SUBJECT: **PREQUALIFICATION FOR CURED-IN-PLACE PIPE (CIPP)**

BID #: RFQ-0037-13 OPEN DATE: **2013-03-27**

GENERAL GOVERNMENT AWARDS COMMITTEE

KIND AND BASIS OF CONTRACT:
CONSTRUCTION SUPPLY – FROM CONTRACT DATE THROUGH SEPTEMBER 30, 2014, WITH TWO (2) TWO (2) YEAR RENEWAL OPTIONS

AGENCY: **PUBLIC WORKS**

BASIS OF AWARD: **PRE-QUALIFICATIONS**

NUMBER OF BIDS INVITED: **3** NUMBER RECEIVED: **3** OTHER: **0**

SUMMARY OF BIDS AND RECOMMENDED ACTIONS:
Lanzo Lining Services, Inc. failed to acknowledge the Conflict of Interest form for subject project, Procurement has received and requests to accept and waive the technicality as a minor irregularity.

Accordingly, recommend approval of award to Lanzo Lining Services, Inc., as the lowest responsive, responsible bidder in the total base bid amount of $359,030.00 for Sites #1 - #10 (Bid Date 5-9-18).

Funding for this award to be encumbered by accounts PWGM461SW-03410 and PWGM462SW-06505-PW0072-01, to be executed by Purchase Order.

Attachments: Recommendation Memo, Tabulation Sheet, Vendor Response, Contract Terms, Previous Award

Analyst: _____ **RESPECTFULLY SUBMITTED:** _____
CHELSEY FLEMING GREGORY PEASE, CHIEF
PROCUREMENT DIVISION

CONCURRENCE BY: STEVE D. LONG, JR., P.E., CHIEF, RIGHT OF WAY AND STORMWATER MAINT. DIVISION

(ALL AWARD ACTIONS SUBJECT TO LAWFULLY APPROPRIATED FUNDS)
ACTION OF GGAC COMMITTEE ON RECOMMENDATIONS ABOVE

MEMBERS APPROVING _____ MEMBERS DISAPPROVING _____ DATE: _____

_____ _____ OTHER: _____

_____ _____

_____ _____

ACTION OF AWARDING AUTHORITY DATE _____

APPROVED _____ DISAPPROVED _____

OTHER _____

SIGNATURE OF AUTHENTICATION _____

City of Jacksonville, Florida

Lenny Curry, Mayor

Department of Public Works
Right of Way & Stormwater Maintenance Division
609 St. Johns Bluff Road
Jacksonville, FL 32225
(904) 472-2900
www.coj.net

ONE CITY. ONE JACKSONVILLE.

May 15, 2018

MEMORANDUM

TO: Greg Pease, Chief,
Procurement Division

THRU: John P. Pappas P.E., Director of Public Works

FROM: Steven D. Long Jr., P.E. Chief
Right of Way and Stormwater Maintenance Division

RE: **RECOMMENDATION TO AWARD**
Cured-in-Place Pipe (CIPP) Bid Date 5-09-18 (Sites 1-10)

BID No.: **RFQ-0037-13**
Received Date: May 9, 2018
Award Amount: $359,030.00

Please be advised that the Right of Way and Stormwater Maintenance Division of the Department of Public Works has reviewed bids on the above-referenced contract and determined that Lanzo Trenchless Technologies South, 125 SE 5th Court Deerfield Beach, Fl., submitted the lowest qualified responsive bid in the amount of $359,030.00 for the above-referenced bid. There were a total of three bidders.

We, therefore, recommend the subject bid in the amount of $359,030.00 be awarded to Lanzo Trenchless Technologies South., the lowest conforming bidder. Funding should be encumbered from Right of Way and Stormwater Maintenance Division account PWGM4615W-03410 and PWGM4625W06505-PW0072-01.

If you require any additional information, you may contact Robert Young at 255-4294.

SL: ry

cc: Ann Brackin, Public Works
Chelsey Fleming, Procurement
Dan Pearson, Procurement
Teresa Otto, RoWSM
Robert Young, RowSM

ab

BID TABULATION SHEET

TITLE: CURED-IN-PLACE PIPE LINING BID NO. RFQ-0037-13 - SITES #1-10 OPEN DATE: MAY 9, 2018 @ 2:00 P.M. ANALYST: CHELSEY FLEMING No. Invited: (3) No. Received (3) No Bids: (0)			Insituform Technologies, Inc.	Lanzo Lining Services, Inc.	Layne Inliner
BID ITEMS					
SITE #1	Location: 4725 HATTERAS ROAD				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 26,936.00	$ 15,470.00	$ 21,840.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 7,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 4,500.00
	TOTAL BASE BID FOR SITE #1		**$ 26,938.00**	**$ 15,770.00**	**$ 33,840.00**
SITE #2	Location: 5263 DOSTIE DRIVE SOUTH				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 21,080.00	$ 15,454.00	$ 21,242.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 7,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 4,500.00
	TOTAL BASE BID FOR SITE #2		**$ 21,082.00**	**$ 15,754.00**	**$ 33,242.00**
SITE #3	Location: 1442 LANE CIRCLE EAST				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 9,207.10	$ 7,105.00	$ 9,800.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 7,500.00
	TOTAL BASE BID FOR SITE #3		**$ 9,208.10**	**$ 7,255.00**	**$ 17,300.00**
SITE #4	Location: PATOU DRIVE NORTH @THIERVY DRIVE				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 66,913.00	$ 56,681.00	$ 60,178.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 9,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 7,500.00
	TOTAL BASE BID FOR SITE #4		**$ 66,915.00**	**$ 56,981.00**	**$ 77,178.00**
SITE #5	Location: 6747 DAUGHTRY BOULEVARD				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 100,270.80	$ 75,367.00	$ 105,050.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 11,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 9,500.00
	TOTAL BASE BID FOR SITE #5		**$ 100,272.80**	**$ 75,667.00**	**$ 126,050.00**
SITE #6	Location: 2130 BURPEE DRIVE				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 59,966.20	$ 46,690.00	$ 49,736.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 9,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 7,500.00
	TOTAL BASE BID FOR SITE #6		**$ 59,968.20**	**$ 46,990.00**	**$ 66,736.00**
SITE #7	Location: 2937 FRONT ROAD				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 64,192.00	$ 51,408.00	$ 67,313.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 11,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 9,500.00
	TOTAL BASE BID FOR SITE #7		**$ 64,194.00**	**$ 51,708.00**	**$ 88,313.00**

BID TABULATION SHEET

TITLE: CURED-IN-PLACE PIPE LINING BID NO. RFQ-0037-13 - SITES #1-10 OPEN DATE: MAY 9, 2018 @ 2:00 P.M. ANALYST: CHELSEY FLEMING No. Invited: (3) No. Received (3) No Bids: (0)			Insituform Technologies, Inc.	Lanzo Lining Services, Inc.	Layne Inliner
BID ITEMS					
SITE #8	Location: 8438 GRAYLING DRIVE SOUTH				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 52,650.30	$ 41,829.00	$ 63,510.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 11,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 9,500.00
	TOTAL BASE BID FOR SITE #8		**$ 52,652.30**	**$ 42,129.00**	**$ 84,510.00**
SITE #9	Location: 6352 CHRISTOPHER CREEK ROAD WEST				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 30,399.60	$ 30,576.00	$ 28,812.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 9,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 7,500.00
	TOTAL BASE BID FOR SITE #9		**$ 30,401.60**	**$ 30,876.00**	**$ 45,812.00**
SITE #10	Location: 6307 DIANE ROAD				
1	CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 17,316.00	$ 15,600.00	$ 17,745.00
2	POINT REPAIR (under pavement)	EA	$ 1.00	$ 150.00	$ 7,500.00
3	POINT REPAIR (natural ground)	EA	$ 1.00	$ 150.00	$ 4,500.00
	TOTAL BASE BID FOR SITE #10		**$ 17,318.00**	**$ 15,900.00**	**$ 29,745.00**
	TOTAL BASE BID FOR SITES (#1 - #10)		**$ 448,950.00**	**$ 359,030.00**	**$ 602,726.00**
	CONFLICT OF INTEREST:		Yes	**NO**	Yes
	ADDENDUM(S): ( ) ACKNOWLEDGED:		N/A	N/A	N/A

CURED-IN-PLACE PIPE (CIPP) LINING
JOB SITE SPECIFICATIONS, INVITATION TO BID AND BID FORM
Bid Date 5-9-18 Site Visit Date 4-24-2018

SITE #1: **LOCATION: 4725 HATTERAS ROAD**
APPROXIMAT SIZE (Dia): 15X21 (IN.) TYPE: ACMP APPROXIMATE LENGTH: 25 (FT.)
APPROXIMAT SIZE (Dia): 15X21 (IN.) TYPE: ACMP APPROXIMATE LENGTH: 157 (FT.)
SEE ATTACHED DRAWING
Note: Video provided to bidders
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 15,470 00
POINT REPAIR (under pavement)	EA	$ 150 00
POINT REPAIR (natural ground)	EA	$ 150.00
TOTAL BID SITE #1 =		$ 15770 00

SITE #2: **LOCATION: 5263 DOSTIE DRIVE SOUTH**
APPROXIMAT SIZE (Dia): 15 (IN.) TYPE: RCP APPROXIMATE LENGTH: 28 (FT.)
APPROXIMAT SIZE (Dia): 18 (IN.) TYPE: RCP APPROXIMATE LENGTH: 144 (FT.)
SEE ATTACHED DRAWING
Note: Video provided to bidders
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 15,454 00
POINT REPAIR (under pavement)	EA	$ 150 00
POINT REPAIR (natural ground)	EA	$ 150.00
TOTAL BID SITE #2 =		$ 15,754 00

SITE #3: **LOCATION: 1442 LANE CIRCLE EAST**
APPROXIMAT SIZE (Dia): 18 (IN.) TYPE: RCP APPROXIMATE LENGTH: 49 (FT.)
SEE ATTACHED DRAWING
Note: No Video provided to bidders
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 7,105 00
POINT REPAIR (under pavement)	EA	$ 150 00
TOTAL BID SITE #3 =		$ 7,255 00

SITE #4: **LOCATION: PATOU DRIVE NORTH @ THIERVY DRIVE**
APPROXIMAT SIZE (Dia): 24 (IN.) TYPE: CMP APPROXIMATE LENGTH: 239 (FT.)
APPROXIMAT SIZE (Dia): 21 (IN.) TYPE: CMP APPROXIMATE LENGTH: 235 (FT.)
APPROXIMAT SIZE (Dia): 18 (IN.) TYPE: CMP APPROXIMATE LENGTH: 38 (FT.)
APPROXIMAT SIZE (Dia): 15 (IN.) TYPE: CMP APPROXIMATE LENGTH: 41 (FT.)
SEE ATTACHED DRAWING
Note: Video provided to bidders. This site to be worked after the road crossing is replaced by others.
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 56,681.00
POINT REPAIR (under pavement)	EA	$ 150 00
POINT REPAIR (natural ground)	EA	$ 150 00
TOTAL BID SITE #4 =		$ 56,981 00

CURED-IN-PLACE PIPE (CIPP) LINING
JOB SITE SPECIFICATIONS, INVITATION TO BID AND BID FORM
Bid Date 5-9-18 Site Visit Date 4-24-2018

SITE #5 **LOCATION: 5747 DAUGHTRY BOULEVARD**

APPROXIMAT SIZE (Dia): 36 (IN.) TYPE: CMP APPROXIMATE LENGTH: 145 (FT.)
APPROXIMAT SIZE (Dia): 25x36 (IN.) TYPE: ACMP APPROXIMATE LENGTH: 26 (FT.)
APPROXIMAT SIZE (Dia): 22x36 (IN.) TYPE: ACMP APPROXIMATE LENGTH: 282 (FT.)
APPROXIMAT SIZE (Dia): 15 (IN.) TYPE: CMP APPROXIMATE LENGTH: 30 (FT.)
SEE ATTACHED DRAWING
Note: No Video provided to bidders
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 75,367.00
POINT REPAIR (under pavement)	EA	$ 150.00
POINT REPAIR (natural ground)	EA	$ 150.00
TOTAL BID SITE #5 =		$ 75,667.00

SITE #6 **LOCATION: 2130 BURPEE DRIVE**

APPROXIMAT SIZE (Dia): 24 (IN.) TYPE: CMP APPROXIMATE LENGTH: 143 (FT.)
APPROXIMAT SIZE (Dia): 24 (IN.) TYPE: CMP APPROXIMATE LENGTH: 238 (FT.)
APPROXIMAT SIZE (Dia): 24 (IN.) TYPE: CMP APPROXIMATE LENGTH: 25 (FT.)
SEE ATTACHED DRAWING
Note: No Video provided to bidders
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 46,690.00
POINT REPAIR (under pavement)	EA	$ 150.00
POINT REPAIR (natural ground)	EA	$ 150.00
TOTAL BID SITE #6 =		$ 46,990.00

SITE #7 **LOCATION: 2937 FRONT ROAD**

APPROXIMAT SIZE (Dia): 36 (IN.) TYPE: RCP APPROXIMATE LENGTH: 185 (FT.)
APPROXIMAT SIZE (Dia): 36 (IN.) TYPE: RCP APPROXIMATE LENGTH: 56 (FT.)
APPROXIMAT SIZE (Dia): 36 (IN.) TYPE: RCP APPROXIMATE LENGTH: 31 (FT.)
SEE ATTACHED DRAWING
Note: Video provide to bidders. This site is tidal. Pipe runs under a fence line.
The last Structure before the River is a Drop Box
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 51,408.00
POINT REPAIR (under pavement)	EA	$ 150.00
POINT REPAIR (natural ground)	EA	$ 150.00
TOTAL BID SITE #7 =		$ 51,708.00

SITE #8 **LOCATION: 8438 GRAYLING DRIVE SOUTH**

APPROXIMAT SIZE (Dia): 24 (IN.) TYPE: RCP APPROXIMATE LENGTH: 28 (FT.)
APPROXIMAT SIZE (Dia): 28x42 (IN.) TYPE: ERCP APPROXIMATE LENGTH: 195 (FT.)
SEE ATTACHED DRAWING
Note: Video Provided to Bidders
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 41,829.00
POINT REPAIR (under pavement)	EA	$ 150.00
POINT REPAIR (natural ground)	EA	$ 150.00
TOTAL BID SITE #8 =		$ 42,129.00

CURED-IN-PLACE PIPE (CIPP) LINING
JOB SITE SPECIFICATIONS, INVITATION TO BID AND BID FORM
Bid Date 5-9-18 Site Visit Date 4-24-2018

SITE #9 **LOCATION: 6352 CHRISTOPHER CREEK ROAD WEST**
APPROXIMAT SIZE (Dia): *30* (IN.) TYPE: *RCP* APPROXIMATE LENGTH: *196* (FT.)
SEE ATTACHED DRAWING
Note: No Video provided to bidders
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 30,576 00
POINT REPAIR (under pavement)	EA	$ 150 00
POINT REPAIR (natural ground)	EA	$ 150 00
TOTAL BID SITE #9 =		$ 30,876 00

SITE #10 **LOCATION: 6307 DIANE ROAD**
APPROXIMAT SIZE (Dia): *18* (IN.) TYPE: *CMP/RCP* APPROXIMATE LENGTH: *195* (FT.)
SEE ATTACHED DRAWING
Note: No Video provided to bidders
BID ITEMS:

CURED-IN-PLACE LINER (ASTM F1216)	LS	$ 15,600 00
POINT REPAIR (under pavement)	EA	$ 150 00
POINT REPAIR (natural ground)	EA	$ 150 00
TOTAL BID SITE #10 =		$ 15,900 00

TOTAL BASE BID FOR SITES (#1- #10) $ 359,030.00 (Three Hundred Fifty Nine Thousand and Thirty Dollars Zero Cents)

CURED-IN-PLACE PIPE (CIPP) LINING
JOB SITE SPECIFICATIONS, INVITATION TO BID AND BID FORM
Bid Date 5-9-18 Site Visit Date 4-24-2018

Comments: 1) Refer to attached Site Visit(s) sign in sheet.
2) ESTIMATED GROUNDWATER TABLE ELEVATION FOR ALL SITES IS ONE FOOT.
3) Design Parameters, specific resin system, site condition and minimum CIPP design thickness will be required for each site as part of the bid submittal.
4) All concrete or debris shall be removed from the pipes and structures to provide positive flow and a minimum of 10% reduction of ovality/ cross-sectional area.

TIME IS OF THE ESSENCE. It is mutually agreed among the parties that the subject work shall be completed within 90 Calendar days after the issue date of the Purchase Order.

Award will be by total base bid for ALL sites to the lowest responsive, responsible bidder.
All awards are subject to the availability of funds.

It is the Contractor's responsibility to verify pipe size and length prior to manufacturing the liner. The liner will be structural unless otherwise instructed in writing by the project engineer. Point repairs are to be a contingency item, however, they will be included in the total base bid in determining the low bidder. The Contractor's Bid lump sum(LS) for the liner and lump sum(LS) for each point repair is to be sealed and submitted to the address below on the proper form. It is understood that the Contractor may perform any number of point repairs on any job site(s) at the unit price submitted.

Please consider this as an invitation to submit a bid on this project. Sealed bids are to be submitted to the below-specified address on or before 2:00 p.m.on Wednesday, the 9th Day of May 2018 Bidders are fully responsible for delivery of bids; Reliance on mail or public carrier is at bidder's risk. **LATE BIDS WILL NOT BE CONSIDERED**

Sealed Bids submitted to: **City of Jacksonville**
Procurement Division
Ed Ball Building, 1st Floor
214 N. Hogan Street, Suite 105
Jacksonville, Fl. 32202

CURED-IN-PLACE PIPE (CIPP) LINING
JOB SITE SPECIFICATIONS, INVITATION TO BID AND BID FORM
Bid Date 5-9-18 Site Visit Date 4-24-2018

This document is issued pursuant to those certain prequalification specifications, identified as RFQ-0037-13 for the reconstruction of existing storm drain pipe lines and conduits by the installation of cured-in-place pipe (F1216), and pursuant to those certain contracts for Storm Sewer Rehabilitation by Cured-In-Place Pipe Technology, by and between the City of Jacksonville and Insituform Technologies, LLC, Layne Inliner, LLC, and Lanzo Trenchless Technologies, respectively. Said Request for Qualifications (R.F.Q.) and contracts are on file in the Office of the Right of Way and Grounds Maintenance, Chief and, by this reference, are made a part hereof as if set out in their entirety.

The undersigned Bidder certifies that this proposal is made in good faith, without collusion or connection with any other entity bidding on the work.

The undersigned Bidder certifies that no officer or agent of the City will directly or indirectly benefit from this bid, as evidence by the Conflict of Interest Form attached here to.

The undersigned Bidder states that all applicable taxes are included in the lump sum bid, for each site, and that the CONTRACTOR acknowledges that the work at the job sites are not exempt from the State or Local Sales or Use taxes, and payment of such taxes is the responsibility of the Bidder.

The undersigned Bidder agrees to keep its bid in effect for 120 calendar days after the Bid Opening date to allow the CITY time to award the bid, should it be awarded. This time period begins at the time bids are opened and ends upon the issuance of Notice to Proceed (NTP) which will be in the form of a Purchase Order (PO) from the CITY. The bid prices shall remain in effect throughout the life of the Contract. Failure of the CITY to issue a PO within the specified time period shall allow Bidder to withdraw its Bid and terminate its contract without penalty. Failure of the CITY to issue a PO within the specified time period shall not entitle Bidder to an adjustment of its Bid prices, unless mutually agreeable by the CITY.

The undersigned Bidder acknowledges that included in the various items of the proposal and in the total bid price are costs for complying with the Florida Trench Safety Act and Occupational Safety and Health Administration's Safety Standards for Confined Space Entry.

The undersigned Bidder certifies, under penalty of perjury and contract rescission, that it has all required licenses to perform the work required to fulfill the terms of the contract resulting from a successful bid. Furthermore, the undersigned Bidder affirms that all subcontractors requiring to be licensed are properly licensed to perform work on their respective portions of this project.

NAME OF BIDDER (Print) Lanzo Trenchless Technologies South _____ If Corporation, affix Corporate Seal

ORIGINAL SIGNATURE _____ TITLE Assistant Secretary
Corporate Representative

LANZO
Trenchless Technologies

Florida Office
125 SE 5th Court,
Deerfield Beach, FL 33441-4749
Office 954 973-8700
Fax 954 974-3894
www.Lanzo.Net

Michigan Office
28135 Groesbeck Highway,
Roseville, MI 48066
Office 586.755-5819
Fax 586.775-2328

Cured-In-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 15" CMP

Design Assumptions:

[ ] Variable Inputs for Wall Thickness Determination

Condition of host pipe	FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in) D =	15	
Depth of cover (ft) H =	2.0	Ground surface to top of pipe
Height of groundwater (ft) H_w =	2.0	Water table to top of pipe
Ovality of host pipe (%) q =	2.0	Default value is 2%; range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi) E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)	50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi) E_L =	200,000	Determined from long-term retention %
Design safety factor N =	2	Default value is 2.0
Unit weight of soil (pcf) δ_s =	120	
Unit weight of water (pcf) δ_w =	62.4	
Poisson's ratio of CIPP v =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi) σ_i =	6,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi) σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless) I_f =	1.2	*Depth <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1*
Distributed load area over pipe at depth H (ft²) A_{LL} =	39.7	See table below
Total applied surface wheel load (lb) P_{LW} =	32,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi) w_{LH} =	6.7	$w_L = (P \cdot I_f)/(144 \cdot A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)			
Condition	H, ft	P, lbs	A_{LL}, ft²
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75H)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydralic Loading

Ovality reduction factor (dimensionless) C = 0.84

$$C = \left(\frac{1 - q/100}{[1 + q/100]^2}\right)^3$$

External hydrostatic pressure from groundwater (psi) P_w = 1.41

$$P_w = \gamma_w (H_w + D/12)/144$$

Minimum thickness required, hydrostatic buckling t_1 = 0.15 in = 3.89 mm

$$t_1 = \frac{D}{\left(\left[\frac{2\,K \cdot E_L \cdot C}{(1-v^2) \cdot N \cdot (P_w + P_v)}\right]^{1/3}\right) + 1}$$ ASTM F1216, Equation X1.1

Minimum thickness required, ovality check t_2 = 0.08 in = 2.12 mm, SDR_2 = 179

$$1.5 \cdot \frac{q}{100} \cdot \left(1 + \frac{q}{100}\right) \cdot SDR^2 - 0.5 \cdot \left(1 + \frac{q}{100}\right) SDR - \frac{\sigma_L}{P \cdot N} = 0$$

If P_w = 0, default SDR = 100

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) = W_e =	6.72	From live load calculations
Water buoyancy factor (dimensionless) R_w =	0.67	$R_w = 1 - 0.33(H_w/H)$ (min value = 0.67) **Note**: If H_w<0, use H_w = 0
Total external pressure on pipe (psi) q_t =	9.24	$q_t = 0.433H_w + \delta_s H R_w/144 + W_e$ **Note**: If H_w<0, use H_w = 0
Coefficient of elastic support (in-lb) B' =	0.219	$B' = 1/(1+4e^{-0.065H})$

Minimum thickness required t_3 = 0.25 in = 6.23 mm

$$t = \left[\frac{(q_t \cdot N)^2 \cdot D^3 \cdot 12}{32\, R_w \cdot B' \cdot M_m \cdot E_L \cdot C}\right]^{1/3}$$ ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness t_4 = 0.21 in = 5.36 mm

$$t = D/(E/0.093 \cdot 12)^{1/3}$$ ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

	Fully Deteriorated Gravity Flow	
Host pipe condition		
CIPP end use application		
CIPP outside diameter (host pipe inside diameter) D =	15.00	in
Minimum CIPP thickness calculated t_{calc} =	0.25	in
=	6.23	mm
Nominal CIPP thickness to be supplied t_{CIPP} =	7.5	mm

Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4

LANZO
Trenchless Technologies

Florida Office
125 SE 5th Court,
Deerfield Beach, FL 33441-4749
Office 954 973-9700
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Cured-in-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 18" CMP

Design Assumptions:

Variable inputs for Wall Thickness Determination

Condition of host pipe	FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in) D =	18	
Depth of cover (ft) H =	2.5	Ground surface to top of pipe
Height of groundwater (ft) H_w =	2.5	Water table to top of pipe
Ovality of host pipe (%) q =	2.0	Default value is 2%, range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi) E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)	50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi) E_L =	200,000	Determined from long-term retention %
Design safety factor N =	2	Default value is 2.0
Unit weight of soil (pcf) δ_s =	120	
Unit weight of water (pcf) δ_w =	62.4	
Poisson's ratio of CIPP v =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi) σ_i =	5,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi) σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless) I_f =	1.1	*Depth <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1*
Distributed load area over pipe at depth H (ft^2) A_{LL} =	52.3	See table below
Total applied surface wheel load (lb) P_{LW} =	32,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi) w_{LH} =	4.7	$w_L = (P \cdot I_f)/(144 \cdot A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)			
Condition	H, ft	P, lbs	A_{LL}, ft^2
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75H)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydralic Loading

Ovality reduction factor (dimensionless) C = 0.84

$$C = \left(\frac{1 - q/100}{\left[1 + q/100\right]^2}\right)^3$$

External hydrostatic pressure from groundwater (psi) P_w = 1.73

$$P_w = \gamma_w (H_w + D/12)/144$$

Minimum thickness required, hydrostatic buckling t_1 = 0.20 in = 5.00 mm

$$t_1 = \frac{D}{\left(\left[\frac{2\,K\,E_L\,C}{(1-v^2)\,N \cdot P_w + P_v}\right]^{1/3}\right) + 1}$$

ASTM F1216, Equation X1.1

Minimum thickness required, ovality check t_2 = 0.11 in = 2.83 mm, SDR_2 = 162

$$1.5 \cdot \frac{q}{100}\left(1 + \frac{q}{100}\right) SDR^2 - 0.5\left(1 + \frac{q}{100}\right) \cdot SDR - \frac{\sigma_L}{P \cdot N} = 0$$

If P_w = 0, default SDR = 100

ASTM F1216, Equation X1.2

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) = W_s =	4.68	From live load calculations
Water buoyancy factor (dimensionless) R_w =	0.67	$R_w = 1 - 0.33(H_w/H)$ (min. value = 0.67) — **Note**: If H_w<0, use H_w = 0
Total external pressure on pipe (psi) q_t =	7.80	$q_t = 0.433H_w + \delta_s H R_w/144 + W_s$ — **Note**: If H_w<0, use H_w = 0
Coefficient of elastic support (in-lb) B' =	0.223	$B' = 1/(1+4e^{-0.065H})$

Minimum thickness required t_3 = 0.25 in = 6.53 mm

$$t = \left[\frac{(q_t\,N)^3 \cdot D^3 \cdot 12}{32\,R_w \cdot B' \cdot M_{sh}\,E_L\,C}\right]^{1/3}$$

ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness t_4 = 0.25 in = 6.44 mm

$$t = D/(E/0.093 \cdot 12)^{1/3}$$

ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

Host pipe condition	Fully Deteriorated	
CIPP end use application	Gravity Flow	
CIPP outside diameter (host pipe inside diameter) D =	18.00	in
Minimum CIPP thickness calculated t_{calc} =	0.26	in
=	6.63	mm
Nominal CIPP thickness to be supplied t_{CIPP} =	7.5	mm

Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4

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Cured-In-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 15x21" CMP

Design Assumptions:

[ ] Variable inputs for Wall Thickness Determination

Condition of host pipe	FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in) D =	18	Equivalent
Depth of cover (ft) H =	1.0	Ground surface to top of pipe
Height of groundwater (ft) H_w =	1.0	Water table to top of pipe
Ovality of host pipe (%) q =	10.0	Default value is 2%; range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi) E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)	50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi) E_L =	200,000	Determined from long-term retention %
Design safety factor N =	2	Default value is 2.0
Unit weight of soil (pcf) δ_s =	120	
Unit weight of water (pcf) δ_w =	62.4	
Poisson's ratio of CIPP ν =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi) σ_i =	5,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi) σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless) I_f =	1.3	*Depth <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1*
Distributed load area over pipe at depth H (ft²) A_{LL} =	8.8	See table below
Total applied surface wheel load (lb) P_{LW} =	16,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi) w_{LH} =	16.4	$w_L = (P \cdot I_f)/(144\ A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)

Condition	H, ft	P, lbs	A_{LL}, ft²
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75H)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydralic Loading

Ovality reduction factor (dimensionless) C = 0.41

$$C = \left(\frac{1 - q/100}{\left[1 + q/100\right]^2}\right)^3$$

External hydrostatic pressure from groundwater (psi) P_w = 1.08

$$P_w = \gamma_w (H_w + D/12)/144$$

Minimum thickness required, hydrostatic buckling t_1 = 0.21 in = 5.40 mm

$$t_1 = \frac{D}{\left(\left[\frac{2\ K\ E_L\ C}{(1-\nu^2)\ N\ (P_w + P_v)}\right]^{1/3}\right) + 1}$$ ASTM F1216, Equation X1.1

Minimum thickness required, ovality check t_2 = 0.20 in = 5.18 mm, SDR_2 = 88

$$1.5 \cdot \frac{q}{100} \cdot \left(1 + \frac{q}{100}\right) \cdot SDR^2 - 0.5 \cdot \left(1 + \frac{q}{100}\right) \cdot SDR - \frac{\sigma_L}{P \cdot N} = 0$$

If P_w = 0, default SDR = 100

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) = W_v =	16.37	From live load calculations
Water buoyancy factor (dimensionless) R_w =	0.67	$R_w = 1 - 0.33(H_w/H)$ (min. value = 0.67) — Note: If H_w<0, use H_w = 0
Total external pressure on pipe (psi) q_t =	18.01	$q_t = 0.433H_w + \delta_s H R_w/144 + W_v$ — Note: If H_w<0, use H_w = 0
Coefficient of elastic support (in-lb) B' =	0.209	$B' = 1/(1+4e^{-0.065H})$

Minimum thickness required t_3 = 0.59 in = 14.98 mm

$$t = \left[\frac{(q_t\ N)^2\ D^2\ 12}{32\ R_w\ B'\ M_m\ E_L \cdot C}\right]^{1/3}$$ ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness t_4 = 0.25 in = 6.44 mm

$$t = D/(E/0.093 \cdot 12)^{1/3}$$ ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

Host pipe condition	Fully Deteriorated	
CIPP end use application	Gravity Flow	
CIPP outside diameter (host pipe inside diameter) D =	18.00	in
Minimum CIPP thickness calculated t_{calc} =	0.59	in
=	14.98	mm
Nominal CIPP thickness to be supplied t_{CIPP} =	15.0	mm

Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4

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Cured-In-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 21" CMP

Design Assumptions:

[ ] Variable Inputs for Wall Thickness Determination

Condition of host pipe		FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in)	D =	21	
Depth of cover (ft)	H =	2.5	Ground surface to top of pipe
Height of groundwater (ft)	H_w =	2.5	Water table to top of pipe
Ovality of host pipe (%)	q =	2.0	Default value is 2%, range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi)	E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)		50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi)	E_L =	200,000	Determined from long-term retention %
Design safety factor	N =	2	Default value is 2.0
Unit weight of soil (pcf)	δ_s =	120	
Unit weight of water (pcf)	δ_w =	62.4	
Poisson's ratio of CIPP	v =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi)	σ_i =	6,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi)	σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless)	I_f =	1.1	*Depth <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1*
Distributed load area over pipe at depth H (ft^2)	A_{LL} =	52.3	See table below
Total applied surface wheel load (lb)	P_{LW} =	32,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi)	w_{LH} =	4.7	$w_L = (P \cdot I_f)/(144 \cdot A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)

Condition	H, ft	P, lbs	A_{LL}, ft^2
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydralic Loading

Ovality reduction factor (dimensionless) — C = 0.84

$$C = \left(\frac{1 - q/100}{[1 + q/100]^2}\right)^3$$

External hydrostatic pressure from groundwater (psi) — P_w = 1.84

$$P_w = \gamma_w (H_w + D/12)/144$$

Minimum thickness required, hydrostatic buckling — t_1 = 0.23 in = 5.95 mm

$$t_1 = \frac{D}{\left(\left[\frac{2 \cdot K \cdot E_L \cdot C}{(1-v^2) \cdot N \cdot (P_w + P_v)}\right]^{1/3}\right) + 1}$$ ASTM F1216, Equation X1.1

Minimum thickness required, ovality check — t_2 = 0.13 in = 3.40 mm, SDR_2 = 157

$$1.5 \cdot \frac{q}{100} \cdot \left(1 + \frac{q}{100}\right) \cdot SDR^2 - 0.5 \cdot \left(1 + \frac{q}{100}\right) SDR - \frac{\sigma_L}{P \cdot N} = 0$$

If P_w = 0, default SDR = 100

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) =	W_e =	4.68	From live load calculations
Water buoyancy factor (dimensionless)	R_w =	0.67	$R_w = 1 - 0.33(H_w/H)$ (min. value = 0.67) — **Note**: If H_w<0, use H_w = 0
Total external pressure on pipe (psi)	q_t =	7.91	$q_t = 0.433H_w + \delta_s H R_w/144 + W_e$ — **Note**: If H_w<0, use H_w = 0
Coefficient of elastic support (in-lb)	B' =	0.223	$B' = 1/(1+4e^{-0.065H})$

Minimum thickness required — t_3 = 0.31 in = 7.80 mm

$$t = \left[\frac{(q_t \cdot N)^2 \cdot D^3 \cdot 12}{32 \cdot R_w \cdot B' \cdot M_m \cdot E_L \cdot C}\right]^{1/3}$$ ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness — t_4 = 0.30 in = 7.51 mm

$$t = D/(E/0.093 \cdot 12)^{1/3}$$ ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

		Fully Deteriorated Gravity Flow	
Host pipe condition			
CIPP end use application			
CIPP outside diameter (host pipe inside diameter)	D =	21.00	in
Minimum CIPP thickness calculated	t_{calc} =	0.31	in — Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4
	=	7.80	mm
Nominal CIPP thickness to be supplied	t_{CIPP} =	9.0	mm

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Cured-In-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 24" CMP

Design Assumptions:

Variable inputs for Wall Thickness Determination

Condition of host pipe		FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in)	D =	24	
Depth of cover (ft)	H =	2.5	Ground surface to top of pipe
Height of groundwater (ft)	H_w =	2.5	Water table to top of pipe
Ovality of host pipe (%)	q =	2.0	Default value is 2%; range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi)	E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)		50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi)	E_L =	200,000	Determined from long-term retention %
Design safety factor	N =	2	Default value is 2.0
Unit weight of soil (pcf)	δ_s =	120	
Unit weight of water (pcf)	δ_w =	62.4	
Poisson's ratio of CIPP	ν =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi)	σ_i =	5,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi)	σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless)	I_f =	1.1	*Depth <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1*
Distributed load area over pipe at depth H (ft^2)	A_{LL} =	52.3	See table below
Total applied surface wheel load (lb)	P_{LW} =	32,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi)	w_{LH} =	4.7	$w_L = (P \cdot I_f)/(144 \cdot A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)			
Condition	H, ft	P, lbs	A_{LL}, ft^2
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydratic Loading

Ovality reduction factor (dimensionless) C = 0.84

$$C = \left(\frac{1 - q/100}{1 + q/100}\right)^2$$

External hydrostatic pressure from groundwater (psi) P_w = 1.95

$$P_w = \gamma_w (H_w + D/12)/144$$

Minimum thickness required, hydrostatic buckling t_1 = 0.27 in = 6.92 mm

$$t_1 = \frac{D}{\left(\left[\frac{2 \cdot K \cdot E_L \cdot C}{(1-\nu^2) \cdot N \cdot (P_w + P_v)}\right]^{1/3}\right) + 1}$$

ASTM F1216, Equation X1.1

Minimum thickness required, ovality check t_2 = 0.16 in = 4.00 mm, SDR_2 = 153

$$1.5 \frac{q}{100}\left(1 + \frac{q}{100}\right) \cdot SDR^2 - 0.5 \cdot \left(1 + \frac{q}{100}\right) \cdot SDR - \frac{\sigma_L}{P \cdot N} = 0$$

If P_w = 0, default SDR = 100

ASTM F1216, Equation X1.2

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) =	W_s =	4.68	From live load calculations
Water buoyancy factor (dimensionless)	R_w =	0.67	$R_w = 1 - 0.33(H_w/H)$ (min value = 0.67) — Note: If H_w<0, use H_w = 0
Total external pressure on pipe (psi)	q_t =	8.02	$q_t = 0.433H_w + \delta_s H R_w/144 + W_s$ — Note: If H_w<0, use H_w = 0
Coefficient of elastic support (in-lb)	B' =	0.223	$B' = 1/(1+4e^{-0.065H})$

Minimum thickness required t_3 = 0.35 in = 9.00 mm

$$t = \left[\frac{(q_t \cdot N)^2 \cdot D^3 \cdot 12}{32 \cdot R_w \cdot B' \cdot M_{sh} \cdot E_L \cdot C}\right]^{1/3}$$

ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness t_4 = 0.34 in = 8.58 mm

$$t = D/(E/0.093 \cdot 12)^{1/3}$$

ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

Host pipe condition		Fully Deteriorated	
CIPP end use application		Gravity Flow	
CIPP outside diameter (host pipe inside diameter)	D =	24.00	in
Minimum CIPP thickness calculated	t_{calc} =	0.35	in
	=	9.00	mm
Nominal CIPP thickness to be supplied	t_{CIPP} =	9.0	mm

Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4

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Cured-in-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 22" x 36" RCP

Design Assumptions:

[ ] Variable Inputs for Wall Thickness Determination

Condition of host pipe		FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in)	D =	29	Equivalent
Depth of cover (ft)	H =	3.0	Ground surface to top of pipe
Height of groundwater (ft)	H_w =	3.0	Water table to top of pipe
Ovality of host pipe (%)	q =	10.0	Default value is 2%, range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi)	E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)		50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi)	E_L =	200,000	Determined from long-term retention %
Design safety factor	N =	2	Default value is 2.0
Unit weight of soil (pcf)	δ_s =	120	
Unit weight of water (pcf)	δ_w =	62.4	
Poisson's ratio of CIPP	v =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi)	σ_I =	5,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi)	σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless)	I_f =	1.1	*Depth <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1*
Distributed load area over pipe at depth H (ft^2)	A_{LL} =	66.4	See table below
Total applied surface wheel load (lb)	P_{LW} =	32,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi)	w_{LH} =	3.7	$w_L = (P \cdot I_f)/(144 \cdot A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)

Condition	H, ft	P, lbs	A_{LL}, ft^2
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydralic Loading

Ovality reduction factor (dimensionless) — C = 0.41

$$C = \left(\frac{1 - q/100}{[1 + q/100]^2}\right)^2$$

External hydrostatic pressure from groundwater (psi) — P_w = 2.35

$$P_w = \gamma_w (H_w + D/12)/144$$

Minimum thickness required, hydrostatic buckling — t_1 = 0.44 in = 11.23 mm

$$t_1 = \frac{D}{\left(\left[\frac{2 \cdot K \cdot E_L \cdot C}{(1-v^2) \cdot N \cdot (P_w + P_s)}\right]^{1/3}\right) + 1}$$

ASTM F1216, Equation X1.1

Minimum thickness required, ovality check — t_2 = 0.48 in = 12.24 mm, SDR_2 = 80

$$1.5 \cdot \frac{q}{100}\left(1 + \frac{q}{100}\right) \cdot SDR^2 - 0.5 \cdot \left(1 + \frac{q}{100}\right) SDR - \frac{\sigma_L}{P \cdot N} = 0$$

If P_w = 0, default SDR = 100

ASTM F1216, Equation X1.2

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) =	W_s =	3.68	From live load calculations
Water buoyancy factor (dimensionless)	R_w =	0.67	$R_w = 1 - 0.33(H_w/H)$ (min. value = 0.67) — **Note:** If H_w<0, use H_w = 0
Total external pressure on pipe (psi)	q_t =	7.70	$q_t = 0.433H_w + \delta_s H R_w/144 + W_s$ — **Note:** If H_w<0, use H_w = 0
Coefficient of elastic support (in-lb)	B' =	0.228	$B' = 1/(1+4e^{-0.065H})$

Minimum thickness required — t_3 = 0.52 in = 13.31 mm

$$t = \left[\frac{(q_t \cdot N)^2 \cdot D^3 \cdot 12}{32 \cdot R_w \cdot B' \cdot M_{sh} \cdot E_L \cdot C}\right]^{1/3}$$

ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness — t_4 = 0.41 in = 10.37 mm

$$t = D/(E/0.093 \cdot 12)^{1/3}$$

ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

Host pipe condition		Fully Deteriorated	
CIPP end use application		Gravity Flow	
CIPP outside diameter (host pipe inside diameter)	D =	29.00	in
Minimum CIPP thickness calculated	t_{calc} =	0.52	in = 13.31 mm — Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4
Nominal CIPP thickness to be supplied	t_{CIPP} =	13.5	mm

LANZO
Trenchless Technologies

Florida Office
125 SE 5th Court,
Deerfield Beach, FL 33441-4749
Office 954.973-9700
Fax. 954.974-3894
www.Lanzo.Net

Michigan Office
28135 Groesbeck Highway,
Roseville, MI 48066
Office 586 755-5819
Fax. 586 775-2328

Cured-In-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 25x36" CMP

Design Assumptions:

[ ] Variable Inputs for Wall Thickness Determination

Condition of host pipe		FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in)	D =	31	Equivalent
Depth of cover (ft)	H =	3.0	Ground surface to top of pipe
Height of groundwater (ft)	H_w =	3.0	Water table to top of pipe
Ovality of host pipe (%)	q =	10.0	Default value is 2%; range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi)	E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)		50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi)	E_L =	200,000	Determined from long-term retention %
Design safety factor	N =	2	Default value is 2.0
Unit weight of soil (pcf)	δ_s =	120	
Unit weight of water (pcf)	δ_w =	62.4	
Poisson's ratio of CIPP	ν =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi)	σ_i =	5,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi)	σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless)	I_f =	1.1	*Depth <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1*
Distributed load area over pipe at depth H (ft^2)	A_{LL} =	66.4	See table below
Total applied surface wheel load (lb)	P_{LW} =	32,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi)	w_{LH} =	3.7	$w_L = (P \cdot I_f)/(144 \cdot A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)

Condition	H, ft	P, lbs	A_{LL}, ft^2
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75H)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydralic Loading

Ovality reduction factor (dimensionless) — C = 0.41

$$C = \left(\frac{1 - q/100}{[1 + q/100]^2}\right)^3$$

External hydrostatic pressure from groundwater (psi) — P_w = 2.42

$P_w = \gamma_w (H_w + D/12)/144$

Minimum thickness required, hydrostatic buckling — t_1 = 0.48 in = 12.12 mm

$$t_1 = \frac{D}{\left(\left[\frac{2 K \cdot E_L \cdot C}{(1-\nu^2) N (P_w + P_L)}\right]^{1/3}\right) + 1}$$

ASTM F1216, Equation X1.1

Minimum thickness required, ovality check — t_2 = 0.52 in = 13.29 mm, SDR_2 = 59

$$1.5 \cdot \frac{q}{100}\left(1 + \frac{q}{100}\right) \cdot SDR^2 - 0.5\left(1 + \frac{q}{100}\right) SDR - \frac{\sigma_L}{P \cdot N} = 0$$

If P_w = 0, default SDR = 100

ASTM F1216, Equation X1.2

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) =	W_a =	3.68	From live load calculations
Water buoyancy factor (dimensionless)	R_w =	0.67	$R_w = 1 - 0.33(H_w/H)$ (min value = 0.67) — **Note**: If H_w<0, use H_w = 0
Total external pressure on pipe (psi)	q_1 =	7.78	$q_1 = 0.433H_w + \delta_s H R_w/144 + W_a$ — **Note**: If H_w<0, use H_w = 0
Coefficient of elastic support (in-lb)	B' =	0.228	$B' = 1/(1+4e^{-0.065H})$

Minimum thickness required — t_3 = 0.56 in = 14.31 mm

$$t = \left[\frac{(q_1 \cdot N)^2 \cdot D^3 \cdot 12}{32 \cdot R_w \cdot B' \cdot M_{sr} \cdot E_L \cdot C}\right]^{1/3}$$

ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness — t_4 = 0.44 in = 11.08 mm

$t = D/(E/0.093\ 12)^{1/3}$ — ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

Host pipe condition		Fully Deteriorated	
CIPP end use application		Gravity Flow	
CIPP outside diameter (host pipe inside diameter)	D =	31.00	in
Minimum CIPP thickness calculated	t_{calc} =	0.56	in
	=	14.31	mm
Nominal CIPP thickness to be supplied	t_{CIPP} =	15.0	mm

Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4

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Fax. 586.775-2328

Cured-in-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 36" CMP

Design Assumptions:

[ ] Variable Inputs for Wall Thickness Determination

Condition of host pipe		FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in)	D =	36	
Depth of cover (ft)	H =	2.0	Ground surface to top of pipe
Height of groundwater (ft)	H_w =	2.0	Water table to top of pipe
Ovality of host pipe (%)	q =	2.0	Default value is 2%; range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi)	E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)		50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi)	E_L =	200,000	Determined from long-term retention %
Design safety factor	N =	2	Default value is 2.0
Unit weight of soil (pcf)	δ_s =	120	
Unit weight of water (pcf)	δ_w =	62.4	
Poisson's ratio of CIPP	ν =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi)	σ_I =	6,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi)	σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless)	I_f =	1.2	Depth <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1
Distributed load area over pipe at depth H (ft^2)	A_{LL} =	39.7	See table below
Total applied surface wheel load (lb)	P_{LW} =	32,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi)	w_{LH} =	6.7	$w_L = (P\ I_f)/(144 \cdot A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)

Condition	H, ft	P, lbs	A_{LL}, ft^2
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydraulic Loading

Ovality reduction factor (dimensionless) C = 0.84

$$C = \left(\frac{1 - q/100}{[1 + q/100]^2}\right)^2$$

External hydrostatic pressure from groundwater (psi) P_w = 2.17

$P_w = \gamma_w (H_w + D/12)/144$

Minimum thickness required, hydrostatic buckling t_1 = 0.42 in = 10.75 mm

$$t_1 = \frac{D}{\left(\left[\frac{2 \cdot K \cdot E_L \cdot C}{(1-\nu^2) \cdot N\ (P_w + P_v)}\right]^{1/3}\right) + 1}$$ ASTM F1216, Equation X1.1

Minimum thickness required, ovality check t_2 = 0.25 in = 6.32 mm, SDR_2 = 145

$$1.5 \cdot \frac{q}{100}\left(1 + \frac{q}{100}\right) \cdot SDR^2 - 0.5 \cdot \left(1 + \frac{q}{100}\right) \cdot SDR - \frac{\sigma_L}{P \cdot N} = 0$$ ASTM F1216, Equation X1.2

If P_w = 0, default SDR = 100

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) =	W_e =	6.72	From live load calculations
Water buoyancy factor (dimensionless)	R_w =	0.67	$R_w = 1 - 0.33(H_w/H)$ (min. value = 0.67) — Note: If H_w<0, use H_w = 0
Total external pressure on pipe (psi)	q_t =	10.00	$q_t = 0.433H_w + \delta_s HR_w/144 + W_e$ — Note: If H_w<0, use H_w = 0
Coefficient of elastic support (in-lb)	B' =	0.219	$B' = 1/(1+4e^{-0.065H})$

Minimum thickness required t_3 = 0.62 in = 15.75 mm

$$t = \left[\frac{(q_t \cdot N)^2 \cdot D^2 \cdot 12}{32 \cdot R_w \cdot B' \cdot M_{sh} \cdot E_L \cdot C}\right]^{1/3}$$ ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness t_4 = 0.51 in = 12.87 mm

$t = D/(E/0.093 \cdot 12)^{1/3}$ ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

Host pipe condition		Fully Deteriorated	
CIPP end use application		Gravity Flow	
CIPP outside diameter (host pipe inside diameter)	D =	36.00	in
Minimum CIPP thickness calculated	t_{calc} =	0.62	in
	=	15.75	mm
Nominal CIPP thickness to be supplied	t_{CIPP} =	16.5	mm

Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4

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Cured-in-Place Pipe (CIPP) Wall Thickness Design, H20 Loading

Project: Jacksonville
Location:
Owner: City of Jacksonville
Line Segment(s): 28" x 42" RCP

Design Assumptions:

[ ] Variable Inputs for Wall Thickness Determination

Condition of host pipe		FD	PD = partially deteriorated, FD = fully deteriorated
Inside diameter of host pipe (in)	D =	35	Equivalent
Depth of cover (ft)	H =	2.0	Ground surface to top of pipe
Height of groundwater (ft)	H_w =	2.0	Water table to top of pipe
Ovality of host pipe (%)	q =	10.0	Default value is 2%, range = 0%-10%
Flexural modulus of Elasticity of CIPP, initial (psi)	E =	400,000	Minimum value is 250,000 psi per ASTM F1216
Long-term retention of mechanical properties (%)		50%	Default value is 50%
Flexural modulus of elasticity of CIPP, long-term (psi)	E_L =	200,000	Determined from long-term retention %
Design safety factor	N =	2	Default value is 2.0
Unit weight of soil (pcf)	δ_s =	120	
Unit weight of water (pcf)	δ_w =	62.4	
Poisson's ratio of CIPP	ν =	0.30	Average value for CIPP per ASTM F1216
Flexural strength of CIPP, initial (psi)	σ_i =	6,500	Minimum value is 4,500 psi per ASTM F1216
Flexural strength of CIPP, long-term (psi)	σ_L =	2,750	Determined from long-term retention %

H20 Calculations (Highway Loads)

Impact factor for traffic load (dimensionless)	I_f =	1.2	*Depth* <=1 = 1.3, <=2 = 1.2, <=3 = 1.1, >=3 = 1
Distributed load area over pipe at depth H (ft^2)	A_{LL} =	39.7	See table below
Total applied surface wheel load (lb)	P_{LW} =	32,000	Based on critical loading configuration (see table below)
H20 live load transferred to pipe at depth H (psi)	w_{LH} =	6.7	$w_L = (P \cdot I_f)/(144 \cdot A_{LL})$

Critical Loading Configurations for H20 loads (per AASHTO)			
Condition	H, ft	P, lbs	A_{LL}, ft^2
1	H < 1.33	16,000	(0.83 + 1.75H)(1.67 + 1.75H)
2	1.33 ≤ H < 4.10	32,000	(0.83 + 1.75)(5.67 + 1.75H)
3	4.10 ≤ H	48,000	(4.83 + 1.75H)(5.67 + 1.75H)

Wall Thickness Design

Partially Deteriorated Gravity Pipe Condition, Hydralic Loading

Ovality reduction factor (dimensionless) — C = 0.41

$$C = \left(\frac{1 - q/100}{(1 + q/100)^2}\right)^3$$

External hydrostatic pressure from groundwater (psi) — P_w = 2.13

$$P_w = \gamma_w (H_w + D/12)/144$$

Minimum thickness required, hydrostatic buckling — t_1 = 0.52 in = 13.13 mm

$$t_1 = \frac{D}{\left(\left[\frac{2\,K\,E_L\,C}{(1-\nu^2)\,N\,(P_w + P_v)}\right]^{1/3} + 1\right)}$$ ASTM F1216, Equation X1.1

Minimum thickness required, ovality check — t_2 = 0.55 in = 14.09 mm, SDR_2 = 63

$$1.5 \cdot \frac{q}{100} \cdot \left(1 + \frac{q}{100}\right) \cdot SDR^2 - 0.5 \cdot \left(1 + \frac{q}{100}\right) \cdot SDR - \frac{\sigma_L}{P\,N} = 0$$ ASTM F1216, Equation X1.2

If P_w = 0, default SDR = 100

Fully Deteriorated Gravity Pipe Condition

Total live load transferred to pipe at depth H (psi) = W_L = 6.72 — From live load calculations

Water buoyancy factor (dimensionless) — R_w = 0.67 — $R_w = 1 - 0.33(H_w/H)$ (min. value = 0.67) — Note: If H_w<0, use H_w = 0

Total external pressure on pipe (psi) — q_t = 9.96 — $q_t = 0.433H_w + \delta_s H R_w/144 + W_L$ — Note: If H_w<0, use H_w = 0

Coefficient of elastic support (in-lb) — B' = 0.219 — $B' = 1/(1+4e^{-0.065H})$

Minimum thickness required — t_3 = 0.76 in = 19.34 mm

$$t = \left[\frac{(q_t \cdot N)^2 \cdot D^3 \cdot 12}{32\,R_w\,B'\,M_m\,E_L\,C}\right]^{1/3}$$ ASTM F1216, Equation X1.3

Minimum thickness required, pipe stiffness — t_4 = 0.49 in = 12.52 mm

$$t = D/(E/0.093 \cdot 12)^{1/3}$$ ASTM F1216, Equation X1.4

CIPP Wall Thickness Design Summary

		Fully Deteriorated Gravity Flow	
Host pipe condition			
CIPP end use application			
CIPP outside diameter (host pipe inside diameter)	D =	35.00	in
Minimum CIPP thickness calculated	t_{calc} =	0.76	in
	=	19.34	mm
Nominal CIPP thickness to be supplied	t_{CIPP} =	19.5	mm

Greatest value calculated from ASTM F1216 Equations X1.1, X1.2, X1.3 and X1.4

(EXHIBIT No. 4)

CONFLICT OF INTEREST CERTIFICATE

RFQ-0037-13

Bidder must execute either Section I or Section II hereunder relative to Florida Statute 112.313(12). Failure to execute either Section may result in rejection of this bid proposal.

SECTION I

I hereby certify that no official or employee of the City or independent agency requiring the goods or services described in these specifications has a material financial interest in this company.

Signature

Lanzo Trenchless Technologies South
Company Name

Kevin Pawlowski, Asst. Secretary
Name of Official (Type or Print)

125 SE 5th Ct
Business Address

Deerfield Beach FL 33441
City, State, Zip Code

SECTION II

I hereby certify that the following named City official(s) and employee(s) having material financial interest(s) (in excess of 5%) in this company have filed Conflict of Interest Statements with the Supervisor of Elections, 105 East Monroe Street, Jacksonville, Duval County Florida, prior to bid opening.

Name	Title or Position	Date of Filing

Signature

Company Name

Name of Official (Type or Print)

Business Address

City, State, Zip Code

PUBLIC OFFICIAL DISCLOSURE

Section 126.112 of the Purchasing Code requires that a public official who has a financial interest in a bid or contract make a disclosure at the time that the bid or contract is submitted or at the time that the public official acquires a financial interest in the bid or contract. Please provide disclosure, if applicable, with bid.

Public Official

Position Held

Position or Relationship with Bidder

Fleming, Chelsey

From: James Tilli <JamesT@Lanzo.org>
Sent: Monday, May 14, 2018 1:55 PM
To: Fleming, Chelsey
Cc: Estimating
Subject: RE: RFQ-0037-13 Bid Date 5/9/18 Sites 1-10
Attachments: SADMIN18051413470.pdf

Good Afternoon,
Please find the requested form attached. Thank you for the opportunity to make the correction.
James Tilli

From: Fleming, Chelsey [mailto:CFleming@coj.net]
Sent: Monday, May 14, 2018 12:59 PM
To: Estimating <Estimating@Lanzo.org>; Alex Diaz <AlexD@Lanzo.org>
Subject: RFQ-0037-13 Bid Date 5/9/18 Sites 1-10
Importance: High

Good afternoon,

Lanzo failed to submit an acknowledged Conflict of Interest for subject project. Please have the form signed and email back to me as soon as possible.

Thank you,
Chelsey Fleming
Purchasing Analyst
Procurement Division
City of Jacksonville
cfleming@coj.net
Direct 904.255.8826

CITY OF JACKSONVILLE

INVITATION TO SUBMIT STATEMENT OF QUALIFICATIONS (S.O.Q.)

for

Storm Sewer Rehabilitation by Cured-In-Place (CIPP) Technology

RFQ-0037-13

Notice is hereby given that the City of Jacksonville, Florida, is requesting Statements of Bidder Qualifications for *Storm Sewer Rehabilitation by Cured-In-Place (CIPP) Technology*. The City will receive the foregoing Statements of Qualifications in the Office of the Intra-Governmental Services Department, Procurement Division, Ed Ball Building, First Floor, Suite 105, 214 N. Hogan Street, Jacksonville, Florida 32202, until 2:00 P.M. on the 27 day of March, 2013. At that time Responses will be publicly opened and recorded in the meeting room #110, 1st Floor, Ed Ball Bldg., 214 N. Hogan Street.

PROJECT SCOPE: Storm Sewer Rehabilitation by Cured-In-Place (CIPP) Technology will include the complete rehabilitation of various storm sewer pipes by Cured-In-Place (CIPP) Technology with work including, but not limited to maintenance of traffic, storm sewer segment isolation and dewatering, pipe cleaning, debris removal, haul and disposal, CCTV (Closed Circuit Television) inspection, point repair(s), written and electronic inspection documentation along with all appurtenant work necessary to accomplish a complete rehabilitation of storm sewer facilities. All work will be performed at designated locations in the City of Jacksonville and in accordance with the Contract Documents.

A Statement of Qualifications (maximum one hundred 8.5"x11" pages) shall be submitted as provided in the REQUEST FOR QUALIFICATIONS RFQ-0037-13, of which a paper copy may be obtained at the Office of Procurement Division, Ed Ball Building, Suite 105, 214 N. Hogan Street, Jacksonville, Florida 32202. The price per set of Documents is $ 40.00.

In accordance with Part 6 of the Purchasing Code and as detailed in the Specifications, this procurement has been designated to be under the ENCOURAGEMENT PLAN to provide Equal Business Opportunity to certain Jacksonville Small Emerging Business "JSEB".

The City of Jacksonville reserves the right to reject any or all Proposals, waive informalities irregularities or defects in any Proposal, make award in part or whole with or without cause, and to make the award it deems to be in the best interest of the City of Jacksonville.

PRE-BID CONFERENCE: N/A

PURPOSE FOR STATEMENT OF QUALIFICATIONS:

The purpose of this Request for Qualifications (RFQ) is to solicit Statements of Qualifications (SOQ) from Firms interested in providing construction services for Storm Sewer Rehabilitation by Cured-In-Place (CIPP) Technology. Statements of Qualifications (SOQ) shall be submitted in accordance with Section VI, contained in the documents herein. The City shall determine those contractors who have met ALL criteria identified in Section VII and those firms will qualify to enter into contract with the City to provide competitive sealed bids for the construction services of this project, pursuant to Chapter 126.207 of the Procurement Code. Each award will be to the lowest, responsive, responsible bidder.

Gregory W. Pease, Chief
Procurement Division

Alvin Brown, Mayor
City of Jacksonville

SUBJECT: PREQUALIFICATION FOR CURED-IN-PLACE PIPE (CIPP)

BID #: RFQ-0037-13

OPEN DATE: 2013-03-27

GENERAL GOVERNMENT AWARDS COMMITTEE

KIND AND BASIS OF CONTRACT: CONSTRUCTION SUPPLY- FROM CONTRACT DATE THOUGH SEPTEMBER 30, 2014; WITH TWO (2), TWO (2) YEAR RENEWAL OPTIONS

AGENCY: PUBLIC WORKS

BASIS OF AWARD: PRE-QUALIFICATIONS

NUMBER OF BIDS INVITED: (19) NUMBER RECEIVED: (7) OTHER (0)

SUMMARY OF BIDS AND RECOMMENDED ACTIONS:
Subject bid was awarded on 04/25/13 to prequalify Insituform Technologies, LLC. (contract #5991-20), Lanzo Trenchless Technologies-South (contract #9888), and Layne Inliner, LLC. (contract #9883), in the amount of $1,000,000.00 for each contract: Increased on 07/19/13 in the amount of $1,000,000.00 for Insituform Technologies, LLC.; Increased on 07/07/14 in the amount of $1,000,000.00 to Insituform Technologies, LLC; 1st Renewal Option utilized on 08/07/14 for all three firms in the amount of $1,000,000.00; Increased on 02/11/15 in the amount of $1,000,000.00 to Insituform Technologies, LLC; Increased on 04/28/15 in the amount of $1,000,000.00 to Insituform Technologies, LLC.

Recommend approval to utilize the Second and Final Renewal Option with Insituform Technologies, Inc., for the annual expenditure amount of $1,000,000.00; Lanzo Trenchless Technologies-South in the amount of $1,000,000.00; Layne Inliner, LLC in the amount of $1,000,000.00. Revised total contact amount for each as follows: Insituform Technologies, Inc., will be $7,000,000.00; Lanzo Trenchless amount $3,000,000.00; Layne Inliner amount $3,000,000.00. Total award amount for all not-to-exceed $13,000,000.00. Period of service will be from October 1, 2016 through September 30, 2018. This award to be funded by account: PWGM462SW-06505-PW0072-01 to be executed by contract amendment(s) through Office of General Counsel- Insituform amendment #6, Lanzo amendment #2 and Layne amendment #2 and released by individual Purchase Order(s).

This award subject to appropriation by the City in the fiscal year beginning October 1, 2016. No funds have been appropriated to date. The City has no obligation for payment and work hereunder is not authorized unless funds are appropriated for work herein. A written notification will be provided in the event the funds are appropriated.

Attachments: Recommendation Memos, Vendor Letters, Contract Terms, Previous Award(s)

BUYER: Marilyn Daidler
MARILYN DAIDLER

RESPECTFULLY SUBMITTED
GREGORY PEASE, CHIEF
PROCUREMENT DIVISION

CONCURRENCE BY:

(ALL AWARD ACTIONS SUBJECT TO LAWFULLY APPROPRIATED FUNDS)
ACTION OF GGAC COMMITTEE ON RECOMMENDATIONS ABOVE

MEMBERS APPROVING 3 MEMBERS DISAPPROVING Ø DATE: 7-14-16

OTHER:

ACTION OF AWARDING AUTHORITY DATE 7/14/16

APPROVED ✓ DISAPPROVED

OTHER

SIGNATURE OF AUTHENTICATION

Sam G. Mousa
Chief Administrative Officer
For Mayor Lenny Curry
Under Authority of
Executive Order No. 2015-05