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CONDITION REMEDIATION ALTERNATIVES ANALYSIS

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# Project Scoping Report

## Central Sewershed Package 10

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**PREPARED FOR:** San Antonio Water System

**PREPARED BY:** Camille Constantine

**DATE:** July 25, 2019

Revision	Date	Revision Description	Approved By
0	1/28/19	Draft Submittal	Camille Constantine
1	1/29/19	Final Submittal	Christopher Jackson
2	5/31/19	Draft Submittal Rev. 1	Camille Constantine
3	7/2/19	Final Draft QC	Project Controls
4	7/16/19	Final Submittal Rev. 1	Christopher Jackson
5	7/25/19	Final Submittal Rev. 2	Christopher Jackson

## 1.0 Executive Summary

San Antonio Water System (SAWS) entered into a Consent Decree (CD) with the United States Environmental Protection Agency (EPA) on July 23, 2013. As part of the CD, SAWS is required to assess the condition of approximately 2,100 miles of gravity sewer mains and identify condition remedial measures on pipes with a “Very Poor” condition rating.

This report presents the results of condition remedial measures alternatives analysis for approximately 3,459 linear feet of selected gravity sewer lines. **Table-1.1** summarizes the proposed constructions methods and their estimated costs. The recommendations in this report may be further modified during subsequent design and construction phases, as appropriate, based on additional data and findings.

*Table-1.1: Proposed Construction Method and Estimated Costs*

Type of Work	Length (ft)	Line Size Range (in)	Estimated Construction Cost
Cured-in-Place Pipe (CIPP)	3,459	6 – 10	\$ 1,514,000.00
<b>Total</b>	<b>3,459</b>		<b>\$ 1,514,000.00</b>

## 2.0 Evaluation

Pipe segments chosen to be rehabilitated on this package have contributed to previous SSOs, and/or are likely to cause or significantly contribute to the future of occurrence of SSOs.

## 3.0 Coordination

### Street Projects

It is recommended that SAWS coordinate with the City of Terrell Hills to determine the timing of any possible future street projects. Please note that pipes may be required to have the construction expedited where street projects are forthcoming.

### High and Medium Pavement Condition Index (PCI) Roads

The City of Terrell Hills does not provide an ArcGIS layer that has the estimated PCI of roads in the city. All mains on this package will be rehabilitated via CIPP, but may impact high or medium PCI roads.

### Other Considerations

Pipes that are located in sensitive areas that may require additional permits have been listed below in **Table-3.1**.

*Table-3.1: Pipes that need additional coordination*

Compkey	Reason
979927	Karst Zone 2

3524688	Karst Zone 2
970260	Karst Zone 2
971037	Karst Zone 2
980185	Karst Zone 2
979982	Karst Zone 2 & 100 Year Floodplain
979983	Karst Zone 2
979984	Karst Zone 2
969546	Karst Zone 2
986064	Karst Zone 2
971151	Karst Zone 2
969666	Karst Zone 2
968957	Karst Zone 2
985846	Karst Zone 2

#### 4.0 Planning Budget

The planning budget provided below is based historical data from similar bids between 2016 and 2018. The data in **Table-4.1** provides cost estimating metrics for the different methods of sewer pipeline rehabilitation and replacement (CIPP, pipe bursting, pipe replacement) for the typical sewer pipe sizes. The unit pricing was calculated based on: pipe size, rehabilitation method, number of estimated point repairs, internal repairs, lateral reconnections, and the pavement condition index of all impacted roads. The planning budget should be revised by the Project Design Consultant during the design based on AACE International standards.

**Table-4.1: Estimated CIPP Cost**

Description	Quantity	Unit	Unit Price	Total
6 – inch CIPP	311	LF	\$ 300.00	\$ 93,000.00
8 – inch CIPP	2,443	LF	\$ 436.00	\$ 1,065,000.00
10 – inch CIPP	705	LF	\$ 504.00	\$ 356,000.00
<b>Total</b>				<b>\$ 1,514,000.00</b>

\*Total amounts have been rounded to nearest \$1000.

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## 5.0 Planning Recommendation

**Table-5.1** provides detailed information, the preliminary remediation method, as well as the reason behind each method chosen for each pipe segment included in this package. Most pipes on this package are part of the condition remedial measures program and need to be completed by said compliance year which is recorded in the table under, "Completion Year".

**Table-5.1: Recommendation Summary**

Compkey	As-built	Install Year	Block Map No.	Completion Year	Dia (in)	Length (ft)	Material	Avg Depth (VF)	Preliminary Rehabilitation Actions	IAP Comments
979982	DJ-4128	1930	172598		10	365	VCP	4	CIPP	CJ recommend CIPP due to existing condition
969666	DJ-4128	1930	172598		8	310	CT	4	CIPP	CC. CP has multiple sections of fractured pipe and some broken pipe around laterals. Could possibly CIPP + PR, looks to be built over & in backyards. CJ Can CIPP need new CCTV
969187	DJ-4128	1930	172598		8	187.6	CT	0	CIPP	CJ. Can be CIPP'd
969745	DJ-4128	1930	172600		6	110	CP	387	CIPP	CJ. May need a PR but can CIPP.
971037	DJ-4128	1930	172598		8	378	CT	5	CIPP	CJ. Can be CIPP'd. May need PR
979983	DJ-4129	1930	172598	2023	8	307	CT	4	CIPP	This pipe is 8" CP. It is between houses, no alley. CJ. Structures appear to be right on top of main. Could CIPP with right contractor.
971151	DJ-4128	1930	172598	2023	10	340	CP	4	CIPP	CJ Can be CIPP'd
968957	DJ-4128	1930	172598		8	171	CT	5	CIPP	CC. CP had multiple large voids and w/CCTV a line could be fed through to PB. Possibly some PR. CJ Changed to CIPP. Will need PR and new CCTV.
969546	DJ-4129	1930	172598		8	228	CT	6	CIPP	This pipe is 8" VCP. It is between houses, no alley. CJ. Could potentially be lined with PR. Will need new CCTV.
970260	DJ-4128	1930	172600		8	283	CT	3	CIPP	CJ. Can be CIPP'd
979927	OM-5264	1956	172600		8	50	VCP	379	CIPP	Known Capacity Issue. CJ Can be lined but may need to be upsized.
979984	DJ-4129	1930	172598	2023	8	179	CT	5	CIPP	This pipe is 8" CP. It is between houses, no alley. CJ. Will need point repairs. Will need new CCTV
3524688	DJ-4128	1930	172600		6	35	CP	0	CIPP	CJ. Can be CIPP'd
980185	DJ-4128	1930	172598		8	163	CT	5	CIPP	CJ. Could potentially line through PR but would cause line to be <6". More than likely will need PR and need re-route if not enough room to work. CJ CIPP with PR. Will need new CCTV.
985846	OM-5267	1948	172598		8	203.8	CP	4	CIPP	CJ will need some PRs and new CCTV
986064	DJ-4129	1930	172598		6	95.86	CT	7	CIPP	CJ. Can be CIPP'd. Will need a MH installed upstream.

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## **6.0 Proposed Project Schedule**

**Table-6.1** provides a proposed project schedule which includes a timeframe for engineering design (plans, permits, right-of-entry, etc.), bidding, and construction phases based CIP board funding and previous schedules from similar projects. These should be reviewed and revised by the consultant during the contract negotiation.

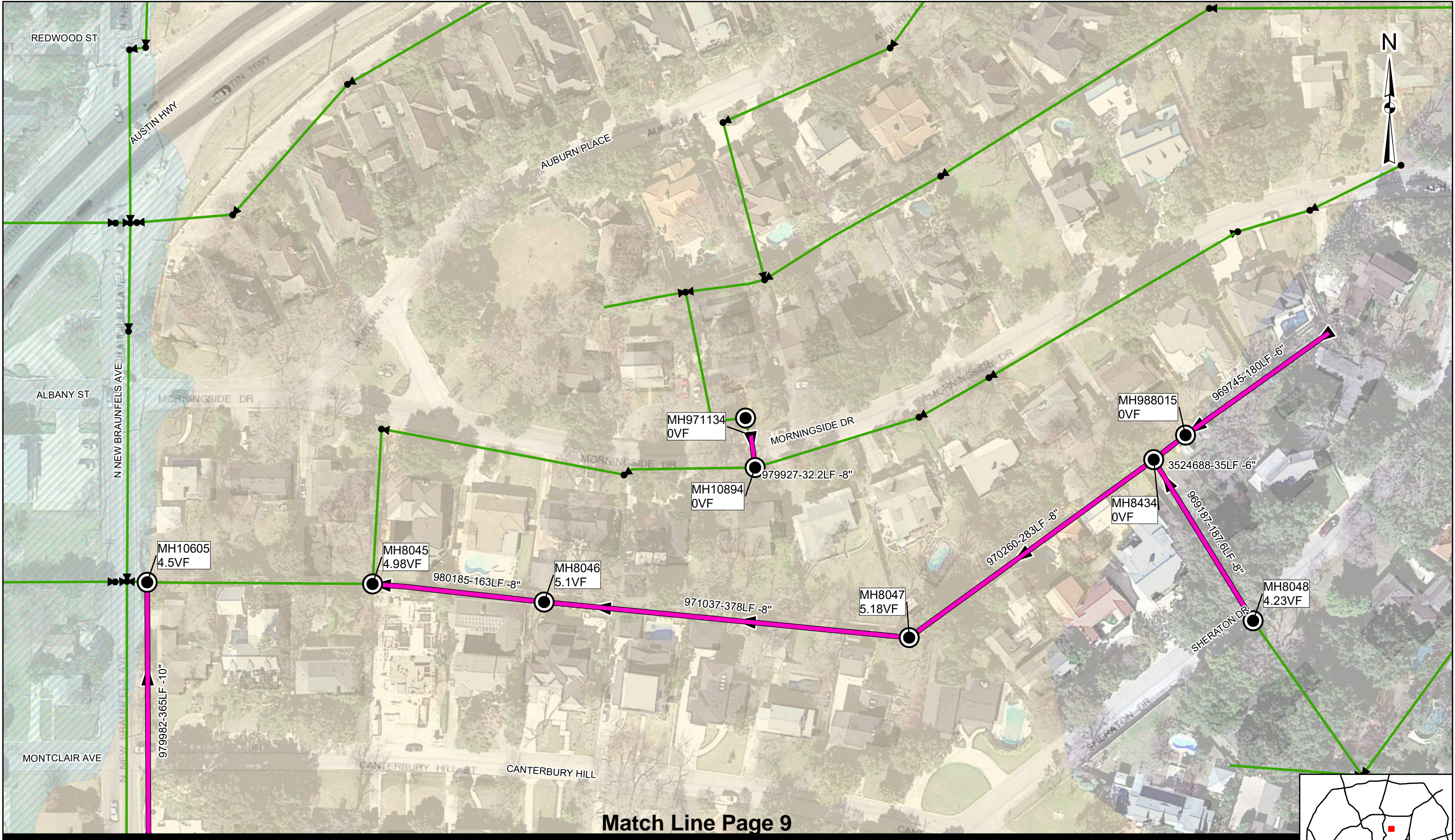
## **7.0 Detailed Maps**

In the detailed maps attached are the CoSA street projects, the estimated PCI for all CoSA roads, and relevant sensitive areas.

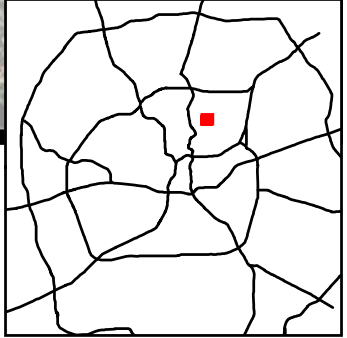
### Table 6.1 - Proposed Project Schedule

ID	Task Name	Calendar Days	Start	Finish	3rd Quarter		4th Quarter		1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter				
					Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
1	Central Sewershed Package 10	820	Mon 8/5/19	Mon 11/1/21																														
2	Contract Execution	157	Mon 8/5/19	Wed 1/8/20																														
7	Design	286	Thu 1/9/20	Tue 10/20/20																														
8	Validation TM	42	Thu 1/9/20	Wed 2/19/20																														
9	Validation TM Review	21	Thu 2/20/20	Wed 3/11/20																														
10	60% Design	70	Thu 3/12/20	Wed 5/20/20																														
11	60% Design Review	21	Thu 5/21/20	Wed 6/10/20																														
12	Plan in Hand Walk Through	21	Thu 6/11/20	Wed 7/1/20																														
13	90% Design	49	Thu 7/2/20	Wed 8/19/20																														
14	ROE Acquisition	90	Thu 6/11/20	Tue 9/8/20																														
15	90% Design Review	20	Thu 8/20/20	Tue 9/8/20																														
16	100% Design	28	Wed 9/9/20	Tue 10/6/20																														
17	100% Design Review	14	Wed 10/7/20	Tue 10/20/20																														
18	Solicitation	147	Wed 10/21/20	Tue 3/16/21																														
19	100% Deisgn - Contracting Review	21	Wed 10/21/20	Tue 11/10/20																														
20	Advertisement	28	Wed 11/11/20	Tue 12/8/20																														
21	Board Prep	83	Wed 12/9/20	Mon 3/1/21																														
22	Board Date	1	Tue 3/2/21	Tue 3/2/21																														
23	Execute Contract	14	Wed 3/3/21	Tue 3/16/21																														
24	Construction	230	Wed 3/17/21	Mon 11/1/21																														

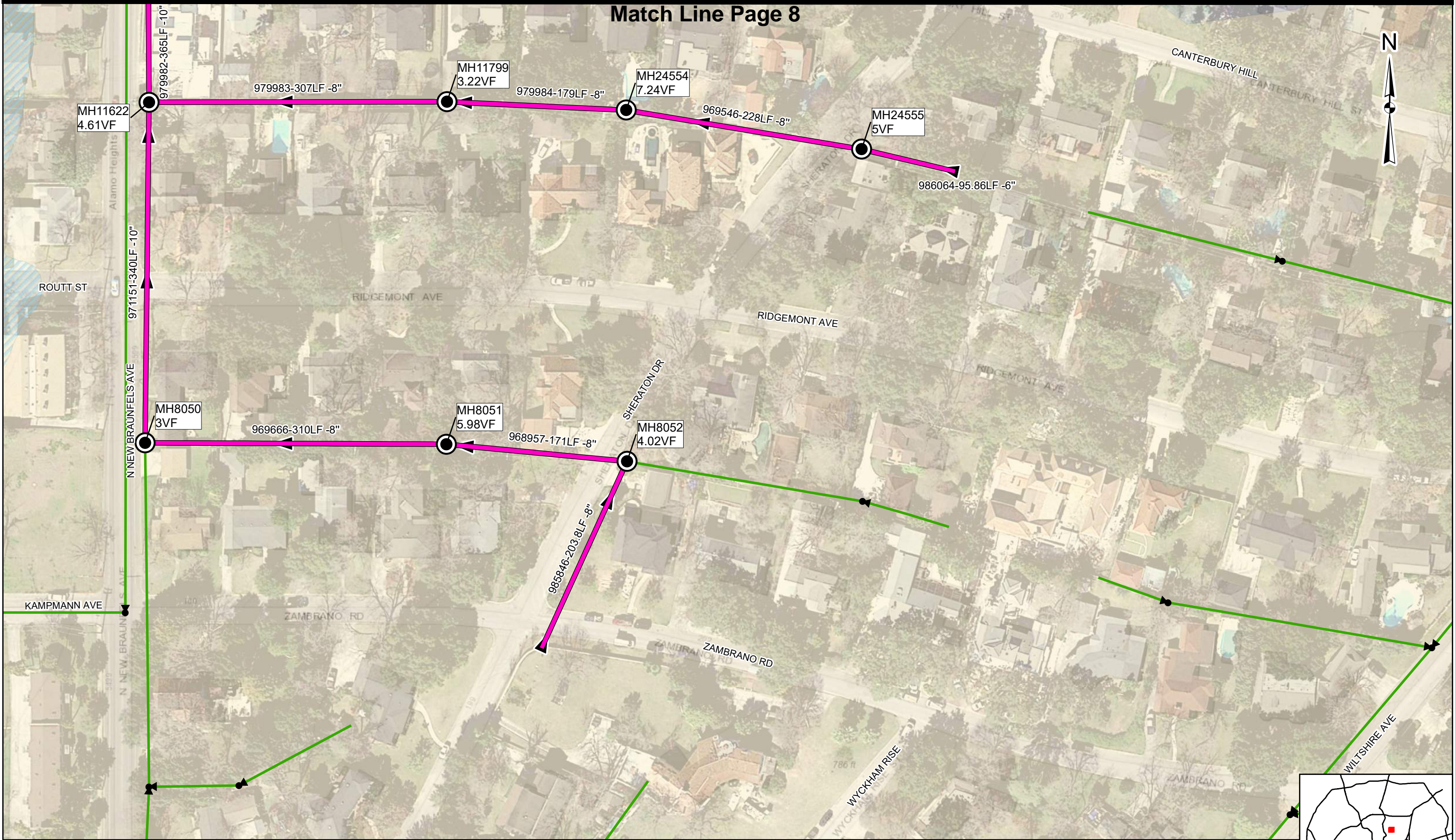




# CENTRAL SEWERSHED PACKAGE 10







Match Line Page 8

CENTRAL SEWERSHED PACKAGE 10

 MHS in Scope

 100Yr Floodplain

 Proposed CIPP

 Karst Zone 2