

# ADDENDUM No. 1

## ITB No. 4525

### CREST BUENA VISTA WASHINGTON WATER MAIN PROJECT

**Due: Friday, March 2, 2018 by 2:00 pm (local time)**

The following changes, additions, and/or deletions shall be made to the Invitation to Bid for Crest, Buena Vista, Washington Water Main Replacement Project ITB No. 4525, on which proposals will be received on/or before Friday March 2, 2018 at 2:00 P.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 64 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>
BF 1 – BF 4	The Bid Form updated to include new items Integral Sidewalk Retaining Wall, 18" Storm Sewer, Type I Manhole, 6" 11.25 Bend, 8" 11.25 Bend, 8" 22.5 Bend, 12" 11.5 Bend, 6" x 6"x 6" Tee, 8" x 8" x 12" x 12" Cross, 8" Gate Valve-in-Box, and 12" Gate Valve-in-Box, change the unit of Remove Sanitary Sewer Lead, and change quantities.
DS 4 - DS 5	The "Detailed Specification for Maintenance of Traffic" was changed to update approximate quantities of traffic control devices.
DS 14 - DS 17	The "Detailed Specification for Item #204 – Minor Traffic Devices, Max. \$15,000" was changed to update approximate quantities of traffic control devices.
DS 75	The "Detailed Specification for Integral Sidewalk Retaining Wall, 6 inch to 18 inch" was added.

## Plan Sheets 1-46

The entire plan set shall be replaced with the attached plan set. Aside from small, insignificant changes, additions, or deletions on multiple sheets, the majority of changes that affect plan quantity or construction methods include sheets 13, 19, 23, 25-28, 32, 34, 35, 38, & 39-45. The significant changes to these plans sheets include the following:

On plan sheet 13, multiple curb & gutter removals and driveway removals from Washington's STA 0+00 to 10+00 were eliminated.

On plan sheet 15, sidewalk removal was added to the corner in Buena Vista.

On plan sheet 19, new storm features were added and Water Main Construction Notes.

On plan sheet 23, the water main valve size changed in the closed valve connection of 12" water on Crest and Buena Vista's proposed 8" water to 12" GVIW.

On plan sheet 25, storm features were added and a note about the dead end connection of water at Washington for the Buena Vista Phase I work.

On plan sheet 26 and 27, storm features were added.

On Plan Sheet 28, the connection to Huron water was eliminated. We will be capping the water main after the last valve on Crest.

On plan sheet 32, fittings to the water for Hydrant 7 were added.

On plan sheets 34 and 35, proposed storm features were added and multiple proposed driveways, M-openings, and curb & gutter were eliminated from Washington station 0+00 to 10+00.

On plan sheet 38, structure and gate box adjustments were added and the sidewalk in the corner of Buena Vista was added.

On plan sheets 39-45, structure and gate box adjustments were added.

## 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:** At what percent compaction is the Aggregate Base installed in the Water Main trench?

**Answer 1:** New Aggregate Base installed in the Water Main trench is compacted to 98% of its Maximum Density.

**Question 2:** Is there sand base under proposed sidewalk and sidewalk ramps?

**Answer 2:** Yes, its pay item "Sand Subbase Course, Class II – C.I.P." and extends past the sidewalk 6 inches on each side, and is 4 inches thick typically, 6 inches thick under proposed sidewalk with retaining wall.

**Question 3:** Are the water service leads really going past the right-of-way?

**Answer 3:** No, the water service leads were drawn on the plans as such for clarity of location. The excavation and backfill will stop as Public Works makes their connections at the existing stop boxes.

**Question 4:** Do you expect a conflict with ground water?

**Answer 4:** Not generally, but Public Works did encounter ground water when working between Eighth St and S. Seventh St south of the project and cautions the Contractor when abandoning the Civil Defense Water Main on S. Seventh that water may be encountered.

**Question 5:** Limits of removals (stationing) and grades of curb lines at intersections were not on the plans. Will they be provided prior to construction?

**Answer 5:** Yes, plan sheets with limits of removals and grades along curbs at the intersections and new curb areas will be provided on new plan sheets prior to construction.

**Question 6:** Are the new and replacement structure castings the City of Ann Arbor standard?

**Answer 6:** No, when ordering castings from your supplier, specify the new Art in Ann Arbor castings if they are available.

**Question 7:** Can the HMA removal be done at one time?

**Answer 7:** No, The HMA removal for the water main trench shall be done first. After the water main is complete, and prior to paving, the pavement removals on the rest of the road can be done.

**Question 8:** Is June 16 a hard date for completing Buena Vista, such that Crest and Washington would not be able to start until Buena Vista is done?

**Answer 8:** It was the intent of the City's to finish Buena Vista before Crest and Washington were started, but we do recognize that we have outlined a tight schedule, and issues come up and testing can delay construction.

**Question 9:** Is it the City's intention to Flowable Fill the Civil Defense water main, or just cut and cap it at the ends?

**Answer 9:** The 12" Civil Defense water main can be cut and capped to abandon it.

**Question 10:** Does the Contractor have to Flowable Fill the 20" Steel water main on Crest if it's discovered not to be filled where removals take place?

**Answer 10:** No, the 20" Steel water line can be cut and capped at the removal limits.

**Question 11:** Can the City exercise the valves beyond the project limits to test the shut off capabilities?

**Answer 11:** Yes, we will ask Public Works to exercise the valves.

**Question 12:** Will the revised plan sheets show the locations of the proposed under drain?

**Answer 12:** No, the underdrains would not have shown up on the plans well, as storm items are shown on the water main sheets. They are intended to be installed under all

new curb and gutter if there is an existing or proposed inlet in the same run of curb. Specific locations can be confirmed at the Pre-Construction meeting.

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



BID FORM

Section 1–Schedule of Prices

Company:

Project: Crest, Buena Vista, & Washinton Water Main Replacement Project

File #: 2016-029 Bid #: 4525 Addendum 1

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
130	Protective Fencing	FT	225	\$ _____	\$ _____
140	Exploratory Excavation (0-10' deep)	EA	18	\$ _____	\$ _____
200	Tree Removal, 8" or Larger, Modified	EA	3	\$ _____	\$ _____
201	Project Supervision, Max. \$25,000.00	LS	1	\$ _____	\$ _____
202	General Conditions, Max. \$50,000.00	LS	1	\$ _____	\$ _____
203	Digital Audio Visual Coverage	LS	1	\$ _____	\$ _____
204	Minor Traffic Devices, Max \$15,000.00	LS	1	\$ _____	\$ _____
205	Clean-Up & Restoration, Special	LS	1	\$ _____	\$ _____
206	"No Parking" Signs	EA	60	\$ _____	\$ _____
209	Sewer, Any Size or Depth, Remove	FT	478	\$ _____	\$ _____
210	Drainage Structure, Any Size or Depth, Remove	EA	23	\$ _____	\$ _____
211	Remove Sanitary Sewer Lead	FT	100	\$ _____	\$ _____
219	Abandoned 20" Steel Water Main Pipe, Remove	FT	1100	\$ _____	\$ _____
220	Water Main Pipe Abandonment, Modified	LS	1	\$ _____	\$ _____
221	Fire Hydrant Assembly Abandonment	EA	5	\$ _____	\$ _____
222	Temporary 6 inch or 8 inch Water Main Line Stop	EA	6	\$ _____	\$ _____
223	Temporary 12 inch Water Main Line Stop	EA	2	\$ _____	\$ _____
224	Temporary 16 inch Water Main Line Stop	EA	2	\$ _____	\$ _____
225	6-Inch Wrapped Underdrain	FT	3230	\$ _____	\$ _____
226	Machine Grading, Modified	SYD	14230	\$ _____	\$ _____
227	Subgrade Undercutting - Type II	CYD	200	\$ _____	\$ _____
230	HMA Pavement Leveling/Top - LVSP	TON	3250	\$ _____	\$ _____

TOTAL THIS PAGE (BF-1)

(Also to be entered on page BF-4)

\$ \_\_\_\_\_

BID FORM

Section 1–Schedule of Prices

Company:

Project: Crest, Buena Vista, & Washinton Water Main Replacement Project

File #: 2016-029 Bid #: 4525 Addendum 1

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
240	Concrete Curb or Curb and Gutter - All Types	FT	2232	\$ _____	\$ _____
241	Concrete Curb or Curb and Gutter - All Types (High Early)	FT	1000	\$ _____	\$ _____
242	4 Inch Concrete Sidewalk	SFT	5434	\$ _____	\$ _____
243	6 Inch Concrete Sidewalk Ramp	SFT	1551	\$ _____	\$ _____
244	6 Inch Concrete Drive - High Early	SYD	242	\$ _____	\$ _____
245	Detectable Warning, Cast In Place	SFT	360	\$ _____	\$ _____
246	Integral Sidewalk Retaining Wall, 6 inch to 18 inch	SFT	100	\$ _____	\$ _____
250	Sand Subbase Course, Class II - C.I.P.	CYD	319	\$ _____	\$ _____
251	21AA Limestone, C.I.P.	CYD	200	\$ _____	\$ _____
252	Aggregate Base Course, 21AA - C.I.P.	CYD	2160	\$ _____	\$ _____
261	Remove Concrete Curb or Curb and Gutter - Any Type	FT	3155	\$ _____	\$ _____
262	Remove Concrete Sidewalk and Drive - Any Thickness	SFT	7239	\$ _____	\$ _____
270	Pavt Mrkg, Thermoplastic, 6 inch Crosswalk	FT	424	\$ _____	\$ _____
271	Pavt Mrkg, Thermoplastic, 12 inch Crosswalk	FT	680	\$ _____	\$ _____
272	Pavt Mrkg, Thermoplastic, 24 inch Stop Bar	FT	160	\$ _____	\$ _____
273	Pavt Mrkg, Thermoplastic, School	EA	2	\$ _____	\$ _____
299	Certified Payroll Compliance and Reporting	LS	1	\$ _____	\$ _____
320	12" CL IV RCP Storm Sewer Pipe, Trench Detail I	FT	388	\$ _____	\$ _____
321	15" CL IV RCP Storm Sewer Pipe, Trench Detail I	FT	20	\$ _____	\$ _____
322	18" CL IV RCP Storm Sewer Pipe, Trench Detail I	FT	7	\$ _____	\$ _____
353	4 inch SDR 35 PVC Sanitary Lead, Trench Detail I	FT	100	\$ _____	\$ _____
354	6 inch SDR 35 PVC Sanitary Lead, Trench Detail I	FT	100	\$ _____	\$ _____
360	Type I Manhole (0-10' deep)	EA	2	\$ _____	\$ _____

TOTAL THIS PAGE (BF-2)

(Also to be entered on page BF-4)

\$ \_\_\_\_\_

BID FORM

Section 1–Schedule of Prices

Company:

Project: Crest, Buena Vista, & Washinton Water Main Replacement Project

File #: 2016-029 Bid #: 4525 Addendum 1

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
366	Inlet-Junction Chamber	EA	1	\$ _____	\$ _____
367	Single Inlet	EA	22	\$ _____	\$ _____
400	6 inch Class 50 DIP w/polywrap, Trench Detail I	FT	82	\$ _____	\$ _____
401	8 inch Class 50 DIP w/polywrap, Trench Detail I	FT	2078	\$ _____	\$ _____
402	12 inch Class 50 DIP w/polywrap, Trench Detail I	FT	1826	\$ _____	\$ _____
410	6" 11.25° Bend	EA	1	\$ _____	\$ _____
411	6" 45° Bend	EA	1	\$ _____	\$ _____
412	6" 90° Bend	EA	1	\$ _____	\$ _____
413	8" 11.25° Bend	EA	3	\$ _____	\$ _____
414	8" 22.5° Bend	EA	3	\$ _____	\$ _____
415	8" 45° Bend	EA	39	\$ _____	\$ _____
416	8" 90° Bend	EA	3	\$ _____	\$ _____
417	12" 11.25° Bend	EA	8	\$ _____	\$ _____
418	12" 45° Bend	EA	12	\$ _____	\$ _____
419	12" 90° Bend	EA	2	\$ _____	\$ _____
420	8" x 1.5" Reducer	EA	1	\$ _____	\$ _____
421	8" x 2" Reducer	EA	1	\$ _____	\$ _____
422	8" x 6" Reducer	EA	9	\$ _____	\$ _____
423	12" x 6" Reducer	EA	2	\$ _____	\$ _____
424	12" x 8" Reducer	EA	2	\$ _____	\$ _____
430	6" x 6" x 6" Tee	EA	1	\$ _____	\$ _____
431	8" x 8" x 8" Tee	EA	9	\$ _____	\$ _____
432	8" x 8" x 8" x 8" Cross	EA	1	\$ _____	\$ _____
433	8" x 8" x 12" x 12" Cross	EA	1	\$ _____	\$ _____
434	8" x 8" x 12" Tee	EA	1	\$ _____	\$ _____

TOTAL THIS PAGE (BF-3)  
(Also to be entered on page BF-4)

\$ \_\_\_\_\_

BID FORM

Section 1–Schedule of Prices

Company:

Project: Crest, Buena Vista, & Washinton Water Main Replacement Project

File #: 2016-029 Bid #: 4525 Addendum 1

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
435	12" x 12" x 8" Tee	EA	4	\$ _____	\$ _____
436	12" x 12" x 12" Tee	EA	3	\$ _____	\$ _____
437	16" x 16" x 12" Tee	EA	1	\$ _____	\$ _____
440	Fire Hydrant Assembly	EA	8	\$ _____	\$ _____
442	6" Gate Valve-in-Box	EA	1	\$ _____	\$ _____
443	8" Gate Valve-in-Box	EA	1	\$ _____	\$ _____
444	12" Gate Valve-in-Box	EA	1	\$ _____	\$ _____
446	6" Gate Valve-in-Well	EA	1	\$ _____	\$ _____
447	8" Gate Valve-in-Well	EA	9	\$ _____	\$ _____
448	12" Gate Valve-in-Well	EA	6	\$ _____	\$ _____
460	Excavate & Backfill for Water Service Tap and Lead	FT	2400	\$ _____	\$ _____
563	Structure Covers	LBS	11700	\$ _____	\$ _____
566	Adjust Structure Cover	EA	27	\$ _____	\$ _____
567	Adjust Monument Box or Gate Valve Box	EA	15	\$ _____	\$ _____
800	Celtic occidentalis, (Hackberry), 2 inch	EA	10	\$ _____	\$ _____
801	Gleditsia tracanthos, (Honeylocust), 2 inch	EA	5	\$ _____	\$ _____
802	Acer rubrum, (Red Maple), 2inch	EA	5	\$ _____	\$ _____
TOTAL THIS PAGE (BF-4)				\$ _____	
TOTAL FROM PAGE BF-1:				\$ _____	
TOTAL FROM PAGE BF-2:				\$ _____	
TOTAL FROM PAGE BF-3:				\$ _____	
<b>TOTAL BASE BID:</b>				\$ _____	

# **DETAILED SPECIFICATION FOR MAINTENANCE OF TRAFFIC**

## **DESCRIPTION**

Traffic shall be maintained in accordance with the City of Ann Arbor Public Services Department Standard Specifications except as specified in Sections 104.11, 812, and 922 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, the Michigan Manual of Uniform Traffic Control Devices, Latest Revised Edition (MMUTCD) and as amended herein.

The Contractor shall furnish, erect, maintain and, upon completion of the work, remove all traffic control devices and barricade lights within the project and around the perimeter of the project for the safety and protection of local traffic. This includes, but is not limited to, advance, regulatory, and warning signs; barricades and channeling devices at intersecting streets on which traffic is to be maintained; barricades at the ends of the project and at right-of-way lines of intersecting streets; portable changeable message signs; lighted arrow boards, and moving traffic control devices for construction operations. Payment shall be paid for as “Minor Traffic Devices, Max \$15,000”.

## **MATERIALS**

The materials and equipment shall meet the requirements specified in the corresponding sections of the MDOT 2012 Standard Specifications for Construction and MMUTCD. The approximate quantities of materials are as follows: 3 small Portable Changeable Message Signs, 506 sft Temporary Signs, Type B, 20 Type III Barricades, and 150 Type III Lighted Plastic Drums.

## **Maintenance of Local Traffic**

Unless otherwise indicated on the plans, all side roads shall not be closed to through traffic except during construction operations of short duration and only upon written approval of the Engineer.

Local access shall be maintained at all times for emergency vehicles, refuse pick-up, mail delivery and ingress/egress to private properties.

Contractor must accommodate the safe access to the residential buildings and businesses located within construction area.

A lane-closure permit shall be obtained by the Contractor from the City Transportation Division, at least 48 hours in advance of any proposed lane or street closing.

The hours of work on all Local streets are 7:00 a.m. to 8:00 p.m., Monday through Saturday, or as specified on the lane-closure permit. No equipment will be allowed in the street before or after these hours. Local streets may only be closed to through traffic (local access only) with written authorization of the Engineer. Work must be completed each day such that all streets are re-opened to through traffic by 8:00 p.m. unless otherwise specified, directed, or authorized in writing by the Engineer. All major changes in traffic control shall be made either between 9:30 a.m. and 3:30 p.m., or between 7:00 p.m. and 6:30 a.m. in order to minimize interference with rush-hour traffic. All traffic controls must be in-place and ready for traffic each day by 6:30 a.m. and 3:30 p.m.

Driveways shall not be blocked for extended periods of time unless arrangements can be made with the affected property owner(s). When it becomes necessary to temporarily block driveways, the Contractor shall notify the affected property owners in advance to coordinate the work and allow sufficient time for vehicles to vacate from properties. It may be necessary to allow for vehicles to temporarily park in the roadway at locations that do not interfere with the Contractor's work. During these periods the owners of the respective vehicles must be available to, with proper notice, move their vehicles if it becomes necessary to accommodate the work.

The Contractor shall maintain pedestrian traffic at all times covered under the pay item “Minor Traffic

Devices, Max \$15,000". For maintaining normal pedestrian traffic while performing sidewalk and driveway repair, Type I barricades shall be placed by the Contractor, as directed by the Engineer. "Sidewalk Closed" and/or "Cross Here" signs shall be placed, by the Contractor, when directed by the Engineer.

During the construction of the water main, storm sewer, and road rehabilitation, parking of residences in the construction area will not be allowed. Temporary "No Parking" signs will be supplied by the City. "No Parking" signs shall be erected after MISS DIG clearance, maintained throughout the project duration, and salvaged and returned to the City of Ann Arbor at the W. R. Wheeler Service Center at the completion of the project, as described in the Detailed Specification for "No Parking" Signs. They will be paid for at the Contract Unit Price for "'No Parking" Signs". Any vehicle parked in the construction zone shall be ticketed and towed at the owner's expense.

At times when it becomes necessary to temporarily obstruct local traffic during the performance of the work, the Contractor shall provide traffic regulation in conformance with Chapter 6E of the MMUTCD. A minimum of two traffic regulators are required. The cost of traffic regulation shall be included in the contract pay item "Minor Traffic Devices, Max \$15,000"

The Contractor shall use quantities of dust palliative, maintenance aggregate, and hot patching mixture for use as temporary base, surfacing, and dust control at utility crossings, side roads and driveways (wherever required to maintain traffic), and where directed by the Engineer to maintain local access. The cost for the use of dust palliative, maintenance aggregate and HMA wedging mixture, as required and directed by the Engineer for maintenance of traffic and local access, shall be included in contract pay item "General Conditions, Max. \$50,000" and it will not be paid for separately.

The Contractor shall perform the work of this Contract while maintaining traffic in accordance with the Contract Documents as specified herein. No traffic shall be allowed on newly placed asphalt surfaces until rolling has been satisfactorily completed and the surface has cooled sufficiently to prevent damage from traffic. This is to be accomplished by traffic regulators and by relocating traffic control devices to prevent traffic from entering the work area until such time that it can be safely maintained without damaging the new construction. The Contractor shall provide traffic regulators in sufficient number to maintain traffic as described herein, and to keep traffic off sections being surfaced, and provide for safe travel at all times as directed by the Engineer.

Each pressure distributor, paver and roller shall be equipped with at least one approved flasher light which shall be mounted on the equipment so as to give a warning signal ahead and behind.

There may be areas where the Engineer directs the paving of less than the full width of a phase to stagger the paving joints and to accommodate changes in crown and/or cross-sectional dimensions/locations. In these locations the gravel base courses shall be constructed to the full area of the phase, and the Contractor shall place traffic control devices on the base course grade as necessary, and shall place, maintain, and remove maintenance aggregate (MDOT 21AA) all as necessary, and as directed by the Engineer, to maintain local traffic to side streets and drives.

The City will not allow any shut down of existing water mains without prior written approval of construction methods and timing of shut down, by the City of Ann Arbor and the Engineer. All water main valves are to be operated by City of Ann Arbor personnel.

The Contractor shall place portable, changeable message signs (PCMs) a minimum of one week prior to the start of construction in locations indicated by the Engineer. PCMs shall be the smaller of the two MDOT and MMUTCD approved message signs so they can fit on Seventh Street in the lawn extension or the limited right-of-way beyond the sidewalk.

Before the detour of southbound S Seventh, the Contractor shall coordinate their activities with the City Public Works and the Signal Unit prior to setting up signs and rerouting traffic. The detour is for the water main connection in the S Seventh Street and W Washington Street intersection and the Civil Defense Water Main Abandonment along S Seventh Street, and shall not be installed until approved by the Engineer.

**DETAILED SPECIFICATION  
FOR  
ITEM #204 - MINOR TRAFFIC DEVICES, MAX. \$15,000**

**DESCRIPTION**

The work of Temporary Traffic Devices shall consist of protecting and maintaining vehicular and pedestrian traffic as shown on the plans, in the Maintenance of Traffic specification, and as directed by the Engineer, in accordance with Sections 103.05, 103.06, and 812 of the 2012 MDOT Standard Specifications for Construction; Part 6 of the Michigan Manual of Uniform Traffic Control Devices, Latest Revised Edition (MMUTCD); and the City Standard Specifications, except as modified herein. These devices include, but not limited to, advance, regulatory, and warning signs; barricades and channeling devices at intersecting streets on which traffic is to be maintained; barricades at the ends of the project and at right-of-way lines of intersecting streets; changeable message signs; lighted arrow boards; sign/signal covers and pavement marking cover tape for construction operations.

The work of Minor Traffic Devices shall include, but not be limited to:

- The furnishing and operating of miscellaneous signs, warning devices, flag-persons, and cones;
- The operation of additional signs furnished by the City;
- Furnishing and installing meter bags;
- Coordinating with the City to have meter heads removed and reinstalled;
- Maintaining pedestrian traffic;
- Temporarily covering traffic controls;
- Temporarily covering existing signs as directed;
- Any and all other miscellaneous and/or incidental items which are necessary to properly perform the work.

The Contractor shall maintain vehicular and pedestrian traffic during the work by the use of flag-persons, channelizing devices, and signs as necessary, as directed by the Engineer, and in accordance with MMUTCD. Typical applications for maintaining pedestrian traffic in accordance with the MMUTCD are included in this detailed specification.

**MATERIALS, EQUIPMENT, AND CONSTRUCTION METHODS**

**General**

Materials and equipment shall meet the requirements specified in the above-designated sections of the MDOT Standard Specifications.

All temporary traffic/pedestrian control devices furnished by the Contractor shall remain the property of the Contractor. The City shall not be responsible for stolen or damaged signs, barricades, barricade lights or other traffic maintenance items. The Contractor shall replace missing traffic control devices immediately, at no additional cost to the City.

All existing signs, and signs erected by the City of Ann Arbor on this project shall be preserved, protected, and maintained by the Contractor. Existing City owned signs which are damaged by the Contractor during the work will be repaired by the City at the Contractor's expense.

The Contractor shall temporarily cover conflicting traffic and/or parking signs when directed by the Engineer.

When traffic control devices have been damaged by, or due to, the negligence of the Contractor, his subcontractors or material suppliers, the traffic control devices shall be replaced at the Contractor's expense.

**Lighted Plastic Drums; Barricades; Temporary Signs; Portable Changeable Message Signs; Lighted Arrow Boards; Pavement Marking Cover Tape; Temporary Pavement Markings**

The Contractor shall furnish and operate these items as directed by the Engineer.

Approximate quantities for these items are 3 Portable Changeable Message Signs, 506 sft Temporary Signs, Type B, 20 Type III Barricades, and 150 Type III Lighted Plastic Drums.

Traffic control devices meeting current MDOT and MMUTCD specifications shall be used on this project.

Lighted plastic drums shall be sufficiently ballasted to minimize tipping.

Type I and III barricades shall have standard orange-and-white stripes on both sides of the barricade.

Sufficient signs shall be provided by the Contractor to ensure the safety of the workers and the general public in accordance with the current MMUTCD.

"Road Work Ahead" warning signs shall be placed, as indicated on the Plans, or as directed by the Engineer, prior to the start of work, regardless of the nature, magnitude or duration of the work.

Removable black pavement marking cover tape shall be used to cover conflicting pavement markings as directed by the Engineer.

Temporary pavement markings may be used within transition areas as directed by the Engineer and shall be removable.

**MEASUREMENT AND PAYMENT**

This item of work will be paid for on a pro rata basis at the time of each progress payment. Measurement will be based on the ratio between work completed during the payment period and the total contract amount. When all of the work of this Contract has been completed, the measurement of this item shall be 1.0 Lump Sum.

The completed work as measured for this item of work will be paid for at the Contract Unit Price for the following Contract (Pay) Item:

**PAY ITEM**

Minor Traffic Devices, Max 15,000

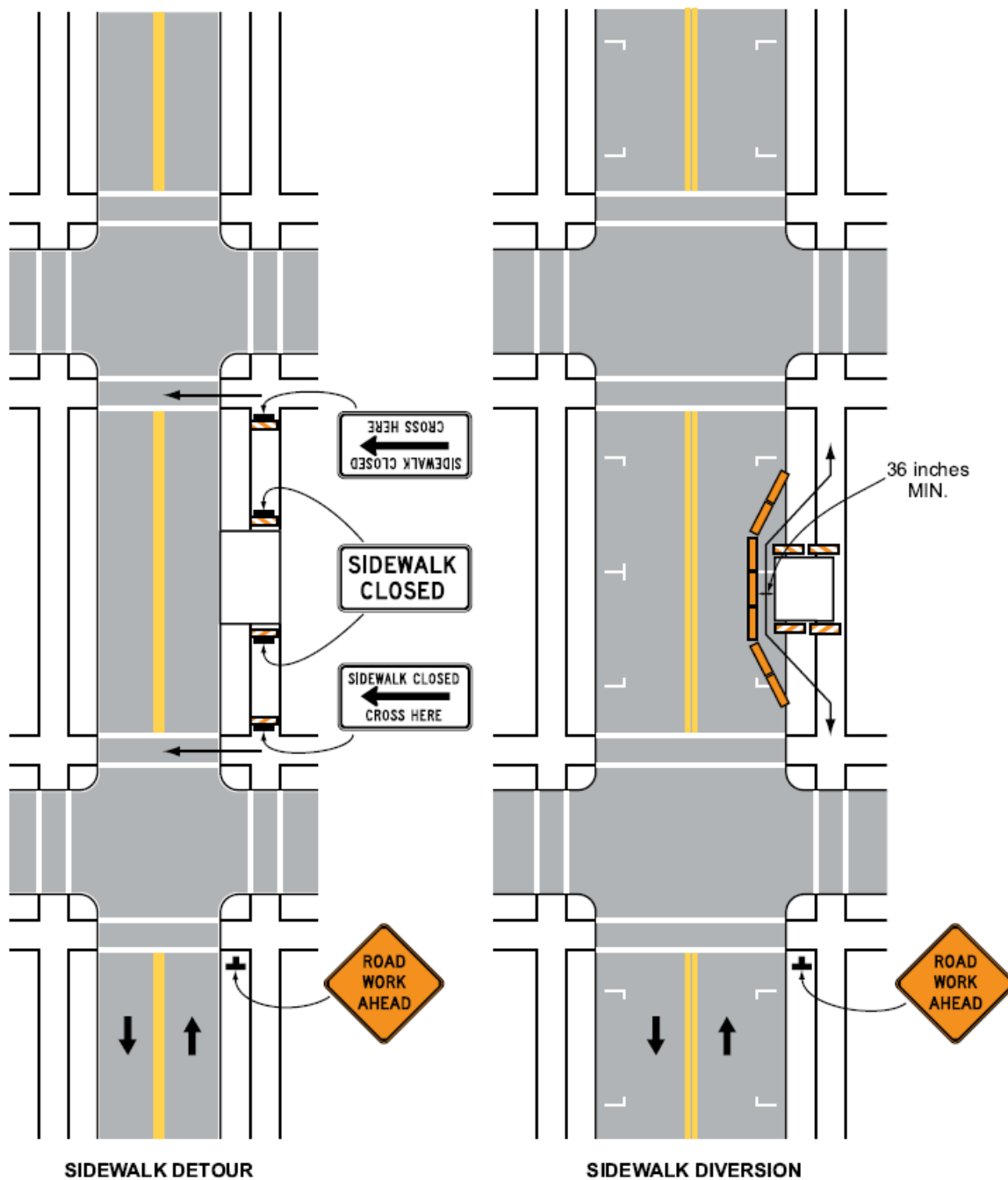
**PAY UNIT**

Lump Sum

The unit price for this item 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.



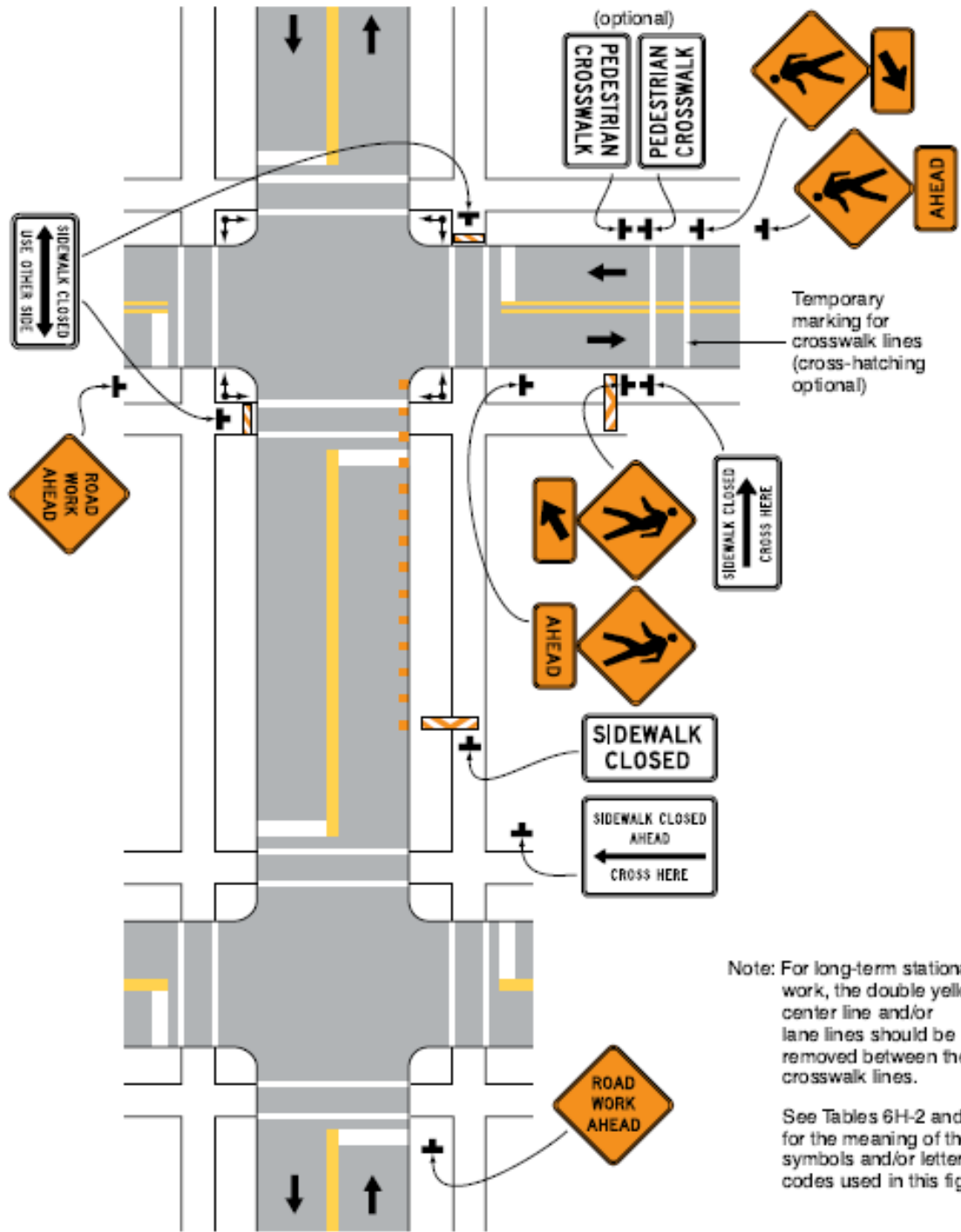
Figure 6H-28. Sidewalk Detour or Diversion (TA-28)



**Typical Application 28**

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Figure 6H-29. Crosswalk Closures and Pedestrian Detours (TA-29)



Note: For long-term stationary work, the double yellow center line and/or lane lines should be removed between the crosswalk lines.

See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 29

CITY OF ANN ARBOR  
SPECIAL PROVISION  
FOR  
**INTEGRAL SIDEWALK RETAINING WALL**

AA:JN:JKA

1 of 2

2/15/18

**a. Description.** This work shall consist of constructing concrete retaining walls adjacent to sidewalks, in accordance with Section 802 of the 2012 edition of the MDOT Standard Specifications for Construction, except as specified herein, as shown in this Detailed Specification, and as directed by the Engineer.

**b. Material.** Concrete mixtures shall be Grade P1 or S2 concrete, or as directed by the Engineer, meeting the requirements specified in Section 803 of the MDOT Standard Specifications.

**c. Construction.** The Contractor shall construct the Integral Sidewalk Retaining Walls as shown herein. Construction shall be in accordance with Section 802 of the 2012 MDOT Standard Specifications for Construction.

**d. Payment.** Payment shall be measured by the exposed face area of the retaining wall in square feet. The completed work, as described, will be measured and paid for at the contract unit price for the following pay item:

<b>Contract Item (Pay Item)</b>	<b>Pay Unit</b>
Integral Sidewalk Retaining Wall, 6 inch to 18 inch	Square Foot

Payment for "Integral Sidewalk and Retaining Wall, 6 inch to 18 inch" shall include all labor, equipment and materials to complete this work.

**Pre-Bid Meeting for the  
Crest, Buena Vista, Washington Water Main Replacement Project**

**February 16, 2018 @ 10:00 a.m. in the Larcom Fourth Floor Conference Room, City Hall**

I. Introductions

II. Addendum Items

- a. Addendum #1 – will include the following:
  - i. Pre-Bid minutes, including Sign-in Sheet
  - ii. Updated Plan Sheets
  - iii. Updated Bid Form - Quantities
  - iv. Updated Detailed Specification for Maintenance of Traffic
  - v. Updated Detailed Specification for Minor Traffic Devices
  - vi. New Detailed Specification for Integral Sidewalk Retaining Wall

III. General

- a. Project Overview
  - i. Buena Vista, 8” and 12” water main
  - ii. Crest, 8” water main north of Buena Vista
  - iii. Washington, 8” and 12” water main
- b. Standard Specifications and Detailed Specifications
  - i. Project Schedule
    - Starting Date – May 14<sup>th</sup> – Can start earlier.
    - Completion Date – September 1, 2018 (110 days after commencement of work)
    - Hours of work: 7:00 a.m. to 8:00 p.m. Monday thru Saturday (Sundays with permission)
    - Buena Vista done first to completion with temp water connection at Washington.
    - Crest and Washington Starting June 16, after school’s out.
  - ii. Engineer’s estimate - \$1,898,295.50
  - iii. General Conditions
    - 1. Coordination with the School
    - 2. Street sweeping & dust control
    - 3. Maintenance gravel
    - 4. Maintaining drainage
  - iv. Access to driveways - Contractor responsible for maintaining access to driveways during construction, and notifying residents when access will be unavailable (i.e. during water main installation, during paving, concrete work)

IV. Construction

- a. Utility Construction
  - i. Water Main – Installation and Testing
    - 1. HMA removal for trench
    - 2. 16” Sleeves at 16” x 16” x 12” Tee Washington and Seventh
    - 3. 8” x 2” Reducer and 8” x 1.5” Reducer are 8” cap with 2” or 1.5” nipple.
  - ii. Sanitary leads when conflicts exist

- iii. Drainage Structure replacements
  - 1. Removals and Installations on Water Main Plan Sheets
- iv. Reminder that all new sanitary and storm sewers (including manholes) shall be cleaned and televised before final acceptance
- b. Resurfacing the road and paving –
- c. Sidewalk and ADA Ramps – ADA compliance MUST be achieved at all locations
- d. Landscape Items and Restoration
  - i. Topsoil and Seeding
  - ii. Trees and shrubs

V. Other Items

- a. The existing 20” water main along Crest was flowable filled, which may or may not fill the entire steel pipe.
- b. The 6” underdrains are intended to be installed where new curb and gutter is proposed, when an outlet basin is present.
- c. The sanitary sewers were all inspected in 2014, and subsequently lined on Crest and Washington within the project limits. Video is available upon request.
- d. Public Works encountered ground water when working between Eighth and Seventh, south of Washington St. Be cautious when working to abandon the Civil Defense water main on Seventh.
- e. New Art in Ann Arbor castings might be ready when ordering from suppliers.

VI. Questions are due today at 1:00pm

Contact Information:

**Jane Allen**

**Project Manager**

**Phone: (734) 794-6410 ext. 43678**

**Fax: (734) 994-1744**

**E-mail: [jallen2@a2gov.org](mailto:jallen2@a2gov.org)**

PRE-BID CONFERENCE SIGN-IN SHEET

PROJECT: Crest, Buena Vista, Washington Water Main Replacement Bid# 4525 FILE #: 2016-029 DATE: February 16, 2018 10:00am

PLEASE PRINT (All information needs to be filled in to receive meeting minutes)

NAME	REPRESENTING	MAILING ADDRESS	TELEPHONE	EMAIL
Jane K Allen	City of Ann Arbor - Engineering	Address: 301 E Huron St City, State: Ann Arbor, MI Zip: 48107	Direct: (734) 794-6410 x43678 Mobile: (419) 345-1976 Fax: (734) 994-1744	jallen2@a2gov.org
Michael Haeussler	Douglas N. Higgins	Address 3390 Trans Pointe Rd. Ste. A City, State Ann Arbor, MI Zip: 48106	Direct: 734-996-9500 Mobile: 734-260-1732 Fax:	mikehdhiggins.com
DUSTON KIRKE	G.T. MACKENZIE COMPANY	Address 6900 JACKSON RD City, State ANN ARBOR MI Zip: 48103	Direct: 734-761-5050 Mobile: 517-499-6270 Fax: 734-761-5323	dkirke@mackenzie.co.com
Andy Smith	Springline Excavations LLC	Address 32545 Folsom Rd City, State Farmington Hills MI Zip: 48331	Direct: 313-491-4880 Mobile: 248-957-8757 Fax: 404-561-5354	asmith@springline.com
Mark K Wagner	Bailey Exc.	Address 1023 Terrace Dr City, State Jackson MI Zip: 49701	Direct: 517-223-3030 Mobile: 517-206-6925 Fax:	mmagner@bailey-excav.com
Brendan Fans	Fanson Company, Inc.	Address 7644 Whitmore Lake Rd City, State Brighton, MI Zip: 48116	Direct: 810-231-5188 Mobile: Fax: 810-231-5404	jheavey@fansoninc.com
		Address	Direct: Mobile: Fax:	
		City, State Zip:	Fax:	
		Address	Direct: Mobile: Fax:	
		City, State Zip:	Fax:	



# CITY OF ANN ARBOR ENGINEERING

## CREST, BUENA VISTA, WASHINGTON WATER MAIN

BID No. 4525, FILE No. 2016029

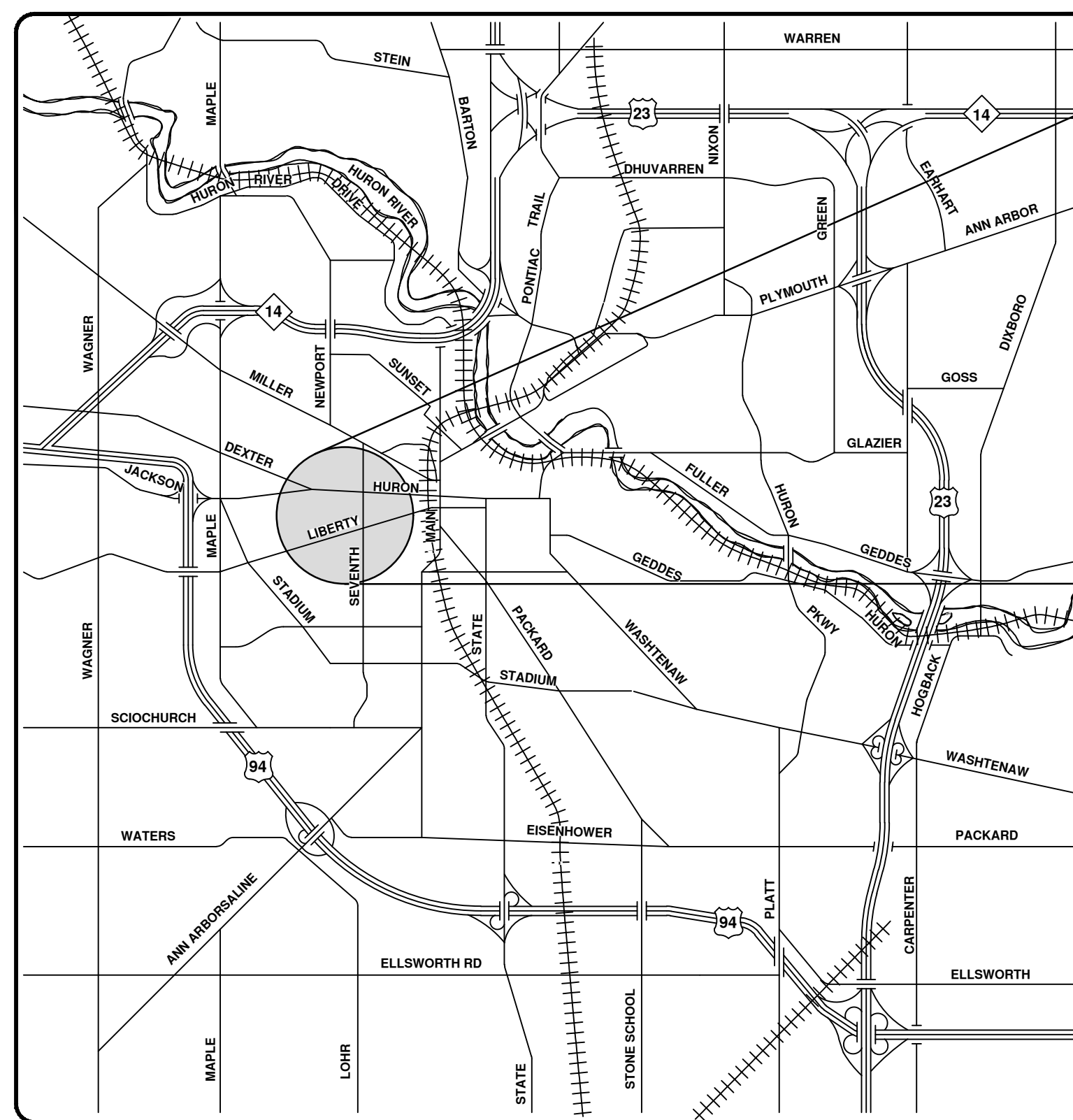
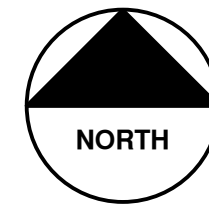
### NOTES

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.

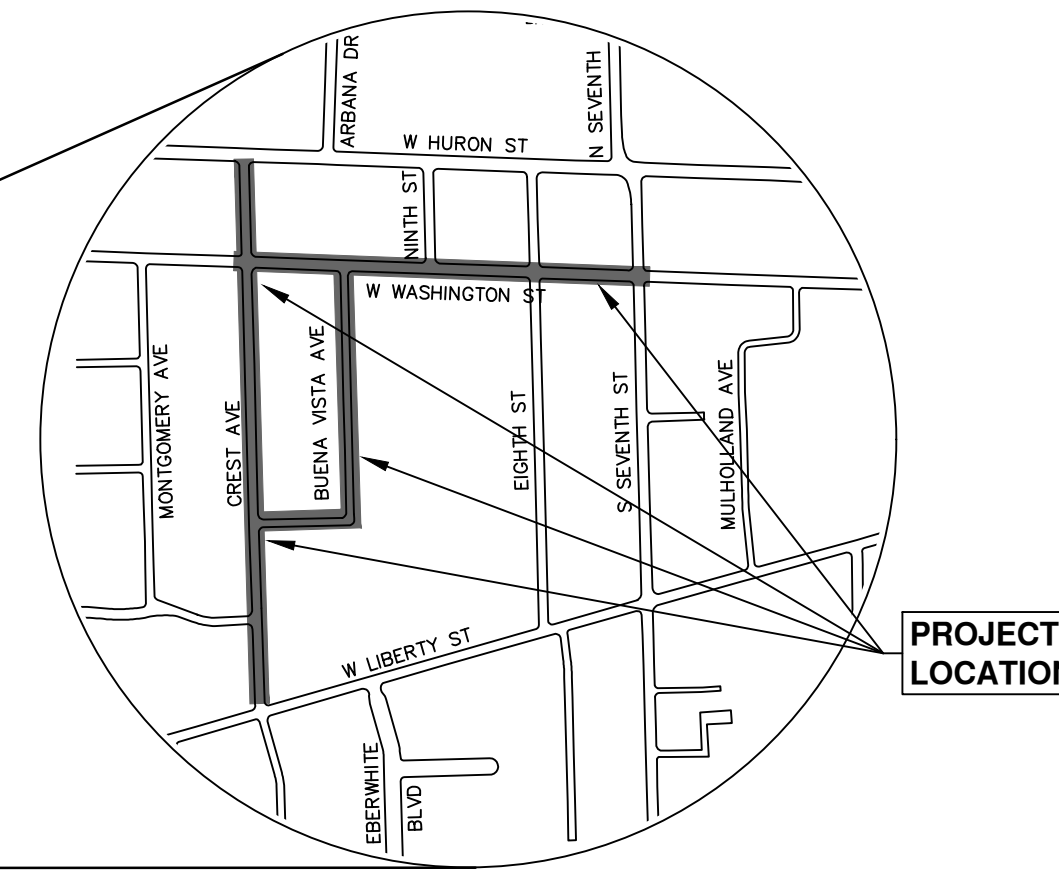
THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

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.

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	STANDARD NOTES
3	LEGEND
4 - 7	TYPICAL PROPOSED ROAD SECTIONS
8 - 10	DETAILS
11	OVERALL TRAFFIC CONTROL
12	SOUTH BOUND S SEVENTH ST DETOUR
13 - 14	WASHINGTON ST. REMOVALS
15 - 16	BUENA VISTA AVE. REMOVALS
17 - 18	CREST AVE. REMOVALS
19 - 22	WASHINGTON ST. WATER MAIN PLAN AND PROFILE
23 - 25	BUENA VISTA AVE. WATER MAIN PLAN AND PROFILE
26 - 28	CREST AVE. WATER MAIN PLAN AND PROFILE
29	NINTH ST. AND EIGHTH ST. WATER MAIN PLAN AND PROFILE
30 - 32	HYDRANT PROFILES
33	CIVIL DEFENSE WATER MAIN ABANDONMENT
34 - 37	WASHINGTON ST. ROAD PLAN AND PROFILE
38 - 40	BUENA VISTA AVE. ROAD PLAN AND PROFILE
41 - 45	CREST AVE. ROAD PLAN AND PROFILE
46	PAVEMENT MARKINGS

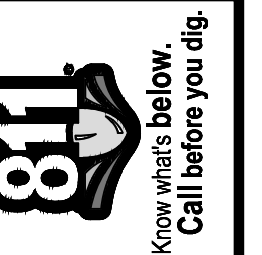


VICINITY MAP



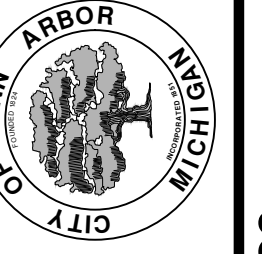
PROJECT LOCATION

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REV.	DATE	DESCRIPTION
01	2-23-18	CEC/DPF
00	2-6-18	CEC/DPF
		DATE
		DRAWN
		CHECKED

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  
CREST AVE., BUENA VISTA AVE., WASHINGTON ST.  
WATERMAIN REPLACEMENT PROJECT

SCALE  
DRAWING No.  
2016029-1  
SHEET No.  
1 OF 46



PREPARED UNDER THE SUPERVISION OF  
*Jane K. Allen*  
JANE KATHERINE ALLEN, P.E. - MI LICENSE No. 57254  
PROJECT MANAGER



2/06/2018  
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 ENCASED PER ANSI/AWWA C105/A21.5.
- FLUOROPOLYMER COATED 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 FIELD OPERATIONS AND MAINTENANCE 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 FERNCO 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.
- FOR MAINLINE PAVING, THE WIDTH OF THE MAT FOR EACH PASS OF THE PAVEMENT SHALL BE NOT LESS THAN 10.5' OR GREATER THAN 15', AS DIRECTED BY THE ENGINEER. THE ENGINEER WILL DIRECT THE LAYOUT OF THE LONGITUDINAL JOINTS DURING CONSTRUCTION.
- 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 FIELD OPERATIONS AND MAINTENANCE 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 PIPES OF DIFFERENT SIZES OR MATERIALS ARE JOINED, FERNCO FLEXIBLE COUPLINGS WITH STAINLESS STEEL SHEAR RINGS SHALL BE USED. ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THESE DEVICES SHALL BE INCLUDED IN THE PAYMENT FOR THE SEWER.
- 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 MOST GRANULAR MATERIAL, CLASS II.
- EXISTING STREET NAME, GUIDE, AND REGULATORY SIGNS, AND MAILBOXES WHICH CONFLICT WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED PRIOR TO CONSTRUCTION, STORED IN A MANNER WHICH WILL PREVENT DAMAGE, AND RE-SET IN LOCATIONS AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN "MACHINE GRADING, MODIFIED"
- IN AREAS WHERE EDGE DRAIN CANNOT BE INSTALLED IN ACCORDANCE WITH CITY OF ANN ARBOR DETAIL SD-TD-11, THE EDGE DRAIN SHALL BE INSTALLED AT THE DEPTH AS INDICATED ON THE PLANS, OR AS DIRECTED BY ENGINEER. IN NO CASE SHALL THE EDGE DRAIN BE INSTALLED AT A GRADE LESS THAN 0.50' OR AT A DEPTH OF LESS THAN 2' BELOW TOP OF PROPOSED PAVEMENT.

**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 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.

**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
MDOT RIGHT-OF-WAY PERMIT	MICHIGAN DEPARTMENT OF TRANSPORTATION

**CONTACT INFORMATION**

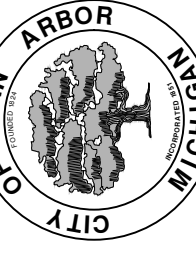
PUBLIC UTILITIES	OWNER	CONTACT
WATER		DAN WOODEN (734) 794-6350
SANITARY		RYAN FERREL (734) 794-6350
STORM	CITY OF ANN ARBOR PUBLIC WORKS UNIT W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	PAT MAINO (734) 794-6350
FORESTRY		MATT WALDSMITH (734) 794-6350
SIGNS SIGNALS STREET LIGHTS		CHUCK FOJTIK (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

BM #	ELEV	DESCRIPTION
1	852.599	RR SPIKE IN N'LY SIDE OF U.P. @ S.E. CORNER OF LIBERTY ST. & SEVENTH ST. (BK 1115, PG. 29)
2	857.983	SET RR SPIKE IN N. SIDE OF U.P. ON S. SIDE OF LIBERTY ST. 30± W OF E OF EIGHTH ST TO NORTH.
3	860.753	SET RR SPIKE IN N'LY SIDE OF U.P. ON S. SIDE OF LIBERTY ST. IN FRONT OF HSE NO. 1017
4	863.006	RR SPIKE IN N. SIDE OF U.P. @ S.E. CORNER OF LIBERTY ST. & EBERWHITE BLVD.
5	870.196	N.W. ANCHOR BOLT FOR "CROSS-WALK" MAST ARM POLE @ SW CORNER OF LIBERTY ST. & CREST AVE.
6	855.669	SET RR SPIKE IN E. SIDE OF L.P. @ S.W. CORNER OF CREST AVE. & BEMIDJI DR.
7	858.214	SET RR SPIKE IN EAST SIDE OF L.P. ON W. SIDE OF CREST AVE. @ BUENA VISTA AVE.
8	862.400	SET RR SPIKE IN E. SIDE OF L.P. ON W. SIDE OF CREST AVE. @ HSE NO. 240
9	861.462	FND RR SPIKE IN E. SIDE OF L.P. ON W. SIDE OF CREST AVE. @ DRIVE FOR HSE NO. 218
10	862.883	SET RR SPIKE IN S.E. SIDE OF U.P. @ N.W. CORNER OF CREST AVE. & WASHINGTON ST.
11	862.649	SET RR SPIKE IN N.W. SIDE OF L.P. @ S.E. CORNER OF CREST AVE. & HURON ST.
12	858.162	SET RR SPIKE IN S. SIDE OF U.P. ON N. SIDE OF WASHINGTON ST. @ BUENA VISTA AVE.
13	855.241	SET RR SPIKE IN E. SIDE OF L.P. ON W. SIDE OF BUENA VISTA AVE. BETWEEN HSE NO.'S 210 & 212
14	854.193	SET RR SPIKE IN E. SIDE OF P.P. ON W. SIDE OF BUENA VISTA AVE. BETWEEN HSE NO.'S 226 & 224
15	842.363	SET RR SPIKE IN N. SIDE OF U.P. ON S. SIDE OF BUENA VISTA AVE. @ BEND IN STREET.
16	852.598	SET RR SPIKE IN S'LY SIDE OF U.P. @ N.W. CORNER OF WASHINGTON ST. & NINTH ST.
17	846.504	SET RR SPIKE IN N'LY SIDE OF U.P. @ S.W. CORNER OF WASHINGTON ST. & EIGHTH ST.
18	835.276	SET RR SPIKE IN N'LY SIDE OF U.P. @ S.W. CORNER OF SEVENTH ST. & WASHINGTON ST.

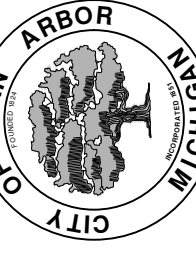


Know what's below. Call before you dig.


			JKA	JKA	CHECKED
			CEC/DFP	CEC/DFP	DRAWN
		2-23-18		2-6-18	DATE
		01	ADDENDUM #1		REV.
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CREST, BUENA VISTA, WASHINGTON WATER MAIN  
STANDARD NOTES



SCALE: N/A  
DRAWING No.  
2016029-2

SHEET No.

2 OF 46



**EXISTING LEGEND**

- ⊕ FIRE HYDRANT
- I GATE VALVE IN BOX
- ⊗ GATE VALVE IN WELL
- ⊙ STOP BOX
- ⊠ WATER VAULT
- ⊙ WELL
- CATCH BASIN (SQ)
- ⊙ CATCH BASIN (RD)
- STORM MANHOLE
- NON-CURB CATCH BASIN (SQ)
- ) END SECTION
- SANITARY MANHOLE
- CLEAN-OUT
- POST
- ⊕ PEDESTRIAN SIGNAL
- ⊢ SIGN
- HAND HOLE
- ORNAMENTAL LIGHT
- ⊕ FLOOD LIGHT
- ⊙ UNKNOWN MANHOLE
- ⊙ TELEPHONE MANHOLE
- ⊠ TELEPHONE RISER
- GAS VALVE
- GAS VENT
- ⊠ GAS BOX
- ⊠ ELECTRICAL RISER
- ⊠ TRANSFORMER
- ⊕ UTILITY POLE
- LAMP POLE
- ⊢ GUY ANCHOR
- GUY POLE
- ⊙ MONITORING WELL
- ⊠ MAILBOX
- SOIL BORING
- △ TRAVERSE POINT
- ⊕ BENCH MARK
- IRON PIPE
- ⊠ MON BOX

- W --- WATER MAIN
- - - - - WATER MAIN ABANDONED
- R --- STORM SEWER
- - - - - STORM SEWER ABANDONED
- S --- SANITARY SEWER
- - - - - SANITARY SEWER ABANDONED
- G --- GAS MAIN
- G (DEAD) --- GAS MAIN (DEAD)
- E --- ELECTRICAL OVER HEAD
- E --- ELECTRICAL UNDER GROUND
- e duct bank --- ELECTRICAL DUCT BANK
- t --- TELEPHONE OVER HEAD
- t --- TELEPHONE UNDER GROUND
- t duct bank --- TELEPHONE DUCT BANK
- ohtv --- CABLE TV OVER HEAD
- tv --- CABLE TV UNDER GROUND
- fo --- FIBER OPTIC
- fo duct bank --- FIBER OPTIC DUCT BANK
- BOUNDARY
- /// BUILDING
- CENTERLINE OF DITCH
- CENTERLINE/CROWN OF ROAD
- 800 --- CONTOUR MAJOR
- 799 --- CONTOUR MINOR
- EDGE OF WATER
- FLOODPLAIN
- /// FENCE
- GRAVEL
- GUARDRAIL
- STONE WALL
- R.O.W.
- TREELINE
- WETLAND
- EDGE OF BRUSH
- HEDGE
- TREE (DECIDUOUS)
- TREE (CONIFEROUS)
- SHRUB (DECIDUOUS)
- STUMP
- 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

**PROPOSED LEGEND**

- ⊕ HYDRANT (PLAN)
- ⊗ WATER GATE WELL
- ▽ REDUCER
- ⊠ WATER GATE VALVE
- ⊙ WATER STOP BOX
- ⊠ WATER VAULT
- ⊙ INLET
- ⊠ DOUBLE INLET
- INLET JUNCTION CHAMBER
- ROUND CATCH BASIN
- STORM MANHOLE
- △ DRAIN ARROW
- △ FLARED END SECTION
- SANITARY MANHOLE
- CLEAN-OUT
- SIGN
- PUSH BUTTON
- ⊠ HAND HOLE
- W --- WATER MAIN
- R --- STORM SEWER
- S --- SANITARY SEWER
- FO --- FIBER OPTIC
- E --- ELECTRICAL
- CENTERLINE OF DITCH
- CENTERLINE OF ROAD
- FENCE
- GRAVEL
- SILT FENCE
- PROTECTIVE FENCE
- LOT/UNIT
- CURB
- TEMPORARY GRADING PERMIT
- 800 --- CONTOUR MAJOR
- 799 --- CONTOUR MINOR
- WATER EASMENT
- 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



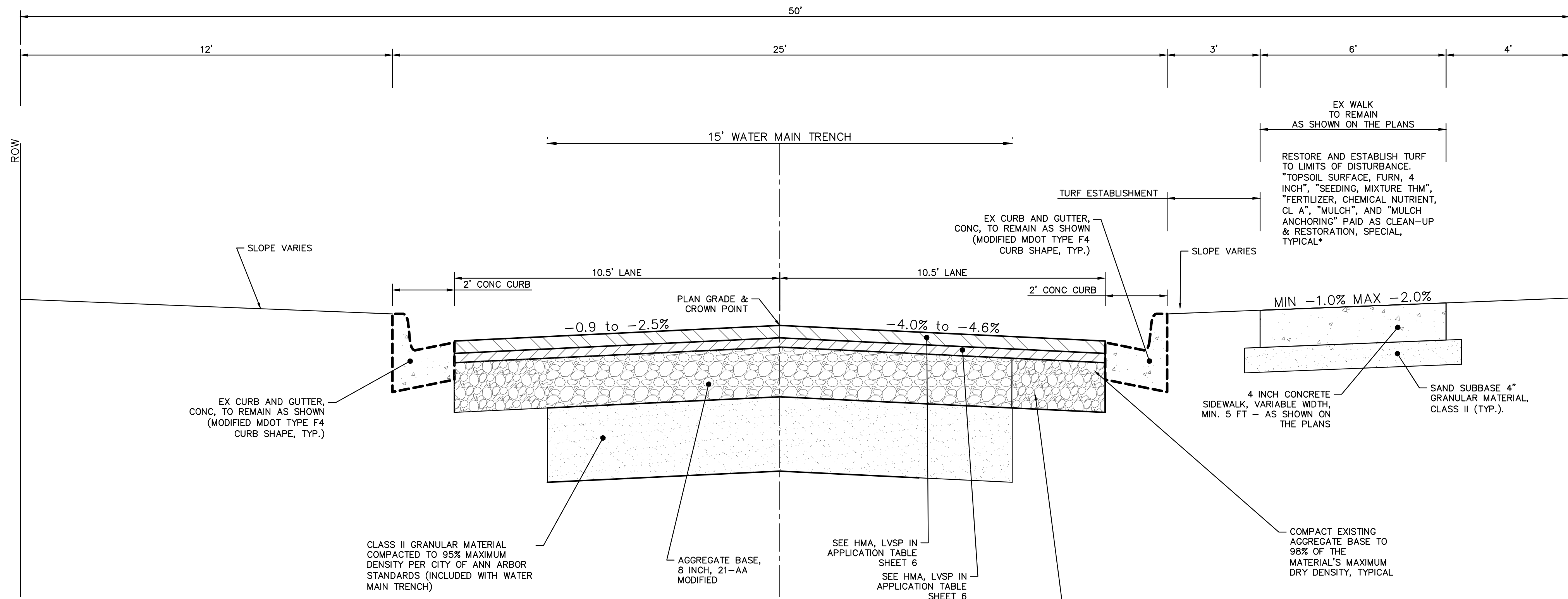
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**CREST, BUENA VISTA, WASHINGTON WATER MAIN**  
LEGEND

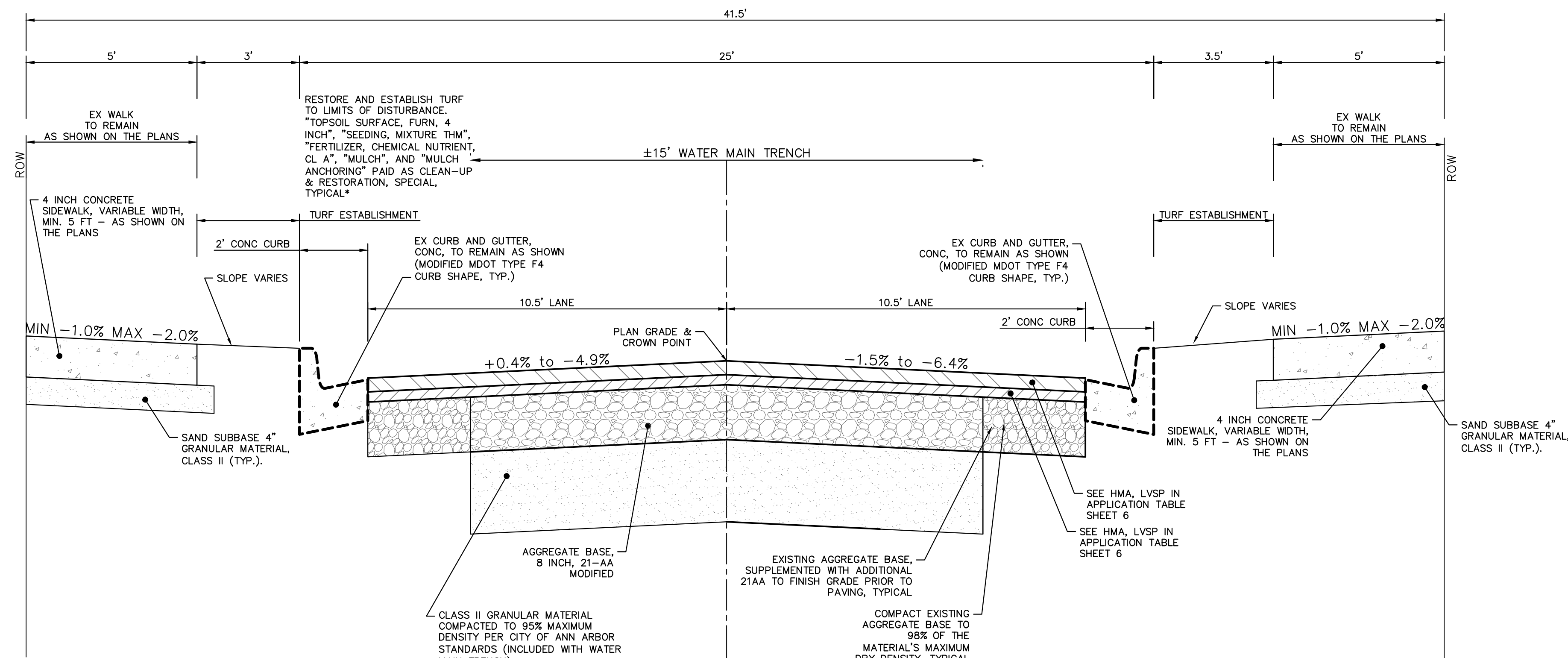
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BUENA VISTA AVENUE  
TYPICAL SECTION STA 0+00 to 3+07

N.T.S.

NOTE:  
SIDEWALK CONSTRUCTION MAY REQUIRE UNDERCUTTING SUBGRADE. BACKFILL WITH MDOT, CL II GRANULAR MATERIAL COMPACTED TO 95% MAXIMUM DRY DENSITY. THIS WORK SHALL BE INCLUDED IN COST OF SIDEWALK, IF REQUIRED, AND WILL NOT BE PAID FOR SEPARATELY.



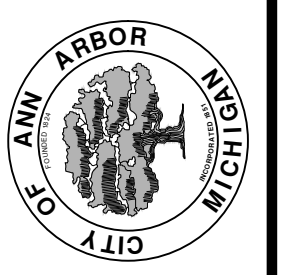
BUENA VISTA AVENUE  
TYPICAL SECTION STA 3+07 to 5+05 and 8+19 to 9+88

N.T.S.



REV.	DATE	DESCRIPTION
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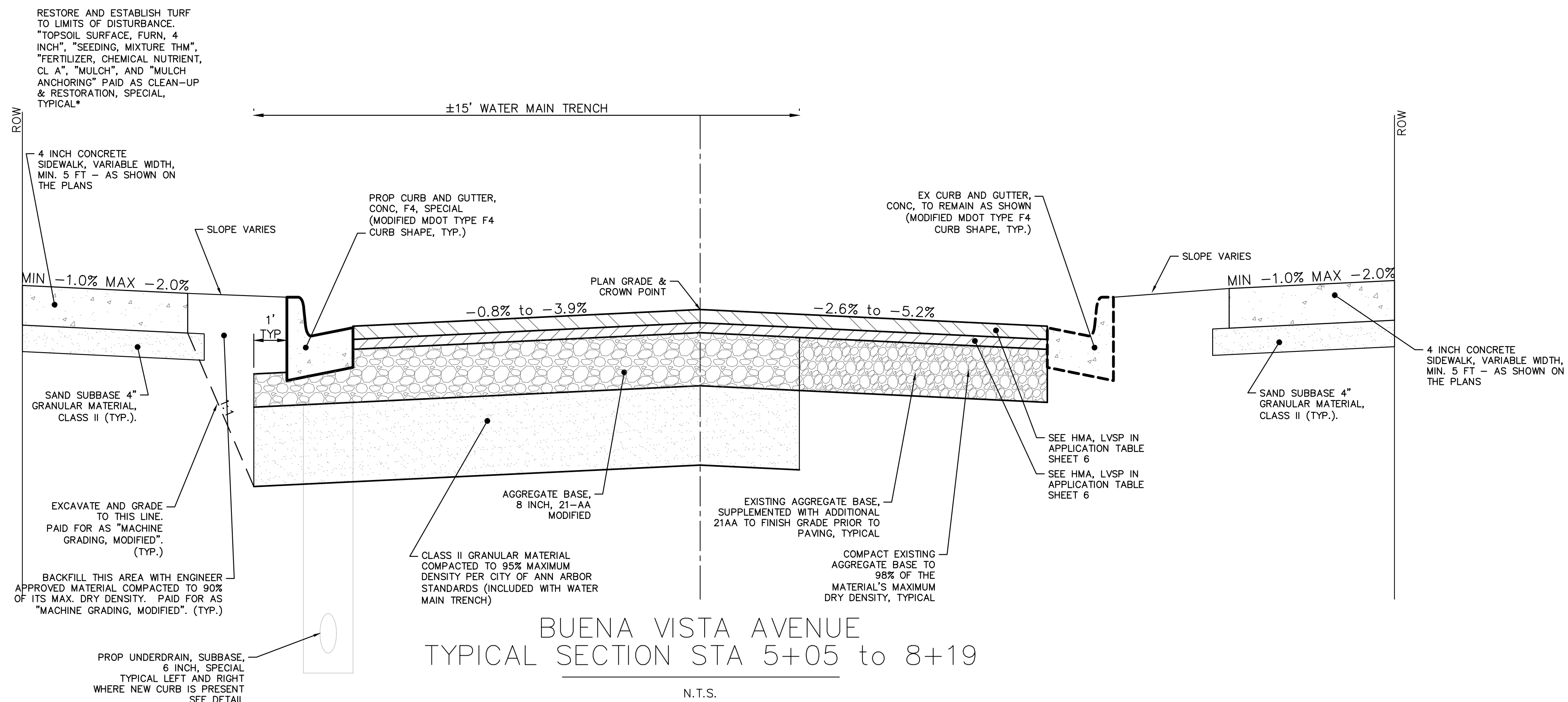
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TYPICAL PROPOSED ROAD SECTIONS BUENA VISTA

SCALE: N/A  
DRAWING No. 2016029-4  
SHEET No.

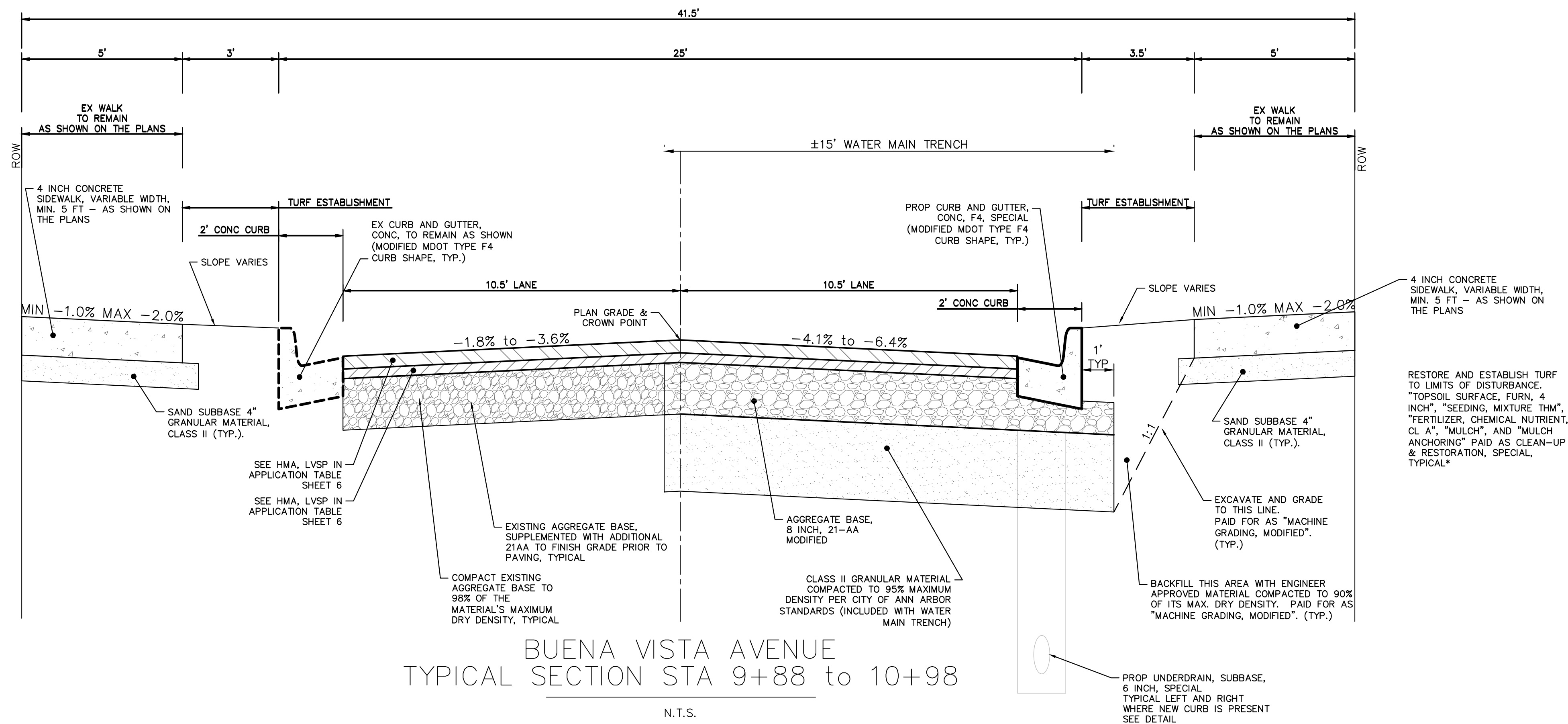
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BUENA VISTA AVENUE  
TYPICAL SECTION STA 5+05 to 8+19

N.T.S.

NOTE:  
SIDEWALK CONSTRUCTION MAY REQUIRE UNDERCUTTING SUBGRADE. BACKFILL WITH MDOT, CL II GRANULAR MATERIAL COMPACTED TO 95% MAXIMUM DRY DENSITY. THIS WORK SHALL BE INCLUDED IN COST OF SIDEWALK, IF REQUIRED, AND WILL NOT BE PAID FOR SEPARATELY.



BUENA VISTA AVENUE  
TYPICAL SECTION STA 9+88 to 10+98

N.T.S.



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		CHECKED
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		JKA

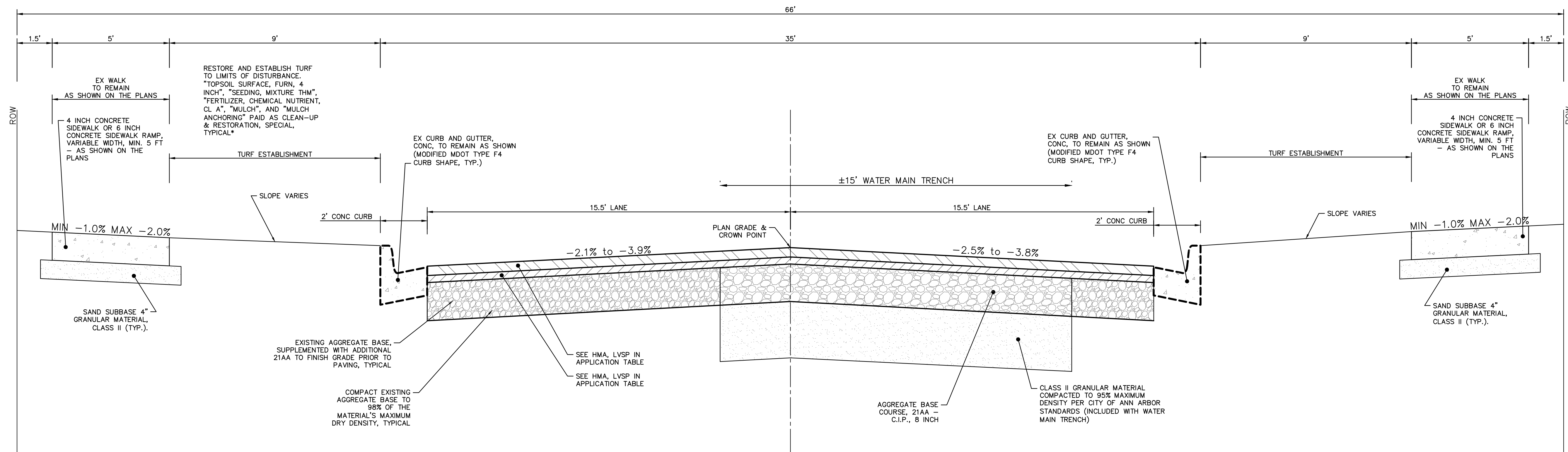
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TYPICAL PROPOSED ROAD SECTIONS BUENA VISTA

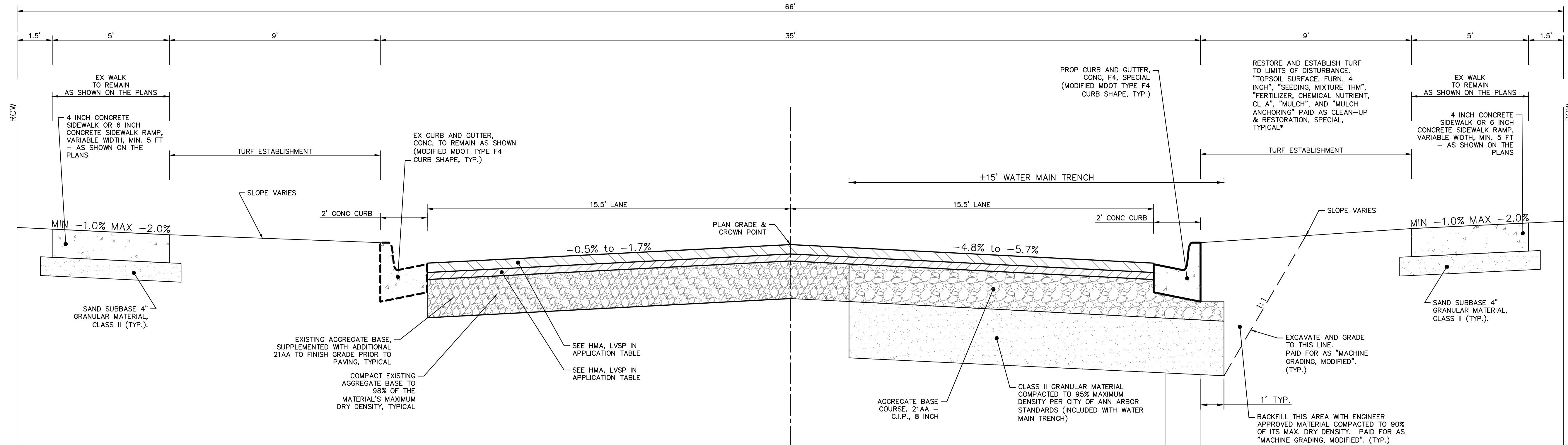
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SHEET No.

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W WASHINGTON STREET  
TYPICAL SECTION STA 0+00 to 10+00  
N.T.S.

HMA APPLICATION ESTIMATE					
HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
LVSP	220 LB/SYD	2	260 (TOP)	PG 58-28	TOP COURSE
LVSP	250 LB/SYD	2.25	-	PG 58-28	LEVELING COURSE
Bond Coat SS-1h	0.10 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



W WASHINGTON STREET  
TYPICAL SECTION STA 10+00 to 13+02  
N.T.S.



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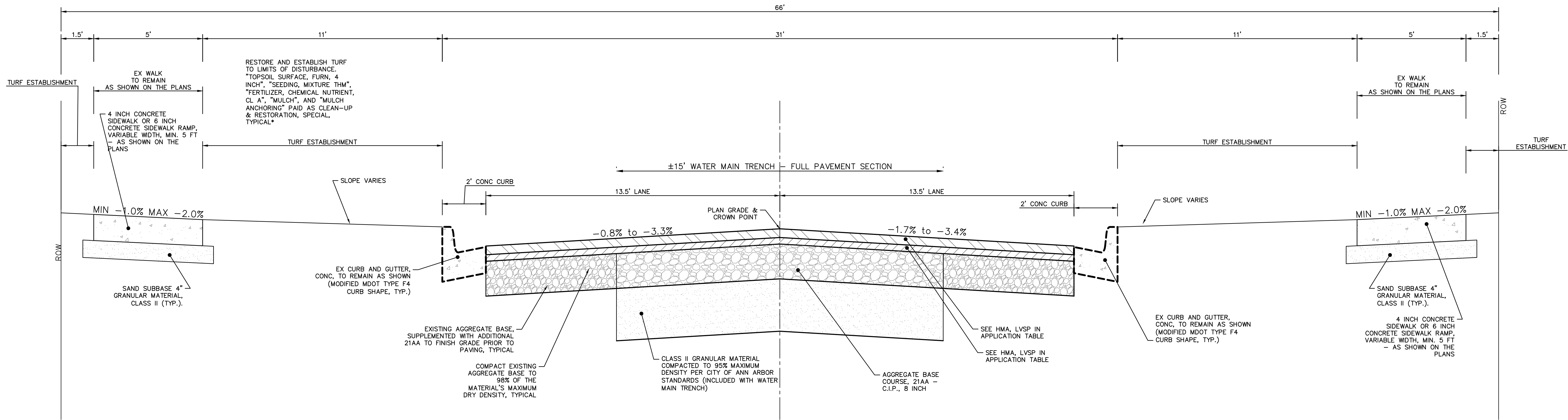
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TYPICAL PROPOSED ROAD SECTIONS WASHINGTON

SCALE: N/A  
DRAWING No. 2016029-6  
SHEET No. 6 OF 46

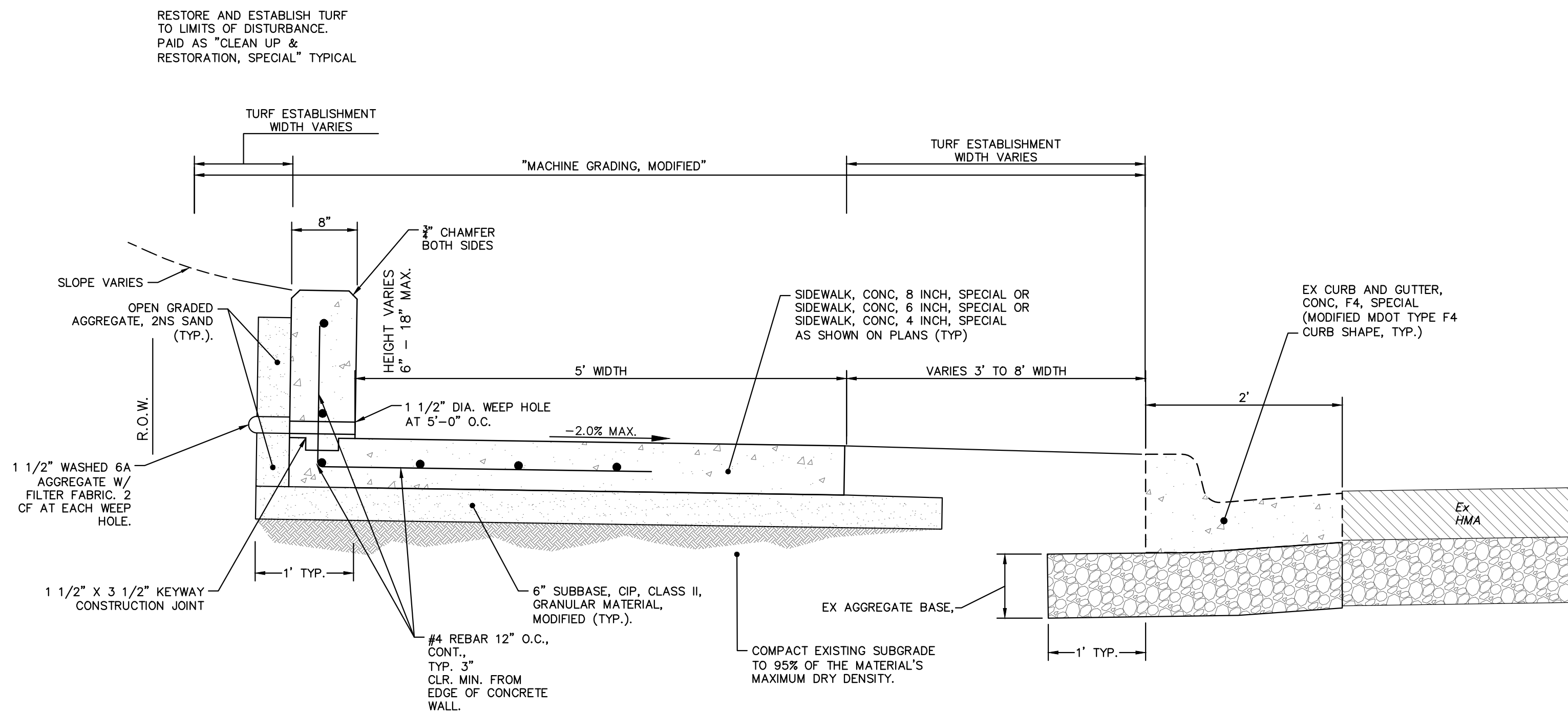


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CREST AVENUE  
TYPICAL SECTION

N.T.S.



SIDEWALK WITH WALL



REV.	DATE	DESCRIPTION
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00	2-6-18	CEC/DFP

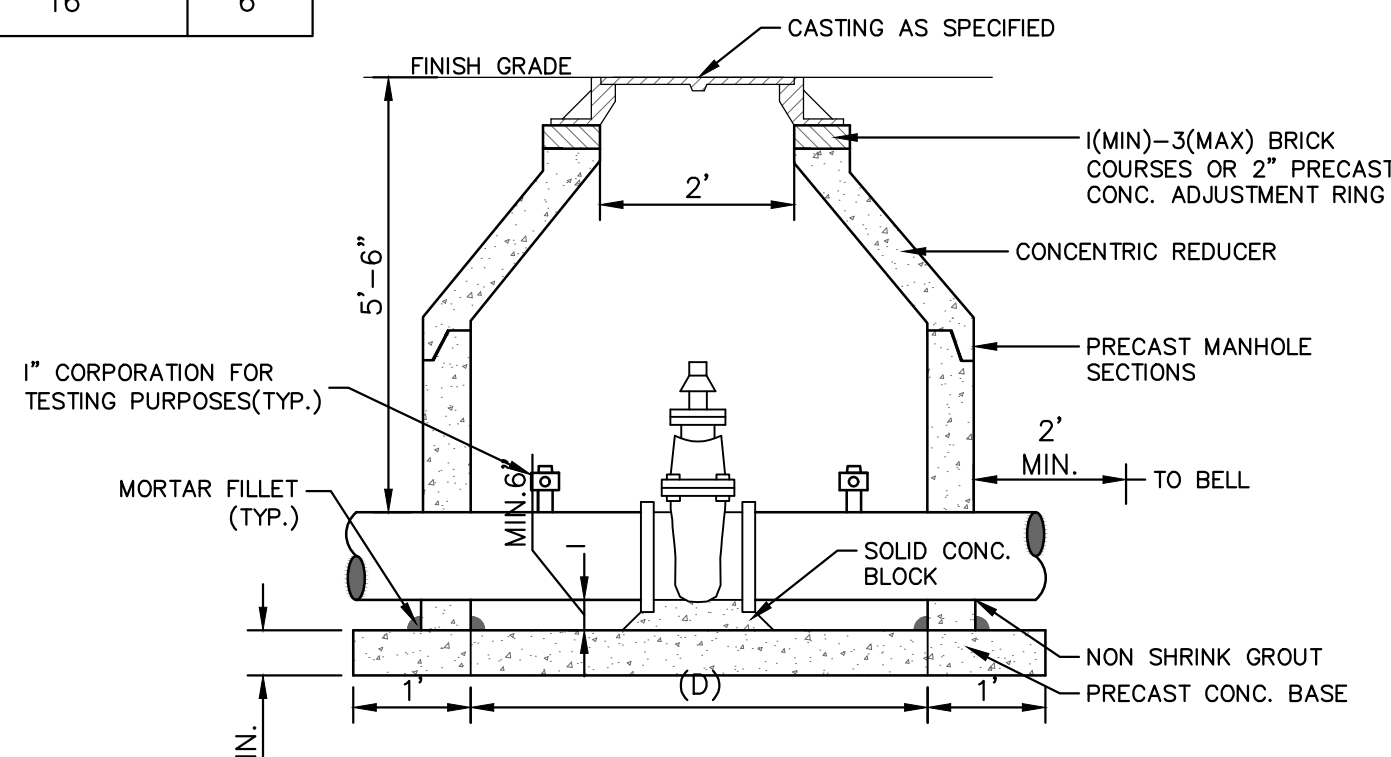
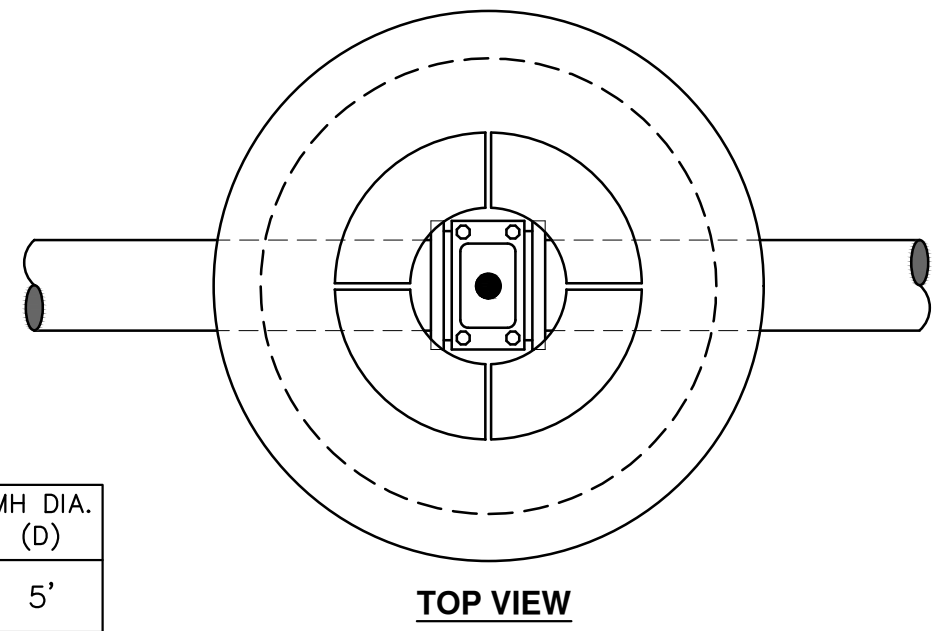
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TYPICAL PROPOSED ROAD SECTIONS CREST

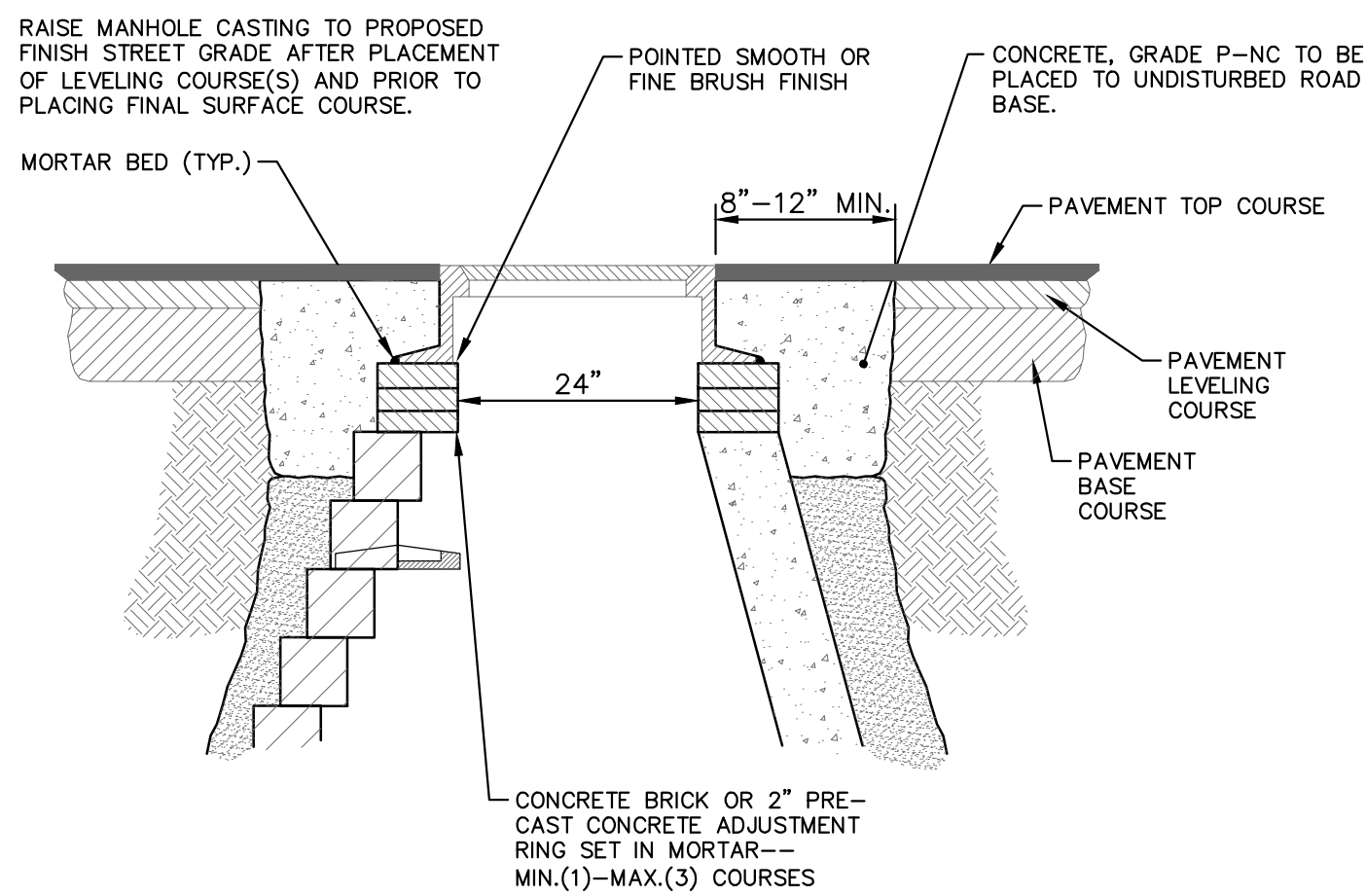
SCALE: N/A  
DRAWING No. 2016029-7

PIPE SIZE	MH DIA. (D)
12" OR LESS	5'
16"	6'



- NOTES:
1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE
  2. ALL JOINTS SHALL BE MADE WATER TIGHT WITH RUBBER GASKET JOINTS
  3. NO STEPS ARE PERMITTED
  4. MANHOLE SECTIONS SHALL MEET ASTM C-478

**GATE WELL FOR MAIN 16" & SMALLER SD-W-3**



NOTE:  
IF MANHOLE WILL BE PLACED IN GRAVEL ROAD, CASTING TO BE SET 6" TO 8" BELOW ROADWAY GRADE. ALL CONSTRUCTION METHODS SHALL REMAIN AS SHOWN ABOVE.

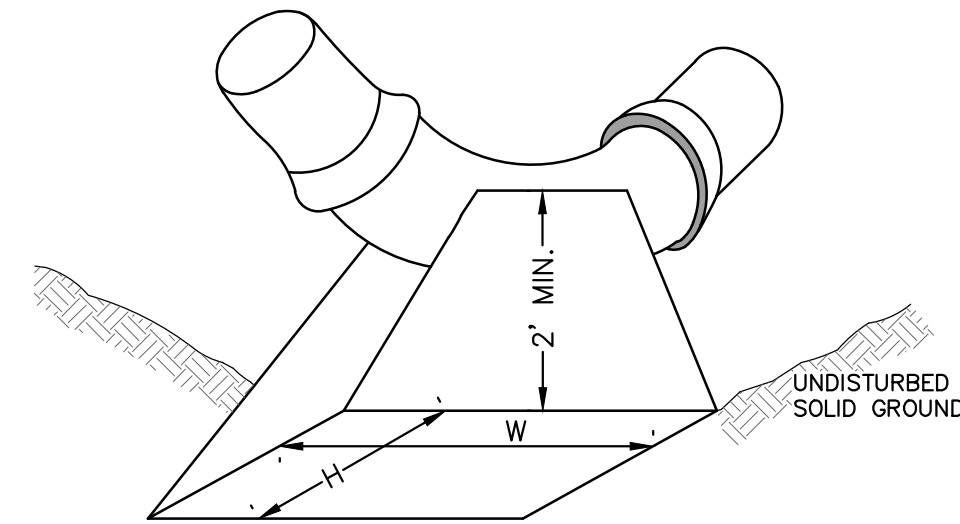
**MANHOLE CASTING ADJUSTMENT SD-GU-6**

**MINIMUM STANDARDS**  
THE MDOT GRADE PI OR P-NC CONCRETE AT THE FITTING FACE SHALL EXTEND TO WITHIN 2 INCHES OF THE BELL AND SHALL EXTEND FROM THE FITTING FACE A MINIMUM OF 2 FEET TO THE UNDISTURBED SOLID GROUND.  
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.  
IF THERE ISN'T SUFFICIENT SPACE FOR THE INSTALLATION OF THE THRUST BLOCK WITHOUT INTERFERENCE WITH OTHER SERVICES, ANOTHER ARRANGEMENT SATISFACTORY TO THE ENGINEER SHALL BE USED.

FITTINGS I.D.	PLUG TEE CROSS		BENDS				HYDRANT	
	W	H	90°	45°	22½°	11¼°	W	H
INCHES	W	H	W	H	W	H	W	H
4	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.5
6	2.0	1.5	2.0	2.0	2.0	1.0	1.0	2.5
8	2.5	2.0	3.5	2.0	2.0	2.0	1.0	2.0
12	3.5	3.0	5.5	3.0	3.5	2.5	2.0	1.0
16	6.0	3.5	6.0	4.0	5.0	3.0	3.5	2.0

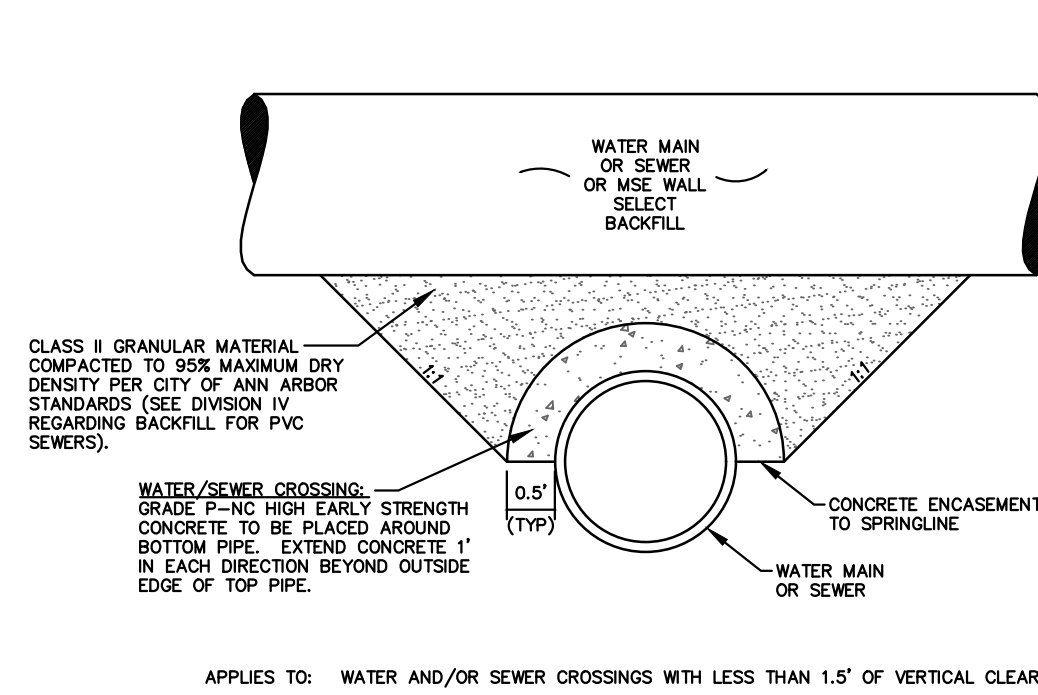
FOR FITTING SIZES LARGER THAN 16", THRUST BLOCK DIMENSIONS SHALL BE AS SPECIFIED BY ENGINEER.

W = WIDTH IN FEET  
H = HEIGHT IN FEET



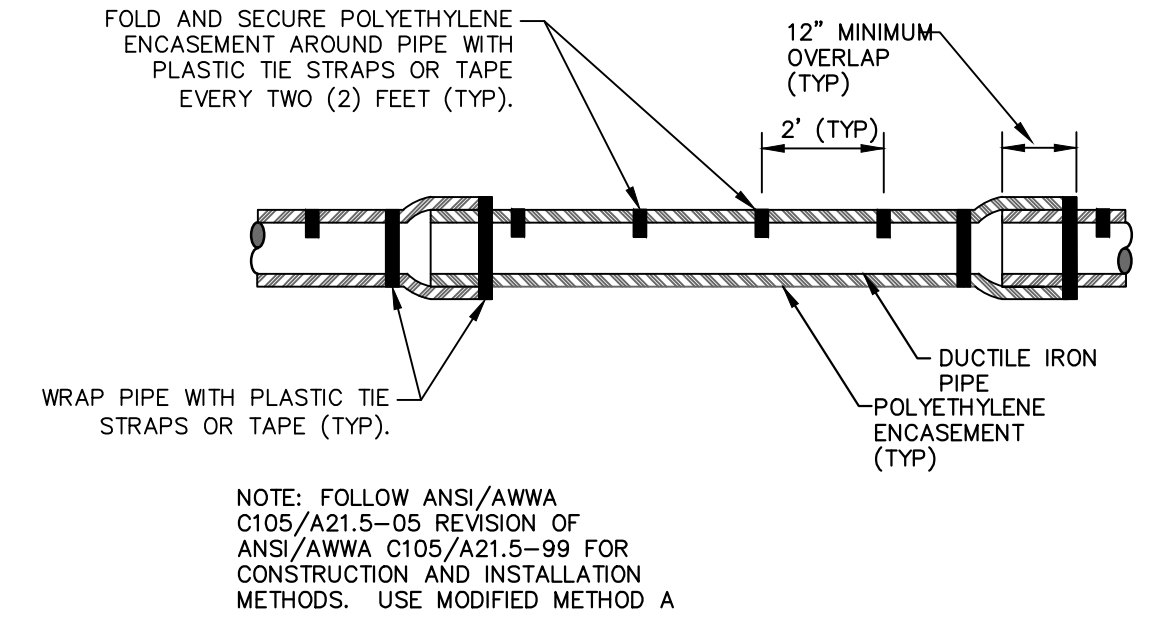
NOTE:  
THESE ARE MINIMUM STANDARDS. WHERE SOIL CONDITIONS DICTATE, ADJUSTMENTS IN SIZE SHALL BE MADE AS DIRECTED BY THE PUBLIC SERVICES AREA ADMINISTRATOR.

**THRUST BLOCK SD-W-2**



APPLIES TO: WATER AND/OR SEWER CROSSINGS WITH LESS THAN 1.5' OF VERTICAL CLEARANCE

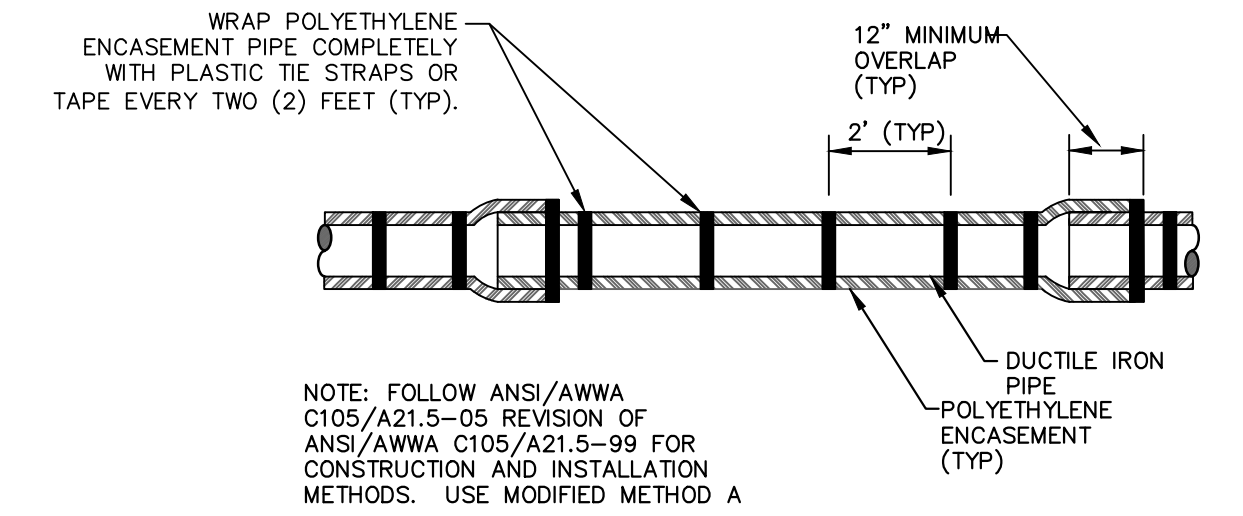
**CONCRETE UTILITY SADDLE**



NOTE: FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN SEE PLANS FOR LOCATIONS

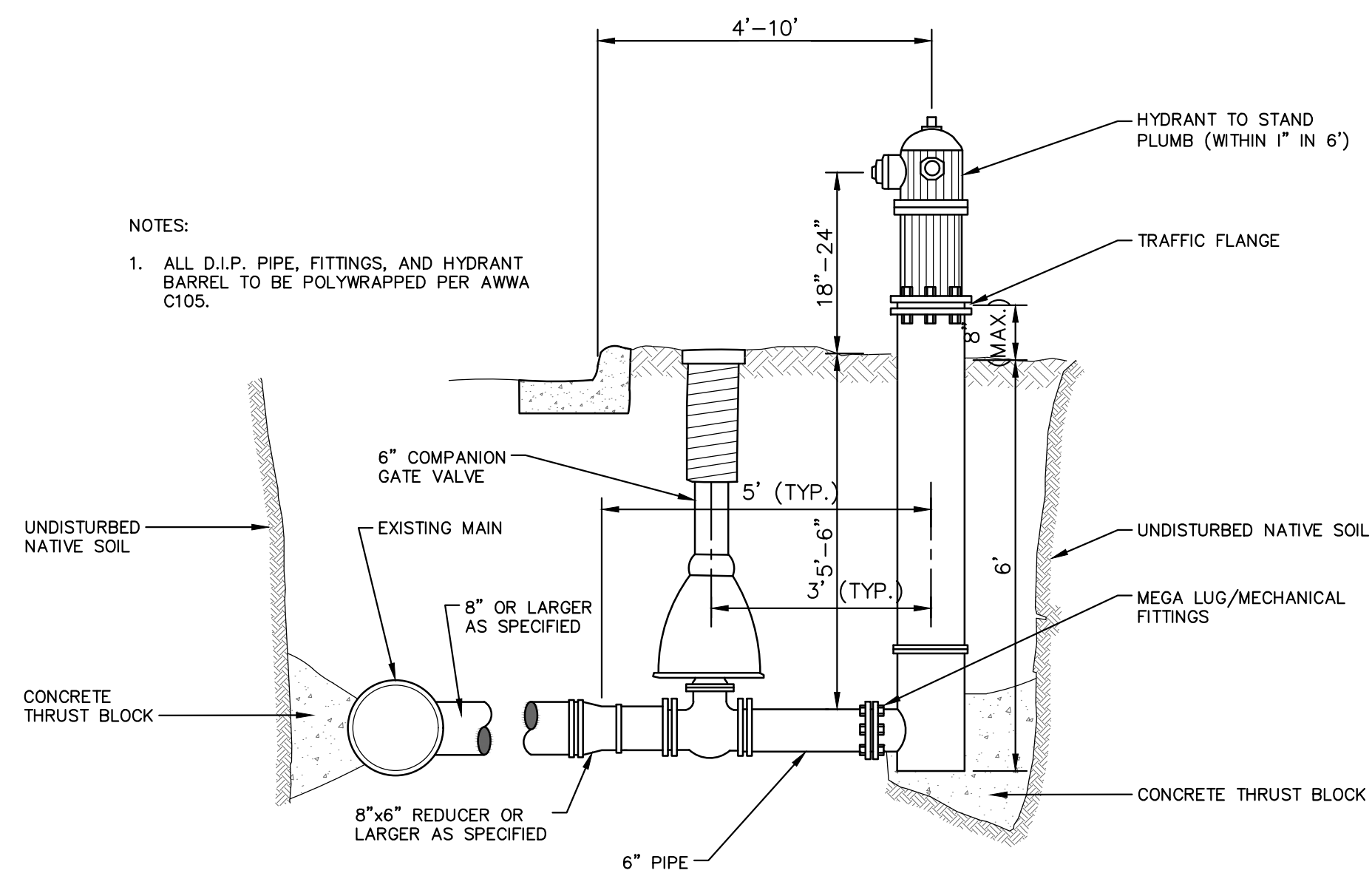
**POLYETHYLENE ENCASUREMENT (DRY INSTALLATION)**



NOTE: FOLLOW ANSI/AWWA C105/A21.5-05 REVISION OF ANSI/AWWA C105/A21.5-99 FOR CONSTRUCTION AND INSTALLATION METHODS. USE MODIFIED METHOD A

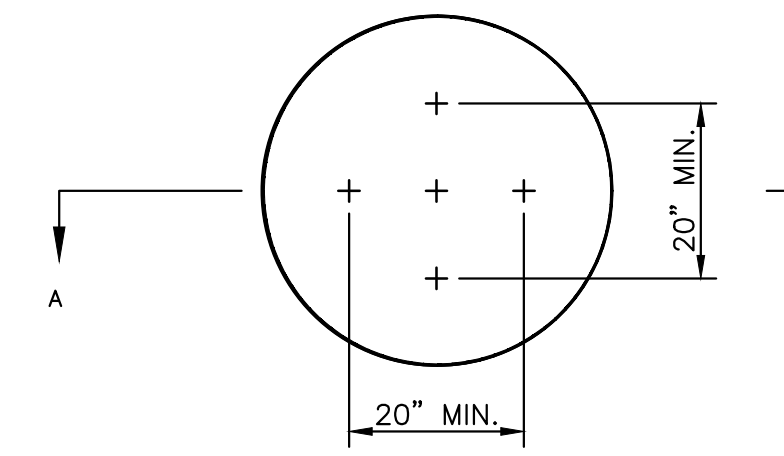
APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN SEE PLANS FOR LOCATIONS

**POLYETHYLENE ENCASUREMENT (WET INSTALLATION)**



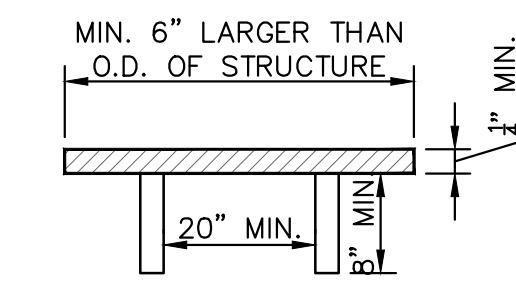
- NOTES:
1. ALL D.I.P. PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWWA C105.

**FIRE HYDRANT ASSEMBLY**



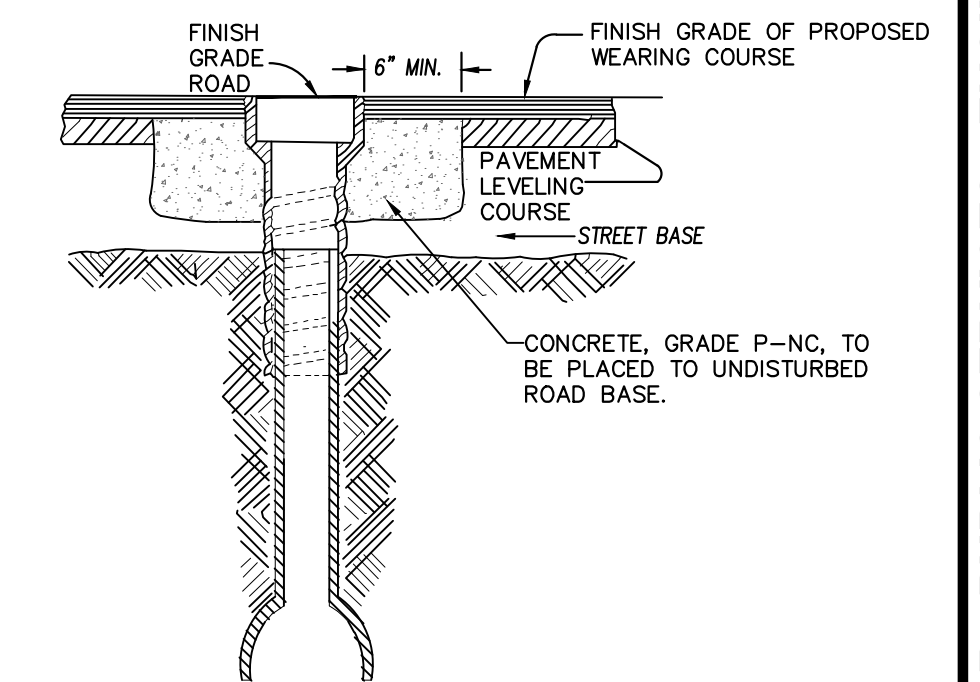
NOTE: PLATE MAY BE CIRCULAR, SQUARE OR RECTANGULAR

SECTION A - A



1/4" MIN. THICKNESS AND SUFFICIENT TO CARRY THE CONSTRUCTION LOAD.

**STRUCTURE PLATE SD-GU-8**



NOTE: RAISE CASTING TO PROPOSED FINISH STREET GRADE AFTER PLACEMENT OF LEVELING COURSE(S) AND PRIOR TO PLACING FINAL SURFACE COURSE

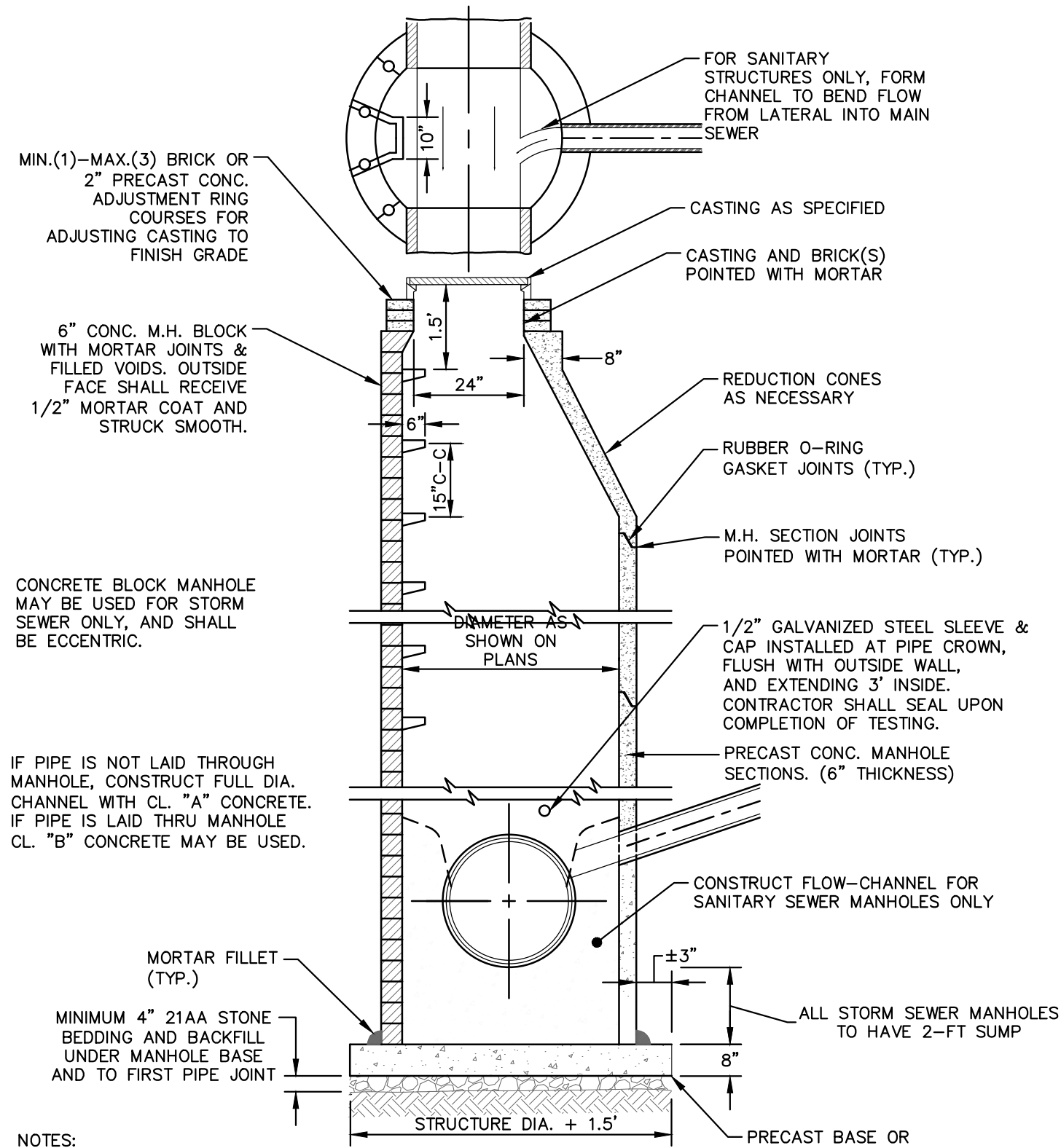
**WATER VALVE BOX ADJUSTMENT**



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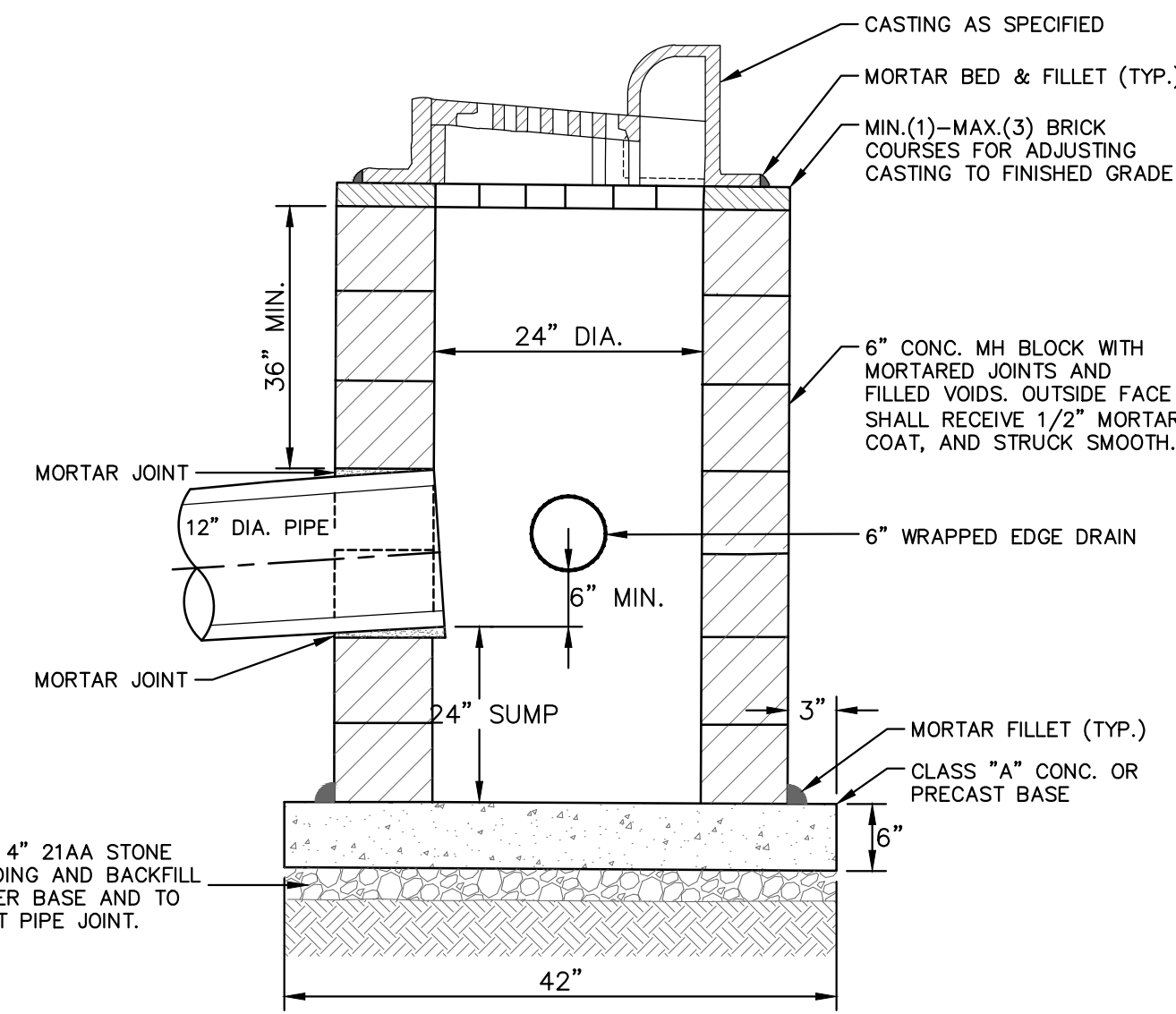
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NOTES:

1. ALL SANITARY MANHOLES SHALL BE PRECAST CONCRETE.
2. ALL MANHOLES MUST HAVE ECCENTRIC CONES - BOTH STORM AND SANITARY
3. ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
4. 2' SUMP REQUIRED ON ALL DRAINAGE STRUCTURES.

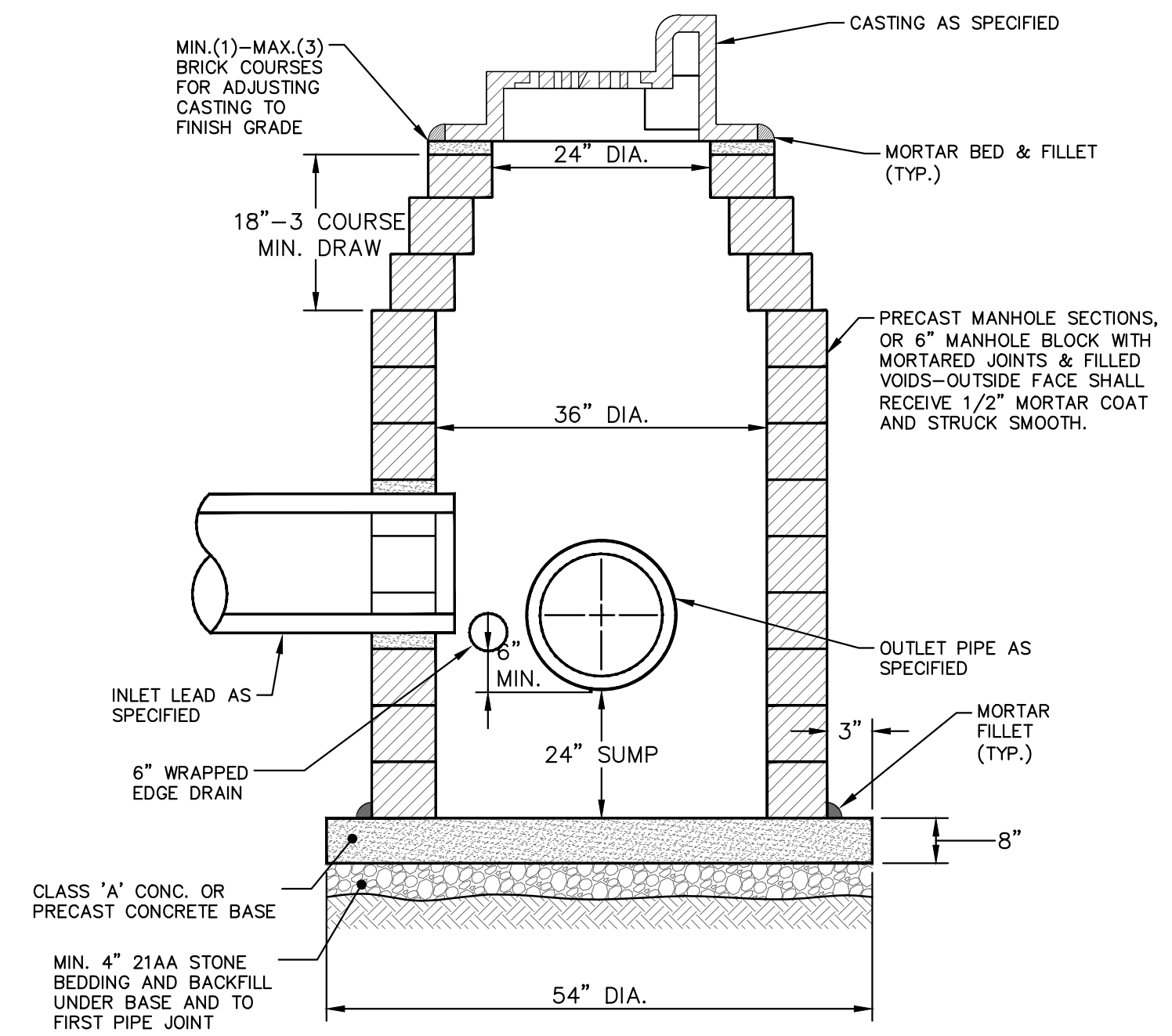
**STANDARD MANHOLE (TYPE I)**



NOTES:

1. MAY BE USED WITH ONLY SINGLE OUTLET PIPE, AND NO INLET PIPE
2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)

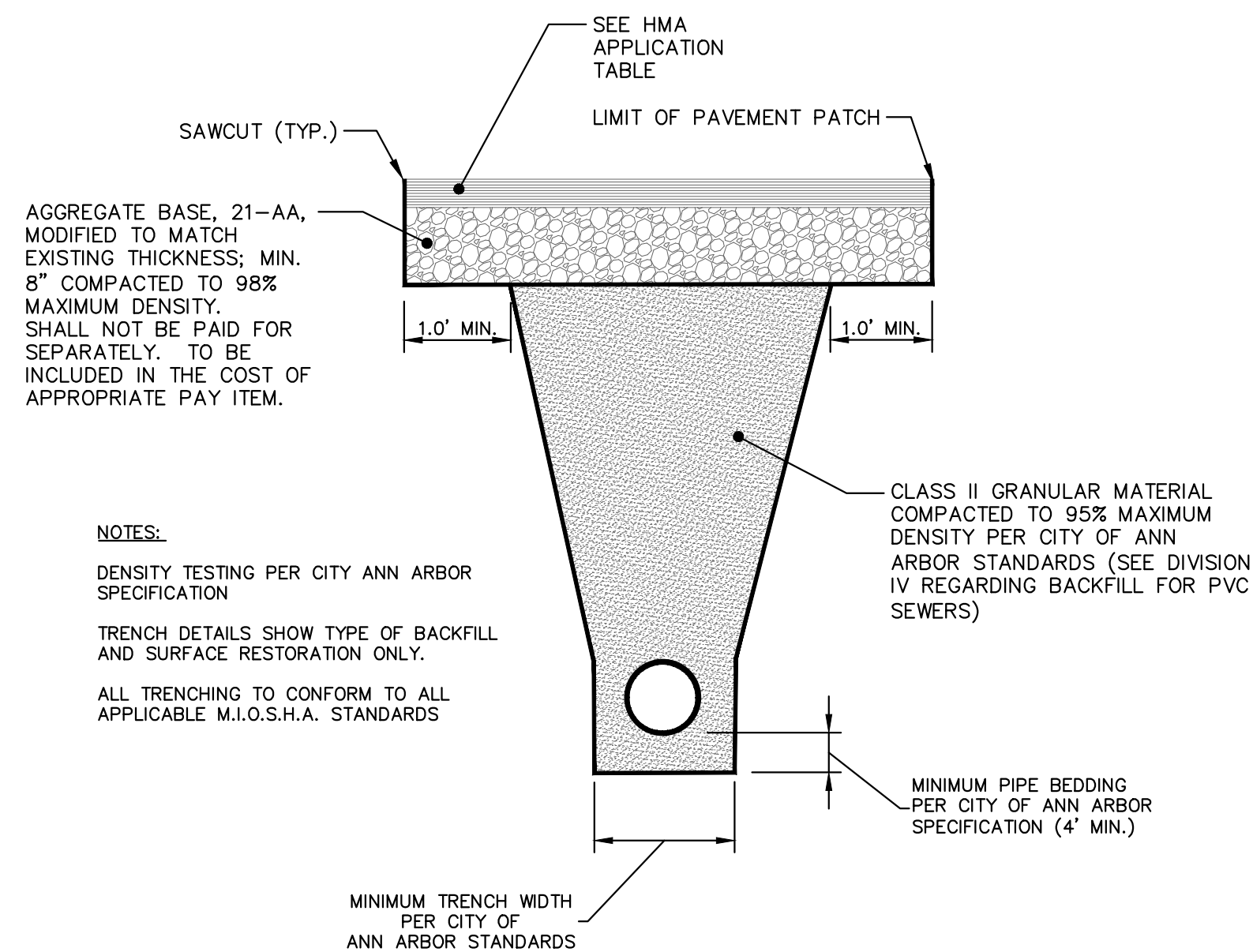
**SINGLE INLET STRUCTURE SD-S-10**



NOTES:

1. SHALL BE USED IF SINGLE OUTLET PIPE AND SINGLE INLET PIPE.
2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)

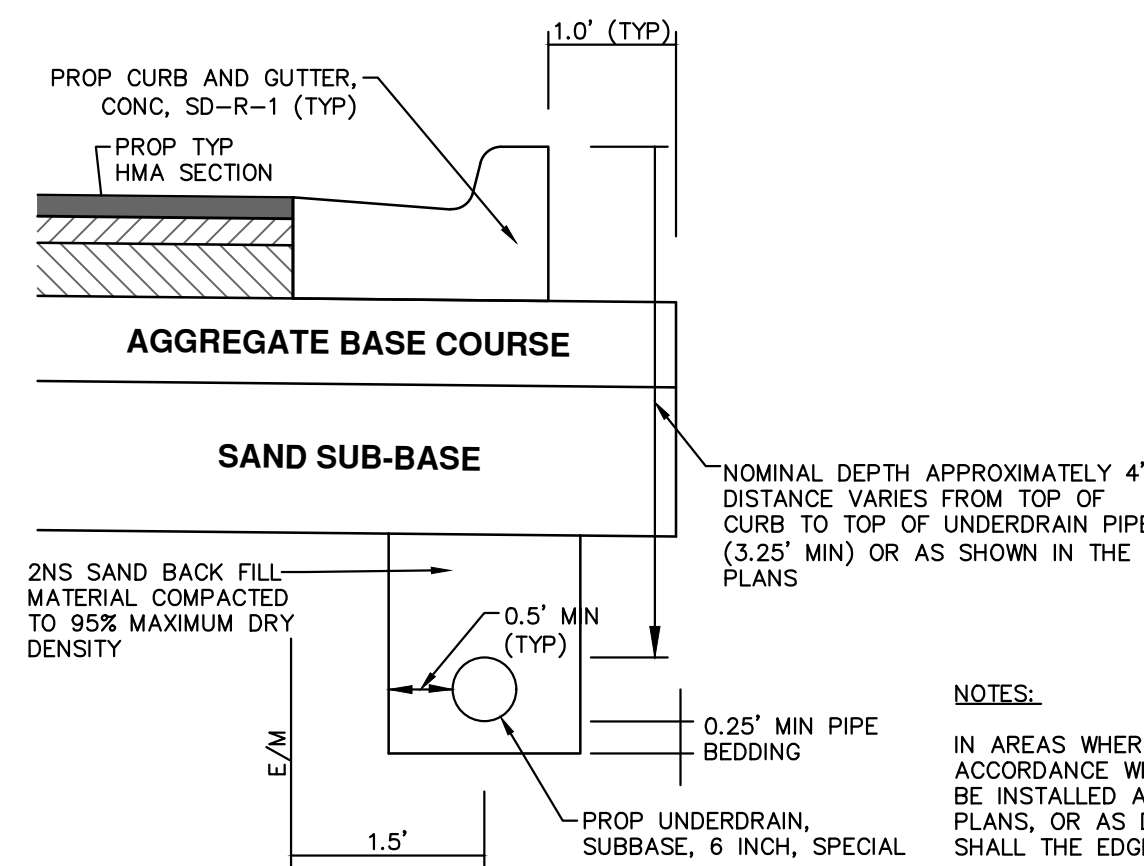
**INLET-JUNCTION CHAMBER SD-S-9**



NOTES:

- DENSITY TESTING PER CITY ANN ARBOR SPECIFICATION
- TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY.
- ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS

**UTILITY TRENCH-TYPE I SD-TD-1 (MODIFIED)**  
(UNDER HMA PAVEMENT)



NOTES:

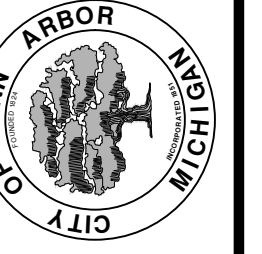
- IN AREAS WHERE EDGE DRAIN CANNOT BE INSTALLED IN ACCORDANCE WITH THE DETAIL, THE EDGE DRAIN SHALL BE INSTALLED AT THE DEPTH AS INDICATED ON THE PLANS, OR AS DIRECTED BY ENGINEER. IN NO CASE SHALL THE EDGE DRAIN BE INSTALLED AT A GRADE LESS THAN 0.50% OR AT A DEPTH OF LESS THAN 2' BELOW TOP OF PROPOSED PAVEMENT.
- FOR PAVEMENT BASE AND SUBBASE THICKNESS, SEE TYPICAL PAVEMENT CROSS-SECTION(S)
- TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION ONLY
- ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS

**TRENCH DETAIL FOR UNDER DRAIN**  
(UNDER HMA PAVEMENT)



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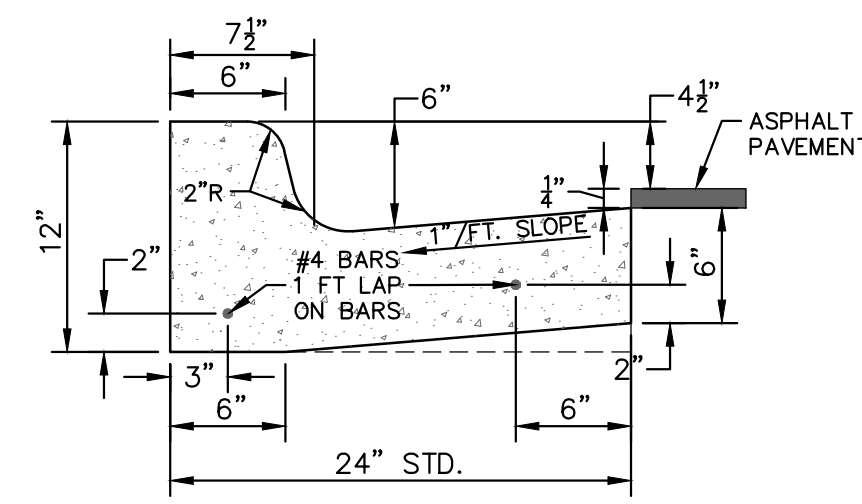


**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

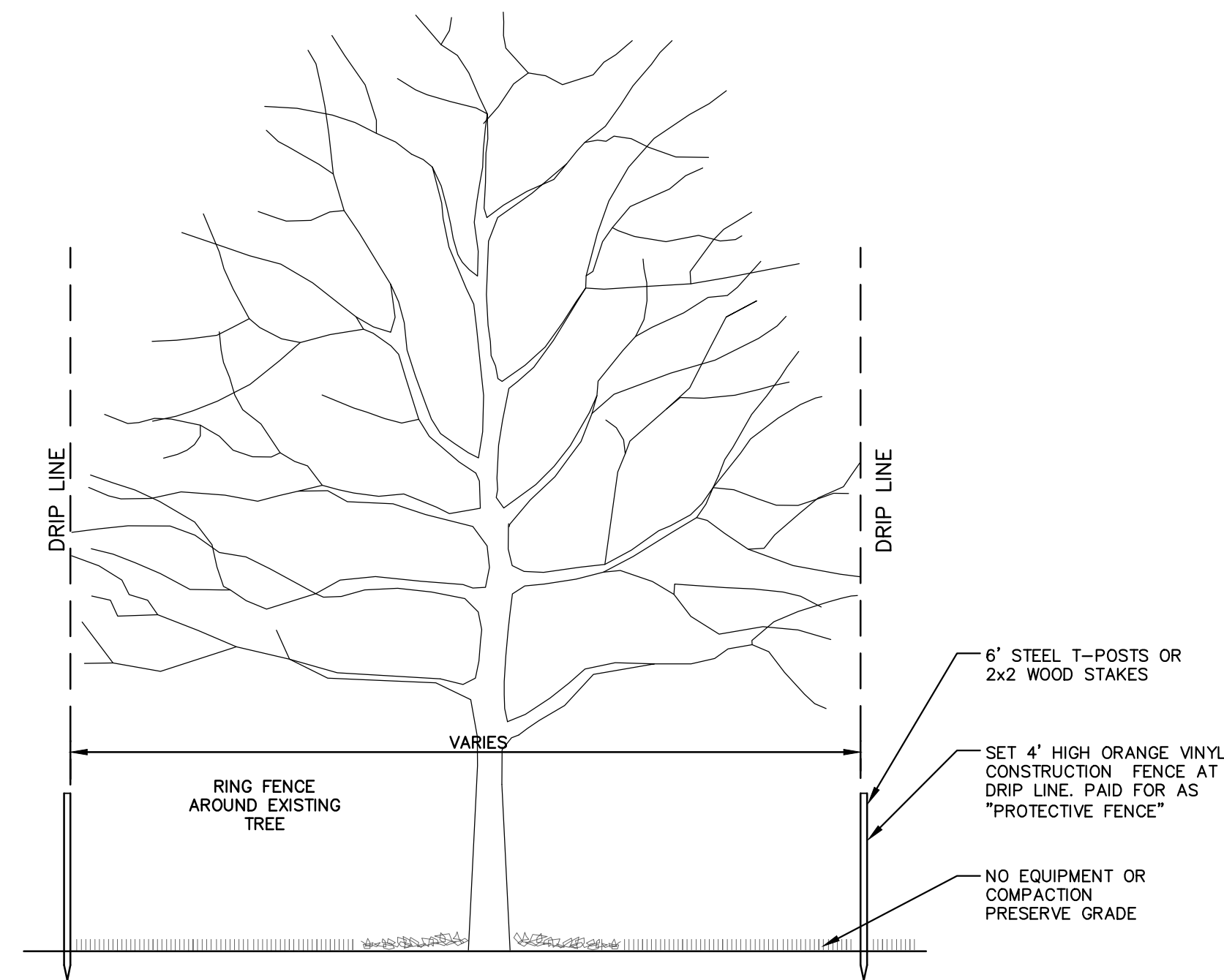
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DRAWING No. 2016029-9

R: \\2016029 Crest Buena Wash Lib WA\Plan Production\2016029DET.dwg Dwg Created: 21-Feb-18 - \_a2 standard bw.stb - Plot Date: 23-Feb-18

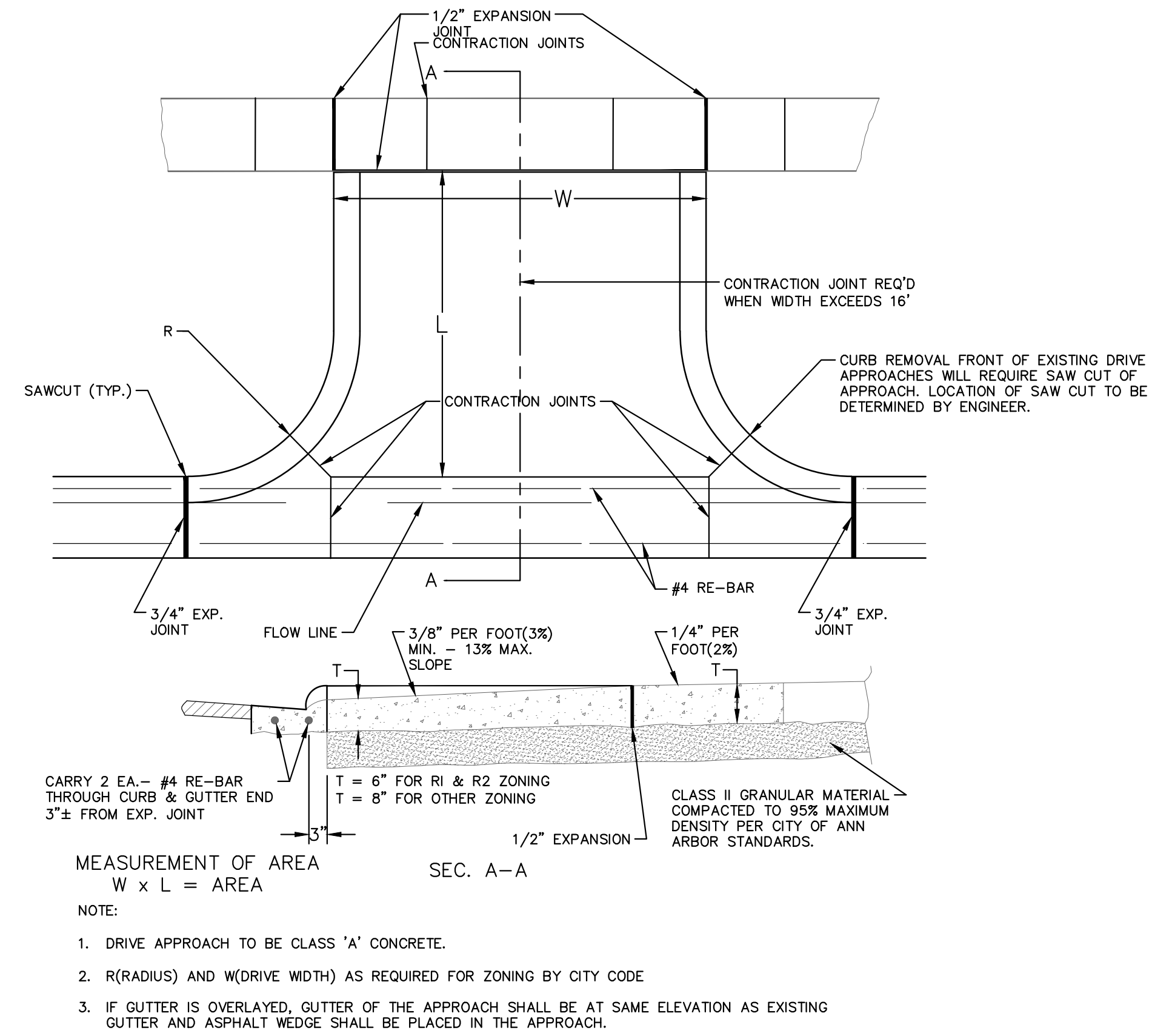
**CURB AND GUTTER, CONC, DET F4, SPECIAL**  
NO SCALE



**TREE PROTECTION DETAIL**



**TYPE 'M' DRIVE APPROACH SD-R-6**



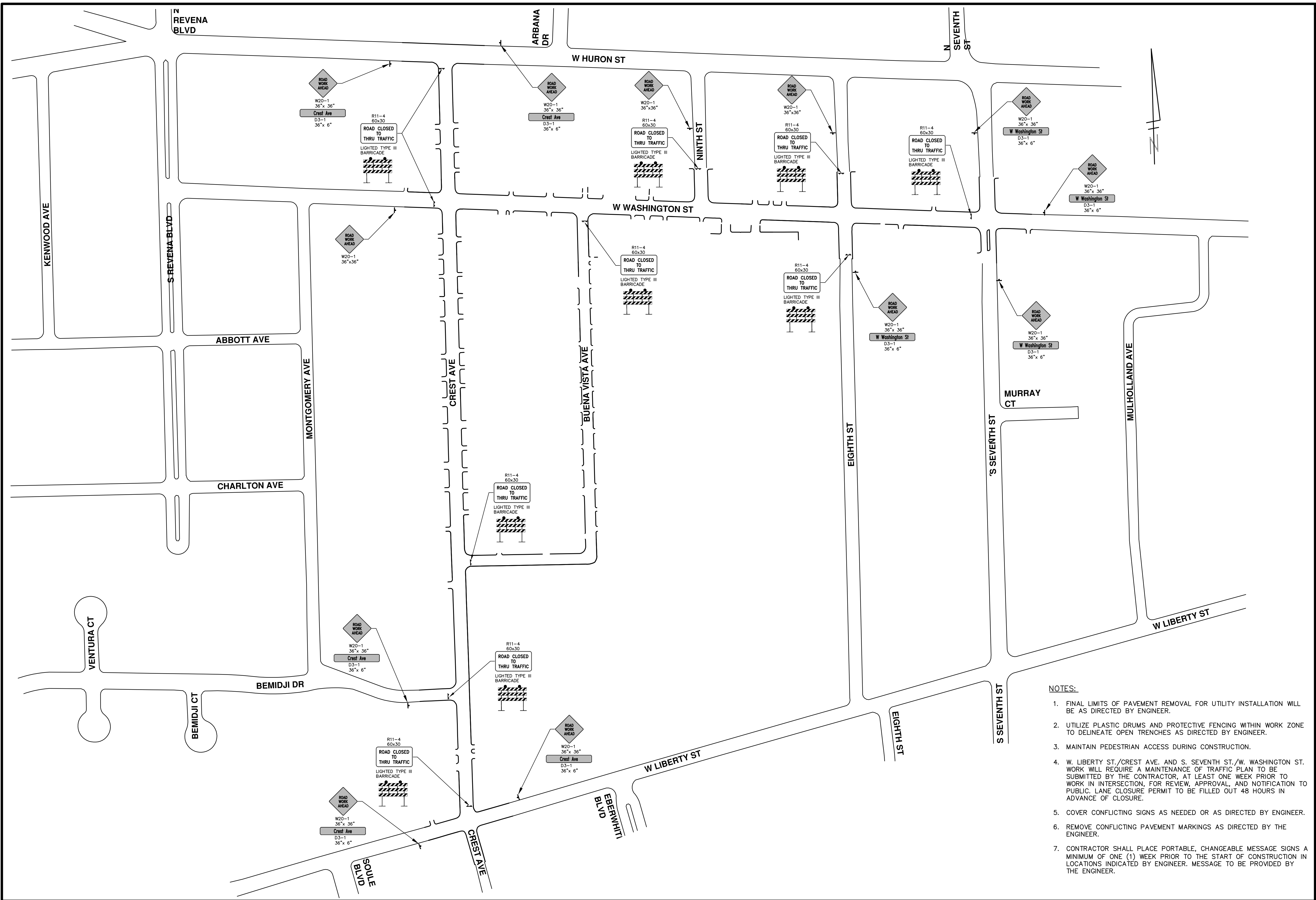
REV.	DATE	DESCRIPTION
01	2-23-18	ADDENDUM #1
00	2-6-18	OUT FOR BID

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**CREST, BUENA VISTA, WASHINGTON WATER MAIN**  
SCALE: N/A  
DRAWING No. 2016029-10  
MISC. DETAILS



R:\2016029 Crest Buena Wash Lib WA\Plan Production\2016029Mtrfr1.dwg Dwg Created: 6--Feb-18 -- \_a2 standard bw.stb -- Plot Date: 23--Feb-18



- NOTES:**
1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE AS DIRECTED BY ENGINEER.
  2. UTILIZE PLASTIC DRUMS AND PROTECTIVE FENCING WITHIN WORK ZONE TO DELINEATE OPEN TRENCHES AS DIRECTED BY ENGINEER.
  3. MAINTAIN PEDESTRIAN ACCESS DURING CONSTRUCTION.
  4. W. LIBERTY ST./CREST AVE. AND S. SEVENTH ST./W. WASHINGTON ST. WORK WILL REQUIRE A MAINTENANCE OF TRAFFIC PLAN TO BE SUBMITTED BY THE CONTRACTOR, AT LEAST ONE WEEK PRIOR TO WORK IN INTERSECTION, FOR REVIEW, APPROVAL, AND NOTIFICATION TO PUBLIC. LANE CLOSURE PERMIT TO BE FILLED OUT 48 HOURS IN ADVANCE OF CLOSURE.
  5. COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
  6. REMOVE CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
  7. CONTRACTOR SHALL PLACE PORTABLE, CHANGEABLE MESSAGE SIGNS A MINIMUM OF ONE (1) WEEK PRIOR TO THE START OF CONSTRUCTION IN LOCATIONS INDICATED BY ENGINEER. MESSAGE TO BE PROVIDED BY THE ENGINEER.

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

SCALE PLAN: 1" = 100'

DRAWING No. **2016029-11**

SHEET No. **11 OF 46**

**MAINTENANCE OF TRAFFIC OVERALL TRAFFIC CONTROL**

DATE: 2-23-18  
DRAWN: JKA  
CHECKED: JKA

APPENDIX #1  
OUT FOR BID: 2-6-18  
REV.

DESCRIPTION

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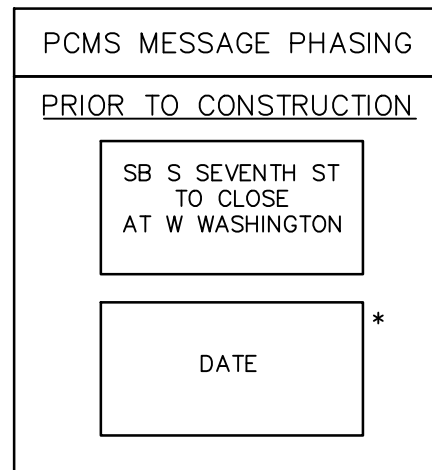
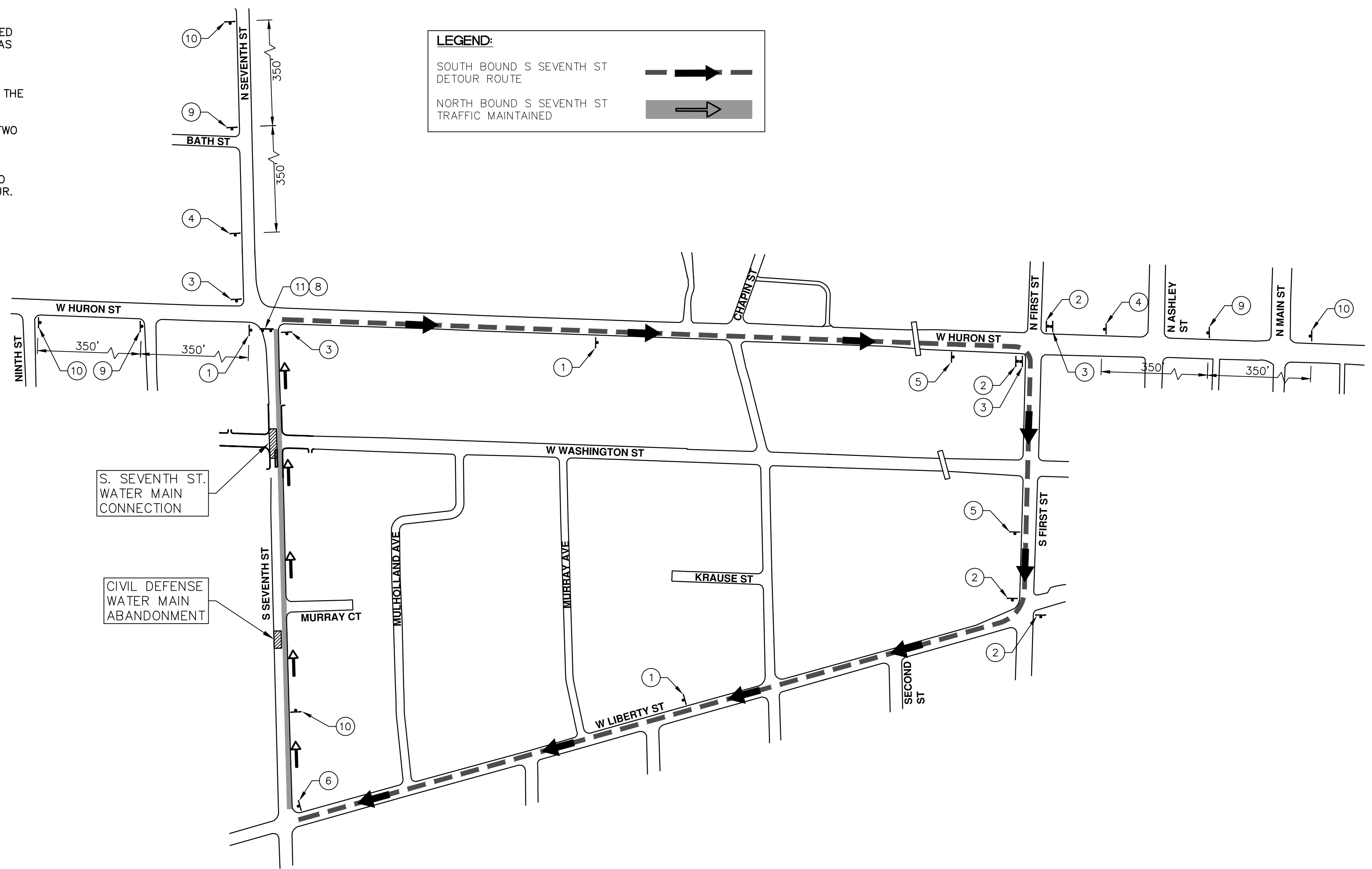
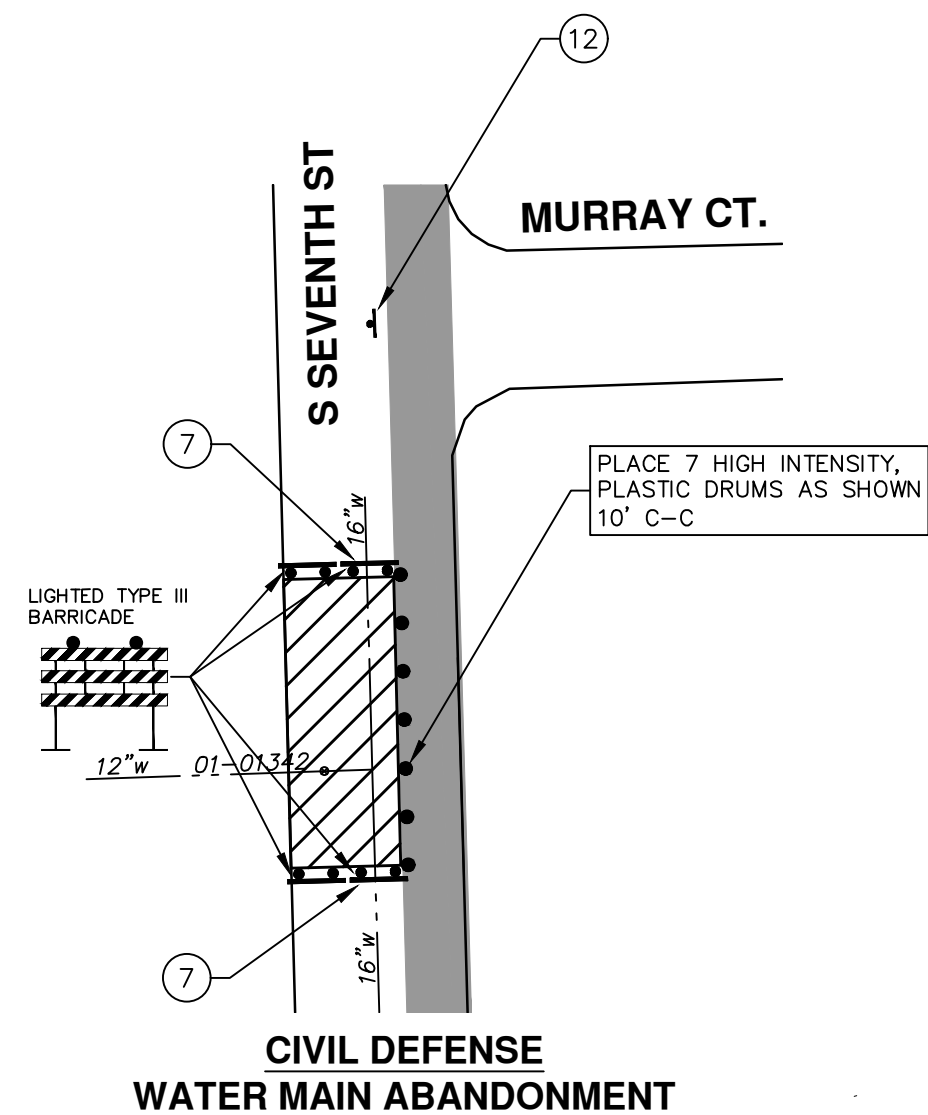
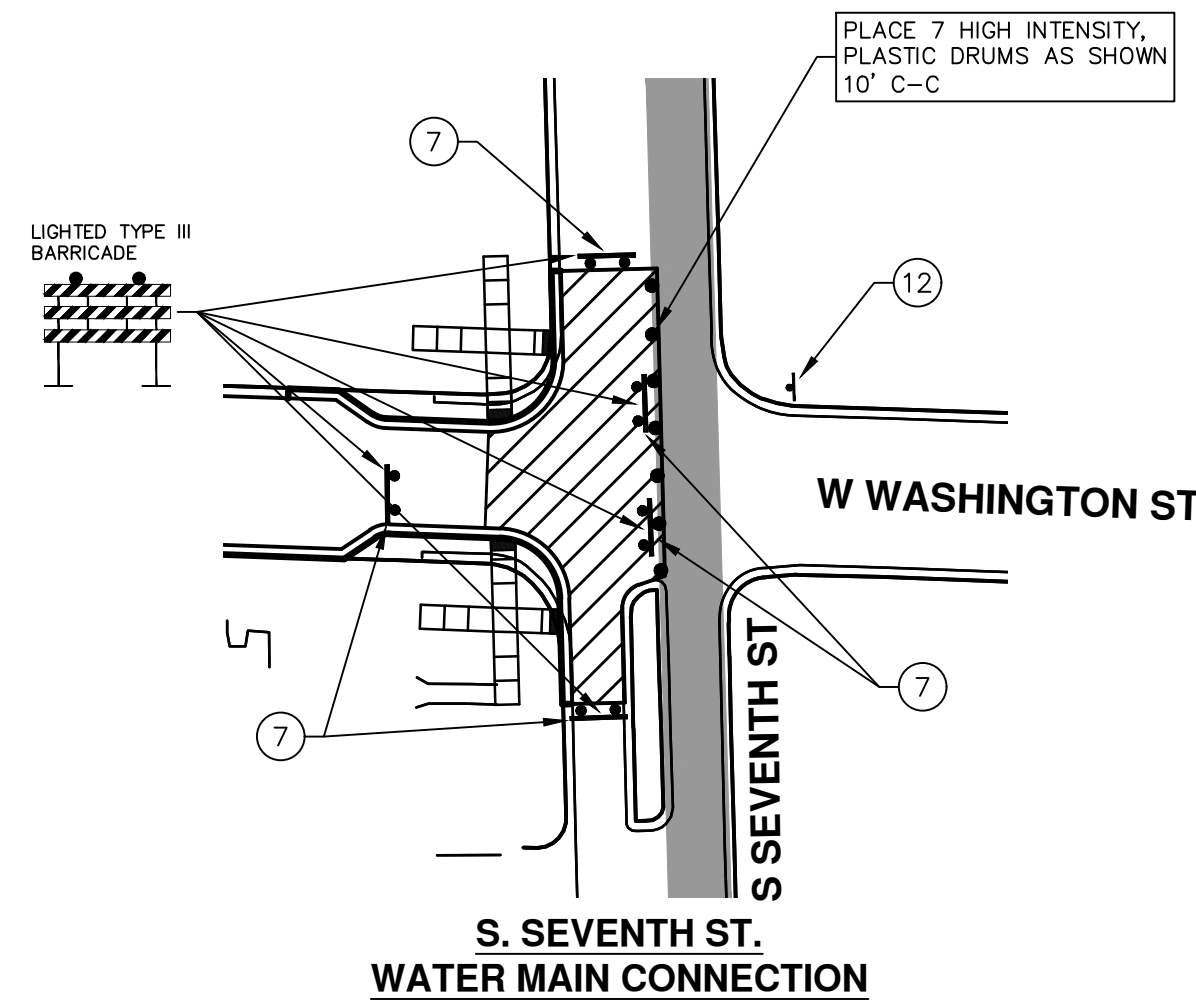
Know what's below.  
Call Before you dig.

**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 THE S. SEVENTH STREET WATER MAIN CONNECTION AND THE CIVIL DEFENSE WATER MAIN ABANDONMENT. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR WILL CLOSE AND DETOUR SOUTH BOUND S. SEVENTH STREET TRAFFIC. SEE DETAILED SPECIFICATION FOR MAINTAINING TRAFFIC AND FOR DETAILS ON CONSTRUCTION STAGING, SEQUENCING, CLOSURE AND DETOUR LIMITATIONS, AND OTHER DETAILS.
5. REFERENCE THE DETAILED SPECIFICATION FOR MAINTAINING TRAFFIC AND 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 "MINOR TRAFFIC DEVICES, MAX \$15,000."
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 NORTH BOUND S. SEVENTH STREET DETOUR. MESSAGE BOARDS TO BE PLACED 7 DAYS PRIOR TO IMPLEMENTATION OF DETOUR.

SOUTH BOUND S. SEVENTH ST.		
SIGN	NUMBER	QUANTITY
	D3-1	3
	M4-9S 30"x24"	3
	D3-1	4
	M4-9R 30"x24"	4
	D3-1	4
	M4-9L 30"x24"	4
	D3-1	2
	M4-9L (MOD) 30"x24"	2
	D3-1	2
	M4-9R (MOD) 30"x24"	2
	D3-1	1
	M4-8A 24"x18"	1
	R11-2 48"x30"	7
	M4-10L 48"x18"	1
	D3-1	3
	W20-2 36"x36"	3
	D3-1	4
	W20-1 36"x36"	4
	R11-4 60"x30"	1
	R3-2 24"x24"	2
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED - 10 EACH		
SIGN, PORTABLE, CHANGEABLE MESSAGE - 2 EACH		
VERIFY EXACT QUANTITY AND LOCATION WITH ENGINEER PRIOR TO ORDERING		



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.

**NOTES:**

1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE AS DIRECTED BY ENGINEER.
2. UTILIZE PLASTIC DRUMS AND PROTECTIVE FENCING WITHIN WORK ZONE TO DELINEATE OPEN TRENCHES AS DIRECTED BY ENGINEER.
3. MAINTAIN PEDESTRIAN ACCESS DURING CONSTRUCTION.
4. W. LIBERTY ST./CREST AVE. AND S. SEVENTH ST./W. WASHINGTON ST. WORK WILL REQUIRE A MAINTENANCE OF TRAFFIC PLAN TO BE SUBMITTED BY THE CONTRACTOR, AT LEAST ONE WEEK PRIOR TO WORK IN INTERSECTION, FOR REVIEW, APPROVAL, AND NOTIFICATION TO PUBLIC. LANE CLOSURE PERMIT TO BE FILLED OUT 48 HOURS IN ADVANCE OF CLOSURE.
5. COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
6. REMOVE CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
7. CONTRACTOR SHALL PLACE PORTABLE, CHANGEABLE MESSAGE SIGNS A MINIMUM OF ONE (1) WEEK PRIOR TO THE START OF CONSTRUCTION IN LOCATIONS INDICATED BY ENGINEER. MESSAGE TO BE PROVIDED BY THE ENGINEER.

R: \2016029 Crest Buena Wash Lib WMA\Plan Production\2016029Mtrf2.dwg Dwg Created: 6-Feb-18 - \_a2 standard bw.stb - Plot Date: 23-Feb-18

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CREST, BUENA VISTA, WASHINGTON WATER MAIN  
MAINTENANCE OF TRAFFIC  
SOUTH BOUND S SEVENTH ST DETOUR

REV.	DATE	DESCRIPTION
01	2-23-18	ADDENDUM #1
00	2-6-18	OUT FOR BID

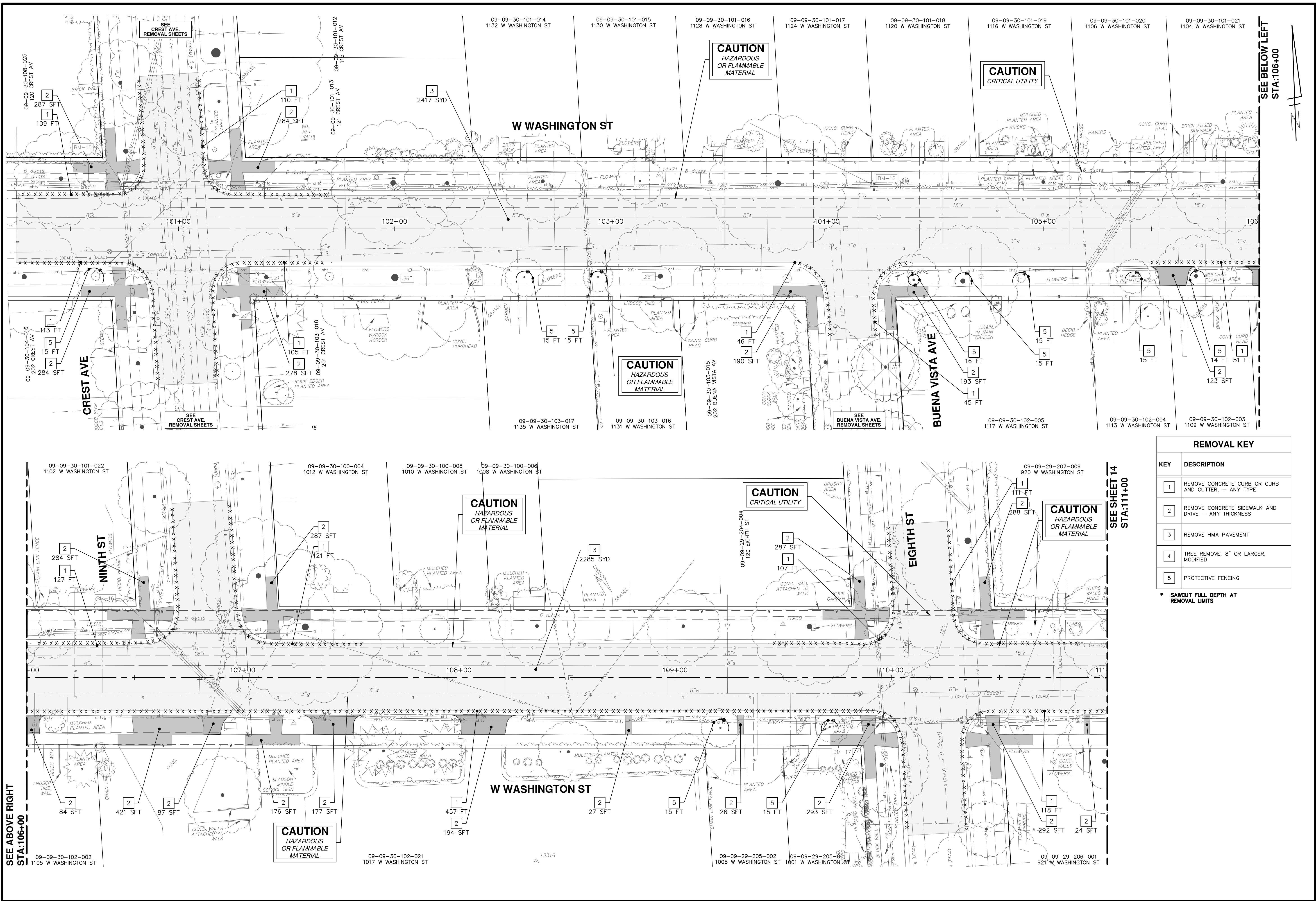
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ANN ARBOR MI 48106-8647  
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CITY OF ANN ARBOR  
MICHIGAN

SHEET No. 12 OF 46



R: \2016029 Crest Buena Wash Lib WA\Plan Production\2016029Rem1.dwg Dwg Created: 21-Feb-18 - \_02 standard bw.stb - Plot Date: 23-Feb-18

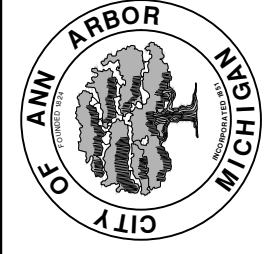


REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING

• SAWCUT FULL DEPTH AT REMOVAL LIMITS



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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
CREST, BUENA VISTA, WASHINGTON WATER MAIN  
WASHINGTON STREET REMOVALS  
STA. 100+00 TO STA. 111+00

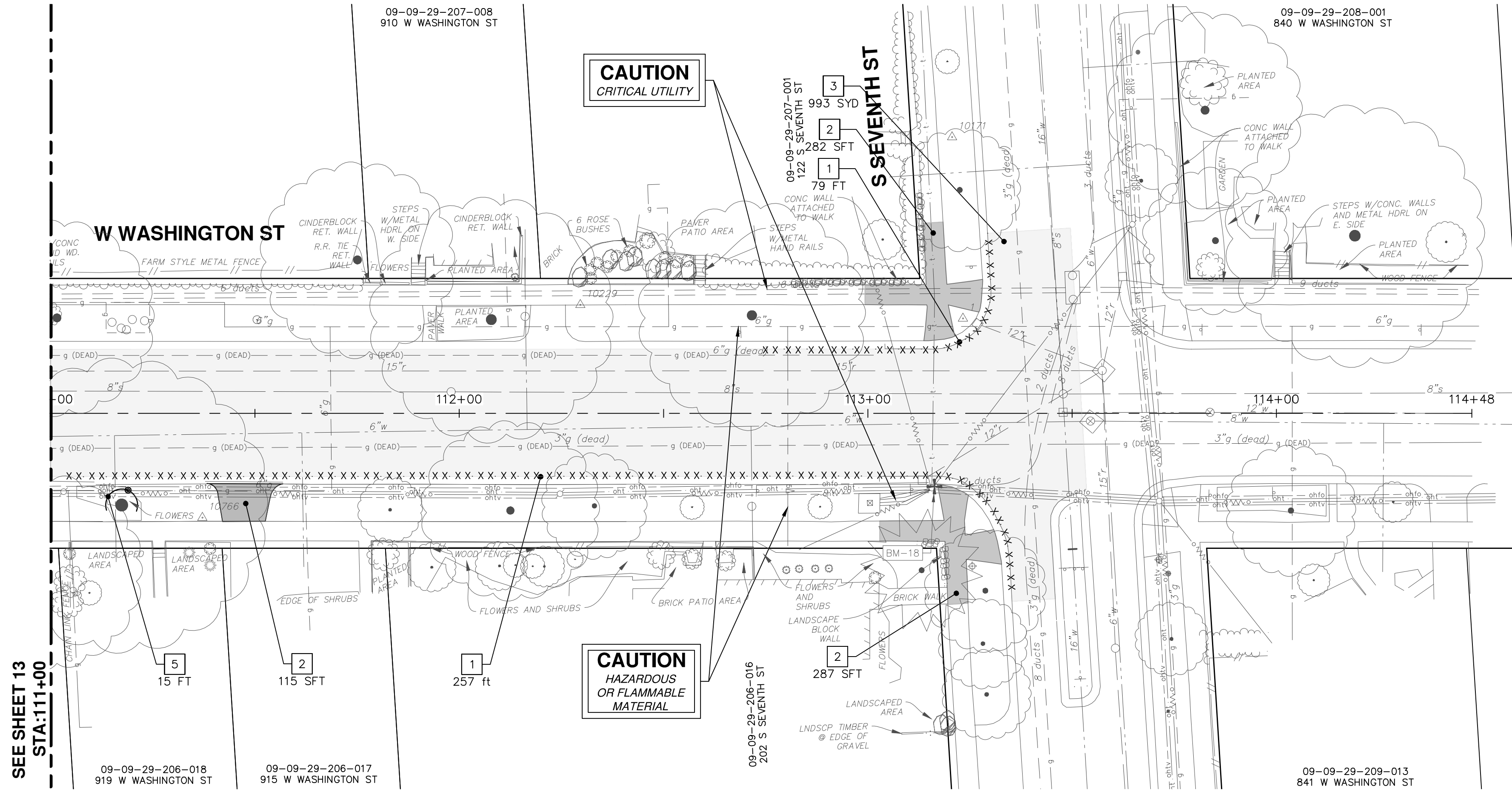
SCALE PLAN: 1" = 20'  
DRAWING NO. 2016029-13  
SHEET NO. 13 OF 46

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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01	ADDENDUM #1	2-23-18	CEC/DPF	JKA

SEE ABOVE RIGHT  
STA:106+00

SEE SHEET 14  
STA:111+00

SEE BELOW LEFT  
STA:106+00



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

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

SCALE PLAN: 1" = 20'

DRAWING No. 2016029-14

SHEET No. 14 OF 46

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

WASHINGTON STREET REMOVALS  
STA. 111+00 TO STA. 114+48

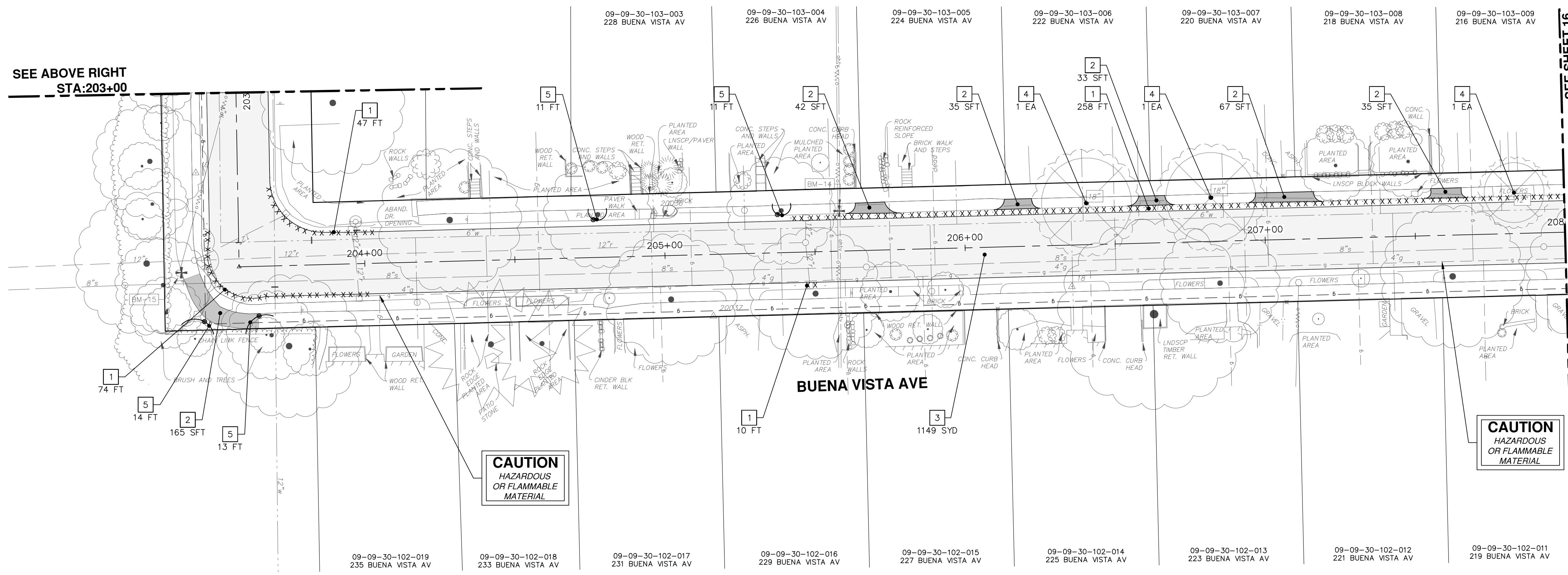
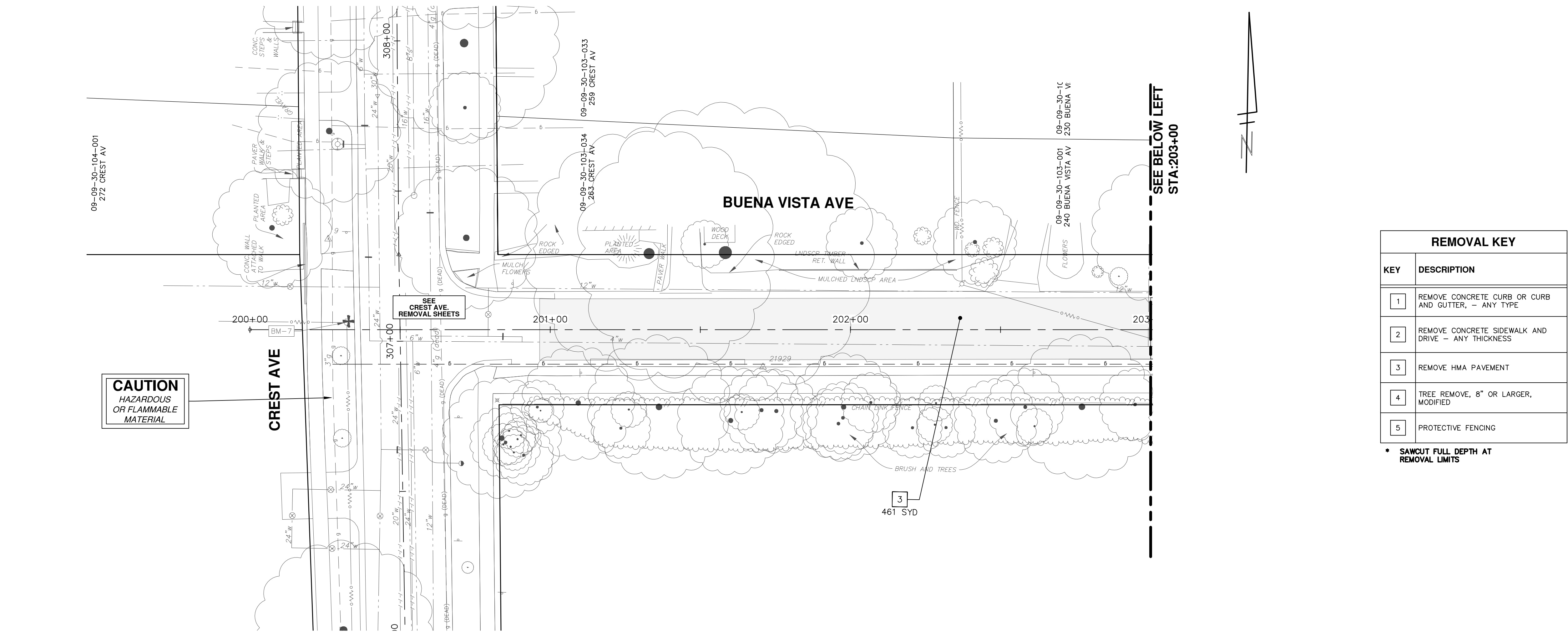
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ANN ARBOR, MI 48106-6647  
ANN ARBOR 734/794-4410  
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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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00	OUT FOR BID	2-6-18	CEC/DFP	CEC/DFP

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REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

BUENA VISTA AVENUE REMOVALS  
STA. 200+00 TO STA. 208+00

SHEET No. **15 OF 46**

**811**  
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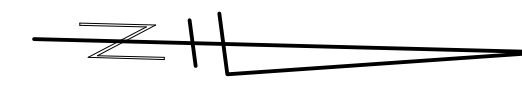
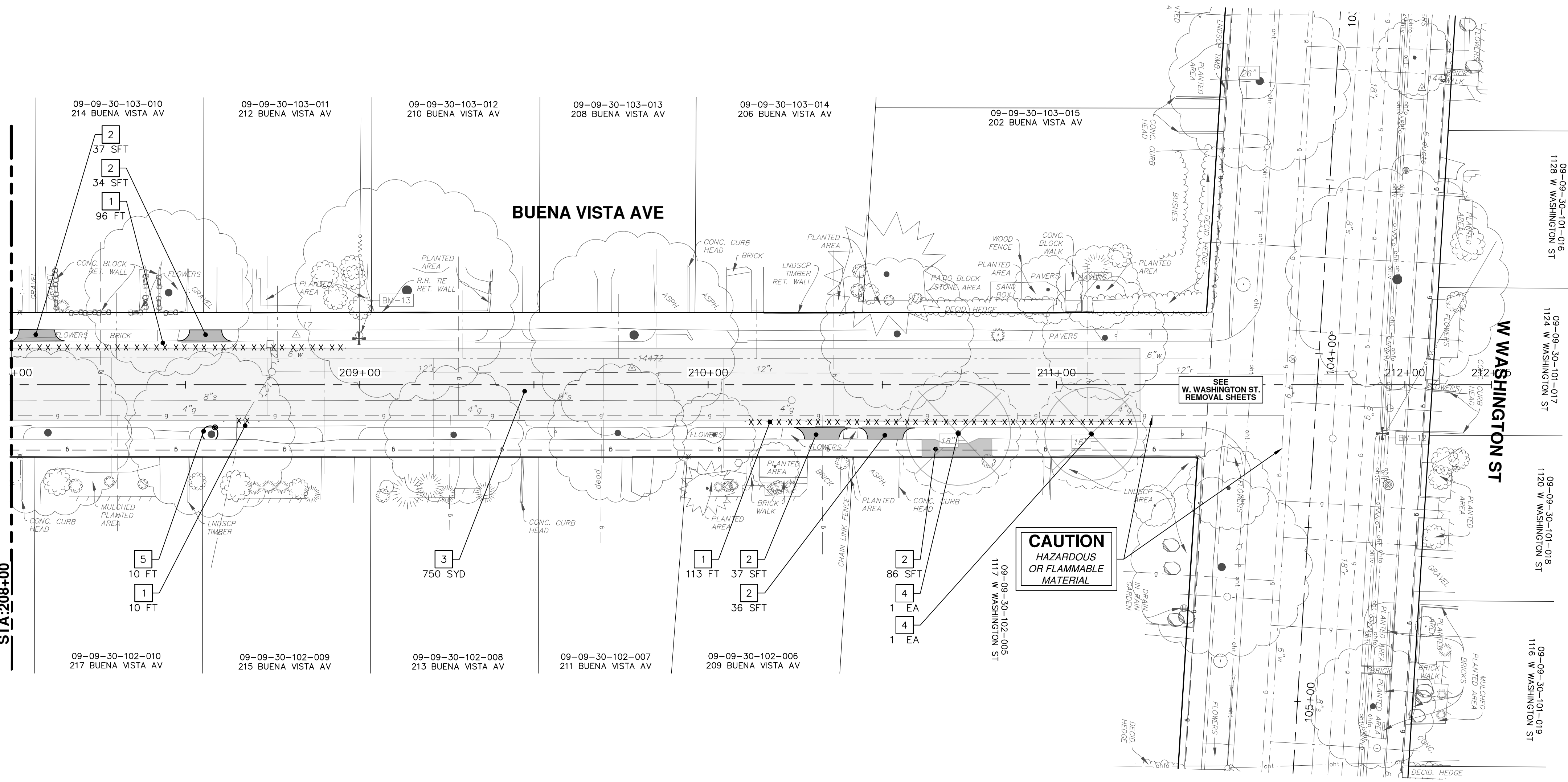
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00	OUT FOR BID	2-6-18	CEC/DPF	JKA	DRAWN
	REV.	DATE	DESCRIPTION		

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**CITY OF ANN ARBOR MICHIGAN**

SCALE PLAN: 1" = 20'  
DRAWING No. **2016029-15**

SEE SHEET 15  
STA: 208+00



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

BUENA VISTA AVENUE REMOVALS  
STA. 208+00 TO STA. 212+25

SCALE PLAN: 1" = 20'

DRAWING No. 2016029-16

SHEET No. 16 OF 46

**811**  
Know what's below.  
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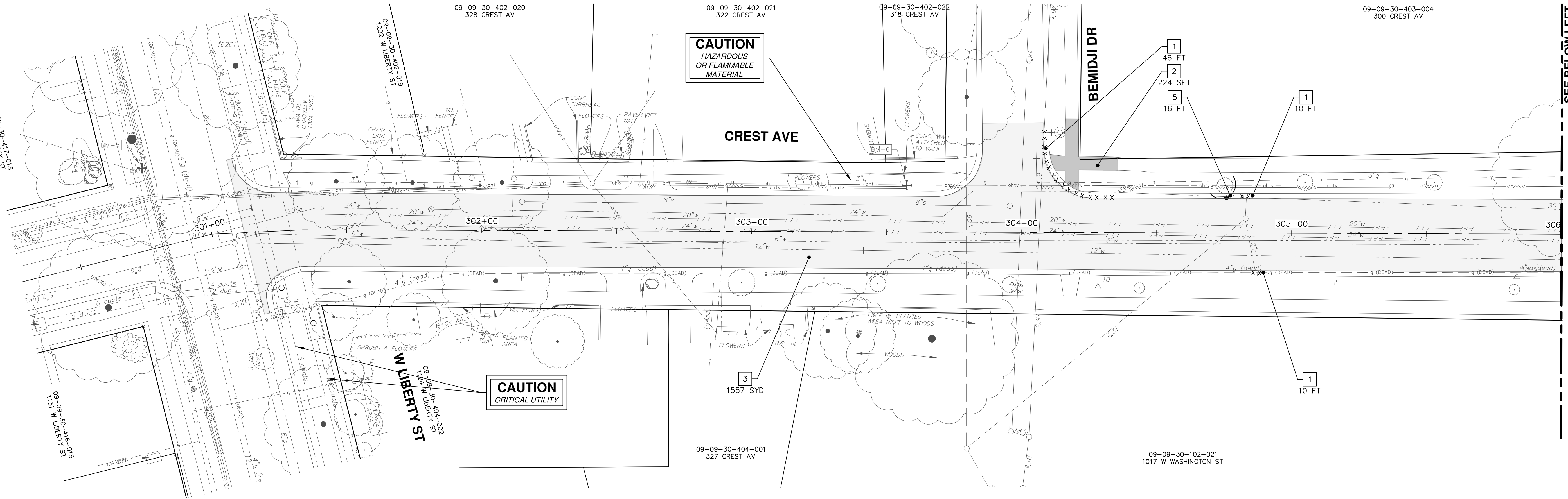
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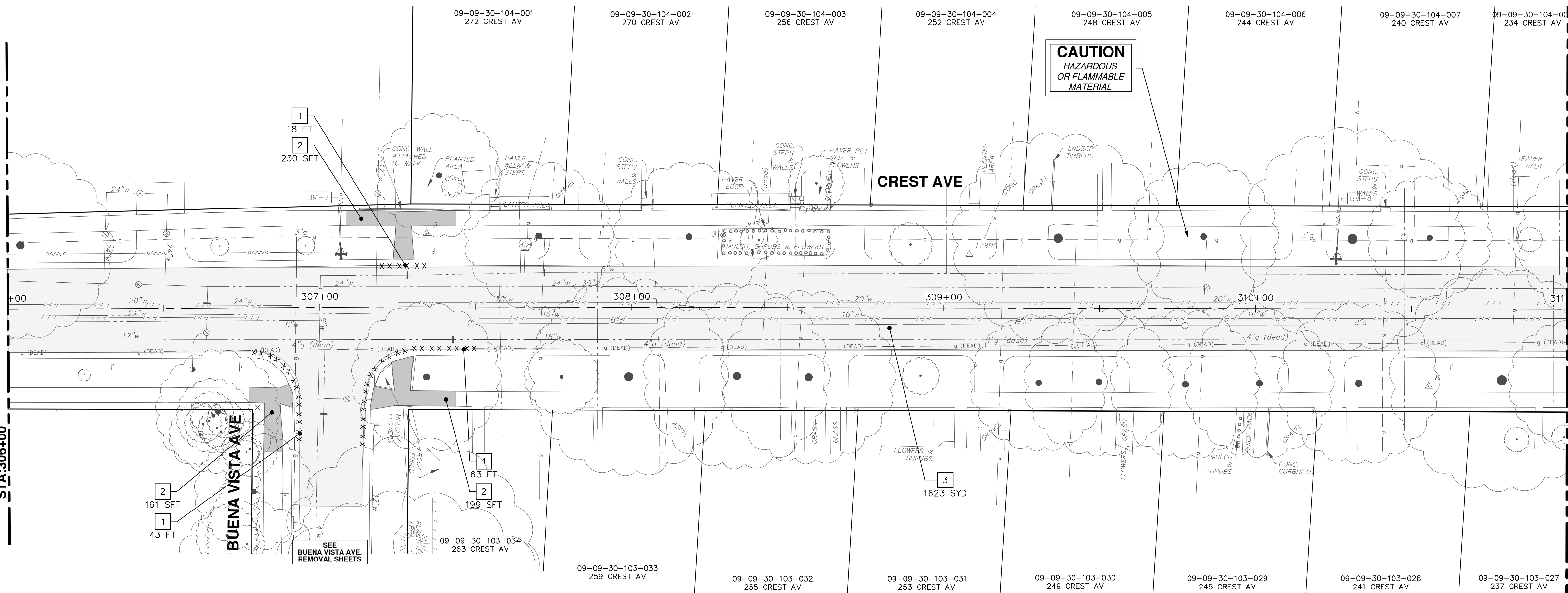


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SEE ABOVE RIGHT  
STA:306+00



SEE BELOW LEFT  
STA:306+00



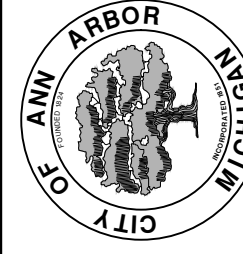
SEE SHEET 18  
STA:311+00

REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING

• SAWCUT FULL DEPTH AT REMOVAL LIMITS



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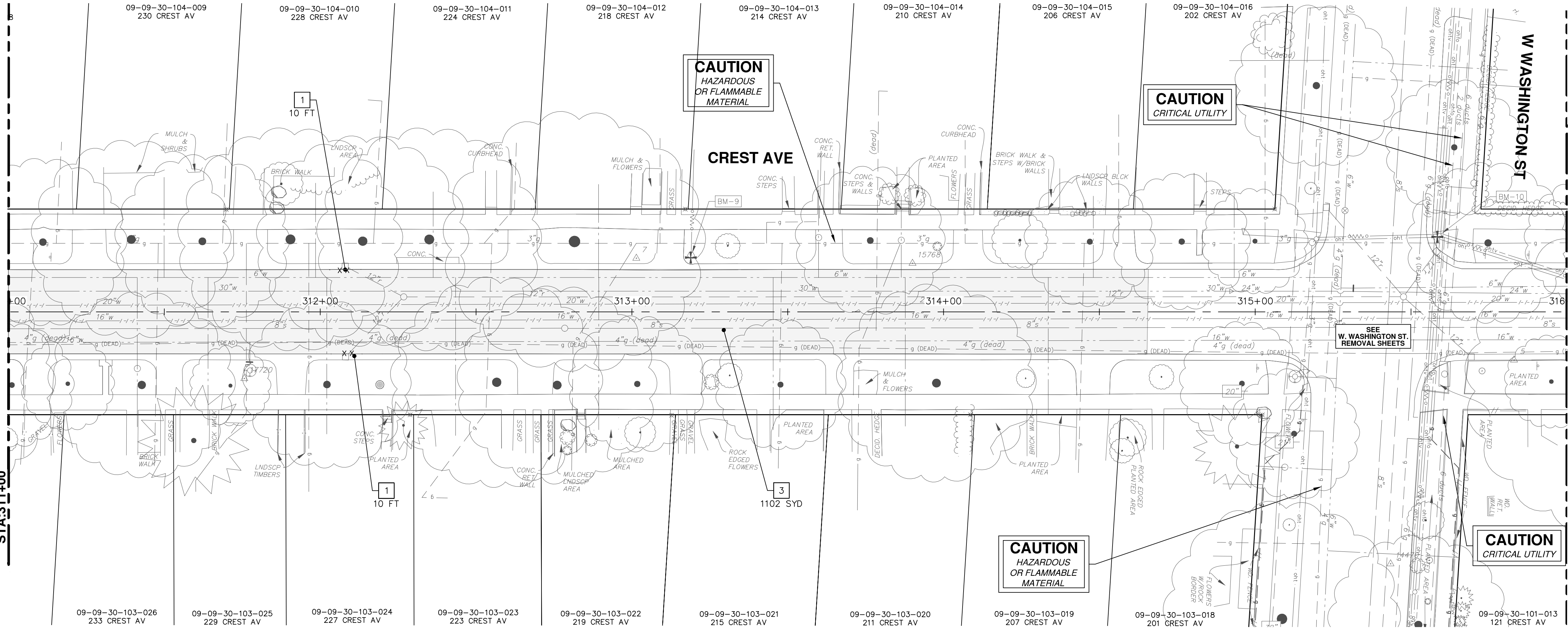
CITY OF ANN ARBOR - ENGINEERING  
CREST, BUENA VISTA, WASHINGTON WATER MAIN  
CREST AVE REMOVALS  
17 - STA. 300+00 TO STA. 311+00

SCALE PLAN: 1" = 20'  
DRAWING No.  
2016029-17

SHEET No.  
17 OF 46

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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00	OUT FOR BID	2-6-18	CEC/DFP	JKA

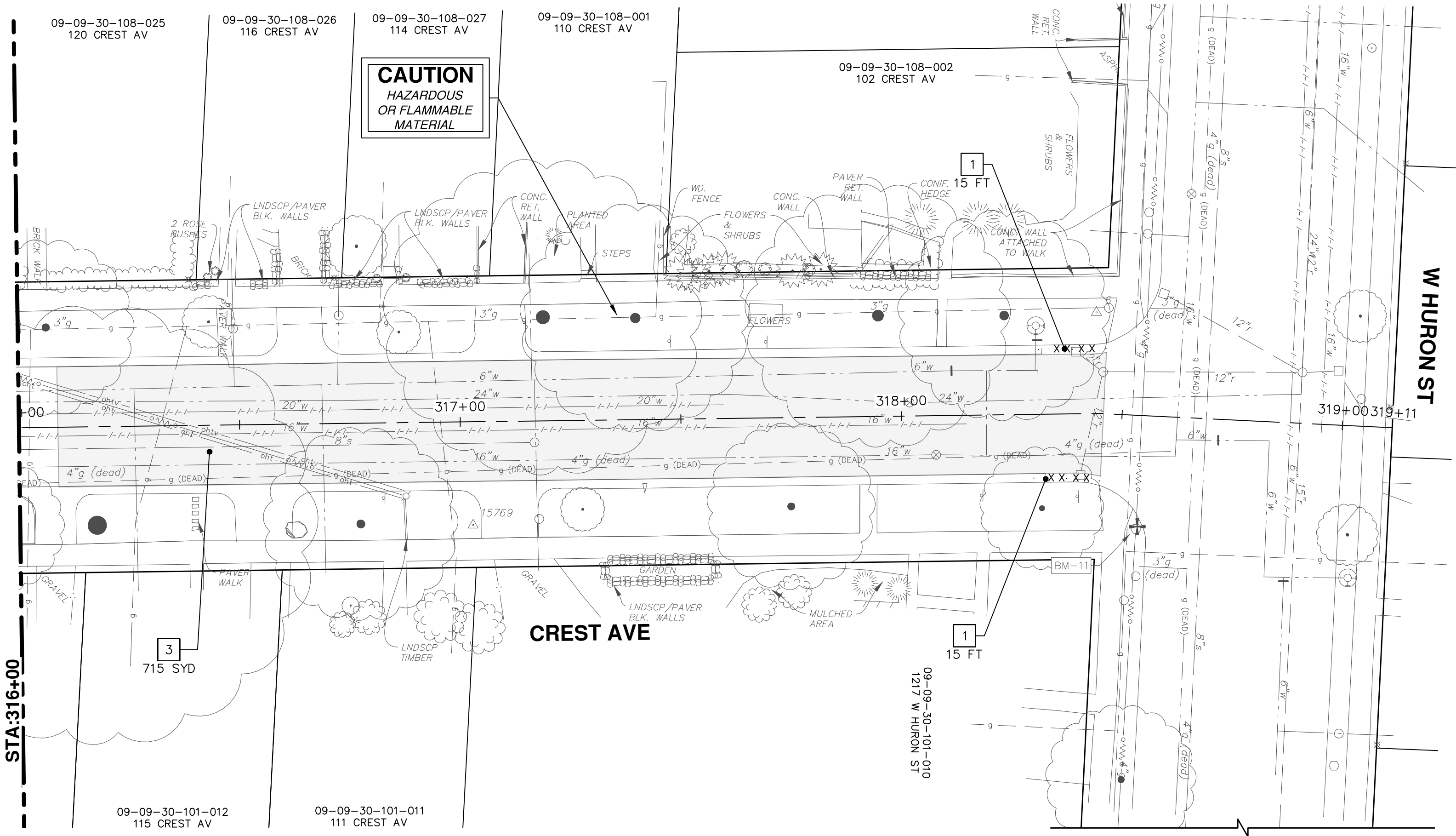
SEE SHEET 17  
STA: 311+00



SEE BELOW LEFT  
STA: 316+00



SEE ABOVE RIGHT  
STA: 316+00



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	REMOVE HMA PAVEMENT
4	TREE REMOVE, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING

\* SAWCUT FULL DEPTH AT REMOVAL LIMITS

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

SCALE PLAN: 1" = 20'

DRAWING No. 2016029-18

SHEET No. 18 OF 46

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

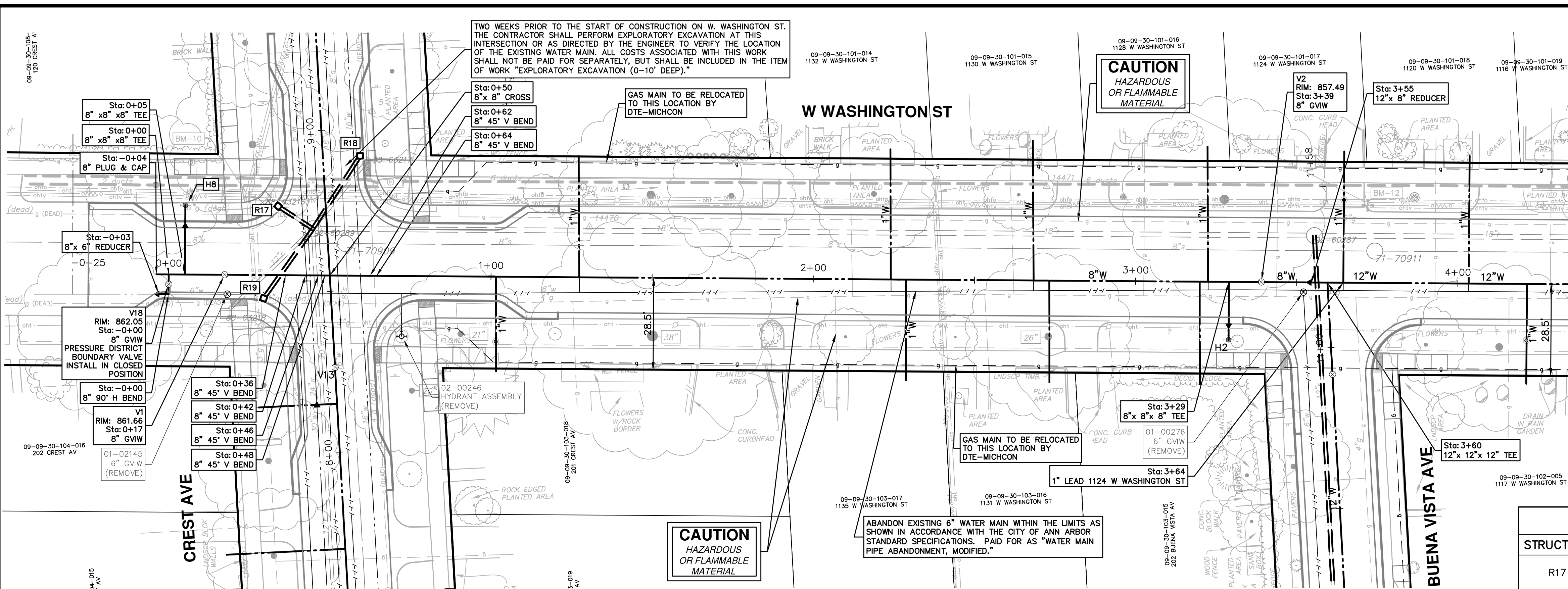
CREST AVE REMOVALS  
STA. 311+00 TO STA. 319+11

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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00	OUT FOR BID	2-6-18	CEC/DFP	JKA

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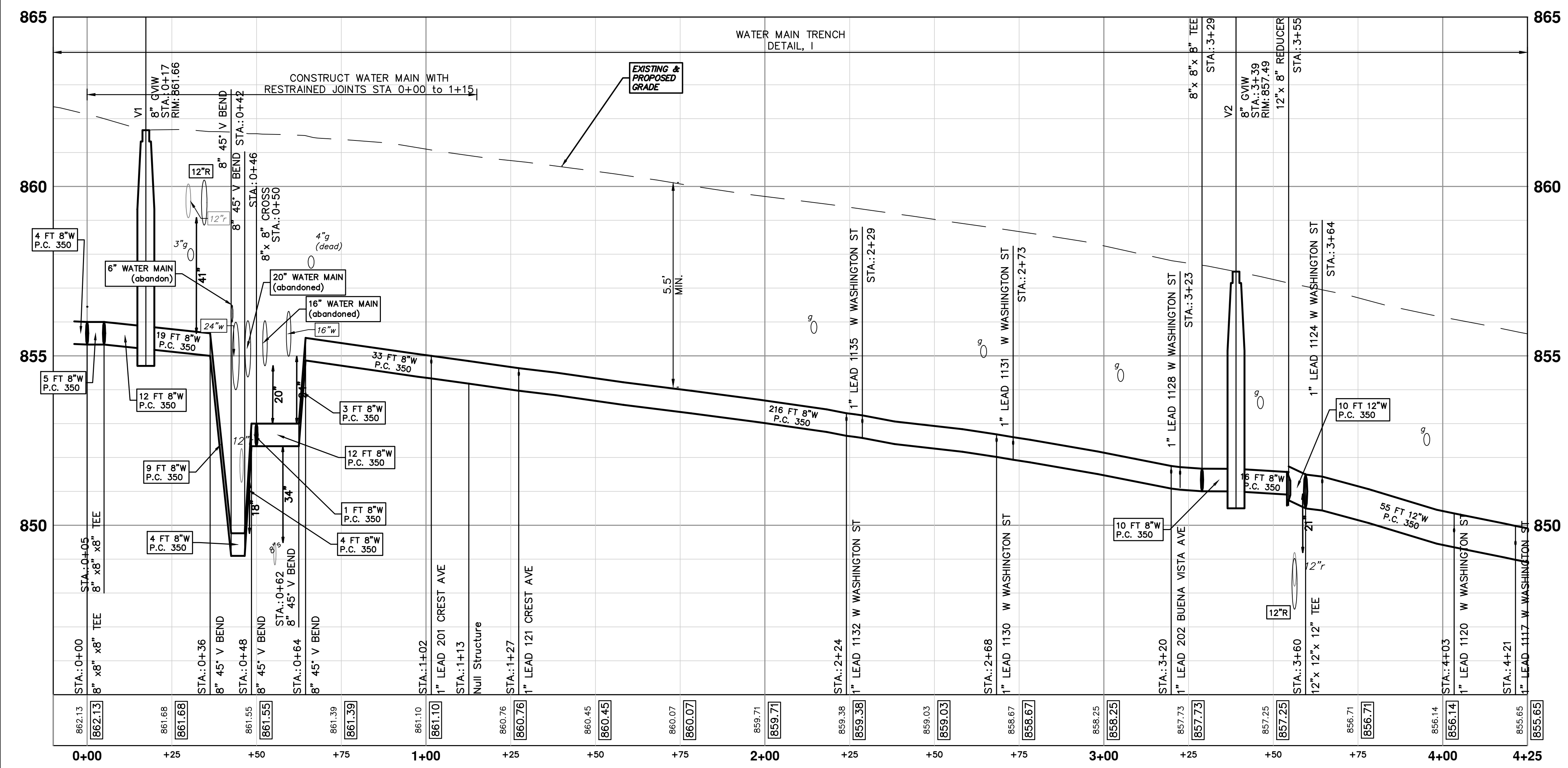


SEE SHEET 20  
STA: 4+35

STRUCTURE	TYPE	STATION	RIM	DEPTH
V1	8" GIW	0+17	861.66	6.46
V2	8" GIW	3+39	857.49	6.49

STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R17	2' Inlet (Cover K)	861.31	12"SE 858.71	13 LF OF 12" @ 6.09%	2'
R18	2' Inlet (Cover K)	861.10	12"SW 856.79	27 LF OF 12" @ 1.55%	2'
R19	2' Inlet (Cover K)	861.47	12"NE 859.18	27 LF OF 12" @ 1.72%	2'

STRUCTURE	DEPTH (Feet)	REMOVE
88-63218	4.12	(Remove) 2' Inlet and 38' of 12" pipe
88-63217	6.05	(Remove) 2' Inlet and 30' of 12" pipe
88-63216	4.12	(Remove) 2' Inlet and 11' of 12" pipe



**WATER MAIN CONSTRUCTION NOTES:**

- ALL WATER MAIN WORK SHALL BE STAGED IN ACCORDANCE WITH THE SPECIAL PROVISION AND AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK, CONSTRUCTION METHODS, AND EQUIPMENT TO COMPLY WITH THE CONTRACT REQUIREMENTS.
- THE CONTRACTOR SHALL CAREFULLY PROTECT FROM DAMAGE OR INJURY DURING CONSTRUCTION OPERATIONS, ALL UTILITIES NOT DESIGNATED FOR REMOVAL OR ABANDONMENT. EXISTING FACILITIES NOT DESIGNATED FOR REMOVAL OR ABANDONMENT WHICH ARE DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS SOLE EXPENSE, IN A MANNER THAT IS APPROVED BY THE ENGINEER.
- THE EXISTING UTILITIES SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AS OBTAINED THROUGH SURVEYS AND/OR EXISTING PLANS. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND/OR THE LOCATION OF EXISTING UTILITIES. IF STORM, SANITARY, OR WATER MAINS CROSS WITH LESS THAN 18" CLEARANCE, THEY SHALL BE SADDLED. IF STORM, SANITARY, OR WATER MAINS CROSS OTHER UTILITIES, CONTACT THEIR RESPECTIVE OWNERS FOR INFORMATION ON HOW TO PROCEED. PAYMENT FOR THE COORDINATION EFFORTS, CONCRETE SADDLES, AND ANY OTHER ASSOCIATED ITEMS SHALL BE INCLUDED IN THE RELATED STORM, SANITARY, OR WATER MAIN ITEMS AND SHALL NOT BE PAID FOR SEPARATELY.
- THE CONTRACTOR WILL ONLY BE ALLOWED TO SHUT DOWN THE EXISTING 12" WATER MAIN FOR A MAXIMUM DURATION OF 8 HOURS IN ANY ONE SHUTDOWN, IN ANY GIVEN 24 HOUR PERIOD. SHUTDOWN OF THE EXISTING WATERMAIN MUST BE SCHEDULED WITH THE ENGINEER A MINIMUM OF 3 WORKING DAYS IN ADVANCE OF THE INTENDED SHUTDOWN. THE SHUTDOWN OF THE WATER MAIN WILL NOT BE ALLOWED TO TAKE PLACE ON A SATURDAY OR A SUNDAY.
- THE CONTRACTOR SHALL PROPOSE A METHOD(S) AND EQUIPMENT FOR THE REVIEW AND APPROVAL OF THE ENGINEER TO BE USED FOR THE FLUSHING OF CHLORINATED WATER FROM PROPOSED WATER MAIN INTO EXISTING SANITARY SEWERS. CHLORINATED WATER SHALL NOT BE ALLOWED IN STORM SEWERS, ANY AND ALL MEASURES NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE INCLUDED IN THE COST OF THE WATER MAIN INSTALLATION AND WILL NOT BE PAID FOR SEPARATELY.

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01	2-23-18	CEC/DFP	JKA	ADDENDUM #1
00	2-6-18	CEC/DFP	JKA	OUT FOR BID

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

SCALE PLAN: 1" = 20'

PROFILE: 1" = 2'

DRAWING NO. 2016029-19

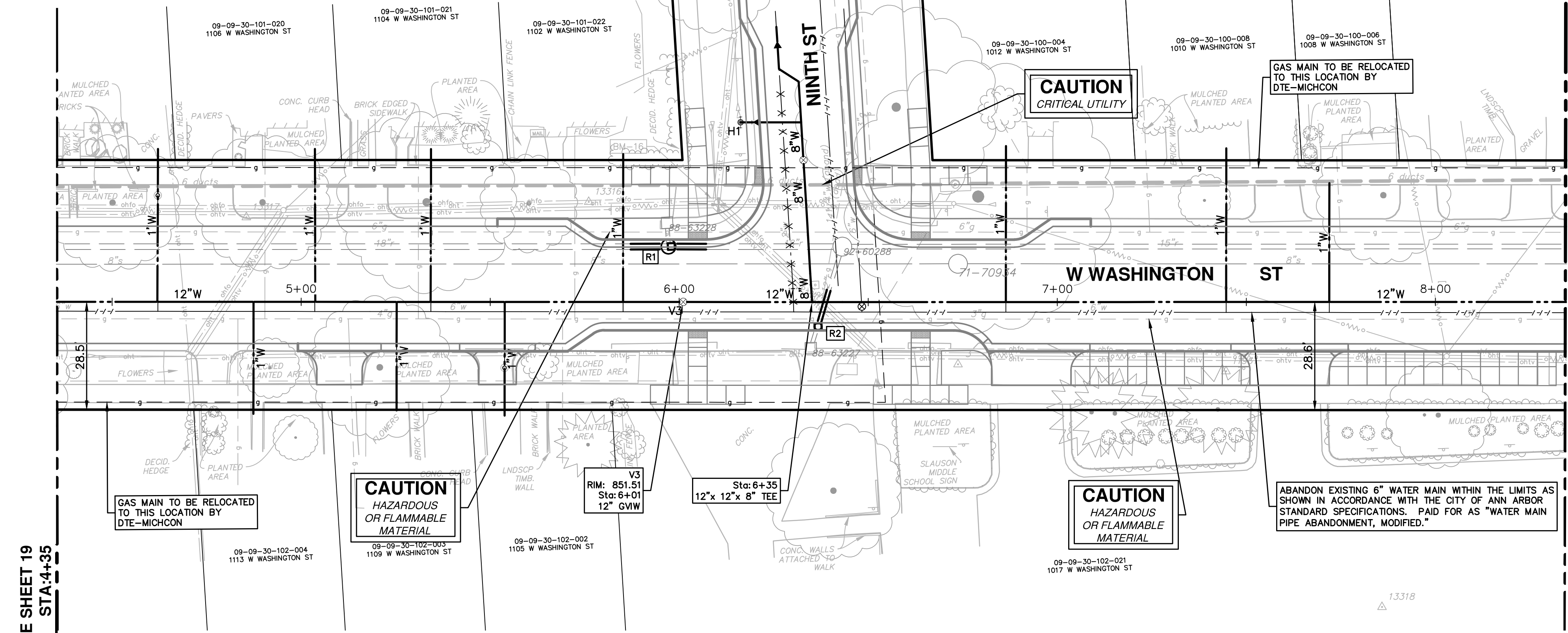
SHEET NO. 19 OF 46

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

CREST, BUENA VISTA, WASHINGTON WATER MAIN

WASHINGTON ST. WATER MAIN PLAN AND PROFILE

STA. 0+00 TO STA. 4+25



**WATER MAIN STRUCTURE TABLE**

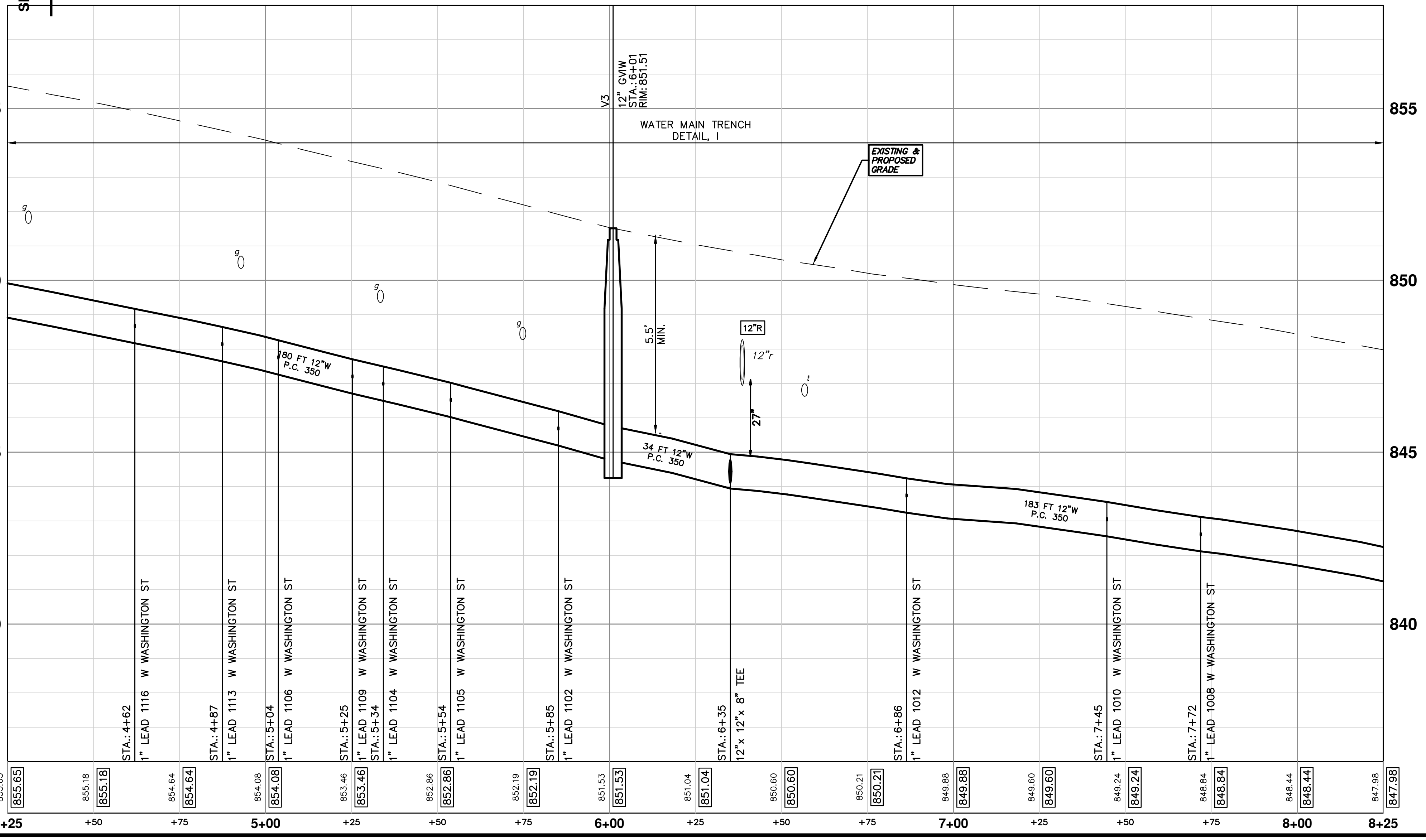
STRUCTURE	TYPE	STATION	RIM	DEPTH
V3	12" GWV	6+01	851.51	6.76

**STORM STRUCTURE TABLE**

STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R1	4' Junction Inlet (Cover K)	851.44	18"E 844.85 18"W 844.85	10 LF OF 18" @ 1.16%	2'
R2	2' Inlet (Cover K)	850.51	12"N 847.48	10 LF OF 12" @ 5.48%	2'

**EXISTING STORM SEWER STRUCTURE REMOVAL TABLE**

STRUCTURE	DEPTH (Feet)	REMOVE
88-63227	4.25	(Remove) 2' Inlet and 16' of 12" pipe
88-63228	6.70	(Remove) 2' Inlet and 7' of 12" pipe



SEE SHEET 19  
STA: 4+35

SEE SHEET 21  
STA: 8+34

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

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
CREST, BUENA VISTA, WASHINGTON WATER MAIN  
WASHINGTON ST. WATER MAIN PLAN AND PROFILE  
STA. 4+25 TO STA. 8+25

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-0667  
www.a2gov.org

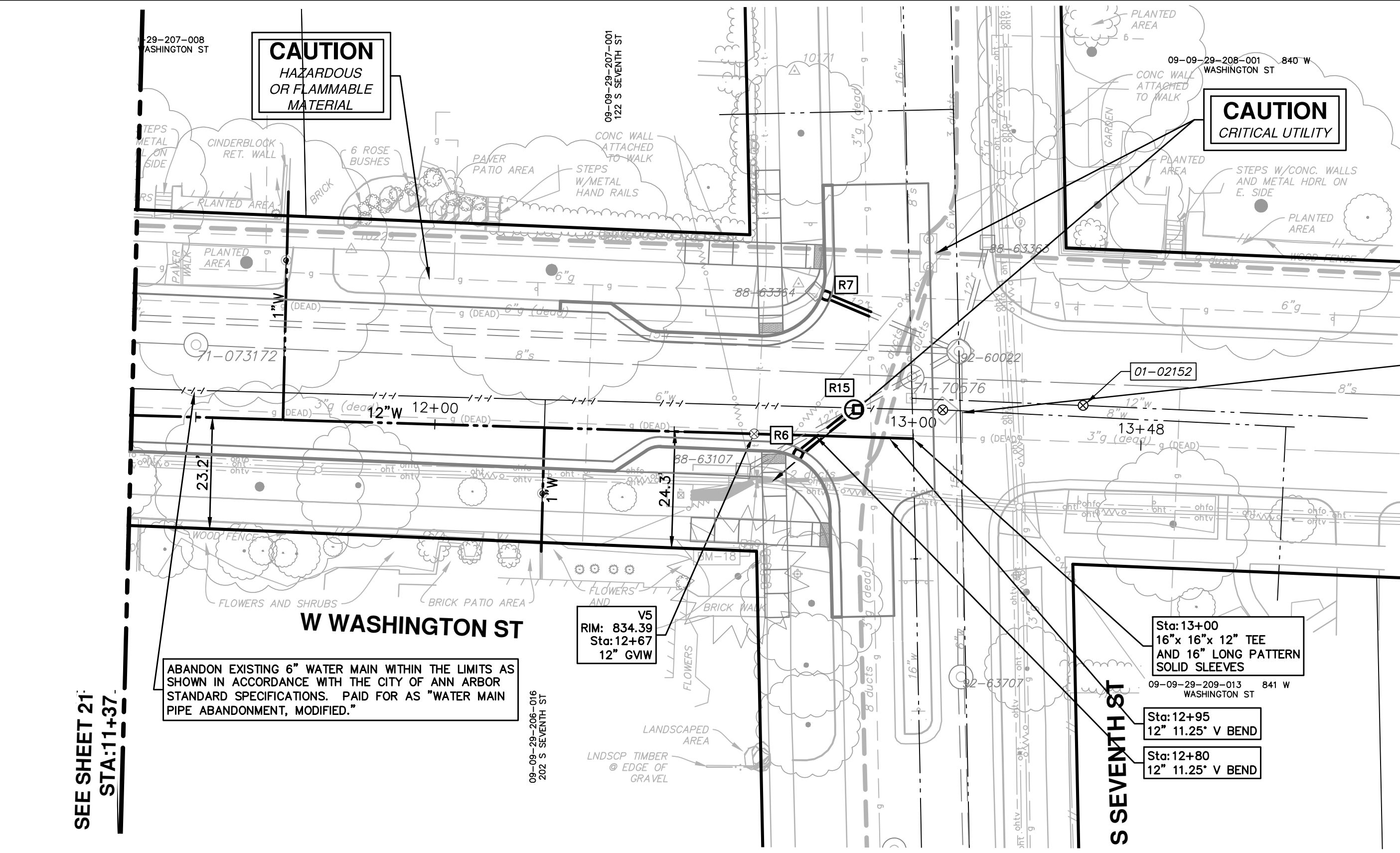
CITY OF ANN ARBOR  
MICHIGAN

SHEET No. 20 OF 46  
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING No. 2016029-20

REV.	DATE	DESCRIPTION
01	2-23-18	CEC/DFP
00	2-6-18	CEC/DFP







SEE SHEET 21  
STA: 11+37

ABANDON EXISTING 6" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT, MODIFIED."

V5  
RIM: 834.39  
Sta: 12+67  
12" GVW

Sta: 13+00  
16" x 16" x 12" TEE  
AND 16" LONG PATTERN  
SOLID SLEEVES

Sta: 12+95  
12" 11.25' V BEND

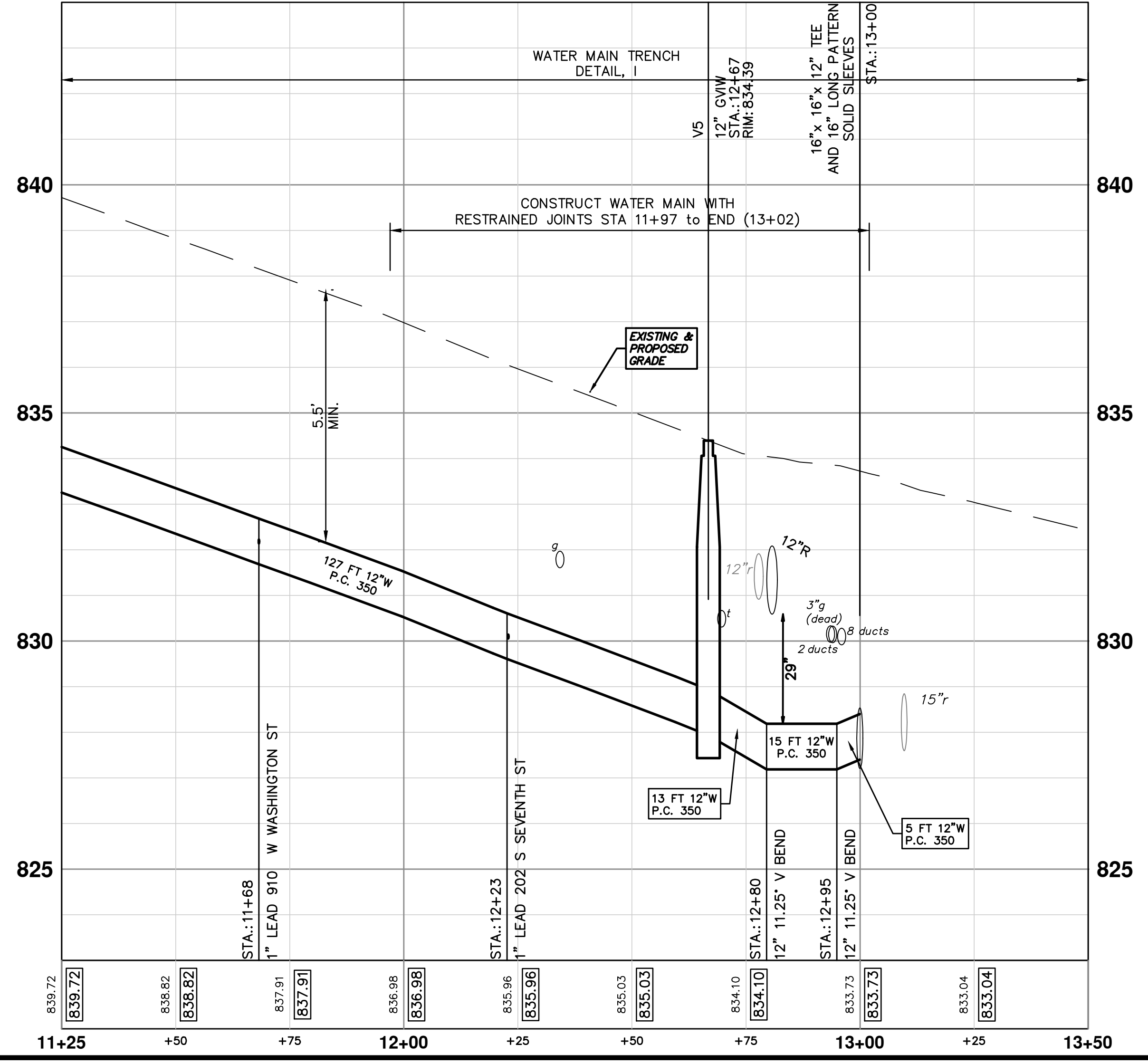
Sta: 12+80  
12" 11.25' V BEND

UPON COMPLETION OF THE WATER MAIN IN WASHINGTON STREET, THE CONTRACTOR SHALL REMOVE THE EXISTING CROSS, ABANDON THE EXISTING 6" WATER MAIN, AND PLACE AN 8" x 8" x 8" TEE, 8" DUCTILE IRON PIPE AND AN 8" LONG PATTERN SOLID SLEEVES TO RE-ESTABLISH THE 8" WATER MAIN EAST OF S. SEVENTH STREET. THE CONTRACTOR TO BE PAID AT THE CORRESPONDING CONTRACT UNIT PRICES FOR THE ACTUAL WORK PERFORMED.

STRUCTURE	TYPE	STATION	RIM	DEPTH
V5	12" GVW	12+67	834.39	6.46

STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R6	2' Inlet (Cover K)	833.87	12"NE 831.08	15 LF OF 12" @ 3.96%	2'
R7	2' Inlet (Cover K)	835.10	12"E 832.13	10 LF OF 12" @ 5.90%	2'
R15	4' Storm MH (Cover B)	834.21	12"SW 830.49	15 LF OF 12" @ 3.96%	2'

STRUCTURE	DEPTH (Feet)	REMOVE
88-63107	4.30	(Remove) 2' Inlet and 26' of 12" pipe
88-63364	4.70	(Remove) 2' Inlet and 13' of 12" pipe



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

01 ADDENDUM #1  
2-23-18  
CEC/DPF

00 OUT FOR BID  
2-6-18  
CEC/DPF

DATE  
DRAWN  
CHECKED

---

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

DESCRIPTION  
REV.

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

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

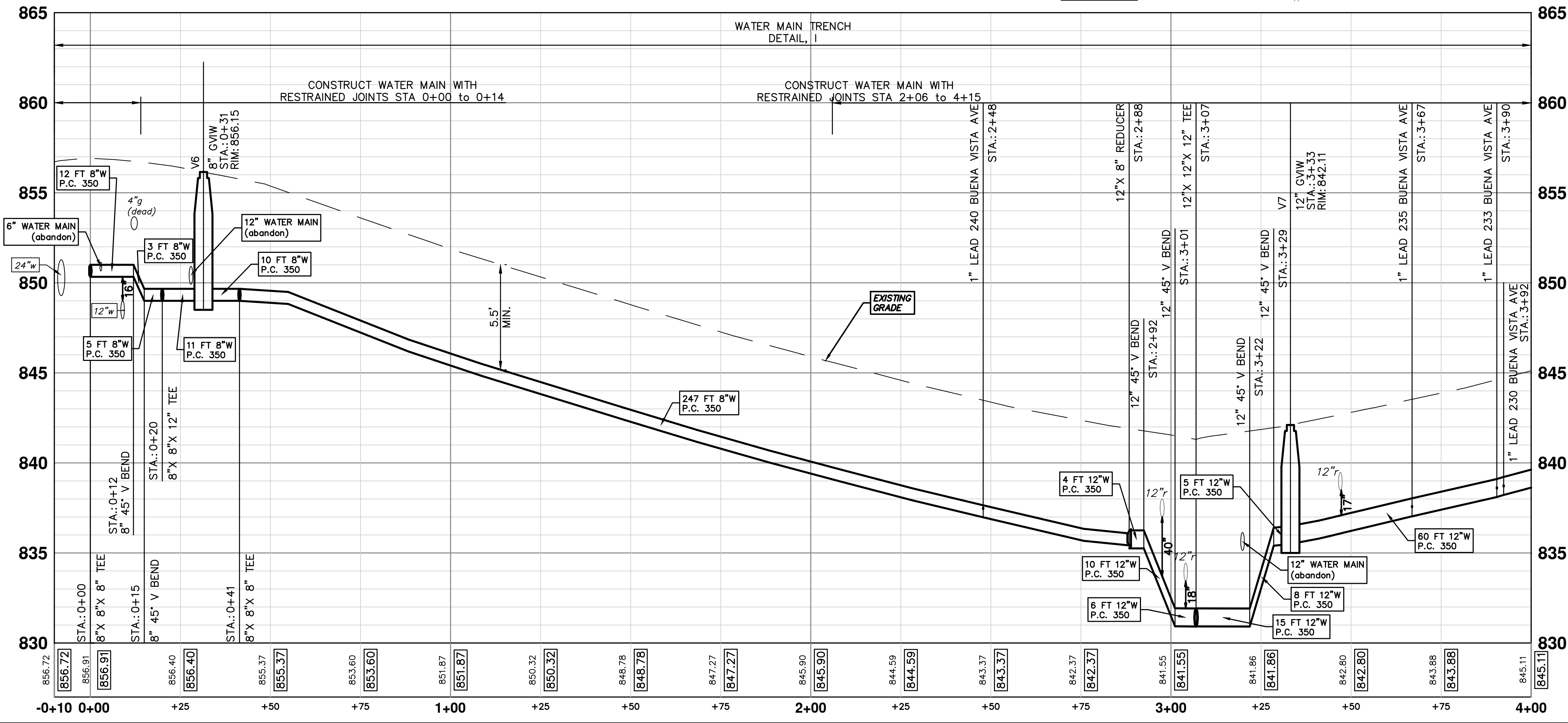
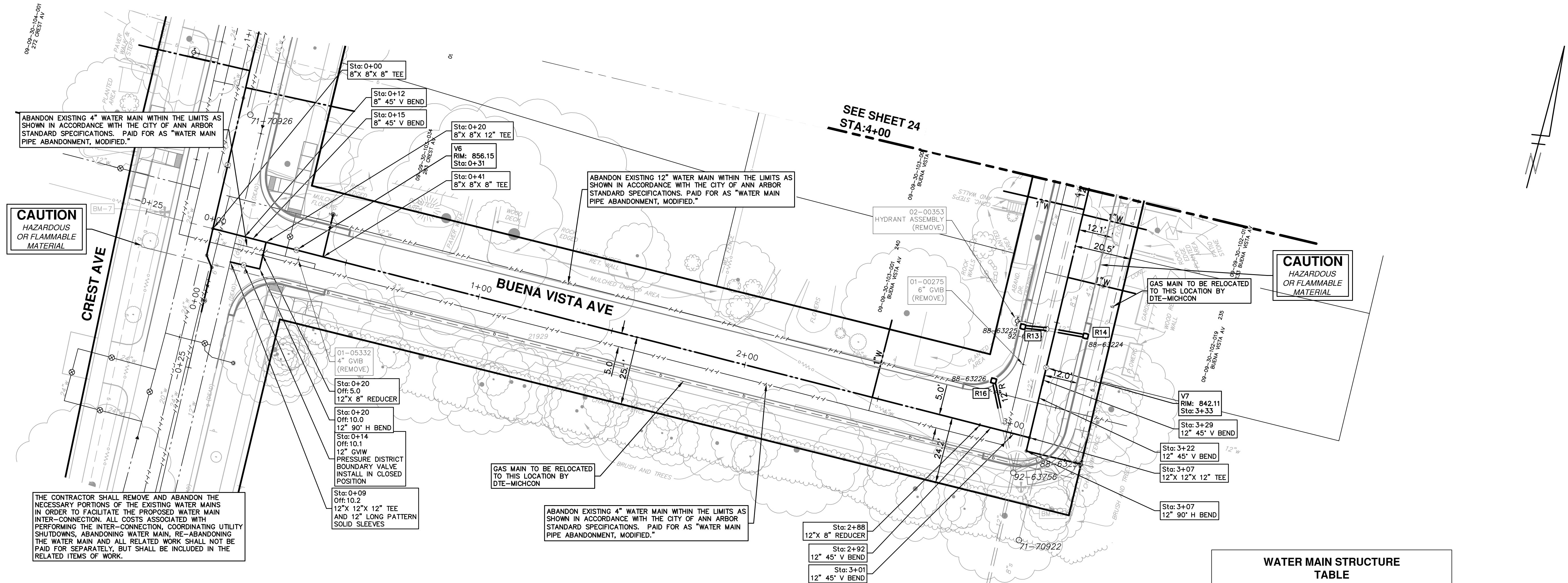
CREST, BUENA VISTA, WASHINGTON WATER MAIN

WASHINGTON ST. WATER MAIN PLAN AND PROFILE  
STA. 11+25 TO STA. 13+80

---

SHEET No.  
22 OF 46

DRAWING No.  
2016029-22



**STORM STRUCTURE TABLE**

STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R13	2' Inlet (Cover K)	842.72	12"E 838.95	9 LF OF 12" @ 8.97%	2'
R14	2' Inlet (Cover K)	842.06	12"W 839.50	10 LF OF 12" @ 9.06%	2'
R16	2' Inlet (Cover K)	841.94	12"SE 838.92	10 LF OF 12" @ 10.23%	2'

**EXISTING STORM SEWER STRUCTURE REMOVAL TABLE**

STRUCTURE	DEPTH (Feet)	REMOVE
88-63226	4.50	(Remove) Drop Inlet and 10' of 12" pipe
88-63224	4.30	(Remove) Drop Inlet and 10' of 12" pipe
88-63225	5.40	(Remove) Drop Inlet and 8' of 12" pipe

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

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

DRAWING NO. 2016029-23

SHEET NO. 23 OF 46

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

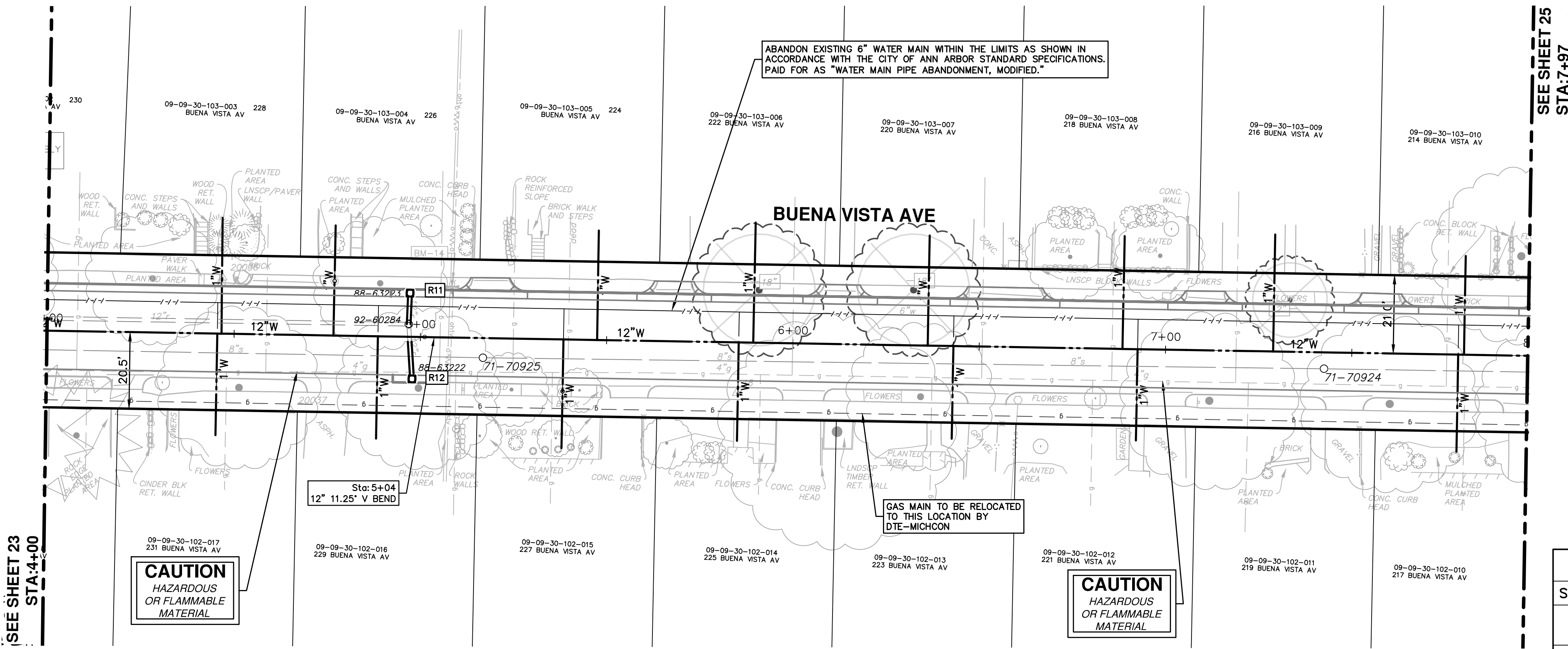
BUENA VISTA AVENUE WATER MAIN PLAN AND PROFILE  
STA. 0+00 TO STA. 4+00

REV.	DATE	DESCRIPTION
01	2-23-18	CEC/DFP
00	2-6-18	CEC/DFP
		DRAWN
		CHECKED

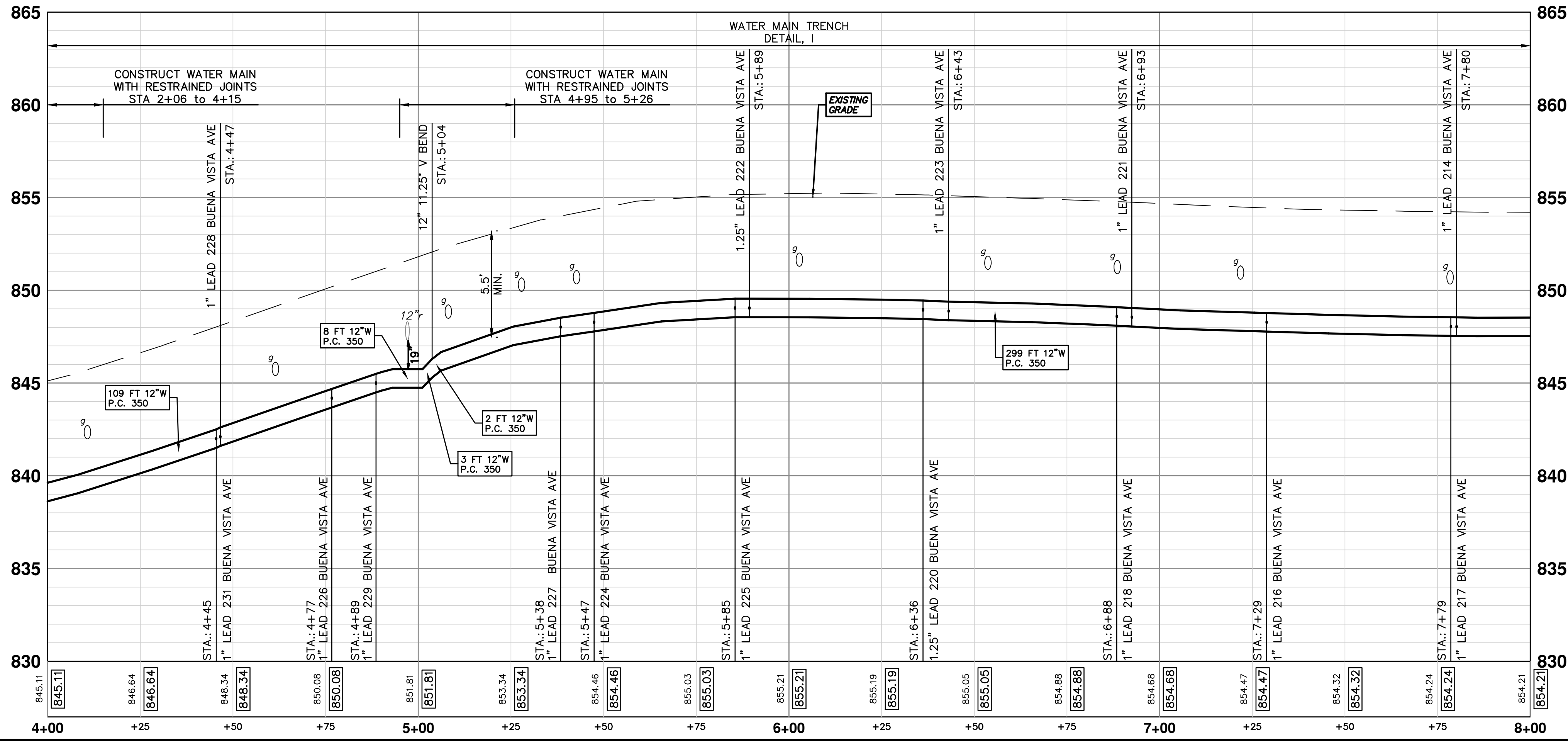
**811**  
Know what's below.  
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**CITY OF ANN ARBOR PUBLIC SERVICES**  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-0667  
www.a2gov.org





STORM STRUCTURE TABLE					
STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R11	2' Inlet (Cover K)	851.65	12"E 847.89	8 LF OF 12" @ 9.63%	2'
R12	2' Inlet (Cover K)	851.11	12"W 847.97	10 LF OF 12" @ 6.03%	2'



EXISTING STORM SEWER STRUCTURE REMOVAL TABLE		
STRUCTURE	DEPTH (Feet)	REMOVE
88-63222	5.10	(Remove) Drop Inlet and 10' of 12" pipe
88-63223	5.45	(Remove) Drop Inlet and 8' of 12" pipe

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

BUENA VISTA AVENUE WATER MAIN PLAN AND PROFILE  
STA. 4+00 TO STA. 8+00

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

DRAWING NO. 2016029-24

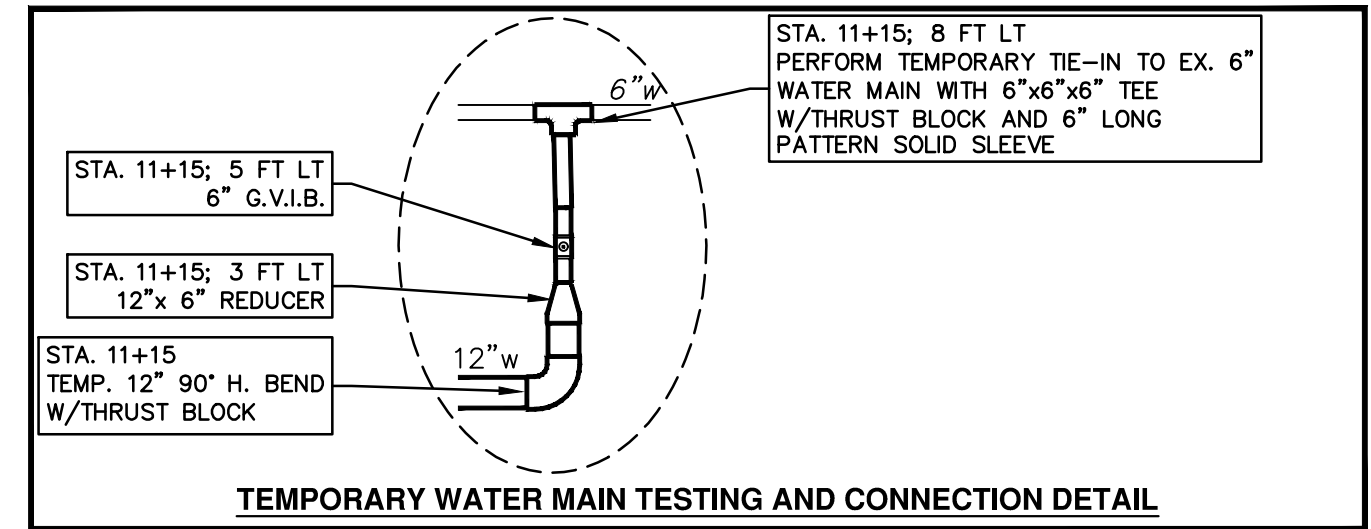
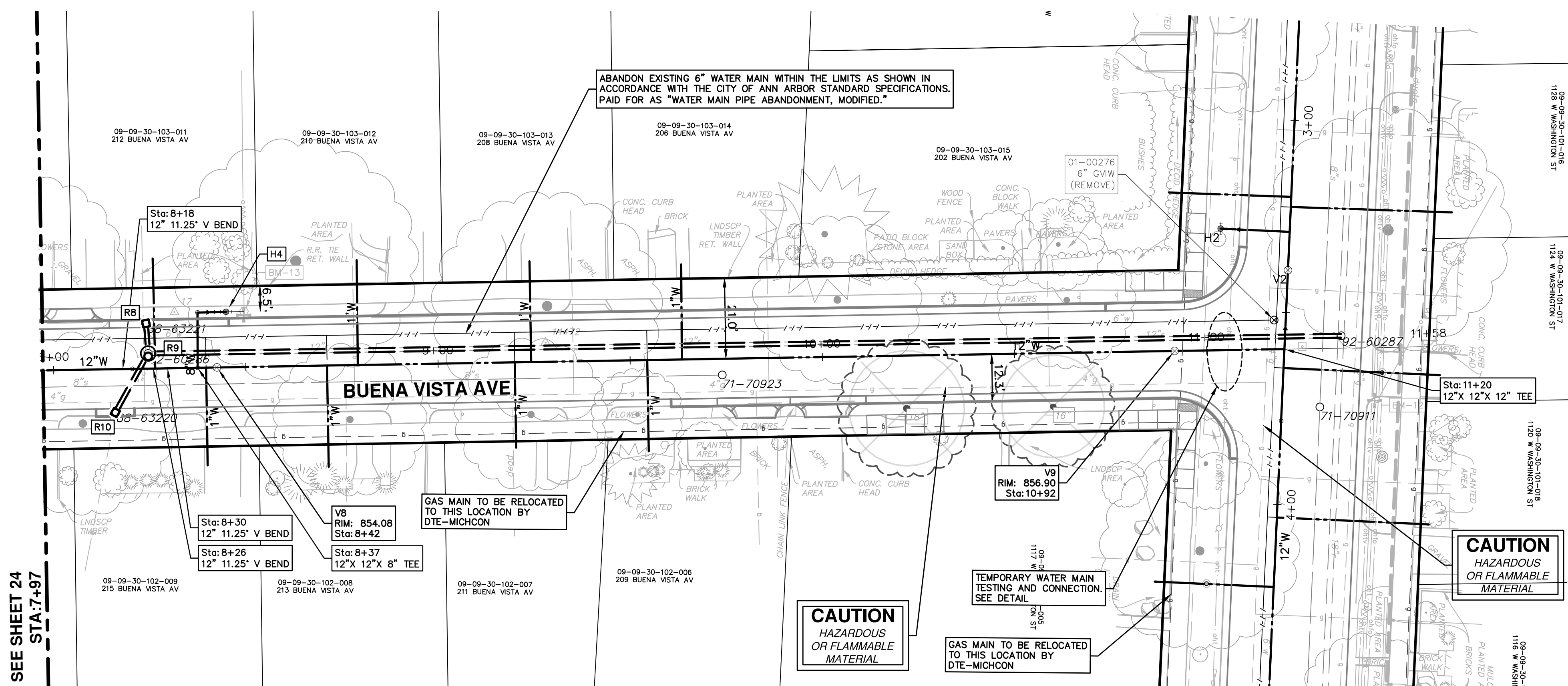
SHEET NO. 24 OF 46

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

01	ADDENDUM #1	2-23-18	CEC/DFP	JKA	CHECKED
00	OUT FOR BID	2-6-18	CEC/DFP	JKA	DRAWN
	REV.	DATE	DESCRIPTION		

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
PO BOX 8667  
ANN ARBOR MI 48106-8667  
www.a3gov.org

**CITY OF ANN ARBOR MICHIGAN**

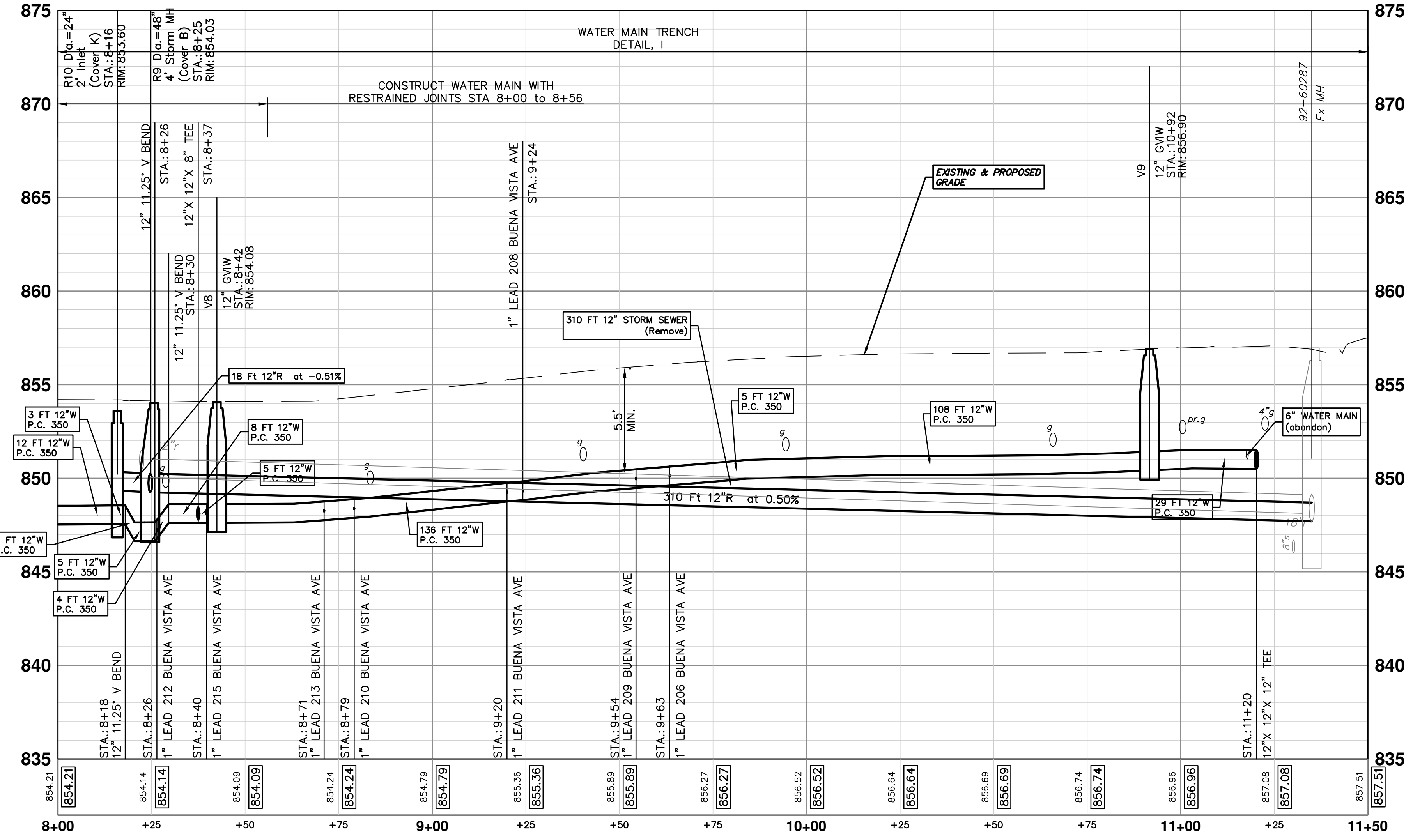


UPON COMPLETION OF THE CONSTRUCTION AND HYDROSTATIC AND BACTERIOLOGICAL TESTING OF THE 12" WATER MAIN ON WASHINGTON STREET, THE CONTRACTOR SHALL REMOVE THE TEMPORARY WATER MAIN TESTING AND CONNECTION ASSEMBLY AND CONSTRUCT THE PERMANENT WATER MAIN AS SHOWN. ALL WORK ASSOCIATED WITH REMOVING THE TEMPORARY TESTING CONNECTION AND CONSTRUCTING THE FINAL, PERMANENT, CONNECTION WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.

WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H4	HYDRANT ASSEMBLY	0+22	854.18	6.00
V8	12" GVIW	8+42	854.08	6.46
V9	12" GVIW	10+92	856.90	6.47

STORM STRUCTURE TABLE					
STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R8	2' Inlet (Cover K)	853.66	12"E 849.29	8 LF OF 12" @ 0.51%	2'
R9	4' Storm MH (Cover B)	854.03	12"W 849.25 12"SE 849.25	310 LF OF 12" @ 0.50% 8 LF OF 12" @ 0.51% 18 LF OF 12" @ 0.51%	2'
R10	2' Inlet (Cover K)	853.60	12"NW 849.34	18 LF OF 12" @ 0.51%	2'

EXISTING STORM SEWER STRUCTURE REMOVAL TABLE		
STRUCTURE	DEPTH (Feet)	REMOVE
88-63221	4.50	(Remove) Drop Inlet and 8' of 12" pipe
88-63220	4.35	(Remove) Drop Inlet and 18' of 12" pipe
92-60286	6.10	(Remove) 4' MH



SEE SHEET 24 STA. 7+97

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

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

BUENA VISTA AVENUE WATER MAIN PLAN AND PROFILE  
STA. 8+00 TO STA. 11+20

DRAWING NO. 2016029-25

SHEET No. 25 OF 46

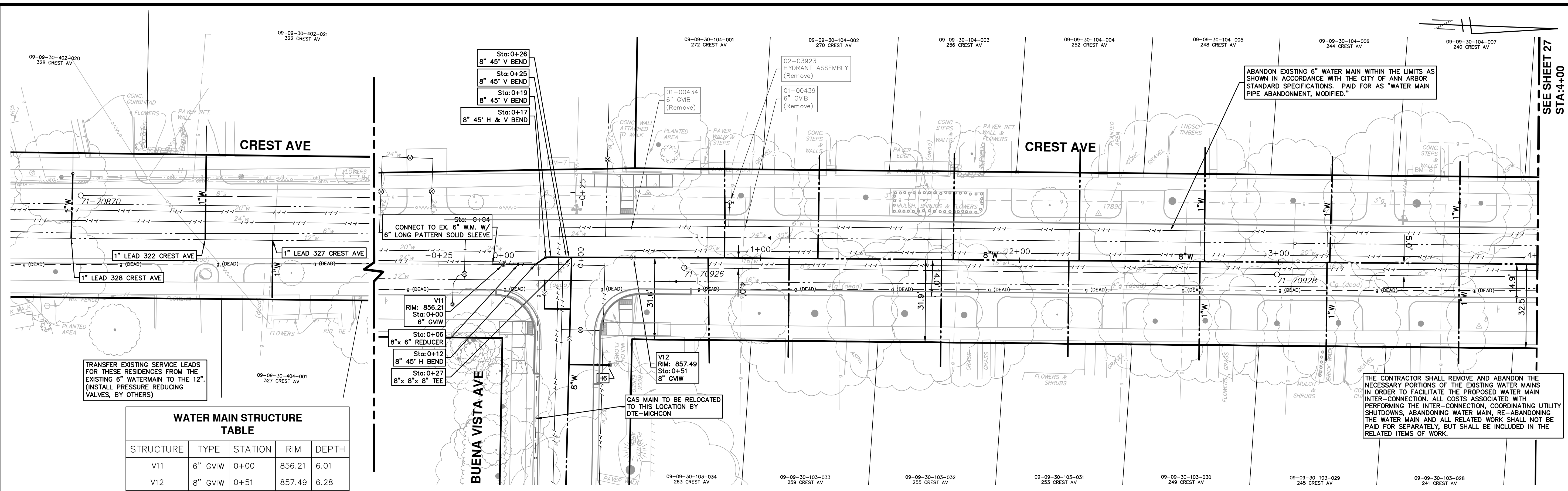
**811**  
Know what's below. Call before you dig.

01	ADDENDUM #1	DATE	DESCRIPTION
00	OUT FOR BID	2-23-18	REV.
		2-6-18	DRAWN
			CHECKED

JKA  
 CEC/DFP  
 JKA  
 CEC/DFP  
 JKA  
 DRAWN  
 CHECKED

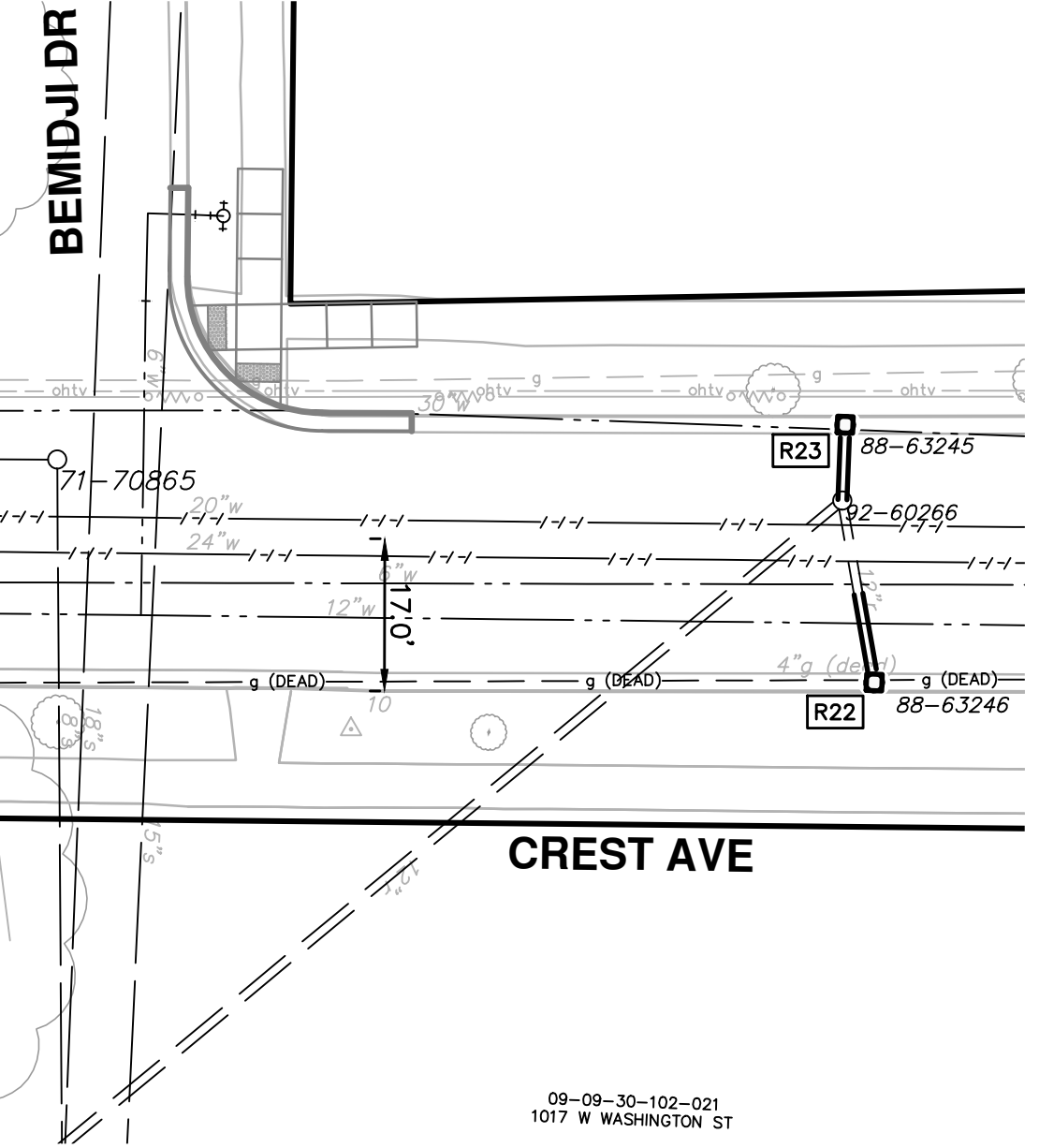
CITY OF ANN ARBOR  
 PUBLIC SERVICES  
 301 EAST HURON STREET  
 P.O. BOX 8667  
 ANN ARBOR, MI 48106-0867  
 www.a2gov.org

R:\20160229\_Crest Buena Wash Lib WA\Plan Production\20160229Wtr3.dwg Dwg Created: 23-Feb-18 - a2 standard bw.stb - Plot Date: 23-Feb-18



**WATER MAIN STRUCTURE TABLE**

STRUCTURE	TYPE	STATION	RIM	DEPTH
V11	6" GVW	0+00	856.21	6.01
V12	8" GVW	0+51	857.49	6.28

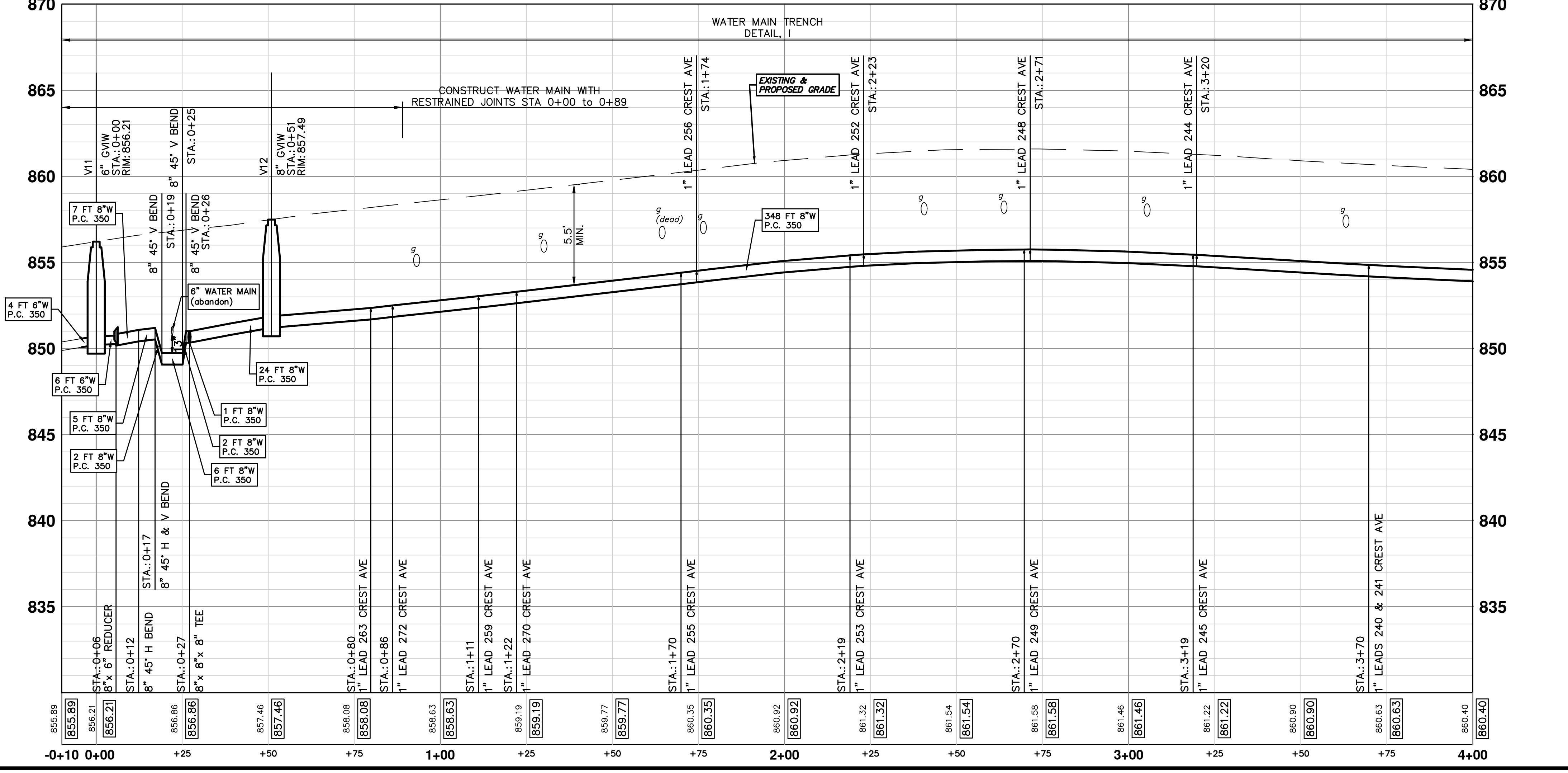


**STORM STRUCTURE TABLE**

STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R22	2' Inlet (Cover K)	851.94	12"W 850.28	10 LF OF 12" @ 2.25%	2'
R23	2' Inlet (Cover K)	850.93	12"E 847.55	8 LF OF 12" @ 11.79%	2'

**EXISTING STORM SEWER STRUCTURE REMOVAL TABLE**

STRUCTURE	DEPTH (Feet)	REMOVE
88-63246	5.00	(Remove) 2' Inlet and 10' of 12" pipe
88-63245	5.00	(Remove) 2' Inlet and 8' of 12" pipe



ABANDON EXISTING 6" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT, MODIFIED."

THE CONTRACTOR SHALL REMOVE AND ABANDON THE NECESSARY PORTIONS OF THE EXISTING WATER MAINS IN ORDER TO FACILITATE THE PROPOSED WATER MAIN INTER-CONNECTION. ALL COSTS ASSOCIATED WITH PERFORMING THE INTER-CONNECTION, COORDINATING UTILITY SHUTDOWNS, ABANDONING WATER MAIN, RE-ABANDONING THE WATER MAIN AND ALL RELATED WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE RELATED ITEMS OF WORK.

SEE SHEET 27  
STA: 4+00

Know what's below. Call before you dig.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

CREST AVENUE WATER MAIN PLAN AND PROFILE  
STA. 0+00 TO STA. 4+00

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

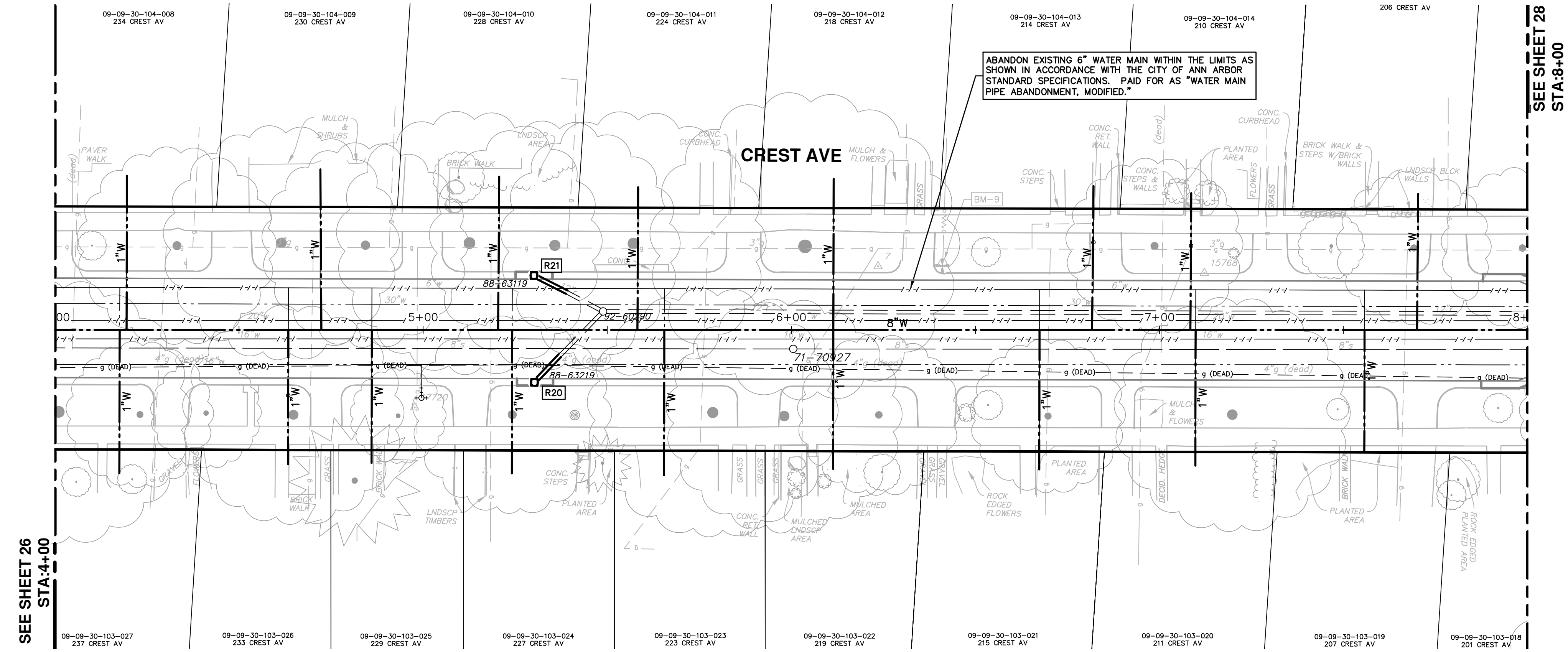
DRAWING NO. 20160229-26

SHEET NO. 26 OF 46

REV.	DATE	DESCRIPTION
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00	2-6-18	CEC/DPF
00		OUT FOR BID
00		REV.

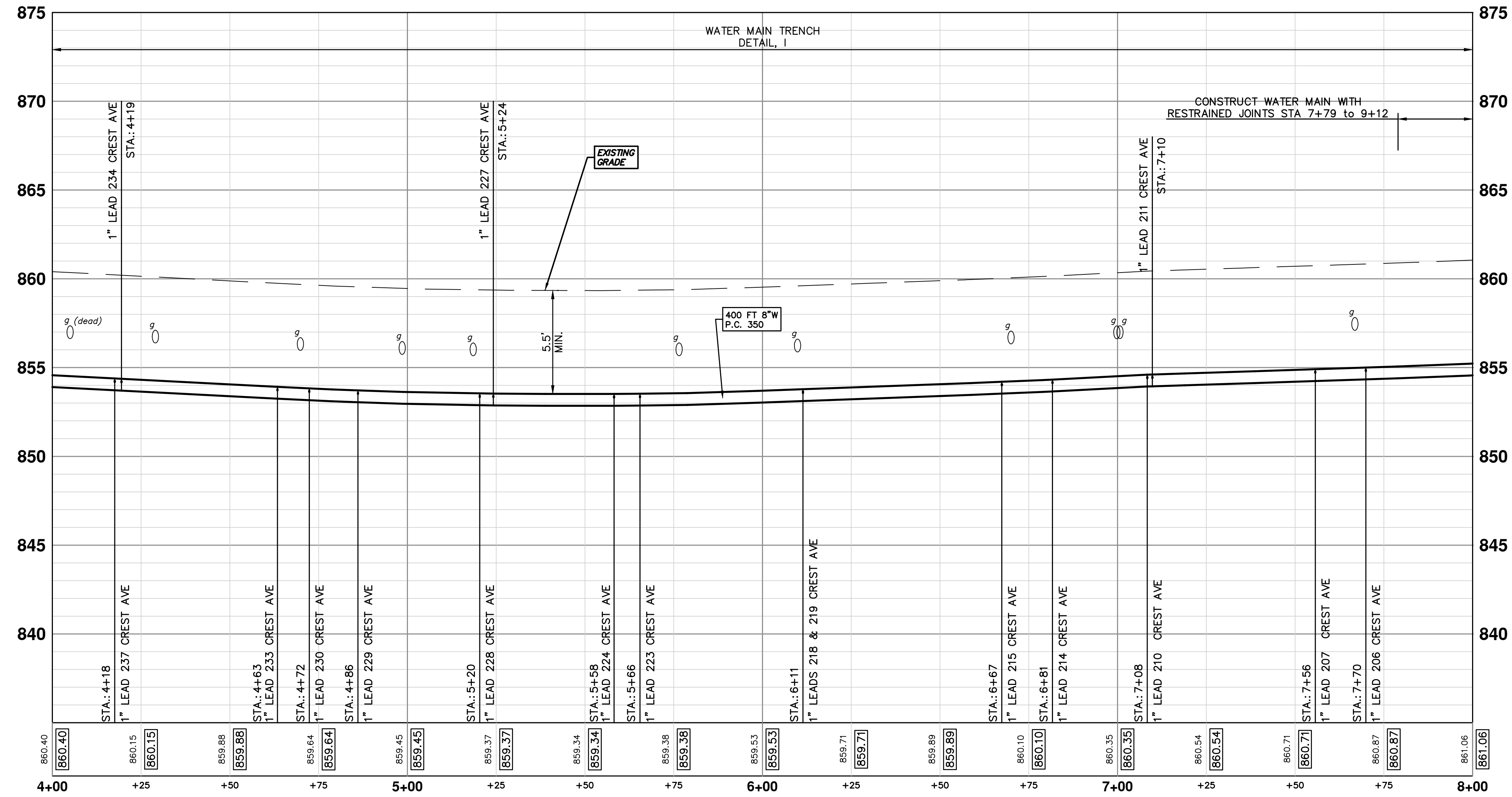
CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
PO BOX 866  
ANN ARBOR MI 48106-0867  
www.a3gov.org





SEE SHEET 28  
STA: 8+00

SEE SHEET 26  
STA: 4+00



STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R20	2' Inlet (Cover K)	859.08	12"NW 856.06	10 LF OF 12" @ 0.49%	2'
R21	2' Inlet (Cover K)	859.00	12"NE 855.24	10 LF OF 12" @ 1.46%	2'

STRUCTURE	DEPTH (Feet)	REMOVE
88-63119	5.45	(Remove) 2' Inlet and 10' of 12" pipe
88-63219	4.75	(Remove) 2' Inlet and 10' of 12" pipe

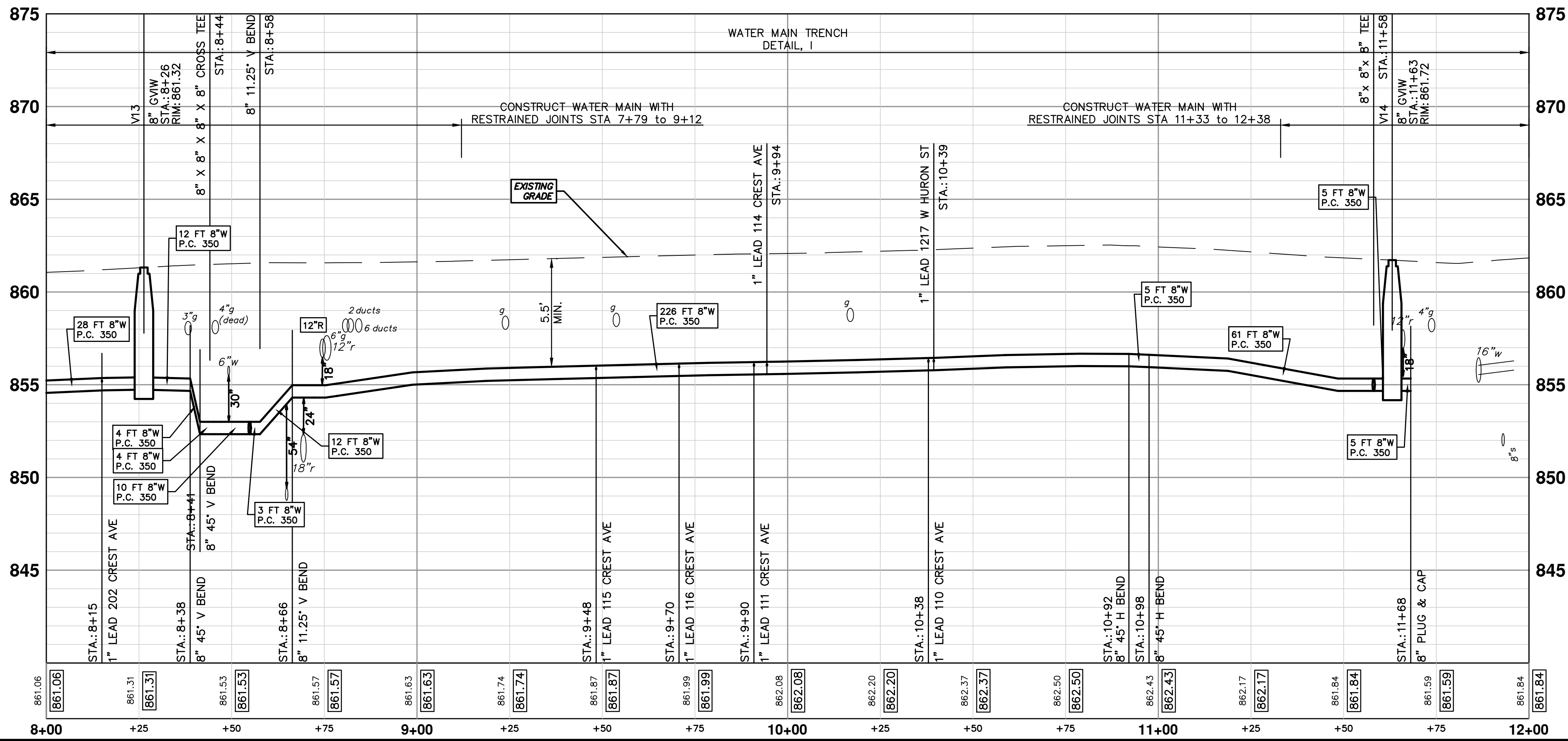
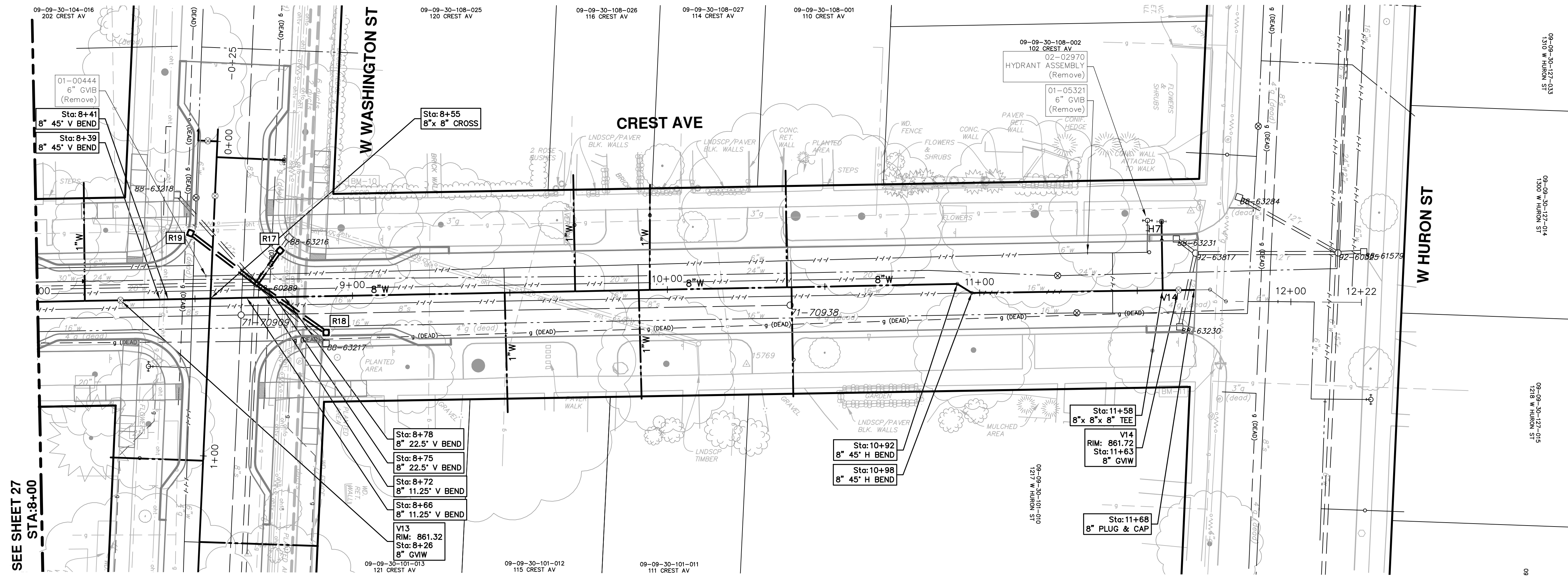


REV.	DATE	DESCRIPTION
01	2-23-18	CEC/DPF
00	2-6-18	CEC/DPF

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**CREST, BUENA VISTA, WASHINGTON WATER MAIN**  
CREST AVENUE WATER MAIN PLAN AND PROFILE  
STA. 4+00 TO STA. 8+00



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V13	8" GVW	8+26	861.32	6.58
V14	8" GVW	11+63	861.72	7.05

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

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

DRAWING NO.  
**2016029-28**

SHEET NO.  
**28 OF 46**

**CITY OF ANN ARBOR**  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-0667  
www.a2gov.org

DATE: 2-23-18  
DRAWN: JKA  
CHECKED: JKA

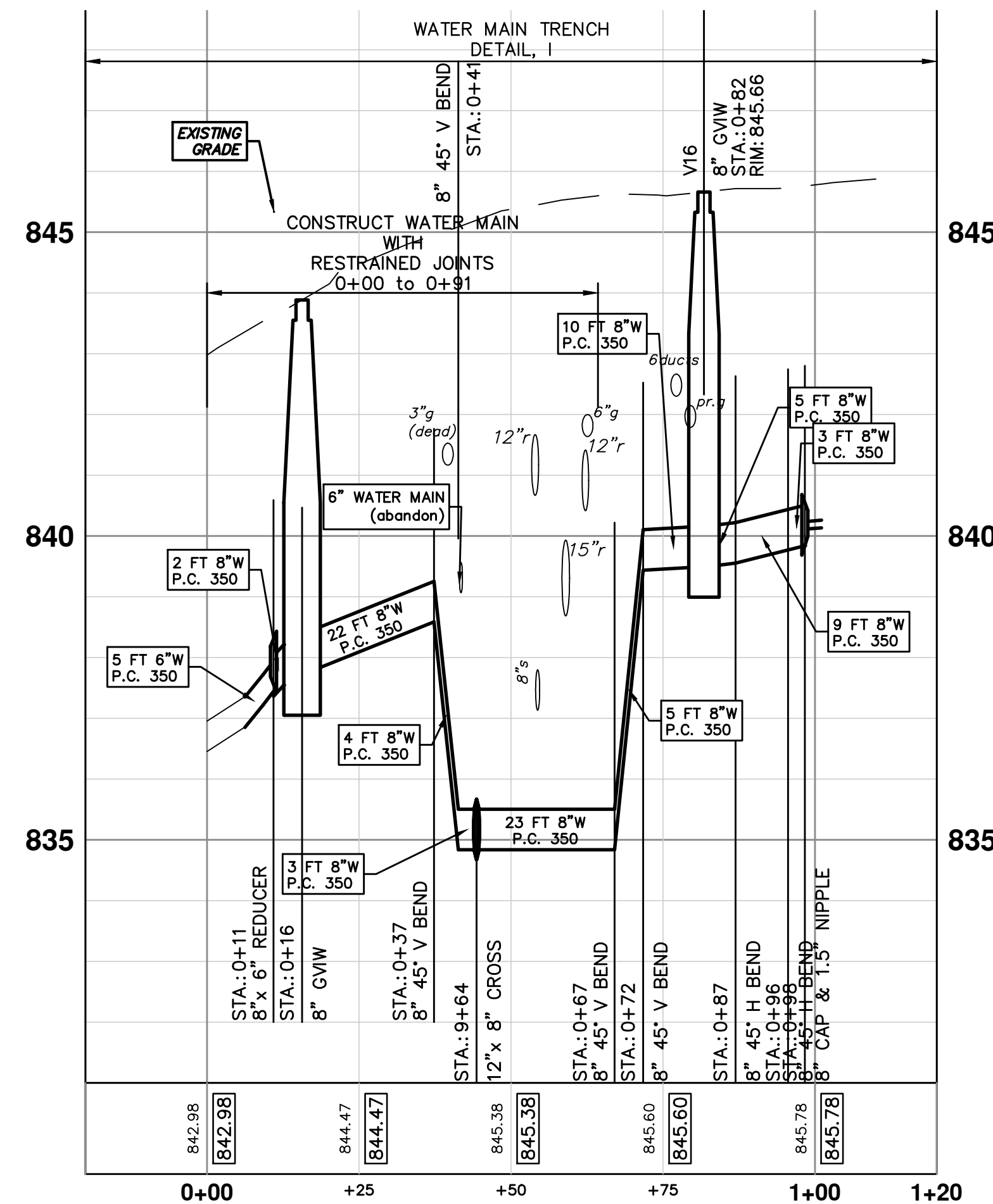
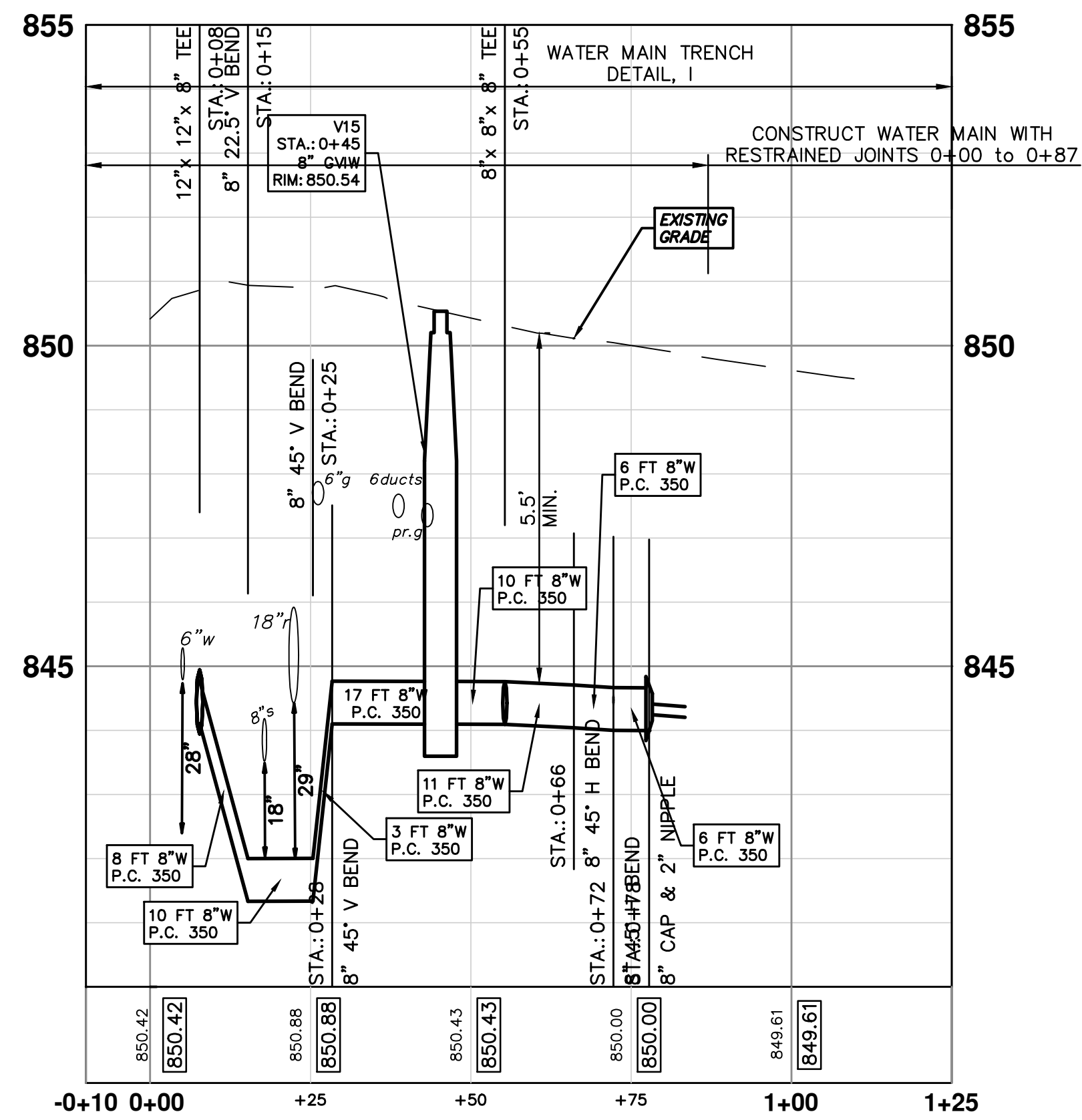
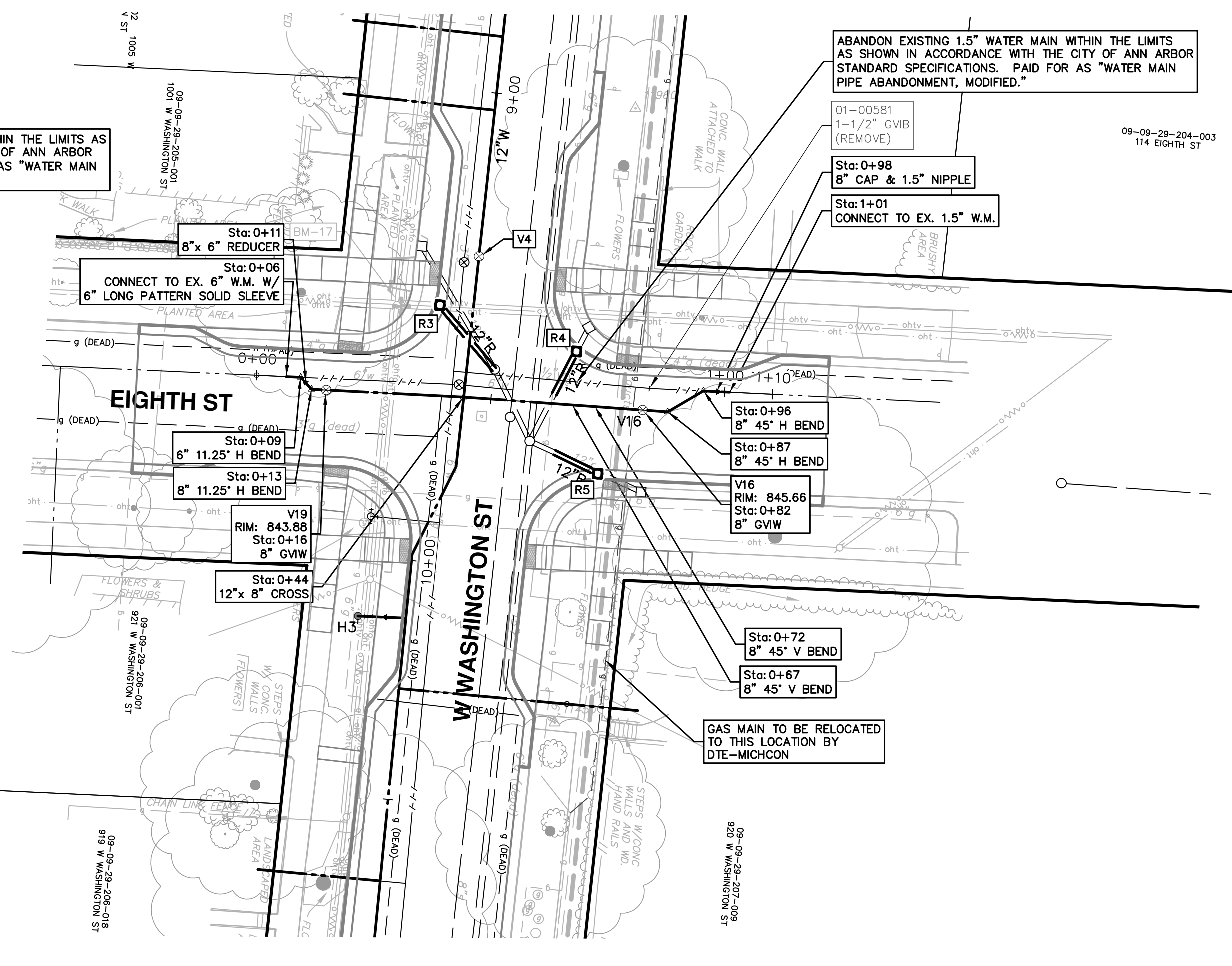
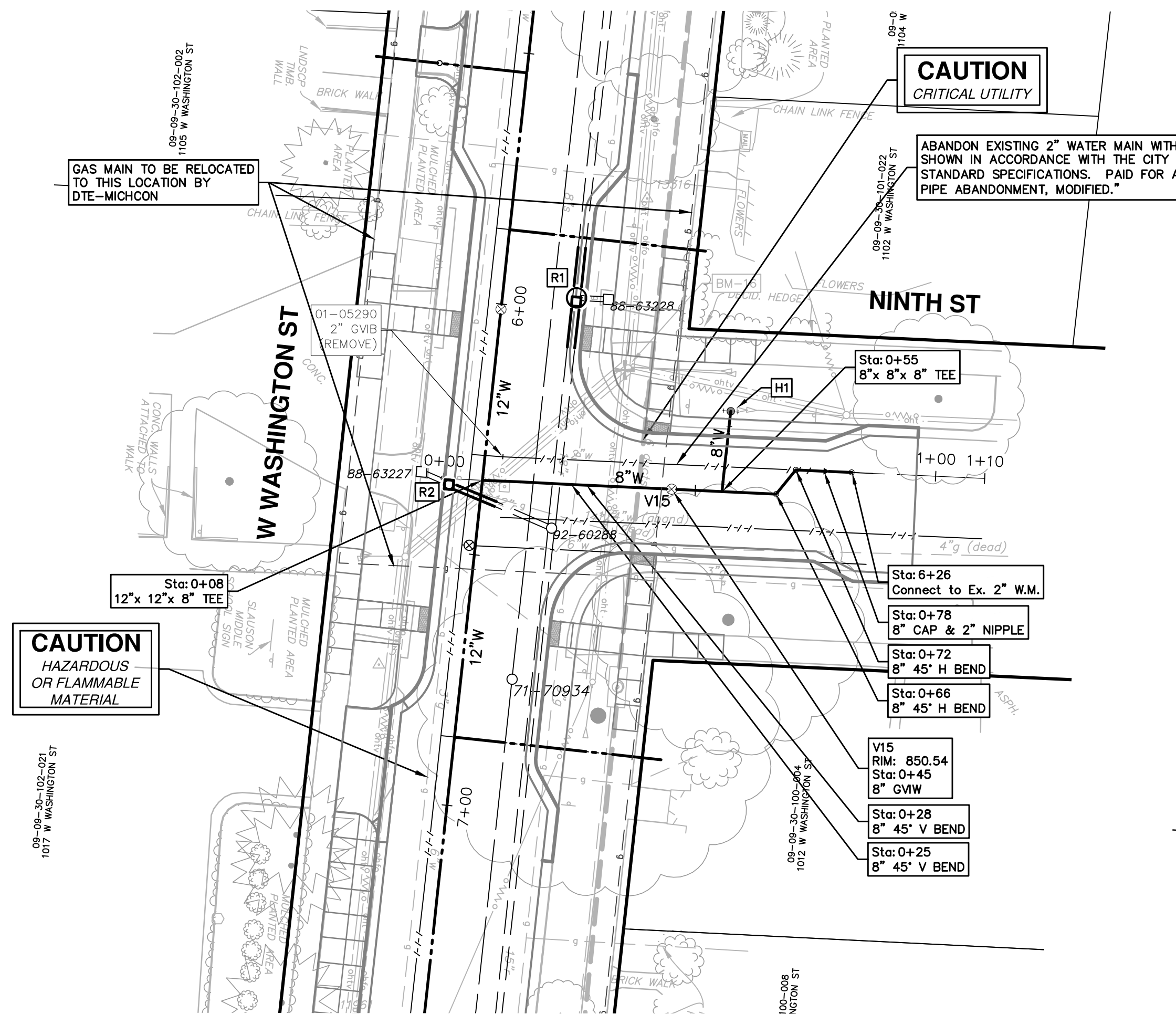
DESCRIPTION: CREST AVENUE WATER MAIN PLAN AND PROFILE STA. 8+00 TO STA. 12+00

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

STA. 8+00 TO STA. 12+00

ANN ARBOR MI CITY

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



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
V15	8" GVW	0+45	850.54	6.44
V16	8" GVW	0+82	845.66	6.17

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

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

DRAWING NO. 20160229-29

SHEET NO. 29 OF 46

**CITY OF ANN ARBOR - PUBLIC SERVICES**  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-0667  
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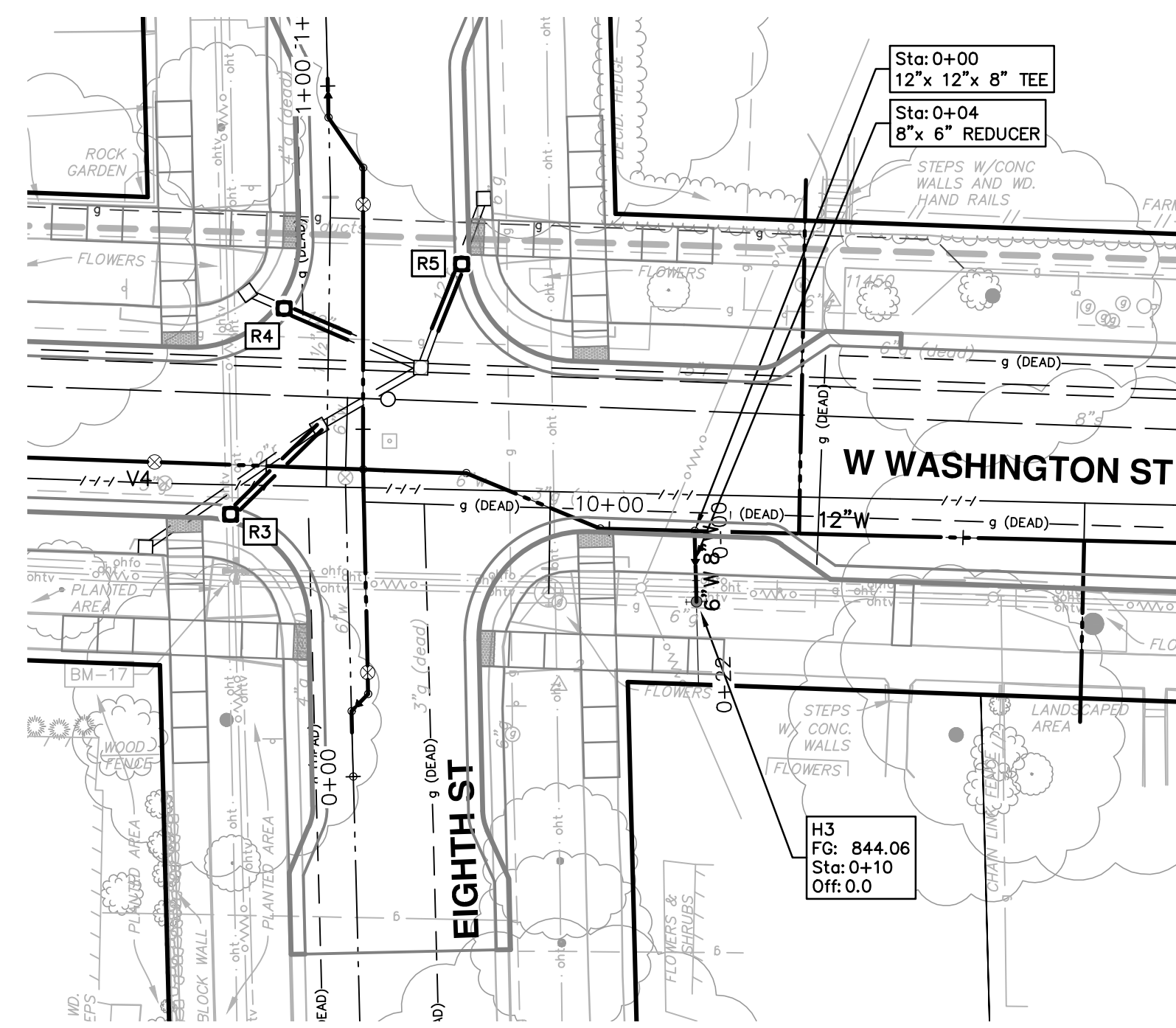
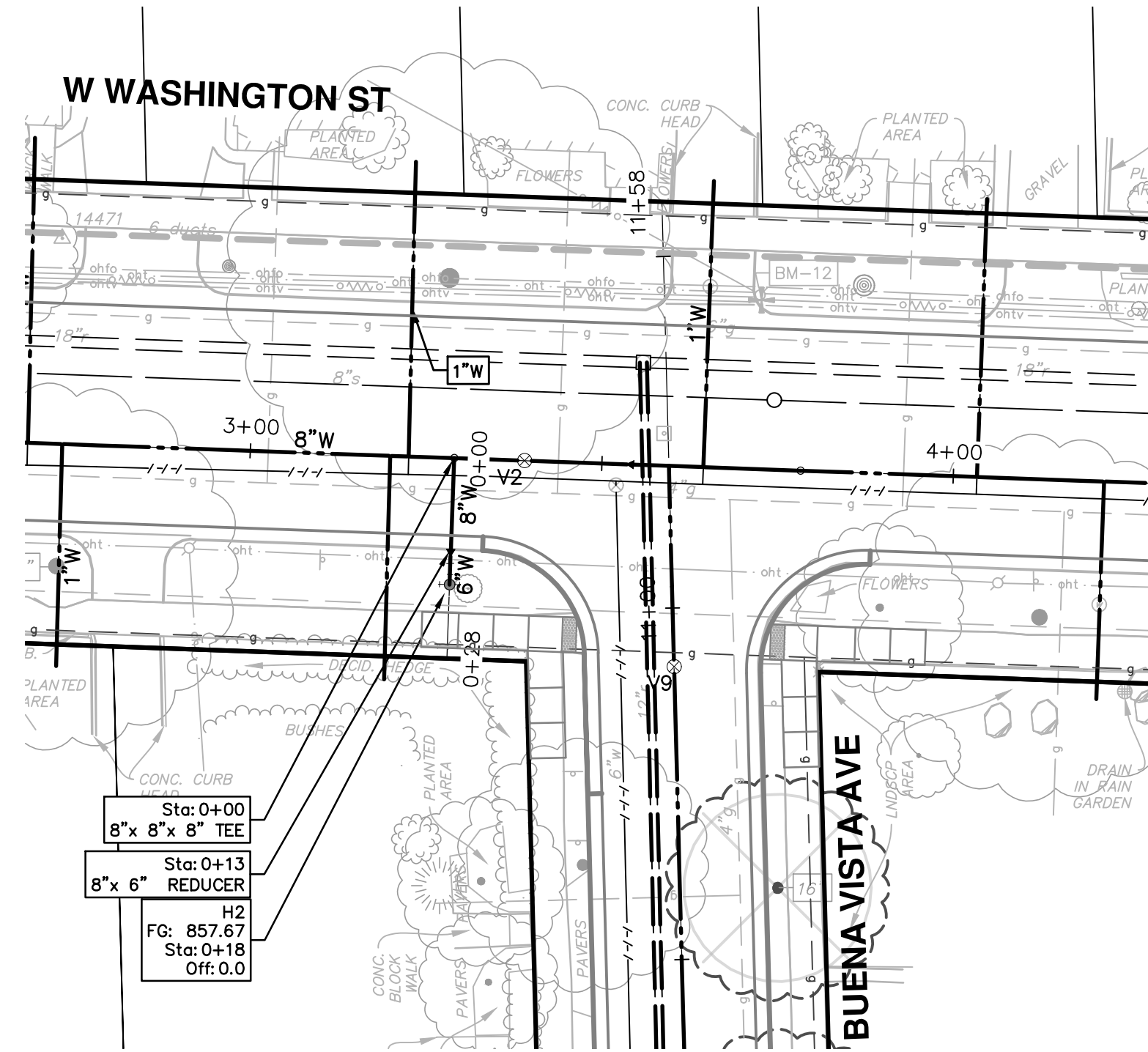
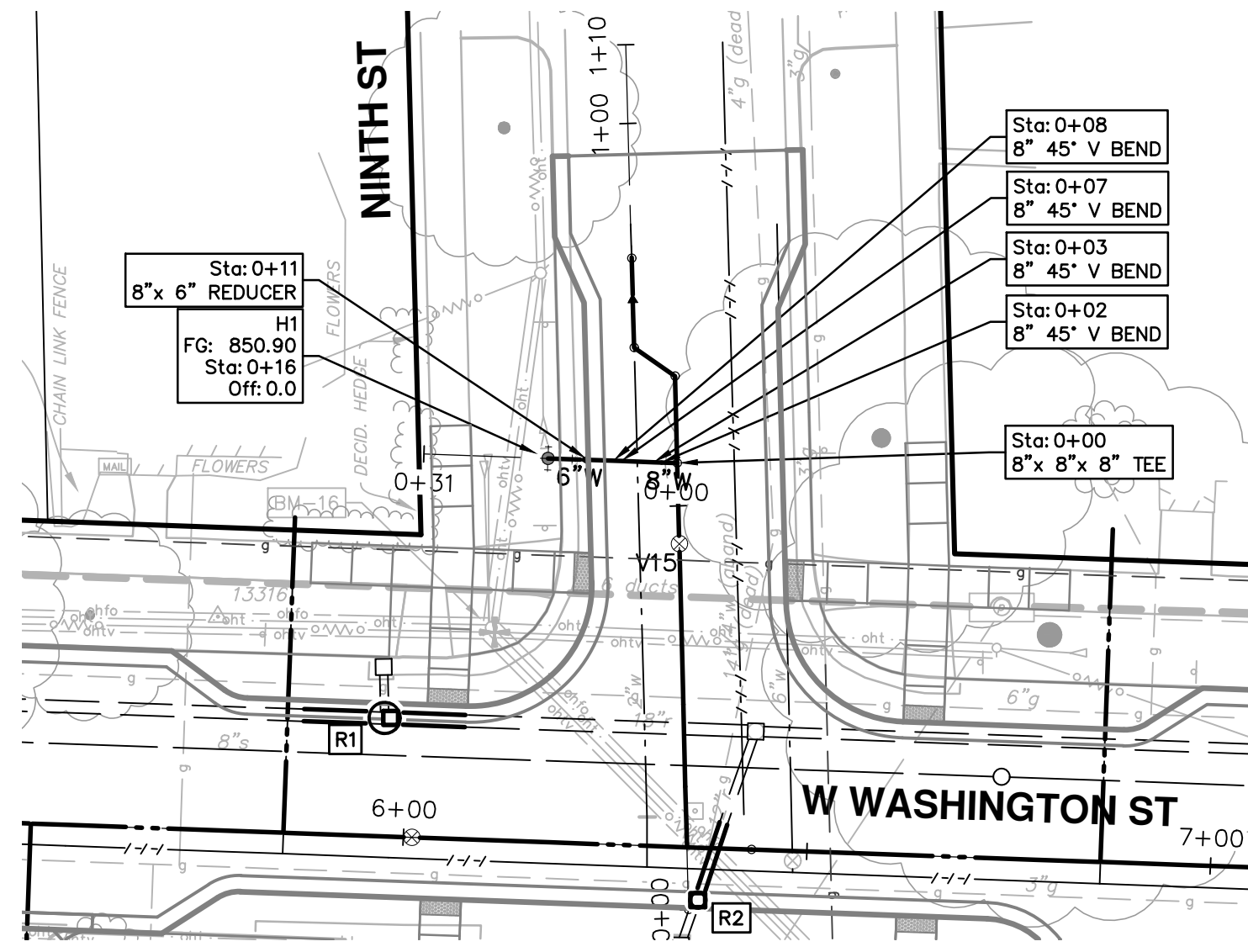
**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

NINTH STREET AND EIGHTH STREET  
WATER MAIN PLAN AND PROFILE

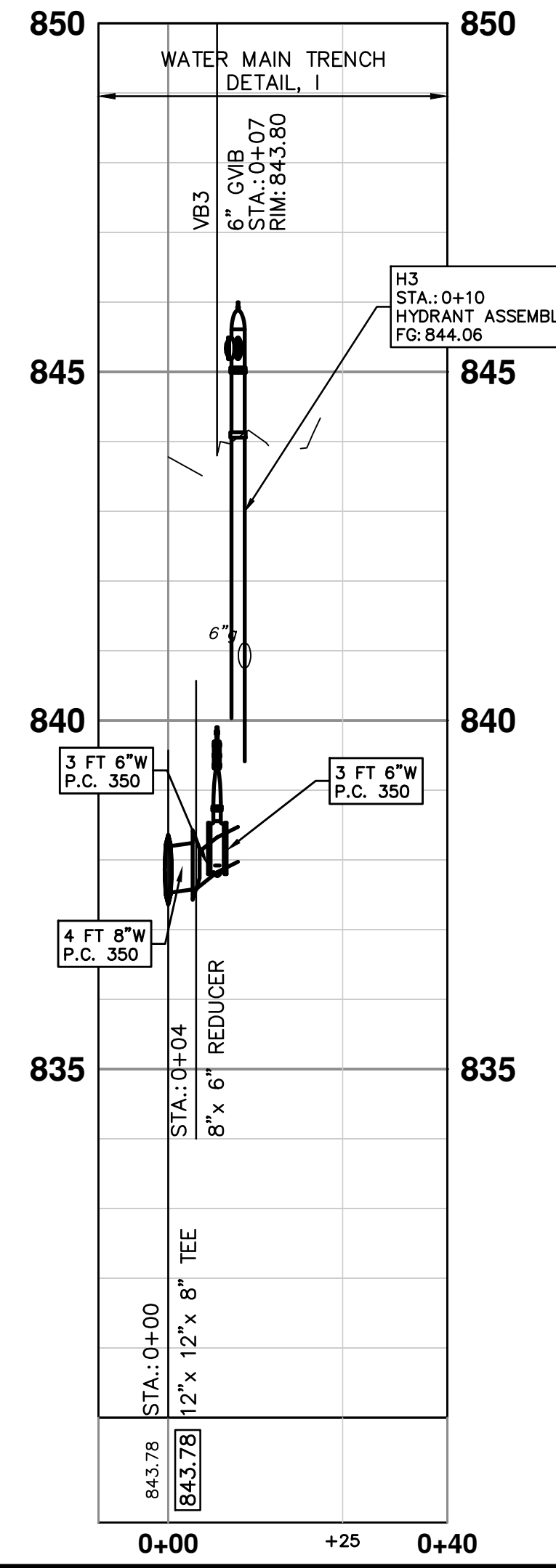
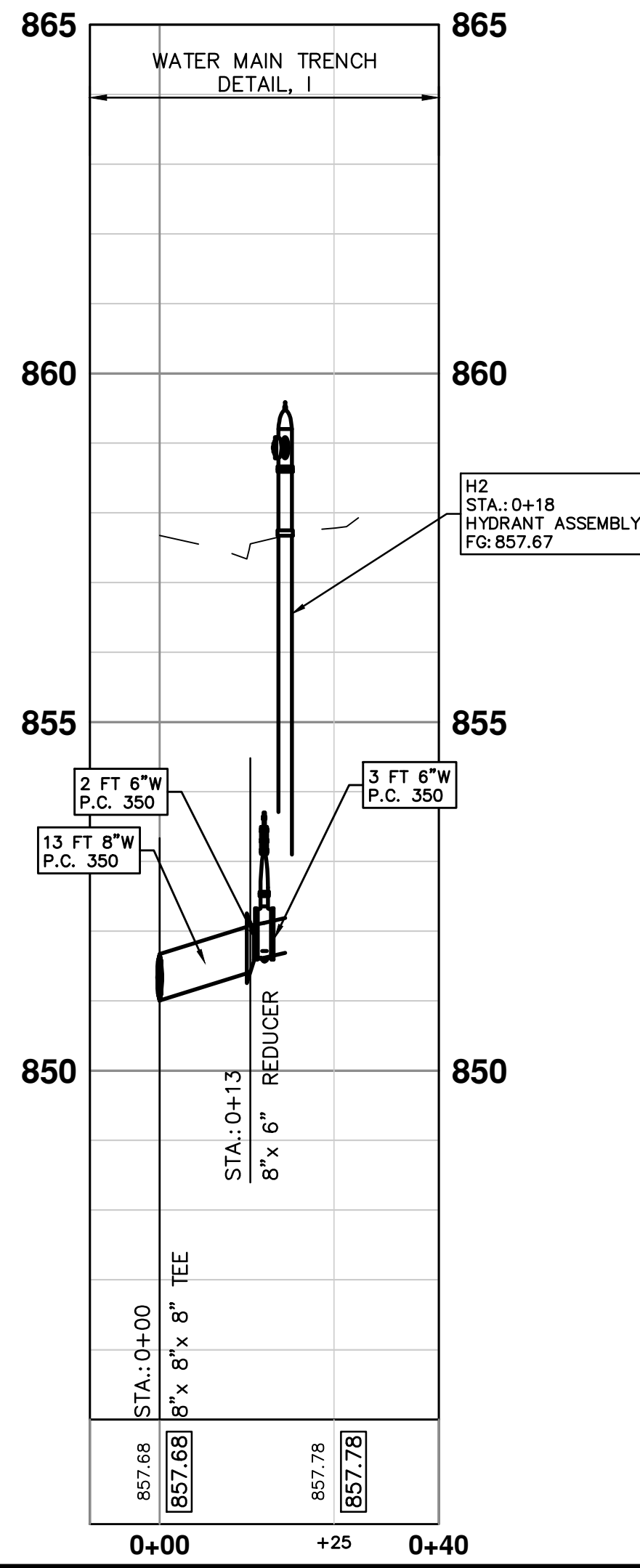
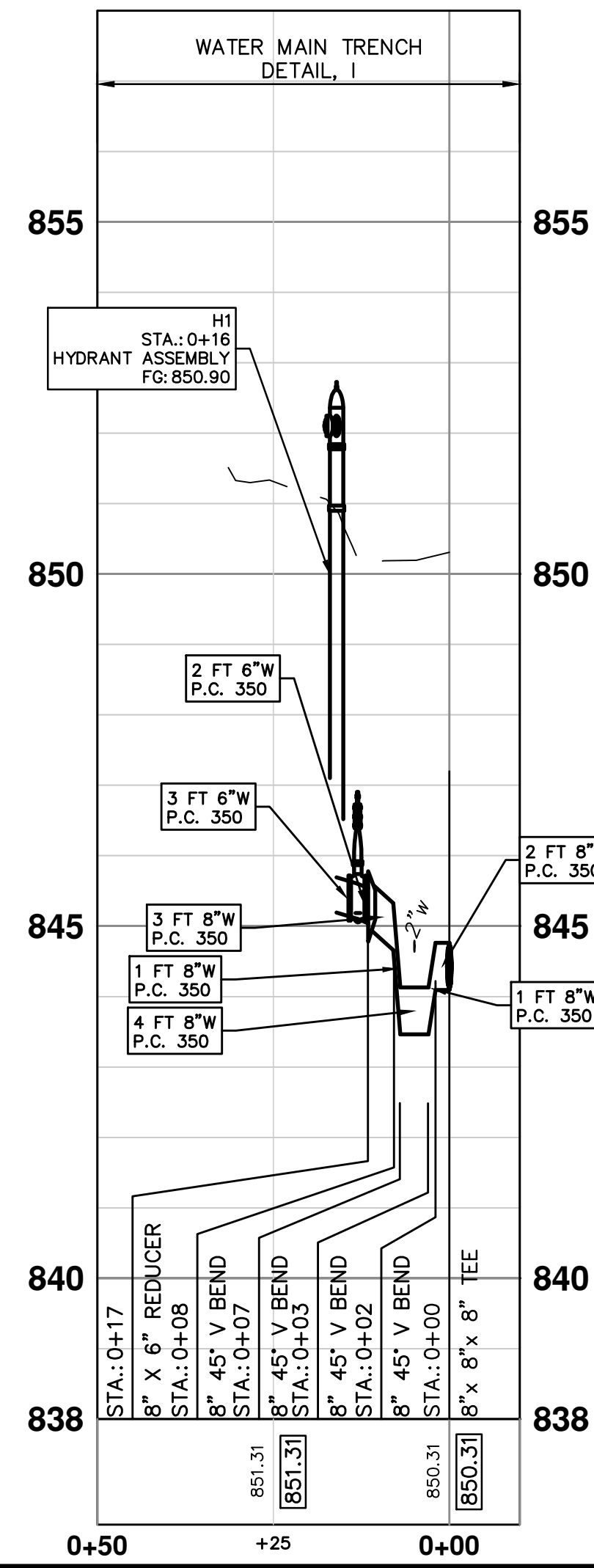
REV.	DATE	DESCRIPTION
01	2-23-18	CEC/DFP
00	2-6-18	CEC/DFP

Know what's below.  
Call Before you dig.

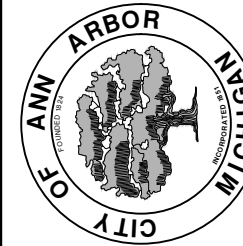




WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H1	HYDRANT ASSEMBLY	???	850.90	5.71
H2	HYDRANT ASSEMBLY	???	857.67	5.98
H3	HYDRANT ASSEMBLY	???	844.06	6.08



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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

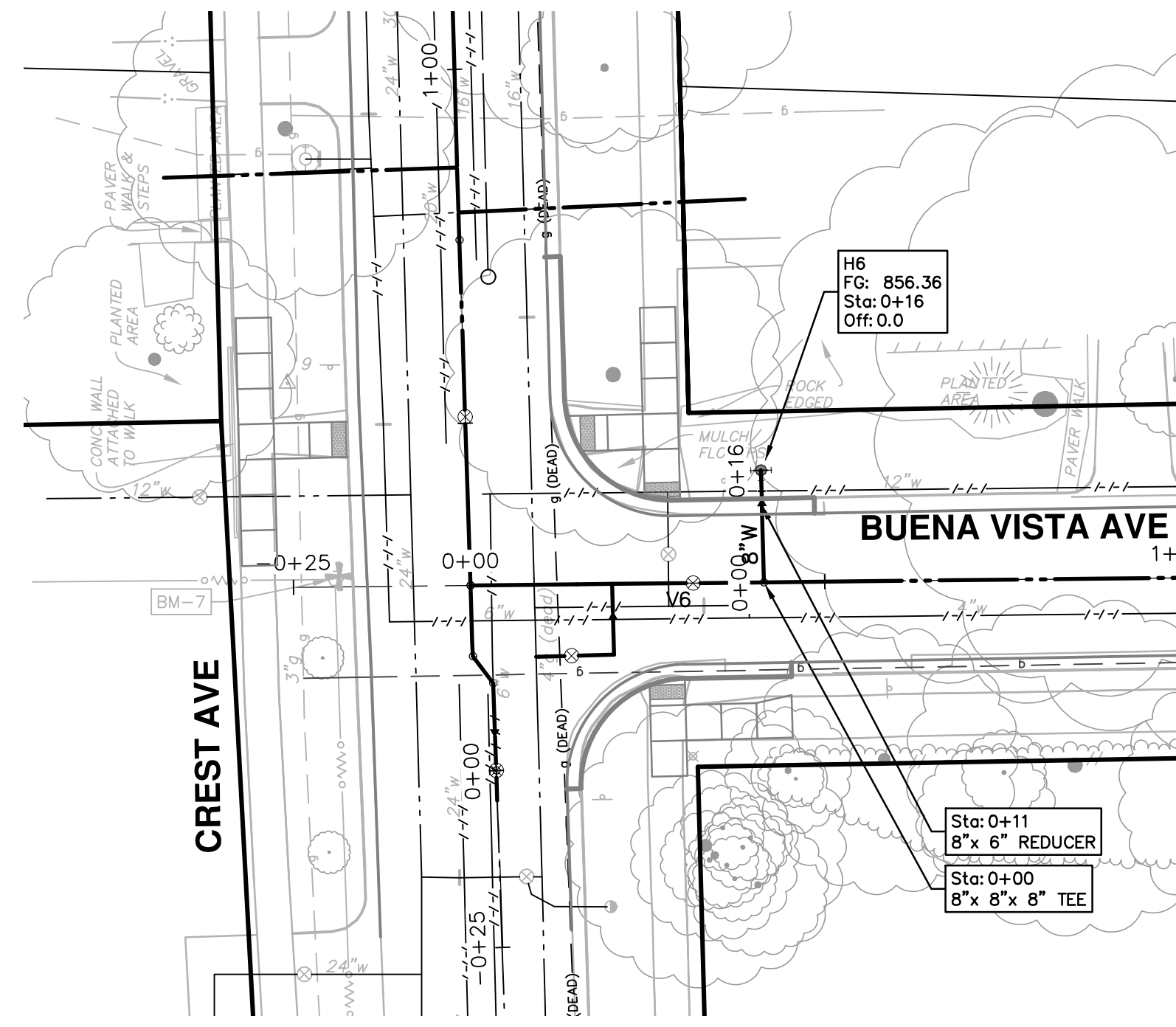
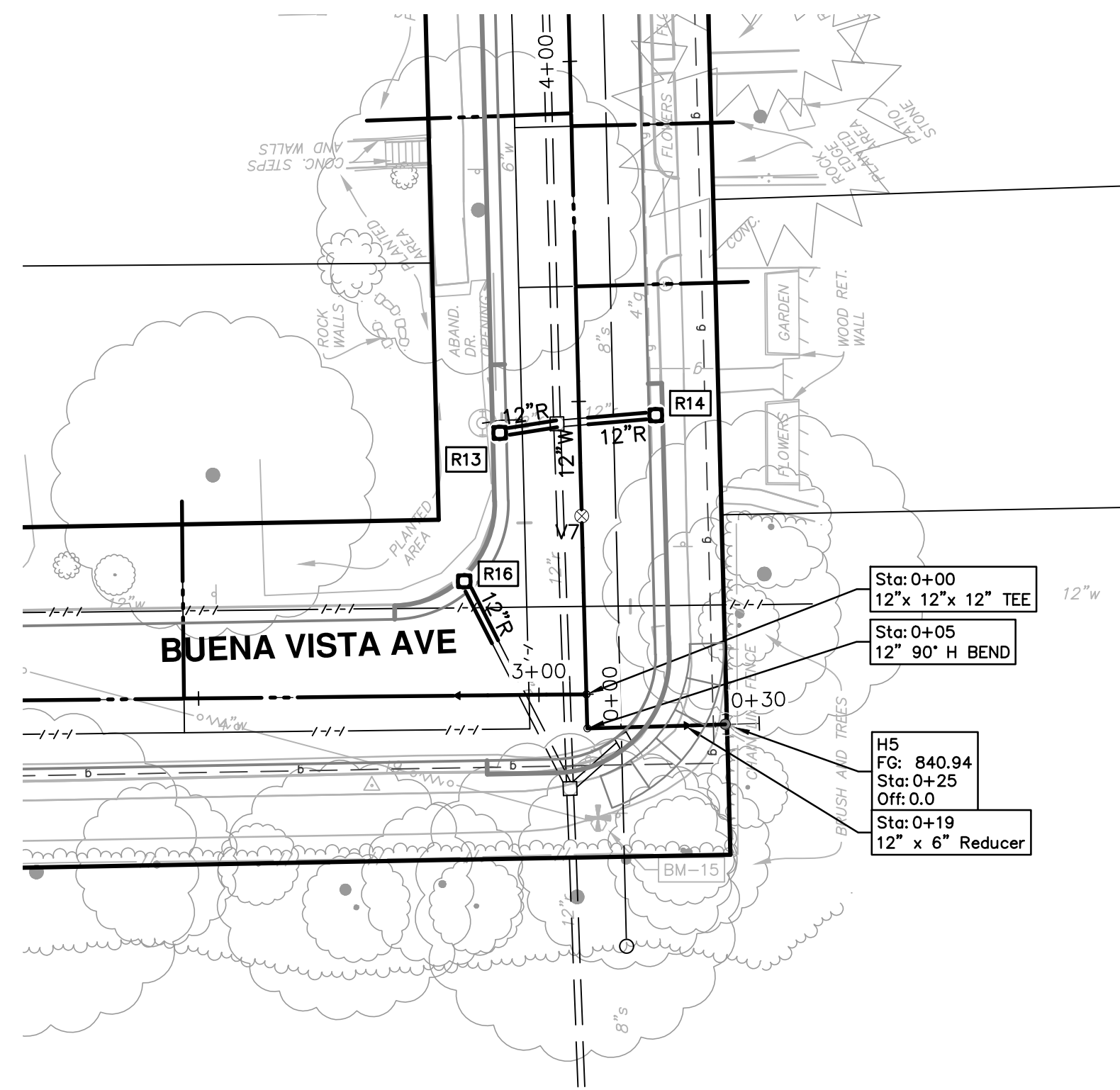
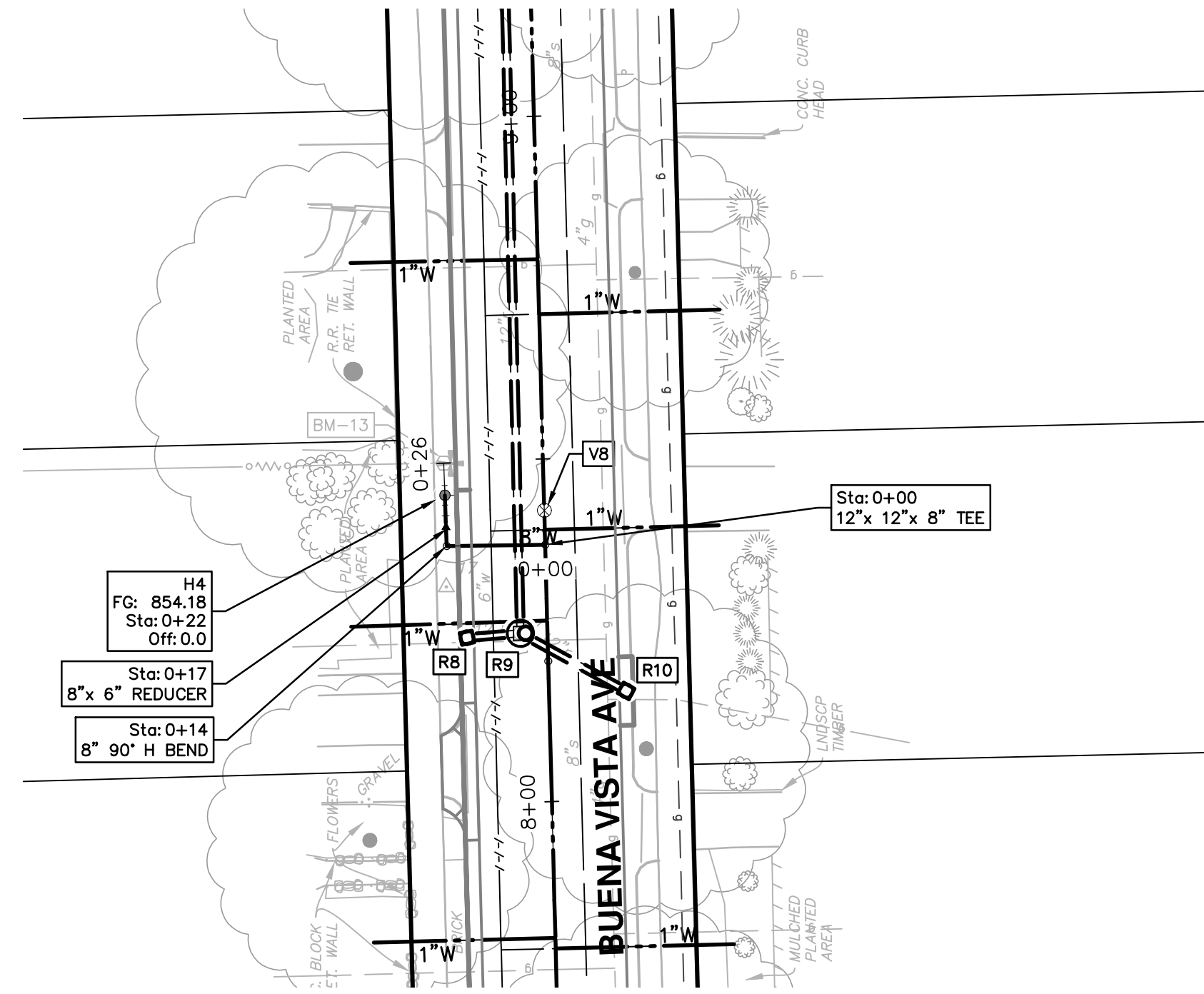
CREST, BUENA VISTA, WASHINGTON WATER MAIN

HYDRANT PROFILES  
H1, H2, H3

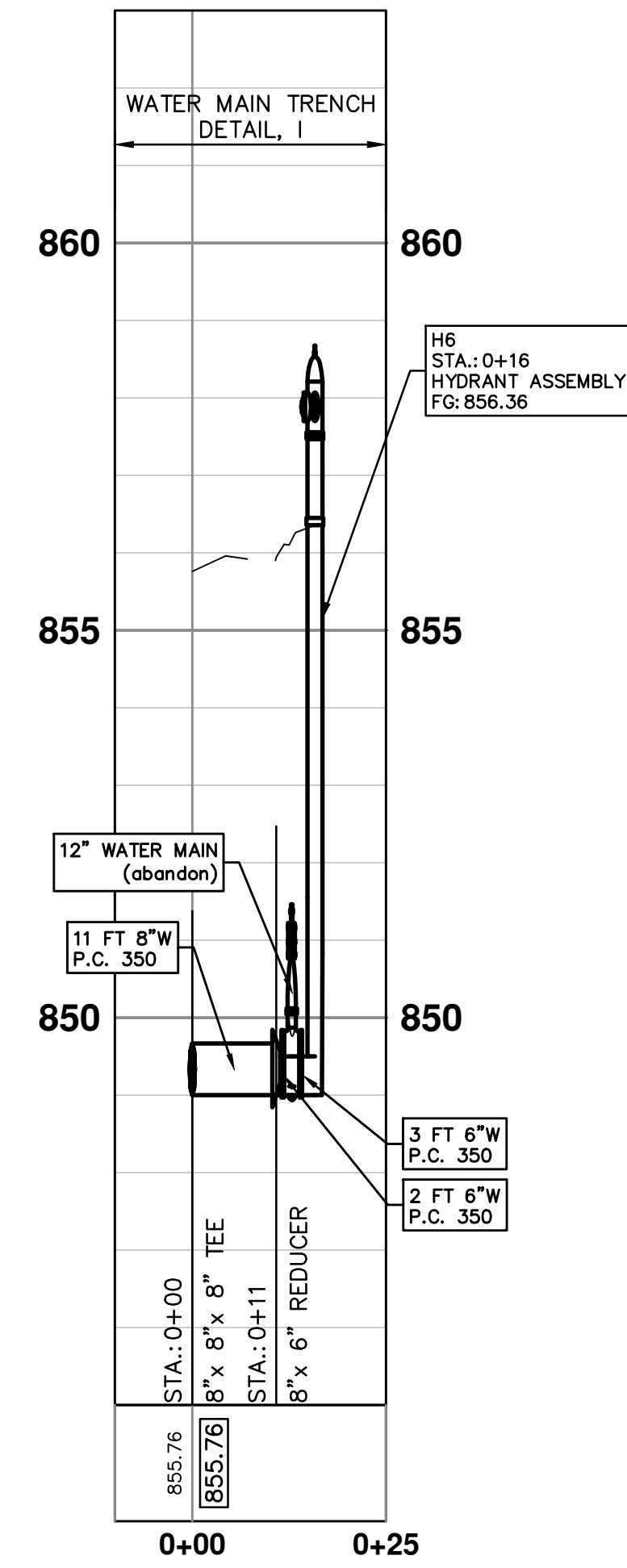
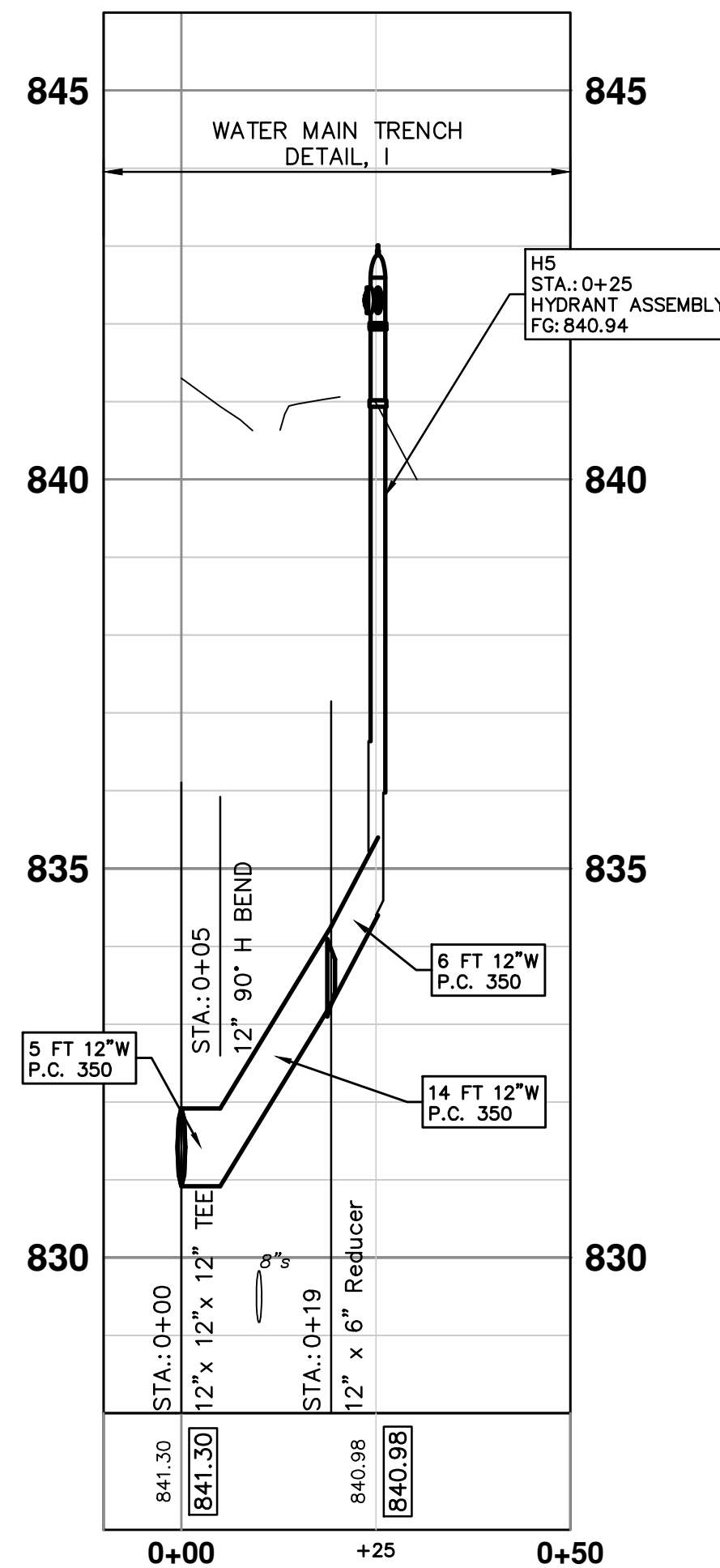
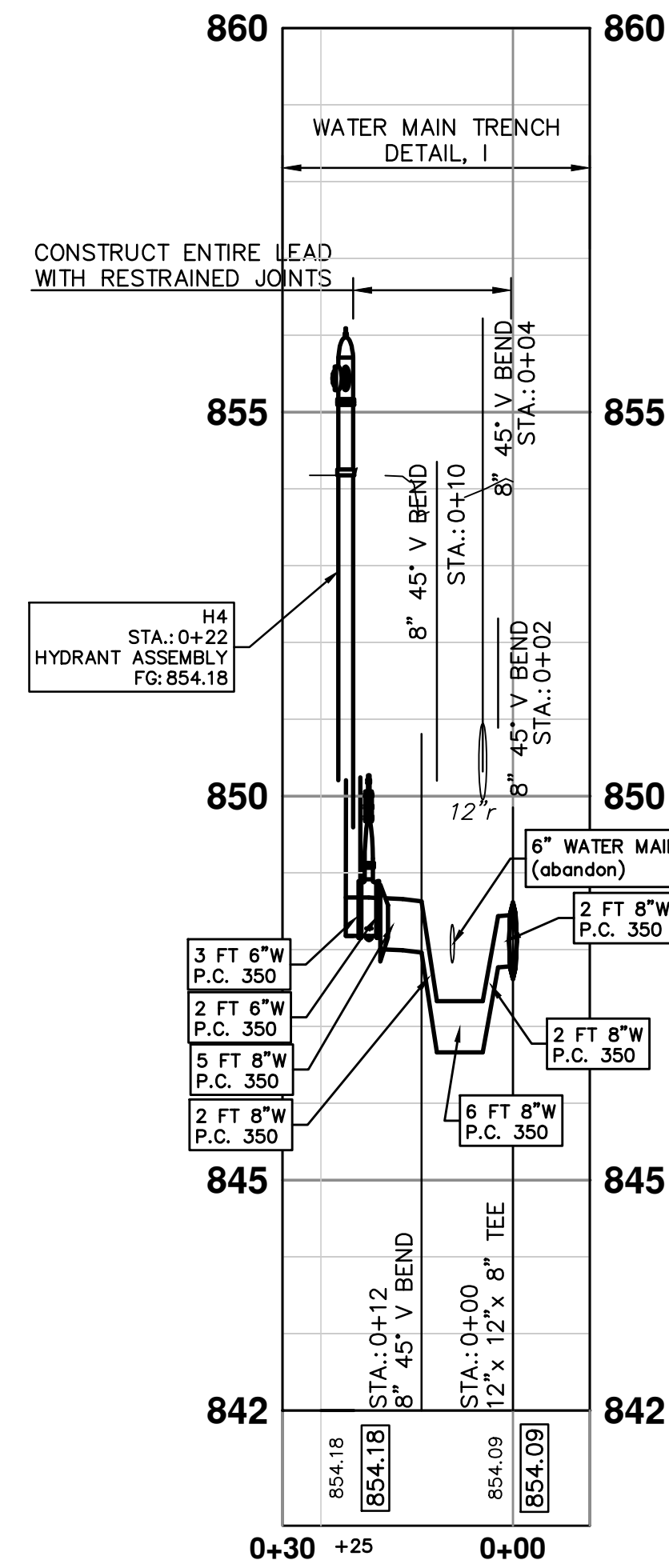
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'  
DRAWING NO.  
2016029-30

SHEET No.  
30 OF 46

REV.	DATE	DESCRIPTION
01	2-23-18	OUT FOR BID
00	2-6-18	CEC/DFP
		CEC/DFP
		JKA
		JKA
		CHECKED
		DRAWN

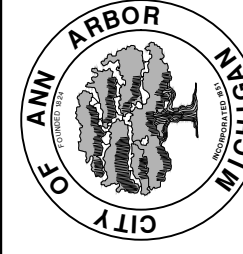


WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H4	HYDRANT ASSEMBLY	0+22	854.18	6.00
H5	HYDRANT ASSEMBLY	0+25	840.94	6.54
H6	HYDRANT ASSEMBLY	???	856.36	7.36

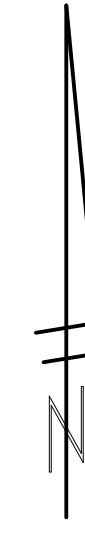
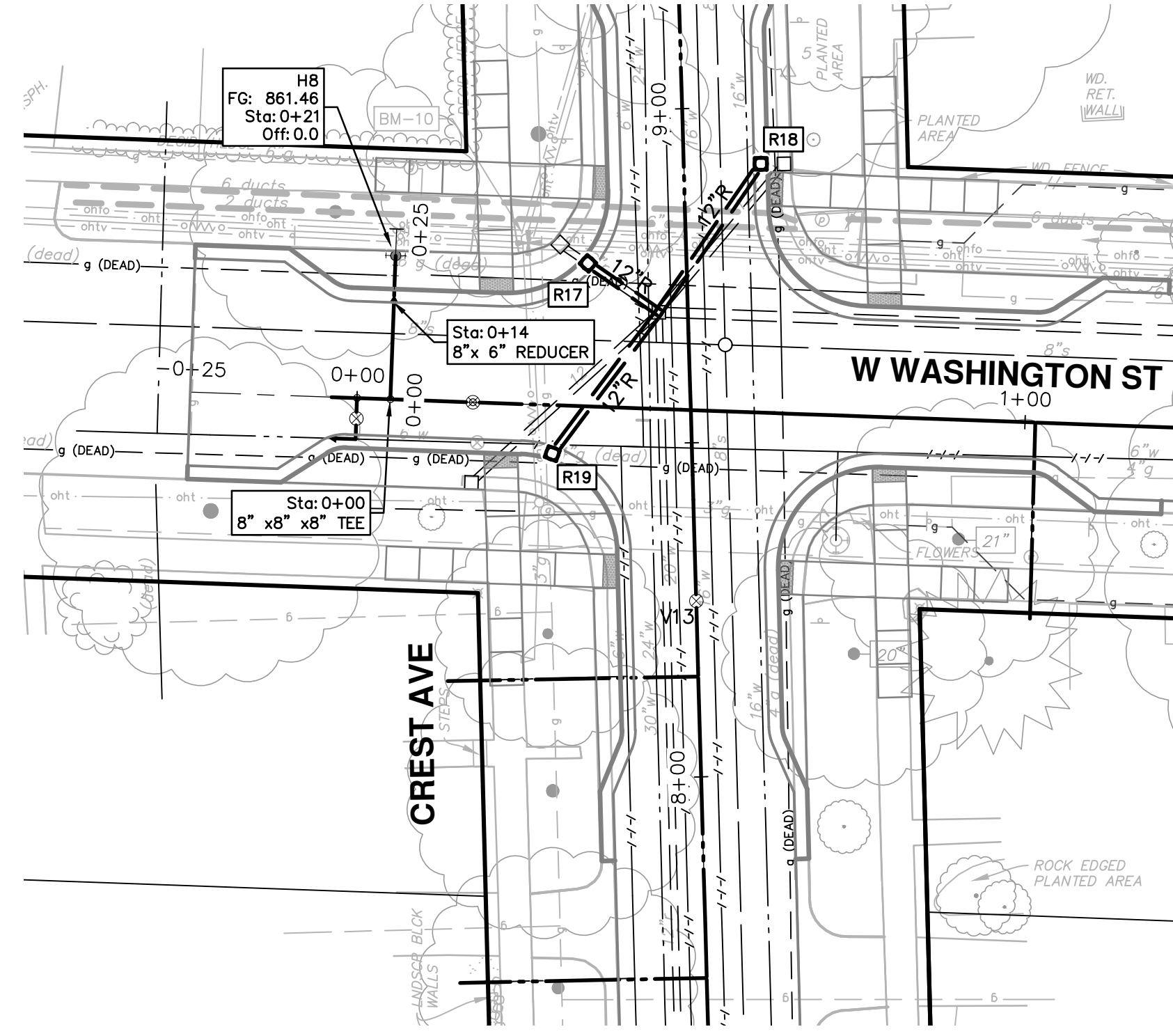
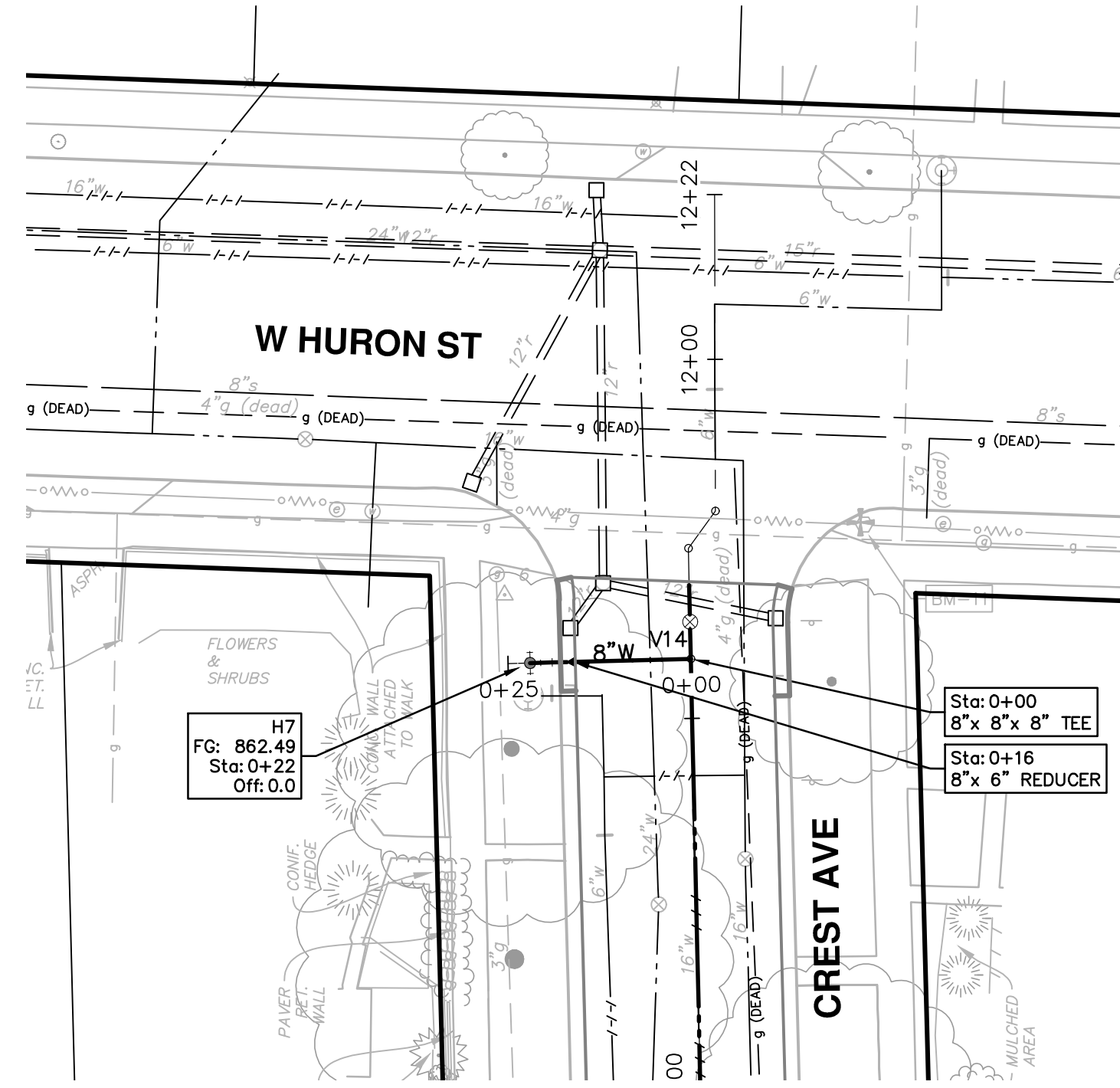


REV.	DATE	DESCRIPTION	CHECKED	DRAWN
01	2-23-18	ADDENDUM #1	CEC/DFP	JKA
00	2-6-18	OUT FOR BID	CEC/DFP	JKA

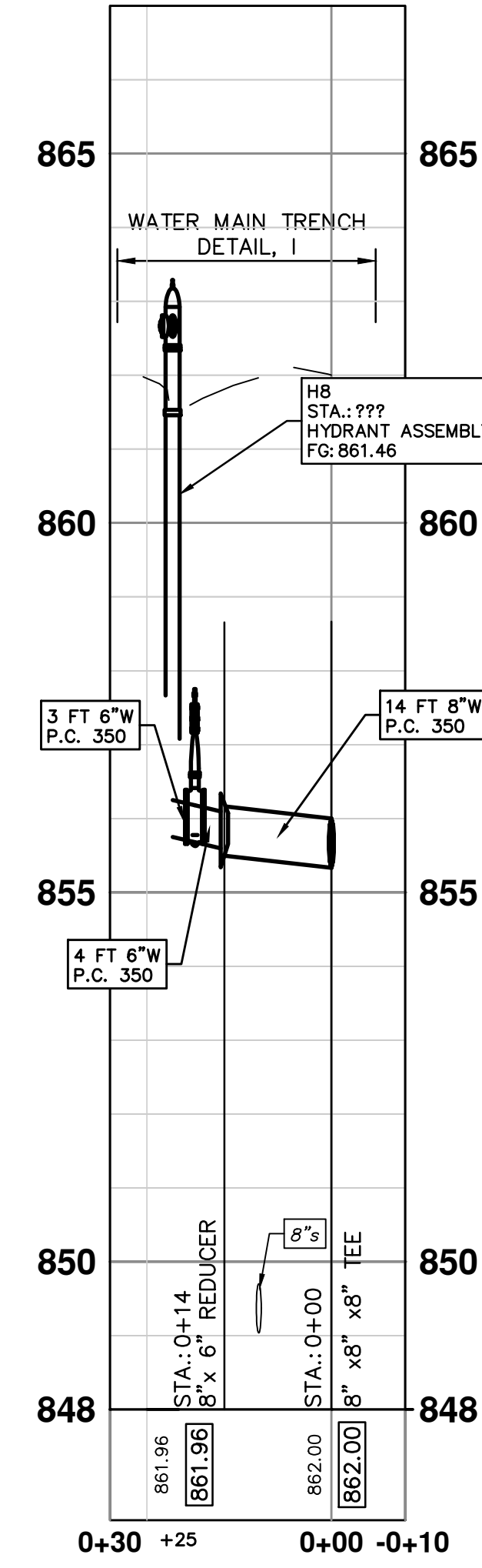
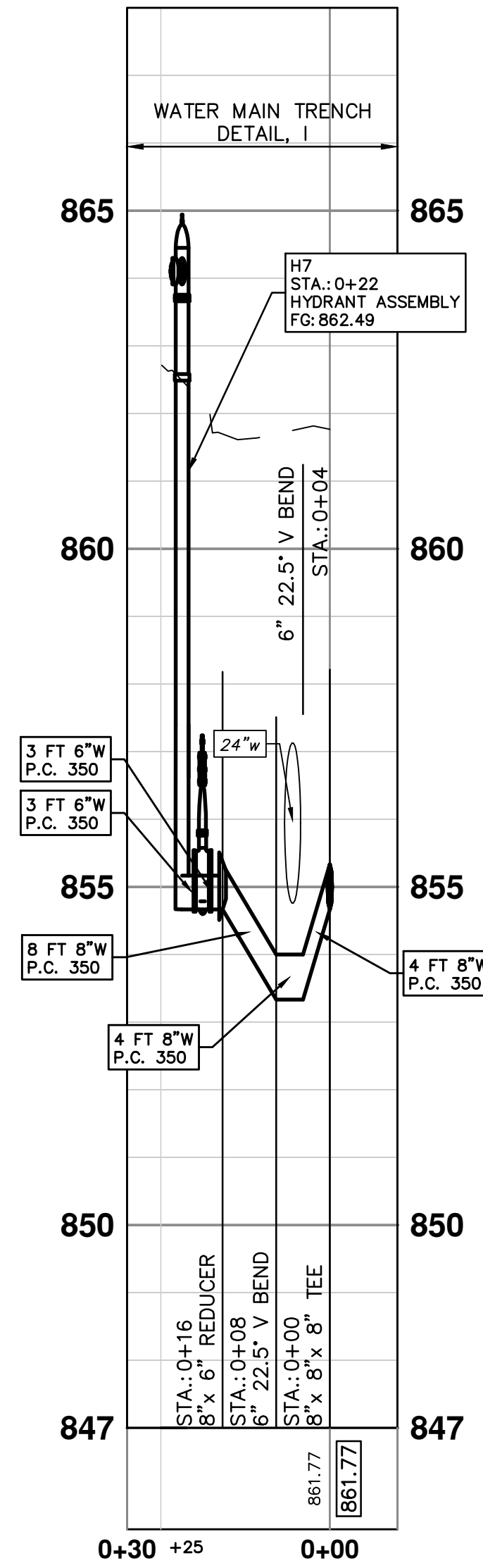
CITY OF ANN ARBOR  
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www.a2gov.org



**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**CREST, BUENA VISTA, WASHINGTON WATER MAIN**  
HYDRANT PROFILES  
H4, H5, H6



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	STATION	RIM	DEPTH
H7	HYDRANT ASSEMBLY	???	862.49	7.82
H8	HYDRANT ASSEMBLY	???	861.46	5.71



REV.	DATE	DESCRIPTION
00	2-6-18	DRAWN
01	2-23-18	CHECKED

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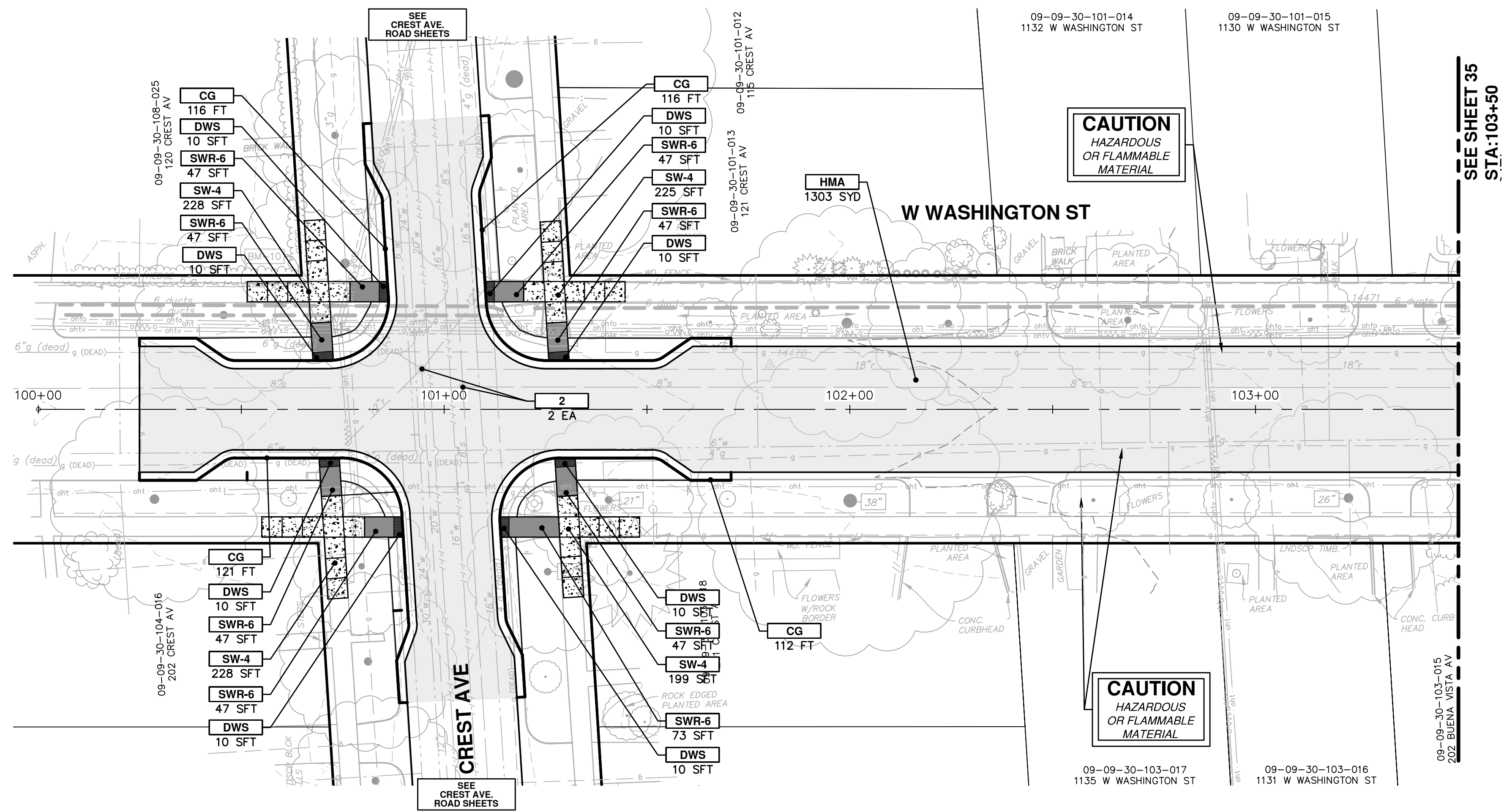


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING  
CREST, BUENA VISTA, WASHINGTON WATER MAIN  
HYDRANT PROFILES  
H7, H8

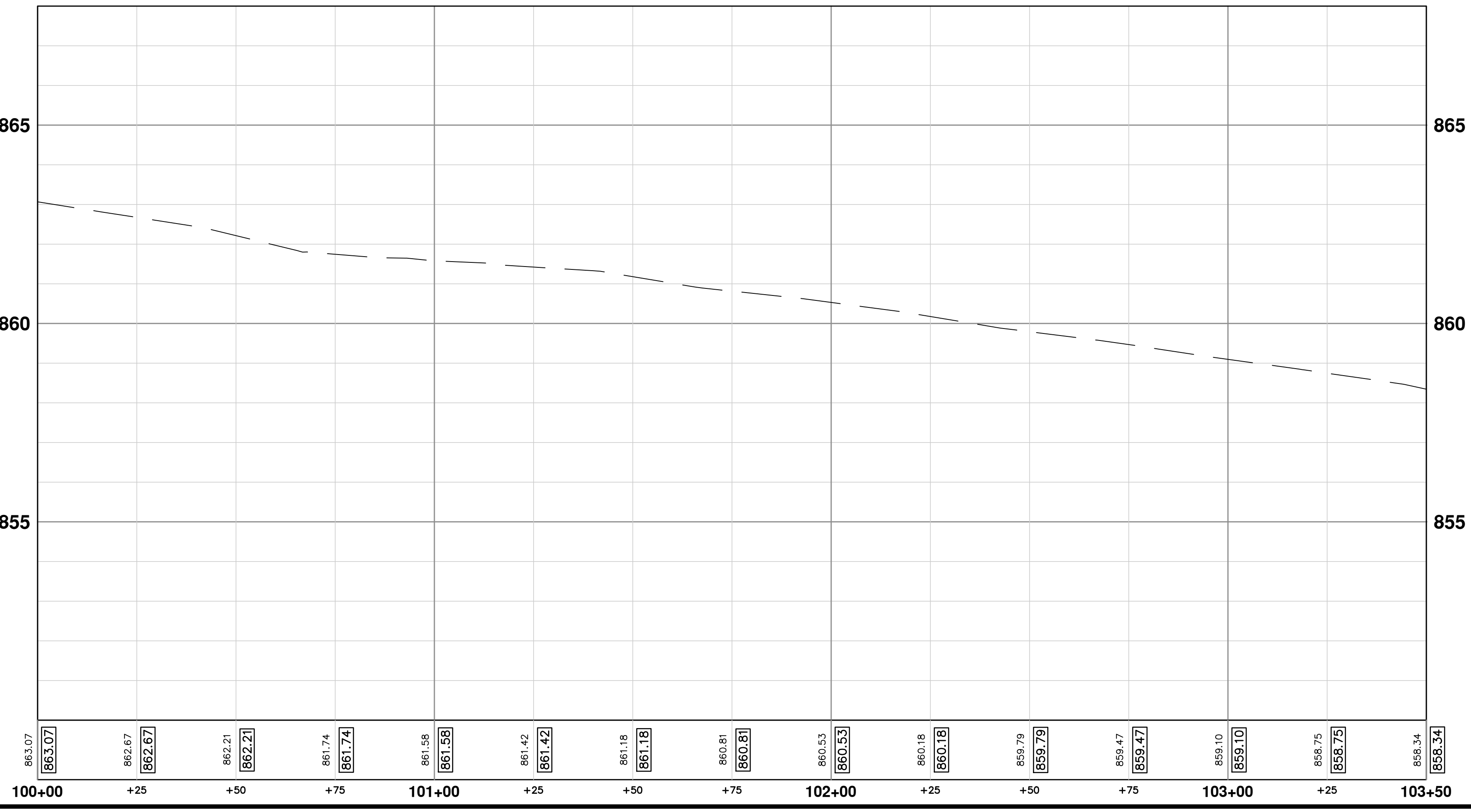
SCALE PLAN: #####  
PROFILE: 1" = 2'  
DRAWING No. 2016029-32







CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC, DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



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

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

WASHINGTON ST. ROAD PLAN AND PROFILE  
STA. 100+00 TO STA. 103+50

DRAWING No. **2016029-34**

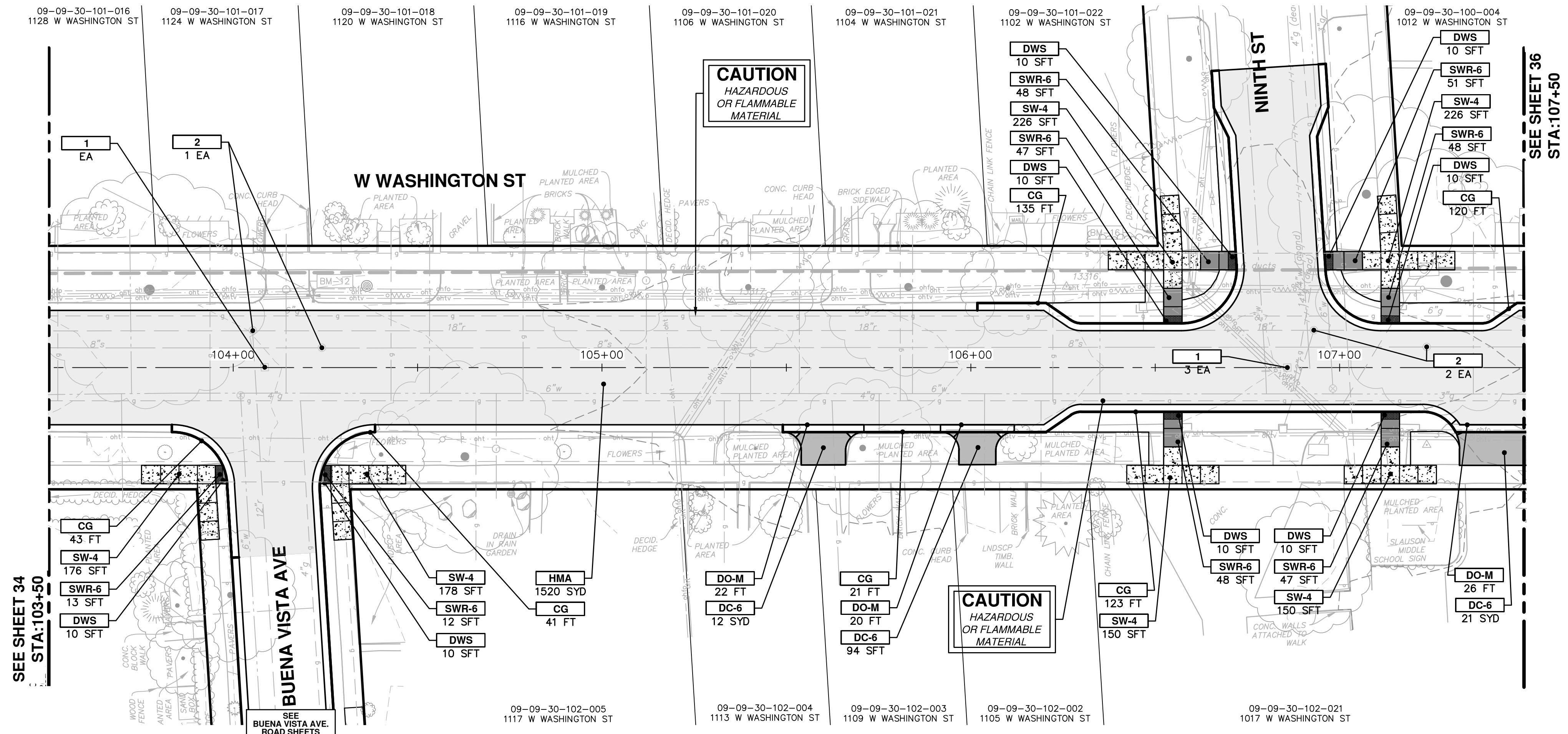
SHEET No. **34 OF 46**

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PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-1667  
www.a2gov.org

01	ADDENDUM #1	DATE	DESCRIPTION
00	OUT FOR BID	2-23-18	CEC/DFP
		2-6-18	CEC/DFP
			DRAWN
			CHECKED

Know what's below.  
Call Before you dig.

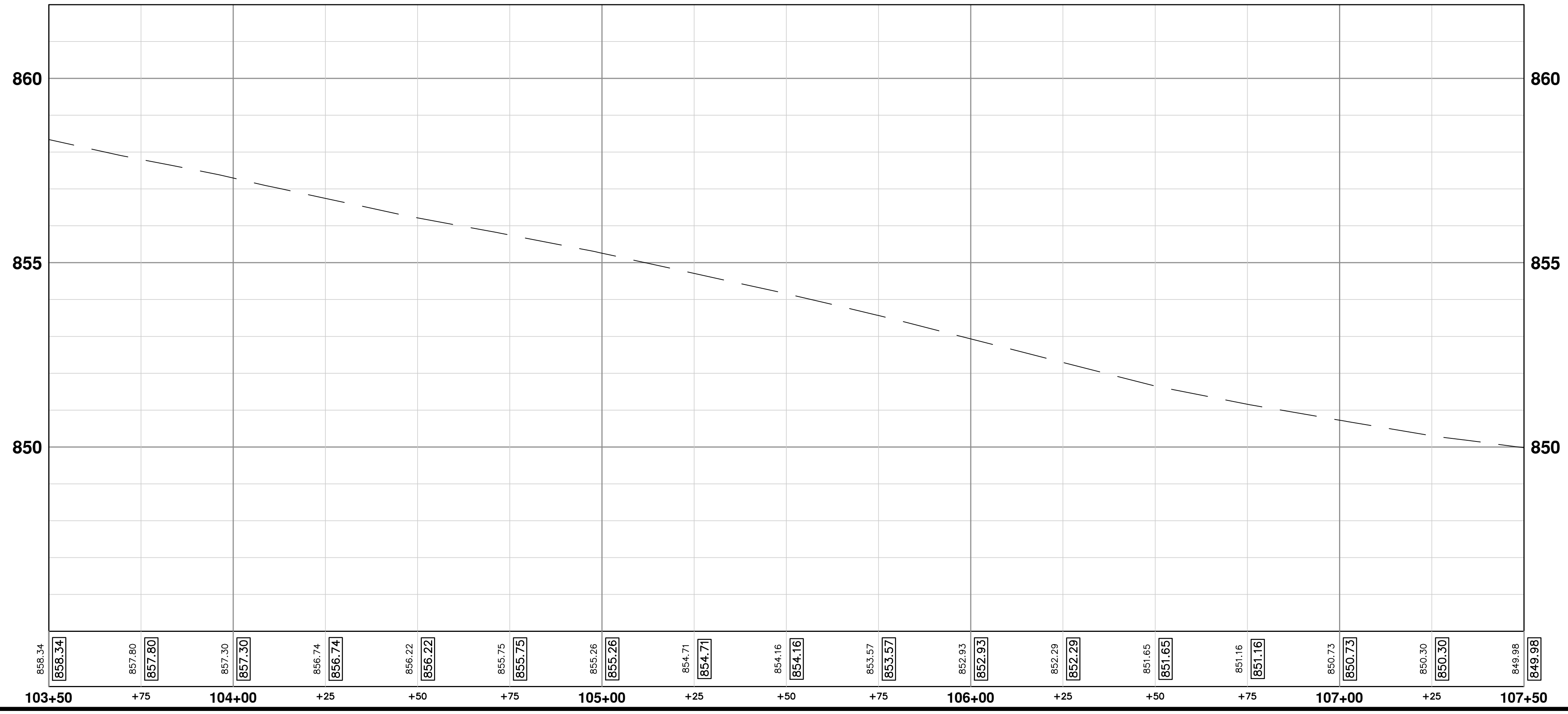




SEE SHEET 36  
STA: 107+50

SEE SHEET 34  
STA: 103+50

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC. F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC. DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC. 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC. 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



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

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

WASHINGTON ST. ROAD PLAN AND PROFILE  
STA. 103+50 TO STA. 107+50

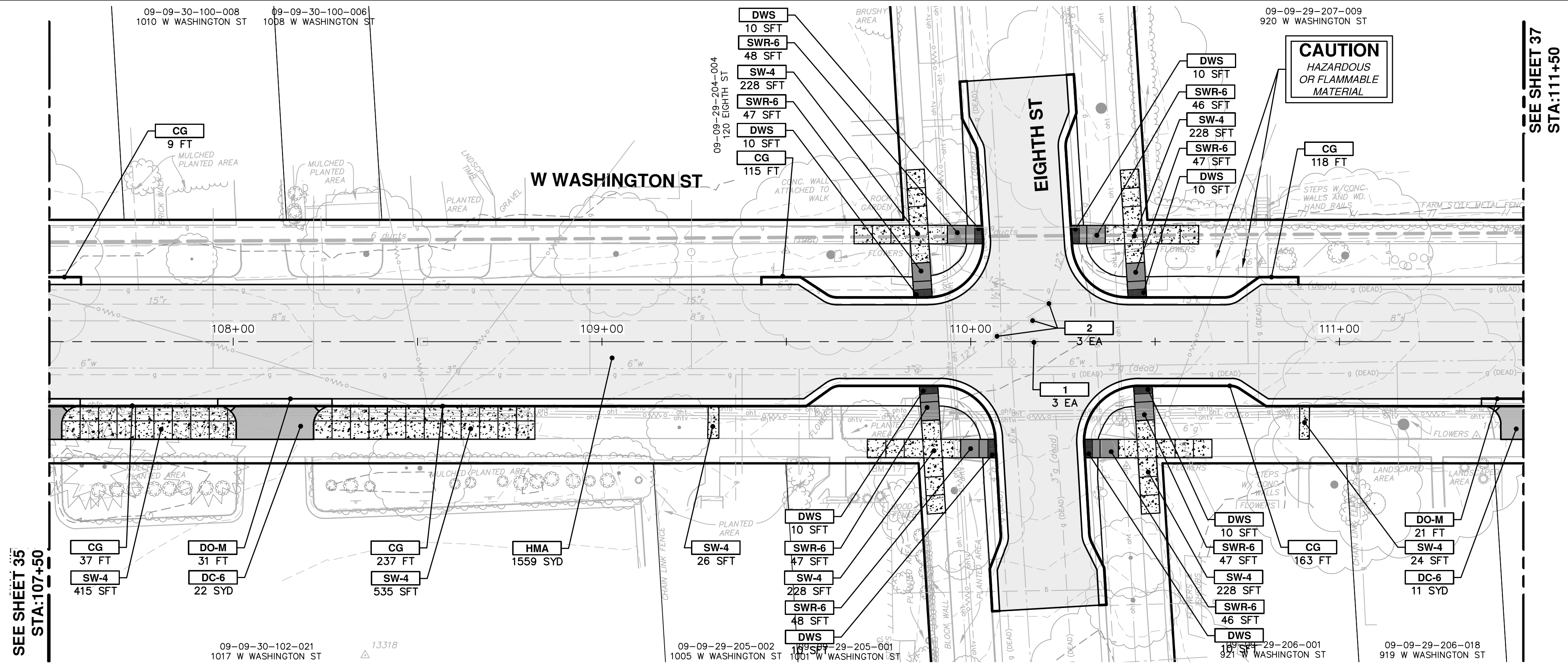
DRAWING No. **2016029-35**

SHEET No. **35 OF 46**

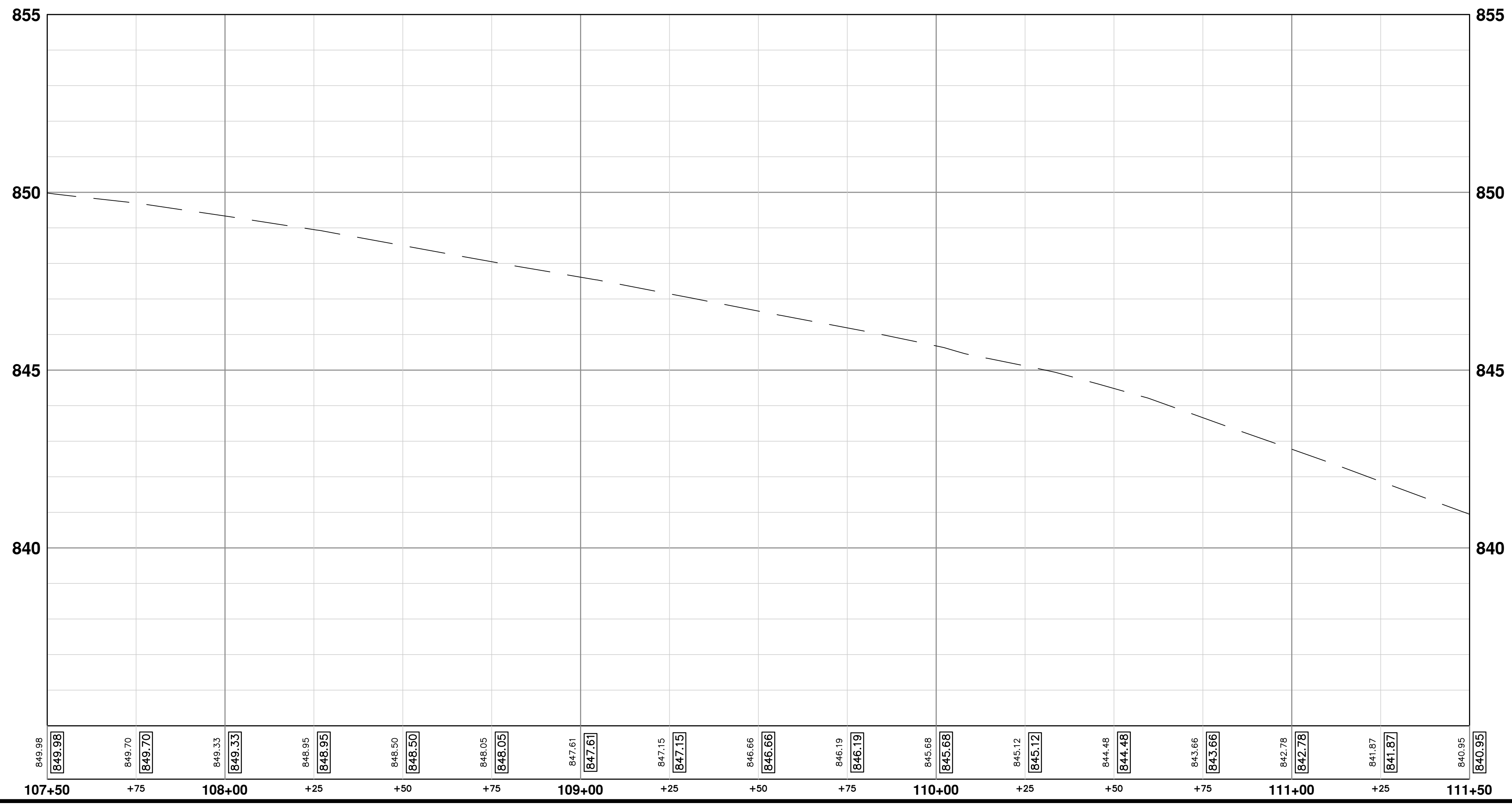
01	ADDENDUM #1	DATE	REVISION
00	OUT FOR BID	2-23-18	CEC/DFP
		2-6-18	CEC/DFP
			DRAWN
			CHECKED
			JKA
			JKA

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Know what's below.  
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SEE SHEET 37  
STA:111+50



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC. F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC. DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC. 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC. 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

WASHINGTON ST. ROAD PLAN AND PROFILE  
STA. 107+50 TO STA. 111+50

DRAWING No. **2016029-36**

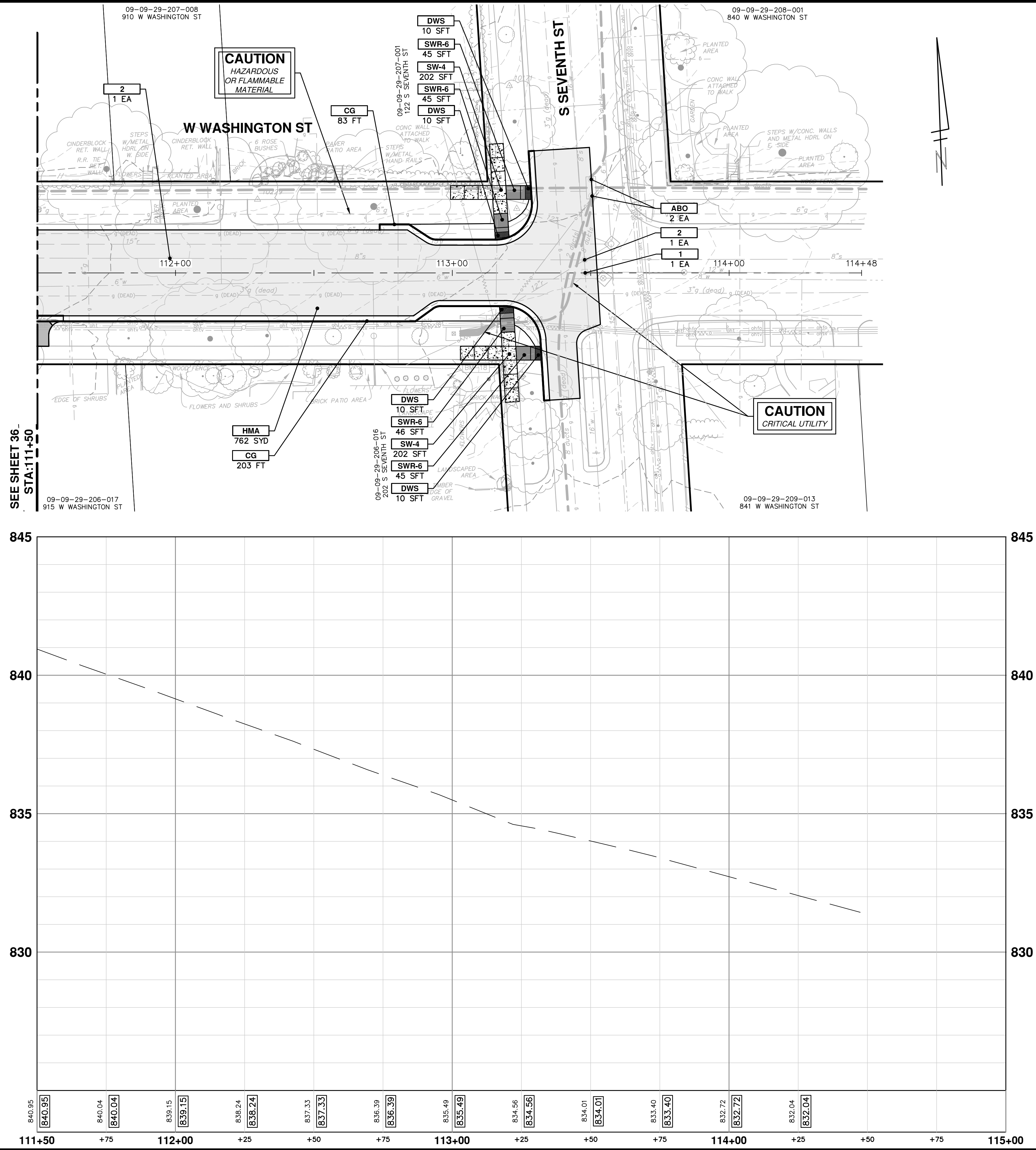
SHEET No. **36 OF 46**

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01	ADDENDUM #1	DATE	DESCRIPTION
00	OUT FOR BID	2-6-18	DRAWN
		2-23-18	CHECKED

CEC/DFP JKA  
CEC/DFP JKA

Know what's below.  
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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

WASHINGTON ST. ROAD PLAN AND PROFILE  
STA. 111+50 TO STA. 114+48

DRAWING No. **2016029-37**

SHEET No. **37 OF 46**

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

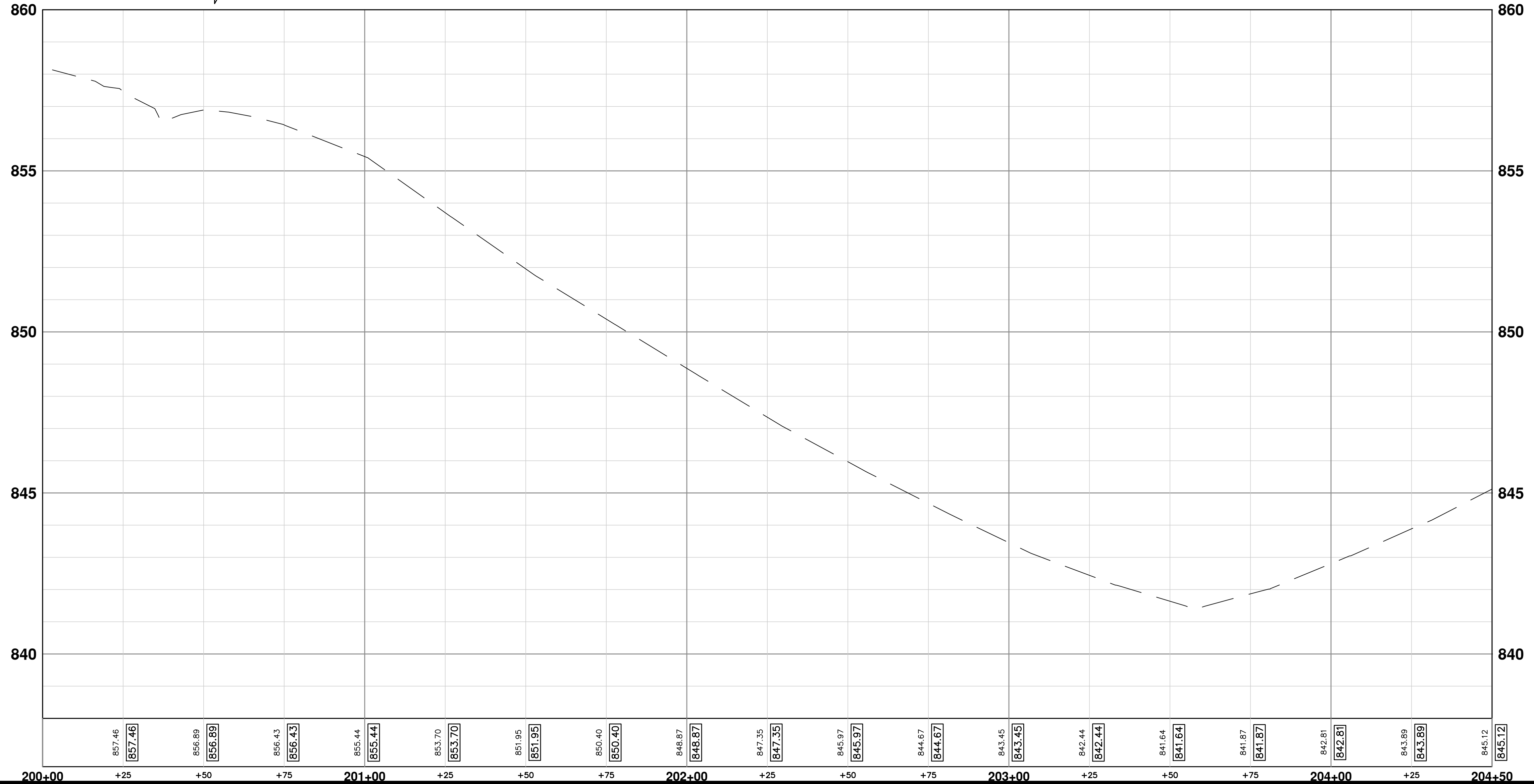
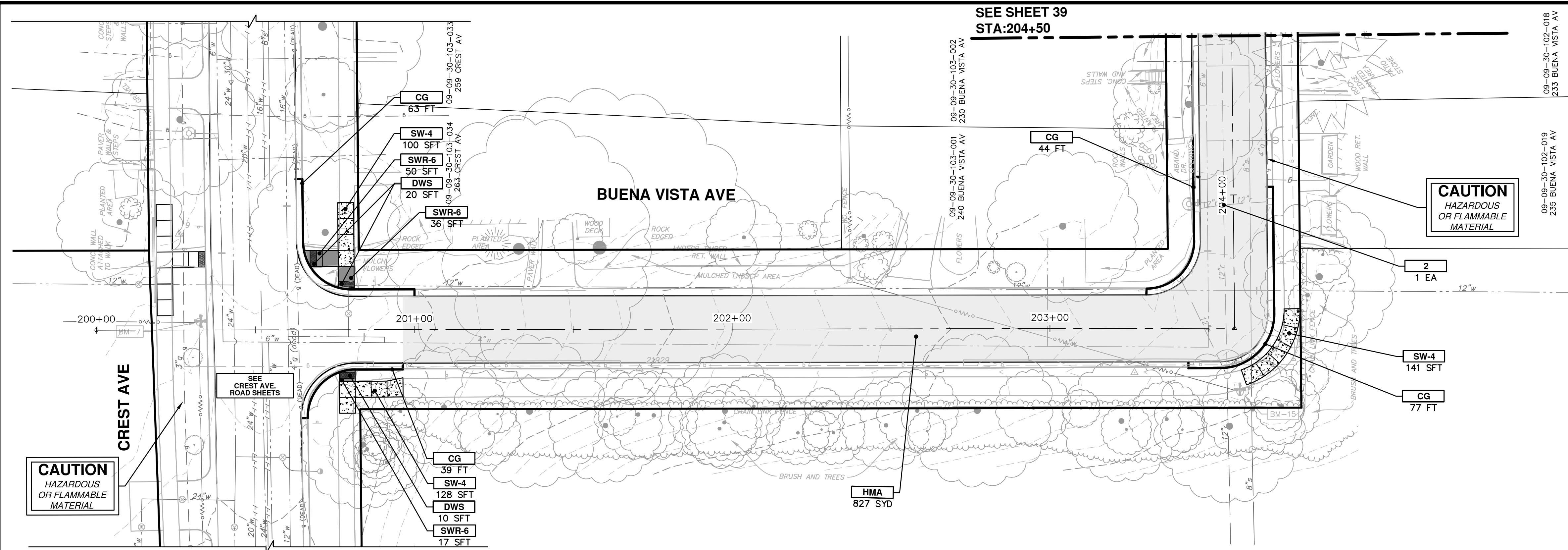
CITY OF ANN ARBOR  
PUBLIC SERVICES  
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ANN ARBOR MI 48106-8647  
www.a3gov.org

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

REV.	DATE	DESCRIPTION
01	2-23-18	CEC/DFP
00	2-6-18	CEC/DFP

ADDENDUM #1  
OUT FOR BID





CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

BUENA VISTA AVE ROAD PLAN AND PROFILE  
STA. 200+00 TO STA. 204+50

DRAWING No. **2016029-38**

SHEET No. **38 OF 46**

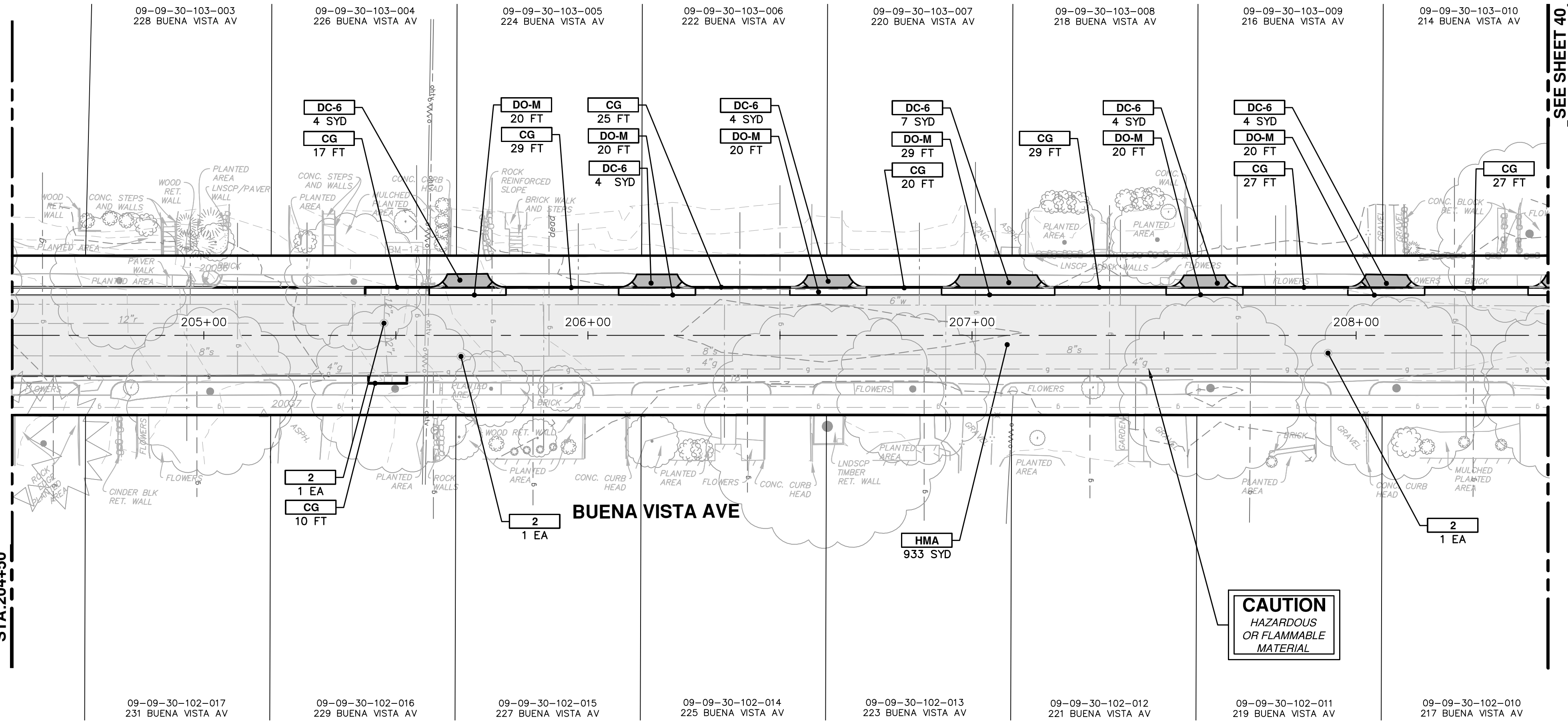
**811**  
Know what's below. Call before you dig.

REV.	DATE	DESCRIPTION	CHECKED
01	2-23-18	CEC/DFP	JKA
00	2-6-18	CEC/DFP	JKA

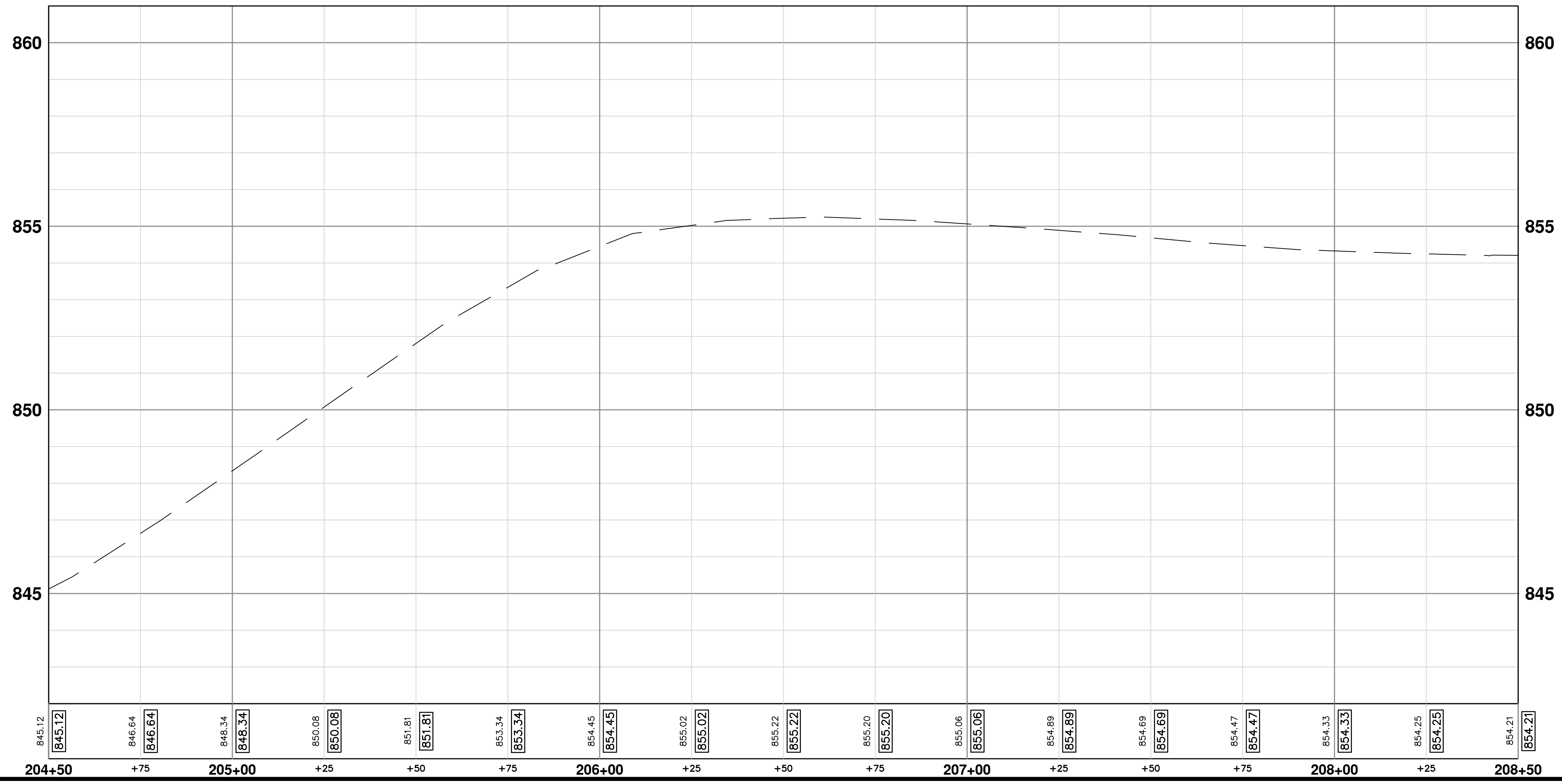
ADDENDUM #1  
OUT FOR BID

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ANN ARBOR MI 48106-8647  
ANN ARBOR MI 734-794-4410  
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SEE SHEET 38  
STA: 204+50

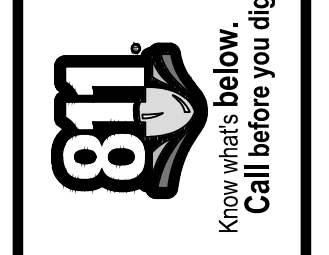


SEE SHEET 40  
STA: 208+50



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

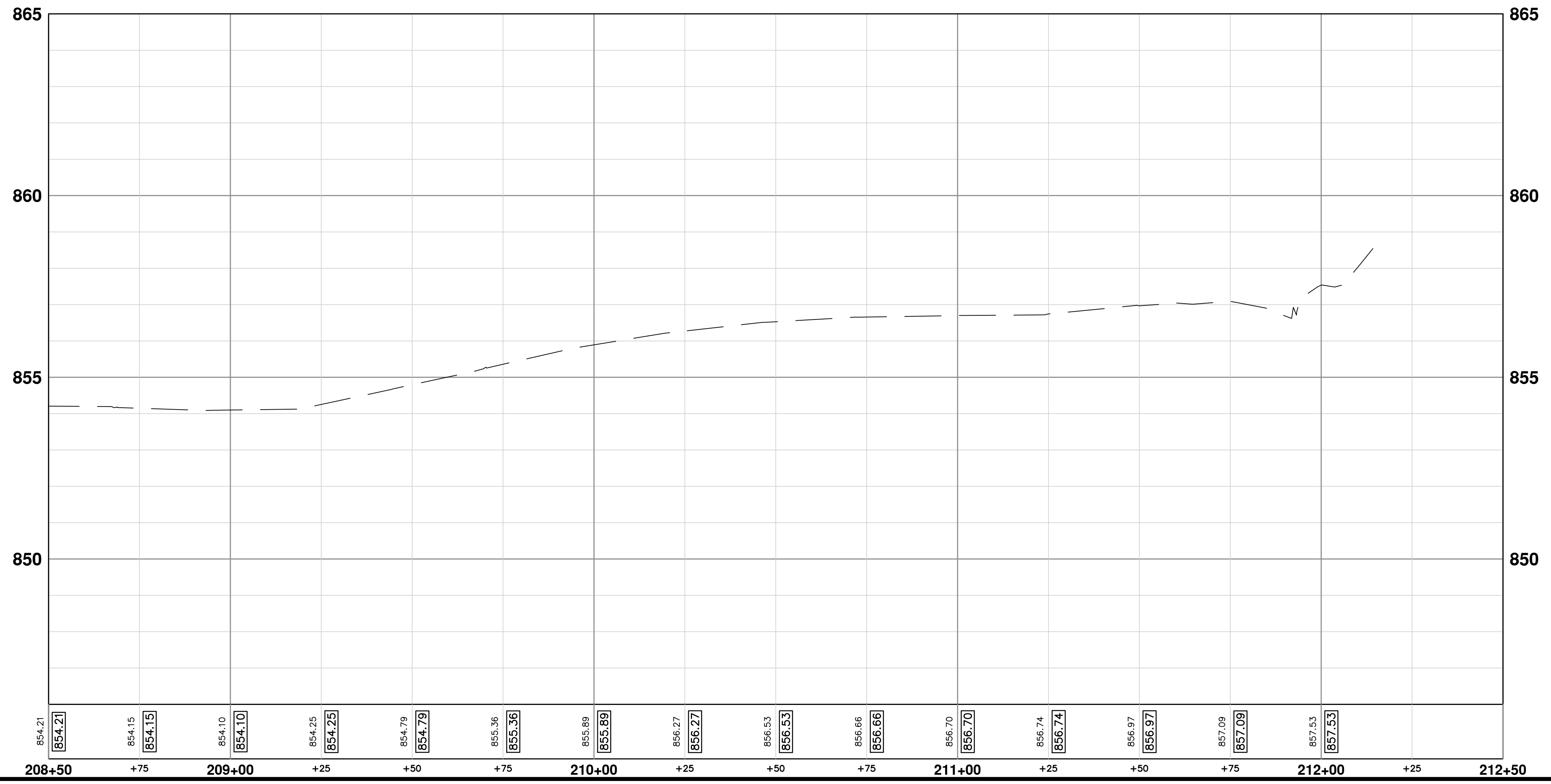
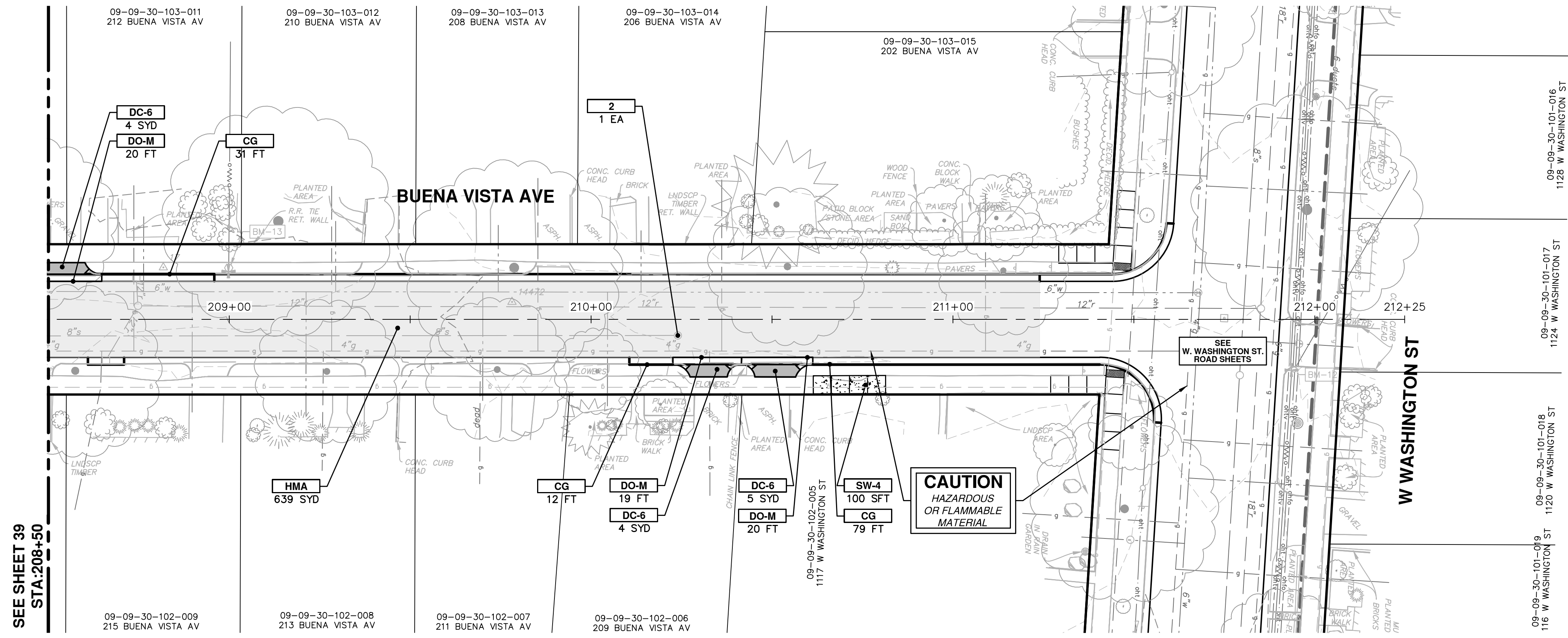
**CAUTION**  
HAZARDOUS  
OR FLAMMABLE  
MATERIAL



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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
**CREST, BUENA VISTA, WASHINGTON WATER MAIN**  
BUENA VISTA AVE ROAD PLAN AND PROFILE  
STA. 204+50 TO STA. 208+50





CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC, DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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

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

DRAWING No. **2016029-40**

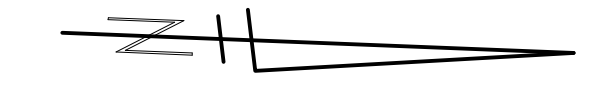
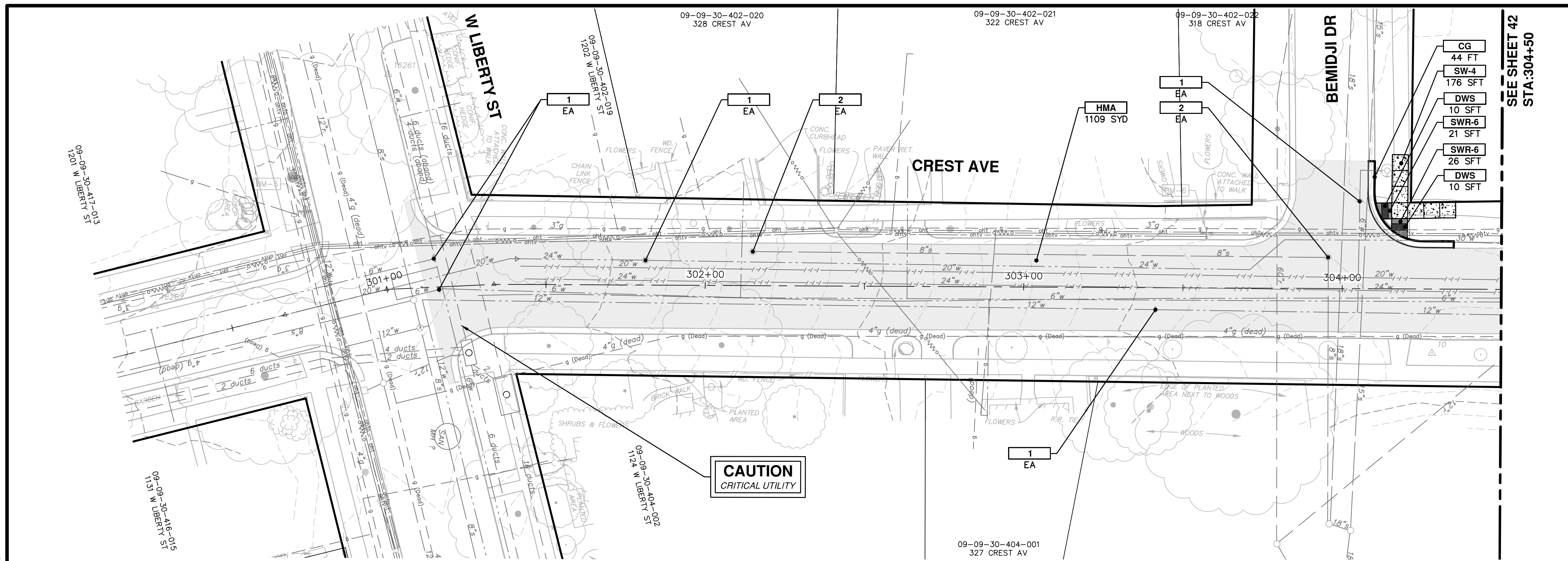
SHEET No. **40 OF 46**

**CITY OF ANN ARBOR**  
PUBLIC SERVICES  
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ANN ARBOR, MI 48106-0667  
www.a2gov.org

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**  
BUENA VISTA AVE ROAD PLAN AND PROFILE  
STA. 208+50 TO STA. 212+50

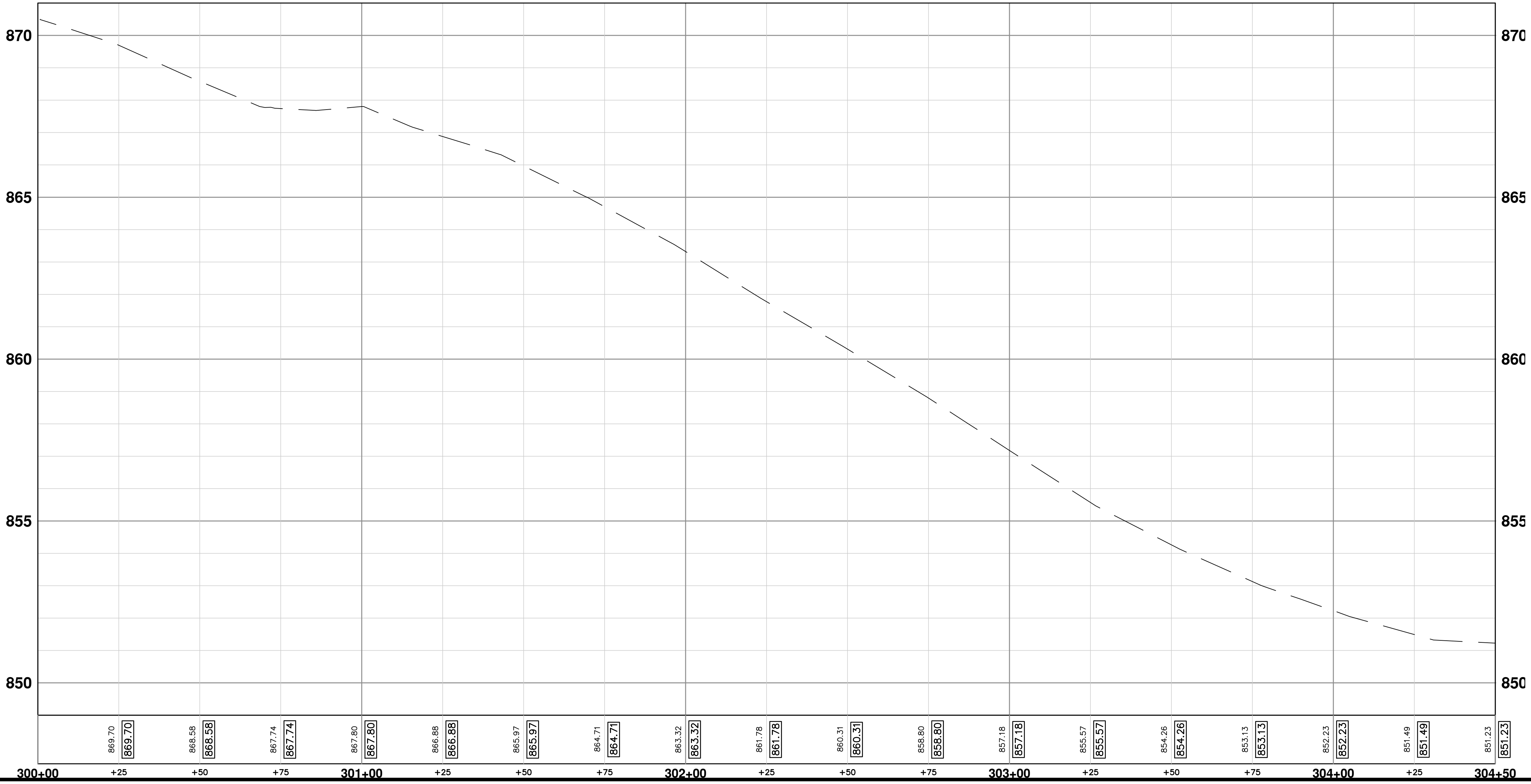
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
01	ADDENDUM #1	2-23-18	CEC/DFP	JKA
00	OUT FOR BID	2-6-18	CEC/DFP	JKA

Know what's below. Call before you dig.



SEE SHEET 42  
STA. 304+50

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC. F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC. DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC. 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, GIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC. 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC. 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



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

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

CREST AVE. ROAD PLAN AND PROFILE  
STA. 300+00 TO STA. 304+50

DRAWING No. 2016029-41

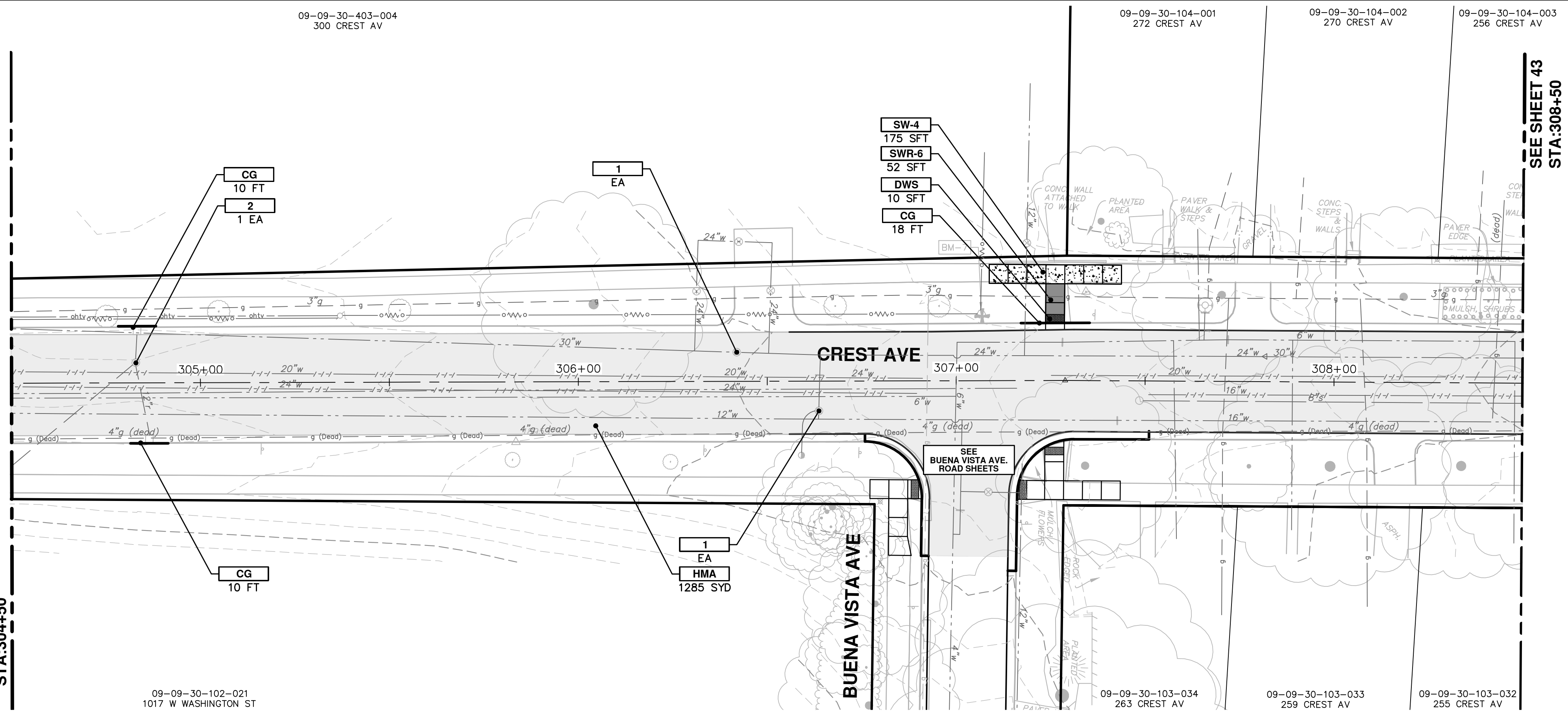
SHEET No. 41 OF 46

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01	ADDENDUM #1	DATE	DESCRIPTION
00	OUT FOR BID	2-6-18	DRAWN
REV.		2-23-18	CHECKED

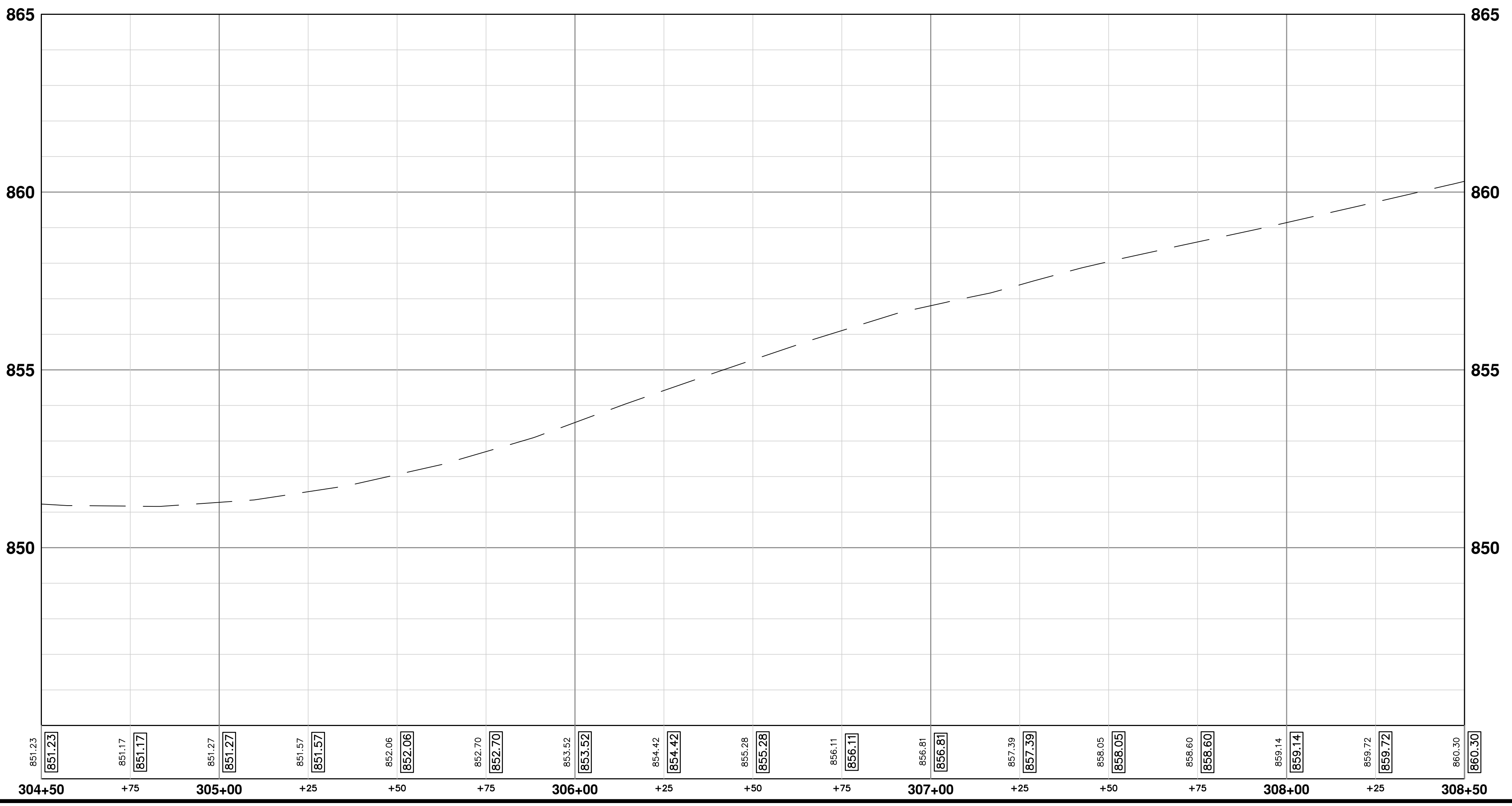
CEC/DFP JKA  
CEC/DFP JKA

Know what's below.  
Call Before you dig.



SEE SHEET 43  
STA: 308+50

SEE SHEET 41  
STA: 304+50



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

CREST AVE. ROAD PLAN AND PROFILE  
STA. 304+50 TO STA. 308+50

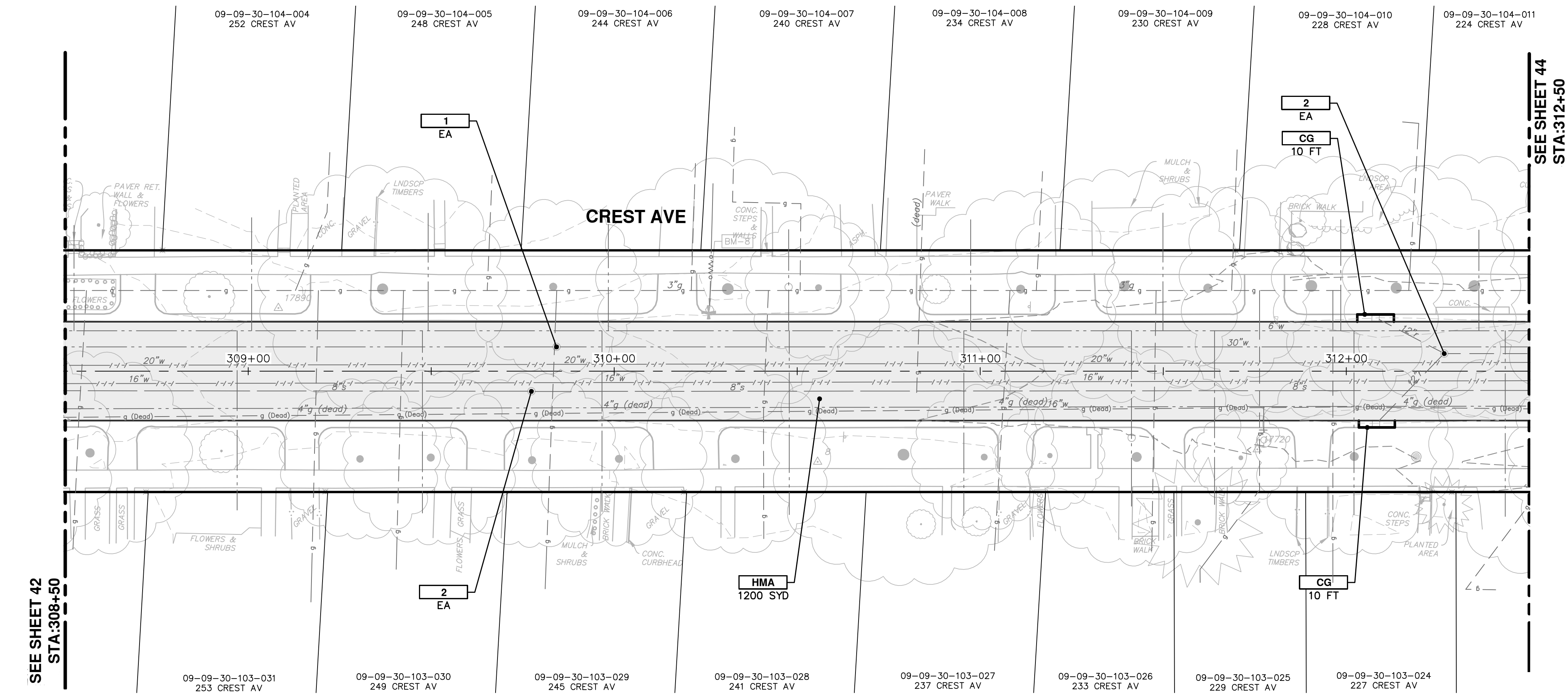
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

DRAWING No. **2016029-42**

SHEET No. **42 OF 46**

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-1667  
www.aagov.org

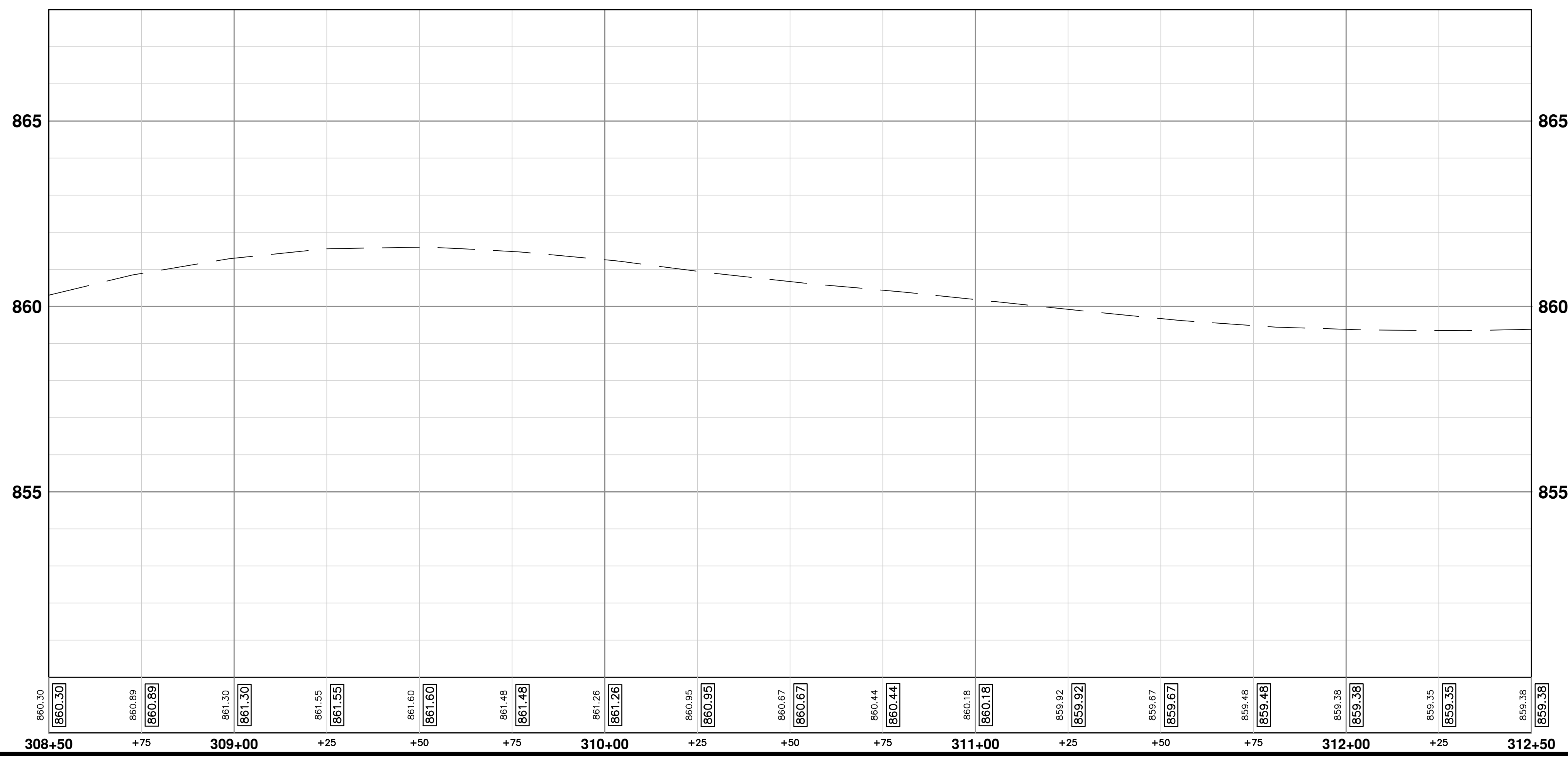
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
01	ADDENDUM #1	2-23-18	JKA	JKA
00	OUT FOR BID	2-6-18	CEC/DFP	CEC/DFP



SEE SHEET 44  
STA: 312+50

SEE SHEET 42  
STA: 308+50

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

CREST AVE. ROAD PLAN AND PROFILE  
STA. 308+50 TO STA. 312+50

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

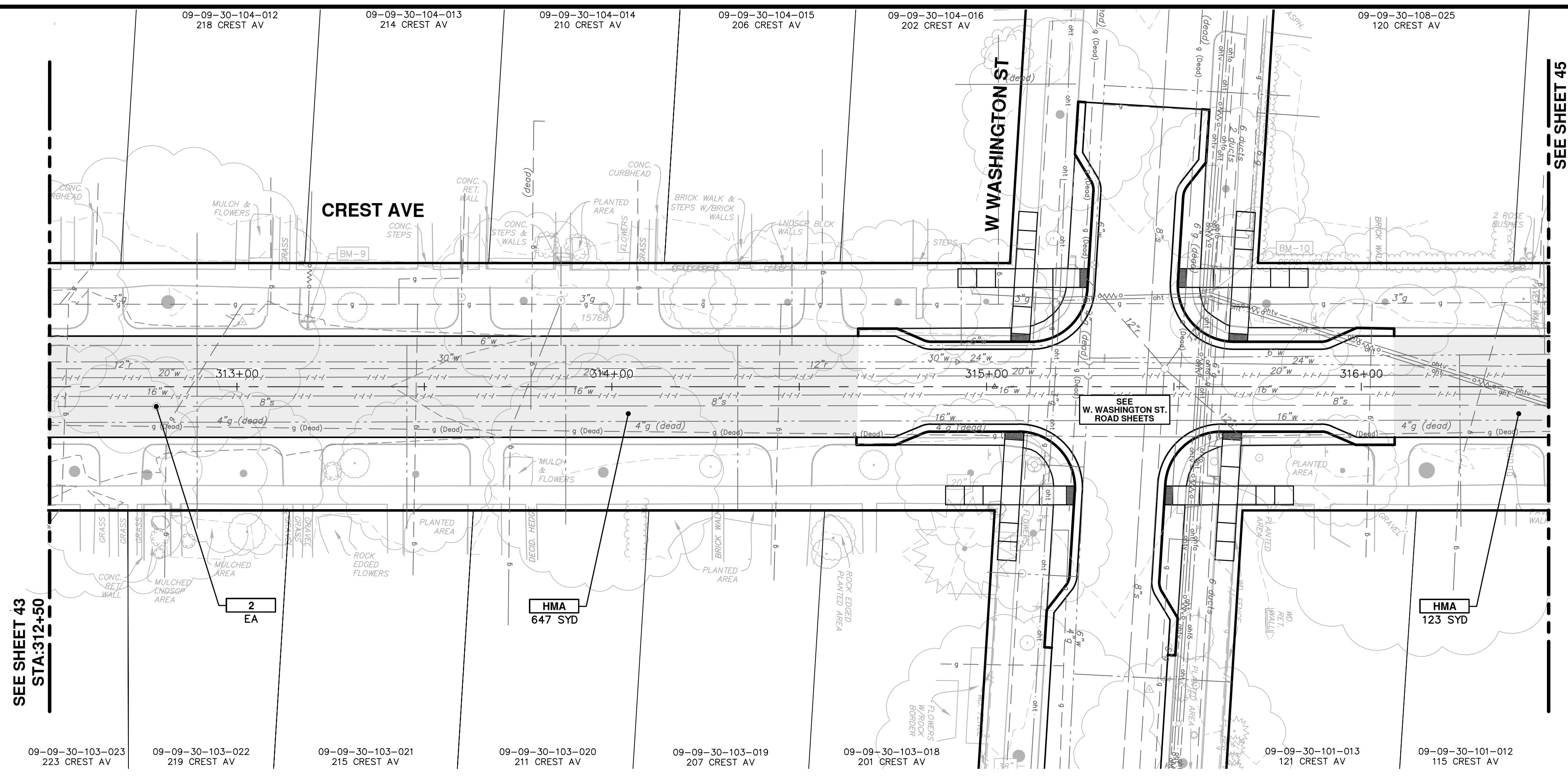
DRAWING No. **2016029-43**

SHEET No. **43 OF 46**

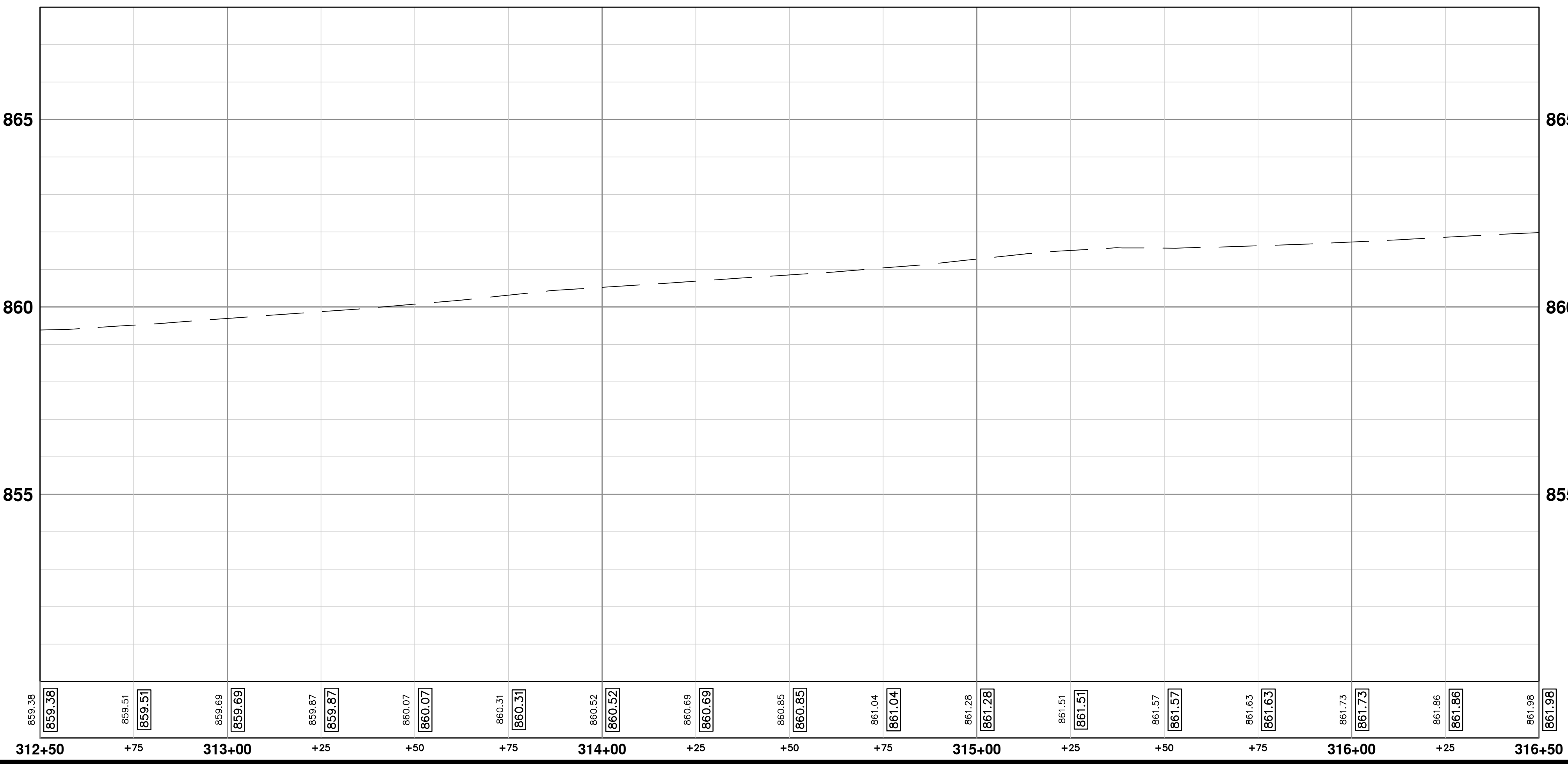
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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
01	ADDENDUM #1	2-23-18	JKA	JKA
00	OUT FOR BID	2-6-18	CEC/DFP	CEC/DFP





SEE SHEET 45  
STA:316+50



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

CREST AVE. ROAD PLAN AND PROFILE  
STA. 312+50 TO STA. 316+50

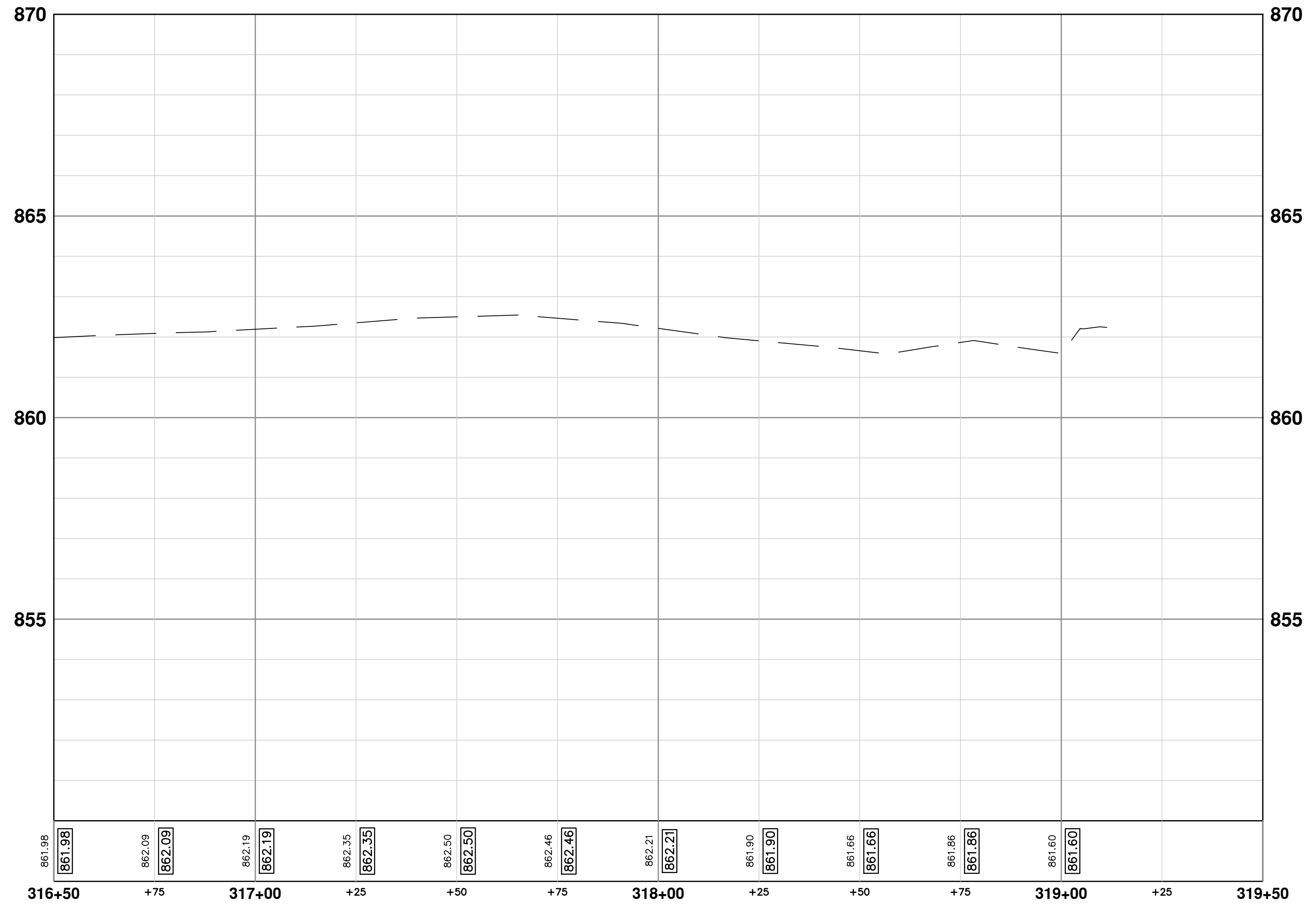
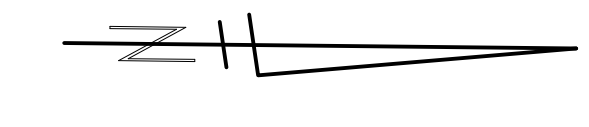
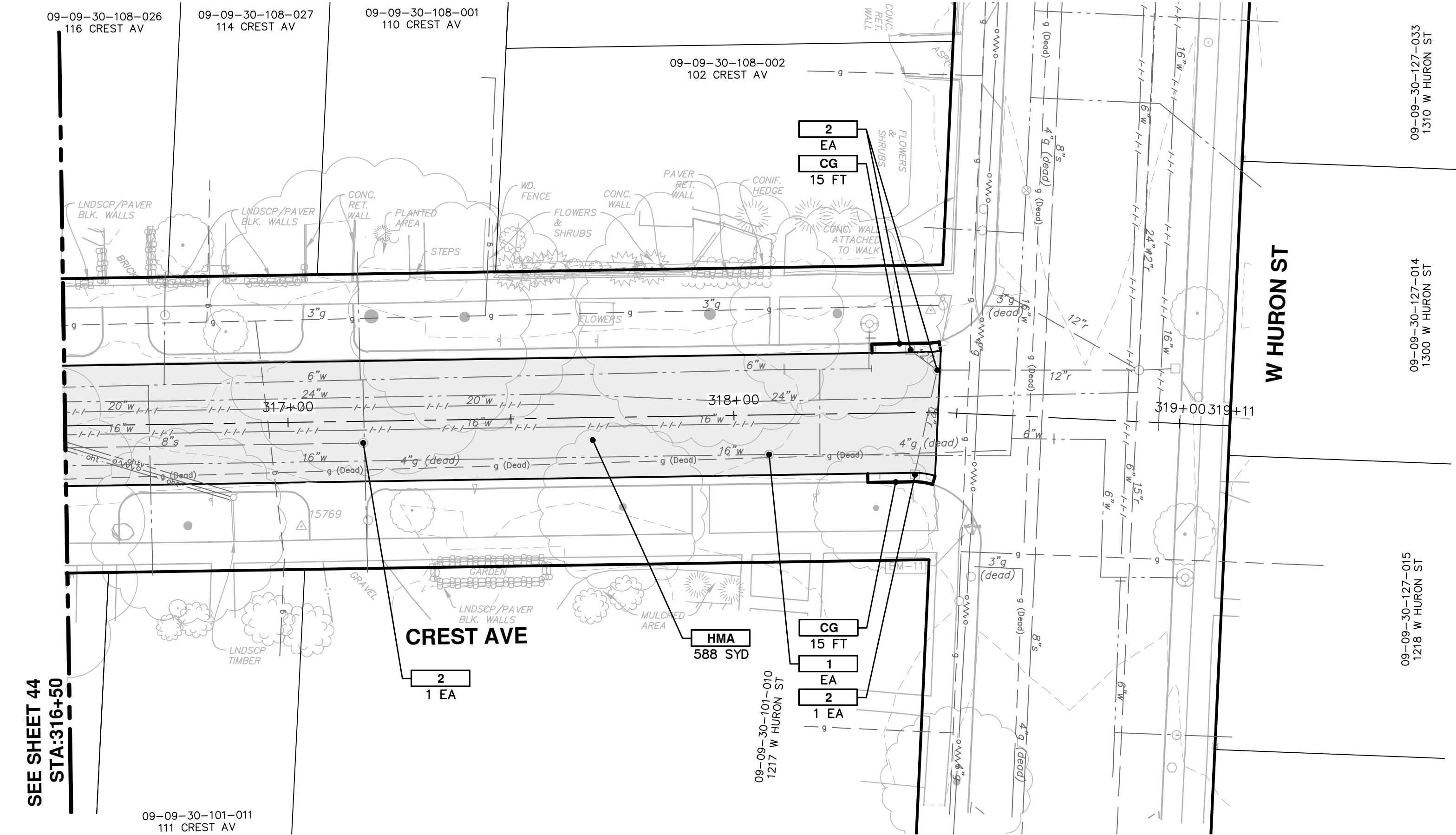
SCALE PLAN: 1" = 20'  
PROFILE: 1" = 2'

DRAWING No. 2016029-44

SHEET No. 44 OF 46

CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR MI 48106-1667  
www.aagov.org

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
01	ADDENDUM #1	2-23-18	CEC/DFP	JKA
00	OUT FOR BID	2-6-18	CEC/DFP	JKA



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
CG	PLACE CURB AND GUTTER, CONC, F4, SPECIAL
DO-M	PLACE DRIVEWAY OPENING, CONC, DETAIL M, P-NC
DC-6	PLACE CONC. DRIVE APPROACH, NON-REINFORCED, P-NC, 6 INCH. PLACE AND COMPACT 6 INCH SUBBASE, CIP, CLASS II GRANULAR MATERIAL, MODIFIED.
SW-4	PLACE SIDEWALK, CONC, 4 INCH, MODIFIED
SWR-6	PLACE SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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

**CREST, BUENA VISTA, WASHINGTON WATER MAIN**

CREST AVE. ROAD PLAN AND PROFILE  
STA. 316+50 TO STA. 319+11

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

DRAWING No. **2016029-45**

SHEET No. **45 OF 46**

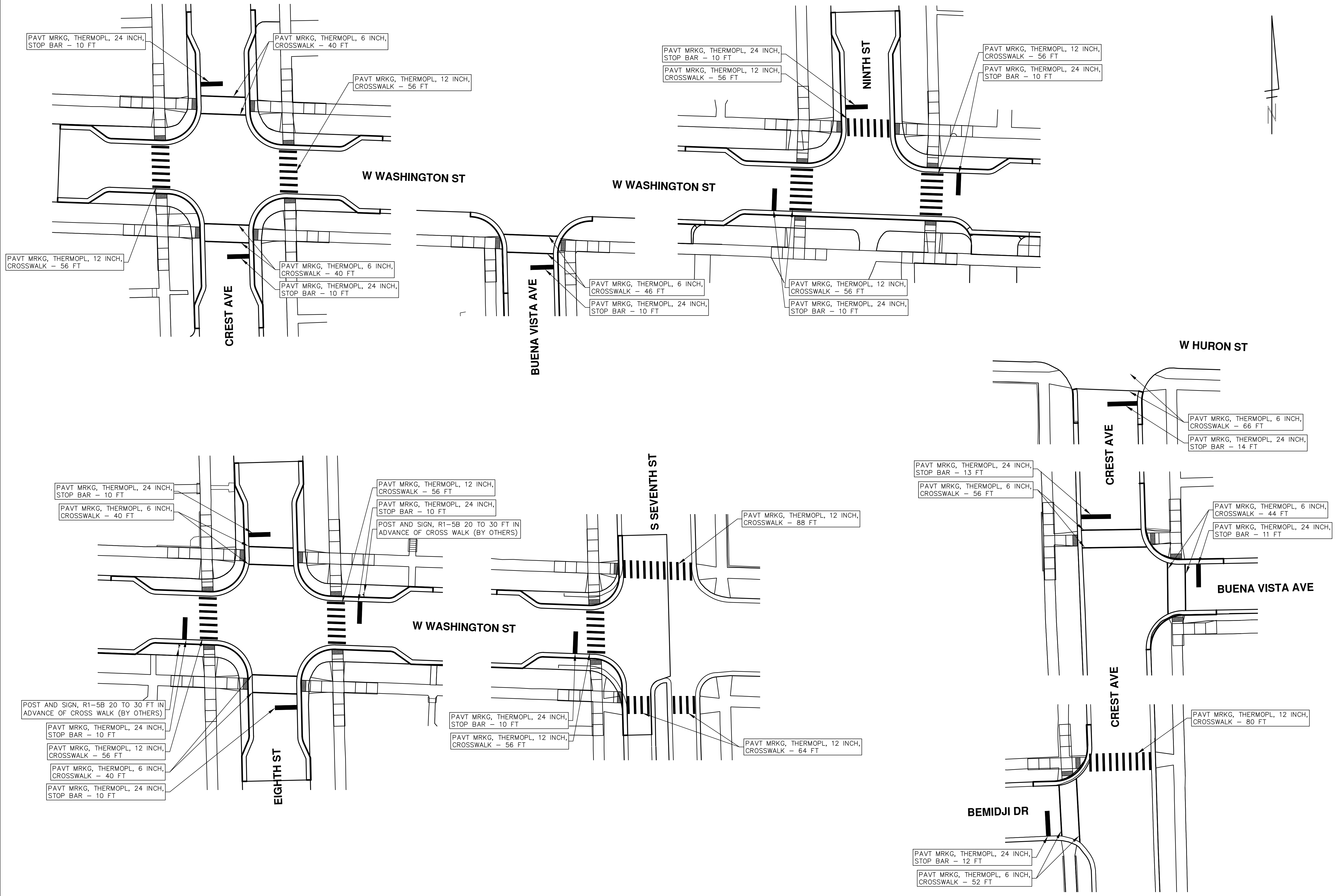
CITY OF ANN ARBOR  
PUBLIC SERVICES  
301 EAST HURON STREET  
ANN ARBOR, MI 48106-0667  
www.a2gov.org

REV.	DATE	DESCRIPTION
01	2-23-18	ADDENDUM #1
00	2-6-18	OUT FOR BID

CEC/DFP JKA  
CEC/DFP JKA  
DRAWN  
CHECKED

Know what's below.  
Call Before you dig.

R:\2016029 Crest Buena Wash Lib WA\Plan Production\2016029Pmk.dwg Dwg Created: 6-Feb-18 - \_g2 standard bw.stb - Plot Date: 23-Feb-18



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

01 ADDENDUM #1  
2-23-18  
CEC/DPF

00 OUT FOR BID  
2-6-18  
CEC/DPF

DATE DRAWN CHECKED

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**CITY OF ANN ARBOR**  
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301 EAST HURON STREET  
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DESCRIPTION

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**CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING**  
CREST, BUENA VISTA, WASHINGTON WATER MAIN

SCALE PLAN: 1" = 20'

DRAWING No. 2016029-46

PAVEMENT MARKINGS

SHEET No. 46 OF 46