3 MORTAR COLOR

A. Mortar Color: Mineral oxide pigment; gray color.

3.1 MORTAR MIXES

A. Mortar for Load Bearing Walls and Partitions: ASTM C270, Type M using the Property Method utilizing the Proportion Method to achieve 3500 psi strength.

B. Pointing Mortar: ASTM C270, Type M or S, using the Property Method with maximum 2 percent ammonium stearate or calcium stearate per cement weight.

3.2 MORTAR MIXING

A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C270.

B. Add mortar color in accordance with manufacturer's instructions. Provide uniformity of mix and coloration.

C. Do not use anti-freeze compounds to lower the freezing point of mortar.

D. If water is lost by evaporation, retemper only within two hours of mixing.

E. Use mortar within two hours after mixing at temperatures of 80 degrees F (26 degrees C), or two-and-one-half hours at temperatures under 50 degrees F (10 degrees C).

3 PART 3 EXECUTION

3.1 EXAMINATION

A. Request inspection of spaces to be grouted.

3.2 PREPARATION

A. Apply bonding agent to existing concrete surfaces.

B. Plug cleanout holes with block masonry units to prevent leakage of grout materials. Brace masonry for wet grout pressure.

3.3 INSTALLATION

A. Install mortar in accordance with premix mortar manufacturer's instructions.
B. Work grout into masonry cores and cavities to eliminate voids.

C. Do not displace reinforcement while placing grout.

D. Remove grout spaces of excess mortar.

END OF SECTION

SECTION 04100

MORTAR

1PART 1 GENERAL

1.1 SECTION INCLUDES

A. Mortar for masonry.

1.2 RELATED WORK

A. Section 01400 - Quality Control: Testing laboratory services.

B. Section 04300 - Unit Masonry System: Installation of mortar.

C. Section 08111 - Standard Steel Doors and Frames: Grouting steel door frames.

1.3 REFERENCES

A. ASTM C5 - Quicklime for Structural Purposes.

B. ASTM C91 - Masonry Cement.

C. ASTM C94 - Ready-Mixed Concrete.

D. ASTM C150 - Portland Cement.

E. ASTM C207 - Hydrated Lime for Masonry Purposes.

F. ASTM C270 - Mortar for Unit Masonry.

G. ASTM C476 - Grout for Masonry.

H. ASTM C780 - Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.

I. ASTM C1019 - Method of Sampling and Testing Grout.

J. IMIAC - International Masonry Industry All-Weather Council: Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

1.4 SUBMITTALS

A. Submit product data under provisions of Section 01340.

B. Include design mix, indicate Proportion or Property method used, required environmental conditions, and admixture limitations.

C. Samples: Submit under provisions of Section 01340.

D. Samples: Submit two ribbons of mortar color, illustrating color and color range.

3 PART 3 EXECUTION

3.1 EXAMINATION

A. Verify site conditions under provisions of Section 01039.

B. Verify that building structure, anchors, devices, and openings are ready to receive work of this Section.

3.2 PREPARATION

A. Provide for erection procedures and induced loads during erection. Maintain temporary bracing in place until final support is provided.

B. Provide necessary hoisting equipment.

3.3 ERECTION

A. Erect units without damage to shape or finish. Replace or repair damaged panels.

B. Erect units level and plumb within allowable tolerances.

C. Align and maintain uniform horizontal and vertical joints as erection progresses.

D. When units require adjustment beyond design or tolerance criteria, discontinue affected work; advise Architect/Engineer.

E. Fasten and Weld units in place. Perform welding in accordance with ANSI/AWS D1.1.

F. Touch-up field welds and scratched or damaged primed painted surfaces.

G. Set vertical units dry, without grout, attaining joint dimension with lead or plastic spacers. Pack grout to base of unit.

H. Exposed Joint Dimension: 1/2 inch.

3.4 ERECTION TOLERANCES

A. Maximum Variation from Plane of Location: 1/4 inch in 10 feet and 3/8 inch in 100 feet, non cumulative.

B. Maximum Offset from True Alignment Between Two Connecting Units: 1/4 inch.

C. Joint Tolerance: Plus or minus 1/4 inch.

3.5 ADJUSTING

A. Adjust work under provisions of Section 01700.

B. Adjust units so that joint dimensions are within tolerances.

3.6 PROTECTION

A. Protect units from damage.

2 PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Spancrete Northeast Inc.

B. Stresscon Limited

C. Substitutions: Under provisions of Section 01600.

2.2 CONCRETE MATERIALS

A. Cement: ANSI/ASTM C150, Portland Type I - Normal buff color.

B. Concrete Materials: ASTM C33; water and sand.

C. Reinforcing Steel: ASTM A615, deformed steel bars epoxy finish, strength and size commensurate with precast unit design.

D. Air Entrainment Admixture: ANSI/ASTM C260.

E. Admixtures: None.

F. Surface Finish Aggregate: Clean, washed angular natural gravel; 3/4 inch size, blue color, from single source throughout the Work , conforming to ASTM C33.

G. Grout: Non-shrink, minimum 10,000 psi 28 day strength.

H. Grout: Thermo-setting epoxy.

2.3 SUPPORT DEVICES

A. Connecting and Support Devices: ANSI/ASTM A36 weldable general construction steel ANSI/ASTM A666.

B. Bolts, Nuts, and Washers: ANSI/ASTM A307 high strength steel.

C. Primer: Zinc rich oil alkyd.

2.4 ACCESSORIES

A. Bearing Pads: Steel, 1/8 inch thick, smooth both sides.

B. Sealant: Type NS as specified in Section 07900.

2.5 MIX

A. Concrete: Minimum 5000 psi, 28 day strength, air entrained to 5 to 7 percent in accordance with ANSI/ACI 301.

2.6 FABRICATION

A. Fabrication procedure to conform to PCI MNL-117.

I. ANSI/ASTM C260 - Air-Entraining Admixtures for Concrete.

J. ANSI/AWS D1.1 - Structural Welding Code.

K. ASTM A325 - High Strength Bolts for Structural Steel Joints.

L. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.

M. ASTM C33 - Concrete Aggregates.

N. PCI Manual For Structural Design of Architectural Precast Concrete.

O. PCI MNL-117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products.

1.5 DESIGN REQUIREMENTS

A. Design units to withstand design loads as calculated in accordance with BOCA code- 1999 edition, and erection forces. Calculate structural properties of units in accordance with ANSI/ACI 318.

B. Design units to accommodate construction tolerances, deflection of building structural members and clearances of intended openings.

C. Design and size components to withstand seismic loads and sway displacement as calculated in accordance with BOCA code - 1999 edition.

D. Design component connections to accommodate building movement and thermal movement. Provide adjustment to accommodate misalignment of structure without unit distortion or damage.

1.6 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Shop Drawings: Indicate layout, unit locations, configuration, unit identification marks, reinforcement, connection details, support items, location of lifting devices, dimensions, openings, and relationship to adjacent materials. Provide erection drawings.

C. Samples: Submit two panels, 24 x 24 inch in size illustrating surface finish, color and texture.

1.7 MAINTENANCE DATA

A. Submit under provisions of Section 01700.

B. Maintenance Data: Indicate surface cleaning, weatherproofing and maintenance instructions.

1.8 QUALITY ASSURANCE

A. Perform Work in accordance with ANSI/ACI 318.

B. Welding: ANSI/AWS D1.1.

C. Maintain one copy of each document on site.

G. One slump test will be taken for each set of test cylinders taken.

3.8 PATCHING

A. Allow Architect/Engineer to inspect concrete surfaces immediately upon removal of forms.

B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect/Engineer upon discovery.

C. Patch imperfections as directed and in accordance with ACI 301.

3.9 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by the Architect/Engineer.

C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

END OF SECTION

3 PART 3 EXECUTION

3.1 EXAMINATION

A. Verify site conditions under provisions of Section 01039.

B. Verify requirements for concrete cover over reinforcement.

C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.2 PREPARATION

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

3.3 PLACING CONCRETE

A. Place concrete in accordance with ACI 304.

B. Notify Architect/Engineer minimum 24 hours prior to commencement of operations.

C. Ensure reinforcement, inserts, embedded parts, formed joint fillers, joint devices and under-slab piping are not disturbed during concrete placement.

D. Install vapor barrier under interior slabs on grade. Lap joints minimum 6 inches and seal watertight by sealant applied between overlapping edges and ends.

E. Repair vapor barrier damaged during placement of concrete reinforcing. Repair with vapor barrier material; lap over damaged areas minimum 6 inches and seal watertight.

F. Install joint fillers, primer and sealant in accordance with manufacturer's instructions.

G. Separate slabs on grade from vertical surfaces with 1/2" inch thick joint filler.

H. Extend joint filler from bottom of slab to within 1/4 inch of finished slab surface. Conform to Section 07900 for finish joint sealer requirements.

I. Install joint devices in accordance with manufacturer's instructions.

J. Install construction joint device in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

K. Install joint device anchors. Maintain correct position to allow joint cover flush with [floor] [and] [wall] finish.

L. Install joint covers in longest practical length, when adjacent construction activity is complete.

M. Apply sealants in joint devices in accordance with Section 07900.

K. ASTM C150 - Portland Cement.

L. ASTM C260 - Air Entraining Admixtures for Concrete.

M. ASTM C330 - Light Weight Aggregates For Structural Concrete.

N. ASTM C494 - Chemicals Admixtures for Concrete.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Provide data on joint devices, and attachment accessories.

C. Samples: Submit two inch long samples of expansion/contraction joint and control joint.

D. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent Work.

1.5 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01700.

B. Accurately record actual locations of embedded utilities and components which are concealed from view.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301.

B. Maintain one copy of each document on site.

C. Acquire cement and aggregate from same source for all work.

D. Conform to ACI 305R when concreting during hot weather.

E. Conform to ACI 306R when concreting during cold weather.

1.7 FIELD SAMPLES

A. Provide under provisions of Section 01400. Coordinate with Section 03100.

C. If requested by Architect/Engineer, cast concrete against sample panel. Obtain acceptance of resultant surface finish prior to erecting formwork.

D. Accepted sample panel is considered basis of quality for the finished work. Keep sample panel exposed to view for duration of concrete work.

E. Accepted sample may remain as part of the Work.

1.9 COORDINATION

A. Coordinate work under provisions of Section 01039.

3 PART 3 EXECUTION

3.1 PLACEMENT

A. Place, support and secure reinforcement against displacement. Do not deviate from required position.

B. Do not displace or damage vapor barrier.

C. Accommodate placement of formed openings.

D. Conform to applicable code for concrete cover over reinforcement.

3.2 FIELD QUALITY CONTROL

A. Field inspection will be performed under provisions of Section 01400.

END OF SECTION

SECTION 03200

CONCRETE REINFORCEMENT

1PART 1 GENERAL

1.1 SECTION INCLUDES

A. Reinforcing steel bars, wire fabric and accessories for cast-inplace concrete.

1.2 RELATED SECTIONS

A. Section 03100 - Concrete Formwork.

B. Section 03300 - Cast-in-Place Concrete.

C. Section 04300 - Unit Masonry System

D. Section 03346 - Concrete Floor Finishing: Reinforcement for concrete floor toppings.

1.3 REFERENCES

A. ACI 301 - Structural Concrete for Buildings.

B. ACI 318 - Building Code Requirements For Reinforced Concrete.

C. ACI SP-66 - American Concrete Institute - Detailing Manual.

D. ANSI/ASTM A82 - Cold Drawn Steel Wire for Concrete Reinforcement.

E. ANSI/ASTM A184 - Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.

F. ANSI/ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.

G. ANSI/ASTM A496 - Deformed Steel Wire Fabric for Concrete Reinforcement.

H. ANSI/ASTM A497 - Welded Deformed Steel Wire Fabric for Concrete Reinforcement.

I. ANSI/AWS D1.4 - Structural Welding Code for Reinforcing Steel.

J. ANSI/AWS D12.1 - Reinforcing Steel Welding Code.

K. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.

L. CRSI - Concrete Reinforcing Steel Institute Manual of Practice.

M. CRSI 63 - Recommended Practice For Placing Reinforcing Bars.

N. CRSI 65 - Recommended Practice For Placing Bar Supports, Specifications and Nomenclature.

1.4 SUBMITTALS

B. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.

C. Corners: Filleted, steel; maximum possible lengths.

D. Dovetail Anchor Slot: Galvanized steel, 22 gage thick, non-filled, release tape sealed slots, anchors for securing to concrete formwork.

E. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages:Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

3 PART 3 EXECUTION

3.1 EXAMINATION

A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with Drawings.

3.2 EARTH FORMS

A. Earth forms are not permitted.

3.3 ERECTION - FORMWORK

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.

B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.

D. Align joints and make watertight. Keep form joints to a minimum.

E. Obtain approval before framing openings in structural members which are not indicated on Drawings.

3.4 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings which are effected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.5 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for items to be embedded in or passing through concrete work.

B. Locate and set in place items which will be cast directly into concrete.

C. Coordinate work of other Sections in forming and placing openings, slots, reglets, recesses, chases, sleeves, bolts,

SECTION 03100

CONCRETE FORMWORK

1PART 1 GENERAL

1.1 SECTION INCLUDES

A. Formwork for cast-in place concrete, with shoring, bracing and anchorage for all concrete above the plane of the top of the concrete deck. Pile reinforced concrete deck by others, NITC.

B. Openings for other work.

C. Form accessories.

D. Form stripping.

1.2 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

A. Section 03300 - Cast-In-Place Concrete: Supply of concrete accessories for placement by this Section.

B. Section 05500 - Metal Fabrications: Supply of metal fabrications for placement by this Section.

1.3 RELATED SECTIONS

A. Section 03200 - Concrete Reinforcement.

B. Section 03300 - Cast-in-Place Concrete.

1.4 REFERENCES

A. ACI 347 - Recommended Practice For Concrete Formwork.

B. ANSI/ASME A17.1 - Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks.

C. PS-1 - Construction and Industrial Plywood.

1.5 DESIGN REQUIREMENTS

A. Design, engineer and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line and dimension.

1.6 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Shop Drawings: Indicate pertinent dimensions, materials, bracing, and arrangement of joints and ties.

C. Product Data: Provide data on void form materials and installation requirements.

1.7 QUALITY ASSURANCE

1.8 REGULATORY REQUIREMENTS

A. Conform to applicable code for materials and installation of the Work of this section.

1.9 FIELD MEASUREMENTS

A. Verify that field measurements and elevations are as indicated.

1.10 COORDINATION

A. Coordinate work under provisions of Section 01039.

B. Coordinate the Work with termination of sanitary sewer connection outside building, connection to municipal sewer utility service, and trenching.

2 PART 2 PRODUCTS

2.1 SEWER PIPE MATERIALS

A. Plastic Pipe: ANSI/ASTM D2729, Poly(Vinyl Chloride) (PVC) material; inside nominal diameter of 6 inches, bell and spigot style solvent sealed joint end.

2.2 PIPE ACCESSORIES

A. Pipe Joints: Mechanical clamp ring type, stainless steel expanding and contracting sleeve, neoprene ribbed gasket for positive seal.

B. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

C. Trace Wire: Magnetic detectable conductor, brightly colored plastic covering, imprinted with "Sewer Service" in large letters.

2.3 BEDDING MATERIALS

A. Bedding: Fill Type A1as specified in Section 02222.

3 PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

3.2 PREPARATION

A. Hand trim excavations to required elevations. Correct over excavation with fine aggregate.

B. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling or compaction.

3.3 BEDDING

E. Prior to setting the precast roof section, bitumen sealant equal to ASTM C990 shall be placed along the top of the baffle wall, using more than one layer of mastic if necessary, to a thickness at least one inch (1") greater than the nominal gap between the top of the baffle and the roof section. The nominal gap shall be determined either by field measurement or the shop drawings. After placement of the roof section has compressed the butyl mastic sealant in the gap, finish sealing the gap with an approved non-shrink grout on both sides of the gap using the butyl mastic as a backing material to which to apply the grout. Also apply non-shrink grout to the joints at the side edges of the baffle wall.

F. After setting the precast roof section of the storm water treatment system, set precast concrete manhole riser sections, to the height required to bring the cast iron manhole covers to grade, so that the sections are vertical and in true alignment with a 1/4 inch maximum tolerance allowed. Backfill in a careful manner, bringing the fill up in 6" lifts on all sides. If leaks appear, clean the inside joints and caulk with lead wool to the satisfaction of the Engineer. Precast sections shall be set in a manner that will result in a watertight joint. In all instances, installation of Storm water Treatment Systems shall conform to ASTM specification C891 "Standard Practice For Installation of Underground Precast Utility Structures".

G. Plug holes in the concrete sections made for handling or other purposes with a non-shrink grout or by using grout in combination with concrete plugs.

H. Where holes must be cut in the precast sections to accommodate pipes, do all cutting before setting the sections in place to prevent any subsequent jarring which may loosen the mortar joints. The Contractor shall make all pipe connections.

END OF SECTION

B. Affidavit on patent infringement

The Contractor shall submit to the Engineer, prior to installation of the stormwater treatment system, an affidavit regarding patent infringement rights stating that any suit or claim against the Owner due to alleged infringement rights shall be defended by the Contractor who will bear all the costs, expenses and attorney's fees incurred thereof.

PART 2.00 PRODUCTS

2.01 MATERIALS AND DESIGN

A. Concrete for precast storm water treatment systems shall conform to ASTM Designation C 857 and C 858 and meet the following additional requirements:

The wall thickness shall not be less than 6 inches or as shown on the dimensional drawings. In all cases the wall thickness shall be no less than the minimum thickness necessary to sustain HS20-44 loading requirements as determined by a Licensed Professional Engineer.

Sections shall have tongue and groove or ship-lap joints with a butyl mastic sealant conforming to ASTM C990.

Cement shall be Type III Portland cement conforming to ASTM Designation C 150.

Pipe openings shall be sealed by the Contractor with a hydraulic cement conforming to ASTM C595M, and shall be sized to accept pipes of the specified size(s) and material(s).

Internal metal components shall be aluminum alloy 5052-H32 in accordance with ASTM B209.

Brick or masonry used to build the manhole frame to grade shall conform to ASTM Designation C32 or ASTM Designation C 139 and the Masonry Section of these Specifications.

Casting for manhole frames and covers shall be in accordance with The Miscellaneous Metals Section of these Specifications.

All sections shall be cured by an approved method. Sections shall not be shipped until the concrete has attained a compressive strength of 4,000 psi or until 5 days after fabrication and/or repair, whichever is the longer.

A bitumen sealant in conformance with ASTM C990 shall be utilized in affixing the aluminum swirl chamber to the concrete vault.

2.02 PERFORMANCE

The storm water treatment system(s) shall adhere to the following performance specifications at the specified design flows, and storage capacities.

The storm water treatment system shall include a circular aluminum "swirl chamber" (or "grit chamber") with a tangential inlet to induce a swirling flow pattern that will accumulate and store settleable solids in a manner and a location that will prevent re-suspension of previously captured particulates. The swirl chamber diameter shall not be less than 4.0 feet, neglecting the chamber wall thickness.

The storm water treatment system shall be of a hydraulic design that includes flow controls designed and certified by a professional engineer using accepted principles of fluid mechanics that raise the water surface inside the tank to a pre-determined level in order to prevent the re-entrainment of trapped floating contaminants.

E. Mount lid and frame level in grout, secured to top cone section to elevation indicated.

3.6 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01400.

B. Request inspection prior to and immediately after placing aggregate cover over pipe.

C. Compaction testing will be performed in accordance with ANSI/ASTM D1557.

D. If tests indicate Work does not meet specified requirements, remove Work, replace and retest.

3.7 PROTECTION

A. Protect finished Work under provisions of Section 01500.

B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION

A. Submit under provisions of Section 01700.

B. Accurately record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.8 REGULATORY REQUIREMENTS

A. Conform to applicable code for installation of the Work of this section.

1.9 FIELD MEASUREMENTS

A. Verify that field measurements and elevations are as indicated on the drawings.

1.10 COORDINATION

A. Coordinate work under provisions of Section 01039.

B. Coordinate the Work with termination of storm sewer connection to existing outlet through seawall and trenching.

2 PART 2 PRODUCTS

2.1 SEWER PIPE MATERIALS

A. Plastic Pipe: ANSI/ASTM D3034, Type PSM, Poly(Vinyl Chloride) (PVC) material; inside nominal diameter of 12 inches, bell and spigot style rubber ring sealed gasket joint.

2.2 PIPE ACCESSORIES

A. Pipe Joints: Mechanical clamp ring type, stainless steel expanding and contracting sleeve, neoprene ribbed gasket for positive seal.

B. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

C. Filter Fabric: Water pervious type, Black polyester.

D. Trace Wire: Magnetic detectable conductor, brightly colored plastic covering, imprinted with "Storm Sewer Service in large letters.

2.3 CATCH BASINS

A. Lid and Frame: Cast iron construction as indicated on drawings:
   1. Lid Design: Linear grill.
   2. Nominal Lid and Frame Size: 24 x 24 inches.

B. Shaft Construction and Eccentric Top Section: Reinforced precast concrete pipe sections, lipped male/female dry joints, nominal shaft diameter of 36 inches.

C. Base Pad: Cast-in-place concrete of type specified in Section 03300.

2.4 BEDDING MATERIALS

C. Variation from True Elevation: Within ½ inch.

3.8 FIELD QUALITY CONTROL

A. Field inspection and] testing will be performed under provisions of Section 01400.

3.9 PROTECTION

A. Immediately after placement, protect pavement from mechanical injury for 2 days.

END OF SECTION

C. Obtain materials from same source throughout.

D. Maintain one copy copies of each document on site.

1.8 REGULATORY REQUIREMENTS

A. Conform to applicable Municipal Code for paving work on public property.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not place asphalt when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

2 PART 2 PRODUCTS

2.1 MATERIALS

A. Asphalt Cement: ASTM D946 In accordance with Municipality of Augusta standards.

B. Aggregate for Binder Course Mix: In accordance with Municipality of Portland standards.

C. Aggregate for Wearing Course Mix: In accordance with Municipality of Portland standards.

D. Fine Aggregate: In accordance with Municipality of Portland standards.

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

2.2 ACCESSORIES

A. Primer: Homogeneous, medium curing, liquid asphalt.

B. Tack Coat: Homogeneous, medium curing, liquid asphalt.

C. Seal Coat: Fibrated emulsion type; Fibrated Dampproofing manufactured by Karnak Corporation.

2.3 ASPHALT PAVING MIX

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

B. Binder Course: 4.5 to 6 percent of asphalt cement by weight in mixture in accordance with Municipality of Portland standards.

C. Wearing Course: 5 to 7 percent of asphalt cement by weight in mixture in accordance with Municipality of Portland standards.

2.4 SOURCE QUALITY CONTROL

A. Provide mix design for asphalt under provisions of Section 01400.

B. Submit proposed mix design for review prior to commencement of work.

3 PART 3 EXECUTION

C. Compaction testing will be performed in accordance with ANSI/ASTM D1557 and with Section 01400.

D. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

E. Proof roll compacted fill surfaces under slabs-on-grade, pavers, and paving.

3.6 PROTECTION OF FINISHED WORK

A. Protect finished Work under provisions of Section 01500.

B. Recompact fills subjected to vehicular traffic.

3.7 SCHEDULE

A. Interior structural slab:
   1. Type A fill, 12 inches thick, compacted to 98 percent,
   2. Cover with 10 mil reinforced polyethylene vapor barrier.
   3. Cover with Type C fill, 2 inches thick, compacted to 98 percent.

B. Exterior Side of Foundation Walls:
   1. Type B fill, to subgrade elevation, each lift, compacted to 95 percent after slab-on-grade is in place and foundations are fully cured.

C. Fill Under Grass Areas:
   1. Subsoil Type fill, to 8 inches below finish grade, compacted to 90 percent.

D. Fill Under Landscaped Areas:
   1. Subsoil Type fill, to 12 inches below finish grade, compacted to 90 percent.

E. Fill for Perimeter Drains:
   1. Type D fill, to 6 inches each side of pipe wrapped with "Mirafi" filter fabric.

F. Fill Under Concrete Paving:
   1. Type A fill, to 6 inches below finish paving elevation, compacted to 98 percent.
   2. Type B fill, from 6 inches to 18 inches below finish paving elevation, compacted to 98 percent. Cover with "Mirafi" filter fabric.

H. Fill to Correct Over-excavation:
   1. Type D fill, minimum 12 inches thick, compacted to 98 percent.

I. Bedding Fill under utilities:
   1. Type C fill to 12 inches above undisturbed suitable earth bearing, compacted to 90 percent.

END OF SECTION

3/8 inch	55 to 85
No. 4	35 to 60
No. 16	15 to 35
No. 40	10 to 25
No. 200	5 to 10

B. Type A1 - Gravel Subbase: **MeDOT Spec. 703.06 Type "D"** - Pit run, washed natural stone; free of shale, clay, friable material, sand, debris; graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size	Percent Passing
2 inches	100
One inch	95
3/4 inch	95
5/8 inch	75
3/8 inch	55 to 85
No. 4	35 to 60
No. 16	15 to 35
No. 40	10 to 25
No. 200	5 to 10

C. Type B - Pea Gravel: Natural stone; washed, free of clay, shale, organic matter; graded in accordance with ANSI/ASTM C136, to the following:
1. Minimum Size: 1/4 inch.
2. Maximum Size: 5/8 inch.

D. Type C - Sand: Natural river or bank sand; washed: free of silt, clay, loam, friable or soluble materials, or organic matter; graded in accordance with ANSI/ASTM C136, within the following limits:

Sieve Size	Percent Passing
No. 4	100
No. 14	10 to 100
No. 50	5 to 90
No. 100	4 to 30
No. 200	0

2.2 Type D - 3/4 inch Crushed aggregate stone: Natural stone; crushed, washed: free of silt, clay, shale or organic matter; graded in accordance with ANSI/ASTM C136

A. Friable Loam free of glass, roots, and debris.

E. Subsoil: Imported free of gravel larger than 3 inch size, and organic debris.

F. Concrete: Structural concrete conforming to Section 03300 with a compressive strength of 2500 psi.

2.3 ACCESSORIES

A. Vapor Retardant: 10 mil thick, reinforced polyethylene.

3 PART 3 EXECUTION

3.1 EXAMINATION

temporary parking areas site structures.

C. Machine slope banks to angle of repose or less, until fully shored.

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

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

F. Hand trim excavation. Remove loose matter.

G. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume. Larger material will be removed if in close proximity to foundations or other structures or utilities as determined by the Architect. Use unit measurement criteria for removal and compensation.

H. Notify Architect/Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.

I. Correct unauthorized excavation at no extra cost to Owner.

J. Correct areas over-excavated by error in accordance with Section 02223: Backfilling.

K. Stockpile reusable Loam excavated material in area designated on site and remove excess unusable soil material not being reused, from site.

3.3 FIELD QUALITY CONTROL

A. Field inspection will be performed under provisions of Section 01400.

B. Provide for visual inspection of bearing surfaces.

3.4 PROTECTION

A. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

B. Protect bottom of excavations and soil adjacent to and beneath foundation, from freezing.

END OF SECTION

C. Subsoil and Topsoil Fill: Place and compact material in continuous layers not exceeding 8 inches compacted depth, compacted to 95 percent.

D. Maintain optimum moisture content of fill materials to attain required compaction density.

E. Slope grade away from building minimum 1 inches in 15 ft, unless noted otherwise.

F. Make grade changes gradual. Blend slope into level areas.

G. Remove surplus fill materials from site.

3.6 TOLERANCES

A. Top Surface of Subgrade: Plus or minus 1/10 foot.

3.7 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01400.

B. Tests and analysis of fill material will be performed in accordance with ANSI/ASTM D1557 and with Section 01400.

C. Compaction testing will be performed in accordance with ANSI/ASTM D1557 and with Section 01400.

D. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

E. Frequency of Tests: Perform tests after subgrades are raised 2 layers or 16".

END OF SECTION

SECTION 02211

ROUGH GRADING

1PART 1 GENERAL

1.1 SECTION INCLUDES

A. Removal of topsoil and subsoil.

B. Cutting, grading, filling and rough contouring the site.

1.2 RELATED SECTIONS

A. Section 01400 - Quality Control: Testing fill compaction.

B. Section 02060 - Building Demolition.

C. Section 02110 - Site Clearing.

D. Section 02222 - Excavation: Building excavation.

E. Section 02223 - Backfilling: General building area backfilling.

F. Section 02921 - Landscape Grading: Finish grading with topsoil to contours.

1.3 REFERENCES

A. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb Rammer and 18 inch Drop.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Samples: Submit 10 lb. sample of each type of fill to testing laboratory, in air-tight containers.

1.5 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01700.

B. Accurately record actual locations of utilities remaining, by horizontal dimensions, elevations or inverts, and slope gradients.

2 PART 2 PRODUCTS

2.1 MATERIALS

A. Topsoil: Excavated material, graded, free of roots, rocks larger than 1 inch, subsoil, debris, and large weeds.

B. Subsoil: Excavated material, graded, free of lumps larger than 6, rocks larger than 5 inches, and debris.

24 pound white paper.

E. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.

F. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
1. Significant design criteria.
2. List of equipment.
3. Parts list for each component.
4. Operating instructions.
5. Maintenance instructions for equipment and systems.
6. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

G. Part 3: Project documents and certificates, including the following:
1. Shop drawings and product data.
2. Air and water balance reports.
3. Certificates.
4. Photocopies of warranties.

H. Submit one copy of completed volumes in final form 15 days prior to final inspection. This copy will be returned after final inspection, with Architect/Engineer comments. Revise content of documents as required prior to final submittal.

I. Submit final volumes revised, within ten days after final inspection.

1.8 WARRANTIES

A. Provide notarized copies.

B. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.

C. Provide Table of Contents and assemble in three D side ring binder with durable plastic cover.

D. Submit prior to final Application for Payment.

E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.9 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.

B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

2 PART 2 PRODUCTS

SECTION 01700

CONTRACT CLOSEOUT

1PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Adjusting.

D. Project record documents.

E. Operation and maintenance data.

F. Warranties.

G. Spare parts and maintenance materials.

1.2 RELATED SECTIONS

A. Section 01500 - Construction Facilities and Temporary Controls: Progress cleaning.

B. Section 01650 - Starting of Systems: System start-up, testing, adjusting, and balancing.

1.3 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspection.

B. Provide submittals to Architect/Engineer that are required by governing or other authorities.

C. Submit final Application for Payment identifying total adjusted Contract Price, previous payments, and sum remaining due.

D. Owner will occupy all portions of the building as specified in Section 01011.

1.4 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to a sanitary condition.

D. Clean filters of operating equipment.

C. Provide off-site storage and protection when site does not permit on-site storage or protection.

D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.

E. Store loose granular materials on solid flat surfaces in a well-drained area and remote from siltation fences and wetlands as indicated on erosion control plans.

F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.6 PRODUCT OPTIONS

A. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications with a provision for substitutions: Submit a request for substitution for any manufacturer not named.

1.7 SUBSTITUTIONS

A. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this Section. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.

B. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

C. A request constitutes a representation that the Bidder:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the Substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner for review or redesign services associated with re-approval by Architect/Engineer and authorities.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitution Submittal Procedure:

6. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
7. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.
8. The Architect/Engineer will notify Contractor, in writing, of decision to accept or reject request.

2 PART 2 PRODUCTS

Not Used

SECTION 01540

SECURITY

1PART 1 GENERAL

1.1 SECTION INCLUDES

A. Security Program.

B. Entry Control.

1.2 RELATED SECTIONS

A. Section 01011 - Summary of Project: Contractor use of premises and Owner occupancy.

B. Section 01500 - Construction Facilities and Temporary Controls: Temporary lighting. Barriers and enclosures.

1.3 SECURITY PROGRAM

A. Protect Work existing premises and Owner's operations from theft, vandalism, and unauthorized entry.

B. Maintain program throughout construction period until Owner acceptance precludes the need for Contractor security.

1.4 ENTRY CONTROL

A. Restrict entrance of persons and vehicles into Project site and existing facilities.

B. Allow entrance only to authorized persons with proper identification.

C. Maintain log of workmen and visitors, make available to Owner on request.

D. Contractor shall control entrance of persons and vehicles related to Owner's operations.

2 PART 2 PRODUCTS

Not Used

3 PART 3 EXECUTION

Not Used

END OF SECTION

D. Provide means of removing mud from vehicle wheels before entering streets.

E. Existing on-site accessways may be used for construction traffic.

1.17 PARKING

A. Provide temporary gravel surface parking areas to accommodate construction personnel.

B. When site space is not adequate, provide additional off-site parking.

C. Do not allow vehicle parking on new paved areas.

1.18 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Remove waste materials, debris, and rubbish from site monthly and dispose off-site at contractors expense and in an approved manner by governing authorities. Dispose of hazardous materials, if any, with approved methods that will meet governing authorities' requirements.

1.18 PROJECT IDENTIFICATION

A. Provide 8'w x 6' h foot project sign of exterior grade plywood and wood frame construction, painted, with die cut vinyl, self-adhesive letters and self-adhesive corporate logo, to Architect/Engineer's design and colors.

B. List title of project, names of Owner, Architect/Engineer, professional sub-consultants, and Contractor. Major Subcontractors may be listed at the discretion of the Contractor.

C. Erect on site at locatior. established by Architect/Engineer.

D. No other signs are allowed without Owner permission except those required by law.

1.19 FIELD OFFICES AND SHEDS

A. Office: Weather-tight, with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture drawing rack and drawing display table.

B. Provide space for project meetings, with table and chairs to accommodate 4 persons.

C. Locate offices and sheds a minimum distance of 30 feet from existing and new structures.

1.20 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.

D. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

E. Maintain lighting and provide routine repairs.

F. Permanent building lighting may be utilized during construction.

1.5 TEMPORARY HEAT

A. Provide and pay for heat devices and heat as required to maintain specified conditions for construction operations.

B. Provide separate metering and reimburse Owner for cost of energy used. Enclose building prior to activating temporary heat in accordance with Article 1.13 - Exterior Enclosures in this Section.

C. Prior to operation of permanent equipment for temporary heating purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

D. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.6 TEMPORARY VENTILATION

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.7 TELEPHONE SERVICE

A. Provide, maintain and pay for telephone service to field office at time of project mobilization.

1.8 TEMPORARY WATER SERVICE

A. Provide, maintain and pay for suitable quality water service required for construction operations.

B. Provide separate metering and reimburse Owner for cost of water used.

C. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

1.9 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required sanitary facilities and enclosures. Existing facilities shall not be used.

1.10 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas but to allow for Owner's use of site at appropriate times, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

1.11 FENCING

B. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment.

C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Submit report in duplicate within 30 days of observation to Architect/Engineer for review.

2 PART 2 PRODUCTS

Not Used

3 PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01400

QUALITY CONTROL

1PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality assurance and control of installation.

B. References.

C. Field samples.

D. Mock-up.

E. Inspection and testing laboratory services.

F. Manufacturers' field services and reports.

1.2 RELATED SECTIONS

A. Section 01090 - Reference Standards.

B. Section 01300 - Submittals: Submission of Manufacturers' Instructions and Certificates.

C. Section 01600 - Material and Equipment: Requirements for material and product quality.

1.3 QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply fully with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.4 REFERENCES

A. Conform to reference standard by date of issue current on date of Owner-Contractor Agreement when there are no dates specified in product Sections.

successful performance of the completed Work.

G. Provide space for Contractor and Architect/Engineer review stamps.

H. Revise and resubmit submittals as required, identify all changes made since previous submittal.

I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.4 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial progress schedule in duplicate within 10 days after date of Owner-Contractor Agreement for Architect/Engineer review.

B. Revise and resubmit as required.

C. Submit a horizontal bar chart with separate line for each major section of Work or operation section of Work, identifying first work day of each week.

D. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.

E. Indicate estimated percentage of completion for each item of Work at each submission.

F. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and under Allowances.

1.5 PROPOSED PRODUCTS LIST

A. Within 15 days after date of Notice to Proceed, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.6 SHOP DRAWINGS

A. Submit the number of opaque reproductions which Contractor requires, plus two copies which will be retained by Architect/Engineer.

B. After review, distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 - Contract Closeout.

1.7 PRODUCT DATA

A. Submit the number of copies which the Contractor requires, plus two copies which will be retained by the Architect/Engineer.

B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.

C. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents

9. Procedures for maintaining record documents.
10. Requirements for start-up of equipment.
11. Inspection and acceptance of equipment put into service during construction period.

1.8 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within two days to Architect/Engineer, Owner, participants, and those affected by decisions made.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect/Engineer, as appropriate to agenda topics for each meeting.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems which impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

1.9 PREINSTALLATION CONFERENCES

A. When required in individual specification Section, convene a pre-installation conference at work site prior to commencing work of the Section.

B. Require attendance of parties directly affecting, or affected by, work of the specific Section.

C. Notify Architect/Engineer four days in advance of meeting date.

D. Prepare agenda, preside at conference, record minutes, and distribute copies within two days after conference to participants, with one copy to Architect/Engineer.

E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

2 PART 2 PRODUCTS

Not Used

3 PART 3 EXECUTION

Not Used

END OF SECTION

B. Contractor to locate and protect survey control and reference points.

C. Control datum for survey is mean sea level or 0.0'.

D. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

E. Submit certificate signed by the Land Surveyor that the elevations and locations of the Work are in conformance with the Contract Documents.

1.4 ALTERATION PROJECT PROCEDURES

A. Materials: As specified in product Sections; match existing products and work for patching and extending work.

B. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

C. Remove, cut, and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to specified condition.

D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

E. Where new work abuts or aligns with existing, perform a smooth and even transition. Patched work to match existing adjacent work in texture and appearance.

F. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect/Engineer.

G. Where a change of plane of 1/4 inch or more occurs, request instructions from Architect/Engineer.

H. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

I. Finish surfaces as specified in individual product Sections.

1.5 CUTTING AND PATCHING

A. Employ skilled and experienced installer to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements which affects:
   1. Structural integrity of element.
   2. Integrity of weather-exposed or moisture-resistant elements.
   3. Efficiency, maintenance, or safety of element.
   4. Visual qualities of sight-exposed elements.
   5. Work of Owner or separate contractor.

C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
   1. Fit the several parts together, to integrate with other Work.
   2. Uncover Work to install or correct ill-timed Work.
   3. Remove and replace defective and non-conforming Work.
   4. Remove samples of installed Work for testing.

Contract Sum/Price and Contract Time as provided in the Contract Documents.

H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

I. Change Order Forms: AIA G701; Change Order.

J. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.9 MEASUREMENT AND PAYMENT - UNIT PRICES

A. Authority: Measurement methods are delineated in the individual specification sections.

B. Take all measurements and compute quantities. The Architect/Engineer will verify measurements and quantities.

C. Unit Quantities: Quantities and measurements indicated in the Bid Form are for contract purposes only. Quantities and measurements supplied or placed in the Work shall determine payment. Actual quantities provided will determine payment.

D. Payment Includes: Full compensation for all required labor, Products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

E. Defect Assessment: The Work, or portions of the Work, not conforming to specified requirements, shall be replaced. If, in the opinion of the Architect/Engineer, it is not practical to remove and replace the Work, the Architect/Engineer will direct an appropriate remedy or adjust payment.

1.10 ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work as required.

C. Schedule of Alternates:

1. Alternate No. 1: Metal Roof Panels.

2 PART 2 PRODUCTS

Not Used

3 PART 3 EXECUTION

Not Used

END OF SECTION

3. On notification of selection by Architect/Engineer, Owner, execute purchase agreement with designated supplier and installer.
4. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
5. Promptly inspect Products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

E. Funds will be drawn from Cash Allowances only by Change Order.

F. Cash Allowances:

1. None at this time

1.4 CONTINGENCY ALLOWANCE

A. Include in the Contract, a stipulated sum/price of 7% (seven percent) of the contract sum for use upon Owner's instruction.

B. Contractor's costs for Products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Allowance.

C. Funds will be drawn from Contingency Allowance only by Change Order.

D. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.5 INSPECTION AND TESTING ALLOWANCES

A. Costs Included in Allowances: Cost of engaging an inspection or testing firm; execution of inspection and tests; and reporting results.

B. Costs Not Included in the Allowance:
1. Costs of incidental labor and facilities required to assist inspection or testing firm.
2. Costs of testing laboratory services required by Contractor separate from Contract Document requirements.
3. Costs of retesting upon failure of previous tests as determined by Architect/Engineer.

C. Payment Procedures:
1. Submit one copy of the inspection or testing firm's invoice with next application for payment.
2. Pay invoice on approval by Architect/Engineer.

D. Inspection and Testing Allowances:

1. Include the sum of $ 1500.00 for testing concrete specified in Section 03300.
2. Include the sum of $ 1000.00 for testing structural welds specified in Section 05120.

E. Funds will be drawn from inspection and testing allowances only by Change Order.

1.6 SCHEDULE OF VALUES

A. Submit typed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet.

B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement established in Notice to Proceed.

G. Section 01019 - Contract Considerations: Project meetings, Preconstruction conferences and Progress meetings.

H. Section 01019 - Contract Considerations: Submittals, Shop drawings, product data and samples.

I. Section 01400 - Quality Control: Contract quality control.

J. Section 01600 - Material and Equipment: Storage and protection.

1.6 TEMPORARY FACILITIES AND SERVICES SECTIONS APPLICABLE TO ALL CONTRACTS

A. Section 01500 - Construction Facilities and Temporary Controls: Temporary electricity and work lights.

B. Section 01500 - Construction Facilities and Temporary Controls: Separate telephone service required for the Work.

C. Section 01500 - Construction Facilities and Temporary Controls: Water hoses required for the Work.

D. Section 01500 - Construction Facilities and Temporary Controls: Progress cleaning of the Work; delivery of debris to collection receptacles.

E. Section 01500 - Construction Facilities and Temporary Controls. Field offices and sheds required for the Work.

2 PART 2 PRODUCTS

Not Used

3 PART 3 EXECUTION

Not Used

END OF SECTION

be mailed to the Owner and the Architect.

a). The General Contractor acknowledges that nothing in the performance of the Services of the Architect in connection with this project implies any undertaking for the benefit of, or which may be enforced by the Contractor, its subcontractors or suppliers, or the surety of any of them and that the obligations of the Architect runs solely to the benefit of the Owner.

b). Any conditions or terms in the agreement which are contrary to those stipulated in the General Conditions of the Contract AIA Form A201, shall take precedence over those in AIA Form A201.

PROGRESS PAYMENTS

14. Based upon applications for payment submitted to the OWNER'S Architect by the CONTRACTOR and Certificates for Payment issued by the Architect, the OWNER shall make Progress Payments on account of the Contract Sum to the CONTRACTOR as provided in the Contract Documents for the period ending the 1st day of the month as follows: Not later than 15 days following the end of the period covered by the Application for Payment, Ninety-Five Percent (95%) of the portion of the Contract Sum properly allocable to materials and equipment suitably stored at the site or at some other location agreed upon in writing, and insured, for the period covered by the Application for Payment, less the aggregate of the previous payments made by the OWNER; and upon substantial completion of the entire work, a sum sufficient to increase the total payments to one-hundred percent (100%) of the contract sum, less such amounts as the Architect shall determine for all incomplete work and unsettled claims as provided in the Contract Documents.

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the maximum rate permitted under the governing State Law at the time of the delinquency for the unpaid municipal taxes.

FINAL PAYMENT

15. Final payment; constituting the entire unpaid balance of the Contract Sum, shall be paid by the OWNER to the CONTRACTOR 30 (thirty) days after the work has been completed, the Contract has been fully performed, a Certificate of substantial completion has been executed, all punch list items have been completed and a final Certificate for Payment has been issued by the Architect.

REMEDIES

16. Except as otherwise agreed by the parties in writing, all disputes, claims, counterclaims and other matters in question between the OWNER and the CONTRACTOR arising out of or relating to this Agreement shall be decided by a Maine Court of Law of competent jurisdiction if all arbitration between parties is unresolved. This Agreement is made and shall be construed under the laws of the State of Maine. Except as otherwise expressly agreed by the parties in writing, exclusive venue for any such civil action shall be in the State of Maine.

EXTENT OF AGREEMENT

17. This Agreement represents the entire and integrated Agreement between OWNER and CONTRACTOR and supersedes all prior negotiations, representations, or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both the OWNER and the CONTRACTOR.

OWNER

_____ By: _____
Witness Its: _____

CONTRACTOR

_____ By: _____
Witness Its: _____

SPECIFICATIONS

1. The CONTRACTOR shall furnish all of the materials and perform all of the work shown on the drawings and described in the Project Manual Specifications entitled: "Renovations and Additions to Cornerstone Assembly of God" which are attached hereto and made a part hereof, and the CONTRACTOR covenants that he shall do everything required by the Agreement, the conditions of the Agreement (General, Supplementary and other Conditions), the Specifications, and the Drawings in return for payment as provided herein.

COMPLETION DATE

2. The work to be performed under this Agreement shall be commenced by _____ and substantially complete on or before _____.

CONTRACT PRICE

3. The OWNER shall pay the CONTRACTOR for the performance of the Agreement the sum of $ _____ Dollars _____.

(In words)

GUARANTEE

4. The CONTRACTOR shall guarantee his/her work against any defects in workmanship and materials for a period of one year (1 Year) from the date of the owners written acceptance of the project or Final payment.

PERMITS AND LICENSES

5. Permits and licenses necessary for the prosecution of the work shall secured and paid for by the CONTRACTOR.

OWNER'S RIGHT TO TERMINATE CONTRACT

6. If the Contractor should be adjudged a bankrupt, or if he/she should make a general assignment for the benefit of creditors, or if a receiver should be appointed on account of its insolvency, or if it should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials or if it should fail to make prompt payment to subcontractors or for material or for labor, or persistently disregard laws, or ordinances or otherwise be guilty of a substantial violation of any provisions of the Agreement, then the OWNER when sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the CONTRACTOR, and his Surety, seven (7) days written notice, terminate the employment of the CONTRACTOR and take possession of the premises and all materials, tools and appliances thereon and furnish the work by whatever method it may deem expedient. In such case, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Agreement amount shall exceed the expense of finishing the work, including compensation for additional Architectural/Engineering, Managerial and Administrative services, such excesses shall be paid to the CONTRACTOR. If such expenses shall exceed such unpaid balance, the CONTRACTOR shall pay the difference to the OWNER.

CONTRACTOR'S LIABILITY INSURANCE

7. The CONTRACTOR shall not commence the work under this Agreement until it has obtained all insurance required under this paragraph and such insurance has been approved by the OWNER, nor shall the CONTRACTOR allow any subcontractor to commence work on its subcontract until all similar issuance required of the subcontractor has been so obtained and approved.

(a) **WORKER'S COMPENSATION INSURANCE** - The CONTRACTOR shall take out and maintain during the life of this Agreement, Workers' Compensation Insurance for all of its employees employed at the site of the project and, in the case that any work is sublet, the CONTRACTOR shall require the subcontractor similarly to provide Workers' Compensation Insurance for all of

BID PROPOSAL FORM:

To: Proprietors of Custom House Wharf
5 Eastern Prom
Portland, Maine 04103

1. BASE BID

Having carefully examined the following documents:
Instruction to Bidders (AIA Document A701)
Supplementary Instruction to Bidders
Invitation to Bid
Bid Bond
Form of Agreement
Performance Bond (AIA Document A311)
Labor and Material Payment Bond (AIA Document A311)
General Conditions of the Contract (AIA Document A201)
Supplementary General Conditions
Specifications (Project Manual)
Construction Working Drawings
Addenda (if any) received and Acknowledged here_____
_____

All entitled **"Marine Use Facility; Custom House Wharf, Portland, Maine" prepared by David D. Leasure - Architectural Assoc. Inc. and Dated July 26, 2001** with addenda subsequently dated, having carefully examined the site and existing building and the conditions affecting the work; the undersigned bidder proposes to furnish all materials and labor to perform all the work indicated in accordance with the documents listed above, for the base bid sum of:

$ _____ or _____. (in words)

2. DATE OF COMPLETION

The undersigned bidder expects to be able to accomplish the work to the point of Substantial Completion in the following number of calender days, excluding legal holidays in _____ days _____.
(in words)

3. ALTERNATES

Several alternate proposals are requested and further defined in the instructions to bidders. The alternate proposals shall indicate the amount to be added to or to be deducted from the base bid should the alternate proposal(s) be accepted by the owner. Each alternate proposal shall include all costs for the proposals including materials, labor, equipment, operations, administration, overhead, profit, taxes and also include all costs for changes in the work that will be made necessary by acceptance of the alternate proposal.

Indicate below, the dollar amount in words and numerals for each alternate proposal. Circle add/deduct as applicable and if there will be no change in dollar amount for an alternate proposal(s) indicate by writing in "no change." (See paragraph on alternates in supplementary instruction to bidders).

Alternate #1 Metal Roof Panels Add/Deduct _____

the each bidder visits the site prior to submitting their bid. Please contact **Mr. Ken MacGowan for appointments at 871-1001.**

QUESTIONS AND ADDENDA:

If a bidder discovers any errors, omissions or ambiguities in the contract documents, he/she shall notify the Architect promptly who in turn shall issue any clarifications, additions or interpretations by addenda to the bidders. No extras will be awarded for oversights by the General Contractor or his/her Sub-contractors in failing to understand the plans, specifications, and addenda

Each bidder shall be responsible for checking that he/she has received all addenda and has thoroughly reviewed all the construction documents. No addendum shall be issued within 48 hours (48 hours) of the scheduled time for the bid opening unless it is one which postpones the bid opening.

PRE-BID CONFERENCE:

David D. Leasure Architectural Assoc. Inc. shall hold a pre-bid conference on ___TBA___ at the project site, 47 Custom House Wharf, Portland, Maine. The purpose of this conference is to permit the bidders to ask any questions regarding the project, including scope of work, bid documents, bidding procedures, etc. Though attendance is not mandatory, bidding General Contractors and their Sub-contractors are strongly urged to attend.

PROPOSALS AND BID OPENINGS:

Each bidder shall submit his/her bid to the owner on the accompanying forms. In making a bid, each bidder agrees that he/she clearly understands the bid documents, that his/her bid is made in accordance with them and without substitution, and that he/she will perform the work within the time specified, and that he/she recognizes the full scope of the work and that he/she has visited the project and has familiarized himself/herself with the conditions affecting the work. Each General Contractor will be required to identify in his/her bid proposal each major sub-contractor if the General intends to use a subcontractor or himself/herself if he/she intends to perform the work with his/her own forces. If the General Contractor intends not to subcontract any portion of the work identified in his/her Bid Proposal, he should indicate "not to be sub-contracted" in the appropriate location on the form. Any subsequent substitution of a sub-contractor shall require the written approval of the owner. The Owner may not require and General Contractor to substitute a different sub-contractor than the one that the General has selected. Each General Shall also be required to indicate the number of calender days that he/she will require to reach substantial completion of the project as defined in the General Conditions of the Contract (AIA Document A201). Each General Contractor shall properly fill out the forms of Bid Proposal and seal them in an Envelope bearing his/her company's name and clearly marked **"Marine Use Facility, Custom House Wharf, Portland, Maine"**. Accompanying the proposal will be a schedule of values indicating the amount of each discipline. No combined bid, ie. Plumbing, Heating, Electrical shall be accepted and these bids will be rejected. Bidders shall hold their bids firm for thirty (30) days after the Bid Opening. All General Contractors Bids must be accompanied by a certified or cashiers check in the amount of 5% of the respective bid or a satisfactory Bid Bond in an equal amount. The owner reserves the right to waive all formalities and reject any and all bids, or to accept any bid whether the bid is the apparent low bid or not.

PERFORMANCE, LABOR AND MATERIAL PAYMENT BOND :

The selected General Contractor will be required to provide a Performance Bond and A Labor and Material Payment Bond in the full amount (100%) of his/her total contract price. The Bond shall be made with a Surety Company that is satisfactory to the owner. The Bond shall be written on the form provided, (AIA Document A311) and shall be delivered to the owner not later than the date of execution of the contract. This Bond shall remain in full force and effect for a period of at least the extent of the warranty set at the final acceptance of the project by the owner. The cost of this Bond shall be included in the General Contractor's bid.

SPECIAL REQUIREMENTS:

All bidders shall submit bids based on the Construction Documents. Any substitutions shall not be permitted unless written permission is given to the respective bidder. In addition, the substitution shall be clearly indicated on the General or sub-contractor's

LIST OF DRAWINGS

	TITLE SHEET & GENERAL NOTES
C-200	SITE PLAN - GENERAL
C-201	SITE TOPOGRAPHY & EROSION CONTROL PLAN
C-202	SITE UTILITY PLAN
C-203	SITE PHOTOMETRIC PLAN
A-200	FLOOR PLANS - GENERAL
S 0.1	STRUCTURAL NOTES & FOUNDATION LOADING PLAN
S 1.1	FIRST FLOOR STRUCTURAL FRAMING PLAN
S 1.2	SECOND FLOOR & ROOF STRUCTURAL FRAMING PLAN
S 2.1	STRUCTURAL BUILDING SECTIONS
S 2.2	PRECAST CONCRETE PANEL ELEVATIONS
S 3.1	FRAMING SECTIONS & DETAILS
LS-200	LIFE SAFETY PLAN
A-400	EXTERIOR BUILDING ELEVATIONS
A-500	COMPOSITE BUILDING SECTION "A"
A-501	COMPOSITE BUILDING SECTION "B"
A-502	COMPOSITE BUILDING SECTION "C"
A-503	DETAILS
A-504	TYPICAL WALL TYPES
A-800	DOOR HARDWARE & SIGNAGE SCHEDULES
A-801	ROOM & WINDOW SCHEDULES

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

DIVISION 8 - DOORS AND WINDOWS

DIVISION 9 - FINISHES

DIVISION 10 - SPECIALITIES

DIVISION 12 - FURNISHINGS

NONE SPECIFIED

DIVISION 14 - CONVEYING SYSTEMS

DIVISION 15 - MECHANICAL