

Recurring Special Provisions

Division 700 - Structures

City of Fort Wayne

Public Works

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**732 FWR01 Retaining Wall, VERSA-LOK, Reinforced, Modular Block Wall System
(Complete in Place)14**

DIVISION 700 – STRUCTURES

20

702.03 Materials

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Grout material for field drilled holes shall be selected from the QPL of Chemical Anchor Systems.

Concrete mix designs for the bridge floor shall incorporate E5 Internal Cure produced by Specification Products. Concrete in other locations may incorporate E5 Internal Cure. Dosage and mixing shall be in accordance with the manufacturer’s recommendations.

The cost for all associated material, labor, and incidentals for this work shall be included in the cost of other items.

704.09 Modified Deck Drains

Description

This work shall consist of furnishing and installing modified deck drains in accordance with 105.03.

Materials

Materials shall be in accordance with the following:

| | |
|--|----------------------|
| Castings | 910.05 |
| Corrugated Polyethylene Drainage Tubing..... | * |
| Flexible Coupler | ASTM D5926, C1173 |

* All thermoplastic pipes shall be from the QPL of Thermoplastic Pipe and Liner Pipe Sources in accordance with 907.16

Construction Requirements

Drainage grates and basins, necessary fittings, connections to drainage pipes, and drainage tubing shall be placed as shown on the plans or as directed.

Method of Measurement

Deck drains will be measured by the number of complete assemblies installed.

Basis of Payment

The accepted quantities for deck drains will be paid for at the contract unit price per each assembly, complete in place.

Payment will be made under:

Pay Item

Pay Unit Symbol

Deck Drain, _____, Modified EACH
(Type)

The cost of corrugated drainage tubing, flexible couplers, band clamps, and all other incidental materials shall be included in the cost of the Deck Drain.

714.11 Method of Measurement

380 Precast reinforced concrete box structures or structure extensions, precast coated reinforced concrete box structures or structure extensions, precast headwalls, precast wingwalls, cast-in-place reinforced concrete box structures or structure extensions, cast-in-place coated reinforced concrete box structures or structure extensions, cast-in-place headwalls, and cast-in-place wingwalls will not be measured. The accepted quantities for payment ~~will be the quantities shown on the plans.~~ will be the actual measured quantities that were installed within the field.

714.12 Basis of Payment

460 The costs of coring, testing, excavation, repairs, plugging core and handling holes, mortar, grout, sealer, cylinder molds, and necessary incidentals shall be included in the cost of the structure. The cost of wingwall footing and the aggregate base shall be included in the cost of the structure or structure extension. Bypassing pumping or flow diversion costs shall also be included in the cost of the structure or structure extension.

470 No additional payment will be made for the repair or replacement of existing concrete damaged by Contractor operations.

Lifting holes are not acceptable. If used, any lift holes shall be patched and repaired appropriately prior to backfilling.

SECTION 715 – PIPE CULVERTS, AND STORM AND SANITARY SEWERS

MATERIALS

10 **715.02 Materials**

40 **(a) Type 1 Pipe**

Type 1 pipe shall be used for culverts under mainline pavement and public road approaches and shall be in accordance with the following:

| | | |
|----|---|-------------------|
| | Clay Pipe, Extra Strength..... | 907.08 |
| | Corrugated Aluminum Alloy Pipe and Pipe-Arches .. | 908.04 |
| | Corrugated Dual-Walled Polyethylene Pipe, Type S.. * | |
| | Corrugated Dual-Walled Polypropylene Pipe..... * | |
| | Corrugated Steel Pipe and Pipe-Arches | 908.02 |
| 50 | Non Reinforced Concrete Pipe, Class 3..... | 907.01 |
| | Polymer Precoated Galvanized Corrugated Steel | |
| | Pipe and Pipe-Arches | 908.08 |
| | Profile Wall Dual-Walled Polyethylene Pipe, Closed. * | |
| | Profile Wall Dual-Walled Polyethylene Pipe, Ribbed * | |
| | Profile Wall PVC Pipe | * |
| | Reinforced Concrete Horizontal Elliptical Pipe..... | 907.03 |
| | Reinforced Concrete Pipe | 907.02 |
| | Smooth Wall Dual-Walled Polyethylene Pipe..... * | |
| | Smooth Wall PVC Pipe..... * | |
| 60 | Spiral Rib Steel Pipe..... | 908.02 |
| | Structural Plate Pipe and Pipe-Arches | 908.09 |

* All thermoplastic pipes shall be from the QPL of Thermoplastic Pipe and Liner Pipe sources in accordance with 907.16.

(b) Type 2 Pipe

Type 2 pipe shall be used for storm and sanitary sewers and shall be in accordance with Fort Wayne City Utilities Design Standards Manual under “Section MA5 Storm Materials and Testing Requirements” and “Section MA6 Sanitary Sewer Materials and Testing Requirements” (<https://www.cityoffortwayne.org/utilities/169-design-and-construction/3259-design-standards.html#Materials>) and the following:

| | | |
|----|---|-------------------|
| | Clay Pipe, Extra Strength..... | 907.08 |
| 70 | Corrugated Dual-Walled Polyethylene Pipe, Type S.. * | |
| | Corrugated Dual-Walled Polypropylene Pipe..... * | |
| | Fully Bituminous Coated and Lined Corrugated Steel | |
| | Pipe and Pipe-Arches..... | 908.07 |
| | Non Reinforced Concrete Pipe, Class 3..... | 907.01 |
| | Polymer Precoated Galvanized Corrugated Steel | |
| | Pipe and Pipe-Arches Type IA and Type IIA | 908.08 |
| | Profile Wall Dual-Walled Polyethylene Pipe, Closed. * | |
| | Profile Wall Dual-Walled Polyethylene Pipe, Ribbed * | |
| | Profile Wall PVC Pipe | * |
| 80 | Reinforced Concrete Horizontal Elliptical Pipe..... | 907.03 |
| | Reinforced Concrete Pipe | 907.02 |
| | Smooth Wall Dual-Walled Polyethylene Pipe | * |
| | Smooth Wall PVC Pipe..... * | |

* All thermoplastic pipes shall be from the Department’s list of approved thermoplastic pipe and liner pipe in accordance with 907.16.

(c) Type 3 Pipe

Type 3 pipe shall be used for culverts under all drives and field entrances. All

Type 1 pipe materials are acceptable. If any type of plastic piping is used, appropriate backfill and end sections must be used.

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(d) Type 4 Pipe

Type 4 pipe shall be used for drain tile and longitudinal underdrains and shall be in accordance with the following:

| | | | |
|--|---|--------|---|
| | Clay Pipe** | 907.08 | |
| | Corrugated Dual-Walled Polyethylene Drainage Tubing | | * |
| | Corrugated Dual-Walled Polyethylene Pipe, Type S** | | * |
| | Corrugated Dual-Walled Polyethylene Pipe, Type SP | | * |
| | Drain Tile** | 907.10 | |
| | Non Reinforced Concrete Pipe | 907.01 | |
| | Perforated Clay Pipe** | 907.09 | |
| | Perforated PVC Semicircular Pipe | | * |
| | Profile Wall PVC Pipe | | * |

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* All thermoplastic pipes shall be from the Department's list of approved thermoplastic pipe and liner pipe in accordance with 907.16. ** These materials shall be used for drain tiles only.

(e) Type 5 Pipe

Type 5 pipe shall be used for broken back pipe runs where coupled or jointed pipe is desirable and shall be in accordance with the following:

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| | | | |
|--|--|-------------------|--|
| | Corrugated Aluminum Alloy Pipe and Pipe Arches | 908.04 | |
| | Corrugated Polyethylene Pipe, Type S | * | |
| | Corrugated Polypropylene Pipe | * | |
| | Corrugated Steel Pipe and Pipe Arches | 908.0 | |
| | 2 Fully Bituminous Coated and Lined Corrugated Steel Pipe and Pipe Arches | 908.0 | |
| | 7 Polymer Precoated Galvanized Corrugated Steel Pipe and Pipe Arches | 908.08 | |

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| | | | |
|--|--|--------|--|
| | Profile Wall Polyethylene Pipe, Closed | * | |
| | Profile Wall Polyethylene Pipe, Ribbed | * | |
| | Profile Wall PVC Pipe | * | |
| | Smooth Wall Polyethylene Pipe | * | |
| | Smooth Wall PVC Pipe | * | |
| | Spiral Rib Steel Pipe | 908.02 | |

* All thermoplastic pipes shall be from the Department's list of approved thermoplastic pipe and liner pipe in accordance with 907.16.

715.04 Excavation

Unless otherwise directed, the trench cross sectional dimensions shall be as shown on the plans. The trench bottom shall give full support to the pipe as shown on the plans. Trench cross sectional dimension shall be outside diameter (OD) of pipe plus 30-inches to allow for backfill to be filled within the pipe haunches. Recesses shall be cut to receive any projecting hubs or bells.

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Where pipe is to be placed in fill sections, a portion of the fill shall be constructed prior to installation of the pipe as shown on the plans.

Where rock or boulder formation is encountered at or above the proposed trench bottom elevation, the trench shall be excavated at least 8 in. below the proposed grade, backfilled with structure backfill, and compacted in accordance with 211.04.

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In case a firm foundation is not encountered at the required grade, the unstable material shall be removed to such depth that when replaced with suitable material, usually B borrow #8 or #9 stone, compacted, and properly shaped, it will produce a uniform and stable foundation along the entire length of the pipe. A timber mat shall be placed to hold the pipe to line and grade if it is necessary.

All trenches shall be kept free from water until any joint filling material has hardened sufficiently not to be harmed.

715.05 Laying Pipe

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Each section of pipe shall have a full firm bearing throughout its length, true to the line and grade given. All pipes which settle or which are not in alignment shall be taken up and re-laid. Pipe shall not be laid on a frozen trench bottom. Fully bituminous coated and lined pipe and pipe arches shall only be placed when the ambient temperature is 35°F or above.

Concrete and clay pipe shall be laid with hub upgrade, with the spigot end fully extended into the adjacent hub, and with all ends fitted together tightly. Concrete pipe shall not be laid in muck or sulphate soils.

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Connections of thermoplastic pipe to manholes, catch basins, and inlets shall be in accordance with the manufacturer's recommendations. Fort Wayne City Utilities Design Standards Manual under "Section MA5 Storm Materials and Testing Requirements" and "Section MA6 Sanitary Sewer Materials and Testing Requirements" (<https://www.cityoffortwayne.org/utilities/169-design-and-construction/3259-design-standards.html#Materials>).

715.06 Joining Pipe

All pipe joints shall follow Fort Wayne City Utilities Design Standards Manual under "Section MA5 Storm Materials and Testing Requirements" and "Section MA6 Sanitary Sewer Materials and Testing Requirements"

715.09 Backfilling

All pipes shall follow bedding requirements as listed under Fort Wayne City Utilities Design Standards Manual under “Section MA5 Storm Materials and Testing Requirements” and “Section MA6 Sanitary Sewer Materials and Testing Requirements” (<https://www.cityoffortwayne.org/utilities/169-design-and-construction/3259-design-standards.html#Materials>).

351 ~~All pipe trenches shall be backfilled with structure backfill or flowable backfill. Structure backfill shall be placed in accordance with 211. The use of “B” Borrow as defined under Sections 211 and 904, is prohibited and requires a variance for use on the City of Fort Wayne projects. Flowable backfill shall be placed in accordance with 213.07 as shown on the plans or as directed.~~

385 After the visual or video inspection, the Contractor shall check pipe deflection by performing a mandrel test as directed on pipes manufactured from materials listed in the following table. ~~The Engineer will determine the runs of pipe installations to be mandrel tested with a minimum of 10% of the total length of each material to be inspected.~~ All installed pipes shall be 100% mandrel tested.

~~If the minimum diameter of the deficient pipe is between 92.5% and 95.0% of the nominal pipe diameter, the Contractor shall provide an evaluation of the deficient pipe prepared by a professional engineer. The evaluation shall consider the severity of the deflection and its effects on structural integrity, environmental conditions, and the design service life of the pipe. A report summarizing the evaluation and including the professional engineer’s recommendation for acceptance, remediation, or replacement of the pipe shall be submitted to the Engineer for final determination.~~

If the minimum diameter of the deficient pipe is equal to or less than ~~92.5%~~ 95% of the nominal pipe diameter, the deficient pipe shall either be replaced or a remediation plan shall be prepared by a professional engineer and submitted to the Engineer for final determination.

715.14 Basis of Payment

Video inspections for pipe ~~will be paid for at the contract unit price per linear foot completed.~~ shall be included within the cost of the pipe.

Payment will be made under:

683 The cost of providing video inspection equipment, technician, and a copy of the video inspection shall be included in the cost of video inspection for pipe of the pipe.

No additional payment will be made for repair, remediation, or replacement of pipes, backfill, video inspection of the repaired, remediated, or replaced pipe, and all other work associated with the repair, remediation, or replacement of unacceptable pipes.

690 The cost of mandrel all testing shall be included in the cost of the pipe.

The cost for pipe bedding shall be included in the cost of the pipe.

SECTION 716 – TRENCHLESS PIPE INSTALLATION

716.01 Description

This work shall consist of installing pipes underground using construction techniques that eliminate reduce open cutting of the pavement or of the ground in accordance with 105.03. This specification addresses auger boring, guided boring, horizontal directional drilling using a reamer diameter up to and including 24 in., pipe jacking, and pipe ramming, as defined below.

MATERIALS

80 716.02 Materials

100 Steel pipe used as a carrier pipe shall have the following minimum wall thickness. Steel pipe used as a casing pipe, but not used as a carrier pipe, shall be selected by the Contractor to have minimum wall thickness sufficient to resist jacking forces. have a minimum yield strength of 35,000 psi and be at least 6” greater than the outside diameter (O.D.) of the carrier pipe joint or couplings. For installations where the casing is not used as a carrier but only as a casing for a carrier pipe, the thickness of the casing shall be determined by the Contractor as shown in the table below.

| Outside Diameter, in. | Wall Thickness, in. |
|-----------------------|---------------------|
| 18 or less | 1/4 |
| 19 – 20 | 5/16 |
| 21 – 26 | 3/8 |
| 27 – 30 | 1/2 |
| 31 – 42 | 1/2 |
| 43 – 48 | 9/16 |

| <u>Casing Outside Diameter (inches)</u> | <u>Casing Wall Thickness Highway Crossings (inches)</u> | <u>Casing Wall Thickness Railroad Crossings (inches)</u> |
|---|---|--|
| 8.625 | 0.250 | 0.250 |
| 10.750 | 0.250 | 0.250 |
| 12.750 | 0.250 | 0.250 |
| 14 | 0.250 | 0.281 |
| 16 | 0.250 | 0.281 |
| 18 | 0.250 | 0.312 |
| 20 | 0.250 | 0.344 |
| 24 | 0.250 | 0.406 |
| 30 | 0.375 | 0.469 |
| 36 | 0.375 | 0.532 |
| 42 | 0.375 | 0.563 |
| 48 | 0.500 | 0.625 |
| 54 | 0.625 | 0.688 |
| 60 | 0.625 | 0.750 |
| 66 | 0.625 | 0.813 |
| 72 | 0.750 | 0.875 |

CONSTRUCTION REQUIREMENTS

110 **716.03 General Requirements**

123 ~~Where the use of explosives is necessary for performing the work, their use shall be in accordance with 107.13.~~

130 Joints in steel pipe shall be watertight. Where welded joints are utilized, they shall be welded in accordance with 711.32. Joints in concrete pipe or other jacking pipe materials ~~including clay pipe~~ shall be designed to withstand the additional forces that are created in the joints during the installation process. The joints in concrete pipe or other pipe jacking materials shall be protected with a resilient material around the circumference of the pipe. Resilient material shall also be used between the pipe and the thrust ring.

145 When the installation is ~~4 in.~~ **8 in.** or larger and the casing is used as the carrier pipe, a visual or a video inspection shall be performed using a high resolution, high sensitivity color video camera and recording equipment. The pipe shall be cleaned of debris prior to the inspection. Cleaning shall be accomplished by means of water jetting or other approved methods.

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170 Where a gravity-flow carrier pipe is placed inside a casing pipe, the gravity-flow carrier pipe shall be shimmed to proper line, elevation, and grade. ~~and then the void between the two pipes shall be grouted with cellular grout.~~ The ends of the casing shall be sealed to prevent the entrance of foreign material.

SECTION 718 – UNDERDRAINS

MATERIALS

718.02 Materials

10 Materials shall be in accordance with the following:

| | |
|---|-----------|
| Coarse Aggregate, Class E or Higher, Size No. 8 or 9 | 904 |
| Concrete, Class A | 702 |
| Geotextile for Underdrains | 918.02(b) |
| Reinforcing Bars | 910.01 |
| Sod, including Nursery Sod | 621 |
| Structure Backfill | 904.05 |
| Underdrain Outlet Pipe | * |

20 Underdrain Pipe 715.02(d)

* All thermoplastic pipes shall be from the Department’s list of approved thermoplastic pipe and liner pipe in accordance with 907.16.

Any underdrains being used for storm drainage shall be either Perforated PVC Semicircular Pipe or Dual Walled Corrugated Polyethylene Pipe.

SECTION 720 – MANHOLES, INLETS, AND CATCH BASINS

720.02 Materials

10 Materials shall be in accordance with Fort Wayne City Utilities Design Standards Manual under “Section MA5 Storm Materials and Testing Requirements” and “Section MA6 Sanitary Sewer Materials and Testing Requirements” (<https://www.cityoffortwayne.org/utilities/169-design-and-construction/3259-design-standards.html#Materials>) the following:

| | |
|-------------------------------|--------|
| Castings | 910.05 |
| Clay or Shale Brick | 905.01 |
| Clay Pipe | 907.08 |
| Concrete Brick | 905.02 |
| Concrete Masonry Blocks | 905.03 |
| Concrete | 702 |

| | |
|--|-------------------|
| Hydrated Lime..... | 913.04 |
| Joint Filler | 906.01 |
| Joint Mortar..... | 901.08, |
| Non Reinforced Concrete Pipe | 907.01 |
| Precast Concrete Manholes, Inlets, and Catch Basins | 907.04 |
| Reinforced Concrete Pipe..... | 907.02 |
| Reinforcing Bars | 910.01 |
| Water | 913.01 |

CONSTRUCTION REQUIREMENTS

30 720.03 General Requirements

52 ~~Iron~~ PVC removable hood traps in catch basins shall be installed in walls as shown on the plans and so placed that a 6 in. seal is formed. Joints between hoods and walls shall be made gas tight.

60 ~~Mortar for laying brick and masonry units shall be composed of 1 part masonry cement and 2 parts mortar sand. Mortar for plastering may be the same or it may be composed of 1 part of a combination of portland cement and hydrated lime and 2 parts mortar sand. The lime shall not exceed 10% of the cement. In any case, proportioning shall be by volume. Ingredients, except water, shall be dry mixed, after which water shall be added to bring the mixture results.~~

 The manhole bottom shall be constructed of a precast bottom section, or of class A concrete and steel reinforcement steel formed in place. A precast cover shall be placed on a manhole in which headroom is limited.

110 ~~Only competent masons shall be employed in laying units. Brick or other masonry units shall be laid in courses with full and close joints of mortar and finished properly as the work progresses. No joint shall exceed 3/8 in. in width. All units shall be wetted thoroughly immediately prior to being laid. Broken or chipped units will not be allowed in the face of the structure. No spalls or bats shall be used except for shaping around irregular openings or where necessary to finish out a course. As nearly as practicable, adjoining courses shall break joints at a 1/2 unit. Courses shall be level except where otherwise necessary. If brick is used, at least one course in each seven shall be composed of headers.~~

142 The Contractor may precast inlets, catch basins, or manholes, subject to approval. If precast concrete inlets, catch basins, or manholes are used, a layer of structure backfill with #8 or #9 stone of minimum thickness of ~~4 in.~~ 6 in. shall be used under each unit for ease in positioning. If holes are formed or field cut in precast inlets or

catch basins to receive the pipe structures, the pipes shall be connected directly to the precast unit, by means of a class A concrete collar of a minimum longitudinal and radial thickness of 6 in. Holes formed or cut in the wrong place shall be plugged satisfactorily with a class A concrete mixture.

161 **720.04 Grade Adjustment of Existing Structures**

When grade adjustment of existing structures is specified, the frames, covers, and gratings shall be removed and the walls reconstructed as required. The cleaned frames shall be reset at the required elevation. If so specified or if it is determined that the existing casting and supporting walls are in good condition, ~~an approved device~~ manhole adjusting rings may be used to adjust the manhole casting cover to the correct grade without reconstructing the walls or resetting the frame. Manhole adjusting rings shall be used in accordance with Fort Wayne City Utilities Design Standards Manual under “Section MA5 Storm Materials and Testing Requirements” and “Section MA6 Sanitary Sewer Materials and Testing Requirements” (<https://www.cityoffortwayne.org/utilities/169-design-and-construction/3259-design-standards.html#Materials>). Upon completion, each structure shall be cleaned of any accumulations of silt, debris, or foreign matter of any kind and shall be kept clear of such accumulation until final acceptance of the work.

SECTION 725 – SLIP LINING OF EXISTING PIPE

199 **725.08 Liner Pipe Installation**

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After the liner pipe installation is complete and the liner pipe has cooled to the temperature of the existing pipe, the liner pipe shall be cut so that each end is 8 in. outside the end of the existing pipe. A visual walk-through inspection shall be performed after the liner pipe has been installed in order to assess the post-installation condition of the pipe. If visual inspection is not possible, a video inspection of the existing pipe shall be performed. A copy of the video inspection shall be provided to the Engineer.

725.10 Basis of Payment

280 The cost of repairing, trimming, or cutting jagged edges or deformities to existing pipe, filling cavities around the existing pipe with cellular concrete grout, pre and post inspection of the pipe, acquisition and restoration of right-of-entry areas, acquiring all necessary new permits or amendments to existing permits to work in areas accessible via Contractor-obtained right-of-entry, erection, maintenance, and removal of temporary fence, removal and disposal of debris and foreign material from the existing pipe, visual or video inspection of the existing pipe, deforming a circular liner pipe,

supplying and constructing the bulkheads, grouting the annular space between the existing pipe and the liner pipe, and other incidentals will not be paid separately, but shall be included in the cost of the pay items in this section.

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SECTION 278 BLANK BIOSWALE CLEANOUT

728.01 Description

This work shall consist of installing bioswale cleanouts that are connected to dual-walled perforated pipe within the bioswale areas.

728.02 Materials

ADS Nyoplast cleanouts and fittings or approved equal.

728.03 Construction Requirements

Install in-line and end-of-line cleanouts flush with finish grade. Size of cleanout piping and riser shall match size of drainage line. Body material shall be PVC. Fittings shall be soil tight (ST).

Bends shall be 90-degree sweeps that are capped at grade. Caps shall be placed by hand and not glued.

728.04 Method of Payment

Payment will be measured by the number of bioswale cleanouts installed.

728.05 Basis of Payment

The accepted quantities of bioswale cleanouts will be paid for at the contract unit price per each, complete in place.

Payment will be made under:

| Pay Item | Pay Unit Symbol |
|-----------------------------------|------------------------|
| _____ in. Bioswale Cleanout | EACH |

The price shall include all costs associated with installing per detail drawing as shown in plans: furnishing and installing materials, labor, equipment, cleanup, and all other operations necessary for installation of cleanouts.

**732 FWR01 – Retaining Wall, VERSA-LOK, Reinforced, Modular Block Wall System
(Complete-in-Place)**

Description

This work shall be all inclusive and constructed in-place as the plans indicate and shall include all items necessary to construct the reinforced modular block retaining wall; which includes: supply, delivery and installation of Versa-Lok reinforced modular retaining wall system per the manufacturers specifications and in compliance with the City of Fort Wayne standards and specifications, Versa-Lok square foot units, Versa-Lok cap units, Versa-Tuff pins, block to be placed at a ¼ in. setback, Versa-Grid 3.0 geo-grid layers placed as per plan, an 8 in. minimum compacted No. 53 aggregate base/leveling pad - placed at 4 in. maximum compacted lifts, 4 in. dia. perforated PVC pipe or corrugated HDPE pipe, 12 in. minimum to an 18 in. maximum depth of No.8 coarse aggregate drain layer, geotextile filter fabric, grate-drainage outlets - spaced at 20 ft. intervals to match sidewalk grade, a minimum (2) two-course block embedment over the base leveling pad, additional block for proper base stepping, type “O” compacted aggregate No. 53 structural backfill compacted-in-place at a maximum of 4 in. lifts - to surface elevation.

Materials

Materials shall be in accordance with the following:

| | |
|------------------------------------|--|
| Versa-Lok Square Foot Units..... | Versa-Lok Square Foot, Grey, Split Face Specifications |
| Versa-Lok Cap Units..... | Versa-Lok Cap Unit Specifications |
| Versa-Tuff Pins..... | Versa-Lok Versa-Tuff Pin Specifications |
| Versa-Grid 3.0..... | Versa-Lok Versa-Grid 3.0 Specifications |
| Structural Backfill, Coarse, | 904.05 Aggregate, Size No. 53 |
| Coarse Aggregate, Class E or | 904 Higher, Size No. 8 |
| Perforated PVC Pipe or | 715-FWR Type 4 Corrugated HDPE Pipe |
| Filter Fabric..... | 918.02 |
| Grate Drainage Outlet..... | Wall Drain Pro Fitting |

Construction Requirements

Construction shall follow what is shown on plans, be in accordance with Versa-Lok reinforced modular retaining wall system specifications for the Square Foot Block Wall System and in compliance with the City of Fort Wayne standards and specifications. The City of Fort Wayne shall be responsible for on-site field inspection.

Method of Payment

The pay quantity for this item shall be the percentage of Work completed at the time of billing (i.e., 10 percent of the lump sum amount for Retaining Wall, Versa-

Lok, Reinforced, Modular Block Wall System (Complete-In-Place) will be earned at 10 percent of earned contract amount).

Basis of Payment

Retaining Wall, Versa-Lok, Reinforced, Modular Block Wall System (Complete-In-Place) will be paid under a lump sum basis.

Payment Will be made under:

| Pay Item Pay | Unit Symbol |
|---|--------------------|
| Retaining Wall, Versa-Lok, Reinforced..... | LS |
| Modular Block Wall System (Complete-In-Place) | |

The cost of all labor, equipment, materials, and all incidental work shall be included in the cost of the pay item.

Excavation will be paid for separately under pay item 'Excavation, Unclassified'.