ATTACHMENTS

The following attachments are a part of this solicitation and any resulting contract.

J- 1 Wage Rate Decision No. ID100012, dated 06/04/2010, 9 pages.

NOTE: THIS PROJECT IS LOCATED IN ZONE 3.

J- 2 Special Project Specifications, 13 pages

Section 02758, Division 2 – Equipment, Sewage Treatment Systems

J- 3 Drawings (See Separate Document)

Site Plan	1 page
Detail 1	1 page
Detail 2	1 page

General Decision Number: ID100012 06/04/2010 ID12

Superseded General Decision Number: ID20080012

State: Idaho

Construction Type: Heavy

Counties: Adams, Bear Lake, Benewah, Bingham, Blaine, Boise, Bonner, Bonneville, Boundary, Butte, Camas, Caribou, Cassia, Clark, Clearwater, Custer, Elmore, Franklin, Fremont, Gem, Gooding, Idaho, Jefferson, Jerome, Kootenai, Latah, Lemhi, Lewis, Lincoln, Madison, Minidoka, Nez Perce, Oneida, Owyhee, Payette, Power, Shoshone, Teton, Twin Falls, Valley and Washington Counties in Idaho.

HEAVY CONSTRUCTION PROJECTS

Superseeds General Decision ID020030001

Modification Number	Publication Date
0	03/12/2010
1	04/16/2010
2	06/04/2010

CARP0001-010 09/01/2009

BENEWAH, BONNER, BOUNDARY, CLEARWATER, IDAHO (NORTH OF THE 46TH PARALLEL), KOOTENAI, LATAH, LEWIS, NEZ PERCE AND SHOSHONE COUNTIES

	Rates	Fringes
CARPENTER (Including Cement Form Work)	$ 26.06	10.56

ZONE PAY:

ZONE 1	0-40 MILES	FREE
ZONE 2	41-65 MILES	$2.25/PER HOUR
ZONE 3	66-100 MILES	$3.25/PER HOUR
ZONE 4	OVER 100 MILES	$4.75/PER HOUR

DISPATCH POINTS:
PASCO (515 N. Neel Street) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

SPOKANE (127 E. AUGUSTA AVE.) or Main Post Office of established residence of employee.

WENATCHEE (27 N. CHELAN) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

COEUR D' ALENE (1839 N. GOVERNMENT WAY) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

MOSCOW (302 N. JACKSON) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

CARP0808-004 01/01/2010

ADAMS, BEAR LAKE, BINGHAM, BOISE, BUTTE, BONNEVILLE, CAMAS, CARIBOU, CASSIA, CLARK, CUSTER, ELMORE, FRANKLIN, FREMONT, GEM, GOODING, IDAHO (SOUTH OF THE 46TH PARALLEL), JEFFERSON, JEROME, LEMHI, LINCOLN, MADISON, MINIDOKA, ONEIDA, OWYHEE, PAYETTE, POWER, TETON, TWIN FALLS, VALLEY AND WASHINGTON COUNTIES

ZONE 1

	Rates	Fringes
CARPENTER (Including Cement Form Work)	$ 26.57	8.10

ZONE PAY:
ZONE 1 0-30 MILES: FREE
ZONE 2 MORE THAN 30-60 MILES: $2.00/PER HOUR
ZONE 3 MORE THAN 60 MILES: $3.00/PER HOUR

If a project is located in more than one zone the lower zone rate shall apply

ZONES SHALL BE MEASURED FROM THE THE FOLLOWING U.S. POST OFFICES:

BOISE: 304 N. 8TH STREET
TWIN FALLS: 253 2ND AVE. WEST
POCATELLO: CLARK STREET
IDAHO FALLS: 875 NORTH CAPITAL AVE.

ELEC0073-007 01/01/2010

IDAHO (SOUTH OF THE 46TH PARALLEL) COUNTY

	Rates	Fringes
CABLE SPLICER	$ 28.62	3%+12.98
ELECTRICIAN	$ 28.37	13.98

ELEC0073-008 01/01/2010

BENEWAH, BONNER, BOUNDARY, CLEARWATER, IDAHO(NORTH OF THE 46TH PARALLEL), KOOTENAI, LATAH, LEWIS, NEZ PERCE AND SHOSHONE COUNTIES

	Rates	Fringes
Cable Splicer	$ 28.62	3%+12.98
ELECTRICIAN	$ 28.37	13.98

ELEC0291-007 01/01/2009

ADAMS, BOISE, ELMORE, GEM, PAYETTE, VALLEY AND WASHINGTON COUNTIES

	Rates	Fringes
CABLE SPLICER		
Adams, Valley and Washington Counties	$ 35.79	3%+$10.00
Boise, Elmore, Gem and Payette Counties	$ 32.50	3%+$10.00
ELECTRICIAN		
Adams, Valley and Washington Counties	$ 32.54	3%+$10.00
Boise, Elmore, Gem and Payette Counties	$ 29.54	3%+$10.00

ELEC0449-001 06/01/2009

BEAR LAKE, BINGHAM, BONNEVILLE, BUTTE, CARIBOU, CLARK, CUSTER, FRANKLIN, FREMONT, JEFFERSON, LEMHI, MADISON, ONEIDA, POWER AND TETON COUNTIES

	Rates	Fringes
ELECTRICIAN		
All remaining counties	$ 27.00	5.5%+$10.00
Fremont and Teton Counties	$ 24.58	$9.10

ELEC0449-006 07/01/2009

BLAINE, CAMAS, CASSIA, GOODING, JEROME, LINCOLN, MINIDOKA AND TWIN FALLS COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 23.00	5.5% + $8.90

ENGI0370-013 01/01/2010

ADAMS, BEAR LAKE, BINGHAM, BLAINE, BOISE, BONNEVILLE, BUTTE, CARIBOU, CASSIA, CLARK, CUSTER, ELMORE, FRANKLIN, FREMONT, GEM, GOODING, IDAHO (SOUTH OF THE 46TH PARALLEL), JEFFERSON, JEROME, LEMHI, LINCOLN, MADISON, MINIDOKA, ONEIDA, OWYHEE, PAYETTE, POWER, TETON, TWIN FALLS, VALLEY AND WASHINGTON COUNTIES

ZONE 1

(Anyone working on HAZMAT jobs working with supplied air shall receive $1.00 per hour above classification)

	Rates	Fringes
Power equipment operator - bulldozer		
Including all attachments	$ 25.59	9.60
Power equipment operator - crane		
Over 50 tons	$ 25.96	9.60
Tower Crane Operator	$ 25.96	9.60
Up to and including 50 tons	$ 25.59	9.60
Power equipment operator - oiler	$ 24.57	9.60
Power equipment operator - scraper		
ALL SCRAPERS UP TO AND INCLUDING 40 YARDS	$ 25.59	9.60
All scrapers, pulling wagons, belly dumps and attachments, over 40 yards to and including 60 yards	$ 25.31	9.60
Elclid and similar, pulling wagons, belly dumps and attachments, over 60 yards to and including 80 yards	$ 25.96	9.60
Euclid and similar, pulling wagons, belly dumps and attachments, over 80 yards to and including 100 yards	$ 26.42	9.60
Euclids and similar, pulling wagons, belly dumps and attachments, over 100 yards	$ 26.67	9.60

ZONE PAY:
ZONE 1 0-30 MILES: FREE
ZONE 2 MORE THAN 30-60 MILES: $2.00/PER HOUR
ZONE 3 MORE THAN 60 MILES: $3.00/PER HOUR

If a project is located in more than one zone the lower zone rate shall apply

ZONES SHALL BE MEASURED FROM THE THE FOLLOWING U.S. POST OFFICES:

BOISE: 304 N. 8TH STREET
TWIN FALLS: 253 2ND AVE. WEST
POCATELLO: CLARK STREET
IDAHO FALLS: 875 NORTH CAPITAL AVE.

BOOM PAY: All Cranes and Concrete Pump Boom Trucks
100 ft to 150 ft $.15 over scale
150 ft to 200 ft $.30 over scale
Over 200 ft $.45 over scale

NOTE: When the crane operator receives additional pay for long boom, the Oiler Shall also receive such additional pay. In computing the length of the boom on Tower Cranes, they shall be measured from the base of the tower to the point of the boom.

ENGI0370-014 06/01/2009

BENEWAH, BONNER, BOUNDARY, CLEARWATER, IDAHO (NORTH OF THE 46TH PARALLEL), KOOTENAI, LATAH, LEWIS, NEZ PERCE AND SHOSHONE COUNTIES

ZONE 1: (Anyone working on HAZMAT jobs working with supplied air shall receive $1.00 per hour above classification)

	Rates	Fringes
Power equipment operator - bulldozer		
(D-6 & equilvalent and over)	$ 25.29	11.05
(To D-6 or equivalent)	$ 24.69	11.05
Power equipment operator - crane		
25 TONS AND UNDER (ALL ATTACHMENTS INCLUDING CLAMSHELL, DRAGLINE)	$ 25.01	11.05
85 TONS AND OVER, AND ALL CLIMBING, OVERHEAD, RAIL AND TOWER	$ 26.66	11.05
OVER 25 TONS UP TO AND INCLUDING 45 TONS (ALL ATTACHMENTS INCLUDING CLAMSHELL, DRAGLINE)	$ 25.29	11.05
OVER 45 TONS TO BUT NOT INCLUDING 85 TONS (ALL ATTACHMENTS INCLUDING CLAMSHELL, DRAGLINE)	$ 25.56	11.05
Power equipment operator - oiler	$ 24.85	11.05
Power equipment operator - scraper		
(All, Rubber-Tired)	$ 25.29	11.05
(Multiple engine with three or scrapers)	$ 25.56	11.05

Zone Differential (Add to Zone 1 rate): Zone 2- $2.00

BASE POINTS: Spokane, Pasco, Washington; Lewiston, Idaho

Zone 1: Within 45 radius miles from the main post office
Zone 2: Outside 45 radius miles from the main post office

BOOM PAY: (All Cranes, including Tower)
180' to 250' $.50 over scale
Over 250' $.80 over scale

NOTE: In computing the length of the boom on Tower Cranes, they shall be measured from the base of the Tower to the point of the boom.

IRON0014-009 07/01/2009

ADAMS (REMAINDER OF COUNTY), IDAHO (SOUTH OF THE 46TH PARALLEL), LEMHI (NORTHWEST CORNER), VALLEY (NORTHEASTERN 1/3) AND WASHINGTIN (NORTHWESTERN 1/2) COUNTIES

	Rates	Fringes
Ironworkers: Rebar, Structural, Fence Erector	$ 30.79	17.40

IRON0014-010 07/01/2009

BENEWAH, BONNER, BOUNDARY, CLEARWATER, IDAHO(NORTH OF THE 46TH PARALLEL), KOOTENAI, LATAH, LEWIS, NEZ PERCE AND SHOSHONE

	Rates	Fringes
Ironworkers: Rebar, Structural, Fence Erector	$ 30.79	17.40

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* IRON0732-005 06/01/2010

ADAMS (EAST CORNER), BEAR LAKE, BINGHAM, BLAINE, BOISE, BUTTE, BONNEVILLE, CAMAS, CARIBOU, CASSIA, CLARK, CLUSTER, ELMORE, FRANKLIN, FREMONT, GEM, GOODING, JEFFERSON, JEROME, LINCOLM, LEMHI (REMAINDER OF COUNTY), MADISON, MINIDOKA, ONEIDA, OWYHEE, PAYETTE, POWER, TETON, TWIN FALLS, VALLEY (SOUTHEAST 2/3), AND WASHINGTON (SOUTHEAST 1/2) COUNTIES

	Rates	Fringes
Ironworkers: Rebar, Structural, Fence Erector	$ 26.00	14.70

LABO0155-003 01/01/2010

ADAMS, BEAR LAKE, BINGHAM, BLAINE, BOISE, BONNEVILLE, BUTTE, CAMAS, CARIBOU, CASSIA, CLARK, CUSTER, ELMORE, FRANKLIN, FREMONT, GEM, GOODING, IDAHO (SOUTH OF THE 46TH PARALLEL), JEFFERSON, JEROME, LEMHI, LINCOLN, MADISON, MINIDOKA, ONEIDA, OWYHEE, PAYETTE, POWER, TETON, TWIN FALLS, VALLEY AND WASHINGTON COUNTIES

ZONE 1 (Anyone working on HAZMAT jobs working with supplied air shall receive $1.00 per hour above classification)

	Rates	Fringes
Laborer: General/Cleanup	$ 22.68	10.90

ZONE PAY:
ZONE 1 0-30 MILES: FREE

ZONE 2 MORE THAN 30-60 MILES: $2.00/PER HOUR
ZONE 3 MORE THAN 60 MILES: $3.00/PER HOUR

If a project is located in more than one zone the lower zone rate shall apply

ZONES SHALL BE MEASURED FROM THE THE FOLLOWING U.S. POST OFFICES:

BOISE: 304 N. 8TH STREET
TWIN FALLS: 253 2ND AVE. WEST
POCATELLO: CLARK STREET
IDAHO FALLS: 875 NORTH CAPITAL AVE.

LABO0238-013 06/01/2009

BENEWAH, BONNER, BOUNDARY, CLEARWATER, IDAHO (NORTH OF THE 46TH PARALLEL), KOOTENAI, LATAH, LEWIS, NEZ PERCE AND SHOSHONE COUNTIES

ZONE 1

	Rates	Fringes
Laborer: General/Cleanup	$ 22.66	8.75

Zone Differential (Add to Zone 1 rates): Zone 2 - $2.00

BASE POINTS: Spokane, Pasco, Lewiston

Zone 1: 0-45 radius miles from the main post office.
Zone 2: 45 radius miles and over from the main post office

SUID2003-007 09/03/2003

	Rates	Fringes
Cement Mason/Finisher	$ 20.22	7.98
LABORER: Tamper	$ 8.00	2.84
Pipe layer	$ 14.26	0.00
Power equipment operator - backhoe	$ 18.96	4.42
Power Equipment Operator (Gradall)	$ 22.84	3.62
Power Equipment Operator (Loader)	$ 21.33	3.43
Power Equipment Operator Excavator	$ 20.24	0.00
TRUCK DRIVER (6 Axle Dump)	$ 24.70	3.90

Truck Driver, Dump.....$ 17.82 0.00

TRUCK DRIVER: Water Truck.....$ 20.89 4.06

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

SECTION 02758

DIVISION 2 – EQUIPMENT

SEWAGE TREATMENT SYSTEMS

PART 1 GENERAL

1.01 DESCRIPTION: This section covers the wastewater treatment system, including cleanouts, two 1,050-gallon triple walled plastic septic tanks, risers and piping for the tanks, two distribution boxes, transport piping and gravelless chambers for drainfield installation, and all appurtenances and related components required for the complete installation of the septic systems.

1.02 REGULATORY REQUIREMENTS

A. Installation shall conform to the Idaho Administrative Code Title 01, Chapter 03. This septic system is regulated by the North Central District Health Department, a division of the Idaho Department of Health and Welfare.

B. The Contractor is responsible for obtaining and maintaining a standard and basic alternative system installer's registration permit, from the Director of the Idaho Department of Environmental Quality or from the North Central District Health Department. Contractor is also required to perform all inspections at the request of any regulatory agency having jurisdiction.

1.03 PROTECTION OF THE SITE: Upon the completion of the work, the Contractor shall restore the site as nearly as possible to its original condition, including the replacement, at the Contractor's sole expense, of any existing or newly constructed facility or landscaping, which has been destroyed.

1.04 BOUNDARIES OF WORK: The United States Forest Service, Bitterroot Ranger District (Owner) shall provide land or rights-of-way for the work specified in this contract and make suitable provisions for ingress and egress. The Owner shall not cause the Contractor to enter or occupy with personnel, tools, equipment or material, any ground outside the property of the Owner without the written consent of the owner of such ground. The Contractor shall conduct his work so as not to impede unnecessarily any work being done by others on or adjacent to the site.

1.05 SUBMITTALS

A. Shop Drawings:

1. Shop drawings shall accompany submittals on all equipment associated with the installation. The Contractor shall supply the Owner and Engineer with two copies of each submittal.
2. If departures from the Contract Documents are deemed necessary by the Contractor, details of such departures, including changes in related portions of the work and the reasons for such changes shall be submitted with shop drawings. Approved departures shall be made at no additional cost to the Owner.

B. Owner's Manuals: The Contractor shall provide the Engineer with the Operation and Maintenance Schedule, the Owner's Manuals, the Instruction Booklets and all Warranty Information for all equipment associated with the project.

PART 2 PRODUCTS

2.01 PIPE AND FITTINGS

A. Contractor shall furnish sewer pipe and fittings as specified in the Contract Documents and meeting the materials and testing requirements of this Section. Furnish wye or tee branches and service line piping of the same material and design as the sewer pipe unless specified otherwise. Pipe strength classifications are shown on the Drawings and/or are listed in the Contract Documents.

B. References made to ASTM or ANSI designation are the latest revision at the time of call for bids.

C. Assure all pipe is clearly marked with type, class and/or thickness as applicable.

D. Assure lettering is legible and permanent under normal conditions of handling and storage.

E. Furnish the joint type, class, thickness designation, castings, lining, marking, testing, etc. as specified.

F. Furnish PVC pipe produced by a continuous extrusion process, employing a prime grade of un-plasticized polyvinyl chloride. Assure the grade used is highly resistant to hydrogen sulfide, sulfuric acid, gasoline, oil, detergents and other chemicals found in sewage and industrial wastes. Assure the material meets "Rigid Polyvinyl Chloride Compounds", ASTM Designation D-1784 requirements. Assure the pipe has self-extinguishing flammability characteristics.

G. Transport and Manifold Pipe: Transport and manifold piping shall be bell-and-spigot 4" Schedule 40 PVC. Furnish each pipe length with a bell designed to provide a watertight joint when jointing the bell and spigot with a rubber ring. Make a rubber gasket joint for PVC pipe and fittings using a rubber gasket compressed between the outer surface of the spigot and the inner surface of the bell. Assure the joint is completely sealed by the gasket so that the assembly remains watertight under all service conditions, including expansion, contraction, settlement and pipe deformation. Follow the manufacturer's recommendations when assembling the rubber ring joint.

H. Use a nominal laying length of 20 feet (6.1 meters), except shorter lengths may be used adjacent to bends or other appurtenances. Assure each pipe length is marked, as a minimum, with size, SDR, pressure rating or both, ASTM designation and manufacturer's name and code. All intermediate joints shall be solvent welded. The transport pipe consists of the pipe from the structure to the septic tank, and from the septic tank to the distribution box. The manifold consists of the pipe from the distribution box to the infiltrator chambers.

I. Contractor shall furnish all pipe and fittings as specified in the Drawings and these specifications, meeting the materials and testing requirements of this section. Furnish bends or tee branches and service line piping of the same material and design as the pipe unless specified otherwise.

J. Monument box covering cleanouts shall be cast iron and shall be removable with common hand tools. Monument boxes shall be resistant to wear and be clearly marked "sewer" on the exposed portion of the lid.

2.02 PIPE TRENCHES

A. Bedding: Pipe bedding shall be placed from 4 inches below the bottom of the pipe, around the pipe, and 6 inches over the pipe. Provide bedding consisting of sand, sandy gravel, or fine gravel having a maximum 3/4 inch size and a maximum plasticity index of 6, determined by AASHTO T89 and T90 or by ASTM D4318. Where trench excavation encounters wet or unstable material, bedding must be free draining and non-plastic.

B. Trench Backfill: Materials used for backfill material obtained from trench excavations must be free of cinders, ash, refuse, organic or frozen material, boulders, or other deleterious materials. Backfill materials and placement are further described in the Execution Section of this specification.

C. Locator Tape: Detectable buried warning tape is to have a minimum 6 inch width and 5 mil (0.12mm) thickness and a solid aluminum core running the full length and width of the tape enclosed in a color coded inert plastic jacket, impervious to alkalis, chemical reagents and solvents in the soil. The tape is to meet APW NULCC Color Code requirements and is to have a maximum 36 inch imprint.

2.03 SEPTIC TANK: The two 1,050-gallon septic tanks shall be plastic meeting the general requirements of this article.

A. General: Septic tanks shall be Infiltrator Systems Inc. Model TW-1050 triple walled 1,050-gallon double compartment plastic septic tank, or Engineer approved equal.

B. Structural Design: Tank walls, floors and lids shall be triple walled and reinforced to support their own weight, the weight of the liquid contents, and soil pressure including four feet of soil cover.

C. Access Riser Opening: Tank shall be manufactured and furnished with access openings of the size and configuration shown on the Drawings to accommodate hardware contained within. Tank manufacturer shall securely fasten a tank adapter to facilitate the bonding of the riser. Risers shall provide a watertight seal once installed. Flanged tank adapters shall be made of material resistant to movement during backfilling operations.

D. Risers: Risers shall be 24 inches in diameter and shall provide a water-tight fit. The risers shall be fitted with a lid insulated with a minimum of 3 inches of high-density urethane foam insulation (Dow Styrofoam TG or approved equal) securely fastened to the lid. Risers and Lids shall be constructed of material resistant to corrosion.

E. Internal Piping and Related Items: All piping and fittings within the tank shall be 4-inch nominal diameter Schedule 40 PVC. Watertight connections shall be used on wall pipe entry/exit points. 3" Schedule 40 PVC pipe shall protrude from the side of the riser for venting of the septic tank. All internal pipe shall be solvent-welded, bell end pipe.

F. Carbon Filter: Carbon filter shall be Orenco Model CF4 or Engineer approved equal. The carbon filter housing and cover shall be constructed of UV and corrosion resistant materials. The cover shall prevent rain, snow and ice from entering the filter. The filter material shall be an activated carbon pouch that is easily replaceable. Carbon Filter shall sit a minimum of 18" above finish grade.

2.04 DISTRIBUTION BOX:

A. General: The distribution box shall be a concrete box as supplied by Donaldson Brothers Precast, or Engineer-approved equal meeting the general requirements of this article.

B. Structural Design: Walls, bottom, and top of concrete distribution box shall be designed across the shortest dimension using one-way slab analysis. No reinforcement is required.

C. Concrete: Concrete shall be ready-mix with cement conforming to ASTM CI50, Type II. It shall have a cement content of not less than six (6) sacks per cubic yard and maximum aggregate size of ¾ inch. Water / cement ratio shall be kept low (0.35±), and concrete shall achieve a minimum compressive strength of 4000 psi in 28 days. Concrete for distribution boxes shall be resistant to the corrosive environment found in septic tanks, and shall be made with sulfate-resistant cement with a tricalcium aluminate content of less than 8 percent. The Contractor shall submit a concrete mix design to the Engineer for review and approval. Three (3) concrete sample cylinders shall be taken and tested for each tank manufactured until the manufacturer and Engineer are satisfied that the minimum compression strength is being obtained. To ensure compliance, the manufacturer shall then make and set three (3) sample cylinders for a minimum of 20% of the remaining tanks at the discretion of the Engineer. If the minimum compressive strength is not being obtained, the manufacturer shall be required to make and test sample cylinders for each tank manufactured. Calcium chloride will not be allowed in the mix design. The cost of testing cylinders shall be the tank manufacturer's responsibility. The tank manufacturer may supply a Swiss hammer for compressive testing in the field in lieu of sample cylinder.

D. Distribution Box Reinforcement: No reinforcement is required.

E. Box Coatings: Box may be protected by applying a heavy cement-base waterproof coating (Thoroseal® or equal), on both inside and outside surfaces, in compliance with the Council of American Building Officials (CABO) report #NRB-168; 6181, however the boxes should be watertight without the addition of seal coatings.

F. Box Form Release: Form release used on box molds shall be Nox Crete TM or equal. Diesel or other petroleum products are not acceptable.

G. Distribution Box Handling: Tanks shall not be moved from the manufacturing site to the job site until they have cured for a minimum of seven (7) days or have reached two-thirds of their design strength.

H. Box Sealant: Box sections shall be sealed with a pre-formed flexible plastic gasket. The flexible plastic gasket shall be equal to the flexible butyl resin sealant conseal CS-102 or CS-202 as manufactured by Concrete Sealants, Inc. of New Carlisle, Ohio, and shall conform to federal specification SS-S-00210(2iOA) and AASHTO M-198.

I. Access Lid: Boxes shall be manufactured and furnished with an access lid. The lid shall be marked with rebar or a suitable, durable marker.

J. Internal Piping and Related Items: All piping entering or leaving the boxes shall be Schedule 40 PVC. Speed levelers shall be used on wall pipe entry/exit points. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being installed. The pipe shall have all sand, gravel, concrete and cement grout removed that has entered the lines during construction. Speed levelers shall be cast into each port.

2.05 GRAVELLESS ABSORPTION TRENCHES

A. Trench Backfill: Materials used for backfill material obtained from gravelless absorption trench excavations must be free of cinders, ash, refuse, organic or frozen material, boulders, or other deleterious materials. Backfill materials and placement are further described in the Execution Section of this specification.

B. Infiltrator Chambers: The materials to be used shall be Infiltrator Systems, Inc. Quick4 Standard Chamber with dimensions of 34” width, 53” length, and 12” height. The ends of the chambers shall be fitted with a Quick4 Standard Chamber MultiPort End Cap with dimensions of 34” width, 16” in length, and 12” in height.

2.06 CESSPOOL ABANDONMENT

A. Fill Material: Fill material used for filling abandoned cesspool shall be earthen materials.

PART 3 EXECUTION

3.01 PIPE AND FITTINGS

A. Fittings shall be provided and installed by the Contractor as required by the manufacturer to complete the installation. All pipe and fittings shall be bell-and-spigot where possible, and solvent welded otherwise.

B. Contractor shall be responsible for all material furnished. Replace all material found defective in manufacture or damaged in handling after delivery. This includes furnishing all material and labor required for the replacement of installed material discovered defective before final acceptance of the work or during the guarantee period. Be responsible for the safe storage of material intended for the work until it has been incorporated in the completed project.

C. Deliver and distribute all pipe to the site. Load and unload pipe, fittings and accessories by lifting with hoists or skidding to avoid shock or damage. Do not drop any materials. Do not roll or skid pipe handled on skidways against pipe already on the ground. In distributing the material at the site of the work, unload each piece opposite or near the place where it is to be laid in the trench. Keep the interior of all pipe and other accessories free from dirt and foreign matter at all times.

D. Handle pipe to prevent damaging coating or lining. If any part of the coating or lining is damaged, make all repairs in a manner satisfactory to the Engineer.

E. Lay and maintain all pipe to the specified lines and grades with fittings and tees at the required locations. Establish line and grade using batter boards and string line, laser equipment or other approved methods. When batter boards and string line are used, use a minimum of three batterboards at all times.

F. Install wye or tee fittings in the transport pipe for service line connections. Furnish wye or tee fittings of the same material, design and specifications as the transport pipe.

G. Use tools and equipment, satisfactory to the Engineer, for the safe and convenient prosecution of the work. Carefully lower all pipe and fittings into the trench to prevent damage to pipe materials and protective coatings and linings. Do not drop or dump any materials into the trench.

H. Take every precaution to prevent foreign material from entering the pipe while it is being installed. At times when pipe laying is not in progress, close the open ends of pipe using a plug or other means approved by the Engineer. Clean and remove all sand, gravel, concrete and cement grout that has entered the lines during construction.

I. Install the pipe within 1/2-inch of the specified alignment and within 1/4-inch of the specified grade.

3.02 PIPE TRENCHES

A. Take precautions to protect all adjoining private and public property and facilities, including underground and overhead utilities, curbs, sidewalks, driveways, structures, and fences. Restore or replace all disturbed or damaged facilities to its original condition at Contractor's expense.

B. Contact all utility owners before starting work. Protect the utilities exposed during the work and prevent damaging underground utilities adjacent to excavations. Immediately notify the utility owner of any construction damage. Repairs of damage to marked utilities are at the expense of the Contractor. Re-locate existing water lines, sanitary sewers and storm drains shown on the Drawings, that conflict with new pipelines or structures as indicated in the Drawings. No separate payment will be made for this work unless shown as a payment item. If the Owner authorizes the relocation of waterlines or sewer lines which are not indicated in the bid documents, and the Engineer determines the work was not included in the original contract, payment will be made under the applicable sections of the General Conditions.

C. Cut and replace existing service lines interfering with trenching operations only with the Engineer's permission and at the contractor's expense. Show all repaired and/or adjusted water and sewer lines on the As-built Drawings.

D. Protect existing water and sewer lines from freezing at all times during construction.

E. If any existing private utility interferes with the work in either alignment or grade, and has to be moved, the work will be performed by the appropriate utility Owner, unless otherwise specified in the contract documents. Such private utilities may include gas mains, underground electrical and telephone cables, telephone poles, light poles, etc. If, however, such private utility relocation is performed by the Contractor, and the relocation is not a separate payment item, payment will be made under the conditions covering such changes. Such payment will be made only if the work is determined by the Engineer to be a change from the original contract work scope.

F. Contractor shall prevent damage to existing buildings or structures in the work area. Repair all construction related damage to the satisfaction of the Owner.

G. Contractor shall use extreme caution to avoid conflict, contact or damage to overhead utilities during the work.

H. Maintain the flow of sewers, drains and water courses encountered during construction. Restore culverts, ditches, fences, crosswalks and structures disturbed by construction to their original condition upon completion of the work.

I. Contractor shall meet current OSHA Safety and Health Standards for all excavation, trenching, shoring, and related work. Provide all shoring, bracing and tight sheeting required to prevent caving and protect workers, meeting current Occupational Safety and Health Act Requirements, and to protect adjacent property and structures. The cost of this work is included in the cost for trench excavation.

J. Excavate at the specified locations for pipeline installations and appurtenant structures.

K. During excavation, stockpile backfill materials away from the trench banks to assure trench wall stability. Stockpile excavated materials on only one side of the trench without obstructing existing fire hydrants, valves, manholes and other appurtenances. Assure surface drainage of adjoining areas is unobstructed.

L. Remove and dispose of all excess or unsuitable excavated materials.

M. Prevent surface water from flowing into excavations. Promptly remove all water accumulating in trench excavations. Do not permit water to accumulate in any open trench. Remove and re-lay all pipe out of alignment or grade caused by trench flooding.

N. Grade the trench bottoms to the specified lines and grades. Assure bedding material provides uniform bearing and support for each pipe section along its entire length. Excavate for bell and joints after the trench bedding is graded, limiting the excavation to the required length, depth and width for making the particular type of joint used. Backfill over-excavations with bedding material.

O. Excavation includes removing and subsequent handling of all earth, gravel, bedrock or other material encountered regardless of the type, character, composition or condition of the material.

P. The use of trench digging machinery is permitted, except in places where its operation is likely to cause damage to existing structures or features, in which case hand methods are to be employed.

Q. Excavate trench to provide room to install and join the pipe as specified. The minimum trench width is 3'-6". Excavate the trench depth as required for the invert grade or pipe bury as specified in the Drawings, plus 4 for the pipe bedding. If bedrock, boulders or large stones are encountered at the bottom of the trench, excavate at least 6 inches below the bottom of the pipe and backfill with pipe bedding.

R. When soft or unstable material is encountered at the trench sub grade which will not uniformly support the pipe, excavate the material to the depth directed by the Engineer and backfill to trench sub grade elevation with pipe bedding.

S. Remove all ground water encountered in trench excavations. Do not place pipe, bedding or backfill materials below the groundwater elevation established by dewatering operations. The cost of dewatering operations is considered a part of the excavation cost.

T. Backfill all trenches as specified immediately after grade, alignment and pipe jointing has been inspected and approved by the Engineer, if required.

U. Place all pipe bedding material 4 inches under the pipe, around the pipe, and 6 inches over the pipe. Place in maximum lifts of 6 inches, using hand operated or other compaction methods without damaging or disturbing the pipe. Thoroughly compact each layer. Use special care to assure compaction under the pipe haunches. Place backfill material in equal lifts on both sides of the pipe for the full trench width. Take care to prevent migration of pipe bedding into surrounding soils during placement and compaction.

V. After the pipe bedding materials are placed and compacted as specified, backfill the trench. Use backfill material free of cinders, ash, refuse, organic or frozen material, boulders, or other deleterious materials. From the top of the pipe bedding to 6 inches below the ground surface, material containing rock up to 8 inches (20cm) in the greatest dimension may be used. Place and compact trench backfill in maximum 12 inch lifts at densities equal to or greater than the densities of adjoining undisturbed soil. Mound earth over the trench top.

W. Flowable fill may be used as a construction expedient, substituting for any type of trench backfill, subject to approval by the Engineer and at the expense of the Contractor.

X. Provide detectable buried warning tape as described in PRODUCTS Section above. Bury tape a maximum 18 inches below finish surface grade.

Y. As work progresses, remove debris and complete to finish grade each portion of the work. Once the works is complete, clear debris and finish the entire site to smooth, uniform slopes presenting a neat and workmanlike appearance. Remove and dispose of

all rocks brought to the surface during excavation or backfilling. Reseed all disturbed sites with seed mix specified by the Owner.

3.03 SEPTIC TANKS:

A. General: The septic tank and appurtenances shall be installed as shown on the Drawings and as recommended by the manufacturer. If groundwater is detected, dewater the ground prior to starting excavation. Excavation shall be performed to the lines, grade, and elevations shown on the Drawings. The Engineer reserves the right to make minor adjustments or revisions in lines or grades. Perform all excavation regardless of the type, nature, or condition of the material encountered. The method of excavation used is optional; however, no equipment shall be operated within 5 feet of existing structures or newly completed construction. Excavation that cannot be accomplished without endangering present or new structures shall be done with hand tools. The Contractor is responsible for field staking the earthwork. No excavation shall be started until the staking is complete. Should the Contractor excavate below the designated lines through fault or negligence, the Contractor shall replace such unauthorized over-excavation with approved materials in an approved manner at his own expense.

B. Tank bedding shall be placed as recommended by manufacturer. Place bedding material free of roots, organic matter, trash, and rocks larger than ¾ inch diameter.

C. Deposit material in horizontal lifts of maximum 8-inch uncompacted depth and compact each lift to not less than 85 percent of maximum ASTM D698 dry density. Maintain material at optimum moisture content, plus or minus 2 percentage points. Place backfill material free of roots, organic matter, trash, and rocks larger than 3-inch diameter. Stop backfill at specified grade. Make allowance for topsoil where required. Any subsequent damage to piping, concrete structures, facilities, or other structures caused by settlement of fill material shall be corrected and repaired by the Contractor at the Contractor's sole expense.

D. Tanks shall be handled with care so as not to damage. If tank sections do become damaged, notify Engineer prior to installation. Tanks shall be installed as per manufacturer's recommendation.

E. Risers shall be installed by contractor and provide a watertight seal with the tank. Sealants shall be applied in accordance with manufacturers specifications. Riser shall be installed as shown in the Drawings.

F. All internal piping shall be of size and lengths shown, and shall be Schedule 40 PVC. All fittings shall be solvent welded or threaded with sealant. All internal piping and related parts shall be removable from the access riser without entering the tank.

G. Septic tanks shall be tested for water tightness. A water test or vacuum test shall be used as outlined below.

1. Water Testing: Water testing shall be conducted by sealing the outlet, filling the tank to its operational level, and allowing the tank to stand for at least 8 hours. If there is a measurable loss (2 inches or more), the tank shall be refilled and the above procedure repeated. If a measurable loss is detected again, the tank shall be rejected and replaced at Contractor's expense.

2. Vacuum Testing: Vacuum testing shall be conducted by sealing all inlets, outlets and accesses, then introducing a vacuum of 4 inches of mercury. If the vacuum drops in the first 5 minutes, it shall be brought back up to 4 inches of mercury. If the tank fails to hold the vacuum at 4 inches of mercury for a second 5 minute period, the tank must be rejected and replaced at Contractor's expense.

3.04 DISTRIBUTION BOX:

A. General: The distribution box and appurtenances shall be installed as shown on the Drawings and as recommended by the manufacturer. Excavation shall be performed to the lines, grade, and elevations shown on the Drawings. The Engineer reserves the right to make minor adjustments or revisions in lines or grades. Perform all excavation regardless of the type, nature, or condition of the material encountered. The method of excavation used is optional; however, no equipment shall be operated within 5 feet of existing structures or newly completed construction. Excavation that cannot be accomplished without endangering present or new structures shall be done with hand tools. The Contractor is responsible for field staking the earthwork. No excavation shall be started until the staking is complete. Should the Contractor excavate below the designated lines through fault or negligence, the Contractor shall replace such unauthorized over-excavation with approved materials in an approved manner at his own expense.

B. Distribution box bedding shall be placed as recommended by manufacturer. Place bedding material free of roots, organic matter, trash, and rocks larger than ¾ inch diameter.

C. Deposit backfill material in horizontal lifts of maximum 8-inch uncompacted depth and compact each lift to not less than 85 percent of maximum ASTM D698 dry density. Maintain material at optimum moisture content, plus or minus 2 percentage points. Place backfill material free of roots, organic matter, trash, and rocks larger than 3-inch diameter. Stop backfill at specified grade. Make allowance for topsoil where required. Any subsequent damage to piping, concrete structures, facilities, or other structures caused by settlement of fill material shall be corrected and repaired by the Contractor at the Contractor's sole expense.

D. Distribution box sections shall be sealed with sealants listed in Products above. Sealants shall be applied in accordance with manufacturer's recommendations. Surfaces shall be clean and free of debris. Sealant shall not be applied when temperature is less than 40 degrees F. Sealant shall provide a uniform and watertight seal.

E. Distribution box shall be handled with care so as not to damage. If distribution box sections do become damaged, notify Engineer prior to installation. Distribution box shall be installed as per manufacturer's recommendation.

F. Lid shall be installed by manufacturer.

G. Distribution box shall be water tested for equal distribution. The boxes shall use a baffling device to ensure equal distribution of effluent.

H. Water testing shall be conducted by sealing the outlets, filling the box to its operational level, and allowing the box to stand for at least 8 hours. If there is a measurable loss (2 inches or more), the box shall be refilled and the above procedure repeated. If a measurable loss is detected again, the box shall be rejected and replaced at Contractor's expense.

I. Contractor shall adjust the orientation of the distribution box such that it is placed level to the site. Speed levelers shall be adjusted to ensure equal distribution to each lateral.

3.06 GRAVELLESS ABSORPTION TRENCHES

A. The infiltrator chambers shall be installed on a flat surface free of large rocks or other objects. Depth of the trenches shall be 24"-36" from existing grade. The minimum trench width is 3 feet. Excavate trench to provide room to install and join infiltrator chambers as specified. In low spots on the drainfield site that have been previously excavated, the trench depth will vary to "bridge" between existing ground elevations so as to create a flat trench bottom. The soil surface exposed for effluent disposal shall consist of scarified native material.

B. Take precautions to protect all adjoining private and public property and facilities, including underground and overhead utilities, curbs, sidewalks, driveways, structures, and fences. Restore or replace all disturbed or damaged facilities to its original condition at Contractor's expense. Contractor shall prevent damage to existing buildings or structures in the work area. Repair all construction related damage to the satisfaction of the Owner.

C. If any existing private utility interferes with the work in either alignment or grade, and has to be moved, the work will be performed by the appropriate utility Owner, unless otherwise specified in the contract documents. Such private utilities may include gas mains, underground electrical and telephone cables, telephone poles, light poles, etc. If, however, such private utility relocation is performed by the Contractor, and the relocation is not a separate payment item, payment will be made under the conditions covering such changes. Such payment will be made only if the work is determined by the Engineer to be a change from the original contract work scope. Contractor shall use extreme caution to avoid conflict, contact or damage to overhead utilities during the work. Contact all utility owners before starting work. Immediately notify the utility owner of any construction damage. Repairs of damage to marked utilities are at the expense of the Contractor. Re-locate existing water lines, sewers lines and/or storm drains shown on the Drawings, that conflict with new pipelines or structures as indicated in the Drawings. No separate payment will be made for this work unless shown as a payment item. If the Owner authorizes the relocation of water or sewer lines which are not indicated in the bid documents, and the Engineer determines the work was not included in the original contract, payment will be made under the applicable sections of the General Conditions.

D. Cut and replace existing lines interfering with trenching operations only with the Engineer's permission and at the contractor's expense. Show all repaired and/or adjusted water and/or sewer lines on the As-built Drawings.

E. Maintain the flow of sewers, drains and water courses encountered during construction. Restore culverts, ditches, fences, crosswalks and structures disturbed by construction to their original condition upon completion of the work.

F. The use of trench digging machinery is permitted, except in places where its operation is likely to cause damage to existing structures or features, in which case hand methods are to be employed.

G. Infiltrator chambers shall be installed per manufacturer recommendations and according to the Drawings. The chambers shall be placed according to the Drawings, and shall be laid straight and level with a minimum of irregularities in horizontal and vertical alignment. The chambers shall be assembled one at a time. The final chamber shall be installed with a MultiPort Endcap. The contractor shall exercise care to minimize the compaction and loss of soil structure that can occur from walking on the exposed trench bottoms. Infiltrators shall be spaced 9 feet apart, center to center.

H. During excavation, stockpile backfill materials away from the trench banks to assure trench wall stability. Stockpile excavated materials on only one side of the trench without obstructing existing valves, tanks and other appurtenances. Assure surface drainage of adjoining areas is unobstructed. Excavation includes removing and subsequent handling of all earth, gravel, bedrock or other material encountered regardless of the type, character, composition or condition of the material. Remove and dispose of all excess or unsuitable excavated materials.

I. Prevent surface water from flowing into excavations. Promptly remove all water accumulating in trench excavations. Do not permit water to accumulate in any open trench.

J. Backfill all trenches as specified immediately after grade, alignment and pipe jointing has been inspected and approved by the Engineer.

K. After the Infiltrator Chambers are placed as specified, backfill the trench. Use backfill material free of cinders, ash, refuse, organic or frozen material, boulders, or other deleterious materials. Mound earth overtop the trench.

L. As work progresses, remove debris and complete to finish grade each portion of the work. Once the work is complete, clear debris and finish the entire site to smooth, uniform slopes (with the exception of the mounded earth atop the trenches) presenting a neat and workmanlike appearance. Remove and dispose of all rocks brought to the surface during excavation or backfilling.

M. Revegetate all disturbed areas with a seed mix provided by the Owner, at the rates and times specified.

3.07 CESSPOOL ABANDONMENT

A. Contractor shall pump all sewage out of the cesspool via a licensed sewage pumper prior to beginning any work on the cesspool. Disconnect all piping. Abandon the cesspool using one of the following methods:

a. Fill the cesspool with pit run, gravel, or other earthen materials. If flowable fill is not used, compact in 12 inch layers to 80% compaction. Mound the material over top the cesspool to allow for future settling and divert surface water.
b. Crush the cesspool and backfill the void with pit run, gravel, or other earthen materials. If flowable fill is not used, compact in 12 inch layers to 80% compaction. Mound the material over top the cesspool to allow for future settling and divert surface water.
c. Remove the cesspool and backfill the void with pit run, gravel, or other earthen materials. If flowable fill is not used, compact in 12 inch layers to 80% compaction. Mound the material over top the cesspool to allow for future settling and divert surface water.

PART 4 MEASUREMENT AND PAYMENT

(Not Used)

END OF SECTION 02758