6707 Riverside

Project No: 21066

Project Status: ISSUED FOR PERMIT

Project Location: AUSTIN, TEXAS

6707 Riversideland LLC

Client Rep:
Client Rep Email:
Client Rep Phone:

PROJECT INFORMATION:

PROJECT SCOPE DESCRIPTION:

PROJECT IS A TWO STORY BUILDING WITH A LEVEL OF PARKING ON THE GROUND LEVEL (LEVEL 1) AND TWO OFFICE SUITES ON LEVEL 2. THE OFFICE SHARE COMMON RESTROOMS AND MAINTENANCE/UTILITY CLOSET. THE BUILDING IS STRUCTURAL STEEL FRAMING ON DRILL CONCRETE PIERS. ALL FRAMING SHALL BE LIGHT GAUGE METAL FRAMING. THE PROJECT WILL PROVIDE VERTICAL CIRCULATION AND EGRESS THROUGH AN ELEVATOR AND MONUMENTAL STAIR AT THE TWO STORY ENTRY VESTIBULE AND AN EXTERIOR EGRESS STAIR LOCATED AT THE END OF THE COMMON CORRIDOR. PARKING GARAGE ON THE GROUND LEVEL WILL BE OPEN AND ALLOW EGRESS THRU OUT IN ANY DIRECTION. THE BUILDING CONSTRUCTION TYPE IS TYPE IIB AND PROVIDE FOR A RATED FLOOR BETWEEN THE GARAGE (S2) AND THE BUSINESS (B) AREAS ON LEVEL 2 WITH A 1 HOUR SEPARATION PER TABLE 508.4. THE ENCLOSED MONUMENTAL STAIR AND ELEVATOR SHALL BE SEPARATED FROM THE PARKING WITH 1 HOUR FIRE SEPARATION.

BUILDING INFORMATION:

2 STORY OFFIE BUILDING - BUSINESS (B) AND MERCANTILE (M) OCCUPANCY ON LEVEL 2 AND PUBLIC PARKING GARAGE (S-2) OCCUPANY ON LEVEL 1 (GROUND LEVEL). CONSTRUCTION TYPE IS IIB, FULLY SPRINKLERED (NFPA 13), WITH A 1 HOUR SEPARATION BETWEEN B AND S-2 OCCUPANY.

APPLICABLE CODES:

2021 INTERNATIONAL BUILDING CODE

2021 ENERGY CONSERVATION CODE

2021 INTERNATIONAL FIRE CODE

2020 NATIONAL ELECTRIC CODE

2021 UNIFORM MECHANICAL CODE

2021 UNIFORM PLUMBING CODE

SITE PLAN CASE NUMBER:

SP-2022-0057C

TDLR REGISTRATION NO.:

TDLR REGISTRATION NO. - TABS2023001704

AHJ TESTING REQUIREMENTS:

FIRE: EMERGENCY RESPONDER COVERAGE TESTING

MECHANICAL: BLOWER DOOR TEST -

DEFERRED SUBMITTALS:

1. FIRE ALARM
2. FIRE SPRINKLER
3. SIGNAGE

	PROJECT DESCRIPTION	NTS		APPLICABLE CODES	NTS		AHJ REQUIREMENTS	NTS

ARCHITECT:

FIFTH DIMENSION ARCHITECTURE & INTERIORS, LLC
2226 1ST AVENUE SOUTH, SUITE 101
BIRMINGHAM, ALABAMA 35233
PROJECT MANAGER: CHONG SHIN
EMAIL: cshin@5da-i.com
PHONE: 512.297.1011

STRUCTURAL:

PICKETT, KELM & ASSOCIATES, INC.
4100 DUVAL ROAD, BUILDING 4, SUITE 103
AUSTIN, TEXAS 78723
PROJECT MANAGER: JOHN E. SOLIZ
EMAIL: jsoliz@pkainc.com
PHONE: 512.345.5538

MECHANICAL:

B2AEP, LLC
3510 EAGLE WAY
ROUNG ROCK, TEXAS 78681
PROJECT MANAGER: CHAD BLACK
EMAIL: chadblack@b2aep.com
PHONE: 512.925.7418

ELECTRICAL:

COEFFICIENT ENGINEERING, LLC
PROJECT MANAGER: MIKE FULK
EMAIL: mikef@coefficientengr.com
PHONE: 512.537.1287

PLUMBING:

B2AEP, LLC
3510 EAGLE WAY
ROUNG ROCK, TEXAS 78681
PROJECT MANAGER: CHAD BLACK
EMAIL: chadblack@b2aep.com
PHONE: 512.925.7418

ACCESSIBILITY:

PROJECT MANAGER:
EMAIL:
PHONE:

CIVIL:

CIVILITUDE
5110 LANCASTER CT.
AUSTIN, TEXAS 78723
PROJECT MANAGER: ESTEBAN GONZALEZ
EMAIL: esteban@civilitude.com
PHONE: 512.761.6161

LANDSCAPE:

PROJECT MANAGER:
EMAIL:
PHONE:

MISC CONSULTANT 1:

PROJECT MANAGER:
EMAIL:
PHONE:

MISC CONSULTANT 2:

PROJECT MANAGER:
EMAIL:
PHONE:

MISC CONSULTANT 3:

PROJECT MANAGER:
EMAIL:
PHONE:

MISC CONSULTANT 4:

PROJECT MANAGER:
EMAIL:
PHONE:

REGISTERED ARCHITECT WALTER D. PHILLIPS 24499 STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ATLANTA, GA
www.5da-i.com

ISSUED FOR PERMIT

6707 Riverside
6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO.	ISSUE DATE
21066	2022.09.27

SHEET NAME:
COVER SHEET

SHEET NO:
G0.00

GENERAL PROJECT NOTES

OWNER REQUIREMENTS

1. THE OWNER SHALL OBTAIN AND PAY FOR BUILDING PERMITS AND IMPACT FEES.
2. AS PART OF THE SUBMITTAL REVIEW PROCESS, THE OWNER SHALL APPROVE ALL MATERIAL FINISH AND COLOR SELECTIONS PRIOR TO PROCEEDING WITH RELATED WORK OR ORDERING RELATED MATERIALS AND EQUIPMENT.
3. THE OWNER TO PROVIDE SPECIAL INSPECTIONS AS REQUIRED BY THE CURRENT BUILDING CODE OR AHJ, REFER TO STRUCTURAL DRAWINGS FOR A LIST OF SPECIAL INSPECTION REQUIRED.
4. THE OWNER TO SECURE ALL AGREEMENTS FOR ON SITE AND OFF-SITE CONSTRUCTION ACCESS, STAGING AND STORAGE AREAS.

GENERAL

1. UNLESS NOTED OTHERWISE, THE GENERAL CONDITIONS FOR CONSTRUCTION ARE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONDITIONS SET FORTH THE RESPONSIBILITIES OF THE VARIOUS PARTIES INVOLVED IN THE CONSTRUCTION. THE CONTRACTOR SHALL READ THESE AND FAMILIARIZE HIMSELF WITH THE REQUIREMENTS BEFORE STARTING CONSTRUCTION INCLUDING ALL NOTES THAT OCCUR THROUGHOUT THE DRAWINGS.
2. THE CONTRACTOR SHALL EXAMINE AND BECOME FAMILIAR WITH ALL CONTRACT DOCUMENTS INCLUDING SPECIFICATIONS IN THEIR ENTIRETY.
3. DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS MUST BE APPROVED IN WRITING BY THE ARCHITECT, AND OR ENGINEER OF RECORD SUBJECT TO OWNER APPROVAL.
4. ALL MATERIAL QUANTITIES TO BE CONFIRMED AND PROVIDED BY THE CONTRACTOR.
5. UNLESS NOTED OTHERWISE IN THE PROJECT MANUAL, THE CONTRACTOR SHALL SUBMIT THE OPERATIONS AND MAINTENANCE MANUALS AT LEAST TWO WEEKS BEFORE THE FINAL INSPECTION IS SCHEDULED FOR SUBSTANTIAL COMPLETION. THE FINAL INSPECTION WILL NOT BEGIN UNTIL O&M MANUALS HAVE BEEN APPROVED.
6. THE CONSTRUCTION SCHEDULE SHALL ALLOW TIME FOR TESTING AND BALANCING AS REQUIRED BY THE PROJECT PRIOR TO SUBSTANTIAL COMPLETION. THE PROJECT WILL NOT BE CONSIDERED SUBSTANTIALLY COMPLETE UNTIL THE TESTING AND BALANCING HAS BEEN COMPLETED.
7. ALL MEANS OF EGRESS AND FIRE PROTECTION SHALL BE MAINTAINED AT ALL TIMES. ANY SHUT DOWN OF LINE SAFETY OR BUILDING SYSTEMS SHALL BE APPROVED AND COORDINATED IN ADVANCE WITH THE OWNER AND LOCAL BUILDING DEPARTMENT.

DEFINITIONS

1. **TYPICAL**: AT LOCATIONS WITHIN THE DRAWINGS, THE TERM "TYPICAL" INDICATES THE DETAIL IS APPLICABLE TO EACH AND ALL SIMILAR CONDITIONS WHETHER INDICATED OR NOT.
2. **PROVIDE**: THE USE OF THE WORDS "PROVIDE" OR "PROVIDED" IN CONNECTION WITH ANY ITEM SPECIFIED IS INTENDED TO MEAN, UNLESS OTHERWISE NOTED, THAT SUCH SHALL BE FURNISHED, INSTALLED AND CONNECTED WHERE SO REQUIRED.
3. **AS REQUIRED**: PROVIDE THE SPECIFIED COMPONENTS TO COMPLETE THE NOTED SYSTEMS.
4. **SIMILAR**: PROVIDE COMPLETE COMPONENTS FOR THE SYSTEM INDICATED THAT ARE COMPARABLE TO THE CHARACTERISTICS FOR THE CONDITION NOTED.
5. **CLEAR**: CRITICAL DIMENSIONS FROM FACE OF FINISH TO FACE OF FINISH.
6. **F/V OR FIELD VERIFY**: DIMENSIONS REQUIRED TO BE FIELD VERIFIED BY CONTRACTOR.
7. **U.N.O.**: UNLESS OTHERWISE NOTED
8. REFER TO DIVISION 1 SECTION "REFERENCES" FOR ADDITIONAL TYPICAL TERMS AND DEFINITIONS APPLICABLE TO THE CONSTRUCTION DOCUMENTS. THIS SECTION SHALL TAKE PRECEDENCE OVER ANY OTHER DEFINITIONS STATED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS.

PROJECT TURNOVER REQUIREMENTS

1. UPON COMPLETION OF THE WORK REMOVE ALL APPLIANCE PROTECTION, CLEAN UP ALL STAINS, DEBRIS AND EQUIPMENT.
2. CLEAN AND LEAVE ALL INTERIOR AND EXTERIOR AREAS TO THE SATISFACTION OF THE OWNER.
3. UPON COMPLETION OF PROJECT, THE CONTRACTOR IS TO PROVIDE OWNER WITH ALL INSTRUCTION MANUALS, WARRANTIES OR OTHER DOCUMENTS REQUIRED FOR OPERATION OR MAINTENANCE OF ANY ITEM IN THE CONTRACTORS WORK.
4. UPON COMPLETION OF PROJECT, OBTAIN ALL FINAL INSPECTIONS AS REQUIRED BY LOCAL JURISDICTIONS AND FURNISH OWNER WITH EVIDENCE OF ALL SUCH INSPECTIONS AND CERTIFICATES OF OCCUPANCY.
5. UPON COMPLETION OF THE WORK, REMOVE ALL TOOLS, EQUIPMENT, TEMPORARY PROTECTION, AND EXCESS MATERIALS FROM THE SITE. CLEAN / POLISH ALL HARDWARE AND FIXTURES. CLEAN / REMOVE ALL PAINT DRIPS / SPLATTERS AND STAINS. REMOVE ALL AREAS BROOM CLEAN, FREE OF STAINS, FILM AND FOREIGN SUBSTANCES.
6. AT A MINIMUM, WARRANT ALL MATERIALS AND LABOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION, OR THE DATE OF BENEFICIAL OCCUPANCY BY THE OWNER, WHICHEVER IS LATER. REPAIR OR REPLACE ALL WORK THAT IS DISCOVERED TO BE DEFECTIVE DURING THAT PERIOD. SEE SPECIFICATIONS FOR ADDITIONAL WARRANTY REQUIREMENTS.
7. WHEN APPLICABLE, ALL DEMONSTRATION AND TRAINING OF OWNER'S PERSONNEL SHALL BE COMPLETE BEFORE THE PROJECT IS CERTIFIED TO BE SUBSTANTIALLY COMPLETE BY THE ARCHITECT.
8. THE CONTRACTOR SHALL CONDUCT TWO POST CONSTRUCTION INSPECTIONS:
   A. THE FIRST INSPECTION WILL BE HELD APPROXIMATELY 8 MONTHS AFTER SUBSTANTIAL COMPLETION TO ADDRESS PLUMBING, HVAC, AND ELECTRICAL CONCERNS.
   B. THE SECOND INSPECTION WILL BE HELD PRIOR TO THE EXPIRATION OF THE 1-YEAR WARRANTY PERIOD TO ADDRESS GENERAL CONSTRUCTION, INCLUDING THE ABOVE.
   C. ALL PROBLEMS DISCOVERED DURING THESE INSPECTIONS THAT RELATE TO DEFECTIVE MATERIALS AND WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

COORDINATION AND DOCUMENT INTERPRETATION

1. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION. VERIFY ALL EXISTING SITE CONDITIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES WITH THE DRAWINGS U.N.O.
2. ALL ROUGH OPENINGS REQUIRING INSTALLATION OF PREFABRICATED ITEMS INCLUDING BUT NOT LIMITED TO WINDOWS, DOOR FRAMES, TUBS, SHOWERS, ELEVATORS, AND TRASH COMPACTORS, SHALL BE FIELD MEASURED OR THE CONTRACTOR SHOULD GUARANTEE THE OPENINGS. DO NOT RELY ON THE DIMENSIONS ON THE DRAWINGS.
3. THE CONTRACTOR SHALL PROVIDE COORDINATION DRAWINGS AS SPECIFIED IN DIVISION 1 SECTION "PROJECT MANAGEMENT AND COORDINATION."
4. ALL PLAN DIMENSIONS ARE FROM FACE OF STUD, FACE OF CMU, FACE OF CAST IN PLACE WALLS OR CENTERLINE OF COLUMNS U.N.O.
5. AT PROJECTS WITH EXISTING CONSTRUCTION, WHERE FINISHES ARE NOT TO BE DEMOLISHED, DIMENSIONS ARE INDICATED FROM THE EXISTING FACE OF FINISH.
6. ALL ANGLED WALLS ARE 45 DEGREES UNLESS NOTED OTHERWISE.
7. UPON DISCOVERY OF ANY OF THE FOLLOWING, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING AND AWAIT A WRITTEN RESPONSE PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
   A. ANY VARIATIONS OR AMBIGUITIES BETWEEN THESE DRAWINGS AND ACTUAL SITE AND CONSTRUCTION CONDITIONS AND/OR REQUIREMENTS
   B. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND OR DIMENSIONS AND INFORMATION CONTAINED WITHIN THE CONTRACT DOCUMENTS.
   C. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND ALL APPLICABLE COUNTY, STATE, CITY CODES AND AMENDMENTS.
   D. ANY INCONSISTENCIES, DISCREPANCIES, OR CONFLICTS IN THE DRAWINGS AND SPECIFICATIONS.
8. WHERE DOORS ARE NOT DIMENSIONED IN METAL OR WOOD STUD WALLS, THEY SHALL BE EITHER CENTERED AT THE MIDPOINT OF THE WALL OR OFFSET TO PROVIDE 4" CLEAR FROM THE ADJACENT WALL CORNER IF CLEARANCE ALLOWS.
9. WHERE NO DIMENSION IS GIVEN AT INTERIOR DOOR LOCATIONS IN CMU, LOCATE EDGE OF FRAME WITHIN 8-INCHES OF ADJACENT WALL. REFER UNCERTAINTIES TO ARCHITECT FOR APPROVAL
10. WHERE WINDOW AND DOOR SCHEDULES INDICATE EQUIVALENT HEAD HEIGHTS WITHIN A ROOM, THE CONTRACTOR SHALL COORDINATE THE SPECIFIC HEIGHT OF EACH ROUGH OPENING TO ALLOW TRIM AT THESE WINDOW AND DOOR HEADS TO MAINTAIN A CONSISTENT HEIGHT ABOVE THE FINISHED FLOOR.
11. SOLID SURFACED PATIOS AND BALCONY FINISHED SURFACES AND SUPPORTING CONSTRUCTION SHALL BE SLOPED 1/4" PER 1'-0" IN THE DIRECTION INDICATED OR TO OUTERMOST EDGE OF BUILDING. SURFACES SHALL WARP AWAY FROM WALLS TO DIRECT WATER AWAY FROM WALLS AND IMPEDING BUILDING ELEMENTS U.N.O.
12. REFER TO STRUCTURAL DRAWINGS FOR CONCRETE CONTROL JOINT SPACING.
13. CONFIRM SIZES OF ALL OPENINGS REQUIRED FOR THE INSTALLATION OF ALL STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WORK PRIOR TO FORMING CONCRETE.
14. LAYOUT AND COORDINATE SUBCONTRACTOR WORK TO AVOID CONFLICTS BETWEEN DUCTWORK, LIGHTING, CEILINGS, PIPING, BUILDING STRUCTURE, ETC. TO ACHIEVE THE INDICATED CEILING HEIGHTS AND WALL LOCATIONS INDICATED ON THE DRAWINGS.
15. COORDINATE LOCATION OF FIXTURES WITH MECHANICAL, ELECTRICAL DRAWINGS, STRUCTURAL DRAWINGS, AND SUBCONTRACTOR PROVIDED FIRE PROTECTION SHOP DRAWINGS (WHERE APPLICABLE). COORDINATE EXACT LOCATION OF ALL CEILING REGISTERS, GRILLES, AND DIFFUSERS WITH LIGHTING LAYOUT, SPRINKLER HEADS, CEILING GRID, ETC. NOTIFY ARCHITECT OF LAYOUT CONFLICTS OR DISCREPANCIES.
16. ALL DETAILS AND SECTIONS ARE INTENDED TO BE TYPICAL FOR THE GENERAL CONDITIONS IN THE PROJECT. ALL DETAILS AND SECTIONS SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR CONDITION THROUGHOUT THE PROJECT UNLESS A SPECIFIC DETAIL IS PROVIDED. REFER ANY UNCERTAINTIES TO ARCHITECT FOR CLARIFICATION.
17. CEILING UTILITY COORDINATION - INSTALL ALL ELECTRICAL AND OTHER CONDUIT TIGHT TO STRUCTURE UNO. CONNECT CEILING GRID AND LIGHTING FIXTURE TIE WIRES TO STRUCTURAL ELEMENTS ABOVE. DO NOT ATTACH TO OTHER SYSTEMS SUCH AS CONDUIT, DUCTS, PIPES, ETC. PROVIDE A MINIMUM OF 1'-0" CLEAR ZONE ADJACENT TO ANY FIRE OR SMOKE PARTITION.
18. PIPING, DUCTWORK, ETC... LOCATED IN THE FINISHED AREAS OF THE BUILDING SHALL BE CONCEALED IN CHASES/FURRED SPACES WITH THE EXCEPTION OF PIPING IN EQUIPMENT ROOMS, AND STANDPIPES, REQUIRED BY CODE TO BE EXPOSED. U.N.O.
19. PROVIDE GALVANIZED METAL ANCHORS FOR WOOD POSTS BEARING ON CONCRETE SLABS, UNLESS NOTED OTHERWISE.
20. REFERENCE CIVIL DRAWINGS FOR FINISHED FLOOR BENCHMARK ELEVATIONS.
21. WHERE INCORRECT REFERENCES TO WALL SECTIONS, DETAILS, AND DRAWING NUMBERS OCCUR, THE CONTRACTOR SHALL REFER UNCERTAINTIES TO THE ARCHITECT FOR CLARIFICATION.
22. WHERE DRAWINGS INDICATE PARTITION TYPES, ACCOMPANIED BY A PARTITION SCHEDULE, AND A WALL IS FOUND TO HAVE NO DESIGNATION, THE CONTRACTOR SHALL ASSUME THE ADJACENT PARTITION TYPE, OR IF UNCERTAIN, ASSUME THE HIGHEST QUALITY. NO CHANGE ORDERS WILL BE GRANTED DUE TO MISSING DESIGNATIONS. REQUEST CLARIFICATION FROM THE ARCHITECT BEFORE PROCEEDING WITH WORK.
23. DEFERRED SUBMITTAL ITEMS SUCH AS SPRINKLER SYSTEM, TRUSSES, POOL, ELEVATOR, ETC. SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER WHO SHALL REVIEW THEM PRIOR TO THE BUILDING OFFICIAL WITH A NOTATION THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
24. PROTRUDING OBJECTS ARE PROHIBITED ALONG ALL CIRCULATION PATHS INCLUDING ACCESSIBLE ROUTES AND STAIRS. A MAXIMUM PROJECTION OF 4" FOR OBJECTS GREATER THAN 27" ABOVE FLOOR IS ALLOWED. ANY PROTRUDING OBJECTS THAT EXTEND GREATER THAN 4" MUST BE MOUNTED WITH THEIR BOTTOM EDGE AT 80" A.F.F.
25. FLOOR TOLERANCE: IN LAYING OUT AND DETAILING THE WORK TO BE COMPLETED, CONSIDERATION SHALL BE GIVEN TO VARIATIONS IN THE FLOOR LEVELNESS RESULTING FROM CONSTRUCTION QUALITY AND LIVE AND DEAD LOADS IMPOSED ON THE STRUCTURE. FIELD VERIFICATIONS SHALL BE MADE OF CONDITIONS TO VERIFY CONSTRUCTION TOLERANCES.
26. ALIGNMENT OF DOOR HEADS AND OTHER HORIZONTAL ELEMENTS SHALL BE MAINTAINED AT A CONSTANT LEVEL AND SHALL NOT FOLLOW VARIATIONS IN FLOOR PLANE.
27. COORDINATE LOCATION AND/OR ELEVATIONS OF FLOOR DRAINS, REGISTERS, GRILLES, LOUVERS, CONVECTORS, PANELS, ETC. WITH MECHANICAL AND ELECTRICAL CONTRACTORS.
28. PROVIDE ACCESS PANELS AS MANDATED BY THE COORDINATION REQUIREMENTS.
29. COORDINATE LOCATION, CONSTRUCTION, AND DETAIL OF LOAD BEARING WALLS BEFORE WORK.
30. WHILE BUILDING IS UNDER CONSTRUCTION, OPERATING FEATURES SHALL COMPLY WITH NFPA 101.
31. CONTRACTOR TO PROVIDE AND INSTALL ALL LOCKING DEVICES, SECURITY DEVICES, AND GLASS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND REQUIREMENTS.

DIVISION 1 - GENERAL REQUIREMENTS

1. UNLESS NOTED OTHERWISE, THE TERM CONTRACTOR IN THE FOLLOWING NOTES SHALL REFER TO THE CONTRACTOR WHO HOLDS THE PRIME CONTRACT WITH THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK CONTAINED IN THE CONSTRUCTION DOCUMENTS.
2. ALL COSTS SUBMITTED SHALL BE BASED ON THOROUGH KNOW-LEDGE OF THE CONTRACT DOCUMENTS IN THEIR ENTIRETY. ANY DISCREPANCY AND/OR UNCERTAINTY AS TO WHAT MATERIAL OR PRODUCT IS TO BE USED SHOULD BE VERIFIED WITH THE OWNER OR ARCHITECT.
3. IT IS THE INTENT OF THE DRAWINGS TO CONFORM TO ALL APPLICABLE COUNTY, STATE, CITY CODES AND AMENDMENTS EVEN IF IT REQUIRES LABOR AND/OR MATERIALS NOT INDICATED ON PLANS.
4. ERRORS OR OMISSIONS IN ANY SCHEDULE OR DRAWING, DO NOT RELIEVE THE CONTRACTOR(S) FROM EXECUTING WORK IN THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS.
5. CONTRACTOR SHALL COORDINATE WITH THE OWNER AND GOVERNING AUTHORITIES TO ESTABLISH CONSTRUCTION TRAFFIC ACCESS TO THE SITE AND DESIGNATED CONSTRUCTION ACCESS THROUGHOUT THE BUILDING, WHERE APPLICABLE.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK INCLUDED IN THE CONTRACT DOCUMENTS. ALL CORRESPONDENCE FROM SUBCONTRACTORS SHALL BE ROUTED THROUGH THE CONTRACTOR.
7. ALL SHOP DRAWINGS AND SUBMITTALS SHALL BE PROVIDED IN A PDF FORMAT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A SHOP DRAWING AND SUBMITTAL LOG THAT IS TO BE SHARED WITH THE ARCHITECT.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO: PAY ALL FEES, FILE ALL REQUIRED DRAWINGS AND OBTAIN ALL PERMITS AND CERTIFICATE AS REQUIRED BY THE AHJ THAT ARE NOT PROVIDED BY THE OWNER.
9. STORE AND PROTECT ALL CONSTRUCTION MATERIALS IN ACCORDANCE WITH MANUFACTURER OR OWNER REQUIREMENTS TO PREVENT DETERIORATION.
10. REMOVE RUBBISH FROM PREMISES AS OFTEN AS NECESSARY OR AS DIRECTED TO MAINTAIN CLEAN AND SAFE PROJECT.
11. VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
12. PROTECT ALL EXISTING WORK, UTILITIES, SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO ORDERING, FABRICATION, AND INSTALLATION FOR ANY EQUIPMENT.
13. VERIFY AND COORDINATE ALL APPLICABLE DIMENSIONS OF FIXTURES AND EQUIPMENT SUPPLIED AND/OR INSTALLED BY OTHERS.
14. MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON THE SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES. ANY CONSTRUCTION OR INSTALLATION BASED ON OUT-OF-DATE PLANS SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
15. PROVIDE TEMPORARY BRACING AND/OR SHORING UNTIL THE PERMANENT BRACING IS IN PLACE.
16. DO NOT ISSUE INCOMPLETE (PARTIAL) SETS OF CONSTRUCTION DRAWINGS. DRAWINGS ARE INTERRELATED.
17. VERIFY AND COORDINATE SPECIFIC REQUIREMENTS FOR OWNER PROVIDED AND/OR INSTALLED EQUIPMENT.
18. PERFORM ALL WORK IN CONNECTION WITH THESE DRAWINGS SHALL BE IN COMPLIANCE WITH THE LATEST O.S.H.A SAFETY AND HEALTH STANDARDS.
19. ALL SUB CONTRACTORS ARE REQUIRED TO COORDINATE THEIR WORK WITH ALL DISCIPLINES TO AVOID CONFLICTS, SEE STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION REGARDING SIZE AND QUANTITY OF OPENINGS, SLAB REQUIREMENTS AND LINTELS.
20. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONSTRUCTION DUMPSTER(S) AND REMOVAL OF CONSTRUCTION WASTE AND DEMOLISHED ITEMS. IF DEMOLITION IS TAKING PLACE, COORDINATE WITH OWNER FOR ITEMS TO BE SALVAGED, STORED OR RETURNED TO OWNER PRIOR TO DEMOLITION.
21. UNLESS A MATERIAL IS SPECIFIED TO BE RECLAIMED, SALVAGED, OR REUSED, ALL MATERIALS SHALL PROVIDED SHALL BE NEW AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. IF A CONFLICT EXISTS BETWEEN THE CONTRACT DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS, THE CONFLICT SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.
22. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF WORK, AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
23. ADJACENT WORK, INCLUDED UNDER OTHER CONSTRUCTION CONTRACTS, WHICH IS DAMAGED DURING EXECUTION OF THIS CONTRACT WORK, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR PRIOR TO FINAL ACCEPTANCE OF THE WORK.
24. THE USE OF HAZARDOUS MATERIALS, EVEN PRODUCTS WITH TRACE AMOUNTS, SHALL NOT BE INCORPORATED INTO THE WORK.
25. MATERIALS CONTAINING MOLD SHALL BE REMOVED FROM THE JOBSITE.
26. ALL TESTS AND INSPECTIONS FOR AIR AND MOISTURE PENETRATION SHALL BE COMPLETED PRIOR TO INSTALLATION OF ANY INTERIOR FINISH MATERIALS.
27. FLOOR FINISH COVERINGS, FINISH TOPPINGS, FLOOR COATINGS, AND OTHER SHEET MEMBRANES SHALL NOT BE INSTALLED OVER CONCRETE SLABS ON GRADE PRIOR TO COMPLETE DRYING OF THE CONCRETE SLAB AND AFTER FIELD TESTING FOR ACCEPTABLE MOISTURE CONTENT.
28. FUEL POWERED EQUIPMENT AND FUEL CANS SHALL NOT BE STORED IN THE BUILDING.
29. NO ASBESTOS, ASBESTOS PRODUCTS, PCB's OR OTHER SUBSTANCE DEEMED TOXIC OR HAZARDOUS UNDER APPLICABLE FEDERAL OR STATE LAWS, RULES, REGULATIONS OR ORDINANCES, ARE TO BE CONTAINED OR INCORPORATED IN THE PROJECT WORK. IF ASBESTOS OR OTHER SUBSTANCES LISTED ABOVE ARE FOUND ON SITE, STOP WORK IMMEDIATELY, CONTACT THE REQUIRED PERSONNEL AND NOTIFY THE OWNER AND ARCHITECT OF THE ASBESTOS. OWNER AND CONTRACTOR TO COORDINATE PROPER REMEDIATION PROCEDURES PRIOR TO WORK CONTINUING. ARCHITECT CLAIMS NO RESPONSIBILITY IN FINDING, HANDLING, OR REMEDIATION OF ASBESTOS OR ANY OTHER SUBSTANCES LISTED ABOVE.
30. BRING TO THE ATTENTION OF THE OWNER ANY MATERIAL SUSPECTED OF BEING HAZARDOUS WHILE ENCOUNTERED DURING EXECUTION OF THE WORK. A DETERMINATION WILL BE MADE BY THE OWNER AS TO WHETHER THE CONTRACTOR SHALL PERFORM TESTS TO DETERMINE IF THE MATERIAL IS HAZARDOUS
31. THE GEOTECHNICAL REPORT PROVIDED BY OTHERS IS A PART OF THE PROJECT AND SHOULD BE REVIEWED BY THE CONTRACTOR.

DIVISION 2 - SITEWORK

1. PROTECT ALL EXISTING TREES, LANDSCAPING, SIDEWALKS AND OTHER SITE RELATED COMPONENTS AS INDICATED ON THE CIVIL AND LANDSCAPE DRAWINGS.
2. UNLESS NOTED OTHERWISE, GEOTECHNICAL REPORTS ARE FOR INFORMATION ONLY WHETHER OR NOT BOUND INTO THE PROJECT MANUAL.
3. UNLESS NOTED OTHERWISE, GEOTECHNICAL REPORTS ARE FOR INFORMATION ONLY WHETHER OR NOT BOUND INTO THE PROJECT MANUAL.
4. REVIEW THE GEOTECHNICAL REPORT
5. ALL SITEWORK SHALL BE ESTABLISHED AND DESIGNED BY THE CIVIL ENGINEER OR LANDSCAPE ARCHITECT.
6. REFER TO CIVIL DRAWINGS FOR DIMENSIONAL CONTROL PLAN AND GRADING, FIRE HYDRANT LOCATIONS, AND CURB CUTS.
7. REFER TO ELECTRICAL AND LANDSCAPING DRAWINGS FOR ALL TRANSFORMER LOCATIONS
8. REFER TO CIVIL DRAWINGS FOR DOWNSPOUT TIE IN LOCATIONS.
9. REFER TO MEP AND LANDSCAPE DRAWINGS FOR EXTERIOR SITE LIGHTING.
10. LOCATION OF MECHANICAL UNITS ARE APPROXIMATE. INSTALL PER MANUFACTURER'S REQUIREMENTS.

DIVISION 3 - CONCRETE

1. REFER TO STRUCTURAL DRAWINGS.
2. CONFIRM SIZES OF ALL OPENINGS REQUIRED FOR THE INSTALLATION OF ALL STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WORK PRIOR TO FORMING CONCRETE.
3. PROVIDE CONTROL JOINTS IN CONCRETE SLABS INCLUDING BALCONIES AND ELEVATED WALKWAYS AS REQUIRED PER THE DIRECTION OF THE STRUCTURAL ENGINEERINGER DRAWINGS- COORDINATE SPECIFIC LAYOUTS FOR EXPOSED FINISHED SLABS AS SHOWN ON ARCHITECTURAL PLANS.

DIVISION 4 - MASONRY

1. UNLESS NOTED OTHERWISE ON THE DRAWINGS, PROVIDE CONTROL JOINTS IN CMU WALLS IN ACCORDANCE WITH ACI 530.1, BUT NOT MORE THAN 28 FEET ON CENTER AND WHERE WALLS CHANGE HEIGHT IN THE PLANE OF THE WALL. ARCHITECT TO APPROVE JOINT LOCATIONS.
2. UNLESS NOTED OTHERWISE ON THE DRAWINGS, PROVIDE EXPANSION JOINTS IN CLAY MASONRY NOT TO EXCEED 24 FEET ON CENTER. ARCHITECT TO APPROVE JOINT LOCATIONS.
3. HORIZONTAL MASONRY DIMENSIONS ARE NOMINAL. CONTRACTOR SHALL CONVERT NOMINAL DIMENSIONS TO ACTUAL DIMENSIONS TO MAINTAIN MASONRY BOND PATTERN. FOR EXAMPLE, 1'-4" EQUALS 1'-3 5/8". OPENINGS ARE ALWAYS 3/8-INCHES WIDER THAN THE
4. NOMINAL DIMENSION, I.E., 4'-0" MO EQUALS 4'-0 3/8".
5. CHEMICAL CLEANERS FOR FACE BRICK SHALL BE APPROVED IN WRITING BY THE FACE BRICK AND MORTAR MANUFACTURERS PRIOR TO THEIR USE. NO EXCEPTIONS.
6. PROIDE VENT STYLE WEEPS AT TOP AND BOTTOM OF BRICK WALL TO FULLY VENT CAVITY.
7. PAINT ALL MASONRY LINTELS - COORDINATE COLOR WITH ARCHITECT.

DIVISION 5 - METALS

1. WHERE COUNTERTOPS ARE UNSUPPORTED BY BASE CABINETS, PROVIDE MISCELLANEOUS STEEL SUPPORTS IN ACCORDANCE WITH REQUIREMENTS OF DIVISION 5 SECTION "METAL FABRICATIONS."
2. RAILING SUB-CONTRACTOR TO VERIFY POUND FORCE ON GUARD RAILING TO DETERMINE ADEQUATE NUMBER OF SUPPORT POSTS. NO MIDDLE SUPPORT PREFERRED.
3. RAILING SUB-CONTRACTOR TO ENGINEER SYSTEM TO NOT PENETRATE WATERPROOF MEMBRANE AT HORIZONTAL SURFACES.
4. U.N.O. ALL RAILINGS TO BE 42" HIGH PREFINISHED ALUMINUM WITH A MAX SPACING OF VERTICAL PICKETS OF 4" O.C. MAX

DIVISION 6 - WOOD, PLASTICS, AND COMPOSITES

1. REFER TO STRUCTURAL DRAWINGS FOR THE LOCATION OF ALL SHEAR WALLS.
2. REFER TO STRUCTURAL DRAWINGS FOR THE GRADES OF ALL LUMBER.
3. REVIEW ALL PENETRATIONS THROUGH SHEAR WALL WITH STRUCTURAL. ANY PENETRATION LARGER OR NOT IN APPROVED ZONES SHOULD BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER IMMEDIATELY.
4. REFER TO FULL UL ASSEMBLIES FOR FURTHER FRAMING INFORMATION.
5. ALL NON-LOAD BEARING INTERIOR WOOD STUD WALLS TO BE 2X4 STUDS @16" O.C.
6. ALL WOOD STUD WALLS TO RECEIVE DOUBLE TOP PLATES.
7. ALL SHELVING TO HAVE SOLID WOOD BLOCKING.
8. ALL EXPOSED WOOD SHELVING TO BE PAINTED FINISH PLYWOOD WITH SOLID WOOD NOSING, SOLID WOOD OR AS OTHERWISE INDICATED IN THE DRAWINGS.
9. ALL WOOD SILLS IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED AND HAVE A CONTINUOUS SILL SEALER ON ENTIRE PERIMETER OF BUILDING.
10. FLOOR TRUSSES ARE TO BE POSITIONED SO THEY DO NOT INTERFERE WITH PLUMBING AND HVAC, ADJUST SPACING, AS NECESSARY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
11. PROVIDE CONCEALED WOOD BLOCKING OR METAL STRAPPING IN METAL STUD PARTITIONS FOR ALL SURFACE MOUNTED ACCESSORIES INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, TOILET PARTITIONS, AND GRAB BARS, CURTAIN RODS, SHOWER SEATS, WALL MOUNTED CABINETS, HANDRAILS, ETC.
12. CABINET SUPPLIER TO FIELD MEASURE AREA OF WORK AFTER ROUGH FRAMING, TO ASSURE AN EXACT FIT. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
13. PROVIDE SOLID BLOCKING AND/OR DOUBLE JOISTS UNDER ALL PERPENDICULAR AND PARALLEL PARTITIONS AND STAIR OPENINGS.
14. PROVIDE WOOD BLOCKING IN CEILING AT CENTER OF ALL BEDROOMS FOR CEILING FAN INSTALLATION.
15. REVIEW ALL PENETRATIONS THROUGH SHEAR WALL WITH STRUCTURAL. ANY PENETRATION LARGER OR NOT IN APPROVED ZONES SHOULD BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER IMMEDIATELY.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

1. WHERE REQUIRED AND PROVIDED, VAPOR BARRIERS SHALL BE CONTINUOUS WITH ALL PENETRATIONS PROPERLY SEALED.
2. WHERE WATERPROOFING IS CALLED FOR ON THE DRAWINGS, APPLY WATERPROOFING SYSTEM TO ALL SIMILAR SURFACES BELOW GRADE WHETHER OR NOT SHOWN ON THE DRAWINGS.
3. ALL HORIZONTAL WATERPROOFING SHALL BE FLOOD TESTED BY THE CONTRACTOR AND WITNESSED BY THE TESTING AGENCY.
4. PROVIDE FLASHING BETWEEN DIS-SIMILAR MATERIALS AND MATERIAL TRANSITIONS.
5. SEAL WITH THE APPROPRIATE TYPE OF SEALANT, AND FLASH AT ALL LOCATIONS NECESSARY TO PREVENT PENETRATION OF MOISTURE AT TRANSITIONS OF DISSIMILAR MATERIALS.
6. CORROSION RESISTANT FLASHING SHALL BE INSTALLED AROUND ALL WINDOW, DOOR, AND ROOF OPENINGS AND THE INTERSECTION OF ROOF AND FRAME WALLS. SEAL AND MAKE WEATHER-TIGHT PER MANUFACTURER'S INSTRUCTIONS ALL EXTERIOR COMPONENTS.
7. PROVIDE AIR IMPERMEABLE SEALANT CONTINUOUS AT ALL EXTERIOR JOINTS AROUND WINDOW FRAMES, DOOR FRAMES, BETWEEN WALL CAVITIES, BETWEEN WALL AND FOUNDATION, BETWEEN WALL AND ROOF, BETWEEN WALL AND PANELS, ALL PENETRATIONS AND UTILITIES THROUGH WALLS AND ROOFS, BETWEEN ALL DISSIMILAR MATERIALS, AND ALL OTHER OPENINGS IN BUILDING ENVELOPE.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION (CONT.)

8. FLASHING SHALL BE INSTALLED AT ALL PLUMBING & WIRING PENETRATIONS IN EXTERIOR BUILDING ENVELOPE.
9. PROVIDE CONTINUOUS WEATHER-STRIPPING AT:
   A. ALL EXTERIOR DOORS & WINDOWS
   B. ALL ATTIC ACCESSES IN CONDITIONED AREAS
   C. ALL INTERIOR DOOR OPENINGS INTO UNCONDITIONED SPACE.
10. ALL SHEET METAL FLASHING DETAILS ARE TO BE IN ACCORDANCE WITH SMACNA "ARCHITECTURAL SHEET METAL MANUAL" CURRENT EDITION U.N.O.
11. ALL GUTTERS, DOWNSPOUTS, GRAVEL STOPS, FASCIA, FLASHING, LOUVERS, SCREENS, METAL STRUCTURES AND ANY ROOF PENETRATIONS ARE TO BE INSTALLED AND FABRICATED AS PER SMACNA STANDARDS OR IN ACCORDANCE WITH ROOFING MANUFACTURER'S RECOMMENDATIONS AS REQUIRED TO OBTAIN A MANUFACTURER'S WARRANTY AS REQUIRED BY THE SPECIFICATIONS.
12. ALL SELF ADHERING MEMBRANE (SAM) TO BE SELF HEALING, 6" WIDTH AND 25 MIL MINIMUM. U.N.O.
13. SEALANTS TO MATCH ADJACENT MATERIALS. WHERE TWO MATERIALS ABUT, COORDINATE SPECIFIC COLORS WITH ARCHITECT.

DIVISION 8 - DOORS AND WINDOWS

1. WOOD DOORS SHALL NOT BE INSTALLED UNTIL THE BUILDING IS ENCLOSED, THE PERMANENT HEATING AND COOLING SYSTEMS ARE IN OPERATION, AND RESIDUAL MOISTURE FROM PLASTER, CONCRETE, MASONRY, AND TERRAZZO WORK HAS DISSIPATED.
2. IF THE DOORS MUST BE INSTALLED BEFORE THE CONDITIONS ARE ACCEPTABLE DUE TO CONSTRUCTION SCHEDULE RESTRAINTS, THE CONTRACTOR SHALL PROCEED AT HIS OWN RISK.
3. PROVIDE CEILING ACCESS PANELS IN GYPSUM BOARD CEILINGS TO ACCESS MECHANICAL EQUIPMENT, WATER VALVES, AND ELECTRICAL JUNCTION BOXES AS REQUIRED. COORDINATE WITH MEP DRAWINGS FINAL EQUIPMENT LOCATIONS.
4. ALL REMOVABLE GLAZING STOPS SHALL BE LOCATED ON THE SECURE SIDE OF OPENINGS.
5. SHIM ALL WINDOWS LEVEL AND FILL ALL GAPS AT ROUGH OPENINGS WITH LOW EXPANSION FOAM SEALANT. INTERIOR OF WINDOWS TO BE SEALED 360 DEG. WITH SEALANT AT WINDOW TO. R.O.
6. PROVIDE A 48X48 ROOF ACCESS HATCH TO PROVIDE ACCESS TO ROOFTOP MECHANICAL EQUIPMENT.

DIVISION 9 - FINISHES

1. PROVIDE SHOP DRAWINGS AND SUBMITTALS SHOWING ALL REQUIRED CONTROL JOINTS, EXPANSION JOINTS, AND SLIP JOINTS THROUGHOUT THE EXTERIOR ENVELOPE INCLUDING BUT NOT LIMITED TO, STUCCO, EIFS, BRICK, STONE, MANUFACTURED STONE, CAST STONE, METAL PANELS AND FIBER CEMENT SIDING. SUBMIT LOCATIONS AND DETAILS OF CONTROL AND EXPANSION JOINTS TO ARCHITECT FOR APPROVAL PRIOR TO BEGINNING WORK.
2. PROVIDE A SUBMITTAL SHOWING THE LOCATION AND DETAIL OF ALL CONTROL JOINTS AT THE INTERIOR OF THE BUILDING WITHIN GYPSUM BOARD WALLS, AND CEILINGS.
3. AT A MINIMUM, GYPSUM BOARD INSTALLATION INCLUDING CONTROL JOINTS SHALL BE IN COMPLIANCE WITH ASTM C 840 & GA 216, GYPSUM SHEATHING; ASTM C 1280
4. PROVIDE A SUBMITTAL SHOWING THE LOCATIONS AND PROPOSED DETAILS OF ALL REQUIRED CONTROL JOINTS IN FLOORING SPECIFIC TO EACH MATERIAL'S INSTALLATION REQUIREMENTS WHETHER INDICATED OR NOT IN THE DRAWINGS. SUBMITTAL O BE COORDINATED WITH CONTROL JOINTS INDICATED ON THE STRUCTURAL DRAWINGS PRIOR TO ARCHITECT'S REVIEW.
5. PROVIDE CONTROL JOINTS IN PLASTER AND STUCCO WALLS AND CEILINGS IN ACCORDANCE WITH ASTM 1063 AND
   A. AT VERTICAL SURFACES: 144 SF MAX AT HORIZONTAL SURFACES: 100 SF MAX
   B. BELOW WINDOW, DOOR AND SIMILAR OPENINGS IN WALL CONSTRUCTION.
   C. DO NOT EXCEED WITH RATIO OF 2.5:1 IN JOINT LAYOUT AND DO NOT EXCEED 18' IN ANY DIRECTION.
6. PROVIDE EXPANSION JOINTS IN ACCORDANCE WITH ASTM 1063 AND
   A. AT FLOOR LINES
   B. AT DISIMILAR CONSTRUCTION MATERIALS
   C. AT EXISTING BUILDING OR EXPANSION JOINTS IN THE CONSTRUCTION
   D. AT CHANGES IN BUILDING HEIGHT
   E. AT COLUMNS OR CANTILEVERED AREAS
7. PROVIDE SUBMITTAL WITH ALL PROPOSED CONTROL AND EXPANSION JOINTS TO ARCHITECT FOR APPROVAL PRIOR TO BEGINNING WORK.
8. ANY AND ALL PRECAUTIONS OVER AND ABOVE ANY SHOWN ON PLANS SHALL BE TAKEN BY CONTRACTOR TO MINIMIZE EXTERIOR MATERIALS CRACKING.
9. REFER TO PAINTING SPECIFICATIONS FOR TYPES OF PAINTS FOR VARIOUS SUBSTRATES.
10. PROVIDE PREFINISHED EXHAUST AND FRESH AIR VENTS, PIPES, AND PENETRATIONS TO MATCH ADJACENT SURFACE COLORS. WHERE STANDARD COLORS ARE NOT AVAILABLE TO MATCH, PAINT ALL VENTS TO MATCH ADJACENT WALL SURFACES WITH APPROPRIATE PAINT DESIGNED TO BOND TO THE SPECIFIC MATERIAL UNLESS DIRECTED OTHERWISE BY THE ARCHITECT.
11. PAINT ALL SURFACES WHICH REQUIRE PROTECTION FROM THE ELEMENTS WITH THE APPROPRIATE PAINT, INCLUDING NECESSARY PRIMER COATS AND BACK PRIMING AS RELATED TO THE EACH SPECIFIC MATERIAL.
12. METAL ACCESS PANELS, ELECTRICAL PANEL LOUVERS AND ALL FERROUS METALS SHALL NOT BE PAINTED WITH LATEX PAINT. REFER TO PAINT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
13. ALL EXTERIOR STEEL TO BE GALVANIZED U.N.O. ITEMS DESIGNATED FOR ADDITIONAL PAINT COATING MUST BE PROPERLY PRIMED.
14. MAXIMUM FLAME SPREAD RATING ON ALL INTERIOR FINISH MATERIALS SHALL NOT BE GREATER THAN THE REQUIREMENTS SPECIFIED IN THE CURRENTLY ADOPTED LOCAL BUILDING CODE.
15. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, PROVIDE CONTROL JOINTS IN GYPSUM BOARD SURFACES IN ACCORDANCE WITH ASTM C 840; CEILINGS: 2500 SF, 50 FEET MAX; PARTITIONS: 30 FEET MAX.
16. ALL METAL STUD WALL FRAMING SHALL EXTEND TO THE DECK ABOVE AND PROVIDE DEFLECTION TRACKS, UNLESS NOTED OTHERWISE.
17. THICKNESS, NAILING, TAPING AND CORRECT STUD SPACING AS REFERENCED IN SPECIFIC UL OR OTHER ASSEMBLIES, ALL GYPSUM BOARD TO BE INSTALLED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF SPECIFIC ASSEMBLY REQUIREMENTS.
18. UNLESS NOTED OTHERWISE OR REQUIRED BY AN ASSEMBLY NOTED IN THE DRAWINGS, PROVIDE 5/8" TYPE "X" GYPSUM BOARD MANUFACTURED IN THE U.S.A.
19. AT RESIDENTIAL SPACES, PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT KITCHEN AND BATH BACK SPLASHES, BEHIND TOILETS, TUBS, PREFABRICATED SHOWER SURROUNDS, REFRIGERATORS AND AT LAUNDRY WET WALLS
20. CEMENT BACKER BOARD SHALL BE USED IN BOTH TUB AND SHOWER COMPARTMENTS AT CLUBHOUSE BUILDINGS AND SPACES BEHIND TILE, UNLESS NOTED OTHERWISE. ALL WET WALLS SHALL HAVE MOISTURE RESISTANT BOARD PER CODE.

DIVISION 9 - FINISHES (CONTINUED)

21. PROVIDE CONTINUOUS METAL CORNER BEADS AT ALL GYPSUM BOARD EXTERIOR CORNERS FROM FLOOR TO CEILING.
22. CONTINUOUS METAL 'L' BEADS AT ALL EXPOSED GYPSUM BOARD EDGES FROM FLOOR TO CEILING.
23. WATER RESISTANT 1/2" CERAMIC TILE BACKER BOARD SHALL BE INSTALLED IN BOTH TUB AND SHOWER SURROUNDS THAT ARE NOT PREFABRICATED U.N.O.
24. PROVIDE ACOUSTIC SEALANT AT ALL PENETRATIONS IN GYPSUM BOARD U.N.O.
25. FILL ALL CONTROL & EXPANSION JOINTS IN FLOORS WITH TRAFFIC SEALANT
26. ALL FIBER CEMENT SIDING AND TRIM TO BE INSTALLED PER JAMES HARDIE INSTALLATION INSTRUCTIONS.
27. INSTALL WEATHER BARRIERS PER MANUFACTURER'S INSTRUCTIONS.
28. DO NOT FASTEN ANYTHING THROUGH THE WEATHER BARRIER WITH STAPLES.

DIVISION 10 - SPECIALTIES

1. THE INTENT IS TO LOCATE PORTABLE FIRE EXTINGUISHERS SO MAXIMUM COVERAGE DOES NOT EXCEED NFPA REQUIREMENTS FOR THE TYPES OF EXTINGUISHERS SPECIFIED. IF THE CONTRACTOR DETERMINES THE DRAWING LOCATIONS DO NOT COMPLY, SUBMIT ALTERNATE LAYOUT TO ARCHITECT FOR APPROVAL PRIOR TO ROUGH IN.
2. ALL EQUIPMENT DESIGNATED TO BE RECESSED IN RATED WALLS MUST CARRY AN EQUIVALENT RATING, WHETHER OR NOT IT IS SPECIFIED.

DIVISION 14 - CONVEYING SYSTEMS

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE DIMENSIONS, LAYOUTS AND FINAL REQUIREMENTS FOR ALL CONVEYING SYSTEMS WITH SUBMITTALS AND SHOP DRAWINGS.
2. UNLESS NOTED OTHERWISE IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL CERTIFY THAT THE HOIST WAY, ELEVATOR PIT, AND MACHINE ROOM LAYOUT, INCLUDING DOOR LOCATION, SIZE, AND SWING, LOCATIONS OF ALL WALL MOUNTED ELECTRICAL DEVICES, AND DIMENSIONS, AS SHOWN ON THE CONTRACT DOCUMENTS, AND ELECTRICAL SERVICES SHOWN AND SPECIFIED, ARE ADEQUATE FOR THE ELEVATOR SYSTEM BEING PROVIDED. IF ANY OF THE ABOVE REFERENCED ITEMS DO NOT COMPLY WITH THE ACTUAL ELEVATOR BEING SUPPLIED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO INSTALLATION. AFTER INSTALLATION HAS BEGUN, THE CONTRACTOR ASSUMES ALL ADDITIONAL COSTS FOR INADEQUATE SYSTEMS AND SERVICES.

DIVISION 21 - FIRE SUPPRESSION

1. WHERE REQUIRED, PROVIDE AN APPROVED AUTOMATIC SPRINKLER SYSTEM DESIGNED BY THE FIRE PROTECTION CONTRACTOR.
2. PROVIDE COMPLETE DESIGN AND SHOP DRAWINGS FOR FIRE SPRINKLER SYSTEM.
3. ALL SPRINKLER PIPING SUBJECT TO FREEZING SHALL BE DRY-TYPE SYSTEMS WHERE PERMITTED.
4. WHERE AN NFPA 13R SYSTEM IS USED, PROVIDE FULLY COMPLIANT NFPA 13R SPRINKLERS ON BALCONIES, PATIOS, AND BREEZEWAYS.

DIVISION 22 - PLUMBING

1. REFER TO PLUMBING DRAWING
2. WATER SERVICE SHALL NOT BE PLACED IN CONCEALED SPACES OUTSIDE OF THE CONDITIONED BUILDING ENVELOPE (BREEZEWAY OR PATIO FLOOR SPACES OR ATTICS).
3. PENETRATIONS AND FIXTURES TO ALIGN VERTICALLY FROM FLOOR TO FLOOR.

DIVISION 23 - HVAC

1. REFER TO MECHANICAL DRAWINGS.
2. MECHANICAL DRAWINGS ARE DIAGRAMMATIC. THE INTENT OF THE DESIGN IS THAT ALL REQUIRED CLEARANCES FOR EQUIPMENT, ESPECIALLY POWER PANELS, SHALL BE PROVIDED. IF THE CONTRACTOR DISCOVERS THAT ADEQUATE CLEARANCES WILL NOT BE POSSIBLE WITHIN THE MECHANICAL ROOMS FOR THE APPROVED EQUIPMENT, CONTACT THE ARCHITECT IMMEDIATELY FOR RESOLUTION.
3. ALL EXHAUST HOODS SHALL BE MOUNTED ON EXT. WALLS AT CONSISTENT HEIGHTS WHERE POSSIBLE.
4. PROVIDE PREFINISHED EXHAUST AND FRESH AIR VENTS TO MATCH ADJACENT SURFACE COLORS. WHERE STANDARD COLORS ARE NOT AVAILABLE TO MATCH, PAINT ALL VENTS TO MATCH ADJACENT WALL SURFACES WITH APPROPRIATE PAINT DESIGNED TO BOND TO THE SPECIFIC MATERIAL UNLESS DIRECTED OTHERWISE BY THE ARCHITECT.
5. EXHAUST VENTS TO BE LOCATED 3' MINIMUM AWAY FROM OPENINGS INTO THE BUILDING INCLUDING THE EXTENTS OF ANY WINDOW IN THE OPEN POSTION AND ANY DOOR.

DIVISION 26 - ELECTRICAL

1. REFER TO ELECTRICAL DRAWINGS.
2. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THE INTENT OF THE DESIGN IS THAT ALL REQUIRED CLEARANCES FOR EQUIPMENT, ESPECIALLY POWER PANELS, SHALL BE PROVIDED. IF THE CONTRACTOR DISCOVERS THAT ADEQUATE CLEARANCES WILL NOT BE POSSIBLE WITHIN THE ELECTRICAL ROOMS FOR THE APPROVED EQUIPMENT, CONTACT THE ARCHITECT IMMEDIATELY FOR RESOLUTION.
3. PROVIDE FIRE RETARDANT PLYWOOD PANELS IN ALL TELECOMMUNICATIONS ROOMS FOR MOUNTING OF EQUIPMENT.
4. AT ANY BACK-TO-BACK DEMISING WALL PENETRATIONS THAT OCCUR LESS THAN 24" OF EACH OTHER (MEASURED HORIZONTALLY), PROVIDE FIRE RESISTANT ACOUSTICAL PUTTY PACKS BY QUIET PUTTY OR EQUAL.

DIVISION 28 - ELECTRONIC SAFETY & SECURITY

1. SMOKE DETECTORS SHALL NOT BE PLACED IN FRONT OF EXHAUST GRILLS.
2. SMOKE DETECTORS SHALL CONTINUOUSLY BE POWERED BY BUILDING ELECTRICAL SYSTEM AND INSTALLED IN ACCORDANCE WITH NFPA AND IBC W/ BATTERY BACK UP.
3. PROVIDE SMOKE DETECTORS IN EACH UNIT IN THE QUANTITY AND LOCATION REQUIRED BY CODE.
4. EVERY EXIT WAY OR CHANGE OF DIRECTION IN A EXIT CORRIDOR SHALL BE MARKED WITH WELL-LIGHTED EXIT SIGNS HAVING LETTERS OF AT LEAST 5 INCHES IN HEIGHT.

DIVISION 31 - EARTHWORK

1. PROVIDE TERMITE PREVENTION AT ALL STRUCTURES.
2. APPLICATION OF TERMITICIDES SHALL BE WITNESSED BY THE ARCHITECT OR THE OWNER'S REPRESENTATIVE, AND CERTIFIED IN WRITING BY THE CONTRACTOR

DIVISION 32 - EXTERIOR IMPROVEMENTS

1. UNLESS NOTED OTHERWISE IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING OF NEW GRASS, TREES, AND OTHER VEGETATION TO GET THROUGH PERIODS OF NO RAINFALL OR TAKE RESPONSIBILITY TO RE-ESTABLISH THOSE AREAS THAT PERISH.
2. ALL LANDSCAPING SHALL BE ESTABLISHED AND DESIGNED BY THE LANDSCAPE ARCHITECT.
3. REFER TO LANDSCAPING DRAWINGS FOR LOCATION OF SIDEWALKS AND DETAILS.

REGISTERED ARCHITECT
WALTER D. FRITZ
24489
STATE OF TEXAS

5D FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5da-i.com

ISSUED FOR PERMIT

6707 Riverside
6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO. 21066
ORIG. ISSUE 09/27/2022
CURRENT:

SHEET NAME:
PROJECT GENERAL INFORMATION

SHEET NO:
G0.20

ABBREVIATIONS

THESE ABBREVIATIONS ARE BASED ON STANDARD ABBREVIATIONS THAT ARE USED IN CONSTRUCTION. HOWEVER, ALL ABBREVIATIONS MUST BE REVIEWED IN CONTEXT AND FINAL INTERPRETATION IS BY THE ARCHITECT. NOT ALL ABBREVIATIONS THAT ARE LISTED ARE USED IN THE ATTACHED DOCUMENTS.

"	INCHES
#	POUND OR NUMBER
&	AND
'	FOOT (FEET)
(E)	EXISTING
356	
360	
<	ANGLE
@	AT
CL	CENTERLINE
A/C	AIR CONDITIONING
AAD	ATTIC ACCESS DOOR
AAP	ATTIC ACCESS PANEL
AB	ANCHOR BOLT
ABV	ABOVE
ACOUS	ACOUSTICAL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN, ACOUSTIC DIMENSIONS
ADA	AMERICANS WITH DISABILITIES ACT
ADD	ADDENDUM, ADDITION
ADJ	ADJUSTABLE, ADJUSTMENT
AFF	ABOVE FINISHED FLOOR
AGGR	AGGREGATE
ALT	ALTERNATE
ALUM	ALUMINUM
AMSMV	ADHERED MANUFACTURED STONE MASONRY VENEER
AOR	AREA OF REFUGE
AP	ACCESS PANEL
APPROX	APPROXIMATE
APT	APARTMENT
ARCH	ARCHITECT, ARCHITECTURAL
ASB	ASBESTOS
ASPH	ASPHALT
BATH	BATHROOM
BD	BOARD
BEL	BELOW
BITUM	BITUMINOUS
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BM	BENCHMARK
BOF	BOTTOM OF FOOTING
BOH	BACK OF HOUSE
BOP	BOTTOM OF PLATE
BOT	BOTTOM
BOW	BOTTOM OF WALL
BPL	BEARING PLATE
BR	BEDROOM
BRG	BEARING
BRK	BRICK
BSMT	BASEMENT
BUR	BUILT-UP ROOFING
CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT
CER	CERAMIC
CF	CUBIC FOOT
CFM	CUBIC FEET PER MINUTE
CG	CORNER GUARD
CH	COAT HOOK
CI	CAST IRON
CJ	CONTROL JOINT
CL	CENTERLINE, CLEARANCE
CLG	CEILING
CLKG	CAULKING
CLOS	CLOSET
CLR	CLEAR(ANCE)
CMT	CERAMIC MOSAIC TILE
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
CO	CASED OPENING, CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CORR	CORRIDOR, CORRUGATED
CPT	CARPET
CR	CHAIR RAIL
CRS	COLD ROLLED STEEL
CSMT	CASEMENT
CT	CERAMIC TILE
CTR	CENTER, COUNTER
CTSK	COUNTERSUNK
CW	CURTAIN WALL
CY	CUBIC YARD
D	DRYER, DISPOSAL
DB	DECIBEL
DBL	DOUBLE
DEMO	DEMOLISH
DEPT	DEPARTMENT
DET, DTL	DETAIL
DF	DRINKING FOUNTAIN
DH	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
DL	DEAD LOAD
DN	DOWN
DO	DOOR OPENING
DR	DOOR
DS	DOWNSPOUT
DSP	DRY STANDPIPE
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
E	EAST
EA	EACH
EF	EXHAUST FAN
EHW	ENGINEERED HARDWOOD
EIFS	EXTERIOR INSULATED FINISHING SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
ENG	ENGINEER
ENT	ENTRANCE
EOC	EDGE OF CARPET
EOS	EDGE OF SLAB
EP	ELECTRICAL PANELBOARD
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION, EXPOSED
EXT	EXTERIOR
F	FARENHEIT
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FAS	FASTEN
FB	FLAT BAR
FCB	FIBER-CEMENT BOARD
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISHED FLOOR
FF&E	FURNITURE, FIXTURES & EQUIPMENT
FFS	FACE OF FINISHED SURFACE
FGL	FIBERGLASS
FHC	FIRE HOSE CABINET
FIN	FINISH(ED)
FIXT	FIXTURE
FJ	FLOOR JOIST
FLASH	FLASHING
FLR	FLOOR
FLUOR	FLUORESCENT
FOB	FACE OF BRICK
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOH	FRONT OF HOUSE
FOS	FACE OF STUD
FP	FIREPLACE
FPRF	FIREPROOF
FR	FIRE RATED
FRIG	REFRIGERATOR
FRMG	FRAMING
FRT	FIRE RETARDANT TREATED
FS	FULL SIZE
FT	FOOT OR FEET
FTG	FOOTING
FURN	FURNISH(ING), FURNITURE
FURR	FURRING
FUT	FUTURE
FWC	FABRIC WALL COVERING
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GDR	GUARD RAIL
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GFI	GROUND FAULT INTERRUPT
GFRC	GLASS FIBER REINFORCED CONCRETE
GI	GALVANIZED IRON
GL	GLASS, GLAZED, GLAZING
GND	GROUND
GOVT	GOVERNMENT
GR	GRADE
GWB	GYPSUM WALLBOARD
GYP BD	GYPSUM BOARD
H	HIGH
HB	HOSE BIB
HC	HANDICAP, HOLLOW CORE
HCW	HOLLOW WOOD CORE
HD	HEAVY DUTY
HDR	HEADER
HDW	HARDWARE
HM	HOLLOW METAL
HO	HOLD OPEN
HORIZ	HORIZONTAL
HR	HOUR, HANDRAIL
HT	HEIGHT
HTG	HEATING
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER
HWD	HARDWOOD
HWH	HOT WATER HEATER
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDE, INCLUDING
IND	INDUSTRIAL
INFO	INFORMATION
INSUL	INSULATION, INSULATE
INT	INTERIOR, INTERNAL
INV	INVERT
J	JOIST
JAN	JANITOR
JCT	JUNCTION
JST	JOIST
JT	JOINT
KDN	KNOCKDOWN
KIT	KITCHEN
KO	KNOCKOUT
KP	KICK PLATE
L	LENGTH, LONG
LA	LANDSCAPE ARCHITECT
LAB	LABORATORY
LAD	LADDER
LAM	LAMINATE(D)
LAV	LAVATORY
LBL	LABEL
LBR	LUMBER
LD	LINEAR DIFFUSER
LF	LINEAR FOOT
LH	LEFT HAND
LIN	LINEAR, LINEN
LKR	LOCKER
LL	LIVE LOAD
LNDG	LANDING
LNT	LINTEL
LOC	LOCATION
LR	LIVING ROOM
LT	LIGHT
LTWT	LIGHTWEIGHT
LUM	LUMINOUS
LV	LOW VOLTAGE
LVR	LOUVER
LVT	LUXURY VINYL TILE
M	METER
MACH	MACHINE
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MARKER BOARD
MC	MEDICINE CABINET
MDF	MEDIUM DENISTY FIBER BOARD
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFD	MANUFACTURED
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MLD	MOLDING
MM	MILLIMETER
MO	MASONRY OPENING
MOD	MODULAR
MOV	MOVABLE
MR	MOISTURE RESISTANT
MRT	MOISTURE RESISTANCE TREATED
MTD	MOUNTED
MTL	METAL
MULL	MULLION
MULT	MULTIPLE
MWK	MILLWORK
N	NORTH
N/A	NOT APPLICABLE
NAT	NATURAL
NEC	NATIONAL ELECTRIC CODE
NEO	NEOPRENE
NIC	NOT IN CONTRACT
NO or #	NUMBER
NOM	NOMINAL
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
NS	NON-SLIP
NTS	NOT TO SCALE
O/A	OVERALL
O/H	OVERHEAD
O/O	OUT TO OUT
OBS	OBSCURE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED/ OWNER INSTALLED
OFF	OFFICE
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
PAN	PANTRY
PAR	PARALLEL
PAV	PAVEMENT
PB	PARTICLE BOARD
PCF	POUNDS PER CUBIC FOOT
PED	PEDESTAL, PEDESTRIAN
PERF	PERFORATE(D)
PERIM	PERIMETER
PERP	PERPENDICULAR
PKG	PARKING
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLBG	PLUMBING
PLF	POUNDS PER LINEAR FOOT
PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PRCST	PRE-CAST
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PREP	PREPARATION
PROD	PRODUCTION
PROJ	PROJECT(OR), PROJECTION
PS	PROJECTION SCREEN
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTD	PAINTED, PAPER TOWEL DISPENSER
PTD/R	COMBO. PAPER TOWEL DISPENSER & RECEPTACLE
PTN	PARTITION
PTR	PAPER TOWEL RECEPTACLE
PVC	POLYVINYL CHLORIDE
PWR	POWER
QT	QUARRY TILE
QTR	QUARTER
QTY	QUANTITY
QUAD	QUADRANT
R	RISER, RISE
RA	RETURN AIR
RAD	RADIUS
RB	RUBBER BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REBAR	REINFORCING BAR
REC	RECESSED
RECPT	RECEPTION, RECEPTACLE
REF.	REFRIGERATOR
REF:	REFER TO, REFERENCE
REINF	REINFORCED
REPRO	REPRODUCE, REPRODUCTION
REQD	REQUIRED
RESIL	RESILIENT
RET	RETURN
REV	REVISE, REVISION
RGTR	REGISTER
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RS	ROD & SHELF
RT	RIGHT
RWD	REDWOOD
RWL	RAIN WATER LEADER
S	SOUTH
S/S	STAINLESS STEEL
SAFB	SOUND ATTENUATING FIRE BLANKET
SAM	SELF-ADHERED MEMBRANE
SAN	SANITARY
SC	SOLID CORE
SCD	SEAT COVER DISPENSER
SCHED	SCHEDULE(D)
SD	SMOKE DETECTOR
SECT	SECTION, SECTOR
SEP	SEPARATE, SEPARATION
SF	SQUARE FOOT (FEET), STOREFRONT
SGD	SLIDING GLASS DOOR
SGL	SINGLE
SH	SHELF, SINGLE HUNG
SHLVG	SHELVING
SHT	SHEET
SHWR	SHOWER
SIM	SIMILAR
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTACLE
SPEC	SPECIFICATION
SQ	SQUARE
SR	SHOWER ROD
SSK	SERVICE SINK
SST	STAINLESS STEEL
ST	STUCCO
STA	STATION
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STK	OPEN STACKED SHELVING
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SURF	SURFACE
SUSP	SUSPEND(ED)
SV	SHEET VINYL
SVC	SERVICE
SW	SHEAR WALL
SYM	SYMETRICAL
SYS	SYSTEM
T	TREAD(S)
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
TB	TOWEL BAR, TACK BOARD, THROUGH BOLT
TC	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPERED, TEMPERATURE
TER	TERRACE, TERRAZZO
THK	THICK
TLT	TOILET
TOC	TOP OF CONCRETE
TOP	TOP OF PLATE
TOW	TOP OF WALL
TP	TOP OF PAVEMENT
TPH	TOILET PAPER HOLDER
TRTD	TREATED
TS	TUBULAR STEEL
TV	TELEVISION
TYP	TYPICAL
UC	UNDER COUNTER
UL	UNDERWRITERS LABORATORIES, INC.
UNF	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
UTIL	UTILITY
VAR	VARIES, VARIABLE, VARIOUS
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VOL	VOLUME
VP	VINYL PLANK
VWC	VINYL WALL COVERING
W	WEST, WIDE, WIDTH, WASHER
W/	WITH
W/D	WASHER / DRYER
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WF	WIDE FLANGE
WGL	WIRED GLASS
WH	WATER HEATER
WI	WROUGHT IRON
WIC	WALK IN CLOSET
WP	WATERPROOF(ING)
WR	WATER RESISTANT, WASTE RECEPTACLE
WRB	WEATHER-RESISTANT BARRIER
WS	WEATHERSTRIPPING
WSCT	WAINSCOT
WT	WEIGHT
YD	YARD

PROJECT SPECIFIC NOTES

MOCK-UP REQUIREMENTS

1. THE CONTRACTOR SHALL PROVIDE A FULL SCALE, MOCK-UP WITH ACCURATE DETAILS OF CONSTRUCTION. THE APPROXIMATE SIZE SHALL BE: 20' LONG X 10' HIGH.
2. THE LOCATION OF THE MOCK-UP ON THE SITE TO BE APPROVED BY OWNER AND CONTRACTOR.
3. MOCK-UP TO INCLUDE APPROPRIATE FLASHING FOR ALL PENETRATION TYPES.
4. INCLUDE ALL EXTERIOR MATERIALS, COMPLETE WALL SYSTEM SHALL INCLUDE: FRAMING, SHEATHING, BUILDING WRAP, FLASHING, AND SIDING. INSTALL SIDING ON ONE SIDE OF WINDOW AND ACROSS TOP TO ALLOW FOR REVIEW OF FLASHING SYSTEM. OWNER TO PROVIDE APPROVAL AND AUTHORIZATION TO PROCEED IN WRITING. INCLUDE COMPLETE MANUFACTURER'S INSTALLATION INSTRUCTIONS IN BOTH ENGLISH AND SPANISH IN WINDOW SUBMITTAL. OWNER REQUIRES 2 WEEKS NOTICE TO SCHEDULE MOCK-UP REVIEW. ENSURE WINDOW MANUFACTURER'S REPRESENTATIVE IS IN ATTENDANCE DURING REVIEW ALSO VERIFY INSTALLATION AND ANSWER ANY OWNER QUESTIONS.
5. MOCK-UP SHALL INCLUDE: 1 DOOR, 2 WINDOWS, FIBER CEMENT, BRICK, METAL RAILING, ROOF MATERIAL.
6. PAINTER TO PROVIDE EXTERIOR PAINT MOCK-UP. EACH AREA TO BE 15'X15'. PAINT SELECTION MAY USE EXTERIOR WALL MOCK-UP, BUT FINAL COLOR APPROVAL WILL REQUIRE FULL AREA TO REVIEW.
7. REFERENCE SHEET MK-UP FOR MOCK-UP DRAWING.

INSULATION AND ENERGY EFFICIENCY SCHEDULE CLIMATE ZONE 2A (COMMERCIAL ENERGY EFFICIENCY)

BUILDING TYPE - OFFICE BUILDING WITH PARKING GARAGE BELOW

INSULATION AND ENERGY EFFICIENCY LISTED BELOW IS BASED ON THE MINIMUM REQUIREMENTS OF THE 2021 IECC AND HAS PASSED A COMCHECK, RESCHECK OR EQUIVALENT TESTING STANDARD. SOUND ATTENUATING INSULATION IS BASED ON MINIMUM REQUIREMENTS TO ACHIEVE CODE REQUIRED STC AND IIC LEVELS

LOCATION	VALUE OR THICKNESS	MATERIAL	VAPOR BARRIER	VAPOR BARRIER LOCATION	COMMENTS
SLOPED ROOFS					
ATTICS ABOVE OCCUPIED SPACE	R-38	UNFACED FIBERGLASS BATTS	NO	N/A	FULLY COVER ALL SPRINKLER AND WATER PIPES THAT PASS THROUGH ATTICS WITH INSULATION
FOUNDATIONS					
UNHEATED SLABS	NONE	N/A	YES	UNDER	
WALLS					
EXTERIOR 6" WALLS	R-13 + R-5ci	UNFACED FIBERGLASS BATTS	YES	OUTSIDE	
CORRIDOR WALLS	R-13	UNFACED FIBERGLASS BATTS	NO	N/A	
SUITE DEMISING WALLS	R-13	UNFACED FIBERGLASS BATTS	NO	N/A	
FLOOR / CEILING					
BETWEEN LEVEL 2 AND LEVEL 1	R-30	SPRAY ON INSULATION	YES	OUTSIDE	
OPAQUE DOORS					
SWINGING	U-0.61.	N/A	N/A	N/A	

LS = LINEAR SYSTEM
ci = CONTINUOUS INSULATION

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dai.com

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6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

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ORIG. ISSUE 09/27/2022
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LEGENDS, INSULATION SCHEDULE

SHEET NO:
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E0.001	ELECTRICAL SPECIFICATIONS
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REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

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CODE STUDY

GENERAL INFORMATION

PROJECT LOCATION:	6707 Riverside 6707 Riverside Drive Austin, TX 78741	ARCHITECT:	FIFTH DIMENSION ARCHITECTURE 2226 1ST AVE. S, SUITE 101 BIRMINGHAM, AL 35233
STRUCTURAL ENGINEER:	PICKETT, KELM & ASSCOAITES, INC 4100 DUVAL ROAD, BLDG 4, SUITE 103 AUSTIN, TX 78759	MECHANICAL ENGINEER:	B2AEP, LLC 3510 EAGLE WAY ROUND ROCK, TX 78681
PLUMBING ENGINEER:	B2AEP, LLC 3510 EAGLE WAY ROUND ROCK, TX 78681	ELECTRICAL ENGINEER:	B2AEP, LLC 3510 EAGLE WAY ROUND ROCK, TX 78681
CIVIL ENGINEER:	CIVILITUDE LLC 5110 LANCASTER CT AUSTIN, TX 78723	LANDSCAPE ARCHITECT:	

PROJECT DESCRIPTION / CODE STRATEGY

PROJECT IS A TWO STORY BUILDING WITH A LEVEL OF PARKING ON THE GROUND LEVEL (LEVEL 1) AND TWO OFFICE SUITES ON LEVEL 2. THE OFFICE SHARE COMMON RESTROOMS AND MAINTENANCE/UTILITY CLOSET. THE BUILDING IS STRUCTRUAL STEEL FRAMING ON DRILL CONCRETE PIERS. ALL FRAMING SHALL BE LIGHT GUAGE METAL FRAMING. THE PROJECT WILL PROVIDE VERICAL CIRCULATION AND EGRESS THROUGH A ELEVATOR AND MONUMENTAL STAIR AT THE TWO STORY ENTRY VESTIBULE AND AN EXTERIOR EGRESS STAIR LOCATED AT THE END OF THE COMMON CORRIDOR. PARKING GARAGE ONT HE GROUND LEVEL WILL BE OPEN AND ALLOW EGRESS THRU OUT IN ANY DIRECTION. THE BUILDING CONSTRUCTION TYPE IS TYPE IIIA AND PROVIDE FOR A RATED FLOOR BETWEEN THE GARAGE (S2) AND THE BUSINESS (B) AREAS ON LEVEL 2 WITH A 1 HOUR SEPERATION PER TABLE 508.4. THE ENCLOSED MONUMENTAL STAIR AND ELEVATOR SHALL BE SEPERATED FROM THE PARKING WITH 1 HOUR FIRE SEPERATION.

APPLICABLE CODES - AUSTIN, TX

2021 - INTERNATIONAL BUILSING CODE
2021 - INTERNATIONAL ENERGY CODE
2021 - INTERNATIONAL FIRE CODE
2020 - NATIONAL ELECTRIC CODE
2021 - UNIFORM MECHANICAL CODE
2021 - UNIFORM PLUMBING CODE

OCCUPANCY TYPE (Chapter 3)

GROUP B - PROFESSIONAL SERVICES
Group S2 - PUBLIC PARKING GARAGE

BUILDING HEIGHTS AND AREAS (Chapter 5)

TABLE 506.2

TOTAL BUILDING	1st Floor	2nd Floor	TOTAL GROSS AREA	TOTAL ALLOWABLE
LEVEL 1 - (S-2)	6,024 sf		**6,024 sf**	**104,000 sf**
LEVEL 1 - (B)	353 sf		**353 sf**	**76,000 sf**
LEVEL 2 (M)		1,900 sf	**1,900 sf**	**sf**
LEVEL 2 (B)		4,663 sf	**4,663 sf**	**76,000 sf**

TABLE 504.3 & 504.4

BUILDING TYPE	BUILDING HEIGHT (TABULAR)	ALLOWABLE STORIES (TABULAR)	BUILDING AREA (TABULAR) (A_t)	ALLOWABLE AREA (A_a)	ACTUAL AREA (LARGEST FLOOR)	ACTUAL NO. OF STORIES	ACTUAL HEIGHT
PARKING (S-2)	75'-0"	4	104,000 sf	104,000 sf	6,024 sf	1	32'-6"
MERCANTILE (M)	75'-0"	3	50,000 sf	50,000 sf	1,900 sf	2	32'-6"
BUSINESS (B)	75'-0"	4	76,000 sf	76,000 sf	4,663 sf	2	32'-6"

ALLOWABLE AREA FORMULAS

$A_a = A_t + (NS \times I_f)$

$I_f = [F/P - 0.25]W/30$

ALLOWABLE AREA FACTORS

BUILDING TYPE	FRONTAGE WIDTH (W)	FRONTAGE PERIMETER (F)	TOTAL PERIMETER (P)	FRONTAGE INCREASE FACTOR (I_f)	SPRINKLER SYSTEM	ALLOWABLE NO. OF STORIES	ALLOWABLE HEIGHT
PARKING (S-2)	Calculations Not Required to increase Allowable Building Area				NFPA 13	4 PER 504.2	75'-0" PER 504.3
MERCANTILE (M)	Calculations Not Required to increase Allowable Building Area				NFPA 13	3 PER 504.2	75'-0" PER 504.3
BUSINESS (B)	Calculations Not Required to increase Allowable Building Area				NFPA 13	4 PER 504.2	75'-0" PER 504.3

TYPES OF CONSTRUCTION (Chapter 6)

TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING TYPE	CONSTRUCTION TYPE	BEARING WALLS (EXTERIOR)	BEARING WALLS (INTERIOR)	NON BEARING WALLS (EXTERIOR)	NON BEARING WALLS (INTERIOR)	FLOOR CONSTRUCTION	ROOF CONSTRUCTION
PARKING (S-2)	IIB	0 HR	0 HR	SEE TABLE 705.5	0 HR	0 HR	0 HR
MERCANTILE	IIB	0 HR	0 HR	SEE TABLE 705.5	0 HR	0 HR	0 HR
BUSINESS (B)	IIB	0 HR	0 HR	SEE TABLE 705.5	0 HR	0 HR	0 HR

TABLE 705.5 FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE (HOURS)

FIRE SEPARATION DISTANCE	TYPE OF	OCCUPANCY GROUP H	OCCUPANCY GROUP F-1, M, S-1	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2, U
X < 5	ALL	3	2	1
5 ≤ X ≤ 10	IA	3	2	1
	OTHERS	2	1	1
10 ≤ X ≤ 30	IA, IB	2	1	1
	IIB, VB	1	0	0
	OTHERS	1	1	1
X ≥ 30	ALL	0	0	0

FIRE AND SMOKE PROTECTION FEATURES (Chapter 7)

TABLE 705.8 MAXIMUM AREA OF EXTERIOR WALL OPENINGS BASED ON FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION

FIRE SEPARATION DISTANCE (feet)	DEGREE OF OPENING PROTECTION	ALLOWABLE AREA
0 to less than 3	Unprotected, NonSprinklered (UP, NS)	NOT PERMITTED
	Unprotected, Sprinklered (UP, S)	NOT PERMITTED
	Protected (P)	NOT PERMITTED
3 to less than 5	Unprotected, NonSprinklered (UP, NS)	NOT PERMITTED
	Unprotected, Sprinklered (UP, S)	15%
	Protected (P)	15%
5 to less than 10	Unprotected, NonSprinklered (UP, NS)	10%
	Unprotected, Sprinklered (UP, S)	25%
	Protected (P)	25%
10 to less than 15	Unprotected, NonSprinklered (UP, NS)	15%
	Unprotected, Sprinklered (UP, S)	45%
	Protected (P)	45%
15 to less than 20	Unprotected, NonSprinklered (UP, NS)	25%
	Unprotected, Sprinklered (UP, S)	75%
	Protected (P)	75%
20 to less than 25	Unprotected, NonSprinklered (UP, NS)	45%
	Unprotected, Sprinklered (UP, S)	NO LIMIT
	Protected (P)	NO LIMIT
25 to less than 30	Unprotected, NonSprinklered (UP, NS)	15%
	Unprotected, Sprinklered (UP, S)	NO LIMIT
	Protected (P)	NO LIMIT
30 or greater	Unprotected, NonSprinklered (UP, NS)	NO LIMIT
	Unprotected, Sprinklered (UP, S)	NO LIMIT
	Protected (P)	NO LIMIT

REQUIRED FIRE-RESISTANCE RATED ASSEMBLIES

FIRE BARRIERS (Chapter 707)

RATING	ASSEMBLY	OPENING PROTECTION	LOCATION	REASON FOR RATING
2 HR	UL U906	60	GARAGES	406.2 Separation between Parking Garage and Business
2 HR	UL U906	60	Elevator Shafts	707.3.1 SHAFT ENCLOSURES

FIRE PARTITIONS (Chapter 708)

RATING	ASSEMBLY	OPENING PROTECTION	LOCATION	REASON FOR RATING
1 HR	UL U405	20	CORRIDOR WALLS	TABLE 1020

HORIZONTAL ASSEMBLIES (Chapter 711)

RATING	ASSEMBLY	OPENING PROTECTION	LOCATION	REASON FOR RATING
1 HR	UL D739	NA	TYP. FLOOR/CEILING ASSEMBLY	TABLE 508.4 REQUIRED SEPERATION OF OCCUPANCIES

FIRE RATED ASSEMBLIES

RATING	ASSEMBLY	OPENING PROTECTION	LOCATION	REASON FOR RATING
1HR	UL U405	-	EXTERIOR WALLS	TABLE 705.5 FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASE DON FIRE SEPERATION DISTANCE
1 HR	UL L524	-	LEVEL 2 FLOOR PERIMETER BEAM	TABLE 508.4 REQUIRED SEPERATION OF OCCUPANCIES
1 HR	ASTM E119	-	LEVEL 1 STEEL COLUMNS	TABLE 508.4 REQUIRED SEPERATION OF OCCUPANCIES

DUCTS AND AIR TRANSFER OPENINGS (Chapter 717) - Fire Blocking & Draftstopping

FIRE AND SMOKE DAMPERS

Fire and smoke dampers are required at duct penetrations of shafts and 2-hour fire barriers. (717.5)

Ceiling radiation dampers are required at duct penetrations of 1-hour ceilings. (717.5)

Smoke dampers are required at duct penetrations of 1-hour corridors where the duct has an opening into the corridor. (717.5)

TABLE 717.3.2.1 FIRE DAMPER RATING

TYPE OF PENETRATION	FIRE-RESISTANCE RATING (hours)
Less than 3-hour fire-resistance-rated assemblies	1.5
3-hour or greater fire-resistance-rated assemblies	3

INTERIOR FINISHES (Chapter 8)

TABLE 803.11 INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY

GROUP	SPRINKLERED			NONSPRINKLERED			INCLUDED IN PROJECT (Yes / No)
	Interior exit stairways,	Corridors and	Rooms and enclosed	Interior exit stairways,	Corridors and enclosure	Rooms and enclosed	
A-1 & A-2	B	B	C	A	A	B	No
A-3, A-4, A-5	B	B	C	A	A	C	Yes
B, E, M, R-1	B	C	C	A	B	C	Yes
R-4	B	C	C	A	B	B	No
F	C	C	C	B	C	C	No
H	B	B	C	A	A	B	No
I-1	B	C	C	A	B	B	No
I-2	B	B	B	A	A	B	No
I-3	A	A	C	A	A	B	No
I-4	B	B	B	A	A	B	No
R-2	C	C	C	B	B	C	Yes
R-3	C	C	C	C	C	C	No
S	C	C	C	B	B	C	No
U	No restrictions			No restrictions			No

TABLE 1004.5 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR	AREA	OCCUPANTS
PARKING GARAGES	200	6,024 sf	30
MERCANTILE	60	1,900 sf	32
BUSINESS	150	5,016 sf	33

1005.3.1 STAIRWAYS

	OCCUPANCY SERVED	REQUIRED WIDTH PER OCCUPANT	REQUIRED WIDTH (INCHES)	WIDTH PROVIDED
STAIR 1	33	0.2	7	38
STAIR 2	33	0.2	7	38

Exeption 1 - For other than Group H and I-2 occupancies, the capacity, of means of egress stairways chall be calculated by multiplying the occupant load served by such stairways by a means of egress factor of .2 inches per occupant in building s equiped throughout with automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and an emregency voice/alarm communication system in accordance with Section 907.5.2.2

1005.3.2 OTHER EGRESS COMPONENTS

	OCCUPANCY SERVED	REQUIRED WIDTH PER OCCUPANT	REQUIRED WIDTH (INCHES)	WIDTH PROVIDED
EGRESS COMPONENTS	65	0.15	10	60

Exeption 1 - For other than Group H and I-2 occupancies, the capacity, of means of egress stairways chall be calculated by multiplying the occupant load served by such stairways by a means of egress factor of .15 inches per occupant in building s equiped throughout with automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and an emregency voice/alarm communication system in accordance with Section 907.5.2.2

PLUMBING SYSTEMS (Chapter 29)

TABLE 2902.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES

AREA / BUILDING DESCRIPTION	OCCUPANCY	OCCUPANT LOAD	WATER CLOSETS / URINALS	LAVATORIES	BATHTUBS OR SHOWERS	DRINKING FOUNTAINS	OTHER
PARKING (S-2)							
BUSINESS (B)	B	65	1 per 25 for the first 50 and 1 per 50 for the remainer excedding 50	1 per 40 for the first 80 and 1 per 80 for the remainder excedding 80		1 per 100	

**** Two (2) single bathroom will be provided in common corridor and each suite will contain an additional single restroom for a totl of Four (4) Fixtures and and (4) Lavatories.***

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dai.com

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

ISSUED FOR PERMIT

6707 Riverside
6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO. 21066
ORIG. ISSUE 09/27/2022
CURRENT:

SHEET NAME:
LIFE SAFETY CODE SUMMARY

SHEET NO:
G1.00

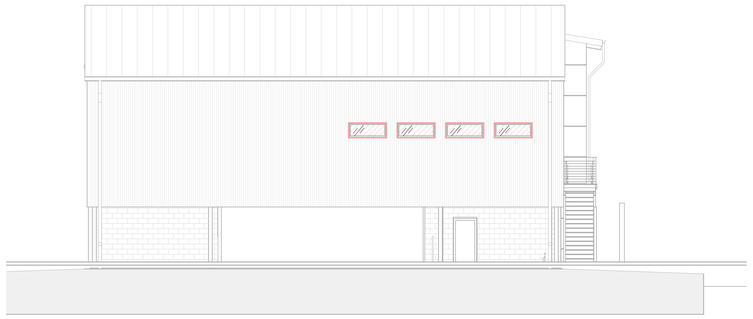
TABLE 705.8
MAXIMUM AREA OF EXTERIOR WALL OPENINGS BASED ON FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION

FIRE SEPARATION DISTANCE (feet)	DEGREE OF OPENING PROTECTION	ALLOWABLE AREA[a]
0 to less than 3[b, c, k]	Unprotected, Nonsprinklered (UP, NS)	Not Permitted[k]
	Unprotected, Sprinklered (UP, S)[j]	Not Permitted[k]
	Protected (P)	Not Permitted[k]
3 to less than 5[d, e]	Unprotected, Nonsprinklered (UP, NS)	Not Permitted
	Unprotected, Sprinklered (UP, S)[j]	15%
	Protected (P)	15%
5 to less than 10[e, f, j]	Unprotected, Nonsprinklered (UP, NS)	10%[h]
	Unprotected, Sprinklered (UP, S)[j]	25%
	Protected (P)	25%
10 to less than 15[e, f, g, j]	Unprotected, Nonsprinklered (UP, NS)	15%[h]
	Unprotected, Sprinklered (UP, S)[j]	45%
	Protected (P)	45%
15 to less than 20[f, g, j]	Unprotected, Nonsprinklered (UP, NS)	25%
	Unprotected, Sprinklered (UP, S)[j]	75%
	Protected (P)	75%
20 to less than 25[f, g, j]	Unprotected, Nonsprinklered (UP, NS)	45%
	Unprotected, Sprinklered (UP, S)[j]	No Limit
	Protected (P)	No Limit
25 to less than 30[f, g, j]	Unprotected, Nonsprinklered (UP, NS)	70%
	Unprotected, Sprinklered (UP, S)[j]	No Limit
	Protected (P)	No Limit
30 or greater	Unprotected, Nonsprinklered (UP, NS)	No Limit
	Unprotected, Sprinklered (UP, S)[j]	No Limit
	Protected (P)	No Limit

FIRE SEPARATION DISTANCE - 5 TO LESS THAN 10 FEET

TOTAL WALL SURFACE AREA = 1,919 SF
TOTAL UNPROTECTED OPENINGS = 192 SF
PERCENTAGE OF UNPROTECTED OPENINGS = 10%

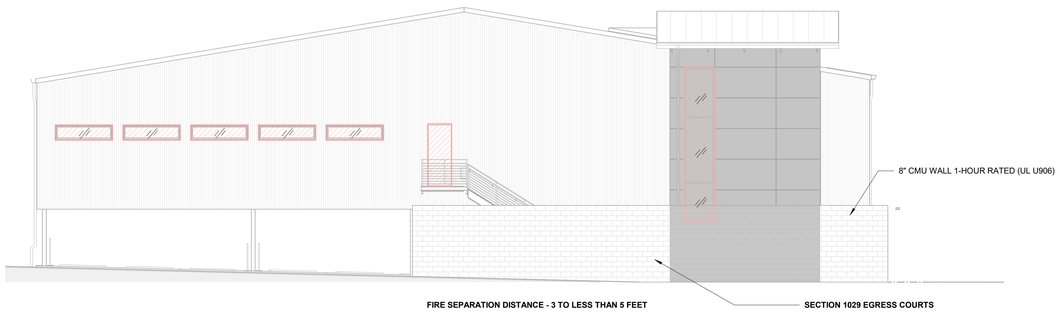
4 WEST ELEVATION - CODE
SCALE: 1/8" = 1'-0"



FIRE SEPARATION DISTANCE - 3 TO LESS THAN 5 FEET

TOTAL WALL SURFACE AREA = 1,023 SF
TOTAL UNPROTECTED OPENINGS = 40 SF
PERCENTAGE OF UNPROTECTED OPENINGS = 4%

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



FIRE SEPARATION DISTANCE - 3 TO LESS THAN 5 FEET

TOTAL WALL SURFACE AREA = 598 SF
TOTAL UNPROTECTED OPENINGS = 80 SF
PERCENTAGE OF UNPROTECTED OPENINGS = 13%

FIRE SEPARATION DISTANCE - 5 TO LESS THAN 10 FEET

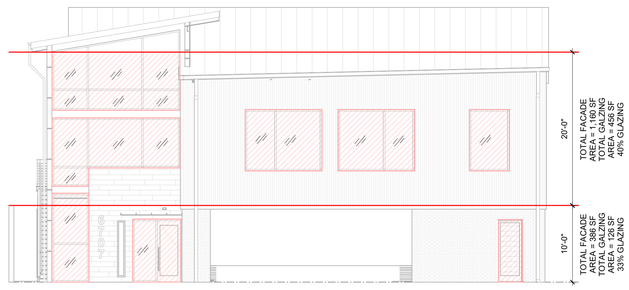
TOTAL WALL SURFACE AREA = 1,707 SF
TOTAL UNPROTECTED OPENINGS = 101 SF
PERCENTAGE OF UNPROTECTED OPENINGS = 6%

SECTION 1029 EGRESS COURTS

1029.3 CONSTRUCTION AND OPENINGS

WHERE AN EGRESS COURT SERVING A BUILDING OR PORTION THEREOF IS LESS THAN 10 FEET IN WIDTH, THE EGRESS COURT SHALL HAVE NOT LESS THAN 1-HOUR FIRE-RESISTANCE RATED CONSTRUCTION FOR A DISTANCE OF 10 FEET ABOVE THE FLOOR OF THE EGRESS COURT. OPENINGS WIHTIN WALLS SHALL BE PROTECTED BY OPENING PROTECTIVES HAVING A FIRE PROTECTION RATING OF NOT LESS THAN 3/4 HOUR.

2 EAST ELEVATION - CODE
SCALE: 1/8" = 1'-0"



EAST RIVERSIDE CORRIDOR REGULATING PLAN

5.4.3.A.1 - AT LEAST 40 PERCENT OF THE WALL AREA ALONG THE PRINCIPAL STREET THAT IS BELOW TEN FEET ABOVE GRADE, AS MEASURED FROM THE FINISHED FLOOR LEVEL OF THIS FACADE'S ENTRY, SHALL CONSIST OF GLAZING.

5.4.3.A.2 - AT LEAST 25 PERCENT OF WALL AREA ALONG THE PRINCIPAL STREET BETWEEN 10 FEET AND 30 FEET, AS MEASURED FROM THE FINISHED LEVEL OF THIS FACADE'S ENTRY, SHALL CONSIST OF GLAZING.

1 NORTH ELEVATION - CODE
SCALE: 1/8" = 1'-0"

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

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6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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CURRENT:

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CODE ELEVATIONS

SHEET NO:
G1.01

SUITE 202 - RETAIL

TYPE OF CONSTRUCTION:	IIB
OCCUPANCY:	M- MERCANTILE
FLOOR AREA:	1,900 SF
OCCUPANT LOAD:	27
SPRINKLER TYPE:	NFPA 13
REQUIRED EXITS:	1

MAX. TRAVEL DISTANCE PER IBC 2021
1017.2 = 250'
ACTUAL TRAVEL DISTANCE = 69'

LEVEL 2 - SUITE 202
RETAIL SPACE
1900.88 SF

LEVEL 2 - SUITE 202
OFFICE
1618.20 SF

MAX. TRAVEL DISTANCE PER IBC 2021
1017.2 = 300'
ACTUAL TRAVEL DISTANCE = 100'

SUITE 202 - OFFICE

TYPE OF CONSTRUCTION:	IIB
OCCUPANCY:	B- BUSINESS
FLOOR AREA:	1,618 SF
OCCUPANT LOAD:	13
SPRINKLER TYPE:	NFPA 13
REQUIRED EXITS:	1

STAIR 02 EGRESS SIZING
HIGHEST OCCUPANT LOAD SERVED = LEVEL 2 (30 OCCUPANT LOAD)
STAIR = 33 x .3 = 9.9"; 42" PROVIDED
DOOR = 33 x .2 = 6.6"; 36" EXTERIOR EGRESS PROVIDED

LEVEL 2 - CIRCULATION/ ACCESSORY
855.54 SF

LEVEL 2 - SUITE 201
OFFICE
2189.32 SF

MAX. TRAVEL DISTANCE PER IBC 2021
1017.2 = 300'
ACTUAL TRAVEL DISTANCE = 70'

DIAGONAL DISTANCE = 119'
1/3 DIAGONAL DISTANCE = 40'
DISTANCE BETWEEN EXITS = 61'

SUITE 201 - OFFICE

TYPE OF CONSTRUCTION:	IIB
OCCUPANCY:	B - BUSINESS
FLOOR AREA:	2,189 SF
OCCUPANT LOAD:	15
SPRINKLER TYPE:	NFPA 13
REQUIRED EXITS:	1

STAIR 01 EGRESS SIZING
HIGHEST OCCUPANT LOAD SERVED = LEVEL 2 (31 OCCUPANT LOAD)
STAIR = 33 x .3 = 9.9"; 48" PROVIDED
DOOR = 33 x .2 = 6.6"; 36" EXTERIOR EGRESS PROVIDED

LEVEL 2 - CIRCULATION/ACCESSORY

TYPE OF CONSTRUCTION:	IIB
OCCUPANCY:	B- BUSINESS
FLOOR AREA:	856
OCCUPANT LOAD:	6
SPRINKLER TYPE:	NFPA 13
REQUIRED EXITS:	1

LEVEL 1
6024.20 SF

116'-10"
OVERALL DIAGONAL DISTANCE

OFFICE ENTRY
353.32 SF

ELEV
45.45 SF

TRASH
39.93 SF

FIRE RISER
39.01 SF

MAX. TRAVEL DISTANCE PER IBC 2021
1017.2 = 400'
ACTUAL TRAVEL DISTANCE = 100'

LEVEL 1 - OPEN PARKING

TYPE OF CONSTRUCTION:	IIB
OCCUPANCY:	S2 - STORAGE
FLOOR AREA:	6,024 SF
OCCUPANT LOAD:	29
SPRINKLER TYPE:	NFPA 13
REQUIRED EXITS:	1

2 CODE COMPLIANCE - LEVEL 2
SCALE: 1/8" = 1'-0"

1 CODE COMPLIANCE PLAN- LEVEL 1
SCALE: 1/8" = 1'-0"

TRUE NORTH PROJECT NORTH

FIRE RATED PROTECTION OF STRUCTURAL STEEL MEMBERS

1. WHERE STEEL BEAMS AND COLUMNS ARE SUPPORTING A RATED ASSEMBLY AS REQUIRED BY ANY PORTION OF THESE DRAWINGS OR CODE, THE STEEL MEMBERS MUST BE PROTECTED IN ACCORDANCE WITH CHAPTER 7 OF THE BUILDING CODE AND AS OUTLINED BELOW:
2. ALL REQUIRED FIRE PROTECTION FOR THIS PROJECT TO CONSIST OF A UL LISTED INTUMESCENT COATING (PAINT).
3. COLUMNS
   - A. ALL STEEL COLUMNS TO BE INDIVIDUALLY ENCASED IN A UL LISTED ENCLOSURE EQUIVALENT TO THE RATING OF THE FLOOR OR ROOF THEY ARE SUPPORTING OR IN ACCORDANCE WITH THE MINIMUM RATING REQUIREMENTS OF THE CONSTRUCTION TYPE, WHICHEVER IS GREATER.
   - B. WHERE THE COLUMN EXTENDS THROUGH A CEILING, THE ENCASEMENT PROTECTION SHALL BE CONTINUOUS FROM THE TOP OF THE FOUNDATION OR FLOOR/CEILING ASSEMBLY BELOW THROUGH THE CEILING SPACE TO THE TOP OF THE COLUMN
4. BEAMS
   - A. WHERE STEEL BEAMS ARE SUPPORTING A RATED ASSEMBLY AND SUPPORT MORE THAN TWO FLOORS, OR ONE FLOOR AND ROOF, OR SUPPORT A LOAD-BEARING WALL OR A NONLOAD-BEARING WALL MORE THAN TWO STORIES HIGH, STEEL BEAMS SHALL BE INDIVIDUALLY ENCASED IN A UL LISTED ENCLOSURE EQUIVALENT TO THE RATING OF THE FLOOR OR ROOF THEY ARE SUPPORTING OR IN ACCORDANCE WITH THE MINIMUM RATING REQUIREMENTS OF THE CONSTRUCTION TYPE, WHICHEVER IS GREATER.

LIFE SAFETY NOTES

1. PROVIDE A SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13 THROUGHOUT
2. REFER TO FIRE PROTECTION DRAWINGS FOR ADDITIONAL NOTES.
3. FIRE PROTECTION SYSTEMS TO BE IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL AHJ AND TO BE DESIGNED BY A LICENSED FIRE PROTECTION SYSTEMS ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED.

PORTABLE FIRE EXTINGUISHERS

1. PROVIDE A MINIMUM RATED 4A:80B:C FIRE EXTINGUISHER SHALL BE PROVIDED AT 75' MAX TRAVEL DISTANCE WITHIN A SEMI-RECESSED CABINET.

LIFE SAFETY SYMBOLS LEGEND

WALL TAG DESIGNATIONS

WALL TAG
PARTITION TYPE
(Wall)

WALL TAG WITH RATING DESIGNATION
PARTITION TYPE
PARTITION RATING

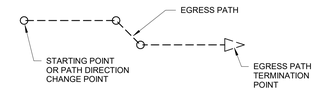
RATING DESIGNATIONS:	
1	1 HR. RATED WALL
1FP	1 HR. FIRE PARTITION
1FB	1 HR. FIRE BARRIER
2	2 HR. RATED WALL
2FW	2 HR. FIRE WALL
2FB	2 HR. FIRE BARRIER
3FW	3 HR. FIRE WALL

DOOR TAG DESIGNATIONS

DOOR NUMBER

LIFE SAFETY CODE EGRESS DESIGNATIONS

EGRESS PATH DESIGNATION



FIRE RATING WALL LEGEND

NOT ALL WALL TYPES ARE NECESSARILY USED IN THIS PROJECT

- NON - RATED WALL
- 1HR - RATED WALL
- 1HR - FIRE PARTITION
- 1HR - FIRE BARRIER
- 2HR - RATED WALL
- 2HR - RATED FIRE WALL
- 2HR - RATED FIRE BARRIER

FIRE RATING WALL LEGEND NOTES:

1. THIS SHEET WAS MEANT TO BE PRINTED IN COLOR. IF WALLS ON LEGEND ABOVE ARE NOT SHOWING IN COLOR, REQUEST A COLOR SET OF DOCUMENTS BEFORE PROCEEDING WITH WORK.
2. SEE STRUCTURAL DRAWINGS FOR ALL SHEAR WALL LOCATIONS. THE CONTRACTOR SHALL NOT REFERENCE THE ARCHITECTURAL DRAWINGS AS THE ONLY REFERENCE FOR SHEAR WALLS. STRUCTURAL DRAWINGS GOVERN. IF THE CONTRACTOR HAS ANY COORDINATION CONFLICTS, THEY ARE RESPONSIBLE FOR COORDINATING WITH THE ARCHITECT AND STRUCTURAL ENGINEER BEFORE PROCEEDING.
3. THE CONTRACTOR SHALL REFER TO THE WALL ASSEMBLY DETAILS FOR SPECIFIC WALL ASSEMBLY REQUIREMENTS.

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

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www.5di-i.com

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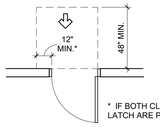
CURRENT:

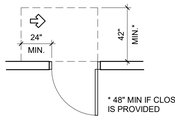
SHEET NAME:
FIRE & LIFE SAFETY CODE PLAN - BUILDING 1 - LEVEL 1

SHEET NO:
G2.10

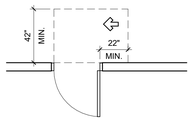
FRONT APPROACH - PUSH SIDE



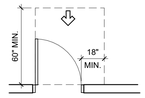
LATCH APPROACH - PUSH SIDE



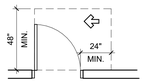
HINGE APPROACH - PUSH SIDE



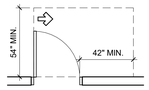
FRONT APPROACH - PULL SIDE



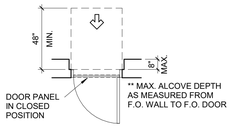
LATCH APPROACH - PULL SIDE



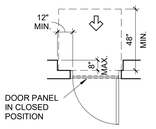
HINGE APPROACH - PULL SIDE



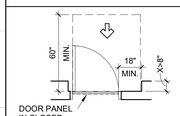
RECESSED DOOR - PUSH SIDE



RECESSED DOOR - PUSH SIDE



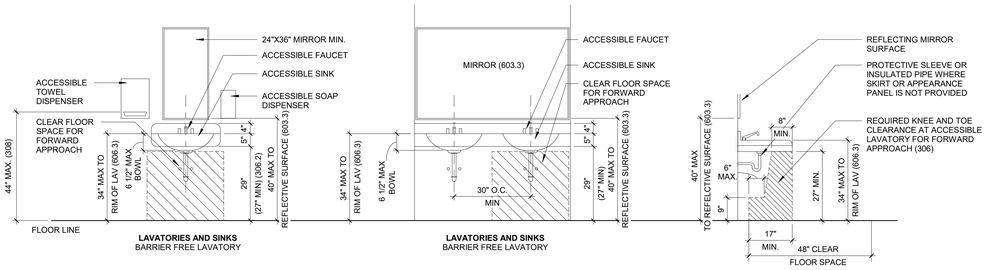
RECESSED DOOR - PULL SIDE



CLEARANCES ABOVE ARE BASED ON TEXAS ACCESSIBILITY STANDARD 2012. PROVIDE CLEARANCES AS INDICATED AT ALL PUBLIC DOORS AND GATES

2 COMMON DOORS

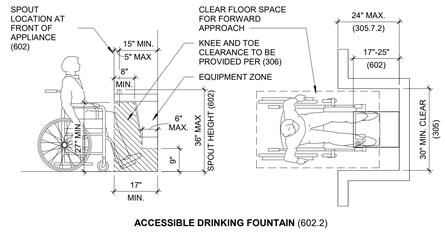
SCALE: NTS 2003/2009 ANSI A117.1 V008 2022-03-17



5 COMMON TOILET ROOM FIXTURES MOUNTING HEIGHTS

SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17

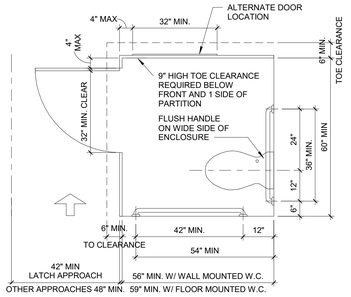
EDITORS NOTE: LIST THE SPECIFICS THAT ARE APPLICABLE HERE BASED ON YOUR PROJECT (IBC 2018, ANSI 2003, INDIANA ACCESSIBILITY CODE)



ACCESSIBLE DRINKING FOUNTAIN (602.2)

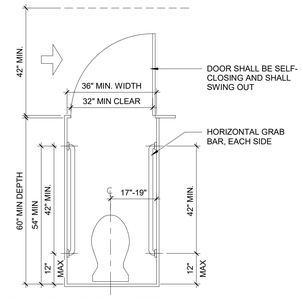
4 COMMON DRINKING FOUNTAIN

SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17

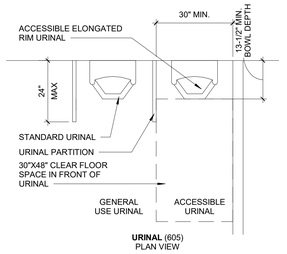


WATER CLOSET AND TOILET COMPARTMENT (604) PLAN VIEW

NOTE: PLAN(S) MAY NOT BE APPLICABLE WHERE LAVATORY IS REQUIRED INSIDE THE STALL BY LOCAL CODES



AMBULATORY ACCESSIBLE COMPARTMENT (604) PLAN VIEW

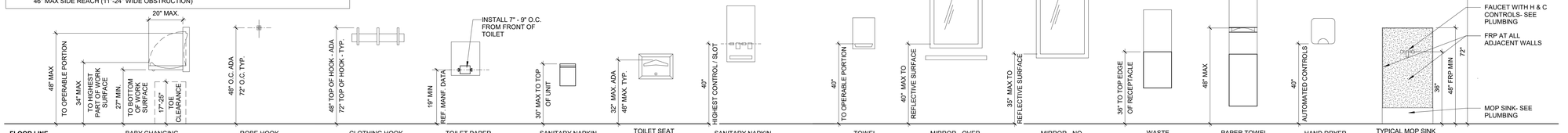


URINAL (605) PLAN VIEW

3 ACCESSIBLE AND GENERAL USE TOILET STALLS

SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17

MOUNTING NOTES:
1. SEE SPECIFICATIONS FOR FURTHER DESCRIPTIONS OF FIXTURES AND ACCESSORIES INCLUDING THOSE NOT SHOWN.
2. SEE ROOM FINISH SCHEDULE AND ELEVATIONS FOR FLOOR AND WALL FINISH MATERIAL.
3. PROVIDE WALL REINFORCEMENT AND BACKPLATES AT ALL WALL MOUNTED FIXTURES.
4. OPERABLE PARTS OF FIXTURES AND ACCESSORIES SHALL BE PLACED WITHIN REACH RANGES 48" MAX, 15" MIN (UNOBSTRUCTED), 44" MAX FORWARD REACH (20"-25" WIDE OBSTRUCTION), AND 46" MAX SIDE REACH (11"-24" WIDE OBSTRUCTION)



1 COMMON TOILET ROOM ACCESSORIES MOUNTING HEIGHTS

SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17

ACCESSIBILITY COMPLIANCE NOTES

PROJECT ACCESIBILITY SHALL COMPLY WITH ALL OF THE FOLLOWING

- THE AMERICANS WITH DISABILITIES ACT 2010 ADA STANDARDS FOR ALL NEW CONSTRUCTION OF PUBLIC USE FACILITIES AND SPACES.
- THE TEXAS ACCESSIBILITY STANDARD (TAS) 2012.
- THE CURRENTLY ENFORCED BUILDING CODE
- ANY AND ALL OTHER LOCALLY ENFORCED AND ADOPTED ACCESSIBILITY STANDARDS.

NOTE WHERE CONFLICTING INFORMATION EXISTS BETWEEN STANDARDS, THE MORE RESTICTIVE SHALL BE FOLLOWED.

GENERAL

1. ALL DIMENSIONS ARE FROM FINISHED DRYWALL, ADJACENT FIXTURE OR EDGE OF COUNTERTOP UNLESS NOTED OTHERWISE.
2. ALL PUBLIC SPACES SHALL BE ADA ACCESSIBLE. UNLESS NOTED OTHERWISE.
3. ENSURE THAT ALL AREAS ON THE ACCESSIBLE ROUTE THROUGHOUT THE SITE MEET THE REQUIREMENTS OF THE APPLICABLE ACCESSIBILITY CODES. COORDINATE BETWEEN CIVIL AND ARCHITECTURAL PLANS.
4. WHERE REQUIRED BY CODE, PUBLIC SIGNAGE SHALL BE VISUAL CHARACTERS, RAISED CHARACTERS AND BRAILLE, IN ACCORDANCE WITH TAS 2012 SECTIONS 216 AND 703
5. AN ACCESSIBLE PATH MUST BE PROVIDED THROUGHOUT THE SITE TO ALL BUILDINGS.
6. FOR LOCATIONS OF ACCESSIBLE PARKING SPACES, LOADING ZONES AND CURB RAMPS, REFER TO CIVIL & LANDSCAPE PLANS

PUBLIC DOORS

1. PROVIDE 1/2" MAX. LOW PROFILE THRESHOLD. THRESHOLDS ABOVE 1/4" MUST BE BEVELED NO GREATER THAN 1:2.
2. PROVIDE A MINIMUM OF 32" CLEAR WIDTH OPENING AT ALL DOORS. (3'-0" DOOR). THE AREA 60" MIN. PERPENDICULAR TO THE DOOR AND 18" MIN. BEYOND THE LATCH OF THE DOOR MUST BE PAVED AND SLOPED AT 1:48 MAX.
3. ALL DOORS SHALL BE LOCATED SO THE EDGE OF DOOR OPENINGS FOR OUTSWING DOORS IS 18-INCHES MINIMUM FROM AN ADJACENT WALL, AND 12-INCHES MINIMUM FOR INSWING DOORS.
4. DOOR CLOSURE: MUST ALLOW FOR "LOW FORCE" TO BE APPLIED IN ORDER TO OPEN. OTHER THAN FIRE DOORS, INTERIOR DOOR OPENING FORCE SHALL NOT EXCEED 5 POUNDS.

PUBLIC RESTROOMS

1. ALL PUBLIC RESTROOMS TO MEET TO MEET THE REQUIREMENTS OF THE 2010 ADA.
2. INSTALL GRAB BARS AT H.C. ACCESSIBLE TOILET STALLS
3. ALL PLUMBING FIXTURES & TRIM UTILIZED IN H.C. ACCESSIBLE STALLS AND LAVATORIES SHOULD BE H.C. APPROVED FIXTURE TYPES.
4. PROVIDE A 60" DIAMETER CLEAR FLOOR SPACE TURNING RADIUS WITHIN ROOM EXCLUSIVE OF DOOR SWING.
5. ROLL-IN SHOWER TYPES TO PROVIDE CLEAR FLOOR SPACE, GRAB BARS AND ACCESSIBLE SEAT. SEE DETAILS.
6. WALL DIMENSIONS AND FIXTURE LOCATIONS MUST BE HELD SO THAT THE MINIMUM AND MAXIMUM CLEARANCES ARE PROVIDED AS SHOWN.
7. PROVIDE 2x MEMBER SIZE REQUIRED WOOD BLOCKING IN LINE OF STUD PLANE FOR WALLS NOTED AS REQUIRING REINFORCING FOR ALL GRAB BARS.
8. LAVATORIES ARE TO BE INSTALLED WITH THE CENTERLINE OF THE FIXTURE A MINIMUM OF 1'-6" HORIZONTALLY FROM FINISHED SURFACE OF AN ADJOINING WALL OR FIXTURE.

WALK SURFACES

1. PROVIDE "NON-SLIP" ABRASIVE SURFACE THROUGHOUT BUILDINGS ALONG ALL ACCESSIBLE ROUTES.
2. FLOOR TRANSITIONS BETWEEN DIFFERENT MATERIALS NEED TO BE FL OR MEET THE 1/2" MAX. THRESHOLD REQUIREMENTS.
3. ALL RAMPS SHALL BE BROOM FINISHED PERPENDICULAR TO SLOPE. CONTRACTOR MUST PROVIDE 0.8 SCOF ON ALL RAMPS. SLOPE RAMPS AT 1:12 (MAX.) REFER TO LANDSCAPE AND CIVIL DRAWINGS FOR DETAILS.
4. CORRIDORS TO HAVE A MINIMUM CLEAR WIDTH OF 4'-0" (48") AND A MIN. HEAD HEIGHT OF 6'-8" (80").

ENVIRONMENTAL CONTROLS

1. LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS, DATA, TELEPHONE AND FIRE ALARM DEVISCES AND OTHER ENVIRONMENTAL CONTROLS: ITEMS MUST BE POSITIONED SO THAT CONTROLS OR TOP OF UPPER RECEPTACLE ARE LOCATED NOT HIGHER THAN 48" A.F.F.
2. INSTALL ELECTRICAL PANELS SO THAT THE TOP OF THE HIGHEST BREAKER IS NO MORE THAN 48" AFF.
3. POSITION ELECTRICAL OUTLETS SO THAT THE MINIMUM HEIGHT IS 15" A.F.F. TO THE BOTTOM OF THE RECEPTACLE.
4. ALL SWITCHES AND OUTLETS OVER COUNTERS THAT REQUIRE A FORWARD OR SIDE REACH SHALL BE MOUNTED NOT HIGHER THAN 46" AFF AT BOTH UNITS AND COMMON SPACES
5. DO NOT INSTALL OUTLETS IN CORNERS OVER CABINETS WITHIN 36" OF A CORNER WHERE TWO COUNTERTOPS INTERSECT.
6. PROVIDE AUDIBLE FIRE ALARMS & STROBE LIGHTS AS REQUIRED BY LOCALLY ENFORCED CODES

REGISTERED ARCHITECT WALTER D. FIFTH 24499 STATE OF TEXAS

5 FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dai.com

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6707 Riverside

6707 Riverside Drive
Austin, TX 78741

REVISIONS

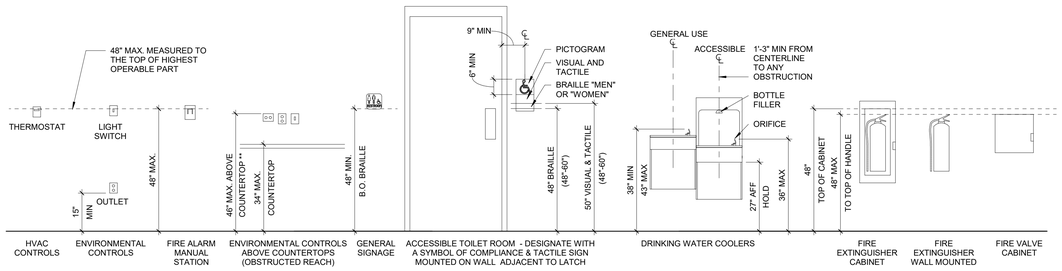
Δ	DATE	DESCRIPTION

PROJ. NO.	ORIG. ISSUE
21066	09/27/2022

CURRENT:

SHEET NAME:
TEXAS ACCESSIBILITY STANDARD REQUIREMENTS

SHEET NO:
G4.101

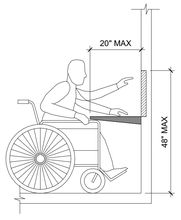


OPERABLE PARTS (309), **REACH RANGES** (308)

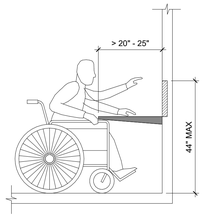
NOTE: PROVIDED FOR MOUNTING HEIGHT INFORMATION ONLY. FIXTURES SHOWN ARE NOT NECESSARILY INCLUDED IN THIS PROJECT.

15 TYPICAL MOUNTING HEIGHTS CORRIDOR AND AMENITY SPACES

SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



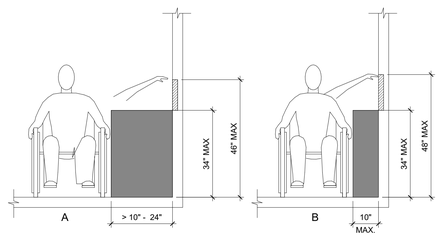
FORWARD REACH, OBSTRUCTED HIGH FORWARD REACH (FIG. 308.2.2(a))



FORWARD REACH, OBSTRUCTED HIGH FORWARD REACH (FIG. 308.2.2(b))

12 OBSTRUCTED HIGH FORWARD REACH

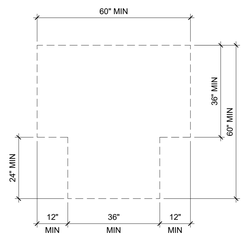
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



SIDE REACH, OBSTRUCTED HIGH REACH (FIG. 308.3.2(b)) **SIDE REACH, OBSTRUCTED HIGH REACH** (FIG. 308.3.2(a))

8 OBSTRUCTED HIGH SIDE REACH

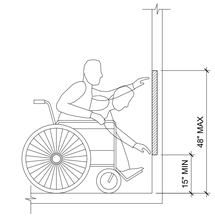
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



T-SHAPED TURNING SPACE (304.3.2)

4 CLEAR FLOOR SPACE TURNING CLEARANCES

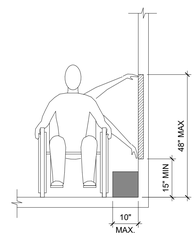
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



FORWARD REACH, UNOBSTRUCTED FORWARD REACH (FIG. 308.2.1)

11 UNOBSTRUCTED FRWD REACH

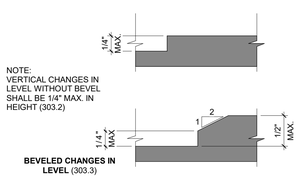
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



SIDE REACH, UNOBSTRUCTED (308.3.1)

3 CHANGE IN LEVEL

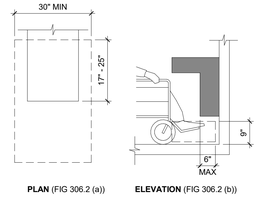
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



BEVELED CHANGES IN LEVEL (303.3)

10 ELEVATOR FLR DESIGNATION

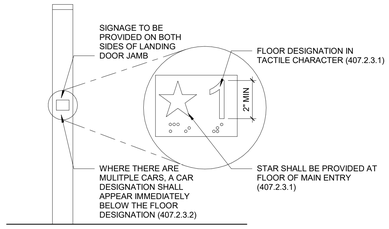
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



PLAN (FIG 306.2 (a)) **ELEVATION** (FIG 306.2 (b))

14 TOE CLEARANCES

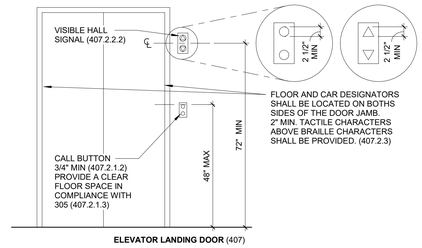
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



HOISTWAY SIGNS (407.2.3)

9 ELEVATOR CALL & SIGNAL

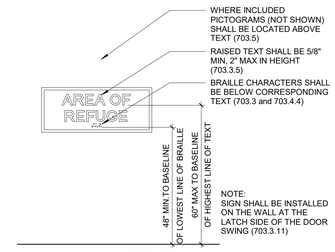
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



ELEVATOR LANDING DOOR (407)

6 SIGNS

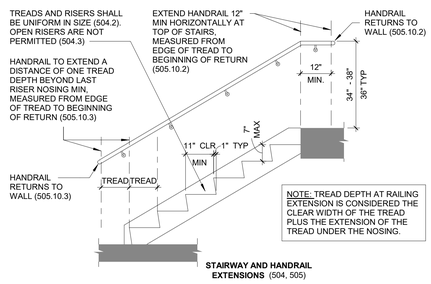
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



SIGNS (703)

5 HANDRAIL EXTENSION

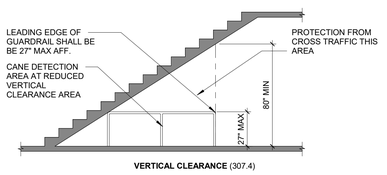
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



STAIRWAY AND HANDRAIL EXTENSIONS (504, 505)

2 VERTICAL CLEARANCE

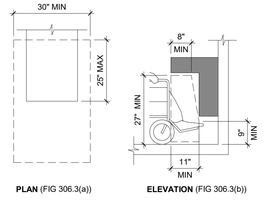
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



VERTICAL CLEARANCE (307.4)

13 KNEE CLEARANCES

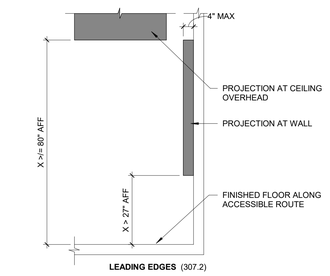
SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



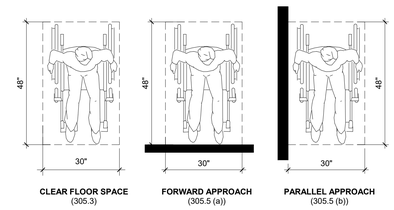
PLAN (FIG 306.3(a)) **ELEVATION** (FIG 306.3(b))

16 PROTRUDING OBJECTS

SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17



LEADING EDGES (307.2)



CLEAR FLOOR SPACE (305.3) **FORWARD APPROACH** (305.5 (a)) **PARALLEL APPROACH** (305.5 (b))

1 CLEAR FLOOR SPACE

SCALE: 1/2" = 1'-0" 2003/2009 ANSI A117.1 V008 2022-03-17

ACCESSIBILITY COMPLIANCE NOTES

PROJECT ACCESIBILITY SHALL COMPLY WITH ALL OF THE FOLLOWING

- THE AMERICANS WITH DISABILITIES ACT 2010 ADA STANDARDS FOR ALL NEW CONSTRUCTION OF PUBLIC USE FACILITIES AND SPACES.
- THE TEXAS ACCESSIBILITY STANDARD (TAS) 2012.
- THE CURRENTLY ENFORCED BUILDING CODE
- ANY AND ALL OTHER LOCALLY ENFORCED AND ADOPTED ACCESSIBILITY STANDARDS.

NOTE WHERE CONFLICTING INFORMATION EXISTS BETWEEN STANDARDS, THE MORE RESTICTIVE SHALL BE FOLLOWED.

GENERAL

1. ALL DIMENSIONS ARE FROM FINISHED DRYWALL, ADJACENT FIXTURE OR EDGE OF COUNTERTOP UNLESS NOTED OTHERWISE.
2. ALL PUBLIC SPACES SHALL BE ADA ACCESSIBLE. UNLESS NOTED OTHERWISE.
3. ENSURE THAT ALL AREAS ON THE ACCESSIBLE ROUTE THROUGHOUT THE SITE MEET THE REQUIREMENTS OF THE APPLICABLE ACCESSIBILITY CODES. COORDINATE BETWEEN CIVIL AND ARCHITECTURAL PLANS.
4. WHERE REQUIRED BY CODE, PUBLIC SIGNAGE SHALL BE VISUAL CHARACTERS, RAISED CHARACTERS AND BRAILLE, IN ACCORDANCE WITH TAS 2012 SECTIONS 216 AND 703
5. AN ACCESSIBLE PATH MUST BE PROVIDED THROUGHOUT THE SITE TO ALL BUILDINGS.
6. FOR LOCATIONS OF ACCESSIBLE PARKING SPACES, LOADING ZONES AND CURB RAMPS, REFER TO CIVIL & LANDSCAPE PLANS

PUBLIC DOORS

1. PROVIDE 1/2" MAX. LOW PROFILE THRESHOLD. THRESHOLDS ABOVE 1/4" MUST BE BEVELED NO GREATER THAN 1:2.
2. PROVIDE A MINIMUM OF 32" CLEAR WIDTH OPENING AT ALL DOORS. (3'-0" DOOR). THE AREA 60" MIN. PERPENDICULAR TO THE DOOR AND 18" MIN. BEYOND THE LATCH OF THE DOOR MUST BE PAVED AND SLOPED AT 1:48 MAX.
3. ALL DOORS SHALL BE LOCATED SO THE EDGE OF DOOR OPENINGS FOR OUTSWING DOORS IS 18-INCHES MINIMUM FROM AN ADJACENT WALL, AND 12-INCHES MINIMUM FOR INSWING DOORS.
4. DOOR CLOSURE: MUST ALLOW FOR "LOW FORCE" TO BE APPLIED IN ORDER TO OPEN. OTHER THAN FIRE DOORS, INTERIOR DOOR OPENING FORCE SHALL NOT EXCEED 5 POUNDS.

PUBLIC RESTROOMS

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2. INSTALL GRAB BARS AT H.C. ACCESSIBLE TOILET STALLS
3. ALL PLUMBING FIXTURES & TRIM UTILIZED IN H.C. ACCESSIBLE STALLS AND LAVATORIES SHOULD BE H.C. APPROVED FIXTURE TYPES.
4. PROVIDE A 60" DIAMETER CLEAR FLOOR SPACE TURNING RADIUS WITHIN ROOM EXCLUSIVE OF DOOR SWING.
5. ROLL-IN SHOWER TYPES TO PROVIDE CLEAR FLOOR SPACE, GRAB BARS AND ACCESSIBLE SEAT. SEE DETAILS.
6. WALL DIMENSIONS AND FIXTURE LOCATIONS MUST BE HELD SO THAT THE MINIMUM AND MAXIMUM CLEARANCES ARE PROVIDED AS SHOWN.
7. PROVIDE 2x MEMBER SIZE REQUIRED WOOD BLOCKING IN LINE OF STUD PLANE FOR WALLS NOTED AS REQUIRING REINFORCING FOR ALL GRAB BARS.
8. LAVATORIES ARE TO BE INSTALLED WITH THE CENTERLINE OF THE FIXTURE A MINIMUM OF 1'-6" HORIZONTALLY FROM FINISHED SURFACE OF AN ADJOINING WALL OR FIXTURE.

WALK SURFACES

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2. FLOOR TRANSITIONS BETWEEN DIFFERENT MATERIALS NEED TO BE FL OR MEET THE 1/2" MAX. THRESHOLD REQUIREMENTS.
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4. CORRIDORS TO HAVE A MINIMUM CLEAR WIDTH OF 4'-0" (48") AND A MIN. HEAD HEIGHT OF 6'-8" (80").

ENVIRONMENTAL CONTROLS

1. LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS, DATA, TELEPHONE AND FIRE ALARM DEVISCES AND OTHER ENVIRONMENTAL CONTROLS: ITEMS MUST BE POSITIONED SO THAT CONTROLS OR TOP OF UPPER RECEPTACLE ARE LOCATED NOT HIGHER THAN 48" A.F.F.
2. INSTALL ELECTRICAL PANELS SO THAT THE TOP OF THE HIGHEST BREAKER IS NO MORE THAN 48" AFF.
3. POSITION ELECTRICAL OUTLETS SO THAT THE MINIMUM HEIGHT IS 15" A.F.F. TO THE BOTTOM OF THE RECEPTACLE.
4. ALL SWITCHES AND OUTLETS OVER COUNTERS THAT REQUIRE A FORWARD OR SIDE REACH SHALL BE MOUNTED NOT HIGHER THAN 46" AFF AT BOTH UNITS AND COMMON SPACES
5. DO NOT INSTALL OUTLETS IN CORNERS OVER CABINETS WITHIN 36" OF A CORNER WHERE TWO COUNTERTOPS INTERSECT.
6. PROVIDE AUDIBLE FIRE ALARMS & STROBE LIGHTS AS REQUIRED BY LOCALLY ENFORCED CODES

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www.5dsi.com

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6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO.	ORIG. ISSUE
21066	09/27/2022

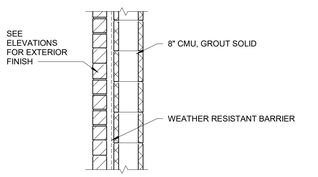
CURRENT:

SHEET NAME:
TEXAS ACCESSIBILITY STANDARD REQUIREMENTS

SHEET NO:
G4.102

TYPICAL EXTERIOR WALL ASSEMBLIES

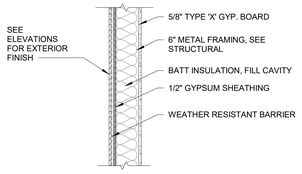
BUILDING TYPE	CONSTRUCTION TYPE	FRAMING SIZE	RATING	INSULATION	COMMENTS
TYPE I	IIB	6"	1 HR *	YES	



EW1	FIRE RATING	DESIGN NO.	STC RATING	SOUND TEST
	2 HR	UL# U906		

DESCRIPTION: EXTERIOR BRICK VENER - 2 HR

- 4" NOM. BRICK VENEER
- 1-1/2" AIR CAVITY
- WEATHER BARRIER
- 8" CMU GROUT SOLID

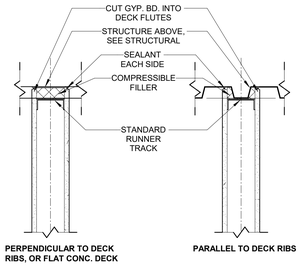


EW2	FIRE RATING	DESIGN NO.	STC RATING	SOUND TEST
	1 HR	UL# U405		

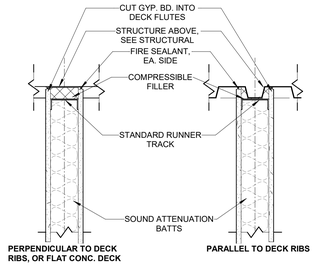
DESCRIPTION: EXTERIOR F.C. SIDING WALL ASSEMBLY - NONRATED

- EXTERIOR CLADDING
- WEATHER RESISTANT BARRIER
- EXTERIOR GYPSUM SHEATHING
- 6" METAL FRAMING
- BATT INSULATION
- 5/8" TYPE 'X' GYP. BOARD

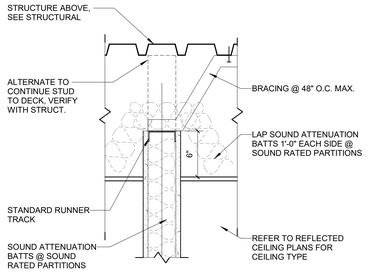
PARTITION TERMINATION



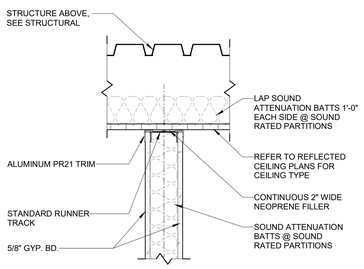
PD - (PARTITION TO DECK)



PDF - (PARTITION TO DECK - ACOUSTIC AND FIRE RATED)

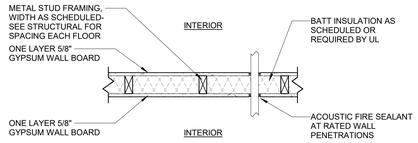


P+6 (PARTITION TERMINATED ABOVE CEILING - ACOUSTIC AND NON-ACOUSTIC SHOWN)



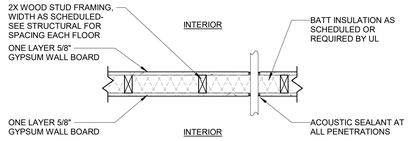
PG - (PARTITION TERMINATED @ CEILING - ACOUSTIC AND NON-ACOUSTIC SHOWN)

TYPICAL METAL FRAME



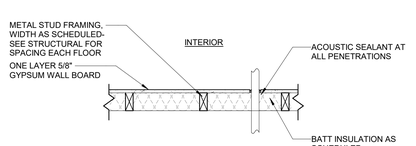
TAG	STUD SIZE	OVERALL THICKNESS	FIRE RATING	ASSEMBLY DESIGN
Waa4	3 - 5/8"	4 - 7/8"	1 HR	UL U 405
Waa6	6"	7 - 1/4"	1 HR	UL U 405

4 RATED PARTITION
SCALE: NTS



TAG	STUD SIZE	OVERALL THICKNESS	FIRE RATING	ASSEMBLY DESIGN
Waa4	3 - 5/8"	4 - 7/8"	-	-
Waa6	6"	7 - 1/4"	-	-

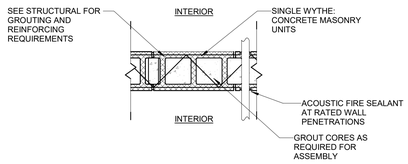
3 NON RATED PARTITION
SCALE: NTS



TAG	STUD SIZE	OVERALL THICKNESS	FIRE RATING	ASSEMBLY DESIGN
Ma4	3 - 5/8"	4 1/4"	-	-
Ma6	6"	6 5/8"	-	-

2 NON RATED PARTITION
SCALE: NTS

CMU WALLS



TAG	BLOCK SIZE	OVERALL THICKNESS	FIRE RATING	ASSEMBLY DESIGN
G8	7-5/8"	7 5/8"	2	UL U906

1 2 HOUR RATED PARTITION TYPE - G_
SCALE: NTS

GENERAL NOTES - PARTITIONS

GENERAL:

1. SEE A800 SERIES SHEETS FOR ADDITIONAL INFORMATION REGARDING THE CONSTRUCTION OF FIRE RATED ASSEMBLIES.
2. SEE SHEET G SERIES SHEETS FOR FIRE RATED CONSTRUCTION NOTES AND ADDITIONAL INFORMATION.
3. WALL TYPES ARE SHOWN ON SMALL SCALE PLANS AND ENLARGED PLANS WHERE APPLICABLE.
4. DETAILED PARTITION TYPES ARE PROVIDED FOR GENERAL REFERENCE. ALL TYPES SHOWN ARE NOT NECESSARILY USED ON THIS PROJECT. REFER TO FLOOR PLANS FOR ACTUAL PARTITION TYPES USED ON THIS PROJECT.
5. PARTITION TYPES DO NOT INCLUDE MATERIAL FINISHES. REFER TO ROOM FINISH SCHEDULE AND ELEVATIONS FOR MATERIAL FINISHES.
6. WHERE ROOMS ARE SCHEDULED WITHOUT CEILINGS, PARTITIONS SHALL EXTEND TO STRUCTURE ABOVE UNLESS NOTED OTHERWISE.
7. CORRIDOR WALLS SHALL BE SEALED AIRTIGHT FOR FULL HEIGHT TO PREVENT PASSAGE OF AIRBORNE SOUND. TAPE AND FINISH ALL GYP. BOARD JOINTS AND FASTENERS. INSTALL ACOUSTIC SEALANT AT PERIMETER OF NON RATED PARTITIONS AND ACOUSTIC FIRE SEALANT AT RATED PARTITIONS.
8. PENETRATIONS THROUGH PARTITIONS BY PIPES, CONDUIT, OR OTHER RIGID MEMBERS ARE TO BE THROUGH HOLES WHICH ARE AT LEAST 1" LARGER THAN THE PENETRATING MEMBER. THE HOLES ARE TO BE FILLED WITH FIBERGLASS AROUND THE MEMBER SO THAT THE MEMBER DOES NOT TOUCH THE WALL AND THEN THE FILLER IS TO BE SEALED OVER FULLY ON EACH SIDE OF THE WALL.
9. SEE INSULATION SCHEDULE FOR INSULATION REQUIREMENTS.
10. PROVIDE QUIET PUTTY PADS OR EQUAL AT ALL ELECTRICAL BOXES IN UNIT DEMISING AND CORRIDOR WALLS.
11. DRYWALL AND FIRE RATED PARITION GYPSUM WALL BOARD AND EXTERIOR GYP. SHEATHING TO BE TYPE X UNLESS NOTED OTHERWISE.

DRYWALL PARTITIONS

1. PROVIDE VERTICAL WALL CONTROL JOINTS (ON EACH SIDE OF THE PARTITION) IN THE CONSTRUCTION OF ALL GYP. BD PARTITIONS WHEN THE SURFACE EXCEEDS 30 FT. OF UNINTERRUPTED LENGTH. REFER TO DETAILS FOR CONTROL JOINT CONSTRUCTION.
2. COORDINATE LOCATIONS OF ALL CONTROL JOINTS WITH DRAWINGS AND ARCHITECT PRIOR TO INSTALATION.
3. FURRING AT COLUMNS (FOR DECORATIVE PURPOSES) MUST BE FIREBLOCKED AT CEILING INTERSECTIONS.
4. CEMENTITIOUS BACKER UNITS AT ALL WET AREAS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:- ALL WALLS OF PUBLIC RESTROOMS, JANITOR ROOMS, BATHING ROOMS -BEHIND SINKS (I.E. AT COUNTERS) EXTENDING 3'-0" BEYOND THE EDGE OF SINK IN ANY DIRECTION.
5. IF NO OTHER SURFACE IS INDICATED PROVIDE 48" FRP PANELS AT JANITOR CLOSET

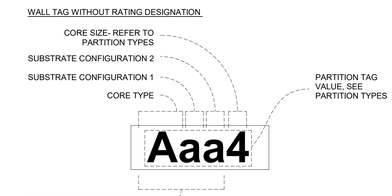
FIRE RATED PARTITIONS

1. SEE FLOOR PLANS AND FIRE & LIFE SAFETY SHEETS FOR LOCATIONS OF ALL FIRE-RATED PARTITIONS.
2. MAINTAIN CONTINUITY OF FIRE-RATED PARTITIONS AT INTERSECTIONS WITH NON-FIRE-RATED OR LESSER RATED PARTITIONS.
3. CONSTRUCTION OF FIRE-RATED PARTITIONS, INCLUDING TAPING AND FINISHING OF GWB FOR FULL HEIGHT TO STRUCTURE ABOVE, SHALL BE IN ACCORDANCE WITH SPECIFIC CURRENT UL ASSEMBLY REQUIREMENTS TO ACHIEVE FIRE RATING INDICATED ON PARTITION TYPE.
4. TYPE OF GWB TO BE IN ACCORDANCE WITH UL ASSEMBLY.
5. SEE FIRE RATED CONSTRUCTION NOTES FOR MORE DETAILED INFORMATION.
6. FURRING REQUIRED FOR FIRE RATED ASSEMBLIES AT COLUMNS TO BE CONTINUOUS THROUGH INTERSTITIAL SPACE TO STRUCTURE ABOVE.

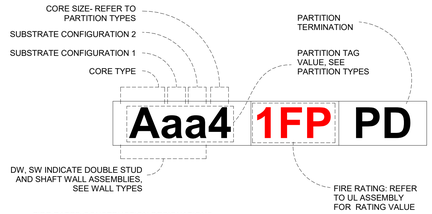
PARTITION LEGEND

WALL TAG DESIGNATIONS

WALL TAG WITHOUT RATING DESIGNATION



WALL TAG WITH RATING DESIGNATION



FIRE RATED CONSTRUCTION DESIGNATIONS:

1	1 HR. RATED WALL	2	2 HR. RATED WALL	3FW	3 HR. FIRE WALL
1FP	1 HR. FIRE PARTITION	2FW	2 HR. FIRE WALL		
1FB	1 HR. FIRE BARRIER	2FB	2 HR. FIRE BARRIER		

CORE TYPES

G.	CONCRETE MASONRY UNIT
S.	METAL SHAFT WALL CH STUD
T.	TILT-UP CONCRETE PANEL
W, DW, SW	WOOD STUD FRAMING / WOOD FURRING DOUBLE WOOD STUD FRAMING / WOOD FURRING

SUBSTRATE CONFIGURATIONS

a. 5/8" GWB (1 LAYER)
b. 5/8" GWB (2 LAYER)
c. 5/8" GWB (3 LAYER)
d. 5/8" GWB (4 LAYER)

e. 1/2" GWB (1 LAYER)
f. 1/2" GWB (2 LAYER)

g. WOOD SHEATHING*
h. GYP. SHEATHING*

j. 5/8" GWB, SHEATHING*
k. 1/2" GWB, SHEATHING*
l. 5/8" GWB, 1/2" RESILIENT CHANNEL
m. 5/8" GWB, 1/2" RESILIENT CHANNEL, 5/8" GWB
n. 5/8" GWB, 1/2" RESILIENT CHANNEL SHEATHING*
o. 5/8" GWB (2 LAYERS), 1/2" RESILIENT CHANNEL
p. 5/8" GWB (2 LAYERS), 1/2" RESILIENT CHANNEL, 5/8" GWB
q. 5/8" GWB (2 LAYERS), 1/2" RESILIENT CHANNEL, SHEATHING*

s. 1" SHAFT LINER
t. 1" SHAFT LINER (2 LAYERS)

u. FC SIDING, WRB, 5/8" GWB, 1/2" RESILIENT CHANNEL, SHEATHING @ SHEAR WALLS*
v. 5/8" GWB, 1/2" RESILIENT CHANNEL, WRB, SHEATHING*

* REFER TO STRUCTURAL FOR SHEATHING TYPE, SIZE
(None) CORE ONLY

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
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ISSUED FOR PERMIT

6707 Riverside
6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO. 21066 | ORIG. ISSUE 09/27/2022 | CURRENT:

SHEET NAME:
WALL TYPES

SHEET NO:
G5.10

ONLINE CERTIFICATIONS DIRECTORY

Design No. D739
BXUV.D739
Fire-resistance Ratings - ANSI/UL 263

Page Bottom

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design No. D739

November 24, 2015

Restrained Assembly Ratings — 1, 1-1/2, 2, 3 and 4 Hr

(See Items 2B, 3, 3A, 6 and 8)

Unrestrained Assembly Ratings — 0, 1, 1-1/2, 2, 3 and 4 Hr.

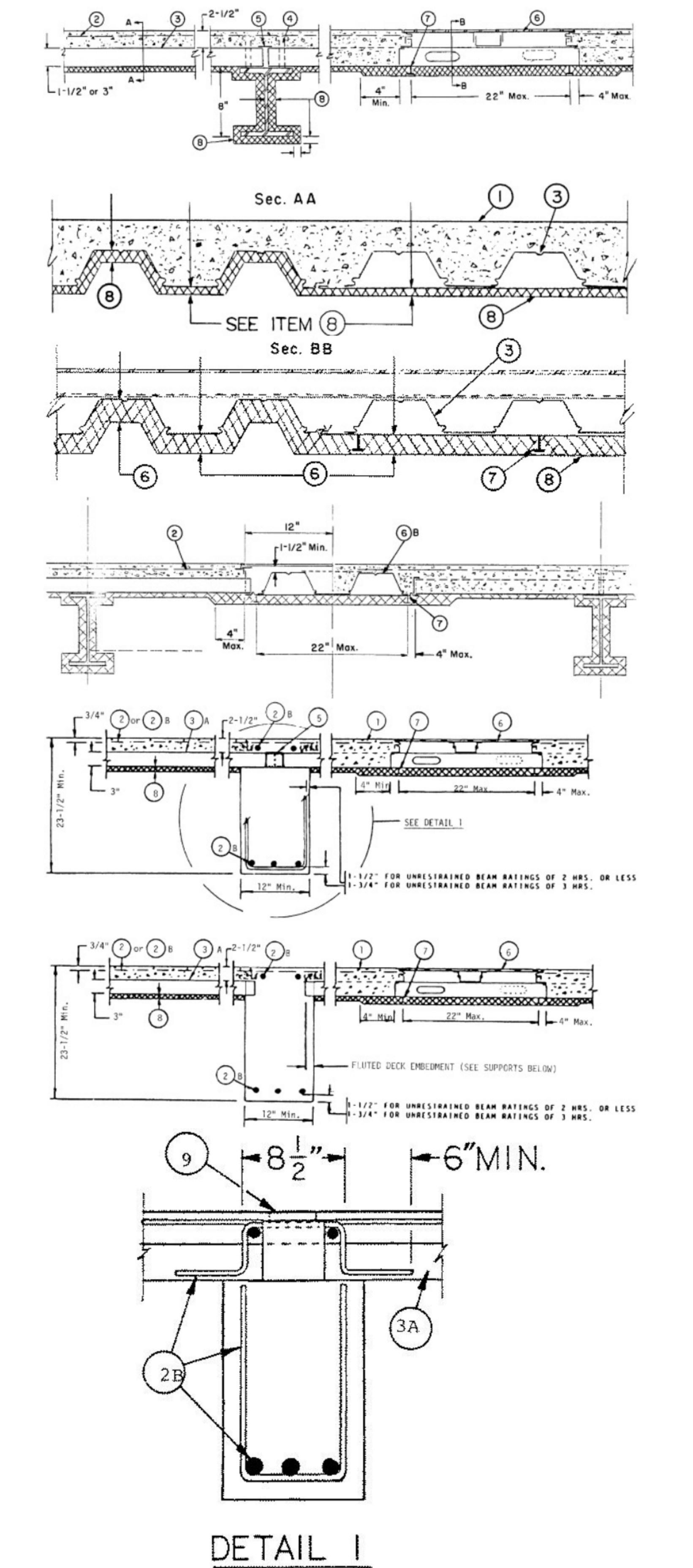
(See Items 2B, 3, 3A and 8)

Unrestrained Beam Ratings — 1, 1-1/2, 2, 3 and 4 Hr.

(See Items 2B, 3, 3A and 8)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



Supports — W8x28 or W6x12 min size steel beams, or steel joists, composite or noncomposite. Steel joists shall be welded to end supports. Min area of joist members shall be 1.44 sq in. for top chord angles, 0.87 sq in. for bottom chord members and 0.47 sq in. for web members. Bridging angles required for noncomposite steel joist, min 1-1/4 in. by 1-1/4 in. by 1/8 in. thick. Welded to the top and bottom chords of steel joists. The l/r ratio for horizontal bridging shall not exceed 300. Bridging sizes and number of rows shall be in accordance with Steel Joist Institute Specifications. See Item 8.

For 3 Hr or less Restrained and Unrestrained Assembly and Unrestrained Beam Ratings, as alternate to steel beams or steel joists, cast in place reinforced concrete beams or girders designed in accordance with the provisions of the Building Code Requirements for Reinforced Concrete (ACI 318-89), may be used as supports for the 3 in. deep floor units. See Item 3A. Min width and depth of concrete beams shall be 12 and 23-1/2 in. respectively.

Fluted steel floor units shall be embedded in the concrete beams a min of 0.0139 times the clear span or 1-1/2 in., whichever is greater. The cellular units may be continuous or with a butted end joint centered over the concrete beam. For continuous floor spans, negative moment reinforcement for the slabs is required over the supporting beams.

1. **Normal Weight or Lightweight Concrete —** Normal weight concrete, carbonate or siliceous aggregate, 145 pcf plus or minus 3 pcf unit weight, 3000 psi compressive strength, vibrated. Lightweight concrete, expanded shale, clay or slate aggregate by rotary-kiln method, 102-120 pcf unit weight (110 pcf unit weight for use with steel joists), 3000 psi compressive strength, vibrated, 4 to 7 percent entrained air.

2. **Welded Wire Fabric —** 6x6 — W1.4xW1.4. When using steel joists, the min welded wire fabric shall be 6x6 — W2.9xW2.9.

2A. **Fiber Reinforcement* —** As an alternate to Item 2, engineered synthetic fibers added to concrete mix to control shrinkage cracks in concrete. Fibers added to concrete mix at a rate of 1.0 lb of fiber for each cu yard of concrete.

GCP APPLIED TECHNOLOGIES INC

2B. **Reinforcement —** Deformed bars of grade 60 steel, for use in floors supported by reinforced concrete beams or girders. Min size No. 3 bars for use as negative reinforcement or vertical stirrups for beams, girders or slabs. Min No. 5 bars for use as positive reinforcement for beams or girders.

Min net concrete cover on the beam or girder bottom reinforcements, shall be 1-1/2 in. for Restrained Assembly Ratings up to 3 Hr and Unrestrained Assembly and Beam Ratings up to 2 Hr. For 3 Hr Unrestrained Assembly and Beam Ratings, 1-3/4 in. cover is required. When continuous cellular units intersect the supporting concrete beams (interrupting the beam stirrups), short pieces of additional stirrups shall be placed in the top part of the beam above the units.

3. **Steel Floor and Form Units* —** Composite 1-1/2, 2, or 3 in. deep galv units. Fluted units may be uncoated. Min gauges are 22 MSG for fluted and 20/20 MSG for cellular. Any combination of fluted and cellular units may be used.

ASC STEEL DECK, DIV OF ASC PROFILES L L C — 32 in. wide Types NH-32, NHN-32, NHF-32; 36 in. wide Types BH-36, BHN-36, BHN-35-1/4, BHF-36, BHF-36A, 2WH-36, 2WHS-36, 2WHF-36, 2WHF-36A, 3WxH-36, 3WxHF-36, 3WxHF-36A, 3WH-36, 3WHF-36, 3WHF-36A, 3W-36, 3WF-36, DG3W-36, DG3WF-36. All units may be galvanized or Prime Shield. Non-cellular decks may be vented designated with a "V" suffix to the product name.

CANAM STEEL CORP — 36 in. wide Type P-3623 composite.

KAM INDUSTRIES LTD, DBA CORDECK — QL Types 24 in. wide 2 in. QL-99, AKX, AKD; 24 in. wide 3, NKX, UKX; 24 or 36 in. wide 2 or 3 in. 99, AKD, AKX, WKD, WKX, TKX, 3 in. QL-WKD, -WKX, 24 or 30 in. wide, 3 in. QL-QKX, -GKXH, -GKX-A 24 in. wide QL-3, QL-UKX; units may be welded or fastened together with No. 10 self-drilling, self-tapping screws 60 in. OC. The length of the screws shall be sufficient to fully penetrate adjacent floor units.

CANAM STEEL CORP — 24, 30 or 36 in. wide Types BL, BLC; 12, 24 or 36 in. wide Type LF1.5, LF2, LF3, LFC1.5, LFC2 or LFC3; 32 in. wide Type LFC3+; 24 in. wide Types N-Lok, NLC for max 2 hr Restrained Assembly Rating, 12 or 24 in. wide Types AWC2 or AWC3+++ may be used. Types 24, 36 in. wide LF2, LF3, LFC2, LFC3 may be welded or fastened together with min 1 in. long No. 10 self-drilling, self-tapping steel screws 36 in. OC. Type AWC units may be button-punched, welded or screw fastened together with min 1 in. long No. 12 self-drilling, self-tapping steel screws spaced a max 42 in. OC. Types BL, LF2, LF3, NL units may be phos/ptd.

CHIA TEH CONSTRUCTION MATERIAL CO LTD — 24 or 36 in. wide Mac-Lok 3; 24 in. wide CFD-3.

NEW MILLENNIUM BUILDING SYSTEMS L L C — 24 in. wide Types CFD-2, -3; 24, 30 or 36 in. wide Type CFD-1.5; 12, 24 or 36 in. wide Types Mac-Lok 2, Mac-Lok 3; 12 in. wide Mac-Way Cellular Types 2-633MTWA, 3-633MTWA, 2-633MTWV, 3-633MTWV. For the 1, 1-1/2, 2h Restrained Assembly Ratings and the 1h Unrestrained Assembly and Beam Rating, 12 in. wide, Type 1.5-633 MTWA may be used. Types CFD-1.5, CFD-2, CFD-3, Mac-Lok 2, Mac-Lok 3 may be phos/ptd. Two rows of steel studs with discs (Item 7) shall be welded along the sides of the Types 2-633MTWV, 3-633MTWV cellular units a max of 22 in. OC.

DECK WEST INC — 36 in. wide Type 2-DW, 3-DW, B-DW or BA-DW, units may be welded or fastened together with No. 10 self-drilling, self-tapping screws 60 in. OC. The length of the screws shall be sufficient to fully penetrate adjacent floors units.

DESIGN ASSISTANCE CONSTRUCTION SYSTEMS INC — 24 in. wide Type DACS2.0CD, or DACS3.0CD.

EPIC METALS CORP — 24 in. wide Type EC366; 24 or 30 in. wide, Types EPC2, EPC3; 36 in. wide Type EC266.

KAM INDUSTRIES LTD, DBA CORDECK — 3KA1F24, 3KF30 or 3P30. Type 3P30 unit may be phos/painted and24 in. wide Type WDR2, WDR2-2, WDR3 or WDR3-2 cellular units ++++.

MARLYN STEEL DECKS INC — Type 1.5 CF, 2.0 CF or 3.0 CF.

NEW MILLENNIUM BUILDING SYSTEMS L L C — Type 1.5CD, 1.25CDI, 1.5CDR, 2.0CD, or 3.0CD. Units may be phos/painted or galvanized.

MORIN CORP — 24, 30 or 36 in. wide, Type LXR-B; 24 or 36 in. wide Type LXR-3W; 36 in wide LXR-2W.

VERCO DECKING INC - A NUCOR CO — 24, 30 or 36 in. wide Types PLB , B, BR; 24 or 36 in. wide Types PLW2 , W2, PLW3 , W3; 24 in. wide Types PLN , N; or Types, N3, PLN3. Units may be phos/ptd.

VULCRAFT, DIV OF NUCOR CORP — 24, 30 or 36 in. wide Types 1.5VL, 1.5VLI, 1.5PLVLI, 1.5VLP, 1.5PLVLP; 24 or 36 in. wide Types 2VLI, 2.0PLVLI, 2VLJ, 3VLI, 3.0PLVLI, 3VLJ, 2VLP, 2.0PLVLP, 3VLP, 3.0PLVLP. Types 1.5VL, 1.5VLI, 1.5PLVLI, 2VLI, 2.0PLVLI, 2VLJ, 3VLI, 2.0PLVLI, 3VLJ units may be phos/ptd; 24 or 36 in. wide Types 2VLJ, 3VLJ units+++++ may be used for max 2 hr Restrained Assembly Rating. 36 in. wide Types 1.5 SB, 1.5 SBR; 24 or 36 in wide Types 2.0 SB, 3.0 SB, 36 in. wide Type High Strength 1.5 SBI, 36 in. wide Type High Strength 1.5 SBN. Units may be phos/ptd.

Spacing of welds attaching units to supports shall be 12 in. OC max. unless specified otherwise, adjacent units button-punched or welded together at side joints and, unless specified otherwise for specific unit types, spacing of all side joint fastening systems shall not exceed 36 in. OC.

+ 32 in. wide, 20/20 min ga Lok-Floor Cell is limited to a blend of one cellular to one or more fluted units. Spans incorporating trench headers may use a blend of one 32 in. wide, 20/20 min ga Lok-Floor cellular unit to one 24 in. wide cellular unit or one or more fluted units, with stud pins and discs (see item 7) required below the cellular units.

+++ Assembly may consist of all Type AWC cellular units or any blend of AWC2 or AWC3 cellular units and Types LF2 or LF3 fluted units. Allowable loading for the floor shall be based upon published loading tables for the fluted units.

++++ Types WDR2, WDR3 cellular units shall be blended one cellular to one or more 24 in. wide fluted units. Adjacent units to be welded together at side joints max 36 in. OC. Allowable loading for the floor shall be based upon published loading tables for the fluted units.

+++++ Side joints of Types 2VLJ or 3VLJ units may be fastened together with No. 8-3/4 in. long self-drilling Tek screws driven diagonally from the top side through the joint of the units at 36 in. O. C. max.

3A. **Steel Floor and Form Units* —** (for alternate cast in place concrete beams) — Composite 3 in. deep galv units. Fluted units may be uncoated. Min gauges are 20 MSG for fluted and 20/20 MSG for cellular. The ratio of blended units shall not exceed one 24 in. wide cellular unit to 36 in. wide fluted unit for the cast in place concrete frame buildings.

KAM INDUSTRIES LTD, DBA CORDECK — QL Types 24 or 36 in. wide 3 in. 99, 24 or 30 in. wide 3 in. QL-GKX, -GKXH, QL-GKX-A; units may be welded or fastened together with No. 10 self-drilling, self-tapping steel screws 60 in. OC. The length of the screws shall be sufficient to fully penetrate adjacent floor unit.

CHIA TEH CONSTRUCTION MATERIAL CO LTD — 24 or 36 in. wide Mac-Lok 3; 24 in. wide CFD-3.

4. **Shear Connectors —** (Optional)-Studs, 3/4 in. diam (min 1/2 diam for use with steel joists) by 4-1/2 in. long, headed type or equivalent per AISC specification. Welded to the top flange of the beam, or top chord of the steel joist, through the deck.

5. **Joint Cover —** 2 in. wide pressure sensitive cloth tape.

6. **Trench Header —** Trench header (Bearing the UL Listing Mark), without the bottom pan. The allowable superimposed load for spans with bottomless trench shall be based on noncomposite design. This trench header, ranging in width from min 12 in. to max 36 in., consists of two cell closers which conform to the contour of the floor units, placed along the sides of the desired trench location and welded to the floor units. The side rails, consisting of extruded aluminum screens secured to galv steel channels (min 18 MSG) are positioned over the cell closers, aligned and welded or riveted to the closers and floor units. A separate U shaped channel (min 18 ga) serving as the power compartment, is welded or riveted to the floor units. Steel cover plates, 1/4 in. thick shall be secured to the side rails. In bottomless trench headers wider than 18 in., each steel cover plates, 1/4 in. thick shall be secured to the side rails. In bottomless trench headers wider than 18 in., each side joint of the steel floor units shall be welded together with a 1 in. long weld near the trench header centerline. For QL-GKX-24 or -30 cellular floor units only, a separate KED-PTS (UL Listed) power transition sleeve is secured to power compartment with one rivet or screw.

The use of this trench requires the use of steel studs with discs (Item 7) and additional protection underneath the trench. Fireproofing thickness shall be increased as shown in the following table:

Restrained Assembly Rating Hr	Spray Applied Fire Resistive Mtl Thk In		
	Crests	Valley	Flat Plate
1 hr	1-3/16	1	1+
1-1/2 hr	1-1/2	1-1/4	1-1/4
2 hr	1-3/4*	1-5/8*	1-5/8*
3 hr	2-1/4	2-1/8	2-1/8

These thicknesses shall extend a min of 4 in. beyond the edges of the trench header.

+ When Spatterkote is used, for the **1 Hr Restrained Assembly Rating,** the thickness of the Spray-Applied Fire Resistive Materials on the flat plate shall be increased to 1-3/4 in. and the steel studs with discs (Item 7) may be omitted.

* When Type AWC units are used, Spray-Applied Fire Resistive Materials thickness shall be 2 in. in the crests and 1-3/4 in on valleys and flat plates for 2 Hr Restrained Assembly Rating.

6A. **Trench Header —** (Not shown) — With bottom pan. (Bearing the UL Listing Mark). Optional and as an alternate to trench header without the bottom pan (Item No. 6), for 2 Hr or less assembly ratings. Housing constructed of steel with metal edge screeds. The thickness of Spray-Applied Fire Resistive Materials on floor units below this trench header is dependent on concrete unit weight as follows: (1) For concrete unit weight range of 105 to 112 pcf the required thickness of Spray-Applied Fire Resistive Materials is 1-1/8in. below the bottom plane of the units with flutes completely filled, except for 2 in. and 3 in. deep floor units, where thickness in flutes shall be 1-1/8 in. (2) For concrete unit weight of 112 pcf or higher and normal weight concrete the required thickness of Spray-Applied Fire Resistive Materials is 7/8 in. below the bottom plane of the units with flutes completely filled, except for 2 in. and 3 in. deep floor units, where thickness in flutes shall be 1-1/8 in. Types AWC, WDR2, WDR2-2, WDR3, WDR3-2 cellular units require the use of steel studs with discs (Item 7). The greater thickness of Spray-Applied Fire Resistive Materials below the trench header shall extend a min of 5 in. beyond the edges of the trench header.

6B. **Feeder Duct System —** (As an alternate to Items 6 or 6A). Consists of 3 in. deep, nom 24 in. wide, 20/18 MSG Type QL-WKM or QL-WKM-E cellular steel floor unit (feeder duct) and nom 24 by 24 in. junction boxes. The valley between the two cells of the feeder duct may or may not be covered by a steel plate to form a third cell. Feeder duct installed at the same elevation and perpendicular to 2 or 3 in. deep fluted and/or cellular steel floor units which are cantilevered from support beams on one or both sides of the feeder duct. The junction boxes consisting of extruded aluminum screeds, 18 galv steel outside flute closures, 16 galv steel compartment divider, and 0.21 in. thick steel cover plate are used at intersections of 2 or 3 in. cellular units and the feeder duct, where desired. Bottom tabs of the flute closures are fastened to the valleys of the 2 or 3 in. units and to the feeder duct with self-drilling tek fasteners, while the cover plate is retained in position by four latch clips, one near each corner of the plate. The height and the level of the aluminum screed are adjusted by four adjustment screws, two each on opposite sides. In between the junction boxes the ends of the 2 or 3 in. fluted and/or cellular units are covered with steel end closure angles tack-welded to the top of the units.

Welded wire fabric (Item 2) extends over the feeder duct between junction boxes. The allowable superimposed load for spans with the feeder duct system shall be based on noncomposite design. Steel studs with discs (Item 7) shall be welded to the underside of the feeder duct in two rows. The spacing between rows shall not exceed 22 in. OC and the spacing of studs in each row shall not exceed 24 in OC. The use of this feeder duct system requires additional protection underneath the feeder duct. Fireproofing thickness shall be increased to 1-3/4 in. for 2 Hr Restrained Assembly Rating and 1-1/2 in. for 1-1/2 Hr Restrained Assembly Rating. These thicknesses shall extend a min of 4 in. beyond the edge of the feeder duct.

KAM INDUSTRIES LTD, DBA CORDECK — 24 in. wide Type QL-WKM or WL-WKM-E.

6C. **Trench Header —** (Bearing the UL Listing Mark) with an intermittent bottom. The allowable superimposed load for spans with an intermittent bottom trench header shall be based on noncomposite design. The intermittent bottom trench header, with a max width of 36 in., consists of a horizontal closure plate (min 22 MSG) over the fluted deck sections at the desired trench header location and affixed to the floor units by welding or screws (No. 14 by 3/4 in. long self-tapping, self-drilling). The side rails consist of extruded aluminum screeds secured to galv steel channels (min 18 MSG), positioned over the edge of the horizontal closure plates, aligned, and welded to the cells and fluted floor units. A separate U-shaped galv steel channel (min 18 MSG), serving as the power compartment, is welded to the horizontal closure plates and floor units. Steel cover plates, 1/4 in. thick, shall be screw-attached to the side rails. For intermittent bottom trench headers wider than 24 in., each side joint of the steel floor units inside the trench header, shall be screwed together with No. 14 by 3/4 in. long, self-tapping, self-drilling steel screw or welded together with 1 in. long weld near the trench header centerline. This trench header requires the use of steel studs with discs (See Item 7) and additional protection underneath the trench. Fireproofing thickness for 24 in. wide intermittent bottom trench headers shall be increased to 1-1/8 in. in the crests and on the valleys and flat plates for the 1, 1-1/2 or 2 Hr **Restrained Assembly Ratings** with normal weight or light weight concrete. Fireproofing thickness for 36 in. wide intermittent bottom trench headers shall be increased to 2 in. in the crest; 1-3/4 in. on valleys and flat plates for 2 Hr Restrained Assembly rating; 1-3/4 in. in the crest, 1-1/2 in. on valleys and flat plates for 1-1/2 H Restrained Assembly rating; 1-1/2 in. in the crest, 1 in. on valleys and flat plates for 1 Hr Restrained Assembly rating with normal weight or lightweight concrete. These thicknesses shall extend a min of 4 in. beyond the edge of the trench header.

6D. **Trench Header —** (Bearing the UL Listing Mark) with an Intermittent Bottom Storage, max 36 in. width, for use with Mac-Way Cellular Units. A 16 in. length of the top hat-shaped cover of the Mac-Way Cellular Unit is cut away in the center of the trench header and each end of unit at the cut out is reinforced with 4 by 11 in., 16 ga. galv steel plate spot-welded to the top of each side compartment. The center 16 in. length of the center channel compartment is covered by a 16 ga. galv steel channel placed over and welded to the center channel compartment forming a box. The cover channel is also welded with a full length fillet weld to the top 4 X 11 in. reinforcing plates on the top cut ends of the unit.

A power compartment channel of 18 MSG galv steel is placed on top and perpendicular to the floor units and centered along the longitudinal centerline of the trench header. The channel is attached to the closure plates over the fluted units with tek screws and is tack-welded to the center compartment Cover channel of the cellular unit. The end closures over the fluted units are made from a min 22 ga. galv steel. The power compartment channel made from 18 MSG galv steel with adjustable sides, is centered along the longitudinal centerline of the trench header. The sides are adjusted to support the cover plate. The side-rail assemblies consist of aluminum extrusion, and 14 MSG min galv steel support. The parts of the side-rails are secured together by leveling screws at 36 in. OC max. The cover plates are 1/4 in. thick enameled steel secured to side-rails with No. 10-24 screws located 3 in. from ends and at 12 in. OC max along the length of the plates.

The trench header requires the use of steel studs with discs (See item 7) and additional protection underneath the trench. The spacing of the steel studs with discs shall be as specified in item 3 for Mac-Way cells. Fireproofing thicknesses under the intermittent bottom storage trench header for the various Restrained Assembly Ratings shall be as follows: 2 in. in the crest; 1-3/4 in. on valleys and flat plates for 2H Restrained Assembly rating; 1-3/4 in. in the crest; 1-1/2 in. on valleys and flat plates for 1-1/2 H Restrained Assembly rating; 1-1/2 in. in the crest; 1 in. on valleys and flat plates for 1H Restrained Assembly rating with normal weight or lightweight concrete. These thicknesses shall extend a min of 4 in. beyond the side edges of the trench header.

7. **Steel Studs With Discs —** The stud consists of No. 12 SWG steel wire, 1-3/8 in. long (2-1/8 in. long in 3 or 4 HR Restrained Assembly Rating) with one end welded to 1-3/16 in. diam, No. 28 MSG galv steel disc. The total number of studs shall avg at least one stud per 236 sq in. of cellular floor units beneath the trench header. The ends of the studs opposite the discs shall be welded to the cellular floor units in rows running parallel with the trench header. The distance between the outer rows of the studs and the edge of the trench header shall not exceed 4 in. The spacing between the rows shall not exceed 22 in. The spacing between studs in each row shall not exceed 24 in. When Type AWC cellular units are used, the total number of studs shall avg. at least one stud per 132 sq. in. of cellular floor units beneath the trench header. The ends of the studs opposite the discs shall be welded to the cellular floor units in rows running parallel with the trench header. The distance between the outer rows of the studs and the edge of the trench header shall not exceed 2 in. The spacing between the rows shall not exceed 8-1/2 in. The spacing between studs in each row shall not exceed 16-3/4 in.

When 24 in. wide Type WDR2, WDR2-2, WDR3 or WDR3-2 cellular units are used, the total number of studs shall avg. at least one stud per 172 sq. in. of cellular floor units beneath the trench header. The ends of the studs opposite the discs shall be welded to the floor units in rows running parallel with the trench header. The distance between the outer rows of the studs and the edge of the trench header shall not exceed 4 in. The spacing between studs in each row shall not exceed 18 in.

8. **Spray-Applied Fire Resistive Materials* —** Applied by mixing with water and spraying to steel surfaces which must be clean and free of dirt, loose scale and oil. When steel deck is used, the area between the steel deck and the beams top flange shall be filled. Min avg and min ind density of 15/14 pcf respectively. Min avg and min ind density of 22/19 pcf respectively for Types Z-106, Z-106/G, and Z-106/HY. Min avg and min ind density of 40/36 pcf respectively for Z-146. Min avg and min ind density of 19/18 pcf respectively for Types 7GP and 7HD. Application to steel deck with Z-146 requires the installation of expanded metal lath. See Item 11B. For method of density determination, refer to Design Information Section. Types 4, 5GP, 5AR, 5GP/AR, 5EF/AR, 5MD/AR, 7GP, 7HD, 8GP, 9GP may be used only in general floor areas without concrete penetrations with all fluted steel floor units or blends consisting of one or more fluted units to one 24 in. wide max cellular unit, 1-1/2 or 3 in. deep, with cells spaced approx 6 and 8 in. respectively. Type Z-106 may be used only in general floor areas without concrete penetrations with all fluted steel floor units. Use of a spatter coat Types DK, DK2, DK3, SK-1 or SK-III is required on all cellular units with flat plate on the bottom, optional on other steel surfaces. When Type WDR2, WDR2-2, WDR3 or WDR3-2 cellular units are blended with fluted units under a trench header, Types DK, DK2, DK3, SK-1 or SK-III is also required on fluted units. Thickness of the spatter coat is included in the total thickness of the protection material.

The thicknesses of material required on the steel beam for the various Unrestrained Beam Ratings and Restrained Assembly Ratings are shown in the following table:

Min Beam Size	Concrete Type	Min Thk In.	Unrestrained Beam Rating Hr	Restrained Assembly Rating Hr
W8X28	LW or NW	1/2(a)	1*	1, 1-1/2 or 2
W6X12	LW or NW	3/4(a)	1*	1, 1-1/2 or 2
W8X28	NW	3/4	1-1/2*	1, 1-1/2, 2 or 3
W8X28	LW	7/8	1-1/2*	1, 1-1/2, 2 or 3
W8X28	NW	7/8	2*	1, 1-1/2, 2, 3 or 4
W8X28	LW	1	2*	1, 1-1/2, 2, 3 or 4
W8X28	NW	1-1/4	3*	1, 1-1/2, 2, 3 or 4
W8X28	LW	1-9/16	3*	1, 1-1/2, 2, 3 or 4
W8X28	LW or NW	2	4	1, 1-1/2, 2, 3 or 4

*When Type AWC cellular units are used, max. 1 hr. Unrestrained Beam Rating.

(a)Type AWC units for use only with NW concrete with 3/4 in. protection on W8x28 beam and 1 in. protection on W6x12 beam.

The thickness of material required on the steel joist for the various ratings are shown in the following table:

Restrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Type of Concrete Slab	Spray Applied Fire Resistive Mtl Thkns In. Joist & Bridging
1	1	NW or LW	1-1/8
1-1/2	1-1/2	NW or LW	1-1/2
2	2+	NW+	1-1/2
2	2	NW or LW	2-1/4
3	3	NW or LW	2-7/8

\+ Maximum joist spacing is limited to 3 ft-6 in..

For the general floor area without trench headers or electrical inserts, the following thicknesses of material are required on the steel floor units for the various Restrained and Unrestrained Assembly Ratings when steel beams are used:

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr (a)	Min Required Unrestrained Beam Rating Hr	Min Thk in		
			Crests	Valley	Flat Plate
1(b)	0	1	0	0	0
1, 1-1/2 or 2	1, 1-1/2 or 2(e)	1, 1-1/2 or 2	3/8(c)	3/8	3/8
3	1-1/2, 2 or 3(e)	1-1/2, 2 or 3	11/16	1/2	1/2
4	2, 3 or 4(b)	2, 3 or 4	1-1/2	1-1/8	—
4	2, 3 or 4(f)	2, 3 or 4	1-7/16	13/16	—
4	2, 3 or 4(g)(h)	2, 3 or 4	—	—	1-1/8(j)
4	2, 3 or 4(g)(i)	2, 3 or 4	—	—	13/16(j)

(a)See above beam thicknesses for applicable Unrestrained Assembly and Unrestrained Beam Ratings.

(b)Floor constructed of lightweight concrete only.

(c)Min thickness of 1/2 in. is required in crests of 1-1/2 in. deep fluted units for the **2 Hr. Restrained Assembly Rating.**

(e)When Type AWC units are used the max **Unrestrained Assembly Rating** is 1 hr.

(f)Floor constructed of normal weight concrete only.

(g)Floor constructed of normal or light weight concrete.

(h)Steel floor unit depth of 2 in.

(i)Steel floor unit depth of 3 in.

(j)Steel studs with discs, as specified in Item 7, are required.

+For 2 Hr. Restrained Assembly Rating, the required thickness of protection material on Type AWC units is 1/2 in.

For the general floor area under a trench header, the following thickness of materials are required on the steel floor units for the various Restrained and Unrestrained Assembly Ratings when steel beams are used:

Restrained Assembly Rating, Hr	Unrestrained Assembly Rating, Hr (a)	Steel Floor Unit Depth, In.	Type of Concrete Slab	Min Thk, in		
				Crests	Valley	Flat Plate
4	2, 3 or 4	2	NW	—	—	1-9/16 (a)
4	2, 3 or 4	3	NW	—	—	1-1/2 (a)

(a)Steel studs with discs, as specified in Item 7, are required.

ARABIAN VERMICULITE INDUSTRIES — Types MK-6/CBF, -6/ED, -6/HY, -6/HB, -6s, MK-10 HB, MK-10 HB Extended Set, SK-3, Sonophone-1, Sonophone-5, Sonophone-35 , Z-106, Z-106/G, Z-146 investigated for exterior use.

GRACE KOREA INC — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6/HB, MK-6s, MK-10 HB, MK-10 HB Extended Set, SK-3, Z-106, Z106/HY, Z-106/G, Z-146 investigated for exterior use.

PYROK INC — Type LD.

SOUTHWEST FIREPROOFING PRODUCTS CO — Types 4, 5, 5EF, 5GP, 5AR, 5GP/AR, 5EF/AR, 5MD/AR, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 9EF, 9GP, 9MD, DK, DK2, DK3.

GCP APPLIED TECHNOLOGIES INC — Types MK-6/HY, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, RG, SK-3, Z-106, Z106/HY, Z-106/G, Z-146 investigated for exterior use.

9. **Electrical Inserts —** (Not shown) — Preset and after set electrical inserts Classified as **Outlet Boxes and Fittings Classified for Fire Resistance** *. Unless specified otherwise for a particular preset electrical insert type, the spacing of the preset electrical inserts shall be not less than 24 in. on center along cellular steel floor units with not more than one preset electrical insert in each 4 sq ft of floor area. The required thickness of Spray-Applied Fire Resistive Materials on the steel floor units with inserts shall be sprayed the entire length and width of the units between supports and shall extend beyond the edge of inserts onto adjacent floor units for a minimum horizontal width of 12 in. In floor spans (between supports) containing electrical inserts, the entire floor span (fluted and cellular steel floor units) must be sprayed with a minimum 3/8 in. thickness of Spray-Applied Fire Resistive Materials.

(1) **KAM INDUSTRIES LTD, DBA CORDECK** Inserts. (Tapmate III-FN, III-EAFN, III-EAFN-FC1; Series KEC).

Installed per accompanying installation instructions over factory-punched holes in QL-AKD or QL-WKD floor units. Inserts are used in the pre-active, active, or abandoned condition. Required spray-applied resistive material thicknesses on floor units with inserts are:

Floor Unit Type	Concrete Type	Min Spray Applied Fire Resistive Mtl Thk In.	Restrained Assembly Rating Hr
(Tapmate III-FN, III-EAFN)			
QL-AKD, -WKD	NW	3/8	1
QL-AKD, -WKD	LW	5/8	1
QL-AKD, -WKD	NW	1/2	1-1/2, 2
QL-WKD	LW	13/16	1-1/2,2
QL-AKD, -WKD	NW	3/4	3
(Tamate III-EAFN-FC1)			
QL-WKD	NW	1/2	2

The hole cut in insert cover for passage of wires shall be no more than 1/8 in. larger diam than the wire. For abandonment of Tapmate inserts, see installation instructions. Abandonment of Tapmate III-FN requires use of KEC-PC insert cover with no holes in it. Abandonment of Tapmate III— EAFN requires use of KEC-PC5 insert cover with no holes in it and use of KEC-PC6 insert cover in lieu of either KEC-PC12 or -PC13 insert cover.

The Tapmate III insert may use KEB-HP-1; Series KEC outlet box fittings with the same hourly rating and fireproofing thicknesses as specified for the Tapmate III-EAFN electrical inserts.

(Tapmate II, II-EA, II-FN, II-EAFN)

Installed per accompanying installation instructions over factory-punched holes in QL-AKX or QL-WKX floor units. Inserts are used in the pre-active, active and abandoned condition. Required Spray-Applied Fire Resistive Materials thicknesses on floor units with inserts are:

Floor Unit Type	Concrete Type	Min Spray Applied Fire Resistive Mtl Thk In.	Restrained Assembly Rating Hr
(Tapmate II or II-EA)			
QL-AKX	NW	9/16	1
QL-AKX	LW	5/8	1
QL-AKX, -WKX	LW or NW	1/2	1
QL-AKX, -WKX	NW	11/16	11/2
QL-AKX, -WKX	NW	7/8	2
QL-AKX	LW	7/8	1-1/2 or 2
QL-WKX	LW	3/4	1-1/2 or 2
QL-AKX	NW	1-1/4	3
QL-AKX	LW	1-1/2	3
QL-WKX	NW	1-13/16	3
QL-WKX	LW	1-3/8	3
(Tapmate II-FN or II-EAFN)			
QL-AKX, -WKX	NW	3/8	1
QL-AKX, -WKX	LW	1/2	1
QL-AKX, -WKX	NW	1/2	1-1/2 or2
QL-WKX	LW	3/4	1-1/2 or 2
QL-AKX, -WKX	NW	3/4	3

The hole cut in insert cover for passage of wires shall be no more than 1/8 in. larger diam than the wire. For abandonment of Tapmate inserts, see installation instructions.

(Tapmate II-EAFN-FC1)

The Tapmate II-FN insert may use KEB-HP-1 outlet box fittings in lieu of the KEB-PC flush cover fittings.

Installed per accompanying installation instructions over factory-punched holes in QL-WKX floor units. Inserts are used in the pre-active, active, or abandoned condition. Required cementitious material thicknesses on floor units with inserts are:

Floor Unit Type	Concrete Type	Min Spray Applied Fire Resistive Mtl Thk In.	Restrained Assembly Rating Hr
QL-WKX	NW	3/8	1
QL-WKX	NW	1/2	1-1/2 or 2

For abandonment see installation instructions. Abandonment requires use of KEB-PC or -PCL insert cover with no holes in it (for all Tapmate inserts), or an abandonment plate for Tapmate II only, or a KEB-PC2 or -PC2-A1 abandonment cover for Tapmate II-EA and II-EAFN only.

(Tapmate IV, IV-EA, IV-H, IV-H-M, IV-S)

Installed per accompanying installation instructions over factory-punched holes in QL-GKX-24 or -30 floor units. Inserts are used in the preactive, active or abandoned condition. Required spray-applied resistive material thicknesses on floor units with inserts are:

Restrained Assembly Rating, Hr	Floor Unit Type	Concrete Type	Min Spray Applied Fire Resistive Mtl Thk In.
(Tapmate IV, IV-H, IV-H-M, IV-S)			
1	QL-GKX	NW, LW	3/8
1-1/2	QL-GKX	NW	1/2
1-1/2	QL-GKX	LW	9/16
2	QL-GKX	NW	5/8
2	QL-GKX	LW	3/4
3	QL-GKX	NW	1-1/4
3	QL-GKX	LW	1-1/2
(Tapmate V)			
1	QL-GKX	NW, LW	3/8
1-1/2	QL-GKX	NW, LW	1/2
2	QL-GKX	NW, LW	5/8
3	QL-GKX	NW, LW	1
(Tapmate IV-EA)			
1	QL-GKX	NW, LW	1/2
1-1/2	QL-GKX	NW	9/16
1-1/2	QL-GKX	LW	5/8
2	QL-GKX	NW	3/4
2	QL-GKX	LW	7/8

The holes cut in insert cover for passage of wires shall be no more than 1/8 in. larger diameter than the wire. For abandonment of inserts see installation instructions.

Type KED-HP-1 outlet box fittings may be used with Tapmate IV box assemblies or in lieu of Tapmate IV or IV-EA fittings with the same hourly ratings, insert spacings and protection material thicknesses as specified for the above electrical inserts.

(Tapmate IV, IV-FN-S, IV-FN-H, IV-EAFN)

Installed per accompanying installation instructions over factory-punched holes in QL-GKX-24 or -30 floor units. Inserts are used in the preactive, active or abandoned condition. Required spray-applied resistive material thicknesses on floor units with inserts are:

Restrained Assembly Rating, Hr	Floor Unit Type	Concrete Type	Min Spray Applied Fire Resistive Mtl Thk In.
(Tapmate IV-FN-S, IV-FN-H, IV-EAFN)			
1	QL-GKX	LW or NW	3/8
1-1/2	QL-GKX	NW	1/2
1-1/2	QL-GKX	LW	5/8
2	QL-GKX	NW	1/2
2	QL-GKX	LW	13/16
3	QL-GKX	NW	3/4

Type KED-HP-1 outlet box fittings may be used with Tapmate IV box assemblies or in lieu of Tapmate IV-FN-S, -IV-FN-H -IV-EAFN fittings with the same hourly ratings and protection material thicknesses as specified for the above electrical inserts.

The hole cut in insert cover for passage of wires shall be no more than 1/8 in. larger diameter than the wire. For abandonment see installation instructions.

(Tapmate KED-MSA Multi-Service After set Inserts)

Installed per accompanying installation instructions in core-drilled holes over QL-GKX-24 or 30 steel floor units. Spacing of after set inserts shall be not more than one insert per each 7-1/2 sq ft of floor area with not less than 25-1/2 in. between edges of adjacent after set inserts. After set inserts may be installed with either the flip lid plastic cover (KEC-PC3, PC4 & PC5 components) or the Deluxe Cover (KED-NAC type). Required Spray-Applied Fire Resistive Materials thicknesses of steel floor units with inserts are tabulated below:

Restrained Assembly Rating Hr	Floor Unit Type	Concrete Type	Min Spray Applied Fire Resistive Mtl Thkns In.
1	QL-GKX	NW, LW	3/8
1-1/2	QL-GKX	NW	1/2
1-1/2	QL-GKX	LW	9/16
2	QL-GKX	NW	5/8
2	QL-GKX	LW	3/4
3	QL-GKX	NW	1-1/4
3	QL-GKX	LW	1-1/2

KAM INDUSTRIES LTD, DBA CORDECK — Tapmate II, II-EA, II-FN, II-EAFN, II-EAFN-FC1; Series KEB. Tapmate III-FN, III-EAFN, III-EAFN-FC1; Series KEC. Tapmate IV, IV-EA, IV-EAFN, IV-FN-S, IV-FN-H, IV-H, IV-H-M, IV-S; Series KED. Tapmate KED-MSA

The following activated versions of Tapmate IV inserts may be installed with either the flip lip plastic cover (KEC-PC3, PC4 and PC5 components) or the Deluxe Cover (KED-NAC): Tapmates IV-S, IV-H, IV-H-M, IV-FN-S, IV-FN-H.

Only those Tapmate II, III or IV inserts having an FN suffix are required to contain the neoprene pad and then only in the activated stage.

(2) **United Steel Deck, Inc.** Inserts.

(Type 325 Preset Insert with Activation Fittings Types I, III, V, VI, or VII). (Type 325-M1 and Type 325-M2 Preset Inserts with Activation Fitting Type X).

Installed per accompanying installation instructions over factory punched holes in Type AWC2 or AWC3 floor units. May be used for max 2 hr Restrained Assembly Rating only. For use with 12 or 24 in. wide AWC2 or AWC3 units. The holes cut in the insert cover for passage of wires shall be no more than 1/8 in. larger diam than the wire. For abandonment of insert see installation instructions.

Required Spray-Applied Fire Resistive Materials thickness on AWC2 or AWC3 units depends on the type of activation fitting and the hourly ratings, as follows:

Type of Activation Fitting	Restrained Assembly Rating Hr	Min Spray Applied Fire Resistive Mtl Thk In.
I, VI, VII or X	1, 1-1/2 or 2	1/2
III or V	1 or 1-1/2	1/2
V	2	5/8
III	2	11/16

(Type 325 preset insert with Activation Fittings Types I, III, V, VI or VII)

Required Spray-Applied Fire Resistive Materials thickness on AWC2 or AWC3 units for the 3 hour rating depends on the type of activation fitting as follows:

Type of Activation Fitting	Restrained Assembly Rating Hr	Min Spray Applied Fire Resistive Mtl Thk In.
I, III	3	15/16
V	3	7/8
VI	3	11/16
VII	3	13/16

Metal lath squares provided in 2 in. by 2 in. C-shaped sections attached to cellular floor unit flat plates by means of self-drilling, self-tapping steel screws and washers. The lath squares are to be located across and along the length of the cellular units, 6 in. OC apart in staggered rows.

(Types 350, 351- After set Inserts)

Installed per accompanying installation instructions in 4 or 4-1/4 in. diam hole, for Types 350 and 351 inserts, respectively, core-drilled through concrete topping, centered over top of cell of Type AWC2 or AWC3 cellular floor unit. Type 350 After set Inserts may be used for max 2 hr Restrained Assembly Rating in normal weight concrete floors. Type 351 After set Inserts may be used for max 2 hr. Restrained Assembly Rating in normal weight or lightweight concrete floors. Spacing of inserts shall be not more than one insert in each 4 sq. ft. of floor area with not less than 2 ft. on center between adjacent inserts. Required Spray-Applied Fire Resistive Materials thickness of 1/2 in. on cellular floor units with inserts.

CANAM STEEL CORP — After set insert Types 350, 351. Type 350DG or -DK fittings used for abandonment of Type 350 after set insert.

(3) **Wiremold Co.** and **Kam Industries Ltd d/b/a Cordeck** Inserts.

(PK Series Preset Inserts; FAKM-II, FPF, RAKM, RAKM-II, S36BB, S36CC, S37BB, S37CC, S36PB, S36PP, S38BB, S38CC, S39BB, S39CC, S38PP, FPCT, FPBT, FPCTC, FPBTC, FPFFTC Service Fittings or Type S3AXBP abandonment plate)

Installed per accompanying installation instructions over factory pre-punched knockouts or factory installed over pre-punched knockouts in Type WDR2 or WDR3 cellular steel floor units. When Type FPF, S36PB, S36PP S38PP or FPFFTC Service fittings are used, furniture whip for power feed from service fitting cover to be liquid-tight steel conduit with cast steel 90 degree elbow connector. Refer to installation instructions for Classified Assemblies. Required Spray-Applied Fire Resistive Materials thicknesses on floor units with inserts are:

Restrained Assembly Rating Hr	Concrete Type	Min Spray Applied Fire Resistive Mtl Thkns In.
(Type FAKM-II)		
1	LW or NW	3/8
1-1/2	LW or NW	1/2
2	LW or NW	11/16
3	LW or NW	15/16
(Type RAKM, S37BB, S37CC, S39BB, S39CC, FPBT, FPCT)		
1	LW or NW	7/16
1-1/2	LW or NW	5/8
2	LW or NW	7/8
(Type RAKM-II, S36BB, S36CC,S38BB, S38CC, FPCTC, FPBTC, S3AXBP)		
1	LW or NW	3/8
1-1/2	LW or NW	7/16
2	LW or NW	5/8
3	LW or NW	1
(Type FPF, S36PB, S36PP, S38PP, FPFFTC)		
1	LW or NW	3/8
1-1/2	LW or NW	1/2
2	LW or NW	11/16
3	LW or NW	15/16

(NRG Bloc IV Preset Inserts: FAKM-II, FPF, RAKM, RAKM-II, RPF, S36BB, S36CC, S37BB, S37CC, S36PB, S36PP, S37PB, S37PP, S38CC, S38BB, S38PP, S39CC, S39BB, S38PP, S39PP, FPCTC, FPBTC, FPFFTC, FPCT, FPBT, FPFFTC, FPFFT Service Fittings or Type S3AXBP abandonment plate)

The NRG Bloc IV preset insert is furnished by **KAM INDUSTRIES LTD d/b/a CORDECK.** The service fitting components are furnished by **WIREMOLD CO.** Installed per accompanying installation instructions over factory-punched holes in 3 in. deep K-Type cellular steel floor units (furnished by KAM INDUSTRIES LTD d/b/a CORDECK). When type FPF, RPF, S36PB, S36PP, S37PB, S37PP, S36PB, S36PP, S37PB, S37PP, S38PP, S39PP, FPFFTC, FPFFT Service fittings are used, furniture whip for power feed from service fitting cover to be liquid-tight steel conduit with cast steel 90 degree elbow connector. The required Spray-Applied Fire Resistive Materials thicknesses on steel floor units with inserts are tabulated below:

Restrained Assembly Rating Hr	Concrete Type	Min Spray Applied Fire Resistive Mtl Thkns In.
(Type RAKM-II, S36BB, S36CC, S38BB, S38CC, FPCTC, FPBTC, S3AXBP)		
1, 1-1/2	LW or NW	3/8
2	LW or NW	1/2
3	LW or NW	13/16
(Type FAKM-II)		
1	LW or NW	3/8
1-1/2	LW or NW	7/16
2	LW or NW	9/16
3	LW or NW	3/4
(Type FPF, S36PB,S36PP, S38PP, S39PP, FPFFTC, FPFFT)		
1	LW or NW	3/8
1-1/2	LW or NW	1/2
2	LW or NW	9/16
3	LW or NW	3/4

Restrained Assembly Rating Hr	Concrete Type	Min Spray Applied Fire Resistive Mtl Thkns In.
(Type RAKM, S37BB, S37CC, S39CC, S39BB, FPCT, FPBT)		
1	LW or NW	3/8
1-1/2	LW or NW	7/16
2	LW or NW	11/16
(Type RPF, S37PB, S37PP, S38PP, S39PP, FPFFTC, FPFFT)		
1	LW or NW	3/8
1-1/2	NW	7/16
1-1/2	LW	9/16
2	NW	5/8
2	LW	3/4

(437 Series Preset/After set Inserts; S125R, S126R, S165B, S166B Fittings)

Single-service preset or after set inserts installed per accompanying installation instructions over Types WDR2, WDR2-2, WDR3 or WDR3-2 cellular steel floor units. When used as a preset insert, attaching ring with mud cap installed over 2-1/2 in. diam factory-punched or field-drilled hole in top of cell prior to concrete placement. When used as an after set insert, a 4 in. diam hole is core-drilled to, but not through, top of cell and attaching ring is installed over 2-1/2 in. diam hole drilled in top of cell concentric with core-drilled hole. Inserts may be installed individually or in clusters of two or three inserts at each location. When installed in clusters of two or three inserts, min center to center spacing of inserts in cluster is 7-3/4 in. Spacing of inserts (or cluster of inserts) shall be not less than 4 ft transverse to steel floor unit direction and not less than 5 ft along length of steel floor unit. Required Spray-Applied Fire Resistive Materials thicknesses on floor units with inserts are:

Restrained Assembly Rating Hr	Concrete Type	Min Spray Applied Fire Resistive Mtl Thkns In.
(Type S125 R)		
1	LW or NW	3/8
1-1/2	LW or NW	1/2
2	LW or NW	5/8
3	LW or NW	1-1/4
(Type S126 R)		
1	LW or NW	1/2
1-1/2	LW or NW	11/16
2	LW or NW	13/16
3	LW or NW	1-1/4
(Type S165 B)		
1	LW or NW	3/8
1-1/2	LW or NW	3/8
2	LW or NW	1/2
3	LW or NW	1-1/8
(Type S166 B)		
1	LW or NW	1/2
1-1/2	LW or NW	11/16
2	LW or NW	13/16
3	LW or NW	1-3/8

When inserts are installed in clusters of two or three, the required thickness of Spray-Applied Fire Resistive Materials on the cellular floor unit beneath the cluster shall be the greater of the thicknesses specified for the individual fittings in the cluster.

Installed per accompanying installation instructions in 7 in. diameter hole core-drilled through concrete topping into center of top of cell of Type WDR2 or WDR3 cellular steel floor units. Spacing shall be not more than one insert in each 8 sq ft of floor area with not less than 2 ft center to center of adjacent inserts. Required Spray-Applied Fire Resistive Materials thicknesses on floor units with inserts are:

Restrained Assembly Rating Hr	Concrete Type	Min Spray Applied Fire Resistive Mtl Thkns In.
(Types TSACR, TSAR)		
1	NW	3/8
1	LW	1/2
1-1/2	NW	3/8
1-1/2	LW	3/4
2	NW	1/2
2	LW	1-1/4
3	NW	3/4

WIREMOLD CO — Type PK-Series inserts; Type FAKM-II, RAKM, RAKM-II, FPF, S36BB, S36CC, S37BB, S37CC, S36PB, S36PP, S39BB, S39CC, S38BB, S38CC, S38PP, S39PP, FPBT, FPCT, FPBTC, FPCTC, FPFFTC, FPFFT Service fittings or Type S3AXBP abandonment plate. Type NRG Bloc IV inserts; Type RAKM-II, FAKM-II, FPF, RAKM, RPF, S36BB, S36CC, S37BB, S37CC, S36PB, S36PP, S37PB, S37PP, S38CC, S39BB, S38PP, S39CC, S39BB, S38PP, S39PP, FPCTC, FPBTC, FPFFTC, FPCT, FPBT, FPFFTC, FPFFT Service fittings or Type S3AXBP abandonment plate. Type 437-Series inserts; Type S125R, S126R, S165B or S166B service fittings. After set insert Types TSACR, TSAR.

10. **Access Openings —** As required, with grommets.

11. **Metal Lath —** (Optional, not shown) — Metal lath may be used to facilitate the spray application of spray-applied resistive materials on steel bar joists and trusses. The diamond mesh 3/8 in. expanded steel lath, 1.7 to 3.4 lb per sq yd is secured to one side of each steel joist with No. 18 SWG galv steel wire at joist web and bottom chord members. Spaced 15 in. O.C. max when used. The metal lath is to be fully covered with spray-applied resistive materials with no min thickness requirements.

11A. **Non-Metallic Fabric Mesh —** (Optional, not shown) — As an alternate to metal lath, glass fiber fabric mesh, weighing approximately 2.5 oz/sq yd. Polypropylene fabric mesh, weighing approximately 1.25 oz/sq yd or equivalent, may be used to facilitate the spray application. The mesh is secured to one side of each joist web member. The method of attaching the mesh must be sufficient to hold the mesh and the spray-applied resistive materials material in place during application until it has cured. An acceptable method to attach the mesh is by embedding the mesh in minimum 1/4 in. long beads of hot melted glue. The beads of glue shall be spaced a maximum of 12 in. O.C. along the top chord of the bar joist. Another method to secure the mesh is by 1-1/4 in. long by 1/2 in. wide hairpin clips formed from No. 18 SWG or heavier steel wire.

11B. **Metal Lath —** (Not Shown) — (Required with Z-146 and Sonophone 35, otherwise optional)—Metal lath shall be 3/8 in. expanded diamond mesh, weighing 2.5 lb per sq yd. Secured to underside of steel deck with No. 12 by 3/8 in. pan head self-drilling, self-tapping screws and steel washers with an outside diam of 1/2 in. screws spaced 12 in. OC in both directions with lath edges overlapped approx 3 in.

12. **Metal Lath —** (Not Shown) — Where Type 7HD is applied to steel deck, 3/8 in. metal ribbed lath weighing 3.4 lb/yd^2 shall be secured to the underside of the steel deck (ribs upward) with S-12 by 3/8 in. long pan head, self-tapping steel screws spaced 12 in. OC in all directions. Steel screws shall be fitted with 1/2 in. diameter steel washers. Adjacent pieces of lath shall be overlapped 1 in. min.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

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6707 Riverside Drive
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REVISIONS

Δ	DATE	DESCRIPTION

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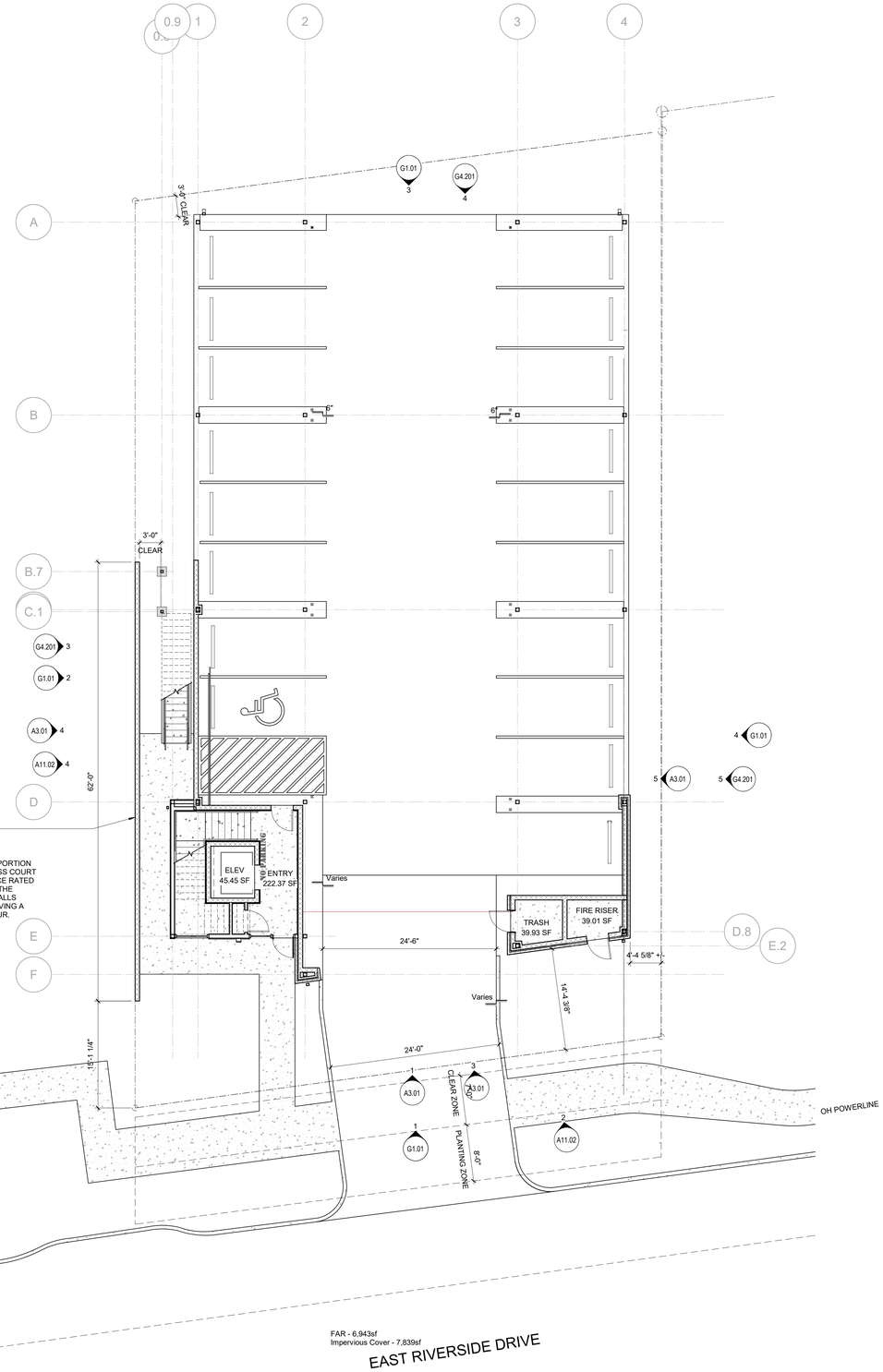

SECTION 1029 EGRESS COURTS

1029.3 CONSTRUCTION AND OPENINGS

WHERE AN EGRESS COURT SERVING A BUILDING OR PORTION THEREOF IS LESS THAN 10 FEET IN WIDTH, THE EGRESS COURT SHALL HAVE NOT LESS THAN 1-HOUR FIRE-RESISTANCE RATED CONSTRUCITON FOR A DISTANCE OF 10 FEET ABOVE THE FLOOR OF THE EGRESS COURT. OPENINGS WHITIN WALLS SHALL BE PROTECTED BY OPENING PROTECTIVES HAVING A FIRE PROTECTION RATING OF NOT LESS THAN 3/4 HOUR.

FAR - 6,943sf
Impervious Cover - 7,839sf

EAST RIVERSIDE DRIVE

1 SITE PLAN/LEVEL 1 - PARKING PLAN
SCALE: 1/8" = 1'-0"

TRUE NORTH

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

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6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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Δ	DATE	DESCRIPTION

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21066	09/27/2022

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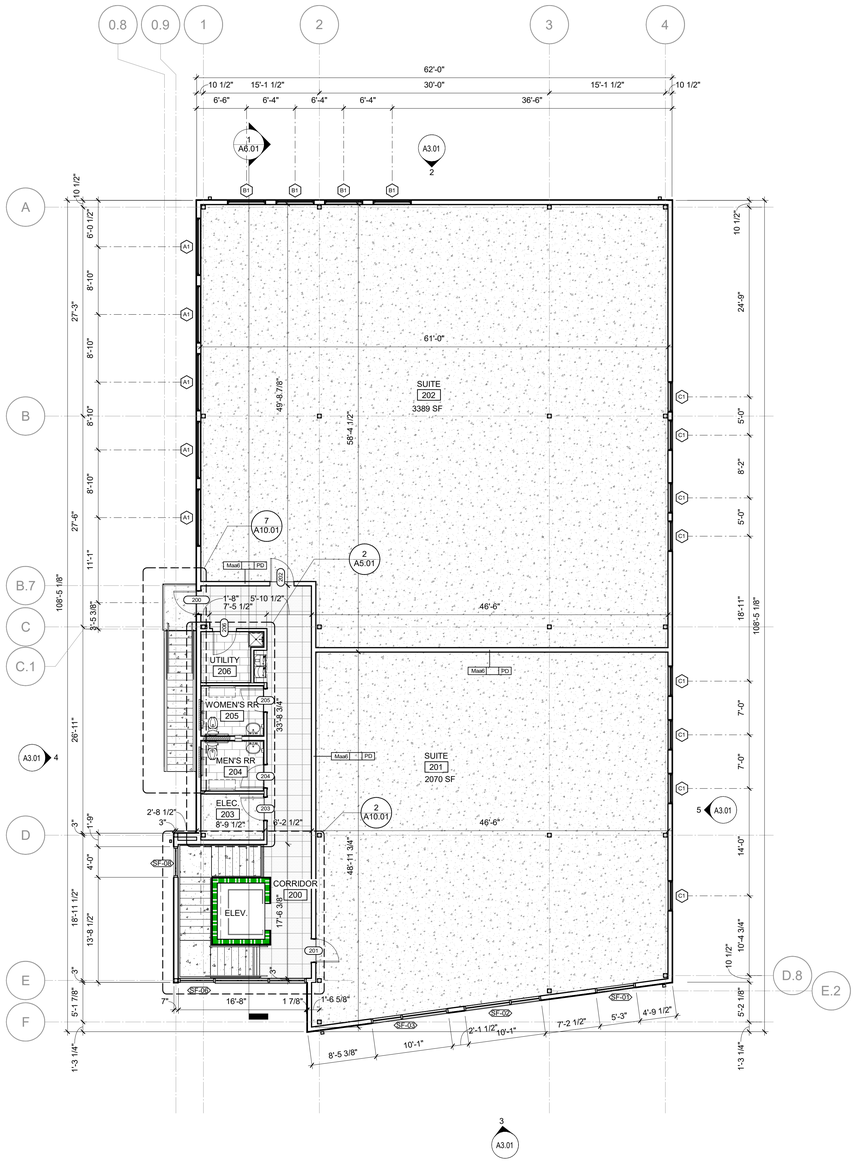
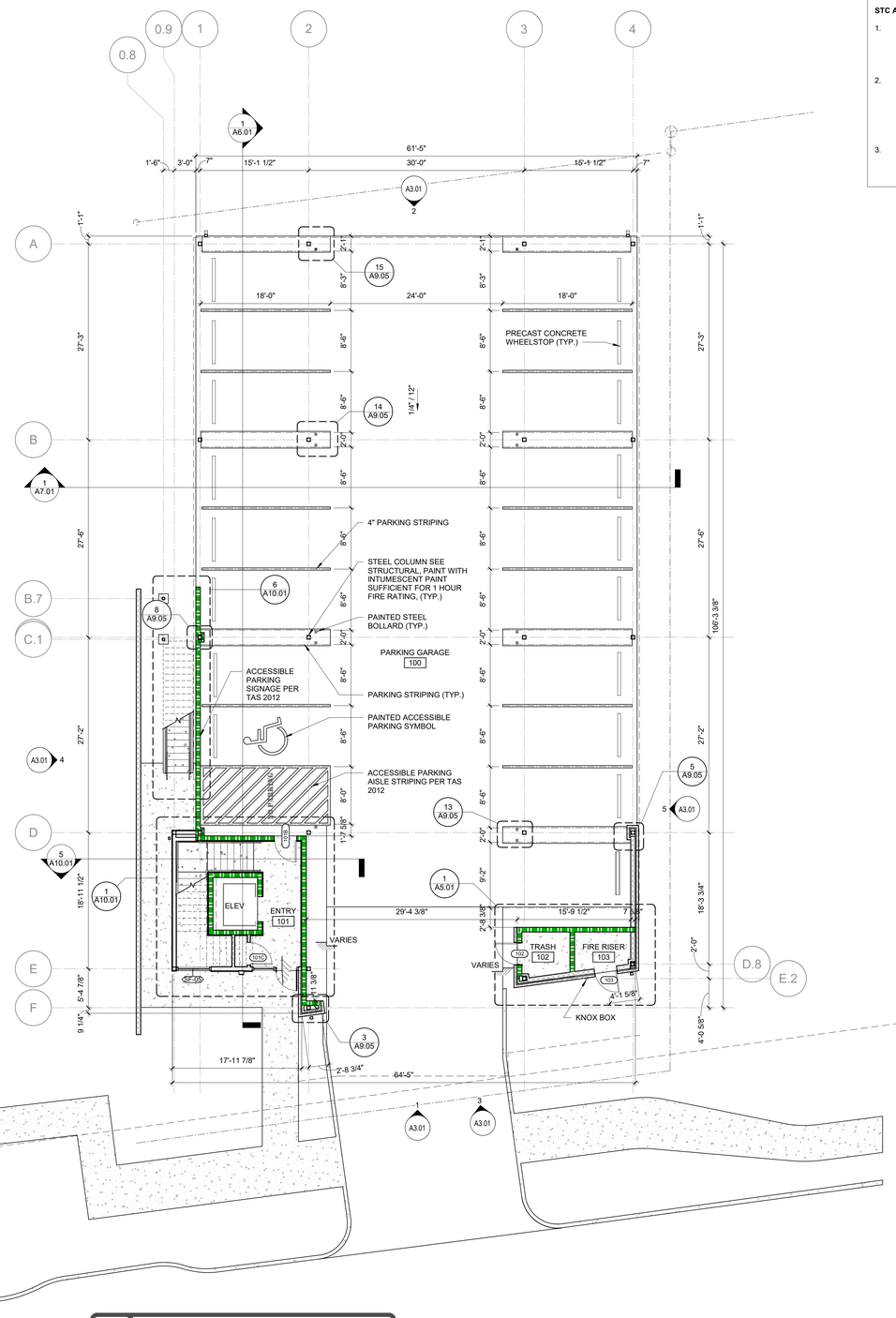
SHEET NAME:
ARCHITECTURAL SITE PLAN - OVERALL

SHEET NO:
AS1.100



2 OVERALL FLOOR PLAN - LEVEL 2
SCALE: 1/8" = 1'-0"



1 OVERALL FLOOR PLAN - LEVEL 1
SCALE: 1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

GENERAL FRAMING INFORMATION

1. ALL STUD WALLS ARE DIMENSIONED TO F.O. STUD U.N.O.
2. METAL STUD WALLS ARE DIMENSIONED 3-5/8" OR 6" U.N.O.
3. REFER TO STRUCTURAL FRAMING PLANS FOR ALL LOAD BEARING STUD SIZING AND SPACING OR AS CODE MINIMUM REQUIRES.
4. DETAILED FLOOR AND ROOF FRAMING AND DIAGRAMS ARE TO BE FURNISHED BY A STRUCTURAL ENGINEER LICENSED IN THE AHJ.
5. FRAME ALL WALLS IN AREAS WITHOUT CEILINGS TO THE UNDERSIDE OF STRUCTURE ABOVE, SO THAT THERE ARE NO GAPS THAT ALLOW NOISE OR LIGHT THRU.
6. ALL METAL STUD FRAMING THAT DOES NOT EXTEND TO THE CEILING SHALL BE BRACED AT 4'-0" O.C. TO STRUCTURE ABOVE SUCH THAT THE BRACING IS NOT VISIBLE IN AREAS WHERE THERE ARE OPEN CEILINGS.
7. SEE LIFE SAFETY PLANS FOR WALL RATINGS AND GENERAL NOTES.
8. SEE SHEET SERIES G4 FOR ACCESSIBILITY REQUIREMENTS, MINIMUM CLEARANCES, AND ACCESIBLIE REQUIRED MOUNTING HEIGHTS.
9. ALL SHAFT WALLS CONNECTING 3 STORIES OR LESS TO BE 1 HOUR RATED MINIMUM.
10. ALL SHAFT WALLS CONNECTING 4 STORIES OR GREATER TO BE 2 HOUR RATED MINIMUM.
11. PROVIDE SURFACES WITH A MAXIMUM SLOPE OF 1:48 WITHIN THE MANEAUVARING CLEARANCES OF ALL PUBLIC.
12. WOOD BLOCKING SHALL BE PROVIDED IN METAL STUD WALLS FOR TOILET ROOM ACCESSORIES, MILWORK, CASEWORK, OR ANY OTHER ITEMS THAT MUST BE ATTACHED TO THE WALLS.

STC AND IIC MINIMUM REQUIREMENTS

1. THE NOTES LISTED BELOW RELATED TO STC AND IIC MINIMUM REQUIREMENTS ARE CODE MINIMUMS THAT MUST BE APPLIED AS A MINIMUM STANDARD. WHERE THE DRAWINGS AND SPECIFICATIONS SPECIFICALLY INDICATE ENHANCEMENTS TO THESE ITEMS THAT ARE ABOVE AND BEYOND THE CODE MINIMUMS, THE DRAWINGS AND SPECIFICATIONS WILL ALWAYS GOVERN.
2. WALLS, PARTITIONS, AND FLOOR CEILING ASSEMBLIES SEPARATING DWELLING UNITS AND SLEEPING UNITS FROM EACH OTHER OR FROM PUBLIC OR SERVICE AREAS SHALL MEET OR EXCEED A SOUND TRANSMISSION CLASS OF 50. PENETRATIONS OR OPENINGS IN CONSTRUCTION ASSEMBLIES FOR PIPING, ELECTRICAL DEVICES, RECESSED CABINETS, SOFFITS, OR HEATING, VENTILATION, OR EXHAUST DUCTS SHALL BE SEALED, LINED, INSULATED OR OTHERWISE TREATED TO MAINTAIN THE REQUIRED RATINGS.
3. ALL UNIT ENTRANCE DOORS TO BE TIGHT FITTING AND SEALED TO THE FRAME AND SILL.

TRUE NORTH PROJECT NORTH

REGISTERED ARCHITECT WALTER D. PAYNE 24499 STATE OF TEXAS

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ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

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6707 Riversideland LLC
6707 Riverside Drive
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REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO. 21066 | ORIG. ISSUE 09/27/2022 | CURRENT:

SHEET NAME:
FLOOR PLAN - LEVEL 1 & LEVEL 2

SHEET NO:
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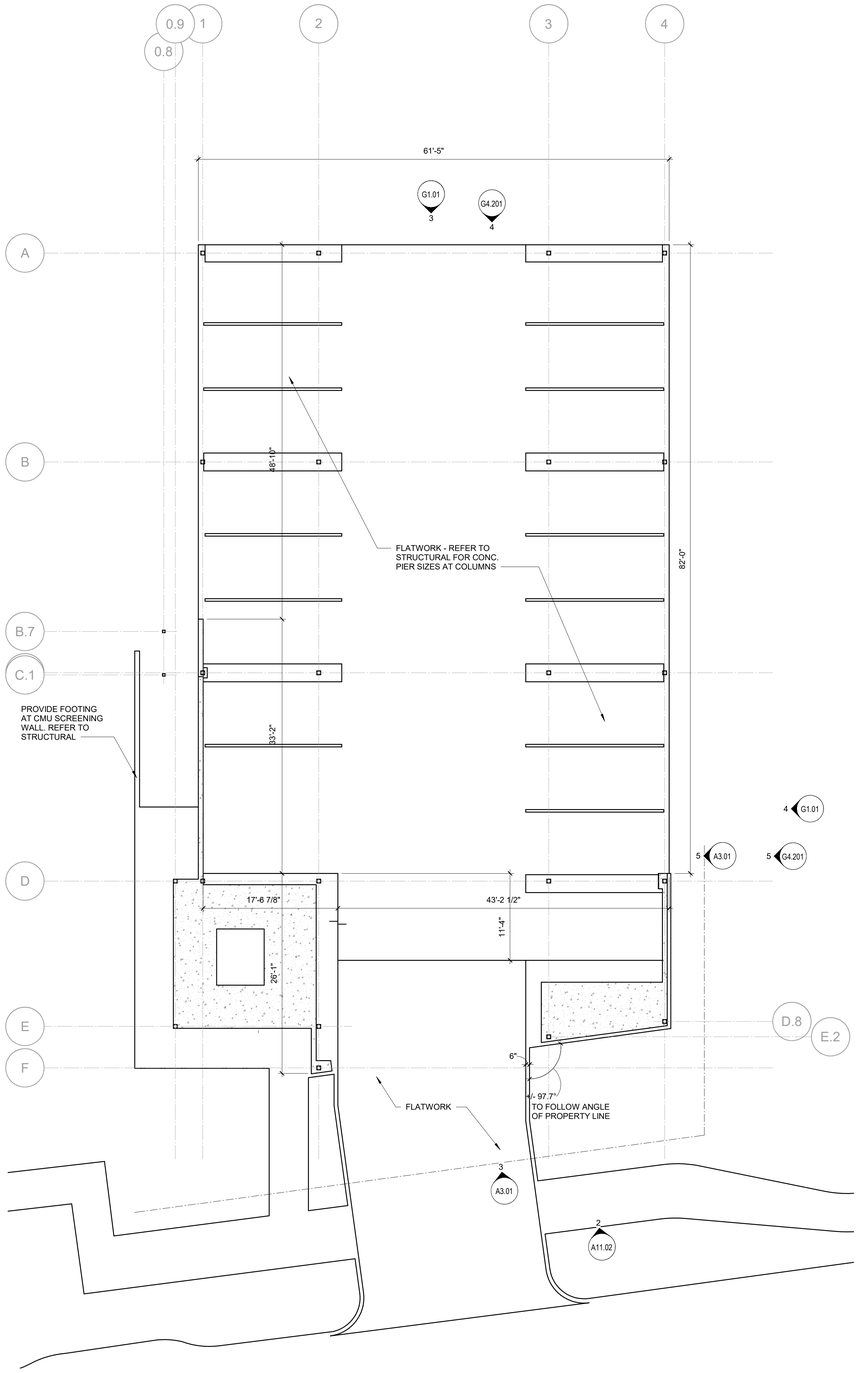
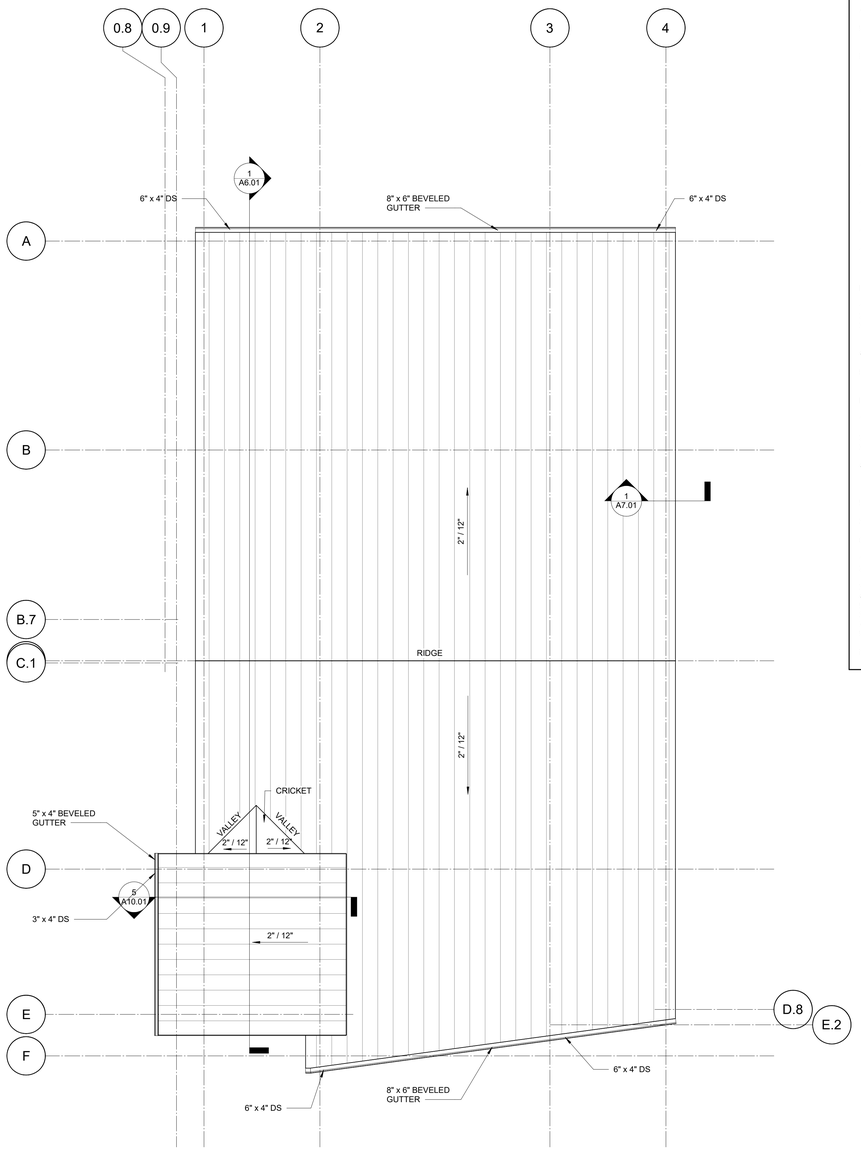


2 SLAB EDGE PLAN- LEVEL 1
SCALE: 1/8" = 1'-0"



1 ROOF PLAN
SCALE: 1/8" = 1'-0"

ROOF PLAN NOTES

GENERAL ROOF NOTES

1. SEE TYPICAL ROOF DETAIL SHEETS FOR CONDITIONS THAT MAY NOT BE KEYED ON THESE PLANS BUT STILL OCCUR AND ARE APPLICABLE TO THIS PROJECT.
2. ARROWS ON THE ROOF PLAN INDICATE WATER DRAINAGE DIRECTION.
3. "DS" INDICATES DOWN SPOUT. "RD" INDICATES ROOF DRAIN. "OD" INDICATES OVERFLOW DRAIN.
4. DETAILED ROOF TRUSS FRAMING DIAGRAMS ARE TO BE FURNISHED BY A STRUCTURAL ENGINEER LICENSED IN THE AHJ
5. FRAMING SUB-CONTRACTOR OR PANEL MANUFACTURER AND ROOF TRUSS SUPPLIER TO REVIEW CONSTRUCTION DOCUMENTS IN THEIR ENTIRETY TO ACCOMMODATE ALL FIRE RATED WALLS, PARTITIONS AND BARRIERS AS APPROPRIATE IN THEIR DESIGN. PROVIDE BLOCK OUTS FOR ROOF ACCESS HATCHES, ROOF ACCESS SPACES AND ELEVATOR SHAFTS AS INDICATED ON ARCHITECTURAL AND STRUCTURAL DRAWINGS.
6. PROVIDE POSITIVE DRAINAGE ON ALL ROOFS WHETHER OR NOT SHOWN ON THE DRAWINGS SO NO STANDING WATER REMAINS AFTER 48 HOURS
7. PRIMARY SLOPES AT ROOFS AND BALCONIES TO BE INCLUDED IN TRUSS FABRICATION. REFERENCE DETAILS FOR MORE INFORMATION.
8. IN THE ABSENCE OF A DETAIL OF ANY CONDITION ON THE ROOF, THE ROOF MANUFACTURER'S STANDARD DETAIL OR THE MOST STRINGENT NRCA/SMACNA DETAIL SHALL APPLY AS IF INCORPORATED INTO THE DRAWINGS.
9. ROOFING SUPPLIERS, MANUFACTURERS AND INSTALLERS SHALL REVIEW ALL ROOFING DETAILS AND ADVISE ARCHITECT ON ANY RECOMMENDED CHANGES. UNLESS NOTED OTHERWISE, ROOFING SUPPLIERS, MANUFACTURERS AND INSTALLERS WILL BE ASSUMED TO HAVE REVIEWED AND APPROVED THE DETAILS SHOWN.
10. PROVIDE ARCHITECT WITH ROOF DETAILS IN ACCORDANCE WITH SELECTED MANUFACTURER FOR APPROVAL IN SHOP DRAWINGS/SUBMITTALS.
11. CONTRACTOR AND ALL SUB-TRADES SHALL BE AWARE AND EXERCISE THE NECESSARY CARE TO PREVENT DAMAGE TO, OR PUNCTURE OF, THE ROOF. THIS SHALL INCLUDE ALL SHARP MATERIALS, TOOLS, MATERIAL SCRAPS OR MATERIALS HAVING A DELETERIOUS AFFECT ON THE ROOFING MATERIAL.
12. PROVIDE A 22 1/2" X 36" MIN. OPENING TO ALL ROOF ATTIC CAVITIES TO CONNECT TO THE MAIN VOLUME OF SPACE FOR ATTIC ACCESS.
13. SEPARATE DISSIMILAR METALS AS THEY OCCUR PER MANUFACTURER'S RECOMMENDATIONS. REVIEW MATERIALS AND METHODS WITH ARCHITECT.
14. UNDERLAYMENT AND INSULATION SHALL BE FASTENED W/ CORROSION RESISTANT FASTENERS PER MANUFACTURERS RECOMMENDATIONS FOR A PROJECTS GIVEN CLIMATE.
15. PRIME ALL METAL TO BE IN CONTACT WITH ROOFING MATERIALS U.N.O.
16. THE ENTIRE BUILDING ENVELOPE INCLUDING ROOF, WALLS, & FLOORS TO BE DRIED IN PRIOR TO THE STORAGE AND INSTALLATION OF INTERIOR FINISH MATERIALS.
17. OMISSION OF ANY ACCESSORY FROM THE ROOF PLAN SHALL NOT RELIEVE THE GC FROM THE RESPONSIBILITIES FOR SUCH ITEMS.
18. ROOFING SHALL BE CLASS - B OR BETTER, INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

EQUIPMENT AND PENETRATION NOTES

1. NO ROOFTOP MECHANICAL EQUIPMENT TO BE LOCATED ON THIS ROOF.
2. PROVIDE CRICKETS AT ALL ROOF CURBS AND EQUIPMENT RAILS WIDER THAN 24-INCHES.
3. LOCATIONS OF ROOF ACCESSORIES AND MATERIALS ARE SCHEMATIC IN NATURE. EXACT LOCATIONS SHALL BE DETERMINED BY INFORMATION ELSEWHERE IN THE DRAWINGS AND IN CONJUNCTION WITH CONDITIONS IN THE FIELD.
4. PROVIDE FLASHING PER MANUFACTURERS STANDARD DETAILS AT ALL PLUMBING, CONDUIT AND HVAC LINES PENETRATING THE ROOF.
5. REFER TO MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR EQUIPMENT, PIPING, CONDUITS, ETC.

METAL ROOF NOTES

1. THE ROOF MEMBRANE UNDERLAYMENT BENEATH ALL METAL ROOFS WILL BE GRACE ULTRA OR EQUAL ANY ALTERNATE WILL BE A HEAT RESISTANT MATERIAL.
2. ALL METAL ROOFS TO BE STANDING SEAM PREFINISHED ALUMINUM U.N.O
3. ALL METAL ROOFING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND STANDARD DETAILS.
4. AT LOCATIONS WITH EXPOSED DECKING UNDERNEATH PROVIDE FURRING STRIPS OR LAYER DECKING TO KEEP FASTENERS FROM PENETRATING EXPOSED T1-11 SMOOTH FINISH PLYWOOD WITH 4" O.C. PATTERN. ORIENT PATTERN FOR REVEALS TO RUN PERPENDICULAR TO EXPOSED FRAMING MEMBERS.
5. ALL TRIM AND METAL ROOF ACCESSORIES SHALL BE PROVIDED BY SAME MANUFACTURER AS THE METAL ROOFING PANELS, WITH COLOR TO MATCH U.N.O.
6. ENSURE DRIP EDGES EXTEND BELOW EXPOSED DECKING BY ½" MIN.

GUTTER AND DOWNSPOUT NOTES

1. ALL GUTTERS AND DOWNSPOUTS TO BE PREFINISHED SEAMLESS ALUMINUM.
2. WHERE GUTTERS ARE REQUIRED, LOCATE HIGH-POINT OF GUTTER AT MID-SPAN IN BETWEEN DOWNSPOUTS UNLESS INDICATED OTHERWISE ON THE ROOF PLAN.
3. SLOPE ALL GUTTERS 1/16" PER 1'-0" MIN.
4. ALL GUTTERS AT MAIN ROOF TO BE 8" X 6" BEVELED.
5. ALL DOWNSPOUTS AT MAIN ROOF TO BE 3 3/4" X 4 3/4" RECTANGULAR
6. GUTTER AT HIGH ROOF TO BE 5" X 4" BEVELED.
7. ALL DOWNSPOUTS AT HIGH ROOF TO BE 3" X 4" RECTANGULAR.
8. ALL DOWNSPOUTS TO BE PIPED TO STORM DRAINS OR PIPED TO DAYLIGHT WITH CONCRETE SPLASH BLOCKS. COORDINATE WITH CIVIL AND LANDSCAPE DRAWINGS.
9. PROVIDE BIRD SCREEN AT ALL DOWNSPOUT NOZZLE LOCATIONS ANNOTATED ON ELEVATIONS.

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

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ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
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6707 Riverside Drive
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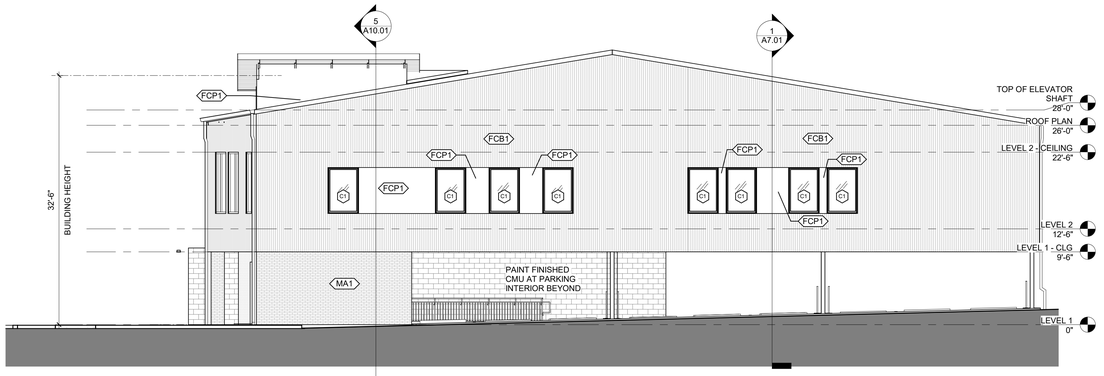
ROOF PLAN
OVERALL & SLAB
EDGE PLAN

SHEET NO:
A2.02

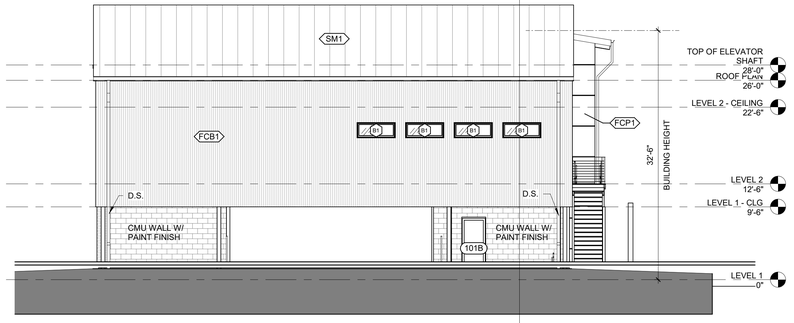
EXTERIOR FINISH MATERIAL SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	SIZE	COLOR	MOUNTING	ACCESSORIES	COMMENTS
FCB1	FIBER CEMENT VERTICAL SIDING	NICHIHA	VINTAGE WOOD SERIES	18X72X5/8	BARK			
FCP1	FIBER CEMENT PANEL	JAMES HARDIE	ARCHITETCURAL PANEL - FINE SAND	48X96	PEARL GREY		TAMLYN XTREME TRIM REVEALS	
MA1	BRICK VENEER	ACME	DTP912	4" MODULAR	OLD DENTON			
MA2	THIN STONE	ARRISCRAFT	BISCAYNE - MIDTOWN 2-1/8" SAWN					
SM1	INSULATED STANDING SEAM METAL ROOFING	AWIP	STANDING SEAM (SR2)	40" WIDTH - 4" THICKNESS				

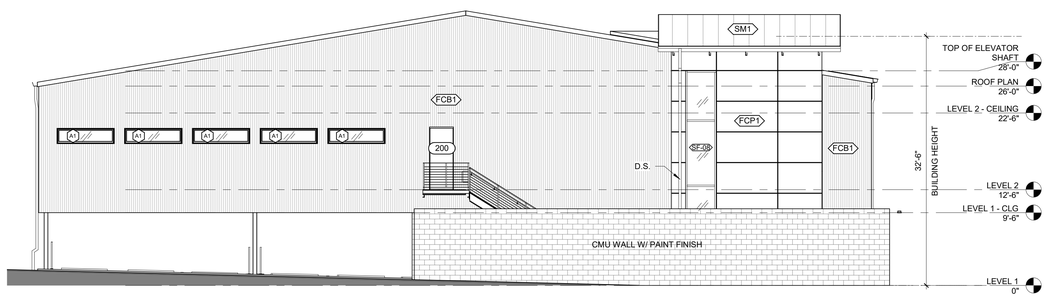
3 NORTH PARTIAL ELEVATION
SCALE: 1/8" = 1'-0"



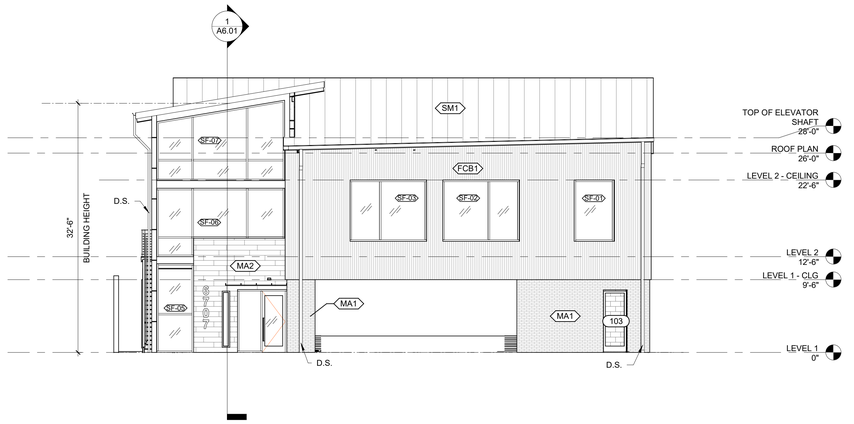
5 WEST ELEVATION
SCALE: 1/8" = 1'-0"



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



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



1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

EXTERIOR ELEVATION NOTES:

ELEVATION GENERAL NOTES

1. FOUNDATION AND GRADES ARE APPROXIMATE AND SHOWN FOR REFERENCES ONLY, SEE STRUCTURAL AND CIVIL DRAWINGS FOR MORE INFORMATION.
2. SEAL ALL PENETRATION WITH SEALANT TO MATCH ADJACENT MATERIALS.
3. SEE ROOF PLANS FOR ROOF SLOPE, DOWNSPOUT, GUTTER AND ROOF VENT INFORMATION.
4. PROVIDE QUICK FLASH BOOTS AT ALL EXTERIOR WALL PENETRATIONS.
5. PAINT ALL EXPOSED METAL THAT IS NOT SPECIFIED OR INDICATED TO RECEIVE A FACTORY FINISH.
6. REFER TO PLANS AND SCHEDULES FOR DOOR AND WINDOW TYPES AND SIZES.
7. SEE GENERAL NOTES DIVISION 9 FOR CONTROL JOINT REQUIREMENTS.
8. WHERE A COLOR IS NOT PROVIDED BY THE ARCHITECT, ALL EXPOSED FLASHING, PENETRATING ELEMENTS, AND OTHER MISCELLANEOUS EXPOSED EXTERIOR ITEMS SHALL MATCH OR BE PAINTED TO MATCH THE ADJACENT EXTERIOR SURFACES U.N.O. CONTACT ARCHITECT WITH ANY QUESTIONS OR CONCERNS.
9. AT BUILDING EXPANSION JOINTS, ALL MATERIALS MUST HAVE A START AND STOP AND A FINISHED WATERPROOF CONTROL JOINT MATERIAL IS TO BE PROVIDED.
10. PROVIDE SUBMITTAL SHOWING ALL CONTROL, EXPANSION AND DECORATIVE JOINT LOCATIONS REQUIRED BY DRAWINGS, CODE, MANUFACTURER'S RECOMMENDATIONS, SPECIFIC SPECIFICATIONS AND STANDARDS
11. PROVIDE SUBMITTAL WITH PROPOSED CONTROL, EXPANSION AND DECORATIVE JOINT DETAILS PRIOR TO PROCEEDING WITH WORK.
12. ALL EXPOSED FLASHING TO BE STAINLESS STEEL OR PREFINISHED.

BRICK

1. PROVIDE FLASHING CUT INTO BRICK WHERE ROOF, CANOPIES OR BALCONY FLASHING TERMINATES INTO BRICK WITH 4" MINIMUM COVERAGE.
2. PAINT ALL LOOSE LINTELS TO MATCH BRICK. COORDINATE PAINT COLOR WITH ARCH.

EXPOSED CMU

1. ALL EXPOSED CMU ON THE EXTERIOR THAT DOES NOT RECEIVE A CLADDING TO RECEIVE ELASTOMERIC PAINT.

EXTERIOR MATERIAL LEGEND

- MA1 — KING SIZE BRICK
- MA2 — BURNISHED CONCRETE MASONRY UNITS
- MT1 — VERTICAL STANDING SEAM METAL SIDING
- MT2 — 1/2" STEEL PLATE WINDOW FRAME
- WD1 — COMPOSITE WOOD SIDING

REGISTERED ARCHITECT WALTER D. PAYNE 24499 STATE OF TEXAS

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EXTERIOR ELEVATIONS

SHEET NO:
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RCP FINISH SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	SIZE	COLOR	MOUNTING	ACCESSORIES	COMMENTS
ACT1	ACCOUSTICAL CEILING TILE	ARMSTRONG	CORTEGA	2X2	WHITE	REF. RCP	CEILING GRID - ARMSTRONG PRELUDE XL 15/16" - COLOR - WHITE	
ACT2	ACCOUSTICAL CEILING TILE	ARMSTRONG	ARMATUFF	2X2	WHITE	REF. RCP	CEILING GRID - ARMSTRONG PRELUDE XL 15/16" - COLOR - WHITE	
ASP	ALUMINUM SOFFIT PANEL	KNOTWOOD	KEC150	6" SOFFIT/CLADDING PANEL (ST)	EASTERN MAHOGANY			
PT10	PAINTED GYP. BD.	SHERWIN WILLIAMS			SW 7005 PURE WHITE			SEMI-GLOSS

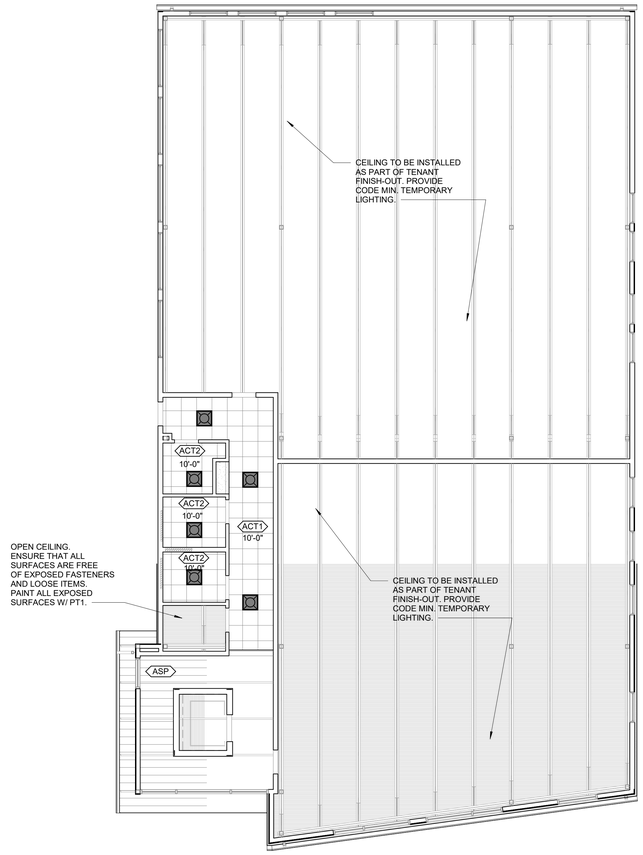
REFLECTED CEILING PLAN NOTES:

GENERAL RCP NOTES

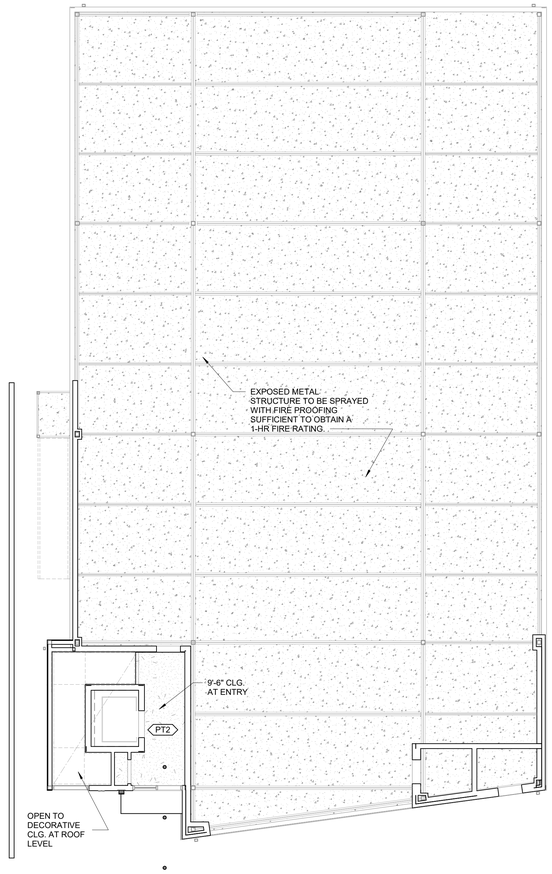
1. NOTIFY ARCHITECT IMMEDIATELY OF CONFLICTS DISCOVERED ON SITE BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS. OBTAIN CLARIFICATION OR RESOLUTION OF CONFLICTS PRIOR TO PROCEEDING WITH WORK IN QUESTION.
2. REFER TO LIGHTING, POWER AND COMMUNICATIONS GENERAL NOTES FOR INFORMATION PERTAINING TO LIGHTING.
3. REFER TO MECHANICAL GENERAL NOTES FOR INFORMATION PERTAINING TO HVAC DEVICES IN THE CEILING.
4. REFER TO PLUMBING AND FIRE PROTECTION GENERAL NOTES FOR INFORMATION PERTAINING TO FIRE SPRINKLER SYSTEMS. CENTER SPRINKLER HEADS IN CEILING TILES U.N.O.
5. LOCATIONS OF LIGHT FIXTURES, HVAC DEVICES AND OTHER CEILING-MOUNTED ELEMENTS ON ARCHITECTURAL REFLECTED CEILING PLANS TAKE PRECEDENCE OVER LOCATIONS SHOWN ON M.E.P. DRAWINGS.
6. CEILING AND SOFFIT HEIGHTS ARE NOTED ON THE REFLECTED CEILING PLANS. ALL SOFFITS WITHIN A SINGLE ROOM ARE THE SAME HEIGHT, TYP., UNLESS NOTED OTHERWISE.
7. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL NOTES, IF APPLICABLE.
8. ALL VERTICAL FACES AND UNDERSIDE OF BULKHEADS TO BE PAINTED TO MATCH CEILING, U.N.O.
9. DIMENSIONS OF FIXTURES, DEVICES, ETC. ARE TO CENTERLINE OF FIXTURE, U.N.O. WHERE ITEMS ARE IN LINE, CENTERLINE OF ITEMS OR GROUP OF ITEMS TO ALIGN, U.N.O.
10. CONTRACTOR TO LOCATE SPRINKLERS AS REQUIRED FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL BUILDING/FIRE CODES.
11. AT ARCHITECTURALLY EXPOSED OPEN STRUCTURE CEILINGS, ALL MECHANICAL DUCTWORK, SPRINKLER PIPES, ETC. TO BE PAINTED A SINGLE COLOR U.N.O.

GYPSUM CEILING NOTES

1. PAINT ALL GYPSUM BOARD CEILINGS AND SOFFITS AS SCHEDULED WITH FLAT FINISH. REFER TO FINISH PLANS FOR ADDITIONAL INFORMATION.
2. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, PROVIDE CONTROL JOINTS IN GYPSUM BOARD SURFACES IN ACCORDANCE WITH ASTM C 840
3. IF ACCESS PANELS ARE REQUIRED, PROVIDE FLUSH DRYWALL TYPE ACCESS PANELS WITH CONCEALED FRAME AT ALL NON-RATED LOCATIONS. PAINT TO MATCH THE SURFACES ON WHICH THEY OCCUR.



2 **RCP - LEVEL 2**
SCALE: 1/8" = 1'-0"



1 **RCP - LEVEL 1**
SCALE: 1/8" = 1'-0"

TRUE NORTH PROJECT NORTH

REGISTERED ARCHITECT WALTER D. PAYNE 24499 STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

ISSUED FOR PERMIT

6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO.	ORIG. ISSUE
21066	09/27/2022

CURRENT:

SHEET NAME:
REFLECTED CEILING PLANS - LEVEL 1 & LEVEL 2

SHEET NO:
A4.01

INTERIOR FINISH METARIAL SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	FINSIH	SIZE	COLOR	ACCESSORIES	COMMENTS
T-1	WALL TILE	DALTILE	WANDERWISE		6X24	SWAN PLANK WW01	SCHLUTER BRUSH ALUMINUM TRIMS AT ALL INTERSECTIONS AND EDGES.	
T-2	FLOOR TILE	DALTILE	WANDERWISE		12X24	ROAM WW03	SCHLUTER BRUSH ALUMINUM TRIMS AT ALL INTERSECTIONS AND EDGES.	
CPT-1	CARPET TILE	INTERFACE	AERIAL COLLECTION AE310			104627 SMOKE		
PT-1	PAINT	SHERWIN WILLIAMS		EGG SHELL		PURE WHITE SW 7005		ALL FINISHED WALLS TO BE PAIINTED PT-1 UNLESS NOTED OTHERWISE
PT-2	PAINT	SHERWIN WILLIAMS		SEMI-GLOSS		PURE WHITE SW 7005		
RT-1	RUBBER STAIR TREAD	ROPPE	#93 TEXTURED DESIGN			123 CHARCOAL		INSTALL AT INTERIOR STAIR
VB-1	VINYL BASE	ROPPE	STANDARD TOE BASE 5/8"			123 CHARCOAL		INSTALL VB-1 AT ALL WALLS WIHTOUT WALL TILE.

GENERAL NOTES - ELEVATIONS

1. ALL WALLS TO BE PC-1 U.N.O.
2. ALL CEILINGS TO BE PC-2 U.N.O
3. ALL WALL BASES TO BE WB-1 U.N.O.
4. SEE APPLIANCE, EQUIPMENT & PLUMBING ON SHEET ID8.20
5. SEE FINISH & LIGHTING SCHEDULE ON SHEET ID8.21
6. SEE ALL TYPICAL MOUNTING HEIGHTS & DIMENSIONS FOR EQUIPMENT ON ID0.31 & ID0.32

LEGEND - ELEVATIONS

- PT-2 — FINISH TAG
- SP — FINISH STARTING POINT
- A-1 — APPLIANCE TAG
- E-1 — EQUIPMENT TAG
- P-1 — PLUMBING TAG
- L-1 — LIGHTING FIXTURE TAG

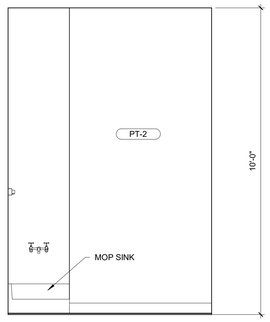
TYPICAL FINISH ABBREVIATIONS

CG	CORNER GUARD
CON	CONCRETE
CPT	CARPET
GF	GLASS FILM
GL	GLASS
GM	GLASS MARKERBOARD
LVT	LUXURY VINYL TILE
MR	MIRROR
MTL	METAL
MWK	MILLWORK
PL	PLASTIC LAMINATE
RF	RESILIENT FLOOR
SS	SOLID SURFACE
ST	STONE
T	TILE
TB	TILE BASE
UPH	UPHOLSTERY
VCT	VINYL COMPOSITION TILE
WB	WALL BASE
WC	WALL COVERING
WD	WOOD
WF	WOOD FLOOR
WIN	WINDOW FILM
WT	WALL TREATMENT

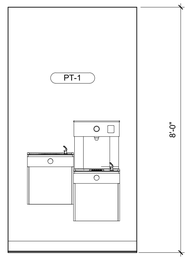
EQUIPMENT LEGEND

- E-1 TOILET TISSUE HOLDER
- E-2 SANITARY NAPKIN DISP.
- E-3 GRAB BAR - 36"
- E-4 GRAB BAR - 42"
- E-5 MIRROR
- E-6 TOWEL / WASTE DISP.
- E-7 SOAP DISPENSER
- E-8 DIAPER CHANGING

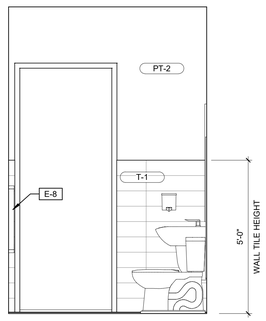
1. ALL ACCESSORIES TO BE INSTALLED WITHIN REACH RANGES.
2. ALL ACCESSORIES TO BE MOUNTED INTO DRYWALL SHEATHING WITH DRYWALL ANCHORS. U.N.O.
3. SEE ELEVATIONS FOR LOCATIONS.
4. SEE EQUIPMENT SCHEDULE & SPECIFICATIONS FOR MORE INFO.



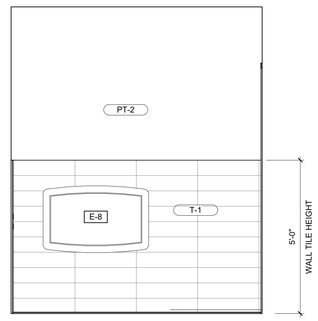
12 206 UTILITY SINK
SCALE: 1/2" = 1'-0"



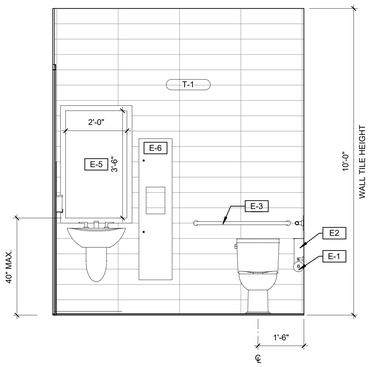
11 200 DRINKING FOUNTAINS
SCALE: 1/2" = 1'-0"



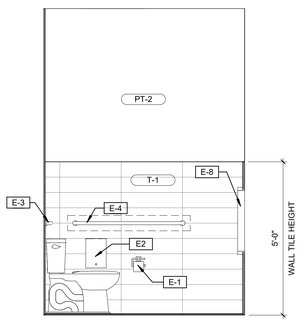
10 205 WOMEN'S RR WEST
SCALE: 1/2" = 1'-0"



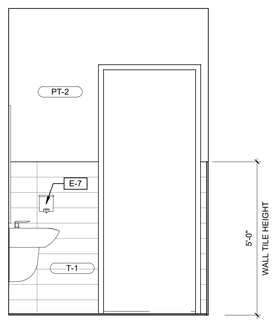
9 205 WOMEN'S RR SOUTH
SCALE: 1/2" = 1'-0"



8 205 WOMEN'S RR NORTH
SCALE: 1/2" = 1'-0"



7 205 WOMEN'S RR EAST
SCALE: 1/2" = 1'-0"



6 204 MEN'S RR WEST
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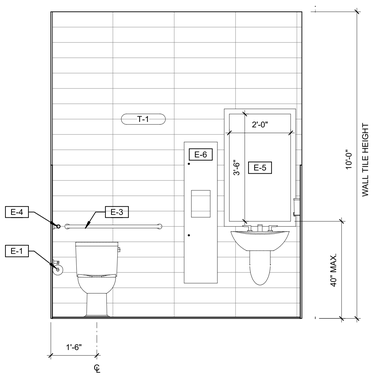
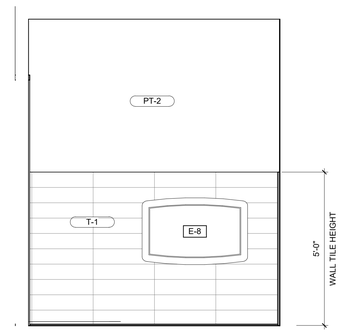
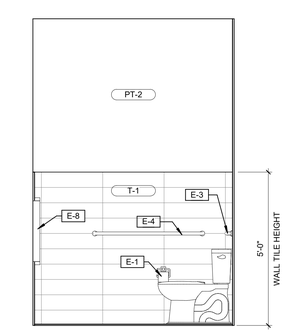


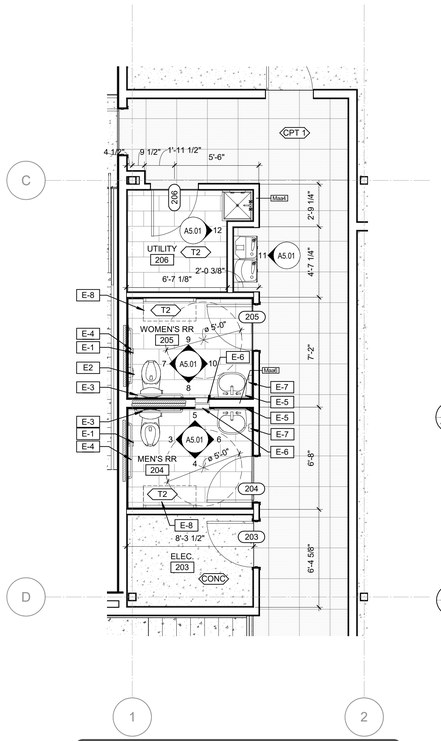
5 204 MEN'S RR SOUTH
SCALE: 1/2" = 1'-0"



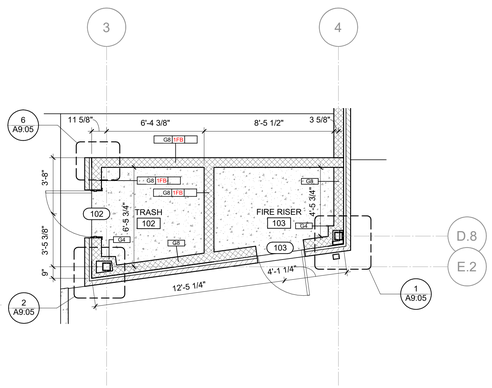
4 204 MEN'S RR NORTH
SCALE: 1/2" = 1'-0"



3 204 MEN'S RR EAST
SCALE: 1/2" = 1'-0"



2 LEVEL 2 - ENLARGED RESTROOM PLANS
SCALE: 1/4" = 1'-0"



1 LEVEL 1 - ENLARGED FIRE RISER ROOM
SCALE: 1/4" = 1'-0"

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

REGISTERED ARCHITECT WALTER D. PAYNE 24499 STATE OF TEXAS

ISSUED FOR PERMIT

6707 Riverside
6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

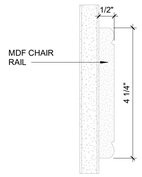
Δ	DATE	DESCRIPTION

PROJ. NO. 21066 | ORIG. ISSUE 09/27/2022 | CURRENT:

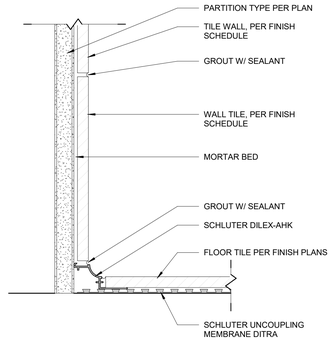
SHEET NAME:
ENLARGED PLANS AND INTERIOR ELEVATIONS

SHEET NO:
A5.01

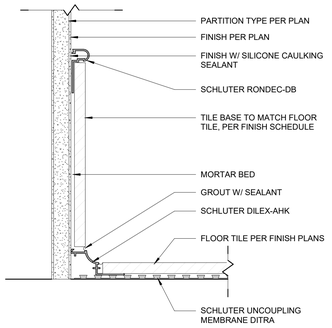
NOTE: THE DETAILS REPRESENTED ON THIS SHEET REPRESENT THE PROJECT STANDARD AND EXPECTATIONS FOR THE ASSEMBLY OF SYSTEMS, WATERPROOFING, FLASHING, SEALANTS, AND INSTALLATION REQUIREMENTS FOR THE VARIOUS EXTERIOR ENVELOPE OF THE BUILDING, SUBJECT TO MANUFACTURER INSTRUCTIONS AND COMPATIBILITY OF PRODUCTS. ISOLATED CONDITIONS NOT DETAILED WILL BE REQUIRED TO BE TREATED TO THE SAME STANDARD AS THESE PRECEDENTS, INCLUDING ANY THRU WALL FLASHING SYSTEMS NECESSARY FOR DRAINAGE, PRIMARY AND SECONDARY SEALANTS, LIQUID FLASHINGS TO CONFORM TO BUILDING GEOMETRY, ETC...



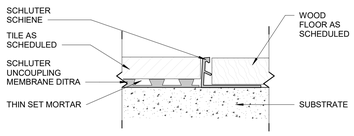
23 MOLDING - SECTION DETAIL - TYPE 1
SCALE: 6" = 1'-0"



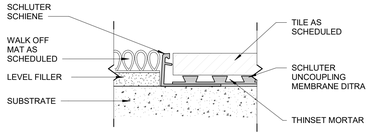
22 TILE BASE @ TILE WALL - SECTION DETAIL
SCALE: 6" = 1'-0"



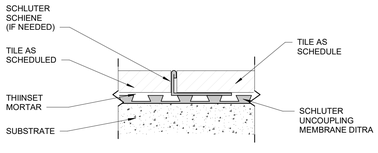
21 TILE BASE - SECTION DETAIL
SCALE: 6" = 1'-0"



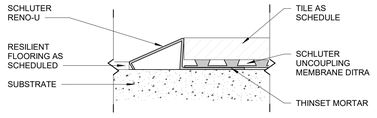
19 FLOOR TRANSITION - TILE TO WOOD - SECTION DETAIL
SCALE: 12" = 1'-0"



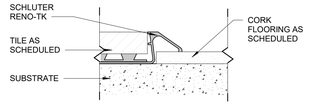
18 FLOOR TRANSITION - TILE TO WALK-OFF MAT - SECTION DETAIL
SCALE: 12" = 1'-0"



17 FLOOR TRANSITION - TILE TO TILE - SECTION DETAIL
SCALE: 12" = 1'-0"

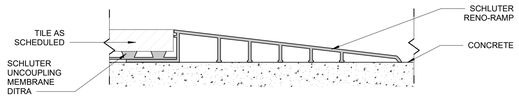


16 FLOOR TRANSITION - TILE TO RESILIENT FLOORING - SECTION DETAIL
SCALE: 12" = 1'-0"



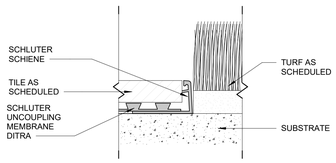
15 FLOOR TRANSITION - TILE TO CORK FLOORING - SECTION DETAIL
SCALE: 12" = 1'-0"

NOTE: CHANGE OF LEVEL SHALL BE 1/4" MAX VERTICAL, 1/2" OR LESS SHALL BE BEVELLED 1:2 AND GREATER THAN 1/2" SHALL BESLOPED 1:12. HEIGHT OF TRANSITION ONLY TO COME UP TO THE THICKNESS OF THE BACKING

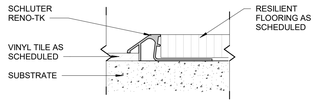


14 FLOOR TRANSITION - TILE TO CONCRETE - SECTION DETAIL
SCALE: 12" = 1'-0"

NOTE: HEIGHT OF TRANSITION ONLY TO COME UP TO THE THICKNESS OF THE BACKING OF TURF

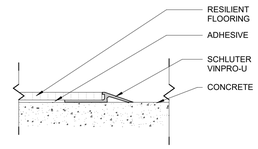


13 FLOOR TRANSITION - TILE TO ASTRO TURF - SECTION DETAIL
SCALE: 12" = 1'-0"

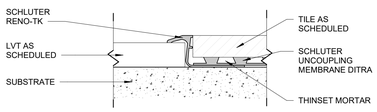


12 FLOOR TRANSITION - RESILIENT FLOORING TO VCT- SECTION DETAIL
SCALE: 12" = 1'-0"

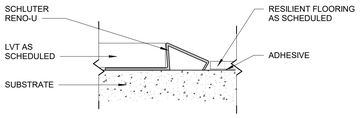
NOTE: CHANGE OF LEVEL SHALL BE 1/4" MAX VERTICAL, 1/2" OR LESS SHALL BE BEVELLED 1:2 AND GREATER THAN 1/2" SHALL BESLOPED 1:12.



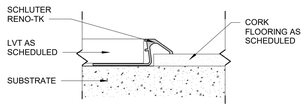
11 FLOOR TRANSITION - RESILIENT FLOORING TO CONCRETE - SECTION DETAIL
SCALE: 1" = 1"



10 FLOOR TRANSITION - LVT TO TILE - SECTION DETAIL
SCALE: 12" = 1'-0"

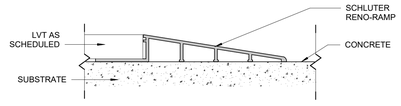


9 FLOOR TRANSITION - LVT TO RESILIENT FLOORING - SECTION DETAIL
SCALE: 12" = 1'-0"

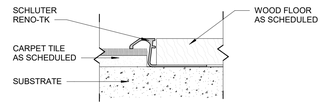


8 FLOOR TRANSITION - LVT TO CORK FLOORING - SECTION DETAIL
SCALE: 12" = 1'-0"

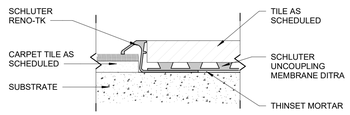
NOTE: CHANGE OF LEVEL SHALL BE 1/4" MAX VERTICAL, 1/2" OR LESS SHALL BE BEVELLED 1:2 AND GREATER THAN 1/2" SHALL BESLOPED 1:12. HEIGHT OF TRANSITION ONLY TO COME UP TO THE THICKNESS OF THE BACKING



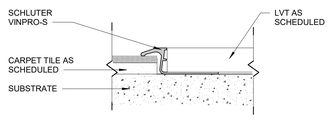
7 FLOOR TRANSITION - LVT TO CONCRETE - SECTION DETAIL
SCALE: 12" = 1'-0"



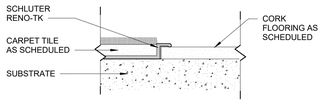
6 FLOOR TRANSITION - CARPET TILE TO WOOD - SECTION DETAIL
SCALE: 12" = 1'-0"



5 FLOOR TRANSITION - CARPET TILE TO TILE - SECTION DETAIL
SCALE: 12" = 1'-0"

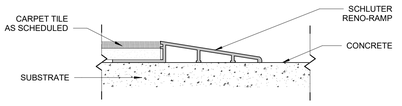


4 FLOOR TRANSITION - CARPET TILE TO LVT - SECTION DETAIL
SCALE: 12" = 1'-0"

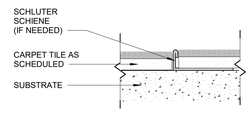


3 FLOOR TRANSITION - CARPET TILE TO CORK FLOORING - SECTION DETAIL
SCALE: 12" = 1'-0"

NOTE: CHANGE OF LEVEL SHALL BE 1/4" MAX VERTICAL, 1/2" OR LESS SHALL BE BEVELLED 1:2 AND GREATER THAN 1/2" SHALL BESLOPED 1:12. HEIGHT OF TRANSITION ONLY TO COME UP TO THE THICKNESS OF THE BACKING



2 FLOOR TRANSITION - CARPET TILE TO CONCRETE - SECTION DETAIL
SCALE: 12" = 1'-0"



1 FLOOR TRANSITION - CARPET TILE TO CARPET TILE - SECTION DETAIL
SCALE: 12" = 1'-0"

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

ISSUED FOR PERMIT

6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO.	ORIG. ISSUE
21066	09/27/2022

CURRENT:

SHEET NAME:
TYPICAL INTERIOR DETAILS - FLOOR TRANSITIONS & BASE

SHEET NO:
A5.02

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ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5da-i.com

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6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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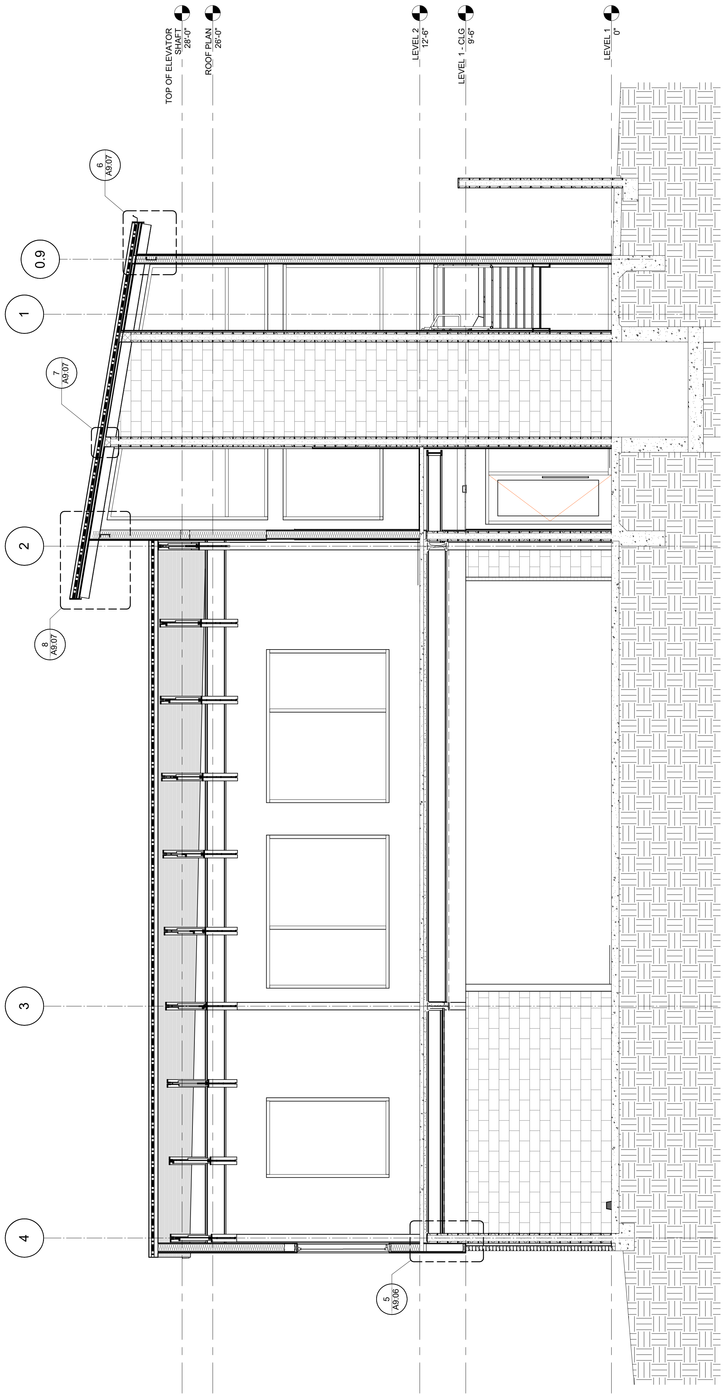
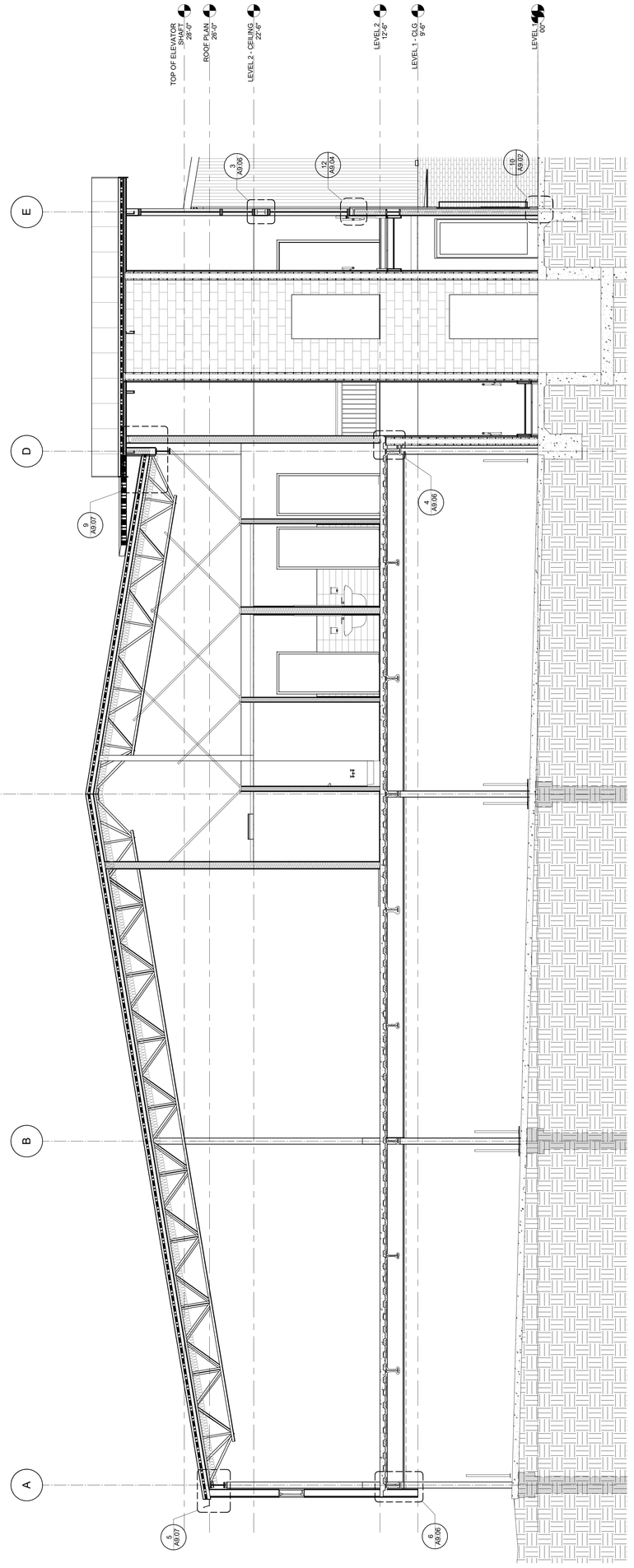
SHEET NAME: BUILDING SECTIONS

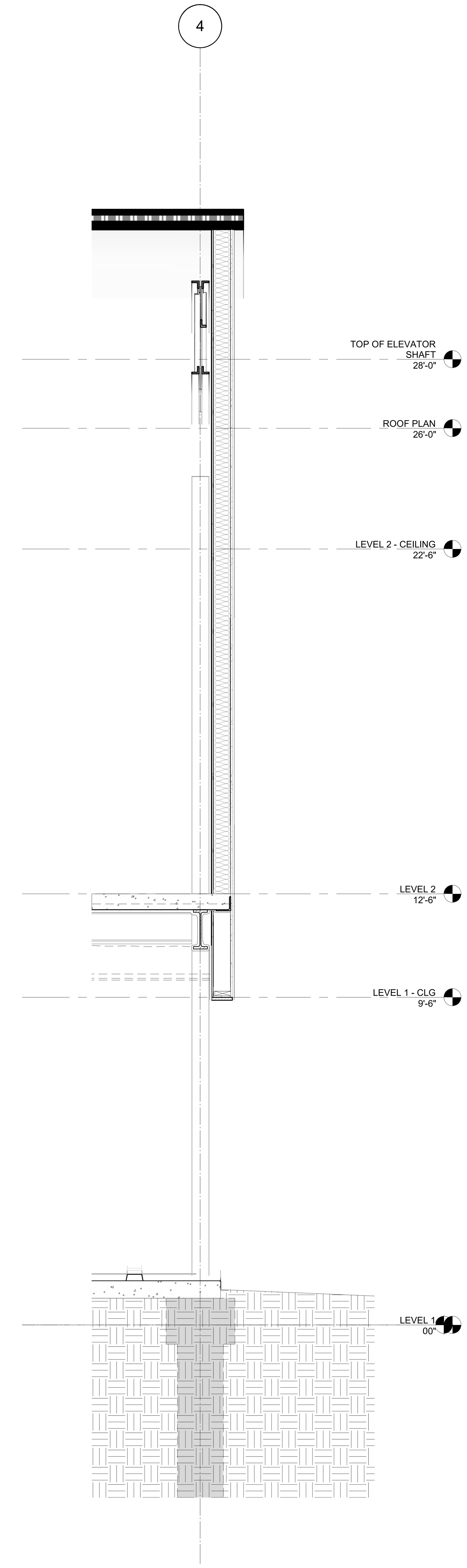
SHEET NO: A6.01



2 SUITE 201 SECTION
SCALE: 1/4" = 1'-0"



1 NORTH/SOUTH SECTION1
SCALE: 1/4" = 1'-0"



REGISTERED ARCHITECT
WALTER D. FRITTS
24489
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5da-i.com

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6707 Riverside Drive
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SHEET NAME:
EXTERIOR WALL SECTIONS

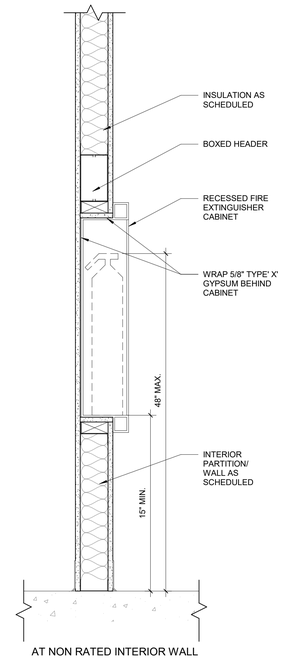
SHEET NO:
A7.01

PENETRATION NOTES

1. THROUGH WALL PENETRATIONS DETAILED BELOW ARE CONSIDERED TYPICAL AND ARE ACCEPTABLE OPTOINS.
2. CONDITIONS BELOW DO NOT NECESSARILY REPRESENT ALL CONDITIONS ON THE PROJECT.
3. WHERE PENETRATIONS ARE REQUIRED BUT NO DETAIL IS PROVIDED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL PENETRATIONS ARE IN ACCORDANCE WITH THE BUILDING CODE AND UL ASSEMBLY REQUIREMENTS
4. ALTERNATIVE DESIGNS ARE ACCEPTABLE AS LONG AS THEY MEET THE REQUIREMENTS OF THE BUILDING CODE.
5. SUBMIT PRODUCT INFORMATION AND UL ASSEMBLY DATA FOR ALL RATED PENETRATIONS TO BOTH THE ARCHITECT AND AHJ.
6. REFERENCE CURRENT UL JOINT SYSTEMS DIRECTORY FOR ALL GENERAL INFORMATION, MATERIAL DESIGNATIONS, THICKNESS AND FIRE RATINGS.

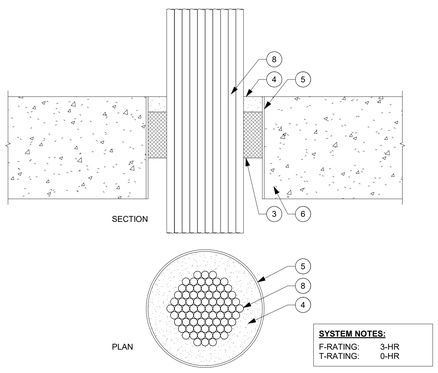
DETAIL NOTES - THROUGH SLAB PENETRATIONS - J2134 R1

1	5/8" THICK USG SHEETROCK® BRAND FIRECODE® X PANELS
2	Z-CLIPS
3	MINERAL WOOL
4	USG SHEETROCK® BRAND FIRECODE® COMPOUND, 1" [25] MIN. THICKNESS
5	OPTIONAL METALLIC SLEEVE
6	FLOOR ASSEMBLY
7	USG SHEETROCK® BRAND ACOUSTICAL OR SMOKE-SOUND SEALANT, MIN. THICKNESS PER UL C-AJ-1020
8	THROUGH PENETRATION
9	2" THICK MINERAL WOOL, COVERING CURTAIN WALL CONNECTIONS
10	EXTERIOR WALL SPANDREL PANEL (HEAT STENGHTENED GLASS CW-S-2001 OR ALUMINUM PANELS CW-S-2002)
11	SPANDREL PANEL SUPPORT
12	2" THICK FOIL-FACED OR UNFACED MINERAL WOOL, PINNED TO SPANDREL ANGLES
13	5/8" USG SHEETROCK® BRAND GLASS-MAT OR USG DUROCK® BRAND CEMENT BOARD PANELS
14	EXTERIOR WALL SYSTEM
15	3" THICK FOIL-FACED THERMAFIBER FIRESPAN INSULATION. FRICTION FIT
16	STEEL STRUT
17	MIN. 3 5/8" 20-GAUGE STEEL STUDS



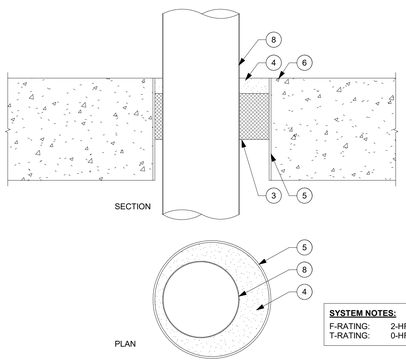
AT NON RATED INTERIOR WALL

5 FIRE EXTINGUISHER CABINET SECTIONS
SCALE: NTS



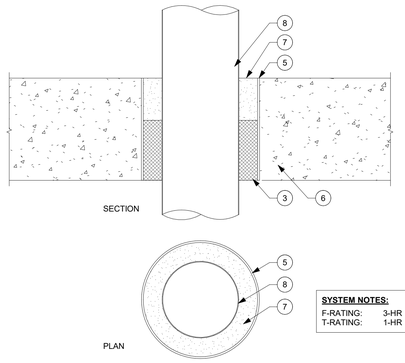
SYSTEM NOTES:
F-RATING: 3-HR
T-RATING: 0-HR

4 TSP-04 - SYSTEM NO. C-A-J-3045
SCALE: 3" = 1'-0"



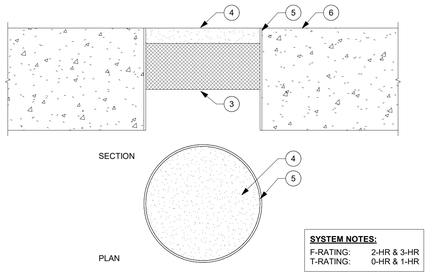
SYSTEM NOTES:
F-RATING: 2-HR & 3-HR
T-RATING: 0-HR

3 TSP-03 - SYSTEM NO. C-A-J-1081
SCALE: 3" = 1'-0"



SYSTEM NOTES:
F-RATING: 3-HR
T-RATING: 1-HR

2 TSP-02 - SYSTEM NO. C-A-J-1020
SCALE: 3" = 1'-0"



SYSTEM NOTES:
F-RATING: 2-HR & 3-HR
T-RATING: 0-HR & 1-HR

1 TSP-01 - SYSTEM NO. C-A-J-0032
SCALE: 3" = 1'-0"

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

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ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
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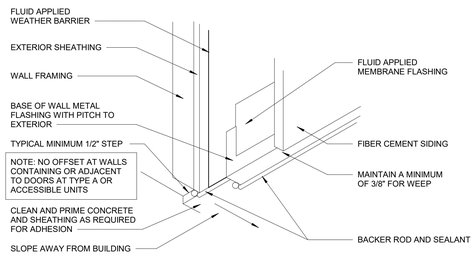
ORIG. ISSUE 09/27/2022
CURRENT:

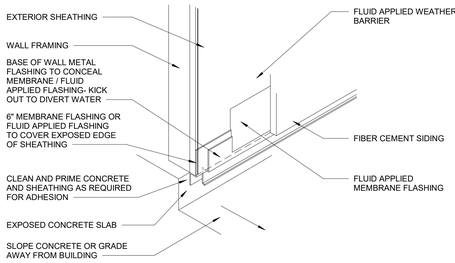
SHEET NAME:
TYPICAL PENETRATIONS

SHEET NO:
A9.01

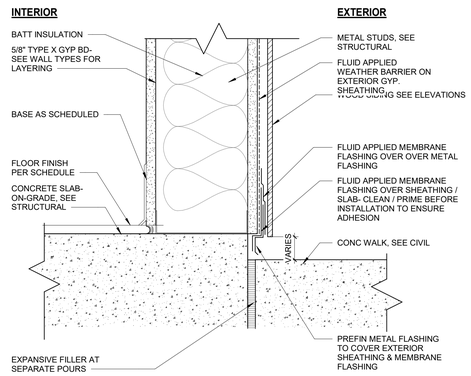
NOTE: THE DETAILS REPRESENTED ON THIS SHEET REPRESENT THE PROJECT STANDARD AND EXPECTATIONS FOR THE ASSEMBLY OF SYSTEMS, WATERPROOFING, FLASHING, SEALANTS, AND INSTALLATION REQUIREMENTS FOR THE VARIOUS EXTERIOR ENVELOPE OF THE BUILDING, SUBJECT TO MANUFACTURER INSTRUCTIONS AND COMPATIBILITY OF PRODUCTS. ISOLATED CONDITIONS NOT DETAILED WILL BE REQUIRED TO BE TREATED TO THE SAME STANDARD AS THESE PRECEDENTS, INCLUDING ANY THRU WALL FLASHING SYSTEMS NECESSARY FOR DRAINAGE, PRIMARY AND SECONDARY SEALANTS, LIQUID FLASHINGS TO CONFORM TO BUILDING GEOMETRY, ETC...



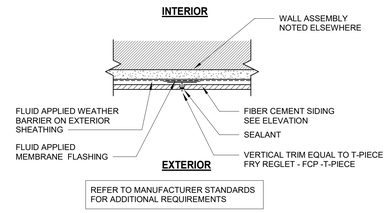
12 TYPICAL FC FLASHING AT EXTERIOR WALL AT PATIOS
SCALE: NTS



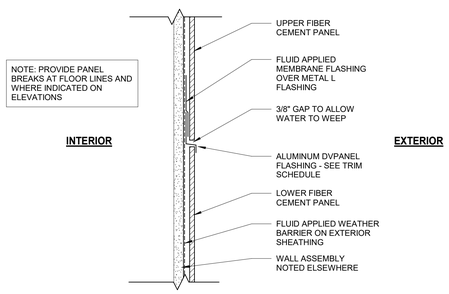
11 TYPICAL FC FLASHING AT BASE OF EXTERIOR WALLS
SCALE: NTS



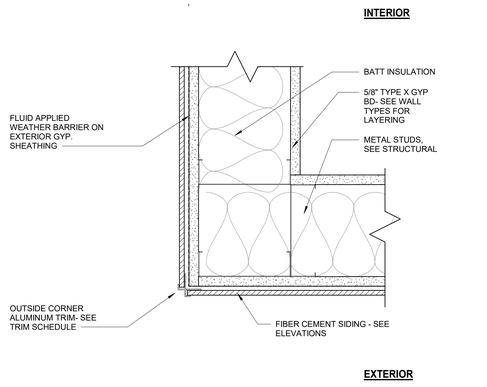
10 TYPCIAL FC B&B / PANEL @ SIDEWALK NO BASE
SCALE: NTS



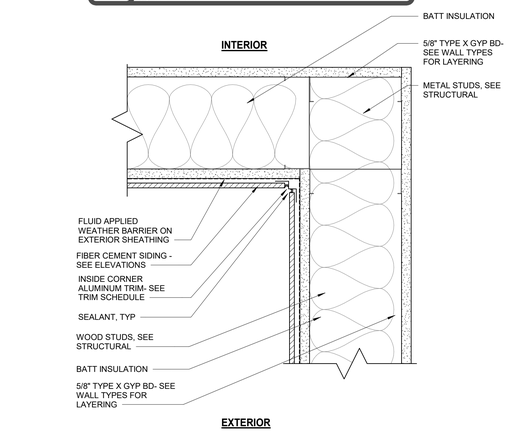
9 TYPICAL VERTICAL REVEAL AT FC PANEL SIDING
SCALE: NTS



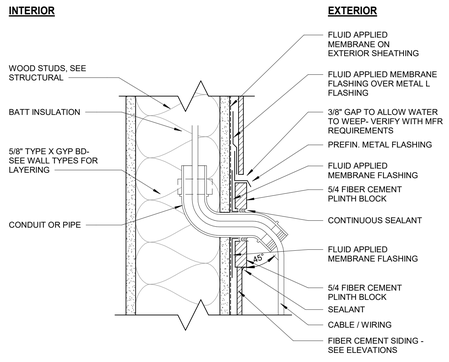
8 TYPICAL HORIZ PANEL JOINT AT FC PANELS
SCALE: NTS



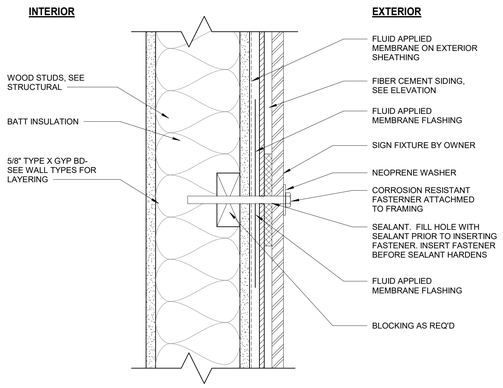
6 TYPICAL OUTSIDE CORNER FIBER CEMENT
SCALE: NTS



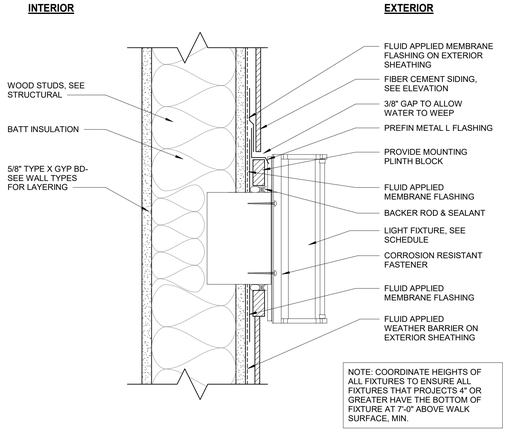
5 TYPICAL INSIDE CORNER FIBER CEMENT
SCALE: NTS



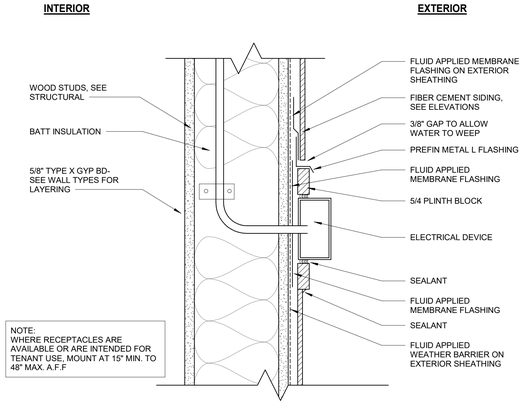
4 TYPICAL SLEEVE PENETRATION @ EXT FC WALL
SCALE: NTS



3 TYPICAL SIGN ATTACHMENT @ FC SIDING
SCALE: NTS



2 TYPICAL ELEC FIXTURE @ EXT FC WALL
SCALE: NTS



1 TYPICAL ELEC PENETRATION @ EXT FC WALL
SCALE: NTS

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ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
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6707 Riversideland LLC
6707 Riverside Drive
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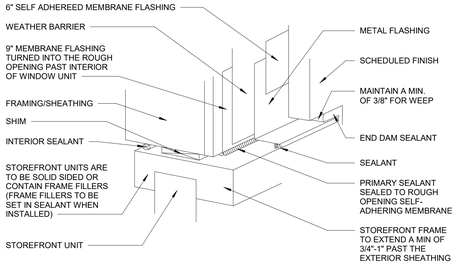
21066	09/27/2022

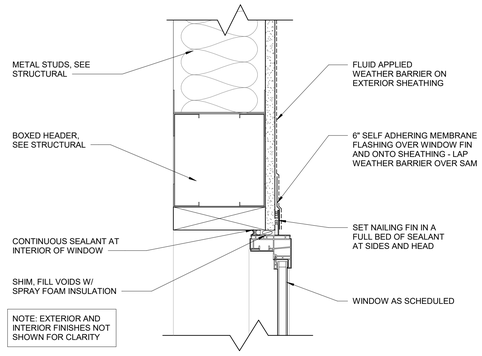
CURRENT:

SHEET NAME:
TYPICAL EXTERIOR DETAILS AT FIBER CEMENT (FLUID APPLIED)

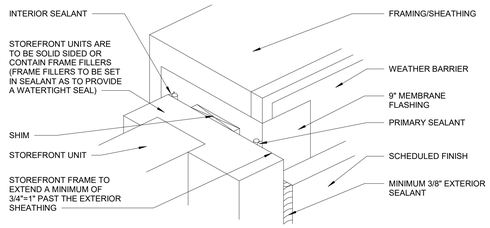
SHEET NO:
A9.02



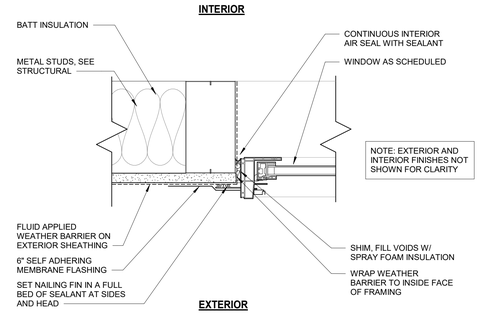
9 TYPICAL STOREFRONT HEAD FLASHING
SCALE: NTS



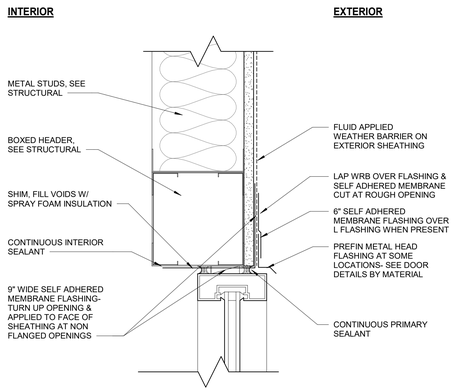
5 TYPICAL FLANGED WINDOW HEAD FLASHING
SCALE: NTS



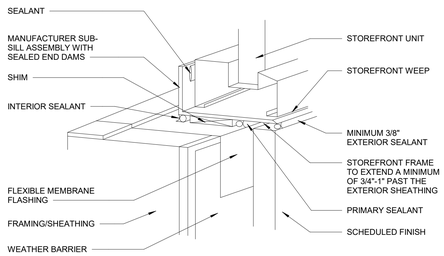
8 TYPICAL STOREFRONT JAMB FLASHING
SCALE: NTS



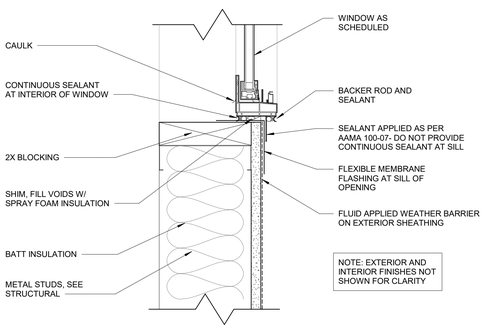
4 TYPICAL WINDOW JAMB FLASHING
SCALE: NTS



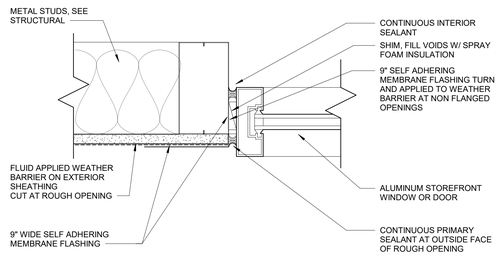
11 TYPICAL NON FLANGED DOOR HEAD FLASHING
SCALE: NTS



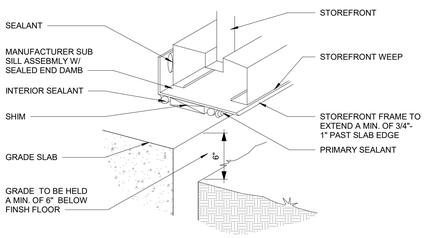
7 TYPICAL STOREFRONT SILL FLASHING
SCALE: NTS



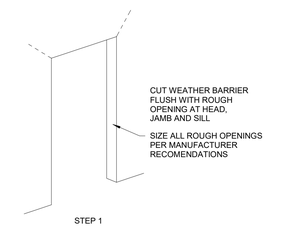
3 TYPICAL FLANGED WINDOW SILL FLASHING
SCALE: NTS



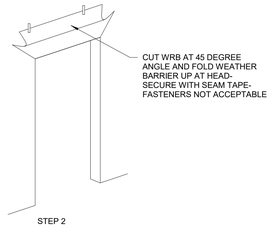
10 TYPICAL NON FLANGED DOOR JAMB FLASHING
SCALE: NTS



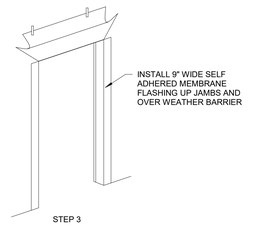
6 TYPICAL STOREFRONT SILL FLASHING AT SLAB ON GRADE
SCALE: NTS



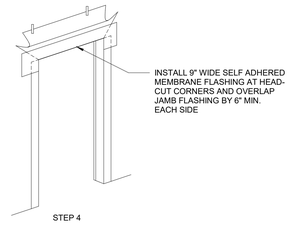
STEP 1



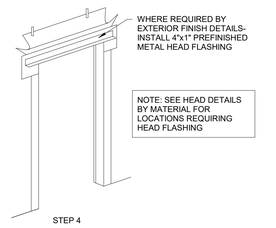
STEP 2



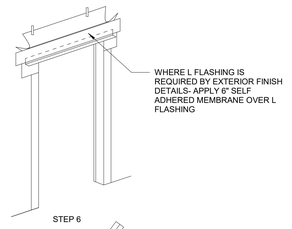
STEP 3



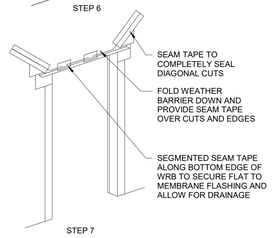
STEP 4



STEP 4

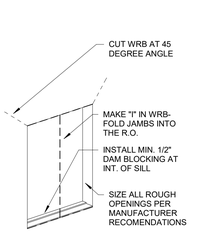


STEP 6

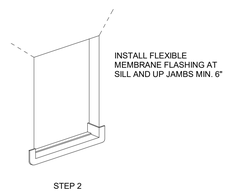


STEP 7

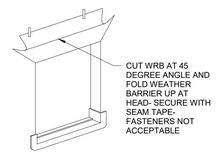
2 TYPICAL NON FLANGED DOOR FLASHING SEQUENCE
SCALE: NTS



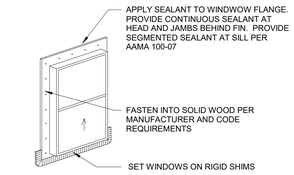
STEP 1



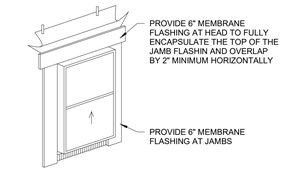
STEP 2



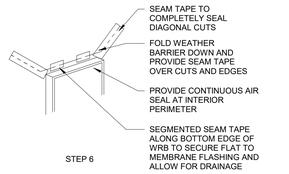
STEP 3



STEP 4



STEP 5



STEP 6

1 TYPICAL FLANGED WINDOW INSTALLATION AND FLASHING SEQUENCE
SCALE: NTS

NOTE: THE DETAILS REPRESENTED ON THIS SHEET REPRESENT THE PROJECT STANDARD AND EXPECTATIONS FOR THE ASSEMBLY OF SYSTEMS, WATERPROOFING, FLASHING, SEALANTS, AND INSTALLATION REQUIREMENTS FOR THE VARIOUS EXTERIOR ENVELOPE OF THE BUILDING, SUBJECT TO MANUFACTURER INSTRUCTIONS AND COMPATIBILITY OF PRODUCTS. ISOLATED CONDITIONS NOT DETAILED WILL BE REQUIRED TO BE TREATED TO THE SAME STANDARD AS THESE PRECEDENTS, INCLUDING ANY THRU WALL FLASHING SYSTEMS NECESSARY FOR DRAINAGE, PRIMARY AND SECONDARY SEALANTS, LIQUID FLASHINGS TO CONFORM TO BUILDING GEOMETRY, ETC...

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

ISSUED FOR PERMIT

6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO.	ORIG. ISSUE
21066	09/27/2022

CURRENT:

SHEET NAME:
TYPICAL WINDOW & DOOR FLASHING

SHEET NO:
A9.03

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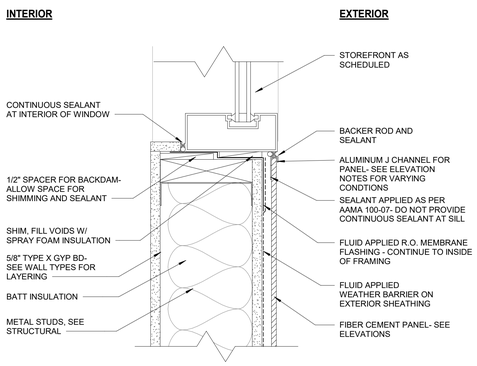
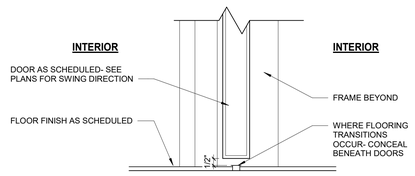
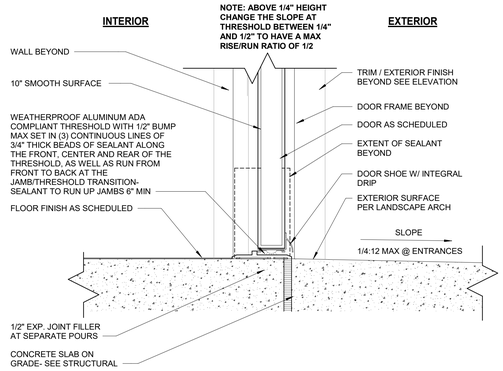


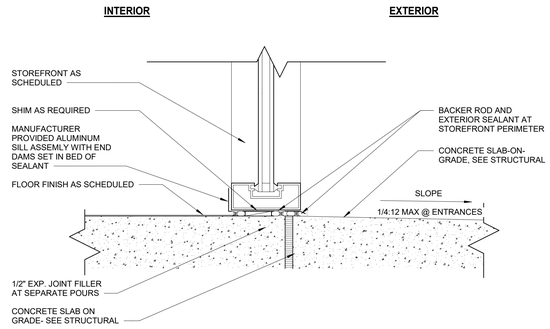
12 TYPICAL STOREFRONT SILL
SCALE: 3" = 1'-0"



11 DOOR SILL @ TYPICAL NON RATED DOORS
SCALE: NTS



10 DOOR SILL AT PUBLIC ACCESS HOLLOW METAL DOORS
SCALE: NTS



9 TYPICAL ALUMINUM STOREFRONT SILL AT SLAB ON GRADE AND FIBER CEMENT
SCALE: NTS

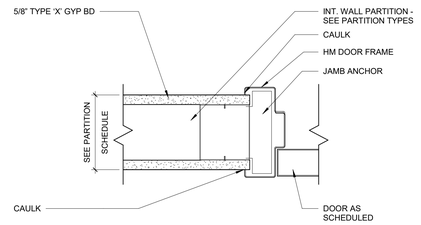
8 DOOR HEAD AT INTERIOR H.M. FRAME
SCALE: NTS

7 EXT HM FRAME HEAD AT FIBER CEMENT
SCALE: NTS

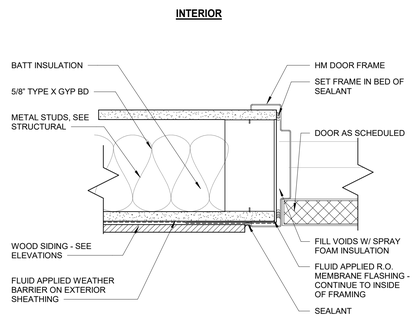
6 TYPICAL H.M. DOOR HEAD AT CMU WITH FC SIDING
SCALE: NTS

NOTE: THIS DETAIL IS ALSO APPLICABLE AT FIXED ALUMINUM STOREFRONT LOCATIONS

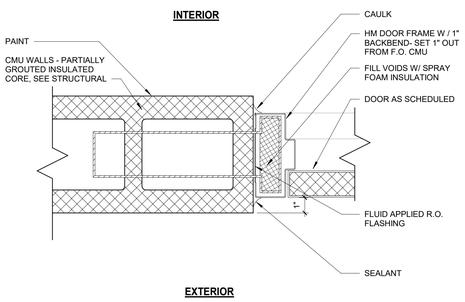
5 EXT ALUM FRAME AT FIBER CEMENT
SCALE: NTS



4 DOOR JAMB AT INTERIOR H.M. FRAME
SCALE: NTS

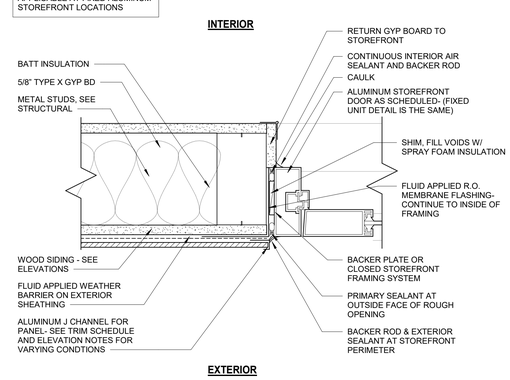


3 EXT HM FRAME JAMB AT FIBER CEMENT
SCALE: NTS



2 TYPICAL H.M. DOOR JAMB AT CMU WITH FC SIDING
SCALE: NTS

NOTE: THIS DETAIL IS ALSO APPLICABLE AT FIXED ALUMINUM STOREFRONT LOCATIONS



1 EXT ALUM FRAME AT FIBER CEMENT
SCALE: NTS

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dai.com

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6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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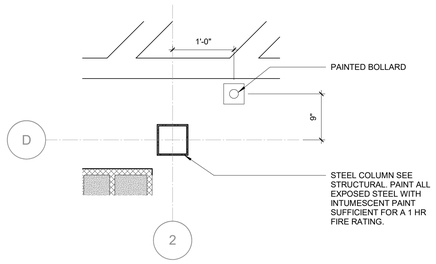
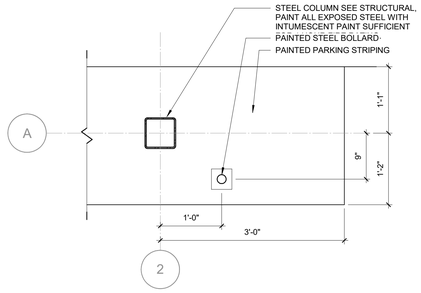
SHEET NAME:
TYPICAL EXTERIOR DOOR AND WINDOW DETAILS AT FIBER CEMENT

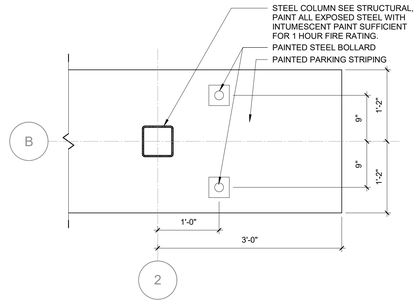
SHEET NO:
A9.04



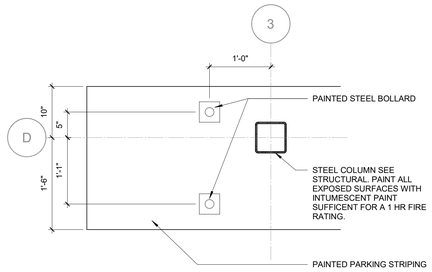
16 LEVEL 1 - ENLARGED STAIR PLAN - Callout 3
SCALE: 1" = 1'-0"



15 LEVEL 1 - Callout 1
SCALE: 1" = 1'-0"



14 LEVEL 1 - Callout 2
SCALE: 1" = 1'-0"



13 LEVEL 1 - Callout 4
SCALE: 1" = 1'-0"

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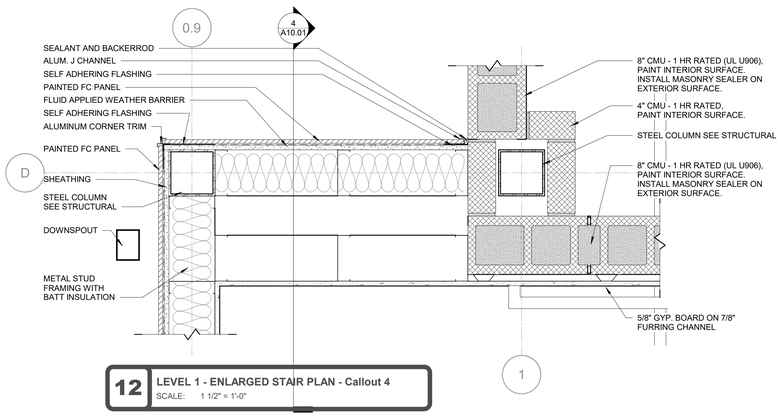
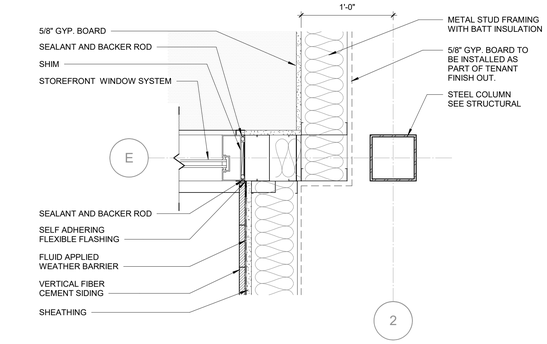
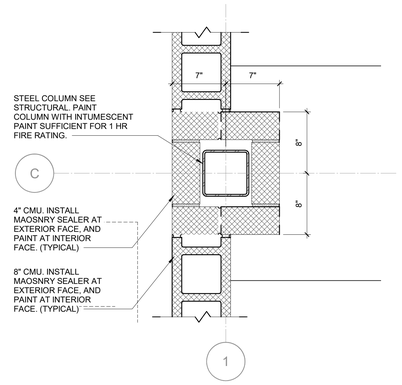


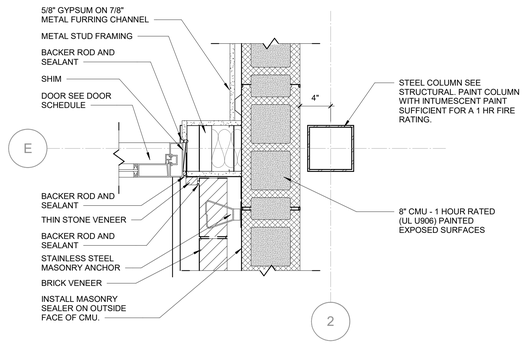
12 LEVEL 1 - ENLARGED STAIR PLAN - Callout 4
SCALE: 1 1/2" = 1'-0"



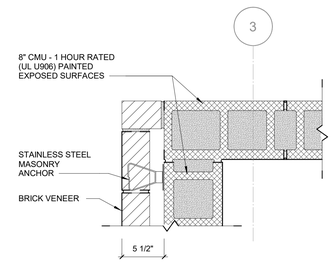
9 LEVEL 2 - ENLARGED STAIR PLAN - Callout 1
SCALE: 1 1/2" = 1'-0"



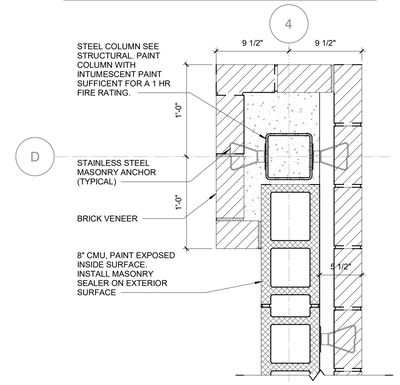
8 LEVEL 1 - Callout 3
SCALE: 1 1/2" = 1'-0"



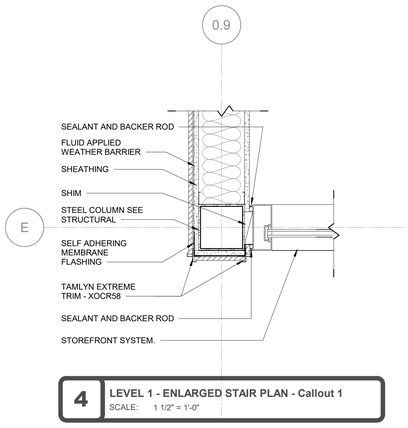
7 LEVEL 1 - ENLARGED STAIR PLAN - Callout 2
SCALE: 1 1/2" = 1'-0"



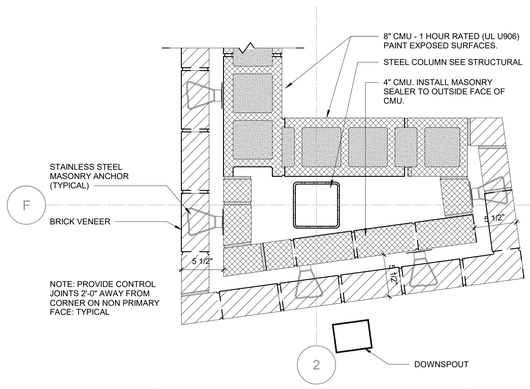
6 LEVEL 1 - ENLARGED FIRE RISER ROOM - Callout 1
SCALE: 1 1/2" = 1'-0"



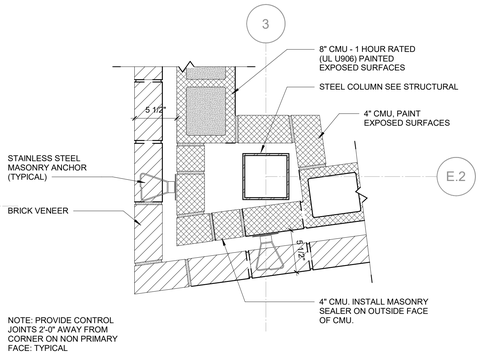
5 LEVEL 1 - Callout 5
SCALE: 1 1/2" = 1'-0"



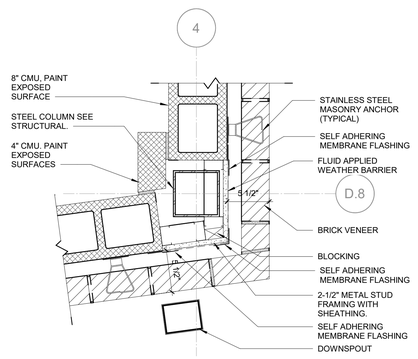
4 LEVEL 1 - ENLARGED STAIR PLAN - Callout 1
SCALE: 1 1/2" = 1'-0"



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



2 LEVEL 1 - ENLARGED FIRE RISER ROOM - Callout 2
SCALE: 1 1/2" = 1'-0"



1 LEVEL 1 - ENLARGED FIRE RISER ROOM - Callout 3
SCALE: 1 1/2" = 1'-0"

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

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6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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PLAN DETAILS

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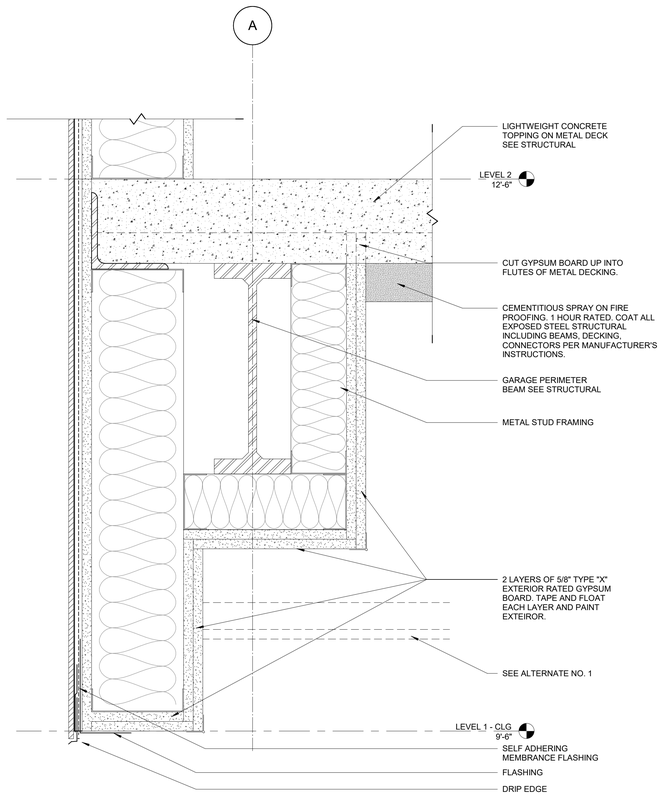
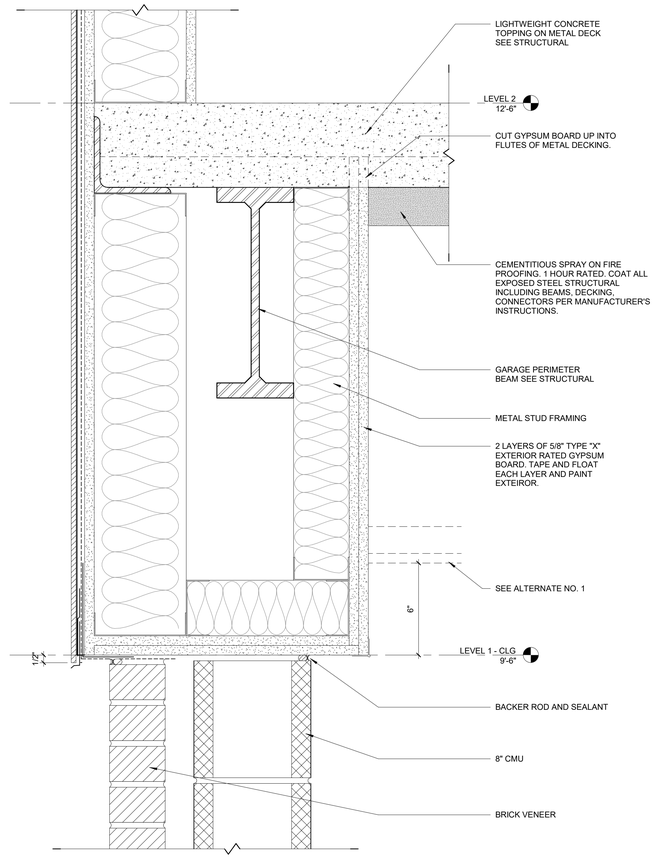
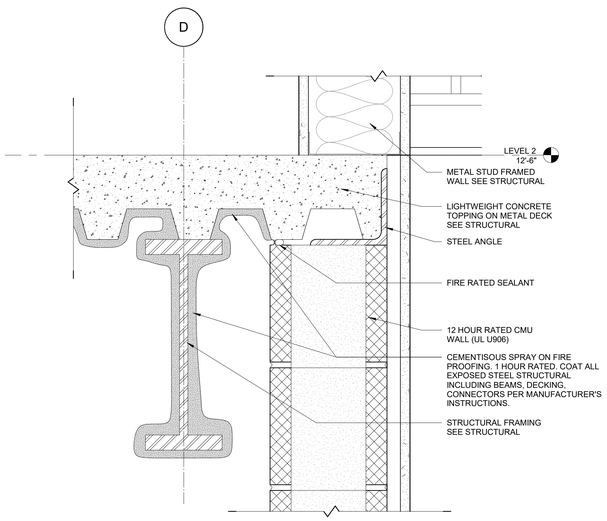


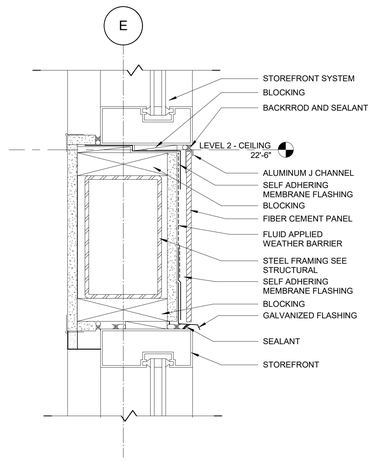
6 NORTH/SOUTH SECTION1 - Callout 5
SCALE: 3" = 1'-0"



5 SUITE 201 SECTION - Callout 7
SCALE: 3" = 1'-0"



4 NORTH/SOUTH SECTION1 - Callout 3
SCALE: 3" = 1'-0"



3 NORTH/SOUTH SECTION1 - Callout 2
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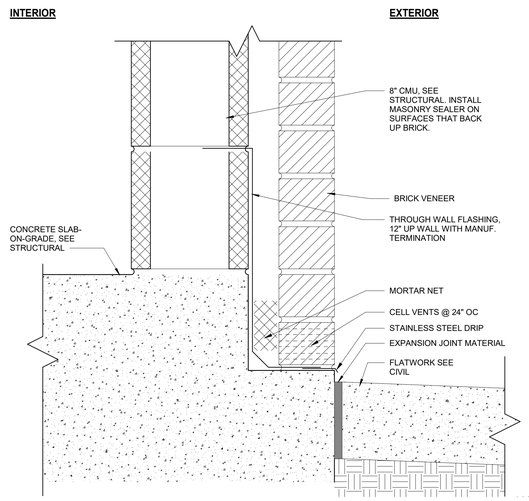
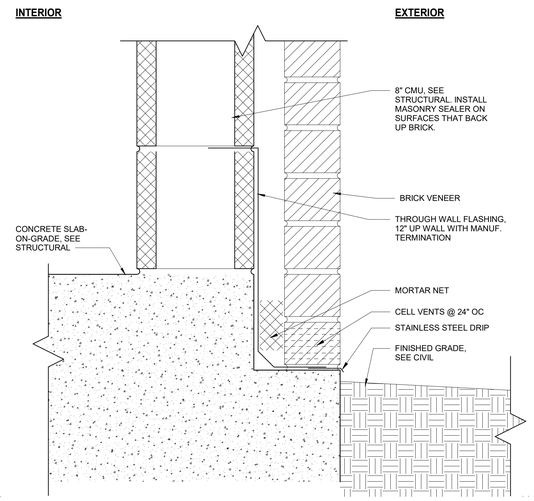


2 TYPICAL BRICK @ SLAB ON GRADE
SCALE: 3" = 1'-0"



1 TYPICAL BRICK @ SLAB ON GRADE
SCALE: 3" = 1'-0"

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dai.com

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6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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SHEET NAME:
SECTION DETAILS

SHEET NO:
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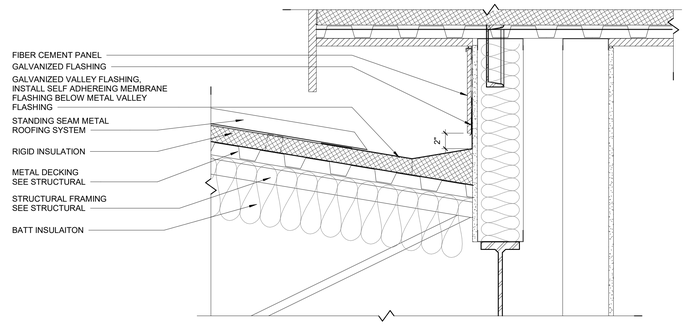
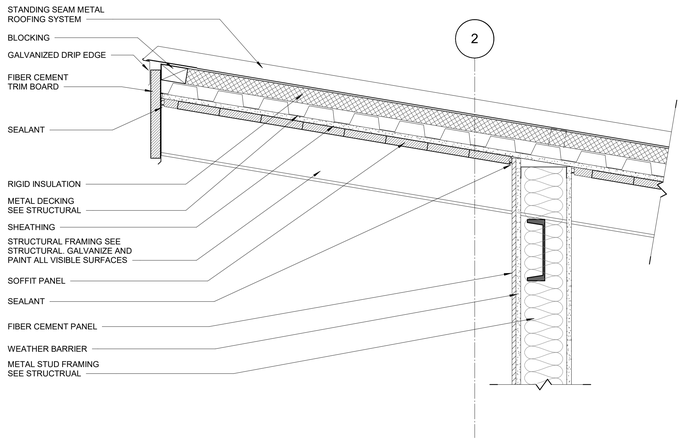
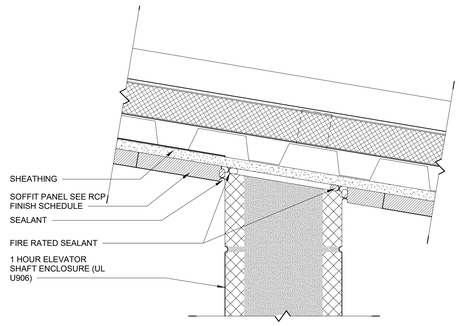


9 NORTH/SOUTH SECTION1 - Callout 1
SCALE: 1 1/2" = 1'-0"



8 SUITE 201 SECTION - Callout 4
SCALE: 1 1/2" = 1'-0"



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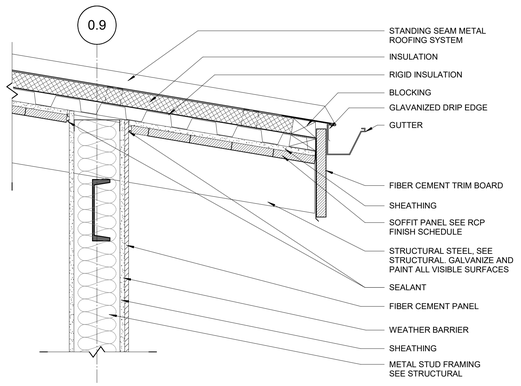
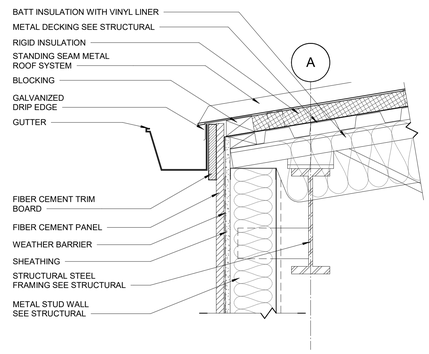
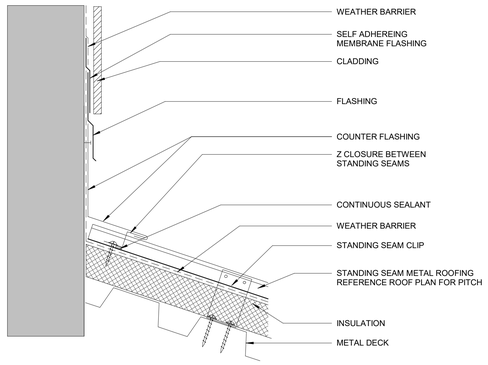


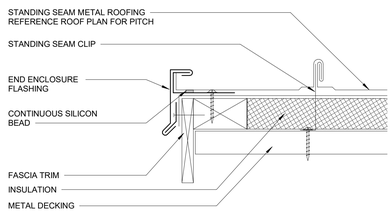
6 SUITE 201 SECTION - Callout 3
SCALE: 1 1/2" = 1'-0"



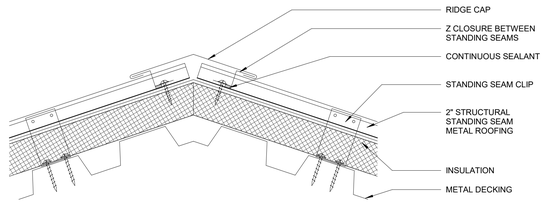
5 NORTH/SOUTH SECTION1 - Callout 6
SCALE: 1 1/2" = 1'-0"



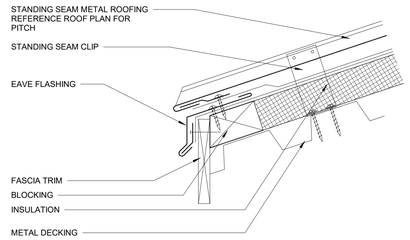
4 TYPICAL STANDING SEAM HEAD WALL FLASHING
SCALE: NTS



3 TYPICAL STANDING SEAM RAKE
SCALE: NTS



2 TYPICAL SANDING SEAM RIDGE
SCALE: NTS



1 TYPICAL STANDING SEAM EAVE
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6707 Riversideland LLC
6707 Riverside Drive
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PROJ. NO.	ORIG. ISSUE
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CURRENT:

SHEET NAME:
ROOF DETAILS - STANDING SEAM METAL

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A9.07

STANDARD SUSPENDED CEILINGS

Assembly and Installation Instructions

1. GENERAL

1.1 This installation document is intended as a general application overview, covering essential steps of a suspended ceiling installation. This document represents standard methods as supported by the manufacturer and are in addition to following the standards outlined in ASTM C636. These standards represent the manufacturers recommendations; however, all installations are subject to requirements set forth by the authority having jurisdiction.

1.2 These instructions should be supplemented with Armstrong's "*The 20 Minute Ceiling Installer*" video for examples of the installation steps, as well as the product specific installation instructions of the product being installed.

2. TOOLS REQUIRED

2.1 Here is a list of the most common tools needed for installing a suspended ceiling. Required tools and materials may vary based on job-specific conditions.

- PPE: Cut resistant gloves, safety glasses, hard hat, steel-toe boots
- Ladder(s), rolling scaffold
- Lasers: horizontal line leveling, vertical alignment, point
- String line: control/dry line
- Chalk line
- Tape measure
- Carpenter pencil
- Cordless drill with screw tips and drill bits
- Snips: metal cutting tin snips
- Rout hole punch
- Pop riveter, aluminum white pop rivets
- Lineman pliers with wire cutter
- Hammer
- Screwdrivers: slotted, Phillips
- Spring clamps: 5 to 7 (small)
- Utility knife
- Tool belt
- Hole saw
- Fasteners: wall molding attachment

3. INSTALLATION LAYOUT

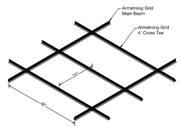
3.1 Grid Layout

3.1.1 There are many different grid layouts used for different products, panel sizes, or fixture integration. Below are guidelines for some of the more typical layouts.

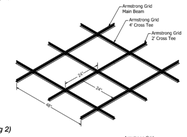
3.1.1.1 Standard 2' x 4' *(Fig 1)*
- Main beams spaced 48" O.C.
- 4' cross tees shall intersect the main beams at 90° every 24" O.C.

3.1.1.2 Standard 2' x 2' *(Fig 2)*
- Main beams spaced 48" O.C.
- 4' cross tees shall intersect the main beams at 90° every 24" O.C.
- 2' cross tees shall be installed at the midpoints of the 4' cross tees, creating 24" x 24" modules.

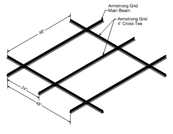
3.1.1.3 H-Layout / Cross-Hatch *(Fig 3)*
- Cross-hatched layouts differ from standard layouts by increasing the spacing of the cross tees that span the mains (typically 24" O.C.) to a distance equal to or greater than the hanger spacing along the mains (typically 48" O.C.).
- When using cross-hatched layouts, cross tees should be equivalent to mains in load carrying capacity (Lbs/LF) since they are now carrying the same load as the mains based on spacing. Refer to grid product data pages for load test data of grid components.



(Fig 1)



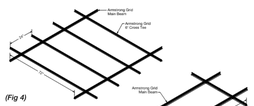
(Fig 2)



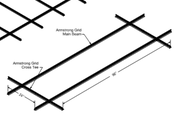
(Fig 3)

3.1.1.4 Plank Sizes
Grid layouts for plank sizes can be constructed in three different ways. The end solution may be chosen based on the desired panel orientation in relation to the mains and load on the grid components:

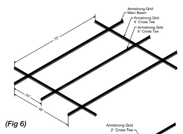
1. Main spacing equal to panel length (panel length perpendicular to mains), cross tees spanning the mains at spacing equal to panel width *(Fig 4)*.
   Refer to the grid product data pages for load test data specific to the length of cross tee being used. Supplemental wires may be required based on the span of the grid and weight of the ceiling product being installed.
2. Main spacing equal to panel width (mains parallel to panel length), cross tees spanning the mains at spacing equal to panel length *(Fig 5)*.
3. Cross-hatching of the grid components, allowing panel length to run parallel with mains without main spacing being equal to panel width *(Fig 6)*.
   When cross-hatching, consider the increased load on the cross tees, especially the cross tees spanning the mains. Refer to the grid product data pages for load test data specific to the length of cross tee being used. Supplemental wires may be required based on the span of the grid and weight of the ceiling product being installed.



(Fig 4)

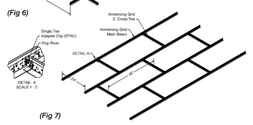


(Fig 5)



(Fig 6)

3.1.1.5 Running Bond / Staggered
Running bond or staggered layouts differ from standard layouts by alternating the grid openings between different rows of mains. This results in single cross tees occupying rout holes. These single cross tee connections must be reinforced to meet code requirements for connection strength. Armstrong's recommended solution is the Single Tee Adapter Clip (STAC) *(Fig 7)*.



(Fig 7)

3.2 Room Layout

Proper layout within a space is crucial for a good installation. Some layouts may have a starting point established by the architect noted on the prints. Examples of starting points may be for a specific border dimension, full size borders, or referenced from lights or columns. It is important to check the project plans before installation.

3.2.1 Calculating Equal Borders
The most pleasing visual is achieved when the border panels are no less than 10" wide, and the opposite wall has the exact same size border panel achieving proper room balance. For installations that require equal borders, the following steps will help you layout an installation with equal borders on opposite sides of the space.

- Determine the direction of the main beams and panel length.
- Divide each dimension of the space (length and width) by the panel length in that direction.
  Ex: 28' 9" (room width) / 2' (panel width) = 14 full size panels and a 9" remainder
- Divide the remainder to get even opposite border panels. If this results in border panels less than 10" you will need to add a full panel to the remainder so that the border panels are greater than 10".
  Ex: 9" (remainder) / 2 (borders) = 4-1/2" border (too small)
  24" (full panel width) + 9" = 33" (new remainder)
  33" / 2 (borders) = 16-1/2" borders with 13 full size panels

3.3 Plenum

Allow at least 3" below the old ceiling, duct work, pipes, or wiring as clearance to maneuver a ceiling panel into the opening of the grid.

4. WALL MOLDING

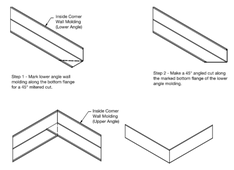
4.1 Wall molding is not considered a load bearing component of most suspended ceiling systems, but it must be securely attached to the wall every 16" - 24" O.C.

4.2 Mitered Corners

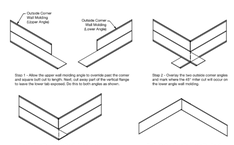
4.2.1 Inside Corners
When you get to your inside corners, a finished 45° miter is a much more pleasing visual than simply overlaying butt cuts. All you have to do is mark and cut 45° on the lower angle then overlay the butt cut upper angle for a perfect mitered visual from below *(Fig 8)*.

4.2.2 Outside Corners
The outside corners require a little more attention, but are still easy to achieve a clean mitered visual. Simply let the angle override past the corner, then square butt cut to length.

Next, cut away the vertical flange, leaving an exposed horizontal tab. Do this to both angles that approach the outside corner. After overlaying them at the corner, mark where the 45° miter cut will occur on the lower angle. Raise your upper angle and make the 45° cut on the lower angle only. Square cut the upper angle to length and you're finished with a corner that looks perfectly mitered, but is structurally sound. A spring clamp will hold the corner into place while you do the final attachment to the wall *(Fig 9)*.



(Fig 8)



(Fig 9)

4.3 Some systems may require the use of a Structural Wall Molding, with additional instructions on installation requirements for this component.

5. SUSPENSION POINTS

5.1 The suspension system must be supported with hanger wire attached to the structure.

5.2 Holding power tests certified by the manufacturer of the fasteners must be available upon request.

5.3 Hanger wires should be a minimum 12-gauge galvanized, soft-annealed, mild steel wire.

5.4 The minimum drop for hanger wire is 4", which is from the bulb of the grid to the structure. This will allow enough room to wrap your wire as well as remove ceiling panels. There is not a maximum length for suspending acoustical ceilings with 12 gauge hanger wire, unless restrictions are in place by your local code authority. Hanger wire splices are available when wire extension is necessary.

5.5 Hanger wires are typically spaced no more than 4' O.C. along the main beams, but may be spaced further if allowed by local code officials and if it is in compliance with load carrying capabilities.

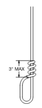
5.6 Each hanger wire must not be more than one in six out of plumb, which means there should be at least 6" of vertical drop for every 1" of lateral movement *(Fig 10)*. For example, if you move a wire 2" out of plumb, you must have at least 12" of vertical drop. When this standard is not met, an equally sloped counter splay wire must be added in the opposing direction to maintain symmetry (ASTM C636) *(Fig 11)*.

5.7 Hanger wire must be wrapped around itself a minimum of three full turns within 3" (ASTM C636 – subject to additional codes) *(Fig 12)*.

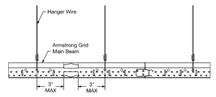
5.8 When installing fire rated main beams, all fire expansion relief cut outs must have a hanger wire within three inches (ASTM C636) *(Fig 13)*.

(Fig 10)

(Fig 11)



(Fig 12)



(Fig 13)

6. SUSPENSION SYSTEM INSTALLATION STANDARDS

6.1 Suspension systems, whether 9/16" or 15/16", shall be installed to meet the minimum requirements established in the ASTM C636 standard, and any other requirements established by local code.

6.2 All grid components used must be rated to carry the appropriate load per ASTM C635 and E3090. Consult the grid product data page for load carrying capabilities.

6.3 Main beams must be level to within 1/4" in 10', determined by measurements taken below the hanger points with the hanging wires tied tight. This process can be aided with the use of a level laser.

6.4 Certain products may call out a specific squareness requirement to ensure a satisfactory installation. Ensuring the grid installation is square can be done with perpendicular dry lines (control lines) or a 90° alignment laser to install the grid off of. Squareness of individual modules can also be verified by measuring opposite diagonals within an opening. The measurements of the opposite diagonals will be the same if they are square. If the grid is not square, push the module's cross tees to the right and clamp to remove slack and measure again.

7. CEILING PANEL INSTALLATION

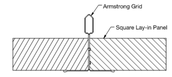
7.1 Edge Detail Types

There are several different types of edge details for panels. Refer to the product data page for edge profile type and Suspension Drawing number that can be referenced in the back of the Specifier's Reference. Some common edge details are:

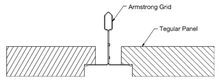
7.1.1 Square Lay-in
Square lay-in panels do not have any cuts on the edges. Each edge will provide a 90° corner. They install above the grid and should generally be installed in 15/16" grid *(Fig 14)*.

7.1.2 Tegular
Tegular panels will have a step cut out around the edge. They will also install above the grid. Tegular edge details can vary in several characteristics, such as square or beveled, or for 9/16" or 15/16". Refer to the product data page for details regarding a specific product *(Fig 15)*.

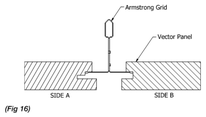
7.1.3 Vector/Concealed
Vector and Concealed panels install from below the grid. Each panel will have an A/B side and a C/D side. Only the A/B sides will engage with the grid *(Fig 16)*. The C/D sides will act as a reverse tegular edge and will butt up next to the grid flange, but not engage with it. Refer to product specific installation instructions for information on Vector and Concealed panel edge details.



(Fig 14)



(Fig 15)



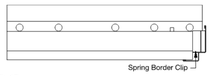
(Fig 16)

7.2 Perimeter Treatment

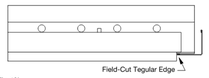
7.2.1 Perimeter panels less than full size shall be installed either by concealing the cut edge on the horizontal flange of a perimeter molding (option A), or by re-cutting the Tegular edge detail (option B).

7.2.2 Option A: Panel Face Resting on Molding
For option A, when the face of the panel rests on the molding, Spring Border Clips (item 7870) should be used for proper panel alignment and to prevent the possibility of the panel shifting toward the wall far enough to permit the opposite edge to drop off the grid flange *(Fig 17)*.

7.2.3 Option B: Re-cut the Edge Detail
For option B, the suspension system rests directly on the horizontal flange of the molding. Tegular edges will have to be field-cut to allow the panel face to drop 1/4" below the grid. All field-cut edges "exposed to view" should be colored to match the factory finish. Armstrong SuperCoat Ceiling Panel Touch-up Paint is recommended *(Fig 18)*.



(Fig 17)



(Fig 18)

7.3 Cleaning

7.3.1 Remove dust or loose dirt with a brush or vacuum with an attachment used for upholstery. Always clean in one direction to avoid rubbing dirt or debris into the tile.

7.3.2 Remove pencil marks, smudges, and stubborn dirt with an ordinary art gum eraser.

7.3.3 Most mineral fiber and fiberglass ceilings may be cleaned with a damp cloth or sponge and mild soap. Use as little water as possible and wipe the soapy film off with a clean, damp cloth or sponge.

7.3.4 Some ceilings can withstand scrubbing, moisture, and germicidal cleaners. Be sure to reference the product specific data page to read the performance features of the ceiling panel.

7.4 Touch-up Paint

7.4.1 Armstrong cannot guarantee the printed performance of a ceiling panel after it has been repainted. Repainting can impact performance features such as light reflectance, fire resistance, acoustical performance, anti-sag, and any mold-inhibiting or retarding treatment.

7.4.2 All warranties will be voided by field painting.

7.4.3 Armstrong SuperCoat Ceiling Panel Touch-up Paint is recommended to cover any blemishes or deeper gouges.

8. LIGHTING LAYOUT CONSIDERATIONS

8.1 Lighting may impact the grid layout by either requiring an H-layout/ cross-hatching or by creating single cross tee connections (unopposed cross tees). These conditions must be addressed by following the instructions in sections 3.1.1.3 (H-Layout / Cross-Hatch) and 3.1.1.5 (Running Bond / Staggered).

8.2 All light fixtures must be independently supported unless noted otherwise in the product specific installation instructions.

8.3 Follow the lighting manufacturer installation instructions and contact your local lighting manufacturer representative with any questions.

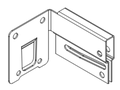
9. HELPFUL ACCESSORIES AND CLIPS

9.1 BERC2 – 2° Beam End Retaining Clip
Joins main beam or cross tee to wall molding via locking barbs without pop rivets or screws *(Fig 19)*.

9.2 XTAC – Cross Tee Adapter Clip
Used to attach field cut cross tees to main beams *(Fig 20)*.

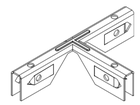
9.3 GC3W – Grip Clip 3-Way
Joins main beams to cross tee via locking barbs without pop rivets or screws *(Fig 21)*.

9.4 GCWA – Grip Clip Wall Attachment
Joins main beam or cross tee to wall molding via locking barbs without pop rivets or screws *(Fig 22)*.

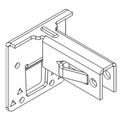


(Fig 19)

(Fig 20)



(Fig 21)



(Fig 22)

9.5 STAC – Single Tee Adapter Clip
Used to create code compliant non-seismic and seismic C, D, E, and F off-module main beam to cross tee connections. Refer to Single Tee Adapter Clip (STAC) installation guide for full instructions *(Fig 23)*.

9.6 Stabilizer Bars
Used to maintain uniform spacing of suspension system components (main beams and cross tees) *(Fig 24)*.

9.7 Stabilizer Clips
Used to maintain uniform spacing of grid components when Stabilizer Bars cannot be used due to lay-in panels. Refer to Large Format Ceiling Panels instructions for details *(Fig 25)*.

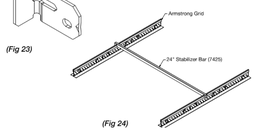
9.8 WS12 – Wire Splice
Used to splice a new hanger wire to an existing hanger wire, or if an extra-long hanger wire is needed *(Fig 26)*.

10. SEISMIC

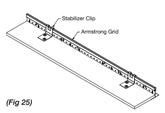
10.1 Installations occurring in seismic design categories C, D, E, or F must be in compliance with the methods described in the Seismic Design: What You Need to Know document. This document outlines the Armstrong Seismic Rx methods for installing suspended ceilings in compliance with the International Building Code (IBC) requirements for seismic design categories C, D, E, and F.

10.2 Reference the product specific installation instructions of the product being installed for any seismic installation requirements.

(Fig 23)



(Fig 24)



(Fig 25)

(Fig 26)

NOTE: INSTALLED SUSPENDED CEILINGS PER ARMSTRONG INSTALLATION INSTRUCUTIONS. ARMSTRONG INSTALLATION INSTRUCTIONS PROVIDED ON THIS SHEET FOR YOUR CONVIENCE.

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

5 FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

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6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
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REVISIONS

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21066	09/27/2022

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SUSPENDED CEILING DETAILS

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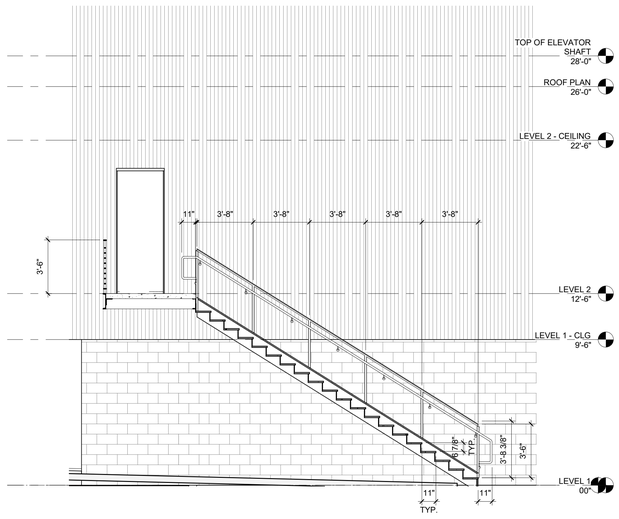
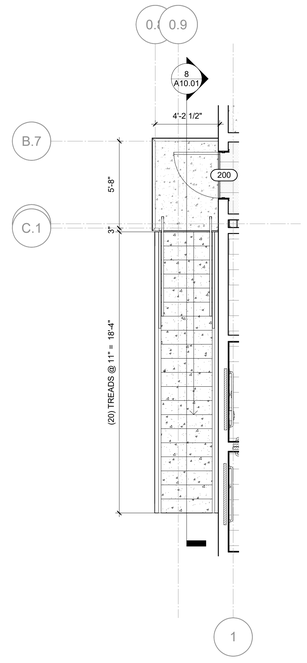
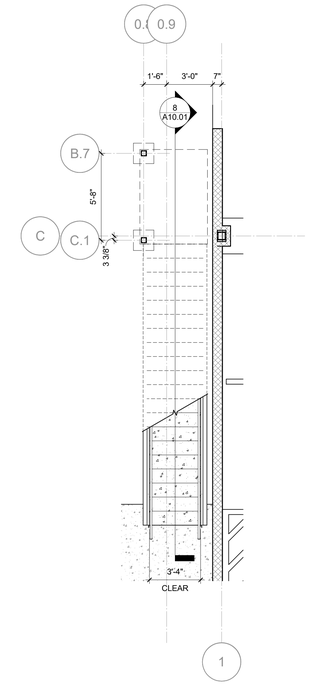


8 EXIT STAIR SECTION
SCALE: 1/4" = 1'-0"



7 LEVEL 2 - ENLARGED EXIT STAIR
SCALE: 1/4" = 1'-0"



6 LEVEL 1 - ENLARGED EXIT STAIR
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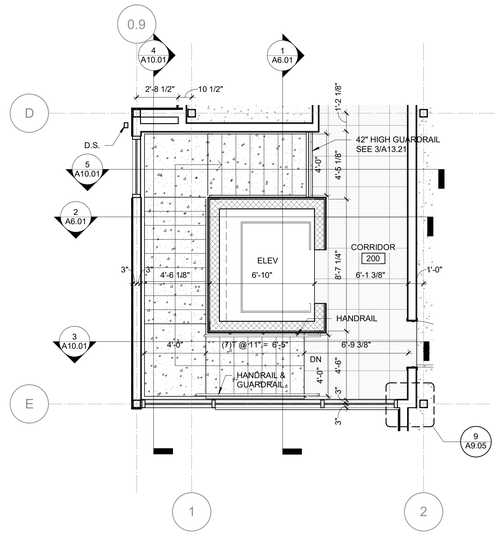
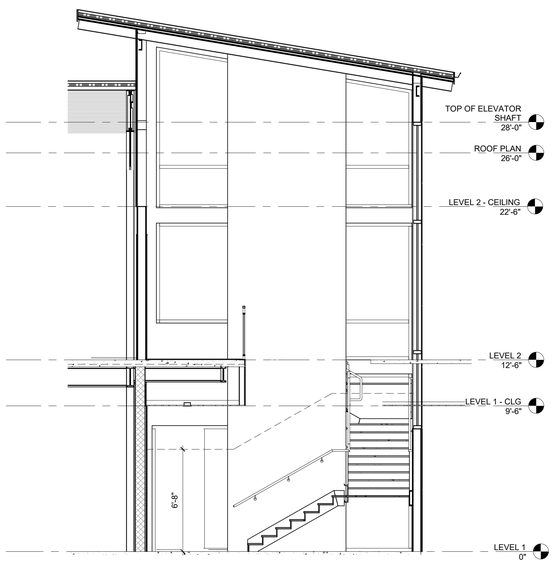
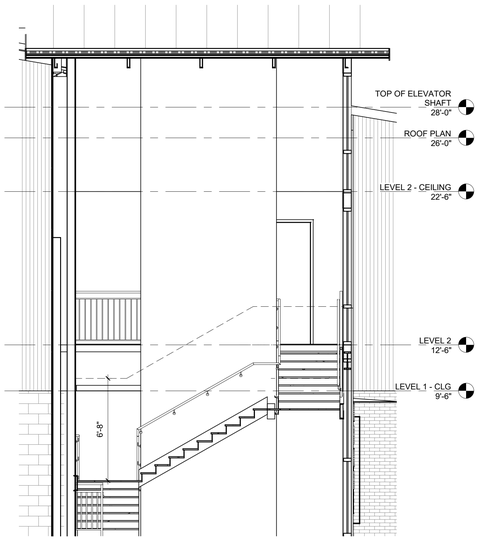


2 LEVEL 2 - ENLARGED STAIR PLAN
SCALE: 1/4" = 1'-0"

NOTE: BASIS FOR DESIGN OF ELEVATOR IS A KNOE MONOSPACE 2000LB



5 STAIR TOWER SECTION1
SCALE: 1/4" = 1'-0"



4 MONUMENTAL STAIR SECTION 2
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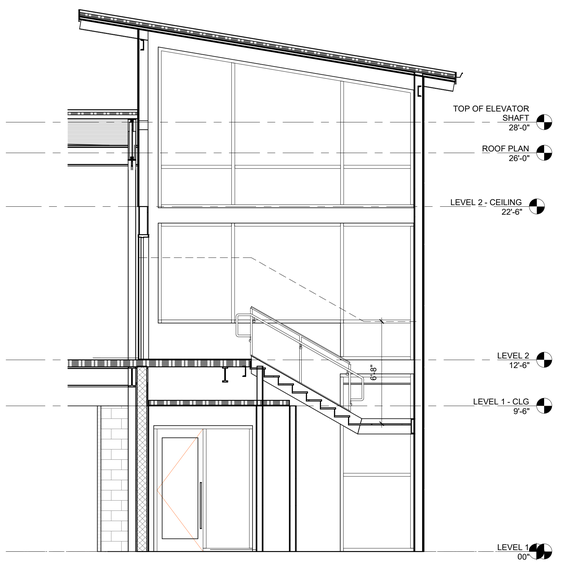

3 MONUMENTAL STAIR SECTION 1
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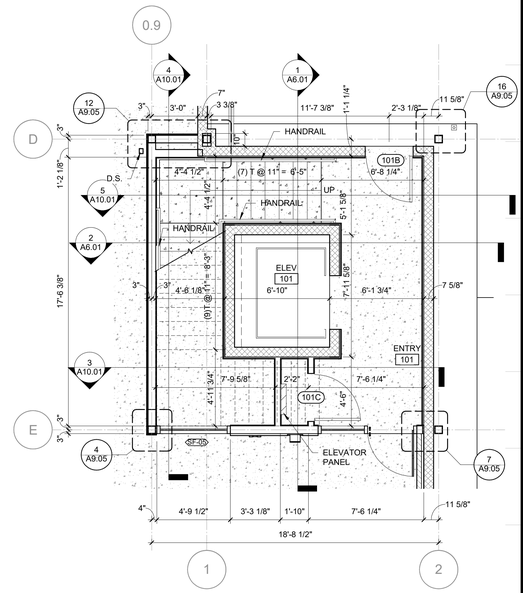

1 LEVEL 1 - ENLARGED STAIR PLAN
SCALE: 1/4" = 1'-0"

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ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

ISSUED FOR PERMIT

6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

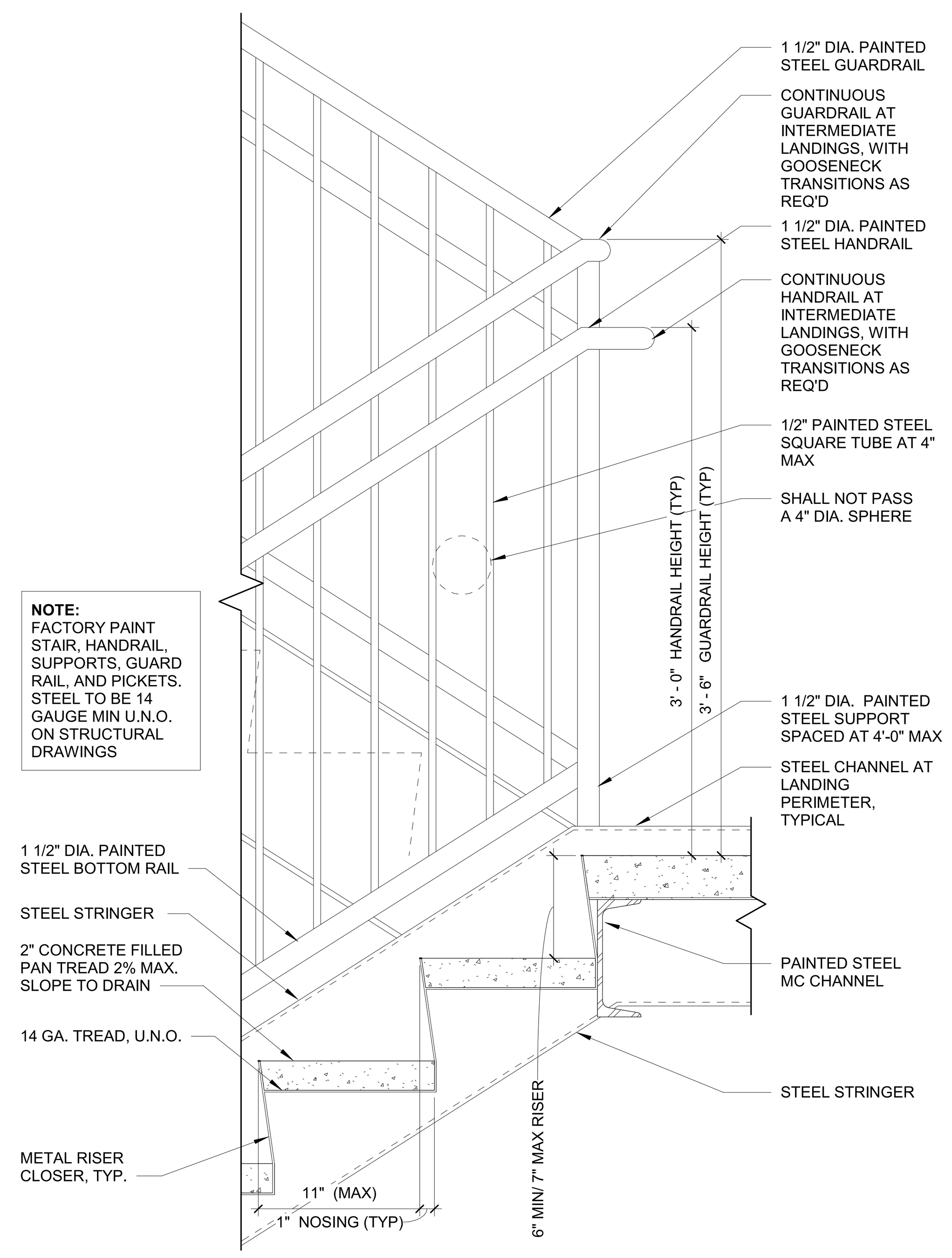
Δ	DATE	DESCRIPTION

PROJ. NO.	ORIG. ISSUE
21066	09/27/2022
	CURRENT:

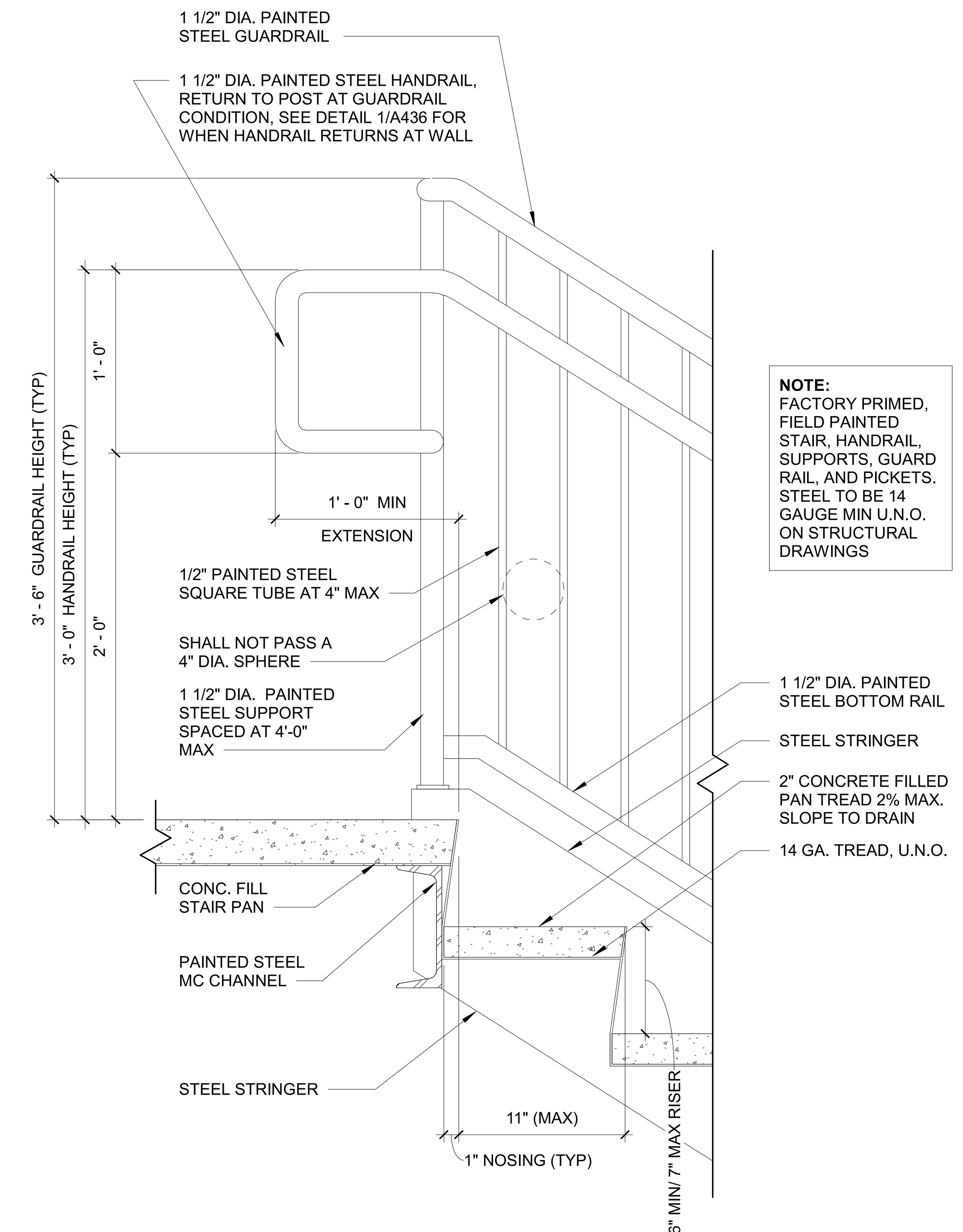
SHEET NAME:
VERTICAL CIRCULATION

SHEET NO:
A10.01

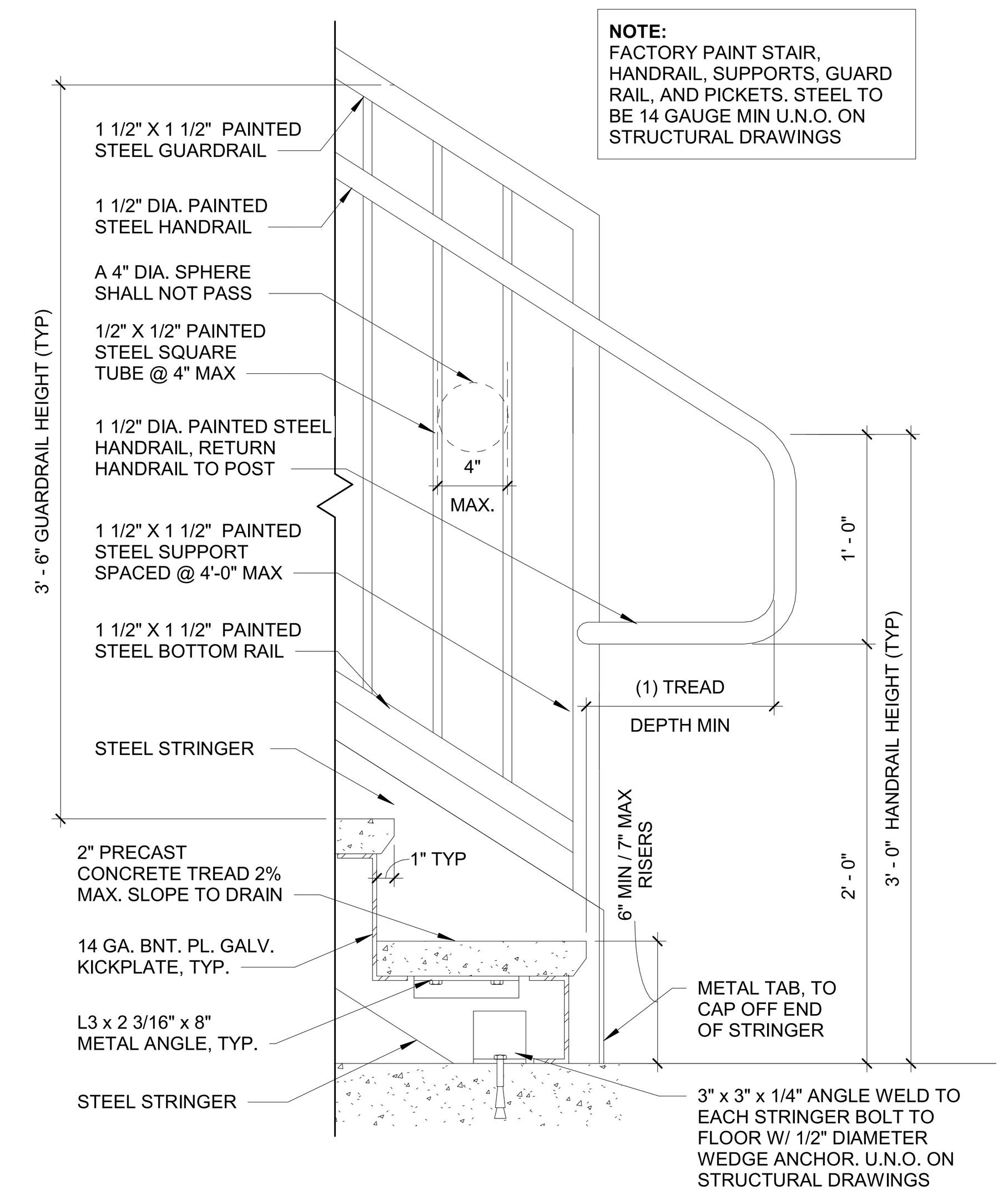
NOTE: THE DETAILS REPRESENTED ON THIS SHEET REPRESENT THE PROJECT STANDARD AND EXPECTATIONS FOR THE ASSEMBLY OF SYSTEMS, WATERPROOFING, FLASHING, SEALANTS, AND INSTALLATION REQUIREMENTS FOR THE VARIOUS EXTERIOR ENVELOPE OF THE BUILDING, SUBJECT TO MANUFACTURER INSTRUCTIONS AND COMPATIBILITY OF PRODUCTS. ISOLATED CONDITIONS NOT DETAILED WILL BE REQUIRED TO BE TREATED TO THE SAME STANDARD AS THESE PRECEDENTS, INCLUDING ANY THRU WALL FLASHING SYSTEMS NECESSARY FOR DRAINAGE, PRIMARY AND SECONDARY SEALANTS, LIQUID FLASHINGS TO CONFORM TO BUILDING GEOMETRY, ETC...



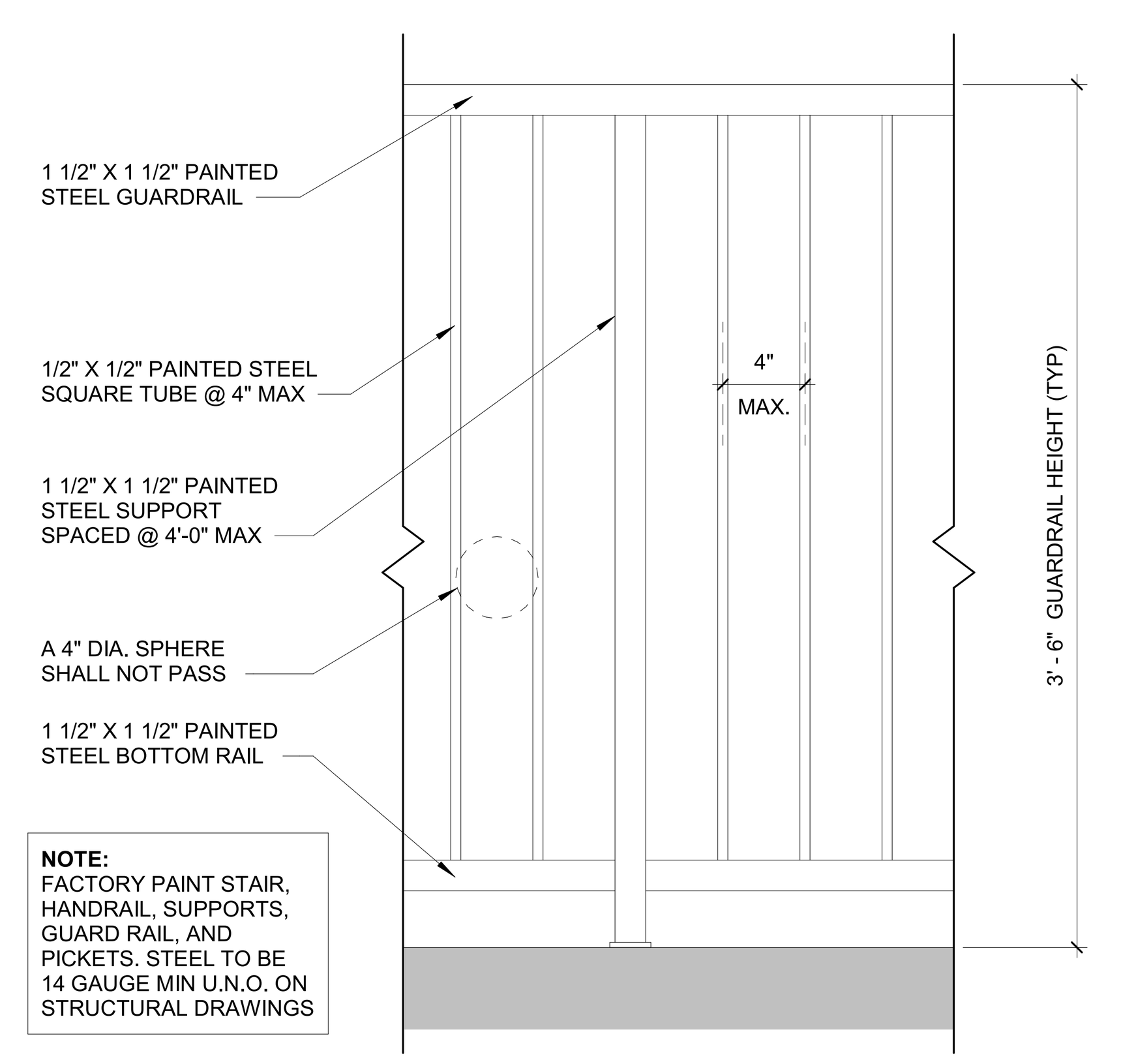
10 **STEEL PAN STAIR INTERMEDIATE LANDING**
SCALE: 1 1/2" = 1'-0"



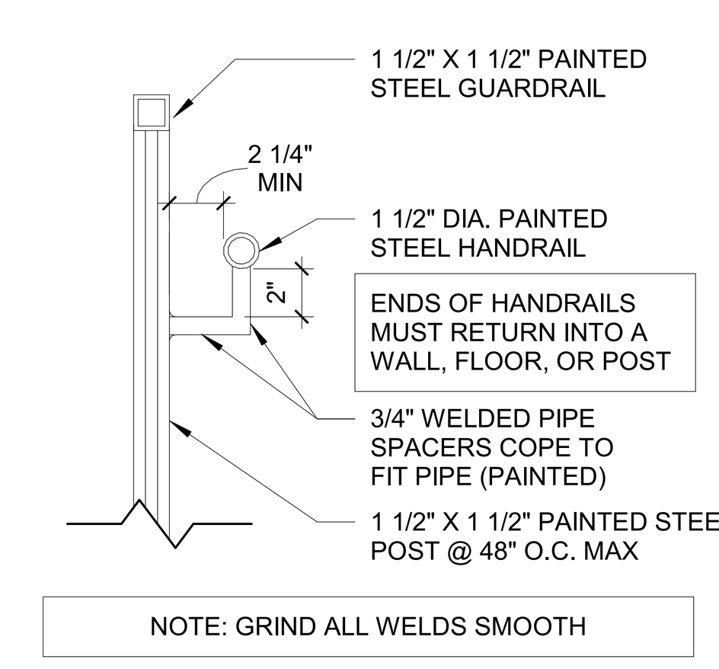
9 **STEEL PAN STAIR TOP RUN**
SCALE: 1 1/2" = 1'-0"



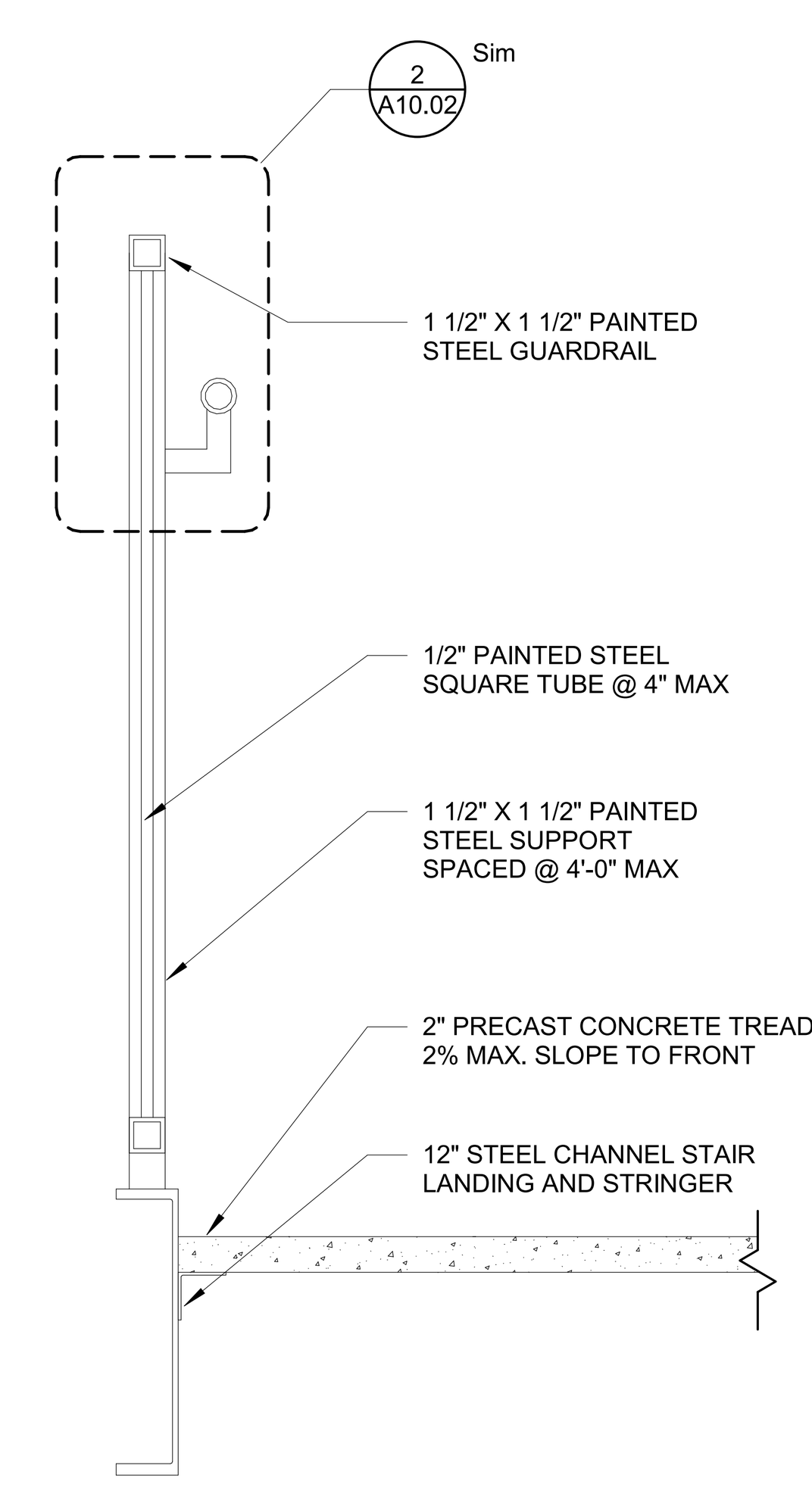
8 **STEEL PAN STAIR BOTTOM RUN**
SCALE: 1 1/2" = 1'-0"



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



2 **HANDRAIL/GUARDRAIL**
SCALE: 1 1/2" = 1'-0"



1 **HANDRAIL/GUARDRAIL @ STRINGER**
SCALE: 1 1/2" = 1'-0"

REGISTERED ARCHITECT
WALTER D. FRITZ
24489
STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL   AUSTIN, TX   ORLANDO, FL   ATLANTA, GA
www.5da.com

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6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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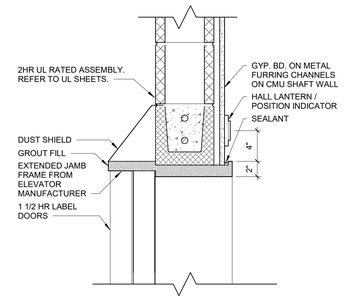
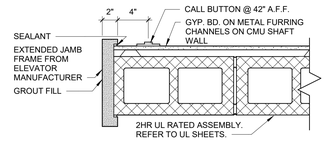
GENE

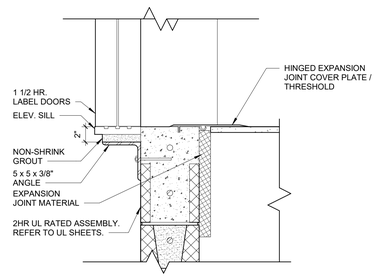
1. ELEV BUILDING GEOMETRY, ETC...)ATE A 24" X 84" STRETCHER IN THE HORIZONTAL OPEN POSITION, WITH NO LESS THAN 5" RADIUS CORNERS, PER APPLICABLE BUILDING AND ACCESSIBILITY CODES.
2. ELEVATOR TO BE IDENTIFIED BY THE INTERNATIONAL SYMBOL FOR EMERGENCY MEDICAL SERVICES (STAR OF LIFE). THE SYMBOL SHALL NOT BE LESS THAN 3 INCHES HIGH AND SHALL BE PLACED INSIDE ON BOTH SIDES OF THE HOISTWAY DOOR FRAME.
3. ELEVATOR WALLS COMPOSED OF 2-HR CONCRETE BLOCK IN ACCORDANCE WITH U.L. ASSEMBLY U905. SEE UL SHEET.



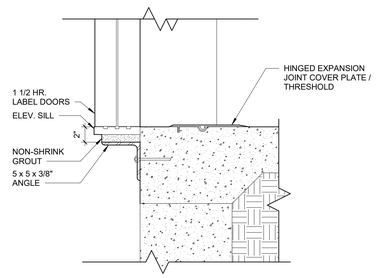
13 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



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



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



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

REGISTERED ARCHITECT WALTER D. PAYNE 24499 STATE OF TEXAS

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ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
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6707 Riverside Drive
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SHEET NAME:
TYPICAL ELEVATOR SECTIONS & DETAILS

SHEET NO:
A10.03

DOOR SCHEDULE

DOOR NO.	DOOR SLAB							DOOR FRAME		BLDG DOOR HARDWARE SET	DOOR FIRE RATING MINUTES	COMMENTS	Type Comments	From Room: Name	From Room: Number	To Room: Name	To Room: Number
	SLAB	LEAF QTY	WIDTH	HEIGHT	THK.	MTL	FINISH	TYPE	FINISH								
101B	F	1	3'-0"	8'-0"	1 3/4"	HM	Fin-PT10	~HM	Fin-PT10	No.2	60						
101C	F	1	3'-0"	8'-0"	1 3/4"	HM	Fin-PT10	~HM	Fin-PT10	No.3	0						
102	F	1	3'-0"	8'-0"	1 3/4"	HM	Fin-PT10	~HM	Fin-PT10	No.3	60						
103	F	1	3'-0"	8'-0"	1 3/4"	AL	Fin-PT10	SF	Fin-PT10	No.4	0						
200	F	1	3'-0"	8'-0"	1 3/4"	HM	Fin-PT11	~HM	Fin-PT11	No.2	0						
201	F	1	3'-0"	8'-0"	1 3/4"	WD	Fin-PT12	~HM	Fin-PT12	No.5	0						
202	F	1	3'-0"	8'-0"	1 3/4"	WD	Fin-PT12	~HM	Fin-PT12	No.5	0						
203	F	1	3'-0"	8'-0"	1 3/4"	HM	Fin-PT12	~HM	Fin-PT12	No.6	0						
204	F	1	3'-0"	8'-0"	1 3/4"	WD	Fin-PT12	~HM	Fin-PT12	No.7	0						
205	F	1	3'-0"	8'-0"	1 3/4"	WD	Fin-PT12	~HM	Fin-PT12	No.7	0						
206	F	1	3'-0"	8'-0"	1 3/4"	WD	Fin-PT12	~HM	Fin-PT12	No.3	0						
BLDG DOOR #	SF	1	2'-10 5/8"	7'-11 5/16"	1 3/4"	ALUM		~SF			0		5D STD DOOR				

GENERAL NOTES - DOORS

GENERAL DOOR NOTES

1. WHERE DOORS ARE NOT DIMENSIONED IN METAL OR WOOD STUD WALLS, THEY SHALL BE EITHER CENTERED AT THE MIDPOINT OF THE WALL OR OFFSET TO PROVIDE 5" CLEAR FROM THE ADJACENT WALL CORNER IF CLEARANCE ALLOWS.
2. WHERE NO DIMENSION IS GIVEN AT INTERIOR DOOR LOCATIONS IN CMU, LOCATE EDGE OF FRAME WITHIN 8" OF ADJACENT WALL. REFER UNCERTAINTIES TO ARCHITECT FOR APPROVAL.
3. ALL DOOR HARDWARE IS TO BE COORDINATED WITH THE CODE REQUIRED EGRESS COMPONENTS, ACCESSIBILITY REQUIREMENTS, AND ACCESS CONTROL REQUIREMENTS PER THE LOW VOLTAGE DRAWINGS.
4. ACCESS CONTROL FOR ALL DOORS AND FRAMES TO BE COORDINATED WITH THE LOW VOLTAGE CONSULTANT, ARCHITECT AND THE CLIENT.
5. ALL GAPS BETWEEN DOOR FRAME AND ROUGH OPENING TO BE FILLED WITH FOAM SEALANT.
6. PROVIDE ALUMINUM THRESHOLD WITH VINYL SEAL AT ALL EXTERIOR DOORS.
7. ALL EXTERIOR DOORS TO HAVE STC RATING 28 MINIMUM.
8. PROVIDE WEATHER STRIPPING AT ALL EXTERIOR DOORS.

DOOR ACCESSIBILITY NOTES

1. SEE ACCESSIBILITY SHEETS AND NOTES ON G4.0 SERIES FOR MORE INFORMATION ON ACCESSIBILITY REQUIREMENTS OF DOORS.
2. THE BOTTOM 10 INCHES OF ALL PUBLIC DOORS AND UNIT ENTRY DOORS SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.
3. THRESHOLDS AT USER PASSAGE DOORS SHALL HAVE A 1/2" MAXIMUM OVERALL CHANGE IN LEVEL WITH A 1:2 BEVEL AND A 1/4" MAXIMUM VERTICAL CHANGE IN LEVEL. NOTE THIS REQUIREMENT IS NOT APPLICABLE AT UNITS ON FLOORS NOT SERVED BY AN ELEVATOR.
WHERE PEEP HOLES ARE PROVIDED, PROVIDE AN ADDITIONAL PEEP HOLE AT 42" AFF AT TYPE A AND FULLY ACCESSIBLE UNIT ENTRY DOORS.

CLEARANCE UNDER BOTTOM OF DOORS

1. CONTRACTOR SHALL UNDERCUT DOORS AS REQUIRED FOR FLOOR FINISHES, BUT NOT GREATER THAN CODE ALLOWS FOR RATED DOOR REQUIREMENTS.
2. THE CLEARANCE BETWEEN THE BOTTOM OF THE DOOR AND A RAISED NON-COMBUSTIBLE SILL SHALL NOT EXCEED 3/8".
3. WHERE THERE IS NO SILL, THE CLEARANCE BETWEEN THE BOTTOM OF THE DOOR AND THE FLOOR SHALL NOT EXCEED 3/4".
4. THE CLEARANCE BETWEEN BOTTOM OF DOOR AND RIGID FLOOR TILE: 5/8" MAX.
5. THE CLEARANCE BETWEEN THE BOTTOM OF 3/4 HR, 1 HR, & 1-1/2 HR RATED DOORS SHALL NOT EXCEED 3/8" FOR SINGLE LEAF DOORS & 1/4" FOR DOUBLE DOORS.

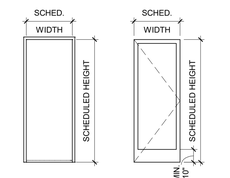
FIRE AND SMOKE RATED DOORS

1. FULLY GROUT ALL H.M. FRAMES AT RATED CMU WALLS.
2. PROVIDE SOUND AND SMOKE SEALS AT ALL INTERIOR UNIT ENTRY DOORS.
3. TRANSOMS IN RATED FRAMES SHALL HAVE SAME FIRE RATING AS DOORS IN SAME FRAME.
4. REFER TO FLOOR PLANS FOR DESIGNATION OF RATED PARTITIONS AND DOORS.

GLAZING IN DOORS

1. GLAZING IN NON-RATED DOORS SHALL BE TEMPERED SAFETY GLASS.
2. GLAZING IN RATED DOORS SHALL BE WIRE GLASS PANELS LIMITED IN SIZE PER THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE.
3. GLAZING OTHER THAN WIRED GLASS IN FIRE WINDOW ASSEMBLIES SHALL BE FIRE PROTECTION-RATED GLAZING IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.

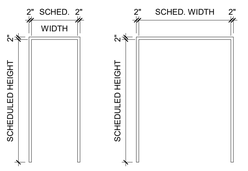
DOOR TYPES LEGEND



TYPE F
FLUSH

TYPE SF
DOUBLE PANEL

FRAME TYPES LEGEND



TYPE HM
FRAME W/ 2" HEAD

TYPE HM2
DOUBLE EGRESS DOOR FRAME

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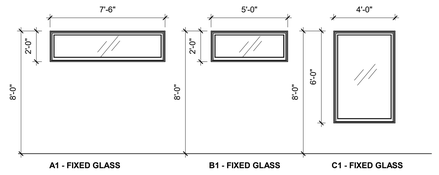
ORIG. ISSUE 09/27/2022
CURRENT:

SHEET NAME:
DOOR SCHEDULES AND LEGENDS

SHEET NO:
A11.01

WINDOW SCHEDULE

MARK	WIDTH	HEIGHT	COMMENTS
A1	7'-6"	2'-0"	
B1	5'-0"	2'-0"	
C1	4'-0"	6'-0"	



1 WINDOW TYPES
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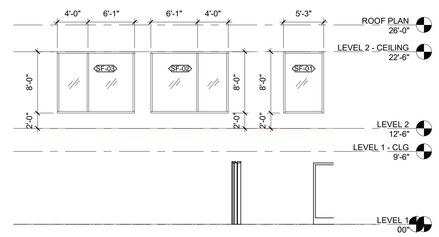
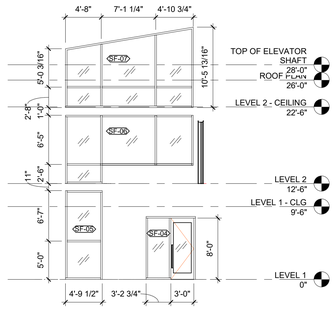
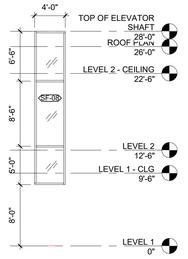


2 STOREFRONT - NORTH ELEVATION
SCALE: NTS



3 STOREFRONT - NORTH ELEVATION
SCALE: NTS



4 STOREFRONT - EAST ELEVATION
SCALE: NTS

GENERAL NOTES - WINDOWS

WINDOW BASIS OF DESIGN

MANUFACTURER & SERIES: QUAKER, CITYVU
GLAZING INFORMATION: ENERGY NORTH LoE2-180 W/ARGON
STRUCTURAL RATING: 80 PSF
STC RATING:
SHGC: .55
U FACTOR: .25
COLOR: BLACK

SEE FULL SPECIFICATIONS FOR MORE INFORMATION.

1. SEE STRUCTURAL DRAWINGS FOR HEADER AND LINTEL SCHEDULES.
2. CONTRACTOR TO COORDINATE ROUGH OPENING REQUIREMENTS WITH WINDOW SUBMITTALS.
3. CONTRACTOR TO COORDINATE EXTERIOR SEALANT JOINTS TO ACCOUNT FOR FUTURE BUILDING SHRINKAGE.
4. SHIM ALL WINDOWS LEVEL AND FILL ALL GAPS AT ROUGH OPENING WITH LOW EXPANSION FOAM SEALANT. INTERIOR OF WINDOWS SHOULD BE SEALED 360 DEGRESS WITH SEALANT AT WINDOW TO R.O.

ALUMINUM STOREFRONT NOTES

1. PROVIDED BACKER PLATE OR CLOSED STOREFRONT SYSTEM AT ALL LOCATIONS.
2. COORDINATE ALL STOREFRONT OPENINGS IN FIELD (FIELD VERIFY) PRIOR TO INSTALLATION.
3. REFERENCE SHRINKAGE INFORMATION AND MANUFACTURER'S REQUIREMENTS FOR ALL SEALANT JOINT SIZES.

REFER TO **IBC 2021 2406.4 GLAZING/HAZARDOUS LOCATIONS**
THE FOLLOWING SHALL BE CONSIDERED SPECIFIC HAZARDOUS LOCATIONS REQUIRING SAFETY GLAZING MATERIALS:

1. GLAZING IN ALL FIXED AND OPERABLE PANELS OF SWINGING, SLIDING, AND BIFOLD DOORS SHALL BE CONSIDERED A HAZARDOUS LOCATION.
   EXCEPTIONS:
   1. GLAZED OPENING OF A SIZE THROUGH WHICH A 3-INCH-DIAMETER SPHERE IS UNABLE TO PASS.
   2. DECORATIVE GLAZING.
   3. GLAZING MATERIALS USED AS CURVED GLAZED PANELS IN REVOLVING DOORS.
   4. COMMERCIAL REFRIGERATED CABINET GLAZED DOORS.
2. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE OF THE GLAZING IS WITHIN A 24-INCH ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION.
   EXCEPTIONS:
   1. DECORATIVE GLAZING.
   2. WHERE THERE IS AN INTERVENING WALL OR OTHER PERMANENT BARRIER BETWEEN THE DOOR AND GLAZING.
   3. WHERE ACCESS THROUGH THE DOOR IS TO A CLOSET OR STORAGE AREA 3 FEET OR LESS IN DEPTH.
   4. GLAZING IN WALLS ON THE LATCH SIDE OF AND PERPENDICULAR TO THE PLANE OF THE DOOR IN A CLOSED POSITION IN ONE AND TWO-FAMILY DWELLINGS OR WITHIN DWELLING UNITS IN GROUP R-2.
3. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS SHALL BE CONSIDERED A HAZARDOUS LOCATION:
   1. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS GREATER THAN 9 SQUARE FEET.
   2. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES ABOVE THE FLOOR.
   3. THE TOP EDGE OF THE GLAZING IS GREATER THAN 36 INCHES ABOVE THE FLOOR.
   4. ONE OR MORE WALKING SURFACES ARE WITHIN 36 INCHES, MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, OF THE PLANE OF THE GLAZING.
   EXCEPTIONS:
   1. DECORATIVE GLAZING.
   2. WHERE A HORIZONTAL RAIL IS INSTALLED ON THE ACCESSIBLE SIDE(S) OF THE GLAZING 34 TO 38 INCHES ABOVE THE WALKING SURFACE. THE RAIL SHALL BE CAPABLE OF WITHSTANDING A HORIZONTAL LOAD OF 50 POUNDS PER LINEAR FOOT WITHOUT CONTACTING THE GLASS AND BE A MINIMUM OF 1 1/2 INCHES IN CROSS-SECTIONAL HEIGHT.
   3. OUTBOARD PANES IN INSULATION GLASS UNITS OR MULTIPLE GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLASS IS 25 FEET OR MORE ABOVE ANY GRADE, ROOF, WALKING SURFACE OR OTHER HORIZONTAL OR SLOPED (WITHIN 45 DEGREES OF HORIZONTAL) SURFACE ADJACENT TO THE GLASS EXTERIOR.
1. GLAZING IN GUARDS AND RAILINGS, INCLUDING STRUCTURAL BALUSTER PANELS AND NONSTRUCTURAL IN-FILL PANELS, REGARDLESS OF AREA OR HEIGHT ABOVE A WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION.
2. GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR FACING HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION. THIS SHALL APPLY TO SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING.
   EXCEPTION: GLAZING THAT IS MORE THAN 60 INCHES, MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, FROM THE WATER'S EDGE OF A BATHTUB, HOT TUB, SPA, WHIRLPOOL, OR SWIMMING POOL.
6. GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS, AND RAMPS SHALL BE CONSIDERED A HAZARDOUS LOCATION.
   EXCEPTIONS:
   1. THE SIDE OF A STAIRWAY, LANDING, OR RAMP THAT HAS A GUARD COMPLYING WITH THE PROVISIONS OF SECTIONS 1015 AND 1607.8, AND THE PLACE OF THE GLASS IS GREATER THAN 18 INCHES FROM THE RAILING.
   2. GLAZING 36 INCHES OR MORE MEASURED HORIZONTALLY FROM THE WMVALKING SURFACE.
7. GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF A STAIRWAY WHERE THE GLAZING IS LESS THAN 60 INCHES ABOVE THE LANDING AND WITHIN A 60-INCH HORIZONTAL ARC THAT IS LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED A HAZARDOUS LOCATION.
   EXCEPTION: GLAZING THAT IS PROTECTED BY A GUARD COMPLYING WITH SECTIONS 1015 AND 1607.8 WHERE THE PLANE OF THE GLASS IS GREATER THAN 18 INCHES FROM THE GUARD.
8. FIRE DEPARTMENT GLASS ACCESS PANELS SHALL BE OF TEMPERED GLASS. FOR INSULATION GLASS UNITS, ALL PANES SHALL BE TEMPERED GLASS.

1. WINDOW WALL SYSTEM IS TO BE DESIGNED AND ENGINEERED SPECIFIC PER STRUCTURAL WIND LOADS.
2. WINDOW WALL SYSTEM TO BE DESIGNED PER WIND-BORNE DEBRIS REQUIREMENTS. (EDITORS NOTE TO CONFIRM IF APPLICABLE)
3. PROVIDE MISSILE IMPACT RATED GLAZING IN WINDOW WALL SYSTEM AS INDICATED ON ELEVATIONS. (EDITORS NOTE TO CONFIRM IF APPLICABLE)
4. SEE SPECIFICATIONS AND PERFORMANCE CRITERIA FOR ADDITIONAL INFORMATION.
5. ALL WINDOW WALLS AND DOORS TO INCLUDE CONTINUOUS INTERIOR AIR SEAL UTILIZING SEALANT.
6. WINDOW WALL TO BE CONSTRUCTED OF EXTRUDED ALUMINUM FRAMING. COLOR TO BE SELECTED FROM MANUFACTURER'S FULL RANGE OF COLORS.

FIRE RATED GLASS WINDOW NOTES

BASIS OF DESIGN

1. SAFTI FIRST 1/2" THICK FIRE 45 MINUTE FIRE-RATED GLASS AND FRAMING TO BE SUPERLITE II-XL 45 (www.safti.com)
2. 1/2" THICK LIMITED TO 1,296 SQ IN. 3/4" THICK UP TO 4,956 SQ IN.
3. FIRE RATING: 45 MINUTES WITH HOSE STREAM TEST. MEETS ASTM E119 AND NFPA 251. IMPACT SAFETY RATING: CPSC 16 CFR CAT. I & II.
4. STCK: 40 (WITH 3/4" PROFILE)

ALTERNATE

1. FIRE GLASS PILKINGTON PYROSTOP 3/4" THICK GLAZING, 45 MINUTE FIRE-RATED GLASS CERAMIC BY TECHNICAL GLASS PRODUCTS (TGP -www.fireglass.com)
2. LIMITED TO 4,500 SQ IN. FIRE RATING: 45 MINUTES WITH HOSE STREAM TEST. BARRIER TO FIRE AND RADIANT HEAT FOR PROTECTION FROM THE NON-FIRE SIDE OF THE GLASS.
3. IMPACT SAFETY RATING: CPSC 16 CFR CAT. I & II
4. STC: 40 (WITH 3/4" PROFILE)

REGISTERED ARCHITECT WALTER D. PAYNE 24499 STATE OF TEXAS

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

ISSUED FOR PERMIT

6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

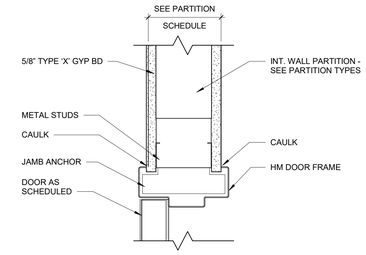
PROJ. NO.	ORIG. ISSUE
21066	09/27/2022

CURRENT:

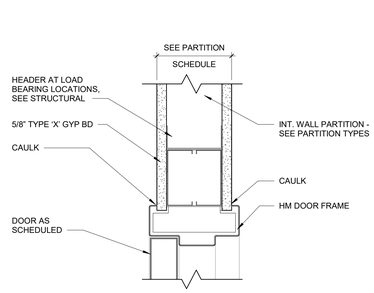
SHEET NAME:
WINDOW SCHEDULES

SHEET NO:
A11.02

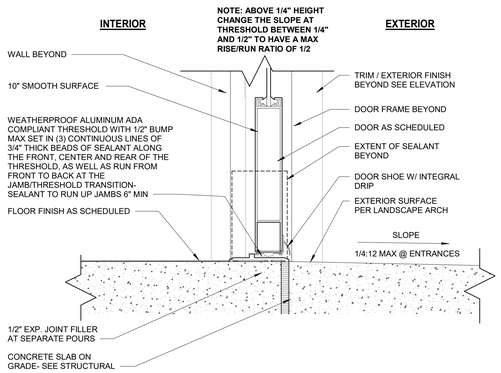
NOTE: THE DETAILS REPRESENTED ON THIS SHEET REPRESENT THE PROJECT STANDARD AND EXPECTATIONS FOR THE ASSEMBLY OF SYSTEMS, WATERPROOFING, FLASHING, SEALANTS, AND INSTALLATION REQUIREMENTS FOR THE VARIOUS EXTERIOR ENVELOPE OF THE BUILDING, SUBJECT TO MANUFACTURER INSTRUCTIONS AND COMPATIBILITY OF PRODUCTS. ISOLATED CONDITIONS NOT DETAILED WILL BE REQUIRED TO BE TREATED TO THE SAME STANDARD AS THESE PRECEDENTS, INCLUDING ANY THRU WALL FLASHING SYSTEMS NECESSARY FOR DRAINAGE, PRIMARY AND SECONDARY SEALANTS, LIQUID FLASHINGS TO CONFORM TO BUILDING GEOMETRY, ETC...



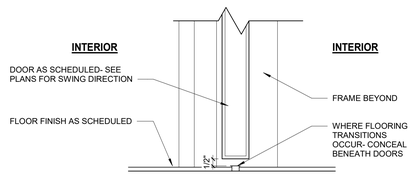
9 DOOR JAMB AT INTERIOR H.M. FRAME
SCALE: 3" = 1'-0"



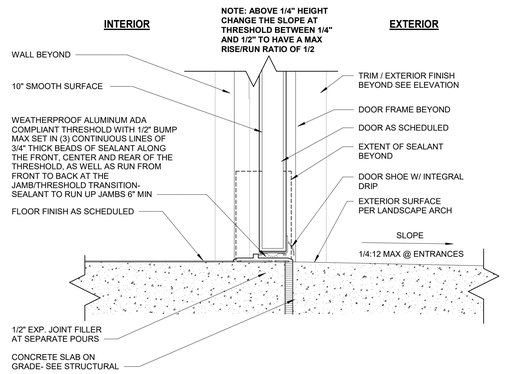
5 DOOR HEAD AT INTERIOR H.M. FRAME
SCALE: 3" = 1'-0"



3 DOOR SILL AT PUBLIC ACCESS ALUMINUM STOREFRONT DOORS
SCALE: 3" = 1'-0"



2 DOOR SILL @ TYPICAL NON RATED DOORS
SCALE: 3" = 1'-0"



1 DOOR SILL AT PUBLIC ACCESS HOLLOW METAL DOORS
SCALE: 3" = 1'-0"

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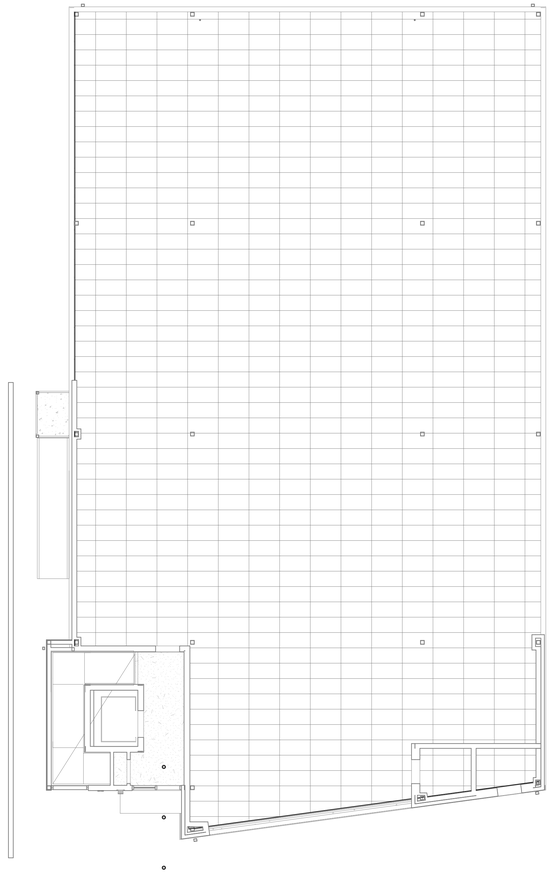
CURRENT:

SHEET NAME:
TYPICAL DOOR DETAILS NOT SHOWN ELSEWHERE

SHEET NO:
A11.03



ALTERNATE NO. 1

PROVIDE ALTERNATE BID TO INSTALL 1 HOUR FIRE RATED EXTERIOR GRADE SUSPENED ACCOSUTICAL CEILING SYSTEM.

BASIS OF BID - USG 2X4X1/2" 3270 WITH USG DXL SUSPENSION GRID. INSTALL PER MANUFACTURER'S INSTRUCTIONS TO ACHIEVE 1 HOUR FIRE RATING.

1 RCP - LEVEL 1
SCALE: 1/8" = 1'-0"

REGISTERED ARCHITECT
WALTER D. PAYNE
24499
STATE OF TEXAS

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CURRENT:

SHEET NAME:
ALTERNATE NO.1 - SUSPENDED CEILING IN GARAGE

SHEET NO:
A15.01

STRUCTURAL GENERAL NOTES & SPECIFICATIONS

GENERAL REQUIREMENTS

1 APPLICABLE CODES AND STANDARDS - UNLESS OTHERWISE NOTED, ALL CODES AND STANDARDS REFERENCED SHALL BE THE LATEST EDITION.

2 PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR REQUIRED OPENINGS TO BE PROVIDED, WHETHER SHOWN ON THESE DRAWINGS OR NOT. VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH THE MECHANICAL AND ELECTRICAL CONTRACTORS. OPENINGS REQUIRING HEADERS OR FRAMING SHALL BE REFERRED TO THE STRUCTURAL ENGINEER. NOMINAL PIPE SLEEVES THROUGH THE METAL ROOF DECK WILL NOT REQUIRE REINFORCEMENT OR FRAMING UNLESS THE OPENING EXCEEDS 6 INCHES IN DIAMETER.

3 INDIVIDUAL FLOOR OPENINGS LESS THAN OR EQUAL TO 10 INCHES IN DIAMETER CAN BE CORE DRILLED THROUGH THE FLOOR SLABS PROVIDED THAT THE CORED HOLES DO NOT CONFLICT OR INTERFERE WITH THE SUPPORTING STRUCTURAL FRAMING OR EDGE ANGLES. MULTIPLE CLOSELY SPACED OPENINGS PLACED PERPENDICULAR TO THE SPAN OF THE SLAB SHALL BE REFERRED TO THE STRUCTURAL ENGINEER FOR APPROVAL AND/OR ADDITIONAL FRAMING PRIOR TO CORE DRILLING. SEE 5/S6.2.

4 ANY REQUIRED CHANGES TO THE STRUCTURAL DRAWINGS DUE TO THE ACCEPTANCE OF ALTERNATES AND/OR SUBSTITUTES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

5 REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR ELEVATIONS, SLOPES, LOCATION OF DEPRESSED FLOOR AREAS, FLOOR FINISHES, WALKS, CURBS, TOPPING SLABS, ETC. ALL SLAB RECESSES SHALL BE PROVIDED BY THE CONTRACTOR WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.

6 THE CONTRACTOR SHALL COMPARE STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND CIVIL DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEERS AND ARCHITECT PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS. CONFLICTS THAT ARISE OR OCCUR DUE TO A LACK OF FIELD COORDINATION SHALL BE CORRECTED OR REMEDIED BY THE CONTRACTOR AT NO ADDITIONAL COST.

7 REPRODUCTION NOTE - THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS IS PROHIBITED. REVIT MODELS AND/OR CAD FILES OF STRUCTURAL DRAWINGS WILL BE MADE AVAILABLE TO THE CONTRACTOR, SUBCONTRACTORS AND/OR FABRICATORS/SUPPLIERS UPON REQUEST. THE CONTRACTOR, SUBCONTRACTORS, FABRICATORS AND/OR SUPPLIERS MAY REQUEST THE REVIT MODEL OR CAD DRAWING FILES WITH THE UNDERSTANDING THAT SUCH FILES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR, SUBCONTRACTOR, FABRICATOR OR SUPPLIER AND THAT PROVIDING THESE FILES DOES NOT IN ANY WAY RELIEVE THESE PARTIES OF THE RESPONSIBILITY FOR COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, COORDINATION OF THE WORK, OR FOR VERIFICATION OF MEASUREMENTS AND DIMENSIONS FOR PROPER FIT. ANY SUCH REQUIRED CHANGES SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

8 JOB SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ADHERE TO OCCUPATIONAL SAFETY AND HEALTH (OSHA) REGULATIONS, AS A MINIMUM, TO PROTECT PERSONNEL AT EXCAVATION SITES AND AT THE PROJECT SITE.

APPLICABLE BUILDING CODE

THE APPLICABLE BUILDING CODE FOR THIS PROJECT IS THE INTERNATIONAL BUILDING CODE (IBC), 2021 EDITION.

DESIGN LOADS

1 LIVE LOADS

ROOF — 20 PSF IN ACCORDANCE WITH IBC, SECTION 1607.14 ROOF LOADS

FLOORS

LOBBIES (FIRST FLOOR)	100 PSF
OFFICES	50 PSF
CORRIDORS (UPPER FLOOR)	80 PSF
PARTITIONS	50 PSF

STAIRS

STAIRS	100 PSF OR 300 LBS ANYWHERE ON TREAD

2 DEAD LOADS

ROOF	
INTRINSIC	10 PSF
SUPERIMPOSED	10 PSF
FLOOR	
INTRINSIC	56 PSF
SUPERIMPOSED	15 PSF

3 WIND LOADS - WIND LOADS ARE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.

RISK CATEGORY =II
EXPOSURE =B
ULTIMATE BASIC DESIGN WIND SPEED = 120 MPH
NOMINAL BASIC DESIGN WIND SPEED = 93 MPH

4 COMPONENTS AND CLADDING LOADS (UNFACTORED)

ROOF

EDGE ZONES MAXIMUM INWARD PRESSURE = 10.0 PSF
MAXIMUM OUTWARD PRESSURE = 30.0 PSF

WIDTH OF EDGE ZONES = 7'-0"

CORNER ZONES MAXIMUM INWARD PRESSURE = 10.0 PSF
MAXIMUM OUTWARD PRESSURE = 34.7 PSF

WIDTH OF CORNER ZONES = 7'-0"

INTERIOR ZONES MAXIMUM INWARD PRESSURE = 10.0 PSF
MAXIMUM OUTWARD PRESSURE = 18.3 PSF

WALLS

INTERIOR ZONES MAXIMUM INWARD PRESSURE = 14.2 PSF
MAXIMUM OUTWARD PRESSURE = 15.4 PSF

END ZONES MAXIMUM INWARD PRESSURE = 14.2 PSF
MAXIMUM OUTWARD PRESSURE = 18.5 PSF

END ZONES EXTEND 7'-0" FROM EACH CORNER.

5 SEISMIC LOADS

PER SITE GEOTECHNICAL INVESTIGATION:

SITE CLASS =	E
S(s) =	0.064
S(1) =	0.037
Fa =	2.5
Fv =	3.5
S(ms) =	0.094
S(m1) =	0.086
S(ds) =	0.063
S(d1) =	0.057

BUILDING OCCUPANCY CATEGORY = II
SEISMIC DESIGN CATEGORY = A
IMPORTANCE FACTOR = 1.0
BASIC SEISMIC FORCE RESISTIVE SYSTEM - ORDINARY STEEL CONCENTRICALLY BRACED FRAMES
RESPONSE MODIFICATION COEFFICIENT = 3.25
SEISMIC RESPONSE COEFFICIENT = 0.01

DESIGN BASE SHEAR, V = 10.62 KIPS

9 GROUND SNOW LOAD

GROUND SNOW LOAD = 5 PSF

10 FIRE RATINGS

FLOOR ASSEMBLIES - NO RATINGS OR UL ASSEMBLY RATINGS ARE REQUIRED.

ROOF ASSEMBLIES - NO RATINGS OR UL ASSEMBLY RATINGS ARE REQUIRED.

11 INTERIOR PARTITION WALLS

LATERAL LOAD 5 PSF

FOUNDATION NOTES

1 DESIGN VALUES ARE AS FOLLOWS:

DRILLED SHAFT FOUNDATIONS

ALLOWABLE END BEARING FOR SHAFTS BEARING IN CLAY BEARING STRATA	4,000 PSF
ALLOWABLE SKIN FRICTION FOR SHAFTS 12 FEET BELOW EXISTING GROUND SURFACE	1,500 PSF
ALLOWABLE SKIN FRICTION FOR SHAFTS IN UPPER 12 FEET BELOW EXISTING GROUND SURFACE (UPLIFT)	1,500 PSF

SKIN FRICTION AND END BEARING MAY BE COMBINED WITH A .70 REDUCTION IN ALLOWABLE END BEARING.

2 THE SITE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT WAS PREPARED BY MLA GEOTECHNICAL, 2800 LONGHORN BOULEVARD, SUITE 104, AUSTIN, TX 78758, TELEPHONE (512) 873-8899, FAX (512) 651-8486, ENGINEER'S JOB NO. 22106100.056, DATED JUNE 8, 2022. THE CONTRACTOR SHALL OBTAIN A COPY OF THIS REPORT AND REVIEW THE REPORT TO BECOME THOROUGHLY FAMILIAR WITH THE GEOTECHNICAL CONDITIONS THAT EXIST AT THIS SITE AND THE RECOMMENDATIONS PRESENTED THEREIN.

THE SITE GEOTECHNICAL REPORT AND THE RECOMMENDATIONS PRESENTED THEREIN ARE REFERENCED FOR INFORMATIONAL PURPOSES ONLY. THE GEOTECHNICAL REPORT FOR THE PROJECT SITE IS NOT A PART OF THE CONSTRUCTION OR CONTRACT DOCUMENTS.

3 THE SOILS AT THE SITE ARE ANTICIPATED TO CONSIST OF APPROXIMATELY 10' OF DARK BROWN HIGH PLASTICITY CLAY WITH GRAVEL OVER TAN MODERATE PLASTICITY CLAY WITH GRAVEL. THE FIRST FLOOR AND FOUNDATION SYSTEM FOR THE BUILDING IS TO CONSIST OF A STRUCTURALLY SUSPENDED BEAM AND SLAB SYSTEM OVER VOID FORMS SUPPORTED BY DRILLED SHAFTS.

4 THE CONTRACTOR SHALL PROVIDE AND ENSURE PROPER DRAINAGE OF THE SITE PRIOR TO BEGINNING CONSTRUCTION OF THE FOUNDATION AND FLOOR SYSTEMS. DRAINAGE SHALL BE SUCH THAT SURFACE RUNOFF IS ROUTED AROUND OR AWAY FROM THE BUILDING SITES. MEASURES SHALL BE TAKEN TO PREVENT THE PONDING OF WATER WITHIN THE BUILDING AREAS.

5 THE PROJECT CONSTRUCTION AREA SHALL BE CLEARED AND GRUBBED TO REMOVE ALL TOP SOIL, VEGETATION AND TREES WITHIN THE CONSTRUCTION AREA. TREE ROOTS SHALL BE GRUBBED AND REMOVED FOR THEIR FULL DEPTHS. TREES THAT ARE TO REMAIN SHALL CLEARLY MARKED AND PROTECTED FROM DAMAGE. WITH THE OWNER'S PERMISSION, TOP SOIL MAY STOCKPILED ON-SITE IN A LOCATION DETERMINED BY THE OWNER FOR LATER GRADING AROUND THE SITE. ALL EXCESS MATERIAL NOT USED FOR FINAL GRADING AND ALL MATERIAL THAT IS NOT PERMITTED TO BE STOCKPILED ON SITE SHALL BE LOADED, HAULED OFF AND DISPOSED OF OFF-SITE. CLEAR AND GRUB THE PROJECT TO A MINIMUM DISTANCE OF 5 FEET OUTSIDE THE LIMITS OF THE FOUNDATION AS SHOWN IN THE STRUCTURAL FOUNDATION PLANS.

6 AFTER CLEARING, GRUBBING AND STRIPPING OF THE BUILDING SITE, EXCAVATE THE ON-SITE SURFICIAL MATERIALS TO A MINIMUM DEPTH OF 8. THE EXCAVATION SHALL BE TO A MINIMUM DISTANCE OF 5 FEET OUTSIDE THE BUILDING FOUNDATION LIMITS, AS SHOWN IN FOUNDATION PLANS.

7 DURING AND UPON COMPLETION OF THE EXCAVATION OPERATIONS, THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE COLLECTION AND REMOVAL OF ANY SURFACE OR GROUND WATER THAT ENTERS OR PONDS IN THE EXCAVATED AREA. ANY WATER THAT ENTERS THE EXCAVATION SHALL BE PROMPTLY PUMPED OUT.

8 AFTER CLEARING, STRIPPING, GRUBBING AND EXCAVATION OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE SHALL BE PROOF ROLLED UNDER THE SUPERVISION OF THE TESTING LABORATORY REPRESENTATIVE BY MAKING AT LEAST 5 PASSES USING A 20-TON PNEUMATIC ROLLER OR FULLY LOADED DUMP TRUCK OR WATER TRUCK, OR OTHER EQUIPMENT APPROVED BY THE TESTING LABORATORY REPRESENTATIVE, TO DETECT ANY SOFT OR WEAK AREAS. THE SUBGRADE IS DEEMED TO PASS PROVIDED THAT THE SUBGRADE SOILS DO NOT RUT OR SHIFT UNDER THE PASSAGE OF THE PROOF ROLLING EQUIPMENT. ANY SOFT, WEAK OR OTHERWISE FAILED AREAS SHALL BE EXCAVATED, REMOVED AND REPLACED WITH COMPACTED SELECT STRUCTURAL FILL.

9 IF NECESSARY TO BUILD-UP THE SITE, PLACE SELECT STRUCTURAL FILL MATERIAL PLACE SELECT STRUCTURAL FILL IN LOOSE LIFTS OF 8 INCHES MAXIMUM THICKNESS AND COMPACT AS SPECIFIED. THE FINAL SUBGRADE SHALL BE REASONABLY CLEAN AND FREE OF LOOSE EARTH, COBBLES, ROCKS AND VOIDS.

10 SELECT STRUCTURAL FILL - SELECT STRUCTURAL FILL SHALL CONSIST OF A WELL-GRADED CRUSHED LIMESTONE BASE MATERIAL MEETING THE REQUIREMENTS OF THE 2014 TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES, ITEM 247 - FLEXIBLE BASE, TYPE A (CRUSHED STONE), GRADE 3 OR BETTER, WITH A MINIMUM PLASTICITY INDEX (PI) OF 3, A MAXIMUM PI OF 12, AND A MAXIMUM PARTICLE SIZE OF 2 INCHES IN ANY DIMENSION.

FILL NOT SPECIFICALLY CONFORMING TO THESE REQUIREMENTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND GEOTECHNICAL ENGINEER OR TESTING LABORATORY FOR APPROVAL.

11 ALTERNATE SELECT STRUCTURAL FILL

A MATERIAL THAT DOES NOT MEET THE REQUIREMENTS FOR SELECT STRUCTURAL FILL MAY BE CONSIDERED FOR USE AS ALTERNATE SELECT STRUCTURAL FILL. SUCH MATERIAL MAY BE USED ONLY IF APPROVED BY THE STRUCTURAL AND GEOTECHNICAL ENGINEERS.

B ALTERNATE SELECT STRUCTURAL FILL SHALL:

1) CONSIST OF A COMPACTABLE CLAYEY SAND, SANDY CLAY, LEAN CLAY, CLAYEY GRAVEL, GRAVELLY CLAY, CRUSHED LIMESTONE SCREENINGS OR OTHER SUITABLE MATERIAL FREE OF ROOTS, DEBRIS, SILT, MUCK, ORGANICS OR ANY OTHER MATERIAL DEEMED DELETERIOUS BY THE STRUCTURAL OR GEOTECHNICAL ENGINEERS;
2) THE LIQUID LIMIT SHALL NOT EXCEED 40;
3) HAVE A PLASTICITY INDEX (PI) OF NOT LESS THAN 5 NOR GREATER THAN 18;
4) A MAXIMUM PARTICLE SIZE OF 2 INCHES IN THE GREATEST DIMENSION;
5) A MAXIMUM GRAVEL CONTENT (PERCENTAGE RETAINED ON A NO. 4 SIEVE) OF 40 PERCENT; AND
6) THE MATERIAL PASSING THE NO. 200 SIEVE SHALL NOT BE LESS THAN 10 PERCENT.

C SOIL ANALYSES, INCLUDING SOIL CLASSIFICATION, GRADATION, LIQUID AND PLASTIC LIMITS AND PLASTICITY INDEX (PI) AND COMPACTION (MOISTURE-DENSITY) CURVES AND SAMPLES SHALL BE SUBMITTED TO THE GEOTECHNICAL AND STRUCTURAL ENGINEERS FOR REVIEW A MINIMUM OF 14 DAYS PRIOR TO THE BID DATE.

12 WHERE THE BUILDING PAD CONSISTS OF AN ALTERNATE SELECT STRUCTURAL FILL MATERIAL, THE TOP 12 INCHES SHALL CONSIST OF A TRUE COMPACTED, WELL-GRADED CRUSHED LIMESTONE BASE MATERIAL SELECT STRUCTURAL FILL AS SPECIFIED IN ITEM 11 ABOVE.

13 NO SELECT OR ALTERNATE SELECT STRUCTURAL FILL MATERIAL SHALL BE PLACED UNTIL THE PROPOSED MATERIAL HAS BEEN SUBMITTED, REVIEWED BY THE STRUCTURAL ENGINEER AND THE SUBMITTAL RETURNED TO THE CONTRACTOR AS APPROVED.

14 SELECT OR ALTERNATE SELECT STRUCTURAL FILL SHALL BE PLACED IN LOOSE LIFTS OF 8 INCHES MAXIMUM THICKNESS AND COMPACTED TOA MINIMUM OF 95 PERCENT OF MAXIMUM DENSITY AT A MOISTURE CONTENT OF +3/-3 OF OPTIMUM IN ACCORDANCE WITH THE STANDARD PROCTOR (ASTM D 698).

15 BRING FILL MATERIAL TO FINAL GRADE. GRADE TOLERANCE SHALL BE +0 / -3/4 INCH MEASURED FROM BOTTOM OF SLAB. MATERIAL USED FOR FINE GRADING SHALL CONSIST OF COMPACTIBLE CRUSHED LIMESTONE FINES OR SELECT STRUCTURAL FILL. THE USE OF SAND FOR FINE GRADING WILL NOT BE PERMITTED.

16 HORIZONTAL RUNS OF PLUMBING, PIPING AND ELECTRICAL CONDUIT SHALL BE BURIED IN THE SLAB SUBGRADE. PLACEMENT OF SUCH ITEMS ON THE SURFACE OF THE SUBGRADE FOR EMBEDMENT IN THE SLAB WILL NOT BE PERMITTED.

17 PRIOR TO PLACEMENT OF VAPOR BARRIER, THE SURFACE OF THE BUILDING PAD OR SUBGRADE SHALL BE FIRM AND REASONABLY SMOOTH, LEVEL AND SHALL BE FREE OF RUTS AND ABRUPT ELEVATION CHANGES.

18 THE PREPARED GRADE AREA SHALL BE COVERED WITH A VAPOR BARRIER. UNLESS OTHERWISE NOTED, VAPOR BARRIER SHALL BE CONTINUOUS UNDER INTERIOR GRADE BEAMS AND SHALL EXTEND DOWN THE INTERIOR SIDE AND ACROSS THE BOTTOM OF EXTERIOR GRADE BEAMS. CONTRACTOR SHALL TAKE CARE TO ENSURE THAT VAPOR BARRIER SHEETING IS SMOOTH AND LEVEL UNDER BEAMS AND SLABS. BUNCHING OF SHEETING WILL NOT BE PERMISSIBLE AND SHALL BE CORRECTED PRIOR TO PLACEMENT OF CONCRETE. TORN, DAMAGED AND PUNCTURED AREAS SHALL BE REPAIRED PRIOR TO PLACEMENT OF CONCRETE.

19 FOOTING AND GRADE BEAM EXCAVATIONS SHALL BE MADE USING A SMOOTH MOUTHED BUCKET. THE USE OF A TOOTHED BUCKET IS PROHIBITED AND WILL NOT BE PERMITTED.

20 PERIMETER GRADE BEAMS MAY BE EARTH FORMED. EXCAVATIONS FOR GRADE BEAMS SHALL BE NEAT AND FREE FROM DEBRIS, TRASH, MUD, MUCK AND ALL LOOSE MATERIALS. CONTRACTOR SHALL USE CARE TO AVOID CAVE-INS AND SLOUGHING DUE TO TRAFFIC FROM WORKMEN OR EQUIPMENT. IF NECESSARY TO CONTROL SLOUGHING, HAUNCHES SHALL BE PROVIDED. WATER ACCUMULATIONS IN EXCESS OF 1 INCH SHALL BE PUMPED OUT PRIOR TO PLACEMENT OF CONCRETE. TOPS OF PIERS SHALL BE CLEAN AND FREE OF DIRT, MUD, LOOSE ROCK, DEBRIS AND VAPOR BARRIER. PLACE VAPOR BARRIER, REINFORCEMENT AND CONCRETE AS SOON AS POSSIBLE FOLLOWING INSPECTION AND APPROVAL OF THE GRADE BEAM EXCAVATIONS BY THE TESTING LABORATORY REPRESENTATIVE. DURING PERIODS OF INCLEMENT WEATHER, ANY WATER PONDING IN THE EXCAVATIONS SHALL BE PROMPTLY PUMPED OUT AND THE EXCAVATION ALLOWED TO DRY. PLACEMENT OF CONCRETE ON SOFT OR MUDDY EXCAVATIONS WILL NOT BE PERMITTED. TO THE EXTENT POSSIBLE AND PRACTICAL, DO NOT MAKE BEAM EXCAVATIONS UNTIL READY TO PLACE REINFORCEMENT AND CONCRETE.

21 THE BOTTOMS OF THE FOOTING EXCAVATIONS SHALL BE INSPECTED BY A TESTING LABORATORY REPRESENTATIVE PRIOR TO PLACEMENT OF REINFORCEMENT AND CONCRETE. THE BOTTOMS OF THE EXCAVATIONS SHALL BE SMOOTH, FIRM AND FREE OF LOOSE MATERIAL, MUD, MUCK, TRASH, DEBRIS AND OTHER DELETERIOUS MATERIAL THAT MAY PREVENT SOLID BEARING. WATER ACCUMULATIONS IN EXCESS OF 1 INCH SHALL BE PUMPED OUT PRIOR TO PLACEMENT OF CONCRETE. PLACE REINFORCEMEN AND CONCRETE AS SOON AS POSSIBLE FOLLOWING INSPECTION AND APPROVAL OF THE FOOTING EXCAVATION BY THE TESTING LABORATORY REPRESENTATIVE. DURING PERIODS OF INCLEMENT WEATHER, ANY WATER PONDING IN THE FOOTING EXCAVATIONS SHALL BE PROMPTLY PUMPED OUT AND THE EXCAVATIONS ALLOWED TO DRY. PLACEMENT OF CONCRETE ON SOFT OR MUDDY EXCAVATIONS WILL NOT BE PERMITTED. TO THE EXTENT POSSIBLE AND PRACTICAL, DO NOT MAKE FOOTING EXCAVATIONS UNTIL READY TO PLACE REINFORCEMENT AND CONCRETE.

22 RETAINING WALL FOOTINGS SHALL BE CAST DIRECTLY AGAINST THE SIDES OF THE FOOTING EXCAVATION. DO NOT FORM RETAINING WALL FOOTINGS.

23 UTILITIES UNDER FOUNDATIONS

A WHERE UTILITY LINES CROSS UNDER GRADE BEAMS OR FOOTINGS, DEPTH, UNLESS OTHERWISE NOTED, SHALL PROVIDE FOR A MINIMUM OF 1 FOOT OF COVER BETWEEN THE TOP OF THE UTILITY LINE AND THE BOTTOM OF THE GRADE BEAM OR FOOTING. UTILITIES SHALL INTERSECT THE GRADE BEAM OR FOOTING PERPENDICULAR TO OR WITHIN 45 DEGREES OF THE PERPENDICULAR TO THE GRADE BEAM OR FOOTING.

B AT GRADE BEAMS, THE UTILITY EXCAVATION SHALL BE BACKFILLED WITH LEAN CONCRETE OR FLOWABLE FILL FOR A MINIMUM DISTANCE OF 2'-0" EACH SIDE OF GRADE BEAM TO THE BOTTOM OF GRADE BEAM ELEVATION.

C AT FOOTINGS, THE UTILITY EXCAVATION SHALL BE BACKFILLED WITH LEAN CONCETE OR FLOWABLE FILL FOR THE FULL WIDTH OF THE FOOTING PLUS AN ADDITIONAL 2 FEET TO EACH SIDE OF THE FOOTING.

D UNDERSLAB UTLITIES SHALL BE PLACED ON BEDDING AS REQUIRED BY THE PLUMBING AND/OR ELECTRICAL DRAWINGS AND SPECIFICATIONS, AND THE TRENCHES BACKFILLED WITH SELECT STRUCTURAL FILL COMPACTED AS REQUIRED FOR THE BUILDING PAD, OR FLOWABLE FILL. BACKFILLING WITH WET SAND WILL NOT BE PERMITTED.

E FLOWABLE FILL SHALL BE IN ACCORDANCE WITH THE 2014 TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES ITEM 401, EXCAVATABLE FLOWABLE FILL.

24 UTILITIES PARALLEL TO BUILDING FOUNDATIONS - UTILITY EXCAVATIONS PARALLEL TO THE FACE OF THE BUILDING WILL NOT BE PERMITTED WITHIN A CLEAR DISTANCE EQUAL TO DIMENSION FROM TOP OF SLAB TO BOTTOM OF GRADE BEAM FROM THE EXTERIOR FACE OF BUILDING OR GRADE BEAM WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. IN CASES WHERE SUCH APPROVAL IS GRANTED, THE UTILITY TRENCH SHALL BE BACKFILLED WITH LEAN CONCRETE OR FLOWABLE FILL FOR THE ENTIRE LENGTH OF THE TRENCH WHERE THE SPECIFIED CLEARANCE HAS NOT BEEN PROVIDED.

VAPOR BARRIER

1 VAPOR BARRIER SHALL CONSIST OF A POLYOLEFIN GEOMEMBRANE THAT MEETS THE FOLLOWING REQUIREMENTS:

A MEET OR EXCEED THE CLASS A REQUIREMENTS OF ASTM E1745;

B FOR NEW MATERIAL, PROVIDE A PERMEANCE RATING OF 0.010 PERMS (GRAINS/HR-SF-IN HG), OR LESS, IN ACCORDANCE WITH ASTM F1249 OR ASTM E154 AND ASTM E96 TEST METHODS.

C AFTER CONDITIONING PER ASTM E1745, PERMEANCE MUST REMAIN BELOW 0.010 PERMS AFTER TESTING PER ASTM E154 AND ASTM F1249, OR ASTM E154 AND ASTM E96 TEST METHODS.

D PROVIDE A MINIMUM PUNCTURE RESISTANCE OF 2250 GRAMS IN ACCORDANCE WITH ASTM D1709;

E PROVIDE A MINIMUM TENSILE STRENGTH OF 45 POUNDS PER INCH IN ACCORDANCE WITH ASTM E154 AND D882;

F A MINIMUM THICKNESS OF 15 MILS.

2 ACCEPTABLE PRODUCTS ARE STEGO WRAP 15 (15 MIL THICKNESS) AS MANUFACTURED BY STEGO INDUSTRIES, LLC, SAN JUAN CAPISTRANO, CALIFORNIA; GRIFFOLYN 15 (15 MIL THICKNESS) VAPOR BARRIER BY REEF INDUSTRIES, HOUSTON, TEXAS; MOISTOP ULTRA 15 (15 MIL THICKNESS), BY FORTIFIBER BUILDING SYSTEMS GROUP, FERNLEY, NEVADA; VAPORFLEX 15 (15 MIL THICKNESS) BY LAYFIELD CONSTRUCTION PRODUCTS OF RENTON, WASHINGTON; BARRIER-BAC VB-350 (16 MIL THICKNESS), BY INTEPLAST GROUP, LTD., LIVINGSTON, NEW JERSEY; OR AN APPROVED ALTERNATE.

3 VAPOR BARRIER SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ASTM E1643 AND THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. SPECIAL ATTENTION SHALL BE PAID TO THE INSTALLATION OF VAPOR BARRIER AT PIPE, CONDUIT AND PLUMBING PENETRATIONS. VAPOR BARRIER SHALL BE SEALED TIGHTLY TO ALL PENETRATIONS USING PIPE BOOTS CONSTRUCTED USING VAPOR BARRIER MATERIAL, PRESSURE SENSITIVE TAPE AND MASTIC PER THE MANUFACTURER'S INSTRUCTIONS.

4 LAP JOINTS IN VAPOR BARRIER A MINIMUM OF 6 INCHES AND SEAL CONTINUOUSLY WITH A PRESSURE SENSITIVE, HIGH DENSITY POLYETHYLENE TAPE MANUFACTURED SPECIFICALLY FOR USE IN SEALING THE VAPOR BARRIER LAPS AND AS APPROVED BY THE VAPOR BARRIER MANUFACTURER. THE TAPE SHALL HAVE A WATER VAPOR TRANSMISSION RATE OF 0.3 PERMS OR LESS IN ACCORDANCE WITH ASTM E96. THE MINIMUM TAPE WIDTH SHALL BE 4 INCHES. ACCEPTABLE PRODUCTS ARE STEGO TAPE AS MANUFACTURED BY STEGO INDUSTRIES, LLC OF SAN JUAN CAPISTRANO, CALIFORNIA; GRIFFOLYN PRESSURE SENSITIVE TAPE, BY REEF INDUSTRIES OF HOUSTON, TEXAS; MOISTOP TAPE BY FORTIFIBER BUILDING SYSTEMS GROUP, OF FERNLEY, NEVADA; VAPORFLEX TAPE BY LAYFIELD CONSTRUCTION PRODUCTS OF RENTON, WASHINGTON; BARRIER-BAC SEAM TAPE BY INTEPLAST GROUP, LTD, LIVINGSTON, NEW JERSEY; OR AN APPROVED ALTERNATE.

5 VAPOR PROOFING MASTIC SHALL HAVE A WATER VAPOR TRANSMISSION RATE OF 0.17 PERMS OR LESS IN ACCORDANCE WITH ASTM E96; A TENSILE STRENGTH OF 32 PSI AND ELONGATION OF 3800% IN ACCORDANCE WITH ASTM D412; PROVIDE RESISTANCE TO DECAY OF 9 PERCENT OR LESS PERMANENT LOSS IN ACCORDANCE WITH ASTM E154; AND WITHSTAND A HYDROSTATIC PRESSURE OF 28 PSI IN ACCORDANCE WITH ASTM D751. APPROVED PRODUCT IS STEGO MASTIC.

6 VAPOR BARRIER SHALL BE CONTINUOUS UNDER SLABS, DOWN SIDES AND ACROSS THE BOTTOM OF INTERIOR GRADE BEAMS AND DOWN INTERIOR SIDE AND ACROSS THE BOTTOM OF EXTERIOR GRADE BEAMS. VAPOR BARRIER SHALL BE INSTALLED SMOOTH AND LEVEL. BUNCHING UNDER SLABS OR GRADE BEAMS WILL NOT BE PERMITTED AND SHALL BE CORRECTED PRIOR TO CONCRETE PLACEMENT.

7 CAREFULLY INSPECT VAPOR BARRIER FOR DAMAGE, TEARS OR PENETRATIONS PRIOR TO CONCRETE PLACEMENT. ANY DAMAGE SHALL BE REPAIRED BY COVERING WITH SOUND VAPOR BARRIER LAPPED A MINIMUM OF 6 INCHES ALL AROUND ONTO THE EXISTING VAPOR BARRIER, AND TAPING OF THE EDGES ALL AROUND.

8 IF AN ALTERNATE PRODUCT IS PROPOSED IN LIEU OF ONE OF THE SPECIFIED PRODUCTS, SUBMIT PRODUCT DATA FOR THE PRODUCT AND TEST REPORTS PREPARED BY AN INDEPENDENT ENGINEERING TESTING LABORATORY AND BEARING THE SEAL OF A CURRENTLY LICENSED PROFESSIONAL ENGINEER SHOWING TEST RESULTS FOR PERMEANCE, MINIMUM PUNCTURE RESISTANCE AND MINIMUM TENSILE STRENGTH OF THE PROPOSED PRODUCT AND FOR COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.

DRILLED SHAFT FOUNDATIONS

1 PRIOR TO THE COMMENCEMENT OF DRILLING OPERATIONS, FIELD LOCATE AND ADEQUATELY PROTECT ANY EXISTING STRUCTURES, UTILITIES AND/OR ANY OTHER PERMANENT ELEMENTS FROM DAMAGE. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY DAMAGE RESULTING FROM DRILLING OPERATIONS.

2 THE DRILLED SHAFT FOUNDATIONS HAVE BEEN DESIGNED TO SUPPORT THE BUILDING LOADS THROUGH A COMBINATION OF END BEARING AND SKIN FRICTION. MINIMUM REQUIRED SHAFT LENGTHS ARE SHOWN ON THE PLANS.

3 THE FINAL LENGTHS OF THE SHAFTS SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE TESTING LABORATORY REPRESENTATIVE. SHOULD PIER CAGES REQUIRE LENGTHENING, VERTICAL BARS SHOULD BE LAPPED 45 BAR DIAMETERS TO THE BOTTOM OF THE CAGE AND TIES SHALL BE PROVIDED TO THE BOTTOM OF THE CAGE AS SCHEDULE.

4 IF THE TOTAL INSTALLED VERTICAL LINEAL FOOTAGE OF DRILLED SHAFTS, COMPUTED FOR THE PROJECT DRILLED SHAFTS AS A GROUP FOR A GIVEN SIZE, EXCEEDS OR IS LESS THAN THE TOTAL LINEAL FOOTAGE COMPUTED ON THE BASIS OF THE SHAFT LENGTHS SHOWN ON THE DRAWINGS FOR THE SHAFTS AS A GROUP, THE CONTRACT PRICE WILL BE ADJUSTED UNDER A CHANGE ORDER. THE TOTAL LENGTH OF A SHAFT PER THE DRAWINGS WILL BE EQUAL TO THE DIFFERENCE BETWEEN TOP OF SHAFT ELEVATION (AT BOTTOM OF GRADE BEAM, PILASTER OR SLAB) SHOWN ON THE PLANS LESS THE ASSUMED ELEVATION OF THE TOP OF THE *[BEARING STRATUM]* PLUS THE REQUIRED EMBEDMENT LENGTH. THE TOTAL VERTICAL LINEAL FOOTAGE OF SHAFTS FOR A GIVEN SIZE WILL BE EQUAL TO THE SUM OF THE LENGTHS OF THE INDIVIDUAL SHAFTS OF THAT SIZE. THE DEPTH OF GRADE BEAM, PILASTER, PIER CAP OR SLAB WILL NOT BE USED TO COMPUTE FINAL SHAFT LENGTHS, BUT THE COST OF DRILLING THROUGH THE BUILDING PAD FOR THE DEPTH OF GRADE BEAM, PILASTER, PIER CAP OR SLAB SHALL BE INCLUDED IN THE BID PRICE.

5 CONCRETE FOR DRILLED SHAFTS - REFER TO THE CONCRETE NOTES FOR SPECIAL REQUIREMENTS FOR CONCRETE TO BE USED IN DRILLED SHAFT FOUNDATIONS.

6 EXCAVATIONS FOR DRILLED SHAFTS SHALL BE NEAT AND FREE OF DEBRIS AND LOOSE MATERIALS. THE BOTTOM OF EXCAVATION SHALL BE MOISTENED, AS NECESSARY, TO PERMIT THOROUGH CLEANING WITH THE DRILLING TOOL. USE A CLEAN-OUT TOOL, IF NECESSARY. REINFORCING STEEL AND CONCRETE SHALL BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATION AND INSPECTION OF THE SHAFTS. UNDER NO CIRCUMSTANCES SHALL A SHAFT BE EXCAVATED OR DRILLED THAT CANNOT BE FILLED WITH CONCRETE PRIOR TO THE END OF THE WORK DAY. WATER ACCUMULATIONS IN EXCESS OF 2 INCHES SHALL BE PUMPED OUT PRIOR TO PLACEMENT OF CONCRETE.

7 EXCAVATIONS FOR DRILLED SHAFTS SHALL COMPLY WITH THE FOLLOWING TOLERANCES:

A DIAMETER OF DRILLED SHAFT: +2 INCHES, -1/2 INCH
B MAXIMUM DEVIATION FROM INDICATED PLAN LOCATION: 5% OF SHAFT DIAMETER OR 3 INCHES, WHICHEVER IS LESS
C TOP OF CONCRETE SHAFT ELEVATION: +1 INCH, -3 INCHES
D MAXIMUM DEVIATION FROM TRUE VERTICAL ALIGNMENT: 1/8 INCH PER FOOT OF DEPTH

8 CONCRETE SHALL BE DIRECTED AT THE CENTER OF THE DRILLED SHAFT EXCAVATION WITHOUT HITTING THE REINFORCEMENT OR THE SIDES OF THE EXCAVATION. A TREMIE SHALL BE USED IF NECESSARY TO PREVENT CONCRETE FROM HITTING REINFORCEMENT DURING PLACEMENT.

9 DRILLED SHAFT EXCAVATIONS SHALL NOT BE MADE DURING INCLEMENT WEATHER.

10 IF GROUNDWATER IS ENCOUNTERED, THE CONTRACTOR MAY, AT HIS OPTION, AND WITH THE APPROVAL OF THE ENGINEER, USE STEEL CASINGS. WHERE CASINGS ARE USED, THE HEAD OF CONCRETE MUST BE MAINTAINED AT 10 FEET ABOVE THE BOTTOM OF THE CASING DURING EXTRACTION AND THE TOP 10 FEET OF THE SHAFT SHALL BE VIBRATED DURING PLACEMENT.

11 CONCRETE FOR DRILLED SHAFTS SHALL BE PLACED UNDERWATER ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER AND ONLY IN COMPLIANCE WITH THE STRUCTURAL ENGINEER'S RECOMMENDATIONS AND INSTRUCTIONS, INCLUDING ADJUSTMENT OF THE CONCRETE MIX DESIGN.

12 PROVIDE SIDE AND BOTTOM SPACERS TO ENSURE PROPER COVER OF THE PIER REINFORCEMENT AND THAT THE REINFORCEMENT IS CENTERED IN THE SHAFT OR PIER HOLE. SIDE SPACERS SHALL BE THE SHAFTSPACER SYSTEM AS MANUFACTURED BY FOUNDATION TECHNOLOGIES, INC., LAWRENCEVILLE, GEORGIA (800) 773-2368; QUICK-LOCK OR QUICK-LOCK HD PIER WHEELS, AS MANUFACTURED BY PIERESEARCH, INC., OF ARLINGTON, TEXAS (800) 342-2409; PLW AZTEC E-Z LOK WHEEL, AS MANUFACTURED BY DAYTON SUPERIOR (888) 977-960; OR AN APPROVED ALTERNATE. BOTTOM SPACERS SHALL BE QUICK-LOCK PIER BOOTS, AS MANUFACTURED BY PIERESEARCH, INC., OF ARLINGTON, TEXAS; THE BARBOOT SYSTEM AS MANUFACTURED BY FOUNDATION TECHNOLOGIES, INC., LAWRENCEVILLE, GEORGIA; PIER BOOTS, AS MANUFACTURED BY MACON CONCRETE PRODUCTS, SAN ANTONIO, TEXAS (866) 663-1053; OR AN APPROVED ALTERNATE. SLED OR SKID-TYPE SIDE SPACERS WILL NOT BE PERMITTED. THE USE OF BOOTS, INCLUDING PRECAST CONCRETE BOOTS, WITHOUT HOLES FOR INSERTION OF VERTICAL BARS WILL NOT BE PERMITTED. HANGING OR SUSPENDING THE REINFORCEMENT CAGE TO POSITION IT IN THE DRILLED SHAFT EXCAVATION DURING CONCRETE PLACEMENT WILL NOT BE PERMITTED.

13 DOWELS INSTALLED INTO THE TOPS OF PIER SHAFTS SHALL BE INSTALLED IN A MANNER TO PREVENT DEPRESSIONS AND VOIDS AROUND THE PORTION OF THE DOWEL EMBEDDED INTO THE PIER CONCRETE AND TO ENSURE GOOD BOND BETWEEN THE PIER CONCRETE AND THE DOWEL BARS.

CONCRETE FORMWORK

1 FORMWORK SHALL BE DESIGNED, ERECTED, SHORED, BRACED AND MAINTAINED IN ACCORDANCE WITH ACI SPEC-301 TO SUPPORT VERTICAL, LATERAL, STATIC AND DYNAMIC LOADS AND CONSTRUCTION LOADS UNTIL THE CONCRETE STRUCTURE CAN SUPPORT SUCH LOADS. SPECIAL ATTENTION SHALL BE PAID TO THE DESIGN OF FORMWORK FOR HIGH SLUMP CONCRETE. FORMWORK THAT WILL BE USED TO SUPPORT THESE CONCRETES SHOULD BE DESIGNED FOR THE FULL FLUID DENSITY OF THE CONCRETE FOR THE HEIGHT OF THE FORM.

2 FORMWORK SHALL BE SUCH THAT CONCRETE MEMBERS ARE OF THE SIZE, SHAPE, ALIGNMENT, ELEVATION AND LOCATION INDICATED ON THE PLANS. TOLERANCES ON LINES, GRADES AND DIMENSIONS OF MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF ACI SPEC-117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."

3 FORMWORK SHALL BE CONSTRUCTED WITH PLYWOOD; TEMPERED CONCRETE-FORM HARDBOARD; DRESSED LUMBER FACED WITH PLYWOOD OR FIBERBOARD LINING; METAL; PLASTIC; OR METAL FRAMED PLYWOOD-FACED PANEL MATERIAL ACCEPTABLE TO THE ENGINEER TO PROVIDE CONTINUOUS, STRAIGHT, SMOOTH SURFACES. FORMING MATERIAL SHALL BE FREE OF RAISED GRAIN, TORN SURFACES, WORN EDGES, PATCHES, DENTS OR OTHER SURFACE DEFECTS. FURNISH MATERIAL IN THE LARGEST PRACTICAL SIZES TO MINIMIZE THE NUMBER OF JOINTS.

FORMWORK FOR CONCRETE THAT IS TO RECEIVE A FORM FINISH AND WILL BE EXPOSED TO VIEW IN THE COMPLETED CONSTRUCTION SHALL BE CONSTRUCTED USING SMOOTH STEEL FORMS TO PROVIDE A MINIMUM CLASS B FORMED SURFACE TOLERANCE (1/4 INCH ABRUPT OR GRADUAL IRREGULARITIES) IN ACCORDANCE WITH ACI PRC-347 "GUIDE TO FORMWORK FOR CONCRETE."

4 REFER TO THE ARCHITECTURAL DRAWINGS FOR ANY SPECIAL FORM LINER REQUIREMENTS.

5 CONSTRUCT FORMS TIGHT ENOUGH TO PREVENT THE LOSS OF CONCRETE MORTAR AND TO MINIMIZE OR ELIMINATE FINS, LINES OR SURFACE IRREGULARITIES AT FORM JOINTS.

6 FABRICATE FORMS FOR EASY REMOVAL WITHOUT HAMMERING OR PRYING AGAINST CONCRETE SURFACES. PROVIDE CRUSH OR WRECKING PLATES WHERE STRIPPING MAY DAMAGE CAST CONCRETE SURFACES.

7 CHAMFER ALL EXPOSED CORNERS OR EDGES 3/4 INCH. FILLET THE NOSINGS OF ALL CONCRETE STAIRS. FILLETS AT STAIR NOSINGS SHALL HAVE A 1/4 INCH RADIUS. REVIEW THE PLANS FOR LOCATIONS WHERE RADIUSED OR FILLETED CORNERS OR EDGES ARE REQUIRED.

8 REMOVE ALL DIRT, TRASH, WOOD CHIPS, SCRAP TIE-WIRE AND REBAR AND ANY OTHER DEBRIS FROM FORMS PRIOR TO PLACEMENT OF CONCRETE.

9 COAT SURFACES OF FORMWORK WITH FORM RELEASE AGENT, IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, PRIOR TO PLACEMENT OF REBAR. REBAR FOUND TO HAVE RELEASE AGENT ON ITS SURFACES WILL BE REJECTED, REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

10 SURFACES THAT WILL NOT BE EXPOSED TO VIEW IN THE COMPLETED CONSTRUCTION MAY BE EARTH FORMED.

CARTON VOID FORMS

1 VOID FORMS BELOW THE SLAB AND BEAMS SHALL CONSIST OF WATER RESISTANT CORRUGATED PAPER OR CARDBOARD MATERIALS MANUFACTURED TO CREATE A VOID BELOW THE CONCRETE, ISOLATE THE CONCRETE FROM THE SUBGRADE AND PROVIDE A TEMPORARY SUPPORT FOR THE PLACEMENT OF REINFORCEMENT AND CONCRETE FOR STRUCTURAL CONCRETE SLABS THE SUBGRADE SOILS.

2 DEPTHS OF VOID FORMS SHALL BE AS SHOWN ON THE DRAWINGS.

3 VOID FORMS SHALL CONSIST OF CORRUGATED PAPER OR CARDBOARD MATERIAL COATED WITH A PARAFFIN WAX OR OTHER MOISTURE RESISTANT EXTERIOR COATING AND A UNIFORM, CELLULAR INTERIOR CONSTRUCTION OF NON-WAX IMPREGNATED COMPONENTS. FORM SHALL BE FABRICATED USING A WATERPROOF ADHESIVE. FORMS MAY BE FACTORY ASSEMBLED OR OF THE KNOCK-DOWN TYPE ASSEMBLED IN THE FIELD IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

4 VOID FORMS BELOW BEAMS SHALL BE TRAPEZOIDAL IN SHAPE AND OF THE DIMENSIONS SHOWN IN THE DRAWINGS. VOID FORMS BELOW SLABS SHALL BE RECTANGULAR IN SHAPE.

5 VOID FORMS FOR BEAMS SHALL HAVE A MINIMUM STRENGTH OF 1600 PSF. VOID FORMS FOR SLABS SHALL HAVE A MINIMUM STRENGTH OF 1000 PSF.

6 ENDS OF SECTIONS OF VOID FORMS SHALL BE SEALED TO PROTECT THE PAPER OR CARDBOARD MATERIAL. ENDS OF SECTIONS CUT IN THE FIELD SHALL BE SEALED BY DIPPING IN WAX OR BY OTHER SUITABLE MEANS AS APPROVED BY THE FORM MANUFACTURER.

7 FURNISH VOID FORMS WITH END CAPS TO SEAL VOIDS AT ENDS OF VOID FORMS. FURNISH SEALS FOR SEALING OF JOINTS BETWEEN ENDS OF VOID FORM SECTIONS.

8 A PROTECTIVE COVER BOARD IS REQUIRED AND SHALL BE INSTALLED OVER THE TOPS OF SLAB VOID FORMS. COVER BOARD SHALL CONSIST OF 1/4-INCH THICK PLYWOOD OR HARDBOARD. PROVIDE COVER BOARD IN 4 FT. X 8 FT. SHEETS.

9 COVER THE SURFACE OF THE INSTALLED CARTON FORMS AND PROTECTIVE COVER BOARD WITH POLYOLEFIN VAPOR BARRIER SHEETING WITH A MINIMUM THICKNESS OF 10 MILS.

10 THE CONTRACTOR SHALL USE EXTREME CARE IN THE STORAGE, HANDLING AND PLACEMENT OF CARTON FORMS TO AVOID DAMAGE, DETERIORATION OR COLLAPSE OF THE FORMS DURING CONSTRUCTION.

11 THE SUBGRADE WHERE VOID FORMS ARE TO BE INSTALLED SHALL BE SMOOTH, LEVEL AND DRY PRIOR TO INSTALLATION.

12 THE STRENGTH AND PERFORMANCE OF VOID FORM PRODUCTS WILL BE REDUCED BY EXPOSURE TO MOISTURE FROM ADVERSE WEATHER CONDITIONS OR HIGH HUMIDITY. VOID FORMS SHALL NOT BE INSTALLED UNTIL THE SUBGRADE HAS BEEN PROPERLY PREPARED AND APPROVED. ONCE INSTALLATION BEGINS, VOID FORM INSTALLATION AND CONSTRUCTION OF THE SLAB AND BEAMS SHALL PROCEED AS QUICKLY AS POSSIBLE TO MINIMIZE DETERIORATION OF THE FORMS AND EXPOSURE TO ADVERSE WEATHER OR MOISTURE. FORMS AND ACCESSORIES SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. INSTALL FORMS ONLY WHEN WEATHER FORECASTS ARE FOR FAVORABLE WEATHER FOR THE DURATION OF THE SLAB CONSTRUCTION PERIOD.

13 IN THE EVENT THAT VOID FORMS ARE EXPOSED TO ADVERSE WEATHER, OR IF DETERIORATION OR LOSS OF STRENGTH HAS OCCURRED, IN THE JUDGMENT OF THE ENGINEER, THE FORMS SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. FORMS THAT HAVE BEEN PARTIALLY OR FULLY SUBMERGED IN WATER SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.

14 IN THE EVENT OF A COLLAPSE OF THE VOID FORMS DURING CONCRETE PLACEMENT, THE ENGINEER SHALL BE NOTIFIED, THE CONCRETE PLACEMENT OPERATIONS TERMINATED IMMEDIATELY, AND THE CONCRETE REMOVED FROM THE COLLAPSED AREA.

15 REINFORCEMENT FOR SLABS AND BEAMS PLACED ON CARTON FORMS SHALL BE OF SUFFICIENT SIZE AND NUMBER TO ADEQUATELY SUPPORT THE REINFORCING BARS AT THE POSITIONS AND SPACINGS REQUIRED BY THE DRAWINGS AND TO PREVENT MOVEMENT OF THE BARS DURING CONCRETE PLACEMENT OPERATIONS.

16 CARTON FORMS SHALL BE THE FURNISHED BY A REPUTABLE MANUFACTURER REGULARLY ENGAGED IN THE FABRICATION AND MANUFACTURE OF CARTON VOID FORMS. ACCEPTABLE PRODUCTS ARE "SLABVOID FORMS", "PIER VOID FORMS" AND "WALL VOID FORMS" AS MANUFACTURED BY SUREVOID PRODUCTS, INC., 1895 WEST DARTMOUTH AVENUE, ENGLEWOOD, COLORADO 80110, PHONE (800) 458-5444; "MOLDED PULP VOID FORMS", AS MANUFACTURED BY RELIABLE VOID FORMS, 13801 AVENUE K, AUSTIN, TEXAS 78728, PHONE (512) 636-1513; OR AN APPROVED ALTERNATE.

CONCRETE REINFORCEMENT

1 DETAILING, FABRICATION AND ERECTION OF REINFORCING STEEL BARS SHALL COMPLY WITH ACI PRC-315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES." CONCRETE CONSTRUCTION TOLERANCES, INCLUDING PLACEMENT OF REINFORCING STEEL, SHALL BE IN CONFORMANCE WITH THE AMERICAN CONCRETE INSTITUTE'S "STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS," ACI SPEC-117. ALL BENDS OF REINFORCING STEEL SHALL COMPLY WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE, INCLUDING MINIMUM RADII OF BENDS.

2 DEFORMED STEEL REINFORCING BARS SHALL CONFORM TO ANSI/ASTM A 615 WITH SUPPLEMENTARY REQUIREMENTS S1, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 65 KSI. WELDED WIRE FABRIC SHALL BE PROVIDED IN FLAT SHEETS. THE USE OF ROLLED WELDED WIRE FABRIC WILL NOT BE PERMITTED.

3 AT GRADE BEAMS FOR PIER SUPPORTED STRUCTURES, PROVIDE STANDARD 90 DEGREE ACI HOOKS AT THE DISCONTINUOUS ENDS OF TOP AND BOTTOM GRADE BEAM REINFORCEMENT. CORNER BARS ARE NOT REQUIRED WHERE HOOKED BARS ARE PROVIDED.

4 PROVIDE THREE NO. 4 X 4'-0" BARS AT ALL RE-ENTRANT CORNERS. PLACE THE FIRST BAR ON THE DIAGONAL WITH 1-INCH CLEARANCE FROM CORNER AND TOP OF SLAB. PLACE THE REMAINING TWO BARS PARALLEL TO THE FIRST AT A SPACING OF 3 INCHES. THIS INCLUDES ANY RECTILINEAR OPENINGS OR BLOCKOUTS AND CORNERS OF DEPRESSED AREAS MADE DUE TO STANDARD CONSTRUCTION PRACTICES.

5 PROVIDE SUPPORTS OR CHAIRS TO SUPPORT REBAR OR WWF AT THE POSITIONS REQUIRED BY THE DRAWINGS. REINFORCING BARS FOR GROUND-SUPPORTED SLABS SHALL BE SUPPORTED ON PRECAST CONCRETE BLOCKS AT A MAXIMUM SPACING 3'-0" ON CENTERS EACH WAY, OR BAR CHAIRS WITH SHEET METAL OR PLASTIC SAND BASES AT A MAXIMUM OF 3'-0" ON CENTERS EACH WAY. DEPTH OF CHAIRS SHALL PROVIDE FOR COVER AS SHOWN ON DRAWINGS. PROPER INSTALLATION OF SUPPORTS, INCLUDING HEIGHT AND SPACING, IS CRITICAL TO CONTROL OF CRACKING IN THE GROUND-SUPPORTED FLOOR SLABS. ACCEPTABLE PRODUCTS ARE COMPOSITE BAR CHAIRS, WITH SAND PLATES, AS MANUFACTURED BY GENERAL TECHNOLOGIES, INC., STAFFORD, TEXAS; BCP METAL BAR CHAIR WITH SAND PLATE, AS MANUFACTURED BY DAYTON SUPERIOR; PLASTIC AZTEC E-Z CHAIR WITH PLASTIC SAND BASE, AS MANUFACTURED BY DAYTON SUPERIOR; AZTEC PCC CASTLE CHAIR BY DAYTON SUPERIOR; OR AN APPROVED ALTERNATE. CHAIRS THAT ARE FOUND TO COLLAPSE, DEFORM, TURN OVER OR OTHERWISE FAIL TO ADEQUATELY SUPPORT AND POSITION THE REBAR HAS REQUIRED UNDER WORKMEN TRAFFIC OR DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH CHAIRS OF ADEQUATE STRENGTH AND STABILITY AT NO ADDITIONAL COST.

6 PROVIDE PLASTIC BAR CHAIRS AND/OR BOLSTERS AT 3'-0" ON CENTERS FOR ALL SLABS AND BEAMS ABOVE GRADE. HEIGHT OF CHAIRS AND BOLSTERS SHALL BE AS REQUIRED TO POSITION THE REBAR AND PROVIDE THE COVER SPECIFIED AND SHOWN IN THE DRAWINGS.

FOR TOPPING SLABS ON METAL DECKING, SUPPORT WELDED WIRE FABRIC ON CONTINUOUS METAL BOLSTERS WITH CONTINUOUS WIRE RUNNERS. THE USE OF BOLSTERS WITHOUT CONTINUOUS RUNNERS WILL NOT BE PERMITTED. BOLSTERS THAT ARE FOUND TO DEFORM OR CRUSH UNDER FOOT TRAFFIC WILL NOT BE PERMITTED AND SHALL BE REMOVED AND REPLACED WITH SATISFACTORY BOLSTERS AT NO ADDITIONAL COST.

7 LAP CONTINUOUS UNSCHEDULED REINFORCING BARS 40 BAR DIAMETERS UNLESS OTHERWISE NOTED. LAP WELDED WIRE FABRIC A MINIMUM OF TWO MESH.

8 FIELD CUTTING OF REINFORCING BARS SHALL BE BY SHEARING OR SAWING. FIELD CUTTING OF REINFORCING BARS BY TORCH WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER.

9 UNLESS OTHERWISE NOTED, ALL 90, 135 AND 180 DEGREE REBAR HOOKS SHOWN OR SPECIFIED ON THE DRAWINGS SHALL BE STANDARD ACI HOOKS. RADII OF BENDS SHALL COMPLY WITH ACI STANDARDS.

10 UNLESS OTHERWISE NOTED, MINIMUM REINFORCING STEEL COVERAGE SHALL BE AS FOLLOWS:

CONCRETE CAST PERMANENTLY AGAINST THE EARTH	3"
CONCRETE CAST AGAINST VAPOR BARRIER	2"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 THRU #18 BARS	2"
#5 AND SMALLER BARS	1 1/2"
FOOTINGS	2" TOP, 3" BOTTOM
SLABS ABOVE GRADE	1"

CONCRETE JOINTS AND EMBEDDED ITEMS

1 CONCRETE BONDING AGENT - BONDING AGENTS SHALL BE USED TO BOND FRESH CONCRETE TO HARDENED CONCRETE. AGENT MAY BE A POLYVINYL ACETATE, ACRYLIC OR EPOXY ADHESIVE CONFORMING TO THE REQUIREMENTS OF ASTM C1059, TYPE 1, ASTM C884, ASTM C881 AND AASHTO M235.

2 EXPANSION JOINT MATERIAL - EXPANSION JOINT MATERIAL SHALL CONSIST OF ONE OF THE FOLLOWING.

A PREFORMED BITUMINOUS TYPE CONFORMING TO ANSI/ASTM D994, CANE FIBER ASPHALT-IMPREGNATED TYPE CONFORMING TO ANSI/ASTM D1751; OR CORK AND RUBBER TYPE CONFORMING TO ANSI/ASTM D1752.

B SEMI-RIGID, CLOSED CELL, NON-WATER ABSORBING POLYPROPYLENE EXPANSION JOINT MATERIAL MEET THE REQUIREMENTS OF ASTM D8139, ASTM D1751 FOR EXTRUSION AND COMPRESSION RECOVERY, AND ASTM D545 FOR WATER ABSORPTION. ACCEPTABLE PRODUCT IS NOMAFLEX, AS MANUFACTURED BY NOMACO, ZEBULON, NORTH CAROLINA.

C A FLEXIBLE, RESILIENT, NON-WATER ABSORBENT, CLOSED CELL POLYETHYLENE OR POLYMER MATERIAL THAT PROVIDES ADEQUATE STRENGTH TO RESIST THE LATERAL PRESSURES DUE TO WET CONCRETE WITH NO SIGNIFICANT COMPRESSION AND THAT MEETS THE REQUIREMENTS OF ASTM D5249, TYPE 2, ASTM D1752, SECTIONS 5.1 - 5.4, AND ASTM D7174. ACCEPTABLE PRODUCT IS CERAMAR FLEXIBLE FOAM EXPANSION JOINT, AS MANUFACTURED BY W.R. MEADOWS.

D JOINT MATERIAL THICKNESS SHALL BE AS SHOWN IN THE DRAWINGS.

3 SLEEVING OF GRADE BEAMS WHERE HORIZONTAL RUNS OF UNDER SLAB PLUMBING OR CONDUIT INTERSECT SHALL OCCUR ONLY AT WITHIN THE MIDDLE THIRD OF THE BEAM DEPTH. ANY PLUMBING OR CONDUITS THAT DO NOT INTERSECT THE GRADE BEAM AS SPECIFIED SHALL BE REFERRED TO THE ENGINEER. VERTICAL SLEEVES WILL NOT BE PERMITTED IN GRADE BEAMS WITHOUT THE EXPLICIT APPROVAL OF THE ENGINEER.

4 UNLESS OTHERWISE NOTED, DRILLED SHAFTS/PIERS AND CAPS SHALL BE PLACED MONOLITHICALLY. GRADE BEAMS AND FLOOR SLABS SHALL BE PLACED MONOLITHICALLY. PLACEMENT OF GRADE BEAMS AND SLABS NON-MONOLITHICALLY WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER.

5 THE CONTRACTOR SHALL ENSURE THAT ALL EMBEDDED ITEMS ARE DELIVERED TO THE SITE IN A TIMELY FASHION AND INSTALLED IN THE FORMWORK PRIOR TO PLACEMENT OF THE CONCRETE.

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5da-i.com

6707 Riverside
6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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Pickett, Kelm & Associates, Inc.
Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
Austin, Texas 78759 • Phone 512-345-5538
Texas Registration No. F-1491
PKA Proj. No. 030-5580

SHEET NAME:
STRUCTURAL NOTES AND SPECIFICATIONS

SHEET NO:
S1.1

STRUCTURAL NOTES AND SPECIFICATIONS (CONT'D)

CONCRETE

1 CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI CODE-318. CONCRETE CONSTRUCTION TOLERANCES SHALL BE IN CONFORMANCE WITH THE AMERICAN CONCRETE INSTITUTE'S "STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS," ACI SPEC-117.

2 NORMAL WEIGHT CONCRETE, WITH THE SPECIFIED 28 DAY COMPRESSIVE STRENGTHS, SHALL BE USED AS FOLLOWS:

DRILLED SHAFT FOUNDATIONS MAXIMUM WATER/CEMENT RATIO = 0.53 (SEE NOTE 4 BELOW)	3000 PSI
FOOTINGS MAXIMUM WATER/CEMENT RATIO = 0.46	4000 PSI
LEVEL 1 STRUCTURED SLAB AND BEAMS MAXIMUM WATER/CEMENT RATIO = 0.43	4000 PSI
CONCRETE TOPPING SLABS ON COMPOSITE METAL DECK MAXIMUM WATER/CEMENT RATIO = 0.43	4000 PSI

3 CONCRETE FOR DRILLED PIERS OR SHAFTS SHALL BE PROPORTIONED TO PROVIDE THE SPECIFIED COMPRESSIVE STRENGTHS AT SLUMPS IN THE RANGE OF 7 TO 9 1/2 INCHES. THE CONCRETE MIX DESIGN SHALL INCLUDE A RETARDER AND MID-RANGE WATER REDUCER TO PROVIDE THE REQUIRED SLUMP. RIVER GRAVEL COARSE AGGREGATE, WITH CLASS F FLY ASH, IS PREFERRED, BUT CRUSHED LIMESTONE COARSE AGGREGATE MAY BE USED. EMPHASIS SHALL BE PLACED ON DEVELOPMENT OF A CONCRETE MIX DESIGN WITH FLUIDITY AND FLOWABILITY WITHOUT SEGREGATION. CONCRETE DELIVERED TO THE SITE WITH LESS THAN THE MINIMUM SPECIFIED SLUMP FOR DRILLED PIERS SHALL BE CAUSE FOR REJECTION.

4 TO MINIMIZE SHRINKAGE, CONCRETE MIXES FOR GROUND-SUPPORTED SLAB CONSTRUCTION SHALL BE DESIGNED TO USE WELL-GRADED AGGREGATES AND THE LARGEST COARSE AGGREGATE SIZE POSSIBLE, BUT NOT LESS THAN 1-INCH, AND TO MINIMIZE THE CEMENT CONTENT. TOTAL CEMENTITIOUS CONTENT SHALL NOT EXCEED 6 SACKS. FOR CONCRETE MIXED WITH CLASS F FLY ASH, THE CEMENT CONTENT SHALL NOT EXCEED 4.2 SACKS AND THE FLY ASH CONTENT SHALL BE 30% OF THE TOTAL CEMENTITIOUS CONTENT. FOR CONCRETE MIXED WITH CLASS C FLY ASH, THE TOTAL CEMENT CONTENT SHALL NOT EXCEED 3.9 SACKS AND THE FLY ASH CONTENT SHALL BE 35% TO THE TOTAL CEMENTITIOUS CONTENT.

5 NORMAL WEIGHT CONCRETE - UNLESS OTHERWISE NOTED, CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH ASTM C94, "STANDARD SPECIFICATION FOR READY-MIXED CONCRETE," ACI SPEC-301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE'" AND ACI PRC-304S "GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE."

A CEMENT

1) CEMENT FOR CONCRETE MIXED WITH CLASS F FLY ASH SHALL CONFORM TO ASTM C150, TYPE I, IA, II OR IV, OR ASTM C595, TYPE IP.
2) CEMENT FOR CONCRETE MIXED WITH CLASS C FLY ASH OR STRAIGHT CEMENT WITHOUT FLY ASH SHALL BE TYPE I LA, II LA OR TYPE I/II LA LOW ALKALI CEMENT. THE ALKALI CONTENT OF THE CEMENT SHALL NOT EXCEED 0.6%.
3) TYPE IL OR IIL CEMENT WILL BE PERMITTED ONLY WITH THE EXPLICIT APPROVAL OF THE STRUCTURAL ENGINEER.
4) USE THE SAME BRAND OF CEMENT PROPOSED IN THE MIX DESIGNS THROUGHOUT THE PROJECT. THE BRAND OF CEMENT SHALL NOT BE CHANGED DURING THE PROJECT WITHOUT THE NOTIFICATION AND APPROVAL OF THE ENGINEER.
5) WHERE A STRAIGHT CEMENT MIX, WITH NO FLY ASH CONTENT, IS EXPLICITLY APPROVED BY THE STRUCTURAL ENGNEER, AND WHERE THE PROPOSED CEMENT USED IS TYPE IL OR IIL LIMESTONE CEMENT, THE WATER CEMENT RATIO WILL BE CALCULATED ON THE BASIS OF THE NET CEMENT CONTENT, LESS THE LIMESTONE CONTENT, AS SHOWN IN THE CEMENT MILL CERTIFICATE.

B ADMIXTURES

1) WATER REDUCING ADMIXTURES SHALL CONFORM TO ASTM C494, TYPE A, D OR E AND SHALL BE NON-STAINING AND CHLORIDE FREE.

2) MID-RANGE WATER REDUCING ADMIXTURES SHALL CONFORM TO ASTM C494, TYPES A AND F.

3) HIGH-RANGE WATER REDUCING ADMIXTURES SHALL CONFORM TO ASTM C494, TYPE F, AND SHALL BE POLYCARBOXYLATE BASED AND FORMULATED TO PROLONG THE SLUMP LIFE OF THE CONCRETE.

6) ALL ADMIXTURES PROPOSED FOR CONCRETE SHALL BE COMPATIBLE, PREFERABLY PRODUCED BY THE SAME MANUFACTURER, AND SHALL BE INTRODUCED INTO THE CONCRETE MIX IN THE ORDER REQUIRED BY THE ADMIXTURE MANUFACTURER.

7) AIR ENTRAINMENT IS NOT REQUIRED FOR STRUCTURAL CONCRETE AND AIR ENTRAINING ADMIXTURES SHALL NOT BE USED. AIR ENTRAINMENT SHALL CONSIST ONLY OF THE AIR NATURALLY ENTRAPPED DURING THE CONCRETE MIXING PROCESS.

C MIXING WATER SHALL BE FRESH, CLEAN AND POTABLE.

D AGGREGATES

1) COARSE AGGREGATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C33, LIMESTONE OR WASHED RIVER GRAVEL, FREE OF CHEMICALS, COATINGS OF SILT OR CLAY OR OTHER FINE MATERIALS THAT MAY AFFECT HYDRATION OR BOND OF THE CEMENT PASTE.

2) FOR CONCRETE MIXED WITH CLASS F FLY ASH, COARSE AGGREGATES MAY CONSIST OF WASHED RIVER GRAVEL OR CRUSHED LIMESTONE.

3) FOR CONCRETE MIXED WITH CLASS C FLY ASH OR FOR STRAIGHT CEMENT MIXES, COARSE AGGREGATE SHALL CONSIST OF WASHED CRUSHED LIMESTONE. THE USE OF RIVER GRAVEL OR OTHER SILICEOUS AGGREGATES IS PROHIBITED IN CLASS FLY ASH OR STRAIGHT CEMENT CONCRETE MIXES.

4) FINE AGGREGATES SHALL CONSIST OF NATURAL SAND OR MANUFACTURED SAND FROM LIMESTONE THAT COMPLIES WITH ASTM C33.

E FLY ASH

1) THE USE OF CLASS F FLY ASH IS PREFERRED. THE USE OF CLASS C FLY ASH WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. IF APPROVED, CLASS C FLY ASH MIXES SHALL BE IN STRICT COMPLIANCE WITH THESE DRAWINGS AND THE PROJECT SPECIFICATIONS.

2) FLY ASH FOR THE PROJECT SHALL BE PRODUCED FROM COAL OF A SINGLE KNOWN AND CONSISTENT SOURCE.

3) THE USE OF BOTH CLASS F AND CLASS C FLY ASH MIXES WITHIN A PROJECT WILL NOT BE PERMITTED.

6 NORMAL WEIGHT CONCRETE SHALL NOT WEIGH MORE THAN 145 PCF.

7 CONCRETE SHALL BE PROPORTIONED TO PROVIDE THE SPECIFIED COMPRESSIVE STRENGTHS AT SLUMPS IN THE RANGE OF 7 TO 9 1/2 INCHES. THE USE OF A MID- OR HIGH-RANGE WATER REDUCING ADMIXTURE IS REQUIRED TO IMPROVE WORKABILITY AND PLACEABILITY OF THE CONCRETE AT THE SPECIFIED WATER/CEMENT RATIOS. HIGHER SLUMPS MAY BE PERMITTED BY THE ENGINEER PROVIDED THAT TESTS ARE PERFORMED TO ENSURE THAT THE CONCRETE AT THE HIGHER SLUMPS DOES NOT RESULT IN SEGREGATION OF THE AGGREGATE AND PASTE OR EXCESSIVE BLEEDING. FOR SLOPED OR STEPPED CONSTRUCTION, SLUMPS MAY BE REDUCED AS DEEMED APPROPRIATE FOR PLACEMENT AND FINISHING BY THE CONTRACTOR.

8 FLY ASH

A FLY ASH SHALL BE USED IN ALL CONCRETE UNLESS THIS REQUIREMENT IS SPECIFICALLY WAIVED BY THE ENGINEER.

B FOR CLASS F FLY ASH MIXES FOR GRADE BEAMS AND GROUND-SUPPORTED SLABS, THE CLASS F FLY ASH SHALL BE 30% OF THE TOTAL WEIGHT OF THE CEMENT PLUS FLY ASH. FOR CLASS C FLY ASH MIXES FOR GRADE BEAMS AND GROUND-SUPPORTED SLABS, THE CLASS C FLY ASH SHALL BE 35% OF THE TOTAL WEIGHT OF THE CEMENT PLUS FLY ASH.

C FOR ALL OTHER CONCRETE, FOR CLASS F FLY ASH MIXES, THE CLASS F FLY ASH CONTENT SHALL BE 25% OF THE TOTAL WEIGHT OF THE CEMENT PLUS FLY ASH. FOR CLASS C FLY ASH MIXES, THE CLASS C FLY ASH CONTENT SHALL BE 30% OF THE TOTAL WEIGHT OF THE CEMENT PLUS FLY ASH.

D STRAIGHT CEMENT CONCRETE MIXES, WITH NO FLY ASH, WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER.

E THE INTERMINGLING OR USE OF BOTH CLASS F AND CLASS C FLY ASH MIXES FOR STRUCTURAL CONCRETE WITHIN THE PROJECT WILL NOT BE PERMITTED.

9 ADDITION OF WATER AT THE PROJECT SITE

A THE BATCHING OF CONCRETE TO DELIBERATELY WITHHOLD WATER AT THE BATCH PLANT WITH THE INTENTION OF ADDING THE WITHHELD WATER AT THE PROJECT JOB SITE IS PROHIBITED AND WILL NOT BE PERMITTED.

B THE ADDITION OF WATER TO CONCRETE MIXER TRUCKS AT THE SITE SHALL BE LIMITED TO A MAXIMUM OF 5 GALLONS PER FULLY BATCHED TRUCK, PROVIDED THAT THE ADDITION OF THE WATER DOES NOT CAUSE THE WATER/CEMENT RATIO TO EXCEED THE SPECIFIED MAXIMUM SHOWN IN THE APPROVED MIX DESIGN. WATER IN EXCESS OF THIS AMOUNT WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER. THE INDISCRIMINATE ADDITION OF WATER TO MIXER TRUCKS WILL NOT BE PERMITTED. UNDER NO CIRCUMSTANCES SHALL THE WATER/CEMENT RATIO OF THE CONCRETE EXCEED THE MAXIMUM APPROVED FOR THE DESIGN MIX.

10 JOB SITE CONCRETE MONITORING AND CONTROL - THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL TO MONITOR CONCRETE FOR EACH POUR. IF CONCRETE CONSISTENTLY ARRIVES AT THE SITE (3 TRUCKS OR MORE) WITH LESS THAN THE SPECIFIED MINIMUM SLUMP, THE DESIGNATED MONITOR SHALL NOTIFY THE BATCH PLANT SO THAT THE DOSAGE OF THE WATER REDUCING ADMIXTURE CAN BE ADJUSTED TO PROVIDE THE REQUIRED SLUMP. SIMILARLY, IF CONCRETE ARRIVES WITH A SLUMP IN EXCESS OF THE SPECIFIED MAXIMUM, THE MONITOR SHALL NOTIFY THE BATCH PLANT SO THAT THE DOSAGE OF THE WATER REDUCING ADMIXTURE CAN BE ADJUSTED TO REDUCE THE SLUMP.

11 HOT AND COLD WEATHER

A COLD WEATHER IS DEFINED AS A PERIOD WHEN, FOR MORE THAN 2 SUCCESSIVE DAYS, THE AIR TEMPERATURE FALLS BELOW FREEZING AND THE MEAN DAILY TEMPERATURE IS BELOW 40 F. CONCRETE SHALL NOT BE PLACED WHEN COLD WEATHER CONDITIONS ARE EXPECTED, UNLESS SPECIAL PROVISIONS ARE MADE. IN THE EVENT THAT A FREEZE IS EXPECTED AFTER PLACEMENT OF FRESH CONCRETE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THE CONCRETE IN ACCORDANCE WITH ACI PRC-306 "COLD WEATHER CONCRETING."

B HOT WEATHER IS DEFINED AS ANY COMBINATION OF HIGH AIR TEMPERATURE, LOW RELATIVE HUMIDITY AND WIND VELOCITY THAT TENDS TO IMPAIR THE QUALITY OF FRESH OR HARDENED CONCRETE OR OTHERWISE RESULTS IN ABNORMAL PROPERTIES.

1) MIX TEMPERATURE - WITH A RETARDING ADMIXTURE, THE PLACEMENT TEMPERATURE OF CONCRETE FOR DRILLED PIERS SHALL NOT EXCEED 100 F. FOR ALL OTHER CONCRETE, THE PLACEMENT TEMPERATURE SHALL NOT EXCEED 95 F. FOR CONCRETE MIXED WITHOUT A RETARDING ADMIXTURE, THE PLACEMENT TEMPERATURE OF CONCRETE FOR DRILLED PIERS SHALL NOT EXCEED 95 F. FOR ALL OTHER CONCRETE, THE PLACEMENT TEMPERATURE SHALL NOT EXCEED 90 F. WHEN CONCRETE TEMPERATURES EXCEED THESE VALUES, IT SHALL BE THE CONCRETE SUPPLIER'S RESPONSIBILITY TO LOWER THE CONCRETE TEMPERATURES THROUGH THE USE OF FOG SPRAY COOLING, CHILLED WATER, ICE OR NITROGEN INJECTION.

2) WHEN THE FORECAST RATE OF EVAPORATION, AS DETERMINED BY ACI PRC-305 "HOT WEATHER CONCRETING" INDICATES A LOSS OF 0.2 POUNDS PER SQUARE FOOT PER HOUR OF WATER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT PRECAUTIONS IN ACCORDANCE WITH THE RECOMMENDATIONS OF ACI PRC-305, OR TO IMMEDIATELY TAKE PRECAUTIONS IF ACTUAL CONDITIONS EXCEED FORECASTS AND CAUSE LOSSES OF 0.2 POUNDS PER SQUARE FOOT PER HOUR, OR MORE.

12 CONCRETE PLACEMENT

A PUMPING OF CONCRETE SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS OF ACI PRC-304.2 "GUIDE TO PLACING CONCRETE BY PUMPING METHODS." THE USE OF ALUMINUM OR ALUMINUM ALLOY PIPES FOR THE CONVEYANCE OF CONCRETE WILL NOT BE PERMITTED.

B EXCEPT AT DRILLED PIERS, THE CONTRACTOR SHALL USE A STEEL TREMIE TO PLACE CONCRETE IN ALL AREAS WHERE THE FALL OF THE CONCRETE WILL EXCEED 5 FEET. THE USE OF AN ALUMINUM TREMIE WILL NOT BE PERMITTED. AT DRILLED PIERS, THE CONCRETE SHALL BE DIRECTED DOWN THE CENTER OF THE PIER SUCH THAT THE CONCRETE CAN FALL WITHOUT HITTING THE REBAR CAGE. IF THE CONCRETE AT PIERS CANNOT BE DISCHARGED IN THIS MANNER, A TREMIE SHALL BE USED.

C CONCRETE SHALL BE PLACED AND DEPOSITED CONTINUOUSLY AND IN LAYERS OF SUCH THICKNESS THAT NO CONCRETE WILL BE DEPOSITED ON CONCRETE THAT HAS HARDENED SUFFICIENTLY TO CAUSE THE FORMATION OF SEAMS, COLD JOINTS OR PLANES OF WEAKNESS WITHIN THE SECTION.

D CONSOLIDATE THE PLACED CONCRETE BY VIBRATION SUCH THAT THE CONCRETE IS THOROUGHLY COMPACTED INTO THE FORMS AND AROUND THE REINFORCEMENT. CONSOLIDATE THE CONCRETE IN CONFORMANCE WITH ACI PRC-309 "GUIDE FOR CONSOLIDATION OF CONCRETE." USE CARE TO AVOID BOTH OVERVIBRATING AND UNDERVIBRATING OF CONCRETE.

13 CONCRETE SHALL NOT BE PLACED PRIOR TO APPROVAL OF THE DESIGN MIXES BY THE ENGINEER.

CONCRETE CURING

1 CURING OF STRUCTURAL CONCRETE - THE CONTRACTOR SHALL CURE THE SURFACES OF FRESHLY PLACED CONCRETE USING MOIST OR WATER CURING METHODS SUCH AS ABSORPTIVE MATS OR FABRICS KEPT CONTINOUSLY WET, POLYETHYLENE SHEETING AND FOGGING OR MISTING, OR BY PONDING OR SPRINKLERING. THE USE OF SPRAY-ON CHEMICAL CURING COMPOUNDS WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER OR ARCHITECT AND MUST BE COMPATIBLE WITH PROPOSED FLOOR COVERINGS, STAINS, WATERPROOFING MATERIALS, SEALERS/HARDENERS AND/OR TOPPINGS. CONCRETE SHALL BE CURED A MINIMUM OF 7 DAYS. FORMWORK LEFT IN PLACE FOR THE 7 DAY PERIOD WILL BE CONSIDERED ADEQUATE CURING. THE PROPOSED CURING METHOD SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

CONCRETE FINISHING

1 CONCRETE FINISHES

A INTERIOR STRUCTURED SLABS - PROVIDE A SMOOTH TROWELED FINISH
B EXTERIOR STRUCTURED SLABS - PROVIDE A BROOM FINISH. AS SLOPED CONCRETE, UNLESS OTHERWISE NOTED, BROOMING SHALL BE IN THE DIRECTION OF THE SLOPE.
C INTERIOR SLABS ON METAL DECK - PROVIDE A SMOOTH TROWELED FINISH
D EXPOSED SURFACES OF EXTERIOR FACES OF PERIMETER BEAMS - PROVIDE A RUBBED FINISH
E SURFACES NOT EXPOSED TO VIEW, UNLESS OTHERWISE NOTED - PROVIDE A FORMED FINISH

2 REPAIR OF SURFACE DEFECTS - DEFECTIVE AREAS SHALL BE REPAIRED IMMEDIATELY AFTER REMOVAL OF FORMS. HONEYCOMBED AND OTHER DEFECTIVE AREAS SHALL BE REMOVED DOWN TO SOUND CONCRETE. THE DEFECTIVE AND SURROUNDING AREA SHALL BE DAMPENED AND A BONDING GROUT APPLIED TO THE AREA. BONDING GROUT SHALL CONSIST OF APPROXIMATELY ONE PART CEMENT TO ONE PART FINE SAND PASSING A NO. 30 SIEVE. MIX GROUT TO THE CONSISTENCY OF A THICK CREAM AND BRUSH THOROUGHLY INTO THE SURFACE.

PATCHING MORTAR SHALL BE OF THE SAME MATERIALS AND APPROXIMATELY THE SAME PROPORTIONS AS CONCRETE EXCEPT THAT COARSE AGGREGATE SHALL BE OMITTED. PREPARE MORTAR WITH NO MORE THAN ONE PART CEMENT TO 2 1/2 PARTS SAND. USE WHITE PORTLAND CEMENT FOR PART OF THE GRAY CEMENT TO MIX A MORTAR OF A COLOR TO MATCH THE SURROUNDING CONCRETE. USE NO MORE WATER THAN NECESSARY AND MIX MORTAR TO THE STIFFEST CONSISTENCY THAT WILL PERMIT PLACING.

AFTER SURFACE WATER FROM THE BONDING GROUT HAS DISSIPATED, THOROUGHLY BRUSH PATCHING MORTAR INTO THE BONDING GROUT.

IN LIEU OF USE OF A BONDING GROUT, A LATEX BONDING AGENT MAY BE USED.

3 GROUT-CLEANED RUBBED FINISH

A REPAIR SURFACE DEFECTS AFTER REMOVAL OF FORMWORK. REMOVE FINS AND JOINT LINES.

B SURFACE FINISH SHALL BE SF-3.0 IN ACCORDANCE WITH ACI SPEC-301 OR CLASS A IN ACCORDANCE WITH ACI SPEC-117 AND ACI PRC-347.

C CLEAN FORMED SURFACES OF CONCRETE AFTER CONTIGUOUS SURFACES HAVE BEEN COMPLETED AND ARE ACCESSIBLE. SURFACES SHALL BE FREE OF ANY MATERIALS THAT MIGHT INTERFERE WITH OR PREVENT BOND, SUCH AS DIRT, OIL OR FORM RELEASE AGENT. IN PARTICULAR, ALL FORM RELEASE SHALL BE CAREFULLY AND THOROUGHLY CLEANED FROM THE FORMED SURFACES. CLEANING OF THE SURFACES FOR PROPER BOND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DELAMINATION OF THE FINISH COATING SHALL BE GROUNDS FOR REJECTION AND REFINISHING OF THE SURFACES SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.

D THE CONCRETE PATCHING AND COATING COMPOUND SHALL BE MIXED, APPLIED AND FINISHED BY PERSONNEL TRAINED AND EXPERIENCED IN THE USE OF THE PRODUCT.

E MIX AND APPLY THE CONCRETE PATCHING AND COATING MATERIAL IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS, INCLUDING PREWETTING OF THE CLEANED, FORMED CONCRETE SURFACES, IF NECESSARY. MATERIAL SHALL BE APPLIED IN THICKNESSES FROM FEATHER EDGE TO 1/2 INCH. USE CARE TO APPLY EVENLY AND UNIFORMLY TO PRODUCE A CONSISTENT APPEARANCE. AFTER MATERIAL DRIES, SAND TO PRODUCE A SMOOTH, UNIFORM APPEARANCE IN TEXTURE AND COLOR.

F APPLY THE PATCHING AND COATING MATERIAL AS SOON AS POSSIBLE AFTER PLACEMENT OF THE CONCRETE, BUT NOT UNTIL THE CONCRETE HAS CURED THE MINIMUM PERIOD OF TIME REQUIRED BY THE MATERIAL MANUFACTURER.

G THE PATCHING AND COATING COMPOUND MANUFACTURER SHALL MAKE AVAILABLE, AT NO COST AND UPON 72 HOURS NOTIFICATION OF THE CONTRACTOR, ARCHITECT OR ENGINEER, THE SERVICES OF A QUALIFIED, EXPERIENCED, FULL-TIME REPRESENTATIVE TO AID IN ENSURING PROPER MIXING, APPLICATION AND FINISHING OF THE COMPOUND UNDER JOB CONDITIONS BY FIELD PERSONNEL.

H PROVIDE A GROUT CLEANED RUBBED FINISH FOR THE FOLLOWING:

CONCRETE SURFACES THAT WILL BE EXPOSED TO VIEW IN THE COMPLETED CONSTRUCTION.

I SURFACE PATCHING AND FINISHING COMPOUND FOR SURFACES TO RECEIVE A GROUT-CLEANED RUBBED FINISH

1) MATERIAL SHALL BE A ONE-COMPONENT CONCRETE PATCHING AND MATERIAL COATING MATERIAL FORMULATED FROM HYDRAULIC CEMENT, HIGH PERFORMANCE POLYMERS AND FINELY GROUND AGGREGATE TO PRODUCE A SMOOTH, UNIFORM CONCRETE APPEARANCE.

2) MATERIAL SHALL BE SANDABLE AFTER APPLICATION TO ACHIEVE AN EXTREMELY SMOOTH FINISH.

3) COLOR SHALL BE GRAY.

4) ACCEPTABLE PRODUCTS ARE RAPID SET WUNDERFIXX, AS MANUFACTURED BY CTS CEMENT MANUFACTURING CORPORATION, OR JET SET SMOOTH, AS MANUFACTURED BY JET SET CEMENT CORPORATION. ALTERNATES OR SUBSTITUTIONS WILL NOT BE PERMITTED.

5) MANUFACTURER SHALL PROVIDE A TECHNICAL REPRESENTATIVE AT THE SITE, IF REQUESTED BY THE CONTRACTOR, ARCHITECT OR ENGINEER, TO ASSIST APPLICATION PERSONNEL IN THE MIXING, APPLICATION AND FINISHING OF THE PRODUCT.

SMOOTH RUBBED FINISH

1 FORMED FINISH SHALL BE SF-2.0, IN ACCORDANCE WITH ACI SPEC-301 OR CLASS B IN ACCORDANCE WITH ACI SPEC-117 AND ACI PRC-347.

2 REMOVE FORMS AS SOON AS POSSIBLE, BUT NOT LATER THAN 24 HOURS FROM TIME OF CONCRETE PLACEMENT.

3 IMMEDIATELY REPAIR ANY SURFACE DEFECTS. WET SURFACES AND RUB WITH A CARBORUNDUM STONE OR SIMILAR ABRASIVE. CONTINUE RUBBING SUFFICIENTLY TO BRING THE SURFACE TO A PASTE, TO REMOVE FORM MARKS AND FINS, AND TO PRODUCE A SMOOTH, DENSE SURFACE OF UNIFORM COLOR AND TEXTURE. DO NOT USE A CEMENT PASTE OTHER THAN THAT DRAWN TO THE SURFACE FROM THE CONCRETE ITSELF. SPREAD PASTE UNIFORMLY OVER THE SURFACE OF THE CONCRETE USING A BRUSH. ALLOW THE PASTE TO SET AND THEN WASH THE SURFACE WITH CLEAN WATER.

STRUCTURAL STEEL NOTES

1 STRUCTURAL STEEL WIDE FLANGE BEAMS SHALL CONFORM TO ASTM A572 OR A992, Fy = 50 KSI. STRUCTURAL STEEL CHANNELS AND STANDARD BEAMS SHALL CONFORM TO ASTM A997, Fy = 50 KSI. STRUCTURAL STEEL ANGLES AND PLATES SHALL CONFORM TO ASTM A572, Fy = 50 KSI.

2 STRUCTURAL STEEL TUBING OR HOLLOW STRUCTURAL SECTIONS(HSS) SHALL CONFORM TO ASTM A500, GRADE C, Fy = 50 KSI, OR A1085, Fy = 50 KSI.

3 DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL COMPLY WITH THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN," AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES," AND ALL UPDATING PUBLICATIONS.

4 BEAM CONNECTIONS SHALL BE IN ACCORDANCE WITH THE DRAWINGS. UNLESS OTHERWISE NOTED, CONNECTIONS SHALL BE SHOP WELDED AND FIELD BOLTED. CONNECTIONS OF MEMBERS TO TILT-UP CONCRETE PANELS SHALL BE FIELD WELDED. UNLESS OTHERWISE NOTED, ALL BOLTED CONNECTIONS SHALL BE MADE USING A325 TENSION CONTROL BOLTS. MEMBER REACTIONS SHOWN ON THE DRAWINGS ARE ASD UNFACTORED REACTIONS.

5 UNLESS NOTED OTHERWISE, ALL BOLTS AT BOLTED CONNECTIONS SHALL CONSIST OF HIGH-STRENGTH, TENSION-CONTROL BOLTS WITH TORQUE OFF SPLINES COMPLETE WITH HARDENED WASHERS AND MATING NUTS. BOLTS, NUTS, AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 AND ASTM F1852 "STANDARD SPECIFICATION FOR "TWIST OFF" TYPE TENSION CONTROL STRUCTURAL BOLT/NUT/WASHER ASSEMBLIES, STEEL, HEAT TREATED, 120/105 KSI MINIMUM TENSILE STRENGTH." ACCEPTABLE BOLTS ARE LEJUENE BOLTS AS SUPPLIED BY THE LEJEUNE BOLT COMPANY; SMARTHEX TC BOLTS, AS MANUFACTURED BY LOHR STRUCTURAL FASTENERS; UNYTITE TENSION CONTROL BOLTS, AS MANUFACTURED BY UNYTITE, INC.; OR AN ALTERNATE APPROVED BY THE STRUCTURAL ENGINEER.

6 WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F436 "STANDARD SPECIFICATION FOR HARDENED STEEL WASHERS."

7 WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY SPECIFICATIONS. ELECTRODES SHALL CONFORM TO AWS A5.5, E70XX, EXCEPT THAT, AT THE ERECTOR'S OPTION, STEEL DECKING MAY BE WELDED TO THE SUPPORTING STRUCTURE USING E60XX ELECTRODES.

8 ALL MISCELLANEOUS WELDS (FIELD OR SHOP) SHALL BE MINIMUM SIZE FILLET ALL AROUND IN ACCORDANCE WITH AISC. WELDING OF CONTINUOUS MEMBERS SHALL BE A MINIMUM OF 2 INCHES OF 3/16 INCH FILLET STITCH WELDS AT 12 INCHES ON CENTER, STAGGERED EACH SIDE, UNLESS OTHERWISE NOTED. COLUMN BASE PLATES, CAP PLATES AND STIFFENER PLATES SHALL BE WELDED ALL AROUND, UNLESS OTHERWISE NOTED.

9 SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION AND TYPE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON THE SHOP DRAWINGS WILL BE REJECTED.

10 BURNING OF HOLES IN STRUCTURAL STEEL IS PROHIBITED. ANY MEMBER WITH BURNED HOLES SHALL BE REPLACED.

11 BEAMS SHALL BE CAMBERED UPWARD AS SHOWN ON DRAWINGS. IF NO CAMBER IS SPECIFIED, THEN BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER PLACED UP.

12 ANGLES FOR SUPPORT OF STEEL DECKS AT FLOOR AND ROOF EDGES AND OPENINGS IN CONCRETE FLOORS AND ROOFS ARE DETAILED IN THE DRAWINGS. THE CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SIMILAR CONDITIONS AND SHALL PROVIDE SUCH FRAMING WHETHER SHOWN BY SECTION MARKS OR NOT.

13 EXAMINE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL ITEMS REQUIRED TO BE HOT-DIP GALVANIZED AFTER FABRICATION. ALL STEEL MEMBERS THAT WILL BE EXPOSED TO VIEW OR THE ENVIRONMENT IN THE COMPLETED CONSTRUCTION SHALL BE HOT DIP GALVANIZED. FIELD WELDS OR DAMAGE TO GALVANIZING SHALL BE REPAIRED WITH COLD GALVANIZING COMPOUND.

14 TOP FLANGES OF COMPOSITE BEAMS SHALL NOT BE PAINTED. OTHERWISE, ALL STRUCTURAL STEEL SHALL BE PAINTED WITH A HIGH-GRADE RUST INHIBITING RED OR GRAY OXIDE PRIMER. ALL FIELD WELDS AND EXPOSED STEEL SHALL BE TOUCHED UP AFTER ERECTION.

15 REFER TO THE ARCHITECTURAL DRAWINGS FOR INTERIOR OR EXTERIOR STRUCTURAL STEEL THAT WILL RECEIVE A FINISH TOP COAT OF PAINT AND BE EXPOSED TO VIEW IN THE COMPLETED CONSTRUCTION . THE FOLLOWING IS APPLICABLE TO THESE MEMBERS.

A ALL STRUCTURAL STEEL MEMBERS SHALL BE FABRICATED PRIOR TO PREPARING MEMBERS FOR THE APPLICATION OF THE PRIMER COAT.

B FOLLOWING FABRICATION OF THE STRUCTURAL STEEL MEMBERS, THE STRUCTURAL STEEL SURFACES SHALL BE PREPARED IN CONFORMANCE WITH THE SOCIETY FOR PROTECTIVE COATINGS SURFACE PREPARATION AND STANDARDS (SP) 6/NACE NO. 3 - "COMMERCIAL BLAST CLEANING." THE STANDARD REQUIRES THE REMOVAL OF ALL VISIBLE OIL, GREASE, DIRT, DUST, MILL SCALE, RUST, PAINT OXIDES, CORROSION PRODUCTS AND/OR ANY OTHER FOREIGN MATTER BY BLASTING WITH A DRY ABRASIVE THROUGH A NOZZLE USING CLEAN, DRY, OIL-FREE COMPRESSED AIR. DISCOLORATIONS OR STAINS OF THE SURFACE SHALL BE LIMITED TO NO MORE THAN 33% PER UNIT AREA OF 9 SQUARE INCHES.

C FOLLOWING SURFACE PREPARATION, THE STEEL SHALL BE PAINTED WITH A HIGH-SOLIDS, MEDIUM-OIL, MODIFIED ALKYD PRIMER APPLIED WITH A DRY FILM THICKNESS OF 2.0 TO 3.5 MILS AND EXCEEDING THE REQUIREMENTS OF FEDERAL SPECIFICATIONS TT-P-636, TT-P-645 AND TT-P-86D, TYPES I AND II. THE MINIMUM SOLIDS CONTENT SHALL BE 56% BY VOLUME.THE USE OF A SHORT-OIL ALKYD PRIMER BASED ON FEDERAL SPECIFICATION TT-P-636 WILL NOT BE PERMITTED. AN ACCEPTABLE PRODUCT IS TNEMEC SERIES 10 PRIMER, OR AN APPROVED ALTERNATE. THIS PRIMER IS WELDABLE AND DOES NOT AFFECT THE INTEGRITY OF WELDS.

D STEEL SURFACE PREPARATION AND APPLICATION OF PRIMER IN THE SHOP SHALL BE SUBJECT TO INSPECTION AND REVIEW BY A REPRESENTATIVE OF THE TESTING LABORATORY, OWNER, ARCHITECT AND/OR ENGINEER. THE CONTRACTOR SHALL NOTIFY THE OWNER OR ARCHITECT A MINIMUM OF 48 HOURS PRIOR TO APPLICATION OF PRIMER. IT SHALL BE THE CONTRACTOR'S AND FABRICATOR'S RESPONSIBILITIES TO COOPERATE FULLY WITH THE INSPECTOR AND SURFACE AND PAINTING INSPECTION REQUIREMENTS.

E THE PRIMED STEEL SHALL BE SHIPPED AND ERECTED.

F FOLLOWING ERECTION OF THE PRIMED STRUCTURAL STEEL, ALL FIELD WELDS SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SP11 - "POWER TOOL CLEANING TO BARE METAL" TO REMOVE ALL SLAG, FOREIGN MATTER AND SURFACE CONTAMINANTS AT THE WELD SITES. THE FIELD WELDS SHALL THEN BE IMMEDIATELY SPOT PRIMED USING THE SAME HIGH-SOLIDS, MEDIUM OIL, MODIFIED ALKYD PRIMER USED IN THE SHOP AND APPLIED TO A DRY FILM THICKNESS OF 2.0 TO 3.5 MILS.

G FOLLOWING CLEANING AND PREPARATION OF THE FIELD WELDS, ALL SURFACES SHALL BE CAREFULLY INSPECTED. THE STEEL MUST BE CLEAN, DRY AND FREE OF ALL OIL, GREASE, RUST AND DELAMINATED PRIMER PAINT PRIOR TO APPLICATION OF THE TOP COATS OF PAINT. ANY RUST OR LOOSE PRIMER SHALL BE REMOVED AND THE STEEL SUBSTRATE CLEANED IN ACCORDANCE WITH SSPC SP2 - "HAND TOOL CLEANING" AND SPOT REPRIMED. THE FINAL STEP BEFORE APPLICATION OF THE TOP COATS SHALL BE CLEANING IN ACCORDANCE WITH SSPC-SP1 -"SOLVENT CLEANING."

H APPLY TOP COATS OF PAINT IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS.

16 ADEQUATE ERECTION BRACING SHALL BE MAINTAINED UNTIL ALL CONNECTIONS ARE MADE, THE FLOOR AND ROOF DECKS ARE INSTALLED AND THE PERMANENT STEEL BRACING, IF ANY, HAS BEEN INSTALLED.

17 TOLERANCES - WIDE FLANGE AND CHANNEL MEMBERS

A CAMBER

FOR MEMBERS WITH FLANGE WIDTH EQUAL TO OR GREATER THAN 6 INCHES, PERMISSIBLE VARIATION IS 1/8 INCH X (TOTAL MEMBER LENGTH IN FEET/10)

FOR MEMBERS WITH FLANGE WIDTH LESS THAN 6 INCHES, PERMISSIBLE VARIATION IS 1/8 INCH X (TOTAL MEMBER LENGTH IN FEET/10). FOR SUCH MEMBERS WITH LENGTH OF 45 FEET OR LESS, THE MAXIMUM PERMISSIBLE VARIATION IS 3/8 INCH MAX.

B SWEEP

FOR MEMBERS WITH FLANGE WIDTH EQUAL TO OR GREATER THAN 6 INCHES, PERMISSIBLE VARIATION IS 1/8 INCH X (TOTAL MEMBER LENGTH IN FEET/10).

FOR MEMBERS WITH FLANGE WIDTH LESS THAN 6 INCHES, PERMISSIBLE VARIATION IS 1/8 INCH X (TOTAL MEMBER LENGTH IN FEET/5). FOR SUCH MEMBERS WITH LENGTH OF 45 FEET OR LESS, THE MAXIMUM PERMISSIBLE VARIATION IS 3/8 INCH MAX.

18 TOLERANCES - HOLLOW STRUCTURAL SECTIONS AND TUBULAR STEEL MEMBERS

ASTRAIGHTNESS

THE PERMISSIBLE VARIATION FOR STRAIGHTNESS OF HOLLOW STRUCTURAL SECTIONS AND TUBULAR STEEL SECTIONS IS 1/8 INCH X (TOTAL MEMBER LENGTH IN FEET/5).

B SQUARENESS OF SIDES

FOR SQUARE OR RECTANGULAR MEMBERS, ADJACENT SIDES OF MEMBER MAY DEVIATE FROM 90 DEGREES BY A TOLERANCE OF PLUS OR MINUS 2 DEGREES MAXIMUM.

C TWIST

TWIST, OR VARIATION WITH RESPECT TO AXIAL ALIGNMENT OF THE SECTION, IS MEASURED BY HOLDING DOWN ONE END OF A SQUARE OR RECTANGULAR SECTION ON A FLAT SURFACE WITH THE BOTTOM SIDE OF THE MEMBER PARALLEL TO THE SURFACE AND NOTING THE HEIGHT THAT EITHER CORNER, AT THE OPPOSITE END OF THE MEMBER, EXTENDS ABOVE THE SURFACE. THE TOLERANCES FOR TWIST SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

DIMENSION OF LONGEST SIDE, IN.	MAXIMUM TWIST PER 3 FT. OF LENGTH, IN.
1 1/2 AND UNDER	0.050
OVER 1 1/2 TO 2 1/2	0.062
OVER 2 1/2 TO 4	0.075
OVER 4 TO 6	0.087
OVER 6 TO 8	0.100
OVER 8	0.112

D RADIUS OF CORNERS - FOR SQUARE OR RECTANGULAR HOLLOW SECTIONS, THE RADIUS OF ANY OUTSIDE CORNER SHALL NOT EXCEED 3 TIMES THE WALL THICKNESS.

HEADED STUDS AND ANCHORS

STUDS FOR SHEAR CONNECTORS AND ANCHORS FOR EMBEDDED PLATES, ANGLES AND OTHER SHAPES SHALL BE OF THE DIAMETER AND LENGTH SPECIFIED ON THE DRAWINGS. STUDS AND HEADED ANCHORS SHALL PROVIDE THE FOLLOWING MINIMUM PROPERTIES IN CONFORMANCE WITH AWS D1.1, TABLE 7.1:

PROPERTY	TYPE A (1/4 & 3/8 INCH DIAMETER)	TYPE B (1/2 INCH DIA. OR MORE)
TENSILE STRENGTH	61 KSI	65 KSI
YIELD STRENGTH	49 KSI	51 KSI
ELONGATION (% IN 2 INCHES)	17%	20%
REDUCTION OF AREA	50%	50%

STUDS AND HEADED ANCHORS SHALL BE HEADED STEEL STUDS AS MANUFACTURED BY THE NELSON DIVISION OF TRW. STUDS SHALL BE ATTACHED TO BEAMS, PLATES, ANGLES, ETC. USING A WELDING GUN SPECIFICALLY MANUFACTURED FOR THIS PURPOSE. MANUAL WELDING USING ROD ELECTRODES WILL NOT BE PERMITTED.

STEEL JOISTS - K SERIES

1 STANDARDS

A STEEL JOIST INSTITUTE STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, K-SERIES."
B STEEL JOIST INSTITUTE "RECOMMENDED CODE OF STANDARD PRACTICE FOR STEEL JOISTS."

2 JOISTS SHALL BE DESIGNED, FABRICATED, TRANSPORTED, STORED AND ERECTED IN CONFORMANCE WITH THE REFERENCE STANDARDS. JOIST SELECTION AND DESIGN IS BASED ON ALLOWABLE STRESS DESIGN.

3 BRIDGING SHALL BE HORIZONTAL RODS OR ANGLES IN ACCORDANCE WITH PARAGRAPHS 5.4 (A), (B) AND (C) AND 5.5 OF THE STEEL JOIST INSTITUTE SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE DRAWINGS. BRIDGING SHALL BE THROUGH STRUCTURAL STEEL JOIST AND ANCHORED TO SPANDREL MEMBERS, HIP BEAMS, VALLEY BEAMS OR TILT-UP PANELS, AS APPROPRIATE.

4 JOISTS, BRIDGING AND CONNECTIONS SHALL BE DESIGNED FOR A NET UPLIFT OF 20 POUNDS PER SQUARE FOOT. THE TRIBUTARY WIDTH OF ROOF SUPPORTED BY THE JOISTS SHALL BE EQUAL TO THE SPACING OF THE JOISTS. THE UPLIFT LOAD SHALL BE EQUAL TO THE TRIBUTARY WIDTH TIMES THE SPECIFIED UNIFORM UPLIFT LOAD.

5 TOP CHORD JOIST EXTENSIONS SHALL BE DESIGNED TO SUPPORT A LIVE AND TOTAL LOAD CAPACITY EQUAL TO THAT OF THE JOIST ITSELF.

5 TOP CHORD JOIST EXTENSIONS SHALL BE DESIGNED TO SUPPORT A LIVE LOAD OF 20 POUNDS PER LINEAL FOOT, A TOTAL LOAD OF 40 POUNDS PER LINEAL FOOT AND AN UPLIFT LOAD OF 20 POUNDS PER LINEAL FOOT.

6 JOIST CONNECTION - AS A MINIMUM, WELD TO SUPPORTS WITH TWO 2-INCH LONG, 1/8-INCH FILLET WELDS PER END. FIELD BOLT JOISTS NEAREST COLUMNS WITH TWO 1/2-INCH DIAMETER BOLTS. PROVIDE 2 1/2 INCH MINIMUM BEARING ON STEEL BEAMS AND 4 INCH MINIMUM BEARING ON STEEL BEARING PLATES AT CONCRETE OR MASONRY WALLS.

7 CAMBER - SJI SPECIFICATIONS PARAGRAPH 4.7.

8 THE CONTRACTOR SHALL EXAMINE THE CONTRACT DOCUMENTS FOR CONDITIONS REQUIRING NON-STANDARD SEATS WHETHER SHOWN ON THE FRAMING PLANS OR NOT. SEATS SHALL BE OF DEPTH TO ALLOW FULL DECK BEARING ON TOP CHORD AND FULL JOIST BEARING ON SUPPORTING BEAMS. IN PARTICULAR, THE JOIST MANUFACTURER SHALL REVIEW FLANGE WIDTHS OF WIDE FLANGE BEAMS AND GIRDERS FOR AVAILABLE BEARING LENGTHS AND DESIGN THE JOIST SEATS FOR THE BEARING LENGTHS AVAILABLE. OPTIONALLY, AND WITH THE APPROVAL OF THE ENGINEER, A STEEL BEAM WITH THE NECESSARY FLANGE WIDTH AND A SECTION MODULUS AND MOMENT OF INERTIA EQUAL TO OR GREATER THAN THE BEAM SPECIFIED MAY BE SUBSTITUTED. ALTERNATE DETAILS, SUCH AS BEARING PLATES OR FLANGE EXTENSIONS, MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, JOIST MANUFACTURER AND STEEL FABRICATOR TO COORDINATE SUCH CONDITIONS.

9 PROVIDE FLAT BEARING FOR ALL JOISTS.

10 JOISTS SHALL BE ERECTED IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS AND REGULATIONS. ADEQUATE ERECTION BRACING SHALL BE MAINTAINED UNTIL ALL CONNECTIONS HAVE BEEN MADE AND THE ROOF DECK PANELS HAVE BEEN INSTALLED AND FASTENED TO THE STRUCTURE. BRIDGING INSTALLATION SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.

11 JOISTS SHALL BE PAINTED WITH A HIGH-QUALITY RUST INHIBITING GRAY OXIDE PRIMER.

COMPOSITE CONSTRUCTION NOTES

COMPOSITE METAL DECK NOTES

1 COMPOSITE STEEL FLOOR DECK SHALL BE 3 INCHES DEEP, 20 GAGE, GALVANIZED (WITH G60 COATING), WITH A MINIMUM YIELD STRENGTH OF 40 KSI AND A MINIMUM SECTION MODULUS = 0.553 IN3. ACCEPTABLE PRODUCTS ARE VULCRAFT 3VLI20 OR AN APPROVED ALTERNATE.

2 STEEL DECK SHALL HAVE A MINIMUM OF 2-SPANS CONTINUOUS. SIDE LAPS SHALL BE FASTENED AT 36" MAXIMUM SPACING ON CENTERS USING #10 TEK SCREWS, BUTTON PUNCHING OR CRIMPING, 5/8 INCH DIAMETER PUDDLE WELDS OR 1" LONG FILLET WELDS. ENDS SHALL HAVE A MINIMUM BEARING OF 1 1/2 INCHES ON STEEL SUPPORTS. BUTT ENDS OF DECK PANELS TOGETHER AT SUPPORTS. WELD DECK AT ENDS AND AT INTERMEDIATE SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS AT 12 INCHES MAXIMUM ON CENTERS. EDGES OF DECK PANELS SHALL BE FASTENED TO SUPPORTS USING 5/8 INCH DIAMETER PUDDLE WELDS AT 12" MAXIMUM SPACING.

COMPOSITE BEAM SHEAR CONNECTORS FASTENED TO BEAMS THROUGH THE DECK WILL BE CONSIDERED ADEQUATE FASTENERS OF THE DECK TO THE BEAMS PROVIDED THAT THEY ARE INSTALLED AT THE MINIMUM SPACINGS DESCRIBED FOR PUDDLE WELDS ABOVE.

UNLESS OTHERWISE NOTED, SINGLE DECK SPANS WILL REQUIRE SHORING AT MIDSPAN.

3 PROVIDE CLOSURES AS NECESSARY AT OPEN ENDS AND AT EDGES OF DECK WHERE DECK DOES NOT ABUT OR LAP THE SUPPORTING STRUCTURE. CLOSURES SHALL MATCH THE PROFILE OF THE DECK. THE USE OF CONTINUOUS ANGLE CLOSURES WILL NOT BE PERMITTED. EXPANDABLE FOAM MAY BE USED TO CLOSE OPEN ENDS OF FLUTES, BUT FOAM SHALL NOT EXTEND INTO THE RIBS OR FLUTES OF THE DECK OR THE SPACE BETWEEN ENDS OF DECK PANELS INTENDED FOR CONCRETE.

4 EDGE ANGLES OR BENT PLATES THAT ARE INTENDED TO FUNCTION AS POUR STOPS ARE SHOWN IN THE DRAWINGS. CONTRACTOR SHALL EXAMINE THE DRAWINGS FOR ALL EDGE CONDITIONS AND PROVIDE EDGE ANGLES OR BENT PLATE POUR STOPS AT DECK EDGES WHETHER SHOWN ON THE DRAWINGS OR NOT.

5 STEEL DECK SHALL CONFORM TO ANSI/SDI-C1.0 STANDARD FOR COMPOSITE STEEL FLOOR DECK.

6 CONTRACTOR SHALL SUBMIT DESIGN AND PRODUCT DATA FOR THE COMPOSITE METAL DECK TO THE ENGINEER FOR REVIEW.

COMPOSITE SLAB

1 THE COMPOSITE FLOOR SLAB SHALL CONSIST OF 2½ INCHES OF NORMAL WEIGHT CONCRETE TOPPING OVER THE 3 INCH COMPOSITE METAL DECK FOR A TOTAL SLAB THICKNESS OF 5½ INCHES.

2 THE CONCRETE TOPPING SHALL BE IN ACCORDANCE WITH THE REINFORCED CONCRETE NOTES.

3 COMPOSITE SLAB SHALL BE REINFORCED WITH 6x6-W4XW4 WELDED WIRE FABRIC LAPPED A MINIMUM OF ONE AND ONE-HALF MESH AT ENDS AND SIDES. WELDED WIRE FABRIC SHALL BE INSTALLED WITH 1-INCH OF CLEAR COVER FROM THE TOP OF THE SLAB. WWF SHALL BE SUPPORTED ON CONTINUOUS SLAB BOLSTERS OF THE PROPER HEIGHT PLACED 1 FOOT EACH SIDE OF BEAMS AND GIRDERS AND AT 3 FEET MAXIMUM ON CENTERS BETWEEN THE BEAMS. WWF SHALL BE PROVIDED IN FLAT SHEETS.

SHEAR CONNECTORS

1 SHEAR CONNECTORS SHALL BE 3/4 INCH DIAMETER BY 4 11/16 INCH LONG HEADED STUDS CONFORMING TO THE REQUIREMENTS FOR HEADED STUDS AND HEADED ANCHORS AND AS MANUFACTURED BY NELSON DIVISION OF TRW, OR AN APPROVED ALTERNATE.

2 SHEAR CONNECTORS SHALL HAVE A MINIMUM LATERAL CONCRETE COVER OF 1 INCH. MINIMUM CENTER TO CENTER SPACING SHALL BE NOT LESS THAN SIX STUD DIAMETERS ALONG THE BEAM AND FOUR STUD DIAMETERS TRANSVERSE TO THE BEAM AXIS. MAXIMUM SHEAR STUD SPACING SHALL NOT EXCEED 8 TIMES THE TOTAL SLAB THICKNESS. THE FABRICATOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND PROVIDE NOT LESS THAN THE MINIMUM NUMBER OF STUDS REQUIRED.

3 REFER TO THE PLANS FOR THE LEGEND FOR COMPOSITE BEAM AND GIRDER SHEAR CONNECTOR DESIGNATIONS.

METAL ROOF DECK

1 ROOF DECK SHALL BE WIDE RIB (TYPE B), 1-1/2 INCHES DEEP, GALVANIZED (WITH MINIMUM G60 COATING), WITH A MINIMUM YIELD STRENGTH OF 33 KSI, DESIGNED IN ACCORDANCE WITH THE ANSI/SDI-RD1.0 STANDARD FOR STEEL ROOF DECK.

DECK SHALL BE 22 GAGE (MINIMUM SECTION MODULUS OF 0.183 IN3/FT OF WIDTH.

ACCEPTABLE PRODUCT IS VULCRAFT 1.5B22 OR AN APPROVED ALTERNATE.

2 WIDE RIB STEEL DECK SHEETS SHALL BE A MINIMUM OF 36 INCHES WIDE.

3 THE ROOF DECK SHALL BE ATTACHED TO THE STRUCTURAL FRAMING USING ONE OF THE FOLLOWING METHODS/PATTERNS:

A USE A 36/7 FASTENER PATTERN WITH 5/8 INCH DIAMETER PUDDLE WELDS AT DECK SUPPORTS AND A MINIMUM OF 4 SIDELAP FASTENERS PER DECK SPAN USING #10 TEK SCREWS; OR

B USE A 36/7 FASTENER PATTERN WITH HILTI X-HSN 24/X-ENP 19 L15 POWDER DRIVEN FASTENERS AT DECK SUPPORTS AND A MINIMUM OF 4 SIDELAP FASTENERS PER DECK SPAN USING #10 TEK SCREWS.

C WHERE ROOF DECKING IS SHOWN TO BE FASTENED OR ANCHORED TO TOP OF CMU, FASTEN USING MUSHROOM HEADED SPIKES.

4 STEEL ROOF DECK SHALL HAVE A MINIMUM OF 2 SPANS CONTINUOUS.

5 CONTRACTOR SHALL SUBMIT DESIGN AND PRODUCT DATA FOR ROOF DECK TO ENGINEER FOR REVIEW.

6 OPENINGS IN ROOF DECK

A OPENINGS 6" IN DIAMETER OR LESS WILL NOT REQUIRE REINFORCEMENT OR FRAMING.
B OPENINGS 6" TO 8" IN DIAMETER SHALL BE REINFORCED WITH AN 18 GAGE PLATE.
C OPENINGS 8" TO 12" IN DIAMETER SHALL BE REINFORCED WITH A 16 GAGE PLATE.
D OPENINGS 12" TO 15" IN DIAMETER SHALL BE REINFORCED WITH A 14 GAGE PLATE.
E OPENINGS 15" OR GREATER IN SIZE SHALL BE REFERRED TO THE ENGINEER FOR FRAMING, OR SHALL BE FRAMED IN ACCORDANCE WITH THE TYPICAL DETAIL FOR FRAMING OF ROOF OPENINGS.
F REFER TO DETAIL 4/S6.2.

REINFORCEMENT PLATES SHALL EXTEND A MINIMUM OF 6" EITHER SIDE OF THE OPENING IN THE DIRECTION PARALLEL TO THE DECK RIBS, AND TO THE SECOND RIB EITHER SIDE OF THE OPENING IN THE DIRECTION PERPENDICULAR TO THE DECK SPAN. FASTEN PLATE TO DECK USING #10 IN ROWS WITH ONE SCREW AT EACH RIB, WITH ROWS AT 6" ON CENTERS.

7 AT RIDGE, HIP AND VALLEY LINES, PROVIDE CONTINUOUS 20 GAGE PLATE FASTENED TO THE DECK RIBS EACH SIDE OF THE RIDGE, HIP OR VALLEY LINE AT 12" ON CENTERS WITH #10 TEK SCREWS.

8 THE SUSPENDING OF LIGHT GAGE FRAMING, CONDUIT, PIPING OR DUCTWORK DIRECTLY FROM THE DECKING WILL NOT BE PERMITTED. LIGHT GAGE FRAMING, CONDUIT, PIPING AND DUCTWORK SHALL BE SUPPORTED FROM THE JOIST OR STEEL FRAMING. THE SUSPENSION OR HANGING OF LIGHT GAGE FRAMING DIRECTLY FROM THE ROOF DECKING WILL NOT, UNDER ANY CIRCUMSTANCES, BE PERMITTED.

HOT-DIP GALVANIZING

1 GALVANIZING OF STEEL MEMBERS AND COMPONENTS SHALL BE PERFORMED BY A GALVANIZER THAT IS A MEMBER OF THE AMERICAN GALVANIZERS ASSOCIATION.

2 MEMBERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.

3 BOLTS, NUTS, WASHERS AND HARDWARE COMPONENTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.

4 SAFEGUARD PRODUCTS AGAINST STEEL EMBRITTLEMENT IN CONFORMANCE WITH ASTM A143.

5 GALVANIZE IN A MANNER TO AVOID MECHANICAL DAMAGE AND TO MINIMIZE DISTORTION.

6 PRECLEAN ALL MEMBERS AND HARDWARE IN ACCORDANCE WITH ACCEPTED METHODS OF PRODUCE ACCEPTABLE SURFACES FOR QUALITY HOT-DIP GALVANIZING. REMOVE ALL SHARD EDGES, BURRS AND SURFACE CONTAMINANTS.

7 FINISHED SURFACE SHALL BE CONTINUOUS, ADHERENT, AND AS SMOOTH AND EVENLY DISTRIBUTED AS POSSIBLE. SURFACE SHALL BE FREE OF DRIPS, RUNS, BURRS, LUMPS, ROUGHNESS, RUST STAINS AND BARE SPOTS. FOR MEMBERS EXPOSED DIRECTLY TO HUMAN CONTACT, THE PRESENCE OF BURRS, SHARP EDGES, ROUGHNESS, LUMPS OR RUNS MAY BE CONSIDERED GROUNDS FOR REJECTION OF THE MEMBER. THE SURFACE SHALL WITHSTAND NORMAL HANDLING CONSISTENT WITH THE NATURE AND THICKNESS OF THE COATING AND THE NORMAL USE OF THE MEMBER.

MEMBERS THAT DO NOT, IN THE OPINION OF THE ENGINEER, SATISFY THESE REQUIREMENTS MAY BE REJECTED AND REQUIRE REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

COLD GALVANIZING COMPOUND

1 FOR REPAIR OF GALVANIZED STEEL MEMBERS AND FABRICATIONS, A COLD GALVANIZING COMPOUND SHALL BE USED THAT MEETS THE REQUIREMENTS OF FEDERAL SPECIFICATION DOD-P-21035A, FEDERAL SPECIFICATION MIP-P-26915A, FEDERAL SPECIFICATION TT-P-460 (TYPE I, ZINC DUST) AND CANADIAN GOVERNMENT SPECIFICATION 1-GP-181A (ZINC COATING).

2 REQUIREMENTS

A PREMIXED, READY TO APPLY, LIQUID ORGANIC ZINC COMPOUND.
B SILVERY FINISH OR LIGHT GRAY FLAT FINISH AS NECESSARY TO MATCH THE EXISTING GALVANIZED FINISH.
C METALLIC ZINC CONTENT - 95% BY WEIGHT IN DRY FILM
D SOLIDS CONTENT - 52% BY VOLUME

3 ACCEPTABLE PRODUCTS ARE ZRC COLD GALVANIZING COMPOUND FOR FLAT, LIGHT GRAY FINISHES, OR ZRC GALVALITE FOR SHINY-SILVERY FINISHES. SUBSTITUTES OR ALTERNATES WILL NOT BE PERMITTED.

4 CLEAN SURFACES TO RECEIVE THE COLD GALVANIZING COMPOUND TO REMOVE ALL GREASE, OIL, RUST, SCALE, PAINT AND SLAG. CLEAN SURFACES DOWN TO BARE METAL AND APPLY THE COLD GALVANIZING COMPOUND IMMEDIATELY AFTER CLEANING. IF THE APPLICATION OF THE COLD GALVANIZING COMPOUND IS DELAYED AND NOT APPLIED IMMEDIATELY AFTER CLEANING, THEN SURFACES WILL REQUIRE RECLEANING PRIOR TO APPLICATION.

5 APPLY WITH SUFFICIENT WET FILM THICKNESS TO ACHIEVE A DRY FILM BUILD OF 2.5 TO 3.5 MILS USING THE MANUFACTURER'S RECOAT TIME DIRECTIONS, BUT NOT LESS THAN THE THICKNESS SPECIFIED BY ASTM A123 FOR HOT DIP GALVANIZED COATING. APPLICATION MAY BE BY BRUSH, ROLLER OR SPRAYER.

6 USE CARE TO SELECT THE APPROPRIATE COLD GALVANIZING COMPOUND APPROPRIATE FOR THE EXISTING GALVANIZED FINISH. USE OF A FLAT GRAY COMPOUND FOR A SILVERY-SHINY FINISH, OR A SILVERY COMPOUND FOR A FLAT GRAY FINISH MAY BE GROUNDS FOR REJECTION.

7 THE DEVELOPMENT OF RUST WITHIN THE FIRST YEAR FOLLOWING SUBSTANTIAL COMPLETION SHALL BE GROUNDS FOR REJECTION AND WILL REQUIRE RECLEANING, RE-PREPARATION OF SURFACES AND RECOATING AT NO ADDITIONAL COST.

CONCRETE MASONRY UNIT CONSTRUCTION

1 CONCRETE MASONRY UNITS SHALL BE HOLLOW, LOAD BEARING, LIGHTWEIGHT UNITS CONFORMING TO THE REQUIREMENTS OF ASTM C90.

2 REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60. CMU WALLS SHALL BE REINFORCED AS SHOWN ON THE DRAWINGS. VERTICAL REINFORCING BARS SHALL BE LAPPED AS SHOWN ON THE DRAWINGS.

3 MORTAR FOR LOAD BEARING MASONRY SHALL BE TYPE S PROPORTIONED BY VOLUME IN ACCORDANCE WITH ASTM C270 CAPABLE OF PROVIDING A MINIMUM COMPRESSIVE PRISM STRENGTH, F'm OF THE MASONRY SYSTEM OF 1500 PSI. MORTAR FOR NON-LOAD BEARING MASONRY SHALL BE TYPE N PROPORTIONED BY VOLUME IN ACCORDANCE WITH ASTM C270.

PROVIDED THAT MORTAR COMPONENTS ARE PROPORTIONED BY VOLUME, NO SAMPLING OR PHYSICAL TESTING OF MORTAR IS REQUIRED, BUT PROPORTIONS SHALL BE VERIFIED BY THE TESTING LABORATORY REPRESENTATIVE.

4 GROUT FOR CMU CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C476 AND SHALL HAVE A SLUMP IN THE RANGE OF 8 TO 11 INCHES. UNDER NO CIRCUMSTANCES SHALL THE SLUMP BE LESS THAN 8 INCHES.

PROVIDED THAT GROUT COMPONENTS ARE PROPORTIONED BY VOLUME, NO SAMPLING OR PHYSICAL TESTING OF GROUT IS REQUIRED, BUT PROPORTIONS SHALL BE VERIFIED BY THE TESTING LABORATORY REPRESENTATIVE.

5 JOINT REINFORCEMENT SHALL CONSIST OF LADDER TYPE REINFORCEMENT WITH NO. 9 GAGE SIDE RODS AND NO. 9 GAGE CROSS RODS. UNLESS NOTED OTHERWISE, PROVIDE JOINT REINFORCEMENT AT EVERY OTHER COURSE. JOINT REINFORCEMENT SHALL BE HOT DIP GALVANIZED.

6 MORTARED JOINTS SHALL BE TOOLED CONCAVE.

7 PROVIDE 2-#5 VERTICAL REINFORCING BARS EACH SIDE OF OPENINGS THROUGH WALLS, AT BOTH SIDES OF CONTROL JOINTS AND AT ALL CORNERS OF WALLS, UNLESS OTHERWISE NOTED.

8 PROVIDE VERTICAL CONTROL JOINTS WHERE SHOWN BY THE DRAWINGS. IF NOT SHOWN OR INDICATED, PROVIDE CONTROL JOINTS AT A MAXIMUM SPACING OF 20 FEET ON CENTERS SO AS NOT TO REDUCE THE STRENGTH OR STABILITY OF THE WALL. AT CORNERS OF BUILDINGS, PROVIDE VERTICAL CONTROL JOINT WITHIN 32 INCHES OF CORNER AT ONE SIDE. SUBMIT DRAWINGS INDICATING PROPOSED LOCATIONS AND CONSTRUCTION DETAILS FOR CONTROL JOINTS FOR THE ARCHITECT'S REVIEW.

9 BOND BEAM REINFORCEMENT SHALL BE CONTINUOUS THROUGH VERTICAL CONTROL JOINTS. THE HORIZONTAL BOND BEAM REINFORCEMENT SHALL BE FURNISHED WITH A BOND BREAKER FOR A DISTANCE OF 12 INCHES EACH SIDE OF THE JOINT. BOND BREAKER MAY CONSIST OF PVC SLEEVE OR GREASED PLASTIC TAPE AROUND THE REBAR, OR OTHER DETAIL AS SUBMITTED AND APPROVED BY THE ARCHITECT OR ENGINEER. HORIZONTAL JOINT REINFORCEMENT SHALL BE DISCONTINUOUS AT CONTROL JOINTS.

10 UNLESS OTHERWISE NOTED, MASONRY SHALL BE CONSTRUCTED WITH A RUNNING BOND.

PKA
Pickett, Kelm & Associates, Inc.
Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
Austin, Texas 78759 • Phone 512-345-5538
Texas Registration No. F-1491
PKA Proj. No. 030-5580

5D FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5da-i.com

6707 Riverside
6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

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STRUCTURAL NOTES AND SPECIFICATIONS

SHEET NO:
S1.2

STRUCTURAL NOTES AND SPECIFICATIONS (CONT'D)

SUBMITTALS

THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. WORK ASSOCIATED WITH THESE ITEMS SHALL NOT COMMENCE UNTIL THE SUBMITTALS HAVE BEEN REVIEWED AND RETURNED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT THE FOLLOWING:

1 CONCRETE

A TEST DATA AND MIX DESIGNS FOR EACH TYPE AND STRENGTH OF CONCRETE SPECIFIED AND PRODUCT DATA FOR ALL PROPOSED CONCRETE ADMIXTURES. PLACEMENT OF CONCRETE SHALL NOT COMMENCE UNTIL THE MIX DESIGNS HAVE BEEN SUBMITTED AND APPROVED.

B REINFORCING STEEL SHOP DRAWINGS DETAILING REINFORCEMENT FABRICATION AND BAR PLACEMENT. SHOP DRAWINGS SHALL CLEARLY INDICATE THE LOCATION, SIZE, SPACING, SPLICES AND PIECEMARK FOR ALL REINFORCING STEEL. THE SHOP DRAWINGS SHALL PROVIDE SUFFICIENT DETAIL TO PERMIT PLACEMENT OF REINFORCEMENT WITHOUT THE USE OF THE DESIGN DRAWINGS. THE SHOP DRAWINGS SHALL INCLUDE A COMPLETE BILL OF MATERIALS FOR ALL REINFORCING STEEL. FABRICATION OF REINFORCING STEEL SHALL NOT COMMENCE UNTIL THE ENGINEER HAS COMPLETED THE REVIEW OF THE SHOP DRAWINGS.

C PRODUCT DATA AND, IF REQUESTED, SAMPLES OF PROPOSED DRILLED PIER SIDE AND BOTTOM SPACERS.

D PRODUCT DATA AND, IF REQUESTED, SAMPLES OF PROPOSED CHAIRS FOR SUPPORT OF REBAR AT GROUND-SUPPORTED SLABS.

E PROPOSED METHOD OF CURING AND PRODUCT DATA FOR ANY CURING COMPOUNDS PROPOSED FOR USE ON THE PROJECT.

F UPON REQUEST, PROVIDE MILL CERTIFICATES FOR THE PROJECT REINFORCING STEEL.

2 STEEL DECKING

A PRODUCT AND DESIGN DATA AND SHOP DRAWINGS FOR COMPOSITE METAL DECK.

B PRODUCT AND DESIGN DATA AND SHOP DRAWINGS FOR METAL ROOF DECK.

3 STRUCTURAL STEEL

A STRUCTURAL STEEL SHOP DRAWINGS DETAILING ALL STRUCTURAL STEEL MEMBERS, CONNECTIONS AND RELATED STRUCTURAL STEEL ITEMS. SHOP DRAWINGS SHALL INDICATE MATERIAL TYPE, SIZES, LOCATIONS, BOLT HOLES, COPED EDGES, WELDS AND ALL OTHER DETAILS NECESSARY TO FABRICATE AND ERECT EACH PIECE. IN ADDITION, THE CONTRACTOR SHALL SUBMIT COORDINATED ERECTION DRAWINGS, CLEARLY INDICATING THE INSTALLED LOCATION, SIZE, ORIENTATION AND PIECEMARK FOR ALL STRUCTURAL STEEL MEMBERS. THE SHOP DRAWINGS AND ERECTION DRAWINGS SHALL PROVIDE SUFFICIENT DETAIL TO PERMIT STEEL FABRICATION AND ERECTION WITHOUT THE USE OF THE DESIGN DRAWINGS.

B SHOP DRAWINGS AND DETAILS FOR ALL OPEN WEB STEEL JOISTS, INCLUDING TYPE AND LOCATIONS OF BRIDGING AND DETAILS OF CONNECTIONS AND TOP AND/OR BOTTOM CHORD EXTENSIONS.

C SHOP DRAWINGS AND DETAILS FOR ALL STEEL STAIRS FOR REVIEW BY THE ARCHITECT AND, IF REQUESTED, DESIGN CALCULATIONS FOR REVIEW BY THE STRUCTURAL ENGINEER INCLUDING DESIGN LOADS AND DEFLECTIONS. BOTH SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BEAR THE SEAL OF A LICENSED TEXAS PROFESSIONAL ENGINEER.

D SHOP DRAWINGS AND DETAILS FOR ALL STEEL ITEMS TO BE EMBEDDED IN THE FOUNDATION.

E UPON REQUEST, SUBMIT MILL CERTIFICATES FOR THE PROJECT STRUCTURAL STEEL. IF STEEL IS OF FOREIGN MANUFACTURE, MILL CERTIFICATE DATA SHALL BE IN ENGLISH AND IMPERIAL UNITS.

4 PRODUCT DATA FOR UNDERSLAB VAPOR BARRIER.

5 PRODUCT SUBMITTALS AND CERTIFICATIONS FOR MATERIALS AND ACCESSORIES TO BE USED IN THE CONSTRUCTION OF LOAD BEARING MASONRY WALLS.

TESTING LABORATORY REQUIREMENTS

THE OWNER SHALL SECURE THE SERVICES OF A COMMERCIAL TESTING LABORATORY TO PERFORM ALL MATERIALS TESTS AND INSPECTIONS, AS REQUIRED BY THE CONSTRUCTION DOCUMENTS, AND SPECIAL INSPECTIONS, AS REQUIRED BY SECTION 1704 OF THE INTERNATIONAL BUILDING CODE. TESTING, INSPECTIONS AND SPECIAL INSPECTIONS SHALL BE PERFORMED UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER CURRENTLY LICENSED IN THE STATE OF TEXAS.

1 REINFORCED CONCRETE CONSTRUCTION

A ONE SET OF CONCRETE TEST CYLINDERS SHALL BE OBTAINED FOR EVERY 50 CUBIC YARDS OF CONCRETE PLACED, OR ANY PORTION THEREOF PLACED IN A SINGLE DAY, AS FOLLOWS:

1) FIVE (5) CONCRETE TEST CYLINDERS SHALL BE MOLDED FROM EACH SAMPLE AND CURED ACCORDING TO ASTM C 31. COMPRESSIVE TESTS SHALL BE PERFORMED ON ONE CYLINDER AT 7 DAYS AND THREE CYLINDERS AT 28 DAYS. THE FIFTH CYLINDER SHALL BE RETAINED FOR 56 DAYS AND TESTED ONLY IF THE AVERAGE STRENGTH OF THE 28 DAYS TESTS DOES NOT MEET THE MINIMUM REQUIRED COMPRESSIVE STRENGTH.

2) A SLUMP TEST AND TEMPERATURE MEASUREMENT SHALL BE PERFORMED FOR EACH SAMPLE.

3) COMPUTATION OF WATER/CEMENT RATIO, AS REQUIRED OR DIRECTED BY THE ENGINEER.

4) FOR PUMPED CONCRETE, CONCRETE SHALL BE SAMPLED AT THE DISCHARGE END OF THE PUMP HOSE.

B ADDITIONAL CYLINDERS MAY BE MADE AND TESTED, AS NECESSARY, FOR ACCELERATED REMOVAL OF FORMS OR ERECTION OF MEMBERS TO VERIFY THAT NECESSARY STRENGTHS HAVE BEEN OBTAINED. SUCH CYLINDERS SHALL MADE AT THE CONTRACTOR'S EXPENSE.

C INSPECT FORMWORK, REINFORCEMENT AND ANCHOR BOLT FABRICATION AND STEEL EMBEDMENTS PRIOR TO CONCRETE PLACEMENT FOR COMPLIANCE OF THE CONSTRUCTION TO THE CONSTRUCTION DOCUMENTS.

2 DRILLED PIERS - SERVICES ARE TO BE PROVIDED AS FOLLOWS:

A CONTINUOUS INSPECTION OF DRILLING OPERATIONS FOR DRILLED PIER EXCAVATIONS.

B VISUAL INSPECTION OF ALL DRILLED PIER EXCAVATIONS UPON COMPLETION OF EXCAVATION OPERATIONS AND PRIOR TO PLACEMENT OF REINFORCEMENT AND CONCRETE.

C MAINTAIN A LOG OF EACH DRILLED PIER.

D INSPECT REINFORCING STEEL INSTALLATION PRIOR TO CONCRETE PLACEMENT.

3 STEEL CONSTRUCTION - SERVICES ARE TO BE PROVIDED AS FOLLOWS:

AINSPECT CONNECTIONS OF STEEL MEMBERS AND DECKING.

B INSPECT INSTALLATION OF COMPOSITE SHEAR CONNECTORS.

C INSPECT WELDS AND BOLTED CONNECTIONS.

D INSPECT ALL STEEL EMBEDS THAT ARE TO BE EMBEDDED INTO THE CONCRETE CONSTRUCTION.

4 CONCRETE MASONRY CONSTRUCTION - PROVIDE SPECIAL INSPECTION OF THE REINFORCED CONCRETE MASONRY CONSTRUCTION AS REQUIRED BY THE BUILDING CODE FOR FULLY GROUTED HOLLOW-UNIT MASONRY.

SPECIAL INSPECTIONS AND TESTS SHALL BE PERFORMED IN ACCORDANCE WITH THE QUALITY ASSURANCE PROGRAM REQUIREMENTS OF TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530.1/ASCE 6.

NOTE: SAMPLING AND PHYSICAL TESTING OF MORTAR AND GROUT IN CONNECTION WITH MASONRY CONSTRUCTION IS NOT NECESSARY OR REQUIRED PROVIDED THAT MORTAR AND GROUT ARE PROPORTIONED BY VOLUME IN ACCORDANCE WITH THE APPROPRIATE ASTM SPECIFICATION AND PROVIDED THAT PROPORTIONS ARE VERIFIED AT THE JOB SITE.

5 THE CONTRACTOR SHALL COOPERATE AND COORDINATE FULLY WITH THE TESTING LABORATORY.

6 IN THE EVENT THAT CONCRETE ELEMENTS OR MEMBERS DO NOT ACHIEVE THE SPECIFIED MINIMUM COMPRESSIVE STRENGTHS, THE ENGINEER MAY REQUIRE ADDITIONAL ANALYSIS, TESTING OR REMOVAL AND REPLACEMENT OF MEMBERS. ANY AND ALL SUCH ADDITIONAL ANALYSIS OR TESTING SHALL BE AT THE CONTRACTOR'S EXPENSE, WHETHER SUCH ANALYSIS OR TESTING DEMONSTRATES ADEQUATE STRENGTH OR NOT. REPLACEMENT OF ANY MEMBERS DEEMED QUESTIONABLE OR INADEQUATE BY THE ENGINEER SHALL BE AT THE CONTRACTOR'S EXPENSE.

7 THE OWNER OR CONTRACTOR SHALL ARRANGE FOR COPIES OF THE INSPECTION AND TESTING REPORTS TO BE SENT TO THE ENGINEER. COPIES OF TEST AND INSPECTION REPORTS SHALL BE FORWARDED TO THE ENGINEER AS QUICKLY AS POSSIBLE FOLLOWING COMPLETION OF THE TESTS AND INSPECTIONS.

SPECIAL INSPECTION REQUIREMENTS

1 EACH SPECIAL INSPECTOR SHALL BE A QUALIFIED INDIVIDUAL WITH DEMONSTRATED COMPETENCE SATISFACTORY TO THE BUILDING OFFICIAL AND THE ENGINEER IN ACCORDANCE WITH SECTION 1704.2.1 OF THE INTERNATIONAL BUILDING CODE. THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND PROVIDE REPORTS TO THE ENGINEER OF RECORD AND THE OWNER IN ACCORDANCE WITH SECTION 1704.2.4 OF THE IBC. SPECIAL INSPECTORS SHALL PERFORM SERVICES UNDER THE SUPERVISION OF A CURRENTLY LICENSED TEXAS PROFESSIONAL ENGINEER.

2 REPORTS - REPORTS SHALL BE SUBMITTED TO THE OWNER AND THE ENGINEER ON A WEEKLY BASIS. REPORTS SHALL, AS A MINIMUM, PROVIDE THE FOLLOWING INFORMATION:

A DESCRIPTION OF WORK INSPECTED
B LOCATION OF THE WORK WITHIN THE PROJECT
C TEST OR INSPECTION METHOD OR STANDARD USED AND THE QUANTITY INSPECTED.
D LIST OF ANY DEFICIENCIES FOUND AND THE CORRECTIVE ACTION TO BE TAKEN.
E WRITTEN VERIFICATION WHEN ALL DEFICIENCIES HAVE BEEN CORRECTED.

3 LETTER OF CONCURRENCE - UPON COMPLETION OF CONSTRUCTION, PROVIDE A FINAL LETTER OF CONCURRENCE, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY LICENSED IN THE STATE OF TEXAS AND EMPLOYED BY THE ENGINEERING TESTING AND INSPECTION FIRM PROVIDING THE SPECIAL INSPECTION SERVICES, TO THE BUILDING OFFICIAL. THE CONCURRENCE LETTER SHALL PROVIDE A STATEMENT REGARDING THE SITE VISITS MADE, THE TESTS AND INSPECTIONS PERFORMED, THE RESULTS OF THE TESTS AND INSPECTIONS PERFORMED, AND ASSURANCE OF CONFORMANCE OF THE CONSTRUCTION TO THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. ANY DISCREPANCIES OR DEFICIENCIES IDENTIFIED WHICH HAVE NOT, TO THE SPECIAL INSPECTOR'S KNOWLEDGE, BEEN RESOLVED SHALL BE INCLUDED IN THE LETTER.

4 SPECIAL INSPECTIONS SHALL BE PROVIDED AS REQUIRED BY SECTION 1705 OF THE IBC FOR THE FOLLOWING ITEMS:

A STEEL CONSTRUCTION (COLUMNS, BEAMS, GIRDERS, JOISTS AND DECK) - THE SPECIAL INSPECTOR SHALL PROVIDE PERIODIC INSPECTION OF ALL CONNECTIONS, BOLTS AND WELDS AS SHOWN AND REQUIRED BY SECTION 1705.2 OF THE IBC AND, FOR OPEN-WEB STEEL JOISTS, TABLE 1705.2.3 OF THE IBC.

B CONCRETE CONSTRUCTION (DRILLED SHAFTS, BEAMS, SLABS AND TOPPING SLABS) - THE SPECIAL INSPECTOR SHALL PROVIDE INSPECTION SERVICES AS REQUIRED BY SECTION 1705.3 AND TABLE 1705.3 OF THE IBC TO VERIFY DIMENSIONS OF MEMBERS AND TO VERIFY THE QUANTITY, SIZE AND PLACEMENT OF STEEL REINFORCEMENT; VERIFY THAT THE APPROVED CONCRETE MIX DESIGN IS BEING USED FOR EACH POUR; AND THAT CONCRETE IS BEING SAMPLED IN ACCORDANCE WITH TABLE 1705.3 OF THE IBC.

FOR DRILLED SHAFT AND PIER FOUNDATION CONSTRUCTION, SPECIAL INSPECTION SHALL ALSO BE PERFORMED IN ACCORDANCE WITH TABLE 1705.8 OF THE IBC.

C CONCRETE MASONRY CONSTRUCTION - PROVIDE SPECIAL INSPECTION OF THE REINFORCED CONCRETE MASONRY CONSTRUCTION AS REQUIRED BY SECTION 1705.4 OF THE BUILDING CODE FOR FULLY GROUTED HOLLOW-UNIT MASONRY. SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE QUALITY ASSURANCE PROGRAM REQUIREMENTS OF TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530.1/ASCE 6.

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NAME: DAVID M. COLE
P.E. No: 103902
DATE: 09/26/2022
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PKA
Pickett, Kelm & Associates, Inc.
Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
Austin, Texas 78759 • Phone 512-345-5538
Texas Registration No. F-1491
PKA Proj. No. 030-0566

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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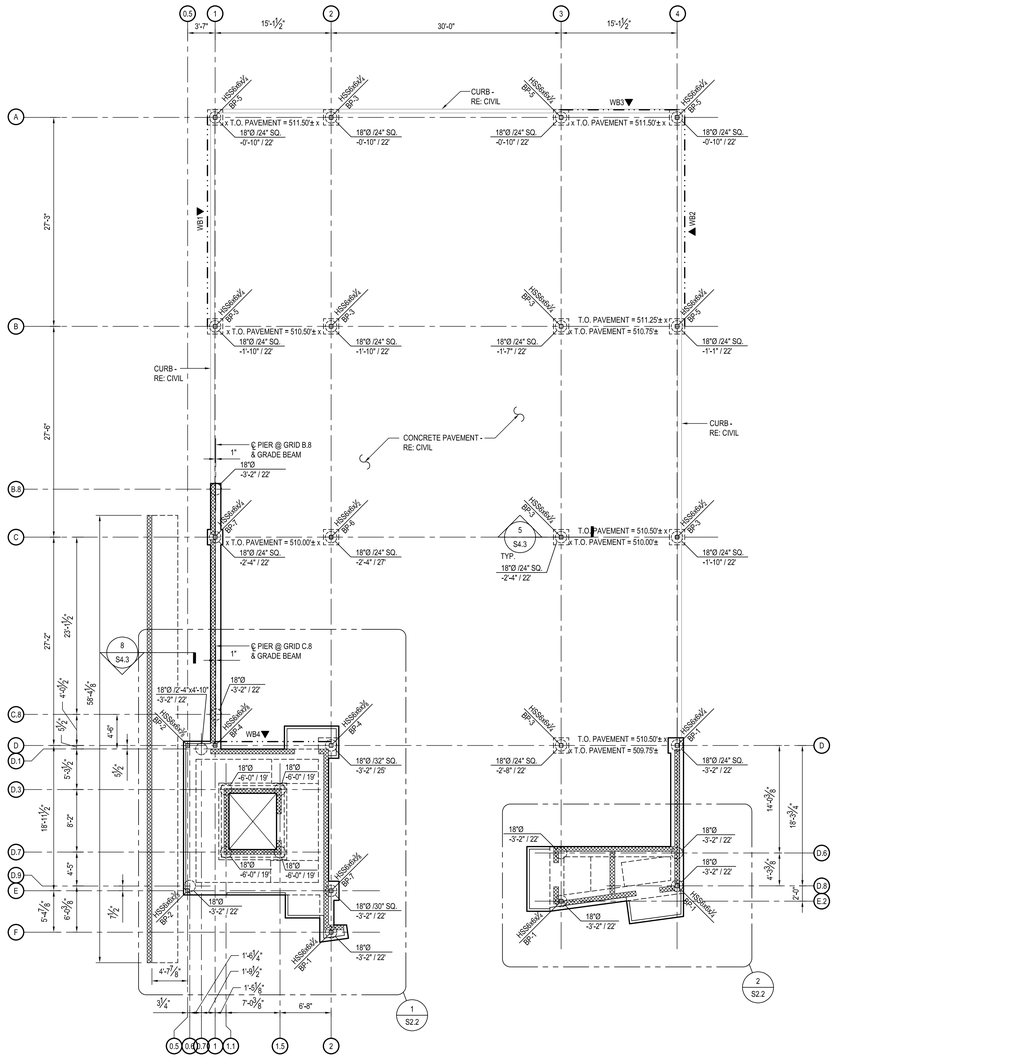
PROJ. NO.	ORIG. ISSUE
21066	2022.09.27

CURRENT:

SHEET NAME:
STRUCTURAL NOTES AND SPECIFICATIONS

SHEET NO:
S1.3



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

TRUE NORTH

PLAN NORTH

PLAN NOTES:

1. FIN. FLR. EL. = TOP OF SLAB ELEVATION = ACTUAL ELEVATION 509.35 = REFERENCE ELEVATION 100'-0" UNLESS NOTED OTHERWISE AS (+) OR (-). NEW FINISH FLOOR SHALL MATCH EXISTING. FIELD VERIFY.
2. SEE SHEETS S1.1, S1.2, AND S1.3 FOR STRUCTURAL NOTES.
3. SEE SHEET S4.1 FOR TYPICAL FOUNDATION DETAILS.
4. SEE 1/S4.1 FOR TYPICAL PIER DETAIL AND PIER SCHEDULE.
5. SEE SHEET S5.1 FOR WIND BRACE ELEVATIONS.
6. SEE SHEET S6.1 FOR STEEL COLUMN BASE PLATE SCHEDULE.
7. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR CONSTRUCTION REQUIREMENTS FOR EXTERIOR CONCRETE WALKWAYS AND SIDEWALKS.
8. VERIFY ALL TOP OF PAVEMENT ELEVATIONS WITH CIVIL. IF TOP OF PAVEMENT ELEVATIONS VARY FROM CIVIL, NOTIFY ENGINEER TO ADJUST TOP OF PIER ELEVATIONS.

LEGEND:

- 18"Ø /24" SQ. -6'-0" / 22' — PIER DIAMETER; PILASTER/PIER CAP PLAN DIMENSIONS (NO PILASTER IF BLANK); MINIMUM PIER LENGTH - SEE 1/S4.1
- T.O. PIER EL. FROM REF. EL. = 100'-0"
- WB1 — BRACED FRAME, REFER TO SHEET S5.1 FOR ELEVATIONS.
- -2½" — TOP OF SLAB DEVIATIONS FROM REFERENCE EL. 100'-0"
- HSS6x6x¼ BP-1 — COLUMN DESIGNATION; BASEPLATE DESIGNATION

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

6707 Riverside

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6707 Riverside Drive
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CURRENT:

SHEET NAME:
FOUNDATION PLAN

SHEET NO:
S2.1

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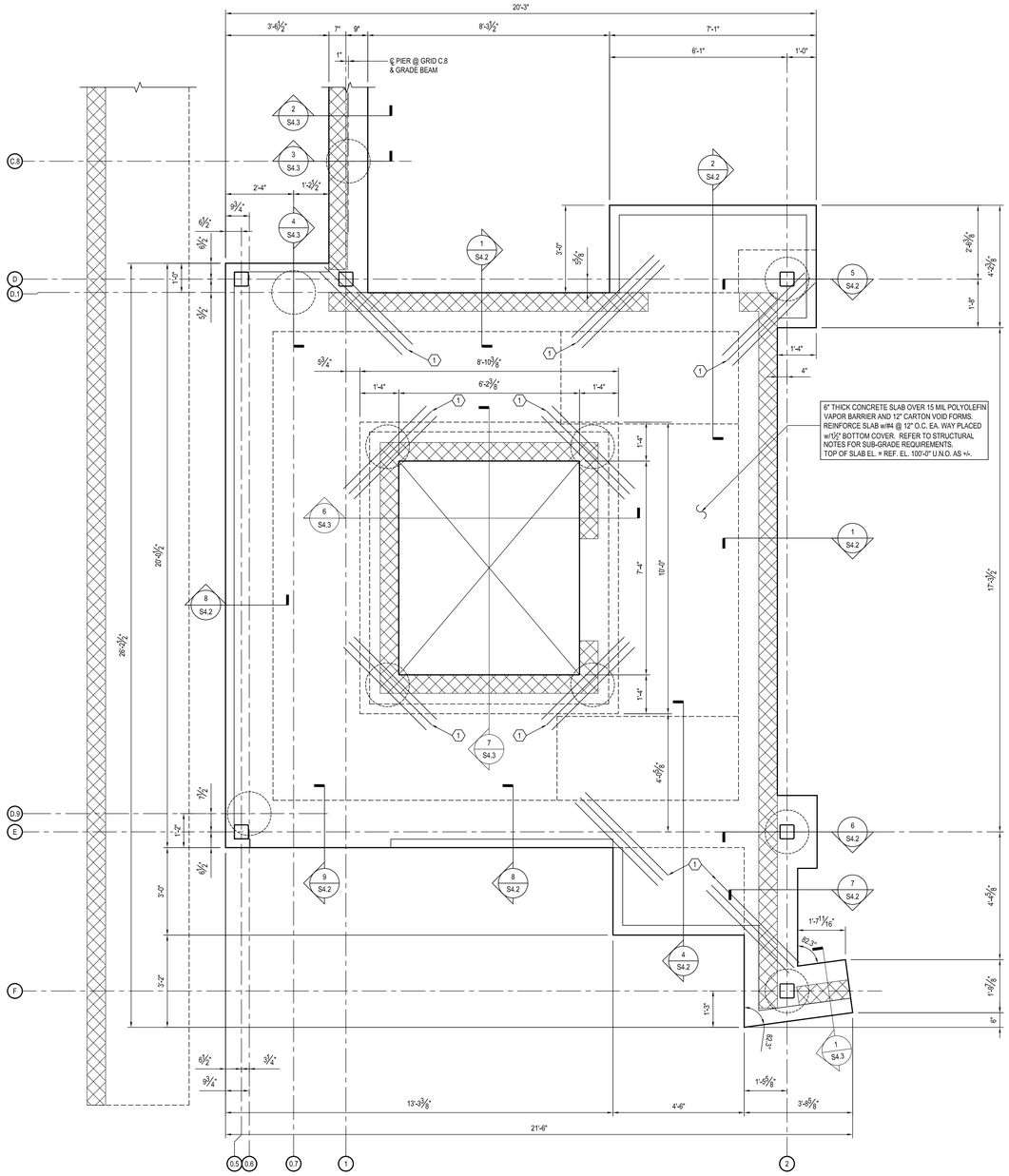
Pickett, Kelm & Associates, Inc.
Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
Austin, Texas 78759 • Phone 512-345-5538
Texas Registration No. F-1491

PKA Proj. No. 000-0506



TRUE NORTH PLAN NORTH

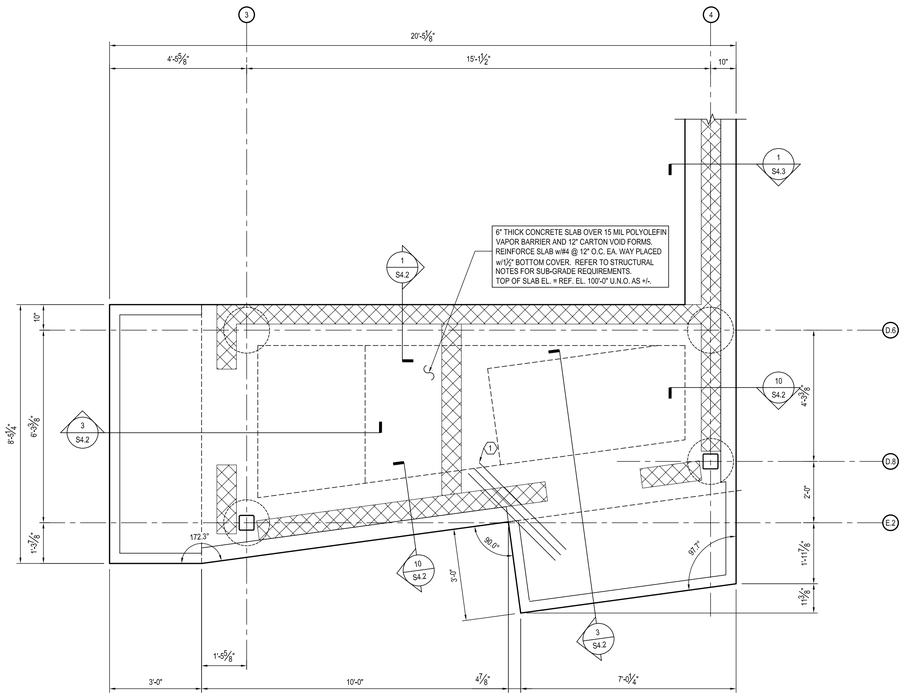
1 ENLARGED FOUNDATION PLAN
1/2" = 1'-0"

PLAN NOTES:

1 FIN. FLR. EL. = TOP OF SLAB ELEVATION = ACTUAL ELEVATION 509.35 = REFERENCE ELEVATION 100'-0" UNLESS NOTED OTHERWISE AS (+) OR (-). NEW FINISH FLOOR SHALL MATCH EXISTING. FIELD VERIFY.
2 SEE SHEETS S1.1, S1.2, AND S1.3 FOR STRUCTURAL NOTES.
3 SEE SHEET S4.1 FOR TYPICAL FOUNDATION DETAILS.
4 SEE 1/S4.1 FOR TYPICAL PIER DETAIL AND PIER SCHEDULE.
5 SEE SHEET S5.1 FOR WIND BRACE ELEVATIONS.
6 SEE SHEET S6.1 FOR STEEL COLUMN BASE PLATE SCHEDULE.
7 SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR CONSTRUCTION REQUIREMENTS FOR EXTERIOR CONCRETE WALKWAYS AND SIDEWALKS.

KEYED NOTES:

(1) 3 - #4 x 4'-0" AT ALL RE-ENTRANT CORNERS. PLACE w/1" CLEAR FROM CORNERS - SEE STRUCTURAL NOTES AND SPECIFICATIONS.



TRUE NORTH PLAN NORTH

2 ENLARGED FOUNDATION PLAN
1/2" = 1'-0"

PLAN NOTES:

1 FIN. FLR. EL. = TOP OF SLAB ELEVATION = ACTUAL ELEVATION 509.35 = REFERENCE ELEVATION 100'-0" UNLESS NOTED OTHERWISE AS (+) OR (-). NEW FINISH FLOOR SHALL MATCH EXISTING. FIELD VERIFY.
2 SEE SHEETS S1.1, S1.2, AND S1.3 FOR STRUCTURAL NOTES.
3 SEE SHEET S4.1 FOR TYPICAL FOUNDATION DETAILS.
4 SEE 1/S4.1 FOR TYPICAL PIER DETAIL AND PIER SCHEDULE.
5 SEE SHEET S5.1 FOR WIND BRACE ELEVATIONS.
6 SEE SHEET S6.1 FOR STEEL COLUMN BASE PLATE SCHEDULE.
7 SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR CONSTRUCTION REQUIREMENTS FOR EXTERIOR CONCRETE WALKWAYS AND SIDEWALKS.

KEYED NOTES:

(1) 3 - #4 x 4'-0" AT ALL RE-ENTRANT CORNERS. PLACE w/1" CLEAR FROM CORNERS - SEE STRUCTURAL NOTES AND SPECIFICATIONS.

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Pickett, Kelm & Associates, Inc.
Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
Austin, Texas 78759 • Phone 512-345-5538
Texas Registration No. F-1491

PKA Proj. No. 0300-0586

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
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6707 Riverside

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6707 Riverside Drive
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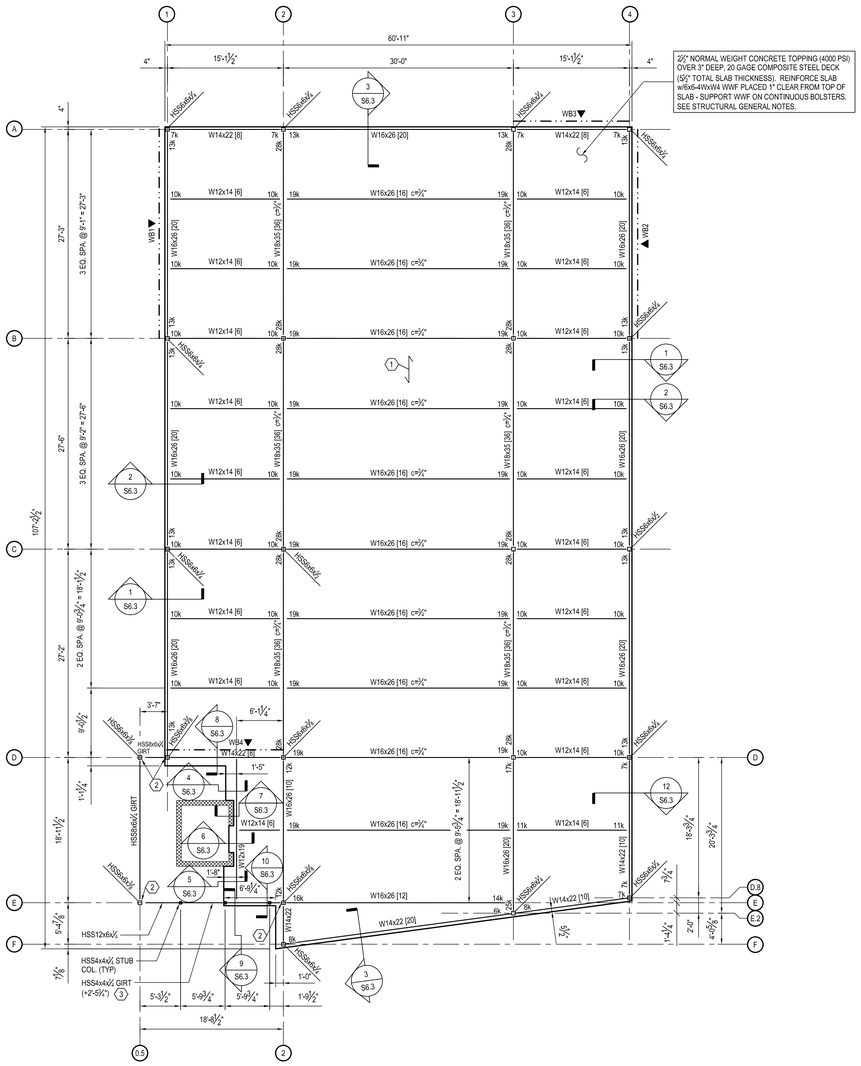
CURRENT:

SHEET NAME:
ENLARGED FOUNDATION PLANS

SHEET NO:
S2.2



1 UPPER LEVEL FRAMING PLAN
1/8" = 1'-0"

TRUE NORTH

PLAN NORTH

PLAN NOTES

1. FINISHED FLOOR ELEVATION = REFERENCE ELEVATION 112'-6".
2. T.O.S. EL. = BOTTOM OF DECK = REF. EL. 112'-0⅝" U.N.O. AS +/-.
2. SEE SHEETS S1.1, S1.2, AND S1.3 FOR STRUCTURAL NOTES.
3. BEAM REACTIONS LESS THAN OR EQUAL TO 6K HAVE BEEN OMITTED FROM THE PLAN.
4. SEE SHEET S5.1 FOR WIND BRACE ELEVATIONS.
5. SEE SHEET S6.1 FOR CONNECTION SCHEDULE AND DETAILS AND TYPICAL FLOOR BEAM CONNECTIONS.

LEGEND

COMPOSITE BEAM AND GIRDER DESIGNATIONS:

BEAMS WITH UNIFORMLY SPACED SHEAR CONNECTORS

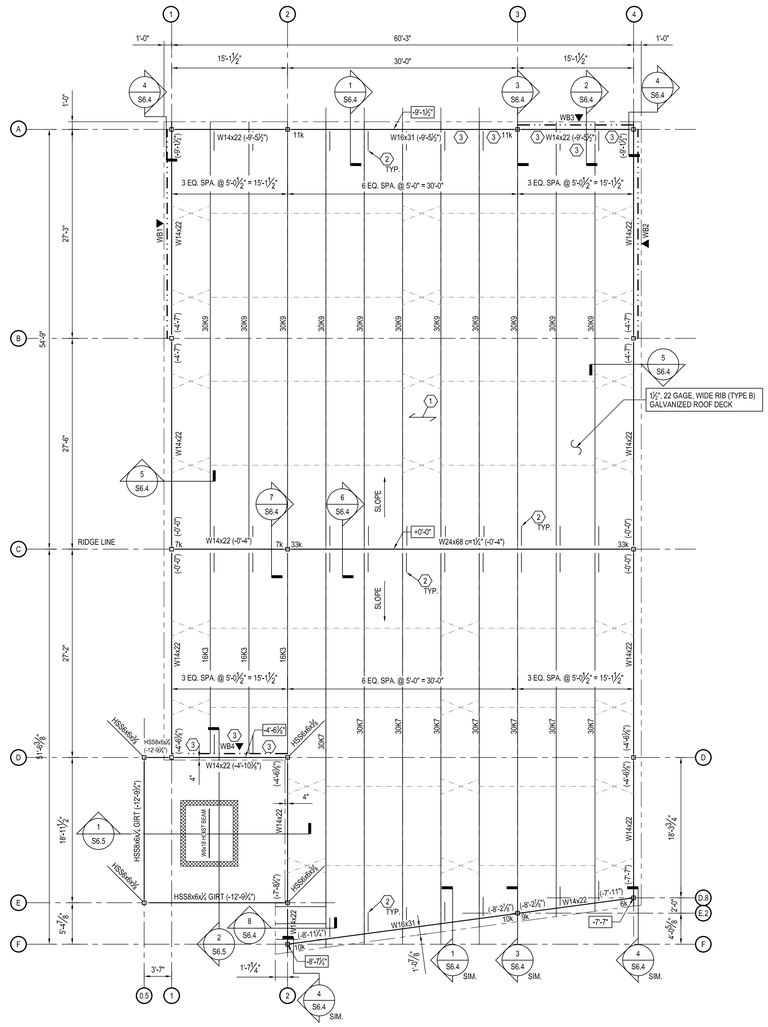
W18x35 — MEMBER SIZE
[20] — TOTAL NUMBER OF UNIFORMLY SPACE SHEAR CONNECTORS REQUIRED
c=½" — CAMBER

(-0'-5") — T.O. BEAM DEVIATIONS FROM REF. EL.

▲WB1 — BRACED FRAME, REFER TO SHEET S5.1 FOR ELEVATIONS.

KEYED NOTES

1. DIRECTION OF DECK SPAN.
2. SEE 11/S6.3 FOR TUBE CONNECTION.
3. HSS4x4x¼ x 12'-2" LG. GIRT CENTERED OVER STUB COLS. - SEE 9/S6.3.



2 ROOF FRAMING PLAN
1/8" = 1'-0"

TRUE NORTH

PLAN NORTH

PLAN NOTES

1. TOP OF STEEL ELEVATION = BOTTOM OF DECK = REFERENCE ELEVATION 135'-0½" UNLESS NOTED OTHERWISE AS (+) OR (-).
2. SEE SHEETS S1.1 AND S1.2 FOR STRUCTURAL NOTES.
3. BEAM REACTIONS LESS THAN OR EQUAL TO 6K HAVE BEEN OMITTED FROM THE PLAN.
4. SEE SHEET S5.1 FOR WIND BRACE ELEVATIONS.
5. SEE SHEET S6.1 FOR CONNECTION SCHEDULE AND DETAILS.

LEGEND

+2'-6" — T.O.S. / BOTTOM OF DECK DEVIATIONS FROM T.O.S. REF. EL.

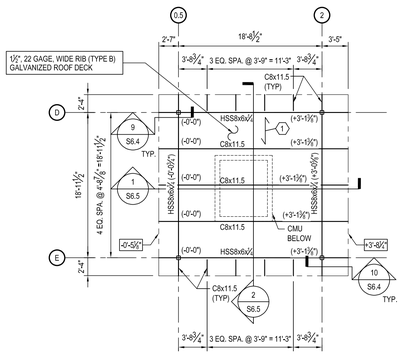
(-0'-5") — T.O. BEAM DEVIATIONS FROM REF. EL.

▲WB1 — BRACED FRAME, REFER TO SHEET S5.1 FOR ELEVATIONS.

JOIST BRIDGING
PROVIDE X-BRIDGING WHERE SHOWN. AT WIDE FLANGE BEAMS, LINES OF BRIDGING SHALL BE TERMINATED WITH X-BRIDGING.

KEYED NOTES

1. DIRECTION OF DECK SPAN.
2. L2x2x3/16 BEAM BOTTOM FLANGE BRACES SHOWN AS ——— ON PLAN. SEE 3/S6.2.
3. PROVIDE ¼ x 6 x 0'-6" LG. BENT PLATE SHEAR COLLECTORS BETWEEN JOISTS WHERE SHOWN. SEE SECTION 2/S6.4 AND 2/S6.5.



3 HIGH ROOF FRAMING PLAN
1/8" = 1'-0"

TRUE NORTH

PLAN NORTH

PLAN NOTES

1. TOP OF STEEL ELEVATION = BOTTOM OF DECK = REFERENCE ELEVATION 131'-10½" UNLESS NOTED OTHERWISE AS (+) OR (-).
2. SEE SHEETS S1.1, S1.2, AND S1.3 FOR STRUCTURAL NOTES.
3. BEAM REACTIONS LESS THAN OR EQUAL TO 6K HAVE BEEN OMITTED FROM THE PLAN.
5. SEE SHEET S6.1 FOR CONNECTION SCHEDULE AND DETAILS.
6. ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.

LEGEND

+2'-6" — T.O.S. / BOTTOM OF DECK DEVIATIONS FROM T.O.S. REF. EL.

(-0'-5") — T.O. BEAM DEVIATIONS FROM REF. EL.

KEYED NOTES

1. DIRECTION OF DECK SPAN.

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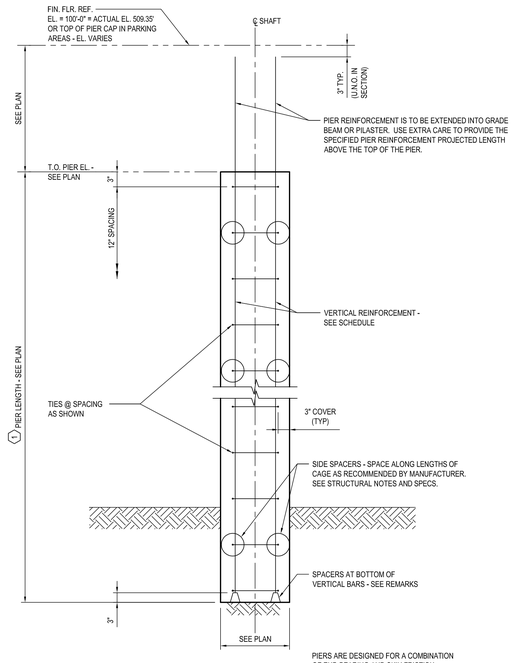
SHEET NAME:
FRAMING PLANS

SHEET NO:
S3.1

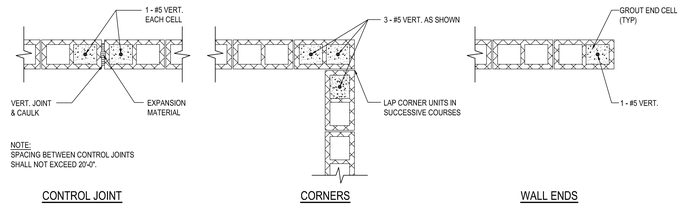


DRILLED PIER REINFORCING SCHEDULE			
SHAFT DIAMETER (INCHES)	VERTICAL BARS	TIES	REMARKS
18	5 - #6 (2)	#3 ○ TIES - PROVIDE 1'-5" LAP	PROVIDE BOT. SPACERS AT EVERY VERTICAL BAR

(1) MINIMUM PIER LENGTHS SHALL BE AS SHOWN ON THE FOUNDATION PLAN ON SHEET S2.1. FINAL PIER LENGTHS (BOTTOM OF PIER ELEVATIONS) WILL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE TESTING LAB REPRESENTATIVE. IF REBAR CAGES NEED TO BE LENGTHENED, LAP VERTICAL BARS 3'-0" MINIMUM TO BOTTOM OF CAGE AND PROVIDE TIES AS SCHEDULED TO BOTTOM. PIER LENGTHS, FOR DETERMINATION OF CONTRACT PRICE ADJUSTMENTS DUE TO FINAL BEARING ELEVATIONS SHALL BE MEASURED FROM THE BOTTOM OF THE PIER SHAFT TO THE UPPER TERMINATION OF THE SHAFT AT THE BOTTOM OF THE PILASTER. DEPTHS OF GRADE BEAMS, PILASTER, CAPS OR SLABS WILL NOT BE INCLUDED IN THE COMPUTATION OF SHAFT LENGTHS. REFER TO THE PROJECT SPECIFICATIONS.

(2) FURNISH PIER REBAR IN STOCK LENGTHS. VERIFY ACTUAL DEPTHS OF PIERS IN THE FIELD AFTER COMPLETION OF DRILLING AND APPROVAL OF THE PIER BY TESTING LABORATORY REPRESENTATIVE. MEASURE PIER DEPTH AND CUT PIER REBAR TO THE REQUIRED LENGTH BASED ON THE FIELD MEASUREMENT.

DRILLED PIER
1 TYPICAL DETAIL & SCHEDULE
3/4"=1'-0"



CMU WALL
2 TYPICAL DETAILS
3/4" = 1'-0"

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Pickett, Kelm & Associates, Inc.
Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
Austin, Texas 78759 • Phone 512-345-5538
Texas Registration No. F-1491
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BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsi.com

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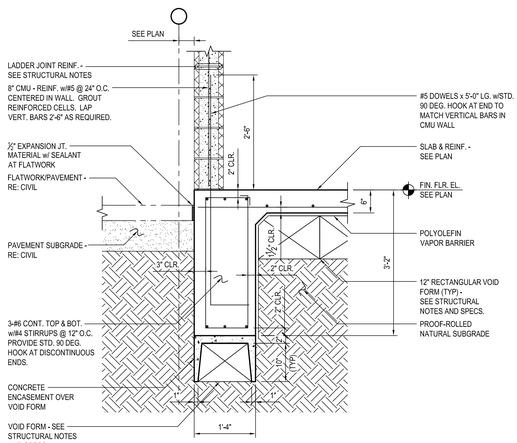
21066	2022.09.27

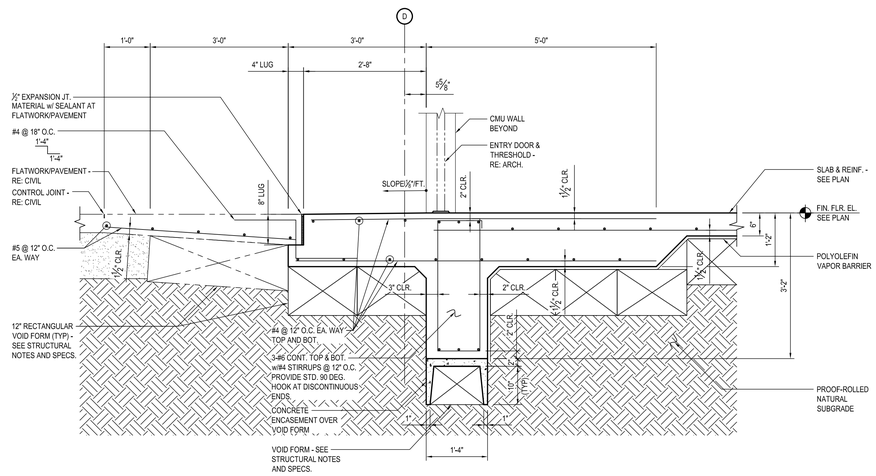
CURRENT:

SHEET NAME:
DRILLED PIER SCHEDULE & CMU TYPICAL DETAILS

SHEET NO:
S4.1



1 SECTION
3/4"=1'-0"



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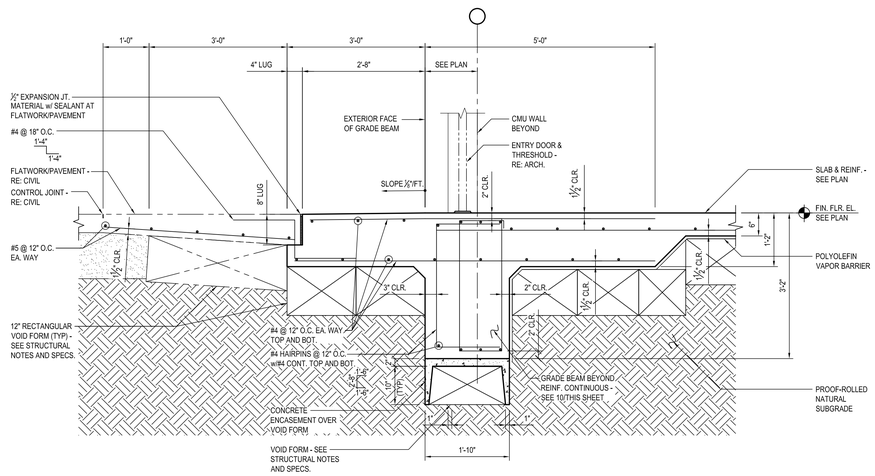
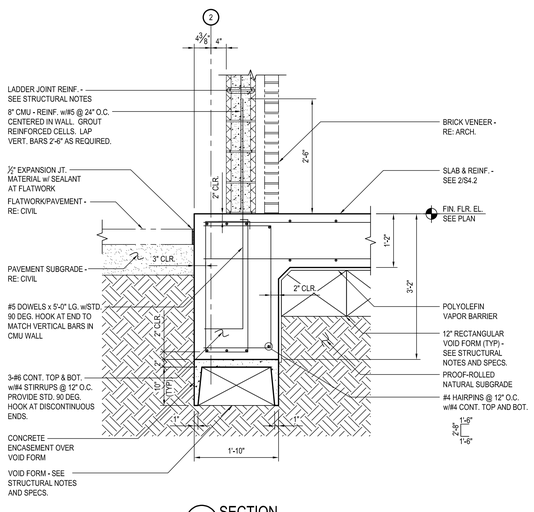


3 SECTION
3/4"=1'-0"

4 SECTION
3/4"=1'-0"

5 SECTION
3/4"=1'-0"

6 SECTION
3/4"=1'-0"



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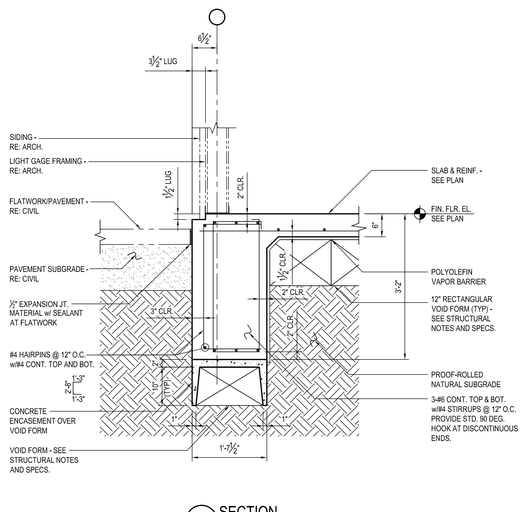
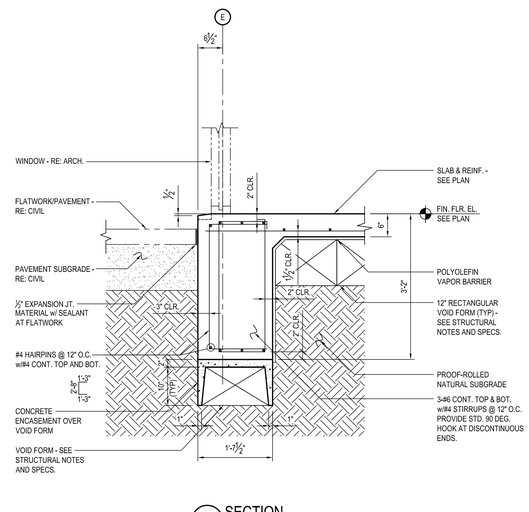
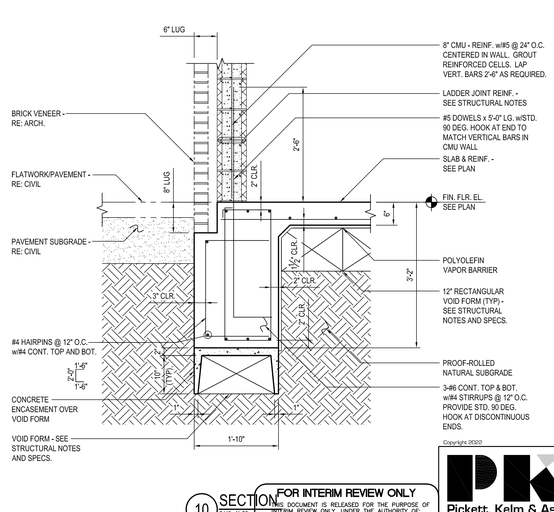


8 SECTION
3/4"=1'-0"



9 SECTION
3/4"=1'-0"



10 SECTION
3/4"=1'-0"

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4100 Duval Road, Bldg. 4, Suite 103
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BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
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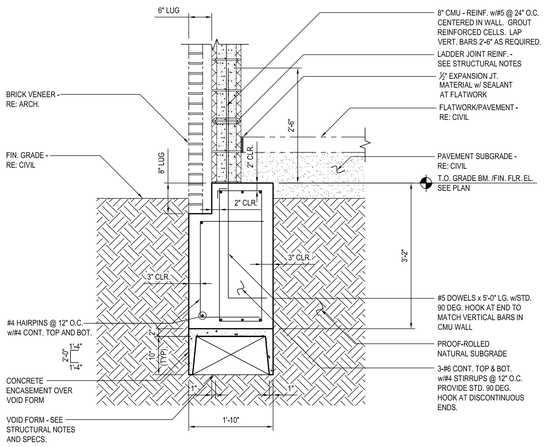
21066	2022.09.27

CURRENT:

SHEET NAME:
FOUNDATION SECTIONS AND DETAILS

SHEET NO:
S4.2



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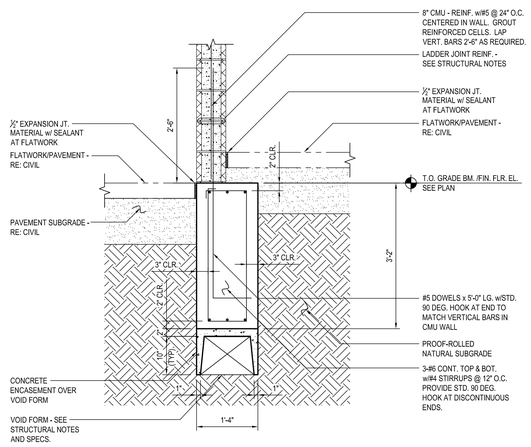

2 SECTION
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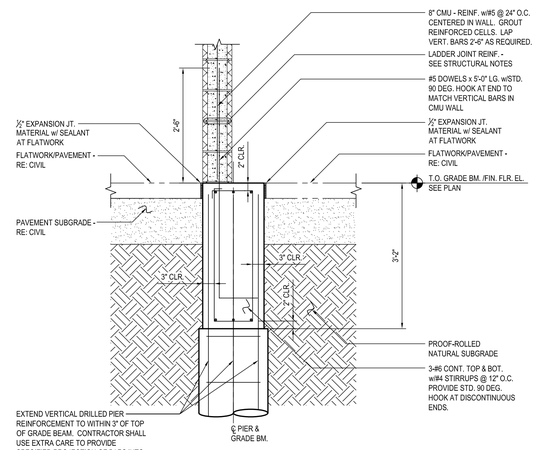

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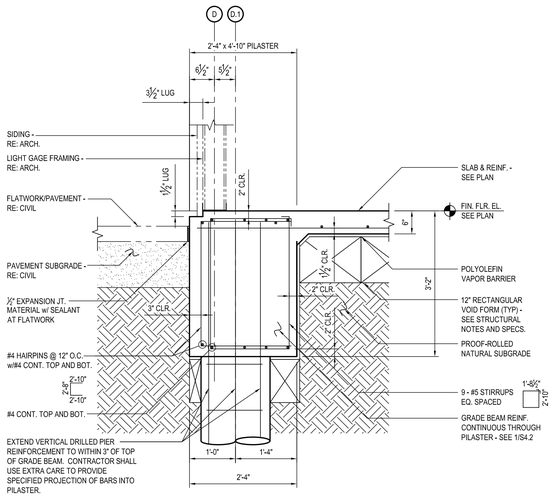
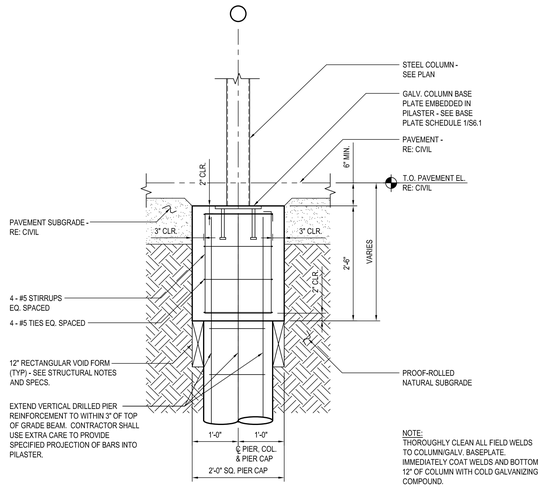
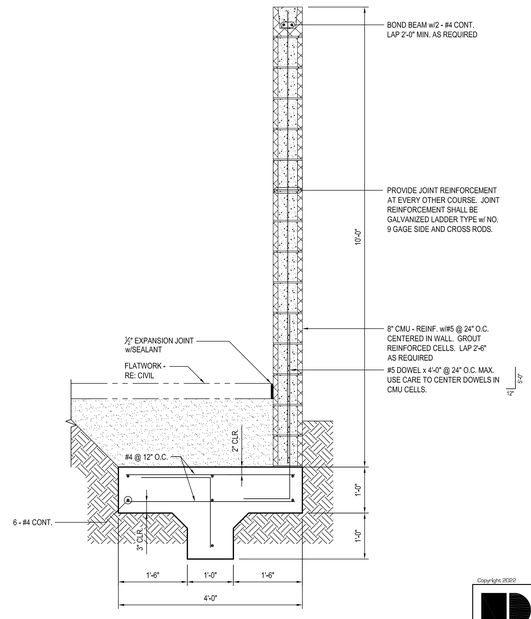


4 SECTION
3/4"=1'-0"



5 SECTION
3/4"=1'-0"

NOTE:
THOROUGHLY CLEAN ALL FIELD WELDS TO COLUMN/GALV. BASEPLATE. IMMEDIATELY COAT WELDS AND BOTTOM 12" OF COLUMN WITH COLD GALVANIZING COMPOUND.



8 SECTION
3/4" = 1'-0"

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BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
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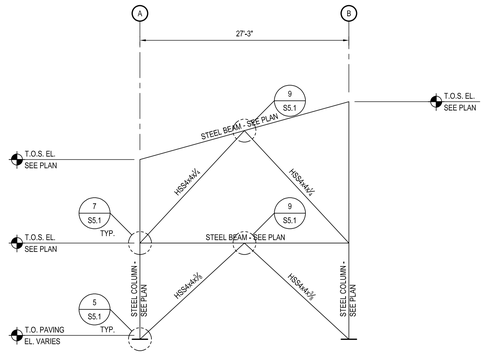
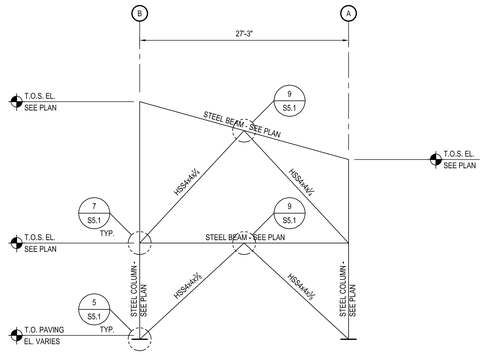
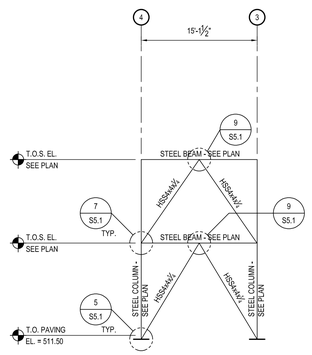
SHEET NO:
S4.3



WB1
1 ELEVATION
1/8" = 1'-0"

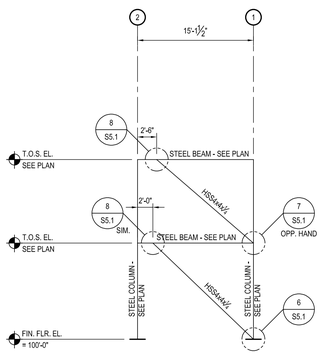


WB2
2 ELEVATION
1/8" = 1'-0"

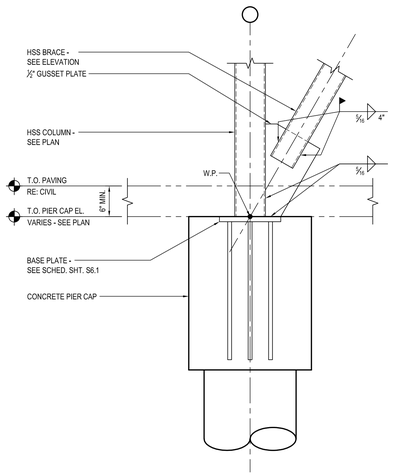


NOTE:
VERIFY TOP OF PAVEMENT
EL. WITH CIVIL.

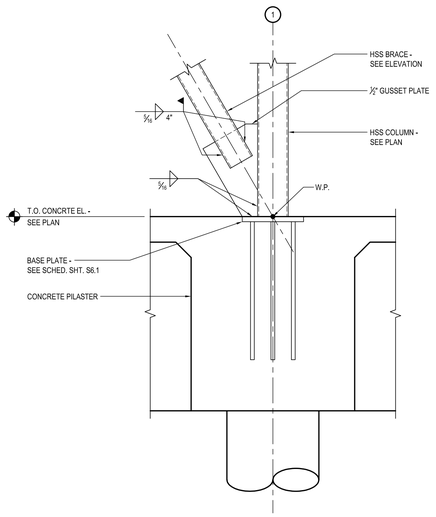
WB3
3 ELEVATION
1/8" = 1'-0"



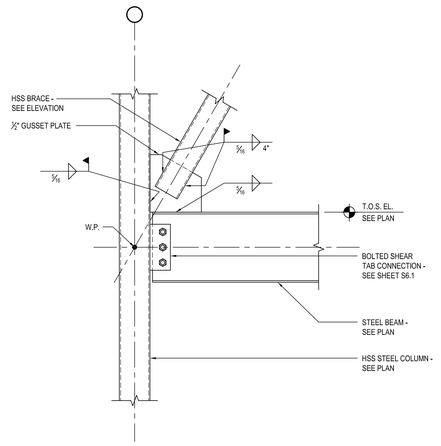
WB4
4 ELEVATION
1/8" = 1'-0"



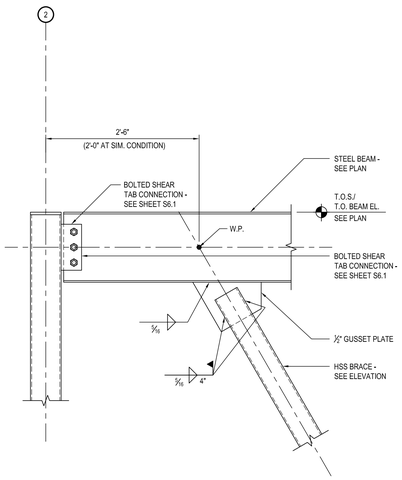
5 SECTION
1" = 1'-0"



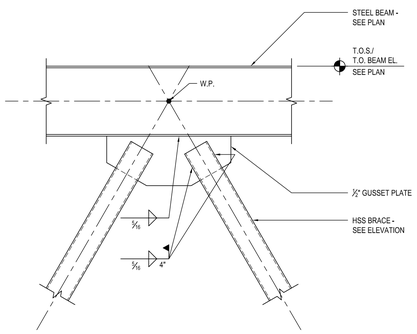
6 SECTION
1" = 1'-0"



7 SECTION
1" = 1'-0"



8 SECTION
1" = 1'-0"



9 SECTION
1" = 1'-0"

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BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
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6707 Riverside

6707 Riversideland LLC
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SHEET NAME:
BRACED FRAME ELEVATIONS AND DETAILS

SHEET NO:
S5.1

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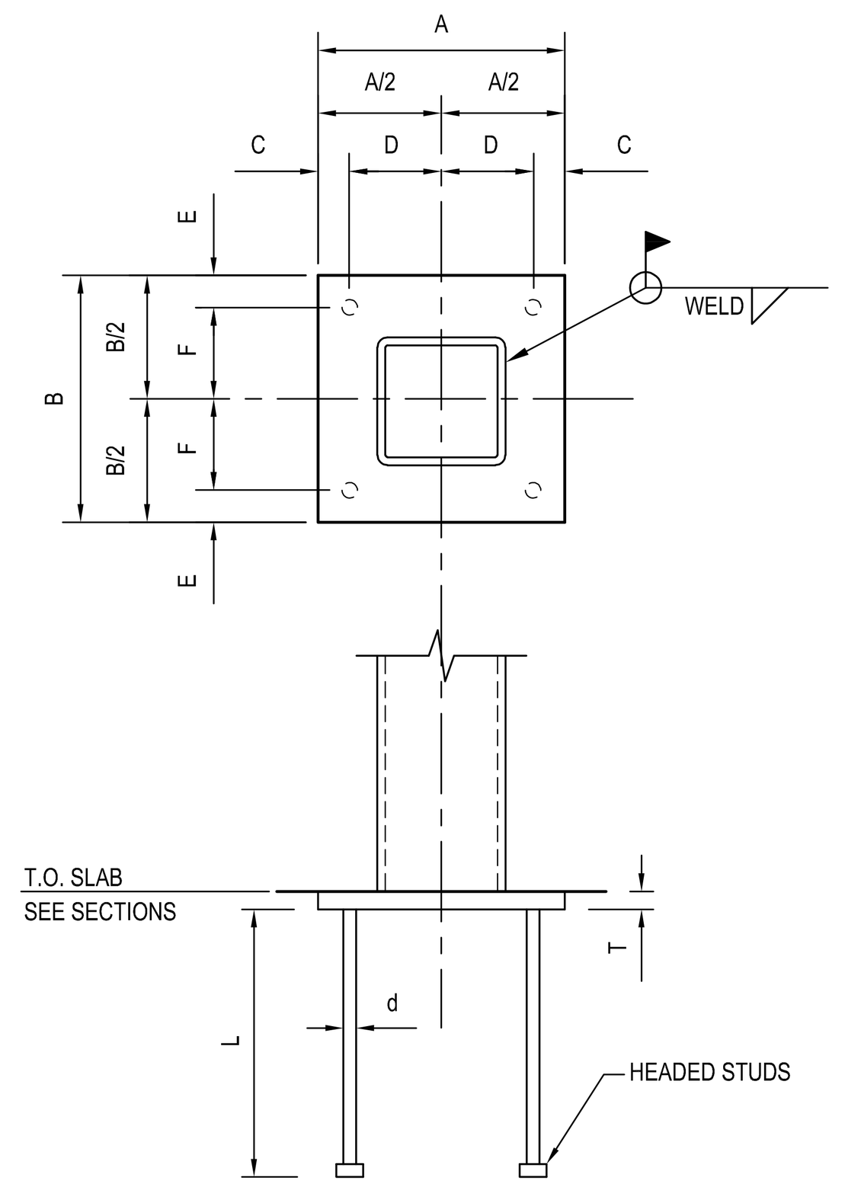

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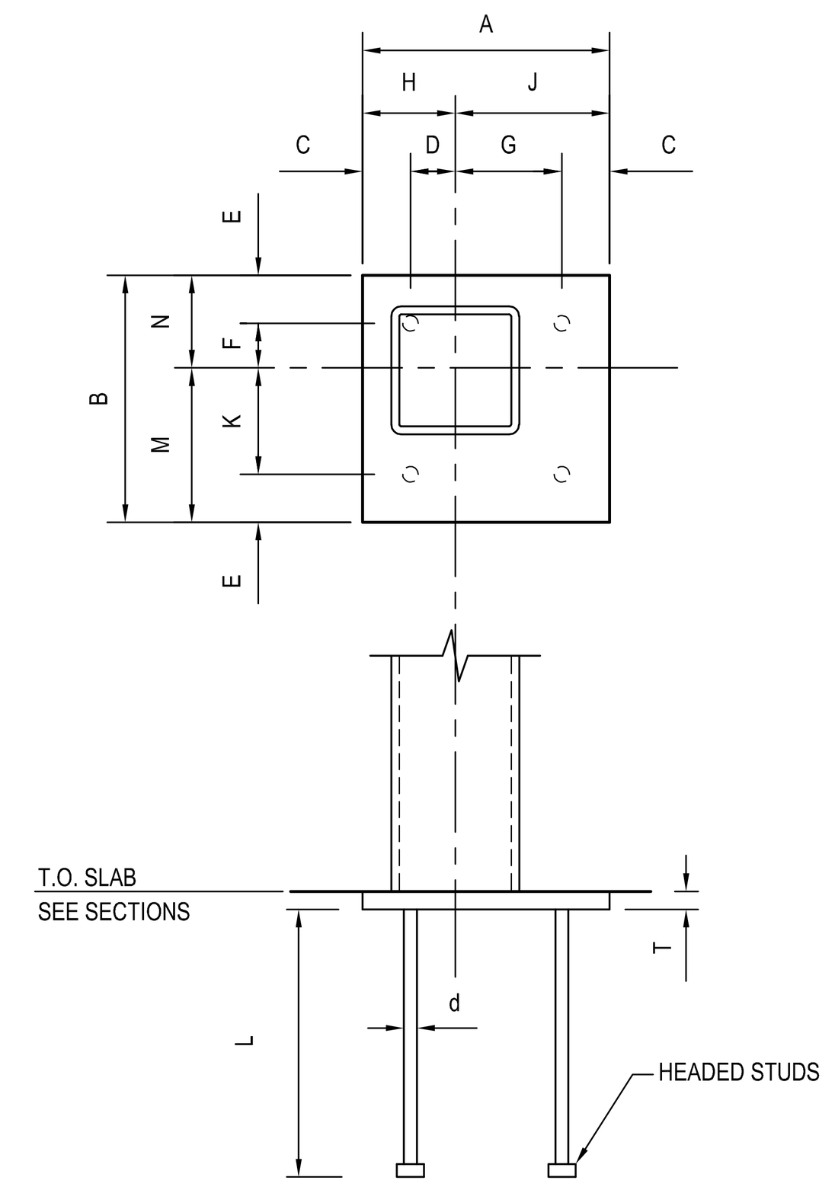

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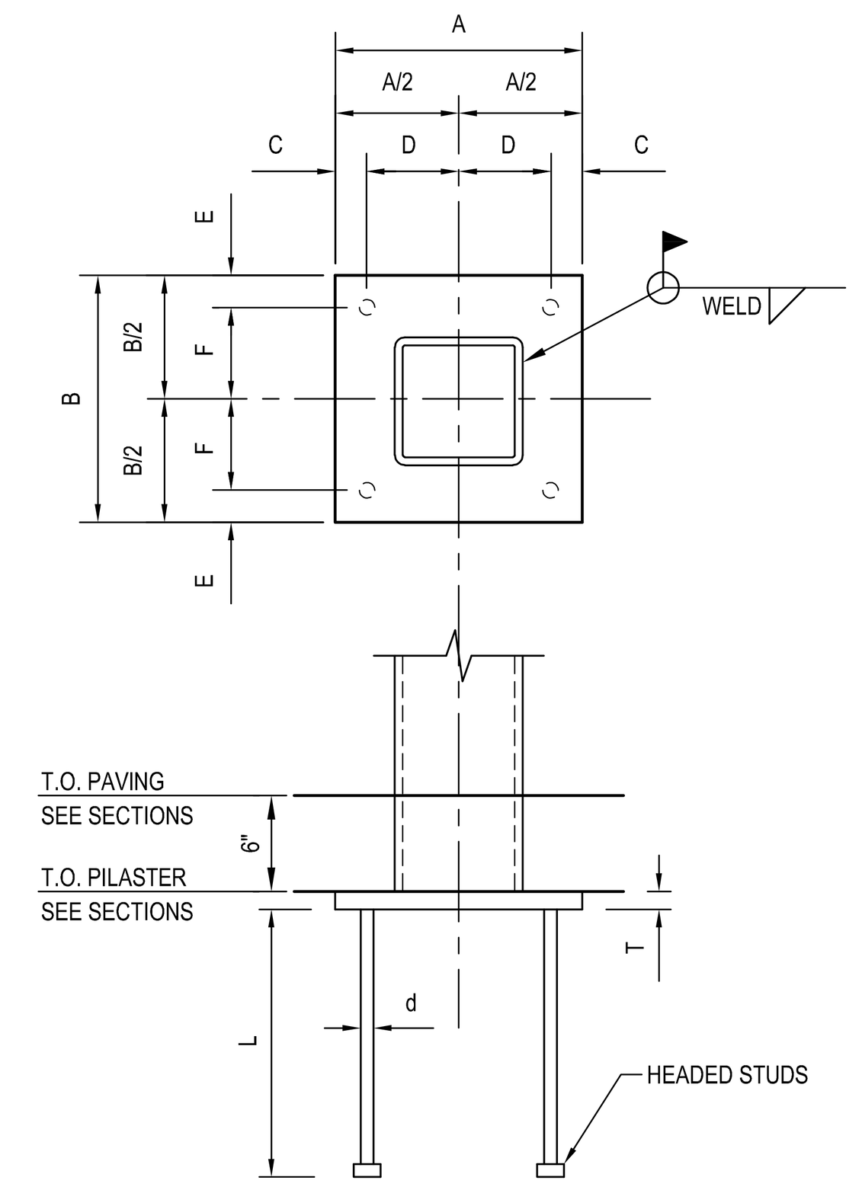

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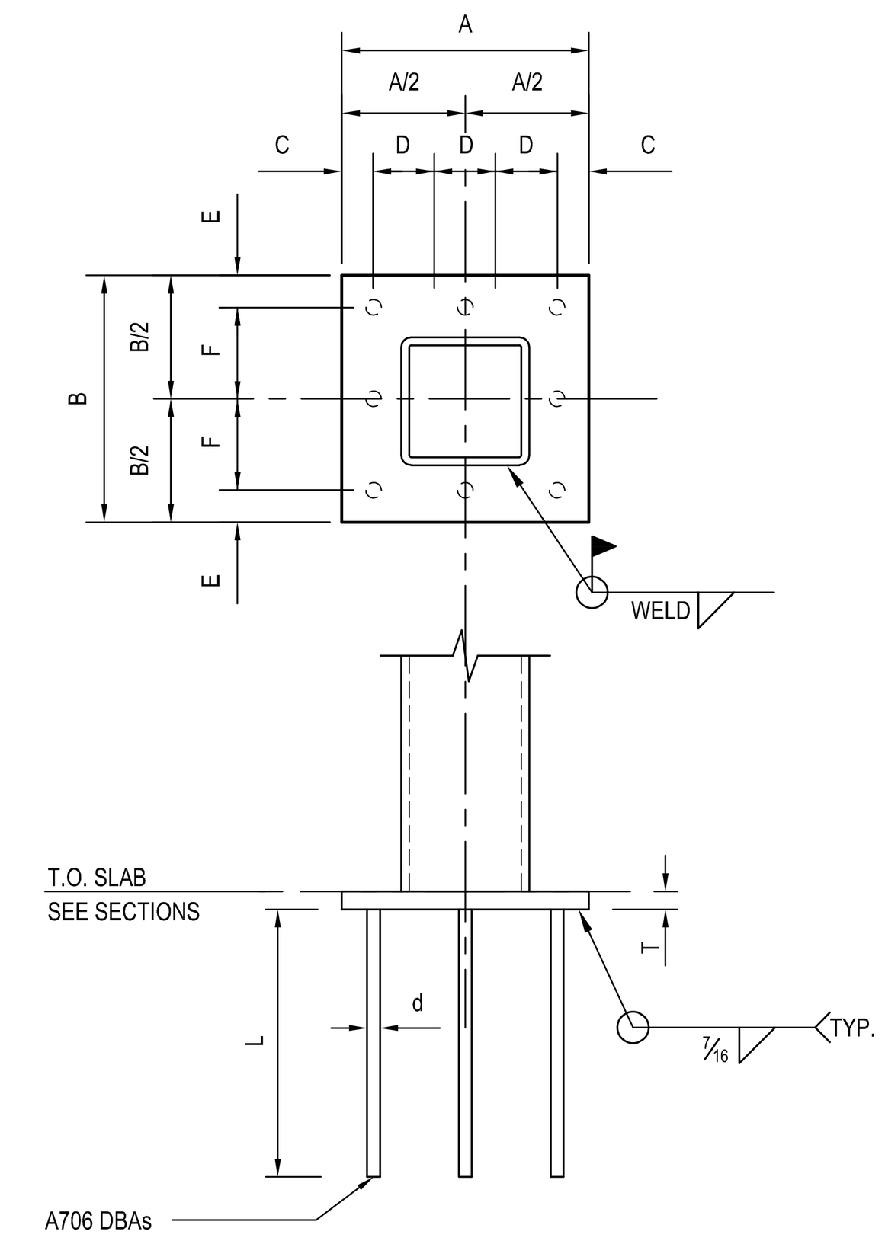

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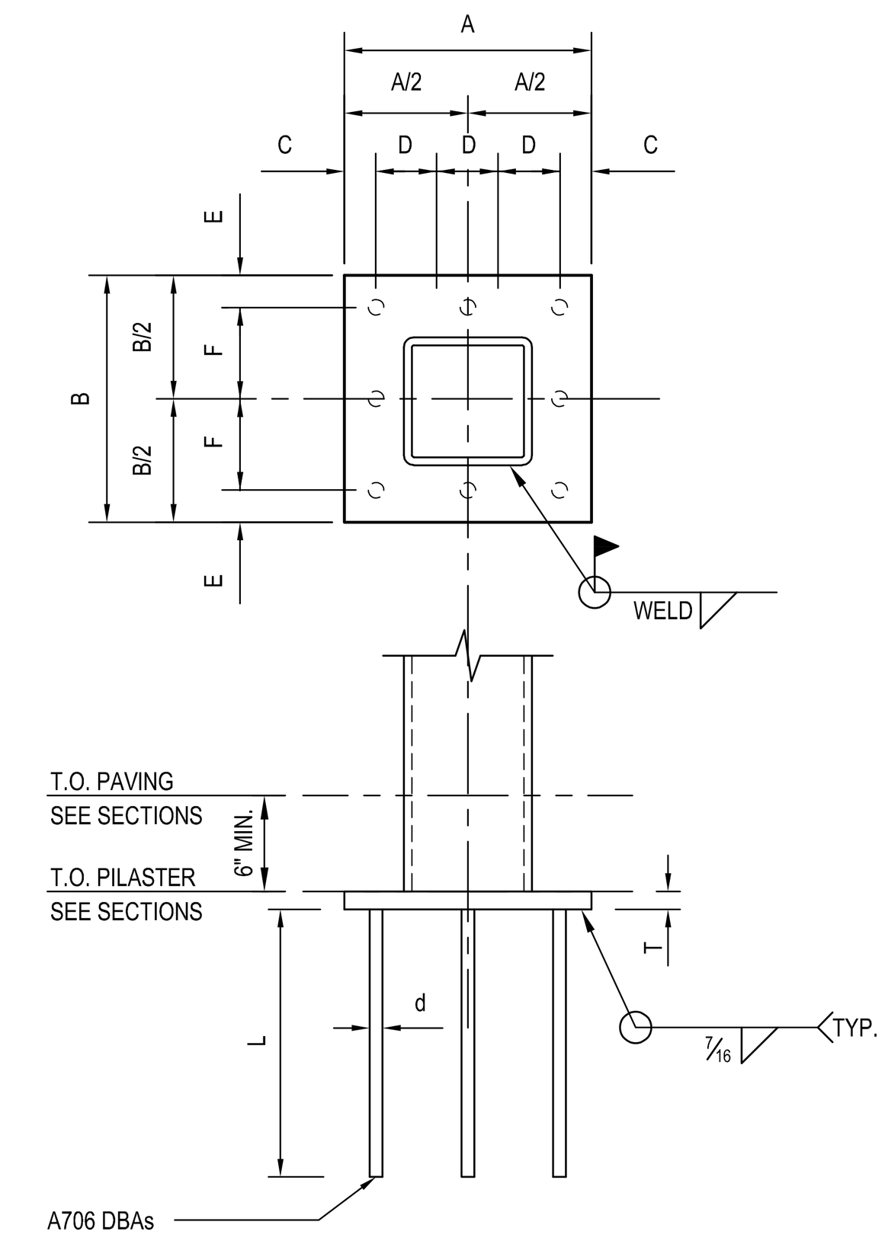


TYPE 5

BASE PLATE SCHEDULE																			
COLUMN SIZE	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	M	N	T	d	L	WELD	NOTES
HSS6x6	BP-1	1	12"	12"	2"	4"	2"	4"	-	-	-	-	-	-	3/4"	3/4"	8"	5/16"	--
	BP-2	2	12"	12"	3"	1 1/2"	3"	1 1/2"	4 1/2"	4 1/2"	7 1/2"	4 1/2"	7 1/2"	4 1/2"	3/4"	3/4"	8"	5/16"	--
	BP-3	3	12"	12"	2"	4"	2"	4"	-	-	-	-	-	-	3/4"	3/4"	8"	5/16"	GALV.
	BP-4	4	12"	12"	2"	4"	2"	4"	-	-	-	-	-	-	3/4"	#6	27"	5/16"	BRACE FRAME AND GALV.
	BP-5	5	12"	12"	2"	4"	2"	4"	-	-	-	-	-	-	3/4"	#6	27"	5/16"	BRACE FRAME AND GALV.
	BP-6	3	12"	12"	2"	4"	2"	4"	-	-	-	-	-	-	1"	3/4"	8"	5/16"	GALV.
	BP-7	1	12"	12"	2"	4"	2"	4"	-	-	-	-	-	-	3/4"	3/4"	8"	5/16"	GALV.

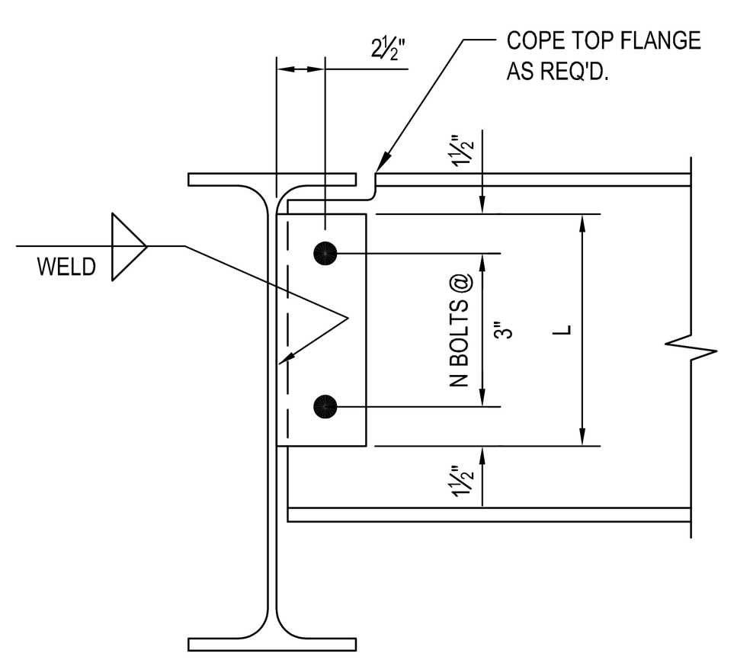
NOTE:

1 CONTRACTOR SHALL USE CARE TO PROPERLY LOCATE BASE PLATES. THE MAXIMUM PERMISSIBLE TOLERANCE IN PLACEMENT OF THE COLUMN FROM THE PLAN CENTERLINE OF THE BASE PLATE IS 1" IN ANY DIRECTION. IN THE EVENT THAT PLACEMENT OF THE COLUMN ON THE BASE PLATE EXCEEDS THIS TOLERANCE, THE CONTRACTOR MAY BE REQUIRED TO BREAKOUT THE BASE PLATE AND SLAB AND REPLACE AT THE CONTRACTOR'S EXPENSE. PLACEMENT OF ANY BASE PLATE OUTSIDE OF THE SPECIFIED TOLERANCE SHALL BE REFERRED TO THE ENGINEER

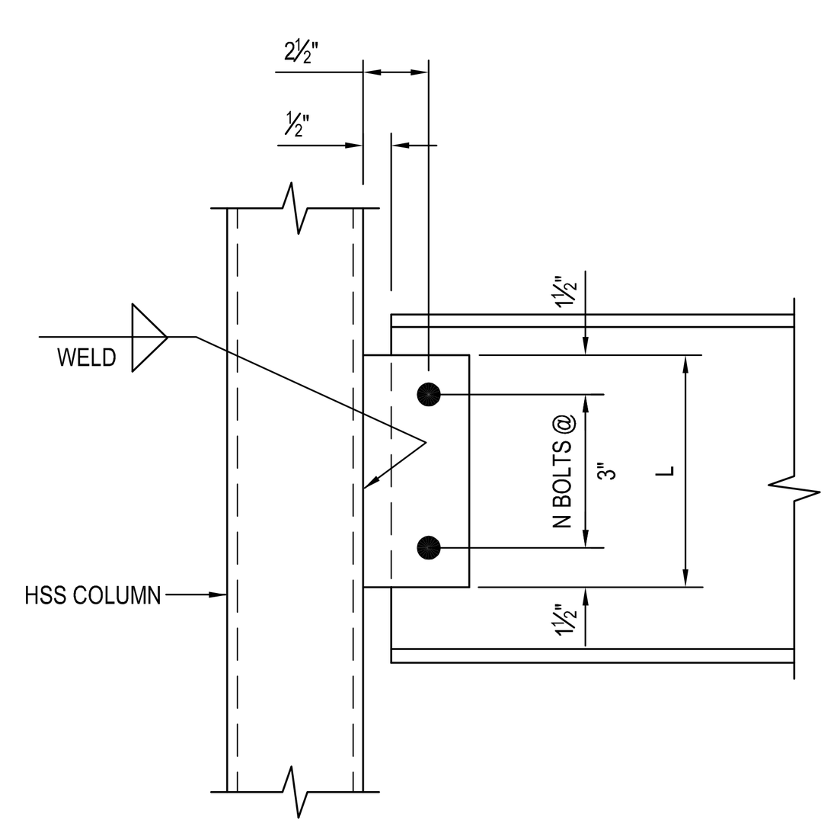
2 AT GALV. BASEPLATES THOROUGHLY CLEAN ALL FIELD WELDS. IMMEDIATELY COAT WELDS WITH COLD GALVANIZING COMPOUND. AT LOCATIONS WHERE COLUMN IS EMBEDDED IN PAVEMENT COAT BOTTOM 12" OF COLUMN WITH COLD GALVANIZING COMPOUND.

1 BASE PLATE SCHEDULE

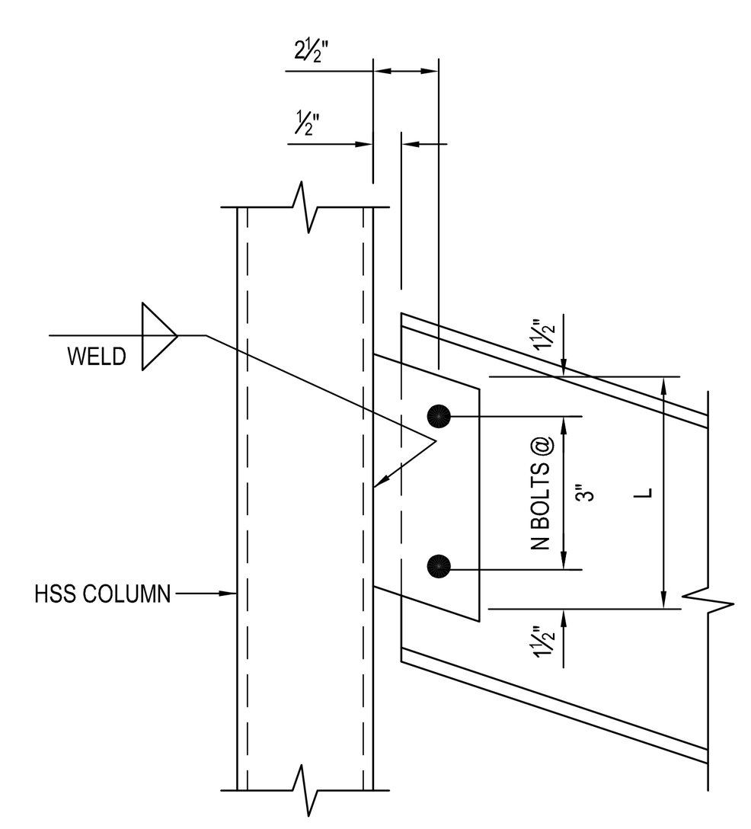
N.T.S.



BEAM TO GIRDER/BEAM CONNECTION

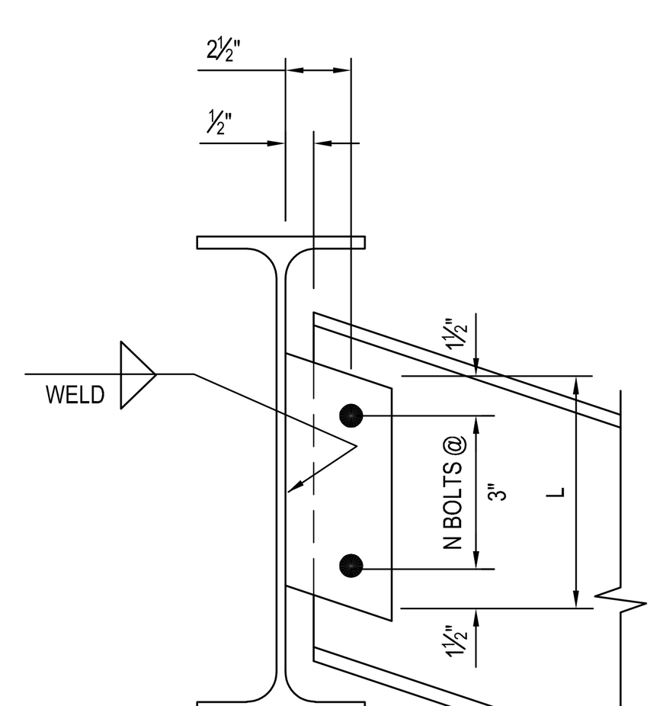


BEAM TO COLUMN CONNECTION



BEAM TO COLUMN CONNECTION

NOTE:
USE CONNECTION PLATES CUT TO MATCH SLOPE OF BEAM IF NECESSARY TO INSTALL SCHEDULED NUMBER OF BOLTS.



BEAM TO GIRDER CONNECTION

NOTE:
USE CONNECTION PLATES CUT TO MATCH SLOPE OF BEAM IF NECESSARY TO INSTALL SCHEDULED NUMBER OF BOLTS.

BOLTED SHEAR TAB CONNECTION SCHEDULE							
BEAM SIZE	SHEAR TAB LENGTH L	SHEAR TAB THICKNESS	BOLT SIZE	NO. BOLTS N	WELD SIZE	CAPACITY (ASD)	NOTES
W12, W14	9"	3/8"	3/4"	3	5/16"	27.9 KIPS	--
W16	12"	3/8"	3/4"	4	5/16"	37.2 KIPS	--
W18, W21	15"	3/8"	3/4"	5	5/16"	46.5 KIPS	--
W24	21"	3/8"	3/4"	7	5/16"	65.1 KIPS	--

NOTES:

1 SHEAR TABS MAY BE SKEWED NO MORE THAN 45 DEGREES FROM LINE PERPENDICULAR TO SUPPORTING MEMBER.

2 ALL BOLTS SHALL BE 3/4" DIA. A325 TENSION CONTROL BOLTS.

2 SHEAR TAB CONNECTION SCHEDULE & DETAILS

N.T.S.

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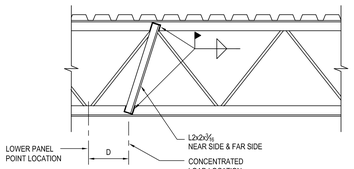
PROJ. NO. 21066
ORIG. ISSUE 2022.09.27
CURRENT:

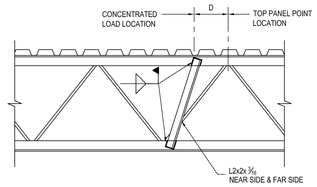
SHEET NAME:
STEEL BASEPLATE AND CONNECTION SCHEDULES

SHEET NO:
S6.1



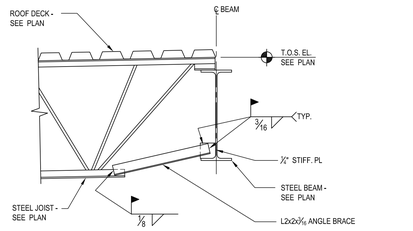
NOTE:
PROVIDE STIFFENER ANGLES WHERE DIMENSION "D" EXCEEDS 4" AND CONCENTRATED LOAD IS 100 LBS. OR GREATER.

JOIST STIFFENER - CONC. LOAD AT BOTTOM CHORD
1 TYPICAL DETAIL
3/4" = 1'-0"



NOTE:
PROVIDE STIFFENER ANGLES WHERE DIMENSION "D" EXCEEDS 4" AND CONCENTRATED LOAD IS 100 LBS. OR GREATER.

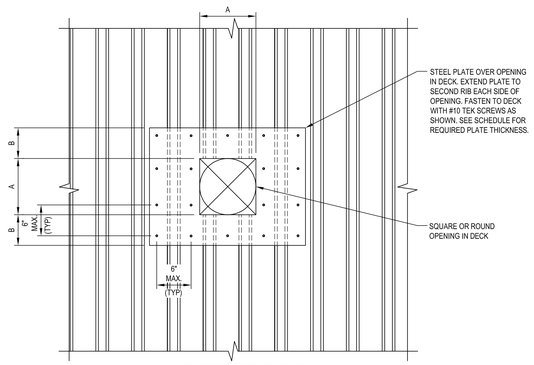
JOIST STIFFENER - CONC. LOAD AT TOP CHORD
2 TYPICAL DETAIL
3/4" = 1'-0"



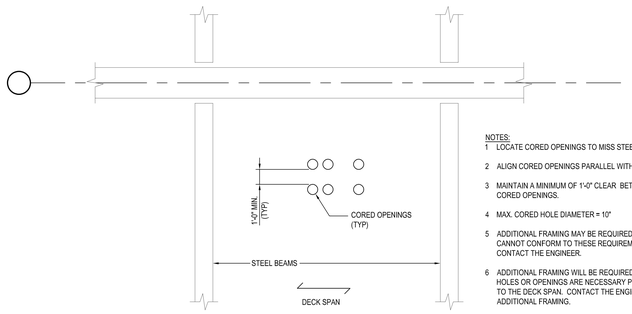
NOTE:
PROVIDE BOTTOM FLANGE BRACES AT BEAM SUPPORTED JOISTS AS SHOWN ON FRAMING PLANS. INSTALL AFTER ROOF DEAD LOADS HAVE BEEN APPLIED.

BEAM BOTTOM FLANGE BRACE
3 TYPICAL DETAIL
N.T.S.

DIM. "A"	PLATE THICKNESS	DIM. "B"
UP TO 6"	NONE	0"
6" - 7 7/8"	18 GA.	6"
8" - 11 1/2"	16 GA.	6"
12" - 13 1/2"	14 GA.	9"
14" - 16"	12 GA.	12"



REINFORCEMENT FOR OPENINGS AT ROOF DECK OPSS. FROM 6" TO 16"
4 TYPICAL DETAIL
N.T.S.



CORED OPENING REQUIREMENTS
5 TYPICAL DETAIL
1/2" = 1'-0"

NOTES:
1 LOCATE CORED OPENINGS TO MISS STEEL BEAMS.
2 ALIGN CORED OPENINGS PARALLEL WITH DECK SPAN.
3 MAINTAIN A MINIMUM OF 1'-0" CLEAR BETWEEN ROWS OF CORED OPENINGS.
4 MAX. CORED HOLE DIAMETER = 10"
5 ADDITIONAL FRAMING MAY BE REQUIRED IF OPENING CANNOT CONFORM TO THESE REQUIREMENTS. CONTACT THE ENGINEER.
6 ADDITIONAL FRAMING WILL BE REQUIRED IF ROWS OF HOLES OR OPENINGS ARE NECESSARY PERPENDICULAR TO THE DECK SPAN. CONTACT THE ENGINEER FOR ADDITIONAL FRAMING.

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Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
Austin, Texas 78759 • Phone 512-345-5538
Texas Registration No. F-1491
PKA Proj. No. 000-0566

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ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dsd.com

6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

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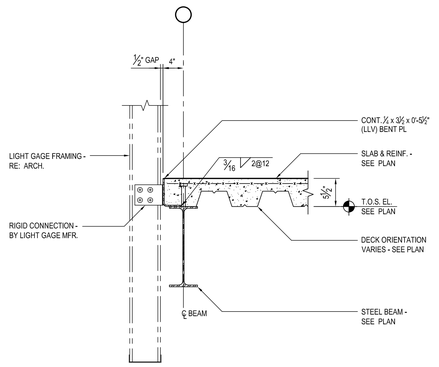
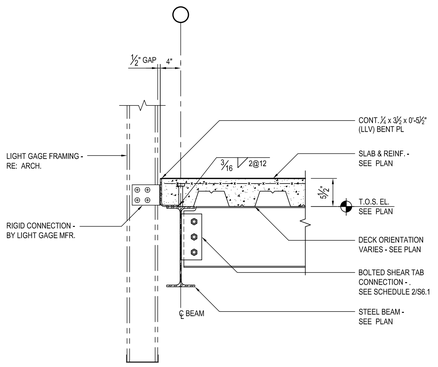


1 SECTION 1"=1'-0"



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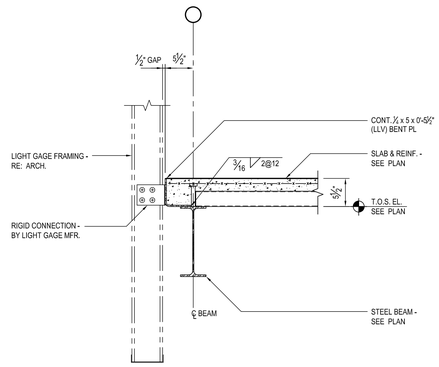

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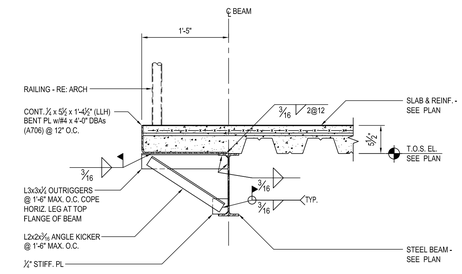

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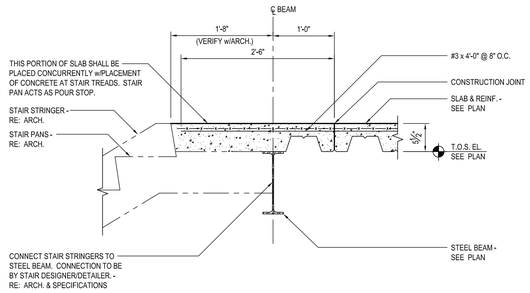

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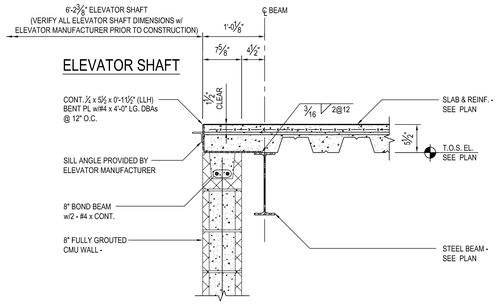

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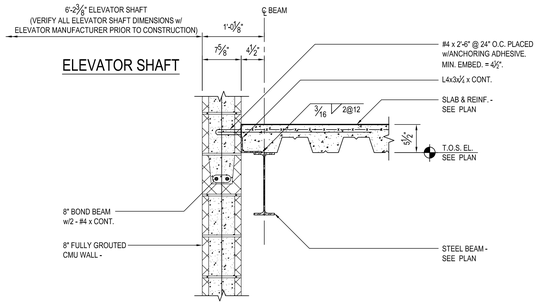

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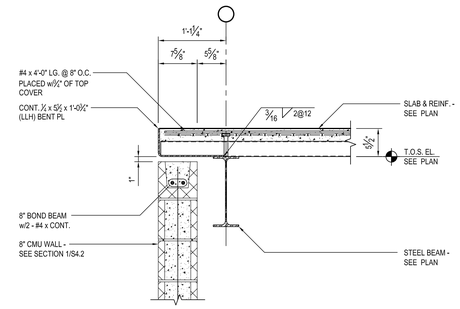

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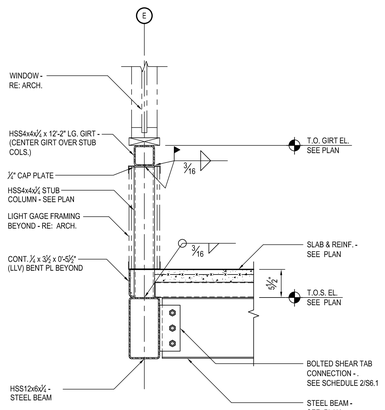

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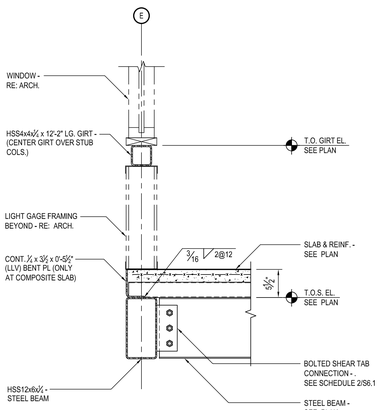

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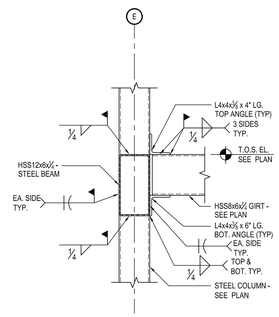

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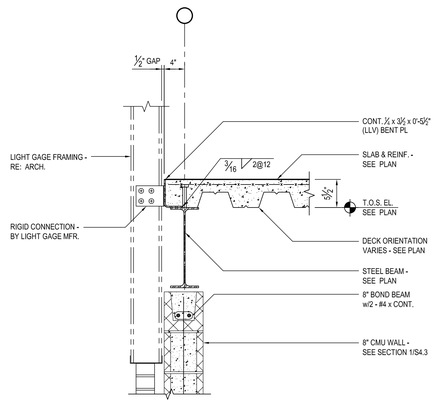

12 SECTION 1"=1'-0"

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www.5dsi4.com

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6707 Riversideland LLC
6707 Riverside Drive
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PKA
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Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
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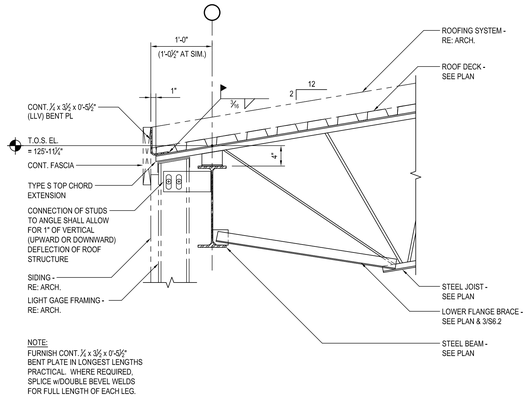

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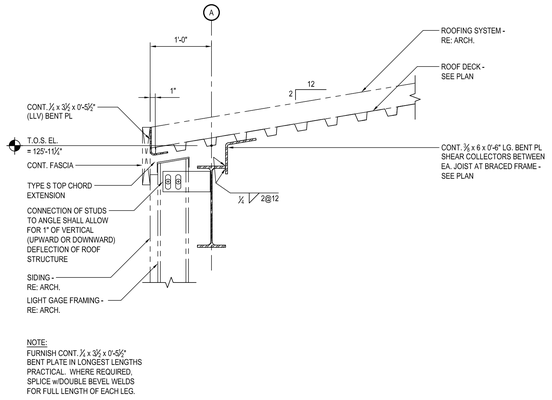

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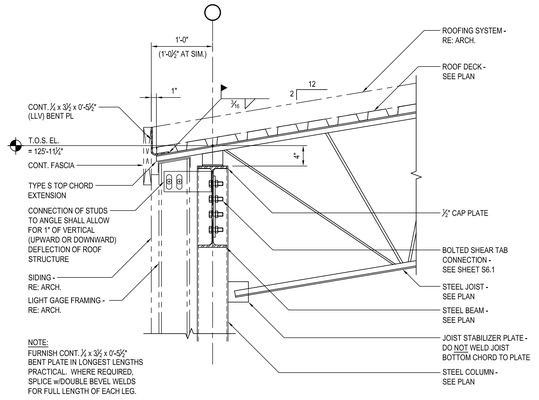

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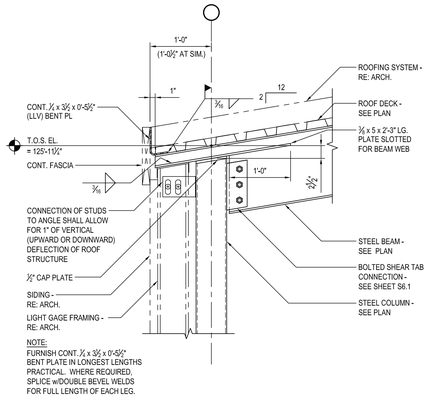

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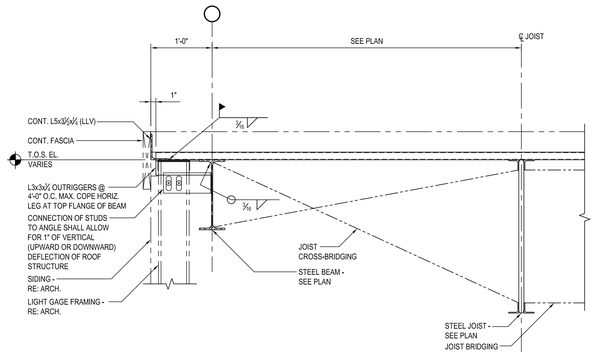

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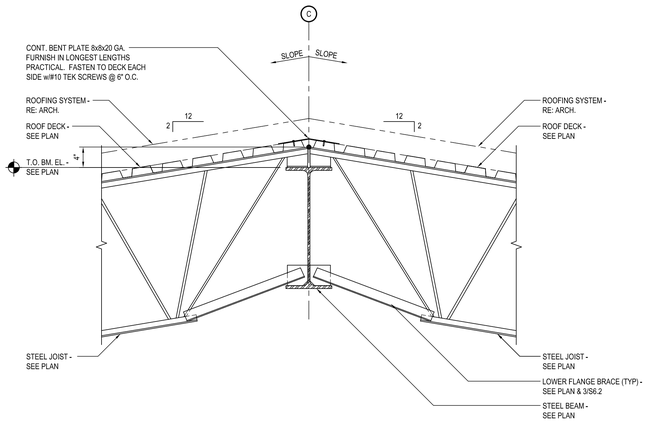

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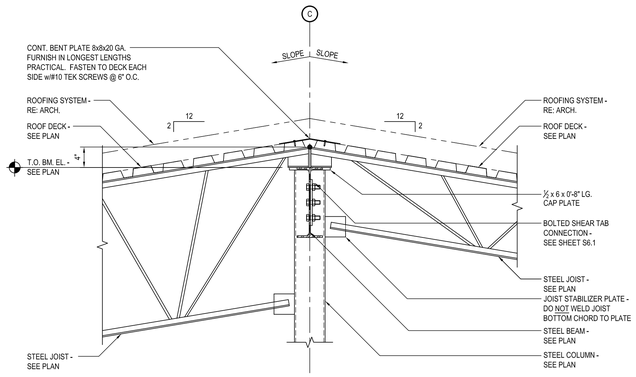

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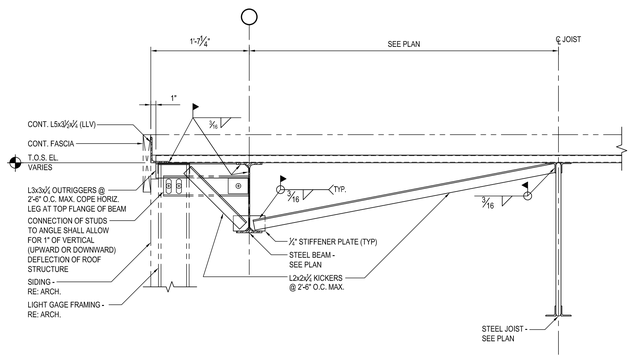

8 SECTION
1" = 1'-0"

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Texas Registration No. F-1491

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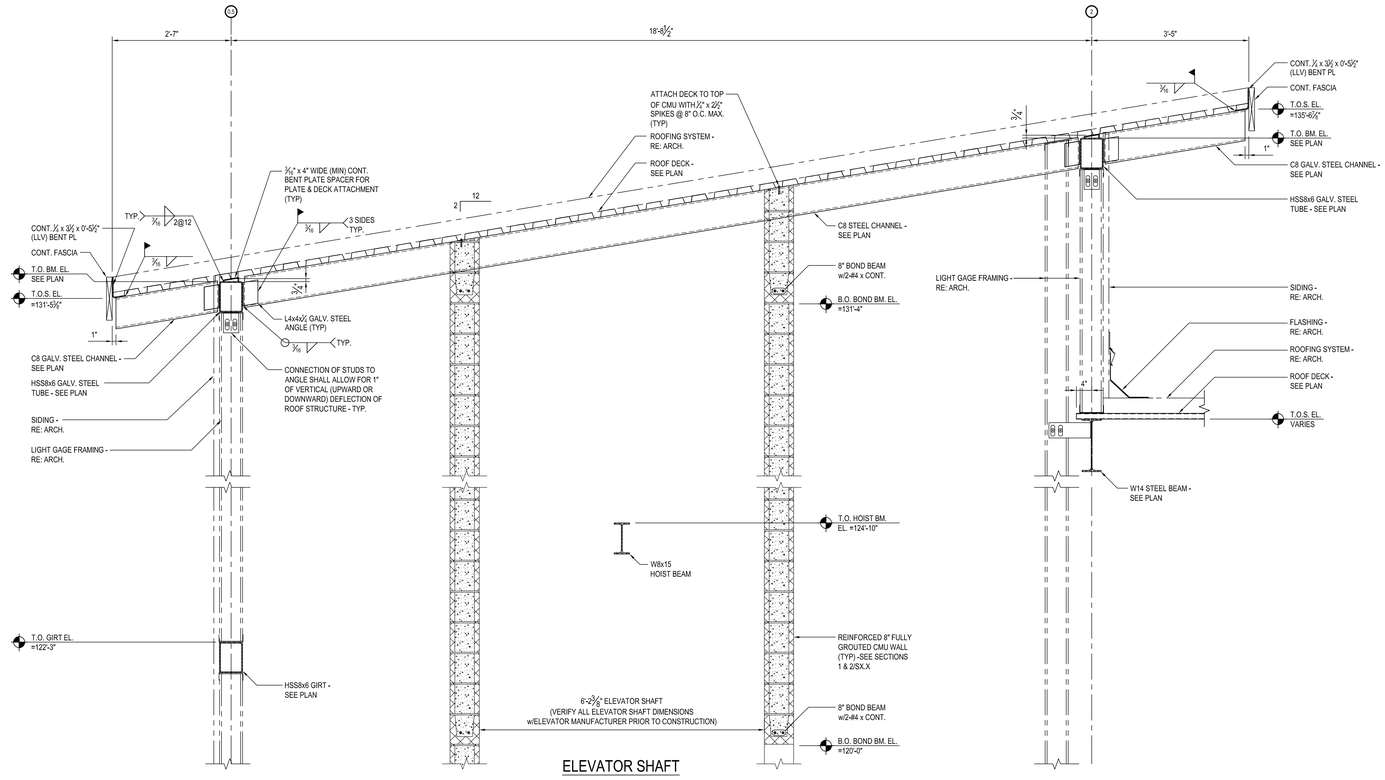
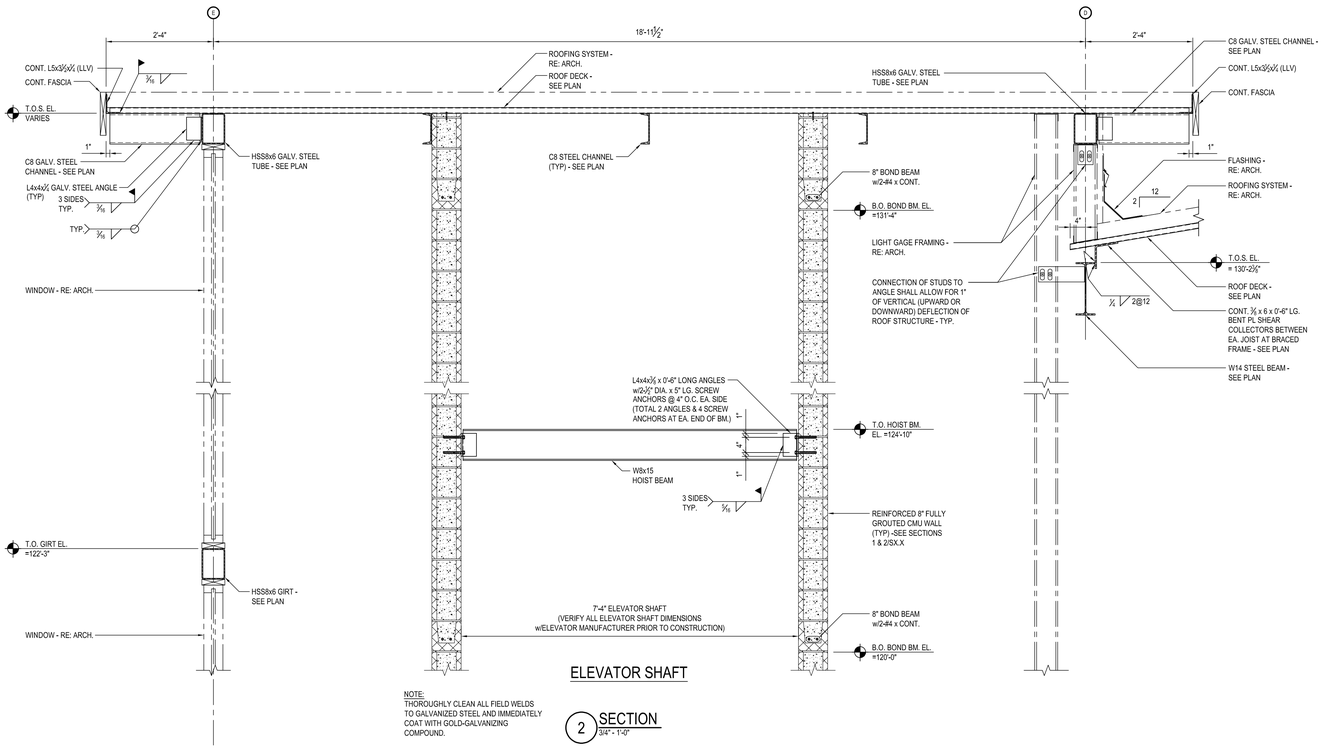


NOTE:
THOROUGHLY CLEAN ALL FIELD WELDS TO GALVANIZED STEEL AND IMMEDIATELY COAT WITH GOLD-GALVANIZING COMPOUND.

ELEVATOR SHAFT

1 SECTION
3/4" = 1'-0"



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ELEVATOR SHAFT

2 SECTION
3/4" = 1'-0"

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Consulting Structural Engineers
4100 Duval Road, Bldg. 4, Suite 103
Austin, Texas 78759 • Phone 512-345-5538
Texas Registration No. F-1491
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BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
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MECHANICAL SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
W/H	EXISTING DUCTWORK SHOWN WITH LIGHT LINES INCHES WIDTH / INCHES HEIGHT	X S,R,E CFM NECK SIZE	AIR DEVICE TAG ('S' = SUPPLY, 'R' = RETURN, 'E' = EXHAUST, 'T' = TRANSFER)
W/H	DEMO DUCTWORK SHOWN WITH LIGHT & DASHED LINES INCHES WIDTH / INCHES HEIGHT		SUPPLY AIR DEVICE
W/H	NEW DUCTWORK SHOWN WITH BOLD LINES INCHES WIDTH / INCHES HEIGHT		RETURN OR EXHAUST AIR DEVICE
W/H OR Ø	NEW EXPOSED TO VIEW DOUBLE WALL (DW) INSULATED DUCTWORK SHOWN WITH BOLD LINES WITH LIGHT HATCH PATTERN. CLEAR INSIDE DIMENSIONS } INCHES WIDTH / INCHES HEIGHT OR Ø FOR ROUND		SLOT DIFFUSER
	CONCENTRIC TRANSITION 15° ANGLE MAXIMUM UNLESS NOTED OTHERWISE		SUPPLY AIRFLOW DIRECTION
	ECCENTRIC TRANSITION 15° ANGLE MAXIMUM UNLESS NOTED OTHERWISE		RETURN OR EXHAUST AIRFLOW DIRECTION
	ROUND TO SQUARE TRANSITION 15° ANGLE MAXIMUM UNLESS NOTED OTHERWISE	T (E)	EXISTING THERMOSTAT OR SENSOR TO REMAIN
	RECTANGULAR ELBOW WITH TURNING VANES	T (D)	THERMOSTAT OR SENSOR TO BE DEMOLISHED
	RECTANGULAR ELBOW WITHOUT TURNING VANES	T	EXISTING THERMOSTAT OR SENSOR TO BE RELOCATED
MVD	STANDARD BRANCH FOR SUPPLY (WITH MANUAL VOLUME DAMPER)	T (R)	NEW LOCATION FOR RELOCATED THERMOSTAT OR SENSOR
	STANDARD BRANCH FOR SUPPLY OR RETURN (WITHOUT MANUAL VOLUME DAMPER)	T	NEW THERMOSTAT OR SENSOR
	ROUND SPIN-IN TAP (WITH DAMPER)	H	NEW HUMIDISTAT (SUBSCRIPTS, LINE WEIGHTS, & LINE TYPES SIMILAR TO THERMOSTATS)
	ROUND SPIN-IN TAP (WITHOUT DAMPER)	CO	NEW CARBON DIOXIDE MONITOR (SUBSCRIPTS, LINE WEIGHTS, & LINE TYPES SIMILAR TO THERMOSTATS)
	ROUND SPIN-IN TAP (WITH DAMPER) AND FLEX DUCT RUN-OUT	CO	NEW CARBON MONOXIDE MONITOR (SUBSCRIPTS, LINE WEIGHTS, & LINE TYPES SIMILAR TO THERMOSTATS)
M	MOTORIZED DAMPER		CONTROL WIRE
FD	FIRE DAMPER (VERTICAL POSITION)	SP	NEW STATIC PRESSURE SENSOR (SUBSCRIPTS, LINE WEIGHTS, & LINE TYPES SIMILAR TO THERMOSTATS)
SFD	COMBINATION SMOKE/FIRE DAMPER (VERTICAL POSITION)	SD	SMOKE DETECTOR (SHOWN FOR REFERENCE ONLY) PROVIDED & INSTALLED BY THE ELECTRICAL CONTRACTOR
FD	FIRE DAMPER (HORIZONTAL POSITION)		NEW EQUIPMENT (SUBSCRIPTS, LINE WEIGHTS, & LINE TYPES SIMILAR TO THERMOSTATS, UNLESS NOTED OTHERWISE)
SFD	COMBINATION SMOKE/FIRE DAMPER (HORIZONTAL POSITION)	EQP-TAG-#	EQUIPMENT TAG/LABEL
	FLEXIBLE CONNECTION		EXISTING PIPING (3" AND SMALLER PIPES SHOWN AS SINGLE LINE) DEMO PIPING NEW PIPING
	POSITIVE PRESSURE RECTANGULAR DUCT DOWN		PIPE DOWN
	NEGATIVE PRESSURE RECTANGULAR DUCT DOWN		PIPE UP
	POSITIVE PRESSURE RECTANGULAR DUCT UP	1	KEYED DRAWING NOTE
	NEGATIVE PRESSURE RECTANGULAR DUCT UP	1	ALTERNATE KEYED DRAWING NOTE
	ROUND DUCT DOWN	1	DRAWING REVISION TRIANGLE
	ROUND DUCT UP		DRAWING REVISION CLOUD
	RADIUS ELBOW (R = 1.5 X DIAMETER)		

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPS	JS	JANITOR SINK
ADD	AUTOMATIC AIR DAMPER		
ABS	ABSOLUTE	KEC	KITCHEN EQUIPMENT CONTRACTOR
ACCU	AIR COOLED CONDENSING UNIT	KW	KILOWATT
A/C	AIR CONDITIONING	KWH	KILOWATT HOUR
AD	ACCESS DOOR OR AREA DRAIN		
ADA	AMERICAN DISABILITIES ACT	LAT	LEAVING AIR TEMPERATURE
ADJ	ADJUSTABLE	LAV	LAVATORY
AFF	ABOVE FINISHED FLOOR	LB	POUND
AHU	AIR HANDLING UNIT	LDB	LEAVING DRY BULB
AMB	AMBIENT	L	LENGTH
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	LF	LINEAR FEET
AP	ACCESS PANEL	LOC	LIMITS OF CONSTRUCTION
APD	AIR PRESSURE DROP	LP	LOW PRESSURE
~	APPROXIMATELY	LWT	LEAVING WATER TEMPERATURE
ARCH	ARCHITECT		
AS	AIR SEPARATOR	MAT	MIXED AIR TEMPERATURE
AVG	AVERAGE	MAU	MAKE UP AIR UNIT
		MAX	MAXIMUM
BDD	BACKDRAFT DAMPER	MBH	BTH/HR X 1,000
BHP	BRAKE HORSEPOWER	MC	MECHANICAL CONTRACTOR
BFP	BACKFLOW PREVENTOR	MD	MOTORIZED DAMPER
		MECH	MECHANICAL
CA	COMPRESSED AIR	MIN	MINIMUM
CAV	CONSTANT AIR VOLUME	MISC	MISCELLANEOUS
CCW	COUNTER CLOCKWISE	MPT	MALE PIPE THREAD
CD	CONDENSATE DRAIN	MTL	METAL
CFM	CUBIC FEET PER MINUTE	MVD	MANUAL VOLUME DAMPER
CFOI	CONTRACTOR FURNISHED / OWNER INSTALLED	MZ	MULTIZONE
CFS	CUBIC FEET PER SECOND		
CH	CHILLER	NA	NOT APPLICABLE
CHWM	CHILLED WATER MAKE-UP	NC	NOISE CRITERIA
CHWP	CHILLED WATER PUMP	N.C.	NORMALLY CLOSED
CHWPP	CHILLED WATER PRIMARY PUMP	NIC	NOT IN CONTRACT
CHWR	CHILLED WATER RETURN	N.O.	NORMALLY OPEN
CHWS	CHILLED WATER SUPPLY	NTS	NOT TO SCALE
CHWSP	CHILLED WATER SECONDARY PUMP		
CI	CAST IRON	OA	OUTSIDE AIR
CLG	CEILING	OAD	OUTSIDE AIR DAMPER
CLG HT	CEILING HEIGHT	OAT	OUTSIDE AIR TEMPERATURE
CW	CLOCKWISE	OBD	OPPOSED BLADE DAMPER
CO	CLEAN-OUT, CARBON MONOXIDE	OD	OUTSIDE DIAMETER
CO2	CARBON DIOXIDE	OFCI	OWNER FURNISHED / CONTRACTOR INSTALLED
COL	COLUMN	OFD	OVERFLOW DRAIN
CONC	CONCRETE	OFOI	OWNER FURNISHED / OWNER INSTALLED
COP	COEFFICIENT OF PERFORMANCE (HEATING)	OZ	OUNCE
CP	CONDENSATE PUMP		
CT	COOLING TOWER	P	PUMP
CU	CONDENSING UNIT	PCT	PERCENT
CV	CONSTANT VOLUME	PD	PRESSURE DROP/DIFFERENCE
CW	COLD WATER	PF	PRE-FILTER
CWP	CONDENSER WATER PUMP	PH	PHASE
CWR	CONDENSER WATER RETURN	PLBG	PLUMBING
CWS	CONDENSER WATER SUPPLY	POC	POINT OF CONNECTION
		PPM	PARTS PER MILLION
dB	DECIBEL(S)	PRS	PRESSURE REDUCING STATION
DB	DRY BULB TEMPERATURE	PRV	PRESSURE REDUCING VALVE
DDC	DIRECT DIGITAL CONTROL	PSF	POUNDS PER SQUARE FOOT
DEG	DEGREE(S)	PSI	POUNDS PER SQUARE INCH
DF	DRINKING FOUNTAIN	PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
DH	DUCT HEATER	PSIG	POUNDS PER SQUARE INCH, GAGE
DIA	DIAMETER	PTAC	PACKAGED TERMINAL AIR CONDITIONER
DP	DEW POINT	PVC	POLYVINYL CHLORIDE
DPT	DEW POINT TEMPERATURE		
D	DRAIN	QT	QUART
DT	DELTA TEMPERATURE	QTY	QUANTITY
DYCO	DOUBLE YARD CLEAN-OUT		
EAT	ENTERING AIR TEMPERATURE	RA	RETURN AIR
ECON	ECONOMIZER	RAF	RETURN AIR FAN
EDB	ENTERING DRY BULB	RAT	RETURN AIR TEMPERATURE
EDH	ELECTRIC DUCT HEATER	RCP	REINFORCED CONCRETE PIPE
EER	ENERGY EFFICIENCY RATIO	RD	ROOF DRAIN
EF	EXHAUST FAN	REF	REFRIGERATOR
EFF	EFFICIENCY	RH	RELATIVE HUMIDITY
ELEC	ELECTRIC	RHC	REHEAT COIL
ENT	ENTERING	RM	ROOM
EQIV FT	EQUIVALENT FEET	RPM	REVOLUTIONS PER MINUTE
EQP	EQUIPMENT	RPS	REVOLUTIONS PER SECOND
ESP	EXTERNAL STATIC PRESSURE	RTU	ROOF TOP UNIT
ET	EXPANSION TANK	RV	RELIEF VALVE
EUH, EH	ELECTRIC (UNIT) HEATER		
EVAP	EVAPORAT(E), (IVE)	SA	SUPPLY AIR
EWB	ENTERING WET BULB	SAF	SUPPLY AIR FAN
EWH	ELECTRIC WATER HEATER	SAN	SANITARY
EWT	ENTERING WATER TEMPERATURE	SAT	SATURATED
EXH	EXHAUST	SCFM	STANDARD CUBIC FEET PER MINUTE
EXT	EXTERIOR	SCFS	STANDARD CUBIC FEE PER SECOND
		SD	SMOKE DAMPER, STORM DRAIN
F	FAHRENHEIT	SEC	SECOND(S)
FA	FREE AREA	SFD	SMOKE/FIRE DAMPER
FC	FLEXIBLE CONNECTION	SH	SHOWER
FCO	FLOOR CLEAN-OUT	SHT	SHEET
FCU	FAN COIL UNIT	SK	SINK
FD	FLOOR DRAIN, FIRE DAMPER	SP	SUMP PUMP
FDC	FIRE DEPARTMENT CONNECTION	SPEC	SPECIFICATIONS
FF	FINAL FILTERS	SS	SERVICE SINK, SANITARY SEWER, STORM SEWER, STAINLESS STEEL
FHC	FIRE HOSE CABINET	STC	SOUND TRANSMISSION CLASS
FLR	FLOOR	STD	STANDARD
FPC	FIRE PROTECTION CONTRACTOR		
FS	FLOOR SINK	T	TEMPERATURE
FPTU	FAN POWERED TERMINAL UNIT	T&P	TEMPERATURE AND PRESSURE VALVE
FTLB	FOOT POUND	T/S	TUB/SHOWER COMBINATION
FPM	FEET PER MINUTE	TAB	TEST ADJUST & BALANCE
FPS	FEET PER SECOND	TD	TEMPERATURE DIFFERENCE
FRP	FIBERGLASS REINFORCED PLASTIC	TDH	TOTAL DYNAMIC HEAD
FV	FACE VELOCITY	TDV	TRIPLE DUTY VALVE
		TEMP	TEMPERATURE
G	NATURAL GAS	TONS	TONS OF REFRIGERATION
GA	GAGE	TSTAT	THERMOSTAT
GAL	GALLON	TYP	TYPICAL
GC	GENERAL CONTRACTOR		
GPH	GALLONS PER HOUR	U	HEAT TRANSFER COEFFICIENT
GPM	GALLONS PER MINUTE	UC	UNDERCUT, UNDER COUNTER
GPS	GALLONS PER SECOND	UH	UNIT HEATER
GT	GREASE TRAP	UNO	UNLESS NOTED OTHERWISE
		UR	URINAL
H	HEIGHT	UV	UNIT VENTILATOR
HB	HOSE BIB		
HD	HEAD	V	VENT, VOLTS
HEPA	HIGH EFFICIENCY PARTICULATE AIR (FILTER)	VA	VOLT AMPERE
HOA	HAND, OFF, AUTO STATION	VAC	VACUUM
HP	HORSEPOWER	VAV	VARIABLE AIR VOLUME
HR	HOUR	VFD	VARIABLE FREQUENCY DRIVE
HS	HAND SINK	VRF	VARIABLE REFRIGERANT FLOW
HSTAT	HUMIDISTAT	VRV	VARIABLE REFRIGERANT VOLUME
HT	HEIGHT	VEL	VELOCITY
HTR	HEATER	VERT	VERTICAL
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	VOL	VOLUME
HW	HOT WATER	VTR	VENT THROUGH THE ROOF
HWC	HOT WATER COIL	VVT	VARIABLE VOLUME TERMINAL
HWCP	HOT WATER CIRCULATING PUMP		
HWP	HOT WATER PUMP	W	WASTE, WIDTH
HWR	HOT WATER RETURN	W/	WITH
HWS	HOT WATER SUPPLY	W/O	WITHOUT
HWT	HOT WATER TANK	WB	WET BULB
HZ	FREQUENCY	WC	WATER CLOSET
		WCO	WALL CLEAN-OUT
IAQ	INDOOR AIR QUALITY	WH	WALL HYDRANT
ID	INSIDE DIAMETER	WHA	WATER HAMMER ARRESTOR
IN WC	INCHES, WATER COLUMN	WM	WATER METER
INCL	INCLUDE	WT	WEIGHT
INSUL	INSULATI(E), (ED), (ION)	WTR	WATER
INT	INTERIOR		
INV	INVERT	YCO	YARD CLEAN-OUT
I/O	INPUT/OUTPUT	YD	YARD
IPS	INTERNATIONAL PIPE STANDARD	YR	YEAR
IPT	IRON PIPE THREADED		
IWH	INSTANTANEOUS WATER HEATER	ZN	ZONE

MECHANICAL GENERAL NOTES

A. REFER TO MECHANICAL PLANS FOR DEMOLITION, NEW WORK, AND ADDITIONAL INFORMATION FOR RELOCATED ITEMS.

B. REFER TO MECHANICAL SPECIFICATIONS, SCHEDULES, AND DETAIL DRAWINGS FOR ADDITIONAL INFORMATION.

D. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS OF ALL EQUIPMENT, DUCTWORK, & PIPING PRIOR TO SUBMITTING A BID. COORDINATE COMPLETELY WITH ALL OTHER TRADES. RELOCATE TERMINAL UNITS AND PROVIDE ADDITIONAL DUCTWORK, OFFSETS, FITTINGS, ETC. AS REQUIRED.

E. THE CONTRACTOR SHALL VERIFY THAT ALL EXISTING AND NEW MECHANICAL EQUIPMENT ARE MOUNTED SO THAT ALL REQUIRED CODE AND MANUFACTURER'S SERVICES CLEARANCES ARE MAINTAINED AT THE BOTTOM AND SIDES OF EACH UNIT FOR PROPER SERVICING AND MAINTENANCE. COORDINATE COMPLETELY WITH ALL NEW WALLS TO STRUCTURE, AND RELOCATE AS REQUIRED TO MAINTAIN PROPER CLEARANCES.

F. DUE TO DRAWING SCALE, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION. CONTRACTOR SHALL FURNISH AND INSTALL BALANCING DAMPERS IN HVAC SYSTEMS THAT HAVE MORE THAN ONE INLET/OUTLET UNLESS NOTED OTHERWISE. BALANCING DAMPERS SHALL APPLY TO NEW AND EXISTING DUCTWORK.

G. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO BRING TO THE ATTENTION OF THE MECHANICAL ENGINEER ANY SLAB-TO-SLAB PARTITIONS THAT DO NOT HAVE PROPER RETURN AIR PATHWAYS. ALL PENETRATIONS OF SLAB-TO-SLAB PARTITIONS SHALL BE SEALED AIR-TIGHT.

H. MECHANICAL CONTRACTOR SHALL VERIFY THAT LOCATION OF CEILING AND WALL MOUNTED AIR CONDITIONING SLOTS, DIFFUSERS, GRILLES, AND REGISTERS SHOWN ON THE DRAWINGS ARE ACCEPTABLE TO THE ARCHITECT PRIOR TO INSTALLATION.

I. VERIFY EXACT REQUIREMENTS AND OPERATION OF EXISTING BUILDING CONTROL SYSTEM WITH BUILDING OWNER PRIOR TO SUBMITTING A BID.

J. THE CONTRACTOR SHALL REPLACE ANY DAMAGED OR NON-FUNCTIONING THERMOSTATS. NEW THERMOSTATS SHALL MATCH BUILDING STANDARD.

K. ALL REFRIGERANT CIRCUITS WITH SERVICE PORTS LOCATED ON THE EXTERIOR OF THE BUILDING SHALL BE PROVIDED WITH LOCKING ACCESS PORT CAPS. THIS REQUIREMENT APPLIES TO ALL NEW REFRIGERANT CIRCUITS AND EXISTING REFRIGERANT CIRCUITS WHEN EQUIPMENT IS RE-USED ON CHANGE OF USAGE PROJECTS.

L. FOR ANY NEW OR RELOCATED FAN-POWERED BOXES PROVIDE EACH FAN-POWERED BOX WITH A HARDWIRED SHUTDOWN WITH THE RTU OR AIR-HANDLING UNIT SMOKE DETECTOR.

M. ANY INDIVIDUAL FAN-POWERED BOX THAT SUPPLIES MORE THAN 2000 CFM SHALL HAVE ITS OWN AREA SMOKE DETECTOR HARDWIRED TO SHUT DOWN THE UNIT UPON DETECTION OF PRODUCTS OF COMBUSTION.

N. MECHANICAL CONTRACTOR SHALL VERIFY THAT LOCATION OF CEILING AND WALL MOUNTED AIR CONDITIONING SLOTS, DIFFUSERS, GRILLES, AND REGISTERS SHOWN ON THE DRAWINGS ARE ACCEPTABLE TO THE ARCHITECT PRIOR TO INSTALLATION.

O. NEW EXPOSED TO VIEW EXHAUST DUCTWORK SHALL BE SINGLE WALL, UN-INSULATED, AND HAVE A "PAINT GRIP" FINISH. REFER TO THE ARCHITECT FOR FINISH OF DUCTWORK.

P. NEW EXPOSED TO VIEW SUPPLY DUCTWORK THAT IS INDICATED WITH A LIGHT HATCH SHALL BE AS SPECIFIED WITHIN THE MECHANICAL SYMBOLS ON THIS DRAWING AND ON DRAWING M0.2.

OUTSIDE AIR CALCULATIONS

OUTSIDE AIR SHALL BE PROVIDED IN ACCORDANCE WITH THE 2021 UNIFORM MECHANICAL CODE. THE REQUIRED OUTSIDE AIR VENTILATION WAS CALCULATED AS FOLLOWS:

VBZ	=	(RP*PZ) + (RA*AZ)			
EZ	=	0.8			
VOZ	=	VBZ / EZ			
	RP	PZ	RA	AZ	VOZ
SPACE	CFM OA / P	P	CFM OA/SF	SF	CFM OA
CORRIDOR	5.0	0.0	0.06	890	66.8
ELECTRICAL	5.0	0.0	0.06	55	4.1
MN & WM TLT	5.0	0.0	0.06	120	9.0
UTILITY	5.0	0.0	0.06	55	4.1
			REQUIRED	TOTAL VOZ	84.0
			PROVIDED	TOTAL OA	160

THE AREAS ABOVE ARE SERVED BY AHU-1. TO SATISFY THE OUTSIDE AIR REQUIREMENTS THE CONTRACTOR SHALL BALANCE THE OUTSIDE AIR TO THE VALUES INDICATED THE MECHANICAL SCHEDULE DRAWING.

MECHANICAL DRAWING LIST

B2AEP

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

ISSUE FOR CONSTRUCTION

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO. 21066 | ORIG. ISSUE 2022.09.27

CURRENT: 2022-09-27

STATE OF TEXAS
M. CHAD BLACK
93681
LICENSED
PROFESSIONAL ENGINEER
9/26/2022

SHEET NAME:
MECHANICAL COVER SHEET

SHEET NO:
M0.000

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. MECHANICAL EQUIPMENT, CONTROLS, DUCTWORK, PIPING, ACCESSORIES, INSULATION, HANGERS, AND SUPPORTS.

1.2 RELATED SECTIONS

A. SCOPE OF WORK

1. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, SUPPLIES, MATERIALS, TOOLS, LABOR, ETC...FOR A COMPLETE INSTALLATION.
2. THE CONTRACTOR SHALL BE TO COORDINATE ALL OF THE CONSTRUCTION WORK WITH ALL OTHER TRADES ON THIS PROJECT.
3. THE CONTRACTOR SHALL PROVIDE A COMPLETE MECHANICAL SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED BY NOTES OR THE SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND SPECIFICATIONS FOR SCOPE OF WORK THAT SHALL BE COMPLETED FOR THIS PROJECT.
5. THE CONTRACTOR SHALL REVIEW SITE CONDITIONS ALONG WITH THE CONTRACT DOCUMENTS TO ASCERTAIN THE COMPLETE SCOPE OF WORK FOR THE PROJECT.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL SITE MEASUREMENTS WITH REGARDS TO THE SCOPE OF WORK TO ACCOUNT FOR ALL REQUIRED DIMENSIONAL ADJUSTMENTS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR ANY DISCREPANCIES BETWEEN DIMENSIONS INDICATED ON THE CONTRACT DOCUMENTS AND ACTUAL FIELD MEASUREMENTS.

1.3 REFERENCES

A. AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS

1. ASHRAE 62.1 - VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY
2. ASHRAE 90.1 - ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS

B. UNDERWRITERS LABORATORY (UL)

1. LISTED PRODUCTS

1.4 SUBMITTALS

A. THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC COPY OF THE SHOP DRAWINGS, EQUIPMENT PERFORMANCE SUBMITTALS, AND PRODUCT DATA FOR THE FOLLOWING ITEMS:

1. EQUIPMENT
2. DUCTWORK
3. PIPING
4. INSULATION
5. AIR DEVICES (GRILLES, REGISTERS, AND DIFFUSERS)
6. CONTROLS
7. ALL OTHER INSTALLED MECHANICAL ITEMS

B. SHOP DRAWINGS

1. INCLUDE SYSTEM COMPONENTS
2. APPLICABLE DIMENSIONAL DATA
3. DIMENSIONS TO ADJACENT CONSTRUCTION AND/OR OBSTRUCTIONS
4. ALL REQUIRED CLEARANCES AND ACCESS DIMENSIONS FOR SERVICING

C. EQUIPMENT WEIGHTS

1. THE CONTRACTOR SHALL INCLUDE EQUIPMENT WEIGHTS ON ALL SUBMITTALS TO VERIFY WHICH PIECES OF EQUIPMENT WEIGH 300 POUNDS OR MORE.

D. HAZARDOUS MATERIALS, PRODUCTS, PROCESSES, AND VOC'S

1. IN THE EVENT THAT MATERIALS, PRODUCTS, AND/OR PROCESSES BEING PROPOSED FOR THIS PROJECT CONTAIN, OR MAY EMIT, ANY VOLATILE ORGANIC COMPOUNDS (VOC), FORMALDEHYDE FORMULATIONS, OR HAZARDOUS OUT-GASSING, AS DETERMINED BY THE MANUFACTURER, A MATERIALS SAFETY DATA SHEET SHALL BE SUBMITTED AS PART OF THE SHOP DRAWING PROCESS FOR REVIEW BY THE ARCHITECT, ENGINEER, AND OWNER.

E. SUBSTITUTIONS OF EQUIPMENT OR MATERIALS

1. THE CONTRACTOR SHALL NOT SUBSTITUTE EQUIPMENT OR MATERIAL WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE ENGINEER OF RECORD AND OWNER.
2. THE DETERMINATION OF WHAT SHALL BE CONSIDERED EQUAL IS AT THE SOLE DISCRETION OF THE ENGINEER OF RECORD AND OWNER.
3. THE CONTRACTOR SHALL INCLUDE SUFFICIENT DESCRIPTIVE INFORMATION, INCLUDING BUT NOT LIMITED TO THE MANUFACTURER'S PUBLISHED DATA TO ESTABLISH CONTRACT COMPLIANCE.
4. THE CONTRACTOR SHALL SUBMIT SAMPLES IF REQUESTED BY THE ARCHITECT OR ENGINEER OF RECORD.
5. ALL SUBSTITUTIONS SHALL BE SUBMITTED AT LEAST SEVEN (7) DAYS PRIOR TO BID SUBMISSION FOR REVIEW.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND ALL ASSOCIATED COSTS FOR ALL DIMENSIONAL DIFFERENCES, WEIGHTS, CLEARANCES, MATERIAL & LABOR FOR ALL SUBSTITUTIONS.

1.5 DEFINITIONS

A. HVAC - HEATING, VENTILATION, AND AIR CONDITIONING. ALL EQUIPMENT INCLUDED TO PERFORM HVAC, BUT NOT LIMITED TO THE FOLLOWING: AIR-HANDLING UNITS, ROOFTOP UNITS, SPLIT SYSTEMS, VRF SYSTEMS, VAV UNITS, TERMINAL UNITS, FAN POWERED UNITS, FANS, PUMPS, ETC...

B. DUCTWORK - MATERIAL USED FOR THE DISTRIBUTION OF HOT/COLD, EXHAUST, VENTILATION, AND/OR TRANSFER AIRFLOW.

C. PIPING - MATERIAL USED FOR THE DISTRIBUTION OF HOT/CHILLED WATER, AND/OR CONDENSATE DRAINAGE.

D. CONTROLS - THERMOSTATS (T-STATS), BUILDING AUTOMATION SYSTEM (BAS), BUILDING MANAGEMENT SYSTEM (BMS), ENERGY MANAGEMENT SYSTEM (EMS), AND FIRE ALARM CONTROL PANEL (FACP).

E. ABBREVIATIONS

1. REFER TO THE CONTRACT DRAWINGS FOR DEFINITIONS OF ALL ABBREVIATIONS.

1.6 QUALITY ASSURANCE

A. REGULATORY REQUIREMENTS

1. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND APPLICABLE CODES AT THE LOCATION OF THE PROJECT.

AMERICANS WITH DISABILITIES ACT (ADA)
CITY AND/OR COUNTY BUILDING CODES AND/OR ORDINANCES
CITY, COUNTY, STATE DEPARTMENT OF HEALTH
INTERNATIONAL BUILDING CODE (IBC)
INTERNATIONAL MECHANICAL CODE (IMC)
INTERNATIONAL PLUMBING CODE (IPC)
INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
TEXAS ACCESSIBILITY STANDARDS (TAS)
NATIONAL ELECTRIC CODE (NEC)
UNIFORM MECHANICAL CODE (UMC)
UNIFORM PLUMBING CODE (UPC)

2. WHEN DIFFERENT SECTIONS OF ANY APPLICABLE CODES SPECIFY DIFFERENT MATERIALS, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THEN THE MOST RESTRICTIVE SHALL GOVERN.

B. MANUFACTURER QUALIFICATIONS

1. MINIMUM OF 5 YEARS EXPERIENCE MANUFACTURING SIMILAR PRODUCTS.

C. INSTALLER QUALIFICATIONS

1. MINIMUM OF 2 YEARS EXPERIENCE INSTALLING SIMILAR PRODUCTS.

D. STANDARDS FOR MATERIAL AND INSTALLATION WORKMANSHIP

1. THE CONTRACTOR SHALL USE MATERIALS THAT ARE NEW, LISTED, AND LABELED BY THE UNDERWRITERS LABORATORIES (UL) AS CONFORMING TO ITS STANDARDS, WHERE SUCH STANDARDS HAVE BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION. THE CONTRACTOR SHALL EXECUTE ALL WORK IN A WORKMAN LIKE MANNER TO PRESENT A CLEAN, NEAT, AND PROFESSIONAL WORKMAN LIKE APPEARANCE WHEN COMPLETED.
2. THE CONTRACTOR, UNLESS NOTED OTHERWISE, SHALL PROVIDE AND INSTALL MATERIALS AND EQUIPMENT THAT CONFORMS THE THE LATEST STANDARDS LISTED BELOW:

AMCA	AIR MOVING & CONDITIONING ASSOCIATIONS, INC.
ANSI	AMERICAN NATIONAL STANDARDS ASSOCIATION
ARI	AIR-CONDITIONING & REFRIGERATION INSTITUTE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, & AIR-CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
IAPMO	INTERNATIONAL ASSOCIATION OF PLUMBING & MECHANICAL OFFICIALS
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
SMACNA	SHEET METAL & AIR CONDITIONING CONTRACTOR ASSOCIATION

E. PERMITS, FEES, AND INSPECTIONS

1. THE CONTRACTOR SHALL PROVIDE AND COORDINATE ALL REQUIRED PERMITS, INTERIM INSPECTIONS, FINAL INSPECTIONS, AND APPROVALS FROM THE INSPECTION DEPARTMENT HAVING JURISDICTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT FOR ALL PERMITS, FEES, TESTS, CERTIFICATIONS, AND INSPECTIONS.
3. THE CONTRACTOR SHALL NOTIFY THE OWNER TWENTY FOUR (24) HOURS IN ADVANCE WHEN EQUIPMENT IS TO BE TESTED OR UTILITIES ARE TO BE SHUT-OFF, BEFORE BEING CONCEALED AND BEFORE TRENCHES ARE COVERED UP.

F. SCHEDULING, COORDINATION, & COOPERATION

1. THE CONTRACTOR SHALL SCHEDULE THEIR WORK AND COOPERATE WITH ALL OTHER TRADES ON THE PROJECT SITE TO AVOID DELAYS, INTERFERENCES, AND UNNECESSARY WORK.
2. THE CONTRACTOR SHALL COOPERATE WITH OTHERS TO PROVIDE FOR THE INSTALLATION OF THEIR WORK AND COORDINATE WITH WORK OF ALL OTHER TRADES TO PROVIDE REQUIRED CLEARANCE OF PIPING, DUCTWORK, CONDUIT, ETC. WHEN SUCH IS REQUIRED.
3. SHOULD ANY CHANGES OCCUR DUE TO THE COORDINATION WITH OTHER TRADES AND/OR CONFLICTS WITH THE CONTRACT DOCUMENTS, THEN THE CONTRACTOR SHALL SUBMIT PROPOSED CHANGES TO THE ENGINEER OF RECORD FOR REVIEW OF AN ALTERNATE METHOD OF COMPLETING THEIR WORK ACCORDING TO THE INTENT OF THE CONTRACT DOCUMENTS.
4. NOTIFY THE OWNER TWENTY FOUR (24) HOURS IN ADVANCE WHEN EQUIPMENT IS TO BE TESTED OR UTILITIES ARE TO BE SHUT-OFF, BEFORE BEING CONCEALED AND BEFORE TRENCHES ARE COVERED UP.
5. IF THE CONTRACTOR FAILS TO COMPLY WITH THE ABOVE REQUIREMENTS, THEN THE CONTRACTOR SHALL UNCOVER AND RETEST DUCTWORK, PIPING, OR EQUIPMENT, REPAIRING DAMAGE TO OTHER CONTRACTOR'S WORK AS WELL AS THEIR OWN WITHOUT ADDITIONAL COST.
6. PORTIONS OF THE BUILDING MIGHT BE IN USE AND OCCUPIED DURING THE CONSTRUCTION PERIOD OF THIS PROJECT. ALL BUILDING SERVICES, UTILITIES, POWER, CHILLED WATER, HEATING HOT WATER, FIRE PROTECTION, AND DOMESTIC COLD & HOT WATER WHICH WILL BE REQUIRED FOR THIS PROJECT SHALL NOT BE DISRUPTED FOR ANY REASON WITHOUT PRIOR COORDINATION WITH A REPRESENTATIVE OF THE BUILDING MANAGEMENT OR BUILDING OWNER. A WRITTEN AUTHORIZATION FROM THE BUILDING MANAGEMENT TEAM OR BUILDING OWNER SHALL BE REQUIRED TO DOCUMENT THE DATE, START TIME, AND DURATION THAT WERE APPROVED BY THE BUILDING MANAGEMENT TEAM OR BUILDING OWNER FOR SUCH DISRUPTION. AN ADDITIONAL ADVANCE NOTIFICATION OF SEVEN (7) DAYS MINIMUM SHALL BE GIVEN TOT HE BUILDING MANAGEMENT TEAM OR OWNER PRIOR TO EACH DISRUPTION.
7. AREAS OF THE BUILDING MIGHT BE OCCUPIED DURING CONSTRUCTION OF THIS PROJECT. NOISY, DUSTY, AND/OR OTHER CONSTRUCTION OPERATIONS REQUIRED FOR WORK WHICH MAY DISTURB OR CAUSE COMPLAINTS BY THE BUILDING OCCUPANTS SHALL NOT BE ACCEPTABLE.THE CONTRACTOR SHALL USE CONSTRUCTION METHODS AND MATERIALS WHICH SHALL NOT ADVERSELY AFFECT THE INDOOR AIR QUALITY OF THE OCCUPIED AREAS.
8. ALL AFTER-HOUR OR OVERTIME WORK REQUIRED BY THE CONTRACTOR TO AVOID DISRUPTION OF OCCUPANTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
9. AFTER COMPLETION OF INSTALLATION, BUT PRIOR TO SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL CERTIFY IN WRITING THAT PRODUCTS AND MATERIALS INSTALLED AND PROCESSES USED TO NOT CONTAIN ASBESTOS OR POLYCHLORINATED BIPHENYL (PCB).

G. COMPLETED WORK

1. THE CONTRACTOR SHALL INSPECT THE INSTALLATION TO ASSURE THAT WORK IS COMPLETE AND THE REQUIREMENTS OF THE CONTRACT HAVE BEEN COMPLETED BEFORE REQUESTING FINAL PAYMENT.

1.7 DELIVERY, STORAGE, AND HANDLING

A. THE CONTRACTOR SHALL ORDER ALL MATERIALS AND EQUIPMENT ON SCHEDULE TO BE ABLE TO COMPLETE ALL CONSTRUCTION BY THE SCHEDULED COMPLETION DATE.

B. THE CONTRACTOR SHALL DELIVER AND STORE PRODUCTS IN THE MANUFACTURER'S UNOPENED PACKAGING BEARING THE BRAND NAME AND THE MANUFACTURER'S IDENTIFICATION UNTIL READY FOR INSTALLATION.

C. THE CONTRACTOR SHALL KEEP THE BUILDING AND CONSTRUCTION AREAS CLEAN AND CLEAR OF ALL SCRAP MATERIALS AT ALL TIMES. THE CONTRACTOR SHALL STORE MATERIALS AND EQUIPMENT IN DESIGNATED STORAGE AREAS.

D. THE CONTRACTOR SHALL COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS TO HANDLE AND STORE ALL MATERIALS TO AVOID DAMAGE.

1.8 PROJECT CONDITIONS

A. THE CONTRACTOR SHALL MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY, AND VENTILATION) WITHIN THE LIMITS RECOMMENDED BY THE MANUFACTURER FOR OPTIMUM RESULTS. THE CONTRACTOR SHALL NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE THE MANUFACTURER'S RECOMMENDED LIMITS AND INSTALLATION INSTRUCTIONS.

B. PROTECTION

1. THE CONTRACTOR SHALL PROTECT THE WORK, EQUIPMENT, AND MATERIALS FROM DAMAGE BY HIS WORK OR HIS PERSONNEL.
2. THE CONTRACTOR SHALL CORRECT ALL DAMAGE THUS CAUSED WITHOUT ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PROTECT ALL WORK, MATERIALS, AND EQUIPMENT FROM THEFT, INJURY, OR DAMAGE.
4. THE CONTRACTOR SHALL CAREFULLY STORE ALL MATERIALS AND EQUIPMENT RECEIVED ON SITE WHICH IS NOT IMMEDIATELY INSTALLED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, MATERIALS, AND EQUIPMENT UNTIL FINAL ACCEPTANCE BY THE OWNER.
6. THE CONTRACTOR SHALL SEAL ALL OPEN ENDS OF DUCTWORK, PIPING, AND EQUIPMENT DURING CONSTRUCTION WITH TEMPORARY COVERS OR PLUGS TO PREVENT THE ENTRY OF DUST, DIRT, AND CONSTRUCTION DEBRIS.
7. THE CONTRACTOR SHALL PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE DUE TO WATER, SPRAY-ON FIREPROOFING, CONSTRUCTION DEBRIS PER THE REQUIREMENTS OF THE ENGINEER OF RECORD AND/OR THE OWNER.
8. THE CONTRACTOR SHALL CLEAN ALL INTERIOR SURFACES (EQUIPMENT & DUCTWORK) PRIOR TO INSTALLATION.
9. THE CONTRACTOR SHALL MAINTAIN ALL EQUIPMENT FILTERS DURING CONSTRUCTION. REPLACE FILTER MEDIA AT THE AHU AND RETURNS A MINIMUM OF TWO TIMES DURING CONSTRUCTION.
10. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION FILTERS OVER ALL AIR-HANDLING UNIT INTAKES AND MAINTAIN FILTER MEDIA DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL PROVIDE FILTER MEDIA FOR ALL RETURN AIR INTAKES TO MECHANICAL ROOMS.
12. THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION FILTERS AT THE END OF CONSTRUCTION.
13. THE CONTRACTOR SHALL REPLACE ALL FILTERS (EXCEPT CONSTRUCTION FILTERS) WITH NEW FILTERS AT THE END OF CONSTRUCTION.

1.9 WARRANTY

A. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE (1) YEAR WARRANTY FROM THE SUBSTANTIAL COMPLETION DATE FOR ALL WORK PERFORMED UNDER THIS CONTRACT. THE DATE OF SUBSTANTIAL COMPLETION SHALL BE DETERMINED BY THE OWNER OR THE OWNER'S REPRESENTATIVE. THE WARRANTY SHALL INCLUDE WORKMANSHIP, LABOR, EQUIPMENT, AND MATERIALS. THE CONTRACTOR SHALL REFER TO THE CONTRACT DOCUMENTS FOR ALL OTHER REQUIRED WARRANTY PERIODS.

1.10 DRAWINGS AND SPECIFICATIONS

A. ALL DRAWINGS SHALL BE CONSIDERED SCHEMATIC AND MAY NOT INDICATE THE EXACT LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR THE ACTUAL DIMENSIONS. THE CONTRACTOR SHALL FIT THEIR WORK TO CONFORM TO THE DETAILS OF THE BUILDING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE ALL OF THE REQUIRED CODE AND MANUFACTURER'S CLEARANCES.

B. ALL DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOT BE SCALED.

C. DUE TO DRAWING SCALE, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION. CONTRACTOR SHALL FURNISH AND INSTALL BALANCING DAMPERS IN HVAC SYSTEMS THAT HAVE MORE THAN ONE INLET/OUTLET UNLESS NOTED OTHERWISE. BALANCING DAMPERS SHALL APPLY TO NEW AND EXISTING DUCTWORK.

D. THE SYMBOLS SHOWN ON THE DRAWINGS ARE ILLUSTRATIVE IN NATURE AND ARE PROVIDED FOR REFERENCE ONLY.

E. THE DRAWINGS ARE BASED UPON THE EXISTING DOCUMENTS PROVIDED BY THE OWNER. THE CONTRACTOR SHALL REPORT ANY UNCOVERED UTILITIES, SERVICES, DUCTWORK, PIPING, ETC. TO THE ARCHITECT BEFORE DISTURBING THE EXISTING INSTALLATION. THE CONTRACTOR SHALL VERIFY THAT ANY ABANDONED DUCTWORK AND PIPING SERVE ONLY ABANDONED FACILITIES.

1.11 AS-BUILT DRAWINGS

A. DURING CONSTRUCTION THE CONTRACTOR SHALL RECORD ON ONE (1) SET OF MECHANICAL DRAWINGS ALL CHANGES AND DEVIATIONS FROM THE CONTRACT DOCUMENTS IN SIZE, LOCATIONS, AND TYPES OF ALL MATERIALS AND EQUIPMENT. THE CONTRACTOR SHALL RECORD THE FINAL LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC... TO INDICATE THE FINAL INSTALLATION. THE CONTRACTOR SHALL MAKE SUFFICIENT MEASUREMENTS TO LOCATE ALL EQUIPMENT AND ACCESSORIES.

B. THE CONTRACTOR SHALL PROVIDE A COMPLETE RED-LINED ELECTRONIC AS-BUILT SET OF DRAWINGS TO THE ENGINEER OF RECORD.

1.12 OPERATION AND MAINTENANCE DATA / CLOSE-OUT DOCUMENTS

A. THE CONTRACTOR SHALL PROVIDE AND DELIVER TO THE ARCHITECT AND ENGINEER OF RECORD A COMPLETE ELECTRONIC COPY OF ALL DATA PREPARED BY THE MANUFACTURERS THAT DETAIL THE OPERATION AND THE MAINTENANCE INSTRUCTIONS FOR ALL MATERIALS AND EQUIPMENT. THE CONTRACTOR SHALL INSTRUCT THE OWNER OR OWNER'S REPRESENTATIVE IN THE OPERATION OF ALL EQUIPMENT.

B. THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC COPY OF THE OWNER'S OPERATION AND MAINTENANCE MANUALS, AS-BUILT DRAWINGS, AND A COMPLETE PARTS LIST FOR ALL INSTALLED EQUIPMENT. ALL CLOSE-OUT DOCUMENTS SHALL BE SUBMITTED THE THE OWNER AND ENGINEER OF RECORD FOR REVIEW.

C. THE CONTRACTOR SHALL PROVIDE THE OWNER A TYPED ELECTRONIC LIST OF ALL NEW AND EXISTING EQUIPMENT, INDICATED THE MANUFACTURER, MODEL NUMBER, SERIAL NUMBER, VOLTAGE, PHASE, HP, KW, CFM, ETC.

1.13 PENETRATIONS, CUTTING, AND PATCHING

A. THE CONTRACTOR SHALL PERFORM CUTTING AND PATCHING IN ACCORDANCE WITH THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THE CONTRACT.

B. THE CONTRACTOR SHALL PROVIDE ALL SLEEVES REQUIRED FOR THE PROPER INSTALLATION OF THE WORK INCLUDED IN THIS SECTION.

C. THE CONTRACTOR SHALL MAKE ALL PENETRATIONS THROUGH WALLS AT 90 DEGREE ANGLES. THE CONTRACTOR SHALL SEAL ALL PENETRATIONS AT FIRE, SMOKE, AND FIRE/SMOKE PARTITIONS WITH FIRE SAFING MATERIAL. THE CONTRACTOR SHALL SEAL ALL PENETRATIONS AT SOUND WALLS WITH SOUNDPROOFING MATERIAL.

D. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL NOT DO MORE CUTTING AND PATCHING THAN WHAT IS REQUIRED FOR THE INSTALLATION OF THEIR WORK.

E. THE CONTRACTOR SHALL NOT CUT STRUCTURAL MEMBERS OR EXPOSED SURFACE OF CONCRETE BLOCK.

F. THE BUILDING MAY HAVE A STRUCTURAL SYSTEM UTILIZING POST-TENSIONED CABLES. THE CONTRACTOR SHALL DETERMINE THE EXISTING STRUCTURAL SYSTEM PRIOR TO CUTTING, DRILLING, OR CORING. IF POST-TENSIONED CABLES ARE EXISTING, THE CONTRACTOR SHALL X-RAY ALL PENETRATIONS PRIOR TO CUTTING THE FLOOR SLAB.

1.14 PRE-CONSTRUCTION SERVICE CHECK-OUT

A. AFTER AWARD OF THE CONTRACT AND PRIOR TO CONSTRUCTION THE MECHANICAL CONTRACTOR THAT IS AWARDED THE PROJECT SHALL PERFORM THE FOLLOWING PRE-CONSTRUCTION SERVICE CHECK-OUT FOR ALL EXISTING EQUIPMENT TO BE RE-USED.

B. TEST THE HEATING AND COOLING CYCLE OF EACH EXISTING PIECE OF HVAC EQUIPMENT THAT SERVES THIS LEASE SPACE. VERIFY THAT ALL CONTROLLERS, ACTUATORS, THERMOSTATS, AND OTHER CONTROLS ARE FULLY OPERATIONAL. VERIFY THAT THE COILS ARE CLEAN AND THAT ALL BELTS AND SHEAVES ARE IN GOOD WORKING ORDER.

C. VERIFY THAT THE EXISTING HVAC EQUIPMENT IS OPERATION AND ACHIEVING PROPER LEAVING AIR TEMPERATURES AND THAT THE FILTERS ARE IN PLACE.

D. ALL RE-USED CONDENSATE PIPING SHALL BE BLOWN CLEAN WITH COMPRESSED AIR.

E. REPLACE DAMAGED OR MISSING INSULATION ON DUCTWORK AND PIPING. EXTERIOR INSULATION SHALL BE PROVIDED WITH NEW JACKETING AS SPECIFIED.

F. REPLACE ALL AIR FILTERS ON THE HVAC EQUIPMENT THAT SERVES THIS LEASE SPACE. REPLACE WITH RIGID FRAME FILTERS AND NOT TEMPORARY HAND CUT FILTER MEDIA.

G. THE CONTRACTOR SHALL NOTIFY THE BUILDING OWNER IN WRITING OF ANY DEFICIENCIES FOUND AND SHALL OBTAIN WRITTEN INSTRUCTIONS FROM THE BUILDING OWNER PRIOR TO BEGINNING CONSTRUCTION REGARDING ANY ACTION TO BE TAKEN TO CORRECT FOUND DEFICIENCIES. ITEMS THAT ARE NOT ADDRESSED IN THE PRE-CONSTRUCTION SERVICE CHECK-OUT SHALL BE CORRECTED BY THE CONTRACTOR PRIOR TO THE COMPLETION OF CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.

1.15 TEMPERATURE CONTROLS

A. THE TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE COMPONENTS NECESSARY FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

B. THE CONTROLS CONTRACTOR SHALL EXPAND THE EXISTING BASE BUILDING DDC SYSTEM AND PROGRAMMING AND SHALL PROVIDE NEW COMPONENTS, CONTROLLERS, ACTUATORS, ACCESSORIES, AND PROGRAMMING MODES OF OPERATION AND SET POINTS WITH BUILDING ENGINEER PRIOR TO BID.

C. CONTROLS SHALL BE INSTALLED TO MATCH EXISTING BUILDING STANDARD CONTROLS, INCLUDING SUPPORTING FUNCTIONS OF THE EXISTING EMCS. LOW VOLTAGE WIRING SHALL BE PROVIDED AND INSTALLED BY THE CONTROLS CONTRACTOR. LINE VOLTAGE WIRING SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL COORDINATE EXACT REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO BID.

D. REFER TO BASE BUILDING TEMPERATURE CONTROLS SEQUENCE OF OPERATION FOR ADDITIONAL TEMPERATURE CONTROLS REQUIREMENTS.

E. COORDINATE WITH THE BUILDING OWNER'S OPERATION ENGINEER FOR ALL COOLING AND HEATING THERMOSTAT SET POINTS. PROVIDE OPERATOR TRAINING FOR ALL NEW CONTROLS AND SYSTEMS PROVIDED. PROVIDE CONTROLS O&M MANUALS TO THE OPERATIONS ENGINEER UPON COMPLETION OF THE CONTROLS SYSTEM.

F. UPDATE PROGRAMMING OF AFTER-HOURS-AIR-CONDITIONING FOR NEW TENANT. COORDINATE ALL REQUIREMENTS (INCLUDING DIAL UP CODES, SCHEDULES, ETC.) COMPLETELY WITH BUILDING OWNER.

G. LOW VOLTAGE WIRING SHALL BE PROVIDED AND INSTALLED BY THE CONTROLS CONTRACTOR. LINE VOLTAGE WIRING SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR AND CONTROLS CONTRACTOR SHALL COORDINATE EXACT REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO SUBMITTING A BID.

H. ALL REQUIRED PNEUMATIC TUBING SHALL BE PROVIDED AND INSTALLED BY THE CONTROLS CONTRACTOR.

I. THE CONTROLS CONTRACTOR SHALL CALIBRATE ALL NEW AND EXISTING PNEUMATIC CONTROLS AND THERMOSTATS UPON COMPLETION.

J. THE GENERAL CONTRACTOR SHALL INCLUDE CONTROLS AND GRAPHICS AS PART OF THE PROJECT CLOSEOUT.

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

ISSUE FOR CONSTRUCTION

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO.	ORIG. ISSUE
21066	2022.09.27

CURRENT: 2022-09-27

STATE OF TEXAS
M. CHAO BLACK
93681
LICENSED
PROFESSIONAL ENGINEER
9/26/2022

SHEET NAME:
MECHANICAL SPECIFICATIONS

SHEET NO:
M0.001

PART 2 - PRODUCTS AND EXECUTION

2.1 GENERAL

A. THE CONTRACTOR SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO COMPLETE THE INSTALLATION OF MECHANICAL SYSTEMS AND EQUIPMENT. THE INSTALLATION SHALL BE PERFORMED BY THE CONTRACTOR AND/OR THE MANUFACTURER'S REPRESENTATIVE REGULARLY ENGAGED IN THE APPLICATION AND INSTALLATION OF THE MATERIALS AND EQUIPMENT. THE CONTRACTOR SHALL INSTALL THE MATERIALS AND EQUIPMENT PER THE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.

B. ALL INSULATION MATERIALS AND ALL OTHER ACCESSORIES SHALL BE ASTM E 84 25/50 FIRE HAZARD RATING NOT TO EXCEED 25 FOR FLAME SPREAD INDEX AND NOT TO EXCEED 50 FOR SMOKE DEVELOPED INDEX. ALL PRODUCTS, THEIR SHIPPING CARTONS, OR PACKAGING SHALL BEAR A LABEL INDICATING THAT THE FLAME AND SMOKE SPREAD RATINGS DO NOT EXCEED THE ABOVE STATED REQUIREMENTS.

C. THE CONTRACTOR SHALL COMPLY WITH NFPA 90A, "STANDARDS FOR THE INSTALLATION OF AIR-CONDITIONING, AND VENTILATING SYSTEMS."

D. THE CONTRACTOR SHALL INSULATE ALL HVAC EQUIPMENT, DUCTWORK, AND PIPING PER THE SPECIFICATIONS LISTED.

E. ACCESSORIES SUCH AS ADHESIVE, MASTICS, CEMENT, TAPES, GLAZE FABRIC, AND COVERS FOR FITTINGS SHALL NOT PRODUCE FLAMING DROPLETS WHEN SUBJECTED TO FIRE, AND THE SAME COMPONENT RATINGS LISTED ABOVE.

F. EXECUTION (EQUIPMENT, DUCTWORK, & PIPING) - UNLESS NOTED OTHERWISE

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL WORK VERTICAL AND HORIZONTAL, AS WELL AS PARALLEL AND PERPENDICULAR TO BUILDING LINES.
2. THE CONTRACTOR SHALL AVOID DIAGONAL RUNS.
3. THE CONTRACTOR SHALL INSTALL DUCT/PIPING SYSTEMS IN THE SHORTEST ROUTE THAT DOES NOT OBSTRUCT USEABLE SPACE OR BLOCK ACCESS FOR SERVICING THE BUILDING AND ITS EQUIPMENT.
4. THE CONTRACTOR SHALL INSTALL DUCTWORK & PIPING WITH A CLEARANCE OF 1-INCH, PLUS ALLOWANCE FOR INSULATION THICKNESS, HANGERS, AND/OR SUPPORTS.

G. ACCESS PANELS

1. THE CONTRACTOR SHALL PROVIDE A MINIMUM 24"X24" ACCESS PANEL, UNLESS NOTED OTHERWISE, IN GYPSUM BOARD CEILINGS FOR ACCESS TO EQUIPMENT LOCATED ABOVE INACCESSIBLE CEILINGS.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM 12"X12" ACCESS DOOR AT ALL LOCATIONS OF DUCT CHASES, FIRE DAMPERS, AND SMOKE/FIRE DAMPERS.
3. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION, FINISH, AND SPECIFICATIONS OF ACCESS PANELS AND DOORS WITH THE ARCHITECT.

H. PARTITION & FLOOR PENETRATIONS

1. THE CONTRACTOR SHALL SEAL ALL PENETRATIONS OF SLAB-TO-SLAB PARTITIONS AIR-TIGHT.
2. THE CONTRACTOR SHALL SEAL ALL NEW AND EXISTING PIPES, CONDUITS, AND DUCT PENETRATIONS THRU FIRE RATED WALLS WITH FIRE CAULKING. FIRE CAULKING SHALL BE EQUAL TO 3M BRAND CP25WP FIRE CAULK. THE CONTRACTOR SHALL INSTALL ALL FIRE CAULKING IN STRICT ACCORDANCE WITH ALL OF THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH ALL APPLICABLE UL DETAILS.
3. THE CONTRACTOR SHALL SEAL ALL NEW AND EXISTING PIPES, CONDUITS, AND DUCT PENETRATIONS THRU FLOORS WITH FIRE CAULKING. FIRE CAULKING SHALL BE EQUAL TO 3M BRAND CP25WP FIRE CAULK. THE CONTRACTOR SHALL INSTALL ALL FIRE CAULKING IN STRICT ACCORDANCE WITH ALL OF THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH ALL APPLICABLE UL DETAILS.

I. PLENUM & NON-PLENUM RATED MATERIALS

1. THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO NON-PLENUM RATED MATERIALS IN THE RETURN AIR PLENUM.
2. THE CONTRACTOR SHALL ENCAPSULATE ALL NON-PLENUM RATED MATERIALS IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
3. IF THE NON-PLENUM RATED MATERIALS ARE NOT ENCAPSULATED IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION, THEN THE CONTRACTOR SHALL REPLACE THE MATERIAL WITH AN APPROVED PLENUM RATED MATERIAL AT NOT ADDITIONAL COST.

J. DUCTWORK AND PIPING INSTALLATION

1. THE CONTRACTOR SHALL INSTALL ALL DUCTWORK AND PIPING TIGHT TO STRUCTURE UNLESS NOTED OTHERWISE.

K. RETURN AIR PATHWAYS

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO BRING TO THE ATTENTION OF THE MECHANICAL ENGINEER ANY SLAB-TO-SLAB PARTITIONS THAT DO NOT HAVE PROPER RETURN AIR PATHWAYS.

L. AIR QUANTITY MEASUREMENTS BEFORE/AFTER RENOVATION

1. PRIOR TO ANY CONSTRUCTION THE MECHANICAL CONTRACTOR SHALL RECORD THE AIR QUANTITY FOR EACH EXISTING AIR DEVICE IN THE ADJACENT SPACES AND RESTROOMS THAT IS CONNECTED TO COMMON EQUIPMENT SERVICING THIS SPACE.
2. AFTER THE COMPLETION OF THE RENOVATION WORK, THE MECHANICAL CONTRACTOR SHALL USE THE SAME BALANCING EQUIPMENT TO RE-BALANCE THE AIR DEVICES CONNECTED TO COMMON EQUIPMENT IN ADJACENT SPACES TO THE ORIGINAL AIR QUANTITIES.

M. PRODUCTS - SEE BELOW AND REFER TO THE OTHER CONTRACT DOCUMENTS FOR ADDITIONAL SPECIFICATIONS AND REQUIREMENTS.

N. THE CONTRACTOR SHALL PROVIDE VIBRATION ISOLATION DEVICES TO INSURE THAT NOISE AND VIBRATION ARE HELD TO A MINIMUM WHEN MOUNTING, SUPPORTING, HANGING, AND CONNECTING TO EQUIPMENT.

O. THE CONTRACTOR SHALL INSTALL DUCT ACCESSORIES, HANGERS, AND SUPPORTS OF MATERIALS SUITED TO DUCT MATERIALS: USE GALVANIZED-STEEL ACCESSORIES IN GALVANIZED-STEEL DUCTS, STAINLESS-STEEL ACCESSORIES IN STAINLESS-STEEL DUCTS, AND ALUMINUM ACCESSORIES IN ALUMINUM DUCTS.

P. DIELECTRIC FITTINGS - ASSEMBLY OF COPPER ALLOY AND FERROUS MATERIALS WITH SEPARATING NON-CONDUCTIVE INSULATING MATERIAL. INCLUDE END CONNECTIONS COMPATIBLE WITH PIPES TO BE JOINED.

Q. PROVIDE TIGHT WALL OR FLOOR ESCUTCHEONS OF CHROME PLATED BRASS WHEREVER PIPES PASS THROUGH FLOORS, WALLS, OR CEILINGS.

2.2 DUCTWORK

A. THE INDICATED DUCTWORK SIZES ARE FREE AREA SIZES (INTERNAL DIMENSIONS) WITH THE SIZES SHOWN AS (WIDTH / HEIGHT).

B. GALVANIZED SHEET METAL STEEL - LOCK-FORMING QUALITY, ASTM A 527, COATING DESIGNATION G 90, MILL PHOSPHATIZED FINISH FOR EXPOSED SURFACES OF DUCTS EXPOSED TO VIEW. DUCTWORK SHALL BE A MINIMUM OF 24 GAUGE METAL FABRICATION. INSTALL DUCTWORK PER SMACNA REQUIREMENTS. DUCT SHALL BE FABRICATED AND SEALED TO MEET 2" STATIC PRESSURE. ALL DUCTS SHALL BE SEALED. THIS INCLUDES ALL SEAMS AND JOINTS. ROUND METAL DUCTWORK SHALL BE SPIRAL SEAM (NO LONG SEAM ROUND DUCTWORK). ALL DUCT SHALL BE PRESSURE TESTED TO 1% LEAKAGE AT 2" STATIC PRESSURE. SEAL ALL JOINTS AND SEAMS WITH WATER BASED DUCT MASTIC. CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS IN THE SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", TABLE 1-3 THROUGH 1-25, INCLUDING THEIR ASSOCIATED DETAILS. CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES, INTERVALS, TIE ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS.

C. UNLESS NOTED OTHERWISE, ALL EXPOSED TO VIEW ROUND DUCTWORK SHALL BE EQUAL TO "LINDAB SPIROsafe" SPIRAL DOUBLE WALL INSULATED DUCT SYSTEM. DUCT AND FITTINGS SHALL CONSIST OF A SOLID INNER LINER, A LAYER OF FIBERGLASS BOARD INSULATION AS SPECIFIED, AND A SOLID OUTER PRESSURE SHELL. (RIGID ROUND DUCT WITH LONGITUDINAL SEAM SHALL NOT TO BE USED.) REFER TO MECHANICAL SPECIFICATIONS FOR MINIMUM INSULATION R-VALUE. THE CONTRACTOR MAY TRANSITION DUCTWORK TO SINGLE WALL WITH EXTERIOR WRAPPED INSULATION IN AREAS WHERE THE DUCTWORK IS NOT VISIBLE. PROVIDE DOUBLE WALL EXPOSED SPIRAL DUCTWORK WITH PAINT GRIP FINISH AND REFER TO ARCHITECT FOR COLOR FINISH. CONTRACTOR SHALL VERIFY "PAINT GRIP" FINISH PRIOR TO ORDERING.

D. UNLESS NOTED OTHERWISE, ALL EXPOSED TO VIEW RECTANGULAR DUCTWORK SHALL BE DOUBLE WALL INSULATED DUCT SYSTEM. DUCT AND FITTINGS SHALL CONSIST OF A SOLID INNER LINER, A LAYER OF FIBERGLASS INSULATION AS SPECIFIED, AND A SOLID OUTER PRESSURE SHELL. REFER TO MECHANICAL SPECIFICATIONS FOR MINIMUM INSULATION R-VALUE. THE CONTRACTOR MAY TRANSITION DUCTWORK TO SINGLE WALL WITH EXTERIOR WRAPPED INSULATION IN AREAS WHERE THE DUCTWORK IS NOT VISIBLE. PROVIDE "PAINT GRIP" FINISH AND REFER TO THE ARCHITECT FOR COLOR. CONTRACTOR SHALL VERIFY "PAINT GRIP" FINISH PRIOR TO ORDERING.

E. REINFORCEMENT SHAPES AND PLATES - UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL PROVIDE GALVANIZED STEEL REINFORCING WHERE INSTALLED ON GALVANIZED SHEET METAL DUCTS PER SMACNA REQUIREMENTS.

F. HANGERS AND SUPPORTS

1. BUILDING ATTACHMENTS - STRUCTURAL STEEL FASTENERS APPROPRIATE FOR THE BUILDING MATERIALS.
2. HANGERS - GALVANIZED SHEET STEEL, OR ROUND UN-COATED STEEL, AND THREADED ROD.
3. STRAPS AND ROD SIZES - CONFORM WITH TABLE 4-1 IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS, 1995 EDITION, FOR THE SHEET STEEL WIDTH & GAUGE, AS WELL AS STEEL ROD DIAMETERS. ALL DUCTWORK SHALL BE SUPPORTED AT A MINIMUM OF 8'-0" ON CENTER, UNLESS NOTED OTHERWISE.
4. DUCT ATTACHMENTS - SHEET METAL SCREWS, BLIND RIVETS, OR SELF-TAPPING METAL SCREWS, COMPATIBLE WITH THE DUCT MATERIALS.

G. EQUIPMENT CONNECTIONS - CONNECT EQUIPMENT WITH FLEXIBLE CONNECTORS.

1. AVAILABLE MANUFACTURES: DURO DYNE CORP., VENTFABRICS, INC., WARD INDUSTRIES, INC., OR EQUAL.
2. MATERIALS: FLAME-RETARDANT OR NON-COMBUSTIBLE FABRICS.
3. COATINGS & ADHESIVES: COMPLY WITH UL 181, CLASS 1.
4. METAL-EDGED CONNECTORS: FACTORY FABRICATED WITH A FABRIC STRIP 3-1/2 INCHES WIDE ATTACHED TO TWO (2) STRIPS OF 2-3/4-INCH WIDE, 0.028-INCH-THICK, GALVANIZED SHEET STEEL SHEETS. PROVIDE METAL COMPATIBLE WITH CONNECTED DUCTS.

H. MANUAL VOLUME CONTROL DAMPERS - FURNISH AND INSTALL FACTORY-FABRICATED VOLUME CONTROL DAMPERS, COMPLETE WITH STAND-OFFS (APPROPRIATE TO ACCOMMODATE INSULATION), ALL REQUIRED HARDWARE AND ACCESSORIES. LOCKING QUADRANT SHALL BE PROVIDED FOR ALL DAMPERS, STIFFEN THE DAMPER BLADES TO PROVIDE STABILITY UNDER OPERATING CONDITIONS. PROVIDE LOCKING DEVICE TO HOLD SINGLE-BLADE DAMPERS IN A FIXED POSITION WITHOUT VIBRATION. PROVIDE WITH 2" INSULATION BUILD-OUT. CLOSE DUCT PENETRATIONS FOR DAMPER COMPONENTS TO SEAL DUCT CONSISTENT WITH PRESSURE CLASS.

I. STANDARD VOLUME DAMPER - SINGLE-BLADE, OPPOSED-BLADE DESIGN AS INDICATED, LOW-LEAKAGE RATING, WITH LINKAGE OUTSIDE OF AIRSTREAM. PROVIDE WITH 2" INSULATION BUILD-OUT.

J. SPIN-IN DAMPERS - ROUND SPIN-IN TAPS IN LOW PRESSURE DUCTWORK SHALL BE MADE WITH A SPIN-IN COLLAR WITH A LOCKING QUADRANT WITH A 2" STAND-OFF. SPIN-IN DAMPERS SHALL BE INSTALLED WITH THE DAMPER AXIS PARALLEL TO THE DIRECTION OF AIRFLOW.

K. REMOTE DAMPER OPERATORS

1. THE CONTRACTOR SHALL PROVIDE REMOTE DAMPER OPERATORS FOR ALL SPIN-IN AND/OR VOLUME DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS.
2. REMOTE DAMPER OPERATORS SHALL BE ROTO-TWIST OR APPROVED EQUAL.
3. CABLE-TYPE OPERATOR.
4. CONCEALED WITHIN DUCT RUN-OUT TO AIR DEVICE.
5. ACCESSIBLE FOR BALANCING FROM FACE OF AIR DEVICE.
6. CONTRACTOR SHALL PROVIDE REQUIRED CABLE LENGTHS, MOUNTING CLAMPS, AND ALL OTHER REQUIRED COMPONENTS FOR PROPER INSTALLATION AND OPERATION.

L. TURNING VANES

1. INSTALL TURNING VANES IN ALL RECTANGULAR SUPPLY DUCTS IN ELBOWS GREATER THAN 45°.

M. INSULATED FLEXIBLE DUCTWORK

1. AVAILABLE MANUFACTURES: DUCTMATE INDUSTRIES, INC., FLEXMASTER U.S.A., INC. HART & COOLEY, INC., MCGILL AIRFLOW CORPORATION, OR EQUAL.
2. INSULATED, FLEXIBLE DUCT SHALL BE UL 181, CLASS 1, 2-PLY VINYL FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE; FIBROUS-GLASS INSULATION; POLYETHYLENE VAPOR-BARRIER FILM.
3. PRESSURE RATING: 10-INCH W.G. POSITIVE AND 1.0-INCH W.G. NEGATIVE.
4. MAXIMUM AIR VELOCITY: 2000 FPM.
5. FLEX DUCT LENGTH SHALL NOT EXCEED 5'-0" MAXIMUM.
6. FLEX DUCT SUPPORT: HORIZONTAL SUPPORT IS REQUIRED. DUCT SHALL BE SUSPENDED ON 36-INCH CENTERS WITH A MINIMUM 3/4" WIDE BAND STRAP AND A MINIMUM 6-INCH WIDE SHEET METAL PROTECTIVE SADDLE.
7. ALL JOINTS AND CONNECTIONS OF FLEXIBLE DUCT SHALL BE MADE BY INSTALLING "PANDUIT" STRAPS ON INNER JACKET, SEALING OUTER JACKET WITH 2 WRAPS OF SMACNA APPROVED DUCT TAPE, AND INSTALLING AN ADDITIONAL "PANDUIT" STRAP OVER THE DUCT TAPE.

2.3 DUCTWORK INSULATION

A. ALL INSULATION SYSTEMS SHALL MEET THE REQUIREMENTS OF THE CURRENT VERSION OF THE INTERNATIONAL ENERGY CONSERVATION CODE WHICH REQUIRES THE FOLLOWING:

1. UNLESS OTHERWISE NOTED, WHEN DUCTWORK IS LOCATED WITHIN CONDITIONED SPACES, THEN THE INSTALLED MINIMUM R-VALUE OF 6 SHALL BE USED FOR HOT AIR, COLD AIR, AND OUTSIDE AIR DUCTWORK AND PLENUMS.
2. UNLESS OTHERWISE NOTED, WHEN DUCTWORK IS LOCATED WITHIN UN-CONDITIONED SPACES, THEN THE INSTALLED MINIMUM R-VALUE OF 8 SHALL BE USED FOR HOT AIR, COLD AIR, AND OUTSIDE AIR DUCTWORK AND PLENUMS.
3. UNLESS OTHERWISE NOTED, ALL DUCTWORK THAT IS LOCATED ON THE EXTERIOR OF A BUILDING SHALL HAVE THE INSTALLED MINIMUM R-VALUE OF 8 AND THE THICKNESS OF DUCTWORK SHALL BE INCREASED TO COMPLY.

B. CONCEALED DUCT INSULATION - UNLESS NOTED OTHERWISE ALL INSULATED DUCTWORK SHALL HAVE EXTERNALLY INSULATION. EXTERNAL DUCT INSULATION SHALL BE GLASS FIBER BLANKET-TYPE INSULATION OF NOT LESS THAN 1 POUND PER CUBIC FOOT DENSITY WITH A FACTORY APPLIED FLAME-RETARDANT VAPOR BARRIER FACING. THE FACING SHALL CONSIST OF A LAYER OF ALUMINUM FOIL, RE-INFORCED LAYER OF GLASS FIBERS, AND A LAYER OF KRAFT PAPER ALL BONDED TOGETHER WITH FIRE-RETARDANT AND ADHESIVE OR A MINIMUM DENSITY OF SIX (6) POUNDS PER CUBIC FOOT OF RIGID INSULATION BOARD WITH ALL SERVICE JACKET (ASJ) SECURED WITH MECHANICAL FASTENERS TRIMMED FLUSH WITH THE INSULATION. INSULATION AND ADHESIVES SHALL ALL BE RATED IN ACCORDANCE WITH UL 181A OR 181B. BLANKET INSULATION SHALL BE EQUAL TO CERTAINTEED STANDARD DUCT INSULATION TYPE IV BLANKET, TWO (2") THICK WRAP. FOSTER 30-30 MASTIC WITH FIBERGLASS MESH AT ALL JOINTS AND SEAMS. TAPE IS NOT ACCEPTABLE.

C. RETURN SOUND BOOTS ONLY - INTERNAL DUCT INSULATION SHALL BE 1" THICK, 0.75 POUND PER CUBIC FOOT DENSITY SECURED WITH ADHESIVE AND PINS.

D. DUCTWORK INSULATION APPLICATION SCHEDULE

SUPPLY AIR:	EXTERNALLY WRAPPED
RETURN AIR:	EXTERNALLY WRAPPED
OUTSIDE AIR:	EXTERNALLY WRAPPED
RELIEF AIR:	EXTERNALLY WRAPPED

2.4 DUCTWORK PAINTING

A. INTERIOR DUCTWORK - PAINT THE VISIBLE INTERIOR SURFACES WITH ONE (1) COAT OF FLAT BLACK APPLIED OVER A COMPATIBLE GALVANIZED-STEEL PRIMER FOR THE METAL DUCTS THAT HAVE INTERIOR SURFACES VISIBLE THROUGH REGISTERS, GRILLES, OR OPEN ENDS OF DUCTWORK.

B. EXPOSED TO VIEW INTERIOR DUCTWORK - EXPOSED TO VIEW DUCTWORK SHALL BE PROVIDED WITH A "PAINT-GRIP" FINISH. THE CONTRACTOR SHALL APPLY A MINIMUM OF TWO (2) COATS OF PAINT ON TOP OF THE "PAINT-GRIP" FINISH. THE COLOR OF THE EXPOSED TO VIEW NEW DUCTWORK THAT IS LOCATED INDOORS SHALL MATCH THE EXISTING EXPOSED TO VIEW DUCTWORK WITHIN THE SPACE UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL ALSO VERIFY THE COLOR WITH THE ARCHITECT BEFORE APPLYING PAINT. THE SEALANT USED FOR EXPOSED TO VIEW DUCTWORK JOINTS SHALL BE CLEAR SEALANT.

2.5 PIPING

A. CONDENSATE DRAIN PIPING - TYPE "L" HARD DRAWN COPPER TUBING WITH SOLDER JOINTS.

B. REFRIGERANT PIPING - TYPE "L" HARD DRAWN "ACR" TUBING THAT HAS BEEN CLEANED AND CAPPED FOR REFRIGERATION SERVICE.

2.6 PIPING INSULATION

A. AVAILABLE MANUFACTURERS: ARMACELL, AEROFLEX, RUBATEX, OR EQUAL.

B. INSULATE ALL CONDENSATE DRAIN PIPING, REFRIGERANT PIPING, CHILLED WATER, AND HEATING HOT WATER WITH "AP ARMAFLEX" OR RUBATEX R-180-FS 25/50 RATED FLEXIBLE ELASTOMERIC PIPE INSULATION. PROVIDE PROTECTION, BLOCKING, AND SHIELDS AT EACH HANGER. PIPE ELBOWS & FITTINGS SHALL BE INSULATED AND COVERED WITH ZESTON 2000 25/50 FIRE/SMOKE RATED PVC JACKETS.

C. PIPE INSULATION THICKNESS SCHEDULE (INCREASE THICKNESS BY 1/2" WHEN EXPOSED TO FREEZING CONDITIONS)

OPERATING TEMP °F	INSULATION THICKNESS	PIPE DIAMETER
40-60	1"	LESS THAN 1-1/2"
40-60	1"	1-1/2" AND LARGER
105-140	1"	LESS THAN 1-1/2"
105-140	2"	1-1/2" AND LARGER
141-200	2"	LESS THAN 1-1/2"
141-200	2"	1-1/2" AND LARGER

D. ALL DRAIN PIPING RECEIVING CHILLED DRAINAGE SHALL BE INSULATED WITH 1" THICKNESS FLEXIBLE ELASTOMERIC PIPE INSULATION SPECIFIED ABOVE.

E. EXTERIOR EXPOSED INSULATED PIPING - PROVIDE OUTER ALUMINUM JACKET AND WRAP COMPLETELY AROUND. PROPOSED ALTERNATE JACKETING SYSTEMS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW FOR COMPLIANCE.

2.7 EQUIPMENT LABELING

A. ALL MECHANICAL EQUIPMENT SHALL BE IDENTIFIED BY NAMEPLATES PERMANENTLY ATTACHED TO THE EQUIPMENT. NAMEPLATES SHALL BE BLACK SURFACE WITH WHITE ENGRAVED LETTERS. NAMEPLATES SHALL BE A MINIMUM OF 3-INCH LONG BY 1-INCH WIDE WITH WHITE LETTERS A MINIMUM OF 1/4-INCH HIGH.

B. IF THE MECHANICAL EQUIPMENT IS LOCATED ABOVE A LAY-IN CEILING, THEN THE CONTRACTOR SHALL PERMANENTLY ATTACH A NAMEPLATE TO THE GRID UNDER THE EQUIPMENT. THE NAMEPLATE ATTACHED TO THE GRID SHALL WHITE SURFACE WITH BLACK LETTERS. NAMEPLATES SHALL BE A MINIMUM OF 3-INCH LONG BY 1-INCH WIDE WITH BLACK LETTERS A MINIMUM OF 1/4-INCH HIGH.

C. IF THE MECHANICAL EQUIPMENT IS LOCATED ABOVE AN ACCESS PANEL, THEN THE CONTRACTOR SHALL PERMANENTLY ATTACH A NAMEPLATE TO THE ACCESS PANEL UNDER THE EQUIPMENT. THE NAMEPLATE ATTACHED TO THE ACCESS PANEL SHALL BE WHITE SURFACE WITH BLACK LETTERS. NAMEPLATES SHALL BE A MINIMUM OF 3-INCH LONG BY 1-INCH WIDE WITH BLACK LETTERS A MINIMUM OF 1/4-INCH HIGH.

2.8 TESTING, ADJUSTING, AND BALANCING

A. THE CONTRACTOR SHALL PROVIDE FULL TESTING, ADJUSTING, AND BALANCING (TAB) SERVICE FROM AN IMPARTIAL NEBB CERTIFIED FIRM. TAB FIRM SHALL PROVIDE AN ELECTRONIC, TYPED, CERTIFIED REPORT TO THE ENGINEER OF RECORD FOR REVIEW.

B. UPON COMPLETION OF HVAC WORK, AND PRIOR TO TENANT OCCUPANCY, ALL AIR & WATER SYSTEMS SHALL BE ADJUSTED AND BALANCED TO WITHIN +/- 10% OF THE INDICATED DESIGN AIR QUANTITIES AND IN ACCORDANCE WITH ALL NEBB OR AABC RECOMMENDATIONS AND PROCEDURES.

C. THE HVAC TAB CONTRACTOR SHALL HAVE CURRENT NEBB OR AABC CERTIFICATION.

D. ALL INSTRUMENTS USED SHALL HAVE CURRENT CALIBRATED CERTIFICATION WITHIN 90 DAYS OF SCHEDULED CONSTRUCTION COMPLETION.

E. TABULATE ALL TEST DATA ON NEBB OR AABC FORMS.

F. IF PROBLEMS ARE ENCOUNTERED DURING BALANCING, THE HVAC TAB CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND IF NECESSARY, THE ENGINEER OF RECORD BEFORE COMPLETION OF THE TESTING & BALANCING.

G. COORDINATE WITH THE TEMPERATURE CONTROLS CONTRACTOR OR OWNER'S BUILDING ENGINEER AS NECESSARY TO UPDATE/PROGRAM ALL REQUIRED SYSTEM STATIC PRESSURE SET-POINTS AND OTHER BASE BUILDING TEMPERATURE CONTROLS SYSTEM CONTROL POINTS AS DETERMINED THROUGH THE TEST-ADJUST-BALANCE.

H. THE CONTRACTOR SHALL ADJUST ALL VAV TERMINAL UNITS AND FAN-POWERED UNITS MINIMUM AND MAXIMUM SET-POINTS.

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TBPE F-18874
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ROUND ROCK, TX 78681

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ISSUE FOR CONSTRUCTION

REVISIONS

Δ	DATE	DESCRIPTION

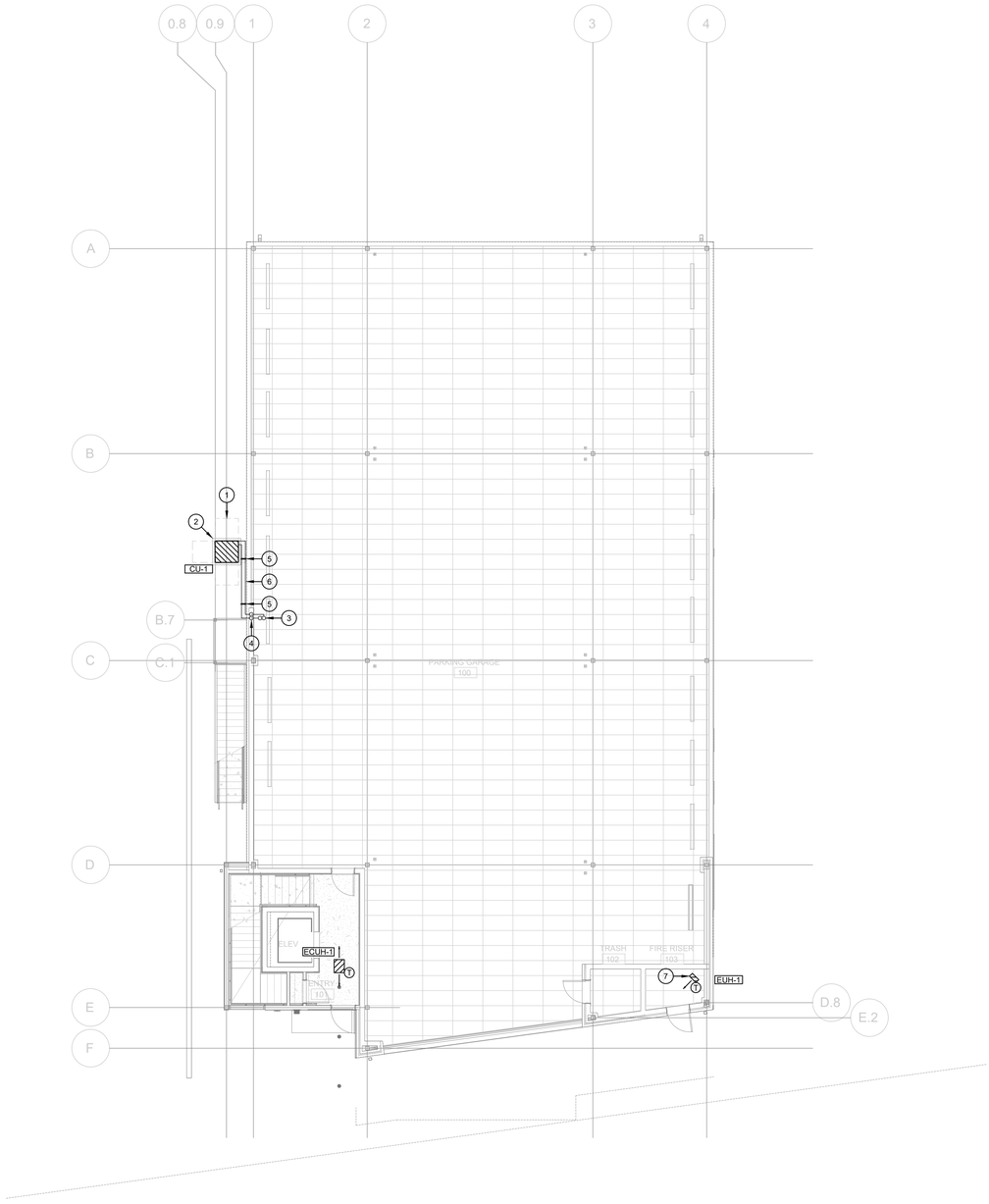
PROJ. NO.	ORIG. ISSUE
21066	2022.09.27

CURRENT: 2022-09-27

STATE OF TEXAS
M. CHAO BLACK
93681
LICENSED
PROFESSIONAL ENGINEER
9/26/2022

SHEET NAME:
MECHANICAL SPECIFICATIONS

SHEET NO:
M0.002



GENERAL NOTES

A. REFER TO MECHANICAL COVER SHEET FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL INFORMATION.

B. REFER TO SPECIFICATIONS, DETAILS, AND SCHEDULES FOR ADDITIONAL INFORMATION.

C. REFER TO DRAWING M2.002 FOR CONTINUATION OF MECHANICAL WORK ABOVE.

D. CONTRACTOR SHALL PROVIDE CHROME PLATED PIPE ESCUTCHEONS AT ALL WALL AND CEILING PENETRATIONS.

E. CONTRACTOR SHALL COORDINATE ROUTING REFRIGERANT PIPING AND CONDENSATE PIPING WITH ALL OTHER TRADES. CONTRACTOR SHALL COORDINATE ROUTING PIPING TO ACCOMMODATE EQUIPMENT SERVICE CLEARANCES AND MINIMUM SLOPE REQUIREMENTS FOR CONDENSATE PIPING.

F. ALL DUCTWORK ON THE POSITIVE PRESSURE SIDE OF THE FAN SHALL BE 26 GA. MIN. GALVANIZED RIGID ROUND DUCT WITH SPIRAL SEAM DUCT CONSTRUCTION, DOUBLE WALL, AND SEALED. PROVIDE "HARDCAST" SEALANT AT ALL JOINTS.

KEYED DRAWING NOTES "—①"

1. LIGHT DASHED LINES INDICATE REQUIRED SERVICE CLEARANCE.
2. PROVIDE CONCRETE EQUIPMENT PAD.
3. ROUTE THE REFRIGERANT PIPING UP TO LEVEL 2.
4. ROUTE THE REFRIGERANT PIPING DOWN IN THE EXTERIOR WALL TO 12" AFF. CONTINUE ROUTING THE REFRIGERANT PIPING OUT THROUGH THE WALL TO THE INDICATED OUTDOOR UNIT.
5. REFER TO DETAIL FOR PIPING SUPPORTS LOCATED OUTSIDE.
6. REFER TO MECHANICAL SHEET SPECIFICATIONS FOR PIPING MATERIAL, PIPING INSULATION REQUIREMENTS, AND ALUMINUM JACKETING FOR EXTERIOR EXPOSED INSULATED PIPING.
7. CONTRACTOR SHALL COORDINATE ELECTRIC UNIT HEATER PLACEMENT WITH THE FIRE RISER. REFER TO THE FIRE PROTECTION DRAWINGS FOR FIRE PROTECTION PIPING LOCATION.

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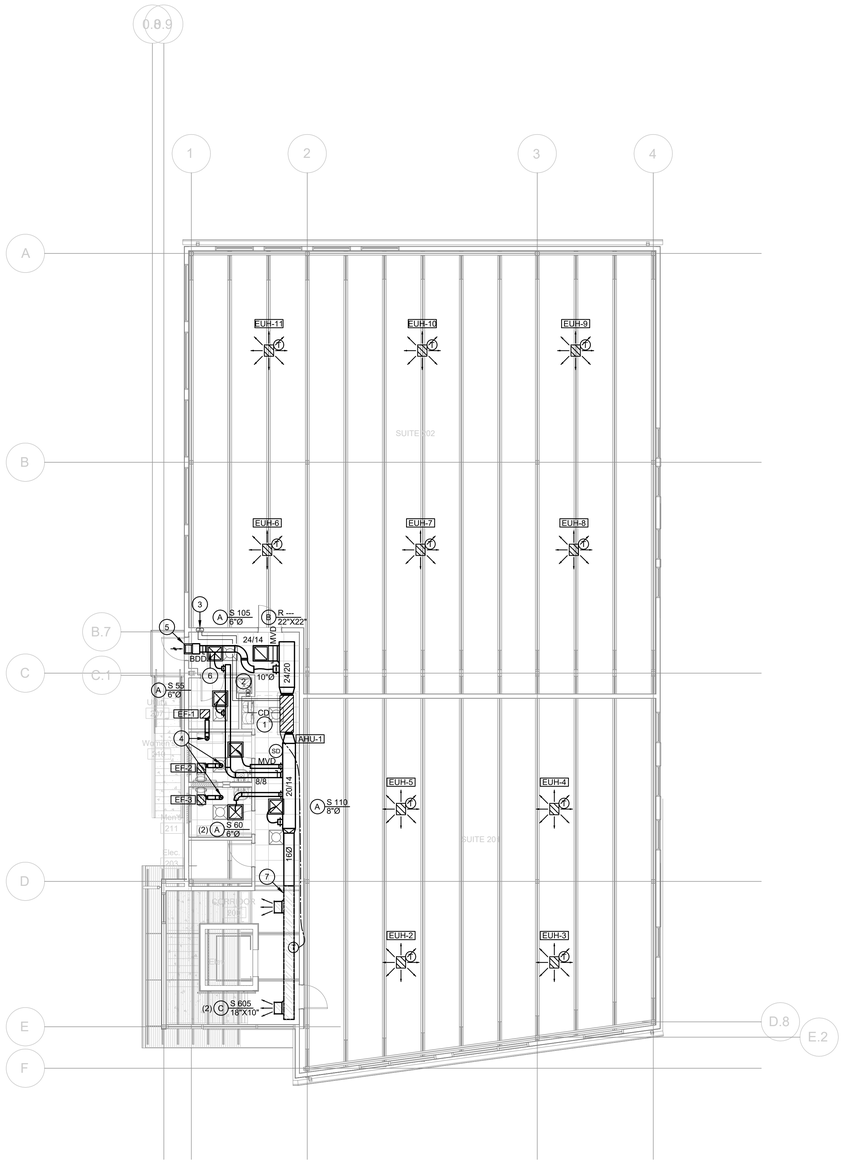
SHEET NAME:
MECHANICAL PLAN - LEVEL 1

SHEET NO:
M2.001

NORTH

1 MECHANICAL PLAN - LEVEL 1
SCALE: ⅛" = 1'-0"



NORTH

1 MECHANICAL PLAN - LEVEL 2

SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO MECHANICAL COVER SHEET FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL INFORMATION.

B. REFER TO SPECIFICATIONS, DETAILS, AND SCHEDULES FOR ADDITIONAL INFORMATION.

C. REFER TO DRAWING M2.001 FOR CONTINUATION OF MECHANICAL WORK ABOVE.

D. CONTRACTOR SHALL PROVIDE CHROME PLATED PIPE ESCUTCHEONS AT ALL WALL AND CEILING PENETRATIONS.

E. CONTRACTOR SHALL COORDINATE ROUTING REFRIGERANT PIPING AND CONDENSATE PIPING WITH ALL OTHER TRADES. CONTRACTOR SHALL COORDINATE ROUTING PIPING TO ACCOMMODATE EQUIPMENT SERVICE CLEARANCES AND MINIMUM SLOPE REQUIREMENTS FOR CONDENSATE PIPING.

F. ALL DUCTWORK ON THE POSITIVE PRESSURE SIDE OF THE FAN SHALL BE 26 GA. MIN. GALVANIZED RIGID ROUND DUCT WITH SPIRAL SEAM DUCT CONSTRUCTION, DOUBLE WALL, AND SEALED. PROVIDE "HARDCAST" SEALANT AT ALL JOINTS.

KEYED DRAWING NOTES "→①"

1. LIGHT DASHED LINES INDICATE REQUIRED SERVICE CLEARANCE.
2. ROUTE THE 3/4" CONDENSATE PIPING AS INDICATED FROM THE AHU TO THE INDICATED MOP SINK. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION OF THE MOP SINK. SLOPE THE CONDENSATE PIPING DOWN A MINIMUM OF 1/8" PER FOOT TO THE DISCHARGE LOCATION. ROUTE CD PIPING DOWN IN THE WALL AND PROVIDE A MINIMUM 1" AIR GAP ABOVE THE FLOOD RIM OF THE INDIRECT WASTE RECEPTOR. FIELD VERIFY AND COORDINATE THE EXACT ROUTING OF THE CONDENSATE PIPING WITH ALL TRADES.
3. ROUTE THE REFRIGERANT PIPING DOWN TO LEVEL 1.
4. 6" EXHAUST DUCTWORK UP TO EXHAUST ROOF CAP ON ROOF.
5. REFER TO THE ARCHITECT FOR INTAKE LOUVER SPECIFICATIONS, FINISH, OVERALL SIZE, AND EXACT LOCATION. THE BOTTOM OF THE OUTSIDE AIR INTAKE LOUVER SHALL BE MOUNTED A MINIMUM OF 10'-0" ABOVE GRADE AND A MINIMUM OF 10'-0" AWAY FROM EXHAUST OUTLETS AND PLUMBING VENTS. THE LOUVER SHALL HAVE DRAINABLE GUTTERS TO THE BUILDING EXTERIOR. LOUVER SHALL BE PROVIDED WITH 0.75" X 0.75" FLAT EXPANDED ALUMINUM INTERNAL BIRDSCREEN. THE LOUVER SHALL HAVE A MINIMUM 0.5 SF OF FREE AREA AND THE MAXIMUM VELOCITY SHALL BE LESS THAN 500 FPM. PROVIDE A FULL SIZE EXTERNALLY INSULATED SHEET METAL PLENUM WITH A BACKDRAFT DAMPER ON THE BACK SIDE OF THE INTAKE LOUVER. THE BACKDRAFT DAMPER SHALL BE NORMALLY CLOSED AND COUNTER WEIGHT BALANCED TO OPEN AT 0.05" W.G. CONTRACTOR SHALL PITCH THE BOTTOM OF THE FULL SIZE SHEET METAL DUCT SO THAT WATER WILL DRAIN BACK THROUGH THE LOUVER TO THE EXTERIOR. THE CONTRACTOR SHALL BALANCE THE OUTSIDE AIR TO EACH OF THE AHU PER THE SCHEDULED AMOUNTS INDICATED ON THE SPLIT SYSTEM SCHEDULE.
6. OUTSIDE AIR DUCTWORK BETWEEN THE INTAKE LOUVER SHALL BE EXTERNALLY INSULATED WITH A MINIMUM R-8 INSULATION.
7. DOUBLE WALL INSULATED SUPPLY DUCT.

ROOF WARRANTY

THE ROOF SYSTEM INSTALLED IN THIS BUILDING HAS A WARRANTY. THE CONTRACTOR SHALL COMPLY WITH ALL WARRANTY GUIDELINES WHILE INSTALLING EQUIPMENT ON THE ROOF. THIS INCLUDES THE INSTALLATION OF ROOF PENETRATIONS, EQUIPMENT CURBS, VTR'S AND PIPE SUPPORTS.

CONTACT BUILDING MANAGER FOR ROOF WARRANTY INFORMATION AND FOR EXACT SPECIFICATIONS FOR ANY WORK TO BE PERFORMED ON THE ROOF OF THIS BUILDING.

UNDER NO CIRCUMSTANCES SHALL THE GENERAL CONTRACTOR OR ANY SUB CONTRACTORS BE ALLOWED TO MAKE ROOF PENETRATIONS. TO DO SO WOULD VOID THE EXISTING ROOF WARRANTY. ALL PENETRATIONS SHALL BE COORDINATED THROUGH THE BUILDING OWNER'S PREFERRED ROOFING CONTRACTOR.

THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY TO ENSURE THAT THE ROOF WARRANTY IS NOT VOIDED DUE TO CONSTRUCTION ASSOCIATED WITH THIS PROJECT.

B2AEP
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3510 EAGLE WAY
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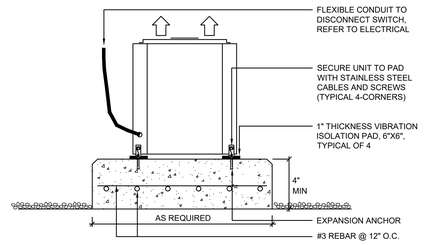
SHEET NAME:
MECHANICAL PLAN - LEVEL 2

SHEET NO:
M2.002



NOTES:

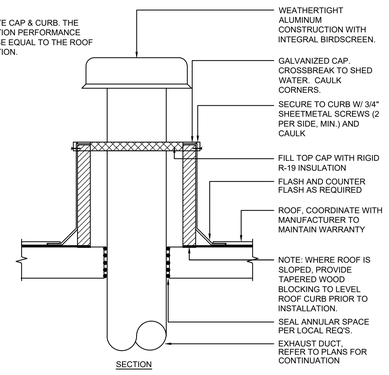
1. DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED AND SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
2. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR THE EQUIPMENT.
3. CONCRETE EQUIPMENT PAD SHALL BE A MINIMUM 4" LARGER IN EACH DIRECTION OF THE FOOT PRINT OF THE EQUIPMENT.

9 PAD MOUNTED OUTDOOR UNIT INSTALLATION

SCALE: NONE

NOTES:

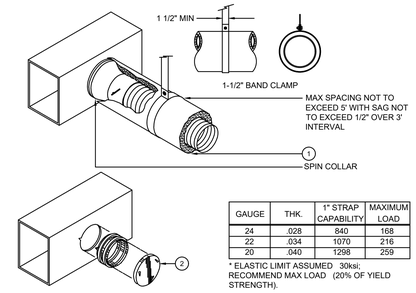
1. INSULATE CAP & CURB. THE INSULATION PERFORMANCE SHALL BE EQUAL TO THE ROOF INSULATION.



SECTION

6 EXHAUST ROOF CAP CURB OUTLET

SCALE: NONE



GAUGE	THK.	1" STRAP CAPABILITY	MAXIMUM LOAD
24	.028	840	168
22	.034	1070	216
20	.040	1298	259

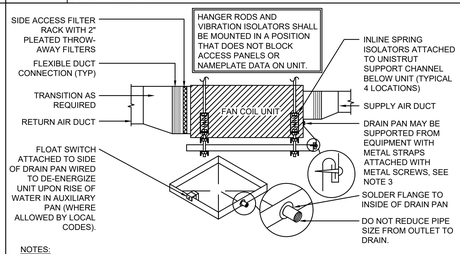
* ELASTIC LIMIT ASSUMED 30ksi; RECOMMEND MAX LOAD (20% OF YIELD STRENGTH).

NOTES:

1. FLEX DUCT WITH EXTERNAL INSULATION AND VAPOR BARRIER JACKETING.
2. "INSPECTOR SERIES" SPIN DOOR.

3 MISCELLANEOUS DUCT

SCALE: NONE

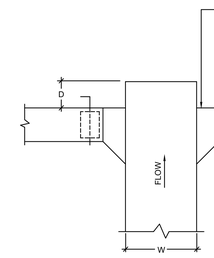


NOTES:

1. FABRICATE DRAIN PAN FROM 24 GA GALVANIZED SHEET METAL. CROSS BREAK THE BOTTOM OF THE SHEET METAL DRAIN PAN TO PROVIDE SLOPED DRAINAGE TO OUTLET. SOLDER OR OTHERWISE SEAL ALL JOINTS TO MAKE DRAIN PAN LEAK-TIGHT. AUXILIARY DRAIN PAN SHALL BE 3" LARGER IN EACH DIRECTION AND A MINIMUM 2" HIGH.
2. SUSPEND DRAIN PAN WITH UNI-STRUT AND EQUIPMENT SUPPORT RODS WHEN POSSIBLE. OTHERWISE ATTACH WITH STRAPS TO EQUIPMENT. REFER TO ILLUSTRATION.
3. ROUTE DRAIN TO CODE APPROVED CONSPICUOUS LOCATION AND PIPE SEPARATELY FROM THE CONDENSATE DRAIN PIPE WHERE ALLOWED BY LOCAL CODES. PROVIDE HOSE END DRAIN VALVE AT THE DRAIN OUTLET FOR MANUAL DRAINING.
4. MAINTAIN ALL SERVICE CLEARANCES.

8 SUSPENDED FAN COIL UNIT INSTALLATION

SCALE: NONE

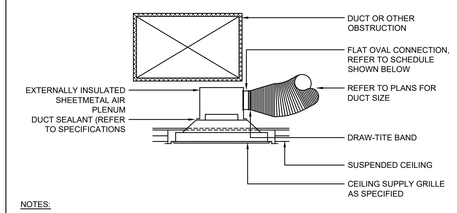


NOTES:

1. AIR CUSHION REQUIRED AT END OF RUN FOR BRANCH TAKE-OFFS ILLUSTRATED.
2. CUSHION DEPTH, D, EQUAL TO 1/2 THE GREATER OF H OR W, SUBJECT TO 6" MINIMUM, WHERE H = HEIGHT OF DUCT.

5 TYPICAL DUCTWORK TEE

SCALE: NONE



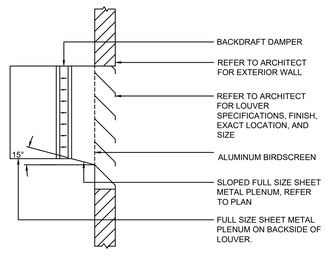
NOTES:

1. THIS DETAIL SHALL ONLY APPLY TO SQUARE CEILING GRILLES THAT ARE LOCATED BELOW DUCTWORK OR OTHER OBSTRUCTIONS WHERE CLEARANCES ARE MINIMAL.
2. THE SIZE OF THE SUPPLY AIR PLENUM SHALL BE A MINIMUM OF 1-INCHES LARGER IN HEIGHT AND WIDTH THAN THE FLAT OVAL DUCTWORK CONNECTION.
3. THE FOLLOWING SCHEDULE SHALL BE USED FOR ROUND TO FLAT OVAL DUCTWORK SIZE EQUIVALENTS.

ROUND, INCHES:	FLAT OVAL, (H" X W")
6	3X11, 4X9, 5X8
8	4X15, 5X12, 6X11
10	6X15, 7X13, 8X11, 9X12
12	7X20, 8X17, 9X15, 10X13
14	9X20, 10X18, 11X17, 12X15

2 LIMITED SPACE FOR AIR DEVICE CONNECTION

SCALE: NONE

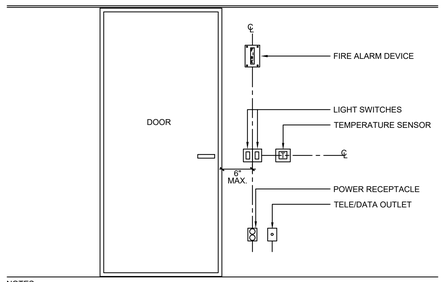


NOTES:

1. PROVIDE LOUVER WITH 0.75" X 0.75" FLAT EXPANDED INTERNAL ALUMINUM BIRDSCREEN.
2. FULL SIZE SHEET METAL PLENUM ON BACKSIDE OF LOUVER SHALL BE EXTERNALLY INSULATED SIMILAR TO SUPPLY DUCTWORK AND SHALL HAVE A MINIMUM R-VALUE OF 8.
3. REFER TO THE MECHANICAL PLAN FOR CONTINUATION OF DUCTWORK CONNECTED TO PLENUM.

10 LOUVER WITH SHEET METAL PLENUM

SCALE: NONE

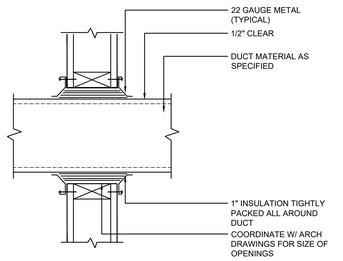


NOTES:

1. COORDINATE FINAL LOCATION OF ALL DEVICES WITH THE ARCHITECT AND THE ENGINEER PRIOR TO INSTALLATION. WHERE DEVICES ARE SHOW IN APPROXIMATELY THE SAME LOCATION ON THE DRAWINGS, THEY SHALL BE ALIGNED AS INDICATED. IF THERE IS NOT SUFFICIENT WALL SPACE TO ALIGN THE TEMPERATURE SENSOR HORIZONTALLY WITH THE LIGHT SWITCHES, THEN THEY SHALL BE LOCATED AT AN ALTERNATE LOCATION APPROVED BY THE ARCHITECT AND ENGINEERS. TEMPERATURE SENSOR SHALL NOT BE INSTALLED WITHIN 12" NEXT TO DIMMER SWITCHES.

7 DEVICE COORDINATION

SCALE: NONE

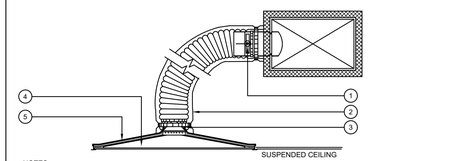


NOTES:

1. DRYWALL, METAL STUDS OR ANY OTHER RIGID MATERIAL MUST NOT TOUCH DUCT
2. SUPPORT DUCT FROM HANGERS FOR ACOUSTICAL CONTROL

4 NON-FIRE-RATED SOUND WALL DUCT PENETRATION

SCALE: NONE



NOTES:

1. ALL SPIN-IN TAPS IN LOW PRESSURE DUCTWORK SHALL BE MADE WITH A DAMPER EXTRACTOR SPIN-IN COLLAR WITH A 2" STAND-OFF LOCKING QUADRANT. SPIN-INS SHALL BE INSTALLED WITH THE DAMPER AXIS PARALLEL TO THE AIR FLOW.
2. PRE-INSULATED FLEX DUCT AS REQUIRED. INSTALLED, PERMANENTLY SEALED AND SUPPORTED TO PREVENT KINKING AND SHARP TURNS.
3. ROUND TO SQUARE ADAPTER AS REQUIRED.
4. LAY-IN-TYPE CEILING DIFFUSER AS SPECIFIED.
5. PROVIDE FOIL BACKED FIBERGLASS INSULATION ON ALL NEW AND EXISTING DIFFUSERS TO COMPLETELY COVER DIFFUSER CONE. SEAL FOIL TO CONE WITH FIBER REINFORCED FOIL BACKED TAPE. REFER TO MECHANICAL SPECIFICATIONS FOR MINIMUM R-VALUE OF INSTALLED INSULATION.
6. T-BAR ARRANGEMENT PER SCHEDULE WITH GRID FURNISHED AND INSTALLED BY OTHERS.
7. 2-90° TURNS ALLOWED.
8. SUPPORT SPACING AS SPECIFIED.
9. PROVIDE A SEPARATE DRAW BAND ON EACH END OF FLEX DUCT.

1 LAY-IN CEILING AIR DEVICE

SCALE: NONE

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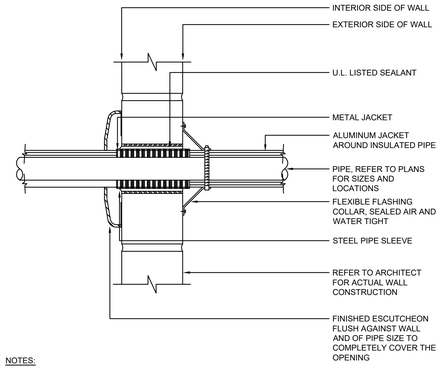
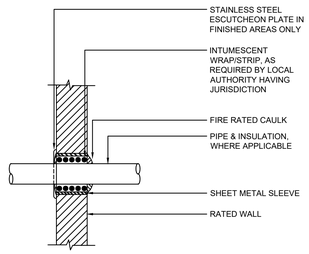


NOTES:

1. CENTER CENTER PIPE IN SLEEVE.

9 ABOVE GRADE EXTERIOR WALL PIPE PENETRATION

SCALE: NONE

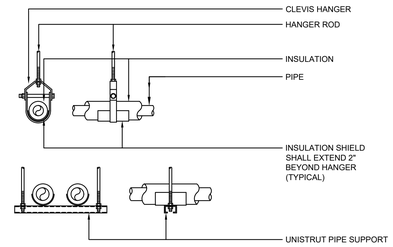


NOTES:

1. TYPICAL FOR NON-INSULATED PIPE AND CONDUIT.
2. TYPICAL FOR MASONRY OR CONCRETE WALLS.

6 FIRE-RATED PIPE PENETRATION

SCALE: NONE

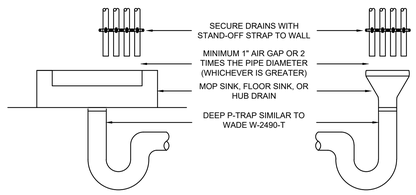


NOTES:

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.

3 TYPICAL PIPE HANGERS

SCALE: NONE

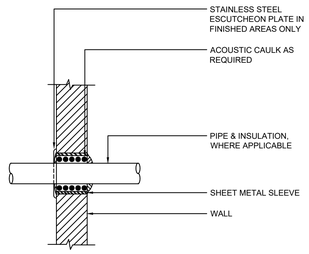


NOTES:

1. REFER TO PLANS FOR CONDENSATE DRAIN PIPE SIZES AND CONTINUATION.

8 CONDENSATE DRAIN

SCALE: NONE

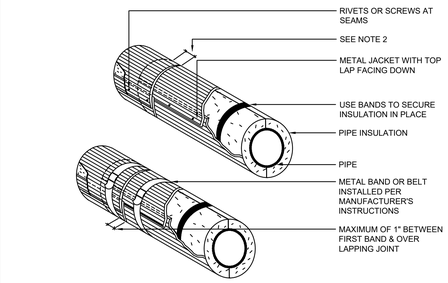


NOTES:

1. TYPICAL FOR NON-INSULATED PIPE AND CONDUIT.
2. TYPICAL FOR MASONRY OR CONCRETE WALLS.

5 NON-FIRE-RATED PIPE PENETRATION

SCALE: NONE



NOTES:

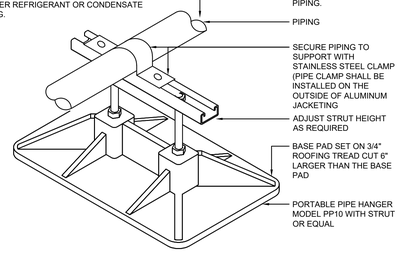
1. LONGITUDINAL JACKETING SEAMS POSITIONED AT 3 OR 9 O'CLOCK ONLY W/TOP LAP FACING DOWN FOR WEATHER PROOFING.
2. OVERLAP JACKETING A MINIMUM OF 1-1/2".

2 ALUMINUM JACKETING FOR INSULATED PIPE

SCALE: NONE

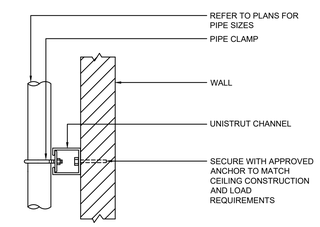
MINIMUM PIPE SUPPORT SPACING		
TYPE	PIPE SIZE	MAXIMUM HORIZONTAL SPACING
STEEL*	≤ 1-1/4"	6'-0"
STEEL*	> 1-1/2"	10'-0"

*NOTE: USE SAME MAXIMUM SPACING FOR COPPER REFRIGERANT OR CONDENSATE PIPING.



7 TYPICAL PIPE SUPPORT

SCALE: NONE

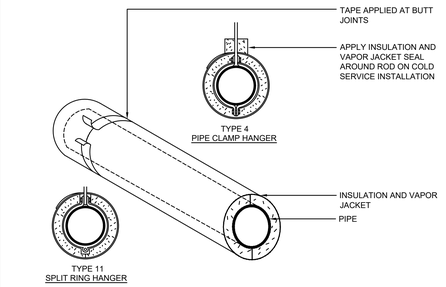


NOTES:

1. PROVIDE MINIMUM ANCHOR SUPPORT SPACING EVERY 6' VERTICALLY.
2. OVERSIZE CLAMP WHEN PIPING IS INSULATED.

4 VERTICAL PIPE SUPPORT

SCALE: NONE



NOTE:

REFER TO SPECIFICATION FOR MINIMUM HEIGHT OF INSULATION UP THE HANGER, OR PROVIDE THE HANGER ON THE OUTSIDE OF THE INSULATION ON THE PIPE.

1 PIPE INSULATION AND VAPOR BARRIER

SCALE: NONE

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STATE OF TEXAS
M. CHAD BLACK
93681
LICENSED
PROFESSIONAL ENGINEER
9/26/2022

SHEET NAME:
MECHANICAL DETAILS

SHEET NO:
M5.001

SPLIT SYSTEM AIR-HANDLING UNIT SCHEDULE

MARK	SERVES	SUPPLY CFM	OUTSIDE AIRFLOW CFM	EXT. SP. DROP IN.	COOLING CAPACITY DATA				ELECTRIC HEAT DATA			EVAPORATOR ELECTRICAL DATA				BASIS OF DESIGN MANUFACTURER & MODEL	WEIGHT LBS.
					EDB °F	EWB °F	NET SENSIBLE MBH	NET TOTAL MBH	HEATING CAPACITY KW	STAGES	V/PH	HP	V/PH	MCA	MOP		
AHU-1	SEE PLANS	1600	210	0.5	77.1	63.9	34.5	38.1	(39.0 MBH)	1	208/3	3/4	208/3	-	-	TRANE TEM6A0C48	174

NOTES:

1. THE AIR-HANDLING UNITS SHALL BE PROVIDED WITH THE FOLLOWING:
   - VERTICAL CONFIGURATION
   - FLEXIBLE INLET & OUTLET CONNECTIONS
   - VIBRATION ISOLATION KIT
   - SINGLE POINT ELECTRICAL CONNECTION AIR-HANDLING UNIT
   - ECM FAN MOTOR
   - FOIL FACE INSULATION
   - I&Q SLOPING DRAIN PAN
   - FREEZE STAT
   - 2" THICK PLEATED MEDIA (MERV 8) FILTERS IN A FILTER BOX BASE WITH HINGED DOOR
   - AUXILIARY DRAIN PAN WITH FLOAT SWITCH WIRED TO DE-ENERGIZE UNIT UPON RISE OF WATER IN PAN
2. 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTOMATIC CHANGE-OVER, HONEYWELL VISION PRO-8000 ELECTRONIC PROGRAMMABLE THERMOSTAT OR EQUAL. THERMOSTAT SHALL HAVE A LARGE BACKLIT TOUCH SCREEN, BATTERY BACKUP TO RETAIN PROGRAMMING DURING POWER OUTAGE. THERMOSTAT SHALL AUTOMATICALLY RESET TIME SCHEDULES FOR DAYLIGHT SAVINGS TIME. SUPPORT FOR MULTIPLE STAGE HEATING/COOLING (AS REQUIRED), ADJUSTABLE PARTIAL OR FULL KEYPAD LOCKOUT, 5-YEAR WARRANTY.
3. THE DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED AND SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
4. SEQUENCE OF OPERATION:

   OCCUPIED MODE
   EACH T-STAT SHALL CONTROL THE RESPECTIVE UNIT TO MAINTAIN THE HEATING/COOLING SET POINTS (INITIALLY 72°F HEATING / 75°F COOLING). THE MOTORIZED OUTSIDE AIR DAMPER SHALL BE POWERED OPEN.

   UN-OCCUPIED MODE
   EACH T-STAT SHALL CONTROL THE RESPECTIVE UNIT TO MAINTAIN THE HEATING/COOLING SET BACK POINTS (55°F HEATING / 85°F COOLING). THE MOTORIZED OUTSIDE AIR DAMPER SHALL BE CLOSED.

SPLIT SYSTEM CONDENSING UNIT SCHEDULE

MARK	SERVES	OUTDOOR AMBIENT TEMP °F	ELECTRICAL DATA			MINIMUM (S)EER	BASIS OF DESIGN MANUFACTURER & MODEL	WEIGHT LBS.
			V/PH	MCA	MOP			
CU-1	AHU-1	105	208/3	18	30	(14.0)	TRANE 4TTA4048	189

NOTES:

1. THE CONDENSING UNITS SHALL BE PROVIDED WITH THE FOLLOWING:
   - ANTI-SHORT CYCLE RELAY
   - HIGH PRESSURE AND LOW PRESSURE PROTECTION
   - FILTER DRYER
   - LOW-AMBIENT CONTROLS
   - EVAPORATOR DEFROST CONTROL AS REQUIRED TO ALLOW OPERATION DOWN TO 0°F AMBIENT
   - HARD START KIT
   - TIMED-OFF CONTROL
   - HAIL GUARDS
   - VIBRATION ISOLATION
   - 5-YR COMPRESSOR WARRANTY
2. THE CONTRACTOR SHALL DETERMINE THE EXACT LENGTHS OF REFRIGERANT LINES REQUIRED AND SUBMIT TO THE MANUFACTURER FOR SIZING OF THE REFRIGERANT PIPING. THE CONTRACTOR SHALL PROVIDE ADDITIONAL COMPONENTS AS RECOMMENDED BY THE MANUFACTURER FOR PROPER OPERATION OF THE UNITS. THE CONTRACTOR SHALL INSTALL THE REFRIGERANT PIPING PER THE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
3. THE DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED AND SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

AIR DEVICE SCHEDULE

MARK	SERVICE	TYPE	FINISH	NECK SIZE	MODULE SIZE	FACE SIZE	BASIS OF DESIGN
A	SUPPLY	SQUARE PLAQUE	OFF-WHITE	SEE PLANS	-	24"X24"	TITUS, OMNI-AA, LAY-IN
B	RTN/TRANSFER	EGGCRATE	OFF-WHITE	SEE PLANS	-	NECK +2"	TITUS, 50F, LAY-IN
C	SUPPLY	SIDEWALL	OFF-WHITE	SEE PLANS	-	NECK +2"	TITUS, 272FS, SURFACE MOUNT

NOTES:

1. DUCT RUN-OUTS TO AIR DEVICES SHALL BE EQUAL TO THE SIZE INDICATED IN THE SCHEDULE ABOVE, UNLESS NOTED OTHERWISE ON THE PLANS. PROVIDE A TRANSITION TO THE NECK SIZE DOWNSTREAM OF TAP AND BRANCH DUCTWORK.
2. FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5 FEET MAXIMUM PER DUCT RUN-OUT. PROVIDE RIGID ROUND EXTERNALLY INSULATED DUCTWORK FOR RUN-OUTS THAT EXCEED 5 FEET OF TOTAL LENGTH. SUPPORT FLEXIBLE DUCTWORK WITH GALVANIZED STRAP HANGERS SPACED A MAXIMUM OF 3 FEET ON CENTER.
3. CONTRACTOR SHALL COORDINATE FINISH COLOR WITH THE ARCHITECT PRIOR TO ORDERING. SUBMIT COLOR CHART TO ARCHITECT.
4. CONTRACTOR SHALL PROVIDE INSULATED BACKPAN ON ALL SUPPLY AIR DEVICES. INSULATION SHALL MATCH THE DUCT SERVICE TYPE. REFER TO THE MECHANICAL SPECIFICATIONS FOR MINIMUM R-VALUE.
5. CONTRACTOR SHALL VERIFY CEILING TYPE CONSTRUCTION WITH THE ARCHITECT AND PROVIDE FRAMING AS REQUIRED FOR ALL AIR DEVICES.
6. CONTRACTOR SHALL PROVIDE AUXILIARY TRIM FRAME FOR ALL AIR DEVICES INSTALLED IN NON-LAY-IN CEILINGS.
7. REFER TO DETAIL FOR AIR DEVICES THAT REQUIRE A FULL SIZE SHEET METAL PLENUM.
8. CONTRACTOR SHALL COORDINATE EXACT MOUNTING HEIGHT AND LOCATION OF SIDEWALL GRILLES AND DOOR GRILLES WITH THE ARCHITECT.

FAN SCHEDULE

MARK	LOCATION	SERVICE	TOTAL CFM	TOTAL S.P. IN. WG.	FRPM	FAN TYPE ARRANGEMENT	ELECTRICAL DATA				BASIS OF DESIGN MANUFACTURER & MODEL
							FLA	HP (W)	VOLTS	PH	
EF-1	SEE PLANS	JANITOR	70	0.33	718	CENTRIFUGAL	1.15	(80)	120	1	GREENHECK SP-B110
EF-2	SEE PLANS	TOILET	70	0.33	718	CENTRIFUGAL	1.15	(80)	120	1	GREENHECK SP-B110
EF-3	SEE PLANS	TOILET	70	0.33	718	CENTRIFUGAL	1.15	(368)	120	1	GREENHECK SP-B110

NOTES:

1. EXHAUST FANS, SHALL BE PROVIDED WITH THE FOLLOWING (UNLESS NOTED OTHERWISE):
   - INTEGRAL BACKDRAFT DAMPER
   - MOTOR RATED FOR CONTINUOUS USE
   - MOTOR WITH THERMAL OVERLOAD
   - UL 507 LISTED
   - SPEED CONTROLLER
   - ALUMINUM ROOF CAP, CURB MOUNTED, PN: RCC-7, INTEGRAL ALUMINUM BIRDSCREEN, BUILT-IN CURB CAP
   - TIME DELAY SWITCH (EF-2 AND EF-3 ONLY)
   - VIBRATION ISOLATION KIT
   - STANDARD GRILLE
   - FLEXIBLE OUTLET CONNECTION
   - ALUMINUM ROOF CURB - GPIP-15-A12, CONTRACTOR SHALL CONFIRM ROOF PITCH WITH ARCHITECT PRIOR TO ORDERING
   - ROOF CURB INSULATION 1.5"
2. EXHAUST FAN, EF-1 SHALL OPERATE CONTINUOUSLY DURING THE OCCUPIED MODE.
3. EXHAUST FANS, EF-2 AND EF-3 SHALL OPERATE BY WALL TIME DELAY SWITCH.
4. THE DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED AND SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

ELECTRIC CEILING UNIT HEATER SCHEDULE

MARK	LOCATION	DISCHAGE	TOTAL CFM	DRIVE TYPE	ELECTRICAL DATA				BASIS OF DESIGN MANUFACTURER & MODEL
					KW	HP	V	PH	
ECUH-1	ENTRY 101	VERTICAL	175	DIRECT	3.0	-	208	1	MARKEL 3380 SERIES, HF3386D-RP

NOTES:

1. ELECTRIC CEILING UNIT HEATERS SHALL BE PROVIDED WITH THE FOLLOWING (UNLESS NOTED OTHERWISE):
   - UL LISTED
   - HEAVY GAUGE STEEL HOUSING
   - CEILING SUSPENDED
   - BAKED-ON POWDER COAT IN CEILING WHITE COLOR
   - WHITE POWDER COATED 18 GAUGE STEEL GRILL
   - HEATER SHALL HAVE A LOW SPEED MOTOR TO DRIVE A VANE AXIAL BLOWER FOR DOWNFLOW AIR
   - HEATING ELEMENT SHALL BE OF THE BLOCK FINNED TYPE WITH LARGE, PARALLEL STEEL FINS FOR QUICK HEAT TRANSFER
   - UNIT SHALL BE RECESS MOUNTED
   - UNIT SHALL BE PROVIDED STANDARD WITH A MANUAL RESET CAPILLARY TYPE LIMIT CONTROL
   - FACTORY INSTALLED TAMPER RESISTANT THERMOSTAT(HEATING SETPOINT SHALL BE 70°F)
2. THE DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED AND SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
3. INSTALL PER THE EQUIPMENT MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.

ELECTRIC UNIT HEATER SCHEDULE

MARK	LOCATION	AIRFLOW DISCHARGE DIRECTION	TOTAL CFM	DRIVE TYPE	ELECTRICAL DATA				BASIS OF DESIGN MANUFACTURER & MODEL
					KW	HP	V	PH	
EUH-1	FIRE RISER	HORIZONTAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-2	SUITE 201	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-3	SUITE 201	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-4	SUITE 201	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-5	SUITE 201	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-6	SUITE 202	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-7	SUITE 202	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-8	SUITE 202	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-9	SUITE 202	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-10	SUITE 202	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N
EUH-11	SUITE 202	VERTICAL	400	DIRECT	3.3	1/125	208	1	MARKEL TASKMASTER F1F5103N

NOTES:

1. ELECTRIC UNIT HEATERS SHALL BE PROVIDED WITH THE FOLLOWING (UNLESS NOTED OTHERWISE):
   - UL LISTED
   - HEAVY DUTY
   - SUSPENDED
   - FACTORY MOUNTING BRACKET - REFER TO HORIZONTAL/VERTICAL DISCHARGE AND PROVIDE APPROPRIATE BRACKET
   - DUST SHIELD
   - OSHA FAN GUARD
   - RADIAL DIFFUSER FOR VERTICAL DOWNWARD DISCHARGE
   - DIRECT DRIVE FAN MOTOR
   - MARKEL MODEL T5100 BUILT-IN T-STAT (SET TO MAINTAIN A MINIMUM TEMPERATURE OF 50°F)
   - CONTROL VOLTAGE 24V
   - 24V TRANSFORMER
2. THE DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED AND SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
3. INSTALL PER THE EQUIPMENT MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

ISSUE FOR CONSTRUCTION

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO. 21066 | ORIG. ISSUE 2022.09.27

CURRENT: 2022-09-27

STATE OF TEXAS
M. CHAO BLACK
93681
LICENSED
PROFESSIONAL ENGINEER
9/26/2022

SHEET NAME:
MECHANICAL SCHEDULES

SHEET NO:
M6.000

LEGEND OF ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING. ARROW INDICATES HOMERUN TO PANEL. CONDUCTOR DESIGNATIONS ARE AS FOLLOWS: LONG HATCH INDICATES NEUTRAL, SHORT HATCH INDICATES PHASE, "DOT" INDICATES INSULATED OR ISOLATED GROUND, AND NO HATCHES INDICATES TWO CONDUCTORS.
	CONDUIT RUN CONCEALED IN FLOOR SLAB, BELOW FLOOR SLAB OR BELOW GRADE. WIRING SAME AS ABOVE.
	SCREENING SHADE INDICATES FIXTURE CONNECTION ON EMERGENCY OR NIGHT LIGHT CIRCUIT.
	EXIT LIGHT, PROVIDE ARROWS AS INDICATED ON DRAWINGS.
	SIMPLEX RECEPTACLE OUTLET; 20 AMP, 125V., 3 WIRE, GROUNDED TYPE.
	DUPLEX RECEPTACLE OUTLET; 20 AMP, 125V., 3 WIRE, GROUNDED TYPE.
	QUADRUPLEX RECEPTACLE OUTLET GANGED WITH A COMMON WALL PLATE; (2)=20 AMP, 125V, 3 WIRE, GROUNDED TYPE.
	DUPLEX RECEPTACLE OUTLET LOCATED ABOVE SPLASH ABOVE COUNTER; 20 AMP, 125V, 3 WIRE GROUNDED TYPE. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT HEIGHT.
GFI	DUPLEX RECEPTACLE OUTLET WITH GROUND FAULT INTERRUPTER; 20 AMP, 125V., 3 WIRE GROUNDED TYPE.
WP/GFI	DUPLEX RECEPTACLE OUTLET W/ WEATHERPROOF WHILE IN USE COVER; GROUND FAULT INTERRUPTER, 20 AMP, 125V., 3 WIRE, GROUNDED TYPE.
	SPECIAL RECEPTACLE OUTLET: SEE DRAWIINGS FOR NEMA CONFIGURATION AND VOLTAGE.
FF	FLUSH MOUNTED FIRE RATED POKE THRU DEVICE FOR FURNITURE FEED. SEE DRAWINGS FOR SPECIFICATIONS.
	FLUSH MOUNTED FIRE RATED POKE THRU DEVICE W/ RECEPTACLE(S) AND/OR DATA AND/OR TELEPHONE, SEE DRAWINGS FOR SPECIFICATIONS.
	FLUSH MOUNTED FLOOR BOX W/ RECEPTACLE (S) AND/OR DATA AND/ OR TELEPHONE. SEE DRAWINGS FOR SPECIFICATIONS.
PP	POWER POLE PROVIDED BY OTHERS, RE: DRAWINGS FOR MORE INFORMATION.
▼	TELEPHONE OUTLET.
TV	CABLE T.V. OUTLET
	COMBINATION TELEPHONE / DATA OUTLET.
▽	DATA OUTLET
TTB	TELEPHONE TERMINAL BOARD, 4'x8'x3/4" FIRE RATED PLYWOOD.
$	SINGLE POLE, SINGLE-THROW SWITCH; 20 AMP, 120/277V.
$3	3-WAY SWITCH: 20 AMP, 120/277V.
$4	4-WAY SWITCH: 20 AMP, 120/277V.
$K	KEY SWITCH
D	DIMMER SWITCH. SEE DRAWINGS FOR SPECIFICATIONS.
$OC	WALL MOUNTED OCCUPANCY SENSOR AS SPECIFIED; 120/277VAC
OS	CEILING MOUNTED OCCUPANCY SENSOR AS SPECIFIED; 120/277VAC
	EMERGENCY POWER OFF SWITCH (E.P.O.)
	PUSH BUTTON
	BUZZER
J	JUNCTION BOX MOUNTED ABOVE ACCESSIBLE CEILING.
J	JUNCTION BOX - WALL MOUNTED
	DISCONNECT IN A NEMA 1 ENCLOSURE, UNLESS OTHERWISE SPECIFIED, REFER TO DRAWINGS FOR AMPERAGE, PHASES, & FUSE SIZE. (IF REQUIRED) 30 AMP, 3 POLE, NON-FUSED - U.O.N.
	SINGLE PHASE MOTOR
	THREE PHASE MOTOR
	MOTOR STARTER / DISCONNECT IN A NEMA 1 ENCLOSURE, UNLESS OTHERWISE SPECIFIED, REFER TO DRAWINGS FOR AMPERAGE, PHASES, FUSE SIZE (IF REQUIRED), AND SIZE. 30 AMP, 3 POLE, NON-FUSED, SIZE "0"-U.O.N.
	MOTOR STARTER/VFD IN A NEMA 1 ENCLOSURE, UNLESS OTHERWISE SPECIFIED. REFER TO DRAWINGS FOR AMPERAGE ,PHASES,AND SIZE.
C	CONTACTOR IN A NEMA 1 ENCLOSURE, UNLESS OTHERWISE SPECIFIED. REFER TO DRAWINGS FOR AMPERAGE AND NUMBER OF POLES.
PC	PHOTO-ELECTRIC CELL
TC	TIMECLOCK IN NEMA 1 ENCLOSURE, OTHERWISE SPECIFIED. REFER TO DRAWINGS FOR AMPERAGE AND NUMBER OF POLES.
CR	CARD READER JUNCTION BOX WITH 3/4"C TO ACCESSIBLE CEILING U.N.O.
	GROUND
	FIRE ALARM SYMBOLS
SD	SMOKE DETECTOR (IONIZATION)
H	HEAT DETECTOR
D	DUCT DETECTOR WITH SAMPLING TUBE.
TS	TAMPER SWITCH
WF	WATER FLOW SWITCH.
DH	MAGNETIC DOOR HOLD OPEN.
SFD	SMOKE FIRE DAMPER
	SECURITY CAMERA
F	FIREMAN'S PHONE JACK.
FT	FIREMAN'S TELEPHONE HANDSET.
FACP	FIRE ALARM CONTROL PANEL.
RACP	FIRE ALARM REMOTE ANNUNCIATOR.

MISCELLANEOUS

RLB	REMOTE LIGHTING BALLAST/TRANSFORMER FOR LIGHTING
TGB	TELEPHONE GROUND BUS
MTGB	MAIN TELEPHONE GROUND BUS
MEGB	MAIN ELECTRICAL GROUND BUS
	TRANSFORMER W/ NEC CLEARANCES; REFER TO DWG FOR VOLTAGE/kVA
	SURFACE PANELBOARD W/ NEC CLEARANCES; 120/208 VOLT.
	SURFACE PANELBOARD W/ NEC CLEARANCES; 277/480 VOLT.
	RECESS PANELBOARD W/ NEC CLEARANCES; 120/208 VOLT.
	RECESS PANELBOARD W/ NEC CLEARANCES; 277/480 VOLT.

NOTES:
1. ALL SYMBOLS MAY NOT BE USED ON THESE DRAWINGS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS

ABBREVIATIONS

(E)	EXISTING TO REMAIN
(N)	NEW
(R)	ITEM NOTED TO BE RELOCATED
(D)	ITEM NOTED TO BE DEMOLISHED
AFF	ABOVE FINISHED FLOOR
AD	AUTOMATIC DAMPER
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AMP	AMPERAGE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CKT.	CIRCUIT
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DISC.	DISCONNECT
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLE
FLA	FULL LOAD AMPS
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERRUPTER
GND.	GROUND
HD	HEAVY DUTY
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
IG	ISOLATED GROUND
KCM	THOUSAND CIRCULAR MILS
KW	KILOWATT
MC	METAL CLAD
MCB	MAIN CIRCUIT BREAKER
MH	METAL HALIDE
MSB	MAIN SWITCHBOARD
MLO	MAIN LUG ONLY
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NF	NON-FUSED
NL	NIGHT LIGHT
NTS	NOT TO SCALE
PH	PHASE
PNL	PANEL OR PANELBOARD
PVC	POLYVINYL CHLORIDE
RACP	REMOTE ANNUNCIATOR CONTROL PANEL
RCP	REFLECTED CEILING PLAN
RE:	REFERENCE
SFD	SMOKE/FIRE DAMPER
SPEC.	SPECIFICATIONS
SF	SQUARE FEET
TS	TIME SWITCH
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UG	UNDERGROUND
U.N.O.	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHER PROOF
WPIU	WEATHER PROOF IN USE COVER
WR	WEATHER RESISTANT
XFMR	TRANSFORMER

ELECTRICAL GENERAL NOTES

A. REFER TO ELECTRICAL PLANS FOR DEMOLITION, NEW WORK, AND ADDITIONAL INFORMATION FOR RELOCATED ITEMS.

B. REFER TO ELECTRICAL SPECIFICATIONS, SCHEDULES, AND DETAIL DRAWINGS FOR ADDITIONAL INFORMATION.

D. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS OF ALL DEVICES, PANELS, & CIRCUITING PRIOR TO SUBMITTING A BID. COORDINATE COMPLETELY WITH ALL OTHER TRADES.

E. THE CONTRACTOR SHALL VERIFY THAT ALL EXISTING AND NEW ELECTRICAL DEVICES AND DISTRIBUTION EQUIPMENT ARE MOUNTED SO THAT ALL REQUIRED CODE AND MANUFACTURER'S SERVICES CLEARANCES ARE MAINTAINED. COORDINATE COMPLETELY WITH ALL NEW WALLS AND RELOCATE AS REQUIRED TO MAINTAIN PROPER CLEARANCES.

F. DUE TO DRAWING SCALE, IT IS NOT POSSIBLE TO INDICATE ALL CONDUIT AND FITIINGS WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY COMPONENTS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.

G. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO BRING TO THE ATTENTION OF THE ELECTRICAL ENGINEER ANY SAFETY OR CODE CONCERNS WITH THE PROPOSED PLAN PRIOR TO ROUGH IN.

H. ELECTRICAL CONTRACTOR SHALL VERIFY THAT LOCATION OF CEILING, FLOOR, AND WALL MOUNTED ELECTRICAL DEVICES OR DISTRIBUTION EQUIPMENT SHOWN ON THE DRAWINGS ARE ACCEPTABLE TO THE ARCHITECT PRIOR TO INSTALLATION.

I. THE CONTRACTOR SHALL REPLACE ANY DAMAGED OR NON-FUNCTIONING LIGHT SWITCHES, RECEPTACLES, OR COVERS , NEW DEVICES AND COVERS SHALL MATCH BUILDING STANDARD.

J. ALL EQUIPMENT LOCATED OUTSIDE OR EXPOSED TO UNCONDITIONED AIR SHALL BE INSTALLED OR PROVIDED WITH NEMA 3R RATED ENCLOSURES.

K. NEW EXPOSED TO VIEW DISCONNECTS, CONDUIT, OR DISTRIBUTION EQUIPMENT SHALL BE PAINTED TO MATCH BUILDING EXTERIOR. REFER TO THE ARCHITECT FOR FINISH OF EQUIPMENT.

Luminaire Schedule

Type	Manufacturer	Catalog Number	Mounting	Lum. Watts	Description
A	METALUX	4VT2-LD5-4-DR-W-UNV-L840-CD1-WL-U	SURFACE	29.9	4FT TAMPER RESISTANT VAPORTITE
B	METALUX	22FP3235C	RECESSED	29.4	2X2- EDGE LIT PANEL
C	TECH LIGHTING	700BCELI24FINISH-LED930	WALL	23.5	ELLIS 24IN BATH BAR
J	METALUX	2VT3-LD5-3-G-UNV-L840-CD1-U	CEILING	23.92	2FT VAPORTITE
K	WAC Lighting	FM-07SQ-930-FINISH	CEILING	15.2119	7IN SQUARE CEILING MOUNT
L	SUNLITE	97065-SU	WALL	59.8	OUTDOOR WALL MOUNT MULTIVOLT WALL PACK; SUPER WHITE
M	LIGHTWAY	NEFW-460-LED-O5C-4-B1-B1-DIM	EXTERIOR WALL	45	60IN WET-LISTED EXTERIOR WALL SCONCE
N	INTENSE LIGHTING	MXG2PSDREM2L03050 FINISH-MOUNTING REMMXG2PL0EM7	PENDANT	10	12IN LED SQUARE DOWNLIGHT CYLINDER W/REMOTE DRIVER ENCLOSURE
O	INTENSE LIGHTING	MXG2PSU2L030DIM5050 FINISH CRWB	WALL	N.A.	12IN WALL SCONCE SQUARE CYLINDER UD/DOWN
P	NEO-RAY	S122DIW-C675D710U830-4F0-1E-UDD-A1-FINISH	WALL	45	2IN WALL DIRECT/INDIRECT
P1	NEO-RAY	S122DIW-C675D710U830-4F0-1E-UDD-A1-FINISH	WALL	23	2IN WALL DIRECT/INDIRECT

LIGHT FIXTURE SCHEDULE NOTES

1. CONTRACTOR SHALL VERIFY CEILING TYPES AND COORDINATE ADDITIONAL LIGHT FIXTURE MOUNTING REQUIREMENTS WITH MANUFACTURER PRIOR TO PURCHASE, AND/OR RELOCATION.
2. FIELD VERIFY CLEARANCE ABOVE FIXTURE PRIOR TO INSTALLATION.
3. VERIFY APPEARANCE AND FINISH OF ALL LIGHT FIXTURES WITH ARCHITECT PRIOR TO PURCHASE.
4. PROVIDE HOUSING TO MATCH FIXTURE SELECTED
5. COORDINATE FINAL MOUNTING HEIGHT WITH ARHITECT PRIOR TO PURCHASE.

OCCUPANCY SENSOR LEGEND

	DEVICE	NOTES
$051	SENSORSWITCH #WSX-PDT-SA-*	SINGLE RELAY, LINE VOLTAGE, WALL MOUNTED. FACTORY SET TO "AUTO ON".
$V51	SENSORSWITCH #WSX-PDT-SA-*	SINGLE RELAY, LINE VOLTAGE, WALL MOUNTED. FACTORY SET TO "MANUAL ON".
$052	SENSORSWITCH #WSX-PDT-2P-2SA-*	DUAL RELAY, LINE VOLTAGE, WALL MOUNTED. BOTH RELAYS FACTORY SET TO "MANUAL ON".
@05	SENSORSWITCH #nWSX-PDT-LV-DX	nLIGHT ENABLED, WALL MOUNTED WITH ON/OFF AND RAISE/LOWER CONTROL.
$*	SENSORSWITCH #nPODM	nLIGHT ENABLED, DIGITAL SWITCH WITH "OFF/ON".
$2*	SENSORSWITCH #nPODM-2P	nLIGHT ENABLED, 2-ZONE, DIGITAL SWITCH WITH "OFF/ON".
$4*	SENSORSWITCH #nPODM-4P	nLIGHT ENABLED, 4-ZONE, DIGITAL SWITCH WITH "OFF/ON".
@*	SENSORSWITCH #nPODM-DX	nLIGHT ENABLED, DIGITAL ON/OFF WITH RAISE/LOWER CONTROL.
@2*	SENSORSWITCH #nPODM-2P-DX	nLIGHT ENABLED, 2-ZONE, DIGITAL ON/OFF WITH RAISE/LOWER CONTROL.
OS CM6	SENSORSWITCH #CM-PDT-6	nLIGHT ENABLED, SINGLE CIRCUIT, CEILING MOUNTED, HIGH MOUNT
OS CM9	SENSORSWITCH #CM-PDT-9	SINGLE CIRCUIT, CEILING MOUNTED, STANDARD ZONE.
OS nCM9	SENSORSWITCH #nCM-PDT-9	nLIGHT ENABLED, SINGLE CIRCUIT, CEILING MOUNTED, STANDARD ZONE
OS CM10	SENSORSWITCH #CM-PDT-10	SINGLE CIRCUIT, CEILING MOUNTED, EXTENDED ZONE.
OS nCM10	SENSORSWITCH #nCM-PDT-10	nLIGHT ENABLED, SINGLE CIRCUIT, CEILING MOUNTED, EXTENDED ZONE
PPA PP0	SENSORSWITCH #nPP16-	nLIGHT ENABLED, AUTO ON, POWER PACK
PPM PP*	SENSORSWITCH #nPP16-SA	nLIGHT ENABLED, MANUAL ON, POWER PACK
PPD PP*	SENSORSWITCH #nPP16-D-SA	nLIGHT ENABLED, MANUAL ON, POWER PACK WITH 0-10V OUTPUT.
PPD PP*	SENSORSWITCH #nPP16-D-ER	nLIGHT ENABLED, MANUAL ON, POWER PACK WITH 0-10V OUTPUT AND EMERGENCY OPERATION.
PPE PP*	SENSORSWITCH #nPP16-ER	nLIGHT ENABLED, MANUAL ON, POWER PACK WITH EMERGENCY OPERATION.

NOTE:
-DISABLE PHOTO SENSOR OPTION ON ALL OCCUPANCY SENSORS.
-DISABLE "SELF-ADAPTIVE MODE" ON ALL OCCUPANCY SENSORS
-SET "DELAYED OFF" SETTING TO 20 MINUTES.
-SET WALL MOUNTED OCCUPANCY SENSORS TO "MANUAL ON"
-SET POWER PACKS "PPS" AND "PPM" TO "MANUAL ON".
-FOR ALL nLIGHT ENABLED DEVICES, ROUTE CAT-5E CABLE AS REQUIRED BETWEEN DEVICES. REFERENCE SENSORSWITCH SHOP DRAWINGS FOR WIRING REQUIREMENTS.
-LIGHT SWITCHES/DIMMERS ASSOCIATED WITH POWER PACK "PPA" SHALL CONNECTED TO THE LOAD SIDE OF THE POWER PACK.
-FOR MULTI-SWITCH nLIGHT DEVICES ON COMMON ZONE, SWITCH LEG DESIGNATION INDICATES CORRESPONDING CHANNEL FOR POWER PACK. FOR EXAMPLE, SWITCH LEG "a" SHALL BE ASSIGNED TO CHANNEL #1 – SWITCH LEG "b" TO CHANNEL #2, ETC.
-WHERE MULTIPLE OCCUPANCY SENSORS ARE INDICATED WITH "LIKE" SWITCH LEG, CONNECT ALL OCCUPANCY SENSORS IN PARALLEL SO THAT ANY OF THE OCCUPANCY SENSORS WILL ACTIVATE THE "OCCUPIED" MODE FOR THAT AREA.

B2AEP
B2AEP, LLC
TBPE F-18874
3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

STATE OF TEXAS
MICHAEL L. FULK
123352
LICENSED
PROFESSIONAL ENGINEER
09/26/2022

6707 Riverside

6707 Riverside, LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

PROJ. NO. | ORIG. ISSUE

CURRENT: 2022-09-23

SHEET NAME:
ELECTRICAL - SYMBOLS, ABBREVIATIONS, SCHEDULES

SHEET NO:
E0.000

ELECTRICAL GENERAL NOTES

GENERAL PROVISIONS

1. FURNISH AND INSTALL ALL ITEMS, INCLUDING EVERY ARTICLE, DEVICE, OR ACCESSORY REASONABLY NECESSARY TO FACILITATE EACH SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT SPECIFIED. ELEMENTS OF THE WORK SHALL INCLUDE, BUT ARE NOT LIMITED TO, MATERIALS, LABOR, SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION, HOISTING/RIGGING, STORAGE, UTILITIES, AND ALL REQUIRED PERMITS AND LICENSES.
2. WORK SHALL COMPLY WITH THE MOST RECENT VERSION OF ALL APPLICABLE LAWS, RULES, REGULATIONS AND ORDINANCES OF ALL FEDERAL, STATE AND LOCAL AUTHORITIES. IN THE EVENT OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND THE LOCAL ENFORCING AUTHORITY, THE LATTER SHALL RULE. ANY MODIFICATION RESULTING THEREFROM SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR ARCHITECT/ENGINEER. THE CONTRACTOR SHALL REPORT ANY SUCH MODIFICATIONS TO THE ARCHITECT/ENGINEER AND SECURE HIS APPROVAL BEFORE PROCEEDING. SHOULD THE REQUIREMENTS OF THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THE CODES, THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE PROVIDED THEY ARE NOT IN CONFLICT WITH THOSE CODES.
3. DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT NECESSARILY REFLECT ALL WORK REQUIRED TO COMPLETE PROJECT. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT AS REQUIRED TO COMPLETE PROJECT WITHIN DESIGN INTENT AT NO ADDITIONAL COST TO OWNER/TENANT OR TENANT. CONTRACTOR SHALL REQUEST ADDITIONAL INFORMATION IN CASES OF DOUBT.
4. IN THE EVENT OF A CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE GREATER AMOUNT OF TOTAL COST SHALL BE PRICED. BRING THE CONFLICT TO THE ATTENTION OF THE ENGINEER AND REQUEST DIRECTION.

PRE-CONSTRUCTION

1. BEFORE SUBMITTING A BID, CONTRACTOR SHALL VISIT THE SITE AND ASCERTAIN FOR HIMSELF THE CONDITIONS TO BE MET IN INSTALLING THE WORK AND MAKE PROVISIONS FOR THE CONDITIONS IN HIS FINAL PRICE. FAILURE ON THE PART OF THE CONTRACTOR TO COMPLY WITH THIS REQUIREMENT SHALL NOT BE CONSIDERED JUSTIFICATION FOR THE OMISSION OR FAULTY INSTALLATION OF ANY WORK COVERED BY THE CONTRACT DOCUMENTS.
2. CONSIDERATION SHALL NOT BE GRANTED FOR MISUNDERSTANDING OF THE SCOPE OR AMOUNT OF WORK TO BE PERFORMED. TENDER OF A PROPOSAL CONVEYS FULL CONTRACTOR AGREEMENT OF THE ITEMS AND CONDITIONS SPECIFIED AND/OR INDICATED, SCHEDULED, OR IMPLIED ON THE CONTRACT DOCUMENTS, AND/OR REQUIRED BY THE NATURE OF THIS WORK.
3. CONTRACTOR SHALL SECURE ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED FOR HIS WORK, AND SHALL PAY ALL FEES IN CONNECTION WITH SUCH PERMITS, LICENSES AND INSPECTIONS.

DEMOLITION

1. ALL EXISTING CONDUIT AND CONDUCTORS SERVING THE AREA UNDER CONTRACT NOT TO BE RE-USED SHALL BE TERMINATED AT LAST PORTION OF CIRCUIT REQUIRING ENERGIZATION BEFORE THE DEMOLITION AREA. IF A CIRCUIT SERVICES ONLY THE DEMOLITION AREA, REMOVE ALL CONDUITS AND CONDUCTORS BACK TO THE PANELBOARD OR BASE BUILDING GRID BOX AND DE-ENERGIZE THE CIRCUIT BREAKER, MAKING IT A SPARE. NOTE "SPARE" OR "GRID-SPARE" ACCORDINGLY ON PANELBOARD DIRECTORY.
2. REMOVE ALL ABANDONED "LOW VOLTAGE" CABLING INCLUDING FIRE ALARM CABLING, TELEPHONE/DATA CABLING, AND SECURITY CABLING. REMOVE ALL EXISTING CONDUIT AND WIRING THAT IS SUPPORTED FROM THE CEILING GRID. REMOVE ALL EXISTING UNUSED ELECTRICAL EQUIPMENT, CONTROLS, CONDUIT, HANGERS, WIRING, ETC.
3. RELOCATE AND RECONNECT ACTIVE PORTIONS OF THE ELECTRICAL SYSTEM OUTSIDE OF THE SCOPE OF DEMOLITION, AS REQUIRED TO MAINTAIN A COMPLETE AND OPERATING SYSTEM THAT IS FUNCTIONALLY EQUIVALENT TO THE PRE-EXISTING SYSTEM PRIOR TO DEMOLITION.
4. ELECTRICAL PLANS INDICATE FINAL WIRING DEVICE, DATA/COMMUNICATIONS OUTLET AND SWITCH LOCATIONS. ALL OTHER EXISTING WIRING DEVICES, DATA/COMMUNICATIONS OUTLETS AND SWITCHES SHALL BE REMOVED AND WALLS SHALL BE PATCHED.
5. ALL EXISTING JUNCTION BOXES, OUTLETS, PULL BOXES, ETC., LOCATED ABOVE NON-ACCESSIBLE CEILINGS INSTALLED UNDER THIS TENANT IMPROVEMENT PROJECT SHALL BE RELOCATED AS NECESSARY TO A LOCATION ABOVE AN ACCESSIBLE CEILING. WHERE EXISTING JUNCTION BOXES ARE NOT PRACTICAL TO RE-LOCATE, ELECTRICAL CONTRACTOR SHALL NOTIFY ARCHITECT AND ENGINEER PRIOR TO SUBSTANTIAL START OF CONSTRUCTION.
6. REMOVE ALL EXISTING UNUSED ELECTRICAL EQUIPMENT, CONTROLS, CONDUIT, HANGERS, WIRING, ETC.. FROM ABOVE CEILINGS.
7. REFER TO ARCHITECTURAL DRAWINGS FOR LIGHT FIXTURES TO BE RELOCATED. RELOCATE AND RECIRCUIT FIXTURES AS SHOWN. PROVIDE ADDITIONAL FIXTURES TO MATCH FIXTURE QUANTITIES SHOWN. FIELD VERIFY EXISTING CONDITIONS.
10. REFER TO ARCHITECTURAL PLANS FOR WALL AND PARTITIONS TO BE REMOVED. CONTRACTOR SHALL PROVIDE ELECTRICAL DEMOLITION AS PREVIOUSLY DESCRIBED.
11. REFER TO ARCHITECTURAL DRAWINGS FOR RECEPTACLES AND VOICE/DATA OUTLETS TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS.
12. CONTRACTOR SHALL REMOVE AND REPLACE ALL WIRING DEVICES NOT CONFORMING TO BUILDING STANDARDS.
13. REMOVE ALL EXISTING CONDUIT AND WIRING THAT IS SUPPORTED FROM THE CEILING GRID VIA CADDY CLIPS, ETC. AND REPLACE EXISTING CONDUIT THAT IS TO BE REUTILIZED WITH MATCHING CONDUIT AND WIRING PROPERLY SUPPORTED FROM STRUCTURE ABOVE.
14. REMOVE ALL EXISTING CONDUIT AND WIRING THAT IS SUPPORTED FROM THE CEILING GRID VIA CADDY CLIPS, ETC. AND REPLACE EXISTING CONDUIT THAT IS TO BE REUTILIZED WITH MATCHING CONDUIT AND WIRING PROPERLY SUPPORTED FROM STRUCTURE ABOVE.
15. RE-SUPPORT AND/ RE-ROUTE ANY REMAINING PIPING OR DEVICES THAT WERE SUPPORTED BY DEMOLISHED WALLS.

SUBMITTALS

1. ALL EQUIPMENT AND MATERIAL TO BE FURNISHED AND INSTALLED ON THIS PROJECT SHALL BE UL OR ETL LISTED, IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION, AND SUITABLE FOR ITS INTENDED USE ON THIS PROJECT.
2. MATERIALS AND EQUIPMENT SHALL BE NEW AND IN GOOD CONDITION. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES INDICATED ARE INTENDED TO IDENTIFY STANDARDS OF QUALITY AND PERFORMANCE NECESSARY FOR THE PROPER FUNCTIONING OF THE WORK. MATERIALS AND EQUIPMENT, WHICH ARE FOUND TO HAVE FACTORY DEFECTS SHALL BE REPLACED OR REPAIRED IN A MANNER ACCEPTABLE TO THE OWNER/TENANT AND ENGINEER AT NO ADDITIONAL COST TO THE OWNER/TENANT.
3. THE CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL NEW EQUIPMENT, CONTROLS, AND FIXTURES TO BE PROVIDED. SUBMIT .PDF FORMAT FILE FOR APPROVAL.
4. THE FOLLOWING SUBMITTAL DATA SHALL BE FURNISHED AND SHALL INCLUDE BUT NOT BE LIMITED TO:
   A. ALL NEW EQUIPMENT, CONTROLS, SPECIALTY WIRING DEVICES, AND LIGHT FIXTURES
   B. LIGHTING CONTROL SHOP DRAWINGS - WHERE DIMMING CONTROL PANELS OR nLIGHT CONTROLS ARE UTILIZED
   C. COORDINATION DRAWINGS
   D. FIRE ALARM MATERIAL AND SHOP DRAWINGS
   E. FIRE STOP MATERIALS AND INSTALLATION DETAILS

CONSTRUCTION

1. ALL WORK SHALL BE ARRANGED IN A NEAT, WELL ORGANIZED MANNER. ALL SERVICES SHALL BE ROUTED PARALLEL AND PERPENDICULAR TO THE PRIMARY LINES OF THE BUILDING. LOCATE ALL OPERATING AND CONTROL EQUIPMENT PROPERLY TO PROVIDE EASY ACCESS AND ARRANGE ENTIRE WORK WITH ADEQUATE ACCESS FOR OPERATION AND MAINTENANCE, AND FOR PROPER CODE AND/OR MANUFACTURERS CLEARANCES.
2. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL COORDINATE THE INSTALLATION OF DUCTWORK, PIPING, CONDUIT, CABLE, ETC., WITH LIGHTING FIXTURES, SPECIAL CEILING CONSTRUCTION, AIR DISTRIBUTION EQUIPMENT, AND THE STRUCTURE. PROVIDE ADDITIONAL RISES AND OFFSETS AS REQUIRED. IF, AFTER INSTALLED, NEW DUCTWORK, PIPING, CONDUIT, CABLE, ETC., IS FOUND TO BE IN CONFLICT WITH THE ARCHITECTURE, STRUCTURE OR OTHER TRADE WORK, WHICH IS EITHER EXISTING OR SHOWN ON THE CONTRACT DOCUMENTS, THE DUCTWORK, PIPING, CONDUIT, CABLE, ETC., SHALL BE RELOCATED WITHOUT ADDITIONAL COST TO THE OWNER/TENANT. COORDINATE ALL WORK COMPLETELY WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
3. THE CONTRACTOR SHALL PROTECT THE WORK, EQUIPMENT, AND MATERIALS FROM DAMAGE BY HIS WORK OR HIS PERSONNEL, AND SHALL CORRECT ALL DAMAGE THUS CAUSED WITHOUT ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, MATERIALS, AND EQUIPMENT UNTIL FINAL ACCEPTANCE BY THE OWNER. PROTECT ALL WORK AGAINST THEFT, INJURY, OR DAMAGE AND CAREFULLY STORE MATERIAL AND EQUIPMENT RECEIVED ON SITE WHICH IS NOT IMMEDIATELY INSTALLED. THE CONTRACTOR SHALL CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUGS DURING CONSTRUCTION TO PREVENT THE ENTRY OF DUST, DIRT, AND OBSTRUCTING MATERIAL. THE CONTRACTOR SHALL PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE DUE TO WATER, SPRAY-ON FIREPROOFING, CONSTRUCTION DEBRIS, ETC. IN A MANNER ACCEPTABLE TO THE ENGINEER AND/OR OWNER.
4. AREAS OF THE EXISTING BUILDING WILL BE OCCUPIED DURING CONSTRUCTION OF THIS PROJECT. NOISY, DUSTY, AND/OR OTHER CONSTRUCTION OPERATIONS REQUIRED FOR WORK WHICH DISTURB OR CAUSE COMPLAINTS BY THE EXISTING BUILDING OCCUPANTS SHALL NOT BE ACCEPTABLE. ALL AFTER-HOUR OR OVERTIME WORK REQUIRED BY THE CONTRACTOR TO AVOID DISRUPTION OF EXISTING OCCUPANTS WILL BE PROVIDED AT NO COST TO THE OWNER/TENANT. THE CONTRACTOR SHALL USE CONSTRUCTION METHODS AND MATERIALS WHICH SHALL NOT ADVERSELY AFFECT THE INDOOR AIR QUALITY OF THE EXISTING OCCUPIED AREAS.
5. ALL BUILDING SERVICES, UTILITIES, POWER, FIRE PROTECTION, AND DOMESTIC COLD AND HOT WATER MAY NOT BE DISRUPTED FOR ANY REASON WITHOUT PRIOR COORDINATION WITH A REPRESENTATIVE OF BUILDING OPERATIONS.
6. THIS BUILDING MAY HAVE A STRUCTURAL SYSTEM UTILIZING POST-TENSIONED CABLES. THE CONTRACTOR SHALL DETERMINE THE EXISTING STRUCTURAL SYSTEM PRIOR TO CUTTING, DRILLING, OR CORING. THE CONTRACTOR SHALL SCAN ALL PENETRATIONS PRIOR TO CUTTING THE FLOOR SLAB.
7. PENETRATIONS THROUGH FLOORS OR FIRE-RATED CONSTRUCTION SHALL BE FIRESAFED TO COMPLY WITH ASTM E-814 (UL 1479), AND THE LOCAL AUTHORITY HAVING JURISDICTION.

PROJECT CLOSE-OUT

THE ELECTRICAL CONTRACTOR SHALL PERFORM THE FOLLOWING TASKS UPON PROJECT COMPLETION. ALL REQUIRED REPORTS AND AS-BUILTS SHALL BE SUBMITTED WITHIN TWO (2) WEEKS OF DATE OF SUBSTANTIAL COMPLETION OR OWNER OCCUPANCY.

A. SUBMIT "AS-BUILT" RECORD DRAWINGS INDICATING ACTUAL AS-BUILT CONDITIONS TO THE ARCHITECT/ENGINEER FOR REVIEW. RECORD DRAWINGS SHALL BE STAMPED "AS-BUILT" AND SHALL HAVE THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THE CONTRACTOR. ALL ENGINEERS' SEALS SHALL BE REMOVED FROM THE DRAWINGS. PROVIDE FOUR (4) BLACK AND WHITE DIGITAL COPIES AND ONE (1) ELECTRONIC FILE.
B. EXISTING CIRCUITRY SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL FIELD VERIFY EXACT CIRCUITRY AND INDICATE ANY DEVIATIONS ON THE "AS BUILT" DRAWINGS. "AS BUILT" DRAWINGS SHALL ACCURATELY INDICATE THE LOCATION OF ALL NEW AND EXISTING JUNCTION BOXES WITH THE RESPECTIVE PANEL AND CIRCUIT NUMBERS.
C. SUBMIT TWO (2) COPIES OF OPERATION AND MAINTENANCE MANUALS. THE MANUALS SHALL INCLUDE RATINGS, CAPACITIES, PARTS LISTS, WIRING DIAGRAMS, SERVICE/MAINTENANCE RECOMMENDATIONS, AND WARRANTIES.
D. SUBMIT WRITTEN RESPONSE TO ALL FIELD REPORTS INDICATING CORRECTIVE ACTIONS TAKEN AND DATE CORRECTIVE ACTION WAS TAKEN TO THE ARCHITECT/ENGINEER FOR REVIEW.

WARRANTY

1. THE WARRANTY PERIOD SHALL BE NO LESS THAN ONE (1) FULL YEAR, UNLESS SPECIFIED OTHERWISE AND SHALL INCLUDE AT LEAST ONE (1) FULL HEATING SEASON AND ONE (1) FULL COOLING SEASON. DURING THE WARRANTY PERIOD THE CONTRACTOR SHALL GUARANTEE THE FOLLOWING IN A FORM SATISFACTORY TO THE OWNER/TENANT:
   A. ALL WORK INSTALLED SHALL BE FREE FROM ANY AND ALL DEFECTS IN WORKMANSHIP AND/OR MATERIALS.
   B. ALL APPARATUS WILL DEVELOP CAPACITIES AND PERFORMANCE CHARACTERISTICS SPECIFIED.
   C. THE SYSTEMS SHALL OPERATE WITHOUT MALFUNCTION.
2. THE START OF THE CONTRACTOR'S WARRANTY PERIOD SHALL COMMENCE ON THE DATE OF "SUBSTANTIAL COMPLETION" AS AGREED TO BY THE OWNER/TENANT.

ELECTRICAL SPECIFICATIONS

CONDUIT

1. ALL CONDUITS SHALL BE CONCEALED IN PIPE CHASES, WALLS, FURRED SPACED, OR ABOVE THE CEILING OF THE BUILDING UNLESS OTHERWISE INDICATED. CONDUIT SHALL NOT BE EMBEDDED IN ANY STRUCTURAL SLAB OR STRUCTURAL MEMBER UNLESS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
2. CONDUIT MAY BE RUN EXPOSED IN MECHANICAL ROOMS, DUCT AND PIPING CHASES, BUT ONLY WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE RUN IN THE NEATEST, MOST INCONSPICUOUS MANNER, AND PARALLEL OR PERPENDICULAR TO THE BUILDING LINES.
3. ALL CONDUIT AND SURFACE RACEWAYS SHALL BE ADEQUATELY AND PROPERLY SUPPORTED FROM THE BUILDING STRUCTURE BY MEANS RECOMMENDED BY THE MANUFACTURER, OR BY THE USE OF HANGER RODS OR CLAMPS.
4. ALL CONDUITS THROUGHOUT THE BUILDING SHALL BE SUPPORTED AT MINIMUM 10 FEET ON CENTERS HORIZONTALLY AND SUPPORTED 6 FEET ON CENTERS VERTICALLY. SUPPORT CONDUIT WITHIN 3' OF ALL CONNECTIONS TO BOXES.
5. CONDUIT SHALL NOT BE SUPPORTED FROM DUCTWORK, PIPING, OR EQUIPMENT.
6. THE LOAD AND SPACING ON EACH HANGER AND/OR INSERT SHALL NOT EXCEED THE SAFE ALLOWABLE LOAD FOR ANY COMPONENT OF THE SUPPORT SYSTEM, INCLUDING THE CONCRETE WHICH HOLDS THE INSERTS. CONFIRM WITH STRUCTURAL ENGINEER WHERE REQUIRED.
7. ALL ELECTRICAL CONDUCTORS SHALL BE INSTALLED IN CONDUIT, OR SURFACE METAL RACEWAYS. IN ADDITION, EMPTY CONDUIT OR SURFACE METAL RACEWAYS SHALL BE INSTALLED FOR THE VOICE/DATA SYSTEM, AND FOR OTHER SYSTEMS AS INDICATED ON THE DRAWINGS.
8. GALVANIZED RIGID METAL CONDUIT (RMC) SHALL BE USED WHERE CONDUIT IS IN A CONCRETE SLAB WITH A VAPOR BARRIER (PROVIDE TAPE WRAP), WHERE SUBJECT TO PHYSICAL DAMAGE, OR IN SIZES GREATER THAN 4" IN DIAMETER.
9. RMC CONDUIT SHALL BE JOINED WITH THREADED COUPLINGS AND SHALL BE SECURED IN CABINETS, OUTLETS, ETC., WITH DOUBLE LOCK NUTS AND SHALL BE PROVIDED WITH INSULATED THROAT BUSHINGS AS MANUFACTURED BY STEEL CITY OR EQUAL. COUPLINGS, ETC., SHALL BE THREADED.
10. RIGID STEEL CONDUIT SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUT. FULL LENGTHS OF PIPE SHALL HAVE GALVANIZED OR ZINC-COATED THREADS ON BOTH ENDS.
11. EMT MAY BE USED INDOORS WHERE CONCEALED OR EXPOSED ABOVE GRADE, EXCEPT WHERE RIGID STEEL CONDUIT IS REQUIRED. ELECTRICAL METALLIC TUBING SHALL BE MADE OF THIN-WALL STEEL TUBING UP TO 4" CONDUIT SIZE, AND SHALL BE GALVANIZED INSIDE AND OUTSIDE.
12. EMT SHALL BE JOINED WITH STEEL SET SCREW TYPE COUPLINGS AND CONDUITS SHALL BE SECURED WITH STEEL SET SCREW TYPE CONNECTORS AT PANELS, JUNCTION BOXES, OUTLETS, ETC. DIE-CAST TYPE CONNECTORS ARE NOT ACCEPTABLE.
13. IF IT COMPLIES WITH THESE SPECIFICATIONS, CONDUIT MANUFACTURED BY ONE OF THE FOLLOWING WILL BE ACCEPTABLE: ALLIED, REPUBLIC, WHEATLAND.
14. IF IT COMPLIES WITH THESE SPECIFICATIONS, CONNECTORS MANUFACTURED BY ONE OF THE FOLLOWING WILL BE ACCEPTABLE: MIDWEST, T & B.

FLEXIBLE METAL CONDUIT

1. FLEXIBLE METAL CONDUIT SHALL BE HOT-DIPPED GALVANIZED STEEL STRIP, SPIRAL WOUND AND INTERLOCKED, AND SHALL BE PROVIDED WITH INSULATED ANTI-SHORT BUSHINGS AT ALL TERMINATIONS.
2. FLEXIBLE METAL CONDUIT SHALL BE SECURED WITH GALVANIZED OR SHERADIZED CONNECTORS SUITABLE FOR CONNECTION TO THE ASSOCIATED BOXES AND CONDUITS. DIE CAST CONNECTORS ARE NOT ACCEPTABLE.
3. FLEXIBLE METAL CONDUIT SHALL BE USED INDOORS AT ANY HEIGHT, IN LENGTHS NOT TO EXCEED 48 INCHES, TO EXTEND CONDUIT CONNECTIONS TO MOTORS, TRANSFORMERS, BUSWAY SWITCHES, AIR DISTRIBUTION TERMINAL UNITS, LIGHTING FIXTURES NOT CONNECTED BY RIGID CONDUIT, CONTROL EQUIPMENT AND DEVICES, PERMANENTLY CONNECTED EQUIPMENT OR APPLIANCES, OR FOR EQUIPMENT AND DEVICES REQUIRING ADJUSTMENT AND/OR REMOVAL FOR MAINTENANCE. FLEXIBLE METAL CONDUIT SHALL NOT BE USED FOR CONNECTIONS IN ELEVATOR MACHINE ROOMS. LIQUID-TIGHT FLEXIBLE CONDUIT SHALL BE USED IN ALL OF THE ABOVE AREAS WHERE FLEXIBLE METAL CONDUIT IS NOT PERMITTED, A "GREEN" INSULATED COPPER GROUNDING CONDUCTOR SHALL BE INSTALLED WITH THE CIRCUIT CONDUCTORS AND SIZED IN ACCORDANCE WITH TABLE 250-122 OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
4. FLEXIBLE METAL CONDUIT (MINIMUM 3/8" DIAMETER) MAY BE USED FOR FIXTURE-TAILS, FOR CONNECTION OF INDIVIDUAL LIGHTING FIXTURES TO THEIR ASSOCIATED LIGHTING SYSTEM JUNCTION BOXES LENGTHS NOT TO EXCEED 6 FEET, AND PROVIDED THE CIRCUIT CONDUCTORS CONTAINED THEREIN ARE PROTECTED BY OVER CURRENT DEVICES RATED AT 20 AMPERES OR LESS. A "GREEN" INSULATED COPPER GROUNDING CONDUCTOR SHALL BE INSTALLED WITH THE CIRCUIT CONDUCTORS AND SIZED IN ACCORDANCE WITH TABLE 250-122 OF THE LATEST EDITION OF THE NATION ELECTRICAL CODE.
5. CONTINUITY OF THE EQUIPMENT GROUND ACROSS FLEXIBLE METAL CONDUIT CONNECTIONS SHALL BE MAINTAINED. THE CONTINUITY SHALL BE MAINTAINED BY INSTALLING A BARE COPPER BONDING CONDUCTOR SIZED IN ACCORDANCE WITH TABLE 250-95 OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. THE BARE COPPER BONDING CONDUCTOR SHALL BE INSTALLED OUTSIDE THE FLEXIBLE AND SHALL BE CONNECTED ON ONE END OF THE FLEXIBLE CONDUIT BY A SUITABLE BINDING POST AN SIMILARLY CONNECTED ON THE OPPOSITE END WITH ANOTHER SUITABLE BINDING POST.
6. IF IT COMPLIES WITH THESE SPECIFICATIONS, CONDUIT MANUFACTURED BY ONE OF THE FOLLOWING WILL BE ACCEPTABLE: AMERICAN FLEXIBLE CONDUIT COMPANY, ANACONDA, CERRO, OR ELECTRI-FLEX.
7. IF IT COMPLIES WITH THESE SPECIFICATIONS, CONNECTORS MANUFACTURED BY ONE OF THE FOLLOWING WILL BE ACCEPTABLE: MIDWEST, APPLETON.

TYPE "MC" METAL CLAD CABLE

1. IF ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AND THE BUILDING OWNER, TYPE "MC" CABLE MAY BE USED IN WALL PARTITIONS IN FINISHED AREAS AND CONNECTION OF LIGHT FIXTURE TAILS, AND WIRING DEVICES. MC CABLE SHALL NOT EXCEED 8' IN LENGTH ABOVE THE CEILING LINE. MC CABLE SHALL BE TYPE 2-#12 OR 3-#12 "THHN" SOLID COPPER INSULATED PHASE CONDUCTORS, AND BARE GROUNDING CONDUCTOR. MC CABLE SHALL BE PROVIDED WITH INSULATED ANTI-SHORT BUSHINGS AT ALL TERMINATIONS. MC CABLE CONNECTORS SHALL BE STEEL GALVANIZED OR SHERADIZED, SUITABLE FOR CONNECTION TO ASSOCIATED BOXES. DIE CAST CONNECTORS ARE NOT ACCEPTABLE.
2. IF IT COMPLIES WITH THE SPECIFICATIONS, ARMORED CABLE MANUFACTURED BY ONE OF THE FOLLOWING WILL BE ACCEPTABLE: AMERICAN FLEXIBLE CONDUIT, BRAND-REX.
3. IF IT COMPLIES WITH THE SPECIFICATIONS, CONNECTORS MANUFACTURED BY ONE OF THE FOLLOWING WILL BE ACCEPTABLE: THOMAS & BETTS, MIDWEST.

CONDUIT INSTALLATION

1. METAL CONDUIT SHALL BE OF AMPLE SIZE TO PERMIT THE EASY INSERTION OR WITHDRAWAL OF CONDUCTORS WITHOUT ABRASION. ALL JOINTS SHALL BE CUT SQUARE, REAMED SMOOTH AND DRAWN UP TIGHT. NO NON-FLEXIBLE METAL CONDUIT SHALL BE SMALLER THAN 1/2".
2. SO FAR AS PRACTICABLE, ALL EXPOSED METAL CONDUIT SHALL RUN WITHOUT TRAPS. WHERE TRAPS OR DIPS ARE UNAVOIDABLE, A JUNCTION OR PULL BOX SHALL BE PLACED AT EACH LOW POINT.
3. EACH ENTIRE METAL CONDUIT SYSTEM SHALL BE INSTALLED COMPLETE BEFORE ANY CONDUCTORS ARE DRAWN IN. TO GUARD AGAINST OBSTRUCTIONS AND OMISSIONS, EACH RUN OF CONDUIT SHALL BE FINISHED BEFORE PLASTERING IS INSTALLED. ALL METAL CONDUIT SHALL BE SWABBED AFTER PLASTER IS FINISHED AND DRY.
4. AS SOON AS CONDUIT HAS BEEN PERMANENTLY INSTALLED IN PLACE, CONDUIT SHALL BE CAPPED OR PLUGGED WITH STANDARD ACCESSORIES.
5. METAL CONDUIT FOR TELEPHONE, SIGNAL, COMMUNICATION, AND TEMPERATURE CONTROL SYSTEMS SHALL BE PROVIDED WITH PULL BOXES OF APPROVED SIZES AT INTERVALS NOT EXCEEDING 70 FEET IN LENGTH OR AFTER TWO RIGHT ANGLE BENDS. BOXES SHALL BE SIZED IN ACCORDANCE WITH THE PERCENT FILL REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AND AS INDICATED ON THE DRAWINGS.
6. ALL EMPTY CONDUIT SYSTEM SHALL HAVE A 1/8" BRAIDED POLYPROPYLENE ROPE OR #14 GALVANIZED STEEL PULL WIRE INSTALLED. AT LEAST 12" OF PROPERLY SECURED ROPE OR WIRE SHALL BE FOLDED BACK INTO EACH END OF THE EMPTY CONDUITS.
7. WHERE PERMITTED BY THE LOCAL AUTHORITY - ARMORED CABLE MAY BE USED INDOORS WHERE CONCEALED ABOVE GRADE, FOR FIXTURE-TAILS OF INDIVIDUAL LIGHTING FIXTURES IN SUSPENDED ACCESSIBLE TYPE CEILINGS. THESE FIXTURE-TAILS SHALL IN LENGTHS NOT TO EXCEED 6 FEET FOR CONNECTION TO THEIR ASSOCIATED LIGHTING JUNCTION BOXES. THE POINT OF CONNECTION OF THE ARMORED CABLE TO THE INDIVIDUAL LIGHTING FIXTURES SHALL NOT BE MORE THAN 3" FROM THE FIXTURE BALLASTS..
8. FLEXIBLE METAL CONDUIT, LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ARMORED CABLE SHALL BE SECURED NO LESS THE EVERY 54" AND WITHIN 12" OF A JUNCTION BOX. IT IS NOT ACCEPTABLE TO LAY CABLES ON CEILING, DUCTWORK, ETC.
9. WHERE PERMITTED BY THE LOCAL AUTHORITY - ARMORED CABLE MAY BE USED INDOORS FOR INDIVIDUAL DROPS TO OUTLETS AND SWITCHES, WHERE CONCEALED IN WALLS AND PARTITIONS - PROVIDED THE FOLLOWING CONDITIONS ARE MET:
   A. THE BRANCH CIRCUIT HOMERUN WIRING IS INSTALLED IN THE ACCESSIBLE CEILING PLENUM USING METAL CONDUIT.
   B. JUNCTION BOXES ARE LOCATED IN THE ACCESSIBLE CEILING PLENUM ADJACENT TO THE ASSOCIATED WALLS OR PARTITIONS IN WHICH OUTLETS OR SWITCH LEGS ARE INSTALLED.
   C. LENGTH OF ARMORED CABLE DROP IS NOT GREATER THAN 12'-O" FROM JUNCTION BOXES TO WIRING DEVICES WITHIN WALL.
10. MC CABLE SHALL NOT BE USED FOR HOMERUN WIRING. HOMERUNS SHALL BE HARD PIPED WITH METAL CONDUIT.

OUTLET BOXES

1. IN STANDARD PARTITIONS, WHERE 1/2", 3/4", AND 1" CONDUITS ARE EMPLOYED: 4" SQUARE BY 2-1/8" DEEP BOXES WITH 1-GANG OR 2-GANG PLASTER COVERS SHALL BE USED UNLESS NOTED OTHERWISE.
2. IN THIN PARTITIONS MEASURING 3-1/2" OR LESS: 4" SQUARE BY 1-1/2" DEEP BOXES WITH 1-GANG OR 2-GANG PLASTER COVERS SHALL BE USED UNLESS NOTED OTHERWISE.
3. IN STANDARD PARTITIONS, WHERE 1-1/4" CONDUITS ARE EMPLOYED: 4-11/16" SQUARE BY 2-1/8" DEEP BOXES WITH 1-GANG OR 2-GANG PLASTER COVERS SHALL BE USED UNLESS NOTED OTHERWISE.
4. OUTLET BOXES SHALL BE SECURELY ATTACHED TO THE PARTITION STUDS, WITH AT LEAST ONE (1) PARTITION STUD PEPARATING THE OUTLET BOXES. IT IS NOT ACCEPTABLE TO SECURE OUTLET BOXES ONLY TO DRYWALL PARTITION.
5. OUTLET, SWITCH AND JUNCTION BOXES FOR VARIOUS USES SHALL BE AS MANUFACTURED BY THOMAS & BETTS OR AN APPROVED EQUAL.
6. PROVIDE EXTRA DUTY COVERS FOR ALL 15 AND 20 AMP, 125 AND 250 VOLT RECEPTACLES IN ALL WET LOCATIONS PER NEC 406.9(B)(1).
7. WHERE OCCUPANCY SENSORS/LIGHT SWITCHES ARE INSTALLED AT END OF DOOR SWING, GENERAL CONTRACTOR TO INSTALL STUD AT 42" FROM HINGE WALL. INSTALL SWITCHES ON EITHER SIDE OF STUD.
8. WHERE MULTI-GANG BACK BOXES ARE REQUIRED,THE BACK BOX SHALL CONSIST OF A SINGLE UNIT - SINGLE BACK BOX WITH MUDRING OR MASONRY STYLE JUNCTION BOX. GANGABLE STYLE BACK BOXES ARE NOT ACCEPTABLE.

GROUNDING

1. THE ELECTRICAL DISTRIBUTION SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE (NEC), AS SHOWN AND SPECIFIED, AND RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS SERVE THE INTENDED FUNCTIONS. ALL CONDUIT SHALL HAVE AN EQUIPMENT GROUND

ELECTRICAL SPECIFICATIONS

WIRING DEVICES

1. PROVIDE BUILDING STANDARD WIRING DEVICES. WHERE A BUILDING STANDARD IS NOT ESTABLISHED, ELECTRICAL RECEPTACLES SHALL BE LEVITON 120 VOLT, 20 AMP, #16362-W SERIES, DECORATOR STYLE, BACK/SIDE WIRED WITH MATCHING COVER PLATE UNLESS OTHERWISE INDICATED. LIGHTING SWITCHES SHALL BE LEVITON #5621-2W OR #5623-2W WITH MATCHING COVER PLATES. DEVICES SHALL BE WHITE UNLESS OTHERWISE INDICATED. COVER PLATES SHALL BE NYLON UNLESS OTHERWISE NOTED. EQUAL DEVICES BY HUBBELL, LEGRAND ARE ACCEPTABLE.
2. ALL WIRING DEVICES SHALL BE RATED 20-AMP MINIMUM. EXISTING 15-AMP DEVICES SHALL BE REPLACED WITH 20-AMP WHERE NEW CIRCUITING IS INDICATED/REQUIRED.
3. ALL NEW AND EXISTING GFI RECEPTACLES INDICATED ON THE PLANS SHALL MEET THE REVISED LATEST U.L. #943 REQUIREMENTS. WEATHERPROOF RECEPTACLES SHALL BE LISTED WEATHER RESISTANT TYPE. REPLACE EXISTING DEVICES AS REQUIRED.
4. ALL WIRING DEVICES (EXCLUDING LIGHT SWITCHES) SHALL BE LABELED WITH SELF-ADHESIVE, LAMINATED TAPE INDICATING THE CIRCUIT NUMBER AND PANEL DESIGNATIONS. UTILIZE CLEAR TAPE WITH BLACK LETTERS UNLESS NOTED OTHERWISE. PROVIDE SAMPLE OF LABELS TO ARCHITECT AND LANDLORD FOR APPROVAL PRIOR TO INSTALLATION.

CONDUCTORS

1. ALL CONDUCTORS FURNISHED AND INSTALLED SHALL COMPLY WITH THE REQUIREMENTS AND LATEST REVISIONS OF THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE (NESC), STANDARDS OF THE UNDERWRITER'S LABORATORIES (UL), NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA), INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE).
2. ALL FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE SOFT DRAWN, ANNEALED COPPER, HAVING A CONDUCTIVITY OF NOT LESS THAN 98% OF THAT OF PURE COPPER, AND MEETING BEFORE STRANDING, THE REQUIREMENTS OF ASTM B-3, "STANDARD SPECIFICATIONS FOR SOFT OR ANNEALED COPPER WIRE FOR ELECTRICAL PURPOSES", LATEST EDITION.
3. UNLESS OTHERWISE SPECIFIED OR NOTED, ALL CONDUCTORS NO. 10 AND SMALLER SHALL BE SOLID COPPER THHN WITH AN INSULATING OUTER JACKET SUITABLE FOR CONDUCTOR TEMPERATURES OF 90°C, EXCEPT FOR NEC CLASS 1, 2, 3, CONDUCTORS WHICH MAYBE STRANDED IF TERMINATED AS REQUIRED HEREIN.
4. UNLESS OTHERWISE SPECIFIED OR NOTED, ALL CONDUCTORS NO. 8 AND LARGER SHALL BE THWN-2/THHN, 600 VOLT, STRANDED WITH A THERMOPLASTIC INSULATING COMPOUND AND AN OUTER JACKET (THWN-2/THHN ONLY) SUITABLE FOR CONDUCTOR TEMPERATURES OF 90°C. STRANDED WIRE SHALL BE TERMINATED AS SPECIFIED HEREIN.
5. IF IT COMPLIES WITH THESE SPECIFICATIONS, THE FOLLOWING CONDUCTOR MANUFACTURERS WILL BE ACCEPTABLE: ESSEX, GENERAL CABLE, ENCORE, SOUTHWIRE OR APPROVED EQUAL.
6. IF IT COMPLIES WITH THESE SPECIFICATIONS, CABLE LUGS AND TERMINATION FITTINGS MANUFACTURED BY ONE OF THE FOLLOWING WILL BE ACCEPTABLE: BLACKBURN, BURNDY, IDEAL, THOMAS & BETTS OR APPROVED EQUAL.
7. NO SPLICES OR TAPS SHALL BE MADE IN ANY CONDUCTOR EXCEPT IN OUTLET BOXES, JUNCTION BOXES, SPLICE BOXES, OR OTHER DEVICES AND EQUIPMENT IN EXPOSED AND ACCESSIBLE LOCATIONS APPROVED FOR THE PURPOSE BY THE LATEST EDITION OF THE NEC.
8. ALL NO. 10 AWG AND SMALLER SOLID CONDUCTORS SHALL BE SPLICED WITH PRE-INSULATED SPRING CONNECTORS. ALL NO. 10 AWG AND SMALLER STRANDED CONDUCTORS FOR NEC CLASS 1, 2, 3 WIRING SHALL BE TERMINATED WITH AMP 'PIDG' UL LISTED PREMIUM GRADE INSULATED FORK CONNECTORS, OR APPROVED EQUAL, AND SHALL BE SPLICES IN A JUNCTION BOX WITH AMP "PLASTIC-GRIP" UL LISTED STANDARD GRADE INSULATED BUTT SPLICES, OR APPROVED EQUAL.
9. ALL 120 VOLT, 20 AMP HOME RUNS LONGER THAN 50 FEET AND ALL 277 VOLT, 20 AMP HOME RUNS LONGER THAN 100 FEET SHALL BE #10 MINIMUM.
10. EMT CONDUIT SHALL BE SIZED IN ACCORDANCE WITH THE PERCENT FILL REQUIREMENTS OF THE NEC AND AS INDICATED ON THE DRAWINGS AND SHALL BE OF AMPLE SIZE TO PERMIT THE READY INSERTION AND WITHDRAWAL OF CONDUCTORS WITHOUT ABRASION. GROUPING OF "HOME RUNS" IS ACCEPTABLE ONLY WHERE THE NUMBER OF CONDUCTORS INDICATED ON THE DRAWINGS IS MAINTAINED AND THE PROPER NEC DE-RATING FACTORS ARE APPLIED BASED ON FULL RATING OF THE BRANCH CIRCUIT OVERCURRENT PROTECTION DEVICES. FOR 20 AMP CIRCUITS, NOT MORE THAN NINE(9) - #12 THHN OR #10 THHN CURRENT CARRYING (PHASE & NEUTRAL) CONDUCTORS SHALL BE INSTALLED IN EACH RACEWAY.
11. THE USE OF "PUSH-IN" STYLE WIRE CONNECTORS (WAGO OR SIMILAR) ARE STRICTLY PROHIBITED FOR TERMINATIONS OF BRANCH CONDUCTORS. CONDUCTORS SHALL BE TWISTED AND TERMINATED WITH APPROVED WIRE NUT CONNECTION. THE USE OF "PUSH-IN" WIRE CONNECTORS ARE ACCEPTABLE ONLY WHEN PROVIDED BY MANUFACTURER AND PRE-TERMINATED WITHIN A LIGHT FIXTURE.

PANELBOARDS

1. CONTRACTOR SHALL PROVIDE ACCURATE TYPE WRITTEN PANEL SCHEDULES. SCHEDULES SHALL INDICATE DEVICES AND/OR EQUIPMENT SERVED, LOCATION AND/OR ROOM NUMBERS FOR NEW AND EXISTING CIRCUITS. PROVIDE NEW SCHEDULES FOR ALL NEW AND EXISTING PANELS.
2. WHERE PANELBOARDS HAVE MULTIPLE PANEL SECTIONS, A BONDING JUMPER SIZED PER NEC, SHALL BE USED TO BOND EACH PANEL ENCLOSURE. USE OF CONDUIT AS ONLY MEANS FOR CONTINUITY IS UNACCEPTABLE.

LIGHTING AND LIGHTING CONTROLS

1. FURNISH AND INSTALL LIGHTING FIXTURES OF THE TYPES SCHEDULED ON THE DRAWINGS. FIXTURE MANUFACTURES SHALL BE AS SCHEDULED ON THE DRAWINGS. ALTERNATE MANUFACTURERS WILL BE CONSIDERED IF SUBMITTED 7 DAYS PRIOR TO BID. FIXTURES SHALL BE FURNISHED WITH ALL REQUIRED ACCESSORIES AND TRIM AS REQUIRED FOR A COMPLETE INSTALLATION IN THE CEILING TYPE SHOWN ON THE ARCHITECTURAL DRAWINGS.
2. A SEPARATE NEUTRAL SHALL BE PULLED FOR EACH DIMMED CIRCUIT.
3. FOR LED FIXTURES, LAMPS, DRIVERS, AND COMPONENTS, PROVIDE A COMPLETE WARRANTY FOR PARTS AND LABOR FOR A MINIMUM OF FIVE (5) YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
4. FOR EXISTING LIGHT FIXTURES WITH BATTERY PACKS, ELECTRICAL CONTRACTOR SHALL ASSUME NEW BATTERY PACKS WILL BE REQUIRED UNLESS FIELD VERIFICATION PROVES OTHERWISE.

IDENTIFICATION/LABELING

1. EXISTING CIRCUITRY IS SHOWN FOR INFORMATION ONLY. EXISTING CIRCUITRY INFORMATION TAKEN FROM COMBINATION OF FIELD SURVEY AND PREVIOUS TENANT DRAWINGS. CONTRACTOR SHALL FIELD VERIFY EXACT CIRCUITRY AND INDICATE ANY DEVIATIONS ON THE "AS BUILT" DRAWINGS. "AS BUILT" DRAWINGS SHALL ACCURATELY INDICATE THE LOCATION OF ALL NEW AND EXISTING JUNCTION BOXES WITH THE RESPECTIVE PANEL AND CIRCUIT NUMBERS.
2. ALL PANELBOARDS, MOTOR STARTERS, CONTROL PANELS, CONTROL REMOTE STATIONS, DISCONNECT SWITCHES, CIRCUIT BREAKERS OR OTHER EQUIPMENT IN SEPARATE ENCLOSURES SHALL BE EQUIPPED WITH NAMEPLATES. THE NAMEPLATES SHALL BE ENGRAVED RIGID PLASTIC LAMINATE OR APPROVED EQUAL, WHITE LETTERING ON BLACK BACKGROUND FOR EQUIPMENT 208/120 VOLT AND BLACK LETTERING ON WHITE BACKGROUND FOR EQUIPMENT 480/277 VOLT, AND BE ATTACHED TO THE EQUIPMENT SECURELY WITH SCREWS. EACH NAMEPLATE SHALL GIVE THE NUMBER DESIGNATION OF THE EQUIPMENT AS SHOWN ON THE ONE LINE DIAGRAM AND ALSO THE SOURCE. UTILIZE SIMILAR RED AND WHITE NAMEPLATES FOR ALL EMERGENCY POWERED EQUIPMENT.
3. ALL WIRING DEVICES (EXCLUDING LIGHT SWITCHES) SHALL BE LABELED WITH SELF-ADHESIVE, LAMINATED TAPE INDICATING THE CIRCUIT NUMBER AND PANEL DESIGNATIONS. UTILIZE CLEAR TAPE WITH BLACK LETTERS UNLESS NOTED OTHERWISE. PROVIDE SAMPLE OF LABELS TO ARCHITECT AND LANDLORD FOR APPROVAL PRIOR TO INSTALLATION.
4. NEW AND EXISTING CIRCUITRY SHALL BE ACCURATELY IDENTIFIED AT THE RESPECTIVE ABOVE CEILING JUNCTION BOXES. THE ASSOCIATED PANEL, CIRCUITS, AND VOLTAGE SHALL BE IDENTIFIED ON ALL JUNCTION BOX COVERS.

POWER

1. COORDINATE THE INSTALLATION OF ELECTRICAL AND COMMUNICATION CONDUIT TO FURNITURE SYSTEMS WITH THE ARCHITECT PRIOR TO THE INSTALLATION OF ELECTRICAL ITEMS. VERIFY IN WRITING WITH THE ARCHITECT THAT THE QUANTITY OF WIRES AND CIRCUITS CORRESPONDS TO THE FURNITURE SYSTEMS THAT WILL BE SUPPLIED TO THIS PROJECT.
2. PROVIDE HEAVY DUTY DISCONNECTS AS REQUIRED FOR THE PLUMBING AND MECHANICAL EQUIPMENT. COORDINATE WITH ALL TRADES.
3. WHERE SEPARATE HOME RUNS ARE INDICATED ON THE PLANS, DO NOT UTILIZE THE NEUTRAL OR GROUND CONDUCTOR FOR ANY OTHER CIRCUITS. TERMINATE ONLY AT DEVICES AND PANELBOARD AS INDICATED.
4. ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH DEDICATED NEUTRALS PER NEC 210.4(B) UNLESS NOTED OTHERWISE. MULTIWIRE BRANCH CIRCUITS MAY BE UTILIZED FOR BREAK ROOM APPLIANCE LOADS, EXISTING MULTIWIRE BRANCH CIRCUITS TO BE RE-UTILIZED, AND FOR LOADS WHERE DEDICATED NEUTRALS ARE NOT POSSIBLE (I.E. FURNITURE SYSTEMS). WHERE MULTIWIRE BRANCH CIRCUITS ARE UTILIZED, PROVIDE HANDLE-TIES IN LIEU OF MULTI-POLE BREAKERS.
5. PROVIDE AN EMPTY BOX AND PULL STRING TO ACCESSIBLE CEILING SPACE FOR ALL COMMUNICATION AND A/V DEVICES UNLESS NOTED OTHERWISE. ALL COMMUNICATION DEVICES LOCATED ON WALLS TO DECK AND/OR SOUND INSULATED WALLS SHALL BE PROVIDED WITH 3/4" EMT CONDUIT AND PULL STRING INTO ACCESSIBLE CEILING SPACE.
6. ALL EXISTING JUNCTION BOXES, OUTLETS, PULL BOXES, ETC., LOCATED ABOVE NON-ACCESSIBLE CEILINGS INSTALLED UNDER THIS TENANT IMPROVEMENT PROJECT SHALL BE RELOCATED AS NECESSARY TO A LOCATION ABOVE AN ACCESSIBLE CEILING. WHERE EXISTING JUNCTION BOXES ARE NOT FEASIBLE TO RE-LOCATE, ELECTRICAL CONTRACTOR SHALL NOTIFY ARCHITECT AND ENGINEER.
7. AT ALL EXPOSED CEILING AREAS, UTILIZE 3/4" MINIMUM EMT CONDUIT FOR ALL BRANCH CIRCUITING, FIRE ALARM, AND CONTROLS CABLING. COORDINATE ALL CONDUIT ROUTING WITH THE ARCHITECT PRIOR TO INSTALLATION AND PROVIDE A SHOP DRAWING FOR REVIEW THAT INDICATES ALL PROPOSED CONDUIT ROUTING AT EXPOSED CEILING AREAS. ALL CONDUIT SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO THE LINES OF THE BUILDING AND SHALL BE PAINTED TO MATCH THE FINISH OF THE STRUCTURE.
8. NEUTRAL CONDUCTORS SHALL BE PROPERLY GROUPED IN AT LEAST ONE(1) LOCATION WITHIN ANY ENCLOSURE PER NEC 200.4(B).
9. PENETRATIONS THROUGH FLOORS OR FIRE-RATED CONSTRUCTION SHALL BE FIRESAFED TO COMPLY WITH ASTM E-814 (UL 1479), AND THE LOCAL AUTHORITY HAVING JURISDICTION.

FIRE ALARM - FIRE ALARM CONTRACTOR SCOPE OF WORK

1. THE FIRE ALARM CONTRACTOR SHALL FIELD VERIFY EXISTING SYSTEM CAPACITIES AND SHALL EXPAND SYSTEM AS REQUIRED. FIRE ALARM CONTRACTOR SHALL PROVIDE ALL FIRE ALARM EQUIPMENT, DEVICES, AND APPURTENANCES AS REQUIRED FOR A COMPLETE SYSTEM PER NFPA 72 AND THE AHJ REQUIREMENTS AT NO ADDITIONAL COST TO OWNER OR TENANT.
2. PROVIDE CEILING MOUNT NOTIFICATION DEVICES UNLESS DIRECTED OTHERWISE BY ARCHITECT.
3. PROVIDE WALL MOUNTED NOTIFICATION DEVICES AT MECHANICAL AND ELECTRICAL ROOMS.
4. PROVIDE DUCT MOUNTED SMOKE DETECTORS AS REQUIRED FOR MECHANICAL EQUIPMENT. COORDINATE WITH MECHANICAL CONTRACTOR.
5. FIRE ALARM CONTRACTOR SHALL SUBMIT SHOP DRAWINGS INCLUDING THE COMPLETE SYSTEM LAYOUT OF THE FIRE ALARM SYSTEM TO THE AUTHORITIES HAVING JURISDICTION AND THE ARCHITECT FOR ADA REVIEW.
6. FIRE ALARM CABLING INSTALLED IN RETURN AIR PLENUMS SHALL BE PLENUM RATED.
7. PROVIDE A MINIMUM ONE(1) YEAR FULL PARTS AND LABOR WARRANTY FOR ALL FIRE ALARM WORK UNDER THIS CONTRACT.
8. FIRE ALARM CONTRACTOR SHALL FURNISH, ACCORDING TO THE CONDITIONS OF THE CONSTRUCTION CONTRACT, SHOP DRAWINGS INCLUDING THE COMPLETE LAYOUT OF FIRE PROTECTION SYSTEMS TO THE AUTHORITIES HAVING JURISDICTION, LOCAL FIRE DEPARTMENT, THE OWNER'S INSURANCE CARRIER, AND LANDLORD FOR APPROVAL.

FIRE ALARM - ELECTRICAL CONTRACTOR SCOPE

1. ASSUME CEILING MOUNTED NOTIFICATION DEVICES UNLESS DIRECTED OTHERWISE BY ARCHITECT. PROVIDE T-BAR HANGERS (WHERE REQUIRED) AND JUNCTION BOX.
2. FOR MECHANICAL AND ELECTRICAL ROOMS, ASSUME WALL MOUNTED FIRE ALARM DEVICES. PROVIDE 4" SQ. X 2-1/8"D BACKBOX AND 3/4" EMT TO ABOVE ACCESSIBLE CEILING.
3. COORDINATE DEVICE LOCATIONS WITH FIRE ALARM SHOP DRAWINGS, THE ARCHITECT AND ALL TRADES PRIOR TO START OF CONSTRUCTION.
4. ELECTRICAL DRAWINGS REFLECT ONLY SMOKE DETECTORS FOR CONTROL OF MECHANICAL SYSTEMS AND SMOKE/FIRE DAMPER POWER CONNECTIONS.
5. FOR APPROXIMATE QUANTITY OF NOTIFICATION DEVICES, PROVIDE BACK-BOXES FOR THE FOLLOWING LOCATIONS:
   -STORAGE ROOMS, JANITOR CLOSETS
   -RESTROOMS
   -MULTI-OCCUPANT OFFICES
   -BREAK ROOMS
   -CONFERENCE, TRAINING, TEAM, HUDDLE ROOMS
   -RECEPTION, WAITING, LOBBY AREAS
   -OPEN OFFICE AND LARGE ENCLOSED ROOMS, (1) BACK-BOX PER 50'X50' AREA

PRE-CONSTRUCTION FUNCTIONAL TEST

PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL FUNCTIONALLY TEST ALL ELECTRICAL AND FIRE ALARM EQUIPMENT THAT IS EXISTING TO REMAIN OR RELOCATED IN THIS PROJECT. THE CONTRACTOR SHALL PROVIDE A WRITTEN DESCRIPTION OF ANY AND ALL DEFICIENCIES TO THE OWNER/TENANT. ANY DEFICIENCIES FOUND AFTER THE START OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER/TENANT. THE EQUIPMENT TO BE TESTED INCLUDES, BUT IS NOT LIMITED TO: RECEPTACLES, LIGHT FIXTURES, EXIT SIGNS, OCCUPANCY SENSORS, PANEL BOARDS, TRANSFORMERS, EMERGENCY LIGHTING BATTERY UNITS, AND SWITCHES.

APPLICABLE CODES AND STANDARDS

1. BUILDING CODE - 2021 IBC WITH CITY OF AUSTIN AMENDMENTS
2. FIRE CODE - 2021 IFC WITH CITY OF AUSTIN AMENDMENTS
3. ELECTRICAL CODE - 2020 NEC WITH CITY OF AUSTIN AMENDMENTS.
4. MECHANICAL CODE - 2021 UMC WITH CITY OF AUSTIN AMENDMENTS
5. PLUMBING CODE - 2021 UPC WITH CITY OF AUSTIN AMENDMENTS
6. OTHER - 2021 INTERNATIONAL ENERGY CONSERVATION CODE WITH CITY OF AUSTIN AMENDMENTS
7. OTHER - LIFE SAFETY CODE (NFPA 101) 2021 EDITION
8. OTHER - FEDERAL DEPARTMENT OF JUSTICE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARDS.
9. ALL APPLICABLE CITY OF AUSTIN ORDINANCES
10. CURRENT (11/9/2020) CITY OF AUSTIN ELECTRIC UTILITY DESIGN CRITERIA MANUAL.
11. SUBCHAPTER E OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE.

B2 AEP

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5da-i.com

STATE OF TEXAS
MICHAEL E. FULK
123352
LICENSED
PROFESSIONAL ENGINEER
09/26/2022

6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

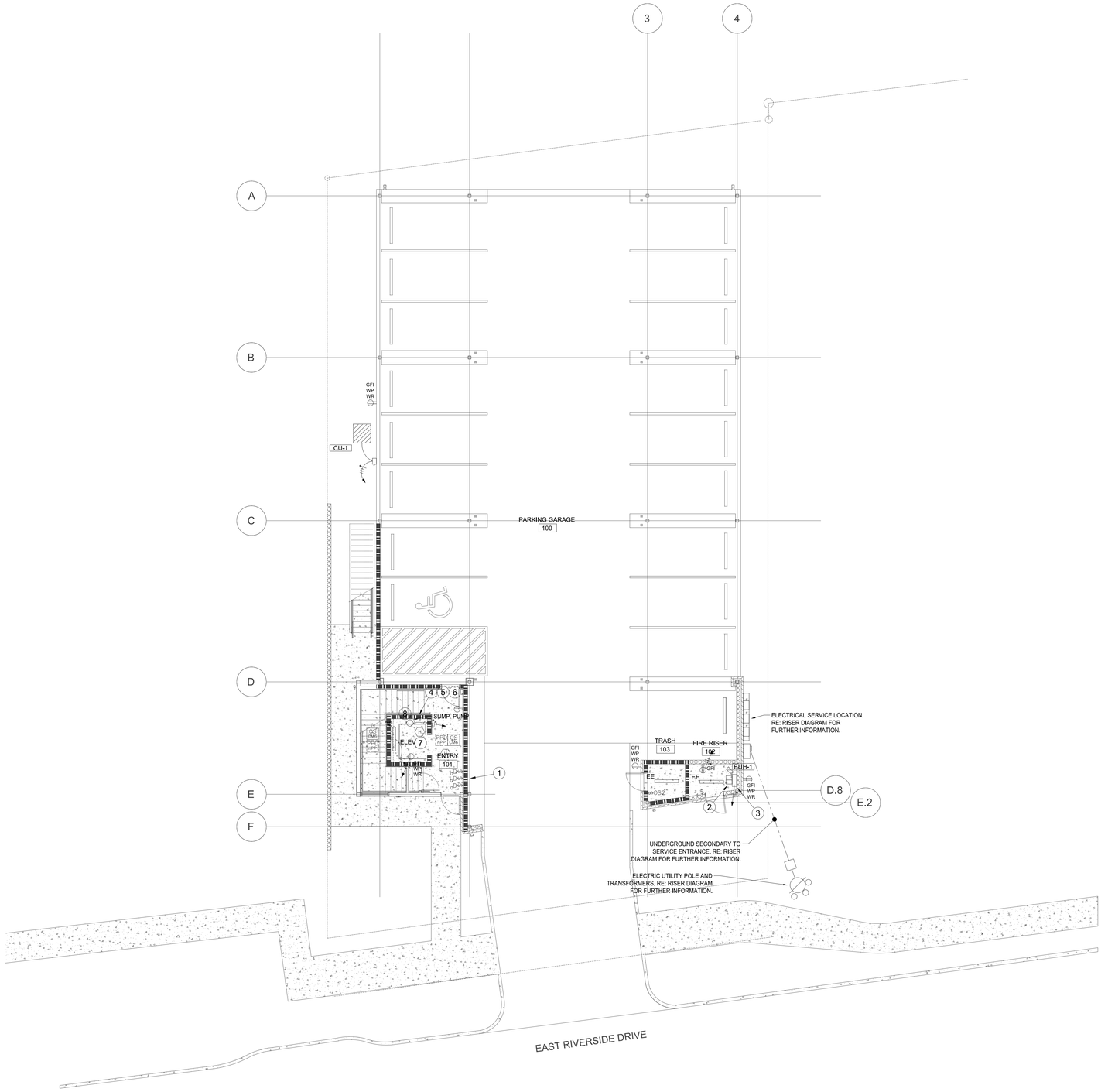
PROJ. NO.

ORIG. ISSUE

CURRENT:
2022-09-23

SHEET NAME:
ELECTRICAL - SPECIFICATIONS

SHEET NO:
E0.001



1 1ST LEVEL
ELECTRICAL - POWER & LIGHTING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO ELECTRICAL COVER SHEET E-000 FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL INFORMATION.

B. REFER TO ELECTRICAL SPECIFICATIONS, DETAILS, AND SCHEDULES FOR ADDITIONAL INFORMATION.

C. EGRESS (NORMALLY OFF) LIGHTING AND EXIT SIGNS WHERE NOT SHOWN WITH A CIRCUIT DESIGNATION, SHALL BE CONNECTED TO NEAREST ADJACENT BRANCH CIRCUIT SERVING THE LIGHTING WITHIN THE SAME AREA. TYPICAL FOR ALL EGRESS (NORMALLY OFF) AND EXIT SIGN LIGHTING U.N.O.

D. VERIFY THE EXACT LOCATION OF ALL EXIT SIGNS WITH THE FINAL LAYOUT AND ORIENTATION OF BUILDING ENTITIES. ENSURE THAT AN EXIT SIGN IS VISIBLE WITHIN 100-FEET OF ANY POINT ALONG THE PATH OF EGRESS. VERIFY EXACT REQUIREMENTS WITH THE LOCAL AHJ AND THE EXIT SIGN MANUFACTURER PRIOR TO ROUGH-IN.

E. VERIFY THE EXACT MOUNTING HEIGHT AND MOUNTING REQUIREMENTS OF ALL LIGHTING FIXTURES WITH THE ARCHITECT PRIOR TO ANY LIGHT FIXTURE ROUGH-IN.

F. COORDINATE AND VERIFY THE EXACT SENSOR (OCCUPANCY, VACANCY, ETC.) LOCATION, MOUNTING AND INSTALLATION REQUIREMENTS WITH THE EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN.

G. COORDINATE THE EXACT ZONING AND CONTROL OF ALL FIXTURES WITH THE ARCHITECT/OWNER. CONTRACTOR SHALL COORDINATE ALL REQUIRED COMPONENTS OF THE LIGHTING CONTROL SYSTEM WITH THE ARCHITECT/OWNER PRIOR TO ANY ROUGH-IN.

H. ALL INTERIOR NORMAL POWER LIGHTING FIXTURES SHALL BE FULLY DIMMABLE. TYPICAL FOR ALL INTERIOR NORMAL POWER FIXTURES, U.N.O.

I. VERIFY THE DIMMING TECHNOLOGY OF EACH FIXTURE TO BE DIMMED WITH THE EQUIPMENT MANUFACTURER AND PROVIDE A COMPATIBLE DIMMER SWITCH AND DIMMING POWER PACK/LOAD CONTROL. VERIFY REQUIREMENTS WITH THE EQUIPMENT MANUFACTURER.

J. ALL NEW LIGHT SWITCHES SHALL BE BASE BUILDING SPECIFICATION GRADE. COORDINATE THE DEVICE STYLE AND FINISH WITH THE BUILDING MANAGEMENT AND ARCHITECT PRIOR TO INSTALLATION. ALL DEVICES SHALL BE RATED 20-AMP MINIMUM.

K. REFERENCE ARCHITECTURAL DRAWINGS AND COORDINATE THE EXACT LOCATION AND ORIENTATION FOR ALL NEW LIGHT SWITCHES AND LIGHT FIXTURES WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION.

L. ALL POWER PACKS/BALLASTS FOR LIGHTING/SENSORS MOUNTED IN GYPSUM BOARD CEILING SHALL BE REMOTE MOUNTED IN EASILY ACCESSIBLE DROP CEILING AREAS. POWER PACKS/BALLAST ARE TO BE LABELED.

M. LOWER CASE LETTERS INDICATES CORRESPONDING SWITCH LEG FOR LIGHT FIXTURE CONTROL.

KEYED DRAWING NOTES "→ (1)"

1. MAIN SWITCHBANK FOR COMMON/LOBBY AREA LIGHTING CONTROL . COORDINATE THE EXACT SWITCHING SCHEMES AND SWITCHBANK LOCATION WITH THE ARCHITECT AND LIGHTING CONTROL MANUFACTURER RECOMMENDATIONS.

2. SPRINKLER SYSTEM FLOW AND TAMPER SWITCHES AT OS&Y VALVES TO BE MONITORED BY THE FIRE ALARM SYSTEM. COORDINATE THE EXACT LOCATION AND QUANTITY WITH THE SPRINKLER SYSTEM CONTRACTOR. VERIFY CONNECTION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR AND MANUFACTURER.

3. SPRINKLER MONITORING SYSTEM PANEL THE CONTRACTOR SHALL ROUTE 1- 1" EMPTY CONDUIT WITH PULLWIRE FROM SPRINKLER MONITORING SYSTEM PANEL TO BUILDING TELEPHONE SERVICE PANEL. COORDINATE EXACT PANEL INSTALLATION REQUIREMENTS WITH THE SPRINKLER SYSTEM AND FIRE ALARM CONTRACTORS.

4. ALL ELEVATOR PIT CONDUITS SHALL BE ENCLOSED IN NEMA '4X' CONDUIT PER ASME A17.1 RULE 102.2.

5. GROUND ALL ELEVATOR ELECTRICAL EQUIPMENT, CONTROLLERS, AND MACHINES WIN ACCORDANCE WITH NEC 620.81-82 AND ASME A17.1 RULE 102.1.

6. COORDINATE WITH THE ELEVATOR MANUFACTURER TO VERIFY ALL ELEVATOR INSTALLATION AND MOUNTING REQUIREMENTS AS WELL AS ALL CONNECTION POINTS PRIOR TO ROUGH-IN OF ANY ELEVATOR DEVICES. REFER TO THIS PROJECTS SHOP DRAWINGS FROM THE ELEVATOR MANUFACTURER FOR THE EXACT INSTALLATION REQUIREMENTS.

7. PROVIDE HEAT DETECTOR IN ELEVATOR PIT NO HIGHER THAN 2-FEET ABOVE THE PIT FLOOR AND NOT MORE THAN 2-FEET FROM THE NEAREST SPRINKLER HEAD. COORDINATE EXACT LOCATION WITH FIRE SPRINKLER CONTRACTOR AND ELEVATOR SHAFT EQUIPMENT.

8. ELECTRICAL CONNECTION TO ELEVATOR SUMP PUMP. COORDINATE THE EXACT INSTALLATION, CONNECTION AND CONTROL REQUIREMENTS WITH THE PUMP AND ELEVATOR MANUFACTURERS.

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

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www.5di-i.com

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6707 Riverside

6707 Riversideland LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

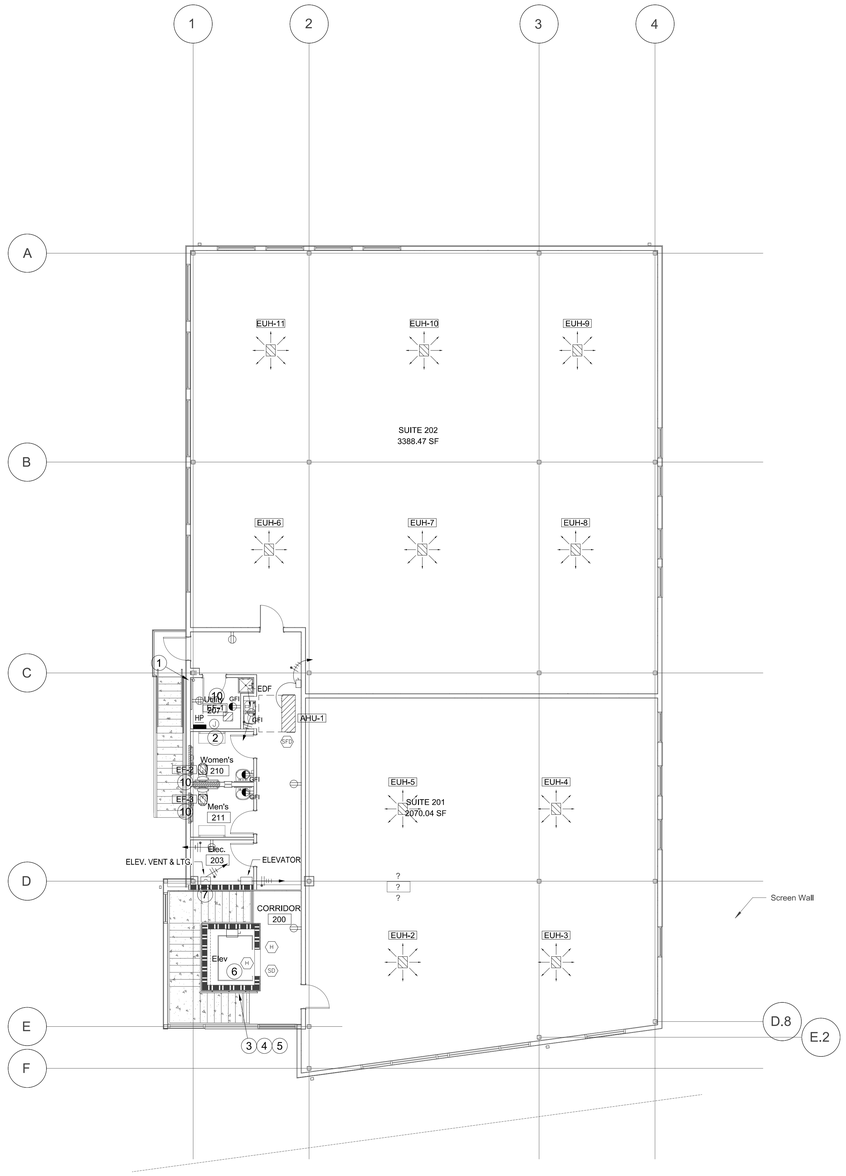
Δ	DATE	DESCRIPTION

PROJ. NO. | ORIG. ISSUE

CURRENT:
2022-09-23

SHEET NAME:
ELECTRICAL -
1ST LEVEL -
LIGHTING &
POWER PLAN

SHEET NO:
E1.000



2ND LEVEL
ELECTRICAL - POWER & LIGHTING PLAN

1

SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET E-000 ELECTRICAL COVER SHEET FOR ADDITIONAL INFORMATION.

B. ALL NEW RECEPTACLES SHALL BE SPECIFICATION GRADE. COORDINATE THE DEVICE STYLE AND FINISH WITH THE BASE BUILDING SPECS, TENANT, AND ARCHITECT PRIOR TO INSTALLATION. ALL DEVICES SHALL BE RATED 20-AMP MINIMUM. ALL DEVICES SHALL BE MATCHING IN FINISH AND COLOR PRIOR TO COMPLETION OF PROJECT.

C. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.

D. THE CONTRACTOR SHALL ACCURATELY LABEL NEW JUNCTION BOXES WITH THE RESPECTIVE PANEL AND CIRCUIT NUMBER(S). IN ADDITION, THE RESPECTIVE PANELBOARD DIRECTORIES SHALL BE PRINTED AND STORED WITH THE PANELBOARDS

E. ELECTRICAL CONTRACTOR SHALL PROVIDE "TYPED" PANEL BOARD SCHEDULES FOR ALL PANELS SERVING THE PROJECT AREA.

F. REFERENCE ARCHITECTURAL DRAWINGS AND COORDINATE THE EXACT LOCATION AND ORIENTATION FOR ALL NEW RECEPTACLES, AND DATA DEVICES WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION.

G. ALL BRANCH CIRCUITRY SHALL BE ACCURATELY IDENTIFIED AT THE RESPECTIVE ABOVE CEILING JUNCTION BOXES. THE ASSOCIATED PANEL, CIRCUITS, AND VOLTAGE SHALL BE IDENTIFIED ON ALL JUNCTION BOX COVERS. IN ADDITION, THE PANEL DIRECTORIES SHALL BE UPDATED.

H. ALL CIRCUIT BREAKER NOT UTILIZED SHALL BE TURNED "OFF" AND LABELED "SPARE" ON UPDATED PANEL SCHEDULE.

I. ALL CIRCUIT BREAKERS TO BE UTILIZED FOR EQUIPMENT WITH HERMETIC REFRIGERANT MOTOR-COMPRESSORS (HVAC EQUIPMENT AND REFRIGERATORS) SHALL BE HACR TYPE.

J. ALL CIRCUIT BREAKERS TO BE UTILIZED FOR VENDING MACHINES SHALL BE GFCI TYPE.

K. ALL MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH HANDLE TIES PER NEC 210.4.

L. PROVIDE TAMPER RESISTANT RECEPTACLES FOR ALL 125V, 15A AND 20A RECEPTACLES IN ALL CHILDCARE AREAS AND WHERE REQUIRED IN COMMON AREAS IN ACCORDANCE WITH NEC ARTICLE 406.12.

M. FIRE ALARM SYSTEM SHALL BE DESIGNED AND SUBMITTED TO THE AUTHORITY HAVING JURISDICTION BY A LICENSED FIRE ALARM CONTRACTOR. FIRE ALARM CONTRACTOR SHALL PROVIDE DESIGN DRAWINGS WHICH ARE NFPA 72 COMPLIANT FOR AHJ APPROVAL. IN ADDITION, THE LICENSED FIRE ALARM CONTRACTOR SHALL PROVIDE APPROVED/STAMPED PLANS FOR PERMIT SUBMISSION. FIRE ALARM CONTRACTOR SHALL PROVIDE NEW COMPONENTS, ACCESSORIES, EQUIPMENT, AND DEVICES AS REQUIRED FOR A COMPLETE SYSTEM CAPABLE OF SERVING THE SCOPE OF WORK INDICATED.

N. PROVIDE SWITCH MOUNTED IN BACKSPLASH FOR GARBAGE DISPOSAL, DISHWASHER, AND ANY OTHER EQUIPMENT REQUIRING AN ACCESSIBLE DISCONNECTING MEANS INSTALLED BELOW COUNTER.

KEYED DRAWING NOTES "→ (1)"

1. PROVIDE 2'x4'x3/4" MARINE RATED PLYWOOD BACKBOARD FOR TELEPHONE BOARD. PROVIDE AND ROUTE EMPTY 2" CONDUIT WITH PULLSTRING ABOVE CEILING, OR AS DIRECTED BY THE ARCHITECT, BUILDING OWNER OR SERVING UTILITY, TO THE EXISTING BUILDING TELECOM SERVICE ENTRANCE/DEMARC LOCATION. COORDINATE INSTALLATION WITH BUILDING OWNER AND SERVING UTILITY. PROVIDE A MINIMUM #6 GROUND CONDUCTOR FROM TELECOM BOARD TO THE SERVICE ENTRANCE GROUND FOR TELECOM EQUIPMENT GROUNDING.

2. LIGHTING CONTROL/TIME CLOCK LOCATION. CONTRACTOR SHALL COORDINATE THE EXACT INSTALLATION REQUIREMENTS WITH THE EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN. PROVIDE A LOCKABLE TYPE CIRCUIT BREAKER FOR THE CIRCUIT SHOWN.

3. FIRE ALARM CONTRACTOR TO PROGRAM THE FIRE ALARM SYSTEM. HEAT DETECTOR, ELEVATOR RECALL, ELEVATOR MAIN POWER SHUNT TRIP CIRCUIT BREAKER ACTIVATION, AND ALL OTHER ELEVATOR FIRE ALARM COMPONENTS AND ELEMENTS IN ACCORDANCE WITH NFPA 72.

4. COORDINATE WITH THE ELEVATOR MANUFACTURER TO VERIFY ALL ELEVATOR INSTALLATION AND MOUNTING REQUIREMENTS AS WELL AS ALL CONNECTION POINTS PRIOR TO ROUGH-IN OF ANY ELEVATOR DEVICES. REFER TO THIS PROJECTS SHOP DRAWINGS FROM THE ELEVATOR MANUFACTURER FOR THE EXACT INSTALLATION REQUIREMENTS.

5. GROUND ALL ELEVATOR ELECTRICAL EQUIPMENT, CONTROLLERS, AND MACHINES WIN ACCORDANCE WITH NEC 620.81-82 AND ASME A17.1 RULE 102.1.

6. PROVIDE HEAT DETECTOR AT THE TOP OF THE ELEVATOR SHAFT NOT MORE THAN 2-FEET FROM ANY SPRINKLER HEAD. COORDINATE EXACT LOCATION WITH FIRE SPRINKLER CONTRACTOR AND ELEVATOR SHAFT EQUIPMENT.

7. CONNECTION/DISCONNECT FOR ELEVATOR LIGHTING AND VENTILATION. PROVIDE A 20A/1P ENCLOSED CIRCUIT BREAKER IN A KEY-LOCKABLE ENCLOSURE OR AS DIRECTED BY THE ELEVATOR MANUFACTURER.

8. 100A/3P/N1 FUSIBLE DISCONNECT FUSED AT 90AMPS. COORDINATE THE EXACT DISCONNECT AND FUSE SIZING AS WELL AS THE EXACT INSTALLATION REQUIREMENTS WITH THE ELEVATOR MANUFACTURER PRIOR TO ROUGH-IN.

9. 100A/3P/NEMA '4X', LOCKABLE, NON-FUSED DISCONNECT. COORDINATE EXACT DISCONNECTING SIZING, MOUNTING, AND CONNECTION REQUIREMENTS WITH THE ELEVATOR MANUFACTURER. INSTALL PER ELEVATOR MANUFACTURER'S RECOMMENDATIONS.

10. EXHAUST FAN TO BE CONTROLLED VIA THE SAME "ON/OFF" SWITCH OR SENSOR CONTROLLING THE LIGHTING WITHIN THE SAME ROOM. FAN TO BE CONNECTED TO THE SAME 120V, 20AMP BRANCH CIRCUIT SERVING THE LIGHTING WITHIN THE SAME ROOM/AREA.

B2AEP
B2AEP, LLC
TBPE F-16874
3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dia-i.com

STATE OF TEXAS
MICHAEL A. FULK
123352
LICENSED
PROFESSIONAL ENGINEER
09/26/2022

6707 Riverside
6707 Riverside Drive
Austin, TX 78741
6707 Riverside Land LLC

REVISIONS

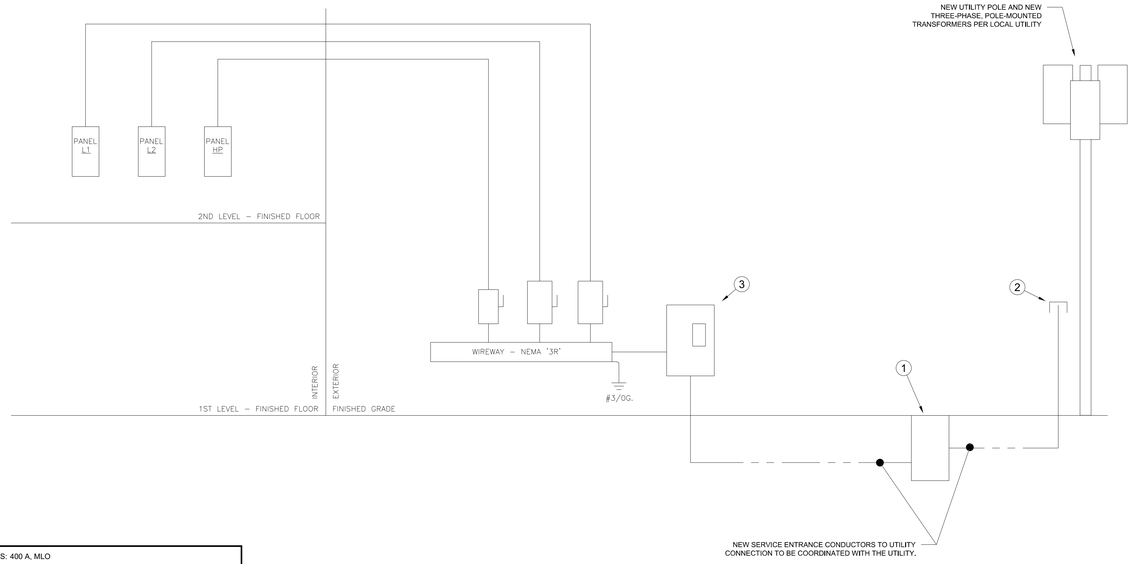
Δ	DATE	DESCRIPTION

PROJ. NO. | ORIG. ISSUE

CURRENT: 2022-09-23

SHEET NAME:
ELECTRICAL - 2ND LEVEL - LIGHTING & POWER PLAN

SHEET NO:
E2.000



01 ELECTRICAL RISER DIAGRAM

SCALE: NO SCALE

PANEL: L2 (NEW)

MAINS: 400 A, MLO
VOLTAGE: 120/208 V., 3 PH, 4 W
BUSSING: 400 A, W/ EQUIPT. GROUND
AIC RATING: 35K RMS SYM, FULLY RATED

ENCLOSURE: RECESSED/NEMA 1

DESCRIPTION	BKR SIZE	PHASE LOAD (VA) A	B	C	CIRC. NO.	CIRC. NO.	PHASE LOAD (VA) A	B	C	BKR SIZE	DESCRIPTION
SPARE	20/1	0			1	2	0			20/1	SPARE
SPARE	20/1		0		3	4		0		20/1	SPARE
SPARE	20/1			0	5	6			0	20/1	SPARE
SPARE	20/1	0			7	8	0			20/1	SPARE
SPARE	20/1		0		9	10		0		20/1	SPARE
SPARE	20/1			0	11	12			0	20/1	SPARE
SPARE	20/1	0			13	14	0			20/1	SPARE
SPARE	20/1		0		15	16		0		20/1	SPARE
SPARE	20/1			0	17	18			0	20/2	SPARE
SPARE	20/1	0			19	20	0				SPARE
SPARE	20/1		0		21	22		0		20/2	SPARE
SPARE	20/1			0	23	24			0		SPARE
SPARE	20/1	0			25	26	0			20/2	SPARE
SPARE	20/1		0		27	28		0			SPARE
SPARE	20/1			0	29	30			0	20/2	SPARE
SPARE	20/1	0			31	32	0				SPARE
SPARE	20/1		0		33	34		0		20/1	SPARE
SPARE	20/1			0	35	36			0	20/1	SPARE
SPARE	20/1	0			37	38	0			20/1	SPARE
SPARE	20/1		0		39	40		0		20/1	SPARE
SPARE	20/1			0	41	42			0	20/1	SPARE
SUBTOTAL		0	0	0			0	0	0	SUBTOTAL	

CONNECTED LOAD		PANELBOARD LOAD ANALYSIS (VOLT-AMPS)						
PHASE A (VA):	0	LOAD TYPE:	LIGHT	RECPT	COOLING	HEAT	MOTOR	MISC	KITCHEN
PHASE B (VA):	0	CONNECTED:	0	0	0	0	0	0	0
PHASE C (VA):	0	DEMAND:	0	0	0	0	0	0	0
TOTAL LOAD (VA):	0	NEC DEMAND:	0 VA			0.0	AMPS, 3 PHASE		

PANEL: L2 (NEW)

MAINS: 400 A, MLO
VOLTAGE: 120/208 V., 3 PH, 4 W
BUSSING: 400 A, W/ EQUIPT. GROUND
AIC RATING: 35K RMS SYM, FULLY RATED

ENCLOSURE: RECESSED/NEMA 1

DESCRIPTION	BKR SIZE	PHASE LOAD (VA) A	B	C	CIRC. NO.	CIRC. NO.	PHASE LOAD (VA) A	B	C	BKR SIZE	DESCRIPTION
SPARE	20/1	0			1	2	0			20/1	SPARE
SPARE	20/1		0		3	4		0		20/1	SPARE
SPARE	20/1			0	5	6			0	20/1	SPARE
SPARE	20/1	0			7	8	0			20/1	SPARE
SPARE	20/1		0		9	10		0		20/1	SPARE
SPARE	20/1			0	11	12			0	20/1	SPARE
SPARE	20/1	0			13	14	0			20/1	SPARE
SPARE	20/1		0		15	16		0		20/1	SPARE
SPARE	20/1			0	17	18			0	20/2	SPARE
SPARE	20/1	0			19	20	0				SPARE
SPARE	20/1		0		21	22		0		20/2	SPARE
SPARE	20/1			0	23	24			0		SPARE
SPARE	20/1	0			25	26	0			20/2	SPARE
SPARE	20/1		0		27	28		0			SPARE
SPARE	20/1			0	29	30			0	20/2	SPARE
SPARE	20/1	0			31	32	0				SPARE
SPARE	20/1		0		33	34		0		20/1	SPARE
SPARE	20/1			0	35	36			0	20/1	SPARE
SPARE	20/1	0			37	38	0			20/1	SPARE
SPARE	20/1		0		39	40		0		20/1	SPARE
SPARE	20/1			0	41	42			0	20/1	SPARE
SUBTOTAL		0	0	0			0	0	0	SUBTOTAL	

CONNECTED LOAD		PANELBOARD LOAD ANALYSIS (VOLT-AMPS)						
PHASE A (VA):	0	LOAD TYPE:	LIGHT	RECPT	COOLING	HEAT	MOTOR	MISC	KITCHEN
PHASE B (VA):	0	CONNECTED:	0	0	0	0	0	0	0
PHASE C (VA):	0	DEMAND:	0	0	0	0	0	0	0
TOTAL LOAD (VA):	0	NEC DEMAND:	0 VA			0.0	AMPS, 3 PHASE		

ONE-LINE DIAGRAM - GENERAL NOTES:

1. ALL GROUNDING SHALL BE IN STRICT ACCORDANCE WITH NEC REQUIREMENTS.
2. COORDINATE THE AIC RATING OF ELECTRICAL PANELBOARDS AND EQUIPMENT WITH THE UTILITY COMPANY INTERRUPTING RATINGS OF THEIR ELECTRICAL GEAR.
3. COORDINATE THE EXACT INSTALLATION REQUIREMENTS FOR THE NEW ELECTRICAL SERVICE WITH THE LOCAL ELECTRICAL UTILITY COMPANY. IT SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE ALL INSTALLATION REQUIREMENTS ARE PER THE LOCAL UTILITY COMPANY AND LOCAL AHJ REQUIREMENTS.

ONE-LINE DIAGRAM KEYED NOTES

1. NEW UTILITY PULLBOX PER LOCAL UTILITY REQUIREMENTS.
2. COORDINATE THE EXACT SECONDARY RISER INSTALLATION REQUIREMENTS WITH THE LOCAL UTILITY.
3. NEW UTILITY METER/TRANSOCKET. COORDINATE THE EXACT GEAR/EQUIPMENT REQUIREMENTS WITH THE LOCAL UTILITY.

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5dint.com

STATE OF TEXAS
MICHAEL A. FULK
123352
LICENSED
PROFESSIONAL ENGINEER
09/26/2022

6707 Riverside

6707 Riverside|and LLC
6707 Riverside Drive
Austin, TX 78741

REVISIONS

Δ	DATE	DESCRIPTION

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CURRENT: 2022-09-23

SHEET NAME:
ELECTRICAL - RISER DIAGRAM AND PANEL SCHEDULES

SHEET NO:
E3.000

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	COLD WATER SUPPLY		FIRE HOSE VALVE
NPW	NON-POTABLE WATER		ALARM VALVE
	HOT WATER SUPPLY		DRY-PIPE VALVE
140	140°F HOT WATER SUPPLY		POST-INDICATOR VALVE
	HOT WATER RETURN		DETECTOR CHECK VALVE
	TRAP PRIMER		STANDPIPE BASE VALVE
A	COMPRESSED AIR		FIRE DEPARTMENT CONNECTION
G	NATURAL GAS		RELIEF VALVE
F	FIRE MAIN, STANDPIPE		GATE VALVE
S	SPRINKLER, DRY OR WET		OS&Y VALVE
	PLUMBING VENT		CIRCUIT SETTER
PD	PUMP DISCHARGE		GLOBE VALVE
	SANITARY, ABOVE GRADE		CIRCUIT SOLVER
SS	SANITARY, BELOW GRADE		BALL VALVE
RD	STORM, ABOVE GRADE		CHECK VALVE
RD	STORM, BELOW GRADE		BUTTERFLY VALVE
OD	OVERFLOW, ABOVE GRADE		PLUG VALVE
OD	OVERFLOW, BELOW GRADE		PRESSURE REGULATING VALVE
	FLOOR DRAIN		SOLENOID VALVE
	FLOOR SINK		STRAINER
	ROOF DRAIN		SLEEVE
	CLEAN-OUT: WALL, FLOOR, YARD, DOUBLE		UNION
	HOSE BIBB, WALL HYDRANT	'A'	SHOCK ARRESTER AND SIZE ('X')
	PIPING AND EQUIPMENT SHOWN LIGHT AND SOLID ARE FURNISHED BY OTHERS		WATER CONNECTION, WALL BOX
	EXISTING PIPING AND EQUIPMENT SHOWN LIGHT LINES		EQUIPMENT
	NEW TO EXISTING CONNECTION LOCATION DEMOLISH TO THIS POINT	DWH-1	EQUIPMENT TAG, FIXTURE TAG

2 working days Call before you Dig. CALL 811

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPS	JS	JANITOR SINK
ADD	AUTOMATIC AIR DAMPER		
ABS	ABSOLUTE	KEC	KITCHEN EQUIPMENT CONTRACTOR
ACCU	AIR COOLED CONDENSING UNIT	KW	KILOWATT
A/C	AIR CONDITIONING	KWH	KILOWATT HOUR
AD	ACCESS DOOR OR AREA DRAIN		
ADA	AMERICAN DISABILITIES ACT	LAT	LEAVING AIR TEMPERATURE
ADJ	ADJUSTABLE	LAV	LAVATORY
AFF	ABOVE FINISHED FLOOR	LB	POUND
AHU	AIR HANDLING UNIT	LDB	LEAVING DRY BULB
AMB	AMBIENT	L	LENGTH
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	LF	LINEAR FEET
AP	ACCESS PANEL	LOC	LIMITS OF CONSTRUCTION
APD	AIR PRESSURE DROP	LP	LOW PRESSURE
~	APPROXIMATELY	LWT	LEAVING WATER TEMPERATURE
ARCH	ARCHITECT		
AS	AIR SEPARATOR	MAT	MIXED AIR TEMPERATURE
AVG	AVERAGE	MAU	MAKE UP AIR UNIT
		MAX	MAXIMUM
BDD	BACKDRAFT DAMPER	MBH	BTH/HR X 1,000
BHP	BRAKE HORSEPOWER	MC	MECHANICAL CONTRACTOR
BFP	BACKFLOW PREVENTOR	MD	MOTORIZED DAMPER
		MECH	MECHANICAL
CA	COMPRESSED AIR	MIN	MINIMUM
CAV	CONSTANT AIR VOLUME	MISC	MISCELLANEOUS
CCW	COUNTER CLOCKWISE	MPT	MALE PIPE THREAD
CD	CONDENSATE DRAIN	MTL	METAL
CFM	CUBIC FEET PER MINUTE	MVD	MANUAL VOLUME DAMPER
CFOI	CONTRACTOR FURNISHED / OWNER INSTALLED	MZ	MULTIZONE
CFS	CUBIC FEET PER SECOND		
CH	CHILLER	NA	NOT APPLICABLE
CHWM	CHILLED WATER MAKE-UP	NC	NOISE CRITERIA
CHWP	CHILLED WATER PUMP	N.C.	NORMALLY CLOSED
CHWPP	CHILLED WATER PRIMARY PUMP	NIC	NOT IN CONTRACT
CHWR	CHILLED WATER RETURN	N.O.	NORMALLY OPEN
CHWS	CHILLED WATER SUPPLY	NTS	NOT TO SCALE
CHWSP	CHILLED WATER SECONDARY PUMP		
CI	CAST IRON	OA	OUTSIDE AIR
CLG	CEILING	OAD	OUTSIDE AIR DAMPER
CLG HT	CEILING HEIGHT	OAT	OUTSIDE AIR TEMPERATURE
CW	CLOCKWISE	OBD	OPPOSED BLADE DAMPER
CO	CLEAN-OUT, CARBON MONOXIDE	OD	OUTSIDE DIAMETER
CO2	CARBON DIOXIDE	OFCI	OWNER FURNISHED / CONTRACTOR INSTALLED
COL	COLUMN	OFD	OVERFLOW DRAIN
CONC	CONCRETE	OFOI	OWNER FURNISHED / OWNER INSTALLED
COP	COEFFICIENT OF PERFORMANCE (HEATING)	OZ	OUNCE
CP	CONDENSATE PUMP		
CT	COOLING TOWER	P	PUMP
CU	CONDENSING UNIT	PCT	PERCENT
CV	CONSTANT VOLUME	PD	PRESSURE DROP/DIFFERENCE
CW	COLD WATER	PF	PRE-FILTER
CWP	CONDENSER WATER PUMP	PH	PHASE
CWR	CONDENSER WATER RETURN	PLBG	PLUMBING
CWS	CONDENSER WATER SUPPLY	POC	POINT OF CONNECTION
		PPM	PARTS PER MILLION
dB	DECIBEL(S)	PRS	PRESSURE REDUCING STATION
DB	DRY BULB TEMPERATURE	PRV	PRESSURE REDUCING VALVE
DDC	DIRECT DIGITAL CONTROL	PSF	POUNDS PER SQUARE FOOT
DEG	DEGREE(S)	PSI	POUNDS PER SQUARE INCH
DF	DRINKING FOUNTAIN	PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
DH	DUCT HEATER	PSIG	POUNDS PER SQUARE INCH, GAGE
DIA	DIAMETER	PTAC	PACKAGED TERMINAL AIR CONDITIONER
DP	DEW POINT	PVC	POLYVINYL CHLORIDE
DPT	DEW POINT TEMPERATURE		
D	DRAIN	QT	QUART
DT	DELTA TEMPERATURE	QTY	QUANTITY
DYCO	DOUBLE YARD CLEAN-OUT		
EAT	ENTERING AIR TEMPERATURE	RA	RETURN AIR
ECON	ECONOMIZER	RAF	RETURN AIR FAN
EDB	ENTERING DRY BULB	RAT	RETURN AIR TEMPERATURE
EDH	ELECTRIC DUCT HEATER	RCP	REINFORCED CONCRETE PIPE
EER	ENERGY EFFICIENCY RATIO	RD	ROOF DRAIN
EF	EXHAUST FAN	REF	REFRIGERATOR
EFF	EFFICIENCY	RH	RELATIVE HUMIDITY
ELEC	ELECTRIC	RHC	REHEAT COIL
ENT	ENTERING	RM	ROOM
EQIV FT	EQUIVALENT FEET	RPM	REVOLUTIONS PER MINUTE
EQP	EQUIPMENT	RPS	REVOLUTIONS PER SECOND
ESP	EXTERNAL STATIC PRESSURE	RTU	ROOF TOP UNIT
ET	EXPANSION TANK	RV	RELIEF VALVE
EUH, EH	ELECTRIC (UNIT) HEATER		
EVAP	EVAPORAT(E), (IVE)	SA	SUPPLY AIR
EWB	ENTERING WET BULB	SAF	SUPPLY AIR FAN
EWH	ELECTRIC WATER HEATER	SAN	SANITARY
EWT	ENTERING WATER TEMPERATURE	SAT	SATURATED
EXH	EXHAUST	SCFM	STANDARD CUBIC FEET PER MINUTE
EXT	EXTERIOR	SCFS	STANDARD CUBIC FEE PER SECOND
		SD	SMOKE DAMPER, STORM DRAIN
F	FAHRENHEIT	SEC	SECOND(S)
FA	FREE AREA	SFD	SMOKE/FIRE DAMPER
FC	FLEXIBLE CONNECTION	SH	SHOWER
FCO	FLOOR CLEAN-OUT	SHT	SHEET
FCU	FAN COIL UNIT	SK	SINK
FD	FLOOR DRAIN, FIRE DAMPER	SP	SUMP PUMP
FDC	FIRE DEPARTMENT CONNECTION	SPEC	SPECIFICATIONS
FF	FINAL FILTERS	SS	SERVICE SINK, SANITARY SEWER, STORM SEWER, STAINLESS STEEL
FHC	FIRE HOSE CABINET		
FLR	FLOOR	STC	SOUND TRANSMISSION CLASS
FPC	FIRE PROTECTION CONTRACTOR	STD	STANDARD
FS	FLOOR SINK		
FPTU	FAN POWERED TERMINAL UNIT	T	TEMPERATURE
FTLB	FOOT POUND	T&P	TEMPERATURE AND PRESSURE VALVE
FPM	FEET PER MINUTE	T/S	TUB/SHOWER COMBINATION
FPS	FEET PER SECOND	TAB	TEST ADJUST & BALANCE
FRP	FIBERGLASS REINFORCED PLASTIC	TD	TEMPERATURE DIFFERENCE
FV	FACE VELOCITY	TDH	TOTAL DYNAMIC HEAD
		TDV	TRIPLE DUTY VALVE
G	NATURAL GAS	TEMP	TEMPERATURE
GA	GAGE	TONS	TONS OF REFRIGERATION
GAL	GALLON	TSTAT	THERMOSTAT
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GPH	GALLONS PER HOUR		
GPM	GALLONS PER MINUTE	U	HEAT TRANSFER COEFFICIENT
GPS	GALLONS PER SECOND	UC	UNDERCUT, UNDER COUNTER
GT	GREASE TRAP	UH	UNIT HEATER
		UNO	UNLESS NOTED OTHERWISE
H	HEIGHT	UR	URINAL
HB	HOSE BIB	UV	UNIT VENTILATOR
HD	HEAD		
HEPA	HIGH EFFICIENCY PARTICULATE AIR (FILTER)	V	VENT, VOLTS
HOA	HAND, OFF, AUTO STATION	VA	VOLT AMPERE
HP	HORSEPOWER	VAC	VACUUM
HR	HOUR	VAV	VARIABLE AIR VOLUME
HS	HAND SINK	VFD	VARIABLE FREQUENCY DRIVE
HSTAT	HUMIDISTAT	VRF	VARIABLE REFRIGERANT FLOW
HT	HEIGHT	VRV	VARIABLE REFRIGERANT VOLUME
HTR	HEATER	VEL	VELOCITY
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	VERT	VERTICAL
HW	HOT WATER	VOL	VOLUME
HWC	HOT WATER COIL	VTR	VENT THROUGH THE ROOF
HWCP	HOT WATER CIRCULATING PUMP	VVT	VARIABLE VOLUME TERMINAL
HWP	HOT WATER PUMP		
HWR	HOT WATER RETURN	W	WASTE, WIDTH
HWS	HOT WATER SUPPLY	W/	WITH
HWT	HOT WATER TANK	W/O	WITHOUT
HZ	FREQUENCY	WB	WET BULB
		WC	WATER CLOSET
IAQ	INDOOR AIR QUALITY	WCO	WALL CLEAN-OUT
ID	INSIDE DIAMETER	WH	WALL HYDRANT
IN WC	INCHES, WATER COLUMN	WHA	WATER HAMMER ARRESTOR
INCL	INCLUDE	WM	WATER METER
INSUL	INSULATE(), (ED), (ION)	WT	WEIGHT
INT	INTERIOR	WTR	WATER
INV	INVERT		
I/O	INPUT/OUTPUT	YCO	YARD CLEAN-OUT
IPS	INTERNATIONAL PIPE STANDARD	YD	YARD
IPT	IRON PIPE THREADED	YR	YEAR
IWH	INSTANTANEOUS WATER HEATER		
		ZN	ZONE

PLUMBING GENERAL NOTES

A. REFER TO THE PLUMBING PLANS FOR DEMOLITION, NEW WORK, AND ADDITIONAL INFORMATION.

B. REFER TO THE PLUMBING SPECIFICATIONS, SCHEDULES, RISERS, AND DETAIL DRAWINGS FOR ADDITIONAL INFORMATION.

C. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS OF ALL EQUIPMENT, DUCTWORK, & PIPING PRIOR TO SUBMITTING A BID. COORDINATE COMPLETELY WITH ALL OTHER TRADES. RELOCATE TERMINAL UNITS AND PROVIDE ADDITIONAL DUCTWORK, OFFSETS, FITTINGS, ETC. AS REQUIRED.

D. THE CONTRACTOR SHALL VERIFY THAT ALL EXISTING AND NEW PLUMBING EQUIPMENT ARE MOUNTED SO THAT ALL REQUIRED CODE AND MANUFACTURER'S SERVICES CLEARANCES ARE MAINTAINED AT THE BOTTOM AND SIDES OF EACH UNIT FOR PROPER SERVICING AND MAINTENANCE. COORDINATE COMPLETELY WITH ALL NEW WALLS TO STRUCTURE, AND RELOCATE AS REQUIRED TO MAINTAIN PROPER CLEARANCES.

E. REFER TO THE ARCHITECTURAL PLANS AND DETAILS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES, FLOOR DRAINS, FLOOR SINKS, ETC.

F. ALL SANITARY PIPING SHALL BE SLOPED AS PER CODE BASED UPON PIPE SIZE.

G. THE PLUMBING CONTRACTOR SHALL COORDINATE EXACT ROUTING OF ALL PIPING WITH THE WORK OF ALL OTHER TRADES. PROVIDE OFFSETS IN PIPING WHERE REQUIRED BY COORDINATION OF TRADES.

H. THE PLUMBING CONTRACTOR SHALL CLEAN, FLUSH, AND DISINFECT ALL COLD WATER AND HOT WATER PIPING AND ALL FIXTURES PRIOR TO COMPLETION OF WORK.

I. INSTALL ALL FLOOR DRAINS AND FLOOR SINKS SUCH THAT GRATING IS FLUSH WITH ADJACENT FLOORING SURFACE. FLOOR SHALL SLOPE TO DRAINS NOT FLOOR SINKS. COORDINATE ALL REQUIREMENTS WITH ARCHITECT AND GENERAL CONTRACTOR PRIOR TO INSTALLATION.

J. VENTS THROUGH ROOF TO BE LOCATED A MINIMUM OF 10'-0" HORIZONTALLY AWAY FROM OUTSIDE AIR INTAKES.

K. FLOOR DRAINS NOT RECEIVING REGULAR-USE DRAINAGE ARE TO BE TRAP PRIMERED.

L. PROVIDE BACKFLOW PREVENTION AS REQUIRED BY THE LOCAL CROSS CONNECTION CONTROL DEPARTMENT STANDARDS WHERE NOT PROVIDED OR INADEQUATELY PROVIDED, BY EQUIPMENT MANUFACTURER.

M. INSTALL PIPING AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE.

N. VERIFY DIMENSIONS FROM ARCHITECTURAL DRAWINGS AND FROM ACTUAL MEASUREMENTS AT JOBSITE.

O. PROVIDE SADDLES AND SHIELDS FOR SUPPORT OF INSULATED PIPING TO PREVENT CRUSHING.

P. PIPING PENETRATIONS THROUGH PERIMETER BEAMS, FOUNDATION ON GRADE, AND STRUCTURAL FLOORS SHALL BE SLEEVED. COORDINATE SLEEVE LOCATIONS AND SIZES WITH STRUCTURAL PRIOR TO POUR.

Q. PROVIDE DIELECTRIC UNIONS AT DISSIMILAR MATERIALS.

R. PROVIDE ESCUTCHEONS AT ALL FINISHED WALL AND CEILING PIPING PENETRATIONS.

S. ALL PIPING SHALL BE IDENTIFIED AS TO TYPE OF USE, SERVICE, AND DIRECTION OF FLOW. LOCATE MARKERS AT EACH VALVE, AT ENTRIES TO WALLS, AND ON 20-FOOT CENTERS ON STRAIGHT RUNS OF PIPE. PROVIDE A FLOW ARROW AT EACH IDENTIFICATION MARKER. PIPE MARKERS SHALL BE SETON "SETMARK" OR EQUAL.

T. COORDINATE WORK COMPLETELY WITH ALL OTHER TRADES.

U. INSTALL PIPING FREE OF SAGS AND BENDS. PROVIDE NON-METALLIC COATED HANGERS WHERE IN DIRECT CONTACT WITH COPPER PIPING.

V. PROVIDE ENGINEERED WATER HAMMER ARRESTERS SIZED AND PLACED IN ACCORDANCE WITH STANDARD PDI-WH 201. AIR CHAMBERS SHALL NOT BE ALLOWED.

W. PROVIDE FLEXIBLE EXPANSION FITTINGS SUITABLE FOR SANITARY (DWV) AND RAINWATER PIPING WHERE PIPING ENTERS EXPANSIVE SOILS TO ALLOW FOR 4-IN OF DIFFERENTIAL MOVEMENT.

X. MAKE ALL NECESSARY EXCAVATIONS, CUTTING OF PAVING, CONCRETE, ETC., REMOVAL OF UNUSABLE SPOIL MATERIAL, DO ALL BACKFILLING WITH STABILIZED FILL, AND DO TEMPORARY PATCH PAVING REPAIRS NECESSARY FOR PROPER EXECUTION OF THE WORK. BACKFILL SHALL BE MECHANICALLY COMPACTED TO A DENSITY OF 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST.

Y. SADDLE CLAMPS SHALL NOT BE PERMITTED AT 1/4" CW PIPING STUB-OUTS FOR ICE MAKERS AND COFFEE MAKERS.

Z. PROVIDE MINIMUM 1" AIR GAP OR 2 TIMES THE PIPE DIAMETER, WHICHEVER IS GREATER, AT DRAIN DISCHARGE FOR ALL INDIRECT WASTE DISCHARGE PIPING.

AA. PROVIDE A MINIMUM 1" AIR GAP OR 2 TIMES THE PIPE DIAMETER, WHICHEVER IS GREATER, ABOVE THE FLOOD RIM OF A JANITOR SINK FOR ALL INDIRECT WASTE DISCHARGE PIPING.

AB. DISCHARGE PIPING FROM A DISHWASHER SHALL BE LOOPED UP AND SECURELY FASTENED TO THE UNDERSIDE OF THE COUNTER OR AN APPROVED DISHWASHER AIR-GAP FITTING IS REQUIRED.

AC. COMPRESSION TANKS SUPPLIED AT EACH WATER HEATER SHALL BE SECURED TO A WALL WITH (2) 1" X 14 GA. GALVANIZED STRAPS. PROVIDE LAG BOLTS AND BLOCKING AS REQUIRED.

AD. AN ATMOSPHERIC VACUUM BREAKER OR OTHER APPROVED BACKFLOW PREVENTION DEVICE MUST BE INSTALLED ON ALL THREADED HOSE BIBB, WALL HYDRANT OR THREADED FAUCET CONNECTIONS LOCATED INSIDE OR OUTSIDE THE BUILDING.

PLUMBING DRAWING LIST

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

ISSUE FOR CONSTRUCTION

REVISIONS

Δ	DATE	DESCRIPTION

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21066	2022.09.27

CURRENT: 2022-09-27

STATE OF TEXAS
M. CHAO BLACK
93681
LICENSED
PROFESSIONAL ENGINEER
9/26/2022

SHEET NAME:
PLUMBING COVER SHEET

SHEET NO:
P0.000

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. PLUMBING EQUIPMENT, PIPING, FIXTURES, ACCESSORIES, ASSOCIATED TRIM, INSULATION, HANGERS, AND SUPPORTS.

1.2 RELATED SECTIONS

A. SCOPE OF WORK

1. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, SUPPLIES, MATERIALS, TOOLS, LABOR, ETC...FOR A COMPLETE INSTALLATION.
2. THE CONTRACTOR SHALL COORDINATE ALL OF THE CONSTRUCTION WORK WITH ALL OTHER TRADES ON THIS PROJECT.
3. THE CONTRACTOR SHALL PROVIDE A COMPLETE PLUMBING SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED BY NOTES AND/OR THE SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND SPECIFICATIONS FOR SCOPE OF WORK THAT SHALL BE COMPLETED FOR THIS PROJECT.
5. THE CONTRACTOR SHALL REVIEW SITE CONDITIONS ALONG WITH THE CONTRACT DOCUMENTS TO ASCERTAIN THE COMPLETE SCOPE OF WORK FOR THE PROJECT.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL SITE MEASUREMENTS WITH REGARDS TO THE SCOPE OF WORK TO ACCOUNT FOR ALL REQUIRED DIMENSIONAL ADJUSTMENTS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR ANY DISCREPANCIES BETWEEN DIMENSIONS INDICATED ON THE CONTRACT DOCUMENTS AND ACTUAL FIELD MEASUREMENTS.

1.3 REFERENCES

A. AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

B. AMERICAN SOCIETY OF PLUMBING ENGINEERS (ASPE)

C. AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE)

D. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

E. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

F. UNDERWRITERS LABORATORY (UL)

1. LISTED PRODUCTS

1.4 SUBMITTALS

A. THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC COPY OF THE SHOP DRAWINGS, EQUIPMENT PERFORMANCE SUBMITTALS, AND PRODUCT DATA FOR THE FOLLOWING ITEMS:

1. EQUIPMENT
2. PIPING
3. INSULATION
4. FIXTURES
5. TRIM/ACCESSORIES
6. ALL OTHER INSTALLED PLUMBING ITEMS

B. SHOP DRAWINGS

1. INCLUDE SYSTEM COMPONENTS
2. APPLICABLE DIMENSIONAL DATA
3. DIMENSIONS TO ADJACENT CONSTRUCTION AND/OR OBSTRUCTIONS
4. ALL REQUIRED CLEARANCES AND ACCESS DIMENSIONS FOR SERVICING

C. EQUIPMENT WEIGHTS

1. THE CONTRACTOR SHALL INCLUDE EQUIPMENT WEIGHTS ON ALL SUBMITTALS TO VERIFY WHICH PIECES OF EQUIPMENT WEIGH 300 POUNDS OR MORE.

D. HAZARDOUS MATERIALS, PRODUCTS, PROCESSES, AND VOC'S

1. IN THE EVENT THAT MATERIALS, PRODUCTS, AND/OR PROCESSES BEING PROPOSED FOR THIS PROJECT CONTAIN, OR MAY EMIT, ANY VOLATILE ORGANIC COMPOUNDS (VOC), FORMALDEHYDE FORMULATIONS, OR HAZARDOUS OUT-GASSING, AS DETERMINED BY THE MANUFACTURER, A MATERIALS SAFETY DATA SHEET SHALL BE SUBMITTED AS PART OF THE SHOP DRAWING PROCESS FOR REVIEW BY THE ARCHITECT, ENGINEER, AND OWNER.

E. SUBSTITUTIONS OF EQUIPMENT OR MATERIALS

1. THE CONTRACTOR SHALL NOT SUBSTITUTE EQUIPMENT OR MATERIAL WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE ENGINEER OF RECORD AND OWNER.
2. THE DETERMINATION OF WHAT SHALL BE CONSIDERED EQUAL IS AT THE SOLE DISCRETION OF THE ENGINEER OF RECORD AND OWNER.
3. THE CONTRACTOR SHALL INCLUDE SUFFICIENT DESCRIPTIVE INFORMATION, INCLUDING BUT NOT LIMITED TO THE MANUFACTURER'S PUBLISHED DATA TO ESTABLISH CONTRACT COMPLIANCE.
4. THE CONTRACTOR SHALL SUBMIT SAMPLES IF REQUESTED BY THE ARCHITECT OR ENGINEER OF RECORD.
5. ALL SUBSTITUTIONS SHALL BE SUBMITTED AT LEAST SEVEN (7) DAYS PRIOR TO BID SUBMISSION FOR REVIEW.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND ALL ASSOCIATED COSTS FOR ALL DIMENSIONAL DIFFERENCES, WEIGHTS, CLEARANCES, MATERIAL & LABOR FOR ALL SUBSTITUTIONS.

1.5 DEFINITIONS

A. FIXTURES: WATER CLOSETS, URINALS, LAVATORIES, ETC. AND PIECE OF PLUMBING EQUIPMENT.

B. TRIM: FAUCETS, TRAPS, STOPS, STRAINERS, ETC. ITEMS ASSOCIATED WITH THE PLUMBING FIXTURES.

C. PIPING - MATERIAL USED FOR THE DISTRIBUTION OF DOMESTIC HOT/COLD WATER, WASTE WATER, WASTE VENT, GREASE WASTE, CONDENSATE DRAINAGE, AND STORM DRAINAGE.

D. ABBREVIATIONS

1. REFER TO THE CONTRACT DRAWINGS FOR DEFINITIONS OF ALL ABBREVIATIONS.

1.6 QUALITY ASSURANCE

A. REGULATORY REQUIREMENTS

1. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND APPLICABLE CODES AT THE LOCATION OF THE PROJECT.

AMERICANS WITH DISABILITIES ACT (ADA)
CITY AND/OR COUNTY BUILDING CODES AND/OR ORDINANCES
CITY, COUNTY, STATE DEPARTMENT OF HEALTH
INTERNATIONAL BUILDING CODE (IBC)
INTERNATIONAL MECHANICAL CODE (IMC)
INTERNATIONAL PLUMBING CODE (IPC)
INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
TEXAS ACCESSIBILITY STANDARDS (TAS)
NATIONAL ELECTRIC CODE (NEC)
UNIFORM MECHANICAL CODE (UMC)
UNIFORM PLUMBING CODE (UPC)

2. WHEN DIFFERENT SECTIONS OF ANY APPLICABLE CODES SPECIFY DIFFERENT MATERIALS, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THEN THE MOST RESTRICTIVE SHALL GOVERN.

B. MANUFACTURER QUALIFICATIONS

1. MINIMUM OF 5 YEARS EXPERIENCE MANUFACTURING SIMILAR PRODUCTS.

C. INSTALLER QUALIFICATIONS

1. MINIMUM OF 2 YEARS EXPERIENCE INSTALLING SIMILAR PRODUCTS.

D. STANDARDS FOR MATERIAL AND INSTALLATION WORKMANSHIP

1. THE CONTRACTOR SHALL USE MATERIALS THAT ARE NEW, LISTED, AND LABELED BY THE UNDERWRITERS LABORATORIES (UL) AS CONFORMING TO ITS STANDARDS, WHERE SUCH STANDARDS HAVE BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION. THE CONTRACTOR SHALL EXECUTE ALL WORK IN A WORKMAN LIKE MANNER TO PRESENT A CLEAN, NEAT, AND PROFESSIONAL WORKMAN LIKE APPEARANCE WHEN COMPLETED.
2. THE CONTRACTOR, UNLESS NOTED OTHERWISE, SHALL PROVIDE AND INSTALL MATERIALS AND EQUIPMENT THAT CONFORMS THE THE LATEST STANDARDS LISTED BELOW:

ANSI	AMERICAN NATIONAL STANDARDS ASSOCIATION
ARI	AIR-CONDITIONING & REFRIGERATION INSTITUTE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, & AIR-CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
IAPMO	INTERNATIONAL ASSOCIATION OF PLUMBING & MECHANICAL OFFICIALS
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION

E. PERMITS, FEES, AND INSPECTIONS

1. THE CONTRACTOR SHALL PROVIDE AND COORDINATE ALL REQUIRED PERMITS, INTERIM INSPECTIONS, FINAL INSPECTIONS, AND APPROVALS FROM THE INSPECTION DEPARTMENT HAVING JURISDICTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT FOR ALL PERMITS, FEES, TESTS, CERTIFICATIONS, AND INSPECTIONS.
3. THE CONTRACTOR SHALL NOTIFY THE OWNER TWENTY FOUR (24) HOURS IN ADVANCE WHEN EQUIPMENT IS TO BE TESTED OR UTILITIES ARE TO BE SHUT-OFF, BEFORE BEING CONCEALED AND BEFORE TRENCHES ARE COVERED UP.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DOMESTIC AND FIRE PROTECTION TAPS AND METERS.

F. SCHEDULING, COORDINATION, & COOPERATION

1. THE CONTRACTOR SHALL SCHEDULE THEIR WORK AND COOPERATE WITH ALL OTHER TRADES ON THE PROJECT SITE TO AVOID DELAYS, INTERFERENCES, AND UNNECESSARY WORK.
2. THE CONTRACTOR SHALL COOPERATE WITH OTHERS TO PROVIDE FOR THE INSTALLATION OF THEIR WORK AND COORDINATE WITH WORK OF ALL OTHER TRADES TO PROVIDE REQUIRED CLEARANCE OF PIPING, DUCTWORK, CONDUIT, ETC. WHEN SUCH IS REQUIRED.
3. SHOULD ANY CHANGES OCCUR DUE TO THE COORDINATION WITH OTHER TRADES AND/OR CONFLICTS WITH THE CONTRACT DOCUMENTS, THEN THE CONTRACTOR SHALL SUBMIT PROPOSED CHANGES TO THE ENGINEER OF RECORD FOR REVIEW OF AN ALTERNATE METHOD OF COMPLETING THEIR WORK ACCORDING TO THE INTENT OF THE CONTRACT DOCUMENTS.
4. NOTIFY THE OWNER TWENTY FOUR (24) HOURS IN ADVANCE WHEN EQUIPMENT IS TO BE TESTED OR UTILITIES ARE TO BE SHUT-OFF, BEFORE BEING CONCEALED AND BEFORE TRENCHES ARE COVERED UP.
5. IF THE CONTRACTOR FAILS TO COMPLY WITH THE ABOVE REQUIREMENTS, THEN THE CONTRACTOR SHALL UNCOVER AND RETEST PIPING AND EQUIPMENT, REPAIRING DAMAGE TO OTHER CONTRACTOR'S WORK AS WELL AS THEIR OWN WITHOUT ADDITIONAL COST.
6. PORTIONS OF THE BUILDING MIGHT BE IN USE AND OCCUPIED DURING THE CONSTRUCTION PERIOD OF THIS PROJECT. ALL BUILDING SERVICES, UTILITIES, POWER, CHILLED WATER, HEATING HOT WATER, FIRE PROTECTION, AND DOMESTIC COLD & HOT WATER WHICH WILL BE REQUIRED FOR THIS PROJECT SHALL NOT BE DISRUPTED FOR ANY REASON WITHOUT PRIOR COORDINATION WITH A REPRESENTATIVE OF THE BUILDING MANAGEMENT OR BUILDING OWNER. A WRITTEN AUTHORIZATION FROM THE BUILDING MANAGEMENT TEAM OR BUILDING OWNER SHALL BE REQUIRED TO DOCUMENT THE DATE, START TIME, AND DURATION THAT WERE APPROVED BY THE BUILDING MANAGEMENT TEAM OR BUILDING OWNER FOR SUCH DISRUPTION. AN ADDITIONAL ADVANCE NOTIFICATION OF SEVEN (7) DAYS MINIMUM SHALL BE GIVEN TOT HE BUILDING MANAGEMENT TEAM OR OWNER PRIOR TO EACH DISRUPTION.
7. AREAS OF THE BUILDING MIGHT BE OCCUPIED DURING CONSTRUCTION OF THIS PROJECT. NOISY, DUSTY, AND/OR OTHER CONSTRUCTION OPERATIONS REQUIRED FOR WORK WHICH MAY DISTURB OR CAUSE COMPLAINTS BY THE BUILDING OCCUPANTS SHALL NOT BE ACCEPTABLE.THE CONTRACTOR SHALL USE CONSTRUCTION METHODS AND MATERIALS WHICH SHALL NOT ADVERSELY AFFECT THE INDOOR AIR QUALITY OF THE OCCUPIED AREAS.
8. ALL AFTER-HOUR OR OVERTIME WORK REQUIRED BY THE CONTRACTOR TO AVOID DISRUPTION OF OCCUPANTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
9. AFTER COMPLETION OF INSTALLATION, BUT PRIOR TO SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL CERTIFY IN WRITING THAT PRODUCTS AND MATERIALS INSTALLED AND PROCESSES USED TO NOT CONTAIN ASBESTOS OR POLYCHLORINATED BIPHENYL (PCB).

G. COMPLETED WORK

1. THE CONTRACTOR SHALL INSPECT THE INSTALLATION TO ASSURE THAT WORK IS COMPLETE AND THE REQUIREMENTS OF THE CONTRACT HAVE BEEN COMPLETED BEFORE REQUESTING FINAL PAYMENT.

1.7 DELIVERY, STORAGE, AND HANDLING

A. THE CONTRACTOR SHALL ORDER ALL MATERIALS AND EQUIPMENT ON SCHEDULE TO BE ABLE TO COMPLETE ALL CONSTRUCTION BY THE SCHEDULED COMPLETION DATE.

B. THE CONTRACTOR SHALL DELIVER AND STORE PRODUCTS IN THE MANUFACTURER'S UNOPENED PACKAGING BEARING THE BRAND NAME AND THE MANUFACTURER'S IDENTIFICATION UNTIL READY FOR INSTALLATION.

C. THE CONTRACTOR SHALL KEEP THE BUILDING AND CONSTRUCTION AREAS CLEAN AND CLEAR OF ALL SCRAP MATERIALS AT ALL TIMES. THE CONTRACTOR SHALL STORE MATERIALS AND EQUIPMENT IN DESIGNATED STORAGE AREAS.

D. THE CONTRACTOR SHALL COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS TO HANDLE AND STORE ALL MATERIALS TO AVOID DAMAGE.

1.8 PROJECT CONDITIONS

A. THE CONTRACTOR SHALL MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY, AND VENTILATION) WITHIN THE LIMITS RECOMMENDED BY THE MANUFACTURER FOR OPTIMUM RESULTS. THE CONTRACTOR SHALL NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE THE MANUFACTURER'S RECOMMENDED LIMITS AND INSTALLATION INSTRUCTIONS.

B. PROTECTION

1. THE CONTRACTOR SHALL PROTECT THE WORK, EQUIPMENT, AND MATERIALS FROM DAMAGE BY HIS WORK OR HIS PERSONNEL.
2. THE CONTRACTOR SHALL CORRECT ALL DAMAGE THUS CAUSED WITHOUT ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PROTECT ALL WORK, MATERIALS, AND EQUIPMENT FROM THEFT, INJURY, OR DAMAGE.
4. THE CONTRACTOR SHALL CAREFULLY STORE ALL MATERIALS AND EQUIPMENT RECEIVED ON SITE WHICH IS NOT IMMEDIATELY INSTALLED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK, MATERIALS, AND EQUIPMENT UNTIL FINAL ACCEPTANCE BY THE OWNER.
6. THE CONTRACTOR SHALL SEAL ALL OPEN ENDS OF DUCTWORK, PIPING, AND EQUIPMENT DURING CONSTRUCTION WITH TEMPORARY COVERS OR PLUGS TO PREVENT THE ENTRY OF DUST, DIRT, AND CONSTRUCTION DEBRIS.
7. THE CONTRACTOR SHALL PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE DUE TO WATER, SPRAY-ON FIREPROOFING, CONSTRUCTION DEBRIS PER THE REQUIREMENTS OF THE ENGINEER OF RECORD AND/OR THE OWNER.
8. THE CONTRACTOR SHALL CLEAN ALL INTERIOR SURFACES (EQUIPMENT/PIPING) AFTER INSTALLATION. AFTER INSTALLATION OF PLUMBING EQUIPMENT AND PIPING THE CONTRACTOR SHALL FLUSH THE WATER SYSTEMS WITH WATER OF AT LEAST 3 FEET PER SECOND TO REMOVE DUST AND FOREIGN MATERIALS FROM THE SYSTEM. PLUMBING SYSTEMS SHALL BE FLUSHED WITH THE APPROPRIATE DETERGENTS AND CLEANING CHEMICALS. DISINFECT POTABLE SYSTEMS APPROPRIATELY PRIOR TO USE.

1.9 WARRANTY

A. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE (1) YEAR WARRANTY FROM THE SUBSTANTIAL COMPLETION DATE FOR ALL WORK PERFORMED UNDER THIS CONTRACT. THE DATE OF SUBSTANTIAL COMPLETION SHALL BE DETERMINED BY THE OWNER OR THE OWNER'S REPRESENTATIVE. THE WARRANTY SHALL INCLUDE WORKMANSHIP, LABOR, EQUIPMENT, AND MATERIALS. THE CONTRACTOR SHALL REFER TO THE CONTRACT DOCUMENTS FOR ALL OTHER REQUIRED WARRANTY PERIODS.

1.10 DRAWINGS AND SPECIFICATIONS

A. ALL DRAWINGS SHALL BE CONSIDERED SCHEMATIC AND MAY NOT INDICATE THE EXACT LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR THE ACTUAL DIMENSIONS. THE CONTRACTOR SHALL FIT THEIR WORK TO CONFORM TO THE DETAILS OF THE BUILDING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE ALL OF THE REQUIRED CODE AND MANUFACTURER'S CLEARANCES.

B. ALL DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOT BE SCALED.

C. DUE TO DRAWING SCALE, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.

D. THE SYMBOLS SHOWN ON THE DRAWINGS ARE ILLUSTRATIVE IN NATURE AND ARE PROVIDED FOR REFERENCE ONLY.

E. THE DRAWINGS ARE BASED UPON THE EXISTING DOCUMENTS PROVIDED BY THE OWNER. THE CONTRACTOR SHALL REPORT ANY UNCOVERED UTILITIES, SERVICES, DUCTWORK, PIPING, ETC. TO THE ARCHITECT BEFORE DISTURBING THE EXISTING INSTALLATION. THE CONTRACTOR SHALL VERIFY THAT ANY ABANDONED PIPING SERVES ONLY ABANDONED FACILITIES.

1.11 AS-BUILT DRAWINGS

A. DURING CONSTRUCTION THE CONTRACTOR SHALL RECORD ON ONE (1) SET OF PLUMBING DRAWINGS ALL CHANGES AND DEVIATIONS FROM THE CONTRACT DOCUMENTS IN SIZE, LOCATIONS, AND TYPES OF ALL MATERIALS AND EQUIPMENT. THE CONTRACTOR SHALL RECORD THE FINAL LOCATION OF EQUIPMENT, PIPING, ETC... TO INDICATE THE FINAL INSTALLATION. THE CONTRACTOR SHALL MAKE SUFFICIENT MEASUREMENTS TO LOCATE ALL EQUIPMENT AND ACCESSORIES.

B. THE CONTRACTOR SHALL PROVIDE A COMPLETE RED-LINED ELECTRONIC AS-BUILT SET OF DRAWINGS TO THE ENGINEER OF RECORD.

1.12 OPERATION AND MAINTENANCE DATA / CLOSE-OUT DOCUMENTS

A. THE CONTRACTOR SHALL PROVIDE AND DELIVER TO THE ARCHITECT AND ENGINEER OF RECORD A COMPLETE ELECTRONIC COPY OF ALL DATA PREPARED BY THE MANUFACTURERS THAT DETAIL THE OPERATION AND THE MAINTENANCE INSTRUCTIONS FOR ALL MATERIALS AND EQUIPMENT. THE CONTRACTOR SHALL INSTRUCT THE OWNER OR OWNER'S REPRESENTATIVE IN THE OPERATION OF ALL EQUIPMENT.

B. THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC COPY OF THE OWNER'S OPERATION AND MAINTENANCE MANUALS, AS-BUILT DRAWINGS, AND A COMPLETE PARTS LIST FOR ALL INSTALLED EQUIPMENT. ALL CLOSE-OUT DOCUMENTS SHALL BE SUBMITTED THE THE OWNER AND ENGINEER OF RECORD FOR REVIEW.

C. THE CONTRACTOR SHALL PROVIDE THE OWNER A TYPED ELECTRONIC LIST OF ALL NEW AND EXISTING EQUIPMENT, INDICATED THE MANUFACTURER, MODEL NUMBER, SERIAL NUMBER, VOLTAGE, PHASE, HP, KW, GPM, ETC.

1.13 PENETRATIONS, CUTTING, AND PATCHING

A. THE CONTRACTOR SHALL PERFORM CUTTING AND PATCHING IN ACCORDANCE WITH THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THE CONTRACT.

B. THE CONTRACTOR SHALL PROVIDE ALL SLEEVES REQUIRED FOR THE PROPER INSTALLATION OF THE WORK INCLUDED IN THIS SECTION.

C. THE CONTRACTOR SHALL MAKE ALL PENETRATIONS THROUGH WALLS AT 90 DEGREE ANGLES. THE CONTRACTOR SHALL SEAL ALL PENETRATIONS AT FIRE, SMOKE, AND FIRE/SMOKE PARTITIONS WITH FIRE SAFING MATERIAL. THE CONTRACTOR SHALL SEALL ALL PENETRATIONS AT SOUND WALLS WITH SOUNDPROOFING MATERIAL.

D. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL NOT DO MORE CUTTING AND PATCHING THAN WHAT IS REQUIRED FOR THE INSTALLATION OF THEIR WORK.

E. THE CONTRACTOR SHALL NOT CUT STRUCTURAL MEMBERS OR EXPOSED SURFACE OF CONCRETE BLOCK.

F. THE BUILDING MAY HAVE A STRUCTURAL SYSTEM UTILIZING POST-TENSIONED CABLES. THE CONTRACTOR SHALL DETERMINE THE EXISTING STRUCTURAL SYSTEM PRIOR TO CUTTING, DRILLING, OR CORING. IF POST-TENSIONED CABLES ARE EXISTING, THE CONTRACTOR SHALL X-RAY ALL PENETRATIONS PRIOR TO CUTTING THE FLOOR SLAB.

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

5 FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

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CURRENT: 2022-09-27

STATE OF TEXAS
M. CHAD BLACK
93681
LICENSED
PROFESSIONAL ENGINEER
9/26/2022

SHEET NAME:
PLUMBING SPECIFICATIONS

SHEET NO:
P0.001

PART 2 - PRODUCTS AND EXECUTION

2.1 GENERAL

A. THE CONTRACTOR SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO COMPLETE THE INSTALLATION OF PLUMBING SYSTEMS AND EQUIPMENT. THE INSTALLATION SHALL BE PERFORMED BY THE CONTRACTOR AND/OR THE MANUFACTURER'S REPRESENTATIVE REGULARLY ENGAGED IN THE APPLICATION AND INSTALLATION OF THE MATERIALS AND EQUIPMENT. THE CONTRACTOR SHALL INSTALL THE MATERIALS AND EQUIPMENT PER THE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.

B. ALL INSULATION MATERIALS AND ALL OTHER ACCESSORIES SHALL BE ASTM E 84 25/50 FIRE HAZARD RATING NOT TO EXCEED 25 FOR FLAME SPREAD INDEX AND NOT TO EXCEED 50 FOR SMOKE DEVELOPED INDEX. ALL PRODUCTS, THEIR SHIPPING CARTONS, OR PACKAGING SHALL BEAR A LABEL INDICATING THAT THE FLAME AND SMOKE SPREAD RATINGS DO NOT EXCEED THE ABOVE STATED REQUIREMENTS.

C. THE CONTRACTOR SHALL INSULATE ALL PIPING PER THE SPECIFICATIONS LISTED.

D. ACCESSORIES SUCH AS ADHESIVE, MASTICS, CEMENT, TAPES, GLAZE FABRIC, AND COVERS FOR FITTINGS SHALL NOT PRODUCE FLAMING DROPLETS WHEN SUBJECTED TO FIRE, AND THE SAME COMPONENT RATINGS LISTED ABOVE.

E. EXECUTION (EQUIPMENT, FIXTURES, & PIPING) - UNLESS NOTED OTHERWISE

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL WORK VERTICAL AND HORIZONTAL, AS WELL AS PARALLEL AND PERPENDICULAR TO BUILDING LINES.

2. THE CONTRACTOR SHALL AVOID DIAGONAL RUNS FOR ALL ABOVE GRADE PIPING ONLY.

3. THE CONTRACTOR SHALL INSTALL PIPING SYSTEMS IN THE SHORTEST ROUTE THAT DOES NOT OBSTRUCT USEABLE SPACE OR BLOCK ACCESS FOR SERVICING THE BUILDING AND ITS EQUIPMENT.

4. THE CONTRACTOR SHALL INSTALL ALL PIPING WITH A CLEARANCE OF 1-INCH, PLUS ALLOWANCE FOR INSULATION THICKNESS, HANGERS, AND/OR SUPPORTS.

G. ACCESS PANELS

1. THE CONTRACTOR SHALL PROVIDE A MINIMUM 24"X24" ACCESS PANEL, UNLESS NOTED OTHERWISE, IN GYPSUM BOARD CEILINGS FOR ACCESS TO EQUIPMENT LOCATED ABOVE INACCESSIBLE CEILINGS.

2. THE CONTRACTOR SHALL PROVIDE A MINIMUM 12"X12" ACCESS DOOR AT ALL LOCATIONS OF PIPE CHASES FOR ACCESS TO SHUT-OFF VALVE, SERVICE VALVES, AND WATER HAMMER ARRESTORS (OR 24"X24" ACCESS PANEL FOR DUAL WATER HAMMER ARRESTORS).

3. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION, FINISH, AND SPECIFICATIONS OF ACCESS PANELS AND DOORS WITH THE ARCHITECT.

H. PARTITION & FLOOR PENETRATIONS

1. THE CONTRACTOR SHALL SEAL ALL PENETRATIONS OF SLAB-TO-SLAB PARTITIONS AIR-TIGHT.

2. THE CONTRACTOR SHALL SEAL ALL NEW AND EXISTING PIPES, CONDUITS, AND DUCT PENETRATIONS THRU FIRE RATED WALLS WITH FIRE CAULKING. FIRE CAULKING SHALL BE EQUAL TO 3M BRAND CP25WP FIRE CAULK. THE CONTRACTOR SHALL INSTALL ALL FIRE CAULKING IN STRICT ACCORDANCE WITH ALL OF THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH ALL APPLICABLE UL DETAILS.

3. THE CONTRACTOR SHALL SEAL ALL NEW AND EXISTING PIPES, CONDUITS, AND DUCT PENETRATIONS THRU FLOORS WITH FIRE CAULKING. FIRE CAULKING SHALL BE EQUAL TO 3M BRAND CP25WP FIRE CAULK. THE CONTRACTOR SHALL INSTALL ALL FIRE CAULKING IN STRICT ACCORDANCE WITH ALL OF THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH ALL APPLICABLE UL DETAILS.

I. PLENUM & NON-PLENUM RATED MATERIALS

1. THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO NON-PLENUM RATED MATERIALS IN THE RETURN AIR PLENUM.

2. THE CONTRACTOR SHALL ENCAPSULATE ALL NON-PLENUM RATED MATERIALS IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.

3. IF THE NON-PLENUM RATED MATERIALS ARE NOT ENCAPSULATED IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION, THEN THE CONTRACTOR SHALL REPLACE THE MATERIAL WITH AN APPROVED PLENUM RATED MATERIAL AT NOT ADDITIONAL COST.

J. PIPE INSTALLATION

1. THE CONTRACTOR SHALL INSTALL ALL PIPING TIGHT TO STRUCTURE UNLESS NOTED OTHERWISE.

K. PRODUCTS - SEE BELOW AND REFER TO THE OTHER CONTRACT DOCUMENTS FOR ADDITIONAL SPECIFICATIONS AND REQUIREMENTS.

L. THE CONTRACTOR SHALL PROVIDE VIBRATION ISOLATION DEVICES TO INSURE THAT NOISE AND VIBRATION ARE HELD TO A MINIMUM WHEN MOUNTING, SUPPORTING, HANGING, AND CONNECTING TO EQUIPMENT.

M. THE CONTRACTOR SHALL INSTALL ACCESSORIES, HANGERS, AND SUPPORTS OF MATERIALS SUITED TO EQUIPMENT & PIPING MATERIALS; USE GALVANIZED-STEEL ACCESSORIES IN GALVANIZED-STEEL PIPING, STAINLESS-STEEL ACCESSORIES IN STAINLESS-STEEL PIPING.

N. DIELECTRIC FITTINGS - ASSEMBLY OF COPPER ALLOY AND FERROUS MATERIALS WITH SEPARATING NON-CONDUCTIVE INSULATING MATERIAL. INCLUDE END CONNECTIONS COMPATIBLE WITH PIPES TO BE JOINED.

O. PROVIDE TIGHT WALL OR FLOOR ESCUTCHEONS OF CHROME PLATED BRASS WHEREVER PIPES PASS THROUGH FLOORS, WALLS, OR CEILINGS.

P. FITTINGS ON COPPER TUBING SHALL BE SOLDER-JOINT TYPE OF WROUGHT COPPER AND SHALL BE ASSEMBLED WITH SPECIAL SOLDER, USING A NON-CORROSIVE FLUX, ALL AS RECOMMENDED BY THE MANUFACTURER OF THE TUBING AND THE FITTING SURFACES TO BE SOLDERED SHALL BE CLEANED BRIGHT. USE 95-5 SOLDER FOR WATER PIPING AND 50-50 SOLDER FOR DRAINS AND VENTS. HEAT COPPER TUBING LARGER THAN 1" WITH RING TORCH. WRAP COPPER TUBING WITH ELECTRICAL TAPE WHEREVER TUBING TOUCHES A DISSIMILAR METAL.

Q. CLEAN-OUTS SHALL BE PROVIDE AT EACH CHANGE OF DIRECTION, IN INTERIOR HORIZONTAL RUNS AT INTERVALS NOT EXCEEDING 50'. CLEAN-OUTS SHALL BE BRASSED CAULK INTO THE LINES, AND WHERE THEY OCCUR IN THE WALLS OR FLOOR OF FINISHED AREAS THEY SHALL BE PROVIDED WITH ADJUSTABLE ACCESS PLATES. ALL INTERIOR CLEAN-OUTS SHALL BE THE SAME SIZE AS THE PIPE SERVED UP TO 4" SIZE AND 4" FOR ALL LARGER LINE SIZES UNLESS NOTED OTHERWISE. EXTERIOR CLEAN-OUTS SHALL CONSIST OF A CONCRETE ENCASED WYE IN THE LINE WITH THE CLEAN-OUT LEG EXTENDING UPWARD FROM AND TERMINATING IN A CONCRETE SLAB BELOW GRADE. A STANDARD CAST IRON CLEAN-OUT CASTING SHALL BE SET ON THIS SLAB IN SUCH A MANNER AS TO BE FLUSH WITH THE FINISHED GRADE AND TO PROVIDE ACCESS THROUGH ITS COVER TO THE CLEAN-OUT. A REMOVABLE CONCRETE STOPPER SHALL BE SET IN THE OPEN TOP OF THE CLEAN-OUT PIPE. CLEAN-OUTS SHALL BE THE SAME SIZE AS THE SEWER PIPING.

R. WATER HAMMER ARRESTORS SHALL BE PROVIDED ON ALL SUPPLY LINES, BOTH HOT & COLD, NEAR EACH FAUCET CONTROL VALVE, OR FLUSH VALVE, AS APPLICABLE. WATER HAMMER ARRESTORS SHALL BE SIZED PER EACH FIXTURE APPLICATION IN ACCORDANCE WITH THE PLUMBING DRAINAGE INSTITUTE (PDI) WH-201. ONLY THREADED END WATER HAMMER ARRESTORS SHALL BE USED. PIPE AIR CHAMBERS ARE NOT ALLOWED.

S. UPON COMPLETION OF ALL TEST AND NECESSARY REPAIRS OR REPLACEMENTS, ALL WATER PIPING SYSTEMS SHALL BE SUBJECTED TO A DISINFECTION PROCEDURE AS HEREIN SPECIFIED. THE SYSTEMS TO BE DISINFECTED SHALL INCLUDE HOT & COLD DOMESTIC WATER PIPING, DRINKING WATER PIPING, AND ANY OTHER SYSTEMS THAT MAY BE CONNECTED TO THE SAME SUPPLY SOURCE. THE DISINFECTANT SHALL BE APPLIED TO ALL PIPING INCLUDED IN THE CONTRACT OR FOR THE MAIN CUT-OFF VALVE THROUGH ALL TANKS, PUMPS, AND OTHER APPURTENANCES CONNECTED THERETO.

T. HOT & COLD WATER SUPPLIES SHALL HAVE CHROME PLATED SUPPLY STOPS.

U. PRODUCTS - SEE BELOW AND REFER TO THE OTHER CONTRACT DOCUMENTS FOR ADDITIONAL SPECIFICATIONS AND REQUIREMENTS.

2.2 PLUMBING FIXTURES

A. PLUMBING FIXTURES SHALL BE FURNISHED COMPLETE WITH ALL FITTINGS, MOUNTING FLANGES, CARRIERS, CAP SETTING COMPOUND, ETC. FITTINGS AND PIPING SHALL BE BRASS AND WHEREVER EXPOSED, SHALL BE POLISHED CHROME PLATED. PROVIDE TIGHT WALL OR FLOOR ESCUTCHEONS OF CHROME PLATED BRASS WHEREVER PIPES PASS THROUGH FLOORS, WALLS, OR CEILINGS.

B. PLUMBING FIXTURES SHALL BE AS SCHEDULED ON THESE DRAWINGS OR LISTED EQUAL.

2.3 PIPING MATERIALS

A. DOMESTIC WATER PIPING

1. ABOVE GRADE:
ASTM B88, TYPE "L" HARD DRAWN COPPER WITH SOLDER OR "PROPRESS" JOINTS.

2. BELOW GRADE:
ASTM B88, TYPE "K" COPPER, SEAMLESS TUBING. PIPING SHALL BE INSULATED AS SPECIFIED AND ROUTED WITHIN A PVC SLEEVE TO PROTECT THE PIPING INSULATION.

B. TRAP PRIMER PIPING

1. ASTM B88, TYPE "K" COPPER, SEAMLESS TUBING, 1/2".

C. SANITARY SEWER (WASTE) AND VENT PIPING

1. ABOVE GRADE:
ASTM D2665, SCHEDULE 40 PVC JOINED WITH SOLVENT WELDS.

2. BELOW GRADE:
ASTM D2665, SCHEDULE 40 PVC JOINED WITH SOLVENT WELDS.

3. GREASE WASTE:
ASTM A74, CAST IRON, HUB AND SPIGOT TYPE, JOINED WITH ASTM C564 NEOPRENE COMPRESSION GASKETS.

4. WASTE AND VENT PIPING (WITHIN RETURN AIR PLENUM):
ASTM A888, HUBLESS CAST IRON, WITH CISPI 301 SPIGOT BEAD ENDS FOR COUPLING ASSEMBLY.

5. INDIRECT DRAINS:
ASTM B88, TYPE "L" COPPER WITH SOLDERED JOINTS.

6. INDIRECT DRAIN PIPING (WITHIN RETURN AIR PLENUM):
ASTM D88, TYPE "L" COPPER WITH SOLDERED JOINTS.

7. RPZ RELIEF DISCHARGE PIPING:
ABOVE GRADE: ASTM B88, TYPE "L" COPPER WITH SOLDERED JOINTS.

D. NATURAL GAS PIPING

1. ABOVE GRADE: ASTM A53, SCHEDULE 40 BLACK STEEL, WELDED OR WITH THREADED FITTINGS.

2. BELOW GRADE: SAME AS ABOVE GRADE, EXCEPT WITH HIGH-DENSITY POLYETHYLENE COATING.

E. PLUMBING VALVES

1. ALL WATER VALVES SHALL BE BALL VALVES. NO GATE VALVES SHALL BE USED.

2. ALL GAS VALVES SHALL BE PLUG VALVES UNLESS NOTED OTHERWISE.

F. GAS PIPING PAINTING

1. GAS PIPING ON THE ROOF NOT VISIBLE FROM GRADE SHALL BE PAINTED WITH (2) COATS OF YELLOW PAINT.

2. GAS PIPING VISIBLE FROM GRADE SHALL BE PAINTED WITH (2) COATS OF PAINT. THE CONTRACTOR SHALL PAINT THE EXPOSED TO VIEW GAS PIPING TO MATCH THE COLOR OF THE BUILDING.

2.4 PIPING INSULATION

A. AVAILABLE MANUFACTURERS: ARMACELL, AEROFLEX, RUBATEX, OR EQUAL.

B. INSULATE ALL CONDENSATE DRAIN PIPING, DOMESTIC HOT & COLD PIPING, AND DOMESTIC RECIRCULATION PIPING WITH "AP ARMAFLEX" OR RUBATEX R-180-FS 25/50 RATED FLEXIBLE ELASTOMERIC PIPE INSULATION. PROVIDE PROTECTION, BLOCKING, AND SHIELDS AT EACH HANGER. PIPE ELBOWS & FITTINGS SHALL BE INSULATED AND COVERED WITH ZESTON 2000 25/50 FIRE/SMOKE RATED PVC JACKETS.

C. PIPE INSULATION THICKNESS SCHEDULE (INCREASE THICKNESS BY 1/2" WHEN EXPOSED TO FREEZING CONDITIONS)

OPERATING TEMP °F	INSULATION THICKNESS	PIPE DIAMETER
40-60	1"	LESS THAN 1-1/2"
40-60	1"	1-1/2" AND LARGER
105-140	1"	LESS THAN 1-1/2"
105-140	2"	1-1/2" AND LARGER
141-200	2"	LESS THAN 1-1/2"
141-200	2"	1-1/2" AND LARGER

D. ALL DRAIN PIPING RECEIVING CHILLED DRAINAGE SHALL BE INSULATED WITH 1" THICKNESS FLEXIBLE ELASTOMERIC PIPE INSULATION SPECIFIED ABOVE.

E. IF ROUTED IN EXTERIOR WALL, INCREASE INSULATION THICKNESS BY 1/2".

F. EXTERIOR EXPOSED INSULATED PIPING - PROVIDE OUTER ALUMINUM JACKET AND WRAP COMPLETELY AROUND. PROPOSED ALTERNATE JACKETING SYSTEMS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW FOR COMPLIANCE.

2.5 EQUIPMENT LABELING

A. ALL PLUMBING EQUIPMENT SHALL BE IDENTIFIED BY NAMEPLATES PERMANENTLY ATTACHED TO THE EQUIPMENT. NAMEPLATES SHALL BE BLACK SURFACE WITH WHITE ENGRAVED LETTERS. NAMEPLATES SHALL BE A MINIMUM OF 3-INCH LONG BY 1-INCH WIDE WITH WHITE LETTERS A MINIMUM OF 1/4-INCH HIGH.

B. IF THE PLUMBING EQUIPMENT IS LOCATED ABOVE A LAY-IN CEILING, THEN THE CONTRACTOR SHALL PERMANENTLY ATTACH A NAMEPLATE TO THE GRID UNDER THE EQUIPMENT. THE NAMEPLATE ATTACHED TO THE GRID SHALL BE WHITE SURFACE WITH BLACK LETTERS. NAMEPLATES SHALL BE A MINIMUM OF 3-INCH LONG BY 1-INCH WIDE WITH BLACK LETTERS A MINIMUM OF 1/4-INCH HIGH.

C. IF THE PLUMBING EQUIPMENT IS LOCATED ABOVE AN ACCESS PANEL, THEN THE CONTRACTOR SHALL PERMANENTLY ATTACH A NAMEPLATE TO THE ACCESS PANEL UNDER THE EQUIPMENT. THE NAMEPLATE ATTACHED TO THE ACCESS PANEL SHALL BE WHITE SURFACE WITH BLACK LETTERS. NAMEPLATES SHALL BE A MINIMUM OF 3-INCH LONG BY 1-INCH WIDE WITH BLACK LETTERS A MINIMUM OF 1/4-INCH HIGH.

2.6 FIRE PROTECTION SYSTEM (EXISTING SPRINKLER SYSTEM SHALL BE MODIFIED)

A. THESE CONTRACT DOCUMENTS ARE TO BE REVIEWED FOR CONCEPT ONLY DURING THE BUILDING PERMIT PLAN REVIEW. DESIGN AND INSTALLATION ARE REQUIRED TO BE PERFORMED BY A CONTRACTOR PROPERLY LICENSED BY THE STATE FIRE MARSHAL AND MUST COMPLY WITH THE LATEST EDITION OF NFPA-13 AND NFPA-14 AS ADOPTED BY THE LOCAL FIRE DEPARTMENT. IN ADDITION, THE INSTALLATION MUST COMPLY WITH THE APPLICABLE BUILDING CODE, STATE OF TEXAS AND CITY REQUIREMENTS, AND NATIONAL CODES AND STANDARDS.

B. THE SPRINKLER CONTRACTOR SHALL RELOCATE EXISTING SPRINKLER HEADS AND PIPING, AND SHALL PROVIDE NEW SPRINKLER HEADS AND PIPING AS REQUIRED TO PROVIDE FULL COVERAGE OF THIS LEASE SPACE IN STRICT ACCORDANCE WITH NFPA-13, AND ALL CITY, STATE, AND NATIONAL CODES AND STANDARDS. NEW SPRINKLER HEADS SHALL MATCH EXISTING BUILDING STANDARD HEADS. COVERAGE AND DENSITY SHALL MATCH EXISTING BUILDING.

C. THE SPRINKLER CONTRACTOR SHALL REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN TO DETERMINE EXACT LOCATIONS OF ALL SPRINKLER HEADS. RELOCATE EXISTING SPRINKLER HEADS AND PIPING WHERE DUCTWORK AND/OR LIGHTING FIXTURE CONFLICTS OCCUR.

D. SPRINKLERS LOCATED IN ACOUSTIC TILE CEILINGS SHALL BE ON CENTER.

E. SPRINKLER BRANCH PIPING SHALL NOT BE LOCATED DIRECTLY BELOW TERMINAL UNITS OR OTHER MECHANICAL EQUIPMENT. RELOCATE BRANCH PIPING AND SPRINKLER HEADS AS REQUIRED TO PROVIDE CLEAR SERVICE BELOW.

F. COORDINATE SPRINKLER LOCATIONS WITH ARCHITECT IN HIGH-FINISH AREAS AND IN HARD CEILINGS.

G. INSTALL EXPOSED PIPING IN FINISHED AREAS WITH NO CEILINGS AS HIGH AND INCONSPICUOUS AS POSSIBLE. COORDINATE PAINTING REQUIREMENTS WITH ARCHITECT.

H. PROTECTION CRITERIA FOR SPRINKLERS SHALL BE BASED ON THE FOLLOWING AREA/DENSITY REQUIREMENTS:

<u>OFFICE AND PUBLIC AREAS - LIGHT HAZARD, (DROP CEILINGS/HARD CEILINGS)</u>

1. 0.10 GPM OVER MOST REMOTE 1,500 SQUARE FEET WITH THE PROTECTION AREA PER SPRINKLER NOT EXCEEDING 225 SQUARE FEET.

2. CEILING SPRINKLERS SHALL BE ORDINARY TEMPERATURE RATED, CONCEALED TYPE, COORDINATE COVER FINISH WITH ARCHITECT. EXCEPTION OUTDOOR AREAS: HIGH TEMPERATURE RATED.

<u>OFFICE AND PUBLIC AREAS - LIGHT HAZARD, (OPEN CEILING)</u>

1. 0.10 GPM OVER MOST REMOTE 1,500 SQUARE FEET WITH THE PROTECTION AREA PER SPRINKLER NOT EXCEEDING 225 SQUARE FEET.

2. CEILING SPRINKLERS SHALL BE ORDINARY TEMPERATURE RATED, PENDANT/UPRIGHT TYPE. EXCEPTION OUTDOOR AREAS: HIGH TEMPERATURE RATED.

<u>KITCHEN/COOKING/SERVICE AREA - ORDINARY HAZARD</u>

1. 0.15 GPM OVER MOST REMOTE 2,000 SQUARE FEET WITH THE PROTECTION AREA PER SPRINKLER NOT EXCEEDING 225 SQUARE FEET.

2. CEILING SPRINKLERS SHALL BE INTERMEDIATE TEMPERATURE RATED, RECESSED CHROME TYPED.

I. COORDINATE SPRINKLER AND PIPING DEMOLITION AND RELOCATION REQUIRED TO OCCUR DURING DEMOLITION PACKAGE DUE TO ARCHITECTURAL CEILING, DUCTWORK AND EQUIPMENT MODIFICATIONS, ETC.

J. APPLICABLE STANDARDS:

NFPA 13: INSTALLATION OF SPRINKLER SYSTEMS.
NFPA 101: SAFETY TO LIFE FROM FIRE IN BUILDINGS AND STRUCTURES.
NFPA 51B: FIRE PREVENTION DURING WELDING, CUTTING, AND OTHER HOT WORK.
NFPA 241: SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS.

K. CONTRACTOR (PROPERLY LICENSED WITH THE STATE FIRE MARSHAL) SHALL FURNISH, ACCORDING TO THE CONDITIONS OF THE CONSTRUCTION CONTRACT, SHOP DRAWINGS INCLUDING THE COMPLETE LAYOUT OF FIRE PROTECTION SYSTEMS TO THE AUTHORITIES HAVING JURISDICTION, LOCAL FIRE DEPARTMENT AND THE OWNER'S INSURANCE CARRIER FOR APPROVAL.

L. THE CONTRACTOR SHALL ALLOW A MINIMUM OF 5 WORKING DAYS FOR REVIEW OF REMODELED SYSTEMS AND A MINIMUM OF 15 WORKING DAYS FOR THE NEW SYSTEMS PLAN REVIEWS. REVIEW TIMES MAY BE LONGER DEPENDING ON CURRENT PLAN REVIEW WORK LOAD.

B2AEP
B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

ISSUE FOR CONSTRUCTION

REVISIONS

Δ	DATE	DESCRIPTION

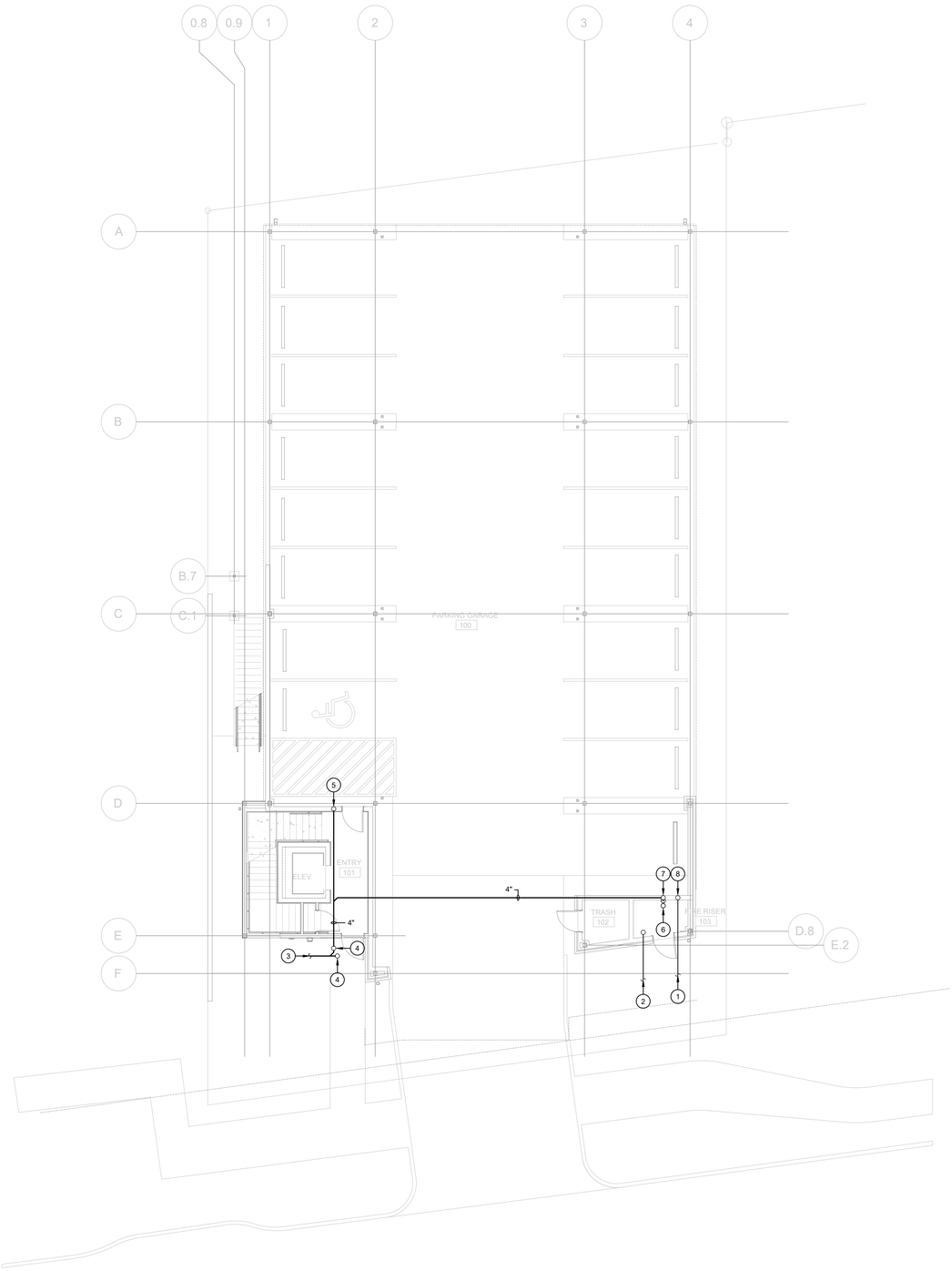
PROJ. NO.	ORIG. ISSUE
21066	2022.09.27

CURRENT: 2022-09-27

STATE OF TEXAS
M. CHAO BLACK
93681
LICENSED
PROFESSIONAL ENGINEER
9/26/2022

SHEET NAME:
PLUMBING SPECIFICATIONS

SHEET NO:
P0.002



1 PLUMBING PLAN - UNDERSLAB
SCALE: 1/8" = 1'-0"

NORTH

GENERAL NOTES

A. REFER TO PLUMBING COVER SHEET FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL INFORMATION.

B. REFER TO RISER AND EQUIPMENT CONNECTION SCHEDULE FOR ADDITIONAL SIZES AND ROUTING NOT INDICATED ON PLANS.

C. REFER TO PLUMBING SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

D. CONTRACTOR SHALL DETERMINE INVERT AND VERIFY THAT THEY ARE COORDINATED WITH OTHER TRADES.

E. JOB CONDITIONS RESULT IN UNUSUALLY LIMITED SPACE FOR SYSTEM INSTALLATION THAT PERMITS SERVICE, AND MAINTENANCE. UTMOST ATTENTION SHALL BE REQUIRED FOR ALL ELEMENTS OF CONSTRUCTION, BUT ESPECIALLY PLANNING, COORDINATION AND TRADES WORKMANSHIP.

F. PROVIDE STEEL NAIL PLATES NOT LESS THAN 18 GAUGE IN THICKNESS TO ALL PLASTIC AND COPPER PIPING PENETRATING FRAMING MEMBERS WITHIN 1-INCH OF THE EXPOSED FRAMING PER CODE.

G. REFER TO THE ARCHITECT'S DRAWING NOTES AND REQUIREMENTS. IN CASE OF ANY DISCREPANCIES THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR SPECIFICATIONS.

H. COORDINATE ALL WORK WITH ALL OTHER TRADES.

I. FIELD VERIFY ALL CONDITIONS AND SCOPE OF WORK PRIOR TO STARTING WORK. COORDINATE SEQUENCING OF WORK WITH OWNER'S REPRESENTATIVE.

J. CONNECTIONS OF NEW PIPING TO EXISTING PIPING SHALL BE DONE IN SUCH A MANNER AS TO NOT DAMAGE EXISTING SYSTEMS. REPORT ALL SUCH OCCURRENCES IMMEDIATELY TO THE ARCHITECT/OWNER'S REPRESENTATIVE.

K. COORDINATE SHUTDOWN OF SYSTEMS DURING CONSTRUCTION WITH OTHER TRADES, THE TENANT, OTHER TENANTS, AND THE BUILDING MANAGEMENT TEAM.

L. RE-ROUTING OF EXISTING PIPING SHALL BE DONE IN SUCH A MANNER AS TO NOT DAMAGE OTHER SYSTEMS THAT ARE TO REMAIN. COORDINATE WITH ARCHITECT/OWNER'S REPRESENTATIVE FOR LOCATIONS.

M. REPORT ALL SYSTEMS OR COMPONENTS APPEARING TO BE DEFECTIVE, NON-OPERATIONAL OR "SUSPECT", TO OWNER'S REPRESENTATIVE/ARCHITECT IMMEDIATELY TO DETERMINE FURTHER ACTION.

N. REFER TO DRAWING P2.001 FOR CONTINUATION OF PLUMBING WORK ABOVE.

KEYED DRAWING NOTES "→①"

1. REFER TO CIVIL FOR CONTINUATION OF BELOW GRADE DOMESTIC WATER PIPING.
2. REFER TO CIVIL FOR CONTINUATION OF BELOW GRADE FIRE PIPING.
3. REFER TO CIVIL FOR CONTINUATION OF BELOW GRADE SANITARY PIPING.
4. 4" PIPING UP TO YCO. REFER TO DRAWING P2.001 FOR CONTINUATION.
5. 4" SANITARY PIPING UP. REFER TO DRAWING P2.001 FOR CONTINUATION.
6. 4" SANITARY WASTE PIPING FROM FIXTURE ABOVE. REFER TO DRAWING P2.001 FOR CONTINUATION.
7. 2" VENT PIPING UP. REFER TO DRAWING P2.001 FOR CONTINUATION.
8. DCW PIPING UP. REFER TO DRAWING P2.001 FOR CONTINUATION.

B2AEP, LLC
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3510 EAGLE WAY
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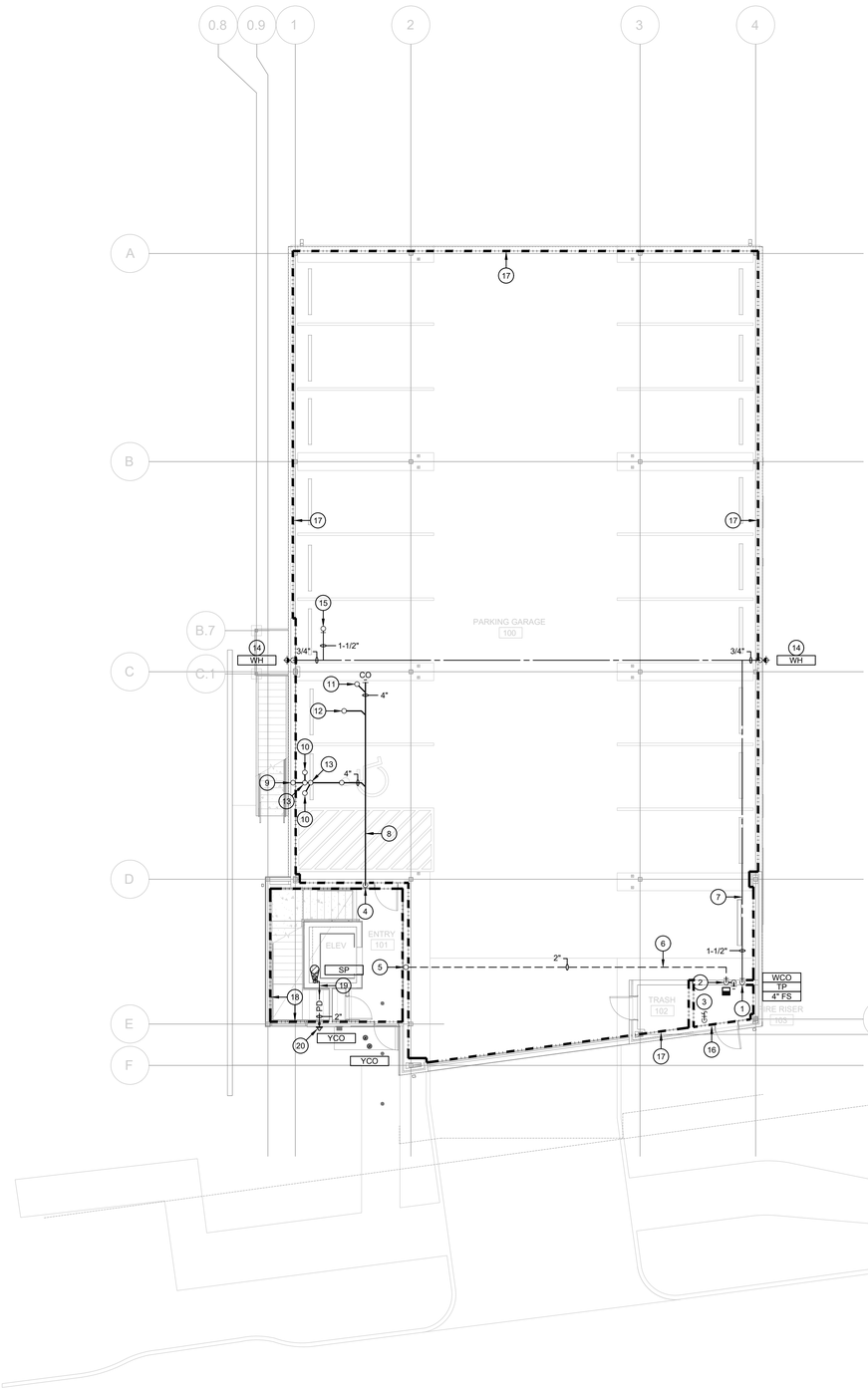
SHEET NAME:
PLUMBING PLAN - UNDERSLAB

SHEET NO:
P2.000



GENERAL NOTES

A. REFER TO PLUMBING COVER SHEET FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL INFORMATION.

B. REFER TO RISER AND EQUIPMENT CONNECTION SCHEDULE FOR ADDITIONAL SIZES AND ROUTING NOT INDICATED ON PLANS.

C. REFER TO PLUMBING SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

D. CONTRACTOR SHALL DETERMINE INVERT AND VERIFY THAT THEY ARE COORDINATED WITH OTHER TRADES.

E. JOB CONDITIONS RESULT IN UNUSUALLY LIMITED SPACE FOR SYSTEM INSTALLATION THAT PERMITS SERVICE, AND MAINTENANCE. UTMOST ATTENTION SHALL BE REQUIRED FOR ALL ELEMENTS OF CONSTRUCTION, BUT ESPECIALLY PLANNING, COORDINATION AND TRADES WORKMANSHIP.

F. PROVIDE STEEL NAIL PLATES NOT LESS THAN 18 GAUGE IN THICKNESS TO ALL PLASTIC AND COPPER PIPING PENETRATING FRAMING MEMBERS WITHIN 1-INCH OF THE EXPOSED FRAMING PER CODE.

G. REFER TO THE ARCHITECT'S DRAWING NOTES AND REQUIREMENTS. IN CASE OF ANY DISCREPANCIES THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR SPECIFICATIONS.

H. COORDINATE ALL WORK WITH ALL OTHER TRADES.

I. FIELD VERIFY ALL CONDITIONS AND SCOPE OF WORK PRIOR TO STARTING WORK. COORDINATE SEQUENCING OF WORK WITH OWNER'S REPRESENTATIVE.

J. CONNECTIONS OF NEW PIPING TO EXISTING PIPING SHALL BE DONE IN SUCH A MANNER AS TO NOT DAMAGE EXISTING SYSTEMS. REPORT ALL SUCH OCCURRENCES IMMEDIATELY TO THE ARCHITECT/OWNER'S REPRESENTATIVE.

K. COORDINATE SHUTDOWN OF SYSTEMS DURING CONSTRUCTION WITH OTHER TRADES, THE TENANT, OTHER TENANTS, AND THE BUILDING MANAGEMENT TEAM.

L. RE-ROUTING OF EXISTING PIPING SHALL BE DONE IN SUCH A MANNER AS TO NOT DAMAGE OTHER SYSTEMS THAT ARE TO REMAIN. COORDINATE WITH ARCHITECT/OWNER'S REPRESENTATIVE FOR LOCATIONS.

M. REPORT ALL SYSTEMS OR COMPONENTS APPEARING TO BE DEFECTIVE, NON-OPERATIONAL OR "SUSPECT", TO OWNER'S REPRESENTATIVE/ARCHITECT IMMEDIATELY TO DETERMINE FURTHER ACTION.

N. REFER TO DRAWING P2.000 FOR CONTINUATION OF PLUMBING WORK BELOW.

O. REFER TO DRAWING P2.002 FOR CONTINUATION OF PLUMBING WORK ABOVE.

KEYED DRAWING NOTES "←(1)"

1. DOMESTIC COLD WATER PIPING UP FROM BELOW. REFER TO DRAWING P2.000 FOR CONTINUATION. PROVIDE DCW SHUT-OFF VALVE AND A WALL ACCESS PANEL AT 3'-0" AFF.
2. VENT PIPING UP FROM BELOW. REFER TO DRAWING P2.000 FOR CONTINUATION.
3. FIRE PIPING UP FROM BELOW TO FIRE RISER SHOWN FOR REFERENCE ONLY. FIRE PIPING SHALL BE DESIGNED BY A STATE OF TEXAS LICENSED FIRE PROTECTION ENGINEER.
4. 4" SANITARY PIPING UP FROM BELOW. REFER TO DRAWING P2.000 FOR CONTINUATION.
5. 2" VENT PIPING UP. REFER TO DRAWING P2.002 FOR CONTINUATION.
6. VENT PIPING SHALL BE ROUTED ABOVE THE CEILING.
7. DOMESTIC COLD WATER PIPING SHALL BE ROUTED ABOVE THE CEILING.
8. SANITARY PIPING SHALL BE ROUTED ABOVE THE CEILING.
9. 4" SANITARY WASTE PIPING FROM WCO ON THE LEVEL ABOVE. REFER TO DRAWING P2.002 FOR CONTINUATION.
10. 4" SANITARY WASTE PIPING FROM THE FIXTURE ABOVE. REFER TO DRAWING P2.002 FOR CONTINUATION.
11. 3" SANITARY WASTE PIPING FROM THE FIXTURE ABOVE. REFER TO DRAWING P2.002 FOR CONTINUATION.
12. 2" SANITARY WASTE PIPING FROM THE FIXTURE ABOVE. REFER TO DRAWING P2.002 FOR CONTINUATION.
13. 2" VENT PIPING UP. REFER TO DRAWING 2.002 FOR CONTINUATION.
14. CONTRACTOR SHALL COORDINATE EXACT PLACEMENT OF WH WITH THE ARCHITECT.
15. DOMESTIC COLD WATER PIPING UP. REFER TO DRAWING P2.002 FOR CONTINUATION.
16. LIMIT OF FIRE SPRINKLER SCOPE. THIS AREA HAS A CEILING. REFER TO "FIRE SPRINKLER SYSTEM NOTES" ON THE PLUMBING SPECIFICATIONS SHEET FOR ADDITIONAL INFORMATION.
17. LIMIT OF FIRE SPRINKLER SCOPE. THIS AREA HAS A CEILING, HOWEVER THE PARKING GARAGE IS OPEN. TRASH 102 IS NOT HEATED. THEREFORE, A DRY PIPE SYSTEM SHALL BE USED FOR THE PARKING GARAGE AND FOR TRASH 102. REFER TO "FIRE SPRINKLER SYSTEM NOTES" ON THE PLUMBING SPECIFICATIONS SHEET FOR ADDITIONAL INFORMATION.
18. LIMIT OF FIRE SPRINKLER SCOPE. THE CONTRACTOR SHALL REFER TO THE ARCHITECT FOR AREAS THAT HAVE A CEILING AMD AREAS THAT DONT HAVE CEILINGS. REFER TO "FIRE SPRINKLER SYSTEM NOTES" ON THE PLUMBING SPECIFICATIONS SHEET FOR ADDITIONAL INFORMATION.
19. LABEL ALL SUMP PUMP DISCHARGE PIPING AT 10'-0" INTERVALS AS "ELEVATOR SUMP PUMP DISCHARGE".
20. CONTRACTOR SHALL COORDINATE DOWN SPOUT NOZZLE LOCATION WITH THE ARCHITECT AND CIVIL. DOWN SPOUT SHALL "DAYLIGHT" THE DISCHARGE AT GRADE.

PLUMBING PLAN - LEVEL 1

NORTH

SCALE: 1/8" = 1'-0"

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
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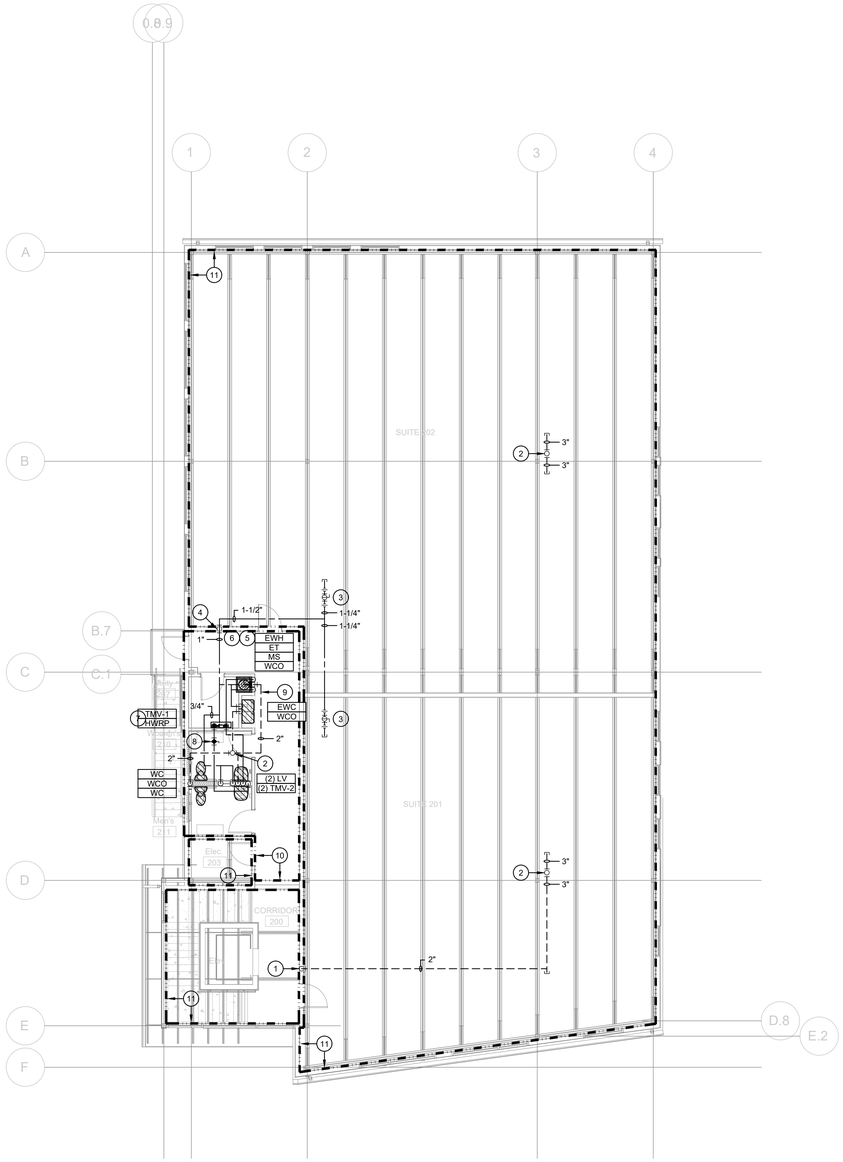
SHEET NAME:
PLUMBING
PLAN - LEVEL 1

SHEET NO:
P2.001



1 PLUMBING PLAN - LEVEL 2
NORTH
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO PLUMBING COVER SHEET FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL INFORMATION.

B. REFER TO RISER AND EQUIPMENT CONNECTION SCHEDULE FOR ADDITIONAL SIZES AND ROUTING NOT INDICATED ON PLANS.

C. REFER TO PLUMBING SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

D. CONTRACTOR SHALL DETERMINE INVERT AND VERIFY THAT THEY ARE COORDINATED WITH OTHER TRADES.

E. JOB CONDITIONS RESULT IN UNUSUALLY LIMITED SPACE FOR SYSTEM INSTALLATION THAT PERMITS SERVICE, AND MAINTENANCE. UTMOST ATTENTION SHALL BE REQUIRED FOR ALL ELEMENTS OF CONSTRUCTION, BUT ESPECIALLY PLANNING, COORDINATION AND TRADES WORKMANSHIP.

F. PROVIDE STEEL NAIL PLATES NOT LESS THAN 18 GAUGE IN THICKNESS TO ALL PLASTIC AND COPPER PIPING PENETRATING FRAMING MEMBERS WITHIN 1-INCH OF THE EXPOSED FRAMING PER CODE.

G. REFER TO THE ARCHITECT'S DRAWING NOTES AND REQUIREMENTS. IN CASE OF ANY DISCREPANCIES THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR SPECIFICATIONS.

H. COORDINATE ALL WORK WITH ALL OTHER TRADES.

I. FIELD VERIFY ALL CONDITIONS AND SCOPE OF WORK PRIOR TO STARTING WORK. COORDINATE SEQUENCING OF WORK WITH OWNER'S REPRESENTATIVE.

J. CONNECTIONS OF NEW PIPING TO EXISTING PIPING SHALL BE DONE IN SUCH A MANNER AS TO NOT DAMAGE EXISTING SYSTEMS. REPORT ALL SUCH OCCURRENCES IMMEDIATELY TO THE ARCHITECT/OWNER'S REPRESENTATIVE.

K. COORDINATE SHUTDOWN OF SYSTEMS DURING CONSTRUCTION WITH OTHER TRADES, THE TENANT, OTHER TENANTS, AND THE BUILDING MANAGEMENT TEAM.

L. RE-ROUTING OF EXISTING PIPING SHALL BE DONE IN SUCH A MANNER AS TO NOT DAMAGE OTHER SYSTEMS THAT ARE TO REMAIN. COORDINATE WITH ARCHITECT/OWNER'S REPRESENTATIVE FOR LOCATIONS.

M. REPORT ALL SYSTEMS OR COMPONENTS APPEARING TO BE DEFECTIVE, NON-OPERATIONAL OR "SUSPECT", TO OWNER'S REPRESENTATIVE/ARCHITECT IMMEDIATELY TO DETERMINE FURTHER ACTION.

N. REFER TO DRAWING P2.001 FOR CONTINUATION OF PLUMBING WORK BELOW.

KEYED DRAWING NOTES "←1"

1. VENT PIPING UP FROM BELOW. CONTINUE ROUTING PIPING AS INDICATED. CONTRACTOR SHALL COORDINATE INSTALLING VENT PIPING TIGHT TO STRUCTURE WHILE ALLOWING FOR THE REQUIRED SLOPE.
2. UP TO 3" VTR.
3. PROVIDE VALVE AND CAP FOR FUTURE TENANT CONNECTION.
4. DOMESTIC COLD WATER PIPING UP FROM BELOW. REFER TO DRAWING P2.001 FOR CONTINUATION.
5. SUSPEND WATER HEATER AND ITS AUXILIARY DRAIN PAN ABOVE THE MOP SINK. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
6. ROUTE WATER HEATER RELIEF AND DRAINS INDEPENDENTLY ALONG WALL OVER TO THE MOP SINK AND PROVIDE AN AIR GAP FROM THE DISCHARGE OF THE DRAIN PIPING A MINIMUM OF 2 X THE PIPE DIAMETER OR 1" (WHICHEVER IS GREATER) ABOVE THE FLOOD RIM OF THE MOP SINK. PIPING NOT SHOWN FOR CLARITY.
7. INSTALL PRE-PIPED THERMOSTATIC MIXING VALVE ON WALL. REFER TO DETAIL FOR ADDITIONAL INFORMATION.
8. THE CONTRACTOR SHALL BALANCE THE 1/2" HOT WATER RETURN CIRCUIT SETTER TO 1.0 GPM.
9. CONTRACTOR SHALL COORDINATE ROUTING VENT PIPING AS HIGH AS POSSIBLE WHILE MAINTAINING THE REQUIRED SLOPE TO ACCOMMODATE THE SERVICE CLEARANCE OF THE AHU. REFER TO THE MECHANICAL DRAWINGS FOR LOCATION OF AHU.
10. LIMIT OF FIRE SPRINKLER SCOPE. THIS AREA HAS A CEILING. REFER TO "FIRE SPRINKLER SYSTEM NOTES" ON THE PLUMBING SPECIFICATIONS SHEET FOR ADDITIONAL INFORMATION.
11. LIMIT OF FIRE SPRINKLER SCOPE. THIS AREA DOES NOT HAVE A CEILING. REFER TO "FIRE SPRINKLER SYSTEM NOTES" ON THE PLUMBING SPECIFICATIONS SHEET FOR ADDITIONAL INFORMATION.

ROOF WARRANTY

THE ROOF SYSTEM INSTALLED IN THIS BUILDING HAS A WARRANTY. THE CONTRACTOR SHALL COMPLY WITH ALL WARRANTY GUIDELINES WHILE INSTALLING EQUIPMENT ON THE ROOF. THIS INCLUDES THE INSTALLATION OF ROOF PENETRATIONS, EQUIPMENT CURBS, VTR'S AND PIPE SUPPORTS.

CONTACT BUILDING MANAGER FOR ROOF WARRANTY INFORMATION AND FOR EXACT SPECIFICATIONS FOR ANY WORK TO BE PERFORMED ON THE ROOF OF THIS BUILDING.

UNDER NO CIRCUMSTANCES SHALL THE GENERAL CONTRACTOR OR ANY SUB CONTRACTORS BE ALLOWED TO MAKE ROOF PENETRATIONS. TO DO SO WOULD VOID THE EXISTING ROOF WARRANTY. ALL PENETRATIONS SHALL BE COORDINATED THROUGH THE BUILDING OWNER'S PREFERRED ROOFING CONTRACTOR.

THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY TO ENSURE THAT THE ROOF WARRANTY IS NOT VOIDED DUE TO CONSTRUCTION ASSOCIATED WITH THIS PROJECT.

B2AEP
B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

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93681
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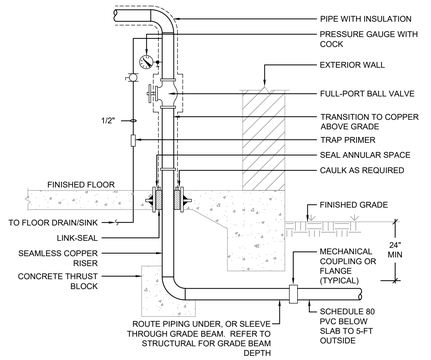
PROFESSIONAL ENGINEER
9/26/2022

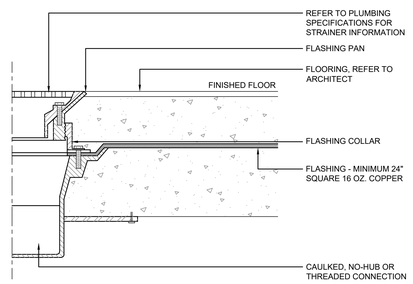
SHEET NAME:
PLUMBING
PLAN - LEVEL 2

SHEET NO:
P2.002



12 DOMESTIC WATER ENTRY DETAIL

SCALE: NONE

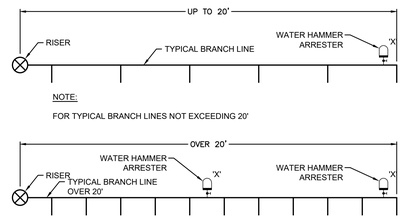


NOTES:

1. PROVIDE FLASHING WHEN DRAIN IS INSTALLED IN A NON-MEMBRANE FLOOR

9 FLOOR DRAIN / FLOOR SINK

SCALE: NONE



NOTE:

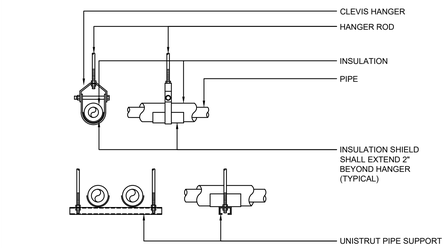
FOR TYPICAL BRANCH LINES NOT EXCEEDING 20'

NOTE:

FOR TYPICAL BRANCH LINES EXCEEDING 20'

6 TYPICAL WATER HAMMER ARRESTOR PLACEMENT

SCALE: NONE

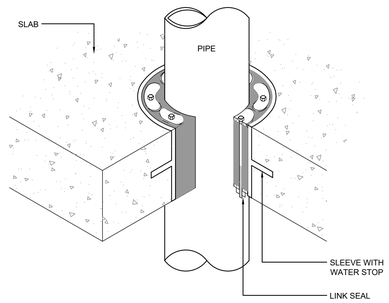


NOTES:

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.

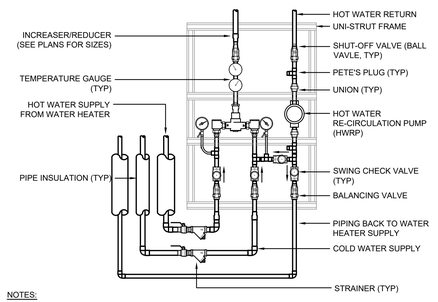
3 TYPICAL PIPE HANGERS

SCALE: NONE



11 TYPICAL WATER-TIGHT SLEEVE

SCALE: NONE

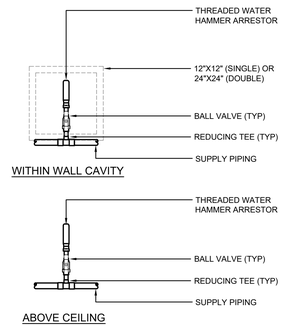


NOTES:

1. REFER TO MANUFACTURERS RECOMMENDED PIPING DIAGRAM FOR THE THERMOSTATIC MIXING VALVE BEING INSTALLED.
2. PROVIDE ALL TEMPERATURE GAUGES AND PRESSURE GAUGE INDICATED TO PROPERLY BALANCE SYSTEM.

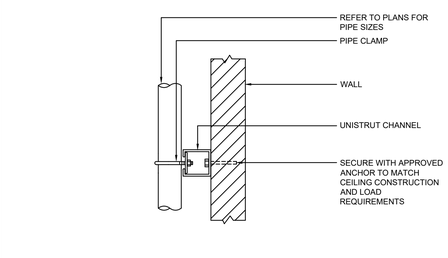
8 MASTER DISTRIBUTION MIXING VALVE W/ PUMP

SCALE: NONE



5 TYPICAL WATER HAMMER ARRESTOR INSTALLATION

SCALE: NONE

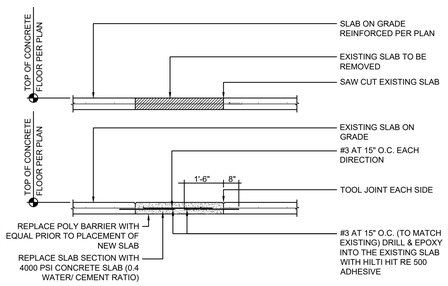


NOTES:

1. PROVIDE MINIMUM ANCHOR SUPPORT SPACING EVERY 6' VERTICALLY.
2. OVERSIZE CLAMP WHEN PIPING IS INSULATED.

2 VERTICAL PIPE SUPPORT

SCALE: NONE

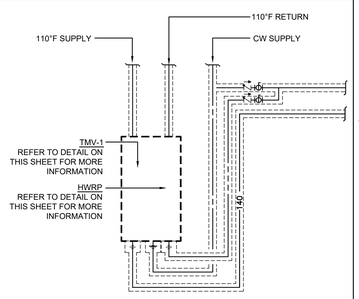


NOTES:

1. CURE NEW SLAB WITH ASHFORD CURING/HARDENING AND SEALING COMPOUND.
2. BACKFILL TRENCH WITH MACHINE COMPACTED SELECT FILL.

10 CONCRETE SAW CUTTING

SCALE: NONE

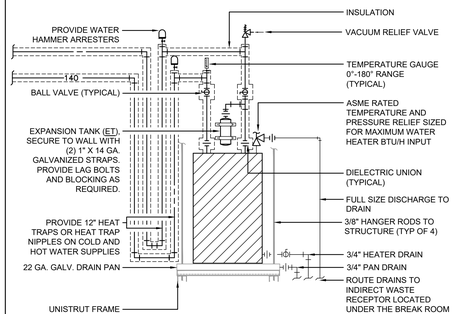


NOTES:

1. PIPE INSULATION NOTE SHOWN FOR CLARITY. REFER TO PLUMBING SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS FOR PIPE INSULATION.

7 HOT WATER SCHEMATIC

SCALE: NONE

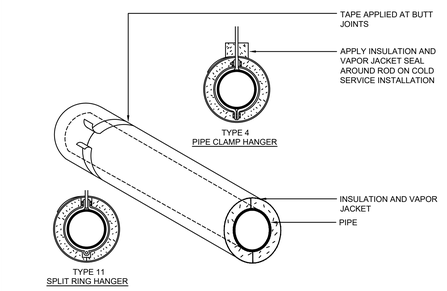


NOTES:

1. PROVIDE AN AIR GAP FROM THE DISCHARGE OF THE DRAIN PIPING OF 2X THE PIPE DIAMETER OR 1" (WHICHEVER IS GREATER) ABOVE THE FLOOD RIM OF THE MOP SINK.

4 SUSPENDED ELECTRIC WATER HEATER

SCALE: NONE



NOTE:

REFER TO SPECIFICATION FOR MINIMUM HEIGHT OF INSULATION UP THE HANGER, OR PROVIDE THE HANGER ON THE OUTSIDE OF THE INSULATION ON THE PIPE.

1 PIPE INSULATION AND VAPOR BARRIER

SCALE: NONE

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

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ARCHITECTURE & INTERIORS, LLC
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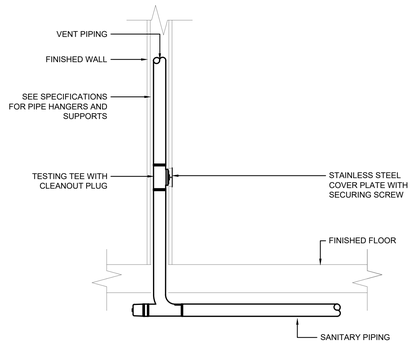
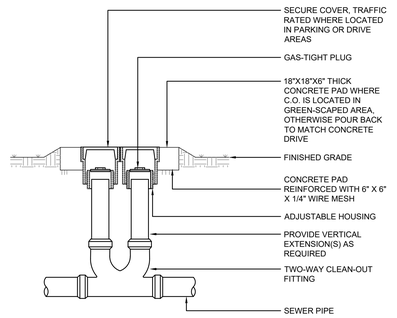
P5.000



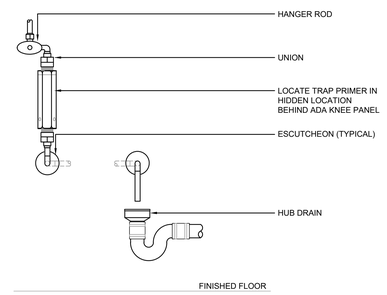
9 WALL CLEANOUT

SCALE: NONE



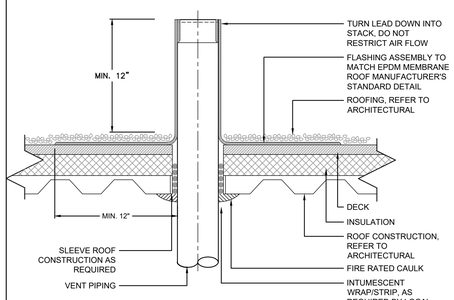
6 TYPICAL TWO-WAY CLEAN-OUT

SCALE: NONE



3 TRAP PRIMER INSTALLATION

SCALE: NONE

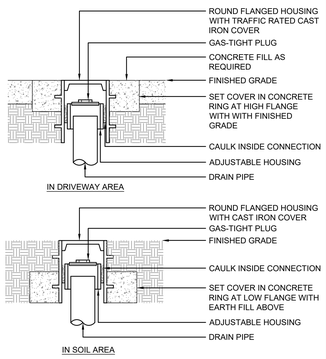


NOTES:

1. THE EXISTING ROOF SYSTEM INSTALLED IN THIS BUILDING HAS A WARRANTY. THE CONTRACTOR SHALL REFER TO THE PLUMBING ROOF PLAN FOR ROOF WARRANTY REQUIREMENTS.
2. MAINTAIN A MINIMUM OF 15'-0" FROM FRESH AIR INTAKES AND OPENINGS INTO BUILDINGS.

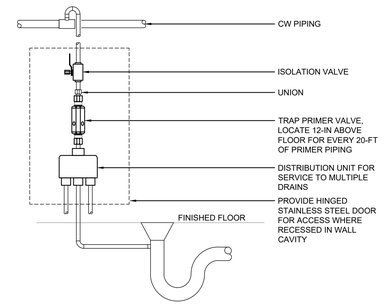
8 VENT THROUGH ROOF

SCALE: NONE



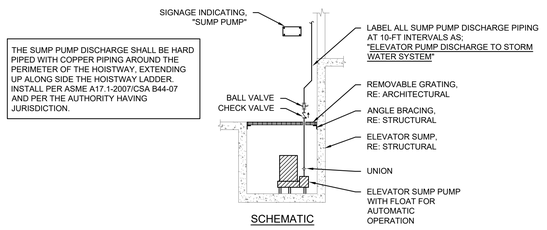
5 TYPICAL FLOOR CLEAN-OUT

SCALE: NONE



2 DIFFERENTIAL PRESSURE TYPE TRAP PRIMER

SCALE: NONE



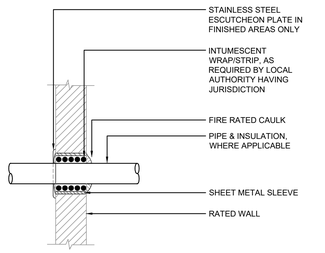
THE SUMP PUMP DISCHARGE SHALL BE HARD PIPED WITH COPPER PIPING AROUND THE PERIMETER OF THE HOISTWAY, EXTENDING UP ALONG SIDE THE HOISTWAY LADDER. INSTALL PER ASME A17.1-2007/CSA B44-07 AND PER THE AUTHORITY HAVING JURISDICTION.

SCHEMATIC

NOTE:
SUMP PUMP SHALL BE PROVIDED WITH A COMPLETE SJE RHOMBUS "TANK ALERT I" LIQUID LEVEL ALARM PANEL SYSTEM. PROVIDE FLOAT SWITCH IN SUMP BASIN TO DETECT HIGH WATER LEVEL. ALARM PANEL TO BE INSTALLED IN AN ACCESSIBLE LOCATION. POWER FOR THE ALARM PANEL SHALL BE PROVIDED BY THE CONVENIENCE RECEPTACLE LOCATED ADJACENT TO PANEL. A DEDICATED SWITCHED RECEPTACLE LOCATED WITHIN THE ELEVATOR SHAFT WILL POWER THE SUMP PUMP. COORDINATE ALL REQUIREMENTS WITH ELECTRICAL.

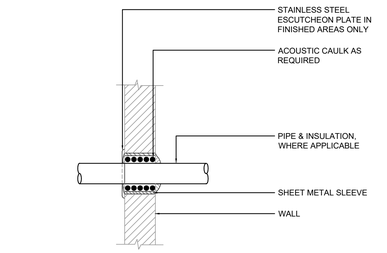
7 ELEVATOR SUMP DISCHARGE

SCALE: NONE



4 FIRE-RATED PIPE PENETRATION

SCALE: NONE



NOTES:

1. TYPICAL FOR NON-INSULATED PIPE AND CONDUIT.
2. TYPICAL FOR MASONRY OR CONCRETE WALLS.

1 NON-FIRE-RATED PIPE PENETRATION

SCALE: NONE

B2AEP, LLC
TBPE F-18874

3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
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SHEET NAME:
PLUMBING DETAILS

SHEET NO:
P5.001

WATER HAMMER ARRESTER SCHEDULE

FIXTURE	TYPE OF SUPPLY CONTROL	WEIGHT IN FIXTURE - UNITS					
		PUBLIC			PRIVATE		
		TOTAL	CW	HW	TOTAL	CW	HW
WATER CLOSET	FLUSH VALVE	-	8	-	5	5	-
WATER CLOSET	FLUSH TANK	15	5	-	2.5	2.5	-
PEDESTAL URINAL	FLUSH VALVE	-	4	-	-	-	-
WALL URINAL	FLUSH VALVE	3	4	-	-	-	-
LAVATORY	FAUCET	11	1.5	1.5	1	1	1
BATHTUB	FAUCET	-	2	3	2	1.5	1.5
SHOWER HEAD	MIXING VALVE	-	2	3	2	1	2
BATHROOM GROUP	FLUSH VALVE CLOSET	-	-	-	8	8	3
BATHROOM GROUP	FLUSH TANK CLOSET	-	-	-	6	6	3
SEPARATE SHOWER	MIXING VALVE	-	-	-	2	1	2
SERVICE SINK	FAUCET	2	3	3	-	-	-
LAUNDRY TUBS (1-3)	FAUCET	-	-	-	3	3	3
COMBINATION FIXTURE	FAUCET	-	-	-	3	3	3

PDI UNITS	A	B	C	D	E	F
FIXTURE UNITS	1 - 11	12 - 32	33 - 60	61 - 113	114 - 154	155 - 330

NOTES:
1. SIZING PER THE PLUMBING AND DRAINAGE INSTITUTE (PDI) STANDARD PDI-HW 201.
2. ALL SIZING DATA BASED ON THE FLOW VELOCITIES OF 10 FPS OR LESS.
3. ROUND UP THE FIXTURE-UNIT TOTAL TO THE NEXT LARGER WHOLE NUMBER.

DOMESTIC WATER AND WASTE WATER CALCULATIONS

ROOM / AREA	TAG	FIXTURE TYPE	QTY	WATER FIXTURE UNITS	BRANCH FIXTURE UNITS		TOTAL DCW FIXTURE UNITS	SANITARY WASTE	
					HW	CW		DRAINAGE DFU	TOTAL DFU
SEE PLANS	MS	MOP SINK	1	1.50	1.13	1.13	1.50	3.00	3.00
RESTROOM	EWC	WATERCOOLER (DBL. BOWL TAS)	2	0.50	-	1.00	1.00	0.50	1.00
RESTROOM	LV	LAVATORY	2	1.00	1.50	1.50	2.00	1.00	2.00
RESTROOM	WC	WATER CLOSET - FT	2	2.50	-	5.00	5.00	4.00	8.00
RISER	FS	FLOOR SINK - 4"	1	-	-	-	-	8.00	8.00
EXTERIOR	WH	WALL HYDRANT	1	2.50	-	2.50	2.50	-	-
EXTERIOR	WH	WALL HYDRANT	1	1.00	-	1.00	1.00	-	-
			TOTAL WSFU =		2.63	12.13	13.00	TOTAL DFU =	22.00
			RECOMMENDED MINIMUM BUILDING WATER SUPPLY PIPE SIZE (INCHES) [NOTE 2]						1-1/2"
			RECOMMENDED MINIMUM BUILDING WATER SERVICE METER SIZE (INCHES)						2"
			RECOMMENDED MINIMUM BUILDING SANITARY SEWER PIPE SIZE (INCHES)						4.00

NOTES:
1. CALCULATIONS PER THE 2021 UPC.
2. BASED ON A SUPPLY PRESSURE RANGE OF 50 TO 60 PSI.
3. THE ESTIMATED TOTAL BUILDING DOMESTIC WSFU = 45 WSFU'S.
4. THE ESTIMATED TOTAL BUILDING SANITARY WASTE = 62 DFU'S.

DOMESTIC WATER HEATER (ELECTRIC) SCHEDULE

MARK	SERVES	LOCATION	STORAGE	CAPACITY		ELECTRICAL DATA			BASIS OF DESIGN MANUFACTURER & MODEL
			GALLONS	GPH	TEMP RISE °F	KW	VOLTS	PH	
EWH	POTABLE	SEE PLANS	6	8	80	1.5	120	1	AO SMITH DEL-6S-1.5

NOTES:
1. PROVIDE AMTROL EXTROL ST-5-C SERIES PRE-CHARGED THERMAL EXPANSION ABSORBER (ET) FOR WATER HEATER.
2. WATER HEATER SET POINT SHALL BE AT 140°F.
3. WATER HEATER INSTALLATIONS SHALL MEET OR EXCEED ALL CODE REQUIREMENTS, LOCAL AMENDMENTS, AND MANUFACTURER'S RECOMMENDED INSTALLATION REQUIREMENTS.
4. ALL PLUMBING SUPPLIES, VALVES, AND ASSOCIATED APPURTENANCES SHALL BE INSTALLED.
5. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECTURAL.
6. COORDINATE DISCONNECT SWITCH LOCATION AND REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
7. THE DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED AND SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

PUMP SCHEDULE

MARK	SERVICE	TYPE	FLOW	DESIGN HEAD	ELECTRICAL DATA			BASIS OF DESIGN MANUFACTURER & MODEL
			GPM	FT. W.G.	HP	RPM	V / PH	
HWRP	HW CIRC.	CENTRIFUGAL	1.0	25	1/4	3300	120 / 1	ITT NBF-36 (SPEED 1)

NOTES:
1. PROVIDE HWRP WITH 24-HR, 7-DAY TIMER CONTROLLER. INSTALL AQUASTAT ON THE RETURN ADJACENT TO LAST FIXTURE TAP.
2. THE DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED AND SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

THERMOSTATIC MIXING VALVE SCHEDULE

MARK	DESIGN FLOW RATE [GPM]	PRESSURE DROP @ DESIGN FLOW RATE [PSI]	MINIMUM FLOW RATE [GPM][1]	MAXIMUM FLOW RATE [GPM][2]	BASIS OF DESIGN		NOTES
					MANUFACTURER	MODEL NUMBER	
TMV-1	2.63	0.55	0.5	19	POWERS	LFSH1432	1, 2, 3
TMV-2	0.5	2	0.35	2	POWERS	LFE480	4

NOTES:
1. MINIMUM FLOW RATE REQUIRED TO MAINTAIN TEMPERATURE CONTROL.
2. PRESSURE DROP OF 5 PSI ACROSS VALVE.
3. VALVE FINISH IS TO BE ROUGH BRONZE.
4. VALVE FINISH IS TO BE POLISHED CHROME. MIXING VALVE SHALL FAIL CLOSED UPON OUTLET TEMPERATURES EXCEEDING 110°F. SET OUTLET TEMPERATURE TO 105°F.

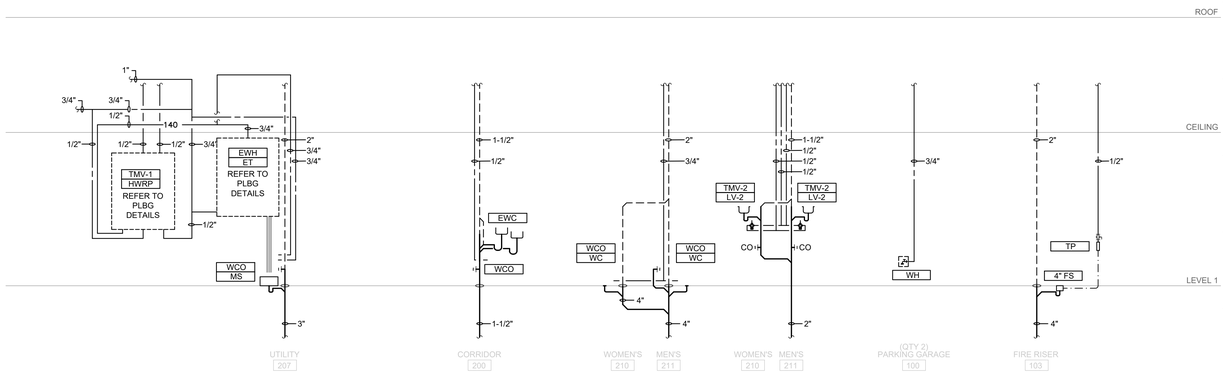
ELEVATOR SUMP PUMP SCHEDULE

MARK	SERVICE	TYPE	FLOW	DESIGN HEAD	ELECTRICAL DATA			BASIS OF DESIGN MANUFACTURER & MODEL
			GPM	FT. W.G.	HP	RPM	V / PH	
SP	ELEV. SUMP	SUBMERSIBLE	50	25	1/2	3600	120 / 1	MYERS PENTEK EPP-ME45

NOTES:
1. SUMP PUMP SHALL AUTOMATICALLY OPERATE.
2. PROVIDE SUMP PUMP WITH 6' OIL RESISTANT POWER CORD.
3. PROVIDE SUMP PUMP WITH ELEVATOR PUMP CONTROL SYSTEM, REMOTE ALARM, HIGH OIL INDICATOR, AND SINGLE FLOAT WITH MULTIPLE ALARM POINTS. FLOAT SHALL ACTIVATE LOCAL AUDIO/VISUAL ALARM AT 2" ABOVE PUMP OFF LEVEL.
4. CONTRACTOR SHALL COORDINATE LOCATION OF ALARM A/V DEVICE WITH THE AUTHORITY HAVING JURISDICTION.
5. PROVIDE WITH 40 GALLON VERTICAL SELF VENTED POLYETHYLENE OIL STORAGE TANK (COLOR: BLACK).

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MOUNTING TYPE	MANUFACTURER MODEL NUMBER	SPECIFICATIONS	ADA (Y/N)	BRANCH CONNECTION SIZE UNLESS NOTED OTHERWISE				P-TRAP SIZE
						CW	HW	SAN	VENT	
EWC	ELECTRIC WATER COOLER	WALL	ELKAY LZSTL8WSLK	SELF CONTAINED, BARRIER FREE, DUAL LEVEL, SELF CLOSING PUSH BARS ON FRONT AND SIDES, SAFETY BUBBLERS, 8.0 GPH CAPACITY. WATER COOLER (LZSTL8WSLC), BOTTLE FILLER (LZWSR), AND FILTER. FILTER SHALL BE CERTIFIED TO NSF 42 AND 53 FOR LEAD, PARTICULATE, CHLORINE, TASTE, AND DOOR REDUCTION. 3000 GALLON CAPACITY. GALVANIZED FRAME WITH STAINLESS STEEL BASIN. REFER TO ARCHITECTS DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT. PROVIDE APRONS IF REQUIRED BY TAS. CONTRACTOR SHALL SUPPLY THE SCHEDULED P-TRAP FOR EWC. 115V/60HZ, 6A, 370W.	Y	1/2"	-	1-1/2"	1-1/2"	1-1/2"
FCO	FLOOR CLEAN-OUT	FLOOR	JR SMITH 4020 SERIES	CAST-IRON BODY, ABS GASKETED CLEANOUT PLUG, SATIN NICKEL BRONZE FLANGE AND COVER. TWO-PIECE, THREADED, ADJUSTABLE HOUSING FOR FLUSH INSTALLATION. PROVIDE WITH FLANGE WITH FLASHING CLAMPS (-F-C).	-	-	-	SEE PLANS	-	-
FS	FLOOR SINK	FLOOR	JR SMITH 3140 SERIES	12" X 12" 8" RECEPTOR, ACID-RESISTANT ENAMELED CAST IRON, ALUMINUM DOME STRAINER, RIM WITH 1/2 GRATE	-	-	-	4"	2"	4"
LV	LAVATORY	WALL	KOHLER KINGSTON K-2005 SERIES	BOWL: RECTANGULAR 21 X 18 IN, INGLE FAUCET HOLE, CONCEALED ARM CARRIER SYSTEMS, FRONT OVERFLOW, WHITE. FAUCET: KOHLER K-13460, 0.50 GPM WITH TIME-OUT SETTING AT 30-SECONDS, ADA COMPLIANT, SENSOR ACTIVATED, AERATED SPRAY HEAD, CHROME PLATED BRASS, DC BATTERY POWERED. SUPPLY: MCGUIRE 2167 SERIES. LOOSE KEY WITH RISER. TRAP: MCGUIRE 8902 SERIES. CAST BODY WITH CLEAN-OUT. CARRIER: SMITH 0700 SERIES. STRAINER, AND TAILPIECE: MCGUIRE 155WC OFFSET TAILPIECE, OPEN GRID STRAINER. PROTECTIVE PIPE COVERS: TRUEBRO OR EQUAL.	Y	1/2"	1/2"	2"	1-1/2"	1-1/4"
MS	MOP SINK	FLOOR	FIAT MSB-24X24	24 X 24-IN, 10-IN HIGH WALLS WITH 1-IN WIDE SHOULDERS, STAINLESS STEEL DRAIN BODY (3-IN DRAIN PIPE CONNECTION), COMBINATION DOME STRAINER AND STAINLESS STEEL LINT BASKET. FAUCET: 830 WALL MOUNTED FAUCET WITH VACUUM BREAKER, PAIL HOOK AND 3/4" HOSE THREAD ON SPOUT. STAINLESS STEEL WALL GUARDS, BUMPER GUARDS, MOP BRACKET, HOSE, AND BRACKET.	-	3/4"	3/4"	3"	2"	3"
TP	TRAP PRIMER	WALL	PPP DUAL-FLOW	BRASS BODY, 1/2" MALE NPT INLET, 1/2" FEMALE NPT OUTLET. PROVIDE DISTRIBUTION UNITS AS REQUIRED.	-	1/2"	-	-	-	-
WC	WATER CLOSET	FLOOR	KOHLER "HIGHLINE" K-3519-TR	VITREOUS CHINA, ELONGATED RIM, EQUIPPED WITH SLOAN "FLUSHMATE" SYSTEM, CLOSE-COUPLED TANK, 2" OUTLET, 1.0 GALLONS PER FLUSH, WITH BOLT CAPS, INTEGRAL TRAP, AND LOCKING TANK LID. SEAT: CHURCH 9500C SERIES . OPEN-FRONT SEAT WITHOUT COVER. SHALL BE ADA COMPLIANT. MOUNT TANK FLUSH HANDLE TOWARD THE "WIDE" SIDE OF ADA COMPLIANT STALL. REFER TO ARCHITECTS DRAWINGS FOR EXACT LOCATION.	Y	1/2"	-	4"	2"	-
WCO	WALL CLEAN-OUT	WALL	-	TAPPED CLEANOUT TEE, EXTRA-HEAVY, THREADED, SOLID HEXAGONAL NUT, CLEANOUTS IN HUBS OF COMBINATION WYE AND 1/8-BENDS OR WYES: TAPPED SPIGOT. CLEANOUTS AT ENDS OF HUBLESS COMBINATION WYE AND 1/8-BENDS OR WYES: BLIND PLUG. COVERS OVER CLEANOUTS IN CONCEALED VERTICAL PIPING (ALL AREAS, FINISHED AND UNFINISHED): SQUARE FRAME WITH SECURED, SMOOTH, SATIN NICKEL BRONZE ACCESS COVER. OPENING SIZES: 4-IN AND SMALLER PIPING: 6 X 6-IN. LARGER THAN 4-IN PIPING: 8 X 8-IN. CERAMIC TILE, QUARRY TILE, STONE, RESILIENT TILE, AND SHEET: FACE FLANGE TO HIDE ROUGH WALL OPENING. SMITH 4430 SERIES. TERRAZZO AND CONCRETE (FINISHED AREAS): PLASTER GROUND FLANGE AND FLUSH-WITH-WALL FRAME. SMITH 4431 SERIES	-	-	-	-	-	-
WH	WALL HYDRANT	WALL	WOODFORD MODEL B65	ANTI-SIPHON FREEZELESS WALL HYDRANT. CHROME FINISH WITH ANTI-SIPHON VACUUM BREAKER WITH 3/4" MALE HOSE THREAD, HARDENED STAINLESS STEEL STEM WITH LOOSE TEE KEY OPERATOR, CONCEALED BOX TYPE.	-	3/4"	-	-	-	-
YCO	YARD CLEAN-OUT	GRADE	JR SMITH 4237	EXTRA-HEAVY, DOUBLE-FLANGED, CAST-IRON FERRULE, COMPLETELY FREE OF PIPING SO THAT NO LOAD IS TRANSMITTED TO PIPE. CONCRETE: HEAVY-DUTY ROUND TOP WITH SCORIATED COVER AND LIFTING DEVICE, SET IN FINISHED CONCRETE. POURED AT SURFACE USING HIGH FLANGE. NON-SURFACED AND ASPHALT: HEAVY-DUTY ROUND TOP WITH SCORIATED COVER AND LIFTING DEVICE, SET IN 6-IN THICK CONCRETE PAD, 24 X 24-IN SQUARE. POURED BELOW SURFACE USING LOW FLANGE. NICKEL BRONZE FINISH.	-	-	-	-	4"	-	-



1 PLUMBING RISERS
SCALE: NONE

B2AEP, LLC
TBPE F-18874
3510 EAGLE WAY
ROUND ROCK, TX 78681

FIFTH DIMENSION
ARCHITECTURE & INTERIORS, LLC
BIRMINGHAM, AL AUSTIN, TX ORLANDO, FL ATLANTA, GA
www.5di-i.com

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REVISIONS

Δ	DATE	DESCRIPTION

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STATE OF TEXAS · M. CHAD BLACK · 93681 · LICENSED PROFESSIONAL ENGINEER
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SHEET NO:
P6.000