




ERIE COUNTY WATER AUTHORITY

INTEROFFICE MEMORANDUM

October 4, 2024

To: Terrence D. McCracken, Secretary to the Authority

From: Michael J. Quinn, PE, Senior Distribution Engineer 

Subject: Board Authorization for Miscellaneous System Improvements
Water Distribution System Replacements and Improvements (PN 202300009)

Please be advised that Authority has recently completed a number of water distribution system improvement projects within the Direct Service areas of the Erie County Water Authority Service Area under the above referenced contract.

These projects involve the installation and/or replacement of pipes, valves and hydrants of the Authority as well as the abandonment of the existing assets and removal of them from our inventory that have been developed and designed by the Engineering Department. The new assets in some cases replace existing authority assets. The action to replace and retire assets requires Board consideration.

Attached find the Construction Authorization forms and design documents for the following projects:

- Dover Road - Water System Improvements - 8" Main Replacement (HATN)
- Como Park Boulevard at Hitchcock Drive and Croyden – Redundant Supply Connection (CHTN)
- 3464 McKinley Parkway Main Relocation (HATN)
- Roxborough Avenue Main Replacement and Hydrant Relocation (CHTN)
- Hazel Court Main Relocation (OPTN)
- Air Release Chamber Replacement – 4727 Transit Road (LNTN)
- Marion Road Main Replacement (CHTN)
- New Cayuga Road Interconnection (CHTN)

These documents identify all the pertinent data including the cost of the new assets for each project.

Also attached please find the associated authorization form. Please advise if you require additional information.

MJQ:jmf
Attachments
cc: ECWA-928-2301

ERIE COUNTY WATER AUTHORITY
AUTHORIZATION FORM
For Approval/Execution of Documents
(check which apply)

Contract: _____	Project No.: <u>202300009</u>
Project Description: <u>Water Distribution System – Replacements and Improvements</u> <u>May 1, 2023 through April 30, 2025</u>	

Item Description:

<input type="checkbox"/> Agreement	<input type="checkbox"/> Professional Service Contract	<input type="checkbox"/> Amendment	<input type="checkbox"/> Change Order
<input type="checkbox"/> BCD	<input type="checkbox"/> NYSDOT Agreement	<input checked="" type="checkbox"/> Contract Documents	<input type="checkbox"/> Addendum
<input type="checkbox"/> Recommendation for Award of Contract	<input type="checkbox"/> Recommendation to Reject Bids		
<input type="checkbox"/> Request for Proposals			
<input checked="" type="checkbox"/> Other <u>EC's</u>			

Action Requested:

<input type="checkbox"/> Board Authorization to Execute	<input type="checkbox"/> Legal Approval
<input type="checkbox"/> Board Authorization to Award	<input type="checkbox"/> Execution by the Chairman
<input type="checkbox"/> Board Authorization to Advertise for Bids	<input type="checkbox"/> Execution by the Secretary to the Authority
<input type="checkbox"/> Board Authorization to Solicit Request for Proposals	
<input checked="" type="checkbox"/> Other <u>Board Resolution</u>	

Approvals Needed:

APPROVED AS TO CONTENT:

<input checked="" type="checkbox"/> Sr. Distribution Engineer		Date: <u>10/07/2024</u>
<input type="checkbox"/> Chief Operating Officer	_____	Date: _____
<input checked="" type="checkbox"/> Executive Engineer		Date: <u>10/7/2024</u>
<input type="checkbox"/> Director of Administration	_____	Date: _____
<input type="checkbox"/> Risk Manager	_____	Date: _____
<input type="checkbox"/> Chief Financial Officer	_____	Date: _____
<input type="checkbox"/> Legal	_____	Date: _____

APPROVED FOR BOARD RESOLUTION:

<input checked="" type="checkbox"/> Secretary to the Authority		Date: <u>10/7/2024</u>
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Remarks: _____

Resolution Date: _____	Item No: _____
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**ERIE COUNTY WATER AUTHORITY
CONSTRUCTION AUTHORIZATION**

Project No. 202100220
Budget No. _____

Authorization No.: EC 7271
Date: 9/03/21
Inputted By/Date: _____

June 2022 Estimate Starting Date
June 2023 Estimate Complete Date
X yes _____ no Retirement Involved
X Public Street
Private Right of Way
On Authority's Prop
Tax Districts _____
Name of Grantor of Easement _____
Date of Easement _____

TITLE OF PROJECT: Dover Rd./Lake Shore Rd. Water System Improvements.

CLASS OF MAIN INSTALLATION:
X System Betterment
Bldr/Cont/Dev. Agree.
Owner Occupant Cont.
Special Revenue Cont.

DETAILED DESCRIPTION AND PURPOSE:
Replace existing 8" water main intersection of Dover Rd. and Lake Shore Rd.

ESTIMATE COST

(1) Total Est. Cost \$ 56,467.59
(2) _____ Meters and Service @ _____ \$ _____
(3) Removal Cost Less Salvage \$ _____
(4) Gross Investment \$ 56,467.59

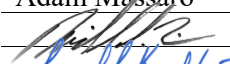
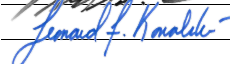
DEDUCT

(5) Const. Advance \$ _____
(6) Service Conn. \$ _____
(7) Refunds \$ _____
(8) Net Auth. Invest. \$ 56,467.59

BUDGETARY DATA

(9) Tot. Budget Expnd. \$ _____
(10) This Authorization \$ _____
(11) Pre Approved \$ _____
(12) Tot. Apvl. To Date \$ _____
(13) Bal. Budget Expnd. \$ _____

APPROVALS

Preparation Adam Massaro
Sr. Dist. Engr.  10/4/2024
Exec. Engr.  10/7/2024
Admn. Director _____
Legal Dept. _____
Acct. Dept. _____

ESTIMATED EARNINGS & RETURNS

ESTIMATED INCREASE IN REVENUES

(14) Customers @ _____ \$ _____
(15) _____ Hydrants @ _____ \$ _____
\$ _____

EST. SAVINGS IN OPERATING EXPENSES

(16) _____ \$ _____
(17) Gross Increase in Earnings \$ _____

REVENUE DEDUCTIONS

(18) Operating Exp. _____ % \$ _____
(19) Depreciation \$ _____
(20) Total Deductions \$ _____
(21) Net Income Loss \$ _____
(22) % Return on Investment _____
(21) divided by 8) _____ %

RESOLUTION APPROVING

Adopted _____
Item No. _____

KANDEY COMPANY INC. - Project No. K2175
ECWA WATER DISTRIBUTION SYSTEM REPLACEMENTS CONTRACT # 202100009

Attn: Bill Wheeler

K2175 - 13

ITEM NO.	DESCRIPTION	QTY	UM	BILLING	TOTAL
Item 1 - Watermain					
Item 1A - 4-inch to 8-inch Watermain (PVC or DIP)					
1A1	Installing 4-inch to 8-inch Watermain, 6-feet or less of cover	103.50	LF	\$80.00	\$8,280.00
1A2	For installing 4-inch to 8-inch Watermain, greater than 6-feet of cover	15.00	LF	\$95.00	\$1,425.00
1B1	For installing 10-inch to 12-inch Watermain, 6-feet or less of cover		LF	\$90.00	\$0.00
1B2	For installing 10-inch to 12-inch Watermain, greater than 6-feet of cover		LF	\$110.00	\$0.00
Item 1C - High Density Polyethylene (HDPE) - HDD USE ONLY					
1C1	F&I 10-inch DR9 DIPS (HDPE) Watermain for 8-inch watermain supply		LF	\$44.00	\$0.00
1C2	F&I 12-inch DR9 DIPS (HDPE) Watermain for 10-inch watermain supply		LF	\$55.00	\$0.00
1C3	F&I 16-inch DR9 DIPS (HDPE) Watermain for 12-inch watermain supply		LF	\$100.00	\$0.00
Item 2 - Valves					
Item 2A - Gate Valves					
2A1	For installing 4-inch to 8-inch Gate Valve	3.00	Ea	\$3,500.00	\$10,500.00
2A2	For installing 10-inch to 12-inch Gate Valve		Ea	\$3,800.00	\$0.00
Item 2B - Butterfly Valves					
2B2	For installing 12-inch Butterfly Valve		Ea	\$4,000.00	\$0.00
Item 2C - Air Release Valve					
2C1	For furnishing and installing Air Release Valve with Concrete Chamber		Ea	\$5,000.00	\$0.00
2C2	For furnishing and installing Manually Operated Air Release Assembly		Ea	\$3,000.00	\$0.00
2D1	For Existing Valve Abandonment - Complete (All Sizes)		Ea	\$1,200.00	\$0.00
Item 3 - Existing Watermain Connections (Interconnections)					
Item 3A - Inline Connection					
3A1	For 4-inch to 8-inch Inline Connection - Complete	2.00	Ea	\$2,500.00	\$5,000.00
3A2	For 10-inch to 12-inch Inline Connection - Complete		Ea	\$3,000.00	\$0.00
Item 3B - Tapping Sleeve and Valve (Hot Tap)					
3B1	For installing 4-inch to 8-inch Tapping Sleeve and Valve		Ea	\$5,000.00	\$0.00
3B2	For installing 10-inch to 12-inch Tapping Sleeve and Valve - Complete		Ea	\$5,000.00	\$0.00
Item 3C - Cut-in Tee with Valve Cluster					
3C1	For installing 4-inch to 8-inch Cut-in Tee with Valve Cluster - Complete		Ea	\$5,300.00	\$0.00
3C2	For installing 10-inch to 12-inch Cut-in Tee with Valve Cluster - Complete		Ea	\$5,300.00	\$0.00
Item 4 - Fire Hydrants					
Item 4A - New Fire Hydrant Assembly					
4A1	For installing New Fire Hydrant Assembly - Complete	1.00	Ea	\$1,450.00	\$1,450.00
Item 4B - Existing Fire Hydrant Abandonment					
4B1	For Existing Fire Hydrant Abandonment - Complete		Ea	\$750.00	\$0.00
Item 5 - Ductile Iron (DI) Fittings					
Item 5A - Ductile Iron (DI) Fittings					
5A1	For installing 4-inch to 8-inch Ductile Iron (DI) fittings with restraints not included under Item 3	9.00	Ea	\$250.00	\$2,250.00
5A2	For installing 10-inch to 12-inch Ductile Iron (DI) fittings with restraints not included under Item 3		Ea	\$300.00	\$0.00
5A3	For installing Joint Restraints per Section 15106 on existing 4-inch to 8-inch watermain		Ea	\$2,500.00	\$0.00
5A4	For installing Joint Restraints per Section 15106 on existing 10-inch to 12-inch watermain		Ea	\$3,000.00	\$0.00
Item 6 - Polyethylene Encasement					
Item 6A - Polyethylene Encasement for Ductile Iron Pipe and Fitting					
6A1	For installing Polyethylene Encasement for Ductile Iron Pipe and Fitting	98.00	LF	\$1.00	\$98.00
Item 7 - Rock Excavation, Test Pit Excavation/Backfill, and Extra Excavation/Backfill					
Item 7A - Rock Excavation					
7A1	For Rock Excavation per Section 02317, (Fixed Minimum Unit Price of \$50.00 per CY)		CY	\$300.00	\$0.00
Item 7B - Test Pit Excavation and Backfill					
7B1	For Test Pit Excavation and Backfill (Fixed Minimum Unit Price of \$200.00 per Each)	2	Ea	\$650.00	\$1,300.00
Item 7C - Extra Excavation and Backfill					
7C1	For Extra Excavation and Backfill		CY	\$50.00	\$0.00
Item 8 - Special Backfill					
Item 8A - Select Backfill					
8A1	For furnishing and installing Select Backfill	73.33	CY	\$55.00	\$4,033.15

ITEM NO.	DESCRIPTION	QTY	UM	BILLING	TOTAL
Item 8B - Rip-Rap Backfill					
8B1	For furnishing and installing Rip-Rap Backfill		CY	\$180.00	\$0.00
Item 9 - Water Service Connections and Blow-offs					
Item 9A - Service Replacement/Installation					
9A1	For installing 3/4-inch to 1-inch Copper Service Replacement/Installation	1	Ea	\$1,975.00	\$1,975.00
9A2	For installing 1 1/2-inch and 2-inch Copper Service Replacement/Installation		Ea	\$2,250.00	\$0.00
9A3	For furnishing and installing 3/4-inch to 1-inch Polyethylene Service Replacement/Installation		Ea	\$1,975.00	\$0.00
9A4	For furnishing and installing 1 1/2-inch and 2-inch Polyethylene Tubing Replacement/Installation		Ea	\$2,250.00	\$0.00
Item 9B - Additional Copper and Polyethylene Tubing					
9B1	For installing 3/4-inch to 1-inch Additional Copper Tubing	39	LF	\$15.00	\$585.00
9B2	For installing 1 1/2-inch and 2-inch Additional Copper Tubing		LF	\$25.00	\$0.00
9B3	For furnishing and installing 3/4-inch to 1-inch Additional Polyethylene Tubing		LF	\$15.00	\$0.00
9B4	For furnishing and installing 1 1/2-inch and 2-inch Additional Polyethylene Tubing		LF	\$25.00	\$0.00
Item 9C - Blow-off Assemblies					
9C1	For installing Permanent 2-inch Blowoff Assembly		Ea	\$500.00	\$0.00
9C2	For installing Temporary 2-inch Blowoff Assembly	2	Ea	\$250.00	\$500.00
9C3	For installing Permanent 4-inch Blowoff Assembly		Ea	\$1,000.00	\$0.00
9C4	For installing Temporary 4-inch Blowoff Assembly		Ea	\$750.00	\$0.00
9C5	For installing Permanent 8-inch Blowoff Assembly		Ea	\$1,500.00	\$0.00
Item 10 - Casing Pipe					
Item 10 - Trenchless Casing Pipe Installation					
10A1	For furnishing and installing 18-inch Diameter Casing Pipe for 8-inch Carrier Pipe		LF	\$400.00	\$0.00
10A2	For furnishing and installing 20-inch Diameter Casing Pipe for 10-inch Carrier Pipe		LF	\$400.00	\$0.00
10A3	For furnishing and installing 24-inch Diameter Casing Pipe for 12-inch Carrier Pipe		LF	\$460.00	\$0.00
Item 10B - Open-cut Casing Pipe Installation					
10B1	For furnishing and installing 18-inch Diameter Casing Pipe for 8-inch Carrier Pipe		LF	\$120.00	\$0.00
10B2	For furnishing and installing 20-inch Diameter Casing Pipe for 10-inch Carrier Pipe		LF	\$120.00	\$0.00
10B3	For furnishing and installing 24-inch Diameter Casing Pipe for 12-inch Carrier Pipe		LF	\$150.00	\$0.00
Item 10C - Additional for Trenchless Casing Pipe Installation in Rock					
10C1	For Trenchless Casing Pipe Installation in Rock, 16-inch to 18-inch		LF	\$330.00	\$0.00
10C2	For Trenchless Casing Pipe Installation in Rock, 20-inch to 24-inch		LF	\$360.00	\$0.00
Item 11 - Horizontal Directional Drilling (HDD)					
Item 11A - Horizontal Directional Drilling (HDD)					
11A1	Horizontal Directional Drill for installing 4-inch to 10-inch watermain		LF	\$80.00	\$0.00
11A2	Horizontal Directional Drill for installing 12-inch to 16-inch watermain		LF	\$100.00	\$0.00
Item 12 - Testing and Disinfection					
Item 12A - Testing and Disinfection of Water main Lengths 200-feet or Less					
12A1	For Testing and Disinfection of 4-inch Watermain (includes 6-inch HDPE)		LF	\$10.00	\$0.00
12A2	For Testing and Disinfection of 6-inch Watermain (includes 8-inch HDPE)		LF	\$10.00	\$0.00
12A3	For Testing and Disinfection of 8-inch Watermain (includes 10-inch HDPE)	98.00	LF	\$10.00	\$980.00
12A4	For Testing and Disinfection of 10-inch Watermain (includes 12-inch HDPE)		LF	\$10.00	\$0.00
12A5	For Testing and Disinfection of 12-inch Watermain (includes 16-inch HDPE)		LF	\$10.00	\$0.00
Item 12B - Testing and Disinfection of Water main Lengths greater than 200-feet					
12B1	For Testing and Disinfection of 8-inch Watermain (includes 10-inch HDPE)		LF	\$55.00	\$0.00
12B2	For Testing and Disinfection of 10-inch Watermain (includes 12-inch HDPE)		LF	\$5.00	\$0.00
12B5	For Testing and Disinfection of 12-inch Watermain (includes 16-inch HDPE)		LF	\$5.00	\$0.00
Item 13 - Pavement, Sidewalk, Driveway, Lawn, and Landscape Restoration					
Item 13A - Clearing and Grubbing					
13A1	For Additional Clearing and Grubbing, width greater than 15-feet		SY	\$100.00	\$0.00
Item 13B - Pavement Restoration					
13B1	For Asphalt Pavement Restoration	40.00	SY	\$130.00	\$5,200.00
13B2	For Concrete Pavement Restoration		SY	\$175.00	\$0.00
13B3	For Concrete with Asphalt Top Pavement Restoration		SY	\$185.00	\$0.00
13B4	For Asphalt Shoulder Restoration		SY	\$95.00	\$0.00
13B5	For Concrete Gutter Restoration		LF	\$75.00	\$0.00
13B6	For Concrete Curb Restoration		LF	\$75.00	\$0.00
13B7	For Granite Curb Restoration		LF	\$200.00	\$0.00
13B8	For Cold Milling and Asphalt Top at 1-inch to 2-inch depth		SY	\$165.00	\$0.00
13B9	For Cold Milling and Asphalt Top at each 1-inch over 2-inch depth		SY	\$75.00	\$0.00
13B10	For Cold Patch (high performance patching material) per 3-inch depth		SY	\$50.00	\$0.00
13B11	For Traffic Loop Installation		Ea	\$3,000.00	\$0.00
Item 13C - Sidewalk Restoration					
13C1	For Asphalt Sidewalk Restoration		SY	\$100.00	\$0.00
13C2	For Concrete Sidewalk Restoration		SY	\$150.00	\$0.00

ITEM NO.	DESCRIPTION	QTY	UM	BILLING	TOTAL
Item 13D - Driveway Restoration					
13D1	For Asphalt Driveway Restoration		SY	\$100.00	\$0.00
13D2	For Concrete Driveway Restoration		SY	\$170.00	\$0.00
Item 13E - Asphalt Sealant					
13E1	For Asphalt Sealant for driveway and sidewalks (Fixed Minimum Unit Price\$0.50 perSY)		SY	\$5.00	\$0.00
Item 13F - Lawn Restoration					
13F1	For Lawn Restoration	140	SY	\$30.00	\$4,200.00
Item 13G - Landscaping Restoration					
13G1	For Deciduous Trees, 3-feet to 4-feet (balled)		Ea	\$450.00	\$0.00
13G2	For Deciduous Trees, 1 1/2-inch to 2-inch caliper (balled)		Ea	\$450.00	\$0.00
13G3	For Deciduous Trees, 4-inch to 4 1/2 inch caliper (balled)		Ea	\$650.00	\$0.00
13G4	For Deciduous Shrubs, 3-feet to 4-feet (bare root)		Ea	\$95.00	\$0.00
13G5	For Evergreen Trees, 5-feet to 6-feet (balled)		Ea	\$250.00	\$0.00
13G6	For Evergreen Shrubs, 2 liz-feet to 4-feet (balled)		Ea	\$250.00	\$0.00
13G7	For Repairing Damaged Trees, pruning and wrapping		Ea	\$750.00	\$0.00
13G8	For Fertilizing Existing Trees		Ea	\$200.00	\$0.00
Item 14 - Crew Rate and Construction Allowance					
Item 14A - Crew Labor and Equipment					
14A1	For Crew Labor and Equipment (Fixed Minimum Unit Price of \$100.00 per hour)		Hrs	\$445.00	\$0.00
14A2	For Survey Crew Labor and Equipment (Unit Price shall not be less than prevailing wage)		Hrs	\$200.00	\$0.00
14A3	For Vacuum Truck and Crew Labor (Fixed Minimum Unit Price of \$125.00 per hour)	8	Hrs	\$450.00	\$3,600.00
Item 14B - Construction Allowance					
14B1	For General Construction Allowance	0.0106	LS	\$150,000.00	\$1,586.13
14B2	For Maintenance and Protection of Traffic (State and County Roads)	0.0425	LS	\$50,000.00	\$2,126.06
<p>Location: Lakeshore & Dover</p> <hr/> <p>Install: new 8" PVC mainline with interconnects, hydrant, and service</p> <p>Work Order:</p> <hr/> <p>Proj No:</p> <hr/> <p>OWIP/EC#:</p> <hr/>					
INVOICE AMOUNT				\$55,088.34	
Less Retention 5%				\$2,754.42	
INVOICE TOTAL				\$52,333.92	

K & S Contractors Supply, Inc.
 1971 Gunnville Road
 Lancaster, NY 14086
 716) 759-6911

INVOICE

Page: 1

Invoice Number: 23-1122
 Invoice Date: 1/20/2023

Bill
 To: Kandey Company Inc
 Marie
 19 Ransier Drive
 West Seneca, NY 14224

Ship
 To: Kandey Company Inc
 Marie
 19 Ransier Drive
 West Seneca, NY 14224

Ship Via Customer Pickup
 Ship Date 01/20/2023
 Due Date 02/19/2023
 Terms Net 30 days

Customer ID C99-0276
 P.O. Number K2175
 P.O. Date 1/19/2023
 Our Order No. SO-23J0181
 SalesPerson
 Ship Document SS223J0198

Item/Description	Unit	Order Qty	Quantity	Unit Price	Total Price
070018300 3/4 x4 Fcc T-Bolt W/Nut	each	225	225	6.13	1,379.25

Mat	K	Job No.	K2175	13
Sub		Entered	CD	
Rent		P.M.		
Misc		K-1		
Other		Extra		

Amount Subject to Sales Tax US 0
 Amount Exempt from Sales Tax US 1,379.25

Subtotal: 1,379.25
 Invoice Discount: 0.00
 Total Sales Tax: 0.00

Total US: 1,379.25

We charge an additional 5% for credit card transactions



ERIE COUNTY WATER AUTHORITY

REQUISITION ON STORES

Project No.: 202100220 Date: 03-09-23 Requisition No.: _____

Issue To: Kandey Co., Inc.

For Use In: Dover Road - Water System Improvements (8" WM Replacement) – **Partial Project (2nd Portion)**

Location: Dover Road and Lake Shore Road

OWIP: _____ EC NO.: 107200-007271 Svc. No.: _____

Quantity	Description	Part #	On Site	Used	Ret.
220 ft	8" DI Pipe				
220 ft	Poly Wrap				
4	8" 45° DI Bends MJ w/ Accessories				
2	8" 22.5° DI Bends MJ w/ Accessories				
2	8" 11.25° DI Bends MJ w/ Accessories				
1	8" HYMAX				
1	8" Solid Sleeve w/ Accessories				
2	8"x2" DI Tapped Cap MJ w/ Accessories				
1	8" Solid Cap				
2	8" Gate Valve				
2	Complete Valve Box				
11	8" Joint Restraints – Complete both sides				
18	8" DI Mega Lugs				
1	8" CI Mega Lugs				
24	Ductile Lugs				
32	3/4" All Thread				
24	3/4" Nuts				
3	2" Compression x Compression Corp				
3	2" Compression Curb Stop				
30	2" Copper				
50	3/4" Copper				
2	3/4" Curb Stop				
2	3/4" Corp Stop				
2	Complete Service Box				





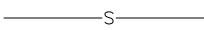

Kandey Co., Inc. _____

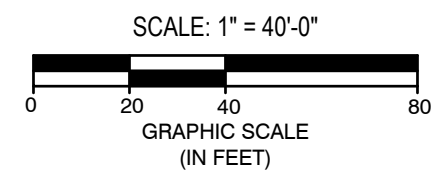
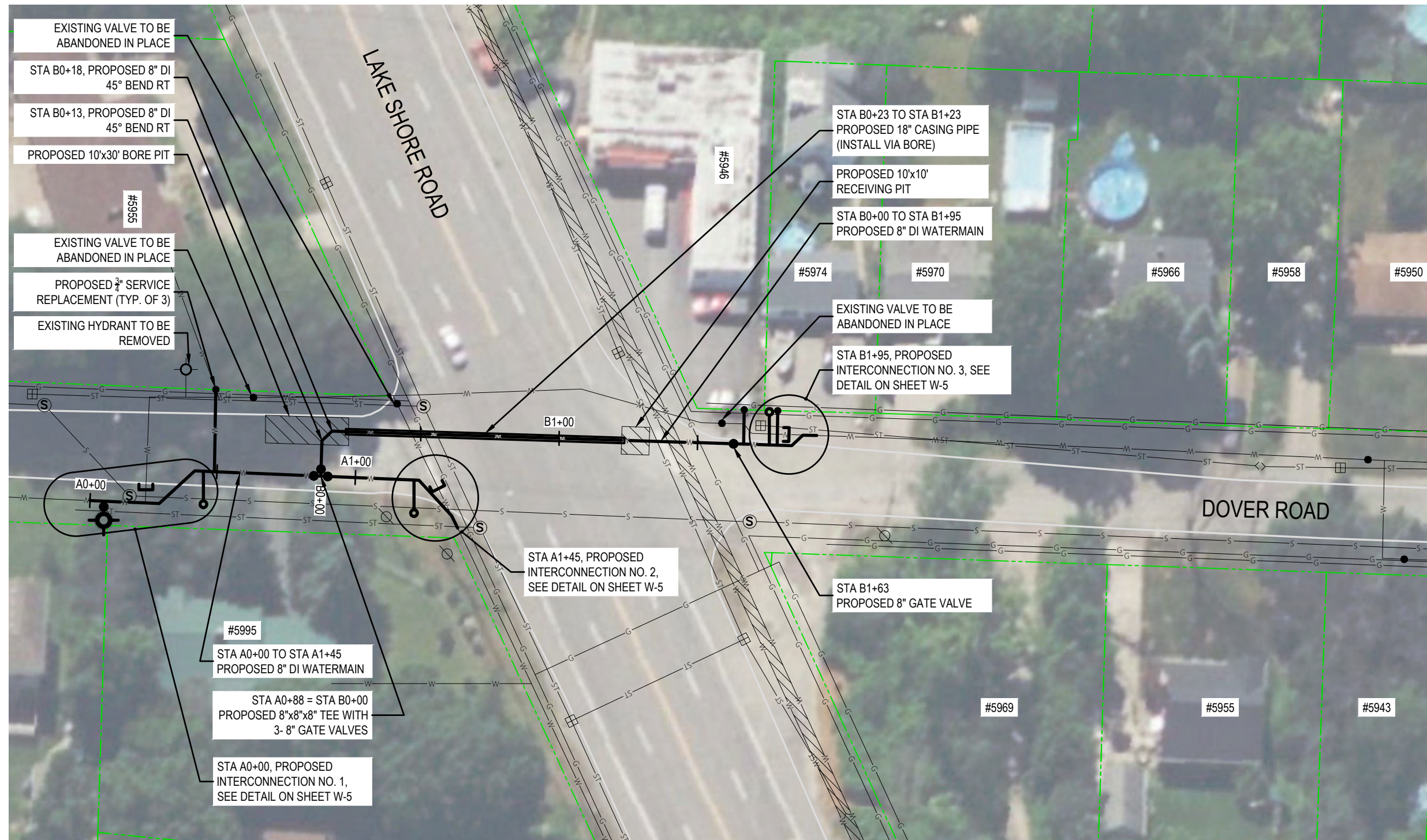
Inspector _____

General Notes

- 1.) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ERIE COUNTY WATER AUTHORITY STANDARD DETAILS AND SPECIFICATIONS, ECWA PN: 202100009
- 2.) WATERMANS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C600
- 3.) WATERMANS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651, HOWEVER THE TABLET METHOD IS NOT ALLOWED
- 4.) TWO SETS OF WATER BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART
- 5.) SEE STANDARD DETAIL GENERAL NOTES SECTION ON MISCELLANEOUS DETAILS
- 6.) CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION
- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

-  = SANITARY MH
-  = TRAFFIC MH
-  = STORM MH
-  = CATCH BASIN
-  = UTILITY POLE
-  = FIRE HYDRANT
-  = WATER VALVE
-  = TREES
-  = EXISTING WATERLINE
-  = NEW WATERLINE
-  = SANITARY SEWER
-  = STORM SEWER
-  = GAS MAIN



Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
DOVER ROAD AT LAKE
SHORE ROAD - PLAN

Date:
JUNE 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

W-1

Page: 1 of 17

File Name:
202100220 - DOVER DESIGN






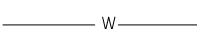

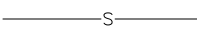
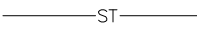
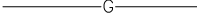


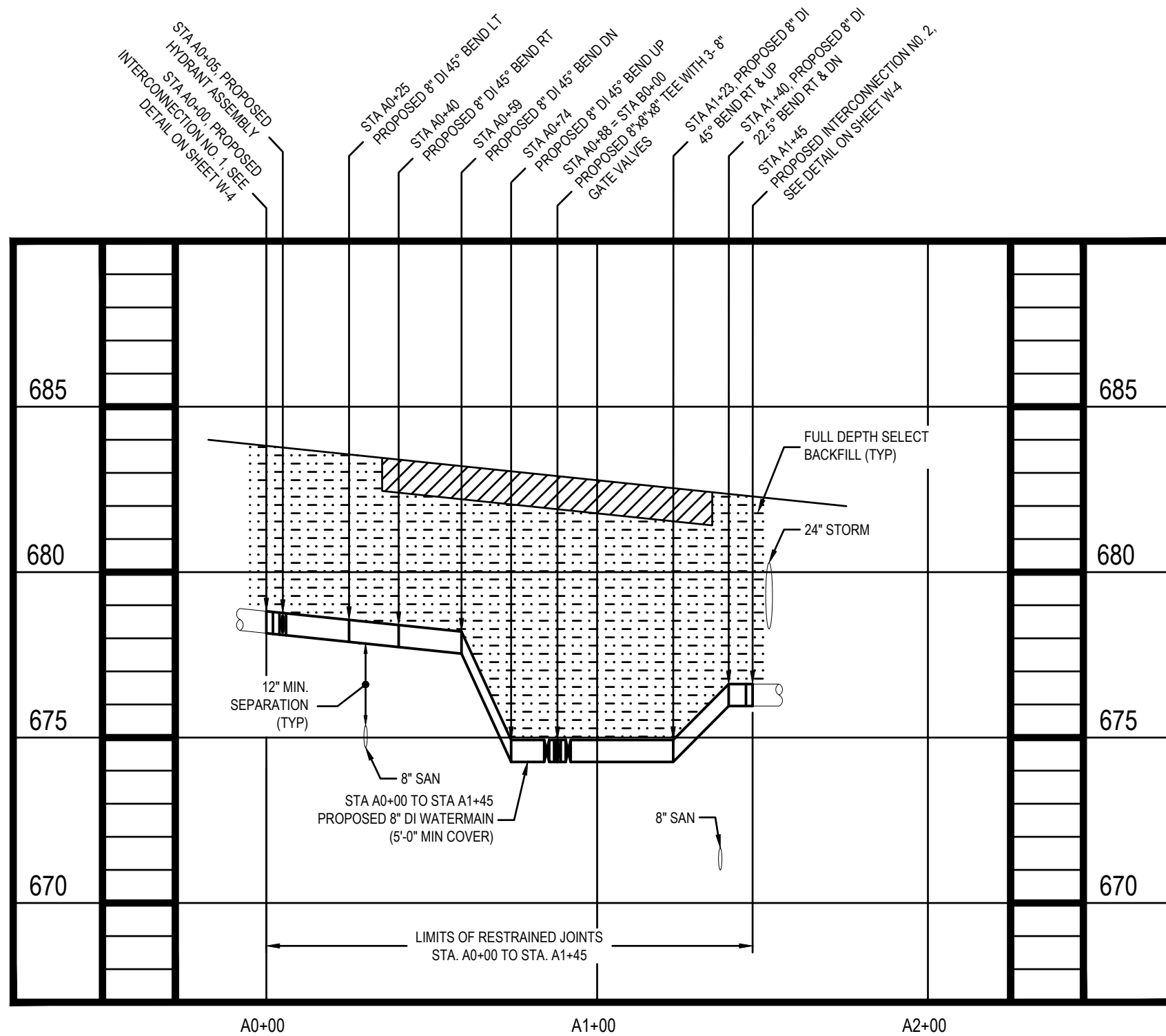
ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.

General Notes

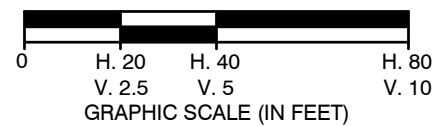
- 1.) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ERIE COUNTY WATER AUTHORITY STANDARD DETAILS AND SPECIFICATIONS, ECWA PN: 202100009
- 2.) WATERMAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C600
- 3.) WATERMAINS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651, HOWEVER THE TABLET METHOD IS NOT ALLOWED
- 4.) TWO SETS OF WATER BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART
- 5.) SEE STANDARD DETAIL GENERAL NOTES SECTION ON MISCELLANEOUS DETAILS
- 6.) CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION
- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

-  = SANITARY MH
-  = TRAFFIC MH
-  = STORM MH
-  = CATCH BASIN
-  = UTILITY POLE
-  = FIRE HYDRANT
-  = WATER VALVE
-  = TREES
-  = EXISTING WATERLINE
-  = NEW WATERLINE
-  = SANITARY SEWER
-  = STORM SEWER
-  = GAS MAIN



SCALE: HORZ. 1" = 40'-0"; VERT. 1" = 5'-0"



Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
DOVER ROAD AT LAKE
SHORE ROAD - PROFILE A

Date:
JUNE 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

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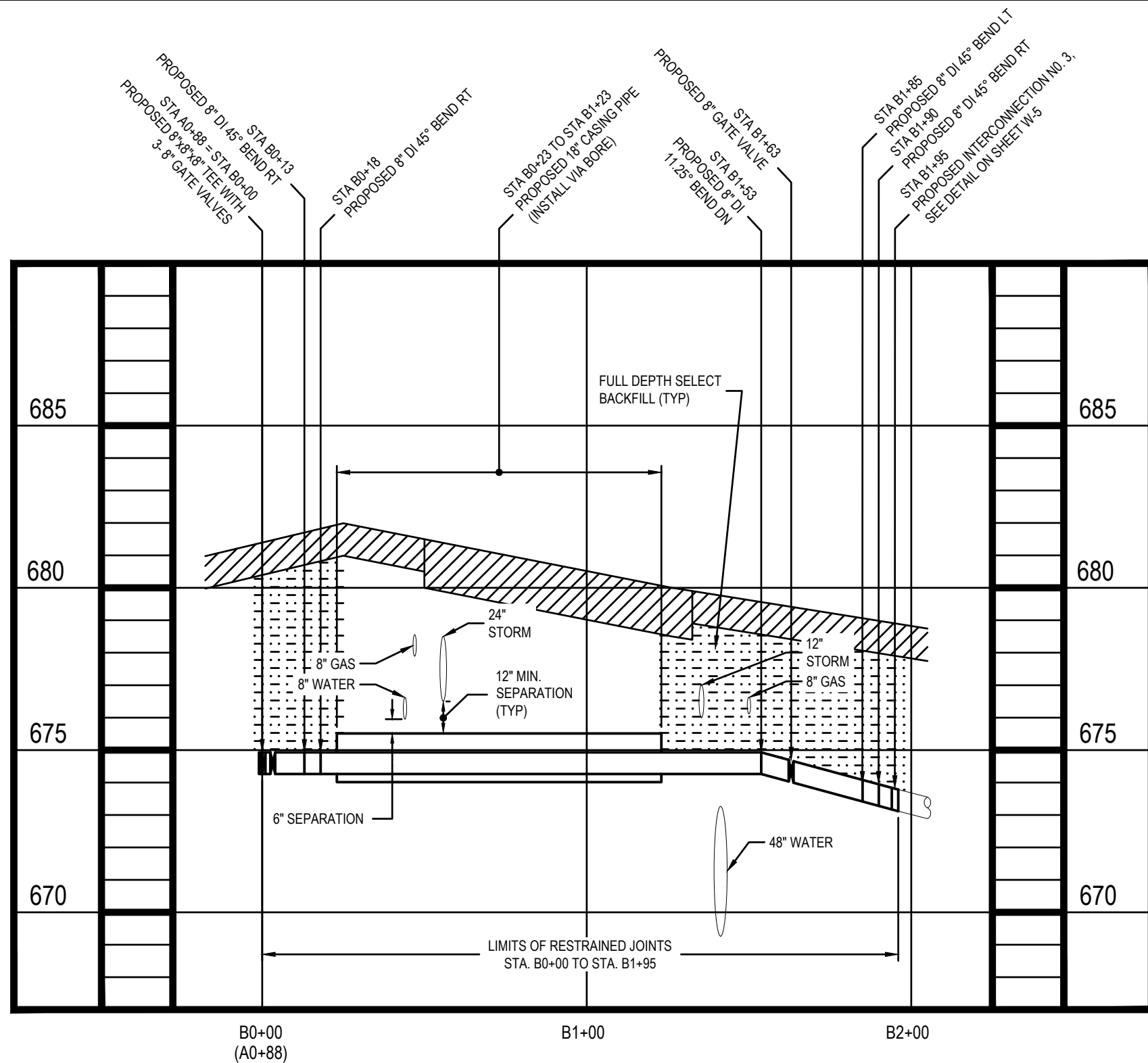
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File Name:
202100220 - DOVER DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.



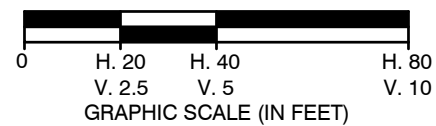
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Legend

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- = TRAFFIC MH
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- = NEW WATERLINE
- = SANITARY SEWER
- = STORM SEWER
- = GAS MAIN

SCALE: HORZ. 1" = 40'-0"; VERT. 1" = 5'-0"



Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202100220

TOWN OF HAMBURG
 ERIE COUNTY - NEW YORK

Name:
 DOVER ROAD AT LAKE
 SHORE ROAD - PROFILE B

Date:
 JUNE 2022

Scale:
 AS SHOWN

Drawn/Revised By:
 WWW

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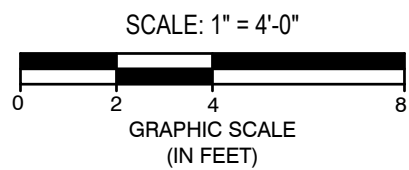
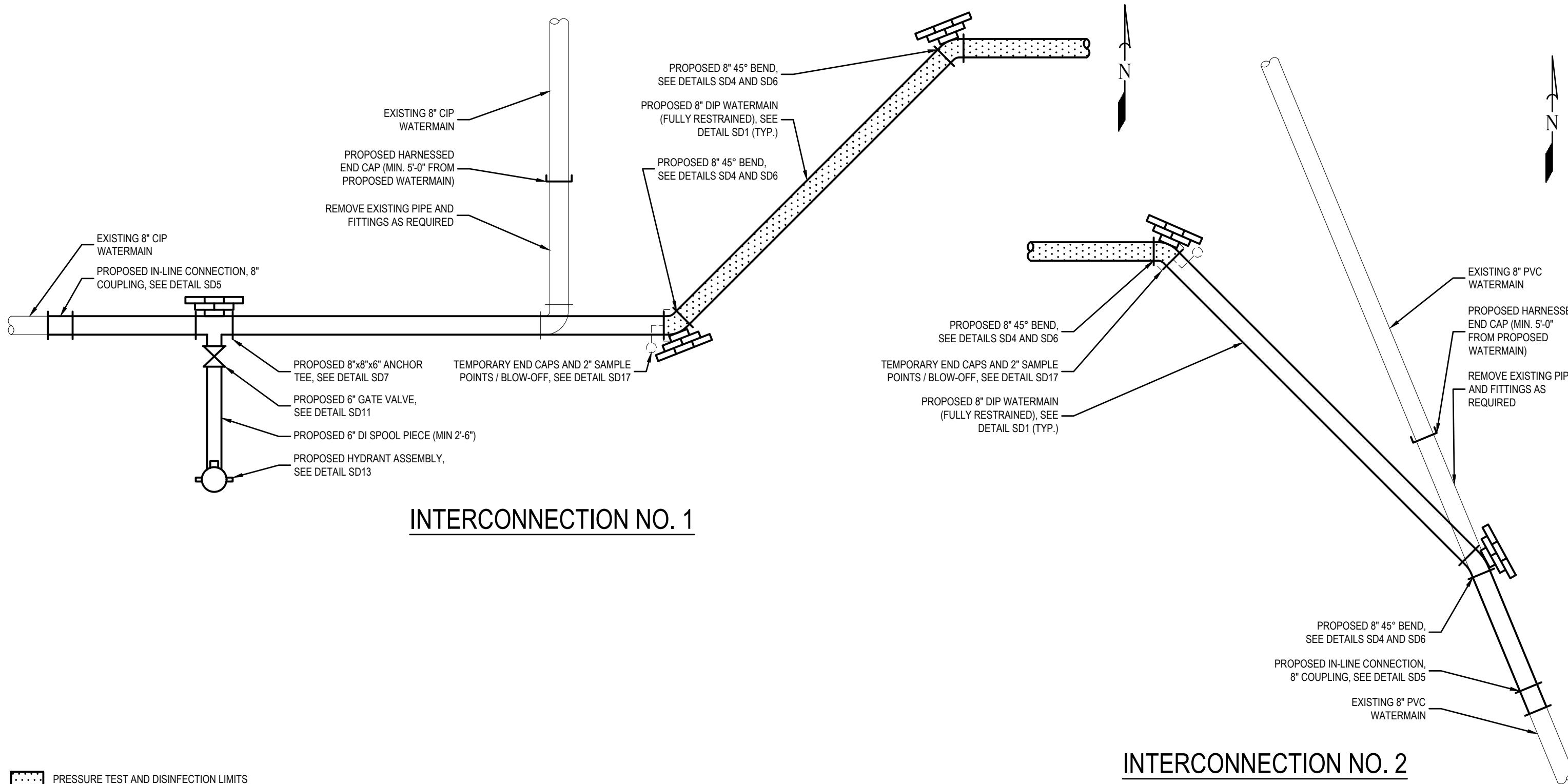
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File Name:
 202100220 - DOVER DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.



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Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
INTERCONNECTIONS
NO. 1 AND NO. 2

Date:
JUNE 2022

Scale:
AS SHOWN

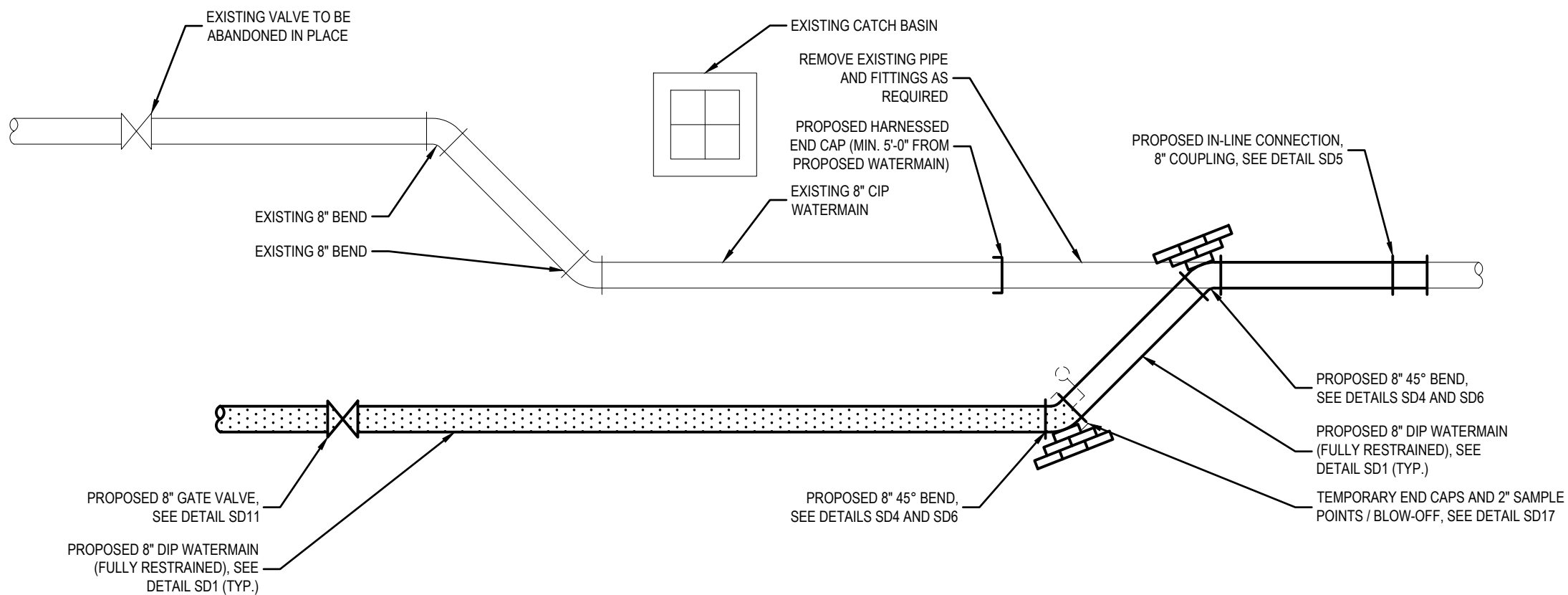
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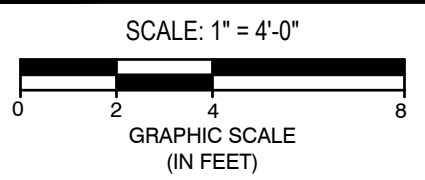
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File Name:
202100220 - DOVER DESIGN



INTERCONNECTION NO. 3

PRESSURE TEST AND DISINFECTION LIMITS



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.

Approved By:

06/28/2022

ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

**DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220**

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

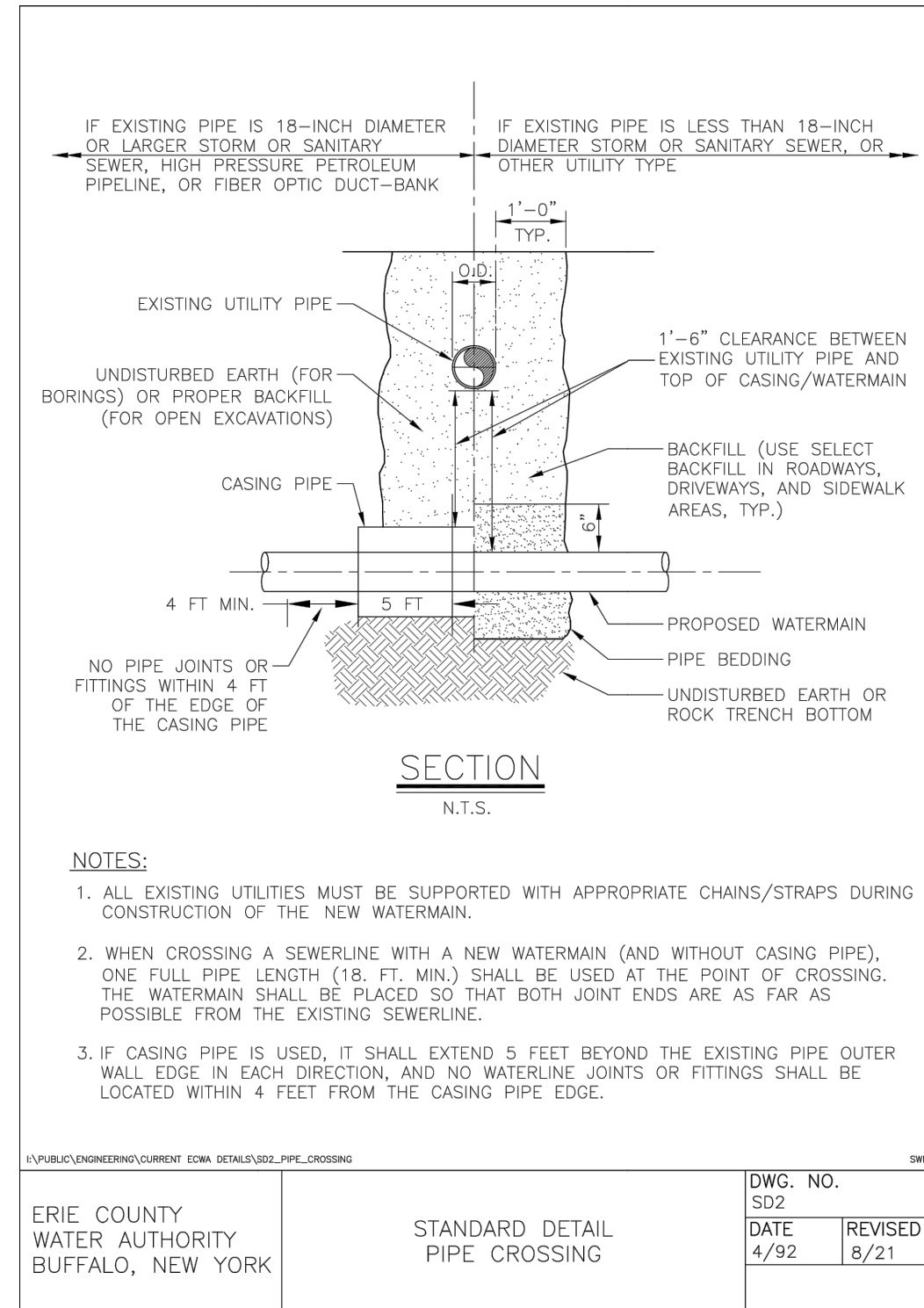
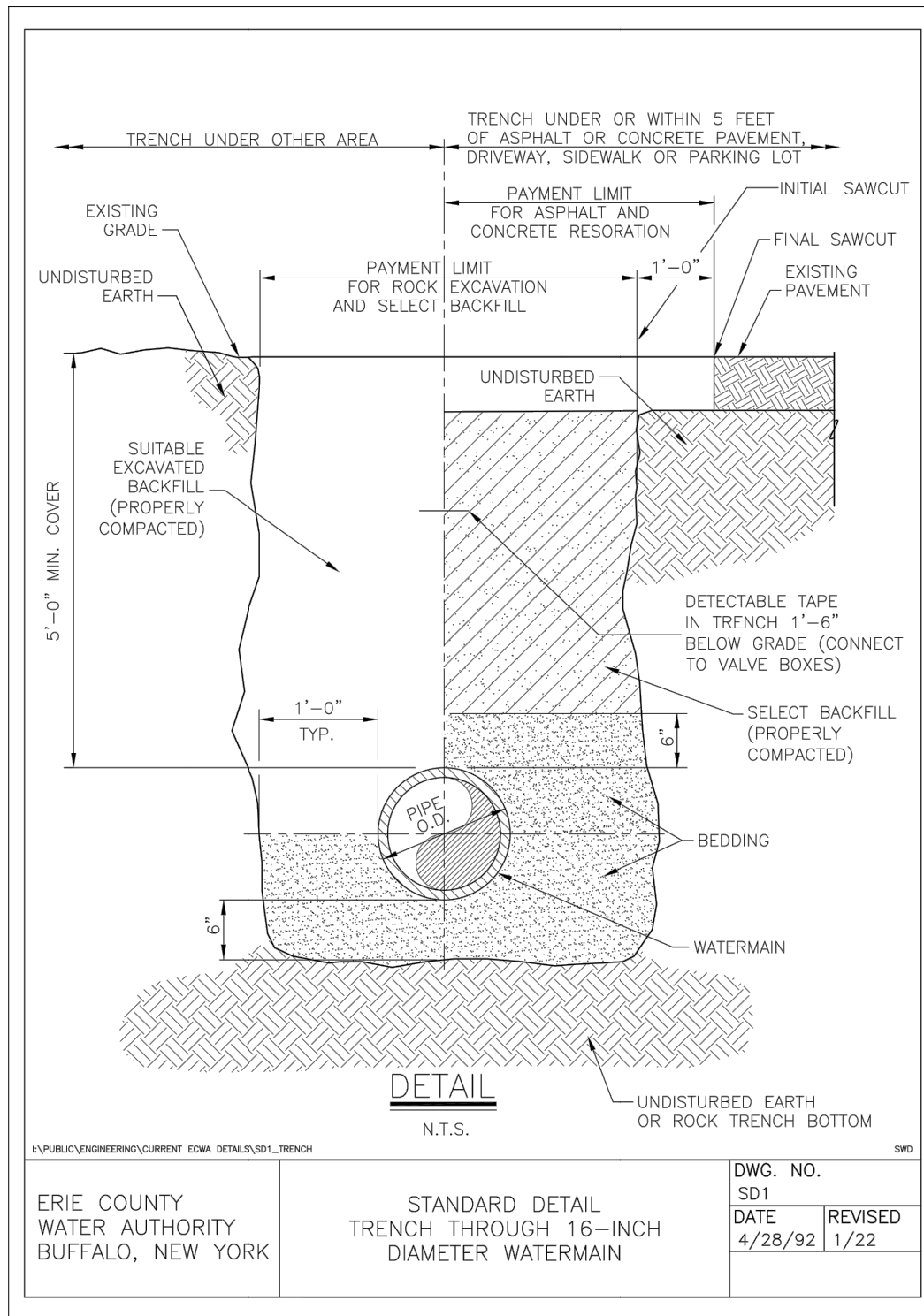
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Date: JUNE 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

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File Name:
202100220 - DOVER DESIGN



Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS

Date: JUNE 2022

Scale: AS SHOWN

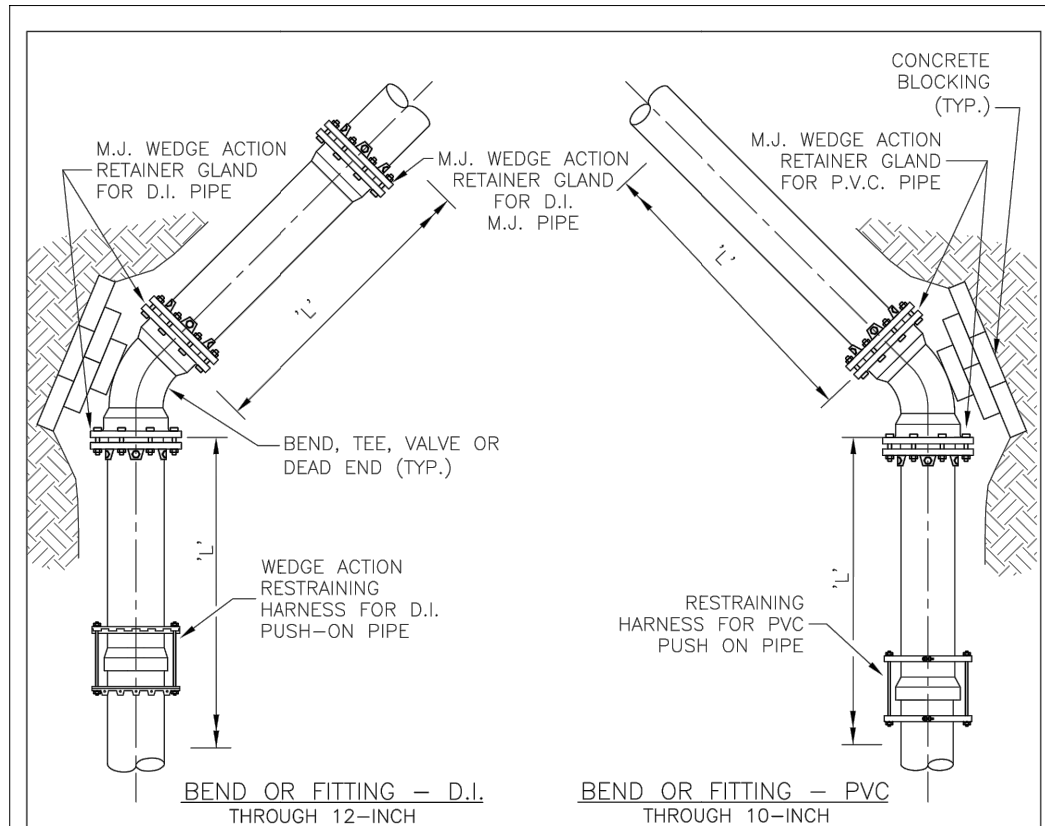
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File Name:
202100220 - DOVER DESIGN



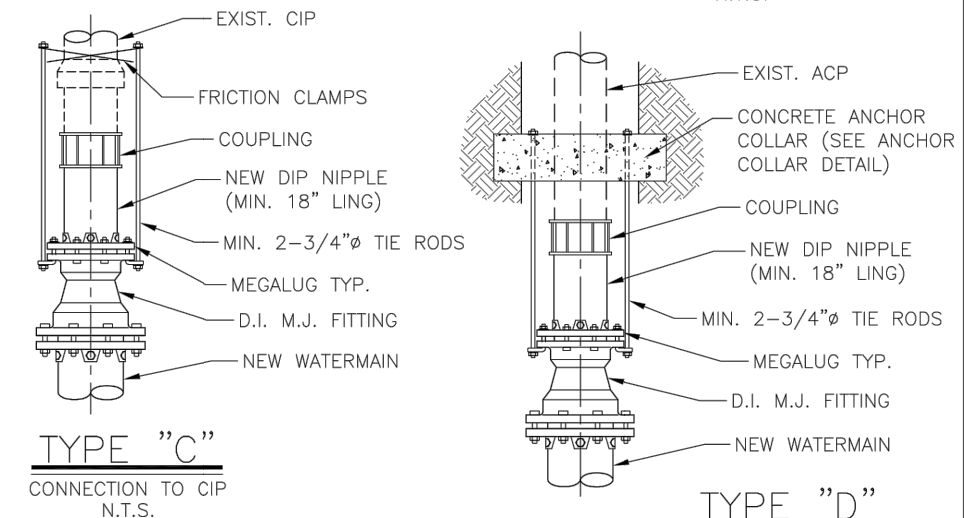
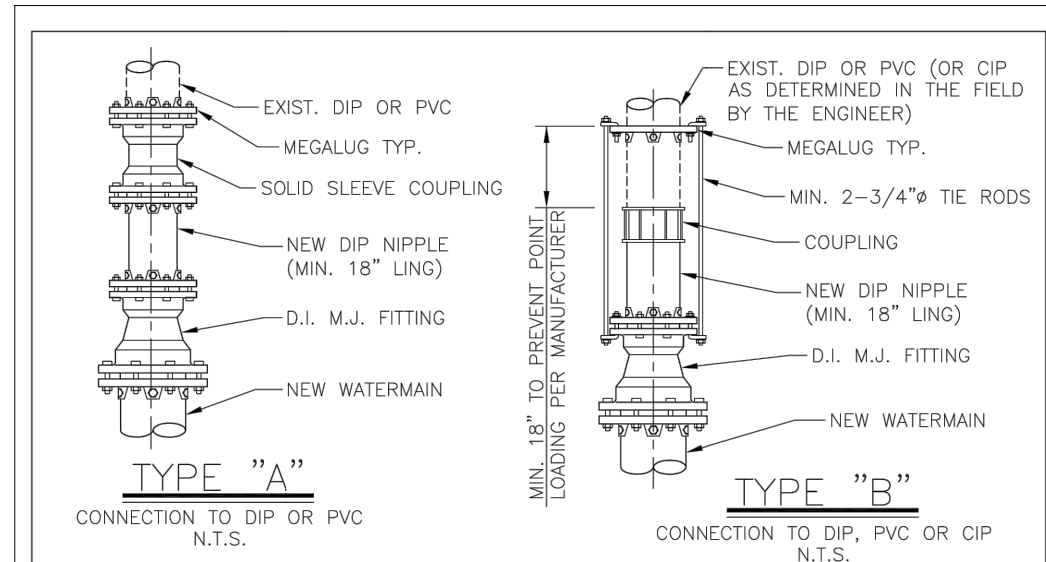
RESTRAINED JOINT SCHEDULE					
PIPE SIZE	PIPE TYPE	11.25' ELBOW	22.5' ELBOW	45' ELBOW	TEE BRANCH, 90° BEND, VALVE OR DEAD END
		'L'	'L'	'L'	'L'
8"	PVC/DIP	13'/12"	25'/23"	48'/45"	99'/94"
10"	PVC/DIP	15'/14"	30'/28"	57'/54"	120'/112"
12"	DIP	16'	32'	63'	130'
16"	DIP	20'	40'	81'	170'

NOTES:
 1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINING PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

PLAN
 N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD4_REST_JOINT_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4	
		DATE 4/28/92	REVISED 7/16



NOTES:
 1. VALVES AND TEES MAY BE HARNESSSED SIMILARLY.
 2. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE—PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
 3. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
 4. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD5_CONN_EXIST_WMMAIN

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD5	
		DATE 3/05	REVISED 7/16

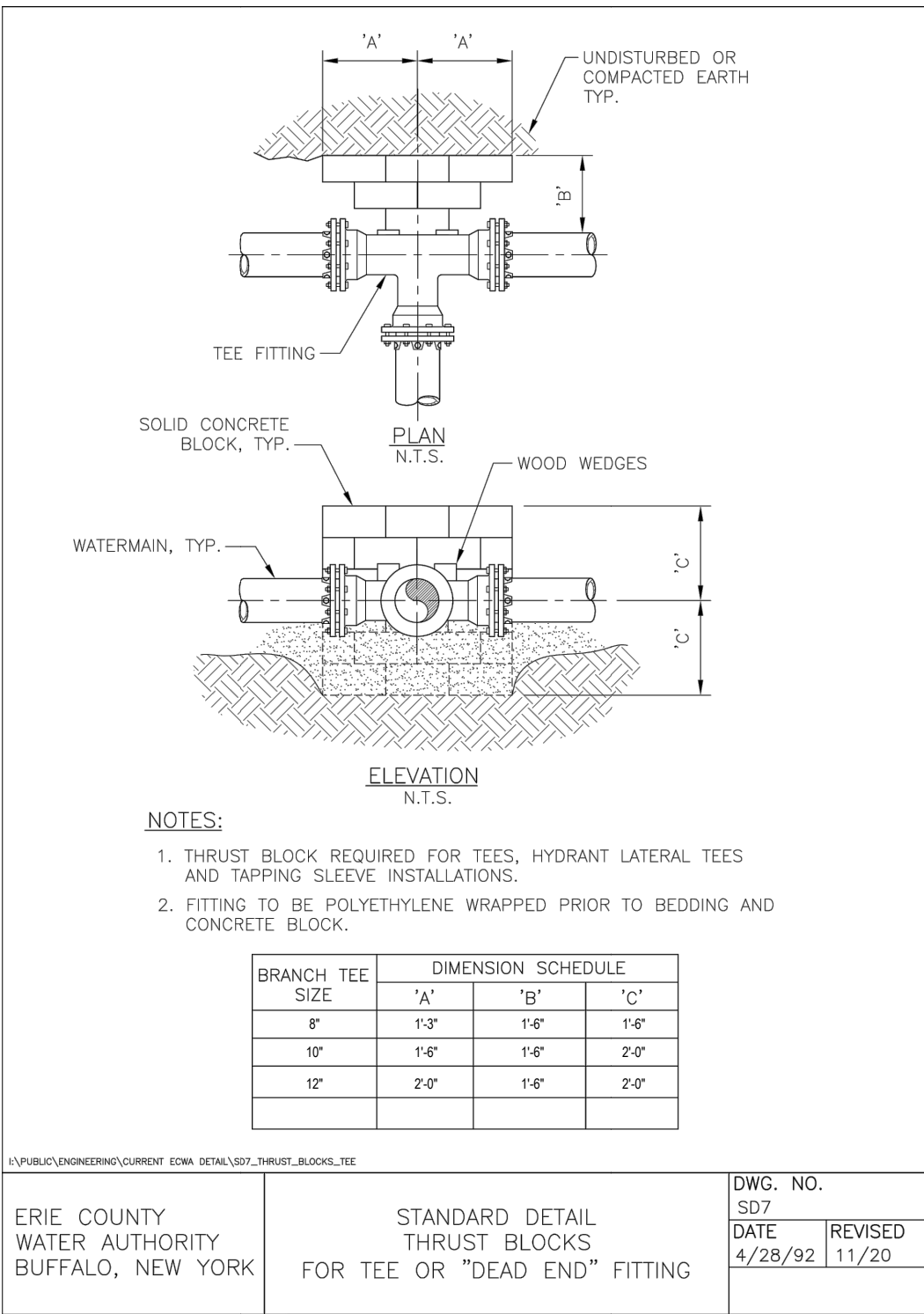
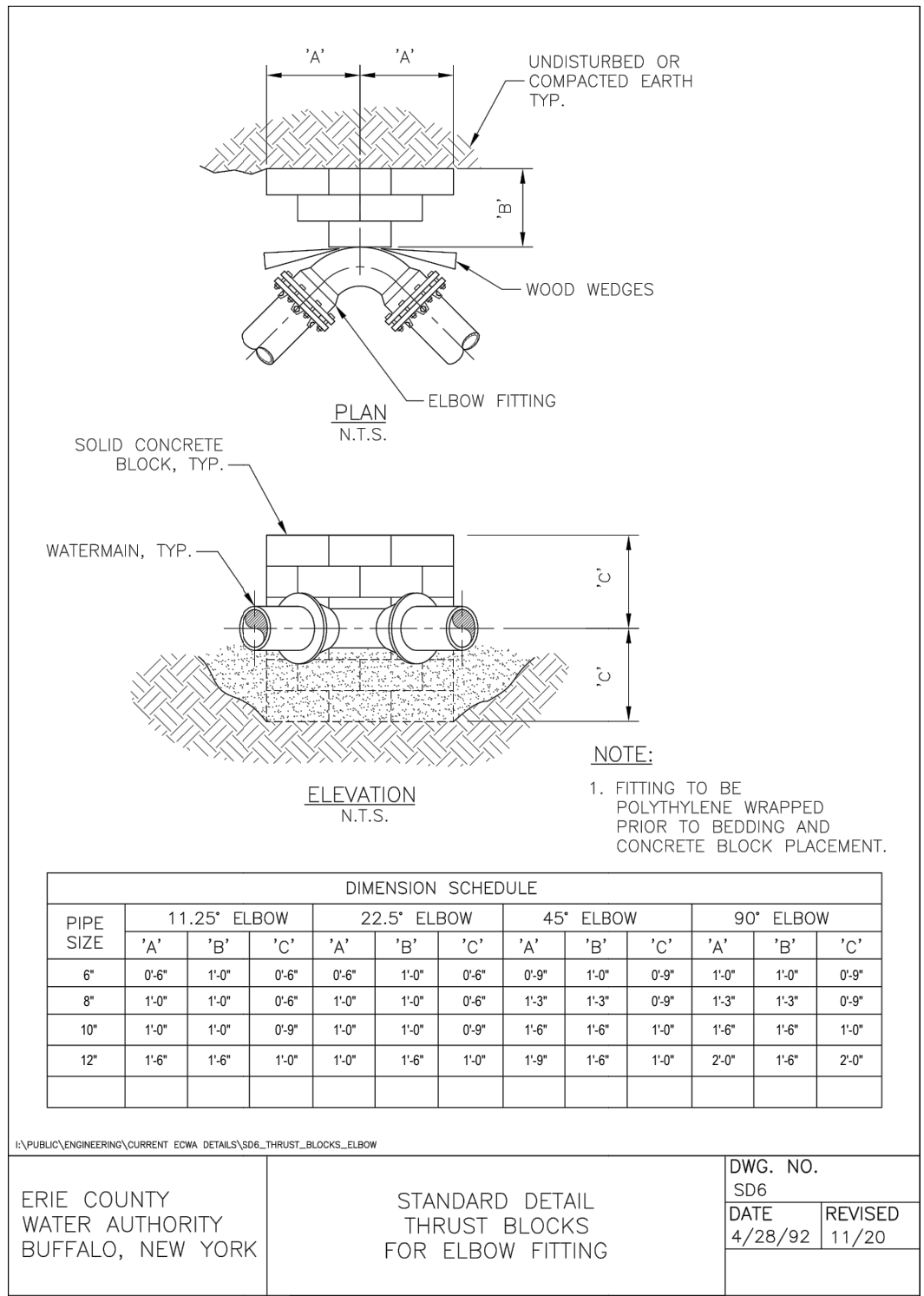
Approved By:

 06/28/2022


 ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name
 DOVER ROAD
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202100220
 TOWN OF HAMBURG
 ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS	Sheet
Date: JUNE 2022	W-7
Scale: AS SHOWN	
Drawn/Revised By: WWW	Page: 7 of 17
	File Name: 202100220 - DOVER DESIGN



Approved By:

06/28/2022

ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: JUNE 2022

Scale: AS SHOWN

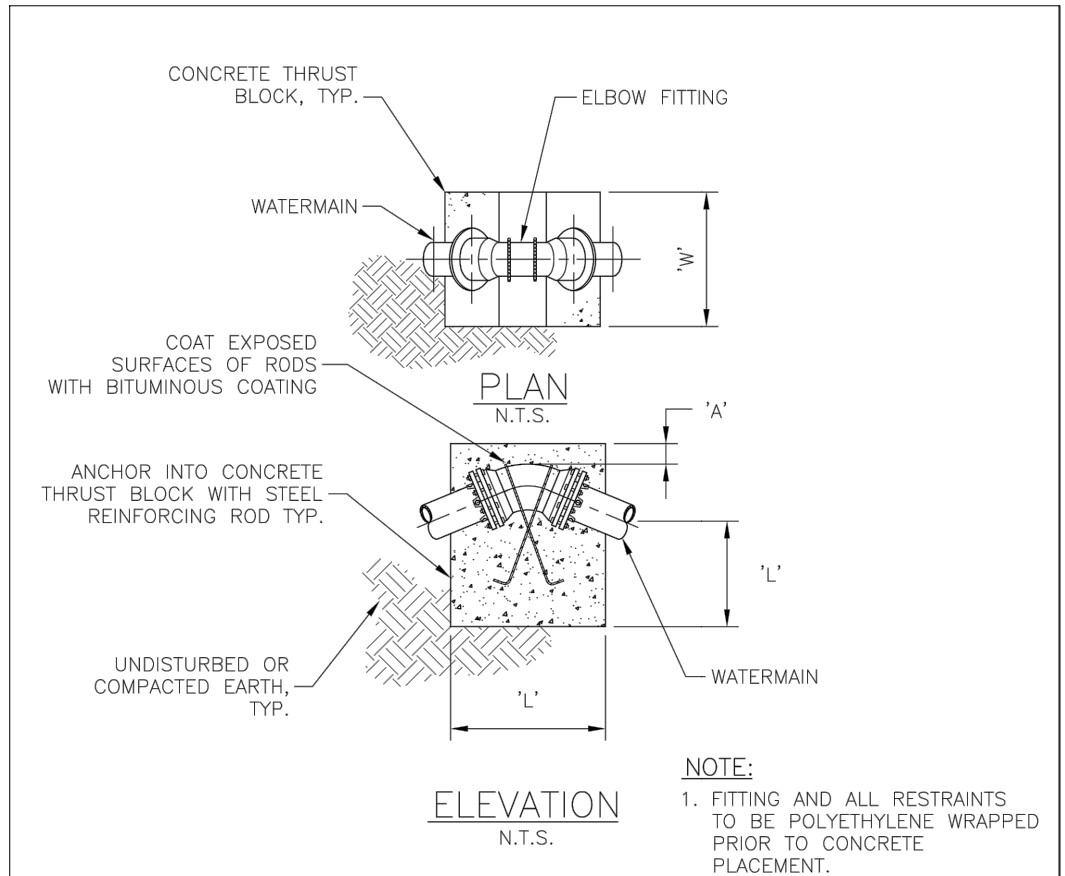
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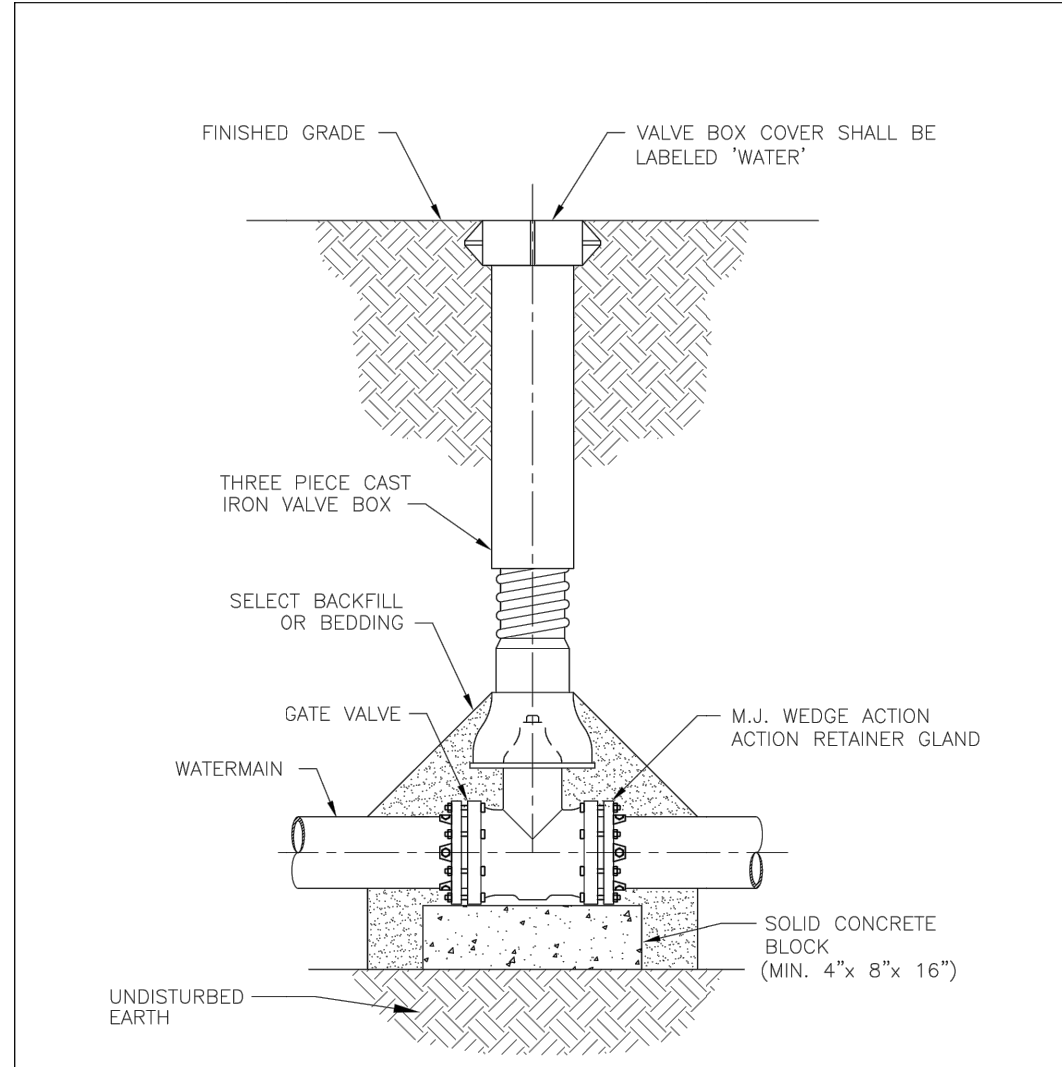
File Name: 202100220 - DOVER DESIGN



DIMENSION SCHEDULE													
PIPE SIZE	PIPE TYPE	11.25° ELBOW				22.5° ELBOW				45° ELBOW			
		'A'	'W'	'L'	ROD Ø	'A'	'W'	'L'	ROD Ø	'A'	'W'	'L'	ROD Ø
8"	PVC/DIP	1'-0"	3'-0"	3'-0"	1/2"	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-6"	1/2"
10"	PVC/DIP	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-9"	1/2"
12"	DIP	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-6"	1/2"	1'-0"	5'-0"	5'-0"	1/2"

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD8_THRUST_BLOCKS_VBEND

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8	
		DATE 4/28/92	REVISED 11/20



I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD11_GATE_VALVE_SET

SECTION
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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GATE VALVE SETTING	DWG. NO. SD11	
		DATE 4/28/92	REVISED 02/17

Approved By:

06/28/2022

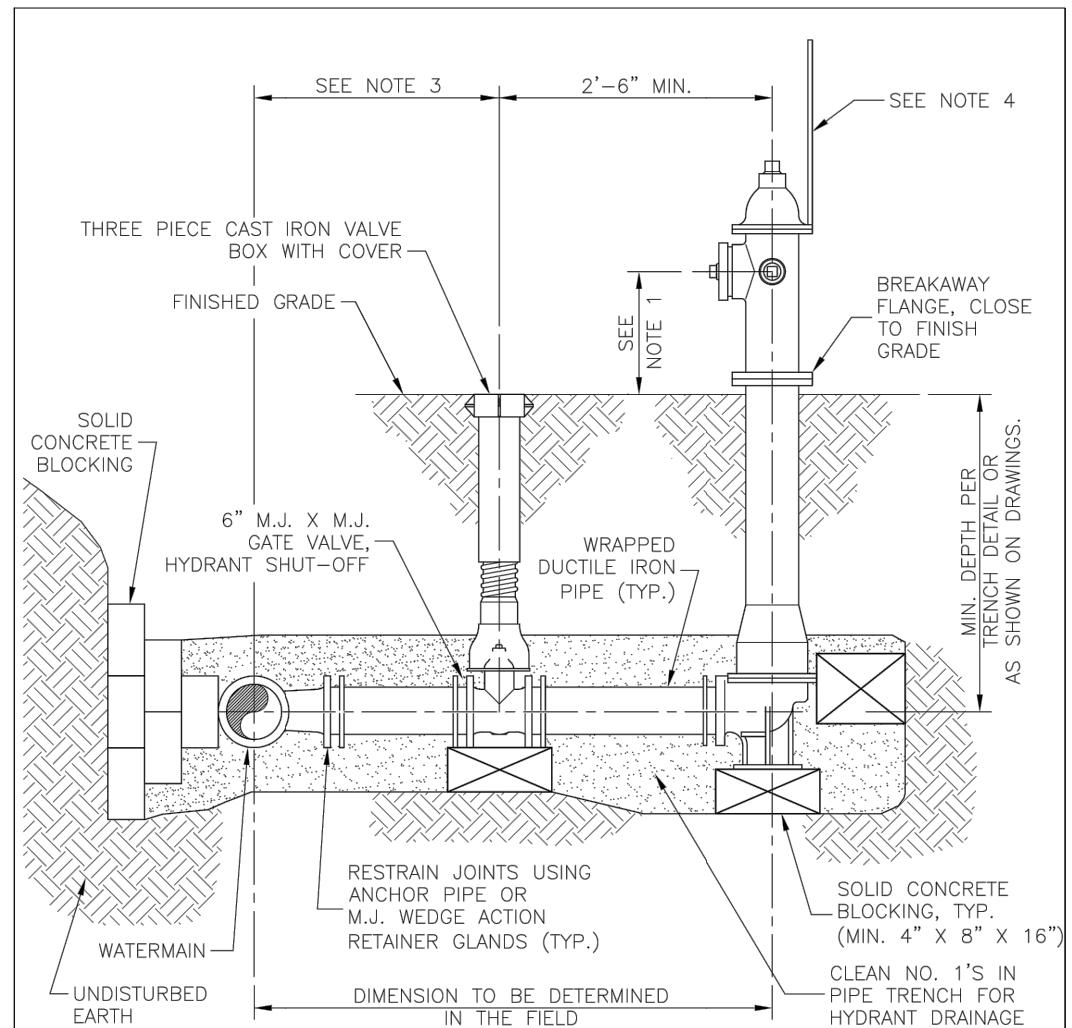
ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS	Sheet W-9
Date: JUNE 2022	Page: 9 of 17
Scale: AS SHOWN	File Name: 202100220 - DOVER DESIGN
Drawn/Revised By: WWW	



NOTES:

1. CENTERLINE OF THE LOWEST NOZZLE TO FINISHED GRADE SHALL BE A MIN. OF 15" & MAX. OF 18".
2. HYDRANT RISER SHALL BE INSTALLED PLUMB.
3. VALVE BOX SHALL NOT BE PLACED IN PAVEMENT
4. RELOCATE HYDRANT MARKER (IF PRESENT), FOR WATERLINE REPLACEMENT PROJECTS ONLY.

SECTION

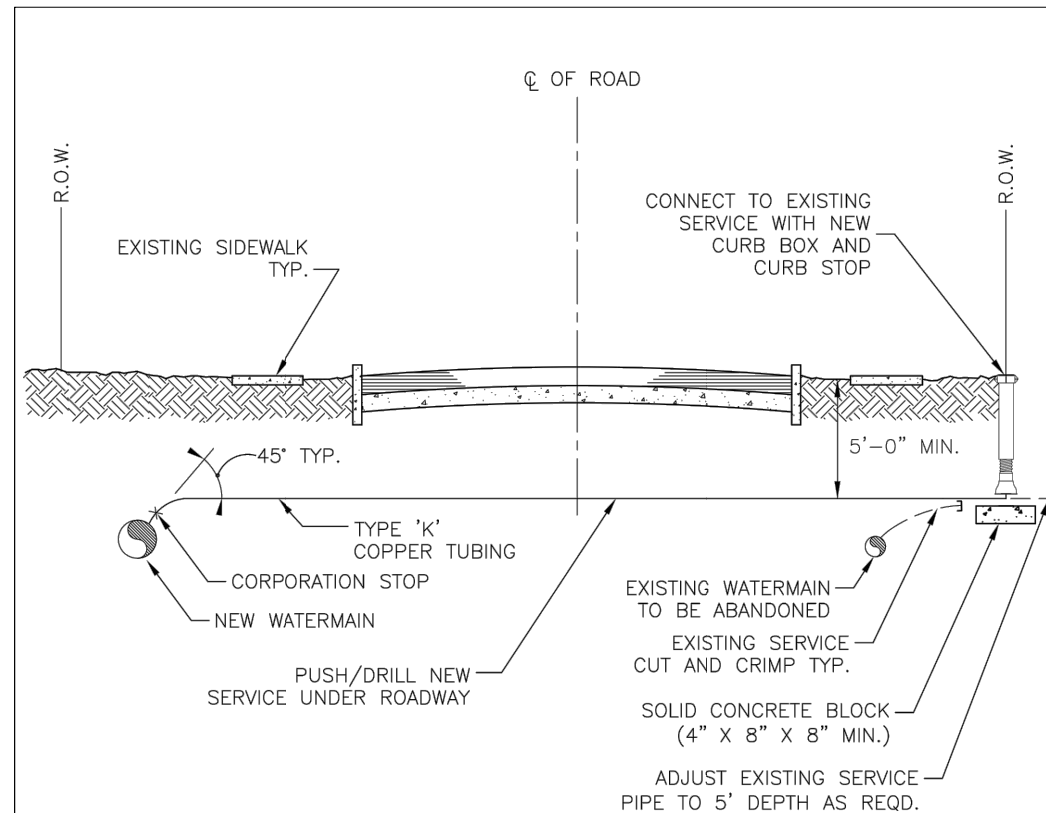
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ERIE COUNTY
WATER AUTHORITY
BUFFALO, NEW YORK

STANDARD DETAIL
FIRE HYDRANT
INSTALLATION

DWG. NO. SD13	
DATE 6/00	REVISED 07/16



NOTES:

1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
 - A. WHEN SERVICES AND PLACED ON 4" OR SMALLER PIPES.
 - B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 6" PIPE.
 - C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
 - D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
 - E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
 - F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. USE POLYETHYLENE FOR 3/4" AND 1" SERVICES GREATER THAN 100 FEET IN LENGTH, AND FOR 1-1/2" AND 2" SERVICES GREATER THAN 60 FEET IN LENGTH. ALL POLYETHYLENE SERVICES SHALL INCLUDE A TRACER WIRE FOR DETECTION BY ECWA FORCES.
5. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD16_SERVICE_REPLACE

ERIE COUNTY
WATER AUTHORITY
BUFFALO, NEW YORK

STANDARD DETAIL
SERVICE REPLACEMENT/INSTALLATION

DWG. NO. SD16	
DATE 4/92	REVISED 10/20

Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JUNE 2022

Scale:
AS SHOWN

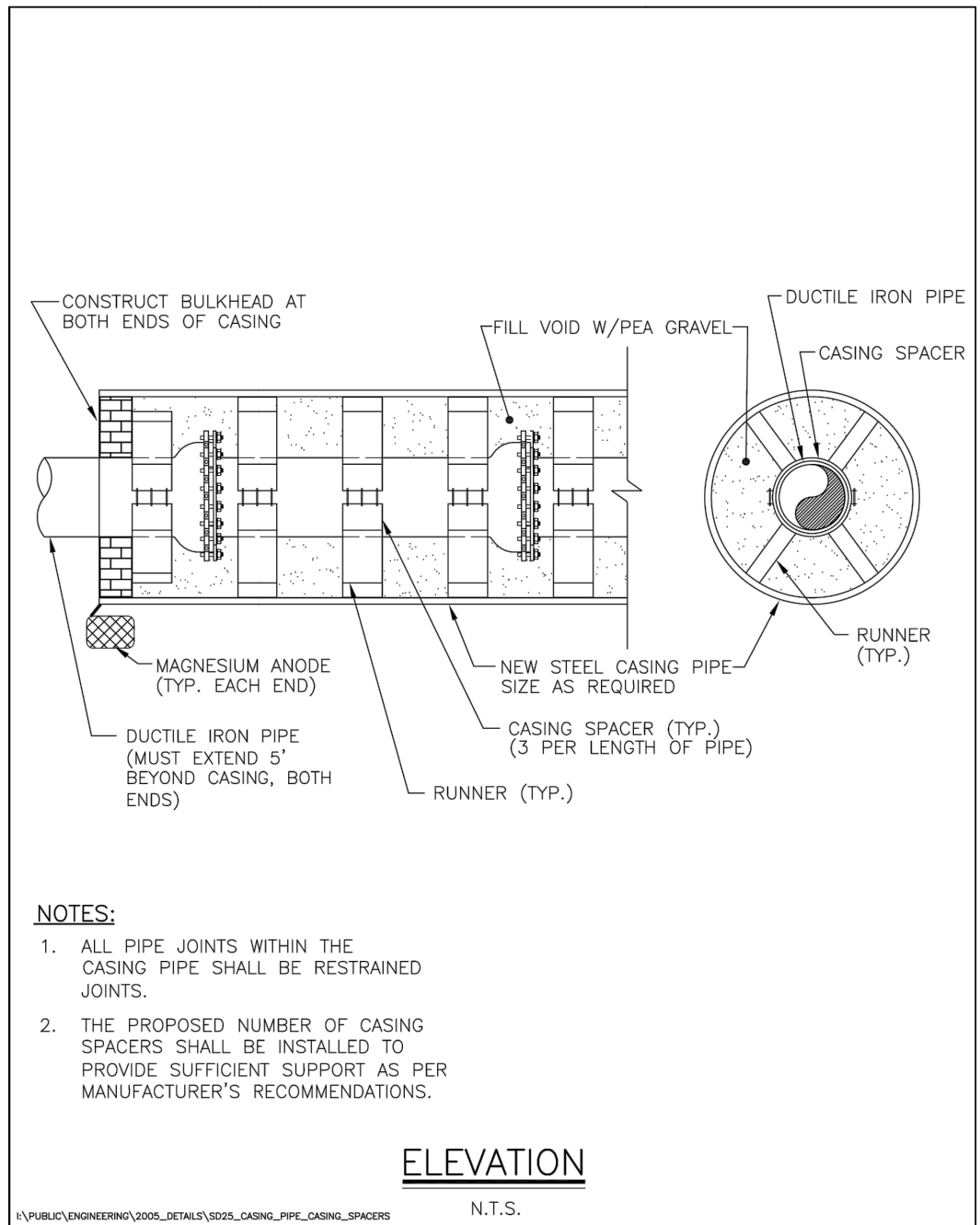
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WWW

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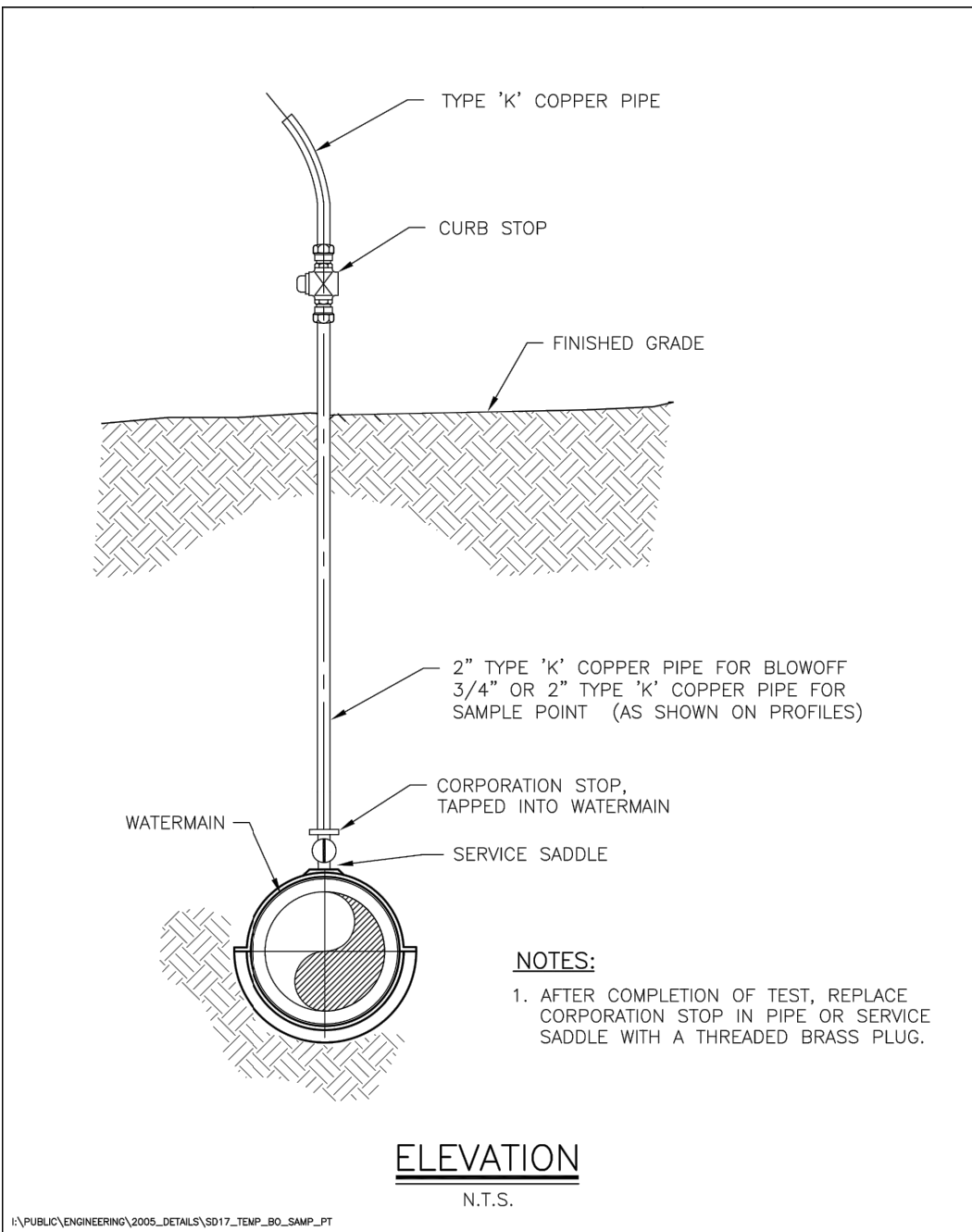
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File Name:
202100220 - DOVER DESIGN



ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL CASING PIPE WITH CASING SPACERS	DWG. NO. SD25	
		DATE 6/00	REVISED 10/05



ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17	
		DATE 4/28/92	REVISED 10/05

Approved By:

06/28/2022

ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS

Date: JUNE 2022

Scale: AS SHOWN

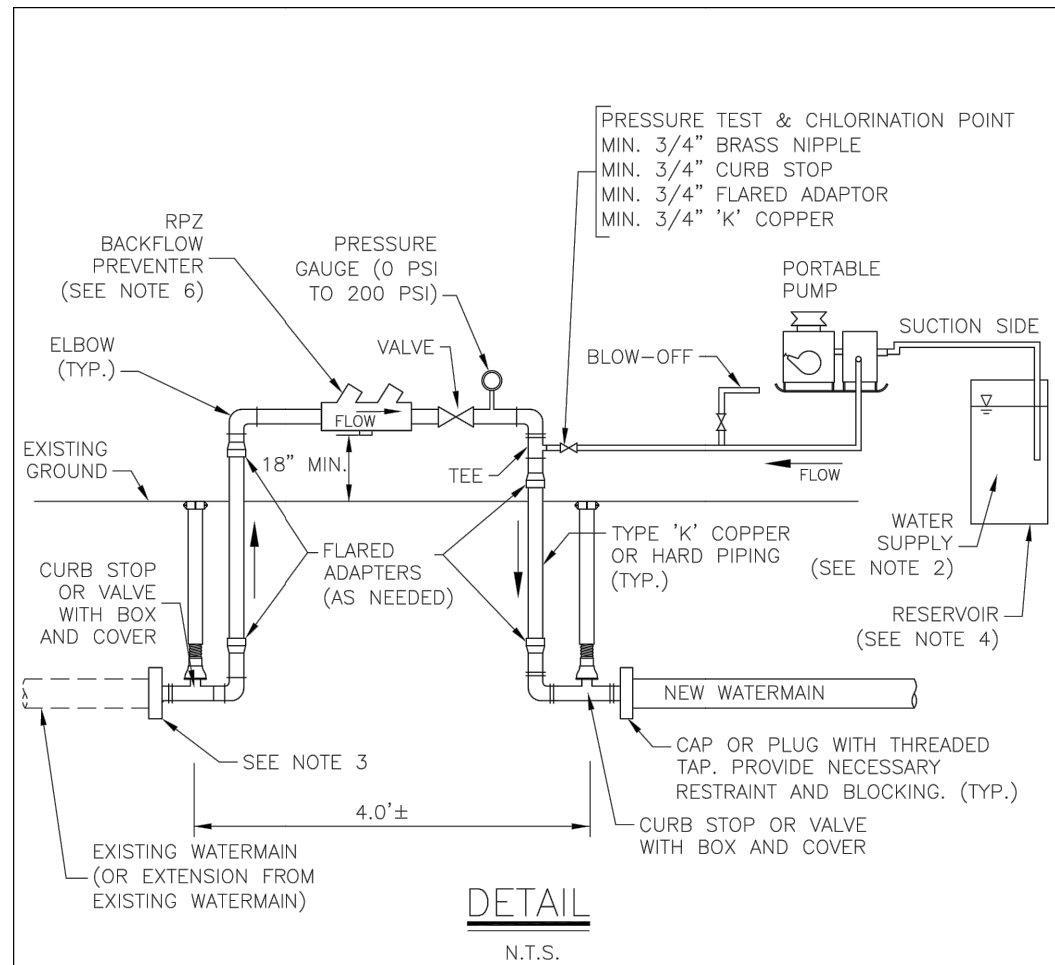
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File Name: 202100220 - DOVER DESIGN

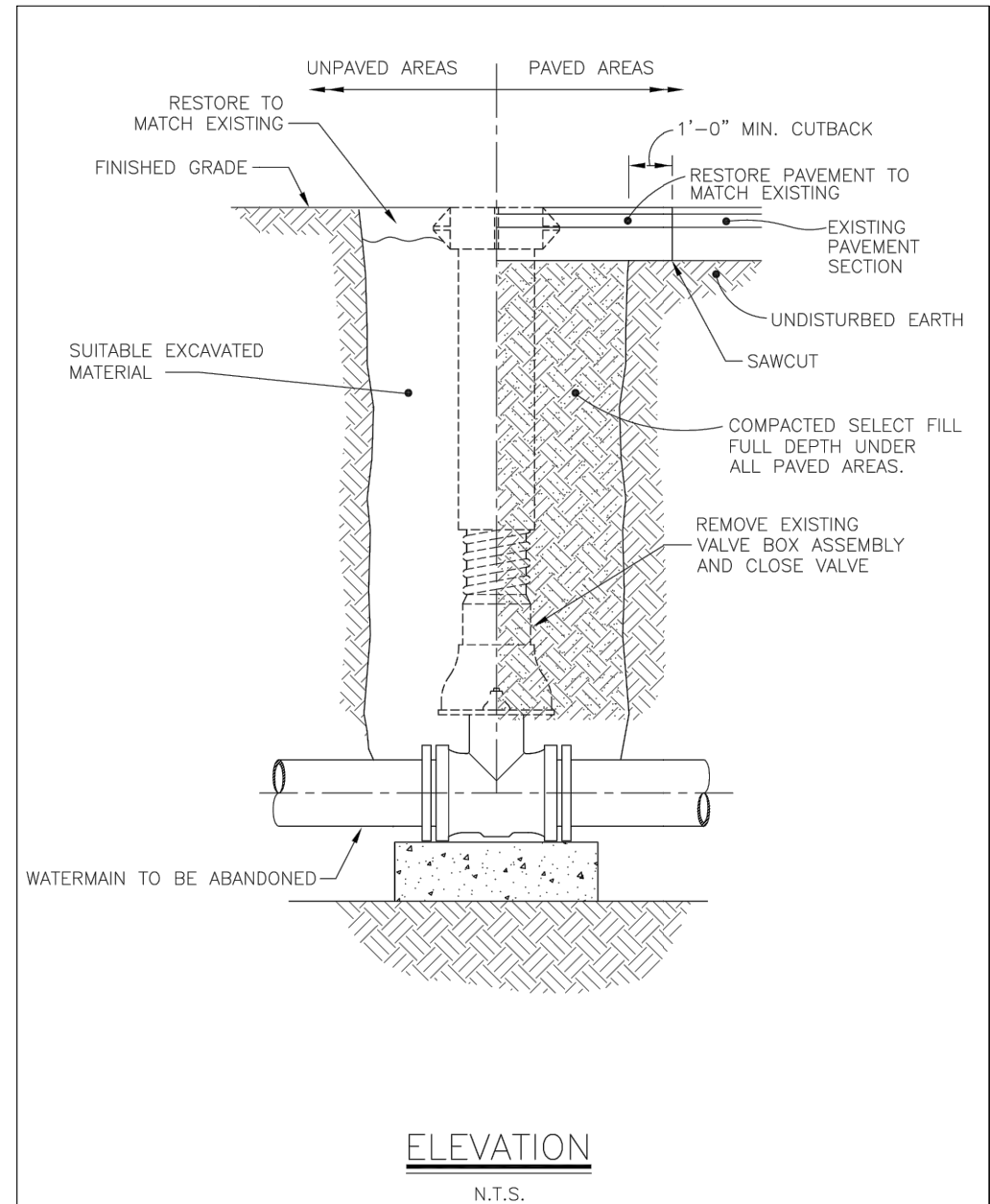


NOTES:

- | | |
|---|---|
| <p>1. BACTERIOLOGICAL WATER SAMPLES SHALL BE TAKEN AT BEGINNING AND END OF NEW WATERMAIN SECTION AND AT MAXIMUM 1,000 FT. SPACINGS.</p> <p>2. PROVIDE CLEAN WATER SUPPLY FOR PRESSURE TESTING. PROVIDE CHLORINATED WATER SUPPLY FOR DISINFECTION.</p> <p>3. CAP OR PLUG WITH THREADED TAP OR APPROPRIATE TAP INTO MAIN. PROVIDE NECESSARY RESTRAINT AND BLOCKING.</p> | <p>4. DIAMETER OF RESERVOIR SHALL BE 15" OR LESS. IF DIAMETER IS GREATER THAN 15", LEAKAGE TEST SHALL BE RUN A MINIMUM OF 4 HOURS.</p> <p>5. PRESSURE TEST CANNOT EXCEED 2,000 LINEAR FEET PER TEST SECTION.</p> <p>6. BACKFLOW PREVENTER TO BE SIZED TO ACHIEVE MIN 3 FPS SCOUR VELOCITY DURING FLUSHING OF NEW WATERLINE.</p> |
|---|---|

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD23_PRESS_TEST_SCHEM

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PRESSURE TESTING AND DISINFECTION APPARATUS SCHEMATIC	DWG. NO. SD23	
		DATE 6/00	REVISED 11/20



I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD26_EXIST_VBOX_ABAND

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL EXISTING VALVE BOX ABANDONMENT	DWG. NO. SD26	
		DATE 6/00	REVISED 8/16

Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JUNE 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

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Page: 12 of 17

File Name:
202100220 - DOVER DESIGN

NOTES

1. All elevations refer to USGS NAVD88 datum.
2. The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
3. The CONTRACTOR work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
4. The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
5. The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install watermain to avoid conflicts.
6. The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as needed basis, phased to reduce erosion and visual impact.
7. Blasting will not be permitted.
8. No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
9. The Erie County Water Authority only shall operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
10. The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 5 business days in advance of the requested shut-down date.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD29_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	SD29	
		DATE 3/05	REVISED 11/21

11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of the 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga.
19. The CONTRACTOR shall place temporary pavement (consisting of hot mix asphalt or cold patch) in all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict school bus access.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for approval.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants and curb stops operate as required.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD30_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30	
		DATE 3/05	REVISED 10/21

Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JUNE 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

W-13

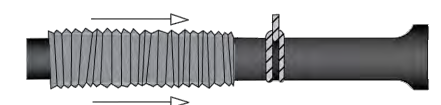
Page: 13 of 17

File Name:
202100220 - DOVER DESIGN

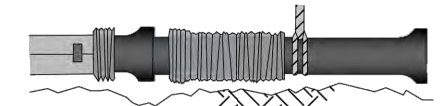
PIPE DIAMETER (in)	PIPE MATERIAL		WORKING PRESSURE (psi)	TEST PRESSURE (psi)
	Type (DIP, PVC, etc.)	Rating (Class/DR)		
8"	DIP	CLASS 52	100	175

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD31_PRESS_TEST_SCHD

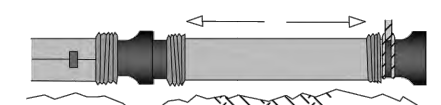
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	PRESSURE TESTING SCHEDULE	DWG. NO. SD31	
		DATE 10/05	REVISED 11/20



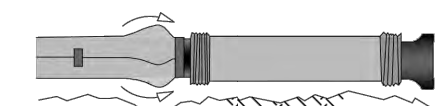
STEP 1.
CUT A SECTION OF POLYETHYLENE TUBE APPROXIMATELY 2 FEET LONGER THAN THE PIPE SECTION. REMOVE ALL LUMPS OF CLAY, MUD, CINDERS, OR OTHER MATERIALS THAT MIGHT HAVE ACCUMULATED ON THE PIPE SURFACE DURING STORAGE. SLIP THE POLYETHYLENE TUBE ACCORDION-FASHION ON THE END OF THE PIPE. PULL BACK THE OVERHANGING END OF THE TUBE UNTIL IT CLEARS THE PIPE END.



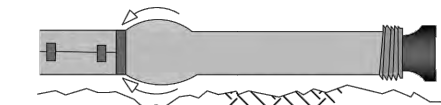
STEP 2.
DIG A SHALLOW BELL HOLE IN THE TRENCH BOTTOM AT THE JOINT LOCATION TO FACILITATE INSTALLATION OF THE POLYETHYLENE TUBE. LOWER THE PIPE INTO THE TRENCH AND MAKE UP THE PIPE JOINT WITH THE PROCEEDING SECTION OF PIPE.



STEP 3.
MOVE THE CABLE TO THE BELL END OF THE PIPE AND LIFT THE PIPE SLIGHTLY TO PROVIDE ENOUGH CLEARANCE TO EASILY SLIDE THE TUBE. SPREAD THE TUBE OVER THE ENTIRE BARREL OF THE PIPE. NOTE: MAKE SURE THAT NO DIRT OR OTHER BEDDING MATERIAL BECOMES TRAPPED BETWEEN THE WRAP AND THE PIPE.



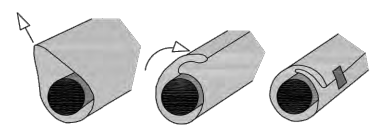
STEP 4.
MAKE THE OVERLAP OF POLYETHYLENE TUBE BY PULLING BACK THE BUNCHED POLYETHYLENE FROM THE PRECEDING LENGTH OF PIPE AND SECURING IT IN PLACE. NOTE: THE POLYETHYLENE MAY BE SECURED IN PLACE BY USING TAPE OR PLASTIC TIE STRAPS.



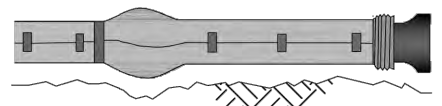
STEP 5.
OVERLAP THE SECURED TUBE END WITH THE END OF THE NEW PIPE SECTION, FOR A MINIMUM OF 12 INCHES. SECURE THE NEW TUBE END IN PLACE. PIPE JOINT SHOULD HAVE TWO LAYERS OF POLYWRAP, EACH SECURED IN PLACE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD32_POLY_WRAP

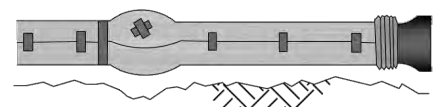
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYETHYLENE ENCASEMENT OF DUCTILE IRON PIPE	DWG. NO. SD32	
		DATE 06/16	REVISED 02/19



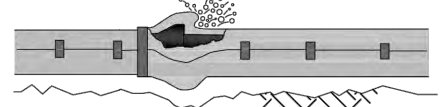
STEP 6.
TAKE UP THE SLACK IN THE TUBE ALONG THE BARREL OF THE PIPE TO MAKE A SNUG, BUT NOT TIGHT, FIT. FOLD EXCESS POLYETHYLENE BACK OVER THE TOP OF THE PIPE.



STEP 7.
SECURE THE FOLD AT SEVERAL LOCATIONS ALONG THE PIPE BARREL (APPROXIMATELY EVERY 3 FEET, MAXIMUM OF 5 FEET).



STEP 8.
REPAIR ALL THE SMALL RIPS, TEARS, OR OTHER TUBE DAMAGE WITH ADHESIVE TAPE. IF THE POLYETHYLENE IS BADLY DAMAGED, REPAIR THE DAMAGED AREA WITH A SHEET OF POLYETHYLENE AND SEAL THE EDGES OF THE REPAIR WITH ADHESIVE TAPE.



STEP 9.
CAREFULLY BACKFILL THE TRENCH ACCORDING TO THE PROCEDURES IN AWWA C600 STANDARD. TO PREVENT DAMAGE DURING BACKFILLING ALLOW ADEQUATE SLACK IN THE TUBE AT THE JOINT. BACKFILL SHOULD BE FREE OF CINDERS, ROCKS, BOULDERS, NAILS, STICKS, OR OTHER MATERIALS THAT MIGHT DAMAGE THE POLYETHYLENE. AVOID DAMAGING THE POLYETHYLENE WHEN USING TAMPING DEVICES.

NOTES:

- 1 - POLYETHYLENE WRAP (POLYWRAP) SHALL BE OF PROPER DIAMETER TO FIT OVER BELLS AND EXTERNAL WEDGE-ACTION RETAINER GLANDS.
- 2 - CAST AND DUCTILE IRON FITTINGS (BENDS, TEES, VALVES, ETC.) ARE TO BE WRAPPED IN POLYWRAP AND SECURED IN PLACE.
- 3 - DO NOT USE CHAINS, METAL WIRE, OR OTHER SUPPORTING SYSTEMS WHICH MAY DAMAGE THE POLYETHYLENE ENCASEMENT. REPLACE DAMAGED POLYWRAP ACCORDINGLY.

Approved By:

06/28/2022

ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: JUNE 2022

Scale: AS SHOWN

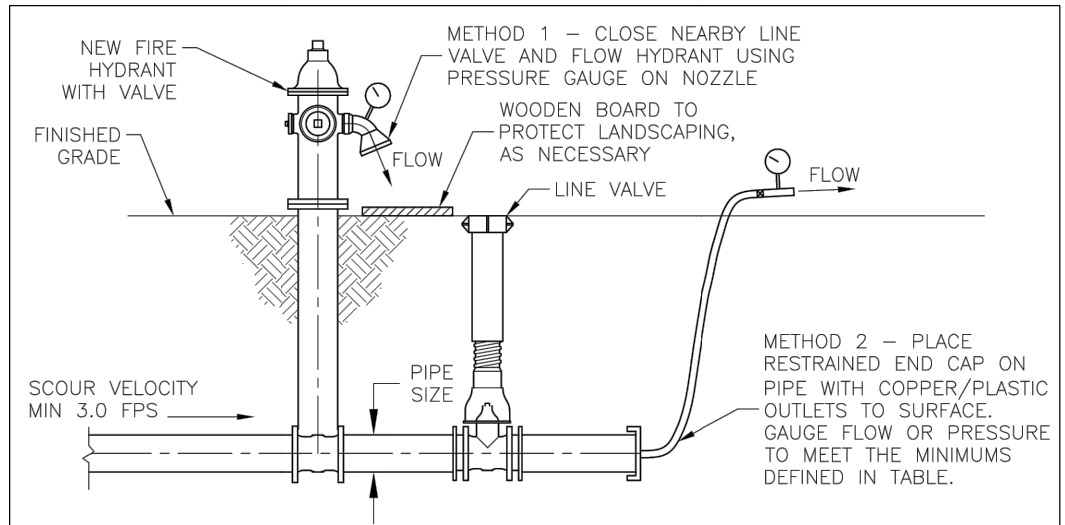
Drawn/Revised By: WWW

Sheet

W-14

Page: 14 of 17

File Name: 202100220 - DOVER DESIGN



PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW		METHOD 2 END CAP FLOW	
		2 1/2" NOZZLE PRESSURE (PSI)	4" NOZZLE PRESSURE (PSI)	2" I.D. PRESSURE (PSI)	3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	-	22
16	1900	-	20	-	62
20	3000	-	50	-	-

I.D. = INNER DIAMETER

NOTES:

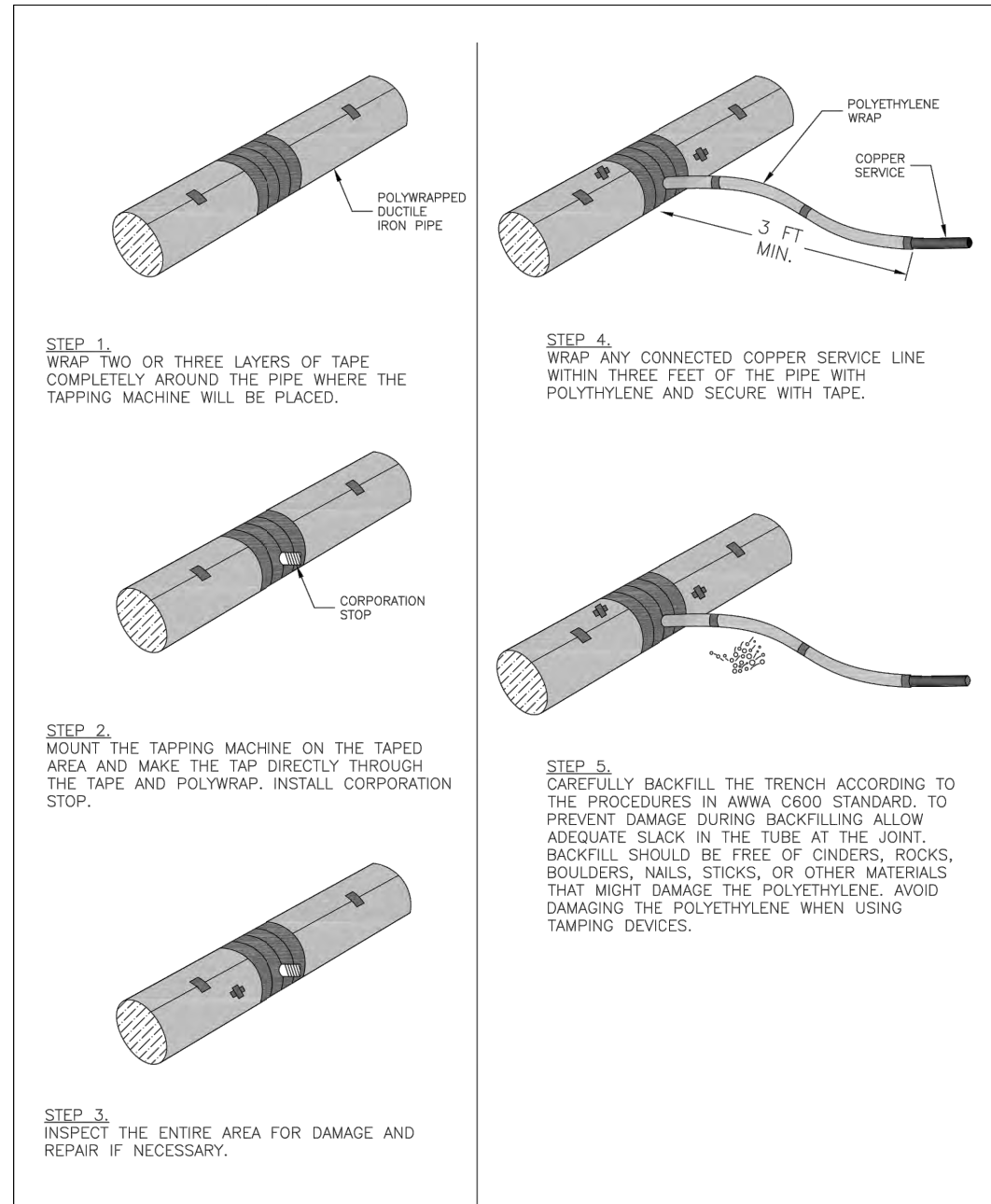
1. TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
2. OUTLET PRESSURE MEASURED BY PITOT GAUGE.
3. ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
4. TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION

N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD36_WATERLINE_FLUSHING

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL WATERLINE FLUSHING	DWG. NO. SD36	
		DATE 6/16	REVISED 3/18



I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD38_TAP_POLY_WRAP_PIPE

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TAPPING POLYWRAPPED PIPE	DWG. NO. SD38	
		DATE 05/18	REVISED

Approved By:

06/28/2022

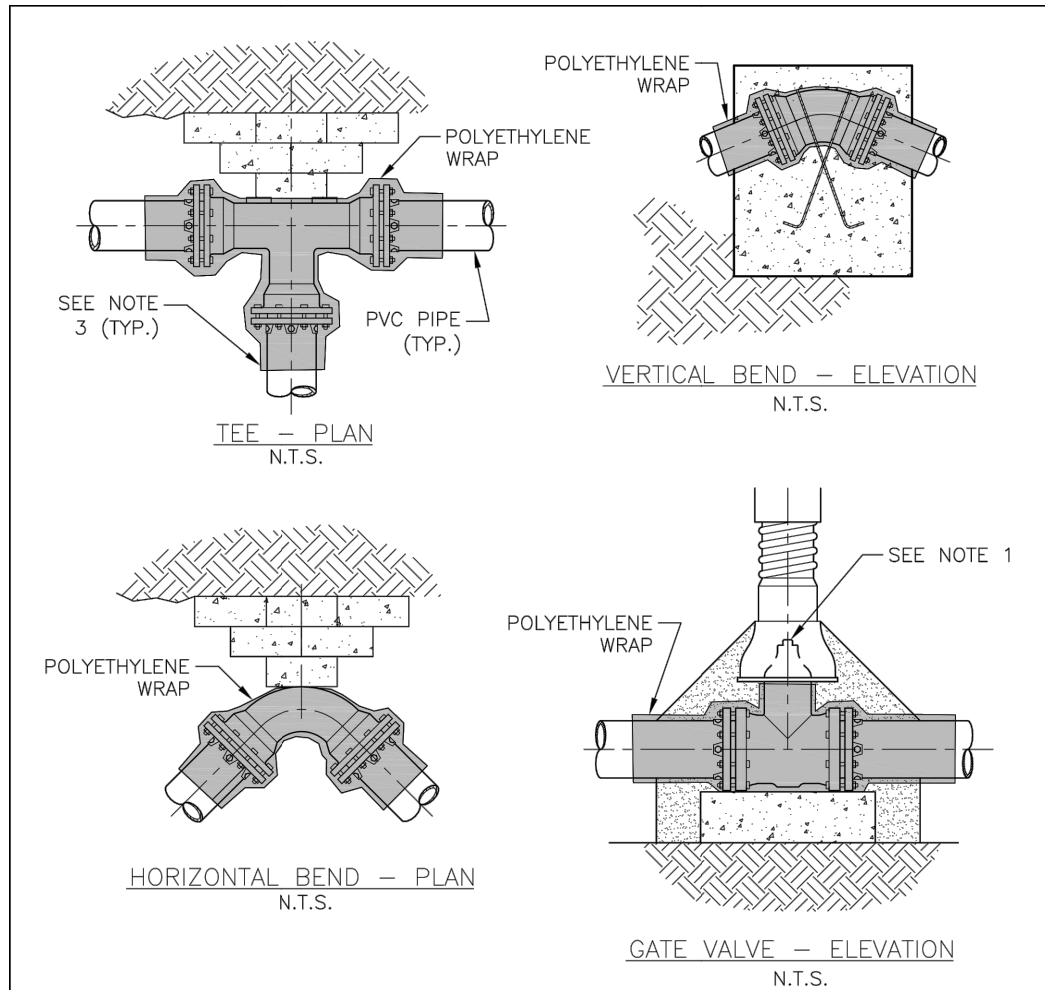
ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS	Sheet
Date: JUNE 2022	W-15
Scale: AS SHOWN	
Drawn/Revised By: WWW	Page: 15 of 17
	File Name: 202100220 - DOVER DESIGN

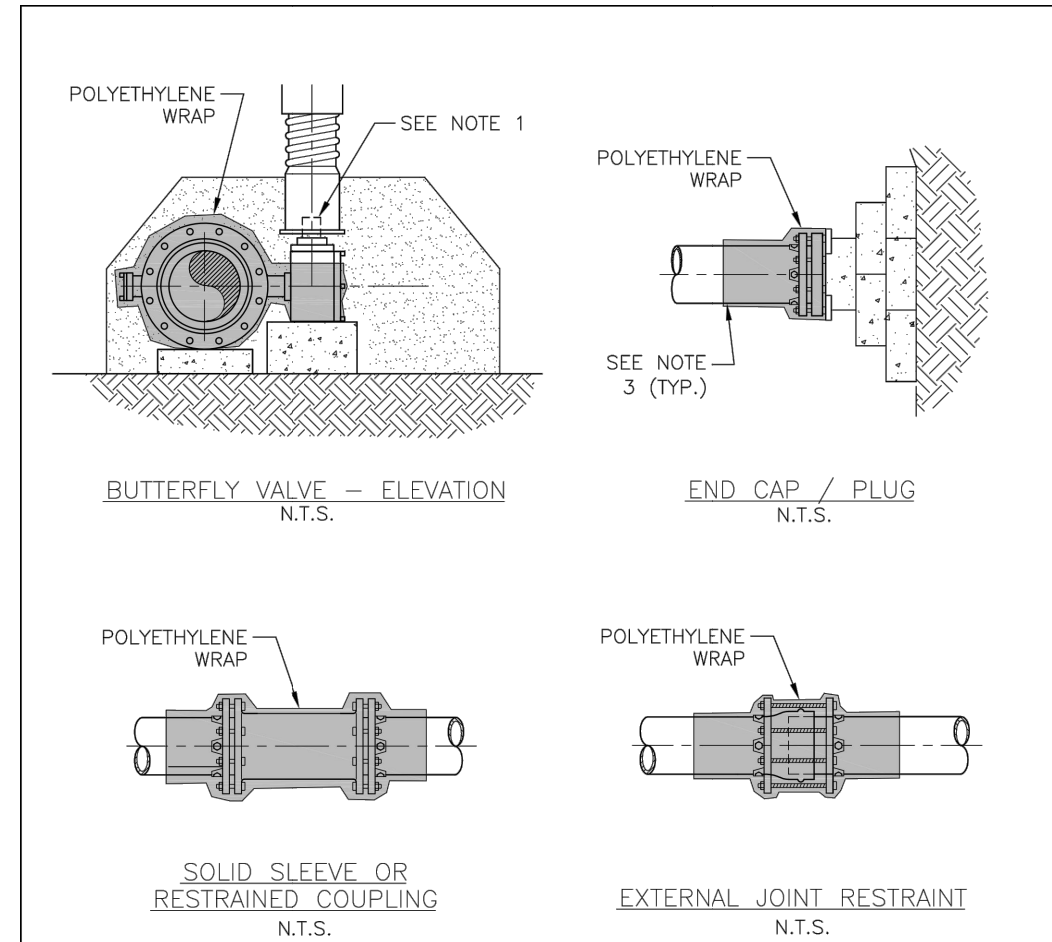


NOTES:

1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A	
		DATE 3/18	REVISED 12/18



NOTES:

1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39B	
		DATE 12/18	REVISED

Approved By:

06/28/2022

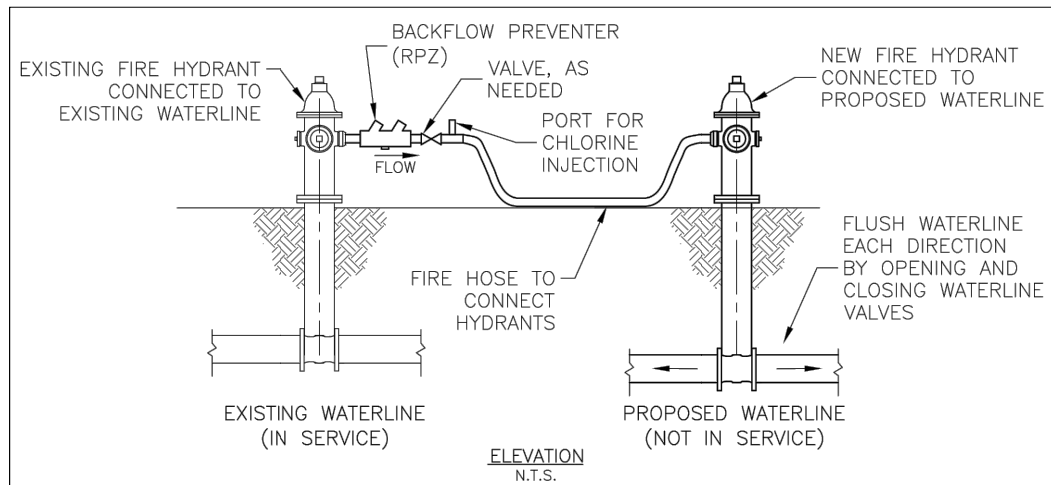
ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

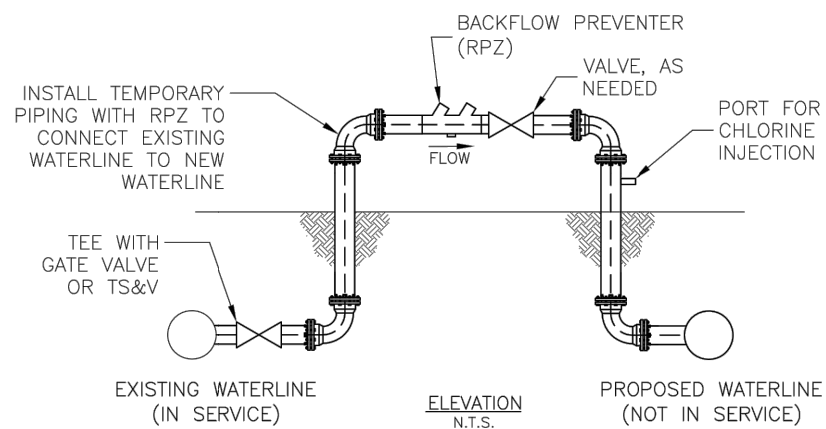
DOVER ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100220

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS	Sheet
Date: JUNE 2022	W-16
Scale: AS SHOWN	
Drawn/Revised By: WWW	Page: 16 of 17
	File Name: 202100220 - DOVER DESIGN



METHOD 1 – CONNECT EXISTING HYDRANT TO PROPOSED HYDRANT



METHOD 2 – SERVICE TAP, TAPPING SLEEVE AND VALVE (TS&V), OR INTERCONNECTION

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO DEPICT ACCEPTABLE METHODS OF CONNECTING EXISTING WATERLINES TO PROPOSED WATERLINES FOR FILLING, FLUSHING, AND TESTING PROCEDURES IF 2-INCH COPPER OR POLYETHYLENE TUBING IS NOT USED TO BYPASS A VALVE. OTHER METHODS REQUIRE SUBMITTAL AND APPROVAL BY THE AUTHORITY PRIOR TO USE.
2. FIRE HOSES, TEMPORARY PIPING, AND BACKFLOW PREVENTERS SHALL NOT ENCROACH INTO ROADWAYS, DRIVEWAYS, OR SIDEWALK AREAS WITHOUT PROVIDING PROPER MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD44_SOURCE_WATER_CONNECTIONS

SWD

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SOURCE WATER CONNECTIONS	DWG. NO. SD44	
		DATE 10/20	REVISED

Approved By:



06/28/2022



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name

DOVER ROAD
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202100220

TOWN OF HAMBURG
 ERIE COUNTY - NEW YORK

Name:
 MISCELLANEOUS
 DETAILS

Date:
 JUNE 2022

Scale:
 AS SHOWN

Drawn/Revised By:
 WWW

Sheet

W-17

Page: 17 of 17

File Name:
 202100220 - DOVER DESIGN



Date: 7/1/2022 **Author:** US Traffic Control **Project:** ECWA PN202100220 Dover Rd. Water System Improvements

Comments:

Kandey Co installing 8" waterline in 18" bored casing crossing Lakeshore Rd. at Dover Rd. intersection in Town of Hamburg.

Westbound NY 5 Right Lane Closure per Standard Sheet 619-30
 Eastbound NY 5 Right Shoulder Closure per Standard Sheet 619-20 As Needed

Night Time operation as WB Right Lane Closure will be left in place during off hours as required.

Anticipated Duration is 3 - 4 weeks

Sheet 1 of 5

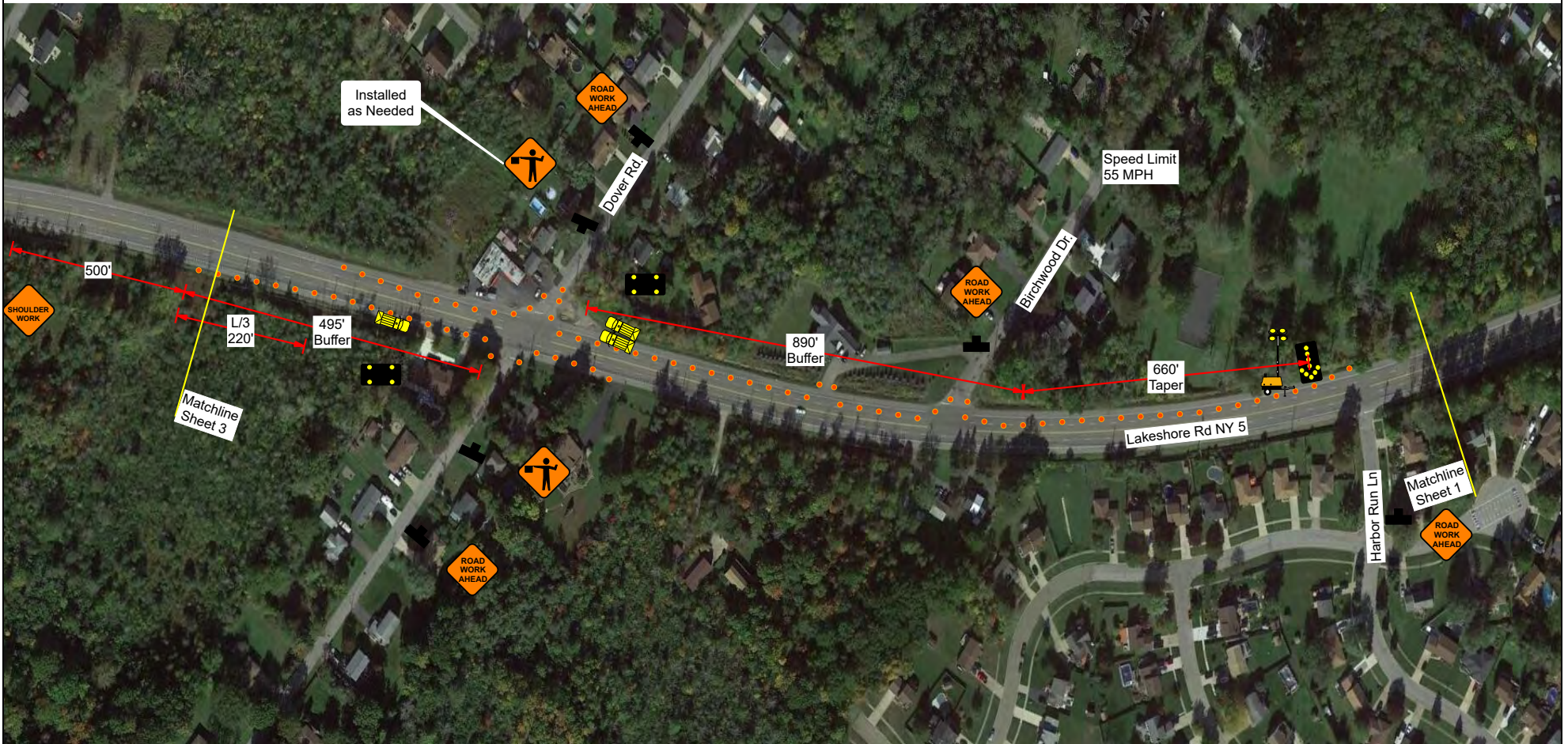


*** All driveways will be delineated.**

NOTE: Place "Road Work Ahead" signs on side roads 100-200ft in advance of intersection.

**Delineation device spacing = 40'
 Drawing not to scale.**





Date: 7/1/2022 **Author:** US Traffic Control **Project:** ECWA PN202100220 Dover Rd. Water System Improvements

Comments:
Kandey Co installing 8" waterline in 18" bored casing crossing Lakeshore Rd. at Dover Rd. intersection in Town of Hamburg.

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Night Time operation as WB Right Lane Closure will be left in place during off hours as required.

Anticipated Duration is 3 - 4 weeks

Sheet 2 of 5

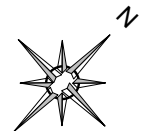


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Drawing not to scale.





Date: 7/1/2022 **Author:** US Traffic Control **Project:** ECWA PN202100220 Dover Rd. Water System Improvements

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Sheet 3 of 5

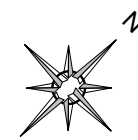


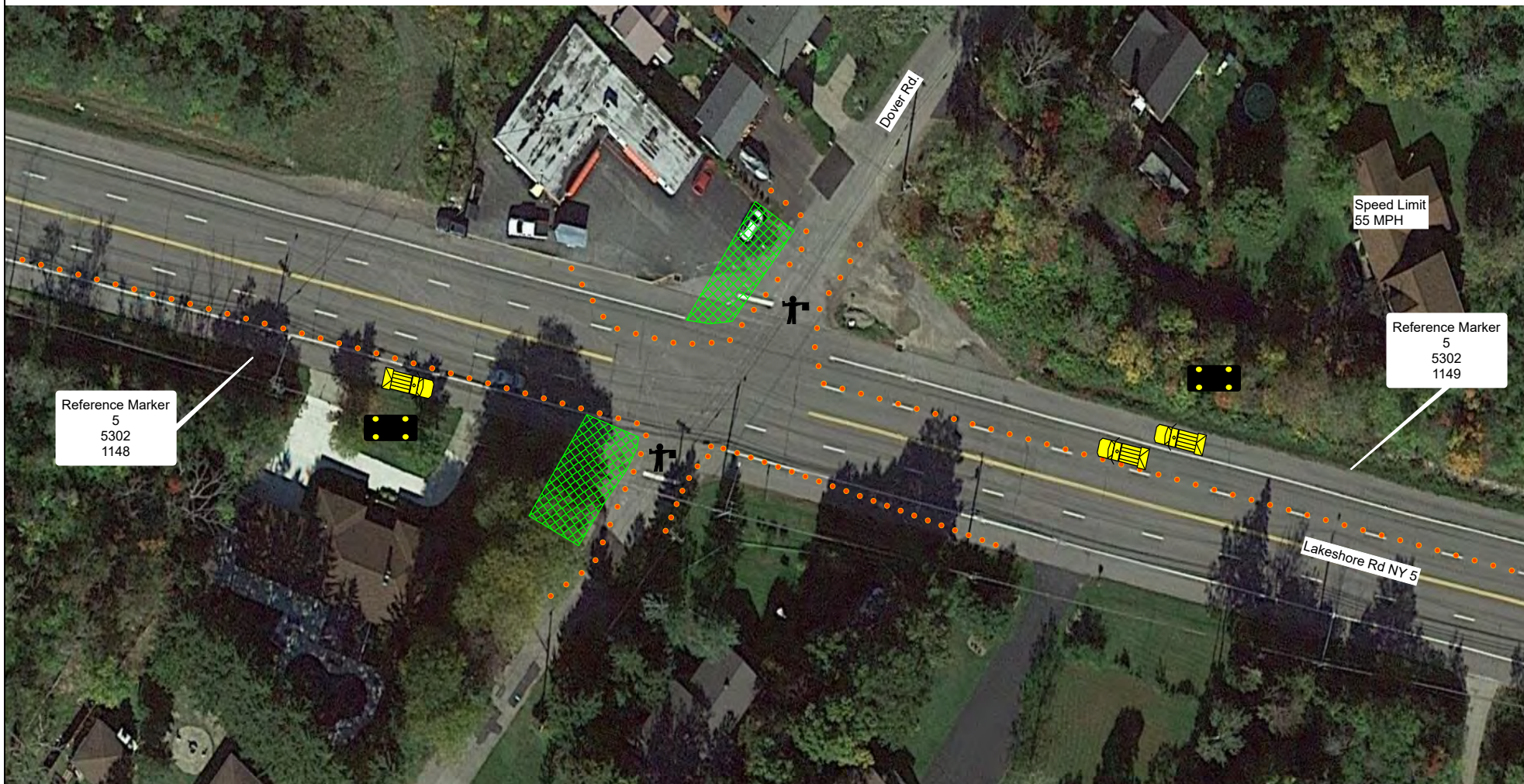
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Delineation device spacing = 40'

Drawing not to scale.





Reference Marker
5
5302
1148

Speed Limit
55 MPH

Reference Marker
5
5302
1149



Date: 7/1/2022 **Author:** US Traffic Control **Project:** ECWA PN202100220 Dover Rd. Water System Improvements

Comments:

Kandey Co installing 8" waterline in 18" bored casing crossing Lakeshore Rd. at Dover Rd. intersection in Town of Hamburg.

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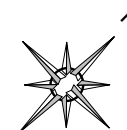
Sheet 4 of 5

*** All driveways will be delineated.**

NOTE: Place "Road Work Ahead" signs on side roads 100-200ft in advance of intersection.

Delineation device spacing = 40'

Drawing not to scale.



619-3.19 Nighttime Operations. Work occurring after sunset and before sunrise will be considered nighttime operations. All workers involved in nighttime operations shall wear protective helmets and nighttime apparel in accordance with §107-05A. *High Visibility Apparel* at all times.

Standard Specification 619-3.02 J

One Type A flashing warning light shall be installed on the first channelizing device in each series of a nightwork shoulder or travel lane closure. One Type A flashing warning light shall be installed on channelizing devices used to mark the location of hazards in or adjacent to the travel lane, including, but not limited to, pavement discontinuities, drainage structures, excavations, fixed objects, and other obstructions and potential hazards remaining at the end of the work shift. Where the placement of numerous Type A flashing warning lights may present a distraction to motorists, flashing warning lights may be eliminated at intermediate locations such as driveway entrances or intersections.

Standard Specification 619-3.02 J- 4

A non-signalized intersecting roadway shall be delineated by a new series of channelizing devices, and the series will start with one drum equipped with a Type A flashing warning light, placed along the primary roadway after the intersection.

Work Zone Provisions		Maximum Device Spacing	Channelizing Device														
			Drums	Standard Cones	Tail Cones	Extra Tall Cones	Temporary Traffic Signals	Interim Traffic Signals	Vertical Panels	Oversized Work Area Panels	Type II Reflective	Type III Reflective					
Intermediate-term and Long-Term Stationary Work Zones involve work that occupies a location for more than 1 daylight period or nighttime work that occupies a location for more than 1 hour																	
Shoulder/Merging/Shifting Tapers	<40 mph	20 ft.	X									X	X				
	≥ 40 mph	40 ft.	X									X	X				
One-Lane Taper for Alternating Two-Way Traffic		20 ft.	X									X	X				
Longitudinal Lane or Shoulder Closure w/Workers		40 ft.	X		X	X						X	X				
Longitudinal Lane or Shoulder Closure w/No Workers		80 ft.	X		X	X						X	X				
Freeway / Expressway Gores		20 ft.	X		X	X						X	X	O			
Marking for Transverse Bumps ¹		N/A	X ²			X ²						X ²					
Transverse Device within Closed Traffic Lane and/or		800 ft.	X		X	X						X	X	X	O		
Roadway edge exposed with no Edgeline or Permanent Delineators		200 ft.	X		X	X						X	X	X	O		
Roadway Intersection or Commercial Driveway Radii		6 ft.	X			X											
Residential Driveway Radii		6 ft.	X			X											
Removal of existing guide rail	shoulder width ≥ 4	80 ft.	X		X	X	X					X	X	X	O		
	shoulder width < 4	40 ft.	X		X	X	X					X	X	X	O		
Pavement Drop offs > 2 in. and < 24 in.		See Table 619-4															
Drop off ≥ 24 in. within 10 ft. of active travel way; Posted speed ≤ 45 mph; Drop off Length ≤ 100 ft.; Not to last longer than 1 work shift		20 ft.	X			X							X				
Two-Lane Two-Way Operations on expressways and freeways at	along curves	20 ft.	X										X	X	O		
	along tangents	40 ft.	X										X	X	O		
Two-Lane Two-Way Operations on expressways and freeways between Crossovers		40 ft.	X		X	X		X	X	X							
Closed Roads		N/A															X
Closed Sidewalks		N/A															X

NOTES: X = Allowed Blank = Not Allowed O = Optional at Contractor's expense
 1 - A Type 1 Object Marker may be used in lieu of channelizing device.
 2 - Channelizing devices shall be equipped with a flashing warning light.



Date: 7/1/2022 **Author:** US Traffic Control **Project:** ECWA PN202100220 Dover Rd. Water System Improvements
Comments:
 Kandey Co installing 8" waterline in 18" bored casing crossing Lakeshore Rd. at Dover Rd. intersection in Town of Hamburg.
 Westbound NY 5 Right Lane Closure per Standard Sheet 619-30
 Eastbound NY 5 Right Shoulder Closure per Standard Sheet 619-20 As Needed
 Night Time operation as WB Right Lane Closure will be left in place during off hours as required.
 Anticipated Duration is 3 - 4 weeks
 Sheet 5 of 5

**ERIE COUNTY WATER AUTHORITY
CONSTRUCTION AUTHORIZATION**

Project No. 202200113
Budget No. _____

Authorization No.: EC 7258
Date: 5/11/22
Inputted By/Date: _____

May 2022 Estimate Starting Date
May 2023 Estimate Complete Date
X yes no Retirement Involved
 X Public Street
 Private Right of Way
 On Authority's Prop
 Tax Districts _____
Name of Grantor of Easement _____
Date of Easement _____

TITLE OF PROJECT: Croydon Dr. & Hitchcock Dr. at Como Park Blvd. Redundant Supply.

DETAILED DESCRIPTION AND PURPOSE:
Redundant supply to Croydon Dr. & Hitchcock Dr. At Como Park Blvd. in the Town of Cheektowaga.

CLASS OF MAIN INSTALLATION:

 X System Betterment
 Bldr/Cont/Dev. Agree.
 Owner Occupant Cont.
 Special Revenue Cont.

ESTIMATE COST

(1) Total Est. Cost \$ 65,070.00
(2) _____ Meters and Service @ _____ \$ _____
(3) Removal Cost Less Salvage \$ _____
(4) Gross Investment \$ 65,070.00

DEDUCT

(5) Const. Advance \$ _____
(6) Service Conn. \$ _____
(7) Refunds \$ _____
(8) Net Auth. Invest. \$ 65,070.00

BUDGETARY DATA

(9) Tot. Budget Expnd. \$ _____
(10) This Authorization \$ _____
(11) Pre Approved \$ _____
(12) Tot. Apvl. To Date \$ _____
(13) Bal. Budget Expnd. \$ _____

APPROVALS

Preparation Adam Massaro
Sr. Dist. Engr. 10/4/2024
Exec. Engr. Jenaid F. Kmalik 10/7/2024
Admn. Director _____
Legal Dept. _____
Acct. Dept. _____

ESTIMATED EARNINGS & RETURNS

ESTIMATED INCREASE IN REVENUES

(14) Customers @ _____ \$ _____
(15) _____ Hydrants @ _____ \$ _____
\$ _____

EST. SAVINGS IN OPERATING EXPENSES

(16) _____ \$ _____
(17) Gross Increase in Earnings \$ _____

REVENUE DEDUCTIONS

(18) Operating Exp. _____ % \$ _____
(19) Depreciation \$ _____
(20) Total Deductions \$ _____
(21) Net Income Loss \$ _____
(22) % Return on Investment _____
(21) divided by 8) _____ %

RESOLUTION APPROVING

Adopted _____
Item No. _____



3030 Union Road
Cheektowaga, NY 14227
(716) 684-1510
www.ecwa.org

PROJECT No.: 202200113
PROJECT Name: Como Park
Water System Improvements
DATE: Wednesday, May 11, 2022

DESIGNED BY: WWW
CHECKED BY: WRW
PAGE: 1 of 1

The cost estimate herein was prepared utilizing the Kandey Contract for Water Distribution System Repairs & Improvements (ECWA 202100009)

Como Park @ Hitchcock

Bid Item	QTY	Unit Cost	Computed Price
Item 7B1 - For Test Pit Excavation and Backfill	4	\$650.00	\$2,600.00
Item 9A2 - For installing 1 1/2-inch and 2-inch Copper Service	2	\$2,250.00	\$4,500.00
Item 9B2 - For installing installing 1 1/2-inch and 2-inch Additional Copper Tul	90	\$25.00	\$2,250.00
Item 13F1 - For Lawn Restoration	60	\$30.00	\$1,800.00
Project Total:			\$11,150.00

Como Park @ Croydon

Bid Item	QTY	Unit Cost	Computed Price
Item 1A1 - For installing 4-inch to 8-inch Watermain, 6-feet or less cover	20	\$80.00	\$1,600.00
Item 1A2 - For installing 4-inch to 8-inch Watermain, greater than 6-feet of co	33	\$95.00	\$3,135.00
Item 3C2 - For installing 4-inch to 8-inch Cut-in Tee with Valve Cluster	2	\$5,300.00	\$10,600.00
Item 5A1 - For installing 4-inch to 8-inch DI Fittings with restraints	6	\$250.00	\$1,500.00
Item 6A1 - For installing Polyethylene Encasement for DI Pipe and Fittings	135	\$1.00	\$135.00
Item 7B1 - For Test Pit Excavation and Backfill	3	\$650.00	\$1,950.00
Item 8A1 - For furnishing and installing Select Backfill	30	\$55.00	\$1,650.00
Item 9C2 - For installing Temporary 2-inch Blow-off Assembly	3	\$250.00	\$750.00
Item 10A1 - For furnishing and Installing 18-inch Diameter Casing Pipe	72	\$400.00	\$28,800.00
Item 12A5 - For Testing and Disinfection of 12-inch Watermain (<200 ft)	125	\$10.00	\$1,250.00
Item 13F1 - For Lawn Restoration	85	\$30.00	\$2,550.00
Project Total:			\$53,920.00

Como Park Water System Improvements Total Cost: \$65,070.00



ERIE COUNTY WATER AUTHORITY

REQUISITION ON STORES

Project No.: 202200113 Date: 05-17-22 Requisition No.: _____

Issue To: Kandey Co., Inc.

For Use In: 8" WM Road Crossing and 2" WM Road Crossing

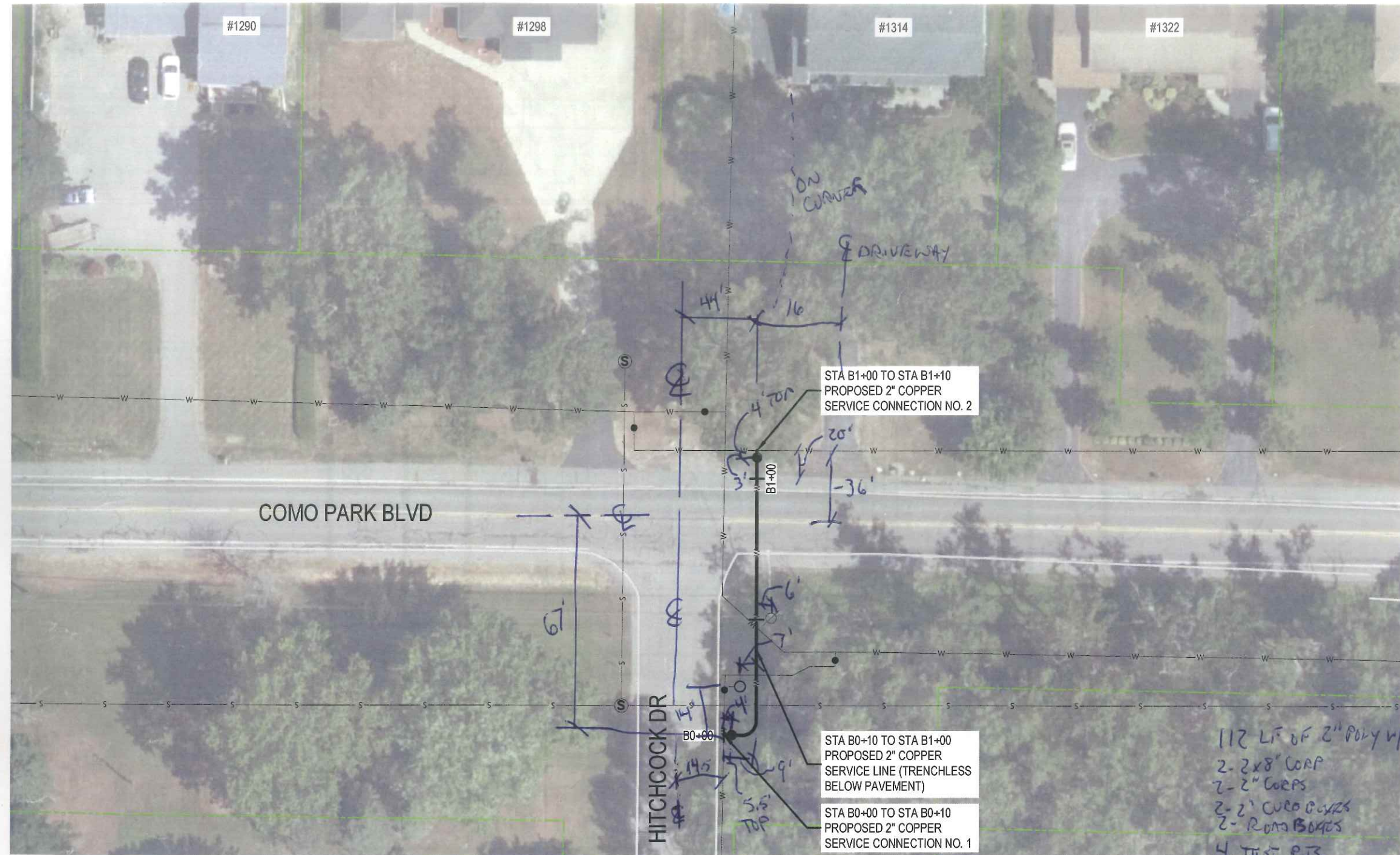
Location: Como Park at Hitchcock and Croydon

OWIP: _____ EC NO.: 107200-007236 Svc. No.: _____

Quantity	Description	Part #	On Site	Used	Ret.
160 ft	8" DI Pipe				
160 ft	Poly Wrap				
8	8" 45° DI Bends MJ w/ Accessories				
4	8" Spigot 45° DI Bends MJ w/ Accessories				
2	8" 22.5° DI Bends MJ w/ Accessories				
4	8"x12"L Anchor Nipple				
2	8"x8"x8" DI Tee w/ Accessories				
2	8" HYMAX				
4	8" Solid Sleeve w/ Accessories				
3	8"x2" DI Tapped Cap MJ w/ Accessories				
4	8" Gate Valve				
4	Complete Valve Box				
5	8" Joint Restraints – Complete both sides				
36	8" DI Mega Lugs				
4	8" CI Mega Lugs				
24	Ductile Lugs				
32	3/4" All Thread				
24	3/4" Nuts				
5	2" Compression x Compression Corp				
5	2" Compression Curb Stop				
150	2" Copper (Full Coils – Longest Length Possible)				
1	2" Tapping Saddle for DI Pipe				
1	2" Tapping Saddle for CI Pipe				
2	Complete Roadway Box				

Kandey Co., Inc. _____

Inspector _____



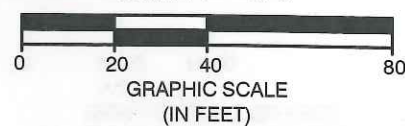
General Notes

- 1.) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ERIE COUNTY WATER AUTHORITY STANDARD DETAILS AND SPECIFICATIONS, ECWA PN: 202100009
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- 5.) SEE STANDARD DETAIL GENERAL NOTES SECTION ON MISCELLANEOUS DETAILS
- 6.) CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION
- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

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- = TRAFFIC MH
- = STORM MH
- = CATCH BASIN
- = UTILITY POLE
- = FIRE HYDRANT
- = WATER VALVE
- = TREES
- = EXISTING WATERLINE
- = NEW WATERLINE
- = SANITARY SEWER
- = STORM SEWER
- = GAS MAIN

SCALE: 1" = 40'-0"



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

10x40 = 400/9 = 44.44
61sy

COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:

COMO PARK BLVD AT
HITCHCOCK DR - PLAN

Date:

MAY 2022

Scale:

AS SHOWN

Drawn/Revised By:

WWW

Sheet

W-2

Page: 2 of 16

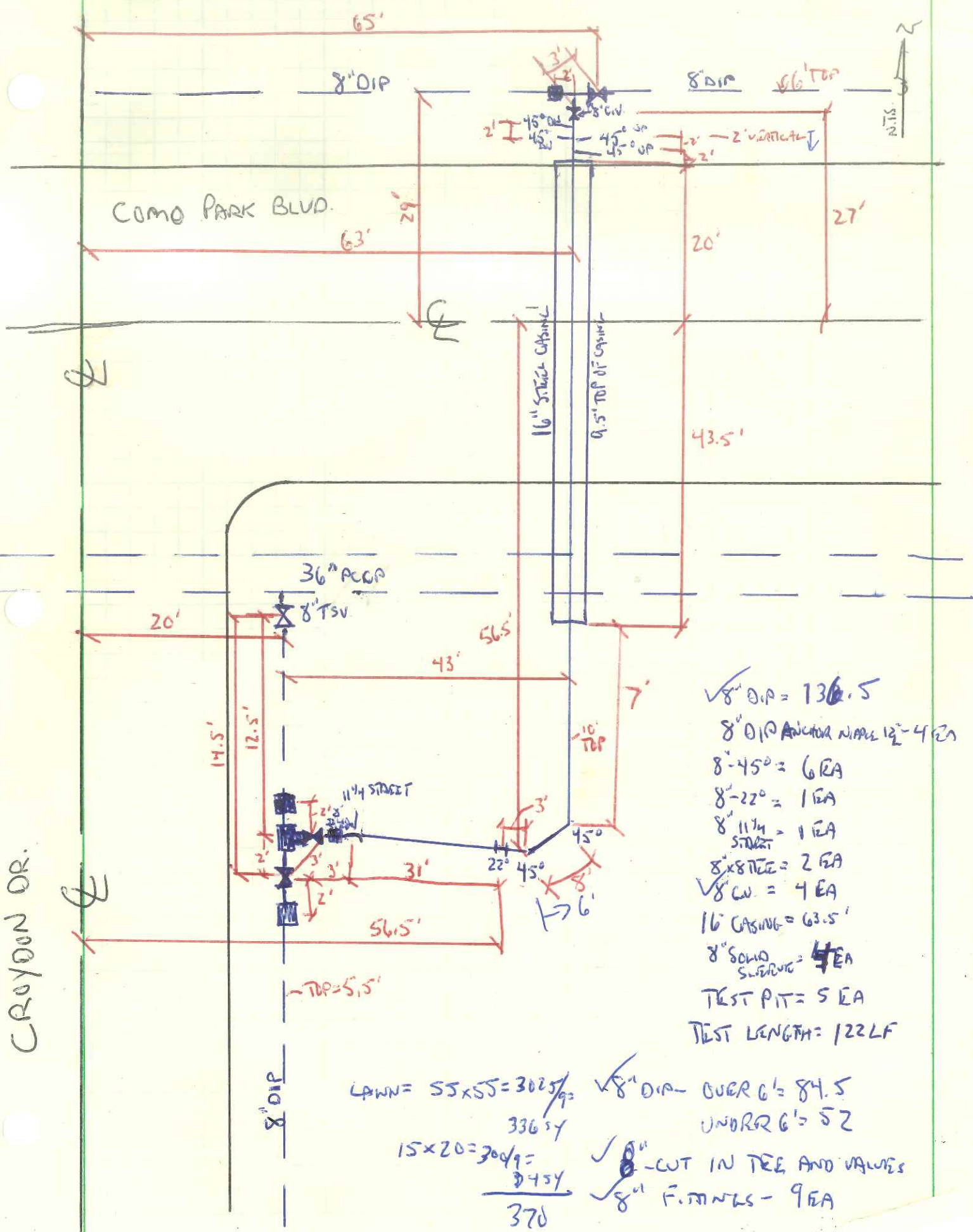
File Name:

202200113 - COMO PARK DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.

CRAYDON DR.



- √ 8" O.P. = 136.5
- 8" O.P. ANCHOR W/ 12" - 4 EA
- 8" - 45° = 6 EA
- 8" - 22° = 1 EA
- 8" 1 1/4" STREET = 1 EA
- 8" x 8" TEE = 2 EA
- √ 8" CW = 4 EA
- 16" CASING = 63.5'
- 8" SOLID SUBMERG = 4 EA
- TEST PIT = 5 EA
- TEST LENGTH = 122 LF

$LAWN = 55 \times 55 = 3025/9 = 336.11$
 $15 \times 20 = 300/9 = 33.33$







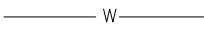
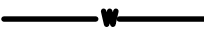

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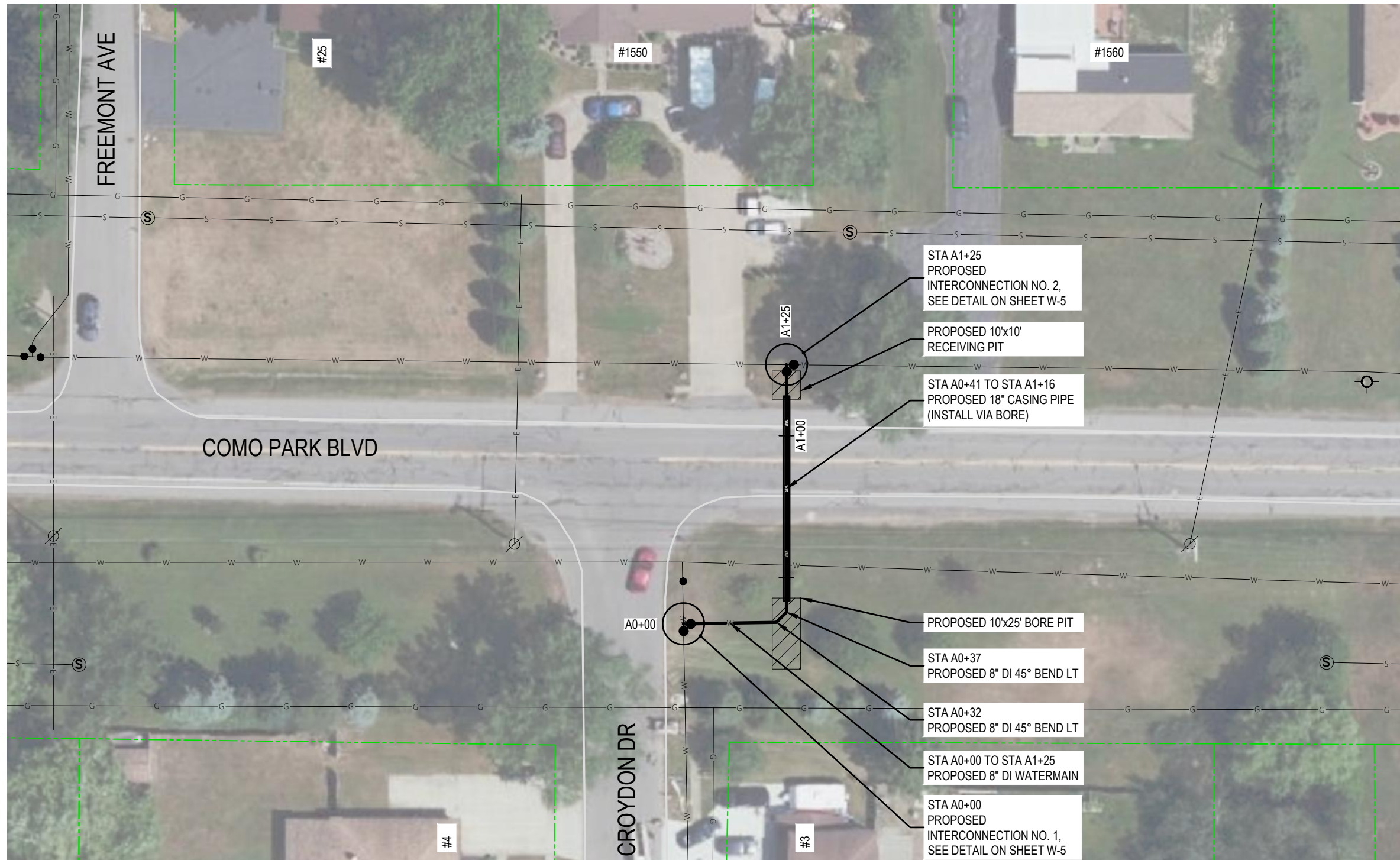
- √ 8" O.P. - OVER G' = 84.5
- UNDER G' = 52
- √ 8" - CUT IN TEE AND VALVES
- √ 8" FITTINGS - 9 EA

General Notes

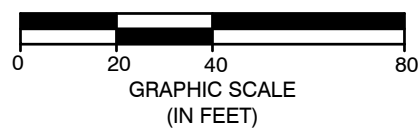
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SCALE: 1" = 40'-0"



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
COMO PARK BLVD AT
CROYDON DR - PLAN

Date:
MAY 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

W-1

Page: 1 of 16

File Name:
202200113 - COMO PARK DESIGN









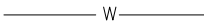
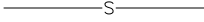
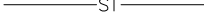


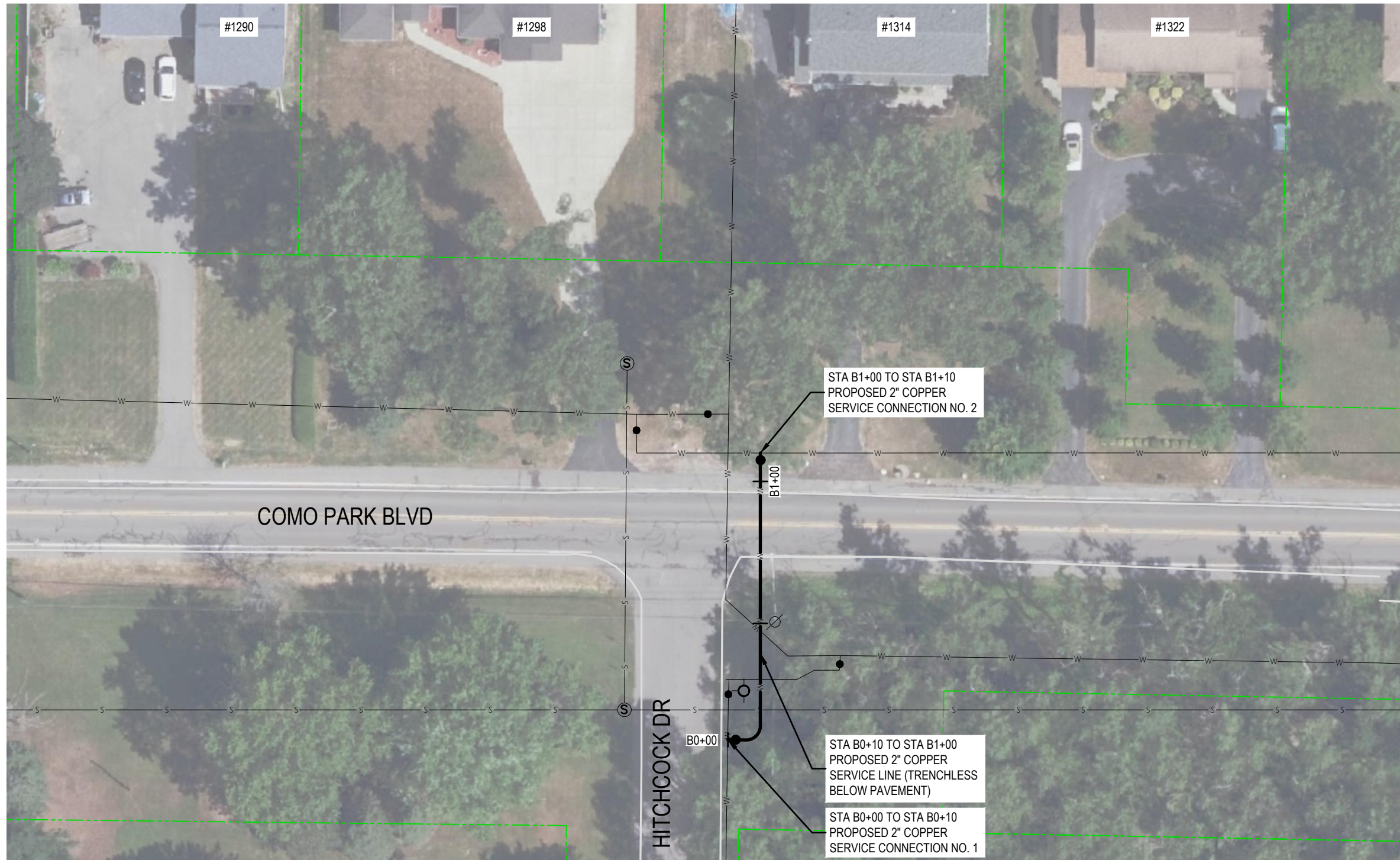
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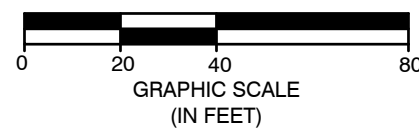
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SCALE: 1" = 40'-0"



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
COMO PARK BLVD AT
HITCHCOCK DR - PLAN

Date:
MAY 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

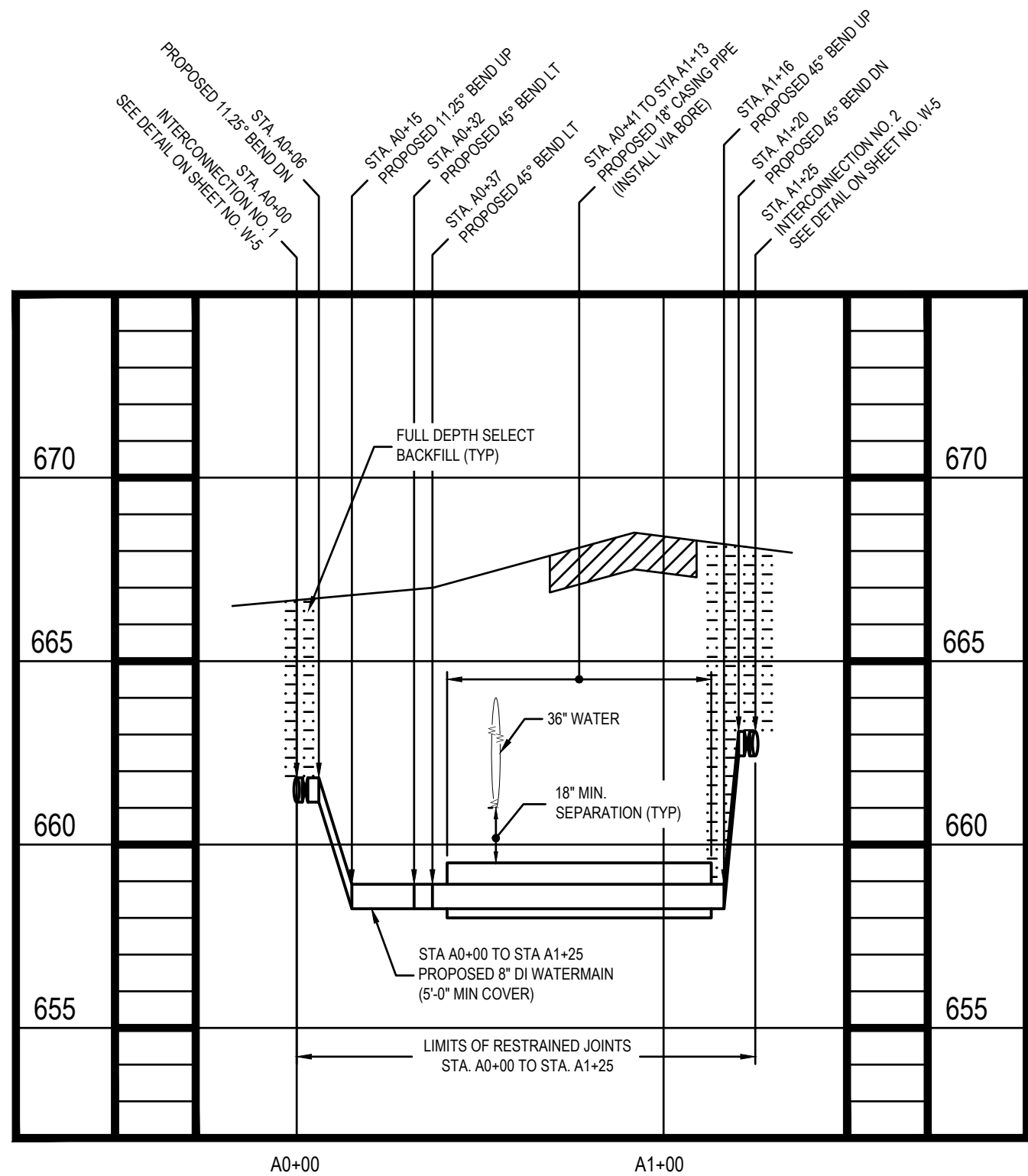
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Page: 2 of 16

File Name:
202200113 - COMO PARK DESIGN



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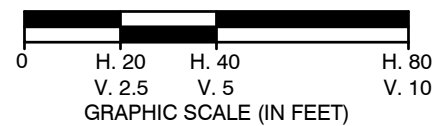
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SCALE: HORZ. 1" = 40'-0"; VERT. 1" = 5'-0"



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
COMO PARK BLVD AT
CROYDON DR - PROFILE

Date:
MAY 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

W-3

Page: 3 of 16

File Name:
202200113 - COMO PARK DESIGN






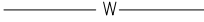



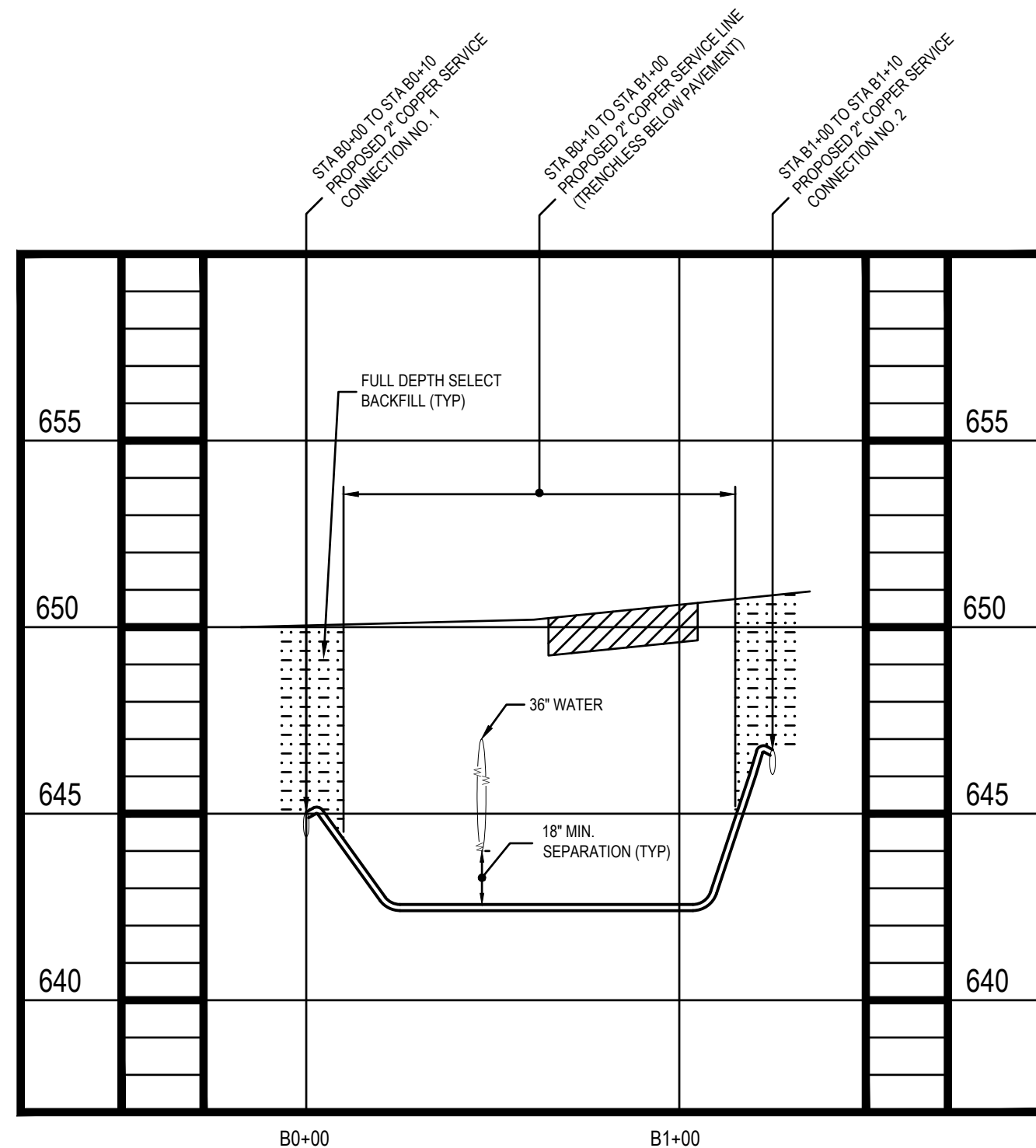
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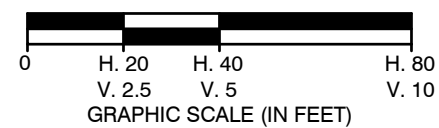
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SCALE: HORZ. 1" = 40'-0"; VERT. 1" = 5'-0"



Approved By:



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name

COMO PARK BLVD
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202200113

TOWN OF CHEEKTOWAGA
 ERIE COUNTY - NEW YORK

Name:
 COMO PARK BLVD AT
 HITCHCOCK DR - PROFILE

Date:
 MAY 2022

Scale:
 AS SHOWN

Drawn/Revised By:
 WWW

Sheet

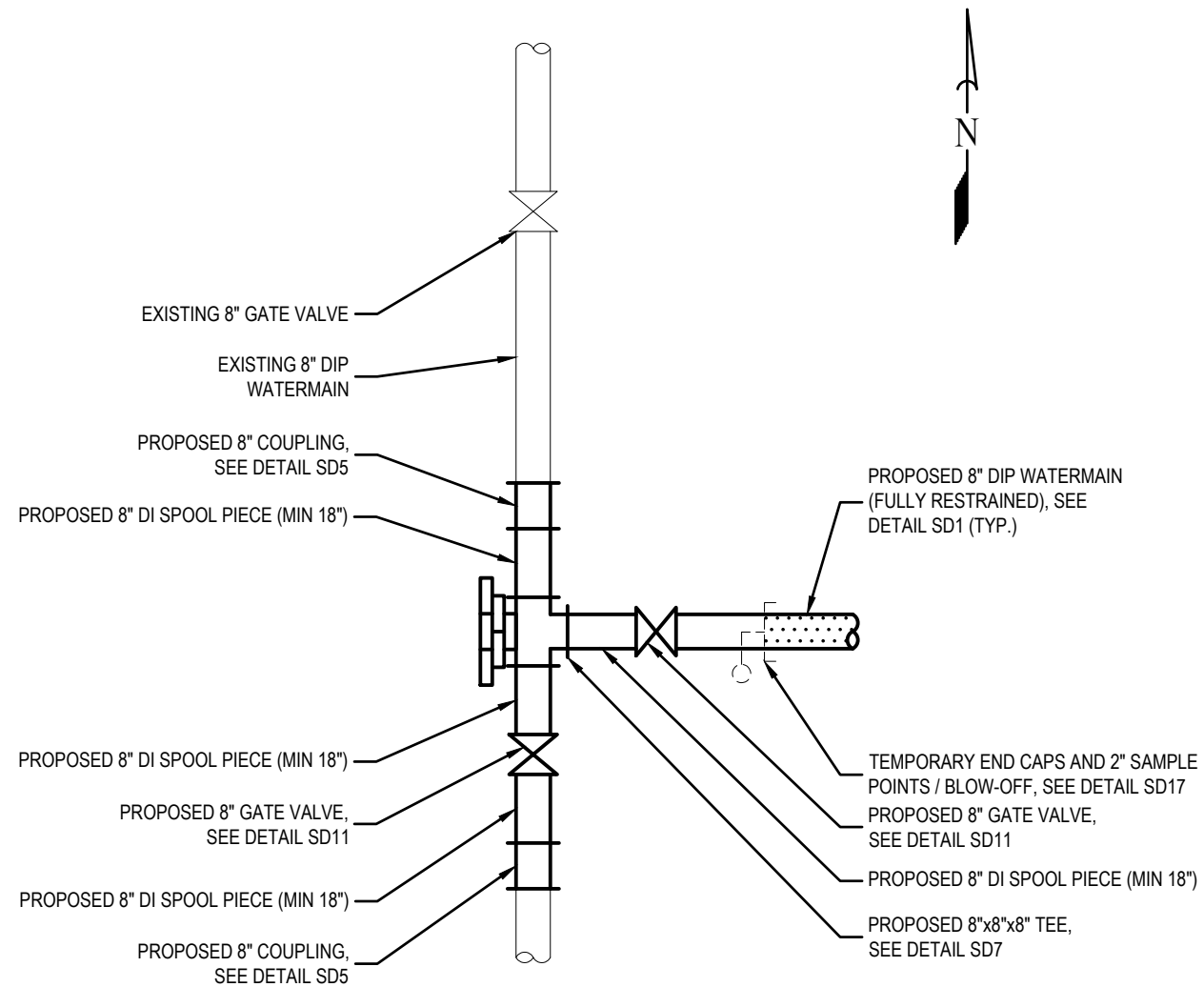
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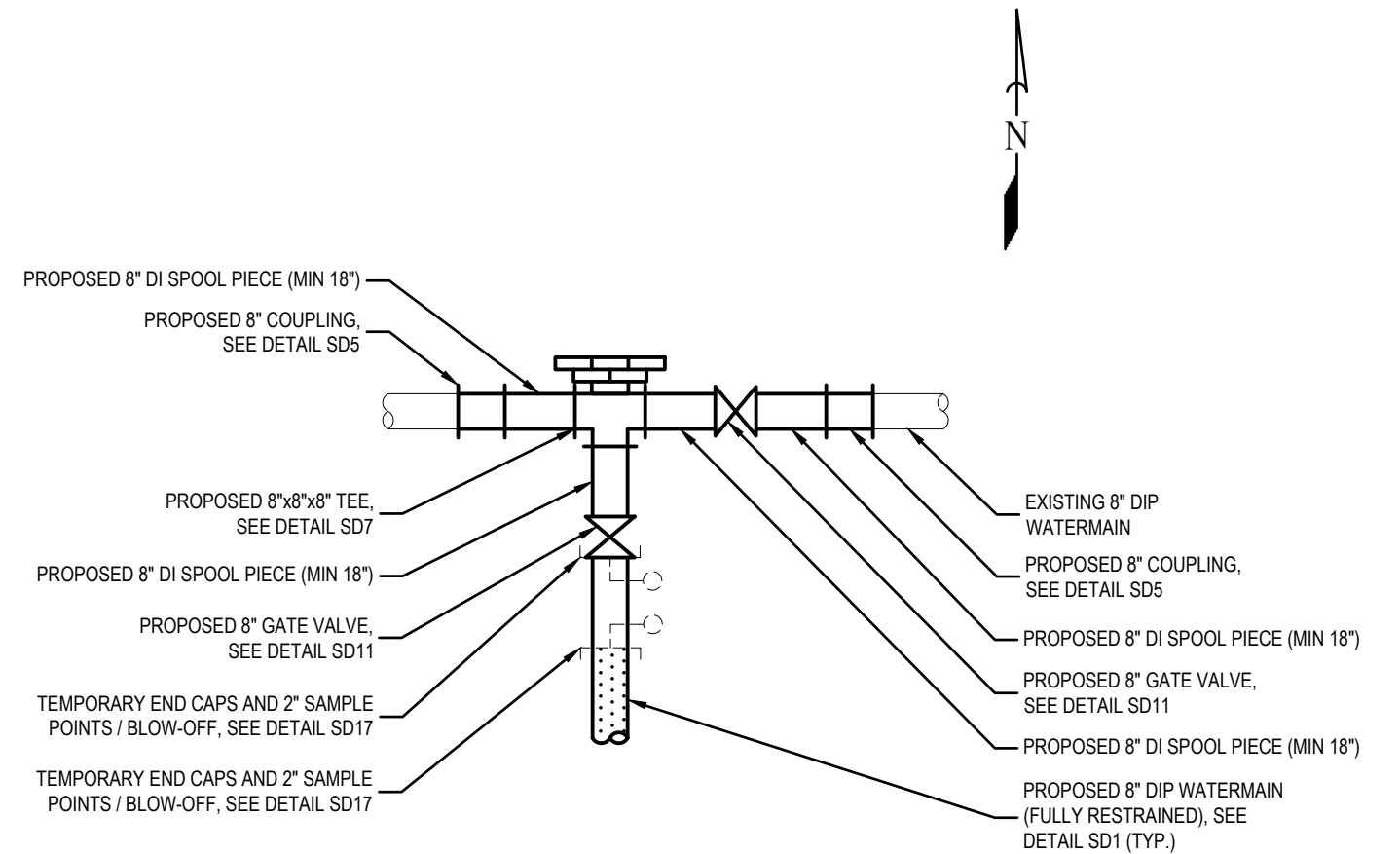
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 202200113 - COMO PARK DESIGN



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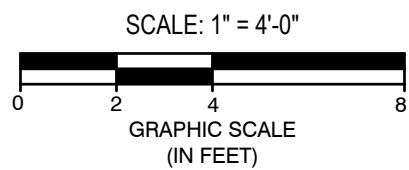


INTERCONNECTION NO. 1



INTERCONNECTION NO. 2

PRESSURE TEST AND DISINFECTION LIMITS



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
INTERCONNECTIONS
NO. 1 AND NO. 2

Date:
MAY2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

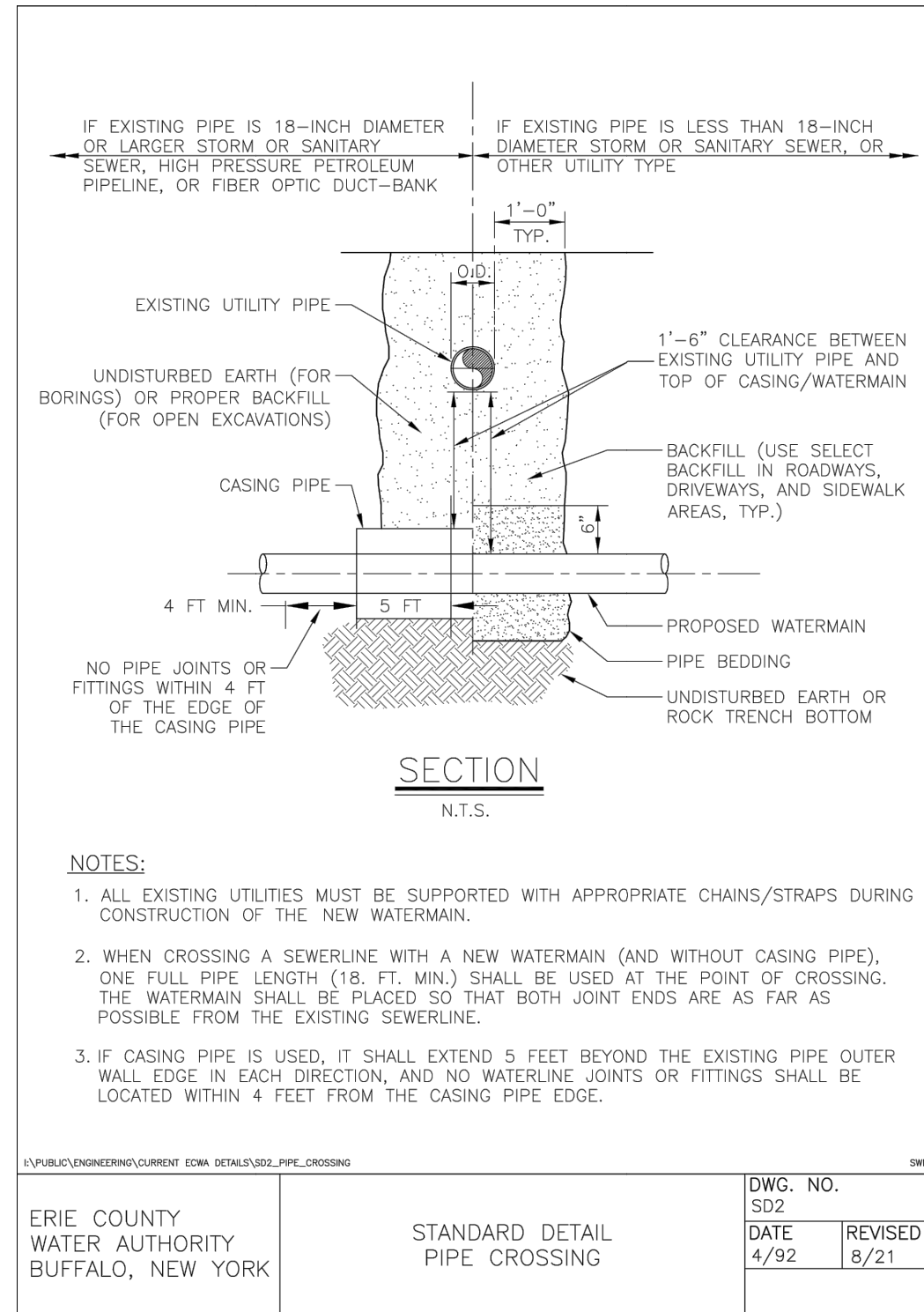
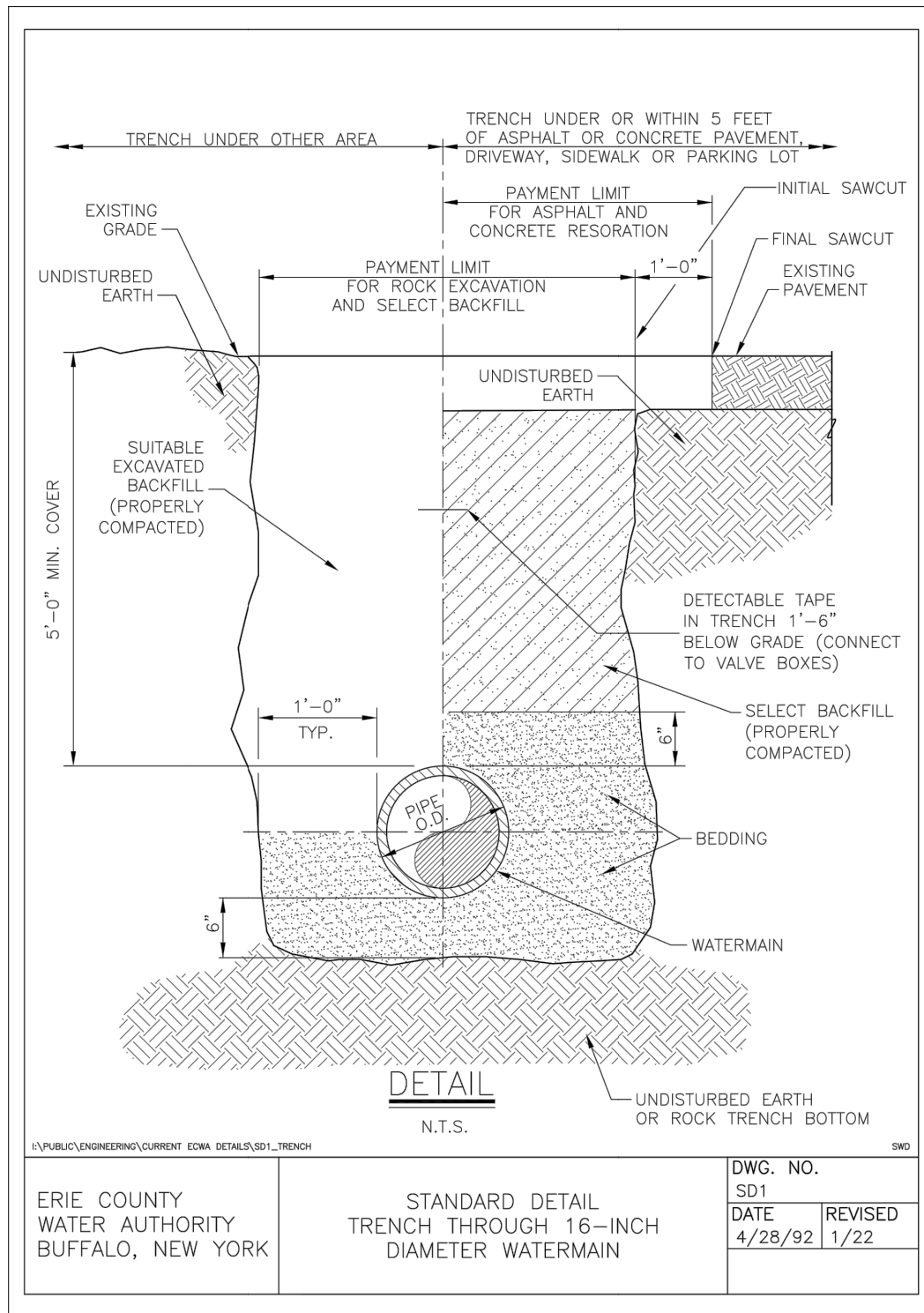
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Page: 5 of 16

File Name:
202200113 - COMO PARK DESIGN



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Approved By:



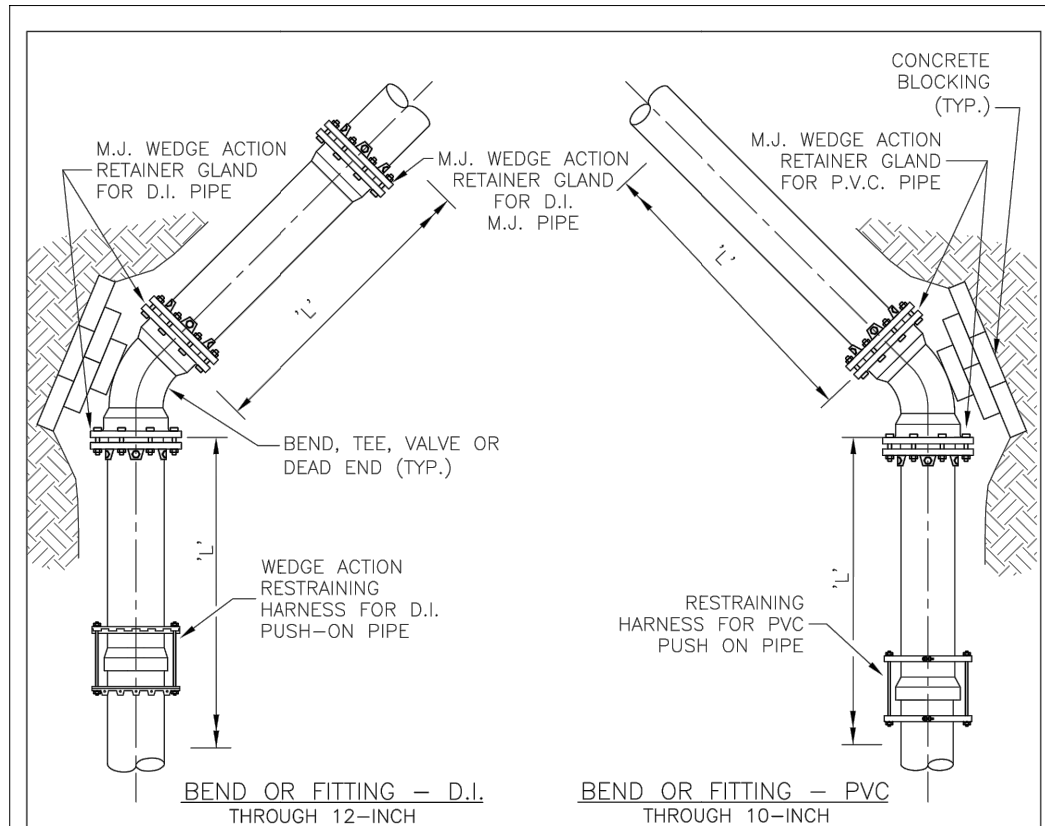
ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name
**COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS
Date: MAY 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

Sheet
W-6
Page: 6 of 16
File Name:
202200113 - COMO PARK DESIGN



RESTRAINED JOINT SCHEDULE					
PIPE SIZE	PIPE TYPE	11.25° ELBOW	22.5° ELBOW	45° ELBOW	TEE BRANCH, 90° BEND, VALVE OR DEAD END
		'L'	'L'	'L'	'L'
8"	PVC/DIP	13'/12"	25'/23"	48'/45"	99'/94"
10"	PVC/DIP	15'/14"	30'/28"	57'/54"	120'/112"
12"	DIP	16'	32'	63'	130'
16"	DIP	20'	40'	81'	170'

NOTES:

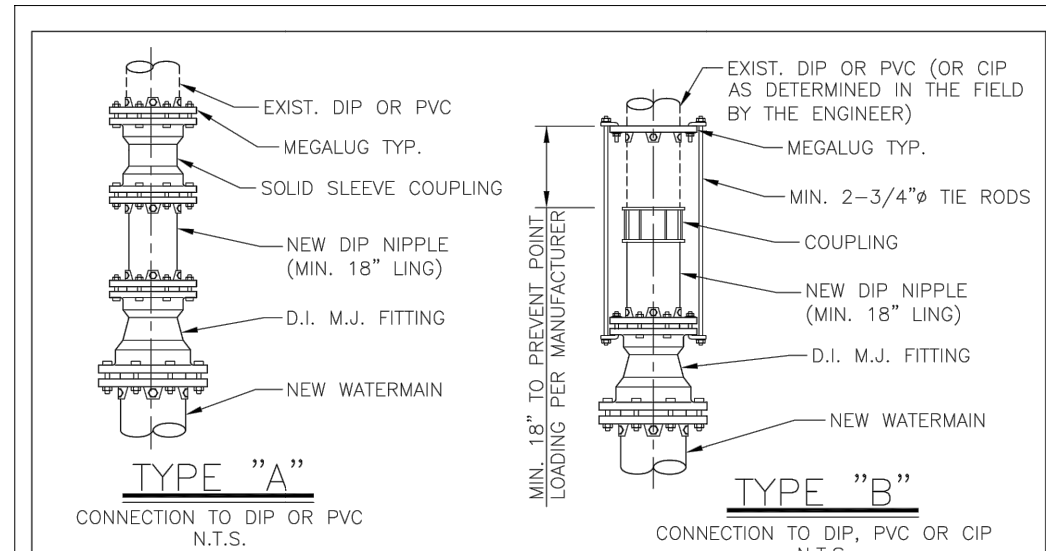
- DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINING PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

PLAN

N.T.S.

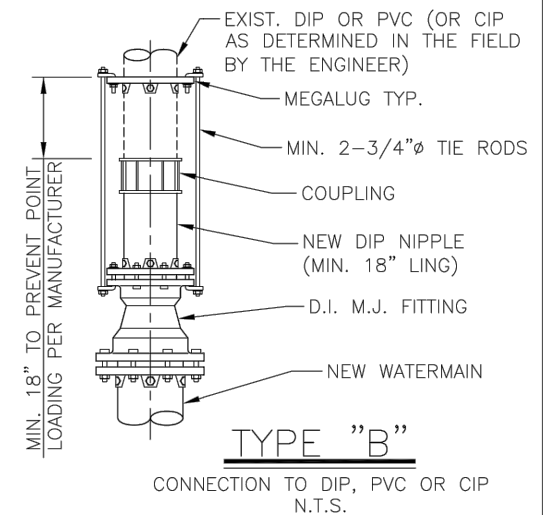
I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD4_REST_JOINT_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4	
		DATE 4/28/92	REVISED 7/16



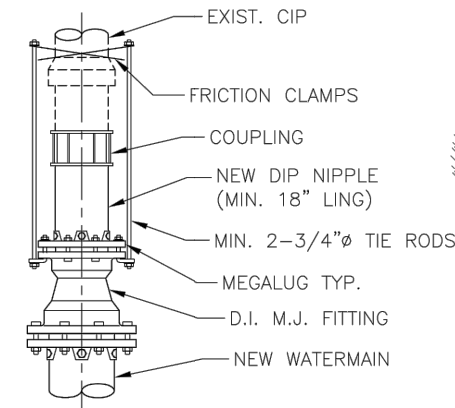
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CONNECTION TO DIP OR PVC
N.T.S.



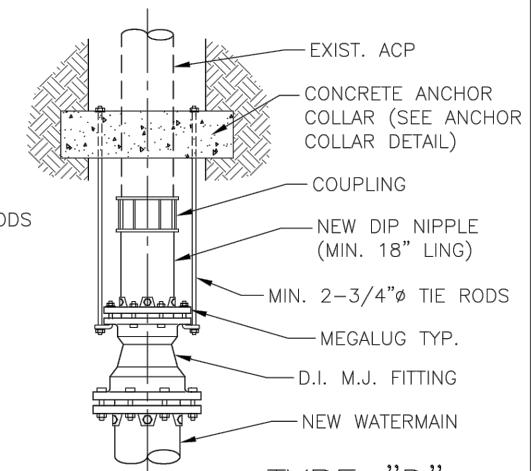
TYPE "B"

CONNECTION TO DIP, PVC OR CIP
N.T.S.



TYPE "C"

CONNECTION TO CIP
N.T.S.



TYPE "D"

CONNECTION TO ACP
N.T.S.

NOTES:

- VALVES AND TEES MAY BE HARNESSSED SIMILARLY.
- HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE—PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
- COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
- TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD5_CONN_EXIST_WMMAIN

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD5	
		DATE 3/05	REVISED 7/16

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
MAY 2022

Scale:
AS SHOWN

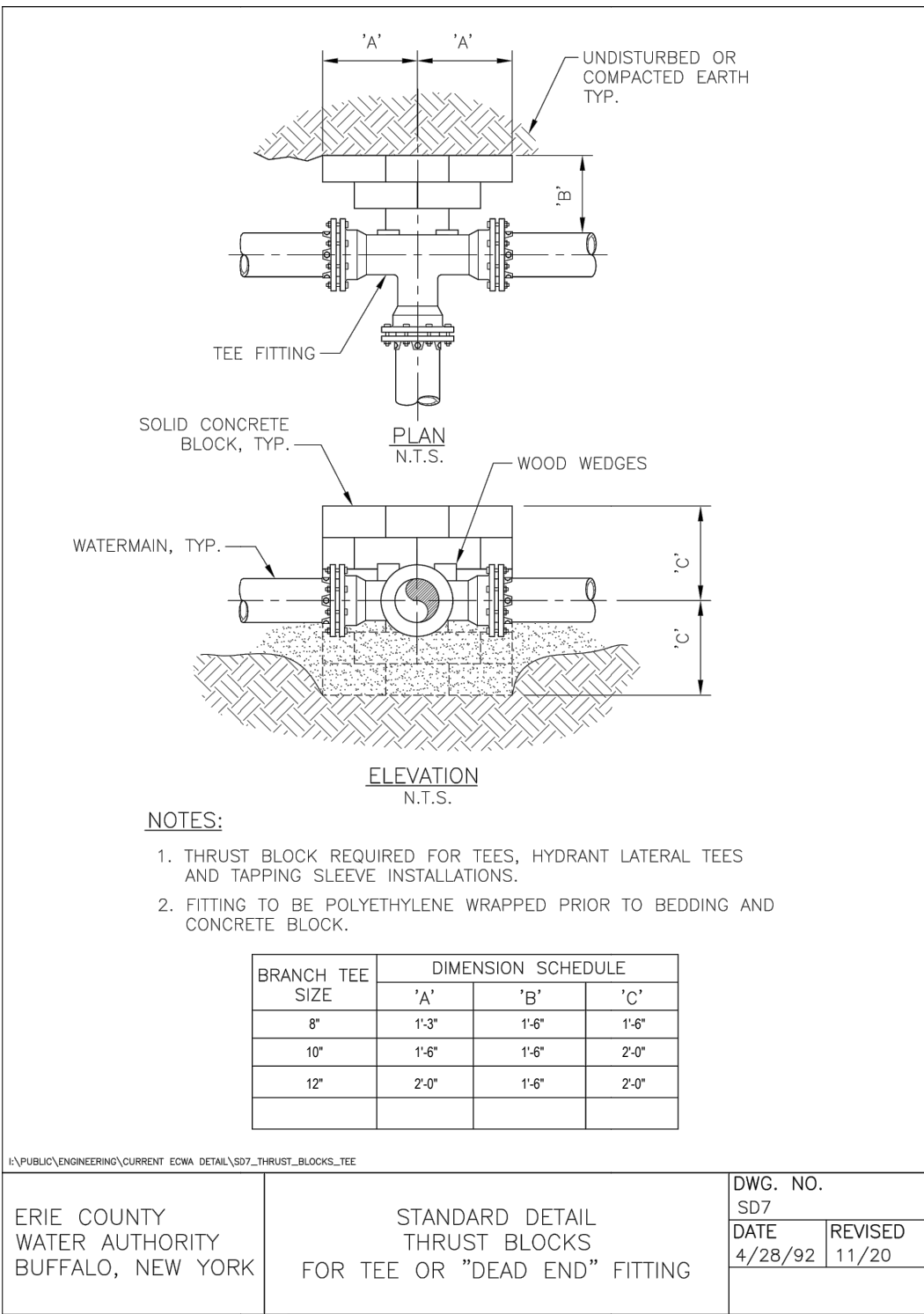
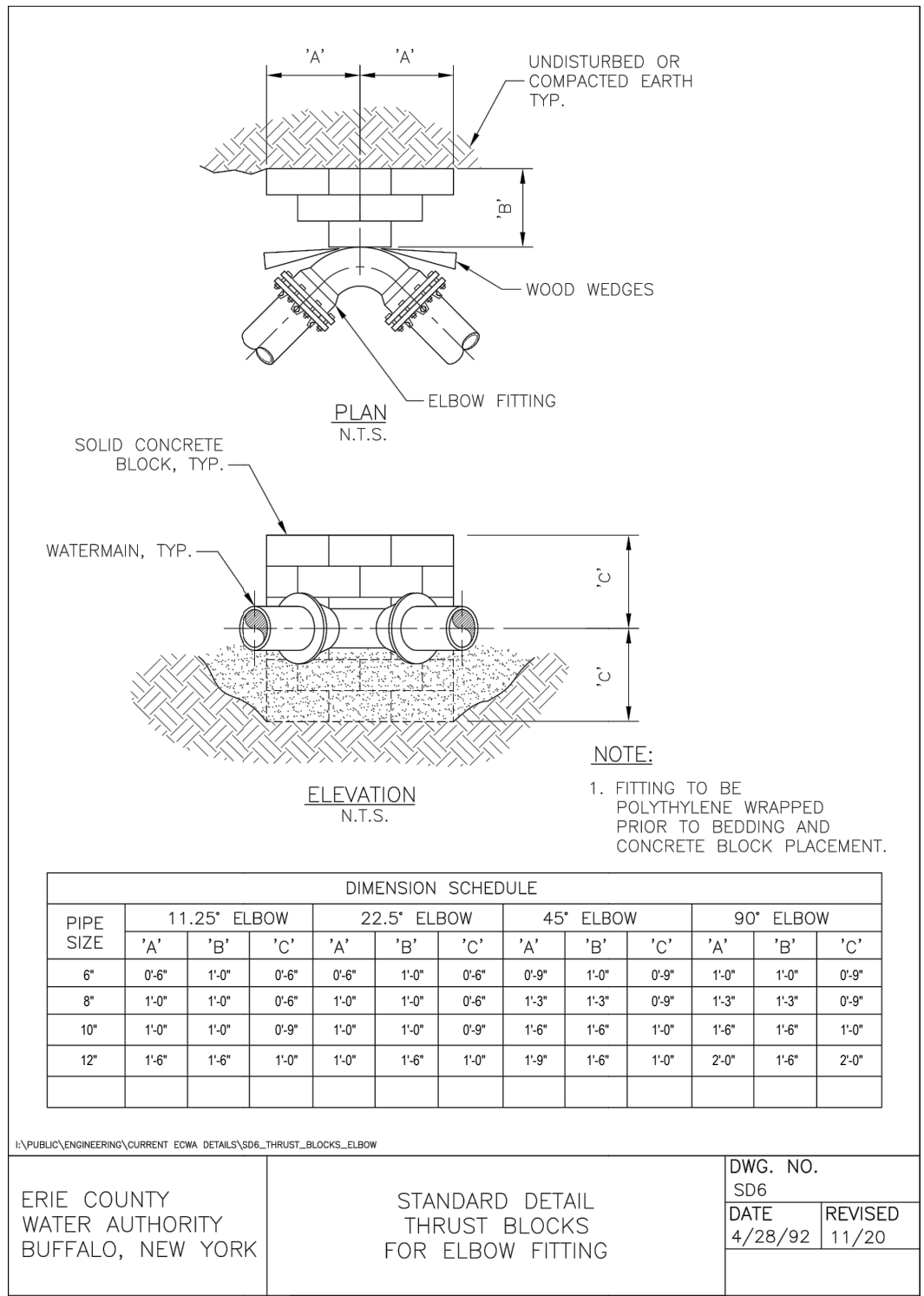
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File Name:
202200113 - COMO PARK DESIGN



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: MAY 2022

Scale: AS SHOWN

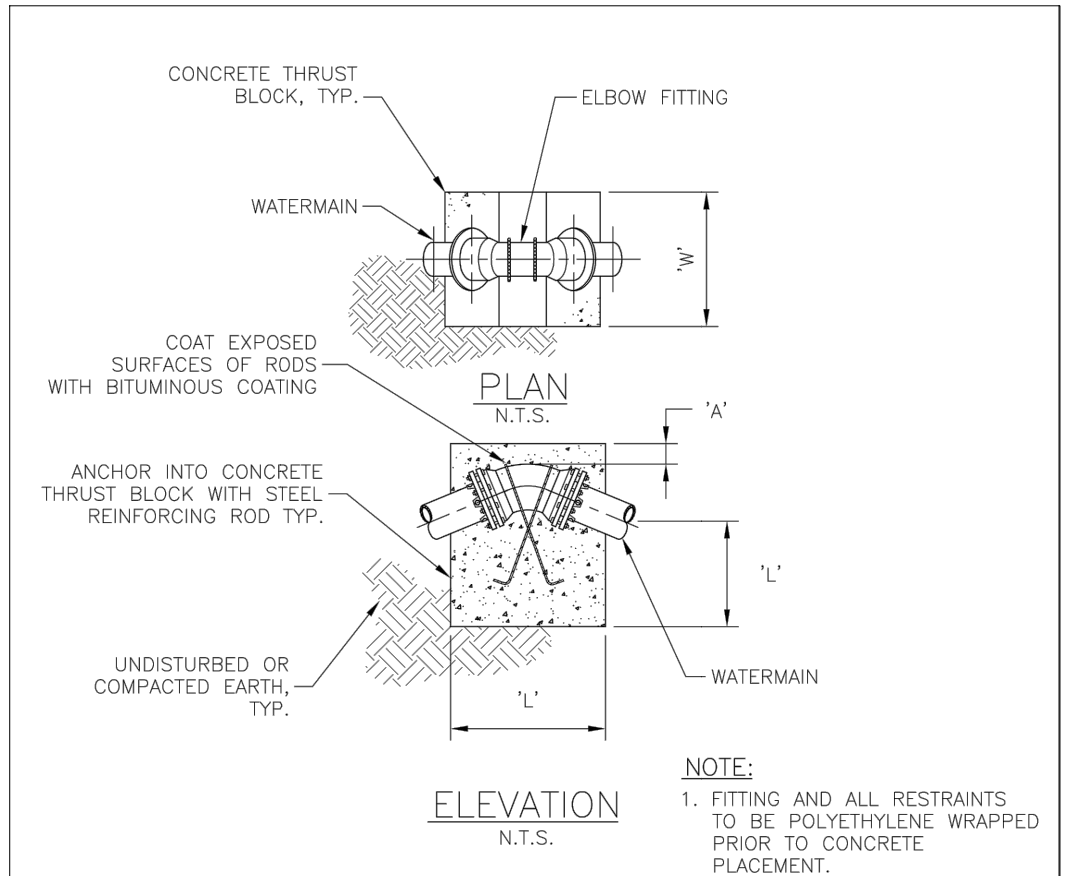
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File Name: 202200113 - COMO PARK DESIGN

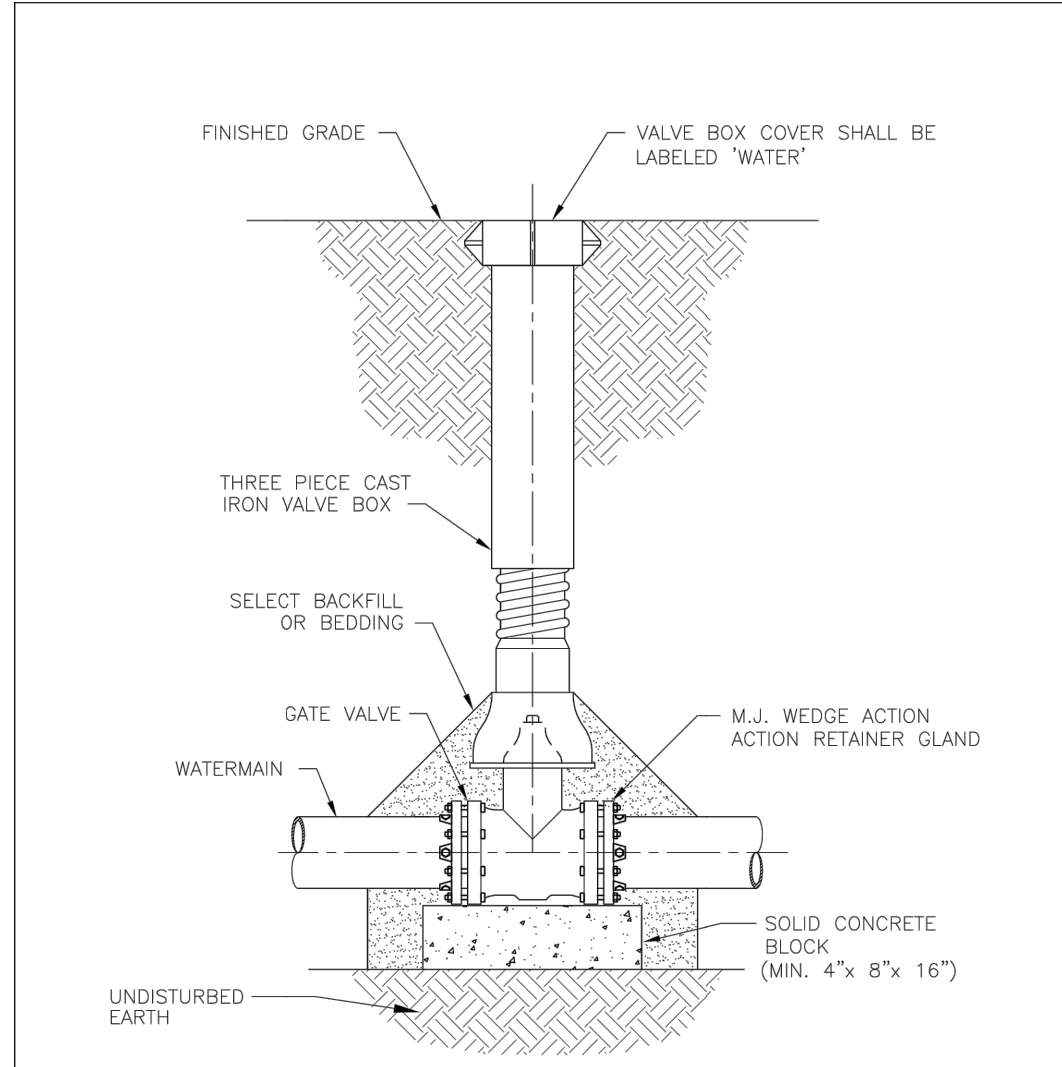


DIMENSION SCHEDULE

PIPE SIZE	PIPE TYPE	11.25° ELBOW				22.5° ELBOW				45° ELBOW			
		'A'	'W'	'L'	ROD ϕ	'A'	'W'	'L'	ROD ϕ	'A'	'W'	'L'	ROD ϕ
8"	PVC/DIP	1'-0"	3'-0"	3'-0"	1/2"	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-6"	1/2"
10"	PVC/DIP	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-9"	1/2"
12"	DIP	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-6"	1/2"	1'-0"	5'-0"	5'-0"	1/2"

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD8_THRUST_BLOCKS_VBEND

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8	
		DATE 4/28/92	REVISED 11/20



NOTES:
 1. VALVE SHALL NOT SUPPORT VALVE BOX.
 2. GATE VALVE SHALL BE INSTALLED LEVEL.
 3. VALVE BOX SHALL BE PLUMB TO GRADE, WITH OPERATING NUT CENTERED IN BOX.

SECTION
N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD11_GATE_VALVE_SET

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GATE VALVE SETTING	DWG. NO. SD11	
		DATE 4/28/92	REVISED 02/17

Approved By:



Project Name

**COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: MAY 2022

Scale: AS SHOWN

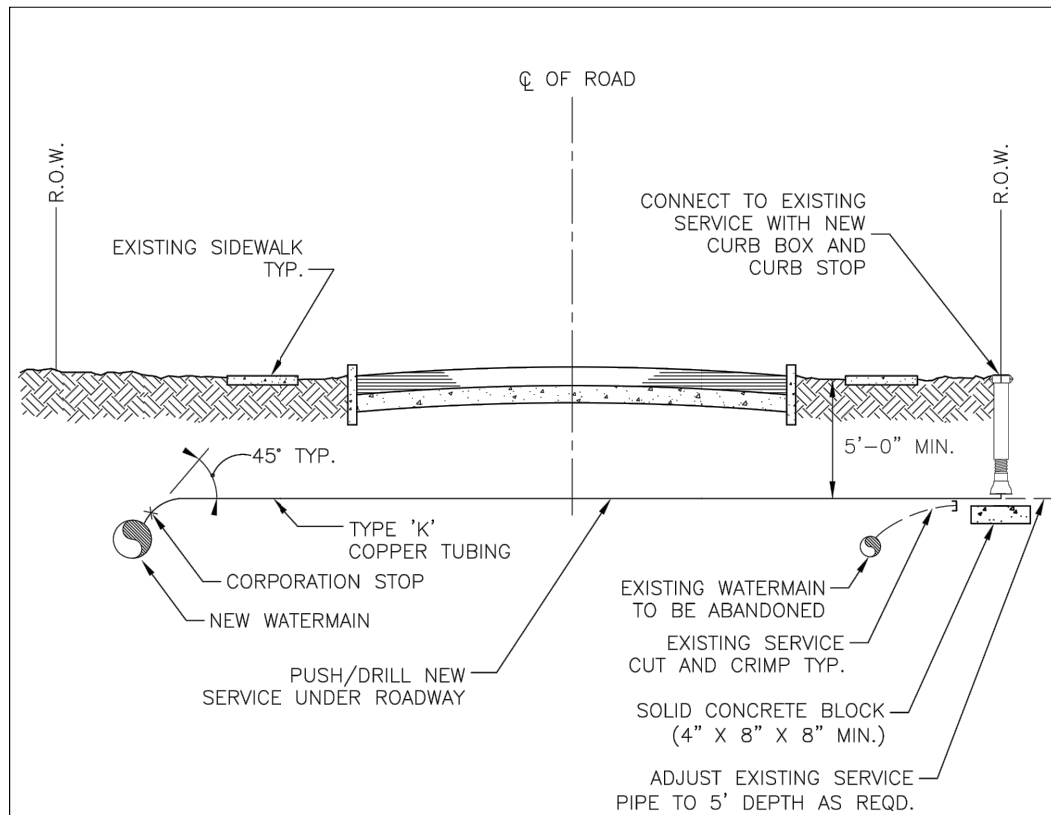
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File Name: 202200113 - COMO PARK DESIGN



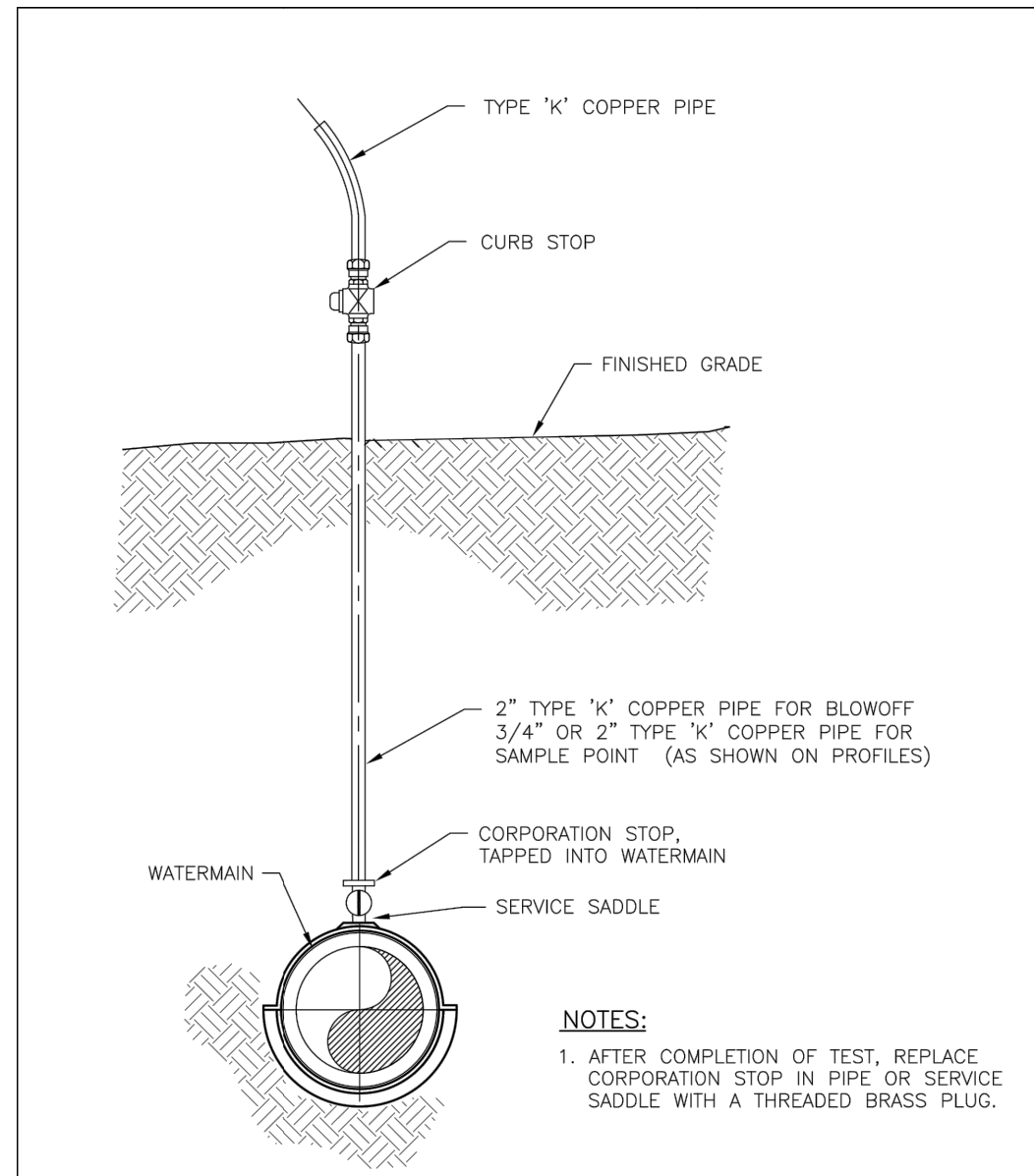
NOTES:

1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
 - A. WHEN SERVICES AND PLACED ON 4" OR SMALLER PIPES.
 - B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 6" PIPE.
 - C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
 - D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
 - E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
 - F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. USE POLYETHYLENE FOR 3/4" AND 1" SERVICES GREATER THAN 100 FEET IN LENGTH, AND FOR 1-1/2" AND 2" SERVICES GREATER THAN 60 FEET IN LENGTH. ALL POLYETHYLENE SERVICES SHALL INCLUDE A TRACER WIRE FOR DETECTION BY ECWA FORCES.
5. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD16_SERVICE_REPLACE

SWD

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD16	
		DATE 4/92	REVISED 10/20



NOTES:

1. AFTER COMPLETION OF TEST, REPLACE CORPORATION STOP IN PIPE OR SERVICE SADDLE WITH A THREADED BRASS PLUG.

ELEVATION

N.T.S.

I:\PUBLIC\ENGINEERING\2005_DETAILS\SD17_TEMP_BO_SAMP_PT

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17	
		DATE 4/28/92	REVISED 10/05

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
MAY 2022

Scale:
AS SHOWN

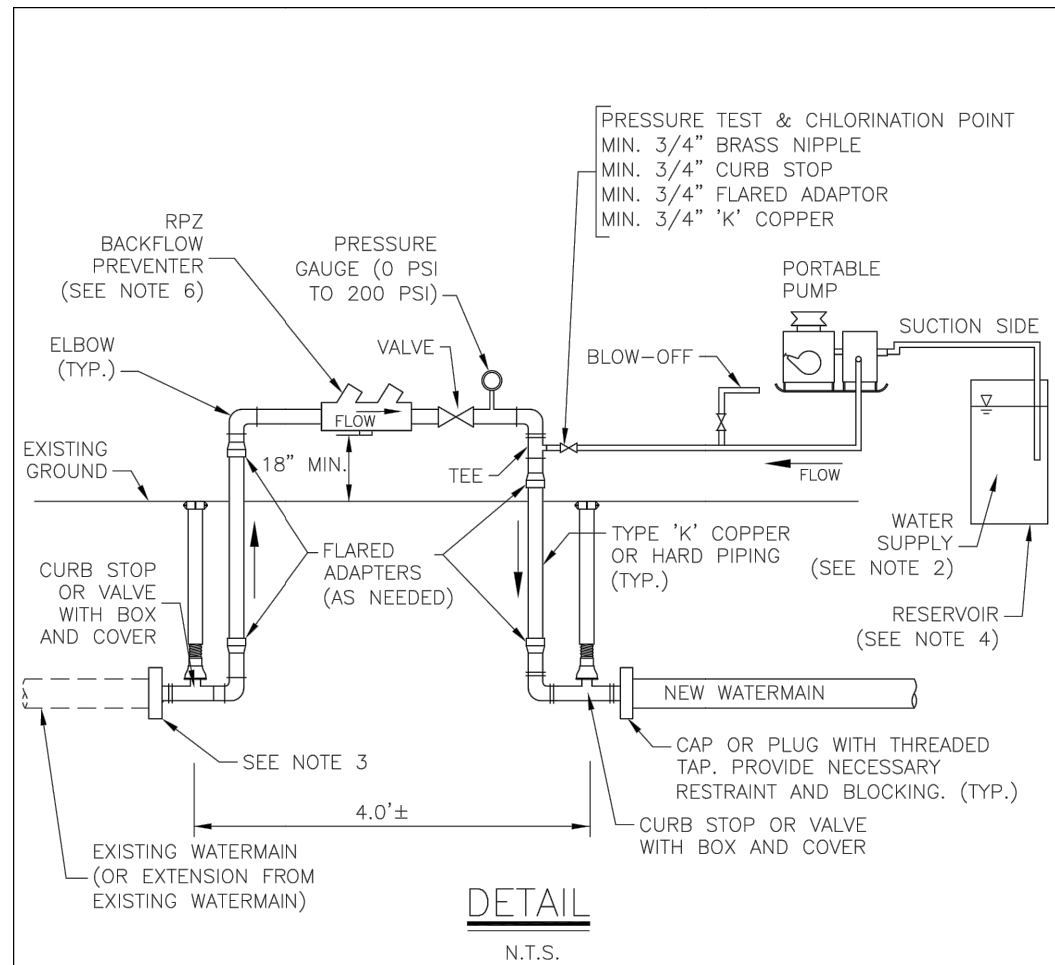
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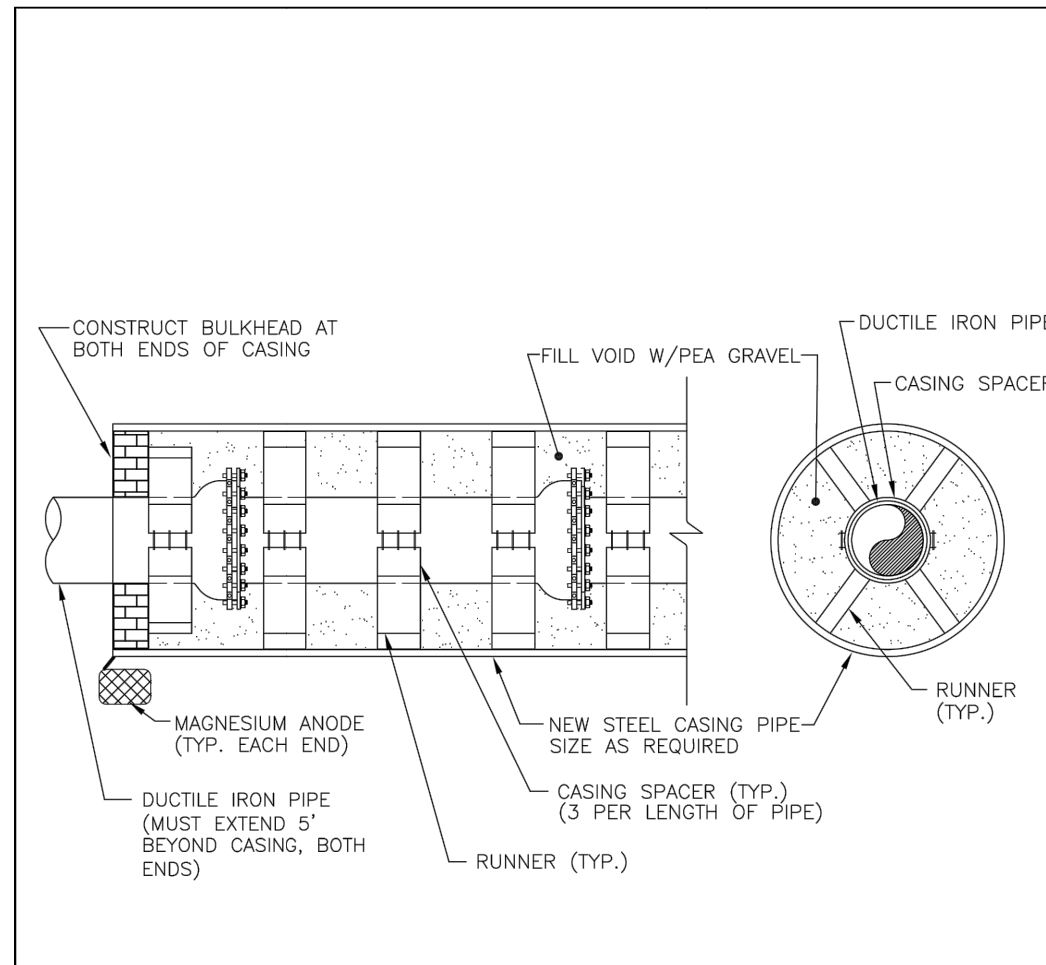


NOTES:

1. BACTERIOLOGICAL WATER SAMPLES SHALL BE TAKEN AT BEGINNING AND END OF NEW WATERMAIN SECTION AND AT MAXIMUM 1,000 FT. SPACINGS.
2. PROVIDE CLEAN WATER SUPPLY FOR PRESSURE TESTING. PROVIDE CHLORINATED WATER SUPPLY FOR DISINFECTION.
3. CAP OR PLUG WITH THREADED TAP OR APPROPRIATE TAP INTO MAIN. PROVIDE NECESSARY RESTRAINT AND BLOCKING.
4. DIAMETER OF RESERVOIR SHALL BE 15" OR LESS. IF DIAMETER IS GREATER THAN 15", LEAKAGE TEST SHALL BE RUN A MINIMUM OF 4 HOURS.
5. PRESSURE TEST CANNOT EXCEED 2,000 LINEAR FEET PER TEST SECTION.
6. BACKFLOW PREVENTER TO BE SIZED TO ACHIEVE MIN 3 FPS SCOUR VELOCITY DURING FLUSHING OF NEW WATERLINE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD23_PRESS_TEST_SCHEM

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PRESSURE TESTING AND DISINFECTION APPARATUS SCHEMATIC	DWG. NO. SD23	
		DATE 6/00	REVISED 11/20



NOTES:

1. ALL PIPE JOINTS WITHIN THE CASING PIPE SHALL BE RESTRAINED JOINTS.
2. THE PROPOSED NUMBER OF CASING SPACERS SHALL BE INSTALLED TO PROVIDE SUFFICIENT SUPPORT AS PER MANUFACTURER'S RECOMMENDATIONS.

I:\PUBLIC\ENGINEERING\2005_DETAILS\SD25_CASING_PIPE_CASING_SPACERS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL CASING PIPE WITH CASING SPACERS	DWG. NO. SD25	
		DATE 6/00	REVISED 10/05

Approved By:



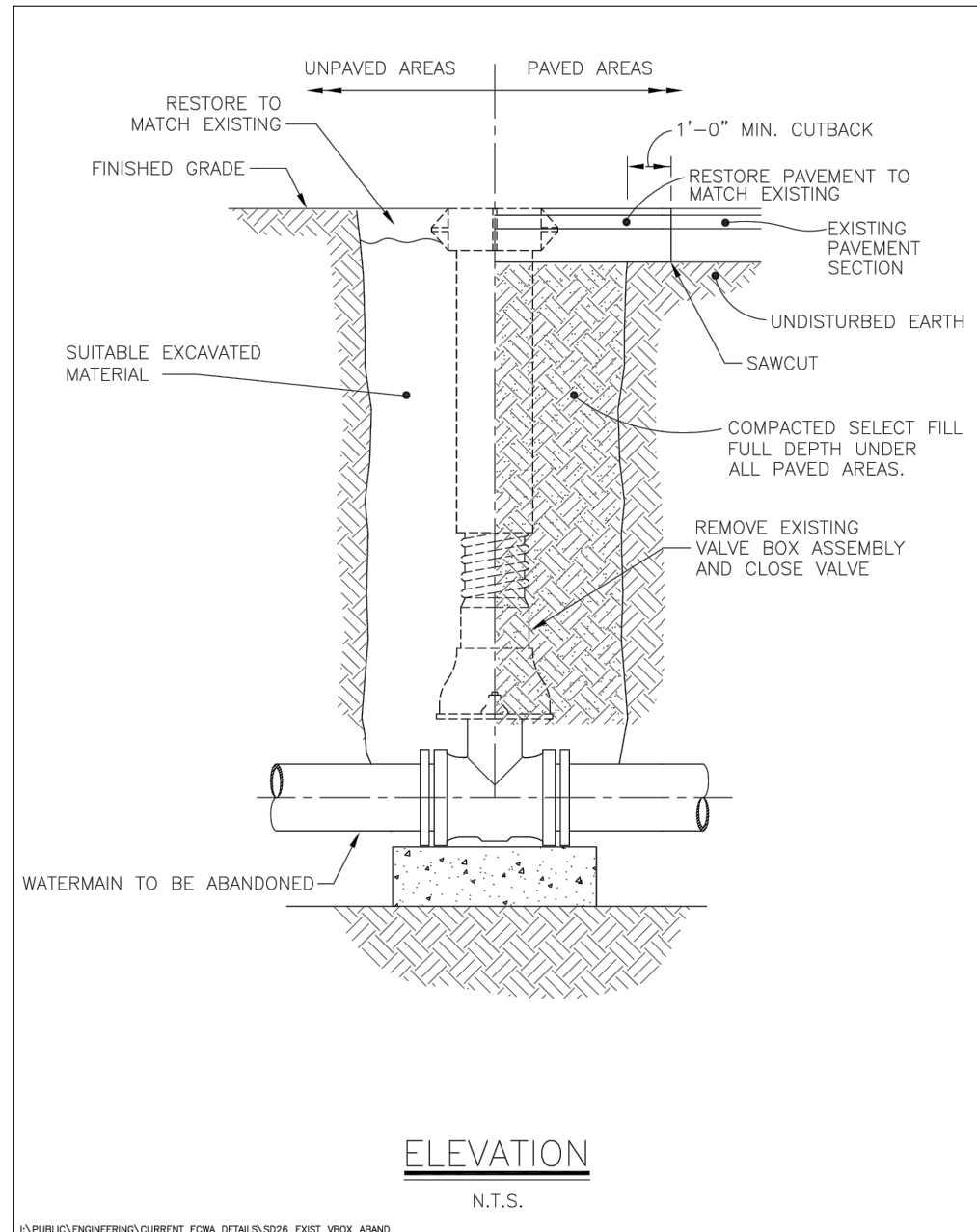
ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name
**COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANOUS
DETAILS
Date: MAY 2022
Scale: AS SHOWN
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I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD26_EXIST_VBOX_ABAND ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL EXISTING VALVE BOX ABANDONMENT	DWG. NO. SD26	
		DATE 6/00	REVISED 8/16

NOTES

- All elevations refer to USGS NAVD88 datum.
- The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
- The CONTRACTOR work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
- The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
- The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install watermain to avoid conflicts.
- The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as needed basis, phased to reduce erosion and visual impact.
- Blasting will not be permitted.
- No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
- The Erie County Water Authority only shall operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
- The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 5 business days in advance of the requested shut-down date.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD29_GENERAL_NOTES ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	SD29	
		DATE 3/05	REVISED 11/21

Approved By:



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name
**COMO PARK BLVD
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202200113**
 TOWN OF CHEEKTOWAGA
 ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS
 Date: MAY 2022
 Scale: AS SHOWN
 Drawn/Revised By: WWW

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 File Name: 202200066 - ANDREWS DESIGN

11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of the 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga.
19. The CONTRACTOR shall place temporary pavement (consisting of hot mix asphalt or cold patch) in all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict school bus access.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for approval.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants and curb stops operate as required.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD30_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30	
		DATE 3/05	REVISED 10/21

PIPE DIAMETER (in)	PIPE MATERIAL		WORKING PRESSURE (psi)	TEST PRESSURE (psi)
	Type (DIP, PVC, etc.)	Rating (Class/DR)		
8"	DIP	CLASS 52	100	175

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD31_PRESS_TEST_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	PRESSURE TESTING SCHEDULE	DWG. NO. SD31	
		DATE 10/05	REVISED 11/20

Approved By:



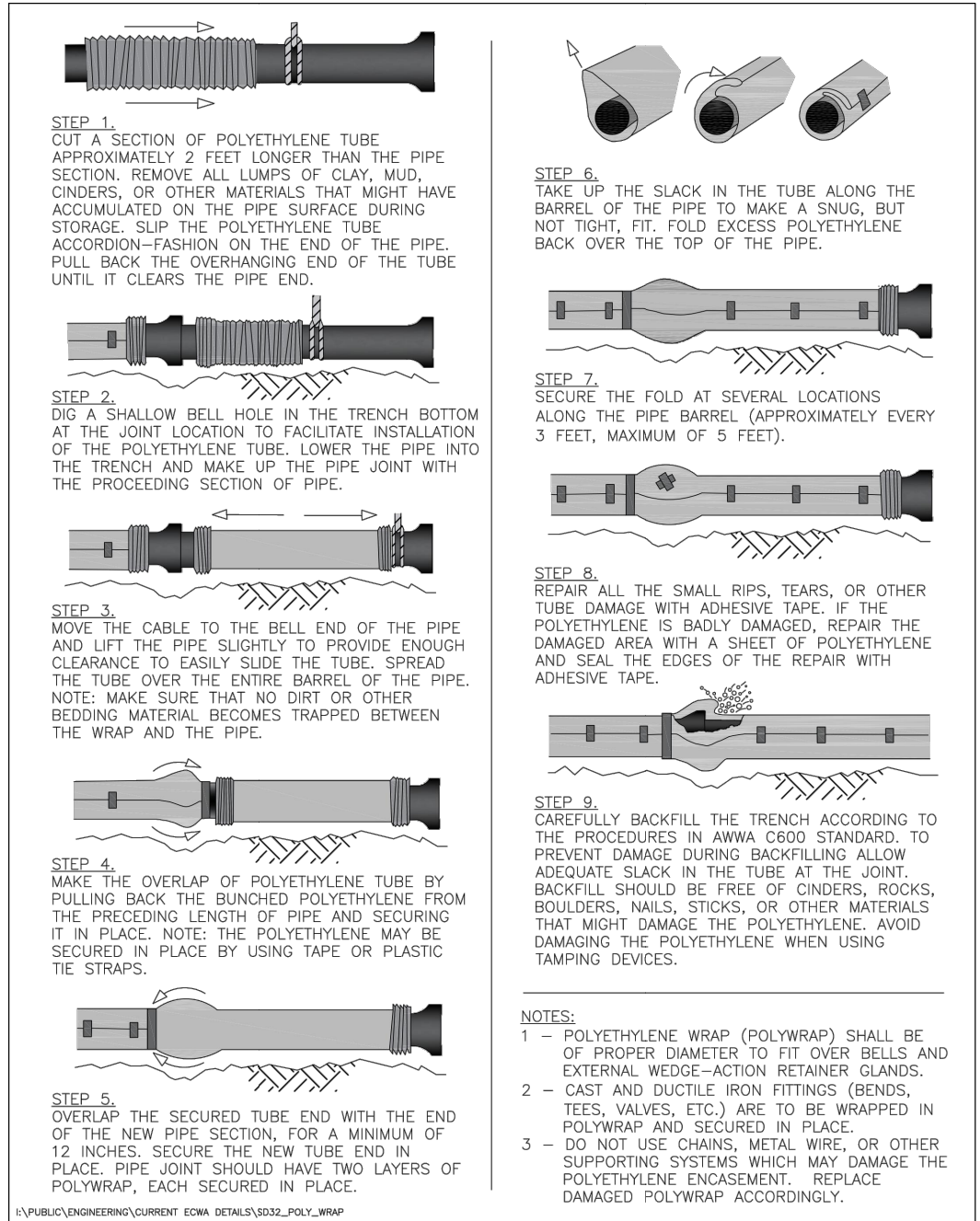
ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name
**COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113**

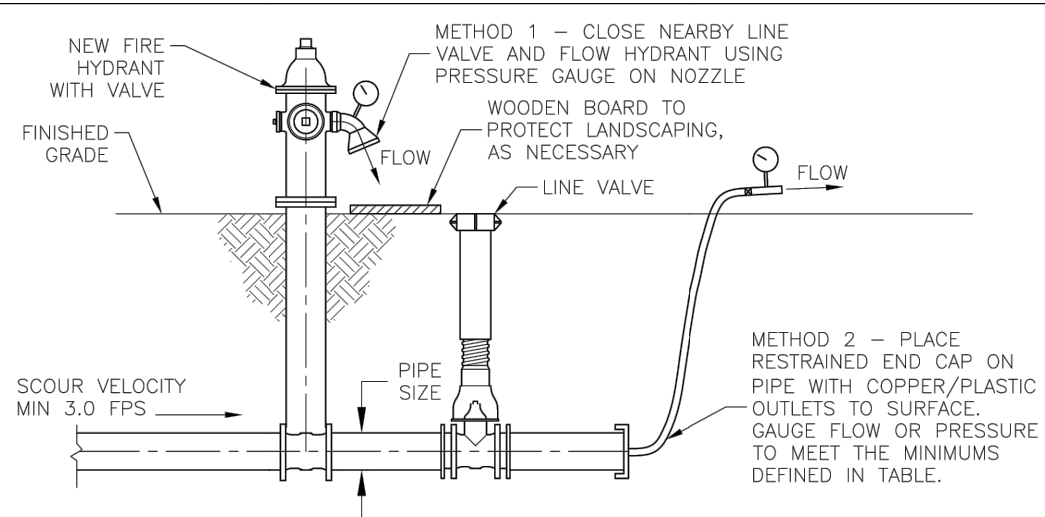
TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS
Date: MAY 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYETHYLENE ENCASEMENT OF DUCTILE IRON PIPE	DWG. NO. SD32	
		DATE 06/16	REVISED 02/19



PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW		METHOD 2 END CAP FLOW	
		2 1/2" NOZZLE PRESSURE (PSI)	4" NOZZLE PRESSURE (PSI)	2" I.D. PRESSURE (PSI)	3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	-	22
16	1900	-	20	-	62
20	3000	-	50	-	-

I.D. = INNER DIAMETER

- NOTES:**
- TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
 - OUTLET PRESSURE MEASURED BY PITOT GAUGE.
 - ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
 - TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION

N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL WATERLINE FLUSHING	DWG. NO. SD36	
		DATE 6/16	REVISED 3/18

Approved By:



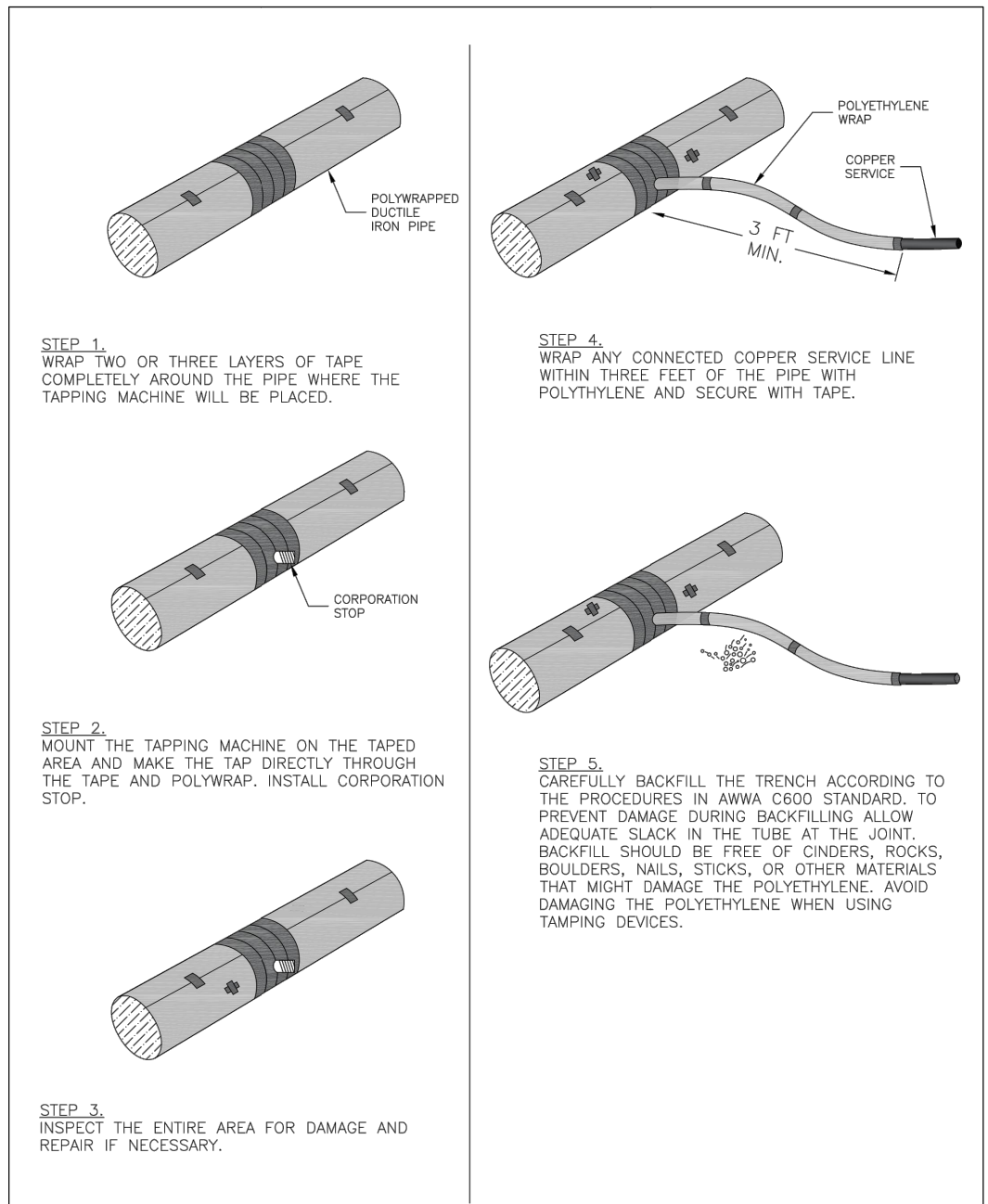
ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name
**COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

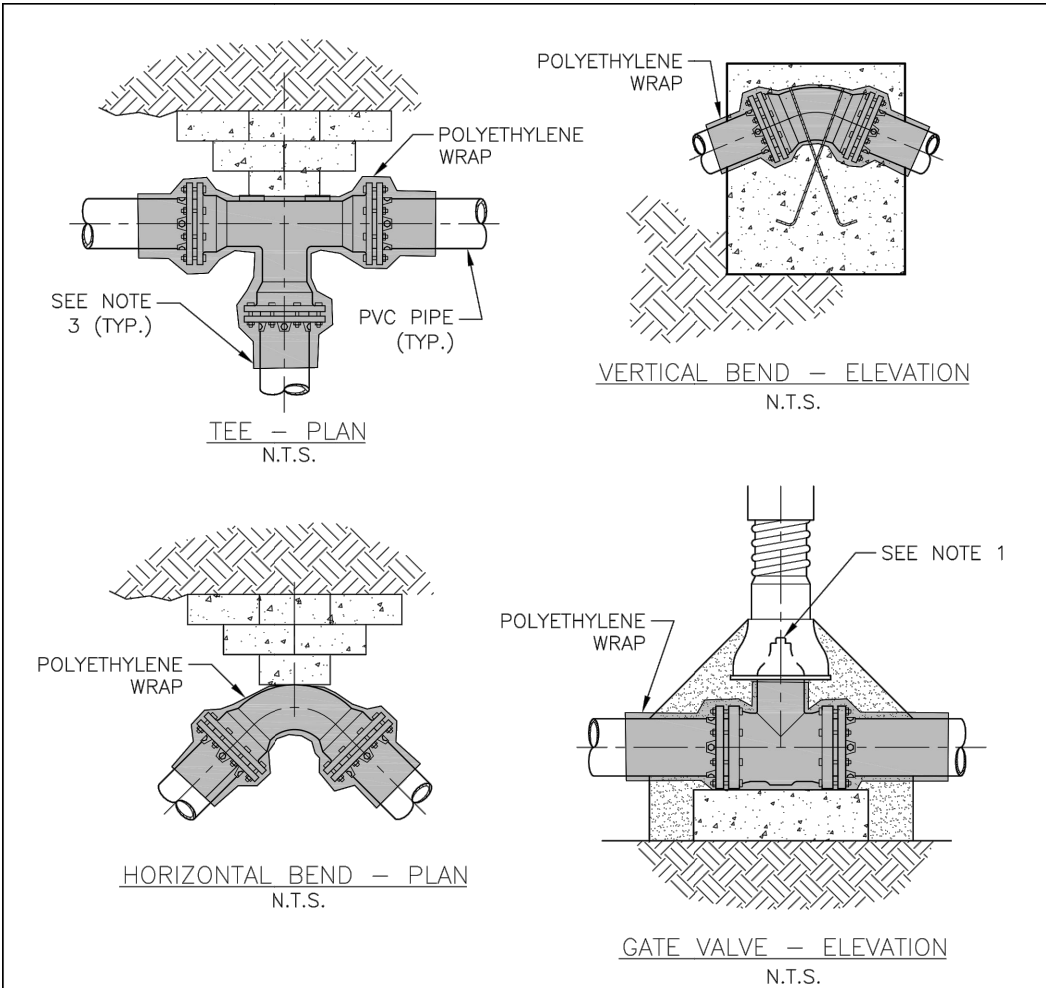
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Date: MAY 2022
Scale: AS SHOWN
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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TAPPING POLYWRAPPED PIPE	DWG. NO. SD38	
		DATE 05/18	REVISED



NOTES:

1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A	
		DATE 3/18	REVISED 12/18

Approved By:



Project Name

**COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
MAY 2022

Scale:
AS SHOWN

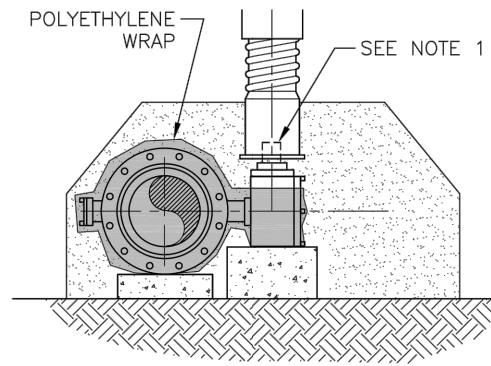
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WWW

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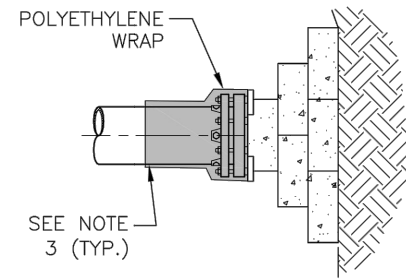
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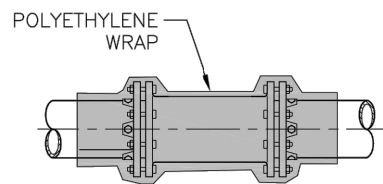
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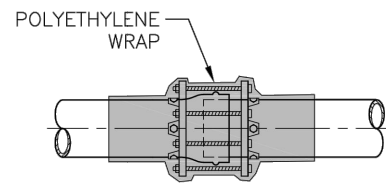
BUTTERFLY VALVE – ELEVATION
N.T.S.



END CAP / PLUG
N.T.S.



SOLID SLEEVE OR
RESTRAINED COUPLING
N.T.S.



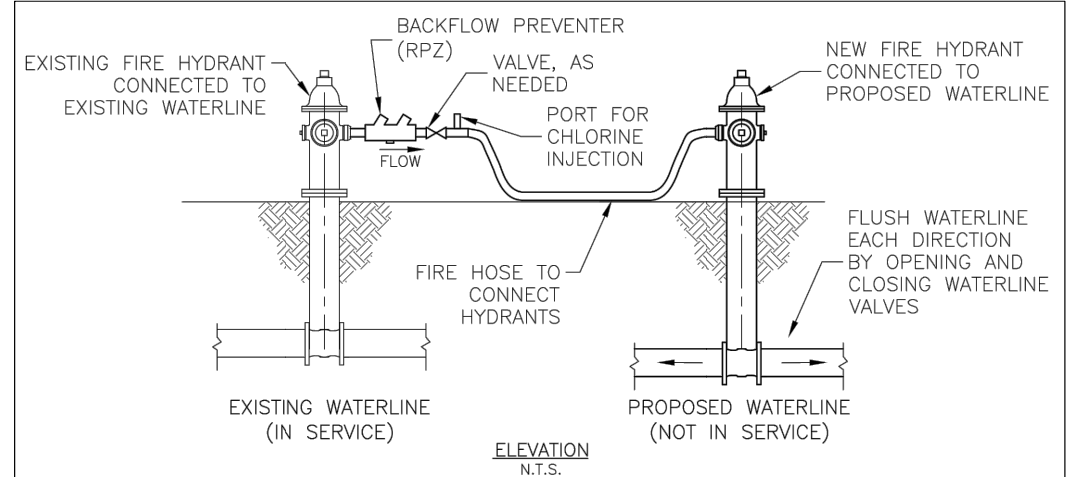
EXTERNAL JOINT RESTRAINT
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NOTES:

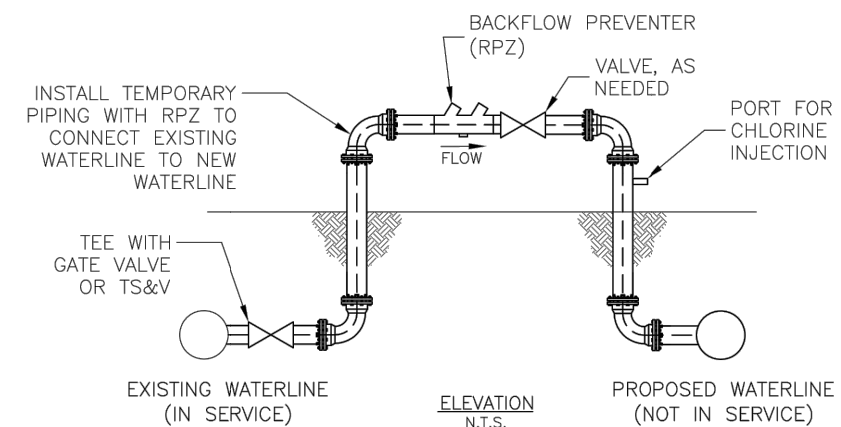
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39B	
		DATE 12/18	REVISED



METHOD 1 – CONNECT EXISTING HYDRANT TO PROPOSED HYDRANT



METHOD 2 – SERVICE TAP, TAPPING SLEEVE AND VALVE (TS&V),
OR INTERCONNECTION

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO DEPICT ACCEPTABLE METHODS OF CONNECTING EXISTING WATERLINES TO PROPOSED WATERLINES FOR FILLING, FLUSHING, AND TESTING PROCEDURES IF 2-INCH COPPER OR POLYETHYLENE TUBING IS NOT USED TO BYPASS A VALVE. OTHER METHODS REQUIRE SUBMITTAL AND APPROVAL BY THE AUTHORITY PRIOR TO USE.
2. FIRE HOSES, TEMPORARY PIPING, AND BACKFLOW PREVENTERS SHALL NOT ENCRoACH INTO ROADWAYS, DRIVEWAYS, OR SIDEWALK AREAS WITHOUT PROVIDING PROPER MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD44_SOURCE_WATER_CONNECTIONS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SOURCE WATER CONNECTIONS	DWG. NO. SD44	
		DATE 10/20	REVISED

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name
**COMO PARK BLVD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200113**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS
Date: MAY 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

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202200113 - COMO PARK DESIGN

**ERIE COUNTY WATER AUTHORITY
CONSTRUCTION AUTHORIZATION**

Project No. 202100304
Budget No. _____

Authorization No.: EC 7236
Date: 3/21/22
Inputted By/Date: _____

March 2022 Estimate Starting Date
March 2023 Estimate Complete Date
X yes no Retirement Involved
 X Public Street
 Private Right of Way
 On Authority's Prop
 Tax Districts _____
Name of Grantor of Easement _____
Date of Easement _____

TITLE OF PROJECT: 3464 McKinley Pkwy
Main Relocation.

DETAILED DESCRIPTION AND PURPOSE:
Waterline relocation as a part of redevelopment at
3464 McKinley Pkwy.

CLASS OF MAIN INSTALLATION:
 X System Betterment
 Bldr/Cont/Dev. Agree.
 Owner Occupant Cont.
 Special Revenue Cont.

ESTIMATE COST

(1) Total Est. Cost \$ 49,820.00
(2) _____ Meters and Service @ _____ \$ _____
(3) Removal Cost Less Salvage \$ _____
(4) Gross Investment \$ 49,820.00

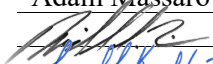
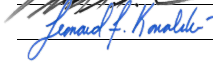
DEDUCT

(5) Const. Advance \$ _____
(6) Service Conn. \$ _____
(7) Refunds \$ _____
(8) Net Auth. Invest. \$ 49,820.00

BUDGETARY DATA

(9) Tot. Budget Expnd. \$ _____
(10) This Authorization \$ _____
(11) Pre Approved \$ _____
(12) Tot. Apvl. To Date \$ _____
(13) Bal. Budget Expnd. \$ _____

APPROVALS

Preparation Adam Massaro
Sr. Dist. Engr.  10/4/2024
Exec. Engr.  10/7/2024
Admn. Director _____
Legal Dept. _____
Acct. Dept. _____

ESTIMATED EARNINGS & RETURNS

ESTIMATED INCREASE IN REVENUES

(14) _____ Customers @ _____ \$ _____
_____ \$ _____
(15) _____ Hydrants @ _____ \$ _____
_____ \$ _____

EST. SAVINGS IN OPERATING EXPENSES

(16) _____ \$ _____
(17) Gross Increase in Earnings \$ _____

REVENUE DEDUCTIONS

(18) Operating Exp. _____ % \$ _____
(19) Depreciation \$ _____
(20) Total Deductions \$ _____
(21) Net Income Loss \$ _____
(22) % Return on Investment _____
(21) divided by 8) _____ %

RESOLUTION APPROVING

Adopted _____
Item No. _____



3030 Union Road
Cheektowaga, NY 14227
(716) 684-1510
www.ecwa.org

PROJECT No.: 202100304
PROJECT Name: McKinley Parkway
Watermain Relocation
DATE: Monday, March 21, 2022

DESIGNED BY: WWW
CHECKED BY: _____
PAGE: 1 of 1

The cost estimate herein was prepared utilizing the Kandey Contract for Water Distribution System Repairs & Improvements (ECWA 202100009)

Bid Item	QTY	Unit Cost	Computed Price
Item 1A1 - For installing 4-inch to 8-inch Watermain, 6-feet or less cover	20	\$80.00	\$1,600.00
Item 1B1 - For installing 10-inch to 12-inch Watermain, 6-feet or less of cover	195	\$90.00	\$17,550.00
Item 2A1 - For Installing 4-inch to 6-inch Gate Valve	1	\$3,500.00	\$3,500.00
Item 2B1 - For installing 12-inch Butterfly Valve	1	\$4,000.00	\$4,000.00
Item 3A2 - For 10-inch to 12-inch Inline Connection - Complete	2	\$3,000.00	\$6,000.00
Item 4A1 - For installing New Fire Hydrant Assembly - Complete	1	\$1,450.00	\$1,450.00
Item 4A2 - For Existing Fire Hydrant Abandonment - Complete	1	\$750.00	\$750.00
Item 5A1 - For installing 4-inch to 8-inch DI Fittings with restraints	1	\$250.00	\$250.00
Item 5A2 - For installing 10-inch to 12-inch DI Fittings with restraints	6	\$300.00	\$1,800.00
Item 6A1 - For installing Polyethylene Encasement for DI Pipe and Fittings	220	\$1.00	\$220.00
Item 7B1 - For Test Pit Excavation and Backfill	5	\$650.00	\$3,250.00
Item 8A1 - For furnishing and installing Select Backfill	100	\$55.00	\$5,500.00
Item 9C2 - For installing Temporary 2-inch Blow-off Assembly	2	\$250.00	\$500.00
Item 12A5 - For Testing and Disinfection of 12-inch Watermain (<200 ft)	195	\$10.00	\$1,950.00
Item 13B10 - For Cold Patch (high performance patching material) per 3" dep	30	\$50.00	\$1,500.00
Project Total:			\$49,820.00



ERIE COUNTY WATER AUTHORITY

REQUISITION ON STORES

Project No.: 202100304 Date: 03-21-22 Requisition No.: _____

Issue To: Kandey Co., Inc.

For Use In: 12" Main Relocation

Location: McKinley Parkway, Hamburg

OWIP: _____ EC NO.: 107200-007236 Svc. No.: _____

Quantity	Description	Part #	On Site	Used	Ret.
20 ft	6" DI Pipe				
220 ft	12" PVC Pipe				
60 ft	Poly Wrap				
6	12" 45° DI Bends MJ w/ Accessories				
2	12" 22.5° DI Bends MJ w/ Accessories				
2	12"x12"x6" DI Anchor Tee w/ Accessories				
2	12" Solid Sleeve w/ Accessories				
1	6" DI Plug MJ w/ Accessories				
2	12"x2" DI Tapped Cap MJ w/ Accessories				
2	12" Solid End Cap MJ w/ Accessories				
1	12"x12" Anchor Nipple				
1	6"x24" Anchor Nipple				
2	6" Gate Valve				
1	12" Butterfly Valve				
3	Complete Valve Box				
12	12" Joint Restraints – Complete both sides				
5	6" DI Mega Lugs				
5	6" PVC Mega Lugs				
2	12" DI Mega Lugs				
18	12" PVC Mega Lugs				
8	Ductile Lugs				
24	3/4" All Thread				
8	3/4" Nuts				
1	5.5' Hydrant Assembly				
2	2" MIP x Compression Corp				
2	2" Compression x Compression Corp				
20	2" Copper				

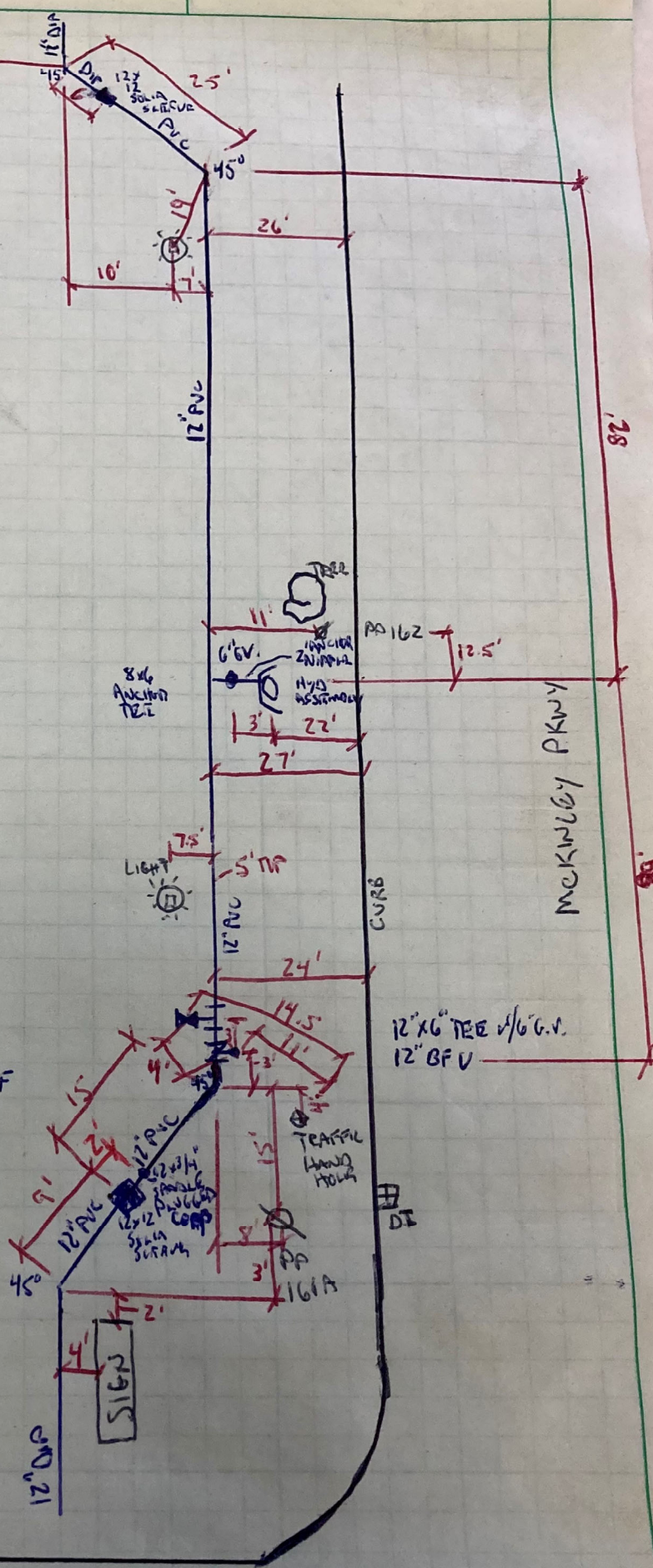
Kandey Co., Inc. _____

Inspector _____

BLDG 3467

NTS
202100304

35'
(NOT TO SCALE)
AT ALL



CRUSHER:

$3 \times 4.5 \times (7+7) = 95/27 = 3.5 \text{ cy}$
 $10 \times 10 \times 4.5 = 450/27 = 17 \text{ cy}$
 $10 \times 10 \times 4.5 = 450/27 = 17 \text{ cy}$
37.5 cy

ROCK/SLAG:

$3 \times 1.5 \times 20 = 3.33 \text{ cy}$

- 2 - 12" ABANDONMENTS / END CAPS
- 2 - 12" SOLID SHELVES
- 1 - 12" BFV
- 1 - 8x6 TEE
- 1 - 6" G.V.
- 1 - HYD ASSEMBLY
- 4 - 1/2" 45° BRNDS
- 2 - 12" IN-LINE CONNECTIONS
- 10 - 12" WATER LINE:

INITIAL TESTING = 190 LF
 INTERCONNECTS = $8 + 10 = 18 \text{ LF} + 15 \text{ LF} = 33 \text{ LF}$
TOTAL = 223 LF









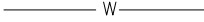



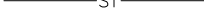
- Poly WRAP: 50 LF
- TEST PIT: 3 EA
- 2" TEMP BLOW-OFF - 2 EA
- 3/4" TEMP BLOW-OFF - 1 EA

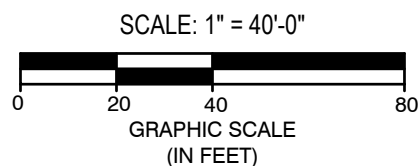
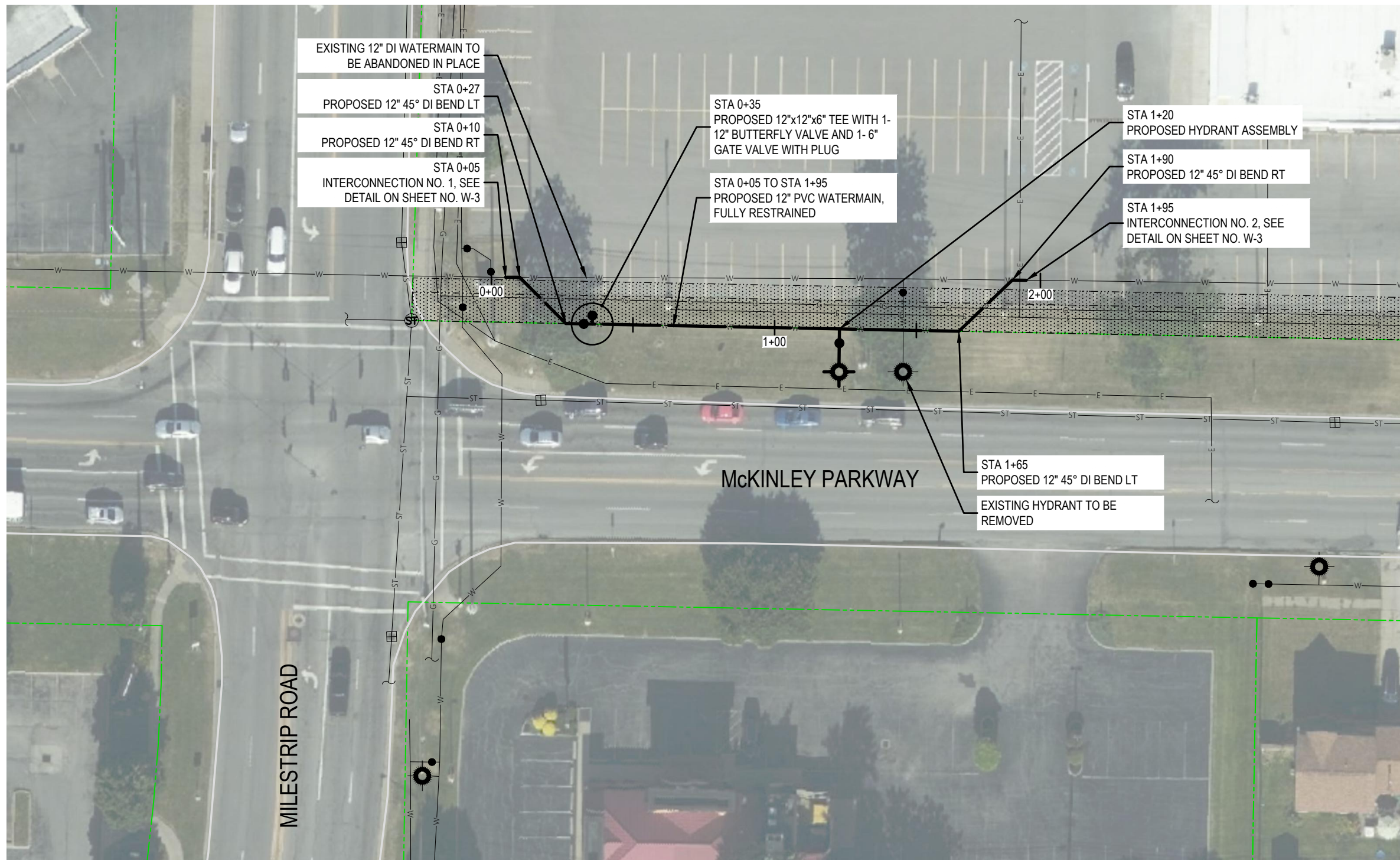
MILESTRIP ROAD

General Notes

- 1.) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ERIE COUNTY WATER AUTHORITY STANDARD DETAILS AND SPECIFICATIONS, ECWA PN: 202100009
- 2.) WATERMAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C600
- 3.) WATERMAINS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651, HOWEVER THE TABLET METHOD IS NOT ALLOWED
- 4.) TWO SETS OF WATER BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART
- 5.) SEE STANDARD DETAIL GENERAL NOTES SECTION ON MISCELLANEOUS DETAILS
- 6.) CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION
- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

-  = SANITARY MH
-  = TRAFFIC MH
-  = STORM MH
-  = CATCH BASIN
-  = UTILITY POLE
-  = FIRE HYDRANT
-  = WATER VALVE
-  = TREES
-  = EXISTING WATERLINE
-  = NEW WATERLINE
-  = SANITARY SEWER
-  = STORM SEWER
-  = GAS MAIN



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
McKINLEY PARKWAY PLAN

Sheet

Date:
MARCH 2022

W-1

Scale:
AS SHOWN

Page: 1 of 15

Drawn/Revised By:
WWW

File Name:
202100304 - McKINLEY DESIGN









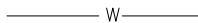

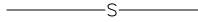
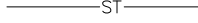



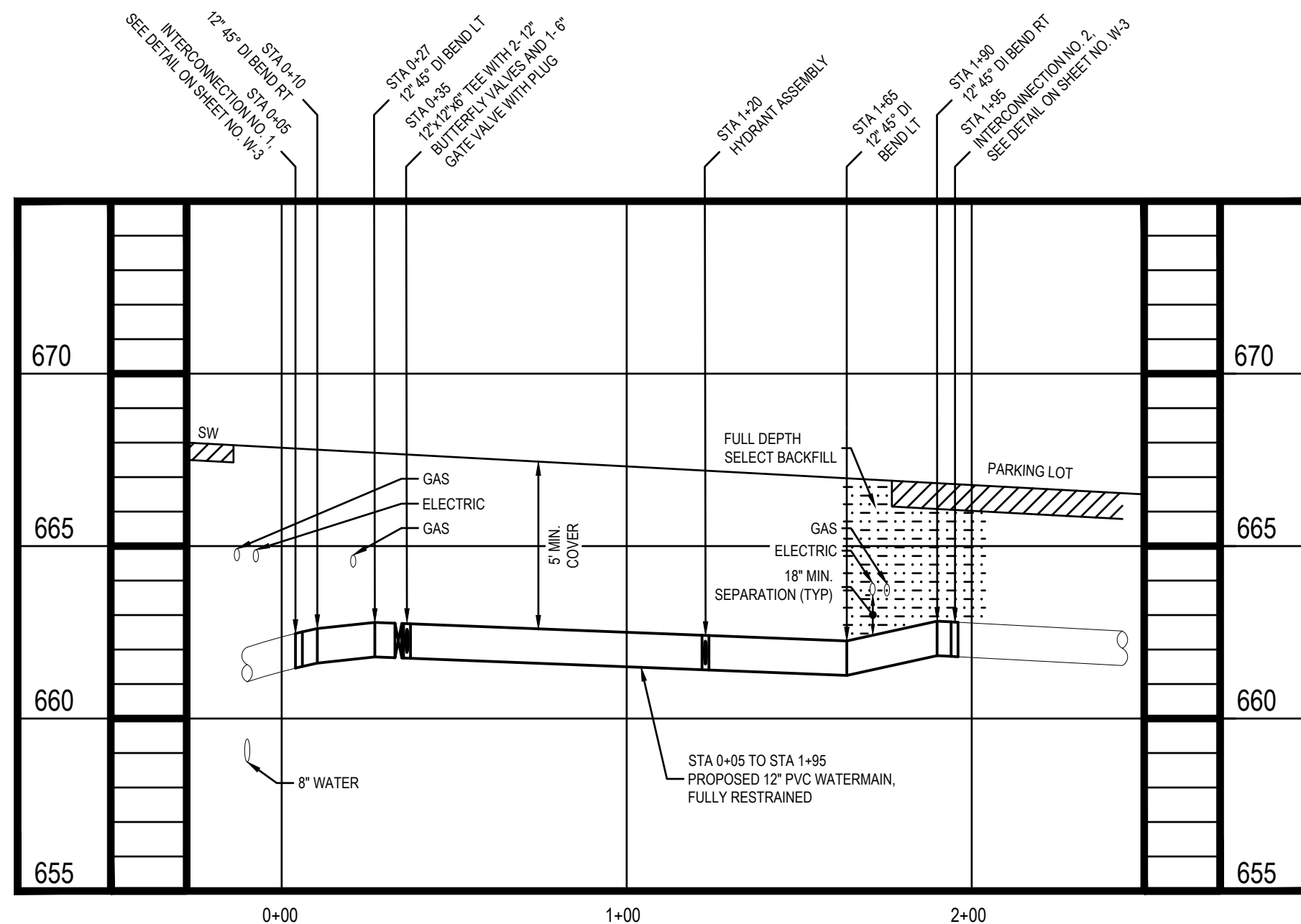
ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.

General Notes

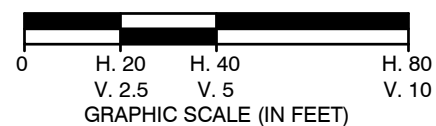
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Legend

-  = SANITARY MH
-  = TRAFFIC MH
-  = STORM MH
-  = CATCH BASIN
-  = UTILITY POLE
-  = FIRE HYDRANT
-  = WATER VALVE
-  = TREES
-  = EXISTING WATERLINE
-  = NEW WATERLINE
-  = SANITARY SEWER
-  = STORM SEWER
-  = GAS MAIN



SCALE: HORZ. 1" = 40'-0"; VERT. 1" = 5'-0"



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
McKINLEY PARKWAY
PROFILE

Date:
MARCH 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

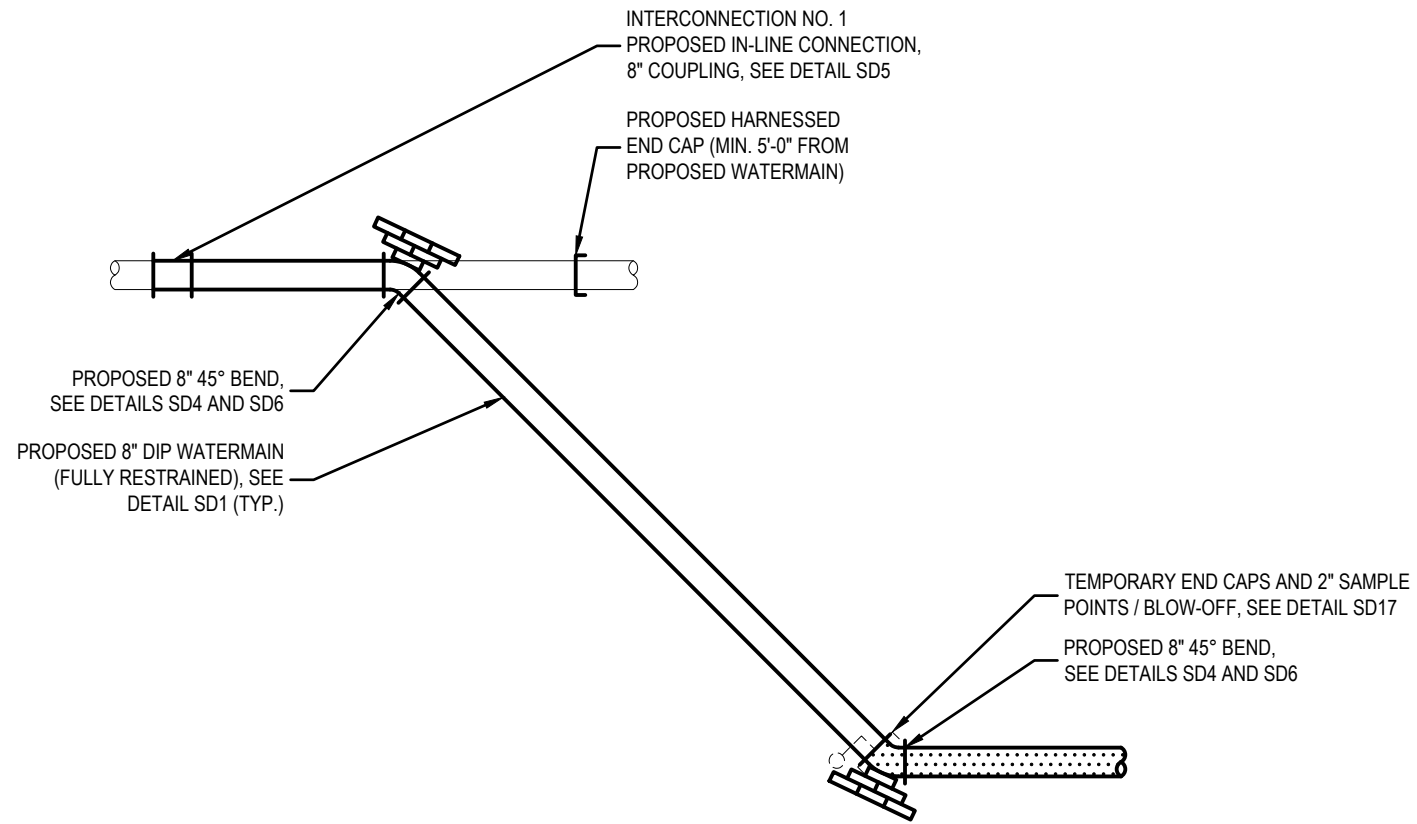
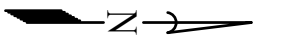
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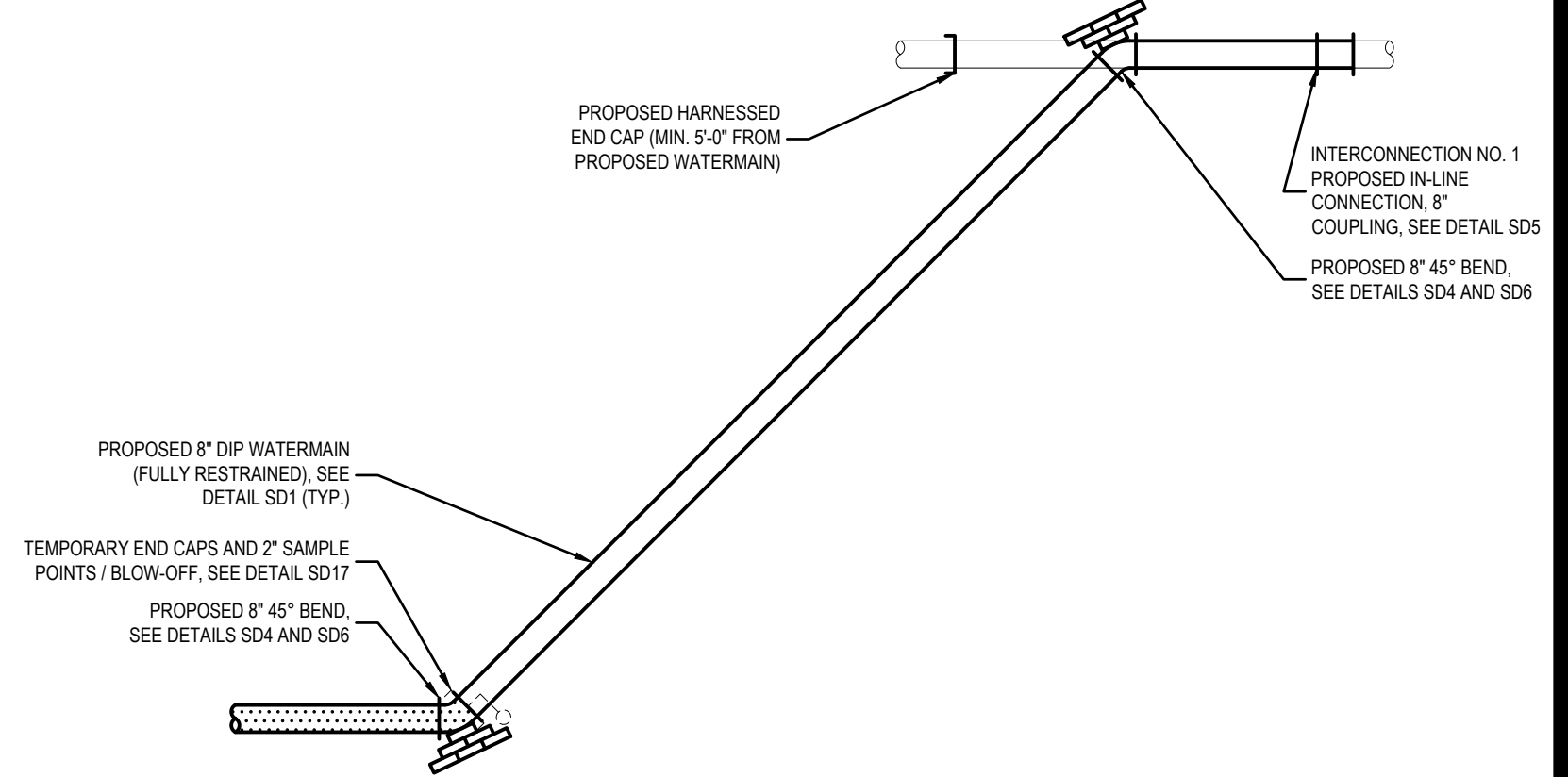
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202100304 - McKINLEY DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.

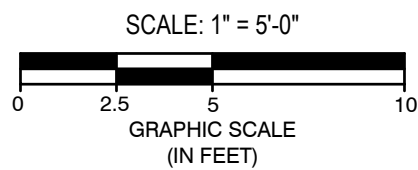


INTERCONNECTION NO. 1



INTERCONNECTION NO. 2

 PRESSURE TEST AND DISINFECTION LIMITS



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
INTERCONNECTION
NO. 1 & 2

Date:
MARCH 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

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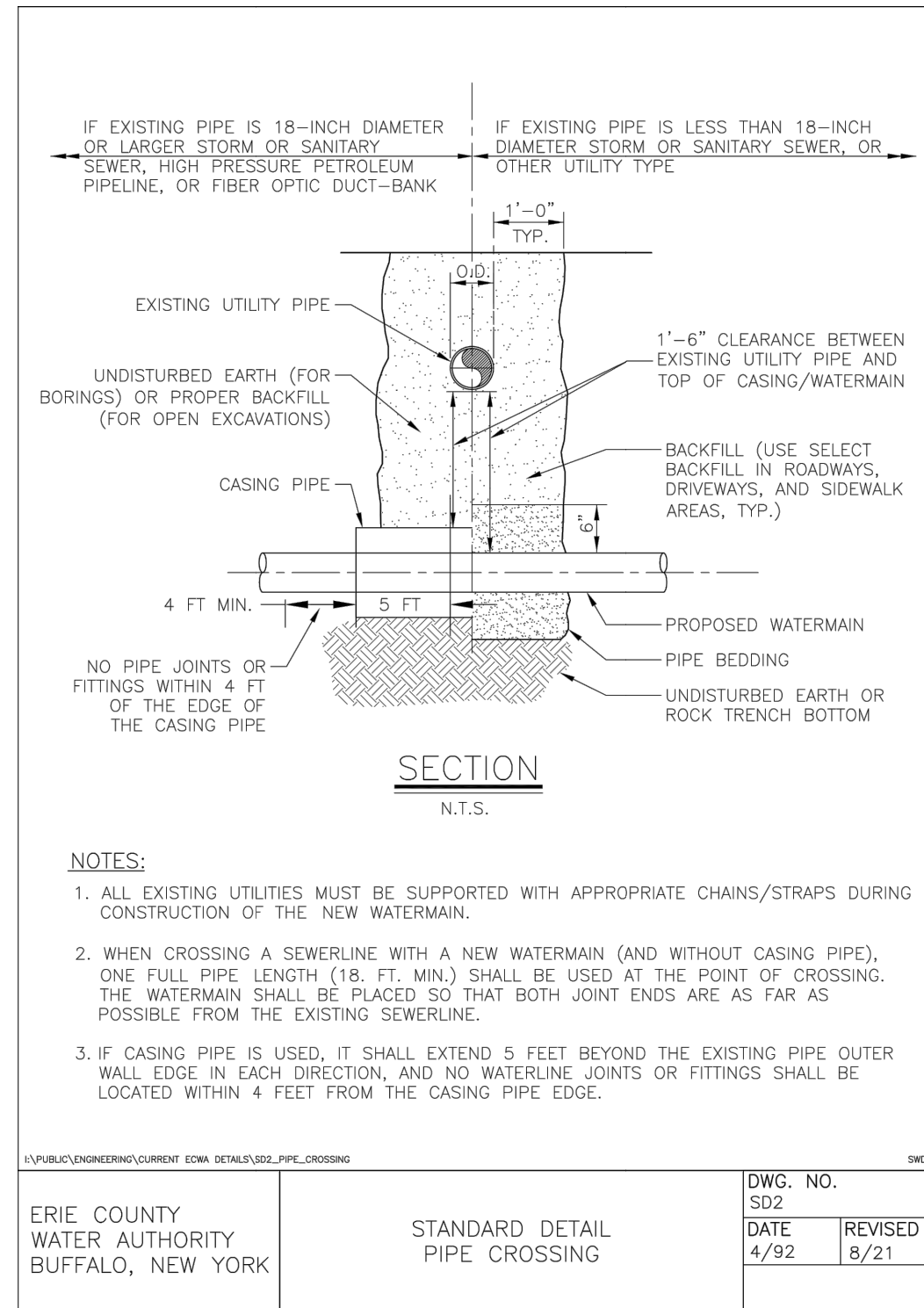
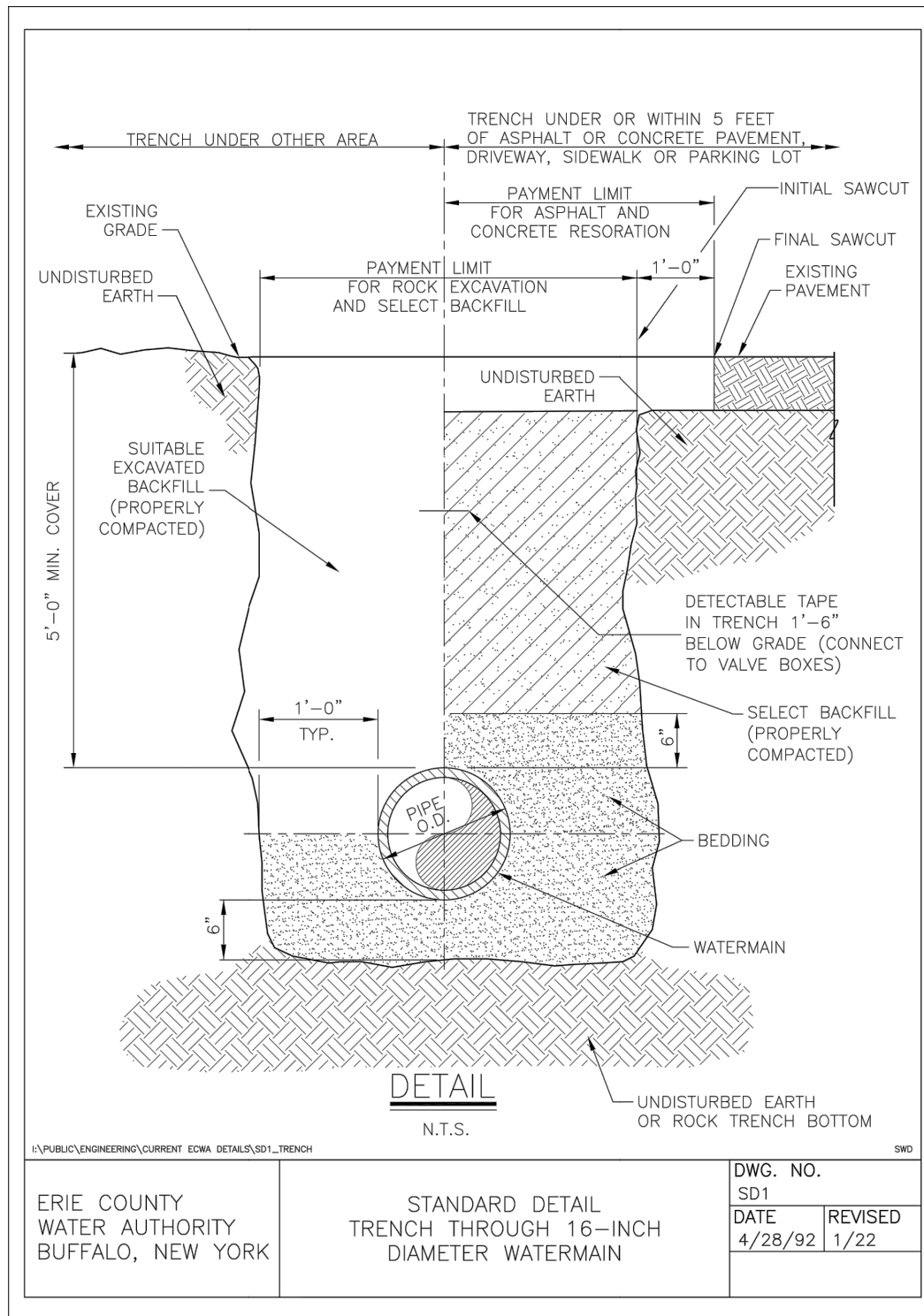
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File Name:
202100304 - McKINLEY DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.



NOTES:

1. ALL EXISTING UTILITIES MUST BE SUPPORTED WITH APPROPRIATE CHAINS/STRAPS DURING CONSTRUCTION OF THE NEW WATERMAIN.
2. WHEN CROSSING A SEWERLINE WITH A NEW WATERMAIN (AND WITHOUT CASING PIPE), ONE FULL PIPE LENGTH (18. FT. MIN.) SHALL BE USED AT THE POINT OF CROSSING. THE WATERMAIN SHALL BE PLACED SO THAT BOTH JOINT ENDS ARE AS FAR AS POSSIBLE FROM THE EXISTING SEWERLINE.
3. IF CASING PIPE IS USED, IT SHALL EXTEND 5 FEET BEYOND THE EXISTING PIPE OUTER WALL EDGE IN EACH DIRECTION, AND NO WATERLINE JOINTS OR FITTINGS SHALL BE LOCATED WITHIN 4 FEET FROM THE CASING PIPE EDGE.

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
MARCH 2022

Scale:
AS SHOWN

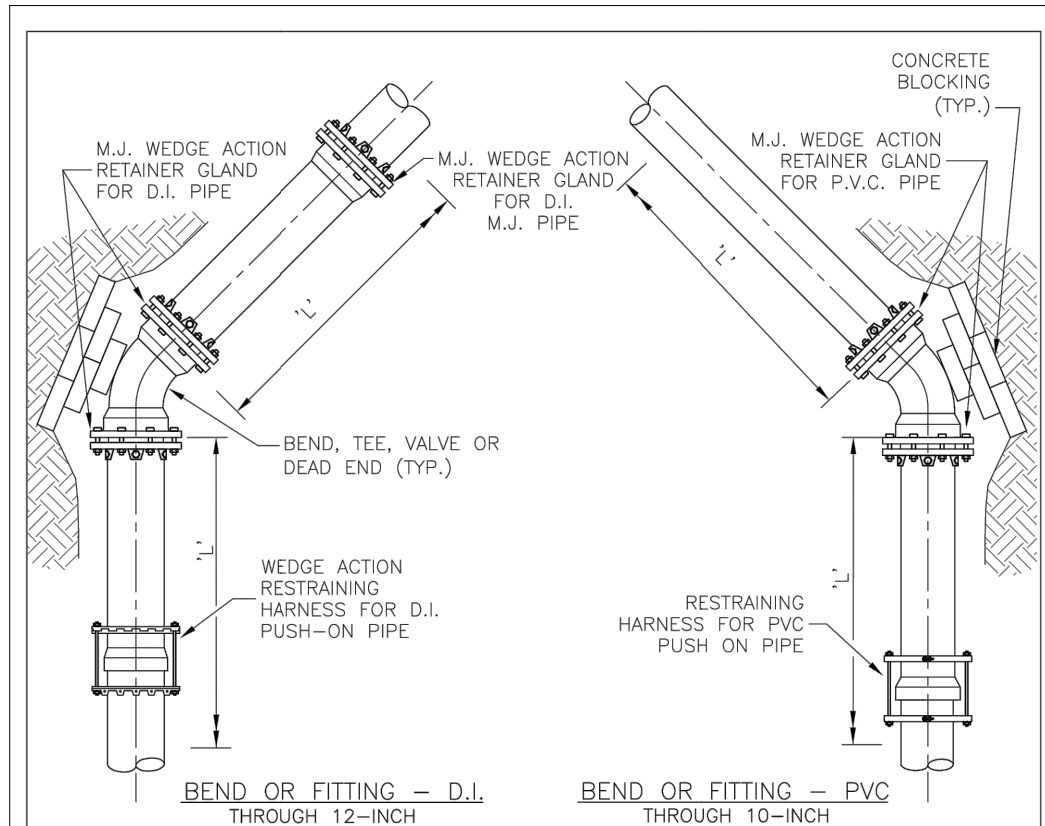
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File Name:
202100304 - McKINLEY DESIGN



RESTRAINED JOINT SCHEDULE					
PIPE SIZE	PIPE TYPE	11.25° ELBOW	22.5° ELBOW	45° ELBOW	TEE BRANCH, 90° BEND, VALVE OR DEAD END
		'L'	'L'	'L'	'L'
8"	PVC/DIP	13'/12"	25'/23"	48'/45"	99'/94"
10"	PVC/DIP	15'/14"	30'/28"	57'/54"	120'/112"
12"	PVC/DIP	17'/16"	34'/32"	66'/63"	140'/130"
16"	DIP	20'	40'	81'	170'

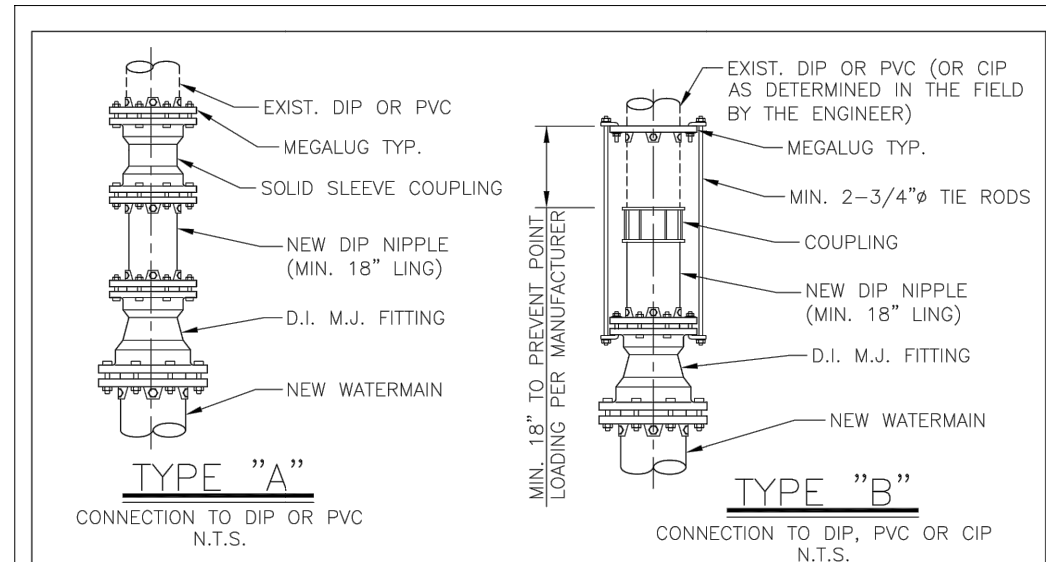
NOTES:
 1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINING PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

PLAN

N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD4_REST_JOINT_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4	
		DATE 4/28/92	REVISED 7/16



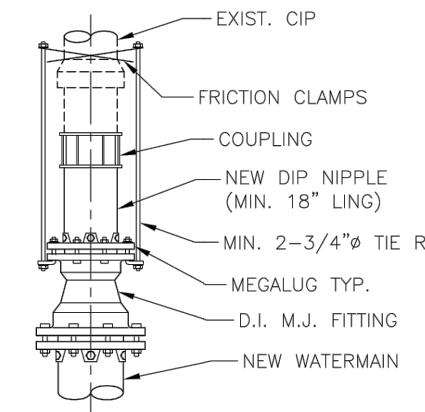
TYPE "A"

CONNECTION TO DIP OR PVC
N.T.S.

MIN. 18" TO PREVENT POINT LOADING PER MANUFACTURER

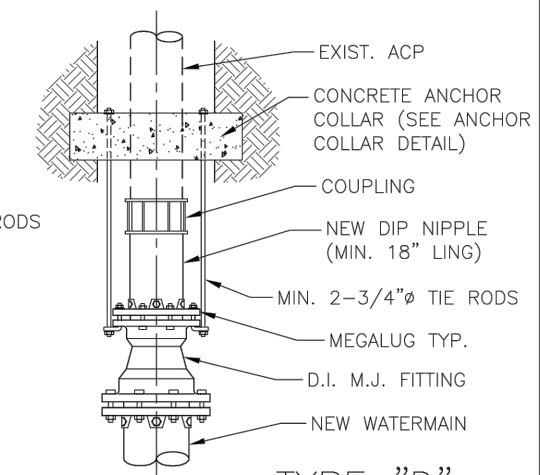
TYPE "B"

CONNECTION TO DIP, PVC OR CIP
N.T.S.



TYPE "C"

CONNECTION TO CIP
N.T.S.



TYPE "D"

CONNECTION TO ACP
N.T.S.

NOTES:

1. VALVES AND TEES MAY BE HARNESSSED SIMILARLY.
2. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE—PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
3. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
4. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD5_CONN_EXIST_WMMAIN

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD5	
		DATE 3/05	REVISED 7/16

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name
**McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304**

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
**MISCELLANEOUS
DETAILS**

Date:
MARCH 2022

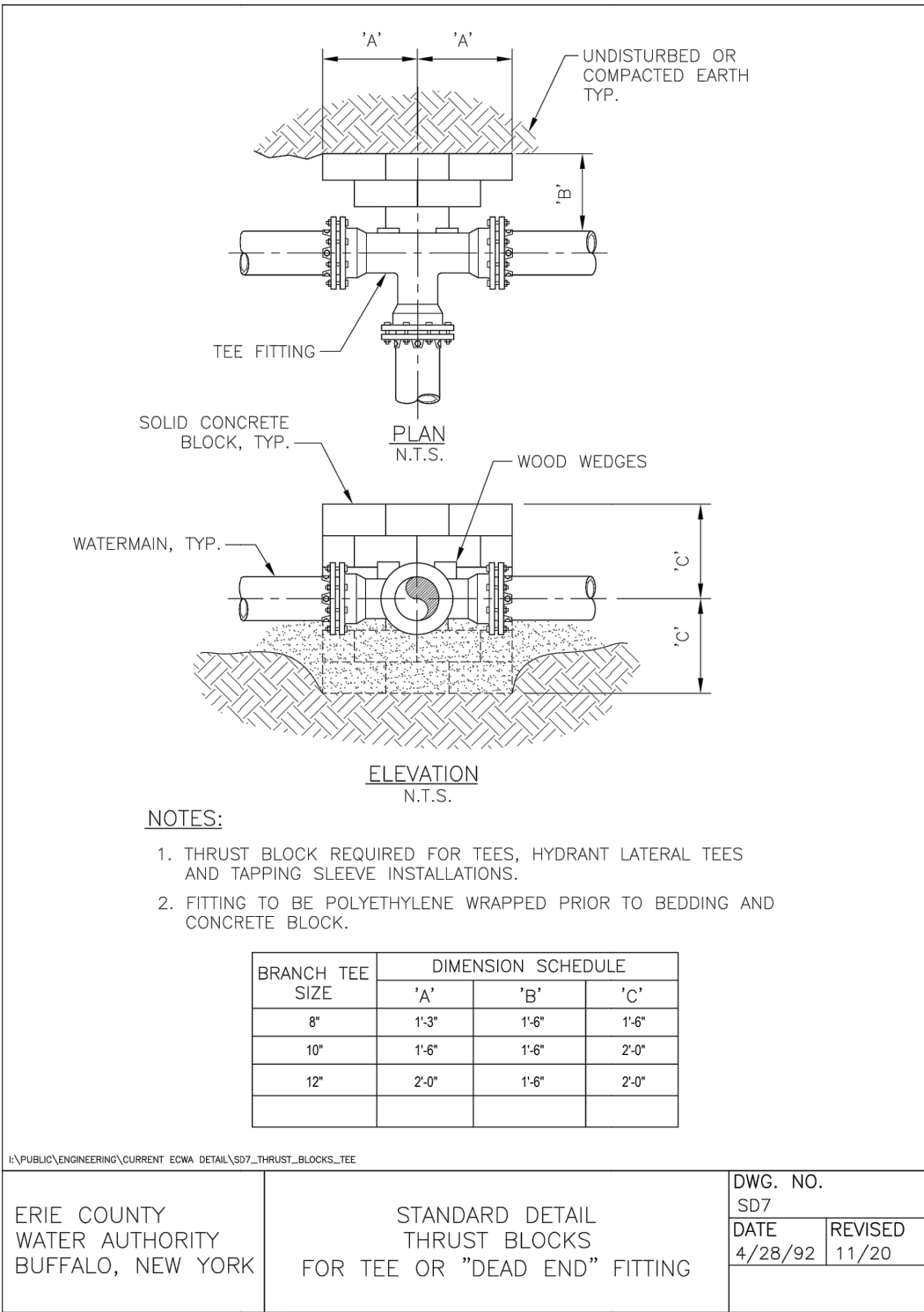
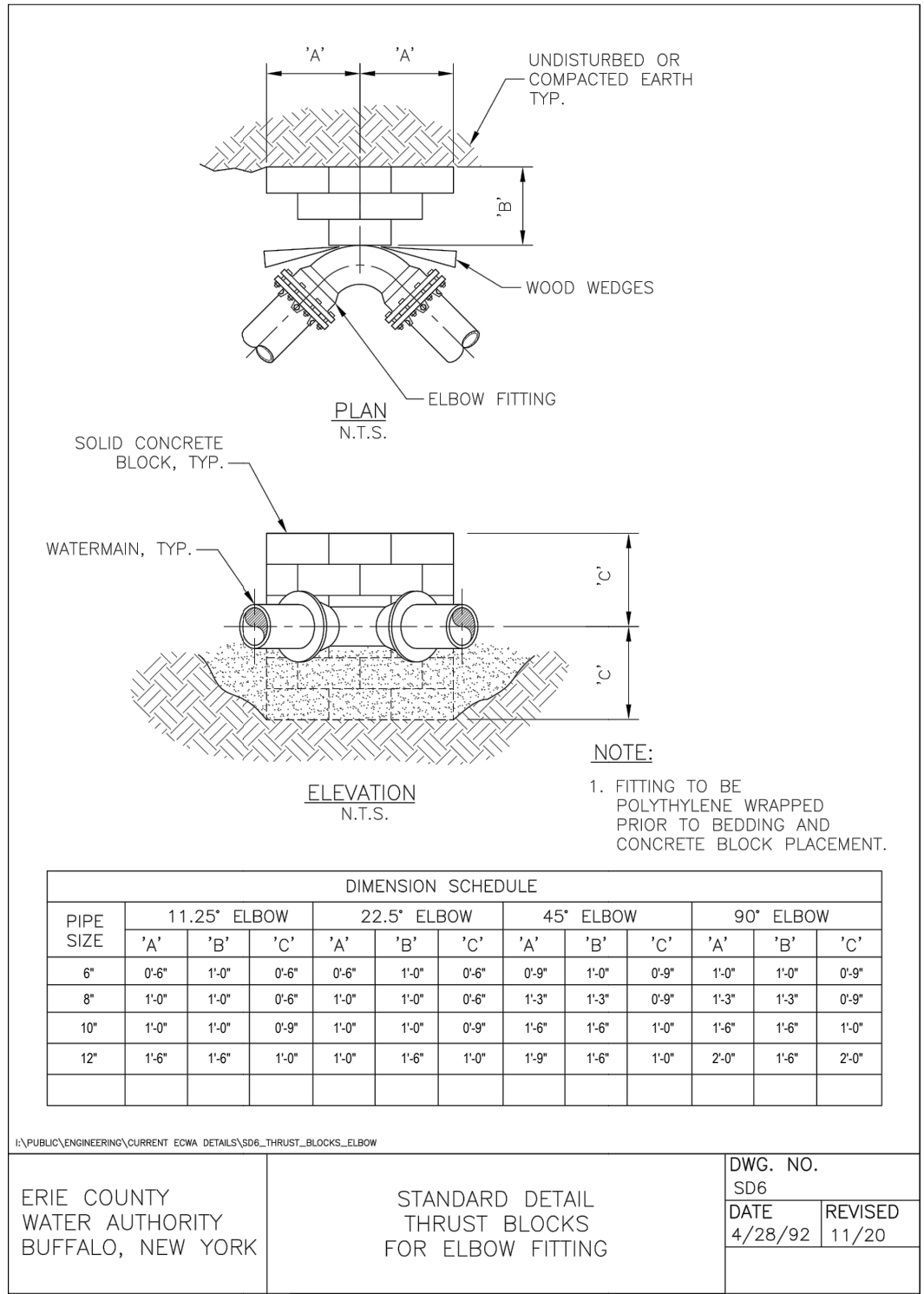
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Sheet
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Page: 5 of 15

File Name:
202100304 - McKINLEY DESIGN



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

**McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304**

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: MARCH 2022

Scale: AS SHOWN

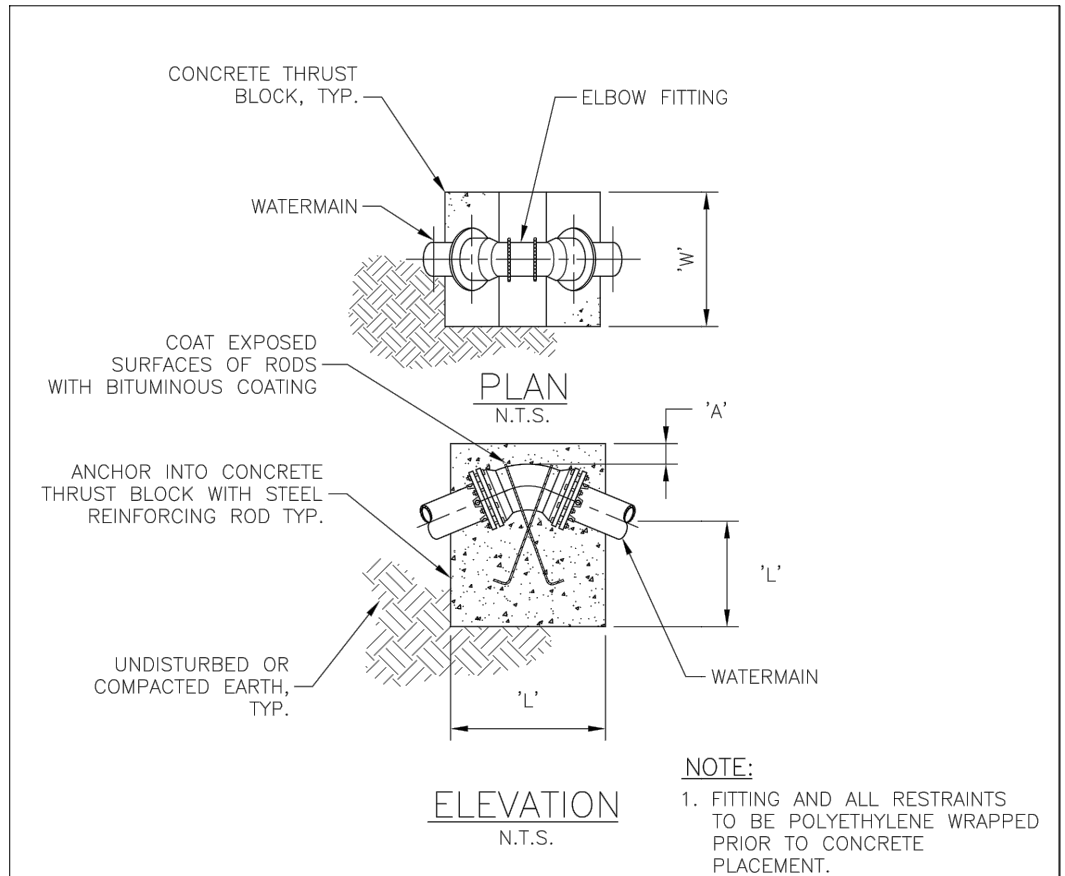
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Page: 6 of 15

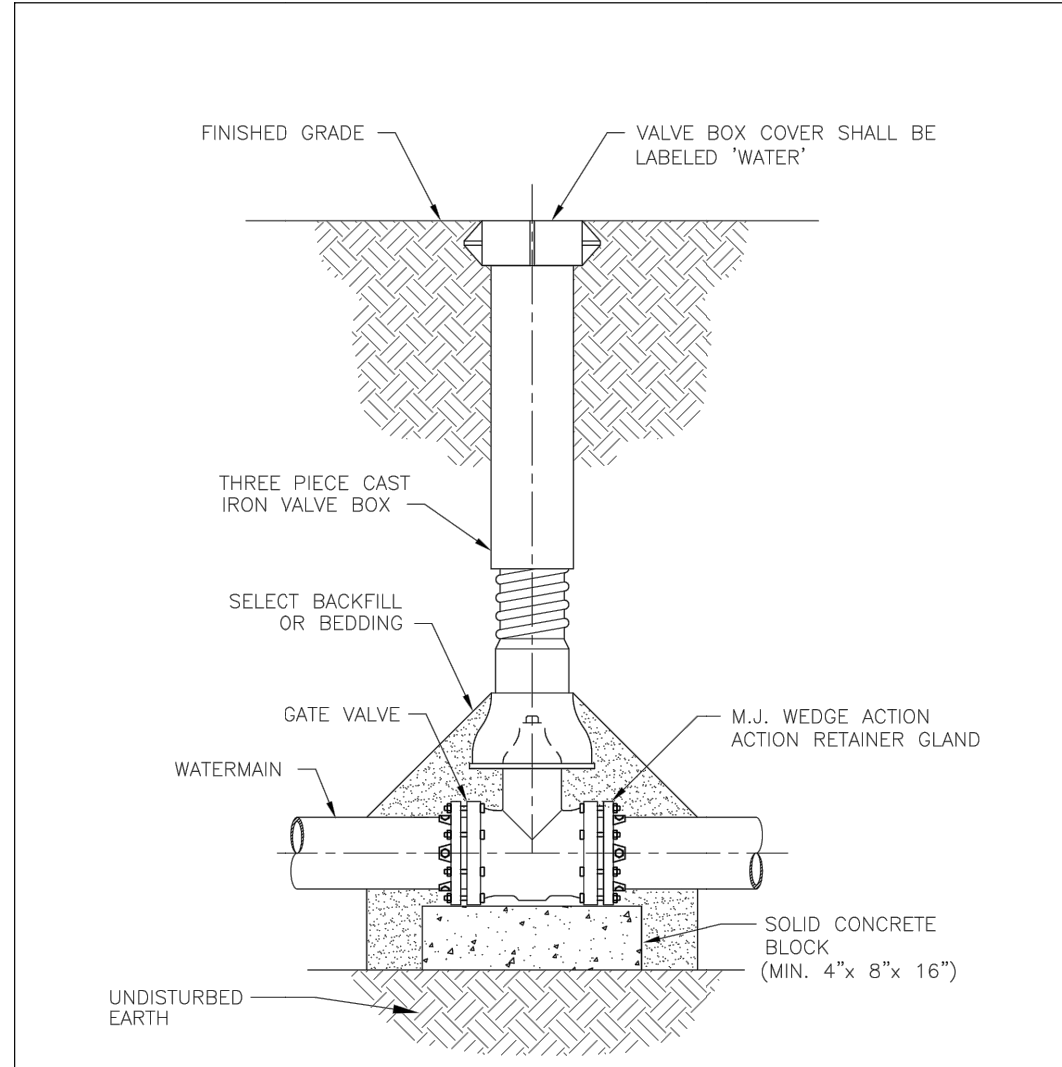
File Name: 202100304 - McKINLEY DESIGN



DIMENSION SCHEDULE													
PIPE SIZE	PIPE TYPE	11.25° ELBOW				22.5° ELBOW				45° ELBOW			
		'A'	'W'	'L'	ROD ϕ	'A'	'W'	'L'	ROD ϕ	'A'	'W'	'L'	ROD ϕ
8"	PVC/DIP	1'-0"	3'-0"	3'-0"	1/2"	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-6"	1/2"
10"	PVC/DIP	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-9"	1/2"
12"	PVC/DIP	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-6"	1/2"	1'-0"	5'-0"	5'-0"	1/2"

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD8_THRUST_BLOCKS_VBEND

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8	
		DATE 4/28/92	REVISED 11/20



I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD11_GATE_VALVE_SET

NOTES:
 1. VALVE SHALL NOT SUPPORT VALVE BOX.
 2. GATE VALVE SHALL BE INSTALLED LEVEL.
 3. VALVE BOX SHALL BE PLUMB TO GRADE, WITH OPERATING NUT CENTERED IN BOX.

SECTION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GATE VALVE SETTING	DWG. NO. SD11	
		DATE 4/28/92	REVISED 02/17

Approved By:



Project Name

**McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304**

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
MARCH 2022

Scale:
AS SHOWN

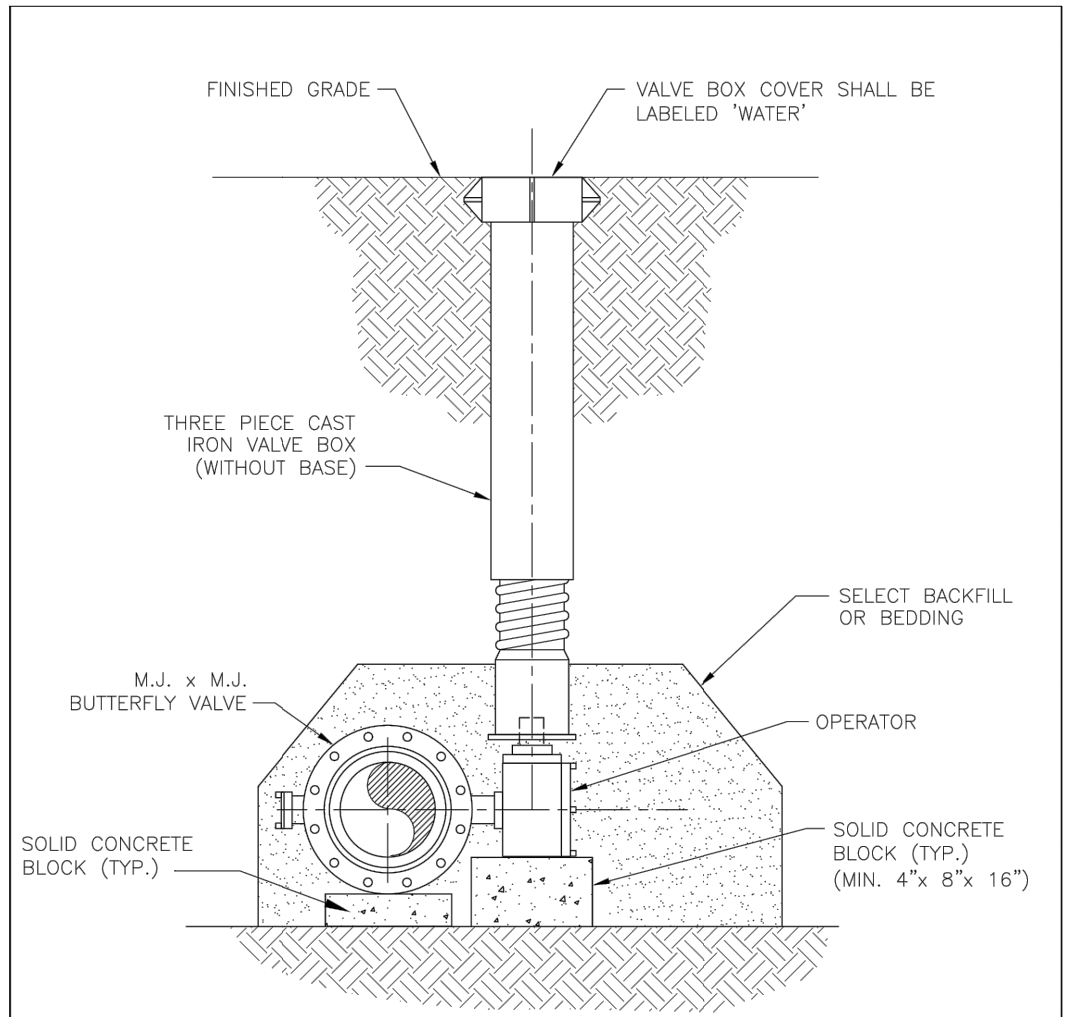
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Sheet

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Page: 7 of 15

File Name:
202100304 - McKINLEY DESIGN



NOTES:

1. VALVE SHALL NOT SUPPORT VALVE BOX.
2. BUTTERFLY VALVE SHALL BE INSTALLED LEVEL.
3. VALVE BOX SHALL BE PLUMB TO GRADE, WITH OPERATING NUT CENTERED.
4. POSITION VALVE SO THAT OPERATOR IS ON SIDE OF WATERMAIN OPPOSITE THE ϕ OF ROADWAY.

SECTION

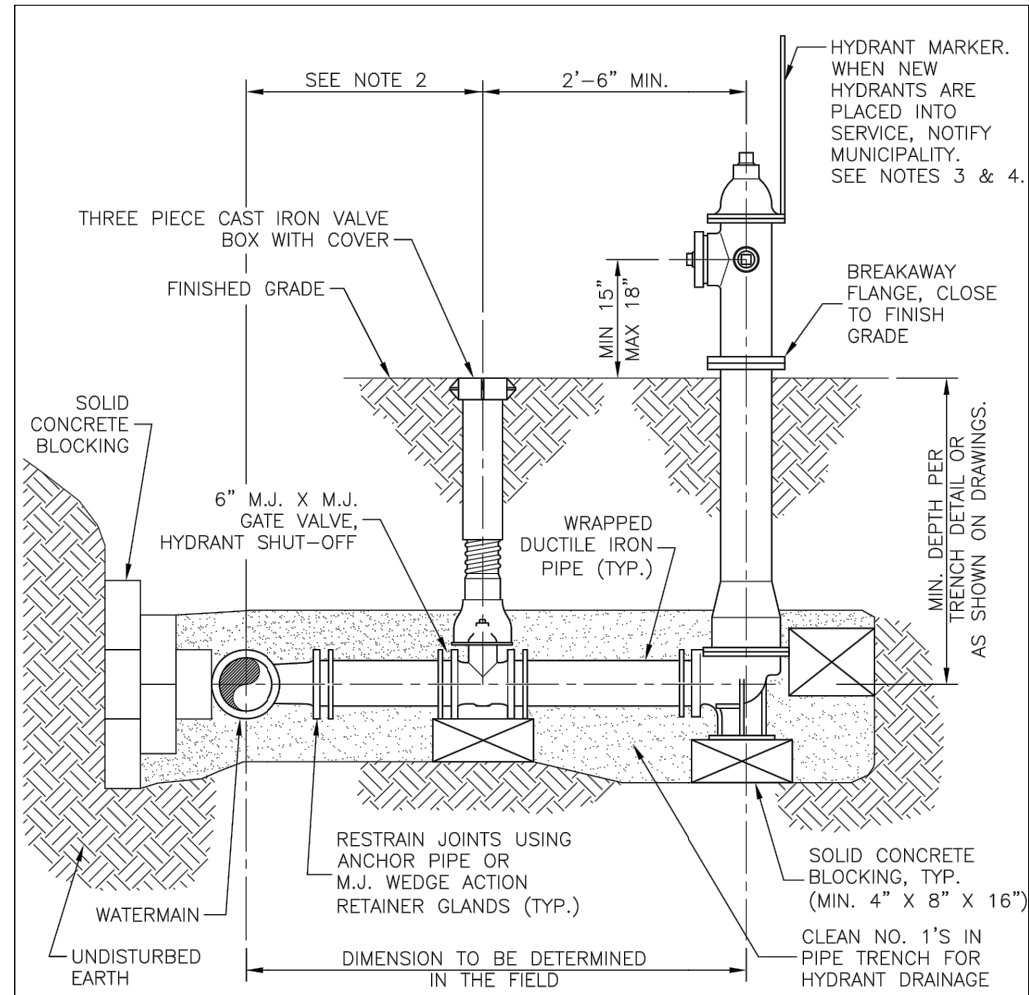
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ERIE COUNTY
WATER AUTHORITY
BUFFALO, NEW YORK

STANDARD DETAIL
BUTTERFLY VALVE SETTING

DWG. NO. SD12	
DATE 6/00	REVISED 02/17



NOTES:

1. HYDRANT RISER SHALL BE INSTALLED PLUMB.
2. VALVE BOX SHALL NOT BE PLACED IN PAVEMENT.
3. FOR WATERLINE REPLACEMENT PROJECTS, RELOCATE EXISTING MARKERS TO NEW HYDRANTS.
4. MUNICIPALITY SHALL BE RESPONSIBLE TO PROVIDE ANY NEW HYDRANT MARKERS AS NEEDED. CONTRACTOR TO COORDINATE WITH ALL MUNICIPALITIES AND FIRE DISTRICTS.
5. HYDRANT FACE TO BE A MINIMUM OF 3' FROM THE BACK FACE OF ALL CURBS OR A MINIMUM OF 5' FROM ALL EDGES OF PAVEMENT (IF NO CURB).

SECTION

N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD13_HYD_INST

ERIE COUNTY
WATER AUTHORITY
BUFFALO, NEW YORK

STANDARD DETAIL
FIRE HYDRANT
INSTALLATION

DWG. NO. SD13	
DATE 6/00	REVISED 1/22

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
MARCH 2022

Scale:
AS SHOWN

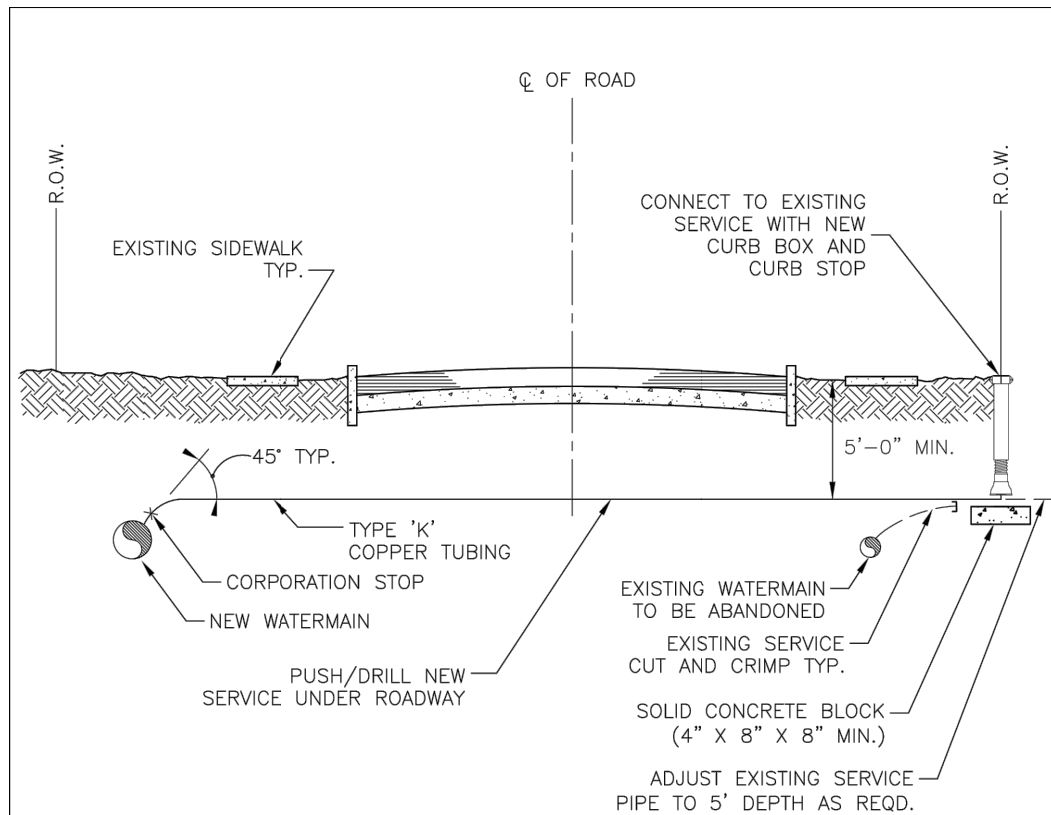
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File Name:
202100304 - McKINLEY DESIGN



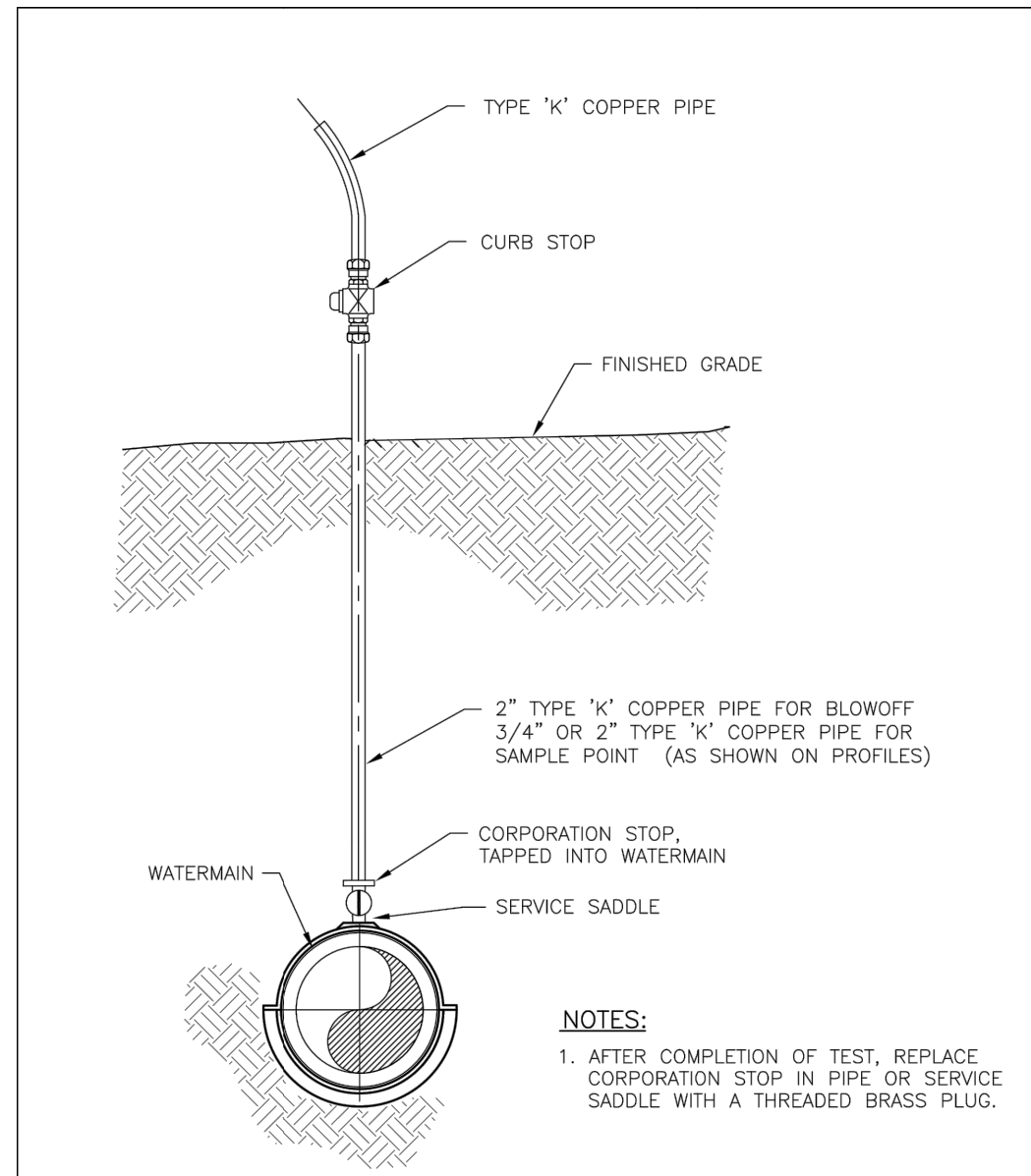
NOTES:

1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
 - A. WHEN SERVICES AND PLACED ON 4" OR SMALLER PIPES.
 - B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 6" PIPE.
 - C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
 - D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
 - E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
 - F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. USE POLYETHYLENE FOR 3/4" AND 1" SERVICES GREATER THAN 100 FEET IN LENGTH, AND FOR 1-1/2" AND 2" SERVICES GREATER THAN 60 FEET IN LENGTH. ALL POLYETHYLENE SERVICES SHALL INCLUDE A TRACER WIRE FOR DETECTION BY ECWA FORCES.
5. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD16_SERVICE_REPLACE

SWD

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD16	
		DATE 4/92	REVISED 10/20



NOTES:

1. AFTER COMPLETION OF TEST, REPLACE CORPORATION STOP IN PIPE OR SERVICE SADDLE WITH A THREADED BRASS PLUG.

ELEVATION

N.T.S.

I:\PUBLIC\ENGINEERING\2005_DETAILS\SD17_TEMP_BO_SAMP_PT

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17	
		DATE 4/28/92	REVISED 10/05

Approved By:



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name

MCKINLEY PARKWAY
 WATERMAIN RELOCATION
 ECWA PN202100304

TOWN OF HAMBURG
 ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: MARCH 2022

Scale: AS SHOWN

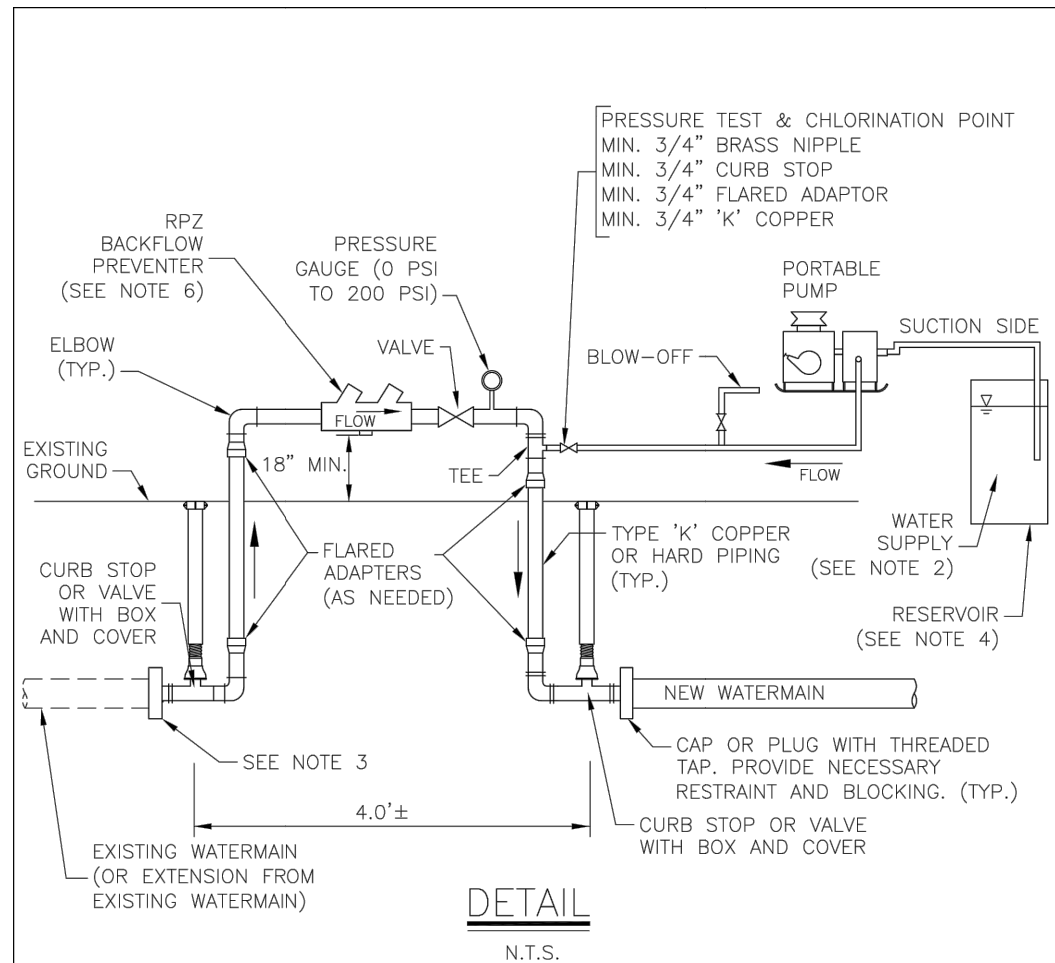
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File Name: 202100304 - MCKINLEY DESIGN



NOTES:

- | | |
|---|---|
| <p>1. BACTERIOLOGICAL WATER SAMPLES SHALL BE TAKEN AT BEGINNING AND END OF NEW WATERMAIN SECTION AND AT MAXIMUM 1,000 FT. SPACINGS.</p> <p>2. PROVIDE CLEAN WATER SUPPLY FOR PRESSURE TESTING. PROVIDE CHLORINATED WATER SUPPLY FOR DISINFECTION.</p> <p>3. CAP OR PLUG WITH THREADED TAP OR APPROPRIATE TAP INTO MAIN. PROVIDE NECESSARY RESTRAINT AND BLOCKING.</p> | <p>4. DIAMETER OF RESERVOIR SHALL BE 15" OR LESS. IF DIAMETER IS GREATER THAN 15", LEAKAGE TEST SHALL BE RUN A MINIMUM OF 4 HOURS.</p> <p>5. PRESSURE TEST CANNOT EXCEED 2,000 LINEAR FEET PER TEST SECTION.</p> <p>6. BACKFLOW PREVENTER TO BE SIZED TO ACHIEVE MIN 3 FPS SCOUR VELOCITY DURING FLUSHING OF NEW WATERLINE.</p> |
|---|---|

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD23_PRESS_TEST_SCHEM

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PRESSURE TESTING AND DISINFECTION APPARATUS SCHEMATIC	DWG. NO. SD23	
		DATE 6/00	REVISED 11/20

NOTES

- All elevations refer to USGS NAVD88 datum.
- The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
- The CONTRACTOR work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
- The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
- The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install watermain to avoid conflicts.
- The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as needed basis, phased to reduce erosion and visual impact.
- Blasting will not be permitted.
- No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
- The Erie County Water Authority only shall operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
- The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 5 business days in advance of the requested shut-down date.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD29_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	SD29	
		DATE 3/05	REVISED 11/21

Approved By:



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name

**McKINLEY PARKWAY
 WATERMAIN RELOCATION
 ECWA PN202100304**

TOWN OF HAMBURG
 ERIE COUNTY - NEW YORK

Name:	MISCELLANEOUS DETAILS
Date:	MARCH 2022
Scale:	AS SHOWN
Drawn/Revised By:	WWW

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File Name:
 202100304 - McKINLEY DESIGN

11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of the 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga.
19. The CONTRACTOR shall place temporary pavement (consisting of hot mix asphalt or cold patch) in all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict school bus access.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for approval.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants and curb stops operate as required.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD30_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30	
		DATE 3/05	REVISED 10/21

PIPE DIAMETER (in)	PIPE MATERIAL		WORKING PRESSURE (psi)	TEST PRESSURE (psi)
	Type (DIP, PVC, etc.)	Rating (Class/DR)		
12"	DIP	CLASS 52	100	175
12"	PVC	DR-18	100	175

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD31_PRESS_TEST_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	PRESSURE TESTING SCHEDULE	DWG. NO. SD31	
		DATE 10/05	REVISED 11/20

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
MARCH 2022

Scale:
AS SHOWN

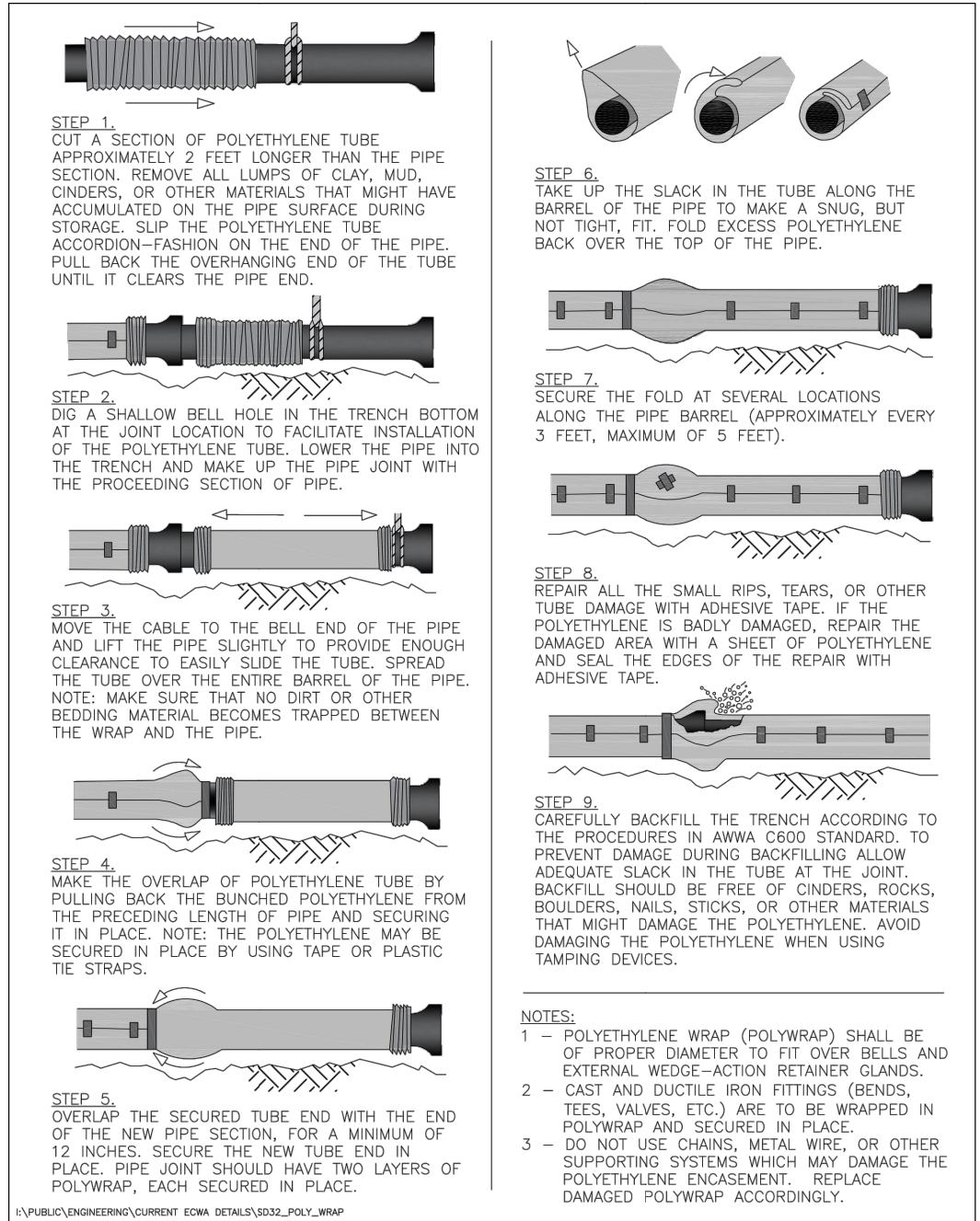
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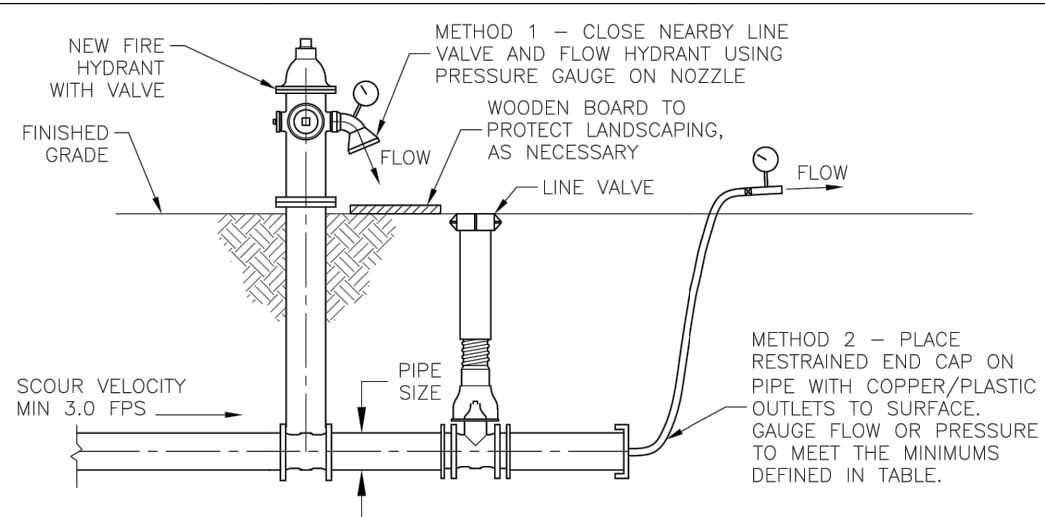
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ERIE COUNTY WATER AUTHORITY
BUFFALO, NEW YORK

STANDARD DETAIL
POLYETHYLENE ENCASEMENT
OF DUCTILE IRON PIPE

DWG. NO. SD32
DATE 06/16 REVISED 02/19



PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW		METHOD 2 END CAP FLOW	
		2 1/2" NOZZLE PRESSURE (PSI)	4" NOZZLE PRESSURE (PSI)	2" I.D. PRESSURE (PSI)	3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	-	22
16	1900	-	20	-	62
20	3000	-	50	-	-

I.D. = INNER DIAMETER

- NOTES:**
- TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
 - OUTLET PRESSURE MEASURED BY PITOT GAUGE.
 - ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
 - TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION

N.T.S.

ERIE COUNTY WATER AUTHORITY
BUFFALO, NEW YORK

STANDARD DETAIL
WATERLINE FLUSHING

DWG. NO. SD36
DATE 6/16 REVISED 3/18

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

**McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304**

**TOWN OF HAMBURG
ERIE COUNTY - NEW YORK**

Name: MISCELLANEOUS DETAILS

Date: MARCH 2022

Scale: AS SHOWN

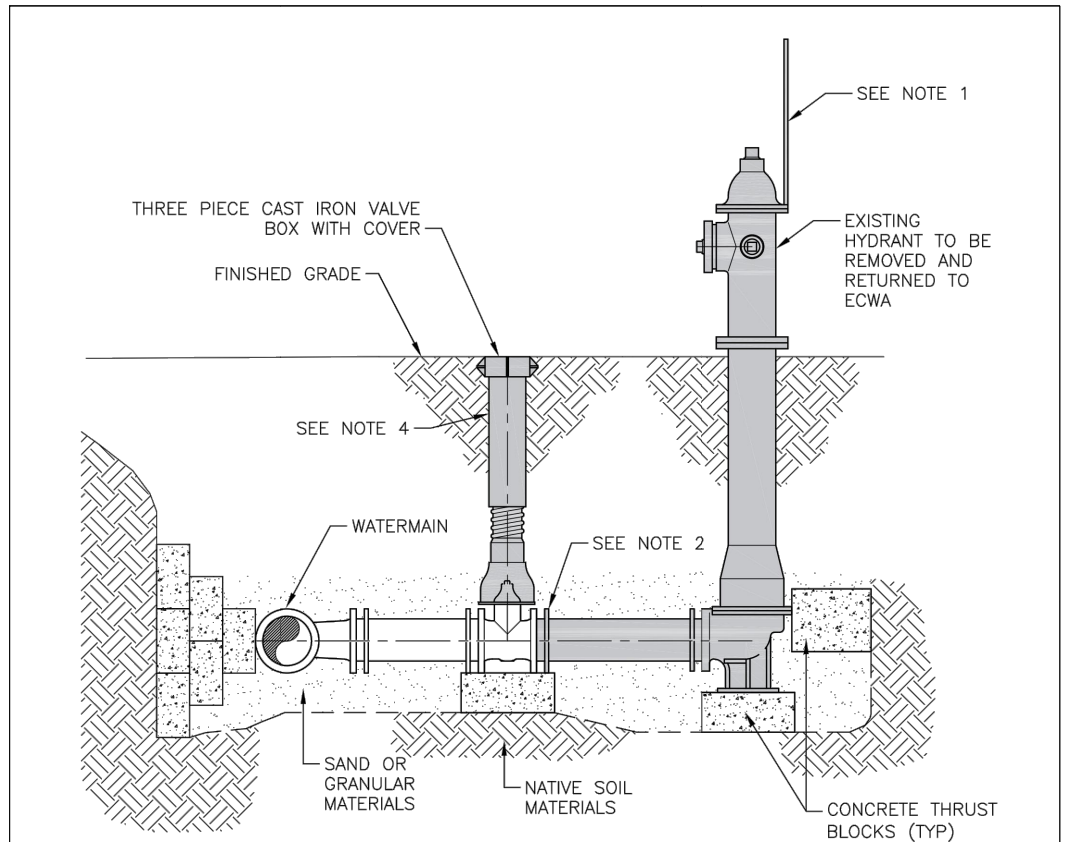
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File Name: 202100304 - McKINLEY DESIGN



PROCEDURE:

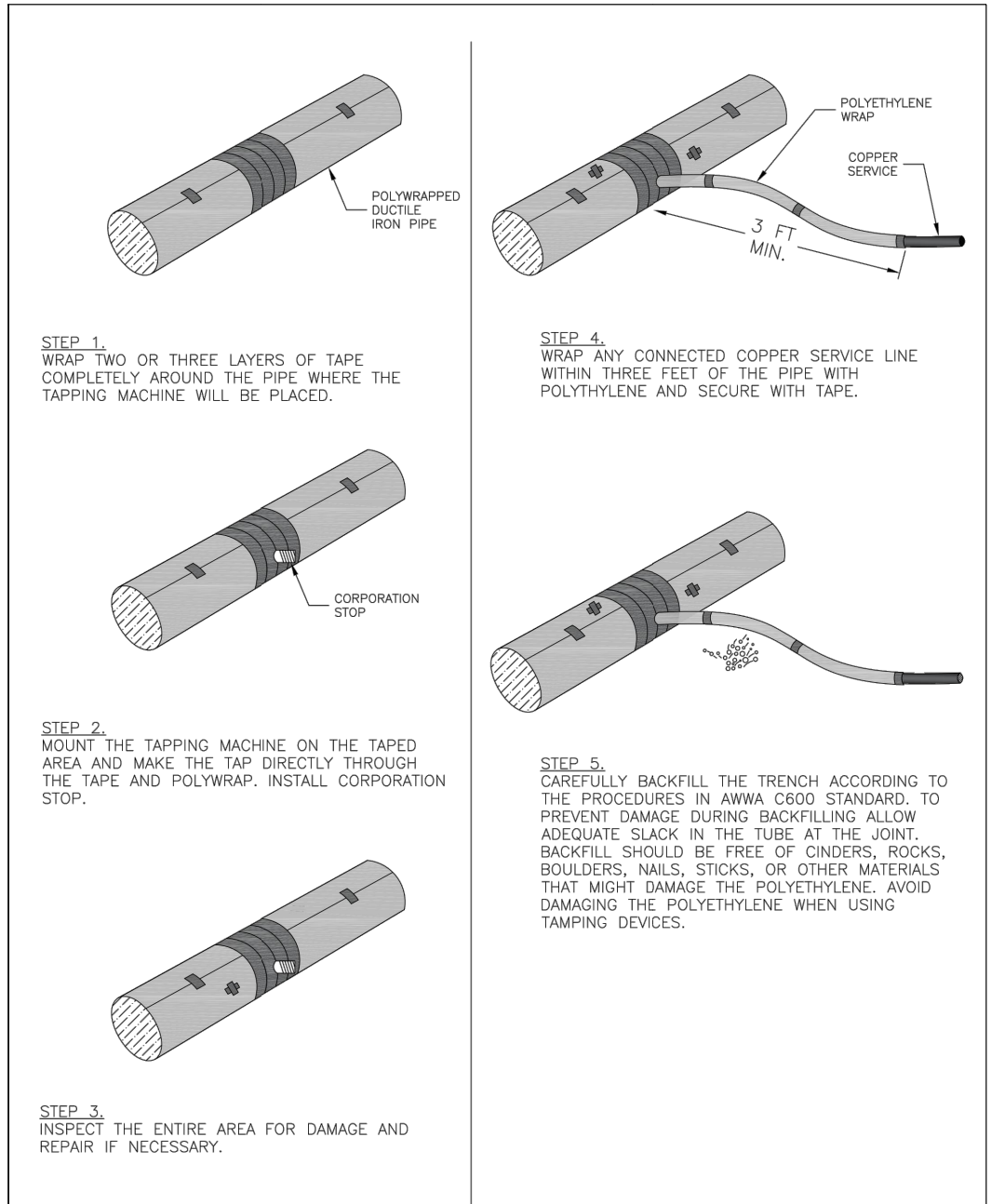
1. REMOVE HYDRANT MARKER AND RELOCATE TO NEW HYDRANT, OR RETURN TO APPROPRIATE MUNICIPALITY/FIRE DISTRICT.
2. WHEN WATERLINE IS TO BE ABANDONED, DEPRESSURIZE WATERLINE AND CLOSE WATER VALVE. EXCAVATE HYDRANT ASSEMBLY AND CAREFULLY DISCONNECT HYDRANT FROM GATE VALVE. DO NOT FORCE HYDRANT FROM VALVE WITHOUT PROPERLY DISCONNECTING.
3. WHEN WATERLINE IS TO REMAIN IN SERVICE, PERFORM SCHEDULED SHUTDOWN OF WATERLINE, REMOVE HYDRANT TEE AND REPLACE WITH NEW PIPE AND COUPLINGS.
4. REMOVE HYDRANT, HYDRANT PIPING, VALVE BOX AND COVER.
5. RETURN HYDRANT WITH PIPING TO ERIE COUNTY WATER AUTHORITY SERVICE CENTER, 3030 UNION ROAD, CHEEKTOWAGA, NY. HYDRANT IS TO BE HANDLED CAREFULLY TO AVOID ANY DAMAGE IN REMOVAL AND/OR TRANSIT. UNLOAD HYDRANTS AT LOCATION DEFINED BY ECWA.
6. REMOVE ANY EXISTING CONCRETE BLOCKING, AND FILL EXCAVATION WITH SUITABLE BACKFILL MATERIALS. COMPACT BACKFILL MATERIALS APPROPRIATELY.
7. REGRADE SURFACE TO ENSURE PROPER DRAINAGE. RESTORE SURFACE APPROPRIATELY USING ASPHALT, CONCRETE, AND/OR TOPSOIL/SEED.

SECTION

N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD37_HYD_ABANDON

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL FIRE HYDRANT ABANDONMENT	DWG. NO. SD37	
		DATE 1/17	REVISED



I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD38_TAP_POLY_WRAP_PIPE

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TAPPING POLYWRAPPED PIPE	DWG. NO. SD38	
		DATE 05/18	REVISED

Approved By:



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name

**McKINLEY PARKWAY
 WATERMAIN RELOCATION
 ECWA PN202100304**

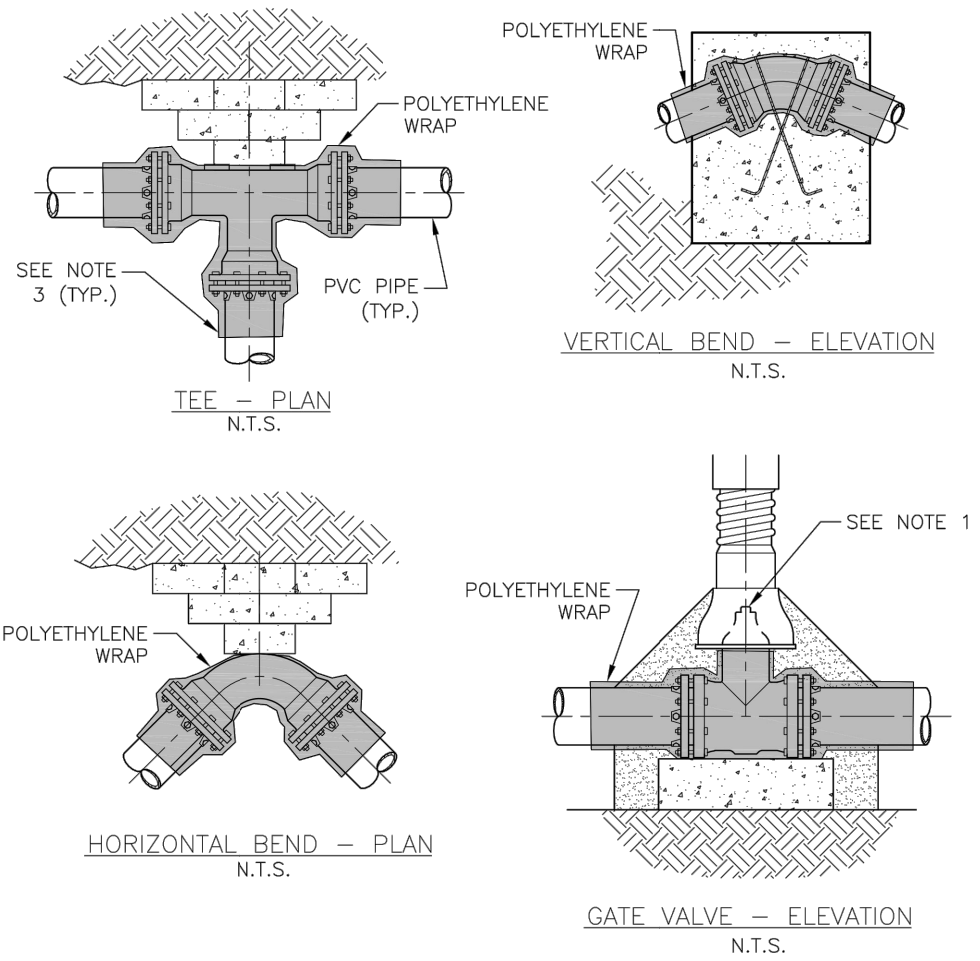
**TOWN OF HAMBURG
 ERIE COUNTY - NEW YORK**

Name: MISCELLANEOUS DETAILS
Date: MARCH 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

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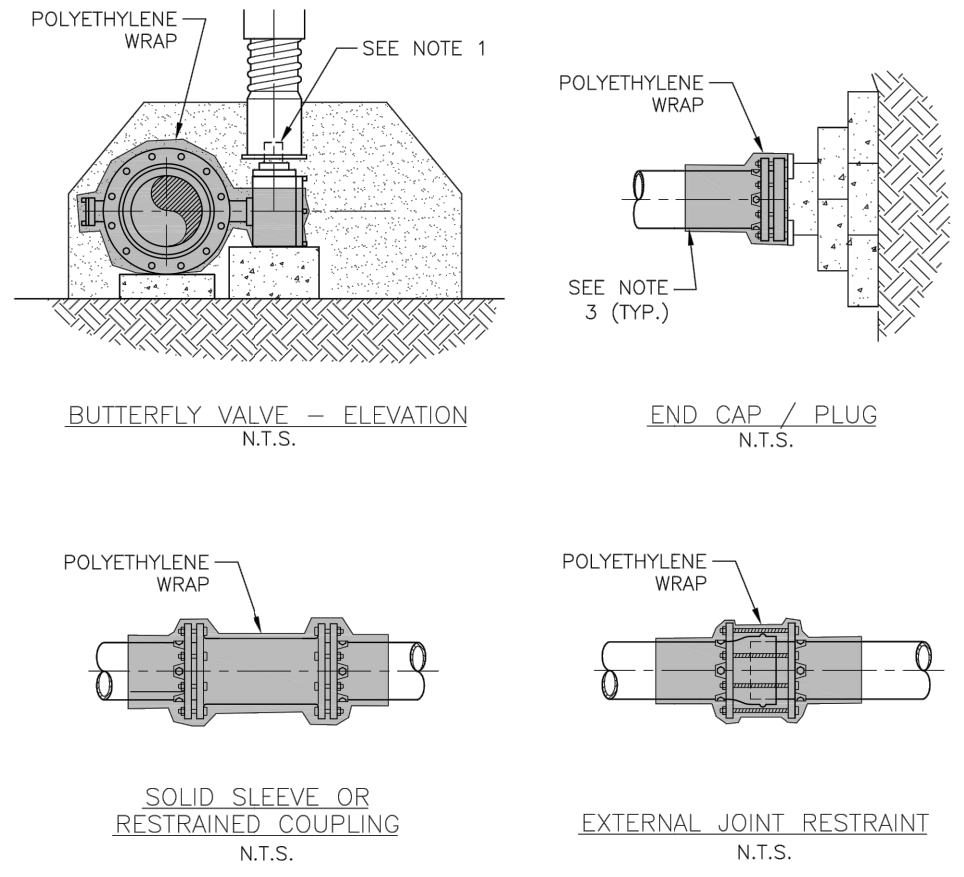
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- NOTES:**
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
 2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
 3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A	
		DATE 3/18	REVISED 12/18



- NOTES:**
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
 2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
 3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39B	
		DATE 12/18	REVISED

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

**McKINLEY PARKWAY
WATERMAIN RELOCATION
ECWA PN202100304**

TOWN OF HAMBURG
ERIE COUNTY - NEW YORK

Name:
**MISCELLANEOUS
DETAILS**

Date:
MARCH 2022

Scale:
AS SHOWN

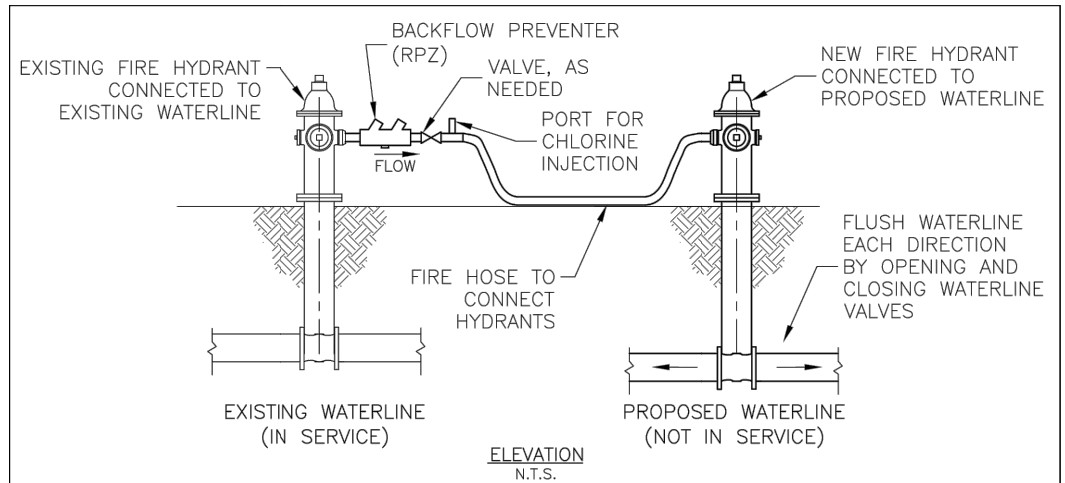
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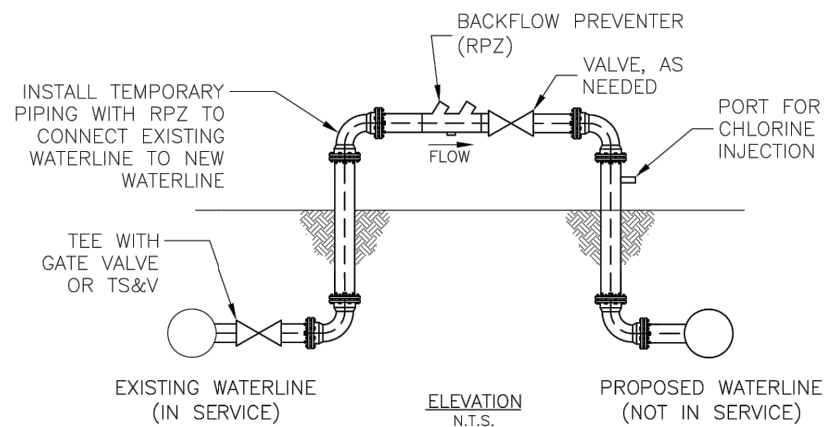
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METHOD 1 – CONNECT EXISTING HYDRANT TO PROPOSED HYDRANT



METHOD 2 – SERVICE TAP, TAPPING SLEEVE AND VALVE (TS&V), OR INTERCONNECTION

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO DEPICT ACCEPTABLE METHODS OF CONNECTING EXISTING WATERLINES TO PROPOSED WATERLINES FOR FILLING, FLUSHING, AND TESTING PROCEDURES IF 2-INCH COPPER OR POLYETHYLENE TUBING IS NOT USED TO BYPASS A VALVE. OTHER METHODS REQUIRE SUBMITTAL AND APPROVAL BY THE AUTHORITY PRIOR TO USE.
2. FIRE HOSES, TEMPORARY PIPING, AND BACKFLOW PREVENTERS SHALL NOT ENCROACH INTO ROADWAYS, DRIVEWAYS, OR SIDEWALK AREAS WITHOUT PROVIDING PROPER MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES.

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SWD

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SOURCE WATER CONNECTIONS	DWG. NO. SD44	
		DATE 10/20	REVISED

Approved By:



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name

MCKINLEY PARKWAY
 WATERMAIN RELOCATION
 ECWA PN202100304

TOWN OF HAMBURG
 ERIE COUNTY - NEW YORK

Name:
 MISCELLANEOUS
 DETAILS

Date:
 MARCH 2022

Scale:
 AS SHOWN

Drawn/Revised By:
 WWW

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File Name:
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**ERIE COUNTY WATER AUTHORITY
CONSTRUCTION AUTHORIZATION**

Project No. 202100140
Budget No. _____

Authorization No.: EC 7185
Date: 2/21/19
Inputted By/Date: _____

March 2021 Estimate Starting Date

March 2022 Estimate Complete Date

 yes no Retirement Involved

 Public Street

Private Right of Way

On Authority's Prop
Tax Districts _____

Name of Grantor of Easement

Date of Easement

TITLE OF PROJECT: Lowering 6" main
3775 Genesee St. in the Town of Cheektowaga

CLASS OF MAIN INSTALLATION:

 System Betterment

Bldr/Cont/Dev. Agree.

Owner Occupant Cont.

Special Revenue Cont.

DETAILED DESCRIPTION AND PURPOSE:
Replacement and lowering of approximately 30' of 6" DIP along Roxborough Ave. near Genesee St. in the Town of Cheektowaga. Relocation off Hydrant K09-A31.

ESTIMATE COST

(1) Total Est. Cost \$ \$20,819.93
(2) _____ Meters and Service @ _____ \$ _____
(3) Removal Cost Less Salvage \$ _____
(4) Gross Investment \$ \$20,819.93

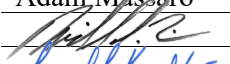
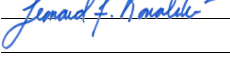
DEDUCT

(5) Const. Advance \$ _____
(6) Service Conn. \$ _____
(7) Refunds \$ _____
(8) Net Auth. Invest. \$ \$20,819.93

BUDGETARY DATA

(9) Tot. Budget Expnd. \$ _____
(10) This Authorization \$ _____
(11) Pre Approved \$ _____
(12) Tot. Apvl. To Date \$ _____
(13) Bal. Budget Expnd. \$ _____

APPROVALS

Preparation Adam Massaro
Sr. Dist. Engr.  10/4/2024
Exec. Engr.  10/7/2024
Admn. Director _____
Legal Dept. _____
Acct. Dept. _____

ESTIMATED EARNINGS & RETURNS

ESTIMATED INCREASE IN REVENUES

(14) _____ Customers @ _____ \$ _____

\$ _____
(15) _____ Hydrants @ _____ \$ _____

\$ _____

EST. SAVINGS IN OPERATING EXPENSES

(16) _____ \$ _____
(17) Gross Increase in Earnings \$ _____

REVENUE DEDUCTIONS

(18) Operating Exp. _____ % \$ _____
(19) Depreciation \$ _____
(20) Total Deductions \$ _____
(21) Net Income Loss \$ _____
(22) % Return on Investment _____
(21) divided by 8) _____ %

RESOLUTION APPROVING

Adopted _____
Item No. _____



ERIE COUNTY
WATER AUTHORITY
 BUFFALO, NEW YORK

REVISED DR. N.G.S.
 DATE: 9-11-01
 FIELD

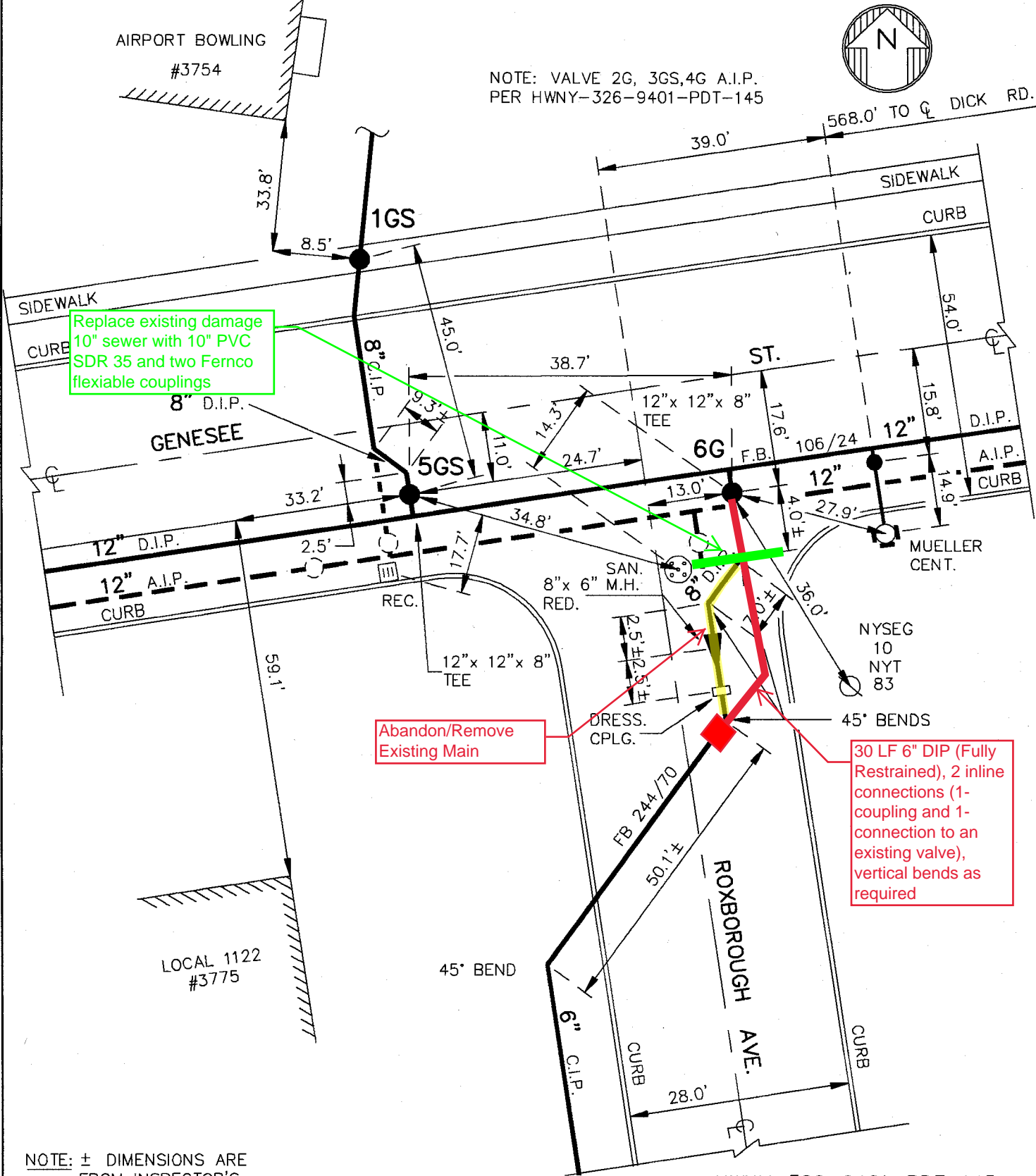
REVISED DR. N.G.S.
 DATE: 9-11-01
 OFFICE

TOWN OF CHEEKTOWAGA
 E.C.W.A.

K09-A31
 DETAIL SHT. NO.
 199400365
 CURRENT PROJECT NO.



NOTE: VALVE 2G, 3GS, 4G A.I.P.
 PER HWNY-326-9401-PDT-145



NOTE: ± DIMENSIONS ARE FROM INSPECTOR'S FIELD BOOK. NOT FIELD CHECKED. DETAIL DRAWN ON CAD SYSTEM.

HWNY-326-9401-PDT-145
 F.B. 127/9
 F.B. 244/70
 F.B. 106/24

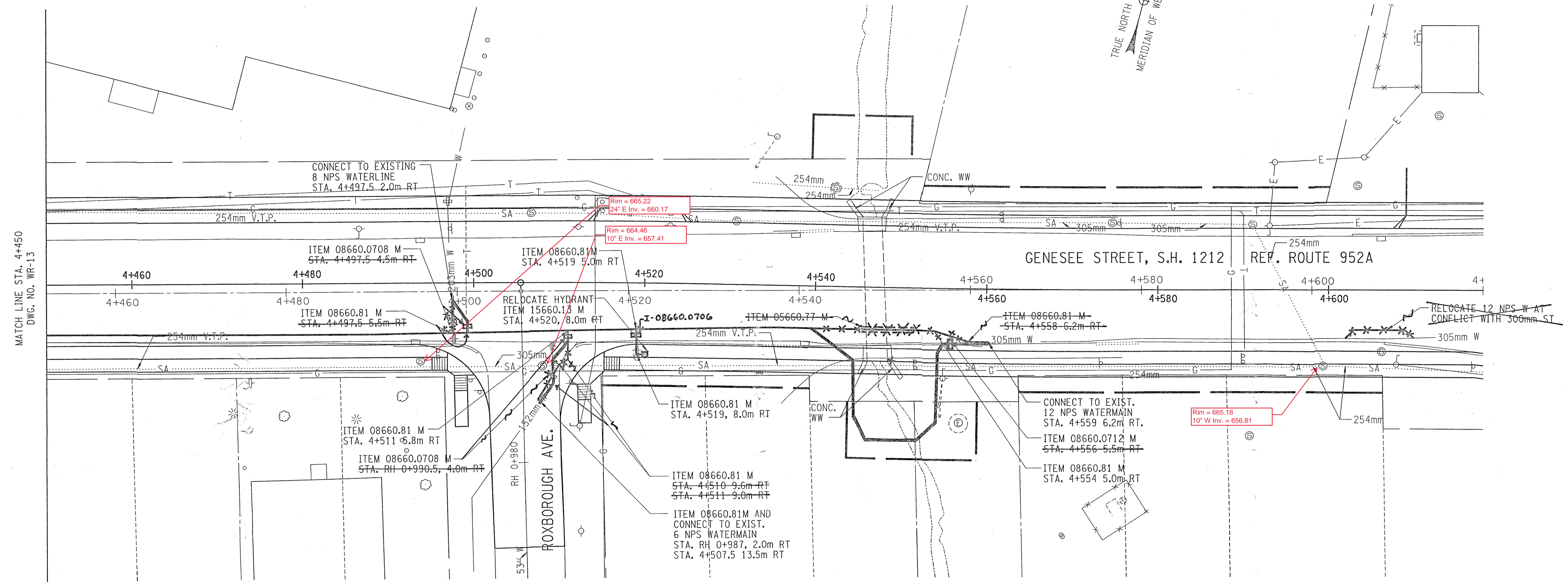
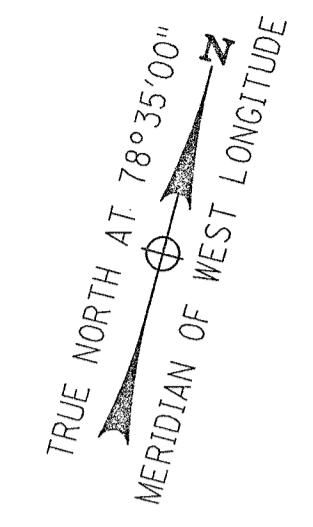
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 DETAIL SHT. NO.

MASTER COPY

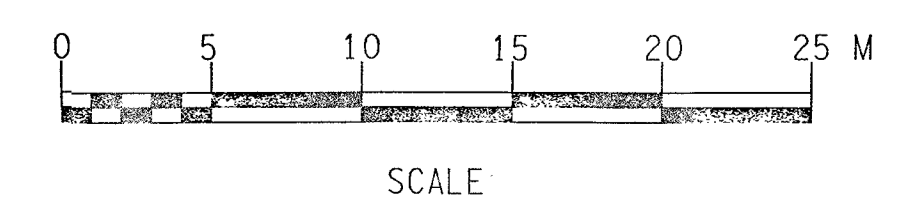
FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	N.Y.		248	294
GENESEE STREET, PART 1, S.H. 1212				
N.Y. ROUTE 33B				
ERIE COUNTY P.I.N. 5463.01				

IN CHARGE OF M. ARMBRUST DESIGNED BY R. SINICROPI CHECKED BY M. ARMBRUST ESTIMATED BY K. COVERT CHECKED BY M. ARMBRUST DRAFTED BY D. PURDUE CHECKED BY M. ARMBRUST DATE 4/98

Elevations based off record data



NOTE:
 AT CONFLICTING LOCATIONS WITH STORM LINES, RELOCATION OF THE WATER MAIN SHALL BE REFERENCED TO DRAWING WD-2 FOR TYPICAL INSTALLATION, AND DRAWING WD-5 FOR ITEMS & QUANTITIES.



AS-BUILT REVISIONS

- RELOCATED WL TIE IN AT 4+500 RT.
- ALTERED WL TIE IN ON ROXBOROUGH AVE.
- ADDED HYDRANT VALVE 4+519 RT.
- RELOCATED WL FROM 4+540 TO 4+560 RT.
- ELIMINATED WL RELOCATION AT 4+605 RT.

SIGNATURE _____ DATE _____

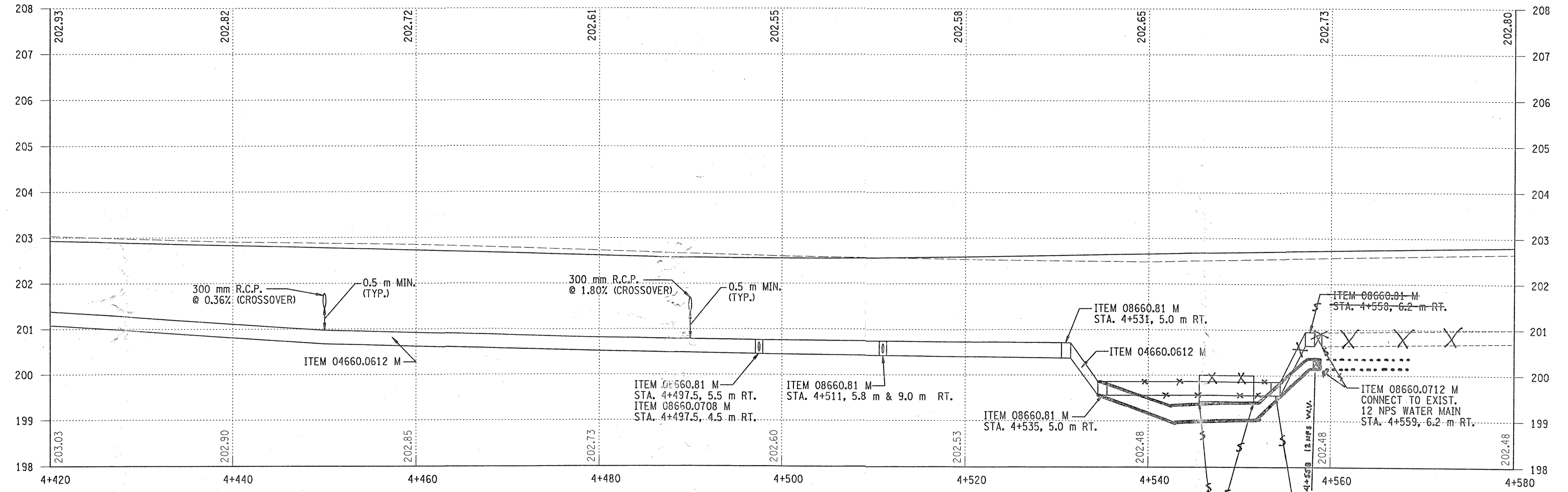
**WATER MAIN RELOCATION PLAN
SEGMENT H**

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

DRAWING NO. WR-14	SCALE 1:250	DATE APRIL 1998	Folt-Albert Associates Architecture, Engineering and Surveying, P.C. Buffalo, New York 14203
----------------------	----------------	--------------------	---

FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	N.Y.		257	294
GENESEE STREET, PART 1, S.H. 1212				
N.Y. ROUTE 33B				
ERIE COUNTY P.I.N. 5463.01.102				

IN CHARGE OF G. J. SENTZ DESIGNED BY M. McMANUS CHECKED BY M. McMANUS ESTIMATED BY M. LoTEMPIO DRAFTED BY M. LoTEMPIO CHECKED BY K. ZEIS CHECKED BY J. TOCKE DATE 4/98



GENESEE STREET, PART 1, S.H. 1212

AS-BUILT REVISIONS

ACTUAL LOCATION OF NEW W.L. & SPECIALS

SIGNATURE _____ DATE _____

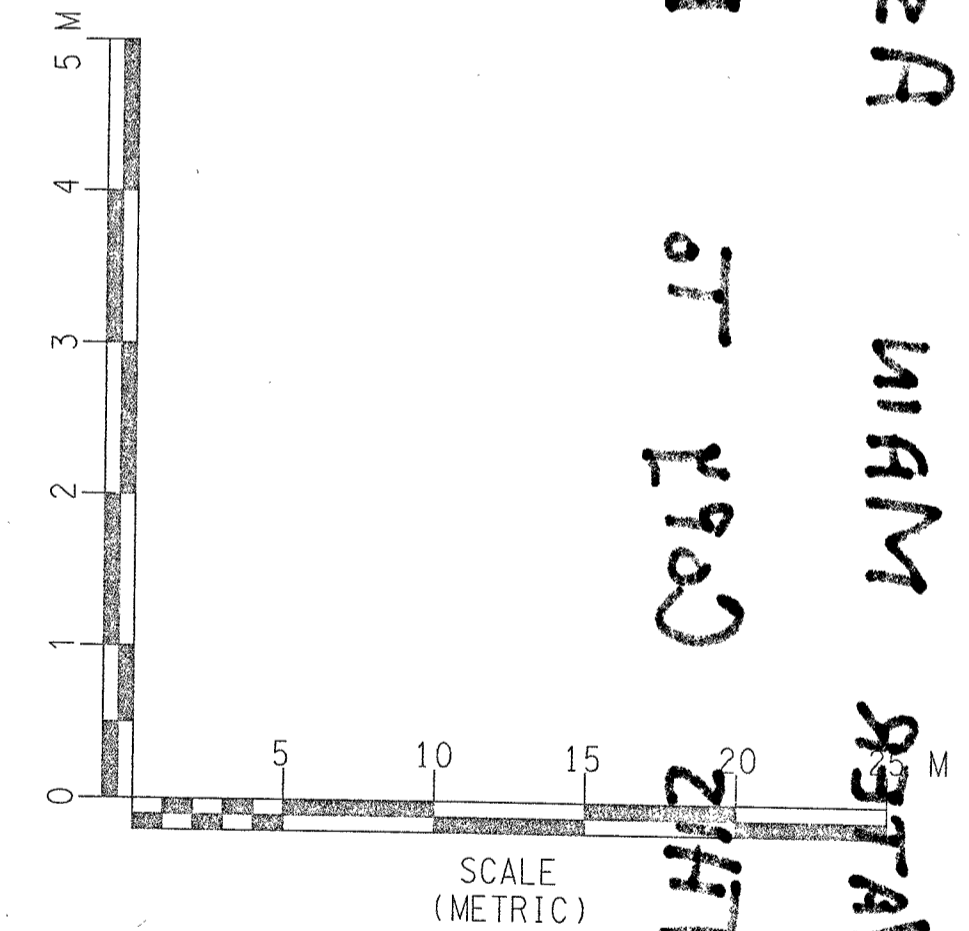
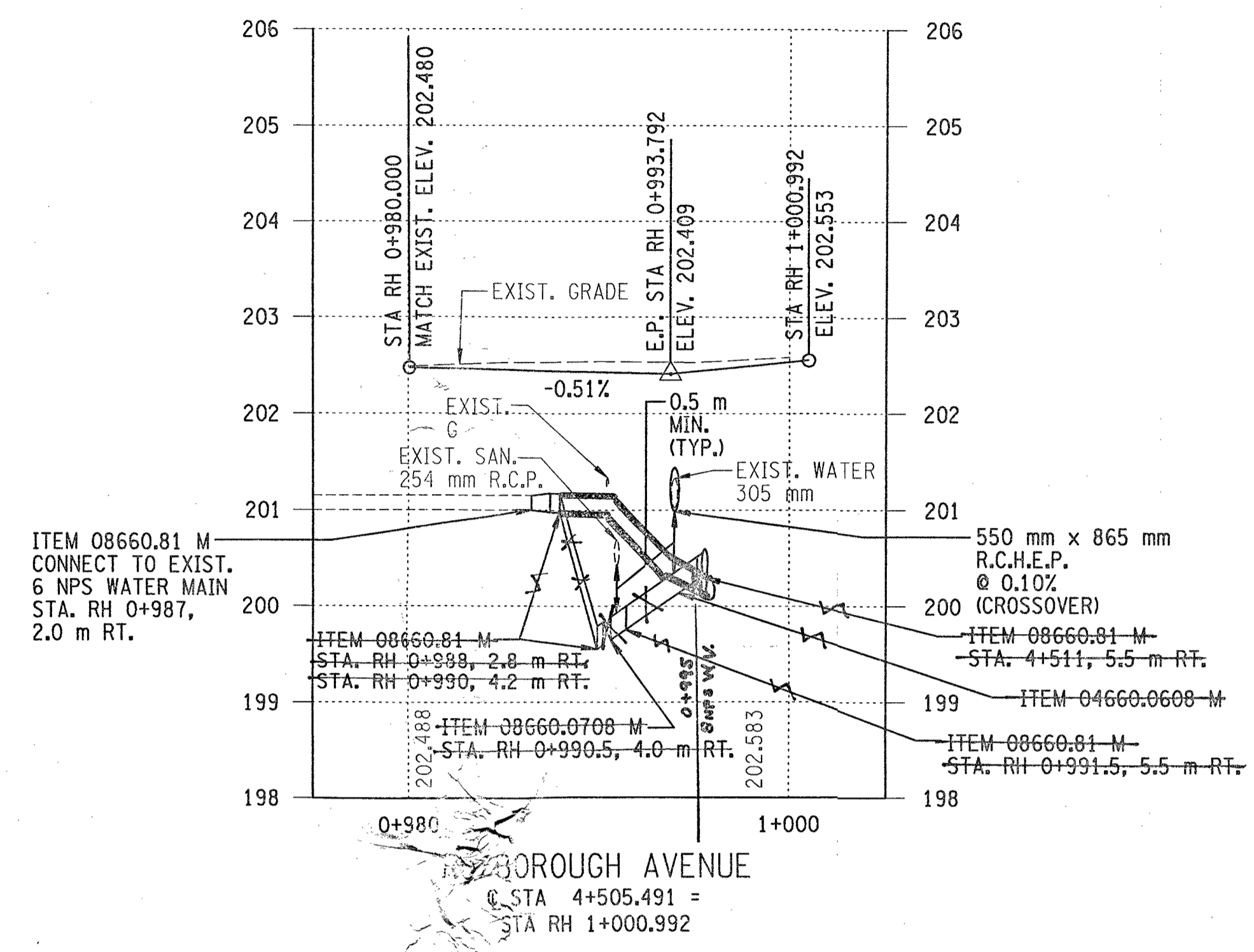
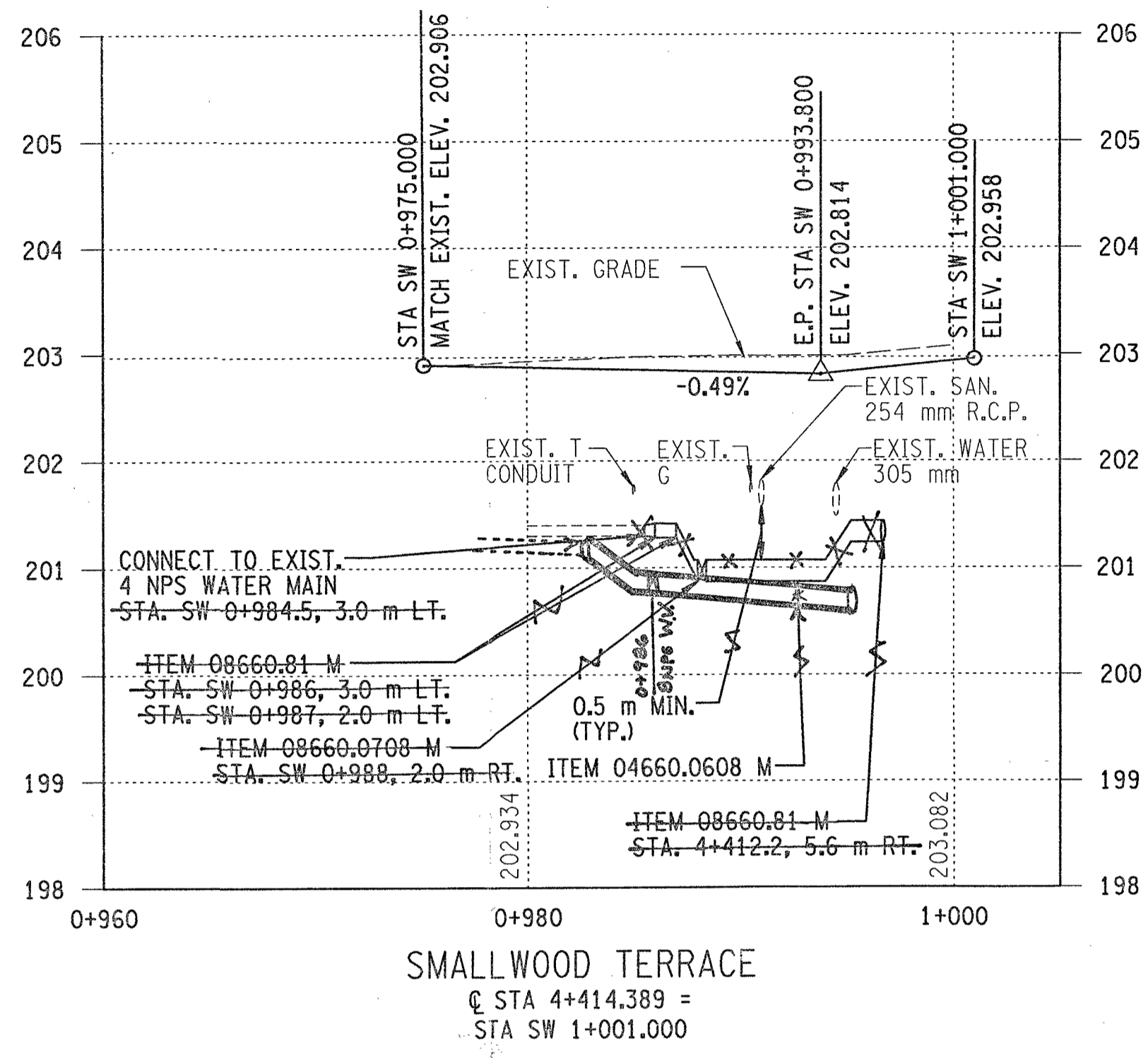
PROFILE
 @ STA. 4+320 TO @ STA. 4+510

STATE OF NEW YORK
 DEPARTMENT OF TRANSPORTATION

 BERGMANN ASSOCIATES ENGINEERS, ARCHITECTS, SURVEYORS, P.C.	 Folt-Albert Associates Architecture, Engineering and Surveying, P.C. Buffalo, New York 14203	
DRAWING NO. WLP-9	SCALE HORIZ. 1:500 VERT. 1:100	DATE APRIL 1998

FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	N.Y.		264	294
GENESEE STREET, PART 1, S.H. 1212				
N.Y. ROUTE 33B				
ERIE COUNTY P.I.N. 5463.01.102				

IN CHARGE OF M. ARMBRUST DESIGNED BY M. ARMBRUST CHECKED BY M. FORYS ESTIMATED BY M. MCMANUS CHECKED BY M. LOTEMPIO DRAFTED BY D. PURDIE CHECKED BY J. TOCKE DATE 4/98



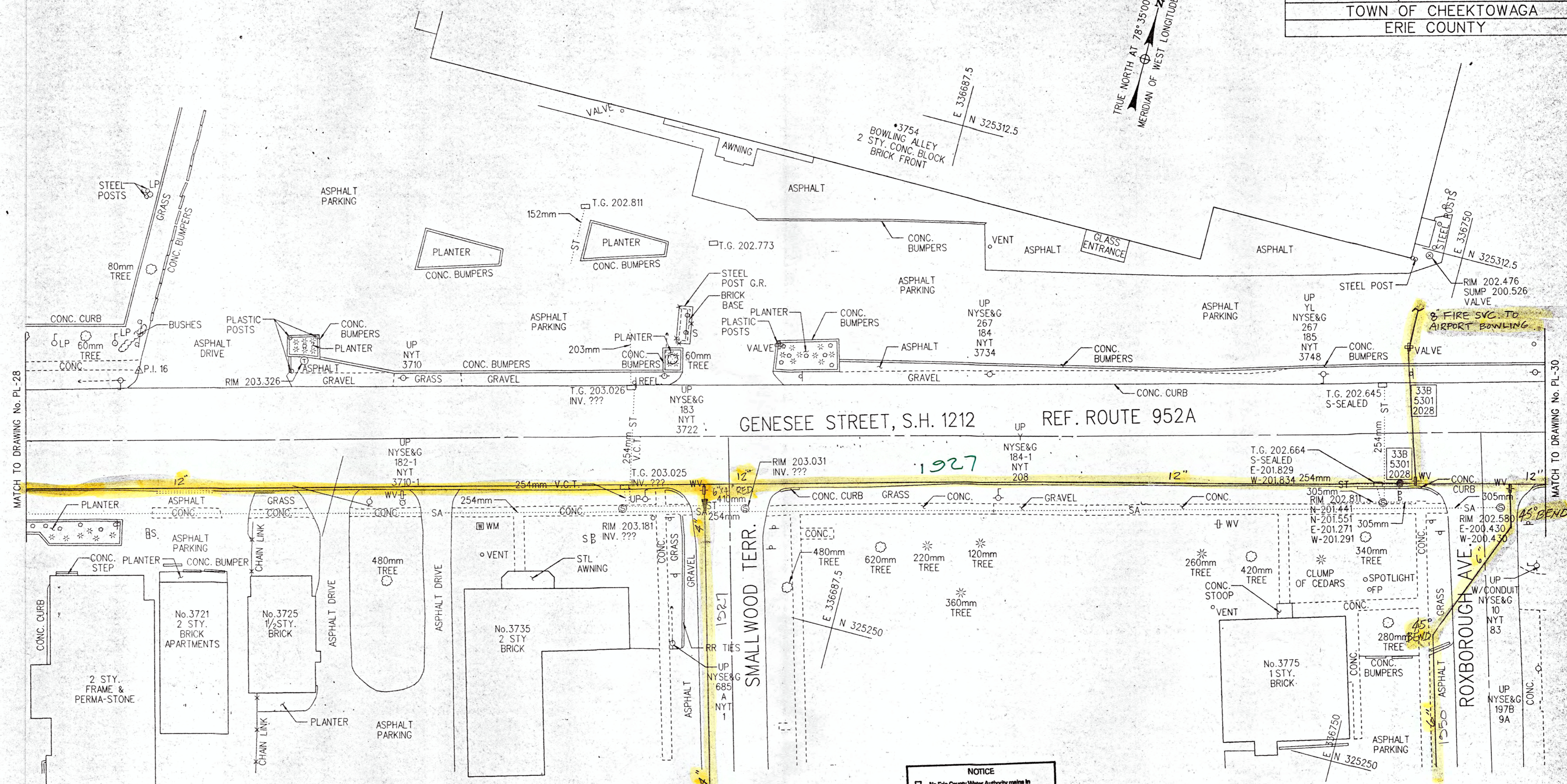
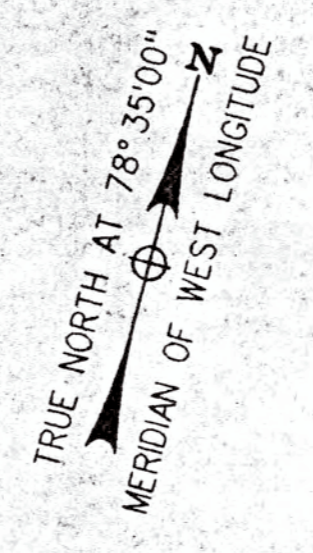
JHT
 COLLECT 1990
 AWG
 MAM
 27JUB-2R
 PER 250
 21

AS-BUILT REVISIONS		
ACTUAL LOCATION OF NEW W.L. & SPECIALS		
SIGNATURE		DATE
SIDE STREET PROFILE		
STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION		
BERGMANN ASSOCIATES ENGINEERS, ARCHITECTS, SURVEYORS, P.C.		Folt-Albert Associates Architecture, Engineering and Surveying, P.C. Buffalo, New York 14203
DRAWING NO. WLP-16	SCALE HORIZ. 1:500 VERT. 1:100	DATE APRIL 1998

IN CHARGE OF DESIGNED BY CHECKED BY ESTIMATED BY CHECKED BY DRAFTED BY J.L. PITTORE CHECKED BY DATE 8-18-94

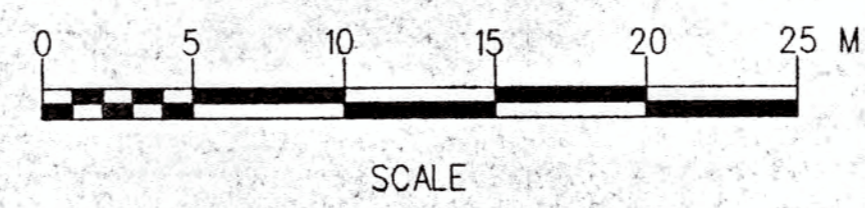
FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	N.Y.			

GENESEE ST., REF. RTE. 952A, S.H. 1212
 TOWN OF CHEEKTOWAGA
 ERIE COUNTY



NOTICE

- No Erie County Water Authority mains in this area.
- Location of Erie County Water Authority mains shown are in accordance with best information available to the Authority.
- Correct _____ for other facilities in this area.
- For field location please notify U. L. S. at 604-4498, two to ten days in advance of scheduled work in this location.



AS-BUILT REVISIONS

SIGNATURE _____ DATE _____

PLAN

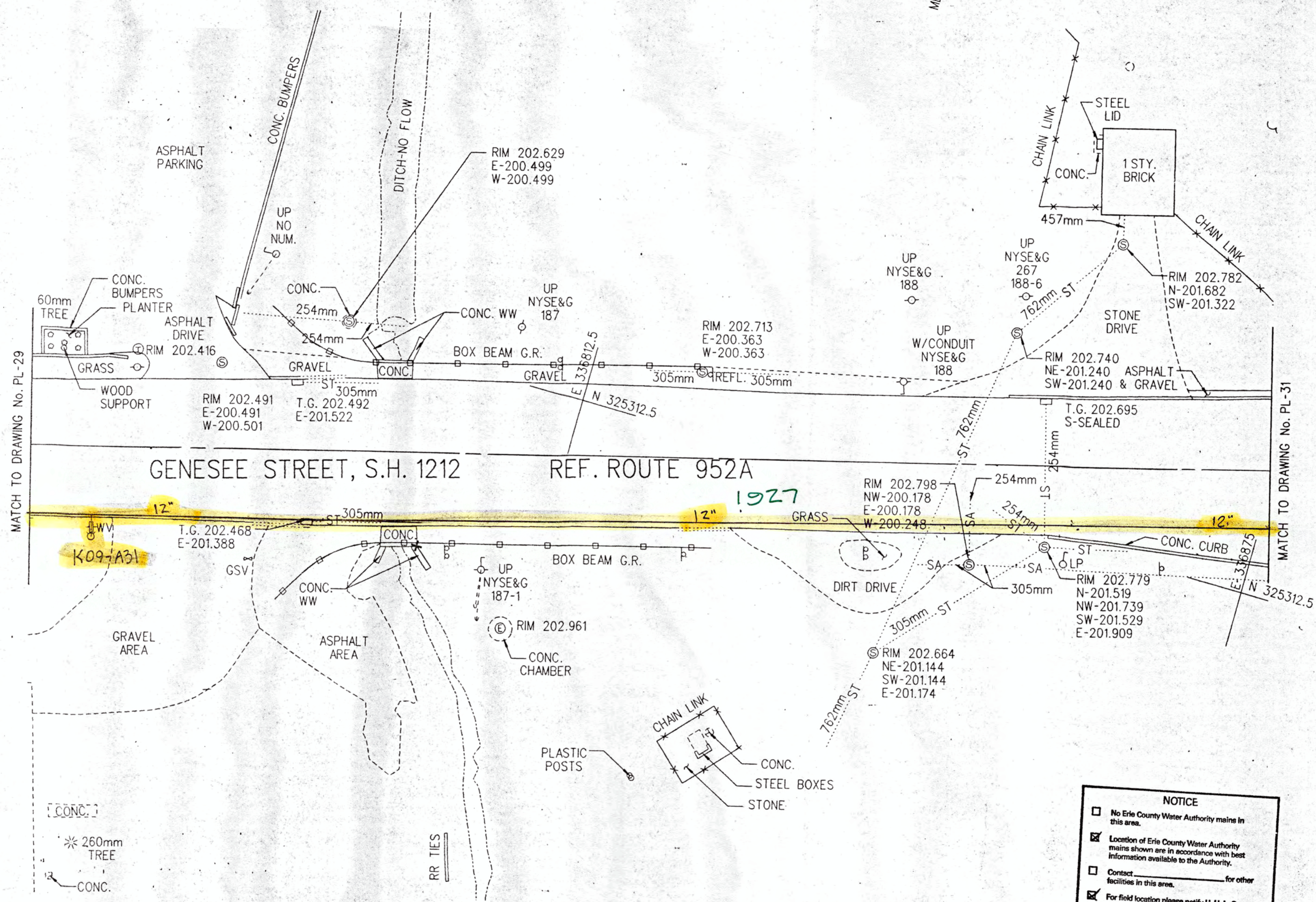
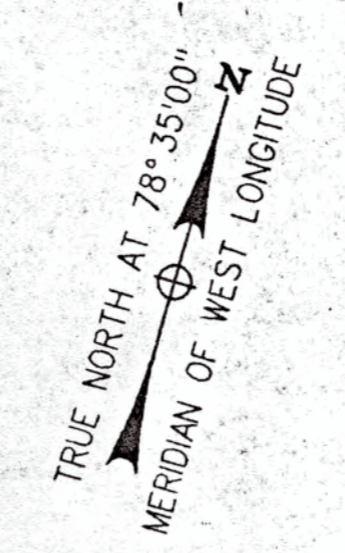
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

BERGMANN ASSOCIATES CONSULTING ENGINEERS	DRAWING NO. PL-29	SCALE 1:250	DATE 8/8/94	
---	----------------------	----------------	----------------	--

FA Project No.: 93043

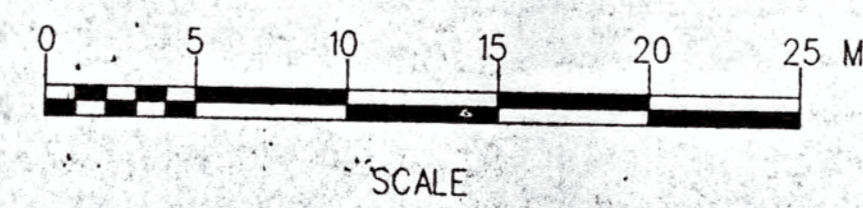
FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	N.Y.			

GENESEE ST., REF. RTE. 952A, S.H. 1212
TOWN OF CHEEKTOWAGA
ERIE COUNTY



NOTICE

- No Erie County Water Authority mains in this area.
- Location of Erie County Water Authority mains shown are in accordance with best information available to the Authority.
- Contact _____ for other facilities in this area.
- For field location please notify U. I. L. S. at 663-4488, two to ten days in advance of scheduled work in this location.



AS-BUILT REVISIONS

SIGNATURE

DATE

PLAN

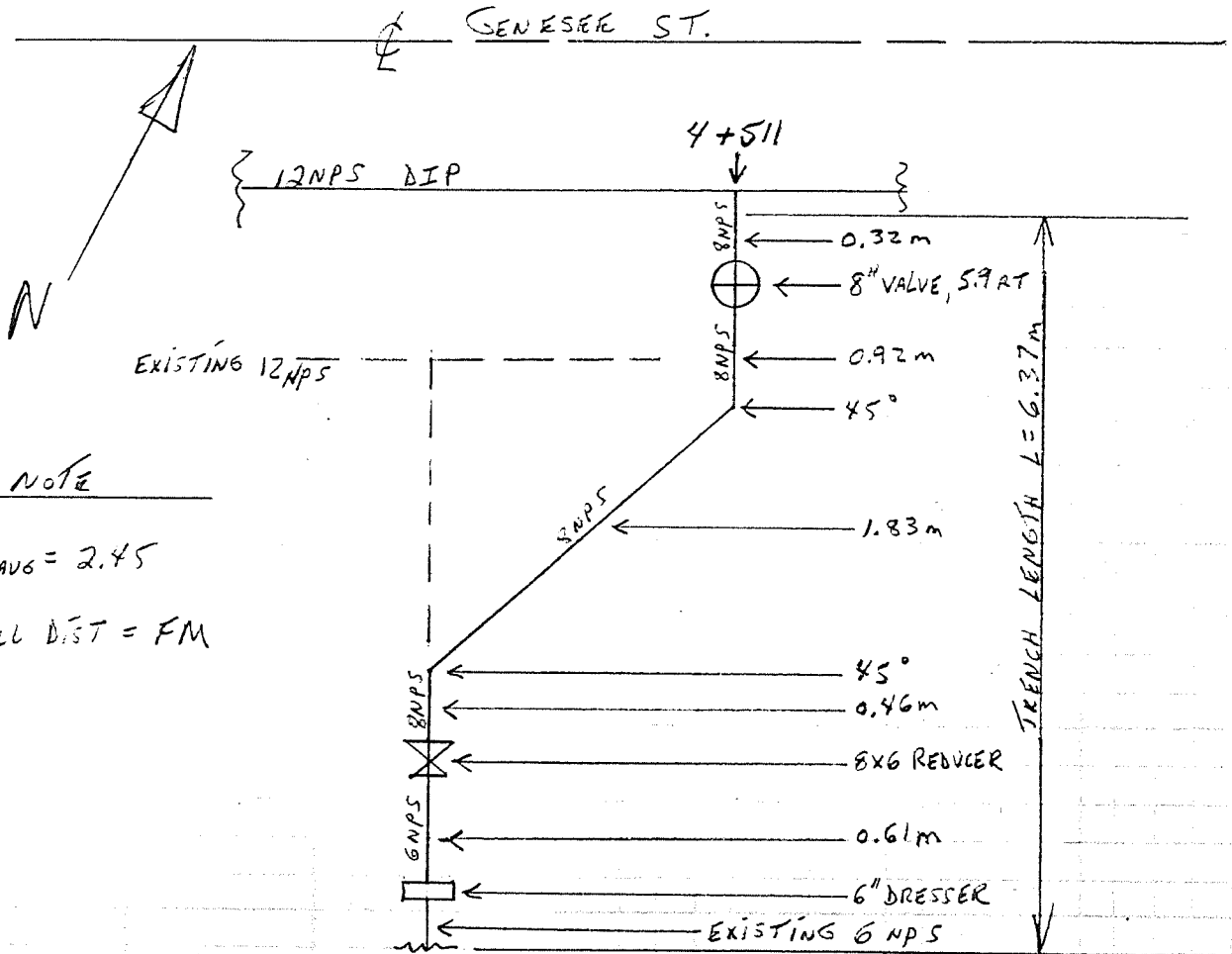
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

BERGMANN ASSOCIATES CONSULTING ENGINEERS	DRAWING NO. PL-30	SCALE 1:250	DATE 8/18/94	
---	----------------------	----------------	-----------------	--

D257739 - CPIN 5463.01.301
 RECONSTRUCTION ON GENESEE STREET (ROUTE
 N.Y. 1902A) INCLUDING BRIDGE/RECONSTRUCTION
 EXPRESSWAY (ROUTE 33), CITY OF BUFFALO
 AND TOWN OF CHEEKTOWAGA, ERIE COUNTY;
 HARTFORD PAVING CORPORATION

CONSTRUCTION JOB STAMP

Sheet 1 of 3 Prep. by Tom Hays Date 4/14/00
 Checked by _____ Date _____ Design Ident.: SH.No. _____
 County _____ P.I.N. _____
 Job Title Roxborough 8NPS H₂O Tie-in



NOTE

- 1) $D_{AVG} = 2.45$
- 2) ALL DIST = FM
- 3)

ITEM 206.02 - TRENCH + CULVERT EXC

$$6.37 \times (0.60 + 0.23) \times 2.45 \Rightarrow \underline{\text{PAY } 12.95 \text{ m}^3 \checkmark}$$

ITEM 203.07 - SELECT GRAN FILL

$$12.95 \text{ m}^3 - [(6.37 \times 0.83 \times 0.125)] \Rightarrow \underline{\text{PAY } 12.29 \text{ m}^3 \checkmark}$$

↳ TEMP PATCH

ITEM 552.05 - SAFE OP. SHIELD

$$2.44 \times 1.83 \times 2 (\text{SIDES}) \times 2 \Rightarrow \underline{\text{PAY } 17.86 \text{ m}^2 \checkmark}$$

↳ USED 2X

IR1317

OPEN 5453 01 301
N.Y.S. DEPARTMENT OF TRANSPORTATION
REGISTRATION ON GENESSEE STREET (2000)
951A BRIDGING BRIDGE/KENSINGTON
EXPRESSWAY (ROUTE 33), CITY OF BOSTON
AND TOWN OF CHEEKTOWAGA, ERIE COUNTY
HARTMAN BRIDGING JOBS STAMP

Sheet 1 of 2 Prep. by RG Date 9/28/2000

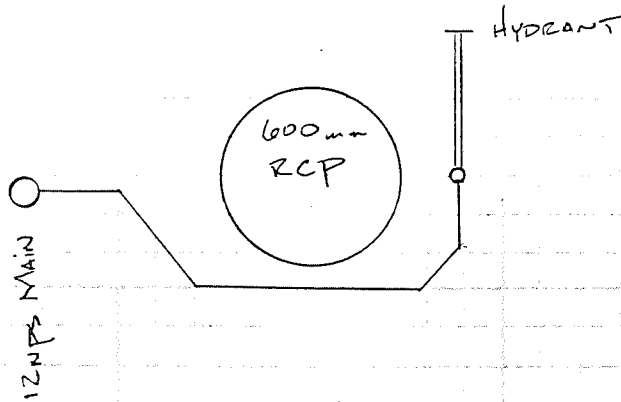
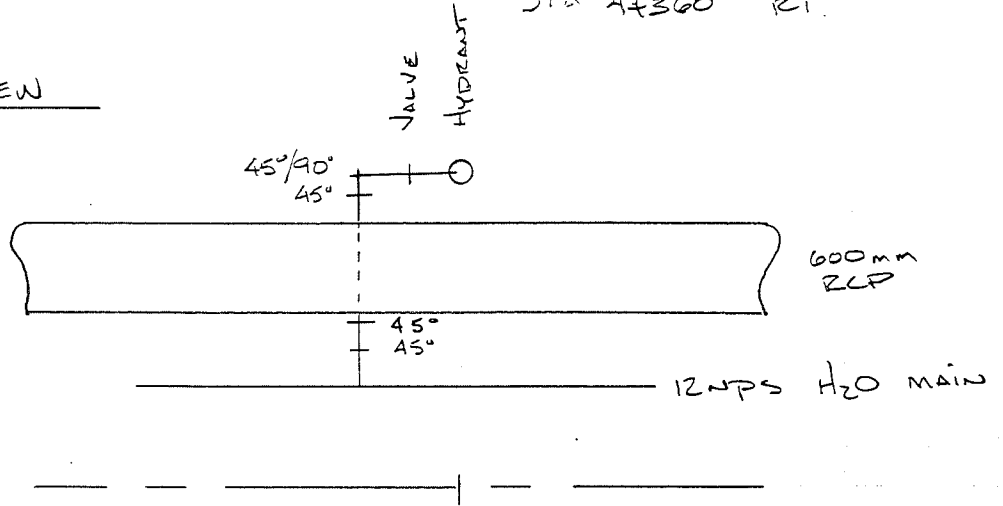
Checked by _____ Date _____ Design Ident.: SH.No. _____

County _____ P.I.N. _____

Job Title HYDRANT RELOCATION @

STA 4+360± RT.

PLAN VIEW



ELEVATION

No PAYMENTS FOR THIS WORK

**ERIE COUNTY WATER AUTHORITY
CONSTRUCTION AUTHORIZATION**

Project No. 202200219
Budget No. _____

Authorization No.: EC 7283
Date: 9/7/2022
Inputted By/Date: _____

August 2022 Estimate Starting Date
August 2023 Estimate Complete Date
X yes _____ no Retirement Involved
X Public Street
Private Right of Way
On Authority's Prop
Tax Districts _____
Name of Grantor of Easement _____
Date of Easement _____

TITLE OF PROJECT: Water main replacement/relocation.

DETAILED DESCRIPTION AND PURPOSE:
Replace approximately 100' of existing water main Due to failure.

CLASS OF MAIN INSTALLATION:

X System Betterment
Bldr/Cont/Dev. Agree.
Owner Occupant Cont.
Special Revenue Cont.

ESTIMATE COST

(1) Total Est. Cost \$ 74,556.96
(2) _____ Meters and Service @ _____ \$ _____
(3) Removal Cost Less Salvage \$ _____
(4) Gross Investment \$ 74,556.96

DEDUCT

(5) Const. Advance \$ _____
(6) Service Conn. \$ _____
(7) Refunds \$ _____
(8) Net Auth. Invest. \$ 74,556.96

BUDGETARY DATA

(9) Tot. Budget Expnd. \$ _____
(10) This Authorization \$ _____
(11) Pre Approved \$ _____
(12) Tot. Apvl. To Date \$ _____
(13) Bal. Budget Expnd. \$ _____

APPROVALS

Preparation Adam Massaro
Sr. Dist. Engr. [Signature] 10/4/2024
Exec. Engr. [Signature] 10/7/2024
Admn. Director _____
Legal Dept. _____
Acct. Dept. _____

ESTIMATED EARNINGS & RETURNS

ESTIMATED INCREASE IN REVENUES

(14) Customers @ _____ \$ _____
(15) _____ Hydrants @ _____ \$ _____
\$ _____

EST. SAVINGS IN OPERATING EXPENSES

(16) _____ \$ _____
(17) Gross Increase in Earnings \$ _____

REVENUE DEDUCTIONS

(18) Operating Exp. _____ % \$ _____
(19) Depreciation \$ _____
(20) Total Deductions \$ _____
(21) Net Income Loss \$ _____
(22) % Return on Investment _____
(21) divided by 8) _____ %

RESOLUTION APPROVING

Adopted _____
Item No. _____



ERIE COUNTY WATER AUTHORITY

REQUISITION ON STORES

Project No.: 202200219 Date: 09-07-22 Requisition No.: _____

Issue To: Kandey Co., Inc.

For Use In: 6" Main Replacement

Location: 6 Hazel Court, Orchard Park

OWIP: _____ EC NO.: 107200-007283 Svc. No.: _____

Quantity	Description	Part #	On Site	Used	Ret.
120 ft	6" PVC Pipe				
10 ft	6" DI Pipe				
20 ft	Poly Wrap				
2	6" 11.25° DI Bends MJ w/ Accessories				
4	6" 22.5° DI Bends MJ w/ Accessories				
1	6"x6"x6" DI Tee w/ Accessories				
1	6" 90° DI Bend w/ Accessories				
2	6" HYMAX				
2	6"x2" DI Tapped Cap MJ w/ Accessories				
2	6" Solid End Caps				
1	6" Gate Valve				
1	Complete Valve Box				
4	6" PVC Joint Restraints – Complete both sides				
10	6" PVC Mega Lugs				
6	6" DI Mega Lugs				
4	6" Gray Mega Lug				
8	Ductile Lugs				
24	3/4" All Thread				
8	3/4" Nuts				
2	2" MIP x Compression Corp – For End Caps				
1	2" Compression Corp Stop CC for Saddle				
2	2" Compression x Compression Curb Stop				
30	2" Copper				
1	6"x2" Saddle				
2	3/4" Curb Stop				
2	3/4" Corp Stop				
2	Complete Service Box				
100 ft	3/4" Copper				
2	6"x3/4" Saddle				
2	3/4" x 3/4" Flare Coupling				
1	5.5' Hydrant Assembly				

Kandey Co., Inc. _____

Inspector _____

202200219- HAZEL COURT
10/4/2022



HOUSE # 4

EXISTING 6" CAST

BTD

HOUSE # 6

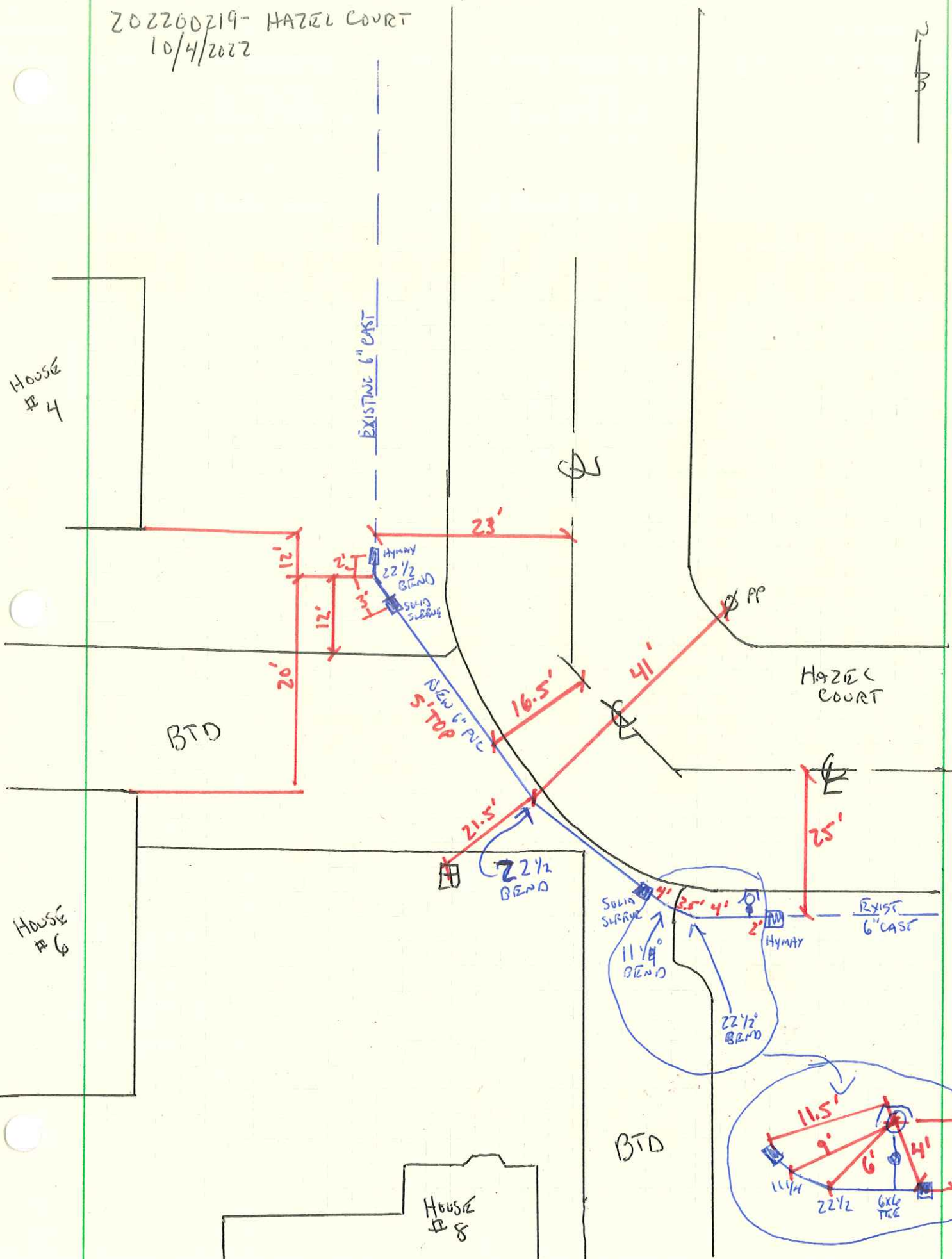
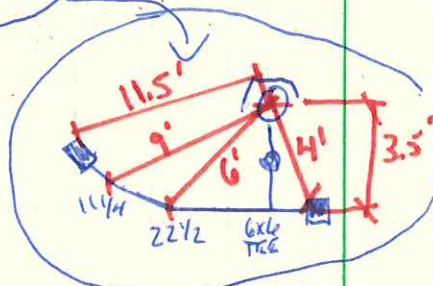
NEW 6" PVC
5" TOP

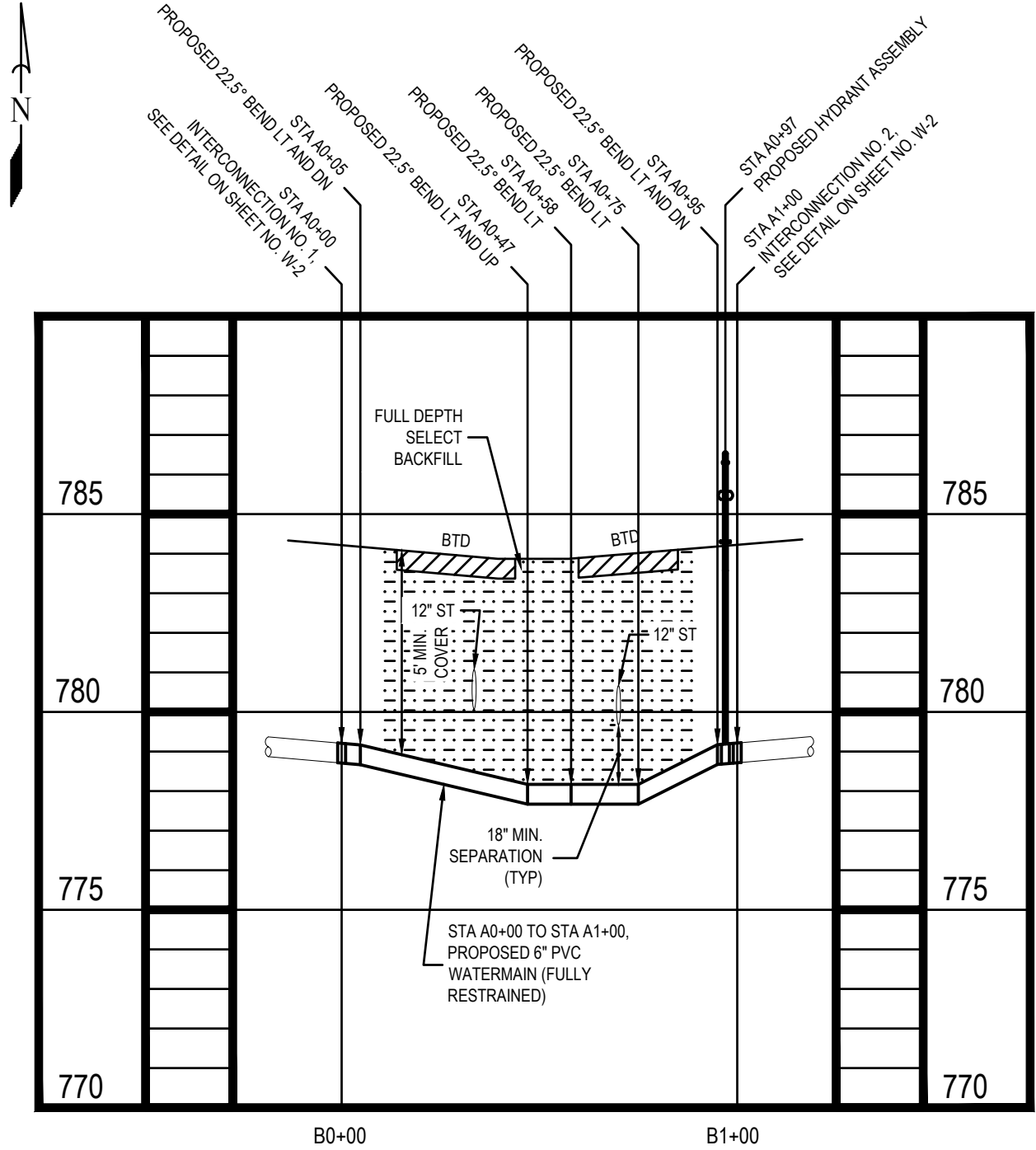
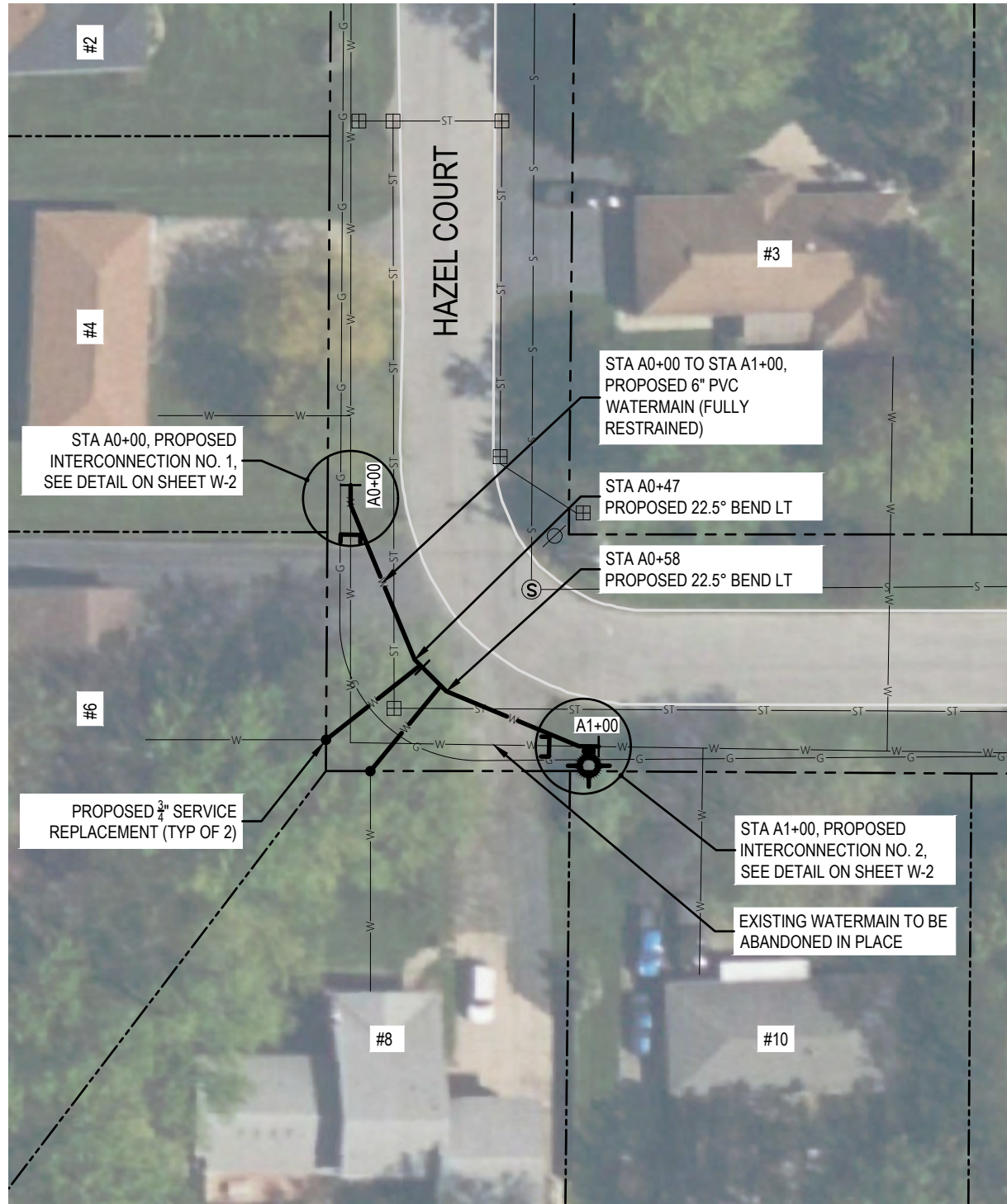
22 1/2 BEND

BTD

HOUSE # 8

HAZEL COURT



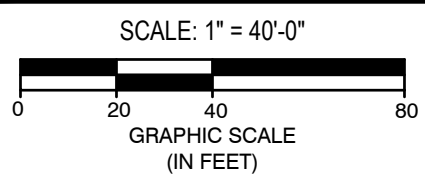


General Notes

- 1.) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ERIE COUNTY WATER AUTHORITY STANDARD DETAILS AND SPECIFICATIONS, ECWA PN: 202100009
- 2.) WATERMAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C600
- 3.) WATERMAINS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651, HOWEVER THE TABLET METHOD IS NOT ALLOWED
- 4.) TWO SETS OF WATER BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART
- 5.) SEE STANDARD DETAIL GENERAL NOTES SECTION ON MISCELLANEOUS DETAILS
- 6.) CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION
- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

- = SANITARY MH
- = TRAFFIC MH
- = STORM MH
- = CATCH BASIN
- = UTILITY POLE
- = FIRE HYDRANT
- = WATER VALVE
- = TREES
- = EXISTING WATERLINE
- = NEW WATERLINE
- = SANITARY SEWER
- = STORM SEWER
- = GAS MAIN



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name:
HAZEL COURT
PLAN AND PROFILE

Date:
AUGUST 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

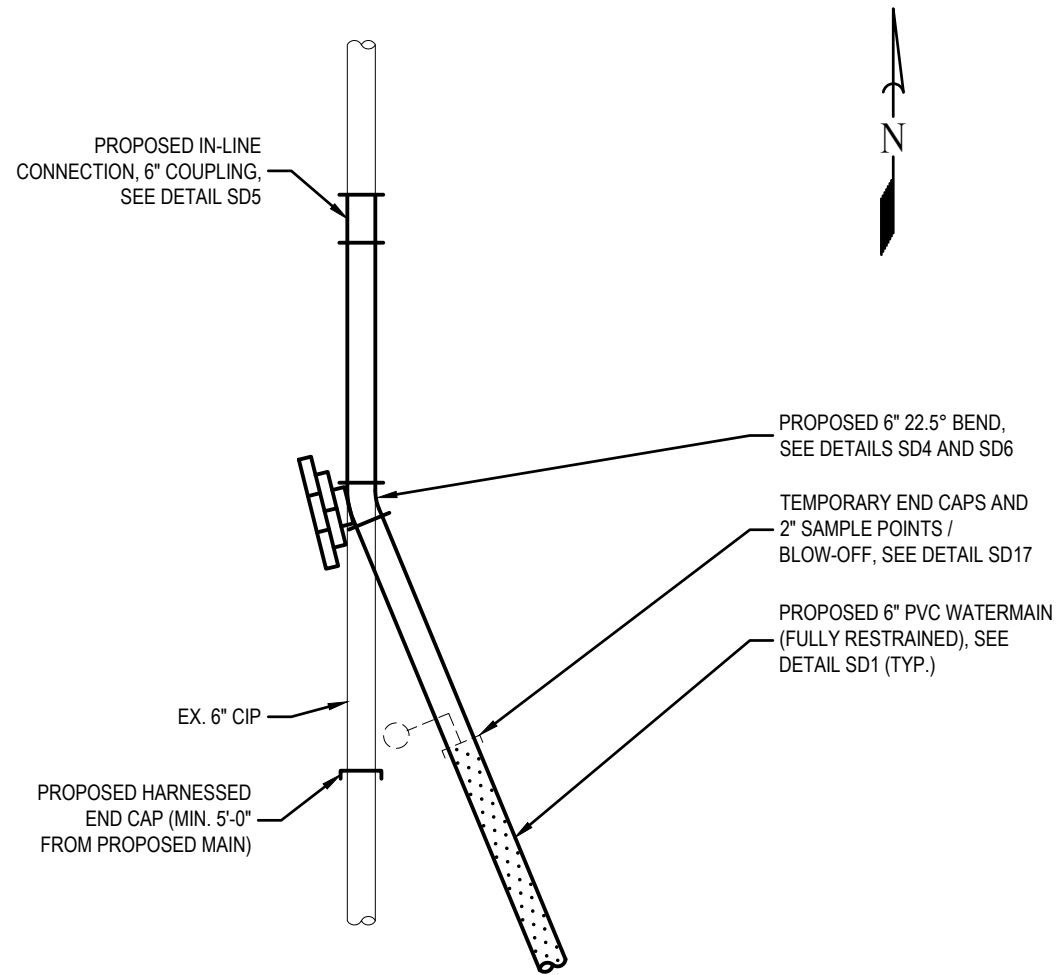
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Page: 1 of 12

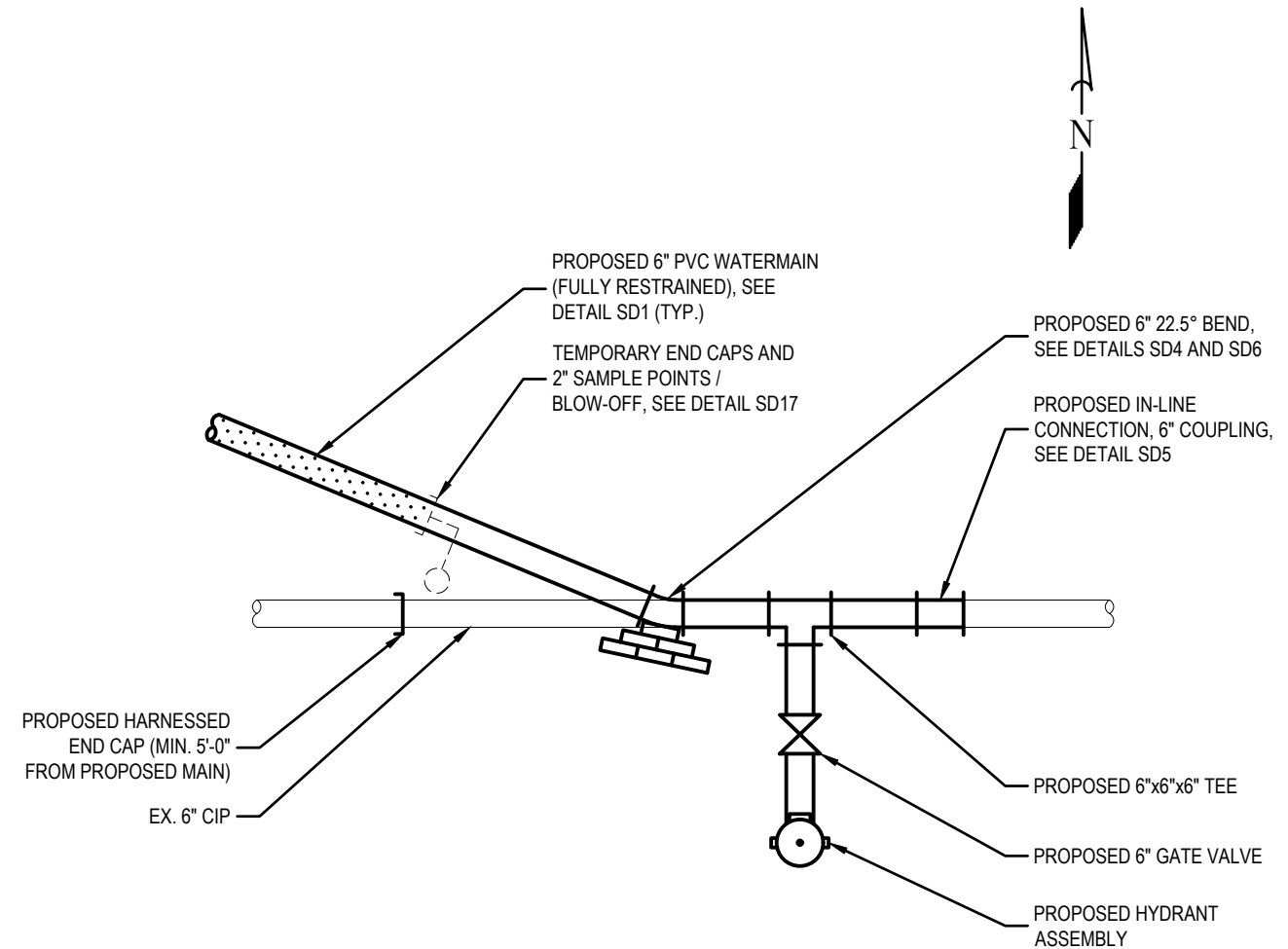
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202200219 - HAZEL DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.

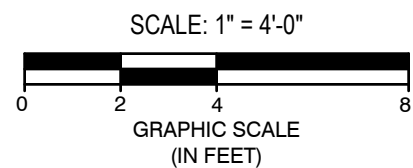


INTERCONNECTION NO. 1



INTERCONNECTION NO. 2

PRESSURE TEST AND DISINFECTION LIMITS



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name:
INTERCONNECTIONS

Date:
AUGUST 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

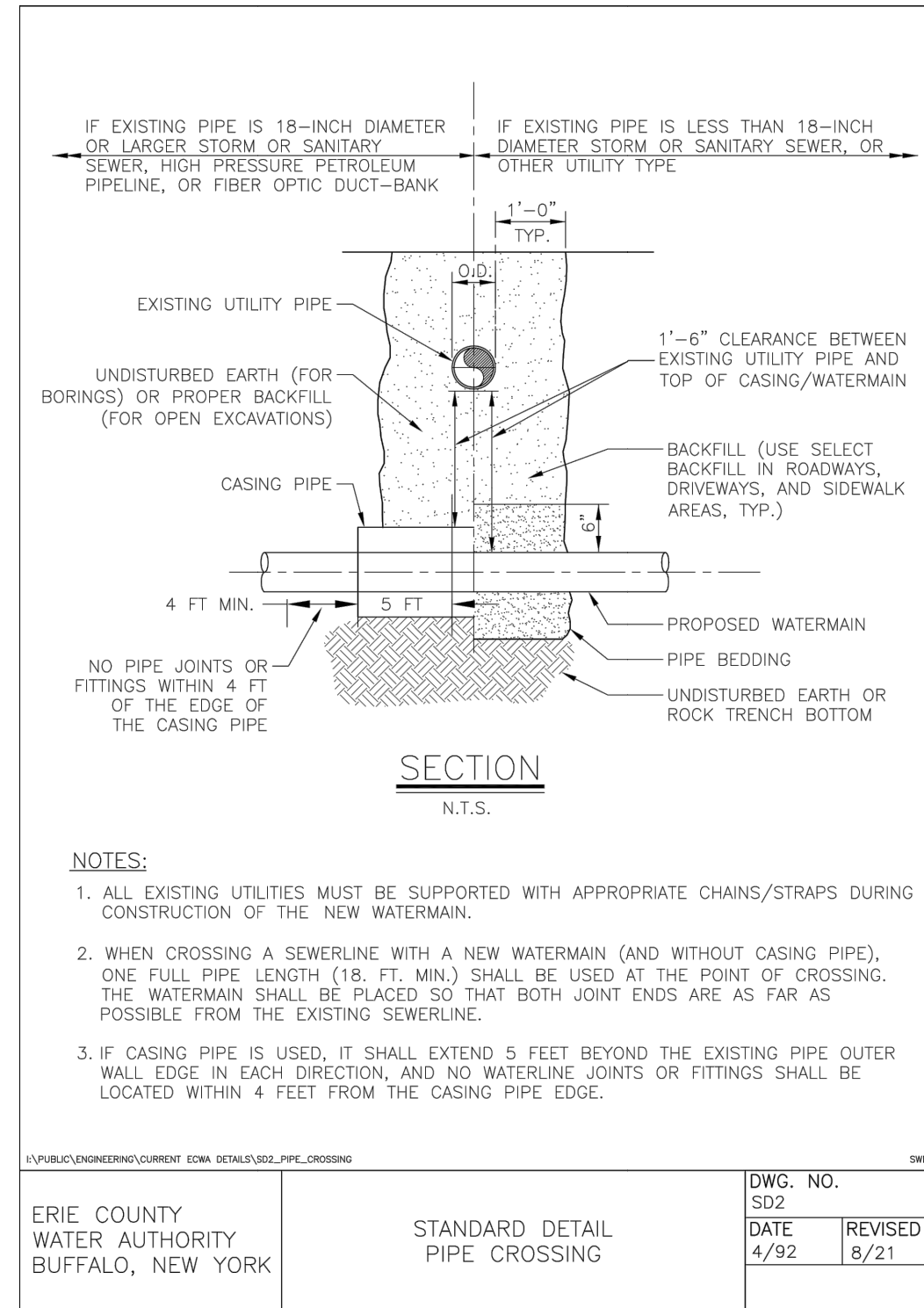
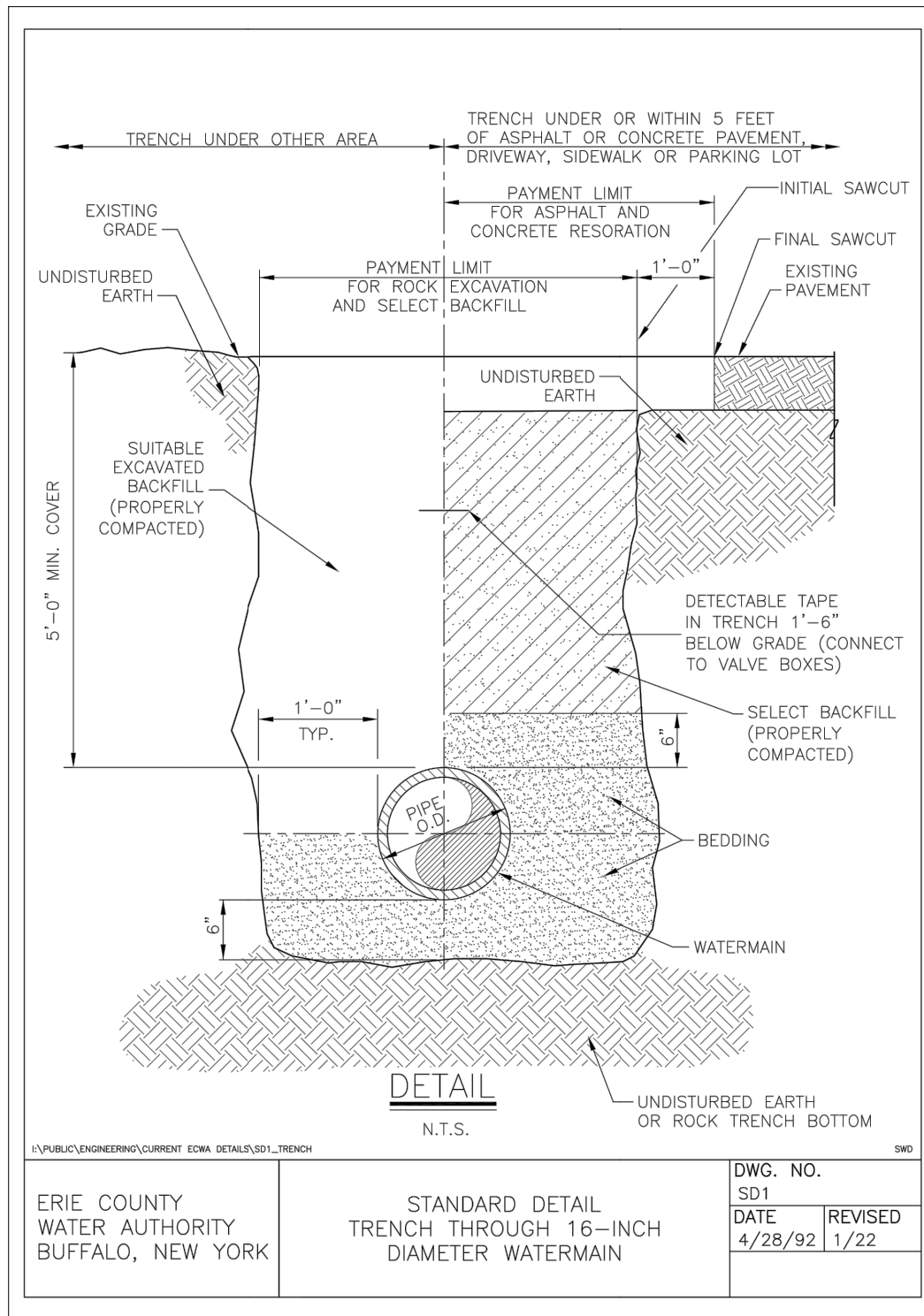
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Page: 2 of 12

File Name:
202200219 - HAZEL DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

**HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219**

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS

Date: AUGUST 2022

Scale: AS SHOWN

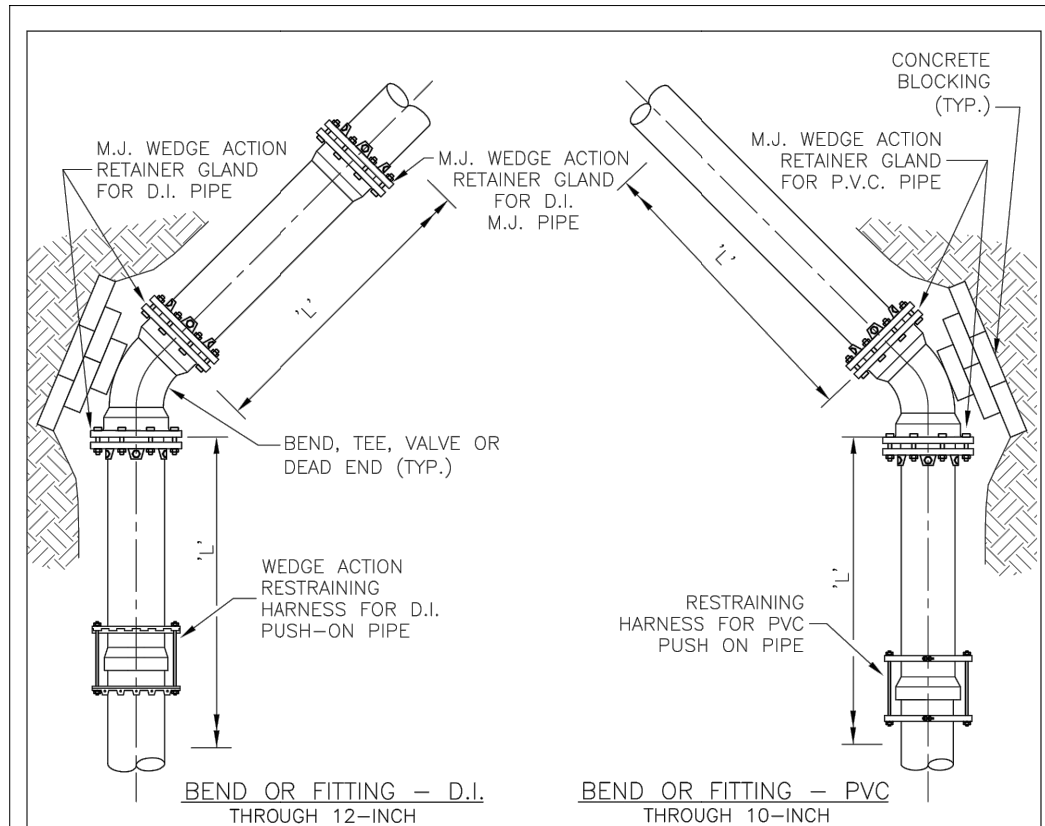
Drawn/Revised By: WWW

Sheet

W-3

Page: 3 of 12

File Name:
202200219 - HAZEL DESIGN



RESTRAINED JOINT SCHEDULE					
PIPE SIZE	PIPE TYPE	11.25° ELBOW	22.5° ELBOW	45° ELBOW	TEE BRANCH, 90° BEND, VALVE OR DEAD END
		'L'	'L'	'L'	'L'
8"	PVC/DIP	13'/12"	25'/23"	48'/45"	99'/94"
10"	PVC/DIP	15'/14"	30'/28"	57'/54"	120'/112"
12"	PVC/DIP	17'/16"	35'/32"	66'/63"	140'/130"
16"	DIP	20'	40'	81'	170'

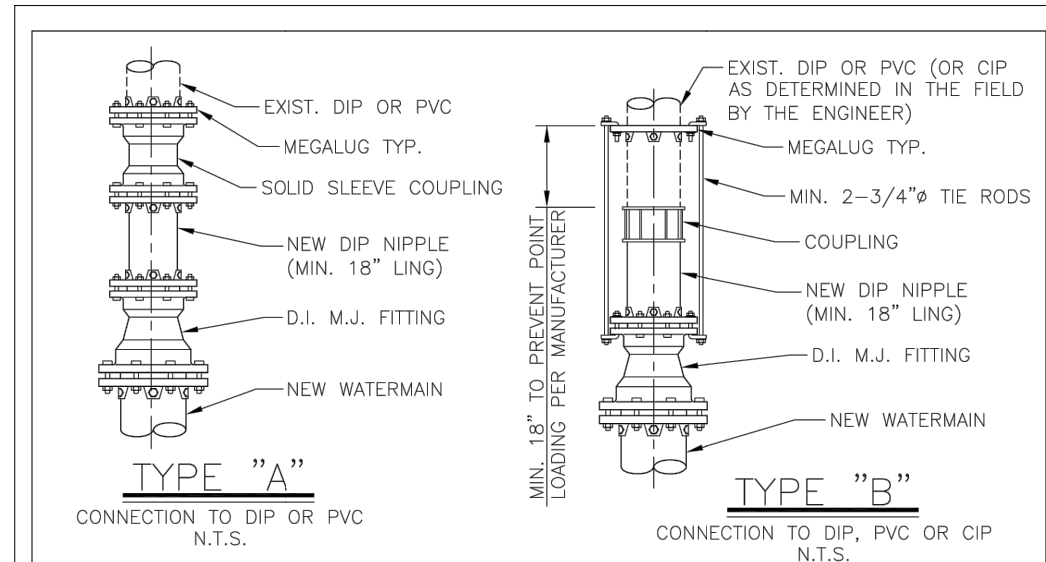
NOTES:
 1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINING PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

PLAN

N.T.S.

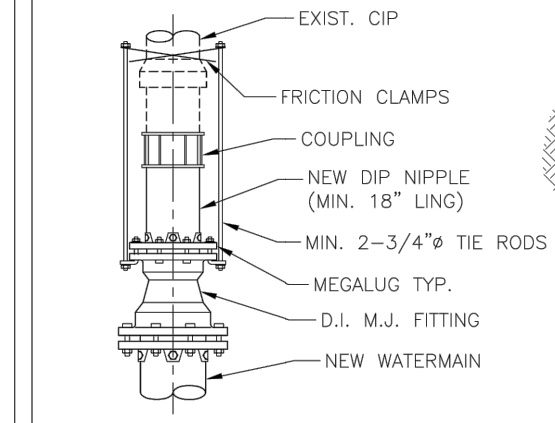
I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD4_REST_JOINT_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4	
		DATE 4/28/92	REVISED 7/16

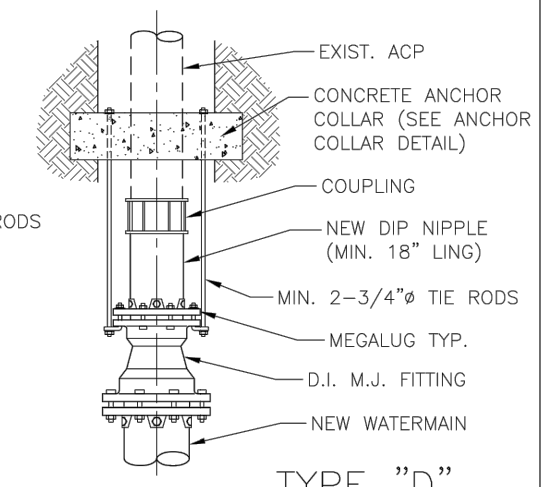


TYPE "A"
 CONNECTION TO DIP OR PVC
 N.T.S.

TYPE "B"
 CONNECTION TO DIP, PVC OR CIP
 N.T.S.



TYPE "C"
 CONNECTION TO CIP
 N.T.S.



TYPE "D"
 CONNECTION TO ACP
 N.T.S.

NOTES:
 1. VALVES AND TEES MAY BE HARNESSSED SIMILARLY.
 2. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE—PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
 3. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
 4. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD5_CONN_EXIST_WMMAIN

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD5	
		DATE 3/05	REVISED 7/16

Approved By:

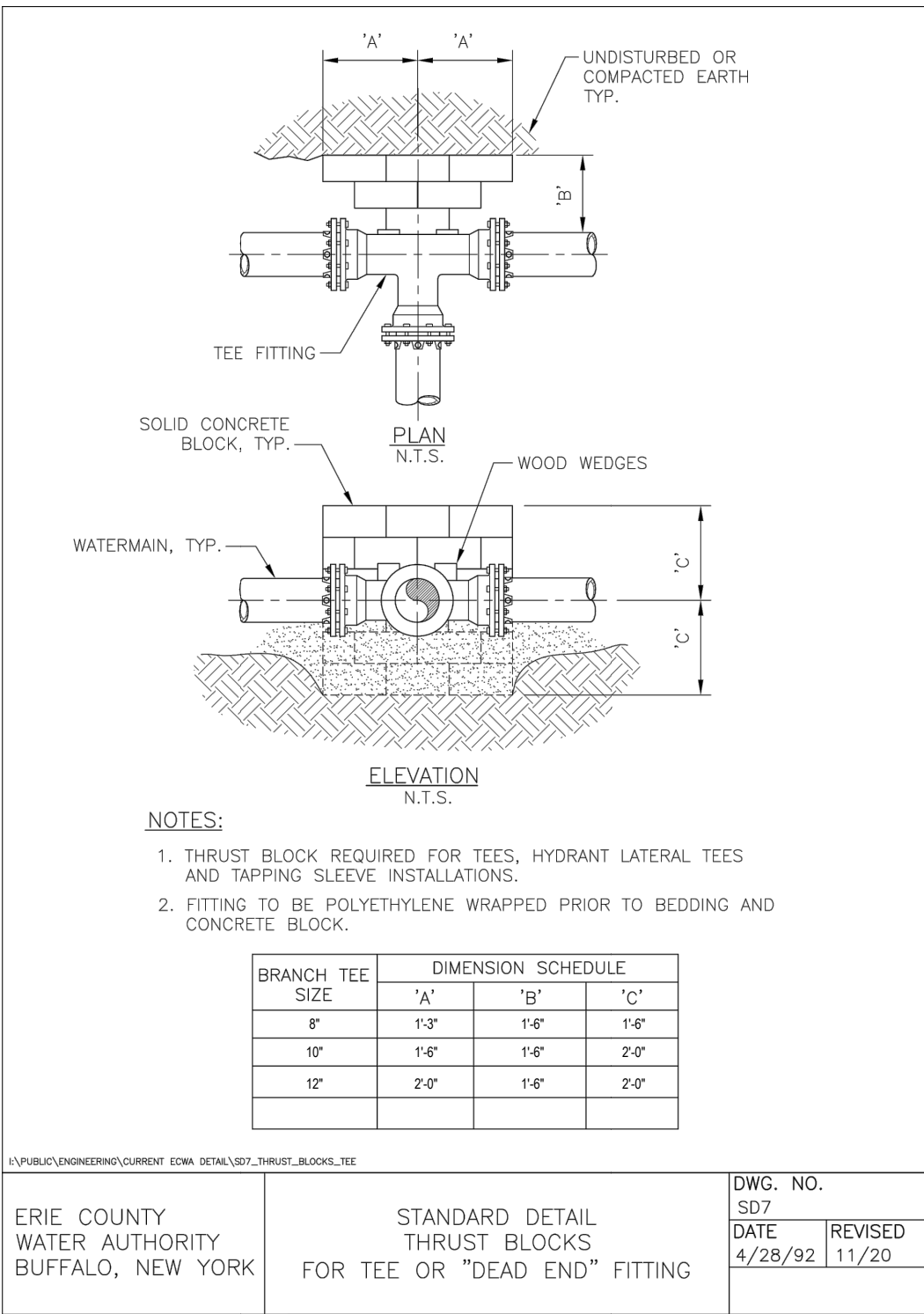
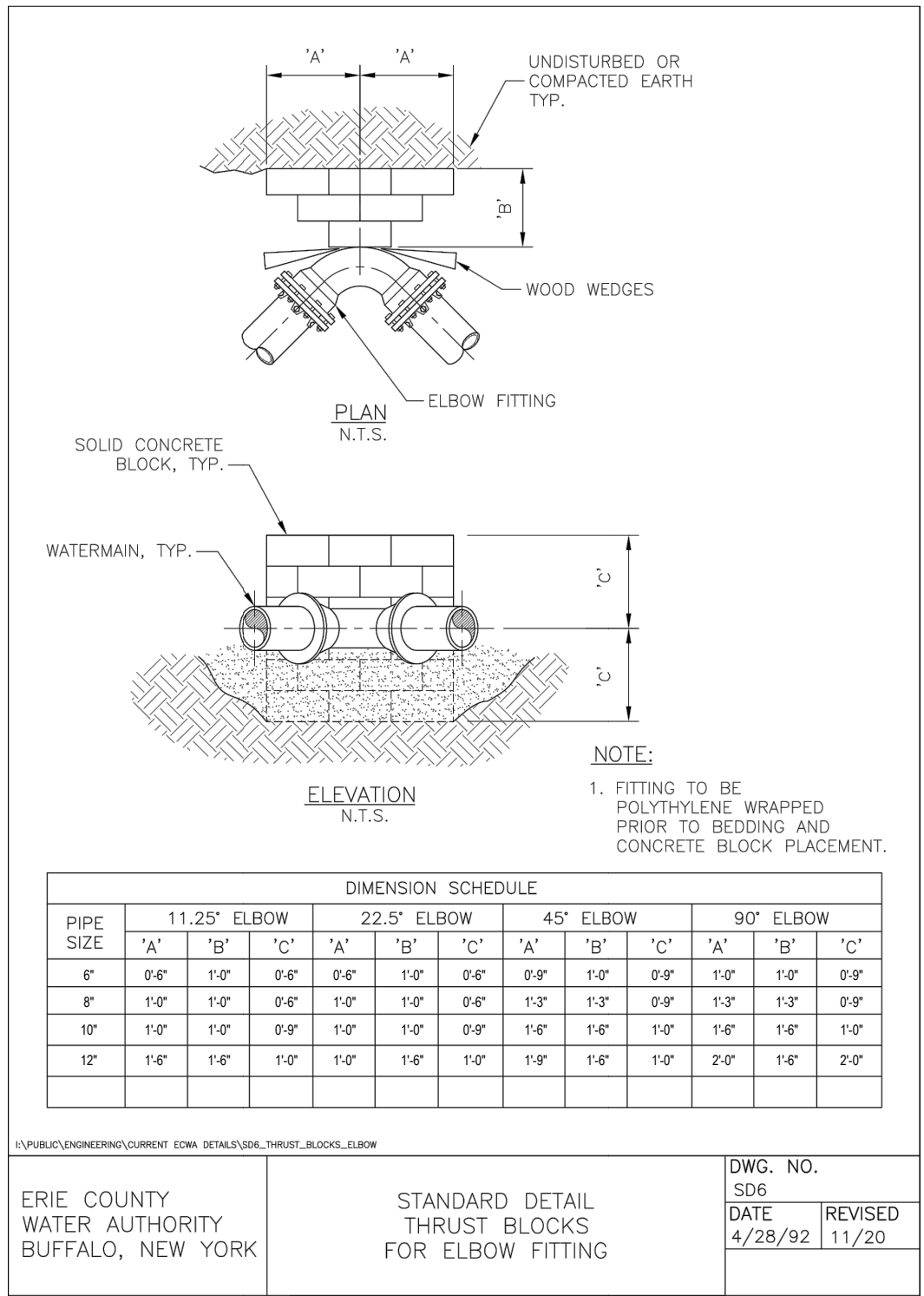


ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA, NY 14227

Project Name
**HAZEL COURT
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202200219**
 TOWN OF ORCHARD PARK
 ERIE COUNTY - NEW YORK

Name:
**MISCELLANEOUS
 DETAILS**
 Date:
AUGUST 2022
 Scale:
AS SHOWN
 Drawn/Revised By:
WWW

Sheet
W-4
 Page: 4 of 12
 File Name:
 202200219 - HAZEL DESIGN



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

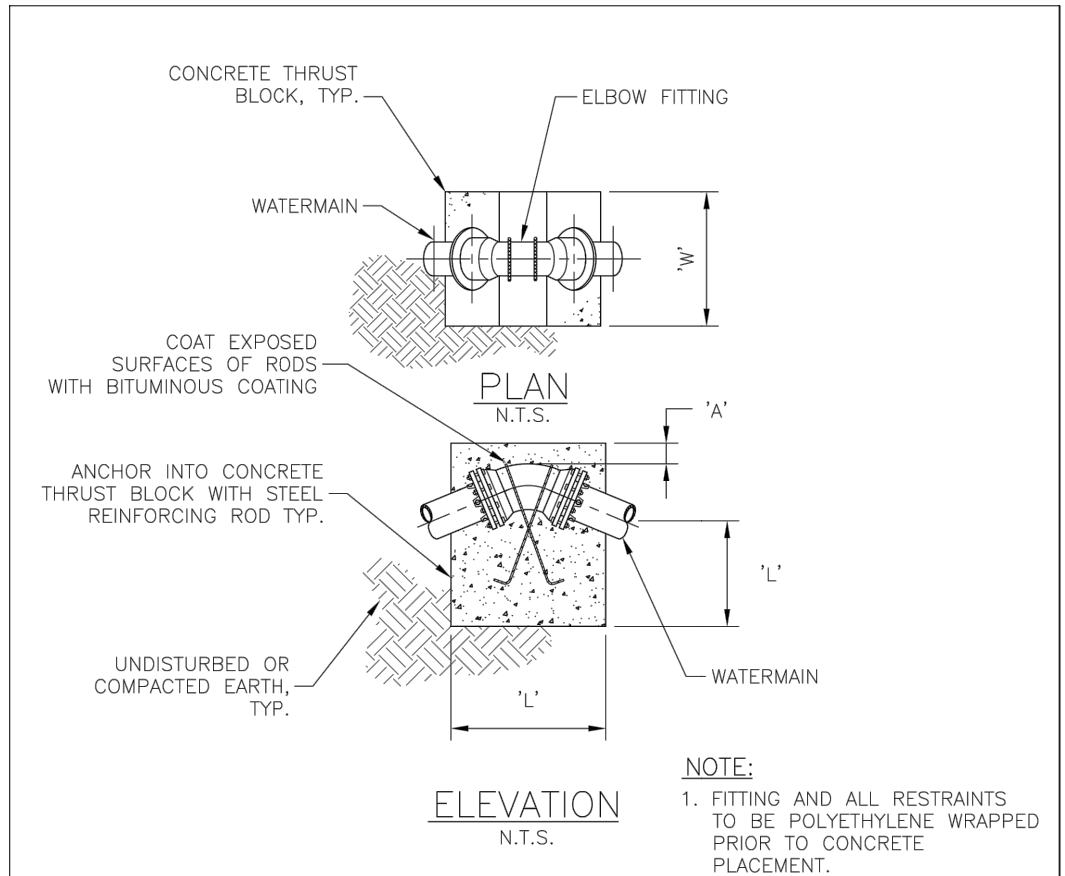
Project Name

HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS
Date: AUGUST 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

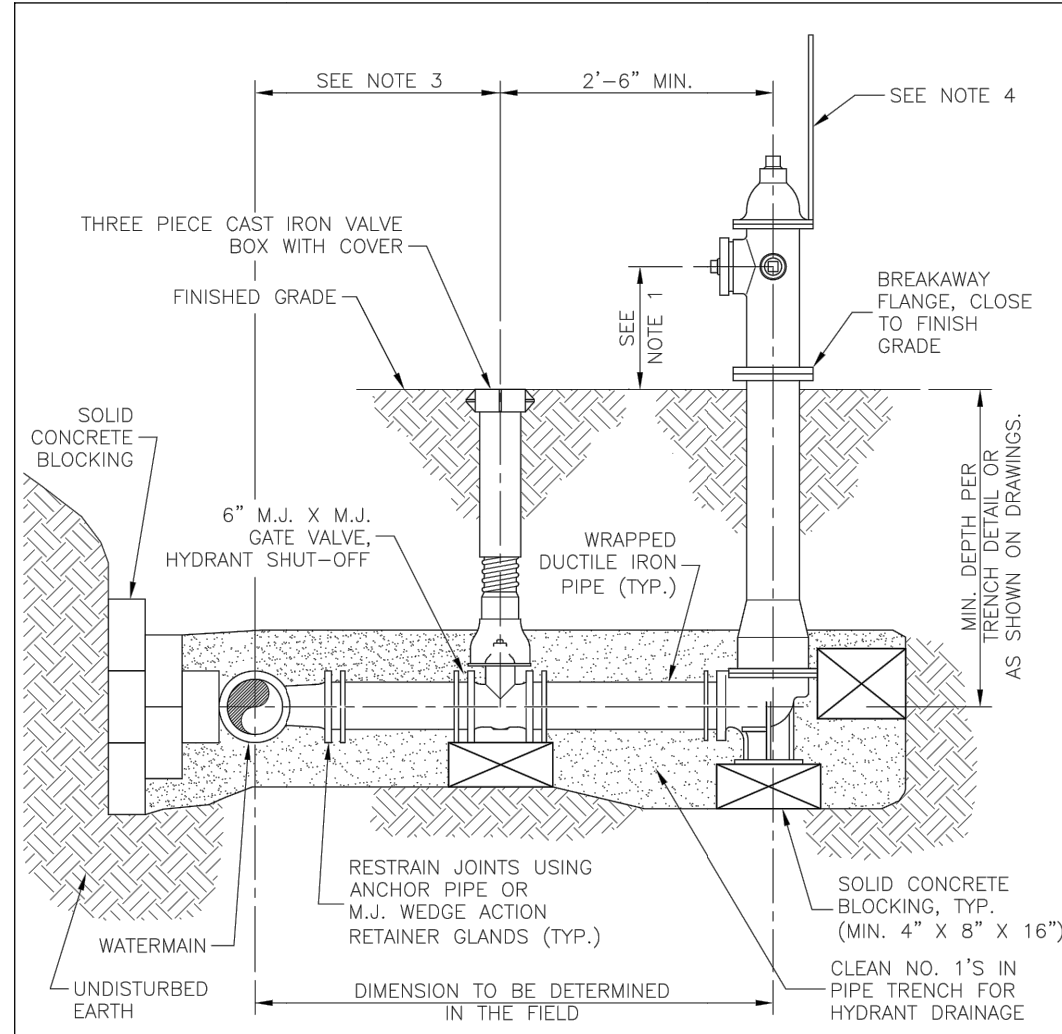
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File Name: 202200219 - HAZEL DESIGN



DIMENSION SCHEDULE													
PIPE SIZE	PIPE TYPE	11.25° ELBOW				22.5° ELBOW				45° ELBOW			
		'A'	'W'	'L'	ROD Ø	'A'	'W'	'L'	ROD Ø	'A'	'W'	'L'	ROD Ø
8"	PVC/DIP	1'-0"	3'-0"	3'-0"	1/2"	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-6"	1/2"
10"	PVC/DIP	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-9"	1/2"
12"	PVC/DIP	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-6"	1/2"	1'-0"	5'-0"	5'-0"	1/2"

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD8_THRUST_BLOCKS_VBEND

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8	
		DATE 4/28/92	REVISED 11/20



NOTES:

- CENTERLINE OF THE LOWEST NOZZLE TO FINISHED GRADE SHALL BE A MIN. OF 15" & MAX. OF 18".
- HYDRANT RISER SHALL BE INSTALLED PLUMB.
- VALVE BOX SHALL NOT BE PLACED IN PAVEMENT
- RELOCATE HYDRANT MARKER (IF PRESENT), FOR WATERLINE REPLACEMENT PROJECTS ONLY.

SECTION
N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS 2016\SD13_HYD_INST

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL FIRE HYDRANT INSTALLATION	DWG. NO. SD13	
		DATE 6/00	REVISED 07/16

Approved By:



Project Name

**HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219**

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS

Date: AUGUST 2022

Scale: AS SHOWN

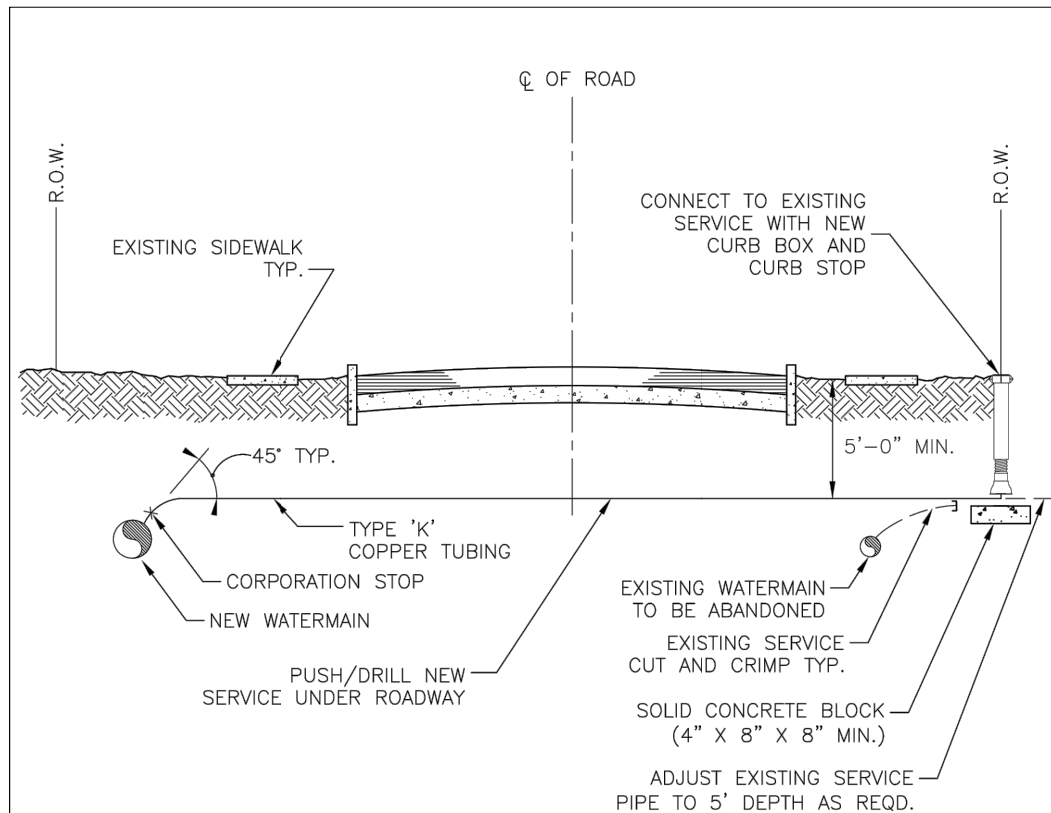
Drawn/Revised By: WWW

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File Name:
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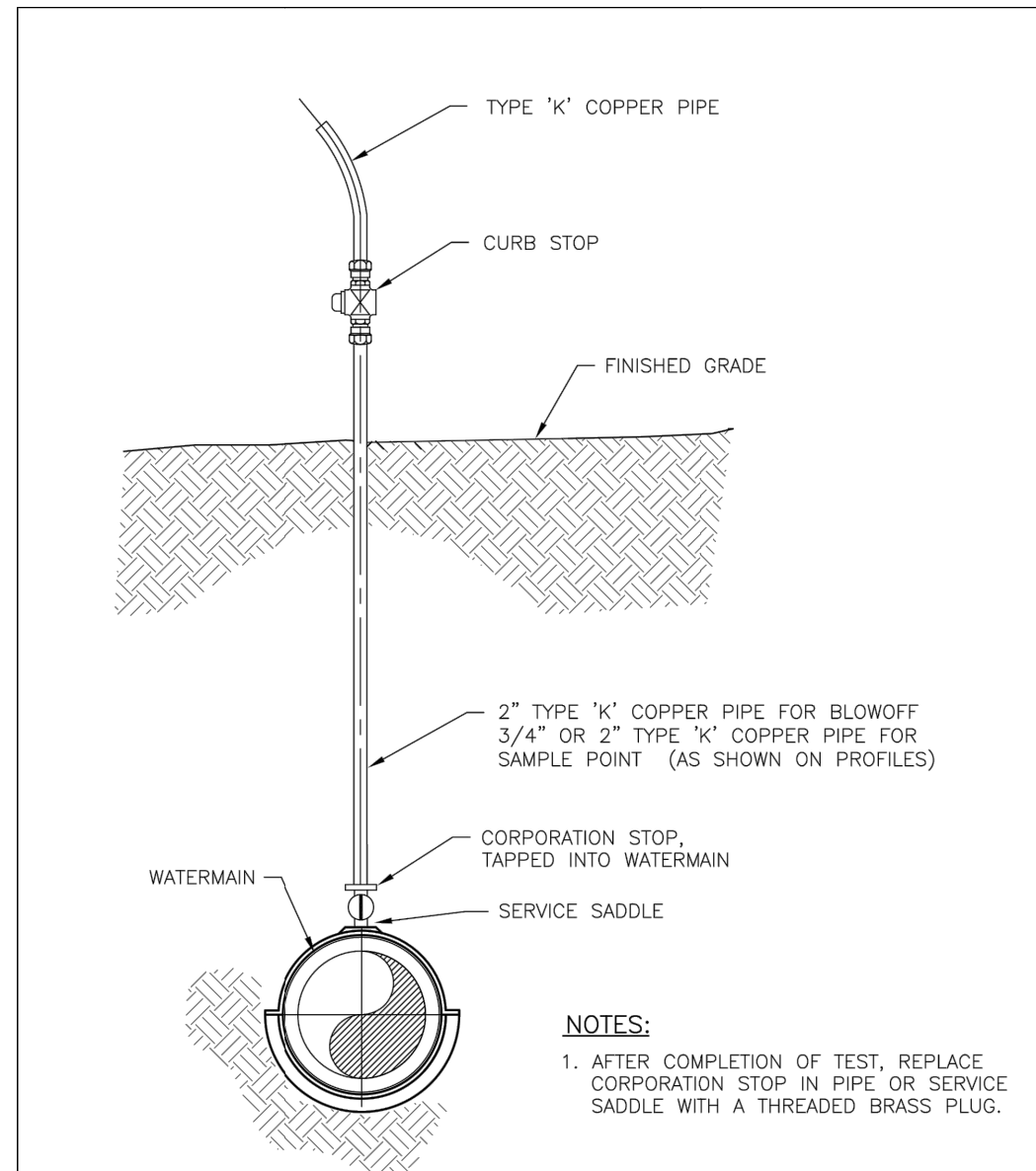
NOTES:

1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
 - A. WHEN SERVICES AND PLACED ON 4" OR SMALLER PIPES.
 - B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 6" PIPE.
 - C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
 - D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
 - E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
 - F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. USE POLYETHYLENE FOR 3/4" AND 1" SERVICES GREATER THAN 100 FEET IN LENGTH, AND FOR 1-1/2" AND 2" SERVICES GREATER THAN 60 FEET IN LENGTH. ALL POLYETHYLENE SERVICES SHALL INCLUDE A TRACER WIRE FOR DETECTION BY ECWA FORCES.
5. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD16_SERVICE_REPLACE

SWD

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD16	
		DATE 4/92	REVISED 10/20



NOTES:

1. AFTER COMPLETION OF TEST, REPLACE CORPORATION STOP IN PIPE OR SERVICE SADDLE WITH A THREADED BRASS PLUG.

ELEVATION

N.T.S.

I:\PUBLIC\ENGINEERING\2005_DETAILS\SD17_TEMP_BO_SAMP_PT

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17	
		DATE 4/28/92	REVISED 10/05

Approved By:



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA, NY 14227

Project Name

**HAZEL COURT
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202200219**

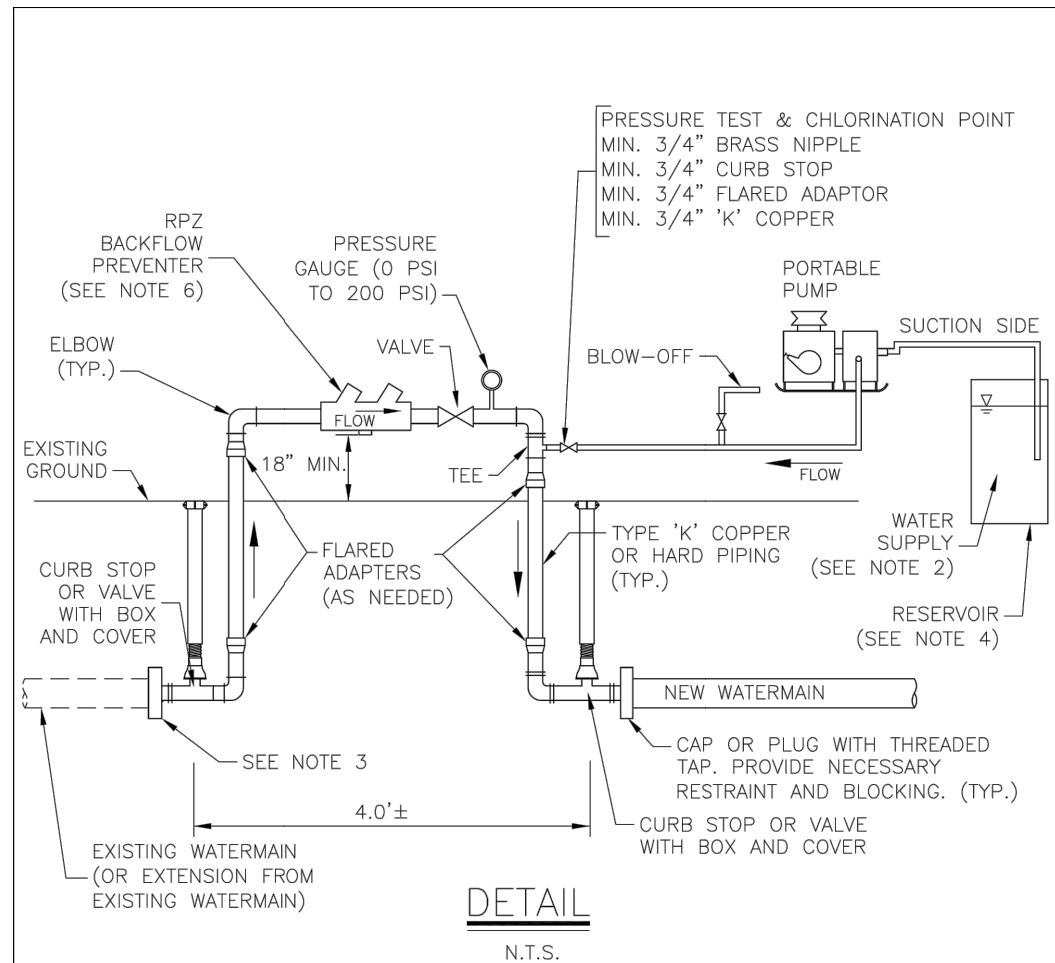
 TOWN OF ORCHARD PARK
 ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
 DETAILS
 Date: AUGUST 2022
 Scale: AS SHOWN
 Drawn/Revised By: WWW

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 202200219 - HAZEL DESIGN



NOTES:

- | | |
|--|---|
| 1. BACTERIOLOGICAL WATER SAMPLES SHALL BE TAKEN AT BEGINNING AND END OF NEW WATERMAIN SECTION AND AT MAXIMUM 1,000 FT. SPACINGS. | 4. DIAMETER OF RESERVOIR SHALL BE 15" OR LESS. IF DIAMETER IS GREATER THAN 15", LEAKAGE TEST SHALL BE RUN A MINIMUM OF 4 HOURS. |
| 2. PROVIDE CLEAN WATER SUPPLY FOR PRESSURE TESTING. PROVIDE CHLORINATED WATER SUPPLY FOR DISINFECTION. | 5. PRESSURE TEST CANNOT EXCEED 2,000 LINEAR FEET PER TEST SECTION. |
| 3. CAP OR PLUG WITH THREADED TAP OR APPROPRIATE TAP INTO MAIN. PROVIDE NECESSARY RESTRAINT AND BLOCKING. | 6. BACKFLOW PREVENTER TO BE SIZED TO ACHIEVE MIN 3 FPS SCOUR VELOCITY DURING FLUSHING OF NEW WATERLINE. |

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD23_PRESS_TEST_SCHEM

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PRESSURE TESTING AND DISINFECTION APPARATUS SCHEMATIC	DWG. NO. SD23	
		DATE 6/00	REVISED 11/20

NOTES

- All elevations refer to USGS NAVD88 datum.
- The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
- The CONTRACTOR work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
- The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
- The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install watermain to avoid conflicts.
- The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as needed basis, phased to reduce erosion and visual impact.
- Blasting will not be permitted.
- No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
- The Erie County Water Authority only shall operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
- The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 5 business days in advance of the requested shut-down date.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD29_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	SD29	
		DATE 3/05	REVISED 11/21

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name
**HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219**

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS
Date: AUGUST 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

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File Name:
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11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of the 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga.
19. The CONTRACTOR shall place temporary pavement (consisting of hot mix asphalt or cold patch) in all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict school bus access.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for approval.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants and curb stops operate as required.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD30_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30	
		DATE 3/05	REVISED 10/21

PIPE DIAMETER (in)	PIPE MATERIAL		WORKING PRESSURE (psi)	TEST PRESSURE (psi)
	Type (DIP, PVC, etc.)	Rating (Class/DR)		
6"	PVC	DR-18	100	175

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD31_PRESS_TEST_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	PRESSURE TESTING SCHEDULE	DWG. NO. SD31	
		DATE 10/05	REVISED 11/20

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
AUGUST 2022

Scale:
AS SHOWN

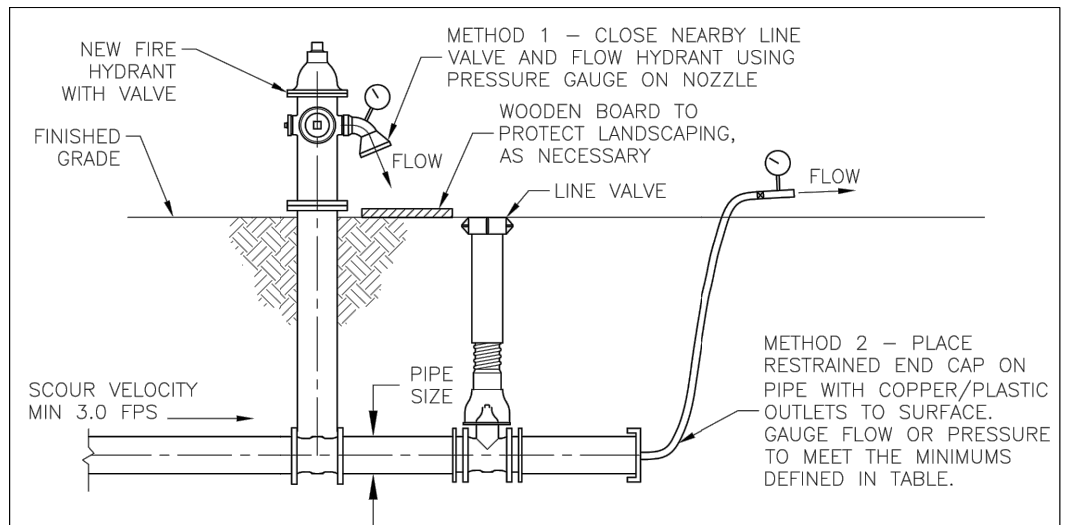
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File Name:
202200219 - HAZEL DESIGN



PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW		METHOD 2 END CAP FLOW	
		2 1/2" NOZZLE PRESSURE (PSI)	4" NOZZLE PRESSURE (PSI)	2" I.D. PRESSURE (PSI)	3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	-	22
16	1900	-	20	-	62
20	3000	-	50	-	-

I.D. = INNER DIAMETER

NOTES:

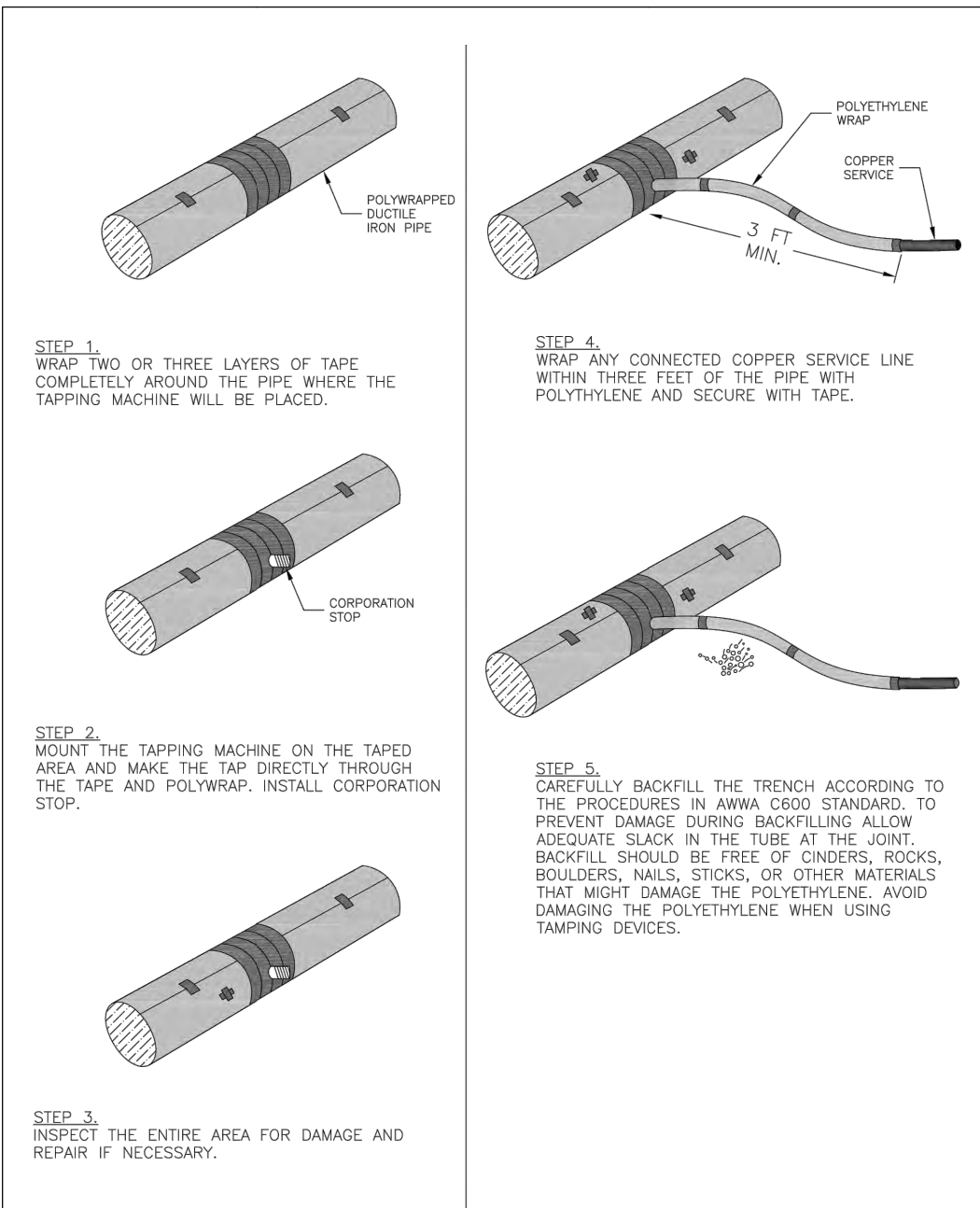
1. TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
2. OUTLET PRESSURE MEASURED BY PITOT GAUGE.
3. ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
4. TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION

N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD36_WATERLINE_FLUSHING

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL WATERLINE FLUSHING	DWG. NO. SD36	
		DATE 6/16	REVISED 3/18



I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD38_TAP_POLY_WRAP_PIPE

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TAPPING POLYWRAPPED PIPE	DWG. NO. SD38	
		DATE 05/18	REVISED

Approved By:

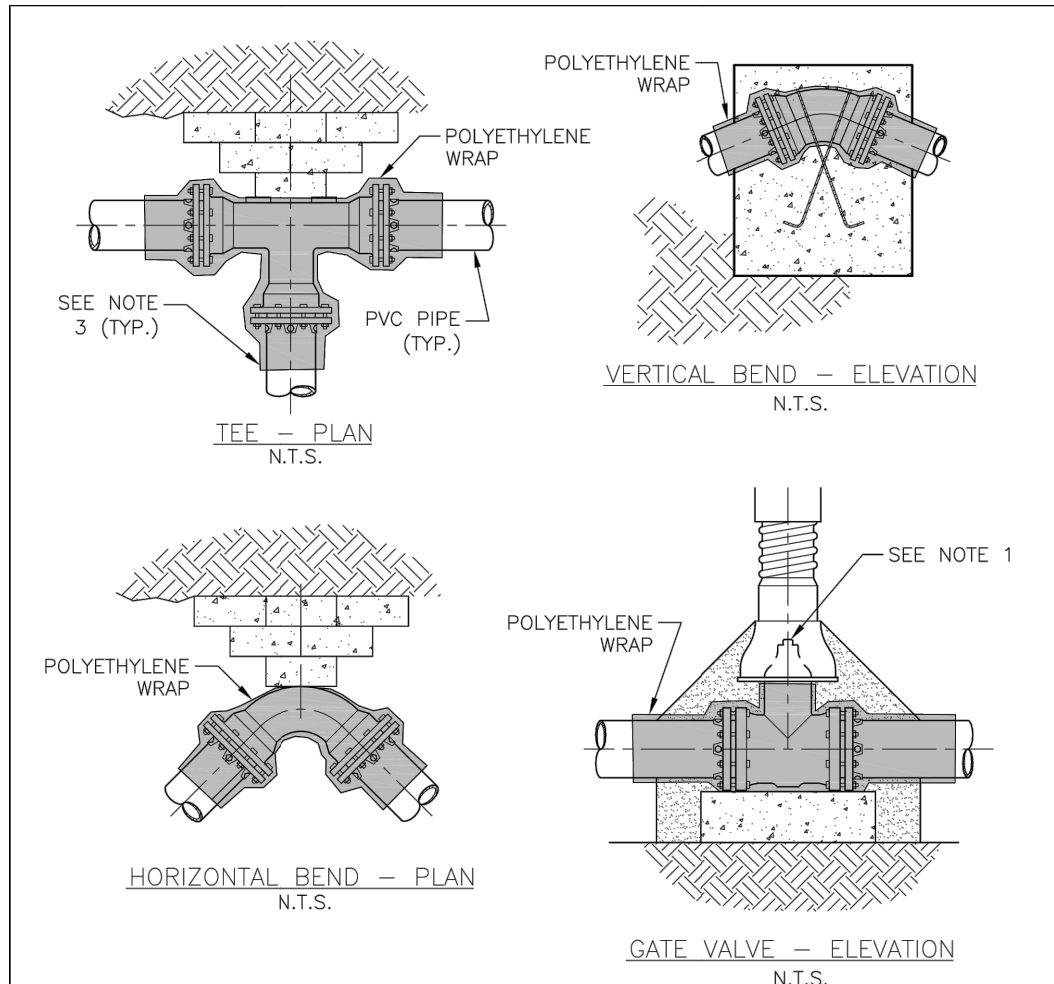


Project Name
**HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219**

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS
Date: AUGUST 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

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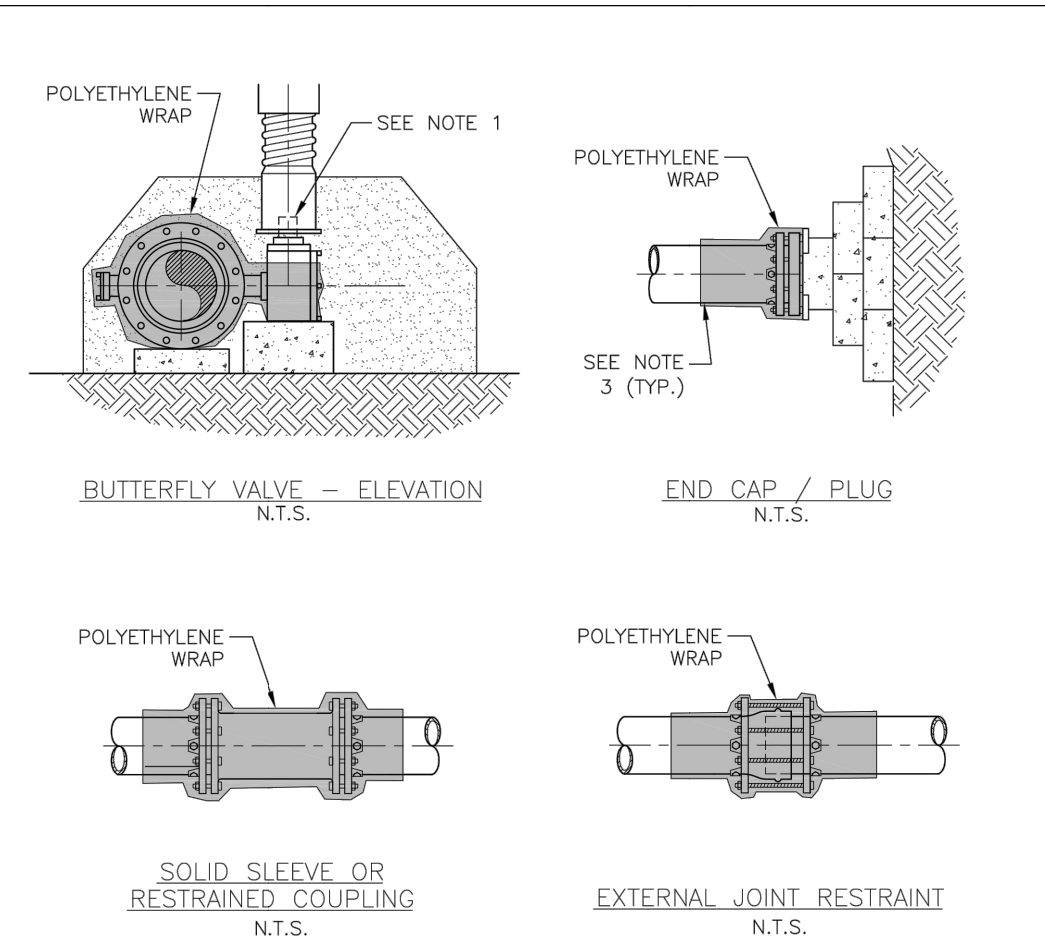


NOTES:

1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A	
		DATE 3/18	REVISED 12/18



NOTES:

1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39B	
		DATE 12/18	REVISED

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name
**HAZEL COURT
WATER SYSTEM IMPROVEMENTS
ECWA PN202200219**

TOWN OF ORCHARD PARK
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
AUGUST 2022

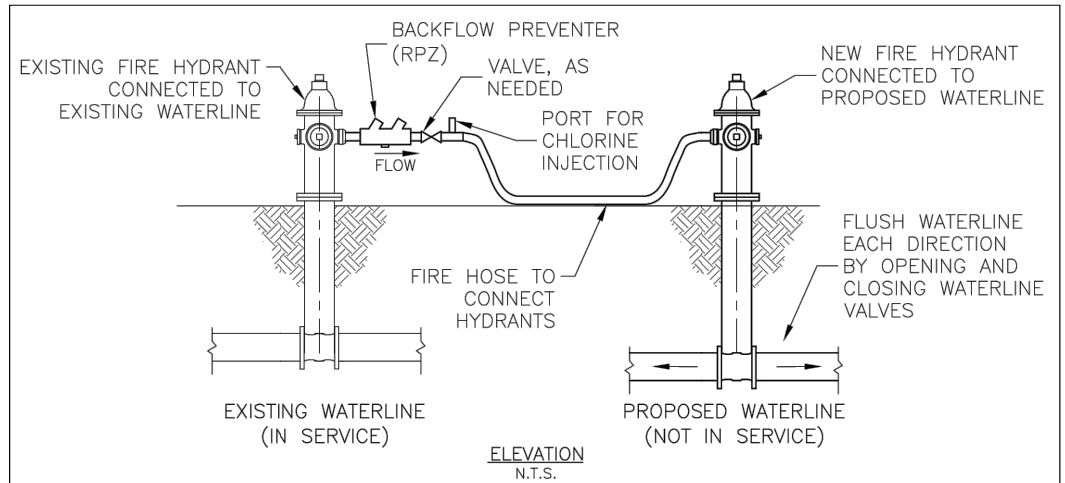
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WWW

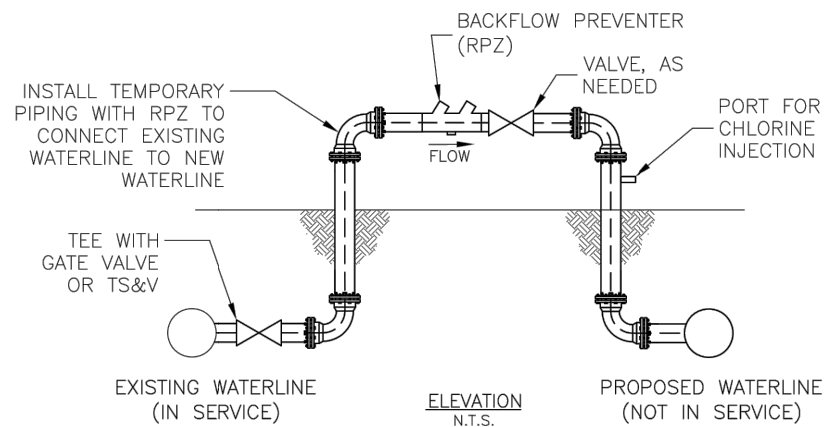
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202200219 - HAZEL DESIGN



METHOD 1 – CONNECT EXISTING HYDRANT TO PROPOSED HYDRANT



METHOD 2 – SERVICE TAP, TAPPING SLEEVE AND VALVE (TS&V), OR INTERCONNECTION

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO DEPICT ACCEPTABLE METHODS OF CONNECTING EXISTING WATERLINES TO PROPOSED WATERLINES FOR FILLING, FLUSHING, AND TESTING PROCEDURES IF 2-INCH COPPER OR POLYETHYLENE TUBING IS NOT USED TO BYPASS A VALVE. OTHER METHODS REQUIRE SUBMITTAL AND APPROVAL BY THE AUTHORITY PRIOR TO USE.
2. FIRE HOSES, TEMPORARY PIPING, AND BACKFLOW PREVENTERS SHALL NOT ENCROACH INTO ROADWAYS, DRIVEWAYS, OR SIDEWALK AREAS WITHOUT PROVIDING PROPER MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD44_SOURCE_WATER_CONNECTIONS

SWD

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SOURCE WATER CONNECTIONS	DWG. NO. SD44	
		DATE 10/20	REVISED

Approved By:



ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA, NY 14227

Project Name

HAZEL COURT
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202200219

TOWN OF ORCHARD PARK
 ERIE COUNTY - NEW YORK

Name: MISCELLANOUS DETAILS

Date: AUGUST 2022

Scale: AS SHOWN

Drawn/Revised By: WWW

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File Name: 202200219 - HAZEL DESIGN

**ERIE COUNTY WATER AUTHORITY
CONSTRUCTION AUTHORIZATION**

Project No. 202200247
Budget No. _____

Authorization No.: EC 7293
Date: 11/10/2022
Inputted By/Date: _____

October 2022 Estimate Starting Date
October 2023 Estimate Complete Date
X yes no Retirement Involved
 X Public Street
 Private Right of Way
 On Authority's Prop
 Tax Districts _____
Name of Grantor of Easement _____
Date of Easement _____

TITLE OF PROJECT: Air Relief Valve Replacement/ARV at 4727 Transit Rd.

DETAILED DESCRIPTION AND PURPOSE:
Replacement of air relief valve/ARV and vault at 4727 Transit Rd. in the Town of Lancaster.

CLASS OF MAIN INSTALLATION:

 X System Betterment
 Bldr/Cont/Dev. Agree.
 Owner Occupant Cont.
 Special Revenue Cont.

ESTIMATE COST

(1) Total Est. Cost \$ 4,064.57
(2) _____ Meters and Service @ _____ \$ _____
(3) Removal Cost Less Salvage \$ _____
(4) Gross Investment \$ 4,064.57

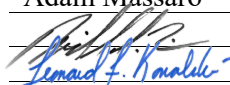
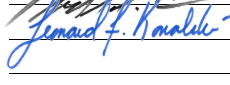
DEDUCT

(5) Const. Advance \$ _____
(6) Service Conn. \$ _____
(7) Refunds \$ _____
(8) Net Auth. Invest. \$ 4,064.57

BUDGETARY DATA

(9) Tot. Budget Expnd. \$ _____
(10) This Authorization \$ _____
(11) Pre Approved \$ _____
(12) Tot. Apvl. To Date \$ _____
(13) Bal. Budget Expnd. \$ _____

APPROVALS

Preparation Adam Massaro
Sr. Dist. Engr.  10/4/2024
Exec. Engr.  10/7/2024
Admn. Director _____
Legal Dept. _____
Acct. Dept. _____

ESTIMATED EARNINGS & RETURNS

ESTIMATED INCREASE IN REVENUES

(14) _____ Customers @ _____ \$ _____
_____ \$ _____
(15) _____ Hydrants @ _____ \$ _____
_____ \$ _____

EST. SAVINGS IN OPERATING EXPENSES

(16) _____ \$ _____
(17) Gross Increase in Earnings \$ _____

REVENUE DEDUCTIONS

(18) Operating Exp. _____ % \$ _____
(19) Depreciation \$ _____
(20) Total Deductions \$ _____
(21) Net Income Loss \$ _____
(22) % Return on Investment _____
(21) divided by 8) _____ %

RESOLUTION APPROVING

Adopted _____
Item No. _____



SALES QUOTATION / DELIVERY FORM
KISTNER CONCRETE PRODUCTS, INC.
 SUPERIOR PRECAST PRODUCTS
 MAIN SALES OFFICE: 3080 West Main Street Batavia, New York 14020
 585-815-4550

CUSTOMERS DESIRED DELIVERY DATE: fri morning 9-10 am

WHAT SALES TOLD CUSTOMER: _____

PLANT: _____

B	L	P	PH	S	Lima
B	L	P	PH	S	x Lima

LEAD PLANT DISPATCH COORDINATOR (when more than 1 plant involved):
 FREIGHT TERMS: _____

joe blahowicz 12/1/22
 PERSON WHO AUTHORIZED DATE TIME

<input type="checkbox"/>	PICKED UP
<input checked="" type="checkbox"/>	Delivered - Contr to unload
<input type="checkbox"/>	Delivered & Unloaded
<input type="checkbox"/>	Delivered & Set - tank truck - see setting charge below
<input type="checkbox"/>	Delivered & Set - crane truck - see setting charge below
<input type="checkbox"/>	W/C - TENTATIVE (CONTR. WILL CALL TO SETUP SCHEDULE)

SPECIAL NOTES FOR DISPATCHER:

*DELIVER TO KANDEY COMPANY
 YARD, 19 RANSIER DR.
 W. SENECA NY 14224*

CUSTOMER: KANDEY COMPANY INC
19 RANSIER DRIVE
WEST SENECA NY 14224

OFFICE PH #: (716) 675-7245

OFFICE FX #: (716) 675-4957

JOB PH #: _____

JOB FX #: _____

MOBILE #: 716-597-5845

VOICE PAGER: _____

NO. PAGER: _____

ACCT. NO.: 1101

CONTACT PERSON (OFF.): joe blahowicz

CONTACT PERSON (FIELD): _____

SALES CODE: 6 1-EP/2-EB/3-SP/4-LP/5-MJK/6-CJC/08-PHELPS/11-KJK/26-BPB/27-SDA/36-DJL/38-KMJ/45-SMD/49-NDB/50-JLH/51-GMK

ARE LIFTERS REQ'D? YES NO 2TON 4TON 8TON NO

CAN CUSTOMER UNLOAD TO POTENTIALLY EXPEDITE DELIVERY IF FLATBED IS GOING BY? _____

QUANTITY	MARK	PRODUCT CODE	DESCRIPTION	UNIT PRICE	TOTAL PRICE
1	ea	wmp-2	WATER METER PIT - 2"	\$ 6,742.00	\$ 6,742.00
1	ea	wmp-hatch-36c	METER PIT HATCH - LD ALUM 36" SQ IN 6" H CONC CURB	\$ -	\$ -
1	ea	WMP-APL-06	ALU LADDER POLYPROP COAT - 60" TALL W/LAD UP POST	\$ -	\$ -
2	ea	WMP-APL-BF	ALU LADDER POLYPROP COAT - BRACKET-FLATWALL-SET OF 2	\$ -	\$ -
3	ea	WMP-APL-H	ALU LADDER POLYPROP COAT - HDWE-INSERT, WASHER, NUT	\$ -	\$ -
Deductions:					
ECWA Parts Supplied for Air Relief				-\$1,755.54	
24"x48" Stock Catch Basin				-\$504.00	
CHS1 24x24 F/8" with RPC				-\$1,423.05	
Delivery				-\$125.00	
Deduction Total:				-\$3,807.59	

Revised Balance:
 Water Meter Pit - Complete \$6,742.00
 Deductions -\$3,807.59
 Delivery Charge \$600.00
 Revised Subtotal: \$3,534.41
 15% Markup: \$530.16
Revised Total: \$4,064.57

0	TRUCK-SC	SETTING CHARGE - LUMP SUM			
0	TRUCK-UC	UNLOADING CHARGE - LUMP SUM			
0	TRUCK-DO	DROP OFF CHARGE - LUMP SUM - "WHEN IN AREA"			
1	TRUCK-DC	DELIVERY CHARGE - DEDICATED		\$ 600.00	\$ 600.00
SUB-TOTAL			\$ 7,342.00	8.750% TAX \$ 642.43	TOTAL \$ 7,984.43
TAX RATE (SELECT COUNTY OR EXEMPT):			ERIE		

Job Name transit road

Del Location _____

Tax Exempt

PAYMENT TERMS:

<input checked="" type="checkbox"/>	CHARGE	Credit Card
<input type="checkbox"/>	C.O.D.	300-CASH
<input type="checkbox"/>	C.O.D.-CASH	300-CERT CK
<input type="checkbox"/>	C.O.D.-CO CK	300-MON ORDER
<input type="checkbox"/>	PREPAY	????

PURCHASE ORDER NO.: K2175 -17

JOB #: _____

ORDER DATE: 12/1/22

APPROVED BY: cjc

CONFIRMATION ORDER HAS BEEN RECEIVED BY PLANT

PERSON CONFIRMING:

CONFIRMED WITH: _____

DATE CONFIRMED: _____

TIME CONF: _____

- 1) ALL ORDERS ARE SUBJECT TO STATE AND APPLICABLE TAXES
- 2) IF APPLICABLE, A VALID TAX EXEMPTION CERTIFICATE MUST BE SUBMITTED AT THE TIME OF ORDER.
- 3) PAYMENT BY CERTIFIED CHECK REQUIRED ON DELIVERY. SPECIAL ORDERS REQUIRE DOWN PAYMENT.
- 4) NON-COD ORDERS REQUIRE PAYMENT ARRANGEMENTS TO BE MADE IN ADVANCE WITH CREDIT DEPT
- 5) ACCEPTANCE OF THIS OFFER IS SUBJECT TO KISTNER STANDARD TERMS & CONDITIONS
- 6) LIFTING APPARATUS WILL REQUIRE PAYMENT ON DELIVERY.

12/1/22

J. Shuman

MANUFACTURING AND DELIVERY SCHEDULE TO BE DETERMINED THROUGH NEGOTIATIONS. DELIVERY TO BE SUPPLIED AFTER RECEIPT OF SIGNED QUOTE AND APPROVED DRAWINGS. QUOTE GOOD FOR 7 DAYS AFTER BID.

ACCEPTED BY:

DATE:

P.O.#:

SIGNED:

KISTNER CONCRETE PRODUCTS, INC



ERIE COUNTY WATER AUTHORITY

REQUISITION ON STORES

Project No.: 202200247 Date: 11/10/22 Requisition No.: _____

Issue To: Kandey Co., Inc

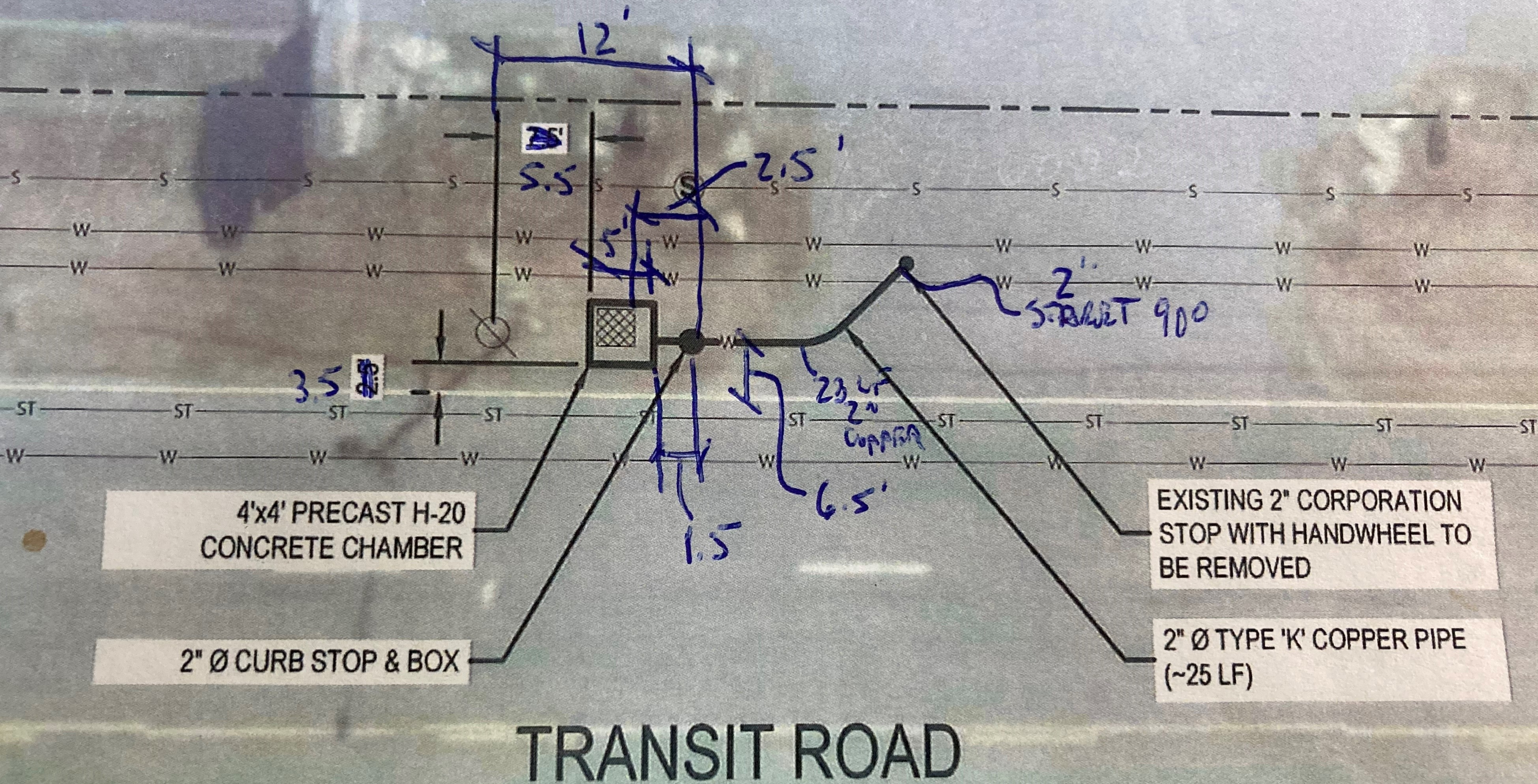
For Use In: ARV Replacement

Location: 4727 Transit Road, Town of Lancaster

OWIP: _____ EC NO.: 107200-007293 Svc. No.: _____

Quantity	Description	Part #	On Site	Used	Ret.
1	2" Air Relief Valve				
2	2" Flare 90° x 2" Compression	23621			
1	2" Compression x Compression Curb				
2	2" Brass Lock Washer (For Swivel Bends)				
1	2" MIP x 2" Compression Adapter				
50 ft	2" Copper				
1	Complete Service Box				

Kandey Co., Inc. _____ Inspector _____



4'x4' PRECAST H-20
CONCRETE CHAMBER

2" Ø CURB STOP & BOX

EXISTING 2" CORPORATION
STOP WITH HANDWHEEL TO
BE REMOVED

2" Ø TYPE 'K' COPPER PIPE
(~25 LF)

TRANSIT ROAD









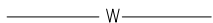

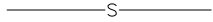


PLAN VIEW

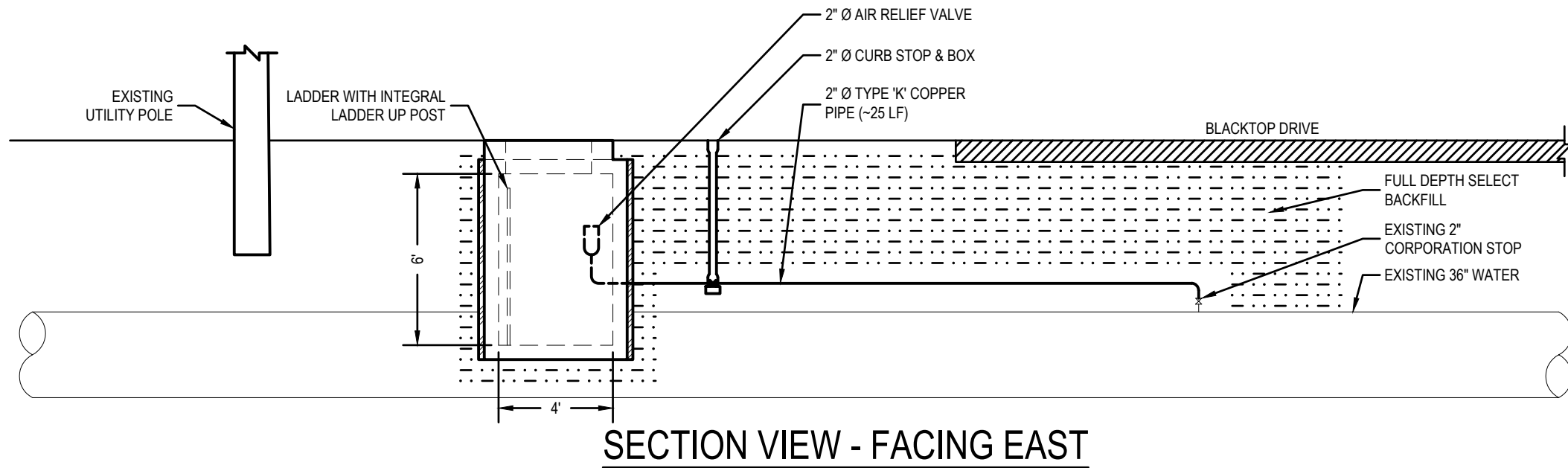
Approved By:

General Notes

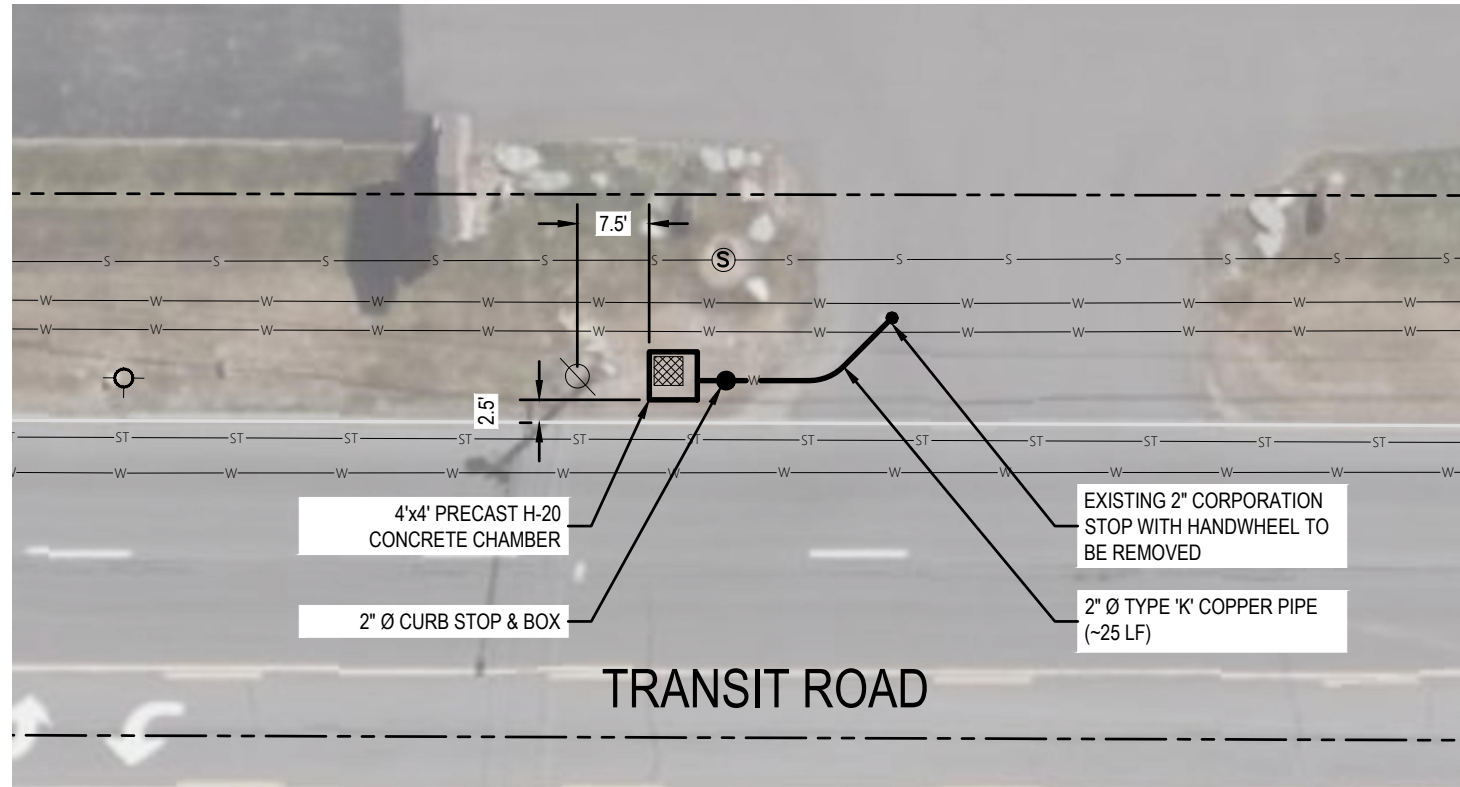
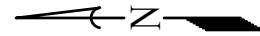
- 1.) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ERIE COUNTY WATER AUTHORITY STANDARD DETAILS AND SPECIFICATIONS, ECWA PN: 202100009
- 2.) WATERMANS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C600
- 3.) WATERMANS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651, HOWEVER THE TABLET METHOD IS NOT ALLOWED
- 4.) TWO SETS OF WATER BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART
- 5.) SEE STANDARD DETAIL GENERAL NOTES SECTION ON MISCELLANEOUS DETAILS
- 6.) CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION
- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

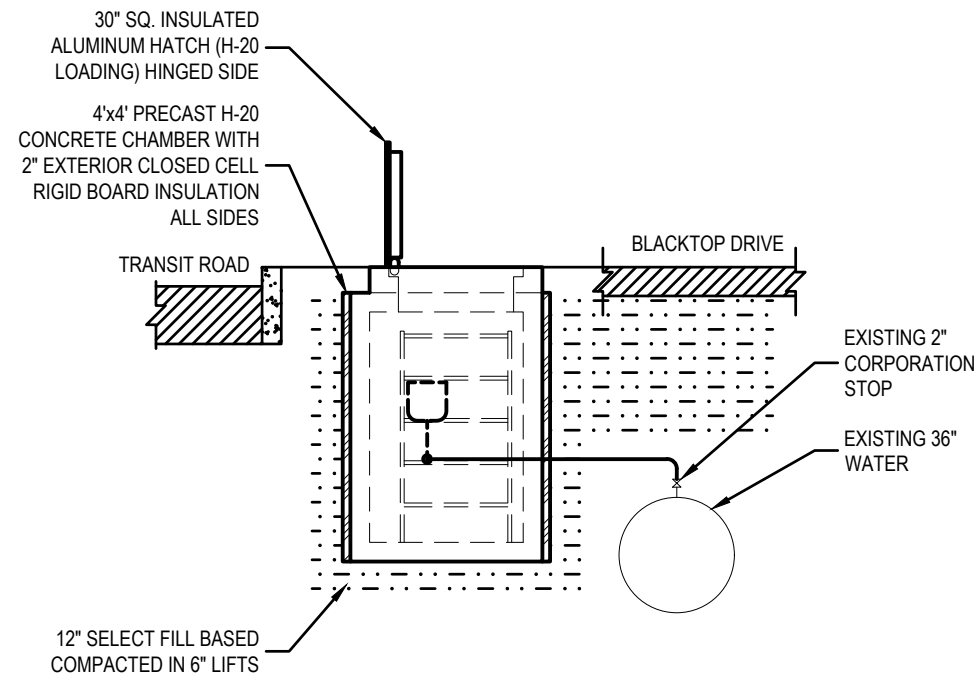
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-  = TRAFFIC MH
-  = STORM MH
-  = CATCH BASIN
-  = UTILITY POLE
-  = FIRE HYDRANT
-  = WATER VALVE
-  = TREES
-  = EXISTING WATERLINE
-  = NEW WATERLINE
-  = SANITARY SEWER
-  = STORM SEWER
-  = GAS MAIN



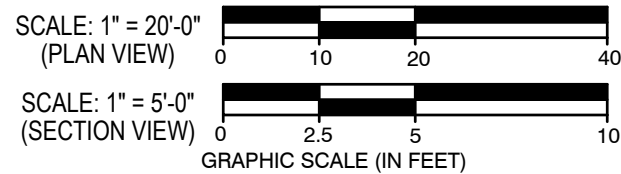
SECTION VIEW - FACING EAST



PLAN VIEW



SECTION VIEW - FACING NORTH



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

4727 TRANSIT ROAD
AIR RELIEF RELOCATION
ECWA PN202200247

TOWN OF LANCASTER
ERIE COUNTY - NEW YORK

Name:
AIR RELIEF CHAMBER

Sheet

Date:
OCTOBER 2022

W-1

Scale:
AS SHOWN

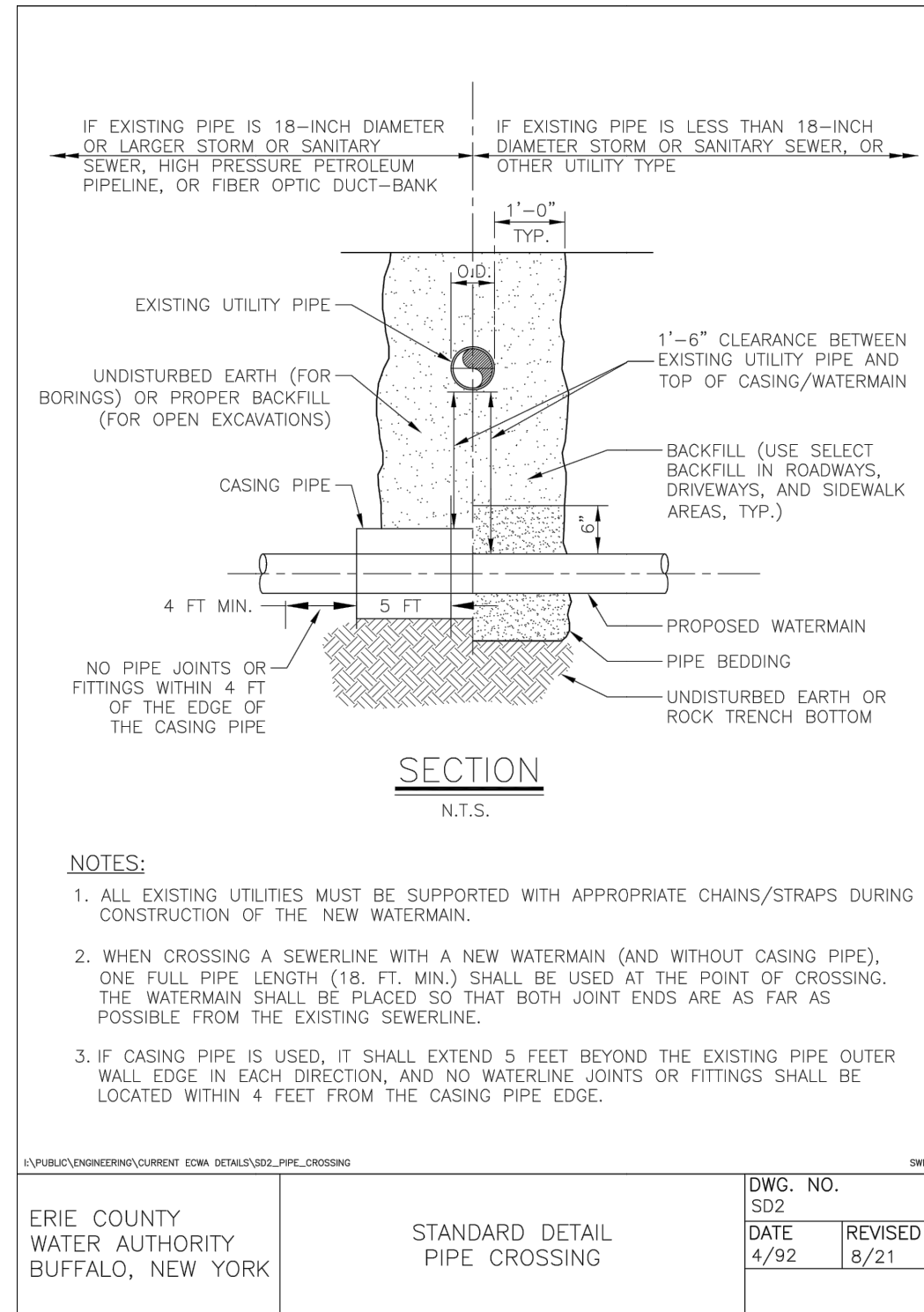
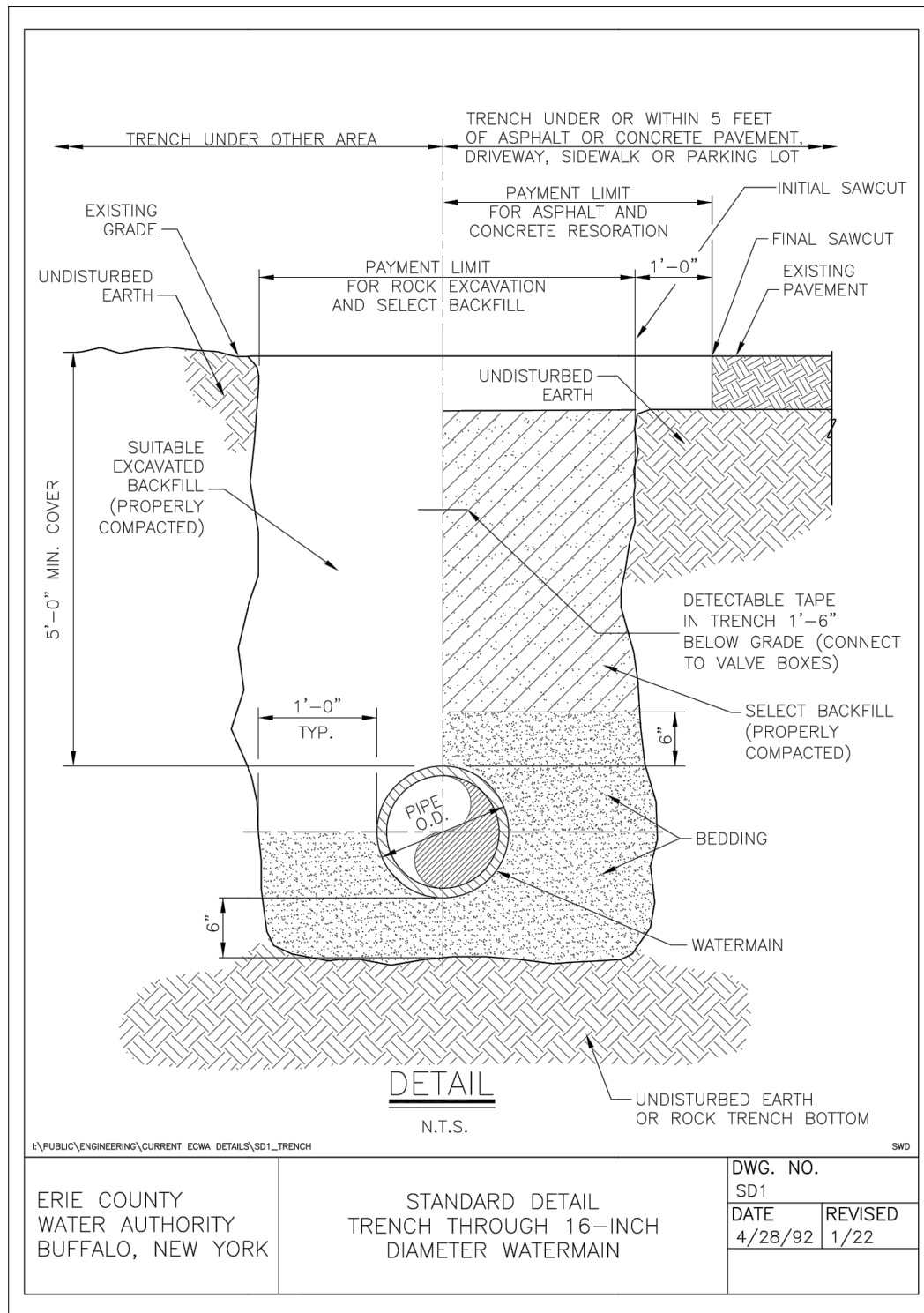
Page: 1 of 3

Drawn/Revised By:
WWW

File Name:
202200247 - AR TRANSIT DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

**4727 TRANSIT ROAD
AIR RELIEF RELOCATION
ECWA PN202200247**

TOWN OF LANCASTER
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: OCTOBER 2022

Scale: AS SHOWN

Drawn/Revised By: WWW

Sheet

W-2

Page: 2 of 3

File Name: 202200247 - AR TRANSIT DESIGN

NOTES

1. All elevations refer to USGS NAVD88 datum.
2. The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
3. The CONTRACTOR work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
4. The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
5. The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install watermain to avoid conflicts.
6. The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as needed basis, phased to reduce erosion and visual impact.
7. Blasting will not be permitted.
8. No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
9. The Erie County Water Authority only shall operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
10. The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 5 business days in advance of the requested shut-down date.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD29_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	SD29	
		DATE 3/05	REVISED 11/21

11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of the 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga.
19. The CONTRACTOR shall place temporary pavement (consisting of hot mix asphalt or cold patch) in all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict school bus access.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for approval.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants and curb stops operate as required.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD30_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30	
		DATE 3/05	REVISED 10/21

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

4727 TRANSIT ROAD
AIR RELIEF RELOCATION
ECWA PN202200247

TOWN OF LANCASTER
ERIE COUNTY - NEW YORK

Name:
MISCELLANOUS
DETAILS

Date:
OCTOBER 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

W-3

Page: 3 of 3

File Name:
202200247 - AR TRANSIT DESIGN

**ERIE COUNTY WATER AUTHORITY
CONSTRUCTION AUTHORIZATION**

Project No. 202200160
Budget No. _____

Authorization No.: EC 7282
Date: 8/22/2022
Inputted By/Date: _____

January 2023 Estimate Starting Date
January 2024 Estimate Complete Date
X yes no Retirement Involved
 X Public Street
 Private Right of Way
 On Authority's Prop
 Tax Districts _____
Name of Grantor of Easement _____
Date of Easement _____

TITLE OF PROJECT: Marion Rd. water system
Improvements.

CLASS OF MAIN INSTALLATION:
 X System Betterment
 Bldr/Cont/Dev. Agree.
 Owner Occupant Cont.
 Special Revenue Cont.

DETAILED DESCRIPTION AND PURPOSE:
Replacement of 12" main on Marion Rd. between
Eggert Rd. and Niagara Falls Blvd. Installation of
Approximately 230 LF of 12" water main and
Appurtenances along Marion Rd.

ESTIMATE COST

(1) Total Est. Cost \$ 70,980.00
(2) _____ Meters and Service @ _____ \$ _____
(3) Removal Cost Less Salvage \$ _____
(4) Gross Investment \$ 70,980.00

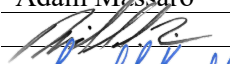
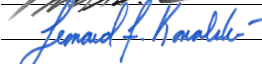
DEDUCT

(5) Const. Advance \$ _____
(6) Service Conn. \$ _____
(7) Refunds \$ _____
(8) Net Auth. Invest. \$ 70,980.00

BUDGETARY DATA

(9) Tot. Budget Expnd. \$ _____
(10) This Authorization \$ _____
(11) Pre Approved \$ _____
(12) Tot. Apvl. To Date \$ _____
(13) Bal. Budget Expnd. \$ _____

APPROVALS

Preparation Adam Massaro
Sr. Dist. Engr.  10/4/2024
Exec. Engr.  10/7/2024
Admn. Director _____
Legal Dept. _____
Acct. Dept. _____

ESTIMATED EARNINGS & RETURNS

ESTIMATED INCREASE IN REVENUES

(14) _____ Customers @ _____ \$ _____
_____ \$ _____
(15) _____ Hydrants @ _____ \$ _____
_____ \$ _____

EST. SAVINGS IN OPERATING EXPENSES

(16) _____ \$ _____
(17) Gross Increase in Earnings \$ _____

REVENUE DEDUCTIONS

(18) Operating Exp. _____ % \$ _____
(19) Depreciation \$ _____
(20) Total Deductions \$ _____
(21) Net Income Loss \$ _____
(22) % Return on Investment _____
(21) divided by 8) _____ %

RESOLUTION APPROVING

Adopted _____
Item No. _____



3030 Union Road
Cheektowaga, NY 14227
(716) 684-1510
www.ecwa.org

PROJECT No.: 202200066
PROJECT Name: Marion Road
Watermain Replacement
DATE: Tuesday, January 24, 2023

DESIGNED BY: WWW
CHECKED BY: WRW
PAGE: 1 of 1

The cost estimate herein was prepared utilizing the Kandey Contract for Water Distribution System Repairs & Improvements (ECWA 202100009)

ECWA Portion

Bid Item	QTY	Unit Cost	Computed Price
Item 1B1 - For installing 10-inch to 12-inch Watermain, 6' of cover or less	280	\$90.00	\$25,200.00
Item 2B1 - For installing 12-inch Butterfly Valve	2	\$4,000.00	\$8,000.00
Item 3A2 - For 10-inch to 12-inch Inline Connection - Complete	2	\$3,000.00	\$6,000.00
Item 5A2 - For installing 10-inch to 12-inch DI Fittings with restraints	4	\$300.00	\$1,200.00
Item 6A1 - For installing Polyethylene Encasement for DI Pipe and Fittings	280	\$1.00	\$280.00
Item 7B1 - For Test Pit Excavation and Backfill	2	\$650.00	\$1,300.00
Item 8A1 - For furnishing and installing Select Backfill	140	\$55.00	\$7,700.00
Item 9A1 - For installing 1 1/2-inch to 2-inch Copper Service Replacement	2	\$2,250.00	\$4,500.00
Item 9C1 - For installing Permanent 2-inch Blow-off Assembly	1	\$500.00	\$500.00
Item 12A5 - For Testing and Disinfection of 12-inch Watermain (<200 ft)	80	\$10.00	\$800.00
Item 13D1 - For Asphalt Driveway Restoration	155	\$100.00	\$15,500.00
Project Total:			\$70,980.00



ERIE COUNTY WATER AUTHORITY

REQUISITION ON STORES

Project No.: 20220160 Date: 01/24/23 Requisition No.: _____

Issue To: Kandey Co., Inc.

For Use In: 12" Main Replacement

Location: Abandoned Marion ROW

OWIP: _____ EC NO.: 107200-007282 Svc. No.: _____

Quantity	Description	Part #	On Site	Used	Ret.
220 ft	12" PVC Pipe				
40 ft	Poly Wrap				
2	12" 45° DI Bends MJ w/ Accessories				
2	12" 22.5° DI Bends MJ w/ Accessories				
2	12" Solid Sleeve w/ Accessories				
2	12"x2" DI Tapped Cap MJ w/ Accessories				
2	12" Solid End Cap MJ w/ Accessories				
2	12" Butterfly Valve				
2	Complete Valve Box				
5	12" Joint Restraints – Complete both sides				
2	12" HYMAX				
2	12" PVC Mega Lugs				
2	12" CI Mega Lugs				
8	Ductile Lugs				
40	3/4" All Thread				
8	3/4" Nuts				
1	2" Compression x Compression Corp				
1	2" Compression Curb Stop				
40	2" Copper				
2	12"x2" Saddle				
1	12"x1.5" Saddle				
25	1.5" Copper				
1	1.5" Compression x Compression Corp				
1	1.5" Compression Curb Stop				
2	Service Boxes - Complete				

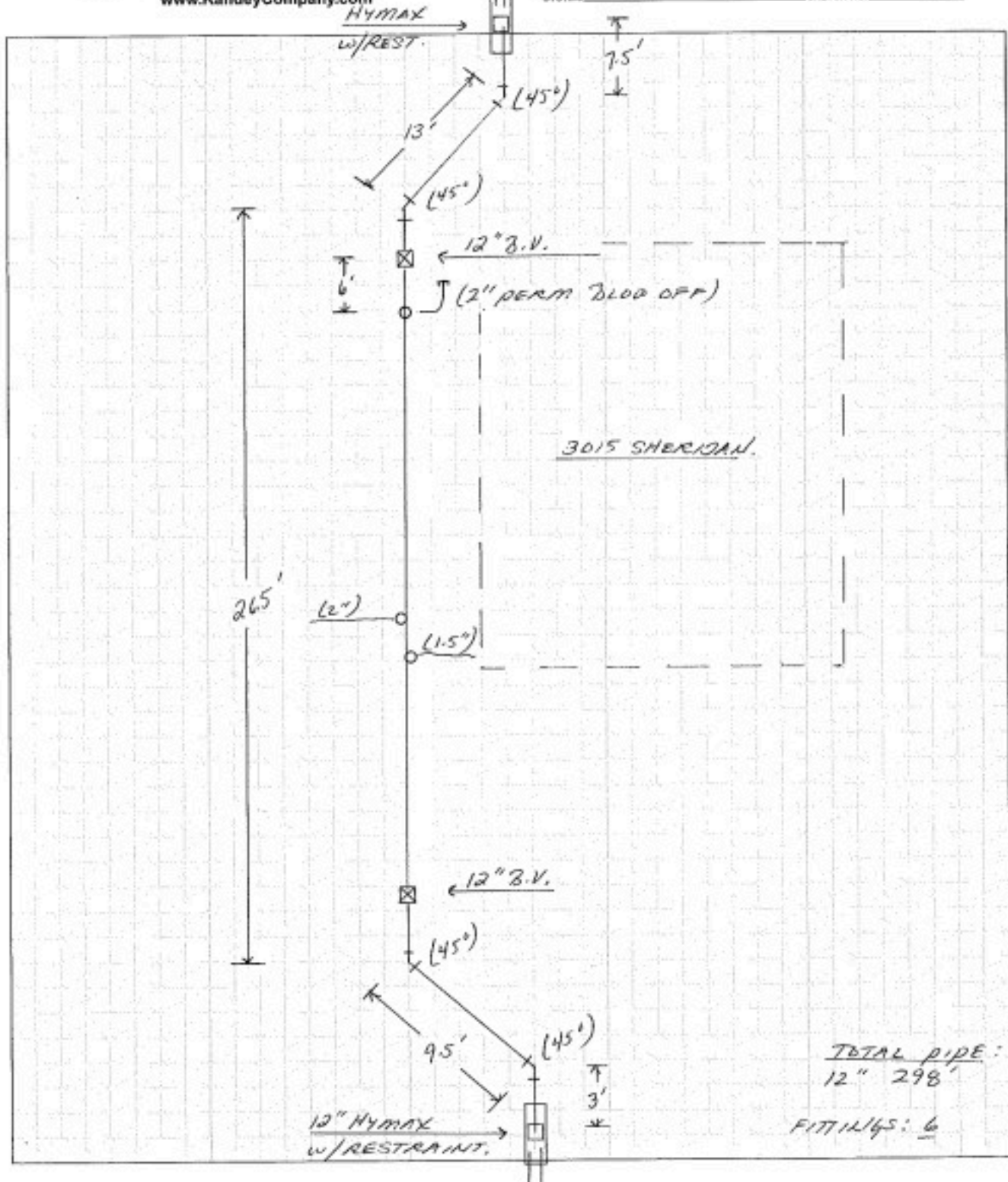
Kandey Co., Inc _____

Inspector _____

KANDEY CO. INC.

19 Rensler Drive
West Seneca, New York 14224
PHONE: (716) 675-7245 • FAX: (716) 675-4957
www.KandeyCompany.com









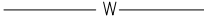

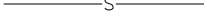
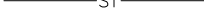

JOB NAME MARION RD. WATER.
JOB EST. # K2175-16 DATE 2/19/23
LOCATION MARION - AMHEST
DRAWN BY BLAHOWICZ SCALE N/A.
SYSTEM _____ SKETCH NO. _____

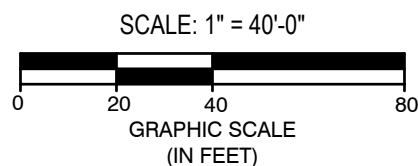
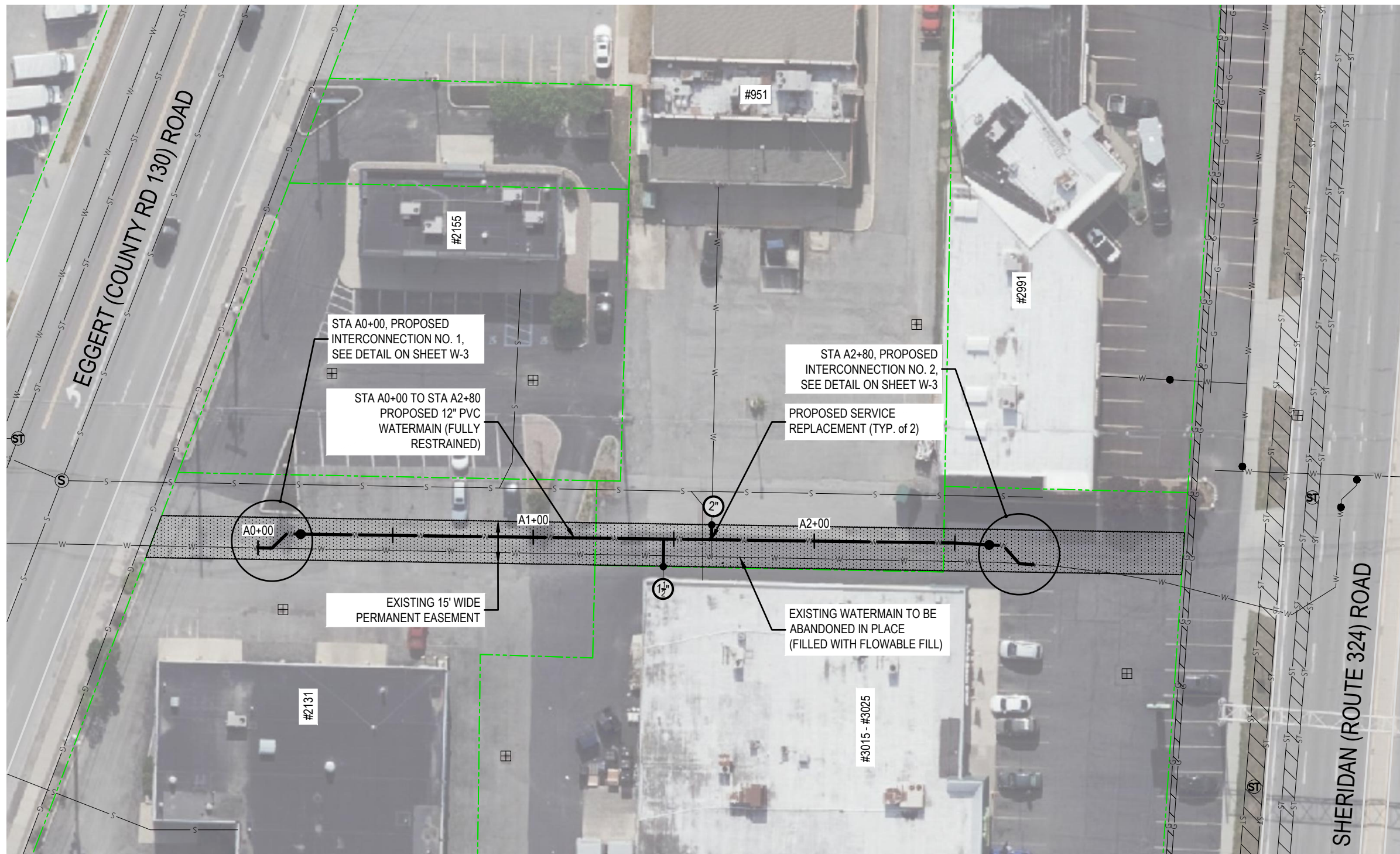


General Notes

- 1.) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ERIE COUNTY WATER AUTHORITY STANDARD DETAILS AND SPECIFICATIONS, ECWA PN: 202100009
- 2.) WATERMAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C605
- 3.) WATERMAINS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651, HOWEVER THE TABLET METHOD IS NOT ALLOWED
- 4.) TWO SETS OF WATER BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART
- 5.) SEE STANDARD DETAIL GENERAL NOTES SECTION ON MISCELLANEOUS DETAILS
- 6.) CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION
- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

-  = SANITARY MH
-  = TRAFFIC MH
-  = STORM MH
-  = CATCH BASIN
-  = UTILITY POLE
-  = FIRE HYDRANT
-  = WATER VALVE
-  = TREES
-  = EXISTING WATERLINE
-  = NEW WATERLINE
-  = SANITARY SEWER
-  = STORM SEWER
-  = GAS MAIN



Approved By:



01/24/2023



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MARION ROAD - PLAN

Sheet

Date:
JANUARY 2023

W-1

Scale:
AS SHOWN

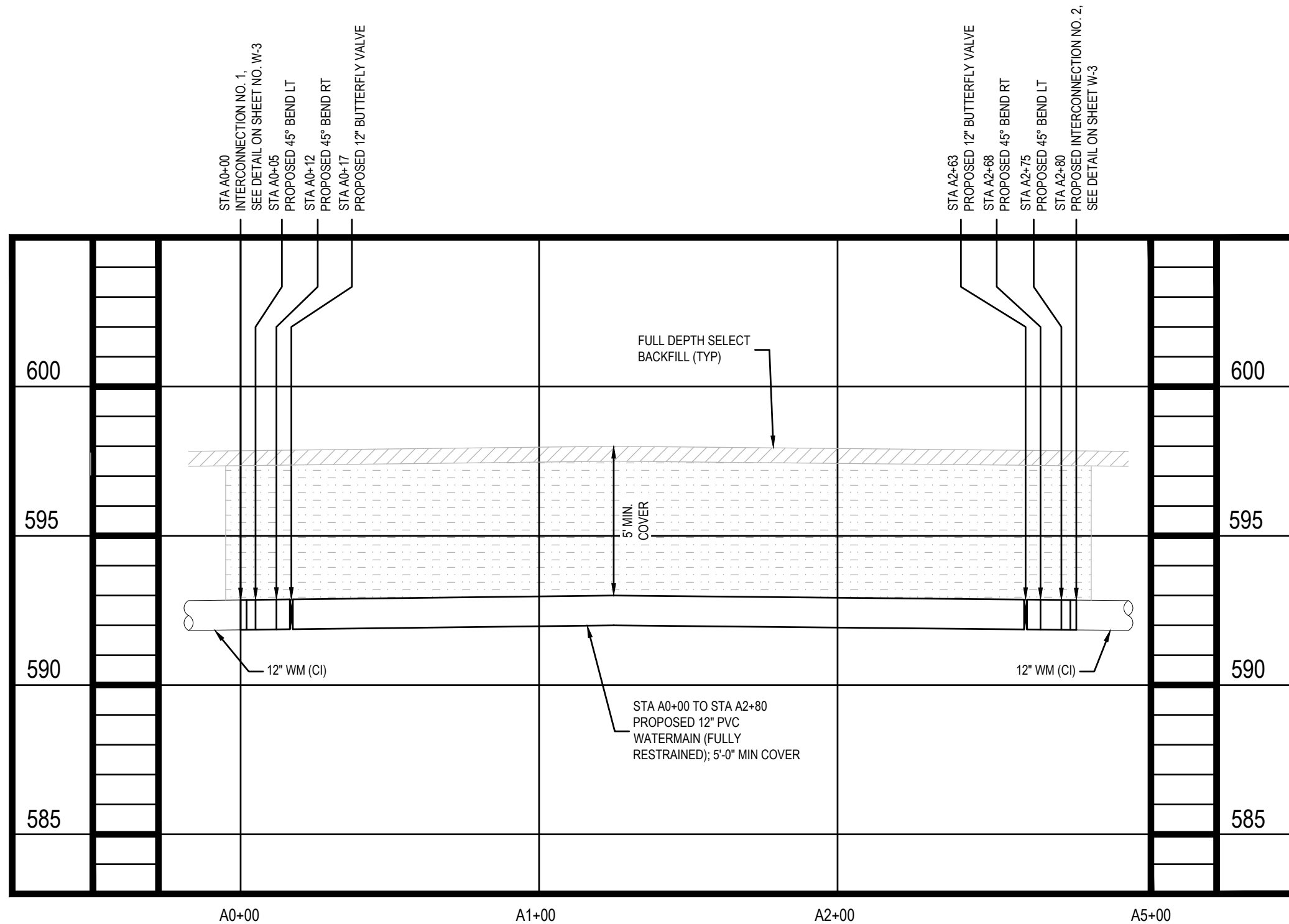
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Drawn/Revised By:
WWW

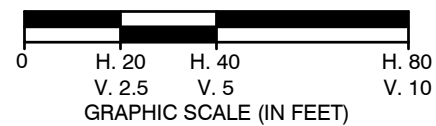
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ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.



SCALE: HORZ. 1" = 40'-0"; VERT. 1" = 5'-0"



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.

Approved By:



01/24/2023



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MARION ROAD - PROFILE

Date:
JANUARY 2023

Scale:
AS SHOWN

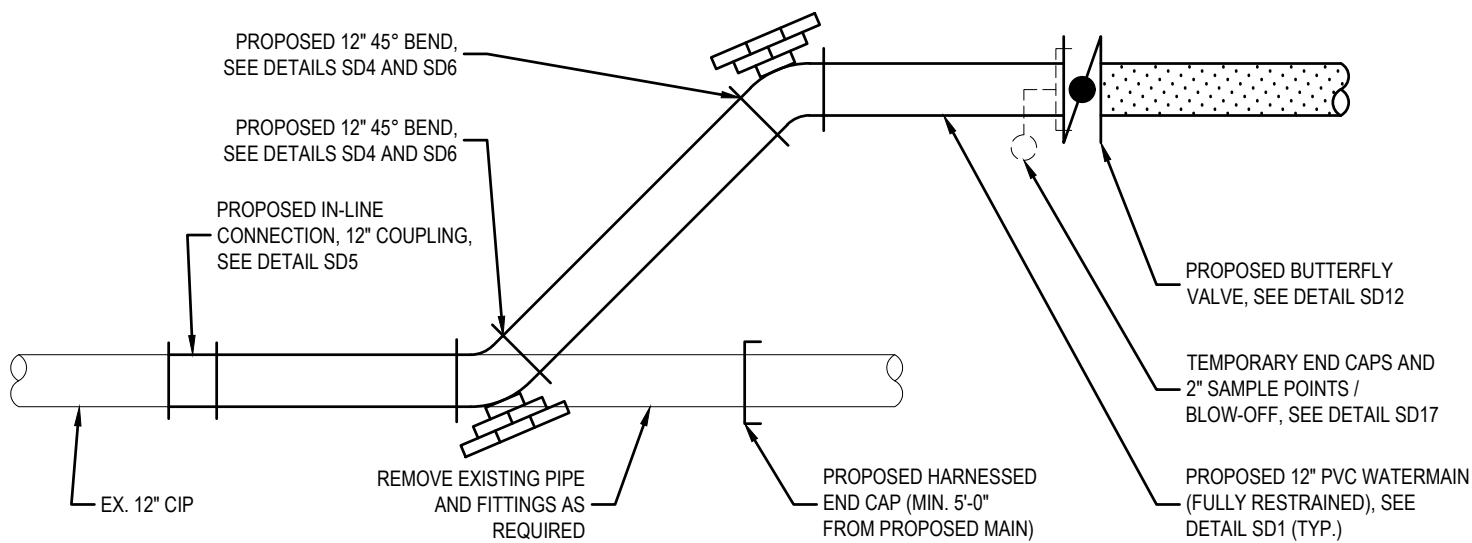
Drawn/Revised By:
WWW

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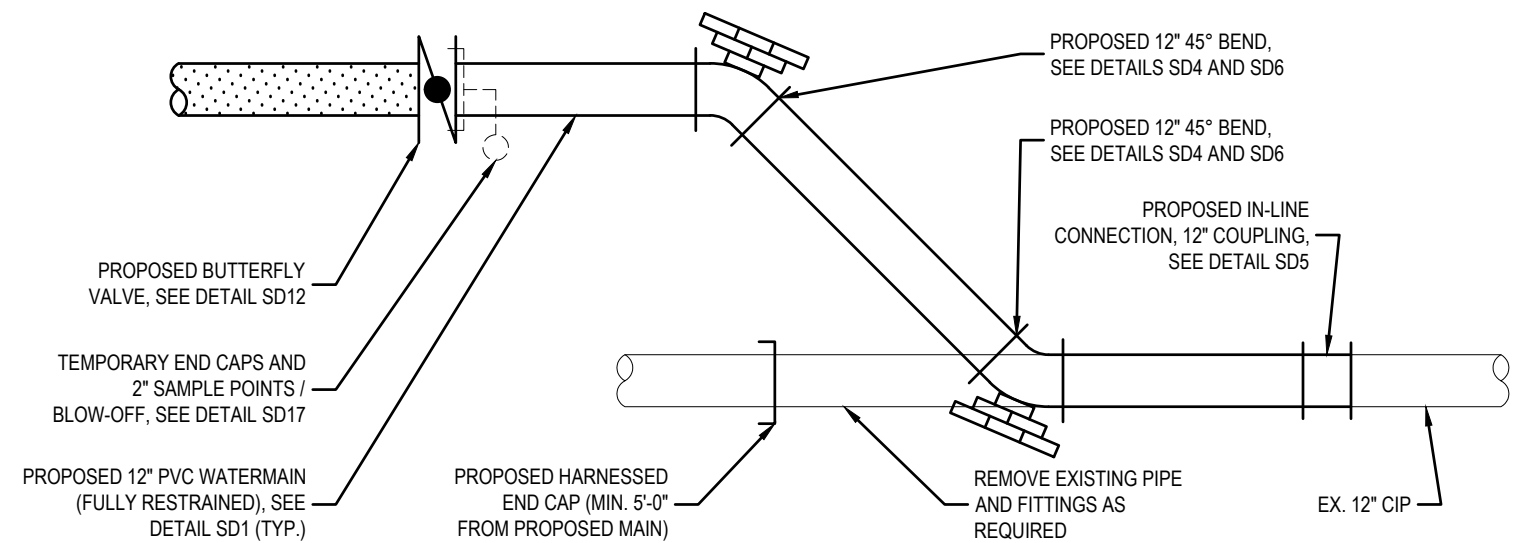
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202200160 - MARION DESIGN

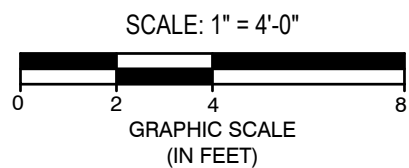


INTERCONNECTION NO. 1



INTERCONNECTION NO. 2

PRESSURE TEST AND DISINFECTION LIMITS



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.

Approved By:



01/24/2023



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
INTERCONNECTIONS

Date:
JANUARY 2023

Scale:
AS SHOWN

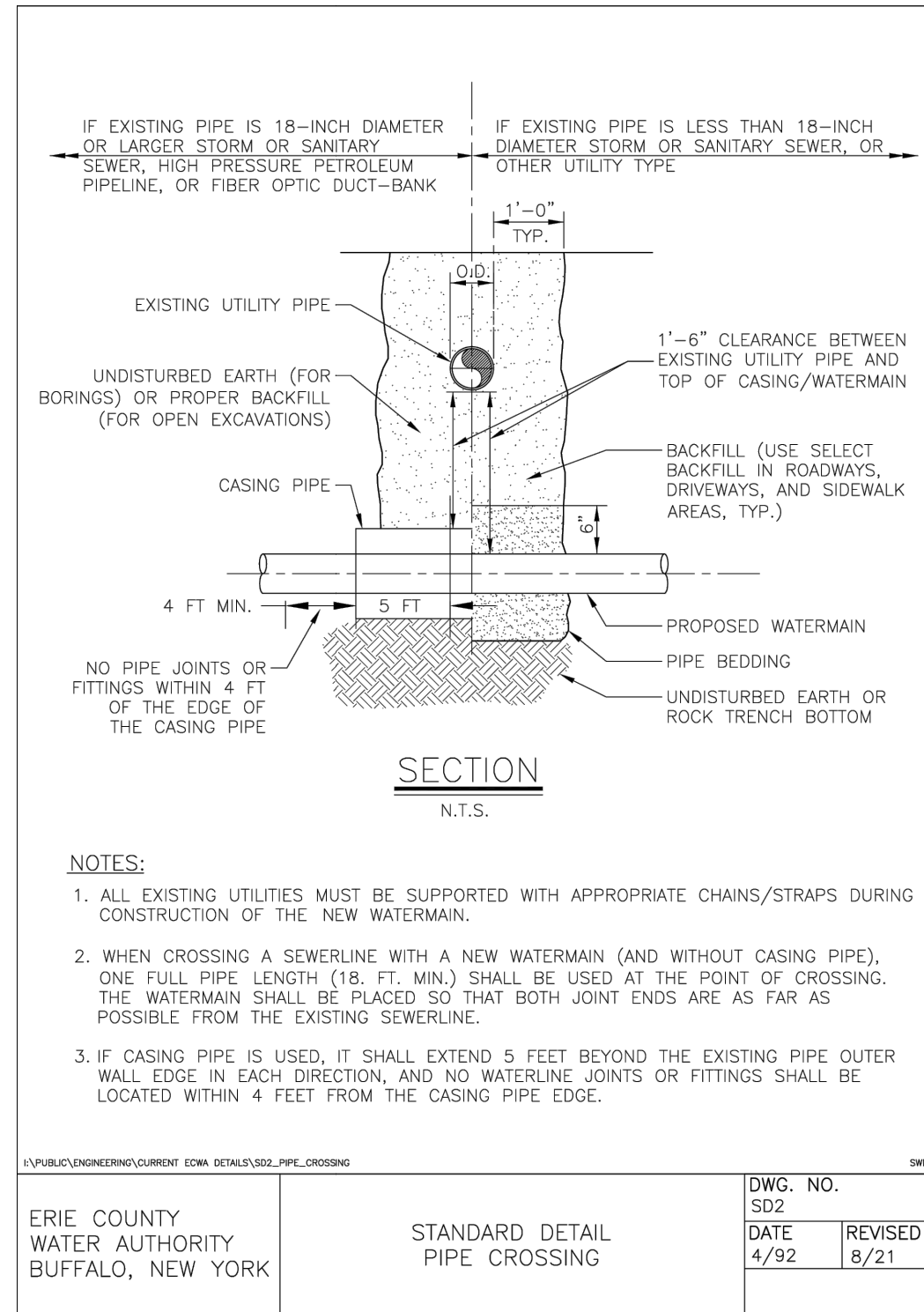
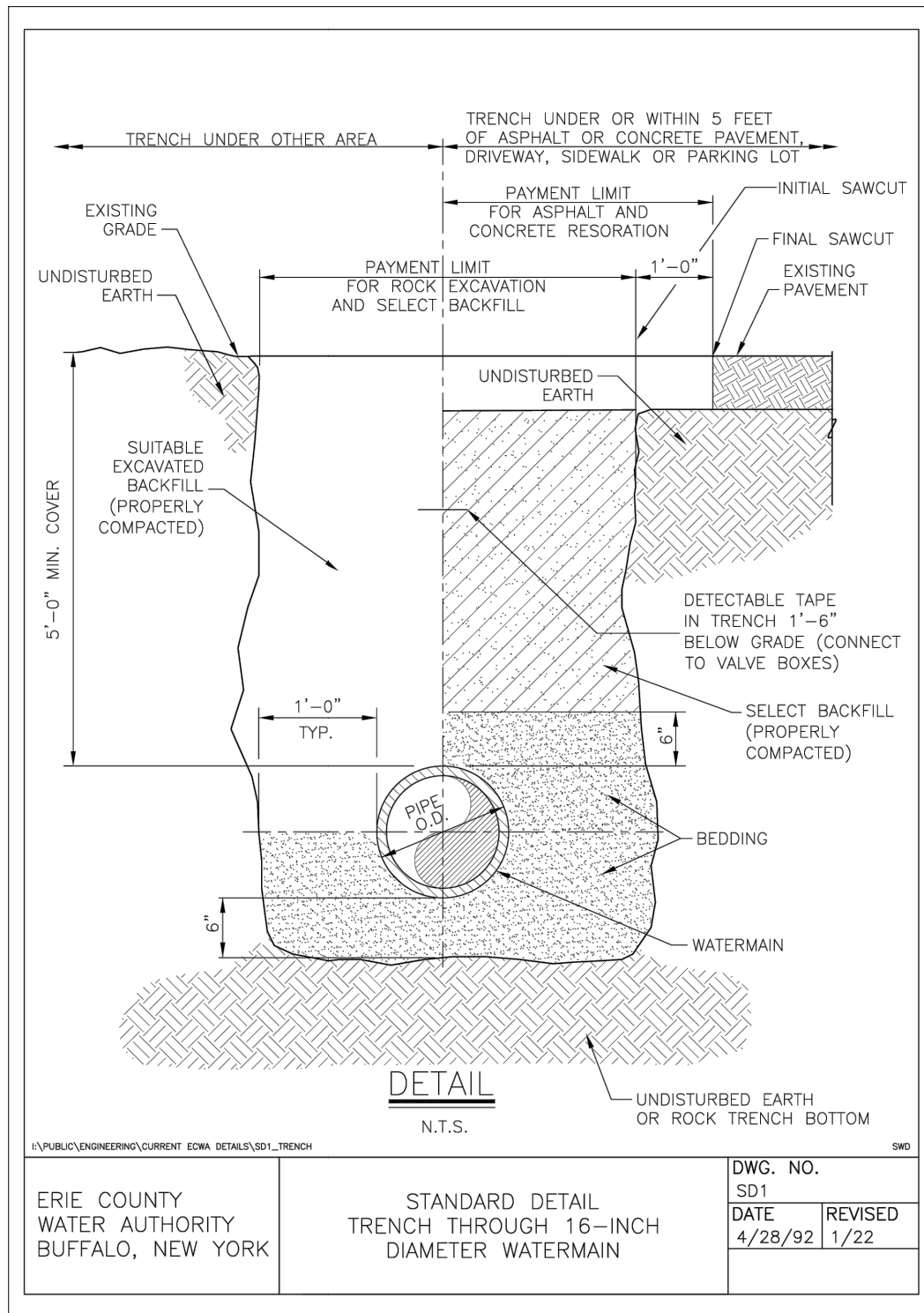
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File Name:
202200160 - MARION DESIGN



Approved By:



01/24/2023



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JANUARY 2023

Scale:
AS SHOWN

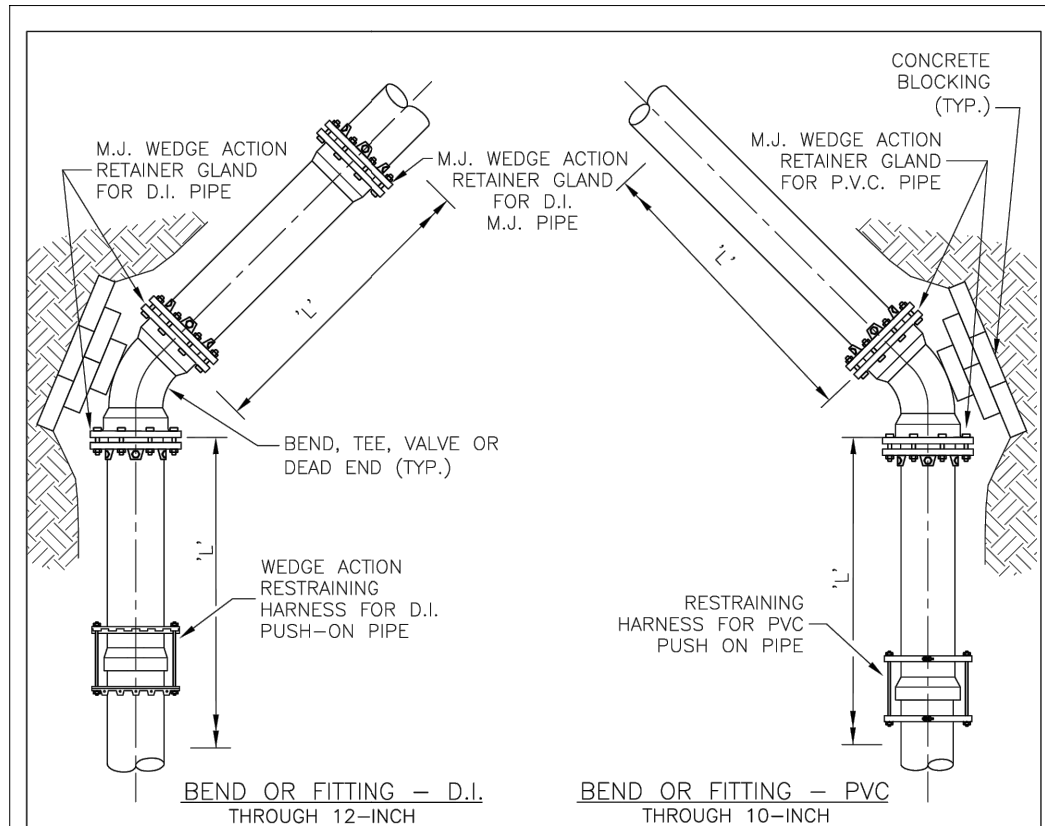
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File Name:
202200160 - MARION DESIGN



RESTRAINED JOINT SCHEDULE					
PIPE SIZE	PIPE TYPE	11.25° ELBOW	22.5° ELBOW	45° ELBOW	TEE BRANCH, 90° BEND, VALVE OR DEAD END
		'L'	'L'	'L'	'L'
8"	PVC/DIP	13'/12"	25'/23"	48'/45"	99'/94"
10"	PVC/DIP	15'/14"	30'/28"	57'/54"	120'/112"
12"	PVC/DIP	17'/16"	35'/32"	66'/63"	140'/130"
16"	DIP	20'	40'	81'	170'

NOTES:

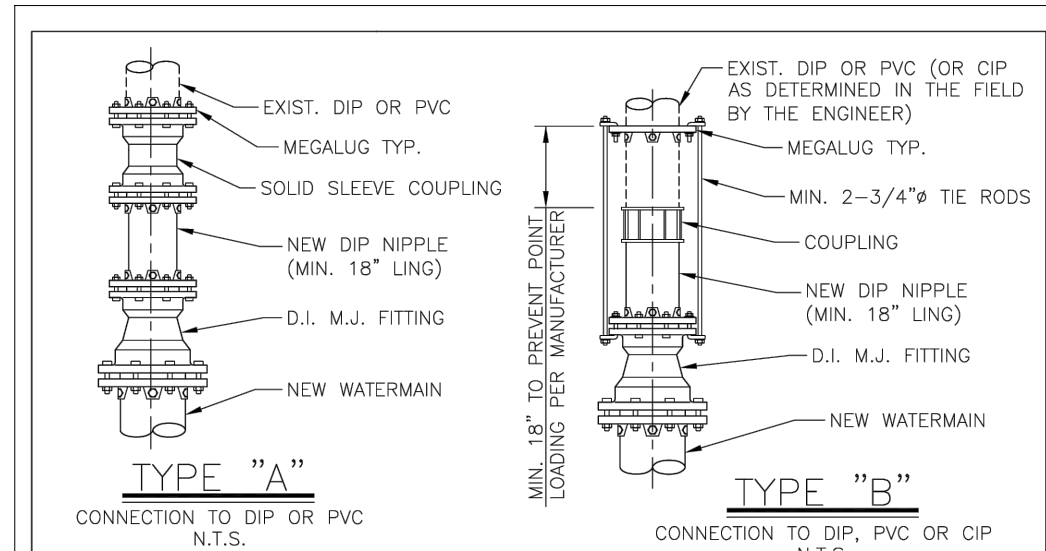
- DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINING PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

PLAN

N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD4_REST_JOINT_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4	
		DATE 4/28/92	REVISED 7/16

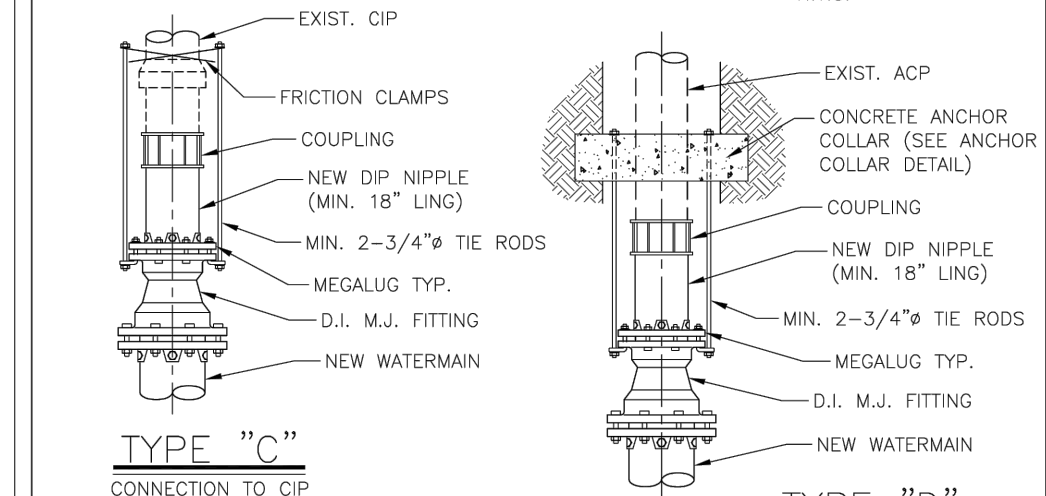


TYPE "A"

CONNECTION TO DIP OR PVC
N.T.S.

TYPE "B"

CONNECTION TO DIP, PVC OR CIP
N.T.S.



TYPE "C"

CONNECTION TO CIP
N.T.S.

TYPE "D"

CONNECTION TO ACP
N.T.S.

NOTES:

- VALVES AND TEES MAY BE HARNESSSED SIMILARLY.
- HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE—PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
- COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
- TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD5_CONN_EXIST_WMMAIN

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD5	
		DATE 3/05	REVISED 7/16

Approved By:

01/24/2023



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

**MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

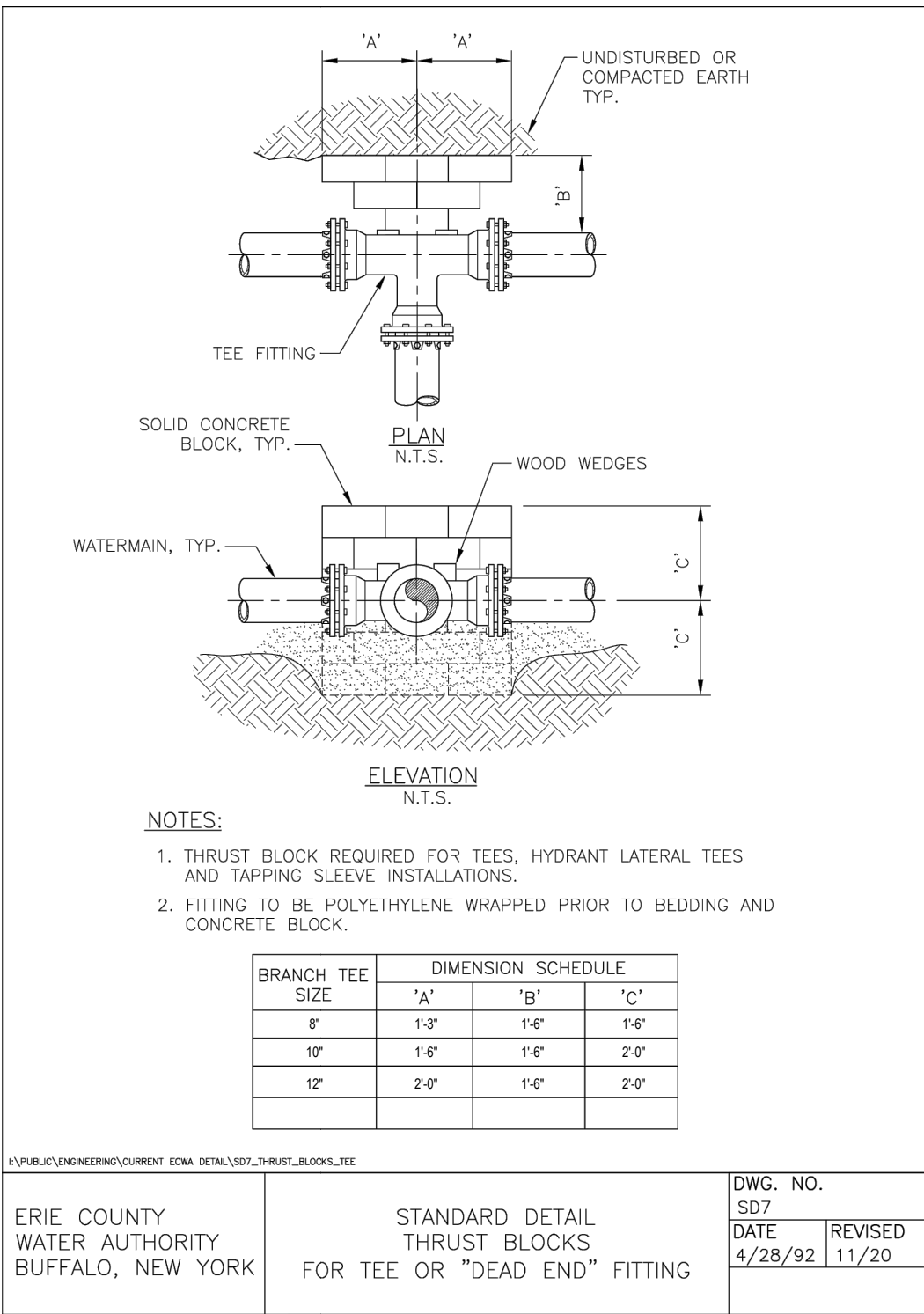
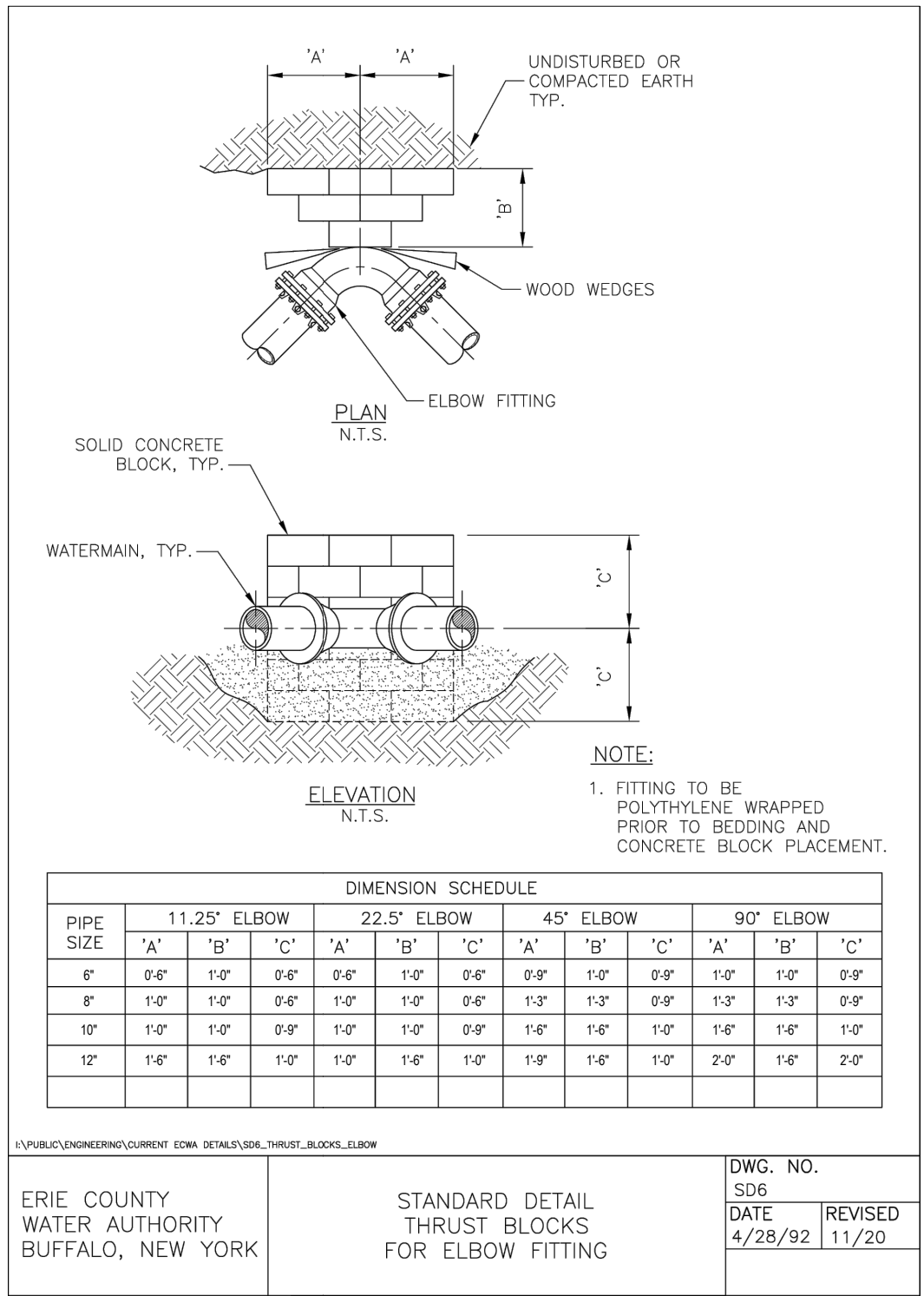
Name:	MISCELLANEOUS DETAILS
Date:	JANUARY 2023
Scale:	AS SHOWN
Drawn/Revised By:	WWW

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File Name:
202200160 - MARION DESIGN



Approved By:

01/24/2023

ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: JANUARY 2023

Scale: AS SHOWN

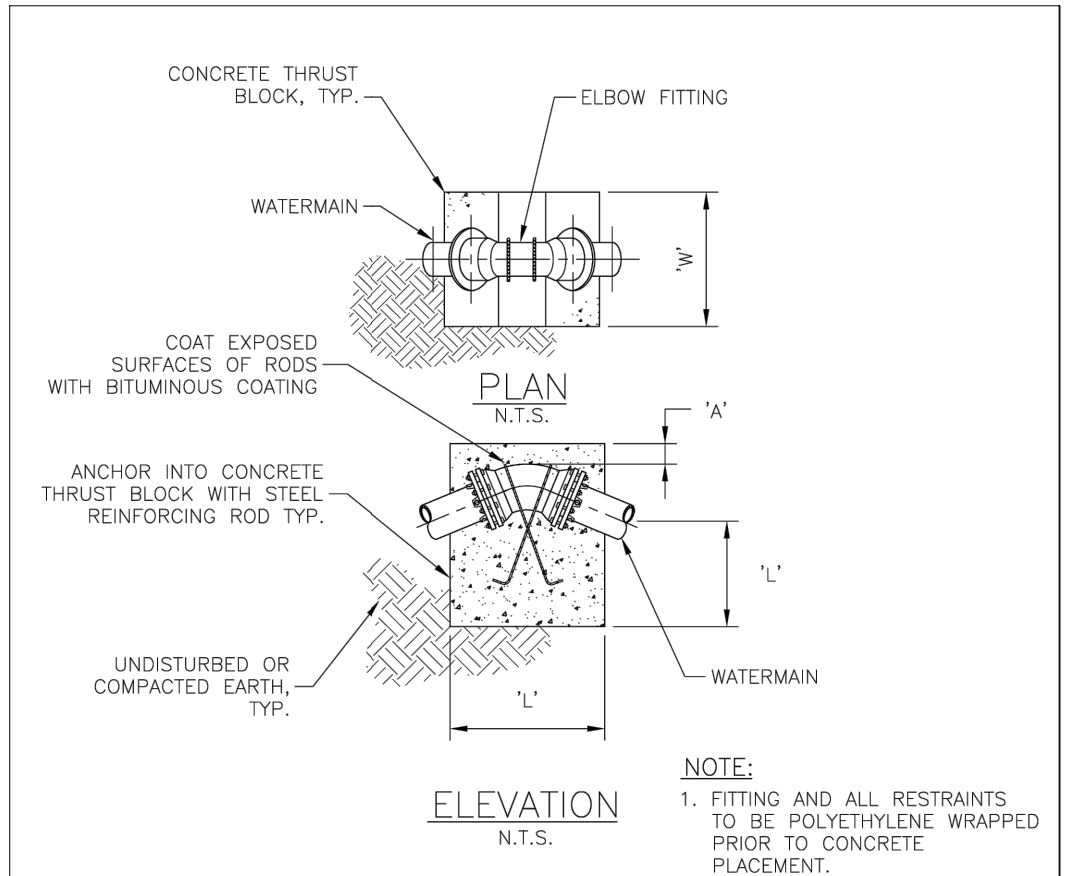
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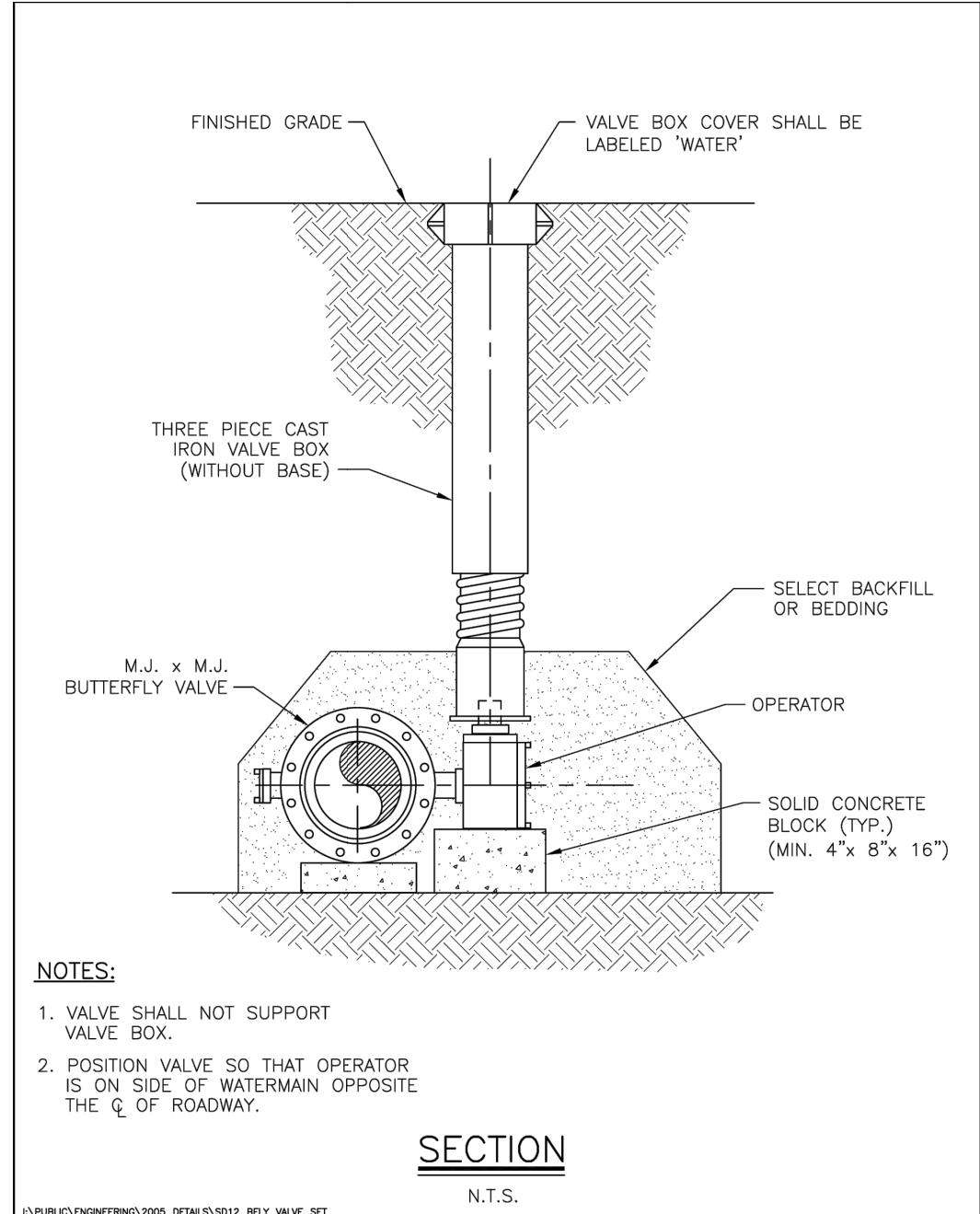


DIMENSION SCHEDULE

PIPE SIZE	PIPE TYPE	11.25° ELBOW				22.5° ELBOW				45° ELBOW			
		'A'	'W'	'L'	ROD ϕ	'A'	'W'	'L'	ROD ϕ	'A'	'W'	'L'	ROD ϕ
8"	PVC/DIP	1'-0"	3'-0"	3'-0"	1/2"	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-6"	1/2"
10"	PVC/DIP	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-9"	1/2"
12"	PVC/DIP	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-6"	1/2"	1'-0"	5'-0"	5'-0"	1/2"

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD8_THRUST_BLOCKS_VBEND

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8	
		DATE 4/28/92	REVISED 11/20



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SECTION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL BUTTERFLY VALVE SETTING	DWG. NO. SD12	
		DATE 6/00	REVISED 10/05

Approved By:

01/24/2023

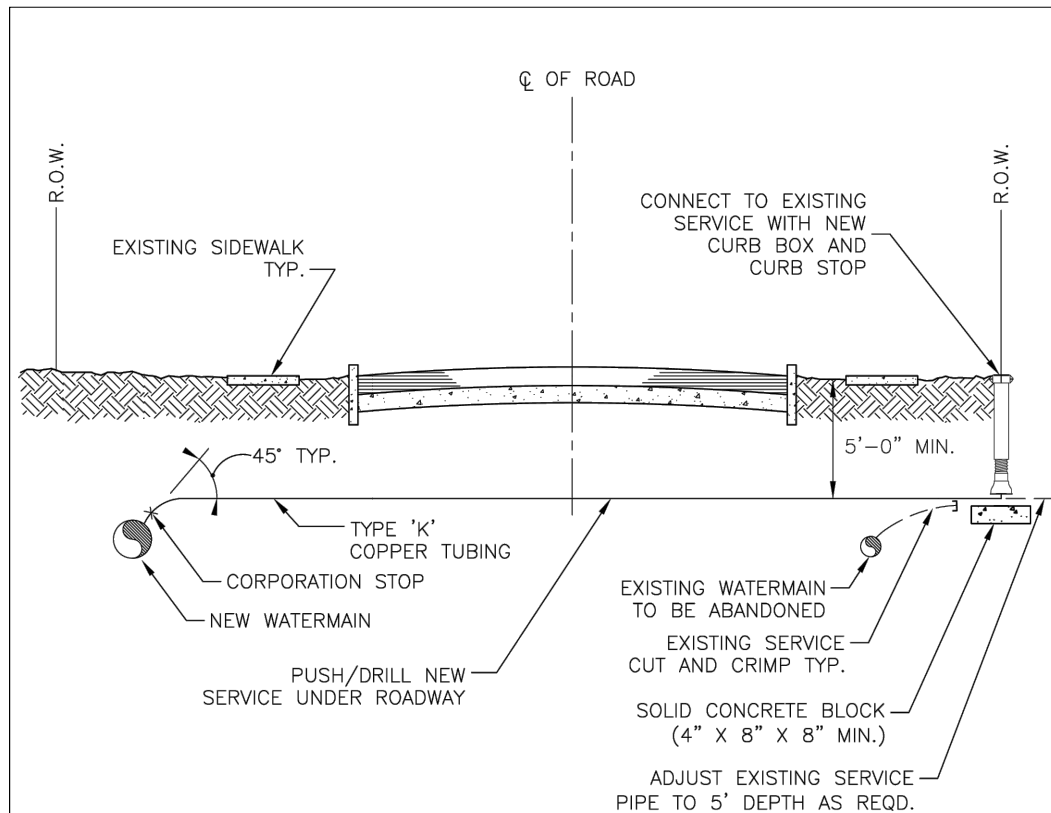
ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

**MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS	<h1>W-7</h1>
Date: JANUARY 2023	
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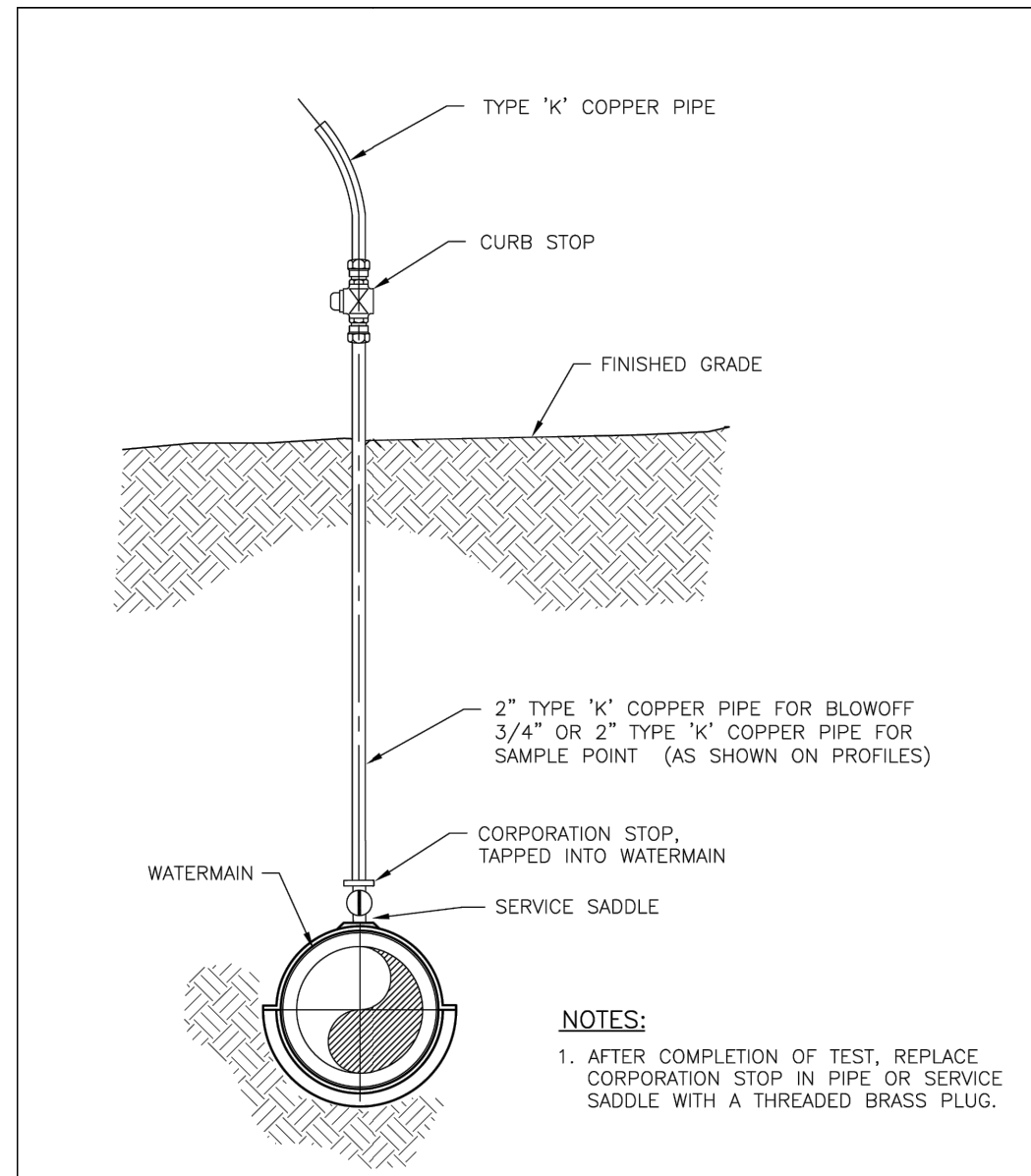
NOTES:

1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
 - A. WHEN SERVICES ARE PLACED ON 4" OR SMALLER PIPES.
 - B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 6" PIPE.
 - C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
 - D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
 - E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
 - F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. USE POLYETHYLENE FOR 3/4" AND 1" SERVICES GREATER THAN 100 FEET IN LENGTH, AND FOR 1-1/2" AND 2" SERVICES GREATER THAN 60 FEET IN LENGTH. ALL POLYETHYLENE SERVICES SHALL INCLUDE A TRACER WIRE FOR DETECTION BY ECWA FORCES.
5. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD16_SERVICE_REPLACE

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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD16	
		DATE 4/92	REVISED 10/20



NOTES:

1. AFTER COMPLETION OF TEST, REPLACE CORPORATION STOP IN PIPE OR SERVICE SADDLE WITH A THREADED BRASS PLUG.

ELEVATION

N.T.S.

I:\PUBLIC\ENGINEERING\2005_DETAILS\SD17_TEMP_BO_SAMP_PT

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17	
		DATE 4/28/92	REVISED 10/05

Approved By:



01/24/2023



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JANUARY 2023

Scale:
AS SHOWN

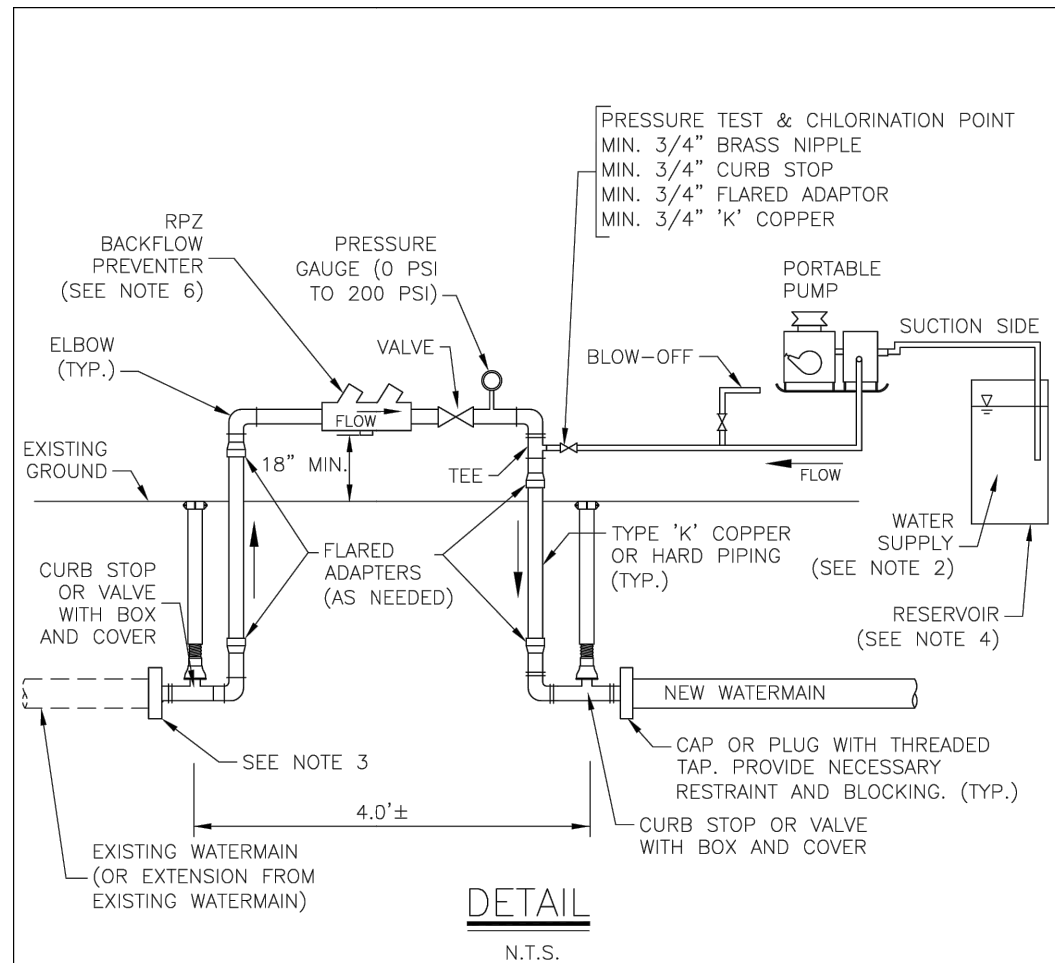
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NOTES:

- | | |
|---|---|
| <p>1. BACTERIOLOGICAL WATER SAMPLES SHALL BE TAKEN AT BEGINNING AND END OF NEW WATERMAIN SECTION AND AT MAXIMUM 1,000 FT. SPACINGS.</p> <p>2. PROVIDE CLEAN WATER SUPPLY FOR PRESSURE TESTING. PROVIDE CHLORINATED WATER SUPPLY FOR DISINFECTION.</p> <p>3. CAP OR PLUG WITH THREADED TAP OR APPROPRIATE TAP INTO MAIN. PROVIDE NECESSARY RESTRAINT AND BLOCKING.</p> | <p>4. DIAMETER OF RESERVOIR SHALL BE 15" OR LESS. IF DIAMETER IS GREATER THAN 15", LEAKAGE TEST SHALL BE RUN A MINIMUM OF 4 HOURS.</p> <p>5. PRESSURE TEST CANNOT EXCEED 2,000 LINEAR FEET PER TEST SECTION.</p> <p>6. BACKFLOW PREVENTER TO BE SIZED TO ACHIEVE MIN 3 FPS SCOUR VELOCITY DURING FLUSHING OF NEW WATERLINE.</p> |
|---|---|

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD23_PRESS_TEST_SCHEM

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PRESSURE TESTING AND DISINFECTION APPARATUS SCHEMATIC	DWG. NO. SD23	
		DATE 6/00	REVISED 11/20

NOTES

- All elevations refer to USGS NAVD88 datum.
- The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
- The CONTRACTOR work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
- The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
- The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install watermain to avoid conflicts.
- The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as needed basis, phased to reduce erosion and visual impact.
- Blasting will not be permitted.
- No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
- The Erie County Water Authority only shall operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
- The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 5 business days in advance of the requested shut-down date.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD29_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	SD29	
		DATE 3/05	REVISED 11/21

Approved By:



01/24/2023



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS

Date: JANUARY 2023

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11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of the 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga.
19. The CONTRACTOR shall place temporary pavement (consisting of hot mix asphalt or cold patch) in all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict school bus access.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for approval.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants and curb stops operate as required.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD30_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30	
		DATE 3/05	REVISED 10/21

PIPE DIAMETER (in)	PIPE MATERIAL		WORKING PRESSURE (psi)	TEST PRESSURE (psi)
	Type (DIP, PVC, etc.)	Rating (Class/DR)		
12"	PVC	DR-18	100	175

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD31_PRESS_TEST_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	PRESSURE TESTING SCHEDULE	DWG. NO. SD31	
		DATE 10/05	REVISED 11/20

Approved By:



01/24/2023



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JANUARY 2023

Scale:
AS SHOWN

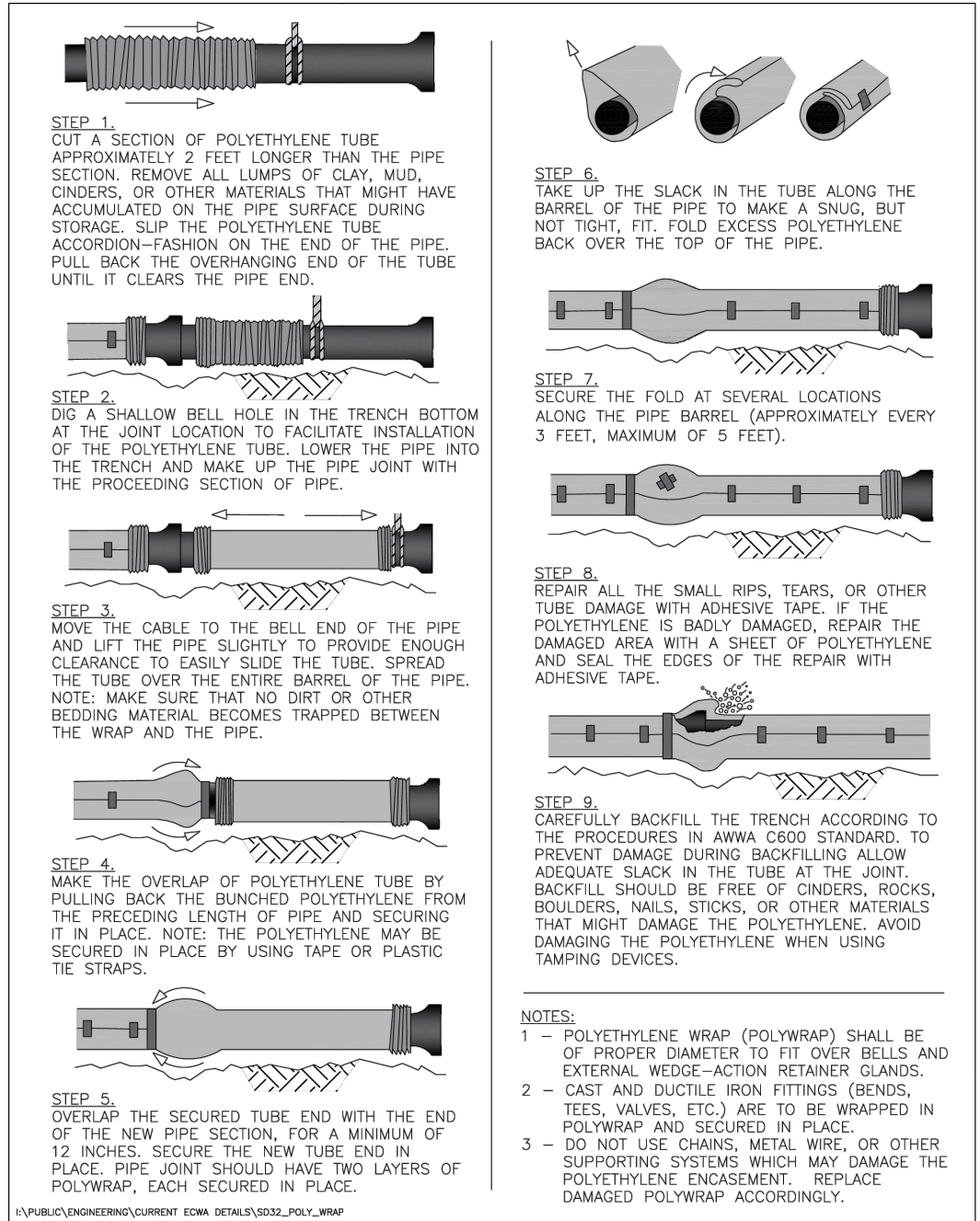
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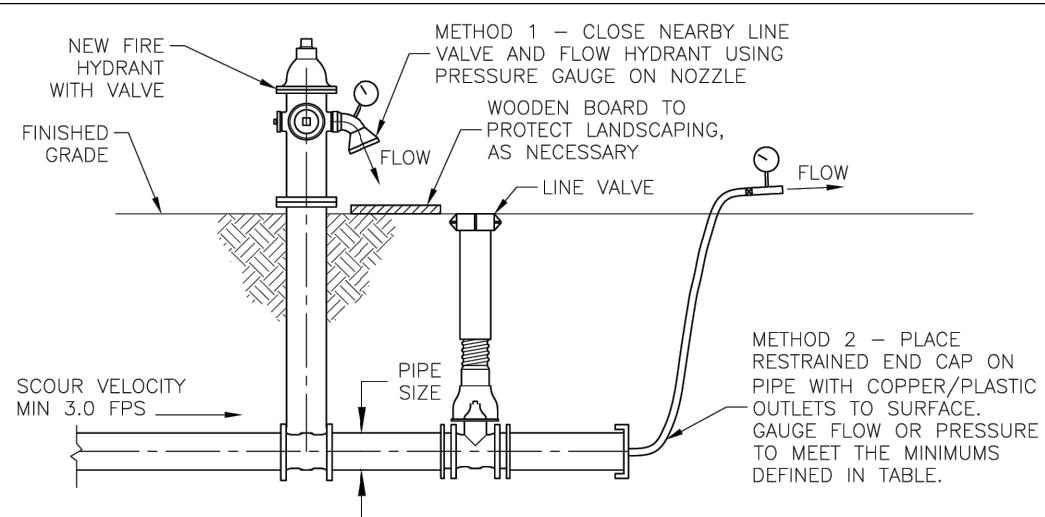


ERIC COUNTY WATER AUTHORITY
BUFFALO, NEW YORK

STANDARD DETAIL
POLYETHYLENE ENCASEMENT
OF DUCTILE IRON PIPE

DWG. NO. SD32
DATE 06/16 REVISED 02/19

01/24/2023



PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW		METHOD 2 END CAP FLOW	
		2 1/2" NOZZLE PRESSURE (PSI)	4" NOZZLE PRESSURE (PSI)	2" I.D. PRESSURE (PSI)	3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	-	22
16	1900	-	20	-	62
20	3000	-	50	-	-

I.D. = INNER DIAMETER

- NOTES:**
- TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
 - OUTLET PRESSURE MEASURED BY PITOT GAUGE.
 - ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
 - TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION

N.T.S.

ERIC COUNTY WATER AUTHORITY
BUFFALO, NEW YORK

STANDARD DETAIL
WATERLINE FLUSHING

DWG. NO. SD36
DATE 6/16 REVISED 3/18

Approved By:

01/24/2023

ERIC COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160

TOWN OF CHEEKTOWAGA
ERIC COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS

Date: JANUARY 2023

Scale: AS SHOWN

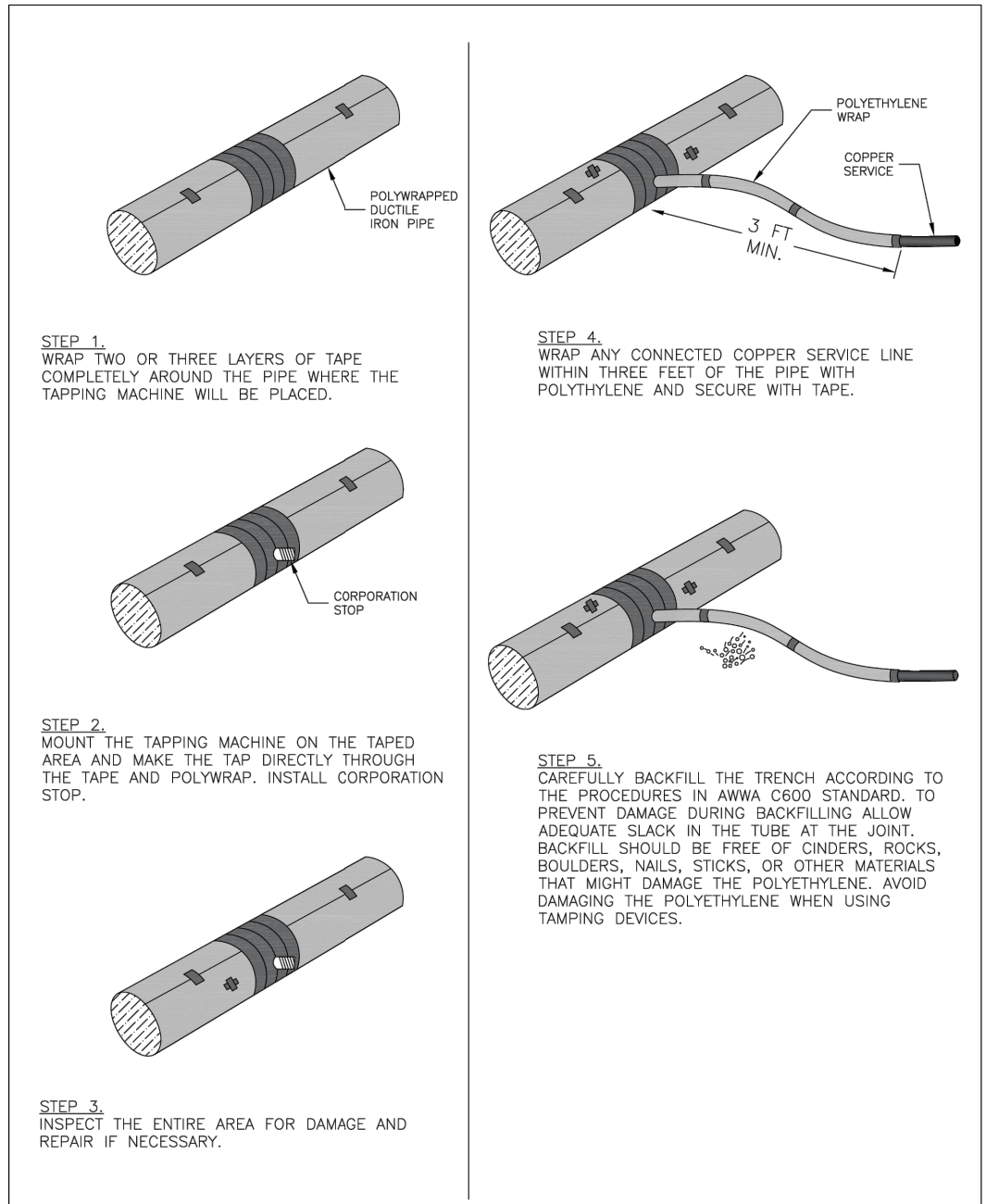
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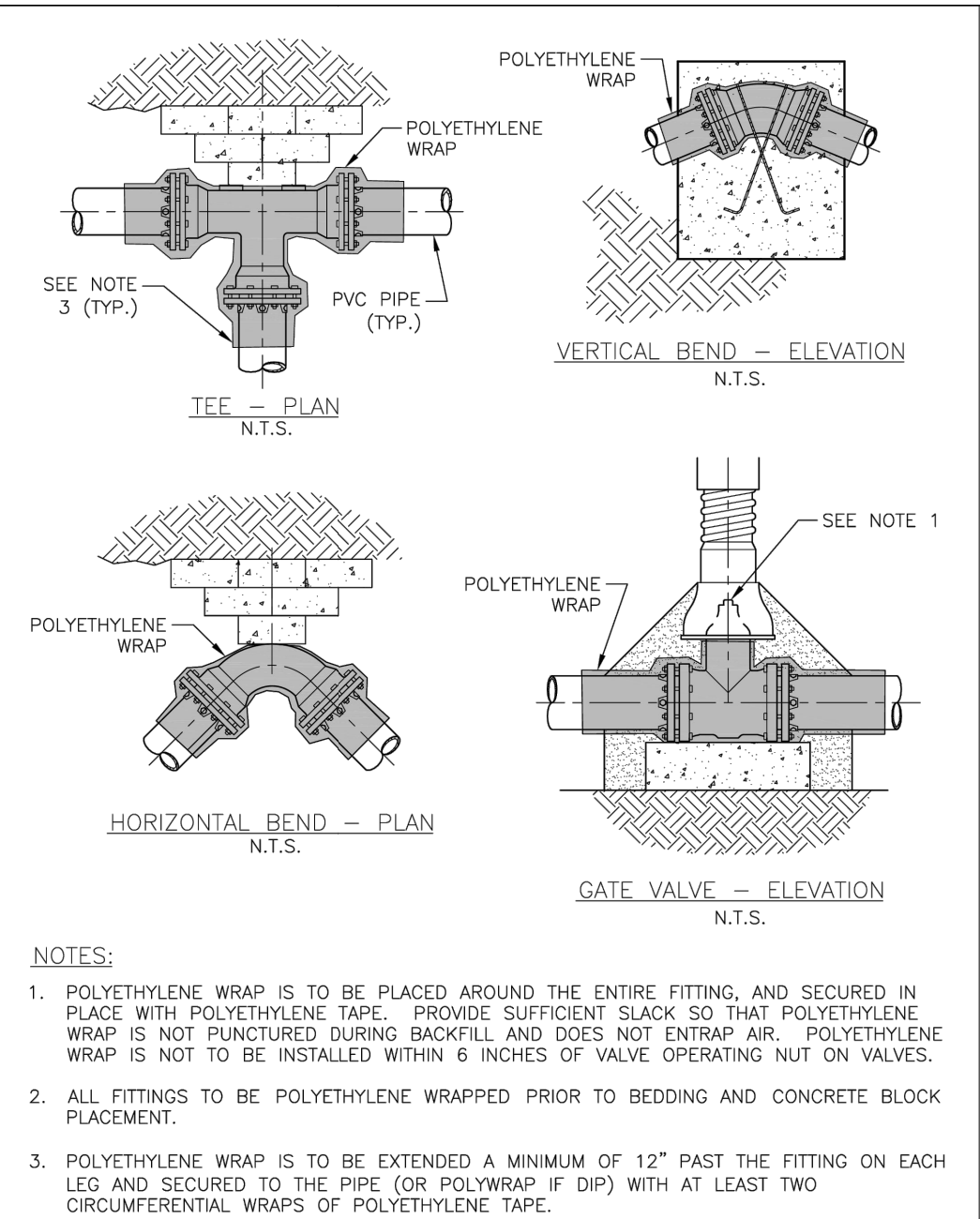
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File Name: 202200160 - MARION DESIGN



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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TAPPING POLYWRAPPED PIPE	DWG. NO. SD38	
		DATE 05/18	REVISED



I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A	
		DATE 3/18	REVISED 12/18

NOTES:

- POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
- ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
- POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

Approved By:

01/24/2023

ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

**MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS

Date: JANUARY 2023

Scale: AS SHOWN

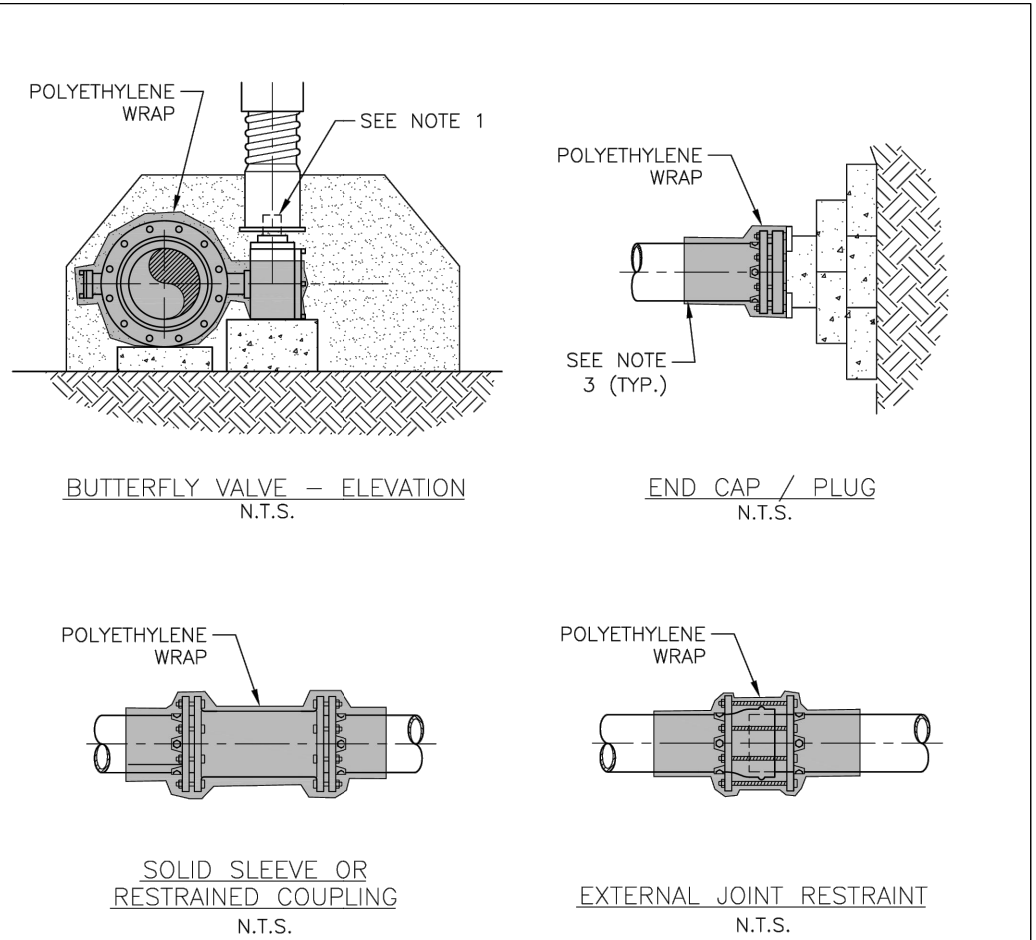
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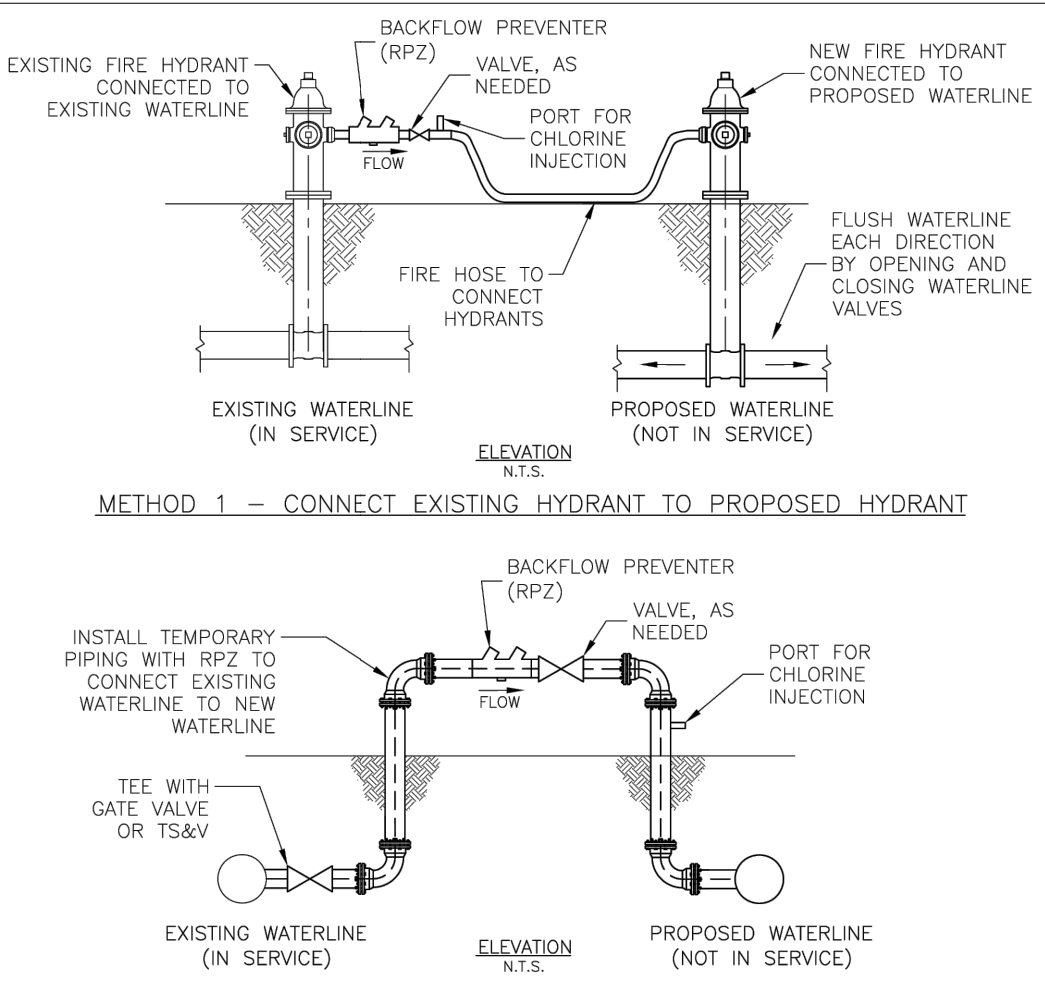


NOTES:

1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39B	
		DATE 12/18	REVISED



METHOD 1 - CONNECT EXISTING HYDRANT TO PROPOSED HYDRANT

METHOD 2 - SERVICE TAP, TAPPING SLEEVE AND VALVE (TS&V), OR INTERCONNECTION

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO DEPICT ACCEPTABLE METHODS OF CONNECTING EXISTING WATERLINES TO PROPOSED WATERLINES FOR FILLING, FLUSHING, AND TESTING PROCEDURES IF 2-INCH COPPER OR POLYETHYLENE TUBING IS NOT USED TO BYPASS A VALVE. OTHER METHODS REQUIRE SUBMITTAL AND APPROVAL BY THE AUTHORITY PRIOR TO USE.
2. FIRE HOSES, TEMPORARY PIPING, AND BACKFLOW PREVENTERS SHALL NOT ENCRoACH INTO ROADWAYS, DRIVEWAYS, OR SIDEWALK AREAS WITHOUT PROVIDING PROPER MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD44_SOURCE_WATER_CONNECTIONS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SOURCE WATER CONNECTIONS	DWG. NO. SD44	
		DATE 10/20	REVISED

Approved By:

01/24/2023

ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA, NY 14227

Project Name

**MARION ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200160**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS DETAILS	Sheet
Date: JANUARY 2023	W-13
Scale: AS SHOWN	
Drawn/Revised By: WWW	Page: 13 of 13
	File Name: 202200160 - MARION DESIGN

**ERIE COUNTY WATER AUTHORITY
CONSTRUCTION AUTHORIZATION**

Project No. 202200161
Budget No. _____

Authorization No.: EC 7272
Date: 7/11/2022
Inputted By/Date: _____

June 2023 Estimate Starting Date
June 2024 Estimate Complete Date
X yes _____ no Retirement Involved
_____ X Public Street
Private Right of Way
On Authority's Prop
Tax Districts _____
Name of Grantor of Easement _____
Date of Easement _____

TITLE OF PROJECT: Cayuga Rd. Loop
Dead-End Main.

DETAILED DESCRIPTION AND PURPOSE:
Loop a dead-end main between 530 Cayuga Rd. and
550 Cayuga Rd.

CLASS OF MAIN INSTALLATION:

X System Betterment
Bldr/Cont/Dev. Agree.
Owner Occupant Cont.
Special Revenue Cont.

ESTIMATE COST

(1) Total Est. Cost \$ 19,900.00
(2) _____ Meters and Service @ _____ \$ _____
(3) Removal Cost Less Salvage \$ _____
(4) Gross Investment \$ 19,900.00

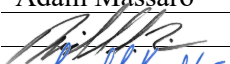

DEDUCT

(5) Const. Advance \$ _____
(6) Service Conn. \$ _____
(7) Refunds \$ _____
(8) Net Auth. Invest. \$ 19,900.00

BUDGETARY DATA

(9) Tot. Budget Expnd. \$ _____
(10) This Authorization \$ _____
(11) Pre Approved \$ _____
(12) Tot. Apvl. To Date \$ _____
(13) Bal. Budget Expnd. \$ _____

APPROVALS

Preparation Adam Massaro
Sr. Dist. Engr.  10/4/2024
Exec. Engr.  10/7/2024
Admn. Director _____
Legal Dept. _____
Acct. Dept. _____

ESTIMATED EARNINGS & RETURNS

ESTIMATED INCREASE IN REVENUES

(14) Customers @ _____ \$ _____
(15) _____ Hydrants @ _____ \$ _____
\$ _____

EST. SAVINGS IN OPERATING EXPENSES

(16) _____ \$ _____
(17) Gross Increase in Earnings \$ _____

REVENUE DEDUCTIONS

(18) Operating Exp. _____ % \$ _____
(19) Depreciation \$ _____
(20) Total Deductions \$ _____
(21) Net Income Loss \$ _____
(22) % Return on Investment _____
(21) divided by 8) _____ %

RESOLUTION APPROVING

Adopted _____
Item No. _____



3030 Union Road
Cheektowaga, NY 14227
(716) 684-1510
www.ecwa.org

PROJECT No.: 202200161
PROJECT Name: Cayuga Road
Water System Improvements
DATE: Monday, July 11, 2022

DESIGNED BY: WWW
CHECKED BY: WRW
PAGE: 1 of 1

The cost estimate herein was prepared utilizing the Kandey Contract for Water Distribution System Repairs & Improvements (ECWA 202100009)

Cayuga Road

Bid Item	QTY	Unit Cost	Computed Price
Item 1A1 - For installing 4-inch to 8-inch Watermain, 6-feet or less cover	75	\$80.00	\$6,000.00
Item 3A1 - For 4-inch to 8-inch Inline Connection - Complete	1	\$2,500.00	\$2,500.00
Item 3C2 - For installing 4-inch to 8-inch Cut-in Tee with Valve Cluster	1	\$5,300.00	\$5,300.00
Item 5A1 - For installing 4-inch to 8-inch DI Fittings with restraints	3	\$250.00	\$750.00
Item 6A1 - For installing Polyethylene Encasement for DI Pipe and Fittings	100	\$1.00	\$100.00
Item 7B1 - For Test Pit Excavation and Backfill	2	\$650.00	\$1,300.00
Item 8A1 - For furnishing and installing Select Backfill	10	\$55.00	\$550.00
Item 9C2 - For installing Temporary 2-inch Blow-off Assembly	1	\$250.00	\$250.00
Item 12A3 - For Testing and Disinfection of 8-inch Watermain (<200 ft)	75	\$10.00	\$750.00
Item 13C2 - For Concrete Sidewalk Restoration	8	\$150.00	\$1,200.00
Item 13F1 - For Lawn Restoration	40	\$30.00	\$1,200.00
Project Total:			\$19,900.00



ERIE COUNTY WATER AUTHORITY

REQUISITION ON STORES

Project No.: 202200161 Date: 07-08-22 Requisition No.: _____

Issue To: Kandey Co., Inc.

For Use In: 8" Main Extension

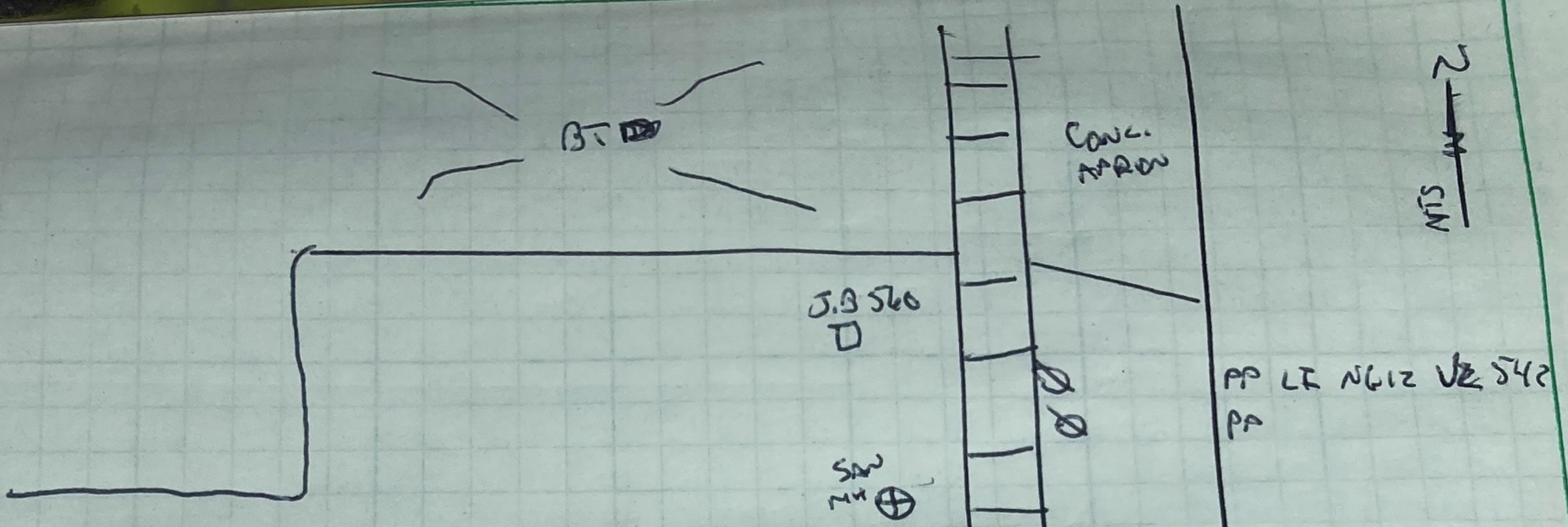
Location: Cayuga Road, Cheektowaga

OWIP: _____ EC NO.: 107200-007272 Svc. No.: _____

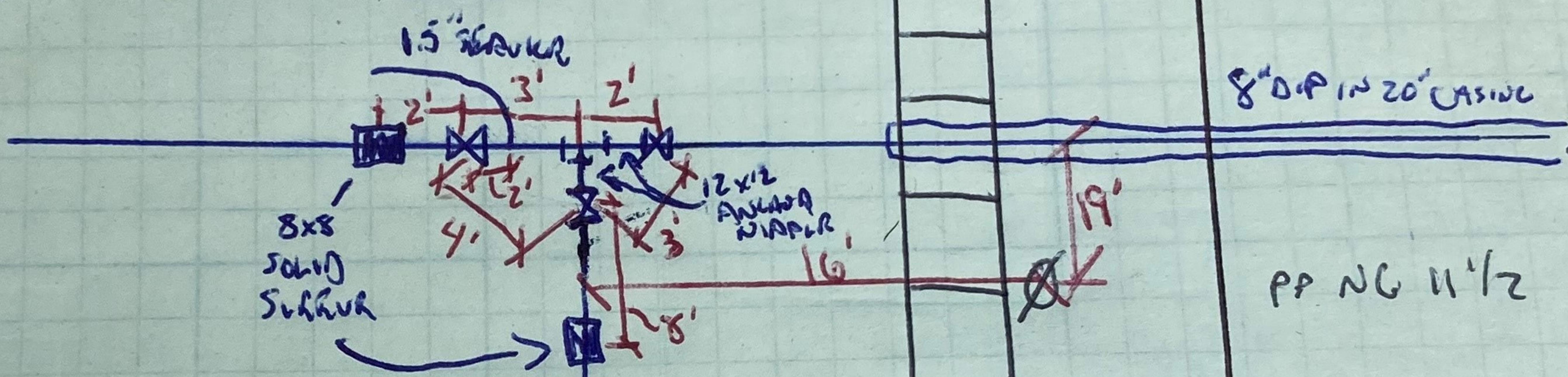
Quantity	Description	Part #	On Site	Used	Ret.
100 ft	8" DI Pipe				
20 ft	6" DI Pipe				
100 ft	Poly Wrap				
2	8" 11.25° DI Bends MJ w/ Accessories				
2	8" 22.5° DI Bends MJ w/ Accessories				
1	8"x6" DI Reducer MJ w/ Accessories				
1	8"x8"x8" DI Tee w/ Accessories				
1	8" Solid Sleeve w/ Accessories				
1	6" HYMAX				
1	8"x2" DI Tapped Plug MJ w/ Accessories				
2	8"x2" DI Tapped Cap MJ w/ Accessories				
2	8" Gate Valve				
2	Complete Valve Box				
3	8" Joint Restraints – Complete both sides				
17	8" DI Mega Lugs				
4	6" DI Mega Lugs				
1	6" Gray Mega Lug				
8	Ductile Lugs				
24	3/4" All Thread				
8	3/4" Nuts				
2	2" MIP x Compression Corp				
2	2" Compression x Compression Corp				
20	2" Copper				

Kandey Co., Inc. _____

Inspector _____



LIFE STORAGE SIGN



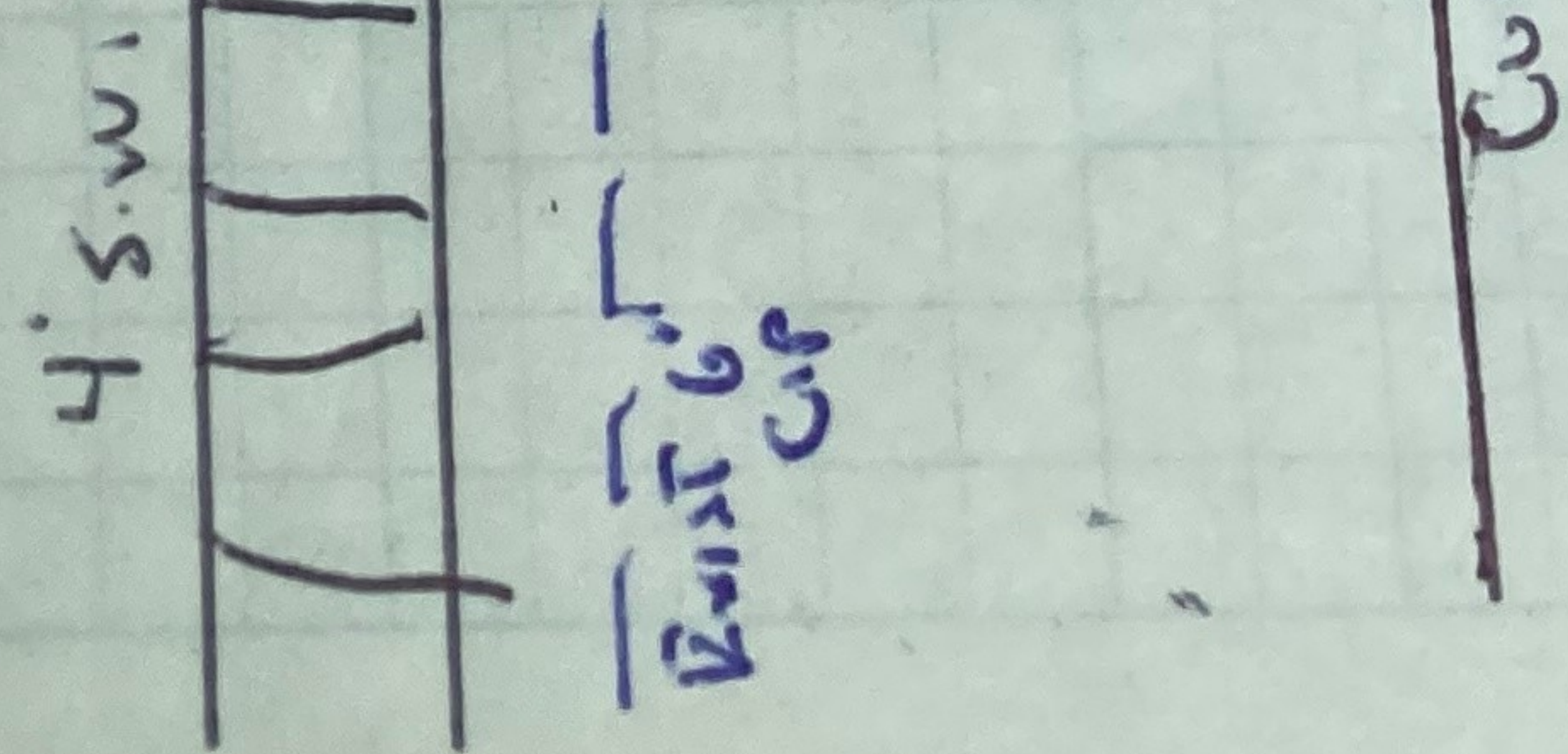
47' FOR TEST
+16
53'

- 1 1/2" - Comp COUPLING
- 2 EA - 12" x 12" ANCHOR NIPPLES
- 2 EA - 8" SOLID S-REVER
- 1 EA - 8x8 TEE
- 3-8" G.V.
- 2 LF 6" DIP
- 8" DIP = 5' + 53' + 8' + 7' = 73 LF
- 8" - 45° = 2 EA
- 6" - CONNECTION - HYMAX - 1 EA
- 8x6 REGULAR - 1 EA

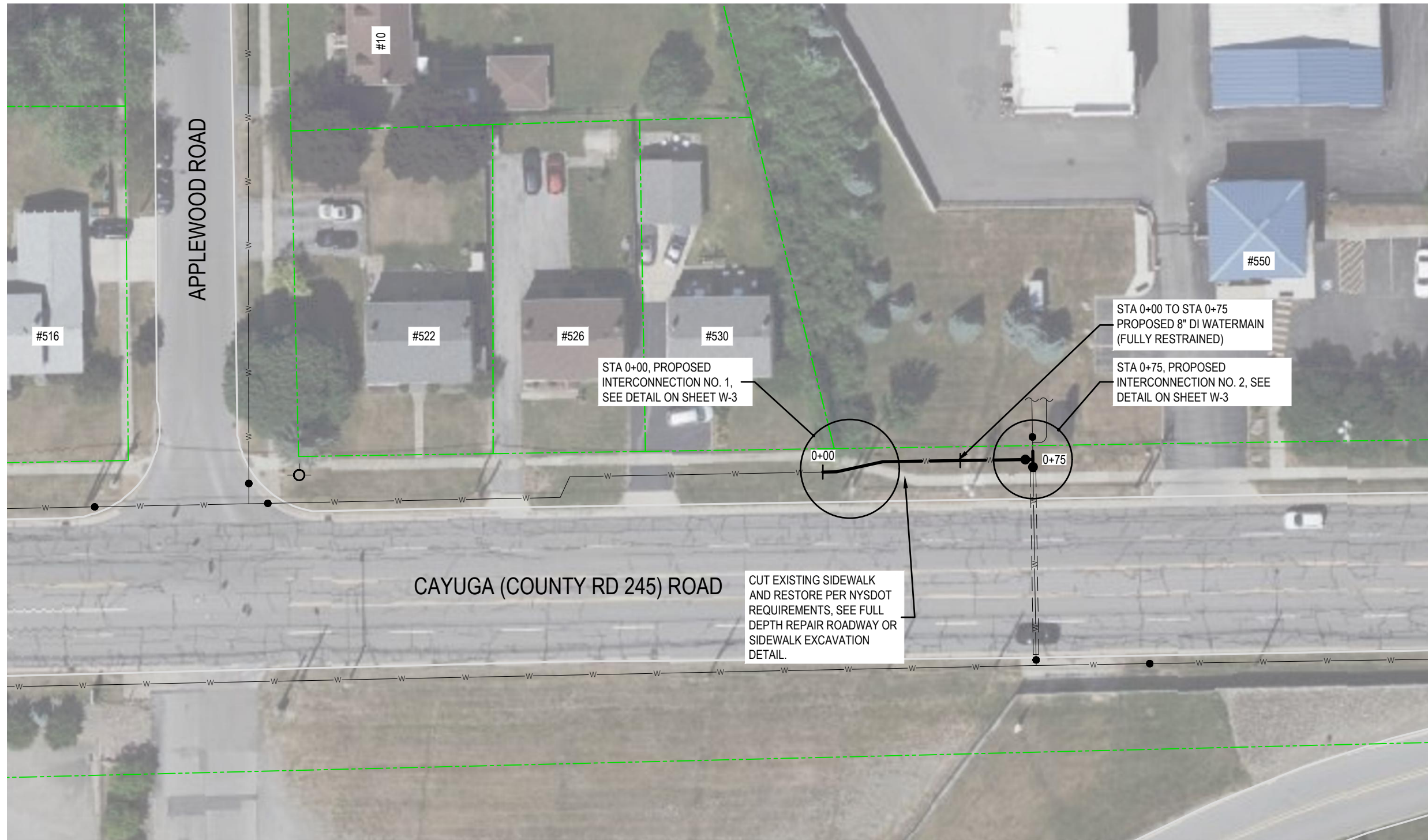
SELECT 12x10x5

PP LF 701 NG 11
PP NYT S34

HOUSE #530



CAYUGA 12"

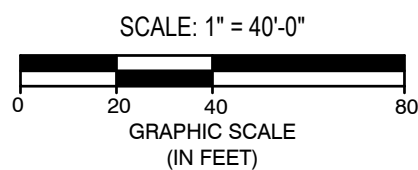


General Notes

- 1.) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ERIE COUNTY WATER AUTHORITY STANDARD DETAILS AND SPECIFICATIONS, ECWA PN: 202100009
- 2.) WATERMANS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C600
- 3.) WATERMANS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651, HOWEVER THE TABLET METHOD IS NOT ALLOWED
- 4.) TWO SETS OF WATER BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART
- 5.) SEE STANDARD DETAIL GENERAL NOTES SECTION ON MISCELLANEOUS DETAILS
- 6.) CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION
- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

- = SANITARY MH
- = TRAFFIC MH
- = STORM MH
- = CATCH BASIN
- = UTILITY POLE
- = FIRE HYDRANT
- = WATER VALVE
- = TREES
- = EXISTING WATERLINE
- = NEW WATERLINE
- = SANITARY SEWER
- = STORM SEWER
- = GAS MAIN



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202100161

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
CAYUGA ROAD - PLAN

Sheet

Date:
JUNE 2022

W-1

Scale:
AS SHOWN

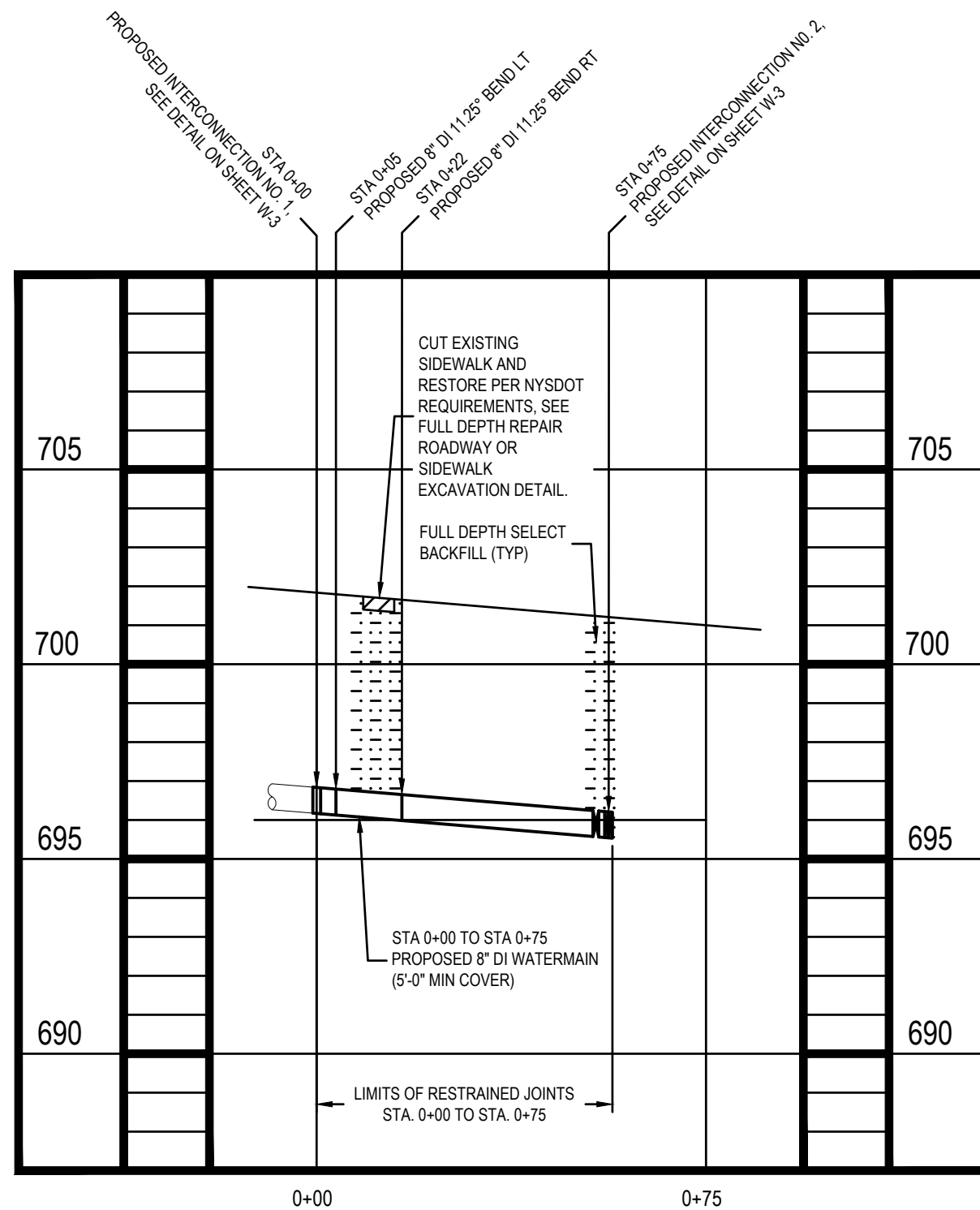
Page: 1 of 13

Drawn/Revised By:
WWW

File Name:
202200161 - CAYUGA DESIGN



ALL UTILITIES ARE BASED ON BEST GIVEN INFORMATION AND ARE APPROXIMATE ONLY. SOME UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES DURING EXCAVATION BY CONTACTING UFPO PRIOR TO PERFORMING ANY EARTHWORK.



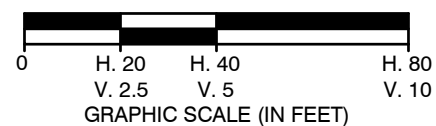
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- 7.) SERVICE LOCATIONS ARE APPROXIMATIONS ONLY AND SHOULD BE FIELD CHECKED PRIOR TO CONSTRUCTION

Legend

- = SANITARY MH
- = TRAFFIC MH
- = STORM MH
- = CATCH BASIN
- = UTILITY POLE
- = FIRE HYDRANT
- = WATER VALVE
- = TREES
- = EXISTING WATERLINE
- = NEW WATERLINE
- = SANITARY SEWER
- = STORM SEWER
- = GAS MAIN

SCALE: HORZ. 1" = 40'-0"; VERT. 1" = 5'-0"



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
CAYUGA ROAD - PROFILE

Sheet

Date:
JUNE 2022

W-2

Scale:
AS SHOWN

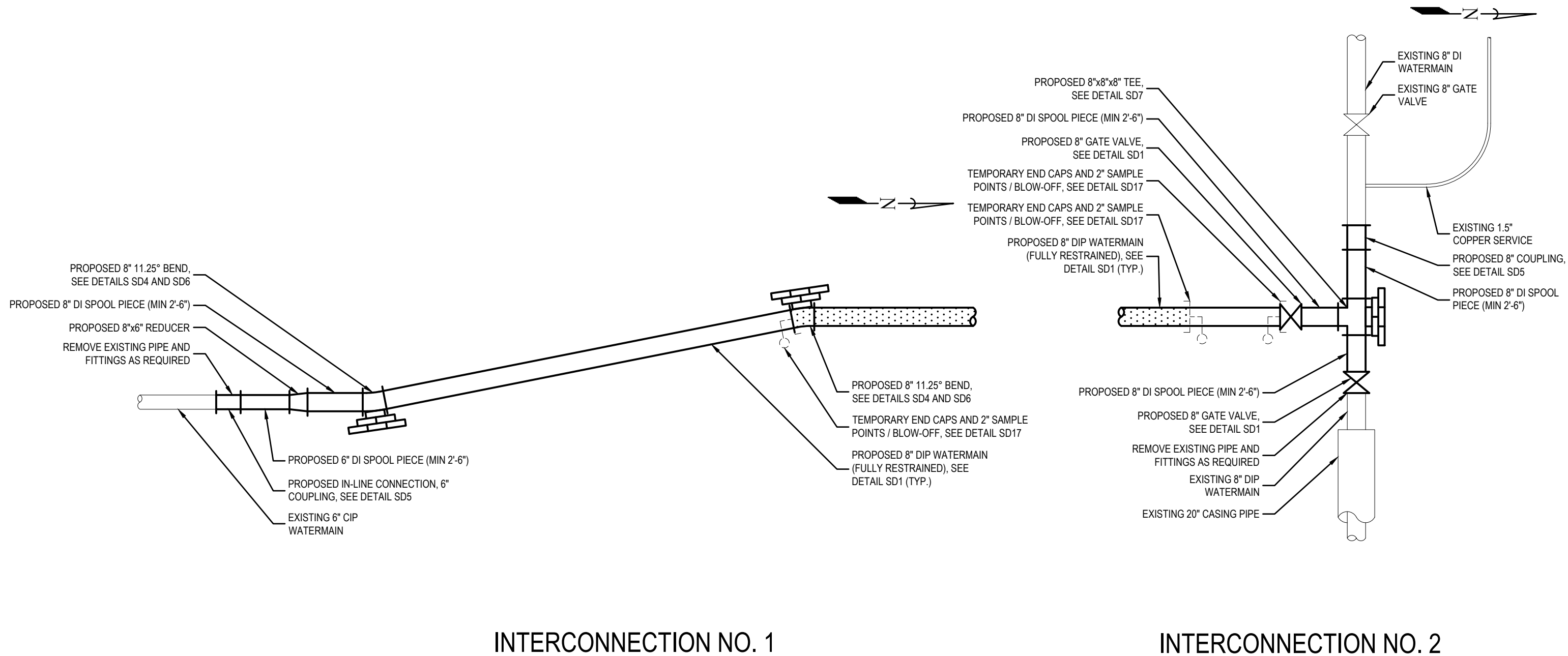
Page: 2 of 13

Drawn/Revised By:
WWW

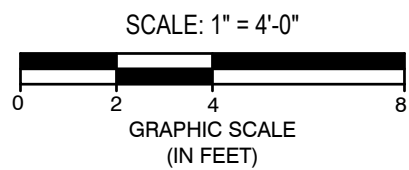
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202200161 - CAYUGA DESIGN



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PRESSURE TEST AND DISINFECTION LIMITS



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
INTERCONNECTIONS
NO. 1 AND NO. 2

Date:
JUNE 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

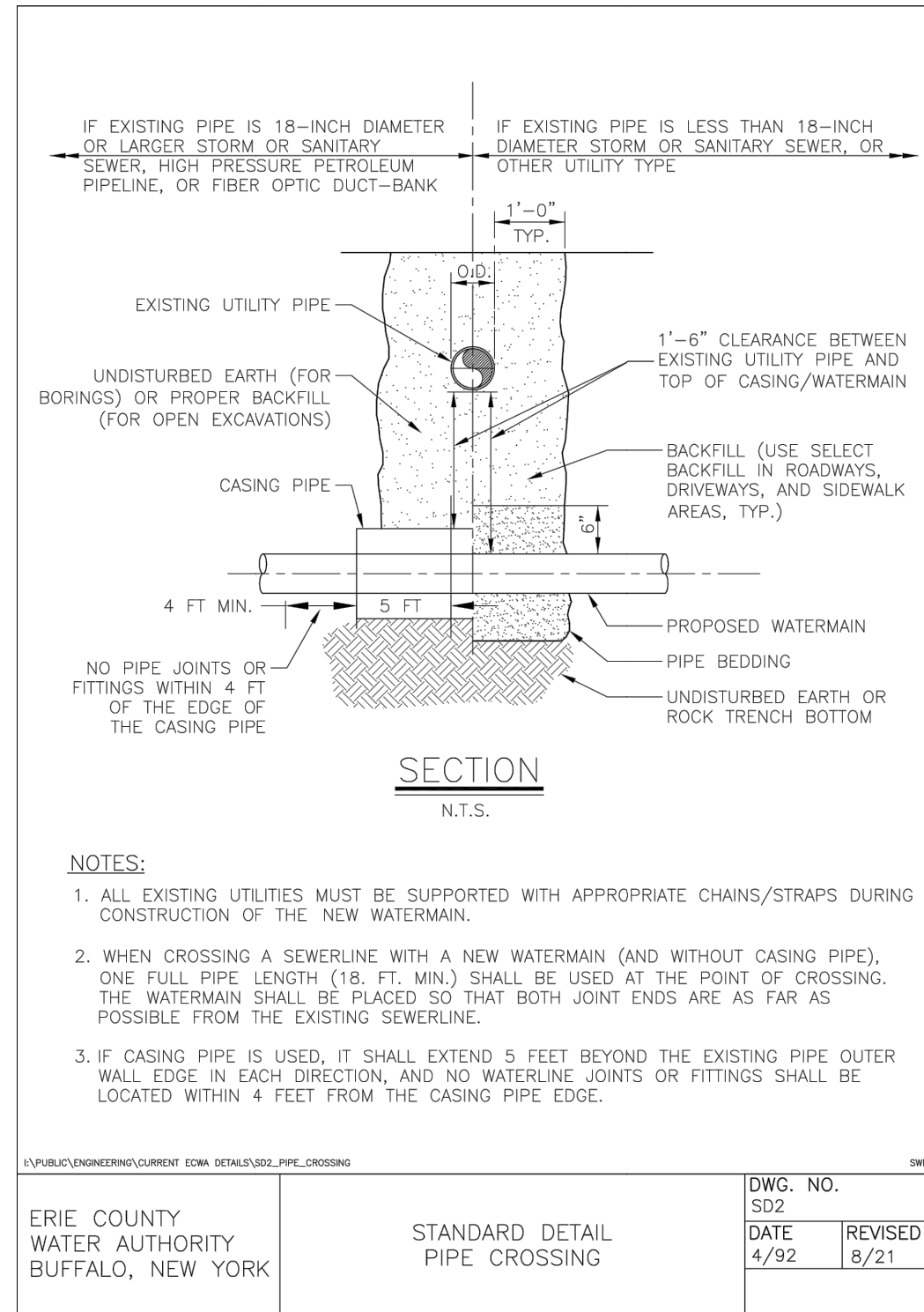
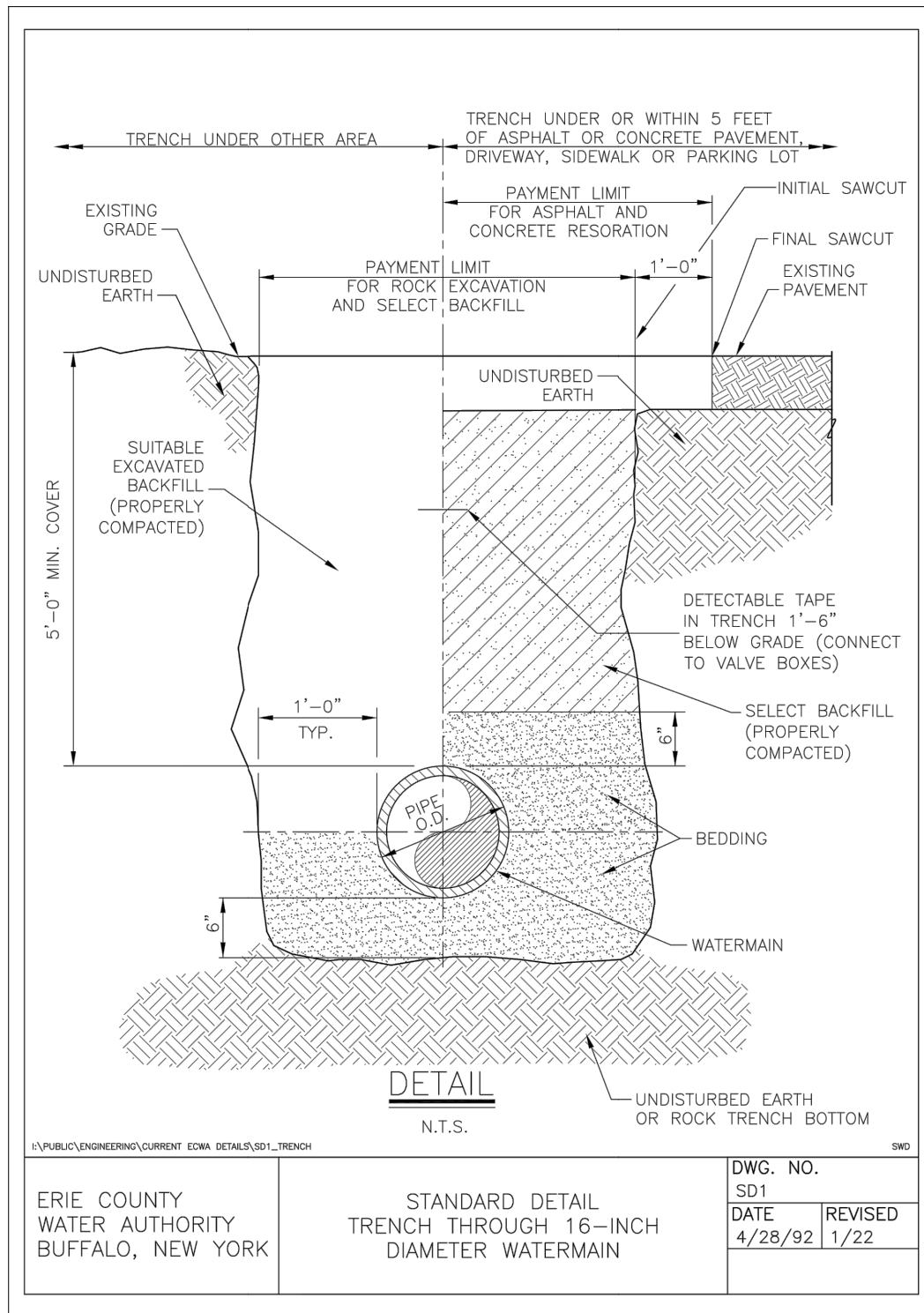
W-3

Page: 3 of 13

File Name:
202200161 - CAYUGA DESIGN



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Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

**CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS

Date: JUNE 2022

Scale: AS SHOWN

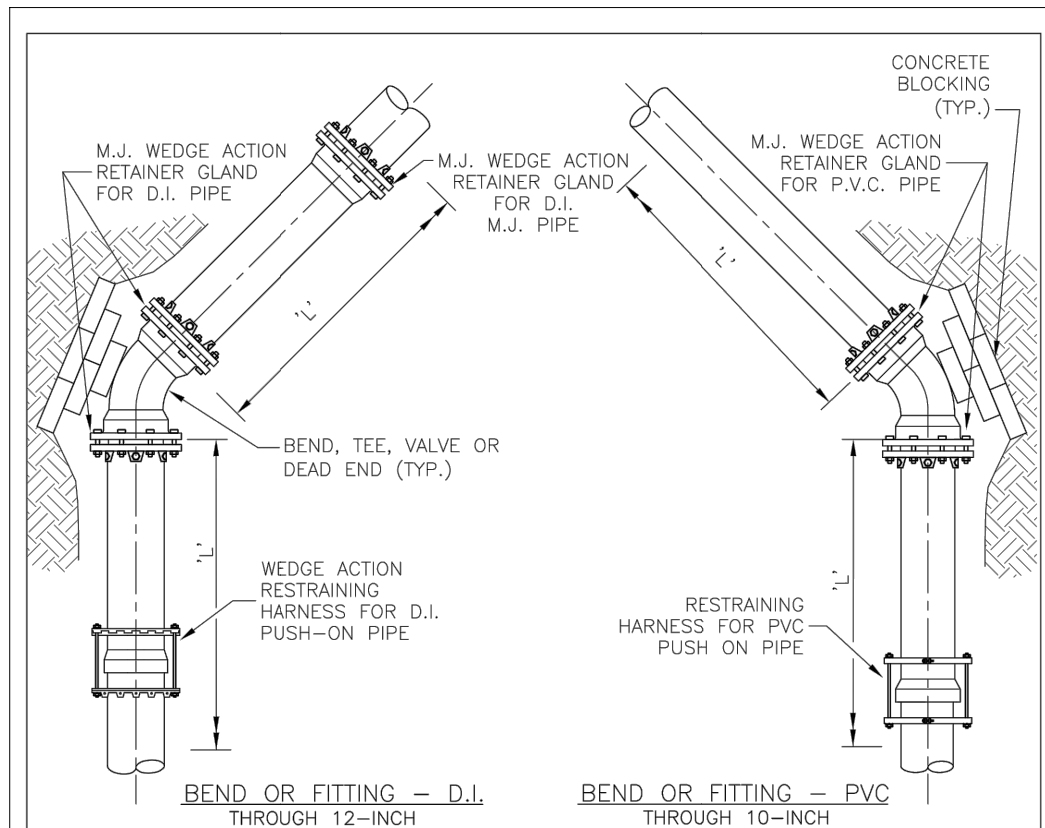
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Sheet

W-4

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File Name:
202200161 - CAYUGA DESIGN



RESTRAINED JOINT SCHEDULE					
PIPE SIZE	PIPE TYPE	11.25° ELBOW	22.5° ELBOW	45° ELBOW	TEE BRANCH, 90° BEND, VALVE OR DEAD END
		'L'	'L'	'L'	'L'
8"	PVC/DIP	13'/12"	25'/23"	48'/45"	99'/94"
10"	PVC/DIP	15'/14"	30'/28"	57'/54"	120'/112"
12"	DIP	16'	32'	63'	130'
16"	DIP	20'	40'	81'	170'

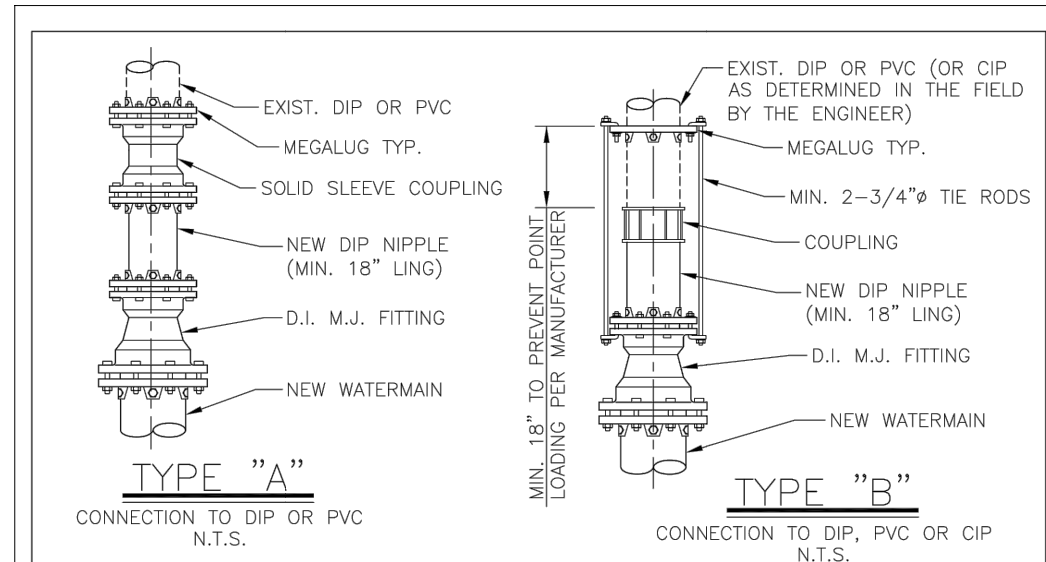
NOTES:
 1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINING PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

PLAN

N.T.S.

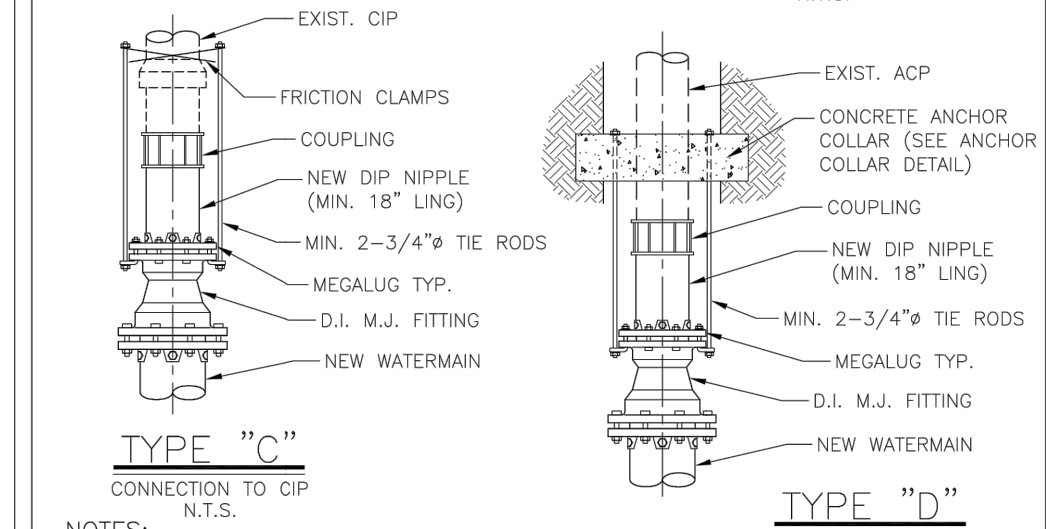
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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4	
		DATE 4/28/92	REVISED 7/16



TYPE "A"
 CONNECTION TO DIP OR PVC
 N.T.S.

TYPE "B"
 CONNECTION TO DIP, PVC OR CIP
 N.T.S.



TYPE "C"
 CONNECTION TO CIP
 N.T.S.

TYPE "D"
 CONNECTION TO ACP
 N.T.S.

- NOTES:**
1. VALVES AND TEES MAY BE HARNESSSED SIMILARLY.
 2. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE—PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
 3. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
 4. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD5_CONN_EXIST_WMMAIN

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD5	
		DATE 3/05	REVISED 7/16

Approved By:

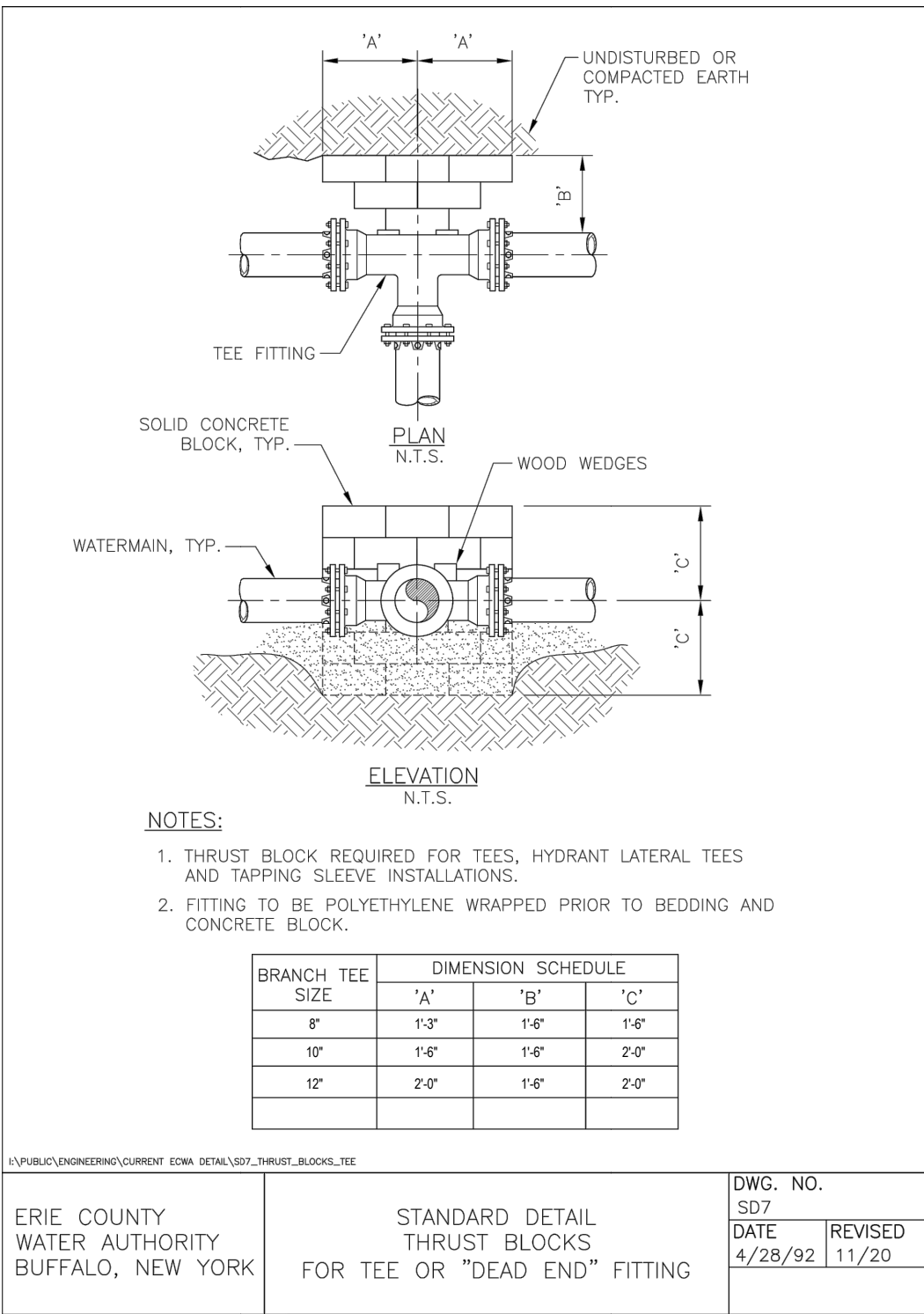
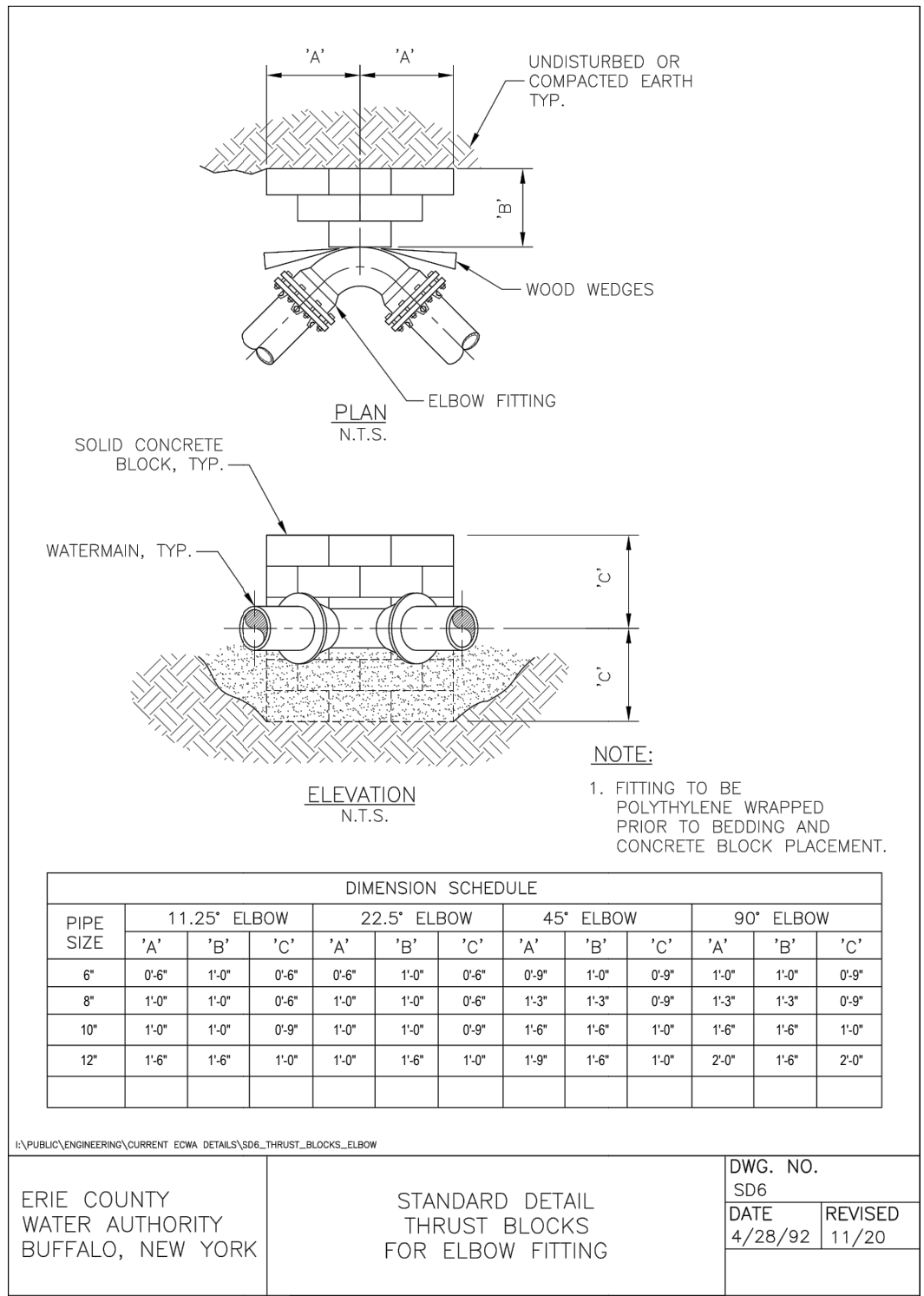


ERIE COUNTY WATER AUTHORITY
 3030 UNION RD.
 CHEEKTOWAGA NY, 14227

Project Name
**CAYUGA ROAD
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202200161**
 TOWN OF CHEEKTOWAGA
 ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS
 Date: JUNE 2022
 Scale: AS SHOWN
 Drawn/Revised By: WWW

Sheet
W-5
 Page: 5 of 13
 File Name:
 202200161 - CAYUGA DESIGN



Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JUNE 2022

Scale:
AS SHOWN

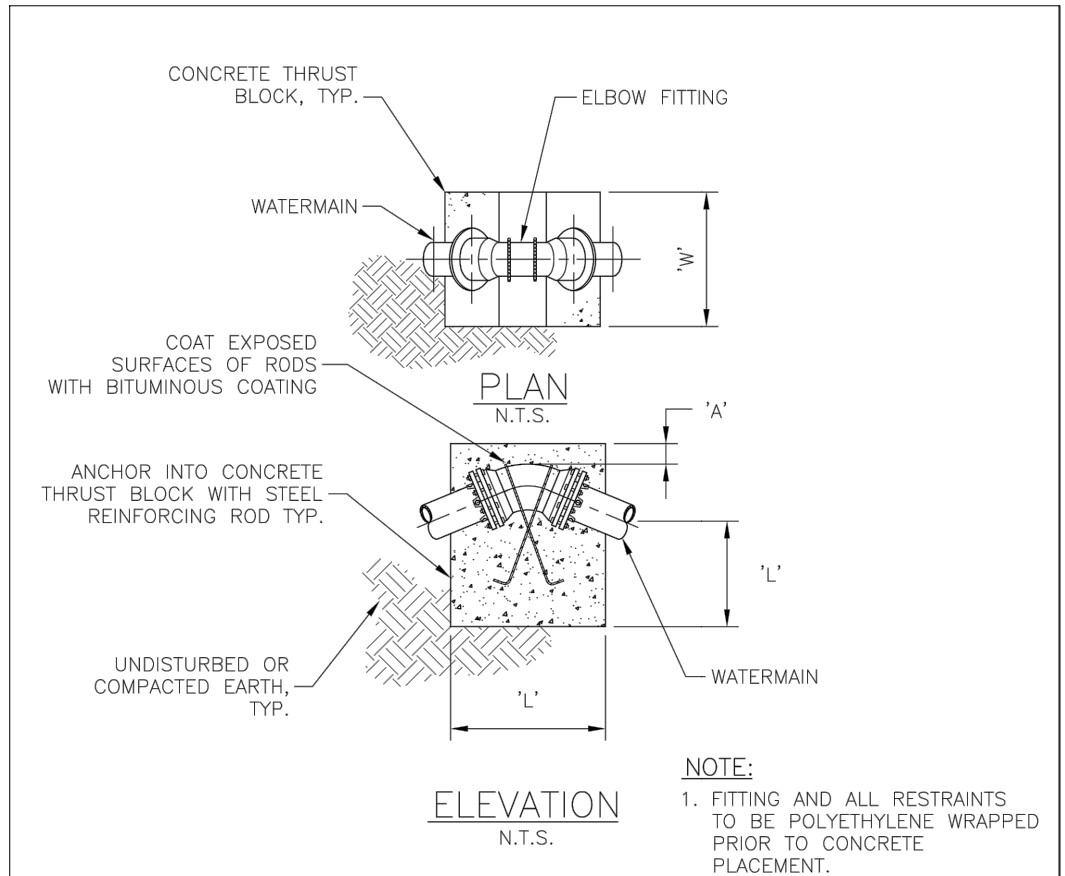
Drawn/Revised By:
WWW

Sheet

W-6

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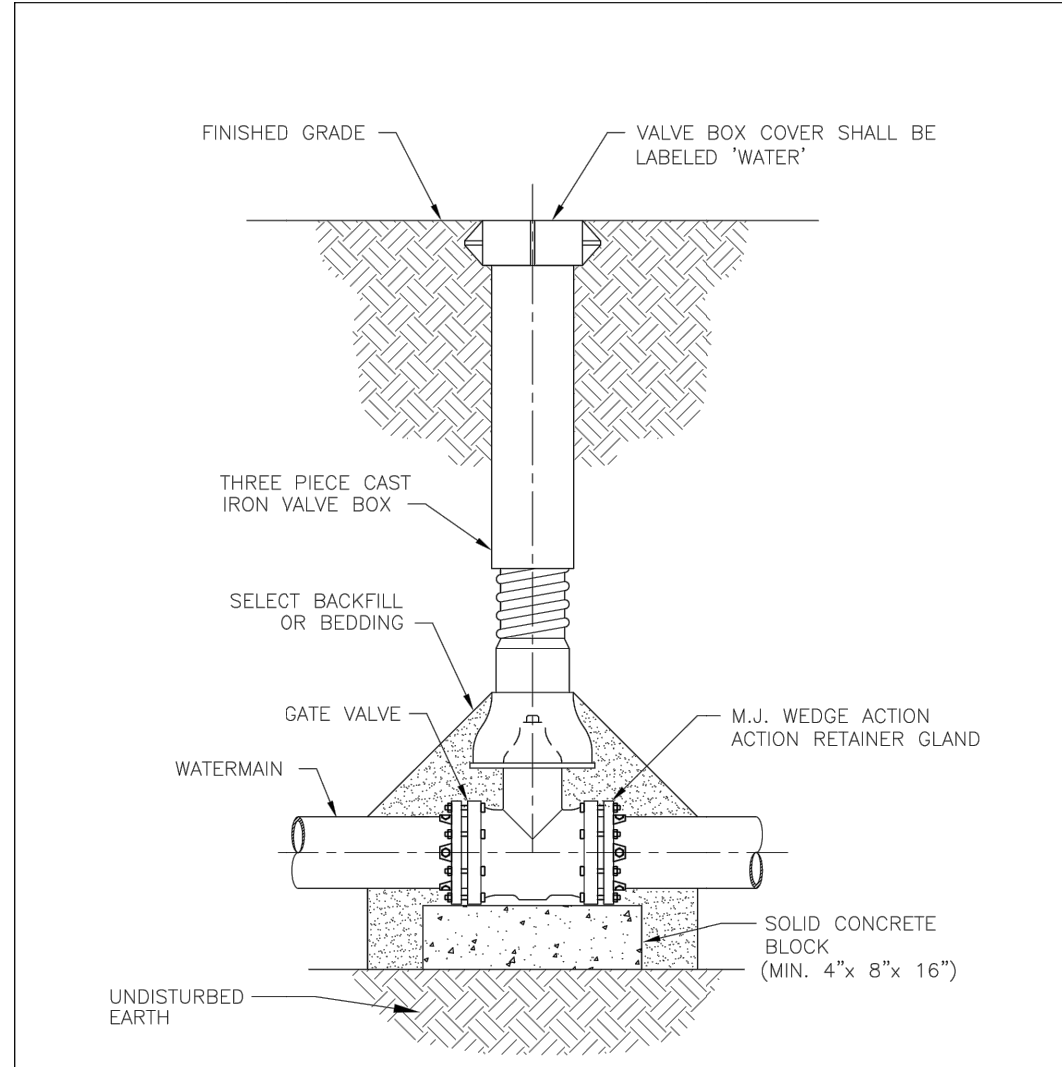
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DIMENSION SCHEDULE													
PIPE SIZE	PIPE TYPE	11.25° ELBOW				22.5° ELBOW				45° ELBOW			
		'A'	'W'	'L'	ROD Ø	'A'	'W'	'L'	ROD Ø	'A'	'W'	'L'	ROD Ø
8"	PVC/DIP	1'-0"	3'-0"	3'-0"	1/2"	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-6"	1/2"
10"	PVC/DIP	1'-0"	3'-6"	3'-6"	1/2"	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-9"	1/2"
12"	DIP	1'-0"	4'-0"	4'-0"	1/2"	1'-0"	4'-6"	4'-6"	1/2"	1'-0"	5'-0"	5'-0"	1/2"

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD8_THRUST_BLOCKS_VBEND

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8	
		DATE 4/28/92	REVISED 11/20



NOTES:
 1. VALVE SHALL NOT SUPPORT VALVE BOX.
 2. GATE VALVE SHALL BE INSTALLED LEVEL.
 3. VALVE BOX SHALL BE PLUMB TO GRADE, WITH OPERATING NUT CENTERED IN BOX.

SECTION
N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD11_GATE_VALVE_SET

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GATE VALVE SETTING	DWG. NO. SD11	
		DATE 4/28/92	REVISED 02/17

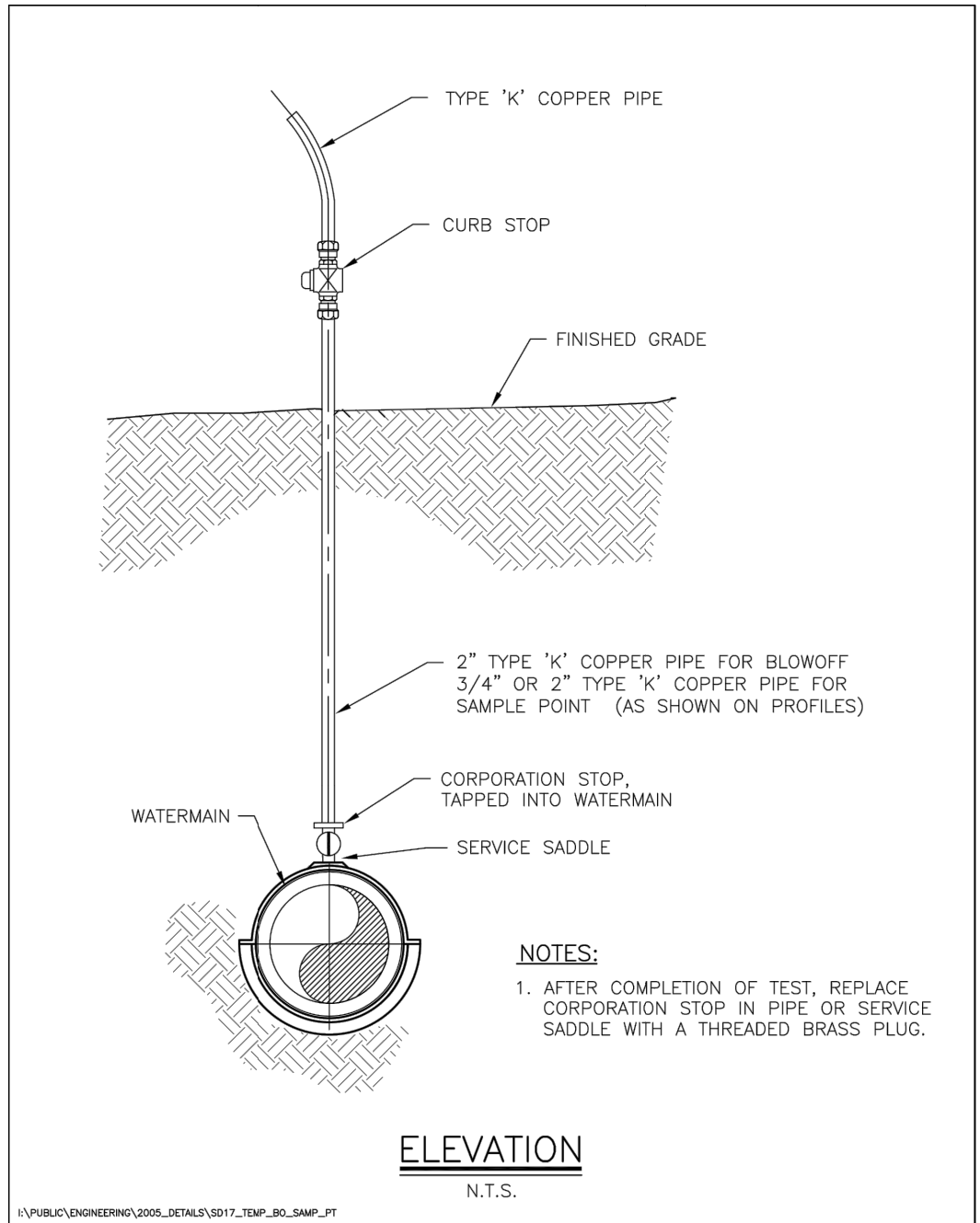
Approved By:



Project Name
**CAYUGA ROAD
 WATER SYSTEM IMPROVEMENTS
 ECWA PN202200161**
 TOWN OF CHEEKTOWAGA
 ERIE COUNTY - NEW YORK

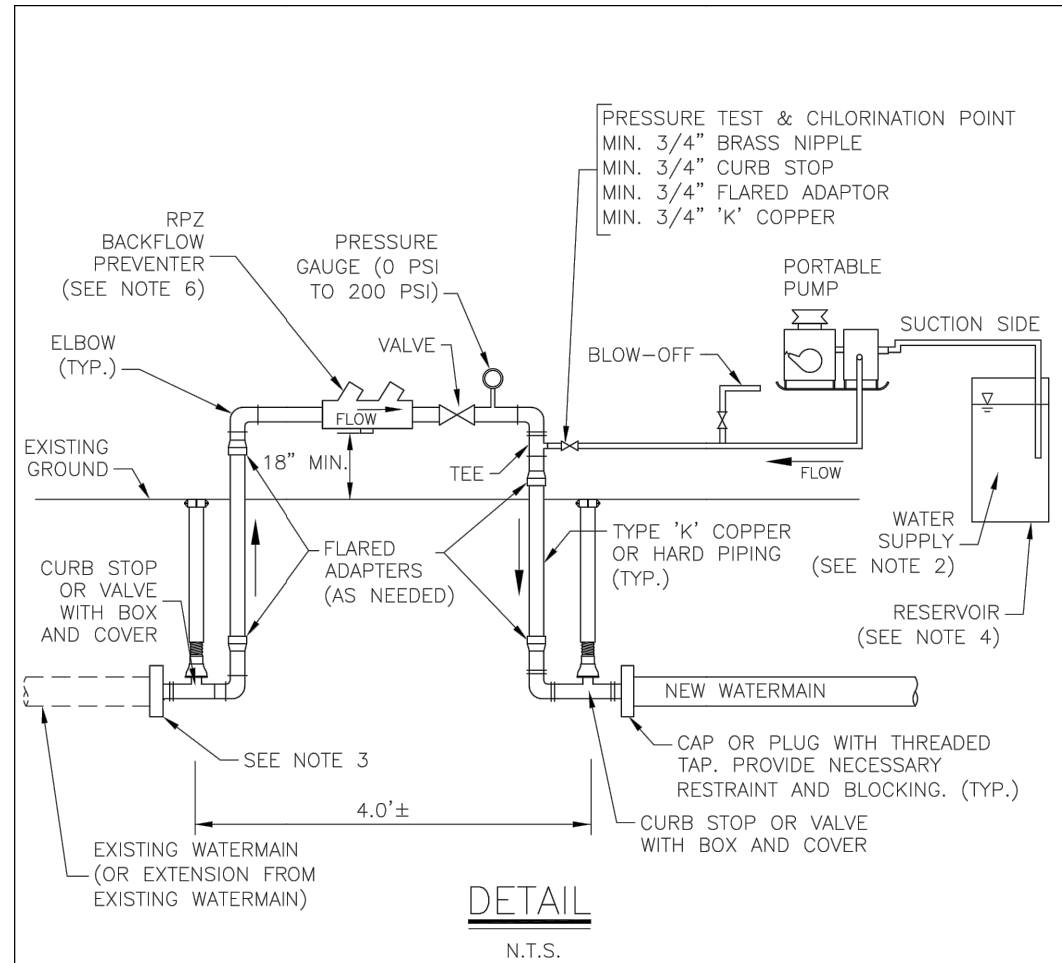
Name:
MISCELLANEOUS
DETAILS
 Date:
JUNE 2022
 Scale:
AS SHOWN
 Drawn/Revised By:
WWW

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W-7
 Page: 7 of 13
 File Name:
202200161 - CAYUGA DESIGN



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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17	
		DATE 4/28/92	REVISED 10/05



- NOTES:**
- BACTERIOLOGICAL WATER SAMPLES SHALL BE TAKEN AT BEGINNING AND END OF NEW WATERMAIN SECTION AND AT MAXIMUM 1,000 FT. SPACINGS.
 - PROVIDE CLEAN WATER SUPPLY FOR PRESSURE TESTING. PROVIDE CHLORINATED WATER SUPPLY FOR DISINFECTION.
 - CAP OR PLUG WITH THREADED TAP OR APPROPRIATE TAP INTO MAIN. PROVIDE NECESSARY RESTRAINT AND BLOCKING.
 - DIAMETER OF RESERVOIR SHALL BE 15" OR LESS. IF DIAMETER IS GREATER THAN 15", LEAKAGE TEST SHALL BE RUN A MINIMUM OF 4 HOURS.
 - PRESSURE TEST CANNOT EXCEED 2,000 LINEAR FEET PER TEST SECTION.
 - BACKFLOW PREVENTER TO BE SIZED TO ACHIEVE MIN 3 FPS SCOUR VELOCITY DURING FLUSHING OF NEW WATERLINE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD23_PRESS_TEST_SCHEM

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PRESSURE TESTING AND DISINFECTION APPARATUS SCHEMATIC	DWG. NO. SD23	
		DATE 6/00	REVISED 11/20

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name
**CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS
Date: JUNE 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

Sheet
W-8
Page: 8 of 13
File Name:
202200161 - CAYUGA DESIGN

NOTES

1. All elevations refer to USGS NAVD88 datum.
2. The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
3. The CONTRACTOR work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
4. The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
5. The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install watermain to avoid conflicts.
6. The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as needed basis, phased to reduce erosion and visual impact.
7. Blasting will not be permitted.
8. No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
9. The Erie County Water Authority only shall operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
10. The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 5 business days in advance of the requested shut-down date.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD29_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	SD29	
		DATE 3/05	REVISED 11/21

11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of the 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga.
19. The CONTRACTOR shall place temporary pavement (consisting of hot mix asphalt or cold patch) in all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict school bus access.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for approval.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants and curb stops operate as required.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD30_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30	
		DATE 3/05	REVISED 10/21

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JUNE 2022

Scale:
AS SHOWN

Drawn/Revised By:
WWW

Sheet

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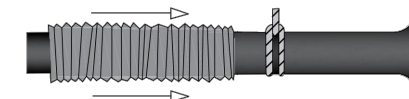
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File Name:
202200161 - CAYUGA DESIGN

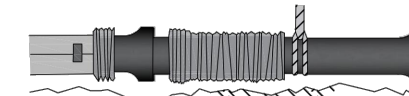
PIPE DIAMETER (in)	PIPE MATERIAL		WORKING PRESSURE (psi)	TEST PRESSURE (psi)
	Type (DIP, PVC, etc.)	Rating (Class/DR)		
8"	DIP	CLASS 52	100	175

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD31_PRESS_TEST_SCHED

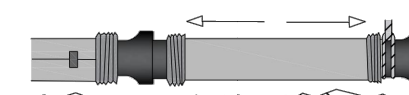
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	PRESSURE TESTING SCHEDULE	DWG. NO. SD31	
		DATE 10/05	REVISED 11/20



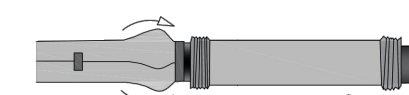
STEP 1.
CUT A SECTION OF POLYETHYLENE TUBE APPROXIMATELY 2 FEET LONGER THAN THE PIPE SECTION. REMOVE ALL LUMPS OF CLAY, MUD, CINDERS, OR OTHER MATERIALS THAT MIGHT HAVE ACCUMULATED ON THE PIPE SURFACE DURING STORAGE. SLIP THE POLYETHYLENE TUBE ACCORDION-FASHION ON THE END OF THE PIPE. PULL BACK THE OVERHANGING END OF THE TUBE UNTIL IT CLEARS THE PIPE END.



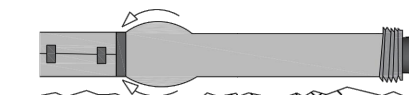
STEP 2.
DIG A SHALLOW BELL HOLE IN THE TRENCH BOTTOM AT THE JOINT LOCATION TO FACILITATE INSTALLATION OF THE POLYETHYLENE TUBE. LOWER THE PIPE INTO THE TRENCH AND MAKE UP THE PIPE JOINT WITH THE PROCEEDING SECTION OF PIPE.



STEP 3.
MOVE THE CABLE TO THE BELL END OF THE PIPE AND LIFT THE PIPE SLIGHTLY TO PROVIDE ENOUGH CLEARANCE TO EASILY SLIDE THE TUBE. SPREAD THE TUBE OVER THE ENTIRE BARREL OF THE PIPE. NOTE: MAKE SURE THAT NO DIRT OR OTHER BEDDING MATERIAL BECOMES TRAPPED BETWEEN THE WRAP AND THE PIPE.



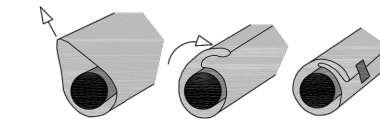
STEP 4.
MAKE THE OVERLAP OF POLYETHYLENE TUBE BY PULLING BACK THE BUNCHED POLYETHYLENE FROM THE PRECEDING LENGTH OF PIPE AND SECURING IT IN PLACE. NOTE: THE POLYETHYLENE MAY BE SECURED IN PLACE BY USING TAPE OR PLASTIC TIE STRAPS.



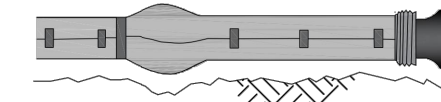
STEP 5.
OVERLAP THE SECURED TUBE END WITH THE END OF THE NEW PIPE SECTION, FOR A MINIMUM OF 12 INCHES. SECURE THE NEW TUBE END IN PLACE. PIPE JOINT SHOULD HAVE TWO LAYERS OF POLYWRAP, EACH SECURED IN PLACE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD32_POLY_WRAP

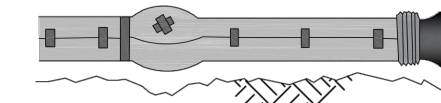
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYETHYLENE ENCASEMENT OF DUCTILE IRON PIPE	DWG. NO. SD32	
		DATE 06/16	REVISED 02/19



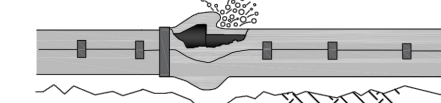
STEP 6.
TAKE UP THE SLACK IN THE TUBE ALONG THE BARREL OF THE PIPE TO MAKE A SNUG, BUT NOT TIGHT, FIT. FOLD EXCESS POLYETHYLENE BACK OVER THE TOP OF THE PIPE.



STEP 7.
SECURE THE FOLD AT SEVERAL LOCATIONS ALONG THE PIPE BARREL (APPROXIMATELY EVERY 3 FEET, MAXIMUM OF 5 FEET).



STEP 8.
REPAIR ALL THE SMALL RIPS, TEARS, OR OTHER TUBE DAMAGE WITH ADHESIVE TAPE. IF THE POLYETHYLENE IS BADLY DAMAGED, REPAIR THE DAMAGED AREA WITH A SHEET OF POLYETHYLENE AND SEAL THE EDGES OF THE REPAIR WITH ADHESIVE TAPE.



STEP 9.
CAREFULLY BACKFILL THE TRENCH ACCORDING TO THE PROCEDURES IN AWWA C600 STANDARD. TO PREVENT DAMAGE DURING BACKFILLING ALLOW ADEQUATE SLACK IN THE TUBE AT THE JOINT. BACKFILL SHOULD BE FREE OF CINDERS, ROCKS, BOULDERS, NAILS, STICKS, OR OTHER MATERIALS THAT MIGHT DAMAGE THE POLYETHYLENE. AVOID DAMAGING THE POLYETHYLENE WHEN USING TAMPING DEVICES.

NOTES:

- 1 - POLYETHYLENE WRAP (POLYWRAP) SHALL BE OF PROPER DIAMETER TO FIT OVER BELLS AND EXTERNAL WEDGE-ACTION RETAINER GLANDS.
- 2 - CAST AND DUCTILE IRON FITTINGS (BENDS, TEES, VALVES, ETC.) ARE TO BE WRAPPED IN POLYWRAP AND SECURED IN PLACE.
- 3 - DO NOT USE CHAINS, METAL WIRE, OR OTHER SUPPORTING SYSTEMS WHICH MAY DAMAGE THE POLYETHYLENE ENCASEMENT. REPLACE DAMAGED POLYWRAP ACCORDINGLY.

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JUNE 2022

Scale:
AS SHOWN

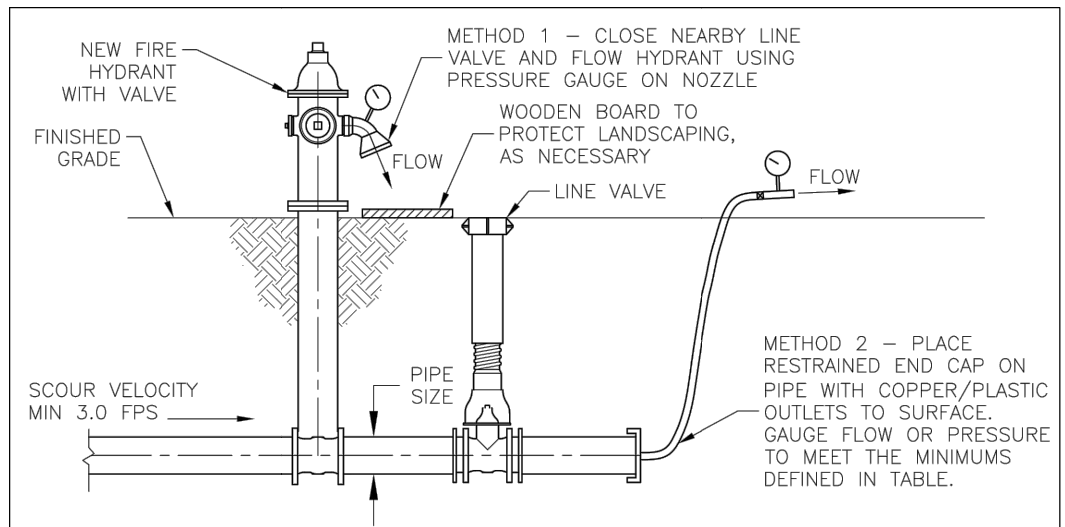
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202200161 - CAYUGA DESIGN



PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW		METHOD 2 END CAP FLOW	
		2 1/2" NOZZLE PRESSURE (PSI)	4" NOZZLE PRESSURE (PSI)	2" I.D. PRESSURE (PSI)	3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	-	22
16	1900	-	20	-	62
20	3000	-	50	-	-

I.D. = INNER DIAMETER

NOTES:

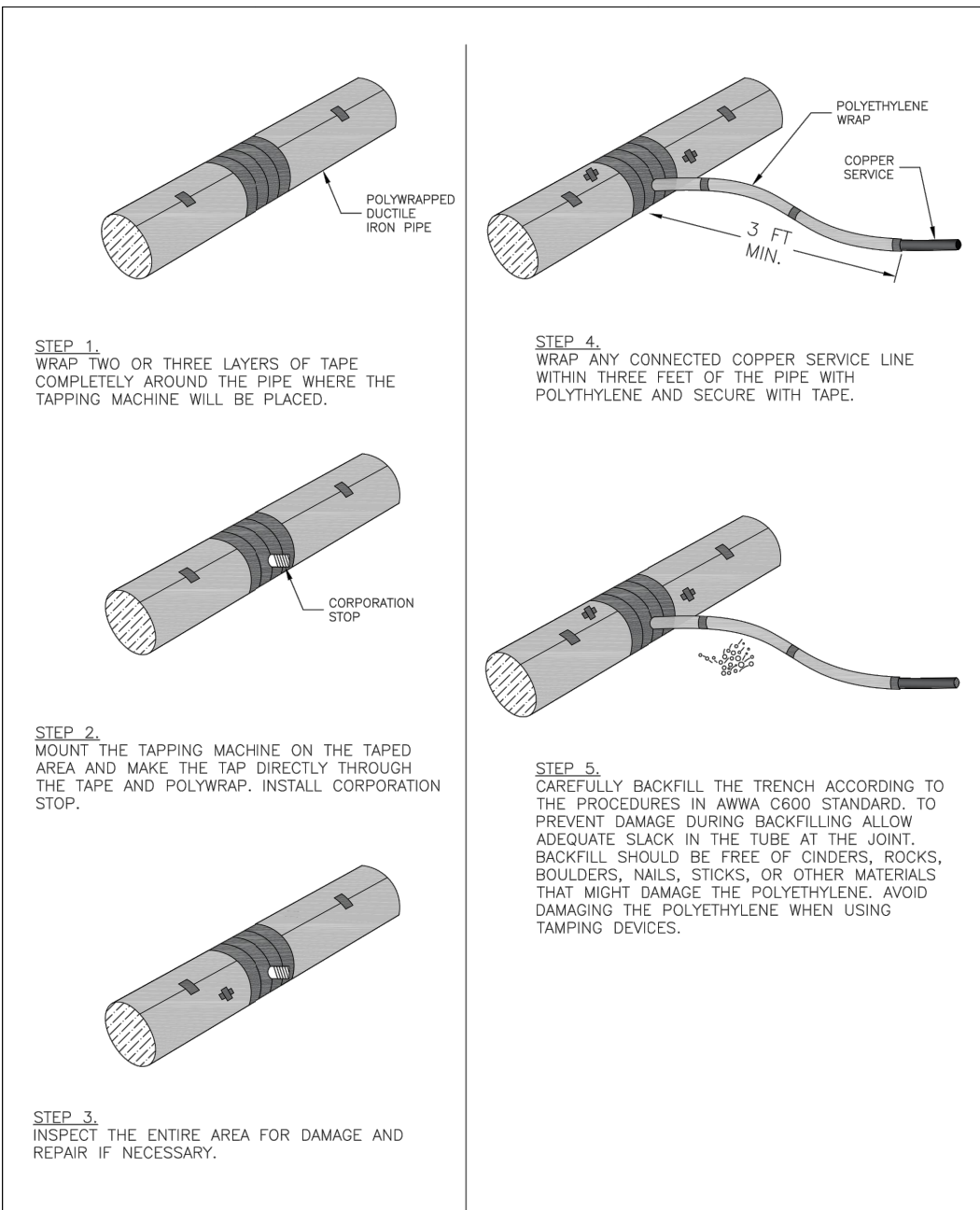
1. TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
2. OUTLET PRESSURE MEASURED BY PITOT GAUGE.
3. ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
4. TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION

N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD36_WATERLINE_FLUSHING

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL WATERLINE FLUSHING	DWG. NO. SD36	
		DATE 6/16	REVISED 3/18



I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD38_TAP_POLY_WRAP_PIPE

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TAPPING POLYWRAPPED PIPE	DWG. NO. SD38	
		DATE 05/18	REVISED

Approved By:

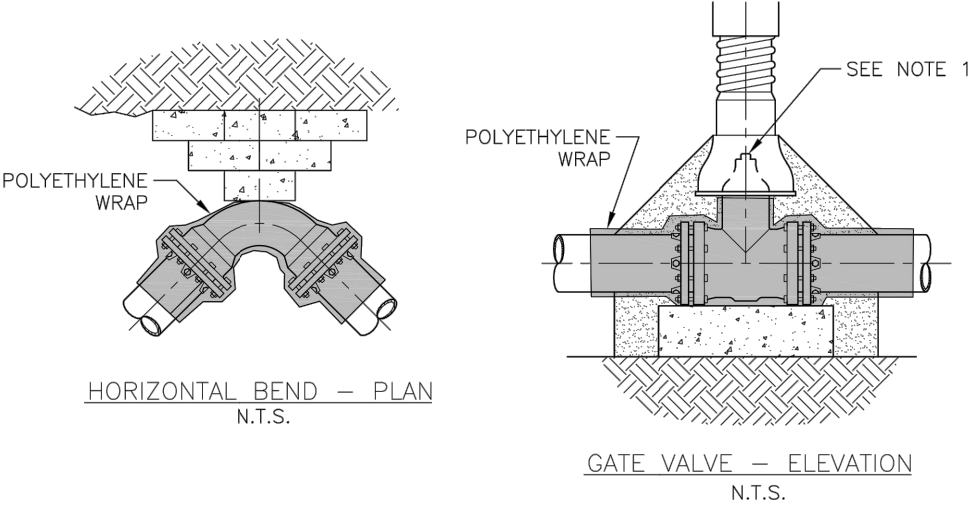
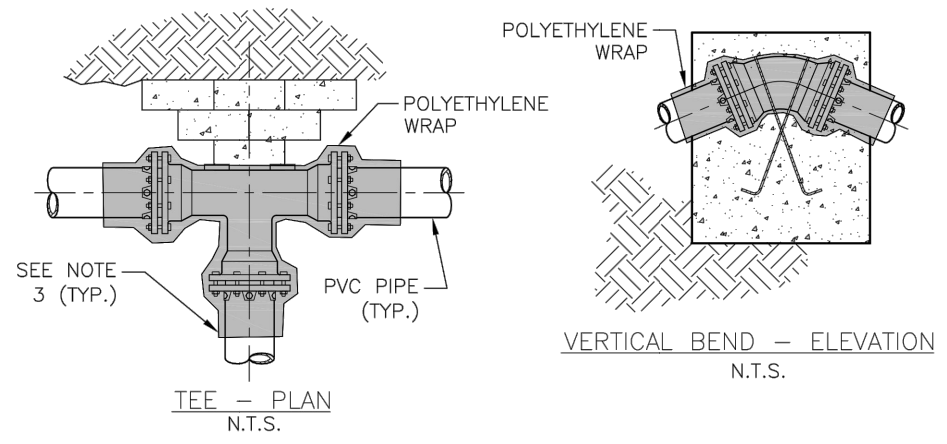


Project Name
**CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name: MISCELLANEOUS
DETAILS
Date: JUNE 2022
Scale: AS SHOWN
Drawn/Revised By: WWW

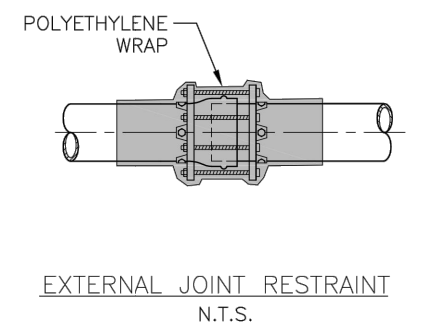
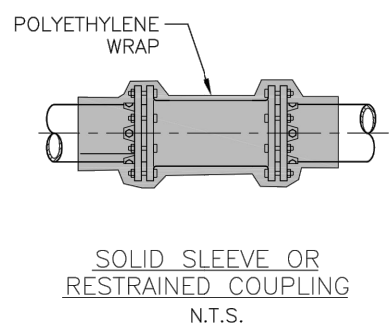
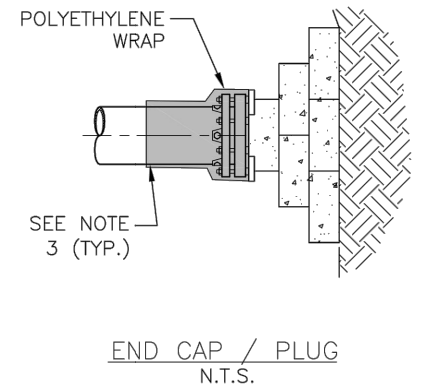
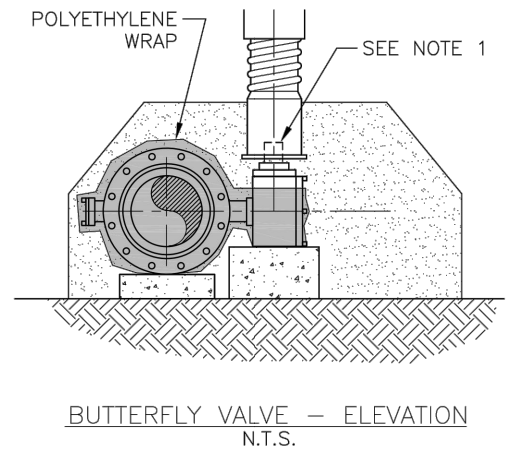
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Page: 11 of 13
File Name: 202200161 - CAYUGA DESIGN



- NOTES:**
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
 2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
 3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A	
		DATE 3/18	REVISED 12/18



- NOTES:**
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
 2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
 3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39B	
		DATE 12/18	REVISED

Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name
**CAYUGA ROAD
WATER SYSTEM IMPROVEMENTS
ECWA PN202200161**

TOWN OF CHEEKTOWAGA
ERIE COUNTY - NEW YORK

Name:
MISCELLANEOUS
DETAILS

Date:
JUNE 2022

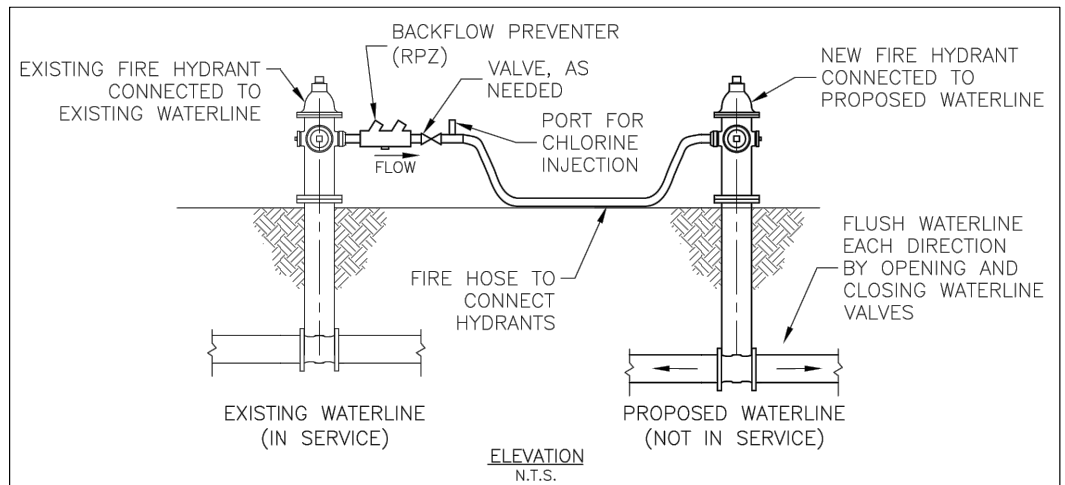
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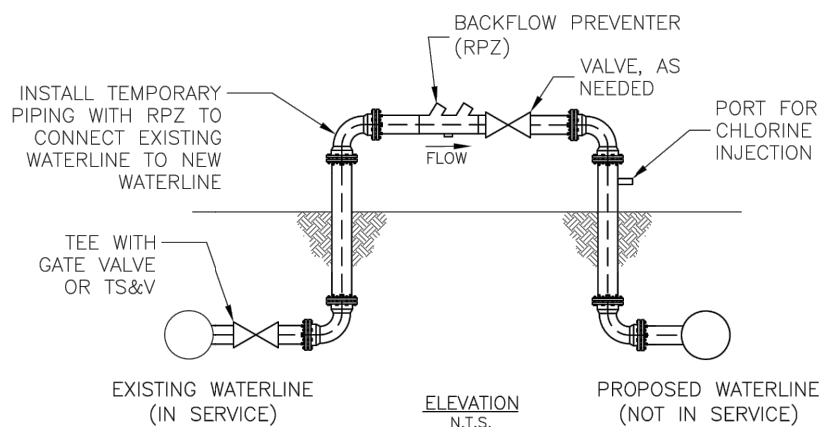
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202200161 - CAYUGA DESIGN



METHOD 1 – CONNECT EXISTING HYDRANT TO PROPOSED HYDRANT



METHOD 2 – SERVICE TAP, TAPPING SLEEVE AND VALVE (TS&V), OR INTERCONNECTION

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO DEPICT ACCEPTABLE METHODS OF CONNECTING EXISTING WATERLINES TO PROPOSED WATERLINES FOR FILLING, FLUSHING, AND TESTING PROCEDURES IF 2-INCH COPPER OR POLYETHYLENE TUBING IS NOT USED TO BYPASS A VALVE. OTHER METHODS REQUIRE SUBMITTAL AND APPROVAL BY THE AUTHORITY PRIOR TO USE.
2. FIRE HOSES, TEMPORARY PIPING, AND BACKFLOW PREVENTERS SHALL NOT ENCR OACH INTO ROADWAYS, DRIVEWAYS, OR SIDEWALK AREAS WITHOUT PROVIDING PROPER MAINTENANCE AND PROTECTION OF TRAFFIC MEASURES.

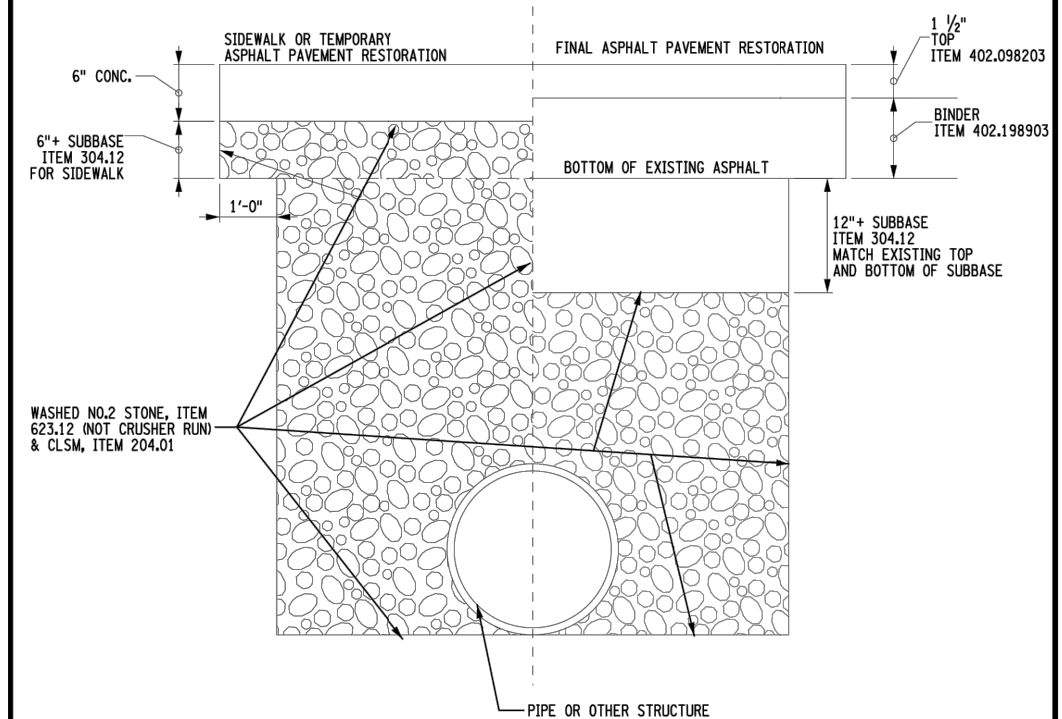
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ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL SOURCE WATER CONNECTIONS	DWG. NO. SD44	
		DATE 10/20	REVISED

**FULL DEPTH REPAIR
ROADWAY OR SIDEWALK EXCAVATIONS**

NOT TO SCALE



GENERAL NOTES

- A. SECTION 204 OF THE STANDARD SPECIFICATIONS APPLIES, EXCEPT AS MODIFIED BY THE FOLLOWING NOTES.
- B. THE FOLLOWING NOTES PERTAIN TO THE USE OF CONTROLLED LOW STRENGTH MATERIAL (CLSM) FOR BACKFILL AT THE EXISTING UNDERGROUND UTILITY INSTALLATION.

2. CLSM RESTRICTIONS

- A. DO NOT PLACE CLSM IN CONTACT WITH ALUMINUM PIPE OR CONNECTIONS UNLESS THE ALUMINUM IS COATED WITH AN APPROVED PRIMER.
- B. DO NOT PLACE CLSM CONTAINING FLY ASH (ITEM 204.01) IN CONTACT WITH CAST IRON OR DUCTILE IRON PIPES OR FITTINGS, USE CLSM WITH NO FLY ASH (ITEM 204.02).
- C. THERE SHALL BE NO SAND IN THE CLSM MIX DESIGN.
- D. THE WATER/CEMENT RATIO SHALL BE 0.36-0.40.

1. CLSM PLACEMENT

- A. WORK INVOLVING QUANTITIES OF CLSM LESS THAN 2.6yd. THE REGIONAL PERMIT ENGINEER MAY ALLOW USE OF A SMALL CONSTRUCTION MIXER CAPABLE OF PRODUCING CLSM HAVING THE SPECIFIED COMPRESSIVE STRENGTH AND FLOW CONSISTENCY. FOR CLSM PLACED UNDER SUCH CONDITIONS, MIX TIME IS MINIMUM OF 90 SECONDS AFTER ALL THE MATERIALS ARE IN THE MIXER DRUM.
- B. OBSERVE PROPER SET TIME FOR CLSM BEFORE PLACING OVERLYING MATERIALS.

STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION	06/12/18	REGION 4
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Approved By:



ERIE COUNTY WATER AUTHORITY
3030 UNION RD.
CHEEKTOWAGA NY, 14227

Project Name

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WATER SYSTEM IMPROVEMENTS
ECWA PN202200161

TOWN OF CHEEKTOWAGA
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