

**CARMINAWOOD**  
DESIGN

**Water & Sanitary Sewer SEQR Compliance Report**

for

**Proposed Buffalo Bills Stadium**

**1 Bills Drive**

**Town of Orchard Park, Erie County, New York**

For

**Erie County Department of Environment and Planning  
Edward A Rath County Office Building  
95 Franklin Street, 10th Floor  
Buffalo, New York 14202**

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Prepared by

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**September 2022**

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## **Section 1 - Location & Description**

The Project replaces the existing Highmark Stadium, home of the NFL Buffalo Bills with a similar, but smaller capacity stadium. The New Stadium will be located on the existing Buffalo Bills parking lots on the west side of Abbott Road directly across the street from the existing stadium (see location map, Appendix A). The New Stadium's operations and uses will be consistent to those existing since Highmark Stadium opened in 1973, primarily to host Buffalo Bills games, and secondarily a variety of additional periodic events such as concerts, community events and outdoor sports. Historically, the seating capacity of Highmark Stadium has been approximately 70,021 and will be reduced to approximately 60,000 - 63,000 in the New Stadium. The New Stadium will be approximately 1,350,000 square feet configured in nominally eight to nine levels with a standalone ancillary building of approximately 75,000 square feet for maintenance, broadcast, and operational support spaces. The existing Highmark Stadium will be demolished and its depressed seating bowl brought to grade. It and its immediate site area is anticipated to be developed for use as parking and other community events. The existing field house, administration building and operations center will remain.

## **Section 2 - Methodology/Baseline**

New York State Department of Environmental Conservation's State Environmental Quality Review Act (SEQR) requires that potential environmental impacts be looked at for a proposed project meeting the criteria of a Type 1 or unlisted action. This project would be classified as a Type 1 action. Our firm's scope of the impact analysis is the water and sanitary sewer usage. As a baseline for this analysis we will use the current water usage and sewage generation from the existing Highmark Stadium.

## **Section 3 - Water Service**

### Existing:

The existing Highmark Stadium complex (stadium, training center, operation building and field house) has a 16" DIP combined fire and domestic service. This service also supplies water for irrigation of the grass practice fields. The service enters the water building located at the bend of One Bills Drive and inside splits into a 10" domestic and 10" fire service. There is also a 12" hydrant loop around the existing stadium for fire protection. Both services current have backflow protection. The service is tapped off the existing 16" ECWA main



located on One Bills Drive. The 16" main connects to the existing 42" ECWA main located on Big Tree Road, is reduced down to a 12" main north of the service connection and continues up the east side of Abbott Road. See Appendix B for existing water main maps.

Based on flow test results provided by ECWA, it appears the pressure and flow is relatively low. See Appendix C for hydrant flow information provided by ECWA. Public comments were received at the scoping session on July 14, 2022 there appears to be a low pressure situation in the vicinity of the stadium on game days.

Proposed:

The existing service described above will remain and continue to service the field house, training center and operations building.

Per information provided by Labella Associates, the project design engineer, the new stadium is proposed to have (2) two 16" combined fire and domestic services. The primary (northerly) connection would connect to the 36" ECWA main located on the north side of Southwestern Boulevard. The redundant (southerly) connection would connect to the existing 12" stadium hydrant loop, downstream of the existing water distribution building located on the east side of Abbott Road. The northerly connection will continue to a utility structure located along Southwestern Boulevard which will contain the meter and back flow devices. The combined service will continue from there and circle the new stadium. Private fire hydrants will be installed off this loop to provide fire protection. A combined service for the new stadium building will be tapped off this loop at the south end of the new stadium. It is anticipated the new playing field will be grass, therefore these new service will also supply water for irrigation. The southerly connection is redundant to the primary connection and will be a 16" combined fire and domestic line which will cross Abbott Road to be connected as described above. The valve at the connection point for the southerly connection will remain closed per ECWA and only be opened under emergency situations such as disruption in service from the northerly connection. A schematic map showing these new services is included in Appendix E. Given the current flow and pressure information provided by ECWA, it is anticipated booster pumps will be required for both the fire and domestic services. These booster pumps will most likely be located in the structure described above or within the proposed stadium, following the meter and backflow devices.



### Conclusions:

Given the reduction in capacity of the proposed stadium vs. the existing Highmark Stadium by approximately 10%, we would anticipate a reduction in peak water usage on event days. This reduction shall be quantified by the design engineer as the design progresses.

The new playing field is anticipated to be grass, therefore there will be an increase in water usage for field irrigation that does not currently exist for the artificial turf field. This usage should be further defined by the design engineer as the detailed design progresses.

The new primary 16" main which will tap the 36" ECWA main in Southwestern Boulevard should provide some relief to the pressure & flow situation given that the other local water mains don't currently connect to the 36" main. On game days we would agree with the ECWA that all the water for the stadium potentially would only come off the 36" main and the valve on the redundant connection to the existing 12" stadium service would be closed as to not draw water from the local mains that supply water to the surrounding area. As the design progresses, additional hydraulic analysis of this scenario should be done by the design engineer to determine if this is feasible to provide sufficient water for domestic and fire protection to the stadium during peak use times.

In addition to the above, Erie Community College has an 8" domestic service which is tapped off the 12" main on Abbott Road. This service would run through the proposed new stadium parking lot. A portion of this existing service will be relocated as part of the new stadium project to avoid a proposed building.

## **Section 4 - Sanitary Sewer Service**

### Existing:

The existing Highmark Stadium complex has (3) three 10" private sanitary mains located along the southeast portion of the stadium. These private mains collect sewage from the stadium and tie together into an 18" private main which conveys the flow north to the existing 120' x 26' flow attenuation tank located along the northeast portion of the existing site. This tank provides attenuation during peak flow events and is controlled by manual valves and an 8" outlet pipe. The tank does have an 18" overflow pipe in the event the tank capacity is exceeded or the outlet pipe is plugged. The outlet pipe and overflow pipe both connect to the 21" Erie County Sewer District (ECSD) trunk line located along the west side of Smokes Creek, behind the stadium. This main flows south towards



Abbott Road. See Appendix F for the existing sanitary sewer main map. This main is located in ECSD #3 and ultimately discharges to the Southtowns Advanced Waste Water Treatment Plant.

The remainder of the Highmark Stadium complex (fieldhouse, training center and operations building) is collected with a separate 8" lateral which also ties into the 21" trunk line, downstream of and separate from the attenuation tank.

Proposed:

The 8" main which services the fieldhouse, training center and operations building will remain and be unchanged.

Per information provided by Labella Associates, the project design engineer, the new stadium located on the west side of Abbott Road will have a series of discharge laterals that vary in size from 8" to 10". The internal plumbing tributary to these laterals may have pumping stations due to elevation issues. These laterals will converge and flow through a new private 18" gravity sewer main which will convey the sewage under Abbott Road to the existing attenuation tank described above. A schematic map showing these new lines is included in Appendix G. The tank will be evaluated for structural integrity and sizing, if either is inadequate a new tank will be designed to replace the existing. The attenuation tank will continue to connect to the 21" ECSD main at the point described above.

Other mains in the vicinity were considered by the design engineer as potential connection points. Given the depth, size and known limited capacity of these mains, through conversations with Erie County Department of Environment and Planning, Division of Sewerage Management, reusing the existing attenuation tank and connecting at the existing connection point was determined to be the most appropriate choice.

To confirm the above, flow monitoring is being done upstream and downstream of the attenuation connection point on the 21" ECSD #3 trunk line. Additional monitoring points include the 18" stadium sewer outlet and the 8" fieldhouse, training center and operations building. This monitoring is being performed to confirm existing flow conditions and will be used to determine the final design flow rates.

Conclusions:

Given the reduction in capacity of the proposed stadium vs. the existing Highmark Stadium by approximately 10%, we would anticipate a reduction in



peak sanitary sewer discharge to the attenuation tank system on event days. This reduction shall be quantified by the design engineer as the design progresses and the results of the ongoing flow monitoring shall be implemented to make any adjustments in the proposed design, including verification of the reuse of the attenuation tank.

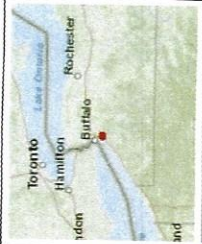
Through conversations with Erie County Department of Environment and Planning, Division of Sewerage Management (operators of the sewer system which the stadium ties into), the current tie-in point for the Existing Stadium on the 21" trunk line is the best location for the New Stadium to connect when considering the various sanitary sewers in the area. Further, with the continued use of a peak flow attenuation tank system and the projected overall net reduction of the sanitary sewer volumes from the New Stadium when compared to the Existing Stadium, no adverse impacts to ECSD#3's system are anticipated from the project." The flow monitoring shall be evaluated to confirm the above.

Appendix A

Location Map & Preliminary Site Plan



# Erie County On-Line Mapping Application



**Legend**

- Parcels



The map is a user generated static output from an internet mapping site and is for reference only. Data layers appearing on this map may or may not be accurate, current, or otherwise reliable.

ERIE COUNTY  
DEPARTMENT OF ENVIRONMENT & PLANNING  
OFFICE OF GIS



WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
THIS MAP IS NOT TO BE USED FOR NAVIGATION



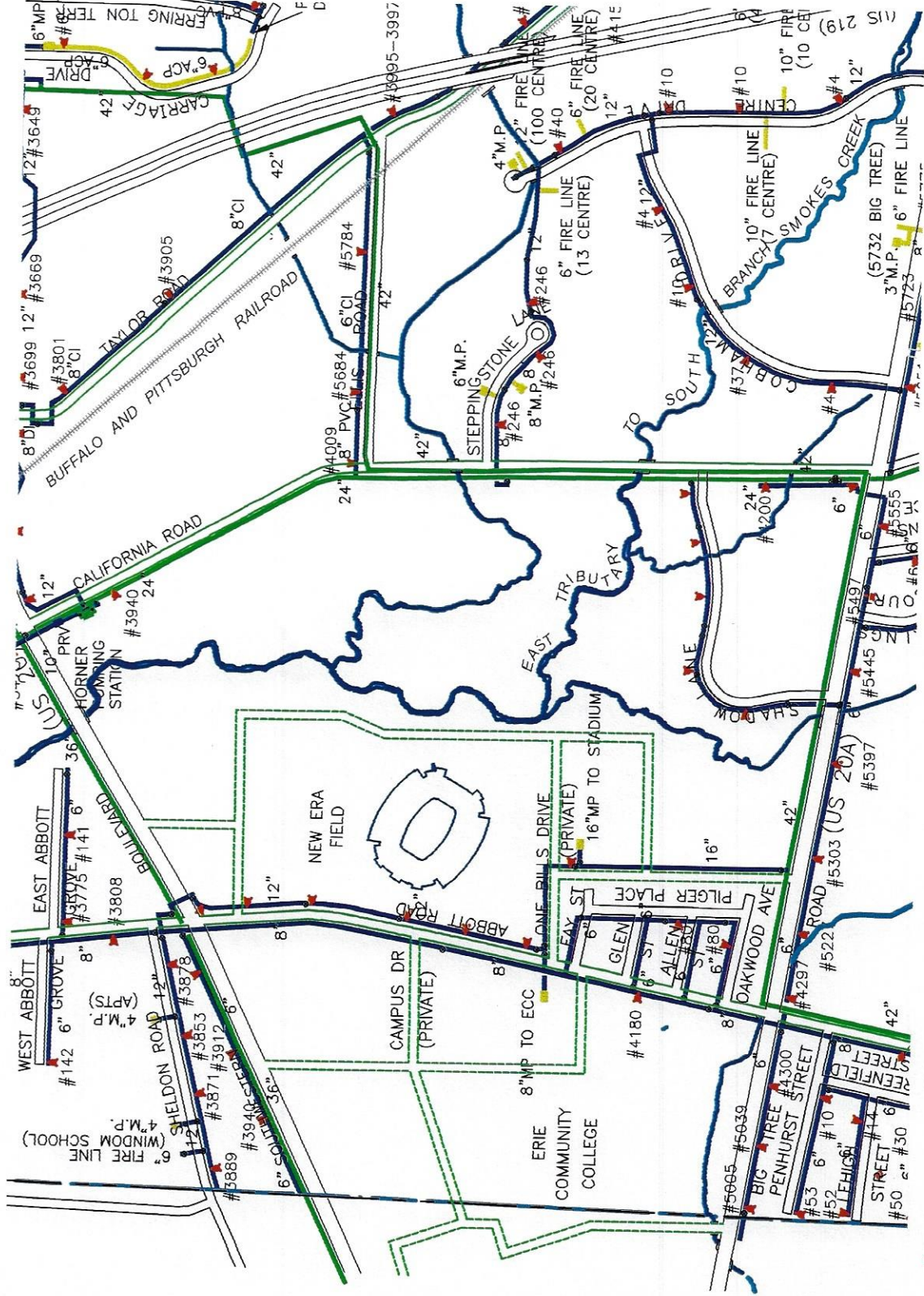
**CONCEPT SITE PLAN**

- A** NEW STADIUM
- B** AUXILIARY BUILDING
- C** NEW PARKING @ HIGHMARK STADIUM
- D** EXISTING PARKING TO REMAIN
- E** EXISTING BUILDING TO REMAIN
- F** EXISTING EDUCATIONAL BUILDING TO REMAIN





Appendix B  
Existing Water Main Maps



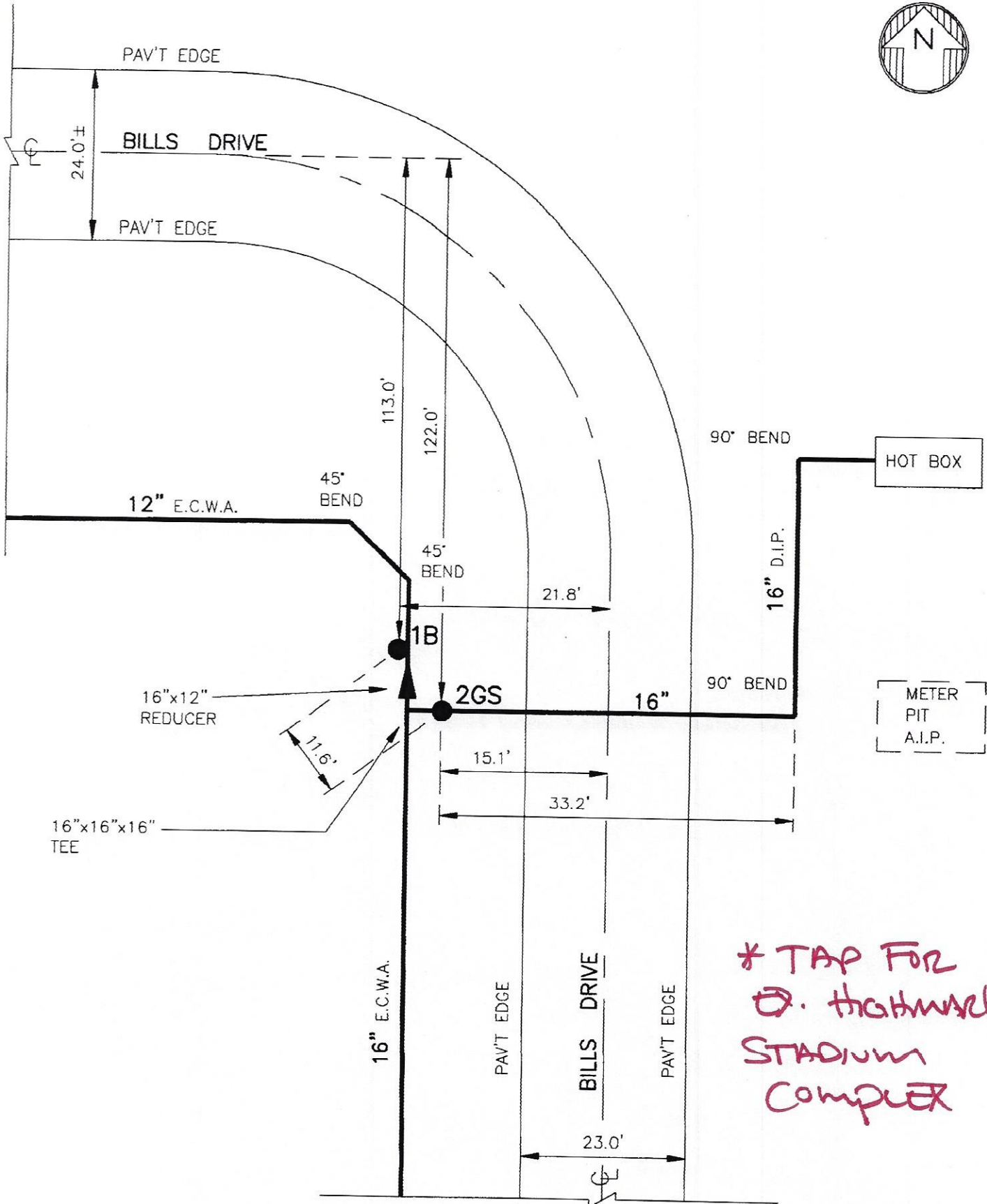
TOWN OF ORCHARD PARK WATER MAP












\* TAP FOR  
ORCHARD PARK  
STADIUM  
COMPLEX

 ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	REVISED DR. P.C.I.	REVISED DR. DJW	TOWN OF ORCHARD PARK E.C.W.A. & HAMBURG ORCHARD PARK JOINT W.D.	J16-A56A DETAIL SHT. NO. N.T.S.
	DATE: 12-6-73	DATE: 01-16-01		
	FIELD	OFFICE		

**MASTER COPY**



EC  
WA

ERIE COUNTY  
WATER AUTHORITY  
BUFFALO, NEW YORK

REVISED  
DR. M.J.M.

REVISED  
DR. M.J.M.

TOWN OF ORCHARD PARK

J16-A55A  
DETAIL SHT. NO.

DATE: 11/16/06

DATE: 11/20/06

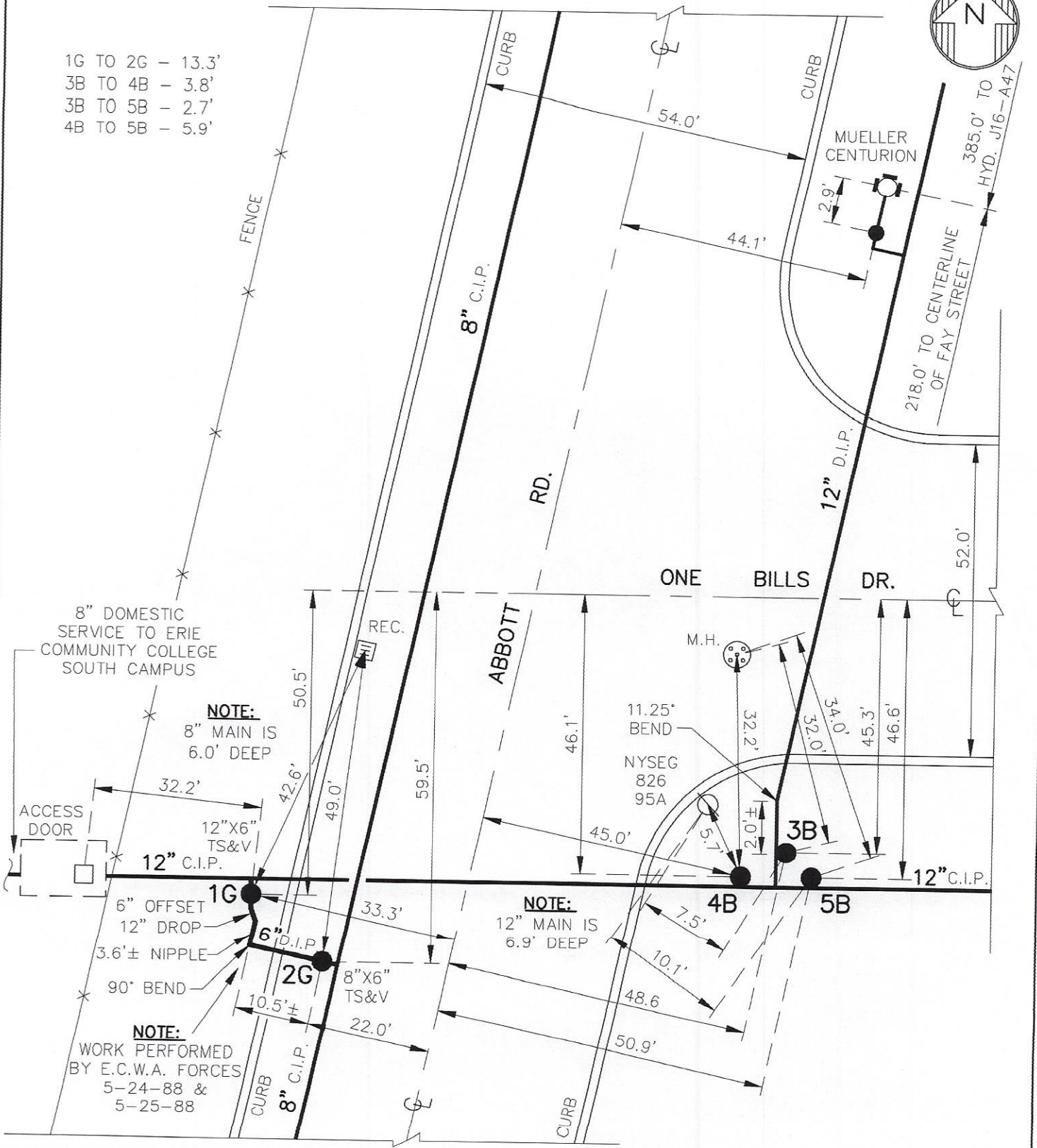
HAMBURG - ORCHARD PARK  
WATER DISTRICT #6

200200352  
CURRENT PROJECT NO.

FIELD

OFFICE

1G TO 2G - 13.3'  
3B TO 4B - 3.8'  
3B TO 5B - 2.7'  
4B TO 5B - 5.9'



**NOTE:**  
8" MAIN IS  
6.0' DEEP

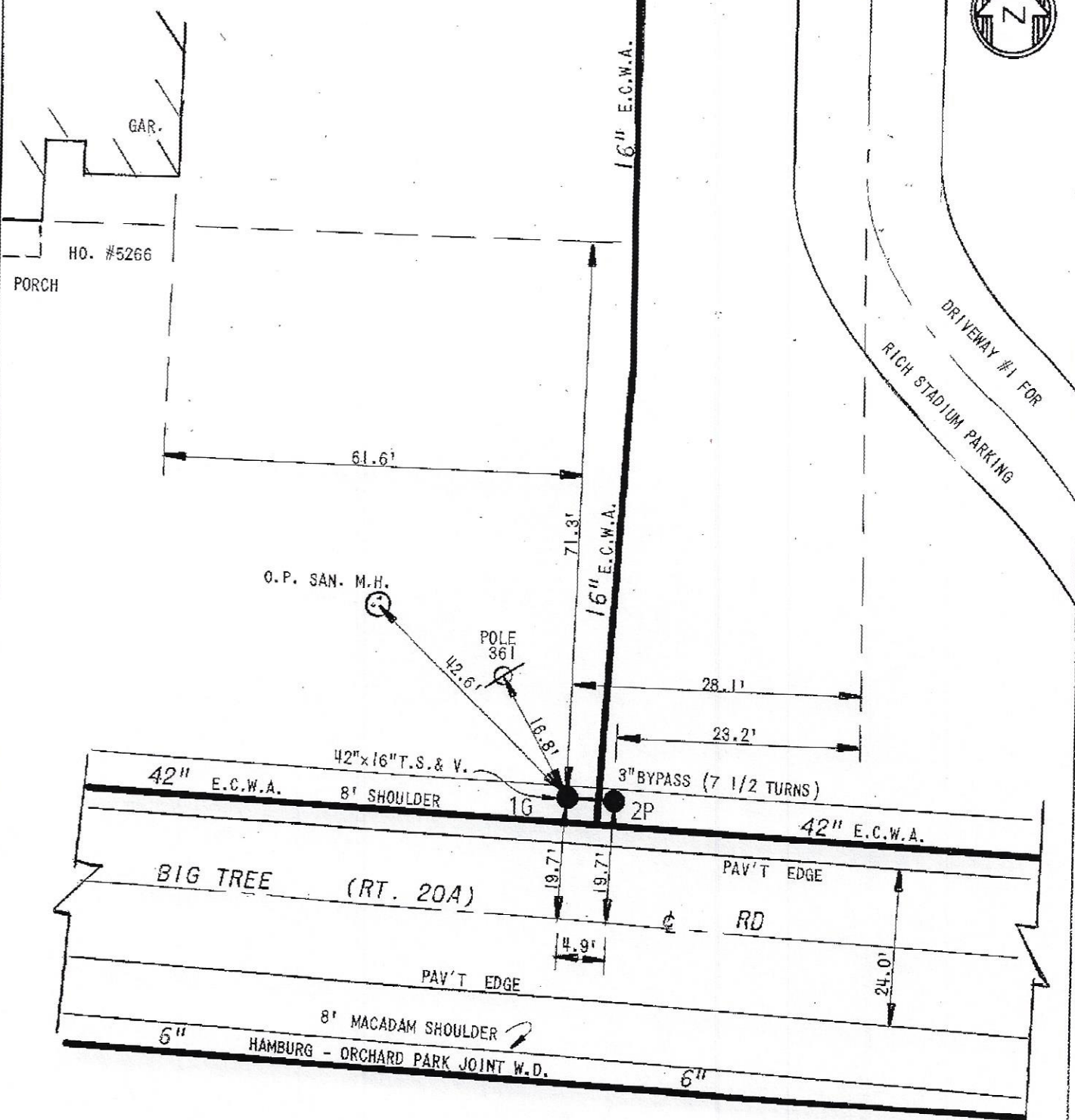
**NOTE:**  
12" MAIN IS  
6.9' DEEP

**NOTE:**  
WORK PERFORMED  
BY E.C.W.A. FORCES  
5-24-88 &  
5-25-88

OPTN-928-0201

J16-A55A  
DETAIL SHT. NO.

**MASTER COPY**



O.P. SAN. M.H.

POLE 361

42.6'

16.8'

16" E.C.W.A.

16" E.C.W.A.

42" E.C.W.A.

42"x16" T.S. & V.

8' SHOULDER

1G

3" BYPASS (7 1/2 TURNS)

2P

42" E.C.W.A.

BIG TREE (RT. 20A)

PAV'T EDGE

RD

PAV'T EDGE

8' MACADAM SHOULDER

HAMBURG - ORCHARD PARK JOINT W.D.

5"

6"

NOTE: NO DWGS. OR AS BUILT.

DWG. T6-C1 (42")

**EC** **ERIE COUNTY**  
**WA** **WATER AUTHORITY**  
 BUFFALO, NEW YORK

DR. BY: P.C.I.  
 DATE: 12/6/73  
 SCALE: NONE

TOWN OF ORCHARD PARK  
 E.C.W.A. & HAMBURG  
 ORCHARD PARK JOINT  
 W.D.

DETAIL SHEET NO.  
 J16-E16B



EC  
WA

ERIE COUNTY  
WATER AUTHORITY  
BUFFALO, NEW YORK

REVISED DR. C.H.M.  
DATE: 2/17/2010  
FIELD

REVISED DR. R.D.C.  
DATE: 7/20/2016  
OFFICE

TOWN OF ORCHARD PARK  
HAMBURG - ORCHARD PARK  
WATER DISTRICT #6

J16-A15  
DETAIL SHT. NO.  
200400117  
CURRENT PROJECT NO.

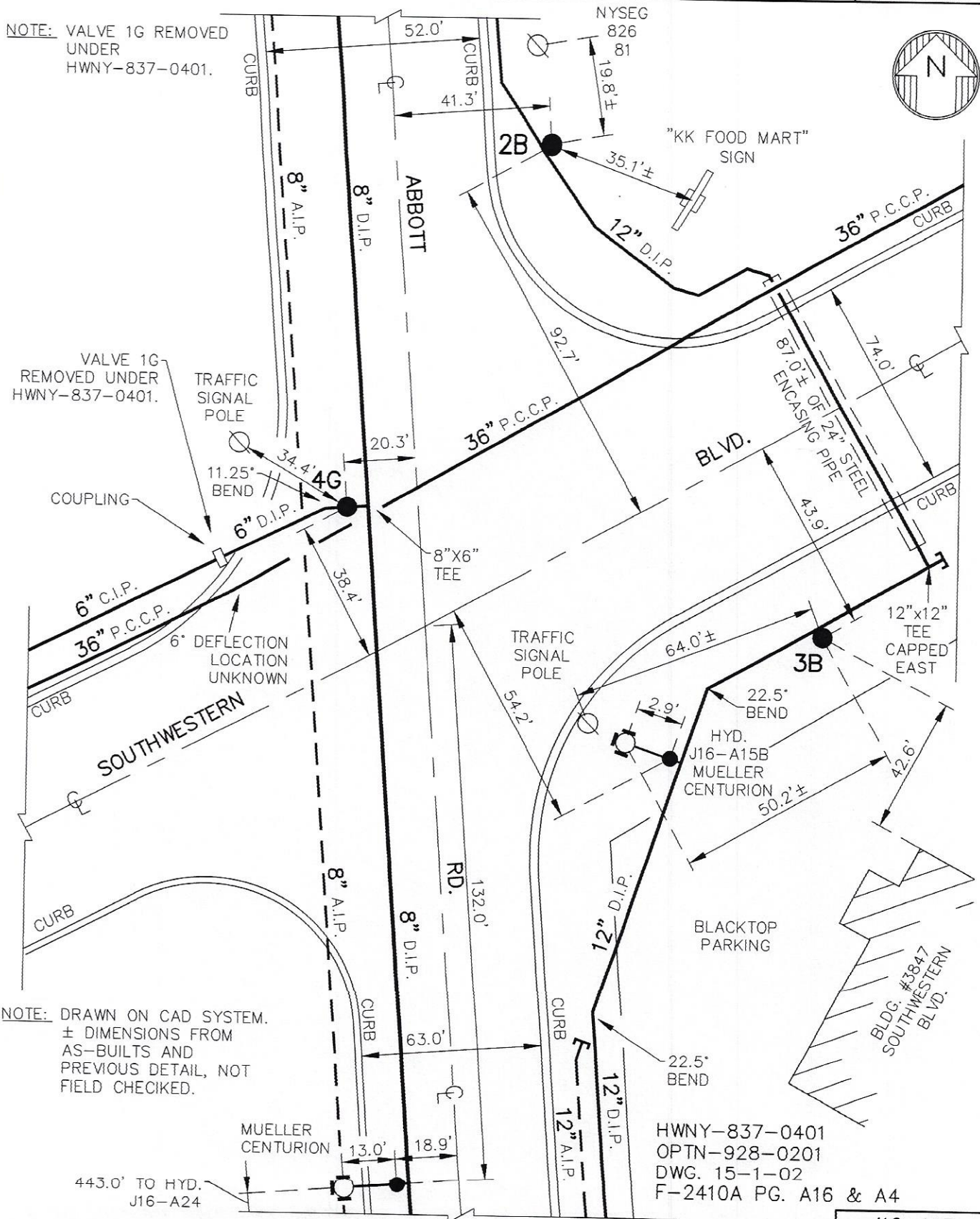
NOTE: VALVE 1G REMOVED UNDER HWNY-837-0401.

VALVE 1G REMOVED UNDER HWNY-837-0401.

NOTE: DRAWN ON CAD SYSTEM. ± DIMENSIONS FROM AS-BUILTS AND PREVIOUS DETAIL, NOT FIELD CHECKED.

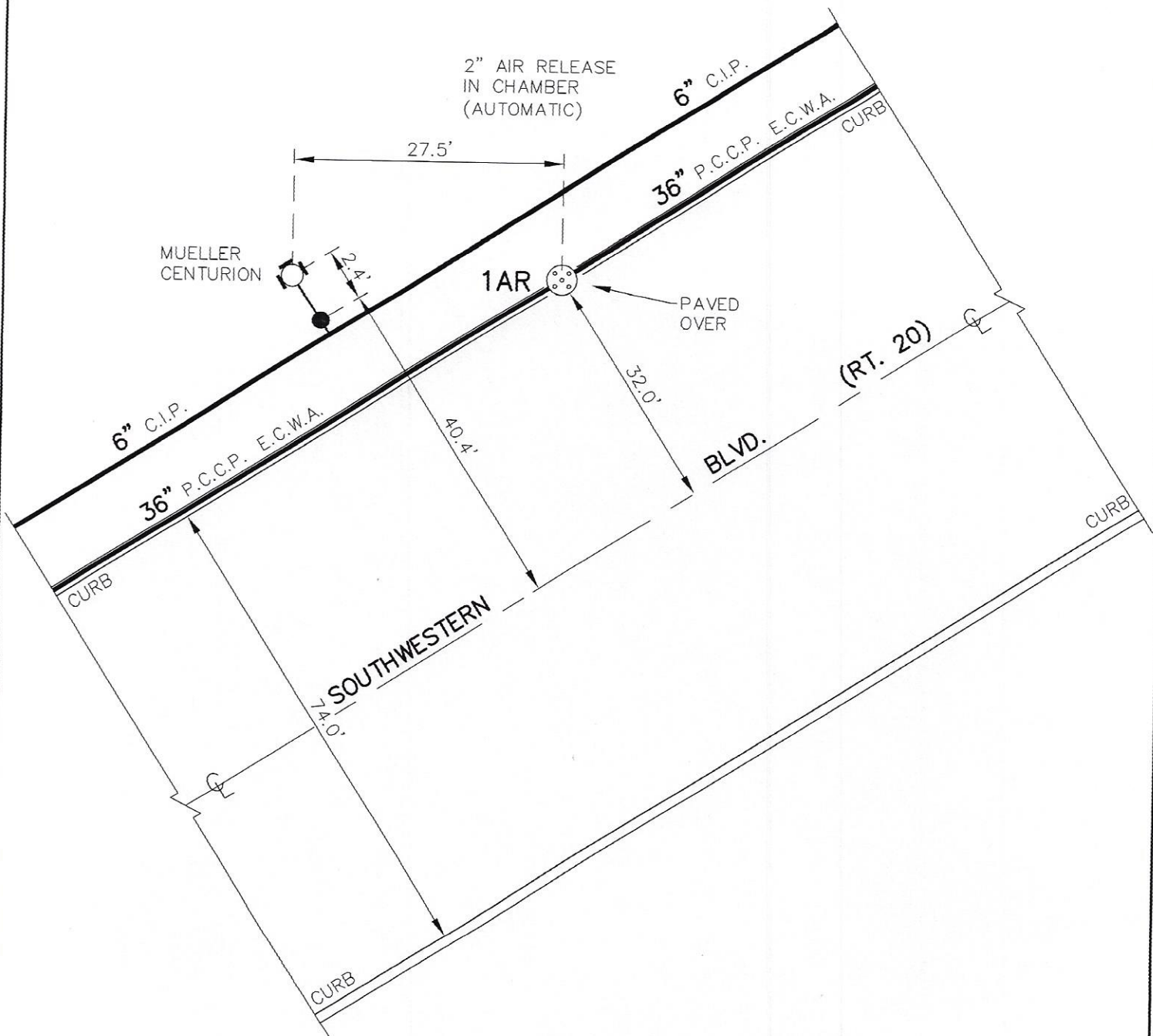
443.0' TO HYD. J16-A24

HWNY-837-0401  
OPTN-928-0201  
DWG. 15-1-02  
F-2410A PG. A16 & A4



J16-A15  
DETAIL SHT. NO.

MASTER COPY



NOTE: DETAIL DRAWN ON CAD SYSTEM.

HWNY-837-0401  
 F-2410-A  
 DWG. 15-1-02

**J16-A15A**  
 DETAIL SHT. NO.

**MASTER COPY**



EC  
WA

ERIE COUNTY  
WATER AUTHORITY  
BUFFALO, NEW YORK

REVISED DR. D.C.C.  
DATE: 6/29/1987

REVISED DR. R.D.C.  
DATE: 2/3/2022

FIELD

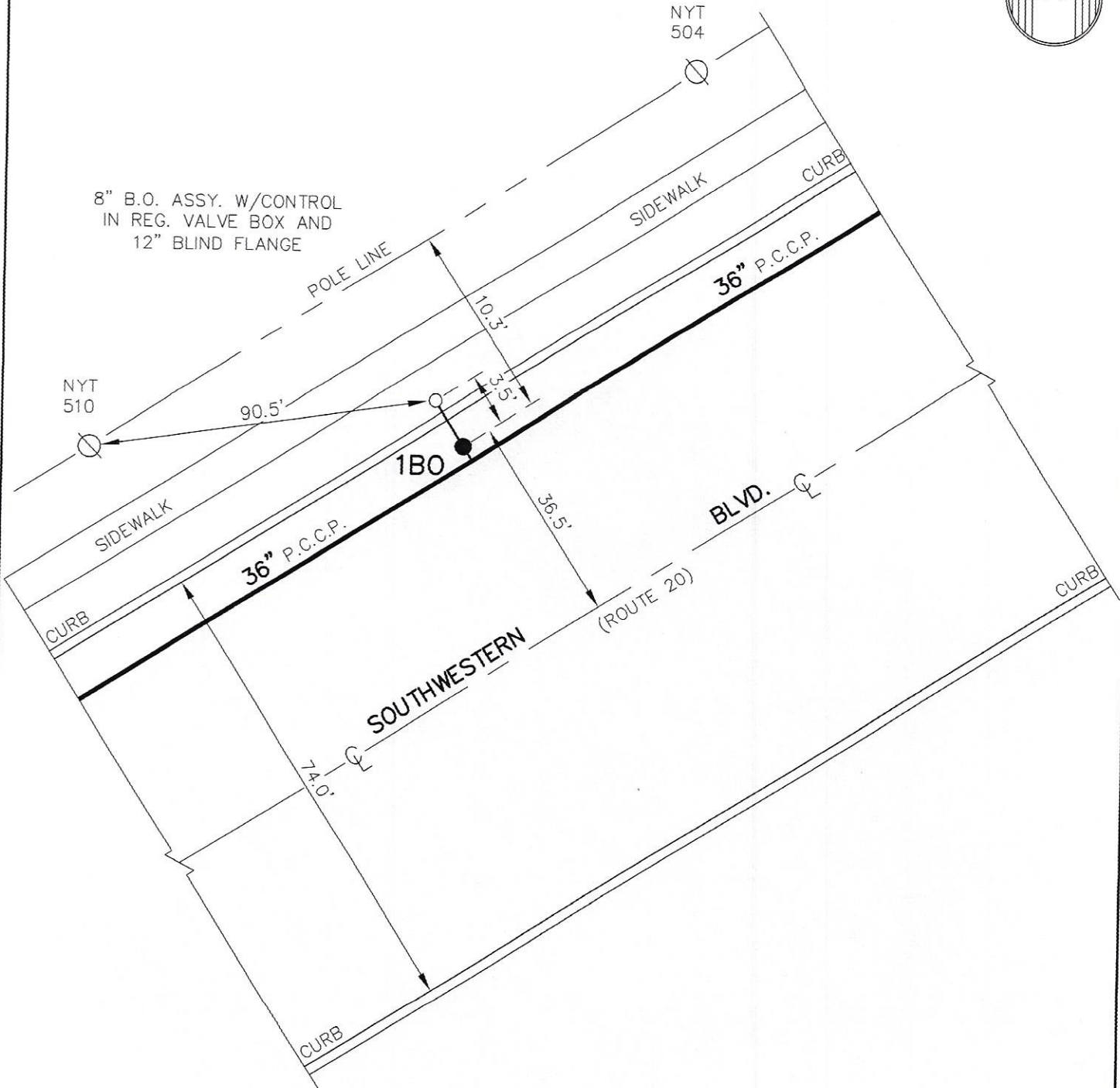
OFFICE

TOWN OF HAMBURG

E.C.W.A.

J16-A25  
DETAIL SHT. NO.

200400117  
CURRENT PROJECT NO.



HWNY-837-0401  
15-1-02

J16-A25  
DETAIL SHT. NO.

MASTER COPY

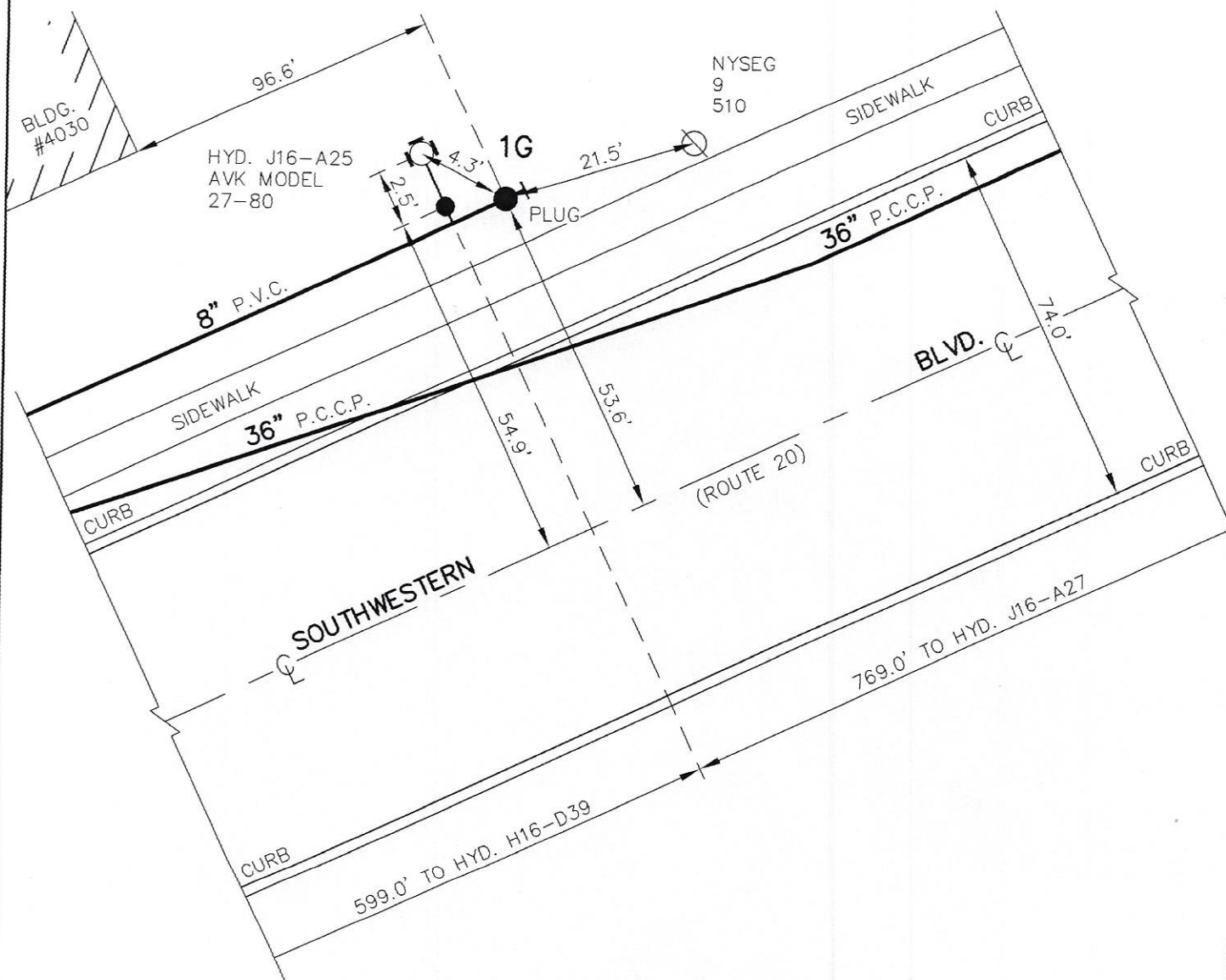


ERIE COUNTY  
WATER AUTHORITY  
BUFFALO, NEW YORK

DR. R.D.C.	REVISED DR.
DATE: 1/12/2022	DATE:
FIELD	OFFICE

TOWN OF HAMBURG  
E.C.W.A.

J16-A25A  
DETAIL SHT. NO.  
202100241  
CURRENT PROJECT NO.



NOTE: DETAIL DRAWN ON CAD SYSTEM.

HATN-837-2104  
HWNY-837-0401  
15-1-02

J16-A25A  
DETAIL SHT. NO.

**MASTER COPY**





ERIE COUNTY  
WATER AUTHORITY  
BUFFALO, NEW YORK

REVISED  
DR.

REVISED  
DR. R.D.C.

TOWN OF HAMBURG

J16-A26

DATE:

DATE: 7/20/2016

DETAIL SHT. NO.

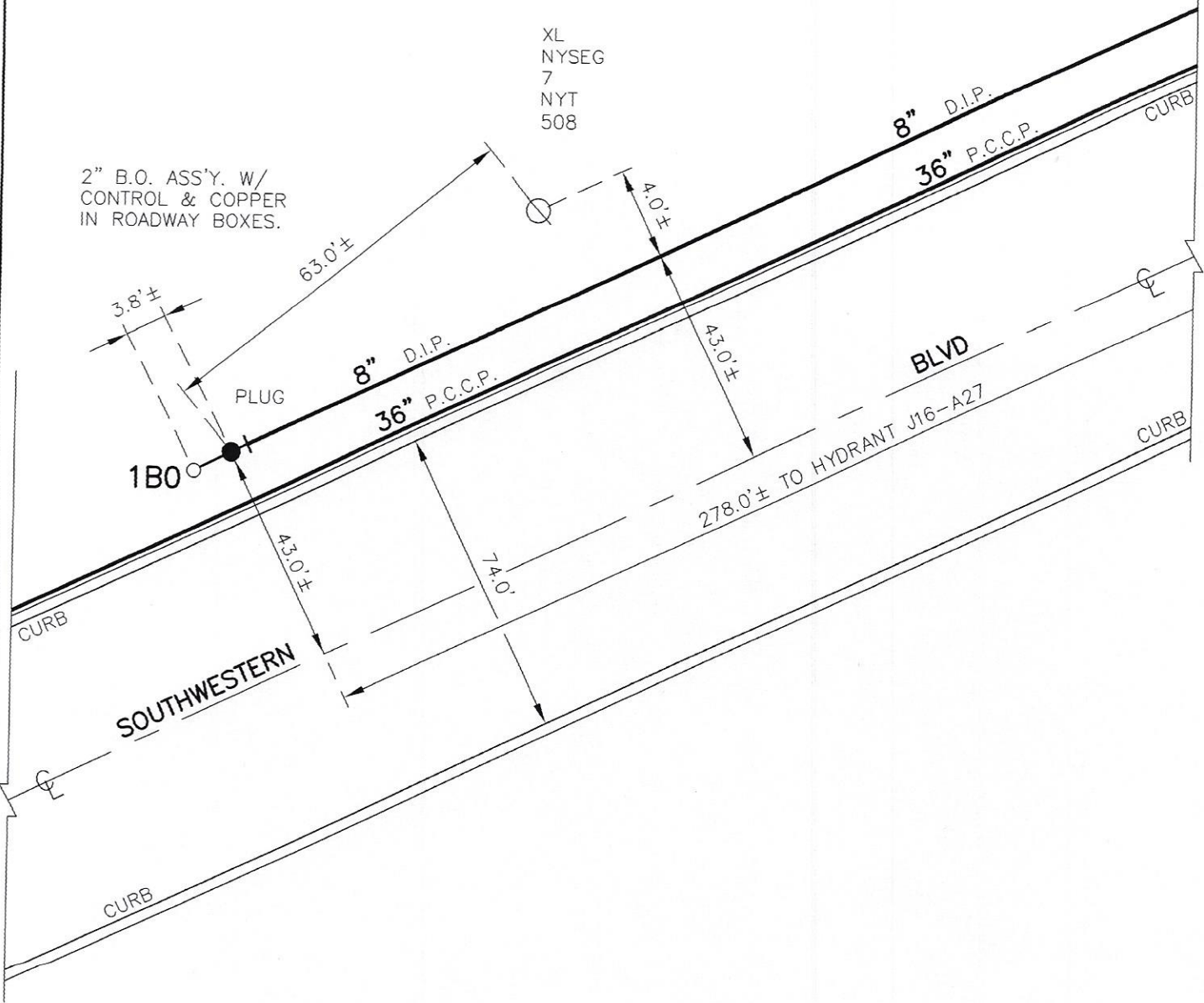
FIELD

OFFICE

E.C.W.A.

200400117

CURRENT PROJECT NO.



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

HWNY-837-0401  
F.B. 459/13  
HATN-837-9507-P  
DWG. 15-1-02

J16-A26  
DETAIL SHT. NO.

MASTER COPY



**ERIE COUNTY**  
**WATER AUTHORITY**  
 BUFFALO, NEW YORK

REVISED DR.

DATE:

FIELD

REVISED DR. R.D.C.

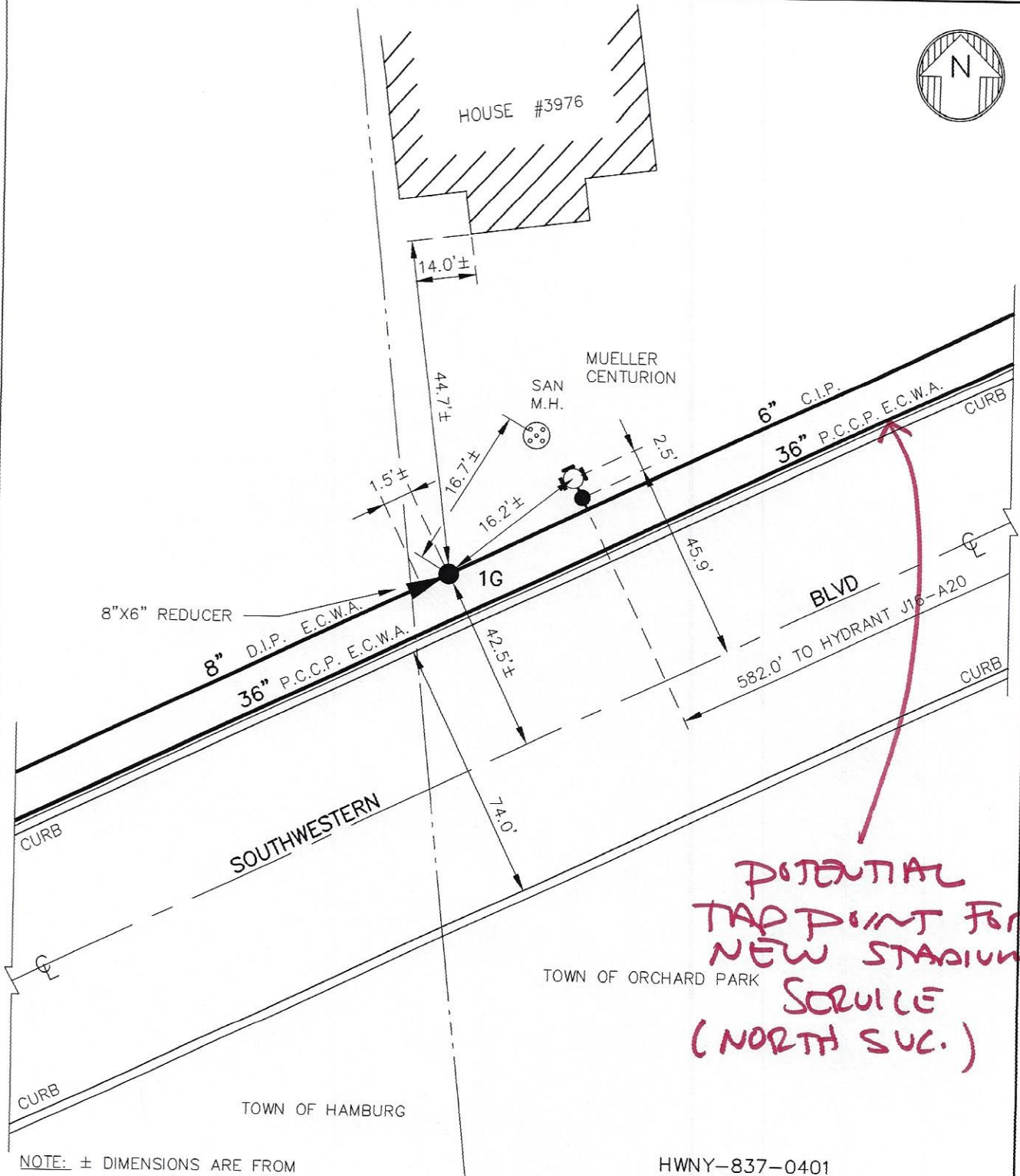
DATE: 7/20/2016

OFFICE

**TOWN OF HAMBURG**  
**E.C.W.A.**  
**TOWN OF ORCHARD PARK**  
**W.D. 6**

J16-A27  
 DETAIL SHT. NO.

200400117  
 CURRENT PROJECT NO.



**POTENTIAL  
 TAP POINT FOR  
 NEW STADIUM  
 SERVICE  
 (NORTH SUC.)**

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

HWNY-837-0401  
 F.B. 459/13  
 HATN-837-9507-P  
 DWG. 15-1-02

J16-A27  
 DETAIL SHT. NO.

**MASTER COPY**



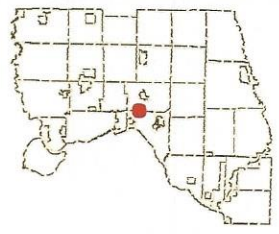
## Appendix C

### Hydrant Flow Test Information from ECWA

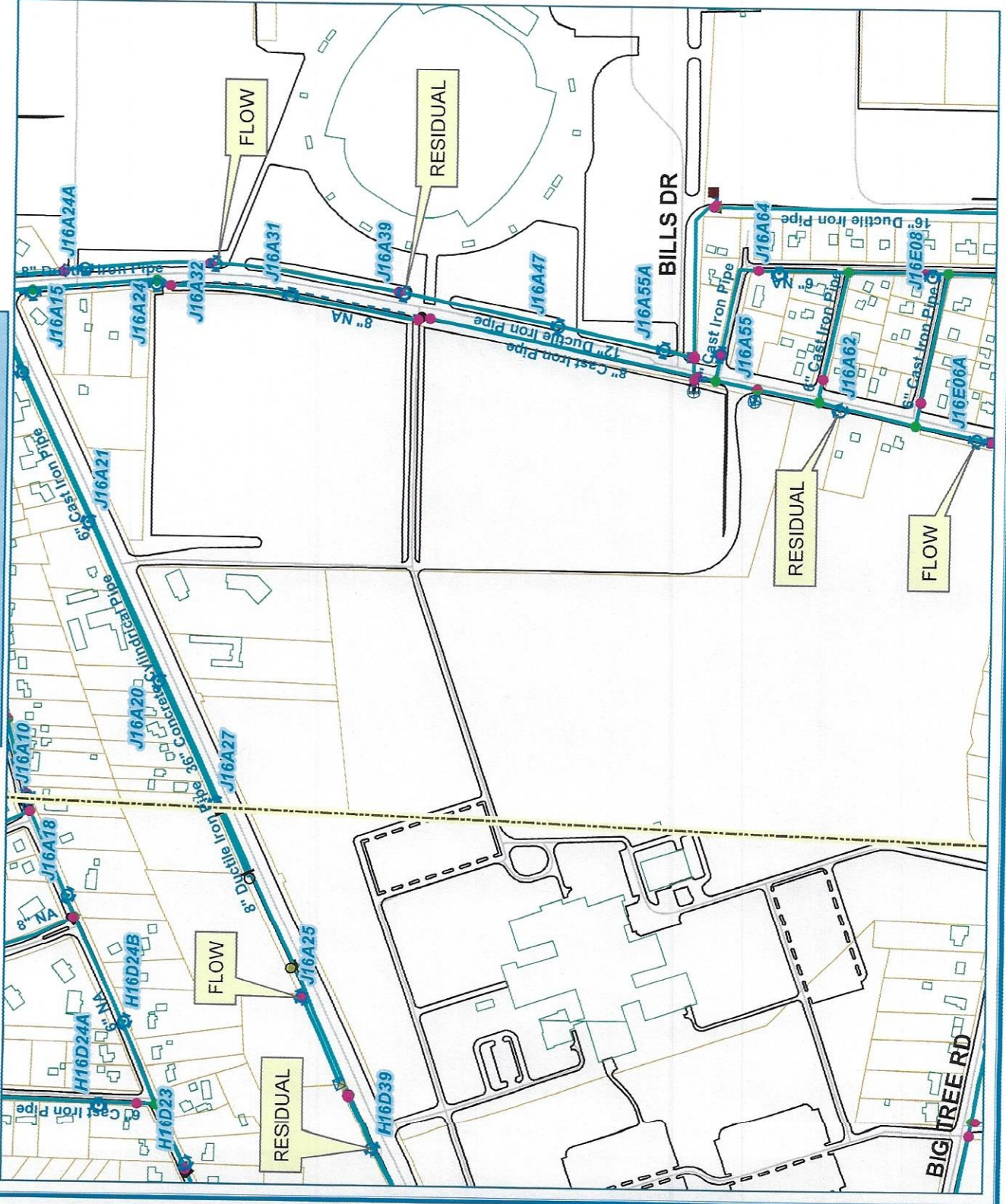
# ABBOTT AND SOUTHWESTERN



1 inch = 500 feet



Legend:





8" ABBOTT RD

BILLS DR

12" Ductile Iron Pipe

FAY ST

ABBOTT RD

16" Ductile Iron Pipe

8" Cast Iron Pipe

6" Cast Iron Pipe

ALLEN ST

OAKWOOD ST

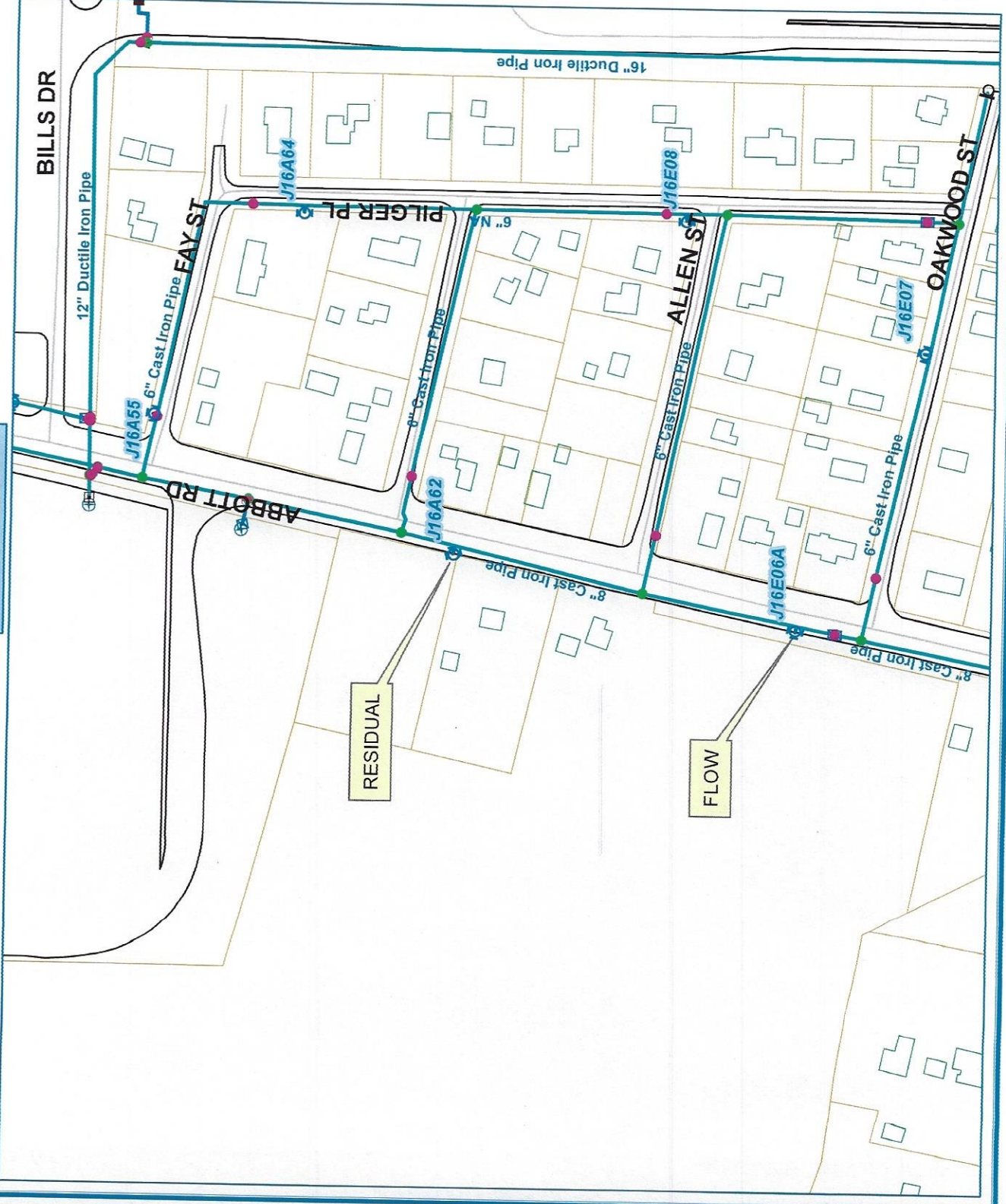
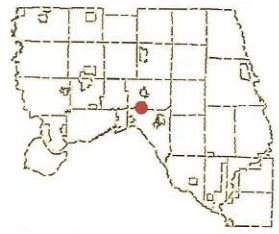
RESIDUAL

FLOW



1 inch = 200 feet

Legend:

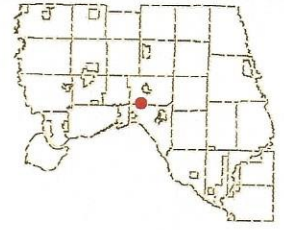








1 inch = 200 feet



Legend:



12" ABBOTT RD

ABBOTT RD

ABBOTT RD

J16A24

FLOW

J16A32

J16A31

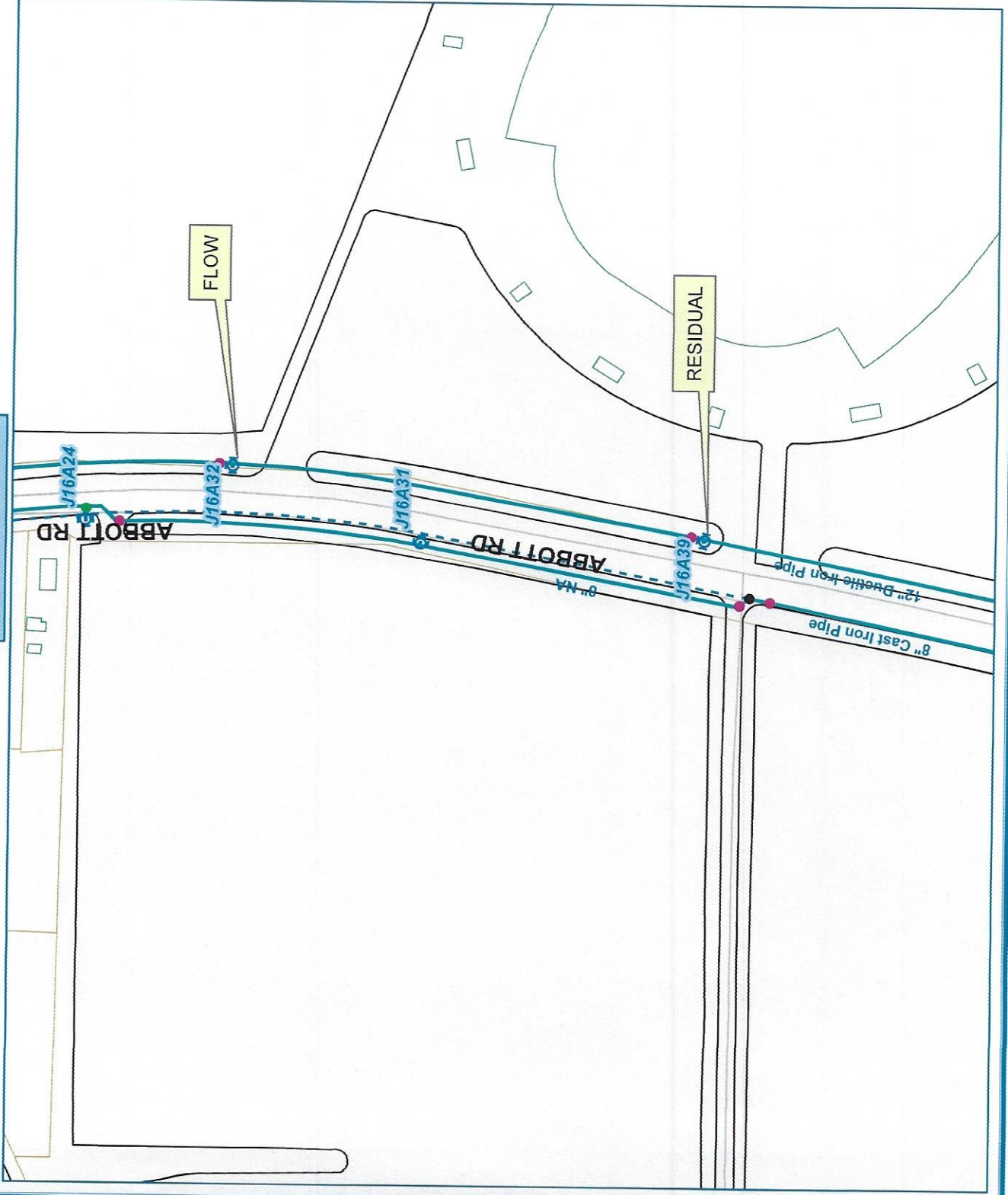
RESIDUAL

J16A39

8" MA

12" Ductile Iron Pipe

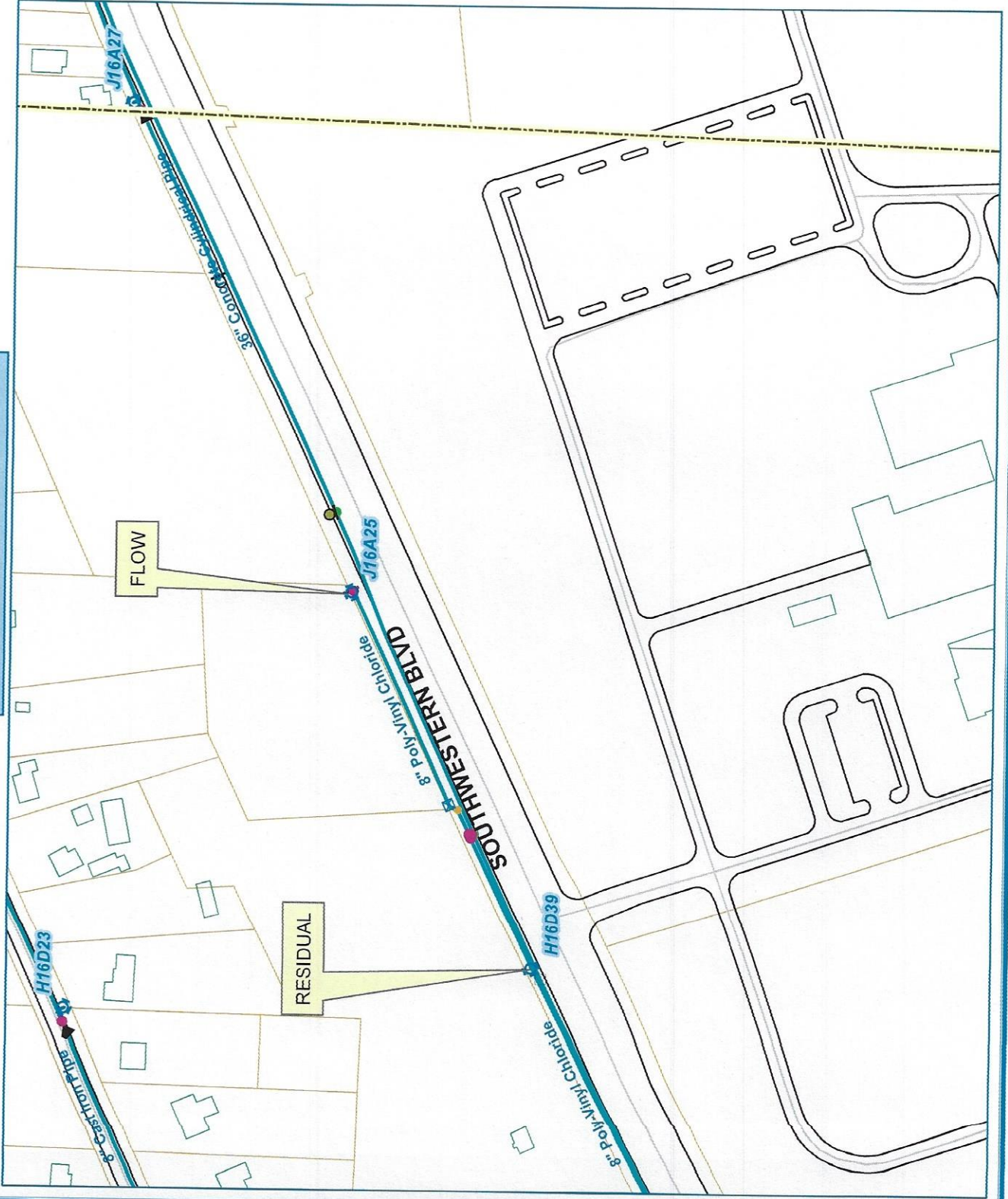
8" Cast Iron Pipe





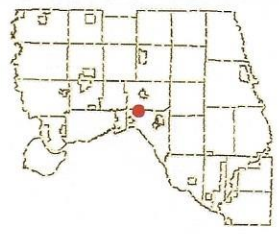


**8" SOUTHWESTERN BLVD**



1 inch = 200 feet

**Legend:**







## Appendix D

### Existing Highmark Stadium Water Usage (2021)

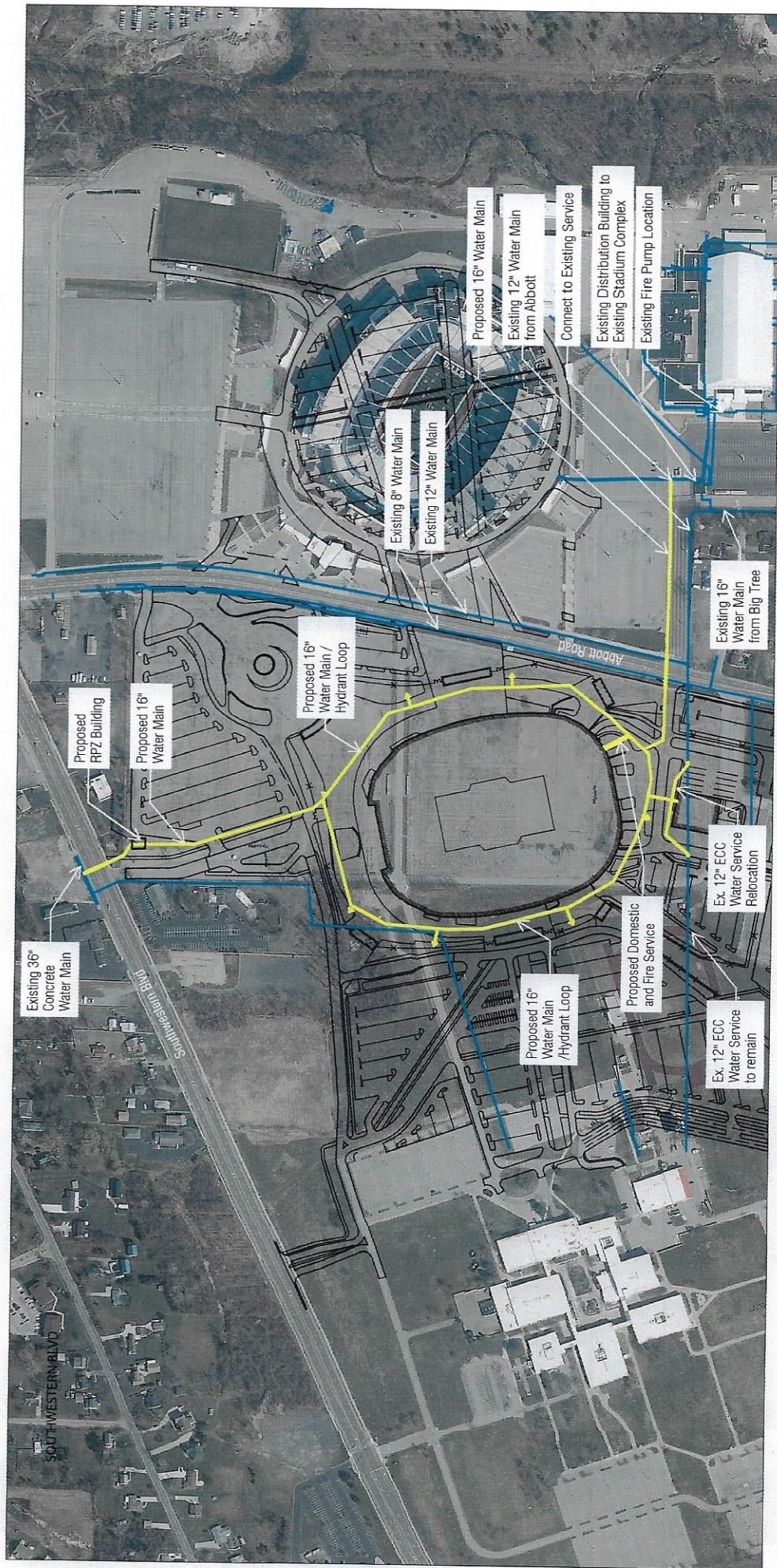




Appendix E

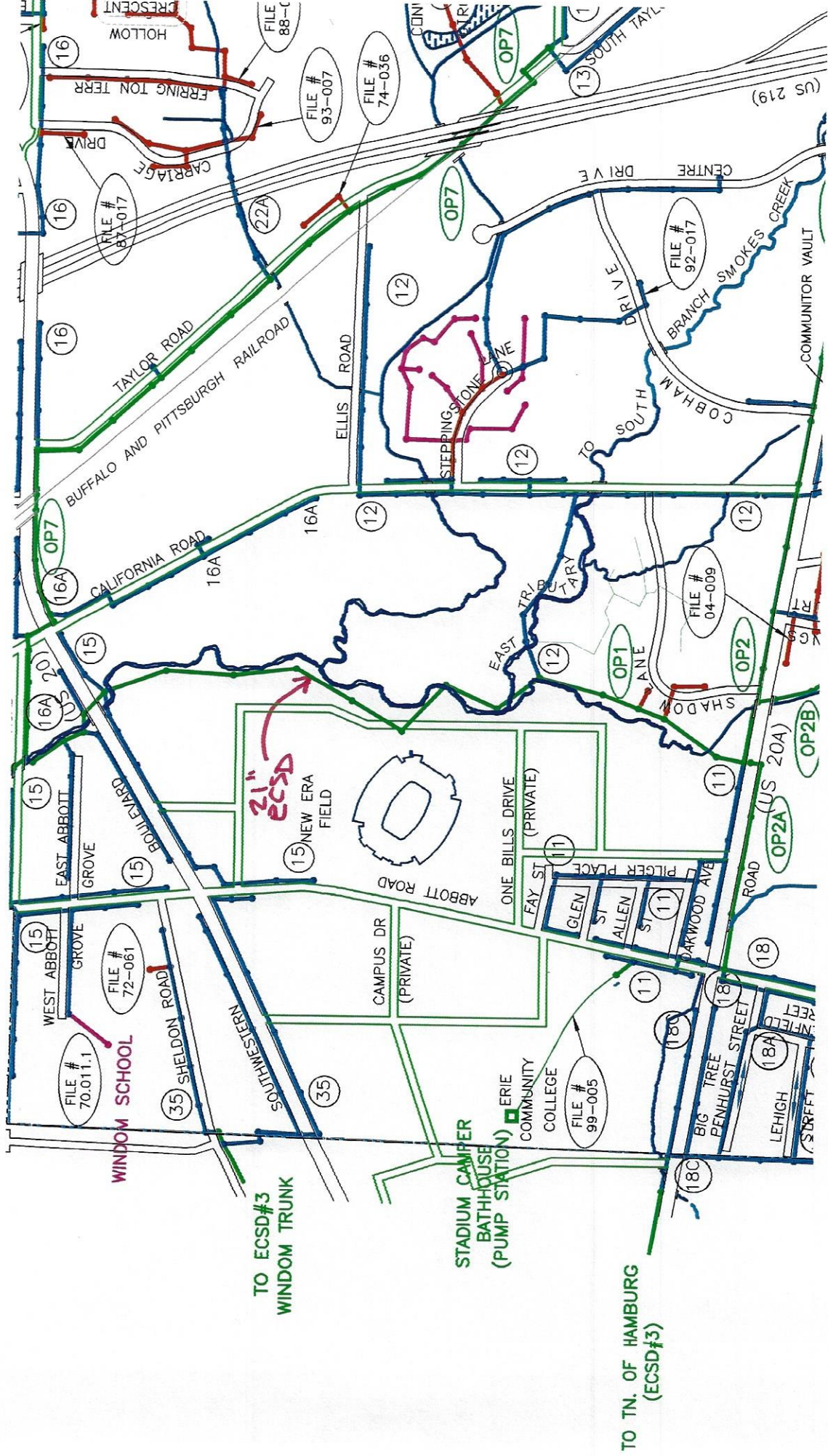
Preliminary Proposed Water Main Routing

CIVIL Conceptual Water Service Routing





Appendix F  
Existing Sanitary Sewer Main Maps





## Appendix G

### Preliminary Proposed Sanitary Sewer Main Routing



CIVIL Conceptual Sanitary Sewer Routing

