



TRANSPORTATION CABINET

Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

October 15, 2015

CALL NO. 301
CONTRACT ID NO. 151066
ADDENDUM # 1

Subject: Campbell County, FD04 SPP 019 0009 NEW ALIGN
Letting October 23, 2015

- (1) Revised - Plan Sheet - U1, U04, U04p, & U10q
- (2) Replaced - Utility Notes - Pages 22-25(a) of 249
- (3) Added - Notes - Pages 1-32 of 32
- (4) Revised - Bid Items - Pages 244-249(a) of 249

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

Plan revisions are available at <http://www.lynnimaging.com/kytransportation/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in cursive script that reads "Rachel Mills".

Rachel Mills, P.E.
Director
Division of Construction Procurement

RM:ks
Enclosures



An Equal Opportunity Employer M/F/D

TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS

CAMPBELL COUNTY

KY 9

SANITARY SEWER UTILITIES

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
U01	TITLE SHEET
U02	GENERAL NOTES
U03	INDEX SHEET
U04	PLAN SHEET STA. 0+00 TO STA. 3+79
U04P	PROFILE SHEET STA. 0+00 TO STA. 3+79
U05	PLAN SHEET STA. 5+00 TO STA. 7+87
U05P	PROFILE SHEET STA. 5+00 TO STA. 7+87
U06	PLAN & PROFILE SHEET STA. 10+00 TO STA. 12+54
U07	PLAN & PROFILE SHEET STA. 15+00 TO STA. 17+72
U08	PLAN & PROFILE SHEET STA. 20+00 TO STA. 26+18
U09	PLAN SHEET STA. 30+00 TO STA. 35+00
U10	PLAN SHEET STA. 35+00 TO STA. 38+40
U10P	PROFILE SHEET STA. 30+00 TO STA. 35+00
U10Q	PROFILE SHEET STA. 35+00 TO STA. 38+40
U11	PLAN SHEET STA. 40+00 TO STA. 45+92
U11P	PROFILE SHEET STA. 40+00 TO STA. 45+92
U12	PLAN & PROFILE SHEET STA. 50+00 TO STA. 56+48
U13	PLAN SHEET

SPECIAL NOTES

SPECIAL PROVISIONS

STANDARD DRAWINGS

SPECIFICATIONS

SANITATION DISTRICT #1 STANDARD SPECIFICATIONS AND DRAWINGS

REVISION	DATE
DESIGNED BY:	CHECKED BY:
DATE:	
DETAILED BY:	

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

PROJECT NUMBER

FD04 SPP 019 0009 NEW ALIGNMENT

SANITARY SEWER SUMMARY

ITEM CODE	ITEM	UNIT	QUANTITY	COMMENTS
15004	S CIPP LINER 10 INCH	LF	105	
15005	S CIPP LINER 12 INCH	LF	291	
15125	S CIPP LINER 18 INCH	LF	761	
15007	S CIPP LINER 24 INCH	LF	434	
15128	S CIPP LINER 30 INCH	LF	267	
15129	S CIPP LINER 36 INCH	LF	272	
15130	S CIPP LINER 42 INCH	LF	289	
15094	S MANHOLE ADJUST TO GRADE (DETAIL A)*	EA	7	
15094	S MANHOLE ADJUST TO GRADE (DETAIL B)*	EA	7	
15093	S MANHOLE ABANDON/REMOVE	EA	24	
15105	S PIPE DUCTILE IRON 10 INCH	LF	144	
15092	S MANHOLE	EA	1	
15102	S MANHOLE WITH LINING	EA	13	
15097	S MANHOLE RECONSTRUCT INVERT	EA	1	
15111	S PIPE POINT REPAIR	EA	10	
02690	SAFEOLOADING	CUYD	172	

*THE CONTRACTOR IS ADVISED THAT THE QUANTITIES FOR EACH TYPE OF "MANHOLE ADJUST TO GRADE" ARE FOR INFORMATION ONLY. RIM GRADE ELEVATION DIFFERENCES SHALL BE VERIFIED IN THE FIELD.

FILE NAME: P:\225210\T\WORKING\JAMES BINTA\COMBINE_SEWER\2252101TU01_CS.DGN

USER: mlgmk
DATE PLOTTED: October 14, 2015

E-SHEET NAME: U00100LS

MicroStation v8.11.7.443

TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS

CAMPBELL COUNTY

KY 9

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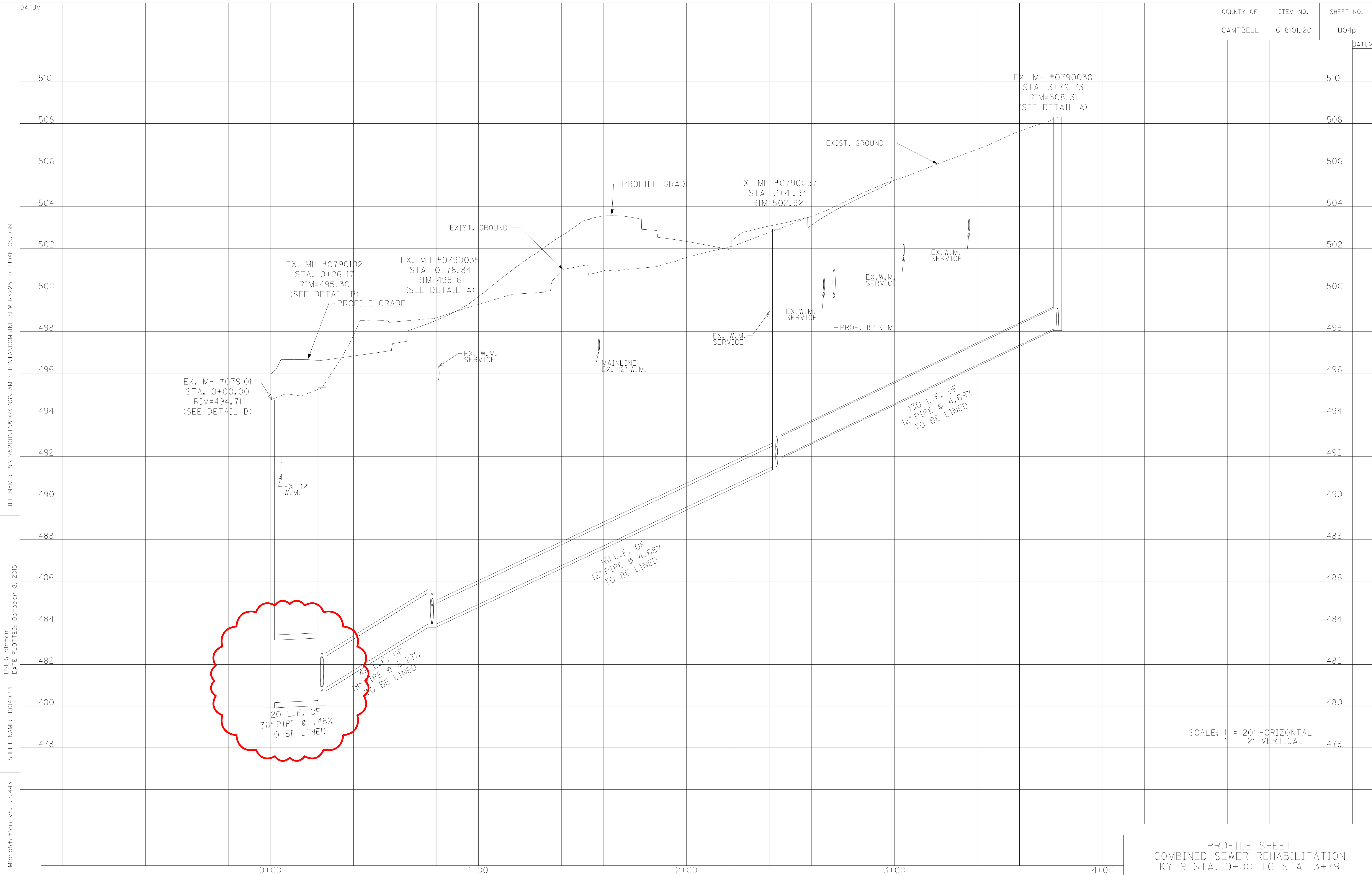
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FILE NAME: P:\225210\T\WORKING\JAMES BINTA\COMBINE_SEWER\2252101TU01_CS.DGN

USER: mlgmk
DATE PLOTTED: October 14, 2015

E-SHEET NAME: U00100LS

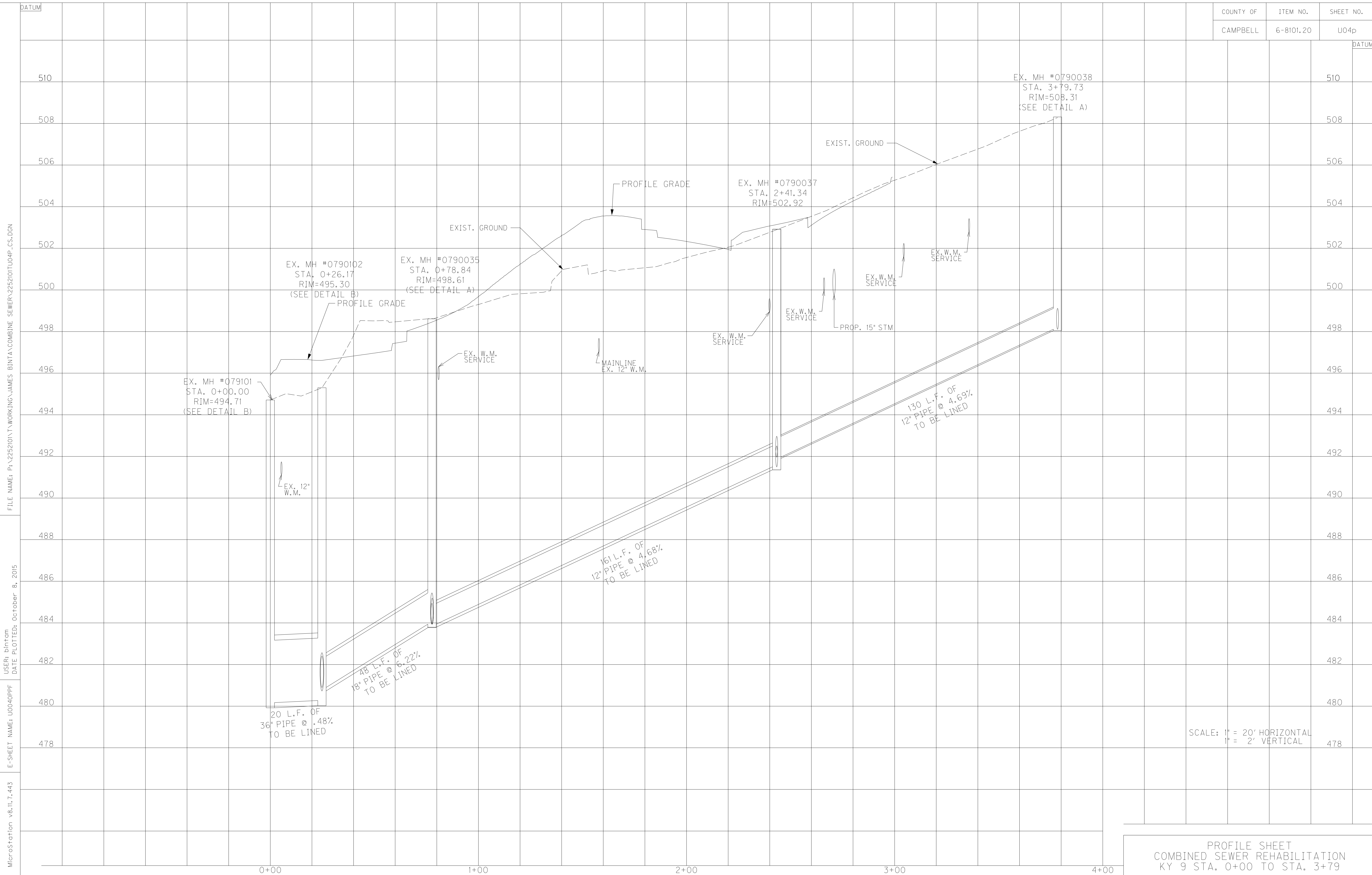
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 USER: bintom
 DATE PLOTTED: October 8, 2015
 E-SHEET NAME: U0040PPF
 MicroStation v8.11.7.443

SCALE: 1" = 20' HORIZONTAL
 1" = 2' VERTICAL

PROFILE SHEET
 COMBINED SEWER REHABILITATION
 KY 9 STA. 0+00 TO STA. 3+79

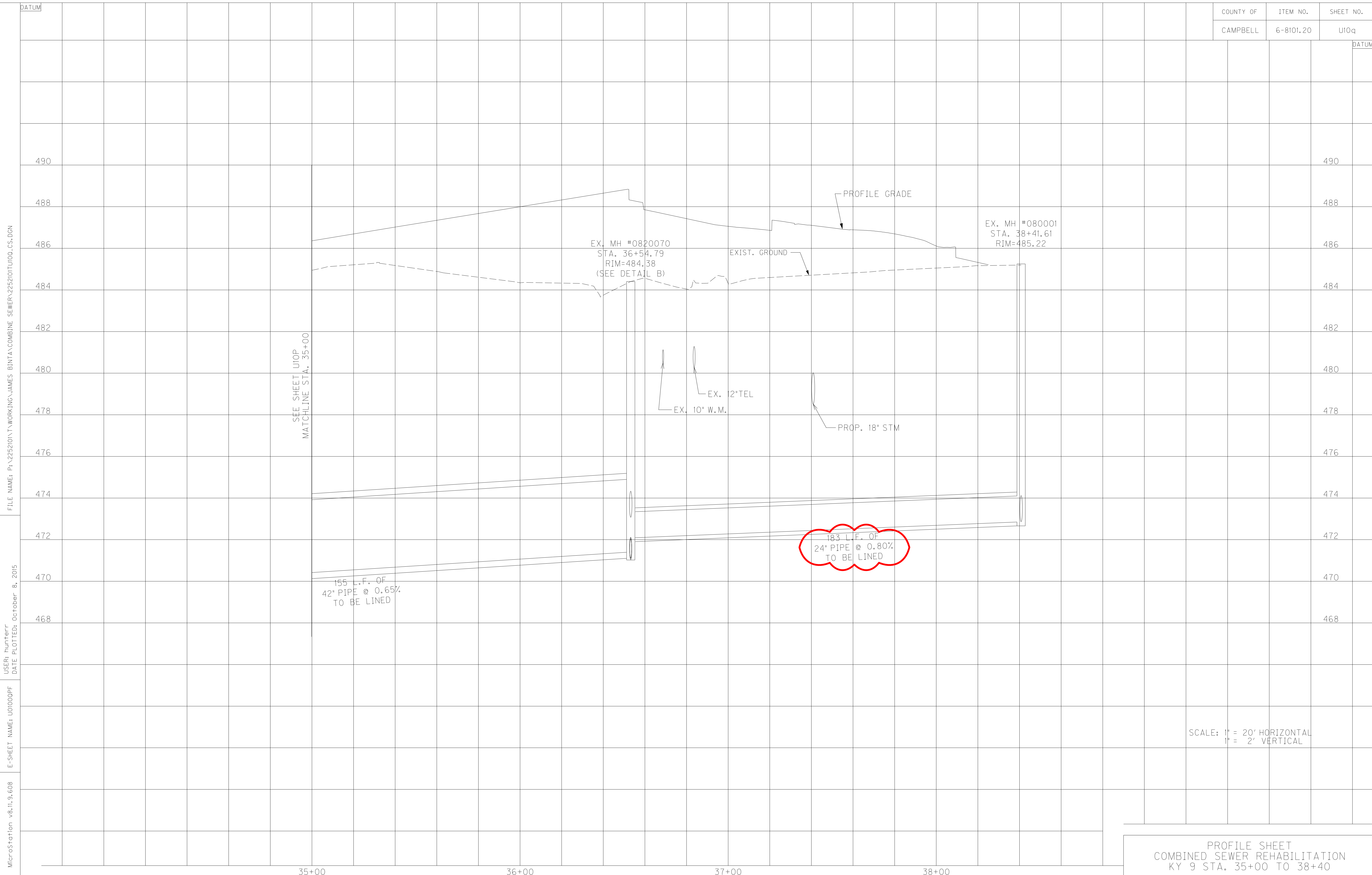


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SCALE: 1" = 20' HORIZONTAL
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PROFILE SHEET
 COMBINED SEWER REHABILITATION
 KY 9 STA. 0+00 TO STA. 3+79

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-8101.20	UI0q



FILE NAME: P:\225210\T\WORKING\JAMES BINTA\COMBINE SEWER\225210TUI00_CS.DGN

USER: hunter
DATE PLOTTED: October 8, 2015

E-SHEET NAME: UI0000PF

MicroStation v8.11.9.608

SEE SHEET UI0P
MATCHLINE STA. 35+00

155 L.F. OF
42" PIPE @ 0.65%
TO BE LINED

EX. MH #0820070
STA. 36+54.79
RIM=484.38
(SEE DETAIL B)

EXIST. GROUND

PROFILE GRADE

EX. MH #080001
STA. 38+41.61
RIM=485.22

EX. 10" W.M.
EX. 12" TEL

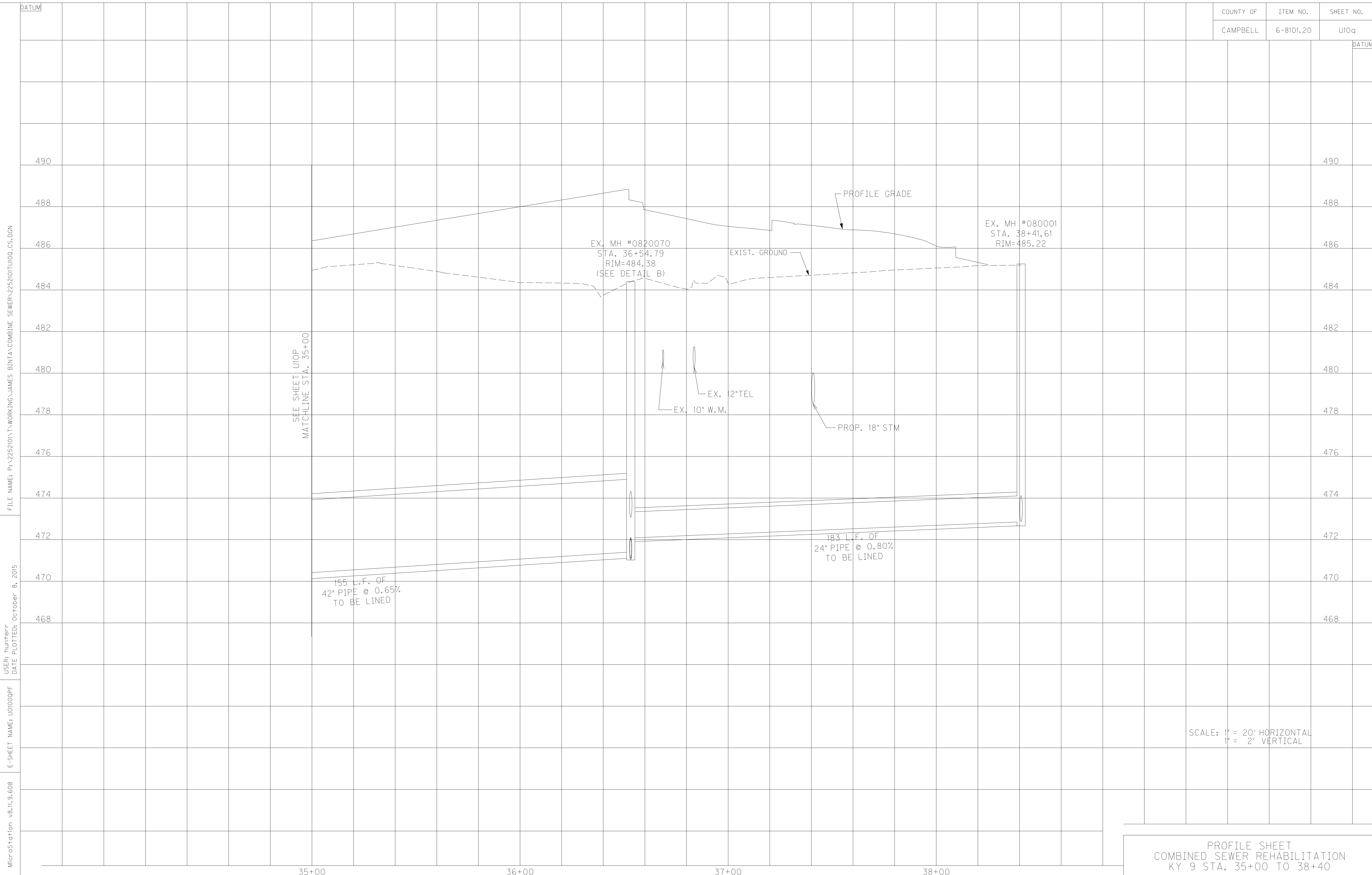
PROP. 18" STM

183 L.F. OF
24" PIPE @ 0.80%
TO BE LINED

SCALE: 1" = 20' HORIZONTAL
1" = 2' VERTICAL

PROFILE SHEET
COMBINED SEWER REHABILITATION
KY 9 STA. 35+00 TO 38+40

COUNTY OF	ITEM NO.	SHEET NO.
CAMPBELL	6-8101.20	U10q



FILE NAME: P:\225210\T\WORKING\JAMES BINTA\COMBINE SEWER\225210T\U10Q.CS.DGN

USER: hunter
DATE PLOTTED: October 8, 2015

E-SHEET NAME: U01000PF

MicroStation v8.11.9.608

SEE SHEET U10P
MATCHLINE STA. 35+00

155 L.F. OF
42" PIPE @ 0.65%
TO BE LINED

EX. MH #0820070
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RIM=484.38
(SEE DETAIL B)

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PROFILE SHEET
COMBINED SEWER REHABILITATION
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GENERAL UTILITY NOTES AND INSTRUCTIONS APPLICABLE TO ALL UTILITY WORK MADE A PART OF THE ROAD CONSTRUCTION CONTRACT

The contractor should be aware the following utility notes and Standard KYTC Utility Bid Item Descriptions shall supersede, replace and take precedence over any and all conflicting information that may be contained in utility owner supplied specifications contained in the contract, on plans supplied by the utility owner, or any utility owner specifications or information externally referenced in this contract.

Where information may have been omitted from these notes, bid item descriptions, utility owner supplied specifications or plans; the KYTC Standard Specifications for Road and Bridge Construction shall be referenced.

PROTECTION OF EXISTING UTILITIES

The existing utilities shown on the plans are shown as best known at the time the plans were developed and are to be used as a guide only by the Contractor. The Contractor shall use all means at his disposal to accurately locate all existing utilities, whether shown on the plans or not, prior to excavation. The contractor shall protect these utilities during construction. Any damage to existing utilities during construction that are shown or not shown on the plans shall be repaired at the Contractor's expense.

PREQUALIFIED UTILITY CONTRACTORS

Some utility owners may require contractors that perform relocation work on their respective facilities as a part of the road contract be prequalified or preapproved by the utility owner. Those utility owners with a prequalification or preapproval requirement are as follows:

Duke Energy Gas Pre-qualified Gas Contractor Phone Numbers

AMS Construction – 10670 Loveland Madeira Rd., Loveland, OH 45140
Phone- 513-794-0410 Fax: 513-794-0414
Contact: Dale Franklin, Cell Phone - 513-276-032 dale@amsdigs.com

RLA Investments – 603 Sheperd Lane, Cincinnati, Ohio 45215

Office: 513-554-1469

Fax: 513-554-1221

Contact: Scott Moody, Cell Phone – 513-623-4258, rlainvestment@fuse.net

KS Energy Co – 755 US-50, Milford, OH 45150

Office: 513-271-5616

Contact: John Reichenberger, Cell Phone – 513-623-4258, jreichenberger@ksenergyservices.com

Premier Energy Services - 7383 Dixie Hwy, Fairfield, OH 45014

Office: 513-889-4575

Contact: Ron Barton, Cell Phone – 513-333-8484, rbarton@premierenergyservices.com

The bidding contractor needs to review the above list. Only contractors shown to be prequalified or preapproved by the utility owner on the above list(s) will be allowed to work on that utility as a part of this contract.

Any utility contractor that is not listed as prequalified or preapproved by the utility owner when the project is advertised for bid and wishes to be added must make request through the KYTC Contract Procurement website. The request should be made at least one week prior to the bidding deadline to allow for review and posting on the KYTC Contract Procurement website. A contractor is only considered prequalified or preapproved by the utility owner when published on the KYTC Contract Procurement website. Contractors that contact the utility owner directly for preapproval or prequalification without contacting KYTC will not be considered for preapproval or prequalification for this contract. Contractors that are not prequalified or preapproved by the utility owner through KYTC before the bidding deadline will not be considered for prequalification or preapproval after bidding.

CONTRACT ADMINISTRATION RELATIVE TO UTILITY WORK

All utility work is being performed as a part of a contract administered by KYTC; there is not a direct contract between the utility contractor and utility owner. The KYTC Section Engineer is ultimately responsible for the administration of the road contract and any utility work included in the contract.

SUBMITTALS AND CORRESPONDENCE

All submittals and correspondence of any kind relative to utility work included in the road contract shall be directed to the KYTC Section Engineer, a copy of which may also be supplied to the utility owner by the contractor to expedite handling of items like material approvals and shop drawings. All approvals and correspondence generated by the utility owner shall be directed to the KYTC Section Engineer. The KYTC Section Engineer will relay any approvals or correspondence to the utility contractor as appropriate. At no time shall any direct communication between the utility owner and utility contractor without the communication flowing through the KYTC Section Engineer be considered official and binding under the contract.

ENGINEER

Where the word “Engineer” appears in any utility owner specifications included in this proposal, utility owner specifications included as a part of this contract by reference or on the utility relocation plans, it shall be understood the “Engineer” is the Kentucky Transportation Cabinet (KYTC) Section Engineer or designated representative and the utility owner engineer or designated representative jointly. Both engineers must mutually agree upon all decisions made with regard to the utility construction. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

INSPECTOR OR RESIDENT PROJECT REPRESENTATIVE

Where the word “Inspector” or “Resident Project Representative” appears in the utility specifications included in this proposal, utility owner specifications included as a part of this contract by reference or on the utility relocation plans, it shall be understood the “Inspector” or “Resident Project Representative” is the utility owner inspector and KYTC inspector jointly. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

NOTICE TO UTILITY OWNERS OF THE START OF WORK

One month before construction is to start on a utility, the utility contractor shall make notice to the KYTC Section Engineer and the utility owner of when work on a utility is anticipated to start. The utility contractor shall again make confirmation notice to the KYTC Section Engineer and the utility owner one week before utility work is to actually start.

UTILITY SHUTDOWNS

The Contractor shall not shut down any active and in-service mains, utility lines or services for any reason unless specifically given permission to do so by the utility owner. The opening and closing of valves and operating of other active utility facilities for main, utility line or utility service shut downs are to be performed by the utility owner unless specific permission is given to the contractor by the owner to make shutdowns. If and when the utility owner gives the contractor permission to shutdown mains, utility lines or utility services, the contractor shall do so following the rules, procedures and regulations of the utility owner. Any permission given by the utility owner to the contractor to shutdown active and in-service mains, utility lines or services shall be communicated to the KYTC Section Engineer by the utility owner that such permission has been given.

Notice to customers of utility shut downs is sometimes required to be performed by the utility contractor. The contractor may be required; but, is not limited to, making notice to utility customers in a certain minimum amount of time in advance of the shut down and by whatever means of communication specified by the utility owner. The means of communication to the customer may be; but is not limited to, a door hanger, notice by newspaper ad, telephone contact or any combination of communication methods deemed necessary, customary and appropriate by the utility owner. The contractor should refer to the utility owner specifications for requirements on customer notice.

Any procedure the utility owner may require the contractor to perform by specification or plan note and any expense the contractor may incur to comply with the utility owner's shut down procedure and notice to customers shall be considered an incidental expense to the utility construction.

STATIONS AND DISTANCES

All stations and distances, when indicated for utility placement in utility relocation plans or specifications, are approximate; therefore, some minor adjustment may have to be made during construction to fit actual field conditions. Any changes in excess of 6 inches of plan location shall be reviewed and approved jointly by the KYTC Section Engineer or designated representative and utility owner engineer or designated representative. Changes in location without prior approval shall be remedied by the contractor at his own expense if the unauthorized change creates an unacceptable conflict or condition.

RESTORATION

Temporary and permanent restoration of paved or stone areas due to utility construction shall be considered incidental to the utility work. No separate payment will be made for this work. Temporary restoration shall be as directed by the KYTC Section Engineer. Permanent restoration shall be "in-kind" as existing.

Restoration of seed and sod areas will be measured and paid under the appropriate seeding and sodding bid items established in the contract for roadway work.

BELOW ARE NOTES FOR WHEN "INST" ITEMS ARE IN THE CONTRACT MEANING THE UTILITY COMPANY IS PROVIDING CERTAIN MATERIALS FOR UTILITY RELOCATION

MATERIAL

Contrary to Standard Utility Bid Item Descriptions, those bid items that have the text "**Inst**" at the end of the bid item will have the major components of the bid item provided by the utility owner. No direct payment will be made for the major material component(s) supplied by the utility company. All remaining materials required to construct the bid item as detailed in utility bid item descriptions, in utility specifications and utility plans that are made a part of this contract will be supplied by the contractor. The contractor's bid price should reflect the difference in cost due to the provided materials.

The following utility owners have elected to provide the following materials for work under this contract:

Duke Energy Gas Supplied Materials

Duke Energy will provide all:

- Steel and polyethylene pipe,
- Steel and polyethylene pipe fittings, flanges, adapters, couplings, etc.

- Valves and valve assemblies,
- Regulators,
- Regulator vaults or enclosures,
- Cathodic protection material,
- Other associated gas pipe materials required for the replacement work.

SECURITY OF SUPPLIED MATERIALS

If any utility materials are to be supplied by the utility owner, it will be the responsibility of the utility contractor to secure all utility owner supplied materials after delivery to the project site. The utility contractor shall coordinate directly with the utility owner and their suppliers for delivery and security of the supplied materials. Any materials supplied by the utility owner and delivered to the construction site that are subsequently stolen, damaged or vandalized and deemed unusable shall be replaced with like materials at the contractor's expense.

SPECIAL NOTE

For Tree Removal

**CAMPBELL COUNTY
KY 9 New Route
Item No. 6-8101.2**

NO CLEARING OF TREES \geq 3" DIAMETER (BREAST HEIGHT) FROM June 1 –
July 31.

**If there are any questions regarding this note, please contact David Waldner,
Director, Division of Environmental Analysis, 200 Mero Street, Frankfort, KY
40601, Phone: (502) 564-7250.**

Gravity Sewer Pipe Rehabilitation by Cured-In-Place Pipe Method Sanitation District No.1 of Northern Kentucky

Part 1 General

1.1 Description of Work

Furnish all labor, material and equipment to provide for the reconstruction of existing sewer pipes using an approved Cured-In-Place Pipe (CIPP) method by forming a new pipe within an existing pipe, which has generally maintained its original shape. This Specification covers the general requirements for the referenced specifications, CIPP manufacturer and installer qualifications, submittal and guaranty guidelines, materials, installation and testing procedures.

1.2 General

Supply all products and perform all work in accordance with applicable American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), or other recognized standards. Latest revisions of all standards are applicable. Where discrepancies exist between this specification and referenced product/process standards, this specification shall govern.

1.3 Intent

It is the intent of this specification to provide for the reconstruction of existing sewers by the CIPP method in pipes which have generally maintained their original shape. The CIPP shall provide flow capacity not less than 100% of the original pipe's flow capacity when new. The process is defined as the reconstruction of sewer lines by the installation of a thermosetting resin-impregnated flexible felt-fiber tube coated on one side with an impermeable plastic which is installed into the existing sewer utilizing a hydrostatic head, or air pressure. Curing is accomplished by circulating hot water or the introduction of controlled steam throughout the length of the inverted tube to cure the resin into a hard, impermeable pipe with the plastic coating on the interior surface of the newly formed pipe. The CIPP shall extend the full length of the original pipe segment and shall provide a structurally sound, joint-less, close fitting and corrosion resistant cured-in-place pipe.

1.4 Objective

The primary objective of this section is to rehabilitate those sewers on which failure could be very disruptive and hazardous to public health and, to restore structural integrity to sewers which would be very expensive to repair after failure. The secondary objective of this scope is to reduce the excessive infiltration and inflow of extraneous water into selected sewer segments thereby reducing sewer overflows and the unnecessary treatment and transport costs associated with inflow/infiltration. It is critical that both the Product and the Installer have the ability to meet or exceed all requirements of the Owner.

Part 2 Contractor's General Responsibilities

2.1 Supervision

1. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of SD1 in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

2. At all times during the progress of the Work, Contractor shall assign a competent foreman or crew leader. The foreman or crew leader will be Contractor's representative at any work site and shall have authority to act on behalf of Contractor. All communications given to or received from the competent foreman or crew leader shall be binding on Contractor.

2.2 Labor

1. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform services as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site and represent SD1 in the most professional manner.

2.3 Services, Materials, and Equipment General Requirements

1. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, coordination, permits, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance and completion of the Work.

2. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of SD1. If required by SD1, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

3. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

4. The contractor shall protect, store, and handle the materials during transportation, while on-site and during installation in accordance with manufacturer's recommendations to ensure that they are not damaged.

5. If any materials become damaged before or during installation, they shall be replaced at the contractor's expense before proceeding further.

2.4 Subcontractors, Suppliers, and Others General Requirements

1. Contractor shall be fully responsible to SD1 for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.

2. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, supplier, or other individual or entity any contractual relationship between SD1 and any such Subcontractor, supplier or other individual or entity. Nor does anything in the Contract Documents create any obligation on the part of SD1 to pay or to see to the payment of any moneys due any such Subcontractor, supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

3. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

4. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with SD1 through Contractor.

5. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of SD1. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against SD1 and all other individuals or entities identified to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and Subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

2.5 Patent Fees and Royalties General Requirements

1. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of SD1 its use is subject

to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by SD1 in the Contract Documents.

2. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless SD1, and the officers, directors, partners, employees, agents, consultants and Subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

2.6 Permits General Requirements

Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. SD1 shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges, permits, and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. SD1 shall pay all charges of utility owners for connections for providing permanent service to the Work.

2.7 Laws and Regulations General Requirements

1. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, SD1 shall not be responsible for monitoring Contractor's compliance with any Laws or Regulations.

2. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work.

3. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price.

2.8 Taxes General Requirements

Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

2.9 Related Work at Site

1. SD1 may perform other work related to the Project at the Site with SD1’s employees or via other direct contracts therefore, or have other work performed by utility owners. Notice will be given to Contractor prior to starting any such other work.

2. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and SD1, if SD1 is performing other work with SD1’s employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of SD1 and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between SD1 and such utility owners and other contractors.

3. If the proper execution or results of any part of Contractor’s Work depends upon work performed by others under this Section, Contractor shall inspect such other work and promptly report to SD1 in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor’s Work. Contractor’s failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor’s Work except for latent defects and deficiencies in such other work.

Part 3 General Requirements of CIPP

The finished pipe must be such that when the thermosetting resin cures, the total wall thickness will be a homogeneous, monolithic felt and resin composite matrix that will be chemically resistant to withstand internal exposure to domestic sewage. When cured, the CIPP must form a mechanical bond with the host pipe.

3.1 Reference Specifications

Installation and material tests of cured-in-place pipe (CIPP) must meet the minimum requirements demonstrated in the latest revisions of the following ASTM standards:

Test Method of Flexural Properties of Plastics

ASTM F-1216 Standard Practice for the installation of
Cured-In-Place Pipe by Inversion Lining

ASTM D-790 **Standard Polyester Resin**
Flexural Strength 4,500 psi

Flexural Modulus 250,000 psi

Enhanced Polyester Resin

Flexural Strength 4,500 psi

Flexural Modulus 400,000 psi

Any approved process shall strictly adhere to this specification with regard to all standards and requirements. Where discrepancies exist, or any latitude is either inferred or interpreted between this specification and ASTM product and process standards, THIS SPECIFICATION SHALL GOVERN.

3.2 Submittals

1. The Contractor shall furnish three (3) copies of the design calculations establishing the structural capabilities, chemical composition, thickness, curing temperature and period, assumptions, and other mechanical properties of the liner system proposed.
2. The Contractor shall furnish three (3) copies of the manufacturer's brochures giving a complete description of the product proposed, its physical and chemical composition, the same for the thermosetting resin or epoxy hardener, the recommended range of curing temperature, period of cure, cool-down procedures and method of installation.
3. Sampling procedures for obtaining representative restrained or plate (for diameters 15-inch and larger), samples of the finished liner.

Part 4 Materials

4.1 Cured-In-Place-Pipe

1. The CIPP material shall be fabricated from materials which, when cured, will be suitable for the environment intended, i.e., resistant to withstand exposure to sewage gases containing normal levels for domestic sewage of hydrogen sulfide, carbon monoxide, carbon dioxide, methane, traces of mercaptan, kerosene, saturation with moisture, dilute sulfuric acid, external exposure to soil bacteria, and any chemical attack which may be due to materials in the surrounding ground. The final product must not deteriorate, corrode, or lose structural strength in any manner that will preclude meeting the expected design life.
2. The structural performance of the inverted cured-in-place pipe must be adequate to accommodate all internal and external loads (live and dead) over its service life. The CIPP liner shall be designed considering the host pipe is fully deteriorated, a prism loading, a soil loading of 120 pcf, a 2.0 factor of safety, a 2-percent ovality, a 5-percent maximum deflection, a 1,000 psi modulus of soil reaction, a 4,500 psi flexural strength, a 3,000 psi tensile strength, a lining enhancement factor (K) of 7 maximum, H-20 live loads where applicable, 50-percent long-term modulus reduction factor and a hydrostatic load beginning at the surface.

4.2 Acceptable Resin Classes

1. The resin class for CIPP installed under this contract shall be either a Standard Polyester or Enhanced Polyester unless otherwise directed by the Sanitation District due to site-specific field conditions and/or design requirements.

4.3 Standard Polyester Resins

1. The resin used shall be high-grade corrosion resistant isophthalic polyester specifically designed for the CIPP being installed. Only premium, non-recycled resin shall be used. The acceptable resin, (Reichhold PolyLite® 33420 or approved equal) shall have been tested according to ASTM D2990, D5813, and F1216 by accredited, third-party testing facilities. Results of these tests shall be made available to the Sanitation District upon request. **Proper certification shall be submitted with the Contractor's bid. Failure to provide this documentation may be grounds for disqualification.**

2. The resin must be manufactured under ISO 9002 certified procedures. The resin vendor must be able to reference the corrosion scale with the resin itself having a heat deflection temperature greater than 212 degrees Fahrenheit. Only PREMIUM, NON-RECYCLED resins will be accepted. PET resins or those containing enhancement additives and/or fillers will not be accepted.

4.4 Enhanced Polyester Resins

1. The resin used shall be a corrosion resistant enhanced thixotropic, medium reactivity, high viscosity, and rigid, chemical resistant isophthalic resin. These resins contain a mineral filler to enhance mechanical properties and are specifically formulated for use in the cured-in-place pipe (CIPP) industry. **Proper certification shall be submitted with the Contractor's bid. Failure to provide this documentation may be grounds for disqualification.**

2. The acceptable resin, (Reichhold PolyLite® 33420-E or approved equal) shall have been tested according to ASTM D2990, D 5813 and F1216 by accredited third party testing facilities. Results of these tests shall be made available to the Sanitation District upon request.

3. The resin must be manufactured under ISO 9002 certified procedures. The resin vendor must be able to reference the corrosion scale with the resin itself having a heat deflection temperature greater than 224 degrees Fahrenheit. Only PREMIUM, NON-RECYCLED resins will be accepted.

4. The resin shall be shipped directly from the resin manufacturer's facility to the CIPP wet-out facility. The resin shall not be sent to any intermediate mixing facility. Copies of the shipping documents from the resin manufacturer shall be submitted to the Sanitation District indicating dates of shipment, originating and receiving locations

4.5 Quality Assurance

1. In order that the Owner is assured that the specified resin class is used for the duration of the Contract, the following provisions are made part of this specification:

2. The Contractor shall designate a wet-out facility and shall provide wetout liner tubes from this designated facility only. Multiple facilities to supply wet-out liner tubes for the duration of this contract may not be used without prior approval of the Engineer.
3. The Contractor shall place a sampling valve in-line at a point in the resin/catalyst mixing stage so that a sample of non-catalyzed resin may be taken. A second sampling valve shall be placed in-line at a point after the resin/catalyst mixing stage, but prior to catalyzed resin injection into the liner so that a resin sample may be taken. Both sampling valves shall be left in place for the duration of the Contract.
4. The Owner/Engineer shall have the right to inspect the designated wetout facility and draw samples from one or both sampling valves without prior notice to the Contractor for the duration of the Contract.
5. To further assure usage of a specified resin class, the Owner reserves the right to subject resin samples to an infrared analysis (IR Scan). This standard analytical test involves shining a beam of light in the infrared frequency region through a thin sample of subject resin. The frequency of light is then varied across the infrared spectrum. Chemical functional groups present in the resin being analyzed will absorb infrared light at specific frequencies and with characteristic absorption intensities. A spectrum created from the measurement of light transmitted through the sample across the range of infrared frequencies shall be used to determine the resin's chemical fingerprint. An overlaid IR spectrum of the "Acceptable Resin" by class (see sections 4.2, 4.3 and 4.4 of this specification), shall be used as a baseline comparison for the purpose of a resin class test.
6. The Owner/Engineer may perform random Infrared Scans (IR Scans) and/or Composite Burn-offs to insure resin quality and consistency throughout the duration of the Contract and shall be responsible for the cost of IR testing.

4.6 Catalyst Systems

1. The exact mixture ratio of resin and catalyst shall also be submitted. The catalyst system shall be identified by product name. The resin/catalyst ratio shall be approved by the resin manufacturer in writing. The catalyst system shall be made up of a primary catalyst and a secondary catalyst. The primary catalyst shall be Akzo Perkadox 16 or approved equal and shall be added at a maximum of 1% of the resin volume by weight unless otherwise approved by the Engineer. The secondary catalyst shall be Akzo Trigonox or approved equal and shall be added at a maximum of 0.05% of the resin volume by weight unless otherwise approved by the Engineer.
2. "Quick-Cure" or accelerated resin systems including those formulated by substantially increasing the amount of catalysts from that specified above, will not be allowed. Resins, catalysts and resin/catalyst mix ratios shall not be changed or altered during this Contract unless specifically approved by the Engineer in writing.
3. Cure schedules for the CIPP shall be submitted to the Engineer for review. The proposed curing schedules/process shall be approved by the resin manufacturer in writing. Cure schedules

shall include specific information on “step curing” procedures, “cooking times”, duration and “cool down” procedures – all to be approved by the resin manufacturer in writing.

4. The resin shall be shipped directly from the resin manufacturer’s facility to the CIPP wet-out facility. The resin shall not be sent to any intermediate mixing facility. Copies of the shipping documents from the resin manufacturer shall be submitted to the Engineer indicating dates of shipment, originating and receiving locations.

5. The Contractor shall submit a Certificate of Authenticity from the resin manufacturer for each shipment to the wet-out facility to include the date of manufacture and Heat Distortion Temperature. This information shall be submitted before the manufacture or installation of any CIPP.

4.7 Liner Tube

1. The tube shall consist of one or more layers of absorbent non-woven felt fabric and meet the requirements of ASTM F1216. In the event of a discrepancy between the referenced ASTM requirement and this specification, this specification will govern.

2. The tube shall be constructed to withstand installation pressures, have sufficient strength to bridge missing pipe, and stretch to fit irregular shaped pipe sections.

3. The wet-out tube shall have a uniform thickness that when compressed at installation pressures shall meet or exceed design “finished and installed” thickness.

4. The tube shall be manufactured to a size that when installed shall tightly fit the internal circumference and length of the original pipe. In the event that under-sized pipe is present, liner tube shall be manufactured so that overlap folds or wrinkles do not occur. Allowances shall be made for circumferential stretching during inversion.

5. The outside layer of the tube, before installation, shall have an impermeable polyurethane or polyethylene plastic coating. This coating shall be an impermeable, flexible membrane that shall contain the resin and facilitate monitoring of resin saturation during resin impregnation. This coating shall form the inner layer of the finished pipe and is required for enhancement of corrosion resistance, flow and abrasion properties.

6. The tube shall be homogeneous across the entire wall thickness containing no intermediate or encapsulated layers. No material may be included in the tube that may cause de-lamination in the cured liner, and no dry or unsaturated areas or layer shall be evident.

7. The wall color of the interior liner surface after installation shall be a light-reflective color so that a clear, detailed inspection with closed circuit television equipment may be conducted.

8. The outside of the tube shall be marked for distance at regular intervals not to exceed 10 feet. Such markings shall include the Manufacturers name or identifying symbol.

9. The minimum length shall be that deemed necessary by the Contractor to effectively span the distance between manhole sections of the segment to be lined unless otherwise specified. The line lengths shall be verified in the field before impregnation of the tube with resin.

Part 5 CIPP Design

5.1 Liner Thickness

The Contractor shall submit liner thickness calculations to the Engineer for review. The CIPP shall be designed in accordance with the applicable provisions of F1216 and D2412 for “fully deteriorated gravity pipe conditions” and shall meet the following design conditions:

1. AASHTO H-20 Live Load with two trucks passing for CIPP in streets (16,000 lbs.)
2. A soil modulus of elasticity of 1000 psi, soil weight of 120 pounds per cubic foot and a coefficient of friction of $K_u' = 0.130r$.
3. **Standard Polyester** - Short-term flexural modulus of 250,000 psi and long-term modulus of 125,000 psi
4. **Enhanced Polyester** - Short-term flexural modulus of 400,000 psi and long-term modulus of 150,000 psi
5. Safety factor of 2.0 shall be used.
6. Groundwater elevation at the ground surface.
7. Pipe ovality: 2%
8. Poisson ratio of 0.3.
9. Enhancement factor (K) of 7.
10. Service temperature range shall be 40 to 140 degrees

5.2 Minimum Acceptable Pipe Thickness (“Finished and Installed”)

1. The Minimum Acceptable Pipe Thickness (Finished and Installed), shall be based on design parameters in section 5.1 Items 1 through 9 of this Specification adjusted for site-specific field conditions and approved by the Engineer in writing prior to tube manufacture.
2. It is the Contractor’s responsibility to determine the site specific external loads on the liner and increase or decrease its thickness as required. The Contractor shall submit his proposed plan for ensuring that the finished and installed CIPP meets minimum thickness requirements. The plan shall include detailed inversion procedures to reduce stretching and resin loss and to minimize shrinkage.
3. The contractor shall submit his price proposal based on the appropriate length, size, and existing pipe parameters. The deterioration of sewers is an on-going process. In the event pre-construction inspections reveal the sewers to be in substantially different conditions than those in the design considerations, the contractor shall request such changes in reconstruction liner thickness, supporting such requests with the appropriate design data satisfactory to the Engineer. The deviation, if approved, shall be reflected by the appropriate addition or reduction in the unit cost for that size as agreed to by the Owner/Engineer.

4. Any liner that does not meet the specified strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the Engineer at no additional cost to the Owner. The Engineer's decision on how to correct deficient CIPP installations shall be final. Options for correcting deficient liners that will be considered by the Engineer include removing the liner and re-lining the sewer, excavating and replacing the sewer from manhole to manhole, or providing the Owner with a substantial credit. The primary option that will be considered will be to re-line the sewer. Credits will only be authorized for CIPP that does not meet required thickness. If a credit is acceptable to the Owner and Engineer, the credit shall be calculated by multiplying the bid price by the percent that the liner thickness is below the required installed thickness as follows:

Credit = (1 – Installed CIPP thickness/required CIPP thickness)
X bid price

The Contractor shall not assume a credit will be acceptable to the Engineer/Owner in any case.

5. The finished CIPP will provide a uniform smooth, interior wall surface and will have at least 100% of the flow capacity of the original pipe before rehabilitation. In lieu of measurements, calculated capacities may be derived using a Manning "n" coefficient of 0.013 for the original pipe material and a Manning "n" coefficient of 0.011 for a joint-less smooth-wall cured-in-place pipe.

Part 6 Execution

6.1 By-Pass Pumping

1. If the sewers to be rehabilitated under this contract convey both sanitary and storm water flows, it shall be incumbent upon the Contractor to complete the installation of CIPP during a time-frame wherein precipitation shall not impact the work process or prevent normal storm water flow into and along the subject sewers. The Contractor shall in any case provide for the bypass pumping of all flows the host pipe is deemed by the Owner to be capable of carrying.

2. The installation methodology contemplated requires the temporary blocking and back-ups of sewers and sewage. Contractor shall be responsible to limit the extent and duration of such blockages and backups so that overflows and spillage onto public or private property and into storm sewers, waterways, and streets does not occur. In the event that such spillage or overflows do occur during the course of or as a result of the Work, the Contractor performing the Work shall immediately eliminate the spillage or overflow and, as necessary, remove the blockage and eliminate the back-up. On elimination of the spillage or overflow, the Contractor is to clean up and disinfect the area. Work to stop or contain such events is to be deemed EMERGENCY in nature and sufficient justification for total mobilization of resources, the use of overtime or double time, and any other reasonable measures to assure correction of the problem without delay. Damages arising from blockages, back-ups, spillage, or overflows of sewage during the course of the Work or because of the Work shall be the sole responsibility of the Contractor.

3. Sewage flow shall be pumped around segments during CIPP installation, lateral service reinstatement and post-installation closed-circuit television inspection.

4. Pumping equipment shall have the capacity to convey 100% of predicted dry and wet-weather flows for a 2 year design storm. Maps with predicated flows are provided to size bypass pumping systems around the construction area.

The flow shall be intercepted at the upstream end of the construction area and shall be pumped through temporary piping of adequate size. The flow shall be discharged into a manhole on the downstream side of the construction area, thus bypassing the sewer segment(s) under construction. The Contractor shall be required to contact all residential and commercial customers whose service lines connect to the sewer main being bypassed and inform them that they will be temporarily out of service. The Contractor shall also advise those customers against water usage until the mainline is back in service. After completing the necessary work on the main line to allow its reuse, the Contractor shall advise those customers that the sewer main is back in service. Should a condition arise that the Contractor cannot restore service within twelve (12) hours of service interruption; the Contractor shall make provisions for pumping all flows within the service interruption area at no cost to the Owner.

5. A standby pump or pumps of the same capacity shall be required on site.

6. The Contractor is responsible for paying all fines imposed for overflow or spills during construction.

6.2 Cured-In-Place-Pipe Rehabilitation

1. All reconstruction of existing gravity sewer mains using an approved CIPP Product and Installer shall be performed in strict accordance with this Specification and the latest revision of ASTM F1216. Where discrepancies exist, or any latitude is either inferred or interpreted between this specification and ASTM product and process standards, this Specification shall govern.

2. Pull-In and Inflate methods of CIPP installations, (reference ASTM F1743), will not in any case be acceptable.

3. The Contractor shall carry out his operations in strict accordance with all applicable OSHA standards. Particular attention is drawn to those safety requirements involving work on an elevated platform and entry into a confined space.

4. The Contractor will be responsible for locating and accessing all manholes and provide access to water hydrants for cleaning, inversion and other work items requiring water.

5. All surfaces, which have been damaged by the Contractor's operations, shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of the Contractor's operations. Suitable materials and methods shall be used for such restoration. The restoration of existing property or structures shall be done as promptly as practicable and shall not be left until the end of the construction period. Compensation for this work will be included in the Contractor's proposal.

6. The tube shall be fabricated to a size that, when installed, will neatly fit the internal circumference of the conduit(s) designated for CIPP. Allowance shall be made for the circumferential stretching during insertion of the tube. After curing of the resin is completed, the hardened CIPP will extend from manhole to manhole of the section designated providing a structurally sound, corrosion-resistant, watertight conduit that excludes exfiltration and infiltration, is tightfitting within the existing pipe, and is free of voids or annular spaces between the CIPP and the existing pipe walls. K-Factor for tightness shall equal 7.0 or greater. All terminations into manhole walls shall be watertight at the time of final inspection. No annular space shall be visible between the CIPP and manhole wall. In the event that an annular space is present, it shall be completely filled with epoxy or other suitable material to the satisfaction of the Engineer.

7. The Contractor shall be responsible for determining the minimum length to effectively span the distance from the manhole to manhole and shall verify the length of the fabric tube in the field before the tube is either cut to length or wet-out with resin. The tube may run through one or more manholes with the approval of the Owner/Engineer.

6.3 Preliminary Installation Requirements

1. "Normal" Cleaning of Sewers

- a. Sewers shall be cleaned of all debris, roots and other materials that would inhibit proper inversion of CIPP
- b. Utilizing high-pressure jet cleaning equipment, several passes are completed to assure that all debris is removed from the pipe to the satisfaction of the Owner/Engineer.

2. "Heavy" Cleaning of Sewers

If roots are present which require the use of mechanical brushes or dragging devices or, if in the judgment of the Owner/Engineer, the pipe is more than 25% full of debris, the pipe shall be cleaned to the satisfaction of the Owner/Engineer and additional payment authorized under the appropriate Pay Item on the Bid Form. Heavy Cleaning shall be defined as the pipe being more than 25% full of debris or requiring the use of apparatus other than normal high-pressure jetting equipment. The Contractor shall be paid for heavy cleaning on the basis of the distance loosened debris is moved to the nearest point of extrication from the sewer. Payment shall be calculated on a lineal foot basis and will be paid in addition to the normal cleaning rate shown on the Bid Sheet. **Any heavy cleaning must have pre-approval from the Owner/Engineer.**

6.4 Debris Disposal

All debris cleaned from the pipe shall be removed and disposed of at the cost of the Contractor in a dumpsite designated by the Owner. Debris shall not be allowed to wash into any other pipe segment either up or downstream from the pipe segment being cleaned.

6.5 Provision and Usage of Water

The Owner shall provide all water required to perform this Work. The Owner shall provide a fire hydrant meter at no cost to the Contractor beyond the normal security deposit for use on the Project. Contractor shall coordinate connection and usage limits and withdrawal locations with the Owner prior to construction.

6.6 Pre/Post Installation Video Inspection

1. Prior to installation of the CIPP, but not more than 48-hours prior to such installation, the section of sewer designated for CIPP is to be televised its full length using a remote television camera specifically designed for that purpose.

2. Inspection of the sewer pipe shall be performed by the Contractor's experienced personnel trained in location breaks and obstacles by CCTV inspection. Utilizing a color video inspection system with data recording capabilities, the entire pipe section to be lined shall be recorded in a Digital Format and two (2) copies produced. The interior of the pipe shall be carefully inspected to determine the location of any conditions, which may prevent the proper installation of the CIPP, and it shall be noted so that these conditions can be corrected. A DVD/CD-ROM and suitable log shall be submitted to the Owner.

3. Pre and post-installation videos and logs shall be submitted during the course of the Work. The television camera used for this purpose shall be operative in one hundred percent moisture conditions. Lighting for the camera shall be sufficient to yield a clear picture of the entire periphery of the pipe. The camera, television monitor, and other components of the video system shall be capable of producing a five hundred line resolution picture. The camera's rate of travel shall not exceed 20 feet per minute. At each service, the camera shall come to a complete stop and the service shall be panned so that the entire cross sectional area of the service is inspected. The footage meter count shall be clearly visible. Logs shall include date, line size, length, manhole numbers and project number, direction of camera travel, direction of flow, and any observed defects or comments. For each service the log should include the distance from manhole, its location (e.g. 9:00 or 2:00 o'clock), street address or parcel, and distance from mainline to cleanout. Videos between manhole segments shall be continuous; no breaks or "blink-outs" in the video shall be observed. The videos shall be in CD-ROM or DVD format.

4. Sewer service connections shall also be TV inspected from within the sewer main, identifying all service connection locations and conditions. Conditions of service connections shall be noted in the log.

5. The full cross-sectional area of the pipe shall be visible during video inspection except where misalignment of the sewer may have resulted in standing water in bellies or sags.

6. If for any reason the camera becomes disabled inside the sewer and cannot further proceed, the Contractor will be responsible for retrieving the camera at no additional cost to the Owner.

6.7 Identification and Pre-measurement of Lateral Connections

A 360-degree Pan-and-Tilt view camera shall be used to inspect the pipe. At each connection the operator will stop and turn the camera lens toward the lateral thereby inspecting the first 8 to 12 inches of the lateral connection. The Contractor shall be responsible for determining if connection is active or inactive. For each existing service connection determined by the Contractor to be active, the Contractor shall determine the condition of the service connection to the main, make his recommendation for lateral connection repair, and record both items in his log.

6.8 Resin Impregnation of the CIPP Tube (Wet-Out)

The contractor shall designate a location where the tube shall be impregnated or "wet out" with resin, using distribution rollers and a vacuum impregnation system to thoroughly saturate the tube's felt fiber prior to installation in the field. The impregnated tube shall be free of pinholes, resin voids and other defects. If the cured-in-place pipe is impregnated at the manufacturing plant, it shall be delivered to the job site in a refrigerated truck, and remain refrigerated prior to installation to prevent premature curing. The flexible tube shall be vacuum impregnated with resin under controlled conditions or by such other means provided such means can assure thorough resin impregnation to the full satisfaction of the Owner/Engineer. The volume of resin used shall be sufficient to fill all voids in the tube material at normal or design thickness and diameter. The volume of resin shall be adjusted by adding seven to ten percent excess resin for the change in resin volume due to polymerization and allow for any migration of resin into the cracks and joints in the original pipe.

6.9 Inversion of CIPP

1. The preferred method of curing CIPP shall be by circulated water. The use of controlled steam will be considered on a case-by-case basis only. The Contractor shall submit a written request for the use of steam in sewer segments where the Contractor feels that curing by steam will be beneficial to the Sanitation District. The Contractor shall not assume in any case that the use of controlled steam for the curing of CIPP is acceptable to the Sanitation District without prior written authorization from the Sanitation District. This must be done 2 weeks prior to the installation.
2. The impregnated tube shall be inverted through an existing manhole or other approved access point utilizing a hydrostatic water column or pressurized air until it has fully traversed the designated line length and the inversion face breaches the destination manhole or termination point. The fluid column or air pressure shall have been adjusted and maintained to be sufficient to cause the impregnated tube to hold tight against the existing pipe wall, produce dimples at side connections, and flared ends at the manholes. Lubricant during inversion shall be used as necessary in accordance with the CIPP manufacturer's recommendations. Thermocouples shall be placed at the top and bottom interface of both ends of the liner for monitoring temperature during the cure cycle. Care should be taken during tube installation not to over-stress the fabric fiber.
3. When using pressurized air, particular attention should be given to the maintenance of the minimum required "finished and installed" thickness of the CIPP. Before the inversion begins, the tube manufacturer shall provide the minimum air pressure required to hold the tube tight against the host pipe and the maximum allowable pressure so as not to damage the tube. Once

the inversion has started, pressure shall be maintained between the minimum and maximum pressures until the inversion has been accomplished

6.10 Curing - Using Circulated Heated Water

1. A suitable source of heat and water recirculation equipment is required to circulate heated water throughout the pipe. The equipment shall be capable of delivering hot water throughout the inverted tube to uniformly raise the temperature required to affect a cure of the resin.
2. Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound and the thermocouples indicate that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. Post-Cure temperature should be held for a period as recommended by the resin manufacturer, during which time the recirculation of the water and cycling of the heat source to maintain the temperature continues.
3. Prior to any inversion, the Contractor shall provide a Post-Cure Hold Time and Temperature Table. This table shall indicate the minimum time and temperature the inverted tube will be held at in order to achieve desired physical properties. The resin manufacturer shall certify both the time and temperatures presented in the table.
4. Curing must take into account the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil).

6.11 Curing - Using Controlled Steam

1. Suitable steam-generating equipment is required to distribute steam throughout the pipe. The equipment shall be capable of delivering steam throughout the inverted tube to uniformly raise the temperature required to affect a cure of the resin.
2. Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound and the thermocouples indicate that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. Post-Cure temperature should be held for a period as recommended by the resin manufacturer, during which time the distribution and control of steam to maintain the temperature continues.
3. Prior to any inversion, the Contractor shall provide a Post-Cure Hold Time and Temperature Table. This table shall indicate the minimum time and temperature the inverted tube will be held at in order to achieve desired physical properties. The resin manufacturer shall certify both the time and temperatures on the table.
4. The Time and Temperature Table submitted when using steam curing shall be identical to time and temperature hold times when curing with heated, circulated water.

5. Curing must take into account the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil).

6.12 Cool-Down

Cool-down of CIPP shall be in accordance with the manufacturer's recommendations. Care should be taken during the cool-down process so as to minimize shrinkage of the CIPP.

6.13 Lateral Service Reinstatement

After the CIPP has been cured, the existing service connections and laterals shall be reinstated. In general, reinstatement of service connections and laterals shall be accomplished internally, without surface excavation, using a remote control cutting device equipped with a television monitor. Reopened services shall be wire brushed to the satisfaction of the Owner/Engineer. In some cases, remote reinstatement may not be possible. In these instances, reinstatement by conventional methods in accordance with the standard Specifications is acceptable. All connections must be reinstated by at least 95-percent of the original opening.

6.14 Appearance of Finished CIPP

All workmanship and materials will meet the standards of the industry. The finished CIPP shall be continuous over the length of pipe between two manholes and shall be an impermeable, joint-less conduit, free from visual defects such as foreign inclusions, dry spots, pin holes, lifts, or delamination. Wrinkles in the CIPP, (other than minor, longitudinal pressure wrinkles) will not be acceptable. The Owner/Engineer shall determine as to the acceptability of pressure wrinkling with that decision being final. In the event the finished liner does not fit tightly against the original pipe at its termination point(s), the space between the liner and the pipe shall be made watertight, utilizing manhole end seals, Hydro-Tite® gaskets, or approved equal.

6.15 Acceptance Testing of CIPP

1. The Owner/Engineer may, at their discretion, direct the Contractor to collect samples of the cured CIPP for laboratory determination of flexural strength, flexural modulus and wall thickness for each test sample during the execution of this Contract. These three individual analyses shall comprise one completed test. All samples shall be collected per the sampling protocols set forth in ASTM F-1216.
2. Upon notification by the Engineer, the Contractor shall remove one restrained sample of the installed liner at least 12 inches in length for testing. For sewers 15 inches and larger, plate samples may be taken and cured in the same water as the installed CIPP. For each sample taken, the Contractor shall cut and deliver a 1-inch wide representative sample (taken at least 2 inches from the end of the specimen) to the Engineer. The sample delivered to the Engineer shall be labeled and removed from any restraining mold. The Engineer may return such samples to the Contractor for disposal.
3. The tests shall be used to verify that the installed CIPP meets these specifications. CIPP thickness shall be measured in accordance with ASTM D5813. Flexural properties shall be determined per ASTM D790. The Contractor shall label and date all samples and deliver the samples directly to the Owner/Engineer. All testing shall be performed by an independent, ASTM-certified testing laboratory of the Owner/Engineer's designation and at the Owner's expense. Payment to the Contractor shall be withheld pending the Owner/Engineer's acceptance of the CIPP test results.
4. Any liner that does not meet the specified strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the Owner/Engineer at no additional cost to the Owner. The Owner/Engineer's decision on how to correct deficient CIPP installations shall be final.

6.16 Traffic Control

The Contractor shall be responsible for traffic control during the course of each phase of the Work. Prior to beginning Work, Contractor shall submit a traffic control plan for each section of Work to the Owner for the review and approval. It is the intent that this Work is to be accomplished with as little disturbance to traffic, private property, and the public as is reasonably possible, consistent with timely completion thereof. The traffic control plan shall reflect such requirements where applicable. Signs, signals, and detours shall conform to the Kentucky Department of Highways & Public Transportation requirements for streets and highways within the jurisdiction of the Sanitation District No. 1 of Northern Kentucky.

Part 7 Television Inspection

1.1 Description

1. Contractor shall provide all labor, materials, tools, equipment and incidentals as shown, specified, and required to perform television (TV) inspection of the sewer system. Contractor shall restore the Site to pre-inspection condition at completion of work.

1.2 Definitions

1. TV Inspection: Video inspection conducted before sewer line has been cleaned to determine conditions of the pipe, confirm cleaning, and location of service connections. TV Inspection also includes the pan and tilt inspection of manholes and the inspection of laterals, if required, by launching the camera via a mainline, manhole or cleanout.

1.3 Requirements

1. Contractor shall be aware that this Contract requires work in active sewers and shall follow all federal, state and local requirements for safety in confined spaces.

1.4 Performance Requirements

1. Inspection shall be done one sewer line section (i.e. manhole to manhole) at a time.
2. Quality of inspection recording shall be acceptable to SD1 when viewed on a 24" monitor.
3. Inspection shall be performed by a NASSCO *Pipeline Assessment Certification Program* (PACP) certified operator and shall meet the coding and reporting standards and guidelines as set by PACP. All report annotations, pipe conditions and pipe defects shall be identified properly using PACP codes as defined by or PACP.

1.5 Submittals

1. Submit one copy of Electronic Inspection Reports and TV videos on portable hard drive on a weekly basis. The inspections shall be provided in a tabular spreadsheet or database.

2. Copies of PACP certificates of inspectors completing the work.
3. Submit one copy of the QA/QC reports on portable hard drive.

1.6 Reference Standards

1. NASSCO prepared *Pipeline Assessment and Certification Program (PACP)*, Current Edition Reference Manual. This manual includes a standard TV inspection form and sewer condition codes.

1.7 Television Equipment

1. Closed Circuit TV Equipment: Select and use closed-circuit television equipment that will produce a color recording.
2. Pipe Inspection Camera: Produce a video recording using a pan-and-tilt, radial viewing, pipe inspection camera that pans ± 275 degrees and rotates 360 degrees. Use a camera with an accurate footage counter that displays on the TV monitor the exact distance of the camera from the centerline of the starting manhole. Use a camera with camera height adjustment so that the camera lens is always centered at one-half the inside diameter, or higher, in the pipe being televised. Provide a lighting system that allows the features and condition of the pipe to be clearly seen. A reflector in front of the camera may be required to enhance lighting in large diameter pipe. The camera shall be operative in 100 percent humidity conditions. The camera, television monitor, and other components of the video system shall be capable of producing a minimum 500-line resolution colored video picture. Picture quality and definition shall be to the satisfaction of SD1.
3. TV Studio: The TV studio is to be contained in an enclosed truck, trailer or van for on-road work. It shall have room and seating for the operator, one District staff member, and at least one standing visitor with the doors closed. The studio shall have air conditioning and heating. Normal operation of all equipment, including the TV camera, monitor, and winches is to be from a control panel in the studio.
4. For off-road work, Contractor shall provide the appropriate vehicle(s) for the terrain in order to access the sewers and allow for proper inspection of the sewers and manholes.
5. Recording: Record all images digitally.
7. Video Capture: Full time live color video files shall be captured for each pipe segment inspected with sound identifying the location and the appropriate defect code. The files shall be stored in industry standard MPEG format viewable from an external hard drive on an external personal computer that utilizes Microsoft Media Player, version 9.0 or higher to view the recording. The MPEG video shall be ISO-MPEG Level 1 (MPEG-1) coding with a resolution of at least 352 pixels (x) by 240 pixels (y) and an encoded frame rate of 29.97 frames per second. System shall perform an automatic disk image/file naming structure to allow saved video/data sections to be saved to a portable hard drive. The video recording shall be free of electrical interference and shall produce a clear and stable image. The digital recordings and inspection data shall be cross-

referenced to allow instant access to any point of interest within the digital recording.

- 8. Video recording shall include audio location, asset information, and the defect observations related to the inspection of all defects identified during the inspection.

1.8 Television Inspection

- 1. Televise each sewer line to document the structural and maintenance conditions of the line. The sewer inspections shall be compatible with the SCREAM™ defect coding system for sewers and manholes, which is SD1’s standard defect coding system. The Contractor shall use PACP to conduct the sewer inspections. However, the system selected to be used shall be converted by the Contractor to the SCREAM™ code equivalents for use in importing and scoring in our LucityMS database. An example of the conversion from PACP codes to SCREAM™ codes is included with this specification.

The following data for the defect observations shall be recorded:

- Observation Data
- Observation#, unique per line
- Upstream MH#
- Downstream MH#
- Date of inspection
- Direction of inspection
 - 1 = upstream to downstream
 - 2 = downstream to upstream
- Footage
- Clock position (1 – 12)
- Defect/Description (use code or text)
- Comments

- 2. In addition to recording the defects for the sewers and manholes, Contractor shall also record the following attribute data as “fields” in their inspections:

- Upstream MH#
- Downstream MH#
- Date of inspection
- Direction of inspection
 - a. 1 = upstream to downstream
 - b. 2 = downstream to upstream
- Length of pipe
- Diameter/height (inches)
- Shape (use shape code or text)
- Material (use pipe material code or text)
- Pipe width, non-circular (inches)
- Crew
- Video number (TV inspection only)
- Start counter (TV inspection only)

- Comments
 - Movie document name (provide extension)
 - Depth of each incoming and outgoing pipe measured from the manhole rim, as well as the manhole invert at the upstream and downstream side of the manhole, to the nearest 1/8".
 - Cleaned: Yes/No
 - Amount of debris removed: cubic yards
3. A NEW inspection shall be started where a manhole, junction, or diversion chamber is located. This includes new manholes, junctions, or diversion chambers identified in the field, but not previously identified in District mapping. Therefore, no manholes, junctions, or diversion chambers shall be at a midpoint of an inspection log, only at the beginning and the end of each inspection. Inspection runs shall begin and end at manholes or junctions unless an obstruction is encountered. Lateral connections from inlets/catch basins, material changes or breaks in grade are not approved locations to begin/end an inspection. Said features shall be logged on the recording. If Contractor uses a lateral connection from inlets/catch basins, material changes or breaks in grade as a begin/end point for televising, District will reject said segment and the sewer data shall be reorganized to match the data requirements at no additional cost to SD1.
4. It is critical to obtain maintenance and structural grade for each pipe, therefore the Contractor shall not clean the pipe prior to inspection, unless there is an obstruction that could block the progress of the camera. Upon completion of the sewer inspection, a maintenance score shall be determined. If the sewer scores a 3 or higher using the PACP method, the pipe shall be cleaned immediately after the inspection is completed and this cleaning shall be noted along with the score in the inspection. All debris removed shall be measured by cubic yard and reported for each pipe segment from Manhole to Manhole. After the cleaning is completed the pipe shall be televised to confirm that it has been cleaned properly and all debris has been removed. This inspection shall be per the PACP codes and logged as a separate inspection record for the pipe.

If the Contractor encounters a removable obstruction, such as debris, roots, etc., that blocks the progress of the camera; SD1 shall be notified immediately. The Contractor shall record this obstruction in the inspection. The Contractor shall be responsible for any cleaning (i.e. root sawing, jetting, etc.) that may be required to remove the obstruction in order to complete the inspection. Contractor shall complete the inspection of the remainder of the pipe after the obstruction is removed as part of the original inspection record. The Contractor will be responsible for any pipe damaged due to the use of a cleaning procedure that could have reasonably been expected to present a significant risk of pipe damage or collapse.

If an obstruction is encountered that is not removable and not passable with the camera, such as a broken or collapsed pipe, SD1 shall be notified immediately. The Contractor shall record this obstruction in the inspection. It is expected, however, that if a collapsed pipe, or any other type of impassible structural defect, is encountered within a section of pipe, that this defect will be approached from both the downstream and upstream directions in order to capture inspection data on the most pipe length available. SD1's crews will be responsible for repairing the obstruction. The Contractor may be required to re-inspect the sewer once

the repair is complete and will be paid according to the terms outlined in this contract. SD1's crews will re-inspect the sewer upon completion of the repair.

5. Notify SD1 on a weekly basis or each day, as needed, where the Contractor will be working in advance of any TV inspection so that SD1 staff knows the locations of the Contractor's crews and may observe inspection operations.
6. Inspections shall be from center of the starting manhole to the center of the ending manhole. Distances along the pipe should be measured from the center of the manhole. Measurement meters shall be accurate to the nearest foot per 100 feet of sewer being televised within the particular section of pipe (section of pipe being defined as the length of pipe between the upstream and downstream MHs). Measurement meters shall be accurate to two-tenths of a foot over the entire length of the sewer line section being inspected. Prior to recording the location of defects and service connections, slack in the cable of the television inspection camera shall be taken up to ensure metering device is designating proper footage. Accuracy of the measurement meters shall be checked daily by use of a walking meter, roll-a-tape, or other suitable device.
7. Center the camera in the middle of the pipe.
8. Move the camera through the line (in the downstream direction whenever possible) at a uniform rate not to exceed 30 feet per minute. The intent is to perform the inspection per the PACP standards. It may be necessary for a lower rate of speed depending on the defects encountered.
9. Stop at every defective joint for three seconds using a pan and tilt view. When appropriate, stop elsewhere for a length of time long enough to ensure proper documentation of the sewer's structural and maintenance conditions. Pan and tilt to observe and document areas of apparent deteriorated pipe surface.
10. Stop at every lateral connection. Center the camera so that the lighting and the pan and tilt view can be used to inspect as far into the lateral connection as possible. Record all defects found in the service connection. Observe top, bottom and sides of lateral connections. Where lateral flow is observed, observe flows from service connections for a length of time long enough to ascertain if the flow is sanitary or extraneous flow. The video recording may be paused during observation. Record results of the flow observed on the inspection. The inspection of the service lateral is not to be performed and will not be paid for as part of this RFP unless explicit direction is given by SD1 to perform such work.
11. Use manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions to move the camera through the sewer line.
12. TV inspection recordings shall be continuous for each pipe segment and include sound identifying the location and type of defect.
13. Contractor is responsible for adjusting light levels, cleaning fouled or fogged lens, and allowing vapor to dissipate from camera lights in order to produce acceptable recordings.

SD1 will not pay for unacceptable CCTV video footage that does not clearly identify the type of defects present in the sewer pipeline.

- 14. Sewer inspections not meeting the requirements set forth in this specification as determined by SD1 shall be re-performed at no additional cost to SD1 until the inspection meets to SD1’s satisfaction.
- 15. If a lateral inspection is required and a Contractor finds a defective lateral connection in which a lateral inspection cannot be completed, contact SD1 immediately. Contractor must make 3 attempts to inspect the lateral.

1.9 Flow Control

- 1. Adequately control the flow in the section being televised. Plugging of the flows may be used to accomplish this. Recordings made where the depth of wastewater flow shown below is exceeded will be rejected:

Pipe Diameter (Inches)	Depth of Flow (Percent of Pipe Diameter)
6-10	50
12-24	30 Over 24
	30

It is not expected for the Contractor to provide bypass pumping if the depth of flow listed above is exceeded and TV inspection during minimum flow hours does not result in depths meeting the above requirements. In these cases, SD1 shall be notified and a note in the inspection log shall be provided indicating “Depth of flow exceeds requirements.” If it is determined that a sewer segment requires by-pass pumping, by-pass pumping may be performed in accordance with a negotiated amendment to the Contract as directed by SD1.

See Item 4 below.

- 2. Whenever flows in a sewer line are blocked, or plugged, sufficient precautions must be taken to protect the sewer lines from damage that might be inflicted by excess sewer surcharging. Further, precautions must be taken to ensure that sewer flow control operations do not cause overflows, flooding or damage to public or private property being served by the sewers involved. No overflows are permitted. Contractor is responsible for all damages.
- 3. Contractor is responsible for all damages to owned and operated equipment, District facilities, and privately owned facilities caused by malfunctioning plugs, pumps or other Contractor-owned or operated equipment. In the event of a failure or malfunction of Contractor equipment, Contractor is responsible for all work necessary to restore facilities to pre-contraction condition including but not limited to excavation and restoration of sewer lines and roadways required to retrieve malfunctioning cameras, plugs, and hoses.
- 4. It is anticipated that portions of the sanitary sewer are bowed or bellied and as a result the camera will be submerged. Wherever the camera encounters a submerged condition, or where the wastewater flow depth exceeds the maximum allowable, reduce the flow depth to an

acceptable level by performing the survey TV inspection during minimum flow hours, or by pulling a camera with swab, high-velocity jet nozzle or other acceptable dewatering device. Contractor can request cleaning costs as a result of this depth reduction in accordance with the cleaning specification 02760. Recordings made while floating the camera are not acceptable unless approved by SD1.

1.10 Passage of TV Camera

1. If during TV inspection of a pipe segment, the camera is unable to pass an obstruction even though flow is unobstructed, televise the pipe segment from the opposite direction in order to obtain a complete recording of the line. Contractor shall also measure the distance between the manholes (centerline to centerline) with a tape or wheel to accurately determine the total length of the manhole segment. See additional requirements in 3.1 above.

1.11 QA/QC Analysis

1. The selected Contractor will be provided a copy of SD1's sewer and manhole GIS and database to use as a guide when conducting the inspections. The Contractor shall perform a QA/QC analysis on all sewer and manhole data recorded before the data is submitted to SD1. The Contractor shall provide a summary report of the results of the QA/QC analysis. The QA/QC verification items shall be compared to SD1's database and shall include, but not necessarily be limited to, the following:
 - Deviations of five feet or greater
 - Any missing or mislabeled sewer or manhole attribute data.
 - Confirmation that applicable continuous defects have a recorded defect length.
 - Any missing or mislabeled attribute or defect data supposed to be recorded for both sewers and manholes.
 - Verification that all necessary defect data is present so that a SCREAM™ sewer and manhole score can be calculated.

1.12 INSPECTION DELIVERABLES

1. The inspections shall be provided in a tabular spreadsheet or database.
2. The attribute and inspection data, CCTV video, and the QA/QC analysis, shall be submitted weekly via portable hard drive. These weekly submissions shall be for one week's worth of work from the two prior weeks. For example the data collected during the week of March 30, 2015 through April 3, 2015 shall be submitted on Monday, April 17, 2015. The intent is to give the Contractor the first week to gather all data, the second week to perform the QA/QC analysis and assemble all of the data, and then deliver the portable hard drive with all information to SD1 on the Monday of the third week. See REPORTING below.
3. The CCTV videos shall be provided as specified in Item 2.1.F for easy import into SD1's Asset Management Software.
4. All inspections and videos shall be divided into separate files for each manhole to manhole segment and each manhole and shall be labeled based on SD1's manhole numbering system for easy linkage to SD1's asset management database.

5. Digital Inspection Recordings
 1. Provide digital inspection recordings. Inspection recordings must be viewable on a standard 16" computer monitor.
 2. Recording shall be of a quality sufficient for SD1 to evaluate the condition of the sewer and manholes, locate the sewer service connections, and verify cleaning. If SD1 determines that the quality is not sufficient, Contractor shall re-televiser the sewer segment and/or re-inspect the manhole and provide a new recording and report at no additional compensation. Camera distortions, inadequate lighting, dirty lens, or blurred/hazy picture will be cause for rejection Payment for inspection of the sewer and manholes shall not be made until SD1 approves the inspections, re-inspections as required, videos, pictures, and QA/QC reports.
 3. Multiple project areas may be included on a given hard drive, but the files must be organized in individual project folders. TV Inspection recordings shall not be edited. Each pipe segment must be its own electronic file. Electronic recording file must allow snap scrolling to allow easy and quick access of the entire recording.
 4. Each hard drive must have a file index whose name contains the pipe segment reference number.
 5. Contractor shall maintain a master copy of all recordings and Inspection Reports submitted, for two years after delivery of inspections reports and recordings.
 6. Label each hard drive with the following information:
 - a. Pipe Segments
 - b. Contractor's Name
 - c. Project Name
 - d. Contract Number
 - e. Inspection Type: Downstream of SSO, within 50' of creek, Phase 1 priority basin, as-needed inspection
 - f. Date Televised

1.13 Supplements

- A. Example of the conversion from PACP codes to SCREAM™ codes may be obtained from SD1.

Part 7 Warranty

The Contractor shall warrant all work and materials installed under this contract for FIVE (5) years from the date of final acceptance. The date of final acceptance shall be the date final payment is made to the Contractor.

Part 8 Payment for Work

Payment for Cured-In-Place pipe shall be based on the unit prices per linear foot by size of sewer, complete in place, as shown on the Bid Pricing Form. The unit bid price shall be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

END OF SECTION

GENERAL UTILITY NOTES AND INSTRUCTIONS APPLICABLE TO ALL UTILITY WORK MADE A PART OF THE ROAD CONSTRUCTION CONTRACT

The contractor should be aware the following utility notes and Standard KYTC Utility Bid Item Descriptions shall supersede, replace and take precedence over any and all conflicting information that may be contained in utility owner supplied specifications contained in the contract, on plans supplied by the utility owner, or any utility owner specifications or information externally referenced in this contract.

Where information may have been omitted from these notes, bid item descriptions, utility owner supplied specifications or plans; the KYTC Standard Specifications For Road and Bridge Construction shall be referenced.

PROTECTION OF EXISTING UTILITIES

The existing utilities shown on the plans are shown as best known at the time the plans were developed and are to be used as a guide only by the Contractor. The Contractor shall use all means at his disposal to accurately locate all existing utilities, whether shown on the plans or not, prior to excavation. The contractor shall protect these utilities during construction. Any damage to existing utilities during construction that are shown or not shown on the plans shall be repaired at the Contractor's expense.

PREQUALIFIED UTILITY CONTRACTORS

Some utility owners may require contractors that perform relocation work on their respective facilities as a part of the road contract be prequalified or preapproved by the utility owner. Those utility owners with a prequalification or preapproval requirement are as follows:

No contractors are required to be prequalified or preapproved by the utility owner(s) to perform utility relocation work under this contract.

The bidding contractor needs to review the above list and look for a list of preapproved or prequalified contractors at the end of these general notes as identified above before bidding. Only contractors shown to be prequalified or preapproved by the utility owner on the following list(s) will be allowed to work on that utility as a part of this contract.

Any utility contractor that is not listed as prequalified or preapproved when the project is advertised for bid and wishes to be added must make request through the KYTC Contract Procurement website. The request should be made at least one week prior to the bidding deadline to allow for review and posting on the KYTC Contract Procurement website. A contractor is only considered prequalified or preapproved when published on the KYTC Contract Procurement website. Contractors that contact the utility owner directly for preapproval or prequalification without contacting KYTC will not be considered for preapproval or prequalification for this contract. Contractors that are not prequalified or preapproved through KYTC before the bidding deadline will not be considered for prequalification or preapproval after bidding.

CONTRACT ADMINISTRATION RELATIVE TO UTILITY WORK

All utility work is being performed as a part of a contract administered by KYTC; there is not a direct contract between the utility contractor and utility owner. The KYTC Section Engineer is ultimately responsible for the administration of the road contract and any utility work included in the contract.

SUBMITTALS AND CORRESPONDENCE

All submittals and correspondence of any kind relative to utility work included in the road contract shall be directed to the KYTC Section Engineer, a copy of which may also be supplied to the utility owner by the contractor to expedite handling of items like material approvals and shop drawings. All approvals and correspondence generated by the utility owner shall be directed to the KYTC Section Engineer. The KYTC Section Engineer will relay any approvals or correspondence to the utility contractor as appropriate. At no time shall any direct communication between the utility owner and utility contractor without the communication flowing through the KYTC Section Engineer be considered official and binding under the contract.

ENGINEER

Where the word "Engineer" appears in any utility owner specifications included in this proposal, utility owner specifications included to be a part of this contract by reference or on the utility relocation plans, it shall be understood the "Engineer" is the Kentucky Transportation Cabinet (KYTC) Section Engineer or designated representative and the utility owner engineer or designated representative jointly. Both engineers must mutually agree upon all decisions made with regard to the utility construction. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

INSPECTOR OR RESIDENT PROJECT REPRESENTATIVE

Where the word "Inspector" or "Resident Project Representative" appears in the utility specifications included in this proposal, utility owner specifications included to be a part of this contract by reference or on the utility relocation plans, it shall be understood the "Inspector" or "Resident Project Representative" is the utility owner inspector and KYTC inspector jointly. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

NOTICE TO UTILITY OWNERS OF THE START OF WORK

One month before construction is to start on a utility, the utility contractor shall make notice to the KYTC Section Engineer and the utility owner of when work on a utility is anticipated to start. The utility contractor shall again make confirmation notice to the KYTC Section Engineer and the utility owner one week before utility work is to actually start.

UTILITY SHUTDOWNS

The Contractor shall not shut down any active and in-service mains, utility lines or services for any reason unless specifically given permission to do so by the utility owner. The opening and closing of valves and operating of other active utility facilities for main, utility line or utility service shut downs are to be performed by the utility owner unless specific permission is given to the contractor by the owner to make shutdowns . If and when the utility owner gives the contractor permission to shutdown mains, utility lines or utility services, the contractor shall do so following the rules, procedures and regulations of the utility owner. Any permission given by the utility owner to the contractor to shutdown active and in-service mains, utility lines or services shall be communicated to the KYTC Section Engineer by the utility owner that such permission has been given.

Notice to customers of utility shut downs is sometimes required to be performed by the utility contractor. The contractor may be required; but, is not limited to, making notice to utility customers in a certain minimum amount of time in advance of the shut down and by whatever means of communication specified by the utility owner. The means of communication to the customer may be; but is not limited to, a door hanger, notice by newspaper ad, telephone contact or any combination of communication methods deemed necessary, customary and appropriate by the utility owner. The contractor should refer to the utility owner specifications for requirements on customer notice.

Any procedure the utility owner may require the contractor to perform by specification or plan note and any expense the contractor may incur to comply with the utility owner's shut down procedure and notice to customers shall be considered an incidental expense to the utility construction.

STATIONS AND DISTANCES

All stations and distances, when indicated for utility placement in utility relocation plans or specifications, are approximate; therefore, some minor adjustment may have to be made during construction to fit actual field conditions. Any changes in excess of 6 inches of plan location shall be reviewed and approved jointly by the KYTC Section Engineer or designated representative and utility owner engineer or designated representative. Changes in location without prior approval shall be remedied by the contractor at his own expense if the unauthorized change creates an unacceptable conflict or condition.

MATERIAL

Contrary to Standard Utility Bid Item Descriptions those bid items that have the text "**Inst**" at the end of the bid item will have the major components of the bid item provided by the utility owner. No direct payment will be made for the major material component(s) supplied by the utility company. All remaining materials required to construct the bid item as detailed in utility bid item descriptions, in utility specifications and utility plans that are made a part of this contract will be supplied by the contractor. The contractor's bid price should reflect the difference in cost due to the provided materials.

The following utility owners have elected to provide the following materials for work under this contract:

Louisville Water Company will supply fire hydrants and copper pipe for service connections. All other materials are to be supplied by the contractor per bid item descriptions, utility specifications and utility plans.

SECURITY OF SUPPLIED MATERIALS

If any utility materials are to be supplied by the utility owner, it will be the responsibility of the utility contractor to secure all utility owner supplied materials after delivery to the project site. The utility contractor shall coordinate directly with the utility owner and their suppliers for delivery and security of the supplied materials. Any materials supplied by the utility owner and delivered to the construction site that are subsequently stolen, damaged or vandalized and deemed unusable shall be replaced with like materials at the contractor's expense.

RESTORATION

Temporary and permanent restoration of paved or stone areas due to utility construction shall be considered incidental to the utility work. No separate payment will be made for this work. Temporary restoration shall be as directed by the KYTC Section Engineer. Permanent restoration shall be "in-kind" as existing.

Restoration of seed and sod areas will be measured and paid under the appropriate seeding and sodding bid items established in the contract for roadway work.

PROPOSAL BID ITEMS

151066

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Report Date 10/15/15

Section: 0001 - PAVING-ASPH ALT

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00003		CRUSHED STONE BASE	13,674.00	TON		\$	
0020	00078		CRUSHED AGGREGATE SIZE NO 2	10,982.00	TON		\$	
0030	00214		CL3 ASPH BASE 1.00D PG64-22	8,894.00	TON		\$	
0040	00388		CL3 ASPH SURF 0.38B PG64-22	1,180.00	TON		\$	
0050	02069		JPC PAVEMENT-10 IN	12,148.00	SQYD		\$	
0060	02101		CEM CONC ENT PAVEMENT-8 IN	47.00	SQYD		\$	
0070	02220		FLOWABLE FILL	7.00	CUYD		\$	
0080	02599		FABRIC-GEOTEXTILE TYPE IV	32,812.00	SQYD		\$	
0090	02677		ASPHALT PAVE MILLING & TEXTURING	55.00	TON		\$	
0100	10203ND		PAVEMENT ADJUSTMENT ASPHALT	1.00	LS	\$85,112.00	\$	\$85,112.00
0110	20550ND		SAWCUT PAVEMENT	273.00	LF		\$	
0120	40074		ASPHALT LEVELING AND WEDGING	47.00	TON		\$	

Section: 0002 - PAVING-CONC ALT

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0590	00003		CRUSHED STONE BASE	15,250.00	TON		\$	
0600	00078		CRUSHED AGGREGATE SIZE NO 2	2,401.00	TON		\$	
0610	00214		CL3 ASPH BASE 1.00D PG64-22	3,128.00	TON		\$	
0620	00388		CL3 ASPH SURF 0.38B PG64-22	532.00	TON		\$	
0630	02069		JPC PAVEMENT-10 IN	21,546.00	SQYD		\$	
0640	02101		CEM CONC ENT PAVEMENT-8 IN	47.00	SQYD		\$	
0650	02220		FLOWABLE FILL	7.00	CUYD		\$	
0660	02599		FABRIC-GEOTEXTILE TYPE IV	32,739.00	SQYD		\$	
0670	02677		ASPHALT PAVE MILLING & TEXTURING	40.00	TON		\$	
0680	10203ND		PAVEMENT ADJUSTMENT CONCRETE	1.00	LS	\$55,307.00	\$	\$55,307.00
0690	20550ND		SAWCUT PAVEMENT	273.00	LF		\$	
0700	40074		ASPHALT LEVELING AND WEDGING	272.00	TON		\$	

Section: 0003 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0710	01000		PERFORATED PIPE-4 IN	9,989.00	LF		\$	
0720	01810		STANDARD CURB AND GUTTER	9,473.00	LF		\$	
0730	01811		STANDARD CURB AND GUTTER MOD SPECIAL	826.00	LF		\$	
0740	01811		STANDARD CURB AND GUTTER MOD	2,527.00	LF		\$	
0750	01830		STANDARD INTEGRAL CURB	3,621.00	LF		\$	
0760	01845		ISLAND INTEGRAL CURB	1,156.00	LF		\$	
0770	01875		STANDARD HEADER CURB	657.00	LF		\$	
0780	01984		DELINEATOR FOR BARRIER - WHITE	10.00	EACH		\$	
0790	02001		CURB TO BARRIER WALL TRANS	2.00	EACH		\$	
0800	02012		BARRICADE-TYPE I	40.00	EACH		\$	
0810	02014		BARRICADE-TYPE III	37.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0820	02091		REMOVE PAVEMENT	5,168.00	SQYD		\$	
0830	02159		TEMP DITCH	1,819.00	LF		\$	
0840	02160		CLEAN TEMP DITCH	909.00	LF		\$	
0850	02200		ROADWAY EXCAVATION	13,703.00	CUYD		\$	
0860	02242		WATER	900.00	MGAL		\$	
0870	02429		RIGHT-OF-WAY MONUMENT TYPE 1	49.00	EACH		\$	
0880	02545		CLEARING AND GRUBBING ACRES	1.00	LS		\$	
0890	02555		CONCRETE-CLASS B	58.00	CUYD		\$	
0900	02562		TEMPORARY SIGNS	1,044.00	SQFT		\$	
0910	02585		EDGE KEY	410.00	LF		\$	
0920	02613		HANDRAIL-TYPE A-3	220.00	LF		\$	
0930	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0940	02671		PORTABLE CHANGEABLE MESSAGE SIGN	6.00	EACH		\$	
0950	02690		SAFELoading	8.00	CUYD		\$	
0960	02701		TEMP SILT FENCE	1,819.00	LF		\$	
0970	02703		SILT TRAP TYPE A	17.00	EACH		\$	
0980	02704		SILT TRAP TYPE B	17.00	EACH		\$	
0990	02705		SILT TRAP TYPE C	17.00	EACH		\$	
1000	02706		CLEAN SILT TRAP TYPE A	17.00	EACH		\$	
1010	02707		CLEAN SILT TRAP TYPE B	17.00	EACH		\$	
1020	02708		CLEAN SILT TRAP TYPE C	17.00	EACH		\$	
1030	02720		SIDEWALK-4 IN CONCRETE	7,682.00	SQYD		\$	
1040	02726		STAKING	1.00	LS		\$	
1050	02775		ARROW PANEL	1.00	EACH		\$	
1060	03149		CONC MEDIAN BARRIER TYPE 9A2	341.00	LF		\$	
1070	04950		REMOVE SIGNAL EQUIPMENT	2.00	EACH		\$	
1080	05950		EROSION CONTROL BLANKET	1,146.00	SQYD		\$	
1090	05952		TEMP MULCH	54,950.00	SQYD		\$	
1100	05953		TEMP SEEDING AND PROTECTION	41,213.00	SQYD		\$	
1110	05963		INITIAL FERTILIZER	2.00	TON		\$	
1120	05964		20-10-10 FERTILIZER	3.00	TON		\$	
1130	05985		SEEDING AND PROTECTION	39,911.00	SQYD		\$	
1140	05990		SODDING	9,873.00	SQYD		\$	
1150	05992		AGRICULTURAL LIMESTONE	32.00	TON		\$	
1160	06510		PAVE STRIPING-TEMP PAINT-4 IN	29,803.00	LF		\$	
1170	06514		PAVE STRIPING-PERM PAINT-4 IN	23,424.00	LF		\$	
1180	06516		PAVE STRIPING-PERM PAINT-8 IN	3,566.00	LF		\$	
1190	06568		PAVE MARKING-THERMO STOP BAR-24IN	1,026.00	LF		\$	
1200	06570		PAVE MARKING-PAINT CROSS-HATCH	16,963.00	SQFT		\$	
1210	06572		PAVE MARKING-DOTTED LANE EXTEN	301.00	LF		\$	
1220	06573		PAVE MARKING-THERMO STR ARROW	6.00	EACH		\$	
1230	06574		PAVE MARKING-THERMO CURV ARROW	24.00	EACH		\$	
1240	06575		PAVE MARKING-THERMO COMB ARROW	23.00	EACH		\$	
1250	08001		STRUCTURE EXCAVATION-COMMON	61.00	CUYD		\$	
1260	20100ES842		PAVE MARK TEMP PAINT LINE ARROW	30.00	EACH		\$	
1270	20782NS714		PAVE MARKING THERMO-BIKE	3.00	EACH		\$	
1280	22520EN		PAVE MARKING-THERMO YIELD BAR-36 IN	81.00	LF		\$	
1290	23158ES505		DETECTABLE WARNINGS	1,129.00	SQFT		\$	
1300	23379EC		STAMPED CONCRETE	776.00	SQYD		\$	
1310	23791EC		PAVE STRIPING-CHEVRON MARKINGS	1,118.00	SQFT		\$	

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1320	24386EC		PAVE MARKING THERMO-BIKE LANE ARROW	9.00	EACH		\$	
1330	24722EC		UTILITY RELOCATION & COORDINATION	1.00	LS		\$	

Section: 0004 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1340	00521		STORM SEWER PIPE-15 IN	1,249.00	LF		\$	
1350	00522		STORM SEWER PIPE-18 IN	1,324.00	LF		\$	
1360	00524		STORM SEWER PIPE-24 IN	448.00	LF		\$	
1370	00526		STORM SEWER PIPE-30 IN	24.00	LF		\$	
1380	00528		STORM SEWER PIPE-36 IN	520.00	LF		\$	
1390	00529		STORM SEWER PIPE-42 IN	770.00	LF		\$	
1400	00530		STORM SEWER PIPE-48 IN	554.00	LF		\$	
1410	00532		STORM SEWER PIPE-60 IN	129.00	LF		\$	
1420	00533		STORM SEWER PIPE-66 IN	815.00	LF		\$	
1430	00980		SLOTTED DRAIN PIPE-12 IN	24.00	LF		\$	
1440	01456		CURB BOX INLET TYPE A	29.00	EACH		\$	
1450	01480		CURB BOX INLET TYPE B	4.00	EACH		\$	
1460	01496		DROP BOX INLET TYPE 3	1.00	EACH		\$	
1470	01538		DROP BOX INLET TYPE 7	3.00	EACH		\$	
1480	01544		DROP BOX INLET TYPE 11	6.00	EACH		\$	
1490	01568		DROP BOX INLET TYPE 13S	28.00	EACH		\$	
1500	01581		DROP BOX INLET TYPE 16G	1.00	EACH		\$	
1510	01720		RECONSTRUCT INLET	2.00	EACH		\$	
1520	01756		MANHOLE TYPE A	2.00	EACH		\$	
1530	01767		MANHOLE TYPE C	2.00	EACH		\$	
1540	01768		MANHOLE TYPE C MOD	4.00	EACH		\$	
1550	01791		ADJUST MANHOLE FRAME TO GRADE	2.00	EACH		\$	
1560	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	12,181.00	SQYD	\$2.00	\$	\$24,362.00
1570	08100		CONCRETE-CLASS A	169.00	CUYD		\$	
1580	08150		STEEL REINFORCEMENT	34,109.00	LB		\$	
1590	20424EC		CONNECT TO EXIST MANHOLE	4.00	EACH		\$	
1600	23795EC		CONNECT STORM LATERAL TO STORM SEWER	2.00	EACH		\$	
1610	23952EC		DRAINAGE JUNCTION BOX TY B	1.00	EACH		\$	
1620	24814EC		PIPELINE INSPECTION	2,842.00	LF		\$	

Section: 0005 - UTILITY-ELECTRICAL

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1630	08100		CONCRETE-CLASS A	22.00	CUYD		\$	
1640	17000		EC COMMUNICATIONS MANHOLE	4.00	EACH		\$	
1650	17001		EC COMMUNICATIONS PULL BOX	7.00	EACH		\$	
1660	17003		EC DUCT - 02 BANK	208.00	LF		\$	
1670	17004		EC DUCT - 02 BANK CONCRETE ENCASED	456.00	LF		\$	
1680	17005		EC DUCT - 03 BANK	1,128.00	LF		\$	
1690	17006		EC DUCT - 03 BANK CONCRETE ENCASED	1,045.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1700	17007		EC DUCT - 04 BANK	138.00	LF		\$	
1710	17008		EC DUCT - 04 BANK CONCRETE ENCASED	232.00	LF		\$	

Section: 0006 - GAS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1720	16513		G ENCASEMENT STEEL OPEN CUT RANGE 6 INST (ADDED: 10-15-15)	137.00	LF		\$	
1730	16517		G PIPE POLYETHYLENE/PLASTIC 04 INCH INST (ADDED: 10-15-15)	347.00	LF		\$	
1740	16518		G PIPE POLYETHYLENE/PLASTIC 06 INCH INST (ADDED: 10-15-15)	955.00	LF		\$	
1750	16526		G PIPE STEEL 06 INCH INST (ADDED: 10-15-15)	37.00	LF		\$	
1760	16531		G SERVICE LONG SIDE 1 INCH INST (ADDED: 10-15-15)	4.00	EACH		\$	
1770	16536		G SERVICE SHORT SIDE 1 INCH INST (ADDED: 10-15-15)	4.00	EACH		\$	
1780	16538		G SERVICE SHORT SIDE 2 INCH INST (ADDED: 10-15-15)	3.00	EACH		\$	
1790	16551		G VALVE POLYETHYLENE/PLASTIC 04 IN INST (ADDED: 10-15-15)	2.00	EACH		\$	

Section: 0007 - SEWER

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1800	02690		SAFELOADING	172.00	CUYD		\$	
1810	15004		S CIPP LINER 10 INCH (REVISED: 10-15-15)	105.00	LF		\$	
1820	15005		S CIPP LINER 12 INCH	291.00	LF		\$	
1830	15007		S CIPP LINER 24 INCH (REVISED: 10-15-15)	434.00	LF		\$	
1840	15092		S MANHOLE	1.00	EACH		\$	
1850	15093		S MANHOLE ABANDON/REMOVE (REVISED: 10-15-15)	24.00	EACH		\$	
1860	15094		S MANHOLE ADJUST TO GRADE DETAIL A (REVISED: 10-15-15)	7.00	EACH		\$	
1870	15094		S MANHOLE ADJUST TO GRADE DETAIL B (REVISED: 10-15-15)	7.00	EACH		\$	
1880	15097		S MANHOLE RECONSTRUCT INVERT	1.00	EACH		\$	
1890	15102		S MANHOLE WITH LINING (REVISED: 10-15-15)	13.00	EACH		\$	
1900	15105		S PIPE DUCTILE IRON 10 INCH	144.00	LF		\$	
1910	15111		S PIPE POINT REPAIR	10.00	EACH		\$	
1920	15125		S CIPP LINER 18 INCH (REVISED: 10-15-15)	761.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1930	15128		S CIPP LINER 30 INCH (REVISED: 10-15-15)	267.00	LF		\$	
1940	15129		S CIPP LINER 36 INCH (REVISED: 10-15-15)	272.00	LF		\$	
1950	15130		S CIPP LINER 42 INCH (REVISED: 10-15-15)	289.00	LF		\$	

Section: 0008 - SIGNING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1960	06405		SBM ALUMINUM PANEL SIGNS	148.00	SQFT		\$	
1970	06406		SBM ALUM SHEET SIGNS .080 IN	725.00	SQFT		\$	
1980	06410		STEEL POST TYPE 1	1,712.00	LF		\$	
1990	06440		GMSS GALV STEEL TYPE B	1,038.00	LB		\$	
2000	06490		CLASS A CONCRETE FOR SIGNS	5.00	CUYD		\$	
2010	24631EC		BARCODE SIGN INVENTORY	185.00	EACH		\$	

Section: 0009 - SIGNALIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2020	04795		CONDUIT-2 IN	525.00	LF		\$	
2030	04797		CONDUIT-3 IN	15.00	LF		\$	
2040	04811		ELECTRICAL JUNCTION BOX TYPE B	4.00	EACH		\$	
2050	04821		OPEN CUT ROADWAY	235.00	LF		\$	
2060	04844		CABLE-NO. 14/5C	2,900.00	LF		\$	
2070	04881		MAST ARM POLE	3.00	EACH		\$	
2080	04885		MESSENGER-10800 LB	275.00	LF		\$	
2090	04931		INSTALL CONTROLLER TYPE 170	2.00	EACH		\$	
2100	04932		INSTALL STEEL STRAIN POLE	4.00	EACH		\$	
2110	04935		TEMP SIGNAL	1.00	LS		\$	
2120	04950		REMOVE SIGNAL EQUIPMENT	2.00	EACH		\$	
2130	20093NS835		INSTALL PEDESTRIAN HEAD-LED	16.00	EACH		\$	
2140	20188NS835		INSTALL LED SIGNAL-3 SECTION	11.00	EACH		\$	
2150	23052NN		SPAN MOUNTED SIGN	9.00	EACH		\$	
2160	23157EN		TRAFFIC SIGNAL POLE BASE	24.50	CUYD		\$	
2170	23222EC		INSTALL SIGNAL PEDESTAL	1.00	EACH		\$	
2180	23982EC		INSTALL ANTENNA	2.00	EACH		\$	

Section: 0010 - LIGHTING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0130	03381		PVC PIPE-2 IN	5,750.00	LF		\$	
0140	04740		POLE BASE	88.00	EACH		\$	
0150	04741		POLE BASE IN MEDIAN WALL	6.00	EACH		\$	
0160	04761		LIGHTING CONTROL EQUIPMENT	2.00	EACH		\$	
0170	04780		FUSED CONNECTOR KIT	94.00	EACH		\$	
0180	04820		TRENCHING AND BACKFILLING	5,125.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0190	04832		WIRE-NO. 12	5,700.00	LF		\$	
0200	04833		WIRE-NO. 8	14,268.00	LF		\$	
0210	04834		WIRE-NO. 6	26,130.00	LF		\$	
0220	04940		REMOVE LIGHTING	1.00	LS		\$	
0230	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	40.00	EACH		\$	
0240	20392NS835		ELECTRICAL JUNCTION BOX TYPE C	3.00	EACH		\$	
0250	20394ES835		PVC CONDUIT-3 IN- IN MEDIAN BARRIER WALL	195.00	LF		\$	
0260	20410ED		MAINTAIN LIGHTING	1.00	LS		\$	
0270	21543EN		BORE AND JACK CONDUIT	2,533.00	LF		\$	
0280	24589ED		LED LUMINAIRE	94.00	EACH		\$	
0290	24831EC		DECORATIVE LIGHT POLE 16 FT	94.00	EACH		\$	

Section: 0011 - WATERLINE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0300	14000		W AIR RELEASE VALVE 1 INCH	2.00	EACH		\$	
0310	14003		W CAP EXISTING MAIN	2.00	EACH		\$	
0320	14019		W FIRE HYDRANT ASSEMBLY	11.00	EACH		\$	
0330	14021		W FIRE HYDRANT REMOVE	6.00	EACH		\$	
0340	14023		W FLUSHING ASSEMBLY	1.00	EACH		\$	
0350	14027		W METER 2 INCH	2.00	EACH		\$	
0360	14037		W PIPE DUCTILE IRON 08 INCH	848.00	LF		\$	
0370	14038		W PIPE DUCTILE IRON 10 INCH	7.00	LF		\$	
0380	14039		W PIPE DUCTILE IRON 12 INCH	2,448.00	LF		\$	
0390	14040		W PIPE DUCTILE IRON 16 INCH	172.00	LF		\$	
0400	14048		W PIPE DCTL IRON RSTRND JOINT 08 IN	50.00	LF		\$	
0410	14050		W PIPE DCTL IRON RSTRND JOINT 12 IN	295.00	LF		\$	
0420	14051		W PIPE DCTL IRON RSTRND JOINT 16 IN	110.00	LF		\$	
0430	14080		W SERV PE/PLST LONG SIDE 3/4 IN COPPER	1.00	EACH		\$	
0440	14082		W SERV PE/PLST SHORT SIDE 1 IN COPPER	3.00	EACH		\$	
0450	14084		W SERV PE/PLST SHORT SIDE 2 IN COPPER	1.00	EACH		\$	
0460	14085		W SERV PE/PLST SHORT SIDE 3/4 IN COPPER	1.00	EACH		\$	
0470	14094		W TIE-IN 06 INCH	3.00	EACH		\$	
0480	14095		W TIE-IN 08 INCH	3.00	EACH		\$	
0490	14096		W TIE-IN 10 INCH	1.00	EACH		\$	
0500	14097		W TIE-IN 12 INCH	2.00	EACH		\$	
0510	14098		W TIE-IN 16 INCH	2.00	EACH		\$	
0520	14101		W TIE-IN SPECIAL 10 IN X 10 IN CUT-IN TEE	1.00	EACH		\$	
0530	14105		W VALVE 06 INCH	1.00	EACH		\$	
0540	14106		W VALVE 08 INCH	9.00	EACH		\$	
0550	14108		W VALVE 12 INCH	21.00	EACH		\$	
0560	14109		W VALVE 16 INCH	3.00	EACH		\$	

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Section: 0012 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0570	02568		MOBILIZATION	1.00	LS		\$	
0580	02569		DEMOBILIZATION	1.00	LS		\$	