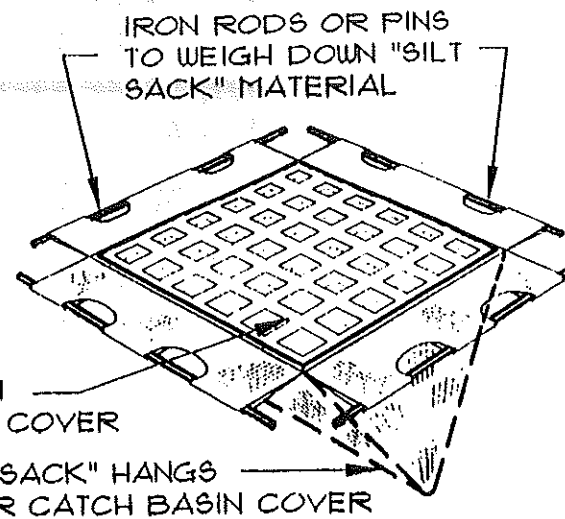


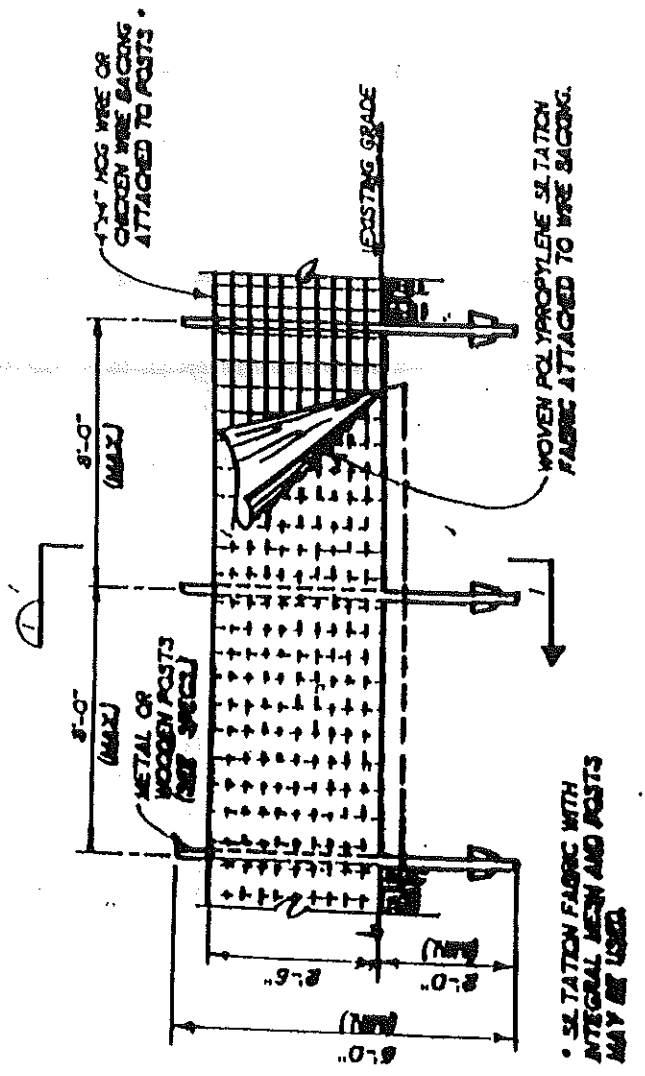
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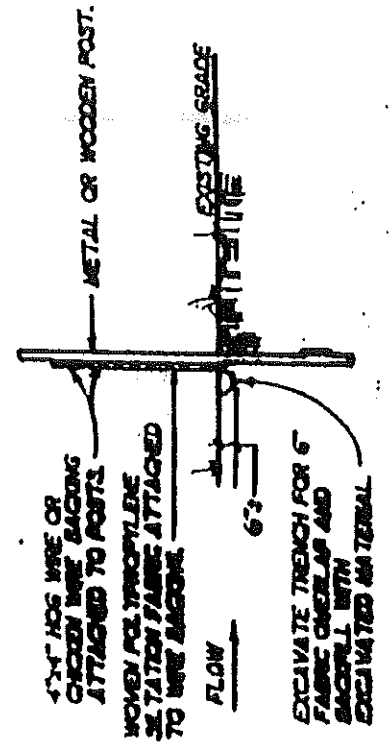
OBLIQUE VIEW

SILT SACK DETAIL

NOT TO SCALE



SILTATION FENCE DETAIL
K.T.S



SECTION 1
K.T.S

(doubling the seed rate) and mulching, but it may result in winter kill. Vegetation must be inspected and reseeded as necessary in the following spring to assure good vegetative cover.

2. No seeding shall be permitted on the snow.
3. Mulch shall be applied after all seed applications (see mulch) and in enough quantity to cover all bare spots such that bare ground is not visible.
4. Permanent seedings should be made 45 days or more prior to the first killing frost (Seed by September 15th) or as a temporary and dormant seeding after the first killing frost.

Maintenance

During the period of construction and/or until long term vegetation is established:

1. Seeded areas will be fertilized and reseeded as necessary to insure 75% vegetative establishment.
2. At a minimum, the hay bale/silt fence barriers shall be inspected and repaired once a week and immediately following all significant rainfall or snow melt. Sediment trapped behind these barriers shall be excavated when it reaches a depth of 6 six inches and regraded onto the site.
3. Any Diversion ditches and swales will be checked weekly and repaired when necessary until adequate vegetation is established.
4. The Owner and contractor shall be responsible for the construction and maintenance of all proposed temporary and permanent erosion control measures including vegetation. The contractor must install or construct all required improvements shown on the plans. The contractor must incorporate all other site improvements, restrictions, construction limits, drainage improvements, natural vegetated buffers, proposed landscaping, etc. The contractor must obtain a complete set of plans, reports and documents pertaining to the project before beginning construction.

Mulch Material	Quality Standards	Application per 1000 Sq Ft	Rates per Acre	Depth of Application or Area covered per unit	Remarks
Hay or Straw	Air-dried; free of undesirable seeds and coarse materials	70-90 lb. (2 bales)	1.5-2.0T (90-100 bales)	Lightly cover 75 to 90% of surface	Use straw where mulch effect to be maintained for more than 3 months. Subject to wind blowing unless kept moist or fed down. Relatively slow to decompose. Resistant to wind blowing.
Composts, Shredded or Chopped	Air-dried, shredded into 8-12 in. lengths	185-275 lb	4-6 ton	-	
Wood Chips or Shavings	Green or air-dried. Free of objectionable coarse materials	460-920 lb	10-20 ton	2-6 inches	Has about the same use and application as sawdust, but requires less Niton (10-12 lb). Resistant to wind blowing. Can be used on critical areas if protected from washing. Decomposes slowly.
Wood Excelsior	Green or air-dried burned wood fibers .024 in x .031 in x 4 in	90 lb (1 bale)	2 tons	-	Effective for erosion control. Tiedown usually not required. Decomposes slowly. Subject to some windblowing. Packaged in 80-90 lb bales. Extra nitrogen fertilizer may be required.
Sawdust, Green or Composted	Free from objectionable coarse material	80-500 cu ft	-	1-7 inches	Effective as a mulch around ornaments, small fruits, and other nurserystock. Resistant to wind blowing. Requires 30-35 lb Niton to prevent N deficiency while decaying. One cu ft weighs 12-24 lb.
Wood Fiber Cellulose (Partly digested wood fibers)	Made from natural wood usually with green dye and dispersing agent added. Max 15% moisture packed	50 lb	2000 lb	-	When used for erosion control on critical areas double application rate. Apply by hand or hydro-mulcher. May not require tie-down.
Peat Moss	Dried, compressed free of coarse materials	200-400 cu ft	-	2-4 inches	Effective as a mulch around ornaments. Subject to wind blowing unless kept wet. Excellent moisture holding capacity.
Jute, Twisted Yarn	Unbleached plain weave Warp 78 ends/yard Weft 41 ends/yard	48 in x 50 yd or 48 in x 75 yd	Roll 60 lb 90 lb	66 sq yd 100 sq yd	Use without additional mulch. Tie down as per manufacturing specification. Effective for erosion control on critical areas. Install in accordance with manufacturer's specifications. Staples will be made of plain iron wire. No. 8 gauge or heavier, and will be 6 inches or more in length.
Excelsior Wood Fiber Mats	Interlocking web of excelsior fibers with mulch net backing on one side only	36 in x 30 yd	Roll	30 sq yd	Use without additional mulch. Tie down as per manufacturing specifications. Good for establishing seedlings on critical erosion areas.

the velocity of concentrated stormwater flows. Average design size stone, D₅₀, shall be as called out in the detail on the plans. Largest size of stone in the riprap is to be 1.5 times the D₅₀ size.

Vegetative Measures

1. Topsoil on site shall be stockpiled at a stable location on site and covered with anchored mulch for temporary erosion control.
2. If any disturbed area of soil will be left bare for more than two weeks, or if construction is to be completed in phases over an extended duration, temporary seeding and mulching shall commence immediately following initial fine grading of site. In sensitive areas (within 100' of wetlands) temporary mulch must be applied within 7 days or prior to any storm event on all disturbed surfaces. It shall be maintained and reseeded as necessary to insure good vegetative cover for the entire duration of construction. Seed will be selected from the following table, according to the time of the year.

Temporary Seed Mixture

Seed Type	lbs acre	lbs 1000 sf	Seeding Depth	Recommended Seeding Date
Winter Rye	112	2.6	1"-1.5"	8/15 - 10/1
Oats or Annual Ryegrass	80 40	1.8 0.9	1"-1.5" .25"	4/1 - 7/1 and 8/15 - 9/15
Sudangrass	40	0.9	.5"-1"	5/15 - 8/15
Perennial Ryegrass	40	0.9	.25"	8/15 - 9/15
Temporary Mulch with dormant seeding				10/1 - 4/1

Stephen J. Roberge, P.E.

SJR Engineering Inc.

21 Mayflower Road, Augusta, ME 04330
Tel/Fax: 207-622-1676

Mr. David Leasure
Architectural Associates, Inc.
14 Sunset Road
Falmouth, Maine 04105

Re: Erosion Control for Marine Use Facility at Custom House Wharf

Dear Dave,

The project is to construct a new 22,050 square foot building and 31 car parking lot with all associated traffic maneuvering area. Access to the site is from Custom House Wharf in Portland. Site drainage is designed to flow towards an existing catch basin will divert flows to a Vortex Model 2000 oil/grit basin. Water will then be directed to the adjacent Atlantic ocean. It is anticipated that this project' site infrastructure will be constructed in one construction season.

Existing Site Conditions

The existing site being proposed for new construction is developed property consisting of a previously demolished building (outline shown on plan) and a stone sea wall. The topography of the proposed developed site is shown with spot elevations as depicted from the physical survey of the area by Titcomb Associates Inc.. The slope of the property varies from 1% along the flatter areas to vertical along the sea wall. The site is currently serviced by municipal public utility services.

Adjacent Areas

Adjacent areas and land uses are similar in nature to that being proposed.

Erosion and Sediment Control Practices

This plan has been developed to provide a strategy for dealing with soil erosion during and after the construction of buildings, parking areas, landscaping areas, and utilities at the Marine Use Facility construction site. This plan is based on the standards and specifications for erosion prevention as contained in the Environmental Quality Handbook for Erosion and Sediment Control dated March 1986, Stormwater Management Manual by Greater Portland Council of Governments and "Best Management Practices" by the Soil and Water Conservation District.

Construction is expected to begin immediately following obtaining permits for approval. It is hopeful that some construction will begin in the late Fall of 1999

APPENDIX:

2.1 FIRE ALARM AND SMOKE DETECTION CONTROL PANEL

- A. Control Panel: Modular construction with flush wall-mounted enclosure.
- B. Power Supply: Adequate to serve control panel modules, remote detectors, remote annunciators, door holders, smoke dampers, relays, and alarm signaling devices. Include battery-operated emergency power supply with capacity for operating system in standby mode number of hours required by governing code.
- C. Detection Circuits: Supervised zone module with alarm and trouble indication.
- D. Signal Circuits: Supervised zone coded signal module, sufficient for signal devices connected to system.
- E. Municipal Trip Circuit: Provide output connections for connection to remote station transmitter. Include municipal trip DISCONNECT switch.
- F. Remote Station Signal Transmitter: Electrically supervised, capable of transmitting alarm and trouble signals over telephone lines to remote station receiver.
- G. Remote Station Signal Receiver: Electrically supervised, capable of receiving signals from remote station transmitter over telephone lines with up to 4000 ohms loop resistance, and visually annunciating alarm signals by zone and common trouble signal. Include circuit for remote audible alarm and trouble signal, accessory alarm and trouble relays with single pole, double throw (SPDT) contacts, and separate manual alarm and trouble SILENCE functions.
- H. Auxiliary Relays: Provide sufficient SPDT auxiliary relay contacts for each detection zone to provide accessory functions specified.
- I. Provide TROUBLE ACKNOWLEDGE, DRILL, and ALARM SILENCE switch.

2.2 INITIATING DEVICES

- A. Manual Station: Surface mounted, single action manual station with break-glass rod, and auxiliary contacts for performing accessory functions as required.
- B. Heat Detector: Combination rate-of-rise and fixed temperature, rated 135 degrees F, and temperature rate of rise of 15 degrees F.
- C. Ceiling Mounted Smoke Detector: NFPA 72E; ionization and photoelectric type for respective condition with adjustable sensitivity, auxiliary relay contact, integral thermal element rated 135 degrees F, and visual indication of detector actuation, suitable for mounting on 4 inch outlet box. Suitable for operation on existing control panel and power supply.
- D. Duct Mounted Smoke Detector: NFPA 72E; ionization type with auxiliary SPDT relay contact, key-operated NORMAL-RESET-TEST switch, duct sampling tubes extending width of duct, and visual indication of detector actuation, in duct-mounted housing. Suitable for operation on existing control panel and power supply.
- E. Remote Test Switch: Key-operated switch mounted on flush cover with lamp to indicate detector actuation. Provide one switch for each duct mounted smoke detector.

2.3 SIGNALING DEVICES

- A. Alarm Horn: NFPA 72G; projector type fire alarm horn. Sound Rating: 87 dB at 10 feet. Provide integral visual strobe lamp and flasher with red lettered FIRE on white lens.

SECTION 16721

FIRE ALARM AND SMOKE DETECTION SYSTEMS

1 PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fire alarm and smoke detection systems.

1.2 GENERAL CONTRACTOR'S RESPONSIBILITIES:

- A. General contractor shall secure and pay for a design/build contractor to design and install the Fire Alarm & Smoke Detection System required by code and herein schematically described. The general contractor shall be responsible for a approvals, permits, certifications, licenses, and fees from the authority having jurisdiction and all other municipal, state and federal regulatory agencies. The Fire Alarm & Smoke Detection System shall be designed by a qualified engineer registered in the State of Maine.

1.3 RELATED SECTIONS

- A. Section 08712 - Door Hardware: Door closers.
- B. Section 15010 - Basic Mechanical Requirements: Duct mounted smoke detectors.
- C. Section 15010 - Basic Mechanical Requirements: Smoke dampers.
- D. Section 16120 - Wire and Cable.

1.4 REFERENCES

- A. NFPA 72 - National Fire Alarm Code.
- B. NFPA 101 - Life Safety Code.

1.5 CONTRACTOR FURNISHED SERVICES

- A. Electrical Contractor shall provide complete Design-Build Proposals as described above for the following systems.
 - i. Smoke and Fire Detection, Initiation, and Alarm system the "Limit of Work" area indicated on drawings. Existing, new and relocated system components including but not limited to smoke detectors, heat detectors, audible horn/visual strobe devices, magnetic door holdback devices, manual fire pull stations, control and zone annunciation panels. It is sole responsibility of the the system designer to meet all applicable codes, governing authority and regulatory requirements for system design.

1.6 REGULATORY REQUIREMENTS

- A. System: UL and FM listed.
- B. Conform to requirements of NFPA 101.
- C. Conform to special requirements of the Authority Having Jurisdiction.

Custom House Wharf - Marine Use Facility

3.2 INSTALLATION

- A. Install in accordance with manufacturers instructions.
- B. Support luminaires on floor structure independent of ceiling framing.
- C. Locate luminaires as required by lighting level required.
- D. Install surface mounted luminaires and exit signs plumb and adjust to align with building lines and with each other. Secure to prohibit movement.
- E. Exposed Grid Ceilings: Support surface mounted luminaires on grid ceiling directly from building structure.
- F. Install recessed luminaires to permit removal from below.
- G. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating.
- H. Install clips to secure recessed grid-supported luminaires in place.
- I. Install wall mounted luminaires at height indicated on Drawings.
- J. Install accessories furnished with each luminaire.
- K. Connect luminaires to branch circuit outlets using flexible conduit.
- L. Bond products and metal accessories to branch circuit equipment grounding conductor.
- M. Install lamps in each luminaire, emergency lighting unit and exit sign to match existing and meet code requirements.

3.3 INTERFACE WITH OTHER PRODUCTS

- A. Interface with air handling accessories designed and installed under Section 15010..

3.4 FIELD QUALITY CONTROL

- A. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

3.5 ADJUSTING

- A. Adjust Work under provisions of Section 01700.
- B. Adjust exit sign directional arrows as indicated with directional chevron on drawings.
- C. Relamp all existing luminaires prior to Substantial Completion.

3.6 CLEANING

- A. Clean Work under provisions of Section 01700.
- B. Clean electrical parts to remove conductive and deleterious materials.
- C. Remove dirt and debris from enclosure.

- E. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.5 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01700.
- B. Accurately record actual locations of each luminaire.

1.6 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Section 01700.
- B. Maintenance Data: Include replacement parts list.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years documented experience.

1.8 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Conform to requirements of NFPA 101.
- C. Conform to requirements of NFPA 99.
- D. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose required.

2 PART 2 PRODUCTS

2.1 LUMINAIRES

- A. Furnish products to as scheduled on Drawings.
- B. Substitutions: Under provisions of Section 01600.
- C. Install ballasts, lamps, and specified accessories at factory.
- D. Description: Recessed Fluorescent Troffer with energy efficient electronic ballast.
- E. Size: 2 ft. x 4 ft. 4 lamp.
- F. Material: Sheet steel housing.
- G. Enclosure: Clear Prismatic lens.
- H. Installation Conditions: Damp Location.
- I. Mounting: Recessed troffer lay in.

Not Used

3 PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 16010

BASIC ELECTRICAL REQUIREMENTS

1 PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Basic Electrical Requirements specifically applicable to Division 16 Sections, in addition to Division 1 - General Requirements.

1.2 OWNER FURNISHED PRODUCTS

- 1.3 All existing Products and equipment currently installed and designated for alteration, relocation, or removed shall be refurbished and reinstalled by the respective contractor to the greatest degree possible to meet the current project requirements

1.4 GENERAL CONTRACTOR'S RESPONSIBILITIES:

The General Contractor shall include in his/her bid, Design/Build services for the systems listed below. The general contractor shall be responsible for a approvals, permits, certifications, licenses, and fees from the authority having jurisdiction and all other municipal, state and federal regulatory agencies. All systems shall be designed by a qualified engineer registered in the State of Maine. These systems are as follows:

- A. Fire Detection, Initiation & Alarm System renovation for limit of work areas indicated on drawings. Existing, New and relocated Detection, Initiation and Alarm system components including but not limited to smoke detectors, magnetic hold devices, fire pull stations, and fire horns are schematically indicated only on the drawings. It is sole responsibility of the respective system designer's to meet all applicable code, governing authority and regulatory requirements for system design.
- B. Electrical distribution system renovation including power wiring, conduit, receptacles, switches, emergency lighting, exit lighting, interior luminaires, and the Essential Electrical System (EES); Type I System as defined by NFPA 99; 1996 Edition. Existing, New and relocated Electrical system components including but not limited to are schematically indicated only on the drawings. It is sole responsibility of the respective system designer's to meet all applicable code, governing authority and regulatory requirements for system design.

Note that all new wiring within the existing facility shall be installed in surface mounted wiring enclosures. In addition all deenergized wiring and devices shall be completely removed.
- C. Cable TV distribution system renovation including power surface wiring, conduit, and telescoping wall mounting brackets. The Cable TV system shall be based on a service from a local cable TV provider. New Cable TV system components including but not limited to are schematically indicated only on the drawings. The system shall meet the requirements of NFPA 99; 1996 Edition. It is sole responsibility of the respective system designer's to meet all applicable code, governing authority and regulatory requirements for system design.

1.5 WORK SEQUENCE

- A. Install work in stages to accommodate Owner's occupancy requirements and during the construction period coordinate electrical schedule and operations with the Owner.

1.6 UNIT PRICES

Custom House Wharf - Marine Use Facility

inclusion in operating and maintenance manuals.

- F. Provide reports in soft cover, letter size, 3-ring binder manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.
- G. Include detailed procedures, agenda, sample report forms, prior to commencing system balance.

3 PROJECT RECORD DOCUMENTS

- A. Submit record documents under provisions of Section 01700.
- B. Accurately record actual locations of balancing valves and rough setting.

3.1 QUALITY ASSURANCE

- A. Agency shall be company specializing in the adjusting and balancing of systems specified in this Section with minimum five years documented experience. Perform Work under supervision of registered Professional Engineer.
- B. Total renovated system balance shall be performed in accordance with ASHRAE - 1984 Systems Handbook.

3.2 SEQUENCING AND SCHEDULING

- A. Sequence work to commence after completion of renovated system and schedule completion of work before Substantial Completion of Project.

3.3 PRE-INSTALLATION CONFERENCE

- A. Convene a conference two days prior to commencing work of this Section.

4 PART 3 EXECUTION

4.1 EXAMINATION

- A. Before commencing work, verify that systems are complete and operable. Ensure the following:
 1. Equipment is operable and in a safe and normal condition.
 2. Temperature control systems are installed complete and operable.
 3. Proper thermal overload protection is in place for electrical equipment.
 4. New filters are in place.
 5. Duct systems are clean of debris.
 6. Correct fan rotation.
 7. Fire and volume dampers are in place and open.
 8. Coil fins have been cleaned and combed.
 9. Access doors are closed and duct end caps are in place.
 10. Air outlets are installed and connected.
 11. Duct system leakage has been minimized.
 12. Hydronic systems have been flushed, filled, and vented.
 13. Correct pump rotation.
 14. Proper strainer baskets are clean and in place.
 15. Service and balance valves are open.
- B. Report any defects or deficiencies noted during performance of services to the Architect.

- E. Provide standard 45 degree lateral wye takeoffs unless otherwise indicated where 90 degree conical tee connections may be used.

3 PART 3 EXECUTION

3.1 INSTALLATION

- A. Obtain manufacturer's inspection and acceptance of fabrication and installation of metal ductwork at beginning of installation.
- B. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
- C. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- D. Set plenum doors 6 to 12 inches (150 to 300 mm) above floor. Arrange door swings so that fan static pressure holds door in closed position.
- E. Connect terminal units to medium or high pressure ducts with one foot (300 mm) maximum length of flexible duct. Do not use flexible duct to change direction.
- F. Connect diffusers or troffer boots to low pressure ducts with 5 feet (1.5 m) maximum length of flexible duct. Hold in place with strap or clamp.
- G. Fibrous glass ductwork may not be substituted for internally or externally insulated or uninsulated low pressure sheet metal ductwork.
- H. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

3.2 ADJUSTING AND CLEANING

- A. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment which may be harmed by excessive dirt with temporary filters, or bypass during cleaning.
- B. Clean duct systems with high power vacuum machines. Protect equipment which may be harmed by excessive dirt with filters, or bypass during cleaning. Provide adequate access into ductwork for cleaning purposes.

END OF SECTION

SECTION 15890

DUCTWORK

1 PART 1 GENERAL

1.1 WORK INCLUDED

- A. Medium and high pressure ductwork.

1.2 RELATED WORK

- A. Section 15990 - Testing, Adjusting and Balancing.

1.3 GENERAL CONTRACTOR'S RESPONSIBILITY

- A. General contractor shall secure and pay for a design/build contractor to design and install the ductwork and HVAC system. The general contractor shall be responsible for a approvals, permits, certifications, licenses, and fees from the authority having jurisdiction and all other municipal, state and federal regulatory agencies. The HVAC system and peripheral ductwork shall be designed by a qualified engineer registered in the State of Maine.

1.4 REFERENCES

- A. ASHRAE - Handbook 1981 Fundamentals; Chapter 33 - Duct Design.
- B. ASHRAE - Handbook 1983 Equipment; Chapter 1 - Duct Construction.
- C. ASTM A 525 - General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- D. NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
- E. SMACNA - High Pressure Duct Construction Standards.

1.5 DEFINITIONS

- A. Duct Sizes: Inside clear dimensions. For lined ducts, maintain sizes inside lining.
- B. Medium Pressure: Three pressure classifications: 3 inch WG (750 Pa) positive or negative static pressure and velocities less than 4,000 fpm (20 m/sec), 4 inch WG (1,000 Pa) positive static pressure and velocities greater than 2,000 fpm (10 m/sec) and m/sec), 6 inch WG (1,500 Pa) positive static pressure and velocities greater than 2,000 fpm (10 m/sec).
- C. High Pressure: 10 inch WG (4300 Pa) positive static pressure and velocities greater than 2,000 fpm (10 m/sec).

1.6 REGULATORY REQUIREMENTS

- A. Construct ductwork to NFPA 90B standards.

1.7 SUBMITTALS

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316 stainless steel, self-rimming with undercoating, 3-1/2 inch crumb cup and stainless steel drain, ledge back drilled for trim.

3. ANSI/ASME A112.19.3; single compartment 15L x 15W x 7-1/2D inch outside dimensions, 18 gage thick, Type 316 stainless steel, self-rimming with undercoating, 3-1/2 inch crumb cup and stainless steel drain, ledge back drilled for trim.

B. Trim

1. Manufacturer: Kohler Model Finesse with High Country Spout.

2. ASME A112.18.1; color-matched vacuum breaker, white single lever handle and retractable spray; brass P-trap with clean-out plug and arm with escutcheon.

4 PART 3 EXECUTION

4.1 EXAMINATION

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Verify that electric power is available and of the correct characteristics.

4.2 PREPARATION

- A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

4.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install each fixture with trap, easily removable for servicing and cleaning.
- C. Provide chrome plated rigid or flexible supplies to fixtures with screwdriver stops, reducers, and escutcheons.
- D. Install components level and plumb.
- E. Install and secure fixtures in place with wall supports and bolts.
- F. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07900, color to match fixture.
- G. Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.

4.4 ADJUSTING

- A. Adjust work under provisions of Section 01700.
- B. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

4.5 CLEANING

- A. Clean work under provisions of 01700.
- B. At completion clean plumbing fixtures and equipment.

SECTION 15440

PLUMBING FIXTURES

1 PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Water closets.
- B. Lavatories.
- C. Sinks.

1.2 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Summary of Work: Existing fixtures to be relocated including existing water closets , Flush Valves, Lavatories, Service Sinks and controls.

1.3 RELATED SECTIONS

- A. Section 07900 - Joint Sealers: Seal fixtures to walls and floors.

1.4 REFERENCES

- A. ANSI/ASME A112.6.1 - Supports for Off-the-Floor Plumbing Fixtures for Public Use.
- B. ASME A112.18.1 - Finished and Rough Brass Plumbing Fixture Fittings.
- C. ANSI/ASME A112.19.2 - Vitreous China Plumbing Fixtures.
- D. IAPMO/ANSI Z124.1 - Plastic Bathtub Units.
- E. IAPMO/ANSI Z124.2 - Plastic Shower Receptors and Shower Stalls.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide catalogue illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- C. Manufacturer's Installation Instructions.

1.6 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Section 01700.

- B. Maintenance Data: Include fixture trim exploded view and replacement parts lists.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.

Custom House Wharf - Marine Use Facility

- A. Verify pipe routing under provisions of Section 01039.

2.2 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

2.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever joining dissimilar metals.
- C. Route piping in orderly manner and maintain gradient.
- D. Install piping to conserve building space and not interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- G. Provide clearance for installation of insulation and access to valves and fittings.
- H. Provide access where valves and fittings are not exposed. Coordinate size and location of access doors with the Architect.
- I. Provide support for utility meters in accordance with requirements of utility companies.
- J. Prepare pipe, fittings, supports, and accessories not prefinished, ready for finish painting. Refer to Section 09900.
- K. Install bell and spigot pipe with bell end upstream.
- L. Install valves with stems upright or horizontal, not inverted.
- M. Pipe vents from gas pressure reducing valves to outdoors and terminate in weather proof hood.

2.4 APPLICATION

- A. Use grooved mechanical couplings and fasteners only in accessible locations.
- B. Install unions downstream of valves and at equipment or apparatus connections.
- C. Install brass male adapters each side of valves in copper piped system. Sweat solder adapters to pipe.
- D. Install ball or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- E. Install butterfly valves for throttling, bypass, or manual flow control services.
- F. Provide plug valves in Natural gas systems for shut-off service.

SECTION 15410

PLUMBING PIPING

1 PART 1 GENERAL

1.1 SECTION INCLUDES

1.2 Pipe and pipe fittings.

- A. Valves.
- B. Sanitary sewer piping system.
- C. Domestic water piping system.

1.3 GENERAL CONTRACTOR'S RESPONSIBILITY

A. General contractor shall secure and pay for a design/build contractor to design and install the wastewater disposal and domestic water supply systems herein described. The general contractor shall be responsible for a approvals, permits, certifications, licenses, and fees from the authority having jurisdiction and all other municipal, state and federal regulatory agencies. The plumbing systems shall be designed by a qualified engineer registered in the State of Maine.

1.4 REFERENCES

- A. ANSI B31.9 - Building Service Piping.
- B. ASME Sec. 9 - Welding and Brazing Qualifications.
- C. ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250 and 800.
- D. ASME B16.3 - Malleable Iron Threaded Fittings.
- E. ASME B16.22 - Wrought Copper and Bronze Solder-Joint Pressure Fittings
- F. ASTM A53 - Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.
- G. ASTM B32 - Solder Metal.
- H. ASTM B75 - Seamless Copper Tube.
- M. ASTM D1785 - Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
- N. ASTM D2466 - Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
- AM. ASTM D2564 - Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings.
- AZ. AWS A5.8 - Brazing Filler Metal.
- BG. CISPI 310 - Joints for Hubless Cast Iron Sanitary Systems.

2 PART 2 PRODUCTS

2.1 SPRINKLER HEADS

- A. Suspended Ceiling:
 - 1. Type: Semi-recessed pendant type with matching screw on escutcheon plate.
 - 2. Head Finish: Chrome plated.
 - 3. Escutcheon Plate Finish: Chrome plated.
 - 4. Fusible Link: Glass bulb type temperature rated for specific area hazard.

 - B. Exposed Area Type:
 - 1. Type: Standard upright type with guard.
 - 2. Head Finish: Chrome plated.
 - 3. Fusible Link: Glass bulb type temperature rated for specific area hazard.

 - C. Guards: Finish to match sprinkler head.
- 2.2 PIPING SPECIALTIES
- A. Wet Pipe Sprinkler Alarm Valve: Check type valve with divided seat ring, rubber faced clapper to automatically actuate electrically and hydraulically operated alarms, with pressure retard chamber and variable pressure trim.
 - B. Flooding Deluge Valve: Existing Gate type valve with rubber faced disc actuated electrically with electrically and hydraulically operated alarms, with alarm testing trim.
 - C. Electric Alarm: Electrically operated red enamelled gong with pressure alarm switch.
 - D. Water Flow Switch: Vane type switch for mounting horizontal or vertical, with two contacts rated 10 amp at 115 volt AC.

3 PART 3 EXECUTION

3.1 PREPARATION

- A. Coordinate work of this Section with other affected work.

3.2 INSTALLATION

- A. Install equipment in accordance with manufacturers instructions.
- B. Install buried shut-off valves in valve box. Provide post indicator.
- C. Provide double check valve assembly at sprinkler system water source connection.
- D. Check Location of fire department connection with sufficient clearance from walls, obstructions, or adjacent siamese connectors to allow full swing of fire department wrench handle.
- E. Check Location of outside alarm gong on building wall
- F. Place pipe runs to minimize obstruction to other work.
- G. Place piping in concealed spaces above finished ceilings.

SECTION 15325

SPRINKLER SYSTEMS

1 PART 1 GENERAL

1.1 SECTION INCLUDES

- A. System design, installation, and certification.
- B. Fire department connections.

1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 04300 - Unit Masonry Systems: Placement of sleeves.

1.3 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Section 15310 - Fire Protection Piping: Piping and valves.

1.4 REFERENCES

- A. NFPA 13 - Installation of Sprinkler Systems.

1.5 SYSTEM DESCRIPTION

- A. System to provide coverage for building areas undergoing renovation.
- B. Provide system to NFPA 13 ordinary hazard, Group 1 occupancy requirements.
- C. Determine volume and pressure of incoming water supply from water flow test data. Revise design when test data available prior to submittals.
- D. Interface system with building control system.

1.6 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Preliminary Shop Drawings: Prior to detailed submission, submit preliminary layout of finished ceiling areas indicating only head locations coordinated with ceiling installation.
- C. Shop Drawings: Indicate hydraulic calculations, detailed pipe layout, hangers and supports, components and accessories. Indicate system controls.
- D. Product Data: Provide data on sprinkler heads, valves, and specialties, including manufacturers catalogue information. Submit performance ratings rough-in details, weights, support requirements, and piping connections.
- E. Submit shop drawings with hydraulic calculations to State of Maine Fire Marshal and Owner's insurance underwriter for approval. Submit proof of approval to Architect/Engineer.
- F. Samples: Submit one of each style of sprinkler head specified.

3. Unit price for purchase, delivery and, installation of plumbing fixtures, controls, valves, hangers, fittings, piping, insulation, concrete slab coring, and other required materials to complete work of the Plumbing system.
4. Unit price for removal, storage, refurbishing, protection and reinstallation of plumbing fixtures, controls, valves, hangers, fittings, piping, sprinkler piping, sprinkler heads, insulation, concrete slab coring, and other required materials to complete work of the Plumbing system.
5. Unit price for purchase, delivery and, installation of electrical wiring, conduit, junction boxes, receptacles, switches, breakers, light fixtures, fire detection equipment, completed system testing, and other required materials to complete work of the electrical and fire detection system. (See Basic Electrical Requirements - Section 16010).
6. Unit price for removal, storage, refurbishing, protection and reinstallation of electrical wiring, conduit, junction boxes, receptacles, switches, breakers, light fixtures, fire detection equipment, completed system testing, and other required materials to complete work of the electrical and fire detection system. (See Basic Electrical Requirements - Section 16010).

1.6 REFERENCES

- A. ASHRAE - American Society of Heating, Refrigeration, and Air-Conditioning Engineers; Handbook of Fundamentals.
- B. ASHRAE - American Society of Heating, Refrigeration, and Air Conditioning Engineers; Standard 52-76, Method of Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter.
- C. NFPA - 10: Standard for portable fire extinguishers.
- D. NFPA - 13: Standard for Installation of Sprinkler systems; Latest Edition.
- E. NFPA - 14: Standard for the Installation of Standpipe and Hose systems.
- F. NFPA 90B - Standard for Installation of Warm Air Heating and Air Conditioning Systems.
- G. NFPA 101 - Life Safety Code; Latest Edition.
- H. Maine State Plumbing Code

1.7 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Proposed Products List include Products required in the following disciplines:
 1. Plumbing Fixtures and controls, Piping, Piping Insulation, mechanical identification.
 2. Ductwork, Ductwork insulation, Air Inlets & Outlets.
 3. Building Wire and Cable, conduit, boxes, grounding and bonding, circuit breaker switchgear, interior luminaires, emergency lighting equipment, emergency power supply, fire alarm and smoke detection system, Public address system, electrical identification.
- C. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal.
- D. Mark dimensions and values in units to match those required.

4.10 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. Do not permit construction traffic within cab after cleaning.

END OF SECTION

- A. Arrange for temporary electrical power for installation work and testing of elevator components.

4.3 EXCAVATION AND BACKFILLING FOR CASING

- A. Excavate for plunger casing in accordance with Section 02222. Remove subsoil from site.
- B. Maintain shaft alignment of 1 inch from plumb. Fill over excavated shaft depth with lean concrete.
- C. Maintain shaft excavation free of water.
- D. Place plunger casing full depth of shaft. Align to 1/4 inch from plumb. Cut top of casing at hoistway pit slab elevation.
- E. Backfill around plunger casing in accordance with Section 02223.
- F. Backfill with Type B fill; placed in 12 inch lifts compacted to 98%.

4.4 INSTALLATION

- A. Install in accordance with ANSI/ASME A17.1.
- B. Install system components. Connect equipment to building utilities. Install piping between hoistway plunger and pump unit.
- C. Provide conduit, boxes, wiring, and accessories.
- D. Mount motor and pump unit on vibration and acoustic isolators, on bed plate and concrete pad. Place unit on structural supports and bearing plates. Securely fasten to building supports. Prevent lateral displacement.
- E. Accommodate equipment in space indicated.
- F. Install guide rails using threaded bolts with metal shims and lock washers under nuts. Compensate for expansion and contraction movement of guide rails.
- G. Accurately machine and align guide rails. Form smooth joints with machined splice plates.
- H. Bolt or weld brackets directly to structural steel hoistway framing.
- I. Coordinate installation of hoistway wall construction.
- J. Install hoistway door sills, frames, and headers in hoistway walls. Grout sills in place. Set entrances in vertical alignment with car openings and aligned with plumb hoistway lines.
- K. Fill hoistway door frames solid with grout in accordance with Section 04300.
- L. Adjust equipment for smooth and quiet operation.

4.5 TOLERANCES

- A. Guide Rail Alignment: Plumb and parallel to each other within 1/8 inch in accordance with ANSI/ASME A17.1 and ANSI/ASME A17.2.
- B. Cab Movement on Aligned Guide Rails: Smooth movement, with no objectionable lateral or oscillating movement or

- L. Certificate Frame and Glazing: Brass frame, clear polycarbonate attached with tamper proof screws.
- 3.10 CAB ENTRANCES
- A. Cab Doors: Stainless steel; 16 gage thick metal, of hollow sandwich panel construction, flush design, rolled profiles, rigid construction. Fabricate front return panels same as doors.
 - B. Cab Door Frames: Stainless steel; 16 inch thick metal, welded corner design with smooth invisible joints.
 - C. Thresholds: Extruded aluminum type to align with frame return to allow reversing of cab carpet floor finish.
- 3.11 HOISTWAY ENTRANCES
- A. Hoistway Doors (All Floors): Stainless steel; 16 gage thick metal, of hollow sandwich panel construction, flush design, rolled profiles, rigid construction.
 - B. Door and Frame Construction: UL 3/4 hour fire rating; insulated sandwich panel door construction 1-1/4 inch thick, minimum.
 - C. Weatherstrip hoistway doors and frames to minimize audible noise caused by air movement, imposed by car movement in the hoistway, and air pressure differential between hoistway and landing floors.
 - D. Sills: Stainless steel.
- 3.12 FINISHES
- A. Structural Metal Surfaces: Clean surfaces of rust, oil or grease; wipe clean with solvent; prime two coats.
 - B. Machine Room Components: Clean and degrease; prime one coat, finish with one coat of enamel.
 - C. Galvanized Surfaces: Clean with neutralizing solvent; prime one coat.
 - D. Aluminum: Clear anodized; Mill finish.
 - E. Wood Surfaces not Exposed to Public View: One coat primer, one coat enamel.
 - F. Stainless Steel: No. 4 brushed.
- 3.13 MACHINE ROOM INTERFACING MONITOR
- A. Fabricate one multiple terminal block in controller relay panel or selector, in location indicated, for connection of monitoring devices for:
 1. Hall and car registration circuits.
 2. Load weighing circuits.
 3. Up and down peak programming circuits.
 4. Independent service switches.
 - B. Label terminals for use with alligator test clips.
- 3.14 CAR OPERATING PANEL
- A. Provide one flush mounted operating panel per car with front return panels containing illuminated call buttons

- E. Provide emergency call back service during working hours for this maintenance period.
- F. Maintain locally, near the Place of the Work, an adequate stock of parts for replacement or emergency purposes. Have personnel available to ensure the fulfillment of this maintenance service, without unreasonable loss of time.
- G. Perform maintenance work using competent and qualified personnel, under the supervision [and in the direct employ] of the elevator manufacturer or original installer.
- H. Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

3 PART 2 PRODUCTS

3.1 MANUFACTURERS

- A. Otis Hydraulic Elevator Model LRV 3000.
- B. Substitutions: Under provisions of Section 01600.

3.2 MATERIALS

- A. Rolled Steel Sections, Shapes, Rods: ANSI/ASTM A36.
- B. Casing: ASTM A139, Grade A steel.
- C. Stainless Steel: ASTM A167 Type 316, No. 4 finish.
- D. Aluminum: ASTM B221, extruded.
- E. Plywood: APA Structural I, Grade C-D, sanded.
- F. Plastic Laminate: NEMA LD3, color/pattern and surface finish as selected by owner.

3.3 FINISH MATERIALS

- A. Touch-Up Primer for Galvanized Surfaces: SSPC 20 Type I Inorganic zinc rich.
- B. Primer for Wood Surfaces: Alkyd primer sealer.
- C. Finish Paint (for Metal Surfaces): Alkyd enamel, semi-gloss color as selected by Architect.
- D. Finish Paint (for Wood Surfaces): Alkyd enamel, semi-gloss color as selected by Architect.

3.4 EQUIPMENT

- A. Motor, Pumps, Valves, Regulators, Fluid Tank, Hydraulic Fluid, Controller, Controls, Buttons, Wiring and Devices, Indicators: Required by ANSI/NFPA 70.
- B. Guide Rails, Cables, Spring Buffers, Attachment Brackets and Anchors: Purpose designed, sized according to code with safety factors.

3.5 ELECTRICAL CHARACTERISTICS AND COMPONENTS

Custom House Wharf - Marine Use Facility

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate the following information:
 1. Motor and hydraulic pump, valves, controller, selector, governor and other component locations.
 2. Car, machine beams, guide rails, buffers, and other components in hoistway.
 3. Rail bracket spacing; maximum loads imposed on guide rails requiring load transfer to building structural framing.
 4. Individual weight of principal components; load reaction at points of support.
 5. Loads on hoisting beams.
 6. Clearances and over travel of car.
 7. Location of components in machine room.
 8. Locations in hoistway and machine room of connections for car light and telephone.
 9. Location and sizes of access doors, doors, and frames.
 10. Expected heat dissipation of elevator equipment in machine room.
 11. Applicable seismic design data; certified by a Registered Professional Structural Engineer.
 12. Interface with building security system.
 13. Electrical characteristics and connection requirements.
 14. Show arrangement of equipment in machine room so moving elements and other equipment can be removed for repairs or replaced without disturbing other components. Arrange equipment for clear passage through access door.
- C. Product Data: Provide data on the following items:
 1. Signal and operating fixtures, operating panels, indicators.
 2. Cab design, dimensions, layout, and components.
 3. Cab and hoistway door and frame details.
 4. Electrical characteristics and connection requirements.
- D. Samples: Submit material samples illustrating cab interior wall finishes, cab and hoistway door and frame finishes.

1.9 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Section 01700.
 - B. Include a parts catalog with complete list of equipment replacement parts; identify each entry with equipment description and identifying code.
 - C. Provide technical information for servicing operating equipment.
 - D. Include legible schematic of hydraulic piping and wiring diagrams of installed electrical equipment, and changes made in the Work. List symbols corresponding to identify or markings on machine room and hoistway apparatus.
 - E. Provide one copy of master electric and hydraulic schematic and one copy of lubrication chart, each framed with clear [plastic] [glass]; mount on machine room wall.
- 1.10 QUALITY ASSURANCE
- A. Perform Work in accordance with ANSI/ASME A17.1, ANSI/AWS D1.1, NFPA 70, AISC, and as supplemented in this section.
 - B. Fabricate and install door and frame assemblies in accordance with ANSI/NFPA 80 and ANSI/JUL 10B.
 - C. Maintain copies of each document on site.

SECTION 14245

HYDRAULIC ELEVATORS - PASSENGER

1PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Hydraulic elevator system; hydraulic cylinder in buried casing.
- B. Passenger cab with doors and frames; hoistway entrance doors and frames.
- C. Excavating and backfilling for plunger casing.
- D. Motor and pump, controllers, hoistway, equipment, and accessories.

1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 04300 - Unit Masonry Systems: Placement of special guide rail brackets and inserts for installation in CMU walls.

1.3 RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete: Concrete for enclosed hoistway and pit and grouting thresholds.
- B. Section 04300 - Unit Masonry System: Building-in and grouting hoistway door frames; masonry hoistway enclosure.
- C. Section 05120 - Structural Steel: Hoistway framing and overhead hoist beams.
- D. Section 05500 - Metal Fabrications: Pit ladder and Sill supports.
- E. Section 09688 - Carpet -Glue Down: Floor finish in cab.
- F. Section 10522 - Fire Extinguishers, Cabinets and accessories: Fire extinguisher in elevator machine room.
- G. Section 16111 - Conduit: By Others; Not in This Contract
- H. Section 16180 - Equipment Wiring Systems: By Others; Not in This Contract.
- I. Section 16721 - Fire Alarm and Smoke Detection Systems: Fire and smoke detectors and interconnecting devices.
- J. Section 16721 - Fire Alarm and Smoke Detection Systems: Fire alarm signal lines to elevator controller cabinet.

1.4 REFERENCES

- A. ANSI A117.1 - Buildings and Facilities - Providing Accessibility and Usability for Physically Handicapped People.
- B. ANSI/ASME A17.1 - Safety Code for Elevators and Escalators.
- C. ANSI/NFPA 70 - National Electrical Code.
- D. ANSI/NFPA 80 - Fire Doors and Windows.

- A. Coordinate the work of this Section with the placement of internal wall blocking and reinforcement of toilet partitions to receive anchor attachments.

2 PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Vestal Product: lotion dispenser.
- B. Scott Product: Paper towel dispenser.
- C. Scott Product: Toilet Tissue dispenser.
- D. Substitutions: Under provisions of Section 01600.

2.2 MATERIALS

- A. Polycarbonate Housings.
- B. Stainless Steel Sheet: ASTM A167, Type 304.
- C. Adhesive: Two component epoxy type, waterproof.
- D. Fasteners, Screws, and Bolts: Hot dip galvanized tamperproof.

2.3 FABRICATION

- A. Weld and grind smooth joints of fabricated components.
- B. Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
- C. Shop assemble components and package complete with anchors and fittings.
- D. Hot dip galvanize exposed and painted ferrous metal and fastening devices.

2.4 FACTORY FINISHING

- A. Galvanizing: ANSI/ASTM A386 to 1.25 oz/sq yd.
- B. Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats electrostatic baked enamel.
- C. Chrome/Nickel Plating: ANSI/ASTM B456, Type SC 2 satin finish.
- D. Stainless Steel: No. 4 satin luster polished finish.
- E. Polycarbonate plastic

3 PART 3 EXECUTION

3.1 EXAMINATION

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2.7 ACCESSORIES

- A. Extinguisher Brackets: Formed steel, galvanized white enamel finish.
- B. Graphic Identification: "FIRE EXTINGUISHER" in 4" high red Lettering on white background.

2.8 FINISHES

- A. Extinguisher: Stainless steel, polished chrome, No. 4 finish.

1 PART 3 EXECUTION

1.1 EXAMINATION

- A. Verify wall is solid or blocking has been installed under the provisions of Section 01039.

1.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Secure rigidly in place.
- C. Place extinguishers on wall brackets.
- D. Position extinguisher signage above unit at 5'-0" above finished floor in visible location to activity routes.

1.3 SCHEDULES

- A. Locate as required by NFPA-101 and the Office of the State of Maine Fire Marshall.

END OF SECTION

2.2 LETTERING

- A. Size and Style: 1 inch San Serif or Simple Serif upper case.
- B. Color: Black.

2.3 ACCESSORIES

- A. Tape Adhesive: Self Adhesive tape, permanent adhesive.

3 PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means installer accepts existing surfaces.

3.2 INSTALLATION

- A. Install in accordance with manufacturer's written instructions.
- B. Install signs at 60 inches above the finished floor on the wall near the latch side of the door or room opening or if no wall space is available at 60 inches A.F.F. on the nearest adjacent wall.
- C. Clean and polish.

END OF SECTION

- C. Apply each coat to uniform finish.
- D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- E. Sand wood and metal lightly between coats to achieve required finish.
- F. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.
- G. Allow applied coat to dry before next coat is applied.
- H. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- I. Prime concealed surfaces of [interior] [and] [exterior] woodwork with primer paint.
- J. Prime concealed surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.

3.4 CLEANING

- A. Clean work under provisions of 01700.
- B. Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

END OF SECTION

D. Manufacturers - Primer Sealers for Gypsum Board

1. Pratt & Lambert Paint Pro-Hide Plus Latex Flat

E. Manufacturers - Finish for Gypsum Board

1. Pratt & Lambert Paint Accolade.

F. Manufacturers - Galvanized Steel Frames, Doors, and Panels

1. Pratt & Lambert Galvanized Metal Latex Primer (W).
2. Pratt & Lambert Effecto Enamel

G. Substitutions: Under provisions of Section 01600.

2.2 MATERIALS

A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating; good flow and brushing properties; capable of drying or curing free of streaks or sags.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

C. Patching Materials: Latex filler.

D. Fastener Head Cover Materials: Latex filler.

2.3 FINISHES

A. As indicated below.

3 PART 3 EXECUTION

3.1 EXAMINATION

A. Verify site conditions under provisions of Section 01039.

B. Verify that substrate conditions are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Test shop applied primer for compatibility with subsequent cover materials.

E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:

1. Plaster and Gypsum Wallboard: 12 percent
2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent
3. Interior Wood: 15 percent, measured in accordance with ASTM D2016.
4. Concrete Floors: 8 percent

SECTION 09900

PAINTING

1PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation and field application of paints and coatings.

1.2 REFERENCES

- A. ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.
- B. NACE (National Association of Corrosion Engineers) -Industrial Maintenance Painting.

1.3 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this Section.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on all finishing products.
- C. Samples: Submit two Color Guides illustrating range of colors and textures available for each surface finishing product scheduled.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- B. Applicator: Company specializing in performing the work of this section with minimum five years documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to NFPA code for flame and smoke rating requirements for finishes.

1.7 FIELD SAMPLES

- A. Provide field sample of paint under provisions of Section 01400.
- B. Provide field sample panel for Filler Room Ceiling, 5 feet long by 5 feet wide, illustrating coating color, texture, and finish.
- C. Locate where directed by Owner.
- D. Accepted sample may remain as part of the Work.

Custom House Wharf - Marine Use Facility

3.1 EXAMINATION

- A. Verify that surfaces are smooth and flat with maximum variation of 1/4 inch in 10 ft, and are ready to receive work.
- B. Verify concrete floors are dry to a maximum moisture content of 7 percent, and exhibit negative alkalinity, carbonization, or dusting.

3.2 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.

3.3 INSTALLATION

- A. Apply carpet and adhesive in accordance with manufacturers' instructions.
- B. Verify carpet match before cutting to ensure minimal variation between dye and pattern lots.
- C. Locate seams in area of least traffic.
- D. Join seams by hot adhesive tape method. Form seams straight, not overlapped or peaked, and free of gaps.
- E. Lay carpet tight and flat on subfloor, well fastened at edges, with a uniform appearance. Provide monolithic color, pattern, and texture match within any one area.
- F. Do not change run of pile in any room where carpet is continuous through a wall opening into another room. Locate change of color or pattern between rooms under door centerline.
- G. Cut and fit carpet around interruptions.
- H. Conceal carpet terminations with resilient edge strips.
- I. Fit carpet tight to intersection with vertical surfaces without gaps.
- J. Where wall bases are scheduled, cut carpet tight to walls. Fit carpet tight to vertical interruptions, leaving no gaps.

3.4 CLEANING

- A. Clean work under provisions of 01700.
- B. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- C. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09688

CARPET - GLUE DOWN

1PART 1 GENERAL

1.1 SECTION INCLUDES

- A. New carpet placed with glue down method to match existing tenant space carpet currently completely installed.
- B. Accessories.

1.2 REFERENCES

- A. ASTM D2859 - Test Method for Flammability of Finished Textile Floor Covering Materials.
- B. ASTM E84 - Surface Burning Characteristics of Building Materials.
- C. NFPA 253 - Test for Critical Radiant Flux of Floor Covering Systems.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate seaming plan, method of joining seams, direction of carpet, and location of edge transition strips.
- C. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- D. Samples: Submit two samples 12 x 12 inch in size illustrating color and pattern for each carpet material specified.
- E. Submit two, 12 inch long samples of resilient edge strip for each material specified.
- F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing specified carpet with minimum five years documented experience.
- B. Installer: Company specializing in installing carpet with minimum five years documented experience.

1.5 REGULATORY REQUIREMENTS

- A. Conform to NFPA 101 - Life Safety code for flame/smoke rating requirements of carpet materials in accordance with ASTM E84.
- B. Conform to NFPA 253 Class II for flooring radiant panel test.
- C. Conform to ASTM D2859 for surface flammability ignition test.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Store materials for 3 days prior to installation in area of installation to achieve temperature stability.

D. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify concrete floors are dry to a maximum moisture content of 7 percent, and exhibit negative alkalinity, carbonization, or dusting.
- B. Verify floor and lower wall surfaces are free of substances that may impair adhesion of new adhesive and finish materials.

3.2 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- B. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.
- D. Apply primer to metal surfaces.

3.3 INSTALLATION - SHEET FLOORING

- A. Install in accordance with manufacturer's instructions.
- B. Spread only enough adhesive to permit installation of materials before initial set.
- C. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Lay flooring with joints and seams in accordance with floor pattern plan for four-bed Pediatric Units and perpendicular to longest room dimension.
- E. Install sheet flooring parallel to width of room. Provide minimum of 1/3 full roll width. Double cut sheet, provide continuously heat welded seal.
- F. Terminate flooring at corridor side of door openings where adjacent floor finish is dissimilar.
- G. Install edge strips at unprotected or exposed edges, and where flooring terminates. Secure resilient strips by adhesive.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- I. At cabinets, install flooring under cabinet without interrupting floor pattern.
- J. Install feature strips where indicated. Fit joints tightly.

3.4 INSTALLATION - BASE

- A. Fit joints tight and vertical. Maintain minimum measurement of 24 inches between joints.
- B. Miter internal corners. At external corners, fold units.

SECTION 09650

RESILIENT FLOORING

1PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Resilient sheet flooring.
- B. Resilient base.

1.2 RELATED SECTIONS

- A. Section 09260 - Gypsum Board Systems: Wall materials to receive application of base.

1.3 REFERENCES

- A. ASTM E84 - Surface Burning Characteristics of Building Materials.
- B. FS LLL-F-1238A - Natural Resilient Floor Covering with Backing.
- C. FS SS-W-40 - Wall Base: Rubber.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate seaming plan and patterns as indicated on drawings.
- C. Product Data: Provide data on specified products, describing physical and performance characteristics, sizes, patterns and colors available.
- D. Samples: Submit two samples, 12 x 12 inch in size illustrating color and pattern for each floor material for each color specified.
- E. Submit two 4 inch long samples of base material for each color specified.
- F. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and recommended adhesive for prepared substrate.

1.5 REGULATORY REQUIREMENTS

- A. Conform to NFPA 101 - Life Safety Code for flames/smoke rating requirements of linoleum flooring in accordance with ASTM E84.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.
- B. Protect roll materials from damage by storing as recommended by manufacturer's written instructions.

1.7 ENVIRONMENTAL REQUIREMENTS

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B. Substitutions: Under provisions of Section 01600.

1.4 ACOUSTICAL UNIT MATERIALS

A. Acoustical Panels for Print Shop : Armstrong Product Fissured Minaboard: ASTM E 1264, conforming to the following:

1. Size: 24 x 24 inches and 24 x 48 inches.
2. Thickness: 5/8 inches.
3. Composition: Wet-formed Mineral fiber.
4. Light Reflectance: LR1 (min. 0.75) percent.
5. NRC Range: .55 to .60.
6. CAC Range: 35 to 39.
7. Surface Burning Classification: Class A per ASTM E 1264. Flame spread 25 or under.
8. Edge: Square.
9. Surface Color: White.
10. Surface Finish: Directional fissured.

1.5 ACCESSORIES

A. Touch-up Paint: Type and color to match acoustical and grid units.

2 PART 3 EXECUTION

2.1 EXAMINATION

- A. Verify site conditions under provisions of Section 01039.
- B. Verify that layout of hangers will not interfere with other work.

2.2 INSTALLATION - LAY-IN GRID SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636, manufacturer's written instructions, and orientation of existing ceiling to be extended.
- B. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
- C. Lay out system in new ceiling areas to a balanced grid design with edge units no less than 50 percent of acoustical unit size in new rooms.
- D. Expand ceiling system in existing ceiling areas to match existing layout.
- E. Install after major mechanical and electrical work is complete. Coordinate the location of hangers with other work.
- F. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support luminaire fixture loads by supplementary hangers located within 6 inches of each corner, or support components independently.

SECTION 09511

SUSPENDED ACOUSTICAL CEILINGS

1PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Suspended metal grid ceiling system and perimeter trim.
- B. Acoustical panels.
- C. Non-fire rated assembly.

1.2 RELATED SECTIONS

- A. Section 15325 - Sprinkler Systems: Sprinkler heads in ceiling system.
- B. Section 16510 - Interior Luminaires: Light fixtures in ceiling system.
- C. Section 16721 - Fire Alarm and Smoke Detection Systems: Fire alarm components in ceiling system.

1.3 REFERENCES

- A. ASTM C635 - Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

1.4 SYSTEM DESCRIPTION

- A. Suspension system to rigidly secure acoustical ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate grid layout and related dimensioning, extension of existing ceiling, interrelation of mechanical and electrical items related to system and and special conditions.
- C. Product Data: Provide data on metal grid system components, acoustical panel units and existing ceiling panels.
- D. Samples: Submit one sample 6 x 6 inch in size illustrating material and finish of acoustical units.
- E. Samples: Submit one sample, 12 inches long, of suspension system main runner, cross runner, and edge trim.
- F. Manufacturer's Installation Instructions: Indicate special procedures, existing ceiling conditions, perimeter conditions requiring special attention, and verify that new extended system components are compatible with existing system components.

1.6 QUALIFICATIONS

- A. Grid Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

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- B. Shop Drawings: Indicate special details associated with fireproofing, slip tracks, acoustical seals, and smoke proof seals.
- C. Product Data: Provide data on metal framing, gypsum board, joint tape, and screw fasteners.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C840.
- B. Maintain one copy of each document on site.

1.7 QUALIFICATIONS

- A. Applicator: Company specializing in performing the work of this section with minimum five years documented experience.

1.8 REGULATORY REQUIREMENTS

- A. Conform to NFPA-101: Life Safety Code; Latest Edition code for fire rated assemblies in conjunction with Section 09111 as follows:
 - 1. Fire Rated Partitions: Listed assembly by GA File No. WP 1200.
 - 2. Fire Rated Structural Column Framing: Listed assembly by GA File No. CM 3120 for 3 Hr. rated column enclosure.

2 PART 2 PRODUCTS

2.1 MANUFACTURERS - GYPSUM BOARD SYSTEM

- A. Sheetrock Brand Product Gypsum panels - 5/8 inch Firecode Core Gypsum Wallboard, Type X gypsum board complying with ASTM C36.
- B. Sheetrock Brand Product Gypsum Panels - 1/2 & 5/8 inch Water-Resistant gypsum board complying with ASTM C630.
- C. Sheetrock Brand Product Gypsum Panels - 1/2 & 3/8 inch Gypsum Panels
- D. Substitutions: Under provisions of Section 01600.

2.2 GYPSUM BOARD MATERIALS

- A. Standard Gypsum Board: ASTM C36; 1/2 inch thick, maximum permissible length; ends square cut, tapered and beveled square edges.
- B. Fire Rated Gypsum Board: ASTM C36; fire resistive type, UL rated; 5/8 inch thick, maximum permissible length; ends square cut, tapered and beveled square edges.
- C. Moisture Resistant Gypsum Board: ASTM C630; 1/2 and 5/8 inch thick, maximum permissible length; ends square cut, tapered and beveled square edges.

3 PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under provisions of Section 01039.

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members to avoid deflection transfer to studs. Provide extended leg ceiling runners.

- P. Coordinate placement of insulation in stud spaces made inaccessible after stud framing erection.

3.3 ERECTION TOLERANCES

- A. Maximum Variation From True Position: 1/8 inch.
- B. Maximum Variation of any Member from Plane: 1/8 inch.
- C. Maximum Variation From Plumb: 1/8 inch.

END OF SECTION

- C. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement to framing connections.
- D. Product Data: Provide data describing standard framing member materials and limitations.
- E. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C754.
- B. Maintain one copy of each document on site.

1.8 QUALIFICATIONS

- A. Installer: Company specializing in performing the work of this section with minimum five years documented experience.
- B. Design structural elements under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State of Maine.

1.9 COORDINATION

- A. Coordinate work under provisions of Section 01039.
- B. Coordinate with the placement of components within the stud framing system, specified in Section 06114: Wood Blocking and Curbing.

2 PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Dietrich Industries Inc. Product Big "D" Drywall Products.
- B. Substitutions: Under provisions of Section 01600.

2.2 STUD FRAMING MATERIALS

- A. Studs: ASTM A525, non-load bearing rolled steel, channel shaped, punched for utility access, in range of sizes indicated on drawings.
 - 1. Depth: 2-1/2, 3-5/8, and 6 inches.
 - 2. Thickness: 20 gage.
- B. Runners: Of same material and thickness as studs, bent leg retainer notched to receive studs with provision for crimp locking to stud. Ceiling Runners: With extended leg retainer.
- C. Furring and Bracing Members: Of same material as studs; thickness to suit purpose.
- D. Fasteners: Self drilling, self tapping screws.
- E. Anchorage Devices: Drilled expansion bolts.
- F. Sealant: As specified in Section 09260.

3.7 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. After installation of full height glazing, mark pane with an 'X' by using removable plastic tape or paste.

END OF SECTION

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.8 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop Drawings and in conformance with applicable codes.

1.9 COORDINATION

- A. Coordinate Work under provisions of Section 01039.
 - B. Coordinate the Work with glazing frames, wall openings, doors and adjacent Work.
- 1.10 WARRANTY
- A. Provide five year manufacturer's warranty under provisions of Section 01700.

1.11 EXTRA MATERIALS

- A. Furnish under provisions of Section 01700.

2 PART 2 PRODUCTS

- A. Wire Glass (Type FG-G): Clear, polished both sides, square mesh of woven stainless steel wire of ½ inch grid size.

2.1 PLASTIC SHEET MATERIALS

- A. Polycarbonate Sheet (Type PS-A): plastic compound, translucent, ultraviolet stabilized, silicone abrasion resistant coating for scratch resistance; 1/4 inch thick minimum.

2.2 GLAZING COMPOUNDS

- A. Silicone Sealant (Type GC-F): Class A, single component, solvent curing, capable of water immersion without loss of properties; cured Shore A hardness of 15-25, clear color.

2.3 GLAZING ACCESSORIES

- A. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 - 15 Shore A durometer hardness; coiled on release paper, black color.
- B. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot, black color.
- C. Glazing Clips: Manufacturer's standard type.
- D. Mirror Attachment Accessories: Plastic rosettes and Mirror adhesive, chemically compatible with mirror coating and wall substrate.

3 PART 3 EXECUTION

3.1 EXAMINATION

B. Do not permit adjacent work to damage hardware or finish.

END OF SECTION