

- F. All excavation materials not used in backfill, or final grading operations shall be hauled from the site and disposed of by the CONTRACTOR at his own expense. He shall not dispose of such material on the site of the work without the permission of the OWNER.

PART 2: PRODUCTS

- A. Not used.

PART 3: EXECUTION

3.01 EXCAVATION AND BACKFILL FOR STRUCTURES

- A. Excavation for all structures shall be made to the lines and grades as shown on the plans, and in the case of concrete structures, the excavation shall be made far enough from the final lines of the structure to afford ample room for setting and removing forms for dewatering purposes and for other construction needs.
- B. Machine excavation shall be permitted to within 3 inches of the bottom of footings, floors and foundations but the final 3 inches shall be shaped with hand shovel to insure attainment of correct final grades which are free from loose, shattered, spongy, or other unsatisfactory foundation conditions. Any foundation areas which are overcut or disturbed by the CONTRACTOR's operations shall be cleaned and backfilled to foundation grade with concrete conforming to these specifications.
- C. Excavation for manholes or similar structures may be performed with non-vertical banks except where such excavation will undermine adjacent facilities or structures, or where such excavation will violate private property outside the property lines established for this work. All inlets and discharge piping within the area of the manhole excavation shall be installed in concrete cradle and the cradle shall extend a minimum of three feet and as far into the pipe trench as necessary to protect the pipe to where standard trench conditions are reached.
- D. Backfill around structures shall not be placed until approval is received from the OWNER's representative

at the site. No backfill will be permitted to be placed against newly poured concrete walls until the concrete has attained the specified 28-day strength. Backfill around structures shall be placed uniformly in successive layers around the entire structure to preclude the possibility of nonuniform loading for the exterior wall. In this regard, the maximum permissible differential elevation of backfill at any one time will be four feet.

- E. Backfill around all structures and in all trenches shall be carried to the grade indicated on the drawings or to that grade indicated on the drawings or to that grade existing before the installation of the improvement, unless otherwise indicated on the drawings or specified hereafter.
- F. Compaction of the backfill around structures shall be accomplished by the use of adequately weighted rollers except that within three feet of any building wall, only approved mechanical tampers shall be used. Backfill material which is to be rolled shall be spread and compacted in layers not to exceed eight inches (compacted thickness). Rollers shall be of a design approved by the OWNER's representative at the site. The thickness of the layers of backfill material which are spread by bulldozer and compacted by the bulldozer tracks, or which are to be tamped in place shall not exceed four inches. No stones larger in any dimension than the thickness of the compacted layers specified will be permitted in the backfill material. Fill areas and trench backfill under roadways shall be compacted to Proctor Density of 95%.

### 3.02 OPEN EXCAVATION

- A. Except where otherwise shown on the plans, all pipelines shall be constructed in open trenches. All excavation shall be unclassified and no extra payment will be made for rock, boulders, shale, timbers, logs, old foundations, masonry, or other natural or artificial materials encountered in the trenching operations. There shall be no blasting.
- B. The depth of trenches shall be such that the location of the proposed pipes will conform with the lines and grades shown on the plans or as revised and

established by the OWNER's representative in the field during construction. The shape of all trenches above the pipe zone, trench sidewall supports both above and within the pipe zone, the construction methods employed, the general protection requirements, the general excavation requirements, the general trenching requirements, and the minimum requirements for trench shoring, shall conform with the regulations set forth under Subpart P, "Excavation, Trenching and Shoring" published as part of the Safety and Health Regulations for Construction by the U. S. Department of Labor, as amended. No trenching excavation work shall be performed which is not in accordance with those regulations.

- C. The shape of the trenches in the "pipe zone" (which shall be construed to be that portion of the trench between the trench bottom and an elevation 1 foot above the top of the pipe), shall conform to the configuration identified as "Typical Bedding" on the contract drawing. The CONTRACTOR is herein advised that if trench widths in the pipe zone exceed the outside diameter of the pipe plus two feet, and if the OWNER's representative determines that such excessive widths will result in structural loadings for which the pipe is not designed, he shall be required to bed the pipe on concrete cradle as directed by the OWNER's representative at no additional cost to the OWNER.
  
- D. The CONTRACTOR shall shape trenches which are located adjacent to existing aboveground or underground structures and/or facilities or in other confined areas, so that such structures and facilities are properly protected against damage or disturbance from settlement or displacement. Adequate sheeting, shoring and/or bracing shall be installed and maintained to provide such protection and the CONTRACTOR shall be responsible for all damages resulting to such proposed and existing structures, pipelines, and/or facilities as the result of his failure to use and maintain adequate trench wall supports, as well as a result of any other construction activities. The bottoms of all trenches shall be excavated to a depth of 0.5 ft. below the bottom of the proposed lines to accommodate the bedding hereinafter specified.

- E. Materials excavated from trenches shall be stored or deposited within the rights-of-way established for this work, unless the CONTRACTOR secures, in writing, permission from adjacent property owners to use their property for this purpose.
- F. Where muck, quicksand, soft clay, swampy or other material is encountered in the trench bottom, which in the opinion of the OWNER's representative is unsuitable for pipe foundation subgrade or backfill, such material shall be removed to a depth satisfactory to the OWNER's representative. The trench shall then be backfilled to grade with acceptable material, mechanically compacted in successive layers. For the removal and replacement of such unsuitable materials, to a depth greater than the 6" below the bottom of the pipe, and when authorized by the OWNER's representative, the CONTRACTOR shall be reimbursed on the basis of the invoiced unit cost of the delivered material times the actual measured unit quantity installed times a multiplier of 1.15.
- G. The OWNER's representative may require that sheeting, shoring and/or bracing installed for trench excavation be left in place in order to protect adjacent facilities or structures. Where such is not required in the Detailed Specifications, or in the Plans, the CONTRACTOR will be reimbursed in accordance with the Changes of Contract Price section of the General Conditions. All other sheeting may be salvaged when the removal of same will not present a hazard to the adjacent facilities or to the safety of the CONTRACTOR's personnel. The CONTRACTOR shall be fully responsible and liable for any improper or premature removal of sheeting, shoring or bracing and any and all personnel or property damages resulting therefrom.
- H. The depth of trench for pipelines shall be such that pipe in its installed position will comply with the lines and grades shown on the plans, or as revised and established by the OWNER's representative in the field during construction.



### 3.03 PIPE BEDDING AND PIPE ZONE BACKFILL MATERIAL

- A. Where rock is encountered at the bottom of the trench and where ductile iron and flexible material pipelines are installed, piping shall be supported on a granular material such as 2B limestone or 2B gravel complying with the gradation and classification of the Pennsylvania Department of Transportation or similar material approved by the OWNER's representative with a minimum depth of 0.5 ft. below the bottom of the pipe installed for the full width of the trench. For flexible pipe, said material shall further be required to be placed in the entire pipe zone area of the trench to an elevation 1 ft. above the top of the pipe. For ductile iron pipe the bedding material shall extend to the pipe spring line. No slag material is permitted. The bedding and backfill material shall then be choked as required by the OWNER's representative with approved material in sufficient quantities to prevent the migration of surrounding soils into the bedding and backfill. The material shall be placed in the pipe zone in such a manner as to not disturb, displace, or otherwise misalign the installed lines. Bedding material shall be installed to support precast concrete manholes and precast concrete vaults.

### 3.04 BACKFILL MATERIAL ABOVE THE PIPE ZONE

- A. Backfilling of trenches located under the proposed building and in roadways, parking areas, driveways and other traveled ways shall be backfilled between the pipe zone and the base of the roadway or structure with approved crushed stone material. No slag material shall be permitted as select backfill material.
- B. The CONTRACTOR shall limit daily trench excavation to a length of pipe placement and backfilling that can be completed the same day.
- C. The width of all trenches shall not exceed the maximum of four feet or the pipe diameter plus two feet, as measured from the bottom of the respective pipe trench to a horizontal plane located one foot above the top of pipe. In the event that the CONTRACTOR's construction methods/activities result in a trench wider than the pipe diameter plus two feet within that pipe zone, he

shall install concrete bedding or encasement or shall make such other provisions as may be directed by the ENGINEER to assure the structural integrity of the pipe. Where excavation exposes the bottom of proposed trenches where very soft or other unstable pipe foundation materials exist, the CONTRACTOR will be directed to overcut or stabilize/overcut and the CONTRACTOR shall be compensated for the additional excavation in accordance with the provisions specified in the General Conditions. Polyvinylchloride sewer pipes and ductile iron pipe having restrained joints shall be installed at the locations identified in the contract drawings on bedding material with a minimum depth of 6", which material shall conform to the specifications set forth hereinafter.

- D. The material excavated during trenching and other construction operations shall be used as backfill at locations where there is no permanent improvement. Said material shall be used for the full depth of trench to the finished ground surface where the ground is unimproved. At all locations, the entire depth within the backfilled area shall be thoroughly compacted in layers. Backfill material in trenches above the pipe zone at all locations, shall be placed in lifts not exceeding eight inches in thickness and shall be thoroughly and mechanically compacted by the use of vibratory or reciprocating tamping equipment or may be placed in lifts not exceeding three feet in thickness and shall be thoroughly and mechanically compacted by use of vibratory hoe pack for the full depth of trench. Special backfill material (select backfill is required in trenches under existing streets, alleys, roads, traveled ways, road shoulders or berms and driveways. In the event that the CONTRACTOR desires to employ the use of special vibratory and/or heavy duty machinery for that purpose, such methods will be approved by the OWNER's representative, subject to demonstration by the CONTRACTOR that satisfactory end results can be attained.
- E. Unsatisfactory trench settlements occurring within 18 months after completion of the work shall be the responsibility of the CONTRACTOR at no extra cost to the OWNER.

### 3.05 EMBANKMENT AND FILLS

#### A. Fill Procedures

1. Embankments and fills to be included in this work shall be constructed to the lines and grades shown on the plans.
2. Where newly placed material abuts old material in the embankment, the old material shall be cut or broken by discing, plowing, scarifying or bulldozing until it shows the characteristic colors of undried material. The bulldozer shall then work on both old and new material in such a manner as to thoroughly bond them together.
3. During the dumping and spreading operations of the materials for the embankment or fill, the CONTRACTOR shall maintain at all times a force of men sufficient to remove roots, grass, trash and branches from the rolled fill section and these materials shall be removed from the embankment and burned or otherwise disposed of in a manner satisfactory to the ENGINEER.
4. The surface of the fill or embankment shall have the optimum water content required for compaction, as determined by the CONTRACTOR's soils expert.
5. The fill and/or embankment shall be built up in approximate horizontal layers of the maximum thickness indicated in the compaction method or method hereafter specified across its full length and width. The layers shall be spread uniformly and shall have a slope of approximately 1% to the outside of the embankment to facilitate surface drainage during placement operations.
6. The entire surface of the embankment or fill shall be maintained at all times in such a condition that construction equipment can travel over any part and at no time shall separate pieces of equipment track each other.

7. Compaction shall be accomplished by one of the following methods, the first of which shall be used where practical and possible.

B. Compaction Method No. 1

1. Fill material shall be spread in uniform layers not to exceed 6" after compaction.
2. Tamping rollers having staggered, uniformly spaced knobs and equipped with suitable cleaners, shall be used for compacting each layer. The projecting face area of each row and the number and spacing of the knobs shall be such that the total weight in pounds of the roller and ballast, if distributed over the equivalent area of one row of knobs parallel to the axis, will not be less than 250 pounds per square inch and preferably not more than 500 pounds per square inch. Each layer of material shall be compacted by passing the specified roller over the entire surface the number of times required to obtain 50% coverage as determined by the size and spacing of the roller feet or knobs, and assuming that no part of the layer being compacted is covered by a roller knob more than once.
3. If, in the opinion of the ENGINEER, additional rolling is required to obtain optimum compaction, the CONTRACTOR shall perform the same at no additional cost to the OWNER. The design and operation of tamping rollers shall be subject to the approval of the ENGINEER and he shall have the right at any time during the prosecution of the work to direct such alterations or repairs as may be found necessary to secure the optimum compaction of the earth fill materials.

C. Compaction Method No. 2

1. Fill material shall be spread in uniform layers not to exceed 4 inches after compaction. The CONTRACTOR will be permitted to employ a heavy bulldozer for spreading such material. The bulldozer shall weigh not less than 10 tons and be equipped with cleated tracks. In compacting the embankment, the bulldozer tracks or treads

shall cover the entire surface of each layer at least once. Compaction of the embankment with the bulldozer shall continue until the maximum compaction has been secured.

D. Compaction Method No. 3

1. This method is intended for use only in confined areas too small for the use of tamping rollers or bulldozers. Material shall be spread in layers not to exceed 4" depth before compaction and then thoroughly compacted by means of mechanical tamping. Hand tamping will not be approved as a substitute for mechanical tamping.
2. It is contemplated that this method shall be used in pipe trenches, under and around pipe passing through embankments and to heights of 2 feet above such pipe, and adjacent to manholes and structures. Particular care shall be taken in these areas to obtain compaction at least equal to that obtained by Method No. 1 of the previously specified methods.

**End of Section**

SECTION 02230

RIP RAP

PART 1: GENERAL

1.01 DESCRIPTION

- A. Section includes Requirements, Procedures, and Methods related to installation of dumped stone Rip-Rap Slope/Outfall Erosion Protection Devices.
- B. Rock Rip-Rap includes the use of filter and bedding aggregates, Geotextile and Foundations where applicable.
- C. It is the intent of these specifications to produce a fairly compact Rip-Rap protection in which all sizes of material are placed in their proper proportions. Hand placing or rearranging of individual stones by mechanical equipment may be required to the extent necessary to secure the results specified.
- D. At the locations indicated in the Contract Drawings, the CONTRACTOR shall place a protective covering of erosion resistant material on the slopes.
- E. At locations identified on the Contract Drawings, grout shall be placed with the Rip-Rap so that all the voids between the rocks shall be filled. Maximum spacing between rocks shall be 2". Surface rocks shall be imbedded with grout from  $\frac{1}{2}$  to  $\frac{2}{3}$  of their maximum dimension.

1.02 SUBMITTALS

- A. The sources from which the stone will be obtained shall be selected in advance of the time when the stone will be required in the work. The acceptability of the stone will be determined by service records and/or by suitable tests. If testing is required, suitable samples of stone shall be taken in the presence of the ENGINEER at least 10 days in advance of the time when the placing of rip-rap is expected to begin. The approval of some rock fragments from a particular quarry site shall not be construed as

constituting the approval of all rock fragments taken from the quarry

- B. In the absence of service records, resistance to disintegration from freezing and thawing, stone shall be tested by ASSHTO Test 103, for ledge rock procedure A. The stone should have a loss not exceeding 10 percent after 12 cycles of freezing and thawing.

PART 2: MATERIAL

2.01 STONE RIP RAP

- A. Stone used for the dumped Rip-Rap shall be hard, durable, angular in shape; resistant to weathering and to water action; free from overburden, spoil, shale and organic materials; and shall meet the gradation requirements for the class specified. Neither breadth nor thickness of a single stone should be less than one-third its length. Rounded stone or boulders will not be accepted unless authorized by special provisions. Shale and stone with shale seams are not acceptable.
- B. Stone shall be free from overburden, spoil, shale and organic material. Each load of Rip-Rap shall be reasonably well graded from the smallest to the maximum size specified. Stones smaller than the specified 10 percent size and spalls will not be permitted in an amount exceeding 10 percent by weight of each load.
- C. The minimum weight of stone shall be 155 pounds per cubic foot as computed by multiplying the specific gravity (bulk saturated, surface dry basis, ASSHTO Test T 85) times 62.3 pounds per cubic foot.
- D. The Rip-Rap shall meet National Crushed Stone Association (NSA) requirements and shall be placed on a filter blanket.
- E. Rip-Rap sizes are identified in the Contract Drawings.

2.02 FILTER STONE BLANKET OR BEDDING

- A. As required, and as shown in the project drawings the CONTRACTOR shall install bedding materials to prepare

the subgrade and/or protect the geotextile, prior to placement of rock.

- B. Filter stone shall meet NSA Filter Stone Requirements.
- C. Filter stone sizes are identified in the Contract Drawings.

### 2.03 GEOTEXTILE

- A. Geotextile product shall be composed of polypropylene materials for stabilization applications, and meet AASHTO M288-92, requirements for woven high survivability separation fabrics. The fabric shall be inert to biological degradation and naturally encountered chemicals, alkalis, and acids.
- B. For Rip-Rap R-4 and smaller, CONTRACTOR shall supply material meeting PennDot's Publication 408 geotextile requirements Class II, Type B.
- C. For Rip-Rap R-5 and larger, it shall meet Type A of the same requirements.
- D. Product shall be TNS W280 Woven Fabric for Type B and TNS W200 Woven Fabric for Type A manufactured by TNS Advanced Technologies or equal.

## PART 3: EXECUTION

### 3.01 GENERAL

- A. Slopes and areas to be protected by Rip-Rap shall be free of brush, trees, stumps and other objectionable materials and be dressed to a smooth surface. All soft or spongy material shall be removed to the depth shown on the plans or as directed by the ENGINEER and replaced with approved material.
- B. Stone for Rip-Rap shall be placed on the prepared slope or area in a manner which will produce a reasonably well graded mass of stone with the minimum practicable percentage of voids. The entire mass of stone shall be placed so as to be in conformance with the lines, grading and thickness shown on the plans. Rip-rap shall be placed to its full course thickness as one operation and in such a manner as to avoid



displacing the underlying material. Placing of Rip-Rap in layers, or by dumping into chutes, or by similar methods likely to cause segregation will not be permitted.

- C. The larger stones shall be well distributed and the entire mass of stone shall conform to the gradation specified. All material going into Rip-Rap protection shall be so placed and distributed that there will be no large accumulations of either the larger or smaller sizes of stone.

### 3.02 SUBGRADE PREPARATION

- A. Prior to the placement of rock Rip-Rap, filter aggregate, bedding or geotextiles, the subgrade surfaces shall be cut, filled, compacted and graded to the lines and grades as shown on the project drawings. All subgrade surfaces shall be prepared so as to be reasonably smooth, and free of mounds, dips, or windows.
- B. The placement of fill to meet design grades and elevations shall be of an approved material, and placement shall include adequate compaction of the materials as set forth in Construction Specification.
- C. No Rip-Rap, filter/bedding aggregate or geotextile shall be placed until the subgrade is inspected and approved by the Project ENGINEER. The subgrade shall be of a depth that provides finished grades to match the pre construction grades at stream crossings.
- D. As shown on the project drawing, The CONTRACTOR shall provide for an adequate foundation under the rock Rip-Rap. Where unstable soils (i.e clays/silts) are present, a geotextile and gravel foundation may be required to prevent settling of the Rip-Rap.

### 3.03 DUMPED & PLACED ROCK RIP-RAP

- A. The rock Rip-Rap shall be placed by equipment on the surfaces and to the depths specified. The rock Rip Rap shall be installed to the full course thickness in one operation and in such a manner as to avoid displacement of the underlying subgrade, filter/bedding aggregate or geotextile.

- B. The rock for Rip-Rap shall be delivered and placed in such a manner that will insure that the Rip Rap in-place, will be reasonably homogeneous with the larger rocks informally disturbed and firmly in contact with the smaller rocks and spalls filling the voids between the larger rock. Hand placement of chinking stone shall be completed to insure a final surface which is smooth.
  
- C. At both the upper and lower limits of the rip-rap section, the rock Rip-Rap shall be keyed into the stable bank providing protection from erosion getting behind the Rip-Rap blanket. The rock Rip-Rap shall be placed to an elevation which is below the design streambed elevation. Rock Rip-Rap will be placed starting at the lowest elevation of a toe trench as shown on the drawings.

**End of Section**

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SECTION 02298

BORING

PART 1: GENERAL

1.01 RELATED WORK

- A. Shoring: Section 02150
- B. Excavating, Backfilling and Compacting: Section 02220
- C. Piped Wastewater Sewers Section 02730
- D. Division 3 - Concrete

1.02 QUALITY ASSURANCE

- A. Workman Qualifications:
  - 1. Use only personnel thoroughly trained and experienced in the skills required.
  - 2. Welds shall be made only by welders, tackers and welding operators who have been previously qualified by tests as prescribed in the Structural Welding Code AWS D1.1 of the American Welding Society to perform the type of work required.
- B. Design Criteria:
  - 1. Encasing conduit under railroad tracks shall be of sufficient strength to support all superimposed loads, including a Cooper E 80 Loading with 50 percent added for impact.
- C. Requirements of Regulatory Agencies:
  - 1. Materials and methods of construction used on railroad company property shall be subject to the approval of the railroad company and the Contractor shall at all times conduct his work and operations fully within the railroad company's rules, regulations and requirements. Ascertain from the railroad company, its rules, regulations and requirements, and what, if any delays may be

encountered. If required by the railroad company, submit for approval an outline of the methods and means proposed for prosecuting the work.

2. Perform work within the railroad company's property in accordance with the requirements of the current edition of Railroad Company Specifications, the American Railway Engineering Association specifications, and any governing laws or regulations.
3. Record and have on file details pertaining to railroad company inspections. Include as a minimum the dates of inspections, number of railroad company personnel and number of hours spent on inspections, number of railroad company personnel and number of hours spent on inspection by railroad company personnel. Identify contractor personnel also present.
4. Furnish and erect crossing signs on both sides of the tracks. The actual location where each sign is to be erected will be established by the Engineer in the field.
5. Materials and methods of construction used on state highways shall be subject to the approval of the Pennsylvania Department of Transportation and the Contractor shall at all times conduct his work and operations fully within the Pennsylvania Department of Transportation, regulations and requirements. Ascertain from the OWNER, a copy of the permit identifying requirements of the construction.
6. Perform work within the state highway in accordance with the requirements of the Pennsylvania Department of Transportation Publication 408 latest edition.
7. Record and have on file details pertaining to inspections by the Pennsylvania Department of Transportation. Include as a minimum all personnel from the state, contractor and others present and number of hours spent on inspection by the state.

#### 1.03 REFERENCES

- A. American Association of State Highway and Transportation Officials (H-20): (AASHTO) Loading for Conduits Installed Under Streets, Roads, or Highways.

- B. American Railway Engineering Association (A.R.E.A.) (Cooper E-80).
- C. American Society for Testing and Materials:
  - 1. ASTM A 53, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless, 35,000 PSI minimum yield strength.
  - 2. ASTM C 32, Specification for Sewer and Manhole Brick (Made from Clay or Shale).
  - 3. ASTM C 33, Specification for Concrete Aggregates
  - 4. ASTM C 150, Specification for Portland Cement.
  - 5. ASTM C 270, Specification for Mortar for Unit Masonry.
- D. American Welding Society: AWS D1.1 Structural Welding Code.
- E. Pennsylvania Department of Transportation Publication 408 Latest Edition.
- F. CE-8 Specification for Pipeline Occupancy of CSX Transportation, Inc. property.
- G. Requirements and Specifications for Pipeline Occupancy, National Railroad Passenger Corporation, Northeast Corridor. (Control No. OCE-0110).

#### 1.04 SUBMITTALS

- A. Shop Drawings and Product Data: Furnish completely dimensioned shop drawings, cuts or other data as required to provide a complete description of Products to be installed.

#### 1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Transport, handle and store materials and Products specified herein in a manner recommended by the respective manufacturers of such to prevent damage and defects.

#### 1.06 SITE CONDITIONS

- A. Classification of Materials:
  - 1. Boring: No consideration will be given to the nature of materials encountered in boring for Pipe Line Crossings. Remove rock encountered during the

boring operation, no separate or additional payment will be made for boring through rock.

B. Scheduling:

1. The CONTRACTOR shall schedule work with the Pennsylvania Department of Transportation, Railroad Company, or other property owner and coordinate same with the Owner's Representative.

C. Environmental Requirements:

1. As specified in here in the Contract Documents.

D. Protection: As specified in Section 02220 and such added requirements included herein.

1. Adequately support and protect utilities and facilities that are encountered in, or may be affected by, the work.
2. Temporary track support to be provided shall be as shown on CSX Transportation Company's Drawing Number 43380-R1 entitled "Temporary Track Support for Support of Tracks When Tunneling or Driving Pipe" which is included hereinafter at the end of this Section of the Specifications.
3. Shoring: As specified in Section 02150.
4. Accommodation of Traffic: As specified in Section 01550.
5. Barriers and enclosures as specified in Section 01551.
6. Explosives and Blasting: Not permitted in performance of work of this Section.
7. Excavation Conditions: As specified in Section 02220.
8. Excess Materials: As specified in Section 02220.

PART 2: PRODUCTS

2.01 ENCASING CONDUIT

- A. Steel Pipe: ASTM A53, Grade B.

1. Minimum Diameter: As shown on the Drawings.

2.02 CARRIER PIPE AND FITTINGS

A. Carrier Pipe shall be as specified herein and or as noted on the contract drawings.

2.03 MISCELLANEOUS MATERIAL

A. Concrete: As specified in Cast-In-Place: Section 03300.

1. Class B: 3000 psi

B. Lean Concrete: 2000 psi compressive strength at 28 days with minimum cement content per cubic yard in accordance with current ready-mix plant standard practice.

1. Reduced Aggregate: Aggregate with particle size not less than 1/8-inch or more than 1/2-inch in any dimension and a maximum of 5 percent of particles passing a #8 sieve.

C. Aggregate Backfill:

1. AASHTO No. 8 Coarse Aggregate conforming to Pennsylvania Department of Transportation Section 703.2

2. Select Granular Material (2RC) conforming to Pennsylvania Department of Transportation Section 703.3.

D. Brick: Commercially manufactured brick made from clay or shale and burned, meeting requirements of ASTM C32, Grade MS.

E. Grout (Sand/Cement):

1. Portland Cement: ASTM C 150 Type II.

2. Sand: ASTM C 33, fine aggregate.

3. Water: Portable.

4. Grout Quality: Mixture of one part Portland cement, three parts fine aggregate and water.

F. Treated Wood Blocking (Pipe Support on Conduit): Wood species of the allowable types under the WWPA or SPIB grading rules and stamped to indicate product compliance with U.S. Dept. of Commerce Product Standard PS-20-70.

1. Preservative treatment shall conform to American Wood Preserves Association Standard P-5 (0.60



pounds per cu. Ft. of wood) for soil contact service; Wolman CCA Type C, or equal.

2. Steel Bands: Use one inch wide (min.) stainless steel strapping to make the treated wood blocking attachment bands. Secure the bands in place with stainless steel compression style band clamps. Provide a minimum of two bands on each set of treated wood blocking.
- G. Casing Spacers (Pipe support in conduit): Casing spacers shall be 14 gauge steel with 90 mil PVC or Neoprene liner having a width of 12 inches. Spacers shall be installed as recommended by the manufacturer to provide proper support of the carrier pipe. Spacers shall have abrasion resistant dielectric runners and dielectric inner liner. Casing pipe shall have rubber end seals matching the diameter of the casing pipe and carrier pipe and shall be held in place with stainless steel bands. Spacers shall be as manufactured by Advance Products or an approved equal.
- H. Railroad Crossing Sign:
1. Dimensions and letterings as shown on the Drawings.
  2. Sign Plate: Mill finish aluminum allow 6061-T6, minimum 0.080 inch thick.
  3. Steel Pipe Post: Shall conform to ATM A 120 with schedule 40 wall thickness and galvanized finish.
  4. Aluminum U-bolts, Nuts and Washers: ASTM F 467 and ASTM F 468.
  5. Painting:
    - a. Thoroughly clean sign plate surfaces with mineral spirits to remove grease, dirt and moisture.
    - b. Apply one coat of Sherwin Williams Zinc Chromate Primer #B50Y1, which when thoroughly dry shall be followed by 2 coats of Sherwin Williams Metalastic Enamel (White).
    - c. When the second coat of enamel has thoroughly dried, perform the required lettering to the satisfaction of the Engineer using the services of a professional sign painter and an

approved grade of exterior black paint or enamel.

PART 3: EXECUTION

3.01 INSPECTION

- A. Inspect materials and Products before installing in conformance with the inspection requirements of the appropriate referenced standard.
- B. Remove rejected materials and products from the project.

3.02 PREPARATION

- A. Excavation: As specified in Section 02220 and such added requirements included herein:
  - 1. Should the Contractor in constructing any (boring) (or jacking) pit excavate below the subgrade from the carrier pipe, he shall be required to backfill the area excavated below the subgrade with Aggregate Backfill or with Concrete, as required by the Engineer, at no increase in Contract Price.

3.03 PERFORMANCE

- A. All Pipelines where identified in the Contract Drawings shall be bored or augured in place at the elevations and along the alignments shown on the plans and profiles. The CONTRACTOR shall be responsible for construction to true line and grade and shall be held fully responsible for protecting against surface subsidence, damages or disturbances to adjacent property and facilities from his construction operations and shall rectify resultant subsidence, damages or disturbances to the satisfaction of the ENGINEER.
- B. The CONTRACTOR shall be required to submit complete details and descriptions of the proposed operations, indicating all construction characteristics of the boring as well as details of all portals and other open excavations in the vicinity. Before actual construction work commences written approval of the Pennsylvania Department of Transportation and or railroad shall be compulsory. Details submitted to the Department and or railroad by the CONTRACTOR shall include but will not necessarily be limited to the following: details of method proposed, approximate time of commencement, complete sheeting and bracing details, number of shifts

and hours per shifts and hours per shift anticipated for the work, equipment proposed to be used, provisions and details of barricades and night lights and all other pertinent or additional information required by the respective agency.

- C. All sheeting, shoring, bracing, lining, etc., required for the construction of shafts, portals, etc. shall be furnished and installed by the CONTRACTOR and shall conform to the requirements set forth under "Open Excavation". All work relative to the installation of water mains, sewers and force mains by the boring method shall be performed in accordance with the regulations set forth under Subpart S, "Tunnels and Shafts, Caissons, Cofferdams and Compressed Air" published as part of the Safety and Health Regulations for Construction by the U.S. Department of Labor.
- D. Where possible, boring operations shall be conducted from the high end of the pipe. When augers, or similar devices, are used for encasing conduit emplacement, the front of the encasing conduit shall be provided with mechanical arrangements or devices that will positively prevent the auger and cutting head from leading the encasing conduit. The method of augering the entire hole and then pushing the encasing conduit through will not be permitted. At certain pipe line locations slope of the encasing conduit, its gradient and therefore, elevations, are extremely critical and, each CONTRACTOR shall program his boring activities so that the pipeline connections/gradient will be accomplished as shown on the drawings. All CONTRACTOR's shall coordinate their activities and cooperate with each other to assure construction at the correct alignments and gradients. They shall also minimize field conflicts where working areas are confined and where scheduling becomes a problem.
- E. The CONTRACTOR shall check the conduit alignment and grade at least once during each shift as work continues.
- F. Wherever pipe lines are shown and specified to be bored in place, said pipes shall be encased in the specified diameter steel casing pipes as shown on the contract drawing. The contractor shall have the option to install a larger diameter encasing conduit than shown in the drawing upon approval by the owner's representative and there shall be no extra payment. If the CONTRACTOR elects to install a larger diameter encasing conduit under the roadway, and or railroad tracks, he shall

maintain required clearances under said roadway and or railroad track along with the specified pipeline gradient.

- G. CONTRACTOR shall install the pipeline in the conduit as specified herein. Support and maintain the alignment and grade of the pipeline using the specified wood blocking in accordance with detail SD 2-006 or specified casing spacers in accordance with standard detail SD-2-005.
- H. Cleanup: As specified in the Contract Documents

#### 3.04 FIELD QUALITY CONTROL

- A. Testing: After laying pipe line in encasing conduit and before filling conduit line acceptance testing as specified in accordance with the requirements of the carrier pipe line.

**End of Section**

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SECTION 02500

PAVING AND SURFACING

PART 1: GENERAL

1.01 WORK INCLUDED

- A. CONTRACTOR shall furnish all equipment, plant, labor, and materials required for the construction of paving and surfacing required of the Contract and shall include furnishing and installing all materials required to complete the project as described in the Plans and Specifications.
- B. The CONTRACTOR and his surety will continue to be liable for all latent defects. However, the surety is liable only until the performance/maintenance bond is released. The ENGINEER will determine when a defect is a latent defect. The CONTRACTOR shall satisfactorily repair or correct latent defects, at no expense to the OWNER. If the defects cannot be satisfactorily repaired or corrected, provide reimbursement for any expenses or damages incurred by the OWNER because of the defects.
- C. The CONTRACTOR shall remove, renew, restore, and repair damage to any part of the work, occurring before acceptance, which is due to the action of the elements or any other cause. Repair such work, in accordance with the terms and conditions of the contract, at no expense to the OWNER except if the damage is due to unforeseeable causes beyond the control of the CONTRACTOR, as determined by the ENGINEER.
- D. The CONTRACTOR shall furnish all plant, labor, equipment, barricades, warning and protective devices to protect the new construction and paving within the limits of work at all times. CONTRACTOR shall submit time schedule for work to be performed.
- E. The CONTRACTOR shall furnish all plant, labor, tools equipment, barricades, warning and protective devices required to protect the paving courses by erecting and maintaining said barricades to prevent vehicular traffic from the new surface courses after placement of materials to permit adequate stability and adhesion of the aggregate.
- F. All distribution and trucks used under this contract shall be properly cleaned and shall meet the requirements

of and be equipped as specified by the Pennsylvania Department of Transportation and shall be calibrated by a recognized engineering firm. A certified calibration chart shall accompany the distributor at all times. All distributors shall be equipped with a tachometer or an approved metering device and asphalt sampling containers for test samples.

- G. Mixing Plant, hauling equipment, pavers and rollers shall be suitable to complete all required work in accordance with the requirements of Pennsylvania Department of Transportation Section 400 of Publication 408, 2007 edition as amended.
- H. CONTRACTOR shall provide all hauling equipment required or necessary to move pavers, rollers or chipping equipment from street to street as a part of those items specified in the form of proposal.

PART 2: PRODUCTS

2.01 BITUMINOUS ASPHALT PAVING

- A. All materials furnished, supplied, delivered or used under this contract shall be in accordance with the PennDOT Publication 408, 2007 edition as amended, or as specified herein and the CONTRACTOR will be required to certify that the material used under these contracts shall meet these specifications.
- B. Coarse aggregate will be slag, gravel or stone manufactured from approved sources as listed in Bulletin No. 14 (Publication No. 34), "Aggregate Products" current edition.
- C. Fine aggregate for bituminous mixtures will be manufactured from approved sources as listed in Bulletin No. 14 (Publication No. 34), "Aggregate Producers" current edition.
- D. Bituminous material shall be manufactured from approved sources and meet the requirements of Bulletin No. 25 (Publication No. 37), "Specifications for Bituminous Materials" current edition.
- E. Bituminous concrete mixtures shall be manufactured as approved and specified in Bulletin No. 27 (Publication No. 27), "Design Procedures/Specifications, Special Bituminous Mixtures" current edition and be from approved sources as listed in Bulletin No. 41 (Publication No.

- 41), "Producers of Bituminous Mixtures" current edition.
- F. All equipment used in mixing, hauling, spreading, rolling, chipping, applying liquid asphalt and tools necessary to perform and complete all work herein specified shall be in accordance with the requirements of PennDOT Publication 408 dated 2007 as amended.
  - G. All material furnished, delivered or applied shall comply with the requirements of Section 106 "Control of Material" of Publication 408 dated 2007 as amended.
  - H. Materials required to meet PennDOT specifications shall be tested in accordance with the requirements of Publication 408 2007 edition as amended.
  - I. Flexible Pavements: Subbase for widening, repairs and reconstructed areas.
    - 1. Excavate and prepare the subgrade prior to placing subbase.
    - 2. Install Class 4 Geotextile material as specified in Publication 408, Section 212.
    - 3. Install an 8" aggregate base consisting of 5½" compacted No. 3 stone, 2" compacted No. 57 stone and ½" choke course No. 8 stone. Aggregate shall meet the requirements of PennDOT Publication 408.
  - J. Brooming and Cleaning and Bituminous Tack Coat
    - 1. Brooming and cleaning shall be performed in locations requiring subsequent leveling, binder, or wearing courses.
    - 2. Brooming and cleaning shall be as specified in Publication 408, Section 400 "Flexible Pavements". All unsuitable material shall be disposed of by the CONTRACTOR at a site secured by the CONTRACTOR.
    - 3. The bituminous tack coat shall be furnished and applied to existing wearing surfaces in locations requiring subsequent leveling, binder, or wearing courses.
    - 4. The bituminous tack coat shall be applied with an approved distributor as specified in Publication 408, Section 460 "Bituminous Tack Coat".



5. The tack coat shall be Class AE-T Emulsified Asphalt. CONTRACTOR shall submit a certified affidavit that material complies with PennDOT Publication 408, Section 460.
6. The bituminous tack coat shall be applied at the rate of 0.07 to 0.10 gallons per square yard on all surfaces of the existing bituminous pavement to be resurfaced.

K. Superpave 25.0mm Base Course

1. The Superpave 250mm Base Course material shall be furnished and placed in locations as specified herein and by the ENGINEER/OWNER's Representative.
2. Keyways shall be cut at limits of work.
3. CONTRACTOR shall furnish, place and roll Base Course constructed of a minimum four inches (4"), as measured after compaction, of Superpave 25.0 mm Base Course. Asphalt mix design shall be as follows: Superpave 25.0mm Base Course 0.3 to 3.0 million ESAL's, PG 64-22, 4" depth. The Superpave 25.0 mm Base Course shall conform to PennDOT Publication 408, 2007 edition as amended, Section 409.

L. The Superpave 9.5mm Fine-Grade Wearing Course

1. The Superpave 9.5mm Fine-Grade Wearing Course shall be furnished and placed as specified herein and by the ENGINEER/OWNER's Representative.
2. CONTRACTOR shall furnish and place, and roll a Wearing Course asphalt mix design as follows: Superpave 9.5mm Fine-Grade Wearing Course 0.3 to 3.0 million ESAL's, PG 64-22, SRL H, rolled and compacted to a finished depth of one and one-half inch (1½"), as measured after compaction. The Superpave 9.5 mm Fine-Grade Wearing Course material shall conform to PennDOT Publication 408, 2007 edition as amended, Section 409. Material shall be placed on the prepared roadway/formed curb surface as specified and meeting the requirements of Publication 408.

M. Joint

1. Longitudinal and traverse joints shall be in accordance with Pennsylvania Department of Transportation Publication 408, Section 400 Flexible Pavements. All new pavement edges to be treated with Class E-1, E-6, or E-8 emulsified asphalt. Prior to sealing, clean and free harmful material from area to be sealed. Control the application rate so residual asphalt completely fills surface voids provides a water tight joint.

PART 3: EXECUTION

3.01 CONSTRUCTION REQUIREMENTS

- A. Where construction activities damage or disturb cartway, berms and/or shoulders along State, Municipal and Private Roads, the work shall be conducted and the cartway and berms shall be restored in a manner as is described herein. Attention is directed to the fact, however, that all backfill between the top elevation of the pipe zone and the surface of the road and/or berm along those State Roadways shall be well compacted 2RC material in accordance with the requirement of the PA Department of Transportation regardless of the distance between the edge of paving and the side of ditch. All backfill between the top elevation of the pipe zone and the surface of Private Roads, Municipal Roads and/or berms shall be well compacted 2A material or other aggregate as required by the Municipal Street Owner. Where open trenches cross Municipal Streets or Roads, 2A material backfill or aggregate as required by the Municipal Street Owner backfill shall be placed for the full trench width, for the full depth of backfill on both sides of the edge of paving, in addition to being placed under the pavement.
- B. At locations where construction is on private properties and adjacent to PennDOT right of ways, stockpiling of excavated material within the above rights of ways is prohibited.
- C. All paving removed, damaged or destroyed during the construction of this work shall be replaced by one of the following methods at least equivalent to that existing before construction. Where damage is within two feet of the curb or edge of roadway, replacement shall be to that curb or paving edge. The CONTRACTOR shall guarantee all paving replaced against defect and settlement for a period of eighteen months after the date of the final estimate.

- D. All paving and/or berm areas disturbed or damaged along State Roadways as a result of pipeline construction or by other activities of the CONTRACTOR shall be replaced in a manner equal to or greater than the quality of the existing surfaces and, to the satisfaction of the OWNER and PADOT. The paving and berm restoration shall conform strictly to the standards of the Pennsylvania Department of Transportation Publication 408.
- E. The CONTRACTOR is cautioned that damage caused by tracked equipment on any finished road, street, driveway, sidewalk, etc. surface inside or outside of the work area will be restored by the CONTRACTOR at his cost.
- F. Prior to placing of any new bituminous material, all exposed vertical joints must be cleaned and primed with AC-20 Asphalt Cement or with Emulsions E1, E6 or E8.
- G. All bituminous material shall be installed and compacted by methods and with equipment approved by the Pennsylvania Department of Transportation.
- H. When all paving and compaction is completed all joints shall be sealed using AC-20 Asphalt Cement or with Emulsions E1, E6 or E8. This application shall be a minimum of six inches in width. All bituminous material shall be installed and compacted by methods and with equipment approved by the Pennsylvania Department of Transportation.
- I. The CONTRACTOR shall protect newly paved areas keeping traffic off of the area until adequate curing and stability is attained and as directed by the ENGINEER.
- J. All painted traffic lines and markings destroyed during the construction of this project shall be replaced. All painted traffic lines and markings shall be installed according to the Commonwealth of Pennsylvania Department of Transportation Publication 408, Section 962, and all other applicable sections.

### 3.02 STATE HIGHWAY - NON-RIGID PAVING

- A. There are areas along state highways where the proposed pipeline will be adjacent to or encroach upon the improved shoulder or where bore pits may be located in or adjacent to the improved shoulder. In those areas where the shoulder is damaged as a result of sanitary sewer construction the trench in the shoulder area shall be

backfilled full depth with select material (2RC) compacted in lifts as described previously in these technical specifications. The improved shoulder surface shall be restored to a condition equal to or greater than that existing prior to construction.

### 3.03 PRIVATE DRIVEWAYS

- A. All non-rigid bituminous surface paving shall be restored by neatly and uniformly cutting the edges 12 inches beyond the trench edge each side and placing a binder course and wearing course over the trench fill in accordance with requirements of the Pennsylvania Department of Transportation Publication 408. The base course shall be compacted 4 inch superpave binder course, followed by Superpave Wearing Course totaling 1-1/2" after compaction. Seal edges with hot bituminous liquid. The trench shall be backfilled full depth with select material 2A Limestone compacted in lifts.

### 3.04 CONCRETE DRIVEWAYS:

- A. All concrete paving shall be restored by neatly and uniformly cutting the edges and placing a 6" thick reinforced concrete slab over the trench. The concrete shall be reinforced with 6x6x10 gauge wire mesh. If the proposed sewer line trench is within 3 feet of an existing joint in the concrete driveway the existing pavement shall be saw cut at the joint and replaced to that existing joint. If the proposed trench is not within 3 feet of an existing joint in the concrete driveway the CONTRACTOR shall saw cut to the limits of the trench and replace the concrete as described above placing a new joint on one side of the new concrete paving where it matches the existing concrete.

### 3.05 STONE/SLAG/GRAVEL DRIVES:

- A. Where the proposed construction crosses existing stone, slag or gravel driveways the driveway shall be restored by placing a 4" thick lift of crushed limestone for the full width of the disturbed area. The limestone shall consist of hard, tough, durable stone free from slaty texture or cleavage planes. The limestone shall be secured from a PADOT approved supplier. Sandstone, shale, slag etc., will not be an acceptable substitute.

**End of Section**

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SECTION 02609

DETECTABEL MARKING TAPE

PART 1: GENERAL

- 1.01 The CONTRACTOR shall furnish and install magnetical detectable tape. Marking tape shall be detectable with conventional location equipment and therefore shall be encased in aluminum foil or other similar material.
- 1.02 The marking tape shall be minimum three (3) inch width and shall be installed two (2) feet above the pipe and along the pipe line installed.
- 1.03 At locations where existing utilities are exposed during construction, the CONTRACTOR shall also install the appropriate marking tape identifying that utility at the pipe line crossing.
- 1.04 Marking tape shall be vividly colored in accordance with standard industry color standards. Tape shall be marked "Gravity Sewer Line" at gravity sewers, "Intermittent Pressure Sewer" at force Mains and "Waterline" at water lines, storm sewer, gas, or electric above those buried lines.

PART 2: PRODUCTS

- 2.01 Marking tape shall be as manufactured by the Terra Tape or an approved equal.

PART 3: EXECUTION

- A. Not used.

**End of Section**

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SECTION 02640

VALVES

PART 1: GENERAL

- A. Not used.

PART 2: PRODUCTS

2.01 COMBINATION SEWAGE AIR RELIEF VALVES

- A. The CONTRACTOR shall furnish and install combination sewage air relief valves in accordance with the schedule provided on the contract drawings.
- B. Unless otherwise identified on the schedule all valves shall be equivalent to Figure 942-F valves with back flushing accessories as manufactured by GA Industries, LLC, Cranberry Township, PA USA.
- C. The combination air valve shall consist of a large orifice and a small orifice housed in a single body. The large orifice shall vent air and sewage gas during the filling of a pipeline or system and automatically close when liquid rises in the valve. The small orifice shall automatically open as often as necessary to release small amounts of accumulated air and sewage gas while the system is pressurized. The large orifice shall re-open to admit air during draining or a negative pressure condition. The valve shall have an elongated body not less than 20" (508mm) tall suitable for use with sewage, wastewater or other "dirty" fluids and be of the float operated, compound lever type with an adjustable seat.
- D. The valve's large orifice diameter shall be no less than the nominal size of the valve as shown on the plans and/or in the valve schedule. Valves 3" and smaller shall have NPT inlet and outlet connections and 1" size valves shall have a 2" inlet connection (2" x 1") to minimize plugging. Sizes 4" and 6" shall have a flanged inlet and NPT outlet connections. The small orifice shall be suitable for working pressures up to 150 PSI.
- E. There shall be an additional plugged 2" NPT cleanout connection near the bottom and plugged ½" NPT connections near the top and a 1" NPT connection near the bottom for testing, draining and/or the installation of back flushing accessories.



- F. The valve body and cover shall be rated for 200 PSI, made from cast iron conforming to ASTM A126 Class B and shall be shop coated with enamel primer. The float ball, internal trim and linkage mechanism shall be made from Type 316 stainless steel. The seat shall be replaceable and made from Buna-N rubber or other suitable elastomer compounds.
- G. The air release valve shall be supplied with back flushing accessories consisting of a bronze ball valve for inlet isolation, a 1" ball valve for draining and a ½" ball valve for flushing, quick connect couplings and a minimum of 5 ft. of rubber hose.

## 2.02 PLUG VALVES

- A. Plug valves shall be furnished as indicated on the contract drawings. Plug valves shall be quarter-turn, non-lubricated, eccentric type with resilient faced plug for wastewater service with pressure up to 175 psig. Eccentric Plug Valves shall be Series 5800R (Flanged) as manufactured by Val-Matic Valve & Manufacturing Corporation, Elmhurst, IL. USA, or equal.
- B. The valve body and cover shall be constructed of ASTM A126 Class B cast iron for working pressures up to 175 psig. The words "SEAT END" shall be cast on the exterior of the body seat end. The plug shall be of one-piece construction and made of ASTM A126 class B cast iron with a resilient facing per ASTM D2000-BG and ANSI/AWWA C504 requirements. Radial bearings shall be constructed of self-lubricating Type 316 stainless steel. The top thrust bearing shall be Teflon. The bottom thrust bearing shall be Type 316 stainless steel. Cover bolts shall be corrosion resistant with zinc plating. Valves shall have flanges with drilling to ANSI B16.1, Class 125.
- C. Port areas of not less than 85% or pipe area shall be provided on valves. The valve seat shall be a welded overlay or 99% pure nickel applied directly to the body on a pre-machined, cast seating surface and machined to a smooth surface. Shaft seals shall conform to ANSI/AWWA C504 and consist of V-type packing in a fixed gland with an adjustable follower designed to prevent over compression of the packing and to meet design parameters of the packing manufacturer. Permanently lubricated, shaft bearings shall be supplied in the upper and lower bearing journals. Thrust bearings shall be provided in the upper and lower journal areas. Both the packing and the bearings in the upper and lower journals shall be

protected by a Grit-Guard™ shaft seal located on the valve shaft to minimize the entrance of grit into the bearing journals and the shaft seal areas.

- D. All 4" and above valves shall be supplied with totally enclosed and sealed worm gear actuator with position indicator and externally adjustable open and closed stops. The worm segment gear shall be ASTM A536 Grade 65-45-12 ductile iron with a precision bore and keyway for connection to the valve shaft. Bronze radial bearings shall be provided for the segment gear and worm shaft. Alloy steel roller thrust bearings shall be provided for the hardened worm. All gear actuators shall be designed to withstand, without damage, a rim pull of 200 lb. on hand wheel.
- E. Valves shall be marked with the Serial Number, Manufacturer, Size, Cold working pressure (CWP), and the Direct and Reverse Actuator Pressure Ratings on a corrosion resistant nameplate. The exterior of the valve shall be coated with a universal primer.
- F. The valves shall be proof of design tested in accordance with ANSI/AWWA C504. When requested, the manufacture shall provide test certificates.

PART 3: EXECTION

- A. Not used.

**End of Section**

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SECTION 02730

PIPED WASTEWATER SEWER

PART 1: GENERAL

1.01 RELATED WORK

- A. Excavating Backfilling and Compacting: Section 02220
- B. Manholes: Section 02731

1.02 QUALITY ASSURANCE

- A. Design Criteria:
  - 1. Use one type and class of pipe in continuous line of sewer between structures, unless otherwise indicated on the Drawings.
  - 2. Use pipe and fittings designed to withstand imposed trench loadings and conditions at the various locations.

1.03 SUBMITTALS

- A. Shop Drawings and Product Data: Submit completely dimensioned shop drawings, catalog cuts and such other data as required to provide complete descriptive information for the following:
  - 1. Sewer Pipe and Fittings
  - 2. Piping Specialties
  - 3. Service Connection Pipe and Fittings
- B. Certificates:
  - 1. Certified records or reports of results of shop tests, such records or reports to contain a sworn statement that shop test have been performed as specified.
  - 2. Manufacturer's sworn certification that pipe will be manufactured in accordance with specified reference standards for each pipe type.

1.04 PRODUCT DELIEVERY, STORAGE AND HANDLING

- A. Transport, handle and store pipe materials and the associated materials specified herein, in the manner recommended by the respective materials manufacturers so as to prevent damage and defects to their respective materials.

1.05 SITE CONDITIONS

A. Environmental Requirements:

1. Keep trenches dewatered until pipe joints have been made and concrete cradle and encasement (as required) have cured.
2. Do not lay pipe in water or on bedding containing frost.
3. Do not lay pipe when weather conditions are unsuitable for pipe laying work, as determined by the ENGINEER.

PART 2: PRODUCTS

2.01 DUCTILE IRON PIPE FOR GRAVITY SEWERS

- A. Ductile Iron Pipe: Provide pipe which is permanently marked with the manufacturer's trademark, size, and conforming to Pressure Class 350.
1. The Pipe shall be centrifugally cast in metal molds or sand-lined molds, for water or other liquids as described in the specifications published by the American Water Works Association ANSI/AWWA C151/A21.51.
  2. Fittings shall conform to the applicable provisions of ANSI/AWWA/C110/A21.10 and ANSI/AWWA C111/A21.11.
  3. Joints shall generally be of the push-on type. The manufacturer shall furnish a sworn statement that the inspection and all of the specified tests have been made and that the results comply with the above stated specification standards.

4. All pipe and fittings shall be coated and shall be provided with a cement lining in accordance with the latest revision of the ANSI/AWWA C104/A21.4 specification.
5. The push-on type joints shall be of the single rubber gasket molded to be positioned in an annular recess in the pipe or fitting and shall compress radially to form a positive seal and shall be shaped so that the gasket is locked in place against displacement. Joints shall conform to those provisions set forth in the ANSI/AWWA/C111/A21.11 specifications, which are applicable to the push-on type. All lubricants and gaskets and any required special tools for construction of the pipeline shall be furnished by the pipe manufacturer.
6. All necessary accessories including lock ring, bolts, etc., shall be furnished and installed to accommodate the restrained and/or mechanical joints.
7. Pipe and fittings shall be similar and equal to those products manufactured by Atlantic States Cast Iron Pipe Co., American Cast Iron Pipe Company or U.S. Pipe and Foundry Company.

## 2.02 DUCTILE IRON PIPE PRESSURE SEWER

- A. Ductile Iron Pressure Sewer Pipe: Provide pipe which is permanently marked with the manufacturer's trademark, size and pressures sewers (Force Mains) shall be fabricated conforming with the ANSI A21.50 and A21.51 specifications, Thickness Class 52.
  1. The ductile iron pipe shall be finished with a double cement mortar lining coated per ANSI A21.4 and shall be coated with a standard bituminous coating.
  2. Fittings shall also be fabricated of ductile iron conforming to ANSI A21.10 or A21.53 (short body) (gray iron fittings are not acceptable). All pipe fittings shall be furnished with a double cement mortar lining per ANSI A21.4. Fittings shall be rated for at least 350 pounds per square inch (psi) service.

3. Pressure Sewers shall be anchored and/or blocked at all locations where bends and/or changes in profile or alignment exceed 10°; concrete blocking and anchoring shall be as specified with Section 02151. Reference KLH Standard Detail SD-2-045 and SD-2-046.

2.03 POLYVINYL CHLORIDE (PVC) PIPE FOR PRESSURE SEWERS  
(14 INCH THROUGH 48 INCH DIAMETERS).

- A. Pressure Sewer (Force Main) Pipe shall be unplasticized Polyvinyl Chloride (PVC) Pressure Pipe with integral bell and spigot joings, and shall be rated 200 psi meeting the requirements of DR21. Provide pipe which is permanently marked with the manufacturers trademark, and size. Pipe shall meet AWWA C905/NSF 61 and ANSI/UL 1285 (14" - 24").

1. All pipe shall be made from quality PVC resin, compounded to provide physical and mechanical properties that equal or exceed Class 12454 as defined in ASTM D1784.
2. All pipe shall be suitable for use as pressure conduit. Provisions must be made for expansion and contraction at each joint with an elastomeric ring. The bell shall consist of an integral wall section with a locked in solid cross section elastomeric ring which meets the requirements of ASTM F-477. The bell section shall be designed to be at least as hydrostatically strong as the pipe wall and meet the requirements of AWWA C905 and Section 6.2 of ASTM D3139 "Standard Specification for Joint for plastic pressure pipes using Flexible Elastomeric Seals." Sizes and dimensions shall be as shown in the Contract Drawings.
3. Standard laying lengths shall be 20 feet (plus or minus 1") for all sizes. At least 85% of the total footage of pipe of any class and size shall be furnished in standard lengths. The remaining 15% can be furnished in random lengths. Random lengths shall not be less than 10 feet long. Each standard and random length of pipe shall be tested to four times the class pressure of the pipe for a minimum of 5 seconds. The integral bell shall be tested with the pipe.

4. PVC Pipe installation cautions:
  - a. Check to see that the gasket is properly seated in the bell groove, and that the bell and spigot are clean before assembly.
  - b. Apply the approved lubricant supplied with the pipe to the spigot end of the pipe, paying particular attention to the bevel. The coating should be equivalent to a brush coat of enamel paint.
  - c. Assemble the joint only to and not over the assembly mark provided on the spigot end.
  - d. If undue resistance to insertion of the spigot is encountered, or the assembly mark does not reach the flush position, disassemble the joint and check the position of the rubber gasket, and remove any debris.
  - e. The angular deflection at the joint shall be maximum of 1.5 degrees. This will produce an offset in a 20' section of approximately  $6 \frac{1}{4}$  inches. Joint deflection is achieved after the joint is assembled in straight alignment and to the reference mark.
  - f. Prior to backfilling, check to see that the assembly mark is flush with the end of the bell.
5. Fittings shall be Pressure Class 350 and be fabricated of Ductile Iron conforming to the latest revision of ANSI/AWWA/C110/A21.10 or A21.53 (short body) (gray iron fittings not acceptable. All pipe fittings shall be furnished with a double cement mortar lining per ANSI/AWWA/C104/A21.4 specifications.
6. All buried Fitting and Valves shall be installed with retaining glands (Megalugs or an approved equal). Having stainless steel head bolts, studs and nuts and shall also have a polyethylene wrap. See Section 09954.



7. Force mains shall be anchored and/or blocked at all locations where bends and/or changes in profile or alignment exceed 10°; concrete blocking and anchoring shall be as specified in Section 02151. Reference KLH Standard Detail SD-2-045 and SD-2-046.

PART 3: EXECUTION

3.01 INSPECTION

- A. Inspect each section of pipe and each pipe fitting before laying in conformance with the inspection requirements of the appropriate referenced standard.
- B. Remove rejected products from the project site.

3.02 PREPARATION

- A. General Requirements:
  1. Clean piping interior prior to laying pipe and following pipe laying.
  2. Keep open ends of piping and pipe attachment openings capped or plugged until actual connection or actual pipe testing. Prevent water and debris from washing into the pipe.
  3. Excavate trenches in rock at least 25-feet in advance of pipe laying.
- B. Earthwork: Perform earthwork for sewer installation as specified in Section 02220.

3.03 SEWER CONSTRUCTION METHODS

- A. General Requirements: Use proper and suitable tools and appliances for the proper and safe handling, lowering into trench and laying of pipes.
  1. Lay pipe proceeding upgrade true to line and grades given. Lay bell and spigot pipe with bell end upgrade. Lay tongue and groove pipe with groove end upgrade.
  2. Exercise care to insure that each length abuts against the next in such manner that no shoulder

or unevenness of any kind occurs along inside bottom half of pipe line.

3. No wedging or blocking permitted in laying pipe unless by written order of ENGINEER.
  4. Before joints are made, bed each section of pipe full length of barrel with recess excavated so pipe invert forms continuous grade with invert of pipe previously laid. Do not bring succeeding pipe into position until the preceding length is embedded and securely in place.
  5. Dig bell holes sufficiently large to permit proper joint making and to insure pipe is firmly bedded full length of its barrel.
  6. Walking or working on completed pipe line, except as necessary in tamping and backfilling, is not permitted until trench is backfilled one-foot deep over top of pipes.
  7. Take up and relay pipe that is out of alignment or grade, or pipe having disturbed joints after laying.
  8. Take up and replace with new, such in place pipe sections found to be defective. No additional compensation paid for replacement work.
  9. Bedding materials and concrete work for pipe bedding as specified in the Contract.
- B. Pipe Laying and Joining: Perform pipe laying and joining in strict accordance with manufacturer's installation instructions, reference standards as included, and such additional requirements as specified herein.
1. Make joints absolutely watertight and immediately repair detected leaks and defects. Methods of repair subject to Engineer's approval.
  2. Laying/Joining Ductile Iron Pipe: Installation and joint assembly according to AWWA C 600, and as follows:
    - a. Where necessary to field cut pipe use

approved pipe cutter, milling cutter or abrasive wheel saw.

3. Laying/Joining Specified Types of Plastic Pipe: Installation and joint assembly according to ASTM D. 2321 requirements and bedding materials as specified herein.

C. Gravity Service Sewer Connection Fittings:

1. Wyes or Tees: Make connections to sewer using wye or tee fittings of same material and joint configuration as the sewer at planned point of branch connection.
  - a. Use commercially manufactured wye or tee fittings and one-eighth bends.
  - b. Set wye or tee branches at proper vertical angles as required to bring service connections to the proper depth.
  - c. Fittings locations determined by the ENGINEER with respect to service connections to existing house or building location.
2. Plugs: Close free ends of branches and service connections with carefully fitted plugs. Type of plug used and method of installation to Engineer's approval. Installed plugs shall successfully pass Line Acceptance Tests.

D. Service Line Observation Port. An Observation Port shall be installed on each service sewer reinstatement at the property line or Right of Way line directly after the Wye fitting. Reference KLH Standard Detail SD-2-031.

1. Inspection Port shall consist of a tee, a riser pipe, having a minimum diameter of 6 inches and a tamper resistant cap.
2. At locations where inspection ports are installed on slopes that may compromise pipe stability, shall be the tee and one foot of riser pipe encased in concrete.

3. Materials for pipe and fittings shall be as required for the installed sewer line.
4. Tamper resistant cap shall be installed and conform to KLH Standard Detail SD-2-034.

E. Gravity Service Sewer Reinstatement:

The exact location, type and size of existing service connections are unknown. All information provided in the Drawings and Specifications is for purposes of identifying locations for service sewer reinstatement. The CONTRACTOR shall locate the existing service line prior to installing the new service on property utilizing closed circuit TV inspection of the interceptor. The existing service line size and material must be verified by the CONTRACTOR. There shall be no extra payment for service sewer reinstatement as the CONTRACTOR is required to locate existing lines via CCTV and excavate and verify the existing service prior to extending the new service sewer and making a connection.

1. The CONTRACTOR shall notify the ENGINEER and property owners forty-eight (48) hours prior to any interruption of sanitary sewer service. The CONTRACTOR shall provide temporary service during the period of interruption.
2. At all locations where the new 6-inch service sewer is extended to a point near the existing sewer main, the CONTRACTOR shall first excavate and locate the existing service pipe, verify the pipe material and elevation.
3. Install new sewer pipe maintaining a minimum 1/8 inch per four slopes to the new sewer main wye fitting with a minimum bury depth of four (4) feet.
4. Pipe connection between the existing service sewer to the new service sewer shall be made at a clean existing pipe joint on the existing service sewer.
5. Connector shall be a Fernco Coupling encased in concrete to eliminate offset joints. The Fernco Coupling shall be suitable for the pipe material.

6. Service Sewer Reinstatement shall be completed upon the successful testing of the new sewer system and acceptance by the owner allowing the new sewer connection to the existing sewer system.
- F. Manhole Outside Drop Connection: Make drop connection where indicated on the Contract Drawings and where the drop in invert is two feet or more above the manhole bottom.
1. Pipe material shall match the specified sewer pipe material.
  2. Construct outside Drop Connection in accordance with KLH Standard Detail SD-2-009.

### 3.04 FIELD QUALITY CONTROL

- A. General Requirements: Conduct tests specified herein so that each pipe line stalled in the Project is tested to the Engineer's satisfaction.
1. Provide tools, materials (including water and temporary fittings), apparatus and instruments necessary for pipe line testing.
  2. Conduct tests in the presence of and to the satisfaction of the ENGINEER.
  3. A testing schedule.
  4. A listing of equipment intended to be used, including general information on the pump, pressure gauge, pressure relief and water meter.
  5. Certification that the pressure gauge has been calibrated to 0.1 psi.
  6. Maintain testing records on a form provided by the ENGINEER and the CONTRACTOR, shall be required to certify that all such testing has conformed with the specified test conditions and requirements.
- B. Testing Equipment:

1. Use air compressing apparatus equipped with a control panel with necessary piping, control valves and gauges to control air flow rate to piping test section; and to monitor air pressure within piping test section and air pressure within test section seal plugs. To prevent accidental overloading of piping test section, provide air compressing apparatus with an approved pressure relief device set to relieve at ten psi.
  2. Provide an extra pressure gauge of known accuracy to frequently check test equipment and apparatus.
  3. Air testing equipment and associated testing apparatus subject to Engineer's approval.
  4. Provide GO-NO-GO Mandrel and incidental equipment for Deflection Test. Mandrel to conform to following requirements:
    - a. Cylindrical in shape with not less than nine arms spaced evenly around the mandrel.
    - b. Minimum contract length of mandrel arms with pipe wall not less than the nominal diameter of the pipe being tested.
    - c. Mandrel diameter 95 percent of inside pipe diameter.
- C. Cleaning Prior to Test: Before tests are conducted, flush piping including sewers, branches and service connections until free of all forms of dirt and construction debris.
1. The water for the flush cleaning operation shall be from the CONTRACTOR's source.
  2. A plug shall be installed in the new sewer connecting into the existing sewer system to preclude any water and debris from the flushing operations from entering the existing sewer system.

3. CONTRACTOR shall be responsible to remove and dispose of all flushing water, debris, dirt, etc., from the new sewer system.
  4. New sewer shall remain plugged until the new sewer system is accepted by the OWNER.
- D. Gravity Sewer Line Acceptance Test: After a section of sewer and its service connections is constructed between adjacent manholes, backfilled and successfully cleaned, perform line acceptance test as specified herein.
1. Where sewers are constructed in a location and at an elevation where the ground water elevation is 4 feet (vertically) higher than the test section of pipe, said constructed sewer pipe(s) shall be hydrostatically tested by measuring the rates and/or volume of flow of infiltration into the pipeline through the pipe joints and/or pipe walls.
  2. The CONTRATOR shall furnish and install such weiring devices as is required for that purpose, subject to the prior approval of the ENGINEER. All sewers so tested by measuring the rates and/or volumes of water infiltrating into the constructed sewer (as a result of external hydrostatic pressure imposed by ground water) shall be required to comply with such test results which indicate that those rates are less than a flow of 100 gallons per inch diameter of sewer line per mile of pipe per day. Those sewers which admit infiltration of ground water at rates in excess of the parameter, regardless of the differential in elevation between the sewer pipe and the ground water, shall be reconstructed or shall be sealed in a manner satisfactory to the ENGINEER.
  3. All sewer pipes not subjected to latent external hydrostatic ground water pressure shall be tested by including low pressure air, internally, into the pipe. Said test shall not be performed until the backfill has been in place at least 10 days. Air shall be slowly introduced into the section of pipe to be tested, until the air pressure is

raised to approximately 4.0 psi and the test pipe section is stabilized for 2 minutes without drop. The pressure shall then be slowly decreased to 3.5 psi to 3.0 psi shall be compared to the required time to decide if the rate of air loss is allowable. Minimum holding times required by the pipe diameter are shown in Gravity Pipe Air Test Requirements, Table 1, Exhibit "A". In the event loss does occur before the minimum time displaced in the table below or more than 0.5 psig, appropriate repairs or reconstruction shall be made and, the test procedure shall be rerun until the test criteria as displayed in the Gravity Pipe Air Test Requirements, Table I, appended to of Section 02730, is successfully accomplished.

4. In the event the ENGINEER approves the application of internal low pressure air test where ground water elevations prevail higher than the top of the sewer pipe being tested, 0.5 psi per foot of hydrostatic head above the top of the sewer pipe shall be added to the test pressure.
  5. The CONTRACTOR shall lamp each section of sewer pipe between manholes by providing a light at one end; the ENGINEER/OWNER'S field representative will observe the pipe at the other end. Sewers not constructed on uniform line and grade and, therefore, not showing a full circle of light during lamping, shall be rejected.
  6. All gravity sewer pipes shall also be tested for pipe deflection. Said tests shall not be performed until the backfill has been in place for at least thirty (30) days; maximum acceptable deflection shall be 5% of the vertical internal diameter. Said testing may be performed with a deflectometer, or an ASTM approved mandrel for the specified pipe diameter. Deflection testing equipment shall be required to receive the prior approval of the ENGINEER.
- E. Force Main (Pressure Sewer) Line Acceptance Test: After the pipe line had been constructed, restrained, anchored and blocked, backfilled and successfully cleaned, Perform line acceptance test specified herein.



1. A hydrostatic test shall be conducted at a pressure of a minimum of 150 pounds per square inch at any point of testing. The time period of said test shall be not less than two hours and the pressure shall not vary by more than plus or minus 5 psi during the entire period of the test. All air shall be completely expelled from the section of line to be tested, prior to application of the test pressure.
2. No section of pipeline will be accepted if, as a result of the aforementioned hydrostatic test, leakage is greater than an amount determined by the following formula:

$$L = \frac{SD (P)^{0.5}}{133,200}$$

L: Allowable leakage, gallon per hour  
 S: Length of pipe tested, feet  
 D: Diameter of pipe, inches  
 P: Average test pressure, pounds per square inch

3. If the testing of any section of line discloses leakage greater than the amount, the CONTRACTOR shall, at his sole expense, locate the problem and make all necessary repairs and retest until the pipeline conforms with the specified allowance. Any and all visible leaks which are detected shall also be repaired, regardless of the amount of leakage.
4. All force main shall also be hydrostatically tested for leakage after installation is completed. Said testing shall be performed in accordance with the applicable sections of the AWWA C600 standards. Each section of pipe to be tested shall be slowly filled with water during which time air shall be expelled from the pipeline through the air release valves (where high points in the line exist at which there are no air release valves, CONTRACTOR shall install corporation cocks for the purpose). After all air is expelled, the air release devices shall be

closed and line pressures shall be raised to the test pressure directed by the ENGINEER. Test pressures shall be 1.5 times the expected working pressure predicted upon the elevation of the lowest point in the line, corrected to the elevation of the test gauge. Any joint, fittings, valves, cracked pipe or other appurtenances revealing leakage during the pressure test shall be corrected, after which the pressure test shall be rerun. Pressure tests shall be conducted for a 30 minute time period.

5. After performance of the successful pressure test, a leakage test shall be performed over a duration period of two hours at a pressure to be determined by the ENGINEER. Leakage is defined as the quantity of water supplied to the test section of pipe, which is required to maintain pressure within 5 psig of said test pressure during the entire testing period. Pipe construction so tested shall be deemed to have failed the leakage test if the leakage resulting is greater than 10 gallon per inch diameter per mile of pipe per day.

F. Repair and Retest: When sections of sewer fails to meet test requirements specified previously:

1. Determine source or sources of leakage.
2. Repair or replace defective material, if as result of improper workmanship, correct such.
3. Take up and relay pipe sewer line section that has more than the maximum allowable deflection.
4. Conduct additional test required to demonstrate that sewer line meets specified test requirements.

G. The OWNER reserves the right to retest at his expense, any piping throughout the duration of the Construction Period.

1. CONTRACTOR shall make repairs as Work of this Contract to piping found defective by such Owner conducted tests.

Table 1 Minimum Specified Time Requirement for a 0.5 psig Pressure Drop for Size and Length of Pipe

Pipe Diameter In.	Minimum Time min:s	Length (L) For Minimum Time ft.	Time for Longer Length S/L	Specification Time for Length (L) Shown, min:s								
				100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	350 ft.	400 ft.	450 ft.	
4	1:53	597	0.190/L	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53
6	2:50	398	0.427/L	2:50	2:50	2:50	2:50	2:50	2:50	2:50	2:51	3:12
8	3:47	298	0.760/L	3:47	3:47	3:47	3:47	3:48	4:26	5:04	5:42	5:42
10	4:43	239	1.187/L	4:43	4:43	4:43	4:57	5:56	6:55	7:54	8:54	8:54
12	5:40	199	1.709/L	5:40	5:40	5:42	7:08	8:33	9:58	11:24	12:50	12:50
15	7:05	159	2.671/L	7:05	7:05	8:54	11:08	13:21	15:35	17:48	20:02	20:02
18	8:30	133	3.846/L	8:30	9:37	12:49	16:01	19:14	22:26	25:38	28:51	28:51
21	9:55	114	5.235/L	9:55	13:05	17:27	21:49	26:11	30:32	34:54	39:16	39:16
24	11:20	99	6.837/L	11:24	17:57	22:48	28:30	34:11	39:53	45:35	51:17	51:17
27	12:45	88	8.563/L	14:25	21:38	28:51	36:04	43:16	50:30	57:42	64:54	64:54
30	14:10	80	10.683/L	17:48	26:43	35:37	44:31	53:25	62:19	71:13	80:07	80:07
33	15:35	72	12.926/L	21:23	32:19	43:56	53:52	64:38	75:24	86:10	96:57	96:57
36	17:00	66	15.384/L	25:39	38:28	51:17	64:06	76:55	89:44	102:34	115:23	115:23

NOTE: Reprinted from ASTM 1417-92

End of Section

SECTION 02731

MANHOLES

PART 1: GENERAL

1.01 WORK INCLUDED

- A. The CONTRACTOR shall furnish and install where shown on the drawings, precast concrete manholes. The CONTRACTOR shall consult KLH Standard Details bound with this contract specification for the details of construction. Manhole shall have 5'-0" diameter unless noted otherwise. All manhole vaults shall be 5'-0" inside diameter unless noted otherwise.

1.02 RELATED WORK

1. Excavation, Backfilling and Compaction, Section 02220
2. Piped Wastewater Sewer, Section 02730
3. Division 3 Concrete

1.03 QUALITY ASSURANCE

- A. Source Quality Control:
1. Maintain uniform quality of products and component compatibility by using the products of one manufacturer for precast reinforced concrete manholes.
  2. Obtain certificate of construction compliance with ASTM C 478 from the precast reinforced concrete manhole manufacturer. Submit this certificate as part of required submittals.
  3. Obtain certificate of material compliance with ASTM A 48, Class 30 tensile strength from the manhole frame and cover manufacturer. Furnish certification that tensile test bars were from same pour as castings. Submit the certificate as part of required submittals.

#### 1.04 SUBMITTALS

##### A. Shop Drawings and Product Data:

1. Submit manufacturer's published detail drawings, modified to suit design conditions if required, and CONTRACTOR prepared drawings as applicable, for each product specified herein.
2. Submit manufacturer's description literature and specifications for each product specified herein. Include installation information.

##### B. Certificates:

1. Certified records or reports of results of shop tests, such records or reports to contain a sworn statement that shop tests have been made as specified.
2. Manufacturer's sworn certification that components and products will be manufactured in accordance with specified reference standards for components and products.
3. Manufacturer's sworn certification that manhole frame and cover tensile test bars were poured from the same iron as castings they represent.

#### 1.05 DELIVERY, STORAGE AND HANDLING

- A. Transport and handle precast reinforced concrete manhole components, and other products specified herein, in a manner recommended by their respective manufacturers to prevent damage and defects. Through-wall lifting holes are not permitted in manhole component construction.
- B. Store precast reinforced concrete manhole components in accordance with their manufacturer's recommendations to prevent joint damage and contamination. Exercise such care in storage of other specified products as recommended by their respective manufactures.

1.06 SITE CONDITIONS

A. Environmental Requirements

1. Do not set or construct manhole bases on subgrade containing frost.

PART 2: PRODUCTS

2.01 BASIC MATERIALS

A. Cast-In-Place Concrete Products: Formwork, Reinforcement, and Cast-In-Place Concrete conforming requirements of Division 3-Concrete.

B. Waterproofed Mortar: Mortar material composition shall meet the requirements of ASTM C 270, for Type M mortar with waterproofing admixture included.

1. Acceptable Manufacturers:

- a. Medusa Cement Company; Medusa Waterproofing Paste or Power.
- b. Grace Construction Materials; Hydratite
- c. Chem-Master Corporation; Hydrolox
- d. Or Equal.

C. Epoxy Bonding Compound: Provide a high-modulus, low viscosity, moisture insensitive epoxy adhesive having the following characteristics.

1. Mix Ratio: 100 percent solids, two-component; mixed one part by volume component B to two parts by volume component A.

2. Ultimate Compressive Strength; 13,000 psi after cure at 73 degrees F. and 50 percent relative humidity determined in accordance with ASTM D 695.

3. Acceptable Manufacturers:

- a. Sika Corporation: Sikadur Hi-Mod.
- b. Euclid Chemical Company; No. 452 Epoxy System.
- c. A.C. Horn, Inc., Epoxitite Binder.
- d. Or Equal.

D. Frames and Covers

1. Standard Manhole frames and covers shall be heavy duty cast iron designed for AASHTO Highway Loading Class H-20 and to fit the precast top section of the manhole; frame shall be anchor bolted to conical top section or slab. The frame and cover for the manhole will be fabricated of cast iron and conform to the details of KLH SD 2-019. Frames and covers shall be NEEHAN R-1753 with self sealing lids. The covers shall having lettering identifying the "OWNER and SEWER" shall be cast in the cover as applicable. Four  $\frac{3}{4}$ " anchor bolts shall be provided for each frame. The final setting of manhole castings shall be such that they conform with the existing ground slopes and shall be set to exclude surface water. Contact surfaces of frames and covers shall be machined so that covers rest securely in the frames. Frames and covers shall be coated with a corrosion resistant bitumastic material which shall be smooth and durable and will not chip off.
2. Watertight Manhole Frames and Covers shall be Neenah R-1755-F2 complete with Neoprene Gasket, bronze tightening bolt and channel locking bar or an approved equal. Frame and cover shall conform to the details of KLH SD-2-020. Frames and covers shall be machined so that covers rest securely in the frames. Frames and covers shall be coated with a corrosion resistant bitumastic material which shall be smooth and durable and will not chip off. The covers shall have lettering identifying the "Owner and Sewer" or "Owner and Water".

E. Pipe Connections

1. Sanitary sewer pipe connections shall be watertight and shall be installed during the precasting process and shall as manufactured by A-Lok or an approved equal. See Standard Details for specific pipe connector.

F. Ladder Bars

1. Ladder bars shall be twelve inches wide on twelve inch centers cast in the manhole wall at the time that the concrete barrel section is made; steps shall be ASTM A 615 deformed steel reinforcing bar completely encapsulated in grade 49108, ASTM D 401 Polypropylene Compound, Type II; MA Industries Inc. or equal.

G. Coatings

1. The exterior surface of all manholes, and other concrete vaults shall be coated and waterproofed with two coats of bitumastic material or coal tar. Each coat shall have a minimum dry film thickness of 8 mils.

H. Concrete Sealant

1. Concrete Sealant shall be used between joints at precast concrete manholes. Material shall be flexible Butyl Resin Sealant meeting the requirements of Federal Specifications SS-S-210 (210A), AASHTO M-198B, and ASTM C-990-91. Material shall be ConSeal or an approved equal.

I. Manhole Liner

All manholes where identified in the Contract Drawings shall have installed a continuous impermeable Polyvinyl Chloride (PVC) Resin Liner. Liner system shall be Dura Plate 100 as manufactured by A-Lok or an approved equal and the PVC color shall be white.

1. The design of the liner shall insure that it will conform to the contour of the structure and form a permanent mechanical bond to the concrete through use of preformed horizontal ribs. The liner will be formed in such a manner that the joints between the structure sections will be afforded protection through the use of a continuous PVC return into the joint for a minimum  $\frac{3}{4}$  of an inch.
2. Provisions shall be made to allow the pipe openings to be lined and sealed.



3. The PVC Resin compound shall provide a semi-rigid material suitable for thermoforming to the contour of the structure. The liner may be fabricated in panels with the panels joined together by a slotted strip of EPDM rubber according to the manufacturers specifications. All plastic liner sections shall be free of cracks, pinholes or other defects adversely effecting the protective characteristics of the material and shall have a minimum thickness of 65 mils.
4. The structure will be installed using a butyl rubber joint material in accordance with the manufacturers installation specifications. The joint material shall be placed on the joint surfaces to provide a watertight seal by filling the annular cavity, while providing sufficient squeeze-out between the PVC returns to protect against corrosion. The dimension of the butyl rubber will be 5/8" by 3-1/2" or as recommended by a liner manufacturer.
5. There shall be no ladder bars in manholes having a plastic liner.

J. INFLOW PROTECTORS:

1. The CONTRACTOR shall furnish and install plastic inflow protectors at all manholes not having a watertight frame and cover. Plastic inflow protectors shall be fabricated to fit the specified frames and covers. Inflow protectors shall be fabricated of a material which will not corrode or otherwise be adversely affected by the sewage atmosphere and shall be provided with a gas relief valve. They shall be similar to KLH Standard Detail SD-2-017 or approved equal.

2.02 PRECAST REINFORCED CONCRETE MANHOLE COMPONENTS

- A. Materials and Construction: Conforming to requirements specified in ASTM C 478 except as follows:
1. Concrete: Composition and compressive strength conforming to ASTM C 478 except use Type II or

Type III cement in manhole components and increase compressive strength to 4500 psi (at 28 days) in precast bases.

2. Casting and Curing: Wet cast and steam curing process in accordance with Section 3.6.11 and 3.7.2 of AWWA C 302.
  3. Manhole Steps: Factory installed in manhole components, prealigned vertically, spaced on equal centers, and located the minimum distance from ends of risers and top sections as indicated on Drawings.
  4. Manhole Component Seals: Manhole component joints factory formed for self-centering concrete to concrete bearing employing a flexible Butyl Resin Sealant.
  5. Manhole Component Design: Designs shall conform to ASTM C 478. Base, tapered and straight riser section, and top sections dimensions and diameters, not consistent with ASTM C 478, are as indicated on Drawings.
  6. Lifting Holes and Lugs: Through-wall lifting holes not permitted in manhole component construction. Factory-install lifting keys or lugs integrally in manhole components.
- B. Precast Bases and Riser Sections: Design, materials and construction as specified previously.
- C. Pipe Openings: Custom preformed during manufacturing in each base and riser section requiring a pipe opening. Preform the opening to accommodate the type of pipe and pipe opening seal required.
1. Prefabricated Pipe Opening Seals: Resilient gasket type, conforming to requirements specified in ASTM C 923.
- D. Precast Top Sections: Designs as required by the Drawings, and of materials and construction as specified herein, except additional and differing requirements as follows:

1. Hold Down Bolt Inserts: Factory cast the inserts in the top section with four (4)  $\frac{3}{4}$  inch threaded inserts or slotted inserts to accommodate manhole frame hold down bolts. Provide threaded inserts of three inches depth and designed for an ultimate load in tension of 12,500 pounds. Inserts factory plugged for shipping. Coordinate insert locations in the top sections to match the bolt hole locations in the manhole cover frames.
  2. Flat Slab Tops: Thickness versus diameter is as indicated on the Drawings. Tops factory formed to properly accept and support required manhole cover frame and properly formed underside to join the top section to the riser section in a matching joint.
  3. Eccentric Cone Tops: Provide precast tops of the same minimum wall thickness and with same area of circumferential steel reinforcement as riser sections.
- E. Precast Grade Rings: Leveling and adjusting units of three inches or four inches thickness and of materials and construction as specified. Provide precast grade rings with hold down bolt holes matching location of bolt holes in manhole cover frame. The design shall provide for full bearing of manhole cover frame.

PART 3: EXECUTION

3.01 INSPECTION

- A. Inspect precast reinforced concrete manhole components in accordance with requirements of ASTM C 478 regarding repairable defects and defects subject to rejection by the ENGINEER.

3.02 PREPARATION

- A. Keep pipe and manhole interiors cleared of debris as construction progresses.
- B. Earthwork: Perform earthwork for manhole installation as specified in Section 02220.

### 3.03 MANHOLE CONSTRUCTION METHODS

- A. Precast Concrete Manhole Bases: Install bases on a 6-inch deep compacted layer of aggregate meeting requirements of Bedding as specified in Section 02220.
  - 1. When using Prefabricated Pipe Opening Seals for connecting pipes into manholes, and such seals create an annular space on interior and exterior of manhole wall pipe openings after pipe connection is made, fill such annular spaces with Prefomed Plastic Sealing Compound.
    - a. Tightly caulk sealing compound into annular spaces in a manner to completely fill the spaces and render the installation watertight.
    - b. Following sealing compound installation, trowel compound surface smooth and flush with interior face of manhole.
- B. Length of Pipe Connections into Manholes:
  - 1. Use pipes no longer than five feet in length when connecting into manholes through Prefabricated Pipe Opening Seals.
  - 2. For all other pipe connections into manholes, use pipes of such length that a pipe joint is provided at the outside edge of manhole base or wall as applicable. Also use pipes no longer than 6 feet in length of first pipe joined thereto.
- C. Concrete Channel Fill: Field pour and form concrete channel fill for each manhole base.
  - 1. Form inverts directly in concrete channel fill.
  - 2. Accurately shape invert to a semi-circular bottom conforming to inside of connecting pipes, and steel trowel finish to a smooth dense surface.
  - 3. Make changes in size and grade gradually.

4. Make changes in direction of entering sewer and branches to a true curve of as large a radius as manhole size will permit.
  5. In terminal manholes, install concrete channel fill formed channel extending from down stream pipe opening directly across the base to future pipe opening on upstream side of the base.
  6. Make slopes gradual outside the invert channels.
  7. Use Class B (3000 psi) concrete as specified in Section 03300, unless indicated otherwise on Drawings.
  8. When precast bases with preformed channels are used, fill the annular space at the pipe connections, on both sides of the wall, with non-shrink non-metallic grout as specified in Section 03600.
  9. The size and depth of the inverts will vary to suit the size of the pipe used and shall have a height of at least 6 inches higher than the springline or to the top of the inlet pipe, whichever is higher.
- D. Manhole Wall Erection: Provide precast reinforced concrete straight riser, tapered riser and top sections necessary to construct complete manholes. Fit the different manhole components together to permit watertight jointing and true vertical alignment of manhole steps.
1. Install flexible butyl resin between joints in accordance with the manufacturer's recommendations.
- E. Lifting Recess Sealing: Seal with properly designed tapered rubber plugs. Drive plugs into recesses in such manner to render them completely water and air tight. Sealing of lifting recesses with grout not permitted.
- F. Frame and Cover Installation: Where required, make final adjustment of frame to elevation using materials selected under Contractor Options In Products.

1. Set precast grade rings, bricks or concrete masonry units in Waterproofed Mortar. Wet, but do not saturate concrete masonry units and precast grade rings immediately before laying. Saturate brick immediately before laying.
2. Precast grade ring: Pre-set to proper plane and elevation using wedges or blocks or cementitious material not exceeding the joint thickness. No more than four wedges or blocks per grade ring permitted. Incorporate wedges or blocks in fresh mortar in a manner to completely encase each. Crown fresh mortar to produce squeeze-out between grade rings. Tool exposed joints with appropriately shaped tool and compact mortar edge into joints. Clean off excess mortar prior to initial mortar set.
3. Concrete Masonry Leveling Unit: Lay segmental concrete masonry units to line and in radial courses with completely filled mortar joints. Flush cut exposed horizontal and vertical joints on manhole interior and exterior. Leave exterior surface ready for parging.
4. Brick Leveling Units: Lay brick to line and in header courses. Lay each course to stagger one half brick over previous course. Completely fill joints and make close joints not exceeding  $\frac{1}{4}$  inch on inside face of manhole. In making closures, use no portion of a brick less than the width of a brick, and whenever practical use whole brick laid with long side at right angles to inside face of manhole wall. Finish brick work with long side at right angles to inside face of manhole wall. Finish brick work with neatly struck and pointed joints. Clean brick work by removing mortar smears and drippings.
5. Parge the outside of finished brick or concrete masonry leveling units with a minimum of  $\frac{1}{2}$  inch thick waterproofed mortar.
6. Bolt manhole frames in place on manhole top section, or leveling units with a minimum of  $\frac{1}{2}$  inch thick preformed plastic sealing compound on

bearing surface of manhole frame. Remove excess sealing compound squeeze-out after manhole frame is bolted in place.

7. Use bolts of sufficient length to properly pass through leveling units, if any, engage full depth of manhole top section inserts and allowing enough threaded end to pass through manhole frame to properly tighten nut and washer. Tighten manhole frame bolts after mortar has cured.

- G. **Plugging Pipe Openings:** Plug pipe openings in manholes where such openings are required for future pipe connections.

Use masonry units and waterproofed mortar laid up to prevent deterioration.

Install such materials to meet exfiltration limits and to allow future removal without damage to manhole.

- H. **Drop Manholes:** Construct in accordance with Type indicated in Standard Details or bound in the Contract Drawings. Use the same type pipe and fittings in drop connection as used in the sewer line from which drop connection is made.

### 3.04 FIELD QUALITY CONTROL

- A. **General:** After erection of the manholes, connection of the sewers, and placement of the backfill to approximately the finished ground elevation, each manhole shall be vacuum tested for water tightness.

1. Conduct tests in presence of, and to complete satisfaction of the ENGINEER.

2. Should a manhole not satisfactorily pass testing, discontinue manhole construction in the Project until that manhole does test satisfactorily.

3. Provide tools, materials (including water), equipment and instruments necessary to conduct the manhole testing specified herein.

- a. **Vacuum Testing Equipment:**

- 1). Use vacuum apparatus equipped with necessary piping, control valves and gauges to control air removal rate from the manhole and to monitor vacuum.
  - 2). Provide an extra vacuum gauge of known accuracy to frequently check test equipment and apparatus.
  - 3). Vacuum testing equipment and associated testing apparatus are subject to ENGINEER's approval.
  - 4). Provide seal plate with vacuum piping connections for inserting in manhole frame.
4. Prior to testing, clean manholes thoroughly and seal openings, both to the complete satisfaction of the ENGINEER. Seal openings using properly sized plugs.
  5. Perform testing with frames installed. Include the joint between the manhole and manhole frame in the test.
  6. The CONTRACTOR may elect to make a test for his own purposes prior to backfilling. However, conduct tests of the manholes for acceptance, only after the backfilling has been completed.

B. Vacuum Test Procedure:

1. Perform vacuum testing in accordance with the testing equipment manufacturer's written instructions.
2. Draw a vacuum of ten inches of mercury and close the valves.
3. Consider manhole acceptable when vacuum does not drop below nine inches of mercury for the following manhole sizes and times:
  - a. Four foot diameter - 60 seconds.
  - b. Five foot diameter - 75 seconds.
  - c. Six foot diameter - 90 seconds.



d. Seven foot diameter - 105 seconds.

C. Repair and Retest: Determine source or sources of leaks in manholes failing acceptable limits.

1. Repair or replace defective materials and workmanship, as is the case, and conduct such additional Manhole Acceptance Tests and such subsequent repairs and retesting as required until manholes meet test requirements.
2. Materials and methods used to make manhole repairs shall meet with ENGINEER's approval prior to use.
3. Make repairs, replacements and retests at no increase in Contract Price.

**End of Section**

SECTION 02732

MANHOLE VAULTS

PART 1: GENERAL

1.01 Vaults shall be precast concrete manholes having a diameter of five feet unless otherwise noted in the Contract Documents. Structures shall house air and vacuum relief valves. Vaults shall conform to KLH standard detail SD-2-041.

1.02 RELATED WORK

- A. Excavation, Backfill and Completion - Section 02300.
- B. Manholes - Section 02731
- C. Division 3 - Concrete

1.03 QUALITY ASSURANCE

A. Source Quality Control; Manhole Frames and Covers:

- 1. As specified in Section 02601 for watertight manhole frames and covers.

B. Precast Concrete Products - Manhole Sections

- 1. As specified in Section 02601 for manholes.

1.04 SUBMITTAL

A. Shop Drawings and Product Data:

- 1. Manufacturers' published detail drawings, modified to suit design conditions if required, and Contractor prepared drawings as applicable.
- 2. Manufacturer's descriptive literature and specifications covering the product specified. Include installation information.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Transport and handle precast concrete vault components, and other products specified herein, in a manner recommended by their respective manufacturers to prevent damage and defects. Through-wall lifting holes are not permitted in chamber component construction.

- B. Store precast concrete vault components in accordance with their manufacturer's recommendations to prevent joint damage and joint contamination. Exercise such care in storage of other specified products as recommended by their respective manufacturers.

PART 2: PRODUCTS

2.01 BASIC MATERIALS

- A. Precast concrete manhole components meeting the requirements of ASTM C478 and shall include barrel sections, flat top and precast extended base.
- B. Cast-In Place Concrete Products: Formwork, Reinforcement and Cast-In-Place Concrete conforming to requirements of Division 3-Concrete.
- C. Watertight Manhole Frame and Cover: Gray iron castings conforming to previously specified requirements for Manhole Frame and Cover.
- D. Manhole Steps:
  - 1. Reinforced Plastic Step: Composed of a 3/8 inch Grade 60, ASTM A 615 deformed steel reinforcing bar completely encapsulated in Grade 49108, ASTM D 4104 Polypropylene Copolymer Compound, Type; M. A. Industries, Inc. or equal.
- E. Concrete sealant: Flexible Butyl Resin Sealant meeting the requirements of federal specification ss-s210 (210A). AASHTO M-198B and ASTM C-900-91 and material shall be ConSeal or an approved equal.
- F. Grout: As specified in Section 03600.
  - 1. Non-shrink non-metallic grout.
- G. Epoxy Bonding Compound: Use product such as W.R. Grace Epoxite Binder, Sika Chemical COLMA-FIX or equal.
- H. Pipe Penetrations: Pipe Penetrations shall be watertight and shall be watertight type steel wall sleeves cast in the barrel section during the manufacturing process of the diameters required by the Construction Drawings, and shall have link seal installed in the field.
- I. The exterior surface of all vaults shall be coated and waterproofed with two coats of bitumastic material or

coal tar. Each coat shall have a minimum dry film thickness of 8 mils.

- J. After erection of the vaults and backfill to approximately finished ground elevation, each vault shall be vacuum tested for water tightness as specified in Section 02601.

PART 3: EXECUTION

3.01 VAULT CONSTRUCTION METHODS

- A. Precast Concrete Manhole Vault Unit Installation: Install unit on a minimum six-inch deep compacted layer of Aggregate Fill.
  - 1. Install Flexible Butyl Resin between sections, and to seal the top section on the chamber unit. Install sealing material in accordance with manufacturer's recommendations.
- B. Manhole Steps and Frame and Cover Installation: As specified in Section 02601.

3.02 FIELD QUALITY CONTROL

- A. General: After erection of the vaults, connection of the sewers, and placement of the backfill to approximately the finished ground elevation, each manhole shall be vacuum tested for water tightness.
  - 1. Conduct tests in presence of, and to complete satisfaction of the ENGINEER.
  - 2. Should a manhole vault not satisfactorily pass testing, discontinue manhole construction in the Project until that manhole does test satisfactorily.
  - 3. Provide tools, materials (including water), equipment and instruments necessary to conduct the manhole testing specified herein.
    - a. Vacuum Testing Equipment:
      - 1). Use vacuum apparatus equipped with necessary piping, control valves and gauges to control air removal rate from the manhole vault and to monitor vacuum.

- 2). Provide an extra vacuum gauge of known accuracy to frequently check test equipment and apparatus.
  - 3). Vacuum testing equipment and associated testing apparatus are subject to ENGINEER's approval.
  - 4). Provide seal plate with vacuum piping connections for inserting in manhole frame.
4. Prior to testing, clean manhole vault thoroughly and seal openings, both to the complete satisfaction of the ENGINEER. Seal openings using properly sized plugs.
  5. Perform testing with frames installed. Include the joint between the manhole vault and manhole vault frame in the test.
  6. The CONTRACTOR may elect to make a test for his own purposes prior to backfilling. However, conduct tests of the manholes for acceptance, only after the backfilling has been completed.
- B. Vacuum Test Procedure:
1. Perform vacuum testing in accordance with the testing equipment manufacturer's written instructions.
  2. Draw a vacuum of ten inches of mercury and close the valves.
  3. Consider manhole vault acceptable when vacuum does not drop below nine inches of mercury for the following manhole sizes and times:
    - a. Four foot diameter - 60 seconds.
    - b. Five foot diameter - 75 seconds.
    - c. Six foot diameter - 90 seconds.
    - d. Seven foot diameter - 105 seconds.
- C. Repair and Retest: Determine source or sources of leaks in manholes failing acceptable limits.
1. Repair or replace defective materials and workmanship, as is the case, and conduct such additional Manhole Acceptance Tests and such

subsequent repairs and retesting as required until manholes meet test requirements.

2. Materials and methods used to make manhole vault repairs shall meet with ENGINEER's approval prior to use.
3. Make repairs, replacements and retests at no increase in Contract Price.

**End of Section**

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SECTION 02910

SOIL TREATMENT

PART 1: GENERAL

A. Not used.

PART 2: PRODUCTS

A. Not used.

PART 3: EXECUTION

3.01 FINAL GRADING

- A. All areas disturbed by the CONTRACTOR's operation, including those areas used for storage of excavated material, equipment, etc., shall be brought up to within 4 inches of the final grade indicated on the drawings by the methods therein before specified. In general, the grade shall slope away from the installed or existing structures to drainage ditches or culverts. Those areas which are not occupied by structures or pavement shall be thoroughly loosened by harrowing or discing and then raked by hand and all stones, over 1 inch, rubbish or debris shall be removed. Topsoil shall then be uniformly spaced in piles and distributed by an approved method.
- B. The CONTRACTOR shall supply any additional topsoil required over and above that salvaged from the site in order to maintain a minimum of 4 inches. of depth over the entire area defined above if the area is to be seeded, or 4 inches of depth is the area to be sodded or planted. Any surface irregularities shall be corrected to prevent formation of low places where surface water may pool. Topsoil shall not be placed when the subgrade is frozen or when it is excessively wet or dry and shall not be handled when in a frozen or muddy condition.

3.02 TOP SOIL

- A. The CONTRACTOR shall obtain topsoil from a local garden supplier or nurseryman for locations where existing topsoil is not of adequate quantity and



quality. The cost of furnishing and placing all such topsoil shall be included in the price bid for the respective pipe items.

- B. Texture Classifications of top soil shall be in accordance with the Textural Classification System developed by the U.S. Department of Agriculture. Acceptable topsoil textures shall be within the following acceptable ranges, sand - 12% to 60%, silt-15% to 65%, and clay - 0% to 23%, organic content shall be 4% minimum. Only soil additives approved by the OWNERS Representative shall be used to achieve the specified top soil quality.

### 3.03 SEEDING

- A. All areas which are disturbed by construction operations, including equipment and materials storage, and which are not occupied by a roadway or permanent structure, shall be seeded with grass seed as follows:
- B. After the topsoil has been properly distributed, lime in the form of raw ground limestone shall be applied in an amount to be determined from an analysis of the soil by a qualified soil sampling service; then one week after the lime has been spread, fertilizer shall be added. Fertilizer in the amount of 5-10-5, nitrogen phosphorus and potash, respectively, shall be spread at the rate of 30 lb. per 1000 sq. ft. after which a 1/4 in. layer of peat moss or mushroom manure shall be added. The entire area shall then be properly tilled and hand-raked to a smooth, even grade. All stones and dirt clods over 1 in. diameter shall be removed from the topsoil.
- C. Permanent seeding shall consist of a mixture of 88% Kentucky 31 tall fescue and 12% red top, sown at the rate of 2 pounds per 1000 square foot. The area shall then be lightly brushed or raked to provide slight covering over the seed, after which it shall be lightly rolled in two directions.
- D. All seeded areas shall be kept constantly wet to a depth of 3 in. for 10 days immediately after seeding. All areas which do not show prompt catch of grass shall then be reseeded as required. In any event, the

CONTRACTOR shall insure a good final stand of grass as specified above, and he shall maintain the seeded areas until the lawn, as such, is free from bare spots and off color areas and until final acceptance of the entire project.

- E. Sowing may be done mechanically, by hand, or by an approved method of hydroseeding. In the latter case, alternate means of fertilizing in combination with seeding will be permitted on inaccessible areas and upon approval of methods by the OWNER's representative. Mulching material shall be in accordance with the recommendation of a local recognized nurseryman approved by the OWNER's representative.

**End of Section**

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**DIVISION 3- CONCRETE**

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1: GENERAL

- A. Not used.

PART 2: PRODUCTS

2.01 PORTLAND CEMENT

- A. Portland Cement shall conform to the Standard Specifications for Portland Cement of the American Society for Testing Materials, Serial Designation C-150, Type I or Type III. All cement shall be obtained from one source. Different brands of cement will not be permitted, except as previously specified. All cement shall be stored in a suitable manner to protect the cement from dampness in a manner to be easily inspected and to permit easy identification of each shipment. Facilities shall be provided for inspection and sampling of stored cement being used. The cement shall be rejected if it fails to meet any of the requirements of these specifications.

2.02 ADMIXTURES

- A. All admixtures shall be approved by the OWNER, if he so desires, and shall be added to the concrete in strict accordance with the recommendation of the manufacturer. An air entraining admixture shall be added to all concrete for structures subjected to freeze-thaw conditions, such as sidewalks, outside liquid containing or liquid conveying vessels, concrete walls and roofs exposed to weather, etc. Admixture shall be added to the concrete to produce a 5% air content in Class A concrete and 6% air content in Class B concrete. Air content shall not vary more than 1% from the specified amount. An admixture similar to Type B or Type D, ASTM Standard C-494, shall be added to all Class A or Class B non-air entrained concrete unless other wise approved by the ENGINEER and shall be optional with Class C. This admixture shall contain no calcium chloride or

triethanolamine. Densifying retarders as manufactured by Sika Chemical Company, Master Builders Company or Dewey & Almy Corporation will be considered, provided the CONTRACTOR obtains the approval of the OWNER for the type to be used prior to the making of the trial mixes and further provided that they meet the requirements hereinafter specified.

### 2.03 WATER

- A. Water used in mixing and curing concrete shall be fresh, clean and free from injurious amounts of sewage, oil, acid, alkali, organic matter or other deleterious substances. Water shall be approved for human consumption.

### 2.04 CONCRETE AGGREGATE

- A. Concrete aggregate shall conform to the "Specifications for Concrete Aggregate", ASTM Designation C-33, except as revised. If requested, aggregate shall be certified by an independent commercial testing laboratory to show compliance with the above-mentioned Specifications.

1. Fine Aggregates: Only clean natural sand shall be used. Artificial or manufactured sand will not be acceptable.

2. Coarse Aggregates: Coarse aggregate shall consist of crushed stone conforming to the following limits:

Sodium Sulfate	-	10% Maximum Loss
L.A. Abrasion Test	-	35% Maximum Loss
Crushed Particles	-	45% Minimum Loss

- B. The sizes of coarse aggregate for the three types of concrete being used in this work as described hereafter, as follows:

<u>Concrete</u>	<u>ASTM Size Number</u>
Class A	467 or 57
Class B	67
Class C	2

- C. The CONTRACTOR must utilize a crushed Limestone mix. Random samples of concrete delivered to the site will be washed to inspect the character of the coarse aggregate. At random selection aggregate samples taken at the construction site will be tested.

2.05 STORAGE

- A. Cement and aggregates shall be stored in such a manner as to prevent deterioration or contamination with foreign matter. Fine and coarse aggregate shall be stored separately and in such a manner as to avoid segregation. Cement which has become caked, partially set, or otherwise deteriorated, or any material which has become damaged or contaminated, shall be rejected for use.

2.06 CONCRETE MIXES

<u>Type</u>	<u>W/c Ratio</u> <u>Maximum</u>	<u>Minimum</u> <u>Cement</u> <u>Factor</u>	<u>28-Day Strength</u> <u>Characteristics</u>	<u>Maximum</u> <u>Slump</u> <u>In Inches</u>
Class A	0.45	6	4000 psi	3±
Class B	0.45	6-3/4	4500 psi	3±
Class C	0.59	5	2800 psi	3±

PART 3: EXECUTION

3.01 SCOPE OF WORK

- A. All concrete which is to retain or exclude water and intended to be watertight shall be Class A. Class B concrete shall be used in walls and slabs 6 inches or less in thickness. It shall also be used for forming channels in the bottom of flumes and other similar structures and for closing openings in walls around pipes. Class C concrete shall be used for pipe cradle backfill, or as shown on the drawings. Class A concrete shall be used at all other locations.
- B. Concrete shall be mixed and delivered in accordance with the requirements of "Standard Specifications for Ready-Mixed Concrete" (ASTM Designation C-94) and/or as modified by these specifications. During a continuous pour, the interval between loads shall not be greater than twenty minutes, or in any case be so

great as to allow the concrete in place to become partially hardened. Water used to flush the mixer or agitator between loads shall not be allowed to become a part of any concrete in the work.

- C. When the temperature is below 40°F, adequate equipment shall be provided for heating the component materials of the concrete so that the concrete being deposited can be maintained at a temperature of 50°F minimum to 90°F maximum. When the air temperature is above 90°F, and adequate means of cooling the concrete mix shall be provided.
- D. Truck mixers shall be revolving drum type and shall be equipped with a mixing water tank. Only the prescribed amount of mixing water shall be placed in the tank for any one batch, unless the tank is equipped with an approved device by which the amount of water added to each batch can be readily verified by the ENGINEER.
- E. Delivery tickets shall be prepared for each load of ready-mixed concrete delivered. The batch plant operator shall prepare the ticket. The drivers of the trucks shall deliver the tickets to the OWNER's representative at the site at the time of the delivery. The tickets shall contain the following information:
  - 1. Number of yards delivered on this truck
  - 2. Quantities of materials in the batch
  - 3. The time at which the truck left the batching plant
  - 4. The time at which the cement was added
  - 5. The outdoor temperature in the shade
  - 6. The numerical sequence of the delivery
  - 7. Date
- F. Placing of the concrete shall be done in accordance with ACI Standard 304, "Recommended Practice for Measuring, Mixing and Placing Concrete", Except as modified or revised by these Specifications.
- G. Before depositing concrete all debris shall be removed from the space to be occupied by the concrete. Forms, if constructed of lumber, shall be thoroughly secured in position. Water shall be removed from the space to be occupied by the concrete before concrete is deposited.

- H. Concrete shall be handled from the transporting vehicle in such a way as to prevent the separation or loss of the ingredients. Under no circumstances shall concrete that has partially hardened be deposited in the work. Concrete shall be deposited in the forms as nearly as practical in its final position to avoid rehandling. It shall be so deposited as to maintain, until the completion of the unit, a plastic surface approximately horizontal. Forms for walls or thin sections of considerable height shall be provided with openings or other devices that will prevent segregation and accumulation of hardened concrete on the forms or on the metal reinforcement above the level of the concrete.
- I. Where concrete is conveyed to chutes, the equipment shall be of such size and design as to insure a continuous flow in the chute. The chutes shall be of metal, or metal-lined, and if two or more lengths are used, they shall have approximately the same slope. The slope shall not be less than one vertical to two horizontal and shall be such as to prevent the segregation of the ingredients. The discharge end of the chute shall be provided with a baffle plate to prevent segregation. If the distance of the discharge end of the chute above the surfaces of the concrete is more than three times the thickness of the layer being deposited, or more than 4 feet above the surface of the concrete, a spout or "elephant trunk" shall be used, and the lower end maintained as near to the surface of deposit as practical. When the operation is intermittent, the chute shall discharge into a hopper. The chute shall be thoroughly cleaned before and after each run and the debris from any water used shall be discharged outside the forms.
- J. Before depositing new concrete on or against concrete which has hardened and to which it is to bond, the forms shall be retightened. The surface of the hardened concrete shall be roughened in a manner that will not leave loosened particles of aggregate to damaged concrete at the surface. It shall be thoroughly cleaned of foreign matter and laitance, and saturated with water. To insure an excess of mortar at the junction of the hardened and the newly deposited concrete, the cleaned and saturated surfaces,



including inclined surfaces, shall be first thoroughly covered with a coating of mortar or neat cement grout against which the new concrete shall be placed before the grout has attained its initial set.

- K. Concrete during and immediately after depositing shall be thoroughly compacted by means of vibration. The number of vibrators used shall at all times be subject to the approval of the OWNER. The concrete shall be thoroughly worked around the reinforcement, and around embedded fixtures and into the corners of the forms. Attention is directed to the fact that manhole bottoms, pipe cradle and encasement and similar concrete work are required to be thoroughly vibrated.
- L. The accumulation of water on the surface of the concrete due to water gain, segregation, or other causes, during placement and compacting, shall be prevented as far as possible by adjustment in the mixture. Provision shall be made for the removal of such accumulated water so that under no circumstances will concrete be placed in such accumulation.
- M. To minimize the formation of laitance, great care shall be exercised to disturb the concrete as little as possible while it is being deposited. Upon completion of a section of concrete, all laitance shall be entirely removed before work is resumed. The CONTRACTOR shall submit to the OWNER, prior to start of work, the details of procedures he proposes to minimize and control the development of shrinkage cracks.
- N. At least 24 hours must elapse after depositing concrete in the walls before depositing it in beams, girders, or slabs supported thereon. Beams and girders shall be considered as part of the floor system and shall be placed monolithically therewith.
- O. Concrete shall be placed in cold weather in accordance with "Recommended Practice for Cold Weather Concreting" (ACI 306) except as modified or revised by these specifications. Before placing concrete during cold weather, the forms shall be free from frost and ice.

- P. During those seasons of the year (after the first frost in the fall and until the daily mean temperature in the spring reaches 40°F for three successive days) when freezing temperatures can be anticipated, the CONTRACTOR shall maintain facilities to keep the concrete from freezing for at least 72 hours after placing.
- Q. When the daily mean temperature drops below 40°F for more than one day, the concrete shall be maintained at a temperature of 55°F for Class B concrete and 50°F for Class A or Class C concrete for a minimum of five days. During this period concrete and adjacent form surfaces shall be kept moist at all times. When heated enclosures are to be provided, care shall be taken to provide adequate space around the outer edges and top of the concrete structure to permit circulation of the heated air so that neither freezing nor excessive heating of these extremities can occur. All facilities for protection and heating must be on hand before the concrete is placed.
- R. After the required protection period is over, the heat shall be removed gradually and uniformly so that there will be a temperature differential of no more than 40°F over any 24 hour period.
- S. Forms shall not be removed from the concrete surfaces during the protection period stipulated above, the forms shall not be removed for a period of three days during those seasons of the year previously specified when the difference between the daily high and low temperatures may reasonably be expected to exceed 40°F.
- T. Concrete shall be placed in hot weather in accordance with "Recommended Practice for Hot Weather Concreting" (ACI 305) except as modified or revised by these specifications.
- U. At air temperatures of 90°F or above, concrete should be kept as cool as possible during placing and curing. Concrete surfaces shall be wet cured in accordance with ACI 305 specifications for hot weather curing. After the period of wet-curing, a suitable heat-reflecting plastic membrane or white-pigmented curing compound may be used - or immediate membrane curing.

- V. If, after stripping of forms, any concrete is found to be not formed as shown on the Drawings, or is out of alignment or level, or shows a defective surface, it shall be considered as not conforming with the intent of these specifications and shall be removed and replaced by the CONTRACTOR at his expense unless the OWNER grants permission to patch the defective area, in which case patching shall be done as hereinafter described.
- W. Defects that require replacement or repair are those that consist of honeycomb, damage due to stripping forms, loose pieces of concrete, surface holes caused by bolts and ties, excessive ridges at form joints and bulges due to movement of the forms. Ridges and bulges shall be removed by chipping, tooling or grinding on finished surfaces. Honeycomb and other defective concrete shall be chipped out, the chipped openings having sharp edges and shaped so that the mortar filling will be keyed in place. All holes shall be kept thoroughly moistened for several hours before mortar filling is placed.
- X. Imperfections, bolt and tie-rod holes, and chipped-out honeycomb areas to be repaired shall be filled with dry patching mortar composed of one part of Portland Cement to two parts of regular concrete sand (volume measurement) and just enough water so that, after the ingredients are mixed thoroughly, the mortar will stick together on being molded into a ball by slight pressure of the hands, and will not exude free water. Mortar repairs shall be placed in thin layers and thoroughly compacted by suitable tools. Care shall be taken in filling rod and bolt holes so that the entire depth of the hole is completely filled with compacted mortar. "EMBECO", or equal, shall be added to all patching mortar in an amount as recommended by the manufacturer for the mix to be used except for unpainted, exposed surface.

**End of Section**

SECTION 03600

GROUT

PART 1: GENERAL

1.01 RELATED WORK

A. Cast-In-Place Concrete: Section 03300

1.02 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

1. Grout manufacturer shall furnish the Engineer with current independent laboratory test results indicating the grout as non-shrink from the time of placement; indicating no expansion after final set, ASTM C 827; indicating 4,000 psi strength developed with a trowelable mix within 24 hours, ASTM C 109; and indicating placement time based on initial set of not less than 60 minutes, ASTM C 191.
2. Test Results, as supplied by the grout manufacturer, shall indicate that in projects of similar scope and size, the effective bearing area was between 95 and 100 percent.

B. Laboratory Test of Grout: Perform test of sand/cement grout in accordance with ASTM C 1019.

1. Prior to placing grouts prepare trial batches of the proposed grout mixes for approval.
2. During production grout operation, perform grout test for each 5000 square feet of masonry.

1.03 REFERENCES

A. American Concrete Institute:

1. ACI 308, Recommended Practice for Curing Concrete
2. ACI 530, Specification for Masonry Structures.

B. American Society for Testing and Materials:

1. ASTM C 33, Specification for Concrete Aggregates
2. ASTM C 150, Specification for Portland Cement
3. ASTM C 191; Test Method for Time of Setting of Hydraulic Cement by Vicat Needle.
4. ASTM C 476; Specification for Grout for Reinforced and Non-Reinforced Masonry.
5. ASTM C 827; Test Method for Early Volume change of Cementitious Mixtures.
6. ASTM C 1019; Method for Sampling and Testing Grout.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Prevent moisture damage and contamination of materials.
- B. Store materials in undamaged condition with seals and labels intact as packaged by the manufacturer.

1.05 PROJECT CONDITIONS

- A. Protect against high and low temperatures and unfavorable environmental conditions in accordance with American Concrete Institute standards for placement of concrete.

PART 2: PRODUCTS

2.01 MATERIALS

- A. Non-Shrink Non-Metallic Grout: A factory premixed material containing no corrosive irons, aluminum, chemicals, or gypsums and complying with the following limitations.
  1. Grouts containing water reducers, accelerators, or fluidifiers shall have no drying shrinkage greater than the equivalent sand cement and water mix when tested according to ASTM C 596.

2. Grout shall exhibit no shrinkage before initial set and show no expansion after set when tested according to ASTM C 827.
  3. Initial set of grout shall occur in not less than 60 minutes according to ASTM C 191 Test.
  4. Use Type II (Sulfate Resistant) cement for grout applications in contact with sewage.
  5. Acceptable Manufacturer: U.S. Grout Corporation, FIVE STAR, or equal.
- B. Epoxy Based Grout: A moisture insensitive, solvent-free, high solids, high-modulus, and epoxy-resin grout formulated of epoxy component and selected silicia aggregate in a pre-proportion package. Grout properties as follows:
1. Compressive Strength, ASTM D 695: Minimum 12,000 psi in 28 days at 73 degree Fahrenheit ambient and material temperature.
  2. Flexural Strength, ASTM D 790: Minimum 3,800 psi in 28 days at 73 degrees Fahrenheit ambient and material temperature.
  3. Tensile, Shear Strength, ASTM D 638: Minimum 1,500 psi in 28 days at 73 degrees Fahrenheit ambient and material temperature
  4. Acceptable manufacturers:
    - a. Sika Corporati9on; Sikadur Grout-Pak.
    - b. L & M Construction Chemicals; EPOGROUT.
    - c. The Euclid Chemical Company; Poly-Patch.
    - d. Or Equal.

## 2.02 GROUT QUALITY

- A. Non-Shrink Grout: Use ready-mix type requiring only the addition of water. Do not add other materials. Water requirement proportions shall conform to manufacturer's specification for desired mix consistency.

PART 3: EXECUTION

3.01 PREPARATION

A. Forming

1. Use forming procedures that allow proper and complete placement of grout.
2. Anchor Support elements so no movement is possible.
3. Remove supports only after grout has hardened.
4. Pre-treat wood forms with forming oils so that they do not absorb moisture.

B. Preparation of Surface:

1. General: A clean surface to be grouted to be free of oil, grease, laitance, dirt and other contaminants. Remove loose material. Remove rust, paint, and oil from metal components in contact with grout.
2. Non-shrink Grout: Perform additional surface preparation in accordance with manufacturer's instructions.

3.02 MIXING

A. Equipment: Use power operated mechanical mixer of sufficient capacity.

B. Time:

1. Non-Shrink Grout: In accordance with manufacturer's instructions.
2. Epoxy Base Grout: In accordance with manufacturer's instructions for preconditioning and two-component mixing.

3.03 PLACING

A. Epoxy Based Grout: Place in accordance with manufacturer's instructions.

B. Non-Shrink Non-Metallic Grout: Perform grout placement in accordance with the recommendations of ACI and the manufacturer's published specifications for mixing and placing. Place Non-Shrink Non-Metallic Grout only where indicated on Drawings.

**End of Section**



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DIVISION 9 - FINISHES

SECTION 09954

POLYETHYLENE ENCASEMENT

PART 1: GENERAL

1.01 DESCRIPTION

- A. This section includes all materials, applications, labor and utilities of polyethylene sheet encasement.
- B. All ductile iron pipe fittings installed on the pressure sewer under this contract shall be furnished with polyethylene encasement.

1.02 SUBMITTALS

- A. Submit submittal packages in accordance with Section 01301.
- B. Submit manufacturer's catalog literature and product data sheets describing the physical, chemical and electrical properties of the encasement material.

PART 2: PRODUCTS

2.01 POLYETHYLENE MATERIALS

- A. The encasement shall consist of a polyethylene sheet or tube of at least 8 mils thickness conforming to AWWA C105.

2.02 PLASTIC ADHESIVE TAPE

- A. Use 2 inch wide adhesive tape such as Calpico Vinly Tape. Polyken 900, Scotchwrap 50, or an approved equal.

PART 3: EXECUTION

3.01 APPLYING SHEET ENCASEMENT TO BURIED FITTINGS, COUPLINGS, AND APPURTENANCES

- A. Wrap buried ferrous metal pipe fittings, couplings, adapters, and appurtenances with polyethylene sheet.

Overlap the adjoining pipe or fitting a minimum of one-foot and secure in place with 2-inch wide plastic adhesive tape. Apply a second layer and secure with tape around the barrel of the connecting pipe to prevent the entrance of soil. Pour concrete anchor and thrust blocks after the wrap has been properly placed.

- B. Wrap base elbows with 2 layers of polyethylene sheet and secure in place with 2-inch wide plastic adhesive tape. Extend the wrap to the finish ground level of the assembly. Secure the sheets with tape around the ends to prevent the entrance of soil. Pour concrete anchor and support blocks after the wrap has been properly placed.
- C. Junctions between wrapped and unwrapped pipe - Where polyethylene wrapped pipe joins an adjacent pipe that is not wrapped, extend the polyethylene wrap to cover the adjacent pipe for a distance of at least 3 feet. Secure the end with circumferential turn of tape.
- D. Backfill for polyethylene-wrapped pipe fittings - Use the same backfill material as that specified for pipe without polyethylene wrap, exercising care to prevent damage to the polyethylene wrapping when placing backfill. Backfill material shall be free from cinders, refuse, boulders, rocks, stones, or other material that could damage polyethylene.
- E. The polyethylene encasement shall prevent contact between the pipe fittings and the surrounding backfill and bedding material but is not intended to be a completely airtight or watertight enclosure. All clumps of clay, mud, cinders, and so forth, on the pipe surface shall be removed prior to installation of the polyethylene encasement. During installation, care shall be exercised to prevent soil or embedment material from becoming trapped between the pipe fitting and the polyethylene.
- F. The polyethylene film shall be fitted to the contour of the pipe to effect a snug, but not tight, encasement with minimum space between the polyethylene and the pipe fitting. Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such

as bell-spigot interfaces, bolted joints, or fittings, and to prevent damage to the polyethylene due to backfilling operations. Overlaps and ends shall be secured with adhesive tape, plastic tie straps, or any other approved material capable of holding the polyethylene encasement in place until backfilling operations are complete.

- G. For installations below the water table, the CONTRACTOR shall provide for circumferential wraps of the tape or plastic tie straps be placed at 2-ft (0.6-m) intervals along the barrel of the pipe to help minimize the space between the polyethylene and the pipe fitting.

### 3.02 REPAIR OF POLYETHYLENE MATERIAL

- A. Repair polyethylene material that is damaged during construction. Use polyethylene sheet, place over damaged or torn area, and secure in place with 2-inch wide plastic adhesive tape.

**End of Section**

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**ISSUED TO: Galway Bay Corporation**

**MUNICIPAL AUTHORITY  
OF THE CITY OF MCKEESPORT  
ALLEGHENY COUNTY, PENNSYLVANIA**

**CONTRACT DOCUMENTS FOR  
CLIFF STREET PUMP STATION IMPROVEMENTS**

**CONTRACT NO. 2010-11  
GENERAL/MECHANICAL CONSTRUCTION**

**JANUARY 2011 RELEASE FOR BID**

**KLH**   
**ENGINEERS, INC.**  
5173 Campbells Run Road  
Pittsburgh, PA 15205  
Telephone: (412) 494-0510  
Fax: (412) 494-0426  
E-mail: [info@klhengineers.com](mailto:info@klhengineers.com)  
Ref. No. 220-35

Section C

**BID FORM - CONTRACT NO. 2010-11**

**Project Identification:** Cliff Street Pump Station  
Improvements

**Contract Identification  
and Number:** General/Mechanical Construction  
Contract No. 2010-11

**This Bid is Submitted to:** Municipal Authority of the City of  
McKeesport  
100 Atlantic Avenue  
McKeesport, PA 15132

**C1** The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in Section J of the Contract Documents and, to complete all Work as Specified and within the Contract Time indicated in this Bid, in accordance with the Contract Documents.

**C2** BIDDER accepts all of the terms and conditions of the Instructions to Bidders and other components of the Contract Documents. This Bid may not be withdrawn for ninety (90) days after the day of Bid opening. BIDDER will sign the Agreement and submit the Contract Security and other documents required by the Contract Documents within fifteen days after the date of OWNER's Notice of Award.

**C3** In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

C3.1 Bidder has examined copies of all Contract Documents including Sections A through K and all Drawings, and the following Addenda designated as Section L (if any):

<b>Date of Issuance</b>	<b>Addenda Number</b>
<u>February 1, 2011</u>	<u>1</u>
<u>February 10, 2011</u>	<u>2</u>
<u>February 15, 2011</u>	<u>3</u>
March 1, 2011	4

receipt of all which is hereby acknowledged.

C3.2 BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the

work and has made such independent investigations as BIDDER deems necessary. BIDDER has satisfied itself as to the conditions to be encountered both overhead and on the surface of the ground and/or within existing structures and of the character, quality and quantities of work to be done, materials to be furnished, services required and all other terms of the Technical Specifications and other Contract Documents. BIDDER assumes all risks inherent in performing the work and arising from any deficiencies in the Drawings or Specifications or other Contract Documents and will make no claim against the OWNER or the ENGINEER because of any such alleged deficiency.

C3.3 This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation, BIDDER has not directly or indirectly induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

C4 BIDDER will complete the Work under Contract No. 2010-11 for the following Lump Sum Price: Eight Hundred Eighty Two

**Lump Sum Contract Price** Thousand Dollars Zero Cents  
 (Words)  
 \$ 882 000.00  
 (Figures)

C5 BIDDER agrees that the lump sum prices above are predicated on furnishing the following major process equipment at the cost stated below.

Specification Item No.	Description	Name of Manufacturer	Cost of Base Bid Equipment
11310	Raw Wastewater Pumps	Yeomans Pump	<u>112,000.00</u>

C6 BIDDER hereby offers deductions from the lump sum bid prices if the OWNER desires that alternate equipment be furnished by the respective manufacturers identified below (BIDDER may insert alternate manufacturers' names in any one or more of the spaces below):



Specification	Description	Name of Alternate Manufacturer and Associated Deduction from Bid Price
11310	Raw Wastewater	Deduct \$ <u>Fairbanks</u> <u>20000.00</u>

**C7** BIDDER agrees that the Work will be completed within five Hundred forty (540) Calendar days after the date when the Contract Time commences.

**C8** BIDDER understands and agrees to coordinate his construction activities with those of the OWNER, the ENGINEER and the other CONTRACTORS.

**C9** BIDDER accepts the provisions set forth in the Agreement in Section J of the Contract Documents as to liquidated damages in the event of failure to complete the Work on time.

**C10** BIDDER recognizes the problem in identifying exact locations of reputed underground utility pipe lines, structures, and/or appurtenances and in classifying, during the bidding period, the subsurface conditions which will be encountered during construction and, in submitting this bid, has included any and all costs in connection therewith and shall not seek any extra compensation for performing the work because of those actual prevailing conditions.

**C11** The required Bid Security set forth in Paragraphs B7 of the Instructions to Bidders in the form of a certified bank check, or a Bid Bond, the form for which is included as Section D of the Contract Documents, is in the amount of 10% of the Amount of the Bid.

**C12** Communications concerning this Bid shall be addressed to the BIDDER at the address stated on the following page.

**C13** The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

**Submitted on** \_\_\_\_\_ March 7, 2011 .

(Execute the Bid Form on the following page)



*Galway*

(continued from previous page)

**WWTP Expansion Combination No. 2**

Column A Combination of Contracts	Column B Reduction in the Amounts of the Lump Sums bid if Awarded the Combination indicated in Column A
	(In Figures)
• Contract 2010-01 Wastewater Treatment Plant Expansion General Mechanical Construction.	\$ <u>382,000.00</u>
• Contract 2010-03 West Shore Pump Station General Mechanical Construction.	\$ <u>282,000.00</u>
• Contract 2010-05 Long Run Pump Station Improvements General Mechanical Construction.	\$ <u>1,095,000.00</u>
• Contract 2010-07 Ripple Road Pump Station General Mechanical Construction.	\$ <u>243,000.00</u>
• Contract 2010-09 28 <sup>th</sup> Avenue Pump Station Improvements General Mechanical Construction.	\$ <u>220,000.00</u>
• Contract 2010-11 Cliff Street Pump Station Improvements General Mechanical Construction.	\$ <u>207,000.00</u>
<b>Total</b>	\$ <u>2,429,000.00</u>



IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their several seals this 7th day of March, 2011, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned and representative, pursuant to authority of its governing body.

ATTEST: DATE March 7th, 2011

WITNESS: Galway Bay Corporation  
Name of Bidder, Corporation, Firm or Individual

Judy K Clark  
Judy K. Clark - Secretary

By [Signature]  
Gregory R. Maynard - President  
(Title)  
10 Ainsley Lane, P O Box 320  
Mount Braddock, PA 15465  
Business Address of Bidder

\*\*\*\*\*

ATTEST:  
[Signature]  
Patty Mangus, Witness

Liberty Mutual Insurance Company  
Surety  
[Signature]  
Attorney-in-fact  
Kimberly L. Miles

IMPORTANT - Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

Section J

**AGREEMENT - CONTRACT NO. 2010-11**

**THIS AGREEMENT** is dated as of the 28 day of JUNE in the year of 2011 by and between The Municipal Authority of the City of McKeesport hereinafter called OWNER and Galway Bay Corporation hereinafter called CONTRACTOR.

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

**J1 WORK**

J1.1 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Contract No. 2010-11 Cliff Street Pump Station Improvements

General/Mechanical Construction

**J2 CONTRACT TIME**

J2.1 The Work will be completed within five Hundred forty (540) calendar days after the date when the Contract Time commences as provided in the General Conditions.

J2.2 Liquidated Damages OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not complete within the time specified in paragraph J2.1 above, plus any extensions thereof allowed in accordance with the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER Six Hundred Fifty Dollars (\$650.00) for each day that expires after the time specified in paragraph J2.1 for completion until the Work is substantially complete.

**J3 CONTRACT PRICE**

J3.1 OWNER shall pay CONTRACTOR for performance of the Work in accordance with the Contract Documents in the following lump sum amount:

Six Hundred Seventy Five Thousand Dollars & 00/100

(\$675,000.00)

#### **J4 PAYMENT PROCEDURES**

J4.1 CONTRACTOR shall submit Applications for Payment in accordance with Section H of the Contract Documents.

J4.2 Progress Payments. OWNER shall make progress payments on the Contract Price on the basis of CONTRACTOR's Application for Payment. All payments will be on the basis of the progress of the Work measured by the schedule of values provided for in the Contract Documents.

J4.3 Prior to 50% completion of the Work, progress payments will be in an amount equal to:

- 90% of the Work completed, and
- 100% of materials and equipment not incorporated in the Work but delivered and suitably stored, less in each case, the aggregate of payments previously made.

J4.4 After the work is at least 50% complete, and subject to satisfactory progress and compliance with the provisions of the Contract Documents, the OWNER may, at its discretion, elect to reduce the retainage to an amount equal to 5% of the completed work value.

J4.5 Final Payment. Upon final completion and acceptance of the Work, OWNER shall pay the remainder of the Contract Price not previously paid.

#### **J5 INTEREST**

J5.1 All moneys not paid when due hereunder shall bear interest at the rate defined in Paragraph H2.

#### **J6 CONTRACTOR'S REPRESENTATIONS**

J6.1 CONTRACTOR represents that he has familiarized himself with the nature and extent of the Contract Documents, Work, locale and with all local conditions; federal, state and other laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work; and, has made or caused to be made such examinations, investigations (including subsurface explorations) and tests and studies of such reports and related data as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes, and that he shall be responsible

to fully perform all work within the contract time and for the contract price(s) stated herein, regardless of the conditions actually encountered. All risks assumed hereunder have been included in the contract price.

J6.2 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

**J7 CONTRACT DOCUMENTS**

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

<b>Section</b>	<b>Identification</b>	<b>Page No.</b>
J	Agreement	J-1 to J-4
	Exhibits attached to this agreement	_____ (if any)
K	Surety Bonds/Insurance Certificates	K-1 to K-7
E	General Conditions	E-1 to E-27
F	Supplemental General Conditions	F-1 to F-28
G	Technical Specifications	01000-16990
H	Measurement and Payment	H-1 to H-2
I	Standard Detail Drawings	I-1 to I-20
	Drawings 24" x 36" - Bound Separately from this Book (Are identified in Section 01010)	
L	Addenda	L-1 to L-25 (if any)
C	Contractor's Bid	C-1 to C-9
	Change Orders duly issued with or after the effective date of this Agreement	_____ (if any)

There are no Contract Documents other than those listed above in this Agreement, Section J. The Contract Documents may only be altered, modified, amended or repealed by appropriate execution of a Change Order.

**J8 MISCELLANEOUS**

J8.1 Terms used in this Agreement are defined in the General Conditions and shall have the meanings indicated in the General Conditions.

J8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law) and unless specifically stated to the contrary in any written consent to an assignment

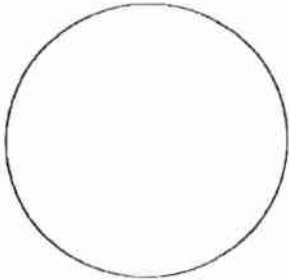


no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

J8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

**IN WITNESS WHEREOF**, the parties hereto have signed this Agreement in Five ( 5 ) copies. One counterpart each has been delivered to OWNER and the CONTRACTOR. All portions of the contract Documents have been signed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on \_\_\_\_\_  
20\_\_\_\_\_.



**OWNER**

Municipal Authority of the  
City of McKeesport \_\_\_\_\_

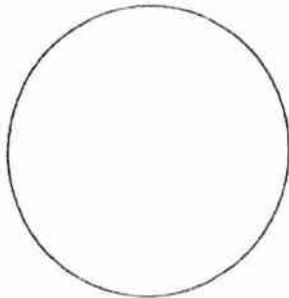
by \_\_\_\_\_

**ATTEST** \_\_\_\_\_  
**Title** \_\_\_\_\_

**Address for Giving Notice**

100 Atlantic Avenue  
McKeesport, PA 15132

\*\*\*\*\*



**CONTRACTOR**

Galway Bay Corporation \_\_\_\_\_

by \_\_\_\_\_

**ATTEST** \_\_\_\_\_  
**Title** \_\_\_\_\_

**Address for Giving Notice**

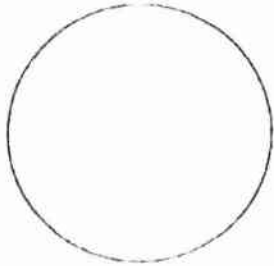
10 Ainsley Lane  
Mt. Braddock, PA 15465

no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

J8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

**IN WITNESS WHEREOF**, the parties hereto have signed this Agreement in Five (5) copies. One counterpart each has been delivered to OWNER and the CONTRACTOR. All portions of the contract Documents have been signed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on JUNE 28 2011.



(CORPORATE SEAL)

**OWNER**

Municipal Authority of the  
City of McKeesport

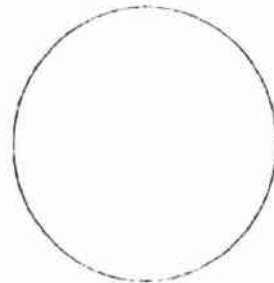
by [Signature]

ATTEST [Signature]  
Title Executive Director

**Address for Giving Notice**

100 Atlantic Avenue  
McKeesport, PA 15132

\*\*\*\*\*



(CORPORATE SEAL)

**CONTRACTOR**

Galway Bay Corporation

by [Signature]  
Gregory R. Maynard - President

ATTEST [Signature]  
Title Judy K. Clark - Secretary

**Address for Giving Notice**

10 Ainsley Lane

Mt. Braddock, PA 15465

Section K

**PAYMENT BOND**

**CONTRACT NO. 2010-11**

**KNOW ALL MEN BY THESE PRESENTS:** that

Galway Bay Corporation

**(Name of Contractor)**

10 Ainsley Lane, Mt. Braddock, PA 15465

**(Address of Contractor)**

a Corporation, hereinafter called Principal,  
(Corporation, Partnership, Individual)

and Liberty Mutual Insurance Company

**(Name of Surety)**

8044 Montgomery Road, Suite 150E, Cincinnati, OH 45236

**(Address of Surety)**

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_  
Municipal Authority of the City of McKeesport

**(Name of Owner)**

100 Atlantic Avenue, McKeesport, PA 15132

**(Address of Owner)**

hereinafter called Owner, in the penal sum of Six Hundred Seventy Five Thousand & 00/100 Dollars (\$675,000.00) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION** is such that Whereas, the Principal entered into a certain contract with the Owner, dated the 28 day of JUNE, 2011, a copy of which is hereto attached and made a part hereof for the construction of:

Contract No. 2010-11 Cliff Street Pump Station Improvements

General/Mechanical Construction

**NOW, THEREFORE,** if the Principal shall promptly make payment to all persons, firms, subcontractors and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, fuel, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

**PROVIDED, FURTHER,** that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

**PROVIDED, FURTHER,** that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

**IN WITNESS WHEREOF,** this instrument is executed in Five (5) counterparts, each one of which shall be deemed an original, this the 28 day of JUNE, 2011.

10 Ainsley Lane  
(Address)  
Mt. Braddock, PA 15465

Cassandra R. Wright  
(Witness to Principal)  
Cassandra R. Wright  
10 Ainsley Lane  
Mt. Braddock, PA 15465  
(Address)

Galway Bay Corporation  
(Principal)  
by [Signature]  
Gregory R. Maynard, President  
(ATTEST)  
Judy K. Clark  
(Principal) (Secretary)  
Judy K. Clark  
(SEAL)

\*\*\*\*\*

8044 Montgomery Road, Suite 150E  
(Address)  
Cincinnati, OH 45236

Liberty Mutual Insurance Company  
(Surety)  
(ATTEST)  
(Surety) (Secretary)  
(SEAL)  
[Signature]  
(Witness to Surety)  
Kimberly L. Miles

\*\*\*\*\*

by: [Signature]  
(Attorney in Fact) Douglas P. Taylor  
One Hillcrest Drive East  
(Address)  
Charleston WV 25311

**NOTE:** Date of Bond must be the same as the date of Agreement. If Contractor is Partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the U. S. Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

LIBERTY MUTUAL INSURANCE COMPANY  
BOSTON, MASSACHUSETTS  
POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS: That Liberty Mutual Insurance Company (the "Company"), a Massachusetts stock insurance company, pursuant to and by authority of the By-law and Authorization hereinafter set forth, does hereby name, constitute and appoint **KIMBERLY L. MILES, DOUGLAS P. TAYLOR, ANDREW K. TEETER, DONNA J. PRICE, JANIS K. PEACOCK, CHRISTOPHER A. MICHEL, PAMELA V. LANHAM, BRADLEY P. BOBERSKY, ALL OF THE CITY OF CHARLESTON, STATE OF WEST VIRGINIA**.....

, each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations in the penal sum not exceeding **TWENTY FIVE MILLION AND 00/100**..... DOLLARS (\$ **25,000,000.00**.....) each, and the execution of such undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company in their own proper persons.

That this power is made and executed pursuant to and by authority of the following By-law and Authorization:

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

By the following instrument the chairman or the president has authorized the officer or other official named therein to appoint attorneys-in-fact:

Pursuant to Article XIII, Section 5 of the By-Laws, Garnet W. Elliott, Assistant Secretary of Liberty Mutual Insurance Company, is hereby authorized to appoint such attorneys-in-fact as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

That the By-law and the Authorization set forth above are true copies thereof and are now in full force and effect.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Liberty Mutual Insurance Company has been affixed thereto in Plymouth Meeting, Pennsylvania this 5th day of June, 2009.

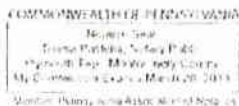
LIBERTY MUTUAL INSURANCE COMPANY

By Garnet W. Elliott  
Garnet W. Elliott, Assistant Secretary

COMMONWEALTH OF PENNSYLVANIA ss  
COUNTY OF MONTGOMERY

On this 5th day of June, 2009, before me, a Notary Public, personally came Garnet W. Elliott, to me known, and acknowledged that he is an Assistant Secretary of Liberty Mutual Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Liberty Mutual Insurance Company thereto with the authority and at the direction of said corporation.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



By Teresa Pastella  
Teresa Pastella, Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy, is in full force and effect on the date of this certificate; and I do further certify that the officer or official who executed the said power of attorney is an Assistant Secretary specially authorized by the chairman or the president to appoint attorneys-in-fact as provided in Article XIII, Section 5 of the By-laws of Liberty Mutual Insurance Company.

This certificate and the above power of attorney may be signed by facsimile or mechanically reproduced signatures under and by authority of the following vote of the board of directors of Liberty Mutual Insurance Company at a meeting duly called and held on the 12th day of March, 1980.

VOTED that the facsimile or mechanically reproduced signature of any assistant secretary of the company, wherever appearing upon a certified copy of any power of attorney issued by the company in connection with surety bonds, shall be valid and binding upon the company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said company, this \_\_\_\_\_ day of \_\_\_\_\_

By David M. Carey  
David M. Carey, Assistant Secretary

Not valid for mortgage, note, loan  
currency rate, interest rate or resis-  
ter of credit, bank deposit,  
value guarantees.

To confirm the validity of this Power of Attorney call  
1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

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Section K

**PERFORMANCE AND MAINTENANCE BOND**

**CONTRACT NO. 2010-11**

**KNOW ALL MEN BY THESE PRESENTS:** that

Galway Bay Corporation

(Name of Contractor)

10 Ainsley Lane, Mt. Braddock, PA 15465

(Address of Contractor)

a Corporation, hereinafter called Principal,  
(Corporation, Partnership, Individual)

and Liberty Mutual Insurance Company

(Name of Surety)

8044 Montgomery Road, Suite 150E, Cincinnati, OH 45236

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto  
Municipal Authority of the City of McKeesport

(Name of Owner)

100 Atlantic Avenue, McKeesport, PA 15132

(Address of Owner)

hereinafter called Owner, in the penal sum of Six Hundred Seventy Five Thousand & 00/100 Dollars (\$675,000.00) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION** is such that Whereas, the Principal entered into a certain contract with the Owner, dated the 28 day of JUNE, 2011, a copy of which is hereto attached and made a part hereof for the construction of:

Contract No. 2010-11 Cliff Street Pump Station Improvements

General/Mechanical Construction

**NOW, THEREFORE**, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall remedy in accordance with the terms of the Contract any defects which may develop during a period of eighteen (18) months from the date of completion of the work performed under said contract, and shall fully indemnify and save harmless the OWNER



from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect. Whenever CONTRACTOR shall be declared by OWNER to be in default under the Contract, the Surety shall promptly remedy the default. If the OWNER terminates the Contract for such default, the following shall govern the liability of the CONTRACTOR and the Surety hereunder. In the event of such termination, the CONTRACTOR and Surety shall remain fully liable to the OWNER for the CONTRACTOR's failure to timely complete the Contract, any additional costs incurred by the OWNER in completing the Contract, and liquidated damages from the required completion date to the date of the actual completion of the work by the OWNER. In the event of such termination, the Surety may elect to take over and complete performance of the Contract by giving written notice to the OWNER of such election within seven (7) days of the OWNER's mailing of notice of termination to the Surety and actually commencing completion within fourteen (14) days of the OWNER's notice to the Surety, time being of the essence. The Surety shall fully complete the work by the originally scheduled date of completion and the CONTRACTOR and the Surety shall remain liable to the OWNER for all damages.

**PROVIDED, FURTHER,** that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

**PROVIDED, FURTHER,** any suit under this bond may be instituted until the expiration of two years from the date on which final payment under the Contract falls due or before the expiration of one year from the end of the maintenance and guarantee obligation under the Contract, which ever is later, notwithstanding any statute of limitations setting forth a shorter limitation period.

IN WITNESS WHEREOF, this instrument is executed in Five (5) counterparts, each one of which shall be deemed an original, this the 29 day of JUNE, 20 11.

10 Ainsley Lane  
Address  
Mt. Braddock, PA 15465

Cassandra R. Wright  
(Witness to Principal)  
Cassandra R. Wright  
10 Ainsley Lane  
Mt. Braddock, PA 15465  
(Address)

Galway Bay Corporation  
Principal  
by [Signature]  
Gregory B. Maynard, President  
ATTEST  
Judy K. Clark  
Principal (Secretary)  
Judy K. Clark  
(SEAL)

\*\*\*\*\*

8044 Montgomery Road, Suite 150E  
Address  
Cincinnati, OH 45236

Liberty Mutual Insurance Company  
Surety  
ATTEST  
[Signature]  
Surety (Secretary)  
(SEAL)  
(Witness to Surety)  
Kimberly L. Miles

\*\*\*\*\*

One Hillcrest Drive East  
(Address)  
Charleston WV 25311

by: [Signature]  
(Attorney in Fact)  
Douglas P. Taylor

**NOTE:** Date of Bond must be the same as the date of Agreement. If Contractor is Partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the U. S. Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

LIBERTY MUTUAL INSURANCE COMPANY  
BOSTON, MASSACHUSETTS  
POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS: That Liberty Mutual Insurance Company (the "Company"), a Massachusetts stock insurance company, pursuant to and by authority of the By-law and Authorization hereinafter set forth, does hereby name, constitute and appoint **KIMBERLY L. MILES, DOUGLAS P. TAYLOR, ANDREW K. TEETER, DONNA J. PRICE, JANIS K. PEACOCK, CHRISTOPHER A. MICHEL, PAMELA V. LANHAM, BRADLEY P. BOBERSKY, ALL OF THE CITY OF CHARLESTON, STATE OF WEST VIRGINIA**.....

each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations in the penal sum not exceeding **TWENTY FIVE MILLION AND 00/100**..... DOLLARS (\$ **25,000,000.00**.....) each, and the execution of such undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company in their own proper persons.

That this power is made and executed pursuant to and by authority of the following By-law and Authorization:

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

By the following instrument the chairman or the president has authorized the officer or other official named therein to appoint attorneys-in-fact:

Pursuant to Article XIII, Section 5 of the By-Laws, Garnet W. Elliott, Assistant Secretary of Liberty Mutual Insurance Company, is hereby authorized to appoint such attorneys-in-fact as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

That the By-law and the Authorization set forth above are true copies thereof and are now in full force and effect.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Liberty Mutual Insurance Company has been affixed thereto in Plymouth Meeting, Pennsylvania this 5th day of June 2009.

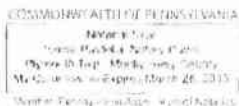
LIBERTY MUTUAL INSURANCE COMPANY

By Garnet W. Elliott  
Garnet W. Elliott, Assistant Secretary

COMMONWEALTH OF PENNSYLVANIA ss  
COUNTY OF MONTGOMERY

On this 5th day of June, 2009, before me, a Notary Public, personally came Garnet W. Elliott, to me known, and acknowledged that he is an Assistant Secretary of Liberty Mutual Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Liberty Mutual Insurance Company thereto with the authority and at the direction of said corporation.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



By Teresa Pastella  
Teresa Pastella, Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy, is in full force and effect on the date of this certificate; and I do further certify that the officer or official who executed the said power of attorney is an Assistant Secretary specially authorized by the chairman or the president to appoint attorneys-in-fact as provided in Article XIII, Section 5 of the By-laws of Liberty Mutual Insurance Company.

This certificate and the above power of attorney may be signed by facsimile or mechanically reproduced signatures under and by authority of the following vote of the board of directors of Liberty Mutual Insurance Company at a meeting duly called and held on the 12th day of March, 1980.

VOTED that the facsimile or mechanically reproduced signature of any assistant secretary of the company, wherever appearing upon a certified copy of any power of attorney issued by the company in connection with surety bonds, shall be valid and binding upon the company with the same force and effect as though manually affixed

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said company, this \_\_\_\_\_ day of \_\_\_\_\_

By David M. Carey  
David M. Carey, Assistant Secretary

Not valid for mortgage, note, loan, currency rate, interest rate or residential value guarantees, bank deposit, value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

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**CERTIFICATE OF INSURANCE**

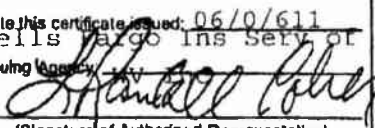
This Certificate shall be required to be properly completed by the Contractor and his Insurance Agent at the time that the construction contract is executed. It is informational and does not amend, extend or alter the coverage afforded by the policies listed below.

Name and Address of Insurance Agency Wells Fargo Ins Serv of WV Inc 1075 VanVoorhis Road Suite 200 Morgantown WV 26505	<b>COMPANIES AFFORDING COVERAGES</b>
Name and Address of Insured Contractor Galway Bay Corporation PO Box 320 Mt Braddock PA 15464-0260	Company Letter <b>A</b> Westfield Insurance Co
Name(s) of Additionally Insured Party KLH Engineers, Inc	Company Letter <b>B</b> Travelers Prop Cas Co
	Company Letter <b>C</b>
	Company Letter <b>D</b>

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time and that the insurance afforded by the policies is subject to all the terms, exclusions and conditions of such policies.

Company Letter	Type of Insurance	Policy Number	Policy Expiration Date	Limits of Liability in Thousands (000)		
					Each	Aggregate
A	<input checked="" type="checkbox"/> General Liability <input checked="" type="checkbox"/> Comprehensive Form <input checked="" type="checkbox"/> Premise-Operations <input type="checkbox"/> Explosion and Collapse Hazard <input checked="" type="checkbox"/> Underground Hazard <input checked="" type="checkbox"/> Products/Completed Operation Hazard <input checked="" type="checkbox"/> Contractual Insurance <input checked="" type="checkbox"/> Broad Form Property Damage <input checked="" type="checkbox"/> Independent Contractors <input checked="" type="checkbox"/> Personal Injury	CMM3928866	03/07/12	Bodily Injury	\$	\$
				Property Damage	\$	\$
				Bodily Injury and Property Damage Combined	\$1,000	2,000
				Personal Injury		\$
A	<input checked="" type="checkbox"/> Automotive Liability <input checked="" type="checkbox"/> Comprehensive Form <input checked="" type="checkbox"/> Owned <input checked="" type="checkbox"/> Hired <input checked="" type="checkbox"/> Non-Owned	CMM3928866	03/07/12	Bodily Injury (Each Person)	\$	
				Bodily Injury (Each Person)	\$	
				Property Damage	\$	
				CSL	1,000	
A	<input checked="" type="checkbox"/> Excess Liability <input checked="" type="checkbox"/> Umbrella Form <input type="checkbox"/> Other than Umbrella Form	CMM3928866	03/07/12	Bodily Injury and Property Damage Combined	\$10,000	
A	<input checked="" type="checkbox"/> Workers' Compensation and Employers' Liability	WCP1997666	03/07/12	Statutory		500 EL
B	<input checked="" type="checkbox"/> Builder's Risk	QT6600162R854 TIL11	06/15/13	\$675,000 Project		
				\$1,000,000 Temp Storage/		
	<input checked="" type="checkbox"/> Other			Transit Forms Attached		

The coverage issued in the above listed policies will not be cancelled, materially changed, or renewal refused until at least ten (10) days prior written notice has been given to the named owner and certificate holder at the address listed below.

Construction Contract Identification Cliff Street Pump Station Renovation Contract No. 2010-11 General/Mechanical	Name and Address of Owner and Certificate Holder Municipal Authority of the City of McKeesport 100 Atlantic Avenue McKeesport, PA 15132	Date this certificate issued: 06/06/11 Wells Fargo Ins Serv of Issuing Agency  (Signature of Authorized Representative)
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THIS FORM CANNOT BE SUBSTITUTED.

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – AUTOMATIC STATUS WHEN  
REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**A. Section II – Who Is An Insured** is amended to include as an additional insured any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for that additional insured are completed.

**B.** With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:
  - a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications, or
  - b. Supervisory, inspection, architectural or engineering activities
2. "Bodily injury" or "property damage" occurring after:
  - a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
  - b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY  
CG 25 03 05 00

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**DESIGNATED CONSTRUCTION PROJECT(S)  
GENERAL AGGREGATE LIMIT**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**SCHEDULE**

Designated Construction Project(s):
AS REQUIRED BY WRITTEN CONTRACT
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

- A. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I -- Coverage A, and for all medical expenses caused by accidents under Section I -- Coverage C, which can be attributed only to ongoing operations of a single designated construction project shown in the Schedule above:
1. A separate Designated Construction Project General Aggregate Limit applies to each designated construction project, and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.
  2. The Designated Construction Project General Aggregate Limit is the most we will pay for the sum of all damages under Coverage A, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage C regardless of the number of:
    - a. Insureds;
    - b. Claims made or "suits" brought; or
    - c. Persons or organizations making claims or bringing "suits".
  3. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the Designated Construction Project General Aggregate Limit for that designated construction project. Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Construction Project General Aggregate Limit for any other designated construction project shown in the Schedule above.
  4. The limits shown in the Declarations for Each Occurrence, Damage To Premises Rented To You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Designated Construction Project General Aggregate Limit.

**B.** For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I – Coverage A, and for all medical expenses caused by accidents under Section I – Coverage C, which cannot be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and
2. Such payments shall not reduce any Designated Construction Project General Aggregate Limit.

**C.** When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Construction Project General Aggregate Limit.

**D.** If the applicable designated construction project has been abandoned, delayed, or abandoned and then restarted, or if the authorized contracting parties deviate from plans, blueprints, designs, specifications or timetables, the project will still be deemed to be the same construction project.

**E.** The provisions of Section III – Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.



**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**GENERAL LIABILITY EXPANDED PLUS  
COVERAGE ENDORSEMENT**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE FORM

**1. SECTION I - COVERAGES, COVERAGE A  
BODILY INJURY AND PROPERTY DAMAGE  
LIABILITY** is amended as follows:

Item 2, Exclusions a, is deleted and replaced with the following:

a. Expected Or Intended Injury

"Bodily injury" or "property damage" expected or intended from the standpoint of the insured. This exclusion does not apply to "bodily injury" or "property damage" resulting from the use of reasonable force for the purpose of protecting persons or property.

Item 2, Exclusions g. (2) (a) is deleted and replaced with the following:

(a) Less than 60 feet long; and

Item 2, Exclusions j. (6) second exception paragraph after (6) is deleted and replaced with the following:

Paragraph (2) of this exclusion does not apply if the premises are "your work" and were not occupied, rented or held for rental by you beyond one year from the date "your work" was completed.

The last paragraph of item 2, Exclusions is deleted and replaced with the following:

Exclusions c. through n. do not apply to damage by fire or explosion to premises while rented to you or temporarily occupied by you with permission of the owner. A separate limit of insurance applies to this coverage as described in Section III - LIMITS OF INSURANCE.

**2. SECTION I - COVERAGES, COVERAGE C  
MEDICAL PAYMENTS** is amended as follows:

Item 2, Exclusions b, is deleted and replaced with the following:

b. Hired Person

To a person hired to do work for or on behalf of any insured or tenant of any insured; however this exclusion does not apply to "volunteer workers" while engaged in maintenance or repair of your premises.

**3. The following coverages are added to SECTION I - COVERAGES:**

VOLUNTARY PROPERTY DAMAGE

1. Insuring Agreement

We will pay, at your request, for "property damage" to property of others caused by you, or while in your possession, arising out of your business operations. The amount we will pay for damages is limited as described in SECTION III - LIMIT OF INSURANCE.

2. Exclusions

Coverage for Voluntary Property Damage does not apply to:

a. "Loss" of property at premises owned, rented, leased, operated or used by you

b. "Loss" of property while in transit;

c. "Loss" of property owned by, rented to, leased to, borrowed by or used by you

d. The cost of repairing or replacing:

(1) "Your work" defectively or incorrectly done by you; or

(2) "Your product" manufactured, sold or supplied by you;

unless the "property damage" is caused directly by you after delivery of "your product" or completion of "your work" and resulting from a subsequent undertaking

e. "Loss" of property caused by or arising out of the "products-completed operations hazard."

3. Deductible

We will not pay for "loss" in any one "occurrence" until the amount of "loss" exceeds \$250. We will then pay the amount of "loss" in excess of \$250, up to the applicable limit of insurance

4. Actual Cost

In the event of covered "loss", you shall, if requested by us, replace the damaged property or furnish the labor and materials necessary for repairs thereto at your actual cost, excluding profit or overhead charges

## CARE, CUSTODY OR CONTROL

### 1. Insuring Agreement

We will pay those sums the insured becomes legally obligated to pay as damages because of "property damage" to property of others while in your care, custody or control or property as to which you are exercising physical control if the "property damage" arises out of your business operations. The amount we will pay for damages is limited as described in SECTION III - LIMIT OF INSURANCE.

### 2. Exclusions

Coverage for Care, Custody or Control does not apply to:

- a. "Property damage" to property at any premises owned, rented, leased, operated or used by you;
- b. "Property damage" to property while in transit;
- c. The cost of repairing or replacing:
  - (1) "Your work" defectively or incorrectly done by you; or
  - (2) "Your product" manufactured, sold or supplied by you;unless the "property damage" is caused directly by you after delivery of "your product" or completion of "your work" and resulting from a subsequent undertaking
- d. "Property damage" to property caused by or arising out of the "products-completed operations hazard."

### 3. Deductible

We will not pay for "property damage" in any one "occurrence" until the amount of "property damage" exceeds \$250. We will then pay the amount of "property damage" in excess of \$250, up to the applicable limit of insurance.

### 4. Actual Cost

In the event of covered "property damage", you shall, if requested by us, replace the property or furnish the labor and materials necessary for repairs thereto at your actual cost, excluding profit or overhead charges.

## WATER DAMAGE LEGAL LIABILITY

### 1. Insuring Agreement

We will pay those sums that the insured becomes legally obligated to pay as damages because of "property damage"

arising out of water damage to premises that are both rented to and occupied by you. The amount we will pay for damages is limited as described in SECTION III - LIMIT OF INSURANCE.

### 2. Exclusions

Coverage for Water Damage Legal Liability does not apply to:

- a. "Property damage" for which the insured is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the insured would have in the absence of the contract or agreement.
- b. "Property damage" caused by or resulting from any of the following:
  - (1) Wear and tear;
  - (2) Rust, corrosion, fungus, decay, deterioration, hidden or latent defect or any quality in property that causes it to damage or destroy itself;
  - (3) Smog or smoke;
  - (4) Settling, cracking, shrinking or expansion;
  - (5) Insects, birds, rodents or other animals; or
  - (6) Mechanical breakdown, including rupture or bursting caused by centrifugal force.
- c. "Property damage" caused directly or indirectly by any of the following:
  - (1) Any earth movement, such as an earthquake, landslide, mine subsidence or earth sinking, rising or shifting;
  - (2) Volcanic eruption, explosion or effusion;
  - (3) Flood, surface water, waves, tides, tidal waves, overflow of any body of water, or their spray, all whether driven by wind or not;
  - (4) Mudslide or mudflow;
  - (5) Water that backs up from a sewer or drain; or
  - (6) Water under the ground surface pressing on, or flowing or seeping through:
    - (a) Foundations, walls, floors or paved surfaces;

- (b) Basements, whether paved or not; or
- (c) Doors, windows or other openings.
- d. "Property damage" caused by or resulting from any of the following:
  - (1) Water that leaks or flows from any plumbing, heating, air conditioning or fire protection system caused by or resulting from freezing, unless:
    - (a) You make a reasonable effort to maintain heat in the building or structure; or
    - (b) You drain the equipment and shut off the water supply if the heat is not maintained.
- e. "Property damage" to:
  - (1) Plumbing, heating, air conditioning, fire protection systems, or other equipment or appliances; or
  - (2) The interior of the premises caused by or resulting from rain or snow, whether driven by wind or not.

4. SECTION I - SUPPLEMENTARY PAYMENTS - COVERAGES A AND B is amended as follows:

Item 1.b. is deleted and replaced with the following:

- b. Up to \$1,000 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which the Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.

Item 1.d. is deleted and replaced with the following:

- d. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit," including actual loss of earnings up to \$350 a day because of time off from work.

5. SECTION II - WHO IS AN INSURED is amended as follows:

Item 2. a. is deleted and replaced with the following:

- a. Your "employees" or volunteer workers, other than either your "executive officers" (if you are an organization other than a partnership, joint venture or limited liability company) or your managers (if you are a limited liability company), but only for acts within the scope of their

employment by you or while performing duties related to the conduct of your business. However, none of these "employees" or volunteer workers are an insured for:

- (1) "Bodily injury" or "personal and advertising injury":
  - (a) To you, to your partners or members (if you are a partnership or joint venture), to your members (if you are a limited liability company), or to a co-"employee" or co-volunteer worker while that co-"employee" or co-volunteer worker is either in the course of his or her employment or performing duties related to the conduct of your business;
  - (b) To the spouse, child, parent, brother or sister of that co-"employee" or co-volunteer worker as a consequence of paragraph (1) (a) above;
  - (c) For which there is any obligation to share damages with or repay someone else who must pay damages because of the injury described in paragraphs (1) (a) or (b) above; or
  - (d) Arising out of his or her providing or failing to provide professional health care services.

This does not apply to nurses emergency medical technicians or paramedics employed by you to provide health care services, but only if you are not in the business or occupation of providing such professional services.

- (2) "Property damage" to property
  - (a) Owned, occupied or used by,
  - (b) Rented to, in the care, custody or control of, or over which physical control is being exercised for any purpose by you, any of your "employees" or volunteer workers, any partner or member (if you are a partnership or joint venture), or any member (if you are a limited liability company).

Item 3. a. is deleted and replaced with the following:

- a. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier.

Item 4. is added as follows:

4. For **COVERAGE A** and **COVERAGE B** only, the owner of any building leased to you, but only if the building owner is a shareholder in your corporation or a partner in your partnership insured in this policy, and only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to you. However, this insurance does not apply:
- a. To any "occurrence" or offense which takes place after you cease to be a tenant in the premises; or
  - b. To structural alterations, new construction or demolition operations performed by or on behalf of the building owner.

Item 5. added as follows:

5. Vendors - Any person(s) or organization(s) with whom you agree in a written contract or agreement to name as an insured but only with respect to "bodily injury" or "property damage" arising out of "your products" which are distributed or sold in the regular course of the vendor's business, subject to the following additional exclusions:
- a. The insurance afforded the vendor does not apply to:
    - (1) "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the vendor would have in the absence of the contract or agreement;
    - (2) Any express warranty unauthorized by you;
    - (3) Any physical or chemical change in the product made intentionally by the vendor;
    - (4) Repackaging, except when unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instructions from the manufacturer, and then repackaged in the original container;
    - (5) Any failure to make such inspections, adjustments, tests or

servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business in connection with the distribution or sale of the products;

- (6) Demonstration, installation, servicing or repair operations, except such operations performed at the vendor's premises in connection with the sale of the product;
- (7) Products which, after distribution or sale by you, have been labeled or relabeled or used as a container, part or ingredient of any other thing or substance by or for the vendor; or
- (8) "Bodily injury" or "property damage" arising out of the sole negligence of the vendor for its own acts or omissions or those of its employees or anyone else acting on its behalf. However, this exclusion does not apply to:
  - (a) The exceptions contained in subparagraphs 4. or 6.; or
  - (b) Such inspection, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products.
- b. This insurance does not apply to any insured person or organization, from whom you have acquired such products, or any ingredient, part or container, entering into, accompanying or containing such products.

Item 6. is added as follows:

**6. Managers or Lessors of Premises**

Any person(s) or organization(s) with whom you agree in a written contract or agreement to name as an insured but only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to you and subject to the following additional exclusions:

This insurance does not apply to:

- (1) Any "occurrence" which takes place after you cease to be a tenant in that premises.

- (2) Structural alterations, new construction or demolition operations performed by or on behalf of the person(s) or organization(s).

6. SECTION III - LIMITS OF INSURANCE is amended as follows:

Item 6. is deleted and replaced with the following:

- 5. Subject to 5. above, the Damage To Premises Rented To You Limit is the most we will pay under Coverage A for damages because of "property damage" to any one premises, while rented to you, or in the case of damage by fire, while rented to you or temporarily occupied by you with permission of the owner.

Items 8., 9. and 10. are added as follows:

- 8. The most we will pay under Voluntary Property Damage for "loss" arising out of any one "occurrence" is \$250. The most we will pay for the sum of all "losses" under this coverage is \$1,000.
- 9. The most we will pay under Care, Custody or Control for "property damage" is \$1,000 for each "occurrence". The most we will pay for the sum of all damages because of "property damage" under this coverage is \$5,000.
- 10. The most we will pay under Water Damage Legal Liability for all "property damage" arising out of any one "occurrence" is \$25,000.

7. SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS is amended as follows:

Items e. and f. are added to 2. Duties In The Event Of Occurrence, Offense, Claim Or Suit as follows:

- e. The requirement in Condition 2. a. applies only when the "occurrence" or offense is known to:

- (1) You, if you are an individual;
- (2) A partner, if you are a partnership;
- (3) An "executive officer" or insurance manager, if you are a corporation; or
- (4) A manager, if you are a limited liability company.

- f. The requirement in Condition 2. b. will not be breached unless the breach occurs after such claim or "suit" is known to:

- (1) You, if you are an individual;
- (2) A partner, if you are a partnership;
- (3) An "executive officer" or insurance manager, if you are a corporation; or
- (4) A manager, if you are a limited liability company

The following is added to Item 6. Representations

- d. Your failure to disclose all hazards or prior "occurrences" existing as of the inception date of this policy shall not prejudice the coverage afforded by this policy, provided such failure to disclose all hazards or prior "occurrences" is not intentional.

The following is added to Item 8. Transfer Of Rights Of Recovery Against Others To Us:

We waive any right of recovery we may have against any person or organization with respect to which the insured has waived its right of recovery.

It is further agreed that work commenced under letter of intent or work order, subject to subsequent reduction to writing with customers whose customary written contracts would require a waiver of recovery rights against them, also falls within this blanket waiver of subrogation.

8. SECTION V - DEFINITIONS is amended as follows:

Item 3. is amended to include Incidental Medical Malpractice Injury.

Incidental Medical Malpractice Injury means injury arising out of the rendering of or the failure to render medical, surgical, dental, x-ray, nursing or paramedical services to any person(s) if employed by you to provide such services

The following definition is added:

- 23. "Loss" means unintentional damage or destruction but does not include disappearance, theft, or loss of use.

9. Liberalization

If we adopt any revision that would broaden the coverage under this endorsement without additional premium within 45 days prior to or during the policy period, the broadened coverage will immediately apply to this endorsement.



MA070621000

**CERTIFICATE OF LIABILITY INSURANCE**DATE (MM/DD/YYYY)  
6/7/2011

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b>	Commercial Lines - (304) 598-5678 Wells Fargo Insurance Services of West Virginia Inc 1075 Van Voorhis Road, Suite 200 Morgantown, WV 26505-3403	<b>CONTACT NAME:</b> Denise A Deem <b>PHONE (A/C, No, Ext):</b> 304-598-8091 <b>E-MAIL ADDRESS:</b> denise.deem@wellsfargo.com	<b>FAX (A/C, No):</b> 866-972-2565
	<b>INSURED</b>	Municipal Authority of the City of McKeesport 100 Atlantic Avenue  McKeesport PA 15132	<b>INSURER(S) AFFORDING COVERAGE</b> Westfield Insurance Company  NAIC # 24112

**COVERAGES**      **CERTIFICATE NUMBER: 2843863**      **REVISION NUMBER: See below**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS

INSR LTR	TYPE OF INSURANCE	ADD'L SUBR: INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>GENERAL LIABILITY</b>					EACH OCCURRENCE \$
	COMMERCIAL GENERAL LIABILITY					DAMAGE TO RENTED PREMISES (Ea occurrence) \$
	CLAIMS-MADE OCCUR					MED EXP (Any one person) \$
						PERSONAL & ADV INJURY \$
						GENERAL AGGREGATE \$
	GEN'L AGGREGATE LIMIT APPLIES PER:					PRODUCTS COMP/OP AGG \$
	POLICY PRO-JECT LOC					\$
	<b>AUTOMOBILE LIABILITY</b>					COMBINED SINGLE LIMIT (Ea accident) \$
	ANY AUTO					BODILY INJURY (Per person) \$
	ALL OWNED AUTOS	SCHEDULED AUTOS				BODILY INJURY (Per accident) \$
	HIRED AUTOS	NON-OWNED AUTOS				PROPERTY DAMAGE (Per accident) \$
						\$
	<b>UMBRELLA LIAB</b>	OCCUR				EACH OCCURRENCE \$
	EXCESS LIAB	CLAIMS-MADE				AGGREGATE \$
	DED RETENTION \$					\$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b>					WC STATUTORY LIMITS: OTH ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N	N/A			C L EACH ACCIDENT \$
	If yes, describe under DESCRIPTION OF OPERATIONS below					E L DISEASE - EA EMPLOYEE \$
						E L DISEASE - POLICY LIMIT \$
A	OCP-McKeesport			06/06/2011	06/06/2012	\$2,000,000 Occurrence \$2,000,000 Aggregate

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Contractor -- Galway Bay Corporation  
Contracts #2010-01; 2010-03; 2010-05; 2010-07; 2010-09 and 2010-11

**CERTIFICATE HOLDER**

Municipal Authority of the City of McKeesport  
100 Atlantic Avenue  
McKeesport PA 15132

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

*James Brada*

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**CERTIFICATE OF INSURANCE**  
**(Single Permit Only)**  
**Utility Facility Occupancy**  
**67 Pa. Code, Chapter 459 "Occupancy of State Highways by Utilities"**

Insured\*: Galway Bay Corporation

Address: PO Box 320

Mt Braddock PA 15465-0260

Insurer: Westfield Insurance Company

Insurance Agency: Wells Fargo Insurance Services of WV Inc.

1075 VanVoorhis Road, Suite 200 Morgantown WV 26505

Additional Insured: Commonwealth of Pennsylvania, Department of Transportation

*This is to certify that:*

(a) The occurrence-based Commercial General Liability (CGL) policy(-ies) of insurance listed below have been issued to the Insured named above and are in force at this time.

(b) The following coverage is provided by the policy(-ies) of insurance listed below. Initial in the space provided as certification of the insurance coverage provided (all blocks must be initialed):

JAC (producer's initials) The Commonwealth of Pennsylvania, Department of Transportation is an additional insured for at least \$250,000 per person and \$1,000,000 per occurrence.

JAC (producer's initials) Contractual liability

JAC (producer's initials) Care, custody, and control

JAC (producer's initials) XCU - explosion (X), collapse (C), and underground (U) hazards

\* Insured may attach Exhibit A to include subsidiary entities.

(c) The CGL policy(-ies) of insurance (occurrence-based or claims made with a two (2) year extended reporting period) listed below shall not be cancelled unless sixty (60) days (ten (10) days in the case of non-payment of premium) advance written notice of such intention to cancel delivered to the Department at the Bureau of Highway Safety and Traffic Engineering, 400 North Street, Harrisburg, PA 17120, Attention Central Office Permit Manager.

(d) The CGL policy(-ies) of insurance listed below are without deductibles or the Insured has provided the Department with a pre-approved plan of self-insurance for the amount of the deductible.

Policy Number(s): CMM3928866

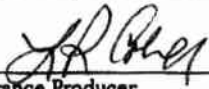
Policy Expiration Date(s): March 7, 2012

We certify that the foregoing is true and correct and this Certificate of Insurance is made subject to the penalties provided in 18 Pa.C.S. § 4904 for purpose of obtaining a highway occupancy permit pursuant to 67 Pa. Code, Chapter 459.

Permittee/Permittee's Contractor

- President
- Vice-President
- Sole Proprietor
- Managing Partner
- Other

Date: \_\_\_\_\_

  
\_\_\_\_\_  
Insurance Producer

Date: 6/6/11



**ISSUED TO: Lanco Electric**

**MUNICIPAL AUTHORITY  
OF THE CITY OF MCKEESPORT  
ALLEGHENY COUNTY, PENNSYLVANIA**

**CONTRACT DOCUMENTS FOR  
CLIFF STREET PUMP STATION IMPROVEMENTS**

**CONTRACT NO. 2010-12  
ELECTRICAL CONSTRUCTION**

**JANUARY 2011 RELEASE FOR BID**

**KLH**  
**ENGINEERS, INC.**  
5173 Campbells Run Road  
Pittsburgh, PA 15205  
Telephone: (412) 494-0510  
Fax: (412) 494-0426  
E-mail: [info@klhengineers.com](mailto:info@klhengineers.com)  
Ref. No. 220-35

Section C

**BID FORM - CONTRACT NO. 2010-12**

**Project Identification:** Cliff Street Pump Station  
Improvements

**Contract Identification  
and Number:** Electrical Construction  
Contract No. 2010-12

**This Bid is Submitted to:** Municipal Authority of the City of  
McKeesport  
100 Atlantic Avenue  
McKeesport, PA 15132

**C1** The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in Section J of the Contract Documents and, to complete all Work as Specified and within the Contract Time indicated in this Bid, in accordance with the Contract Documents.

**C2** BIDDER accepts all of the terms and conditions of the Instructions to Bidders and other components of the Contract Documents. This Bid may not be withdrawn for ninety (90) days after the day of Bid opening. BIDDER will sign the Agreement and submit the Contract Security and other documents required by the Contract Documents within fifteen days after the date of OWNER's Notice of Award.

**C3** In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

C3.1 Bidder has examined copies of all Contract Documents including Sections A through K and all Drawings, and the following Addenda designated as Section L (if any):

<b>Date of Issuance</b>	<b>Addenda Number</b>
<u>February 1, 2011</u>	<u>1</u>
<u>February 10, 2011</u>	<u>2</u>
<u>February 15, 2011</u>	<u>3</u>
March 1, 2011	4

receipt of all which is hereby acknowledged.

C3.2 BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the

work and has made such independent investigations as BIDDER deems necessary. BIDDER has satisfied itself as to the conditions to be encountered both overhead and on the surface of the ground and/or within existing structures and of the character, quality and quantities of work to be done, materials to be furnished, services required and all other terms of the Technical Specifications and other Contract Documents. BIDDER assumes all risks inherent in performing the work and arising from any deficiencies in the Drawings or Specifications or other Contract Documents and will make no claim against the OWNER or the ENGINEER because of any such alleged deficiency.

C3.3 This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation, BIDDER has not directly or indirectly induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

C4 BIDDER will complete the Work under Contract No. 2010-12 for the following Lump Sum Price:

<b>Lump Sum Contract Price</b>	<u>Five Hundred Forty Thousand Dollars</u> (Words)
	<u>\$ 540,000.00</u> (Figures)

C5 BIDDER hereby offers deductions from the lump sum bid price if the OWNER desires that alternate equipment from that shown in the technical specifications, identified below (BIDDER may insert deduction in the spaces below):

Specification No. - Description	Associated Deduction From Bid Price
16140 - Wiring Devices	Deduct\$ <u>NA</u>
16180 - Safety Disconnect Switches	Deduct\$ <u>NA</u>
16235 - Standby Emergency Generator	Deduct\$ <u>NA</u>
16471 - Panel Boards	Deduct\$ <u>NA</u>
16479- Surge Protective Device	Deduct\$ <u>NA</u>
16500- Lighting	Deduct\$ <u>NA</u>
16810 - Video Surveillance	Deduct\$ <u>NA</u>
16910 - Instrumentation	Deduct\$ <u>NA</u>
16925 - Custom Control Panels	Deduct\$ <u>NA</u>
16950 - Variable Frequency Drive Motor Controllers	Deduct\$ <u>NA</u>
16990 - Motor Control Centers - Low Voltage	Deduct\$ <u>NA</u>

**C6** BIDDER agrees that the Work will be completed within five Hundred forty (540) Calendar days after the date when the Contract Time commences.

**C7** BIDDER understands and agrees to coordinate his construction activities with those of the OWNER, the ENGINEER and the other CONTRACTORS.

**C8** BIDDER accepts the provisions set forth in the Agreement in Section J of the Contract Documents as to liquidated damages in the event of failure to complete the Work on time.

**C9** BIDDER recognizes the problem in identifying exact locations of reputed underground utility pipe lines, structures, and/or appurtenances and in classifying, during the bidding period, the subsurface conditions which will be encountered during

construction and, in submitting this bid, has included any and all costs in connection therewith and shall not seek any extra compensation for performing the work because of those actual prevailing conditions.

**C10** The required Bid Security set forth in Paragraphs B7 of the Instructions to Bidders in the form of a certified bank check, or a Bid Bond, the form for which is included as Section D of the Contract Documents, is in the amount of 10% of the Amount of the Bid.

**C11** Communications concerning this Bid shall be addressed to the BIDDER at the address stated on the following page.

**C12** The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

**Submitted on** March 7 20 11.

(Execute the Bid Form on the following page)

IF BIDDER is:

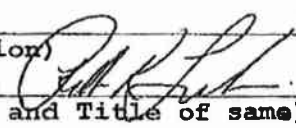
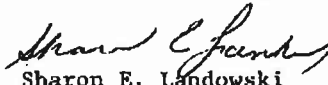
**An Individual**

By \_\_\_\_\_ (Seal)  
(Individual's Name)  
doing business as \_\_\_\_\_  
\_\_\_\_\_  
(Business Address and Telephone Number)

**A Partnership**

By \_\_\_\_\_ (Seal)  
(Firm Name)  
\_\_\_\_\_  
(General Partner)  
\_\_\_\_\_  
(Business Address and Phone Number)

**A Corporation**

By \_\_\_\_\_ Lanco Electric, Inc. (Seal)  
(Corporation Name)  
\_\_\_\_\_  
Pennsylvania  
(State of Incorporation)  
By \_\_\_\_\_ Robert K. Landowski, V.P.   
(Name of Person Authorized to Sign and Title of same)  
(Corporate Seal)   
Attest \_\_\_\_\_ Sharon E. Landowski  
(Secretary)  
\_\_\_\_\_  
300 Canal Street, Leechburg, PA 15656-1350 Ph: 724-845-8146  
(Business Address and Telephone Number)

**A Joint Venture**

By \_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Address)  
\_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Address)

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a part to the joint venture should be in the manner indicated above.)

Section D

**BID BOND**

**KNOW ALL MEN BY THESE PRESENTS**, that we Lanco Electric, Inc.

as Principal and Fidelity and Deposit Company of Maryland  
of P.O. Box 1884, Pittsburgh, State of Pennsylvania,  
a corporation existing under the laws and the State of Maryland,  
and authorized to transact business in  
Pennsylvania, as Surety, are held and firmly bound unto  
Municipal Authority of the City of McKeesport

(OWNER)

100 Atlantic Avenue, McKeesport, PA 15132

(Address)

hereinafter called the Obligee, in the sum of Ten Percent of Amount Bid  
Dollars (\$ 10% ).  
lawful money of the United States of America, for payment of which  
sum well and truly to be made, we bind ourselves, our heirs,  
executors, administrators and successors, jointly and severally,  
firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH**, that whereas the Prin-  
cipal has submitted the accompanying Proposal or Bid dated  
March 7, 2011, for the Cliff Street Pump Station Improvements  
Contract No. 2010-12 Electrical Construction

**NOW THEREFORE**, the condition of this Bond shall be such that if the  
Principal, upon due acceptance of said Proposal and award of the  
Contract to him by the Obligee, bonds with good and sufficient  
surety as may be required by the Contract Documents, and furnishes  
the Obligee proper evidence of effectiveness of insurance coverage,  
respectively, within the time, in the forms and in the amounts as  
appropriate, required by the Contract Documents, and enters into a  
Contract with the Obligee in accordance with the Contract  
Documents, then this Bond shall be void; otherwise, the Bond shall  
be and shall remain in full force and effect.

The Principal and Surety hereby stipulate and agree that if the  
Principal fails to perform all conditions of this Bond, they will pay  
the sum of the Bond to the Obligee as fixed, liquidated damages.

The Surety, for value received, hereby stipulates and agrees that  
the obligations of said Surety and its Bond shall be in no way  
impaired or affected by any extension of time within which the  
OWNER may accept such bid; and said Surety does hereby waive notice  
of any extension.

It is the intention of the parties to be legally bound by this  
instrument.

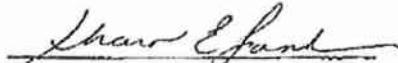
IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their several seals this 7th day of March, 2011, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned and representative, pursuant to authority of its governing body.

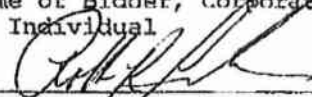
ATTEST:

DATE March 7, 2011

WITNESS:

Lanco Electric, Inc.  
Name of Bidder, Corporation, Firm or Individual

  
Sharon E. Landowski

By   
Robert K. Landowski  
Vice President

(Title)  
300 Canal Street

Leechburg, PA 15656  
Business Address of Bidder

\*\*\*\*\*  
ATTEST:   
Barbara A. Leeper, Witness

Fidelity and Deposit Company of Maryland  
Surety

  
Attorney-in-Fact  
Josephine M. Streyte

IMPORTANT - Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.



**Power of Attorney  
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

KNOW ALL MEN BY THESE PRESENTS: That the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, a corporation of the State of Maryland, by WILLIAM J. MILLS, Vice President, and GREGORY E. MURRAY, Assistant Secretary, in pursuance of authority granted by Article VI, Section 2, of the By-Laws of said Company, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, does hereby nominate, constitute and appoint **Brian W. LONG, Richard L. ENDERS, Brian F. JEFFE, Michael J. PETRASEK, SR., Jay BLACK, Josephine M. STREYLE, Marge FEDAK and Barbara A. LEEPER**, all of Pittsburgh, Pennsylvania, EACH its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings**, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Company, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in Baltimore, Md., in their own proper persons. This power of attorney makes that issued on behalf of Brian W. LONG, Richard L. ENDERS, Brian F. JEFFE, Michael J. PETRASEK, SR., Jay BLACK, Josephine M. STREYLE, Marge FEDAK, Barbara LEEPER, dated November 30, 2009.

The said Assistant Secretary does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article VI, Section 2, of the By-Laws of said Company, and is now in force.

IN WITNESS WHEREOF, the said Vice-President and Assistant Secretary have hereunto subscribed their names and affixed the Corporate Seal of the said FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 26th day of February, A.D. 2010.

ATTEST:

**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



*Gregory E. Murray*

*William J. Mills*

*Gregory E. Murray* Assistant Secretary

By:

*William J. Mills*

Vice President

State of Maryland }  
City of Baltimore } ss:

On this 26th day of February, A.D. 2010, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, came WILLIAM J. MILLS, Vice President, and GREGORY E. MURRAY, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and they each acknowledged the execution of the same, and being by me duly sworn, severally and each for himself depose and saith, that they are the said officers of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and that the said Corporate Seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.



*Maria D. Adamski*

Maria D. Adamski

Notary Public

My Commission Expires: July 8, 2011

**EXTRACT FROM BY-LAWS OF FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

"Article VI, Section 2. The Chairman of the Board, or the President, or any Executive Vice-President, or any of the Senior Vice-Presidents or Vice-Presidents specially authorized so to do by the Board of Directors or by the Executive Committee, shall have power, by and with the concurrence of the Secretary or any one of the Assistant Secretaries, to appoint Resident Vice-Presidents, Assistant Vice-Presidents and Attorneys-in-Fact as the business of the Company may require, or to authorize any person or persons to execute on behalf of the Company any bonds, undertakings, recognizances, stipulations, policies, contracts, agreements, deeds, and releases and assignments of judgements, decrees, mortgages and instruments in the nature of mortgages,....and to affix the seal of the Company thereto."

**CERTIFICATE**

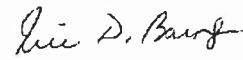
I, the undersigned, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that the Vice-President who executed the said Power of Attorney was one of the additional Vice-Presidents specially authorized by the Board of Directors to appoint any Attorney-in-Fact as provided in Article VI, Section 2. of the By-Laws of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed."

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said Company,

this 7<sup>TH</sup> day of MARCH, 2011.



Assistant Secretary

Section J

**AGREEMENT - CONTRACT NO. 2010-12**

**THIS AGREEMENT** is dated as of the 2<sup>nd</sup> day of July in the year of 20 11 by and between The Municipal Authority of the City of McKeesport hereinafter called OWNER and Lanco Electric hereinafter called CONTRACTOR.

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

**J1 WORK**

J1.1 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Contract No. 2010-12 Cliff Street Pump Station Improvements

Electrical Construction

**J2 CONTRACT TIME**

J2.1 The Work will be completed within five Hundred forty (540) calendar days after the date when the Contract Time commences as provided in the General Conditions.

J2.2 Liquidated Damages OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not complete within the time specified in paragraph J2.1 above, plus any extensions thereof allowed in accordance with the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER Six Hundred Fifty Dollars (\$650.00) for each day that expires after the time specified in paragraph J2.1 for completion until the Work is substantially complete.

**J3 CONTRACT PRICE**

J3.1 OWNER shall pay CONTRACTOR for performance of the Work in accordance with the Contract Documents in the following lump sum amount:

Five Hundred Forty Thousand Dollars & 00/100

(\$540,000.00)

#### **J4 PAYMENT PROCEDURES**

J4.1 CONTRACTOR shall submit Applications for Payment in accordance with Section H of the Contract Documents.

J4.2 Progress Payments. OWNER shall make progress payments on the Contract Price on the basis of CONTRACTOR's Application for Payment. All payments will be on the basis of the progress of the Work measured by the schedule of values provided for in the Contract Documents.

J4.3 Prior to 50% completion of the Work, progress payments will be in an amount equal to:

- 90% of the Work completed, and
- 100% of materials and equipment not incorporated in the Work but delivered and suitably stored, less in each case, the aggregate of payments previously made.

J4.4 After the work is at least 50% complete, and subject to satisfactory progress and compliance with the provisions of the Contract Documents, the OWNER may, at its discretion, elect to reduce the retainage to an amount equal to 5% of the completed work value.

J4.5 Final Payment. Upon final completion and acceptance of the Work, OWNER shall pay the remainder of the Contract Price not previously paid.

#### **J5 INTEREST**

J5.1 All moneys not paid when due hereunder shall bear interest at the rate defined in Paragraph H2.

#### **J6 CONTRACTOR'S REPRESENTATIONS**

J6.1 CONTRACTOR represents that he has familiarized himself with the nature and extent of the Contract Documents, Work, locale and with all local conditions; federal, state and other laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work; and, has made or caused to be made such examinations, investigations (including subsurface explorations) and tests and studies of such reports and related data as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes, and that he shall be responsible

to fully perform all work within the contract time and for the contract price(s) stated herein, regardless of the conditions actually encountered. All risks assumed hereunder have been included in the contract price.

J6.2 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

## **J7 CONTRACT DOCUMENTS**

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

<b>Section</b>	<b>Identification</b>	<b>Page No.</b>
J	Agreement	J-1 to J-4
	Exhibits attached to this agreement	_____ (if any)
K	Surety Bonds/Insurance Certificates	K-1 to K-7
E	General Conditions	E-1 to E-27
F	Supplemental General Conditions	F-1 to F-28
G	Technical Specifications	01000-16990
H	Measurement and Payment	H-1 to H-2
I	Standard Detail Drawings	I-1 to I-20
	Drawings 24" x 36" - Bound Separately from this Book (Are identified in Section 01010)	
L	Addenda	L-1 to L-25 (if any)
C	Contractor's Bid	C-1 to C-9
	Change Orders duly issued with or after the effective date of this Agreement	_____ (if any)

There are no Contract Documents other than those listed above in this Agreement, Section J. The Contract Documents may only be altered, modified, amended or repealed by appropriate execution of a Change Order.

## **J8 MISCELLANEOUS**

J8.1 Terms used in this Agreement are defined in the General Conditions and shall have the meanings indicated in the General Conditions.

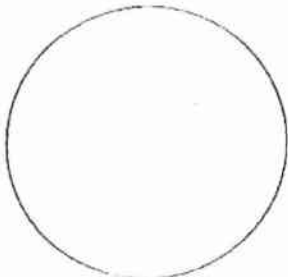
J8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law) and unless specifically stated to the contrary in any written consent to an assignment

no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

J8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

**IN WITNESS WHEREOF**, the parties hereto have signed this Agreement in Five ( 5 ) copies. One counterpart each has been delivered to OWNER and the CONTRACTOR. All portions of the contract Documents have been signed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on July 20<sup>th</sup>  
20 11.



(CORPORATE SEAL)

**OWNER**

Municipal Authority of the  
City of McKeesport

by *Robert J. Hunt*

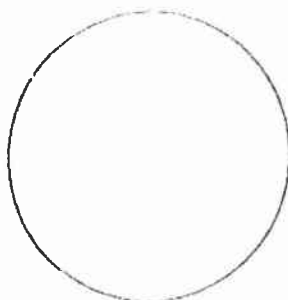
ATTEST *Carol E. Post*

Title *Executive Director*

**Address for Giving Notice**

100 Atlantic Avenue  
McKeesport, PA 15132

\*\*\*\*\*



(CORPORATE SEAL)

**CONTRACTOR**

Lanco Electric

by *Robert J. Lankford*

ATTEST *Carol E. Post*

Title *Vice President*

**Address for Giving Notice**

300 Canal Street

Leechburg, PA 15656

Section K

PAYMENT BOND

Bond No. 7624063

CONTRACT NO. 2010-12

KNOW ALL MEN BY THESE PRESENTS: that

Lanco Electric  
(Name of Contractor)

300 Canal Street, Leechburg, PA 15656  
(Address of Contractor)

a Corporation, hereinafter called Principal,  
(Corporation, Partnership, Individual)

and Fidelity and Deposit Company of Maryland  
(Name of Surety)

P.O. Box 1884, Pittsburgh, PA 15230  
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto  
Municipal Authority of the City of McKeesport

100 Atlantic Avenue, McKeesport, PA 15132  
(Address of Owner)

hereinafter called Owner, in the penal sum of Five Hundred Forty  
Thousand & 00/100 Dollars (\$ 540,000.00 ) in lawful money of the  
United States, for the payment of which sum well and truly to be  
made, we bind ourselves, our heirs, executors, administrators and  
successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Prin-  
cipal entered into a certain contract with the Owner, dated the  
20<sup>th</sup> day of July, 2011, a copy of which is hereto  
attached and made a part hereof for the construction of:

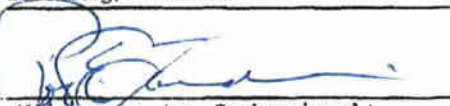
Contract No. 2010-12 Cliff Street Pump Station Improvements  
Electrical Construction

NOW, THEREFORE, if the Principal shall promptly make payment to all  
persons, firms, subcontractors and corporations furnishing materials  
for or performing labor in the prosecution of the work provided for  
in such contract, and any authorized extension or modification  
thereof, including all amounts due for materials, lubricants, oil,  
fuel, repairs on machinery, equipment and tools, consumed or used in  
connection with the construction of such work, and all insurance  
premiums on said work and for all labor, performed in such work  
whether by subcontractor or otherwise, then this obligation shall be  
void; otherwise to remain in full force and effect.

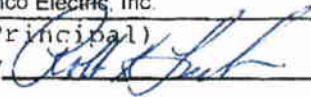

**PROVIDED, FURTHER,** that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

**PROVIDED, FURTHER,** that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

**IN WITNESS WHEREOF,** this instrument is executed in Five (5) counterparts, each one of which shall be deemed an original, this the 20<sup>th</sup> day of July, 2011.


300 Canal Street  
(Address)  
Leachburg, PA 15656  
  
(Witness to Principal)

\_\_\_\_\_  
(Address)

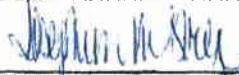
Lanco Electric, Inc.  
(Principal)  
by   
(ATTEST)  
  
(Principal) (Secretary)  
  
(SEAL)

\*\*\*\*\*

P.O. Box 1884  
(Address)  
Pittsburgh, PA 15230

Fidelity and Deposit Company of Maryland  
(Surety)  
(ATTEST)  
(Surety) (Secretary)  
  
(SEAL)  
  
(Witness to Surety)  
Barbara A. Leeper

\*\*\*\*\*

by:   
(Attorney in Fact) Josephine M. Streyle  
1010 Ohio River Boulevard  
(Address)  
Pittsburgh, PA 15202



**NOTE:** Date of Bond must be the same as the date of Agreement. If Contractor is Partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the U. S. Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

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**Power of Attorney**  
**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

KNOW ALL MEN BY THESE PRESENTS: That the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, a corporation of the State of Maryland, by WILLIAM J. MILLS, Vice President, and GREGORY E. MURRAY, Assistant Secretary, in pursuance of authority granted by Article VI, Section 2, of the By-Laws of said Company, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, does hereby nominate, constitute and appoint **Brian W. LONG, Richard L. ENDERS, Brian F. JEFFE, Michael J. PEDRASEK, SR., Jay BLACK, Josephine M. STREYLE, Marge FEDAK and Barbara A. LEEPER, all of Pittsburgh, Pennsylvania, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver to, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings**, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Company, as fully and apply to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in Baltimore, Md., in their own proper persons. This power of attorney revokes that issued on behalf of Brian W. LONG, Richard L. ENDERS, Brian F. JEFFE, Michael J. PEDRASEK, SR., Jay BLACK, Josephine M. STREYLE, Marge FEDAK, Barbara LEEPER, dated November 30, 2009.

The said Assistant Secretary does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article VI, Section 2, of the By-Laws of said Company, and is now in force.

IN WITNESS WHEREOF, the said Vice-President and Assistant Secretary have hereunto subscribed their names and affixed the Corporate Seal of the said FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 26th day of February, A.D. 2010.

ATTEST:

**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



*Gregory E. Murray*

By:

*Gregory E. Murray* Assistant Secretary

*William J. Mills*

Vice President

State of Maryland }  
City of Baltimore } ss:

On this 26th day of February, A.D. 2010, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, came WILLIAM J. MILLS, Vice President, and GREGORY E. MURRAY, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and they each acknowledged the execution of the same, and being by me duly sworn, severally and each for himself depose and saith, that they are the said officers of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and that the said Corporate Seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.



*Maria D. Adamski*

Maria D. Adamski

Notary Public

My Commission Expires: July 8, 2011

**EXTRACT FROM BY-LAWS OF FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

"Article VI, Section 2. The Chairman of the Board, or the President, or any Executive Vice-President, or any of the Senior Vice-Presidents or Vice-Presidents specially authorized so to do by the Board of Directors or by the Executive Committee, shall have power, by and with the concurrence of the Secretary or any one of the Assistant Secretaries, to appoint Resident Vice-Presidents, Assistant Vice-Presidents and Attorneys-in-Fact as the business of the Company may require, or to authorize any person or persons to execute on behalf of the Company any bonds, undertakings, recognizances, stipulations, policies, contracts, agreements, deeds, and releases and assignments of judgements, decrees, mortgages and instruments in the nature of mortgages,....and to affix the seal of the Company thereto."

**CERTIFICATE**

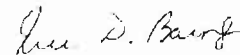
I, the undersigned, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that the Vice-President who executed the said Power of Attorney was one of the additional Vice-Presidents specially authorized by the Board of Directors to appoint any Attorney-in-Fact as provided in Article VI, Section 2, of the By-Laws of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed."

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said Company,

this \_\_\_\_\_ day of \_\_\_\_\_.



*Assistant Secretary*

Section K

**PERFORMANCE AND MAINTENANCE BOND**

**CONTRACT NO. 2010-12**

Bond No. 7624063

**KNOW ALL MEN BY THESE PRESENTS:** that

Lanco Electric  
(Name of Contractor)  
300 Canal Street, Leechburg, PA 15656  
(Address of Contractor)  
a Corporation, hereinafter called Principal,  
(Corporation, Partnership, Individual)  
and Fidelity and Deposit Company of Maryland  
(Name of Surety)  
P.O. Box 1884, Pittsburgh, PA 15230  
(Address of Surety)  
hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_  
Municipal Authority of the City of McKeesport  
(Name of Owner)  
100 Atlantic Avenue, McKeesport, PA 15132  
(Address of Owner)

hereinafter called Owner, in the penal sum of Five Hundred Forty Thousand & 00/100 Dollars (\$ 540,000.00 ) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION** is such that Whereas, the Principal entered into a certain contract with the Owner, dated the 20<sup>th</sup> day of July, 2011, a copy of which is hereto attached and made a part hereof for the construction of:

Contract No. 2010-12 Cliff Street Pump Station Improvements  
Electrical Construction

**NOW, THEREFORE**, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall remedy in accordance with the terms of the Contract any defects which may develop during a period of eighteen (18) months from the date of completion of the work performed under said contract, and shall fully indemnify and save harmless the OWNER

from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect. Whenever CONTRACTOR shall be declared by OWNER to be in default under the Contract, the Surety shall promptly remedy the default. If the OWNER terminates the Contract for such default, the following shall govern the liability of the CONTRACTOR and the Surety hereunder. In the event of such termination, the CONTRACTOR and Surety shall remain fully liable to the OWNER for the CONTRACTOR's failure to timely complete the Contract, any additional costs incurred by the OWNER in completing the Contract, and liquidated damages from the required completion date to the date of the actual completion of the work by the OWNER. In the event of such termination, the Surety may elect to take over and complete performance of the Contract by giving written notice to the OWNER of such election within seven (7) days of the OWNER's mailing of notice of termination to the Surety and actually commencing completion within fourteen (14) days of the OWNER's notice to the Surety, time being of the essence. The Surety shall fully complete the work by the originally scheduled date of completion and the CONTRACTOR and the Surety shall remain liable to the OWNER for all damages.

**PROVIDED, FURTHER,** that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

**PROVIDED, FURTHER,** any suit under this bond may be instituted until the expiration of two years from the date on which final payment under the Contract falls due or before the expiration of one year from the end of the maintenance and guarantee obligation under the Contract, which ever is later, notwithstanding any statute of limitations setting forth a shorter limitation period.

IN WITNESS WHEREOF, this instrument is executed in Five (5) counterparts, each one of which shall be deemed an original, this the 20<sup>th</sup> day of July, 2011.

300 Canal Street  
Address  
Leechburg, PA 15656

[Signature]  
(Witness to Principal)

Lanco Electric, Inc.  
Principal  
by [Signature]

ATTEST  
[Signature]  
Principal (Secretary)

(SEAL)

\_\_\_\_\_  
(Address)

\*\*\*\*\*

P.O. Box 1884  
Address  
Pittsburgh, PA 15230

Fidelity and Deposit Company of Maryland  
Surety

ATTEST  
[Signature]  
Surety (Secretary)

(SEAL)  
[Signature]  
(Witness to Surety)  
Barbara A. Leeper

\*\*\*\*\*

1010 Ohio River Boulevard  
(Address)  
Pittsburgh, PA 15202

by: [Signature]  
(Attorney in Fact)  
Josephine M. Streyle

**NOTE:** Date of Bond must be the same as the date of Agreement. If Contractor is Partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the U. S. Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

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**Power of Attorney**  
**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

KNOW ALL MEN BY THESE PRESENTS: That the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, a corporation of the State of Maryland, by WILLIAM J. MILLS, Vice President, and GREGORY E. MURRAY, Assistant Secretary, in pursuance of authority granted by Article VI, Section 2, of the By-Laws of said Company, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute and appoint **Brian W. LONG, Richard L. ENDERS, Brian F. JEFFE, Michael J. PETRASEK, SR., Jay BLACK, Josephine M. STREYLE, Marge FEDAK and Barbara A. LEEPER, all of Pittsburgh, Pennsylvania, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver to, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings, and the execution of such bonds or undertakings** in pursuance of these presents, shall be as binding upon said Company, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in Baltimore, Md., in their own proper persons. This power of attorney makes that issued on behalf of Brian W. LONG, Richard L. ENDERS, Brian F. JEFFE, Michael J. PETRASEK, SR., Jay BLACK, Josephine M. STREYLE, Marge FEDAK, Barbara LEEPER, dated November 30, 2009.

The said Assistant Secretary does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article VI, Section 2, of the By-Laws of said Company, and is now in force.

IN WITNESS WHEREOF, the said Vice-President and Assistant Secretary have hereunto subscribed their names and affixed the Corporate Seal of the said FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 26th day of February, A.D. 2010.

ATTEST:

**FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



*Gregory E. Murray*

*Gregory E. Murray* Assistant Secretary

By:

*William J. Mills*

*William J. Mills* Vice President

State of Maryland }  
City of Baltimore } ss:

On this 26th day of February, A.D. 2010, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, came WILLIAM J. MILLS, Vice President, and GREGORY E. MURRAY, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and they each acknowledged the execution of the same, and being by me duly sworn, severally and each for himself depose and saith, that they are the said officers of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and that the said Corporate Seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.



*Maria D. Adamski*

Maria D. Adamski

Notary Public

My Commission Expires: July 8, 2011

**EXTRACT FROM BY-LAWS OF FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

"Article VI, Section 2. The Chairman of the Board, or the President, or any Executive Vice-President, or any of the Senior Vice-Presidents or Vice-Presidents specially authorized so to do by the Board of Directors or by the Executive Committee, shall have power, by and with the concurrence of the Secretary or any one of the Assistant Secretaries, to appoint Resident Vice-Presidents, Assistant Vice-Presidents and Attorneys-in-Fact as the business of the Company may require, or to authorize any person or persons to execute on behalf of the Company any bonds, undertakings, recognizances, stipulations, policies, contracts, agreements, deeds, and releases and assignments of judgements, decrees, mortgages and instruments in the nature of mortgages,...and to affix the seal of the Company thereto."

**CERTIFICATE**

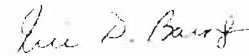
I, the undersigned, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that the Vice-President who executed the said Power of Attorney was one of the additional Vice-Presidents specially authorized by the Board of Directors to appoint any Attorney-in-Fact as provided in Article VI, Section 2, of the By-Laws of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed."

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said Company.

this \_\_\_\_\_ day of \_\_\_\_\_



*Assistant Secretary*

**CERTIFICATE OF INSURANCE**

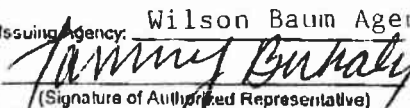
This Certificate shall be required to be properly completed by the Contractor and his Insurance Agent at the time that the construction contract is executed. It is informational and does not amend, extend or alter the coverage afforded by the policies listed below.

Name and Address of Insurance Agency Wilson Baum Agency, Inc. 314 Long Run Road McKeesport, PA 15132 Name and Address of Insured Contractor Lanco Electric, Inc. 300 Canal Street Leechburg, PA 15656 Name(s) of Additionally Insured Party KLH Engineers, Inc	<b>COMPANIES AFFORDING COVERAGES</b>	
	Company Letter	<b>A</b> Harleysville Insurance Co.
	Company Letter	<b>B</b> Ohio Casualty
	Company Letter	<b>C</b> Victor O Schinnerer & Co.
	Company Letter	<b>D</b>

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time and that the insurance afforded by the policies is subject to all the terms, exclusions and conditions of such policies.

Company Letter	Type of Insurance	Policy Number	Policy Expiration Date	Limits of Liability in Thousands (\$000)		
					Each Coverage	Aggregate
A	General Liability <input checked="" type="checkbox"/> Comprehensive Form <input checked="" type="checkbox"/> Premise-Operations <input checked="" type="checkbox"/> Explosion and Collapse Hazard <input checked="" type="checkbox"/> Underground Hazard <input checked="" type="checkbox"/> Products/Completed Operation Hazard <input checked="" type="checkbox"/> Contractual Insurance <input checked="" type="checkbox"/> Broad Form Property Damage <input checked="" type="checkbox"/> Independent Contractors <input checked="" type="checkbox"/> Personal Injury	MPA 85543C	9-01-11	Bodily Injury	\$	\$
				Property Damage	\$	\$
				Bodily Injury and Property Damage Combined	\$ 1M	2M
			Personal Injury	1M	\$	
A	Automotive Liability <input checked="" type="checkbox"/> Comprehensive Form <input checked="" type="checkbox"/> Owned <input checked="" type="checkbox"/> Hired <input checked="" type="checkbox"/> Non-Owned	BA 85820C	9-01-11	Bodily Injury (Each Person)	\$ 1M	
				Bodily Injury (Each Person)	\$	
				Property Damage	\$ 1M	
A	Excess Liability <input checked="" type="checkbox"/> Umbrella Form <input type="checkbox"/> Other than Umbrella Form	BEC 90874C	9-01-11	Bodily Injury and Property Damage Combined	\$ 6M	6M
A	<input checked="" type="checkbox"/> Workers' Compensation and Employers' Liability	WC 85130C	9-01-11	Statutory		500/500/500
B	<input checked="" type="checkbox"/> Builder's Risk	BMO 53021801	10-22-11			
C	<input checked="" type="checkbox"/> Other E & O	CPB11-411-02-76	12-01-11		1,000,000	

The coverage issued in the above listed policies will not be cancelled, materially changed, or renewal refused until at least ten (10) days prior written notice has been given to the named owner and certificate holder at the address listed below.

Construction Contract Identification Cliff Street Pump Station Renovation Contract No. 2010-12 02ccrcl	Name and Address of Owner and Certificate Holder Municipal Authority of the City of McKeesport 100 Atlantic Avenue McKeesport, PA 15132	Date this certificate issued: 6-29-11 Issuing Agency: Wilson Baum Agency  (Signature of Authorized Representative)
--	--	--

THIS FORM CANNOT BE SUBSTITUTED.

**ISSUED TO: Galway Bay Corporation**

**MUNICIPAL AUTHORITY  
OF THE CITY OF MCKEESPORT  
ALLEGHENY COUNTY, PENNSYLVANIA**

**CONTRACT DOCUMENTS FOR  
TWENTY EIGHTH AVENUE PUMP STATION  
IMPROVEMENTS**

**CONTRACT NO. 2010-09  
GENERAL/MECHANICAL CONSTRUCTION**

**JANUARY 2011 RELEASE FOR BID**

**KLH**  
**ENGINEERS, INC.**  
5173 Campbells Run Road  
Pittsburgh, PA 15205  
Telephone: (412) 494-0510  
Fax: (412) 494-0426  
E-mail: [info@klhengineers.com](mailto:info@klhengineers.com)  
Ref. No. 220-35

Section C

**BID FORM - CONTRACT NO. 2010-09**

**Project Identification:** Twenty Eighth Avenue Pump Station Improvements

**Contract Identification and Number:** General/Mechanical Construction Contract No. 2010-09

**This Bid is Submitted to:** Municipal Authority of the City of McKeesport  
100 Atlantic Avenue  
McKeesport, PA 15132

**C1** The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in Section J of the Contract Documents and, to complete all Work as Specified and within the Contract Time indicated in this Bid, in accordance with the Contract Documents.

**C2** BIDDER accepts all of the terms and conditions of the Instructions to Bidders and other components of the Contract Documents. This Bid may not be withdrawn for ninety (90) days after the day of Bid opening. BIDDER will sign the Agreement and submit the Contract Security and other documents required by the Contract Documents within fifteen days after the date of OWNER's Notice of Award.

**C3** In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

C3.1 Bidder has examined copies of all Contract Documents including Sections A through K and all Drawings, and the following Addenda designated as Section L (if any):

<b>Date of Issuance</b>	<b>Addenda Number</b>
<u>February 1, 2011</u>	<u>1</u>
<u>February 10, 2011</u>	<u>2</u>
<u>February 15, 2011</u>	<u>3</u>
<u>March 1, 2011</u>	<u>4</u>

receipt of all which is hereby acknowledged.

**C3.2** BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the

work and has made such independent investigations as BIDDER deems necessary. BIDDER has satisfied itself as to the conditions to be encountered both overhead and on the surface of the ground and/or within existing structures and of the character, quality and quantities of work to be done, materials to be furnished, services required and all other terms of the Technical Specifications and other Contract Documents. BIDDER assumes all risks inherent in performing the work and arising from any deficiencies in the Drawings or Specifications or other Contract Documents and will make no claim against the OWNER or the ENGINEER because of any such alleged deficiency.

C3.3 This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation, BIDDER has not directly or indirectly induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.

C4 BIDDER will complete the Work under Contract No. 2010-09 for the following Lump Sum Price:

**Lump Sum Contract Price**

Nine Hundred Thirty One Thousand Dollars Zero Cents  
(Words)

\$ 931,000.00  
(Figures)

C5 BIDDER agrees that the lump sum prices above are predicated on furnishing the following major process equipment at the cost stated below.

Specification Item No.	Description	Name of Manufacturer	Cost of Base Bid Equipment
11310	Raw Wastewater Pumps	Yeomans Pump	<u>130,000.00</u>

C6 BIDDER hereby offers deductions from the lump sum bid prices if the OWNER desires that alternate equipment be furnished by the respective manufacturers identified below (BIDDER may insert alternate manufacturers' names in any one or more of the spaces below):

Specification	Description	Name of Alternate Manufacturer and Associated Deduction from Bid Price
11310	Raw Wastewater Pump	<i>Fairbanks</i> Product \$ <u>10,000.00</u>

**C7** BIDDER agrees that the Work will be completed within five Hundred forty (540) Calendar days after the date when the Contract Time commences.

**C8** BIDDER understands and agrees to coordinate his construction activities with those of the OWNER, the ENGINEER and the other CONTRACTORS.

**C9** BIDDER accepts the provisions set forth in the Agreement in Section J of the Contract Documents as to liquidated damages in the event of failure to complete the Work on time.

**C10** BIDDER recognizes the problem in identifying exact locations of reputed underground utility pipe lines, structures, and/or appurtenances and in classifying, during the bidding period, the subsurface conditions which will be encountered during construction and, in submitting this bid, has included any and all costs in connection therewith and shall not seek any extra compensation for performing the work because of those actual prevailing conditions.

**C11** The required Bid Security set forth in Paragraphs B7 of the Instructions to Bidders in the form of a certified bank check, or a Bid Bond, the form for which is included as Section D of the Contract Documents, is in the amount of 10% of the Amount of the Bid.

**C12** Communications concerning this Bid shall be addressed to the BIDDER at the address stated on the following page.

**C13** The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

**Submitted on** March 7, 2011

(Execute the Bid Form on the following page)

IF BIDDER is:

**An Individual**

By \_\_\_\_\_ (Seal)  
(Individual's Name)  
doing business as \_\_\_\_\_  
(Business Address and Telephone Number)

**A Partnership**

By \_\_\_\_\_ (Seal)  
(Firm Name)  
\_\_\_\_\_  
(General Partner)  
\_\_\_\_\_  
(Business Address and Phone Number)

**A Corporation**

By Galway Bay Corporation (Seal)  
(Corporation Name)  
Pennsylvania  
(State of Incorporation)  
By \_\_\_\_\_  
(Name of Person Authorized to Sign and Title of same)  
Gregory R. Maynard - President  
(Corporate Seal)  
Attest *Judy K. Clark*  
Judy K. Clark (Secretary)  
10 Ainsley Lane, P. O. Box 320, Mount Braddock, PA 15465 724-277-4282  
(Business Address and Telephone Number)

**A Joint Venture**

By \_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Address)  
\_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Address)

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a part to the joint venture should be in the manner indicated above.)



*GPL/AM*

(continued from previous page)

**WWTP Expansion Combination No. 2**

Column A Combination of Contracts	Column B Reduction in the Amounts of the Lump Sums bid if Awarded the Combination indicated in Column A
	(In Figures)
• Contract 2010-01 Wastewater Treatment Plant Expansion General Mechanical Construction.	\$ <u>382,000.00</u>
• Contract 2010-03 West Shore Pump Station General Mechanical Construction.	\$ <u>282,000.00</u>
• Contract 2010-05 Long Run Pump Station Improvements General Mechanical Construction.	\$ <u>1,095,000.00</u>
• Contract 2010-07 Ripple Road Pump Station General Mechanical Construction.	\$ <u>243,000.00</u>
• Contract 2010-09 28 <sup>th</sup> Avenue Pump Station Improvements General Mechanical Construction.	\$ <u>220,000.00</u>
• Contract 2010-11 Cliff Street Pump Station Improvements General Mechanical Construction.	\$ <u>207,000.00</u>
<b>Total</b>	\$ <u>2,429,000.00</u>

Section D

**BID BOND**

**KNOW ALL MEN BY THESE PRESENTS**, that we Galway Bay Corporation  
Ainsley Lane, Mount Braddock, PA 15465  
as Principal and Liberty Mutual Insurance Company  
of Boston, State of Massachusetts,  
a corporation existing under the laws and the State of  
Massachusetts, and authorized to transact business in  
Pennsylvania, as Surety, are held and firmly bound unto  
Municipal Authority of the City of McKeesport

(OWNER)

100 Atlantic Avenue, McKeesport, PA 15132

(Address)

hereinafter called the Obligee, in the sum of (10%) Ten percent of  
amount bid Dollars (\$ \_\_\_\_\_ ).  
lawful money of the United States of America, for payment of which  
sum well and truly to be made, we bind ourselves, our heirs,  
executors, administrators and successors, jointly and severally,  
firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH**, that whereas the Prin-  
cipal has submitted the accompanying Proposal or Bid dated  
March 7th, 2011, for the Contract No's. 2010-01, 02, 03, 04, 05, 06,  
07, 08, 09, 10, 11, 12, 13, 14, and 15

**NOW THEREFORE**, the condition of this Bond shall be such that if the  
Principal, upon due acceptance of said Proposal and award of the  
Contract to him by the Obligee, bonds with good and sufficient  
surety as may be required by the Contract Documents, and furnishes  
the Obligee proper evidence of effectiveness of insurance coverage,  
respectively, within the time, in the forms and in the amounts as  
appropriate, required by the Contract Documents, and enters into a  
Contract with the Obligee in accordance with the Contract  
Documents, then this Bond shall be void; otherwise, the Bond shall  
be and shall remain in full force and effect.

The Principal and Surety hereby stipulate and agree that if the  
Principal fails to perform all conditions of this Bond, they will pay  
the sum of the Bond to the Obligee as fixed, liquidated damages.

The Surety, for value received, hereby stipulates and agrees that  
the obligations of said Surety and its Bond shall be in no way  
impaired or affected by any extension of time within which the  
OWNER may accept such bid; and said Surety does hereby waive notice  
of any extension.

It is the intention of the parties to be legally bound by this  
instrument.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their several seals this 7th day of March, 2011, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned and representative, pursuant to authority of its governing body.

ATTEST: DATE March 7th, 2011

WITNESS: Galway Bay Corporation  
Name of Bidder, Corporation, Firm or Individual

Judy K. Clark  
Judy K. Clark - Secretary

By [Signature]  
Gregory R. Maynard - President  
(Title)  
10 Ainsley Lane, P O Box 320  
Mount Braddock, PA 15465  
Business Address of Bidder

\*\*\*\*\*

ATTEST:  
[Signature]  
Patty Mangus, Witness

Liberty Mutual Insurance Company  
Surety  
[Signature]  
Attorney-in-Fact  
Kimberly L. Miles

IMPORTANT - Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

Section J

**AGREEMENT - CONTRACT NO. 2010-09**

**THIS AGREEMENT** is dated as of the 29 day of JUNE in the year of 2011 by and between The Municipal Authority of the City of McKeesport hereinafter called OWNER and Galway Bay Corporation hereinafter called CONTRACTOR.

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

**J1 WORK**

J1.1 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Contract No. 2010-09 Twenty Eighth Avenue Pump Station

Improvements General/Mechanical Construction

**J2 CONTRACT TIME**

J2.1 The Work will be completed within five Hundred forty (540) calendar days after the date when the Contract Time commences as provided in the General Conditions.

J2.2 Liquidated Damages OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not complete within the time specified in paragraph J2.1 above, plus any extensions thereof allowed in accordance with the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not complete on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER Six Hundred Fifty Dollars (\$650.00) for each day that expires after the time specified in paragraph J2.1 for completion until the Work is substantially complete.

**J3 CONTRACT PRICE**

J3.1 OWNER shall pay CONTRACTOR for performance of the Work in accordance with the Contract Documents in the following lump sum amount:

Seven Hundred Eleven Thousand Dollars & 00/100

(\$11,000.00)

#### **J4 PAYMENT PROCEDURES**

J4.1 CONTRACTOR shall submit Applications for Payment in accordance with Section H of the Contract Documents.

J4.2 Progress Payments. OWNER shall make progress payments on the Contract Price on the basis of CONTRACTOR's Application for Payment. All payments will be on the basis of the progress of the Work measured by the schedule of values provided for in the Contract Documents.

J4.3 Prior to 50% completion of the Work, progress payments will be in an amount equal to:

- 90% of the Work completed, and
- 100% of materials and equipment not incorporated in the Work but delivered and suitably stored, less in each case, the aggregate of payments previously made.

J4.4 After the work is at least 50% complete, and subject to satisfactory progress and compliance with the provisions of the Contract Documents, the OWNER may, at its discretion, elect to reduce the retainage to an amount equal to 5% of the completed work value.

J4.5 Final Payment. Upon final completion and acceptance of the Work, OWNER shall pay the remainder of the Contract Price not previously paid.

#### **J5 INTEREST**

J5.1 All moneys not paid when due hereunder shall bear interest at the rate defined in Paragraph H2.

#### **J6 CONTRACTOR'S REPRESENTATIONS**

J6.1 CONTRACTOR represents that he has familiarized himself with the nature and extent of the Contract Documents, Work, locale and with all local conditions; federal, state and other laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work; and, has made or caused to be made such examinations, investigations (including subsurface explorations) and tests and studies of such reports and related data as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes, and that he shall be responsible

to fully perform all work within the contract time and for the contract price(s) stated herein, regardless of the conditions actually encountered. All risks assumed hereunder have been included in the contract price.

J6.2 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

**J7 CONTRACT DOCUMENTS**

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

<b>Section</b>	<b>Identification</b>	<b>Page No.</b>
J	Agreement	J-1 to J-4
	Exhibits attached to this agreement	(if any)
K	Surety Bonds/Insurance Certificates	K-1 to K-7
E	General Conditions	E-1 to E-27
F	Supplemental General Conditions	F-1 to F-28
G	Technical Specifications	01000 to 16990
H	Measurement and Payment	H-1 to H-2
I	Standard Detail Drawings	I-1 to I-16
	Drawings 24" x 36" - Bound Separately from this Book (Are identified in Section 01010)	
L	Addenda	L-1 to L-25 (if any)
C	Contractor's Bid	C-1 to C-9
	Change Orders duly issued with or after the effective date of this Agreement	(if any)

There are no Contract Documents other than those listed above in this Agreement, Section J. The Contract Documents may only be altered, modified, amended or repealed by appropriate execution of a Change Order.

**J8 MISCELLANEOUS**

J8.1 Terms used in this Agreement are defined in the General Conditions and shall have the meanings indicated in the General Conditions.

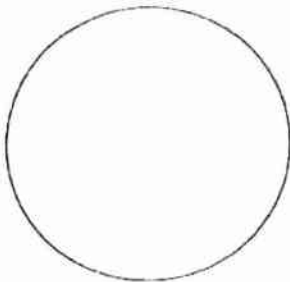
J8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law) and unless specifically stated to the contrary in any written consent to an assignment

no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

J8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

**IN WITNESS WHEREOF,** the parties hereto have signed this Agreement in Five (5) copies. One counterpart each has been delivered to OWNER and the CONTRACTOR. All portions of the contract Documents have been signed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on \_\_\_\_\_  
20\_\_\_\_.



**(CORPORATE SEAL)**

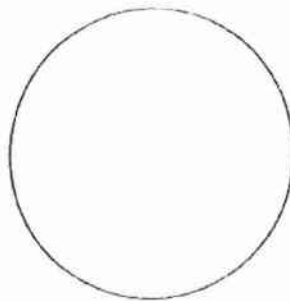
**OWNER**  
Municipal Authority of the  
City of McKeesport \_\_\_\_\_

by \_\_\_\_\_

**ATTEST** \_\_\_\_\_  
**Title** \_\_\_\_\_

**Address for Giving Notice**  
100 Atlantic Avenue  
McKeesport, PA 15132

\*\*\*\*\*



**(CORPORATE SEAL)**

**CONTRACTOR**  
Galway Bay Corporation

by \_\_\_\_\_

**ATTEST** \_\_\_\_\_  
**Title** \_\_\_\_\_

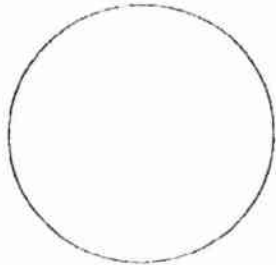
**Address for Giving Notice**  
10 Ainsley Lane  
Mt. Braddock, PA 15465

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J8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

**IN WITNESS WHEREOF**, the parties hereto have signed this Agreement in Five (5) copies. One counterpart each has been delivered to OWNER and the CONTRACTOR. All portions of the contract Documents have been signed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on JUNE 26  
20 11 .



(CORPORATE SEAL)

**OWNER**

Municipal Authority of the  
City of McKeesport

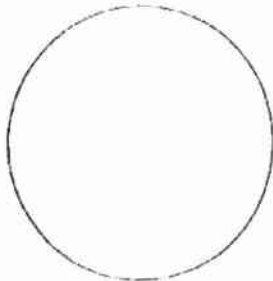
by [Signature]

**ATTEST**  
**Title** [Signature]

**Address for Giving Notice**

100 Atlantic Avenue  
McKeesport, PA 15132

\*\*\*\*\*



(CORPORATE SEAL)

**CONTRACTOR**

Galway Bay Corporation

by [Signature]  
Gregory R. Maynard, President

**ATTEST**  
**Title** [Signature]  
Judy K. Clark Secretary

**Address for Giving Notice**

10 Ainsley Lane

Mt. Braddock, PA 15465



Section K

PAYMENT BOND

CONTRACT NO. 2010-09

KNOW ALL MEN BY THESE PRESENTS: that

Galway Bay Corporation

(Name of Contractor)

10 Ainsley Lane, Mt. Braddock, PA 15465

(Address of Contractor)

a Corporation, hereinafter called Principal,  
(Corporation, ~~Partnership~~, ~~Individual~~)

and Liberty Mutual Insurance Company

(Name of Surety)

8044 Montgomery Road, Suite 150E, Cincinnati, OH 45236

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto  
Municipal Authority of the City of McKeesport

(Name of Owner)

100 Atlantic Avenue, McKeesport, PA 15132

(Address of Owner)

hereinafter called Owner, in the penal sum of Seven Hundred  
Eleven Thousand & 00/100 Dollars (\$ 711,000.00 ) in lawful money  
of the United States, for the payment of which sum well and truly  
to be made, we bind ourselves, our heirs, executors, administrators  
and successors, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION** is such that Whereas, the Prin-  
cipal entered into a certain contract with the Owner, dated the  
19<sup>th</sup> day of JUNE, 2011, a copy of which is hereto  
attached and made a part hereof for the construction of:

Contract No. 2010-09 Twenty Eighth Avenue Pump Station Improvements  
General/Mechanical Construction

**NOW, THEREFORE**, if the Principal shall promptly make payment to all  
persons, firms, subcontractors and corporations furnishing materials  
for or performing labor in the prosecution of the work provided for  
in such contract, and any authorized extension or modification  
thereof, including all amounts due for materials, lubricants, oil,  
fuel, repairs on machinery, equipment and tools, consumed or used in  
connection with the construction of such work, and all insurance  
premiums on said work and for all labor, performed in such work  
whether by subcontractor or otherwise, then this obligation shall be  
void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in Five (5) counterparts, each one of which shall be deemed an original, this the 29 day of JUNE, 2001.

10 Ainsley Lane  
(Address)  
Mt. Braddock, PA 15465

Cassandra R. Wright  
(Witness to Principal)  
Cassandra R. Wright  
10 Ainsley Lane  
Mt. Braddock, PA 15465  
(Address)

Galway Bay Corporation  
(Principal)  
by [Signature]  
Gregory R. Maynard, President  
(ATTEST)  
Judy K. Clark  
(Principal) (Secretary)  
Judy K. Clark  
(SEAL)

\*\*\*\*\*

8044 Montgomery Road, Suite 150E  
(Address)  
Cincinnati, OH 45236

Liberty Mutual Insurance Company  
(Surety)  
(ATTEST)  
[Signature]  
(Surety) (Secretary)  
(SEAL)  
[Signature]  
(Witness to Surety)  
Kimberly L. Miles

\*\*\*\*\*

by: [Signature]  
(Attorney in Fact) Douglas P. Taylor  
One Hillcrest Drive East  
(Address)  
Charleston WV 25311

**NOTE:** Date of Bond must be the same as the date of Agreement. If Contractor is Partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the U. S. Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

LIBERTY MUTUAL INSURANCE COMPANY
BOSTON, MASSACHUSETTS
POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS: That Liberty Mutual Insurance Company (the "Company"), a Massachusetts stock insurance company, pursuant to and by authority of the By-law and Authorization hereinafter set forth, does hereby name, constitute and appoint KIMBERLY L. MILES, DOUGLAS P. TAYLOR, ANDREW K. TEETER, DONNA J. PRICE, JANIS K. PEACOCK, CHRISTOPHER A. MICHEL, PAMELA V. LANHAM, BRADLEY P. BOBERSKY, ALL OF THE CITY OF CHARLESTON, STATE OF WEST VIRGINIA.....

, each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations in the penal sum not exceeding TWENTY FIVE MILLION AND 00/100..... DOLLARS (\$ 25,000,000.00.....) each, and the execution of such undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company in their own proper persons.

That this power is made and executed pursuant to and by authority of the following By-law and Authorization:

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

By the following instrument the chairman or the president has authorized the officer or other official named therein to appoint attorneys-in-fact:

Pursuant to Article XIII, Section 5 of the By-Laws, Garnet W. Elliott, Assistant Secretary of Liberty Mutual Insurance Company, is hereby authorized to appoint such attorneys-in-fact as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

That the By-law and the Authorization set forth above are true copies thereof and are now in full force and effect.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Liberty Mutual Insurance Company has been affixed thereto in Plymouth Meeting, Pennsylvania this 5th day of June, 2009.

LIBERTY MUTUAL INSURANCE COMPANY

By Garnet W. Elliott, Assistant Secretary

COMMONWEALTH OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 5th day of June, 2009, before me, a Notary Public, personally came Garnet W. Elliott, to me known, and acknowledged that he is an Assistant Secretary of Liberty Mutual Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Liberty Mutual Insurance Company thereto with the authority and at the direction of said corporation.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



By Teresa Pastella, Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy, is in full force and effect on the date of this certificate; and I do further certify that the officer or official who executed the said power of attorney is an Assistant Secretary specially authorized by the chairman or the president to appoint attorneys-in-fact as provided in Article XIII, Section 5 of the By-laws of Liberty Mutual Insurance Company.

This certificate and the above power of attorney may be signed by facsimile or mechanically reproduced signatures under and by authority of the following vote of the board of directors of Liberty Mutual Insurance Company at a meeting duly called and held on the 12th day of March, 1980.

VOTED that the facsimile or mechanically reproduced signature of any assistant secretary of the company, wherever appearing upon a certified copy of any power of attorney issued by the company in connection with surety bonds, shall be valid and binding upon the company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said company, this \_\_\_\_\_ day of \_\_\_\_\_

By David M. Carey, Assistant Secretary

ier of credit, bank deposit, value guarantees.

Not valid for mortgage, note, loan currency rate, interest rate or resi

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

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Section K

**PERFORMANCE AND MAINTENANCE BOND**

**CONTRACT NO. 2010-09**

**KNOW ALL MEN BY THESE PRESENTS:** that

Galway Bay Corporation

**(Name of Contractor)**

10 Ainsley Lane, Mt. Braddock, PA 15465

**(Address of Contractor)**

a Corporation, hereinafter called Principal,  
(Corporation, ~~Partnership~~, ~~Individual~~)

and Liberty Mutual Insurance Company

**(Name of Surety)**

8044 Montgomery Road, Suite 150E, Cincinnati, OH 45236

**(Address of Surety)**

hereinafter called Surety, are held and firmly bound unto  
Municipal Authority of the City of McKeesport

**(Name of Owner)**

100 Atlantic Avenue, McKeesport, PA 15132

**(Address of Owner)**

hereinafter called Owner, in the penal sum of Seven Hundred  
Eleven Thousand & 00/100 Dollars (\$ 711,000.00 ) in lawful money  
of the United States, for the payment of which sum well and truly  
to be made, we bind ourselves, our heirs, executors, administrators  
and successors, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION** is such that Whereas, the Prin-  
cipal entered into a certain contract with the Owner, dated the  
12 day of JUNE, 2011, a copy of which is hereto  
attached and made a part hereof for the construction of:

Contract No. 2010-09 Twenty Eighth Avenue Pump Station Improvements

General/Mechanical Construction

**NOW, THEREFORE**, if the Principal shall well, truly and faithfully  
perform its duties, all the undertakings, covenants, terms, con-  
ditions and agreements of said contract during the original term  
thereof, and any extensions thereof which may be granted by the  
OWNER, with or without notice to the Surety, and if he shall  
satisfy all claims and demands incurred under such contract, and  
shall remedy in accordance with the terms of the Contract any  
defects which may develop during a period of eighteen (18) months  
from the date of completion of the work performed under said  
contract, and shall fully indemnify and save harmless the OWNER

from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect. Whenever CONTRACTOR shall be declared by OWNER to be in default under the Contract, the Surety shall promptly remedy the default. If the OWNER terminates the Contract for such default, the following shall govern the liability of the CONTRACTOR and the Surety hereunder. In the event of such termination, the CONTRACTOR and Surety shall remain fully liable to the OWNER for the CONTRACTOR's failure to timely complete the Contract, any additional costs incurred by the OWNER in completing the Contract, and liquidated damages from the required completion date to the date of the actual completion of the work by the OWNER. In the event of such termination, the Surety may elect to take over and complete performance of the Contract by giving written notice to the OWNER of such election within seven (7) days of the OWNER's mailing of notice of termination to the Surety and actually commencing completion within fourteen (14) days of the OWNER's notice to the Surety, time being of the essence. The Surety shall fully complete the work by the originally scheduled date of completion and the CONTRACTOR and the Surety shall remain liable to the OWNER for all damages.

**PROVIDED, FURTHER,** that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

**PROVIDED, FURTHER,** any suit under this bond may be instituted until the expiration of two years from the date on which final payment under the Contract falls due or before the expiration of one year from the end of the maintenance and guarantee obligation under the Contract, which ever is later, notwithstanding any statute of limitations setting forth a shorter limitation period.

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IN WITNESS WHEREOF, this instrument is executed in Five (5) counterparts, each one of which shall be deemed an original, this the 28 day of JUNE, 2011.

10 Ainsley Lane  
Address  
Mt. Braddock, PA 15465

Cassandra R. Wright  
(Witness to Principal)  
Cassandra R. Wright  
10 Ainsley Lane  
Mt. Braddock, PA 15465  
(Address)

Galway Bay Corporation  
Principal  
by [Signature]  
Gregory R. Maynard, President  
ATTEST  
Judy K. Clark  
Principal (Secretary)  
Judy K. Clark  
(SEAL)

\*\*\*\*\*

8044 Montgomery Road, Suite 150E  
Address  
Cincinnati, OH 45236

Liberty Mutual Insurance Company  
Surety  
ATTEST  
[Signature]  
Surety (Secretary)  
(SEAL)  
(Witness to Surety)  
Kimberly L. Miles

\*\*\*\*\*

One Hillcrest Drive East  
(Address)  
Charleston WV 25311

by: [Signature]  
(Attorney in Fact)  
Douglas P. Taylor

**NOTE:** Date of Bond must be the same as the date of Agreement. If Contractor is Partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the U. S. Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

LIBERTY MUTUAL INSURANCE COMPANY
BOSTON, MASSACHUSETTS
POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS: That Liberty Mutual Insurance Company (the "Company"), a Massachusetts stock insurance company, pursuant to and by authority of the By-law and Authorization hereinafter set forth, does hereby name, constitute and appoint
KIMBERLY L. MILES, DOUGLAS P. TAYLOR, ANDREW K. TEETER, DONNA J. PRICE, JANIS K. PEACOCK, CHRISTOPHER A. MICHEL, PAMELA V. LANHAM, BRADLEY P. BOBERSKY, ALL OF THE CITY OF CHARLESTON, STATE OF WEST VIRGINIA.....

, each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations in the penal sum not exceeding TWENTY FIVE MILLION AND 00/100..... DOLLARS (\$ 25,000,000.00.....) each, and the execution of such undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company in their own proper persons.

That this power is made and executed pursuant to and by authority of the following By-law and Authorization:

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

By the following instrument the chairman or the president has authorized the officer or other official named therein to appoint attorneys-in-fact:

Pursuant to Article XIII, Section 5 of the By-Laws, Garnet W. Elliott, Assistant Secretary of Liberty Mutual Insurance Company, is hereby authorized to appoint such attorneys-in-fact as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

That the By-law and the Authorization set forth above are true copies thereof and are now in full force and effect.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Liberty Mutual Insurance Company has been affixed thereto in Plymouth Meeting, Pennsylvania this 5th day of June, 2009.

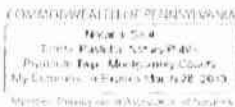
LIBERTY MUTUAL INSURANCE COMPANY

By Garnet W. Elliott, Assistant Secretary

COMMONWEALTH OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 5th day of June, 2009, before me, a Notary Public, personally came Garnet W. Elliott, to me known, and acknowledged that he is an Assistant Secretary of Liberty Mutual Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Liberty Mutual Insurance Company thereto with the authority and at the direction of said corporation.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



By Teresa Pastella, Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy, is in full force and effect on the date of this certificate; and I do further certify that the officer or official who executed the said power of attorney is an Assistant Secretary specially authorized by the chairman or the president to appoint attorneys-in-fact as provided in Article XIII, Section 5 of the By-laws of Liberty Mutual Insurance Company.

This certificate and the above power of attorney may be signed by facsimile or mechanically reproduced signatures under and by authority of the following vote of the board of directors of Liberty Mutual Insurance Company at a meeting duly called and held on the 12th day of March, 1980.

VOTED that the facsimile or mechanically reproduced signature of any assistant secretary of the company, wherever appearing upon a certified copy of any power of attorney issued by the company in connection with surety bonds, shall be valid and binding upon the company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said company, this \_\_\_\_\_ day of \_\_\_\_\_

By David M. Carey, Assistant Secretary

Not valid for mortgage, note, loan, currency rate, interest rate or residential value guaranties.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

**CERTIFICATE OF INSURANCE**

This Certificate shall be required to be properly completed by the Contractor and his Insurance Agent at the time that the construction contract is executed. It is informational and does not amend, extend or alter the coverage afforded by the policies listed below

Name and Address of Insured Contractor  Name(s) of Additionally Insured Party  KLH Engineers, Inc. Municipal Authority of the City of McKeesport	COMPANIES AFFORDING COVERAGES	
	Company Letter	<b>A</b>
	Company Letter	<b>B</b>
	Company Letter	<b>C</b>
	Company Letter	<b>D</b>

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time and that the insurance afforded by the policies is subject to all the terms, exclusions and conditions of such policies.

Company Letter	Type of Insurance	Policy Number	Policy Expiration Date	Limits of Liability in Thousands (000)		
					Each Occurrence	Aggregate
	<b>General Liability</b> <input type="checkbox"/> Comprehensive Form <input type="checkbox"/> Premise-Operations <input type="checkbox"/> Explosion and Collapse Hazard <input type="checkbox"/> Underground Hazard <input type="checkbox"/> Products/Completed Operation Hazard <input type="checkbox"/> Contractual Insurance <input type="checkbox"/> Broad Form Property Damage <input type="checkbox"/> Independent Contractors <input type="checkbox"/> Personal Injury			Bodily Injury	\$	\$
				Property Damage	\$	\$
				Bodily Injury and Property Damage Combined	\$	
				Personal Injury		\$
	<b>Automotive Liability</b> <input type="checkbox"/> Comprehensive Form <input type="checkbox"/> Owned <input type="checkbox"/> Hired <input type="checkbox"/> Non-Owned			Bodily Injury (Each Person)	\$	
				Bodily Injury (Each Person)	\$	
				Property Damage	\$	
	<b>Excess Liability</b> <input type="checkbox"/> Umbrella Form <input type="checkbox"/> Other than Umbrella Form			Bodily Injury and Property Damage Combined	\$	
	<input type="checkbox"/> <b>Workers' Compensation and Employers' Liability</b>			Statutory		
	<input type="checkbox"/> <b>Builder's Risk</b>					
	<input type="checkbox"/> <b>Other</b>					

The coverage issued in the above listed policies will not be cancelled, materially changed, or renewal refused until at least ten (10) days prior written notice has been given to the named owner and certificate holder at the address listed below

Construction Contract Identification Twenty Eighth Avenue Pump Station Improvement Contract No. 2010-09 General/Mechanical	Name and Address of Owner and Certificate Holder Municipal Authority of the City of McKeesport 100 Atlantic Avenue McKeesport, PA 15132	Date this certificate issued: _____ Issuing Agency _____  (Signature of Authorized Representative)
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THIS FORM CANNOT BE SUBSTITUTED.



**CERTIFICATE OF INSURANCE**

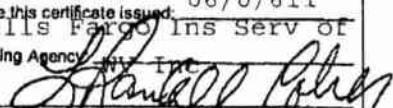
This Certificate shall be required to be properly completed by the Contractor and his Insurance Agent at the time that the construction contract is executed. It is informational and does not amend, extend or alter the coverage afforded by the policies listed below.

Name and Address of Insurance Agency Wells Fargo Ins Serv of WV Inc 1075 VanVoorhis Road Suite 200 Morgantown WV 26505	<b>COMPANIES AFFORDING COVERAGES</b>	
Name and Address of Insured Contractor Galway Bay Corporation PO Box 320 Mt Braddock PA 15464-0260	Company Letter <b>A</b>	Westfield Insurance Co
	Company Letter <b>B</b>	Travelers Prop Cas Co
Name(s) of Additionally Insured Party  KLH Engineers, Inc. Municipal Authority of the City of McKeesport	Company Letter <b>C</b>	
	Company Letter <b>D</b>	

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time and that the insurance afforded by the policies is subject to all the terms, exclusions and conditions of such policies.

Company Letter	Type of Insurance	Policy Number	Policy Expiration Date	Limits of Liability in Thousands (000)		
					Each	Aggregate
A	General Liability <input checked="" type="checkbox"/> Comprehensive Form <input checked="" type="checkbox"/> Premise-Operations <input checked="" type="checkbox"/> Explosion and Collapse Hazard <input checked="" type="checkbox"/> Underground Hazard <input checked="" type="checkbox"/> Products/Completed Operation Hazard <input checked="" type="checkbox"/> Contractual Insurance <input checked="" type="checkbox"/> Broad Form Property Damage <input checked="" type="checkbox"/> Independent Contractors <input checked="" type="checkbox"/> Personal Injury	CMM3928866	03/07/12	Bodily Injury	\$	\$
				Property Damage	\$	\$
				Bodily Injury and Property Damage Combined	\$ 1,000	2,000
				Personal Injury		\$
A	Automotive Liability <input checked="" type="checkbox"/> Comprehensive Form <input checked="" type="checkbox"/> Owned <input checked="" type="checkbox"/> Hired <input checked="" type="checkbox"/> Non-Owned	CMM3928866	03/07/12	Bodily Injury (Each Person)	\$	
				Bodily Injury (Each Person)	\$	
				Property Damage	\$	
				CSL	1,000	
A	Excess Liability <input checked="" type="checkbox"/> Umbrella Form <input type="checkbox"/> Other than Umbrella Form	CMM3928866	03/07/12	Bodily Injury and Property Damage Combined	\$ 10,000	
A	<input checked="" type="checkbox"/> Workers' Compensation and Employers' Liability	WCP1997666	03/07/12	Statutory		500 EL
B	<input checked="" type="checkbox"/> Builder's Risk	QT6600162R854 TIL11	06/05/13	\$711,000 Project		
	<input checked="" type="checkbox"/> Other			\$1,000,000 Temp Storage		
				Transit		
				Forms Attached		

The coverage issued in the above listed policies will not be cancelled, materially changed, or renewal refused until at least ten (10) days prior written notice has been given to the named owner and certificate holder at the address listed below.

Construction Contract Identification Twenty Eighth Avenue Pump Station Improvements Contract No. 2010-09 General/Mechanical	Name and Address of Owner and Certificate Holder Municipal Authority of the City of McKeesport 100 Atlantic Avenue McKeesport, PA 15132	Date this certificate issued: 06/0/611 Wells Fargo Ins Serv of Issuing Agency  (Signature of Authorized Representative)
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THIS FORM CANNOT BE SUBSTITUTED.

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – AUTOMATIC STATUS WHEN  
REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**A. Section II – Who Is An Insured** is amended to include as an additional insured any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for that additional insured are completed.

**B.** With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

- a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
- b. Supervisory, inspection, architectural or engineering activities.

2. "Bodily injury" or "property damage" occurring after:

- a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
- b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY  
CG 25 03 05 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**DESIGNATED CONSTRUCTION PROJECT(S)  
GENERAL AGGREGATE LIMIT**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**SCHEDULE**

<b>Designated Construction Project(s):</b>
AS REQUIRED BY WRITTEN CONTRACT
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

- A. For all sums which the Insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage A, and for all medical expenses caused by accidents under Section I - Coverage C, which can be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:
1. A separate Designated Construction Project General Aggregate Limit applies to each designated construction project, and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.
  2. The Designated Construction Project General Aggregate Limit is the most we will pay for the sum of all damages under Coverage A, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage C regardless of the number of:
    - a. Insureds;
    - b. Claims made or "suits" brought; or
    - c. Persons or organizations making claims or bringing "suits".
  3. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the Designated Construction Project General Aggregate Limit for that designated construction project. Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Construction Project General Aggregate Limit for any other designated construction project shown in the Schedule above.
  4. The limits shown in the Declarations for Each Occurrence, Damage To Premises Rented To You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Designated Construction Project General Aggregate Limit.

B. For all sums which the Insured becomes legally obligated to pay as damages caused by "occurrences" under Section I – Coverage A, and for all medical expenses caused by accidents under Section I – Coverage C, which cannot be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and
2. Such payments shall not reduce any Designated Construction Project General Aggregate Limit.

C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Construction Project General Aggregate Limit.

D. If the applicable designated construction project has been abandoned, delayed, or abandoned and then restarted, or if the authorized contracting parties deviate from plans, blueprints, designs, specifications or timetables, the project will still be deemed to be the same construction project.

E. The provisions of Section III – Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**GENERAL LIABILITY EXPANDED PLUS  
COVERAGE ENDORSEMENT**

This endorsement modifies insurance provided under the following:

**COMMERCIAL GENERAL LIABILITY COVERAGE FORM**

**1. SECTION I - COVERAGES, COVERAGE A  
BODILY INJURY AND PROPERTY DAMAGE  
LIABILITY is amended as follows:**

Item 2. Exclusions a. is deleted and replaced with the following:

**a. Expected Or Intended Injury**

"Bodily injury" or "property damage" expected or intended from the standpoint of the insured. This exclusion does not apply to "bodily injury" or "property damage" resulting from the use of reasonable force for the purpose of protecting persons or property.

Item 2. Exclusions g. (2) (a) is deleted and replaced with the following:

**(a) Less than 60 feet long; and**

Item 2. Exclusions j. (6) second exception paragraph after (6) is deleted and replaced with the following:

Paragraph (2) of this exclusion does not apply if the premises are "your work" and were not occupied, rented or held for rental by you beyond one year from the date "your work" was completed.

The last paragraph of Item 2. Exclusions is deleted and replaced with the following:

Exclusions c. through n. do not apply to damage by fire or explosion to premises while rented to you or temporarily occupied by you with permission of the owner. A separate limit of insurance applies to this coverage as described in Section III - LIMITS OF INSURANCE.

**2. SECTION I - COVERAGES, COVERAGE C  
MEDICAL PAYMENTS is amended as follows:**

Item 2. Exclusions b. is deleted and replaced with the following:

**b. Hired Person**

To a person hired to do work for or on behalf of any insured or tenant of any insured; however this exclusion does not apply to "volunteer workers" while engaged in maintenance or repair of your premises.

**3. The following coverages are added to SECTION I - COVERAGES:**

**VOLUNTARY PROPERTY DAMAGE**

**1. Insuring Agreement**

We will pay, at your request, for "property damage" to property of others caused by you, or while in your possession, arising out of your business operations. The amount we will pay for damages is limited as described in SECTION III - LIMIT OF INSURANCE.

**2. Exclusions**

Coverage for Voluntary Property Damage does not apply to:

a. "Loss" of property at premises owned, rented, leased, operated or used by you.

b. "Loss" of property while in transit;

c. "Loss" of property owned by, rented to, leased to, borrowed by or used by you;

d. The cost of repairing or replacing:

(1) "Your work" defectively or incorrectly done by you, or

(2) "Your product" manufactured, sold or supplied by you;

unless the "property damage" is caused directly by you after delivery of "your product" or completion of "your work" and resulting from a subsequent undertaking.

e. "Loss" of property caused by or arising out of the "products-completed operations hazard."

**3. Deductible**

We will not pay for "loss" in any one "occurrence" until the amount of "loss" exceeds \$250. We will then pay the amount of "loss" in excess of \$250, up to the applicable limit of insurance.

**4. Actual Cost**

In the event of covered "loss", you shall, if requested by us, replace the damaged property or furnish the labor and materials necessary for repairs thereto at your actual cost, excluding profit or overhead charges.



## CARE, CUSTODY OR CONTROL

### 1. Insuring Agreement

We will pay those sums the insured becomes legally obligated to pay as damages because of "property damage" to property of others while in your care, custody or control or property as to which you are exercising physical control if the "property damage" arises out of your business operations. The amount we will pay for damages is limited as described in SECTION III - LIMIT OF INSURANCE.

### 2. Exclusions

Coverage for Care, Custody or Control does not apply to:

- a. "Property damage" to property at any premises owned, rented, leased, operated or used by you;
- b. "Property damage" to property while in transit;
- c. The cost of repairing or replacing:
  - (1) "Your work" defectively or incorrectly done by you; or
  - (2) "Your product" manufactured, sold or supplied by you;  
  
unless the "property damage" is caused directly by you after delivery of "your product" or completion of "your work" and resulting from a subsequent undertaking.
- d. "Property damage" to property caused by or arising out of the "products-completed operations hazard."

### 3. Deductible

We will not pay for "property damage" in any one "occurrence" until the amount of "property damage" exceeds \$250. We will then pay the amount of "property damage" in excess of \$250, up to the applicable limit of insurance.

### 4. Actual Cost

In the event of covered "property damage", you shall, if requested by us, replace the property or furnish the labor and materials necessary for repairs thereto at your actual cost, excluding profit or overhead charges.

## WATER DAMAGE LEGAL LIABILITY

### 1. Insuring Agreement

We will pay those sums that the insured becomes legally obligated to pay as damages because of "property damage"

arising out of water damage to premises that are both rented to and occupied by you. The amount we will pay for damages is limited as described in SECTION III - LIMIT OF INSURANCE.

### 2. Exclusions

Coverage for Water Damage Legal Liability does not apply to:

- a. "Property damage" for which the insured is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the insured would have in the absence of the contract or agreement.
- b. "Property damage" caused by or resulting from any of the following:
  - (1) Wear and tear;
  - (2) Rust, corrosion, fungus, decay, deterioration, hidden or latent defect or any quality in property that causes it to damage or destroy itself;
  - (3) Smog or smoke;
  - (4) Settling, cracking, shrinking or expansion;
  - (5) Insects, birds, rodents or other animals; or
  - (6) Mechanical breakdown, including rupture or bursting caused by centrifugal force.
- c. "Property damage" caused directly or indirectly by any of the following:
  - (1) Any earth movement such as an earthquake, landslide, mine subsidence or earth sinking, rising or shifting;
  - (2) Volcanic eruption, explosion or effusion;
  - (3) Flood, surface water, waves, tides, tidal waves, overflow of any body of water, or their spray, all whether driven by wind or not;
  - (4) Mudslide or mudflow;
  - (5) Water that backs up from a sewer or drain; or
  - (6) Water under the ground surface pressing on, or flowing or seeping through:
    - (a) Foundations, walls, floors or paved surfaces;

- (b) Basements, whether paved or not; or
  - (c) Doors, windows or other openings.
  - d. "Properly damage" caused by or resulting from any of the following:
    - (1) Water that leaks or flows from any plumbing, heating, air conditioning or fire protection system caused by or resulting from freezing, unless:
      - (a) You make a reasonable effort to maintain heat in the building or structure; or
      - (b) You drain the equipment and shut off the water supply if the heat is not maintained.
  - e. "Properly damage" to:
    - (1) Plumbing, heating, air conditioning, fire protection systems or other equipment or appliances; or
    - (2) The interior of the premises caused by or resulting from rain or snow, whether driven by wind or not.
4. SECTION I - SUPPLEMENTARY PAYMENTS - COVERAGES A AND B is amended as follows:
- Item 1.b. is deleted and replaced with the following:
- b. Up to \$1,000 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which the Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.
- Item 1.d. is deleted and replaced with the following:
- d. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit," including actual loss of earnings up to \$350 a day because of time off from work.
5. SECTION II - WHO IS AN INSURED is amended as follows:
- Item 2. a. is deleted and replaced with the following:
- a. Your "employees" or volunteer workers, other than either your "executive officers" (if you are an organization other than a partnership, joint venture or limited liability company) or your managers (if you are a limited liability company), but only for acts within the scope of their

employment by you or while performing duties related to the conduct of your business. However, none of these "employees" or volunteer workers are an insured for:

- (1) "Bodily injury" or "personal and advertising injury":
  - (a) To you to your partners or members (if you are a partnership or joint venture), to your members (if you are a limited liability company), or to a co-"employee" or co-volunteer worker while that co-"employee" or co-volunteer worker is either in the course of his or her employment or performing duties related to the conduct of your business;
  - (b) To the spouse, child, parent, brother or sister of that co-"employee" or co-volunteer worker as a consequence of paragraph (1) (a) above;
  - (c) For which there is any obligation to share damages with or repay someone else who must pay damages because of the injury described in paragraphs (1) (a) or (b) above; or
  - (d) Arising out of his or her providing or failing to provide professional health care services.

This does not apply to nurses, emergency medical technicians or paramedics employed by you to provide health care services, but only if you are not in the business or occupation of providing such professional services.

- (2) "Property damage" to property:
  - (a) Owned, occupied or used by,
  - (b) Rented to, in the care, custody or control of, or over which physical control is being exercised for any purpose by

you, any of your "employees" or volunteer workers, any partner or member (if you are a partnership or joint venture), or any member (if you are a limited liability company).

Item 3. a. is deleted and replaced with the following:

- a. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier.

Item 4, is added as follows:

4. For COVERAGE A and COVERAGE B only, the owner of any building leased to you, but only if the building owner is a shareholder in your corporation or a partner in your partnership insured in this policy, and only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to you. However, this insurance does not apply:
  - a. To any "occurrence" or offense which takes place after you cease to be a tenant in the premises; or
  - b. To structural alterations, new construction or demolition operations performed by or on behalf of the building owner.

Item 5, added as follows:

5. Vendors - Any person(s) or organization(s) with whom you agree in a written contract or agreement to name as an insured but only with respect to "bodily injury" or "property damage" arising out of "your products" which are distributed or sold in the regular course of the vendor's business, subject to the following additional exclusions:
  - a. The insurance afforded the vendor does not apply to:
    - (1) "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the vendor would have in the absence of the contract or agreement;
    - (2) Any express warranty unauthorized by you;
    - (3) Any physical or chemical change in the product made intentionally by the vendor;
    - (4) Repackaging, except when unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instructions from the manufacturer, and then repackaged in the original container;
    - (5) Any failure to make such inspections, adjustments, tests or

servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products;

- (6) Demonstration, installation, servicing or repair operations, except such operations performed at the vendor's premises in connection with the sale of the product;
  - (7) Products which, after distribution or sale by you, have been labeled or relabeled or used as a container, part or ingredient of any other thing or substance by or for the vendor; or
  - (8) "Bodily injury" or "property damage" arising out of the sole negligence of the vendor for its own acts or omissions or those of its employees or anyone else acting on its behalf. However, this exclusion does not apply to:
    - (a) The exceptions contained in subparagraphs d, or f; or
    - (b) Such inspection, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the productions.
- b. This insurance does not apply to any insured person or organization, from whom you have acquired such products, or any ingredient, part or container, entering into, accompanying or containing such products.

Item 6, is added as follows:

**6. Managers or Lessors of Premises**

Any person(s) or organization(s) with whom you agree in a written contract or agreement to name as an insured but only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to you and subject to the following additional exclusions:

This insurance does not apply to:

- (1) Any "occurrence" which takes place after you cease to be a tenant in that premises.

- (2) Structural alterations, new construction or demolition operations performed by or on behalf of the person(s) or organization(s).

**6. SECTION III - LIMITS OF INSURANCE** is amended as follows:

Item 6. is deleted and replaced with the following:

5. Subject to 5. above, the Damage To Premises Rented To You Limit is the most we will pay under Coverage A for damages because of "properly damage" to any one premises, while rented to you, or in the case of damage by fire, while rented to you or temporarily occupied by you with permission of the owner.

Items 8., 9. and 10. are added as follows:

8. The most we will pay under Voluntary Property Damage for "loss" arising out of any one "occurrence" is \$250. The most we will pay for the sum of all "losses" under this coverage is \$1,000.
9. The most we will pay under Care, Custody or Control for "properly damage" is \$1,000 for each "occurrence". The most we will pay for the sum of all damages because of "properly damage" under this coverage is \$5,000.
10. The most we will pay under Water Damage Legal Liability for all "properly damage" arising out of any one "occurrence" is \$25,000.

**7. SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS** is amended as follows:

Items e. and f. are added to 2. Duties In The Event Of Occurrence, Offense, Claim Or Suit as follows:

- e. The requirement in Condition 2. a. applies only when the "occurrence" or offense is known to:
  - (1) You, if you are an individual;
  - (2) A partner, if you are a partnership;
  - (3) An "executive officer" or insurance manager, if you are a corporation; or
  - (4) A manager, if you are a limited liability company.
- f. The requirement in Condition 2. b. will not be breached unless the breach occurs after such claim or "suit" is known to:

- (1) You, if you are an individual;
- (2) A partner, if you are a partnership;
- (3) An "executive officer" or insurance manager, if you are a corporation; or
- (4) A manager, if you are a limited liability company.

The following is added to Item 6. **Representations**

- d. Your failure to disclose all hazards or prior "occurrences" existing as of the inception date of this policy shall not prejudice the coverage afforded by this policy, provided such failure to disclose all hazards or prior "occurrences" is not intentional.

The following is added to Item 8. **Transfer Of Rights Of Recovery Against Others To Us:**

We waive any right of recovery we may have against any person or organization with respect to which the insured has waived its right of recovery.

It is further agreed that work commenced under letter of intent or work order, subject to subsequent reduction to writing, with customers whose customary written contracts would require a waiver of recovery rights against them also falls within this blanket waiver of subrogation.

**8. SECTION V - DEFINITIONS** is amended as follows:

Item 3. is amended to include Incidental Medical Malpractice Injury.

Incidental Medical Malpractice Injury means injury arising out of the rendering of or the failure to render medical, surgical, dental, x-ray, nursing or paramedical services to any person(s) if employed by you to provide such services.

The following definition is added:

23. "Loss" means unintentional damage or destruction but does not include disappearance, theft, or loss of use.

**9. Liberalization**

If we adopt any revision that would broaden the coverage under this endorsement without additional premium within 45 days prior to or during the policy period, the broadened coverage will immediately apply to this endorsement.