Specifications

l.01 TECHNICAL SPECIFICATIONS:

All item numbers referenced to in the drawings refer to the State of Ohio Department of Transportation Construction and Material Specifications, 2016 Edition. All equipment, material and workmanship shall be performed according to these specifications and any Ohio Department of Transportation Standard Construction Drawings (SCD) referenced on the plans.

1.02 SUPPLEMENTAL SPECIFICATIONS:

02567 – Manhole Rehabilitation – Lining Material Specifications and Requirements

Supplemental Specification 02567

MANHOLE REHABILITATION – LINING MATERIAL SPECIFICATIONS AND REQUIREMENTS

September 2019

07.01 - DESCRIPTION.

This specification includes all work, materials and equipment required for the structural rehabilitation of manhole structures including circular and non-circular construction. The purpose is to eliminate infiltration, repair voids, restore structural integrity and provide corrosion protection by the application of a spray-applied monolithic resin liner to the wall and bench surfaces of brick/concrete structures or structures produced with any other masonry construction material. These structures include, but are not limited to manholes, special structures, wet wells, lift stations and pump stations.

07.02 - SPECIFICATIONS AND MATERIALS

07.021 References:

ASTM D638: Test Method for Tensile Properties of Plastics
ASTM D695: Test Method for Compressive Properties of Rigid Plastics
ASTM D790: Test Methods for Flexural Properties of Unreinforced and reinforced Plastics and Electrical Insulating Materials
ASTM C1244: Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill
ASTM D2240: Standard Test Method for Rubber Property - Durometer Hardness
ASTM D412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers -Tension
ASTM D624: Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

7.022 Plugging and Repair Materials:

Plugging and repair materials should not be used unless their manufacturer provides information as to its suitability and procedures for topcoating with the approved coating. Project specific submittals should be provided including application, cure time and surface preparation procedures which permit optimum bond strength with the approved coating.

Repair materials shall be used to fill voids, structurally reinforce and/or rebuild surfaces, etc. as determined necessary by the protective coating applicator. Repair materials must be compatible with the specified coating and shall be applied in accordance with the manufacturer's recommendations

The following products may be accepted and approved as compatible repair basecoat materials for approved topcoating for use within the specifications:

a) 100% solids, solvent-free grout specifically formulated for approved topcoating compatibility. The grout manufacturers shall provide instructions for trowel or spray application and for approved topcoating procedures.

b) Factory blended, rapid setting, high early strength, non-shrink repair mortar that can be troweled or pneumatically spray applied may be approved if specifically formulated to be suitable for approved topcoating. Such repair mortars should not be used unless their manufacturer provides information as to its suitability for topcoating with the approved topcoating. Projvet specific submittals should be provided including application, cure time and surface preparation procedures which permit optimum bond strength with the approved coating.

c) In case of excessive infiltration, a hydraulic cement or plug may be used to stop the flow of the infiltration. Hydraulic cement shall cure sufficiently prior to any topcoating. Manufacturer's include *Strong*, *Sika*, *Preco* or approved equal. The hydraulic cement shall be compatible with the spray applied resin coating.

7.023 Structural Repairs:

Loose or protruding brick, mortar and concrete shall be removed using a masons hammer and chisel. All structural repairs necessary to complete the lining process shall be made with a non-shrink grout compatible with the lining system manufacturer's recommendations. This material shall be applied to patch cracks, fill voids, make structural repairs, and build-up deteriorated manhole or wet well surfaces back to original thickness. All repair and/or patching materials shall be submitted to the Engineer for approval prior to material usage.

7.024 Lining Materials:

The lining materials shall be a self-priming monolithic system that eliminates infiltration, is designed and manufactured to provide chemical resistance to hydrogen sulfide and be third-party tested and certified for a design life of no less than 50 years. The approved lining systems and manufacturers are:

a) *Armour 1000* by OBIC

b) *SprayWall* by SprayRoq

07.03 - EQUIPMENT

Equipment for installation of lining materials shall be high quality grade and be as recommended by the manufacturer. The equipment utilized shall be specialized equipment which shall reduce the amount of time the manhole or wet well is out of service. It is the intent that whatever method of lining is approved, that the down time for a standard manhole is kept to a maximum of 3 hours.

07.04 - WEATHER LIMITATIONS

Application Temperatures:

No lining shall be made to any manhole or wet well when ambient temperature is below 50° Fahrenheit or when the substrate surface temperature is below 55° Fahrenheit.

07.05 - APPLICATION

7.051 Bypassing Sewage:

Unless otherwise noted on the Plan Sheet and/or in the Bid Documents the Contractor shall bypass the sewage around existing manholes or wet wells that are to be lined; an existing upstream manhole shall be plugged and the sewage shall be pumped into a downstream manhole or adjacent system. Use of any invert "flow-through" device shall be limited to an as-needed basis, and only upon the written approval of the Engineer. The bypass system shall be of adequate capacity and size to handle the existing peak flows (See Item 51). Under no circumstances will the dumping of raw sewage on private property or in streets be permitted.

7.052 Surface Preparation:

All manhole or wet well surface preparation shall conform to the manufacturer's recommendations for the intended substrate - refer to Appendix A and B of this item for specific product requirements. New precast concrete manholes or wet wells shall not be lined prior to 28 days following their manufacture date. All water used shall be clean and potable.

7.053 Plugging Active Water:

The Contractor shall stop all active water infiltration in said manholes or wet wells by troweling, injecting and/or pumping a quick setting non-shrinking Cementitious grout or polyurethane chemical grout into any dislodged section joints, pipe connections, cracks or spalled areas greater than 3/4".

This material and procedure shall be for the stopping of active water only. Any areas that require structural repair shall utilize the non-shrinking grout as specified above. All excess material shall be removed from internal wall surfaces.

7.054 Structural Repairs:

After all active infiltration has been stopped the Contractor shall utilize a non-shrinking grout to structurally repair or build-up any deteriorated manhole or wet well surface back to the original surface thickness. The Contractor shall repair any dislodged section joints, pipe connections, cracks or spalled areas greater than 3/4".

7.055 Application of the Lining System:

All pipe inverts shall be plugged with a removable plug to protect the pipes from lining over-spray. The Contractor shall apply the lining system per the manufacturer's recommendations. The minimum total lining system thickness shall be 250 mils for OBIC and 500 mils for SprayRoq. The interior surface shall be considered to include the entire area from the inside top of the manhole or wet well casting to the bench/invert. In cases where moisture or temperature is a concern a propane-fired heater shall be utilized to assist in reduction of curing time. No solvents shall be used.

7.056 Lining Repair Procedure:

After the application of the lining system, it shall be visually inspected to identify any defects such as pinholes, bug holes, etc. If any defects or deficiencies are found they shall be repaired per the manufacturer's recommendations.

07.06 - QUALITY CONTROL

Completed manholes shall be vacuum tested in accordance with ASTM C1244, as applicable.

07.07 - DOCUMENTATION

The Contractor shall be a certified applicator of the lining system, and provide documentation from the manufacturer that all employees are also certified. The Contractor shall have performed similar work on at least 200 manholes, wet wells, or a combination thereof. The Contractor shall provide a list of five (5) project references including the following information: project owner, description, location, scope, quantity lined, start and completion dates. Contractors not meeting the above credentials shall submit in writing their past experience in manhole lining to be considered.

07.08 - ACCEPTANCE

All lined manholes or wet wells shall be guaranteed against material delamination and all other defects in workmanship and materials for a minimum of five (5) years after the completion of the lining, but in no case shall be less than the manufacturer's published standard warranty. Any defect or failure shall be repaired within four (4) weeks from the date of notification, at no additional cost to the city.

The Contractor shall provide a final written report detailing the location, date of installation, description of the lining for each manhole or wet well lined, testing results and a copy of the manufacturer's standard published warranty.

07.09 - METHOD OF MEASUREMENT

The number of manholes to be paid for under Item 07 shall be the number of manholes lined.

07.10 - BASIS OF PAYMENT

Payment will be made at contract price for:

Item	Unit	Description
07	EA.	Manhole Lining

APPENDIX

Structural Rehabilitation & Corrosion Protection for Circular and Non-Circular Structures in Wastewater Collection Systems

SECTION 1: GENERAL

1.01 DESCRIPTION

This specification includes all work, materials and equipment required for the structural rehabilitation of circular structures. The purpose is to eliminate infiltration, repair voids, restore structural integrity and provide corrosion protection by the application of a spray-applied monolithic resin liner to the wall and bench surfaces of brick/concrete structures or structures produced with any other masonry construction material. These structures include, but are not limited to manholes, wet wells, lift stations and pump stations.

1.02 QUALITY ASSURANCE

A. Furnish materials of quality required by the American Society for Testing and Materials (ASTM) standards or other approved standards and specifications.

B. Provide guarantee against defective materials and workmanship in accordance with the requirements of these specifications.

C. The contractor installing the finished protective liner will be a certified trained applicator of the specified process.

D. Provide verifiable independent third party creep test results documenting no less than 70% retention of flexural modulus of elasticity after 50 years of service. The third party testing firm may not be affiliated with the manufacturer in any way.

1.03 REFERENCES

American Society for Testing and Materials (ASTM) Annual Book of Standards:

A. ASTM D638: Test Method for Tensile Properties of Plastics.

B. ASTM D695: Test Method for Compressive Properties of Rigid Plastics.

C. ASTM D790: Test Methods for Flexural Properties of unreinforced and reinforced Plastics and Electrical Insulating Materials.

1.04 PROJECT/SITE CONDITIONS

Coordinate with the Construction Manager for traffic control during rehabilitation work at each designated location.

1.05 SEQUENCING

All required interruptions of flow through manholes, wet wells, pump stations or any other portion of the sanitary sewer collection system shall be coordinated with and approval received from the Facility Manager or Construction Manager prior to the interruption.

SECTION 2: PRODUCTS

2.01 MATERIALS

I. Infiltration Control mix:

A. Minor Infiltration - Cementitious Grout (De Neef Industrial Products)

1) A rapid-setting cementitious grout or chemical grout specifically formulated for leak control should be used to stop minor water infiltration. It should be mixed and applied according to the manufacturer's recommendations and should meet the following minimum requirements.

Compressive strength	ASTM C 109	1,800 psi @ ½ hr 4,000 psi @ 24 hrs 5,000 psi @ 7 days
Tensile strength	ASTM C 190	300 psi @ 7 days 350 psi @ 28 days

B. Very Active Infiltration - Chemical Grout (De Neef Industrial Chemicals)

1) A chemical grout must be used for stopping very active infiltration, filling voids and should be mixed and applied according to manufacturer’s recommendations. The cementitious grout should be volume stable having a minimum 1 day compressive strength of 50 psi and a 28 day compressive strength of 250 psi.

2) Chemical grouts can be used for stopping very active infiltration and should be mixed and applied per manufacturer’s recommendations.

II. Patching and Profiling Mix:

A. Cementitious Compound (Strong Seal or equivalent product)

A quick-setting cementitious material can be used to bring the substrate to profile by filling voids, cracks, missing mortar and other substrate defects. It should be mixed and applied according to the manufacturer's recommendations and should meet the following minimum requirements.

Compressive strength	ASTM C 109	1000 psi @ 1 hr 3500 psi @ 48 hrs 5000 psi @ 28 days
Tensile strength	ASTM C 307	200 psi @ 24 hrs 300 psi @ 7 days

III. Resin Based Liner:

A. The resin based material shall be used to form the sprayed on/structural enhanced monolithic liner covering all interior surfaces of the structure including benches and inverts of manholes. The finished liner shall conform to the minimum physical requirements listed below.

Compressive strength	ASTM D 695	10,500 psi
Tensile strength	ASTM D 638 ASTM D 412	7,000 psi 2,250 psi
Flexural Strength	ASTM D 790	12,000 psi
Flexibility (1/8" Mandrel)	ASTM D 522	Pass
Bond		Shall exceed tensile strength of substrate
Flexural modulus (initial)	ASTM D 790	735,000 psi
Density		87 pcf
Hardness (Shore D)	ASTM D2240	52

1. The finished structure shall be corrosion resistant to: Hydrogen Sulfide; 20% sulfuric Acid; 17% Nitric Acid; 5% Sodium Hydroxide; road salts for winter conditions as well as other common ingredients of the sanitary sewage environment.

2. The wall of the resin based liner will be structurally designed to withstand the hydraulic load generated by the groundwater table & restore structural integrity. The long term (50 yr.) value of the flexural modulus of elasticity will be a minimum of 500,000 psi and is an integral part of the engineering equation used to design the wall thickness of the structural liner.

For this reason, the value of the long term flexural modulus of the proposed product will be certified by an independent, third party testing lab and submitted with the design calculations for each individual structure.

Definition- Long term value will be identified as initial flexural modulus less the reduction in value caused by Creep over a fifty (50) year minimum period and verified by DMA testing.

B. Other Materials: Because of the advantages associated with rapid cure and infinite thickness capabilities, no resin based materials other than polyurethane shall be used to achieve the structural enhancement without prior approval of the Construction Manager.

SECTION 3: EXECUTION

3.01 INSPECTION

A. Evaluation of Atmosphere: Prior to entering structures, an evaluation of the atmosphere will be conducted to determine the presence of toxic, flammable vapors or possible lack of oxygen. The evaluation shall be in accordance with local, state or federal safety regulations.

3.02 PREPARATION

A. Place covers over all pipe openings to prevent extraneous material from entering the sewer system. All foreign material shall be removed from the structures' wall and bench/floor using a pressure water spray (minimum 2500 psi). The use of acid for cleaning purposes, no matter how dilute, will not be allowed. Loose or protruding brick, mortar and concrete shall be removed by using a mason's hammer and chisel. Fill any large voids with quick setting patch mix as described in Paragraph (2.01 IIA). The surface to be repaired must be clean and free of any loose materials.

B. Minor leaks shall be stopped using the quick-setting specially formulated infiltration control mix (paragraph 2.01 IA) and shall be mixed and applied per manufacturer's recommendations. When severe infiltration is present, drilling may be required in order to pressure grout outside the structure using either a cementitious or chemical grout (paragraph 2.01 IB). Manufacturer's recommendations shall be followed when pressure grouting is required.

3.03 INSTALLATION/APPLICATION

A. Application Temperatures: Application of liner shall not be made unless the ambient temperature inside the structure is 50° degrees or higher.

B. Bench/Invert Repair:

1. The manhole bench must be sprayed but depending on availability and future plans, some judgment consideration will have to be made regarding the invert. Important issue here is the necessity to insure a monolithic system is achieved.

2. After blocking flow through the structure and thorough cleaning/preparatory work has been achieved. The sprayed on resin-based liner shall be applied to the invert, bench and wall areas in the same manner as specified for the liner application below. The spray shall be applied such that the entire structure receives a structurally enhanced monolithic liner.

3. The finished invert surfaces shall be smooth, free of ridges and will be sloped in the direction of flow. Special care shall be used to insure a smooth transition between the new manhole invert and intersecting pipeline inverts such that flow will not be impaired.

C. Liner Application: The resin based liner shall be manually sprayed on to all surfaces by a trained technician who is experienced in the application of a spray applied resin and has been certified by the manufacturer. Appropriate personal protection equipment shall be utilized but in every case when applying the liner, the sprayer and personnel in direct contact with the spray atmosphere, will always be protected by supplied air.

The minimum thickness of the material applied is to be no less than 250 mils in order to support structural integrity. No other products such as cement or grouts may be used as part of the structural reinstatement, however, said products may be used as part of the repair process prior to sprayed application of the structure as specified in 2.01 IIA.

Application of the spray applied material must be completed in one (1) mobilization in order to minimize the disruption and cost of excessive bypassing, pipeline plugging, traffic control and all other support services.

The finished manhole must be returned to full service immediately after the spray application is complete.

D. Curing: The structure should be allowed to cure for 24 hours and return to ambient temperature prior to any physical testing, including vacuum testing.

3.04 FIELD QUALITY CONTROL

A. The following test/inspection will be performed by the Construction Manager.

B. Visually verify the absence of leaks from infiltration.

3.05 WARRANTY

A. All products are to be applied by trained and approved Certified Partners only and in strict accordance with the directions for usage and installation of the product. The contractor guarantees products to conform to the quality assurance procedures established by the manufacturer and its resin blending partners. Liability, if any, is limited to replacement of the product for a period of three (3) years from the date of application.

Signature and Proposal Pages

Signature Page
44th Street Water Main Replacement

To the Director of Public Service of the City of Canton:

The undersigned, having carefully examined the complete invitation to bid, herewith proposes to furnish all the labor and materials required to complete the **44th Street Water Main Replacement** in accordance with the specifications on file, including any and all work and materials that may be necessary to complete the project in a proper and workmanlike manner, and in accordance with the instructions in the bid packet and under the direction of and to the satisfaction of the Director of Public Service of said City.

The bidder hereby agrees that the Director of Public Service has the right to reject any and all bids and to accept the bid(s) deemed most beneficial to the City of Canton.

The bidder hereby certifies that the undersigned _____ is the only person interested in the bid and the bidder herewith certifies that no officer or employee of the City of Canton is in any manner interested therein.

The bidder herewith encloses a _____**(BID BOND, CERTIFIED/CASHIER'S CHECK)** in the sum of $ _____ dollars made payable to the CITY OF CANTON as a guaranty that if awarded the contract for the work included in the proposal, will enter into contract therefore, with sureties satisfactory to the Director of Public Service, within the prescribed time of ten (10) days from the date of service of notice of award, otherwise such bond or checks shall become the property of said City, as liquidated damages of the failure on the bidder's part to do said contract within the specified time.

The bidder acknowledges receipt of Addenda Numbers: _____.

SIGNATURE OF BIDDER: _____.

NOTE: If bidder is a corporation, set forth the legal name of the corporation, together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If bidder is a partnership, set forth the name of the firm, together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Proposal Page

We (I), the above signed hereby propose to furnish the following article(s) and/or service(s) at the price(s) and terms stated subject to all instructions, conditions, specifications, and all attachments hereto. We (I) have read all attachments including the specifications and fully understand what is required.

BID ITEM	ODOT ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE LABOR	UNIT PRICE MATERIAL	TOTAL UNIT PRICE	ITEM TOTAL
ROADWAY								
1	201	CLEARING AND GRUBBING	1	LUMP				
2	254	PAVEMENT PLANING, ASPHALT CONCRETE	19050	S.Y.				
3	301	6 " ASPHALT CONCRETE BASE, PG 64-22	828	C.Y.				
4	304	6 " AGGREGATE BASE	544	C.Y.				
5	407	TACK COAT AT 0.075 GAL/SY	1801	GAL				
6	441	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG70-22M	1003	C.Y.				
7	608	CURB RAMP, TYPE A1	1120	S.F.				
8	608	CURB RAMP, TYPE A2	50	S.F.				
9	609	CANTON TYPE 2 STANDARD COMBINED CONCRETE CURB AND GUTTER	466	L.F.				
10	609	CANTON TYPE 1 STANDARD CONCRETE CURB	75	L.F.				
11	611	CATCH BASIN, MISC.: CURB INLET CATCH BASIN SCD#1, AS PER PLAN	23	EACH				
12	611	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	20	EACH				
13	SPECIAL	MANHOLE SEALING WITH A PROTECTIVE POLYMER LINING	29	EACH				
14	611	12" CONDUIT, TYPE B	20	L.F.				
15	644	CENTER LINE	1.34	MILE				
16	644	CHANNELIZING LINE, 8"	408	FT				

BID ITEM	ODOT ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE LABOR	UNIT PRICE MATERIAL	TOTAL UNIT PRICE	ITEM TOTAL
17	644	STOP LINE	288	FT				
18	644	CROSSWALK LINE	1278	FT				
19	644	TRANSVERSE/DIAGONAL LINE, 8"	52	FT				
20	644	SCHOOL SYMBOL MARKING, 72"	2	EACH				
21	644	LANE ARROW	8	EACH				
22	644	WORD ON PAVEMENT, 72"	5	EACH				
23	653	4" TOPSOIL FURNISHED AND PLACED	1	LUMP				
24	659	SEEDING AND MULCHING	1	LUMP				
25	816	VIDEO DETECTION SYSTEM, AS PER PLAN	3	EACH				
WATER WORKS								
26	638	ABANDON VALVE	35	EACH				
27	638	FIRE HYDRANT AND GATE VALVE REMOVED, HYDRANT TEE PLUGGED	7	EACH				
28	638	1" WATER SERVICE, COMPLETE - LONG SIDE	10	EACH				
29	638	1" WATER SERVICE, COMPLETE - SHORT SIDE	45	EACH				
30	638	1 1/2" WATER SERVICE, COMPLETE - SHORT SIDE	1	EACH				
31	638	2" WATER SERVICE, COMPLETE - SHORT SIDE	1	EACH				
32	638	4" WATER MAIN DUCTILE IRON PIPE, CLASS 52	12	L.F.				
33	638	6" WATER MAIN DUCTILE IRON PIPE, CLASS 52	840	L.F.				
34	638	8" WATER MAIN DUCTILE IRON PIPE, CLASS 52	6675	L.F.				
35	638	12" WATER MAIN DUCTILE IRON PIPE, CLASS 53	720	L.F.				
36	638	24" WATER MAIN DUCTILE IRON PIPE, CLASS 54	6	L.F.				

BID ITEM	ODOT ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE LABOR	UNIT PRICE MATERIAL	TOTAL UNIT PRICE	ITEM TOTAL
37	638	4 INCH GATE VALVE AND VALVE BOX, COMPLETE	1	EACH				
38	638	4 INCH 45 DEGREE BEND	2	EACH				
39	638	4 INCH PLUG	1	EACH				
40	638	4 INCH CUT-IN SLEEVE	2	EACH				
41	638	6 INCH GATE VALVE AND VALVE BOX, COMPLETE	8	EACH				
42	638	6 INCH 45 DEGREE BEND	16	EACH				
43	638	6 INCH 11.25 DEGREE BEND	2	EACH				
44	638	6 INCH PLUG	8	EACH				
45	638	6 INCH X 6 INCH TEE	2	EACH				
46	638	6 INCH x 6 INCH x 4 INCH TEE	1	EACH				
47	638	6 INCH CUT IN SLEEVE	5	EACH				
48	638	HYDRANT ASSEMBLY	15	EACH				
49	638	8 INCH GATE VALVE AND VALVE BOX, COMPLETE	25	EACH				
50	638	8 INCH 45 DEGREE BEND	45	EACH				
51	638	8 INCH 22.5 DEGREE BEND	1	EACH				
52	638	8 INCH CUT IN SLEEVE	6	EACH				
53	638	8 INCH PLUG	13	EACH				
54	638	8 INCH x 8 INCH x 4 INCH TEE	1	EACH				
55	638	8 INCH x 8 INCH x 6 INCH TEE	4	EACH				
56	638	8 INCH x 8 INCH x 8 INCH TEE	8	EACH				
57	638	8 INCH x 8 INCH CROSS	2	EACH				

BID ITEM	ODOT ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE LABOR	UNIT PRICE MATERIAL	TOTAL UNIT PRICE	ITEM TOTAL
58	638	12 INCH GATE VALVE AND VALVE BOX, COMPLETE	6	EACH				
59	638	12 INCH 45 DEGREE BEND	16	EACH				
60	638	12 INCH PLUG	3	EACH				
61	638	12 INCH CUT IN SLEEVE	2	EACH				
62	638	12 INCH x 12 INCH x 12 INCH TEE	1	EACH				
63	638	12 INCH x 12 INCH CROSS	1	EACH				
64	638	12 INCH x 8 INCH REDUCER	1	EACH				
65	638	12 INCH x 6 INCH REDUCER	2	EACH				
66	638	24 INCH x 12 INCH CROSS	1	EACH				
INCIDENTALS								
67	614	MAINTAINING TRAFFIC	1	LUMP				
68	623	CONSTRUCTION LAYOUT STAKES AND SURVEYING	1	LUMP				
69	624	MOBILIZATION	1	LUMP				
70	832	EROSION CONTROL, COMPLETE	1	LUMP				
TOTAL BASE BID =								

Total Base Bid Price in Figures _____

Total Base Bid Price in Words _____

Base Bid Prices are for Informational Purposes Only.
Total Unit Prices will govern.