

OUTLINE SPECIFICATIONS

Specification NO. 1180

January 15, 2025

**OUTLINE SPECIFICATIONS FOR REMODEL / CONVERSION CONSTRUCTION -
RTS**

TJX COMPANIES, INC

**770 COCHITUATE ROAD
FRAMINGHAM, MA 01701**

TJX Companies, Inc.

SPECIFICATION NO. 1180

OUTLINE SPECIFICATIONS AND REQUIREMENTS FOR REMODEL / CONVERSION CONSTRUCTION

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

SPECIFICATION NO. 1180

DIVISION 1 - REQUIREMENTS

SECTION 1A – GENERAL REQUIREMENT

SECTION 1A GENERAL REQUIREMENTS

1A.10 INTRODUCTION

- Landlord shall construct a Tenant Facility and related parking area in accordance with Construction Plans and Specifications ("CPS") prepared by Landlord's architect and shall be inclusive of revisions, changes, and required tenant approvals in the manner outlined in Schedule "C" of the lease. The architectural design of the Store shall be developed in accordance with the Tenant requirements contained herein and as approved by the TJX Preplanning Department and TJX 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

- These Outline Specifications and criteria set of drawings described in Schedule "C" of the lease are "Tenant Requirements" from which pursuant to Schedule "C" of the lease, Landlord's architect shall prepare the Construction Plans and Specifications for the construction of a Tenant facility. Said Construction Plans and Specifications as finalized in the manner outlined in Schedule "C" of the lease 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.
- Landlord/Architect Construction Plans shall be developed with the same CAD standard as "Tenant Criteria Set (C-Set)".

*** Refer to TJX "Landlord Letter" for additional requirements.**

1A.12 ARCHITECTURAL AND ENGINEERING SERVICES

- Landlord shall provide the services of competent registered architects and engineers to develop and prepare the CPS based on Tenant requirements, in the manner required by Schedule "C" of the lease, 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 CAD drawings shall be in the format used in the TJX site specific criteria drawings.
- The A&E Drawing set to be developed on 36"x48" sheet size and match the drawing scale, building orientation, and CAD standards of the TJX Criteria Set.
- The Construction Plans shall be submitted to Tenant for review and approval in accordance with the provisions of said Schedule "C" of the lease before construction is commenced. Any approval by Tenant of the CPS or any revisions, modifications, substitutions or changes therein shall not relieve Landlord 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 BMS Contractor, an electronic copy of the Mechanical Drawings that shall include the floor plan, room use names, all rooftop units, ductwork, sensor and equipment schedules. Drawings shall be in AutoCAD (.dwg files) and shall be sent via standard email to: BMS Contractor as identified on drawing C1 of the TJX Criteria Set or as identified in Lucernex workflow. **(Refer to TJX "MEP Sample Set" on the TJX Real-estate website for a guide in design requirements*)**.

1A.12 ARCHITECTURAL AND ENGINEERING SERVICES (Continued)

- Additional requirements are set forth in the TJX real-estate website for title 24 code compliance.
- 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 shall be submitted to Tenant for approval prior to start of elevation construction.
- Provide suitable sign access catwalk with-in sign canopy. Catwalk deck to be pressure treated 3/4" plywood deck full length of canopy and as wide as width of canopy will allow. Minimum 4'-0" wide on standard canopy. Include all required framing and supports for safe work area. Provide minimum 30"x30" access panel for access to catwalk. Access panel to be located per plans.
- Furnish and install 3/4" pressure treated plywood backer sheathing (for sign attachment) at EIFS or stucco facades. Area shall be 12" larger on all sides than the sign to be attached.
- Tenant will use 6'- 0" high letters for its storefront signage, any deviation from this letter size is to be submitted for review and approval by Tenant.
- It is the responsibility of architect and/or engineer to review/design structural support for required items per store chain
- COMcheck lighting compliance forms are to be part of the lighting/electric drawings and be present in the A&E submittal set to TJX.
- Emergency lighting shown on the TJX Criteria Set is based on minimum number of emergency light requirements. It is the responsibility of the architect/engineer to design emergency lighting as required to meet all state and local codes.
- Architect/Engineer shall include a ceiling coordination drawing showing ceiling related items. Showing HVAC, lighting, hanging unistrut, etc. This shall be a separate sheet from HVAC, Lighting, hanging unistrut, etc. and be titled "Ceiling Coordination Plan"

1A.13 COMPLIANCE WITH LAWS AND REGULATIONS

- In performing all engineering and construction obligations the Landlord 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. Landlord shall be responsible for all permits, licenses, and taxes required by law for all such construction, including without limitation Certificates of Occupancy and Health Permits or local equivalent.

1A.13A COMPLIANCE WITH ADA (Americans with Disabilities Act)

- In performing all engineering and construction obligations the Landlord and all of his Agents, Employees, Architects, Engineers and Supervisors shall comply with the most current version of the **Department of Justice ADA Standards for Accessible Design, State, or local ADA** Requirements, whichever code has the most stringent accessibility requirements. Requirements include, but are not limited to, all exterior and interior elements of access and egress, parking, signage, ramps, approaches, clearances, reaches, and any other applicable elements set forth in the "Tenant Requirements". In addition to Department of Justice ADA Standards for Accessible Design, State, or local ADA Requirements, all Landlord agents shall comply with TJX ADA requirements. Coordinate with TJX Project Manager.

1A.14 WORKMANSHIP AND MATERIALS

- All workmanship shall be the highest quality with industry standards as a minimum. It is the responsibility of the General Contractor to oversee construction of the project, continually inspect the work, materials, and workmanship provided by all of their tradespeople, subcontractors, and suppliers. The TJX Project Manager has final approval or disapproval. Workmanship of all subcontractors falls under the General Contractor's responsibility and failure to provide may result in corrective action at own cost. Additionally, all construction shall comply with all state and local code, and inspection requirements as approved and amended by the governing city. All material shall be new and of high quality. Used material 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 Landlord shall furnish and pay all permanent and 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 Landlord will pay the costs of such standby supervision and service.
- Upon request, the Landlord is to provide telephone numbers, addresses and contacts for local utilities serving the proposed location, including associated meter numbers.

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 Landlord.

1A.17 PROJECT UPDATES

- Landlord, or landlord's GC, shall provide a digital construction update on a weekly basis. The update is due to the TJX construction Project Manager via email each Thursday by the end of the day for the project in question. Updates should commence when GC starts construction and shall end when the Construction Punch List is complete. The construction update will include, but is not limited to, site progress photos, building interior and exterior progress photos, building signage photos and written bullet point updates explaining the weekly progress and a two week look ahead by trade for any and all trades that are actively working on the TJX site.

1A.18 WASTE DISPOSAL/RECYCLING OF CARDBOARD/CORRUGATE

- All contractors shall be in compliance with all laws and regulations of the state and surrounding states where the project is located. This includes all construction and demolition waste, recycled materials, etc. It will be the responsibility of all contractors to be aware and abide by all laws and regulations or pay any fines and/or legal fees.

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 Landlord 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 Landlord 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. Projects with multiple stores brands with-in the same shopping center, which are separately demised, shall retain one (1) full-time superintendent for each demised store brand. Only one (1) superintendent will be required for combo stores

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 Landlord 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.

1A.22 PRE-OPENING MAINTENANCE

- From and after the "Fixture Date" as defined by Tenant, through store opening date Landlord 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

- Landlord shall deliver the Tenant facility to Tenant in a neat and clean and suitable opening condition. Landlord shall professionally clean all surfaces including, aluminum and glasswork. TJX will perform professional waxing of all VCT flooring prior to fixturing.

1A.24 CLOSE OUT DOCUMENTS/SURPLUS MATERIALS

- Landlord/Landlord's General Contractor shall provide close out documents, as-built construction plans and surplus materials to the TJX Project Manger and Store Manager team in the form as requested by the TJX Project Manager. This may be hard copy, computer flash drive, upload to Lucernex, or any combination as required or requested.
The as-built plans shall be provided on completion of the punch list or thirty (30) days after opening, whichever is first. Also to be delivered to the TJX Project Manager shall be the certificate of occupancy, air balance report, and a list of sub contractors who performed work on the Tenant's store. Also provide their telephone numbers for both business and emergency numbers for after hours contact. Additionally the Landlord/Landlord's General Contractor shall provide a list of sub-contractors (as outlined above) to the TJX Project Manager within seven (7) days of commencement of construction.
One (1) hard copy set of construction as-built shall be provided in Tenant electric room. Plans shall be rolled and placed in a 6" PVC conduit. (See Div. 16.33 Plan Storage).
- Surplus Materials: Deliver surplus materials to Tenant. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
 - VCT: one (1) box of each VCT used
 - LVT: one (1) box of each LVT used
 - ACT: one case (1) of each ACT used
 - Vestibule Mat: one (1) box of carpet mat.

1A.25 OPERATING INSTRUCTIONS AND GUARANTEES

- Landlord 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 door hardware key cores are installed by Tenant) plus such additional periods of time as are expressly required under the last sentence of this Paragraph 1A.25. Landlord 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, Tenant'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 Landlord 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, Landlord 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

- Landlord 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 Landlord 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 Landlord 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 Landlord 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 REMODEL/CONVERSION CONSTRUCTION

SPECIFICATION NO. 1180

SECTION 1B - CHAIN SPECIFIC REQUIREMENTS

SECTION 1B – SPECIFIC REQUIREMENTS OF HOMEGOODS, HOMESENSE, MARSHALLS, TJ MAXX, AND SIERRA

Specific requirements listed in this section are unique to the store chain involved and supersede 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 HOMEGOODS STORES.

COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS.

8A.13 ALUMINUM STOREFRONT

- HOMEGOODS storefront finish shall be, Kawneer, Bone White UC109880 Standard Permafluor color.

8A.14. VESTIBULE

- HOMEGOODS Vestibule storefront finish shall be, Kawneer, Bone White UC109880 Standard Permafluor color.

10A.13 PAPER TOWEL DISPENSER / ELECTRIC HAND DRYER

- HOMEGOODS stores shall have Landlord to install recessed battery-operated paper towel dispenser/waste receptacle provided by Tenant. Do not provide Electric Hand Dryer.
- HOMEGOODS COMBO stores require Electric Hand Dryers provided and installed by GC. Model to be Xlerator XL-SB. with Xlerator ADA recess hand dryer exchanger kit with continuous splash guard to floor (model #40502) where indicated on Tenant Criteria Drawings.

11A.12 SCISSOR LIFT

- For HOMEGOODS stores with on-grade receiving or locations with a truck well other than 48" below Finish Floor (+/- 6") a Truck Scissor Lift Dock shall be provided as specified below. Scissor lifts are only to be used in the event best efforts are made for a prototypical loading dock or on grade loading cannot be achieved.

National Account: Deluxe Systems Div. of W.T. Hight Co.

Model #T2-50608, Platform size 72" x 96"

Type: Pit Mount Capacity: 5,000lbs

Travel Speed: 12 FPM

Electric: General Contractor to provide 230v-60-3ph disconnect along with a receptacle outlet to accept a L15-20P plug.

- See TJX Criteria Set of plans for Deluxe Systems, contact information. If the criteria set of plans shows a scissor lift, please contact Deluxe Systems and provide them with a fixture plan so they may help you with what is required.

11A.13 PIN LOCK STORAGE CABINET (Supplied by TJX)

- Install pin lock storage cabinet adjacent to the loading dock man door. As indicated below:

Manufacturer: Mier Products Inc.

Model: Security Source 10"W X 12"H X 6"D metal outdoor rated enclosure.

Mounting: 42" to bottom of cabinet accessible from loading dock man door landing area.

See TJX Criteria Set for location.

Section 1B

SPECIFIC REQUIREMENTS FOR HOMEGOODS STORES. (Continued)

15A.14 PLUMBING FIXTURES

- **Vanity Tops and Integral Bowls.** Vanity top shall be post-formed, with “no drip” edge. All vanity tops to be scribed to wall opening and mounted per manufacturer’s specifications. Refer to criteria plans for countertop finishes.

15B.11 GENERAL-CPS PHASE

- In addition to Grand Opening Day Coverage, The Heating, Ventilating and Air Conditioning Contractor shall have a qualified mechanic present at the store “Soft Opening” (prior to Grand Opening). The day shall consist of fourteen (14) hours continuously, from 8:00 A.M. through 10:00 P.M. coordinate the exact date with TJX Project Manager. Same hours on Grand Opening day.

15B.12 SYSTEM DESCRIPTION

- Install (1) truck fan per overhead door in standalone HomeGoods stores. For Combo stores, install (1) truck fan at the HomeGoods overhead door. Fan to be AeroTec model 750. GC to purchase, mount and provide power for the fans. Consult TJX Criteria set for location and mounting heights.

16A.29 STORE OPENINGS

- In addition to Grand Opening Day Coverage, The Electrical Contractor shall have a qualified electrician present at the store “Soft Opening” (prior to Grand Opening). The day shall consist of fourteen (14) hours continuously, from 8:00 A.M. through 10:00 P.M. coordinate the exact date with TJX Project Manager. Same hours on Grand Opening day.

Section 1B

SPECIFIC REQUIREMENTS FOR HOMESENSE STORES

COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS

5B.18 MISCELLANEOUS STEEL

- Sidewall Rug Rack Fixture Support Structure. Architect / Structural Engineer is responsible to design and detail a support structure fastened at top and bottom, add as required additional vertical and horizontal steel framing and supports (rug rack support structure) as required to support the provided HOMESENSE rug rack fixture at side wall. Refer to CPS for location and additional information/details.

6A.17 INTERIOR WALLS

- Demising walls separating TJX premises from adjacent tenant, shall be minimum construction of 6" metal stud place at 16" on center. Gauge and spacing of studs should be designed per SMMA and associated limiting height requirements for composite walls. Provide 5/8" Fire Treated Plywood from finish floor to 15 feet A.F.F. (HomeSense stores).

10A.13 PAPER TOWEL DISPENSER

- Landlord to install battery operated paper towel dispenser provided by HOMESENSE. Electric hand dryer not required in HOMESENSE stores.

11A.12 SCISSOR LIFT

- For HOMESENSE stores with on-grade receiving or locations with a truck well other than 48" below Finish Floor (+/- 6") a Truck Scissor Lift Dock shall be provided as specified below. Scissor lifts are only to be used in the event best efforts are made for a prototypical loading dock or on grade loading cannot be achieved.

National account: Deluxe Systems, Div. of W.T. Hight Co.

Model#: T2-50608 Platform size 72" x 96"

Type: Pit Mount Capacity: 5,000lbs

Travel Speed: 12 FPM

Electrical: General Contractor to provide 230v-60-3ph disconnect along with the receptacle to accept a L15-20P plug.

- See TJX Criteria Set of plans for Deluxe Systems, contact information. If the criteria set of plans shows a scissor lift, please contact Deluxe Systems and provide them with a fixture plan so they may help you with what is required.

11A.13 PIN LOCK STORAGE CABINET (Supplied by TJX)

- Install pin lock storage cabinet adjacent to the loading dock man door as indicated below:

Manufacturer: Mier Products Inc.

Model: Security Source 10"W X 12"H X 6D" metal outdoor rated enclosure.

Mounting" 42" to bottom of cabinet accessible from loading dock man door landing area.

See TJX Criteria Set for location

SPECIFIC REQUIREMENTS FOR HOMESENSE STORES (Continued)

15B.11 GENERAL-CPS PHASE

- In addition to Grand Opening Day Coverage, The Heating, Ventilating and Air Conditioning Contractor shall have a qualified mechanic present at the store "Soft Opening" (prior to Grand Opening). The day shall consist of fourteen (14) hours continuously, from 8:00 A.M. through 10:00 P.M. coordinate the exact date with TJX Project Manager. Same hours on Grand Opening day.

15B.12 SYSTEM DESCRIPTION

- Install (1) truck fan per overhead door in HomeSense stores. Fan to be AeroTec model 750. GC to purchase, mount and provide power for the fans. Consult TJX Criteria set for location and mounting heights.

16A.18 CHANDELIER FIXTURE

- In Chandelier fixture to be suspended by threaded rod supplied and installed by GC. Size rods per manufacturers installation instructions. Fixture to be suspended from roof structure (top cord). Additional unistrut may be required at roof structure to allow uniform installation. All required support structure to be painted white. Engineer of record to review structure at the chandelier fixture locations and attachment method to ensure safety and structural integrity of the fixture. Attachment to the roof deck is prohibited.

16A.29 STORE OPENINGS

- In addition to Grand Opening Day Coverage, The Electrical Contractor shall have a qualified electrician present at the store "Soft Opening" (prior to Grand Opening). The day shall consist of fourteen (14) hours continuously, from 8:00 A.M. through 10:00 P.M. coordinate the exact date with TJX Project Manager. Same hours on Grand Opening day.

Section 1B

SPECIFIC REQUIREMENTS FOR MARSHALLS STORES

COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS

Marshalls Stores – Puerto Rico & Hawaii

7A.19 ROOFTOP EQUIPMENT

- All rooftop equipment, and associated curbs, shall be mechanically attached to the roof structure. Gravity connections or wood sleeper curbs will not be accepted or approved. Engineering, for equipment attachment, should be designed for a minimum wind load of 180 MPH.

15B.13 NEW ROOFTOP HEATING AND AIR CONDITIONING UNITS

- Add Item as follows: Upon completion of equipment installation, the contractor is to provide “additional” field applied Adsil Microguard1 3500 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.
- Contractor to coordinate and provide coating with-in one week of RTU installation.
- For Puerto Rico contact: Giovannie Santiago with Green Air Systems, 787-787-1293.
- For US locations contact: Adsil, Inc., One Hargrove Grave #1K, Palm Coast, FL 32137. Phone: 1-800-549-2539.
- Substitutions will not be accepted.

16A.11 SERVICING AND METERING

- Consideration will be given for the re-use of existing main electrical service. An existing 400 amp (277V/480V), or 600 amp (120V/208V), electrical service may be reused on the following conditions:
 - The architect/engineer of record must provide electrical load calculations supporting this request, for review and approval by TJX, prior to the re-use of any existing electrical service.
 - All electrical service equipment to be re-used must be in compliance per local and state codes.
 - The re-use of fused disconnect will not be considered.

Section 1B

SPECIFIC REQUIREMENTS FOR TJ MAXX STORES

COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS

TJ Maxx Stores – Puerto Rico & Hawaii

7A.19 ROOFTOP EQUIPMENT

- All rooftop equipment, and associated curbs, shall be mechanically attached to the roof structure. Gravity connections or wood sleeper curbs will not be accepted or approved. Engineering, for equipment attachment, should be designed for a minimum wind load of 180 MPH.

15B.13 NEW ROOFTOP HEATING AND AIR CONDITIONS UNITS

- Add Item as follows: Upon completion of equipment installation, the contractor is to provide “additional” field applied Adsil Microguard1 3500 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.
- Contractor to coordinate and provide coating with-in one week of RTU installation.
- For Puerto Rico contact: Giovannie Santiago with Green Air Systems, 787-787-1293.
- For US locations contact: Adsil, Inc., One Hargrove Grave #1K, Palm Coast, FL 32137. Phone: 1-800-549-2539.
- Substitutions will not be accepted.

16A.11 SERVICING AND METERING

- Consideration will be given for the re-use of existing main electrical service. An existing 400 amp (277V/480V), or 600 amp (120V/208V), electrical service may be reused on the following conditions:
 - The architect/engineer of record must provide electrical load calculations supporting this request, for review and approval by TJX, prior to the re-use of any existing electrical service.
 - All electrical service equipment to be re-used must be in compliance per local and state codes.
 - The re-use of fused disconnect will not be considered.

Section 1B

SPECIFIC REQUIREMENTS FOR SIERRA STORES COORDINATE WITH GENERAL SPECIFICATION REQUIREMENTS

8A.13 ALUMINUM STOREFRONT

- SIERRA storefront finish shall be, Kawneer, Charcoal anodized color.

8A.14. VESTIBULE

- SIERRA Vestibule storefront finish shall be, Kawneer, Charcoal anodized color, as shown on the TJX provided Criteria Set of Drawings.

10A.13 ELECTRIC HAND DRYER

- SIERRA stores require Electric Hand Dryers provided and installed by GC. Model to be Xlerator XL-SB. with Xlerator ADA recess hand dryer exchanger kit with continuous splash guard to floor (model #40502) where indicated Tenant Criteria Drawings.
- Refer to CPS set for location of fixtures.

11A.12 SCISSOR LIFT

- For SIERRA stores with on-grade receiving or locations with a truck well other than 48" below Finish Floor (+/- 6") a Truck Scissor Lift Dock shall be provided as specified below. Scissor lifts are only to be used in the event best efforts are made for a prototypical loading dock or on grade loading cannot be achieved.

National account: Deluxe Systems, Div. of W.T. Hight Co.

Model#: T2-50608 Platform size 72" x 96"

Type: Pit Mount Capacity: 5,000lbs

Travel Speed: 12 FPM

Electrical: General Contractor to provide 230v-60-3ph disconnect along with a receptacle outlet to accept a L15-20P plug.

- See TJX Criteria Set of plans for Deluxe Systems, contact information. If the criteria set of plans shows a scissor lift, please contact Deluxe Systems and provide them with a fixture plan so they may help you with what is required

16A.11 SERVICING AND METERING

- Consideration will be given for the re-use of existing main electrical service. An existing 400 amp (277V/480V), or 600 amp (120V/208V), electrical service may be reused on the following conditions:
 - The architect/engineer of record must provide electrical load calculations supporting this request, for review and approval by TJX, prior to the re-use of any existing electrical service.
 - All electrical service equipment to be re-used must be in compliance per local and state codes.
 - The re-use of fused disconnect will not be considered.

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DIVISION 2 - SITE WORK

SECTION 2A

SITE REQUIREMENTS

2A.10 SCOPE OF WORK

- Landlord shall provide/update as required a hard surface parking lot including all parking areas, loading areas, access around entire premises, all driveways to public streets, parking lot lighting, parking stall striping, landscaping, drainage systems, and sewer systems. If existing, review with TJX project Manager of Development (MOD) for anything required to update per current TJX Specification and/or Criteria Set.

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. Manholes will NOT be permitted with-in the building envelope.
 - 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. Catch Basins will NOT be permitted with-in the building envelope.
- 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.
 - Sanitary manholes will NOT be permitted with-in the building envelope.

2A.12 PAVING CONSTRUCTION

- Landlord shall design and install/update new/existing 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 Landlord 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. Maximum slope of pavement shall not exceed 2%.

2A.13 SITE IMPROVEMENTS

- Landlord shall provide any necessary site improvements required by Tenant including but not limited to fencing, guard rails, retaining walls and sidewalks. Landlord 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. Landlord will be responsible for all handicapped signage, ramps, and parking identification that may be required by local, state or federal statutes.

2A.13 SITE IMPROVEMENTS (Continued)

- Landlord to provide a “curb cut” access ramp that is in compliance with all requirements located directly in front of the tenant entry doors. Width of “curb cut” shall be 6’-0” minimum. This “curb cut” is required in addition to any other ADA access ramps at the shopping center and is required whether or not such ramp is necessary to bring the shopping center into compliance with the ADA.

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. Landlord 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/updated 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 Landlord and shall be as approved by Tenant. Upon request tenant will provide artwork for announcement sign. The sign shall be installed as directed by Tenant, maintained and kept erect during the entire period of construction by Landlord, 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

- Landlord 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 Landlord and Tenant.

2A.18 LOT LIGHTING

- A parking lot lighting system shall be provided/updated 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.
- The area of storefront for the extent of lease line, either under canopy or not shall maintain minimum 10 foot candles (fc).

2A.19 TAILGATE UNLOADING

- Landlord 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.
- Clearance between interior finished floor and top of loading dock slab shall be 48".
- Dock length shall be a minimum of 70', or as required per site conditions and minimum slope requirements.

2A.19 TAILGATE UNLOADING (Continued)

- Max slope(s) of loading dock:
 - First 10'-0" from face of receiving door foundation shall be 2% max sloped to the storm drain.
 - The next 25' section of dock slab, away from the receiving door, shall be 3% max.
 - The remaining slope of the dock slab (to natural site grade) shall be 6% max.
- Drainage shall be provided in the truck dock and such drain shall be located a minimum of 3' from the edge of dock.
- Existing truck dock slabs shall not exceed the max slope requirements noted above, unless documentation supporting feasibility of existing truck dock is submitted to tenant for review and approval. Slopes greater than 6% will not be accepted.
- Seals and bumper shall be provided at the receiving door opening. Refer to Division 11 "Equipment" for receiving door equipment specifications.
- Landlord shall provide a trash compactor pad adjacent to the Tenant receiving dock for use by Tenant. Furnish and install minimum 8" diameter concrete filled steel bollards for compactor protection. Quantity and location of bollards as directed by TJX project manager. Refer to criteria drawings for location of trash compactor pad. Refer to 3A.16 for pad requirements.
- Tenant reserves the right to install a "Cart Containment System" in the parking areas in front of the Demised Space. The exact location will be coordinated with Landlord and Tenant. Tenant will be responsible for the cost of the installation and maintenance of the cart containment system.

**OUTLINE SPECIFICATIONS AND
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SPECIFICATION NO. 1180

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 psi minimum, or as required per soils report.

3A.11 SUB-GRADE AND BASE

- There shall be a 6" minimum gravel base or clean, free draining material placed beneath the slab in accordance with any applicable soils report. 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 "interior" concrete slabs-on-grade. 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
- If slab is existing, a new vapor barrier shall be installed over any new trenching or cutouts.
- Approved Manufacturer: Stego Wrap 15 mil by Stego Industries.

3A.13 FLOOR SLABS

- Concrete floor slabs-on-grade shall be a minimum 4" thick, 3,500 PSI, monolithic placement with Floor Flatness and Levelness values in line with industry standards for retail stores. Concrete mixture shall be designed for minimum shrinkage. The water/cement ratio of the concrete shall not exceed 0.55. Slump range shall be 4" +/- 1".
- The concrete slab shall be dry, clean, smooth, structurally sound, and free of any foreign materials that might prevent proper adhesive bond per ASTM F710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring". Slabs shall be machine troweled to a tight steel trowel finish.

3A.14 SLAB MOISTURE TESTING AND RESILIENT FLOORING ADHESIVES

- Prior to the installation of any resilient flooring or any patching or underlayment compound, moisture testing shall be performed in accordance with ASTM F2170 "Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in Situ Probes".
- Testing shall be done by an Independent ICRI Certified Concrete Slab Moisture Testing Technician. Complete test results shall be sent to Tenant's Project Manager and the flooring contractor within 24 hours of receipt of test results.
- Bond testing shall be conducted per the flooring manufacturer's recommendations to determine the compatibility of the adhesive to the concrete slab.

- Regardless of slab moisture levels, the Flooring Manufactures high moisture adhesives must be used (unless using Aquaflex).
- High Moisture Adhesives must be used as follows:
 - Armstrong – S515 High Moisture Adhesive
 - Mannington/Amtico = Amtico High Moisture PS Adhesive
 - Parterre – Parterre Universal Pressure Sensitive Adhesive
 - ASI – High Moisture Series Adhesive FLBMD097
 - Tarkett/Centiva – Tarkett Rollsmart Adhesive
- If the slab RH is 81% or greater, and/or the PH is 11 or greater, one of the following options is required: Provide a moisture mitigation system is required per ASTM F3010 “Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings”. Or provide Aquaflex Waterproof Adhesive per manufacturers instructions. TJX moisture level requirements exceed flooring manufacturer’s requirements.
- All patching and underlayment compounds shall be moisture, mildew, and alkali-resistant.
- Per specifications section 2A.12 a 15 mil. Stego Wrap Vapor Barrier is required directly under the concrete slab. Failure to install the specified vapor barrier will require the installation of a Moisture Mitigation system per ASTM F3010 regardless of moisture levels in the slab.

3A.14A MOISTURE MITIGATION SYSTEMS AND AQUAFLEX WATERPROOF ADHESIVE

- If a Moisture Mitigation System is required, the following requirements apply:
 - System must be in accordance with ASTM F3010 “Standard Practice for Two- Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings”
 - System must have a minimum 10-year warranty provided by the Moisture System Manufacturer, not the Flooring Installation contractor. Warranty information should be sent to the Tenant’s Project Manager within 48 hours after System application
- Approved manufacturers are:
 - A. Schonox
 - B. TEC
 - C. Mapei
 - D. Ardex
- If Aquaflex Waterproof Adhesive is used, the following requirements apply:
 - Aquaflex must be installed per Manufacturer’s instructions, including required slab prep.
 - Aquaflex must be purchased directly from the Manufacturer.
 - If needed, the following are approved for use with Aquaflex:
 - Self-Leveling Underlayment (SLU) – Ardex K60 Rapid Setting Latex Smoothing and Leveling Compound.
 - Surface Repair Mortar (SKM) – Ardex MRF Moisture Resistant Rapid Drying Skimcoat Patching Underlayment.
 - Any other patch, skim or underlay compounds must be approved by Aquaflex prior to use.
 - *Contact for Aquaflex is: info@aquaflexinc.com / 800-359-3201.

3A.15 CONCRETE SIDEWALKS

- Concrete walks shall be 4" thick or greater, and laid on minimum 4" crushed stone sub-base. Compact base to 95% compaction.

3A.16 PAD FOR COMPACTOR

- Provide a minimum 6" thick concrete pad to accommodate compactor. Locate pad according per Site Specific C-Set. Minimum pad dimension 10'-0" x 40'-0". Increase slab thickness at perimeter to 1'-0" x 1'-0". Provide 6x6x2.9x2.9 W.W.M. reinforcing with-in slab. Refer to 3A.11 for sub-base requirements.

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SPECIFICATION NO. 1180

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.
- Shapes: Provide shapes indicated including for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
- ASTM C90 Hollow Load Bearing Grade N.
 - Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 PSI (B.1 MPa) unless indicated otherwise.
 - Density Classification: Normal weight unless otherwise indicated.

4A.12A EXTERIOR WALLS - EXISTING

- TJX requires all existing walls to be structurally sound and aesthetically in good condition.
- Shall meet the thermal envelope requirements of the state or local energy code, per climate zone. Refer to Section 7B for additional insulation direction.
- All exterior walls to be properly flashed.

4A.13 PROJECT CONDITIONS

- Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- Desert Requirements: Continuously dampen wall surfaces with light fog spray during initial mortar curing period of 3 days. Do not saturate.
- During erection, cover tops of walls with waterproof sheeting at the end of each day's work. Cover partially completed structures when work is not in progress. Extend cover a minimum of 24 inches down both sides of walls and secure in place.

4A.14 MATERIAL, GENERAL

- Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in completed Work.
- Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

4A.15 MORTAR AND GROUT MIXES

- General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
 - Do not use calcium chloride in mortar or grout.
 - Use Portland cement-lime mortar unless otherwise indicated.
 - Add cold-weather admixture (if used) at same rate for mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.
 - For masonry below grade or in contact with earth, use Type S.
 - For reinforced masonry, use Type S.
 - For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; and for other applications where another type is not indicated, use Type S.

4A.16 FLASHING MATERIALS

- Metal Flashing:
 - Metal Drip Edge: Fabricate from stainless steel. Extend at least 3 inches (76 mm) into wall and 1/2 inch (13 mm) out from wall, with outer edge bent down 30 degrees and hemmed.
- Flexible Flashing:
 - Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than 0.040 inch (1.02 mm).

4A.17 NEW OPENINGS IN EXISTING WALLS

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

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SPECIFICATION NO. 1180

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 fast-curing, lead and chromate free, universal modified-alkyd primer with good resistance to normal atmospheric corrosion, complying with performance requirements of FS TT-P-664.

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, primed / 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 METAL STUDS (LOAD BEARING)

- Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
 - Minimum Base-Metal Thickness: 0.0598 inch (16 gauge) unless noted otherwise on structural drawings.
 - Flange Width: 1-5/8 inches.
- Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with straight flanges, and as follows.
 - Minimum Base-Metal Thickness: Match steel studs.
 - Flange Width: Maximum suitable for wall width.
- Steel Box or Back-to-Back Headers: Manufacturer's standard C-shapes used to form header beams, of web depths indicated, punched, with stiffened flanges, and same minimum base-metal thickness as steel studs.
 - Minimum Base-Metal Thickness: Match steel studs.
 - Flange Width: Maximum suitable for wall width.

5A.16 METAL STUDS (NON-LOAD BEARING - INTERIOR)

- Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated on Tenant criteria drawings, punched, with stiffened flanges, and as follows:
 - Minimum Base-Metal Thickness: 0.0329 inch (20 gauge) unless noted otherwise on structural drawings.

5A.16 METAL STUDS (NON-LOAD BEARING – INTERIOR) (Continued)

- Flange Width: 1-1/4 inches.
- Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and same minimum base-metal thickness as steel studs.
 - Minimum Base-Metal Thickness: Match steel studs.
 - Flange Width: Manufacturer's standard width.
- Double Deflection Tracks: Manufacturer's double, deep-leg, U-shaped steel tracks, consisting of nested inner and outer tracks; unpunched, with unstiffened flanges.
 - Outer Track: Of web depth to allow free vertical movement of inner track, with flanges designed to support horizontal and lateral loads and transfer them to primary structure, and as follows:
 - Minimum Base-Metal Thickness: 0.0598 inch (16 gauge).
 - Flange Width: 1 inch (25 mm) plus twice design gap for other applications.
 - Inner Track: Of web depth indicated, and as follows:
 - Minimum Base-Metal Thickness: Match steel studs.
 - Flange Width: Manufacturer's standard width.

5A.17 COORDINATION

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

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SPECIFICATION NO. 1180

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.

5B.11A LADDER FALL PROTECTION

- When total rise exceeds 24'-0" a steel safety cage shall be provided for fall protection. Cages shall be designed and installed per OSHA standards and requirements. Cages are not required on total rise of under 24'-0" AFF.

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 solid bars 6" o.c. each way welded at intersections. Duct penetrations through the roof will require burglar bars, coordinate with section 15B.13 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 and/or ADA compliance.
- 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 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 COMPACTOR SECURITY DOOR

- Furnish and install steel compactor slider door and frame at location shown on criteria drawings. Door to be slider type unless shown otherwise on criteria drawings. Door and frame to be ordered from TJX national account vendor: PTR Baler and Compactor Company. See TJX Criteria set for vendor contact information.

5B.17 PIPE BOLLARDS

- Fabricate pipe bollards from Schedule 80 steel pipe. Cap bollards with 1/4-inch minimum steel plate. Bollard to be filled with concrete.
- If required, fabricate sleeves for bollard anchorage from steel pipe with 1/4-inch thick steel plate welded to bottom of sleeve.
- Exterior Bollard minimum size is 8". Interior Bollard minimum size is 6".
- Quantity and location of bollards as directed by TJX project manager.

**OUTLINE SPECIFICATIONS AND
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SPECIFICATION NO. 1180

DIVISION 6 - CARPENTRY

SECTION 6A

CARPENTRY MILLWORK

6A.11 MILLWORK

- All finish lumber shall be thoroughly seasoned kiln dried.
- Refer to Tenant criteria drawings for Millwork scope and associated details.

6A.12 NOT USED

6A.13 PLASTIC LAMINATE – REFER TO CRITERIA DRAWINGS

6A.14 FIBERGLASS REINFORCED POLYESTER (FRP) PANELS

- Where indicated on Criteria Plans, furnish and install FRP panels with manufacturer provided corner, seam, and termination trim accessories. FRP finish shall be per criteria drawings.

6A.15 BUILDING FACADE

- Tenant façade shall be as shown on drawing C1 (Title Sheet), as approved by the TJX preplanning Department. Provide suitable structural reinforcement to support open steel grid-work and canopies. Height of building sign(s) to be 6'-0" or maximum allowed by governing code. Refer to section 1A.12, 16A Electrical for sign power and 7b for EIFS System for additional requirements.
- Provide 3/4" pressure treated plywood reinforcement at facade of storefront signage area. Area shall be 12" larger on all sides than the sign that will be installed. 6A.16 SLATWALL PANEL SYSTEM
- Exterior elevation (Building Façade) is to be constructed with heights, materials, colors, accents, etc. that match the approved TJX pre-planning documents. No exceptions.

6A.16 SLATWALL PANEL SYSTEM.

- Furnish and install prefabricated wall panel system (Slatwall) throughout the sales floor. See TJX prototype and site specific TJX Criteria Set for extents. See TJX Criteria Set 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.16A OUT-RIGGER HANGING SYSTEM

- Landlord to furnish and install all components for Out-Rigger Hanging System to be fastened to sales floor walls. See TJX prototype and site specific TJX Criteria Set for extents. See TJX Criteria Set 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 Out-Rigger Hanging System 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 roof deck if required. Partitions for mechanical and electric rooms that are not in or adjacent to processing area shall be constructed to meet building and fire codes and be full height to the underside of the roof deck. If allowed, and adjacent to the processing room, the electrical room demising wall shall be open from 12'-0" A.F.F. to underside of roof deck with 1"x2" 14 gauge turkey wire, or as indicated on the Tenant criteria drawings. Dividing partitions between sales area and stock areas shall be 6" metal 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. Remaining partitions shall be 3-5/8" metal studs at 16" on center, or as indicated on Tenant criteria drawings, double stud at openings and triple stud at corners. Extend all walls of the Cash Office to underside of deck. Wire mesh partitions shall be framed with wood or metal studs, as indicated on Tenant criteria drawings and covered with a 1" X 2" #14-gauge turkey wire. All interior wood studs to be fire treated.

- All blocking for store fixtures, shelving, toilet accessories, etc...., shall be plywood, wood studs, or Danback System. Wood blocking shall be fire retardant treated and located in accordance with Tenant requirements.
- Sales floor walls shall have control joints at 32'- 0" o.c. maximum. All control joint locations must be coordinated with TJX criteria set sheet C4 and TJX Project Manager to avoid any conflicts with wall messages and focal walls.
- Demising walls, separating TJX premises from adjacent tenants, shall be a minimum construction of 6" metal studs spaced at 16" on center. Gauge and spacing of studs should be designed per SMMA and associated limiting height requirements for composite walls. Provide 5/8" Fire Treated Plywood from finish floor to 12 feet A.F.F. (15 feet A.F.F. for HomeSense stores). Provide sound attenuation batt insulation (3 1/2" thick minimum), full cavity height and width of demising walls. Plywood is to be positioned on Tenant side of demising wall studs. Coordinate with details on Tenant Criteria Set. Demising wall shall be a minimum 1 HR fire rated wall, or per building code requirements and adjacent tenant use.
- All walls that demise TJX tenant space from other tenant spaces or common areas, including but not limited to vertical stair enclosures, hallways, corridors, vestibules, and entrances, shall be construction to meet TJX demising wall specifications.
- 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, ridges, dust, and ready for finish paint.
- Corner Guards (all areas other than processing): Provide clear plastic corner guards on all outside corners. Refer to Tenant Criteria Plans Sheet C-4 for product information.
- Corner Guards (Processing): Provide stainless steel corner guards on all outside corners of walls & columns.
- **For corner guards on HomeGoods Sales Floor columns only, adhesive shall be used for installation.**

NOTE: Prior to the application of finish paint, the prepared surface shall be coated with a drywall primer.

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

SPECIFICATION NO. 1180

DIVISION 7 - MOISTURE PROTECTION

SECTION 7A

ROOFING AND FLASHING

7A.10 SINGLE PLY MEMBRANE ROOFING

- All existing roofs shall be inspected by a certified roofing inspector. A copy of a written report shall be provided to Tenant, including a fifteen (15) year warranty. Where determined existing roof requires replacement, furnish and install a fully adhered EPDM membrane roofing system. The design "A" adhered roofing system shall be .060" thick, white 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 manufacturer's installation instruction.
- TPO roofing membranes of similar physical characteristics, as noted above, is an approved roof covering membrane.

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 walkways 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 with a minimum R-Value R25.
- Roofing insulation should meet all federal, state, and local energy code requirements.

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.
- All products to be installed per manufacturer's recommendations.

7A.15 WALKWAY PROTECTION

- Walkway pads are required at and around 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. Walkway pads shall be connected and lead to roof access point.

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, or spill onto sidewalks. Position drains so that rainwater is diverted from entering loading dock truck well.
- Provide overflow drains as code required.

7A.18 ROOF HATCH

- A roof hatch shall be provided complete with 14-gauge prime painted steel frame with 12-inch-high curb, integral counter flashing and mounting flanges. Roof hatch shall be Milcor Model M-1 3'-0" X 2'-6" minimum. Substitutions are not allowed. Coordinate location of roof hatch with criteria drawings and TJX Project Manager. Refer to section 5B for steel ladder.
- Roof hatch shall have hinge side located on opposite side of roof ladder. Hatch operating mechanism to be accessible from ladder. Include Milcor upright safety bar.

7A.19 ROOFTOP EQUIPMENT

- All rooftop equipment, and associated curbs, shall be mechanically attached to the roof structure. Gravity connections or wood sleeper curbs will not be accepted or approved. In high wind zones locations connections shall be designed and calculated to handle local wind pressures and associated load on equipment.

7A.19A ROOFTOP EQUIPMENT – REMOVAL OF EXISTING

- Existing unused equipment, curbs/bases shall be disconnected, made safe, and removed from the roof.
- Existing roof openings / penetrations are to be sealed and roof patched.
- Existing openings / penetrations on the interior are to be framed in and skinned with similar material as the underside of roof deck and be made to match existing, painted per TJX Criteria Set.

7A.20 COORDINATION

- Coordinate all roof penetrations, including, but not limited to, location of 2" conduit weather head with TJX Criteria plans.

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

SPECIFICATION NO. 1180

DIVISION 7 - MOISTURE PROTECTION

SECTION 7B

THERMAL INSULATION

7B.10 INSULATION – PERIMETER AND UNDER-SLAB

- Provide rigid board 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.
- All insulation to meet minimum requirements of applicable energy code, per climate zone.

7B.11 EXTERIOR WALL INSULATION – MASONRY CONSTRUCTION

- Provide continuous extruded – polystyrene rigid board insulation, of type and thickness necessary to achieve minimum requirements of applicable energy codes, per climate zone. Insulation shall be held to walls by furring strips and mechanical fastening.
- Wall separating Vestibule and canopy is considered an exterior wall and should be included in minimum requirements noted above, despite omissions on tenant’s criteria set.
- 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.
- When rigid insulation installation is not practical provide core fill insulation in all empty cores. Core-Fill 500, or equal is an approved product.

7B.12 EXTERIOR WALL INSULATION – METAL STUD CONSTRUCTION

- 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. Batts are to extend full height of wall, and onto ceiling(s) contiguous to wall for a distance of 2’-0”. Batts are to be as manufactured by Owens-Corning (or equal as approved by Tenant).

7B.14 UNDERSIDE ROOF DECK INSULATION

- When required by local code, the Landlord shall be responsible for installing insulation in addition to the TJX minimum of “R” value R25. The use of batt insulation installed on the underside of roof deck is prohibited.

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. Systems materials and installation shall comply with EIMA guideline specifications for exterior insulations and finish systems Class PB, ASTM PS49 and systems 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 outsulation plus as manufactured by Dryvit Systems, Inc.

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

SPECIFICATION NO. 1180

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 for exterior doors and 18-gauge steel for interior doors. U.L. approved, as manufactured by Republic Door Mfg. Company, Amweld Mfg. Company, or Curries Mfg. (an Assa Abloy 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. Door hardware per tenant criteria set.

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

- Aluminum material varies in finish and shall be provided based on chain requirements. Provide clear anodized frames unless directed otherwise is Section 1B. 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 frames per Tenant plans.
- Exterior Aluminum storefront shall be Kawneer TriFab VG 451T, thermally broken, 2" x 4-1/2" profile, center glazed, 1" clear insulated glass.
- Interior Aluminum storefront shall be Kawneer TriFab VG 450, 2" x 4-1/2" profile, center glazed, 1/4" clear glass.

***Coordinate with Section 1B "Chain Specific requirements".**

8A.14 VESTIBULE/STOREFRONT DOORS

- Vestibule shall have automatic swing doors and/or automatic sliding doors as detailed in Tenant criteria set 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. Additional exit doors shall be Kawneer standard aluminum entrance 190 series or approved equal by Tenant. See Paragraph 8A.17 for door tension.
- A metal stud / gypsum board soffit shall be constructed from underside of roof deck to top of aluminum vestibule. Install wall insulation as required at the exterior wall for entire length of vestibule soffit to prevent freezing temperatures in soffit cavity.

***Coordinate with Section 1B "Chain Specific requirements".**

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 interior aluminum doors shall be 1/4" thick tempered plate glass. Exterior glazing shall be 1" insulated glass with Low E coating. When required by code, the storefront glass shall be tempered.
- As required by state or local impact glass must be specified, supplied, and installed in hurricane zones.

8A.16 AUTOMATIC DOOR OPERATORS

- Automatic door operating system as manufactured and installed by Stanley Access Technologies. Refer to Criteria Drawings for specific requirements and R.O. dimensions.

8A.17 DOOR TENSION SETTINGS - FOR SWING DOORS

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

8A.18 AUTOMATIC SWING DOOR – ADDITIONAL REQUIREMENTS

- Swing doors with automatic operating hardware or devices that swing onto a public walk or accessible route, will require cane detection protection on each side of door located on latch side, from the open position. Per BHMA A156.10 and Accessibility requirements. Contractor to procure cane detection rails from Stanley Access Technologies and install.

8A.19 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. Paint doors to match area where they are installed.
- The Milcor M Series Access panels shall consist of a 16 GA Cold Rolled Steel one-piece frame and 16 GA door panel. The door shall be available with concealed spring hinge allowing the door to open 175°. The door shall be provided with an easy opening screwdriver cam latch. Properly size special doors to allow full access to equipment, boxes, sprinkler test valves, store front canopy, etc.... Door provided as gray powder coated steel. Paint doors to match area where they are installed.
- Exterior canopy access panel minimum size to be 30"x30" for sign access.

8A.20 DOOR HARDWARE

- Landlord to provide all hardware for interior and exterior doors as indicated on Tenants criteria drawings, including associated finishes. NO exceptions or substitutions allowed.

8A.21 ROLL-UP GRILLES FOR INTERIOR MALL TYPE OF OPENINGS

- "Roll-up Grilles to be by Metro Door – Model 36V. Operation to be manual with lift handle. Aluminum curtain to be straight pattern with "Clear-Vue" Clear lexan inserts. Locks to be factory installed, center mounted with 2 point mortise cylinder. See TJX Criteria Set for location, height, width, and finish.

8A.22 CHAIN OPERATED OVERHEAD SERVICE DOOR – PROCESSING/LOADING

- See (per store chain) TJX Prototype set at [tjxrealestate](http://tjxrealestate.com) website and/or site specific TJX Criteria Set.

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

SPECIFICATION NO. 1180

DIVISION 9 - FINISHES

SECTION 9A

ACOUSTIC CEILINGS AND FINISHES

9A.11 ACOUSTIC AND GYPSUM BOARD CEILING

- **GC Instructions for ordering Armstrong ceiling materials:** Contractor will need to identify the customer as TJX - the brands do not need to be identified by brand/banner specifically. Refer to Tenant criteria drawings for vendor contact information.
- Ceiling construction shall be as indicated in Tenant's criteria drawings.
- Acoustic ceiling tiles shall be 48" X 24" X 5/8", white square lay-in, medium surface texture "Cortega" lay-in tiles (#769A) as manufactured by Armstrong World Industries.
- Suspension system – the suspension system is to be Armstrong Prelude XL 15/16" (#7300), color white. System to be installed per manufacturer's instructions and specifications.
- Ceiling system shall meet or exceed seismic code requirements. Additional support hangers to be provided in seismic zones per local, state, and federal statutes.
- 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.
- Suspended Ceiling support hangers shall be coordinated with related trades including, but not necessarily limited to, acoustic ceilings, mechanical systems, electrical work, etc.
- Refer to Section 6A.17 for Gypsum Board (Drywall) Finish, which includes soffits.
- Provide and install hurricane clips for Vestibule ACT. Verify with TJX project manager when clips are to be installed.
- 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. Install per manufacturer's recommendations.
- 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 with the exception of seismic areas as flange may be wider.
- 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.

9A.12 CEILING HEIGHTS

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

9A.13A PAINT SHEENS

- All paints shall be as listed on Tenant Criteria Drawings. Type of coating to be as follows:
 - 1) Eggshell finish for all Exteriors
 - 2) Eggshell finish Sales Floor area (other than ceilings and columns).
 - 3) Flat finish for all ceilings – Dry fall type for all exposed ceilings including structure.
 - 4) Satin-Pearl finish for Sales Floor columns
 - 5) Satin-Pearl finish for all support areas
 - 6) Satin-Pearl finish for all H.M. doors, door frames & door trim.

9A.13B PAINT MISCELLANEOUS

- In addition to the paint scope and requirements noted on Tenant's criteria drawings, contractors shall provide the following:
 - Paint 2" RED stripe around column starting at 11'-10" A.F.F. where fire extinguishers are located.
 - Paint 2" BLACK stripe around columns starting at 11'-10" A.F.F. where telephones are located for all NON-MARSHALLS stores.
 - Paint 2" BLUE stripe around columns starting at 11'-10" A.F.F. where telephones are located for all MARSHALLS stores.
 - On columns that have both phone and fire extinguisher will have (2) two stripes starting at 11'-8".

9A.14A PROCESSING ROOM SAFETY STRIPING

- Benjamin Moore product: INSL-X TP-3224 Latex Traffic Paint. Provide clear sealer topcoat.
- If painted over bare or naked concrete apply additional INSL-X Sure Step anti-slip coating.
- Paint as shown on Tenant criteria drawings. Paint walkway 36" wide with no gaps.
- **SURFACE PREPARATION**

Surface to be marked must be manually sanded, cleaned, free of dust, oil, grease, wax, rust or bleeding stains. Prepare in accordance with manufacture's recommendations.
- **APPLICATION**

Latex Traffic Paint may be applied by brush, roller, spray, hand or automatic line markers. Do not apply when air or surface temperatures are below 50°F. Do not paint if surface temperature is within 5°F of the dew point. Do not apply to extremely hot surfaces. Stir contents thoroughly from the bottom before using. Paint only in dry weather. Thinning is not normally recommended; if necessary thin sparingly with clean water. This Latex Traffic Paint will dry to touch (ASTM-1640, 8 mils) in 30 minutes at 72 °F. Dry to no pickup (ASTM D-711, 15 mils) occurs at 45 minutes at 72 °F. Latex Traffic Paint is not designed as an anti-slip coating.

9A.14B EXPOSED CONCRETE SEALER / STAIN

- All exposed concrete slabs, not receiving floor covering finish, shall be coated and sealed. Provide Benjamin Moore Concrete Water Proofing Sealer - INSL-X, Tuffcrete CST-5100, if entire slab is new apply clear color. If slab is existing or existing with partial new apply gray color.

Refer to section 9A.14A for requirements for processing room walkway
- **SURFACE PREPARATION**

Uncoated Concrete: All fully cured and uncoated concrete must be clean, dry and free of oil, grease, dirt or other foreign matter that could interfere with penetration and adhesion. Grease, release agents and dirt can be removed by scrubbing the surface with an Oil and Grease Emulsifier. Final rinse and all surface preparation shall be per new finish manufacturer's recommendations. To neutralize uncoated concrete, etch the surface with a concrete etching material or muriatic acid. Follow all label instructions carefully.
- All control joints, cracks, and other imperfections are to be filled prior to applying sealer / paint. Refer to sealer / paint manufacturers recommendations.

9A.14B EXPOSED CONCRETE SEALER / STAIN (Continued)

- **APPLICATION**

Concrete Stain & Waterproofing Sealer may be applied by low pressure airless spray, roller or brush. Apply evenly in thin coats to avoid lap marks at 300-400 square feet per gallon. Allow the first coat to dry two hours then apply a second coat of Concrete Stain & Waterproofing Sealer. If a high sheen or additional durability is needed, spray-apply one or two coats of Insl-x® CST-5100 Clear over the last coat of pigmented Concrete Stain & Waterproofing Sealer. CST-5100 Clear can be used separately as a clear sealer to reduce dusting and improve maintenance. This product is formulated to be applied without thinning. Do not thin if this would result in the product exceeding any VOC regulations in effect where it is being applied.

9A.15 Floor Finishes

- **GC Instructions for ordering Armstrong floor and ceiling materials:**

- Consult the TJX criteria Set for “Approved Vendor List” contact information.
- GC's/Contractors will need to identify the customer as TJX - the brands do not need to be identified by brand/banner specifically.

- **GC Instructions for ordering DAL tile materials:**

- Consult the TJX criteria Set for “Approved Vendor List” contact information
- Explain that you are ordering materials under the TJX National Account rate.
- If you are ordering for a TJ Maxx, Marshalls, HomeGoods, HomeSense, and Sierra stores, use the following account number for reference:
 - NA-001285
 - Refer to TJX Criteria Plans for finishes and information.
- Coordinate Installation of floor finishes with manufacturer's requirements and installation recommendations. Specific manufacturers are listed on the Tenant Criteria Plans.

- ✓ **Coordinate additional requirements with DIV 3 (Concrete).**

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

SPECIFICATION NO. 1180

DIVISION 10 - SPECIALTIES

SECTION 10A

TOILET COMPARTMENTS

BUILDING SPECIALTIES

10A.11 TOILET COMPARTMENTS

- All metal toilet compartments shall be powder coated, 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 and provided by CG Schmitt & Company, Inc. 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 Tenants Criteria Drawings for location, size, and color.
- All HC stall partitions shall receive cross bracing from wall to center of partition.
- All HC stall partitions doors shall be "self-closing".
- All HC and standard stall partition doors to have solid wood cores.
- All HC stalls shall receive applicable code requirement items, including, but not limited to, mirrors, sinks, grab bars, etc.
- Urinal Screen shall have continuous lateral post support from floor to ceiling.

10A.12 WASHROOM ACCESSORIES

- 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.
- Provide and install framed glass mirror units as indicated on Tenant Criteria Plans.

10A.13 ELECTRIC HAND DRYER

- Furnish and install Excel Model No. Xlerator XL-SB with noise reduction Nozzle, and Xlerator ADA recess hand dryer exchanger kit with continuous splash guard to floor (model #40502) where indicated on Tenant Criteria Drawings.

***Coordinate with specific requirements listed in Section 1B. Some Brands to not require hand dryers.**

10A.14 BABY CHANGING STATIONS

- Landlord to install Tenant provided, Koala Care Baby Changing Station KB200 in all restrooms including associated blocking. See TJX Criteria Plans for installation locations and details.

10A.15 FIRE PROTECTION SPECIALTIES

- Provide and install NFPA compliant portable fire extinguishers 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 11'-10" A.F.F. to top of sign.
- In addition to signage, paint 2" red stripe around column starting at 11'-10" A.F.F in drop ceiling stores.

10A.16 MOP RACK

- Provide a mop holding rack in the Janitors Closet over the mop sink. Holding rack to be hung on a wall so mops hang over mop sink.
- Model to order either: Mustee 65.600 or T&S Brass B-0653. Both are 24" mop holders.

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

SPECIFICATION NO. 1180

**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 TJX 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.
- When site conditions do not allow for recessed dock loading as required in Section 2A.19 TAILGATE UNLOADING, furnish and install a 12' wide X 5' deep standing seam metal canopy with frame fastened to the building over the loading dock door. Underside of canopy shall be a minimum of 15' above finish grade.

*** Approval of loading dock canopy is required from TJX. Provide under separate cover plans, make, model, and fastening method. Include bollard locations and specifications.**

11A.12 SCISSOR LIFT

- **Coordinate with specific requirements listed in Section 1B HOMEGOODS, HOMESENSE, SIERRA**

11A.13 PIN LOCK STORAGE CABINET (SUPPLIED BY TJX)

- **Coordinate with specific requirements listed in section 1B – HomeGoods.**

11A.14 TRASH COMPACTOR EQUIPMENT

- Landlord is responsible to furnish trash chute and compactor per TJX Criteria Set design. This equipment and its installation shall be purchased from PTR Bailer & Company. Landlord shall supply and install the required disconnect for compactor equipment at the exterior of building per TJX Criteria Set design. Equipment to be hard wired to disconnect.

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

SPECIFICATION NO. 1180

DIVISION 14 - CONVEYING EQUIPMENT

SECTION 14A

CONVEYORS, ELEVATORS AND LIFTS

14A.10 GRAND OPENING MAINTENANCE COVERAGE:

- Elevators & Escalators installed by Landlord. (2) licensed vendor mechanics, (1) for elevators & (1) for escalators shall be on site for the first (2) opening days. Each day will consist of 14 hours starting at 8:00 AM to 10:00 PM. Standby mechanics shall be equipped with adequate tools and stock of miscellaneous supplies necessary to immediately repair any breakdown of the escalator and elevator equipment and return affected equipment back to service immediately.

14A.11 INCLINE BELT CONVEYOR (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: National account: Deluxe Systems Div. of W.H. Hight Co.

42 Winter Street

Pembroke, MA 02359

508-588-4410

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

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- This specification is intended to cover the complete furnishing and installing of the following:
 - One (1) oil hydraulic passenger
 - One (1) oil hydraulic freight elevator
 - One (1) oil hydraulic LU/LA life

All work shall be performed in a workmanlike manner and is to include all work and material 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.

1.2 RELATED WORK BY OTHERS

1. 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 or local requirements must be used if more stringent.
2. A properly framed and enclosed legal hoistway, including venting as required by the governing code or authority. Plumb to within $\frac{1}{2}$ " at any point, minimum two-hour enclosure walls.
3. 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.
4. 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.
5. 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.
6. Furnish and install channel frames. Frames to be plumb, one above the other, and square with the channel.
7. 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.
8. 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*.
9. 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).
10. Removal of excavation spoils from jack hole drilling.
11. Provide means of clear access to and egress from location of jack hole drilling location for truck mounted drilling equipment.
12. All electric power for lights, tools, hoists, etc., during erection as well as electric current for starting, testing and adjusting the elevator.

13. A fused disconnect switch for each elevator per the National Electrical Code with feeder or branch wiring to controller. Size to suit elevator contractor. Disconnect to include separate ground wires from disconnect to elevator controller.
14. 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.
15. Suitable light and convenience outlets in machine room with light switches located within 18 inches of lock jamb side of machine room door.
16. Venting of machine room.
17. Convenience outlet and light fixture in pit with switch located adjacent to the access door.
18. High water sensor in pit; interconnect to fire alarm system.
19. 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.
20. Convenience outlet and telephone outlet on control panel.
21. Cutout through machine room wall, 8" X 16", for oil line and wiring duct. Coordinate with elevator contractor at the building site.
22. All conduit and wire runs remote from either the machine room or the hoistways.
23. Hoisting beams, trap doors, ladders or stairs and other means of access to machine room for maintenance and equipment removal purposes.
24. 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.
25. Entrance walls and finished floors are not to be constructed until after door frames and sills are in place. Consult elevator contractor for rough opening size. When drywall construction is used, the general contractor shall supply the drywall framing so that the wall fire resistance rating is maintained.
26. Filling and grouting around entrances by general contractor as required.
27. 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.
28. 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 grips shall be provided to the same height.
29. Furnish and install finished flooring in elevator cab. Coordinate with TJX Criteria plans for finishes
30. For sill support by the elevator contractor, hoistway capable of accepting anchor stud type fastener must be provided.
31. Where openings occur, all walls and sill supports must be plumb.

1.3 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.

1.4 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.

1.5 TEMPORARY USE

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

1.6 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.

1.7 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.

1.8 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 contractor.
- Emergency call-back service shall be provided 24 hours 7 days a week.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS (Freight Elevator)

- Subject to compliance with requirements, provide products of Schindler Elevator, Kone, Otis Elevator Corporation, ThyssenKrupp Elevator, or Mitsubishi Electric (west coast only).

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

- Elevator Equipment Summary: One (1) Oil Hydraulic Freight Elevator Application: Conventional Borehole, or dual piston holeless

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
Useable Area:	115.83 S.F.
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)

2.02 ACCEPTABLE MANUFACTURERS (“Hybrid” Passenger/Freight Elevator)

- Subject to compliance with requirements, provide products of Schindler Elevator, Kone, Otis Elevator Corp., ThyssenKrupp Elevators (TKE).

2.02A MATERIALS - ELEVATOR SYSTEM AND COMPONENTS (“Hybrid” Passenger/Freight Elevator)

- Elevator Equipment Summary: One (1) Oil Hydraulic Passenger/Freight Elevator Application:

Telescopic Holeless Dual Piston

Service:	Passenger/Freight Elevator to serve multiple levels as dictated by Tenant space
Capacity:	5,000 lb., Class A loading
Speed:	100 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 (TBD by site conditions)
Control:	Microprocessor based
Operation:	Single Car Automatic Operation
Machine Room:	Adjacent to hoistway; alternate remote from hoistway (TBD by site conditions)
Platform Size:	6'-0" wide X 9'-4½" deep:
Hoistway Size:	7'-4" wide X 10'-2" deep
Hoistway Entrances:	4'-0" wide x 7'-0" high; Two Speed Side Opening doors
Car Enclosure:	Cab height 8'-0"; 14-gauge walls in #4 Stainless Steel with 5WL textured finish wall panels, suspended ceiling with translucent plastic or aluminum eggcrate panels, fluorescent lighting. Handrails ½" x 2" stainless steel at rear or side walls. Acrovyn 8" Crash Rails mounted above and below handrails, Acrovyn Corner Guards on returns at entry.
Power Supply:	208 volts, 3 phase, 60 Hz; alternate voltage as required (TBD by site conditions)
Contract Maintenance:	12 months with emergency callback service, 24 hours 7 days a week
Additional Features:	Anti-Stall Feature Braille and Audible Signals Cab Pads and Hook Car Position Indicator (Digital) and Car Lantern in Cab Certificate Fram Door open and close stall protection Emergency Light

Firefighter's Service, sensors by others
 Independent Service Feature
 Infrared light curtain door protection
 Keyed Switch Security Feature as required (TBD by site conditions)
 Low Oil Return
 Oil Cooler/Oil Heat Exchanger
 Overload Sensors
 Phase Protection
 Remote Monitoring Capable
 Rescue Feature (Battery Powered Lowering)
 Soft Start Electronic Starting
 Telephone (ADA Compliant)
 Vandal Resistant Cab and Hall Fixtures
 Wiring in Travel Cable for Camera

2.03 ACCEPTABLE MANUFACTURERS (LU/LA LIFT)

- Subject to compliance with requirements, provide products of Savaria (Orion).

2.03A MATERIALS ELEVATOR SYSTEM AND COMPONENTS (LU/LA LIFT)

- Elevator Equipment Summary: One (1) Oil Hydraulic Lift Elevator

Service:	Single Stop Passenger Lift for Employee Access only
Capacity:	1,400 lb.
Speed:	30 fpm
Travel:	12'-0" (+-) to Mezzanine or 2nd Story floor
Type:	Type 1R or 1L (Refer to C-set for required type)
Landings:	2
Openings:	1 per floor (2 total)
Control:	Automatic user interface; Programmable Logic Controller (PLC)
Operation:	Single Automatic Push Button
Machine Room:	Adjacent to hoist way or Remote (40' max distance from cylinder)
CAB Size:	3'-6" wide x 6'-1" deep x 7'-0" high
Hoistway Size:	5'-9" wide x 6'-1" deep
Car Enclosure:	14 gauge steel, enamel finish. 8'-0" high vertical bi-parting power doors
Power Supply:	208 volts, 3 phase, 60 Hz or 240 volts, 1 phase, 60Hz
Contract Maintenance:	12 months with emergency callback service, 24 hours 7 days a week

Additional Features:	8lb/ft T-Rail System Anti-creep device Architectural white ceiling Automatic can ON/OFF lighting Car top stop switch and car top prop (where required) Data plates, capacity tags and rope tags Digital floor and directional indicator Emergency manual lowering, stop key switch and alarm buttons Emergency battery back-up for lighting, alarm and emergency lowering Floor specific battery lowering Illuminated cab operating buttons Magnetic floor selection, stopping and re-leveling Manual reset slack rope safety switch Maintenance pit props Pit switch Pit clearance switch Pump run timer Rail sections (8ft standard or 16ft optional) LED lights in stainless steel Recessed plywood floor Two 12V, 4AH, sealed no maintenance batteries with 24V, 4 AMP Smart™ battery charge Variable speed pressure compensated valve with manual lowering upper and lower terminal limits Firefighter's Service, sensor by others Telephone (ADA Compliant) Brushed Stainless Steel Cab, Frames, & Door Finishes
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2.1 MATERIALS – ELEVATOR SYSTEM AND COMPONENTS (Freight Elevator)

- 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. The Motor and Starter: Shall have a minimum rating of 120 starts per hour and be capable of operating at +/- 10 % of nominal voltage. The motor shall be supplied with an internal thermal overload that will self-reset. The thermal overload shall be integrated into the control circuitry to prevent damage to the motor from continued operation under over temperature conditions.
- Storage Tank-The storage tank shall be constructed of 12-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. The oil reservoir shall have a V shaped bottom and capacity equal to the jack displacement plus a minimum of 25%. Provide an oil reservoir and/or oil cooler such that the system shall be capable of a minimum of 120 starts per hour. At a sustained operation of 120 starts per hour the oil temperature will not rise above 65 C (150 F) with an ambient machine room temperature of 35 degrees C (95 F). Contractor shall provide owner with the heat dissipation of the hydraulic system in BTU's under 120 starts per hour. Landlord shall provide the proper cooling for the machine room in order to maintain a maximum temperature of less than 35 C under the maximum stated starts per hour. (See section 15B)
- Valves- Landlord shall supply a temperature compensated valve that is designed to operate within the specified temperature range.
- 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. Toe 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.
- Guides-Steel elevator guide rails shall be furnished to guide the car, erected plumb and securely fastened to the building structure. Guide shoes to be solid cast iron.
- 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
- Testing- Landlord shall test the elevator for compliance with the required starts per hour prior to acceptance by the Tenant. With an initial oil temperature of 25 C (80 F) the Landlord shall run the elevator every minute the full length of the rise and back down to the lowest landing recording the starting and ending ambient machine room temperature and oil temperature. The maximum oil and ambient temperature should not rise above the specified values.
- 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 24" 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: Aluminum checker plate 1/4"
- 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 Contractor 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.

- Door operator: The 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 (Customer & Employee))

2.1A ACCEPTABLE MANUFACTURERS

- Subject to compliance with requirements, provide products of Schindler Elevator, Kone, Otis Elevator Corporation, ThyssenKrupp Elevator, or Mitsubishi Electric (west coast only).

2.2A ELEVATOR SYSTEM AND COMPONENTS

- Elevator Equipment Summary:

Application:	Telescopic Holeless Dual Piston 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 SSSO doors
Power Supply:	480 Volts 3 Phase 60 Hz
Contract Maintenance:	12 month(s) with emergency callback, 24 hours 7 days a week

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: Electronic Starting (Soft Start)
- 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)
Rescue Feature (Battery Lowering)

2.3A 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 contractor'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.
- **Tank:** The oil reservoir shall have a "V" shaped bottom, and capacity equal to the jack displacement +/- 25%
- **Motor and Starter:** Motor/Starter shall have a minimum rating of 120 starts per hour and be capable of operating at +/- 10% nominal voltage. The motor shall be supplied with a self-resetting internal thermal overload. The thermal overload shall be integrated into the control circuitry to prevent damage to the motor from continued operation in over temperature conditions.
- The Landlord shall provide an oil reservoir and/or oil cooler and motor such that the system shall be capable of 120 starts per hour. At a sustained operation of 120 starts per hour, the oil temperature shall not rise over 65 degrees C (150 deg. F) with an ambient machine room temperature of 35 deg. C (95 deg. F). The Landlord shall provide Tenant with the heat dissipation of the hydraulic system in BTU's under 120 starts per hour. Landlord shall provide proper cooling in the machine room in order to maintain a maximum temperature of less than 35 deg. C (95 deg. F) under the maximum number of starts stated above.
- Landlords Contractor shall test the elevator for compliance with the minimum starts per hour prior to acceptance by Tenant. With the initial oil temperature at 35 deg. C (95 deg. F) the Landlord shall run the elevator every minute the full length of travel and back to the lowest landing, recording the starting and ending machine room ambient temperature, and oil temperature. The oil temperature shall rise and stabilize at the maximum allowable values. Landlord shall provide a temperature compensating valve to operate within the specified temperature range

2.4A 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 1/4". 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. Transoms 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.
- A 1/2" 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.
- Cab finishes to be submitted to TJX, for Review and Approval prior to fabrication. Refer to tenant's criteria drawings for finish requirements.

2.5A 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.

2.6A 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
- Certificate Frame
- Telephone (ADA compliant hands free)

2.7A 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.

PART 3 REQUIREMENTS

3.1 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.

3.2 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 1/4" of the landing.

3.3 ADJUST AND CLEAN

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

3.4 OPERATION OF EQUIPMENT TRAINING / CLOSEOUT PROCEDURE

- 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, use 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: National account: Deluxe Systems, Division of W.H. Hight Co.
42 Winter Street
Pembroke, MA 02359
Phone: 508-588-4410
Toll Free: 800-242-0962

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
REMODEL/CONVERSION CONSTRUCTION**

SPECIFICATION NO. 1180

DIVISION 14 - CONVEYING EQUIPMENT

SECTION 14B

ESCALATORS

14B.12 ESCALATORS (For All Multi-Level Stores)

1.1 PART 1 GENERAL

DESCRIPTION OF WORK

- This specification is intended to cover the complete furnishing and installing of escalators. 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.

1.2 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 manufacturers 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.
- 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.

1.3 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.

1.4 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.

1.5 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.

1.6 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.

1.7 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.

1.8 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

2.1 ACCEPTABLE MANUFACTURERS

- Subject to compliance with requirements, provide products of Schindler Elevator, Kone, Otis Elevator Corporation, ThyssenKrupp Elevator, or Mitsubishi Electric (west coast only).

2.2 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

2.3 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

2.4 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

2.4 TRUSS (Continued)

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 contractor 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.

2.5 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.

2.6 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.

2.7 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.

2.8 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.

2.9 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.

2.10 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.

2.11 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.

2.12 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.
- 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 1/4 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 an absolute minimum.

2.13 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.

2.14 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.

2.15 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.

2.16 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.
- Balustrade shall be inclined.
- Inner and outer decks shall be #4 stainless steel.

2.17 BALUSTRADE PROFILE

- Balustrade profile section shall be stainless steel.

2.18 BALUSTRADE PANELS

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

2.19 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.

2.20 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.

2.20 DRIVE UNIT (Continued)

- 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.

2.21 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.

2.22 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.

2.23 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.

2.24 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 intact throughout its entire service life.
- Handrail color shall be black.

2.25 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.

2.26 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.

2.27 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.

2.28 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.

2.29 SERVICE HOUR METER

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

2.30 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.

2.31 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.

2.32 DIRECTION INDICATORS

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

2.33 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 802.3l 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.

2.33 SAFETY REQUIREMENTS (Continued)

- 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.
- 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 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.
- Stop switches shall be provided in both the upper and lower machine spaces for use by service personnel during maintenance.
- 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 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.
- 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.

2.33 SAFETY REQUIREMENTS (Continued)

- 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.

3.1 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.

3.2 INSTALLATION

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

3.3 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
REMODEL/CONVERSION CONSTRUCTION**

SPECIFICATION NO. 1180

DIVISION 15 - MECHANICAL

SECTION 15A

PLUMBING

15A.10 GENERAL - PHASE

- The plumbing system shall be furnished and installed conforming to ANSI, ADA, and all current state and local Plumbing Code(s).
- The plumbing system shall include, but is not necessarily limited to, service connections for water, gas, sanitary 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 must be submitted to Tenant for final approval and signature. These documents must contain fixture schedules, equipment descriptions, piping layouts, details, schematics, and isometric drawings 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.
- Mechanical Contractor shall coordinate in wall blocking requirements (to mount fixtures and accessories) with G.C.
- All workmanship shall be the highest quality with industry standards as a minimum. It is the responsibility of the Plumbing Contractor to oversee construction of the project, continually inspect the work, materials, and workmanship provided by all of their tradespeople, subcontractors, and suppliers. The TJX Project Manager has final approval or disapproval of all work performed. Workmanship of all plumbing subcontractors falls under the awarded plumbing contractor who in turn answers to the General Contractor. Failure to provide may results in corrective action at own cost. Additionally, all construction shall comply with state and local code, and inspection requirements as approved and amended by the governing city. All material shall be new and of the highest quality. Used material or equipment shall not be permitted. Manufactured materials and equipment shall be installed as directed by the manufacturer unless otherwise noted.

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:
 - All plumbing fixtures, hot water heaters, piping materials and pipe covering shall be per tenant specifications and/or criteria set. If any such items are not available shop drawings for substitutions shall be submitted to tenant under separate cover for review and approval.
 - All equipment and materials shall be guaranteed for a minimum of one (1) year. (See Division 1 General Requirements).

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 sanitary sewer lines shall be jetted and then inspected by video camera to ensure lines are clear. This shall take place (1) one week prior to fixturing.
- Landlord shall provide access to emergency plumbing service on opening day that can be on site within 45 minutes to service any plumbing problems.
- 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 water closet 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.
- Water closet seat, not rim, shall be 17"-19" above finish floor (A.F.F.).
- Handrails and accessories shall be installed in conformance with approved Federal, State and Local standards.
- Centerline of water closet shall be 18" from face of finished wall.
- *Coordinate layout of stall with Criteria Drawings.*
- Restrooms shall have at least one lavatory that meets the following requirements:
- Lavatory when mounted allows 27" (minimum) 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.
- 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.
- In addition to Department of Justice ADA Standards for Accessible Design, State, or local ADA Requirements, all Landlord agents shall comply with TJX ADA requirements. Coordinate with TJX Project Manager

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 water closet 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 manufacturer's instructions.
- Furnish and Install one floor drain in each restroom, and in Janitor's closet. Location to be coordinated with TJX Project Manager. Drain access shall be clear of fixtures and restroom partitions. Floor drains shall have trap primers.
- Plumbing fixtures shall be the following:

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: 2257.101

Fixture Name: American Standard AFWall – Wall hung 1.6 flush valve bowl

Flush Valve: Sloan Optima Systems battery powered flushometers **model** Sloan Electronic Single flush G2-8111-1.6. **In ADA stall coordinate height of flush valve with ADA grab bar.**

Vanity Tops and Integral Bowls - Vanity top to be postform with a "No Drip" edge. All vanity tops to be scribed to wall opening and mounted per manufacturers recommendations and per TJX Criteria Set. See TJX Criteria Set for countertop finishes.

Bowl: American Standard Aqualyn, White, 0476.028.

Faucet: Sloan Optima EBF-650 for sinks.

NOTE: Supply fittings that are in compliance with ADA.

Urinal - shall be a wall hung washout type, top spud with exposed flush valve with vacuum breaker and integral screwdriver stop.

Fixture Number: 6590.001.

Fixture Name: American Standard Washbrook Flowise urinal 0.5 GPF

Flush Valve: Sloan Optima Systems G2 plus battery powered flushometers model #G2- 8186.5

Mop Service Basin - shall be a Mustee #63M, 24" x 24", 10" basin with integral strainer and drain, provide Mustee. #63.600A wall mounted faucet with vacuum breaker, wall brace and pail Hook, #65.700 hose and hose holder, #65.600 service mop hanger.

Water Cooler - Double Bi-level wall hung (NON FILTERED) electric cold water fountain to be Oasis Versacooler II with Bottle Filler mounted on lower cooler, Model #PG8EBFSL. Required water fountains shall be mounted per ADA required heights. Separated Single wall hung, (NON FILTERED) electric cold water fountains to be: Oasis Versacooler II Model #PG8EBF mounted per ADA required height (includes Water Bottle Filler) Quantity (1) one) and Oasis Versacooler II Model #PG8AC mounted at standard height (NO WATER BOTTLE FILLER) Quantity (1) one). No substitutions ALLOWED. Water coolers shall never include filters. Color to be Greystone. See TJX Criteria set for location.

15A.14 PLUMBING FIXTURES (Continued)

Lounge Sink – Stainless steel by Elkay Lustertone, model LRAD172055. Faucet: Kohler Jolt K-30613-CP. Note: Supply fittings to be in compliance with ADA.

Floor Drains - shall be self-priming, cast iron body with 6" brass strainer model Jay R Smith 2005. Pipe size to be determined per plumbing plan.

Cleanouts: All cleanouts shall be brass finish. Wall cleanouts to be chrome finish. Floor: Jay R Smith 4020 series brass/brass. Wall: Jay R Smith 4402 series brass/chrome.

15A.15 WATER HEATER

- The water heater(s) shall be State Patriot™ Model PCE 20 10MSA, rated at 4.5 KW, 208 volts, Single (1) phase, 60 cycle AC. Water heater(s) shall be listed by Underwriters Laboratories and meet or exceed the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA 90.1. 20-gallon capacity with a recovery capacity of 23 GPH at a temperature rise of 80°F. Water heater shall be mounted below finish ceiling as tight to ceiling as possible. Mount on Holdrite Quicksand Model#50 SWPH-W.
- Verify with state or local codes if a re-circulation pump is required for hot water piping. If it is required Landlord/GC to supply and install.

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, water heater, and all connections shown for Tenant Equipment on the drawings. Installation shall include sterilization and testing. All domestic water piping shall be copper. Water Hammer Arresters are required within (6) size feet of fixture served for single fixtures. On horizontal branch line less than 20 feet place (1) one within (6) six feet of last fixture. On horizontal branch lines longer than 20 feet, place another in the middle. Each shall be sized for half the fixture units.
- 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. All gas piping shall be mounted on the exterior of the building and exterior of roof unless prohibited by code. All gas piping to be painted yellow. If by code gas piping is required to run on the interior of the space, then the gas piping shall be clearly identified/labeled every 25 feet.
- 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.

15A.16 PIPING SYSTEMS (Continued)

- 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.
- Back Flow Prevention valves shall be provided in accordance with ASSE standard 1013 and as required by governing authority. Provide pressure regulating valve (RPZ) if the supply pressure exceeds 80 psi.
- 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. Minimum 1 1/2" meter size.

15A.17 EYE WASH STATION

- Landlord shall provide an Eyewash station in the Janitors closet. Coordinate exact location with TJX Fixture plan.
- **SPECIFICATION:** Guardian eyewash unit model **G1814** Wall mounted eye wash with Stainless Steel bowl, 1/2" U.S. made chrome plated brass stay open ball valve, powder coated cast aluminum flag handle and wall bracket. Unit shall have (2) polypropylene 'GS Plus' spray heads with integral "flip-top" dust covers, filters and 1.8-GPM flow control orifices mounted on a chrome plated brass eyewash assembly. Unit shall include ANSI compliant sign. Unit shall be fully factory assembled and hydrostatically tested to meet or exceed ANSI Z358.1 – 2009 and come with a full 2-year warranty.
- Eyewash drain to be in-wall design (concealed).
- **Emergency Eyewash Thermostatic Mixing Valve Specification:** Guardian Thermostatic mixing valve (factory set to 85 degrees) model **G6020** (Lead Free) for single emergency eye wash. Unit shall include a built-in cold-water by-pass, rough bronze finish, precision thermal actuator, locking temperature regulator with limit stop factory set for 90 degrees, integral check stops, and dial thermometer. Performance: Units shall have a flow range of 3-GPM to 10-GPM with a maximum pressure loss of 20-PSI and come with a full 2-year warranty.

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

SPECIFICATION NO. 1180

DIVISION 15 - MECHANICAL

SECTION 15B

HEATING, VENTILATION AND AIR CONDITIONING

15B.10 GENERAL - DESIGN PHASE

- The Heating, Ventilating and Air Conditioning (HVAC) system shall be in accordance with the following Codes and Standards, but in no instance shall the installation and operation be less than the Tenant requirements set forth herein.
 - a. All applicable local, state and federal Codes, including all amendments
 - b. National Electric Code (NEC)
 - c. Standards of Underwriters' Laboratories (U.L.)
 - d. American National Standards Institute (ANSI)
 - e. Occupational Safety and Health Administration (OSHA)
 - f. Air Moving and Conditioning Association (AMCA)
 - g. Testing, Adjusting and Balancing Bureau (TABB)
 - h. National Environmental Balancing Bureau (NEBB)
 - i. American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE)
 - j. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
 - k. American Gas Association (AGA)
 - l. Air Conditioning, Heating, & Refrigeration Institute (AHRI)
 - m. National Fire Protection Association (NFPA)
 - n. Electrical Testing Laboratory (ETL)
- The heating, ventilating and air conditioning system shall include, but is not necessarily limited to new 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 and as required for a complete operable system. HVAC design to be fully functional and compatible with all TJX criteria.
- HVAC system shall be able to consistently provide and maintain the tenant required interior temperatures and be able to consistently provide and maintain relative humidity ratings of 50% or less. Specify RTUs with Hot-gas Reheat for dehumidification for all stores located in Moist (A) – ASHRAE Climate zones as identified in specification section 15B.12 System Description.
- **Tenant prototype specifications and Sample Set plans are diagrammatic in nature, indicating the minimum tenant Requirements. Adjustments as necessary shall be incorporated into the Construction Documents to account for all Code requirements and site-specific location.**
- All design work shall be done by a Registered Professional Engineer and shall be so certified. Tenant will review drawings, selections of equipment, or other design data, throughout the progress of the design as requested per TJX submittal process. Final contract plans must be submitted to Tenant for final approval and signature. These documents must contain double line duct layouts, complete equipment descriptions, schedules, details and schematics as necessary to fully document the design. A coordination plan shall be provided showing RTU's, ductwork, diffusers, etc. as they relate to all other ceiling equipment.
- All RTUs are to have hail guards specified, except if located in the following states: Arizona, Utah, Idaho, Washington State, Oregon, Nevada, California, Hawaii, and Puerto Rico. These states will not require hail guards.

- Design engineer shall research locations in high altitudes to see if high altitude kits are required for the HVAC equipment utilizing gas and note it on plans and schedules.
- 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, R454B refrigerant based product of that manufacturer. Alternate low Global Warming Potential (GWP) refrigerants will be considered based on equipment availability or local code requirements. Alternatives must be approved by TJX in writing prior to procuring equipment. 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:
 1. The Heating, Ventilating and Air Conditioning Contractor shall thoroughly instruct Tenant in the efficient operation of all new and (if allowed) existing equipment.
 2. Contractor shall have a qualified HVAC mechanic present at the store continuously for Grand Opening Day to ensure that all equipment, material, devices and controls, etc. are working properly. A day consist of 14 hours from 8:00 AM to 10:00 PM. Coordinate with TJX Project Manager. Standby mechanic shall be equipped with adequate tools and stock of miscellaneous supplies necessary to immediately repair any breakdown of HVAC equipment and return affected equipment back to service immediately.
 3. 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 permanently secured tags, nameplates, etc.
 4. The Heating, Ventilating and Air Conditioning 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 on the Thursday prior to grand opening. It is expressly understood that all responsibility for costs, parts and labor for the heating-ventilating-air conditioning system shall be the Contractors until the first anniversary of the store grand opening. Normal maintenance is not part of this warranty period.
 5. General Contractor shall receive in writing from the Heating, Ventilating, and Air Conditioning Contractor an unconditional guarantee for all new parts, material and labor for a period of one (1) year after date of store opening. The Heating, Ventilating and Air Conditioning 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.
 6. Upon completion of the installation of the HVAC system, the General Contractor shall provide the Tenant Project manager via email a PDF version of the Certified Air Balancing Report conducted by a qualified Air Balancing Technician. Testing shall be conducted in accordance with: ASHRAE Standard 111, SMACNA 221, and TJX Air Balancing Field Manual.

7. Air Balancing Contractors shall configure and balance the following RTUs sting shall be conducted in accordance with as defined in the TJX Air Balancing Field Manual.
 - (1) Total Supply Airflow at 100% VFD speed per Design drawings.
 - (2) Confirm the Supply Fan VFD speeds to match Total Airflow for RTU Modes (Heating and cooling stages as per the manufacturer's instructions).
 - (3) Demand Control Ventilation (DCV) minimum Outdoor Air Damper Position setpoints (AbsPosMin and AbsPosMax).
 - (4) Minimum outdoor air damper position at 100% supply fan VFD speed to match minimum outdoor air flow as per Design drawings (DesPosMax).
 - (5) Minimum outdoor air damper position at minimum supply fan VFD speed to match minimum outdoor air flow as per Design drawings (DesPosMax).
 - (6) Diffuser airflows as per Design drawings.
8. At conclusion of the project and prior to store grand opening, the mechanical contractor shall change and provide new filters for all RTU's. Mechanical contractor shall provide written documentation to the GC containing the date filters were changed. The GC will be part responsible to provide a copy of this to the TJX project manager as part of close out.

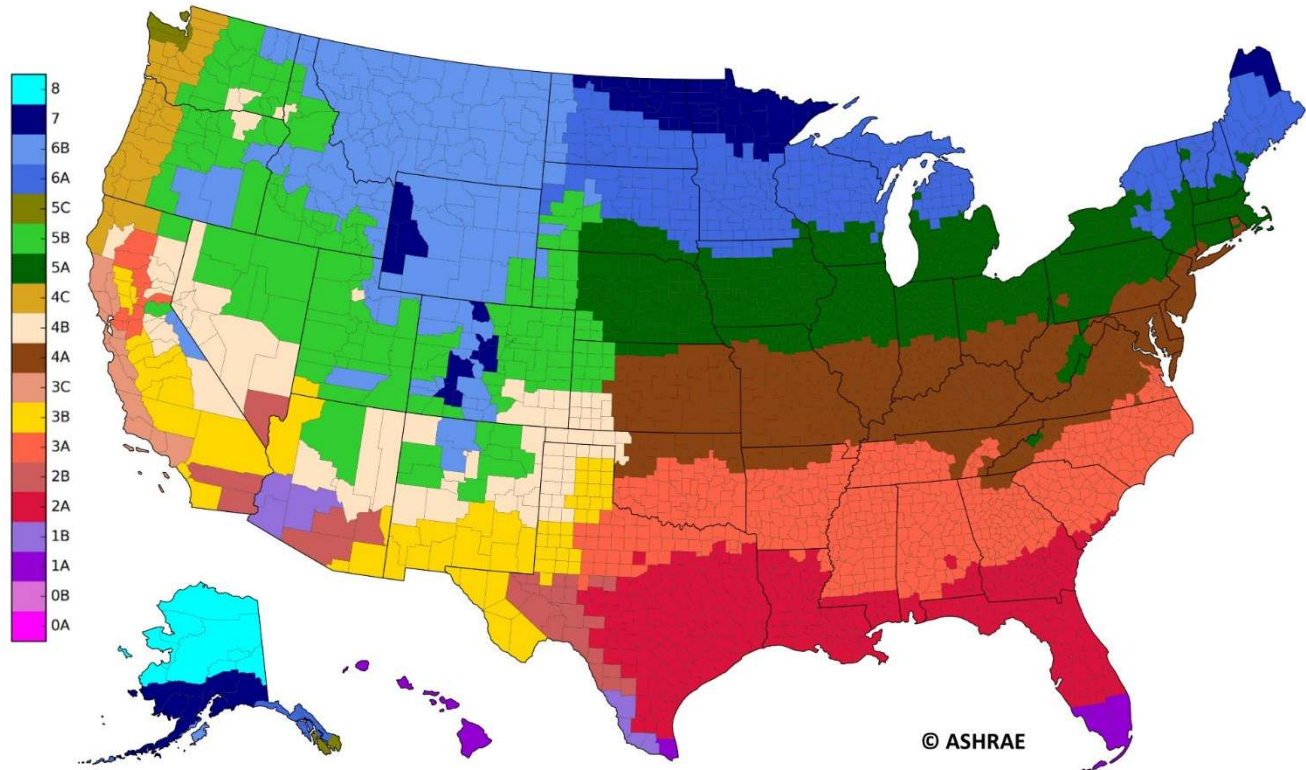
***Refer to Section 1B for specific requirements at HomeGoods and Homesense chains.**

15B.12 SYSTEM DESCRIPTION

- The Heating, Ventilating and Air Conditioning 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.
- All workmanship shall be the highest quality with industry standards as a minimum. It is the responsibility of the Mechanical Contractor to oversee construction of the project, continually inspect work, materials, and workmanship provided by all of their tradespeople, subcontractors, and suppliers. The TJX Project Manager has final approval or disapproval of work performed. Workmanship of all mechanical subcontractors falls under the awarded mechanical contractor who in turn answers to the General Contractor. Failure to provide may result in corrective action as own cost. Additionally, all construction shall comply with all state and local code, and inspection requirements as approved and amended by the governing city. All material shall be new and of high quality. Used material or equipment shall not be permitted. Manufactured materials and equipment shall be installed as directed by the manufacturer unless otherwise noted.
- Equipment selected shall be sized to nearest manufacturer's standard unit that exceeds calculated demand of heating or cooling.

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. The design engineer will design the building and systems in accordance with the climate zones identified in current version of ASHRAE Standard 169 – Climate Data for Building Design Standards.



©ASHRAE, www.ashrae.org. (2025) ASHRAE Standard-169

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	

SEE SCHEDULE ON NEXT PAGE FOR ADDITIONAL REQUIREMENTS

15B.12 SYSTEM DESCRIPTION (Continued)

- The design engineer shall specify the total airflow for each RTU based on the climate zones as per the table below.

Supply Airflow based on Climate Zone	
Climate Zone	Supply Airflow (cfm/ton)
1A – 3A	350
4A – 7A	375
1B – 6B	400
3C & 4C	400

- Natural gas shall be the primary fuel when available and electric resistance as the secondary fuel. Units in climate zones 5, 6, and 7 shall be equipped with high heat, medium heat in zones 3 and 4, and low heat in zones 1 and 2. Use of Heat Pumps is limited to Zones 1B-6B and 3C-4C of the U.S. Climate Zones Map section 15B.12. Use of Heat pumps in zones, other than noted above, must be approved by TJX prior to completion of construction documents.
- In Puerto Rico the system shall be designed as follows: The RTUs designated for the front line and (1) of the furthest rear sales floor RTUs shall be designed to have heat. The remaining (3) will be cooling only, unless code requirements are more stringent. All other area RTUs shall have heat and cooling. Every space in the store shall be heated and air conditioned, except as noted above.

HVAC Dedicated Unit Distribution:

- Rooftop HVAC units shall be Zoned throughout the store as follows:
 - One (1) dedicated split system for elevator machine room (where applicable) controlled via stat and temperature rise with set point @ 80 degrees.
 - One (1) dedicated split system for designated systems room (where applicable). Split systems controlled via stat and temperature rise with set point @ 80 degrees.
 - One (1) unit dedicated to dressing room area (when present). Where store layout dictates support spaces either forward or rear of dressing room area, if there are maximum 2 spaces, these spaces may be supplied by the dressing room RTU. When this is done, main control sensor will be in the dressing room space. Any additional spaces should have one BACnet thermostat installed in each space connected to the RTU serving that area.
 - One (1) unit dedicated to support areas (Lounge, Restrooms, Janitors space, Offices, etc.) when these areas are shown combined or close enough for a centrally located RTU to serve all support spaces. When support areas are divided and too far away from each other provide one (1) RTU for each area. When one (1) RTU serves multiple spaces of like duties the design and controls shall make all areas equally comfortable. There shall be one BACnet thermostat installed in each space connected to the RTU serving that area.
 - One (1) unit dedicated to the Processing area. Unit sizing shall take into account heat produced by equipment in electrical room. When wire mesh wall is present on wall between electrical room and processing areas size RTU approximately 400 CFM larger for added heat. Adjacent spaces of unlike duties shall not be served by/included on this unit

Five (5) units for sales floor. Individual unit sizes shall not exceed fifteen (15) tons. Sales areas with larger square footage may require additional units, design accordingly.

- Front-line (storefront wall, vestibule, checkout area) unit shall be sized for approximately twenty-five (+/- 25%) percent of overall sales floor requirements due to customer que lines, front wall glass, vestibule doors, etc. Front line unit shall be a ducted supply with single point of return facing towards the rear of the space. Return air grille to be mounted to the side of return ductwork. Front line supply duct to be located sixteen to twenty (16' to 20') feet away from and parallel to storefront wall, sized to deliver 750 to 900 cfm per diffuser. Install duct direct mounted registers at (20) degrees down from horizontal, directed at storefront wall. Provide (1) register centered in front of entrance doors sized to deliver 300 to 400 cfm towards doors. Provide ducted supply to vestibule from front-line ductwork adequate to supply (2) 300 cfm ceiling mounted diffusers in the vestibule. Duct run for vestibule to come thru the upper sidewall of vestibule on the side opposite checkout.
- The (4) remaining units shall be sized as required to meet the balance of the load, taking into account exterior versus interior demising walls. RTUs should be located to provide even air distribution to the remainder of the sales floor areas through drop box type diffuser with separate return. Plans shall show diagrammatically the diffuser manufacturers throw radius and data.
- Reference Section 15B.15 for drop box diffuser height information.

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

NOTE: In open deck stores: HVAC equipment and ductwork serving non-sales floor areas (Support/Dressing/Processing) are not to be exposed on sales floor. Equipment and ductwork serving non-sales areas (Support/Dressing) shall be located with-in the area served, off of the sales floor area. Location of non-sales floor RTUs shall take into account accessibility for maintenances.

- **Exhaust Fan** parameters for spaces listed are Tenant minimum requirements. Additional exhaust shall be provided as required by Code:
- **Rest Rooms** - 8 air changes per hour; dedicated exhaust fan – (2) restrooms
- **Janitor's Closet** – 8 air changes per hour; included on restrooms fan
- **Lounge and Coat Room** - 0.5 cfm/ft². Provide a dedicated roof top exhaust fan for lounge. It will be wired to the employee circuit and will run continuously during business hours. Locate ceiling grille near kitchenette.
- **Women's Dressing Room** - 250 cfm; Dedicated exhaust fan. Locate towards back of dressing area and grille should be located minimum 6'-0" from any supply grille. For smaller dressing rooms the dedicated exhaust fan size shall be adjusted as required.
- **Men's Dressing Room** – If required by Code; May be combined and added with Women's Dressing Room fan. Size per local ventilation requirements.
- **Electric/Systems Room** – When code or store layout/location will not allow for wire mesh on the wall above 12' on walls separating the electric room from processing, provide a dedicated 400 cfm Exhaust Fan with wall mounted reverse acting thermostat set at 80 degrees F.
- **All fans (except Electric Room)** – fans shall be powered thru "Employee" lighting contactor panel, allowing fans to operate only during occupied hours. Contactor panel provided by Electrical Contractor, coordinate with Section 16A, paragraph 16A.15
- **Exhaust fan for elevator machine rooms (where applicable) shall be per Manufacturers requirements or governing code, whichever is greater.**

- Control all exhaust fans except Electric Room through "Employee" lighting contactor panel. This will run exhaust fans only during occupied hours. Local switching is not allowed. Electrical contractor will provide contactor panel. Coordinate with section 16A, paragraph 16A.15 contactor relay panels.
- The space above ceilings **SHALL NOT** be used as a return air plenum chamber.
- At the conclusion of the HVAC system installation, the General Contractor shall demonstrate to the satisfaction of the tenant that all mechanical equipment is tested and demonstrates 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. Baseboard heaters do not need to be installed on the exterior wall. Consult layout of equipment within the space on the Criteria Set Fixture Plan for best location within space. 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 "S" series, as manufactured by Markel Products. Coordinate with section 16A, paragraph 16A.15 Contactor Relay Panels.
- **Electric Baseboard Heat not required in US Climate Zones 1, 2, and 3 from US Climate ASHRAE Zone map section 15B.12**
- **Processing Room/Vestibule heater not required in US Climate Zones 1 and 2 from US Climate ASHRAE Zone map section 15B.12**
- All processing rooms shall receive (5) 24" diameter TPI commercial wall-mounted circulator fans if shown on tenant criteria drawings. Fans to be located at each processing table and one (1) in the receiving area pointing at the roll up door.
 - Fans to be TPI Model CACU 24-W, wall-mount fans
 - Fan power: 120V, single phase, ¼ HP, 2.3 Amp.
 - Fans to be controlled individually with "TORK C506H" 6-hour spring-wound wall timer, installed at 48" A.F.F.
 - Fans to be on controlled circuit (Employee)
 - Top of fan bracket to be mounted at 9'-1" A.F.F.
- Tenant maintains a national account relationship with **YORK National Accounts**. See contact information below.

YORK NATIONAL ACCOUNTS – DUCTED SYSTEMS

Contact: Saul Diaz @ Saul.Omar.Diaz@jci.com

CC @ BE-TJX-NatlAcct@jci.com

Direct Office Number: 405-419-6447

Toll Free: 800-484-9738

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 National Accounts** and has selected **YORK as the approved manufacturer for HVAC equipment**. Landlord shall be required to contact YORK National Accounts for more information on National Account pricing. All new equipment shall be purchased directly with the TJX National Account representative listed below. SUBSTITUTIONS ARE NOT ALLOWED. See contact information Section 15B.12
- **York MEV - (Manufacturer Equipment Verification). All HVAC packaged equipment shall be furnished with York's Manufacturer Equipment Verification (MEV). MEV is an onsite equipment inspection and reporting program purchased directly through York National Accounts and can be coordinated with your York National Account contact. MEV is to be completed after the successful installation and startup of the HVAC packaged equipment on the project is confirmed with the York MEV coordinator. MEV will validate that the equipment has been installed and is operating per factory and TJX standards. Should there be any questions regarding the process of coordinating MEV, please contact York National Account MEV representative.**

YORK NATIONAL ACCOUNT (MEV) REPRESENTATIVE

Jessica Humes
Sales National Equipment & Controls
National Accounts
Global Products

Contact: Jessica Humes at Jessica.Humes@jci.com

Direct: 405-320-3755

Quote Request & Tech Services: 800-491-9738

www.johnsoncontrols.com

www.york.com/nationalaccounts.com

- HVAC contractor can, after equipment is properly installed, run the units in Stand Alone Mode via control board prior to York Factory On Site Equipment Evaluation Program.
- 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. KT model (R454B) for 3-ton through 5-ton cooling capacity, KJ model (R454B) for 6.5 ton through 12.5 ton, and AK model for 15 ton.
- 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 tool-less access for compressor, heating controls, blower and air filter compartments.
- All RTUs shall be mechanically fastened to roof curbs. Fasten with minim 3/8" lag bolts @ 18" o.c.. Engineer of record is responsible for design of any additional fastening as required for high wind areas.
- The refrigeration equipment shall consist of fully hermetic type, internally protected scroll compressors (Where possible). For units with cooling capacity of 6.5 tons to 8.5 tons, these units will consist of multiple scroll compressors with independent circuits.

- All fans shall be made from steel with a corrosion proof finish and shall be dynamically balanced. Units 3 to 12.5 tons shall have sealed bearings, permanently lubricated ball bearing type. Units 15 and larger to 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. All curbs shall be set level and plumb. Use of adjustable curbs may be used at Tenants discretion. Wiring shall be routed through a protective waterproof conduit sleeve at the bottom of the unit (if so equipped) and shall be arranged for single point connection. Burglar bars shall be field 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 and secured with approved pipe carriers not to exceed six (6) foot intervals. Wood pipe supports are NOT approved. 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 BMS Contractor.
- All units shall be equipped with a Disconnect Switch, and a powered GFI receptacle per local code requirements (Coordinate with Division 16A.24).
- All Sales Floor Units Shall be equipped with power exhaust, except in Climate Zones 1A & 1B, which will be provided with barometric relief dampers only.
- All units shall be equipped with a duct smoke detector on the return air side.
- Landlord shall provide units with factory applied "E-Coat" coil and fin protective treatment to all coils if the project location is within ten (15) miles of the coastline or any saltwater or brackish water ways.
- Nothing is to be field installed in or on RTU cabinet that will inhibit filter change out or general maintenance of any kind. HVAC and Electric contractor are to coordinate on the prior to store grand opening date.
- All RTUs larger than 3 tons installed in B – Moist/Humid Climate Zones shall be supplied with factory installed hot gas reheat for dehumidification control.

***Refer to section 1B for additional coating requirements.**

15B.13 NEW ROOFTOP HEATING & AIR CONDITIONING UNITS (Continued)

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.
- ✓ 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.
- ✓ MagnaDry Dehumidification system is factory installed and provides dehumidification of an occupied space while maintaining temperature control utilizing a hot gas reheat coil.
 - Standard SSE control board shall control functionality in straight cooling, straight heating, or reheat mode.
 - Reheat mode shall utilize a specific reheat coil placed after the evaporator coil to heat the conditioned air back to a neutral temperature when the occupied space required dehumidification, but the temperature requirements are satisfied.
 - The reheat circuit shall utilize solenoid to alter the refrigerant flow from being directed through the condenser circuit to the hot gas reheat circuit.
 - Changeover from cooling mode to reheat mode shall be accomplished in 30 seconds or less

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
- ✓ 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.
- ✓ MagnaDry Dehumidification system is factory installed and provides dehumidification of an occupied space while maintaining temperature control utilizing a hot gas reheat coil.
 - U8226 – standard SSE control board shall control functionality in straight cooling, straight heating, or reheat mode.
 - U8826 – reheat mode shall utilize a specific reheat coil placed after the evaporator coil to heat the conditioned air back to a neutral temperature when the occupied space required dehumidification, but the temperature requirements are satisfied.
 - U8826 – the reheat circuit shall utilize solenoids to alter the refrigerant flow from being directed through the condenser circuit to the hot gas reheat circuit.
 - Changeover from cooling mode to reheat mode shall be accomplished in 30 seconds or less.

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 3/4 inch nominal pipe thread stainless steel drain connection and 1/2 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 1/2 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.
- 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. Gauge and construction details shall be 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 contractor. 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. Provide 45-degree side take off (STO) at branch ducts with volume control dampers (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 concealed air-conditioned supply ductwork above finished ceilings shall be wrapped with a minimum 1-1/2" thickness of 3/4" lb density fiberglass vinyl back insulation. Insulation thickness may require to be increased based on energy code requirements.
- All duct mains, duct work, plenum's, branches, adjustable dampers, sensors, or accessories pertaining to HVAC systems installed above acoustic or gypsum type ceilings shall be no more than 4'-0" (48") above finish ceiling for accessibility and maintenance requirements.
- Minimum 1 inch acoustical liner shall be installed in first 15 feet of ALL ductwork entering or leaving equipment as a minimum. Duct liner may be reduced to 10 feet if two (2) 90 degree elbows occur within the first 15 feet of ductwork.
- Fire or smoke dampers with access doors shall be installed on all ductwork passing through fire separating walls, partitions, and fire related ceilings. Dampers shall be Underwriters' Laboratories approved and shall be so constructed and arranged that no reduction in duct cross-sectional area is made. 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:

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 (for open ceiling concept) Spiral duct layout with Tuttle & Bailey Model T64 sidewall air devices minimum 20 inches wide by 10 inches high, placed at a (20) degree angle from horizontal pointing down, are to be placed with even air distribution for the front line/checkout area. Supply duct or any air device to run parallel to front perimeter wall and shall be located 16 feet minimum and 20 feet maximum from the front perimeter wall. All diffusers are to throw toward front of store. Unless noted otherwise on plans.

15B.15 DIFFUSERS, REGISTERS AND GRILLES

- All new equipment shall be as listed below.
- Tenant maintains a national account relationship with **YORK National Accounts** and has selected **Tuttle & Bailey** Air Devices as the required equipment. Landlord shall be required to contact YORK National Accounts for more information on national account pricing. All devices shall be purchased directly through the TJX National Account representative listed below. SUBSTITUTIONS ARE NOT ALLOWED. See contact information Section 15B.12
- All ceiling diffusers in offices, fitting rooms, etc., shall be steel square or rectangular diffusers with frame to match ceiling type. Diffusers shall be Tuttle & Bailey Model S1200. Color: white.
- Receiving / Processing rooms (exposed ceilings) to have spiral / round duct with Tuttle Bailey model T64 supply grilles. Grilles to be a minimum of 14 inches wide by 8 inches high, placed at a (20) degrees angle from horizontal pointing down, are to be placed to provide even air distribution within the space and at receiving door area. All sidewall supply registers shall be all steel double deflection type, $\frac{3}{4}$ -inch spacing, with horizontal front blades, and vertical rear blades. Registers shall be supplied with internal opposed blade dampers. Coordinate location of diffusers so they do not blow on light fixtures. Rectangular / square ductwork is prohibited in exposed ceiling conditions with the exception of return air duct. Bottom of largest spiral duct to be 6" higher than bottom of light fixture level.
- Sales floor (exposed ceilings) to have spiral / round duct with Tuttle Bailey model T64 supply grilles. Grilles to be minimum 20 inches wide by 10 inches high, placed at a 20 degree angle from horizontal pointing down, are to be placed to provide even air distribution for the front line checkout and front line perimeter wall (windows, vestibule, etc.). Registers shall be supplied with internal opposed blade dampers. Coordinate location of diffusers so they do not blow on light fixtures. Rectangular / square ductwork is prohibited in exposed ceiling conditions with the exception of return air duct. Coordinate with all trades and verify final height with TJX Project Manager. Any light fixtures within 15 feet of HVAC diffusers shall be supported by threaded rod for stability (exposed ceiling conditions). Bottom of largest spiral duct to be 6" higher than bottom of light fixture level.

- Drop box ceiling for Open Deck stores to be sized as required for RTU it is serving. Drop Box ceiling diffusers for ACT ceilings shall be sized as required for RTU it is serving, model number will be followed by designation "CM" and are low profile 9" deep. White finish as manufactured by AES Industries. Diffusers to include a permanent ant-sweat gasket (not adhesive) and hanging supports. Drop Box Diffusers are to be purchased directly from AES Industries. To order contact tjx@aescurb.com
- AES Drop Box diffusers to be mounted 12" higher than the TOP of light fixture level for open ceiling concepts. Any lights fixtures within 15 feet of an HVAC diffuser shall be supported by threaded rod for stability. For ACT Ceilings, AES Drop Box diffusers will be mounted at ACT ceiling grid level. Coordinate with all trades and verify final height with TJX Project Manager.
- Lay-in/hard ceiling return and exhaust grilles shall be Tuttle & Bailey Model CRE500, all aluminum grid core, 1/2" x 1/2" x 1/2". Mechanical contractor to provide duct transitions.
- Return, exhaust, and transfer registers, other than in lay-in ceilings, shall be steel curved bar registers with 3/4" spacing and be supplied with integral opposed blade damper. The units shall be Tuttle & Bailey Model T70D. Color white.
- Spacing of Drop Box diffusers to achieve (4) quadrants on the sales floor to the back side of the frontline ductwork. Size Drop Box diffuser as required for throw radius to fill required quadrant. The design engineer must show the manufacturer's throw data / radius on the HVAC plan for TJX review and approval. Drop Box diffusers are to be located directly below or within a few feet of the RTU it serves. Drop Box diffusers cannot be ducted away from RTU.

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/PROCESSING 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. Unit Heater Controller supplied and installed by BMS Contractor. Unit heater shall be Sterling XF200 MBH. Motor: 1/3 HP, 1 phase, 120V. 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.
- **Heater shall be mounted to face the overhead door and located approximately 12 feet from the overhead door. Design engineer shall look at heights in area where heater will be hung to ensure the heaters bottom most point is minimum 8'-0" A.F.F. Maximum height to bottom of heater 14'-0". Note on the plans: Final location and height of heater must be approved and signed off by TJX Project Manager prior to hanging the heater.**
- **Tenant maintains a national account relationship with YORK National Accounts. See contact information Section 15B.12**
- ***Processing Room/Vestibule heater not required in US Climate Zones 1, 2.**

15B.18 EXHAUST FANS

- All 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
- Tenant maintains a national account relationship with YORK National Accounts and has selected PennBarry as the required Exhaust Fans, Model number EVD (DX), roof mounted downblast exhaust fan.
- Exhaust fans cannot be located within 15 feet of RTU air intake.
- Landlord shall be required to contact YORK National Accounts for more information on National Account pricing. All new equipment shall be purchased directly with the TJX National Account representative listed below. SUBSTITUTIONS ARE NOT ALLOWED. See contact information Section 15B.12

**OUTLINE SPECIFICATIONS AND
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SPECIFICATION NO. 1180

DIVISION 15 - MECHANICAL

SECTION 15C

CONTROLS / BUILDING MANAGEMENT SYSTEM (BMS)

15C.10 SCOPE

- Contractor shall furnish, install and maintain a complete BMS 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.

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

- The Building Management System (BMS) shall be installed and fully wired only by TJX Approved Building Management contractors (Contact TJX Project managers for information). The HVAC Contractor shall have all the HVAC units started, operating in standalone mode and have scheduled York's MEV prior to BMS completion. RTUs need to be running in back up mode based on its return air temperature sensor. Baseboard heaters are to be running based off temperature thermostat with proper set point.
- The Landlord shall be required to contact TJX Approved BMS vendor about purchasing the Tenant BMS Package, which includes: control equipment, design and programming purchases, installation and startup. Purchasing, scheduling, and installation of Tenant BMS Package shall be the responsibility of the Landlord and scheduling/timing of this work shall be included in the General Contractor's Construction Schedule. Closeout of work including the deficiency report shall require Tenant signature.
- Controls for all new packaged roof top equipment shall be factory installed York SSE boards with additional Bacnet communication cards.
- Controls for Receiving Heater will be supplied by BMS contractor. It will be controlled by the approved controller not by conventional thermostats.
- Controls for vestibule heater will be supplied by BMS contractor. It will be controlled by a temperature sensor and control relay not conventional thermostat.
- Storefront sign, canopy lighting, security lighting, and one-half sales floor lighting shall also be controlled by the BMS when required sales floor lighting shall be dimmable ballast/LED driver (0-10vdc) and dimming control wiring to be installed by electrical contractor. All other interior/exterior signs, and other fixtures shall be wired to the GE relay panel per plan.
- A phase monitor via BMS shall monitor Electrical meter supplied by BMS contractor and installed by Electrical Contractor.
- A remote "LCD" override panel will be installed by BMS contractor adjacent to the Controller, which will allow store personnel to override lighting and HVAC equipment.
- BMS contractor will create a floor plan graphic for each store.
- Coordinate with Paragraph 1A.12 (Section 1A) of this specification.
- BMS system shall consist of controller, CP1 interface, I/O panel, LCD override, monitoring sensors, and global sensors. Exact sensor configuration to be determined based on floor plan, equipment selection, and location code requirements.
- BMS system has NO interface to any life safety systems.

BMS CONTROL SYSTEM DESCRIPTION

- CONTROL POINTS- BMS Control system will control the RTUs via York RTU BACnet integration. Central panel has input/output points as shown below.

A. CENTRAL PANEL INPUT/OUTPUT POINTS

INPUTS

1. OUTDOOR TEMPERATURE
2. OUTDOOR HUMIDITY
3. OUTDOOR PHOTOCELL
4. PHASE LOSS
5. SECURITY SYSTEM - OCCUPANCY
6. GENERAL MANUAL OUTPUT OVERRIDE
- 7-16. MONITORING TEMPS AS REQUIRED
BY SPEC.

OUTPUTS

1. CUSTOMER LIGHTS
2. SIGN & CANOPY LIGHTS
3. BASEBOARD HEAT
4. SPARE
5. SPARE
6. VESTIBULE HEATER
7. SPARE
8. SECURITY LIGHTING
9. SPARE

1. ETM INPUT/OUTPUT POINTS (IF NON-BACNET STORE)

INPUTS

1. ZONE TEMP
2. DISCHARGE TEMP SENSOR
3. RETURN AIR TEMP
4. HUMIDITY (as applicable)
5. OpriAQ (CO2, as applicable)

OUTPUTS

(BMS Sends Setpoints,
Occupancy Schedule,
Economode,
Min. Damper Position)

B. OUTPUT POINT DESCRIPTION

- CUSTOMER LIGHTS The customer light circuit controls approximately one half of the 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 - VESTIBULE Any 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 (wired normally open). Multiple outputs will be used where there are heaters serving different areas.
- **(NOTE:** A 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 the on/off control via the GE programmable relay panel. Integral thermostats will control temperature when the contactors are not disabled.

- PARKING LOT LIGHTS If Parking lot or other outside lights are controlled from the Tenant electrical area, they will be controlled by this output(s).
- SECURITY LIGHTS: If security lights are controlled from the Tenant electrical area, they will be controlled by this output(s).
- UNIT HEATER – RECEIVING AREA: Any gas or electric unit or space heaters must be controlled. The control will be via BMS contractors temperature sensor and unit heater controller. No thermostat is to be installed.

C. YORK INTEGRATION BACNET CONTROL

- BMS Contractor to provide, install, and monitor (1) space temperature sensor per RTU, unless the unit has been otherwise specified to run via Return Temperature Reading. BMS will monitor the discharge air temperature sensor and return air temperature via factory installed sensor included with the York equipment.
- BMS Contractor to provide and install (2) CO2 sensors and (2) relative humidity sensors. Each sensor will be wired directly to a York RTU for monitoring purposes. Sensor data is available via York SE BACnet Interface.
- BMS Contractor to provide occupancy schedule, setpoints, economizer mode enable / disable, minimum damper position information, fan setting (continuous ON or AUTO) etc. to the York RTUs wit BACnet communications protocol. After that unit's internal logic to decide the functioning on how to achieve those setpoints.

D. CENTRAL PANEL

- OUTDOOR LIGHT LEVEL (ANALOG) - The Outdoor Light Level, Outdoor Temperature and outdoor relative humidity sensors are mounted together on the RTU nearest to the electrical room.
- RECEIVING AREA TEMPERATURE- A temperature sensor will be mounted in the receiving area on an inside wall near the unit heater.
- MONITORING ZONE TEMPERATURE-Depending on store layout from 4 to 6 monitoring temperature sensors will most likely be required.
- Honeywell Multisite BMS system has no interface to any life safety systems.

15C.12A WORKMANSHIP AND MATERIALS

- All workmanship shall be the highest quality with industry standards as a minimum. It is the responsibility of the BMS Contractor to oversee construction of the project, continuously inspect the work, materials, and workmanship provided by all of their tradespeople, subcontractors and suppliers. The TJX Project Manager has final approval or disapproval. Workmanship of all subcontractors falls under the General Contractor's responsibility and failure to provide may result in corrective action as own cost. Additionally, all construction shall comply with all state and local code, and inspection requirements as approved and amended by the governing city. All material shall be new and of the highest quality. Used material or equipment shall not be permitted. Manufactured materials and equipment shall be installed as directed by the manufacturer unless otherwise noted.

**OUTLINE SPECIFICATIONS AND
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SPECIFICATION NO. 1180

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 2-0, "Installation guidelines for Automatic Sprinklers" except sprinklers may be omitted above suspended noncombustible ceilings, provided the unsprinkled ceiling space is completely cut off from sprinkled areas and there is no combustible storage or construction within said space.
- One eight (8) inch sprinkler system is recommended; final size to be determined via hydraulic load calculations, flow test, and system/specification requirements. The system shall be inclusive of all required assembly components i.e. shut off, backflow preventer, pressure gauges, main drain, pumps (if applicable), etc. An alarm check valve (Tamper Switch) should be provided for each sprinkler riser (Multiple risers, only if applicable) feeding TJX premises and equipped with approved notification devices. Riser(s) shall be dedicated and accessible from TJX space only.
- Fire risers feeding NON-TJX or adjacent tenant spaces shall not be located with-in the TJX leased premises.
- When the TJX fire riser is not located with-in the leased premises means of shut off shall be provided with-in the TJX space in an accessible, agreed upon location. As discussed with TJX representative for final approval.
- The automatic sprinkler system for the retail area (Hazard Category 2) should be designed to provide a minimum design of .20 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 2,500 sq. ft. area. The sprinkler system for the office areas should be designed to provide a design of 0.10 gpm/sq. ft. over the most hydraulically remote 1,500 sq. ft. area. The above areas should be designed to include a 250 gpm hose stream allowance. This is in accordance with FM Global Data Sheet 3-26, Fire Protection Water Design for Non-Storage Sprinklered Properties".
- The sprinkler system for the storage areas should be designed to flow 15 sprinkler heads at 25 psi per sprinkler head. Storage areas should be designed to provide an additional allowance of 500 gpm for hose streams. This is in accordance with FM Global Data Sheet 8-9, "Storage of Class 1, 2, 3, 4 and Plastic Commodities" for Class 4 and cartoned, unexpanded plastic materials beneath a 20 ft. high ceiling.
- 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 2-0, "Installation of Automatic Sprinklers" for finished areas and FM Global Data Sheet 8-9 "Storage of Class 1,2,3, 4 and Plastic Commodities". Final acceptance of the automatic sprinkler systems will be by satisfactory completion of the Contractor's Material and Test Certificate.

15D.11 AUTOMATIC PROTECTION (Continued)

- 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.
- 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, contractor 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

- FM Approved, 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.). Sprinkler heads in finished ceiling areas should have a minimum K = 8.0 factor. All other unfinished areas shall have FM Approved pendant type sprinkler heads with a minimum K factor of 8.0 except storage areas which should have a minimum K factor of 11.2. Sprinkler heads in storage areas should be FM Approved quick response pendant type sprinkler heads of standard coverage.
- 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
- All main feeds, branch feeds, and drops shall be coordinated with all trades. Obstructing lighting, ductwork/equipment access will not be permitted.

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.

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.

15D.15 WORKMANSHIP AND MATERIALS

- All workmanship shall be the highest quality with industry standards as a minimum. It is the responsibility of the Fire Protection Contractor to oversee construction of the project, continuously inspect the work, materials, and workmanship provided by all of their tradespeople, subcontractors and suppliers. The TJX Project Manager has final approval or disapproval. Workmanship of all subcontractors falls under the General Contractor's responsibility and failure to provide may result in corrective action at own cost. Additionally, all construction shall comply with all state and local code, and inspection requirements as approved and amended by the governing city. All material shall be new and of the highest quality. Used material or equipment shall not be permitted. Manufactured materials and equipment shall be installed as directed by the manufacturer unless otherwise noted.

**OUTLINE SPECIFICATIONS AND
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SPECIFICATION NO. 1180

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 is performed.
- The word "provide" shall mean furnish, install, wire, connect and test complete in place.
- COMcheck lighting compliance forms are to be part of the lighting/electric drawings and be present in the submittal set to TJX.

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 277/480-volt system as an electrical source for all receptacles, miscellaneous devices and all other equipment requiring either 120 or 208 volts. Transformers shall be floor mounted in the electric room where space and/or code allows.
- 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 30,000 square feet. Larger area stores will require greater electrical capacity. All service entrance wire shall be copper.
- Combo stores and stores larger than 30K SF may require increased service sizes and shall be provided as required, per facility requirements.
- Service switches and/or MDP's (main distribution panels) shall be new unless approved otherwise by TJX MOD. Fused disconnects and/or fusible switches are prohibited.
- All states that prohibit the use of a Gas fuel source for roof top equipment (Washington State and any other states adopting this energy code), the electric service may be required to increase, above minimum requirements. Recommended minimum sizes shall be 800 amp for 277/480V services and 1,000 Amp for 120/208V stores. Final service amperage increase shall account for additional loads related to electric resistance heating.

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.
- 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.

16A.12 SCOPE OF WORK (Continued)

- Complete lighting system control, including Building Management System (BMS) control scheme as described in this Division.
- All conduit, fittings, outlet boxes, floor boxes, wire raceways, wiring devices, hanger supports, etc..., for BMS wiring. BMS wires to be supplied and installed by BMS contractor.
- Emergency lighting system and exit signs shall be circuited separately from general lighting on unswitched circuit, except where prohibited by code.
- Final connections to water heaters, electrified store fixtures or other electrical equipment furnished by Tenant.
- Contactor relay panel.
- Doorbell 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.
- Conduit and Internet cabling must be provided to main point of entry (MPOE).
- 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.
- All Junction Boxes, receptacles, switches and all devices in general shall be labeled for the appropriate circuit assigned to that device
- **Emergency Generators (Puerto Rico Stores Only):** Provide a new diesel generator. Generator shall be sized to provide power to the entire store (600 amps @ 480 volts, 3- phase, 4-wire or 800 amps @ 208 volt, 3-phase, 4-wire as applicable) generator shall be 60 hz, UL listed for standby purposes of 400 kw/ 500 kva @.8PF for 600 amp 480 volt services and 230 kw/ 287.5 kva @ .8PF for 800 amp 208 volt services. Unit shall also be CSA certified and meet the requirements of NFPA 110, The Puerto Rico Building Code 2011, NFPA 70 2011, Puerto Rico Electric Power Authority Complimentary Code, EPA requirements for emissions control and any and all fuel storage requirements. Generator shall have an Isochronous Governor. Generator shall be furnished with a double wall, base mounted fuel storage tank with a capacity to run the facility at full load for a period of 48 hours. Tank size shall not exceed 1,200 gallons. Base mounted tank shall have interstitial space monitoring for leak detection between tanks. Any and all fuel storage licenses required for storage of fuel shall be procured by the building owner. Generator shall be fitted with a sound attenuated weatherproof enclosure with a dba of 73 @ 23 feet. Generator unit shall be manufactured by one manufacturer and shall be as manufactured by SDMO or TJX Corp approved equal.
- Provide an Automatic Transfer Switch (ATS), ATS shall be rated 600 amps @ 480 volts, 3-phase, 4-wire or 800 amps @ 208 volts, 3-phase, 4-wire as applicable.
- The ATS shall be UL 1008 listed & CSA certified to standard C22.2. Unit shall meet the requirements of NFPA 110 & National Electrical Code (NEC) sections 700,701 & 702.
- Provide a concrete pad for generator. Pad shall be sized to accommodate the length and width of the purchased generator with an additional 6" of pad around the entire perimeter of the generator and tank. If required by local codes, provide 6" concrete blocks around the entire perimeter of the generator for tertiary containment. Provide a 12'-0" high Cyclone fence with barbwire surrounding entire generator and pad. There shall be at least a 3'-0" clearance in all directions from the generator to the fence. Fence shall have adequate gates to allow for access for service and maintenance of the generator. Provide 6" diameter, 6'-0" tall, concrete filled SS bollards that extend from grade to a height of 4'. Bollards shall be placed around the generator and fencing in all directions where generator can be accessed from vehicle traffic. The spacing between bollards along the length of the generator shall not exceed 7'-10 1/2" center to center and 6'-0" along the width of the generator center to center. Concrete shall meet all the requirements of American Concrete Institute (318R-95), Puerto Rico Building Code, American Society for Testing & Materials, Concrete Reinforcing Steel Institute, American Welding Society, American Institute of Steel Construction, Steel Deck Institute & Uniform Building Code.

16A.13 DISTRIBUTION PANELBOARDS

- Furnish and install a main distribution panel and separate panel boards for lighting and power controls. All Panel boards shall be single section, surface mounted 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 and BMS Electrical Submeter shall have a minimum rating of 600 amp to 800 amps, unless larger is required. Electrical Contractor shall Arrange and install the CT's for the proper phase orientation for the BMS contractors phase monitor.
- 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. Breaker faceplate shall list current rating, complying with UL and IEC standards. All circuit protective devices shall have current interrupting capacity.
- Approved manufacturers are GE, Eaton/Cutler-Hammer, Square D, and Siemens. **Landlord has the option to purchase switchgear locally**, or through TJX National Account (WESCO).
- Install power feeds to the main switchboard in a neat workmanlike manner as to allow for Current Transformer (CT) installation. Provide a dedicated 20amp circuit fed from the MDP. Furnish and install a main distribution panel as manufactured by an approved company, as noted above. 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, unless larger is required. Electrical Contractor shall provide a 36"x 36"x12" Nema 1 enclosure upstream of the MDP to allow for the installation of the BMS supplied Current Transducers (CT's). Arrange and install the CT's for the proper phase orientation.

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 277/480 or 120/208 volts, three phase, four wire services.
- Panel "CP" shall have IG outlet, BMS power, system rack power, IDF outlet (when applicable) and shall be single phase, three wire.
- Electric panels must have permanent circuit schedule labels identifying all circuits mounted on back of panel door. Final circuit schedules shall be typed and laminated.
- Relay panels must have permanent relay schedule labels identifying relay circuits mounted on the back of panel door. Final relay schedules shall be typed and laminated.
- All panels shall be located in the TJX Electrical Room. All panels including relay panels shall be accessible from the floor (should not require special means to access). Coordinate location with the Criteria Drawings. Label all panelboard, cabinet, control device, breaker, disconnect, and safety switch with 1/4" high black letters cut in white laminated phenolic strip. Use red letters for all equipment connected to emergency systems. Attach to enclosure with (2) metal screws. All labeling of panels shall be complete prior to grand opening date. Interior circuit labeling shall be color coded per control sequence (generally completed by BMS Contractor). EC to coordinate with BMS Contractor.

16A.15 CONTACTOR RELAY PANELS AND TIME CLOCKS

- Provide GE programmable relay 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. GE programmable relay panels shall include a 48-relay control module with corresponding push-button channels. The 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. If parking lot lighting is fed from Tenant service, the electrical contractor shall wire the circuit(s) to the control relay panel.
- The panel will include the following items that need to be controlled for employee and customer ON / OFF periods: 277V Lighting, 120V Lighting, baseboard heat (if required), exhaust fans, exterior lights, signage circuits, and Lamp gondola outlets (if required for HomeGoods, HomeSense Stores) shall be wired separately to contactor relay panels, as provided by the electrical contractor. The 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 MC 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, THWN or THHW 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 tight to building structure.
- 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.)

16A.18 LIGHTING (Continued)

- 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.
- Any sales floor lighting within 15 feet radius of an HVAC diffuser to be hung be supported by treaded rod (size as required) to provide stability and eliminate swaying (in open ceiling concepts). All threaded rod, fasteners, etc. to be provided by GC/EC and to be painted white to match deck.
- All fixtures shall be supported by threaded rod, bow-chain, or Gripple System or other seismic bracing required. A minimum of two (2) supports per 4-feet of fixture. Fixtures shall be hung from building structure, NOT roof deck. All lighting supports must be hung at 90-degree angle from light fixture and building structure. Perimeter track for track lighting is to be attached to Unistrut which is to be hung by threaded rod (open ceiling). Perimeter track unistrut and threaded rod to be painted white.
- The minimum number of supports for surface mounted or suspended 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.
- **The emergency lighting** shall be provided by using a "Self-Contained Battery Back-up" system. The fixture shall be Quantum ELM Series (Color White) as indicated on the Criteria Drawings sheet C-5 as "R fixtures". Arrange fixtures as required to provide a minimum of one (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. Emergency fixtures shown on the C-5 sheet are for reference only. It is the responsibility of the architect / engineer of record to design emergency lighting as required to meet site specific, and all state and local electric codes
- Sales Floor lighting shall be circuited every other row to coordinate with GE programmable relay panel requirements.
- Note: Data shown on drawing C-5 is for information only, a final layout meeting governing code requirement must be developed by a registered engineer and submitted to Tenant for approval.
- 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.
- Refer to the Criteria Drawings for the Light Fixture Schedule.
- All drivers or ballasts will be factory installed in the light fixtures. Final circuit wiring shall be by the Electrical Contractor.
- All Switch covers and blank covers to have brushed aluminum finish.
- **GE PROGRAMMABLE RELAY PANEL.** The Landlord shall furnish and install 48 slot GE programmable relay panel. The panel 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, Overhead lighting, Processing Room, Rest Rooms, etc. The Employee Lighting shall be activated by the burglar alarm system and will not be controlled by the BMS system. "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) Dressing Room Mirror Lights. Customer lighting shall be controlled by the contactor relay panel(s) operated by the BMS Contractor. BMS contractor will program the panel.

16A.18 LIGHTING (Continued)

- Multiple GE relay panels may be required depending on store, and store size (point count).
- The GE programmable relay panel shall be completed prior to BMS Contractor arriving on site. BMS Contractor will program the GE Lightsweep Softwire Contactor Relay Panel as part of the BMS Contractor commissioning process.
- GC is responsible to ensure that the GE relay panel is programmed and working to TJX specifications.
- GC is responsible to ensure that the lighting checklist is completed after programming. A copy of the lighting checklist must be provided with the closeout documents.
- **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.

Contractor shall ensure all areas of designated rooms shall have complete coverage.

16A.19 PARKING LOT LIGHTING, BUILDING SECURITY LIGHTING, AND STOREFRONT UNDERCANOPY 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) High Efficiency lamps to provide a maintained 2.3 foot candles. A photometric plan shall be provided. Parking lot lighting shall be serviced from common area electric room.
- A system of exterior security lighting shall be provided and will consist of LED wall pack units mounted to the exterior building perimeter. Contact relays in the relay panel, controlled by the BMS Contractor system, shall operate the security lighting from dusk to dawn. Emergency lighting at egress points shall be independent of security lighting. Coordinate the location of the security/emergency lights with the TJX Criteria Drawings.
- Anytime a storefront canopy is present, under canopy lighting will be provided per TJX store chain Prototype Drawing Set and/or TJX Criteria Drawing Set

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 contractor. The BMS Contractor 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 framed sales area columns, provide a duplex receptacle as indicated on criteria plans. All wire shall be run in concealed conduit. Feed column duplex outlets from overhead. Wherever columns are not framed, run fire alarm, power, phone and/or sensor wiring etc., via Wiremold 2100.
- All convenience outlets should be grounding type equal to Hubbell CR20WHI, 20A, 125v duplex commercial grade outlet. 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.

16A.21A UPS PROTECTED PANEL / IG OUTLETS

- Panel CP to be fed via TJX specified UPS. Feed CP panel via 30A, 2P breaker. UPS is only used in some states within the US. See list of states on C7 of the TJX Criteria Set.
- All IG outlets shall be fed from panel "CP"
- All receptacles fed from CP shall be IG
- All IG receptacles shall be solid orange receptacle with IG indication. Leviton model 5362-IG or equivalent. 20A duplex must be manufactured solid orange.
- All junction boxes for IG circuits shall be labeled accordingly and color-coded orange
- Panel "CP" shall only feed:
 - (2) quad boxes for Blade Server
 - Quadplex receptacles for single que registers. Circuiting for single que registers shall be per code with no less than (2) circuits per single que run.
 - (2) duplex receptacles for Jewelry registers (if required). Both registers to be on (1) circuit
 - Cash office IDF circuit only if requested by store systems.
 - Include three (3) BMS contractor to CP Panel: **BMS-1 – BMS Contractor Panel Power (TR-1), BMS-2 – CP1 Relay Power (TR-2), and BMS-3 Power for GE Relay Panel(s).**

16A.22 LOW VOLTAGE COORDINATION

- Tenant will provide a third-party contractor to install **low voltage** wiring. Including, but not limited to telephone wiring, CCTV wiring, POS wiring. Electrical contractor shall coordinate requirements with Tenant Criteria Plans, and Tenants Contractors.

16A.22A TELEPHONE / COMMUNICATION SYSTEM

- Landlord Contractor shall provide a minimum 4" conduit from exterior telecommunications pedestal into Tenants Electric room. Conduit shall be stubbed up at Tenants telephone backboard.
- Landlord Contractor shall provide a minimum 2" conduit from local telecommunications provider pedestal (i.e., cable, fiber, DSL, etc.) into the Tenant's electric room. Conduit shall be stubbed up at Tenant's telephone backboard. Landlord Contractor shall work with local telecommunications provider to pull internet cabling from outside pedestal to main point of entry (MPOE). Tenant will provide a third party contractor to install wiring (copper, fiber) from main point of entry (MPOE) backboard to the store systems room (demark extension).
- 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 DOORBELL 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 TJX Criteria Set.
- Furnish and install at the receiving room door a rear door alarm control as indicated on the TJX Criteria Set.

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 contractor or BMS Contractor and line voltage power wiring by electrical contractor.
- Provide three (3) 120-volt, 20-amp circuits at location BMS Contractor Electrical Meter. Provide one (1) 3 pole, 20-amp breaker at the main distribution panel for use by BMS Contractor phase monitor.
- Automatic temperature control (BMS) shall be furnished and installed by the contractor.
- All units shall have a GFI receptacle (Coordinate with Division 15B.13).
- All units shall have a factory/field installed Disconnect Switch per local code requirements (Coordinate with Division 15B.13).
- See section 15B for exhaust fan control wiring requirements.

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.

16A.29 STORE OPENINGS

- Contractor shall have a qualified electrical mechanic present at the store continuously for Grand Opening day to ensure 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. Coordinate with TJX Project Manager for Grand Opening day.

***Refer to section 1B for specific requirements at HOMEGOODS & HOMESENSE**

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

16A.32 POWER FOR COMPACTOR

- Provide dedicated circuit with appropriate voltage and disconnect for Tenant. For 460v provide 30 amp disconnect. For 230v provide 60 amp disconnect. Coordinate all requirements, including location of disconnect, with Tenant Criteria Plans.

16A.33 AS-BUILT PLAN STORAGE

- Provide one (1) 6" diameter X 51" long PVC conduit/tube with closed screw-off ends for as-built plan storage. Conduit/tube is to be fastened to the wall. Coordinate location in electric room with TJX project manager. Store hard copy as-built plans in the conduit/tube.
- Provide electronic copy of as-builts as part of the close-out documents provided to TJX.

***Coordinate with section 1A.24 Close-Out Documents**

16A.34 NOT USED

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

SPECIFICATION NO. 1180

**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

- Provide a fire alarm control panel Fire Lite Alarms ES-200X --198-point addressable FACP w/internal digital alarm communicator/transmitter. FACP 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. No substitutions unless approved by TJX Project Manager. "PROPRIETARY" fire alarm panels are prohibited.
- Furnish and install a complete, constantly supervised, battery backup fire alarm system.
- 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, 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 landlord. The fire alarm system shall be monitored by Tenant's off site monitoring service provider unless specified differently by local authority having jurisdiction (AHJ). The fire alarm installer shall contact the Tenants off site monitoring service provider to arrange for final off site monitoring connection and commence fire alarm system monitoring. Communication signals must be verified and communicated to the Tenant Project Manager. The fire installer will provide the Tenant off site monitoring service provider with the following information:
 - Fire Panel Manufacturer & Model
 - Panel phone #1 and #2
 - Language Format: Contact ID (Preferred), 4-2 other
 - 10 digit Local Fire department 24-hour emergency number ("911" will not work)
 - Zone list and zone type (if not contact ID, All system trouble types too)
- As-built drawings shall be provided in a fire alarm document box. The as-built drawings shall be prepared in AutoCad format. The document box should contain at a minimum (1) record copy of site specific software. (2) As-built drawings. (3) Fir alarm manual. (4) Record of completion.
- Duct detector remote indicator test switches NFPA 72-17.4.7 where smoke detectors are installed in concealed locations more than 10 feet A.F.F. or in arrangements where the detector's alarm or supervisory indicator is not visible to responding personnel, the detectors shall be provided with remote alarm or supervisory indication in a location acceptable to the authority having jurisdiction (AHJ).