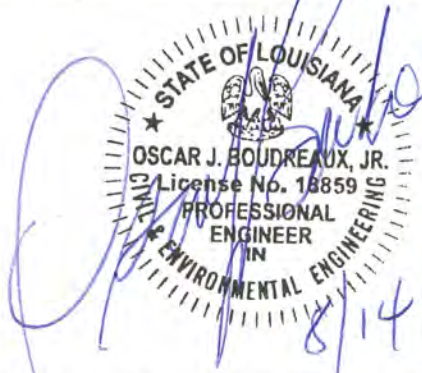
ADDENDUM NO. 1

Addis Place Subdivision Sanitary Sewer Rehabilitation
Town of Addis, Louisiana

DATE ISSUED: August 14, 2017 EES PROJECT NO. 1332
BID DATE: August 22, 2017

This Addendum shall be considered as included and/or amended in the original Contract Documents and shall take precedence over any part of the original documents or previous addendum in conflict therewith. This Addendum contains 69 pages. All bidders shall ensure all sheets of this Addendum are enclosed. If sheets are missing from this Addendum, it is the responsibility of the Bidder to notify the Engineer seventy-two (72) hours prior to the bid date and time.



I. SPECIFICATIONS

A. Section 00801 – LDEQ General Conditions

Remove the existing Wage Determination dated April 21, 2017 and **Replace** with the attached Wage Determination dated August 4, 2017.

B. Appendix A

Add the attached Appendix A – SSES Inspection Findings for Addis Place Subdivision.

End of Addendum

General Decision Number: LA170002 08/04/2017 LA2

Superseded General Decision Number: LA20160002

State: Louisiana

Construction Type: Heavy

Counties: Acadia, Ascension, Bossier, Caddo, Calcasieu, East Baton Rouge, Lafayette, Lafourche, Livingston, Ouachita, Rapides, St Landry, St Martin, Terrebonne, Webster and West Baton Rouge Counties in Louisiana.

HEAVY CONSTRUCTION PROJECTS (includes flood control, water & sewer lines, and water wells; excludes elevated storage tanks, industrial construction-chemical processing, power plants, and refineries)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2017
1	01/13/2017
2	01/20/2017
3	02/17/2017
4	04/21/2017
5	08/04/2017

CARP1098-004 07/01/2014

ASCENSION, EAST BATON ROUGE, LIVINGSTON AND WEST BATON ROUGE PARISHES

	Rates	Fringes
CARPENTER (formbuilding/formsetting).....	$ 26.16	8.39

CARP1098-014 07/01/2014

CALCASIEU PARISH

	Rates	Fringes
CARPENTER (formbuilding/formsetting).....	$ 26.16	6.80

CARP1098-015 07/01/2014

ACADIA, LAFAYETTE, ST. LANDRY AND ST. MARTIN PARISHES

	Rates	Fringes
CARPENTER (formbuilding/formsetting).....	$ 26.16	5.60

CARP1098-016 07/01/2014

BOSSIER, CADDO, OUACHITA, RAPIDES AND WEBSTER PARISHES

	Rates	Fringes
CARPENTER (formbuilding/formsetting).....	$ 20.80	6.80

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* CARP1846-008 07/01/2017

LAFOURCHE and TERREBONNE PARISHES

	Rates	Fringes
CARPENTER (formbuilding/formsetting).....	$ 25.06	9.10

ELEC0130-009 12/01/2016

LAFOURCHE AND TERREBONNE PARISHES

	Rates	Fringes
ELECTRICIAN.....	$ 30.06	11.17

ELEC0194-007 09/05/2016

BOSSIER, CADDO, and WEBSTER PARISHES

	Rates	Fringes
ELECTRICIAN		
Lineman and Heavy Equipment Operator.....	$ 27.25	10.97

ELEC0446-007 09/01/2016

OUACHITA PARISH

	Rates	Fringes
ELECTRICIAN.....	$ 23.68	1%+10.69

ELEC0576-006 09/01/2016

RAPIDES PARISH

	Rates	Fringes
ELECTRICIAN.....	$ 24.50	4.25%+6.95

ELEC0861-006 01/01/2017

ACADIA, CALCASIEU, LAFAYETTE, AND ST. MARTIN PARISHES

	Rates	Fringes
ELECTRICIAN.....	$ 27.58	4.34%+11.25

ELEC0995-006 12/01/2016

ASCENSION, EAST BATON ROUGE, LIVINGSTON, ST. LANDRY, AND WEST BATON ROUGE PARISHES

	Rates	Fringes
ELECTRICIAN.....	$ 24.94	10.13

SULA2004-006 04/29/2004

	Rates	Fringes
CARPENTER (all other work).....	$ 12.81	0.00
Cement Mason/Concrete Finisher...	$ 13.77	0.00
Laborers		
Common.....	$ 8.20	0.00
Pipelayer.....	$ 9.45	0.00
Power Equipment Operators		
Backhoe/Excavator.....	$ 13.01	0.00
Bulldozer.....	$ 13.83	0.00
Crane.....	$ 16.62	3.28
Dragline.....	$ 15.16	0.00
Front End Loader.....	$ 11.50	0.00
Motor Grader/Blade.....	$ 11.75	0.00
Oiler.....	$ 8.59	2.50
Trackhoe.....	$ 12.64	0.00
Water Well Driller.....	$ 11.91	2.44
Winch.....	$ 11.38	0.00
Truck Driver, Dump.....	$ 10.25	0.00

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION

Compliance EnviroSystems, LLC

Engineers • Scientists • Planners • Contractors

THE TOWN OF ADDIS, LOUISIANA ADDENDUM
SSES INSPECTION FINDINGS FOR ADDIS PLACE SUBDIVISION DELIVERABLE

PACP DATABASE WITH CCTV INSPECTION VIDEOS (PACP CODED)

SUMMARIES

- PROJECT SUMMARIES*
- PACP OVERALL PIPE RATING INDEX REPORT*

PACP CODES TABLE & PACP ASSET INFORMATION TABLES*

UPDATED AS BUILT MAP*

CCTV REPORTS

- PACP SCORE AND SEWER REPORTS*
- INSPECTION REPORTS WITH PIPE RUN GRAPH*
- OBSERVATION REPORT WITH PHOTOS*

* REPORTS ARE IN .PDF FORMAT ON INCLUDED THUMB DRIVE

SOUND DATA, SOLID SOLUTIONS

COMPLIANCE ENVIROSYSTEMS

1401 SEABORD DRIVE
BATON ROUGE, LA 70810
ONLINE AT:
WWW.CES-SSES.COM

SSES INSPECTION RESULTS FOR:

THE TOWN OF ADDIS, LOUISIANA
ADDENDUM
SSES INSPECTION FINDINGS FOR
ADDIS PLACE SUBDIVISION

CONTRACTED BY:

THE TOWN OF ADDIS, LOUISIANA
CARROLL BOURGEOIS
MAYOR
P.O. BOX 237 – 7818 HWY 1 SOUTH
ADDIS, LA 70710

FILES CONTAINED ON INCLUDED THUMB DRIVE:

- PACP DATABASE & MEDIA FOR CCTV INSPECTIONS
- MICROSOFT EXCEL FORMAT PROJECT SUMMARY
- REPORTS FOLDER – CONTAINS ALL PROJECT REPORTS
- UPDATED AS BUILT MAPS

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COMPLIANCE ENVIROSYSTEMS

Project Summary

1187 - ADDIS, LA. - ADDIS PLACE

PLR	Date	Drainage Area	Operator	Pipe Size	Upstream MH	Downstream MH	Pipe	Asset length	Surveyed Length
200_199	8/20/2012	CHAD DRIVE LS	J.FOOTE-CES	8	200	199	RPM	282.3	282.3
199_197	8/20/2012	CHAD DRIVE LS	J.FOOTE-CES	8	199	197	RPM	179.9	116.3
199_197	8/20/2012	CHAD DRIVE LS	J.FOOTE-CES	8	199	197	RPM	179.9	63.6
198A_198	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	198A	198	RPM	121.0	121.0
198_197A	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	198	197A	RPM	253.8	253.8
197A_197	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	197A	197	RPM	140.9	140.9
197_195	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	197	195	RPM	337.5	337.5
196_195A	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	196	195A	RPM	177.9	177.9
196_195A	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	196	195A	RPM	177.9	101.5

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PLR	Date	Drainage Area	Operator	Pipe Size	Upstream MH	Downstream MH	Pipe	Asset length	Surveyed Length
195A_195	8/21/2012	CHAD DRIVE LS	S. ALDANA - CES	8	195A	195	RPM	159.5	159.5
195_193	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	195	193	RPM	328.2	328.2
194_193A	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	194	193A	RPM	269.9	269.9
193A_193	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	193A	193	RPM	181.4	22.6
193A_193	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	193A	193	RPM	181.4	158.8
193_191	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	193	191	RPM	302.9	302.9
191_189	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	191	189	RPM	297.5	297.5
189_187	8/23/2012	CHAD DRIVE LS	J.FOOTE-CES	8	189	187	RPM	338.7	338.7
182_184	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	182	184	RPM	275.0	275.0
184_186	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	184	186	RPM	218.0	218.0
186_188A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	186	188A	RPM	193.0	101.9

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PLR	Date	Drainage Area	Operator	Pipe Size	Upstream MH	Downstream MH	Pipe	Asset length	Surveyed Length
186_188A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	186	188A	RPM	193.0	91.6
183_183A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	183	183A	RPM	188.0	188.0
183A_188	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	183A	188	RPM	299.0	299.0
188_188A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	188	188A	RPM	119.0	119.0
187_190A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	187	190A	RPM	233.0	233.0
190A_190	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190A	190	RPM	226.0	226.0
190C_190B	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190C	190B	RPM	319.0	320.0
192B_190	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192B	190	RPM	154.0	154.0
190_188	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190	188	RPM	32.7	32.7
190_188	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190	188	RPM	32.7	0.0
190B_190A	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190B	190A	RPM	198.1	113.1

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PLR	Date	Drainage Area	Operator	Pipe Size	Upstream MH	Downstream MH	Pipe	Asset length	Surveyed Length
190B_190A	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190B	190A	RPM	198.1	85.0
192_192A	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192	192A	RPM	238.6	90.7
192_192A	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192	192A	RPM	238.6	147.9
192A_192B	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192A	192B	RPM	227.3	5.0
192A_192B	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192A	192B	RPM	227.3	222.3
185_187	10/12/2012	CHAD DRIVE LS	J.FOOTE-CES	8	185	187	RPM	134.1	134.1

Number of inspections: 37

Subtotal	**7,855.1 ft**	**6,529.2 ft**
Total	**7,855.1 ft**	**6,529.2 ft**

COMPLIANCE ENVIROSYSTEMS, LLC
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ADDIS, LA - CCTV INSPECTION PROJECT REPORT

8/20/2012 - 9/25/2012

PLR	Date	Drainage Area	Operator	Pipe Size	Upstream Manhole	Downstream Manhole	Pipe	Asset Length	Surveyed Length	Light Clean	Heavy Clean	Root Cut	Tap Cut
200_199	8/20/2012	CHAD DRIVE LS	J.FOOTE-CES	8	200	199	RPM	282.3	282.3	282.3	N/A	N/A	N/A
199_197	8/20/2012	CHAD DRIVE LS	J.FOOTE-CES	8	199	197	RPM	179.9	116.3	179.9	N/A	N/A	N/A
199_197	8/20/2012	CHAD DRIVE LS	J.FOOTE-CES	8	199	197	RPM	179.9	63.6	0	N/A	N/A	N/A
198A_198	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	198A	198	RPM	121	121	121	N/A	N/A	N/A
198_197A	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	198	197A	RPM	253.8	253.8	253.8	N/A	N/A	N/A
197A_197	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	197A	197	RPM	140.9	140.9	140.9	N/A	N/A	N/A
197_195	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	197	195	RPM	337.5	337.5	337.5	N/A	N/A	N/A
196_195A	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	196	195A	RPM	177.9	177.9	279.4	N/A	279.4	N/A
196_195A	8/21/2012	CHAD DRIVE LS	J.FOOTE-CES	8	196	195A	RPM	177.9	101.5	0	N/A	N/A	N/A
195A_195	8/21/2012	CHAD DRIVE LS	S. ALDANA - CES	8	195A	195	RPM	159.5	159.5	159.5	N/A	N/A	N/A
195_193	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	195	193	RPM	328.2	328.2	328.2	N/A	N/A	N/A
194_193A	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	194	193A	RPM	269.9	269.9	269.9	N/A	N/A	N/A
193A_193	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	193A	193	RPM	181.4	22.6	181.4	N/A	N/A	N/A
193A_193	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	193A	193	RPM	181.4	158.8	0	N/A	N/A	N/A
193_191	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	193	191	RPM	302.9	302.9	302.9	N/A	N/A	N/A
191_189	8/22/2012	CHAD DRIVE LS	J.FOOTE-CES	8	191	189	RPM	297.5	297.5	297.5	N/A	N/A	N/A
182_184	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	182	184	RPM	275	275	275	N/A	N/A	N/A
184_186	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	184	186	RPM	218	218	218	N/A	N/A	N/A
186_188A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	186	188A	RPM	193	101.9	193	N/A	N/A	N/A
186_188A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	186	188A	RPM	193	91.6	N/A	N/A	N/A	N/A
183_183A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	183	183A	RPM	188	188	188	N/A	N/A	N/A
183A_188	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	183A	188	RPM	299	299	299	N/A	N/A	N/A
188_188A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	188	188A	RPM	119	119	119	N/A	N/A	N/A
187_190A	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	187	190A	RPM	233	233	233	N/A	N/A	N/A
190A_190	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190A	190	RPM	226	226	226	N/A	N/A	N/A
190C_190B	10/5/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190C	190B	RPM	319	320	319	N/A	N/A	N/A
192B_190	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192B	190	RPM	154	154	154	N/A	N/A	N/A
190_188	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190	188	RPM	32.7	32.7	32.7	N/A	N/A	N/A
190_188	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190	188	RPM	32.7	0	N/A	N/A	N/A	N/A

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ADDIS, LA - CCTV INSPECTION PROJECT REPORT

8/20/2012 - 9/25/2012

PLR	DATE	DRAINAGE AREA	OPERATOR	PIPE SIZE	UPSTREAM MANHOLE	DOWNSTREAM MANHOLE	PIPE	ASSET LENGTH	SURVEYED LENGTH	LIGHT CLEAN	HEAVY CLEAN	ROOT CUT	TAP CUT
190B_190A	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190B	190A	RPM	198.1	113.1	198.1	N/A	N/A	N/A
190B_190A	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	190B	190A	RPM	198.1	85	N/A	N/A	N/A	N/A
192_192A	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192	192A	RPM	238.6	90.7	238.6	N/A	N/A	N/A
192_192A	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192	192A	RPM	238.6	147.9	N/A	N/A	N/A	N/A
192A_192B	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192A	192B	RPM	227.3	5	227.3	N/A	N/A	N/A
192A_192B	10/8/2012	CHAD DRIVE LS	J.FOOTE-CES	8	192A	192B	RPM	227.3	222.3	N/A	N/A	N/A	N/A
189_187	8/23/2012	CHAD DRIVE LS	J.FOOTE-CES	8	189	187	RPM	338.7	338.7	338.7	N/A	N/A	N/A
185_187	10/12/2012	CHAD DRIVE LS	J.FOOTE-CES	8	185	187	RPM	134.1	134.1	134.1	N/A	N/A	N/A

ADDIS, LA - CCTV INSPECTION PROJECT TOTALS	
CCTV FOOTAGE :	6529.2
LIGHT CLEANING :	6527.7
HEAVY CLEANING :	0
# OF ROOT CUTS	0
# OF TAP CUTS	0

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ADDIS, LA - CCTV INSPECTION PROJECT - PACP OVERALL RATINGS REPORT

8/20/2012 – 9/25/2012

PSR	Upstream Manhole	Downstream Manhole	Date	Time	Direction	Total Length	Length Surveyed	Structural Pipe Rating	Structural Quick Rating	Structural Pipe Rating Index	O&M Pipe Rating	O&M Quick Rating	O&M Pipe Rating Index	Overall Pipe Rating	Overall Pipe Rating Index
200_199	200	199	8/20/2012	15:07	D	282.3	282.3	11	4132	2.75	26	4229	2.363636	42	2.470588
199_197	199	197	8/20/2012	16:46	D	179.9	116.3	0	0	0	8	2400	2	22	2.444444
199_197	199	197	8/20/2012	17:17	U	179.9	63.6	0	0	0	4	2200	2	8	2
198A_198	198A	198	8/21/2012	7:51	U	121	121	6	4121	3	5	5100	5	21	2.625
198_197A	198	197A	8/21/2012	8:23	D	253.8	253.8	7	2311	1.75	27	312A	2.076923	48	2
197A_197	197A	197	8/21/2012	10:17	U	140.9	140.9	0	0	0	16	3225	2.285714	22	2.2
197_195	197	195	8/21/2012	11:10	D	337.5	337.5	5	5100	5	0	0	0	24	2.4
196_195A	196	195A	8/21/2012	13:33	D	177.9	177.9	3	3100	3	0	0	0	22	2.444444
196_195A	196	195A	8/21/2012	14:34	U	177.9	101.5	0	0	0	6	4121	3	19	2.714286
195A_195	195A	195	8/21/2012	16:16	U	159.5	159.5	3	3100	3	4	2200	2	11	2.2
195_193	195	193	8/22/2012	8:44	D	328.2	328.2	0	0	0	5	2211	1.666667	14	2
194_193A	194	193A	8/22/2012	10:59	D	269.9	269.9	0	0	0	24	4131	2.181818	29	2.230769
193A_193	193A	193	8/22/2012	12:04	D	181.4	22.6	0	0	0	0	0	0	5	5
193A_193	193A	193	8/22/2012	12:31	U	181.4	158.8	0	0	0	4	2200	2	12	2
193_191	193	191	8/22/2012	13:57	D	302.9	302.9	0	0	0	21	5241	3.5	25	3.125
191_189	191	189	8/22/2012	16:49	D	297.5	297.5	0	0	0	9	5122	3	13	2.6
182_184	182	184	10/5/2012	10:43	U	275	275	0	0	0	8	2400	2	12	2
184_186	184	186	10/5/2012	11:29	D	218	218	0	0	0	43	3A22	2.866667	45	2.8125
186_188A	186	188A	10/5/2012	12:50	D	193	101.9	3	3100	3	40	3A22	2.857143	45	2.8125
186_188A	186	188A	10/5/2012	13:08	U	193	91.6	2	1200	1	29	4137	2.9	39	2.785714
183_183A	183	183A	10/5/2012	13:30	D	188	188	0	0	0	39	312B	2.052632	47	2.043478
183A_188	183A	188	10/5/2012	14:08	D	299	299	0	0	0	20	2A00	2	31	2.066667
188_188A	188	188A	10/5/2012	14:34	D	119	119	7	4131	3.5	4	2200	2	18	3
187_190A	187	190A	10/5/2012	14:46	D	233	233	0	0	0	14	2700	2	14	2
190A_190	190A	190	10/5/2012	15:01	D	226	226	0	0	0	23	3327	2.3	23	2.3
190C_190B	190C	190B	10/5/2012	15:18	D	319	320	0	0	0	110	2J00	2	110	2
192B_190	192B	190	10/8/2012	6:41	U	154	154	2	2100	2	12	2600	2	17	2.125
190_188	190	188	10/8/2012	7:08	D	32.7	32.7	0	0	0	6	2300	2	14	2.8
190_188	190	188	10/8/2012	7:18	U	32.7	0	0	0	0	0	0	0	0	0
190B_190A	190B	190A	10/8/2012	7:30	U	198.1	113.1	0	0	0	6	2300	2	15	2.5
190B_190A	190B	190A	10/8/2012	7:43	D	198.1	85	0	0	0	2	2100	2	9	2.25
192_192A	192	192A	10/8/2012	8:03	D	238.6	90.7	0	0	0	36	2B00	2	43	2.15
192_192A	192	192A	10/8/2012	8:12	U	238.6	147.9	6	3200	3	46	422B	2.190476	59	2.36
192A_192B	192A	192B	10/8/2012	8:28	D	227.3	5	0	0	0	0	0	0	5	5
192A_192B	192A	192B	10/8/2012	8:33	U	227.3	222.3	0	0	0	12	2600	2	24	2.4
189_187	189	187	8/23/2012	16:37	D	338.7	338.7	0	0	0	26	412A	2.166667	47	2.043478
185_187	185	187	10/12/2012	7:29	D	134.1	134.1	2	2100	2	49	422C	2.130435	55	2.115385

PACP© Condition Grading System

The Pipeline Assessment and Certification Program (PACP) developed by NASSCO provides a mechanism for creating reliable descriptions of pipe conditions. NASSCO has also developed a system based on the PACP codes to assign a condition rating to pipelines. Requirements of the grading system were as follows:

1. Like the PACP, the grading system should be direct and objective.

2. Provide the ability to qualitatively identify differences in pipe condition between one inspection and subsequent inspections, and to prioritize based on the significance of the defects different pipe segments.

Many other approaches to sewer pipe grading have been used in the United States as well as in other parts of the World. These approaches generally use some type of defect grading that is then used to calculate an overall pipe rating.

It is problematic to develop a single pipe segment rating that fully describes all of the important aspects of a pipe. Therefore the PACP Condition Grading System uses more than one method of rating pipe segment condition including a rating that considers the number of total defects within the pipe segment and a rating that considers the most severe defects within the pipe segment.

The PACP Condition Grading System only considers internal pipe conditions obtained from TV inspection. While other factors such as pipe material, depth, soils, and surface conditions also affect pipe survivability, those factors have not been included in the PACP Condition Grading System. The PACP Condition Grading System should be used only as a tool for screening pipe segment inspections, allowing the User to quickly determine which pipe segments have significant defects. It is expected that as the PACP further develops the PACP Condition Grading System will expand to include other factors.

The PACP Condition Grading System provides condition ratings for Structural Defects and Operation and Maintenance Defects.

Approach

Using the PACP Code Matrix, Each PACP defect code is assigned a condition grade of from 1 to 5. Grades are assigned based on the significance of the defect, extent of

damage, percentage of flow capacity restriction, or the amount of wall loss due to deterioration.

The PACP Condition Grading System alone is inadequate for determining if a pipe segment should be rehabilitated or replaced. Many other factors in addition to the internal condition of the segment should be considered. The fact that a segment has significant Grade 4 or Grade 5 defects does not necessarily mean the pipe segment should be immediately rehabilitated. Recent experience by PACP Users has shown that pipe segments with serious defects such as hinge failures may remain largely unchanged for many decades if no deterioration factors such as surcharging, roots, or groundwater are present.

What is needed is improved estimates of remaining life or mean time before failure that are based on close monitoring of pipe segments over time. Once we know how much change occurs in pipe segments we can better understand the relationship between defects, deterioration factors, and pipe segment life expectancy. PACP continues to be an excellent tool for benchmarking pipe condition between one inspection and subsequent inspections of the same pipe.

Grades are assigned for two categories, Structural, and O&M defects.
Grades are as follows;
5 - Most significant defect grade
4 – Significant
3 – Moderate defect grade
2 – Minor to Moderate
1 –Minor defect grade

The PACP Condition Grading System results are entirely dependent on the quality of the PACP defect coding. Errors in the coding will directly result in errors in the Grading. All utilities, engineers, and contractors should make sure the data they are using was coded by experienced technicians who have successfully demonstrated their competence through a formal or informal apprenticeship program. PACP data from inexperienced technicians should be checked and corrected as needed. Errors found in coding should be corrected and the errors brought to the attention of the technician.

Grading of Continuous Defects

The PACP continuous defect feature is used to denote where long portions of a sewer pipe are affected by the same defect, without the User having to repetitively enter point defects. However to develop a grade for the pipe segment, a mechanism is needed to translate a continuous defect into an equivalent number of point defects.

The equivalent number (quantity) of "uninterrupted" and "joint repeating" continuous defects is calculated by dividing the length of the continuous defect by 5. Example, a 6-meter long continuous defect, grade 3, should equate to four Grade 3 defects. Fractions are rounded to the nearest whole number.

Pipe Ratings

The pipe rating is based on the number of occurrences for each condition grade. Ratings are calculated separately for **Structural Defects** and **O&M Defects**. Several ways of expressing pipe segment condition are used by the PACP Condition Grading System as follows.

Segment Grade Scores - Each pipe segment will have a Segment Grade Score for each of the five grades. The number of occurrences of each pipe grade is multiplied by the pipe grade to calculate the segment grade score. Example, six Grade 5 defects would be 6 times 5 and equates to a Segment Grade 5 Score of 30. If a pipe segment had no defects of a particular grade, then the Segment Grade Score for that grade would be 0.

Overall Pipe Rating –The five Segment Grade Scores are added together to calculate the **Overall Pipe Rating. Structural Pipe Ratings** are calculated using only Structural Defect grades, while **O&M Pipe Ratings** are calculated using only O&M Defect grades.

PACP Quick Rating – The PACP Quick Rating is a shorthand way of expressing the number of occurrences for the two highest severity grades. The PACP Quick Rating is a four character score as follows:

1. The first character is the highest severity grade occurring along the pipe length.
2. The second character is the total number of occurrences of the highest severity grade. If the total number exceeds 9, then alphabetic characters are used as follows- 10 to 14 – A; 15 to 19 – B; 20 to 24 – C; etc.
3. The third character is the next highest severity grade occurring along the pipe length.
4. The fourth character is the total number of the second highest severity grade occurrences, derived as in item 2 above.

For Example

4B27

This immediately shows that no grade 5 defects or grade 3 defects, however 15 to 19 grade 4 defects and seven grade 2 defects were found.

Another Example

3224

Two grade 3 defects and four grade 2 defects, however no grade 5 or grade 4 defects were found.

If a pipe segment only has defects of one grade, the first two characters are the grade and the quantity of defects, and the last two characters are 00 (denoting no other defect grades). A pipe segment with no defects would have a Quick Score of 0000 (all zeros).

The PACP Quick Rating provides the ability to summarize the number and severity of defects found within a pipe segment. As with the Pipe Rating, Quick Structural Ratings

are calculated using only Structural Defect Grades, and Quick O&M Ratings are calculated using only O&M Defect Grades.

The Quick Rating is an excellent screening tool to determine which pipe segments require closer scrutiny. If a pipe has not defects greater than Grade 1 or 2, then the pipe segment probably does not need any further investigation.

Pipe Ratings Index – This is an indicator of the distribution of defect severity. The Pipe Ratings Index is calculated by dividing the Pipe Rating by the number of defects. For example, the Structural Pipe Ratings Index would be the Structural Pipe Rating divided by the number of structural defects. Pipe Ratings Indexes are calculated for Structural, O&M, and Overall. A pipe segment with a Pipe Rating of zero (0) would have a Pipe Rating Index of zero (0).

Summary

The following procedures are used to calculate pipe segment ratings using the PACP Condition Grading System:

1. Determine the number of occurrences for each condition grade within the pipe segment. Calculate separately for Structural Defect Grades and O&M Defect Grades.
2. Calculate the Segment Grade Score by multiplying the number of occurrences by the respective grade 1 through 5. Calculate the Structural Segment Grade Score and the O&M Segment Grade Score separately, and then add together for the Overall Segment Grade Score.
3. Calculate the Pipe Rating for the pipe segment by adding the Segment Grade Scores. Add all five Structural Segment Grade Scores for the Structural Pipe Rating, and add all five O&M Segment Grade Scores for the O&M Pipe Rating. Add all five Overall Segment Grade Scores for the Overall Pipe Rating.
4. Determine the PACP Quick Rating by calculating the number of occurrences of the two highest severity grades.

5. Calculate the Pipe Ratings Index by dividing the Pipe Rating by the number of defects. If the pipe has no defects, the Pipe Ratings Index is zero.
6. Verify the PACP defect data used in accurate. The grading is a direct calculation from the defect data, and coding errors will be reflected in grading errors.

NASSCO PACP Condition Grading System
Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
Structural	Crack (C)	Circumferential (C)		CC	1	
		Longitudinal (L)		CL	2	
		Multiple (M)		CM	3	
		Hinge (CH2)		CH2	4	
		Hinge (CH3)		CH3	5	
		Hinge (CH4)		CH4	5	
		Spiral (S)		CS	2	
Structural	Fracture (F)	Circumferential (C)		FC	2	
		Longitudinal (L)		FL	3	
		Multiple (M)		FM	4	
		Hinge (H2)		FH2	4	
		Hinge (H3)		FH3	5	
		Hinge (H4)		FH4	5	
		Spiral (S)		FS	3	
Structural	Pipe Failures (Silent)	Broken (B)		B	1 clock pos - 3, 2 clock pos - 4, >=3 clock pos - 5	
		Broken (B)	Soil Visible (SV)	BSV	5	
		Broken (B)	Void Visible (V V)	BVV	5	
		Hole (H)		H	1 clock pos - 3, 2 clock pos - 4, >= 3 clock pos - 5	
		Hole (H)	Soil Visible (SV)	HSV	5	
		Hole (H)	Void Visible (V V)	HVV	5	
Structural	Collapse (X)	Pipe (P)		XP	5	
		Brick (B)		XB	5	
Structural	Deformed (D)	(Pipe)		D	<=10% - 4,>10% - 5	
		(Brick)	Horizontally (H)	DH	5	
		(Brick)	Vertically (V)	DV	5	
Structural	Joint (J)	Offset (displaced) (O)	Med (M)	JOM	1	
			Large (L)	JOL	2	
		Separated (open) (S)	Med (M)	JSM	1	
			Large (L)	JSL	2	
		Angular (A)	Med (M)	JAM	1	
			Large (L)	JAL	2	
Structural	Surface Damage Chemical (S)	Roughness Increased (RI)	C	SRIC	1	
		Surface Spalling (SS)	C	SSSC	2	
		Aggregate Visible (AV)	C	SAVC	3	
		Aggregate Projecting (AP)	C	SAPC	3	
		Aggregate Missing (AM)	C	SAMC	4	

NASSCO PACP Condition Grading System
Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
		Reinforcement Visible (RV)	C	SRVC	5	
		Reinforcement Projecting (RP)	C	SRPC	3	
		Reinforcement Corroded (RC)	C	SRCC	5	
		Missing Wall (MW)	C	SMWC	5	
		Other (Z)	C	SZC		
Structural	Surface Damage Mechanical (M)	Roughness Increased (RI)	M	SRIM	1	
		Surface Spalling (SS)	M	SSSM	2	
		Aggregate Visible (AV)	M	SAVM	3	
		Aggregate Projecting (AP)	M	SAPM	3	
		Aggregate Missing (AM)	M	SAMM	4	
		Reinforcement Visible (RV)	M	SRVM	5	
		Reinforcement Projecting (RP)	M	SRPM	3	
		Reinforcement Corroded (RC)	M	SRCM	5	
		Missing Wall (MW)	M	SMWM	5	
		Other (Z)	M	SZM	N/A	
Structural	Surface Damage Not Evident (Z)	Roughness Increased (RI)	Z	SRIZ	1	
		Surface Spalling (SS)	Z	SSSZ	2	
		Aggregate Visible (AV)	Z	SAVZ	3	
		Aggregate Projecting (AP)	Z	SAPZ	3	
		Aggregate Missing (AM)	Z	SAMZ	4	
		Reinforcement Visible (RV)	Z	SRVZ	5	
		Reinforcement Projecting (RP)	Z	SRPZ	3	
		Reinforcement Corroded (RC)	Z	SRCZ	5	
		Missing Wall (MW)	Z	SMWZ	5	
		Other (Z)	Z	SZZ	N/A	
Structural	Surface Damage (Metal Pipes)	Corrosion (CP)		SCP	3	
Structural	Lining Features (LF)	Detached (D)		LFD	3	
		Defective End (DE)		LFDE	3	
		Blistered (B)		LFB	3	
		Service Cut Shifted (CS)		LFCS	3	
		Abandoned Connection (AC)		LFAC		
		Overcut Service (OC)		LFOC	3	
		Undercut Service (UC)		LFUC	3	
		Buckled (BK)		LFBK	3	
		Annular Space (AS)		LFAS	3	
		Bulges (BU)		LFBU	3	
		Discoloration (DC)		LFDC	3	
		Delamination (DL)		LFDL	3	
		Pinholes (PH)		LFPH	3	
		Resin Slug (RS)		LFRS	3	
		Wrinkled (W)		LFW	3	
		Other (Z)		LFZ	N/A	
Structural	Weld Failure (WF)	Circumfrential (C)		WFC	2	
		Longitudinal (L)		WFL	2	

NASSCO PACP Condition Grading System
Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
		Multiple (M)		WFM	3	
		Spiral (S)		WFS	2	
Structural	Point Repair (RP)	Localized Pipeliner (L)		RPL		
		Localized Pipeliner (L)	Defective (D)	RPLD	4	
		Patch Repair (P)		RPP		
		Patch Repair (P)	Defective (D)	RPPD	4	
		Pipe Replaced (R)		RPR		
		Pipe Replaced (R)	Defective (D)	RPRD	4	
		Other (Z)		RPZ		
		Other (Z)	Defective (D)	RPZD		
Structural	Brickwork (Silent)	Displaced (DB)		DB	3	
		Missing (MB)		MB	4	
		Dropped Invert (DI)		DI	5	
		Missing Mortar	Small	MMS	2	
			Medium	MMM	3	
			Large	MML	3	
O&M	Deposits (D)	Deposits Attached (DA)	Encrustation (E)	DAE		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Grease (G)	DAGS		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Ragging (R)	DAR		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Other (Z)	DAZ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Deposits Settled (DS)	Hard/Compacted (C)	DSC		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Fine silt/sand (F)	DSF		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Gravel (G)	DSGV		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Other (Z)	DSZ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Deposits Ingress (DN)	Fine silt/sand (F)	DNF		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Gravel (GV)	DNGV		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5

NASSCO PACP Condition Grading System
Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
			Other (Z)	DNZ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
O&M	Roots (R)	Fine (F)	Barrel (B)	RFB		2
			Lateral (L)	RFL		1
			Connecfion (C)	RFC		1
	Roots (R) at a Joint		N/A	RFJ	in software with a J	1
		Tap (T)	Barrel (B)	RTB		3
			Lateral (L)	RTL		2
			Connecfion (C)	RTC		2
	Roots (R) at a Joint		N/A	RTJ		2
		Medium (M)	Barrel (B)	RMB		4
			Lateral (L)	RML		3
			Connecfion (C)	RMC		3
	Roots (R) at a Joint		N/A	RMJ		3
		Ball (B)	Barrel (B)	RBB		5
			Lateral (L)	RBL		4
			Connecfion (C)	RBC		4
	Roots (R) at a Joint		N/A	RBJ		4
O&M	Infiltration (I)	Weeper (W)		IW		2
		Dripper (D)		ID		3
		Runner (R)		IR		4
		Gusher (G)		IG		5
		Stain (S)		IS		
O&M	Obstacles/Obstructions (OB)	Brick or Masonry (B)		OBB		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Pipe Material in Invert (M)		OBM		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Object Intruding Thru Wall (I)		OBI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Object Wedged in Joint (J)		OBJ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Object Thru Connection (C)		OBC		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		External Pipe or Cable In Sewer (P)		OBP		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Built Into Structure (S)		OBS		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5

NASSCO PACP Condition Grading System
Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
		Construction Debris (N)		OBN		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Rocks (R)		OBR		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Other Objects (Z)		OBZ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
O&M	Vermin (V)	Rat (R)		VR		2
		Cockroach (C)		VC		1
		Other (Z)		VZ		1
O&M	Grout Test and Seal (G)	Grout Test Pass (GTP)				
			Joint (J)	GTPJ		
			Lateral (L)	GTPL		
		Grout Test Fail (GTF)				
			Joint (J)	GTFJ		
			Lateral (L)	GTFL		
		Grout Test Unable to Test (GTU)				
			Joint (J)	GTUJ		
			Lateral (L)	GTUL		
		Grout at a Location (not a joint) (GRT)		GRT		
Construction Features	Tap (T)	Factory Made (F)		TF		
			Capped (C)	TFC		
			Abandoned (B)	TFB		
			Defective (D)	TFD		2
			Intruding (I)	TFI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Activity (A)	TFA		
		Break-In/Hammer (B)		TB		
			Capped (C)	TBC		2
			Abandoned (B)	TBB		
			Defective (D)	TBD		3
			Intruding (I)	TBI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Activity (A)	TBA		
		Saddle (S)		TS		
			Capped (C)	TSC		
			Abandoned (B)	TSB		

NASSCO PACP Condition Grading System
Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
			Defective (D)	TSD		2
			Intruding (I)	TSI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Activity (A)	TSA		
		Rehabilitated (R)		TR		
			Defective (D)	TRD		2
			Intruding (I)	TRI		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
Construction Features	Intruding Seal Material (IS)			IS		
		Sealing Ring (SR)		ISSR		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Hanging (H)	ISSRH		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
			Broken (B)	ISSRB		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Loose, Poorly Fitting (SRL)		ISSRL		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Grout (GT)		ISGT		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
		Other (Z)		ISZ		<=10% - 2, <=20% - 3, <=30% - 4, >30% - 5
Construction Features	Line (L)	Left (L)		LL		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Left/Up (LU)		LLU		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Left/Down (LD)		LLD		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Right (R)		LR		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4

NASSCO PACP Condition Grading System
Code Matrix

Family	Group	Descriptor	Modifier	Code	Structural Grade	O&M Grade
		Right/Up (RU)		LRU		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Right/Down (RD)		LRD		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Up (U)		LU		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
		Down (D)		LD		<=10 Deg - 1, <=20 Deg 2, >20 Deg - 4
Construction	Access Points (A)					
		Cleanout (CO)		ACO		
			Mainline (M)	ACOM		
			Property (P)	ACOP		
			House (H)	ACOH		
		Discharge Point (DP)		ADP		
		Junction Box (JB)		AJB		
		Meter (M)		AM		
		Manhole (MH)		AMH		
		Other Special Chamber (OC)		AOC		
		Tee Connection (TC)		ATC		
		WW Access Device (WA)		AWA		
		Wet Well (WW)		AWW		
		Catch Basin (CB)		ACB		
		End of Pipe (EP)		AEP		
Other	Miscellaneous (M)	Camera Underwater (CU)		MCU		4
		Dimension/Diam/Shape Change (SC)		MSC		
		General Observation (GO)		MGO		
		General Photograph (GP)		MGP		
		Material Change (MC)		MMC		
		Lining Change (LC)		MLC		
		Pipe Joint Length Change (JL)		MJL		
		Survey Abandoned (SA)		MSA		
		Water Level (WL)		MWL		
			Sag (S)	MWLS	<=30% - 2, <=50% - 3, >50% - 4	
		Water Mark (WM)		MWM		>=50% 4, >=75% 5
		Dye Test (Y)		MY		
			Visible (V)	MYV		5
			Not Visible (N)	MYN		3

APPENDIX A Code Order

Full PACP Code	Description	Distance (Feet)	Video Ref.	Code		Continuous	Value				Joint	Location		Image Ref.	Remarks
				Group/ Descriptor	Modifier/ Severity		S/M/L	Inches 1st	Inches 2nd	%		At/ From	To		
ACB	Catch Basin	Required	Optional	ACB										Optional	Optional
ACOH	Cleanout House	Required	Optional	ACO	H									Optional	Optional
ACOM	Cleanout Mainline	Required	Optional	ACO	M									Optional	Required
ACOP	Cleanout Propertyline	Required	Optional	ACO	P									Optional	Optional
ADP	Discharge Point	Required	Optional	ADP										Optional	Optional
AEP	End of Pipe	Required	Optional	AEP										Optional	Optional
AJB	Junction Box	Required	Optional	AJB										Optional	Required
AM	Meter	Required	Optional	AM										Optional	Required
AMH	Manhole	Required	Optional	AMH										Optional	Required
AOC	Special Chamber	Required	Optional	AOC										Optional	Optional
ATC	Tee Connection	Required	Optional	ATC				Required	Optional			Required		Optional	Optional
AWA	Wastewater Access Device	Required	Optional	AWA										Optional	Required
AWW	Wet Well	Required	Optional	AWW										Optional	Optional
B	Broken	Required	Optional	B		Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
BSV	Broken Soil Visible	Required	Optional	B	SV	Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
BVV	Broken Void Visible	Required	Optional	B	VV	Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
CC	Crack Circumferential	Required	Optional	CC		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
CH2	Crack Longitudinal Hinge, 2	Required	Optional	CH2		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
CH3	Crack Longitudinal Hinge, 3	Required	Optional	CH3		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
CH4	Crack Longitudinal Hinge, 4	Required	Optional	CH4		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
CL	Crack Longitudinal	Required	Optional	CL		Optional		Optional	Optional		Optional	Required		Optional	Optional
CM	Crack Multiple	Required	Optional	CM		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
CS	Crack Spiral	Required	Optional	CS		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
D	Deformed	Required	Optional	D		Optional				Required 5% increments				Optional	Optional
DAE	Deposits Attached Encrustation	Required	Optional	DA	E	Optional				Required	Optional	Required	Optional	Optional	Optional
DAGS	Deposits Attached Grease	Required	Optional	DA	GS	Optional				Required	Optional	Required	Optional	Optional	Optional
DAR	Deposits Attached Ragging	Required	Optional	DA	R	Optional				Required	Optional	Required	Optional	Optional	Optional
DAZ	Deposits Attached Other	Required	Optional	DA	Z	Optional				Required	Optional	Required	Optional	Optional	Optional
DB	Displaced Brick	Required	Optional	DB		Optional						Required	Optional	Optional	Optional
DH	Deformed Horizontal	Required	Optional	DH		Optional				Required 5% increments				Optional	Optional
DI	Dropped Invert	Required	Optional	DI		Optional		Required						Optional	Optional
DNF	Deposits Ingressed Fine	Required	Optional	DN	F	Optional				Required	Optional	Required	Optional	Optional	Optional
DNGV	Deposits Ingressed Gravel	Required	Optional	DN	GV	Optional				Required	Optional	Required	Optional	Optional	Optional
DNZ	Deposits Ingressed Other	Required	Optional	DN	Z	Optional				Required	Optional	Required	Optional	Optional	Required
DSC	Deposits Settled Compacted	Required	Optional	DS	C	Optional				Required	Optional	Required	Optional	Optional	Optional
DSF	Deposits Settled Fine	Required	Optional	DS	F	Optional				Required	Optional	Required	Optional	Optional	Optional
DSGV	Deposits Settled Gravel	Required	Optional	DS	GV	Optional				Required	Optional	Required	Optional	Optional	Optional
DSZ	Deposits Settled Other	Required	Optional	DS	Z	Optional				Required	Optional	Required	Optional	Optional	Required
DV	Defomed Vertical	Required	Optional	DV		Optional				Required 5% increments				Optional	Optional
FC	Fracture Circumferential	Required	Optional	FC		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
FH2	Fracture Longitudinal Hinge, 2	Required	Optional	FH2		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
FH3	Fracture Longitudinal Hinge, 3	Required	Optional	FH3		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
FH4	Fracture Longitudinal Hinge, 4	Required	Optional	FH4		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
FL	Fracture Longitudinal	Required	Optional	FL		Optional		Optional	Optional		Optional	Required		Optional	Optional
FM	Fracture Multiple	Required	Optional	FM		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
FS	Fracture Spiral	Required	Optional	FS		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional

APPENDIX A Code Order

Full PACP Code	Description	Distance (Feet)	Video Ref.	Code		Continuous	Value				Joint	Location		Image Ref.	Remarks
				Group/ Descriptor	Modifier/ Severity		S/M/L	Inches 1st	Inches 2nd	%		At/ From	To		
GRT	Grout done at Location	Required	Optional					Optional						Optional	Optional
GTFJ	Grout Air Test Fail Joint	Required	Optional					Optional	Required					Optional	Optional
GTFL	Grout Air Test Fail Lateral	Required	Optional					Optional	Required					Optional	Optional
GTPJ	Grout Air Test Pass Joint	Required	Optional											Optional	Optional
GTPL	Grout Air Test Pass Lateral	Required	Optional											Optional	Optional
GTUJ	Grout Air Test Unable Joint	Required	Optional											Optional	Required
GTUL	Grout Air Test Unable Lateral	Required	Optional											Optional	Required
H	Hole	Required	Optional	H		Optional		**Optional**	**Optional**		Optional	Required	Optional	Optional	Optional
HSV	Hole Soil Visible	Required	Optional	H	SV	Optional		**Optional**	**Optional**		Optional	Required	Optional	Optional	Optional
HVV	Hole Void Visible	Required	Optional	H	VV	Optional		**Optional**	**Optional**		Optional	Required	Optional	Optional	Optional
ID	Infil Dripper	Required	Optional	ID		Optional					Optional	Required	Optional	Optional	Optional
IG	Infil Gusher	Required	Optional	IG		Optional					Optional	Required	Optional	Optional	Optional
IR	Infil Runner	Required	Optional	IR		Optional					Optional	Required	Optional	Optional	Optional
IS	Infil Stain	Required	Optional	IS		Optional					Optional	Required	Optional	Optional	Optional
ISGT	Intruding Sealing Grout	Required	Optional	ISGT		Optional				Required		Required	Required	Optional	Optional
ISSR	Intruding Sealing Ring	Required	Optional	ISSR		Optional				Required		Required	Required	Optional	Optional
ISSRB	Intruding Sealing Ring Broken	Required	Optional	ISSR	B	Optional				Required		Required	Required	Optional	Optional
ISSRH	Intruding Sealing Ring Hanging	Required	Optional	ISSR	H	Optional				Required		Required	Required	Optional	Optional
ISSRL	Intruding Sealing Ring Loose/Poorly Fitting	Required	Optional	ISSR	L	Optional				Required		Required	Required	Optional	Optional
ISZ	Intruding Sealing Other	Required	Optional	ISZ		Optional				Required		Required	Required	Optional	Optional
IW	Infil Weeper	Required	Optional	IW		Optional					Optional	Required	Optional	Optional	Optional
JAL	Joint Angular Large	Required	Optional	JA		Optional	L	**Optional**	**Optional**					Optional	Optional
JAM	Joint Angular Medium	Required	Optional	JA		Optional	M	**Optional**	**Optional**					Optional	Optional
JOL	Joint Offset Large	Required	Optional	JO		Optional	L	**Optional**	**Optional**					Optional	Optional
JOM	Joint Offset Medium	Required	Optional	JO		Optional	M	**Optional**	**Optional**					Optional	Optional
JSL	Joint Separated Large	Required	Optional	JS		Optional	L	**Optional**	**Optional**					Optional	Optional
JSM	Joint Separated Medium	Required	Optional	JS		Optional	M	**Optional**	**Optional**					Optional	Optional
KW	Buckling Wall	Required	Optional	K	W	Optional						Required	Optional	Optional	Optional
KD	Buckling Dimpling	Required	Optional	K	D	Optional						Required	Optional	Optional	Optional
KI	Inverse Curvature	Required	Optional	K	I	Optional				required		Required		Optional	Optional
LD	Alignment Down	Required	Optional	LD		Optional				Required				Optional	Optional
LFAC	Lining Failure Abandoned Connection	Required	Optional	LF	AC	Optional					Optional	Required	Optional	Optional	Optional
LFAS	Lining Failure Annular Space	Required	Optional	LF	AS	Optional					Optional	Required	Optional	Optional	Optional
LFB	Lining Failure Blistered	Required	Optional	LF	B	Optional					Optional	Required	Optional	Optional	Optional
LFBK	Lining Failure Buckled	Required	Optional	LF	BK	Optional					Optional	Required	Optional	Optional	Optional
LFBU	Lining Failure Bulges	Required	Optional	LF	BU	Optional					Optional	Required	Optional	Optional	Optional
LFCS	Lining Failure Connection Cut Shifted	Required	Optional	LF	CS	Optional					Optional	Required	Optional	Optional	Optional
LFD	Lining Failure Detached	Required	Optional	LF	D	Optional					Optional	Required	Optional	Optional	Optional
LFDC	Lining Failure Discoloration	Required	Optional	LF	DC	Optional					Optional	Required	Optional	Optional	Optional
LFDE	Lining Failure Defective End	Required	Optional	LF	DE	Optional					Optional	Required	Optional	Optional	Optional
LFDL	Lining Failure Delaminating	Required	Optional	LF	DL	Optional					Optional	Required	Optional	Optional	Optional
LFOC	Lining Failure Overcut Connection	Required	Optional	LF	OC	Optional					Optional	Required	Optional	Optional	Optional
LFPH	Lining Failure Pinhole	Required	Optional	LF	PH	Optional					Optional	Required	Optional	Optional	Optional
LFRS	Lining Failure Resin slug	Required	Optional	LF	RS	Optional					Optional	Required	Optional	Optional	Optional
LFUC	Lining Failure Undercut Connection	Required	Optional	LF	UC	Optional					Optional	Required	Optional	Optional	Optional
LFW	Lining Failure Wrinkled	Required	Optional	LF	W	Optional					Optional	Required	Optional	Optional	Optional
LFZ	Lining Failure Other	Required	Optional	LF	Z	Optional					Optional	Required	Optional	Optional	Required
LL	Alignment Left	Required	Optional	LL		Optional				Required				Optional	Optional

APPENDIX A Code Order

Full PACP Code	Description	Distance (Feet)	Video Ref.	Code		Continuous	Value				Joint	Location		Image Ref.	Remarks
				Group/ Descriptor	Modifier/ Severity		S/M/L	Inches 1st	Inches 2nd	%		At/ From	To		
LLD	Alignment Left Down	Required	Optional	LLD		Optional				Required				Optional	Optional
LLU	Alignment Left Up	Required	Optional	LLU		Optional				Required				Optional	Optional
LR	Alignment Right	Required	Optional	LR		Optional				Required				Optional	Optional
LRD	Alignment Right Down	Required	Optional	LRD		Optional				Required				Optional	Optional
LRU	Alignment Right Up	Required	Optional	LRU		Optional				Required				Optional	Optional
LU	Alignment Up	Required	Optional	LU		Optional				Required				Optional	Optional
MB	Missing Brick	Required	Optional	MB		Optional						Required	Optional	Optional	Optional
MCU	Camera Underwater	Required	Optional	MCU		Optional								Optional	Optional
MGO	General Observation	Required	Optional	MGO										Optional	Required
MGP	General Photo	Required	Optional	MGP										Optional	Optional
MJL	Joint Length Change	Required	Optional	MJL				Required						Optional	Optional
MLC	Lining Change	Required	Optional	MLC										Optional	Optional
MMC	Material Change	Required	Optional	MMC										Optional	Required
MML	Mortar Missing Large	Required	Optional	MM		Optional	L					Required	Optional	Optional	Optional
MMM	Mortar Missing Medium	Required	Optional	MM		Optional	M					Required	Optional	Optional	Optional
MMS	Mortar Missing Small	Required	Optional	MM		Optional	S					Required	Optional	Optional	Optional
MSA	Abandoned Survey	Required	Optional	MSA										Optional	Required
MSC	Shape or Size Change	Required	Optional	MSC				Required	Optional					Optional	Optional
MWL	Water Level	Required	Optional	MWL						Required				Optional	Optional
MWLS	Water Level Sag	Required	Optional	MWL	S	**Optional**				Required				Optional	Optional
MWM	Water Mark	Required	Optional	MWM						Required				Optional	Optional
MYN	Dye Test Not Visible	Required	Optional	MY	N									Optional	Optional
MYV	Dye Test Visible	Required	Optional	MY	V									Optional	Required
OBB	Obstacle Brick	Required	Optional	OBB		Optional				Required		Required	Optional	Optional	Optional
OBC	Obstacle Thru Connection	Required	Optional	OBC		Optional				Required		Required	Optional	Optional	Optional
OBI	Obstacle Intruding Thru Wall	Required	Optional	OBI		Optional				Required		Required	Optional	Optional	Optional
OBJ	Obstacle In Joint	Required	Optional	OBJ		Optional				Required	Required	Required	Optional	Optional	Optional
OBM	Obstacle Pipe Material	Required	Optional	OBM		Optional				Required		Required	Optional	Optional	Optional
OBN	Obstacle Construction Debris	Required	Optional	OBN		Optional				Required		Required	Optional	Optional	Optional
OBP	Obstacle External Pipe or Cable	Required	Optional	OBP		Optional				Required		Required	Optional	Optional	Optional
OBR	Obstacle Rocks	Required	Optional	OBR		Optional				Required		Required	Optional	Optional	Optional
OBS	Obstacle Built Into Structure	Required	Optional	OBS		Optional				Required		Required	Optional	Optional	Optional
OBZ	Obstacle Other	Required	Optional	OBZ		Optional				Required		Required	Optional	Optional	Required
RBB	Roots Ball Barrel	Required	Optional	RB	B	Optional				Required > 50%		Required	Optional	Optional	Optional
RBC	Roots Ball Connection	Required	Optional	RB	C	Optional				Required > 50%		Required	Optional	Optional	Optional
RBJ	Roots Ball Joint	Required	Optional	RBJ		Optional				Required > 50%	Required	Required	Optional	Optional	Optional
RBL	Roots Ball Lateral	Required	Optional	RB	L	Optional				Required > 50%		Required	Optional	Optional	Optional
RFB	Roots Fine Barrel	Required	Optional	RF	B	Optional						Required	Optional	Optional	Optional
RFC	Roots Fine Connection	Required	Optional	RF	C	Optional						Required	Optional	Optional	Optional
RFJ	Roots Fine Joint	Required	Optional	RFJ		Optional					Required	Required	Optional	Optional	Optional
RFL	Roots Fine Lateral	Required	Optional	RF	L	Optional						Required	Optional	Optional	Optional
RMB	Roots Medium Barrel	Required	Optional	RM	B	Optional				Required ≤ 50%		Required	Optional	Optional	Optional
RMC	Roots Medium Connection	Required	Optional	RM	C	Optional				Required ≤ 50%		Required	Optional	Optional	Optional
RMJ	Roots Medium Joint	Required	Optional	RMJ		Optional				Required ≤ 50%	Required	Required	Optional	Optional	Optional
RML	Roots Medium Lateral	Required	Optional	RM	L	Optional				Required ≤ 50%		Required	Optional	Optional	Optional
RPL	Repair Localized Liner	Required	Optional	RPL		Optional					Optional			Optional	Required
RPLD	Repair Localized Liner Defective	Required	Optional	RPL	D	Optional					Optional			Optional	Required
RPP	Repair Patch	Required	Optional	RPP		Optional					Optional	Required	Optional	Optional	Required
RPPD	Repair Patch Defective	Required	Optional	RPP	D	Optional					Optional	Required	Optional	Optional	Required
RPR	Repair Point Pipe Replaced	Required	Optional	RPR		Optional					Optional			Optional	Required
RPRD	Repair Point Defective	Required	Optional	RPR	D	Optional					Optional			Optional	Required

APPENDIX A Code Order

Full PACP Code	Description	Distance (Feet)	Video Ref.	Code		Continuous	Value				Joint	Location		Image Ref.	Remarks
				Group/ Descriptor	Modifier/ Severity		S/M/L	Inches 1st	Inches 2nd	%		At/ From	To		
RPZ	Repair Other	Required	Optional	RPZ		Optional					Optional			Optional	Required
RPZD	Repair Other Defective	Required	Optional	RPZ	D	Optional					Optional			Optional	Required
RTB	Roots Tap Barrel	Required	Optional	RT	B	Optional				Required >1/2" thick		Required	Optional	Optional	Optional
RTC	Roots Tap Connection	Required	Optional	RT	C	Optional				Required >1/2" thick		Required	Optional	Optional	#NAME?
RTJ	Roots Tap Joint	Required	Optional	RTJ		Optional				Required >1/2" thick	Required	Required	Optional	Optional	Optional
RTL	Roots Tap Lateral	Required	Optional	RT	L	Optional				Required >1/2" thick		Required	Optional	Optional	Optional
SAM	Surface Aggregate Missing	Required	Optional	SAM		Optional					Optional	Required	Optional	Optional	Optional
SAMC	Surface Aggregate Missing Chemical	Required	Optional	SAM	C	Optional					Optional	Required	Optional	Optional	Optional
SAMM	Surface Aggregate Missing Mechanical	Required	Optional	SAM	M	Optional					Optional	Required	Optional	Optional	Optional
SAMZ	Surface Aggregate Missing Unknown	Required	Optional	SAM	Z	Optional					Optional	Required	Optional	Optional	Optional
SAP	Surface Aggregate Projecting	Required	Optional	SAP		Optional					Optional	Required	Optional	Optional	Optional
SAPC	Surface Aggregate Projecting Chemical	Required	Optional	SAP	C	Optional					Optional	Required	Optional	Optional	Optional
SAPM	Surface Aggregate Projecting Mechanical	Required	Optional	SAP	M	Optional					Optional	Required	Optional	Optional	Optional
SAPZ	Surface Aggregate Projecting Unknown	Required	Optional	SAP	Z	Optional					Optional	Required	Optional	Optional	Optional
SAV	Surface Aggregate Visible	Required	Optional	SAV		Optional					Optional	Required	Optional	Optional	Optional
SAVC	Surface Aggregate Visible Chemical	Required	Optional	SAV	C	Optional					Optional	Required	Optional	Optional	Optional
SAVM	Surface Aggregate Visible Mechanical	Required	Optional	SAV	M	Optional					Optional	Required	Optional	Optional	Optional
SAVZ	Surface Aggregate Visible Unknown	Required	Optional	SAV	Z	Optional					Optional	Required	Optional	Optional	Optional
SCP	Surface Corrosion Metal Pipe	Required	Optional	SCP		Optional					Optional	Required	Optional	Optional	Optional
SMW	Surface Missing Wall	Required	Optional	SMW		Optional					Optional	Required	Optional	Optional	Optional
SMWC	Surface Missing Wall Chemical	Required	Optional	SMW	C	Optional					Optional	Required	Optional	Optional	Optional
SMWM	Surface Missing Wall Mechanical	Required	Optional	SMW	M	Optional					Optional	Required	Optional	Optional	Optional
SMWZ	Surface Missing Wall Unknown	Required	Optional	SMW	Z	Optional					Optional	Required	Optional	Optional	Optional
SRC	Surface Reinforcement Corroded	Required	Optional	SRC		Optional					Optional	Required	Optional	Optional	Optional
SRCC	Surface Reinforcement Corroded Chemical	Required	Optional	SRC	C	Optional					Optional	Required	Optional	Optional	Optional
SRCM	Surface Reinforcement Corroded Mechanical	Required	Optional	SRC	M	Optional					Optional	Required	Optional	Optional	Optional
SRCZ	Surface Reinforcement Corroded Unknown	Required	Optional	SRC	Z	Optional					Optional	Required	Optional	Optional	Optional
SRI	Surface Roughness Increased	Required	Optional	SRI		Optional					Optional	Required	Optional	Optional	Optional
SRIC	Surface Roughness Increased Chemical	Required	Optional	SRI	C	Optional					Optional	Required	Optional	Optional	Optional
SRIM	Surface Roughness Increased Mechanical	Required	Optional	SRI	M	Optional					Optional	Required	Optional	Optional	Optional
SRIZ	Surface Roughness Increased Unknown	Required	Optional	SRI	Z	Optional					Optional	Required	Optional	Optional	Optional
SRP	Surface Reinforcement Projecting	Required	Optional	SRP		Optional					Optional	Required	Optional	Optional	Optional

APPENDIX A Code Order

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				Group/ Descriptor	Modifier/ Severity		S/M/L	Inches 1st	Inches 2nd	%		At/ From	To		
SRPC	Surface Reinforcement Projecting Chemical	Required	Optional	SRP	C	Optional					Optional	Required	Optional	Optional	Optional
SRPM	Surface Reinforcement Projecting Mechanical	Required	Optional	SRP	M	Optional					Optional	Required	Optional	Optional	Optional
SRPZ	Surface Reinforcement Projecting Unknown	Required	Optional	SRP	Z	Optional					Optional	Required	Optional	Optional	Optional
SRV	Surface Reinforcement Visible	Required	Optional	SRV		Optional					Optional	Required	Optional	Optional	Optional
SRVC	Surface Reinforcement Visible Chemical	Required	Optional	SRV	C	Optional					Optional	Required	Optional	Optional	Optional
SRVM	Surface Reinforcement Visible Mechanical	Required	Optional	SRV	M	Optional					Optional	Required	Optional	Optional	Optional
SRVZ	Surface Reinforcement Visible Unknown	Required	Optional	SRV	Z	Optional					Optional	Required	Optional	Optional	Optional
SSS	Surface Spalling	Required	Optional	SSS		Optional					Optional	Required	Optional	Optional	Optional
SSSC	Surface Spalling Chemical	Required	Optional	SSS	C	Optional					Optional	Required	Optional	Optional	Optional
SSSM	Surface Spalling Mechanical	Required	Optional	SSS	M	Optional					Optional	Required	Optional	Optional	Optional
SSSZ	Surface Spalling Other	Required	Optional	SSS	Z	Optional					Optional	Required	Optional	Optional	Optional
SZ	Surface Other	Required	Optional	SZ		Optional					Optional	Required	Optional	Optional	Required
SZC	Surface Other Chemical	Required	Optional	SZ	C	Optional					Optional	Required	Optional	Optional	Required
SZM	Surface Other Mechanical	Required	Optional	SZ	M	Optional					Optional	Required	Optional	Optional	Required
SZZ	Surface Other Unknown	Required	Optional	SZ	Z	Optional					Optional	Required	Optional	Optional	Required
TB	Tap Break-in	Required	Optional	TB				Required			Optional	Required		Optional	Optional
TBA	Tap Break-in Active	Required	Optional	TB	A			Required			Optional	Required		Optional	Optional
TBB	Tap Break-in Abandoned	Required	Optional	TB	B			Required			Optional	Required		Optional	Optional
TBC	Tap Break-in Capped	Required	Optional	TB	C			Required			Optional	Required		Optional	Optional
TBD	Tap Break-in Defective	Required	Optional	TB	D			Required	Optional		Optional	Required		Optional	Optional
TBI	Tap Break-in Intruding	Required	Optional	TB	I			Required	Required		Optional	Required		Optional	Optional
TF	Tap Factory	Required	Optional	TF				Required			Optional	Required		Optional	Optional
TFA	Tap Factory Active	Required	Optional	TF	A			Required			Optional	Required		Optional	Optional
TFB	Tap Factory Abandoned	Required	Optional	TF	B			Required			Optional	Required		Optional	Optional
TFC	Tap Factory Capped	Required	Optional	TF	C			Required			Optional	Required		Optional	Optional
TFD	Tap Factory Defective	Required	Optional	TF	D			Required	Optional		Optional	Required		Optional	Optional
TFI	Tap Factory Intruding	Required	Optional	TF	I			Required	Required		Optional	Required		Optional	Optional
TR	Tap Rehabilitated	Required	Optional	TR				Required			Optional	Required		Optional	Optional
TRD	Tap Rehabilitated Defective	Required	Optional	TR	D			Required	Optional		Optional	Required		Optional	Optional
TRI	Tap Rehabilitated Intruding	Required	Optional	TR	I			Required	Required		Optional	Required		Optional	Optional
TS	Tap Saddle	Required	Optional	TS				Required			Optional	Required		Optional	Optional
TSA	Tap Saddle Active	Required	Optional	TS	A			Required			Optional	Required		Optional	Optional
TSB	Tap Saddle Abandoned	Required	Optional	TS	B			Required			Optional	Required		Optional	Optional
TSC	Tap Saddle Capped	Required	Optional	TS	C			Required			Optional	Required		Optional	Optional
TSD	Tap Saddle Defective	Required	Optional	TS	D			Required	Optional		Optional	Required		Optional	Optional
TSI	Tap Saddle Intruding	Required	Optional	TS	I			Required	Required		Optional	Required		Optional	Optional
VC	Vermin Cockroach	Required	Optional	VC							Optional			Optional	Optional
VR	Vermin Rat	Required	Optional	VR				Required			Optional			Optional	Optional
VZ	Vermin Other	Required	Optional	VZ				Required			Optional			Optional	Optional
WFC	Weld Failure Circumferential	Required	Optional	WFC		Optional					Optional	Required	Optional	Optional	Optional
WFL	Weld Failure Longitudinal	Required	Optional	WFL		Optional					Optional	Required	Optional	Optional	Optional
WFM	Weld Failure Multiple	Required	Optional	WFM		Optional					Optional	Required	Optional	Optional	Optional
WFS	Weld Failure Spiral	Required	Optional	WFS		Optional					Optional	Required	Optional	Optional	Optional

APPENDIX A Code Order

Full PACP Code	Description	Distance (Feet)	Video Ref.	Code		Continuous	Value				Joint	Location		Image Ref.	Remarks
				Group/ Descriptor	Modifier/ Severity		S/M/L	Inches 1st	Inches 2nd	%		At/ From	To		
WFZ	Weld Failure Other	Required	Optional	WFZ		Optional					Optional	Required	Optional	Optional	Required
XB (brick pipe only)	Collapse Brick Sewer	Required	Optional	XB						Required > 40%				Optional	Optional
XP	Collapse Pipe Sewer	Required	Optional	XP						Required > 40%				Optional	Optional

APPENDIX B Family Group and Group Order

Family	Group	Full PACP Code	Description	Distance (Feet)	Video Ref.	Code		Continuous	Value				Joint	Location		Image Ref.	Remarks
						Group/ Descript	Modifier/ Severity		S/M/L	Inches 1st	Inches 2nd	%		At/ From	To		
Structural	Brickwork	MML	Mortar Missing Large	Required	Optional	MM		Optional	L					Required	Optional	Optional	Optional
Structural	Brickwork	MMM	Mortar Missing Medium	Required	Optional	MM		Optional	M					Required	Optional	Optional	Optional
Structural	Brickwork	MMS	Mortar Missing Small	Required	Optional	MM		Optional	S					Required	Optional	Optional	Optional
Structural	Brickwork	DB	Displaced Brick	Required	Optional	DB		Optional						Required	Optional	Optional	Optional
Structural	Brickwork	DI	Dropped Invert	Required	Optional	DI		Optional		Required						Optional	Optional
Structural	Brickwork	MB	Missing Brick	Required	Optional	MB		Optional						Required	Optional	Optional	Optional
Structural	Broken	B	Broken	Required	Optional	B		Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
Structural	Broken	BSV	Broken Soil Visible	Required	Optional	B	SV	Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
Structural	Broken	BVV	Broken Void Visible	Required	Optional	B	VV	Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
Structural	Buckling	KW	Buckling Wall	Required	Optional	K	W	Optional						Required	Optional	Optional	Optional
Structural	Buckling	KD	Buckling Dimpling	Required	Optional	K	D	Optional						Required	Optional	Optional	Optional
Structural	Buckling	KI	Inverse Curvature	Required	Optional	K	I	Optional				required		Required		Optional	Optional
Structural	Collapse	XB (brick pipe only)	Collapse Brick Sewer	Required	Optional	XB						Required > 40%				Optional	Optional
Structural	Collapse	XP	Collapse Pipe Sewer	Required	Optional	XP						Required > 40%				Optional	Optional
Structural	Crack	CC	Crack Circumferential	Required	Optional	CC		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Crack	CH2	Crack Longitudinal Hinge, 2	Required	Optional	CH2		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Crack	CH3	Crack Longitudinal Hinge, 3	Required	Optional	CH3		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Crack	CH4	Crack Longitudinal Hinge, 4	Required	Optional	CH4		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Crack	CL	Crack Longitudinal	Required	Optional	CL		Optional		Optional	Optional		Optional	Required		Optional	Optional
Structural	Crack	CM	Crack Multiple	Required	Optional	CM		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Crack	CS	Crack Spiral	Required	Optional	CS		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Deformed	D	Deformed	Required	Optional	D		Optional				Required 5% increments				Optional	Optional
Structural	Deformed	DH	Deformed Horizontal	Required	Optional	DH		Optional				Required 5% increments				Optional	Optional
Structural	Deformed	DV	Deformed Vertical	Required	Optional	DV		Optional				Required 5% increments				Optional	Optional
Structural	Fracture	FC	Fracture Circumferential	Required	Optional	FC		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Fracture	FH2	Fracture Longitudinal Hinge, 2	Required	Optional	FH2		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Fracture	FH3	Fracture Longitudinal Hinge, 3	Required	Optional	FH3		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Fracture	FH4	Fracture Longitudinal Hinge, 4	Required	Optional	FH4		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Fracture	FL	Fracture Longitudinal	Required	Optional	FL		Optional		Optional	Optional		Optional	Required		Optional	Optional
Structural	Fracture	FM	Fracture Multiple	Required	Optional	FM		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Fracture	FS	Fracture Spiral	Required	Optional	FS		Optional		Optional	Optional		Optional	Required	Required	Optional	Optional
Structural	Hole	H	Hole	Required	Optional	H		Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
Structural	Hole	HSV	Hole Soil Visible	Required	Optional	H	SV	Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
Structural	Hole	HVV	Hole Void Visible	Required	Optional	H	VV	Optional		Optional	Optional		Optional	Required	Optional	Optional	Optional
Structural	Joint	JAL	Joint Angular Large	Required	Optional	JA		Optional	L	Optional	Optional					Optional	Optional
Structural	Joint	JAM	Joint Angular Medium	Required	Optional	JA		Optional	M	Optional	Optional					Optional	Optional
Structural	Joint	JOL	Joint Offset Large	Required	Optional	JO		Optional	L	Optional	Optional					Optional	Optional
Structural	Joint	JOM	Joint Offset Medium	Required	Optional	JO		Optional	M	Optional	Optional					Optional	Optional
Structural	Joint	JSL	Joint Separated Large	Required	Optional	JS		Optional	L	Optional	Optional					Optional	Optional
Structural	Joint	JSM	Joint Separated Medium	Required	Optional	JS		Optional	M	Optional	Optional					Optional	Optional
Structural	Lining	LFAC	Lining Failure Abandoned Connection	Required	Optional	LF	AC	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFAS	Lining Failure Annular Space	Required	Optional	LF	AS	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFB	Lining Failure Blistered	Required	Optional	LF	B	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFBK	Lining Failure Buckled	Required	Optional	LF	BK	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFBU	Lining Failure Bulges	Required	Optional	LF	BU	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFCS	Lining Failure Connection Cut Shifted	Required	Optional	LF	CS	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFD	Lining Failure Detached	Required	Optional	LF	D	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFDC	Lining Failure Discoloration	Required	Optional	LF	DC	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFDE	Lining Failure Defective End	Required	Optional	LF	DE	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFDL	Lining Failure Delaminating	Required	Optional	LF	DL	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFOC	Lining Failure Overcut Connection	Required	Optional	LF	OC	Optional					Optional	Required	Optional	Optional	Optional

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Structural	Lining	LFPH	Lining Failure Pinhole	Required	Optional	LF	PH	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFRS	Lining Failure Resin slug	Required	Optional	LF	RS	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFUC	Lining Failure Undercut Connection	Required	Optional	LF	UC	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFW	Lining Failure Wrinkled	Required	Optional	LF	W	Optional					Optional	Required	Optional	Optional	Optional
Structural	Lining	LFZ	Lining Failure Other	Required	Optional	LF	Z	Optional					Optional	Required	Optional	Optional	Required
Structural	Repair	RPL	Repair Localized Liner	Required	Optional	RPL		Optional					Optional			Optional	Required
Structural	Repair	RPLD	Repair Localized Liner Defective	Required	Optional	RPL	D	Optional					Optional			Optional	Required
Structural	Repair	RPP	Repair Patch	Required	Optional	RPP		Optional					Optional	Required	Optional	Optional	Required
Structural	Repair	RPPD	Repair Patch Defective	Required	Optional	RPP	D	Optional					Optional	Required	Optional	Optional	Required
Structural	Repair	RPR	Repair Point Pipe Replaced	Required	Optional	RPR		Optional					Optional			Optional	Required
Structural	Repair	RPRD	Repair Point Defective	Required	Optional	RPR	D	Optional					Optional			Optional	Required
Structural	Repair	RPZ	Repair Other	Required	Optional	RPZ		Optional					Optional			Optional	Required
Structural	Repair	RPZD	Repair Other Defective	Required	Optional	RPZ	D	Optional					Optional			Optional	Required
Structural	Surface Damage	SAM	Surface Aggregate Missing	Required	Optional	SAM		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAMC	Surface Aggregate Missing Chemical	Required	Optional	SAM	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAMM	Surface Aggregate Missing Mechanical	Required	Optional	SAM	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAMZ	Surface Aggregate Missing Unknown	Required	Optional	SAM	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAP	Surface Aggregate Projecting	Required	Optional	SAP		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAPC	Surface Aggregate Projecting Chemical	Required	Optional	SAP	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAPM	Surface Aggregate Projecting Mechanical	Required	Optional	SAP	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAPZ	Surface Aggregate Projecting Unknown	Required	Optional	SAP	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAV	Surface Aggregate Visible	Required	Optional	SAV		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAVC	Surface Aggregate Visible Chemical	Required	Optional	SAV	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAVM	Surface Aggregate Visible Mechanical	Required	Optional	SAV	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SAVZ	Surface Aggregate Visible Unknown	Required	Optional	SAV	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SCP	Surface Corrosion Metal Pipe	Required	Optional	SCP		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SMW	Surface Missing Wall	Required	Optional	SMW		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SMWC	Surface Missing Wall Chemical	Required	Optional	SMW	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SMWM	Surface Missing Wall Mechanical	Required	Optional	SMW	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SMWZ	Surface Missing Wall Unknown	Required	Optional	SMW	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRC	Surface Reinforcement Corroded	Required	Optional	SRC		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRCC	Surface Reinforcement Corroded Chemical	Required	Optional	SRC	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRCM	Surface Reinforcement Corroded Mechanical	Required	Optional	SRC	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRCZ	Surface Reinforcement Corroded Unknown	Required	Optional	SRC	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRI	Surface Roughness Increased	Required	Optional	SRI		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRIC	Surface Roughness Increased Chemical	Required	Optional	SRI	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRIM	Surface Roughness Increased Mechanical	Required	Optional	SRI	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRIZ	Surface Roughness Increased Unknown	Required	Optional	SRI	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRP	Surface Reinforcement Projecting	Required	Optional	SRP		Optional					Optional	Required	Optional	Optional	Optional

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Structural	Surface Damage	SRPC	Surface Reinforcement Projecting Chemical	Required	Optional	SRP	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRPM	Surface Reinforcement Projecting Mechanical	Required	Optional	SRP	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRPZ	Surface Reinforcement Projecting Unknown	Required	Optional	SRP	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRV	Surface Reinforcement Visible	Required	Optional	SRV		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRVC	Surface Reinforcement Visible Chemical	Required	Optional	SRV	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRVM	Surface Reinforcement Visible Mechanical	Required	Optional	SRV	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SRVZ	Surface Reinforcement Visible Unknown	Required	Optional	SRV	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SSS	Surface Spalling	Required	Optional	SSS		Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SSSC	Surface Spalling Chemical	Required	Optional	SSS	C	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SSSM	Surface Spalling Mechanical	Required	Optional	SSS	M	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SSSZ	Surface Spalling Other	Required	Optional	SSS	Z	Optional					Optional	Required	Optional	Optional	Optional
Structural	Surface Damage	SZ	Surface Other	Required	Optional	SZ		Optional					Optional	Required	Optional	Optional	Required
Structural	Surface Damage	SZC	Surface Other Chemical	Required	Optional	SZ	C	Optional					Optional	Required	Optional	Optional	Required
Structural	Surface Damage	SZM	Surface Other Mechanical	Required	Optional	SZ	M	Optional					Optional	Required	Optional	Optional	Required
Structural	Surface Damage	SZZ	Surface Other Unknown	Required	Optional	SZ	Z	Optional					Optional	Required	Optional	Optional	Required
Structural	Weld	WFC	Weld Failure Circumferential	Required	Optional	WFC		Optional					Optional	Required	Optional	Optional	Optional
Structural	Weld	WFL	Weld Failure Longitudinal	Required	Optional	WFL		Optional					Optional	Required	Optional	Optional	Optional
Structural	Weld	WFM	Weld Failure Multiple	Required	Optional	WFM		Optional					Optional	Required	Optional	Optional	Optional
Structural	Weld	WFS	Weld Failure Spiral	Required	Optional	WFS		Optional					Optional	Required	Optional	Optional	Optional
Structural	Weld	WFZ	Weld Failure Other	Required	Optional	WFZ		Optional					Optional	Required	Optional	Optional	Required
O & M	Deposits	DAE	Deposits Attached Encrustation	Required	Optional	DA	E	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DAGS	Deposits Attached Grease	Required	Optional	DA	GS	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DAR	Deposits Attached Ragging	Required	Optional	DA	R	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DAZ	Deposits Attached Other	Required	Optional	DA	Z	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DNF	Deposits Ingressed Fine	Required	Optional	DN	F	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DNGV	Deposits Ingressed Gravel	Required	Optional	DN	GV	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DNZ	Deposits Ingressed Other	Required	Optional	DN	Z	Optional				Required	Optional	Required	Optional	Optional	Required
O & M	Deposits	DSC	Deposits Settled Compacted	Required	Optional	DS	C	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DSF	Deposits Settled Fine	Required	Optional	DS	F	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DSGV	Deposits Settled Gravel	Required	Optional	DS	GV	Optional				Required	Optional	Required	Optional	Optional	Optional
O & M	Deposits	DSZ	Deposits Settled Other	Required	Optional	DS	Z	Optional				Required	Optional	Required	Optional	Optional	Required
O & M	Grout Test	GRT	Grout done at Location	Required	Optional					Optional						Optional	Optional
O & M	Grout Test	GTFJ	Grout Air Test Fail Joint	Required	Optional					Optional	Required					Optional	Optional
O & M	Grout Test	GTFL	Grout Air Test Fail Lateral	Required	Optional					Optional	Required					Optional	Optional
O & M	Grout Test	GTPJ	Grout Air Test Pass Joint	Required	Optional											Optional	Optional
O & M	Grout Test	GTPL	Grout Air Test Pass Lateral	Required	Optional											Optional	Optional
O & M	Grout Test	GTUJ	Grout Air Test Unable Joint	Required	Optional											Optional	Required
O & M	Grout Test	GTUL	Grout Air Test Unable Lateral	Required	Optional											Optional	Required
O & M	Infil	ID	Infil Dripper	Required	Optional	ID		Optional					Optional	Required	Optional	Optional	Optional
O & M	Infil	IG	Infil Gusher	Required	Optional	IG		Optional					Optional	Required	Optional	Optional	Optional
O & M	Infil	IR	Infil Runner	Required	Optional	IR		Optional					Optional	Required	Optional	Optional	Optional
O & M	Infil	IS	Infil Stain	Required	Optional	IS		Optional					Optional	Required	Optional	Optional	Optional
O & M	Infil	IW	Infil Weeper	Required	Optional	IW		Optional					Optional	Required	Optional	Optional	Optional
O & M	Obstacles	OBB	Obstacle Brick	Required	Optional	OBB		Optional				Required		Required	Optional	Optional	Optional
O & M	Obstacles	OBC	Obstacle Thru Connection	Required	Optional	OBC		Optional				Required		Required	Optional	Optional	Optional
O & M	Obstacles	OBI	Obstacle Intruding Thru Wall	Required	Optional	OBI		Optional				Required		Required	Optional	Optional	Optional
O & M	Obstacles	OBJ	Obstacle In Joint	Required	Optional	OBJ		Optional				Required	Required	Required	Optional	Optional	Optional
O & M	Obstacles	OBM	Obstacle Pipe Material	Required	Optional	OBM		Optional				Required		Required	Optional	Optional	Optional

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O & M	Obstacles	OBN	Obstacle Construction Debris	Required	Optional	OBN		Optional				Required		Required	Optional	Optional	Optional
O & M	Obstacles	OBP	Obstacle External Pipe or Cable	Required	Optional	OBP		Optional				Required		Required	Optional	Optional	Optional
O & M	Obstacles	OBR	Obstacle Rocks	Required	Optional	OBR		Optional				Required		Required	Optional	Optional	Optional
O & M	Obstacles	OBS	Obstacle Built Into Structure	Required	Optional	OBS		Optional				Required		Required	Optional	Optional	Optional
O & M	Obstacles	OBZ	Obstacle Other	Required	Optional	OBZ		Optional				Required		Required	Optional	Optional	Required
O & M	Roots	RBB	Roots Ball Barrel	Required	Optional	RB	B	Optional				Required > 50%		Required	Optional	Optional	Optional
O & M	Roots	RBC	Roots Ball Connection	Required	Optional	RB	C	Optional				Required > 50%		Required	Optional	Optional	Optional
O & M	Roots	RBJ	Roots Ball Joint	Required	Optional	RBJ		Optional				Required > 50%	Required	Required	Optional	Optional	Optional
O & M	Roots	RBL	Roots Ball Lateral	Required	Optional	RB	L	Optional				Required > 50%		Required	Optional	Optional	Optional
O & M	Roots	RFB	Roots Fine Barrel	Required	Optional	RF	B	Optional						Required	Optional	Optional	Optional
O & M	Roots	RFC	Roots Fine Connection	Required	Optional	RF	C	Optional						Required	Optional	Optional	Optional
O & M	Roots	RFJ	Roots Fine Joint	Required	Optional	RFJ		Optional					Required	Required	Optional	Optional	Optional
O & M	Roots	RFL	Roots Fine Lateral	Required	Optional	RF	L	Optional						Required	Optional	Optional	Optional
O & M	Roots	RMB	Roots Medium Barrel	Required	Optional	RM	B	Optional				Required ≤ 50%		Required	Optional	Optional	Optional
O & M	Roots	RMC	Roots Medium Connection	Required	Optional	RM	C	Optional				Required ≤ 50%		Required	Optional	Optional	Optional
O & M	Roots	RMJ	Roots Medium Joint	Required	Optional	RMJ		Optional				Required ≤ 50%	Required	Required	Optional	Optional	Optional
O & M	Roots	RML	Roots Medium Lateral	Required	Optional	RM	L	Optional				Required ≤ 50%		Required	Optional	Optional	Optional
O & M	Roots	RTB	Roots Tap Barrel	Required	Optional	RT	B	Optional				Required >1/2" thick		Required	Optional	Optional	Optional
O & M	Roots	RTC	Roots Tap Connection	Required	Optional	RT	C	Optional				Required >1/2" thick		Required	Optional	Optional	Optional
O & M	Roots	RTJ	Roots Tap Joint	Required	Optional	RTJ		Optional				Required >1/2" thick	Required	Required	Optional	Optional	Optional
O & M	Roots	RTL	Roots Tap Lateral	Required	Optional	RT	L	Optional				Required >1/2" thick		Required	Optional	Optional	Optional
O & M	Vermin	VC	Vermin Cockroach	Required	Optional	VC							Optional			Optional	Optional
O & M	Vermin	VR	Vermin Rat	Required	Optional	VR				Required			Optional			Optional	Optional
O & M	Vermin	VZ	Vermin Other	Required	Optional	VZ				Required			Optional			Optional	Optional
Const Features	Access Pt	ACB	Catch Basin	Required	Optional	ACB										Optional	Optional
Const Features	Access Pt	ACOH	Cleanout House	Required	Optional	ACO	H									Optional	Optional
Const Features	Access Pt	ACOM	Cleanout Mainline	Required	Optional	ACO	M									Optional	Required
Const Features	Access Pt	ACOP	Cleanout Propertyline	Required	Optional	ACO	P									Optional	Optional
Const Features	Access Pt	ADP	Discharge Point	Required	Optional	ADP										Optional	Optional
Const Features	Access Pt	AEP	End of Pipe	Required	Optional	AEP										Optional	Optional
Const Features	Access Pt	AJB	Junction Box	Required	Optional	AJB										Optional	Required
Const Features	Access Pt	AM	Meter	Required	Optional	AM										Optional	Required
Const Features	Access Pt	AMH	Manhole	Required	Optional	AMH										Optional	Required
Const Features	Access Pt	AOC	Special Chamber	Required	Optional	AOC										Optional	Optional
Const Features	Access Pt	ATC	Tee Connection	Required	Optional	ATC				Required	Optional			Required		Optional	Optional
Const Features	Access Pt	AWA	Wastewater Access Device	Required	Optional	AWA										Optional	Required
Const Features	Access Pt	AWW	Wet Well	Required	Optional	AWW										Optional	Optional
Const Features	Intruding Seal	ISGT	Intruding Sealing Grout	Required	Optional	ISGT		Optional				Required		Required	Required	Optional	Optional
Const Features	Intruding Seal	ISSR	Intruding Sealing Ring	Required	Optional	ISSR		Optional				Required		Required	Required	Optional	Optional
Const Features	Intruding Seal	ISSRB	Intruding Sealing Ring Broken	Required	Optional	ISSR	B	Optional				Required		Required	Required	Optional	Optional
Const Features	Intruding Seal	ISSRH	Intruding Sealing Ring Hanging	Required	Optional	ISSR	H	Optional				Required		Required	Required	Optional	Optional
Const Features	Intruding Seal	ISSRL	Intruding Sealing Ring Loose/Poorly Fitting	Required	Optional	ISSR	L	Optional				Required		Required	Required	Optional	Optional
Const Features	Intruding Seal	ISZ	Intruding Sealing Other	Required	Optional	ISZ		Optional				Required		Required	Required	Optional	Optional
Const Features	Line	LD	Alignment Down	Required	Optional	LD		Optional				Required				Optional	Optional
Const Features	Line	LL	Alignment Left	Required	Optional	LL		Optional				Required				Optional	Optional
Const Features	Line	LLD	Alignment Left Down	Required	Optional	LLD		Optional				Required				Optional	Optional
Const Features	Line	LLU	Alignment Left Up	Required	Optional	LLU		Optional				Required				Optional	Optional
Const Features	Line	LR	Alignment Right	Required	Optional	LR		Optional				Required				Optional	Optional
Const Features	Line	LRD	Alignment Right Down	Required	Optional	LRD		Optional				Required				Optional	Optional
Const Features	Line	LRU	Alignment Right Up	Required	Optional	LRU		Optional				Required				Optional	Optional
Const Features	Line	LU	Alignment Up	Required	Optional	LU		Optional				Required				Optional	Optional
Const Features	Tap	TB	Tap Break-in	Required	Optional	TB				Required			Optional	Required		Optional	Optional

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Const Features	Tap	TBA	Tap Break-in Active	Required	Optional	TB	A			Required			Optional	Required		Optional	Optional
Const Features	Tap	TBB	Tap Break-in Abandoned	Required	Optional	TB	B			Required			Optional	Required		Optional	Optional
Const Features	Tap	TBC	Tap Break-in Capped	Required	Optional	TB	C			Required			Optional	Required		Optional	Optional
Const Features	Tap	TBD	Tap Break-in Defective	Required	Optional	TB	D			Required	Optional		Optional	Required		Optional	Optional
Const Features	Tap	TBI	Tap Break-in Intruding	Required	Optional	TB	I			Required	Required		Optional	Required		Optional	Optional
Const Features	Tap	TF	Tap Factory	Required	Optional	TF				Required			Optional	Required		Optional	Optional
Const Features	Tap	TFA	Tap Factory Active	Required	Optional	TF	A			Required			Optional	Required		Optional	Optional
Const Features	Tap	TFB	Tap Factory Abandoned	Required	Optional	TF	B			Required			Optional	Required		Optional	Optional
Const Features	Tap	TFC	Tap Factory Capped	Required	Optional	TF	C			Required			Optional	Required		Optional	Optional
Const Features	Tap	TFD	Tap Factory Defective	Required	Optional	TF	D			Required	Optional		Optional	Required		Optional	Optional
Const Features	Tap	TFI	Tap Factory Intruding	Required	Optional	TF	I			Required	Required		Optional	Required		Optional	Optional
Const Features	Tap	TR	Tap Rehabilitated	Required	Optional	TR				Required			Optional	Required		Optional	Optional
Const Features	Tap	TRD	Tap Rehabilitated Defective	Required	Optional	TR	D			Required	Optional		Optional	Required		Optional	Optional
Const Features	Tap	TRI	Tap Rehabilitated Intruding	Required	Optional	TR	I			Required	Required		Optional	Required		Optional	Optional
Const Features	Tap	TS	Tap Saddle	Required	Optional	TS				Required			Optional	Required		Optional	Optional
Const Features	Tap	TSA	Tap Saddle Active	Required	Optional	TS	A			Required			Optional	Required		Optional	Optional
Const Features	Tap	TSB	Tap Saddle Abandoned	Required	Optional	TS	B			Required			Optional	Required		Optional	Optional
Const Features	Tap	TSC	Tap Saddle Capped	Required	Optional	TS	C			Required			Optional	Required		Optional	Optional
Const Features	Tap	TSD	Tap Saddle Defective	Required	Optional	TS	D			Required	Optional		Optional	Required		Optional	Optional
Const Features	Tap	TSI	Tap Saddle Intruding	Required	Optional	TS	I			Required	Required		Optional	Required		Optional	Optional
Misc	Misc	MCU	Camera Underwater	Required	Optional	MCU		Optional								Optional	Optional
Misc	Misc	MGO	General Observation	Required	Optional	MGO										Optional	Required
Misc	Misc	MGP	General Photo	Required	Optional	MGP										Optional	Optional
Misc	Misc	MJL	Joint Length Change	Required	Optional	MJL				Required						Optional	Optional
Misc	Misc	MLC	Lining Change	Required	Optional	MLC										Optional	Optional
Misc	Misc	MMC	Material Change	Required	Optional	MMC										Optional	Required
Misc	Misc	MSA	Abandoned Survey	Required	Optional	MSA										Optional	Required
Misc	Misc	MSC	Shape or Size Change	Required	Optional	MSC				Required	Optional					Optional	Optional
Misc	Misc	MWL	Water Level	Required	Optional	MWL						Required				Optional	Optional
Misc	Misc	MWLS	Water Level Sag	Required	Optional	MWL	S	**Optional**				Required				Optional	Optional
Misc	Misc	MWM	Water Mark	Required	Optional	MWM						Required				Optional	Optional
Misc	Misc	MYN	Dye Test Not Visible	Required	Optional	MY	N									Optional	Optional
Misc	Misc	MYV	Dye Test Visible	Required	Optional	MY	V									Optional	Required

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Section 4—Continuous Defect Coding

"UNINTERRUPTED" 4-1

"Uninterrupted or Truly" continuous defects run along the sewer without any interruption for more than 3 feet.
Examples:
- Longitudinal Fractures
- Longitudinal Cracks

"JOINT REPEATED" 4-1

"Joint Repeated" continuous defects occur at regular intervals along the sewer. These occur at pipe joints and include:
-Encrustation
-Open Joints
-Circumferential Fractures

Code Changes in Version 6.0

Added:
Buckling Wall (KW), Buckling Dimpling (KD), and Buckling Inverse Curvature (KI)

Section 5—Structural Defect Coding (Module 6A)

C CRACK 5-1
- CL Longitudinal 5-2
- CC Circumferential 5-2
- CM Multiple 5-2
- CS Spiral 5-2
- CH Hinge 5-2

F FRACTURE 5-7
- FL Longitudinal 5-7
- FC Circumferential 5-7
- FM Multiple 5-7
- FS Spiral 5-7
- FH Hinge 5-7

B BROKEN 5-14
- BSV -Soil Visible 5-15 Beyond Defect
- BV V -Void Visible 5-15 Beyond Defect

H HOLE 5-16
- HSV -Soil Visible 5-17 Beyond Defect
- HV V -Void Visible 5-17 Beyond Defect

D DEFORMED 5-19
- DV Deformed Vertically (brick) 5-20
- DH Deformed Horizontally (brick) 5-20

X COLLAPSE 5-23
- XP Pipe Collapse 5-24
- XB Brick Collapse 5-24

J JOINT 5-26
- JO Joint Offset (Displaced) 5-27
- JS Joint Separated (Open) 5-27
- JA Joint Angular 5-27

S SURFACE DAMAGE 5-32
- SRI Roughness Increased 5-32
  - SRI - M - Mechanical
  - SRI - C - Chemical
  - SRI - Z - Not Evident

S SURFACE DAMAGE 5-32
- SAV Aggregate Visible 5-32
  - SAV - M - Mechanical
  - SAV - C - Chemical
  - SAV - Z - Not Evident

S SURFACE DAMAGE 5-32
- SAP Aggregate Projecting 5-32
  - SAP - M - Mechanical
  - SAP - C - Chemical
  - SAP - Z - Not Evident

S SURFACE DAMAGE 5-32
- SAM Aggregate Missing 5-32
  - SAM - M - Mechanical
  - SAM - C - Chemical Attack
  - SAM - Z - Not Evident

S SURFACE DAMAGE 5-32
- SRV Reinforcement Visible 5-32
  - SRV - M - Mechanical
  - SRV - C - Chemical Attack
  - SRV - Z - Not Evident

S SURFACE DAMAGE 5-32
- SRP Reinforcement Projecting 5-32
  - SRP - M - Mechanical
  - SRP - C - Chemical Attack
  - SRP - Z - Not Evident

S SURFACE DAMAGE 5-32
- SRC Reinforcement Corroded 5-32
  - SRC - M - Mechanical
  - SRC - C - Chemical Attack
  - SRC - Z - Not Evident

S SURFACE DAMAGE 5-32
- SMW Missing Wall 5-33
  - SMW - M - Mechanical
  - SMW - C - Chemical Attack
  - SMW - Z - Not Evident

S SURFACE DAMAGE 5-32
- SSS Surface Spalling 5-33
  - SSS - M - Mechanical
  - SSS - C - Chemical Attack
  - SSS - Z - Not Evident

S SURFACE DAMAGE 5-32
- SZ Other 5-33
  - SZ - M - Mechanical
  - SZ - C - Chemical Attack
  - SZ - Z - Not Evident

S SURFACE DAMAGE 5-32
- SCP Corrosion (metal pipe) 5-33
  *no modifiers used

K BUCKLING 5-46
- KW Wall 5-46
- KD Dimpling 5-46
- KI Inverse Curvature 5-46

LF LINING FAILURE 5-50
- LFD Detached Lining 5-50
- LFDE Defective End 5-50
- LFB Blistered Lining 5-50
- LFCS Service Cut Shifted 5-50
- LFAC Abandoned Connection 5-50

LF LINING FAILURE 5-50 (continued)
- LFOC Overcut Service 5-50
- LFUC Undercut Service 5-50
- LFBK Buckled Lining 5-50
- LFW Wrinkled Lining 5-50
- LFAS Annular Space 5-50

LF LINING FAILURE 5-50
- LFBU Bulges 5-51
- LFDC Discoloration 5-51
- LFDL Delamination 5-51
- LFRS Resin Slug 5-51
- LFPH Pinholes 5-51
- LFZ Other 5-51

WF WELD FAILURE 5-68
- WFL Longitudinal 5-68
- WFC Circumferential 5-68
- WFM Multiple 5-68
- WFS Spiral 5-68
- WFZ Unidentified 5-68

RP POINT REPAIR 5-71
- RPR Pipe Replaced 5-71
  - RPR - D -Defective 5-71
- RPP Patch Repair 5-71
  - RPP - D -Defective 5-71

RP POINT REPAIR 5-71
- RPL Localized Pipeliner 5-71
  - RPL - D -Defective 5-71
- RPZ Other 5-71
  - RPZ - D -Defective 5-71

BRICKWORK 5-77
- DB Displaced 5-77
- MB Missing 5-77
- DI Dropped Invert 5-77

BRICKWORK 5-77
- MM Missing Mortar 5-77
- S -Small 5-77
- M -Medium 5-77
- L -Large 5-77

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Section 6—Operational and Maintenance (Module 6B)

D	DEPOSITS	6-1
DA	Attached	6-1
DAE	-Encrustation	6-2
DAGS	-Grease	6-2
DAR	-Ragging	6-2
DAZ	-Other	6-2

D	DEPOSITS	6-1
DS	Settled	6-1
DSF	-Fine	6-2
DSGV	-Gravel	6-2
DSC	-Hard/Compacted	6-2
DSZ	-Other	6-2

D	DEPOSITS (continued)	6-1
DN	Ingress	6-1
DNF	-Fine (silt & sand)	6-3
DNGV	-Gravel	6-3
DNZ	-Other	6-3

R	ROOTS	6-7
RF	Fine	6-7
RFB	-Barrel	6-7
RFL	-Lateral	6-7
RFC	-Connection	6-8

R	ROOTS	6-7
RT	Tap	6-7
RTB	-Barrel	6-7
RTL	-Lateral	6-7
RTC	-Connection	6-8

R	ROOTS	6-7
RM	Medium	6-7
RMB	-Barrel	6-7
RML	-Lateral	6-7
RMC	-Connection	6-8

R	ROOTS	6-7
RB	Ball	6-7
RBB	-Barrel	6-7
RBL	-Lateral	6-7
RBC	-Connection	6-8

I	INFILTRATION	6-13
IS	Stain	6-13
IW	Weeper	6-13
ID	Dripper	6-13
IR	Runner	6-13
IG	Gusher	6-13

OB	OBSTACLES/ OBSTRUCTIONS	6-19
OBB	Brick or Masonry	6-19
OBM	Pipe Material in Invert	6-19
OBI	Object protruding through wall	6-19

OB	OBSTACLES/ OBSTRUCTIONS	6-19
OBJ	Object wedged in joint	6-19
OBC	Object through connection/junction	6-19
OBP	External Pipe Cable	6-19

OB	OBSTACLES/ OBSTRUCTIONS	6-19
OBS	Built into structure	6-20
OBN	Construction Debris	6-20
OBR	Rocks	6-20
OBZ	Other	6-20

V	VERMIN	6-31
VR	Rat	6-31
VC	Cockroach	6-31
VZ	Other	6-31

G	GROUT TEST & SEAL	6-33
GTP	Grout Test Passed	6-33
GTP - J - Joint		6-33
GTP - L - Lateral		6-33
GTF	Grout Test Failed	6-33

G	GROUT TEST & SEAL	6-33
GTU	Grout Test Unable	6-33
GTU - J - Joint		6-33
GTU - L - Lateral		6-33
GRT	Grout Test Location	6-33

Section 7—Construction Features Coding (Module 6C)

T	TAP	7-1
TF	Factory Made	7-1
TFI	-Intruding	7-2
TFA	-Active	7-2
TFC	-Capped	7-2
TFB	-Abandoned	7-2
TFD	-Defective	7-2

T	TAP	7-1
TB	Break In/Hammer	7-2
TBI	-Intruding	7-2
TBA	-Active	7-2
TBC	-Capped	7-2
TBB	-Abandoned	7-2
TBD	-Defective	7-2

T	TAP	7-1
TS	Saddle	7-2
TSI	-Intruding	7-2
TSA	-Active	7-2
TSC	-Capped	7-2
TSB	-Abandoned	7-2
TSD	-Defective	7-2

T	TAP	7-1
TR	Rehabilitated	7-2
TRI	-Intruding	7-2
TRA	-Active	7-2
TRC	-Capped	7-2
TRB	-Abandoned	7-2
TRD	-Defective	7-2

IS	INTRUDING SEALING MATERIAL	7-9
ISSR	Sealing Ring	7-9
ISSRH	-Hanging	7-9
ISSRB	-Broken	7-9

IS	INTRUDING SEALING MATERIAL	7-9
ISGT	Grout	7-9
ISZ	Other	7-9
ISSRL	Loose	7-9

L	LINE (of sewer)	7-11
LL	Left	7-11
LLU	Left Up	7-11
LLD	Left Down	7-11
LR	Right	7-11

L	LINE (of sewer)	7-11
LRU	Right Up	7-11
LRD	Right Down	7-11
LU	Up	7-11
LD	Down	7-11

A	ACCESS POINT	7-14
AMH	Manhole	7-14
AWA	Wastewater Access	7-14
ADP	Discharge Point	7-14
ATC	Tee Connection	7-14

A	ACCESS POINT	7-14
AOC	Other Special Chamber	7-14
AM	Meter	7-14
AWW	Wet Well	7-15
AJB	Junction Box	7-15

A	ACCESS POINT	7-14
ACO	Clean Out	7-15
ACOM	-Mainline	7-15
ACOP	-Property	7-15
ACOH	-House	7-15

A	ACCESS POINT	7-14
ACB	Catch Basin	7-15
AEP	End of Pipe	7-15

Section 8—Miscellaneous Features Coding (Module 6D)

M	MISCELLANEOUS FEATURES	8-1
MCU	Camera Underwater	8-1
MGO	General Observation	8-1
MGP	General Photograph	8-1
MSC	Shape/Size Change (Sewer Dimension/Vertical/ Horizontal)	8-1
MJL	Joint Length Change	8-1

M	MISCELLANEOUS FEATURES	8-1
MLC	Lining Change	8-2
MMC	Material Change	8-2
MSA	Survey Abandoned	8-2
MWL	Water Level	8-2
MWLS	-Sag	8-2

M	MISCELLANEOUS FEATURES	8-1
MWM	Water Mark	8-2
MY	Dye Test	8-2
MYV	-Dye Visible	8-3
MYN	-Not Visible	8-3

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ADDIS, LOUISIANA SSES PROJECT - ADDIS PLACE

COMPLIANCE ENVIROSYSTEMS

COMPLIANCE ENVIROSYSTEMS, LLC
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BATON ROUGE, LA 70810
PHONE: (225) 769-2933 FAX: (225) 769-2939
ON LINE AT: WWW.CES-SSES.COM

SOUND DATA, SOLID SOLUTIONS

LEGEND

- MANHOLE DNE
- MANHOLE
- GRAVITY MAIN DNE
- CCTV INSPECTED
- GRAVITY MAIN
- TARGET AREA

260 130 0 260 520 780 FEET

N W E S

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COMPLIANCE ENVIROSYSTEMS

Project Summary

1187 - ADDIS, LA. - ADDIS PLACE

PLR	Date	Drainage Area	Operator	Pipe Size	Upstream MH	Downstream MH	Pipe	Asset length	Surveyed Length
189_187	8/23/2012	CHAD DRIVE LS	J.FOOTE-CES	8	189	187	RPM	338.7	338.7
185_187	10/12/2012	CHAD DRIVE LS	J.FOOTE-CES	8	185	187	RPM	134.1	134.1

Number of inspections: 2

Subtotal	**472.8 ft**	**472.8 ft**
Total	**472.8 ft**	**472.8 ft**

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COMPLIANCE ENVIROSYSTEMS

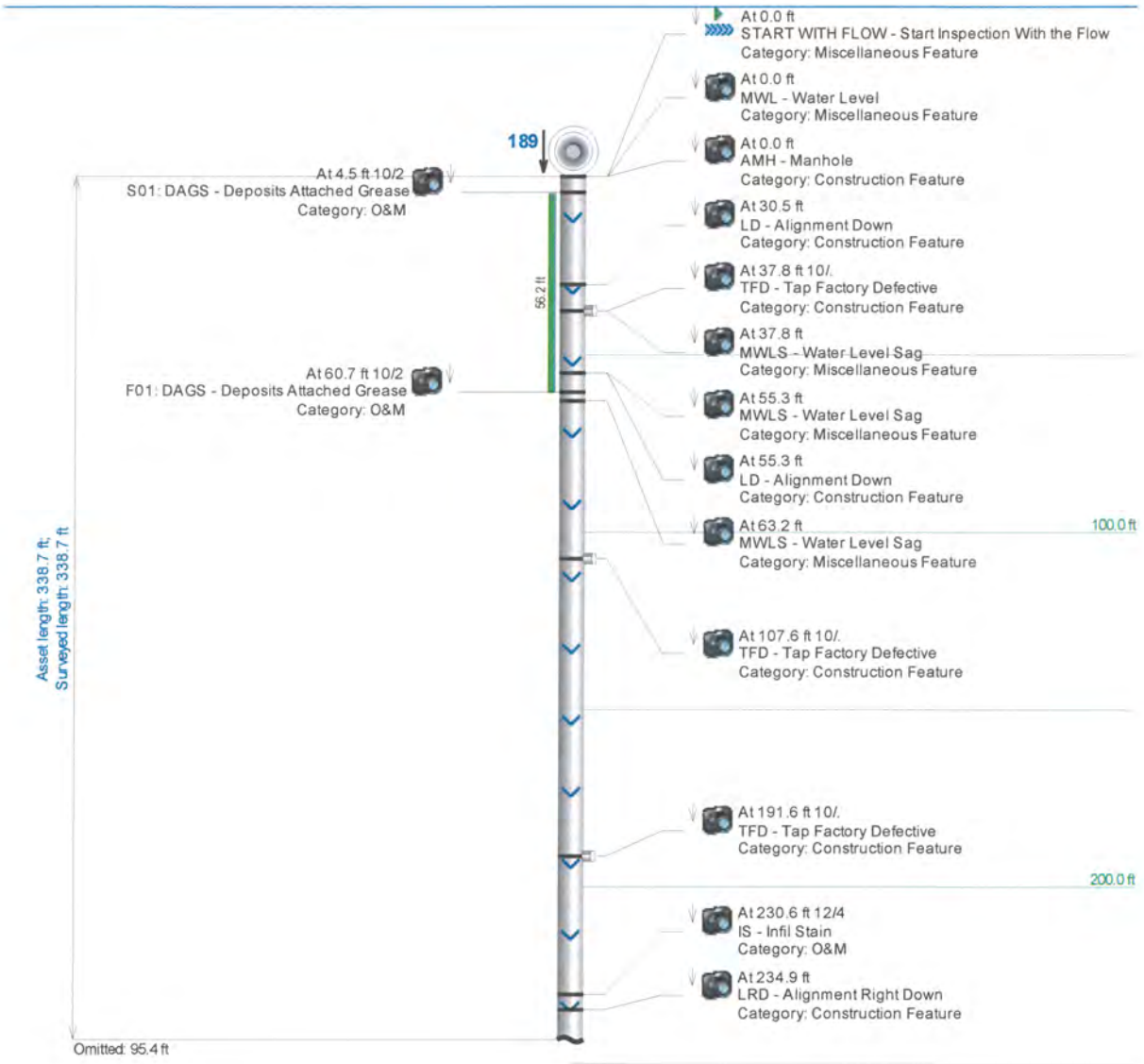
Inspection with Pipe-Run Graph

ADDIS, LA

Pipe ID:	189_187	
UpsMH / Depth:	189	8
DnsMH / Depth:	187	
Pipe Material:	RPM	
Shape:	C	
Joint Length:	20	
Pipe Length:	338.7	

Drainage Area:	CHAD DRIVE LS	
Address / Street:	3756 KAREN DR	
Date / Time:	8/23/2012 11:22:10 AM	
Surveyor:	J.FOOTE-CES	0986
Pre-Cleaning / Date:	J	08/23/2012
Diameter:	8	
Length Surveyed:	338.7	

Comment:	8" DOWNSTREAM CLEAN & CCTV SURVEY COMPLETE



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COMPLIANCE ENVIROSYSTEMS

ADDIS, LA

Pipe ID:	189_187	
UpsMH / Depth:	189	8
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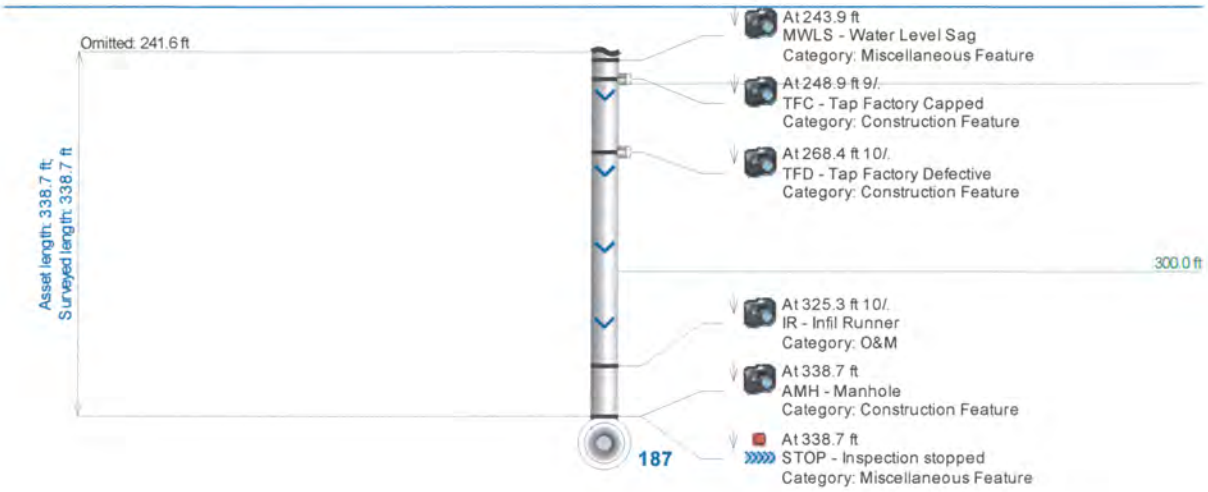

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COMPLIANCE ENVIROSYSTEMS

Observation Report with Still Images

Pipeline segment ref:	Project Name:	Start date/time:	Weather:	Surveyed by:
189_187	1187 - ADDIS, LA. - ADDIS PLACE	8/23/2012 4:37:21 PM	1	J.FOOTE-CES

Upstream manhole No:	Depth US:	Downstream manhole No:	Depth DS:	Total length:	Extra:
189	8.0	187		338.7	ADDIS PLACE - STREET RECONSTRUCTION

Additional info:
8" DOWNSTREAM CLEAN & CCTV SURVEY COMPLETE

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
0.0		START WITH FLOW	No	/		
0.0		MWL	No	/		

0.0		AMH	No	/		189

4.5		DAGS	No	10 / 2		THIN TRACKS - DEFECT WANDERS IN CLOCK POSITION AND PERCENTAGE

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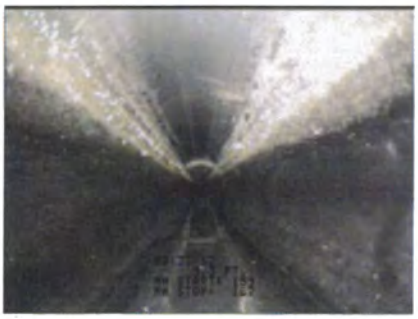
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
30.5		LD	No	/		
						
37.8		TFD	No	10 /		SWEEP ON SERVICE UPSTREAM
						
37.8		MWLS	No	/		

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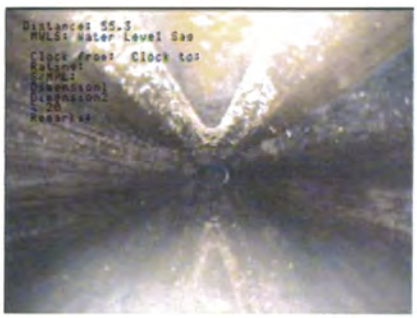
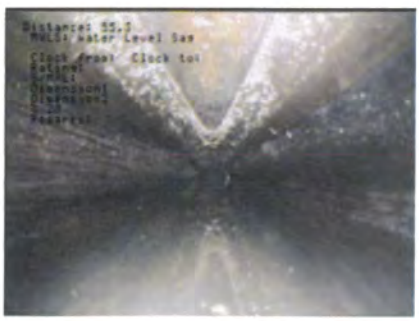
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
55.3		MWLS	No	/		
						
55.3		LD	No	/		
						
60.7		DAGS	No	10 / 2		THIN TRACKS - DEFECT WANDERS IN CLOCK POSITION AND PERCENTAGE

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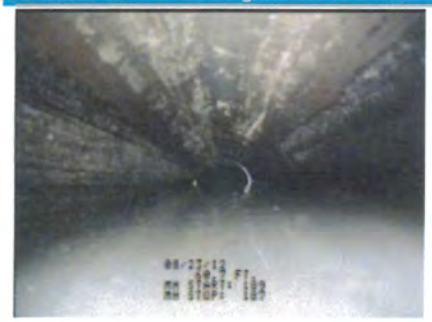
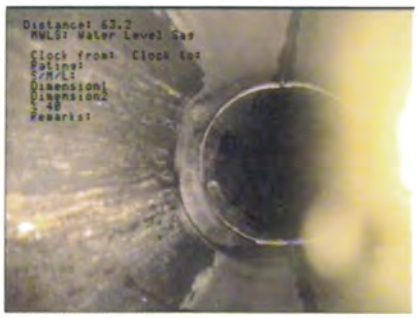
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
63.2		MWLS	No	/		
						
107.6		TFD	No	10 /		SWEEP ON SERVICE UPSTREAM
						
191.6		TFD	No	10 /		SWEEP ON SERVICE UPSTREAM - RUNNER ORIGINATING WITHIN TAP

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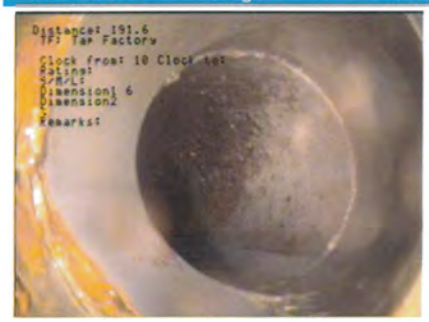
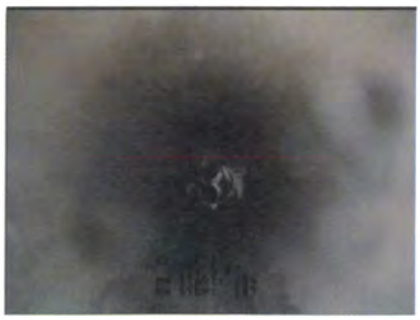
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
230.6		IS	No	12 / 4		
						
234.9		LRD	No	/		
						
243.9		MWLS	No	/		

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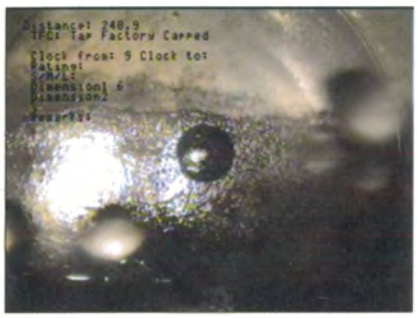
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
248.9		TFC	No	9 /		
						
268.4		TFD	No	10 /		SWEEP ON SERVICE UPSTREAM
						
325.3		IR	No	10 /		

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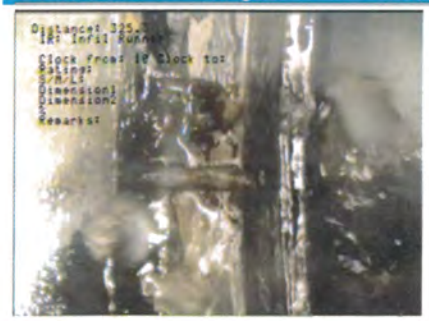
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
338.7		AMH	No	/		187
						
338.7		STOP	No	/		

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COMPLIANCE ENVIROSYSTEMS

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer	Drainage area:	Sheet number:
J.FOOTE-CES	0986	THE TOWN OF ADDIS, LA	ENVIROMENTAL ENGINEERING	CHAD DRIVE LS	1

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
ADDIS PLACE	189_187	2012/08/23	16:37	3756 KAREN DR	ADDIS, LA

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
AGH-340	189	8.0		

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
187				SS	D	P	8

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RPM		20.0	338.7	338.7			ADDIS, LA MEDIA

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
B		J	2012/08/23	1	Y	8" DOWNSTREAM CLEAN & CCTV SURVEY COMPLETE

		Structural					O&M				Overall Pipe	
Grade	Amount of Structural Defects	Structural Segment Grade	Structural Pipe Rating	Structural Quick Rating	Structural Pipe Rating Index	Amount of O&M Defects	O&M Segment Grade	O&M Pipe Rating	O&M Quick Rating	O&M Pipe Rating Index	Overall Pipe Rating	Overall Pipe Rating Index
1	0	0	0	0000	0	0	0	26	412A	2.166667	47	2.043478
2	0	0				11	22					
3	0	0				0	0					
4	0	0				1	4					
5	0	0				0	0					

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COMPLIANCE ENVIROSYSTEMS

Surveyed by:	Owner:	Start date/time:	Upstream manhole No:	Pipeline segment ref:	Sheet number:
J.FOOTE-CES	THE TOWN OF ADDIS, LA	2012/08/23	189	189_187	2

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	to	Image Ref.	Family	Rating	Remarks
0.0	110	MWL						5				ed067d63-5e35-4bd6-b49-1dac185da34f.jpg			
0.0	34	AMH										968b34a7-3d8d-4fef-8d89-f95b3880f165.jpg	CF		189
4.5	184	DAGS		S01				5		10	2	189_187DAGS4.5.jpg	O&M	2	THIN TRACKS - DEFECT WANDERS IN CLOCK POSITION AND PERCENTAGE
30.5	266	LD						15				189_187LD30.5.jpg	CF	2	
37.8	334	TFD				6				10		a2181dc0-a949-4c30-8d52-db30ec9beeae.jpg	CF	2	SWEEP ON SERVICE UPSTREAM
37.8	370	MWLS						20				86b0777a-c47a-456e-8436-108bf1a6c88d.jpg		2	
55.3	431	MWLS						20				e8fdcf05-ba71-4547-9d8c-8e3b5b9bfb82.jpg		2	
55.3	444	LD						15				189_187LD55.3.jpg	CF	2	
60.7	466	DAGS		F01				5		10	2	189_187DAGS60.7.jpg	O&M	2	THIN TRACKS - DEFECT WANDERS IN CLOCK POSITION AND PERCENTAGE
63.2	604	MWLS						30				2ca0d2b0-8af7-4eae-8a56-d9e4318a1e6c.jpg		2	

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COMPLIANCE ENVIROSYSTEMS

Surveyed by:	Owner:	Start date/time:	Upstream manhole No:	Pipeline segment ref:	Sheet number:
J.FOOTE-CES	THE TOWN OF ADDIS, LA	2012/08/23	189	189_187	3

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	to	Image Ref.	Family	Rating	Remarks
107.6	1041	TFD				6				10		253e431e-eda8-448b-916f-d622a22ea954.jpg	CF	2	SWEEP ON SERVICE UPSTREAM
191.6	1257	TFD				6				10		4b358585-c59f-41a8-80e9-93a3af2a6bd5.jpg	CF	2	SWEEP ON SERVICE UPSTREAM - RUNNER ORIGINATING WITHIN TAP
230.6	1399	IS								12	4	2c4edc16-5166-47d9-8981-3e663e4d5545.jpg	O&M		
234.9	1426	LRD						10				189_187LRD234.9.jpg	CF	1	
243.9	1445	MWLS						10				189_187MWLS243.9.jpg		2	
248.9	1462	TFC				6				9		726042e2-b149-4d25-9f32-d3a2ecd3699e.jpg	CF		
268.4	1574	TFD				6				10		2fe4e3ec-5913-4a79-8bd4-b23ef36af97c.jpg	CF	2	SWEEP ON SERVICE UPSTREAM
325.3	1745	IR							J	10		22a1a3f0-ee8d-43ff-8517-404b60409ff8.jpg	O&M	4	
338.7	1870	AMH										1a5bd1b-c3b3-45f0-af85-5817b99227aa.jpg	CF		187

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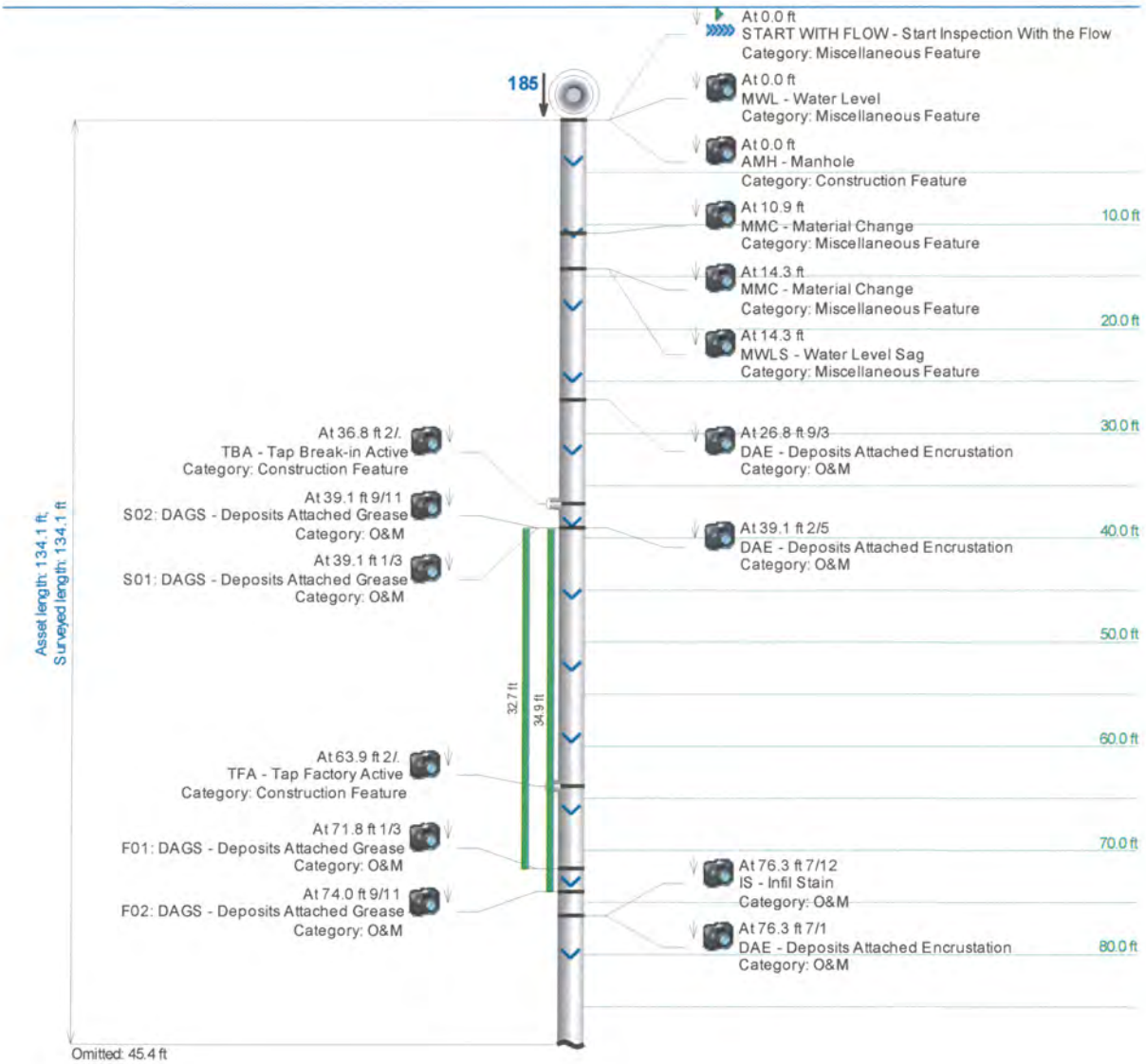
COMPLIANCE ENVIROSYSTEMS

Inspection with Pipe-Run Graph

ADDIS, LA

Pipe ID:	185_187		Drainage Area:	CHAD DRIVE LS	
UpsMH / Depth:	185		Address / Street:	3869 KAREN DR	
DnsMH / Depth:	187		Date / Time:	10/12/2012 7:28:50 AM	
Pipe Material:	RPM		Surveyor:	J.FOOTE-CES	0986
Shape:	C		Pre-Cleaning / Date:	J	10/12/2012
Joint Length:	20		Diameter:	8	
Pipe Length:	134.1		Length Surveyed:	134.1	
Comment:	8" DOWNSTREAM CLEAN & CCTV SURVEY COMPLETE				



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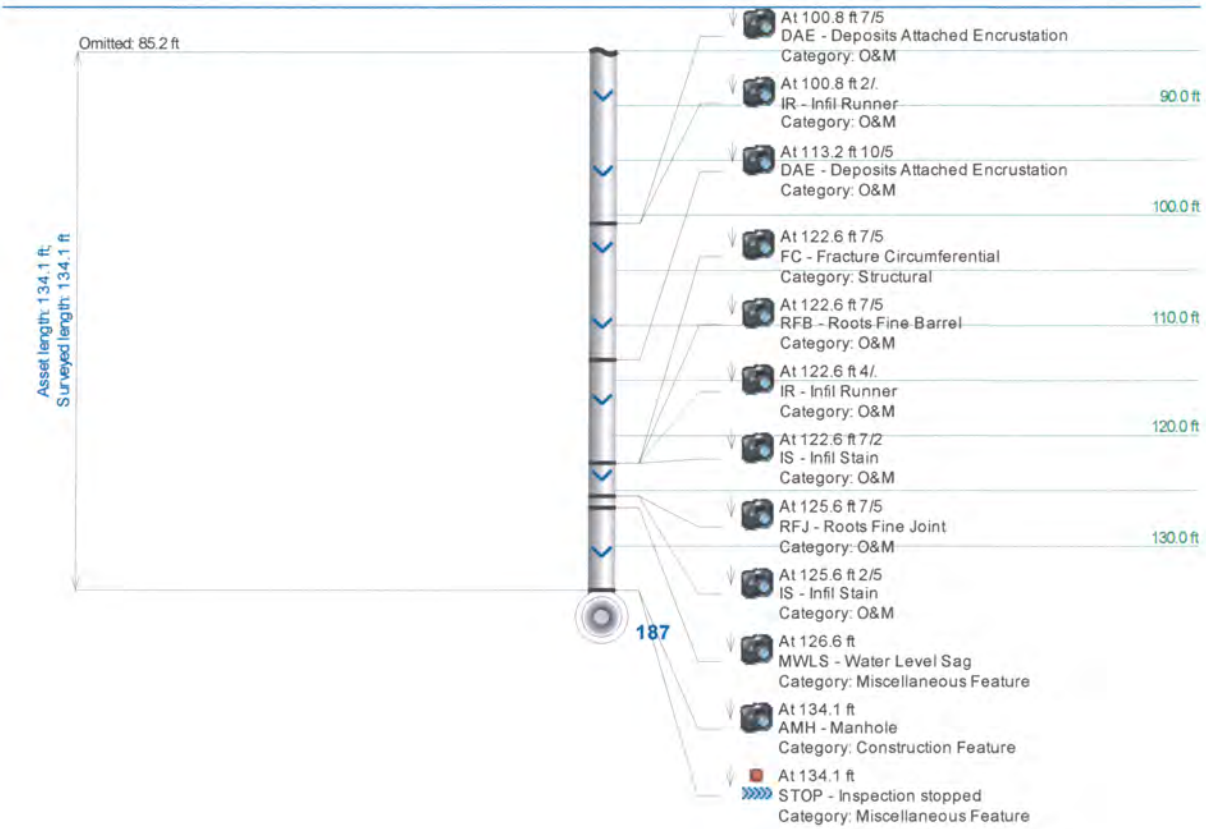
COMPLIANCE ENVIROSYSTEMS

ADDIS, LA

Pipe ID:	185_187		Drainage Area:	CHAD DRIVE LS	
UpsMH / Depth:	185		Address / Street:	3869 KAREN DR	
DnsMH / Depth:	187		Date / Time:	10/12/2012 7:28:50 AM	
Pipe Material:	RPM		Surveyor:	J.FOOTE-CES	0986
Shape:	C		Pre-Cleaning / Date:	J	10/12/2012
Joint Length:	20		Diameter:	8	
Pipe Length:	134.1		Length Surveyed:	134.1	
Comment:	8" DOWNSTREAM CLEAN & CCTV SURVEY COMPLETE				



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COMPLIANCE ENVIROSYSTEMS

Observation Report with Still Images

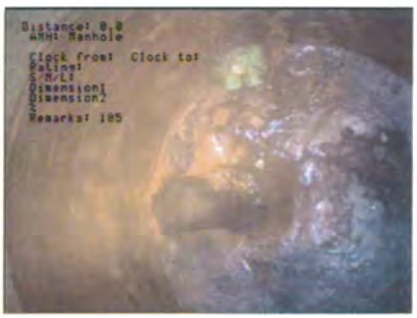
Pipeline segment ref:	Project Name:	Start date/time:	Weather:	Surveyed by:
185_187	1187 - ADDIS, LA. - ADDIS PLACE	10/12/2012 7:29:13 AM	1	J.FOOTE-CES

Upstream manhole No:	Depth US:	Downstream manhole No:	Depth DS:	Total length:	Extra:
185		187		134.1	ADDIS PLACE - STREET RECONSTRUCTION

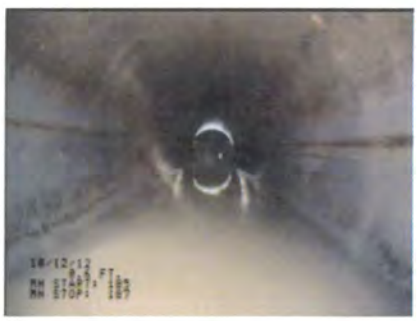
Additional info:
8" DOWNSTREAM CLEAN & CCTV SURVEY COMPLETE

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
0.0		START WITH FLOW	No	/		
0.0		AMH	No	/		185



0.0		MWL	No	/		



10.9		MMC	No	/		RPM TO PVC

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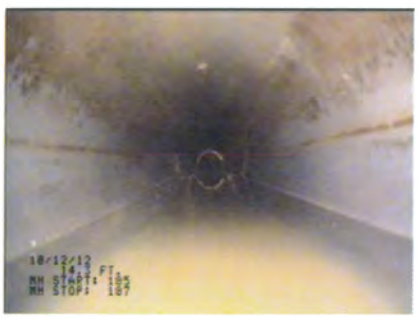
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
14.3		MMC	No	/		PVC TO RPM
						
14.3		MWLS	No	/		
						
26.8		DAE	No	9 / 3		

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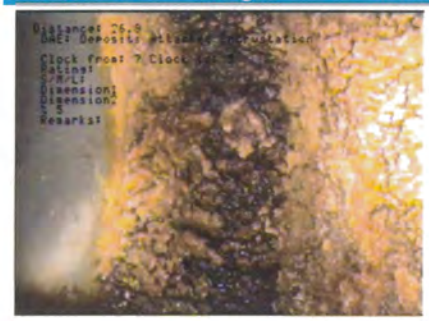
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
36.8		TBA	No	2 /		
						
39.1		DAE	No	2 / 5		
						
39.1		DAGS	No	9 / 11		THIN LAYER WANDERS

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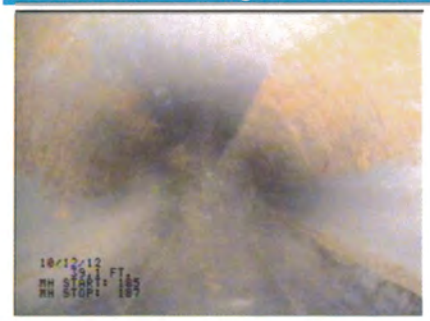
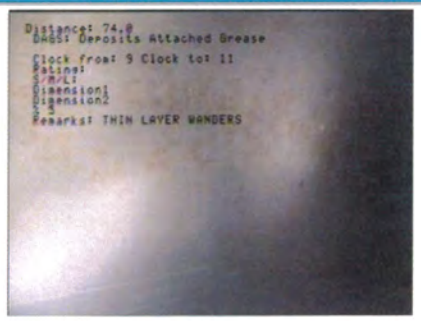
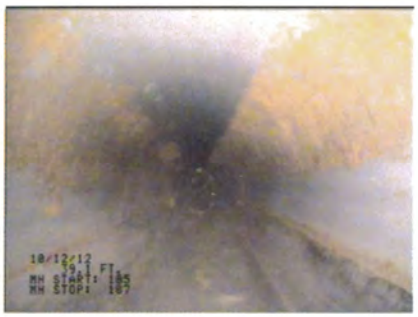
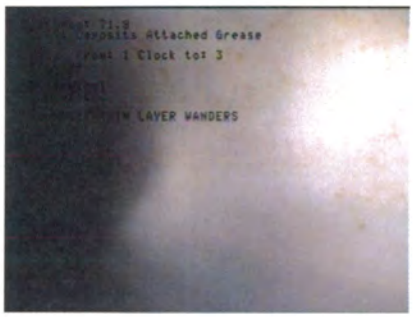
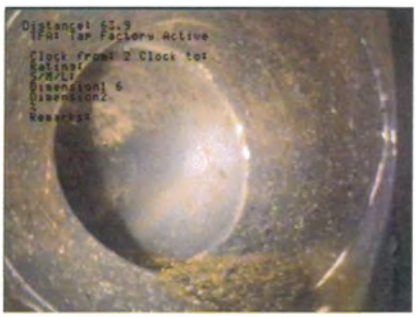
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
						
39.1		DAGS	No	1 / 3		THIN LAYER WANDERS
						
						
63.9		TFA	No	2 /		
						
71.8		DAGS	No	1 / 3		THIN LAYER WANDERS

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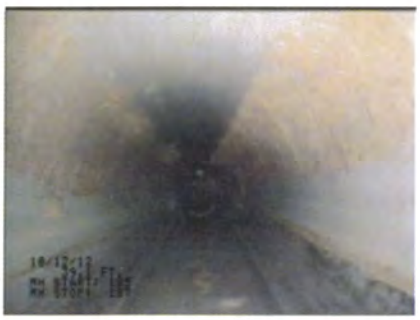
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
74.0		DAGS	No	9 / 11		THIN LAYER WANDERS
						
76.3		IS	No	7 / 12		
						
76.3		DAE	No	7 / 1		

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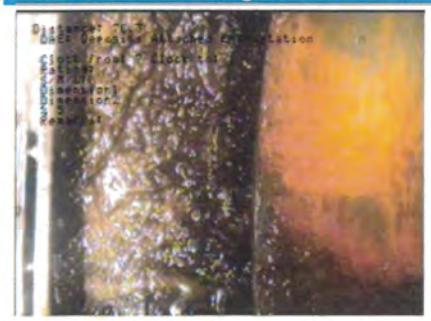
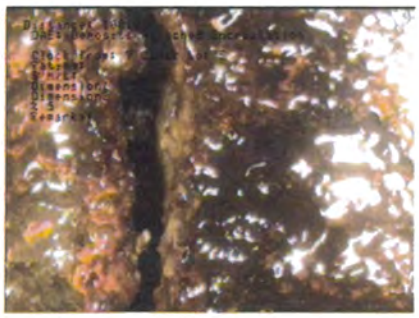
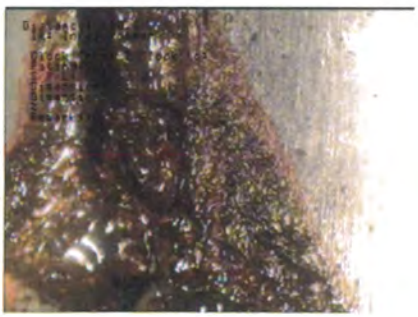
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
100.8		DAE	No	7 / 5		
						
100.8		IR	No	2 /		
						
113.2		DAE	No	10 / 5		

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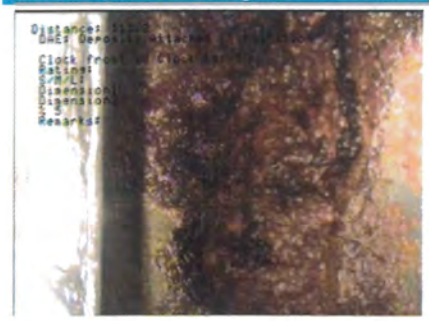
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
122.6		FC	No	7 / 5		
						
122.6		RFB	No	7 / 5		ORIGINATES AT FC
						
122.6		IR	No	4 /		ORIGINATES AT FC

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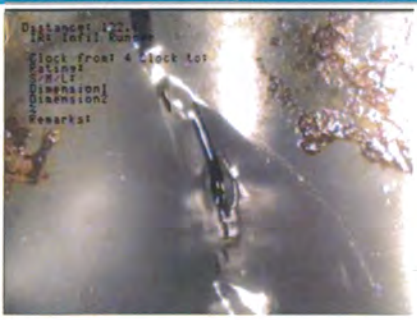
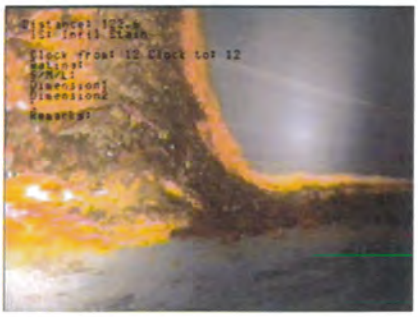
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
122.6		IS	No	7 / 2		ORIGINATES AT FC
						
125.6		RFJ	No	7 / 5		
						
125.6		IS	No	2 / 5		

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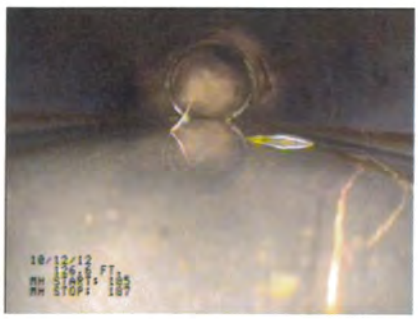
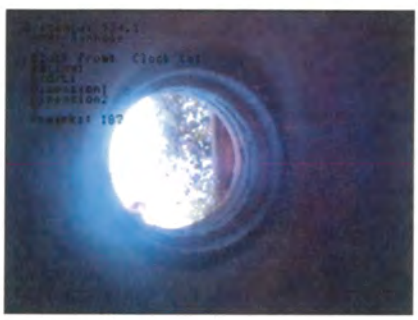
Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
						
126.6		MWLS	No	/		
						
134.1		AMH	No	/		187
						
134.1		STOP	No	/		

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COMPLIANCE ENVIROSYSTEMS

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer	Drainage area:	Sheet number:
J.FOOTE-CES	0986	THE TOWN OF ADDIS, LA	ENVIROMENTAL ENGINEERING	CHAD DRIVE LS	1

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
ADDIS PLACE	185_187	2012/10/12	07:29	3869 KAREN DR	ADDIS, LA

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
AGH-133	185			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
187				SS	D	N	8

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RPM		20.0	134.1	134.1			ADDIS, LA MEDIA

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
B		J	2012/10/12	1	Y	8" DOWNSTREAM CLEAN & CCTV SURVEY COMPLETE

Grade	Amount of Structural Defects	Structural Segment Grade	Structural Pipe Rating	Structural Quick Rating	Structural Pipe Rating Index	Amount of O&M Defects	O&M Segment Grade	O&M Pipe Rating	O&M Quick Rating	O&M Pipe Rating Index	Overall Pipe Rating	Overall Pipe Rating Index
1	0	0	2	2100	2	1	1	49	422C	2.130435	55	2.115385
2	1	2				20	40					
3	0	0				0	0					
4	0	0				2	8					
5	0	0				0	0					

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Surveyed by: J.FOOTE-CES | Owner: THE TOWN OF ADDIS, LA | Start date/time: 2012/10/12 | Upstream manhole No: 185 | Pipeline segment ref: 185_187 | Sheet number: 2

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	to	Image Ref.	Family	Rating	Remarks
0.0	32	AMH										b19a4d74-539f-40ff-966c-b892738472b3.jpg	CF		185
0.0	124	MWL						10				8e589970-b1d3-42f5-8e10-42378e69fb6f.jpg			
10.9	240	MMC										6d379ca2-2817-4dca-b822-16b654edb3ce.jpg			RPM TO PVC
14.3	270	MMC										184148b0-38d-47f5-b41f-263e618bab81.jpg			PVC TO RPM
14.3	288	MWLS						20				8be99010-54b8-4f70-b430-f644f1d73839.jpg		2	
26.8	350	DAE						5	J	9	3	b03caa0e-87ca-48a8-8d30-caa44dd0f7c0.jpg	O&M	2	
36.8	443	TBA			6					2		75c5bbd1-a358-466e-ba65-b9482c719f24.jpg	CF		
39.1	489	DAE						5	J	2	5	97bff28f-1c1-4b98-94f4-fc3fc6564d4e.jpg	O&M	2	
39.1	524	DAGS		S02				5		9	11	e8effcb9-a0e2-4e0e-9e96-f0d71e65363d.jpg	O&M	2	THIN LAYER WANDERS
39.1	541	DAGS		S01				5		1	3	a8039970-3f90-4aba-8be7-1bb7c6433fed.jpg	O&M	2	THIN LAYER WANDERS
63.9	644	TFA			6					2		4226c65a-c620-4e4d-9b1b-57b529c93c7.jpg	CF		
71.8	541	DAGS		F01				5		1	3	185_187DAGS71.8.jpg	O&M	2	THIN LAYER WANDERS
74.0	524	DAGS		F02				5		9	11	185_187DAGS74.jpg	O&M	2	THIN LAYER WANDERS
76.3	750	IS							J	7	12	c62590b8-de66-40e0-96bd-175d09e38f.jpg	O&M		

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Surveyed by: J.FOOTE-CES

Owner: THE TOWN OF ADDIS, LA

Start date/time: 2012/10/12

Upstream manhole No: 185

Pipeline segment ref: 185_187

Sheet number: 3

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Family	Rating	Remarks
76.3	776	DAE						5	J	7	1	4c068d76-f93a-4184-8c71-2ef6f5d3cdc0.jpg	O&M	2	
100.8	891	DAE						5	J	7	5	9136ee8c-23c5-4f43-9b7e-bed171c962d1.jpg	O&M	2	
100.8	907	IR							J	2		b942a447-1e08-4921-8d1b-701911377cb5.jpg	O&M	4	
113.2	985	DAE						10	J	10	5	378cd9a7-8074-437f-8667-e2f316a500.jpg	O&M	2	
122.6	1099	FC							J	7	5	fd092a2f-8292-44ab-93b6-d61b089ab5a.jpg	S	2	
122.6	1114	RFB								7	5	b821d22a-8b9d-468a-b48-d336aaf5c274.jpg	O&M	2	ORIGINATES AT FC
122.6	1157	IR								4		4e361599-b086-4fa4-89f3-6f33b2a3cbd7.jpg	O&M	4	ORIGINATES AT FC
122.6	1189	IS								7	2	a04148f1-efcf-4dce-8efa-1b4545a2cf1b.jpg	O&M		ORIGINATES AT FC
125.6	1244	RFJ							J	7	5	d34e3216-cd49-4c59-8695-e6b5bf33e674.jpg	O&M	1	
125.6	1287	IS							J	2	5	1f4aa89d-6e96-4ec9-9ca6-64f1f3748bb.jpg	O&M		
126.6	1309	MWLS						20				56e99062-a321-4239-a8f0-179e9eed515.jpg		2	
134.1	1375	AMH										80cc1e75-d398-4042-9e35-522458a6846b.jpg	CF		187