ARCHITECTURAL SPECIFICATIONS – TABLE OF CONTENTS

00001 - INTRODUCTORY INFORMATION

1.1 Scope: It is the purpose of these outline specifications format to set forth the minimum general requirements for the completed facility as well as to clarify points of particular interest to the Lessee.

A. Actual design, construction, and performance of the building, building systems, site and ground utilization, etc. are the responsibility of the Lessor.

B. The Lessor shall obtain the services of an independent architect/engineer to provide the construction drawings and specifications pursuant to the Lessee's requirements.

C. The architect/engineer shall be responsible for presiding over and generating periodic progress meetings, minutes of meetings, and periodic on-site construction inspections to verify the provisions of the drawings and specifications.

1.2 Construction Documents: the Lessor shall submit to the Department of Management and Budget, Office of Facilities, Real Estate Division (DMB), and the Property Management Division three (3) sets of complete construction drawings and specifications bearing the seal of a licensed architect or engineer in the State of Michigan, for review and approval.

A. While the approved drawings and specifications will become a part of the Lease, in the event there is a discrepancy between these outline specifications and the Lease, and the approved construction drawings, the outline specification and the written Lease document shall prevail.

B. The Construction Documents shall be approved by the Lessee before remodeling or new construction is started.

C. Approval of these documents does not waive the Lessor's responsibility to comply with the provisions of the Lease and Outline Specifications.

D. Construction drawings shall include a complete architectural site plan indicating boundary and/or topographic surveys, demolition, erosion plan, grading, lighting, utilities, building location, sidewalks, parking lot, drives, curbs, fences, signs, landscaping, and other site considerations.

E. Construction specifications shall follow the AIA/CSI format and shall p provide details and data not provided in the Outline Specifications.

F. All design considerations shall be based on the Lessor's knowledge of the intended use of the Leased premises. The Lessee's process of plans and specifications review and subsequent approval does not relieve the Lessor from any responsibility to provide an end product that is safe, comfortable and functionally satisfactory to serve as an office facility for the Lessee.

G. The Leased premises shall be designed in such a manner as to insure an economical and efficient use of space, adequate natural light, ventilation, circulation patterns and code compliance.

01000 - PROJECT SUMMARY

1.1 Project Name and Location

New Office building

State of Michigan

A. The project is a building for State of Michigan in Lansing, Michigan to be located on a site proposed by the Lessor receiving the award. The building will be a new or fully renovated facility including offices, training and conference.

B. Special Requirements:

1. Owner - Furnished and State- Installed Items:

a. Coordinate installation (by State) of State supplied furniture and other furnishings with base building construction schedule.

1.2 Permits

A. The Lessor or its representative shall obtain all necessary building, zoning, and other permits as required for the complete construction of the Leased premises.

1. Final Construction Documents

a. Prior to start of construction the Lessee shall be furnished free of charge, Five (5) copies of prints of the final approved drawings and specifications from the Lessor at the usual charge for reproduction and handling.

2. Compliance:

a. Construction shall be done in strict accordance with approved plans and specifications. The Lessee reserves the right to make periodic inspections of the construction to ascertain whether construction and workmanship are as represented by approved drawings, and that the Leased premises is also representative of practices of construction that are reasonable and customary in the industry.

b. To facilitate inspections of critical items, a certain reasonable number of special inspections will be identified as required at a Pre-Construction Meeting, to be chaired by an authorized representative of the Lessee. Construction of the item(s) to be inspected will not proceed until the Lessee has inspected and approved the work to that point. These must be given at least two (2) work days notice of when special inspections will occur and inspection will be made within one (1) workday; otherwise, construction can proceed as planned. The Pre-Construction meeting will be called by the Real Estate Division Property Analyst and moderated by an authorized representative of the Office of Facilities.

c. Periodic site inspections will be made by the Lessee or by a licensed architect/engineer hired by the Lessee for this purpose. This does not relieve the Lessor from providing architect/engineer inspections during the construction phase.

d. If any materials or workmanship provided are other than as indicated on drawings, or specified, the Lessee may direct that the portion of the work that is not satisfactory be removed and replaced or otherwise corrected, at no additional cost to the State.

e. Any reference to a specific brand and/or model is intended to establish quality, operating characteristics, or type are acceptable. The entire burden of establishing equality of alternate brands, types, sizes, etc., shall rest with the Lessor and the Lessor shall provide proof of "equal or better" upon request by the State.

1.3 Testing

A. Testing Agency: Independent testing agency engaged and paid for the Contractor, after the t4esting agencies qualifications have been submitted to and written approval obtained from the State of Michigan.

1.4 Coordination:

A. Coordination of site work, utilities, and building construction is required throughout construction.

1.5 Progress Schedule and Subcontractors:

A. Within ten (10) days after the Preconstruction Meeting, the Lessor shall submit to the Lessee a copy of a proposed CPM chart construction schedule, a list of all subcontractors, and shop drawings and catalogues specified below.

B. The Progress Schedule shall include the following:

1. The anticipated date of commencement and completion of the various operations to be performed under the Lease, including submission of samples and other information requiring prior approval of the Lessee, which directly control the key operations.
2. The estimated time required for fabrication or delivery, or both, of controlling materials and equipment required for the work.
3. The "schedule" shall be predicated on the completion of all the work on or before the date specified.
4. After being accepted by the Lessee as satisfactory, the schedule shall be strictly adhered to by the Lessor, subject to approved change order(s) to the Lease.

1.6 Field Engineering:

A. Underground Utilities: Verification and location of underground utilities, facilities, and equipment.

B. Layout: Layout for site improvements, utilities, and structures.

1.7 Project Meetings:

A. Regularly scheduled construction Progress Meetings shall be held at the job-site or a mutually agreed upon location between the Lessor, and the Lessee.

B. The Lessor shall include general contractors and sub-contractors as necessary.

C. A first meeting shall be held prior to commencement of actual construction (a Preconstruction Meeting referenced above) and held monthly thereafter until the Leased premises are completed.

D. The meeting schedule may be altered when mutually agreeable between the Lessor and the Lessee.

E. The Architect/Engineer retained by the Lessor shall record minutes of meetings and coordinate distribution of submittal, etc.

1.8 Required Submittals:

A. Prior to commencement of construction, the Lessor shall submit two copies of all Shop Drawings and Manufacturers' Catalogue information for all construction items proposed for use by the Lessee's authorized representative.

1. These drawings shall include complete schedules for finishes, doors, floors, ceilings, hardware, plumbing fixtures and accessories, HVAC equipment and accessories, etc.
2. Shop Drawings and Manufacturer's Catalogue information shall be checked and approved by the Lessor's Architect/Engineer.

B. Monthly written Construction Progress Reports and site inspection approvals shall be prepared by the Lessor's Architect/Engineer and copies submitted to the Lessee.

C. Construction tests such as soil borings, concrete mix designs, and other pertinent field verifications shall be submitted to the Lessee prior to construction.

D. Upon Substantial Completion of construction within 30 days, the Lessor shall submit to the Lessee the following:

1. Two complete sets of reproducible (Mylar) As-Built Drawings corresponding to the approved construction drawings.
2. Two copies of the final approved Floor Plans in the form of a computer disc(s) compatible with AutoCAD software.
3. Two complete sets of permanent operations manuals, instructions, and manufacturers' repair and maintenance information for all systems and equipment. These items shall be bound in a ring binder.
4. One reduced size composite floor plan (11"x17") designating all emergency valves, switches, controls, locations of equipment that will require periodic maintenance, etc. Provide the Lessee's designee with training to understand and familiarize occupants with building controls and systems locations/operations, etc.

1.9 Temporary Facilities:

A. New temporary utility services shall be obtained and paid for by the contractor.

B. Temporary construction office, material storage yard, office for State of Michigan use, support facilities, and security measures for all facilities shall be provided by the contractor.

1.10 Change Order and Field Bulletin Procedures:

A. Any changes in construction requirements that occur after the final approval of design and construction documents shall be initiated by a bulletin from the Lessor's architect/engineer requesting prices for changes proposed. Either the Lessor or the Lessee may make requests for changes consistent with Article III of the Lessee.

B. Requests for bulletin change shall be complete with drawings and/or other supporting documentation.

C. The Lessor shall submit a detailed breakdown of costs to Lessee through DMB's Real Estate Division, after review and approval by the Lessor's architect/engineer.

D. The Lessee, through DMB's Office of Facilities, will review and recommend the adequacy of pricing only to DMB/Real Estate Division and the Lessee.

E. The Lessee will advise DMB's Real Estate Division in writing: (1) if it wants the changes made, and (2) that it has the funds to pay for the proposed changes.

F. All changes are to be included in the as-built drawings regardless of whether the request is initiated by the Lessor or by the Lessee and regardless of whether a cost is associated with the change.

G. All changes or deletions which result in a change of construction expense shall be provided on the basis of an itemized breakdown of the actual cost plus 20% for overhead and profit for work done by the Lessor or its general contractor. On work performed by a subcontractor, the Lessor or prime contractor is allowed a 7-1/2% handling charge. The subcontractor will then receive the 20% addition for overhead and profit.

H. Payment for such changes, additions or deletions shall be made as a lump-sum adjustment with the first monthly rental payment.

I. All change orders shall be issued in writing by the DMB's Real Estate Division, on a construction change order notice all as required by Article III of the Lease. The Lessor will be responsible for the cost of any unauthorized changes.

1.11 Contract Close Out:

A. The Lessor shall notify the Lessee when the work will be Substantially Complete and ready for inspection and preparation of a list of minor replacement, correction, adjustment and touch-up items.

1. All concerned parties shall attend the Substantial Completion.
2. The Lessor shall complete all work required by the date set for final acceptance by the Lessee.
3. Provide a pest control application for the elimination and/or control of insects and rodents one-week before opening.

B. Final Clearing:

1. The Lessor shall remove from the Leased premises all surplus building material and rubbish; clean or re-clean entire work to normal level for "first class" maintenance/cleaning of building projects of a similar nature; and remove non-permanent protection and labels, polish glass, clean exposed finishes, touch up minor finish damage, clean or replace filers of mechanical systems, remove debris and broom clean non-occupied spaces, sanitize plumbing/food service facilities, clean light fixtures and replace burned out/dinned lamps, sweep and wash new paved areas, police yards and grounds, and perform similar cleanup operations needed to produce a "clean" condition.
2. No payments will be authorized until final cleanup is accomplished and inspection is made by the Lessee.

311000 - SITE CLEARING

1.1 Protection of existing trees, vegetation, landscaping materials, and site improvements not scheduled for clearing, which might be damaged by construction activities.

1.2 Trimming of existing trees and vegetation as recommended by arborist for protections during construction activates.

1.3 Clearing and grubbing of stumps, vegetation, debris, rubbish, designated trees, and site improvements.

1.4 Topsoil stripping and stockpiling.

1.5 Materials used for erosion and sedimentation controls shall meet the requirements as set forth by code and local governing agencies.

1.6 Temporary protection of adjacent property, streets, sidewalks, curbs and gutters also any benchmarks, and monuments.

1.7 Watering of trees and vegetation during construction activities.

1.8 Removal and legal disposal of cleared materials.

1.9 Tree protection, erosion control, siltation control, and dust control material suitable for site conditions.

312000 – EARTH MOVING

1.1 General

A. Remove surface debris.
B. Remove paving and curbs.
C. Clear site of plant life and grass.
D. Remove trees and shrubs
E. Remove root system of trees and shrubs.
F. Verify that existing plant life and features designated to remain are tagged or identified.
G. Protect utilities that remain, from damage.
H. Protect trees, plant growth, and features designated remain as final landscaping.
I. Protect benchmarks and existing structures from damage or displacement.

312319 - DEWATERING

1.1 Dewatering equipment suitable for site conditions.

312000 – EARTH MOVING

1.1 Rough Grading

1.2 Topsoil: Fertile, natural excavated material (if acceptable), graded, free of roots, rocks larger than 1 inch, subsoil, debris, and large weeds. PH range 5.3 to 6.0.

A. Topsoil: Excavated material, graded, free of lumps larger than 6 inches, rocks larger than 3 inches, and debris.
B. Granular Fill: See 02223.

1.3 Finish grading

A. Topsoil: Reuse stockpiled topsoil, if acceptable; or, use imported soils.

B. Topsoil: Imported, friable loam; free of subsoil, roots, grass, excessive amount of weeds, stone, and foreign matter, acidity range (pH) of 5.3 to 6.0; containing a minimum of 4 percent and a maximum of 25 percent organic matter.

1.4 Excavation

A. Underpin adjacent structures, which may be damaged by excavation work, including utilities and pipe cases as required.

B. Excavate subsoil required to accommodate building foundations, slabs-on-grade, paving, and site structures, construction operations, and utilities.

C. Excavate to working elevations. Dewater if required. Excavation may require unacceptable material to be removed.

D. Machine slope banks to angel of repose or less, until shored as required.

E. Excavation cut not to interfere with normal 45 degree bearing splay of foundation.

F. Grade top perimeter of excavation to prevent surface water from draining into excavation.

G. Stockpile excavated material in area designated on site and remove excess unacceptable material not being reused, from site.

1.5 Field Quality Control

A. Field inspection will be performed.

B. Provide for visual inspection of bearing surfaces, and compaction tests of all virgin and fill areas.

1.6 Backfilling

A. Acceptable Fill Materials Are:

B. Type A - Dense graded aggregates: Per MDOT-22A.

C. Type B - Pea Gravel: Natural stone; washed, free of clay, shale, organic matter; graded in accordance with ANSI/ASTM C136, to the following:

1. Minimum Size: ¼".
2. Maximum Size: 5/8".
3. Use pea gravel around building foundation drainage system around site utility trenches where designated.

D. Type C - Sand: Natural river or bank coarse sand; free of clay, lumps and soft or flaky material. Type 2NS per MDOT 8.02-4.

E. Type D - Native Subsoil: Free of organic material, gravel over 2" size, and debris; subject to conditions outlined in Soils Report.

F. Type E - Natural Granular Material: Meeting requirements of MDOT 8.02-3, Class III.

1.7 Accessories

A. Geotextile Fabric: "Miramot" No. 1800 by Mirafi, Inc.

1. Use Mirafi's #600X woven geotextile ground stabilization fabric where designated under all paved areas and area where proper compaction cannot be achieved without extensive excavation and backfilling.

2. Use Mifafi's #500X woven stabilization fabric under slabs-on-grade; in order to acquire proper compacted granular fill base.
3. Use Mifafi's #140 N non-woven filter fabric around footing drain lines, and around drain pipe in below slab drainage system.

1.8 Schedule

A. Interior Slab-On-Grade:

1. Types A or C fills, depth as specified by Soils Report; compacted to 95 percent modified proctor.
2. Coordinate with Division 7 for moisture and thermal protection.

B. Exterior Side of Foundation Walls and Over Granular Filter Material and Foundation Perimeter Drainage:

1. Subsoil Type D fill, to subgrade elevation, each lift, compacted to 90 percent modified proctor. Compact to 95% modified proctor where paving or other new construction occurs above.
2. Type B fill around drain tile and field tile under slab.

C. Fill Under Grass or Landscaped Areas:

1. Subsoil, Type D fill, to 6" below finish grade, compacted to 90 percent modified proctor.

D. Fill Under Asphalt or Concrete Paving:

1. Type A fill, depths as required per drawings, compacted to 95 percent modified proctor.

E. Fill to Correct Over-Excavation:

1. Type A, C, D, or E fill depending on required thickness, flush to required elevation, compacted to 95 percent modified proctor. Coordinate with project engineer.

316200 - DRIVEN PILES

1.1 Steel H-Piles: Hot-rolled carbon steel structural shapes and plates, ASTM A36.

1.2 Steel Piling: Steel piling suitable for project requirements.

1.3 Precast Piles:

A. Concrete, ASTM C96, 500 psi, 28 day minimum compressive strength and maximum aggregate size of ¾".

B. Reinforcing steel, ASTM A615, Grade 60 deformed bars, and ASTM A82, plain cold-drawn steel wire.

C. Prestressing tendons, ASTM A416, Grade 250, seven-wire, uncoated, stress-relieved steel strand.

1.4 Cassons

A. Concrete Mix Design: ASTM C94, 4000 psi, 28 day minimum compressive strength.

B. Portland Cement: ASTM C150, Type I or Type II.

C. Reinforcing Bars: ASTM A615, Grade 60.

D. Casings: Steel pipe, ASTM A252, grade 2 or ASTM A36.

321216 - ASPHALTIC CONCRETE PAVING

1.1 Materials

A. Asphalt Cement: ASTM D946, AC-5, 120-150; 5 percent of mixture by weight.

B. Aggregate for Binder Course Mix: State of Michigan Highway Standard, 20A;per MDOT 1100L mix.

C. Aggregate for Topping Course Mix: State of Michigan Highway Standard, 20AAA per MDOT 1300T mix.

D. Fine Aggregate: Coarse sand, State of Michigan Highway Standard.

E. Mineral Filler: Finely ground particles of limestone, hydrated lime or other mineral dust, free of foreign matter.

1.2 Accessories

A. Primer: Homogeneous, medium curing, liquid asphalt, MDOT Standards of MC-30, MC-70, or MS-OP.

B. Tack Coat: Homogeneous, medium curing, liquid asphalt, MDOT Standards of SS-1H, or CRS-1; 0.05 to 0.10 gallons per square yard.

C. Seal Coat (Paving): Asphalt Institute Manual S-4, sand slurry type; similar to “Jennite” by Neyra Industries, “J-16: by Maintenance, Inc.; or, other approved equivalent.

1.3 Asphalt Paving Mix

A. Use drive material to avoid foaming. Mix uniformly.

B. Binder Course: 4.5 to 6 percent of asphalt cement by weight in mixture in accordance with Asphalt Institute Manual MS-4, MS-13, and State of Michigan Highway Standard.

C. Surface Course: 5 to 7 percent of asphalt cement by weight in mixture in accordance with Asphalt Institute Manual MS-4, MS-13, and State of Michigan Highway Standard.

321400 - UNIT PAVERS

1.1 Brick Pavers

A. Class: ASTM C902, Weather Class SX for use subject to freezing application.

B. Traffic Type: ASTM C902, Traffic Type II for exterior commercial walkways use.

C. Application: ASTM C902, Application Type PS for general application.

D. Concrete Pavers: Solid concrete interlocking paving units, STM C936, normal weight aggregates.

321313 - CONCRETE PAVING

1.1 Concrete: ASTM C150, Type I, Portland Cement; ASTM C33, normal weight aggregates; potable water.

1.2 Design Mix: ASTM C94, 4000 psi, 28 day minimum compressive strength.

1.3 Slump Limits: 8” minimum with superplasticizer, 3” otherwise.

1.4 Air content: 6 percent.

1.5 Broom finish

1.6 Wire Mesh: Welded plain steel wire fabric, ASTM A185.

1.7 Reinforcing Bars: Deformed steel bars, ASTM A615, Grade 60.

1.8 Fabricated Bar Mats: Steel bar or rod mats, ASTM A184, using STM A615, Grade 60 steel bars.

1.9 Joint Dowel Bars: Plain steel bars, ASTM A615, Grade 60.

1.10 Hook Bolts: ASTM A307, Grade A threaded bolts.

1.11 Liquid-membrane Forming and Sealing Curing Compound: ASTM C309, Type I, Class A.

1.12 Bonding Compound: Polyvinyl acetate or acrylic base.

1.13 Epoxy Adhesive: ASTM C881.

1.14 Minimum 6” sand-gravel sub-base MDOT 23A.

1.15 Stripping System: Water borne acrylic paint.

221113 – FACILITY WATER DISTRIBUTION PIPING

1.1 Ductile Iron Pipe, 4 Inches and Larger: AWWA C151, Class 50 minimum.

1.2 PVC Pipe 4 Inches and Larger: AWWA C900, Class 150.

1.3 Fiberglass Pressure Pipe 2 Inches and Larger: AWWA C950, type I filament wound or Type II centrifugally cast; Grade 1 or 2; fiberglass fittings, AWWA C950, RTRP, 200 psi minimum pressure rating.

1.4 Copper Water Tube 2 Inches and Smaller: ASTM B88, Type K seamless, annealed temper; ANSI B16.22 wrought-copper, 50/50 solder-joint copper fittings.

1.5 PVC Pipe 3 Inches and Smaller: ASTM D1785, Schedule 40; Schedule 40 socket-type PVC fittings or elastomeric gasketed joint.

1.6 Polyethylene Pipe and Tubing 3 Inches and Smaller: AWWA C901; barbed insert type copper alloy or nylon fittings.

1.7 Couplings: ASTM A126, gray iron sleeve assembly with followers, rubber gaskets, bolts, nuts, and enamel paint finish.

1.8 Valves:

A. Nonrising stem gate, valves 3 inches and larger, AWWA C500.

B. Rising stem gate valves 3 inches and larger, AWWA C500 or AWWA C509.

C. Nonrising stem gate valves 2 inches and smaller, MSS SP-80.

D. Valve Accessories: Cast-iron valve boxes, curb stops, and service boxes for curb stops.

E. Tapping sleeve and tapping valve for new connections larger than 2 inches.

F. Service clamps and corporation stops for new connections 2 inches and smaller.

1.9 Anchorages:

A. Clamps, Straps, and Washers: ASTM A506, steel.

B. Rods: ASTM A575, steel.

C. Rod Couplings: ASTM A197, malleable iron.

D. Bolts: ASTM A307, steel.

E. Cast-Iron Washers: ASTM A126, gray iron.

F. Concrete Reaction Backing: ASTM C150, Type I Portland cement for 3000 psi, 28 day minimum compressive strength.

1.10 Yard Hydrants: Sanitary type.

1.11 Valve Pits and Meter Pits: Reinforced concrete with ladder and cat-iron manhole frame and cover.

1.12 Water Meter: Utility company approved water meter.

1.13 Meter Box: Cast-iron body and cover with lettering.

1.14 Identification: Metallic-lined plastic underground warning tapes.

1.15 Fire Service Main Accessories:

A. Hose House: 16 gauge steel with red baked enamel finish, hoses, and nozzles.

B. Alarm Devices: UL 753 and FM approved including water flow indicators, supervisory switches, and pressure switches.

1.16 Schedule:

A. Valve, Hydrant and Water Meter Schedule: Provide hydrants at 100 spacing at exterior walls of all buildings. Provide separate meters for domestic water, cooling tower water, and irrigation system. Provide storm and sewer cleanout every 50 to 100 feet along main route to site discharge into municipality.

334600 - SUBDRAINAGE

1.1 Drainage Pipe

A. Perforated PVC pipe, ASTM D2729 with socket joints.

1.2 Subsurface Drainage Mat for Vertical Surfaces: Composite non-woven geotextile filter fabric of polypropylene or polyester fibers and plastic material to conduct water to drainage at maximum soil pressure.

334100 - STORM UTILITY DRAINAGE PIPING

1.1 Pipe and Fittings

A. Hub and Spigot Cast-Iron Soil Pipe and Fittings: ASTM A74, gray cast iron for compression gasket joints, class of service as required.

B. Ductile Iron Pressure Pipe: AWWA C151, Class 50 for push-on joints.

C. Ductile-Iron Culvert Pipe: ASTM A716 for push-on joints.

D. Ductile-Iron Sewer Pipe: ASTM A746, Class 50, for push-on type or mechanical joints.

E. Reinforced Concrete Sewer Pipe and Fittings: ASTM C76, Class III, Wall B, for rubber gasket joints.

F. Ductile-Iron Pipe Encasement: AWWA C105, polyethylene film tube.

G. Couplings: Rubber or elastomeric compression gasket.

H. Gaskets" Compatible with pipe materials joined.

1.2 Manholes

A. Precast Concrete Manholes: ASTM C478.

B. Manhole Steps: Ductile iron or cast aluminum cast in concrete by fabricator.

C. Manhole Frames and Covers: ASTM A536, Grade 60-40-18, heavy-duty ductile iron with lettering.

1.3 Cleanouts

A. Cast-iron, brass or bronze.

1.4 Catch Basins for Strom Sewerage System

A. Precast Concrete Catch Basins: ASTM C478 or ASTM C858.

B. Catch Basin Steps: Cast aluminum, cast in concrete by fabricator.

C. Catch Basin Frames and Grates: ASTM A536, Grade 60-40-18, heavy-duty ductile iron.

D. Curb Inlets: precast concrete, stone, or brick conforming to utility standards.

1.5 Outfalls or Swale for Strom Sewerage System.

A. Cast-in-place reinforced concrete pipe, head wall apron, tapered sides, and rip rap or similar erosion protection.

B. Dry Wells for Strom Sewerage System: ASTM C858, precast reinforced perforated concrete rings with cast-in-place concrete floor and lift-off concrete cover.

C. Trench Drains for Strom Sewerage System: Interlocking precast polymer concrete modular units with grates, channel caps, and related accessories.

D. Identification: Metallic-lined plastic underground warming tapes.

129300 - SITE FURNISHINGS

1.1 Benches: Cast-iron and wood type.

1.2 Trash Receptacles: Precast concrete type.

1.3 Bicycle Racks: Galvanized steel.

1.4 Picnic Tables: Wood with attached seating.

1.5 Entry Bollards: Precast concrete with integral lighting.

1.6 Site Lighting: Pole mounted fixtures.

328400 – PLANTING IRRIGATION

1.1 Pressure Pipe: Galvanized steel pipe for pipe 3 inches and larger: ASTM A53, Schedule 40; copper water tube for pipe under 3 inches, ASTM B88, Type K.

1.2 Circuit Pipe: PVC plastic pipe, ASTM D1785, Schedule 40, Phillips Petroleum, Drisco polyethylene thermal fusion bond or equal.

1.3 Pipe Fittings for PVC Pipe: ATM D2466 socket fittings.

1.4 Valves with Cast Bronze Bodies:

A. Manual Circuit Valves: Globe Valves.

B. Key Operated Valves: Manual valves fitted for key operation.

1.5 Backflow Prevented: Cast bronze.

1.6 Sprinklers

A. Flush surface type with fixed pattern.

B. Bubbler type with fixed pattern.

C. Shrubbery type with fixed pattern.

D. Pop-up spray type with fixed pattern.

E. Pop-up rotary spray type, gear drive.

F. Pop-up rotary impact type, impact drive.

G. Above-ground rotary impact type, impact drive.

1.7 Valve Box: Precast concrete.

1.8 Valve Cover and Frame: Cat iron, lockable.

1.9 Automatic Control System

A. Interior control enclosure.

B. Low voltage transformer.

C. Circuit control.

D. Timing device.

E. Rain gauge/detector.

323113 - CHAIN LINK FENCES AND GATES

1.1 Fabric

A. Material: Galvanized steel, ASTM A392, Class 2 finish.

B. Size: 2 inch mesh, 9 gauge steel.

1.2 Framework: Galvanized steel, ASTM F1083.

1.3 Gates: Swinging type at walkways. Cantilevered sliding type at vehicle entrances,

1.4 Framing and Fittings

A. End, corner, and pull posts, 2" IPS.

B. Line and intermediate posts, 1/12" IPS.

C. Gate post, 6" IPS

D. Top rail 1/12" IPS.

E. Tension wire.

F. Tie wires.

G. Bottom rail 1 ½" IPS

H. Post and line caps.

I. Barbed wire supporting arms, 15" 3 strands.

J. Barbed wire.

329200 – TURF AND GRASSES

1.1 Lawns

A. Sod locally grown.

1.2 Seed Mixture (a combination of the following)

A. Fawn tall fescue.

B. Annual rye.

C. Perennial rye.

D. Kentucky Blue grass.

E. Creeping Red Fescue.

F. No toxic weed seeds permitted.

1.3 Topsoil: From site stockpile with additional fertile, friable topsoils form local source.

1.4 Soil Amendments:

A. Lime: Dolmitic limestone.

B. Aluminum Sulfate: Commercial grade.

C. Peat Humus: Finely divided peat.

D. Superphosphate: 20 percent available phosphoric acid.

E. Sand: Clean, washed sand.

F. Perlite: NBS PS 23.

G. Sawdust: Rotted sawdust free of chips and stones.

H. Manure: Rotted stable manure.

I. Commercial Fertilizer: Neutral character for plant materials and lawns.

J. Mulch: Ground or shredded pine bark mulch.

329300 – PLANTS

1.1 Plant Materials

A. Deciduous trees

B. Deciduous shrubs.

C. Coniferous and broad-leafed evergreen trees and shrubs.

D. Ground cover.

1.2 Landscape Materials:

A. Gravel: Water-worn gravel.

B. Anti-Erosion Mulch: Seed-Free salt hay or threshed straw.

C. Anti-Desiccant: Emulsion type, film-forming.

D. Plastic Sheet: Black polyethylene, 8 mils.

E. Filtration Fabric: Water permeable fiberglass or polypropylene fabric.

F. Wrapping: Tree-wrap tape.

G. Stakes and Guys: New hardwood, treated softwood, or redwood.

H. Metal Edging: Commercial steel edging.

I. Wood Headers and Edging: All heart redwood or pressure treated southern yellow pine.

03300 - CAST-IN-PLACE CONCRETE

1.1 Concrete Design Mixes, ASTM C94, 28 day compressive strength.

	Fc, psi at 28 days	Max WC Ratio	Max Slump (Inches)	Total Air Content (+/- 1-1/2%)
Cast-in-place concrete:				
Footings	4000	0.45	4	no test
Grade beams	4000	0.45	3*	7
Utilities	3000	0.45	3*	7
Slab on grade	3500	0.45	3*	7
Stairs, landings, lobbies	5000	0.40	3*	7

Pour strips, topping	5000	0.40	3*	7
Paving	4000	0.45	3*	7
All other	4000	0.45	3*	7
Other concrete concrete:				
Columns base drypack	8000		0	no test
Masonry wall grout fill	3000		8	no test
N.S.N.S grout	8000		0	no test

***** Prior to adding superplaticizer.....

03350 - CONCRETE TOPPINGS

Standard Aggregate Toppings

A. Portland cement: ASTM C150, Type 1 or Type III

B. Standard aggregate: ASTM C33.

C. Design mix: ASTM C94, 3500 psi, 28 day compressive strength.

D. Reinforcement: Welded steel wire fabric, ASTM A185.

1.2 Heavy-Duty Aggregate Toppings

A. Portland cement: ASTM C150, Type I or Type II.

B. Heavy-duty aggregate: Crushed or natural traprock, quartz, granite or corundum.

C. Design Mix: ASTM C94, 5000 psi, 28 day compressive strength.

D. Reinforcement: Welded steel wire fabric ASTM A185.

1.3 Heavy0Duty Metallic Floor Topping: Iron aggregate and cement topping, 10200 psi, 28 day compressive strength; 1428 psi flexural strength.

03355 - SPECIAL CONCRETE FINISHES

1.1 Abrasive Blast Finish

A. Brush Cut: Face of fine aggregate exposed, no reveal.

B. Light Cut: Fine aggregate exposed, maximum 1/16” reveal.

C. Medium Cut: Coarse aggregate exposed, ¼; reveal.

D. Heavy Cut: Coarse aggregate exposed to maximum projection of 1/3 diameter; 3/8” to ½”; reveal.

E. Acid Cleaning: Weak acid wash after blasting and neutralization of acid.

1.2 Bush hammer finish

A. Finish: Depth of cut and aggregate exposure matching control samples.

B. Acid Cleaning: Weak acid wash after blasting and neutralization of acid.

1.3 Scrubbed Finish

A. Finish: Wire brush scrubbed finish producing uniform exposure of aggregate.

B. Acid Cleaning: Weak acid wash after blasting and neutralization of acid.

03415 - PRECAST HOLLOW CORE PLANKS

1.1 Materials:

A. Materials: ACI 318.

B. Tensioning Steel Tendons: ASTM A416, Grade 250K or 270K, of sufficient strength commensurate with member design.

C. Reinforcing Steel: STM A615, deformed steel bars.

D. Grout: Non-shrink, non-,metallic, minimum yield strength of 10,000psi at 28 days.

1.2 Accessories

A. Connecting and Supporting Devices: ASTM A36 carbon steel plates, angles, items cast into concrete, or items connected to steel framing members, inserts, conforming to PCI NML-123; prime painted. Do not paint surfaces in contact with concrete or surfaces requiring field welding.

B. Core Hole End Plugs: Cardboard insert and concrete fill.

C. Hanger Tabs: Galvanized steel, designed to fit into grouted key joints, capable of supporting 500 pounds dead load, predrilled to receive hanger.

D. Bearing Pads: High density plastic 1/8” thick, smooth both sides.

E. Sill Seal: compressible glass fiber strips.

03450 - ARCHITECTURAL PRECAST CONCRETE

1.1 Design Mix: 5000 psi, 28 day compressive strength, 4 to 6 percent total air content.

1.2 Formwork: Plywood or metal panel formwork sufficient for structural and visual requirements, set with block-outs for reveals and other panel articulation.

1.3 Concrete Materials.

A. White Cement: Portland cement, ASTM C150, Type I.

B. Fine Aggregate (in approved color) for Facing Mixes: ASTM C33.

C. Coarse Granite Aggregate for Facing Mix: ASTM C33.

D. Pigments: Nonfading lime resistant pigments.

03520 - INSULATING CONCRETE DECKS

1.1 Perlite Aggregate Design Mix.

A. Wet Density at Placement: 38-40 pcf, ASTM C138.

B. Oven Dry Density: 24 to 30 PCF, ASTM C495.

C. Compressive Strength: Minimum 125 psi, ASTM C495.

1.2 Vermiculite Aggregate Design Mix

A. West Density at Placement: 44 to 60 pcf, ASTM C.

B. Oven Dry Density: 22 to 28 pcf, ASTM C495.

C. Compressive Strength: Minimum 125 psi, ASTM C.

04200 - UNIT MASONRY

1.1 Face Brick

A. Size: Standard, 3-5/8" x 2-1/4" x 8".

B. Size: Utility 3-5/8" x 3-5/8" x 11-5/8".

C. Grade: ASTM C216, Grade SW, severe weathering type.

D. Special Shapes: As required by building configuration.

E. Bond Pattern: Running bond.

1.2 Concrete Masonry Units

A. Hollow Load-Bearing Concrete Masonry Units: ATM C90, 1900 psi compressive strength, normal weight.

B. Size: Face dimension of 7-5/8" x 15-5/8".

C. Concrete Building Brick: ASTM C55.

D. Special Finish: As selected by architect.

E. Special Shapes: As required by building configuration.

F. Bond Pattern: Running bond.

042300 - GLASS UNIT MASONRY

1.1 Hollow Glass Block: Non-loadbearing glass block with partial vacuum interior.

A. Pattern: Translucent, light-diffusing prismatic design.

B. Edge Coating Color: White

C. Shape: Square, nominal 8 inches square.

D. Corner Unit: Preformed.

E. Joint Width: ¼ inch.

044300 – STONE MASONRY

1.1 Granite

A. Building Stone Standard: 24" x 24" minimum typical stone panel size: ASTM C615.

B. Finish of Veneer: Polished and/or flamed thermal finish.

C. Finish of Flooring, Steps and Risers: Flamed thermal finish, with limited polished finish accents.

D. Type: As selected form samples.

E. Joints: Grout joints.

F. Veneer Thickness: ¾ minimum.

G. Stone Tile Thickness: ¾ inch minimum.

1.2 Marble:

A. Building Stone Standard: 24" x 24" minimum typical stone panel size: ASTM C503.

B. Classification: Calcite, Dolomite, Serpentine or Travertine marble.

C. Finish of Veneer: Honed finish.

D. Finish of Flooring, Steps, and Risers: Honed very flat or lightly bush hammered finish, with limited polished accents.

E. Type: Group A, Marble Institute of America as selected from samples.

F. Joints: Grout joints.

G. Veneer Thickness: ¾ inch minimum.

H. Stone Tile Thickness: ¾ inch.

1.3 Limestone

A. Building Stone Standard: 24" x 24" minimum stone panel size.

B. Finish Veneer: As selected.

C. Type: As selected from samples.

D. Joints: Grout joints

E. Veneer Thickness: 1-inch minimum.

044200 - EXTERIOR STONE CLADDING

1.1 Granite

A. Building Stone Standard: ASTM C615.

B. Finish: Polished and thermal.

C. Finish of Paving, Steps and Risers: Thermal.

D. Type: Color as selected by architect.

E. Joints: Mortar, ASTM C270, Type S.

F. Cladding Thickness: 1/14" plus or minus 1/8".

1.2 Limestone

A. Building Stone Standard: 24" x 24: minimum stone panel size.

B. Finish Veneer: Polished finish.

C. Finish of Flooring, steps and Risers: As selected.

D. Type: As selected from samples.

E. Joints: Mortar joints

F. Veneer Thickness: 1 ¼" plus or minus 1/8".

05120 - STRUCTURAL STEEL

1.1 Steel Materials

A. Structural Steel Shapes, Plates, and Bars: ASTM A36 Fy=36 Ksi or ASTM A572 Fy=50 Ksi.

B. Cold-Formed steel Tubing: ASTM A5090, Grade b.

C. Hot-Formed Steel Tubing: ASTM A501.

D. Steep Pipe: ASTM A53, Type E or S, Grade B; or ASTM A501.

E. Steel Castings: ASTM A27, grade 65-35.

F. Headed Stud-Type Shear Connectors: ASTM A108, Grade 1015 or 1020.

G. Anchor Bolts: ASTM A307, nonheaded type.

H. Unfinished Threaded Fasteners: ASTM A325 or ASTM A490, as applicable.

052100 - STEEL JOIST FRAMING

1.1 Steel Materials:

A. Type: K, LH, or DLH-series open web steel joists.

B. Steel: SJI specifications for chord and web s.

C. Steel Bearing Plates: ASTM A36.

053100 - STEEL DECKING

1.1 Steel Floor and Roof Deck Units

A. Acoustical deck multiple-pan cellular units.

B. Non-composite steel form deck.

C. Cellular metal deck units, double-cell units.

D. Composite steel deck.

1.2 Standards: AISI, specification for the design of cold-formed steel structural members; and SDE design manual for composite decks, form decks and roof decks.

A. Approvals: UL label and FM listing.

1.3 Steel Materials and Finish

A. Type: Steel for galvanized metal deck, ASTM A446.

B. Steel Shapes: ASTM A36 Fy=36 S=KSI or ASTM A572 Fy=36 KSI or ASTM 572 Fy=50 Ksi.

C. Shear Connectors: Headed stud type, ASTM A108.

D. Sheet Metal Accessories: ASTM A526, commercial quality, galvanized.

E. Galvanizing: ASTM A525, G60.

F. Galvanizing Repair: ASTM A780.

1.4 Auxiliary Materials

A. Metal cover plates.
B. Metal closure strips.
C. Roof sump pans.
D. Flexible Closure strips.
E. Acoustic sound barrier closures.

05400 - COLD FORMED METAL FRAMING

1.1 Cold-Formed Metal Framing Materials.

A. Stud Type: C-shaped load bearing steel studs.
B. Joist Type: C-shaped steel joists.
C. Units 16 gauge and heavier: ASTM A446, A570, or A611, yield point 40 ksi.
D. Units 18 gauge and lighter: ASTM A446, A570, or A611, yield point 33 ksi.
E. Finish: Galvanized, ASTM A525, G60.

05500 - METAL FABRICATIONS

1.1 Metal Fabrications

A. Metal stairs.
B. Steel pipe railings.
C. Ladders for elevator pit.
D. Ladders and safety cages.
E. Ship's Ladders.
F. Nosings.
G. Cast treads and thresholds.
H. Loose bearing and leveling plates.
I. Loose steel lintels.
J. Framing and supports for overhead doors.
K. Framing and supports for suspended toilet partitions.
L. Framing and supports for suspended folding partitions.
M. Framing and supports for suspended operable partitions.
N. Prefabricated building columns.
O. Miscellaneous steel trim.
P. Shelf and relieving angles.
Q. Structural steel door frames for overhead doors.
R. Metal bar gratings.
S. Expanded metal gratings.
T. Floor plate and supports.

U. Tread plate and supports.

V. Pipe bollards.

W. Elevator entrance sill angles.

X. Rough hardware.

1.2 Ferrous Materials:

A. Steel Plates, Shapes and Bars: ASTM A36.

B. Rolled Steel Floor Plates: ASTM A766.

C. Steel Bars for Gratings: ASTM A569 or A36.

D. Wire Rod for Grating Cross Bars: ASTM A510.

E. Steel Tubing: ASTM A 500 or A 501.

F. Uncoated Structural Steel Sheet: ASTM A611 or A570.

G. Uncoated Steel Sheet: ASTM A 366 or A 569.

H. Galvanized Steel Sheet, Structural Quality: ASTM A526, G90.

I. Galvanized Steel Sheet, Commercial Quality: ASTM A526, G90.

J. Steel Pipe, Black Finish: ASTM A53.

K. Steep Pipe, Galvanized Finish: ASTM A53.

L. Gray Iron Castings: ASTM A48, Class 30.

M. Malleable Iron Castings: ASTM A47, grade 32510..

N. Reinforcing Bars: ASTM A 615, Grade 60.

O. Brackets, Flanges, and anchors: Cast of formed metal.

P. Concrete Inserts: Threaded or wedge type.

Q. Welding Rods and Bare Electrodes: AWS specifications.

R. Zinc-Coating: Hot-dip galvanized coating for materials in exterior assemblies or exterior walls.

1.3 Stainless Steel Materials

A. Bar Stock: ASTM A276, Type 302 or 304.

B. Plate: ASTM A167, Type 302 or 304.

1.4 Aluminum Materials:

A. Extruded Bars and Shapes: ASTM B221 aluminum alloy.

B. Rolled Tread Plate: ASTM B 632 aluminum alloy.

C. Rivets: ASTM B 316, aluminum alloy.

D. Sheet for Expanded Aluminum Grating: ASTM B209.

E. Fasteners: ASTM A 153.

F. Finish: Clear anodized.

1.5 Fasteners:

A. Bolts and Nuts: Hexagon head type, ASTM A307, Grade A.

B. Lag Bolts: Square head, FS, FF-B-561.
C. Machine Screws: Cadmium plated steel, FS FF-S92.
D. Wood Screws: Flat head carbon steel, FS FF-S-111.
E. Plain Washers: Round carbon steel, FS FF-W-92.
F. Drilled-In Expansion Anchors: FS FF-S-325.
G. Toggle Bolts: Tumble-wing type, FS FF-B-588.
H. Lock Washers: Spring type carbon steel, FS FF-W-84.
I. Zinc-Coating: Fasteners in exterior assemblies or exterior walls.

05521 - PIPE AND TUBE RAILINGS

1.1 Aluminum Pipe and Tube Railing Systems:
A. Extruded Bar and Tube: ASTM B221, alloy 6063 T5/T52.
B. Extruded Structural Pipe and Tube: ASTM B429, alloy 6063 T5/T52.
C. Drawn Seamless Tube: ASTM B210, alloy 6063 T832.
D. Plate and Sheet: ASTM B209, alloy 6061 T6.
E. Die and Hand Forgings: ASTM B247, alloy 6061 T6.
F. Castings: ASTM B26, alloy A356 T7.
G. Finish: Clean anodized.

1.2 Stainless Steel Pipe and Tube Railing Systems:
A. Tubing: ASTM A554, Grade TP304 or TP 316.
B. Pipe: ASTM A312, Grade TP304 or TP316.
C. Casting: ASTM A743, Grade CF8 or CF20.
D. Plate: ASTM A167, Type 304 or 316.
E. Finish: AISI No. 4 bright directional polish.

1.3 Steel Pipe and Tube Railing Systems:
A. Steel Pipe, Black Finish: ASTM A53.
B. Steel Pipe, Galvanized Finish: ASTM A53.
C. Steel Tubing: ASTM A500 or A501.
D. Steel Plates, Shapes and Bars: ASTM A36.
E. Gray Iron Castings: ASTM A48, Class 30.
F. Malleable Iron Castings: ASTM A47, Grade 32510.
G. Finish: Galvanized.

05580 - SHEET MEAL FABRICATIONS

1.1 Sheet Metals:
A. Steel Sheet, Galvanized: ASTM A526 or A527, G90.

B. Steel Sheet, Zinc-Coated: ASTM A591, Class C.

C. Steel Sheet, Uncoated: ASTM A366, Class I.

D. Stainless Steel Sheet: ASTM A167, Type 302 or 304.

E. Aluminum Sheet: ASTM B209, alloy 5005 H15.

1.2 Auxiliary Materials:

A. Sound Deadening Insulation: Unfaced mineral fiber batt.

B. Welding Electrodes and Filler Metal: AWS specifications.

C. Fasteners, Anchors, and Inserts: Noncorrosive.

D. Gaskets: Flexible cellular neoprene, ASTM D1056.

E. Bituminous Paint: Asphalt mastic, SSPC-Paint 12.

05720 - ORNAMENTAL HANDRAILS AND RAILINGS

1.1 Stainless Steel:

A. Tubing: ASTM A554, Grade MT301, 302, or 304.

B. Pipe: ASTM A312, Grade TP304.

C. Castings: ASTM A743, Grade CF8 or CF20.

D. Plate: ASTM A167, Type 301, 302 or 304.

E. Finish: AISI No. 7, satin reflective directional polish.

1.2 Steel and Iron:

A. Steel Tubing: ASTM A500 or A501.

B. Steel Plates, Shapes, and Bars: ASTM A36.

C. Gray Iron Castings: ATM A48, Class 30.

D. Malleable Iron Castings: ASTM A47.

E. Finish: Galvanized and shop primed.

1.3 Glass Components:

A. Tempered Glass: ASTM C1048, Kind FT, Condition A.

B. Glass Color: Transparent

079500 - EXPANISION CONTROL

1.1 Assemblies:

A. Type: Metal assembly with flat cover plates.

B. Performance: Based on building use.

1.2 Expansion Joint Cover Materials:

A. Aluminum: ASTM B221, alloy 6063 T5 for extrusions: ASTM B209, alloy 6061 T6 for sheet and plate.

B. Bronze: ASTM B455, alloy C38500 for extrusions; alloy C28000, Muntz metal for plates.

C. Brass: UNS alloy C26000 for half hard sheet and coil.

D. Stainless Steel: ASTM A167, Type 304 for plates, sheet, and strips.

E. Preformed Seals: ATM D2000 rubber extrusions.

F. Elastomeric Sealant: ASTM C920, Use T. Extrusions.

G. Seismic Seals: ASTM D2000 rubber extrusions.

H. Fire Barriers: Based on fire performance standards.

1.3 Finishes:

A. Aluminum Finish: Clear anodized.

061000 - ROUGH CARPENTRY

1.1 Dimension lumber.

A. Light Framing: Stud, No. 3 or standard grade.

B. Structural Framing: Select structural No. 1 grade.

C. Species: Any species of grade indicated.

D. Exposed Framing: Appearance grade.

1.2 Boards:

A. Exposed Boards: 15% moisture content.

B. Concealed Boards: 19% moisture content.

1.3 Miscellaneous Lumber:

A. Moisture Content: 19%.

B. Grade: Standard grade light framing.

1.4 Particleboard:

A. Underlayment: ANSI A208.1, grade 1-M-1, grade marked.

B. Sub flooring: ANSI A208.1, grade 2-M-W (waferboard) or Grade 2-M-3.

1.5 Gypsum Sheathing:

A. Material: Glass-fiber-surfaced-gypsum sheathing board.

B. Type: Type X fire-resistant ASTM C79.

1.6 Plastic Board Sheathing:

A. Material: Polyisocyanurate, FS HH-I-1972/1 for Class 2.

1.7 Lumber Standards and Grade Stamps: PS20, American Softwood Lumber Standard and inspection agency grade stamps.

1.8 Preservative Treatment: AWPA C2 for lumber and AWPA C9 for plywood; noncorrosive type.

1.9 Fire Retardant Treatment: AWPA C20 for lumber and AWPA C27 for plywood; non-corrosive type.

062000 - FINISH CARPENTRY

1.1 Interior Standing and Running Trim and Rails:

A. Species for Transparent Finish: Rift sawn red oak or comparable quality.

B. Grade: Premium.

1.2 Interior Wood Casework:

A. Species for Transparent Finish: Rift/sawn/cut red oak or comparable quality.

B. Grade: Premium.

C. Face Style: Flush

D. Frame Fabrication: Face Frame

E. Grain Matching: Vertical.

F. Veneer Matching of Leaves: End.

G. Veneer Matching in Panel Face: Slip.

1.3 Interior Laminate-Clad Casework:

A. Laminate: High pressure decorative laminate, NEMA LD-3.

B. Grade: Premium.

C. Face Style: Flush

D. Frame Fabrication: Face Frame.

1.4 Casework Hardware and Auxiliary Materials:

A. Hardware Standard: ANSI/BHMA A156.9.

B. Hardware Finish and Base Metal: Satin stainless steel.

C. Glass: Clear Tempered glass, ASTM C1048.

1.5 Interior Ornamental Items:

A. Species for Transparent Finish: Rift sawn red oak or comparable quality.

B. Grade: Premium.

066400 – WOOD PANELING

1.1 Flush Wood Paneling:

A. Species for Transparent Finish: Rift Sliced red oak or comparable quality.

B. Grade: Premium.

C. Core: Particleboard.

D. Veneer Matching of Leaves: End.

E. Veneer Matching in Panel Face: Balance.

F. Panel Matching Method: Premanufactured sets.

1.2 Factory Finishing:

A. Transparent Finish: Premium grade with stain with dull satin sheen.

B. Opaque Finish: Custom grade with bright rubbed semi-gloss sheen.

1.3 Fire-Retardant Treatment:

A. Lumber: AWPA C20, non-corrosive interior type.

B. Plywood: AWPA C27, non-corrosive interior type.

C. Particleboard: ASTM E84 flame spread 20 or less, smoke developed 25 or less.

071326 – SELF-ADHERING SHEET WATERPROOFING

1.1 Modified Bitumen Sheet Waterproofing: Modified bitumen sheets, 1/8" thick, tensile strength 1400 psi, ASTM D412.

1.2 Flashing Materials and Protection Board: Compatible with membrane waterproofing.

1.3 Drainage Fabric: Woven filter fabric glued to gridded plastic drainage mat.

071700 - BENTONITE WATERPROOFING

1.1 Bentonite Panels, Kraft Board Type: Kraft board panels 3/16" thick containing 1.0 pound per square foot of bentonite.

1.2 Granular Bentonite: Dust-free bentonite granules, packaged in moisture proof bags.

1.3 Plastic Bentonite: Hydrated bentonite gel, minimum 3/16" thick at surfaces and 3/8" thick at construction joints.

1.4 Protection Board: Compatible with bentonite waterproofing.

071113 - BITUMINOUS DAMPPROOFING

1.1 Hot Applied Coal-Tar Dampproofing:

A. Materials and Application: Coal tar primer, ASTM D43, and coal tar bitumen, ASTM D450, Type II or III; 2 coat, total 60 mils.

B. Protection Course: compatible with dampproofing.

071900 - WATER REPELLENTS

1.1 Water Repellents

A. Appearance: Clear, non-gloss, non-yellowing.

B. Vapor Transmission: Breathing type, non vapor barrier.

C. Penetrating Sealers (not visible): Solvent-based siloxane.

D. Application Rate: Suitable for substrate and project conditions.

072700 - AIR BARRIERS

1.1 Sheet Materials.

A. Sheet Barrier, Type 1: Black polyethylene film for above grade application, 10 mil.

B. Sheet Barrier, Type 2: Black polyethylene film reinforced with glass fiber square mesh.

1.2 Sealants

A. Butyl Sealant, Type A: FS TT-S-001657, butyl rubber base, single component, solvent release, non-skidding, shore "A" hardness range of 10 to 30; black color.

B. Polysulphide Sealant, Type B: FS TT-S-00230, Type II Class A; single component, chemical curing, capable of continuous water immersion, non-sagging type, black color.

072100 - THERMAL INSULATION

1.1 Board Insulation:

A. Type: Extruded polystyrene ASTM C578 compressive strength minimum 25 psi, water absorption per ANSI/ASTM D2842, 0.15 percent.

B. Vapor Retarder: Integral vapor retarder as required for application.

1.2 Blanket/Batt Insulation:

A. Type: Glass fiber or mineral slag fiber, ASTM C665, Type I (unfaced).

B. Type: Glass fiber or mineral slag fiber, ASTM C665, Type III (foil-scrim-kraft vapor-retarder membrane).

1.3 Acoustical Insulation:

A. FS-HH-I-521, preformed mineral wool friction fit, thickness and density as required, for STC rating.

1.4 Loose Fill Insualtion:

A. Type: Loose granular vermiculite, ASTM C516, Type II.

1.5 Vapor Retarder (not integral with insulation).

A. Type: Reinforced 2-ply polyethylene, 6 to 8 mils.

078100 – APPLIED FIREPROOFING

1.1 Concealed Sprayed-On Fireproofing:

A. Type: Cellulose Insulation, 2 pounds per cubic foot dry density, ASTM D1622.

B. Auxiliary Materials: Primers, adhesive, lath, and reinforcing fabric.

1.2 Exposed Sprayed-On Fireproofing:

A. Type: High density cementitious fireproofing, cement-aggregate or mineral-fiber formulation.

B. Auxiliary Materials: Primers, adhesive, lath, and reinforcing fabric.

C. Sealer for Mineral-Fiber Fireproofing: Clear-drying protective coating for non-dusting applications.

1.3 Mineral Fiber Board Fireproofing:

A. Type: Semi-refactory fiber board, faced.

B. Auxiliary Materials: Anchorage assemblies required for fire rating and attachment.

078446 – FIRE-RESISTIVE JOINT SYSTEMS

1.1 Through-Penetration Firestopping of Fire-Rated Construction:

A. Systems or devices listed in the U.L. Fire Resistance Directory under categories XHCR and XHEZ may be used, providing that it conforms to the construction type, penetrant type, annular space requirements and fire rating involved in each separate instance, and that the system be symmetrical for wall applications. Systems or devices must be asbestos free.

1. Additional Requirements: Withstand the passage of cold smoke either as an inherent property of the system, or by the use of a separate product included as a part of the U.L. system or device, and designed to perform this function.
2. Acceptable manufacturers and products.
    a. Those listed in the U.L. Fire Resistance Directory for the U.L. system involved.
3. All Firestopping products must be from a single manufacturer.
    a. All trades shall use products from the same manufacturer.

1.2 Construction-Gap Firestopping of Fire-Rated Construction.

A. Firestopping at construction gaps between edges of floor slabs and exterior wall construction.

B. Firestopping at construction gaps between tops of partitions and underside of structural system.

C. Firestopping at construction gaps between tops of partitions and underside of ceiling or ceiling assembly.

D. Firestopping of control joints in fire-rated masonry partitions.

E. Firestopping expansion joints.

F. Acceptable manufacturers and products: Those listed in the U.L. Fire Resistance Directory for the U.L. system involved.

1.3 Smoke Stopping at Smoke Partitions:

A. Through-Penetration Smoke Stopping: Any system complying with the requirements for through-penetration firestopping in fire rated construction, as specified in this , is acceptable, provided that the system includes the specified smoke seal or will provide a smoke seal. The length of time of the fire resistance may be disregarded.

B. Construction Gap Smoke Stopping: Any system complying with the requirements for construction gap firestopping in fire rated construction, as specified in this , is acceptable, provided that the system includes the specified smoke seal or will provide a smoke seal. The length of time of the fire resistance may be disregarded.

1.4 Materials:

A. Firestopping Material: Single or multiple component silicone elastomeric rubber type foam compound, formulated compound mixed with incombustible non-asbestos ceramic fibers.

B. Primer: Type recommended by firestopping manufacturers for specific substrate surfaces.

074113 - METAL ROOF PANELS

1.1 Manufactured Roof Panels:

A. Sheet Materials: Aluminum-zinc alloy coated steel sheet, ASTM A792, with Class AZ-50 coating, 24 gauge.

B. Panel Core: Polyisocyanurate board insulation.

C. Finish: Fluoropolymer, Kynar 500.

1.2 Panel Supports and Anchorage:

A. Roof Purlin: C or Z shaped s, 16 gauge steel, shop painted.

B. Eave Struts: C shaped s, 16 gauge steel, shop painted.

C. Flange and Sag Bracing: 16 gauge steel, shop painted.

D. Base and Sill Angles: 14 gauge galvanized steel.

E. Secondary Structural Members: 14 gauge galvanized steel.

075116 - BUILD-UP COAL TAR ROOFING

1.1 Built-Up Coal Tar Roofing:

A. Type: Inverted roof membrane, 4 ply, 20 year warranty.

B. Felt: Asphalt/glass-fiber felts.

C. Deck Type: Insulated deck.

1.2 Auxiliary Materials:

A. Vapor Retarder: Bituminous vapor retarder.

B. Insulation: Polyisocyanruate foam board.

C. Surfacing Aggregate: Crushed stone.

D. Walkway Protection Boards: Compatible with system.

E. Sheet Metal Accessories: SMACNA and NRCA recommendations.

076200- SHEET METAL FLASHING AND TRIM

1.1 Sheet Metal Flashing and Trim:

A. Lead Coated Copper: ASTM B370, 16 ounces per square foot.

1.2 Fabricated Units: Compliance with SMACNA Architectural Sheet Metal Manual.

077200 - ROOF ACCESSORIES

1.1 Roof Hatches:

A. Lid: Insulated metal lid.

B. Framing: Zinc-coated steel.

C. Curb Type: Insulated double wall curb.

D. Size 2'-6" x 5'-0".

1.2 Vertical- Type Gravity Ventilators:

A. Type: Curb-mounted vertical-type gravity ventilators.

B. Materials: Sheet Aluminum.

C. Dampers: Manual operation.

D. Screens: Insect screens.

1.3 Curb and Equipment Support Units:

A. Type: Designed for roof type and equipment.

B. Materials: Steel, 14 gauge, baked enamel finish.

1.4 Curb-Set Roof Expansion Joints:

A. Type: Prefabricated expansion joints for installation on raised curbs.

B. Materials: Extruded aluminum with waterproof bellows.

077100 - ROOF SPECIALTIES

1.1 Fascia Systems:

A. Type: Standard modular panels, trim, closure strips, and accessories.

B. Materials: Extruded aluminum panels, 0.050" thick.

1.2 Fascia and Gravel Stops: Aluminum sheet, 0.050" thick interlocking with 26 gauge formed zinc-coated steel water dam/hold down clip, compression clamp, compression pad, and expansion covers.

1.3 Metal Fascia Panel Support Systems: Horizontal girts and vertical framing members sized for required wind pressure loading.

1.4 Aluminum Copings: Interlocking multi-part coping system, 0.50" thick aluminum sheet, 24 gauge zinc-coated steel anchor plate, and formed aluminum gutter.

1.5 Elastic Roof Expansion Joint Covers: Metal flanged elastic-sheet bellows-type joint system, membrane, and metal flanges compatible with substrate.

1.6 Finishes:

A. Aluminum Finish: Fluoropolymer, Kynar 500 or equivalent.

B. Application: Factory-applied.

079200 - JOINT SEALANTS

1.1 Silicone Elastomeric Joint Sealants:

A. Type and Applications: One-part nonacid-curing silicone sealant, ASTM C920, for vertical and horizontal joints, modules as required for application, exterior and interior use.

1.2 Polysulfide Elastomeric Joint Sealants:

A. Type and Application: Two-part non-sag polysulfide sealant, ASTM C920, for vertical joints, exterior and interior.

1.3 Compression Seals:

A. Type: preformed hollow neoprene gasket, ASTM D2628.

B. Application: Wide exterior joints in vertical surfaces.

1.4 Fire-Resistive Joint Sealers:

A. Type: Foamed-in-place fire-stopping sealants.

B. Application: Penetrations in fire-rated floor and wall assemblies.

1.5 Specialty Sealants:

A. Type of Application: Synthetic rubber acoustical sealant at concealed joints.

1.6 Paving Joint Fillers:

A. Type: Bituminous fiber.

B. Application: Filler for exterior paving joints.

081113 - HOLLOW METAL DOORS AND FRAMES

1.1 Steel Doors:

A. Door Type: Flush steel doors with hollow or composite construction.

B. Interior Doors: ANSI/SDI-100, Grade II, heavy-duty, minimum 16 gauge cold-rolled steel, 1 ¾" thick.

C. Exterior Doors: ANSI/SDI-100, Grade III, extra-heavy-duty, minimum 16 gauge galvanized sheet steel, 1 ¾" thick insulated core.

D. Accessories: Sight-proof stationary louvers and glazing stops.

E. Finish: Factory primed and field painted.

1.2 Steel Frames:

A. Interior Frames: Welded type, 16-gauge sheet steel, mitered or coped corners.

B. Exterior Frames: Welded type, 16 gauge galvanized sheet steel, mitered or coped corners.

C. Accessories: Door silencers and plaster guards.

D. Finish: Factory primed and field painted.

081416 - FLUSH WOOD DOORS

1.1 Interior Solid Core Doors:

A. Grade: Premium grade.

B. Construction: 5-ply or 7-ply construction with particleboard or glued-block core.

C. Finish: Satin as selected and transparent finish on rift-cut red oak (or comparable quality) faces, factory or field applied.

083113 - ACCESS DOORS AND FRAMES

1.1 Access Doors:

A. Frames: 16-gauge sheet steel with flange suitable for adjacent material.

B. Doors: 14-gauge sheet steel.

C. Door Type: Recessed panel to accept ceiling finish material.

D. Locking Devices: Cylinder locks.

E. Provide access doors for fire rated assembly as required.

083323 - OVERHEAD COILING DOORS AND GRILLES

1.1 Overhead Coiling Doors:

A. Type: Insulated standard service door.

B. Door Curtain: Galvanized steel.

C. Slat Profile: S-configuration.

D. Operation: Electric door operator - 3 button.

E. Steel Finish: Galvanized finish with field applied paint.

F. Fire Rated Assemblies: NFPA-80.

083613 - SECTIONAL DOORS

1.1 Sheet Steel: ANSI/ASTM A526 galvanized to 1.25 oz/sq ft., roll formed with v-groove for ribbed effect.

1.2 Metal Primer Paint: Zinc chromate type.

1.3 Insulation: polyurethane; same thickness as core framing members, bonded to facing.

1.4 Glazing: Wire glass or Polycarbonate, ¼ inch thick.

1.5 Weatherstripping: Resilient neoprene strip.

1.6 Panels: Flush steel construction; outer steel sheet of .016 thick, v-grooved profile; inner steel sheet of .016 gage thick, flat profile.

1.7 Glazed Lights: Glazing for multiple glazed lights per door; set in place with resilient glazing channel.

1.8 Track: 13 gauge thick; inch wide rolled high rise steel track, continuous, vertical mounted; galvanized steel mounting brackets.

1.9 Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel.

1.10 Safety Edge: At bottom of door panel, full width, pneumatic sensitized type, wired to reverse door upon striking object; hollow neoprene covered to weatherstrip seal.

1.11 Jamb Weatherstripping: Formed metal retainer fitted full height of jamb with integral resilient weatherstripping in moderate contact with door panels.

1.12 Lift Mechanism: Torsion spring on cross head shaft, with braided steel life cables.

1.13 Electric Operator: NEMA Type 1 motor, side mounted on cross head shaft, adjustable safety friction clutch, gear driven limit switch, magnetic cross line reversing starter, mounting brackets and hardware.

1.14 Control Station: Standard three button open-close-stop type, separate control for each electric operator, surface mounted.

1.15 Steel: Manufacurer's standard paint.

084113 - ALUMINUM ENTRANCES AND STORE FRONTS

1.1 Aluminum Entrances and Storefront:

A. Door Style: Narrow stile and rail doors.

B. Aluminum Members: ASTM B221, B209 and B211.

C. Steel Reinforcement: ASTM A36, ASTM A611, and ASTM A570.

D. Glass and Glazing: Insulating glazing.

E. Glazing Color: type and color to match windows.

F. Door Hanging Devices: Center pivot sets.

G. Closers: Concealed, head mounted.

H. Closer Operation: Singe acting closers.

I. Aluminum finish: Fluropolymer, Kynar 500, 2-coat system.

084126 – ALL-GLASS ENTRANCES AND STOREFRONTS

1.1 All Glass Entrances:

A. Glass: Tempered safety glass, ASTM C1048, kind FT.

B. Glass Color: Clear.

C. Door Fittings: Stainless steel cladding, ASTM A167, alloy 302 laminated to aluminum extrusions.

D. Hardware: Concealed closers, push-pull sets, lock.

E. Threshold: Matching door fittings.

F. Stainless Steel finish: AISI No. 7, high-reflective, directional polish.

G. Accessory fittings for overhead door stop, transom bracket, sidelight fittings.

H. Electric-strike release.

I. Exit devices.

J. Deadbolts.

084229 - AUTOMATIC ENTRANCES

1.1 Automatic Entrance Doors:

A. Door Operation: One-way swing or sliding doors.

B. Door Style: Narrow stile and rail doors.

C. Door Control: Push button automatic control.

D. Operator: Hydraulic operator.

E. Aluminum Members: ASTM B221, B209 and B211.

F. Steel Reinforcement: ASTM A36, ASTM A611, and ASTM A570.

G. Glass and Glazing: Insulating glazing.

H. Glazing Color: To match windows.

I. Closers: Concealed mounting.

J. Aluminum Finish: Fluropolymer, Kynar 500, 2 coat.

K. Guide rails.

L. Push/pulls; doorstops and deadlocks.

M. Weatherstripping and thresholds.

08520 - ALUMINUM WINDOWS

1.1 Materials.

A. Extruded aluminum: ANSI/ASTM B221; 6063-T5 aluminum alloy.

B. Sheet Aluminum: ASTM B209; aluminum alloy.

C. Steel s: ANSI/ASTM A36; shapes to suit mullion s.

D. Touch-Up Primer for Galvanized Surfaces: FS TT-P-641.

1.2 Fabricated Components

A. Frames: thickness as noted on drawings; thermally broken with interior portion of frame insulated from exterior portion, flush applied glass stops of snap-on type.

B. Sills: 125” thick, extruded aluminum; sloped for positive wash; slope depth for under sash leg to ½” beyond wall face; one piece full width of opening; jamb angles to terminate sill length.

C. Fasteners: Stainless steel.

087100 - DOOR HARDWARE

1.1 Door Hardware:

A. Quality Level: Heavy duty commercial type.

B. Locksets and Latchsets: Mortise type, heavy duty lever handle.

C. Lock cylinders shall be type: Best Lock Corporation "9K Varsity Series."

D. Keying: Owner's requirements keying and key control system, with master and grand master keying.

E. Hinges and butts: Full-mortise type with non-removable pins at exterior doors.

F. Closers, Door Control, and Exit Devices: High frequency and barrier-free type.

G. Pivots: Offset or center-hung type.

H. Push/Pull Units: Through-bolted type.

I. Hardware Finishes: Polished stainless finish on exposed surfaces.

J. Door Trim Units: Kickplates, edge trim, and related trim.

K. Stops and overhead door holders.

L. Sound stripping.

M. Weatherstripping and thresholds.

N. Electromagnetic hold-open devices.

O. Card-operated opening devices.

P. Push button operators.

087113 – AUTOMATIC DOOR OPERATORS

1.1 Power Door Operators:

A. Power Units: One-way sliding type.

B. Operator: Electromechanical operator.

C. Automatic Door Control: Push button automatic controls.

D. Manual Door Control: Rail-supported switch.

E. Guide rails.

F. Wall push-plate switch.

088000 - GLAZING

1.1 Glass:

A. Primary Glass Products: Clear float and tinted float glass, ASTM C1036.

B. Heat-Treated Glass Products: Heat-strengthened, tempered, coated, and spandrel glass, ASTM C1048.

C. Laminated Glass Units: Polyvinyl butyl interlayer.

D. Sealed Insulating Glass Units: ATM E774, Class A, low "E."

E. High-Performance Coatings: Low E (low emissivity) type.

F. Mirrors: Silvering and protective coatings.

1.2 Glazing Schedule:

A. Storefront: 1" thick insulating unit, low E glass to match windows.

B. Entrances: 5/8" thick insulating unit, low "E" tempered glass.

C. Curtain Wall: 1" thick insulating unit, tinted glass or reflective coating on second or third surface, low "E."

D. Handrails: ½" tempered safety glass (non-structural).

E. Mirror: ¼" plate glass.

F. Doors: Tempered or wire glass.

G. Security Glazing: Laminated glass.

084413 - GLAZED ALUMINUM CURTAIN WALLS

1.1 Glazed Aluminum Curtain Walls:

A. Primary Components: Extruded aluminum framing, internal reinforcement, insulated spandrel panels, trim, and filler units, sealants, and gaskets.

B. Glazing: Insulating glass.

C. Glazing Color: Tinted or reflective glass, low "E."

D. Construction: thermal break type.

E. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or galvanized steel.

F. Aluminum Finish: Fluropolymer, Kynar 500, 2 coat for exterior and interior.

084423 - STRUCTURAL SEALANT GLAZED CURTAIN WALLS

1.1 Structural Sealant Glazed Curtain Walls:

A. Primary Components: Extruded aluminum framing, internal reinforcement, insulated spandrel panels, trim, and filler units, sealants, and gaskets.

B. Glazing: Insulating glass.

C. Glazing Color: Tinted or reflective glass, low "E."

D. Construction: Thermal-break type.

E. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or galvanized steel.

F. Aluminum Finish: Fluoropolymer, Kynar 500, 2-coat for exterior. Fluropolymer, Kynar 500, 2-coat or baked enamel for interior.

092300 – GYPSUM PLASTERING

1.1 Portland Cement Plaster:

A. Application: 3 coats over metal lath, 3 coats over concrete unit masonry and 2 coats over concrete unit masonry type.

B. Base and Finish Coat Cements: Portland cement, ASTM C150, Type I or II.

C. Finish Coat: Job-mixed finish coat.

D. Finish: Floated finish.

1.2 Lath and Plaster Support Systems:

A. Metal Supports for Suspended and Furred Ceilings: ASTM C1063, for portland cement plaster installations.

B. Steel Studs and Runners, Non-Load (Axial) Bearing: ASTM C645, 20 gauge steel studs, 2 ½ and 3 5/8" typical depth.

C. Vertical Metal Furring: Channel furring and braces, Z-furring members, and furring brackets.

D. Expanded Metal Lath: ASTM C847, self-furring diamond mesh or rib lath.

092613 – GYPSUM VENEER PLASTERING

1.1 Gypsum Base for Veneer Plaster:

A. ASTM C588, regular, foil-backed, and fire-rated types, 5/8" typical thickness.

B. Installation Standard: ASTM C844.

1.2 Veneer Plaster:

A. Type: ASTM C587, one-component veneer plaster, regular type.

B. Joint Reinforcing Materials: ASTM C587.

C. Installation Standard: ASTM C843.

09250 - GYPSUM DRYWALL

1.1 Metal Framing Members:

A. Steel studs and runners, 3-5/8" unless otherwise noted, channel-type, 20 gage corrosion resistant steel, spaced at 16-inches on center.

B. Pre-manufactured deflection track at walls extending to the underside of floor or roof decks.

1.2 Gypsum Board:

A. Gypsum Wallboard: ASTM C36, regular, foil-backed, and fire-rated types, 5/8" typical thickness, screw attached.

B. Water-Resistant Gypsum Backing Board: ASTM C630, regular and fire-rated types 5/8" typical thickness.

C. Joint Treatment: ASTM C475 and ASTM C840.

D. Installation Standard: ASTM C840, Level 5 Finish.

1.3 Cementitious Backer Units:

A. Type: ANSI A108.1, cement-coated portland cement panels.

B. Thickness: 5/8" nominal.

1.4 Trim Accessories:

A. Material: Metal or plastic trim.

B. Types: Cornerbead, edge trim, and control joints.

09270 - GYPSUM BOARD SHAFT WALL SYSTEMS

1.1 Cavity Shaft Wall Assemblies:

A. Shaft wall Board Thickness: Not less than 1".

B. Studs: C-H or double E type studs, not less than 20 gauge.

1.2 Gypsum Board Shaft Wall Materials:

A. Steel Framing: ASTM C645.

B. Gypsum Shaft wall Board: ASTM C442, Type X.

C. Gypsum Wallboard: ASTM C36, Type X.

D. Gypsum Wallboard Joint Treatment Materials: ASTM C475 and ASTM C840.

E. Studs and Tracks: ANSI/ASTM C645 galvanized sheet steel, 25 gauge "C" shape.

09300 - TILE

1.1 Interior Tile:

A. Wall tile over gypsum wallboard.

B. Wall tile over tile backer board at wet areas.

C. Floor tile over concrete slab.

1.2 Tile Materials: ANSI 118 series standard specifications.

1.3 Tile Installation: ANSI 108 series standard specifications and Tile Council of America, Handbook for Ceramic Tile Installation.

1.4 Unglazed Ceramic Mosaic Tile:

A. Type: Porcelain factory-mounted flat tile with abrasive admixture.

B. Size 2" x 2" minimum.

C. Thickness: ¼" nominal.

D. Face: patterned face with cushion edges.

1.5 Glazed Ceramic Mosaic Wall Tile:

A. Type: Interior type body, flat tile.

B. Face: 2" x 2: minimum.

C. Thickness: ¼" nominal thickness.

D. Face: Plain face with cushion edge.

1.6 Tile Schedule:

A. Toilet Room Walls: Glazed ceramic mosaic tile over gypsum drywall with organic adhesive and latex-Portland cement grout.

B. Toilet Room Floors: Unglazed ceramic mosaic tile over concrete slab with latex portland cement mortar and latex-portland cement grout.

09331 - QUARRY TILE FLOOR FINISH

1.1 Tile Materials

A. Quarry Tile: ANSI/TCA A137.1, conforming to the following:

1. Moisture Absorption: 0 to 0.5
2. Size: 6 x 6 x ½”
3. Edge: Square
4. Surface Finish: Non-slip
5. Color: As selected

B. Quarry Paver Tile: ANSI/TCA A137.1, conforming to the following:

1. Moisture Absorption; 0 to 0.5
2. Size: 6 x 6 x ½”
3. Edge: Square
4. Surface Finish: Non-slip
5. Color: As selected

C. Base: Match quarry or quarry paver tile for moisture absorption, surface finish, and color, conforming to the following:

1. Length: 6”
2. Height: 4”
3. Top Edge: Bullnosed
4. Internal Corner: Coved

1.2 Adhesive Materials

A. Epoxy Adhesive: ANSI/TCA A118.3, ANSI/TEC A108.6; thinset bond type.

1.3 Mortar Materials

A. Mortar Materials: ANSI/TCA A118.1, ANSI/TCA A118.3; Portland cement, sand, later additive, and water.

B. Color Admixture: Color as selected.

1.4 Grout Materials

A. Grout: Cementitious type, resistant to shrinking.

096600 – TERRAZZO FLOORING

1.1 Materials

A. Epoxy Binder: Two component resin and epoxy hardener, non-volatile, thermo-setting, mineral filler, and color pigment.

B. Polyacrylate Binder: Resinous composition, non-volatile, for modifying cement, containing color pigment.

C. Polyester Binder: Two component resin and hardener, thermo-setting, mineral filler, and color pigment.

D. Portland Cement: ASTM C150, Type 1; color as selected; modified to NTMA higher compressive strength requirements.

E. Surface Aggregate: Crushed marble or granite, No. 0-1 size in accordance with NTMA chip size for standard gradation, uniform coloration.

F. Non-Slip Aggregate: Aluminum oxide of size and color to match surface aggregate chips.

G. Divider Strips: Zinc top strip; zinc coated steel bottom strip; neoprene filler strip between side strips, with anchoring features.

H. Control Joint Strips: Zinc top strips; zinc coated steel bottom strip; neoprene filler strip between side strips, with anchoring features.

I. Strip Height: To suit thickness of terrazzo topping, with allowance for grinding.

J. Base Caps, Base Divider Strips, and Separator Strips: Match divider strips with projecting base.

K. Non-Slip Inserts: Zinc or Brass, 20 gauge dovetail shaped channels, with anchors, filled with aluminum oxide non-slip filler.

L. Cleaner: Neutralizing liquid type, pH of 7.

M. Sealer: Colorless, penetrating liquid type to completely seal matrix surface; not detrimental to terrazzo components.

N. Wax: Colorless, liquid type.

O. Subfloor Filler: Latex type.

P. Mixes

1. Topping: three parts aggregate chip; one part aggregate dust; one part matrix binder and hardener.

Q. Floor Colors

1. Matrix Binder: Color as selected.
2. Surface Aggregate: NTMA.

R. Base and Border Colors

1. Matrix Binder: Color as selected.
2. Surface Aggregate: NTMA

S. Stair Tread, Landing, and Stringer Colors

1. Matrix Binder: Color as selected.
2. Surface Aggregate: NTMA.

09512 - ACOUSTICAL TILE CEILINGS

1.1 Mineral Base Panels, Water Felted: Equal to Beveled Teglar Cirrus as manufactured by Armstrong Contract Interiors.

A. Type, form and Finish: ASTM E1264, Type III, form 2 with painted finish.

B. Pattern and Sound Transmission Class: Perforated and fissured pattern with NRX of .55 to .65 or greater.

C. Edge Detail: Beveled, kerfed and rabbeted joints.

D. Size: 24 by 24 by ¾".

1.2 Ceiling Suspension Systems, Non-Fire-Resistance Rated: Equal to Silhouette 9/16" bolt slot system, grid face flush with panel (1/4" "T"-bolt recess), with mitered corner for trim grid interface, as manufactured by Armstrong Contract Interiors, or equal.

A. Type: Direct hung double-web intermediate-duty system, ASTM C635.

B. Suspension System Accessories: Attachment devices and hangers, ASTM C635.

095423 - LINEAR METAL CEILING

1.1 Materials

A. Steel Sheet: ANSI/ASTM A446, Grade A, galvanized with 1.25 oz/sq ft coating with surface paint finish.

B. Aluminum Sheet: ASTM B209, with surface paint finish.

C. Aluminum Extrusions: ASNI/ASTM B221, mill finish.

D. Insulation: FS HH-I-521 preformed mineral wool, with black plastic facing.

E. Suspension Wire: Steel, annealed, galvanized finish, 9 gauge diameter.

1.2 Components

A. Linear Panels: Channel shaped 1 x 3 inch bullnosed edges; of equal lengths.

B. Suspension Members: formed steel or aluminum s, with integral attachment points; galvanized finish.

C. Internal and External Corners: Of same material, thickness, and finish as exposed members; of profile to match system; preformed to required angles. Back brace internal corners.

D. Space Closures: Recessed: extruded vinyl s, snap fit between exposed members.

E. Expansion Joints: Of same material, thickness, and finish as exposed members.

F. End Caps: Formed metal, of same color and finish as exposed members.

G. Edge Molding: Of same material, profile, and color as exposed members.

H. Splices: Of same material, profile, and color as exposed members.

I. Accessories: As required to complete the system; color and finish of exposed to view surfaces, same as system.

1.3 Finishes

A. Exposed Surface Finish: Enamel finish of color from manufacturer's standard range.

09650 - RESILIENT FLOORING AND ACCESSORIES

1.1 Tile Flooring:

A. Vinyl Composition Tile: ASTM F1066, composition 1, non-asbestos formulated, Class 2, 12" by 12" by 1/8" thick.

B. Wall Base: Vinyl wall base 4" height, 1/8" thick. Provide cove base at vinyl composition tile locations and straight base at carpet locations.

C. Resilient stair treads, risers, and skirting: Vinyl or rubber.

D. Edge strips and terminations: Vinyl.

09680 - CARPET

1.1 Specify material and products that contribute to meeting the requirements of LEED-NC 2.2; MR credits 4 and 5; and EQc5.

1.2 The State of Michigan has awarded the supply and installation of the specified carpet to a single manufacturer and installer through a predetermined bidding process. It is to be clarified in the RFP if the carpet described within this specification, referred to as "standard carpet", is to be supplied and installed per this predetermined pricing or if it may be supplied and installed by other manufactures and installers.

A. Any upgraded carpeting noted on the finish schedule and or the building program statement are not included as part of this predetermined bidding process.

B. All costs for the supply and installation of carpeting is to be included as part of the contract.

1.3 Carpet Materials Manufacturer/Subcontractor:

A. Carpet Manufacturer: Tandus, C & A

B. Primary Contact: Elyse Gardner, Account Executive

Tandus USLLC
32720 West Haverford
Franklin MI 48025
Email: egardner@tandus.com
Cell: 248-346-8733
Fax: 866-708-9375
Voice Mail: 800-241-4902, Ext 1461

C. Installation & Secondary Contact: Chris Ruehle

State Contract Coordinator & Project Manager
Lansing Tile & Mosiac, Inc.
2210 Appolo Drive
Lansing MI 48906
Email: Chris.Ruehle@lansingtile.com
Tel: 517-321-5307
Fax: 517-321-5461

1.4 Carpet Product Description (Office Statndrard Field Carpet) Field carpet for standard orders are available in limited color selections as follows:

18215 – Granola
18206 –Carpenter
18210 – Malberry
18209 – Blue Velvet
18216 – Green house
18208 – Spectrum
18204 - Mermaid

A. Manufacturer: Tandus, C & A, "Runway" , 03164
24" x 24"
B. Surface Texture: Level Loop
C. Yarn content: Antron Legacy® Nylon
D. Dye Method: 50% Solution Dyed/50% Yarn Dyed
E. Machine Gauge: 1/13 (50.4 rows/cm)
F. Stiches Per Inch: 8.3 (32.7pu/10 cm)
G. Baking Construction: Conserv Modular Tile. Also available in ER3® Modular Tile
H. Total Product Weight NonRS: 97.2 oz/sq yd, +/- 5%
I. Installation Method: Monolithic
J. Recyled Content: 100% recyclable
K. Flame Resistance: Radiant flooring Panel Clss I ASTM E-648
Surface Flammability Passes CPSC FF 1-70
L. Indoor Air Quality: All C&A products comply with CRI Green Label Plus Standards

1.4 Carpet Product Description (Office Standard Field Carpet) Field carpet for quick ship orders are available in limited color selections as follows:

12032 – El Nino
12026 – Salt & Peper

L. Manufacturer: Tandus, C & A, "Sentinel", 02409
18" x 18"
M. Surface Texture: Textured Loop
N. Yarn content: Antron Lumena® Solution Dyed Nylon
O. Dye Method: Solution Dyed
P. Pile Height Average: 0.117" (3.0 mm)
Q. Machine Gauge: 1/13 (50.4 rows/10cm)
R. Stiches Per Inch: 8.8 (34.6 pu/10 cm)
S. Baking Construction: ER3® Modular Tile, ER3 RS® Modular Tile
T. Total Product Weight: RS NonRS: 130.5 (128.9) oz/sq yd, +/- 5%, 4424 (4088) g/sq m)
U. Recyled Content: Contains between 30-50% overall recycled content including a

minimum of 10% pst consumer carpet. Exact percentages vary by style.

V. Flame Resistance: Radiant flooring Panel Clss I ASTM E-648
Surface Flammability Passes CPSC FF 1-70

L. Indoor Air Quality: All C&A products comply with CRI Green Label Plus Standards

1.5 Carpet Product Description (Office Upgrade Carpet)

A. Manufacturer: Tandus, C & A, "Plexus Accents II"
B. Construction: SYMTEX
C. Gauge: 1/10 (39.4/10 cm)
D. Pile Units: 11.0/in. (43.3/10cm)
E. Pile Height: 0.218 in. (5.5mm) per ASTEM D-418, Section 12
F. Pile Thickness: 0.121 in. (3.1 mm) per ASTM D0418, Section 10
G. Cushion Roll Goods (RS), Total Weight: 97.2 oz/sy (3295 g/m²)
H. ER3® RS Tile, Total Weight: 146.7 oz/sy (4973 g/m²)
I. Fiber Content: DuPont Antron® Legacy Nyoln (100% type 6.6 nylon)
J. Dye Method: Piece Dyed
K. Static Control: Permanent Conductive Fiber
L. Recycled Content: ER3® backing system or cushion backing

09900 - PAINTING

1.1 Products:

A. First-line commercial-quality products for all coating systems.

1.2 Exterior Paint Schedule:

A. Concrete, stucco, and Masonry (except concrete masonry units) to Receive Lusterless Acrylic Latex Finish: 2 coats exterior polyvinyl acetate emulsion.
B. Concrete Masonry Units to Receive Lusterless Acrylic Finish: 1 coat latex block filler, 2 coats exterior acrylic emulsion.
C. Ferrous Metal to Receive Full-Gloss Alkyd Enamel Finish: 1 coat synthetic rust-inhibiting primer, 2 coats alkyd gloss enamel.
D. Zinc-Coated Metal to Receive High-Gloss Alkyd Enamel Finish: 1 coat galvanized metal primer, 2 coats alkyd gloss enamel.

1.3 Interior Paint Schedule:

A. Concrete and Masonry (except concrete masonry units) to Receive Lusterless Latex Finish: 2 coats latex-based interior flat paint.

B. Concrete Masonry Units to Receive Semi-gloss Alkyd Enamel Finish: 1 coat high-performance latex block filler, 1 coat interior enamel undercoat, 1 coat interior semi-gloss odorless alkyd enamel.

C. Gypsum Drywall to Receive Lusterless Emulsion Finish (ceilings): 1 coat latex-based interior primer, 1 coat latex-based interior flat paint.

D. Gypsum Drywall to Receive Semi-gloss Alkyd Enamel Finish (walls): 1 coat interior latex-based primer, 2 coats interior semi-gloss odorless alkyd enamel.

E. Gypsum Drywall to Receive Primer Only (at areas to receive wall covering): 1 coat interior latex-based primer.

F. Plaster to Receive Lusterless Latex Finish: 1 coat latex-based interior flat pain, 1 coat interior flat odorless alkyd paint.

G. Woodwork and Hardboard to Receive Full-Gloss Enamel Finish: 1 coat interior enamel undercoat, 2 coats alkyd gloss enamel.

H. Stained Woodwork to Receive Stained-Varnish Rubbed Finish: 1 coat oil-type interior wood stain, 1 coat cut shellac. 1 application paste wood filler, 2 coats oil rubbing varnish.

I. Ferrous Metal to Receive Full-Gloss Enamel Finish: 1 coat synthetic Rust-inhibiting primer, 1 coat interior enamel undercoat, 1 coat exterior alkyd gloss enamel.

J. Zinc Coated Metal to Receive Full-Gloss Enamel Finish: 1 coat galvanized metal primer, 1 coat interior enamel undercoat, 1 coat exterior alkyd gloss enamel.

09950 - WALL COVERINGS

1.1 Vinyl Wall Covering:

A. Type: FS CCC-W-408 Type II medium duty in offices and Type III heavy-duty wall covering in all other places.

B. Stain Resistance: Factory applied polyvinyl fluoride or polymer coating.

1.2 Wall Covering Schedule:

A. Patterns: Stipples, fabrics or woven in color selected.

10100 - VISUAL DISPLAY BOARDS

1.1 Markerboards:

A. Materials: Porcelain enamel face for liquid-type markers, core material, and backing.

B. Operation: Hinged conference units.

C. Trim: Wood frame and tray.

10155 - TOILET COMPARTMENTS

1.1 Type:

A. Toilet compartment shall be ceiling hung, with non-corrosive doors, panels and pilasters similar and equal to Poly-Mar HD®, or Poly-Granite HD® compartments.

B. Panels, doors, and pilasters shall be fabricated from High Density Polyethylene (HDPE) containing a minimum of 10% recycled material manufactured under high pressure forming a single component which is waterproof, nonabsorbent, and has a self-lubricating surface that resists marking with pens; pencils, or other writing utensils. All panels, doors and pilasters to arrive at job site with special protective plastic covering.

1.2 Characteristics

A. Dual component compression molded High Density Polethylene (HDPE) of solid Poly-Mar HD® virgin resin materials in colors that extend throughout the surface; the panels, doors, and pilasters shall have combined recycled and/or virgin material (HDPE) as the core material.

B. Doors, panels, and pilasters shall be a minimum of 1" thick and all edges machined to a radius of .250" and all exposed surfaces to be free of saw marks.

1.3 Fabrication

A. Dividing panels shall be 55" high and mounted at 14" above finished floor.

B. Doors shall be 55" and mounted at 14" above finished floor.

C. Pilasters shall extend from the finished ceiling to a point 14" above the finished floor. (Maximum length not to exceed 9'-0".)

D. Finish of doors, panels, and pilasters shall be similar and equal to Santana Products, Inc. "Plastic-Glaze 280" color of doors, panels, and pilasters to be selected from the standard Poly-Mar HD®, Poly-Marble HD®, or Poly-Granite color range.

E. Aluminum edging strips to be fastened to the bottom edge of all doors and panels using vandal-proof stainless steel fasteners.

F. Color to be selected from full range of manufacturer's products.

G. Coat hooks on inside of each door.

10200 - LOUVER AND VENTS

1.1 Aluminum Louvers:

A. Aluminum Extrusions: ASTM B221, alloy 6063-T5 or T52.

B. Blade Type: Horizontal drainable sight proof blades.

C. Finish: Flouropolymer, Kynar 500 or equal.

1.2 Louver Accessories:

A. Bird screens.

B. Insect screens.

1.3 Wall Vents:

A. Material: Extruded aluminum.

B. Blade Type: Adjustable

096900 - ACCESS FLOORING

1.1 Access Flooring Assemblies and Materials:

A. Type: Bolted pedestals understructure with bolted stringers all secured to concrete floor with adhesives.

B. Lightweight-Concrete-Filled Steel Pan Panels: Zinc-coated steel pan filled with reinforced lightweight concrete. This panel shall have no cutouts.

107500 - FLAGPOLES

1.1 Flagpoles:

A. Shape: Cone tapered.

B. Type: Vertical pole; length as specified.

1.2 Aluminum Flagpoles:

A. Material: ASTM B241, alloy 6063-T6. Seamless tubing, minimum wall thickness 3/16 inch.

B. Finish: Clear anodized.

1.3 Fittings: External halyard, finial eagle, double trucks and cleats, and lockable box.

10416 - DIRECTORIES AND BULLETIN BOARDS

1.1 Directories:

A. Type: Internally illuminated.

B. Frame: Reveal-type frame and cover design.

C. Glazing: Tinted glass.

D. Message Strips: Film type message strips for rear illumination.

10425 - SIGNS

1.1 Panel Signs:

A. Type: Unframed.

B. Material: Plastic.

C. Copy: Raised lettering in compliance with ADA requirements.

1.2 Dimensional Letters and Numbers:

A. Type: Cast.

B. Material: Stainless steel.

1.3 Cast Plaques:

A. Material: Bronze castings.

10436 - EXTERIOR POST AND PANEL SIGNS

1.1 Panels

A. Type: Hollow box-type panels
B. Copy: Applied.
C. Material: aluminum.
D. Frame: Extruded aluminum.
E. Construction: Fixed signage message.
F. Illumination: internal illumination.

1.2 Posts:

A. Material: structural aluminum tubing, 6063-T5 alloy.
B. Mounting: Permanent, direct-burial.
C. Shape: Square.

1.3 Finishes:

A. Aluminum Finish: Color anodized.

105113 - METAL LOCKERS

1.1 Lockers:

A. Type: Wardrobe lockers, sheet steel, 24 gauge back and sides, 16 gauge top, bottom and doors.
B. Tier: Double-tier lockers.
C. Face: Solid with punched louvers.
D. Locking: Padlock type.
E. Tops: Sloped.
F. Mounting: On 4” high elevated base.
G. Number plates.
H. Locker room benches, wood seat, 5’-0” in length, bolted to floor.
I. Filler strips

104413 - FIRE EXTINGUISHERS AND CABINETS

1.1 Fire Extinguishers:

A. Type: Multipurpose dry chemical type.
B. Rating: Sized for project requirements.
C. Public, Office and work Areas Mounting: Flush mounted in recessed wall cabinet.
D. Warehouse and Storage Area Mounting: Metal brackets, surface mounted.

1.2 Cabinets:

A. Mounting: Recessed.
B. Trim: Trim less.
C. Doors: Aluminum, baked enamel finish.
D. Door Style: Vertical duo glass panel with concealed
E. Accessories: Glass breaker or fire handle.

105500 - POSTAL SPECIALTIES

1.1 Mail Collection Boxes:

A. Loading: Front loading type.
B. Materials: Aluminum, satin anodized finish.

102213 - WIRE MESH PARTITIONS

1.1 Wire Mesh:

A. Partition type: Heavy duty, 6 gauge crimped steel wire, 2” diamond mesh.
B. Railing Insert Type: 10 gauge crimped steel wire, 1-1/2’ diamond mesh.
C. Framing: Cold-rolled channels.
D. Hinged door with lock and hardware.
E. Service window.
F. Service window shelf.
G. Line posts

102226 - OPERABLE PARTITIONS

1.1 Folding Panel Partitions:

A. Panel Type: Individual panels, side stacked STC50.
B. Overhead track suspended partition
C. Operation: Manual or electric
D. Frame: Steel reinforced aluminum.
E. Finish: Vinyl fabric.

101700 - TELEPHONE SPECIALITIES

1.1 Telephone Enclosures:

A. Interior type: Wall-mounted, shelf-type telephone enclosures, ADA and handicapped accessible.
B. Telephones: combination coin/credit card operated
C. Accessories: Telephone directory shelf units.

D. Accessories: Enclosure lighting.

1.2 Materials:

A. Aluminum Extrusions: ASTM B221, alloy 6063-T5.

B. Aluminum Sheet: ASTM B209, alloy 5005-H15.

C. Stainless Steel: ASTM A167, AISI Type 302 or 304.

D. Bronze Plate: Muntz metal.

E. Sheet Steel: ASTM A366 or ASTM A568.

F. Plastic Laminate: NEMA Standard LD-3, Grade GP50.

G. Glass: Tempered, ASTM C1048, transparent.

10800 - TOILET AND BATH ACCESSORIES.....

1.1 Toilet

A. Toilet tissue dispensers, dual roll, cast aluminum, non-restricted flow.

B. Combination towel dispenser/waste receptacle units, stainless steel, fully recessed, large capacity dispenser and waste.

C. Grab bars, 1-1/2” round stainless steel, one per stall.

D. Sanitary napkin disposal units, stainless steel, one per stall.

E. Seat Cover dispensers - one per stall.

F. Feminine napkin dispenser, stainless steel, fully recessed type, allowing coin or free operations, one per toilet room.

G. Soap dispenser, deck mounted, 7” spout, one per lavatory.

H. Mop and broom holders, two per janitor closet.

1.2 Mirrors and Frames:

A. One per sink in utilitarian toilet rooms, of height sufficient for ASDA and handicap use and for use without stooping by tall individuals.

B. Glazing: Mirror glass, ¼” thick, SATM C1036.

C. Frames: Stainless steel

1.3 Materials and Finishes:

A. Stainless Steel: AISI Type 302 or 304, No. 4 polished finish.

1.4 All products must be supplied by one manufacturer, and have coordinated keying provided.

11132 - PROJECTION SCREENS

1.1 Front Projection Screens:

A. Operation: Electric.

B. Mounting: Recessed mounting at ceiling.

C. Viewing Surface: Matte white surface.

D. Edge Treatment: without black masking borders.

1.2 Rear projection Screens:

A. Glazing: Clear float glass with optical coating.

B. Frame: Site-framed.

111300 - LOADING DOCK EQUIPMENT

1.1 Dock Bumpers:

A. Type: Molded or extruded rubber.

B. Mounting: Horizontal and vertical.

1.2 Dock Levelers:

A. Type: Hydraulic recessed in dock.

B. Rated Capacity: 30,000 pounds.

C. Controls: Remote control station.

1.3 Dock Light

A. Swing type next to overhead door.

1.4 Dock Seal

A. Rigid translucent cover.

B. Armor pleated curtain on treated wood frame.

123530 - BREAK ROOM CASEWORK

1.1 Casework:

A. Materials: Plastic laminate, CP28 thickness.

B. Face Style: Flush overlay.

C. Frame Fabrication: Face

D. Frame Finish: Paint.

E. Frame Finish Application: Factory-finished.

1.2 Counters:

A. Materials: Plastic laminate, GP50 thickness with particleboard substrate.

B. Countertop Front Profile: Rolled.

C. Countertop Cove Profile: Cove molding.

D. Countertop Backsplash: Square edge with scribe.

12500 - WINDOW TREATMENT

1.1 Vertical Blinds:

A. Slats: Prefinsihed aluminum.

B. Stall Width: 1”.

C. Operation: Tilting and lifting mechanisms, with top-lock and tilt-lock features.

1.2 Drapery Tracks:

A. Track System: Single channel, ball-bearing carriers.

B. Material: Steel with baked enamel finish.

12680 - VESTIBULE MATS

1.1 Foot Grilles:

A. Type: Extruded aluminum with top-surfaced tread rails.

B. Finish: Aluminum with clear anodized finish.

C. Top Surface: Nylon carpet insert.

1.2 Frame:

A. Material: Extruded aluminum, ASTM B221, alloy 6063-T5

B. Type: Recessed.

142100 - ELECTRIC TRACTION ELEVATORS

1.1 Passenger Elevators

A. Features and Components:

1. Type: D.C. worm geared traction type.
2. Control Systems: Group automatic elevator controls.
3. Cab: Custom design with front swing returns.
4. Door Panels: Stainless steel, AISI No. 4 satin finish.
5. Hoistway Entrances and doors: Stainless steel, AISI No. 4 satin finish.
6. Main lobby and machine room color CRT elevator status display monitors.

B. Auxiliary Operations and Controls:

1. Service panel for switch controls (car light, fan, access, etc.)
2. Alarm button and emergency stop key switch.
3. Digital hall and car position and direction indicators.
4. Audible and visual signals.
5. Automatic 2-way leveling.
6. Programmable security for elevator access and egress.
7. Door nudging device with full door opening scanner protection.
8. Liner blanket hooks.
9. Emergency power operation.
10. Hoistway access switches.
11. Ergonomic car and hall button stations.
12. Automatic and manual fire recall.
13. Independent service feature.
14. Autodial care telephones.
15. Main and auxiliary car stations.

1.2 Freight Elevator

A. Features and Components

1. Type: Worm geared traction type.
2. Control Systems: Selective collective automatic operation.
3. Cab: Custom design with swing front return.
4. Door Panels: Stainless steel, AISI No. 4 satin finish.
5. Hoistway - Entrances: Stainless steel, AISI No. 4 satin finish.
6. Floor: Non-slip steel.
7. Main lobby and machine room color CRT elevator status display monitors.

B. Auxiliary Operations and Controls:

1. Service panel for switch controls (car light, fan, access, etc.)
2. Alarm button and emergency stop key switch.
3. Digital hall and car position and direction indicators.
4. Audible and visual signals.
5. Automatic 2-way leveling.
6. Programmable security for elevator access and egress.
7. Full door opening scanner protection.
8. Liner blanket hooks and blankets.
9. Emergency power operation.
10. Hoistway access switches.
11. Vandal resistant car and hall button stations.
12. Automatic and manual fire recall.
13. Independent service feature.
14. Timed freight loading switch in car station.
15. Autodial car telephones.

143100 - ESCALATORS

1.1 Materials

A. Rolled Steel s, Shapes, Rods: ANSI/ASTM A36.

B. Structural Tubing: ANSI/SATM A500, Grade B, A501.

C. Sheet Steel: ANSI/ASTM A446, Grade B, zinc coated to G90.

D. Stainless Steel: ANSI/ASTM A167, Type 304, No. 4 finish.

E. Aluminum: ANSI/ASTM B221, extruded 6063 alloy with T6 temper finish.

F. Bolts, Nuts, and Washers: ANSI/ASTM A325, A490.

G. Bolts, Nuts, and Washers: ANSI/ASTM A325 A490.

H. Welding Materials: ANSI/AWS D1.1: type required for materials being welded.

I. Touch-Up Primer for Galvanized Surfaces: Zinc rich type.

1.2 Components

A. Structural Steel Components: Truss frame and end bearing plates, tracks, drive wheel trolleys, attachment brackets, anchors and fittings.

B. Cast Aluminum Components: Ribbed moving treads with ribbed risers and comb plate thresholds.

C. Deck Cover: Stainless steel; non-slip surfacing.

D. Handrails: Molded neoprene, steel mesh reinforced to minimize stretch.

E. Balustrades and Skirt Panels: Stainless steel with reinforced backing.

F. Operating Equipment: Motor and transmission drive, endless step drive chains; handrail drive; governor, brake, safety devices, and drip pan to meet system criteria.

G. Electrical components: Controller, switches, conduit and conductors; UL approved.

H. Special Illumination for comb Plates, Riser, Handrails: Flush incandescent downlight.

I. Grease Fittings: For lubricating bearings requiring periodic lubrication.

1.3 Finishes

A. Metal Surfaces concealed from view: Clean surfaces of rust, oil or grease; wipe clean with solvent; prime two coats.

B. Galvanized Surfaces: Clean with neutralizing solvent; prime one coat.

C. Baked Enamel on Steel: Clean and degrease metal surface; apply one coat of primer sprayed and baked; two coats of enamel sprayed and baked; color as selected.

D. Handrail: Black.

E. ANSI/IEEE C1 - National Electrical Safety Code.

F. ASTM C1048 - Heat-treated flat glass - Kind HS Kind FT coated and uncoated glass.

G. AWS A2.0 - Standard welding symbols.

H. AWS D1.1 - Structural welding code.

I. SSPC - Steel structures painting council.

1.4 System Description

A. Characteristics of each escalator as follows:

1. Rated Net Capacity: As selected.
2. Rated Speed: 120 ft/min.
3. Vertical Rise (nominal): As designed.
4. Nominal Tread Width: Per code.
5. Control: One way.

1.5 Operation

A. Operation: Constant speed under light to heavy load conditions, quiet operation, transit speed of handrail same as treads.

B. Switching: Key operated “On/Off” control and emergency ”Stop” buttons located at each end of unit.

C. Machine and Drive: Direct motor, transmission, chain sprocket drive, electromagnetic brake, crank for hand drive during servicing, drive chain tension adjustmen