

**AGREEMENT BETWEEN THE
MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
AND THE CITY OF MILWAUKEE FOR THE
REPLACEMENT OF BRUCE STREET (EXTENDED) COMBINED SEWER (W. REYNOLDS PLACE)
IN THE CITY OF MILWAUKEE**

Intergovernmental Cooperation Agreement between the Milwaukee Metropolitan Sewerage District (District) and the City of Milwaukee (City).

1. WHEREAS, Section 66.30, Stats., authorizes any municipality to enter into an intergovernmental cooperation agreement with another municipality for the furnishing of services.
2. WHEREAS, The District is authorized by statute to project, plan, design, construct, maintain, and operate a sewerage system for the collection, transmission, and disposal of all sewage and drainage of the sewerage service area including, either as an integrated or as a separate feature of the system, the collection, transmission and disposal of storm water and groundwater.
3. WHEREAS, The City owns a combined sewer (CS) in West Bruce Street and in an easement in West Bruce Street (extended) from Reynolds Place west which was constructed in 1892 and varies in size from 22"x15" to 18"x12", which is now under sized and is beyond its life-cycle.
4. WHEREAS, The District owns a 48-inch brick MIS in West Bruce Street, from South Muskego Avenue to Reynolds Place and in easements in West Bruce Street (extended) from Reynolds Place to South 21st Street (extended) and at South 21st Street (extended) from West Bruce Street (extended) to a point about 650 feet north of West Bruce Street (extended).
5. WHEREAS, The District has plans to abandon the 48-inch brick MIS that was constructed in the 1880's and has only three direct connections, which is now over sized and is beyond its life-cycle.
6. WHEREAS, One of the three direct connections to the District owned 48-inch MIS is planned to be re-routed to a District owned 24-inch MIS in South Muskego Avenue.
7. WHEREAS, Two of the three direct connections to the District owned 48-inch MIS are planned to be re-routed to a new larger 36/42/48-inch City of Milwaukee CS in West Bruce Street (extended), which will replace the existing 22"x15"/18"x12" CS.
8. WHEREAS, The District through its contractor has the capability of accomplishing the replacement to the satisfaction of the City and is willing to do so, increasing the diameter of the proposed sewer.

NOW, THEREFORE IT IS AGREED TO BETWEEN THE PARTIES, that in consideration of the mutual promises made by the parties to this Agreement and referring to the plan view portion of Sheet 8 of Contract C07003C01, attached hereto as Exhibit A and made a part of this Agreement:

1. The District shall replace approximately 710 feet of 22"x15" CS in West Bruce Street and in West Bruce Street (extended) west of Reynolds Place and approximately 68 feet of 18"x12" CS in West Bruce Street (extended) west of the west end point of the 22"x15" CS being replaced with 116 feet of 48-inch diameter CS, 422 feet of 42-inch diameter CS and 270 feet of 36-inch diameter CS.
2. The District shall locate the new CS in the same alignment as the existing CS and reconnect all catch basin leads and active laterals, including the two direct connections to the 48-inch MIS, which is to be abandoned.

3. The District shall construct four new manholes to replace the seven existing manholes and modify the existing junction chamber in the intersection of West Bruce Street and Reynolds Place.
4. The District shall restore the pavement in areas associated with replacement of the CS.
5. As described in Specification Section 15005 from Contract C07003C01, attached hereto as Exhibit B and made a part of this Agreement, the replacement of pipes and structures are included therein.
6. There shall be no reimbursement cost to the District by the City for this work.
7. The City reserves the right to have a City inspector on-site to observe this work. The District or its contractor shall notify the City of when this work will proceed by providing the City with a schedule of this work.
8. Additional work can only be accomplished by the amendment, in writing, of this Agreement to increase the scope of work and the contract amount.

SIGNATURES:

CITY OF MILWAUKEE

By: Mariano A. Schifalacqua, P.E.

Title: Commissioner of Public Works

Date: _____

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT (District)

By: Anne Spray Kinney

Title: Executive Director

Date: _____

Approved for form

By: _____
Attorney for the District

15005 GRAVITY SEWERS (3/98) (PC12/00)

A. SCOPE (4/92) (PC10/00)

This Section covers the work necessary for the installation of gravity sewers, of the sizes, material, types and classes indicated, in open cut construction installation as specified herein, including pipe bedding and cover material placed in the pipe zone, as specified and shown on the Plans.

Installation of jacked steel casing pipe is specified under Section 02961, CASING PIPE. Cleaning of 64-inch brick MIS sewer to be sliplined is specified under Section 13510, SEWER CLEANING.

Excavation of the trench and placing of backfill in trenches above pipe cover material for open cut sewer construction is specified in Section 02221, TRENCH EXCAVATION AND BACKFILL. Insertion pits for sewer pipe lining systems and casing pipe and workshaft excavation are specified in Section 02960, INSERTION PITS AND WORKSHAFT EXCAVATION. Ground support is specified in Section 02981, GROUND SUPPORT SYSTEMS.

Manholes are specified in Section 02553, MANHOLES AND MISCELLANEOUS STRUCTURES. Sewer lining system is specified in Section 15006, SEWER LINING SYSTEM.

GENERAL (3/88) (PC10/00)

See CONDITIONS OF THE CONTRACT and Division 1, GENERAL REQUIREMENTS, which contain information and requirements that apply to the work specified herein and are mandatory for this Project.

SUBMITTALS (3/92) (PC10/00)

SUBMITTALS WITH THE BID (PC10/00)

The Contractor shall submit pipe manufacturer information as indicated in Article LIST OF EQUIPMENT AND/OR MATERIAL in the Bid.

SUBMITTALS DURING CONSTRUCTION (3/92) (PC10/00)

Submittals during construction shall be made in accordance with Section 01300, SUBMITTALS DURING CONSTRUCTION. In addition, the following specific information shall be provided:

1. Concrete pipe manufacturers' written quality control procedures;
2. Certificate of Compliance for concrete mix for pipe, and for the reinforced concrete pipe and fittings;

For Laterals:

Vitrified Clay	Polyvinyl PVC Chloride
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C 700 X-STR D 3034 SDR 35

MARKING (4/92)

Each length of pipe shall bear the name or trademark of the manufacturer, the location of the plant, the date of manufacture and the class or strength of the pipe. The markings shall be plainly visible on the exterior or interior of the pipe barrel.

FITTINGS (3/88)

Fittings such as wyes, tees, and bends shall be made in a manner that will provide strength and watertightness at least equal to the class of the adjacent main line pipe to which they are joined and shall conform to all other requirements specified for pipe of corresponding class and internal diameter. Joints shall be of the same type as used on the adjoining pipe.

Fabricated branches for wyes and tees shall be securely attached to the wall of the pipe in a watertight manner and shall be flush with the inside surface of the pipe. Tee branches shall have their axes perpendicular to the longitudinal axis of the pipe. Wye branches shall have their axes at either 60 degrees or 45 degrees from the longitudinal axis of the pipe, measured from the bell end. Pipe reinforcement shall not be interrupted beyond a radial distance of 3 inches outside of the fitting.

REINFORCED PRECAST CONCRETE PIPE AND FITTINGS (2/92) (PC10/00)

Reinforced precast concrete pipe manufactured by any method utilizing a rotating packer or platform will not be acceptable unless the manufacturer can demonstrate through physical testing that the concrete to steel bonding has not been impaired as a result of torsion induced into the steel reinforcement during casting.

Circular reinforced precast concrete pipe and fittings shall meet the requirements of ASTM C 76 with "B" or "C" wall for circular pipe and any additional requirements set forth herein, as manufactured by: APS Industries, Inc., Lannon, WI; American Concrete Pipe Company, Milwaukee, WI; Waukesha Concrete Products Co., Inc., Waukesha, WI; or equal.

Where the reinforcement consists of two cages, the steel area of the outer cage shall not be less than 75 percent of the steel area of the inner cage. Circular pipe with elliptical reinforcing will be not permitted.

The reinforcement cages shall be fabricated in manner that minimizes inducing stress into the finished cage.

CONCRETE PIPE JOINTS (3/92)(PC10/00)

Joints on concrete pipe shall conform to ASTM C 443 including performance requirements for joints. Lubricant for jointing shall be as approved by the pipe manufacturer.

Joints on all concrete pipe larger than 15-inch shall be formed steel joints with rubber gaskets as specified in ASTM C 361. Joints shall be tongue and groove for jacked pipe and final tunnel lining. Joints for pipe installed using open cut methods shall be bell and spigot or tongue and groove. The portions of joint rings that will be exposed on the completed pipe shall be protected from corrosion by either: (1) a 100 percent solids thermosetting epoxy or polyurethane coating, 7 mils minimum dry film thickness (MDFT); or (2) two coats of polyamide high build epoxy, 10 mils MDFT total.

DUCTILE IRON PIPE JOINTS (3/88)

Furnish pipe with the type of ends required for the type of connections shown. Where the pipe joint type is not specified, it is optional.

RUBBER GASKET JOINT PIPE AND FITTINGS (3/88)

Rubber gasket joint pipe and fittings shall conform to AWWA C111 or ANSI 21.51 for cast or ductile iron pipe. Lubricant for jointing shall be as approved by the pipe manufacturer.

CLAY PIPE JOINTS (3/88)

Compression joints for vitrified clay bell-and-spigot pipe shall conform to ASTM C 425, including test requirement for joints. Lubricant for jointing shall be as approved by the pipe manufacturer.

PVC PIPE JOINTS (4/92)

PVC pipe joints shall be bell-and-spigot joint sealed by an elastomeric gasket conforming to ASTM D 3212 so that the assembly will remain watertight under all conditions of service, including the movements resulting from the expansion, contraction, settlement, and deformation of the pipe. Lubricant for jointing shall be as approved by the pipe manufacturer.

ABS PIPE JOINTS (4/92)

ABS pipe joints shall be bell-and spigot sealed by an elastomeric gasket conforming to ASTM D3212 so that the assembly will remain watertight under all conditions of service, including the movements resulting from the expansion, contraction, settlement, and deformation of the pipe. Lubricant for jointing shall be as approved by the pipe manufacturer.

The number of pipe sections to be tested shall be the maximum recommended under the appropriate ASTM specification. Where the ASTM specification does not indicate the number of pipe that may be tested, tests shall be run on 0.5 percent of the total number of pieces to be represented by the test. In no case shall less than two pipe sections be tested per pipe lot.

For pipe testing frequency, a pipe lot shall be defined as all pipe of the same diameter and class manufactured by the same process in one plant over a period not to exceed 2 week(s).

The Contractor shall provide, from each pipe lot produced, a minimum of one pipe which will be inspected by the Engineer to determine the position of the reinforcing steel and to check for voids around the steel. If the inspection reveals that the steel placement is not within specified tolerances or that continuous voids exist around the steel, two additional pipe shall be furnished for inspection. The engineer will randomly select the pipe to be inspected. If either of the two additional pipe fail to comply, the entire lot will be rejected.

CONCRETE PIPE (3/92) (PC10/00)

Pipe lot acceptance of reinforced precast concrete sewer pipe manufactured in accordance with ASTM C76, shall be on the basis of the external load bearing tests, concrete compressive strength and absorption requirements of the applicable ASTM specifications, (Design Tables 1 through 5 of ASTM C76) shall be determined by a three-edge bearing load test to the applicable 0.01-inch crack D-load in accordance with ASTM C497 as well as inspection of manufactured pipe for visual defects and imperfections, including improperly placed reinforcing and lack of bond between the concrete and reinforcing steel.

The Engineer reserves the right to direct that loading be continued to produce the 0.01-inch crack and to the ultimate strength of the pipe. The cost of the pipe tested to ultimate strength will be borne by the Owner, except when samples tested do not meet test requirements. The amount to be paid the Contractor for pipe tested to and meeting the ultimate strength requirements will be the actual price shown on the Contractor's Purchase Order to the pipe manufacturer for the size and class of pipe tested. Pipe that have been loaded beyond the formation of the 0.01-inch crack shall not be used in the work.

A section of pipe sufficiently long enough to expose a minimum of three rings of circumferential steel in each cage shall be cut from the pipe barrel at a location selected by the Engineer. The pipe section shall then be cut longitudinally to provide two 180 degree segments. Cutting shall be done with a saw that will not damage the concrete or reinforcing steel. The exposed surfaces will be inspected for voids adjacent to the reinforcing and for steel placement tolerances. Voids will be considered continuous if a 1/16 inch diameter pin can be inserted 1/4 inch deep.

CLAY PIPE (3/88)

Pipe lot acceptance of clay pipe shall be on the basis of all tests specified in ASTM C 301, except that plaster-of-paris fillets shall not be used in conjunction with hardwood contact strips during 3-edge bearing tests.

WATER FOR TESTING (4/92)

Make all arrangements for furnishing water from the nearest hydrant or other suitable source for testing purposes. Perform the tests and provide all hoses, tank trucks, plugs and other necessary equipment to complete the tests.

DUCTILE IRON, CLAY, POLYVINYL CHLORIDE AND ABS COMPOSITE PIPE AND FITTINGS (4/92)

Ductile iron pipe and fittings shall be inspected at the point of manufacture in accordance with the manufacturer's standard methods. Unless otherwise advised by the Engineer, provide a certificate of tests in lieu of witnessing the inspection and test procedures.

Pipe and fittings that are chipped, cracked, or contain other imperfections, or do not satisfactorily meet the applicable ASTM test requirements, shall be rejected.

COAL-TAR EPOXY COATING FOR PIPE (7/92) (PC10/00)

A coal-tar epoxy coating shall be applied to the outside of all ductile iron and City of Milwaukee and private sewer concrete pipe to be installed. The coal-tar epoxy shall be a two-component polyamine coating having 70 percent solids, minimum and the following physical characteristics:

Color: Black-glossy. Nonvolatile content by volume: 72.9 percent.

Mil. Square Feet: 1,169 per gallon. Touch Dry: 10 hours (will vary with temperature). Heat Resistance (wet): 160 degrees F.

CERTIFICATES REQUIRED (4/92)

The manufacturer of the coal-tar epoxy shall furnish to the Engineer a certificate, duly notarized, indicating that his material will achieve the designated film thickness when applied at the designated coverage and further, that he has tested his material to insure that the desired results can be achieved when application is made by the spray, brush, or roller method recommended by the manufacturer. This certificate shall also state that the material meets the formulation as herein specified.

**GRADING REQUIREMENTS FOR 3/4-INCH CRUSHED STONE CHIPS
(ASTM C 33 - Size No. 67)**

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
1 inch	100
3/4 inch	90 - 100
3/8 inch	20 - 55
No. 4	0 - 10
No. 8	0 - 5

PIPE COVER MATERIAL FOR RIGID PIPE (7/92)(PC10/00)

Material which is to be used above the springline and over the sewer pipe and above the pipe bedding shall be termed cover material. It shall consist of durable particles ranging in size from fine to coarse in a substantially uniform combination.

Crushed bank-run gravel will be considered acceptable.

For sewer pipe less than 60 inches in diameter, pipe bedding material shall be used for pipe cover material.

**PIPE BEDDING AND COVER MATERIAL FOR DUCTILE IRON PIPE WITH
POLYETHYLENE ENCASEMENT (4/92)(PC10/00)**

Bedding and cover material for ductile iron pipe with polyethylene encasement shall be sand ranging uniformly in size from fine to coarse. Reject concrete sand will generally be acceptable. The presence of fine clay or loam is desirable, but shall not exceed 6 percent. Clay or loam lumps are not permitted. The maximum moisture content shall not exceed 10 percent. Material shall conform substantially to the gradation listed below.

GRADING REQUIREMENTS FOR PIPE BEDDING AND COVER SAND

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
3/8 inch	100
No. 4	95 - 100
No. 8	80 - 100
No. 16	50 - 85
No. 30	25 - 60
No. 50	10 - 30
No. 200	2 - 10

TRENCH EXCAVATION AND BACKFILL (3/88)(PC12/00)

Conform to Section 02221, TRENCH EXCAVATION AND BACKFILL.

PREPARATION OF TRENCH (4/92) (PC10/00)

Provide pipe bedding material from under all pipe to the springline for the full width of the trench. Minimum depth of bedding material below the pipe barrel shall be as follows:

<u>Pipe Size</u>	<u>Minimum Depth of Bedding Under Pipe Barrel</u>
24 inches and smaller	4 inches
27 inches to 72 inches	6 inches
78 inches and larger	8 inches

Depth of pipe bedding material under the pipe bell shall not be less than 3 inches.

Hand-grade bedding to proper grade ahead of pipe laying operation. Bedding shall provide a firm, unyielding support along the entire pipe length.

When the Engineer determines that the trench is to be excavated below the required depth for pipe bedding material placement, fill the excess depth with FOUNDATION STABILIZATION MATERIAL as specified in Section 02221, TRENCH EXCAVATION AND BACKFILL to the proper subgrade. Place the foundation stabilization or pipe bedding material for the full width of the trench in layers not exceeding 6 inches and compact each layer by a minimum of three passes with a vibratory plate compactor to provide a firm, unyielding base for the pipe. Payment for foundation stabilization material determined necessary by the Engineer will be paid as specified in Section 02221, TRENCH EXCAVATION AND BACKFILL. Overexcavation that is not determined to be necessary by the Engineer shall be provided and placed by the Contractor at no cost to the Owner.

CONTROL OF WATER (4/92) (PC10/00)

Conform to Section 02530, CONTROL OF WATER, as required to prevent water from entering the trench during the laying operation to the extent required to properly grade the bottom of the trench and allow for proper compaction of the backfill in the pipe zone. Pipe shall not be laid in water.

Contractor is restricted in dewatering from Station 30+00 to Station 40+50. See the GEOTECHNICAL BASELINE REPORT.

Make connections of existing non-reinforced pipe to manholes or concrete structures, so that a standard pipe joint is located not more than 1 foot from the outside edge of the structure.

Joints in ductile iron pipe for sewer line crossing less than 18 inches below waterlines shall be constructed in accordance with LAYING DUCTILE IRON PIPE hereinafter.

LAYING DUCTILE IRON PIPE (3/88)

GENERAL (3/88)

Lay and join ductile iron pipe in accordance with the manufacturer's recommendations, as approved by the Engineer. Provide all special tools and devices such as special jacks, chokers, and similar items required for the installation.

CUTTING DUCTILE IRON PIPE (3/88)

Pipe shall be cut at right angles to the centerline of the pipe in a neat workmanlike manner without damage to the pipe and so as to leave a smooth end. All pipes shall be cut with an approved mechanical cutter. The cut end of pipe to be used with rubber gasket joints shall be tapered by grinding or filing about 1/8 inch back at an angle of approximately 30 degrees with the center line of the pipe, and any sharp or rough edges shall be removed.

POLYETHYLENE ENCASEMENT (7/92)(PC10/00)

Corrosion protection shall be provided for all ductile iron pipe by use of polyethylene encasement. Before installing the polyethylene encasement the exterior of the pipe shall be free of foreign material. The polyethylene wrap shall be cut approximately 2 feet longer than that of the pipe section. After assembling the pipe joint, the polyethylene shall be overlapped approximately 1 foot and sealed at all joints with approved adhesive tape. Additional taping shall be used at 3 foot intervals along the pipe. Any rips, punctures or other damage to the polyethylene shall be repaired immediately with adhesive tape, as specified.

When fittings cannot be practically wrapped in a tube, a flat sheet or split tube shall be used. All seams shall be securely taped with adhesive tape as specified.

The bedding and cover material shall be placed with care so as to prevent damage to the polyethylene encasement. Any rips or punctures in the polyethylene encasement shall be repaired immediately.

LAYING OF PIPE IN COLD WEATHER (4/92)

No pipe shall be laid on frozen ground or frozen pipe bedding material. The Contractor shall be responsible for heating the pipe and jointing materials as recommended by the pipe manufacturer.

If bending of the beam due to air temperature variations becomes apparent with "in the pipe" units, a fan shall be provided to circulate the air. However, air velocity shall not be so excessive as to cause pulsating or vibrating of the beam. If, in the opinion of the Engineer, the beam cannot be accurately controlled, this method of setting line and grade shall be discontinued.

When the above ground method is used, the set-up shall be checked with the three grade boards including one set at the up-stream manhole. If the laser has a gradient indicator, two boards may be used to check the set-up. The grade board at the up-stream manhole shall be retained to check into as pipe laying progresses.

BEDDING AND BACKFILL IN THE PIPE ZONE (4/92)(PC10/00)

GENERAL (4/92)

The pipe zone shall be considered to include the full width of the excavated trench. The pipe zone extends from the bottom of the trench, or the top of the foundation stabilization material, if used, to a height above the top outside surface of the barrel of the pipe as shown and may vary with the type of pipe zone section specified.

Particular attention must be given to the area of the pipe zone from the flow line to the springline of the pipe to insure that firm support is obtained and to prevent any lateral movement of the pipe during the final backfilling of the pipe zone.

Where a maximum trench width below the top of the pipe is shown on the Plans and is exceeded for any reason, the Contractor may be required, at his own expense, to furnish a stronger pipe when determined by the Engineer.

PIPE BEDDING (7/92)(PC12/00)

Place pipe bedding material as shown to the proper grade and elevation and for the full width of the trench. The minimum depth of bedding material under the pipe barrel in unclassified excavation shall be as specified hereinbefore.

CLASS B PIPE ZONE (4/92)

Place and compact pipe bedding material to the proper grade and elevation and for the full width of the trench. Before the pipe is laid, compact the bedding material to provide a firm, unyielding support for the pipe. After the pipe is laid to line and grade, place and carefully compact pipe bedding material for the full width of the trench to the springline of the pipe. Place the material around the pipe in 6-inch layers and thoroughly hand tamp with tamping sticks supplemented by "walking in" and slicing with a shovel.

Backfill with pipe cover material placed in maximum 12-inch layers and carefully compact the area above the pipe springline for the full width of the trench, to a height

PIPE BULKHEADS (4/92) (PC10/00)

Install bulkheads where shown on the Plans or where required to maintain sewage flow during construction. Mortar for brick bulkheads shall conform to Section 02553, **MANHOLES AND MISCELLANEOUS CONCRETE STRUCTURES.**

Construct masonry bulkheads with tightly packed mortar between and inside of connecting sewer all around. Bulkheads shall receive bentonite waterproofing on the inside of the structure or active sewer. See details on the Plans.

LEAKAGE TESTS FOR GRAVITY SEWERS (4/92) (PC12/00)

GENERAL (4/92) (PC12/00)

Combined or sanitary sewers shall be required to pass a leakage test before they are accepted. The permitted leakage tests for sewers larger than 42 inches are, depending on the level of the groundwater, the water infiltration and water exfiltration test. The low-pressure air test shall be used on sewers 36 inches and smaller. Rates of water infiltration or exfiltration or air loss, as applicable, will be measured by the Engineer. The tests shall be performed by the Contractor under the observation of the Engineer. The ends of branches, laterals, tees, wyes, and stubs to be included in a test section shall be plugged to prevent water or air leakage. All plugs shall be secured to prevent blowout due to internal pressure. A test section is defined as the length of sewer between manholes.

On pipe 42 inches in diameter and larger, individual joints may be tested by an approved air or hydrostatic pressure joint testing device. All details of the testing procedure shall be subject to approval of the Engineer.

The rate of infiltration/exfiltration of water to or from the sewers, including manholes and appurtenances, shall not exceed 200 gallons per day per inch diameter per mile of sewer.

The maximum allowable water infiltration/exfiltration is shown below for various pipe and manhole sizes.

ALLOWABLE LIMITS OF INFILTRATION/EXFILTRATION
BASED ON 200 GAL./DAY/IN. DIA./MILE

<u>Diameter</u> <u>of Sewer</u> <u>Inches</u>	<u>Gallons/</u> <u>foot/hour</u>
42	0.0663
48	0.0758

EXAMPLE: 15-inch diameter (listed for example only) with lengths of 150, 250 and 500 feet.

For 150 feet $T = 2.50$ sec (Col B) X 150 ft = 375 Sec = 6:15

For 250 feet $T = 7:05$ (Col D)

For 500 feet $T = 1.11$ sec (Col F) x 500 ft = 555 Sec = 9:15

The Contractor shall not proceed with air testing until the sewers, including appurtenances and laterals, have been backfilled and cleaned. The section of sewer line to be tested shall be flushed prior to conducting the air test, to wet the pipe.

Isolate the section of sewer line to be tested by means of inflatable stoppers or other suitable test plugs. One of the plugs shall have an inlet tap or other provision for connecting a hose to a portable air source.

If the test section is below the groundwater level, determine the height of the groundwater above the springline of the pipe at each end of the test section and compute the average height of groundwater. For every foot of groundwater above the pipe springline, increase the gauge test pressure by 0.43 pounds per square inch.

Connect the air hose to the inlet tap and a portable air source. The air equipment shall include necessary valves and pressure gauges to control the rate at which air flows into the test section and to enable monitoring of the air pressure within the test section. The testing apparatus shall be equipped with a pressure relief device to prevent the possibility of loading the test section with the full capacity of the compressor.

Add air slowly to the test section until the pressure inside the pipe is raised to 4.0 psig greater than the average hydrostatic pressure of the groundwater over the pipe. After a pressure of 4.0 psig is obtained, regulate the air supply so that the pressure is maintained between 3.5 and 4.0 psig above the average groundwater pressure, for a period of 2 minutes to allow the air temperature to stabilize in equilibrium with the temperature of the pipe walls.

Determine the rate of air loss by the time-pressure drop method. After the 2-minute air stabilization period, disconnect the air supply and adjust the pressure to 3.5 psig above the average groundwater pressure. The time required for the test pressure to drop from 3.5 psig to 2.5 psig shall be determined by means of a stopwatch. This time interval shall be compared to the allowable time in the Air Test Time Table to determine if the rate of air loss is within the allowable time limit. If the time is equal to or greater than the times indicated in the tables, the pipeline shall be deemed acceptable.

Upon completion of the test, open the bleeder valve to allow all air to escape. Plugs shall not be removed until all air pressure in the test section has been released. During the time the pipe is being decompressed, do not permit any person to enter the trench or manhole.

In addition, steel panels shall be coated at the same time and with the same material used in coating the pipe. These steel panels shall be 3 inches by 8 inches by 1/8 inches minimum size and shall be grit blasted to remove all dust and scale and shall be free of all foreign substances prior to coating.

The coating manufacturer shall submit a test report from an independent testing laboratory indicating that his coating was subject to and passed the following tests:

Steel plates, coated as specified, will be allowed to cure and then will be submerged in boiling water for a 6-day period. The coating shall exhibit no signs of deterioration, cracking, or blistering at the end of the testing program.

The coating shall be submerged for a 90-day period in the following solutions and the coating shall suffer no effects at the end of this period of time.

- Sodium Hydroxide - 5%
- Sodium Chloride - 5% saturated with Hydrogen Sulfide
- Kerosene
- Nitric Acid - 20%
- Benzene
- Ammonium Hydroxide - 50%
- Hydrochloric Acid - 5%
- Calcium Hydroxide - 20%
- Acetic Acid - Concentrated and 5%

One steel plate, coated as specified shall be tested further for acid resistance by submerging in concentrated 15 percent sulfuric acid at 70 degrees F for 3 days and shall show no signs of damage either to the coal-tar epoxy coating or to the panel. This same panel shall then be washed with clean cold water to remove any clinging acid. The panel shall then be placed in a warming oven for 3 days at 400 degrees F. At the end of this time no blistering or defects shall be noted in the coating.

One steel plate, coated as specified shall be tested for abrasion resistance in accordance with ASTM D 968. The coefficient of abrasion shall be 5550 or better without any break in the coating.

One steel plate, coated as specified and cured for 24 hours shall be tested for cracking and disbonding by bending over a 1/4-inch mandrel at 77 degrees F. No disbond or cracking shall be found.

One steel plate, coated as specified shall be tested for undercutting by drilling 6 holes 1/8-inch in diameter through the coated panel. The panel shall then be immersed in salt water for 30 days. No signs of creep corrosion shall be noted after the 30-day test.

The following pertains to 15-INCH TO 24-INCH CLASS IV CONCRETE MIS SEWER RELAYS, 36-INCH TO 48-INCH CLASS IV CONCRETE CITY OF MILWAUKEE COMBINED SEWER RELAYS AND 12-INCH CLASS IV CONCRETE PRIVATE COMBINED SEWER:

Payment for pipe will be based on the actual number of lineal feet installed, as measured by the Engineer. The pipe will be measured horizontally, on the surface, from center-to-center of manholes to the nearest 0.1 foot.

Full payment for open cut pipe in place will not be made until the pipe has successfully passed the leakage tests specified herein. Prior to a successful testing, acceptable, installed pipe will be paid for at 95 percent of the price bid for the various types, size and class of pipe as stated in the Bid.

Full payment will be withheld on any section of pipe deemed by the Engineer to be unsatisfactory due to excessive leakage, unsatisfactory line and grade, or any other cause until such defects have been corrected in accordance with the intent of these Contract Documents.

If, within guarantee period, any section of sewer system, although originally accepted, is actually not acceptable due to subsequent excessive leakage or any other defects, the Contractor shall repair or replace the affected portion at no cost to the Owner.

15-INCH TO 24-INCH CLASS IV CONCRETE MIS SEWER RELAYS (7/92) (PC10/00)

Payment for the 15-inch, 18-inch and 24-inch Class IV concrete sewer relays will be made at the appropriate unit price per linear foot for Class IV Concrete MIS sewer relay as stated in the Bid for the size of pipe installed.

Payment based upon each unit price in the Bid for each size of Class IV concrete MIS relay in open cut shall constitute full compensation for furnishing all work necessary to excavate and remove the existing pipe and replace it with the appropriate size pipe, including excavation, protection of existing utilities, removal of existing sewer, removal and disposal of sewer sediment, bulkheading and flow diversion, control of water, provision and installation of pipe, and bedding and cover in the pipe zone, connections to existing sewers or structures, sewer lateral reconnections, backfilling, compaction, testing, final cleaning, surface restoration, all as specified and shown on the Plans.

36-INCH TO 48-INCH CLASS IV CONCRETE CITY OF MILWAUKEE COMBINED SEWER RELAY (PC12/00)

Payment for the 36-inch, 42-inch and 48-inch Class IV concrete City of Milwaukee combined sewer relays will be made at the appropriate unit price per linear foot for Class IV Concrete City of Milwaukee Combined Sewer Relays as stated in the Bid for the size of pipe installed.

Payment based upon each unit price in the Bid for each size of Class IV concrete City of Milwaukee combined sewer relay in open cut shall constitute full compensation for furnishing

ADDENDUM NO. 1
to the
CONTRACT DOCUMENTS
for
BRUCE STREET/MUSKEGO AVENUE MIS REPLACEMENT
C07003C01

February 1, 2001

To All Planholders

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for MMSD BRUCE STREET/MUSKEGO AVENUE MIS REPLACEMENT, CONTRACT C07003C01, dated December 2000, as fully and completely as if the same were fully set forth therein:

I. BIDDING REQUIREMENTS

A. INVITATION TO BID

Page 1, 1st paragraph, 1st sentence. Replace "until 10:30 a.m. local time, on the 8th day of February, 2001" with "until 10:30 a.m. local time, on the 12th day of February 2001".

B. BID

Replace Pages 5 through 16 of the Bid in their entirety with the Revised BID Pages appended hereto as Attachment A. Page 17, add the following to the end of the first sentence: "excluding bid items, No's. 2,3,6,7 and 23.

II. SPECIFICATIONS

A. Section 01011, SITE CONDITIONS

Page 8, Part J. SERVICES AND UTILITIES IN THE WORK.

Replace the contact "Ameritech, 3045 W. Grange, Greenfield, WI 53221, George Marine (414) 678-7798" with the following:

"Ameritech, 2005 Pewaukee Road, Waukesha, WI 53188, Darryl Winston
(262) 896-7440"

B. Section 01311, SCHEDULE AND SEQUENCE OF OPERATIONS

Page 1, Part A. CONSTRUCTION SCHEDULE GENERAL PROVISIONS, Article ADDITIONAL SCHEDULING REQUIREMENTS. Add the following after the second paragraph:

“In the event that the pipe covering in the Inactive Utility Tunnel, as shown on Drawing C-3, is found to be Asbestos, the Contractor shall demobilize from the area and allow a minimum of 45 days for the District’s Contractor to remove the pipe covering before remobilizing to the area.

The Contractor shall install the 12-inch Sanitary sewer and manholes, test and complete surface restoration between Manhole Nos. 13 and 14 on Miller Compressing property within 60 days of Notice To Proceed. The Contractor shall continue installation of the 12-inch sanitary sewer from Manhole No. 14 to Manhole No. 19 until completed.”

C. Section 02221, TRENCH EXCAVATION AND BACKFILL

1. Page 2, Part A. SCOPE, Article SUBMITTALS DURING CONSTRUCTION. Delete the following items:

- “4. Detailed plan for removal and disposal of asbestos.
5. Asbestos removal completion report.”

2. Page 7, Part C. WORKMANSHIP, Article PAVEMENT, CURB AND SIDEWALK REMOVAL. Replace the third paragraph with the following:

“Existing rails used as concrete pavement formwork and abandoned railroad rails that are removed on the Miller Compressing Company property shall be cut for removal, separated from the pavement and shall remain the property of Miller Compressing Company. Contractor shall stockpile rails where directed by Miller Compressing Company.

The pavement on Miller Compressing Company property is up to 24-inches thick, see the Geotechnical Baseline Report.

For all pavement removal, if the final saw cut is within 3-feet of an existing joint, the entire width shall be removed to the edge of the joint.”

3. Page 10, Part C. WORKMANSHIP, Article ASBESTOS REMOVAL. Replace the Article with the following:

“The Contractor shall sawcut and remove a 6-foot section of the roof of the inactive utility tunnel as shown on Drawing S-8. The District will have the pipe covering tested for asbestos. If positive, the District’s contractor will remove the pipe covering removed to the extent required for the Contractor’s work. The District’s contractor will complete the work within forty five (45) days.”
If the pipe covering is found not to contain asbestos, the Contractor shall remove and dispose of the pipe covering with the pipe to be removed.

4. Page 12, Part C. WORKMANSHIP, Article SHORING, SHEETING, AND BRACING OF SEWER TRENCH EXCAVATIONS.

Replace the first sentence on the page with the following:

“The use of portable trench boxes or sliding trench shields are not permitted in Bruce Street, in Muskego Avenue, and on the Miller Compressing Company property between Manhole No. 10 and Manhole No. 11, and between Station 15+00 and Station 16+70. Regardless of the method of shoring, sheeting or bracing used by the Contractor, it shall meet all requirements of these specifications.”

5. Page 12, Part D. PAYMENT, Article ASBESTOS INSULATION REMOVAL. Replace the Article with the following:

“Demobilization by the Contractor from the area of the inactive utility tunnel and the remobilization after Forty Five (45) days, required for asbestos removal by the District’s contractor, is to be considered incidental to the appropriate unit price for 36-inch to 48-inch Class IV concrete, City of Milwaukee combined sewer relay, Section 15005, GRAVITY SEWERS.

Payment for asbestos testing of the pipe covering and removal of the pipe covering, if found to contain asbestos by the District’s contractor, will be based on the actual cost invoiced by the District’s contractor plus 15 percent. A Lump Sum Allowance for this cost is included in the Bid. When the exact cost is known, appropriate adjustments will be made in accordance with the Article, PAYMENT FOR MODIFICATIONS of the GENERAL CONDITIONS.”

D. SECTION 15005, GRAVITY SEWERS

Page 26, Part D. PAYMENT, Article 36-INCH TO 48-INCH CLASS IV CONCRETE CITY OF MILWAUKEE COMBINED SEWER RELAY.

Delete the words “private 36-inch combined sewer” from the 8th line from the top of the page.

III. PLANS

- A. DRAWING NO. C-1, PLAN AND PROFILE, W. BRUCE STREET, STA 28+23.75 TO STA 48+50. Add the following note to the detail JUNCTION CHAMBER AT STA 28+20:

“1. The concrete dam across exist 64” MIS to be removed is installed as a 41-inch high, unreinforced, concrete block wall.”

- B. DRAWING NO. C-2, PLAN AND PROFILE, W. BRUCE STREET, STA 36+60 TO STA 48+50. Add the following note:

“Type B surface restoration to be used at MIS Manhole Nos. 03515 and 03516.”

- C. DRAWING NO. C-3, PLAN AND PROFILE, W. BRUCE STREET, STA 48+50 TO STA 60+25. Add the following note:

“Type B surface restoration to be used at MIS Manhole No. 03601.”

- D. DRAWING NO. C-4, PLAN AND PROFILE, MILLER COMPRESSING CO. PROPERTY, STA 60+25 TO STA 69+65. Replace the notation at MIS manholes Nos. 03611, 03612 and 03613 from “Type A surface restoration” to “Type C surface restoration”.

- E. DRAWING NO. C-5, PLAN AND PROFILE, MILLER COMPRESSING CO. PROPERTY, STA 0+00 TO STA 11+00. Replace the notation “Type C surface restoration between Station 0+40 and Manhole No. 13” with the following:

“Type A surface restoration between Station 0+40 and Station 11+00, except the maximum thickness of the Portland Cement Concrete shall be 12-inches.”

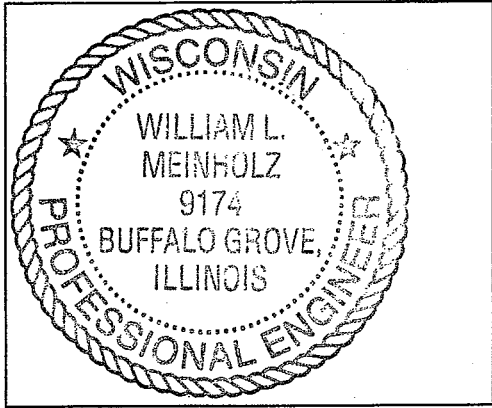
- F. DRAWING NO. C-6, PLAN AND PROFILE, MILLER COMPRESSING CO. PROPERTY, STA 11+00 TO STA 22+23. Replace the notation “Type C surface restoration between Station 11+00 and Manhole No. 14” with the following:

“Type A surface restoration between Station 11+00 and Manhole No. 14, except the maximum thickness of the Portland Cement Concrete shall be 12-inches.”

Appended hereto and part of this Addendum No. 1 is the following Attachment:

ATTACHMENT A: Revised Bid (34 bid items) pages 5 - 16

This Addendum was prepared under the direction of:



Signed William L. Meinholz

Date 02/01/01

[Seal of Engineer]

All Bidders shall acknowledge receipt and acceptance of this Addendum No.1, consisting of 5 pages, and one attachment, by signing in the space provided and submitting the signed Addendum with the Bid. Bids submitted without this Addendum may be considered nonresponsive.

Very Truly yours,

MILWAUKEE METROPOLITAN
SEWERAGE DISTRICT

By James P. Morgan
Jim Morgan
Senior Contract Administrator
Milwaukee Metropolitan Sewerage District

Receipt acknowledged and conditions agreed to
this day of, 20.....

.....
Bidder

.....
By