













# **Project Specifications:**

SECTION 054000 - COLD-FORMED METAL FRAMING

1.1 SECTION REQUIREMENTS B. Comply with AISI's "Specification for the Design of Cold-Formed Steel Structural Members" for calculating structural characteristics of cold—formed metal framing. Consider retaining first paragraph below if Project is limited to one— and two—family residential construction, framing is

requirements and references to a qualified professional engineer above. . Comply with HUD's "Prescriptive Method for Residential Cold—Formed Metal Framing." ). Comply with AWS D1.3, "Structural Welding Code — Sheet Steel." Protect cold—formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling. PART 2 — PRODUCTS

ully detailed, and this HUD document is acceptable to authorities having jurisdiction. If retaining, delete performance

Select one or more of grade requirements in first paragraph below, or revise to a different grade if necessary; if multiple grades are required, identify locations on Drawings. A. Galvanized Steel Sheet: ASTM A 653/A 653M, G60 zinc coated; Structural Steel (SS); Grade 33. B. Steel Studs: C—shaped, with flange width of not less than 1—5/8 inches, minimum uncoated steel thickness of 2. Steel Joists: C—shaped, with flange width of not less than 1—5/8 inches, minimum uncoated steel design thickness of 0.538 inch, and of depths indicated.

D. Steel Track: U—shaped, minimum uncoated metal thickness same as studs or joists used with track, with flange widths of 1-1/4 inches for studs and 1-5/8 inches for joists, of web depths indicated. . Accessories: Fabricate from the same material and finish used for framing members, of manufacturer's standard

B. Cast—in—Place Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon—steel hex—headed bolts and carbon—steel nuts; and flat, hardened—steel washers; zinc coated by hot—dip process according to ASTM A 153/A 153M, Class C. C. Mechanical Fasteners: Corrosion—resistant coated, self—drilling, self—threading steel drill screws.

D. Insulation: ASTM C 665, Type I, unfaced mineral—fiber blankets. E. Galvanizing Repair Paint: SSPC—Paint 20 or DOD—P—21035. PART 3 — EXECUTION

A. Install framing and accessories level, plumb, square, and true to line, and securely fastened, according to ASTM C 1007. emporarily brace framing until entire integrated supporting structure has been completed and permanent connections are P. Fasten framina members by welding or screw fastening.

4. Fasten reinforcement plates over web penetrations larger than standard punched openings. B. Erection Tolerances: Install cold-formed metal framing with a maximum variation of 1/8 inch in 10 feet and with individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed ninimum fastening requirements of sheathing or other finishing materials. C. Studs: Install continuous top and bottom tracks securely anchored at corners and ends. Squarely seat studs against webs of top and bottom tracks. Space studs as indicated, set plumb, align, and fasten both flanges of studs to top and

1. Install and fasten horizontal bridging in stud system, spaced in rows not more than 48 inches apart. Delete first subparagraph below if not required; diagonal bracing is usually limited to shear walls. 2. Install steel—sheet diagonal bracing straps to both stud flanges, terminate at and fasten to reinforced top and bottom 3. Install miscellaneous framing and connections to provide a complete and stable wall—framing system. Delete subparagraph below if non—load—bearing, curtain—wall framing is not required. 4. Isolate non—load—bearing, curtain—wall framing from building structure using vertical slide clips or deflection track to prevent transfer of vertical loads while providing lateral support D. Joists: Install and securely anchor perimeter joist track sized to match joists. Install joists bearing on supporting framing, brace and reinforce, and fasten to both flanges of joist track.

1. Install bridging and fasten bridging at each joist intersection. 2. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold—down angles, anchors, and fasteners. END OF SECTION 054000

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

A. Submittals: Model code evaluation reports for treated wood. 5.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency. . All lumber shall be fire retardant treated unless noted otherwise. Members shall bear stamping verifying the same. 5.2 TREATED MATERIALS A. Preservative—Treated Materials: AWPA C2. . Use treatment containing no arsenic or chromium.

 Kiln—dry lumber after treatment to a maximum moisture content of 19 percent.
 Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review. 3. Provide preservative—treated materials for all miscellaneous rough carpentry unless otherwise indicated.

Fire—Retardant—Treated Materials: Comply with performance requirements in AWPA C20. 1. Use Exterior type for exterior locations and where indicated 2. Use Interior Type A, High Temperature (HT) where indicated.

. Use Interior Type A, unless otherwise indicated. 4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having D. Provide fire—retardant treated materials for all miscellaneous rough carpentry.

1. Maximum Moisture Content: 15 percent. Select one grade requirement and one or more species group in first two subparagraphs below depending on availability Species groups in first subparagraph below are listed in order of decreasing strength (extreme fiber in bending). Select one or more species in first two paragraphs below depending on availability and suitability for Project. B. Exposed Boards: Hem—fir, Select Merchantable or No. 1 Common: NLGA, WCLIB, or WWPA15 percent maximum moisture

Concealed Boards: Eastern softwoods, No. 3 Common: NELMA with 15 percent maximum moisture content. . Miscellaneous Lumber: Construction, or No. 2 grade with 15 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members. 5.4 PLYWOOD BACKING PANELS A. Telephone and Electrical Equipment Backing Panels: Plywood, Exposure 1, C-D Plugged, fire-retardant treated, not less

A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot—dip zinc coating complying with ASTM A 153/A 153M.

A. Set miscellaneous rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction B. Securely attach miscellaneous rough carpentry to substrates, complying with the following: 1. Table 2305.2, "Fastening Schedule," in New Jersey IBC 2006. END OF SECTION 061053

SECTION 062000 - FINISH CARPENTRY

1.1 SECTION REQUIREMENTS A. Submittals: Samples for hardwood veneer plywood paneling.
PART 2 — PRODUCTS

2.1 MATERIALS, GENERAL A. Lumber: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee B. Softwood Plywood: DOC PS 1.
C. Hardwood Plywood: HPVA HP-1.
D. MDF: ANSI A208.2, Grade 130, made with binder containing no urea-formaldehyde resin.

E. Particleboard: ANSI A208.1, Grade M—2, made with binder containing no urea—formaldehyde resin. F. Melamine—Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M—2, finished on both faces with thermally fused, melamine—impregnated decorative paper complying with LMA SAT-1 2.2 EXTERIOR FINISH CARPENTRY

f retaining first paragraph below, select one texture, grade, and species. A. Exterior Lumber Trim: Smooth—textured, Premium or 2 Common (Sterling) eastern white pine, eastern hemlock—balsam fir—tamarack, eastern spruce, or white woods. 1. Maximum Moisture Content: 19 percent.

B. Cellular PVC Exterior Trim: Extruded, expanded PVC with a small—cell microstructure, made from UV— and heat-stabilized, rigid material.

1. Available Products
C. Foam—Plastic Moldings: Molded product of shapes indicated, with a tough outer skin on exposed surfaces; factory primed. Product is recommended by manufacturer for exterior use. D. Plywood Siding: APA-rated siding, 1/2-inch- thick, 303-OL, medium-density overlay, V-grooves at 6 inches o.c 2.3 INTERIOR STANDING AND RUNNING TRIM

A. Interior Softwood Lumber Trim: C Select (Choice), eastern white, Idaho white, Iodgepole, ponderosa, or sugar pine.
1. Maximum Moisture Content: 19 percent. B. Interior Hardwood Lumber Trim: Clear, kiln—dried, alder or poplar unless indicated otherwise in the construction C. Wood Moldings: WMMPA WM 4 made to patterns in WMMPA WM 12 from kiln-dried stock.

. Softwood Moldings for Transparent Finish: Eastern white, Idaho white, Iodgepole, ponderosa, radiata, or sugar pine unless otherwise indicated in the construction documents. Moldings for Painted Finish: P—Grade eastern white, Idaho white, Iodgepole, ponderosa, radiata, or sugar pine unless otherwise indicated in the construction documents. 5. Base, show mold, casing, chair rails and stops: refer to interior design documents

D. Foarm—Plastic Moldings: Molded product of shapes indicated, with a tough outer skin on exposed surfaces; factory primed. Exposed surfaces shall not be shaped after molding. .4 SHELVING AND CLOTHES RODS

A. Refer to interior design documents for manufacturer and specifications on closet interiors.

.5 MISCELLANEOUS MATERIALS A. Fasteners for Exterior Finish Carpentry: Stainless—steel.

B. Glue: Aliphatic—resin, polyurethane, or resorcinol wood glue recommended by manufacturer.

1. Use waterproof resorcinol glue for exterior applications. C. Adhesive for Cellular PVC Trim: Product recommended by trim manufacturer. D. Installation Adhesive for Foam Plastic Moldings: Product recommended for indicated use by foam plastic molding

E. Insect Screening for Soffit Vents: PVC—coated glass—fiber fabric.
PART 3 — EXECUTION
3.1 INSTALLATION

END OF SECTION 062000

A. Condition finish carpentry in installation areas for 24 hours before installing. B. Prime and backprime lumber for painted finish exposed on the exterior. C. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Scribe and cut to fit adjoining work. D. Install standing and running trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related trim. Cope at returns and miter at corners.

E. Nail siding at each stud. Do not allow nails to penetrate more than one thickness of siding, unless otherwise recommended by siding manufacturer. Seal joints at inside and outside corners and at trim locations. F. Select and arrange paneling for best match of adjacent units. Install with uniform tight joints.

SECTION 078100 - APPLIED FIREPROOFING

PART 7 — GENERAL 7.1 SECTION REQUIREMENTS Submittals: Product Data and research/evaluation reports . Provide products identical to those testéd for fire resistance per ASTM E 119 by a testing agency acceptable to uthorities having jurisdiction. . Provide products containing no detectable asbestos as determined according to the method specified in 40 CFR 763,

8.1 CONCEALED APPLIED FIREPROOFING f exposed fireproofing is required, retain this article and revise title and physical properties to suit products selected and equirements of authorities having jurisdiction. . Monokote by WR Grace and Co.

B. Material Composition: As follows:

1. Cementitious fireproofing consisting of factory—mixed, dry formulation of gypsum or portland cement binders, additives, and lightweight mineral or synthetic aggregates mixed with water at Project site. Sprayed—fiber fireproofing consisting of factory—mixed, dry formulation of inorganic binders, mineral fibers, fillers, and ıdditives mixed with water at spray nozzle. Physical Properties: Minimum values unless otherwise indicated, or higher values required to attain designated -resistance ratings, as follows: 1. Dry Density: 15 lb/cu. ft., or greater if required to attain fire—resistance ratings indicated, per ASTM E 605 or AWCI Technical Manual 12—A, Section 5.4.5, "Displacement Method." Bond Strength: 150 lbf/sq. ft. per ASTM E 736.

Corrosion Resistance: No evidence of corrosion per ASTM E 937. 5. Air Erosion: Maximum weight loss of 0.025 a/sa. ft. in 24 hours per ASTM E 859. uxiliary Materials: Provide auxiliary materials that are compatible with applied fireproofing and substrates and are pproved by a testing and inspecting agency acceptable to authorities having jurisdiction for use in fire—resistance designs

Consult manufacturers for requirements and recommendations for products in subparagraph below. . Sealer/Topcoat for Sprayed—Fiber Fireproofing: Protective coating recommended in writing by fireproofing manufacturer.

PART 9 — EXECUTION . Clean substrates of substances that could impair bond of fireproofing, including dirt, oil, grease, release agents, rolling compounds, loose mill scale, and incompatible primers, paints, and encapsulants. . Extend fireproofing in full thickness over entire area of each substrate to be protected. Unless otherwise recommended in writing by fireproofing manufacturer, install body of fireproofing in a single course. Spray apply fireproofing to maximum 2. Apply fireproofing in thicknesses and densities not less than those required to achieve fire—resistance ratings designated for each condition, but not less than 0.375-inch thickness, and 15-ib/cu. ft dry density. ). Apply sealer/topcoat to sprayed—fiber fireproofing. evise paragraph below if Contractor is required to provide testing. Insert specific testing requirements to comply with equirements of authorities having jurisdiction. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and

SECTION 078413 - PENETRATION FIRESTOPPING

10.1 SECTION REQUIREMENTS A. Submittals: Product Data and product certificates signed by manufacturer certifying that products furnished comply B. Provide firestopping systems with fire-resistance ratings indicated by reference to UL designations as listed in its "Fire Resistance Directory," or to designations of another testing agency acceptable to authorities having jurisdiction.

C. Provide through—penetration firestopping systems with F—ratings indicated, as determined according to ASTM E 814, but Delete subparagraph below if no T-ratings are required. T-ratings are generally only required where firestopping is exposed in an occupiable space. If T-ratings are required, show locations on Drawing ovide through—penetration firestopping systems with T—ratings as well as F—ratings, as determined according to ASTM E 814, where indicated. D. For exposed firestopping, provide products with flame—spread indexes of less than 25 and smoke—developed indexes of less than 450, as determined according to ASTM E 84.

A. Any through—penetration firestop system that is classified by UL for the application and with F—rating indicated may be B. UL—classified system designations are indicated on Drawings.

Select either paragraph above or applicable paragraphs below for applications required. PART 12 — EXECUTION 12.1 INSTALLATION A. Install firestopping systems to comply with requirements listed in testing agency's directory for indicated fire-resistance 3. Identification: Identify through—penetration firestop systems with permanent labels attached to surfaces adjacent to

irestop systems so that labels will be visible to anyone seeking to remove penetrating items or firestop systems. Include

. The words "Warning — Through—Penetration Firestop System — Do Not Disturb." Classification/listing designation of applicable testing and inspecting agency. ough—penetration firestop system manufacturer's name and product name.

SECTION 079200 - JOINT SEALANTS

1.3.1 SECTION REQUIREMENTS Submittals: Product Data and color Samples. B. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F. PART 14 — PRODUCTS

14.1 JOINT SEALANTS a. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions. B. Sealant for Use in Building Expansion Joints: . Single—component, neutral—curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses T, M, and O, with the additional capability to withstand [50 percent movement in both extension and compression for a total of 100 percent movement] [100 percent movement in extension and 50 percent movement in compression for a total of 150 percent realant for General Exterior Use Where Another Type Is Not Specified[, One of the Following]: Retain one or more of three subparagraphs below.

Single-component, nonsag polysulfide sealant, ASTM C 920, Type S; Grade NS; Class 12-1/2; Uses NT, M, G, A, and O Single—component, neutral—curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses T, NT, M, G, A, and Single—component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and Uses NT, M, A, and O. of Single-component, nonsag uretnane sealant, ASIM C 920, Type S; Grade NS; Class 25; and Uses NI, M, A, and O. Itetain first two paragraphs below for traffic bearing joints if any.

Discontinuous Sealant for Exterior Traffic—Bearing Joints, Where Slope Precludes Use of Pourable Sealant:

Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses T, NT, M, G, A, and O. Sealant for Exterior Traffic—Bearing Joints, Where Slope Allows Use of Pourable Sealant:

Single-component, pourable urethane sealant, ASTM C 920, Type S; Grade P; Class 25; Uses T, M, G, A, and O. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and Around

. Single—component, mildew—resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses NT, G, A, and O; 6. Sealant for Interior Use at Perimeters of Door and Window Frames: 1. Latex sealant, single-component, nonsag, mildew-resistant, paintable, acrylic-emulsion sealant complying with ASTM C 834. H. Acoustical Sealant[ for Exposed Interior Joints]:

Retain last paragraph above and possibly paragraph below if acoustical assemblies are used.

I. Acoustical Sealant for Concealed Joints: 1. Nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic—rubber sealant recommended for sealing interior oncealed joints to reduce transmission of airborne sound. 4.2 JOINT—SEALANT BACKING A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint—filler materials or joint surfaces at back of joint. PART 15 — EXECUTION 15.1 INSTALLATION

A. Comply with ASTM C 1193.

B. Comply with ASTM C 919 for use of joint sealants in acoustical applications.

END OF SECTION 079200

. Nonsag, paintable, nonstaining, latex sealant complying with ASTM C 834.

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Shop Drawings.

B. Comply with ANSI/SDI A250.8. C. Fire—Rated Doors and Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing per NFPA 252 at neutral pressure.

1. At stairs and exit passageways, provide doors that have a temperature rise rating of 450 deg F.

D. Smoke—Control Door Assemblies: Comply with NFPA 105 or UL 1784. PART 2 — PRODUCTS 2.1 MATERIALS A. Cold—Rolled Steel Sheets: ASTM A 1008/A 1008M, suitable for exposed applications. B. Hot-Rolled Steel Sheets: ASTM A 1011/A 1011M, free of scale, pitting, or surface defects. C. Metallic—Coated Steel Sheet: ASTM A 653/A 653M, with G40A40 metallic coating.

Retain first paragraph below, describing electrolytic zinc-coated steel, for frame anchors only. D. Frame Anchors: ASTM A 591/A 591M, 40Z coating designation; mill phosphatized. 1. For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot—dip galvanized according to ASTM A 153/A 153M, Class B. 2. Use concealed fasteners for all frames. E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M. 2.2 HOLLOW METAL DOORS AND FRAMES

B. Doors: Complying with ANSI 250.8 for level and model and ANSI A250.4 for physical—endurance level indicated, 1—3/4 inches thick unless otherwise indicated. Full flush allows visible seams on edges of doors; seamless does not. 1. Interior Doors: Model 1 (types as shown in the construction documents. Metallic—coated steel sheet faces. 2. Exterior Doors: Model 1 (Full Flush, metallic—coated steel sheet faces.
Retain first subparagraph for thermal—rated doors. Verify R—value with manufacturers.

a. Thermal—Rated (Insulated) Doors: Where indicated, provide doors with thermal—resistance value (R—value) of not less than 4.0 deg F x h x sq. ft./Btu when tested according to ASTM C 1363. 3. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as door face sheets. C. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated. Provide fire rated frames in locations of protected openings.

1. Steel Sheet Thickness for Interior Doors: 0.053 inch. 2. Steel Sheet Thickness for Exterior Doors: 0.067 inch.

5. Fabricate interior frames with mitered or coped and continuously welded corners. Fabricate exterior frames from metallic—coated steel sheet, with mitered or coped and continuously welded corners. 5. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as 6. Frame Anchors: Not less than 0.042 inch thick. D. Glazing Stops: Non-removable stops on outside of exterior doors and on secure side of interior doors; screw-applied, removable, glazing stops on inside, fabricated from same material as door face sheet in which they are installed.

E. Door Louvers: Sight proof per SDI 111C.

1. Fire—Rated Automatic Louvers: Actuated by fusible links and listed and labeled.

F. Door Silencers: Three on strike jambs of single-door frames and two on heads of double-door frames.
G. Grout Guards: Provide where mortar might obstruct hardware operation. H. Prepare doors and frames to receive mortised and concealed hardware according to ANSI A250.6 and ANSI A115 Series Reinforce doors and frames to receive surface—applied hardware. J. Prime Finish: Manufacturer's standard, factory—applied coat of lead— and chromate—free primer complying with ANSI/SDI A250.10 acceptance criteria. PART 3 — EXECUTION 3.1 INSTALLATION

A. Install hollow metal frames to comply with ANSI/SDI A250.11. Fire-Rated Frames: Install according to NFPA 80.

B. Install doors to provide clearances between doors and frames as indicated in ANSI/SDI A250.11. C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air—drying rust—inhibitive primer. Use galvanizing repair paint for metallic coated surfaces. END OF SECTION 081113

SECTION 087100 - DOOR HARDWARE 4.1 SECTION REQUIREMENTS

Retain first paragraph below if an allowance is used. A. Allowances: Provide hardware under Hardware Allowance in Division 01 Section "Price and Payment Procedures." B. Submittals: Hardware schedule and keying schedule. Deliver keys to Owner. Coordinate with Owner on master keying to coordinate with existing locking systems.
Fire—Resistance—Rated Assemblies: Provide products that comply with NFPA 80 and are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for applications indicated. On exit devices

provide label indicating "Fire Exit Hardware."
PART 5 — PRODUCTS A. Manufacturers:

1. As noted on drawings. Coordinate with Owner's locksmith. Select from options in five subparagraphs below. Stainless-steel hinges with stainless-steel pins for exterior. Nonremovable hinge pins for exterior and public interior exposure.
 Ball-bearing hinges for doors with closers and entry doors.

4. 2 hinges for 1-3/8-inch- thick wood doors. 5. 3 hinges for 1-3/4-inch- thick doors 90 inches or less in height; 4 hinges for doors more than 90 inches in

C. Locksets and Latchsets 1. BHMA A156.2, Series 4000, Grade 3 for bored locks and latches. 2. BHMA A156.3, Grade 1 for exit devices. BHMA A156.5, Grade 2 for auxiliary locks

4. BHMA A156.12, Series 5000, Grade 2 for interconnected locks and latches. 5. BHMA A156.13, Series 1000, Grade 2 for mortise locks and latches. 6. ADA Compliant lever handles on locksets and latchsets. 7. Provide trim on exit devices matching locksets. Key locks to Owner's existing master—key system.
 Cylinders with six—pin tumblers and removable cores.

3. Provide key control system, including cabinet. Select from options in two subparagraphs below. 1. Mount closers on interior side (room side) of door opening, unless indicated otherwise. Provide regular—arm, parallel-arm, or top-jamb-mounted closers as necessary. 2. Adjustable delayed opening (accessible to people with disabilities) feature on closers. Provide wall stops or floor stops for doors without closers. Ives 407  $\frac{1}{2}$ .

G. Provide hardware finishes as shown on the construction documents. PART 6 - EXECUTION A. Mount hardware in locations recommended by the Door and Hardware Institute unless otherwise indicated.

## Mechanical

ALL BASIC MECHINICAL REQUIREMENT

 $1. \ \ \text{GENERAL NOTES, SYMBOLS, LISTS AND DETAILS ARE APLICABLE TO ALL MECHINICAL DRAWINGS LABELED "M."}$ 

2. THE CONTRACTOR IS RESPONSBILE FOR ALL WORK, MATERIALS AND LABOR TO PROVIDE COMPLETE AND WORKING MECHINICAL SYSTEMS WHETHER 3.THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO ALL THE LOCAL CODE, STATE LAWS, AGA, BOCA, NBFU, NSPC, ASME AND ALL OTHER GOVERNING AUTHORIES. 4. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTIONS AND APPROVALS AS REQUIRED.

5. DO NOT SCALE THE DRWAINGS FOR EXACT DIMENSIONS, VERIFY ALL FIGURES, CONDITIONS, DIMENSIONS, ETC. AT THE JOB SITE. 6. CONTRACTOR SHALL GAURNTEE THE COMPLETE INSTALLITION AGAINST DEFECTS IN THE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THE FINAL ACCEPTANCE. THIS GUARANTEE SHALL BE BINDING REGARDLESS OF THE MANUFACTURER'S GUARANTEE AND THE CONTRACTOR SHALL REPAIR AND/OR REPLACE. ALL DEFECTIVE MATERIALS OR PARTS REGARDELSS OF CAUSE (EXCLUDING DEFECTS TRACEABLE TO IMPROPER MAINTENANCE OR MALICIOUS DESTRUCTION OR ACTS OF GOD AFTER THE SYSTEM HAS BEEN ACCPTED BY THE OWNER.)

7. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES TO PREVENT INTERFERENCE BETWEEN BEAMS, STRUCTURES, PIPING, LIGHTING, 8. ALL MECHANICAL EQUIPMENT SHALL NE LOCATED AT A MINIMUM FLOOR ELEVATION OF 10.0 MSL OR EQUAL. PROVIDE ALL NECESSARY STRUCTURES. 9.ALL MATERIALS USED IN CONSTRUCTION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS, A SMOKE DEVELOPMENT RATING OF 50 OR LESS, AND A FUEL CONTRIBUTED RATING OG 25 OR LESS. ALL MATERIALS SHALL BE "SELF-EXTINGUISHING. 10. ALL PIPING, CONDUIT AND DUCT PENETRATIONS OF "FIRE RATED BUILDING CONSTRUCTION" SHALL BE SLEEVED AND SEALED WITH A FIRE

BARRIER MATERIAL EQUAL TO 3M "PENETRATION SEALING SYSTEMS," REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATING OF BUILDING

11. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS

20. SUBMIT 3/8" SCALE SHOP DRAWINGS FOR APPROVAL TO FABRICATION. COORDINATE WITH ALL TRADES.

12. CONTRACTOR SHALL PROVIDE THREE (3) COMPLETE SETS OF BOUND OPERATING AND MAINTENANCE INSTRUCTIONS. CONTRACTOR SHALL INSTRUCT THE OWNER OR HIS AGENT WITH REGARD TO THE PROPER USE OF THE SYSTEM UNTIL SUCH INSTRUCTION IS COMPLETE TO THE OWNER'S SATISFACTION. OPERATION AND MAINTENANCE MANUAL SHALL INCLUDE A VALVE SCHEDULE IF VALVES ARE INSTALLED AS PART OF THE NEW WORK. 13. MECHINICAL CONTRACTOR SHALL LABEL ALL NEW MECHINICAL EQUIPMENT, PIPING AND VALVES (INDOORS AND OUTDOORS) IN A PERMANENT manner. Mechinical piping shall be labeled with self-adesive pipe markers equal to marking services inc. (MSI) seriés ms-900 MARKERS, COMPLY WITH ASME A 13, 1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS, AND VIEWING ANGLES OF IDENTIFICATION, DIRECTION DUCTWORK INSULATION DF FLOW SHALL BE IDENTIFIED WITH MS-900 FLOW DIRECTIONAL ARROW TAPE. VALVES SHALL BE IDENTIFIED WITH BRASS VALVE TAGS, ATTACHEI WITH SOLID BRASS CHAINS AND "S" HOOKS. VALVE TAGS SHALL BE COORDINATED WITH VALVE SCHEDULE PROVIDED IN OPERATION AND MAINTENCE MANUEL MECHINICAL EQUIPMENT SHALL BE LABELED WITH ENGRAVED PLASTIC TAGS WITH MOUNTING HOLES AND STAINLESS STEEL SCREWS. ALL LABELING SHALL HAVE HIGH CONTRAST BETWEEN LETTER AND BACKGROUND COLORS AND SHALL BE LOCATED FOR EASY VISIBILITY.

14. ALL MECHINICAL EQUIPMENT AND APPLIANCES INSTALLED SHALL BEAR THE LABEL OF AN APPROVED AGENC'S 15. THE ENTIRE MECHINICAL INSTALLTIION SHAL BE MADE IN ACOORDANCE WITH THE 2003 INTERNATIONAL MECHINICAL CODE AND ANY

16. PROVIDE VIBRATION ISOLATION MOUNTINGS FOR ALL MOTOR OPERATED EQUIPMENTS AND AS RECOMMENDED BY THE MANUFACTURER. . ALL EXTERIOR WALL OPENINGS SHALL BE SLEEVED, PROPERLY CAULKED AND SEALED WITH A HIGH QUALITY SEALANT TO PREVENT INFILTRATION OF MOISTURE AND OUTSIDE AIR. EQUIPMENT, MECHINICAL CONTRACTOR SHALL FURNISH LOOSE MOTOR STARTERS AND DISCONNECT SWITHCES FOR INSTALLITION AND WIRING BY THE ELECTRICAL COTRACTOR. MECHINICAL CONTRACTOR SHALL PROVIDE ALL CONTROL AND INTERLOCK WIRING BY THE ELECTRICAL CONTRACTOR. MECHINICAL CONTRACTOR SHALL PROVIDE ALL CONTROL AND INTERLOCK WIRING AND ALL THERMOSTATS AND ACCESSORIES. 19. PROVIDE BALANCING OF ALL AIR SYSTEMS PER AABC OR NEBB STANDARDS. SUBMIT TEST DATA AND DEMONSTRATE NN FIELD, INCLUDE SOUND TESTING AS MAY BE REQUIRED

21. SUBMIT TO THE ARCHITECT FOR APPROVAL, DUPLICATE SPECIFICATION SHEETS OF ALL EQUIPMENT SUPPLIED OR INSTALLED, INCLUDING BUT NOT AIR HANDLING UNITS

ELECTRIC HEATERS GRILLES AND DIFFUSERS DUCTWORK AND INSULATION

22. A COMPLETE SET OF "AS-BUILT" DRAWINGS, (1) SET HARD COPY REPRODUCIBLE AND (1) SET ELECTROIC FILES PRODUCED IN AUTOCAD FORMAT ELEASE 14 (MIN.) SHALL BE FUNRNISHED (1/8"=1'-0" SCALE MIN.) TO THE OWNER AND ENGINEER UPON REQUE:

1. MECHINICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL VIBRATION ISOLATION EXTERNAL OR INTERNAL TO BOTH AIR HANDLING UNITS AND ALL MOTOR OPERATED DEVICES. EXPECTED NOISE LEVELS SHALL CONFORM TO THE PREFERED CRITERIA RECOMMENDATIONS AS SET FORTH IN ASHRAE 1991 HVAC APPLICATIONS HANDBOOK, CHAPTER 42, PAGE 42.5. IT WILL BE THE MECHINICAL CONTRACTOR'S RESPONSIBILITY TO SELECT AND INSTALL VIBRATION ISOLATORS WHICH WILL ENABLE THE AFORMENTIONED NOISE CRITERIA TO BE MET. ALL EQUIPMENT SHALL BE TESTED, RATED AND CERITIFIED IN ACCORDANCE WITH APPLICABLE INDUSTRY STANDARDS SUCH AS AMCA, ARI, ASHARE AND IRB SHALL ALSO APPLY. EQUIPMENT SHALL BEAR LABELS OR APPROVAL BY APPLICABLE AGENCIES. AMCA TEST STANDARDS, THE OTHER SHALL INDICATE THE "DE-RATING" DUE TO ALL NECESSARY ALLOWANCE. NOT THAT THE "DE-RATING" CIONDITIONS SHALL SATISFY THE DUTIES, AND SHALL BE CONFIRMED BY ACTUAL FIELD TESTING.

4. DRIVES FOR ALL DELT DRIVEN EQUIPMENT SHALL INCLUDE PROPERLY SELECTED SHEAVES, MATCHED V-BELTS, ALL RATED FOR 150 PERCENT OF 5. PROVIDE FLEXIBLE DUCT CONNECTIONS ON SUPPLY, RETURN AND OUTDOOR AIR DUCTS TO ALL AIR HANDLING EQUIPMENT. 6. PROVIDE ROOF CURBS AND COUNTERFLASHING FOR ALL ROOF MOUNTED AIR HANDLING EQUIPMENT. BASE FLASHING SHALL BE BY OTHERS.

. UNLESS OTHERWISE NOTED, ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL, G90 GRADE PER SMACNA. ALL DUCTS CONSTRUCTED OF GALVANIZED STEEL SHEET METAL SHALL HAVE MINIMUM GAGE THICKNESS AS FOLLOWS:

OVER 84 DIAMETER (IN.)

PROVIDE ALL NECESSARY CROSS-BREAKING AND DUCT REINFORCING AS REQUIRED PER SMACNA RECOMMENDATIONS. 2.ALL DUCTWORK SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS.

3. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR DIMENSIONS. 4. COORDINATE LOCATION OF DUCT WORK, PIPING, AND DIFFUSERS WITH ALL OTHER TRADES.

5.ALL DUCTWORK AND PIPING ABOVE CEILING AND IN AREAS WITHOUT CEILINGS SHALL BE INSTALLED AS HIGH AS POSSIBILE. 6. PROVIDE VOLUME DIAMETERS AT ALL DUCT BRANCHES AND RUNOUTS, PROVIDE OPPOSED BLADE VOLUME DAMPERS AT ALL REGISTERS, GRILLES, 7. PROVIDE AT MINIMUM 10 GAUGE STEEL SLEEVES FOR ALL DUCT PENTRATIONS THROUGH FIRE RATED WALLS, FLOORS AND PARTITIONS, PROVIDE PIPE SLEEVES FOR ALL MECHINICAL PIPING PENETRATING THROUGH FIRE RATED WALLS, FLOORS, AND PARTITIONS, SEAL ALL ANNULAR SPACE BETWEEN SLEEVES AND DUCTWORK OR PIPING WITH A FIRE BARRIER MATERIAL EQUAL TO 3M "PENETRATING SEALING SYSTEM."

SECTION 092900 - GYPSUM BOARD

16.1 SECTION REQUIREMENTS R Fire—Resistance—Rated Assemblies: Provide materials and construction identical to those tested in assemblies per

ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction. C. STC—Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency. PART 17 — PRODUCTS 7.1 PANEL PRODUCTS A. Provide in maximum lengths available to minimize end—to—end butt joints

B. Interior Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Type X'unless otherwise indicated.

1. Product: G—P Gypsum; Dens—Shield. Equal Products as approved by the Architect. C. Exterior Gypsum Soffit Board: ASTM C 931/C 931M or ASTM C 1396/C 1396M, in thickness indicated, with

manufacturer's standard edges. Type 'X'unless otherwise indicated. Equal Products as approved by the Architec D. Water-Resistant Gypsum Backing Board: ASTM C 630/C 630M or ASTM C 1396/C 1396M, in thickness indicated. Regular type unless otherwise indicated. Product: G-P Gypsum: Water-resistant.

E. Glass-Mat, Water-Resistant Gypsum Backing Board: ASTM C 1178/C 1178M, of thickness indicated. Regular type unless otherwise indicated. 1. Product: G—P Gypsum; Dens—Shield Tile Guard. F. Cementitious Backer Units: ANSI A118.9. A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum—coated steel sheet, rolled zinc, plastic, or paper—faced galvanized—steel sheet. For exterior trim, use accessories formed from hot—dip galvanized—steel sheet,

. Provide cornerbead at outside corners unless otherwise indicated. . Provide LC—bead (J—bead) at exposed panel edges. Provide control joints where indicated. B. Aluminum Accessories: Extruded-aluminum accessories indicated with manufacturer's standard corrosion-resistant

. Joint Tape: Paper unless otherwise recommended by panel manufacturer. . Joint Compounds: Setting—type compounds, Drying—type, ready—mixed, all—purpose compounds, ready—mixed, compounds for topping. Use setting—type compounds at exterior soffits. 3. Cementitious Backer Unit Joint—Treatment Materials: Products recommended by cementitious backer unit manufacturer. . Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with E. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

A. Install avpsum board to comply with ASTM C 840. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant. Single—Layer Fastening Methods: Fasten gypsum panels to supports with screws. 3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws. B. Install cementitious backer units to comply with ANSI A108.11.

Fire—Resistance—Rated Assemblies: Comply with requirements of listed assemblies. Finishing Gypsum Board: ASTM C 840. . At concealed areas, unless a higher level of finish is required for fire—resistance—rated assemblies, provide Level 1 finish: At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, evel 4 is suitable for surfaces receiving light—textured finish wallcoverings and flat paints. It is generally the standard . Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint ompound to tape, fasteners, and trim flanges. Level 5 is suitable for surfaces receiving gloss and semigloss enamels and surfaces subject to severe lighting. It is considered a high-quality gypsum board finish.

4. Where indicated, provide Level 5 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to ape, fasteners, and trim flanges. Apply skim coat to entire surface. E Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions. The General Macking Panels: Finish according to manufacturer's written instructions.

G. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns of application in accordance with NJ IBC 2006 section Interior wall finishes of a thickness greater than 4" shall be applied directly to a non-combustible backing, except where such materials have a Class 'A' rating. All textile wall/ceiling finishes shall meet or exceed the ASTM E84 Class 'A' requirements for flame spread All suspended ceiling systems shall be installed to comply with ASTM C635 & 636. All interior floor finishes shall comply with NJ IBC 2006 Section 804

Material Finish

Floor finishes installed with subflooring or sleepers shall be provided with solid infill with approved non-combustible All decorative materials and trim shall comply with NJ IBC 2006 Section 806.

100 OFFICE/TICKETING

103 ENTRY FOYER

104 MEN'S ROOM

105 WOMEN'S ROOM

108 WOMEN'S DRESSING 109 MEN'S DRESSING 110 BACK STAGE 111 UNISEX TOILET 112 MECH CLOSET

101 GALLERY

106 THEATER

107 STAGE

201 OFFICE 202 OFFICE 203 OFFICE 204 OFFICE

205 CONTROL ROOM 206 LIGHTING BOOTH

102 COATS/CONCESSIONS VCT

8. THE INSIDE DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.

MINUTE. PROVIDE LINTELS AS REQUIRED.

9.THE MECHINICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF MASONRY RETURN AIR OPENINGS AND RECESSED EQUIPMENT WITH THE 10. ALL RETURN AIR OPENINGS SHALL BE ABOVE CEILING UNLESS NOTED OTHERWISE. PROVIDE AND INSTALL WIRE MESH SCREENS ON ALL OPENINGS. I 1. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASSES OR SUSPENDED CEILING 12. PROVIDE RETURN AIR OPENINGS AS REQUIRED. OPENING SHALL BE SIZED FOR REQUIRED CFM AT A VELOCITY NOT TO EXCEED 500 FEET PER

13. SUPPORTS FOR DUCTS SHALL BE INSTALLED AT INTERVALS OF NOR MORE THAN 10 FEET. 14.FLEXIBLE DUCTWORK CONCEEALED ABOVE CEILINGHALL BE EQUAL TO THERMAFLEZ PRO SERIES G-KM INSULATED FLEXIBLE DUCT (R-VALUE=4.2) WITH POLYEHYLENE VAPOR BARRIER JACKETING. FLEXIBLE DUCEXPOSED TO VIEWSHALL BE EQUAL TO THERMOFLEX M-KE INSULATED FLEXIBLE DUCTWORK WITH REINFORCINGMETALLIZED VAPOR BARRIER JACKETING. FLEX DUCT SHALL BE U.L. LISTED AND LABELED AS A CLASS 1 AIR DUCT, STANDARD 181, FLEX DUCT SHALL BE CONNECTED TO BRANCHES AND MAINS USING CONICAL FITTINGS AND SHALL NOT EXCED 10-0" IN LENGTH INCLUDING ONE ELBOW. FLEXIBLE DUCTWORK SHALL NOT BE USE AS RETURN AIR OR EXAUST DUCTWORK.

1.5.ATT DUCTWORK SHALL BE DESIGNED. CONSTRUCTED AND INSTALLED PER SMANCA STANDARDS AND FOR PRESSURES OF 2" E.S.P., SEAL ALL ONGITUDENAL SEAMS AND TRANSVERSE JOINTS WITH THE FIRE-PROOF SEALANT FOR "AIR-TIGHT" APPLICATION. 16 PROVIDE TYPE "B. DYMANIC FIRE DAMPERS IN DUCTS WHERE DUCT PENETRATES FIRE-RATED WALLS. FLOORS, CEILINGS, ETC, WHERE SHOWN ON DRAWINGS AND AS REQUIRED BY THE INTERNATIONAL MECHINICAL CODE 2000. FIRE DAMPERS SHALL COMPLY WITH REQUIREMENTS OF UL 555.

5. PRIOR TO FINAL ACCEPTANCE OF THE WORK, A WRITTEN STATEMENT SHALL BE Dampers Shall have a minimum of 1.5 hours for penetrations of Less than 3-hour fire-resistance-rated assemblies and a minimum rating of 3-hours for penetration of 3-hour or greater fire-resistance-rated assemblies, provide access doors for all DAMPERS OR OTHER APPROVED MEANS OF ACCESS.

17.DUCT SMOKE DETECTORS AND ASSIOCIATED AUDIO/VISUAL DEVICES SHALL BE FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR. MECHINICAL CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL ALL DUCT SMOKE DETECTORS AND INSTALL ALL REQUIRED CONTROLE WIRING TO AUTOMATICALLY SHUT DOWN FANS AS OUTLINED IN SPECIFICATIONS. THE OWNER. 18. DUCTWORK FOR DISHWASHER SHALL BE CONSTRUCTED OF STAINLESS STEEL. ALL SEAMS AND JOINTS ARE TO BE WELDED.

20. COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES AND WITH FLASHING REQUIRMENTS.

I. AL SHEET METAL SUPPLY AND RETURN AIR DUCTWORK SHALL BE WRAPPED WITH 1-1/2" THICK FIBERGLASS DUCT INSULATION HAVING AN INSTALLED R-VALUE OF 4.5, A THERMAL CONDUCTIVITY OF .27 AT MEAN TEMPERATURE OF 75 DEGREE F, AND A DENSITY OF 1.0 PCF, INSULATION 7. ELECTRICAL CONTRACTOR SHALL SECURE SHOP DRAWINGS FROM OTHER SHALL BE JOHN-MANVILLE "MICROLITE" OR APPROVED EQUAL. 2. OUTDOOR AIR DUCTWORK BETWEEN OA INTAKE DEVICE AND UNIT SHALL BE WRAPPED WITH 2" THICK FIBERGLASS DUCT INSULATION HAVING AN INSTALLED R-VALUE OF 4.5, A THEREMAL CONDUCTIVITY OF .27 AT MEAN TEMPERATURE OF 75 DEGREES F, AND A DESNSITY OF 1.0 PCF. INSULATION SHALL BE JOHN-MANVILLE "MICROLITE" OR APPROVED EQUAL.

3.EXHAUST DUCTWORK SHALL BE UNINSULATED EXCEPT BETWEEN BACKDRAFT DAMPER AND ROOF CURB. EXHAUST DUCTWORK BETWEEN BACKDRAFT

4.INSULATION MUST BE FIRE-RATED FOR FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED FOR 50 OR LESS 5. INSULATION TO BE APPLIED IN ACOORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

DAMPER AND CURB SHALL BE INSTALLED IN THE SAME MANNER AS OUTDOOR AIR DUCTWORK.

I .ALL SIZES OF CEILING DIFFUSERS, EXHAUST GRILLES AND RETURN GRILLES SHOWN ON DRAWINGS ARE MODUAL SIZES, NECK SIZES ARE INDICATED

2. ALL CEILING DIFFUSERS SHOWN ON DRAWINGS ARE 4-WAY UNLESS OTHERWISE NOTED.

3. ALL CEILING DIFFUSERES SHALL HAVE OPPOSED BLADE DAMPERS. 4. ALL SIDEWALL MOUNTED SUPPLY GRILLES SHALL BE DOUBLE DEFLECTION UNLESS OTHERWISE NOTED.

5.ALL CEILING DIFFUSERS SHAL BE OF ALUMINUM CONSTRUCTION UNLESS OTHERWISE NOTED. 6. PROVIDE SQUARE TO ROUND ADAPTERS AS NECESSARY.

7. ALL CEILING DIFFUSERS SHALL BE 24"x24" LAY-IN MODULES UNLESS OTHERWISE NOTED.

1. PIPING SHALL BE RIGIDLY SUPPORTED AT INTERVALS OF NOT MORE THAN 10 FEET.

2.PROVIDE DIELECTRIC UNIONS IN PIPING WHERE DISSIMILAR METALS ARE JOINED TOGETHER 3. THE SIZE OF ALL PIPING SHALL BE JOINED USING 95-5 TIN/ANTIMONY SOLDER

 $4.\mbox{ALL}$  COPER PIPING SHALL BE AS SHOWN IN THE DRAWINGS, OR NOT SHOWN, AS REQUIRED. 5. ALL CONDENSATE DRAIN LINES SHALL BE PIPED TO FULL SIZE OF THE UNITS DRAIN OUTLET AND PROVIDED WITH A "P" TRAP SIZED AT MINIMUM TO EXCEED FAN STATIC PRESSURE. CONNECT CONDENSATE DRAINS TO PLUMBING LING AS INDICATED ON DRAWINGS/ 6. CONDENSATE DRAINAGEWY COPPER TUBING, PITCHED DOWN A MINIMUM OF 1/8" PER FOOT AWAY FROM UNIT

7. INSULATION SHALL CARRY THROUGH ALL WALL AND FLOOR PENETRATIONS AND PIPE HANGERS. 8. PROVIDE GALVANIZED METAL SHEILDS FORMED TO FIT THE INSULATION BETWEEN HANGERS AND FINISHED INSULATIONS. 9 INSULATE CONDENSATE PIPING WITH 1/2" THICK "MICRO-LOK" AP INSULATION (PROVIDE 7ESTON PVC FITING COVERS.)

REFRIGERANT PIPING NOTES I.REFRIGERANT PIPING SHALL BE YUPE "L" OR TYPE "ACR' HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS. JOINED USING 45% SILVER

2.PROVIDE LIQUID LINE REFRIDGERANT SIGHT GLASS/MOISTUTRE INDICATOR. 3. PROVIDE LIQUID AND SUCTION LINE FILER/DYERS AS REQUIRED

4. INSULATE REFRIDGERANT SUCTION LINE WITH 1/2" THICK ARAMAFLEX INSULATION.

5. CONDENSATE DRAIN PIPING SHALL BE DWY COPPER WITH WROUGHT COPPPER FITTINGS, JOINED USING 95-5 TIN/ANTINOMY SOLDER 6. ALL CONDENSATE DRAIN LINES SHALL BE PIPED TO FULL SIZE OF THE UNITS DRAINS AND PROVIDED WITH A "P" TRAP AT MINIMUM TO EXCEED FAN STATIC PRESSURE. CONNECT CONDENSATE DRAINS TO PLUMBING LINES AS INDICATED ON DRAWINGS.

GENERAL PLUMBING SPECIFICATIONS ALL PLUMBING SHALL COMPLY WITH THE 2006 EDITION OF THE NATIONAL STANDARD PLUMBING CODE AS ADOPTED BY THE NEW JERSEY UNIFORM

CONSTRUCTION CODE. CONTRACTOR SHALL PROVIDE AND PAY ALL FEES AND PERMITS. THE DRAWINGS ARE INTENDED TO SHOW APPROXIMATE AND RELATIVE LOCATIONS OF MATERIALS AND FOUIPMENT. DRAWINGS SHALL NOT BE SCALED TO DETERMINE EXACT POSITIONS AND CLEARANCES. BECAUSE OF DIAGRAMMATIC LAYOUT AND SMALL SCALE OF DRAWINGS, NOT ALL RISES, DROPS, OFFSETS ENTS, TRAPS AND RELATED SPECIALTIES ARE INDICATED. PROVIDE ALL SUCH

PIPING, FITTINGS, VALVES AND SPECIALTIES REQUIRED IN SUCH

CASES TO INSURE A COMPLETE AND PROPERLY OPERATING INSTALLATION IN ACCORDANCE WITH CODES AND WITHOUT EXTRA COST TO OWNER. WORK SHALL BE PERFORMED BY MECHANICS SKILLED IN PARTICULAR TRADE INVOLVED, THAT IS, PLUMBING WORK SHALL BE PERFORMED BY PLUMBERS, ELECTRICAL WORK SHALL BE PERFORMED BY ELECTRICIANS, MECHANICAL WORKED PERFORMED BY STEAM FITTERS AND SHEET METAL ALL WORK SHALL BE INSPECTED. TESTED AND APPROVED BY THE PROPER UTHORITIES HAVING JURISDICTION. CERTIFIED COPIES OF THESE APPROVALS SHALL BE DELIVERED TO THE OWNER BEFORE FINAL PAYMENT ESCUTCHEON PLATES SHALL BE PROVIDED ON ALL PIPE WHICH PASS THROUGH WALL PARTITIONS, FLOORS OR CEILINGS. PLATES SHALL BE ONE PIECE, CHROME

THE INSTALLATION OF ALL INSULATION SHALL BE PERFORMED BY AN EXPERIENCED

CRAFTSMAN IN A NEAT WORKMAN-LIKE MANNER AND SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR SERVICE INTENDED.

CONTINUITY OF EXISTING SYSTEMS ALL WORK SHALL BE PERFORMED AT SUCH TIME AND IN SUCH MANNER AS WILL LEAST INTERFERE WITH MAINTENANCE AND OPERATION OF OWNER'S ACTIVITIES. PROVISIONS SHALL BE MADE TO PERMIT OWNER'S USE OF ALL THE BUILDING AND OF EXISTING SYSTEMS AT ALL TIMES. PROVIDE TEMPORARY FACILITIES TO SECURE THESE CONDITIONS. REMOVE TEMPORARY FACILITIES WHEN PERMANENT WORK LAS BEEN BLACED INTO SERVICE WORK HAS BEEN PLACED INTO SERVICE.

FULLY COORDINATE WITH ARCHITECT, OWNER AND ALL OTHER TRADES, ALL WORK INVOLVING SHUT-DOWN AND INTERRUPTION OF EXISTING SYSTEMS AND SERVICE. SHUT-DOWN OF EXISTING SERVICES WHERE REQUIRED TO INSTALL NEW SYSTEMS OR ALTER EXISTING SHALL BE PERFORMED IN A MANNER THAT WILL NOT INTERFERE WITH OWNER'S OPERATIONS. ALL COSTS FOR

PERFORMING THIS WORK SHALL BE BORNE BY THE CONTRACTOR AND WITHOUT "EXTRA" COST TO THE OWNER. EXISTING SYSTEMS AND SERVICES THAT ARE TEMPORARIL'S DISCONNECTED, BUT ARE TO REMAIN IN USE, SHALL BE PERMANENTLY RECONNECTED AND RETURNED TO PROPER OPERATION.

FULLY COORDINATE WITH ARCHITECT, OWNER AND OTHER TRADES TO ENSURE COMPLETE CONTINUITY OF ALL SYSTEMS AND SERVICES.

GAS PIPING NOTES

OF IFGC 2000 SECTION 406.

GAS PIPING SHALL BE SIZED & INSTALLED AS PER 2006 INTERNATIONAL FUEL GAS PIPING 2" & SMALLER SHALL BE ASTM A53 SCH 40 BLACK STEEL PIPE WITH THREADED JOINTS IN ACCORDANCE WITH ANSI/ASME B1.2 THREAD JOINT COMPOUND SHALL BE RESISTANT TO THE ACTION OF NATURAL GAS. GAS PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH IFGC 2000 SECTION 407 & ANSI/MSS SP-58. HANGER SPACING SHALL BE IN ACCORDANCE WITH IFGC 2000

DRIP LEGS SHALL BE INSTALLED AT ANY POINT WHERE CONDENSATE COULD COLLECT

AND AS REQUIRED BY AUTHORITY HAVING JURISDICTION. PIPING SHALL BE SLOPED

PRIOR TO ACCEPTANCE & INITIAL OPERATION, ALL PIPING SHALL BE INSPECTED AND

TESTED TO DETERMINE THAT THE INSTALLATION COMPLIES WITH THE REQUIREMENTS

NOT LESS THAN 1/4" IN 15 FEET TO PREVENT TRAPS.

1. ALL ELECTRICAL WORK TO BE INSTALLED IN ACCORDANCE WITH THE 2005 EDITION OF THE NATIONAL ELECTRICAL CODE ADOPTED BY THE UNIFORM CONSTRUCTION CODE - STATE OF NEW JERSEY AND ANY OTHER PARTY HAVING JURISDICTION.

ALL ELECTRICAL MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND APPROVED BY UNDERWRITERS LABORATORY (U.L.) OR ANY OTHER NATIONALLY RECOGNIZED TESTING AGENCY UNLESS NOTED OTHERWISE ON

3. ALL NECESSARY PERMITS, INSPECTIONS, AND LICENSES SHALL BE PROCURED AND ALL FEES PAID BY THE CONTRACTOR. SUBMIT TO THE OWNER DUPLICATE

4. UPON COMPLETION OF THE WORK. THE ENTIRE WIRING SYSTEM SHALL BE FREE FROM GROUNDS, SHORT CIRCUITS, OPENS, OVERLOADS AND IMPROPER

CERTIFICATES OF INSPECTION FROM THE APPROVED INSPECTION AGENCY.

SUBMITTED TO THE OWNER GUARANTEEING ALL EQUIPMENT AND SYSTEMS AGAINST DEFECTIVE MATERIAL AND WORKMANSHIP FOR ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. UPON NOTICE ALL DEFECTIVE EQUIPMENT, MATERIALS AND SYSTEMS SHALL BE PROMPTLY REPAIRED AT NO EXPENSE TO

6. THIS SET OF DRAWINGS IS DIAGRAMMATIC IN NATURE AND INDICATES THE 19. EXTERIOR LOUVERS ARE INDICATED FOR REFERENCE ONLY, GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL

GENERAL ARRANGEMENT OF THE VARIOUS SYSTEMS AND APPROXIMATE LOCATIONS OF THE EQUIPMENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THAT THERE IS ADEQUATE SPACE AT THE LOCATIONS INDICATED FOR ALL EQUIPMENT PRIOR TO INSTALLATION OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL DIMENSIONS IN THE FIELD, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

CONTRACTORS AND VERIFY EXACT ELECTRICAL CHARACTERISTICS OF EQUIPMENT TO BE WIRED PRIOR TO ROUGH-IN. IF DISCREPANCIES ARE NOTED BETWEEN THE ELECTRICAL CONTRACT DRAWINGS AND OTHER CONTRACTOR SHOP DRAWINGS, ELECTRICAL CONTRACTOR IS TO NOTIFY ENGINEER AT ONCE. FAILURE TO PERFORM THIS DUTY WILL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY TO CORRECT WIRING DEFICIENCIES AT NO EXPENSE TO THE OWNER.

8. ALL DEVICES OR EQUIPMENT SHOWN IN SYMBOL FORM SHALL BE WIRED TO ITS

RESPECTIVE PANEL. 9. THE GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL AN ARC FLASH WARNING PLACARD THAT SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, AND MOTOR CONTROL CENTERS IN ACCORDANCE WITH ARTICLE 110.16 OF THE 2002 NEC.

10. ALL INTERIOR WIRING SHALL BE INSTALLED IN ELECTRICAL NONMETALLIC TUBING OR NONMETALLIC CABLE AND CONCEALED IN WALLS OR IN HUNG CEILING SPACE. ENT SHALL CONFORM TO ARTICLE 362 AND NM CABLE SHALL CONFORM TO ARTICLE 334 OF THE 2002 EDITION OF THE NATIONAL ELECTRICAL CODE. WHERE WIRING CANNOT BE CONCEALED IN FINISHED AREAS, IT SHALL BE RUN EXPOSED IN A NEAT MANNER VIA SURFACE RACEWAY. MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS 11. ALL WIRING, CONNECTIONS AND DEVICES SHALL BE PROVIDED TO COMPLY WITH

THE GROUNDING REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND THE DRAWINGS UNLESS NOTED OTHERWISE. ALL EXPOSED NON-CURRENT CARRYING ELECTRICAL EQUIPMENT METALLIC PARTS, RACEWAY SYSTEMS AND WIRING SYSTEM GROUNDING CONDUCTORS SYSTEM SHALL BE GROUNDED. 12. PROVIDE A SEPARATE, GREEN-COLORED, INSULATED EQUIPMENT GROUNDING CONDUCTOR WITHIN EACH FEEDER AND BRANCH CIRCUIT RACEWAY. THIS CONDUCTOR SHALL BE SEPARATE FROM THE ELECTRICAL SYSTEM NEUTRAL

CONDUCTOR. TERMINATE EACH END OF THIS GROUNDING CONDUCTOR ON A

U.L. LISTED LUG, BUS OR BUSHING. THE GROUNDING CONDUCTOR SIZE SHALL

BE IN ACCORDANCE WITH NEC, TABLE 250.122. 13. ALL CUTTING AND PATCHING REQUIRED FOR THE ELECTRICAL WORK SHALL BE

14. PANEL BOARD DIRECTORIES SHALL BE TYPED, AND UPDATED INDICATING NEW CIRCUITING AND DEVICE DESCRIPTION AS SHOWN ON DRAWINGS. 15. EXISTING EQUIPMENT FIXTURES, COMPONENTS, AND ALL OTHER RELATED

APPURTENANCES WHICH ARE NO LONGER REQUIRED AS INDICATED ON

DRAWINGS SHALL BE REMOVED AND BECOME PROPERTY OF THE OWNER.

17. ALL DEMOLISHED MATERIALS SHALL BE CAREFULLY REMOVED FROM THE

THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

16. ALL COMPONENTS OF EXISTING SYSTEMS REQUIRED TO BE MODIFIED, EXTENDED OR REUSED SHALL BE INSPECTED AND RETURNED TO A FIRST-CLASS OPERATING CONDITION. COMPONENTS SHALL BE CLEANED AND REPAINTED IF NECESSARY.

PREMISES BY THE MOST DIRECT PATH. ANY DAMAGE INCURRED BY THE REMOVAL PROCESS SHALL BE REPAIRED TO MATCH THE SURROUNDING WORK AND LEFT IN SATISFACTORY CONDITION. ALL AREAS SHALL BE CLEANED OF ALL DIRT AND DEBRIS RESULTING FROM DEMOLITION. 18. ALL HOLES OR VOIDS CREATED TO ROUTE CONDUIT OR METAL CLAD CABLE THROUGH FIRE RATED FLOORS AND WALLS SHALL BE SEALED WITH AN

STRIP AND SHEET FORM SHALL HAVE I.C.B.O. AND BOCA APPROVED RATING OF 3 HOURS PER ASTM E-814 (U.L. 1479) AS PER NEC ARTICLE 300.21. 19. THE ELECTRICAL WORK RELATING TO THE PROJECT IS SHOWN. OTHER EXISTING

20. TWO OR THREE POLE CIRCUIT BREAKERS SHALL BE COMMON TRIP TYPE. SINGLE

ELECTRICAL AND SYSTEMS COMPONENTS HAVE BEEN LEFT OFF THE DRAWING

INTUMESCENT MATERIAL CAPABLE OF EXPANDING UP TO 8 TO 10 TIMES WHEN

EXPOSED TO A TEMPERATURE OF 250 DEGREES FAHRENHEIT AND ABOVE.

ACCEPTABLE SEALING MATERIAL SUCH AS 3M FIRE BARRIER CAULK, PUTTY,

21. THE ELECTRICAL CONTRACTOR SHALL NOT UTILIZE A "COMMON NEUTRAL" ON MULTIPLE BRANCH CIRCUITS. EACH SUCH CIRCUIT SHALL BE RUN WITH ITS

POLE BREAKERS WITH YOKED HANDLE WILL NOT BE PERMITTED.

OWN DEDICATED NEUTRAL WIRE. 22. WHERE CONDUIT RUNS CROSS STRUCTURAL EXPANSION JOINTS, LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED TO TRANSITIONAL CONDUIT SYSTEM

23. THERMAL OVERLOAD PROTECTION SHALL BE IN COMPLIANCE WITH MOTOR MANUFACTURER'S SPECIFICATIONS.

FROM ONE STRUCTURAL SECTION TO THE OTHER.

24. WHERE CIRCUIT BREAKERS OR FUSES ARE APPLIED IN COMPLIANCE WITH THE SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURER, THE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE EQUIPMENT HAS BEEN APPLIED WITH A SERIES COMBINATION DEVICE RATING. THE MARKING SHALL BE READILY VISIBLE AND CONFORM TO ARTICLE 110.22 OF THE 2002 EDITION OF THE NATIONAL ELECTRICAL CODE.

25. PROVIDE NECESSARY COMMON GROUNDS BETWEEN THE ELECTRICAL SERVICE, TELEPHONE SERVICE, UNDERGROUND METALLIC PIPING, CONDUIT, AND FOUNDATION/FOOTING REBAR PER NEC ARTICLES 250.50 & 250.52

26. CONTRACTOR TO PROVIDE RECEPTACLES TO MATCH PLUGS FURNISHED WITH EQUIPMENT. 27. ALL LIGHTING AND POWER PANELS SHALL HAVE THEIR TOPS AT 6'-6" ABOVE

FINISHED FLOOR. 28. PANEL BOARDS SHALL BE DEAD-FRONT, SAFETY-TYPE AND SHALL CONTAIN MAIN LUG RATINGS, BRANCH CIRCUIT BREAKERS, SPACES AND BUSSES AS INDICATED ON THE DRAWINGS.

29. PANEL BOARDS SHALL BE SUITABLE FOR FLUSH MOUNTING OR SURFACE MOUNTED INSTALLATION AS REQUIRED.

30. ELECTRICAL CONTRACTOR SHALL LOCATE LIGHTING FIXTURES TO SUIT

DEVICES WITH MILLWORK CONSTRUCTOR AND ARCHITECT PRIOR TO ROUGH-IN.

BEAMS, DROPPED SOFFITS, ACCESS PANELS OR SIMILAR OBSTRUCTIONS REQUIRE A CHANGE IN LIGHTING FIXTURE LAYOUT

31. ELECTRICAL CONTRACTOR SHALL COORDINATE PLACEMENT OF ALL ELECTRICAL

STRUCTURAL AND ARCHITECTURAL CONDITIONS IN THOSE ROOMS WHERE

California State License Pennsylvania License William McLees Architecture, LLC New Jersey State Certificate of Authorization #21AC00055500 Building Renovations & *Improvements* client

William C. McLees, AIA

New Jersey State License Al 14054

revisions

South Jersey Theater

drawn by XXXX

description

scale

sheet

date description

Project Specifications

PHASE 2

**date** 08.13.10