

# *HomeGoods*

Tenant Improvement for  
**HomeGoods Store #556**

Kimco Site #715  
The Village Commons  
Maclay Blvd. & Maclay Rd.  
Tallahassee, Florida

## **PROJECT MANUAL**

TJX Companies, Inc.  
Outline Specifications No. 1180A

Architect

**MCG ARCHITECTURE**  
7100 East Pleasant Valley Rd.  
Suite 320  
Cleveland, Ohio 44131  
Architect's Project #11.327.02

Owner

**Kimco Realty Corp.**  
3705 South Orlando Dr.  
Sanford, FL 32773

Tenant

**HomeGoods**  
770 Cochituate Rd.  
Framingham, Massachusetts 01701

**Permit/ Bid**

January 20, 2012

# TJX Companies, Inc.

## SPECIFICATION NO. 1180A

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**OUTLINE SPECIFICATIONS AND REQUIREMENTS  
FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 1- REQUIREMENTS  
SECTION 1A – GENERAL REQUIREMENTS**

## SECTION 1A GENERAL REQUIREMENTS

### 1A.10 INTRODUCTION

- Contractor shall construct a Tenant Facility and related parking area in accordance with Construction Plans and Specifications ("CPS") prepared by Contractor's architect and revised, changed, and approved. The architectural design of the Store shall be developed in accordance with the Tenant requirements contained herein and shown on the criteria set of drawings.
- Requirements of the Specifications and the criteria set of drawings shall be considered equal. What is called for in one, but not the other, shall be deemed included as part of the Tenant requirements.
- Organization of this Specification into separate divisions and sections is for the convenience of Tenant and its personnel. These divisions and sections are not to be construed in any way as intent to assign responsibility for individual activity or work.

### 1A.11 DESIGN CRITERIA

- Contractor shall provide the following information to Tenant for the purpose of coordinating the criteria set of drawings: Architects name, telephone number and primary contact.
- The Outline Specifications and criteria set of drawings are "Tenant Requirements" from which 's architect shall prepare the Construction Plans and Specifications for the construction of a Tenant facility. Said Construction Plans and Specifications are known as the "CPS". Any conflict or disagreement with respect to Tenant requirements or interpretation thereof shall be resolved or made by Tenant. No substitutions, changes, or deviations in requirements shall be made without the written approval of Tenant. Wherever the expression "or approved equal" or a similar expression is used in requirements, it is intended that the may request written approval from Tenant to substitute methods or materials other than those specifically mentioned, but such substitution shall be permitted only after written approval by Tenant. Wherever the approval of Tenant is required hereunder, Tenant may give such approval only in writing

## 1A.12 ARCHITECTURAL AND ENGINEERING SERVICES

- Contractor shall provide the services of competent registered architects and engineers to develop and prepare the CPS based on Tenant requirements, all to assure Tenant that construction is in accordance with the CPS as revised, changed, and approved by Tenant. “Design Build” engineering is not an accepted process for meeting this requirement.
- The CPS shall be submitted to Tenant for review and approval before construction is commenced. Any approval by Tenant of the CPS or any revisions, modifications, substitutions or changes therein shall not relieve Contractor of responsibility for proper engineering, design, coordination, construction and supervision of the project or for compliance with all building and zoning codes and other laws and Fire Insurance requirements. Upon completion and approval of “CPS”, the Architect/Engineer shall provide to Novar Controls an electronic copy of the Mechanical Drawings that shall include the floor plan, room use names, all rooftop units, ductwork and equipment schedules. Drawings shall be in Autocad (.dwg files) and shall be sent via email [TJX@NovarControls.com](mailto:TJX@NovarControls.com)
- Tenant has developed a storefront elevation shown on the title sheet of the prototype criteria set. If a deviation from this elevation is proposed, the alternate elevation is to be submitted for revisions or approved by Tenant.
- Provide suitable access panels, framing and supports for store signage. 4' wide, 5/8" plywood catwalk to run full length of canopy Furnish and install 3/4 " plywood backer (for sign attachment) at EIFS or stucco facades.
- Tenant will use 8' 0" high letters for its storefront signage, any deviation from this letter size is to be submitted for review and approval by Tenant.
- Provide suitable access panels, framing, and supports for store signage. Furnish and install 3/4" plywood backer (for sign attachment) at EIFS or stucco facades.
- Tenant will use 8'0" high letters for it's storefront signage, any deviation from this letter size is to be submitted for review and approval by Tenant.

### **1A.13 COMPLIANCE WITH LAWS AND REGULATIONS**

- In performing all engineering and construction obligations the Contractor and all of his Agents, Employees, Architects, Engineers and Supervisors shall comply with all building and zoning codes, the Federal Occupational Safety and Health Administration (OSHA) Requirements, and other laws of all public authorities having jurisdiction. The immediately preceding sentence shall not be construed to permit a lower standard of workmanship and material where the provisions of Tenant requirements establish a higher standard of workmanship and material which exceed the requirements of such codes and laws. It is understood that Tenant requirements establish a minimum standard of construction of the Tenant facility and related common facilities. Contractor shall be responsible for all permits and licenses and taxes required by law for all such construction, including, without limitation, Certificates of Occupancy or local equivalent.

### **1A.14 WORKMANSHIP AND MATERIALS**

- All workmanship shall be of high standard and performed in a good workmanlike manner. All material shall be new and of high quality. Used materials or equipment shall not be permitted. Manufactured materials and equipment shall be installed as directed by the manufacturer unless otherwise noted.

### **1A.15 UTILITIES**

- Unless otherwise expressly provided in the lease documents, the Contractor shall furnish and pay all temporary utilities, including, without limitation, water, gas, sewer, storm drainage, telephone, electricity, heating and air conditioning and all related meters and any standby supervision required thereof. Such utilities and meters shall be designed to provide full service to the Tenant facility. If standby supervision and service is required for any utility due to incomplete construction then Contractor will pay the costs of such standby supervision and service. Upon request, the Contractor is to provide telephone numbers, addresses and contacts for local utilities serving the proposed location.

### **1A.16 CHANGES**

- At any time prior to completion of the work, Tenant may request changes in the CPS by giving notice thereof to the Contractor. The Contractor shall furnish "as built" drawings to Tenant on completion of the punch list or thirty (30) days after opening, whichever is first.

**\*Coordinate with specific requirements listed in Section 1B.**

### **1A.17 NOT USED**

### **1A.18 NOT USED**

#### **1A.19 COMPLETION OF WORK/PUNCH LIST**

- Tenant shall have the election to complete and/or correct any work and provide any material which is the obligation of the Contractor and which has not been completed and/or corrected within thirty (30) calendar days after notification of the necessity thereof by Tenant. The expense of this work shall be deductible from the rent due under the lease.

#### **1A.20 SUPERVISION**

- The Contractor shall retain at the Tenant facility during the progress of the work, a competent full time superintendent, dedicated solely to the Tenant facility. Full time superintendent shall be assigned upon commencement of Tenant interior fit out.

#### **1A.21 TEMPORARY SERVICES**

- If the permanent sanitary facilities, light and power, heating, ventilating and air conditioning installations are not in service at the time Tenant commences to install its fixtures, then the Contractor shall make all necessary arrangements to provide adequate temporary facilities at no charge to Tenant. Temporary facilities shall be available to Tenant at all times at all hours and days during Tenant pre-opening operations. If generator is required for temporary power, it shall be sized to provide 50% of the lighting demand as well as 50% heat/air conditioning demand and the complete cash register system. Contractor shall provide, during the construction phase, one telephone conveniently located on site for the use of his and Tenant personnel. Telephone need only be capable of receiving incoming calls and making outgoing local calls. In addition to the telephone, the Contractor shall provide, during the construction phase, a FAX machine for the use of his and Tenant personnel.

#### **1A.22 PRE-OPENING MAINTENANCE**

- From and after the "Fixture Date" as defined by Tenant, through store opening date Contractor shall be responsible for maintenance of the parking lot area and shall assure accessibility to the Tenant store facility at all times for Tenant delivery trucks. This maintenance shall include striping, lighting, snow removal, sweeping of the paved areas impacted by construction activity, and power-washing of sidewalks.

#### **1A.23 CLEAN-UP**

- Contractor shall deliver the Tenant facility to Tenant in a neat and clean and suitable opening condition. Contractor shall professionally clean all surfaces including, aluminum and glasswork.

#### **1A.24 Close-Out Documents**

- Contractor shall provide the Project Manager two (2) complete sets of construction plans on CD Rom with a list of sub-Contractors who performed work for the Tenant's store and their telephone numbers, for both business hours and, in case of emergency, after business hours. Additionally, the Contractor shall provide two (2) lists of SUBS (as outlined above) to the Tenant Construction Department within seven (7) days of commencement of construction.

## **1A.25 OPERATING INSTRUCTIONS AND GUARANTEES**

- Contractor will require all Contractors performing the work to guarantee all workmanship and materials for a period of one (1) year from the commencement date of substantial completion (substantial completion shall commence when final cores are installed by Tenant) plus such additional periods of time as are expressly required under the last sentence of this Paragraph 1A.25. Contractor shall provide all necessary diagrams, operating instructions and information required for Tenant operation of the mechanical and electrical systems. Diagrams, operating instructions and information are to be provided to Tenant prior to store opening. Thirty (30) days prior to the end of such one (1) year or longer period, Contractor's agent shall prepare an inspection report indicating the condition of the Tenant facility and related common facilities itemizing the work to be completed, performed and/or corrected. Such one (1) year period shall be continued in effect and extended until such time as Tenant submits to Contractor written confirmation of the satisfactory completion of the itemized work, which confirmation shall be submitted within a reasonable period of time. Without limiting the generality of the foregoing, Contractor shall also provide, on a twenty-four (24) hour basis, seven (7) days per week during the first twelve (12) months of the term, complete service, lubrication, testing, water treatment and adjusting as required without limitation, for the H.V.A.C. system of the Tenant facility.

## 1A.25A INSURANCE

- Contractor shall procure and maintain at his own expense the following forms of insurance; including any other form of insurance as may be determined and requested by Tenant. Insurance shall remain in full force and effect during performance of work or any supplementary work relating thereto, and until such time as the work is satisfactorily completed and accepted by Tenant.
- Worker's Compensation Insurance. The Contractor shall maintain in force until the work is fully completed, Worker's Compensation and Employer's Liability Insurance in accordance with the requirements of the Worker's Compensation and "occupational disease" laws of the state(s) having jurisdiction over the work.
- Builder's Risk Insurance. The Contractor shall provide at his own expense, builder's Risk Insurance; completed value to protect against perils of fire, lightning, risks covered under standard form of extended coverage, vandalism, and malicious mischief, during construction and until completion and acceptance by Tenant
- Comprehensive General Liability Insurance. Comprehensive General Liability Insurance, including products, completed operations, broad form property damage and contractual liability, with limits of not less than: \$5,000,000 per occurrence and aggregate for Bodily Injury, and \$5,000,000 per occurrence and aggregate for Property Damage
- Comprehensive Automobile Liability Insurance. Comprehensive Automobile Liability Insurance, including Employers non-ownership and Hired Car coverage, protecting against automobile claims whether on or off the premises, with Bodily injury limits of not less than:

\$ 500,000 per person	Bodily Injury
\$1,000,000 per occurrence	Bodily Injury
\$ 250,000 per occurrence	Property Damage
- The Contractor shall furnish certificates of foregoing insurance in the form of Certificate of Insurance naming the TJX Companies, Inc. as additional insured. Certificate of Insurance shall be furnished within 30 days from date of request.

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION  
CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**SECTION 1B- CHAIN SPECIFIC REQUIREMENTS**

**SECTION 1B – SPECIFIC REQUIREMENTS OF AJ WRIGHT, HOMEGOODS,  
MARSHALLS, MARSHALLS MEGA SHOE, AND TJ MAXX**

- Specific requirements listed in this section are unique to the store chain involved, and supercede general specifications. The general specification, these requirements and the store specific criteria drawings comprise the package of information prepared by TJX Companies for the development of “CPS” as outlined in the lease agreement.

## Section 1B

### **SPECIFIC REQUIREMENTS FOR AJ WRIGHT STORES COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS**

#### **6A.17 INTERIOR WALLS**

- Plywood not required at Demising walls for AJ Wright Stores

#### **8A.13 ALUMINUM STOREFRONT**

- The storefront shall be designed herein. All aluminum material shall be clear anodized finish. Incorporated into the storefront shall be a vestibule area containing single acting aluminum entrance and exit doors with no hold open features. The work shall include all labor and material necessary to construct complete all glass and glazing per AJ Wright plans. Aluminum storefront shall be Kawneer Tri Fab II 400 Series, screw spline fabrication, or equal as approved by AJ Wright. See paragraph 8A.17 for door tension.

#### **8A.14 VESTIBULE**

- Vestibule shall have push pull plates on doors and carriage bumpers as detailed in AJ Wright requirements. Contractor shall furnish additional exit doors with proper emergency hardware and storefront finish when required by life and safety codes. Aluminum doors shall be equipped with Best Universal Lock Company cylinders with construction cores. Vestibule shall be Kawneer standard aluminum entrance 190 Series clear anodized or approved equal by AJ Wright.

#### **9A.13 PAINT**

- All paints listed are Pittsburgh or Benjamin Moore numbers. Type of coating to be as follows:
- Latex Flat for all paintable ceilings.
- Latex Lo-Lustre Satin Enamel for all walls in office and employee areas.
- Latex Semi-Gloss Enamel for all walls in toilets; all columns; bulkhead panels in glass line (interior), and for all sales area interior walls.
- Alkyd Quick-Dry Gloss Enamels for all exterior surfaces.
- All exposed concrete floor within confines of the building walls shall receive two (2) coats of Benjamin Moore's silicone acrylic concrete stain, one coat tinted gray, one coat clear.
- Alkyd Semi-Gloss for all H.M. doors, door frames & door trim.

#### **10A.15 CENTRAL VACUUM SYSTEM**

Not required In AJ WRIGHT stores



## Section 1B

### **SPECIFIC REQUIREMENTS FOR HOMEGOODS STORES**

#### **COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS**

#### **8A.13 ALUMINUM STOREFRONT**

- The storefront shall be designed as described herein. All aluminum material shall be clear anodized finish. Incorporated into the storefront shall be a vestibule area containing openings for aluminum entrance and exit doors. The work shall include all labor and material necessary to construct complete all glass and glazing per Homegoods plans. Aluminum storefront shall be Kawneer Tri Fab II 400 Series, screw spline fabrication, or equal as approved by Homegoods.

#### **8A.16 AUTOMATIC DOOR OPERATORS**

- Automatic door operating system as manufactured and installed by The Stanley Works. Magic Force full energy door operators, Magic swing (Centrex) pair door concealed operators. Refer to Criteria Drawings for R.O. dimensions.

#### **10A.15 CENTRAL VACUUM SYSTEM**

Not required In HOMEGOODS stores

#### **15A.14 PLUMBING FIXTURES**

- Purchase and install Sloan Optima Systems G2 plus battery powered flushometers on all Homegoods water closets and urinals shown on the criteria drawings. Waterclosets are to be equipped with model #8110, urinals are to be equipped with model #8180.
- Note: Flushometers are to be installed in "stand alone" Homegoods facilities. Homegoods facilities developed in conjunction with contiguous Marshalls or TJ Maxx facilities will not receive Flushometers.

#### **16A.18 Lighting**

- Homegoods Emergency light fixture to be a self contained battery system as manufactured by Lithonia Lighting (Quantum; Model # ELM2 ) Color White.

#### **16A.28 POWER FOR AUTOMATIC DOOR OPERATORS**

- Provide two (2) dedicated 120 volt, 20 amp circuits for double leaf fully automatic doors. One (1) circuit is to service two (2) door operators at interior of vestibule, and one (1) circuit is to service two (2) door operators at exterior wall. Provide final connections to door operators.

## Section 1B

### **SPECIFIC REQUIREMENTS FOR MARSHALLS STORES**

#### **COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS**

#### **8A.16 AUTOMATIC DOOR OPERATORS**

- Automatic door operating system as manufactured and installed by The Stanley Works. Dura- Glide 3000 All openings prepared to receive Stanley Door Systems to be ½" larger than package width. Refer to Criteria Drawings for all R.O. Dimensions. All Marshalls/Homegoods Combo Stores shall receive The Stanley Works. Dura- Glide 2000

#### **16A.28 POWER FOR AUTOMATIC DOOR OPERATORS**

- Provide two (2) dedicated 120 volt, 20 amp circuits for sliding door operators. One (1) circuit is to service two (2) sliding door operators at interior of vestibule, and one (1) circuit is to service two (2) sliding door operators at exterior wall. Provide final connections to door operators.
- **Marshalls Stores – Puerto Rico**

#### **15B.13 NEW ROOFTOP HEATING AND AIR CONDITIONS UNITS**

- Add Items II as follows: Upon completion of equipment installation, the Contractor is to provide field applied Adsil Microguar AD 35 HVAC/R coil and fin clear protective treatment to all coils and exterior surfaces of all HVAC equipment. Application is to be by Adsil trained and certified mechanics. Conatc, Adsil, Inc., One Hargrove Grave #1K, Palm Coast, FL 32137. Phone: 1-800-549-2539.
- Substitutions will not be accepted.

## Section 1B

### **SPECIFIC REQUIREMENTS FOR MARSHALLS MEGA SHOE STORES COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS**

#### **10A.15 CENTRAL VACUUM SYSTEM**

Not required In MARSHALLS MEGA SHOE stores

#### **16A.12 ELECTRICAL SCOPE OF WORK**

- Main electric service to Tenant shall be 300 amp minimum when 277/480 volts is utilized or 400 amp minimum if 120/208 volts is utilized in a maximum store area of 10,000 square feet. Larger area stores will require greater electrical capacity.

#### **16A.28 POWER FOR AUTOMATIC DOOR OPERATORS**

- Provide two (2) dedicated 120 volt, 20 amp circuits for sliding door operators. One (1) circuit is to service two (2) sliding door operators at interior of vestibule, and one (1) circuit is to service two (2) sliding door operators at exterior wall. Provide final connections to door operators.

#### **Marshalls Stores – Puerto Rico**

#### **15B.13 NEW ROOFTOP HEATING AND AIR CONDITIONS UNITS**

- Add Items II as follows: Upon completion of equipment installation, the contractor is to provide field applied Adsil Microguar AD 35 HVAC/R coil and fin clear protective treatment to all coils and exterior surfaces of all HVAC equipment. Application is to be by Adsil trained and certified mechanics. Contact, Adsil, Inc., One Hargrove Grave #1K, Palm Coast, FL 32137. Phone: 1-800-549-2539.

Substitutions will not be accepted.

## **Section 1B**

### **SPECIFIC REQUIREMENTS FOR TJ MAXX STORES**

#### **COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS**

#### **8A.16 AUTOMATIC DOOR OPERATORS**

- Automatic door operating system as manufactured and installed by The Stanley Works. Dura- Glide 3000 All openings prepared to receive Stanley Door Systems to be ½" larger than package width. Refer to Criteria Drawings for all R.O. Dimensions. All Tj Maxx/Homegoods Combo Stores shall receive The Stanley Works. Dura- Glide 2000

#### **16a.28 POWER FOR AUTOMATIC DOOR OPERATORS**

- Provide two (2) dedicated 120 volt, 20 amp circuits for sliding door operators. One (1) circuit is to service two (2) sliding door operators at interior of vestibule, and one (1) circuit is to service two (2) sliding door operators at exterior wall.
- Provide final connections to door operators.

**OUTLINE SPECIFICATIONS AND  
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**SPECIFICATION NO. 1180A**

**DIVISION 2 - SITE WORK**

**SECTION 2A  
SITE REQUIREMENTS**

## **SITE REQUIREMENTS**

### **2A.10 SCOPE OF WORK**

- Contractor shall provide a hard surface parking lot including all driveways to public streets, parking lot lighting, parking stall marking, landscaping, drainage system and sewer system.

### **2A.11 GRADING AND DRAINAGE**

- Parking lot shall slope to provide drainage of surface water away from the building. Adequate provisions shall be made for the collection and discharge of this water from the site in accordance with law.
  - All drainage systems shall be designed in accordance with the following criteria standards:
    - Pipe - Shall be reinforced concrete and a minimum of 15 inches in diameter.
    - Design Storm - One in five years or the applicable municipal requirement, whichever is greater.
    - Manholes - May be either built in place or precast units and spaced a maximum of 350 feet.
    - Curb Inlets - May be either the side opening or grate opening type.
    - Yard Inlets - Shall be grate openings.
    - Catch Basins - For curb or yard inlets, either built in place or precast units will be allowed.
  - All sanitary sewer systems shall be designed in accordance with the following criteria standards:
    - Pipe - Shall be a minimum of 6" in diameter.
    - Manholes - Shall be precast, reinforced concrete units spaced a maximum of 300 feet.
    - Manholes shall be provided at all changes in pipe direction and changes in pipe slopes.

### **2A.12 PAVING CONSTRUCTION**

- Contractor shall repair and replace paved areas based upon his engineers' sub-surface investigations. Unsuitable materials shall be excavated and removed from the site, and replaced with suitable subgrade materials, placed in such a manner as to capably support the intended use. In general, the wearing surface shall be 2" thick after compaction on a minimum base thickness of 3". All wearing surfaces shall be placed in conformity with Asphalt Institute Specifications or local State Highway Specifications. The Contractor may submit an alternate paving specification more suitable to its climate and geographical standards and will furnish Tenant with an engineer's certification as to the final installation of the paving and paving sub-base.

### **2A.13 SITE IMPROVEMENTS**

- Contractor shall provide any necessary site improvements required by Tenant including but not limited to fencing, guard rails, retaining walls and sidewalks. Contractor shall be responsible for approval and coordination of the entrances to the site with local traffic department requirements, including any necessary revisions to the traffic lighting systems. All new site improvements shall conform to the requirements of codes or authorities having jurisdiction over the site. Contractor will be responsible for all handicapped signage, ramps, and parking identification that may be required by local, state or federal statutes. The preceding sentence shall not preclude provision for a “curb cut” access directly in front of the Tenant entry doors. Width of “curb cut” shall be 6’-0” minimum and A.D.A. conforming.

### **2A.14 LANDSCAPING**

- Non-paved areas shall be sodded or seeded, subject to Tenant approval. Provisions shall be made for watering planted areas satisfactorily and subject to Tenant approval. Contractor shall also make the necessary provisions to protect the site against loss of any embankment area.

### **2A.15 STRIPING**

- The parking areas shall be designed in conformance with Tenant Requirements, and shall have suitably marked double line parking stalls, arrows, and copy, painted dividers, etc., as approved by Tenant. Striping shall be 4" wide. Traffic paint shall be yellow and in conformance with federal specification TT-0-115A. Striping shall include all handicapped parking spaces and fire lanes required by code.

### **2A.16 PROJECT ANNOUNCEMENT SIGN**

- The project announcement sign shall be furnished and erected on the building site by the Contractor and shall be as approved by Tenant. The sign shall be installed as directed by Tenant, maintained and kept erect during the entire period of construction by Contractor, until such time as the permanent sign work is in operation. No other project signs will be allowed without the permission of Tenant.

### **2A.17 GROUND SIGNS**

- Contractor shall provide the shopping center pylon signs at all **Entrance** and **Exits**. Signs shall be in accordance with the provisions made in the lease between Contractor and Tenant.

### **2A.18 LOT LIGHTING**

- A parking lot lighting system shall be provided in accordance with good shopping center development procedures with a minimum of 2.3 F.C. maintained and shall be subject to Tenant approval. The lot lighting system shall be provided as specified in the Electrical Division of the Tenant Requirements. Parking lot lighting shall be complete by date of substantial completion.

## **2A.19 TAILGATE UNLOADING**

- Contractor shall provide suitable facilities for unloading at receiving dock(s) (tailgate unloading). Tailgate unloading may be accomplished in the form of natural grade when site conditions allow. If site locations do not allow for the use of natural grade, retaining walls shall be provided with safety rails. Minimum clearance between receiving floor and grade shall be 48". Slope of loading dock driveway shall be no greater than 6%. Drainage shall be provided in the truck areas. Receiving and sales area floor shall be the same elevation. Seals and bumper shall be provided at the receiving door opening. Refer to Division 11 "Equipment" for receiving door equipment specifications.
- Contractor shall provide a trash compactor pad adjacent to the Tenant receiving door, for use by Tenant. Furnish and install steel, concrete filled, bollards 8" diameter, minimum. Refer to criteria drawings for location of trash compactor pad, and bollards.

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**DIVISION 3 - CONCRETE**

**SECTION 3A  
CONCRETE**

### **3A.10 CAST-IN-PLACE CONCRETE**

- All foundation walls, footings and column footings shall be reinforced concrete. Depth of exterior foundation to be sufficient to be below local frost lines. Design of the foundation shall provide adequate bearing capacity for the soil conditions. Concrete shall be 3,000# P.S.I. minimum.

### **3A.11 SUB-GRADE AND BASE**

- There shall be a 6" gravel base or clean, free draining material placed beneath the slab. Base material shall be compacted to a minimum of 95% per ASTM D1557. Base material shall be graded to the tolerance requirements of ACI 302, section 4.1.3 (+ 0" – 1").

### **3A.12 VAPOR BARRIER**

- Vapor barrier/Retarder shall be installed beneath all concrete slabs-on-ground. The material shall conform to the minimum requirements of ASTM E-1745, class A with the following modified requirement. Permeance shall not exceed 0.018 US perms when tested in accordance with ASTM E-96 Method B. Vapor barrier/Retarder thickness shall be a minimum of 15 mils, and be installed over the compacted base to ensure the material will be in direct contact with the underside of the slab. The Vapor barrier/Retarder seams shall be overlapped a minimum of 6" and taped with the manufacturer's recommended tape per ASTM E-1643
- Acceptable Manufacturer: Stego Wrap 15 mil by Stego Industries

### **3A.13 FLOOR SLABS**

- Concrete floor slabs-on-ground shall be 4" thick, 3,500 PSI, monolithic placement. Concrete mixture shall be designed for minimum shrinkage. The water/cement ratio of the concrete shall not exceed 0.55. Slump range shall be 5" +/- 1".
- Refer to section 9A.15 Floor Finishes for slab moisture requirements

### **3A.14 FLOOR SLAB FINISH**

- Slabs shall be machine troweled to a tight steel trowel finish.

### **3A.15 CONCRETE SIDEWALKS**

- Concrete walks shall be 5" thick and laid on a 6" bed of sandfill.

### **3A.16 PAD FOR COMPACTOR**

- Provide a concrete pad of sufficient size and design to accommodate Tenant compactor. Locate pad adjacent to the receiving door. Minimum pad dimension 10'-0" x 40'-0". Increase slab thickness at perimeter to 1'-0" X 1'-0".

**OUTLINE SPECIFICATIONS AND  
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**SPECIFICATION NO. 1180A**

**DIVISION 4 - MASONRY**

**SECTION 4A**

**MASONRY**

#### **4A.10 MASONRY (GENERAL)**

- All masonry materials and workmanship shall be in accordance with the American Standard Building Code requirements for masonry, as prepared by the American Society for Testing and Materials (ASTM).

#### **4A.11 CONCRETE BLOCKS**

- Concrete masonry units shall be preshrunk stabilized block complying with the following applicable specifications: ASTM C-90-52, ASTM C-130-42.

#### **4A.12 EXTERIOR WALLS**

- Exterior walls shall be 12" thick masonry construction, reinforced with ladder-type reinforcing every other block course. Insulation for walls shall meet a "U" factor of 0.09.

#### **4A.13 NEW OPENINGS IN EXISTING WALLS**

- All new openings in existing walls shall be of sufficient size to accept jamb anchors for new door frames. All openings over 3'-0" wide are to receive new steel lintels. Coordinate with section 5B of this Specification.

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 5 - METALS**

**SECTION 5A**

**STRUCTURAL STEEL, JOISTS, AND DECKING**

### **5A.11 STRUCTURAL**

- The structural frame shall consist of steel columns, trusses or beams and open web bar joists. The design shall be governed by A.I.S.C. s “Code of Standard practice for steel buildings and bridges”, and the standard specifications of the Steel Joist Institute. The heights shall be sufficient to allow incorporation of all electrical, plumbing, sprinkler, and heating, ventilating and air conditioning work above the ceilings maintaining the required ceiling heights. In general, the work includes structural steel, steel joists, metal deck for floor and roof construction, and other such items as shown on Tenant's requirements or specified.
- All steelwork shall be given one heavy shop coat of good quality paint primer.

### **5A.12 STRUCTURAL STEEL**

- Structural steel is to be ASTM A36 fabricated and erected in accordance with current A.I.S.C. specifications.

### **5A.13 STEEL JOISTS**

- Steel joists shall be fabricated and erected in conformance with the latest specifications for the Steel Joist Institute. “Standard specifications, load tables and weight tables for steel joists and joist girders”.

### **5A.14 METAL DECK**

- Roof deck shall be 1-1/2" B-Deck 22 gauge, painted. Deck shall be welded (using welding washers) to the bar joists and purlins as recommended by the manufacturer. Side laps shall be plug welded or crimped at the center of the span. The roof deck shall pitch to provide proper drainage to the roof drains.

### **5A.15 COORDINATION**

- Coordinate structural requirements with ladder (Division 5), roof hatch (Division 10) and HVAC Units (Division 15).

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 5 - METALS**

**SECTION 5B**

**MISCELLANEOUS AND ORNAMENTAL IRON**

### **5B.11 STEEL LADDERS**

- Furnish and install steel ladders where shown on Tenant's drawings. Ladders shall be 2" x 1/4" steel stringers, bent as required by ladder length, anchored top and bottom 8" away from wall. Anchor stringers at midpoint for all runs 20'-0" or greater. Stringers to be 16" apart with 1/2" minimum non-slip round rungs at 12" centers. Side railings shall be provided.

### **5B.12 BURGLAR BARS**

- Burglar bars shall be supplied and installed at all openings through the roof and sidewalls of the building larger than 12". Burglar bars shall be securely embedded in concrete or welded to steel frames as required by roof framing system. Provide 1/2" diameter bars 6" oc each way welded at intersections. Duct penetrations through the roof will require burglar bars, coordinate with section 15B.13.8 for new equipment requirements.

### **5B.13 PIPE RAILS/WALL RAILS**

- Furnish and install all pipe rails and wall rails shown on Tenant's drawings or required by code.
- All rails shall be constructed of 1 1/4" I.D. pipe, cleaned free from all rust, scale, etc. and painted one coat of metal primer. All wall rails shall be supported by brackets and have 1/2 turns at ends to walls. Intermediate post supports shall be 4'-0" O.C., maximum.

**Refer to Section 15D.12.2 for pipe rails at sprinkler risers.**

### **5B.14 LINTELS**

- Furnish and install all loose lintels and plates, not shown on structural drawings, required for support of masonry above all openings over 3'0" wide.

### **5B.15 STAIRS**

- All interior stair tread surfaces to be non-skid with closed stringers and risers. Risers and pans to be #10 gauge steel. Stringers to be rolled steel channels, sized as required by run of stair, weighing not less than 10 pounds per lineal foot.
- All exterior stairs shall be steel grate with rolled steel channel stringers (10 lbs/ln.ft.min.) open risers. Steel grate treads and landings are to have separated surface bearing and crossbars (Reliance Steel Products Co., McKeesport, PA or equal as approved by Tenant).

### **5B.16 SPECIAL DOORS (ACCESS PANELS)**

- Furnish and install all special doors required for access to area behind building facade, water shut off valves, sprinkler risers, etc. Access doors shall be as manufactured by Milcor or equal as approved by Tenant. Properly size special doors to allow full access to equipment, boxes, sprinkler test valves, store front canopy, etc...

### **5B.17 COMPACTOR DOOR**

- Furnish and install compactor door and frame as shown on criteria drawings.

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 6 - CARPENTRY**

**SECTION 6A  
CARPENTRY MILLWORK**

### 6A.11 MILLWORK

- All finish lumber shall be thoroughly seasoned kiln dried, and fire treated to meet federal, state and local codes as to flame spread requirements.

### 6A.12 WOOD DOORS- NOT USED

### 6A.13 PLASTIC LAMINATE – REFER TO CRITERIA DRAWINGS

### 6A.14 FIBERGLASS REINFORCED POLYESTER (FRP) PANELS IN JANITORS CLOSET

- Furnish and install a 4' high wainscoting on all walls. Extend FRP to 8' directly above sink (4' in each direction). Install flexible sealant at all joints. Cut out for plumbing faucet and taps. See criteria drawings for finish number, location and color.

### 6A.15 BUILDING FACADE

- Tenant façade shall be as shown on drawing C1 (Title Sheet). Provide suitable structural reinforcement to support open steel grid-work and canopies. Height of building sign(s) to be 8'-0" or maximum allowed by governing code. Refer to section I6A Electrical for sign power requirements and 7b for EIFS System.

### 6A.16 SLATWALL PANEL SYSTEM

- Install prefabricated wall panel system (slatwall) throughout the sales floor. See Criteria Drawings C-2 and C-4 for extents. See Criteria Drawing C-1 for purchasing data. Installation instructions are included as part of the package and it is the responsibility of the Contractor to become familiar with these instructions prior to commencement of work. Coordinate Slatwall installation with Tenant Project Manager

### 6A.17 INTERIOR WALLS

- Interior partitions shall be located as shown on Tenant criteria drawings. In general, partitions in rooms without suspended ceilings shall extend to underside of deck when required, partitions for mechanical and electric rooms shall be constructed to meet fire codes and be full height to the underside of the roof deck. Dividing partitions between sales area and stock areas shall be 2" X 6" (nominal) studs placed at 16" on center to underside of roof deck. Finishes to both the sales area side and stock room side will be in conformance with Tenant criteria drawings. Nonbearing partitions shall be 2" X 4" (nominal) studs at 16" on center double at opening and tripled at corners, extend all walls of the Money Room/Cash Office to underside of deck. Wire mesh partitions shall be framed with 2" X 4" wood studs at 16" on center and covered with a 1" X 2" #14 gauge turkey wire. Provide floor to roof deck wire mesh partitions around electric room. All blocking for store fixtures, shelving, toilet accessories, etc..., shall be Plywood, fire retardant and located in accordance with Tenant requirements. Sales floor walls shall have control joints at 32'- 0" o.c. maximum. Coordinate with detail on criteria drawings.
- **Demising walls** shall be a minimum construction of 6" 20 gauge metal studs at 24" on center, 5/8" Plywood continuous and full height to underside of deck, with 3½" thick fiberglass noise barrier to underside of deck, face of wall both sides to be 5/8" Plywood to underside of deck. Plywood is to be positioned on Tenant side of demising wall studs. Coordinate with details on criteria drawings.

\* **Coordinate with specific requirements listed in Section 1B.**

#### 6A.17 INTERIOR WALLS (Continued)

- **Drywall finish:** Shall be Level 5 All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. A thin skim coat of joint compound or a material manufactured specifically for this purpose shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges.
- **NOTE:** Prior to the application of finish paint, the prepared surface shall be coated with a drywall primer.

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 7 - MOISTURE PROTECTION**

**SECTION 7A**

**ROOFING AND FLASHING**

#### **7A.10 SINGLE PLY MEMBRANE ROOFING**

- When full roof replacement is part of construction contract, furnish and install a fully adhered EPDM membrane roofing system. The design "A" adhered roofing system shall be .060" thick, black single ply EPDM membrane as manufactured by Carlisle Syntec Incorporated. The insulation shall be mechanically fastened to the roof deck and the EPDM membrane shall be fully adhered to the insulation. As per manufacturers installation instructions.
- Partial roof replacement, patching at roof cuts and leak repairs are to be made by owner's roofing contractor (to preserve existing warranty) with materials and methods compatible with existing roofing and flashing. This requirement remains in place even if warranty is no longer valid. Relief from this requirement may only be made by Tenant in writing.

#### **7A.11 WARRANTY**

- The Contractor shall provide manufacturers standard form signed by roofing system manufacturer and its installer agreeing to prompt repair of leaks resulting from defective materials or workmanship for a period of 15 years.
- Contractor shall provide roofing installers warranty, signed by installer, covering work including all components of membrane roofing system such as membrane, base flashing, roofing insulation, fasteners and walk ways for a period of 5 years.

#### **7A.12 ROOFING INSULATION**

- Insulation materials must be accepted by membrane manufacturer in writing and approved by insulation board manufacturer for intended use. Provide rigid, cellular thermal insulation with polyisocyanurate closed cell foam core and manufacturer's standard facing laminated to both sides a minimum value of R-20.

#### **7A.13 SHEET SEAMING SYSTEM**

- Provide manufacturers standard materials for sealing lapped joints, including edge sealer to cover exposed spliced edges as recommended by membrane manufacturer.

#### **7A.14 CANT STRIPS, TAPERED EDGESTRIPS, FLASHING, MATERIAL MEMBRANE**

- Provide materials recommended by membrane manufacturer including adhesive tapes, flashing cements and sealants.

#### **7A.15 WALKWAY PROTECTION**

- Walkways are required at all traffic concentration points (e.g. roof hatches, access doors, rooftop ladders, rooftop HVAC equipment, etc.). Provide manufacturers standard, designed specifically for protection of exposed single ply membrane roof.

#### **7A.16 MECHANICAL FASTENERS**

- Provide metal or plastic plates, caps, battens, fastening devices, etc. to suit substrate and as recommended by membrane manufacturer.

#### **7A.17 DRAINS**

- Exterior drains will be permitted only at the rear of the building and are to be protected by cast iron guards or channel guards for a height of 5'0" above finished paving. All interior roof drains approved by Tenant are to be insulated and connected directly to storm sewers when facilities are available, otherwise roof drains may flow onto exterior finish surfaces if allowed by local codes. Surface shall be protected with pre-cast concrete splash blocks staked in place. Do not locate drains near doorways or other wall openings. Position drains so that rainwater is diverted from entering loading dock truck well.

#### **7A.18 ROOF HATCH**

- A roof hatch shall be provided complete with 16 gauge prime painted steel frame with 12 inch high curb, integral counter flashing and mounting flanges. Roof hatch shall be Milcor Model RAS-1 2'-6" X 3'-0" or equal to be approved by Tenant. Coordinate location of roof hatch with criteria drawings. Refer to section 5B for steel ladder.

#### **7A.19 COORDINATION**

- Coordinate all roof penetration requirements with this section.

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 7 - MOISTURE PROTECTION**

**SECTION 7B  
THERMAL INSULATION**

#### **7B.10 INSULATION – PERIMETER AND UNDER-SLAB**

- Provide insulation with flame spread performance characteristics indicated per FM Global, ASTM, and corresponding products listed in UL “Fire Resistance Directory” or “Building Materials Directory” and as approved by Tenant.

#### **7B.11 EXTERIOR WALL INSULATION - MASONRY**

- Provide extruded – polystyrene board insulation, or of type and thickness necessary to achieve a “U”-value of no less than 0.09 insulation shall be held to walls by furring strips or mechanical fastening. Perlite loose fill insulation may be used as suitable substitution for rigid insulation. “U”-value of no less than 0.09 applies.
- Provide insulation with flame spread performance characteristics indicated per FM Global, ASTM, and corresponding products listed in UL “Fire Resistance Directory” or “Building Materials Directory” and as approved by Tenant.

#### **7B.12 EXTERIOR WALL INSULATION - METAL STUD**

- Provide faced mineral fiber blanket insulation with flame spread and vapor barrier performance as approved by FM Global and ASTM C665, Type III blankets with reflective membrane facing.

#### **7B.13 INTERIOR NOISE BARRIER BATTS**

- Furnish and install where shown on Tenant criteria drawings noise barrier batts of fiberglass insulation. Batt is to extend full height of wall, and onto ceiling(s) contiguous to wall for a distance of 2'-0". Batt is to be as manufactured by Owens-Corning (or equal as approved by Tenant).

#### **7B.14 UNDER SIDE ROOF DECK INSULATION**

- Wherever required by local code the Contractor will be responsible for adding insulation to meet local Building and Fire safety codes. Minimum “R” value shall be 14.29 for all underside roof deck insulation.

#### **7B.15 EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)**

- Systems in this section refer to exterior assemblies composed of exterior insulation and finish systems (EIFS) applied over substrates. System materials and installation shall comply with EIMA guideline specifications for exterior insulations and finish systems Class PB, ASTM PS49 and system manufacturer’s requirements.
- Provide adhesive, board insulation, reinforcing meshes, base and finish coat materials and accessories compatible with and approved by the system manufacturer. Refer to the Tenant Prototype Drawings for colors, textures and patterns of finish coat. EIFS system shall be out insulation plus as manufactured by Dryvit Systems, Inc. or approved equal.

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 8 - DOORS, STOREFRONT, AND GLASS**

**SECTION 8A  
METAL DOORS AND FRAMES  
ALUMINUM STOREFRONT AND VESTIBULE  
GLASS AND GLAZING**

### **8A.11 HOLLOW METAL DOORS (EXTERIOR AND INTERIOR)**

- Hollow metal doors of sizes, type and style shown on Tenant requirements shall be 16-gauge steel. U.L. approved, as manufactured by Republic Door Mfg., Co. or Amweld Mfg. Company. All doors to be furnished with a coat of rust-inhibitive paint followed by a prime coat. Install floor mounted door stops where doors/door handles will contact walls.

### **8A.12 PRESSED METAL FRAMES**

- Provide pressed metal frames for all doors. Pressed metal frames shall be 16 gauge steel, U.L. approved, and of the same manufacturer and specifications as hollow metal doors. Frames shall be furnished with a coat of rust-inhibitive paint, followed by a prime coat. Provide three (3) rubber grommets on the strike side of each door. Weather stripping shall be provided as shown on Tenant's criteria drawings.

### **8A.13 ALUMINUM STOREFRONT**

- The storefront shall be designed as described herein. All aluminum material shall be clear anodized finish. Incorporated into the storefront shall be a vestibule area containing entrance doors. The work shall include all labor and material necessary to construct complete all glass and glazing per Tenant plans. Aluminum storefront shall be Kawneer Tri Fab 450 System, screw spline fabrication, or equal as approved by Tenant.

**\*Coordinate with specific requirements listed in section 1B.**

### **8A.14 VESTIBULE**

- Vestibule shall have automatic swing doors or sliders as detailed in Tenant requirements. Contractor shall furnish additional exit doors with proper emergency hardware and storefront finish when required by life and safety codes. Aluminum doors shall be equipped with Best Universal Lock Company cylinders with construction cores. Vestibule shall be Kawneer standard aluminum entrance 190 series or approved equal by Tenant. See Paragraph 8A.17 for door tension.

**\*Coordinate with specific requirements listed in section 1B.**

### **8A.15 GLASS AND GLAZING**

- Grading of glass shall be in conformance with federal specification DD-G 451 flat glass and each piece shall bear the manufacturer's label. All glass shall be new and shall have the manufacturer's label. Glazing for all aluminum doors shall be 1/4" thick tempered plate glass. When required by code, the storefront glass shall be tempered.

### **8A.16 AUTOMATIC DOOR OPERATORS**

- Automatic door operating system as manufactured and installed by The Stanley Works.

**\*Coordinate with specific requirements listed in section 1B.**

### **8A.17 DOOR TENSION SETTINGS**

- Maximum effort to operate an exterior door shall be 8.5 (lbf.).
- Maximum effort to operate an interior door shall be 5 (lbf.).

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 9 - FINISHES**

**SECTION 9A**

**ACOUSTICAL CEILINGS AND FINISHES**

### **9A.11 ACOUSTICAL AND GYPSUM BOARD CEILING**

- Ceiling construction shall be as indicated in Tenant's requirements.
- Acoustical ceiling tiles 48" X 24" X 5/8", white square lay-in, medium surface texture "Cortega Tile" and lay-in #769A as manufactured by Armstrong World Industries, Radar as manufactured by USG Interiors, or equal as approved by tenant.
- Alternate acoustical tile shall be 48" X 24" X 5/8" white, square lay-in fine fissured Humiguard Plus tile #755B as manufactured by Armstrong World Industries, Radar (Clima Plus) as manufactured by USG Interiors, or equal as approved by tenant.
- Suspension system – the suspension system is to be Armstrong Prelude: #7300 main beam with # XL7342 Prelude 4 feet cross tee, USG Interiors (Donn) DX-24 System or equal as approved by tenant.
- Ceiling system shall meet or exceed seismic code requirements.
- Gypsum Board Ceilings Suspension System - shall be per best trade practice with furring channels and fasteners capable of meeting all code and rated assembly requirements.
- Gypsum Board Ceiling Drops shall be coordinated with related trades including, but not necessarily limited to, acoustical ceilings, mechanical systems, electrical work, etc.
- Refer to Section 6A.17 for Gypsum Board (Drywall) Finish

### **GENERAL**

- Spacing for hangers for all suspended grid system and gypsum board ceilings must not be more than 4'0" on center. Where spacing greater than four feet (4'0") is necessary, splayed hangers must be provided or intermediate wires 4'0" on center. Attachment devices shall be sized for five times design load indicated by ASTM standards. Wire for hangers and ties shall have a yield stress load of at least three times the designed load, but not less than 12.GA.
- The Contractor shall coordinate his efforts with mechanical, electrical and sprinkler Contractors for proper spacing of grid to work with diffusers, grilles, light fixtures and sprinkler heads, and proper support for same.
- Provide an edge molding around perimeter of all ceiling areas with matching finish. Provide moldings with exposed flange of the same width as exposed runner.
- Provide additional hangers for support of light fixtures or other ceiling support items as shown on criteria drawings. Light fixtures, etc shall be supported from building structure, coordinate with section 16A.
- Furnish and install hurricane hold down clips in acoustic tile ceiling in entire vestibule.

### **9A.12 CEILING HEIGHTS**

- Finished ceiling heights shall be as indicated on Tenant criteria drawings.

### 9A.13 PAINT

- All paints listed are Pittsburgh or Benjamin Moore numbers. Type of coating to be as follows:
- Latex Flat for all paintable ceilings
- Latex Lo-Lustre Satin Enamel for all walls in office and employee areas
- Latex Semi-Gloss Enamel for all walls in toilets; all columns; bulkhead panels in glass line (interior), and for all sales area interior walls
- Alkyd Quick-Dry Gloss Enamels for all exterior surfaces
- All exposed concrete floor within confines of the building walls shall receive two (2) coats of Benjamin Moore's silicone acrylic concrete stain, clear
- Alkyd Semi-Gloss for all H.M. doors, door frames & door trim

**\*Coordinate with specific requirements listed in Section 1B.**

### 9A.14 PROCESSING ROOM SAFETY STRIPING

- Furnish and install painted safety yellow aisles at areas indicated on the drawings (in Back Stock Room). Aisles shall be solid, 36" wide and. PITTSBURGH PAINTS OR EQUAL.  
**Note:** Paint aisles prior to installation of clear floor sealer. See 9A.13E of this specification.

**\*Coordinate with specific requirements listed in Section 1B.**

### 9A.15 Floor Finishes

- **Coordinate Installation of floor finishes with manufacturer's requirements. Specific manufacturers are listed on the Tenant Criteria Plans. The following manufacturers slab moisture requirements are a minimum requirement:**
- **Armstrong VCT shall have a maximum of 3lbs/1000S.F. with a pH level of 9 or less.**
- **Antico Vinyl plank: Concrete sub-floors shall have a RH of 80% or less, and 5lbs MVER**
- **Prior to installation of finish flooring, Moisture testing shall be conducted in accordance with current ACI and ASTM standards. Results of moisture testing shall be provided to Tenant Project Manager in writing within 48 hours.**

**\*Coordinate additional requirements with DIV 3 (Concrete).**

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 10 - SPECIALTIES**

**SECTION 10A**

**TOILET COMPARTMENTS**

**BUILDING SPECIALTIES**

### **10A.11 TOILET COMPARTMENTS**

- All metal toilet compartments shall be floor anchored and overhead braced. Urinal screens shall be floor anchored with post to floor pilaster. Provide internally reinforced, corrosion resistant, metal panel compartment assemblies complete with hardware, doors, grab bars, and miscellaneous accessories as manufactured by Global Steel Products or Sanymetal. Accessories shall include but not limited to hinges, latches, coat hooks, door bumpers, door pulls. Toilet compartment assemblies and layout shall comply with accessibility requirements of authorities having jurisdiction. Refer to the Criteria Drawings for location, size, and color.
- All HC stall partitions shall receive cross bracing from wall to center of partition.

### **10A.12 WASHROOM ACCESSORIES**

- Provide and install Tilt Frame Glass Mirror units as manufactured by Bradley Corporation. Refer to the Criteria Drawings for location.
- Provide and install Grab Bars as manufactured by Bobrick Washroom Equipment Inc. Install grab bars to withstand downward loading according to ASTM testing standards. Refer to Criteria Drawings for location.

### **10A.13 ELECTRIC HAND DRYER**

- Furnish and install Excel Model No. Excelsator XL-W with noise reduction Nozzle as noted on criteria drawings. Color to be white.

**\*Coordinate with specific requirements listed in Section 1B.**

### **10A.14 FIRE PROTECTION SPECIALTIES**

- Provide and install NFPA compliant portable fire extinguishes with labels listing type, rating and classification by an independent testing agency acceptable to authorities having jurisdiction. Minimum five (5) type ABC required. Located per direction of Local Jurisdiction.
- Furnish and install location signage on all sides of columns on sales floor. Mount signs in accordance with local jurisdiction; if permissible mount signs at 12'0" above finish floor or tight to ceiling.

### **10A.15 CENTRAL VACUUM SYSTEM**

- Furnish and install a complete operational Central Vacuum System in the Dressing/Fitting Rooms. (Specifications, including Manufacturer, make, and model number to be determined

**\*For exceptions to this requirement, coordinate with Section 1B "Chain Specific Requirements".**

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 11 - EQUIPMENT  
SECTION 11A**

### **11A.11 LOADING DOCK EQUIPMENT**

- Provide and install Frommelt Dock and Door brand dock seals continuous bottom bumper and anchorage devices at receiving door as manufactured by Rite Hite. Refer to Criteria Drawings for location of receiving dock and door.
- Dock seal projection and taper shall be based on site-specific requirements. Compression of seals shall be no less than 4-inches and not greater than 6-inches. Side and head dock seal pads shall provide a tight seal between back of trailer and building wall. Side and head pad fabric shall be 40-oz. Superwear Hypalon mounted on galvanized TechSteel backer.
- Laminated dock bumper to be continuous length. Projection requirements shall be field verified. Dock bumper shall be designed to absorb 80-percent of truck impact.

**\*Coordinate with specific requirements listed in Section 1B.**

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 14 - CONVEYING EQUIPMENT**

**SECTION 14A**

**CONVEYORS, ELEVATORS AND LIFTS**

#### **14A.11 CONVEYING SYSTEM (For All Multi Level Stores)**

Furnish and install a complete floor to floor conveying system as follows:

Total load capacity: 1500 lbs.

Conveyor type: 30" wide, slider bed belt conveyor

Supports: Adjustable legs at lower and upper level.

Provide mid run supports as required by manufacturer.

Degree of incline: 17 degrees

Motor: Center drive 1 H.P. motor 3 ph. 60 hrz.

230/460, reversible direction.

Belt Speed: 60 feet/minute

Controls: Magnetic starter – reversing NEMA 1.

Emergency push button.

Conveyor: Distributer Deluxe Conveying Systems

50 Strafello Drive

Avon Industrial Park

Avon, MA 02322

508-588-4410

#### **14A.12 PASSENGER AND FREIGHT ELEVATOR(S) (For All Multi Level Stores)**

##### **PART 1 GENERAL**

##### **DESCRIPTION OF WORK**

- This specification is intended to cover the complete furnishing and installing of one (1) oil hydraulic passenger and one (1) oil hydraulic freight elevator by Schindler Elevator Corporation. All work shall be performed in a workmanlike manner and is to include all work and material in accordance with the drawings and as specified herein. In all cases where a device or part of the equipment it herein referred to in the singular number, it is intended that such reference shall apply to as many such devices as are required to complete the installation.

##### **RELATED WORK BY OTHERS**

- General Contractor shall provide the following requirements which shall be in accordance with the requirements of the ASME A18.1 Code plus applicable Model Building Code. For specific rules, refer to ASME A17.1, Section 300 for hydraulic elevators. State of local requirements must be used if more stringent.
- A properly framed and enclosed legal hoistway, including venting as required by the governing code or authority. Plumb to within 1/2" at any point, minimum two hour enclosure walls.

- Suitable machine room with legal access and ventilation, concrete floor. Machine room temperature to be maintained between 60 degree F and 80 degree F. Machine room access per governing authority.

## RELATED WORK BY OTHERS (con't)

- Adequate rail bracket supports, bracket spacing as required by governing code. Divider beams between hoistway at each floor and roof, for guide rail brackets. Maximum allowable vertical spacing of rail supports.
- Dry pit reinforced to sustain normal vertical forces from rails and impact loads from buffer and cylinder (holeless jack units for passenger elevators). P17 floor to be level and free of debris.
- Furnish and install channel frames. Frames to be plumb, one above the other, and square with the channel.
- Hoistway walls are to be designed and constructed in accordance with the required fire rating including where penetrated by elevator fixture boxes and to include adequate fastening to hoistway entrance assemblies.
- Any cutting, including cutouts to accommodate hall signal fixtures, patching painting of walls, floors or partitions together *with finish painting of entrance doors and frames*.
- Provide standard water connections, and water, if required, for equipment and outlet line for discharging excess water during drilling of cylinder hole. (Freight elevator) (hole less jack units for passenger elevator).
- Removal of excavation spoils from jack hole drilling.
- Provide means of clear access to and egress from location of jack hole drilling location for truck mounted drilling equipment.
- All electric power for lights, tools, hoists, etc., during erection as well as electric current for starting, testing and adjusting the elevator.
- A fused disconnect switch for each elevator per the National Electrical Code with feeder or branch wiring to controller. Size to suit elevator . Disconnect to include separate ground wires from disconnect to elevator controller.
- A 120 volt, AC, 20 amp, single phase power supply with fused SPST lockable disconnect switch for each elevator, with feeder wiring to each controller for car lights.
- Suitable light and convenience outlets in machine room with light switches located within 18 inches of lock jamb side of machine room door.
- Venting of machine room.
- Convenience outlet and light fixture in pit with switch located adjacent to the access door.
- High water sensor in pit; interconnect to fire alarm system.

## **RELATED WORK BY OTHERS (con't)**

- Clear access above ceiling, or metal/concrete raceways in floor, for oil line and wiring duct from machine room, if machine room is remote from elevator hoistway.
- Convenience outlet and telephone outlet on control panel.
- Cutout through machine room wall, 8" X 16", for oil line and wiring duct. Coordinate with elevator at the building site.
- All conduit and wire runs remote from either the machine room or the hoistways.
- Hoisting beams, trap doors, ladders or stairs and other means of access to machine room for maintenance and equipment removal purposes.
- Provide smoke sensors at each floor and the elevator machine room. Bring back a pair of wires, to the controller. These wires will be hooked on the N/C or N/O terminals of each controller. Interconnect to fire alarm system.
- Entrance walls and finished floors are not to be constructed until after door frames and sills are in place. Consult elevator for rough opening size. When drywall construction is used, the general shall supply the drywall framing so that the wall fire resistance rating is maintained.
- Filling and grouting around entrances by general as required.
- Guarding and protecting the hoistway during construction. The protection of the hoistway shall include solid panels surrounding each hoistway opening at each floor, a minimum of 48 inches high. Hoistway guards to be erected, maintained and removed by others.
- Where access to the pit is by means of the lowest hoistway entrance, provide vertical ladder of non-combustible material extending 42" minimum above side of access door or hand gripes shall be provided to the same height.
- Furnish and install finished flooring in elevator cab.
- For sill support by the elevator, hoistway capable of accepting anchor stud type fastener must be provided.
- Where openings occur, all walls and sill supports must be plumb.

## **QUALITY ASSURANCE**

- All drawings, clearances, construction, workmanship and material, unless specifically excepted, shall be in accordance with the requirements of the ASME code, handicap accessibility, Americans with Disabilities Act and all codes having legal jurisdiction include requirements or which conflict with the ASME code.

## **SUBMITTALS**

- Shop Drawings: The elevator Contractor shall, after structural and architectural drawings are furnished, submit complete working drawings, showing the location of all equipment, loads, and all other information necessary to render a totally functional elevator to the owner.

- Product Data: The elevator Contractor shall provide cab, entrance and fixture drawings. Provide finish samples upon request.
- Schematics: The elevator Contractor shall provide wiring diagrams.
- Owner's Manuals: The elevator Contractor shall provide renewal parts data.

#### **TEMPORARY USE**

- Temporary use of the car shall be negotiated with the elevator when it is required and shall be in accordance with the terms and conditions of the elevator 's temporary acceptance form.

#### **WARRANTY**

- The elevator Contractor shall guarantee the material and workmanship of the equipment installed by him under these specifications and make good any defects not due to ordinary wear or to improper use which may develop within one year after the completion of the installation or acceptance thereof by beneficial use, whichever is earlier.

#### **PROPRIETARY INFORMATION**

- Any proprietary material, information or data contained in any component or feature of this equipment remains the property of the elevator Contractor. This includes but is not limited to tools, devices, manuals, software, source codes, access codes, objects and passwords.

#### **MAINTENANCE**

- Regular Maintenance service shall be furnished for a period of 12 months on each unit completed under this contract after the completion of the installation or acceptance thereof by beneficial use, whichever is earlier.
- Trained employees shall make periodic examinations and shall perform work including necessary adjusting, greasing, oiling, and the replacing of parts to keep the elevator in operation, except parts which require replacement because of accidents, misuse, or negligence by parties other than the elevator .
- Emergency call-back service shall be provided 24 hours 7 days a week.

## PART 2 PRODUCTS

### 2.01 MATERIALS – ELEVATOR SYSTEM AND COMPONENTS (Freight Elevator)

Elevator Equipment Summary: One (1) Oil Hydraulic Freight Elevator

Application:	Conventional Borehole
Service:	Freight Elevator to serve multiple levels as dictated by Tenant space
Capacity:	6,000 lb., Class C3 loading
Speed:	50 fpm
Travel:	20 feet 9 inches, or as required by story height
Landings:	2 (minimum) multiple levels as dictated by Tenant space
Openings:	2 in line: alternate 1 front and 1 rear opening as required by Tenant space
Control:	Microprocessor based
Operation:	Single Automatic Push Button
Machine Room:	Adjacent to hoistway
Platform Size:	10'-4" wide X 12'-0" deep: with rear openings 12'-8" deep
Hoistway Size:	12'-4" wide X 12'-8" deep: with rear openings 13'-6" deep
Car Enclosure:	14 gauge steel, enamel finish, 8'-0" high vertical biparting power doors
Power Supply:	108 volts, 3 phase, 60 Hz
Contract Maintenance:	12 months with emergency callback service, 24 hours 7 days a week
Additional Features:	Auto Open Light Auto Close Buzzer and Light Emergency Light Firefighter's Service, sensors by others In-Use Light Oil Cooler Phase Protection Reduced Voltage (Wye Delta) Starting Telephone (ADA Compliant)

## 2.01 MATERIALS – ELEVATOR SYSTEM AND COMPONENTS (Freight Elevator) (con't)

- Cylinder and Plunger (Jack Unit)
  - The cylinder shall be constructed of steel pipe of sufficient thickness and suitable for the operating pressure per current ANSI Code. The top of the cylinder shall be equipped with a cylinder head with drip ring and self adjusting packing.
  - The plunger shall be constructed of selected steel tubing or pipe of proper diameter machined true and smooth with a fine polished finish. The plunger shall be provided with a stop ring electrical welded to it to prevent the plunger from leaving the cylinder
  - The plunger and cylinder shall be installed plumb and must operate freely with minimum friction
- Pumping Unit- The pumping unit shall be a submersible design and shall include an electric motor connected to a pump, a hydraulic control system, storage tank, necessary piping connection and silencer, all compactly designed.
- Pump- The pump shall be a positive displacement submersible screw type to give smooth operation and shall be especially designed and manufactured for elevator service.
- Motor-The motor shall be of the alternating current, polyphase squirrel cage induction type and shall be of a design especially adapted to electro-hydraulic submersible requirements.
- Storage Tank-The storage tank shall be constructed of 11 gauge steel and shall be provided with a removable cover containing a removable oil dip stick. The pump and submersible motor shall be mounted on a special reinforced isolation mount in the bottom of the tank. The control valve shall be mounted in the discharge line above the oil level and easily accessible from the top of the tank. The control valve shall not be mounted external of the tank. An initial supply of oil sufficient for 100 stops/hr. shall be provided.
- Piping-Pipe of adequate size and seamless schedule 80 thickness shall be installed between terminal stopping device is also required, it shall be furnished and the controller switches and circuitry arranged in accordance with the requirements of the ANSI Code.
- Hoistway Operating Devices-Normal terminal stopping devices shall be provided. When an emergency terminal stopping device is also required, it shall be furnished and the controller switches and circuitry arranged in accordance with the requirements of the ANSI Code.
- Pit Switch-An emergency stop switch shall be located in the pit.
- Platform-The car platform shall be of steel construction with channel iron stringers and a non-skid steel surface. Tow guards to be minimum 12 gauge steel.
- Car Frame-A suitable car frame fabricated from structural steel members shall be provided with adequate bracing to support the platform and car enclosure. The buffer striking plate on the underside of the car frame plank members must fully compress the spring buffer mounted in the pit before the plunger reaches its down limit of travel. Guide shoes to be solid cast iron.
- Guides-Steel elevator guide rails shall be furnished to guide the car, erected plumb and securely fastened to the building structure.

## 2.01 MATERIALS – ELEVATOR SYSTEM AND COMPONENTS (Freight Elevator) (con't)

- Wiring-All wiring and electrical interconnections shall comply with the governing codes. Insulated wiring shall have flame retardant and moisture-proof outer covering, and shall be run in conduit tubing or electrical wireways. Traveling cables shall be flexible and suitably suspended to relieve strain on individual conductors.
- Hydraulic Control System-The hydraulic control system shall be of compact design suitable for operation under the required pressures and it shall be mounted in the storage tank. The control valve shall be manifold with up, down and check valve sections. A control section including solenoid valves will direct the main valve and control up and down starting, transition from full speed to leveling speed, up and down stops, pressure relief and manual lowering down speed and up and down leveling shall be controlled at the main valve sections. All of these functions shall be fully adjustable for maximum smoothness and to meet contract conditions.
- Leveling Device-The elevator shall be provided with an automatic leveling device which will bring the car to a stop within 3/8" of the landing level regardless of load or direction of travel. Landing level will be maintained within the leveling zone irrespective of the hoistway doors being open or closed.
- Controller-A microprocessor controller shall be provided including necessary starting switches of adequate size together with all relays, switches and hardware required to accomplish the operation specified. A three phase overload device shall be provided to protect the motor against overloading.
- Car Stall Protective Circuit-A protective circuit shall be provided which will stop the motor and the pump and return the car to its lowest landing in the event that the car, while traveling up, does not reach its designated landing within a predetermined time interval. This circuit shall permit a normal exit from the car but prevent further operation of the elevator until the trouble has been corrected.
- Emergency Car Lighting-An emergency power unit employing a 6 volt sealed rechargeable battery and totally static circuits shall be provided that shall illuminate the elevator car and provide current to the alarm bell in the event of normal power failure. The equipment shall comply with the requirements of the ANSI Code. This unit shall be an integral part of the car operating panel.
- Applied Car Operating Panel-An applied car operating panel shall be furnished. Cabinet will contain a bank of mechanical illuminated buttons marked to correspond to the landing served, an emergency stop button, door open and door close buttons. The emergency call button shall be connected to a bell that serves as an emergency signal. Switches for lights and other key operations shall also be located in the car operating panel.
- Telephone and Telephone Compartment-A telephone compartment and ADA compliant hands-free telephone shall be provided in the car operating panel. Necessary wires shall be included in the car traveling cable. Connections to the building service system shall be furnished by others.

## 2.01 MATERIALS – ELEVATOR SYSTEM AND COMPONENTS (Freight Elevator) (con't)

- Cab Enclosure-Walls and canopy to be 14 gauge solid hot rolled steel panels, blue-grey enamel finish. All panels will be no more than 13" wide bolted together and contained in an angle iron framework. Steel protective base bumpers on walls. A recess for mounting of car operating panel shall be provided. Lighting shall consist of two recessed fluorescent lights with top guard,
- Cab Flooring: Steel checker plate ¼"
- Gate-Power car gate shall be vertical sliding and made of not less than 9 gauge steel wire mesh with primer enamel finish. Gate shall be properly guided on steel tracks and counterbalanced by weights attached to the gate by flexible wire or sprocket chain running over suitable sheaves or sprockets. Counterweights shall be enclosed. Equip gate with an electric contact to prevent operation of the car until gate is closed as defined by code.
- Hoistway Entrances
  - The Elevator shall furnish and install power operated hoistway doors complete with wiring. Each door shall bear UL certification
  - Doors shall be vertical biparting all steel counterbalancing type and panels made of not less than #14 gauge sheet steel. A small glass vision panel in each upper door section shall be provided. Doors shall be finished in enamel primer
  - The door operator shall open the door automatically after the car reaches the landing. Constant pressure on the close button shall close the door. Momentary pressure on the open button shall reopen the door if the car is at the landing. Provide manual operation of the doors from the car in the event of a power failure. Each door shall be equipped with a lock and contact operated by a stationary cam on the car to prevent the movement of the car unless all doors are closed and to lock the door when the car leaves a landing
- Signal Fixtures
- In addition to the car operating panel, a car position indicator shall be furnished in the cab.
- In the hallway, an up button and down button at intermediate floors and a single button at each terminal floor shall be furnished at a height to comply with handicap requirements.
- Hall Fixtures shall be finished in #4 stainless steel. Fixture cover plates shall be mounted with tamper resistant fasteners in the same finish.

## **PART 2A PRODUCTS / OPERATIONS (Passenger Elevator)**

### **2.01A ACCEPTABLE MANUFACTURERS**

- Subject to compliance with requirements, provide products of Schindler Elevator Corporation or approved equivalent.

### **2.02A ELEVATOR SYSTEM AND COMPONENTS**

#### Elevator Equipment Summary:

Application: Telescopic Holeless Front Mounted  
Jack

Service: General Purpose Passenger – Class A Loading

Quantity: 1

Capacity: 2500 lbs

Speed: 100 fpm

Travel: 17 feet 6 inches or as required by story height

Landings: 2

Front Openings: 2

Rear Openings: 2 in line alternate , 1 front and 1 rear opening as required by Tenant space

Operation: Microprocessor Group Automatic Operation with Onboard Diagnostic Capabilities

Machine Room: Adjacent to elevator hoistway

Platform Size: 7'-1" wide X 5'-4" deep

Cab Height: 8'-0"

Guide Rails: Strength equivalent to 16lb. Per foot

Hoistway Entrances: 3'-6" wide X 7'-0" high SSO doors

Power Supply: 480 Volts 3 Phase 60 Hz

Contract Maintenance: 12 month(s) with emergency callback, 24 hours 7 days a week

## **2.02A ELEVATOR SYSTEM AND COMPONENTS (con't)**

### Additional Features:

- Anti-Stall Feature
- Braille and Audible Signals
- Door Open and Close Stall Protection
- Emergency Lighting
- Firefighter's Service, sensors by others
- Independent Service Feature
- Infrared Light Curtain Door Protection
- Low Oil Return
- Overload Sensors
- Phase Protection
- Start Type: Wye Delta
- Cab Pads and Fasteners: 1 set(s)
- Certificate Frame
- Heat Exchanger
- Locking Service Panel in Car Operating Panel
- Pressure Switch
- Remote Monitoring Capable
- Telephone (ADA compliant hands free)

## **2.03A MATERIALS AND COMPONENTS**

- Stainless steel shall have #4 satin finish as specified herein. Baked enamel colors, shall be chosen by Tenant from elevator manufacturer's standard color selections.
- Aluminum used for threshold and hoistway entrance sills shall be extruded; aluminum used for exposed frames in suspended ceilings shall be anodized.
- Plastic laminates shall be general purpose type and meet flame spread ratings as required by code. Pattern shall be selected from the elevator 's standard selection. Submit to Tenant for selection and approval.
- Motors, pumps, valves, fluid tank, hydraulic fluid, microprocessor controller, controls, pushbuttons and wiring shall be UL or CSA approved.
- Spring buffers, attachment brackets and anchors shall be designed and sized according to code with safety factors.
- Pump shall be of the positive displacement screw type, designed for steady discharge with minimal pulsations.
- A muffler shall be provided to reduce noise transmission.
- A telescopic holeless jack system shall be provided. The jack cylinder shall be mounted to the front of the car structure. Synchronization of jack stages shall be by direct mechanical means to ensure that the elevator moves at a steady speed and provides a smooth ride.

## **2.04A CAB**

- Cab shall be 8'-0" high from finished floor to underside of canopy.
- Elevator car enclosure wall sections shall be constructed of no less than 16 gauge (.060) steel panels allowing a deflection of no more than ¼". The cab wall shall be steel, baked enamel finish with plastic laminate raised panels.
- The base, frieze and reveals will be 0.
- The ceiling shall be suspended with exposed frame with plastic lay-in panels. The lighting shall be fluorescent.
- Front returns shall be of integral construction. Transcoms shall run full width of cab and will be finished in #4 stainless steel.
- Cab doors shall be flush design both sides, rib construction, finished in #4 stainless steel
- Infrared light curtain door protection shall include equip leading edges of car doors with concealed transmitter and receiver infrared beam devices which detect the presence of an object in the process of passing through the hoistway entrance and car doorway. The device shall use multibeam scanning to detect obstructions in the door opening without any moving parts. The detector device shall prevent the doors from closing, or if they have already started closing, shall cause the doors to reopen and remain open while the object is within the detection zone. Provide a minimum of forty horizontal beams to fill the doorway from ground level to a height of 6 feet.
- A one speed exhaust fan shall be mounted in cab transom or canopy.

#### **2.04A CAB (con't)**

- A ½" X 2" flat brushed aluminum in #4 stainless look handrail shall be mounted on the rear wall.
- The threshold shall be extruded aluminum.
- The cab finish flooring shall be furnished and installed by others.
- One (1) set of quilted, soil resistant and fire-retardant pads with appropriate fasteners shall be furnished.
- A certificate frame shall be provided.

#### **2.05A HOISTWAY ENTRANCES**

- Hoistway door and frame construction shall be UL rated, with required fire rating. Doors shall be of rigid flush panel construction and contain sound-deadening material. Frames shall be securely fastened at the corners to form a unit frame. Frames shall be bolted.
- Exposed areas of the corridor frames shall be finished in baked enamel color as selected by Tenant on all floors.
- Doors shall be finished in baked enamel color as selected by Tenant on all floors.
- Sills shall be extruded aluminum on all floors.

#### **2.06A CAB FIXTURES**

- The main car operating panel shall be mounted in the return and comply with handicap requirements. Pushbuttons that illuminate using long lasting LED's shall be included for each floor served, and emergency buttons and switches shall be provided per code. Switches for car light and accessories shall be provided.
- The following cab fixtures shall also be provided:
  - Car Lantern(s)
  - Digital Car Position Indicator
  - Locking Service Panel in Car Operating Panel

#### **2.06A CAB FIXTURES**

- Certificate Frame
- Telephone (ADA compliant hands free)

## **2.07A HALL FIXTURES**

- An up button at intermediate floors and a single button at each terminal floor at a height to comply with handicap requirements.
- Pushbuttons shall illuminate using long lasting LED's.
- Fixture cover plates made of high impact materials shall be mounted with tamper resistant fasteners.

## **INSPECTION**

- Prior to commencing elevator installation, elevator Contractor shall inspect hoistways, hoistway openings, pits and machine rooms as constructed. Verify that hoistway, pit, machine room and openings are of correct size and within tolerance and are ready for work of this section. Notify General Contractor in writing of any dimensional discrepancies or other conditions detrimental to the proper installation or performance of elevator work.
- Do not proceed with elevator installation until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

## INSTALLATION

- Components will be arranged in machine room so equipment can be removed for repairs or replaced without dismantling or removing other equipment.
- Coordinate elevator work with work of other trades, for proper time and sequence to avoid construction delays.
- Set entrances in vertical alignment with car openings, and aligned with plumb hoistway lines.
- Adjust for smooth acceleration and deceleration of car so not to cause passenger discomfort. Adjust doors to prevent opening of doors at any landing, or is in the leveling zone and stopping at that landing.
- Adjust automatic floor leveling feature at each floor to achieve leveling within ¼" of the landing.

## ADJUST AND CLEAN

- Adjustments:
  - Adjust controller, switches and safety features to operate to within accepted design tolerances.
  - Adjust leveling devices so car stops within 1/4" of finished floor.
- Lubricate equipment in accordance with manufacturer's instructions.
  - Clean Up:
- Remove from hoistway surfaces all loose materials and filings resulting from this work.
- Clean machine room floor of dirt, oil and grease.
- Remove crating and packing materials from premises.

## 14A.12 CLOSEOUT PROCEDURES

- Instruct Owner's Personnel: The elevator Contractor shall provide a competent instructor or instructors for a period of four hours, at a mutually agreed upon time prior to store opening., to instruct the store management and/or appointed personnel in the proper operation and general care of the elevator equipment. Review of manuals, documentation, warranties, safety, used of cleaning materials and service call procedures with store personnel will be included. Instruct store personnel in the operation of special security features, when applicable. Provide to store management four sets of equipment keys. Performance of this training shall not be prerequisite of payment or the release of retainage due to the elevator Contractor

### **14A.13 VERTICAL RECIPROCATING LIFT (For All Multi Level Stores)**

Furnish and install a complete floor to floor vertical reciprocating lift as manufactured by: Wildeck.

As distributed by: Deluxe Conveying Systems  
50 Strafello Drive  
Avon Industrial Park  
Avon, MA 02322  
508-588-4410

- Total load capacity: 2,000 lbs. w/carriage 8' 0" wide x 6' 0" deep
- Lift Type: Mechanical drive with helical gear reducers and brake motor. Raising and lowering of the carriage shall be by a common drive shaft connected to gear reducer.
- Lifting means: The VRC carriage shall be raised and lowered by roller chain and sprockets. Minimum safety factor for the lifting chains is 10:1.
- Travel Speed: 30 feet / minute
- Power: Power characteristics are 230/460V, 3 phase, 60 hrz.
- Controls: Minimum NEMA 12 rated main control cabinet, pre-wired to terminal strip (include a transformer to provide 110V/24V control circuit).
- Limit Switches: Minimum NEMA 4x rated. Limit switches at each operating level as well as upper and lower over travel protection. Provide switches to continuously monitor the lifting chain and stop the VRC in case of a slack or broken chain.
- Level: A mushroom type emergency stop push button shall be located on each station to cut all power to the VRC. Emergency stop button shall be at rest before any other operations take place. E-stop will be illuminated to indicate "to be pushed".

**Substitutions will not be accepted for the vertical reciprocating lift.**

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 14 - CONVEYING EQUIPMENT**

**SECTION 14B**

**ESCALATORS**

## **PART 1 GENERAL**

### **DESCRIPTION OF WORK**

- This specification is intended to cover the complete furnishing and installing of escalators by Schindler Elevator Corporation. All work shall be performed in a workmanlike manner and is to include all labor and material in accordance with the drawings and as specified herein. In all cases where a device or part of the equipment is herein referred to in the singular number, it is intended that such reference shall apply to as many such devices as are required to complete the installation.

### **RELATED WORK BY OTHERS**

- General Contractor shall provide the following in accordance with the requirements of the ANSI A17.1 Code plus applicable Building Code. For specific rules, refer to ANSI A17.1, Section 800 for escalators. State or local requirements will be used if more stringent.
- Provide suitable floor openings properly framed and finished in accordance with the escalator manufacturer's drawings together with any legal enclosures or railings, smoke baffles, or temporary barricades around the wellway that may be required.
- Provide space of proper dimensions for the escalator and machinery in accordance with the manufacturer's approved drawings and do all cutting of and making changes to floors, ceilings, walls or partitions together with all repairs made necessary by such cutting or changes and all painting incidental thereto.
- Provide supports of adequate strength, properly located, for truss at upper and lower landings, including any required intermediate supports, together with steel bracing members, truss bearing plates and supports.
- Provide other building work that may be required for the installation including changes to conduit, piping, ducts, plaster patching, painting, and wellway opening guardrail.
- Provide hoist beams located above the escalator(s) at both the lower and upper head. The length of the beam shall be placed perpendicular to the escalator length to allow centering of the hoisting device over the final escalator position in the building. The hoist beams shall be of sufficient strength to support the hoisting of the escalator from floor level to final position.
- Provide electrical connections from the power main to the controller through a fused mainline switch or other disconnecting device, including wiring, conduit receptacles, and outlets for illumination of interior of truss and machine room.
- Provide electric power as previously described in these specifications for installing, starting, adjusting and testing machinery.
- Provide a 120 volt duplex power receptacle located in the upper and lower head of escalator truss as per code.
- Provide covering for the exterior of the escalator from the edge of the deck covers, including covering for truss and soffit, not to exceed 10 pounds per square foot.

### **RELATED WORK BY OTHERS (con't)**

- Provide well opening protection as shown on the architectural drawings, and in accordance with local regulations.
- Provide mechanical ventilation of machine space and truss spaces as necessary.

### **QUALITY ASSURANCE**

- The escalator Contractor is a company specializing in manufacturing and installing escalator equipment with not less than five years successful experience.
- All designs, clearances, construction, workmanship and material, unless specifically excepted, shall be in accordance with the requirements of the ANSI code, handicap accessibility, Americans with Disabilities Act and all codes having legal jurisdiction. The ANSI A17.1 Code shall govern except where codes having legal jurisdiction include more rigid requirements or conflict with the ANSI A17.1 Code.
- The escalator shall follow design and manufacturing procedures, certified in accordance with International Organization for Standardization (ISO9001) to meet product and service requirements for quality assurance for new products.

### **SUBMITTALS**

- The escalator Contractor shall, after structural and architectural drawings are furnished, submit complete working drawings, showing the location of all equipment, loads, and all other information necessary to render a totally functional escalator to the owner.
- The escalator Contractor shall provide finish samples upon request.
- The escalator Contractor shall provide wiring diagrams.
- The escalator Contractor shall provide Renewal Parts Catalogs and Maintenance Instructions.

### **TEMPORARY USE**

- Temporary use of the escalator shall be negotiated with the escalator Contractor if required and shall be in accordance with the terms and conditions of the escalator Contractor's temporary acceptance form.

### **WARRANTY**

- The escalator Contractor shall guarantee the material and workmanship of the equipment installed by him under these specifications and make good any defects not due to ordinary wear or to improper use that may develop within one year after the completion of the installation or acceptance thereof by beneficial use, whichever is earlier.

**PROPRIETARY INFORMATION**

- Any proprietary material, information or data contained in the equipment, or any component or feature thereof, remains the property of the escalator Contractor .This includes, but is not limited to, tools, devices, manuals, software, source code, access codes, object codes, passwords and remote monitoring feature that is deactivated if escalator Contractor maintenance is discontinued.

**MAINTENANCE**

- The escalator included in these specifications shall receive regular maintenance on each unit for a period of 12 months after the completion of work described herein or acceptance thereof by beneficial use, whichever is earlier.
- Trained employees shall make periodic examinations and perform work including necessary adjusting, greasing, oiling and replacing parts to keep the escalator in operation.

**• PART 2 PRODUCTS / OPERATIONS**

**ESCALATORS SYSTEM AND COMPONENTS**

**Escalator Equipment Summary:**

- Quantity: 2
- Application: Indoor
- Vertical Rise: 17 Feet 6 Inches or building story height
- Escalator Width: 48 inch (1200 mm)
- Step Width: 40 inch (1000 mm)
- Step Run: Two flat steps
- Speed: 90 Feet/Minute
- Floors Served: From 1 to 2 (minimum)
- Power Supply: 480 Volts, 3 Phase, 60 Hertz
- Contract Maintenance: 12 month(s) with emergency callback service, 24-hours/day

**Additional Features**

- Combplate Lighting
- Direction Indicators

## **MATERIALS AND COMPONENTS**

- All escalators shall be the cleat step reversible type, self-contained units, capable of operating under full load conditions in either direction for ascending or descending passenger service on an incline of thirty degrees from the horizontal, complete with driving machine, safety devices, balustrades, etc., all as hereinafter specified.
- All exposed metal work, furnished under these specifications, except the nonferrous materials, and the finishes, plated or machined surfaces, shall be properly painted in accordance with the manufacturer's standard methods.
- Conduit, duct, wiring and fittings necessary for the proper operation of the equipment shall be furnished and installed in accordance with the manufacturer's standard methods and shall be in compliance with the National Electric Code.
- The sound level shall not exceed 58 dba measured 3 feet above the combplates

## **TRUSS**

- The structural steel truss shall be designed and constructed to carry safely the entire load of the escalator including all parts of same, together with the full capacity load and including the weight of the exterior balustrade and truss covering as detailed in these specifications or on the drawings. Weight of exterior covering carried by the truss may not exceed 10 pounds per square foot. The top end of the truss shall carry the drive machine and controller. The load bearing components of the structure shall be composed of open steel shapes as a preventative against hidden corrosion damage. The truss shall have a factor of safety in accordance with the requirements of the ANSI A17.1 Code and other codes having jurisdiction and shall be constructed to withstand a maximum deflection of 1/1000 per unit length.
- The truss shall be coated with an anti-corrosive primer.
- All trusses shall include supports for truss cladding. These supports shall allow a to attach cladding easily to the truss exterior. The design shall be the manufacturers standard and be capable of carrying a minimum load of 10 pounds per square foot.

## **DRIP PANS**

- Steel drip pans of oil-tight construction shall be provided the entire length of the escalator truss and from chord to chord in width. Drip pans shall be capable of supporting workmen.

## **ISOLATION MOUNTING**

- A flexible component, vertically adjustable, shall be provided between the escalator mounting structure and the building support to reduce transmission of vibration. Joints between the escalator's front and sides and the floor shall remain flexible. A gap of approximately 3/8 inch shall be left between the escalator and the floor. After installation, this gap shall be filled with elastic sealing material, e.g. silicone rubber. Under no circumstances shall these supports be cemented in, nor shall they have structural material butting against them.

## **TRACKS**

- The track assembly upon which the step wheels travel shall be designed and manufactured as a completely independent unit. It shall be factory aligned and guarantee accuracy throughout the escalator. The individual track blocks, together with transition sections, step chain tension carriage, main drive shaft and handrail drive shall form a fully independent assembly. When placed into the truss, they shall remain unaffected by any tolerances present in the welded truss lattice framework. The track system shall be bolted that shall minimize down time if maintenance is required. Tracks in the transition shall be made of solid, bright flat steel. All tracks shall have smooth track surface. The track system in the drive and return ends shall be a minimum of 5/16 inch thick. Track in the inclined portion of the escalator shall be a minimum of 1/8 inch thick.

## **STEP DRIVE ASSEMBLIES**

- The top sprocket assembly of the step driving unit shall be carried on two brackets rigidly attached to the truss to ensure and maintain proper alignment of the unit and shall be removable intact from the truss.

## **STEP CHAIN SPROCKETS**

- The step chain sprockets shall be accurately machined to distribute the load evenly on the sprocket teeth and on the chain rollers and shall be designed for smooth operation.

## **TENSION CARRIAGE**

- The lower tension assembly shall be mounted on supporting pedestals that operate on tracks located on each side of the truss and shall be designed and installed to maintain proper tension on the step chains by means of compression springs. It shall be roller supported and have a calibrated tension range of 9 inches. In the 180 degree reversing station, the step chain shall pass over a flat track surface, and the step rollers shall be guided through a precision formed steel guide.

## **BEARINGS**

- Suitable bearings shall be provided. Bearings shall be of the ball or roller type. They shall be dust proof and self-aligning and shall be provided with lifetime lubrication.

## **STEPS**

- Steps shall be of horizontal tread formation, the width shall be as specified. The vertical rise between steps shall not exceed 8-1/2 inches; the horizontal distance between the noses of the steps shall not be less than 15-3/4 inches.
- The steps shall be made of single-piece cast aluminum suitably reinforced to carry the maximum load per step as required by the ANSI A17.1 Code.
- Underside of steps shall be coated with sound deadening material.

## **STEPS (con't)**

- The step wheels shall be designed for quiet operation; they shall be of a type that shall ensure their rotation and prevent flat spots. They shall be so mounted as to prevent tilting and rocking of the steps. They shall be provided with suitable bearings and provisions made for their permanent retention of ample lubricant to ensure satisfactory operation.
- The design of the steps and their various attachments shall permit the steps being readily removed.
- The design of the escalators shall permit running the chain without the steps for convenience in cleaning and inspection.
- The tread portion of the step casting shall be cleat type, designed to ensure a secure foothold and comfortable tread surface; the cleats shall not exceed 1/8 inch in width; the grooves shall not exceed ¼ inch in width and shall be not less than 7/16 inch deep.
- The treads shall have all square edges with a chamfered or rounded nosing of 1/16 inch or less radius at the riser end of the tread. Cleats shall be spaced so that the ends mesh with the vertical cleats of the adjacent step riser.
- The riser portion of the step casting shall be furnished with vertical cleats, arranged to pass between the cleats of the treads on the adjacent steps, so as to form an interlocking unit throughout their exposed travel with minimum clearances.
- In order to maintain step-skirt clearance at an absolute minimum, steps shall be guided by means of guide pads directly along the skirting.
- The steps shall comply with the Step Fatigue Test, Rule 1105.1 of ANSI A17.1 Code.
- The step color shall be silver.
- Step Demarcation:
  - Permanent, yellow, thermo-plastic inserts shall be fitted to the side and rear of the tread surface as well as to the side of the step riser.
  - The inserts shall not only identify the recommended safe standing area but also contribute to reduce the skirt step gap to and absolute minimum.

## **STEP CHAINS**

- The step chains shall be of the endless roller type, one located on each side of the steps. The chains shall be made of high grade steel links with hardened pins and precision rollers designed to accurately engage the drive sprockets to ensure smooth operation. The chains shall have a factor of safety of not less than ten.

## **COMBPLATES**

- The combplates shall have closely spaced comb teeth and shall be so arranged that the cleats of the step treads pass between them with minimum clearance. The comb teeth shall be made in sections so that any damaged or worn sections can be readily replaced without disturbing balance of the others. The comb teeth shall be formed to correspond to the step treads to obtain uniform side clearance.
- Combplate light panels shall be provided flush with the skirt panel designed to illuminate the combplate having a maximum illumination of 50 lux each panel.

## **LANDING AND FLOOR PLATES**

- Landing and floor plates shall be furnished to cover the entire area of the landings within the outline of the truss and shall be supported on the truss. The floor plates shall be extruded aluminum box sections, black anodized with a highlighted finish and a non-slip surface to match the comb and landing plates. Floor plates shall be removable for access to the drive machine. To reduce noise, removable floor cover sections must be separated from each another as well as the floorplate frames by means of rubber or some other isolating material.

## **BALUSTRADE**

- The escalator Contractor shall provide extended newel type balustrades consisting of interior paneling, deck covers, skirt panels and molding in accordance with these specifications. Certain portions of the balustrades shall be removable to permit access to the interior.
- Inclined Balustrade.
- Inner and outer decks shall be #4 stainless steel.

## **BALUSTRADE PROFILE**

- Balustrade profile section shall be stainless steel.

## **BALUSTRADE PANELS**

- Balustrade panels shall be clear glass with joints perpendicular to escalator incline.

## **SKIRT PANELS**

- The skirt panels shall be made of 14-gauge sheet steel, suitably reinforced with steel channels and rigidly fastened to the supporting structure. Their surface shall be sheet steel with black anti-friction.
- When required, skirt deflector brushes will be applied and attached using hidden fasteners.

## **DRIVE UNIT**

- The drive unit shall consist of the basic frame, worm or helical gear reducer, motor and brake. It shall be specifically designed for escalator service.
- The drive unit shall be located outside of the step chain assembly and be accessible for service without removing any steps.
- Transmission from the output gear sprocket to the escalator main drive shaft shall be by means of a quietly running, precision duplex roller chain.
- The drive shall be powered by a six pole, three-phase squirrel-cage AC induction motor specifically developed for escalator service. Motor speed shall not exceed 1200 R.P.M. It shall be flange mounted to the reduction gear unit and connected via a resilient coupling.
- The motor shall be designed for Wye Delta start. This shall minimize starting currents and electrical feeder cable sizes. The motor windings shall be equipped with a sensor that shall cause the escalator to stop if the windings should overheat.
- The drive unit shall be of sufficient capacity to operate the escalator at full load without exceeding the rated horsepower. Motor rating shall be 105 degrees F. ambient, Class F insulation.

## **FLY WHEEL**

- The motor end of the drive unit assembly shall be equipped with a fly wheel sufficiently sized and individually calibrated to assist the primary (service) brake in providing a smooth “up” stop regardless of load on the escalator.

## **CAPACITY**

- The drive unit shall be of sufficient capacity to operate the escalator at full load ascending without exceeding the rated horsepower. Motor rating shall be 105 degrees F. ambient, Class F insulation.

## **LOCATION**

- The drive unit shall be located in the upper escalator head, outside of the step chain assembly, and accessible for inspection and removal without dismantling of the steps.

## **HANDRAILS**

- Handrails shall be of a continuous band design manufactured of vulcanized rubber, factory spliced, with a multi-ply fabric core and steel cord reinforcement. Their gliding surface shall be of nylon webbing. The rubber composition used shall ensure that the handrail surface shall remain smooth and in tact throughout its entire service life.
- Handrail color shall be black.

## **HANDRAIL GUIDES**

- Handrail guides shall be designed so that handrails cannot easily be thrown off or out of alignment. They shall be made from galvanized steel profiles with an even and smooth surface. Handrail guides for outdoor escalators shall be made of stainless steel.

## **HANDRAIL DRIVE**

- The handrail drive shall be of the traction drive type and shall receive its motion from the main drive of the escalator to which it shall be connected so that the handrail movement shall be synchronous in the same direction as the escalator steps. Handrail traction shall be obtained from a rubber rimmed friction wheel with the assistance of a pressure belt that shall hold the handrail firmly against the friction wheel. All handrail wheels shall be provided with suitable bearings and with provisions made for the retention of ample permanent lubricant.

## **CONTROLLER**

- The controller shall be micro-processor base, full magnetic, continuous duty and reversing type, designed to protect the motor against overload and phase failure. It shall be located in the machine space. A fused disconnect switch or circuit breaker shall be included in the escalator controller and located in the machine space. A flexible multi-core cable shall permit removal of the controller to floor level for servicing.

## **PENDANT STATION**

- Portable pendant controls shall be provided for each escalator. The pendant station shall permit control of the escalator by service personnel during routine maintenance. Receptacles for pendant station connection shall be provided in both the lower and upper machinery pits. During pendant control, only one receptacle shall remain operative.

## **SERVICE HOUR METER**

- Each escalator shall be equipped with a meter that shall indicate the number of hours the escalator has been operating.

## **FAULT FINDING PANEL**

- A fault finding panel shall be located in the lower machine pit. It shall contain a digital numerical signal. The signal shall indicate when a malfunction has occurred and through a code the location of the malfunction. It shall be capable of monitoring forty functions and shall have a memory capability to retain the last sixteen faults.

## **START SWITCHES**

- Each escalator shall be provided with a key operated directional start switch. The switch shall be located either in the right hand inner deck or in the balustrade end sections at both the upper and lower landing.

## **DIRECTION INDICATORS**

- Direction indicators shall be provided at the upper and lower landings. The indicators shall be LED displays with red and green signals.

## SAFETY REQUIREMENTS

- Ceiling intersection guards (if applicable) shall be provided in accordance with Rule 802.3g of ANSI A17.1 Code.
- Anti-slide devices (if applicable) shall be provided in accordance with Rule 802.3h of ANSI A17.1 Code.
- Deck barriers (if applicable) shall be provided in accordance with Rule 802.3i of the ANSI A17.1 Code.
- A primary brake shall be designed to provide approximately two-thirds greater braking horsepower in the “down” direction. The primary brake working in conjunction with the motor fly wheel shall provide a smooth stop in both directions of travel regardless of load. It shall stop the escalator whenever power is interrupted from any cause or by any of the safety devices and shall hold the escalator stationary under a full load condition.
- A secondary brake shall be provided integral with the main step chain sprocket assembly. It shall be arranged to operate should the drive unit become disconnected from the main step chain sprocket assembly.
- An emergency red stop button shall be visibly located at the top and bottom landing on the right side facing the escalator. The operation of either of these buttons shall stop the escalator. The buttons shall be covered with a transparent cover that can be readily lifted or pushed aside. When the cover is moved, an audible warning signal shall be activated. The signal shall have a sound intensity of 80 dba minimum at the button location. Size, location, notices and installation shall be in accordance with ANSI A17.1 Code requirements.
- A key operated switch shall be provided in the right hand inner deck to “shut down” the escalator at “close of business” or other appropriate times.
- The escalator shall be equipped with a speed monitor with anti-reverse device. An electronic detector shall be provided that constantly monitors escalator speed. If the escalator speed drops to 50 percent of nominal speed or exceeds nominal speed by 20 percent, a stop shall be initiated.
- A broken step chain device or devices shall be provided with electric contacts that shall cause the secondary brake to be applied should the main drive chain slacken or break.
- A broken main drive chain safety device shall be provided with electric contacts that shall cause the secondary brake to be applied should the main drive chain slacken or break.
- Stop switches shall be provided in both the upper and lower machine spaces for use by service personnel during maintenance.
- The skirt panels at both the upper and lower section of the escalator shall be equipped with electrical switches. These switches shall sense an object being wedged between the skirt panel and the adjacent step. The resulting deflection of the skirt panel shall activate the electrical switch and cause the escalator to stop. The skirt switches shall be located to ensure the escalator stopping before the wedged object reaches the comb.
- Green step demarcation lights shall be provided at both the lower and upper end, immediately outboard of the combplate, consisting of a minimum of two fluorescent fixtures, located within

## **SAFETY REQUIREMENTS (con't)**

- the step loop so as to define the periphery of the step. The demarcation lights shall be mounted perpendicular to escalator travel providing a “strobe” effect.
- A step upthrust device shall be provided in the lower transition radius that shall detect upward step displacement should it occur as the steps travel through the lower transition radius. If activated, the escalator shall be brought to a smooth stop.
- A handrail speed monitor/stopped handrail device shall be provided to ensure synchronous speed with step speed. If the deviation is greater than 20 percent or less than 50 percent, the emergency alarm shall sound. The alarm shall be controlled by an adjustable timer and shall continue to sound for a maximum of 15 seconds after which the escalator shall come to a smooth stop.
- The newel base where the handrail enters the escalator shall be equipped with a handrail entry device that shall free objects that are in danger of becoming wedged between the handrail and the entry point. The device shall be equipped with a safety switch that when activated shall cause the escalator to come to a smooth stop.
- Step level devices shall be located at the top and bottom of the escalator. These devices shall detect downward displacement of 1/8 inch or greater at the riser end of the step. When detected the device shall cause the escalator to stop prior to the detected step entering the comb. The device shall be of the manual reset type.
- Combplate impact devices shall be provided. They shall detect obstructions that wedge and press severely against the combplate. When the devices are activated, the escalator shall be brought to a smooth stop.
- The escalator’s electrical starting circuits shall be designed to prevent both the starting circuit and safety circuit from being energized at the same time.
- Two flat steps shall be provided at both the entrance and exit ends of the unit.
- A missing step device shall be provided to detect a missing step and bring the escalator to a stop prior to the gap resulting from the missing step emerging from the comb.
- An electrical contact shall sense any phase failure or phase reversal and bring the escalator to a smooth stop. This device shall also prevent the escalator from being started under the prevailing conditions.
- Counter tracks (catching arms) shall be located at the lower end of the escalator to retain the step chain in case of breakage.
- Turnaround guards, sheet metal aprons shall be provided at each end to prevent the accidental contact by service technicians with rotating equipment.

## **GENERAL**

- Prior to commencing escalator installation, inspect wellway openings, pits and structural support points as constructed. Verify that wellway openings, pits, and structural support points are of correct size and within tolerance and are ready for work of this section. Notify General Contractor in writing of any dimensional discrepancies or other conditions detrimental to the proper installation or performance of escalator work. Do not proceed with escalator installation until unsatisfactory conditions have been corrected in a manner acceptable to the installer. Arrange for temporary electrical power to be available for installation work and testing of escalator components.

## **INSTALLATION**

- Coordinate escalator work with work of other trades, for proper time and sequence to avoid construction delays.

## **PERMITS AND TESTS**

- The escalator Contractor shall obtain and pay for all necessary Municipal and State permits and relating to the installation of the escalator at his expense, shall make all tests as required by governing codes in effect at the time of the award. The escalator Contractor shall be reimbursed for any permits, tests or equipment necessitated by governing authorities after the date of the award.

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 15 - MECHANICAL**

**SECTION 15A**

**PLUMBING**

#### **15A.10 GENERAL - PHASE**

- The plumbing system shall be furnished and installed conforming to ANSI, ADA, Uniform Plumbing Code, and the latest issue of the National Plumbing code.
- The plumbing system shall include, but is not necessarily limited to, service connections for water, gas, sewer and storm sewer, plumbing fixtures, hot water heaters, piping systems, and all accessory items as shown on the drawings and/or as specified herein.
- Tenant Criteria Drawings are diagrammatic, and are intended to clarify Tenant desires in areas of interest. They are not intended to be complete.
- All design work shall be done by a Registered Professional Engineer and be so certified. Tenant will review drawings, selections of equipment, or other design data, upon conclusion of the design. Final construction plans and specifications must be submitted to Tenant for final approval and signature. These documents must contain fixture schedules, equipment descriptions, piping layouts and details and schematics as necessary to fully document the design.
- Tenant has made material and equipment selections which are noted in these requirements and/or on the Tenant Criteria Drawings. When any material is indicated herein by manufacturer's name and catalog or model number, such reference shall be interpreted as establishing a standard of quality required.
- Contractor shall coordinate in wall blocking requirements (to mount fixtures and accessories) with G.C.

#### **15A.11 GENERAL - CPS PHASE**

- The remainder of this division on plumbing sets forth the requirements that should be incorporated into the construction plans and construction specifications.
- In addition to those requirements deemed necessary by the engineer, the following items of general nature must be incorporated:
  - Shop drawings of all plumbing fixtures, hot water heaters, piping materials and pipe covering shall be submitted to Tenant for final approval.
  - All equipment and materials shall be guaranteed for a minimum of one (1) year. (See Division 1 General Requirements).
  - Tenant shall be furnished with as-built record drawings upon completion of the work.

#### **15A.12 SERVICES**

- It shall be the responsibility of the Contractor to furnish and install all water services, gas services, sanitary sewers and storm drains as required to satisfy Tenant Specifications. It shall also be the responsibility of the Contractor to verify locations and elevations of all sewers, water mains and other necessary services to ascertain that such services are adequate and connections thereto are permissible.
- All fees for connections to meters and to utilities are to be paid by the Contractor .

### **15A.13 PHYSICALLY HANDICAPPED REQUIREMENTS**

**Restrooms shall have at least one watercloset stall that meets the following requirements:**

- Stall shall be 5'0" wide (minimum).
- Stall shall be 5'0" deep minimum with wall mounted water closet.
- Doors shall have a clear opening of 36" minimum and shall swing out.
- Watercloset seat, not rim, shall be 18" from floor.
- Hand rails and accessories shall be installed in conformance with approved Federal, State and Local standards.
- Centerline of watercloset shall be 18" from face of finished wall.
- Flush valve shall have the operator on the "wide" side of the watercloset stall.
- *Coordinate layout of stall with Criteria Drawings.*
- Restrooms shall have at least one lavatory that meets the following requirements:
  - Lavatory when mounted allows 29" clearance from the floor to the bottom of the apron and a maximum height of 34". Provide A.D.A. faucets.
  - Water temperature not to exceed 105 degrees F.
  - Mirror shall be mounted at 40" above the floor to the bottom of the mirror. Locate on wall opposite of lavatory.
  - Insulate all exposed piping.
  - Men's restroom shall have at least one wall mounted urinal.
  - Urinal shall have elongated rim, with the basin opening 17" from the floor (maximum).
  - The Handicapped requirements established by this section are to be considered minimum. National Codes (ADA)(ANSI) or local codes must be followed when their requirements exceed those established by this Specification.

### **15A.14 PLUMBING FIXTURES**

- Furnish and install all plumbing fixtures as outlined in this specification and as shown on the criteria drawings. If local codes or regulations require additional fixtures, they shall be installed as if shown. All plumbing fixtures shall be white, all watercloset seats shall be white, and all enamel shall be acid resisting. All fixtures shall be equipped with individual stops in addition to the normal supply fittings. All exposed piping shall be chromium plated, and wall penetrations shall be fitted with escutcheons. Install equipment and fixtures in accordance with manufacturers instructions.
- Furnish one floor drain in each restroom, and in Janitor's closet.
- Plumbing fixtures shall be equal to the following:

## 15A.14 PLUMBING FIXTURES (con't)

- Plumbing fixtures shall be the following:

\*P-1 - Water Closet - shall be a wall hung siphon jet flush with chair carrier, exposed Sloan flush valve with vacuum breaker and integral screwdriver stop, and solid plastic open front seat without cover.

Fixture Number 2257.103

Fixture Name American Standard Afdwall – Wall hung 1.6 flush valve bowl

Flush Valve Sloan 111

\*P-2 – Vanity Tops and Integral Bowls shall be sized with a continuous 4” back splash. All vanity tops to be scribed to wall opening and mounted per manufacturer’s specifications at 2’ 8” A.F.F. to countertop. The following is the only product approved for use.

Countertop by Wisonart Postformed Style: Caprice. (See Criteria plans for finish)

Bowl Eljer 051-0121 Murray Oval, White.

Center hole Plunger type Faucet: Symmons S-73-G

**\* Coordinate with specific requirements listed in Section 1B.**

**NOTE:** Supply fittings that are in compliance with ADA.

\*P-3 - Urinal - shall be a wall hung washout type with exposed flush valve with vacuum breaker and integral screwdriver stop.

Fixture Number 6590.005

Fixture Name American Standard Washbrook Flowise urinal 0.5 GPF

Flush Valve Sloan 186-0.5

P-4 - Mop Service Basin - shall be a Mustee #62M, 24" x 24", 8 1/2 basin with integral strainer and drain, provide Mustee. #63.600A wall mounted faucet with vacuum breaker, wall brace and pail Hook, #65.700 household bracket, #65.600 mop hanger.

P-5 - Water Cooler - shall be wall hung electric cold water fountain, Oasis Model P8AMSL.

P-6 - Floor Drains - shall be cast iron body with 6" polished brass strainer. Pipe size to be determined per plumbing plan.

P-7 Cleanouts: All cleanouts shall be polish brass finish

-

### **15A.15 HOT WATER HEATER**

- Furnish and install one electric water heater in the Janitor's Closet to provide hot water to the toilet rooms and to the Janitor's Closet (105°F water temperature).
- The hot water heater shall have a storage capacity of 17 gallons and an electric input of 1650 watts in the heating element, 120V. single phase. Unit shall include adjustable thermostats for heating element. Tank shall be insulated with standard manufacturers Fiberglass insulation and be equipped with metal jacket. Heater shall be State – Model #P6-17-10MS-K.
- Water heater shall be mounted above the mop service basin, as tight to the finished ceiling as possible while allowing for full access to the heater. Overflow drain for water heater to spill into service basin.

### **15A.16 PIPING SYSTEMS**

- All materials and installation methods shall conform to local codes and regulations or with the State Plumbing Code requirements where no such local codes or regulations exist.
- The water supply system shall include both cold and hot water piping with meter, pressure regulating valve (if the supply pressure exceeds 80 psi at fixture level), hot water heaters and all connections shown for Tenant Equipment on the drawings. Installation shall include sterilization and testing.
- The gas piping system shall include meter, pressure reducing valve, if required, and gas piping to all gas fired equipment, including a manual gas cock for each piece of equipment in addition to any valves furnished with the equipment. Furnish and install metal double wall type "B" flue pipe, properly sized, for all gas fired equipment.
- The sanitary sewer system shall be complete from the plumbing fixtures, floor drains and Tenant Equipment to the public sewer or disposal area. Sanitary systems shall be independent and not shared with other tenants
- The storm drain system shall be complete from the roof drains and/or gutters and downspouts to the public storm drain or disposal area. Provide catch basins, area drains, intercepting gutters, roof drains, downspouts, complete with metal strainers as required for prompt disposal of storm water and as indicated on the Tenant approved CPS drawing.
- All piping shall be completely concealed except in storage and mezzanine areas. Proper clearance shall be maintained for ceiling systems, ductwork, and lighting. Vertical stacks and risers shall be concealed in storage areas.
- Backwater valves shall be installed on sewer lines whenever conditions are such that flooding may result from overloaded sewer mains. Provisions shall be made for Tenant supervisory system control station alarm on backwater valves.
- All domestic hot water piping, exposed cold water piping, interior downspouts, etc., shall be fully insulated with vapor barrier pipe covering generally accepted by the trade and as approved by Tenant. All piping shall be protected from freezing.
- All fixture drains shall be piped to building drains. The discharge of all relief valves shall be regarded as fixture drains.

#### **15A.16 PIPING SYSTEMS (con't)**

- Back Flow Prevention valves shall be provided in accordance with ASSE standard 1013 and as required by governing authority.
- Piping shall not be supported from the roof deck, joist bridging or other pipes. Hang pipes from beams, joist or supplementary structural members.
- Note: Gripple Hang Fast Suspension System, as manufactured by Gripple, Inc. 1510 Hubbard Avenue, Batavia, IL 60510, is approved for use per manufacturer's instructions.
- Domestic water shall be minimum 2" Dedicated service
- Domestic cold water Piping shall be provided for refrigerator ice makers in the Lounge Area. Piping shall be copper and meet all local code requirements. Size of pipe to be determined by General Contractors Architect/Engineer.

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**S SPECIFICATION NO. 1180A**

**DIVISION 15 - MECHANICAL**

**SECTION 15B**

**HEATING, VENTILATING AND AIR CONDITIONING**

## 15B.10 GENERAL - DESIGN PHASE

- The heating, ventilating and air conditioning system shall be updated and modified in accordance with the following codes and standards, but in no instance shall the standards be less than the requirements set forth herein.
  - National Electric Codes.
  - State Department of Public Safety.
  - Standards of Underwriters' Laboratories (U.L.)
  - American Standards Association (ASA).
  - Occupational Safety and Health Act (OSHA).
  - Local Governing Codes.
  - Air Moving and Conditioning Association (AMCA).
  - American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE).
  - Sheet Metal and Air Conditioning s National Association (SMACNA).
  - Compliance with all applicable local, state and federal codes and regulations.
  - A.G.A. - American Gas Association
  - A.R.I. - Air Conditioning & Refrigeration Institute
  - E.T.L. - Electric Testing Laboratories
- 
- The heating, ventilating and air conditioning system shall include, but is not necessarily limited to, new and existing rooftop heating and air conditioning units, ductwork and insulation, diffusers, registers and grilles, all electric heating units, receiving dock heater, exhaust fans, controls, (including building management system (BMS), and all accessory items as specified herein.
  - **Tenant Requirements are diagrammatic and are intended to clarify Tenant desires in areas of interest.**
  - All design work shall be done by a Registered Professional Engineer and shall be so certified. Tenant will review preliminary drawings, selections of equipment, or other design data, throughout the progress of the design as requested. Final contract plans and specifications must be submitted to Tenant for final approval and signature. These documents must contain double line duct layouts, complete equipment descriptions, and details and schematics as necessary to fully document the design.
  - Tenant has made material and equipment selections which are noted in these requirements. Material that is indicated herein by manufacturer's name shall be the highest EER, SEER R-22 refrigerant based product of that manufacturer. See National Account note on Paragraph 15B.13 of this specification.

### **15B.11 GENERAL - CPS PHASE**

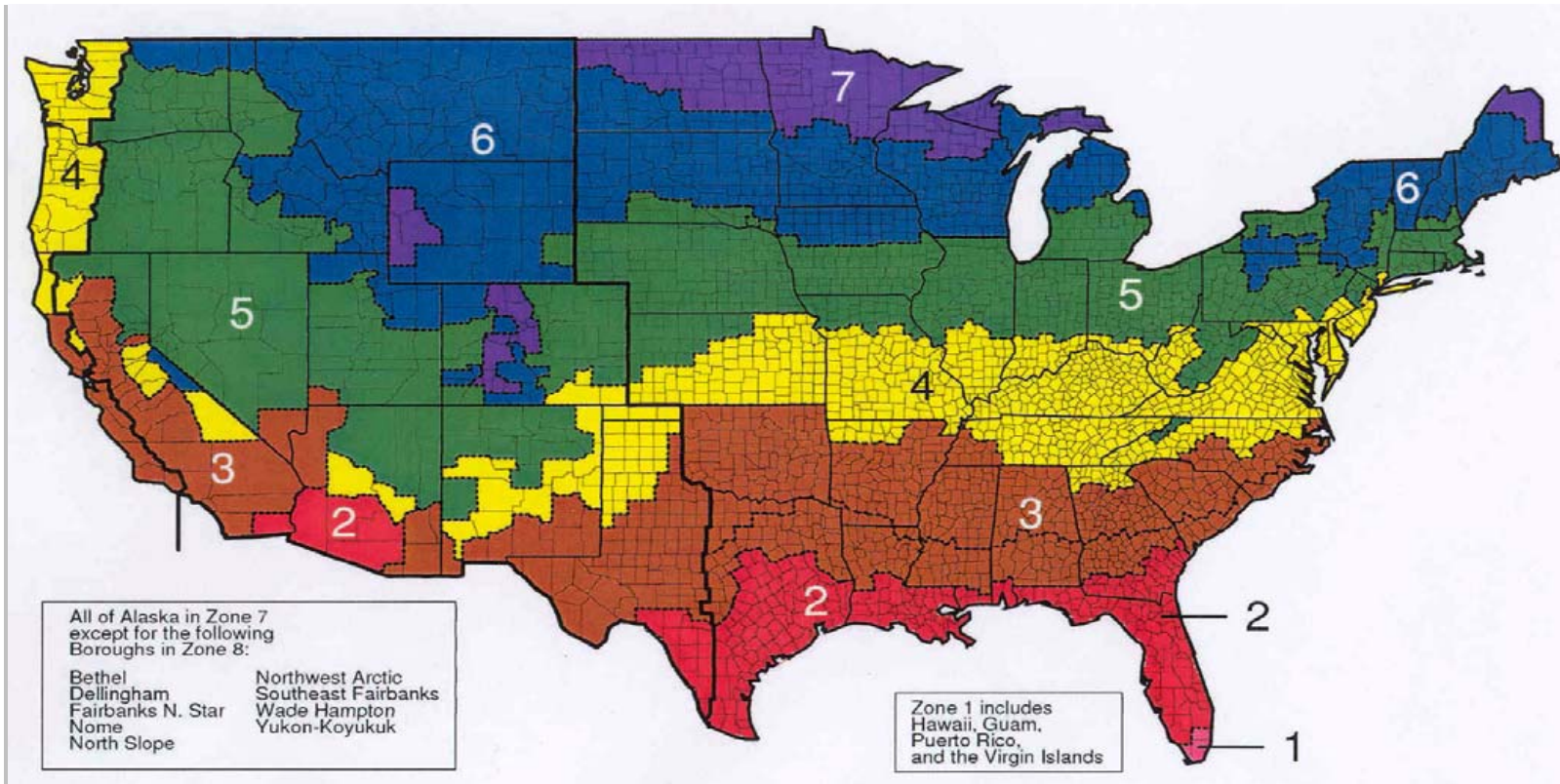
- The remainder of this section on **HEATING, VENTILATING AND AIR CONDITIONING** sets forth the requirements which shall be incorporated into the construction documents.
- In addition to those requirements of a general nature deemed necessary by the engineer, the following items must be incorporated:
- The Heating, Ventilating and Air Conditioning Contractor shall thoroughly instruct Tenant in the efficient operation of all new and existing equipment.
- The Heating, Ventilating and Air Conditioning Contractor shall have a qualified mechanic present at the store for Grand Opening Day to insure proper operation and function of all systems. The day shall consist of fourteen (14) hours continuously, from 8:00 A.M. through 10:00 P.M.
- Tenant shall be furnished with as-built record drawings upon completion of the work.
- Mechanical Contractor shall furnish free supervision, adjustment and repair of entire system for a warranty period of one (1) year from date of store Grand Opening, including first filter change to be made the Thursday prior to opening. It is expressly understood that all responsibility for costs, parts and labor for the heating-ventilating-air conditioning system shall be the Contractor's until the first anniversary of the store opening. Normal maintenance is not part of this warranty period.
- General Contractor shall receive in writing from the Heating, Ventilating, and Air Conditioning an unconditional guarantee for all new parts, material and labor for a period of one (1) year after date of store opening. Mechanical Contractor shall furnish a written unconditional guaranty (from the Manufacturer) of ten (10) years for all compressors and ten (10) years for all heat exchangers. Copies of one (1) year and multi year guarantees shall be furnished to Tenant upon completion of punch list.
- Upon completion of the installation of the HVAC system, the General Contractor shall provide the Tenant Project manager with Air Balancing Report conducted by a certified Air Balancing Technician. Testing shall be conducted IAW ASHRAE standard 111 and SMACNA 221.

### **15B.12 SYSTEM DESCRIPTION**

- The Mechanical Contractor shall furnish and install the heating, ventilating and air conditioning system consisting of rooftop heating and cooling units, distribution ductwork and air outlets, controls and building management system (BMS), exhaust fans and all accessory items, for a complete operating system.
- Design parameters recommended by the American Society of Heating, Refrigeration and Air Conditioning Engineers, aforementioned codes, and Tenant particular requirements shall be used for calculations to determine heating, cooling, and ventilation requirements. The HVAC design engineer shall submit final design calculations for all heat loss/heat gain computations, including "U" factor derivations and final equipment selections made against the computations. Equipment selected shall be sized to nearest manufacturer's standard unit that exceeds calculated demand of heating or cooling.
- Final design shall not exceed 350 square feet/ton of air conditioning equipment.

### 15B.12 SYSTEM DESCRIPTION (continued)

Final design shall be a **minimum** of the chart below. Additional cooling **will be** required based on internal heat inputs (Tenant equipment). Tenant will review and comment on submitted plans accordingly.



**Cooling Loads Based on Climate Zones**

Zone	Square FT/Ton	Zone	Square FT/Ton	Comments
1	350	5	375	
2	350	6	400	
3	350	7	400	
4	375	8	400	

## 15B.12 SYSTEM DESCRIPTION (continued)

- Natural gas shall be the primary fuel when available and electric resistance as the secondary fuel. Where no gas is available, furnish and install York air cooled Heat Pumps. Use of Heat Pumps is limited to Zones 1 and 2 of the U.S. Climate Zones Map on page 89. In Georgia, Alabama, Mississippi, and Florida the systems will be equipped with electric heat instead of gas.
- In geographical areas south of Orlando, Florida and Houston, Texas the system shall be designed for straight cooling on the Sales floor only - all other areas shall have heating and cooling. Every space in the store shall be heated and air conditioned, except as noted above.
- Air Conditioning – Dedicated Unit Distribution
- Rooftop HVAC units shall be Zoned throughout the store as follows:

One (1) unit dedicated for fitting rooms.

One (1) unit dedicated for lounge / toilet rooms janitors closet, and adjacent support offices when these areas are shown combined. When toilet rooms, Lounge, and Janitors closet are not combined with support offices, provide a dedicated unit for each area.

One (1) unit dedicated for the Processing Room. When the Processing Room is adjacent to Layaway Storage, the two areas may be combined

Five (5) units for sales area with maximum unit capacity not to exceed 15 tons. (Additional units will be required if sales floor s/f exceeds 26,250)

**NOTE:** Four (4) units (serving sales floor only) will have concentric supply and return air.

One (1) unit serving the front of the store (vestibule, checkout counters etc. ) will have ducted supply and return air across the entire width of the store.

**This layout shall serve as a guide only. Quantities/adjustments to the layout may be made at the Tenants Final Review/Approval.**

- The **exhaust systems** and fans shall provide the following ventilation rates for the spaces listed. These rates are considered minimum, and shall be exceeded if so required by local, county, or state codes regulations:

**Rest Rooms** - 8 air changes per hour. Control via light switch

**Coat Room, and Lounge** - 0.5 C.F.M./ft2 – provide ON/OFF switch control.

**Women's Fitting Room** - 250 C.F.M. Provide ON/OFF switch controls at entrance to Women's Fitting Room.

**Electric Room** – When code or store layout will not allow for a wire mesh wall separating Electric Room/Processing Room, provide 0.5 C.F.M./ft2 – provide "T-Stat" control.

- **Exhaust fan for elevator machine rooms (where applicable) shall be per Manufacturers requirements or governing code, whichever is greater.**
- Control all exhaust fans through "Employee" lighting contactor panel, or an additional contactor panel "slaved" to this lighting contactor panel. This will run exhaust fans only during occupied hours. Electrical will provide contactor panel. Co-ordinate with section 16A, paragraph 16A.15 contactor relay panels & time clocks.

### 15B.12 SYSTEM DESCRIPTION (con't)

- The space above ceilings **shall not** be allowed to be used as a return air plenum chamber.
- At the conclusion of the system installation, the Contractor shall test and demonstrate to the satisfaction of the Tenant that all mechanical equipment is functioning and that systems are delivering rated outputs as per Tenant's Requirements and final plans and specifications. The Heating, Ventilating and Air Conditioning Contractor shall furnish all testing instruments and devices and all necessary manpower. All apparatus and Control Devices shall be appropriately identified with tags, nameplates, etc., permanently secured.
- Electric baseboard heater with integral thermostats surface mounted shall be furnished by the Heating and Air Conditioning Contractor. Electrical baseboard heater shall be furnished for all offices, rest rooms, lounge and security office(s) that include at least one exterior wall. Electric baseboard heaters are not required in totally interior spaces. Contactor(s) (furnished and installed by the Electrical Contractor) will interrupt all electrical baseboard circuits. A 120 volt signal (from the BMS Controller) will activate the contactor(s). Set bottom of heater 6" A.F.F.
- Electric baseboard heater shall be white, 2900 "A" series, as manufactured by Markel
- products and distributed by Airtech Corporation. Coordinate with section 16A,
- paragraph 16A.15 Contactor Relay Panels and Time Clocks.
- Electric Baseboard Heat not required in US Climate Zone 4 and 5

### 15B.13 NEW ROOFTOP HEATING & AIR CONDITIONING UNITS

- Furnish and install outdoor, roof mounted, heating and cooling units, combination electric cooling and gas heating, as indicated in paragraph 15B.12.
- Tenant maintains a national account relationship with **YORK International - A Johnson Controls Company** and has selected **YORK** units as preferred equipment. The models required are as follows: For 2 Tons cooling capacity, units shall have the highest EER/SEER available, contact York National account Rep for requirements. ZJ (R410a) for 3 tons through 5 tons cooling capacity. ZH (R410a) for 6.5 to 10 tons cooling capacity. ZJ (R410a) for 12.5 to 25 tons cooling capacity. Contact YORK National Accounts for more information on National Account pricing.

JCI. Controls (York) Mike Mullins 405-419-6543 Michael.Mullins@jci.com

- The unit cabinets shall be constructed of galvanized steel capable of withstanding 500 hour salt spray exposure per ASTM B117 and shall be bonderized and coated with a pre-painted, baked enamel finish on all externally exposed surfaces. Evaporator fan compartment interior cabinet surfaces shall be insulated with a minimum ½ inch thick, 1lb density, flexible fiberglass insulation, neoprene coated on the air side. Aluminum foil-faced fiberglass insulation shall be used in the gas heat compartment. Cabinet panels shall be hinged with toolless access for compressor, heating controls, blower and air filter compartments.
- The refrigeration equipment shall consist of fully hermetic type, internally protected scroll compressors. For units with cooling capacity of 7.5 tons to 25 tons, these units will consist of multiple scroll compressors with independent circuits.

### **15B.13 NEW ROOFTOP HEATING & AIR CONDITIONING UNITS (con't)**

- All fans shall be made from steel with a corrosion proof finish and shall be dynamically balanced. Units 3 to 10 tons shall have sealed bearings, permanently lubricated ball bearing type. Units 12.5 to 25 tons indoor blower shall have pillow-block bearings and belt drive.
- The gas heating section (in units so equipped) heat exchanger shall be of the tubular section type constructed of a minimum of 20 of gauge steel coated with 1.2mil aluminum silicone alloy. Ignition system shall be direct spark type with redundant main gas valve with 2 stage control. Warranty for heat exchangers shall be no less than ten years.
- Each rooftop unit shall be complete with a solid state enthalpy controlled economizer system on new or existing (except as noted in paragraph 15B.12). Compressor shall have a ten (10) year warranty.
- The manufacturer shall furnish all new units complete, with roof curb. Roof curb shall support unit and provide a watertight enclosure to protect ductwork and utility services. Wiring shall be routed through a protective waterproof conduit sleeve at bottom of the unit (if so equipped) and shall be arranged for single point connection. Burglar bars shall be factory installed in supply and return openings of all new equipment. Coordinate with section 5B.12.
- Condensate drain piping shall be installed on the roof, not inside the building. Piping connection at the equipment is to have a threaded union at the nipple on the drain pan. Union shall be the same size as the nipple. Piping at the equipment shall be properly trapped (designed and installed per manufacturer's specifications for each unit) with threaded union clean out plug on top of tee connection at trap. Install threaded clean out plug at each 90-degree bend. Piping shall be supported on roof with pipe clamps attached to treated 4" x 4" blocking not to exceed six (6) foot intervals. Condensate drain piping shall be routed to splash blocks (where permitted), otherwise it shall be routed to the nearest roof drain or gutter and down spout. Condensate drains shall not discharge to an interior plumbing fixture.
- A Minimum of 2 Sales floor units shall have York compatible, field installed, CO2 sensors. Coordinate with Novar controls.
- All units shall be equipped with a Factory/Field installed Disconnect Switch, and a powered Factory/Field installed GFI receptacle per local code requirements (Coordinate with Division 16A.24).
- Unit Safeties an operating characteristics shall be as follows:

#### **For Units 3 to 10 Tons**

- Units shall be complete with self-contained low-voltage control circuit protected by a fuse on the 24-v transformer side (008-012 units have a re-settable circuit breaker).
- Unit shall incorporate a solid state compressor protector which provides anti-cycle reset capability at the space thermostat, should any of the following standard safety devices trip and shut off compressor.

### **15B.13 NEW ROOFTOP HEATING & AIR CONDITIONING UNITS (con't)**

- Compressor over temperature, over current.
- Loss of charge/ low pressure switch.
- Freeze protection thermostat, evaporator coil
- High pressure switch
- Automatic reset motor thermal overload protector
- The lockout protection shall be easily disconnected at the control board, if necessary.
- Heating section shall be provided with the following minimum protections:
- High temperature limit switches
- Induced draft motor speed sensor
- Flame rollout switch
- Flame proving controls
- Unit shall be capable of starting and running at 125F ambient outdoor temperature, meeting maximum load criteria of ARI Standard 210/240 or 360 +/- 10% voltage.
- Compressor with standard controls shall be capable of operation down to 25F ambient outdoor temperature.

#### **For Units 12.5 Tons and Larger**

- Unit shall incorporate a solid state compressor lockout which provides optional reset capability at the space thermostat, should any of the following standard safety devices trip and shut off compressor.
- Compressor lockout protection provided for either internal or external overload
- Low pressure protection
- Freeze protection (evaporator coil)
- High pressure protection (high pressure switch or internal)
- Compressor reverse rotation protection
- Loss of charge protection
- Supply-air sensor shall be located in the unit and detect both heating and cooling operation.
- Induced draft heating section shall be provided with the following minimum protections:
- High temperature limit switches
- Induced draft motor speed sensor

### **15B.13 NEW ROOFTOP HEATING & AIR CONDITIONING UNITS (con't)**

- Flame rollout switch
- Flame proving controls
- Redundant gas valve
- Unit shall be capable of starting and running at 125 degrees F (52C) ambient outdoor temperature per maximum load criteria of ARI Standard 360.
- Unit with standard controls will operate in cooling down to an outdoor ambient temperature of 0°F (-17.8C).
- Unit shall be provided with fan time delay to prevent cold air delivery.
- Size 15, 17.5, and 20 ton units shall have 3 fully independent refrigerant circuits to allow for 33 percent capacity per circuit.
- Filters shall be throwaway type, 2" thickness, polyester, or approved equal, on all units with 2" filter channels and 1" throwaway polyester on all other units.

### **MULTI-STORY APPLICATIONS (When roof top units are not feasible)**

- Furnish and install Fan Coil Units, Horizontal Cabinet Model, Ducted, per the following specifications.
- Factory-assembled, horizontal, draw-thru type fan coil unit for ducted installation above the ceiling. Unit shall be complete with water coils, fan(s), motor, belt drive, drain pan, valves, and filter.
- Construction shall be heavy-gage galvanized steel, lined with one-inch thick fiberglass Tuff-Skinn II thermal/acoustical insulation. Knockouts shall be provided for hanging the unit that will accept 3/8 inch threaded rod at the top, and bottom of all unit corners with vibration insulators. Supply and return duct connection shall be one inch long. Removable side panels shall be provided for access to the fan/motor assembly. A double-sloped drain pan shall be constructed of stainless steel, extending under the full length and width of the coil(s) with a ¾ inch nominal pipe thread stainless steel drain connection and ½ inch male MPT stainless secondary drain connection (capped when not required). The outside surface of the drain pan shall be coated with closed cell fire-retardation, foam insulation.
- Belt driven double width fan wheels shall have forward curved blades and be statically and dynamically balanced. Fan drive shall consist of variable-pitch motor pulley, fixed-pitch fan pulley, and V-belt. Fans and scrolls shall be of galvanized steel.
- Standard unit shall be equipped with a 4-row coil for installation in a 2-pipe system and additional rows of coil shall be provided for installation in a 4- pipe system. Coils shall have ½ inch copper tubes, the aluminum fins bended to the tubes by mechanical expansion, and have a working pressure of 250 psig at 200 degrees F. Each coil shall have a manual air vent and sweat connections for copper tubes.
- A single-circuit coil unit installed in a 2-pipe system shall be capable of providing heating or cooling as determined by the operating mode of the central water supply system. A double-circuit coil unit installed in a 4-pipe system shall be capable of providing sequenced heating and cooling.

## **MULTI-STORY APPLICATIONS (When roof top units are not feasible) Con't**

- Fan motors shall be open, drip-proof, single-speed, 60Hz, 1750 rpm single or 3-phase, suitable for continuous duty at 104 degrees F (40 degrees C). Single-phase motors are to be capacitor
- start and shall include automatic reset thermal overload protection. Motors are to be resilient base mounted (except 3 hp motors which are rigid base mounted).

### **15B.14 DUCTWORK**

- All ductwork shall be new and constructed of galvanized steel, of the gauge and with construction details as recommended by SMACNA.
- Designed ductwork shall be varied as necessary to suit available space. Velocities in mains shall not exceed 1400 feet per minute.
- Ducts shall be securely braced and/or reinforced to prevent vibration.
- Ductwork shall not be supported from the roof deck, joist bridging or other ducts. Hang ducts from beams, joist or supplementary structural members provided by mechanical . Note: Gripple Hang Fast Suspension System, as manufactured by Gripple Inc, 1510 Hubbard Ave., Batavia, IL 60510, is approved for use per manufacturer's instructions.
- Provide turning vanes at all 90-degree elbows in ductwork exceeding 20" in width, 45 degree side take off (STO) at branch ducts with volume control (only as shown on drawings), splitters dampers, and any other applicable devices necessary for minimum duct resistance and proper air balancing. All dampers or splitters shall be sufficiently stiffened to prevent noise or vibration and shall be fitted with accessibly located adjuster.
- All ductwork connected to fan or vibrating equipment shall be fitted with flexible canvass connections, which will provide a minimum 1" space between the equipment and the ductwork. Flexible canvass connectors shall be secured in place with iron bands with roll lock seam, and shall be air leak tight.
- All air-conditioned supply ductwork shall be wrapped with a minimum 1 ½" thickness of 3/4 pound density fiberglass vinyl back insulation. 1" acoustical liner shall be installed in first 15 feet of all ductwork entering and leaving equipment, as a minimum. Duct liner may be reduced to 10 ft. if two (2) 90° degree elbows occur within the first 15 feet of ductwork.
- Fire dampers with access doors shall be installed on all ductwork passing through fire separating walls, partitions, and fire related ceilings. Fire dampers shall be Underwriters' Laboratories approved, and shall be so constructed and arranged that no reduction in duct cross-sectional area is made. Fire dampers shall also be installed as required by codes or regulations of the state, county, town, fire department, or other applicable authority.
- Unit heater vents and flues shall be type "B" metal-vent or approved equal with cap, flashing and storm collars.
- Flex duct may be used for final connection to supply air device, Flexmaster type 8M or approved equal. Its use will be limited to 4'-0" maximum length. Provide prefabricated 90 degree elbow connectors from rigid duct to flex duct. The use of flex duct for return or transfer air will not be allowed.
- Exposed spiral ductwork to be single wall type G60 phosphatized galvanized. All spiral ductwork shall comply with the standard gauge as listed below:

## 15B.14 DUCTWORK (con't)

### Single Wall Round Standard Gauge Chart

Diameter	Spiral Pipe	Long Seam Pipe	Fittings
3" - 14"	28	26	26
15" - 26"	26	24	24
27" - 36"	24	22	22
37" - 50"	22	20	20
51" - 60"	20	18	18
61" - 84"	18	16	16

- Sales Floor (when exposed)/Processing Room: Spiral duct layout with Titus 300RS sidewall air devices are to be placed with even air distribution. Supply duct or any air device not to be placed any closer than sixteen feet (16') and no further than twenty feet (20') from all perimeter walls.
- Processing room shall receive flexible fabric duct. Mfg. Duct Sox, Fabric option PolyTex, Model option High Throw. National Account contact:  
Duct Sox Dennis Wilson 815-219-9920 [dwilson@ductsox.com](mailto:dwilson@ductsox.com)

## 15B.15 DIFFUSERS, REGISTERS AND GRILLES

- All new equipment shall be as listed below.
- All ceiling diffusers in offices, fitting rooms, stock rooms, etc., shall be steel square or rectangular diffusers with frame to match ceiling type. Diffusers shall be Titus Model TMS. Stock / processing rooms to receive Type 272 RL side wall grilles.
- All supply registers shall be all steel double deflection type, 3/4-inch spacing, with horizontal front blades, and vertical rear blades. Registers shall be Titus Model 272RL.
- All sales floor diffusers for exposed spiral duct to be Titus 300RS, mounted on a 15 degree downward angle.
- Ceiling diffusers for all concentric units shall be flush mount 510 series as manufactured by Rooftop Systems, Inc., Carrollton Texas. Supply diffuser shall be aluminum with an aluminum eggcrate return. Diffusers to include a permanent anti-sweat gasket (not adhesive) and hanging supports.
- Return and exhaust grilles shall be all aluminum grid core, 1/2" x 1/2" x 1/2", and shall be Titus Model 50.

### **15B.15 DIFFUSERS, REGISTERS AND GRILLES (con't)**

- Return and exhaust registers other than in lay-in ceilings, shall be steel curved bar registers with ¾" spacing and be supplied with integral opposed blade damper. The units shall be Titus Model 350 RL.
- Provide baked on off-white enamel finish for all outlets in finished areas.
- (See National Account pricing Note 15B.12.5 with Airetech Corporation.)
- Spacing of air devices to be in equal grid approximately thirty to thirty-five feet (30' –35') in each direction.
- Supply air at each sales floor air device to have 800 to 1000 cfm.

### **15B.16 ELECTRIC HEATER (VESTIBULE)**

- The Vestibule heater shall be an electric automatic fan forced heater as manufactured by QMark. Unit shall be EFF Series ceiling mounted T-Bar frame 2'x2', 3,000 Watt for 277 Volt power source (10,239 BTU/HR). Heater to be controlled by (BMS) system temperature sensors and control relays, not conventional thermostats. Finish to be Northern White

### **15B.17 RECEIVING ROOM HEATER**

- All new equipment shall be as listed below.
- In Projects where gas fired heating is provided, the receiving room supplementary heater shall be a gas fired unit heater, centrifugal blower type, with an input of 200,000 BTU per hour. Heater to be controlled by Novar Savvy controller temperature sensors and control relays, not conventional thermostats. Unit heater shall be Sterling TF200 MBH. Motor: 1/3 HP, 1 phase, 230V. only. Discharge air shall be directed at the receiving door. Coordinate with Tenant Project Manager.
- Where electric unit heaters are installed, they are to be Markel 5100 Series 30kw with 1800 cfm at the outlet. Electric unit heaters are to be 3 phase.
- (See National Account pricing Note 15B.12.4 with Airetech Corporation.)

### **15B.18 EXHAUST FANS**

- All new equipment shall be as listed below.
- The exhaust fans shown and scheduled on Tenant Requirements shall be spun direct drive, roof mounted, with individual volume control aluminum centrifugal exhaust fans with bird screens, disconnect switches, burglar bars, and lined gravity dampers. Fan capacities shown are to be based upon design airflows described elsewhere herein. Adjustment in airflows shall be made where local codes exceed ventilation rates given (**Coordinate with 15B.12 System description**).
- Exhaust fans shall be Cook. (See National Account pricing **Note** 15B.12.5 with Airetech Corporation.)

**OUTLINE SPECIFICATIONS AND  
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**SPECIFICATION NO. 1180A**

**DIVISION 15 - MECHANICAL**

**SECTION 15C**

**CONTROLS / BUILDING MANAGEMENT SYSTEM (BMS)**

## **15C.10 SCOPE**

- The building Management System (BMS) shall be furnished by Tenant. Final connections are to be accomplished by NOVAR CONTROLS CORPORATION, through Novar's Project Management Group. The HVAC Contractor shall provide temporary thermostats for each HVAC unit and Processing Room Heater to allow testing (In cold weather installations i.e. store openings between October 15 and April 15). HVAC Contractor shall run thermostat wire (18/8) from the low voltage section of each RTU to a 2"x4" box at the final location of thermostats on columns or walls. In addition to thermostat wiring, Contractor shall be responsible for all wiring required to allow Novar to complete terminations (i.e. wiring from Thermostats to Control Panels, wiring from outside sensors, etc...). Coordinate all wiring requirements with NOVAR CONTROLS CORPORATION Project Manager (See Criteria Plans for contact information).

## **15C.11 CONTROLS/BUILDING MANAGEMENT SYSTEM (BMS)**

- Controls for all new packaged rooftop equipment shall be field installed Novar ETM-2040 or ETM 2020.
- Controls for Receiving Heater will be Novar Savvy Controller temperature sensors and control relays, not conventional thermostats.
- Storefront sign, canopy lighting, and one half sales floor lighting shall also be controlled by the BMS.
- A Watts transducer via the Novar BMS shall monitor electrical energy consumption.
- A remote override panel will be installed by BMS adjacent to the Savvy Controller, which will allow store personnel to override lighting and HVAC equipment (unless local HVAC override buttons are provided at thermostat (ETM) locations).
- Novar BMS will create a floor plan graphic for each store.
- Coordinate with Paragraph 1A.12 (Section 1A) of this specification.
- Novar BMS system shall consist of the Novar Savvy controller, one ETM-2020/2040 per HVAC system; one zone sensor and discharge air temperature sensor per ETM; Outdoor temperature and analog light level sensors; receiving and vestibule temperature sensors (if heaters installed); monitoring temperature sensors for any of the following areas where an ETM thermostat has not been installed: Employee Lounge, all Offices, Fitting Rooms (unless no inputs available on Savvy panel); monitoring temperature sensors for each quadrant of the store not monitored by an ETM sensor (i.e. front left, front right, rear left, rear right); override buttons, power supplies, wire and relays as required. Centerline of temperature sensors shall be 60" A.F.F.

### 15C.11 CONTROLS/BUILDING MANAGEMENT SYSTEM (BMS) (con't)

- HVAC Contractor shall supply and install smoke detectors for new equipment, as well as all additional detectors required by Fire Marshall or governing code. Smoke detectors shall be photoelectric type. **Note:** Sprinkler system is considered part of the "Fire Alarm System").

#### NOVAR CONTROL SYSTEM DESCRIPTION

- CONTROL POINTS-The Novar Control system consists of two (2) general types of control points: Each packaged HVAC unit has an ELECTRONIC THERMOSTAT MODULE (ETM) control panel: one central panel is provided which has input/output points as shown below.

#### SAVVY CONTROLLER - CENTRAL PANEL

##### EC INPUT/OUTPUT POINTS

###### ▪ INPUTS

- 1. ANALOG OUTSIDE LIGHT
- 2. RECEIVING TEMP
- 3. INDOOR HUMIDITY
- 4. OUTDOOR HUMIDITY LIGHTS
- 5-8 MONITORING TEMPS AS
  - REQUIRED BY SPEC

###### OUTPUTS

- 1. CUSTOMER LIGHTS
- 2. SIGN & CANOPY LIGHTS
- 3. RECEIVING HEATER
- 4. PARKING LOT LIGHTS & SECURITY
- 5. BASEBOARD HEAT
- 6. VESTIBULE HEATER

- G1. OUTDOOR TEMPERATURE
- G2. BUILDING KW PULSE INPUT
- OVERRIDE BUTTONS WIRED PER DRAWING
- Each Packaged HVAC system will be controlled by Novar Logic One ETM. Each ETM will utilize the following control points.

▪ **SAVVY CONTROLLER - CENTRAL PANEL (con't)**

• ETM INPUT/OUTPUT POINTS

▪ <b>INPUTS</b>		<b>OUTPUTS</b>
1.	Zone Temp	1.FAN
2.	Discharge temp sensor	2.COOL 1
		3.COOL 2
		4.HEAT 1
		5.HEAT 2
		6.OSA-DAMPER(ECONOMIZER ENABLE)

OUTPUT POINT DESCRIPTION

**SAVVY CONTROLLER**

- CUSTOMER LIGHTS The customer light circuit controls approximately one half of the fluorescent sales floor lighting and typically all spot and valance lighting. Lighting pattern must be split evenly, every other row, so that adequate lighting is provided to all areas. Refer to Section 16A.18 - Lighting for more detail on lighting split and contactor relay control. If this store is located in an enclosed mall, any indoor Tenant signs should be controlled by this circuit.
- BUILDING SIGN(S) AND CANOPY LIGHTS Any outdoor Tenant signs and any exterior lights such as Canopy lights shall be controlled by this output. No photocells are allowed for sign control, the BMS will take light level into account internally.
- UNIT HEATERS - RECEIVING AREA AND ELSEWHERE Any gas or electric unit or space heaters must be controlled. No thermostat is to be installed; instead, the control circuit is to be placed on relay control from this output. Multiple outputs will be used where there are heaters serving different areas.
- **(NOTE:** A Novar temperature sensor shall be installed in each area with a unit heater to provide control.)
- BASEBOARD HEAT DISABLE All baseboard heating must be controlled by this output. Square D contactors shall be provided by electrical at the breaker panel with adequate poles to control each baseboard heating circuit. If other electrical loads share a circuit with baseboard heat, these other loads must be moved to another circuit. Integral thermostats will control temperature when the contactors are not disabled.
- PARKING LOT LIGHTS AND SECURITY LIGHTS If Parking lot or other outside lights are controlled from the Tenant electrical area, they will be controlled by this output(s).

### **ELECTRONIC THERMOSTAT MODULE (ETM)**

- Fan, Heat 1, Heat 2, Cool 1, Cool 2, and OA Damper (Economizer enable) are contact closures points. The ETM shall replace conventional thermostats, taking over control of all stages of heating and cooling. Twenty-four (or less) VAC is the only acceptable control voltage for use with the ETM. DC may not be used without installing pilot relays.
- All fans, heat and cool stages must be controlled via these output points. Economizer damper will be enabled by this output.

### **SAVVY CONTROLLER - CENTRAL PANEL**

- OUTDOOR LIGHT LEVEL (ANALOG)- The Outdoor Light Level and Outdoor Temperature sensors are mounted together on the North wall at roof level or on the roof itself facing North.
- RECEIVING AREA TEMPERATURE- A WTS temperature sensor will be mounted in the receiving area on an inside wall near the unit heater.
- NOT USED
- NOT USED
- MONITORING ZONE TEMPERATURE-Depending on store layout from 2 to 5 monitoring temperature sensors will most likely be required.

### **ELECTRONIC THERMOSTAT MODULE (ETM)**

- ELECTRONIC THERMOSTAT MODULE- The ETM will be mounted in the space at the "Thermostat location" for each HVAC unit.
- DISCHARGE TEMPERATURE SENSOR- The discharge temperature sensor (DTS) is a duct probe that shall be inserted into the discharge or supply air duct and wired to the ETM. In those instances where it is desirable to connect a wall temperature sensor as an averaging sensor to the ERM, the discharge temperature sensor will be wired to the Savvy Controller.

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**DIVISION 15 - MECHANICAL  
SECTION 15D  
FIRE PROTECTION SYSTEM**

## 15D.10 SCOPE

- Contractor shall install and maintain a complete fire protection system in accordance with the specifications outlined below, and to comply with requirements of local code and state regulations and the Underwriting Agency having jurisdiction.

## 15D.11 AUTOMATIC PROTECTION

- A standard installation of automatic sprinklers arranged as a wet pipe system shall be installed throughout the premises in accordance with the provisions of NFPA #13, "Sprinkler Systems" and FM Global Standard 2-8N, except sprinklers may be omitted above suspended non combustible ceilings, provided the unsprinkled ceiling space is completely cut off from sprinkled areas and there is no combustible storage within said space.
- One eight (8) inch sprinkler system is recommended, and should be supplied by "side central" feed arrangement of the sprinkler risers. An alarm check valve (water flow alarm) should be provided for each sprinkler riser connected to an outside water gong and inside electric bell.
- The automatic sprinkler system for the retail area should be designed to provide a minimum design of 0.15-gpm/sq. ft. density over the most hydraulically remote 2,500 sq. ft. area. The sprinkler system for the mechanical areas should be designed to provide a design of 0.20 gpm/sq. ft. over the most hydraulically remote 3,000 sq. ft. area. The sprinkler system for the office areas should be designed to provide a design of 0.15 gpm/sq. ft. over the most hydraulically remote 1,500 sq. ft. area. The sprinkler system for the storage areas should be designed to provide a design of 0.17 gpm/sq. ft. over the most hydraulically remote 2,000 sq. ft. area. All areas should be designed to provide an additional allowance of 150 gpm for hose streams.
- A minimum 10 psi pressure cushion should be maintained between the available water supply and the sprinkler systems required pressure demand to account for future deterioration. An inspections test connection should be provided at the hydraulically most remote part of the sprinkler system to facilitate waterflow testing.
- Factory Mutual Research Approved equipment, including sprinklers, valves, piping, fittings, and accessories, should be used and details of the installation should conform to FM Global recommended good practices and FM Global Data Sheet 2-8N. Final acceptance of the automatic sprinkler systems will be by satisfactory completion of the Contractor's Material and Test Certificate.
- Automatic sprinkler protection should be provided throughout all areas where there are combustible construction and/or occupancies present. This includes such areas as above combustible suspended ceilings, under mezzanines, shelves or tables 4 feet wide or wider, inside small, enclosed offices, in concealed floor or ceiling spaces, or in electrical rooms where combustibles are present.
- Outside double hydrants should be provided, arranged for easy access to Tenant's building to provide hose protection to any point in the building, and located in accordance with local code requirements.

### **15D.11 AUTOMATIC PROTECTION (con't)**

- Anti-freeze loops shall be provided in those areas that would be subject to freezing.
- Lightning protection should be provided for the building where necessary in accordance with the provisions of NFPA #78 "Lightning Code".
- Fire Department pumper connections shall be provided in accordance with local code and NFPA #24.
- All required fitting, wiring and switches shall be installed and connected to a central station water flow alarm and valve supervisory service. (Alarm service shall be 24 hr/dy). Water flow alarm shall be Potter Vain Flow Switch, with retard, model #VSR-D.
- Whenever initial water pressure is below NFPA or local authority requirements, shall provide any necessary pumps or storage tanks to increase pressure to acceptable levels.
- All of the above recommendations are dependent upon approval of the Underwriting Agency having jurisdiction.
- Gripple Hang Fast Suspension System as manufactured by Gripple, Inc. ,1510 Hubbard Avenue, Batavia, IL 60510, is approved for use per manufacturer's instructions.

### **15D.12 GENERAL REQUIREMENTS**

- Tyco Model EC-17 White, semi recessed pendant heads and white escutcheon plates shall be used in all areas with finished ceilings, (i.e., Sales floor, offices, toilets, lounge, fitting rooms, etc). All other unfinished areas shall have upright brass heads. In the event that conditions prohibit upright heads, pendant heads may be installed provided they are equipped with guard cages.
- All sprinkler risers, valves and controls, shall be protected with a 4'-0" high double steel pipe railing against possible damage by store carting equipment, and shall be located as directed by Tenant (specifically so as not to interfere with Tenant's area usage). See Section 5B.13.
- Provide a cabinet, painted red, approximately sized to accommodate six (6) of each style sprinkler head used in the Tenant space. Additionally, provide and locate in the cabinet, properly sized wrench to fit sprinkler heads.
- Cabinet is to be fastened to the wall at sprinkler riser location minimum 5'-0" A.F.F. to centerline of cabinet.

### **15D.13 CONSTRUCTION**

- Contractor shall be responsible for taking the following fire precautions during the construction of the building, prior to the sprinkler system being in operation:
- General good housekeeping procedures should be followed so that accumulation of debris and rubbish will not become a hazard.
- All temporary heating equipment and open flame devices shall be properly supervised.
- Smoking should be controlled and permitted only in specific areas.

#### **15D.14 TEMPORARY WATCHMEN**

- In the event that the permanent sprinkler protection is not in operation at the commencement of Tenant's Fixturing operation, Contractor shall reimburse Tenant for the expense of temporary 24-hour watchman service.

**OUTLINE SPECIFICATIONS AND  
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**SPECIFICATION NO. 1180A**

**DIVISION 16 - ELECTRICAL**

**SECTION 16A**

**ELECTRICAL**

### **16A.10 GENERAL**

- Attention is directed to the General Requirements, Division 1, which are hereby made part of this Section.
- The Contractor shall provide a complete electrical system as shown on the Criteria Drawings and in accordance with Tenant's Specifications. The Contractor shall perform all work in accordance with best, present-day installation and manufacturing practices. Contractor shall comply with all applicable laws, building and construction codes and requirements of governmental agencies under whose jurisdiction all work performed.
- The word "provide" shall mean furnish, install, wire, connect and test complete in place.

### **16A.11 SERVICING AND METERING**

- The Contractor shall contact the local Power Company and make all necessary arrangements for bringing a new electric service to the building. This includes underground primary and secondary cables and conduits, exterior transformer pad with pad mount transformer, and fence enclosure or a vault as may be required by the power company's standards.
- Voltage for electrical distribution systems shall be three phase, four wire, 277/480 volts. If the Power Company cannot make 277/480 volts available, the distribution voltage shall be 120/208 volt three phase, four wire throughout.
- TP-1 dry type transformers, connected three phase, four wire, 120/208 voltage shall be furnished and wired to the 480/277 volt system as an electrical source for all receptacles, miscellaneous devices and all other equipment requiring either 120 or 208 volts.
- Main electric service to Tenant shall be 600 amp minimum when 277/480 volts is utilized or 800 amp minimum if 120/208 volts is utilized in a maximum store area of 30,00 square feet. Larger area stores will require greater electrical capacity.

**\* Coordinate with specific requirements listed in Section 1B.**

### **16A.12 SCOPE OF WORK**

- Contractor shall provide the complete electrical system, including the following, but not limited to:
- All provisions for transformer, including primary service conduits and cables, concrete pad or poles as required by the Power Company.
- Underground secondary service conduits and cables from transformer pad to building distribution switchboard, including one (1) spare empty service conduit. Number of conduits and cables as required for ampere capacity of service.
- Complete distribution and metering systems.
- Complete feeder and branch circuit wiring systems.
- Installation of and/or connection to electrified store fixtures, motors, control switches and other electrical equipment furnished by Plumbing, Heating, Ventilating, Air Conditioning, Sprinkler, General Contractor or by Tenant.

### **16A.12 SCOPE OF WORK (cont.)**

- All conduit fittings, outlet boxes, floor boxes, wire raceways, power/telephone poles, plug-in moldings, wiring devices, hanger supports, and other items required incidental to the completion of the installation.
- Complete lighting system control, including Building Management System (BMS) control scheme as described in this Division.
- Emergency lighting system and exit signs in accordance authorities having jurisdiction.
- Final connections to water heaters, electrified store fixtures or other electrical equipment furnished by Tenant.
- Contactor relay panel as controlled by BMS, canopy lights, security lights, and sign wiring.
- Door bell system.
- Conduit and wiring provisions for interphone and music system.
- Conduit and telephone wiring (25 pair) must be provided to Tenant Telephone board within the Tenant electric room.
- Fire alarm and detection system, as required by authorities having jurisdiction.
- Cutting and patching shall be provided where required by Tenant criteria drawings.
- All conduit and wiring provisions for Tenant burglar alarm, telephone, and sprinkler systems.

### **16A.13 DISTRIBUTION PANELBOARDS**

- Furnish and install a main distribution panel as manufactured by General Electric Company. Provide separate panel boards as manufactured by GE for lighting and power control. All Panel boards shall be single section, surface mounted Spectra Bolt-On Panels with lockable front cover, concealed hinged door and shall have totally enclosed circuit breaker type distribution with vertically aligned copper bus bars. Main distribution panel shall have a minimum rating of 600 amp to 800 amps. Electrical shall provide a 36"x 36"x12" Nema 1 enclosure upstream of the MDP to allow for the installation of the Novar supplied Current Transducers (CT's). Arrange and install the CT's for the proper phase orientation.
- Provide current transformers and meter as per local utility company requirements.
- Provide main and branch circuit breakers that shall be quick-make, quick break, trip indicating, low voltage molded-case type as manufactured by GE. Breaker faceplate shall list current rating, complying with UL and IEC standards. All circuit protective devices shall have current interrupting capacity.
- Tenant has entered into a national account agreement for the main distribution switchboard. This equipment may be purchased from the source listed in the Criteria Drawings.
- Install power feeds to the main switchboard in a neat workmanlike manner as to allow for Current Transformer (CT) installation for Watts Transducer monitored by the NOVAR system.

#### **16A.14 LIGHTING AND PANELS**

- Lighting and power panel boards shall be circuit breaker type, 20 amp minimum with one, two or three pole breakers and shall be designed for either 277 or 120 volts, three phase, four wire services.
- Panel doors must be complete with circuit schedule mounted on inside.
- All panels shall be located in the Electrical Room. Coordinate location with the Criteria Drawings. All panels shall have rigid plastic labeling. Interior circuit labeling shall be color coded organizer as manufactured by AgriA LLC or equal.

#### **16A.15 CONTACTOR RELAY PANELS AND TIME CLOCKS**

- Provide Softwired Contactor Panels as manufactured by General Electric Company, for grouping and distribution of circuiting, (i.e. lighting, signage, etc.) and as outlined in Section 15C – Controls/Building Management System. The Softwired Contactor Panel shall be UL approved and shall consist of relay assemblies and their associated wiring. The control relay panels shall be mounted in the Electrical Room. Circuit wiring to the relay panel shall be plenum rated, as required by the NEC and local governing authorities. Software contactor panels shall include 24, 36 or 48-relay control modules with corresponding push-button channels. The NOVAR BMS system shall operate groups of relays within the control panel as outlined in section 15C – Control/Building Management System.
- No time clocks shall be installed except in the instance where parking lot lights and/or other lighting is controlled by the Contractor's service. If parking lot lighting is fed from Tenant service, the electrical shall wire the circuit(s) to the control relay panel. Unit heaters, baseboard heat, exhaust fans, canopy lights and fascia sign circuits shall be wired separately to contactor relay panels, as provided by the electrical. The NOVAR BMS system will monitor outdoor light levels, therefore photocells will not be required.

#### **16A.16 CONDUIT, WIRES, CABLES AND RACEWAYS**

- Rigid steel, threaded hot dipped galvanized conduit shall be used for all underground, in concrete slab and exterior exposed work. When allowed by code, use schedule 40 PVC electrical conduit.
- EMT shall be used for all exposed interior work. Where permitted by code, BX or Romex may be used for branch circuit wiring concealed above hung ceiling or in partitions.
- PVC (Plastic conduit) with separate ground conductor may be used for exterior parking lot lighting wiring.
- All feeder and branch circuit wiring shall be type THW, THHN or THWW copper. Branch circuit wiring shall be type TW, copper.
- With the exception of Service entrance feeds, checkout feeds, and all floor outlets, all conduit shall be run overhead.

## **16A.16 CONDUIT, WIRES, CABLES AND RACEWAYS (cont.)**

- **Power Poles:**

Install Power poles as indicated on the TJX Criteria Plans. Coordinate installation requirements with TJX Construction Project Manager.

## **16A.17 GROUNDING**

- Furnish and install the grounding system compliant with NEC, IEEE and NEMA standards and as required by local codes.
- Grounding conductors shall be stranded copper wire with THW green color insulation. Aluminum shall not be used for grounding conductors.
- Separate system grounding electrode conductor shall be minimum No. 350 MCM THW (green) stranded copper wire in IMC steel conduit to entrance of water service, and concrete encased.

## **16A.18 LIGHTING**

- Tenant has entered into a national account agreement for the lighting. Lighting fixtures must be purchased from the source listed in the Criteria Drawings. Substitutions will not be accepted. All orders **MUST** be placed with the distributor a minimum of four (4) weeks prior to the scheduled installation of lighting.
- Note: Gripple Hang Fast Suspension System as manufactured by Gripple, Inc, 1510 Hubbard Avenue, Batavia, IL 60510 is approved for use (per manufacturer's instructions).
- Special fittings required to support fixtures shall be supplied by the Electrical Contractor, as well as wood, or metal supports or grounds to support surface or pendant mounted fixtures on suspended ceilings.
- Incandescent fixtures over 250 watts, light track, and all HID and fluorescent fixtures shall be supported by building structural elements independent of ceilings.
- Recessed fluorescent fixtures shall be supported by rod, bow-chain, or Gripple System, minimum of two (2) supports per 4-feet of fixture.
- The minimum number of supports for surface mounted fluorescent or suspended fluorescent fixtures shall equal one for each 4-feet of length plus one additional support; 4-feet two (2) supports; 8-feet three (3) supports; 12-feet four (4) supports. Additional supports shall be bolted type; anchors and inserts shall be installed as an integral part of structural system. Explosive or cartridge driven type inserts, anchors or supports are not approved.

## 16A.18 LIGHTING (Cont)

- The emergency lighting shall be provided by using a standard fluorescent light fixture equipped with emergency light ballast. The ballast shall include a high temperature nickel cadmium battery, charger, electronic circuitry and a solid state charging indicator light. The emergency ballast will be factory installed in fluorescent light fixtures and shall operate one 17 – 40 watt T-8 lamp in emergency mode for a minimum of 90 minutes at an initial output of 350-450 lumens. Arrange light fixtures with emergency ballast's as required by code to provide one (1) foot-candle of illumination at the floor, (maintained). For all light fixtures controlled by switch or the contactor relay panel, an unswitched hot lead must be connected to the emergency ballast. The emergency ballast must be fed from the same branch circuit as the AC ballast. Type R Lighting. Type R Lighting fixtures (see drawing C-5) are emergency lighting fixtures with 300 lumen output. Arrange fixtures in single or double plates as required to provide (1) foot candle of illumination at the floor, (maintained). The system shall be 120/277V primary and 12V secondary. All emergency battery units are to be hardwired to an unswitched circuit.

### \*Coordinate with specific requirements listed in section 1B

- Note: Data shown on drawing C-5 is for information only, a final layout meeting governing code requirements must be developed by a registered engineer.
- Night lighting shall be provided at the Sales Floor only. Light fixtures serving as night-lights shall be wired before a switch or the contactor relay panel to a 24-hour circuit and shall remain separate from emergency lighting. Coordinate locations of night-lights with the Criteria Drawings.
- Data shown on the Criteria Drawings is for information only. A lighting plan engineered to code conformance must be developed by a registered Electrical Engineer and submitted to Tenant for approval.
- Refer to the Criteria Drawings for the Light Fixture Schedule.
- All fluorescent lamps shall be as listed on the Light Fixture Schedule in the Criteria Drawings. Lamps for all light fixtures will be shipped separately and field installed by the.
- All fluorescent ballast will be factory installed in the light fixtures. Final circuit wiring shall be by the .
- All Switch covers and blank covers to have brushed aluminum finish
- **GE TLC Softwire Contactor Relay Panel** (s), Shall operate the store lighting. "Employee Lighting" shall consist of one half of the Sales Floor lighting,(every other row of lighting), as well as, all employee support areas i.e., Fitting Rooms, Offices, Processing Room, Rest Rooms, etc. The Employee Lighting shall be controlled by a contactor control switch located at the Customer Service Desk and will not be controlled by the NOVAR system. Provide auxiliary contact relays in the relay panel for the NOVAR BMS system to confirm operation of the Employee Lighting. "Customer Lighting" shall consist of the second half of the lighting (every other row) at the Sales Floor, as well as, all display lighting, (i.e., track, perimeter valance, Lamp Gondola plugmold). Customer Lighting shall be controlled by the contactor relay panel(s) operated by the NOVAR BMS system. **Multiple panels may be required depending on store size**

## 16A.18 LIGHTING (Cont)

- **Occupancy Sensors** Where indicated on the TJX Criteria Plans ( RCP), install occupancy sensors with following characteristics:

Manufacturer: Sensorswitch

Series **(Wall)**: WSD-PDT **(Ceiling)** CMR-PDT 9

Lens: Standard

Photocell: Standard

Voltage: 120-277 VAC

Color: white

Temp/Humidity: Standard

Sensor "Hot Lead" shall be fed via Employee Lighting Contactor on the GE Softwire Contactor Panel.

## 16A.19 PARKING LOT AND SECURITY LIGHTING

- Contractor shall provide in the parking lot a lighting system of 36-inch high concrete bases and 30'-0" high ,round steel tapered poles with four (4) 400 watt metal halide lamps to produce 2.3 foot candles maintained on average. Parking lot lighting shall be serviced from common area electric room.
- A system of exterior security lighting shall be provided and will consist of 100 watt, metal halide wall pack units mounted to the exterior building perimeter. Contact relays in the relay panel, controlled by the NOVAR system, shall operate the security lighting from dusk to dawn. Coordinate the location of the security lights with the Criteria Drawings. Security lighting is supplemental to the exterior wall packs mounted over exterior doors.

## 16A.20 SIGNS

- Provide three (3) 20 amp 120 volt dedicated circuits. Provide three (3) junction boxes behind the center of the main sign field with one circuit per junction box. Sign circuits shall be wired to the Softwired Control Relay Panel (described in Section 16A.15), furnished and installed by the electrical . The NOVAR BMS system shall control the sign circuit(s). Coordinate location of sign and circuits with the Criteria Drawings.
- Pylon sign conduit and wire shall be terminated at the Pylon sign in a weatherproof disconnect with the proper voltage and circuiting requirements as specified in accordance with Tenant's pylon sign requirements. Pylon sign is to be controlled by the same contactor controlling the parking lot lighting.

### **16A.21 CONVENIENCE OUTLETS**

- On selected sales area columns, provide a duplex receptacle as indicated on criteria plans. All wire shall be run in conduit. Feed column duplex outlets from overhead. Wherever fire alarm, power, phone and/or sensor wiring etc., is exposed to view it is to be run in Wiremold 2100.
- All convenience outlets should be grounding type equal to Hubbell #5242 White with grounding pole and grounding terminal.
- All covers and blank covers to have brushed aluminum finish.
- Provide duplex receptacles throughout, as shown on Criteria Drawings.
- All IG receptacles shall be color coded orange
- All junction boxes for dedicated circuits shall be labeled accordingly and color coded orange.

**\*Coordinate with specific requirements listed in section 1B.**

### **16A.22 TELEPHONE SYSTEM**

- Furnish and install all single gang outlet boxes and a complete empty conduit system for the telephone system. Provide 3/4" EMT stub up in office areas from flush junction box to above ceilings. Provide wire plug mold on two separate dedicated circuits at the telephone terminal board location.

### **16A.23 DOOR BELL SYSTEM, REAR DOOR ALARM CONTROL, AND CEILING CHIME SYSTEM**

- Furnish and install at the receiving room door a weatherproof push button and bell controlled from a low voltage transformer, as indicated on the Criteria Drawings
- Furnish and install at the receiving room door a rear door alarm control as indicated on the criteria drawings.

### **16A.24 HEATING, VENTILATING, AIR CONDITIONING, AND PLUMBING WIRING**

- Furnish and install all power interlock control wiring for the complete system for heating, ventilating, air conditioning and plumbing. Low voltage wiring to be completed by mechanical , and line voltage power wiring by electrical .
- Provide two (2) 120 volt, 20 amp circuits at location of Novar BMS panel. Provide one (1) 3 pole, 20 amp breaker at the main distribution panel for use by Novar BMS watts transducer.
- Automatic temperature control (BMS) shall be furnished and installed by the Contractor
- All units shall have a field installed GFI receptacle (Coordinate with Division 15B.13).
- All units shall have a field installed Disconnect Switch per local code requirements (Coordinate with Division 15B.13).

#### **16A.25 SPRINKLER FLOW SWITCHES**

- Contractor shall wire and connect sprinkler entrance, flow switches, fan relay, and other control wiring as required in conjunction with Tenant's protective system, and as detailed in Division 16B, - Fire Alarm.

#### **16A.26 P.O.S. SYSTEM WIRING**

- Tenant shall furnish and install the P.O.S. System including all devices, panel, signal wiring, and related fittings, etc. as shown on the Tenant's drawings. Electrical Contractor to provide pull strings in conduit provided for above.

#### **16A.27 TEMPORARY LIGHT AND POWER**

- In the event that permanent electrical service is not available the Contractor shall make all necessary provisions for temporary light and power in the store and be capable of supplying same for the purposes of Tenant's fixture installation and merchandising operations, including any necessary "stand-by" supervision required for the maintenance of light and power during all hours of Tenant's operations.

#### **16A.28 POWER FOR AUTOMATIC DOOR OPERATORS**

- Provide two (2) dedicated 120 volt , 20 amp circuits for sliding door operators. One (1) circuit is to service two (2) door operators at interior of vestibule, and one (1) circuit is to service two (2) door operators at exterior wall. Provide final connections to door operators.

**\*Coordinate with specific requirements listed in Section 1B .**

#### **16A.29 STORE OPENINGS**

- Contractor shall have a qualified electrical mechanic present at the store continuously at least one (1) day before store opening and for opening day to insure that all equipment, material, devices and controls, etc. are acting properly. A day consists of 14 hours from 8:00 A.M. to 10:00 P.M.

#### **16A.30 GUARANTEE**

- The General Contractor shall receive in writing from the Electrical Contractor a written unconditional guarantee that he will repair or replace any defective material or labor which may show itself within one (1) year after date of the final acceptance certificate. This guarantee shall be turned over to Tenant upon completion of punchlist.

#### **16A.31 Electric Hand Dryer**

- Coordinate requirements with section 10A.13

**OUTLINE SPECIFICATIONS AND  
REQUIREMENTS FOR DESIGNBUILD/REMODEL/CONVERSION CONSTRUCTION**

**SPECIFICATION NO. 1180A**

**DIVISION 16 - ELECTRICAL**

**SECTION 16B**

**FIRE ALARM**

## **16B.10 GENERAL**

- Purpose of this section is to establish a minimum requirement for Tenant to be monitored for basic fire coverage meeting or exceeding local fire monitoring codes.

## **16B.11 FIRE ALARM SYSTEM**

- Furnish and install a complete, constantly supervised, battery backed fire alarm system when required by local authority having jurisdiction.
- The fire alarm system shall conform to and comply with the latest adopted edition of NFPA, local building and fire codes.
- The fire alarm system, its components and its installation shall conform to UL, NEC, NFPA, MEA and FM Global standards.
- Provide a complete, supervised fire alarm system including but not limited to conduit, wire boxes, control panel, devices i.e. smoke detectors, pull stations, audio/visual signals (when required by local authority having jurisdiction), sprinkler water flow and tamper switches. The sprinkler switches shall be provided under section 15D – Fire Protection System and connected to the fire alarm system by the fire alarm installer.
- The complete fire alarm system, including installation is the responsibility of the Contractor. The fire alarm system shall have the capability of being monitored by Tenant offsite monitoring service provider. The fire alarm installer shall contact Tenant to arrange for final offsite monitoring connection and commence fire alarm system monitoring. Coordinate work with the Tenant Project Manager.
- Provide a fire alarm control panel as manufactured by ADEMCO, type 5110XM and shall include but not be limited to keypad, battery backup, pull station, smoke detector, dual phone line connection and A/C power connection to one (1) 120 volt, 20 amp, and dedicated circuit.

**\*Coordinate with specific requirements listed in Section 1B.**