

CITY OF NEWBURGH CONTACT TANK AT WASHINGTON LAKE FILTRATION PLANT

**Newburgh, New York
Site Number 336022**

July 2016

ADDENDUM No. 3

TO CONTRACT D010238



Prepared by:

**Arcadis CE, Inc.
855 Route 146, Suite 210
Clifton Park, NY 12065**

**ADDENDUM No. 3
JULY 2016 CONTRACT DOCUMENTS
CITY OF NEWBURGH CONTACT TANK
AT WASHINGTON LAKE FILTRATION PLANT
NEWBURGH, NEW YORK
CONTRACT NO. D010238
JULY 2016**

TO ALL HOLDERS OF THE CONTRACT DOCUMENTS:

Part A. Clarification

The following question was posed to the Department outside of the prescribed question and comment period. It is addressed herein, for the benefit of all potential bidders, as clarification to amended Contract clauses issued as Addendum No. 1.

QUESTION: Addendum 1, Part B, Item 1a, Bid Forms and Attachments; Article 1; a new article associated with the Iran Divestment Act has been included in this section as Article 1 (g). Was this new article supposed to be included with Addendum 1, we didn't see it anywhere?

RESPONSE: The Article pertaining to the Iran Divestment Act was not included with Addendum No. 1 as indicated in the reference. Information pertaining to the Iran Divestment Act can be found in Contract Documents - Section VII, Appendix A, Item 26.

***26. IRAN DIVESTMENT ACT.** By entering into this Agreement, Contractor certifies in accordance with State Finance Law §165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at: <http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf>*

Contractor further certifies that it will not utilize on this Contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time the Contract is renewed or extended. Contractor also agrees that any proposed Assignee of this Contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the Contract, should the state agency receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, the state agency will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the state agency shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

The state agency reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

PART B. Limited Site Data

Your attention is directed to the following additional information that has been developed to supplement the current Limited Site Data. This is provided for informational purposes only and is not a part of the Contract Documents.

1. Additional Boring Logs have been provided for the Bidder's convenience in Attachment A.

PART C. Changes to Contract Documents

Your attention is directed to the following changes and additions to the July 2016 Contract Documents for the City of Newburgh Contact Tank at Washington Lake Filtration Plant. This addendum has been prepared in accordance with the provisions of the Contract Documents.

1. **Section XI, Specification 40 05 19:** Add Specification 40 05 19 in its entirety in Attachment B.
2. **Drawing C-09:** Wall Manway Detail, delete Note 1. Only one manway is required.



Daniel J. Loewenstein, P.E., BCEE

Dated: August 12, 2016

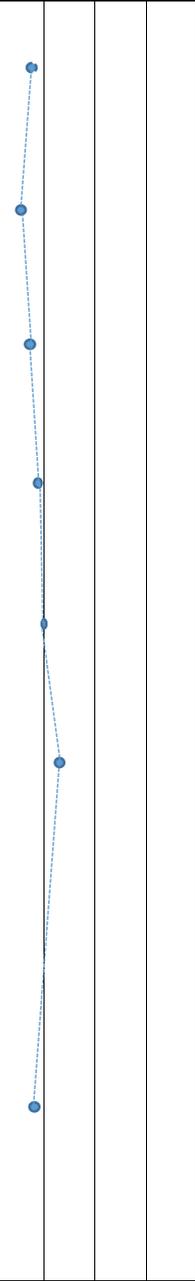
ATTACHMENT A

ADDENDUM No. 3

**City of Newburgh Contact Tank at Washington Lake Filtration Plant
Site No. 336022
CONTRACT NO. D010238**

Limited Site Data

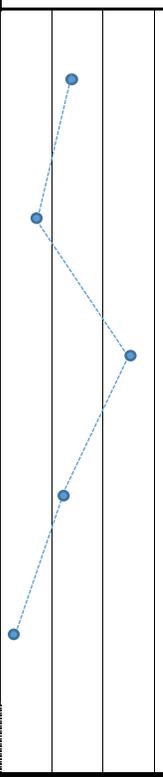
Date Started: 7/25/2016	Date Finished: 7/25/2016	Logged By: RBM	Driller: Jim Casson	DRILLING METHOD	DIA.	DEPTH (ft.)
Drilling Contractor: General Borings, Inc.			Drill Rig Model: Diedrich D-50 Turbo	Power Auger : ID 3.25"	0	TO 18.5
Surface EL (ft): 281.5	Vertical Datum: NAVD88	Sampler : 2" O.D. Split Spoon		Mud Rotary :		TO
Depth to Bedrock (ft): 18.5	Hammer Wt/Drop: 140 lb/ 30"	Boring Location: See Location Plan		Casing :		TO
Groundwater Depth (ft):	NE			Rock Core :		TO
GW Measure Date/Time: 7/25/16 @ 10:00AM				WEATHER: Sunny	TEMP. (°F)	82

Depth (feet)	Sample Data								MATERIAL DESCRIPTION (Strata Changes are Inferred)	N-Value (blows/ft)			Remarks (drilling fluid, casing, drill rig actions, etc.)
	Type-Number	N or Min/FT	Pen. Resist. (blows/6 in)	Recovery (in)	RQD (%)	Moisture	USCS Symbol	Graphic Symbol		20	40	60	
1	S-1	16	8	16		M	SM		Bwn c-f SAND, little c-f Gravel, little Silt				
2			9						SAME				
3	S-2	11	7	14		M	SM		SAME				
4			6										
5	S-3	14	4	16		M	SM		Bwn c-f SAND, some clayey Silt, little m-f Gravel				
6			5										
7	S-4	18	6	4		M	SP		Bwn c-f SAND, some c-f Gravel, trace Silt				
8			8										
9	S-5	20	5	NR					No Recovery				Possibly pushing Cobble
10			10										
11	S-6	25	11	NR					SAME				
12			12										
13			12										
14			13										
15			13										
16	S-7	16	6	20		W	SM		Bwn c-f SAND, and clayey Silt, some m-f Gravel				Auger grinding/shattering from 15'-18'
17			6										
18			6										Auger refusal @ 18.5'
19			10										
20			13										
(EOB @ 18.5' BGS)													

Notes: Estimated surface elevation and vertical datum were based on a survey drawing entitled "PRELIMINARY BASEMAP" prepared by Acadis, dated 7/12/16.

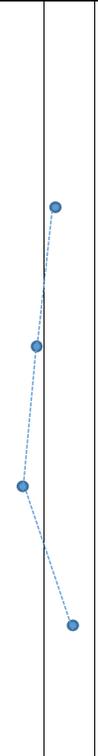
Project Name:	Washington Lake Water Filtration Plant	BORING No.	B - 2	 JHB ENGINEERING PLLC geotechnical engineers www.jhbgeo.com (845) 533-0215
Project Location:	493 Little Britain Road, Newburgh, NY 12250	Sheet	1 of 1	
Project No.	P16.17B			

Date Started:	7/25/2016	Date Finished:	7/25/2016	Logged By:	RBM	Driller:	Jim Casson	DRILLING METHOD	DIA.	DEPTH (ft.)
Drilling Contractor:	General Borings, Inc.			Drill Rig Model:	Diedrich D-50 Turbo			Power Auger :	ID 3.25"	0 TO 11
Surface EL (ft):	275.0	Vertical Datum:	NAVD88	Sampler :	2" O.D. Split Spoon			Mud Rotary :		TO
Depth to Bedrock (ft):	11	Hammer Wt/Drop:	140 lb/ 30"	Boring Location:	See Location Plan			Casing :		TO
Groundwater Depth (ft):	NE						Rock Core :			TO
GW Measure Date/Time:	7/25/2016 @ 1:12PM						WEATHER:	Sunny	TEMP. (°F)	low 90's

Depth (feet)	Sample Data								MATERIAL DESCRIPTION (Strata Changes are Inferred)	N-Value (blows/ft)	Remarks (drilling fluid, casing, drill rig actions, etc.)
	Type-Number	N or Min/FT	Pen. Resist. (blows/6 in)	Recovery (in)	RQD (%)	Moisture	USCS Symbol	Graphic Symbol			
1	S-1	27	6 13 14	24		M	SP				
2			9								
3	S-2	14	5 9	21		M	SP				
4			5								
5	S-3	50	30 20	15		M	SP				
6			20								
7	S-4	24	10 12	13		D	SP				
8			13								
9	S-5	6	2 1	11		M	SM				
10	S-6	50+	5 12	7		D	GP				
11			28 50/1"					Gy c-f GRAVEL, some c-f Sand (possible weathered rock)	Auger Refusal @ 11'		
12								(EOB @ 11' BGS)			
13											
14											
15											
16											
17											
18											
19											
20											

Notes: Estimated surface elevation and vertical datum were based on a survey drawing entitled "PRELIMINARY BASEMAP" prepared by Acadis, dated 7/12/16.

Date Started: 7/25/2016	Date Finished: 7/25/2016	Logged By: RBM	Driller: Jim Casson	DRILLING METHOD	DIA.	DEPTH (ft.)
Drilling Contractor: General Borings, Inc.			Drill Rig Model: Diedrich D-50 Turbo	Power Auger : ID 3.25"	0	TO 11
Surface EL (ft): 268.6	Vertical Datum: NAVD88	Sampler : 2" O.D. Split Spoon		Mud Rotary :		TO
Depth to Bedrock (ft): 11	Hammer Wt/Drop: 140 lb/ 30"	Boring Location: See Location Plan		Casing :		TO
Groundwater Depth (ft):	NE			Rock Core :		TO
GW Measure Date/Time: 7/25/2016 @ 2:20PM				WEATHER: Sunny		TEMP. (°F) low 90's

Depth (feet)	Sample Data								MATERIAL DESCRIPTION (Strata Changes are Inferred)	N-Value (blows/ft)	Remarks (drilling fluid, casing, drill rig actions, etc.)
	Type-Number	N or Min/FT	Pen. Resist. (blows/6 in)	Recovery (in)	RQD (%)	Moisture	USCS Symbol	Graphic Symbol			
1	S-1	50+	50/4"	3		D	SP			Spoon bounce; augured to 2'	
2			11								
3	S-2	23	13	24		M	SM				
4			10								
5	S-3	18	9	19		M	SP				
6			9								
7	S-4	13	7	14		M	SP				
8			7								
9	S-5	31	12	22		M	SM				
10			19								
10	S-6	50+	18			M	SP		Auger refusal @ 11'		
10			50/4"								
11	(EOB @ 11' BGS)										
12											
13											
14											
15											
16											
17											
18											
19											
20											

Notes: Estimated surface elevation and vertical datum were based on a survey drawing entitled "PRELIMINARY BASEMAP" prepared by Acadis, dated 7/12/16.

Project Name: Washington Lake Water Filtration Plant	BORING No. B - 4	 JHB ENGINEERING PLLC geotechnical engineers www.jhbgeo.com (845) 533-0215
Project Location: 493 Little Britain Road, Newburgh, NY 12250	Sheet 1 of 1	
Project No. P16.17B		

Date Started: 7/25/2016	Date Finished: 7/25/2016	Logged By: RBM	Driller: Jim Casson	DRILLING METHOD	DIA.	DEPTH (ft.)
Drilling Contractor: General Borings, Inc.			Drill Rig Model: Diedrich D-50 Turbo	Power Auger : ID 3.25"	0	TO 0.7
Surface EL (ft): 280.7	Vertical Datum: NAVD88	Sampler : 2" O.D. Split Spoon		Mud Rotary :		TO
Depth to Bedrock (ft): 0.7	Hammer Wt/Drop: 140 lb/ 30"	Boring Location: See Location Plan		Casing :		TO
Groundwater Depth (ft):	NE			Rock Core :		TO
GW Measure Date/Time: 7/25/2016 @ 10:25AM				WEATHER: Sunny		TEMP. (°F) low 90's

Depth (feet)	Sample Data								MATERIAL DESCRIPTION (Strata Changes are Inferred)	N-Value (blows/ft)			Remarks (drilling fluid, casing, drill rig actions, etc.)
	Type-Number	N or Min/FT	Pen. Resist. (blows/6 in)	Recovery (in)	RQD (%)	Moisture	USCS Symbol	Graphic Symbol		20	40	60	
1									(EOB @ 8" BGS)			Spoon bouncing @ 8" - moved B-4 3' south to B-4a	
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

Notes: Estimated surface elevation and vertical datum were based on a survey drawing entitled "PRELIMINARY BASEMAP" prepared by Acadis, dated 7/12/16.

Project Name: Washington Lake Water Filtration Plant	BORING No. B - 4a	 JHB ENGINEERING PLLC geotechnical engineers www.jhbgeo.com (845) 533-0215
Project Location: 493 Little Britain Road, Newburgh, NY 12250	Sheet 1 of 1	
Project No. P16.17B		

Date Started: 7/25/2016	Date Finished: 7/25/2016	Logged By: RBM	Driller: Jim Casson	DRILLING METHOD	DIA.	DEPTH (ft.)
Drilling Contractor: General Borings, Inc.			Drill Rig Model: Diedrich D-50 Turbo	Power Auger: ID 3.25"	0	TO 0.8
Surface EL (ft): 280.0	Vertical Datum: NAVD88	Sampler: 2" O.D. Split Spoon		Mud Rotary:		TO
Depth to Bedrock (ft): 0.8	Hammer Wt/Drop: 140 lb/ 30"	Boring Location: See Location Plan		Casing:		TO
Groundwater Depth (ft):	NE			Rock Core:		TO
GW Measure Date/Time: 7/25/2016 @ 10:45AM				WEATHER: Sunny	TEMP. (°F) low 90's	

Depth (feet)	Sample Data								MATERIAL DESCRIPTION (Strata Changes are Inferred)	N-Value (blows/ft)			Remarks (drilling fluid, casing, drill rig actions, etc.)
	Type-Number	N or Min/FT	Pen. Resist. (blows/6 in)	Recovery (in)	RQD (%)	Moisture	USCS symbol	Graphic Symbol		20	40	60	
1	S-1		5	6			SP	[Symbol]	Bwn c-f SAND, some c-f Gravel, trace Silt (EOB @ 9" BGS)				Auger refusal @ 9" - moved B-4a 20' south to B-4b
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

Notes: Estimated surface elevation and vertical datum were based on a survey drawing entitled "PRELIMINARY BASEMAP" prepared by Acadis, dated 7/12/16.

Project Name: **Washington Lake Water Filtration Plant**
 Project Location: **493 Little Britain Road, Newburgh, NY 12250**
 Project No. **P16.17B**

BORING No. B - 4b
 Sheet **1** of **1**



Date Started: 7/25/2016	Date Finished: 7/25/2016	Logged By: RBM	Driller: Jim Casson	DRILLING METHOD	DIA.	DEPTH (ft.)
Drilling Contractor: General Borings, Inc.			Drill Rig Model: Diedrich D-50 Turbo	Power Auger: ID 3.25"	0	TO 9
Surface EL (ft): 280.0	Vertical Datum: NAVD88	Sampler: 2" O.D. Split Spoon		Mud Rotary:	TO	
Depth to Bedrock (ft): 9	Hammer Wt/Drop: 140 lb/ 30"	Boring Location: See Location Plan		Casing:	TO	
Groundwater Depth (ft):	NE			Rock Core:	TO	
GW Measure Date/Time: 7/25/2016 @ 11:18AM				WEATHER: Sunny	TEMP. (°F) low 90's	

Depth (feet)	Sample Data								MATERIAL DESCRIPTION (Strata Changes are Inferred)	N-Value (blows/ft)	Remarks (drilling fluid, casing, drill rig actions, etc.)
	Type-Number	N or Min/FT	Pen. Resist. (blows/6 in)	Recovery (in)	RQD (%)	Moisture	USCS Symbol	Graphic Symbol			
1	S-1	11	5 5 6 10	23		M	SM	Bwn c-f SAND, little c-f Gravel, little Silt	●	Moved another 20' south of B-4a due to auger refusal at shallow depth	
2			7								
3	S-2	46	31 15 13	21		M	GP	Bwn m-f GRAVEL, some c-f Sand, little Silt	●		
4											
5	S-3	8	12 4 4 5	16		M	GP	SAME	●		
6											
7	S-4	20	8 6 14 23	23		M	SP	Bwn c-f Sand, little c-f Gravel, trace Silt	●		
8	S-5	50+	28 50/4"	17		M	SP	Bwn c-f SAND, little m-s Gravel, trace Silt		Auger refusal @ 9'	
9									(EOB @ 9' BGS)		
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

Notes: Estimated surface elevation and vertical datum were based on a survey drawing entitled "PRELIMINARY BASEMAP" prepared by Acadis, dated 7/12/16.



3348 Route 208, Campbell Hall, NY 10916

Phone: 845-496-1600 Fax: 845-496-1398

12960 Commerce Lake Drive, A14, Fort Myers, FL 33913

42 Day Farm Road, West Stockbridge, MA 01266

1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Material:	B1,S3; 4-6'	Project #:	160537
Source:	In-Place	Lab No.:	16-0871A
Location:	In-Place	Item Number:	No Specifications Available
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/27/16	Tested By:	Wesley Loyas / Jonathan Valle

REPORT OF ATTERBERG LIMITS TEST RESULTS

TEST METHOD: ASTM D4318; LL Method B

Lab Number:	16-0871A	Specification
Liquid Limit:	N/A	
Plastic Limit:	N/A	
Plasticity Index:	Non-Plastic	

Notes:

The soil characteristics of this sample do not allow for the liquid limit or plastic limit to be determined. Therefore, the plasticity index for the sample is 'non-plastic.'

Comments:

Report Reviewed By: _____

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 1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Material:	B3,S3; 4-6'	Project #:	160537
Source:	In-Place	Lab No.:	16-0871B
Location:	In-Place	Item Number:	No Specifications Available
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/27/16	Tested By:	Wesley Loyas / Jonathan Valle

REPORT OF ATTERBERG LIMITS TEST RESULTS
TEST METHOD: ASTM D4318; LL Method B

Lab Number:	16-0871B	Specification
Liquid Limit:	N/A	
Plastic Limit:	N/A	
Plasticity Index:	Non-Plastic	

Notes: The soil characteristics of this sample do not allow for the liquid limit or plastic limit to be determined. Therefore, the plasticity index for the sample is 'non-plastic.'

Comments:

Emily J. Rodriguez

Report Reviewed By: _____

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 1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Material:	B2,S5; 8-10'	Project #:	160537
Source:	In-Place	Lab No.:	16-0871E
Location:	In-Place	Item Number:	No Specifications Available
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/29/16	Tested By:	Wesley Loyas

REPORT OF ATTERBERG LIMITS TEST RESULTS
TEST METHOD: ASTM D4318; LL Method B

Lab Number:	16-0871E	Specification
Liquid Limit:	17	
Plastic Limit:	15	
Plasticity Index:	2	

Notes: Values shown are percent moisture.
 Customary procedure is to round results to the nearest whole number.

Comments:

Emily J. Rodriguez

Report Reviewed By: _____

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1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Material:	B1,S3; 4-6'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871A
Location:	In-Place	Item Number:	No Specifications Available
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/26/2016	Tested By:	Wesley Loyas

Report of Natural Moisture Content of Soil and Rock
Test Method: AASHTO T265

Wet Weight (g):	280.0
Dry Weight (g):	248.1
% Nat. Moisture:	12.9

Specification:

Comments:

Report Reviewed By: _____

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42 Day Farm Road, West Stockbridge, MA 01266

1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Material:	B3,S3; 4-6'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871B
Location:	In-Place	Item Number:	No Specifications Available
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/26/2016	Tested By:	Wesley Loyas

Report of Natural Moisture Content of Soil and Rock
Test Method: AASHTO T265

Wet Weight (g):	238.6
Dry Weight (g):	199.6
% Nat. Moisture:	19.5

Specification:

Comments:

Emily J. Rodriguez

Report Reviewed By: _____

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1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Material:	B3,S3; 4-6'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871B
Location:	In-Place	Item Number:	No Specifications Available
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/26/2016	Tested By:	Wesley Loyas

Report of pH of Soil
Test Method: ASTM D4972 Method A

pH Test Result: 6.4 (in Distilled Water)

 N/A (In Calcium Chloride Solution)

Specification

Comments:

Emily J. Rodriguez

Report Reviewed By: _____

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42 Day Farm Road, West Stockbridge, MA 01266

1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Material:	B46,S3; 4-6'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871D
Location:	In-Place	Item Number:	No Specifications Available
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/26/2016	Tested By:	Wesley Loyas

Report of pH of Soil
Test Method: ASTM D4972 Method A

pH Test Result: 6.8 (in Distilled Water)

 N/A (In Calcium Chloride Solution)

Specification

Comments:

Report Reviewed By: _____

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 1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Material:	B2,S5; 8-10'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871E
Location:	In-Place	Item Number:	No Specifications Available
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/26/2016	Tested By:	Wesley Loyas

Report of pH of Soil
Test Method: ASTM D4972 Method A

pH Test Result: 6.3 (in Distilled Water)
 N/A (In Calcium Chloride Solution)

Specification

Comments:

Emily J. Rodriguez

Report Reviewed By: _____

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 Phone: 845-496-1600 Fax: 845-496-1398
 25 Hathorn Road, Enfield, NH 03748
 42 Day Farm Road, West Stockbridge, MA 01266
 1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Item:	B1,S3; 4-6'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871A
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/28/2016	Tested By:	Kyle Schroeder

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE
Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
16-0871A	B1,S3; 4-6'	In-Place	

Sieve Size		% Retained	% Passing	Spec. % Pass
mm	Inches			
37.5 mm	1 1/2"	0.0	100.0	
25.0 mm	1"	0.0	100.0	
19.0 mm	3/4"	5.2	94.8	
12.5 mm	1/2"	4.5	90.3	
9.5 mm	3/8"	0.8	89.5	
6.3 mm	1/4"	3.8	85.7	
4.75 mm	#4	3.7	82.0	
2.00 mm	#10	11.4	70.6	
0.600 mm	#30	14.4	56.2	
0.425 mm	#40	5.4	50.8	
0.300 mm	#50	4.3	46.5	
0.180 mm	#80	5.9	40.6	
0.150 mm	#100	2.2	38.4	
0.075 mm	#200	7.3	31.1	
Pan		31.1		

Comments:

Minus #200 by wash-sieve method.

Report Reviewed By:

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 42 Day Farm Road, West Stockbridge, MA 01266
 1813 State Route 7, Harpursville, NY 13787

Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Item:	B3,S3; 4-6'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871B
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/28/2016	Tested By:	Kyle Schroeder

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE
Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
16-0871B	B3,S3; 4-6'	In-Place	

Sieve Size		% Retained	% Passing	Spec. % Pass
mm	Inches			
37.5 mm	1 1/2"	0.0	100.0	
25.0 mm	1"	0.0	100.0	
19.0 mm	3/4"	0.0	100.0	
12.5 mm	1/2"	25.9	74.1	
9.5 mm	3/8"	6.6	67.5	
6.3 mm	1/4"	11.3	56.2	
4.75 mm	#4	5.9	50.3	
2.00 mm	#10	22.5	27.8	
0.600 mm	#30	7.4	20.4	
0.425 mm	#40	1.8	18.6	
0.300 mm	#50	1.1	17.5	
0.180 mm	#80	2.5	15.0	
0.150 mm	#100	0.7	14.3	
0.075 mm	#200	2.0	12.3	
Pan		12.3		

Comments:

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Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Item:	B1,S7; 15-17'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871C
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/28/2016	Tested By:	Kyle Schroeder

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE
Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
16-0871C	B1,S7; 15-17'	In-Place	

Sieve Size		% Retained	% Passing	Spec. % Pass
mm	Inches			
37.5 mm	1 1/2"	0.0	100.0	
25.0 mm	1"	0.0	100.0	
19.0 mm	3/4"	11.3	88.7	
12.5 mm	1/2"	15.6	73.1	
9.5 mm	3/8"	0.6	72.5	
6.3 mm	1/4"	2.4	70.1	
4.75 mm	#4	1.4	68.7	
2.00 mm	#10	6.2	62.5	
0.600 mm	#30	7.4	55.1	
0.425 mm	#40	2.1	53.0	
0.300 mm	#50	2.7	50.3	
0.180 mm	#80	4.3	46.0	
0.150 mm	#100	1.8	44.2	
0.075 mm	#200	7.8	36.4	
Pan		36.4		

Comments:

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Client:	JHB Engineering	Project:	Newburgh Water Filtration Plant
Item:	B46,S3; 4-6'	Project Number:	160537
Source:	In-Place	Lab Number:	16-0871D
Date Sampled:	7/25/2016	Sampled By:	Client
Date Tested:	7/28/2016	Tested By:	Kyle Schroeder

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE
Test Method(s): ASTM D422, C136, C117; AASHTO T88, T27, T11

Lab Number	Sample Type	Sampling Location	Specification
16-0871D	B46,S3; 4-6'	In-Place	

Sieve Size		% Retained	% Passing	Spec. % Pass
mm	Inches			
37.5 mm	1 1/2"	0.0	100.0	
25.0 mm	1"	0.0	100.0	
19.0 mm	3/4"	33.0	67.0	
12.5 mm	1/2"	19.5	47.5	
9.5 mm	3/8"	4.9	42.6	
6.3 mm	1/4"	5.6	37.0	
4.75 mm	#4	3.3	33.7	
2.00 mm	#10	8.6	25.1	
0.600 mm	#30	3.2	21.9	
0.425 mm	#40	1.1	20.8	
0.300 mm	#50	1.7	19.1	
0.180 mm	#80	1.9	17.2	
0.150 mm	#100	1.0	16.2	
0.075 mm	#200	3.4	12.8	
Pan		12.8		

Comments:

Minus #200 by wash-sieve method.

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ATTACHMENT B

ADDENDUM No. 3

**City of Newburgh Contact Tank at Washington Lake Filtration Plant
Site No. 336022
CONTRACT NO. D010238**

Section XI, Specification 40 05 19

SECTION 40 05 19

DUCTILE IRON PROCESS PIPE

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:

1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to furnish ductile iron pipe and fittings.
2. Extent of piping is shown on the Drawings. Piping schedules in Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation, specify pipe service, diameter, material, lining, coating, pressure rating, joint type, and testing required.

B. Coordination:

1. Review installation procedures under this and other Sections and coordinate installation of items to be installed with or before ductile iron pipe Work.

C. Related Sections:

1. Section 31 23 05, Excavation and Fill.
2. Section 33 05 05, Buried Piping Installation.
3. Section 40 05 05, Exposed Piping Installation.
4. Section 40 05 06, Couplers, Adapters, and Specials for Process Piping.

1.2 REFERENCES

A. Standards referenced in this Section are:

1. ANSI B18.2.1, Square and Hex Bolts and Screws Inch Series.
2. ANSI B18.2.2, Square and Hex Nuts. (Inch Series).
3. ASTM A193, Alloy Steel and Stainless Steel Bolting Materials for High-Temperature Service.
4. ASTM A194, Specification for Carbon Steel and Alloy Steel Nuts for Bolts for High-Pressure or High-Temperature Service, or Both.
5. ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
6. ASTM A354, Specification for Quenched and Tempered Alloy Steel Bolts, Studs and Other Externally Threaded Fasteners.
7. ASTM A563, Specification for Carbon and Alloy Steel Nuts.
8. ASTM B117, Practice for Operating Salt Spray (Fog) Apparatus.
9. ASTM C283, Test Methods for Resistance of Porcelain Enameled Utensils to Boiling Acid.
10. ASTM D714, Test Method for Evaluating Degree of Blistering of Paints.
11. ASTM D792, Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.

12. ASTM D5162, Discontinuity (Holiday) Testing of Non-Conductive Protective Coating on Metallic Substrates.
13. ASTM E96, Test Methods for Water Vapor Transmission of Materials.
14. ASTM G14, Test Method for Impact Resistance of Pipeline Coatings (Falling Weight Test).
15. ASTM G62, Test Methods for Holiday Detection in Pipeline Coatings.
16. ASTM G95, Test Methods for Cathodic Disbondment Test of Pipeline Coatings (Attached Cell Method).
17. ANSI/AWWA C104, Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water.
18. ANSI/AWWA C110, Ductile Iron and Gray Iron Fittings for Water.
19. ANSI/AWWA C111, Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
20. ANSI/AWWA C115, Flanged Ductile Iron Pipe with Ductile Iron or Gray Iron Threaded Flanges.
21. ANSI/AWWA C116, Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile Iron and Gray Iron Fittings for Water Service.
22. ANSI/AWWA C151, Ductile Iron Pipe, Centrifugally Cast, for Water.
23. ANSI/AWWA C153, Ductile Iron Compact Fittings, 3 inch through 24 inch and 54 inch through 64 inch for Water Service.
24. ANSI/AWWA C606, Grooved and Shouldered Type Joints.
25. European Standard (EN), EN 598: Ductile Iron Pipe, Fittings, Accessories and Their Joints for Sewerage Applications.
26. MSS-SP 60, Connecting Flange Joint Between Tapping Sleeves and Tapping Valves.
27. NACE RP0188, Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.
28. NAPF 500-03, Surface Preparation Standard for Ductile Iron Pipe and Fittings Receiving Special External Coatings and/or Special Internal Linings.
29. NSF/ANSI 61, Drinking Water System Components - Health Effects.
30. SSPC PA 2, Measurement of Dry Coating Thickness with Magnetic Gages.
31. SSPC Painting Manual, Volume 1, Para. XIV.

1.3 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer:
 - a. Manufacturer shall have a minimum of five years successful experience producing ductile iron pipe and fittings and shall be able to show evidence of at least five installations in satisfactory operation in the United States that are similar applications to the specified service.
 - b. Lining and coating products shall be manufactured by a firm with a minimum of five years successful experience in protecting pipelines exposed to the specified service conditions , and shall be able to show evidence of at least five installations in satisfactory operation in the United States that are similar applications to the specified service.

- c. When not applied by the manufacturer, lining and coating Subcontractor shall have a minimum of five years successful experience in the application of the specified linings and coatings for similar applications for the specified service, and shall be able to show evidence of at least five installations in satisfactory operation in the United States.

B. Supply and Compatibility:

1. Unless otherwise approved, obtain all pipe, fittings, and appurtenances included in this Section from a single ductile iron pipe manufacturer.
2. Ductile iron pipe manufacturer shall review and approve or prepare all Shop Drawings and other submittals for pipe, fittings, and appurtenances furnished under this Section.
3. Pipe, fittings, and appurtenances shall be suitable for the specified service and shall be integrated into overall piping system by ductile iron pipe manufacturer.
4. Ductile iron pipe manufacturer shall be responsible for all products and all factory-applied linings and coatings, whether installed at pipe manufacturer's facility or at manufacturer's Supplier's facility.

C. Regulatory Requirements:

1. Pipe and fittings, including linings and coatings, that will convey potable water or water that will be treated to become potable, shall be certified by an accredited organization in accordance with NSF/ANSI 61 as being suitable for contact with potable water, and shall comply with requirements of authorities having jurisdiction at Site.

1.4 SUBMITTALS

A. Action Submittals: Submit the following with Shop Drawings required under Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation:

1. Shop Drawings:
 - a. Detailed drawings and data for pipe, fittings, gaskets, appurtenances, linings, and coatings.
2. Product Data:
 - a. Surface preparation and application reports and procedures as required for lining and coating of pipe and fittings. Ductile iron pipe and fitting manufacturer and manufacturer and applicator of lining and coating, as specified, shall mutually determine recommended surface preparation and application methods, and provide written verification of mutually selected method in the submittals.
3. Samples:
 - a. Submit Sample of pipe and fitting with each type of lining, for use at the Site to verify continuity, surface gloss, and color, as applicable, via visual inspection.
4. Test Procedures: For linings and coatings in pipe and fittings.

- B. Informational Submittals: Submit the following:
 - 1. Certificates:
 - a. Submit certificate signed by manufacturer of each product that product conforms to applicable referenced standards and the Contract Documents.
 - 2. Source Quality Control Submittals:
 - a. Submit results of specified shop tests for pipe, fittings, linings, and coatings.
 - b. Lining and coating test coupons.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Refer to Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation.
- B. Handling of Fittings Coated with Fusion Bonded Epoxy: Hooks, forks, chains, straps, and other lifting devices shall be rubber-coated and be used only on exterior of fittings in manner to avoid damaging coating. If coating becomes damaged, notify pipe and coating manufacturer to determine if repair of damaged area or re-coating is required. Perform repairs using recommended procedures and materials provided by manufacturer, as accepted by ENGINEER. Pipe and fittings requiring re-coating shall be removed from Site and returned to manufacturer's facility. Repaired or re-coated pipe and fittings shall comply with requirements of this Section.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. General:
 - 1. Piping systems shall be suitable for their intended use.
 - 2. Joints shall be as specified in Section 33 05 05, Buried Piping Installation and Section 40 05 05, Exposed Piping Installation. If not specified, provide flanged joints for exposed piping and push-on or mechanical joints for buried piping. Provide couplings on pipe with plain or grooved ends where shown or where approved by ENGINEER.
- B. Ductile Iron Pipe, Joints, and Fittings:
 - 1. Flanged Pipe: Fabricate in accordance with ANSI/AWWA C115.
 - a. Pressure Rating: As specified in piping schedule in Section 40 05 05, Exposed Piping Installation. If not otherwise specified, use Special Thickness Class 53 for three-inch to 54-inch diameter pipe and Pressure Class 350 for 60-inch and 64-inch diameter pipe.
 - 2. Non-Flanged Pipe: Conform to ANSI/AWWA C151 for material, pressure, dimensions, tolerances, tests, markings, and other requirements.
 - a. Pressure Class: As specified in piping schedules in Section 33 05 05, Buried Piping Installation and Section 40 05 05, Exposed Piping Installation. If not otherwise specified, use Pressure Class 350.

- b. Special Thickness Class: As specified in piping schedules in Section 33 05 05, Buried Piping Installation and Section 40 05 05, Exposed Piping Installation.
3. Pipe Joints:
- a. Flanged Joints: Conform to ANSI/AWWA C110 and ANSI/AWWA C111 capable of meeting the pressure rating or special thickness class, and test pressure specified in piping schedule in Section 40 05 05, Exposed Piping Installation.
 - 1) Gaskets: Unless otherwise specified, gaskets shall be at least 1/8-inch thick, ring or full-face as required for the pipe, of synthetic rubber compound containing not less than 50 percent by volume nitrile or neoprene, and shall be free from factice, reclaimed rubber, and other deleterious substances. Gaskets shall be suitable for the service conditions specified, specifically designed for use with ductile iron pipe and fittings.
 - 2) Bolts: Comply with ANSI B18.2.1.
 - a) Exposed: ASTM A307, Grade B.
 - b) Buried or Submerged: ASTM A193, Grade B8M, Class 2, Heavy hex, Type 316 stainless steel.
 - 3) Nuts: Comply with ANSI B18.2.2.
 - a) Exposed: ASTM A563, Grade A, Heavy hex.
 - b) Buried or Submerged: ASTM A194, Grade B8M, Heavy hex, Type 316 stainless steel.
 - b. Mechanical Joints: Comply with ANSI/AWWA C111 and ANSI/AWWA C151, capable of meeting pressure rating or special thickness class, and test pressure specified in piping schedules in Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation.
 - 1) Glands: Ductile iron.
 - 2) Gaskets: Plain tip.
 - 3) Bolts and Nuts: High strength, low alloy steel.
 - 4) Manufacturers: Provide products of one of the following:
 - a) Clow Water Systems Company
 - b) Atlantic States Cast Iron Pipe Company
 - c) Canada Pipe Company, Ltd.
 - d) McWane Cast Iron Pipe Company
 - e) Pacific States Cast Iron Pipe Company
 - f) Griffin Pipe Products Co.
 - g) American Cast Iron Pipe Co.
 - h) U.S. Pipe and Foundry Co.
 - i) Or equal.
 - c. Push-On Joints: Comply with ANSI/AWWA C111 and ANSI/AWWA C151, capable of meeting pressure class or special thickness class, and test pressure specified in piping schedules in Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation.
 - 1) Gaskets: Vulcanized SBR, unless otherwise specified.
 - 2) Stripes: Each plain end shall be painted with a circular stripe to provide a guide for visual check that joint is properly assembled.

- 3) Products and Manufacturers: Provide one of the following:
 - a) Tyton or Fastite Joint by Clow Water Systems, Atlantic States Cast Iron Pipe Company, Canada Pipe Company, Ltd., McWane Cast Iron Pipe Company, Pacific States Cast Iron Pipe Company, and Griffin Pipe Products Company.
 - b) Fastite Joint by American Cast Iron Pipe Company.
 - c) Tyton Joint by U.S. Pipe and Foundry Company.
 - d) Or equal.
- d. Grooved End Joints: Comply with ANSI/AWWA C606.
 - 1) Gaskets: Flush seal type designed for ductile iron that complies with or exceeds requirements of ASTM D2000
 - 2) Bolts and nuts: As specified for flanged joints.
 - 3) Unless otherwise specified, grooved end couplings shall be rigid joint for exposed service and flexible joint for buried service.
 - 4) Products and Manufacturers: Provide one of the following:
 - a) Victaulic, Style 31.
 - b) Or equal.
- e. Restrained Joints: Restrained push-on joints shall be capable of being deflected after full assembly. Field cuts of restrained pipe are not allowed without approval of ENGINEER.
 - 1) Products and Manufacturers: Provide restrained joints for mechanical joint piping by one of the following:
 - a) Megalug, Series 1100, by EBBA Iron Sales, Inc.
 - b) MJ Coupled Joint, by American Cast Iron Pipe Co.
 - c) MJ Field Lok, by U.S. Pipe and Foundry Co.
 - d) Or equal.
 - 2) Products and Manufacturers: Provide restrained joints for push-on joint piping by one of the following:
 - a) Super-Lock Joint Pipe, by Clow Water Systems, a division of McWane, Inc.
 - b) Lok-Ring Joint, or Flex-Ring Joint, by American Cast-Iron Pipe Company.
 - c) TR Flex Joint, by U.S. Pipe and Foundry Company.
 - d) Snap-Lok, by Griffin Pipe Products Company.
 - e) Or equal.
4. Flanged and Push-On Joint Fittings: Comply with ANSI/AWWA C110 and ANSI/AWWA C111.
 - a. Material: Ductile iron.
 - b. Pressure rating, gaskets, bolts, and nuts shall be as specified for flanged joints. Pressure rating of fittings shall meet, but not exceed, specified pressure rating or special thickness class of the connected pipe.
5. Mechanical Joint Fittings: Comply with ANSI/AWWA C110 and ANSI/AWWA C111.
 - a. Material: Ductile iron.
 - b. Glands: Ductile iron.
 - c. Pressure rating, gaskets, bolts, and nuts shall be as specified for mechanical joints. Pressure rating of fittings shall meet, but not exceed,

specified pressure rating or special thickness class of connected pipe.

C. Lining, General:

1. Typical Service Conditions:

Property	Tank Influent
Fluid(s) Conveyed Through Pipe	Water
pH range	6.5-8
Temperature Range (degrees F)	33-70
Maximum Fluid Velocity (fps)	4.5

2. Surface Preparation:

- a. Initial Surface Inspection: Surface to be lined shall be inspected by pipe and fitting manufacturer and applicator, if applicator is other than pipe and fitting manufacturer. Inspecting parties shall inspect surface to be coated and mutually determine recommended surface preparation method.
- b. Surface Preparation: Prepare surface in accordance with recommended method.
- c. Finished Surface Inspection: Lining applicator shall inspect finished surface prior to application to determine acceptability. If surface is unacceptable, repeat surface preparation as necessary.

D. Cement-mortar Lining:

1. Where specified in piping schedules included with Section 33 05 05, Buried Piping Installation and Section 40 05 05, Exposed Piping Installation, pipe and fittings shall be lined with bituminous seal coated cement-mortar lining in accordance with ANSI/AWWA C104.

E. Couplings:

1. Refer to Section 40 05 06, Couplings, Adapters, and Specials for Process Piping.

F. Specials:

1. Transition Pieces:
 - a. Provide suitable transition pieces (adapters) for connecting to existing piping.
 - b. Unless otherwise shown or indicated, expose existing piping to determine material, dimensions, and other data required for transition pieces.
2. Taps:
 - a. Provide taps where shown or required for small-diameter piping or instrumentation connections.
 - b. Provide corporation stops where shown or required.
 - c. Where pipe wall thickness or tap diameter will not allow engagement of 5 full threads, provide tapping saddle with outlet joints conforming to requirements of Paragraph 2.1.B.3.a of this Section for four-inch through 12-inch diameter pipe, and Paragraph 2.1.B.3.b. for 14-inch through 54-

- inch diameter pipe.
- d. For flanged connections on tapping saddle outlet branch, counterbore flange in accordance with MSS SP-60 dimensions. Inside diameter of outlet shall be 1/4-inch greater than nominal diameter.

2.2 MARKING FOR IDENTIFICATION

- A. In addition to identification markings specified in Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation, also stamp, mark, and identify push-on joint and mechanical joint pipe with:
 1. Name or trademark of manufacturer.
 2. Weight, class or nominal thickness, and casting period.
 3. Country where cast.
 4. Year the pipe was produced.
 5. Letters "DI" or "Ductile" shall be cast or metal stamped
- B. In addition to identification markings specified in Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation, also stamp, mark, and identify flanged pipe with:
 1. Flange manufacturer's mark, size, and letters "DI" cast or stamped on the flanges.
 2. Fabricator's mark if other than flange manufacturer.
 3. Length and weight.
- C. In addition to identification markings specified in Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation, also stamp, mark, and identify fittings with:
 1. Manufacturer's identification.
 2. Pressure rating.
 3. Nominal diameters of openings.
 4. Country where cast.
 5. Number of degrees or fraction of the circle on bends.
 6. Letters "DI" or "Ductile" cast on them.

2.3 EXTERIOR SURFACE PREPARATION AND COATINGS

- A. General Coating Requirements:
 1. Coating types are specified in piping schedules in Section 33 05 05, Buried Piping Installation, and Section 40 05 05, Exposed Piping Installation.
- B. Exposed Pipe and Fittings:
 1. Surface Preparation:
 - a. Initial Surface Inspection: Pipe and fitting manufacturer and coating applicator shall inspect surface to be coated and mutually determine recommended NAPF 500-03 surface preparation method.
 - b. Surface Preparation: Prepare surface in accordance with recommended NAPF 500-03 method.

- c. Finished Surface Inspection: Prepared surfaces shall be inspected by coating applicator prior to application to determine acceptability of finished surface. If surface is unacceptable, repeat surface preparation and re-application as necessary.

C. Buried Pipe and Fittings:

1. Asphaltic Coating: Where specified in piping schedule in Section 33 05 05, Buried Piping Installation, coat pipe and fittings with an asphaltic coating approximately one-mil thick, in accordance with ANSI/AWWA C151, ANSI/AWWA C115, ANSI/AWWA C110, and ANSI/AWWA C153, as applicable.
2. Fusion Bonded Epoxy Coating for Fittings:
 - a. When specified in piping schedule in Section 33 05 05, Buried Piping Installation, fittings shall be factory coated with 100 percent solids, thermosetting, dry powder epoxy, in conformance with ANSI/AWWA C116.
 - b. Apply coating utilizing a method, recommended by manufacturer that meets requirements of this Section, with finished dry film thickness of at least six mils, with exception of joint areas, which shall receive at least a four-mil dry film thickness coating. Heat and cure fittings in accordance with coating manufacturer's recommendations.
 - c. Source Quality Control: Cut a test coupon from coated fitting no less than six inches in diameter, and approximately four inches long, and split coupon lengthwise into two equal sections. Surface preparation, application procedure, thickness, and curing parameters shall be the same for test coupon as for Project fittings. Perform the following tests on test coupon:
 - 1) Scribe coating material through to bare surface of fitting with an "X" across full length of test coupon. Immerse coupon for 500 hours in 150-degree F bath of distilled water. Coating shall show no signs of disbondment or blistering.
 - 2) Test coupon shall be impact tested using ASTM G14 test method with 20 in.-lbf impact applied near center of convex section of test coupon. Coating shall show no signs of cracking or disbondment without magnification.
 - d. Manufacturer's Inspection and Certification:
 - 1) All coated fittings shall be visually inspected by manufacturer and show no sign of blisters, cracks, or lack of coverage.
 - 2) Check all coated fittings for coating thickness using magnetic film thickness gage utilizing method outlined in SSPC PA 2 Film Thickness Rating.
 - 3) Holiday-test all coated fittings in accordance with ASTM D5162, NACE RP0188, and SSPC Painting Manual Volume 1, Paragraph XIV, with low-voltage, wet sponge holiday detector. Repair methods and materials for holidays shall be as recommended by coating manufacturer and made prior to shipment to the Site.
 - e. Products and Manufacturers: Provide one of the following:

- 1) PipeClad 1500, by Valspar Corporation.
- 2) Or equal.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Inspect piping to assure that piping is free from defects in material and workmanship. Verify compatibility of pipe, fittings, gaskets, linings, and coatings.

3.2 INSTALLATION AND FIELD QUALITY CONTROL

- A. For buried piping installation and testing, refer to Section 33 05 05, Buried Piping Installation.
- B. For exposed piping installation and testing, refer to Section 40 05 05, Exposed Piping Installation.

++ END OF SECTION ++