

FOR BIDDING PURPOSES ONLY

Project Specifications

Fashion Institute of Technology

PROJECT: C1540

PROJECT TITLE: Shirley Goodman Resource Center
Lobby Turnstile Installation
227 West 27th Street
New York, NY 10001

DATE: February 28, 2022

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SECTION 01 10 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. The work to be done under the Contract, in accordance with the Contract Documents, consists of performing, installing, furnishing and supplying all materials, equipment, labor and incidentals necessary or convenient for the construction of the referenced renovation project at the Fashion Institute of Technology and carrying out all of the duties and obligations imposed upon the Contractor by the Contract Documents.
- B. Contractor shall provide temporary lighting for the duration of the Project.
- C. The main features of the work as indicated in plans shall include, but not be limited to the following:

Project Scope:

- 1. Asbestos contaminated material will be removed by a certified asbestos contractor prior to the work of this contract.
- 2. General Contractor is responsible for coordination with Mechanical, Electrical Contractors and turnstile installer to provide coordination drawings for review by the Architect for locations of all openings and penetrations in walls, floors, and ceilings, including but not limited to: outlets, core drills, switches, electrical and data conduit runs, etc.

Demolition: General Construction

- 1. See Demolition Drawings for extent of Demolition.
- 2. All additional work required for the project, such as core drills for turnstiles, ceiling removals, etc.

Demolition – Mechanical/Plumbing/Electrical/Sprinkler/Fire Protection

- 1. See Demolition Drawings for the extent of Demolition

New General Construction:

- 1. Furnish and install all new fixed glass panels as detailed and specified.
- 2. Furnish and install all new glass gates with associated hardware.
- 3. Furnish and install new security desk as detailed and specified.
- 4. Patch, repair and paint any damaged wall which occur during construction.
- 5. Furnish and replace in kind any ceiling damage on lower level to core and being conduit from the power source to the 1st floor.
- 6. Remove existing fire extinguisher and defibrillator and reinstall.
- 7. All other work as shown or indicated on drawing.

New Electrical Work

1. Furnish and install electrical conduits at guard desk as required.
2. Provide conduit from lower level electrical panel and data point to the pedestals to be install by electrician.

New Fire Alarm Work

1. Furnish and install all fire alarm components as required to be tied into the existing building system.
2. Provide fire stopping at all penetrations

1.02 RELATED SECTIONS

- A. Section 01 73 29 - Removals, Cutting and Patching.

1.03 PHYSICAL COMPLETION DATE

- A. Physically complete the Work within FIT's established calendar after the Agreement is approved by the College.

1.04 ITEMS NOT INCLUDED

- A. The following items shown on the drawings are not included in this Contract:
1. Items indicated "NIC" (Not in Contract).
 2. Existing construction, except where such construction is to be removed, replaced, or altered.
 3. Turnstile pedestals will be provided and installed by others.

1.05 EXAMINATION OF PREMISES

- A. Verification of Existing Conditions after Award
1. Various existing conditions at locations of the Work which cannot be determined until removals are under way cannot be indicated on the Drawings or described in the Specifications.
 2. Perform all such removals as required to verify all existing conditions before fabricating the work.
 3. Where applicable, before disturbing any structural work, make all possible preliminary investigations to verify the existing conditions threat. Notify Architect of any existing conditions not previously documented prior to proceeding with work.
 4. Where removals or preliminary investigations reveal existing conditions that differ materially from what is indicated or specified, or that may require changes, immediately notify the Architect in writing and await instructions before proceeding further with that part of the work.

- B. Discrepancies in Existing Conditions:
 - 1. During the process of the Work, should conditions be encountered that materially differ from those shown on the Drawings or indicated in the Specifications, or conditions which could not reasonably have been anticipated, which conditions will materially affect the cost of the Work, such conditions shall immediately be called to the attention of the Architect, before they are further disturbed. The Architect will promptly investigate the conditions and if it is found that they do so materially differ, shall issue a clarification.

1.06 CONNECTION TO ELECTRICAL EQUIPMENT OR SYSTEMS

- A. Contractor will not be allowed to tie into electrical equipment or systems until the FIT Facilities Management Department has reviewed and approved the connection.
 - 1. Submit written procedures to the FIT Facilities Management Department, detailing how the connection Work is proposed to be performed.
 - 2. After procedures have been approved, notify the FIT Representative at least 3 working days prior to the connection Work so that arrangements can be made to have a FIT Facilities Management Department Representative witness the Work.

1.07 CONTRACTOR USE OF PREMISES

- A. Comply with the Facility's Visitor Identification Policy. A copy of the current policy will be distributed at the initial job meeting.
- B. Work hours shall be as established by the Facilities authorities.
- C. Check in with the Facility Representative, as directed, at the beginning of each work day. Furnish information regarding where employees will be working during the day and indicate what is the general nature of the work.
- D. Comply with applicable Federal and State of New York Right-to-Know Law provisions and supply copies of the appropriate Material Safety Data Sheets (MSDS) to the FIT Facility's Safety Information Officer.
- E. Do not diminish the level of life safety during performance of the Work.
- F. Contractor responsible to coordinate with Owner and make all necessary provisions to receive materials and remove debris.

1.08 REFERENCE SPECIFICATIONS AND STANDARDS

- A. Comply with the requirements of the various standards referred to in these specifications, except where they conflict with the requirements of these specifications. In case of conflict, notify architect prior to proceeding. Such reference standards shall be the date of latest revision in effect at the time of receiving bids, unless the date is given.

1.09 LAYOUT

- A. Examine the Contract Documents thoroughly and promptly report any errors or discrepancies to the Architect before commencing the Work.
- B. Lay out the Work in accordance with the Contract Documents.

1.10 CLEAN UP

- A. Clean up and containerize the rubbish (refuse, debris, waste materials, and removed materials and equipment) resulting from the Work at the end of each work day and leave work areas broom swept clean. Locate containerized rubbish where directed.
- B. Remove piled rubbish from property at least once a week or more often if the rubbish presents a hazard. Properly dispose of rubbish. Burning of rubbish will not be permitted.

1.11 SUSTAINABILITY REQUIREMENTS

- A. The Contractor shall meet sustainability performance and documentation requirements to comply with New York City Local Law 86 of 2005, and to achieve the following objectives: sustainable site use, water use reduction, conservation of energy and resources, and improvement of indoor environmental quality, by F.I.T facilities department.
- B. Sustainability performance requirements include, but are not limited to: water use reduction, energy conservation, construction waste management, and indoor air quality controls during construction and prior to occupancy.
- C. Sustainability documentation requirements include, but are not limited to, Contractor's Certification Form, cost information, documentation on VOC content, urea-formaldehyde content and recycled and regional content.

1.12 NEW YORK CITY CODE OF 2008 IMPLEMENTATION

- A. Beginning July 1, 2008, Chapters 17 and 33 of the New York City Construction Code went into affect. These two chapters supersede the Controlled Inspections requirements contained in the 1968 Building Code, and Chapter 19 of the 1968 Building Code that deals with protection of the public.
 - 1. References to "Controlled Inspections" and applicable code sections and "Controlled Inspector" referenced in the Contract Documents shall mean the equivalent "Special Inspection" and "Special Inspector" in accordance with the 2008 NYC Construction Code. It shall be noted that some individual "Controlled Inspection" items have been combined into one "Special Inspection" category.

2. References to public protective's and code sections included in Chapter 19 of the 1968 code referenced in the Contract Documents shall mean those equivalent Sections contained in Chapter 33 of the NYC Construction Code. The Contractor shall be responsible for complying with all provisions of Chapter 33 of the NYC Construction Code.

END OF SECTION 01 10 00

SECTION 01 33 00 - SUBMITTALS

PART 1 - GENERAL

1.01 DEFINITIONS

- A. Deviation: Changes in products, materials, equipment and methods of construction from those required by the Contract Documents and proposed by the Contractor.

1.02 DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS

- A. Deviations from the requirements of the Contract Documents will not be allowed unless a request for deviation is made in writing prior to or at the time of submission and the specific deviation is approved by the Owner or Architect. The submission of a deviation shall be done in a timely manner according to the schedule of submittals to allow the Architect sufficient time for review.

1.03 "OR EQUAL" TO BRAND NAME PRODUCTS

- A. Whenever a product is specified by brand name, a comparable brand, equal to that named, may be submitted for approval subject to:
 - 1. The contractor shall bear the burden of proving that the proposed product is equal to the specified product. The submission of an "or equal" shall be done in a timely manner to allow sufficient time to review the proposed product by the Architect.
 - 2. Whenever a color or pattern is indicated by a specific manufacturer's name or number, the intent is to communicate the required color or pattern of the material. Other manufacturers' comparable colors or patterns may be submitted for approval as equal.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Identify all submittals by project title and number. Include Contractor's name, date, and revision date. On shop drawings, product data and samples, also include the name of the supplier and subcontractor (if any), and applicable specification section number. Stamp each submittal and initial or sign the stamp to certify review and approval of submittal.
- B. Assemble submittals in accordance with the requirements in the individual sections of the Specifications and as required by this section. It is the Contractor's responsibility to review and verify that all information required for each submittal is included in the submittal package. Errors or omissions found by the Contractor are to be corrected prior to the

submission of the submittal package for approval. Incomplete submittal packages that have been submitted for review and approval will be returned.

1. It is the Contractor's responsibility to verify that portions of the submittal package to be provided by a subcontractor (or supplier) are complete, as well as portions of the submittal package being provided directly by the Contractor.
 2. Do not combine the submittals of more than one specification section with submittals required by other specification sections unless specifically stated in the contract specifications.
- C. If a submittal is based on, or the result of, a change order or field order to the Contract documents, include copies of the applicable change order or field order with the submittal.

1.05 COORDINATION DRAWINGS

- A. Provide coordination drawings showing scope of all work. Coordination drawings to indicate any conflicts between services or ceiling heights as indicated on Architectural Drawings or otherwise specified.

1.06 SHOP DRAWINGS

- A. Provide shop drawings in the format required by the specifications. Show the information, dimensions, connections and other details necessary to insure that the shop drawings accurately interpret the Contract Documents. Show adjoining construction in such detail as required indicating proper connections. Where adjoining connected construction requires shop drawings or product data, submit such information for approval at the same time so that connections can be accurately checked.
1. Submit 4 copies of each shop drawing required by the Specifications.
- B. Have shop drawings prepared by a qualified detailer. Shop drawings shall be neatly drawn and clearly legible. Machine duplicated copies of Construction Drawings will not be accepted as shop drawings.
1. Where shop drawings are indicated to be drawn to scale:
 - a. Use scale normally found on an "Architect" scale.
 - b. Written Scale: Clearly label scales being used on each drawing and/or on each detail on the drawing.
 - 1) Examples: 1/8" = 1'-0"
 - c. Graphic Scale: Adjacent to each Written Scale, provide a graphic scale delineating the scale being used. Graphic scale shall be divided into measuring units relating to the accuracy required for the drawing or details.
 - d. Clearly dimension key elements of the drawing or detail.

2. When the drawing sheet is printed full size, the minimum text size shall be 1/8" (3.2 mm) for hand drafting and 3/32" (2.5 mm) for CADD drawings.
- C. The shop drawings will be reviewed and 2 stamped copies returned. If returned copies are stamped "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly resubmit 4 copies of shop drawings meeting Contract requirements.
- D. Contractor is responsible for keeping one record set of all shop drawings on the job site, no matter the stamp.

1.07 PRODUCT DATA

- A. Provide product data in the format required by the specifications. Modify product data by deleting information that is not applicable to the project or by marking the product data to identify pertinent products. Supplement standard information, if necessary, to provide additional information applicable to project.
 1. Submit 4 copies of product data as required by the Specifications.
- B. The product data will be reviewed and 3 stamped copies returned. If returned copies are stamped "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly resubmit 4 copies of product data meeting Contract requirements.
- C. Contractor is responsible for keeping one record set of product data on the job site, no matter the stamp.

1.08 QUALITY ASSURANCE

- A. Provide quality assurance information in the format required by the specifications, including supporting documentation as required.
 1. Submit 4 copies of quality assurance information as required by the Specifications.
- B. The quality assurance information will be reviewed and 3 stamped copies returned. If returned copies are stamped "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly resubmit 6 copies of quality assurance information meeting Contract requirements.

1.09 SAMPLES

- A. Submit 2 (unless a different number is specified) of each sample required by the Specifications.
- B. One sample will become the property of the Owner when submitted and will not be incorporated in the Work unless specifically stated otherwise. One sample will be returned approved or rejected to the contractor.

1.10 REVIEW OF SUBMITTALS

- A. Items submitted for review will be reviewed for compliance with the contract documents, based upon the information submitted. The items will be acted upon with the following dispositions:
1. Approved (or No Exception Taken): Where the submittal is marked “Approved”, the work covered by the submittal may proceed provided it complies with the contract documents. Final acceptance will depend on that compliance.
 2. Approved as Noted (or Furnish as Noted): Where the submittal is marked “Approved as Noted”, the work covered by the submittal may proceed provided it complies with the review comments noted on the submittal and the contract documents. Final acceptance will depend on that compliance.
 3. Revise and Resubmit: Where the submittal is marked “Revise and Resubmit”, do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or other activity for the item submitted. Revise or prepare a new submittal according to the review comments noted on the submittal and meeting the contract documents.
 4. Disapproved (or Rejected): Where the submittal is marked “Disapproved”, do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or other activity for the item submitted. Prepare a new submittal according to the review comments noted on the submittal and meeting the contract documents.

1.11 SCHEDULES AND RECORDS

- A. Submit the following Schedules and Records information not later than 7 days after approval of the Contract unless an earlier submission is required to properly schedule or progress the Work.
1. SCHEDULE OF SUBMITTALS: On the Schedule of Submittals forms, indicate in the spaces following each item, the date the item will be submitted, the date approval is required, and the date delivery of the material or equipment is necessary for timely completion of the Work in accordance with the Project Schedule. The date entered for submittal of each item is the last day a deviation will be considered. Deliver the SCHEDULE OF SUBMITTALS to the Architect and Owner.
- B. Warrantees: Unless specified elsewhere contractor shall warrantee all work for (1) one year.

END OF SECTION 01 33 00

SECTION 01 73 29 - REMOVALS, CUTTING AND PATCHING

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Work under this section shall be governed by the Contract Documents. Provide materials, labor, equipment and services necessary to furnish, deliver and install all work of this section as shown on the drawings, as specified herein, and/or as specified by job conditions.

1.02 DESCRIPTION OF WORK

- A. Provide materials, labor, equipment and services to complete cutting and patching as specified herein and as indicated on the Drawings.

1.03 RELATED WORK SHOWN ELSEWHERE

- A. Selective Removals and Demolition - Section 02 41 13

1.04 QUALITY ASSURANCES

- A. Codes and Regulations
 - 1. Work specified herein shall conform to all applicable State and Local codes and regulations having jurisdiction.

1.05 SUBMITTALS

- A. Product Literature
 - 1. Submit manufacturers' products literature, catalog cuts and data sheets for all products used in patching.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the site, ready for use in the manufacturer's original and unopened containers and packaging, bearing labels as to type of material, brand name and manufacturer's name. Delivered materials shall be identical to approved samples.
- B. Store materials under cover in a dry and clean location, off the ground. Remove materials which are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Maintain a uniform temperature between 55 and 70 degrees F within the work area.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Match the appearance and performance of existing corresponding materials as closely as practicable, unless otherwise indicated.

PART 3 – EXECUTION

3.01 MANUFACTURERS

- A. Do not disturb any existing structure, piping, apparatus, or other construction unless required by the Contract.
- B. Cut and alter existing materials as required to perform the Work. Limit cutting to the smallest amount necessary. Core drill round holes and saw-cut other openings where possible.
- C. Remove existing construction as required to install and connect the Work to adjacent construction in an approved manner. Remove materials and equipment superseded by the Work unless specifically indicated otherwise.
- D. Provide temporary supports necessary to prevent settlement or other damage to existing construction which is to remain.
- E. Perform the cutting, drilling, and removals in a manner which will prevent damage to adjoining construction which is to remain.
- F. Prior to any cutting, drilling, or removal, investigate both sides of the surface involved.
- G. Determine the exact location of all structural members. Do not cut, drill, or remove structural members such as joists, beams, or columns supporting construction that is to remain unless expressly required by the Work. If unforeseen obstructions are encountered, take all precautions necessary to prevent damage and obtain instructions from the FIT Representative before proceeding with the Work.
- H. If existing remaining items are within the damaged area, these items shall be removed and carefully stored until they can be reinstalled.

3.02 PATCHING

- A. Patch existing construction and finishes defaced, damaged, or left incomplete due to alterations and removals. Patching, except as otherwise indicated, shall be

- limited to the areas which have been cut or altered.
- B. Prepare existing surfaces properly to receive and, where required, bond with the Work.
- C. Unless otherwise indicated, provide new materials to match the appearance and performance of existing corresponding materials as closely as practicable.
- D. Paint patched areas and surfaces which will remain exposed by removals to match existing adjacent surfaces as closely as practicable using same type of paint. Painting, except as otherwise indicated, shall be limited to the areas which have been patched.

3.03 REINSTALLATION

- A. Where reinstallation of existing, remaining items removed during cutting is required, reinstall them to a condition equal to or better than their condition before removal.

END OF SECTION 01 73 29

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section includes requirements for Construction Waste Management (CWM), with criteria for recycling and/or salvaging demolition and construction waste generated during the project. A Construction Waste Management Plan shall be developed for approval by the Facilities Representative. The Plan shall be implemented throughout the duration of the project and shall be documented in accordance with the SUBMITTALS Article below.
- B. Each contract shall supply the means for recycling job site waste. Locations for removal bins or dumpsters shall be coordinated with Facilities Representative. Following contract award, the Contractors may elect a single entity to act as the construction waste manager.

1.02 PERFORMANCE REQUIREMENTS

- A. The General Contractor shall prepare and submit a Construction Waste Management Plan (CWM) to the Facilities Representative for approval. The CWM Plan shall outline the provisions to be implemented to recycle and salvage demolition and construction waste generated during the project.
- B. Upon approval of the CWM Plan by the Facilities Representative, it shall be implemented throughout the duration of the project and documented in accordance with the SUBMITTALS Article below.
- C. The Construction Waste Management Plan shall include, but not be limited to, the following components:
 - 1. Listing of Targeted Materials: Develop a list of the waste materials from the Project that will be targeted for reuse, salvage, or recycling. The following materials shall be accounted for (materials that will not be recycled shall be indicated as such):
 - a. Cardboard, paper, packaging.
 - b. Clean dimensional wood, palette wood.
 - c. Beverage containers.
 - d. Metals from banding, stud trim, ductwork, piping, rebar, windows, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - e. Gypsum board.
 - f. Paint.

- g. Glass/Mirrors.
 - h. Plastics.
 - i. Woods.
 - j. Tile
2. Information: Provide the name of the landfill(s) where trash will be disposed of and the applicable landfill tipping fee(s).
 3. Sorting Method: Provide a description of the proposed means of sorting and transporting the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site for off-site sorting).
 4. Packaging Waste: Provide an estimate of packaging materials generated and note whether suppliers will eliminate or take back packaging.
 5. Field Conditions: Include provisions in the Construction Waste Management Plan for addressing conditions in the field that do not adhere to the CWM Plan, including provisions to implement a stop work order, or to rectify non-compliant conditions.
 6. Recycling facilities: Provide the name of the recycling facilities(s) where materials will be sent for recycling, how it will be recycled, and the applicable fee(s).
 7. Additional Information: Include any additional information deemed relevant to describe the scope and intent of the CWM Plan to the Facilities Representative.
 8. Re-Used materials/Equipment: Materials or equipment to be removed from the site or turned over to the College which are classified as recycled materials shall be documented. Documentation shall include the materials turned over, weight or quantity of materials/equipment and a letter on company letterhead indicating the intended use of items.
 9. Subcontractor Requirements: Construction Waste Management and recycling requirements shall be incorporated into all Subcontractor's contracts.

1.03 SUBMITTALS

- A. Submittal Requirements:
 1. A copy of the Construction Waste Management Plan, as defined in the PERFORMANCE REQUIREMENTS Article above.
 2. In conjunction with payment applications, contractors shall submit a monthly Waste Management submission. This submission shall include waste receipts for the payment period and a completed Waste Management Form for the same payment period.
 3. Calculations and supporting documentation to demonstrate end-of-project recycling rates meeting the requirements of the Construction

Waste Management Plan. The process for recording and assembling documentation shall be as follows:

- a. Record and document the total weight (in tons) of all demolition and construction waste materials sent to the landfill. Monthly Waste Management Reporting Forms (sample included at the end of this Section identified as Exhibit "A") shall be used as the basis for determining the total amount of waste landfilled for the project. The monthly reporting forms shall specify:
 - 1) The number of dumpsters or other containers sent to the landfill for that month.
 - 2) The volume (in cubic yards) of each dumpster or container sent to the landfill for that month.
 - 3) The type of waste contained in each dumpster or container.
 - 4) The weight of the waste in each dumpster or container. If the weight of the waste is not directly measured for each dumpster or container, the following Solid Waste Conversion Factors shall be used to convert the volume of waste to weight:

Solid Weight Conversion Factors	
Mixed Waste	350 lbs/cubic yard
Wood	300 lbs/cubic yard
Cardboard	100 lbs/cubic yard
Gypsum Board	500 lbs/cubic yard
Rubble	1,400 lbs/cubic yard
Steel	1,000 lbs/cubic yard

- 5) Identification of the landfill. In addition, provide the name of the landfill that will be accepting the materials. Receipts or other proof of facility reception of materials is required.
- b. Record and document the total weight (in tons) of all demolition and construction waste materials recycled or salvaged. Monthly Waste Management Reporting Forms shall be used as the basis for determining the total amount of waste recycled or salvaged for the project. The monthly reporting forms shall specify:
 - 1) The number of dumpsters or other containers of recycled or salvaged materials for that month.
 - 2) The volume (in cubic yards) of each dumpster or container of recycled or salvaged materials for that month.
 - 3) The type of recycled or salvaged material contained in each dumpster or container.

- 4) The weight of the recycled or salvaged material in each dumpster or container. If the weight of the material is not directly measured for each dumpster or container, the Solid Waste Conversion Factors listed for landfill waste above shall be used, where applicable, to convert the volume of material to weight. For materials not contained in the Solid Waste Conversion Factors above propose a conversion factor for review by the Director's Representative.
 - 5) In addition, provide the name of the receiving facilities/companies that will be purchasing or accepting the recycled or salvaged materials. Receipts or other proof of facility reception of materials is required.
 - 6) For materials separated for recycling off-site, establish a method for tracking the weight of the recycled material. The method shall be included in the CWM Plan for the Director's Representative review and approval.
- c. Calculate the end-of-project recycling rate percentage by dividing the recycled and salvaged waste (in tons) by the total waste generated (recycled, salvaged, and landfilled waste – also in tons), and multiplying by 100.
 - d. For materials turned over to others for reuse, provide documentation on company letterhead indicating the material(s), the quantity (either by weight or units), the date and the intended reuse of the product.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 IMPLEMENTATION

- A. The General Contractor shall be responsible for the provision of containers and the removal of all waste, non-returned surplus materials, and rubbish from the site in accordance with the Waste Management Plan. The General Contractor shall oversee and document the results of the Plan. The Sub-Contractors shall be responsible for collecting, sorting, and depositing in designated areas, their waste, non-returned surplus materials, and rubbish, as per the Waste Management Plan.
- B. Instruction. The General Contractor shall provide on-site instruction of appropriate separation, handling and recycling, salvage, reuse and return methods to be used by all parties in appropriate stages of the Project.

- C. Separation Facilities: The General Contractor shall lay out a specific area(s) to facilitate separation of materials for potential recycling, salvage, reuse and return. Each potential material shall be collected and stored to avoid being mixed with other materials. Recycling and waste bin areas are to be kept neat and clean, and clearly marked.

3.02 MEETINGS

- A. Conduct Construction Waste Management meetings. Meetings shall include Subcontractors affected by the CWM Plan. At a minimum, waste management goals and issues shall be discussed at the following meetings:
 1. Pre-bid meeting.
 2. Pre-construction meeting.
 3. Regular job-site meetings.

3.03 MONTHLY WASTE MANAGEMENT REPORTING FORMS

- A. Monthly Waste Management Reporting Forms, as required in the SUBMITTALS Article above, shall be submitted to the Facilities Representative and Architect for review throughout the duration of the project.

END OF SECTION 01 74 19

Table I - Summary of Universal Waste & Miscellaneous Hazardous Materials Shirley Goodman Resource Center Lobby Turnstile Installation 227 West 27th Street, New York, NY 10001			
Description of Material	Location	Total Quantity	Unit

Legend

- ECB: Electrical circuit board
- FLB: Fluorescent light bulb
- LED: Light emitting diode
- NiCad: Nickel cadmium
- TBD: To be determined

B. Submittals

1. Before Start of Work: Submit the following to the Owner's Representative for review. Work shall not commence until these submittals are returned with approval from the Owner's Representative.
 - a. Copy of State or local license for hazardous waste hauler;
 - b. Certification of at least one on-site supervisor which has satisfactorily completed the OSHA 40 Hour Health and Safety Course for Handling Hazardous Materials
 - c. Certificates of workers which have successfully completed at least the OSHA 40-Hour Health and Safety Course for Hazardous Materials;
 - d. Certificates of workers which have successfully completed the required employee training for universal waste or appropriate type of training to the type of wastes being managed;
 - e. Schedule of start and finish times and dates for this work;
 - f. Name and address of the universal waste handler or a destination facility where the waste materials is to be treated, deposited or recycled in accordance with all regulatory requirements (include contact person and telephone numbers), if the universal waste meets the definition of hazardous waste, the name and address of the hazardous waste treatment, storage and disposal (TSD) facility;
 - g. Material Safety Data Sheets for all materials requiring removal;
 - h. If Contractor introduces any chemical into the work environmental, a MSDS for that chemical is required before use;

- i. Contingency Plan for handling emergency spills or leaks;
- j. Provide a copy of the NYS DEC Part 364 Waste Transporter permit for Universal Waste Transporters that transport more than 500 pounds of universal waste in a single shipment since they must be a permitted hazardous waste transporter.
- k. Large Quantity Handlers of universal waste must provide documentation of notification to the EPA and/or the appropriate local government agency in advance of its intentions to transport the waste and receive from the facility or provide an EPA identification number prior to exceeding 5,000 kilograms of waste on-site, and
- f.

C. Removals

- 1. Contractor to remove and turn over to FIT the following equipment **NOT** for disposal-
 - a. LED Lighting
 - b. Fire Extinguishers
- 2. Contractor to reclaim and recycle refrigerant gas (type and quantity unknown) associated with equipment to be removed and disposed of, to include:
 - a. Water fountain
 - b. AC Unit
- 3. Contractor to notify FIT of any WIFI router and/or security cameras present prior to demolition. It will be the responsibility of the College to remove.

D. Definitions

- 1. Large Quantity Handler (LQH) of Universal Waste shall be a waste handler who accumulates 5,000 kilograms or more of universal waste (batteries, pesticides, thermostats, or lamps, calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which 5,000 kilograms (11,000 pounds) or more total of universal waste is accumulated. The LQH shall notify the EPA, acquire or co-ordinate with a facility regarding an EPA identification number, and provide records for each shipment. The LQH shall ensure all employees are thoroughly familiar with proper waste handling and emergency procedures, relative to their responsibilities during normal facility operations and emergencies.
- 2. Small Quantity Handler of Universal Waste (SQH) shall be a waste handler who does not accumulate 5,000 kilograms (11,000 pounds) or more of total universal waste (batteries, pesticides, thermostats, or lamps, calculated collectively) at any time.
- 3. Destination Facility shall be a facility that legitimately and can legally accept universal waste from offsite so that the universal waste can be treated, disposed, or recycled in accordance with the regulatory requirements.
- 4. Universal Waste Transporter shall be anyone who transports universal waste. In New York, universal waste transporters that transport greater than 500 pounds of universal waste in a single shipment must be a permitted hazardous waste transporter pursuant to Federal and State regulations. Proper notification with the receiving handler agreeing to receive the shipment is required by the Universal Waste Transporter.

5. Employee training shall ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relative to their responsibilities during normal operations and emergencies and to the type of waste they are handling.
6. Universal Waste Regulations – Universal Waste Rule - 40 CFR Part 273, New York State – Standards for Universal Wastes 6 NYCRR Subpart 374-3.

1.02 PRODUCTS

A. Materials

1. Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mil thick, clear, frosted, or black.
2. Duct Tape: Provide duct tape in 3" widths, with an adhesive which is formulated to stick aggressively to sheet polyethylene.
3. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
4. Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags.
5. Labels: As required by the EPA and OSHA for handling, transportation, and disposal of hazardous waste.
6. Drums: Recovery or salvage drums acceptable for disposal of hazardous waste. Prior approval of drums is required. Drums or containers must meet the required OSHA EPA (40 CFR Parts 264.265 and 300), and DOT regulations (49 CFR Parts 171-178). Use of damaged drums will not be allowed.

1.03 EXECUTION

A. Universal Waste

1. Once the properly labeled containers holding the universal waste have been filled and sealed, they shall be stored in designated accumulation areas as approved by the Owners Representative. The Contractor shall not store waste in transportation vehicles, or store waste onsite for more than one year from when the waste has been generated.
2. Documentation when a universal waste in storage was first accumulated shall be provided. This is to be done by dating and labeling the waste with the date of the earliest accumulation that can document the length of time the universal waste has been accumulated.
3. Maintenance of an inventory system on-site that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste was received.
4. Any waste developed from the work that exhibits one or more characteristics of hazardous waste must be handled accordingly and not as a universal waste.

B. Off-Site Shipment of Universal Waste

1. Off-Site shipments shall meet the requirements for offsite shipments, as such, the Contractor is prohibited from sending or taking universal waste to a place other than a designated universal waste handler or a universal waste destination facility.
2. LQH's of universal waste must notify EPA in writing and develop an EPA identification number or co-ordinate with the facility regarding use of their EPA identification number, prior to exceeding 5,000 kilograms of universal waste onsite.
3. SQH's do not need to notify EPA, receive and EPA identification number or keep records of shipments of universal waste.
4. LQH's must keep a record of all universal waste shipments received or sent offsite, and must retain those records for at least three years from the date of receipt or shipment. Records may include invoices, manifests, logs, bills or lading, or other shipping documents.

C. Storage Of Hazardous Waste (if required)

1. Once the properly labeled containers holding the hazardous waste have been filled and sealed, they shall be stored in designated areas as approved by the Owners Representative. The Contractor shall not be allowed to store the hazardous waste for more than the storage limitations relating to quantities stored and the length of time the material may be stored.
2. Documentation when a hazardous waste in storage was first stored shall be provided. This is to be done by dating and labeling the waste with the date of the earliest accumulation that can document the length of time the hazardous waste has been accumulated.
3. Maintenance of an inventory system on-site that identifies the earliest date that any hazardous waste was placed into proper storage.

D. Off-Site Shipment of Hazardous Waste

1. Off site shipments shall meet the requirements for offsite shipments and the Contractor is prohibited from sending or taking hazardous waste to a place other than an authorized treatment, storage and disposal (TSD) facility.
2. An EPA identification shall be developed or provided by the facility.
3. A copy of the transporter's Part 364 Permit shall be provided to the Owner's Representative and the facility representative.
4. A copy of all waste manifests and any test results or waste analysis utilized for the off-site transportation and disposal shall be submitted to FIT.

E. Records

1. For all Universal Waste and Miscellaneous Hazardous Materials removed under this project, the Contractor shall provide a copy of the following documentation to the owner within 60 days of removing waste from campus:
 - i. Hazardous Waste Manifest for all Hazardous Waste removed, to include any and all associated weight tickets that clearly identify the quantity of material disposed. These documents shall be signed or stamped by the receiving facility as applicable.
 - ii. Bill or Lading for Universal Waste or Miscellaneous Hazardous Materials removed, to include any and all associated weight tickets that clearly identify the quantity of material disposed. These documents must be signed or stamped by the receiving facility as applicable.

END OF SECTION 02 08 30

SECTION 02 41 13 - SELECTIVE REMOVALS AND DEMOLITION

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Construction Waste Management - Section 01 74 19
- B. Cutting and Patching - Section 01 73 29
- C. Removal of Universal Waste and Miscellaneous Hazardous Materials – Section 02 08 30

1.02 SUMMARY

- A. Perform all demolition in accordance with the Contract Documents. The Work of this Section shall include but not be limited to the following:
 - 1. Removal of selected items to accommodate new construction
 - 2. Removal of interior finishes and other items, to accommodate new construction.
 - 3. Protect existing items to remain.
 - 4. The maintenance of the College's operations during selective demolition operations.
 - 5. Protection of the cables and utilities serving other buildings and other areas at the College Campus during the demolition and construction activities. The above services shall be maintained in operation without any interruption at all times unless otherwise scheduled and authorized by the Campus.

1.03 DEFINITIONS

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the College's property.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the College's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to the College's designated storage area.
- C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
- D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

1.04 SUBMITTALS

- A. Proposed schedule of operations including coordination for shutoff, capping, and continuation of utility services as required.
 - 1. Provide a detailed sequence of selective demolition and removal work to ensure uninterrupted progress of the College's on-site operations.
 - 2. Coordinate with the College's continuing occupation of certain portions of the existing building.
 - 3. Include proposed methods for dust and noise control measures.
 - 4. Contractor to submit intermediate life safety plan demonstrating how required government regulations will be maintained for occupied portions of the building.
 - 5. Provide a sequence of moving people from the elevator (occupied building above) to safe, approved exiting without going through the construction site.
 - 6. Two points of unobstructed egress must be available to building occupants throughout the duration of the contract.

1.05 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Fluorescent tubes shall be considered hazardous waste and shall be disposed of according to the regulations of the New York State EPA.
 - 1. All demolition work shall comply with requirements of the College's operational requirements and authorities having jurisdiction.
 - a. Coordinate with the College's engineering department.
- C. Contractor shall verify all conditions at site prior to the start of Work.
- D. Notify appropriate agencies of any hazardous materials unearthed at the site. Do not proceed with removal of said substances until so instructed.

1.06 JOB CONDITIONS

- A. Condition of Structures: The College assumes no responsibility for actual condition of structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by the College insofar as practicable.
- B. Explosives: Use of explosives will not be permitted. Explosives will not be permitted for any Work of the project.

- C. Traffic: Conduct selective demolition operations and removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct exiting pathways, streets, walks, or other occupied or used facilities without permission from the College and authorities having jurisdiction. Provide alternate routes around closed or obstructed pedestrian and vehicular traffic ways as required by governing authorities or regulations.
- D. Protections: Ensure safe passage of persons around area of demolition. Conduct operations to prevent damage to adjacent buildings, structures, and other facilities and injury to persons.
 - 1. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structures to be demolished and adjacent facilities to remain.
- E. Damages: Promptly repair damages caused to adjacent areas and facilities by demolition operations.
- F. Flame Cutting: Do not use cutting torches for removal of material to be salvaged. Do not use cutting torches for demolition or removal until work area is cleared of flammable materials. Maintain portable fire suppression devices during flame-cutting operations.
- G. Utility Services: Maintain existing utilities indicated to stay in service and protect against damage during demolition operations.
 - 1. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities and/or the College.
- H. Utility Services: Do not start demolition work until utility disconnections have been completed and verified in writing.
- I. Environmental Controls: Use temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.
 - 1. Do not use water when it may create hazardous or objectionable conditions such as damage to finishes, flooding, and pollution.

1.07 SCHEDULING

- A. Arrange selective demolition schedule so as not to interfere with the College's on-site operations.

PART 2 - PRODUCTS

2.01 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equals or surpasses that of existing materials.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. General: Prior to commencement of selective demolition operations, verify that existing utilities have been located, identified, disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Architect.
- E. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition. Design for shoring and bracing shall be prepared by an engineer licensed in the State of New York.
- F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.02 UTILITY SERVICES

- A. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by the Architect and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to the Architect and to governing authorities.
 - a. Provide not less than 72 hours notice to the College if shutdown of service is required during changeover.
- B. Utility Requirements: Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.03 PREPARATION

- A. General: Provide shoring, bracing, or support to prevent movement, settlement, or collapse of areas to be demolished and adjacent facilities to remain.
 - 1. Cease operations and notify College Safety Officer immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations. Maintain interior and exterior shoring and bracing throughout the term of this Contract.
 - 2. Cover and protect equipment and fixtures from soilage or damage when selective demolition work is performed in areas where such items have not been removed.
 - 3. Erect and maintain dust-proof partitions and closures as required, to prevent spread of dust or fumes, to occupied portions of the building.
 - a. Where selective demolition occurs immediately adjacent to designated portions of the building, construct dust-proof partitions of minimum 3 5/8-inch studs at 16 inches on center, 5/8-inch drywall (joints taped) on occupied side, 1/2-inch fire-retardant plywood on demolition side. Fill partition cavity with sound-deadening insulation. Create dust-tight joints at edges and penetrations of dust-proof partitions.
 - b. Provide weatherproof closures for exterior openings resulting from demolition work.
 - 4. Locate, identify, stub off, and disconnect utility services that are not indicated to remain.
 - a. Provide bypass connections as necessary to maintain continuity of service to designated areas of building. Provide minimum of 72 hours advance notice to the College if shutdown of service is necessary during changeover.
- B. Pollution Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air. Comply with governing regulations pertaining to environmental protection.
 - 1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.
- D. Demolition, General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition work above each floor or tier before disturbing supporting members on lower levels.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 7. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 8. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
 9. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.
- E. If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to the Architect in written, accurate detail. Pending receipt of directive from the Architect, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.

3.04 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: As a minimum, remove weekly from site accumulated debris, rubbish, and other materials resulting from demolition operations. However, more frequent off site removal of accumulated debris is required as soon as the dumpster is full.
1. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
 2. Burning of demolished materials will not be permitted on site.
- B. Removal: Transport materials removed from demolished structures and legally dispose off site.

3.05 CLEANUP AND REPAIR

- A. General: Upon completion of demolition work, remove tools, equipment, and demolished materials from site.
 - 1. Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start operations. Repair adjacent construction or surfaces soiled or damaged by demolition work.
 - 2. Clean adjacent areas, of all dust, dirt, and debris caused by selective demolition, cutting, and patching operations. Daily and final clean up shall be satisfactory to the Architect.
 - 3. Clean existing heating and cooling devices to remain.

END OF SECTION 02 41 13

SECTION 05 73 00

GLASS RAILING & GATE SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Tempered Glass Railing Assemblies.

1.2 RELATED SECTIONS

- A. None.

1.3 REFERENCES

- A. ASTM C 1048 – Standard Specification for Heat Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass
- B. ASTM C1172—Standard Specification for Laminated Architectural Flat Glass
- C. NAAMM Metal Finishes Manual; National Association of Architectural Metal Manufacturers

1.4 SYSTEM DESCRIPTION

- A. Performance Requirements for Handrail Assembly:
 - 1. Support distributed load of 50 pounds per linear foot (0.73kN/M), applied horizontally at right angles in any direction to the handrail.
 - 2. Support concentrated horizontal load of 200 pounds (0.89kN), applied in any direction at any point along handrail system.
 - 3. 50 lbs (0.22kN) on 1 sf (0.093m²) perpendicular to guard at any location
 - 4. Wind loads 25 psf or as otherwise specified.
 - 5. Distributed loads and concentrated loads not to be applied simultaneously.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Submit Manufacturer's technical product data for railing components and accessories.
- C. Shop Drawings: Dimensioned drawings of railing assemblies indicating the following:
 - 1. Elevations; include joint locations, transitions, and terminations.

GLASS RAILING & GATE SYSTEMS

1. Manufacturer's installation and maintenance instructions.

D. Samples of manufacturer's finishes (As selected by Architect.)

1.6 QUALITY ASSURANCE

A. Components and installation are to be in accordance with state and local building codes.

B. All components and fittings to be furnished by the same manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials properly protected against damage to finished surfaces during transit.

B. Inspect materials upon delivery for damage. Unless minor defects can be made to meet the Architect's specifications and satisfaction, damaged parts should be removed and replaced.

C. Store materials at building site under cover in dry location

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: **C.R. Laurence Co., Inc. (CRL)**
70 Seaview Drive, Secaucus, NJ 07094
Tel: (800) 421-6144/ (201) 770-1077
Email: railings@crlaurence.com
www.crl-arch.com
www.crlaurence.com

B. Acceptable Manufacturer: **Frameless Hardware Company (FHC)**
4361 Firestone Blvd.
South Gate, GA 90280
Tel: (888) 295-4531 Fax: (323) 336-8307
sales-support@fhc-usa.com
<https://fhc-usa.com>

C. Acceptable Manufacturer: **Hafele America Co.**
20 W 22nd St SE, New York, NY 10010
Tel: (800) 423-3531/ (212) 897-4460
Email: orders@hafele.us

D. Or equal.

2.2 MATERIALS

- A. Aluminum Components: Conforming to ASTM B 221/ASTM B221M, Alloy 6063- T52
- B. Stainless Steel Components: Conforming to ASTM A 666, Type 304
- C. Stainless Steel Components: Conforming to ASTM A 240 / A 666, Type 316

2.3 COMPONENTS

- A. Glazing: Fully tempered ASTM C 1048 Kind FT, Quality q3.
 - 1. Tempered Thickness: See Drawings.
 - 2. Color: Clear.
- B. Tempered Glass.
- C. Gate Post
 - 1. FHC FG0P4CBS – 4” square gate post offset mount 6” square bae plate and cover.
 - 2. Height: See Drawings.
 - 3. Finish: Brushed Stainless.
- D. Shoe Base: CRL 8B10D w/ Taper-Loc & 8B Series End Caps.
 - 1. Profile: rectangular Base Shoe Drilled.
 - 2. Material: Aluminum
 - 3. Finish: US32D
- E. Pivot Hinges:
 - 1. Top Pivot:
 - a. FHC GP24BS - Gate Pivot for Frameless Gate 2-3/4” Standard Setback.
 - b. FHC PF201 - North American Top/Bottom Patch Fitting No Insert.
 - c. FHC PF303 - North American Pivot Insert Adjustable Top Patch 19/32”.
 - 2. Floor Pivot:
 - a. FHC PF301- North American Pivot Insert for Tapered Spindle Bottom Door Patch.
 - b. FHC PF403 - Adjustable Floor Pivot for PF10.
 - c. R25S12BSC - 2-1/2” Low Profile Door Rail without Lock.
 - d. R24S12BSLS - 2-1/2” Low Profile Door Rail with Lock.
RCT20 thumb turn / RCT30 dummy cylinder
- F. Latch Lock:
 - 1. FHC CLKE610LHBS – 6”X10” center lock with electric strike.
 - 2. FHC CL610SRHRS – 6”x10” RHR center lock storeroom. Lockset cylinder to be compatible with IC-6pin. Coordinate with FIT locksmith.
- G. U-Channel: FHC SUCD12BN – U Channel for ½” glass.

- H. Door Stop: ASSA ABLOY RM851 Rockwood floor mounted door stop.
- I. Card Reader: RP40 multiclass SE card reader by others.
- J. Fasteners: Types and sizes indicated in shop drawings.
 - a. For base shoe concrete attachment, hole size in base shoe is 9/16", counter bore 7/8" x depth 1/2", center-to-center spacing of holes is 12". Expansion anchors 3-3/4" long.

2.4 FABRICATION

- A. Fabricate handrail assembly components to lengths and configurations complying with shop drawings.
- B. Machine joint edges smooth and plane to produce hairline seams when site assembled; supply concealed sleeve connectors for joints.
- C. Isolate dissimilar metals to prevent electrolytic action by applying primer to concealed surfaces of metal components.

PART 3 INSTALLATION

3.1 CLEANING

- A. Clean glazing surfaces after installation, complying with requirements contained in the manufacturer's instructions. Remove excess glazing sealant compounds, dirt or other substances.
- B. Remove protective films from metal surfaces.
- C. Clean railing surfaces with clean water and mild detergent. Do not use abrasive chemicals, detergents, or other implements that may mar or gouge the material.

3.2 PROTECTION

- A. Institute protective measures required throughout the remainder of the construction period to ensure that all the materials do not incur any damage or deterioration.
- B. Replace damaged components to Architect's acceptance.

END OF SECTION 05 73 00

GLASS RAILING & GATE SYSTEMS

06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions shall apply to the Work of this section.

1.02 DESCRIPTION OF WORK

- A. Provide rough carpentry Work as indicated on the Drawings, as required for the completed Work of this Contract, and as specified herein, including, but not limited to, the following:
 - 1. Wood Grounds, nailing strips, blocking, furring, nailers, and framing.
 - 2. Rough hardware, including nails, screws, anchors, brackets, braces, bolts, nuts, fittings, and other devices required for the proper fitting, connecting, and erecting of the Work.
 - 3. Fire-retardant treatment for wood.
 - 4. Miscellaneous Lumber and plywood.

1.03 REFERENCES

- A. U.S. Department of Commerce.
- B. American Plywood Association (APA).
- C. Western Wood Product Association (WWPA).
- D. Southern Pine Inspection Bureau (SPIB).
- E. Redwood Inspection Service (RIS).
- F. American Wood Preservers' Association (AWPA).
- G. American Society for Testing and Materials (ASTM).
- H. Underwriters Laboratories, Inc. (UL).
- I. Federal Specifications (FS).
- J. American Lumber Standards Committee (ALSC).
- K. West Coast Lumber Inspection Bureau (WCLIB).
- L. American Wood Preservers Bureau (AWPB).
- M. National Fire Protection Association (NFPA).

1.04 SUBMITTALS

- A. Quality Control Submittals
 - 1. Certificates: Certification for the following wood treatments:

- a. Dip Treatment: Certification by treating plant stating chemical solutions used, submersion period, and conformance with applicable standards.
- b. Pressure Treatment: Certification by treating plant stating chemicals and process used, net amount of chemical preservative retained, and conformance with specified standards.
- c. Waterborne Preservatives: Certified written statement that moisture content of treated materials was reduced to a maximum of 19 percent prior to shipment to Project site.
- d. Fire-Retardant Treatment: Certification by treating plant stating treated material complies with specified standards and treatment will not bleed through specified finishes.

1.05 QUALITY ASSURANCE

A. Mill and Producers Mark

Each piece of lumber and plywood shall be gradestamped indicating type, grade, mill, and grading agency certified by the Board of Review of the American Lumber Standards Committee. Mark shall appear on unfinished surface, or ends of pieces with finished surfaces.

1. Fire-Retardant Treated Material: Accredited testing agency mark on each piece of wood indicating compliance with the fire hazard classification.

B. Standards

Comply with the following unless otherwise specified or indicated on the Drawings:

1. Lumber: American Softwood Lumber Standard PS 20 by the U.S. Department of Commerce. Comply with applicable provisions by each indicated use.
2. Plywood: Product Standard PS 1 for Softwood Plywood, Construction and Industrial by the U.S. Department of Commerce.
3. Plywood Installation: APA Design/Construction Guide, by the American Plywood Association (APA), except as indicated otherwise.
4. Grading Rules:
 - a. Douglas Fir, Hem-Fir, Idaho White Pine, and other Western Woods: Western Wood Products Association (WWPA) or West Coast Lumber Inspection Bureau (WCLIB).
 - b. Southern Pine: Southern Pine Inspection Bureau (SPIB).
 - c. Redwood: Redwood Inspection Service (RIS).
5. Fire-Retardant Treatment: American Wood Preservers' Association (AWPA) Standards.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Keep materials dry during delivery. Store materials 6" minimum above ground surface. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber and plywood, and provide air circulation between stacks.
- B. Cover stored materials until ready for use for protection from moisture. Place and anchor covering in a manner which will assure good ventilation under the covering.

1.07 PROJECT CONDITIONS

- A. Correlate location of supporting members to allow proper attachment of other Work.

PART 2 - PRODUCT

2.01 LUMBER

- A. General:
Furnish seasoned dimensional lumber dressed to nominal sizes indicated with 19 percent maximum moisture content at time of dressing, marked "S-DRY". Comply with dry size requirements of PS 20.
 - 1. Dress: Surfaced 4 sides (S4S) unless otherwise indicated.
- B. Miscellaneous Lumber:
Standard grade, No. 3 grade, or better grade of the following species unless otherwise indicated:
 - 1. Nailers and Blocking: Douglas Fir, Hem-Fir, Idaho White Pine or Southern Pine.
 - 2. Furring: Douglas Fir or Southern Pine.

2.02 MISCELLANEOUS MATERIALS

- A. Adhesive:
APA Specification AFG-01.

2.03 FIRE-RETARDANT TREATMENT

- A. All lumber is to be fire-retardant treated, provide "FR-S" lumber, complying with AWWA Standards for pressure impregnation with fire-retardant chemicals to achieve a flamespread rating of 25 or less, when tested in accordance with UL Test 723, ASTM E84 or NFPA Test 255.
 - 1. Provide UL label or identifying mark on each piece of fire-retardant lumber.
 - 2. Redry treated items to a maximum moisture content of 19 percent after treatment.

- B. Fire-retardant Treated Plywood:
Comply with APA requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions:
Examine substrate and supporting structure on which rough carpentry is to be installed for defects that will adversely affect the execution and quality of the Work. Do not proceed with installation until unsatisfactory conditions are corrected.

3.02 INSTALLATION - GENERAL

- A. Do not use units of material with defects which impair the quality of the Work and units, which are too small to fabricate the Work with minimum joints or with optimum joint arrangement.
- B. Install Work accurately to required lines and levels with members plumb and true, accurately cut and fitted and securely fastened. Closely fit rough carpentry to other associated construction.
- C. Securely attach carpentry Work to substrates by anchoring and fastening as indicated, or, if not indicated, as required by the referenced standards. Select fasteners of size that will not penetrate through members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required. Set nail heads in exposed Work which is to be painted or stained and fill resulting holes.
- D. Fire-retardant Wood
Do not rip or mill; only end cuts, drilling holes and joining cuts shall be permitted.

3.03 WOOD NAILERS, BLOCKING, AND GROUNDS

- A. Install required items where indicated and where required for support, attachment or screeding of other Work. Form to shapes indicated or required. Coordinate locations and cut and shim as required to provide items at true and level planes to receive Work to be attached. Install closure strips to nailers at all edges.
 - 1. Attach to substrates as indicated; if not indicated, size and space fasteners as required to support applied loading. Maximum spacing of fasteners shall not exceed 16".

3.04 PLYWOOD APPLICATIONS

- A. Comply with printed installation requirements of the APA Design Construction Guide for plywood application unless otherwise noted.

3.05 ROUGH HARDWARE

- A. Furnish all rough hardware, such as nails, bolts, clips, and all other rough hardware required to secure the carpentry work in place, unless otherwise specified.

END OF SECTION 06 10 00

1. Identify woodwork using same identification system shown on Architectural Drawings.
 2. Coordinate details and cut-outs to accommodate accessories specified under other Sections.
 3. Provide field sample.
- H. Samples: Submit the following samples representative of quality to be provided in finished work: sample of resinous material.
- I. Catalogue cuts for all hardware: Stainless Steel Grommets.

1.6 QUALITY ASSURANCE

- A. AWI Quality Standard: Comply with applicable requirements of the AWI "Architectural Woodwork Quality Standards", except where indicated otherwise.
- B. Fabrication and Installation Qualifications: firm which can demonstrate a minimum of 5 years of successful experience in fabricating and installing woodwork items similar in type and quality to those required for this project.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect woodwork during transit, delivery, storage, and handling to prevent damage, soiling and deterioration.
- B. Do not deliver woodwork, until operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If woodwork must be stored, store only in areas meeting requirements specified for installation areas.

PART 2 - PRODUCTS

2.1 FABRICATION, GENERAL

- A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber and plywood at time of fabrication and for relative humidity in installation areas.
- B. Fabricate woodwork to dimensions, profiles, and details indicated with openings and mortises precut, where possible, to receive hardware and other items and work.
- C. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary, provide ample allowances for scribing, trimming, and fitting.
- D. Pre-Cut Openings: Provide woodwork with pre-cut openings, where possible, for hardware, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutouts and, where located in countertops, seal edges of cutouts with a water-resistant coating.

- E. Measurements: Before fabrication of woodwork to be fitted to other construction, obtain field measurements, and verify dimensions and shop drawing details as required for accurate fit.
- F. Woodwork construction shall comply with the requirements of AWI Architectural Cabinets and Paneling, Custom Grade, except where indicated herein and on the Drawings for more stringent requirements.

2.2 WOOD SPECIES AND GRADES

- A. Solid Wood:
 - 1. Plywood not exposed to view: AWI Grade II.
 - 2. Marine Grade Plywood
- B. All plywood products and laminating adhesives used shall contain no added urea-formaldehyde.

2.3 MEDIUM DENSITY FIBER BOARD FOR CABINETS

- A. Manufacturers
 - 1. SierraFP.com
Ph: (866) 265-6624
 - 2. Imarc
30 N. Gould St., Ste
Shendan, WY 82801
 - 3. Mbi
Norwalk, CT
Ph: (833) 752-7161
- B. Thickness as shown on drawings.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine all areas to receive Work of this Section and correct conditions as required to accommodate the Work.
- B. Do not deliver and install Work of this Section until wet work such as plastering, painting and other finishes is completed; the HVAC system shall be operating and maintaining proper temperature and humidity conditions.
- C. Condition woodwork to the average ambient humidity conditions prior to installation.
- D. Verify the location and condition of built-in anchoring.

3.2 INSTALLATION

- A. Install plumb, true, level and without distortion. Shim as needed with concealed

- wood or hard plastic shims.
- B. Install the Work of this Section in strict accordance with the manufacturer's printed instructions and approved shop drawings.
 - C. All cut edges of MDF shall be sanded smooth.
 - D. Fit joints neatly and accurately with adjoining surfaces in same plane. Maintain field joint tolerances equal to those specified in AWI Standards.
 - E. Tolerances: 1/8" in 8'-0" for plumb and level (including tops); allow no variation in flushness of adjoining surfaces.
 - F. Scribe and cut paneling to fit adjoining Work. Refinish cut surfaces to match adjacent surfaces; repair damaged finishes.
 - G. Provide filler strips; trim strips to irregularities of adjacent surfaces.
 - H. Fastening:
 - 1. Use concealed fasteners for all MDF Board installation.
 - 2. Fasten assembled items together securely.
 - 3. Fasten items securely to supporting surfaces.
 - 4. Anchor tops with brackets and concealed fasteners.

3.3 CLEANING AND PROTECTION

- A. Clean woodwork on both exterior and interior surfaces.
- B. Protect woodwork as required. Repair and/or replace damaged items and/or finishes to the architect's satisfaction.

END OF SECTION 06 40 00

SECTION 06 41 00 - CUSTOM CASEWORK

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide security desk as indicated on the Drawings and as specified herein, including, but not limited to the following:
 - 1. Hardware and accessories.
 - 2. Installation Materials
- B. Disassemble and reassemble existing sofa as indicated on the drawing using the specified plates and end leg.

1.02 SUSTAINABILITY REQUIREMENTS

- A. The Contractor shall implement practices and procedures to meet the Project's sustainable requirements as specified in this Section, are implemented to the fullest extent. Substitutions or other changes to the work shall not be proposed by the Contractor or their sub-contractors if such changes compromise the stated Sustainable Design Performance Criteria.
- B. Sustainability requirements included in the Section are as follows:
 - 1. Restrictions on the use of urea-formaldehyde containing materials.

1.03 REFERENCES

- A. References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.
 - 1. Architectural Woodwork Institute (AWI):
Architectural Woodwork Quality Standards
 - 2. American Society for Testing and Materials (ASTM)
 - 3. American National Standards Institute (ANSI):
ANSI 156.9 B43161
 - 4. National Electrical Manufacturers Association (NEMA):
NEMA LD3 High-Pressure Decorative Laminates
 - 5. American Wood Preservers' Association (AWPA).
Standard C2 (Lumber and Timber)
Standard C9 (Plywood)

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's product data for each product and process specified as work of this Section and incorporated into items of the casework.

- B. Manufacturer's AWI Certifications: Submit casework manufacturer's (fabricator's) certification, stating that fabricated casework complies with AWI quality grades and other requirements indicated herein.
- C. Wood Treatment Data: Submit chemical treatment manufacturer's instruction for handling, storing, installation, and finish of treated material.
- D. Fire-Retardant Treatment: Certification by treating plant stating treated material complies with specified standards and treatment will not bleed through specified finishes. Submit BS/A and MEA approval certification.
- E. MEA/BSA Certification: For each manufactured item. Submit certification of approval by NYC Board of Standards and Appeals (BS/A) or Materials and Equipment Acceptance (MEA).
- F. Hardware (for each type): Name, manufacturer, type, style, size, function, finish, and information about fastenings.
- G. Shop Drawings: Submit Shop Drawings showing location of each item, dimensioned plans and elevations, large scale details and profiles, attachment devices, hardware and other components.
 - 1. Identify casework using same identification system shown on Architectural Drawings.
 - 2. Coordinate details and cut-outs to accommodate accessories specified under other Sections.
- I. Samples: Submit the following samples representative of quality to be provided in finished work:
 - 1. Silestone Solid Surface.
- K. Low Emitting Materials Compliance Submittals
 - 1. Provide documentation for each adhesive to be used on site, indicating that the adhesives comply with low V.O.C. requirements.
- L. Sustainable Submittals:
 - 1. Submit manufacturer's documentation that composite wood products, including plywood, that are used are manufactured without the use of any added urea-formaldehyde. This requirement includes binders, and laminating adhesives used in the field or shop. Submit manufacturer's documentation of the resin used in lieu of urea-formaldehyde in binders and laminating adhesives.

1.05 QUALITY ASSURANCE

- A. AWI Quality Standard: Comply with applicable requirements of the AWI "Architectural Woodwork Quality Standards", except where indicated otherwise.
- B. Fabrication and Installation Qualifications: firm which can demonstrate a minimum of 5 years of successful experience in fabricating and installing casework items similar in type and quality to those required for this project.
- C. Obtain each type of hardware from a single manufacturer.
- D. Fire-Retardant Treated Material: Accredited testing agency mark on each piece of wood indicating compliance with the fire hazard classification.
- E. Regulatory Agencies:

1. NYC Board of Standards and Appeals (BS/A).
2. NYC Materials and Equipment Acceptance (MEA).

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect casework during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- B. Do not deliver casework, until operations which could damage, soil or deteriorate casework have been completed in installation areas. If casework must be stored, store only in areas meeting requirements specified for installation areas.

1.07 PROJECT CONDITIONS

- A. Maintain temperature and humidity in installation area as required to maintain moisture content of installed woodwork within 1.0 percent of optimum moisture content as follows:
 1. Optimum Moisture Content of Wood: 5-10%
 2. Relative humidity required to be maintained in installation and storage areas: 25-55%

1.08 COLOR SELECTIONS

- A. As selected by Architect, indicated on drawings and approved in samples.

PART 2 – PRODUCTS

2.01 FABRICATION, GENERAL

- A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber and plywood at time of fabrication and for relative humidity in installation areas.
- B. Fabricate casework to dimensions, profiles, and details indicated with openings and mortises precut, where possible, to receive hardware and other items and work.
- C. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary, provide ample allowances for scribing, trimming, and fitting.
- D. Pre-Cut Openings: Provide casework with pre-cut openings, where possible, for hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutouts and, where located in countertops, seal edges of cutouts with a water-resistant coating.
- E. Measurements: Before fabrication of casework to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required for accurate fit.

- F. Cabinet work and paneling construction shall comply with the requirements of AWI Architectural Cabinets and Paneling, Premium Grade, except where indicated herein and on the Drawings for more stringent requirements.

2.02 WOOD SPECIES AND GRADES

- A. Solid Wood and Hardwood Plywood Veneer:
 - 1. Plywood not exposed to view (tops and backs): AWI Grade II.
 - 2. Shelving in Cabinets (exposed): Plain Sawn Red Oak, AWI Grade I for Oak Units; White Birch, AWI Grade I for Birch units. Solid wood shelving edge (Oak).
 - 3. Shelving in Cabinets: White or Red Birch, AWI Grade II, with solid wood edge to be painted.

2.03 TYPES OF PANELS

- A. Particleboard and Fiberboard: medium density (37 to 50 pounds per cubic foot) shall not be permitted for shelving.
- B. Veneer Core Plywood: core of odd number of veneer plies, with face and back veneers. Use veneer core plywood for all casework, except that other panel types are permitted for certain components where covered by Solid Surface. Use veneer core plywood, marine grade, for all vertical surfaces of security desk.
- C. All plywood, composite wood products and adhesives used shall contain no added urea-formaldehyde.

2.04 GENERAL NOTES

2.05 ARCHITECTURAL CABINETS - WOOD

- A. Comply with AWI requirements for Section 400A Wood Cabinets, Premium Grade, for transparent finish, except provide more stringent requirements, where indicated.

2.06 FIRE-RETARDANT TREATMENT

- A. Where lumber is indicated or required to be fire-retardant treated, provide "FR-S" lumber, complying with AWPA Standards for pressure impregnation with fire-retardant chemicals to achieve a flame spread rating of 25 or less, when tested in accordance with UL Test 723, ASTM E84 or NFPA Test 255.
 - 1. Where treated items are indicated to receive a transparent or paint finish, use a fire-retardant treatment which will not bleed through or adversely affect bond of finish.
 - 2. Provide UL label or identifying mark on each piece of fire-retardant lumber.

3. Redry treated items to maximum moisture content of 19 percent after treatment.
- B. Fire-retardant Treated Plywood
Comply with APA requirements.

2.07 HARDWARE

A. Security Desk

1. Desk Leg – BORSA - Adjustable 2” Furniture Leg - 642
2. Acrylic barrier clamp – Hafele 284.02.043

B. Glass Gate

1. Metal post mounted hinge – Waterson K51GWL-B2
2. Glass mounted latch lock – CRL PTH311BS
3. Lever Handle – CRL PTH306BS

C. Glass railing

1. Base shoe – CRL 8B10D
2. Base shoe end caps – CRL 8B series

D. Screws

1. Secure hardware with suitable screws and bolts of same material and finish as hardware items unless otherwise specified. Provide Phillips head screws unless otherwise indicated.
2. Manufacturer of each hardware item shall provide the fastenings required for the installation of that item.

E. Grommet

1. At built-in security desk.
2. 2” @ Counter Grommet.
 - Doug Mockett & Company, Inc. www.Mockett.com
 - 1-7/8" MM3 SOLID BRASS DESK GROMMET
 - Color: US26D Satin Chrome

E. Hardware Finish:

Hardware finishes shall comply with requirements of U.S. Bureau of Standards for the following:

U.S. - DESCRIPTION

USP - Primed for Painting

US1D - Dull Black

US2C - Zinc Plated, Commercial

US3 - Bright Brass

US4 - Satin Brass

US5 - Satin Brass, Oxidized

US7 - Brass, Nickel oxidized, Bright Relieved

US9 - Bright Bronze

US10 - Satin Bronze

US10A - Antique Bronze, lacquered

- US10B - Antique Bronze, oiled
- US11 - Satin Bronze, oxidized
- US14 - Bright Nickel Plated
- US15 - Satin Nickel Plated
- US15A - Nickel Oxidized Relieved
- US17A - Half Polished Iron, Smooth
- US20 - Statuary Bronze, Light
- US20A - Statuary Bronze, Dark
- US26 - Bright Chromium
- US26D - Satin Chromium
- US32 - Polished Stainless Steel
- US32D - Satin Stainless Steel

2.08 INSTALLATION MATERIALS

- A. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Examine all areas to receive Work of this Section and correct conditions as required to accommodate the Work.
- B. Do not deliver and install Work of this Section until wet work such as plastering, painting and other finishes is completed; the HVAC system shall be operating and maintaining proper temperature and humidity conditions.
- C. Condition cabinetwork and paneling to the average ambient humidity conditions prior to installation.
- D. Verify the location and condition of inserts, and other built-in anchoring devices.

3.02 INSTALLATION

- A. Install cabinetwork and paneling plumb, true, level and without distortion. Shim as needed with concealed wood or hard plastic shims.
Tolerances: 1/8" in 8'-0" for plumb and level (including tops); allow no variation in flushness of adjoining surfaces.
- B. Scribe and cut cabinets and paneling to fit adjoining Work. Refinish cut surfaces to match adjacent surfaces; repair damaged finishes.
- C. Provide filler strips; trim strips to irregularities of adjacent surfaces.
- D. Secure and anchor fixed cabinetwork to substrates with concealed devices and fasteners of sufficient sizes and strengths to support fully-loaded cabinets.
- E. Anchor tops to cabinets with concealed fasteners.
- F. Secure paneling to substrates or supports with concealed fasteners, where possible; where nails are required, use countersunk finishing nails.

3.03 HARDWARE INSTALLATION

- A. Secure hardware with screws, bolts and fasteners of the proper sizes, with finish to match hardware.

3.04 ADJUSTMENT, CLEANING, FINISHING, AND PROTECTION

- A. Adjust cabinetwork units as required for proper and uniform appearance.
- B. Clean and lubricate hardware; adjust hardware for proper operation.
- C. Clean all exposed surfaces.
- D. Touch-up shop-applied finishes where damaged or soiled, to obtain a finished appearance to match that of adjacent surfaces. If not possible to obtain a suitable finish, provide a new surface or component.

3.05 CLEANING AND ADJUSTING

- A. Clean hardware items thoroughly and adjust for proper operation.

3.06 KEY OPERATION AND INSPECTION

- A. Upon completion of the building and after locks have been secured in proper positions, keys belonging thereto shall be fitted and made to work freely in respective locks in the presence of the Owner's Representative.

END OF SECTION 06 41 00

SECTION 06 61 19 – QUARTZ SURFACING FABRICATIONS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes: Provide solid surfacing fabrications including but not limited to following:
 - 1. Silestone: Security desk surfaces.
- B. Related Sections: Following description of work is included for reference only and shall not be presumed complete:
 - 1. Waste management and disposal requirements: Section 02 08 30, Waste Management and Disposal.
 - 2. Provision of finish carpentry and architectural woodwork: Section 06 40 00, Architectural Woodwork.
 - 3. Provision of joint sealants: Section 07 92 00, Joint Sealants.

1.02 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. A108.5 - Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex Portland Cement Mortar.
 - 2. A118.4 - Latex-Portland Cement Mortar.
- B. ASTM International (ASTM):
 - 1. C97 - Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.
 - 2. C99 - Standard Test Method for Modulus of Rupture of Dimension Stone.
 - 3. C170 - Standard Test Method for Compressive Strength of Dimension Stone.
 - 4. C241 - Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic.
 - 5. C256 - Method of Test for Flexural Strength of Magnesium Oxychloride Cements (Using Simple Bar with Two-Point or Single-Point Loading).
 - 6. C370 - Standard Test Methods for Moisture Expansion of Fired Whiteware Products.
 - 7. C373 - Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products.
 - 8. C482 - Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement.
 - 9. C484 - Standard Test Method for Thermal Shock Resistance of Glazed Ceramic Tile.
 - 10. C531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - 11. C648 - Standard Test Method for Breaking Strength of Ceramic Tile.
 - 12. C650 - Standard Test Method for Resistance of Ceramic Tile to Chemical Substances.

13. C672/C672M - Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.
 14. C674 - Standard Test Methods for Flexural Properties of Ceramic Whiteware Materials.
 15. C880 - Standard Test Method for Flexural Strength of Dimension Stone.
 16. C1026 - Standard Test Method for Measuring the Resistance of Ceramic Tile to Freeze-Thaw Cycling.
 17. C1028 - Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
 18. C1353 - Standard Test Method Using the Taber Abraser for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic.
 19. C1378 - Standard Test Method for Determination of Resistance to Staining.
 20. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. Greenguard Environmental Institute (GEI) - Certification Programs.
 - D. NSF International/American National Standards Institute (NSF/ANSI) 51 - Food Equipment Materials.
 - E. Underwriters Laboratories, Inc. (UL) 94 - Standard for Safety of Flammability of Plastic Materials for Parts in Devices and Appliances Testing.

1.03 SUBMITTALS

- A. Submittals for Review:
 1. Shop Drawings: Include layout, dimensions, materials, finishes, cutouts, and attachments.
- B. Samples:
 1. 3 x 3 inch quartz samples [in specified color. See finish schedule.
 2. 3 inch long joint sealer samples. Provide architect with available colors.
- C. Sustainable Design Submittals:
 1. Recycled Content: Certify percentages of post-consumer and pre-consumer recycled content.
 2. Low-Emitting Materials: Certify volatile organic compound (VOC) content.
- D. Closeout Submittals:
 1. Maintenance Data: Include recommended cleaning materials and procedures, and list of materials detrimental to quartz.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 1. Minimum 5 years documented experience in manufacture of quartz surfacing materials.
- B. Fabricator and Installer Qualifications: Minimum 2 years documented experience in work of this Section.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery and Acceptance Requirements: Deliver no components to Project site until areas are ready for installation.
- B. Storage and Handling Requirements:
 - 1. Store components indoors prior to installation.
 - 2. Handle materials to prevent damage to finished surfaces.

1.06 WARRANTY

- A. Provide manufacturer's 10-year warranty against defects in materials and workmanship.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

Manufacturer List: Products of following manufacturers are acceptable subject to conformance to requirements of Drawings, Schedules and Specifications:

- 1. Contract Documents are based on products by Cosentino USA, Inc. (www.cosentinousa.com)
- 2. Caesarstone (www.caserstoneus.com)
- 3. Cambria. (www.cambriausa.com)
- 4. Or approved equal.

2.02 MATERIALS

- A. Quartz Sheet:
 - 1. Product: Silestone Quartz.
 - 2. Composition: Quartz aggregate, polyester resin, and color pigments formed into flat slabs.
 - 3. Bacteriostatic Protection. With Silver Technology.
 - 4. Color: To be selected from manufacturer's full color range.
 - 5. Surface finish: Polished.
 - 6. Thickness: 1.2 cm.
 - 7. Physical characteristics:
 - a. Static coefficient of friction: 0.75 dry, 0.68 wet, tested to ASTM C1028.

- b. Water absorption: 0.03 percent, tested to ASTM C97.
- c. Compressive strength: 29,100 psi, tested to ASTM C170.
- d. Bond strength: 235 psi, tested to ASTM C482.
- e. Modulus of rupture: 6310 psi, tested to ASTM C99.
- f. Flexural strength: 5840 psi, tested to ASTM C880.
- g. Breaking strength: 480 lbf, tested to ASTM C648.
- h. Impact strength: Minus 352 feet, tested to ASTM C256.
- i. Density: 2.47 grams per cubic centimeter, tested to ASTM C373.
- j. Stain resistance: Not affected by 10 percent hydrochloric acid or 10 percent KOH, tested to ASTM C650.
- k. Thermal shock resistance: Pass 5 cycles, tested to ASTM C484.
- l. Abrasive index: 65-Ha = 25, tested to ASTM C241.
- m. Thermal expansion: 1.670×10^{-5} in/in/deg F, tested to ASTM C531.
- n. Deicing resistance: Rating of 0, tested to ASTM C672/C672M.
- o. Freeze/thaw resistance: 0 tiles at 15 cycles, tested to ASTM C1026.
- p. Flame spread rating: Class 1, tested to ASTM E84.
- q. Flammability: Best rating, tested to UL 94.
- 8. Certifications:
 - a. GEI indoor Air Quality Certified.
 - b. GEI Children and Schools Certified.
 - c. NSF/ANSI 51 Certified.
 - d. Kosher Certified.

2.03 ACCESSORIES

- A. Adhesive:
 - 1. Type recommended by quartz manufacturer.
 - 2. Maximum volatile organic compound (VOC) content: [70] grams per liter.
- B. Latex-Portland Cement Mortar: 272 Premium Floor N' Wall Thin-Set Mortar mixed with 333 Super Flexible Additive by Laticrete International, Inc.
- C. Latex-Portland Cement Mortar: 254 Platinum Multipurpose Thin-Set Mortar by Laticrete International, Inc.
- D. Joint Sealer:
 - 1. Latisil Tile and Stone Sealant by Laticrete International, Inc.
 - 2. Volatile organic compound (VOC) content: Maximum [50] grams per liter.
 - 3. Color: provide architect with manufacturer's full color range.

2.04 FABRICATION

- A. Cut quartz panels accurately to required shapes and dimensions.
- B. Fabricate exposed edges to knife edge profile.
- C. Fabricate with hairline joints.
- D. Cut holes for grommets, electrical boxes (see drawings).

PART 3 – EXECUTION

3.01 PREPARATION

- A. Clean surfaces to receive fabrications; remove loose and foreign matter than could interfere with adhesion.

3.02 INSTALLATION

- A. Install fabrications in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Set in thin set mortar bed in accordance with ANSI A 108.5.
- C. Set plumb and level. Align adjacent pieces in same plane.
- D. Install with hairline joints.
- E. fill joints between fabrications and adjacent construction with joint sealer; finish smooth and flush.

3.03 INSTALLATION TOLERANCES

- A. Maximum variation from level and plumb: 1/8 inch in 10 feet, noncumulative.
- B. Maximum variation in plane between adjacent pieces at joint: plus or minus 1/16 inch.

3.04 CLEANING

- A. Clean fabrications in accordance with manufacturer's instructions.

3.05 PROTECTION

- A. Protect installed fabrications with non-staining sheet coverings.

END OF SECTION 06 61 19

SECTION 07 84 00 - FIRESTOPPING

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

- A. Provide firestopping at all penetrations and juncture joints of fire-rated walls, floors and ceilings in accordance with the requirements of the NYC Building Code.
- B. Firestopping shall be provided:
 - 1. At all penetrations through fire rated partitions and assemblies.
 - 2. At all penetrations through concrete slab.
- C. If exposed to view fire stopping shall be painted to match adjacent surface.

1.2 REFERENCES

- A. References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.
 - 1. American Society for Testing and Materials (ASTM)
 - 2. Underwriters Laboratories, Inc. (UL)
 - 3. National Fire Protection Association (NFPA)
 - 4. Warnock Hersey

1.3 DESIGN REQUIREMENTS

- A. Technical Requirements
 - 1. Firestopping materials shall be UL Classified as "Fill, Void or Cavity Material" for use in Through-Penetration Firestop Systems.
 - 2. Firestop Systems shall provide a fire resistance rating at least equal to the hourly resistance rating of the fire-rated barrier and resist passage of smoke and other gases.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product information for each type of firestopping/smoke seal and assembly installed, including application instructions and specifications.
- B. Quality Control Submittals
 - 1. Certificates

- a. Furnish manufacturer's certification that materials meet or exceed specification requirements for each of the performance tests specified in Part 2. Provide testing certification.
 - b. Furnish applicator's certification that material has been completed as specified to meet fire resistance ratings, thickness requirements, and application requirements of the applicable assembly.
 - c. Furnish UL, BSA, MEA, or OTCR approval of material.
 - d. Furnish certificate stating each material is 100% asbestos free.
2. Contractor Qualifications
- a. Provide proof of Manufacturer and Applicator qualifications specified under "Quality Assurance".
- C. Guarantee
1. Contractor and installer's installation guarantee.

1.5 QUALITY ASSURANCE

- A. Qualifications
1. Manufacturer
Company specializing in the manufacture of firestopping/smoke seal materials to be used in this Contract shall have a minimum of five years experience.
 2. Installer: All firestopping Work shall be performed by a Subcontractor who will be acceptable to the firestopping manufacturer in the application of its products and systems and have a minimum of three years experience and shall have worked on at least two projects with similar quantities of materials used.
- B. Regulatory Requirements
1. Building Code: Material and application shall meet the requirements for firestopping materials in accordance with the NYC Building Code.
 2. Material must have UL or NYC BSA, MEA or OTCR approval for each assembly utilized. Comply with the following for firestopping that is required to be in compliance with BC 712 of the 2008 NYC Building Code:
 - a. ASTM E84 - Surface Burning Characteristics of Building Materials.
 - b. ASTM E814 - Fire Tests of Through Penetration Firestops.
 - c. U.L. 1479 - Fire Tests of Through-penetration `Firestops.
 - d. U.L. - Fire Resistance Directory; Through-Penetration Firestop Systems (XHEZ), and Fill, Void or Cavity Materials (XHHW).
 - e. U.L. 723 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. Manufacturer's Certification
1. Manufacturer shall provide written certification stipulating that its products and systems used in this Project, if installed in accordance with the manufacturer's recommendations, shall provide the firestopping specified in this Section, as indicated by its UL rating for that specific installation.
 2. The certification shall not include either or both of the following statements, or variations thereof:

"Owner or User shall determine suitability of the product or system for its intended use and assume all risks and liabilities connected therewith" and, "Owner or User shall test application of product or system for its specific use".

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original, unopened packages bearing name of manufacturer, product identification, and the proper UL labels for fire hazard and fire-resistance classification.
- B. Store materials off ground, under cover, and away from damp surfaces, keep dry.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain air and substrate temperature at a minimum temperature of 50°F for 24 hours before, during, and for 24 hours after application of the material or as required by the product literature, which ever is more stringent. Contractor shall provide enclosures with heat to maintain temperatures.

1.8 GUARANTEE

- A. Submit a guarantee, executed by the Contractor and co-signed by the installer, agreeing to repair/replace firestopping work performed under this Contract which has cracked, flaked, dusted excessively, peeled, or has separated or fallen from the substrate due to defective workmanship for a period of two (2) years from the date of substantial.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Hilti Construction Chemicals, Inc., Tulsa, OK.
- B. The Carborundum Company, Niagara Falls, NY.
- C. 3M Fire Protection Products, St. Paul, MN.
- D. Bio Fireshield, Inc., Concord, MA
- E. Tremco Sealant Division, Tremco LTD, Toronto, Ontario, Canada.
- F. Specified Technologies, Inc., Somerville, NJ
- G. W. R. Grace & Co., Macungie, PA
- H. RectorSeal Corp., Houston, TX

2.2 MATERIALS

- A. Grout and sealant systems, as well as integral firestopping sleeves and membranes, shall meet or exceed requirements as specified in Part 1 of this Section and shall be acceptable to the Architect.
- B. Firestopping systems shall meet the requirements of ASTM E814, which include, but are not limited to, the following:
 - 1. Prevent flame pass-through.
 - 2. Restrict temperature to not exceed 325°F over ambient on side of assembly opposite flames.
 - 3. Provide a positive smoke seal.
 - 4. Withstand hose stream test with a minimum positive pressure differential of 0.01 inch (2.49 pa.)
 - 5. Provide an F rating of not less than the required fire rating of the wall penetrated.
- C. Firestopping materials shall be asbestos-free, emit no toxic or combustible fumes and be capable of maintaining an effective barrier against flame, smoke, gas, and water in compliance with requirements of this Section.
- D. Firestopping materials/systems shall be flexible to allow for normal movement of building structure and penetrating items(s) without affecting the adhesion or integrity of the system.
- E. Firestopping materials shall not require hazardous waste disposal of used containers/packages.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine and confirm the compatibility of surfaces to receive firestopping materials. Verify that surfaces are sound, clean and dry and are ready to receive the firestopping.
- B. Verify that penetration elements are properly located and securely fixed, with the proper space between the penetration element and surfaces of the opening.

3.2 PREPERATION

- A. Protect adjacent surfaces and equipment from damage.
- B. Clean surfaces of opening.

3.3 INSTALLATION

- A. Install firestopping system in strict accordance with the manufacturer's instructions to obtain the fire-rating required at the specific location
- B. Provide escutcheons for piping at each side of penetration.
- C. Paint firestopping to match walls and ceiling where exposed.

3.4 FIELD QUALITY CONTROL

- A. Contractors Responsibility for Quality Control
 - 1. Inspect all installations to ensure that all work meets the requirements specified as the Work progresses.
 - 2. Do not cover firestopping work until it is accepted and approved.

3.5 CLEANING

- A. Remove excess materials, droppings, and debris; remove excess materials from adjacent surfaces.

3.6 PROTECTION

- A. Protect firestopping installations from damage until completion of all Project Work.

END OF SECTION 07 84 00

SECTION 07 92 00 – JOINT SEALANTS

PART 1 – GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

1.2 SUBMITTALS

- A. Product Data: Catalog sheets, specifications, and installation instructions for each product specified except miscellaneous materials.
- B. Samples:
 - 1. Sealants: One pint or standard tube.
 - 2. Joint Fillers: 12-inch-long section
 - 3. Joint Primer/Sealer/Conditioners: One pint.
 - 4. Baker Rods: 12-inch-long section.
 - 5. Bond Breaker Tape: 12-inch-long section.

1.3 QUALITY ASSURANCE

- A. Container Labels: Include manufacturer's name, trade name of product, kind of material, federal specification number (if applicable), expiration date (if applicable), and packaging date or batch number.

1.4 PROJECT CONDITIONS

- A. Environmental Requirements:
 - 1. Temperature: Follow manufacturer's directions.
 - 2. Ventilation: Provide sufficient ventilation wherever sealants, primers, and other similar materials are installed in enclosed spaces. Follow manufacturer's recommendations.
- B. Protection:
 - 1. Protect all surfaces adjacent to sealants with non-staining removable tape or other approved covering to prevent soiling or staining.
 - 2. Protect all other surfaces in the Work area with tarps, plastic sheets, or other approved coverings to prevent defacement from droppings.

PART 2 – PRODUCTS

2.1 SEALANTS

- A. GE Silicone II paintable sealant for sound penetrations or approved equal.
- B. USG Acoustical sealant or approved equal.
- C. Sealant for exterior glazing, GE Silicone based.
- D. Sealant Colors: For exposed materials provide color as indicated or, if not indicated, as selected by the Architect from manufacturer's standard colors. For concealed

materials, provide the natural color which has the best overall performance characteristics.

2.2 JOINT FILLERS

- A. Expanded Polyethylene Joint Filler: Flexible, compressible, closed-cell polyethylene of not less than 10 psi compression deflection (25 percent).

2.4 MISCELLANEOUS MATERIALS

- A. Joint Primer/Sealer/Conditioner: As recommended by the sealant manufacturer for the particular joint surface materials and conditions.
- B. Backer Rod: Compressible rod stock of expanded, extruded polyethylene.
- C. Bond Breaker Tape: Polyethylene or other plastic tape as recommended by the sealant manufacturer; non-bonding to sealant; self-adhesive where applicable.
- D. Cleaning Solvents: Oil free solvents as recommended by the sealant manufacturer. Do not use re-claimed solvents.
- E. Masking Tape: Removable paper or fiber tape, self-adhesive, non-staining.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine all joint surfaces for conditions that may be detrimental to the performance of the completed Work. Do not proceed until satisfactory corrections have been made.

3.2 PREPARATION

- A. Clean joint surfaces immediately before installation of sealant and other materials specified in this Section.
 - 1. Remove all loose materials, dirt, dust, rust, oils and other foreign matter that will impair the performance of materials installed under this Section.
 - 2. Remove protective coatings and similar materials from joint faces with manufacturer's recommended solvents.
 - 3. Do not limit cleaning of joint surfaces to solvent wiping. Use methods such as grinding, acid etching or other approved and manufacturer's recommended means, if required, to clean the joint surfaces, assuring that the sealant materials will obtain positive and permanent adhesion.
- B. Set joint fillers at proper depth and position as required for installation of bond breakers, backer rods, and sealants. Do not leave voids or gaps between the ends of joint filler units.

- C. Priming Joint Surfaces:
 - 1. Prime joints if recommended by the manufacturer's printed instructions.
 - 2. Do not allow the primer/sealer to spill or migrate onto adjoining surfaces.

3.3 JOINT BACKING INSTALLATION

- A. Install bond breaker tape in relaxed condition as it comes off the roll. Do not stretch the tape. Lap individual lengths.
- B. Install backer rod of sufficient size to fill the joint width at all points in a compressed state. Compress backer rod at the widest part of the joint by a minimum of 25%. Do not cut or puncture the surface skin of the rod.

3.4 SEALANT INSTALLATION

- A. Except as shown or specified otherwise, install sealants in accordance with the manufacturer's printed instructions.
- B. Install sealants with ratchet handgun or other approved mechanical gun. Where gun application is impractical, install sealant by knife.
- C. If low temperature makes application difficult, preheat sealants using manufacturer's recommended heating equipment.
- A. Finishing: Tool all vertical, non-sag sealants so as to compress the sealant, eliminating all air voids and providing a neat smoothly finished joint. Provide slightly concave joint surface, unless otherwise indicated or recommended by the manufacturer.
 - 1. Use tool wetting agents as recommended by the sealant manufacturer.

3.5 CLEANING

- A. Immediately remove misapplied sealant and droppings from metal surfaces with solvents and wiping cloths. On other materials, remove misapplied sealant and droppings by methods and materials recommended in writing by the manufacturer of the sealant material.
- B. After sealants are applied and before skin begins to form on sealant, remove all masking and other protection and clean up remaining defacement caused by the Work.

END OF SECTION 07 92 00

**SECTION 10 45 00 – OPTICAL TURNSTILES (OTS-SS SERIES)
(PROVIDES & INSTALLED BY OTHERS)**

PART 1 – GENERAL

1.01 SUMMARY

- A. Provide labor, materials, equipment and services, and perform operations required for installation of barrier style turnstiles, and related work as indicated on the drawings and specified herein.
- B. Work Included: The work of this section shall include, but not be limited to the following:
 - 1. Optical turnstiles.
- C. Related Work Specified Elsewhere
 - 1. Final service connection shall be as specified in the Mechanical and Electrical Sections.

1.02 QUALITY ASSURANCE

- A. Materials shall conform to the latest edition of applicable reference specifications, and codes and requirements of local authorities having jurisdiction.

1.03 SUBMITTALS

- A. Product Data: Copies of manufacturer's latest published literature for materials specified herein shall be submitted for approval and approval obtained before materials are delivered to the site.
- B. Shop Drawings: Shop drawings showing complete assembly of turnstiles, specified herein, and shall be submitted for approval.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials, other than bulk materials, in manufacturer's unopened containers, fully identified.
- B. Handle and store materials in accordance with manufacturer's instructions and recommendations, protected from weather, soiling or damage from any source.

1.05 PROJECT CONDITIONS

- A. Do not install work of this section until space has been enclosed and weather-tight, and until wet work in such space is dry to the satisfaction of the Architect and installer, and until ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Provide the Optical Turnstile Model No. OTS-SS as manufactured by Kouba Systems. The system monitors through-beam infrared sensors, and access control contacts. The card access system is interfaced with the optical turnstile control system. All lane controls and alarms are communicated with relay contacts between the card access system and the optical turnstile system.

2.02 OPERATION

- A. Confirmed Valid Card Usage
1. Valid Card Usage: The lock output of the card access system is monitored by OTS-SS to determine when a valid card has been presented. The lock output must be configured for automatic re-lock when the door is opened. The normally closed-door mimic relay (DMR) is monitored by the card reader system. The (DMR) opens when a valid card is presented to the reader, and closes when a person walks through the passageway. The relay cycle is expected by the card reader system and an authorized passage is registered in the card reader database.
 2. Free Exit Mode: The optical turnstile system has two operating modes – CARD IN / CARD OUT and CARD IN / FREE EXIT. When the system is in FREE EXIT MODE, a person walks through the passageway in the exit direction, the DMR relay does not activate.
 3. Tailgate Alarm: When the optical turnstile system detects a tailgate violation, the DMR opens and again the card reader system interprets that action as a forced door alarm and an alarm is registered in the card reader database. The OTS-SS circuit activates the local sounder so that the alarm is annunciated at the door. The alarm reset shall have an adjustable time delay

4. System Bypass: A bypass contact from the card access or annunciator will enable all light arrays to indicate lane is open allow free passage. The unit will stay in this condition as long as the bypass input is activated.

A. Unconfirmed Valid Card Usage

1. Valid Card Usage: The valid card output relay from the access control System activates for no longer that 1 second when a valid card is presented. The person walks through the lane, and the lane is ready for the next person. The optical turnstile alarm does not activate.
2. Card Stacking: When a valid card is presented and the valid card relay is activated and another card is presented before the person walks through the lane, the optical turnstile will count up the additional cards and allow the additional people to pass through the lane without causing an alarm.
3. Free Exit Mode: The optical turnstile system has two operating modes – CARD IN / CARD OUT and CARD IN / FREE EXIT. When the system is in FREE EXIT MODE, a person walks through the passageway in the exit direction, the DMR relay does not activate.
4. Tailgate Alarm: When the optical turnstile detects a tailgate violation, the ALARM OUTPUT RELAY opens and the sounder is activated. The alarm is reset after an adjustable time delay.
5. System Bypass: A bypass contact from the card access or annunciator will enable all light arrays to indicate lane is open allow free passage. The unit will stay in this condition as long as the bypass input is activated.
6. Invalid Card Usage: When attempting to enter without a card, or by presenting an invalid card an alarm will be generated via LED's and a sounder at the point of entry, and via relay outputs to the access control monitoring station.

2.03 TECHNICAL OPERATION AND COMPONENTS

A. Power: 12 VDC @1 Amp Max Per Walkway

B. Inputs:

Valid entry card contact: 1 lock control relay from card reader system momentarily closes for entry. 1 second max.

Valid exit card contact: 1 lock control relay from card reader system momentarily closes for exit. 1 second max.

Invalid card contact: contact momentarily closes when an invalid card is presented to the reader. 1 second max.

Lane Bypass: maintained or momentary contact closes when turnstile is placed in bypass mode.

Free Exit Mode: contact is open for card in/card out operation (night mode), close contact for card in/free exit operation (day mode).

Through beam infrared sensors mounted inside housing.

C. Outputs:

1 normally closed Door Mimic Relay (DMR)

1 normally closed Bypass Status Relay

Alarm sounder @ 85dB: Sounder is on during alarm

Access Denied Chime sounder @ 85dB: Chime is on when access is denied.

Green Display graphics indicates entry access enabled.

Red Display graphic indicates secured mode. Entry will generate an alarm.

D. Field Adjustments:

Tailgate Sensitivity Adjustment – sets the sensitivity of the tailgate detection software.

E. Delays

Tailgate sensitivity Adjustment- sets the sensitivity of the tailgate detection software

Beam Block Delay – sets the time delay to beam block alarm

Alarm auto reset – sets the time delay for alarm reset

Unused access reset delay –sets the time delay to reset the lane to normal if valid card is presented and the lane passage does not occur

F. Construction:

The sub-base and internal frame are constructed of 3/8” steel. There are 8 mounting holes and access for wiring. Housing is stainless steel with brushed finish.

G. Dimensions:

1. Model OTS-SS-60: 8 X 60 X 38 inches
2. Model OTS-SS-48: 8 X 48 X 36 inches
3. Model OTS-SS-36: 8 X 36 X 38 inches

H. Mounting: The sub-base is bolted to the floor using the provided anchor bolts. The housing frame is mounted to the sub-base.

I. Spacing:

1. Normal Passageways: The turnstile housing should be spaced to provide 30 to 32 inches of walkway space for normal passageways.
2. ADA Passageways: The housings should be spaced to provide a minimum of 36 inches of walkway space for ADA compliant passageways.

2.04 WIRING

- A. Power – 12 VDC @1 Amp per walkway - 2-2 CONDUCTOR 18 AWG
- B. Card Reader – Dependent on type of reader provided and configuration of system (i.e. card in/out or card in/free exit)
- C. Access Control Interface – Includes valid exit, valid entry, invalid, alarm output etc. (12 conductor 22AWG)
- D. Housing to Housing – Provides wiring to adjacent light arrays (6 conductor 22AWG)
- E. Annunciation Terminations (optional) – Provides wires to the optional annunciator (8 conductor 22 AWG)

2.05 WIRE TERMINATIONS TO ACCESS CONTROL SYSTEM

- A. Each walkway requires a 12 volt direct current (VDC) power supply with a minimum of one amp sourcing capabilities.
- B. Valid entry card and exit card (exit card only required in card in/out configuration) input signals are terminated to the lock output relays provided by the access control system.
- C. Lock output relays shall be set for a momentary closure upon valid card read and shall maintain this closure for a maximum of 1 second.
- D. Invalid card input signal shall be terminated to a lock output relay provided by the access control system. Relay shall be momentary and shall close upon an invalid card. The turnstile upon receiving this closed contact will indicate to the user that an invalid card has occurred by activating the chime and flashing red LED's located in the top of the display.
- E. A bypass status output shall be provided for monitoring the systems bypass state. This output will activate when the bypass input is activated.

- F. The alarm status shall be able to activate in two different modes or options via a dip switch option.
 - 1. Mode 1 or Option 1: The alarm status relay shall activate on a valid passage or an alarm (Door Mimic)
 - 2. Mode 2 or Option 2: The alarm status relay shall activate when passage through the turnstile occurs without a valid read or when a tailgate condition is detected (alarm only).

2.06 WIRE TERMINATIONS TO ANNUNCIATOR

- A. Keyswitch shall be configured to disable bypass pushbuttons on the annunciator.
- B. Bypass pushbuttons shall activate the lane bypass.
- C. Alarm status LED shall illuminate when unit is in alarm.
- D. Invalid card status LED shall illuminate when an invalid card is presented to the lane.
- E. Bypass status LED shall illuminate when the lane is in bypass.

2.07 ELECTRICAL CHARACTERISTICS SUMMARY

- A. System Power Requirements – Input Voltage: 12 VDC at 1 AMP per walkway. the power supply shall be regulated, conditioned and on battery back up. Power supply can be sized to accommodate multiple walkways but must be sufficient to provide 20% more current than required by the total number of walkways.
- B. Control Unit – Shall consist of a microprocessor board with a non-volatile one time Programmable chip.
 - 1. Inputs – will provide a .05mA draw across a dry contact.
 - 2. Outputs – will provide a dry contact signal level rated @ 500mA maximum. Not for direct lock control.
- C. Sensors - Shall be prewired through beam type, with active infrared transmitter and receiver pairs with automatic interference protection.
- D. Displays – Shall consist of red and green LED Clusters pre-wired within each housing. External wiring shall be required between lanes to operate adjacent displays.
- E. Sounders – Shall consist of two types and be pre-wired within each housing. Display

Wiring between the lanes shall connect the adjacent sounders.

1. Type 1 – 85dB Sounder
2. Type 2 – 80dB Chime for invalid card indication.

2.08 WARRANTY

- A. Warranty shall be 3 years.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine conditions of the job site where work of this section is to be performed to insure proper arrangement and fit of the work. Start of work implies acceptance of job site conditions.

3.02 PREPARATION

- A. Cooperate with other trades supplying materials or performing work in connection with the work under this Section and to other trades whose work is affected by the work of this Section. Provide items required to be built into the other work in ample time to avoid delaying the normal progress of such work.

3.03 INSTALLATION

- A. Install in strict accordance with manufacturer's specifications
- B. Supports, anchorages and fastenings shall be secure and adequate for use intended.

3.04 PROTECTION AND ACCEPTANCE

- A. The Contractor shall suitably protect the work in order to maintain finishes in perfect condition until final completion and acceptance. Any damaged or defective work shall be removed and replaced at no additional cost to the Owner.
- B. The finished installation shall be sound and free from defects of materials and workmanship. After the inspection of the installation and its approved by the Architect, protection, labels, smears and stains shall be removed and items washed clean.

END OF SECTION 10 45 00