

# ADDENDUM No. 1

## ITB No. 4524

### 2018 Water Main and Sanitary Sewer projects

**Due: Wednesday, March 28, 2018 by 10:00 am (local time)**

The following changes, additions, and/or deletions shall be made to the Invitation to Bid for 2018 Water Main and Sanitary Sewer Projects ITB No. 4524, on which proposals will be received on/or before March 28, 2018 at 10:00 A.M. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any), and is appended thereto. **This Addendum includes twenty (20) pages, twenty nine (29) plan sheets, and Pre-Bid Meeting Sign-in sheet (2 pages).**

**Bidder is to acknowledge receipt of this Addendum No. 1, including all attachments in its Bid by so indicating on page ITB-1 of the Invitation to Bid Form. Bids submitted without acknowledgement of receipt of this addendum may be considered nonconforming.**

**The following forms provided within the ITB Document must be included in submitted bids at bid opening.**

- **City of Ann Arbor Prevailing Wage Declaration of Compliance**
- **City of Ann Arbor Living Wage Ordinance Declaration of Compliance**
- **Vendor Conflict of Interest Disclosure Form**
- **City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance**

**Bids that fail to provide these completed forms listed above upon bid opening will be rejected as non-responsive and will not be considered for award.**

#### **I. CORRECTIONS/ADDITIONS/DELETIONS**

Changes to the Bid documents which are outlined below are referenced to a page or Section in which they appear conspicuously. The Bidder is to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

<b>Section/Page(s)</b>	<b>Change</b>
Plan Sheets	Replace with new plan set, Sheets 1-29, Labelled Addendum 1
Bid Form	Replace with new page BF-1 thru BF-5, Labelled Addendum 1
DS-1 to DS-3	Replace with new Detailed Specification for Project Schedule and Payment, Labelled Addendum 1
DS-29	Replace with new Detailed Specification for Manhole Tap, Labelled Addendum 1
DS-31	Replace with new Detailed Specification for Sewer Lead Connect, Labelled Addendum 1

<b>Section/Page(s)</b>	<b>Change</b>
DS-32 to DS-33	Replace with new Detailed Specification for Water Abandonment or Removal, Labelled Addendum 1
DS-53 to DS-57	Replace with new Detailed Specification for various Concrete Items, Labelled Addendum 1

## **II. QUESTIONS AND ANSWERS**

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the ITB. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

**Question 1:** The schedule requires paving final restoration immediately upon completion of the sanitary sewer. Will 30 day testing be waived?

**Answer 1:** The 30 day period will be waived. The contractor will be required to televise, air-test, and mandrel-test the sewer upon completion before connecting lateral leads.

**Question 2:** What testing will be required for the sanitary sewer?

**Answer 2:** Due to the constrained ROW limits and location of existing sewer, the Engineer will allow the contractor to connect sewer leads to the new sewer as construction proceeds where necessary. The contractor shall still coordinate and complete televising and mandrel test; although air-test will not be required at these locations.

**Question 3:** The water main completion is very tight with the additional coordination time required for City water services reconnections. Can the schedule be adjusted?

**Answer 3:** One week additional has been allowed for Brookwood, Sycamore and Horman in the revised Detailed Specification for Project Schedule and Payment.

**Question 4:** Can the bid be broken up by streets?

**Answer 4:** Recognizing that the pipe installation costs may vary between locations, the bid items for the water main and sewer pipe only are broken down by street. Other bid items are on a "project-wide" basis.

**Question 5:** Are there rim elevations and inverts for the 2' diameter structures that are shown on sheet 16, 24, 29?

**Answer 5:** The information has been added, and is included in the addendum.

**Question 6:** Is there a rim elevation and invert for the 48" dia. sanitary manhole on sheet 17?

**Answer 6:** Approximate elevations have been added. Exploratory excavation will be required to determine verify location and elevation.

**Question 7:** The plans shows to remove both basketball hoops. The spec book and pay item only calls for one basketball hoop to be removed. Is the intent to remove both basketball hoops or just the one?

**Answer 7:** The westerly pole assembly will need to be removed and replaced as it is within the influence of the sanitary sewer trench. The easterly assembly is to be left in place and protected. The plan notes have been revised accordingly.

**Question 8:** Where it is shown on the plans for road removal is the intent to dig down to new subgrade or are we just going to regrade the existing stone that is there that is not touched when the water main and sanitary sewer is installed?

**Answer 8:** The intent is to remove the road to the extent needed for the excavated trench, the estimated limits based on the proposed depth and location of the pipe is indicated on the plans. If the engineer directs additional pavement removal beyond the trench limits, the existing stone may be left in place, shaped, and proofrolled (Machine grading, modified).

**Question 9:** Where it is shown for full width HMA removal for Lafayette Rd and S. Forest Ave are we allowed to take the HMA out all at once or do we have to leave a lane of pavement for traffic?

**Answer 9:** The intent is to remove the pavement to the extent needed for the excavated trench. Pavement for traffic shall remain if it does not need to be removed.

**Question 10:** Will there be a pay item for the 48" diameter storm structures?

**Answer 10:** The Pay item has been added to the bid form.

Respondents are responsible for any conclusions that they may draw from the information contained in the Addendum.

# BID FORM

## Section 1–Schedule of Prices

Project: 2018 Water Main and Sanitary Sewer Projects

File #: 2017-033 Bid #: 4524

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
<b>GENERAL ITEMS</b>					
130	Protective Fencing	LF	600	\$ _____	\$ _____
135	Tree Removal (8" and Larger Trees)	Each	7	\$ _____	\$ _____
201	General Conditions, Max. \$40,000	LS	1	\$ _____	\$ _____
202	Project Supervision, Max. \$25,000	LS	1	\$ _____	\$ _____
203	Minor Traffic Devices, Max. \$15,000	LS	1	\$ _____	\$ _____
204	Digital Audio Visual Coverage	LS	1	\$ _____	\$ _____
205	Certified Payroll Compliance and Reporting	LS	1	\$ _____	\$ _____
206	"No Parking" Signs	Each	90	\$ _____	\$ _____
207	Type III Lighted Barricade, Furn. & Oper.	Each	50	\$ _____	\$ _____
208	Lighted, High Intensity, Channelizing Device, 42 inch Furn. & Oper.	Each	120	\$ _____	\$ _____
209	Plastic Drum - Lighted, Furn. and Oper.	Each	400	\$ _____	\$ _____
210	Temporary Type B Signs	SF	1,100	\$ _____	\$ _____
211	Sign, Portable, Changeable Message, Furn. and Oper.	Each	4	\$ _____	\$ _____
212	Sidewalk Barricade	Each	40	\$ _____	\$ _____
213	Clean-Up & Restoration, Special	LS	1	\$ _____	\$ _____
214	Basketball Pole Assembly	Each	1	\$ _____	\$ _____
702	Inlet Filter	Each	24	\$ _____	\$ _____
703	Silt Fence	LF	500	\$ _____	\$ _____
TOTAL THIS PAGE (BF-1)				\$ _____	_____

# BID FORM

## Section 1–Schedule of Prices

Project: 2018 Water Main and Sanitary Sewer Projects

File #: 2017-033 Bid #: 4524

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
<b>UTILITY GENERAL ITEMS</b>					
140	Exploratory Excavation (0-10' deep)	Each	4	\$ _____	\$ _____
144	Exploratory Excavation Add'l Depth	VF	32	\$ _____	\$ _____
220	Adjust Structure Cover, Modified	Each	15	\$ _____	\$ _____
391	Pipe Undercut and Refill (Class II)	CY	100	\$ _____	\$ _____
392	Pipe Undercut and Refill (6A)	CY	100	\$ _____	\$ _____
563	Structure Covers	Each	20	\$ _____	\$ _____
567	Adjust Monument Box or Gate Valve Box	Each	2	\$ _____	\$ _____
<b>SANITARY ITEMS</b>					
230-S	Existing Manhole Tap, 8 inch	Each	4	\$ _____	\$ _____
231	Sewer Lead, Video	Each	28	\$ _____	\$ _____
232	Sewer Lead, Connect	Each	28	\$ _____	\$ _____
305a	SDR 26 PVC Pipe, 8", Trench Detail II (Stone School)	LF	630	\$ _____	\$ _____
305b	SDR 26 PVC Pipe, 8", Trench Detail II (Packard)	LF	170	\$ _____	\$ _____
305c	SDR 26 PVC Pipe, 8", Trench Detail II (Lafayette)	LF	510	\$ _____	\$ _____
305d	SDR 26 PVC Pipe, 8", Trench Detail II (Forest)	LF	410	\$ _____	\$ _____
305e	SDR 26 PVC Pipe, 8", Trench Detail II (Horman)	LF	250	\$ _____	\$ _____
335	SDR 26 PVC Wye, 8" x 6"	Each	35	\$ _____	\$ _____
350	SDR 26 PVC Riser, 6"	VF	150	\$ _____	\$ _____
353	SDR 26 PVC Service Lead, 6", Trench Detail II	LF	927	\$ _____	\$ _____
360	Type I Manhole (0-10' deep)	Each	15	\$ _____	\$ _____
361	Type I Manhole Add'l Depth	VF	75	\$ _____	\$ _____
362	Type II Manhole - 6 foot diameter (0-10' deep)	Each	1	\$ _____	\$ _____
363	Type II Manhole - 6 foot diameter - Add'l Depth	VF	10	\$ _____	\$ _____
TOTAL THIS PAGE (BF-2)				\$ _____	\$ _____

# BID FORM

## Section 1–Schedule of Prices

Project: 2018 Water Main and Sanitary Sewer Projects

File #: 2017-033 Bid #: 4524

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
<b>SANITARY ITEMS (continued)</b>					
370	Drop Connection, 8 inch	VF	24	\$ _____	\$ _____
385-S	Sanitary Pipe Abandonment or Removal	LF	950	\$ _____	\$ _____
386-S	Sanitary Structure Abandonment or Removal	Each	6	\$ _____	\$ _____
<b>WATER MAIN ITEMS</b>					
240	Water Main Pipe Abandonment or Removal	LF	1,420	\$ _____	\$ _____
241	Fire Hydrant Assembly Abandonment or Removal	Each	1	\$ _____	\$ _____
242	6 inch Temporary Water Main Line Stop	Each	12	\$ _____	\$ _____
243	8 inch Temporary Water Main Line Stop	Each	2	\$ _____	\$ _____
400a	8 inch, Class 50 DIP w/polywrap, Trench Detail I (Brookwood)	LF	720	\$ _____	\$ _____
400b	8 inch, Class 50 DIP w/polywrap, Trench Detail I (Sycamore)	LF	470	\$ _____	\$ _____
400c	8 inch, Class 50 DIP w/polywrap, Trench Detail I (Horman)	LF	450	\$ _____	\$ _____
402	6 inch Class 50 DIP w/polywrap, Trench Detail I	LF	140	\$ _____	\$ _____
410	8" 90° Bend	Each	2	\$ _____	\$ _____
411	8" 45° Bend	Each	8	\$ _____	\$ _____
412	8" 22 1/2° Bend	Each	2	\$ _____	\$ _____
413	8" 11 1/4° Bend	Each	6	\$ _____	\$ _____
414	8" x 6" Reducer	Each	6	\$ _____	\$ _____
415	6" x 6" x 6" Tee	Each	7	\$ _____	\$ _____
416	8" x 8" x 8" Tee	Each	3	\$ _____	\$ _____
440	Fire Hydrant Assembly, including 8" x 6" reducer	Each	4	\$ _____	\$ _____
442	8" Gate Valve-in Box	Each	2	\$ _____	\$ _____
443	6" Gate Valve-in Box	Each	1	\$ _____	\$ _____
446	8" Gate Valve-in Well	Each	6	\$ _____	\$ _____
TOTAL THIS PAGE (BF-3)				\$ _____	\$ _____

# BID FORM

## Section 1–Schedule of Prices

Project: 2018 Water Main and Sanitary Sewer Projects

File #: 2017-033 Bid #: 4524

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
<b>WATER MAIN ITEMS (continued)</b>					
460	Excavate & Backfill for Water Service Tap and Lead	LF	1,000	\$ _____	\$ _____
482	Gate Valve in Box Abandonment or Removal	Each	4	\$ _____	\$ _____
483	Gate Valve in Well Abandonment or Removal	Each	1	\$ _____	\$ _____
<b>STORM SEWER ITEMS</b>					
230-R	Existing Manhole Tap, 12 inch	Each	1	\$ _____	\$ _____
324	12" CL IV RCP Storm Sewer Pipe, Trench Detail I	LF	250	\$ _____	\$ _____
360	Type I Manhole (0-10' deep)	Each	1	\$ _____	\$ _____
361	Type I Manhole Add'l Depth	LF	2	\$ _____	\$ _____
367a	Single Inlet (24" dia)	Each	4	\$ _____	\$ _____
367b	Single Inlet (36" dia)	Each	3	\$ _____	\$ _____
385-R	Storm Pipe Abandonment or Removal	LF	250	\$ _____	\$ _____
386-R	Storm Structure Abandonment or Removal	Each	4	\$ _____	\$ _____
<b>PAVING ITEMS</b>					
261	Pavt, Rem	SY	8,100	\$ _____	\$ _____
262	Remove Concrete Curb or Curb & Gutter, Any Type	LF	2,000	\$ _____	\$ _____
263	Remove Concrete Sidewalk, Ramp and Drives, Any Thickness	SF	3,900	\$ _____	\$ _____
264	Maintenance Gravel	Ton	100	\$ _____	\$ _____
265	Subgrade Undercutting and Backfill - Type II, Modified	CY	100	\$ _____	\$ _____
266	Aggregate Base, 21AA, 8 inch, CIP	SY	8,700	\$ _____	\$ _____
267	Machine Grading, Modified	Sta	37	\$ _____	\$ _____
270	HMA, 5E3 - Pavement Leveling and Top Course	Ton	15	\$ _____	\$ _____
271	HMA, 3C - Pavement Base Course	Ton	670	\$ _____	\$ _____
272	HMA, LVSP - Pavement Leveling Course	Ton	660	\$ _____	\$ _____
TOTAL THIS PAGE (BF-4)				\$ _____	_____

# BID FORM

## Section 1–Schedule of Prices

Project: 2018 Water Main and Sanitary Sewer Projects

File #: 2017-033 Bid #: 4524

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
<b>PAVING ITEMS (continued)</b>					
273	HMA, LVSP - Pavement Top Course	Ton	630	\$ _____	\$ _____
274	HMA, 36A - Pavement Top Course	Ton	25	\$ _____	\$ _____
279	Concrete Curb or Curb & Gutter, Modified, High Early (Horman Ct)	LF	770	\$ _____	\$ _____
280	Concrete Curb or Curb & Gutter, Any Type	LF	200	\$ _____	\$ _____
281	Concrete Curb or Curb & Gutter, Any Type - High Early	LF	1,000	\$ _____	\$ _____
282	4" Concrete Sidewalk	SF	800	\$ _____	\$ _____
283	6" Concrete Sidewalk, Ramp	SF	200	\$ _____	\$ _____
284	6" Concrete Sidewalk, Ramp, Drive Approach - High Early	SF	3,000	\$ _____	\$ _____
285	Concrete Type M Drive Opening - High Early	LF	100	\$ _____	\$ _____
286	Detectable Warning, Cast In Place	SF	40	\$ _____	\$ _____
591	Temporary Pavement Markings (Type R) 6" Black	LF	1,000	\$ _____	\$ _____
592	Temporary Pavement Markings (Type R) 4" Yellow	LF	1,000	\$ _____	\$ _____
593	Temporary Pavement Markings (Type R) 4" White	LF	1,000	\$ _____	\$ _____
594	Hot-Applied, Thermoplastic Pav't Marking, 4" White	LF	550	\$ _____	\$ _____
595	Hot-Applied, Thermoplastic Pav't Marking, 4" Yellow	LF	1,550	\$ _____	\$ _____
596	Hot-Applied, Thermoplastic Pav'e't Marking, 6" White	LF	250	\$ _____	\$ _____
597	Hot-Applied, Thermoplastic Pav'e't Marking, 24" White	LF	50	\$ _____	\$ _____
598	Hot-Applied, Thermoplastic Pav'e't Marking, 12" White	LF	80	\$ _____	\$ _____
TOTAL THIS PAGE (BF-5)				\$ _____	
TOTAL FROM PAGE BF-1:				\$ _____	
TOTAL FROM PAGE BF-2:				\$ _____	
TOTAL FROM PAGE BF-3:				\$ _____	
TOTAL FROM PAGE BF-4:				\$ _____	
<b>TOTAL BASE BID:</b>				<b>\$ _____</b>	



**DETAILED SPECIFICATION  
FOR  
PROJECT SCHEDULE AND PAYMENT**

**1 of 3**

**DESCRIPTION**

**Examination of Plans, Specifications, and Work Site:** Bidders shall carefully examine the Bid Form, plans, specifications and the work site until the Bidder is satisfied as to all local conditions affecting the contract and the detailed requirements of construction. The submission of the bid shall be considered prima facie evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and all requirements of the contract.

The entire work under this Contract shall be completed in accordance with, and subject to, the scheduling requirements as outlined below, and all other requirements of the Contract Documents.

1. The Contractor shall begin the work of this project on or before **May 29, 2018**, and only upon receipt of the fully executed Contract and Notice to Proceed. Appropriate time extensions shall be granted if the Notice to Proceed is delayed beyond this date.
2. This contract requires sanitary sewer and/or water main work at six separate locations, and shall be completed sequentially as listed below. With the exception of setting up/removing traffic control devices, **the contractor may not perform any construction activities at more than two locations at the same time.**
  - 1) Stone School Road – Work consists of the installation of new sanitary sewer and associated work. Utility construction, including all appurtenances, shall be completed within **twenty (20) consecutive calendar days** of the notice to proceed. The entire work at this location as required by this Contract, including the stabilization of all disturbed areas shall be completed within **thirty-four (34) consecutive calendar days** of the Notice to Proceed. The contractor shall coordinate its removal of traffic control devices with the installation of devices by City Resurfacing Program contractor such that the lane closures and detour remain in place through both projects.
  - 2) Brookwood Place – Work shall commence at this location on the calendar day immediately following completion of utility construction at the Stone School Road location. Utility construction, including all appurtenances, shall be completed within **twenty one (21) consecutive calendar days** after commencing with the work. The entire work at this location as required by this Contract, including the stabilization of all disturbed areas, and the removal of any and all traffic control devices shall be completed within **thirty five (35) consecutive calendar days** after commencing with the work.
  - 3) Packard Road – Work shall commence at this location on the calendar day immediately following completion of utility construction at the Brookwood Place location. Utility construction, including all appurtenances, shall be completed within **seven (7) consecutive calendar days** after commencing with the work. The entire work at this location as required by this Contract, including the stabilization of all disturbed areas, and the removal of any and all traffic control devices shall be completed within **twenty-eight (21) consecutive calendar days** after commencing with the work.
  - 4) Sycamore Place – Work shall commence at this location within seven (7) calendar days following completion of utility construction at the Packard Road location. Utility construction, including all appurtenances, shall be completed within **twenty one (21) consecutive calendar**

**DETAILED SPECIFICATION  
FOR  
PROJECT SCHEDULE AND PAYMENT**

**2 of 3**

**days** after commencing with the work. The entire work at this location as required by this Contract, including the stabilization of all disturbed areas, and the removal of any and all traffic control devices shall be completed within **thirty five (35) consecutive calendar days** after commencing with the work.

- 5) Lafayette Road – Work shall commence at this location on the calendar day immediately following completion of utility construction at the Sycamore Place location. Utility construction, including all appurtenances, shall be completed within **fourteen (14) consecutive calendar days** after commencing with the work. The entire work at this location as required by this Contract, including the stabilization of all disturbed areas, and the removal of any and all traffic control devices shall be completed within **twenty-eight (28) consecutive calendar days** after commencing with the work.
  
- 6) Horman Court – Work shall commence at this location on the calendar day immediately following completion of utility construction at the Lafayette Rd location. Utility construction, including all appurtenances, shall be completed within **thirty five (35) consecutive calendar days** after commencing with the work. The entire work at this location as required by this Contract, including the stabilization of all disturbed areas, and the removal of any and all traffic control devices shall be completed within **fifty six (56) consecutive calendar days** after commencing with the work.

The above described project schedule is shown on the following table:

Project Area	Start Date	Utilities Completed		Restoration Completed	
		Days	Date	Days	Date
Stone School	Tue, 05/29/18	20	Mon, 06/18/18	14	Mon, 07/02/18
Brookwood	Mon, 06/18/18	21	Mon, 07/09/18	14	Mon, 07/23/18
Packard (Hikone)	Mon, 07/09/18	7	Mon, 07/16/18	14	Mon, 07/30/18
Sycamore	Mon, 07/23/18	21	Mon, 08/13/18	14	Mon, 08/27/18
Lafayette	Mon, 08/13/18	14	Mon, 08/27/18	14	Mon, 09/10/18
Horman/Forest	Mon, 08/27/18	35	Mon, 10/01/18	21	Mon, 10/22/18

The Contractor is expected to be furnished with two (2) copies of the Contract, for his/her execution, on or before **April 9, 2018**. The Contractor shall properly execute both copies of the Contract and return them, with the required Bonds and Insurance Certificate, to the City within **ten (10) days**. The Contractor shall not begin the work before the applicable date(s) as describes herein without approval from the Project Engineer, and in no case before the receipt of the fully executed Contract. City Council approval is expected on **April 16, 2018**.

Time is of the essence in the performance of the work of this contract. The Contractor is expected to mobilize sufficient personnel and equipment and work throughout all authorized hours to complete the project by the final completion date. Should the Contractor demonstrate that they must work on some Sundays in order to maintain the project schedule, they may do so between the hours of 9:00 a.m. and 5:00 p.m. with prior approval from the City. There will be no additional compensation due to the Contractor for work performed on Sundays.

**DETAILED SPECIFICATION  
FOR  
PROJECT SCHEDULE AND PAYMENT**

**3 of 3**

Prior to the start of any construction, the Contractor shall submit a detailed schedule of work for the Engineer's review and approval. Work shall not be started until a schedule is approved in writing by the Engineer. The proposed schedule must fully comply with the scheduling requirements contained in this Detailed Specification. The Contractor shall update the approved work schedule upon request by the Engineer and present it to the Engineer within seven days of said request.

The Engineer may delay or stop the work due to threatening weather conditions. The Contractor shall not be compensated for unused materials or downtime due to rain, or the threat of rain. The Contractor is solely responsible for repairing all damages to the work and to the site, including road infrastructures, road subgrades, and any adjacent properties, which are caused as a result of working in the rain.

The Contractor shall not work in the dark except as approved by the Engineer and only when lighting for night work is provided as detailed elsewhere in this contract. The Engineer may stop the work, or may require the Contractor to defer certain work to another day, if, in the Engineer's opinion, the work cannot be completed within the remaining daylight hours, or if inadequate daylight is present to either properly perform or inspect the work. The Contractor will not be compensated for unused materials or downtime, when delays or work stoppages are directed by the Engineer for darkness and/or inadequate remaining daylight reasons. The Contractor is solely responsible for repairing all damages to the work and to the site, including road infrastructures, road subgrades, and any adjacent properties, which are caused as a result of working in the dark.

Failure to complete all work as specified herein within the times specified herein, including time extensions granted thereto as determined by the Engineer, shall entitle the City to deduct from the payments due the Contractor, **\$500.00** in Liquidated Damages, and not as a penalty, for delays in the completion of the work for each and every calendar day beyond the "Calendar Days to Complete" for each sub-phase, as required by this Detailed Specification.

Liquidated Damages will be assessed until the required work is completed in the current construction season. If, with the Engineer's approval, work is extended beyond seasonal limitations, the assessment of Liquidated Damages will be discontinued until the work is resumed in the following construction season.

**MEASUREMENT AND PAYMENT**

If the construction contract is not completed within the specified calendar day period including any extensions of time granted thereto, at the sole discretion of the City of Ann Arbor, this Contract may be terminated with no additional compensation due to the Contractor, and the Contractor may be forbidden to bid on future City of Ann Arbor projects for a period of at least three (3) years. If the Engineer elects to terminate the Contract, contract items paid for on a Lump Sum basis shall be paid up to a maximum percentage equal to the percentage of the contract work that has been completed.

Costs for the Contractor to organize, coordinate, and schedule all of the work of the project, will not be paid for separately, but shall be included in the bid price of the Contract Item "General Conditions, Maximum, \$\_\_\_\_"

**DETAILED SPECIFICATION  
FOR  
ITEM #230S –MANHOLE TAP, 8 INCH  
ITEM #230R –MANHOLE TAP, 12 INCH**

**1 of 1**

**DESCRIPTION**

This work shall include making a connection or tapping into an existing manhole as required by the Plans. All work shall be done in accordance with the City of Ann Arbor Public Services Department Standard Specifications, and as directed by the Engineer.

**CONSTRUCTION METHODS**

The Construction Methods shall meet all requirements of the City of Ann Arbor Standard Specifications.

Make connections to existing manholes in accordance with the plans. If tapping an existing manhole, cut an opening into the receiving structure at least equal to the outside diameter of the inlet pipe plus 6 inches and insert the pipe with an approved boot. . Pack a layer of mortar at least 3 inches thick around the inlet pipe and strike smooth with the inner wall of the receiving structure.

The Contractor shall take care not to cause undue damage to the existing manhole while coring the new opening. Repair or replacement of existing manhole(s) damaged by Contractor operations during tapping shall be at the Contractor’s expense and shall not be at any additional cost to the City.

**MEASUREMENT AND PAYMENT**

Completed work as measured for these items of work will be paid for at Contract Unit Price for the following Contract (Pay) Item:

<b><u>PAY ITEM</u></b>	<b><u>PAY UNIT</u></b>
Manhole Tap, 8 inch	Each
Manhole Tap, 12 inch	Each

**DETAILED SPECIFICATION  
FOR  
ITEM #232 – EXISTING SEWER LEAD, CONNECT**

**1 of 1**

**DESCRIPTION**

This work shall include locating, excavating, connecting existing sewer service leads to new service leads; and bulkheading and abandoning old lead to the sewer. The contractor shall locate an appropriate point of connection within the right of way for each sewer lead that minimizes disturbance to existing landscaping, pavement, and similar existing features, and protects the structural integrity of the existing leads.

**CONSTRUCTION METHODS**

The Construction Methods shall meet all requirements of the City of Ann Arbor Standard Specifications.

The contractor shall verify the existing lead diameter and material and install Fernco connection to the new sewer lead. The Contractor shall take care not to damage to the existing lead while making the connection. Repair or replacement of existing sewer lead damaged by Contractor operations shall be at the Contractor's expense and shall not be at any additional cost to the City.

**MEASUREMENT AND PAYMENT**

The completed work as measured for these items of work will be paid for at the Contract Unit Prices for the connection to existing sewer leads:

**PAY ITEM**

**PAY UNIT**

Existing Sewer Lead, Connect

Each

The work shall include all labor, equipment, and materials required for the excavation, connection, bulkhead/abandon and backfill of the sewer leads.

**DETAILED SPECIFICATION  
FOR  
ITEM #240 – WATER MAIN PIPE ABANDONMENT OR REMOVAL  
ITEM #241 – FIRE HYDRANT ASSEMBLY ABANDONMENT**

**DESCRIPTION**

This work shall include abandoning or removing existing water mains, valves, valve wells, valve boxes, and fire hydrant assemblies of various sizes as required by the Plans. All work shall be done in accordance with the City of Ann Arbor Public Services Department Standard Specifications, and as directed by the Engineer.

**MATERIALS**

All materials shall meet the requirements specified in Division 7 and 9 of the MDOT 2012 Standard Specifications for Construction as follows:

Mortar Type II	Section 702
MDOT Class II Sand	Section 902
Masonry Units	Section 913

Push-on joint plugs, caps, air relief assemblies (for grouting purposes), and thrust blocks shall conform to the City of Ann Arbor Standard Specifications.

**METHODS OF CONSTRUCTION**

The Construction Methods shall meet all requirements of the City of Ann Arbor Public Services Department Standard Specifications.

In locations as shown on the Plans or where abandoned water main, valves or valve wells are within 2.5 feet of the proposed subgrade, the pipe, valves or valve wells shall be removed completely. Water main in conflict with excavated trench or new pipes shall be removed completely. The resulting hole or trench shall be backfilled with Class II Sand, in maximum lifts of 12 inches, and be compacted to 95% of its maximum unit weight, if located within the influence paved surfaces or structures, or specified on the trench detail. Otherwise, backfill shall be Engineer approved native material, compacted to 90% of its maximum unit weight, in lifts of 12 inches or less, unless otherwise noted on the plans. Caps or plugs shall be installed in accordance with plans or as specified by Engineer.

For all water mains to be abandoned that are greater than 10 inches in diameter, the Contractor shall drain water from abandoned pipe to an adjacent storm sewer, fill the abandoned pipe with 400 psi (minimum) concrete grout, and backfill and compaction of the trench at all access points.

Abandoned (salvaged) valve operating nuts, fire hydrant assemblies and structure covers shall be delivered to the City of Ann Arbor Public Works Unit located at the W.R. Wheeler Service Center at 4251 Stone School Road, Ann Arbor, MI 48108 within two days of their removal. Valve boxes should be disposed of at the contractor's sole expense.

**MEASUREMENT AND PAYMENT**

The unit price for the pay "Water Main Pipe Abandonment" shall be paid for on a linear foot (LF) basis and includes all labor, material and equipment costs necessary to abandon or remove the pipe including, but not limited to, excavation, cutting of pipe, push-on joint plugs, caps and thrust blocks, brick and mortar bulkheads, grouting, the furnishing, placement, and compaction of approved granular backfill material, as required, and the removal and proper disposal off-site of excess materials. In addition, this pay item includes the removal and salvage of valves, valve boxes, and manhole rings and covers, the removal of the top 4 feet of valve wells, and breaking out the valve well base.

The unit price for the pay item "Fire Hydrant Assembly Abandonment," includes all labor, material and equipment costs associated with the complete removal of the existing fire hydrant assembly, as specified herein, including but not limited to, excavation MDOT CL II Backfill and compaction; pipe cutting; thrust block removal; pipe plug; thrust block; salvaging of fire hydrant, valve and valve box and delivery of fire hydrant, valve and valve box to the City of Ann Arbor Public Works Unit located at the W.R. Wheeler Service Center at 4251 Stone School Road, Ann Arbor, MI 48108.

**PAY ITEM**

Water Main Pipe Abandonment, Modified

Fire Hydrant Assembly Abandonment

**PAY UNIT**

LF

Each

**DETAILED SPECIFICATION  
FOR  
ITEM #279, #280, #281 – CONCRETE CURB OR CURB & GUTTER (specified type)  
ITEM #282 – 4 INCH CONCRETE SIDEWALK  
ITEM #283 – 6 INCH CONCRETE SIDEWALK OR RAMP  
ITEM #284 – 6 INCH CONCRETE SIDEWALK, RAMP, DRIVE APPROACH – HIGH EARLY  
ITEM #285 - CONCRETE TYPE M DRIVE OPENING - HIGH EARLY**

1 of 5

**DESCRIPTION**

This work shall consist of constructing concrete items including curb, gutter, curb and gutter, sidewalks, drive approaches, and drive openings, all of any type and/or dimensions, all of either regular, fibermesh reinforced, and/or high-early concrete, in accordance with Sections 801, 802, and 803 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, except as specified herein, as shown on the Plans, as described in this Detailed Specification, and as directed by the Engineer.

**The Contractor is responsible to construct all sidewalks, sidewalk ramps, curbs, and all other concrete items within ADAAG compliance.** All sidewalks and curb ramps must be constructed in accordance with MDOT Standard Plan R-28-J or version of standard plan/detail in place at time of the bid letting if different.

In addition, all concrete items of work shall comply with the Detailed Specifications for Concrete Durability and Concrete Placement and Protection.

**MATERIALS**

Concrete mixtures shall be as follows (or as directed by the Engineer), and concrete materials shall meet the requirements specified in the referenced sections of the MDOT Standard Specifications for Construction:

<u>Item Description</u>	<u>Concrete Mixture</u>	<u>MDOT Section</u>
All Items, Except High Early	P1, 6 sack	601
All High Early Items	P-NC, 7 sack	601

**CONSTRUCTION METHODS**

General

Curb, gutter, curb and gutter, sidewalk, sidewalk ramps, drive openings, and drives shall be replaced the same day they are removed.

Concrete items, including sidewalk, non-integral curb/gutter, drives, and structure adjustments shall be completed prior to the placement of pavement.

All subgrade work shall be completed prior to placing concrete items, unless directed or approved by the Engineer.

The subbase shall be trimmed to final elevation before placing curb. Curb shall not be placed on a pedestal or mound.



**DETAILED SPECIFICATION  
FOR  
ITEM #279, #280, #281 – CONCRETE CURB OR CURB & GUTTER (specified type)  
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ITEM #285 - CONCRETE TYPE M DRIVE OPENING - HIGH EARLY**

**2 of 5**

The Contractor shall excavate, cut, remove stumps, remove brush, remove pavement, grade, and trim as needed and as directed, and shall import, furnish, fill, place, grade, and compact Class II granular material and 21AA Aggregate material as needed to: construct new concrete items; to repair or replace existing concrete items; to relocate existing concrete items to their new specified/directed elevations/locations, including all necessary grading at elevation changes of curb and gutter, sidewalks and ramps; and at locations where existing concrete items are to be removed and turf is to be established in its place.

At locations where the subgrade, subbase or base becomes either disturbed, saturated or otherwise damaged, and where directed by the Engineer, the Contractor shall remove a minimum 6-inch thick layer of the subgrade, subbase or base, and replace it with approved 21AA Aggregate material, compacted in place.

**The Contractor shall coordinate with the City Forester prior to the removal of any tree roots.**

The Contractor is responsible for any damage to concrete items, including but not limited to vandalism; vehicular, pedestrian and/or miscellaneous structural damage; surface texture damage; and rain damage.

The Contractor shall maintain on-site at all times, a sufficient quantity of adequate materials to protect concrete items. The Engineer may suspend or defer concrete placement if rain protection is not available. The Contractor shall not be entitled to any additional compensation due to work suspension or deferral resulting from a lack of adequate rain protection.

The Contractor shall perform full-depth saw cutting at removal limits, including those necessary to construct 2-foot wide Type M drive openings, and including those necessary to provide for the partial removal of existing drive approaches, as shown on the Plans, as directed by the Engineer, and as marked for removal.

The subbase and adjacent concrete shall be sufficiently wet-down with water prior to placing concrete, to prevent water loss from the new concrete, and to form a better bond between old and new concrete. If a cold-joint becomes necessary, the existing concrete surface(s) shall be cleaned with compressed air to expose the aggregate in the concrete.

Where it is necessary to remove existing pavement to provide space for concrete formwork, a sufficient amount of the existing pavement shall be removed to allow for the use of a vibratory plate compactor in front of the curb.

Where concrete items are placed in areas adjacent to existing pavement that is beyond the general resurfacing (pavement removal and/or milling) limits, the adjacent pavement area shall be backfilled and permanently patched within 48-hours of the removal of concrete formwork. The backfill material shall be

MDOT 21AA aggregate compacted in place to 95%, up to the elevation of the proposed bottom of pavement. The pavement patching material(s) shall be as specified and as directed by the Engineer.

**DETAILED SPECIFICATION  
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ITEM #285 - CONCRETE TYPE M DRIVE OPENING - HIGH EARLY**

**3 of 5**

Where concrete items are placed adjacent to existing pavement that is within areas scheduled for subsequent pavement removal and/or milling, the adjacent pavement area shall, within 48-hours of the removal of concrete formwork, be backfilled with MDOT 21AA aggregate compacted in place to 95% up to the elevation of the bottom of the adjacent pavement.

Prior to compacting backfill in front of curb and gutter, the back of curb shall be backfilled with approved material and compacted by mechanical means to 95%.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The Contractor shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

Restoration

The Contractor shall restore all disturbed areas to better than or equal to their original condition within two calendar days from the date of concrete placement. This includes the placement and compaction of 2.5 inches of topsoil, followed by the placement of grass seed, followed by the placement of 0.5 inches of topsoil, at all turf restoration locations, and at locations where concrete items are removed and turf is to be established. Restoration shall also include the replacement of any brickwork, decorative stone, or other adjacent materials. All restoration work and materials shall be in accordance with the City of Ann Arbor Standard Specifications for Construction.

Contraction Joints in Sidewalk

Contraction joints shall be placed at 5-foot intervals and may be tooled or sawed. The method of forming joints and spacing shall be approved by the Engineer prior to construction.

Expansion Joints in Sidewalks

¾-inch wide expansion joints shall be placed through concrete sidewalks in line with the extension of all property lines, at all expansion joints in the abutting curb, gutter, and combination curb and gutter, and as directed by the Engineer. Transverse expansion joints shall be placed through the sidewalks at uniform intervals of not more than 300-feet.

½-inch wide expansion joints shall be placed between the sidewalk and back of abutting curb or gutter, at the juncture of two sidewalks, between the sidewalk and buildings and other rigid structures, and as directed by the Engineer.

Expansion Joints in Curb and Gutter

¾-inch wide expansion joints shall be placed at all street returns, at all expansion joints in an abutting pavement, at each side of all driveways (at radius points), elsewhere at 300-foot maximum intervals, and as directed by the Engineer.

Expansion joint material shall extend to the full depth of the joint. After installation, the top shall not be above the concrete nor be more than ½-inch below it. No reinforcing steel shall extend through expansion joints.

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**4 of 5**

Plane of Weakness Joints in Curb and Gutter

Intermediate plane of weakness joints shall be placed to divide the structure into uniform sections, normally 10-feet in length, with a minimum being 8-feet in length, and shall be placed opposite all plane of weakness joints in the abutting concrete base course.

Plane of weakness joints shall be formed by narrow divider plates, which shall extend 3-inches into the exposed surfaces of the curb or curb and gutter. Plates shall be notched, if necessary, to permit the steel reinforcement to be continuous through the joint.

**MEASUREMENT AND PAYMENT**

The work of furnishing and installing mechanical anchors and hook bolts will be measured and paid for by the number of hook bolts installed.

All concrete pavement repair, including that which is installed with integral curb and gutter, will be measured and paid for by the area actually placed in square yards (SY).

No additional compensation will be paid for the construction of concrete items adjacent to existing concrete curb, gutter, pavement, or any other pavement or surface feature(s).

No additional compensation will be paid for the removal of a 6-inch thick layer of the subgrade, subbase or base, and replacement with approved 21AA aggregate material, compacted in place.

A deduction in length for catch basins and inlet castings will be made to measurements of Curb and Gutter.

Curb, gutter, and curb and gutter shall be paid as "Concrete Curb or Curb & Gutter – Any Type, Modified".

Restoration work, including backfilling, compacting, HMA patching adjacent to concrete items, topsoiling and seeding will not be paid for separately, but shall be included in the appropriate associated items of work.

Payment for saw cutting for Type M openings and for partial removal of existing drives shall be included in the price for the item of work, "Remove Concrete Sidewalk, Ramp and Drives - Any Thickness, Modified", and will not be paid for separately.

Payment for the removal of HMA pavement and aggregate base to provide space for concrete formwork and vibratory plate compactor shall be included in the price for the item of work, "Remove Concrete Curb or Curb and Gutter - Any Type, Modified", and will not be paid for separately.

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**5 of 5**

Completed work as measured for these items of work will be paid for at Contract Unit Prices for the following Contract (Pay) Items:

<b><u>PAY ITEMS</u></b>	<b><u>PAY UNIT</u></b>
Concrete Curb or Curb & Gutter (specified type)	Linear Foot
4” or 6” Concrete Sidewalk, Ramp, or Drive Approach (as specified)	Square Foot
Concrete Type M Drive Opening, High Early	Linear Foot

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.

## PREBID MEETING SIGN-IN SHEET

**PROJECT: 2018 Water Main and Sanitary Sewer Projects  
ITB #4524  
Thursday, March 15, 2018**

PLEASE PRINT

NAME	REPRESENTING	MAILING ADDRESS	TELEPHONE	EMAIL
Brian Slizewski	City of Ann Arbor - Engineering	Address: 301 E. Huron Street, P.O. Box 8647 City, State: Ann Arbor, MI Zip: 48107-8647	Office: (734) 794-6410, x43607 Cell: (734) 231-6376	<a href="mailto:bslizewski@a2gov.org">bslizewski@a2gov.org</a>
Jordan Bidigare	Bidigare Contractors	Address: 939 S Mill St City, State: Plymouth, MI Zip: 48170	Office: 248-735-1113 Cell: 734-476-4461	<a href="mailto:jordan@bidigarecontractors.com">jordan@bidigarecontractors.com</a>
Jacob Bailey	Bailey Excavating	Address: 1073 Toro Dr City, State: Jackson MI Zip: 49201	Office: 517-750-3030 Cell: 517-740-0371	JacobBailey@Bailey-Excavating.com
Ron Magee	Fonson Co.	Address: 7644 Whitmore Lk City, State: Brighton MI Zip: 48116	Office: 810 231-5158 Cell: 810 620-3324	rmagee@FonsonInc.com
DUSTON KUPKE	E.R. MACKENZIE COMPANY	Address: 6400 JACKSON Rd City, State: Ann Arbor MI Zip: 48103	Office: 734-761-5050 Cell: 517-499-6248	<a href="mailto:dk.kupke@mackenzieco.com">dk.kupke@mackenzieco.com</a>
Michael Haussler	Douglas M. Higgins Inc	Address: 3390 Trans Pkwy Rd City, State: Ann Arbor Zip: 48108	Office: 734-996-9500 Cell: 734-260-1732	<a href="mailto:mikeh@dnhiggins.com">mikeh@dnhiggins.com</a>
Steve McIntosh	Main Street Contractors	Address: 35915 CLINTON City, State: WAGNER MI Zip: 48184	Office: 734-589-8630 Cell: 734-223-6994	<a href="mailto:steve.mcintosh@mainstreetco.com">steve.mcintosh@mainstreetco.com</a>
Jess James	UNIVERSAL CONSOLIDATED INT	Address: 17625 E. TEN MILE City, State: ROSEVILLE MI Zip: 48069	Office: Cell: 586-248-2250	UNIVERSAL CONSOLIDATED @COMCAST.NET

**PREBID MEETING SIGN-IN SHEET**

**PROJECT: 2018 Water Main and Sanitary Sewer Projects  
ITB #4524  
Thursday, March 15, 2018**

**MEETING SIGN-IN SHEET      PLEASE PRINT**

NAME	REPRESENTING	MAILING ADDRESS		TELEPHONE	EMAIL
LYNN L. HARMALA	LAURENCE H. CLARKE	Address: 60850 BENIS ROAD		Office: 734-481-1565	lharmala@lmclarke.com
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Karen Bityk	City of Ann Arbor	Address:	Office:	kbityk@a2gov.org	
		City, State:	Zip:		Cell:
Chris Carson	"	Address:	Office:	ccarson@a2gov.org	
		City, State:	Zip:		Cell:
		Address:	Office:		
		City, State:	Zip:	Cell:	
		Address:	Office:		
		City, State:	Zip:	Cell:	
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		City, State:	Zip:	Cell:	
		Address:	Office:		
		City, State:	Zip:	Cell:	

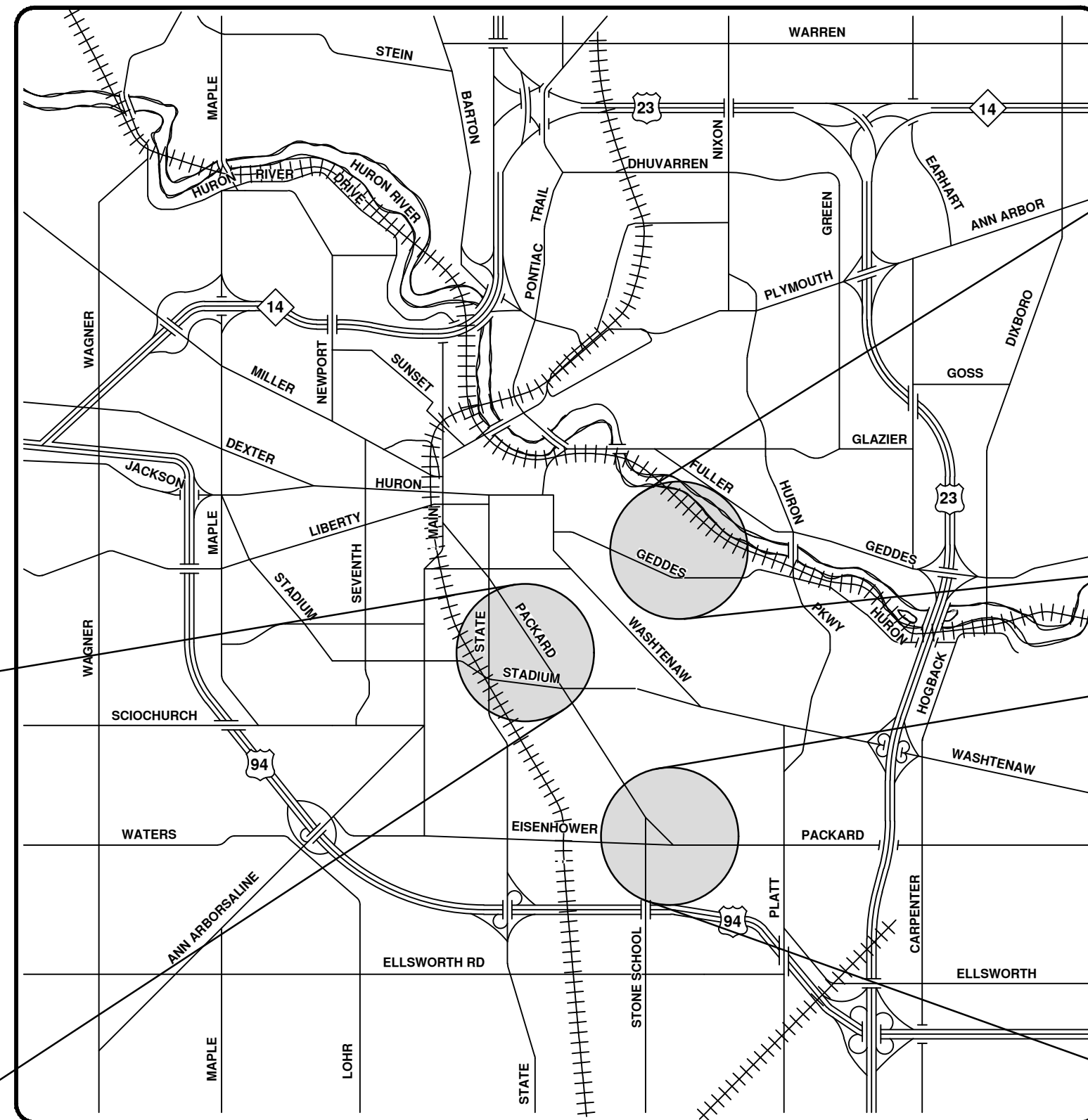
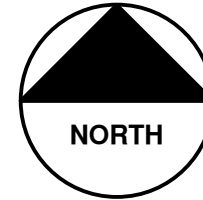


# CITY OF ANN ARBOR ENGINEERING

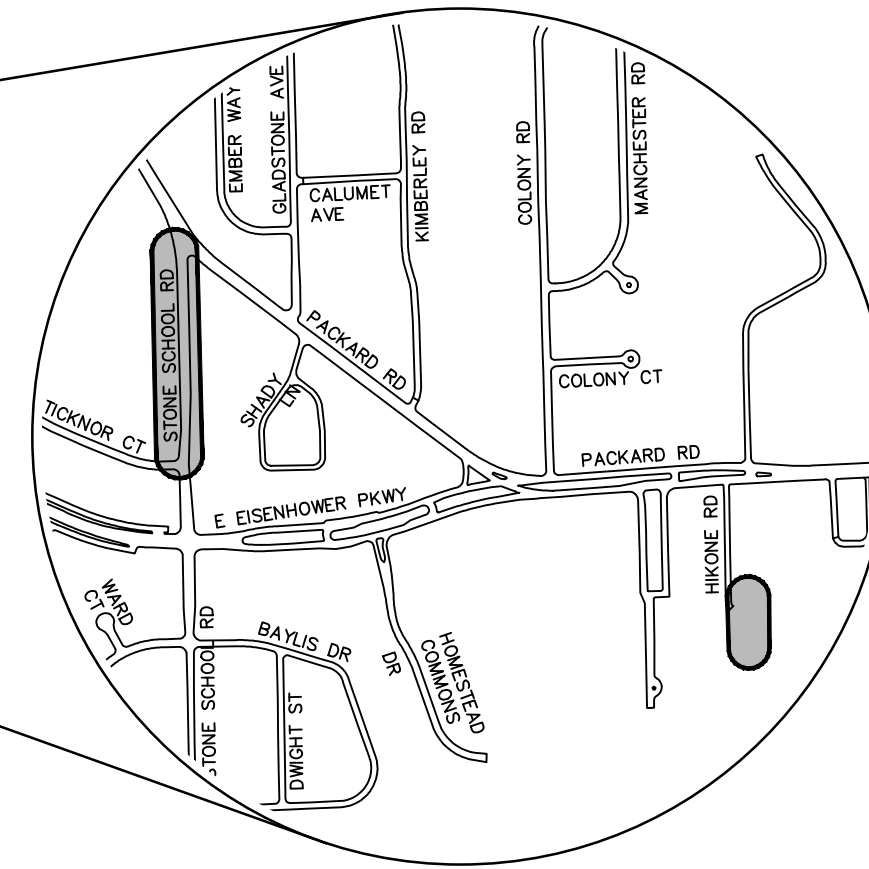
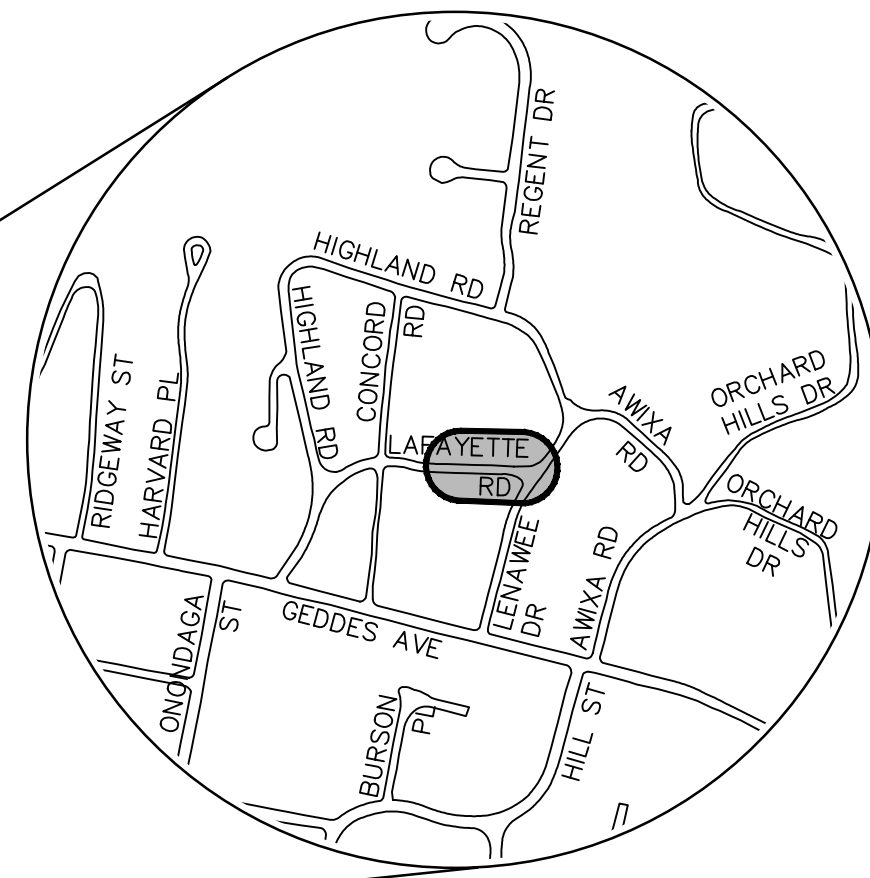
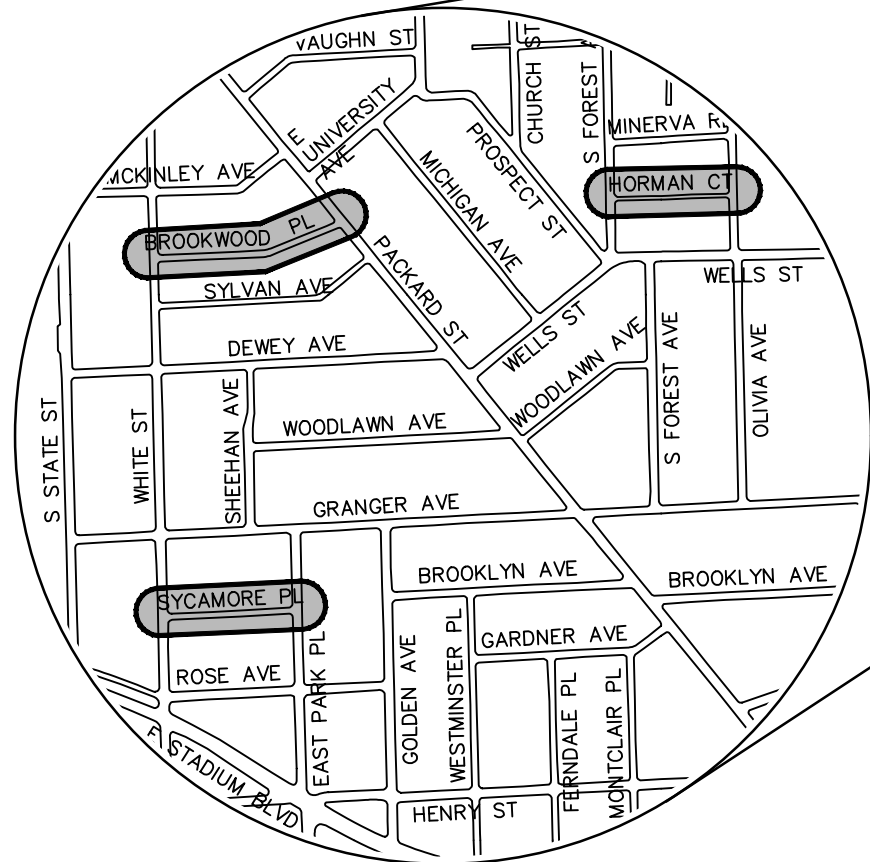
## 2018 MISC UTILITY PROJECTS

BID No. 4524, FILE No. 2017033

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2	STANDARD NOTES
3	LEGEND
4	TYPICAL SECTIONS AND TRENCH DETAILS
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5	DETOUR PLAN
6	TRAFFIC CONTROL - STAGE I
7	TRAFFIC CONTROL - STAGE II
8	REMOVALS
9 - 10	SANITARY SEWER PLAN AND PROFILE
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11	TRAFFIC CONTROL - STAGE I
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VICINITY MAP



### NOTES

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, THE CONTRACTOR SHALL CALL 811 OR 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 1994 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS, ITS DETAILS, WHICH ARE INCLUDED BY REFERENCE, AND THIS PROJECT'S CONTRACT DOCUMENTS. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT.



REV.	DATE	DESCRIPTION
01	03/23/18	ADDENDUM #1
00	03/07/18	ISSUED FOR BID
		CHECKED
		DRAWN
		CEC
		BS

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-8647  
www.a2gov.org



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2018 WATER MAIN AND SANITARY SEWER PROJECTS

SCALE  
DRAWING No. 2017033-1  
SHEET No. 1 OF 29

PREPARED UNDER THE SUPERVISION OF  
  
BRIAN SLIZEWSKI, P.E. - MI LICENSE No. 35654  
PROJECT MANAGER  
3/23/2018  
DATE



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**CONSTRUCTION NOTES:**

- Driveways and entrances to buildings, real property, and the like shall not be blocked except for short durations and only when approved by the Engineer. Vehicular and pedestrian access shall be maintained at all times. It shall be the Contractor's responsibility to coordinate all necessary driveway closures with the property owner(s) and resident(s) in the areas of construction.
- The location and depth of all existing utilities and service leads are to be field verified by the Contractor prior to construction.
- Location and depth of utilities as depicted on the plans is approximate and shown according to the best information available. It is the Contractor's responsibility to excavate ahead and adjust depth of conflict utilities accordingly. Any damage to utilities is the Contractor's responsibility to avoid and/or repair as necessary.
- The Contractor is to take special care to protect the existing water main and be responsible for maintaining consistent water service.
- During non-working hours no trench shall remain open; any open trench shall be properly secured with protective fencing. This work shall be included in the item of work "General Conditions".
- Trenches for new water services shall be excavated to MIOSHA and City of Ann Arbor Public Works requirements.
- City of Ann Arbor Public Works will install the corporation and copper service lead(s) to transfer the connection(s). If an existing water service is found to be failing or is not copper, the lead will be replaced to the curb box by Public Works.
- For the installation of corporations, or any other related activities, the Contractor shall not receive additional compensation for delays due to the scheduling of or coordination with the City of Ann Arbor Public Works.
- The Contractor shall backfill trenches in accordance with Trench Detail specified on plans. This work shall be included in the item of work "Excavate and Backfill for Water Service Tap and Lead". All concrete removals and replacements required for this work will be paid for separately.
- All ductile iron pipe and fittings shall be polyethylene wrapped per ANSI/AWWA C105/A21.5.
- Cor-blu bolts to be used at all mechanical water main joints at hydrants and Megalug fittings
- The Contractor shall construct, flush, and bacteriologically test the water main per Detailed Specification "Water Main Installation and Testing" and as approved by the Engineer. All chlorinated water shall be discharged directly into an approved sanitary sewer. The Contractor shall supply all necessary hoses, fittings and the like to accomplish this work.
- Water main fittings, other than those specifically listed as separate pay items, which are required to complete the work, such as blow-off assemblies, concrete thrust blocks, solid sleeves and mechanical plugs, shall not be paid for separately, but shall be included in the pipe pay items.
- "No Parking" signs shall be installed by the Contractor at locations as approved or directed by the Engineer. All signs shall be installed in accordance with the detailed specifications.
- Postal delivery and refuse pickup service shall be maintained at all times by the Contractor.
- All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. The Contractor within 48 hours shall deliver to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- Where street curbs are undermined due to construction activities, they shall be removed and replaced as directed by the Engineer.
- The Contractor shall be responsible for the continuous maintenance of the temporary road surface and soil erosion control measures within the construction area until the full completion of the project. This work shall be included in the item of work "General Conditions".
- All curb, sidewalk, driveway approach removals shall be approved by Engineer before the work is done.
- Sawed sewer pipe connections shall be coupled with a Ferroc flexible coupling and a stainless steel shear ring.
- The location of material stock piles and on-site staging areas to be approved by the Engineer.
- All structures shall receive new castings as directed by the Engineer, as specified on the standard casting schedule. The existing castings are the property of the City of Ann Arbor. The Contractor shall deliver to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- Payment for drainage structure sumps, where specified, shall be included in the payment for the various drainage structure sizes and or types.
- Where sewer and water main are to be removed & replaced or added, all pipe shall be installed using Trench Detail detailed in the specifications or shown on Plans. Backfill for sewer and water construction shall be MDOT Granular Material, Class II, Modified.

**GENERAL**

NOTIFY THE CITY OF ANN ARBOR SOIL EROSION CONTROL OFFICE 48 HOURS PRIOR TO BEGINNING WORK ON THE PROJECT. PHONE: 734-794-6265.

- THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER AT ALL TIMES DURING CONSTRUCTION. ANY MODIFICATIONS OR ADDITIONS TO THE SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE AS DIRECTED AND APPROVED BY THE ENGINEER.
- ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE CITY OF ANN ARBOR, CITY ORDINANCE CHAPTER 63, CITY OF ANN ARBOR STANDARDS DIVISION VII, THE LAWS OF THE STATE OF MICHIGAN, AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- DAILY, OR AFTER ANY STORM EVENT, INSPECTIONS OF EROSION CONTROL MEASURES SHALL BE MADE BY THE CONTRACTOR. PERIODIC INSPECTIONS MAY BE MADE BY THE ENGINEER TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES. ANY NECESSARY CORRECTIONS SHALL BE MADE WITHOUT DELAY, AND WITHOUT ADDITIONAL COST TO THE CITY OF ANN ARBOR.
- EROSION AND SEDIMENTATION FROM WORK ON THE SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS, ROADWAYS OR WATERWAYS.
- ALL MUD/SOIL TRACKED ONTO ROADWAYS FROM THE SITE DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR. IF SO ORDERED, THE CONTRACTOR SHALL PROVIDE AND OPERATE A VACUUM-TYPE STREET SWEEPER, AT NO ADDITIONAL COST TO THE CITY OF ANN ARBOR, WITHIN FOUR (4) HOURS OF BEING SO ORDERED.
- RESTORATION OF ALL DISTURBED AREAS, INCLUDING PLACEMENT OF TOPSOIL, SEED, FERTILIZER AND MULCH AND/OR SOD SHALL BE PERFORMED WITHIN FIVE (5) DAYS OF THE COMPLETION OF FINAL GRADE.
- CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
- SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
- PROPER DUST CONTROL SHALL BE MAINTAINED DURING CONSTRUCTION BY USE OF WATER TRUCKS AND/OR DUST PALLIATIVE AS REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME MEASURES UPON AUTHORIZED COMPLETION OF THE PROJECT. FINAL COMPLETION OF PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.
- THE CONTRACTOR SHALL NOT GRADE INTO ADJACENT PROPERTIES. SILT AND PROTECTIVE FENCE SHALL BE INSTALLED AND MAINTAINED TO PREVENT GRADING, EROSION AND SEDIMENTATION INTO THE ADJACENT PROPERTIES.
- TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.

**SEQUENCE OF EROSION CONTROL MEASURES:**

- THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER, A SEQUENCE OF CONSTRUCTION WITH RESPECT TO THE SOIL EROSION CONTROL MEASURES FOR REVIEW, COMMENT AND APPROVAL. THIS SCHEDULE IS TO INCLUDE INSPECTION AND REPAIR OF ALL TEMPORARY EROSION CONTROL MEASURES DAILY AND WITHIN 24 HOURS OF A STORM EVENT.

**SAMPLE SOIL EROSION AND SEDIMENTATION CONTROL INSTALLATION MINIMUM REQUIREMENTS:**

- INSTALL SILT FENCE, TREE PROTECTION FENCING, MUD MATS, INLET FILTERS ON EXISTING DRAINAGE FEATURES, AND ALL OTHER TEMPORARY SOIL EROSION CONTROLS, PRIOR TO ANY CLEARING OR EARTH MOVING OPERATION.
- STRIP AND STOCKPILE TOPSOIL. STABILIZE STOCKPILE AS REQUIRED.
- INSTALL WATER MAINS, STORM AND SANITARY SEWERS, AND OTHER ENCLOSED DRAINAGE FEATURES. NEW INLET FILTERS SHALL BE INSTALLED IMMEDIATELY FOLLOWING INSTALLATION OF NEW DRAINAGE INLETS.
- PERFORM MACHINE GRADING OPERATIONS AND CONSTRUCT PAVEMENTS (MAINLINE, SIDEWALKS, DRIVES, ETC.).
- CONTINUALLY MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES, AS REQUIRED TO ALLOW DRAINAGE AND SEDIMENT REMOVAL. REMOVE ANY ACCUMULATED SEDIMENT IMMEDIATELY.
- COMPLETE ALL FINE GRADING.
- TEMPORARY SEED AND INSTALL EROSION CONTROL BLANKET IN ALL DISTURBED AREAS.
- REFER TO LANDSCAPE PLANTING PLANS, IF PROVIDED, FOR PERMANENT SITE STABILIZATION.
- CLEAN OUT STORM SEWER SYSTEMS.
- REMEDY ANY NOTED DEFECTS TO THE SATISFACTION OF THE CITY OF ANN ARBOR'S SOIL EROSION AND SEDIMENTATION CONTROL OFFICIAL.
- ALL TEMP. SOIL EROSION CONTROL MEASURES MUST BE REMOVED, WITH ENGINEERS APPROVAL, PRIOR TO FINAL INSPECTION

NOTE: THIS SEQUENCE IS FOR INFORMATION ONLY. IT IS INTENDED TO SHOW THE SEQUENCE OF CONSTRUCTION WITH RESPECT TO THE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THEIR OWN DETAILED CONSTRUCTION SEQUENCE AND SCHEDULE TO THE ENGINEER FOR REVIEW, COMMENT, AND APPROVAL.

**TEMPORARY SEEDING:**

- SEED IN ACCORDANCE WITH PROJECT DRAWINGS AND SPECIFICATIONS.
- ANY DISTURBED AREA NOT PAVED, SEEDED, MULCHED, SODDED OR BUILT UPON BY NOVEMBER 15TH OR JUNE 30TH IS TO BE TEMPORARILY STABILIZED PER SPECIFICATIONS.

THE ESTIMATED COST OF SOIL EROSION AND SEDIMENTATION CONTROL MEASURES, TOPSOIL, SEEDING, AND MULCH = \$xxx,xxx

ESTIMATE OF EXCAVATION AND FILL FROM EXISTING TO FINAL GRADE:  
 • EXCAVATION = XXX CY, FILL = XXX CY

ON SITE SOILS PER THE USDA SOIL SURVEY OF WASHTENAW COUNTY, MICHIGAN:

**STONE SCHOOL ROAD**

- BnB - BOYER LOAM, 0 TO 6 PERCENT SLOPES - THIS SOIL IS ON BROAD UPLANDS, AND ON OUTWASH PLAINS, KAMES, VALLEY TRAINS, TERRACES, AND MORAINES. SLOPES ARE UNIFORM IN THE UPLANDS AND ARE SHORT AND COMPLEX IN OTHER AREAS.

**LAFAYETTE ROAD**

- MmC - MIAMI LOAM, 6 TO 12 PERCENT SLOPES - THIS SOIL IS IN BROAD AREAS AND ALONG STREAMS AND DRAINAGEWAYS OF TILL PLAINS AND MORAINES. SLOPES IN THE BROAD AREAS ARE SHORT AND COMPLEX.
- MmD - MIAMI LOAM, 12 TO 18 PERCENT SLOPES - THIS SOIL IS IN BROAD AREAS AND ALONG STREAMS AND DRAINAGEWAYS OF TILL PLAINS AND MORAINES. SLOPES IN THE BROAD AREAS ARE SHORT AND COMPLEX.

**BROOKWOOD PLACE, SYCAMORE PLACE, HORMAN COURT**

- FoA - FOX SANDY LOAM, 0 TO 2 PERCENT SLOPES - THIS SOIL IS IN BROAD UPLAND AREAS OF OUTWASH PLAINS, KAMES, VALLEY TRAINS, TERRACES, AND MORAINES.

**PACKARD ROAD**

- WaA - WASEPI SANDY LOAM, 0 TO 4 PERCENT SLOPES - THIS SOIL IS IN DEPRESSIONAL AREAS, ON BROAD LOW-LYING AREAS, AND ALONG DRAINAGEWAYS OF OUTWASH PLAINS, VALLEY TRAINS, AND LAKE PLAINS.

IMPERVIOUS PROJECT AREA	
PRIOR TO CONSTRUCTION = x.xx ACRES	POST CONSTRUCTION = x.xx ACRES
AREA OF PROPOSED DISTURBANCE = x.xx ACRES	

**PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION.**

PERMIT	ISSUING AUTHORITY
LANE CLOSURE PERMIT*	CITY OF ANN ARBOR ENGINEERING
"NO PARKING" SIGNS PERMIT*	CITY OF ANN ARBOR ENGINEERING
GRADING/SOIL EROSION & SEDIMENTATION CONTROL PERMIT*	CITY OF ANN ARBOR CUSTOMER SERVICE
RIGHT-OF-WAY PERMIT*	CITY OF ANN ARBOR CUSTOMER SERVICE
* NO COST TO CONTRACTOR	

**PERMITS REQUIRED TO BE OBTAINED BY THE CITY OF ANN ARBOR PRIOR TO THE BEGINNING OF CONSTRUCTION.**

PERMIT	ISSUING AUTHORITY
M.D.E.Q. WATER MAIN CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
M.D.E.Q. SANITARY SEWER CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

**CONTACT INFORMATION**

PUBLIC UTILITIES	OWNER	CONTACT
WATER		
SANITARY		
STORM	CITY OF ANN ARBOR PUBLIC WORKS W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	(734) 794-6350
FORESTRY		
SIGNS SIGNALS STREET LIGHTS		(734) 794-6361
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 3150 E. MICHIGAN AVE, YPSILANTI TOWNSHIP, MI 48198	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	CLAY COMBEE (734) 397-4112
CABLE	COMCAST 27800 FRANKLIN ROAD SOUTHFIELD, MI 48034	RON SUTHERLAND (313) 999-8300
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	(734) 996-2135
FIBER OPTIC	MCI 2800 N. GLENFILLE ROAD RICHARDSON, TX 75082	DEAN BOYERS (972) 729-6016



BS	BS	CEC	CEC	DRAWN
03/23/18	03/07/18	DATE		
01	00	ISSUED FOR BID		REV.

CITY OF ANN ARBOR  
 PUBLIC SERVICES  
 301 EAST HURON STREET  
 P.O. BOX 8640  
 ANN ARBOR, MI 48108-8640  
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
 2018 MISC UTILITY PROJECTS  
 STANDARD NOTES  
 SHEET No. 2 OF 29  
 SCALE: NTS  
 DRAWING No. 2017033-2



HORMAN COURT BENCHMARKS		
BM #	ELEV	DESCRIPTION
1	857.070	RR SPIKE N.E. SIDE OF L.P. AT CORNER OF OLIVIA AND MINERVA
3	854.830	RR SPIKE E. SIDE OF P.P. W. SIDE OF S. FOREST AVE. AT INTERSECTION OF MINERVA AND FOREST
4	854.740	RR SPIKE W. SIDE OF L.P. AT HSE # 1115 E. SIDE OF FOREST AVE.
5	855.160	TOP OF FIRE HYDRANT ON EAST SIDE OF FOREST AVE BETWEEN HSE # 1031 AND 1027.
6	853.250	RR SPIKE ON E. SIDE OF L.P. ON W. SIDE OF S. FOREST AVE. AT INTERSECTION OF S. FOREST AND ROOSEVELT
7	857.700	RR SPIKE ON E. SIDE OF P.P. ON W. SIDE OF FOREST AVE. AT HSE # 1142 S. PROP. LINE
8	856.840	RR SPIKE ON E. SIDE OF P.P. ON W. SIDE OF FOREST AVE. AT INTERSECTION OF S. FOREST AND WELLS ST.
9	852.150	RR SPIKE ON N. SIDE OF P.P. AT S.W. CORNER OF INTERSECTION OF OLIVIA AVE. AND WELLS ST.
11	853.830	N. RIM OF SEWER M.H. ON CENTERLINE OF HORMAN CT. @ HSE NO. 1303 / 1304 BK 1121 P 6
12	855.286	RR SPIKE ON S. SIDE OF L.P. ON N. SIDE OF HORMAN CT. BETWEEN HSE NO. 1301 / 1303

BROOKWOOD PLACE BENCHMARKS		
BM #	ELEV	DESCRIPTION
1	830.870	RR SPIKE ON N.W. SIDE OF P.P. AT S.E. CORNER OF BROOKWOOD PL. AND WHITE ST. BK 1121 P 10
2	832.960	MAG NAIL ON N. SIDE OF P.P. ON S. SIDE OF BROOKWOOD PL. BETWEEN HSE. #828 AND #822
3	836.630	RR SPIKE ON N'LY SIDE OF P.P. ON THE S. SIDE OF BROOKWOOD PL. AT HSE # 848
4	838.910	RR SPIKE ON E. SIDE OF L.P. AT THE N.W. CORNER OF PACKARD ST. AND BROOKWOOD PL.

STONE SCHOOL ROAD BENCHMARKS		
BM #	ELEV	DESCRIPTION
1	847.482	TOP WEST SIDE OF CONC. BASE FOR PEDESTRIAN POLE AT SE CORNER OF PACKARD AND STONE SCHOOL ROAD.
2	844.702	FOUND BOAT SPIKE IN WEST SIDE OF UTILITY POLE ON EAST SIDE OF STONE SCHOOL ROAD AT SOUTH DRIVE FOR HOUSE NO. 2861.
3	837.912	SET RR SPIKE IN EAST SIDE OF UTILITY POLE ON WEST SIDE OF STONE SCHOOL ROAD, ACROSS THE STREET FROM HOUSE NO. 2907.
4	828.445	SET RR SPIKE IN EAST SIDE OF UTILITY POLE AT NORTH WEST CORNER OF TICKNOR CT. AND STONE SCHOOL ROAD.

LAFAYETTE ROAD BENCHMARKS		
BM #	ELEV	DESCRIPTION
3	916.395	SET R.R. SPIKE IN SOUTHERLY SIDE OF LIGHT POLE AT THE NORTHWEST CORNER OF LAFAYETTE AND CONCORD.
5	890.913	SET R.R. SPIKE IN SOUTHERLY SIDE OF LIGHT POLE AT NORTHWEST CORNER OF LENAWEA AND LAFAYETTE.

SYCAMORE PLACE BENCHMARKS		
BM #	ELEV	DESCRIPTION
1	837.390	R.R. SPIKE IN SOUTHWEST SIDE OF POWER POLE AT THE NORTHEAST CORNER OF WHITE AND SYCAMORE PLACE.
2	833.210	R.R. SPIKE IN THE SOUTHEAST SIDE OF LIGHT POLE AT THE NORTHWEST CORNER OF SYCAMORE PLACE AND EAST PARK PLACE.
4	836.529	SET R.R. SPIKE IN SOUTH SIDE OF POWER POLE ON THE NORTH SIDE OF SYCAMORE PLACE. POLE IS NEAR THE WEST PROPERTY LINE FOR HOUSE #803.

PACKARD ROAD BENCHMARKS		
BM #	ELEV	DESCRIPTION
1	815.964	SET RR SPIKE IN THE E SIDE OF THE LIGHT POLE THAT IS IN THE MIDDLE OF THE WEST SIDE OF THE NORTH PARKING LOT.
2	810.004	SET RR SPIKE IN THE NE SIDE OF THE LIGHT POLE THAT IS IN THE WEST HALF OF THE SOUTH SIDE OF THE SOUTH PARKING LOT.

**EXISTING LEGEND**

	FIRE HYDRANT		WATER MAIN
	GATE VALVE IN BOX		WATER MAIN ABANDONED
	GATE VALVE IN WELL		STORM SEWER
	STOP BOX		STORM SEWER ABANDONED
	WATER VAULT		SANITARY SEWER
	WELL		SANITARY SEWER ABANDONED
	CATCH BASIN (SQ)		GAS MAIN
	CATCH BASIN (RD)		GAS MAIN (DEAD)
	STORM MANHOLE		ELECTRICAL OVER HEAD
	NON-CURB CATCH BASIN (SQ)		ELECTRICAL UNDER GROUND
	END SECTION		ELECTRICAL DUCT BANK
	SANITARY MANHOLE		TELEPHONE OVER HEAD
	CLEAN-OUT		TELEPHONE UNDER GROUND
	POST		TELEPHONE DUCT BANK
	PEDESTRIAN SIGNAL		CABLE TV OVER HEAD
	SIGN		CABLE TV UNDER GROUND
	HAND HOLE		FIBER OPTIC
	ORNAMENTAL LIGHT		FIBER OPTIC DUCT BANK
	FLOOD LIGHT		BOUNDARY
	UNKNOWN MANHOLE		BUILDING
	TELEPHONE MANHOLE		CENTERLINE OF DITCH
	TELEPHONE RISER		CENTERLINE/CROWN OF ROAD
	GAS VALVE		CONTOUR MAJOR
	GAS VENT		CONTOUR MINOR
	GAS BOX		EDGE OF WATER
	ELECTRICAL RISER		FLOODPLAIN
	TRANSFORMER		FENCE
	UTILITY POLE		GRAVEL
	LAMP POLE		GUARDRAIL
	GUY ANCHOR		STONE WALL
	GUY POLE		R.O.W.
	MONITORING WELL		TREELINE
	MAILBOX		WETLAND
	SOIL BORING		EDGE OF BRUSH
	TRAVERSE POINT		HEDGE
	BENCH MARK		TREE (DECIDUOUS)
	IRON PIPE		TREE (CONIFEROUS)
	MON BOX		TREE TO BE REMOVED (DECIDUOUS)

**PROPOSED LEGEND**

	HYDRANT (PLAN)		WATER MAIN
	WATER GATE WELL		STORM SEWER
	REDUCER		SANITARY SEWER
	WATER GATE VALVE		FIBER OPTIC
	WATER STOP BOX		ELECTRICAL
	WATER VAULT		CENTERLINE OF DITCH
	INLET		CENTERLINE OF ROAD
	DOUBLE INLET		FENCE
	INLET JUNCTION CHAMBER		GRAVEL
	ROUND CATCH BASIN		SILT FENCE
	STORM MANHOLE		PROTECTIVE FENCE
	DRAIN ARROW		GUARDRAIL
	FLARED END SECTION		LOT/UNIT
	SANITARY MANHOLE		CURB
	CLEAN-OUT		TEMPORARY GRADING PERMIT
	BARREL		CONTOUR MAJOR
	SIGN		CONTOUR MINOR
	PUSH BUTTON		WATER EASMENT
	HAND HOLE		STORM EASEMENT
			SANITARY EASEMENT
			R.O.W.
			LIMITS OF CONSTRUCTION
			LIMIT OF GRADING
			STONE WALL
			DETECTABLE WARNING
			ASPHALT
			CONCRETE
			SIDEWALK
			TREE (DECIDUOUS)
			TREE (CONIFEROUS)
			TREE TO BE REMOVED (DECIDUOUS)
			TREE TO BE REMOVED (CONIFEROUS)
			STUMP TO BE REMOVED
			TREE TO REMAIN & PROTECT (DECIDUOUS) CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREST HEIGHT (INCHES) X 10
			TREE TO REMAIN & PROTECT (CONIFEROUS) CRITICAL ROOT ZONE (C.R.Z.) = DIAMETER BREST HEIGHT (INCHES) X 10

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

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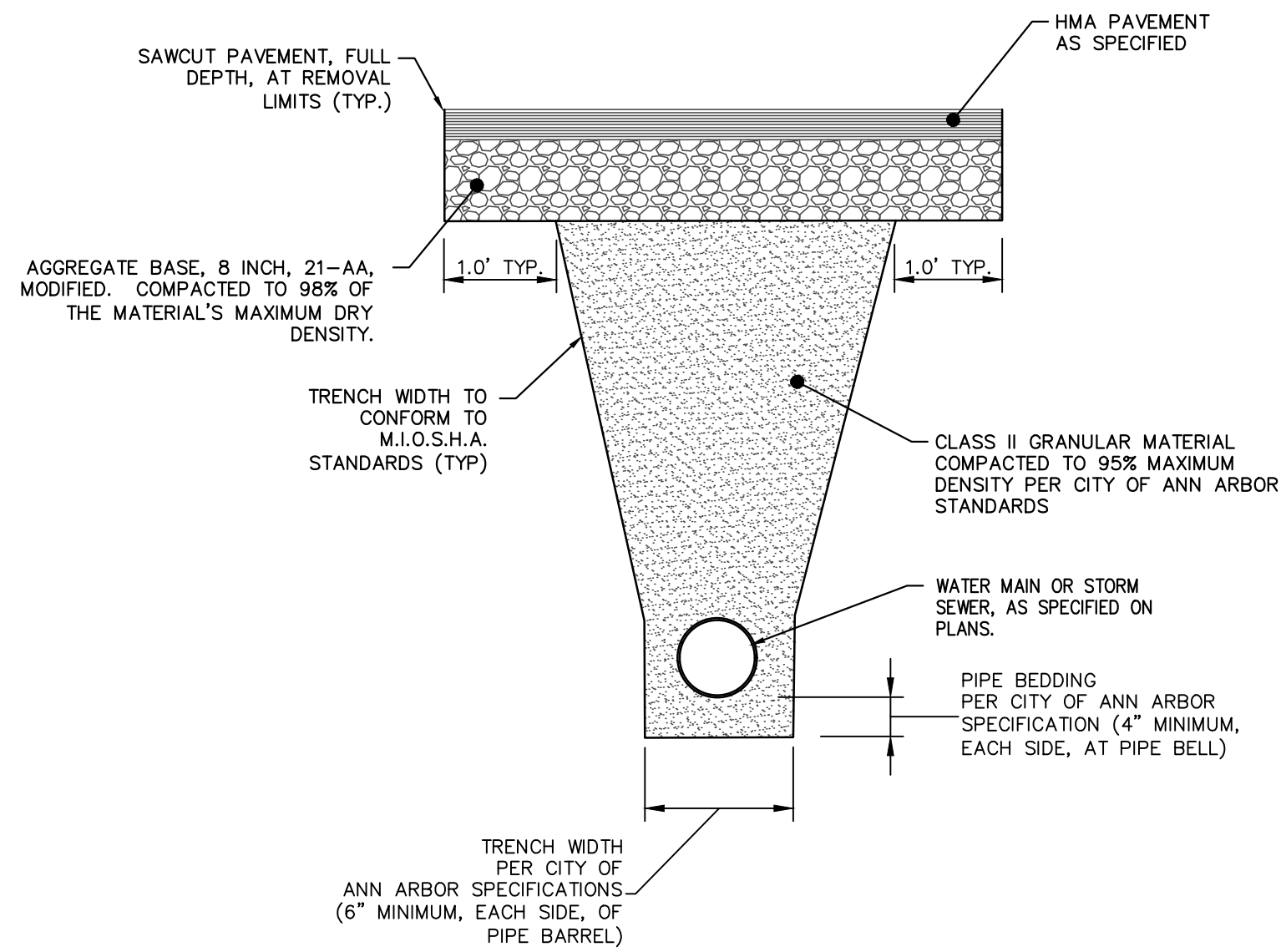
**2018 MISC UTILITY PROJECTS**

**LEGEND**

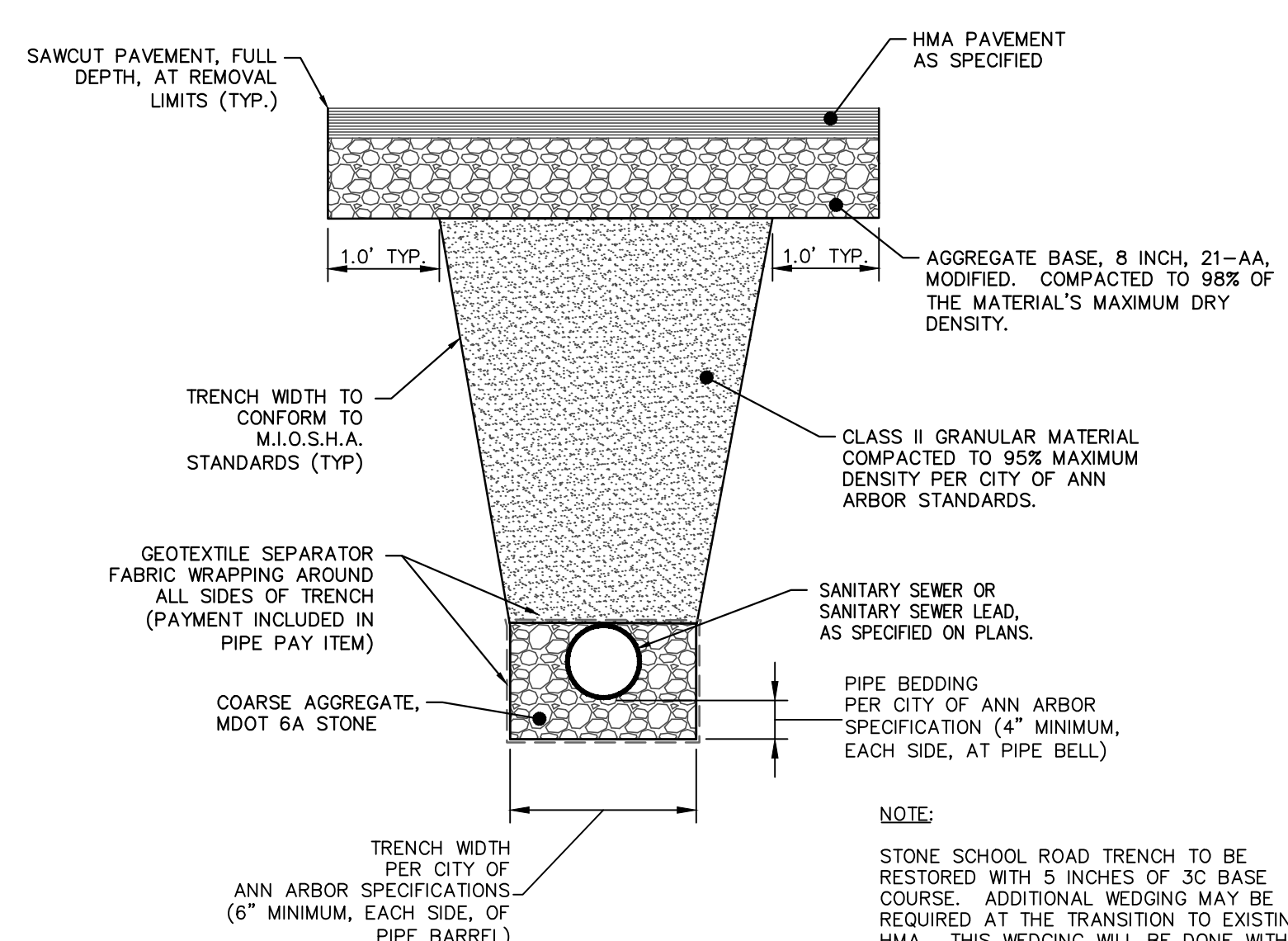
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SHEET No. **3 OF 29**

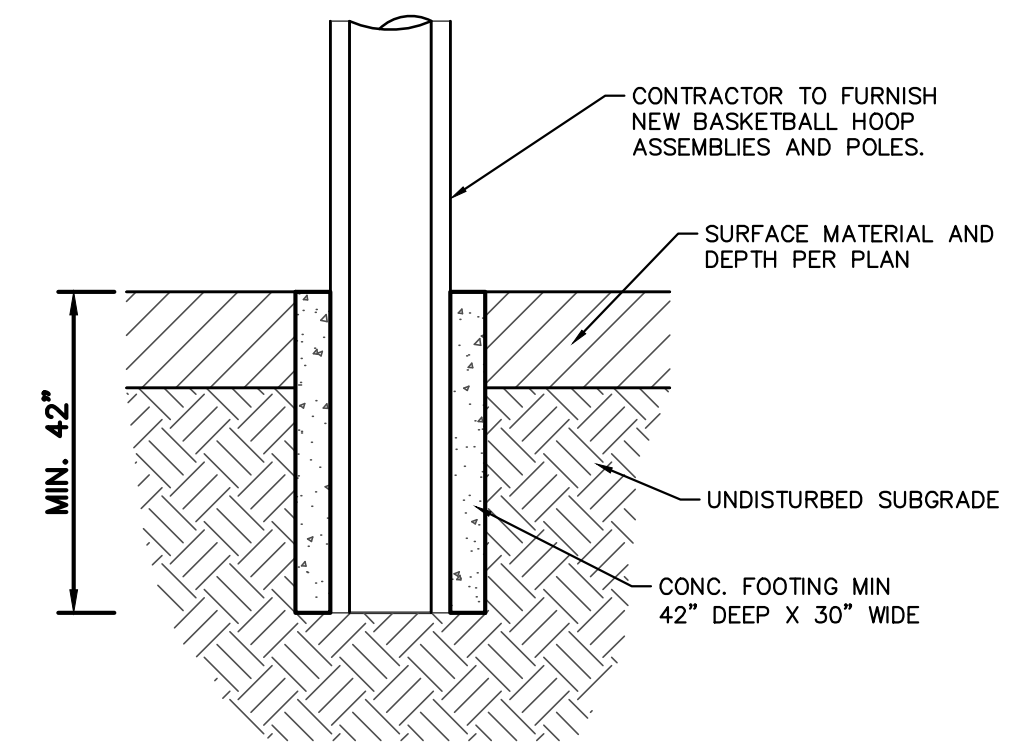
R:\20170333\Horman Ct San and Wtr\Plan Production\20170333Det.dwg Dwg Created: 20-Mar-18 - 02 standard bw.stb - Plot Date: 23-Mar-18



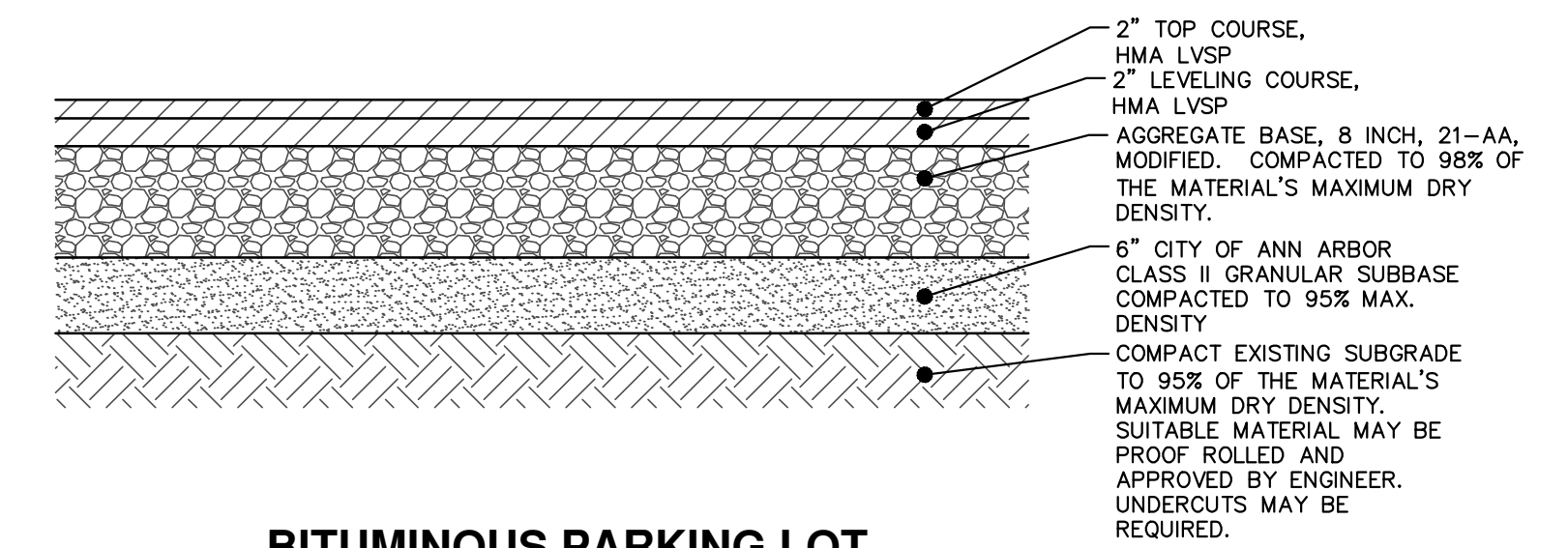
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SD-TD-1, MODIFIED**



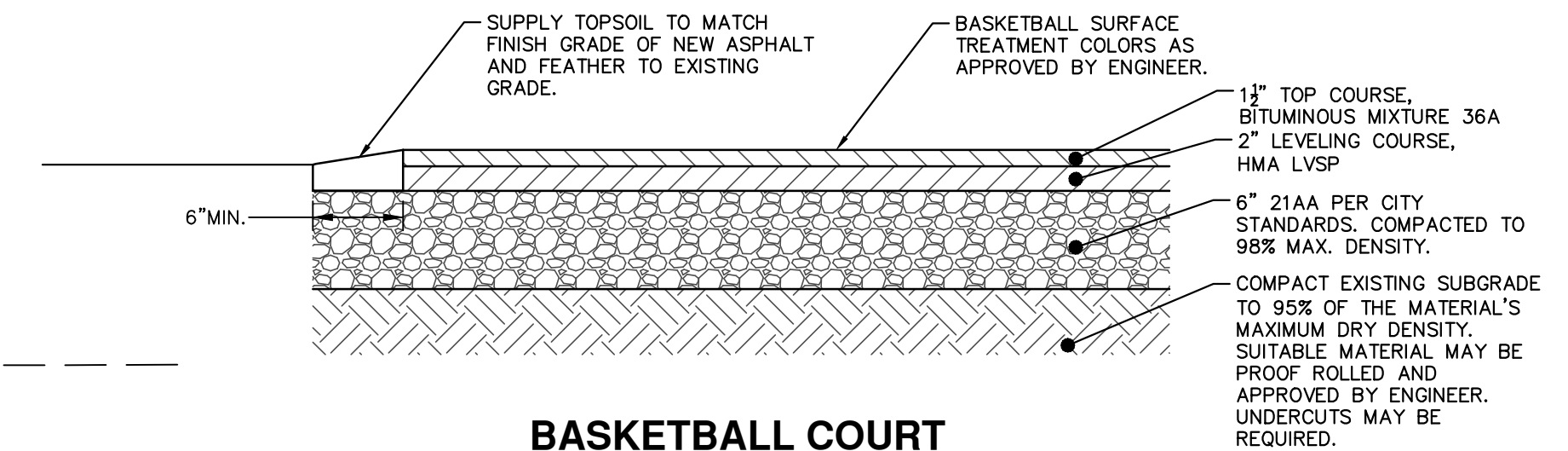
**TRENCH DETAIL - TYPE II,  
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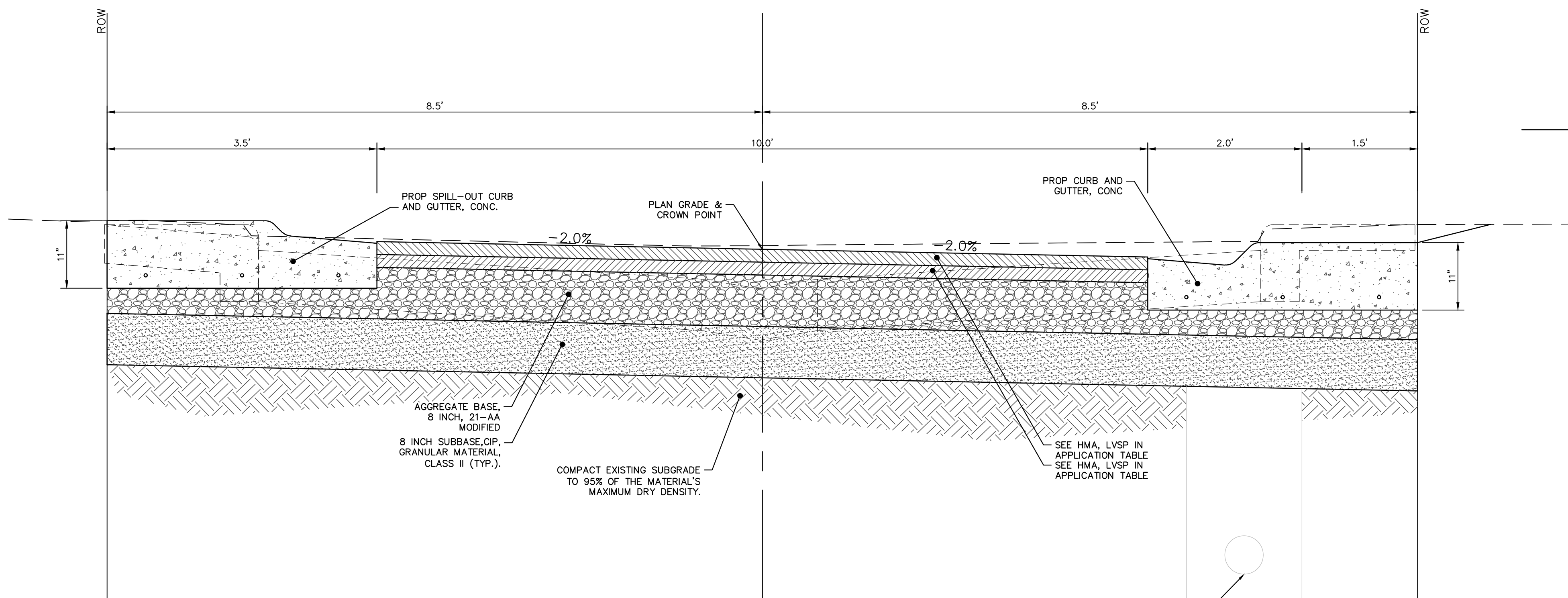
**BASKETBALL HOOP POLE  
FOUNDATION DETAIL**



**BITUMINOUS PARKING LOT  
PAVEMENT DETAIL**



**BASKETBALL COURT  
PAVEMENT DETAIL**



**HORMAN COURT  
TYPICAL CROSS-SECTION**

STONE SCHOOL ROAD - HMA APPLICATION ESTIMATE

HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
3C	275 LB/SYD	5"	-	PG 58-22	BASE COURSE, TWO LIFTS
Bond Coat SS-1h	0.10 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM

PACKARD ROAD - HMA APPLICATION ESTIMATE

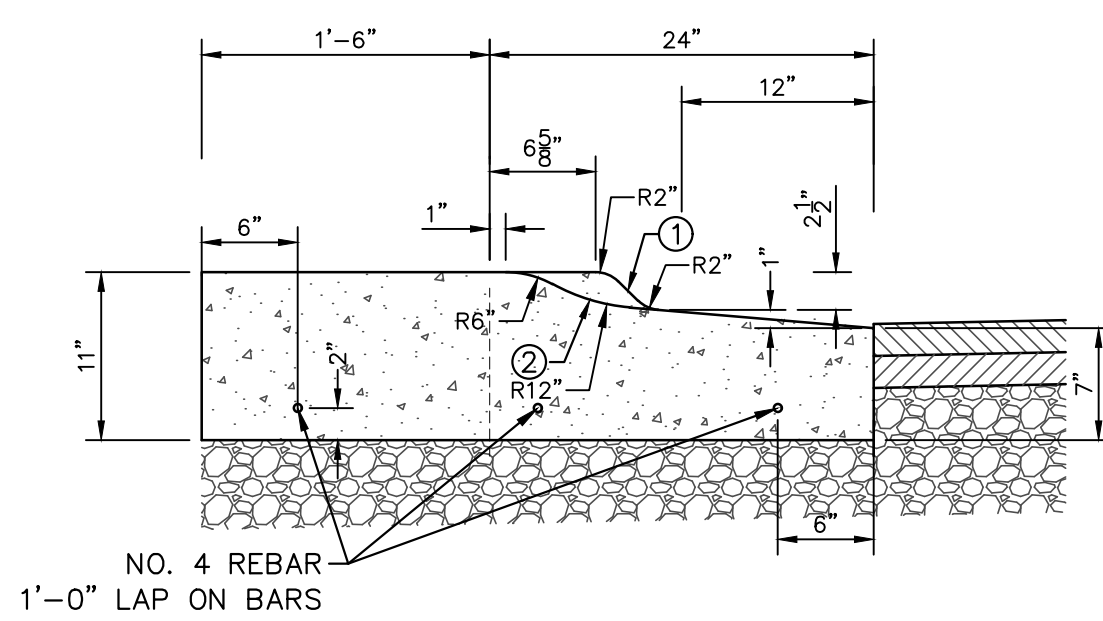
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
5 E3	165 LB/SYD	1.5	260	PG 64-28	TOP COURSE
4 E3	220 LB/SYD	2.0	-	PG 64-28	LEVELING COURSE
3C	330 LB/SYD	3.0	-	PG-58-22	BASE COURSE
Bond Coat SS-1h	0.05 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM

BROOKWOOD, HIKONE PARKING AREA, SYCAMORE, LAFAYETTE/LENAWEE, HORMAN/FOREST - HMA APPLICATION ESTIMATE

HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	660 LB/SYD	4.0	260 (TOP)	PG 58-28	TWO LIFTS
Bond Coat SS-1h	0.10 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM

BASKETBALL COURT - HMA APPLICATION ESTIMATE

HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
36A	165 LB/SYD	1.5	-	PG 58-28	TOP COURSE
LVSP	220 LB/SYD	2.0	-	PG 58-28	BASE COURSE
Bond Coat SS-1h	0.10 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM

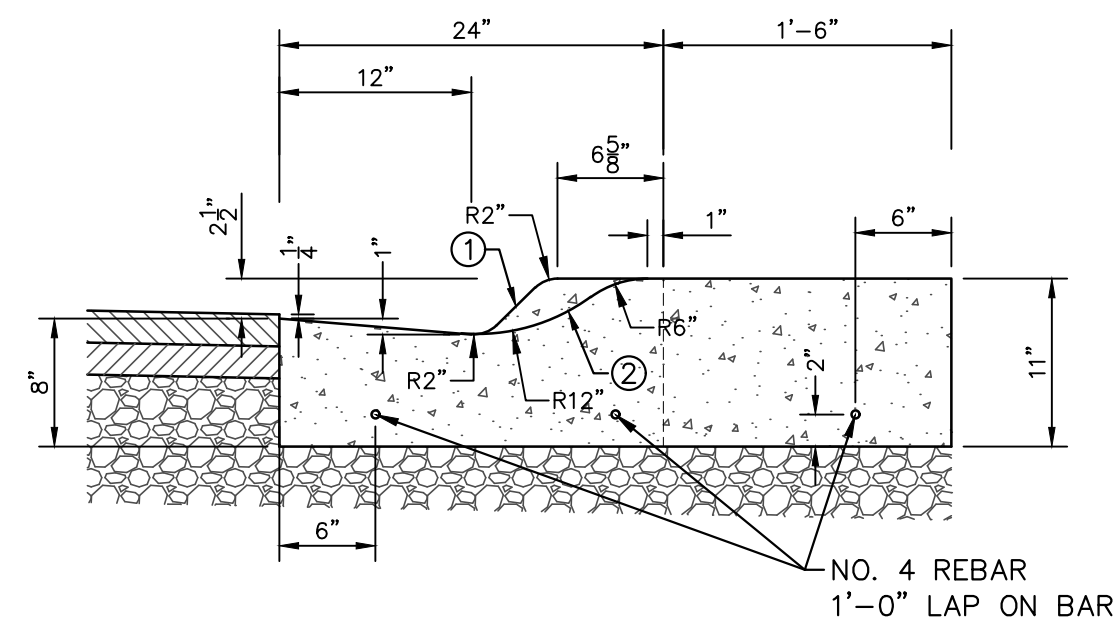


**SPILL-OUT CURB & GUTTER, MODIFIED**

- PLACE CITY OF ANN ARBOR MOUNTABLE CURB AND GUTTER SD-R-2, MODIFIED, AT DRIVEWAYS.
- PLACE MODIFIED BARRIER CURB AND GUTTER AT NON DRIVEWAY SECTIONS.

**NOTE:**

- PAID FOR AS CONC CURB AND GUTTER.
- TRANSITION FROM MOUNTABLE CURB AND GUTTER TO BARRIER CURB AND GUTTER SHALL BE OVER 5 FEET ON EITHER SIDE OF DRIVEWAY SECTIONS.
- FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE OF METAL).

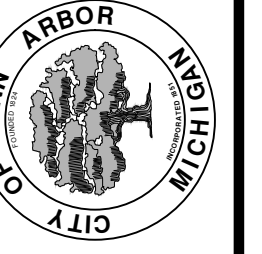


**CURB & GUTTER, MODIFIED**



REV.	DATE	DESCRIPTION
01	03/23/18	ISSUED FOR BID
00	03/07/18	DRAWN
		CHECKED

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**2018 MISC UTILITY PROJECTS**  
TYPICAL SECTIONS AND TRENCH DETAILS

SCALE: NTS  
DRAWING No. 2017033-4

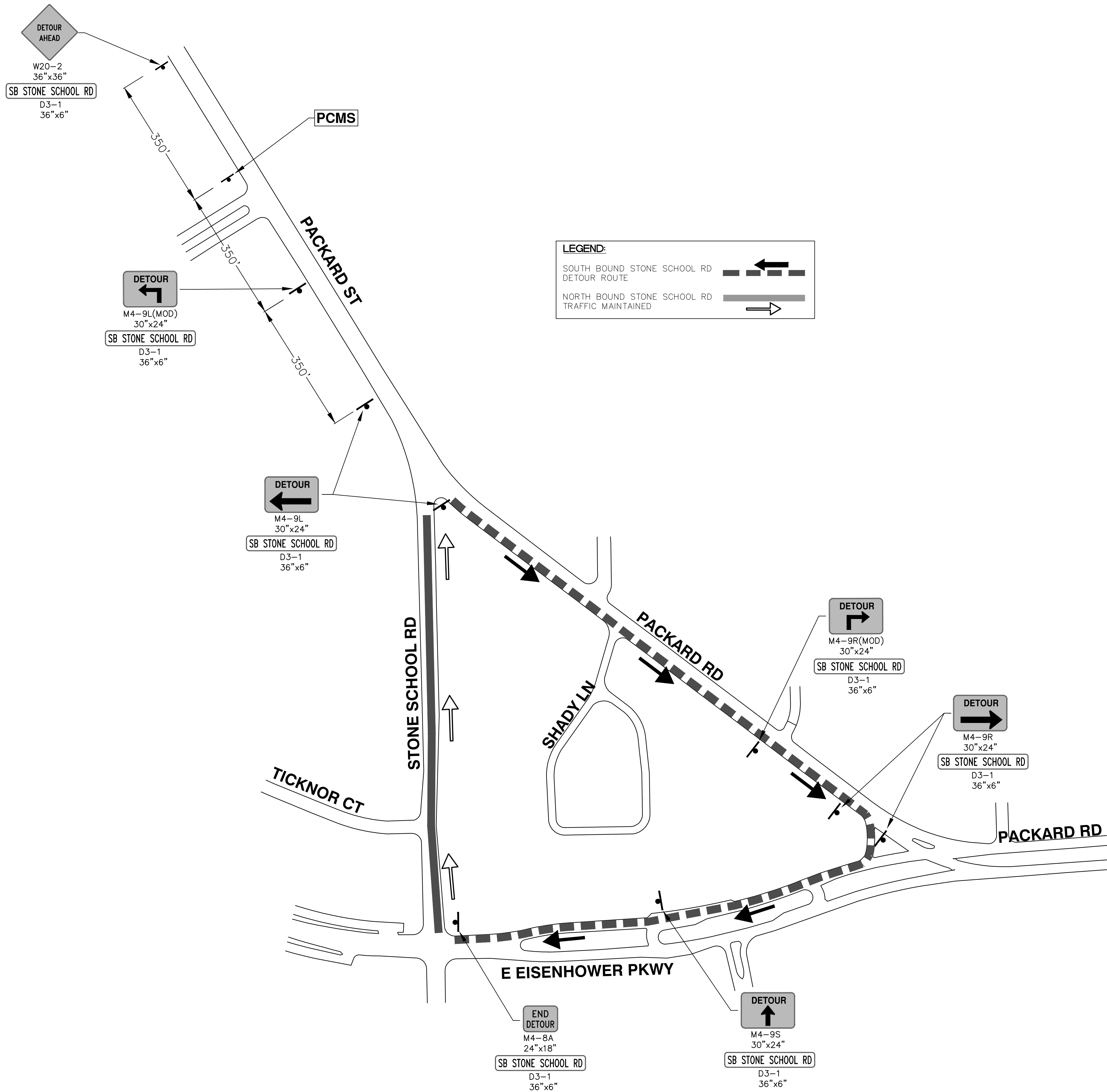
**DETOUR CONSTRUCTION NOTES:**

1. DEPENDING ON THE DETOUR ROUTE THAT IS PUT IN PLACE, CONFLICTING SIGNS MAY BE PRESENT. PRIOR TO THE ORDERING OR PLACEMENT OF ANY SIGNS, MEET WITH THE ENGINEER TO VERIFY THE EXACT NUMBER AND LOCATION OF THE SIGNS TO BE PLACED. THE ENGINEER AND THE CONTRACTOR SHALL WORK TOGETHER TO ELIMINATE ALL CONFLICTS.
2. THE CITY RESERVES THE RIGHT TO ORDER ADDITIONAL SIGNS AND PLACE THEM INTO SERVICE IN ORDER TO SAFELY MAINTAIN TRAFFIC. ADJUSTMENTS IN THE UNIT PRICE FOR THESE ITEMS OF WORK SHALL NOT BE ALLOWED FOR THESE OCCURRENCES.
3. THE CONTRACTOR SHALL COORDINATE HIS OPERATIONS WITH THOSE OF THE CITY OF ANN ARBOR'S SIGNS AND SIGNALS UNIT DURING THE COURSE OF THE DETOUR ROUTE ESTABLISHMENT TO EFFECTIVELY AND SAFELY MAINTAIN TRAFFIC. DO NOT ERECT ANY SIGNS UNTIL ITS LOCATION AND PROPOSED DATE OF INSTALLATION IS APPROVED BY THE ENGINEER.
4. THE DETOUR IS TO BE IN PLACE DURING STONE SCHOOL ROAD SANITARY PROJECT. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR WILL CLOSE AND DETOUR SOUTH BOUND STONE SCHOOL ROAD TRAFFIC. SEE "SPECIAL PROVISION FOR MAINTAINING TRAFFIC AND CONSTRUCTION SEQUENCING" FOR DETAILS ON CONSTRUCTION STAGING, SEQUENCING, CLOSURE AND DETOUR LIMITATIONS, AND OTHER DETAILS.
5. REFERENCE THE "SPECIAL PROVISION FOR MAINTAINING TRAFFIC AND CONSTRUCTION SEQUENCING" FOR ADDITIONAL PROJECT REQUIREMENTS. THE CONTRACTOR'S ATTENTION IS SPECIFICALLY DIRECTED TO THE SECTION OF SAME SPECIAL PROVISION REGARDING COORDINATION WITH THE CITY SIGNS AND SIGNALS UNIT FOR MODIFICATIONS TO TRAFFIC SIGNALS FOR THE DETOUR.
6. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN SIGNS AS SHOWN ON THE PLANS OR OTHERWISE DIRECTED BY THE ENGINEER.
7. CONSTRUCTION WARNING SIGNS SHALL HAVE AN ORANGE, HIGH-INTENSITY, REFLECTORIZED BACKGROUND.
8. SIGNS SHALL CONFORM TO THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. THE CONTRACTOR SHALL DRIVE ALL SIGNS INTO EXPOSED GROUND OR INSERT INTO A BORED HOLE IN PAVEMENT AS NECESSARY TO PERMANENTLY SECURE. ALL HOLES IN PAVEMENT SHALL BE FILLED WITH ENGINEER-APPROVED MORTAR WHEN THE SIGN IS REMOVED AND NO LONGER NEEDED. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE PAY ITEM "SIGN, TYPE B, TEMP, PRISMATIC, FURN" OR "SIGN, TYPE B, TEMP, PRISMATIC, FURN, SPECIAL".
10. ADVANCE WARNING SIGNS SHALL BE PROVIDED WITH TWO (2) TYPE A FLASHING LIGHTS AND ONE (1) DAY-GLOW ORANGE FLAG.
11. CITY TO BE NOTIFIED A MINIMUM OF 7 DAYS PRIOR TO IMPLEMENTING SB STONE SCHOOL ROAD DETOUR.

PCMS MESSAGE PHASING	
PRIOR TO CONSTRUCTION	DURING CONSTRUCTION
STONE SCHOOL ROAD CONSTRUCTION	SB STONE SCHOOL CLSD AT PACKARD
MONTH DATE *	FOLLOW POSTED DETOUR

NOTE: PCMS LOCATIONS AND MESSAGES WILL BE AS DIRECTED BY THE ENGINEER. TO BE PLACED ONE WEEK PRIOR TO CONSTRUCTION.

\*THE CONTRACTOR SHALL PLACE THE APPROPRIATE DATE AS APPROVED BY THE ENGINEER.



R: \2017033 Stone School Sanitary\Plan Production\2017033Mtrf.dwg Dwg Created: 2-Mar-18 - a2 standard bw.stb - Plot Date: 23-Mar-18

**811**  
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01	03/23/18	CEC
00	03/07/18	CEC

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2018 MISC UTILITY PROJECTS**

STONE SCHOOL ROAD

DETOUR PLAN

SHEET No.

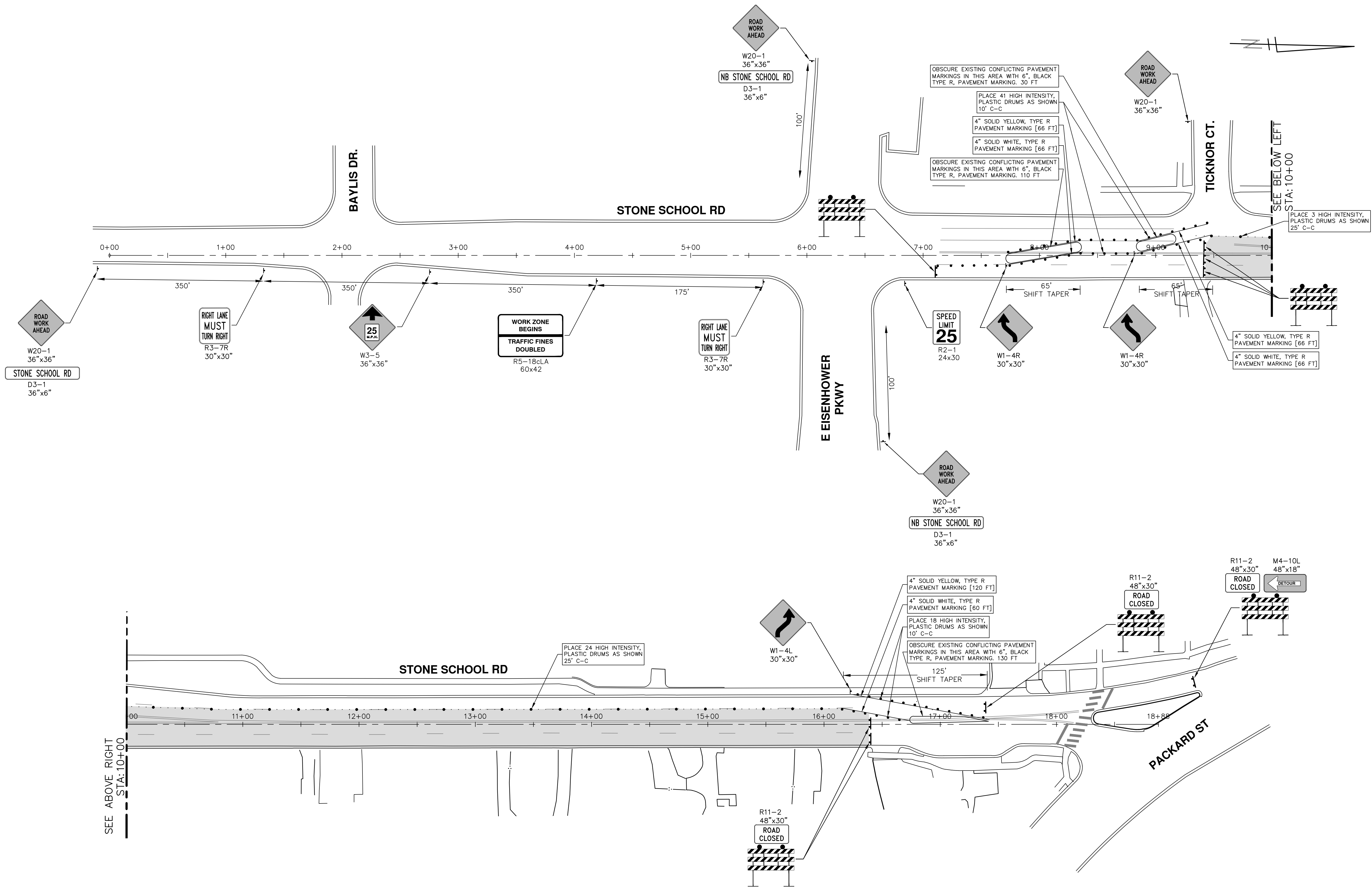
SCALE: 1" = 150'

DRAWING No.

2017033-5

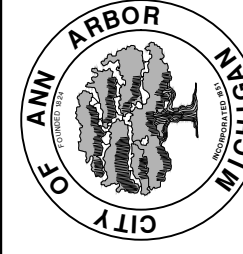
5 OF 29

R:\2017033 Stone School SanitaryPlan Production\2017033Mtrfr1.dwg Dwg Created: 2-Mar-18 --\_a2\_standard\_bw.stb -- Plot Date: 23-Mar-18



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00		03/07/18	CEC	BS

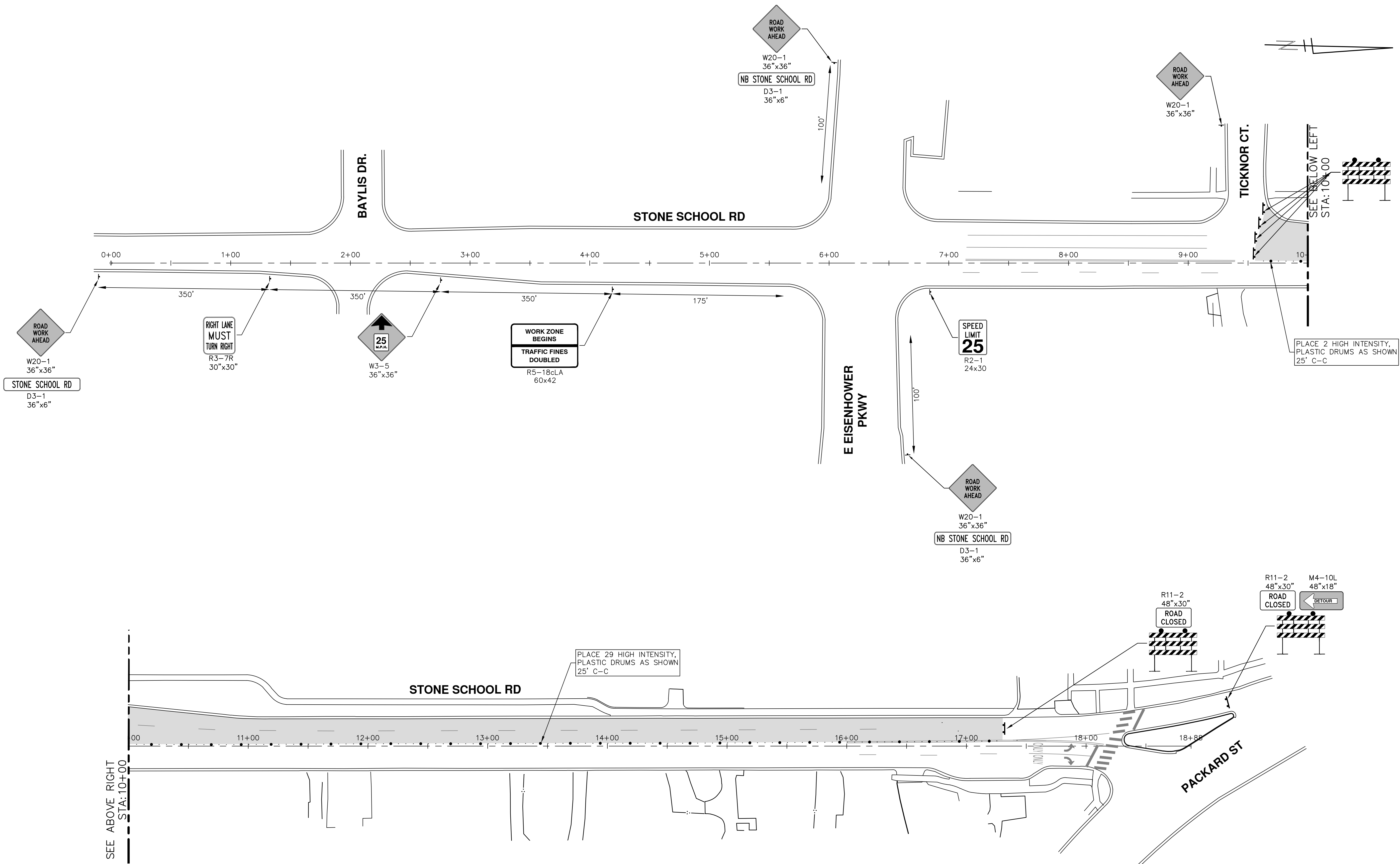
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CITY OF ANN ARBOR - ENGINEERING  
2018 MISC UTILITY PROJECTS  
STONE SCHOOL ROAD  
TRAFFIC CONTROL - STAGE 1

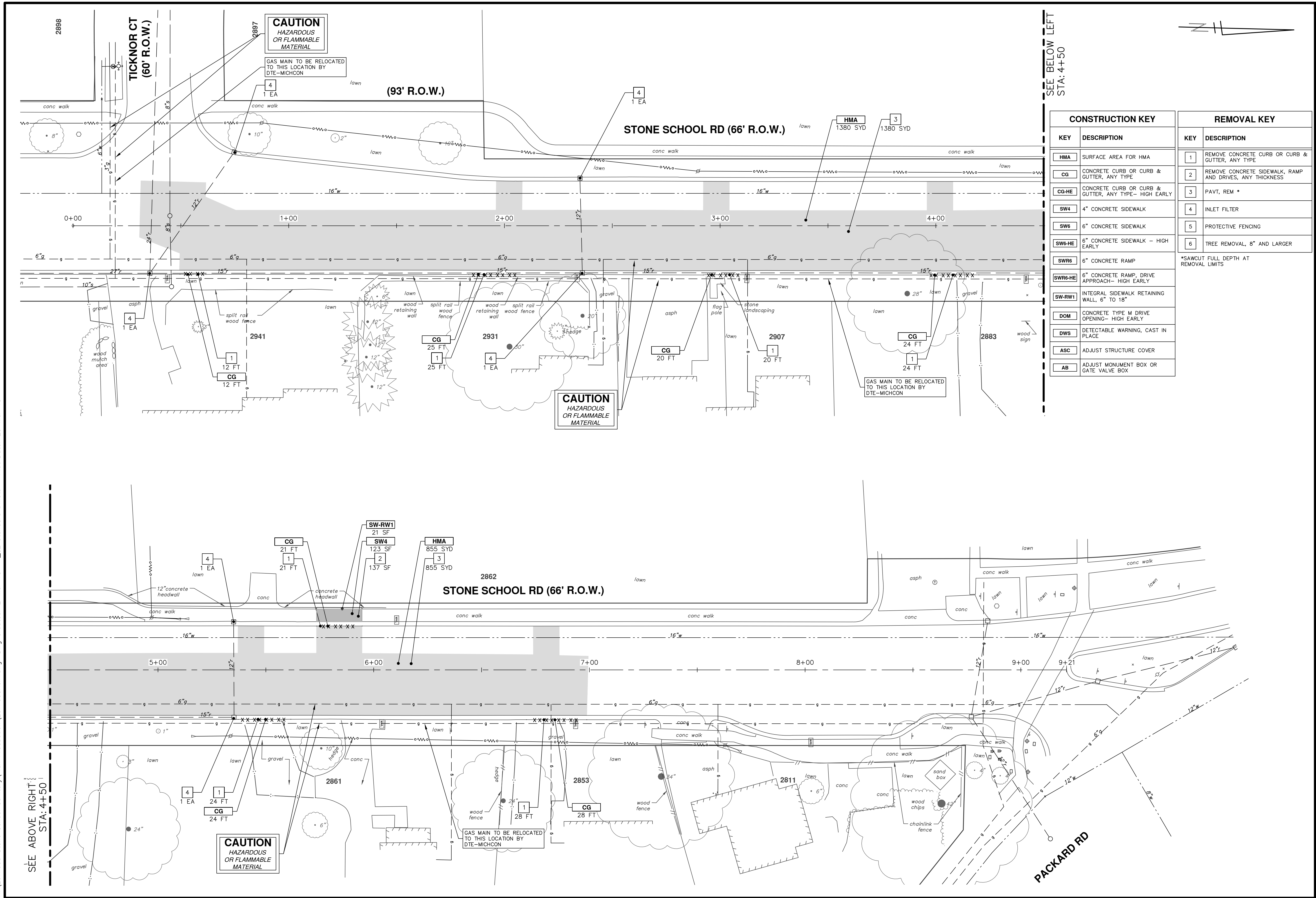
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DRAWING No. 2017033-6

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CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET ANN ARBOR, MI 48106-8647 www.a2gov.org	01 ADDENDUM #1 00 ISSUED FOR BID REV.
CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET ANN ARBOR, MI 48106-8647 www.a2gov.org	03/23/18 03/07/18 DATE
CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET ANN ARBOR, MI 48106-8647 www.a2gov.org	03/23/18 03/07/18 DATE
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING 2018 MISC UTILITY PROJECTS STONE SCHOOL ROAD TRAFFIC CONTROL - STAGE 2	DESCRIPTION DRAWN CHECKED
SCALE PLAN: 1" = 40' DRAWING No. 2017033-7	SHEET No. 7 OF 29


R: \20170333 Stone School Sanitary Plan Production\20170333Rem.dwg Dwg Created: 2-Mar-18 - \_a2 standard bw.stb - Plot Date: 23-Mar-18



SEE BELOW LEFT  
STA: 4+50


CONSTRUCTION KEY		REMOVAL KEY	
KEY	DESCRIPTION	KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA	1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE	2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
CG-HE	CONCRETE CURB OR CURB & GUTTER, ANY TYPE- HIGH EARLY	3	PAVT, REM *
SW4	4" CONCRETE SIDEWALK	4	INLET FILTER
SW6	6" CONCRETE SIDEWALK	5	PROTECTIVE FENCING
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY	6	TREE REMOVAL, 8" AND LARGER
SWR6	6" CONCRETE RAMP	*SAWCUT FULL DEPTH AT REMOVAL LIMITS	
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY		
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"		
DOM	CONCRETE TYPE M DRIVE OPENING- HIGH EARLY		
DWS	DETECTABLE WARNING, CAST IN PLACE		
ASC	ADJUST STRUCTURE COVER		
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX		

SEE ABOVE RIGHT  
STA: 4+50



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Call Before you dig.

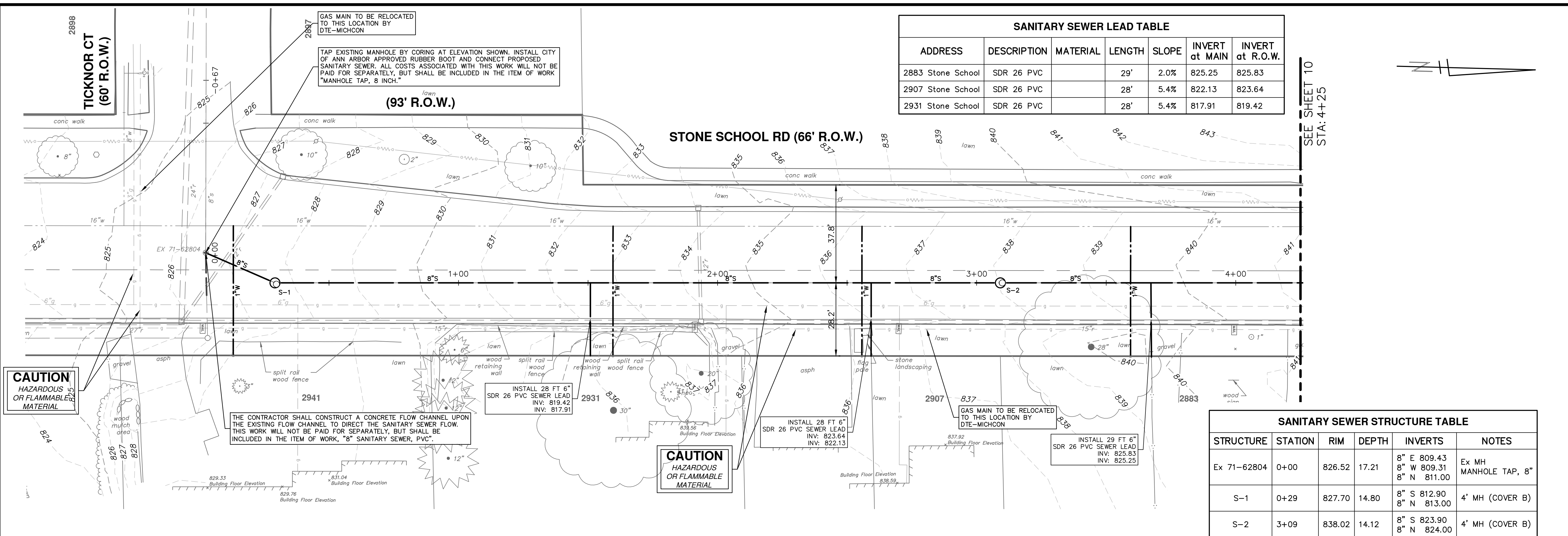
	BS	CEC	CEC	CEC	DATE	DRAWN	CHECKED		
	03/23/18	03/23/18	03/23/18						
	01	ADDENDUM #1	ISSUED FOR BID	00					



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**2018 MISC UTILITY PROJECTS**  
 STONE SCHOOL ROAD  
 REMOVALS

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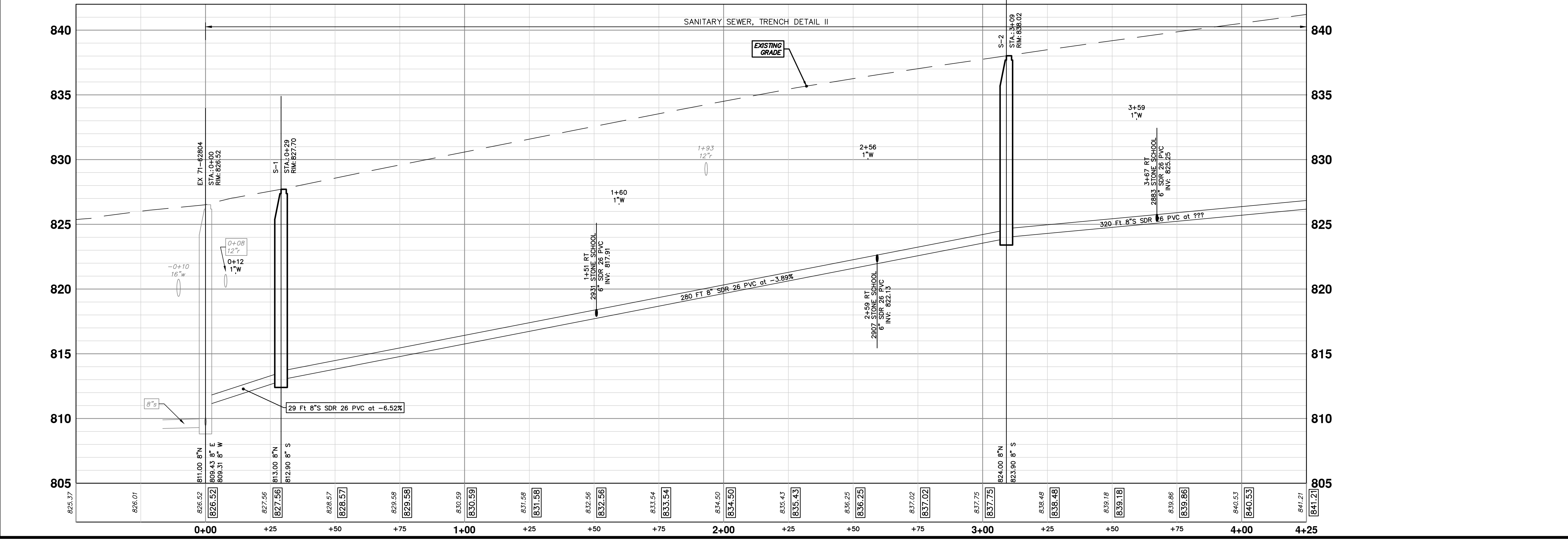
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 DRAWING No. 2017033-8  
 SHEET No. 8 OF 29

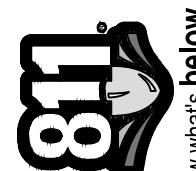


SANITARY SEWER LEAD TABLE						
ADDRESS	DESCRIPTION	MATERIAL	LENGTH	SLOPE	INVERT at MAIN	INVERT at R.O.W.
2883 Stone School	SDR 26 PVC		29'	2.0%	825.25	825.83
2907 Stone School	SDR 26 PVC		28'	5.4%	822.13	823.64
2931 Stone School	SDR 26 PVC		28'	5.4%	817.91	819.42

SEE SHEET 10  
STA: 4+25


SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	STATION	RIM	DEPTH	INVERTS	NOTES	
Ex 71-62804	0+00	826.52	17.21	8" E 809.43 8" W 809.31 8" N 811.00	Ex MH MANHOLE TAP, 8"	
S-1	0+29	827.70	14.80	8" S 812.90 8" N 813.00	4' MH (COVER B)	
S-2	3+09	838.02	14.12	8" S 823.90 8" N 824.00	4' MH (COVER B)	





Know what's below.  
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01	ADDENDUM #1	03/23/18	CEC	BS	BS	CHECKED			
00	ISSUED FOR BID	03/07/18	CEC	BS	BS	DRAWN			
							DATE		DESCRIPTION

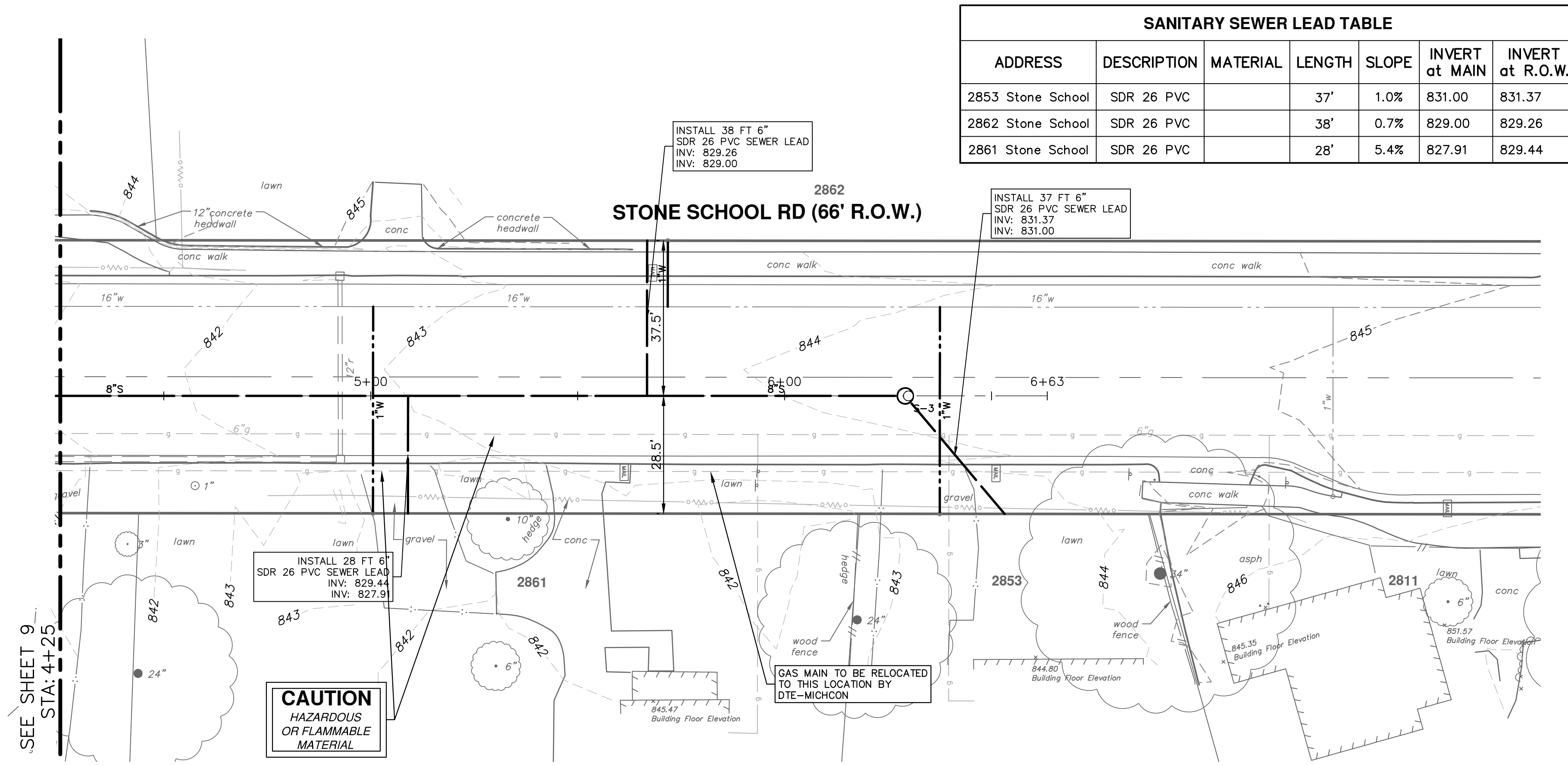


**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
2018 MISC UTILITY PROJECTS  
STONE SCHOOL ROAD  
SANITARY SEWER STA. 0+67 - STA. 5+00

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'

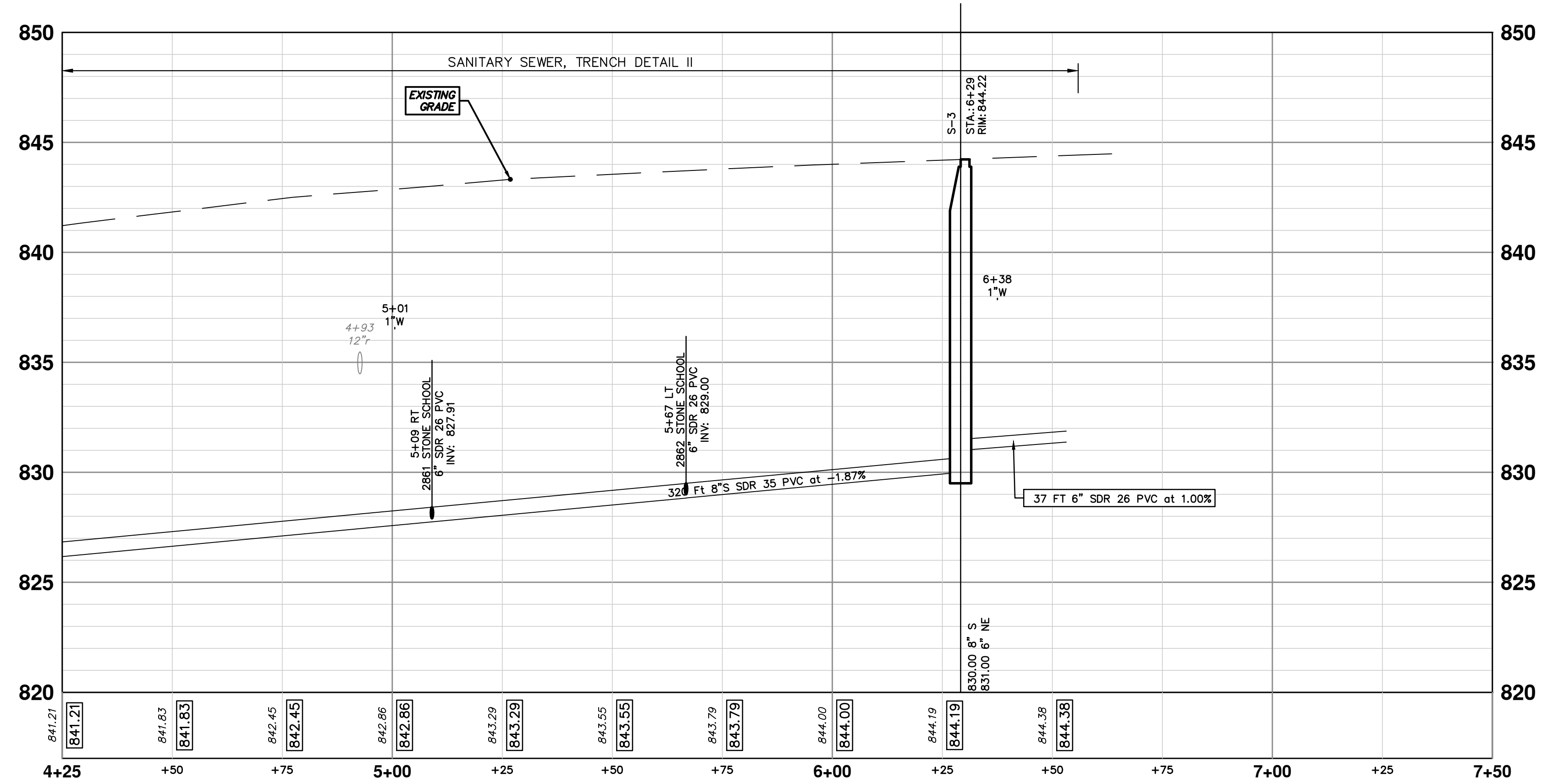
DRAWING NO.  
**2017033-9**

SHEET No.  
**9 OF 29**



SANITARY SEWER LEAD TABLE						
ADDRESS	DESCRIPTION	MATERIAL	LENGTH	SLOPE	INVERT at MAIN	INVERT at R.O.W.
2853 Stone School	SDR 26 PVC		37'	1.0%	831.00	831.37
2862 Stone School	SDR 26 PVC		38'	0.7%	829.00	829.26
2861 Stone School	SDR 26 PVC		28'	5.4%	827.91	829.44

SANITARY SEWER STRUCTURE TABLE					
STRUCTURE	STATION	RIM	DEPTH	INVERTS	NOTES
S-3	6+29	844.22	14.22	8" S 830.00 6" NE 831.00	4' MH (COVER B)



Know what's below. Call before you dig.

01	ADDENDUM #1	03/23/18	CEC	BS	CHECKED				
00	ISSUED FOR BID	03/07/18	CEC	BS	DRAWN				
					DATE				
					DESCRIPTION				
					REV.				

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2018 MISC UTILITY PROJECTS**

STONE SCHOOL ROAD

SANITARY SEWER STA. 5+00 TO STA. 6+96

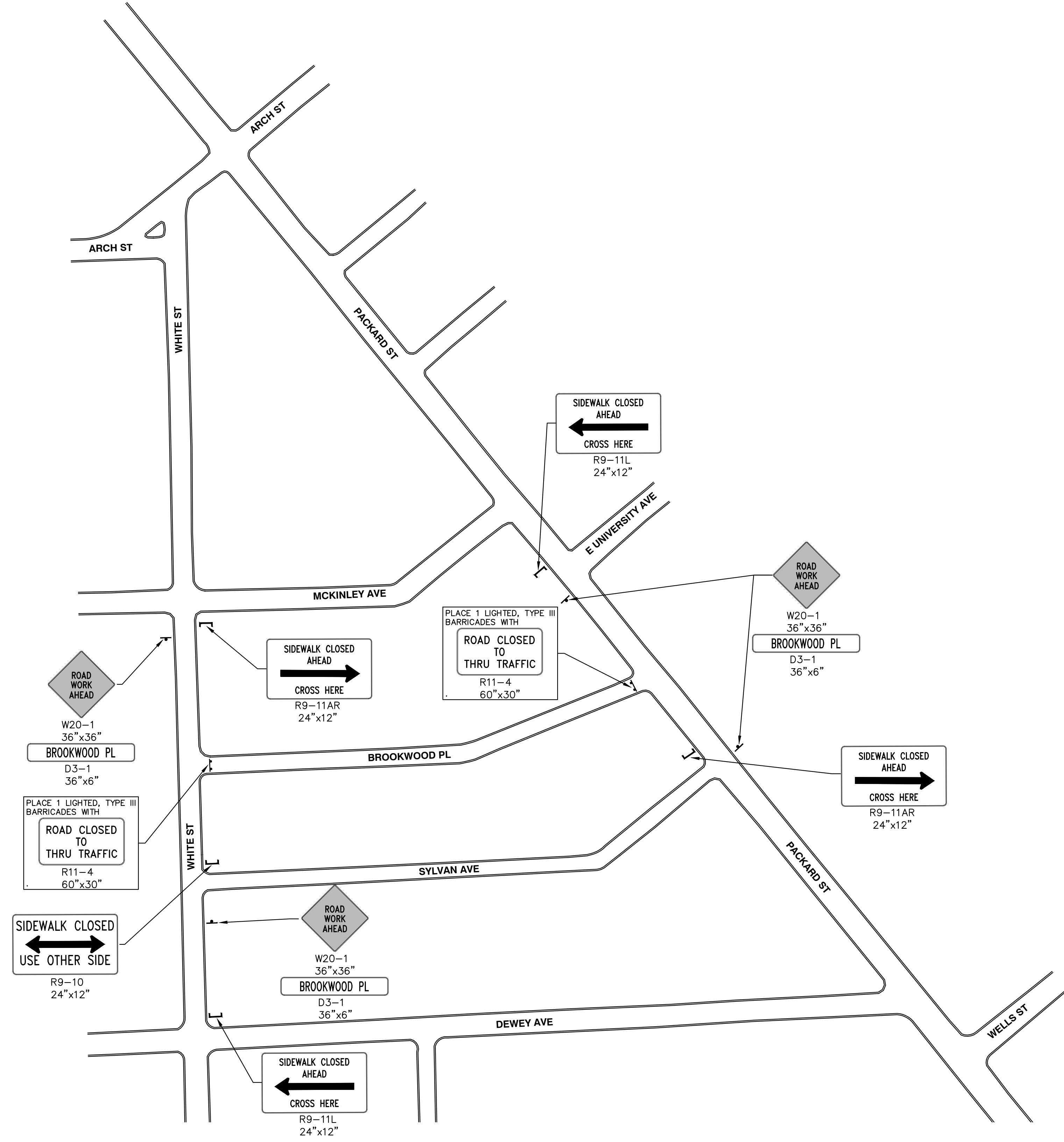
SHEET No. **10 OF 29**

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'

DRAWING No. **2017033-10**



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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**2018 MISC UTILITY PROJECTS**  
BROOKWOOD PLACE  
TRAFFIC CONTROL - STAGE 1

SCALE PLAN: 1" = 100'  
DRAWING No. 2017033-11

SHEET No.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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00	ISSUED FOR BID	03/07/18	CEC	BS

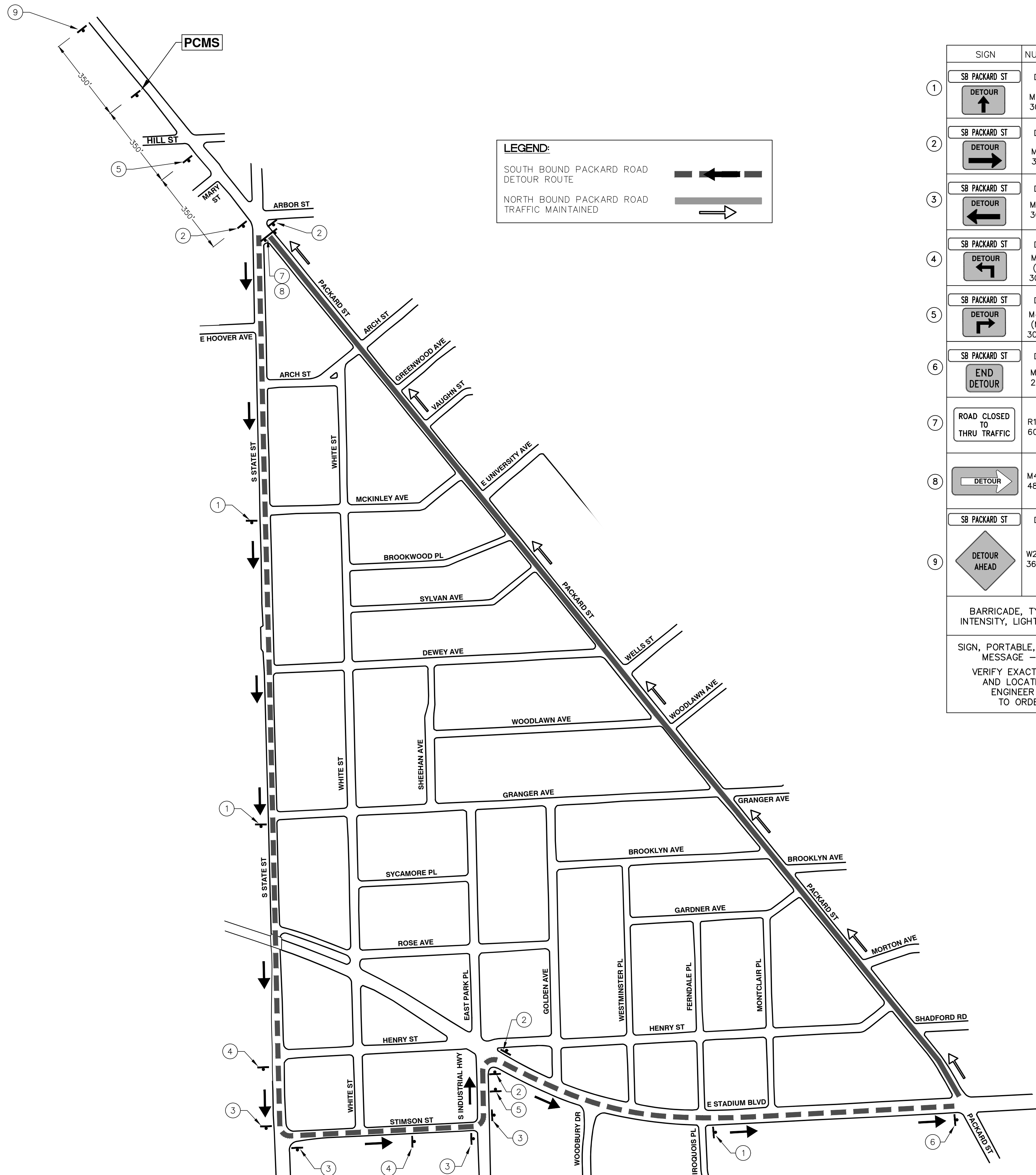
**DETOUR CONSTRUCTION NOTES:**

1. DEPENDING ON THE DETOUR ROUTE THAT IS PUT IN PLACE, CONFLICTING SIGNS MAY BE PRESENT. PRIOR TO THE ORDERING OR PLACEMENT OF ANY SIGNS, MEET WITH THE ENGINEER TO VERIFY THE EXACT NUMBER AND LOCATION OF THE SIGNS TO BE PLACED. THE ENGINEER AND THE CONTRACTOR SHALL WORK TOGETHER TO ELIMINATE ALL CONFLICTS.
2. THE CITY RESERVES THE RIGHT TO ORDER ADDITIONAL SIGNS AND PLACE THEM INTO SERVICE IN ORDER TO SAFELY MAINTAIN TRAFFIC. ADJUSTMENTS IN THE UNIT PRICE FOR THESE ITEMS OF WORK SHALL NOT BE ALLOWED FOR THESE OCCURRENCES.
3. THE CONTRACTOR SHALL COORDINATE HIS OPERATIONS WITH THOSE OF THE CITY OF ANN ARBOR'S SIGNS AND SIGNALS UNIT DURING THE COURSE OF THE DETOUR ROUTE ESTABLISHMENT TO EFFECTIVELY AND SAFELY MAINTAIN TRAFFIC. DO NOT ERECT ANY SIGNS UNTIL ITS LOCATION AND PROPOSED DATE OF INSTALLATION IS APPROVED BY THE ENGINEER.
4. THE DETOUR IS TO BE IN PLACE DURING BROOKWOOD PLACE WATER MAIN TIE-IN AT PACKARD ST. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR WILL CLOSE AND DETOUR SOUTH BOUND PACKARD STREET TRAFFIC. SEE "SPECIAL PROVISION FOR MAINTAINING TRAFFIC AND CONSTRUCTION SEQUENCING" FOR DETAILS ON CONSTRUCTION STAGING, SEQUENCING, CLOSURE AND DETOUR LIMITATIONS, AND OTHER DETAILS.
5. REFERENCE THE "SPECIAL PROVISION FOR MAINTAINING TRAFFIC AND CONSTRUCTION SEQUENCING" FOR ADDITIONAL PROJECT REQUIREMENTS. THE CONTRACTOR'S ATTENTION IS SPECIFICALLY DIRECTED TO THE SECTION OF SAME SPECIAL PROVISION REGARDING COORDINATION WITH THE CITY SIGNS AND SIGNALS UNIT FOR MODIFICATIONS TO TRAFFIC SIGNALS FOR THE DETOUR.
6. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN SIGNS AS SHOWN ON THE PLANS OR OTHERWISE DIRECTED BY THE ENGINEER.
7. CONSTRUCTION WARNING SIGNS SHALL HAVE AN ORANGE, HIGH-INTENSITY, REFLECTORIZED BACKGROUND.
8. SIGNS SHALL CONFORM TO THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. THE CONTRACTOR SHALL DRIVE ALL SIGNS INTO EXPOSED GROUND OR INSERT INTO A BORED HOLE IN PAVEMENT AS NECESSARY TO PERMANENTLY SECURE. ALL HOLES IN PAVEMENT SHALL BE FILLED WITH ENGINEER-APPROVED MORTAR WHEN THE SIGN IS REMOVED AND NO LONGER NEEDED. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE PAY ITEM "SIGN, TYPE B, TEMP, PRISMATIC, FURN" OR "SIGN, TYPE B, TEMP, PRISMATIC, FURN, SPECIAL".
10. ADVANCE WARNING SIGNS SHALL BE PROVIDED WITH TWO (2) TYPE A FLASHING LIGHTS AND ONE (1) DAY-GLOW ORANGE FLAG.
11. CITY TO BE NOTIFIED A MINIMUM OF 7 DAYS PRIOR TO IMPLEMENTING SOUTH BOUND PACKARD STREET DETOUR. MESSAGE BOARDS TO BE PLACED 7 DAYS PRIOR TO IMPLEMENTATION OF DETOUR.

PCMS MESSAGE PHASING	
PRIOR TO CONSTRUCTION	DURING CONSTRUCTION
PACKARD STREET CONSTRUCTION	SB PACKARD STREET CLSD AT STATE
MONTH DATE *	FOLLOW POSTED DETOUR

NOTE: PCMS LOCATIONS AND MESSAGES WILL BE AS DIRECTED BY THE ENGINEER. TO BE PLACED ONE WEEK PRIOR TO CONSTRUCTION.

\*THE CONTRACTOR SHALL PLACE THE APPROPRIATE DATE AS APPROVED BY THE ENGINEER.

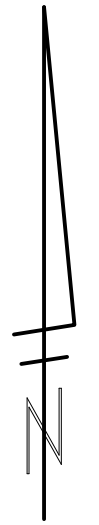


**LEGEND:**

SOUTH BOUND PACKARD ROAD  
DETOUR ROUTE

NORTH BOUND PACKARD ROAD  
TRAFFIC MAINTAINED

SIGN	NUMBER	QUANTITY
SB PACKARD ST DETOUR	D3-1 M4-9S 30"x24"	5
SB PACKARD ST DETOUR	D3-1 M4-9R 30"x24"	2
SB PACKARD ST DETOUR	D3-1 M4-9L 30"x24"	6
SB PACKARD ST DETOUR	D3-1 M4-9L (MOD) 30"x24"	3
SB PACKARD ST DETOUR	D3-1 M4-9R (MOD) 30"x24"	1
SB PACKARD ST END DETOUR	D3-1 M4-8A 24"x18"	1
ROAD CLOSED TO THRU TRAFFIC	R11-4 60"x30"	1
DETOUR	M4-10R 48"x18"	1
SB PACKARD ST	D3-1	1
DETOUR AHEAD	W20-2 36"x36"	4
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED - 1 EACH		
SIGN, PORTABLE, CHANGEABLE MESSAGE - 1 EACH		
VERIFY EXACT QUANTITY AND LOCATION WITH ENGINEER PRIOR TO ORDERING		



R:\2017033 Brookwood Pl Water Main\Plan Production\20170330Tr.dwg Dwg Created: 2-Mar-18 - \_a2 standard bw.stb - Plot Date: 23-Mar-18

**811**  
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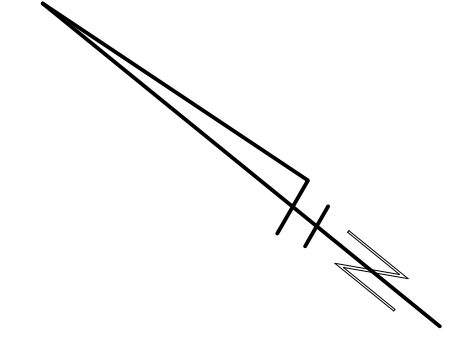
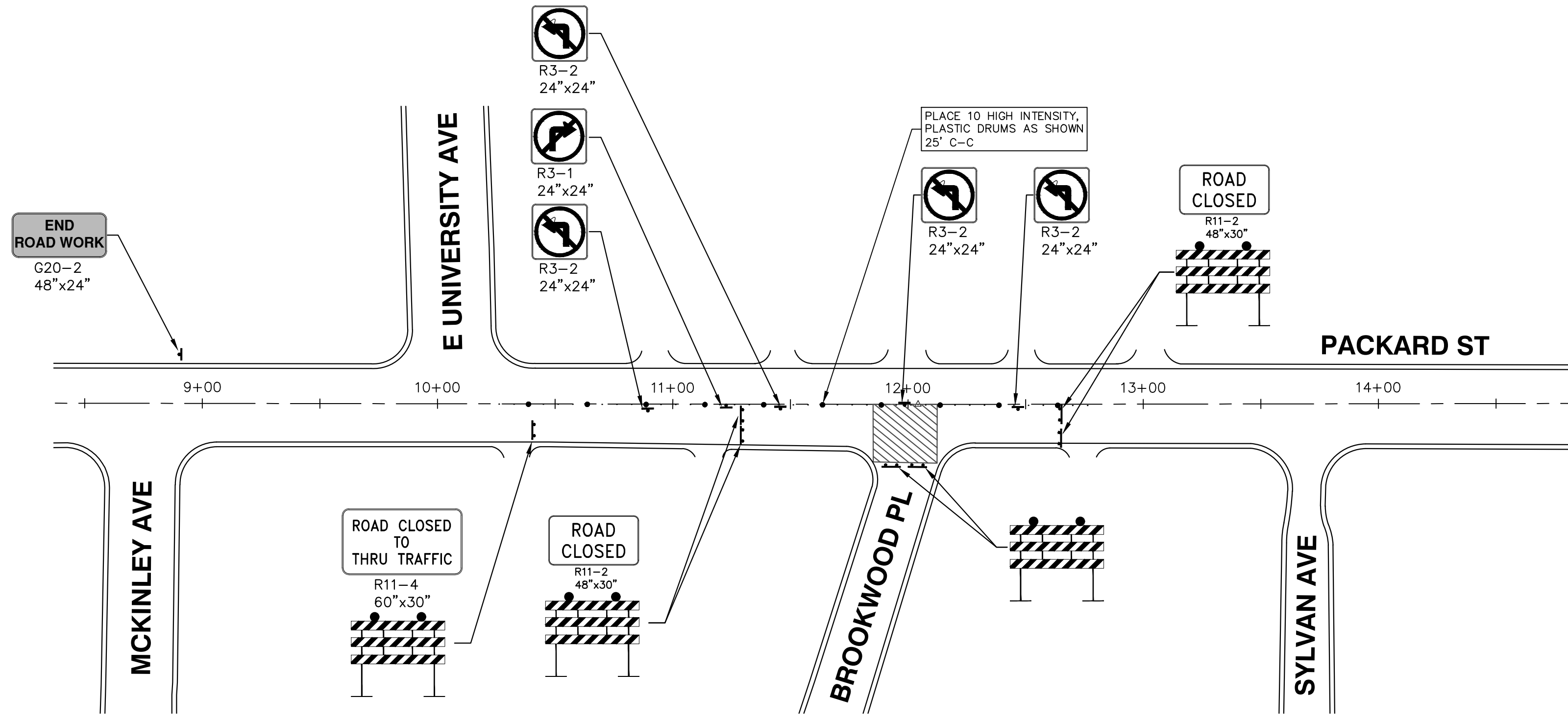
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
2018 MISC UTILITY PROJECTS  
BROOKWOOD PLACE  
DETOUR PLAN

SCALE PLAN: 1" = 250'  
DRAWING No. 2017033-12  
SHEET No. 12 OF 29

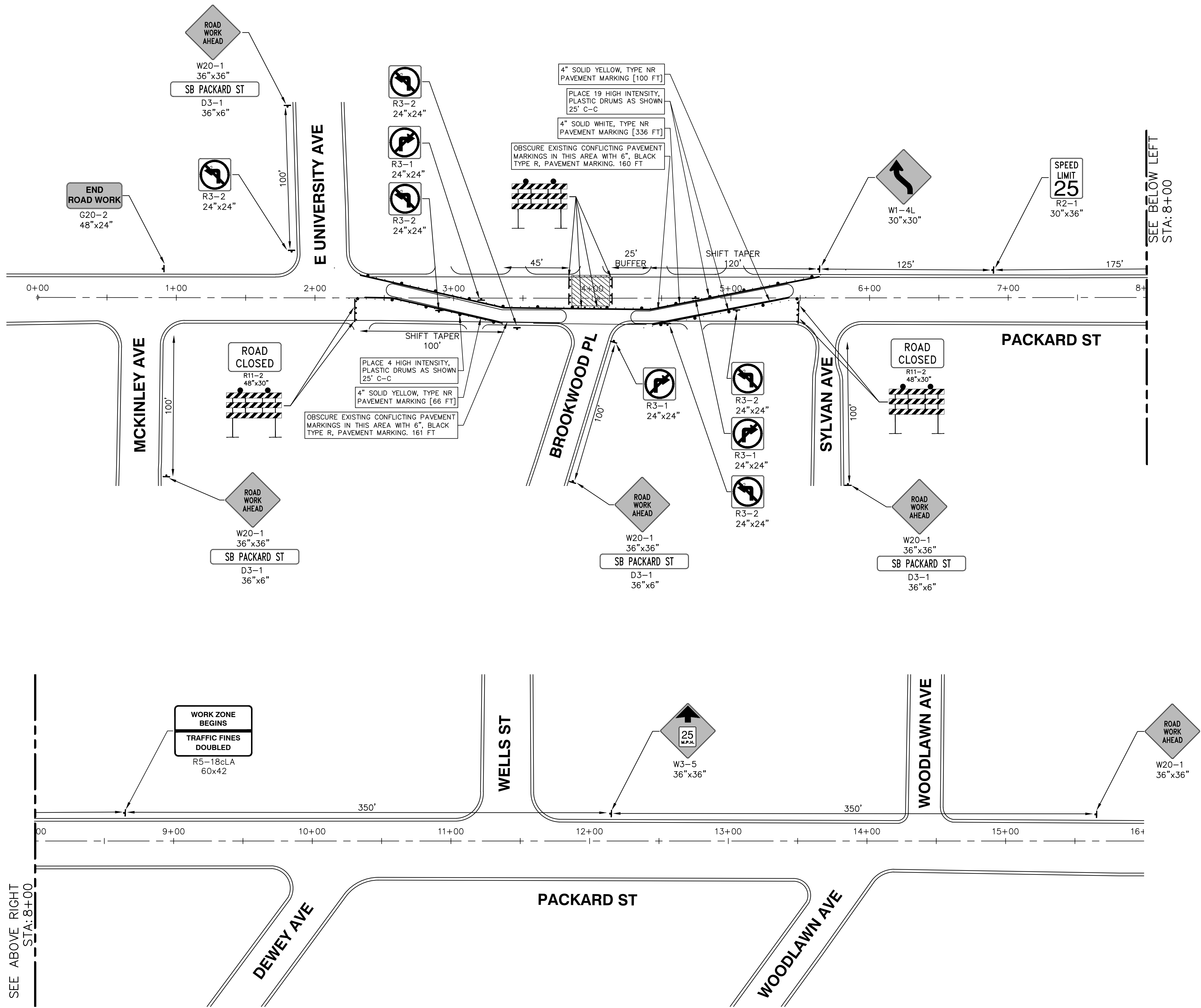
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01	03/23/18	ADDENDUM #1
00	03/07/18	ISSUED FOR BID



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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00		03/07/18	CEC	BS

R:\2017033 Brookwood Pl Water Main\Plan Production\2017033Mtrf2.dwg Dwg Created: 2-Mar-18 - Plot Date: 23-Mar-18



SEE ABOVE RIGHT  
STA: 8+00

SEE BELOW LEFT  
STA: 8+00

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
2018 MISC UTILITY PROJECTS  
BROOKWOOD PLACE  
TRAFFIC CONTROL - STAGE 2, PHASE 2

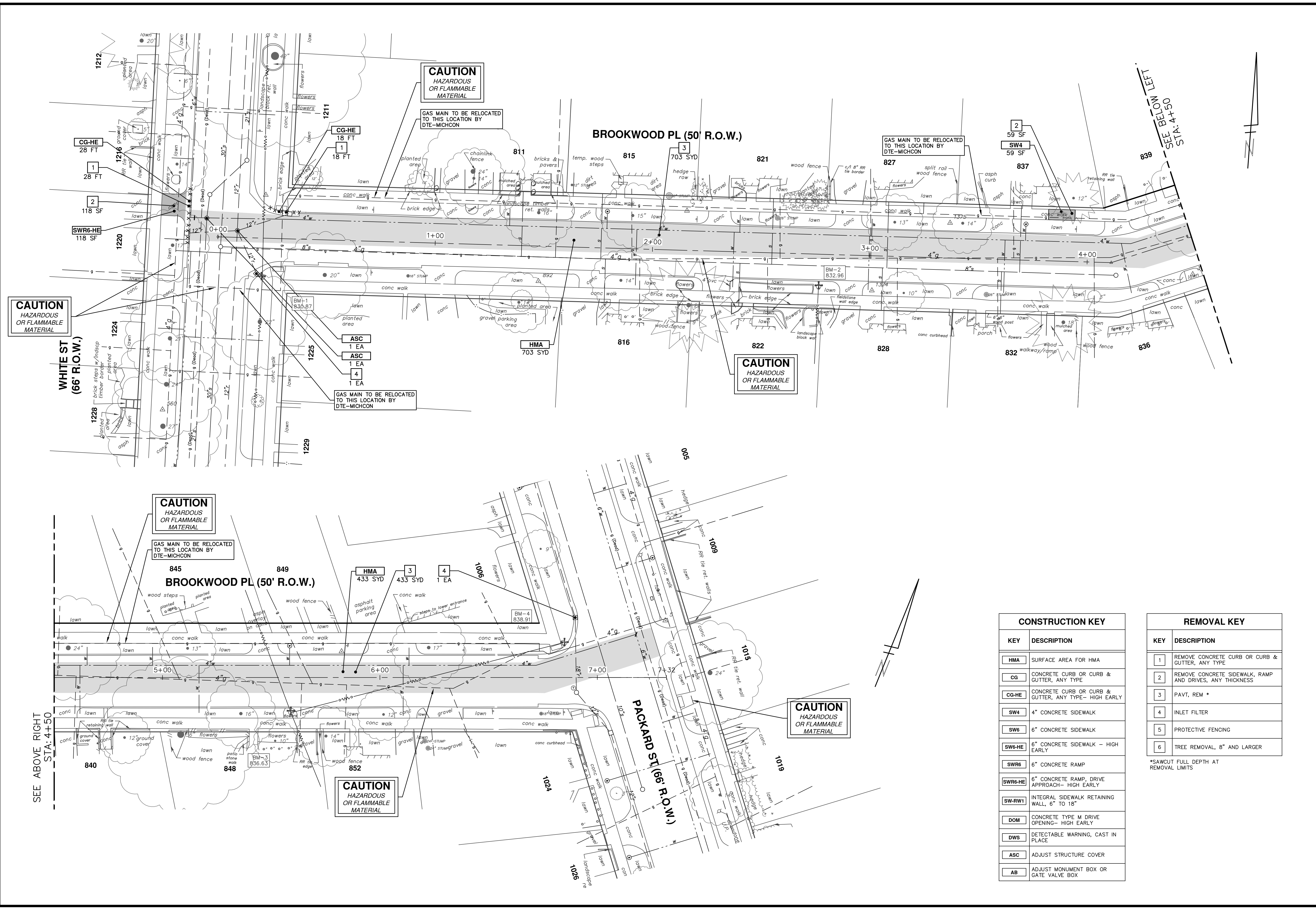
SCALE: 1" = 40'  
DRAWING No. 2017033-14

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REV.	DATE	DESCRIPTION
01	03/23/18	CEC
00	03/07/18	CEC
00		DRAWN
00		CHECKED

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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
CG-HE	CONCRETE CURB OR CURB & GUTTER, ANY TYPE - HIGH EARLY
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH - HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING - HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2018 MISC UTILITY PROJECTS**

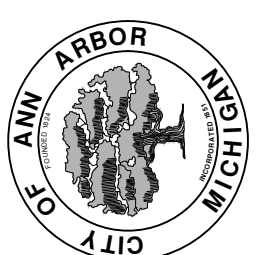
**BROOKWOOD PLACE**

**REMOVALS**

SCALE PLAN: 1" = 20'

DRAWING NO. 2017033-15

SHEET NO. 15 OF 29

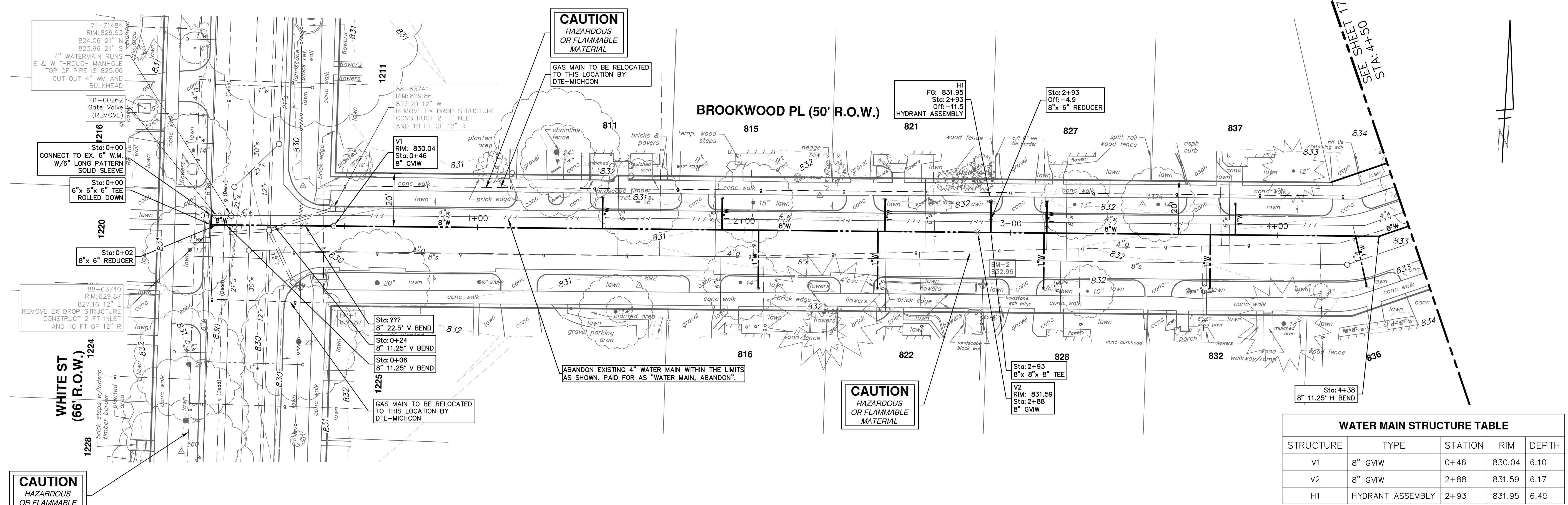


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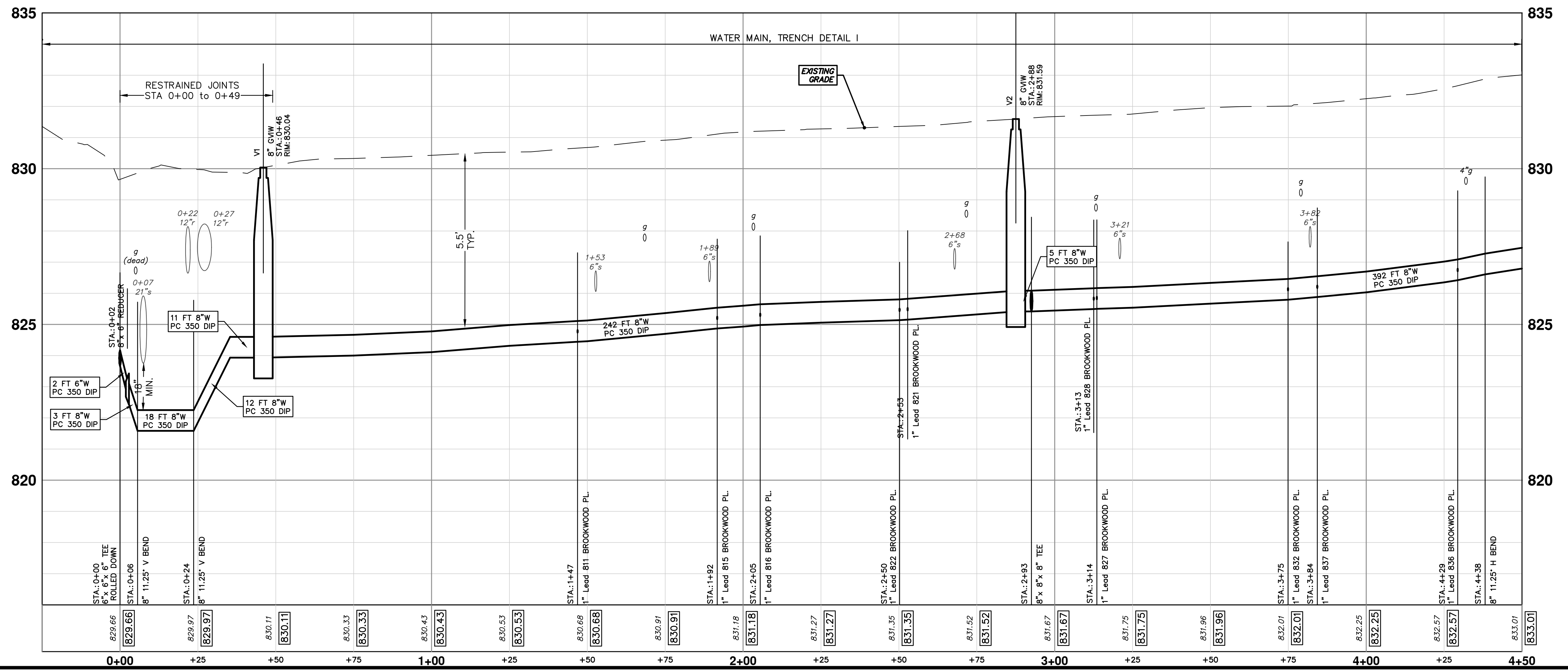
REV.	DESCRIPTION	DATE	CHECKED	DRAWN
01	ADDENDUM #1	03/23/18	CEC	BS
00	ISSUED FOR BID	03/07/18	CEC	BS

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R:\2017033 Brookwood Pl Water Main\Plan Production\2017033Wtr.dwg Dwg Created: 19-Mar-18 - a2 standard bw.stb - Plot Date: 23-Mar-18



STRUCTURE	TYPE	STATION	RIM	DEPTH
V1	8" GVIW	0+46	830.04	6.10
V2	8" GVIW	2+88	831.59	6.17
H1	HYDRANT ASSEMBLY	2+93	831.95	6.45



**811**  
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01  
03/23/18  
CEC  
03/07/18  
CEC  
DATE  
DRAWN  
CHECKED

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ANN ARBOR, MI 48106-0667  
www.a2gov.org

01  
00  
ISSUED FOR BID  
DESCRIPTION  
REV.

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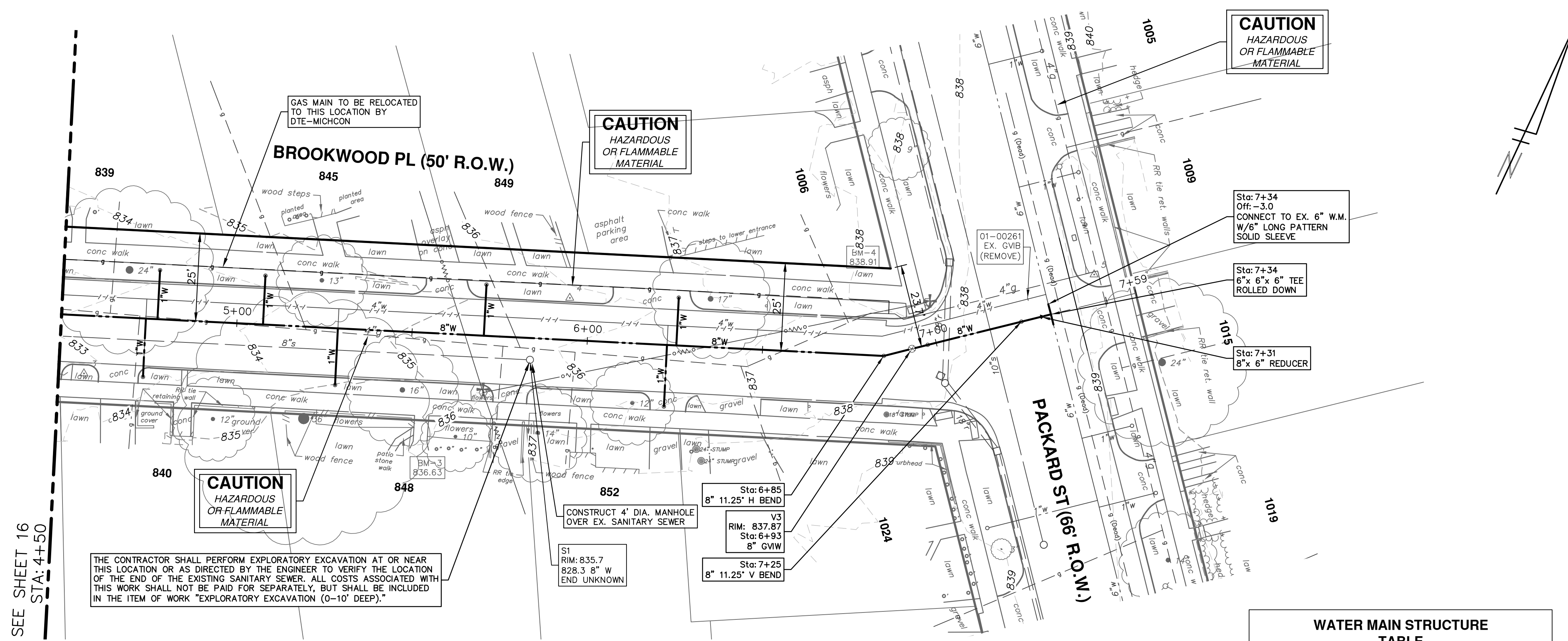
**CITY OF ANN ARBOR - ENGINEERING**  
**2018 MISC UTILITY PROJECTS**  
BROOKWOOD PLACE  
WATER MAIN STA. 0+00 TO STA. 4+50

SHEET No.  
16 OF 29

---

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

DRAWING No.  
2017033-16



SEE SHEET 16  
STA: 4+50

THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT OR NEAR THIS LOCATION OR AS DIRECTED BY THE ENGINEER TO VERIFY THE LOCATION OF THE END OF THE EXISTING SANITARY SEWER. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY EXCAVATION (0-10' DEEP)."

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

Sta: 7+34  
Off: -3.0  
CONNECT TO EX. 6" W.M.  
W/6" LONG PATTERN  
SOLID SLEEVE

Sta: 7+34  
6" x 6" x 6" TEE  
ROLLED DOWN

Sta: 7+31  
8" x 6" REDUCER

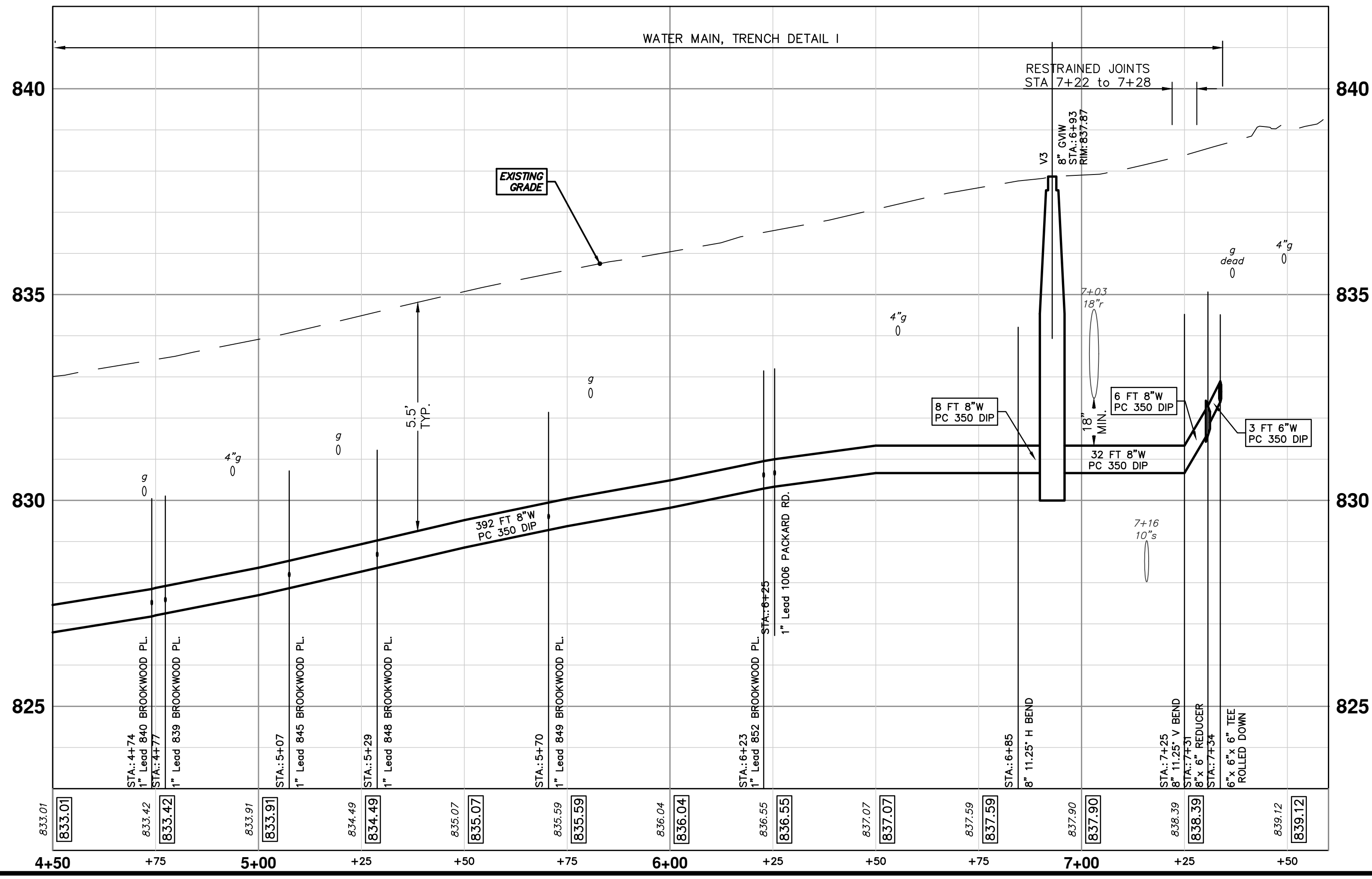
CONSTRUCT 4" DIA. MANHOLE  
OVER EX. SANITARY SEWER

Sta: 6+85  
8" 11.25" H BEND  
V3  
RIM: 837.87  
Sta: 6+93  
8" GVW

Sta: 7+25  
8" 11.25" V BEND

S1  
RIM: 835.7  
828.3 8" W  
END UNKNOWN

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V3	8" GVW	6+93	837.87	7.20



**811**  
Know what's below.  
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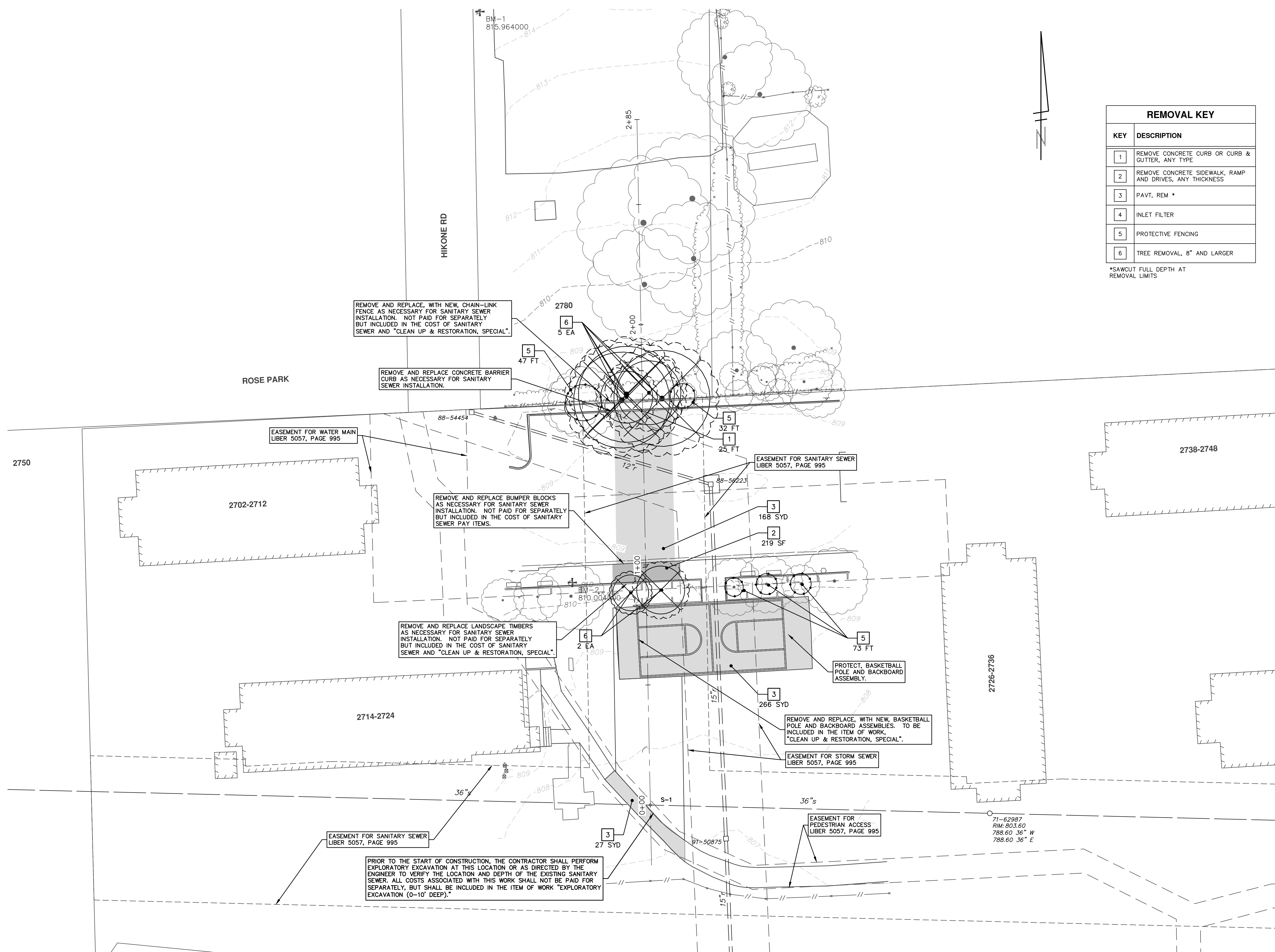
REV.	DATE	DESCRIPTION
01	03/23/18	CEC
00	03/07/18	CEC

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2018 MISC UTILITY PROJECTS  
BROOKWOOD PLACE  
WATER MAIN STA. 4+50 TO STA. 7+34

SHEET No. **17 OF 29**

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No. **2017033-17**

R:\2017033 Packard San\Plan Production\2016035SAN.dwg Dwg Created: 6-Mar-18 - \_a2 standard bw.stb - Plot Date: 23-Mar-18



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS

REMOVE AND REPLACE, WITH NEW, CHAIN-LINK FENCE AS NECESSARY FOR SANITARY SEWER INSTALLATION. NOT PAID FOR SEPARATELY BUT INCLUDED IN THE COST OF SANITARY SEWER AND "CLEAN UP & RESTORATION, SPECIAL".

REMOVE AND REPLACE CONCRETE BARRIER CURB AS NECESSARY FOR SANITARY SEWER INSTALLATION.

EASEMENT FOR WATER MAIN LIBER 5057, PAGE 995

REMOVE AND REPLACE BUMPER BLOCKS AS NECESSARY FOR SANITARY SEWER INSTALLATION. NOT PAID FOR SEPARATELY BUT INCLUDED IN THE COST OF SANITARY SEWER PAY ITEMS.

REMOVE AND REPLACE LANDSCAPE TIMBERS AS NECESSARY FOR SANITARY SEWER INSTALLATION. NOT PAID FOR SEPARATELY BUT INCLUDED IN THE COST OF SANITARY SEWER AND "CLEAN UP & RESTORATION, SPECIAL".

PROTECT, BASKETBALL POLE AND BACKBOARD ASSEMBLY.

REMOVE AND REPLACE, WITH NEW, BASKETBALL POLE AND BACKBOARD ASSEMBLIES. TO BE INCLUDED IN THE ITEM OF WORK, "CLEAN UP & RESTORATION, SPECIAL".

EASEMENT FOR STORM SEWER LIBER 5057, PAGE 995

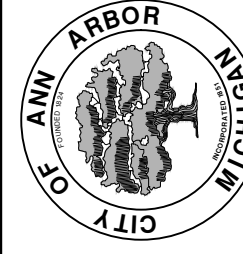
EASEMENT FOR PEDESTRIAN ACCESS LIBER 5057, PAGE 995

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION AT THIS LOCATION OR AS DIRECTED BY THE ENGINEER TO VERIFY THE LOCATION AND DEPTH OF THE EXISTING SANITARY SEWER. ALL COSTS ASSOCIATED WITH THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "EXPLORATORY EXCAVATION (0-10' DEEP)."



Know what's below. Call before you dig.

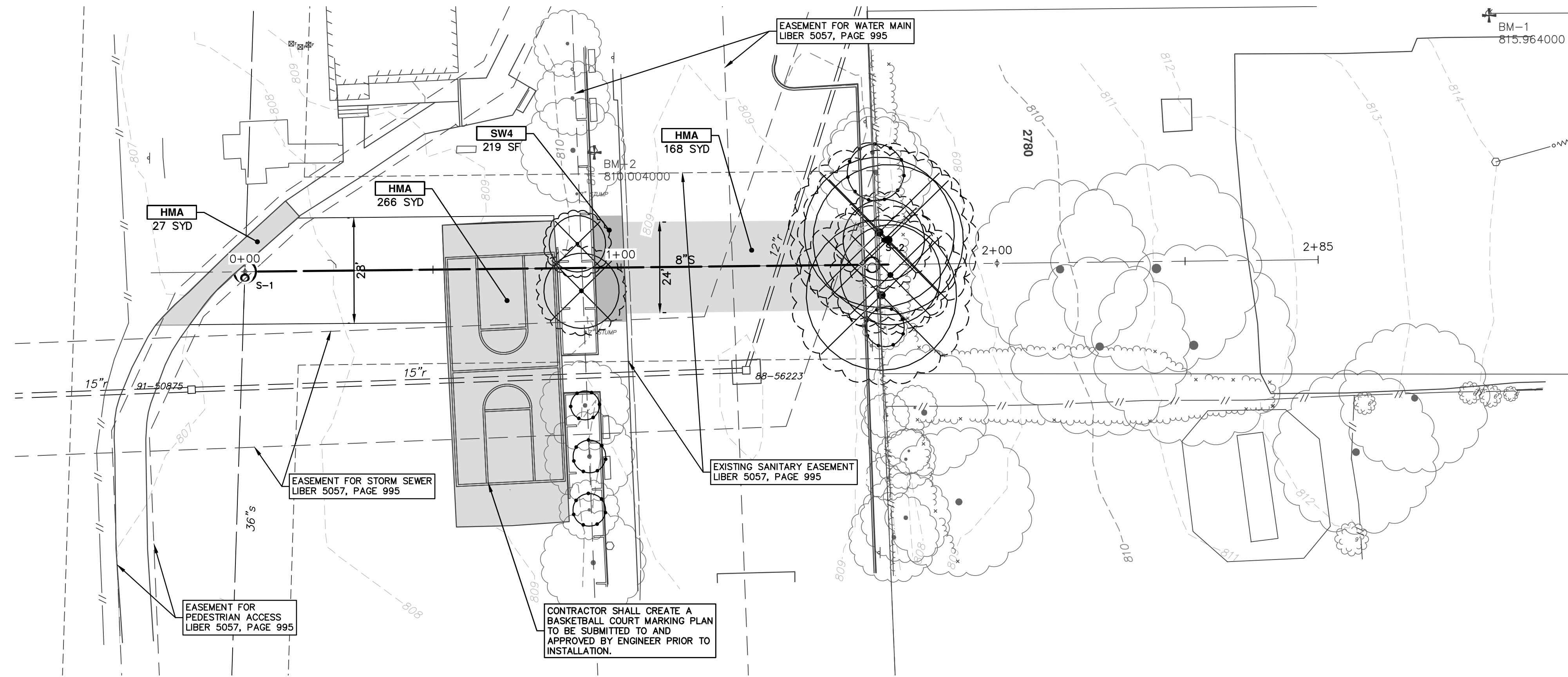
CITY OF ANN ARBOR  
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301 EAST HURON STREET  
ANN ARBOR, MI 48106-8647  
www.a2gov.org



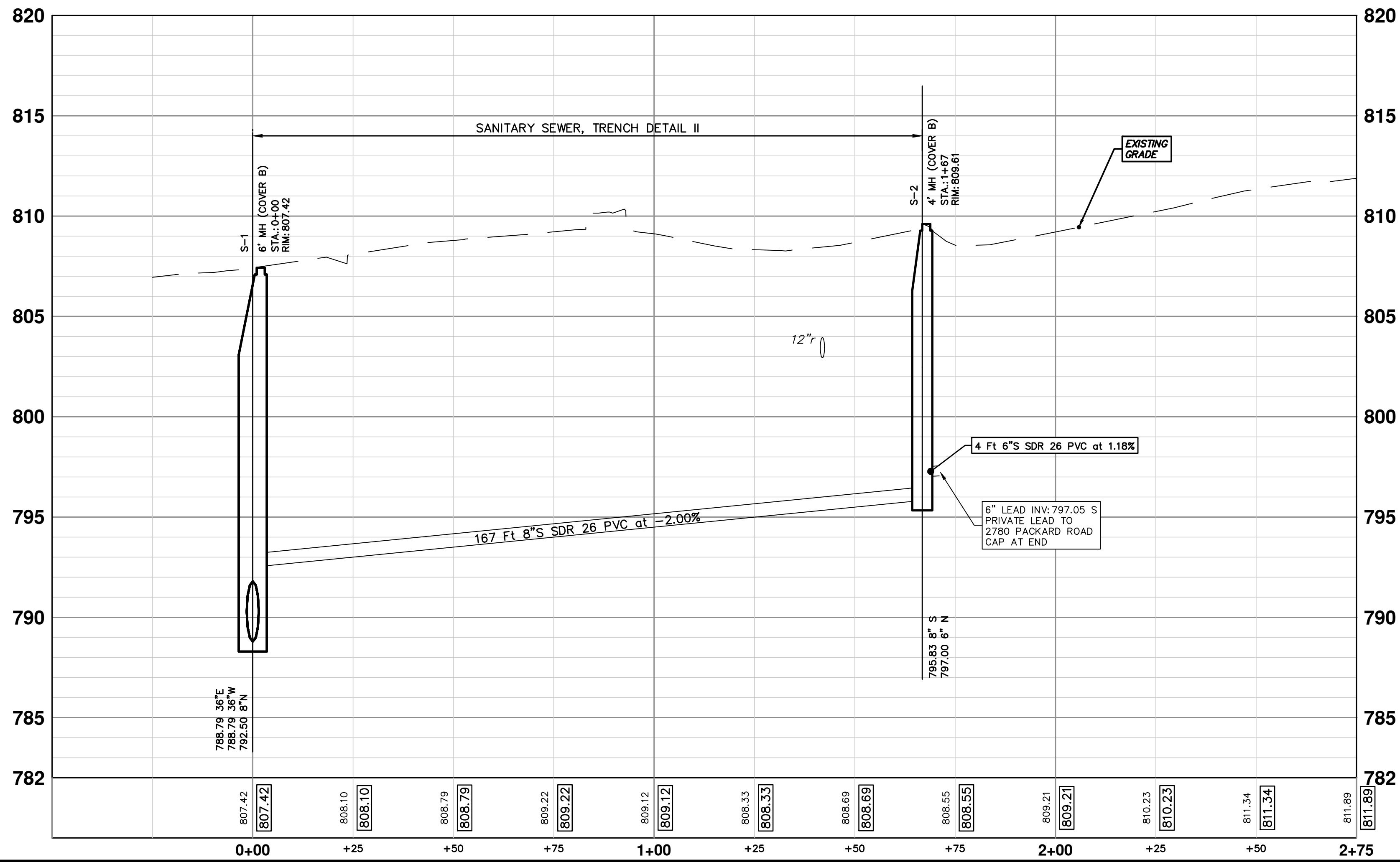
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR  
2018 MISC UTILITY PROJECTS  
PACKARD ROAD  
REMOVALS

SCALE PLAN: 1" = 20'  
DRAWING No. 2017033-18





KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
CG-HE	CONCRETE CURB OR CURB & GUTTER, ANY TYPE- HIGH EARLY
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING- HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX



SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	STATION	RIM	DEPTH	TYPE	INVERTS	NOTES
S-1	0+00	807.42	18.63	6' MH	36" E 788.79 36" W 788.79 8" N 792.50	6' MH (Cover B)
S-2	1+67	809.61	13.78	4' MH	8" S 795.83 6" N 797.00	4' MH (Cover B)

Know what's below. Call before you dig.

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CITY OF ANN ARBOR MICHIGAN

**PROJECT MANAGEMENT - CITY OF ANN ARBOR**

**2018 MISC UTILITY PROJECTS**

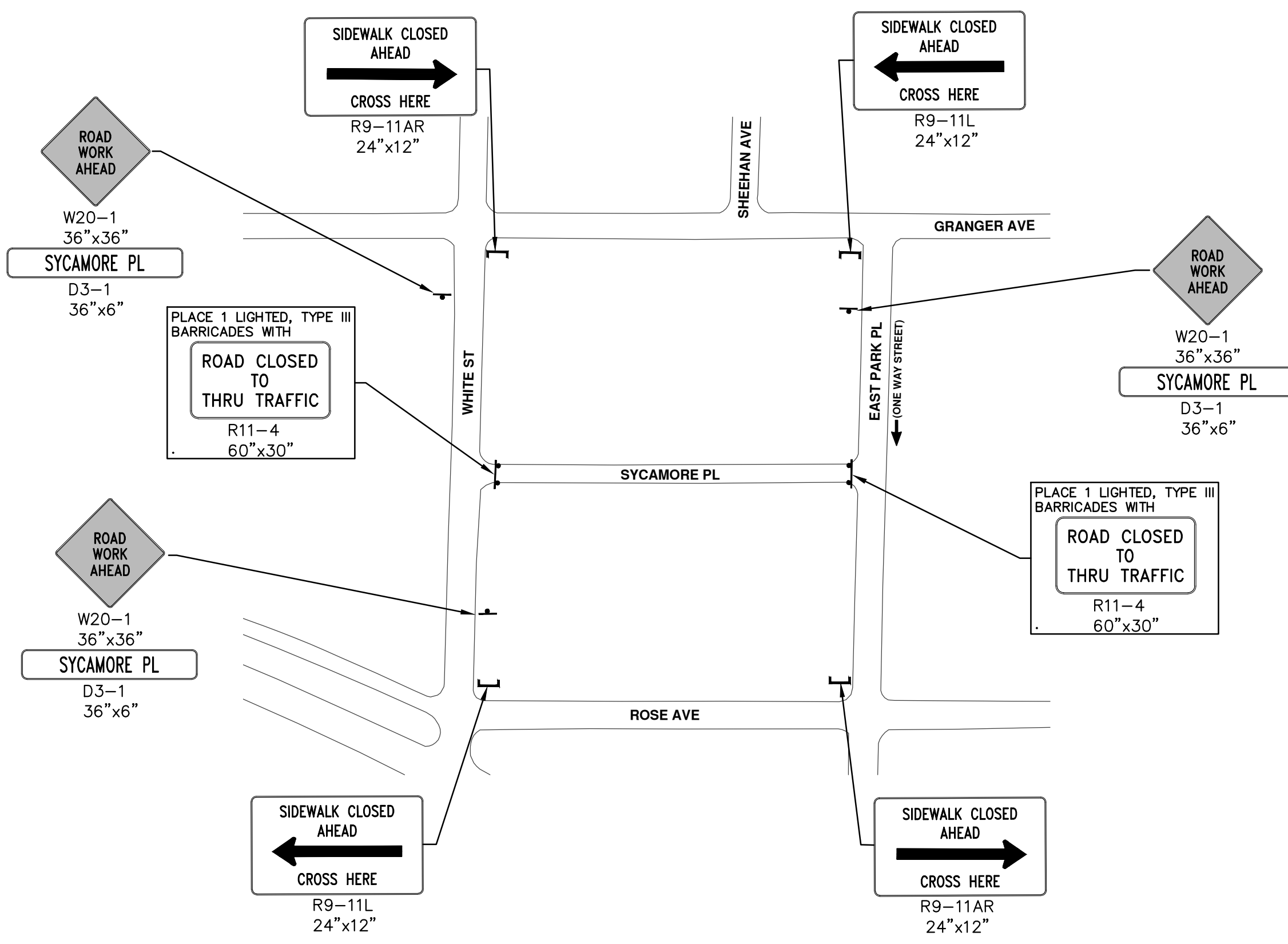
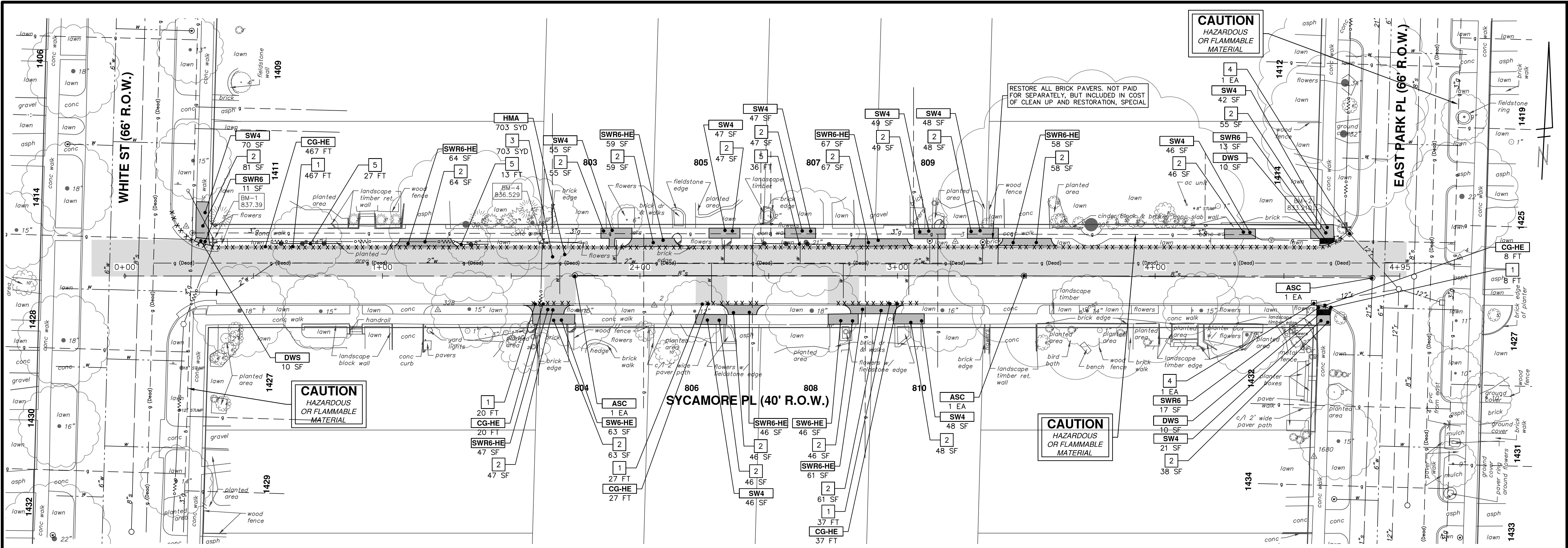
PACKARD ROAD

SANITARY SEWER PLAN & PROFILE

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'

DRAWING No. 2017033-19

SHEET No. 19 OF 29



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
CG-HE	CONCRETE CURB OR CURB & GUTTER, ANY TYPE - HIGH EARLY
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH - HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING - HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS

Know what's below. Call before you dig.

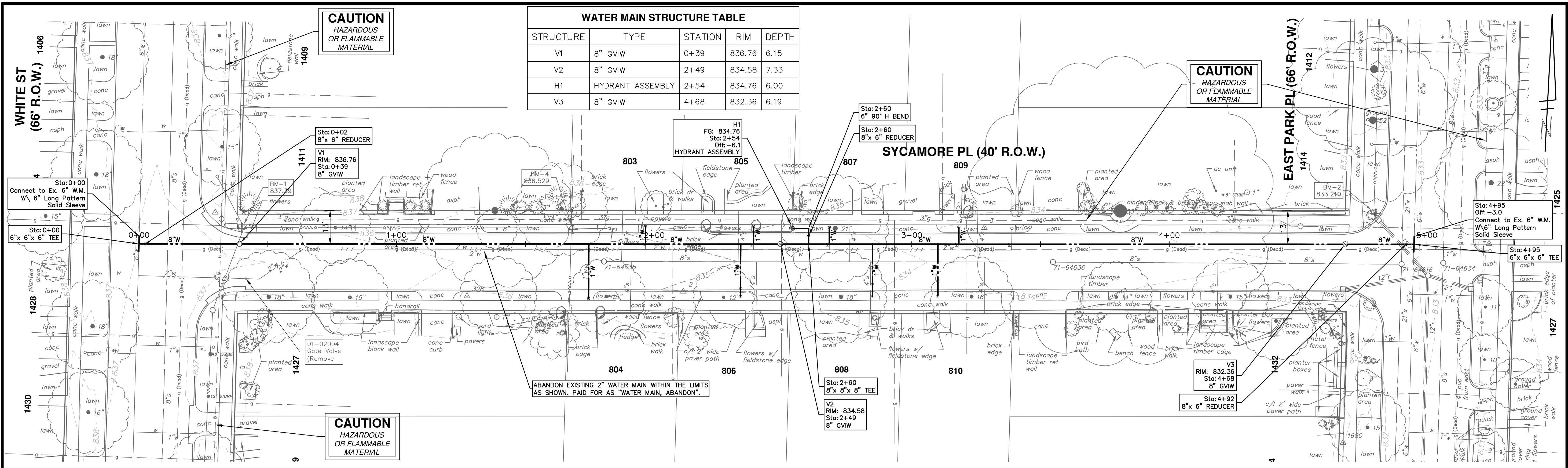
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

2018 MISC UTILITY PROJECTS

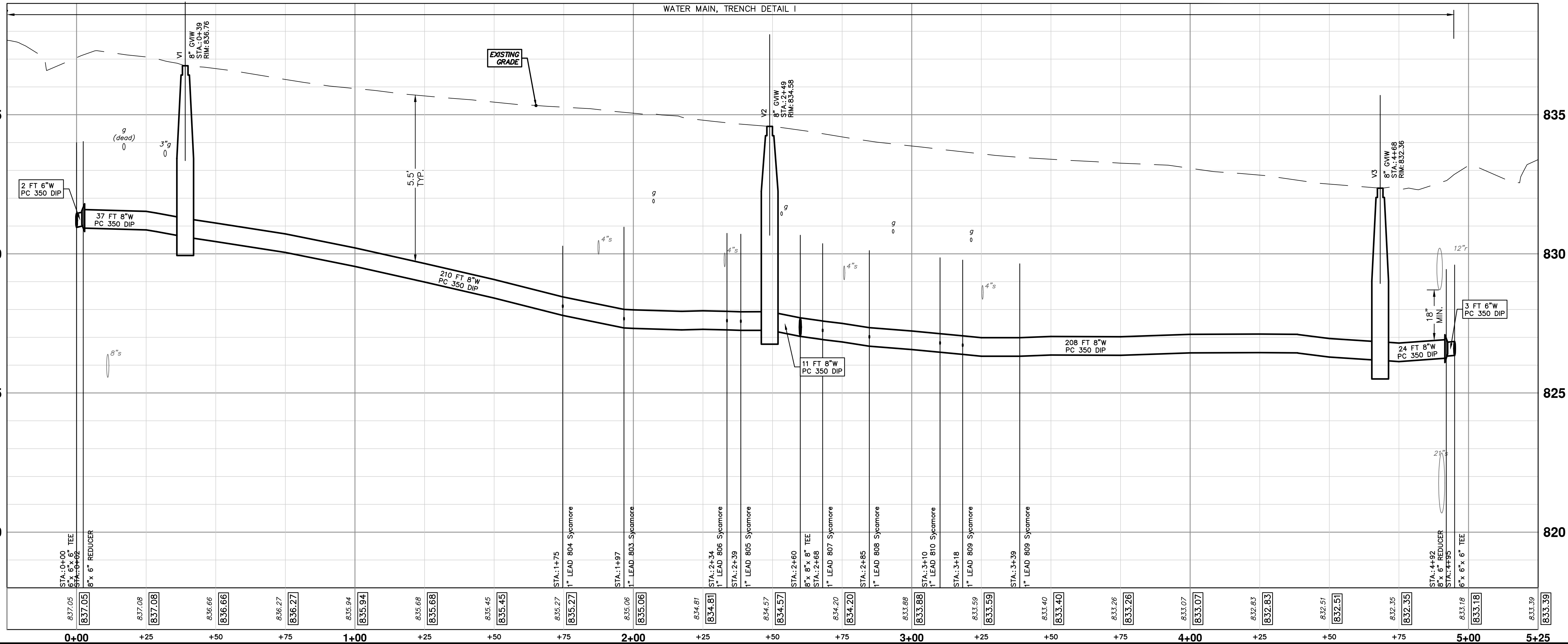
SYCAMORE PLACE REMOVALS AND TRAFFIC CONTROL

REV.	DATE	DRAWN	CHECKED	DESCRIPTION
01	03/23/18	CEC	BS	ADDENDUM #1
00	03/07/18	CEC	BS	ISSUED FOR BID

SHEET No. 20 OF 29



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V1	8" GVIW	0+39	836.76	6.15
V2	8" GVIW	2+49	834.58	7.33
H1	HYDRANT ASSEMBLY	2+54	834.76	6.00
V3	8" GVIW	4+68	832.36	6.19



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2018 MISC UTILITY PROJECTS**

SYCAMORE PLACE

WATER MAIN PLAN AND PROFILE

SHEET No. **21 OF 29**

**811**

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01 ADDENDUM #1

00 ISSUED FOR BID

03/23/18

03/07/18

DATE

DESCRIPTION

REV.

01

00

BS

CEC

CEC

BS

CEC

BS

CHECKED

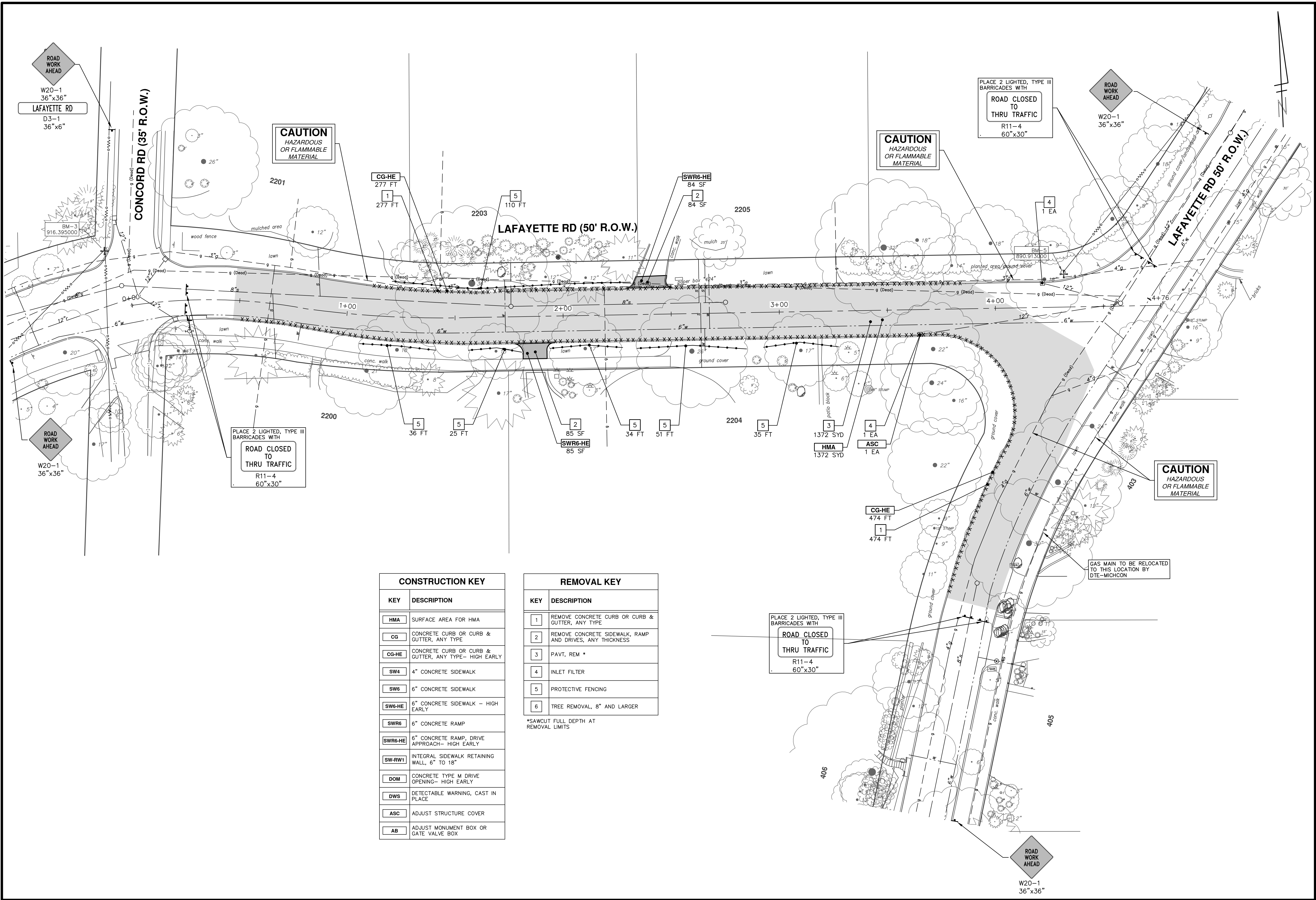
DRAWN

SCALE PLAN: 1" = 20'

PROFILE: 1" = 2'

DRAWING No. **2017033-21**

R:\20170333 Lafayette-Lenawee Son\Plan Production\20170333Rem.dwg Dwg Created: 5-Mar-18 - \_g2 standard bw.stb - Plot Date: 23-Mar-18



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
CG-HE	CONCRETE CURB OR CURB & GUTTER, ANY TYPE- HIGH EARLY
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING- HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

SCALE PLAN: 1" = 20'

SHEET No. **22 OF 29**

**2018 MISC UTILITY PROJECTS**

LAFAYETTE ROAD

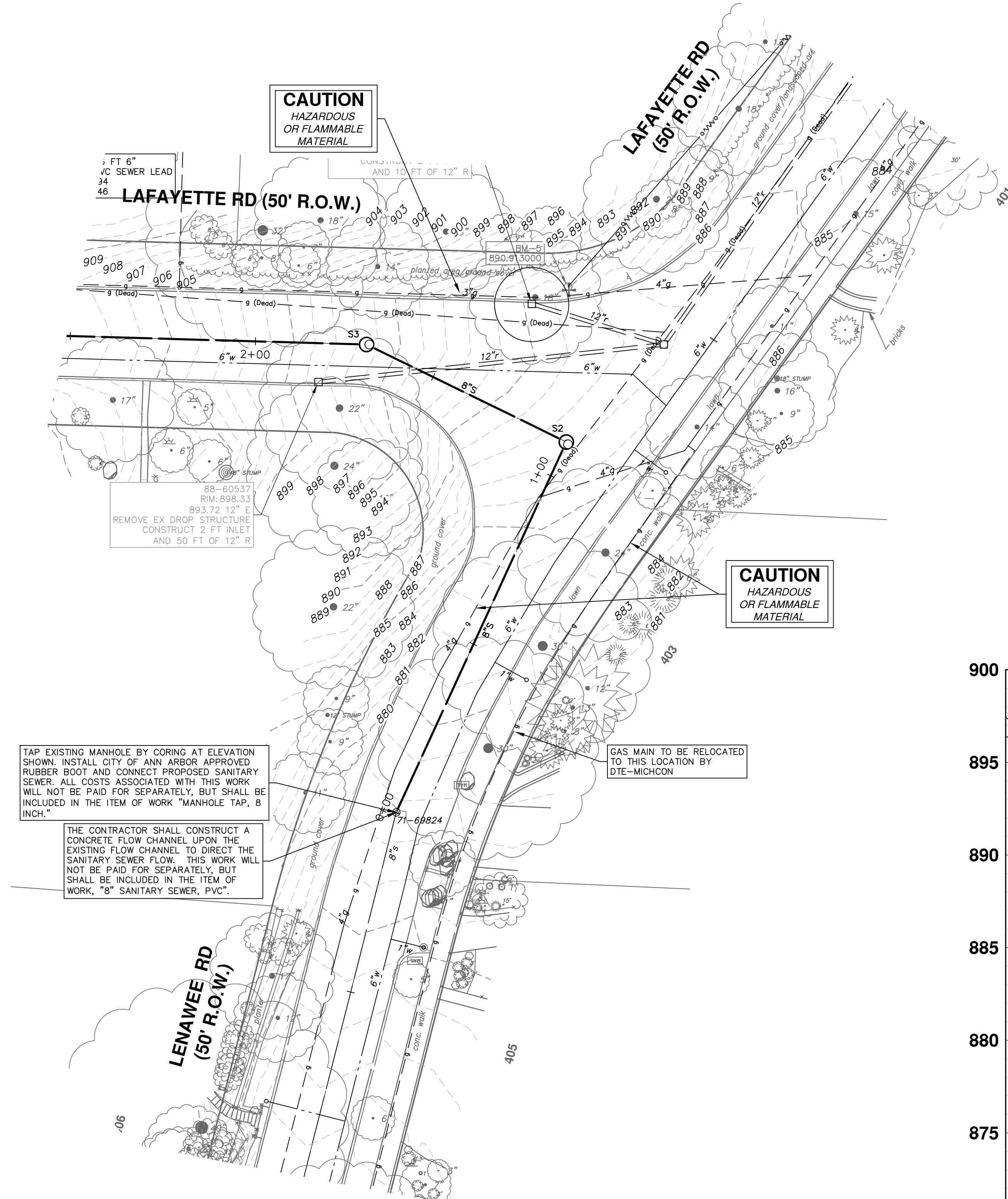
REMOVALS AND TRAFFIC CONTROL

811  
Know what's below.  
Call Before you dig.

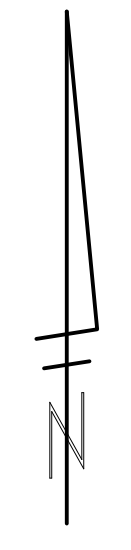
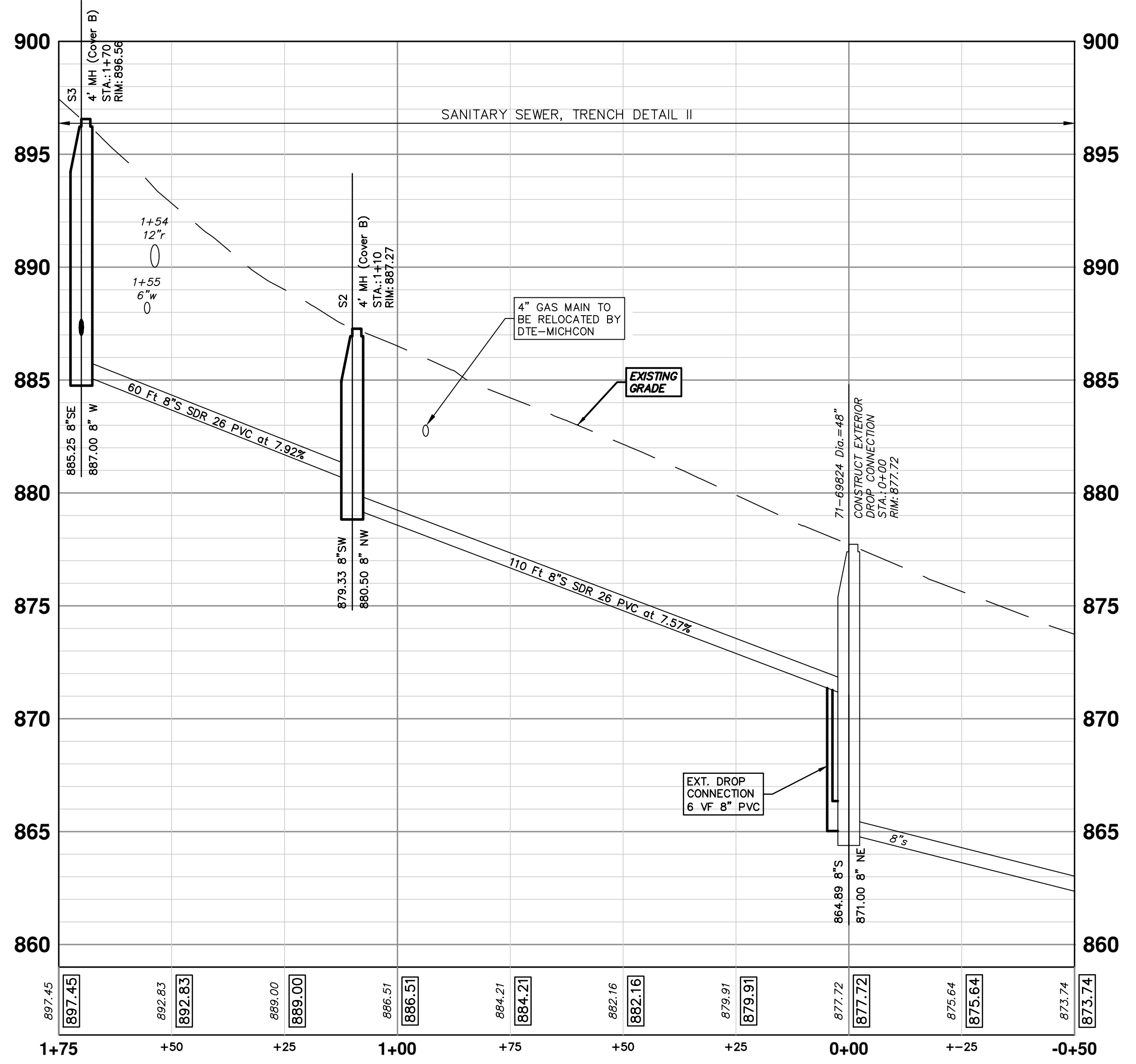
01 ADDENDUM #1  
03/23/18  
03/07/18  
DATE  
DRAWN  
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DATE  
DRAWN  
CHECKED



SANITARY SEWER STRUCTURE TABLE					
STRUCTURE	STATION	RIM	DEPTH	INVERTS	NOTES
71-69824	0+00	877.72	12.83	8" NE 871.00 8" S 864.89	CONSTRUCT EXTERIOR DROP CONNECTION
S2	1+10	887.27	7.94	8" NW 880.50 8" SW 879.33	4' MH (Cover B)
S3	1+70	896.56	11.31	8" W 887.00 8" SE 885.25	4' MH (Cover B)



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2018 MISC UTILITY PROJECTS**

LAFAYETTE ROAD

SANITARY SEWER 71-69824 TO S-3

SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'

DRAWING No. **2017033-23**

SHEET No. **23 OF 29**

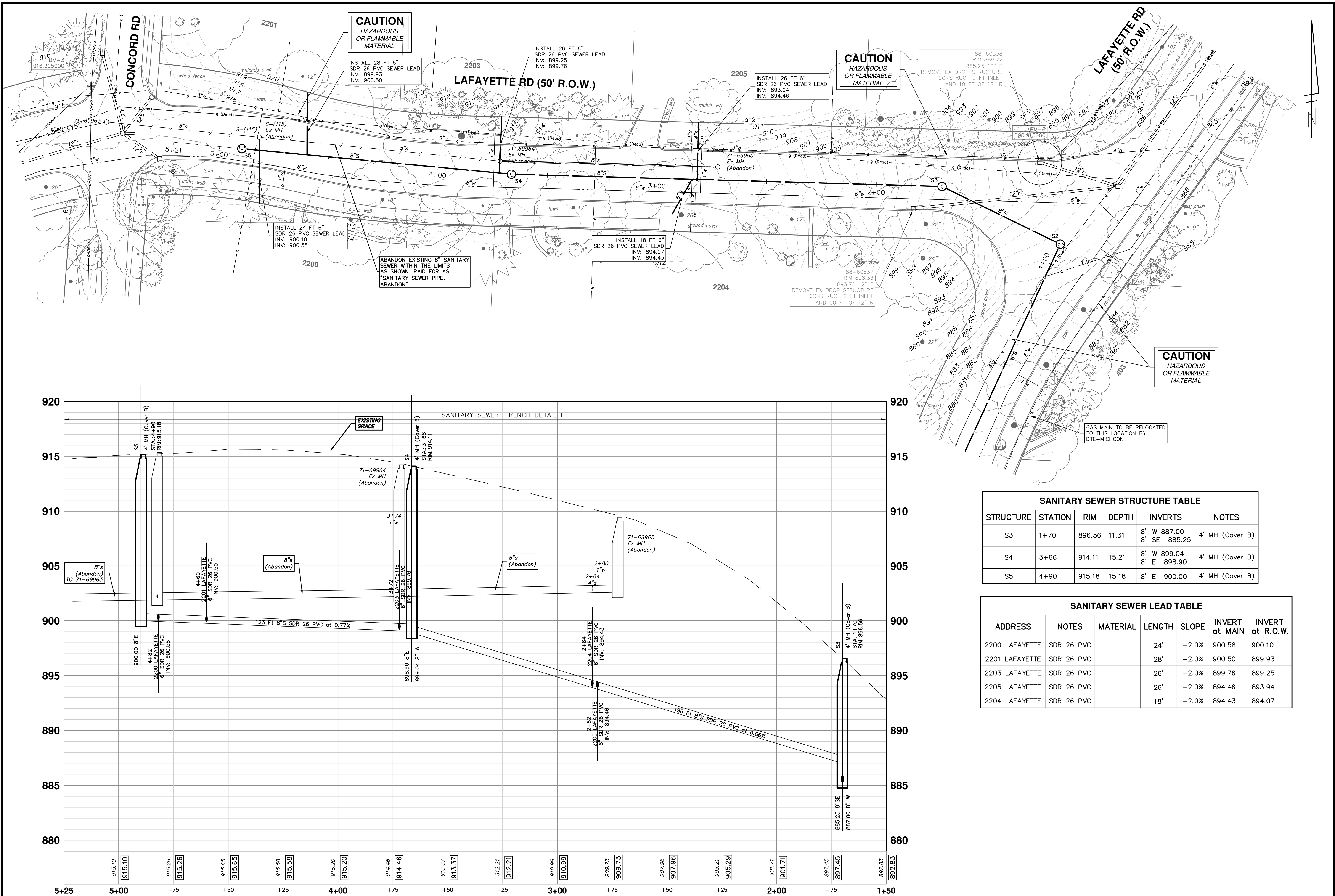
**811**  
Know what's below.  
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01	ADDENDUM #1	ISSUED FOR BID	REV.
03/23/18	CEC	03/07/18	CEC
		DATE	DRAWN
			CHECKED

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CITY OF ANN ARBOR MICHIGAN

R:\20170333 Lafayette-Lenawee San Plan Production\20170333Sswr.dwg Dwg Created: 19-Mar-18 - \_a2 standard bw.stb - Plot Date: 23-Mar-18



SANITARY SEWER STRUCTURE TABLE					
STRUCTURE	STATION	RIM	DEPTH	INVERTS	NOTES
S3	1+70	896.56	11.31	8" W 887.00 8" SE 885.25	4' MH (Cover B)
S4	3+66	914.11	15.21	8" W 899.04 8" E 898.90	4' MH (Cover B)
S5	4+90	915.18	15.18	8" E 900.00	4' MH (Cover B)

SANITARY SEWER LEAD TABLE						
ADDRESS	NOTES	MATERIAL	LENGTH	SLOPE	INVERT at MAIN	INVERT at R.O.W.
2200 LAFAYETTE	SDR 26 PVC		24'	-2.0%	900.58	900.10
2201 LAFAYETTE	SDR 26 PVC		28'	-2.0%	900.50	899.93
2203 LAFAYETTE	SDR 26 PVC		26'	-2.0%	899.76	899.25
2205 LAFAYETTE	SDR 26 PVC		26'	-2.0%	894.46	893.94
2204 LAFAYETTE	SDR 26 PVC		18'	-2.0%	894.43	894.07

**811**  
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'

2018 MISC UTILITY PROJECTS  
LAFAYETTE ROAD  
SANITARY SEWER S-3 TO S-5

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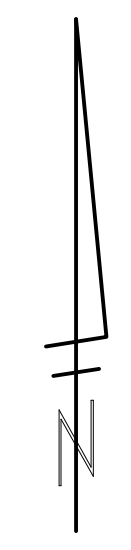
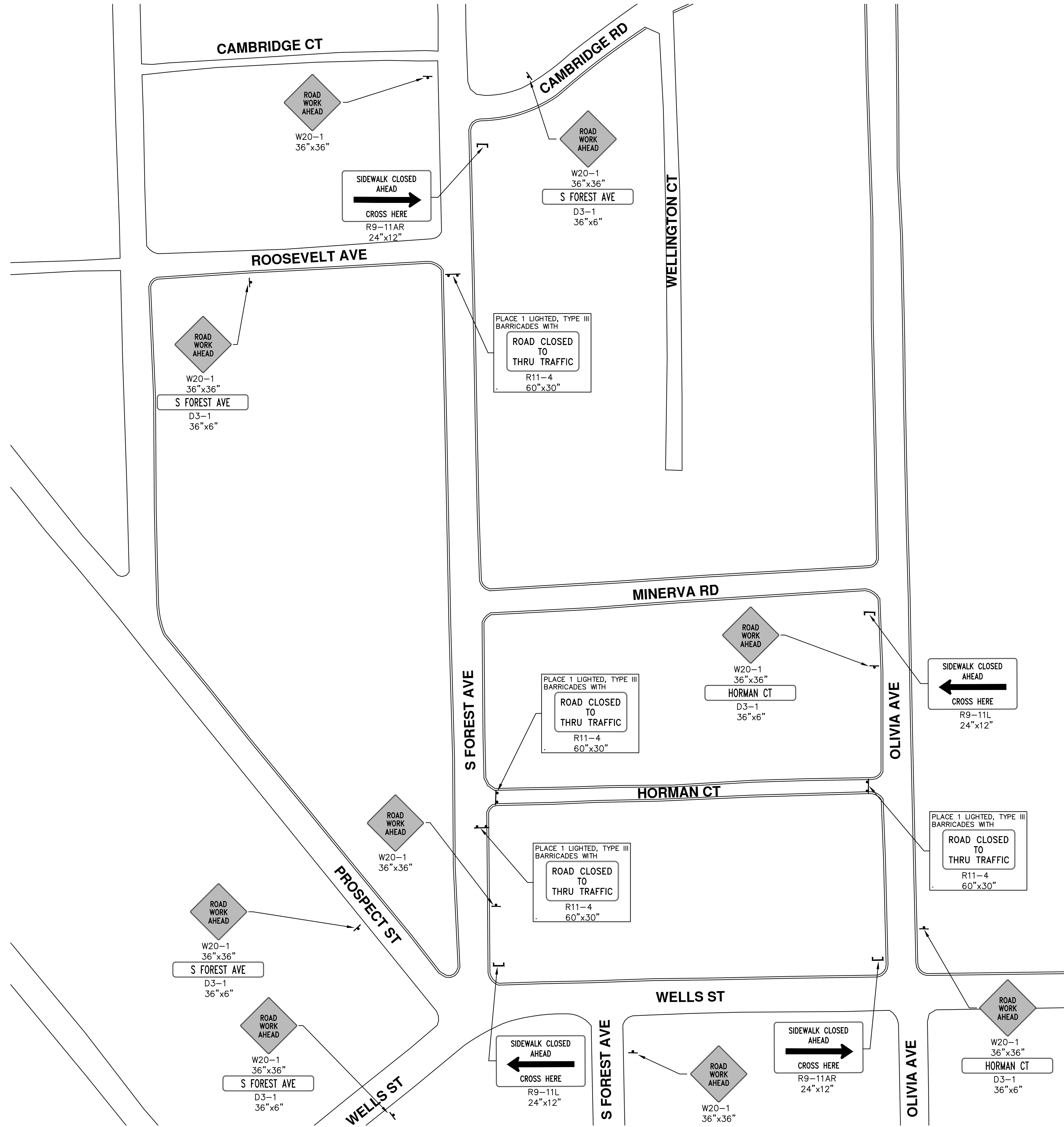
SHEET No.  
24 OF 29

DRAWING No.  
2017033-24

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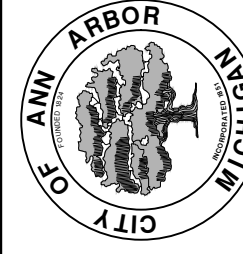
01 ADDENDUM #1  
03/23/18  
03/07/18

REV. DESCRIPTION  
DATE DRAWN CHECKED



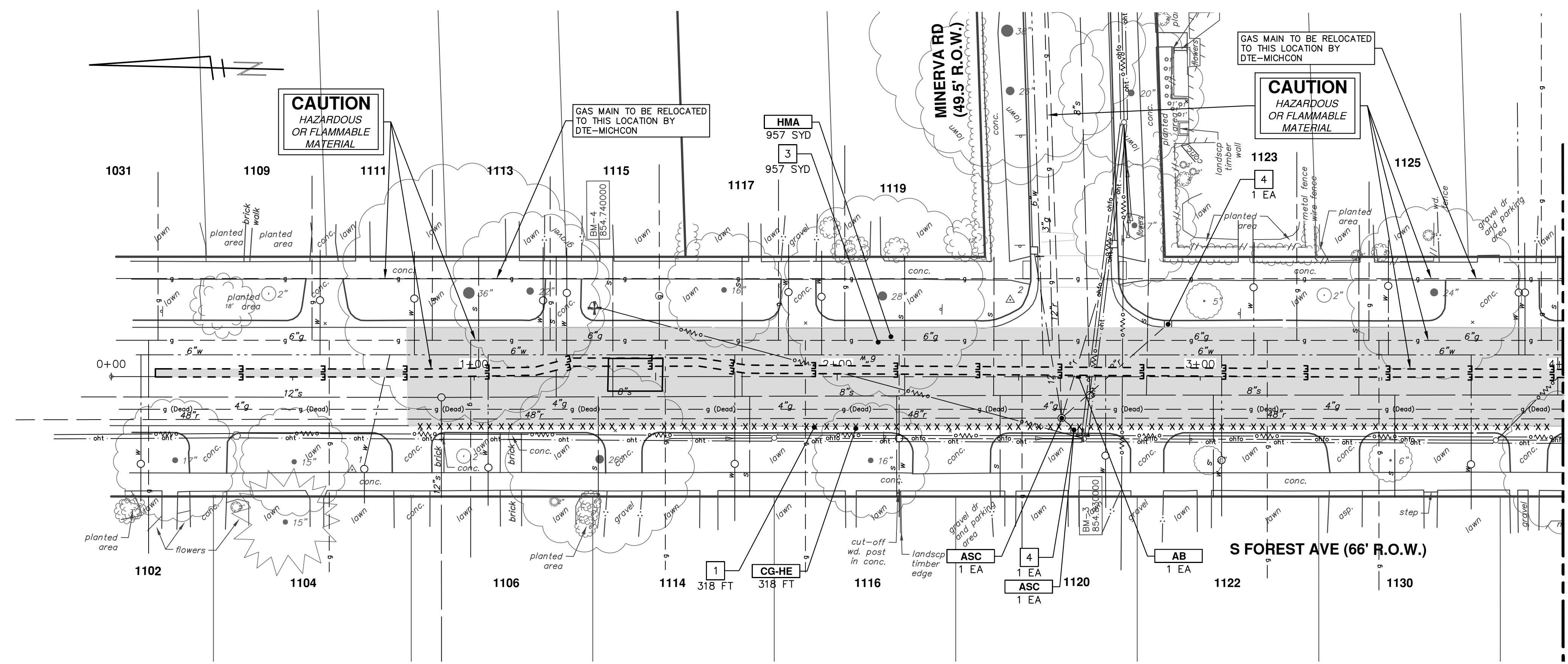
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00	03/07/18	CEC
		DRAWN
		CHECKED

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**2018 MISC UTILITY PROJECTS**  
HORMAN COURT  
TRAFFIC CONTROL

SCALE PLAN: 1" = 60'  
DRAWING No. 2017033-25

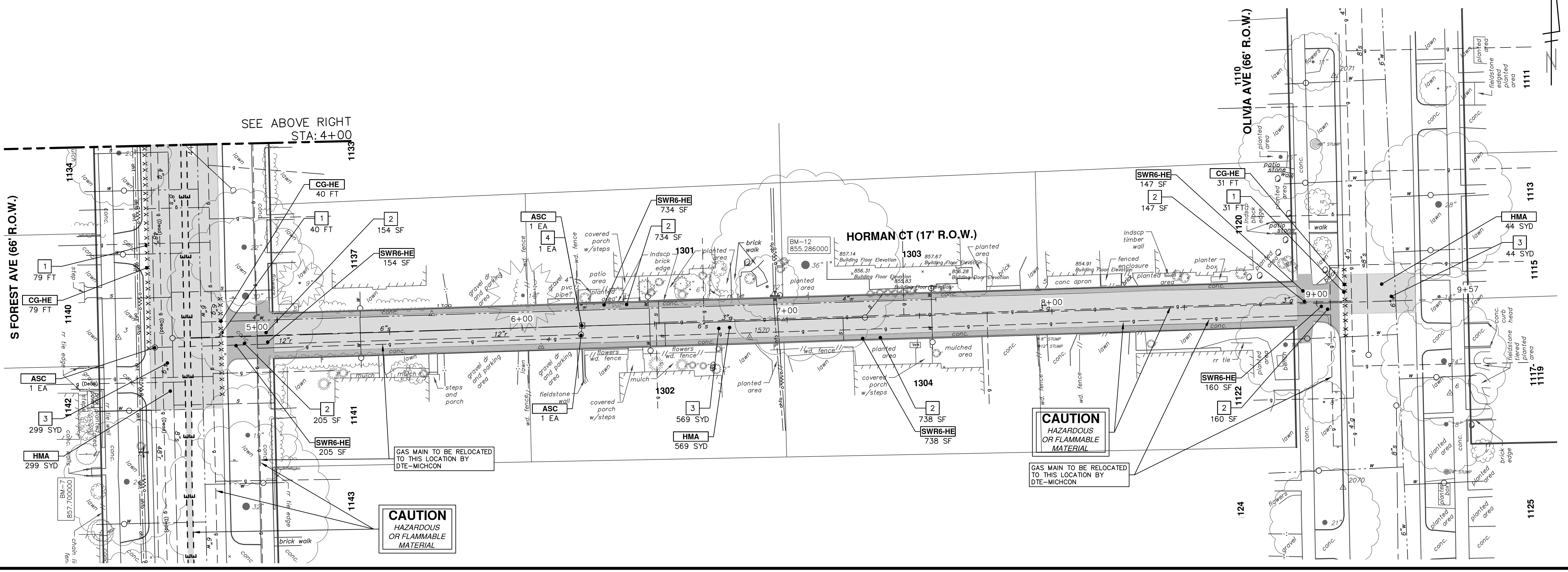


SEE BELOW LEFT  
STA: 4+00

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	SURFACE AREA FOR HMA
CG	CONCRETE CURB OR CURB & GUTTER, ANY TYPE
CG-HE	CONCRETE CURB OR CURB & GUTTER, ANY TYPE- HIGH EARLY
SW4	4" CONCRETE SIDEWALK
SW6	6" CONCRETE SIDEWALK
SW6-HE	6" CONCRETE SIDEWALK - HIGH EARLY
SWR6	6" CONCRETE RAMP
SWR6-HE	6" CONCRETE RAMP, DRIVE APPROACH- HIGH EARLY
SW-RW1	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18"
DOM	CONCRETE TYPE M DRIVE OPENING- HIGH EARLY
DWS	DETECTABLE WARNING, CAST IN PLACE
ASC	ADJUST STRUCTURE COVER
AB	ADJUST MONUMENT BOX OR GATE VALVE BOX

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB & GUTTER, ANY TYPE
2	REMOVE CONCRETE SIDEWALK, RAMP AND DRIVES, ANY THICKNESS
3	PAVT, REM *
4	INLET FILTER
5	PROTECTIVE FENCING
6	TREE REMOVAL, 8" AND LARGER

\*SAWCUT FULL DEPTH AT REMOVAL LIMITS



SEE ABOVE RIGHT  
STA: 4+00

Know what's below.  
Call before you dig.

01	ADDENDUM #1	03/23/18	CEC	BS	CHECKED
00	ISSUED FOR BID	03/07/18	CEC	BS	DRAWN
	REV.	DATE	DESCRIPTION		

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
2018 MISC UTILITY PROJECTS  
HORMAN COURT  
REMOVALS

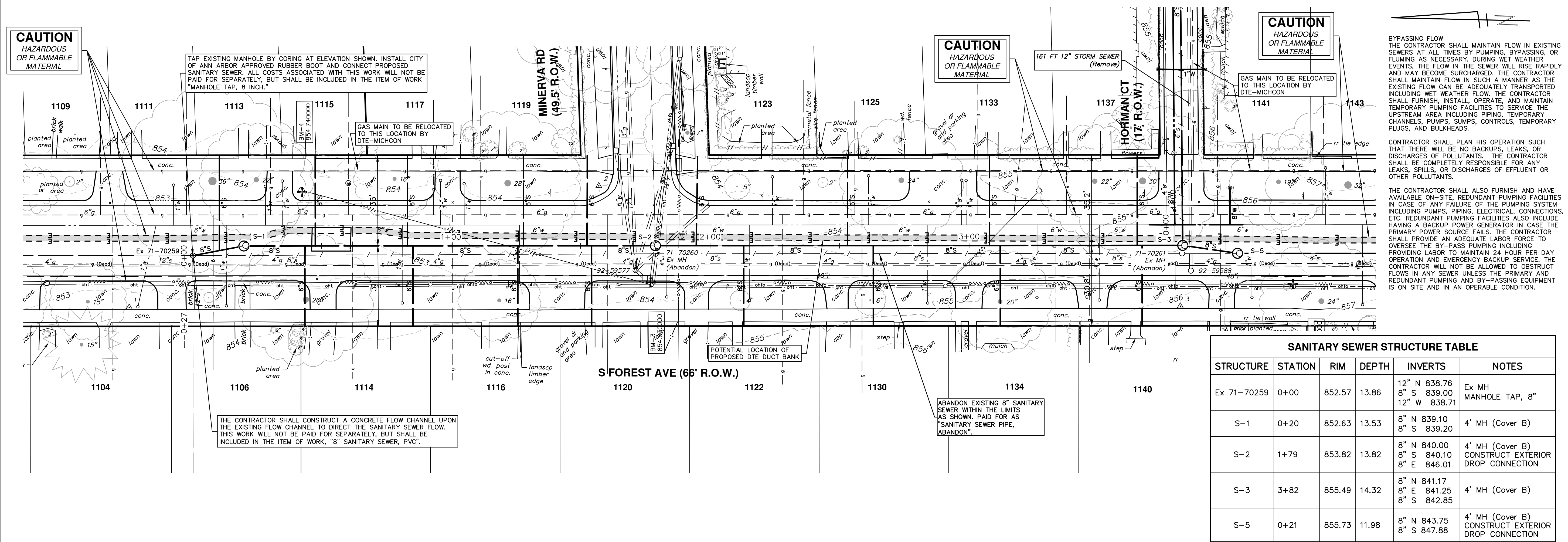
SCALE PLAN: 1" = 20'

DRAWING NO. 2017033-26

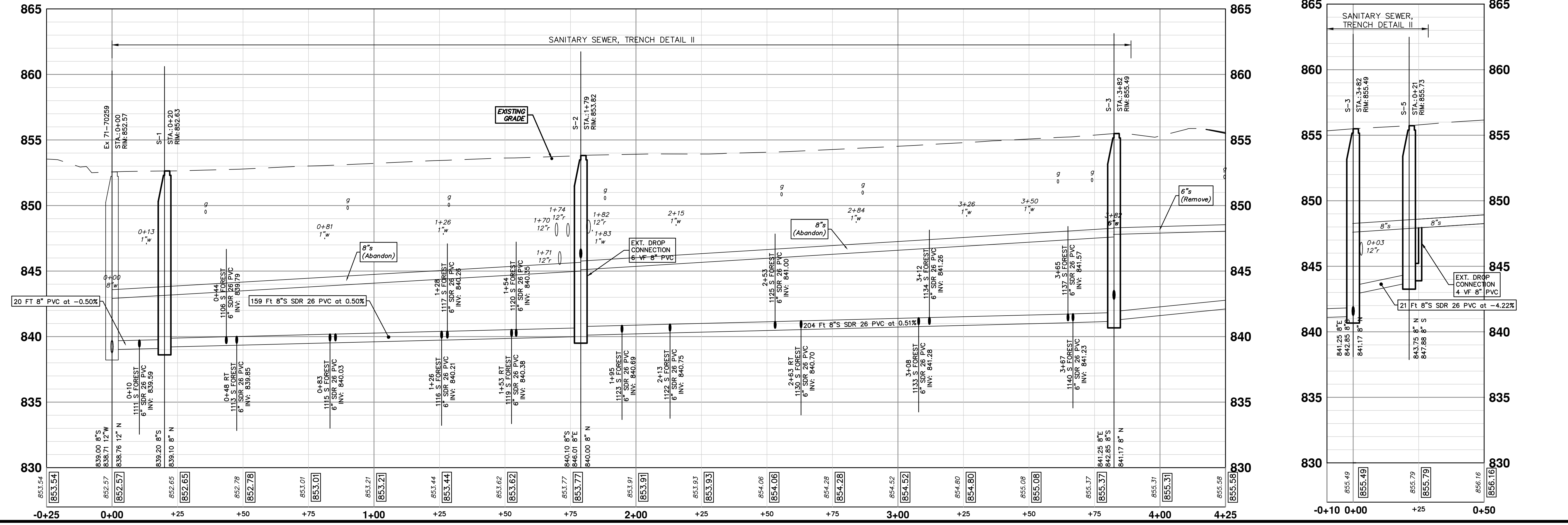
SHEET NO. 26 OF 29

ANN ARBOR MICHIGAN





SANITARY SEWER STRUCTURE TABLE					
STRUCTURE	STATION	RIM	DEPTH	INVERTS	NOTES
Ex 71-70259	0+00	852.57	13.86	12" N 838.76 8" S 839.00 12" W 838.71	Ex MH MANHOLE TAP, 8"
S-1	0+20	852.63	13.53	8" N 839.10 8" S 839.20	4' MH (Cover B)
S-2	1+79	853.82	13.82	8" N 840.00 8" S 840.10 8" E 846.01	4' MH (Cover B) CONSTRUCT EXTERIOR DROP CONNECTION
S-3	3+82	855.49	14.32	8" N 841.17 8" E 841.25 8" S 842.85	4' MH (Cover B)
S-5	0+21	855.73	11.98	8" N 843.75 8" S 847.88	4' MH (Cover B) CONSTRUCT EXTERIOR DROP CONNECTION



**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL

BYPASSING FLOW  
THE CONTRACTOR SHALL MAINTAIN FLOW IN EXISTING  
SEWERS AT ALL TIMES BY PUMPING, BYPASSING, OR  
FLUMING AS NECESSARY. DURING WET WEATHER  
EVENTS, THE FLOW IN THE SEWER WILL RISE RAPIDLY  
AND MAY BECOME SURCHARGED. THE CONTRACTOR  
SHALL MAINTAIN FLOW IN SUCH A MANNER AS THE  
EXISTING FLOW CAN BE ADEQUATELY TRANSPORTED  
INCLUDING WET WEATHER FLOW. THE CONTRACTOR  
SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN  
TEMPORARY PUMPING FACILITIES TO SERVICE THE  
UPSTREAM AREA INCLUDING PIPING, TEMPORARY  
CHANNELS, PUMPS, SUMPS, CONTROLS, TEMPORARY  
PLUGS, AND BULKHEADS.

CONTRACTOR SHALL PLAN HIS OPERATION SUCH  
THAT THERE WILL BE NO BACKUPS, LEAKS, OR  
DISCHARGES OF POLLUTANTS. THE CONTRACTOR  
SHALL BE COMPLETELY RESPONSIBLE FOR ANY  
LEAKS, SPILLS, OR DISCHARGES OF EFFLUENT OR  
OTHER POLLUTANTS.

THE CONTRACTOR SHALL ALSO FURNISH AND HAVE  
AVAILABLE ON-SITE, REDUNDANT PUMPING FACILITIES  
IN CASE OF ANY FAILURE OF THE PUMPING SYSTEM  
INCLUDING PUMPS, PIPING, ELECTRICAL, CONNECTIONS,  
ETC. REDUNDANT PUMPING FACILITIES ALSO INCLUDE  
HAVING A BACKUP POWER GENERATOR IN CASE THE  
PRIMARY POWER SOURCE FAILS. THE CONTRACTOR  
SHALL PROVIDE AN ADEQUATE LABOR FORCE TO  
OVERSEE THE BY-PASS PUMPING INCLUDING  
PROVIDING LABOR TO MAINTAIN 24 HOUR PER DAY  
OPERATION AND EMERGENCY BACKUP SERVICE. THE  
CONTRACTOR WILL NOT BE ALLOWED TO OBSTRUCT  
FLOWS IN ANY SEWER UNLESS THE PRIMARY AND  
REDUNDANT PUMPING AND BY-PASSING EQUIPMENT  
IS ON SITE AND IN AN OPERABLE CONDITION.

**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2018 MISC UTILITY PROJECTS**

HORMAN COURT

FOREST AVE. SANITARY SEWER S-1 TO S-3

SCALE PLAN: 1" = 20'

PROFILE: 1" = 4'

DRAWING NO. 2017033-27

SHEET NO. 27 OF 29

ADDENDUM #1

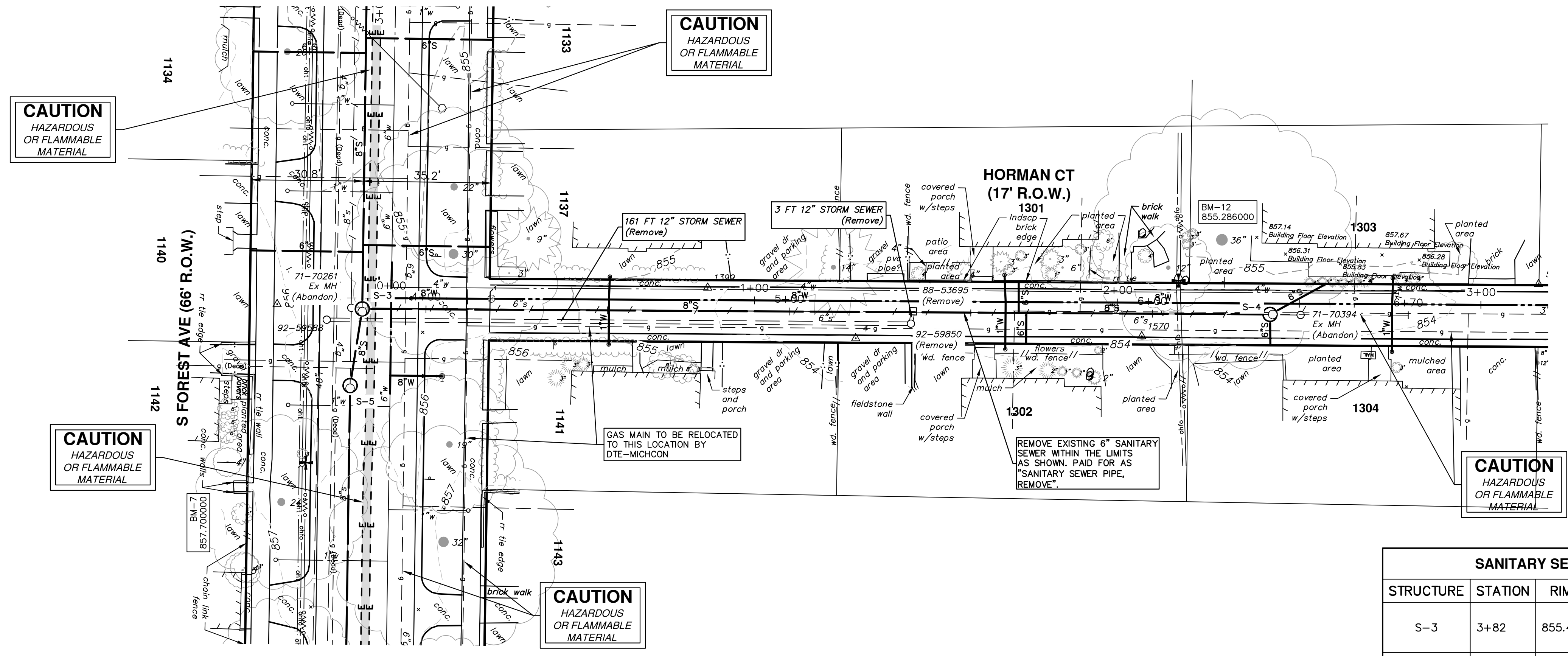
ISSUED FOR BID

DATE

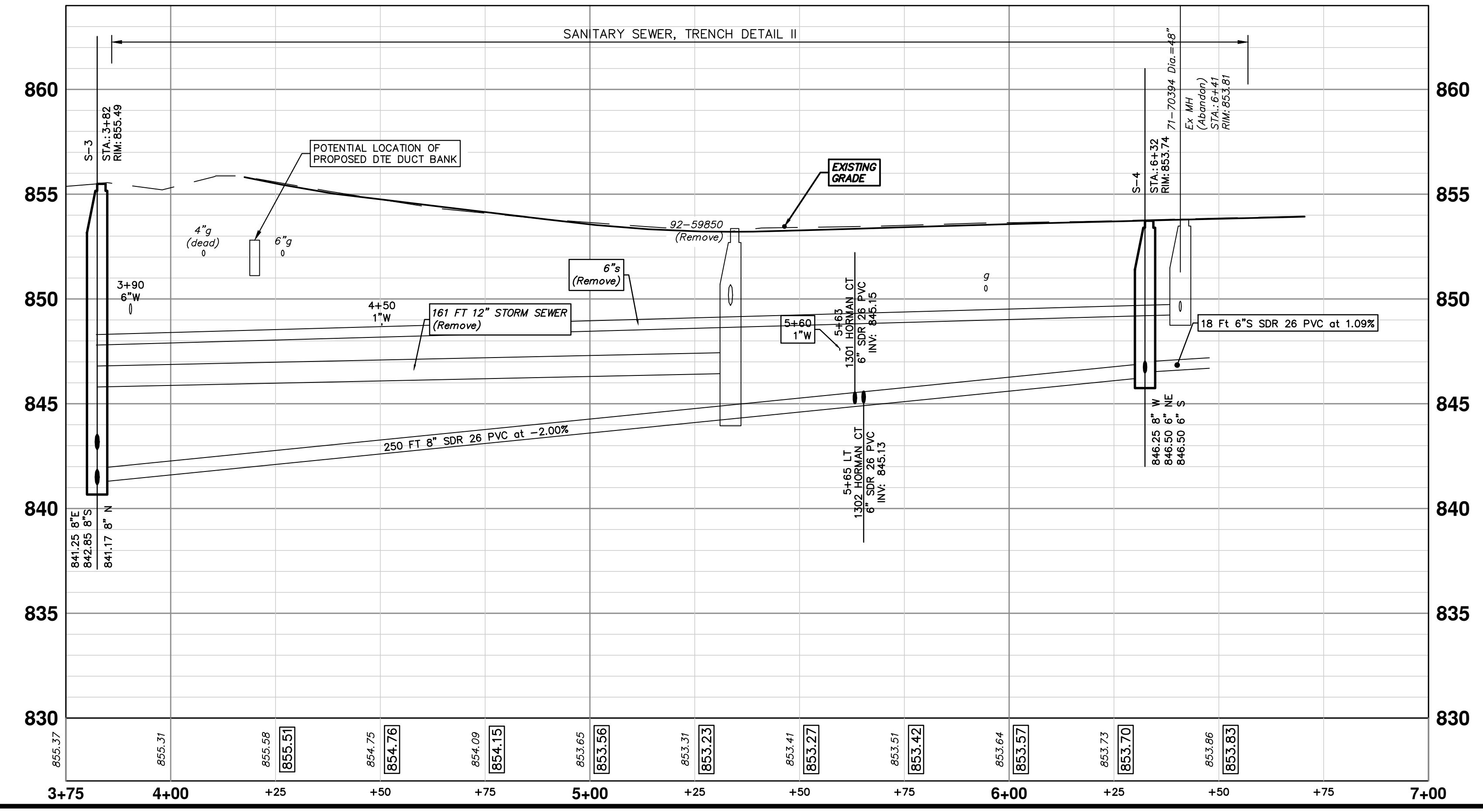
DESCRIPTION

REV.

**811**  
Know what's below.  
Call before you dig.



STRUCTURE	STATION	RIM	DEPTH	INVERTS	NOTES
S-3	3+82	855.49	14.32	8" N 841.17 8" E 841.25 8" S 842.85	4' MH (Cover B)
S-4	6+32	853.74	7.49	8" W 846.25 6" NE 846.50 6" S 846.50	4' MH (Cover B)



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**2018 MISC UTILITY PROJECTS**

HORMAN COURT

HORMAN CT, SANITARY SEWER S-3 TO S-4

**811**  
Know what's below.  
Call Before you dig.

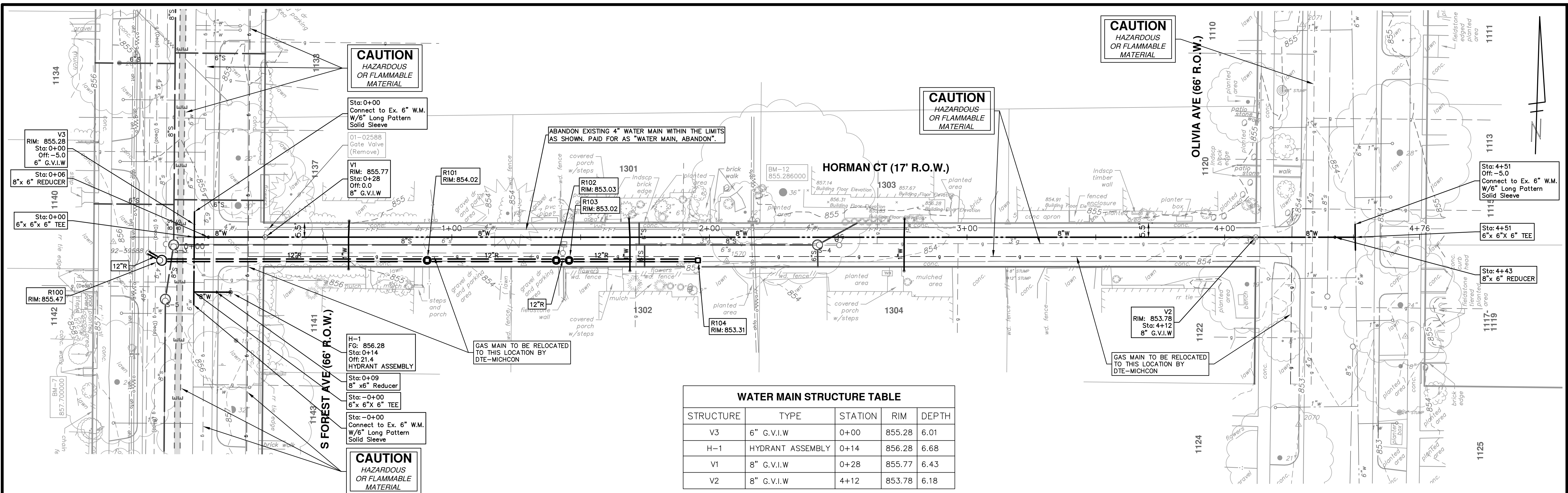
REV.	DATE	DESCRIPTION
01	03/23/18	ADDENDUM #1
00	03/07/18	ISSUED FOR BID

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ANN ARBOR, MI 48106-6647  
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SCALE PLAN: 1" = 20'  
PROFILE: 1" = 4'

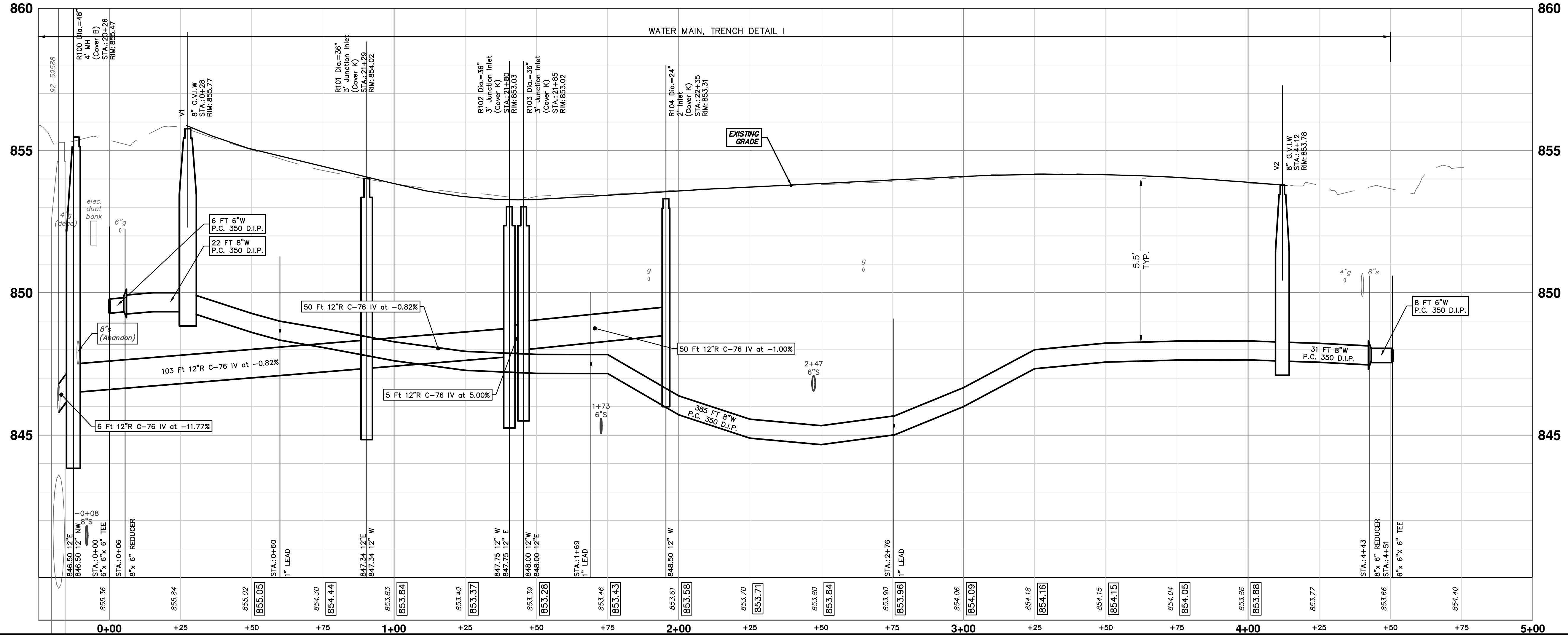
DRAWING No. **2017033-28**


SHEET No. **28 OF 29**



**WATER MAIN STRUCTURE TABLE**

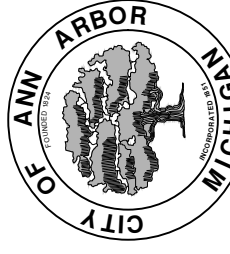
STRUCTURE	TYPE	STATION	RIM	DEPTH
V3	6" G.V.I.W	0+00	855.28	6.01
H-1	HYDRANT ASSEMBLY	0+14	856.28	6.68
V1	8" G.V.I.W	0+28	855.77	6.43
V2	8" G.V.I.W	4+12	853.78	6.18





Know what's below.  
Call before you dig.

REV.	DATE	DESCRIPTION
01	03/23/18	ADDENDUM #1
00	03/07/18	ISSUED FOR BID



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**2018 MISC UTILITY PROJECTS**  
 HORMAN COURT  
 WATER MAIN STA. 0+00 TO STA. 4+51

SCALE PLAN: 1" = 20'  
 PROFILE: 1" = 2'

DRAWING NO.  
**2017033-29**

SHEET No.  
**29 OF 29**