



CITY OF ANN ARBOR ENGINEERING

BARTON DRIVE IMPROVEMENTS

BID No. ITB 4617, FILE No. 2019005

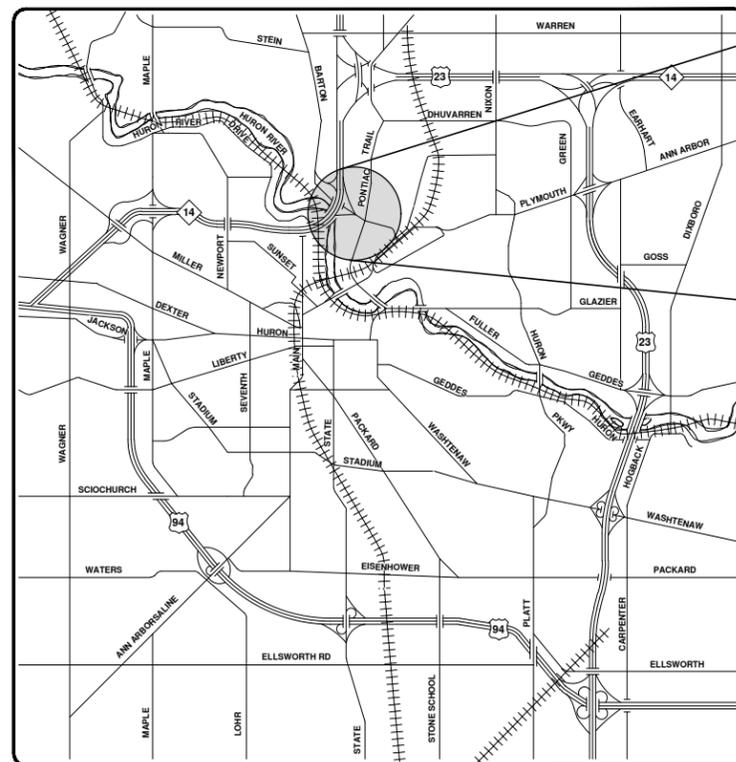
NOTES:

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.

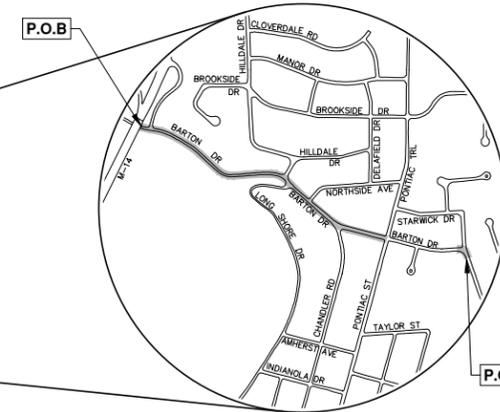
THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. MISS DIG MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.

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.

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VICINITY MAP



TRAFFIC DATA	
2020 ANNUAL DAILY TRAFFIC (ADT)	4,644
2040 ADT	5,666
2020 COMMERCIAL	2.9%
2040 COMMERCIAL	2.9%

PREPARED UNDER THE SUPERVISION OF

Jane K. Allen
JANE KATHERINE ALLEN, P.E. - MI LICENSE No. 57254
 PROJECT MANAGER



2 / 28 / 2020
 DATE

Know what's below.
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REV.	DESCRIPTION	DATE	BY	CHECKED
00	OUT FOR BID	2-28-20	JKA	
			EC:DPF:AE	DRAWN

CITY OF ANN ARBOR
 PUBLIC SERVICES
 301 EAST HURON STREET
 ANN ARBOR, MI 48106-8667
 ANN ARBOR 734-769-4410
 WWW.A2GOV.ORG

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

PROJECT DESCRIPTION AND LIMITS

SCALE

DRAWING No. 2019005-1

SHEET No. 1 OF 61

CONSTRUCTION NOTES:

- Driveways and entrances to buildings, real property, and the like shall not be blocked except for short durations and only when approved by the Engineer. Vehicular and pedestrian access shall be maintained at all times. It shall be the Contractor's responsibility to coordinate all necessary driveway closures with the property owner(s) and resident(s) in the areas of construction.
- The location and depth of all existing utilities and service leads are to be field verified by the Contractor prior to construction.
- Location and depth of utilities as depicted on the plans is approximate and shown according to the best information available. It is the Contractor's responsibility to excavate ahead and adjust depth of conflict utilities accordingly. Any damage to utilities is the Contractor's responsibility to avoid and/or repair as necessary.
- The Contractor is to take special care to protect the existing water main and be responsible for maintaining consistent water service.
- During non-working hours no trench shall remain open; any open trench shall be properly secured with protective fencing. This work shall be included in the item of work "General Conditions".
- Trenches for new water services shall be excavated to MIOSHA and City of Ann Arbor Public Works requirements.
- City of Ann Arbor Public Works will install the corporation and copper service lead(s) to transfer the connection(s). If an existing water service is found to be failing or is not copper, the lead will be replaced to the curb box by Public Works.
- For the installation of corporations, or any other related activities, the Contractor shall not receive additional compensation for delays due to the scheduling of or coordination with the City of Ann Arbor Public Works.
- The Contractor shall backfill trenches in accordance with Trench Detail specified on plans. This work shall be included in the item of work "Excavate and Backfill for Water Service Tap and Lead". All concrete removals and replacements required for this work will be paid for separately.
- All ductile iron pipe and fittings shall be polyethylene wrapped per ANSI/AWWA C105/A21.5.
- Cor-blw bolts to be used at all mechanical water main joints at hydrants and Megalug fittings
- The Contractor shall construct, flush, and bacteriologically test the water main per Detailed Specification "Water Main Installation and Testing" and as approved by the Engineer. All chlorinated water shall be discharged directly into an approved sanitary sewer. The Contractor shall supply all necessary hoses, fittings and the like to accomplish this work.
- Water main fittings, other than those specifically listed as separate pay items, which are required to complete the work, such as blow-off assemblies, concrete thrust blocks, solid sleeves and mechanical plugs, shall not be paid for separately, but shall be included in the pipe pay items.
- "No Parking" signs shall be installed by the Contractor at locations as approved or directed by the Engineer. All signs shall be installed in accordance with the detailed specifications.
- Postal delivery and refuse pickup service shall be maintained at all times by the Contractor.
- All fittings, hydrants, valves and castings removed during construction are the property of the City of Ann Arbor. The Contractor within 48 hours shall deliver to City of Ann Arbor Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- Where street curbs are undermined due to construction activities, they shall be removed and replaced as directed by the Engineer.
- The Contractor shall be responsible for the continuous maintenance of the temporary road surface and soil erosion control measures within the construction area until the full completion of the project. This work shall be included in the item of work "General Conditions".
- All curb, sidewalk, driveway approach removals shall be approved by Engineer before the work is done.
- Sawed sewer pipe connections shall be coupled with a 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 paver 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 Public Works Facility at the W.R. Wheeler Service Center located at 4251 Stone School Road.
- Payment for drainage structure sumps, where specified, shall be included in the payment for the various drainage structure sizes and or types.
- Where sewer pipes of different sizes or materials are joined, Fernco flexible couplings with stainless steel shear rings shall be used. The Contractor's purchase price for these devices, including shipping, shall be paid as an extra. Prior to payment for this item, the Contractor shall submit receipts for the Engineer's review and approval. All other 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 MDOT Granular Material, Class II, Modified.
- 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, CHAPTER 55 ANN ARBOR UNIFIED DEVELOPMENT CODE, 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.
- 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
M.D.E.Q. SANITARY SEWER CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

CONTACT INFORMATION

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

BARTON DRIVE IMPROVEMENTS BENCHMARKS

BM #	ELEV	DESCRIPTION
1	844.039	TOP, S. SIDE OF CONC. BASE FOR PEDESTRIAN CROSSING POLE AT N.E. CORNER OF BARTON AND PONTIAC TRAIL.
2	835.372	SET RR SPIKE IN S. SIDE OF U.P. ON N. SIDE OF BARTON IN FRONT OF HSE NO. 709.
3	830.154	SET RR SPIKE IN N.E. SIDE OF L.P. AT THE S.W. CORNER OF BARTON AND CHANDLER.
4	820.265	SET RR SPIKE IN S. SIDE OF U.P. AT THE N.W. CORNER OF BARTON AND NORTHSIDE.
5	815.495	SET RR SPIKE IN S. SIDE OF L.P. ON N. SIDE OF BARTON. ACROSS FROM LONG SHORE DR.
6	803.694	SET RR SPIKE IN S. SIDE OF U.P. ON N. SIDE OF BARTON. 2ND POLE WEST OF BREDE ST.
7	795.991	SET RR SPIKE IN S. SIDE OF U.P. ON N. SIDE OF BARTON. 3RD POLE WEST OF BREDE ST.
8	794.306	FND BOAT SPIKE IN S. SIDE OF U.P. ON N. SIDE OF BARTON, 40± W. OF E. OF DRIVE FOR HSE NO. 221.
9	792.588	SET RR SPIKE IN S. SIDE OF U.P. ON N. SIDE OF BARTON. 28± E. OF E. OF DRIVE FOR HSE NO. 195.
10	790.934	SET RR SPIKE IN S. SIDE OF U.P. ON N. SIDE OF BARTON. 15± E. OF E. OF DRIVE FOR HSE NO. 169.
11	787.839	SET RR SPIKE IN N. SIDE OF L.P. ON S. SIDE OF BARTON. 45± E. OF E. OF ON AND OFF RAMP FOR M-14.



Know what's below.
Call before you dig.

DO	DATE	REV.	DESCRIPTION	
OUT FOR BID	2-28-20	JKA	CHECKED	
REV.	DRAWN	DATE	DESCRIPTION	



CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS

301 EAST HURON STREET
ANN ARBOR, MI 48106-8667
734-794-4410
www.a2gov.org

STANDARD NOTES

2019005-2

SHEET No.

2 OF 61

EXISTING LEGEND

- FIRE HYDRANT
- 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

- WATER MAIN
- WATER MAIN ABANDONED
- STORM SEWER
- STORM SEWER ABANDONED
- SANITARY SEWER
- SANITARY SEWER ABANDONED
- GAS MAIN
- GAS MAIN (DEAD)
- ELECTRICAL OVER HEAD
- ELECTRICAL UNDER GROUND
- ELECTRICAL DUCT BANK
- TELEPHONE OVER HEAD
- TELEPHONE UNDER GROUND
- TELEPHONE DUCT BANK
- CABLE TV OVER HEAD
- CABLE TV UNDER GROUND
- FIBER OPTIC
- FIBER OPTIC DUCT BANK
- BOUNDARY
- BUILDING
- CENTERLINE OF DITCH
- CENTERLINE/CROWN OF ROAD
- CONTOUR MAJOR
- 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
- WATER MAIN
- STORM SEWER
- SANITARY SEWER
- FIBER OPTIC
- ELECTRICAL
- CENTERLINE OF DITCH
- CENTERLINE OF ROAD
- FENCE
- GRAVEL
- SILT FENCE
- PROTECTIVE FENCE
- GUARDRAIL
- LOT/UNIT
- CURB
- TEMPORARY GRADING PERMIT
- CONTOUR MAJOR
- 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

Know what's below.
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REV.	DATE	DESCRIPTION	DRAWN	CHECKED
00	2-28-20	OUT FOR BID	JKA	JKA
01			DEC.DPFAE	

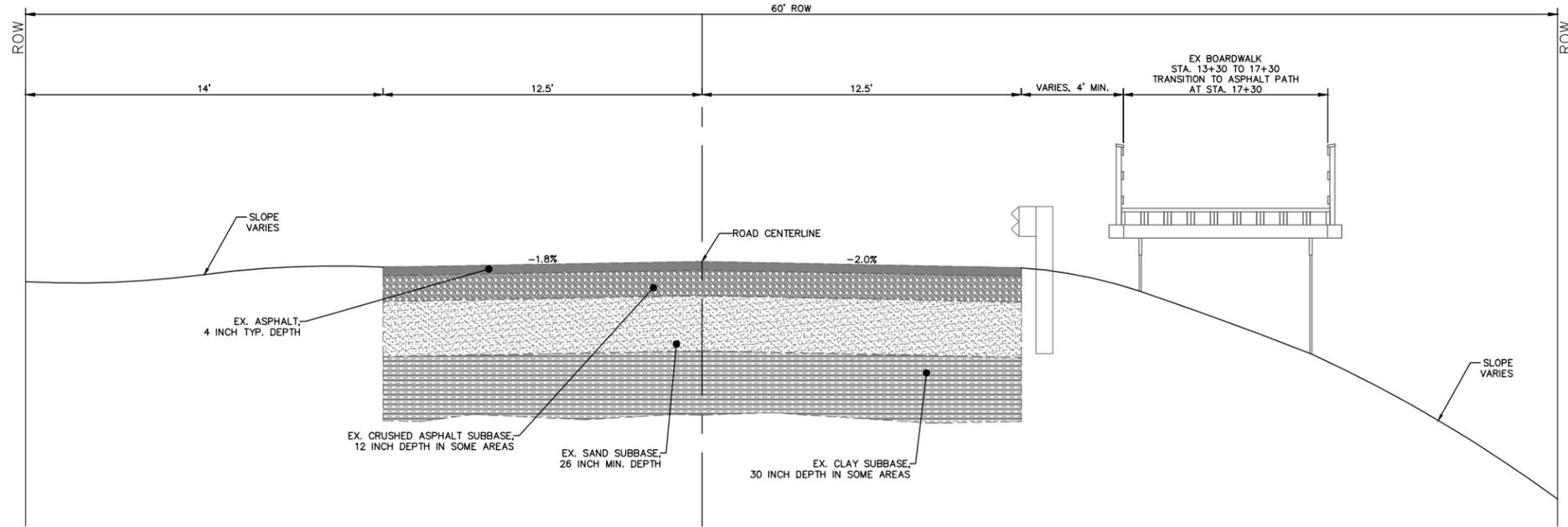
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BARTON DRIVE IMPROVEMENTS

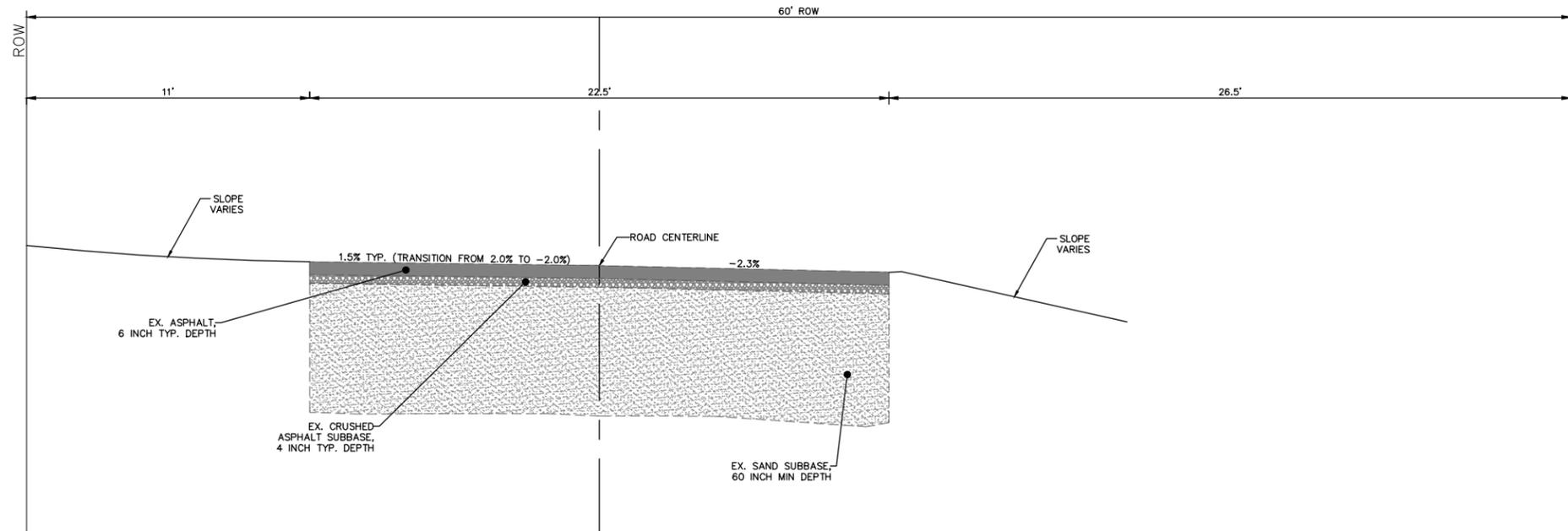
SCALE: NTS
DRAWING No. 2019005-3

SHEET No. 3 OF 61

R:\2019027 Barton Dr.\Plan Production\2019027Det2.dwg Dwg Created: 27-Feb-20 --_a2 standard bw.stb -- Plot Date: 27-Feb-20



**BARTON DRIVE
EXISTING TYPICAL SECTION**
STA. 13+12.5 TO STA. 20+05
N.T.S.



**BARTON DRIVE
EXISTING TYPICAL SECTION**
STA. 4+28 POB TO STA. 13+12.5
N.T.S.



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	2-28-20	JKA	

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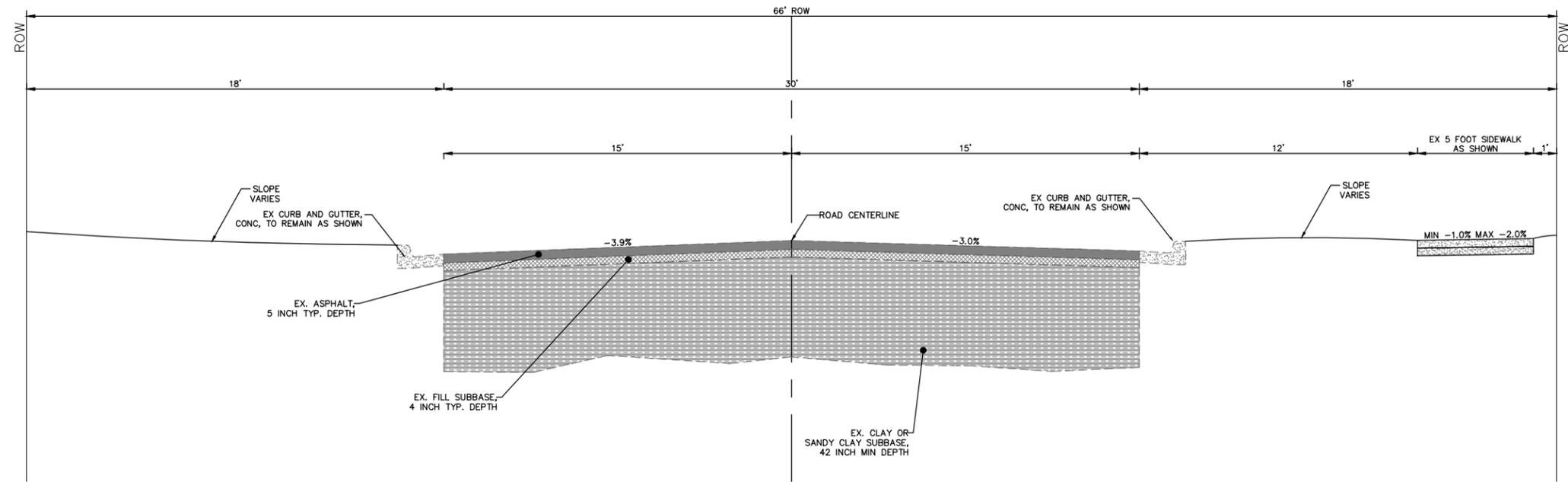


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS

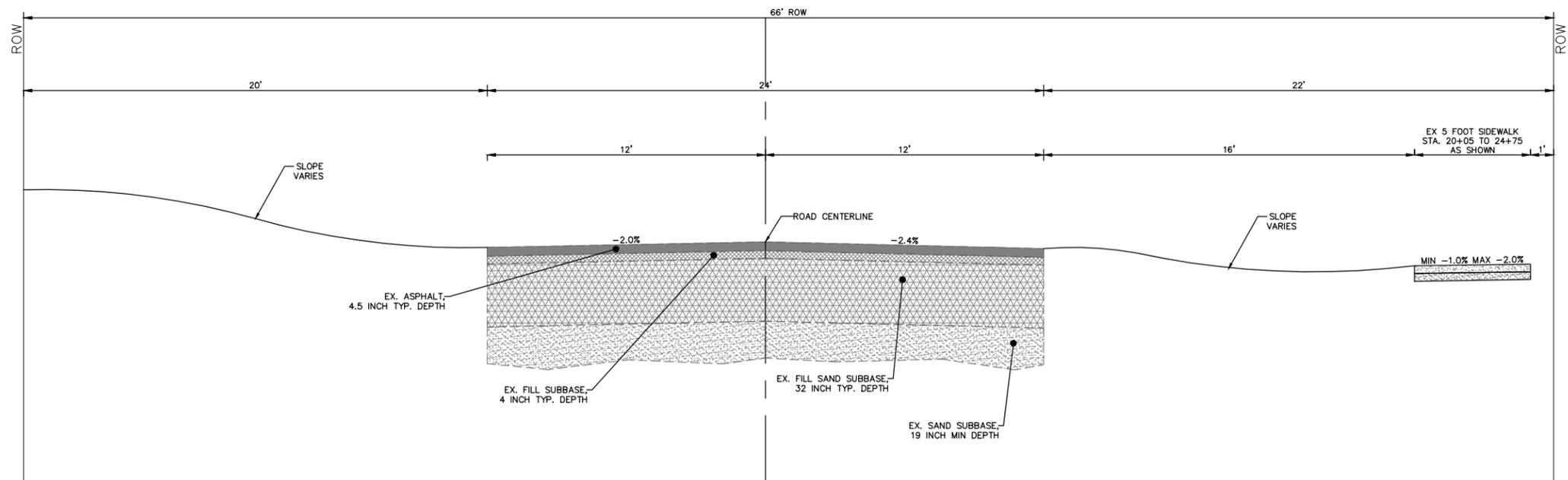
EXISTING TYPICAL ROAD SECTIONS

SCALE: NTS
DRAWING No. 2019005-4

R:\2019027 Barton Dr.\Plan Production\2019027Det2.dwg Dwg Created: 27-Feb-20 -- _a2 standard bw.stb -- Plot Date: 27-Feb-20



**BARTON DRIVE
EXISTING TYPICAL SECTION**
STA. 22+90 TO STA. 30+26
N.T.S.



**BARTON DRIVE
EXISTING TYPICAL SECTION**
STA. 20+05 TO STA. 22+90
N.T.S.



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	2-28-20	JKA	JKA
			DEC.DP/FAC	

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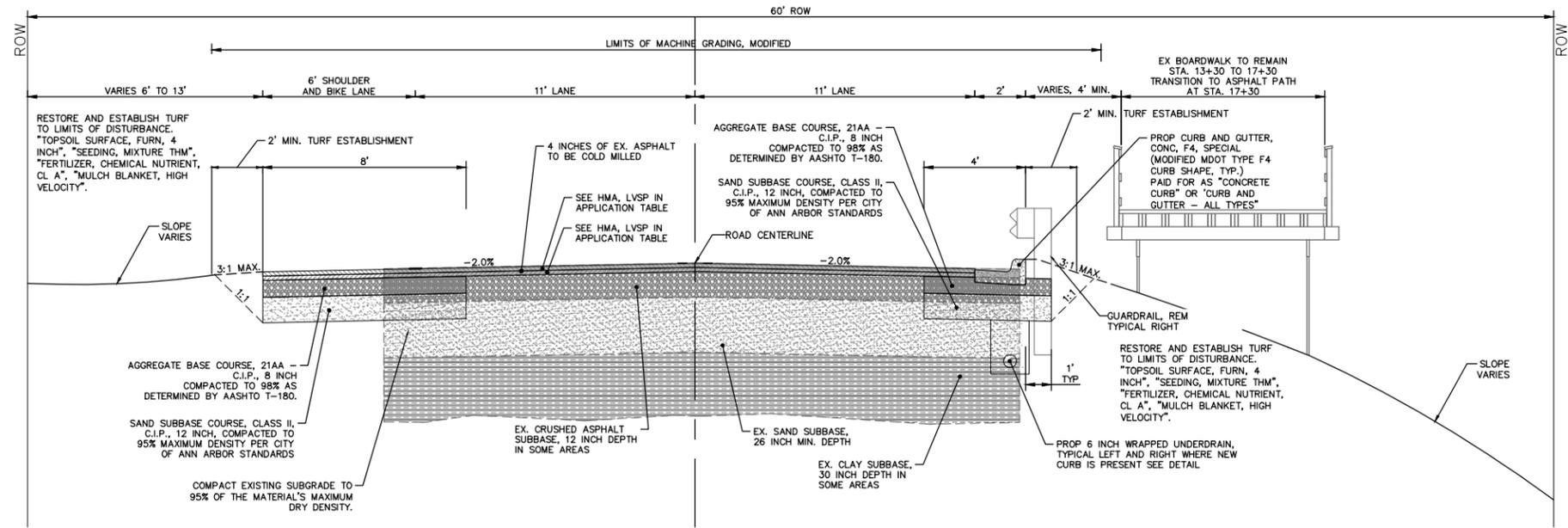


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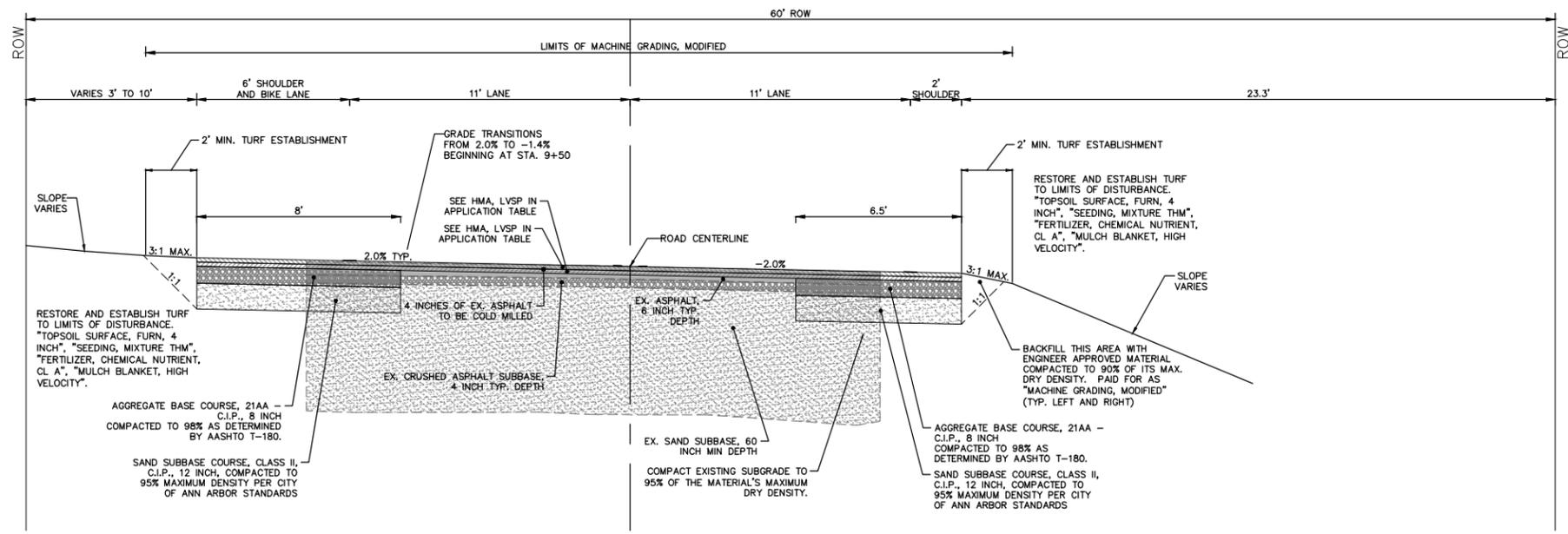
EXISTING TYPICAL ROAD SECTIONS

SCALE: NTS
DRAWING No. 2019005-5

R:\2019027 Barton Dr.\Plan Production\2019027Det2.dwg Dwg Created: 27-Feb-20 -- _a2 standard bw.stb -- Plot Date: 27-Feb-20



**BARTON DRIVE
PROPOSED TYPICAL SECTION**
STA. 13+12.5 POB TO STA. 20+05
N.T.S.



**BARTON DRIVE
PROPOSED TYPICAL SECTION**
STA. 4+28 POB TO STA. 13+12.5
N.T.S.

HMA APPLICATION ESTIMATE						
HMA PAVEMENT	HMA MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI (MIN.)	BINDER	LOCATION/NOTES
HMA PAVEMENT TOP	LVSP	220 LB/SYD	2	260 (TOP)	PG 58-28	TOP COURSE
HMA PAVEMENT LEVELING	LVSP	220 LB/SYD	2	-	PG 58-28	LEVELING COURSE
HMA APPROACH TOP	LVSP	220 LB/SYD	2	260 (TOP)	PG 58-28	TOP COURSE
HMA APPROACH LEVELING	LVSP	220 LB/SYD	2	-	PG 58-28	LEVELING COURSE
HAND PATCHING	LVSP	0 - 440 LB/SYD	-	-	PG 58-28	HAND PATCHING
ASPHALT EMULSION	SS-1h	0.05 - 0.15 GAL/SYD	-	-	-	INCLUDE IN COST OF HMA ITEM



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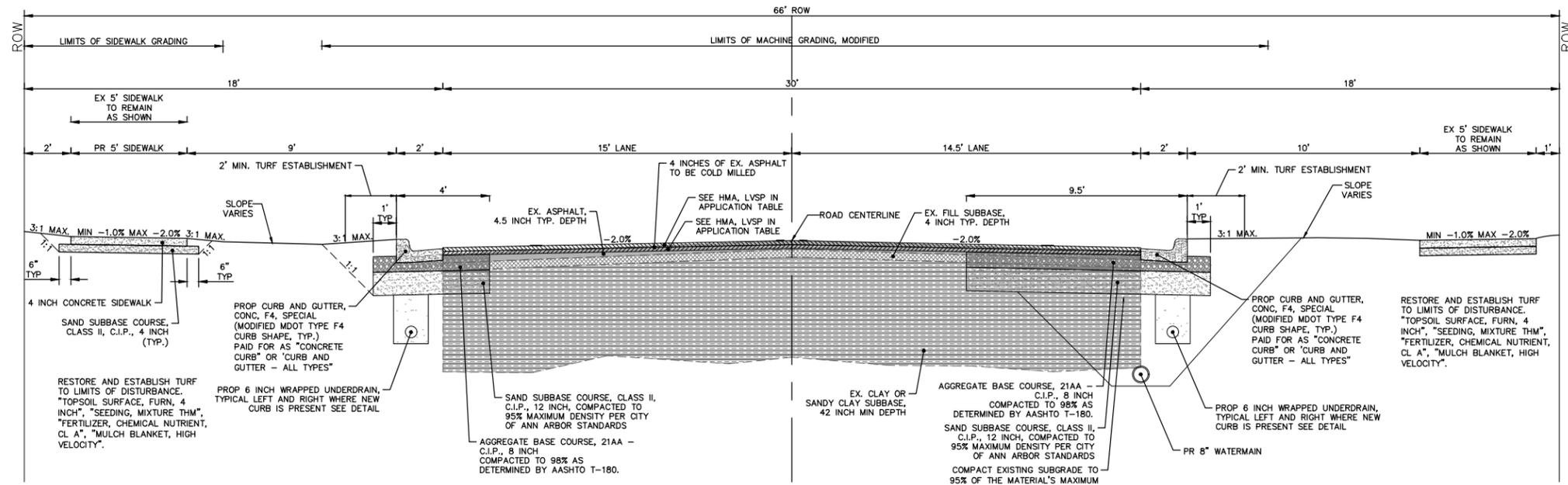
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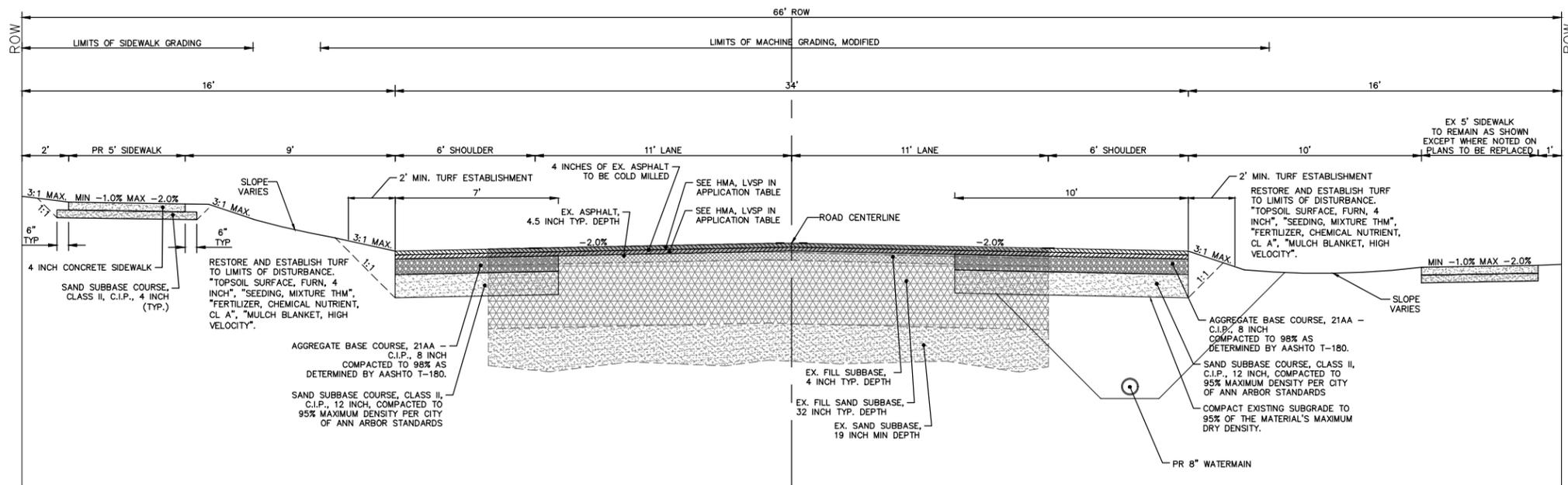
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS
PROPOSED TYPICAL ROAD SECTIONS

SCALE: NTS
DRAWING No. 2019005-6
SHEET No.

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**BARTON DRIVE
PROPOSED TYPICAL SECTION**
STA. 22+90 TO STA. 30+26
N.T.S.



**BARTON DRIVE
PROPOSED TYPICAL SECTION**
STA. 20+05 TO STA. 22+90
N.T.S.



NO.	DATE	DESCRIPTION	REV.
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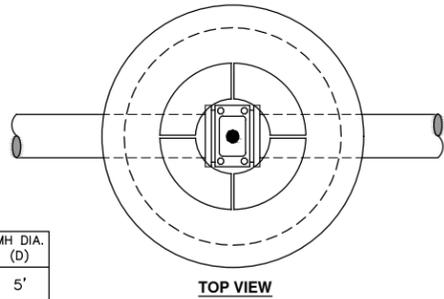
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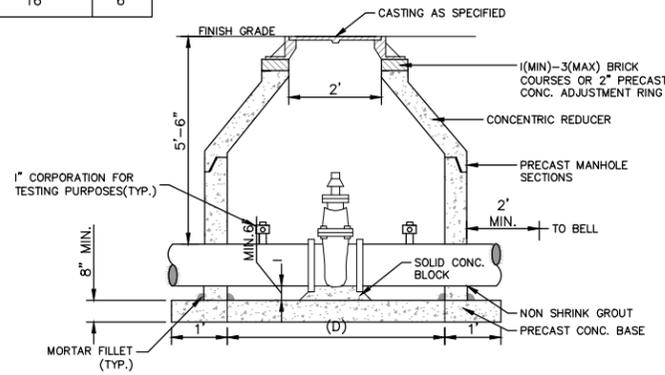
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BARTON DRIVE IMPROVEMENTS
PROPOSED TYPICAL ROAD SECTIONS

SCALE: NTS
DRAWING No. 2019005-7

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



TOP VIEW



- 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

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.

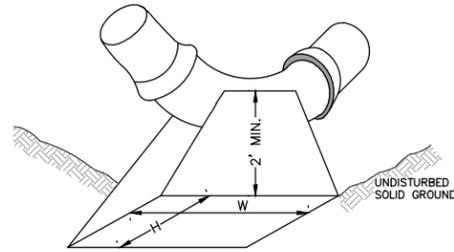
THE DIMENSIONS OF THE THRUST BLOCK AT THE FACE OF THE UNDISTURBED SOLID GROUND SHALL BE AS SHOWN IN THE TABLE BELOW.

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°	22 1/2°	11 1/4°	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	2.5	2.0
8	2.5	2.0	3.5	2.0	2.0	1.0	2.0	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	2.5	2.0

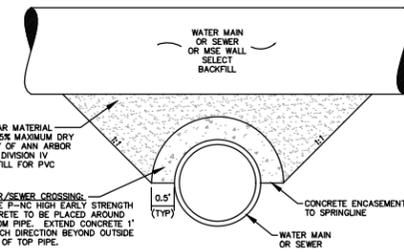
FOR FITTING SIZES LARGER THAN 16", THRUST BLOCK DIMENSIONS SHALL BE AS SPECIFIED BY ENGINEER.

W = WIDTH IN FEET
H = HEIGHT IN FEET



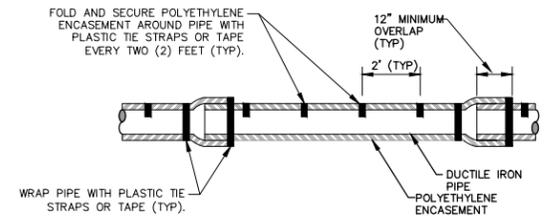
NOTE:
THESE ARE MINIMUM STANDARDS. WHERE SOIL CONDITIONS DICTATE, ADJUSTMENTS IN SIZE SHALL BE MADE AS DIRECTED BY THE PUBLIC SERVICES AREA ADMINISTRATOR.

THRUST BLOCK SD-W-2



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

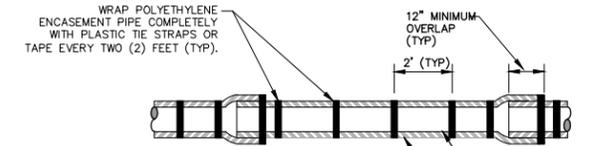
CONCRETE UTILITY SADDLE



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

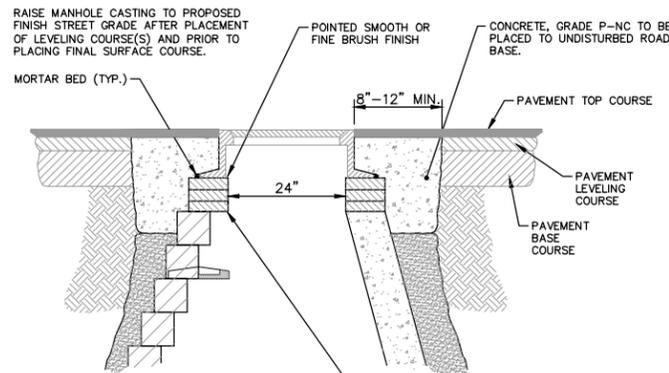
POLYETHYLENE ENCASUREMENT (DRY INSTALLATION)



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

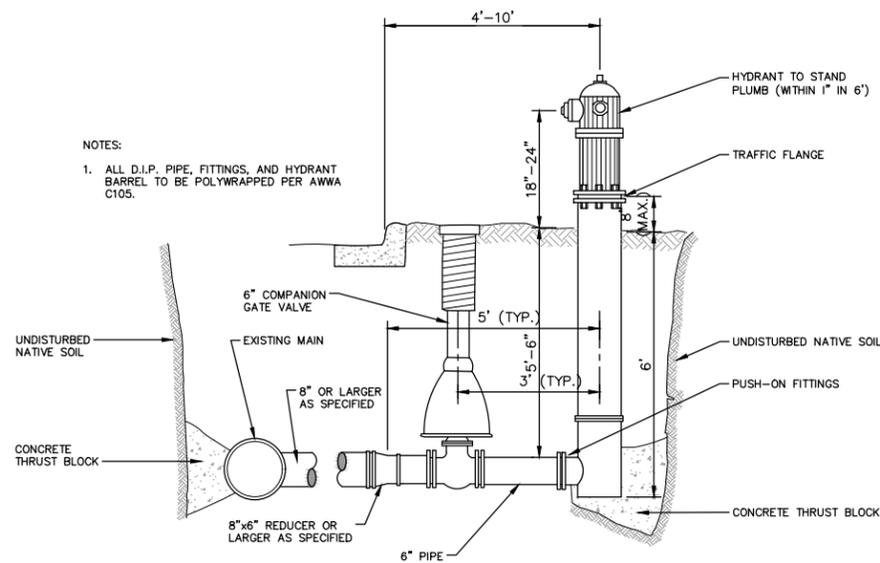
APPLIES TO: POLYETHYLENE WRAPPED D.I. WATERMAIN SEE PLANS FOR LOCATIONS

POLYETHYLENE ENCASUREMENT (WET INSTALLATION)



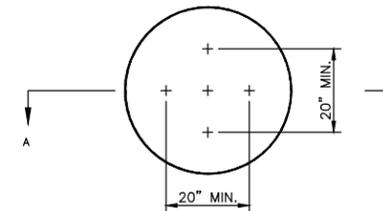
NOTE:
IF MANHOLE WILL BE PLACED IN GRAVEL ROAD, CASTING TO BE SET 6" TO 8" BELOW ROADWAY GRADE. ALL CONSTRUCTION METHODS SHALL REMAIN AS SHOWN ABOVE.
ADDITIONAL REPAIRS NECESSARY BEYOND 15" BELOW GRADE TO BE PAID FOR AS "ADDITIONAL DEPTH STRUCTURE ADJUST/REPAIR"

MANHOLE CASTING ADJUSTMENT SD-GU-6



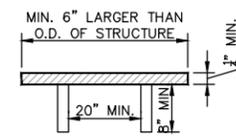
NOTES:
1. ALL D.I.P. PIPE, FITTINGS, AND HYDRANT BARREL TO BE POLYWRAPPED PER AWWA C105.

FIRE HYDRANT ASSEMBLY



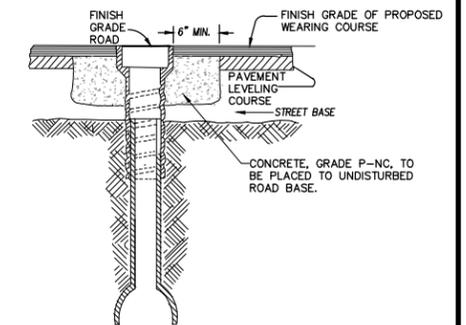
NOTE: PLATE MAY BE CIRCULAR, SQUARE OR RECTANGULAR

SECTION A - A



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

STRUCTURE PLATE SD-GU-8



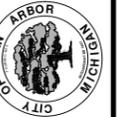
NOTE: RAISE CASTING TO PROPOSED FINISH STREET GRADE AFTER PLACEMENT OF LEVELING COURSE(S) AND PRIOR TO PLACING FINAL SURFACE COURSE

WATER VALVE BOX ADJUSTMENT



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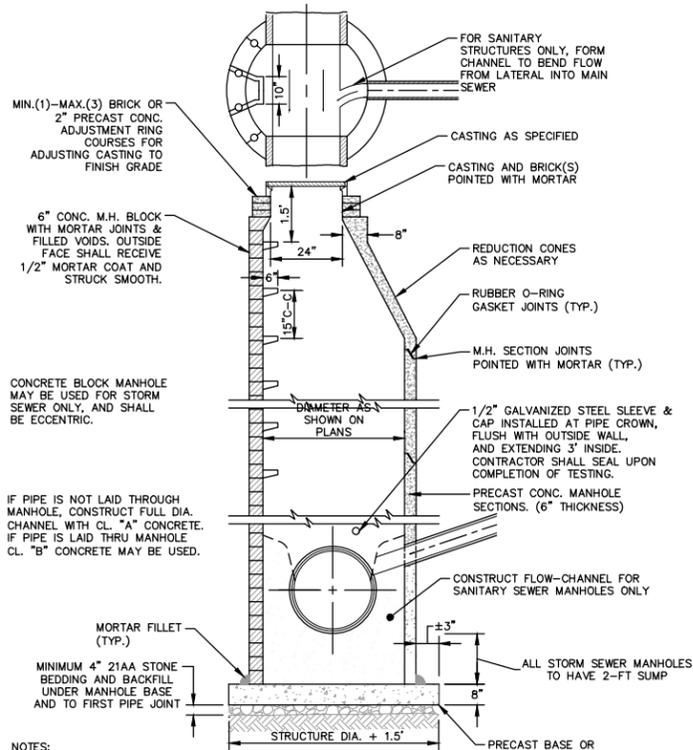


BARTON DRIVE IMPROVEMENTS
WATER MAIN DETAILS

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
SCALE: NTS
DRAWING No. 2019005-8

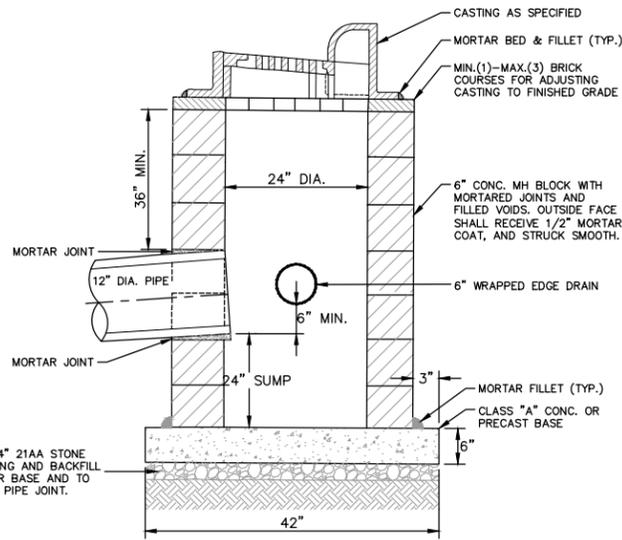
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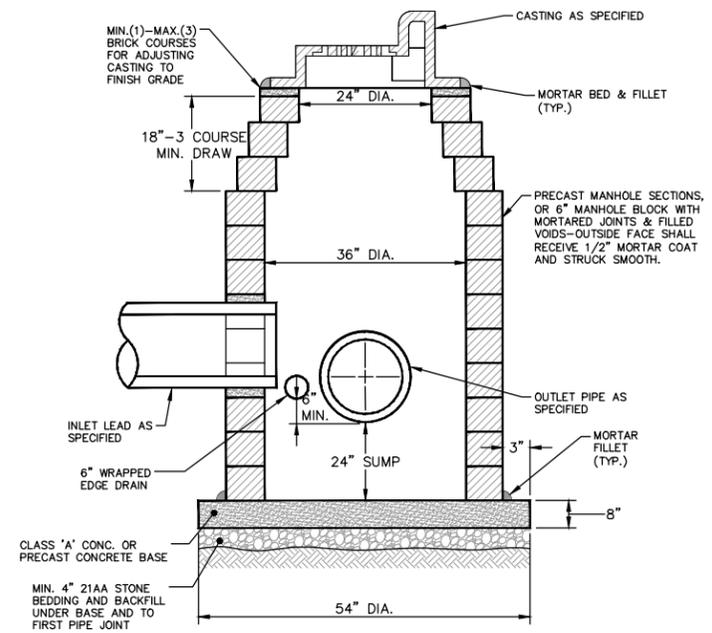
- NOTES:
1. ALL SANITARY MANHOLES SHALL BE PRECAST CONCRETE.
 2. ALL MANHOLES MUST HAVE ECCENTRIC CONES - BOTH STORM AND SANITARY
 3. ALL SANITARY SEWER OPENINGS SHALL BE PRECAST WITH RUBBER BOOT CONNECTIONS.
 4. 2' SUMP REQUIRED ON ALL DRAINAGE STRUCTURES.

STANDARD MANHOLE (TYPE I)



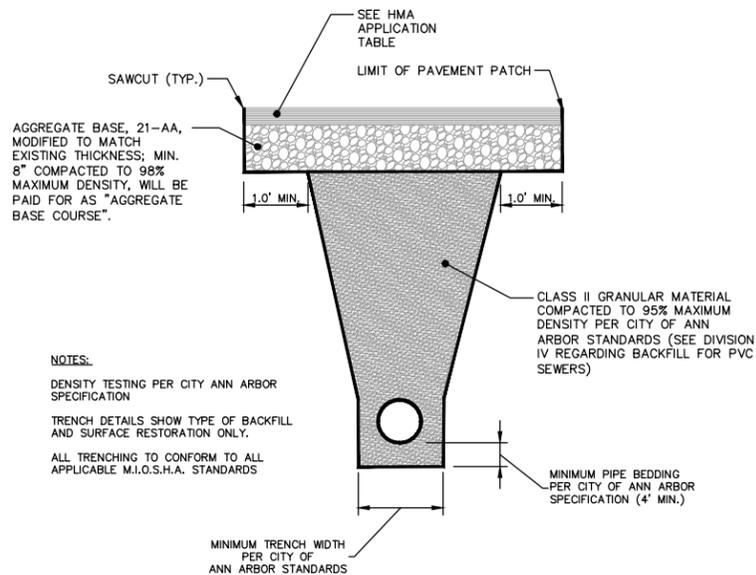
- NOTES:
1. MAY BE USED WITH ONLY SINGLE OUTLET PIPE, AND NO INLET PIPE
 2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)

SINGLE INLET STRUCTURE SD-S-10



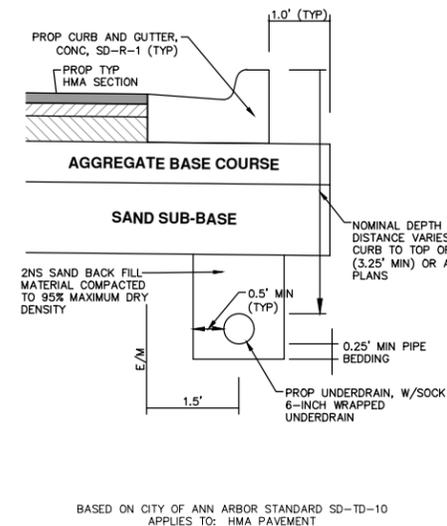
- NOTES:
1. SHALL BE USED IF SINGLE OUTLET PIPE AND SINGLE INLET PIPE.
 2. FRONT EDGE OF INLET CASTING SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)

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
- EDGE DRAINS SHALL BE CONNECTED TO A DRAINAGE STRUCTURE AND WILL EXTEND A MINIMUM OF 100 FEET UPSLOPE FROM THE STRUCTURE.
- ADDITIONAL LENGTHS OF EDGE DRAIN MAY BE REQUIRED BY THE ENGINEER BASED ON EXISTING SITE CONDITIONS, INCLUDING CONDITION OF THE SUBGRADE.

TRENCH DETAIL FOR UNDER DRAIN
(UNDER HMA PAVEMENT)



Know what's below.
Call before you dig.

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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

BARTON DRIVE IMPROVEMENTS

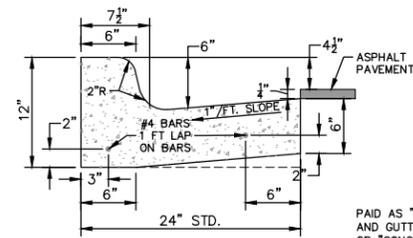
STORM SEWER AND TRENCH DETAILS

SCALE: NTS

DRAWING No. 2019005-9

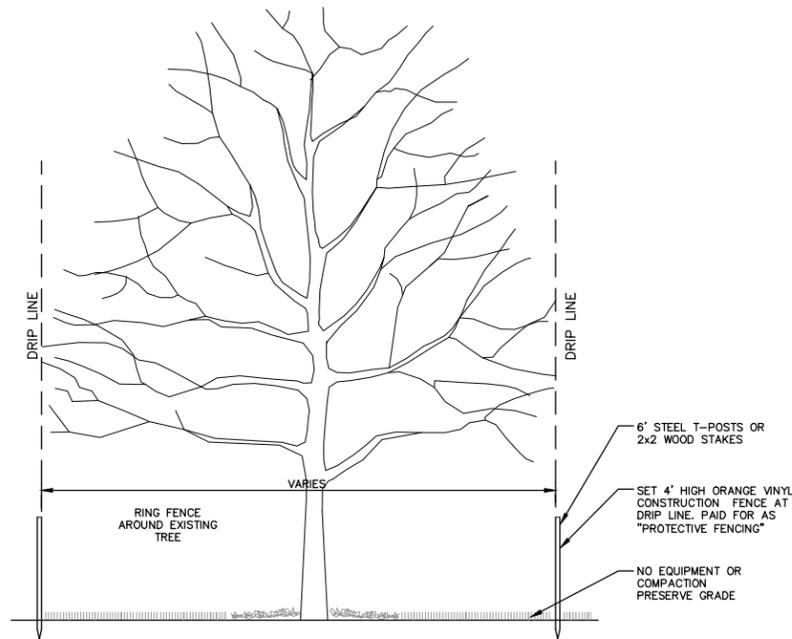
SHEET No. 9 OF 61

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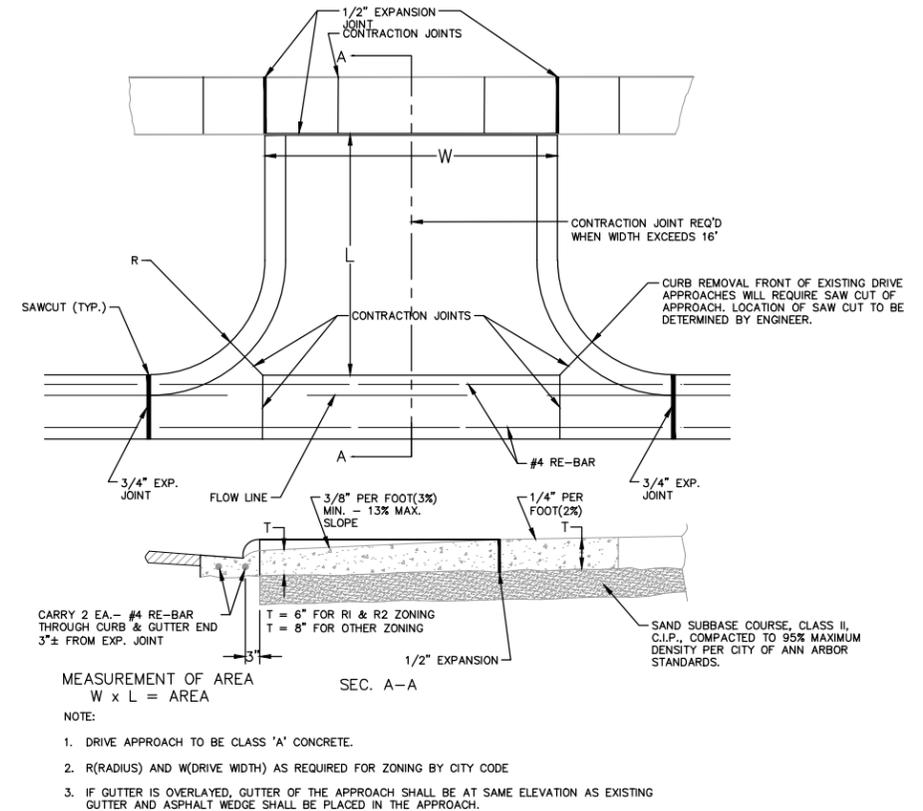


PAID AS "CONCRETE CURB OR CURB AND GUTTER - ALL TYPES" OR "CONCRETE CURB" OR "CURB AND GUTTER - ALL TYPES (HIGH EARLY)"

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



TREE PROTECTION DETAIL



MEASUREMENT OF AREA
 $W \times L = \text{AREA}$ SEC. A-A

NOTE:

1. DRIVE APPROACH TO BE CLASS 'A' CONCRETE.
2. R(RADIUS) AND W(DRIVE WIDTH) AS REQUIRED FOR ZONING BY CITY CODE
3. IF GUTTER IS OVERLAYED, GUTTER OF THE APPROACH SHALL BE AT SAME ELEVATION AS EXISTING GUTTER AND ASPHALT WEDGE SHALL BE PLACED IN THE APPROACH.

TYPE 'M' DRIVE APPROACH SD-R-6



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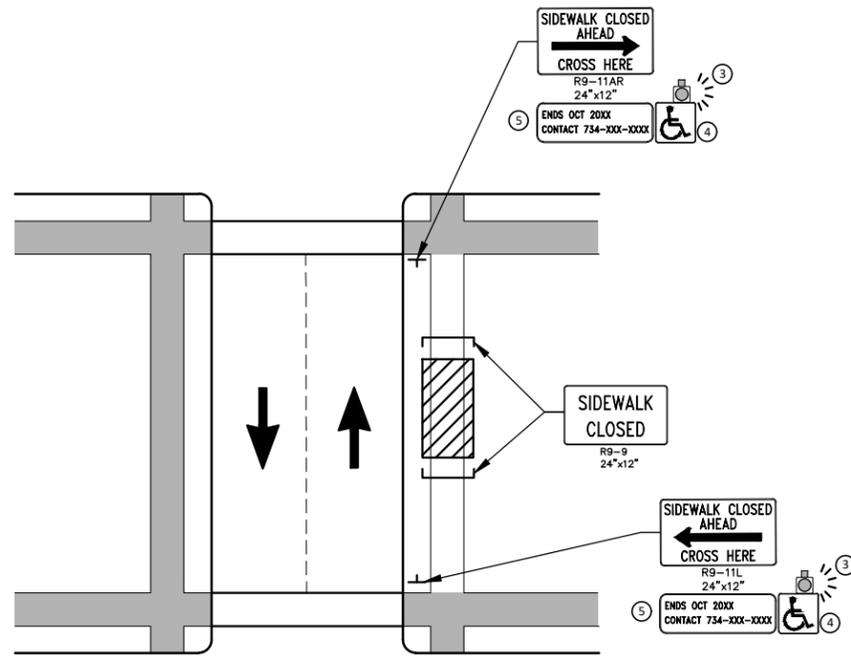
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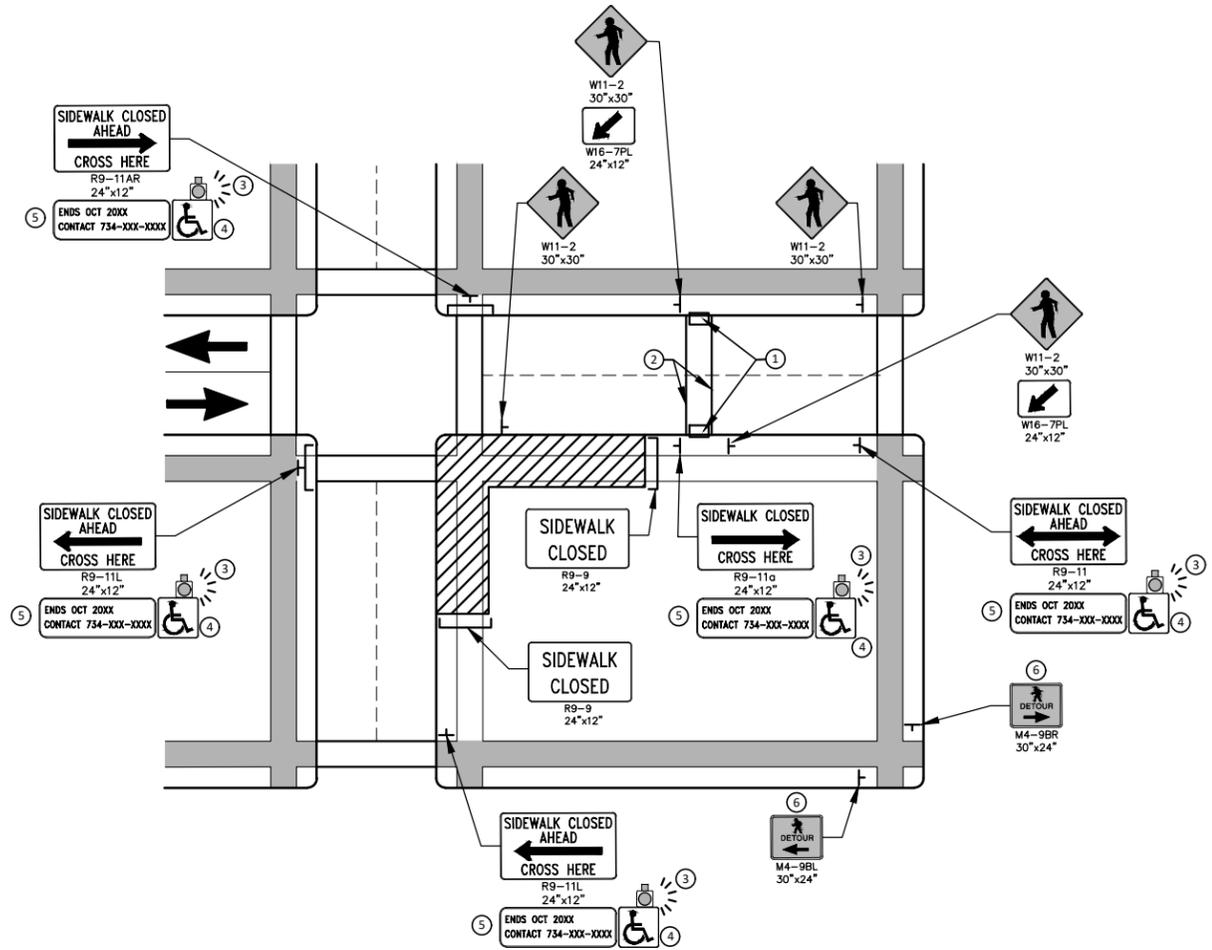
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BARTON DRIVE IMPROVEMENTS
MISC. DETAILS

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PEDESTRIAN DETOUR USING OPPOSITE SIDE OF STREET



**OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS
(FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK)**

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, THE CONTRACTOR SHALL PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED. PROVIDE A FIRM, STABLE, AND SLIP RESISTANT TEMPORARY WALKWAY SURFACE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND.

THE PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED BY THE CITY OF ANN ARBOR. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE THIS WORK WITH THE ENGINEER A MINIMUM OF 72 HOURS (NOT INCLUDING WEEKENDS & HOLIDAYS) PRIOR TO THE BEGINNING OF WORK THAT REQUIRES A SIDEWALK CLOSURE.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN THE ENGINEER DETERMINES THAT THE CONTRACTOR'S OPERATIONS OR PLACEMENT OF TRAFFIC CONTROL DEVICES HAS CAUSED A SITUATION THAT THE VISIBILITY OF IS REDUCED ENOUGH TO CREATE A HAZARD, THE TRAFFIC CONTROL DEVICES SHALL BE DELINEATED WITH FLAGS OR OTHER ENGINEER-APPROVED DEVICES AT NO ADDITIONAL COST TO THE PROJECT.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS AS SHOWN ON THE PROJECT PLANS.

SPECIFIC NOTES

1. TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
2. TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
3. AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHALL BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHALL BE POSTED AND AN ALTERNATE ROUTE SHALL BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.
5. TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHALL INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.
6. PEDESTRIAN DETOUR TRAILBLAZING SIGNS SHALL BE USED IF THE PEDESTRIAN DETOUR IS IN A LOCATION OTHER THAN ACROSS THE STREET FROM THE SIDEWALK CLOSURE.

PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES

1. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MMUTCD, PART 6.
2. PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES AND COMMERCIAL PROPERTIES AT ALL TIMES. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA.
3. IF SIDEWALKS ARE CLOSED, A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK, IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE TPAR SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4 FEET. IF THE TPAR IS LESS THAN 5 FEET IN WIDTH, A 5 FOOT BY 5 FOOT PASSING SPACE SHALL BE PROVIDED AT LEAST EVERY 200 FEET. THE SURFACE OF THE TPAR SHALL BE SMOOTH AND CONTINUOUS FOR THE LENGTH OF THE TPAR. THE TPAR SHALL MAINTAIN THE SAME LEVEL OF ACCESSIBILITY AND DETECTABILITY AS THE FACILITY THAT IS BEING CLOSED. THE TPAR SHALL NOT LEAD PEDESTRIANS INTO CONFLICTS WITH VEHICLES, EQUIPMENT, OR CONSTRUCTION OPERATIONS.
4. IF THE TPAR IS ADJACENT TO MOVING TRAFFIC, CONSTRUCTION OPERATIONS/EQUIPMENT, OR DROP-OFFS, THEN CRASH WORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF NCHRP 350 AND THE MMUTCD SHALL BE USED.
5. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS, EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.
6. THE CONTRACTOR'S OPERATIONS SHALL NOT OCCUPY SIDEWALKS EXCEPT WHERE PROPER PROTECTION AND A TPAR HAVE BEEN PROVIDED.
7. WHEN DIRECTED BY THE ENGINEER, OR STATED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN TRAFFIC CONTROL PLAN FOR REVIEW AND WRITTEN APPROVAL BY THE ENGINEER A MINIMUM OF THREE WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARS AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC. NO WORK SHALL BE ALLOWED TO BEGIN UNTIL THIS PLAN IS APPROVED BY THE ENGINEER IN WRITING.
8. PROVISION OF THE TPAR AND ALL OF ITS ELEMENTS, INCLUDING BUT NOT LIMITED TO, CREATION OF THE TEMPORARY PEDESTRIAN CONTROL PLAN, SIGNS, CHANNELIZING DEVICES, BARRICADES, TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM OF WORK "MINOR TRAF DEVICES."

LEGEND

- SIGN
- EXISTING PEDESTRIAN SURFACE
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- BARRIER
- SIDEWALK BARRICADE
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DEVICE



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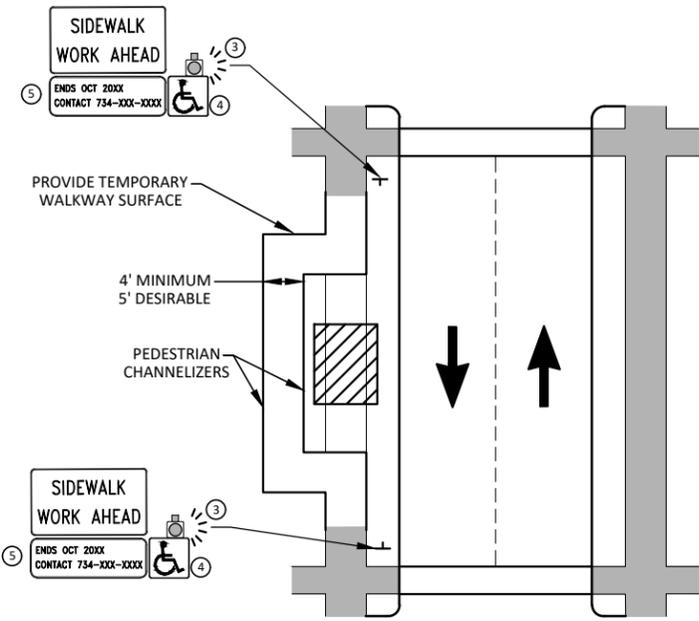
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS
ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

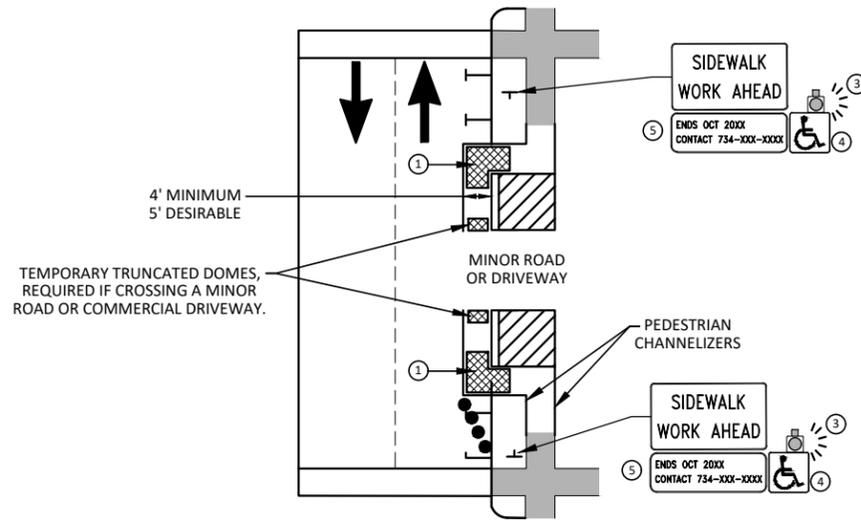
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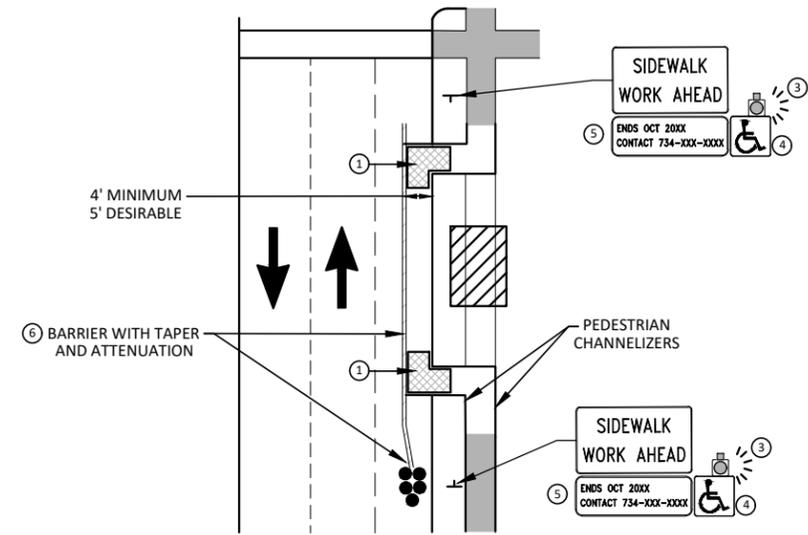


**BYPASS ON ADJACENT AVAILABLE
RIGHT OF WAY
BYPASS TYPE A**

NOTE: MAY ONLY BE USED ON ROADWAY WITH POSTED SPEED OF 45 MPH OR LESS.



**SIDEWALK BYPASS USING PARKING OR
SHOULDER ON LOW SPEED ROADWAY
BYPASS TYPE B**



**SIDEWALK BYPASS USING
SHOULDER OR PARKING LANE ON
HIGH SPEED ROADWAY
BYPASS TYPE C**

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, THE CONTRACTOR SHALL PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED. PROVIDE A FIRM, STABLE, AND SLIP RESISTANT TEMPORARY WALKWAY SURFACE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND.

THE PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED BY THE CITY OF ANN ARBOR. THE CONTRACTOR SHALL SCHEDULE AND COORDINATE THIS WORK WITH THE ENGINEER A MINIMUM OF 72 HOURS (NOT INCLUDING WEEKENDS & HOLIDAYS) PRIOR TO THE BEGINNING OF WORK THAT REQUIRES A SIDEWALK CLOSURE.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN THE ENGINEER DETERMINES THAT THE CONTRACTOR'S OPERATIONS OR PLACEMENT OF TRAFFIC CONTROL DEVICES HAS CAUSED A SITUATION THAT THE VISIBILITY OF A TRAFFIC CONTROL DEVICE IS REDUCED ENOUGH TO CREATE A HAZARD, THE TRAFFIC CONTROL DEVICES SHALL BE DELINEATED WITH FLAGS OR OTHER ENGINEER-APPROVED DEVICES AT NO ADDITIONAL COST TO THE PROJECT.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS AS SHOWN ON THE PROJECT PLANS.

SPECIFIC NOTES

1. TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
2. 5 DEVICE TAPER 25 FEET LONG, RECOMMENDED WHEN THE CLOSED AREA WAS USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
3. AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHOULD BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHALL BE POSTED AND AN ALTERNATE ROUTE SHALL BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.
5. TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHALL INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.
6. SEE MMUTCD FOR GUIDANCE ON PLACEMENT AND USAGE OF BARRIER.

LEGEND

- SIGN
- EXISTING PEDESTRIAN SURFACE
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- BARRIER
- SIDEWALK BARRICADE
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DEVICE



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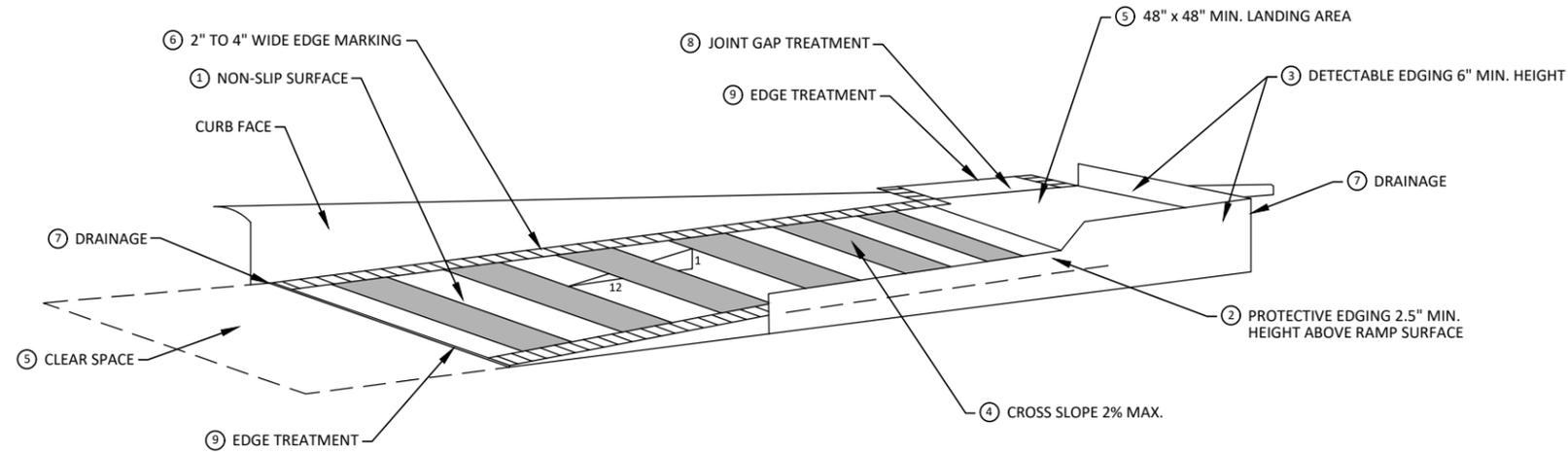
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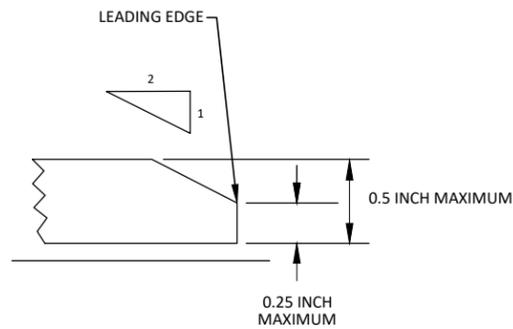
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS
ALTERNATE PEDESTRIAN ROUTE (APR) BYPASS

SCALE: N.T.S.
DRAWING No. 2019005-12

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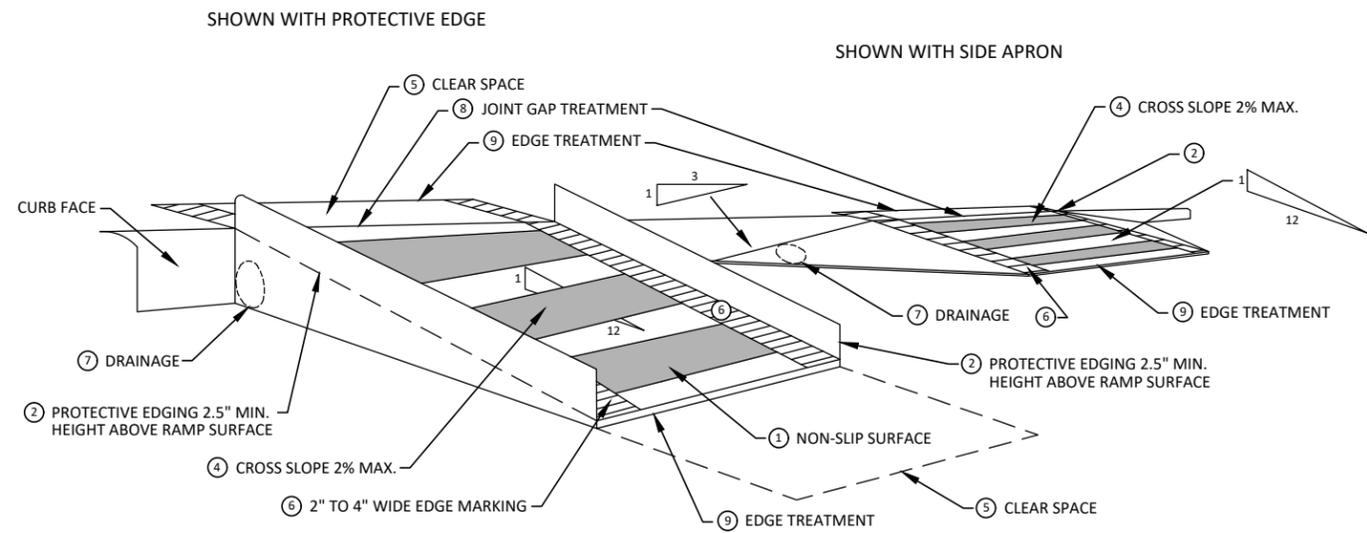
**TEMPORARY CURB RAMP
PARALLEL TO CURB**



9 EDGE TREATMENT

SPECIFIC NOTES

- 1 CURB RAMP SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. PROTECTIVE EDGING WITH A 2.5" MIN. HEIGHT ABOVE THE RAMP SHALL BE PLACED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3. PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMP OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- 2 DETECTABLE EDGING ANYTIME A HANDRAIL IS REQUIRED, AND ANYTIME THE PATH CHANGES DIRECTION. THIS INCLUDES A TURN ONTO THE RAMP FROM THE PATH. DETECTABLE EDGING MUST BEGIN A MAXIMUM OF 2.5" ABOVE THE RAMP SURFACE, AND EXTEND AT LEAST 6" ABOVE THE RAMP SURFACE. CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- 3 CURB RAMP AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE.
- 4 CLEAR SPACE OF 48" x 48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- 5 THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR, 2" TO 4" WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
- 6 WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPEDED.
- 7 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
- 8 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHOULD BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2" HEIGHT.



**TEMPORARY CURB RAMP
PERPENDICULAR TO CURB**



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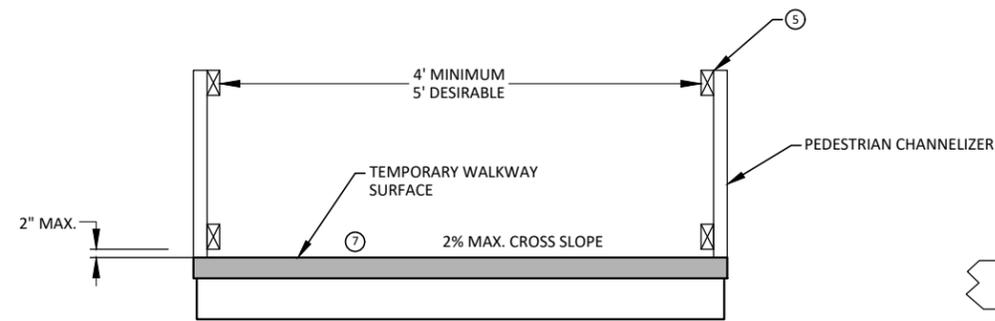
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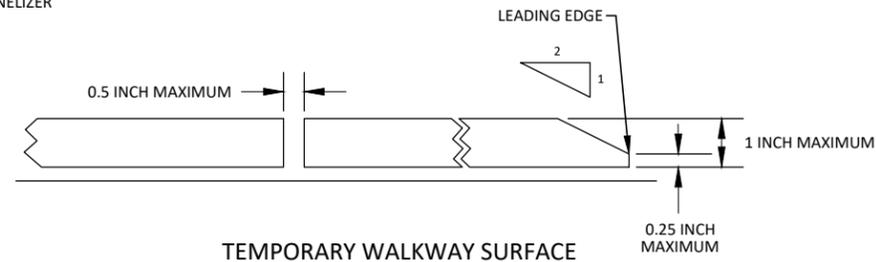
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BARTON DRIVE IMPROVEMENTS
TPAR RAMPS

SCALE: N.T.S.
DRAWING No. 2019005-13

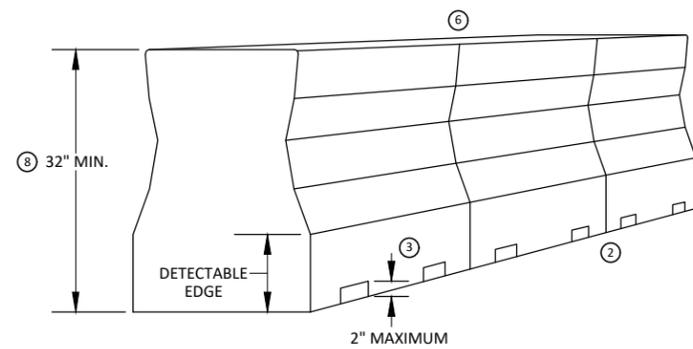
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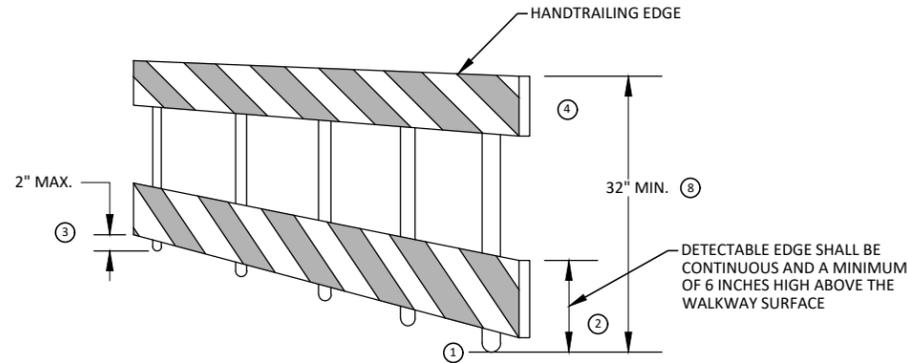
TEMPORARY PEDESTRIAN ACCESS



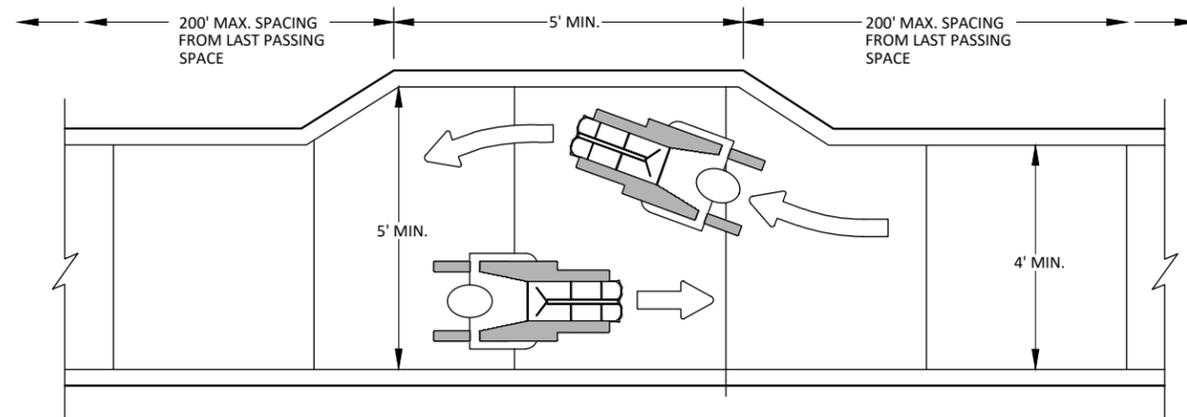
TEMPORARY WALKWAY SURFACE



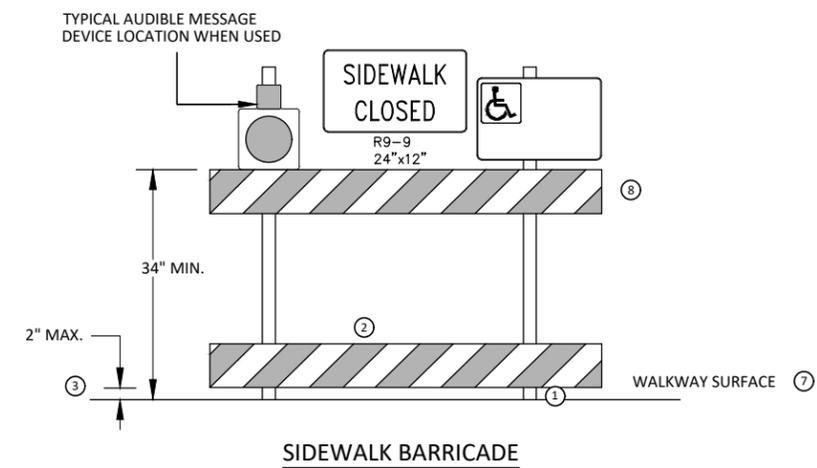
PEDESTRIAN CHANNELIZER USING A BARRIER
(MINIMUM REQUIREMENTS)



PEDESTRIAN CHANNELIZER
(MINIMUM REQUIREMENTS)



NARROW TEMPORARY PEDESTRIAN ACCESS ROUTE PASSING DETAIL



SIDEWALK BARRICADE

GENERAL NOTES

RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4 INCHES INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27 INCHES ABOVE THE WALKWAY SURFACE.

ANY PEDESTRIAN DEVICES USED TO PROVIDE POSITIVE PROTECTION FOR PEDESTRIANS OR WORKERS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIER'S APPLICATION.

BARRICADES SHALL BE PLACED CONTINUOUSLY ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE BEING CLOSED.

SPECIFIC NOTES

- 1 ANY TRIPPING HAZARD IN THE WALKWAY NEEDS A DETECTABLE EDGE. BALLAST SHALL BE LOCATED BEHIND OR INTERNAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHALL NOT EXTEND INTO THE 48 INCH MINIMUM WALKWAY CLEAR SPACE AND SHALL NOT EXCEED 0.5 INCHES IN HEIGHT ABOVE THE WALKWAY SURFACE.
- 2 DETECTABLE EDGES SHALL BE CONTINUOUS AND A MINIMUM OF 6 INCHES IN HEIGHT ABOVE WALKWAY SURFACE AND HAVE COLOR MARKINGS CONTRASTING WITH THE WALKWAY SURFACE.
- 3 DEVICES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2 INCHES IS ALLOWED FOR DRAINAGE PURPOSES.
- 4 PROVIDE A HANDRAIL ON BOTH SIDES OF THE RAMP IF THE RAMP IS NOT EXPOSED TO VEHICLE TRAFFIC AND HAS A TOTAL RISE GREATER THAN 6 INCHES, AND A LENGTH GREATER THAN 72 INCHES.
- ENSURE THE HANDRAIL IS 1.25 AND 1.5 INCHES WIDE AND CONFIGURED TO BE A "GRASPABLE" CROSS-SECTION.
SEE CONSTRUCTION SUBSECTION 2.A FOR ADDITIONAL DETAILS.
WHEN THE RAMP IS EXPOSED TO TRAFFIC, IN LIEU OF HANDRAILS, USE A PROTECTIVE EDGE 2.5 INCHES MINIMUM HEIGHT ABOVE THE RAMP SURFACE OR 1:10 FLARE ON BOTH SIDES OF THE RAMP.
- 5 ALL DEVICES SHALL BE FREE OF SHARP OR ROUGH EDGES, AND FASTENERS (BOLTS) SHALL BE ROUNDED TO PREVENT HARM TO HANDS, ARMS OR CLOTHING OF PEDESTRIANS.
- 6 ALL DEVICES USED TO CHANNELIZE PEDESTRIAN FLOW SHOULD INTERLOCK SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE INTENDED CHANNELIZED PATH.
- 7 A WALKWAY SURFACE SHALL BE FIRM, STABLE, AND SLIP RESISTANT. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED.
- 8 LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES IN HEIGHT OR GREATER.



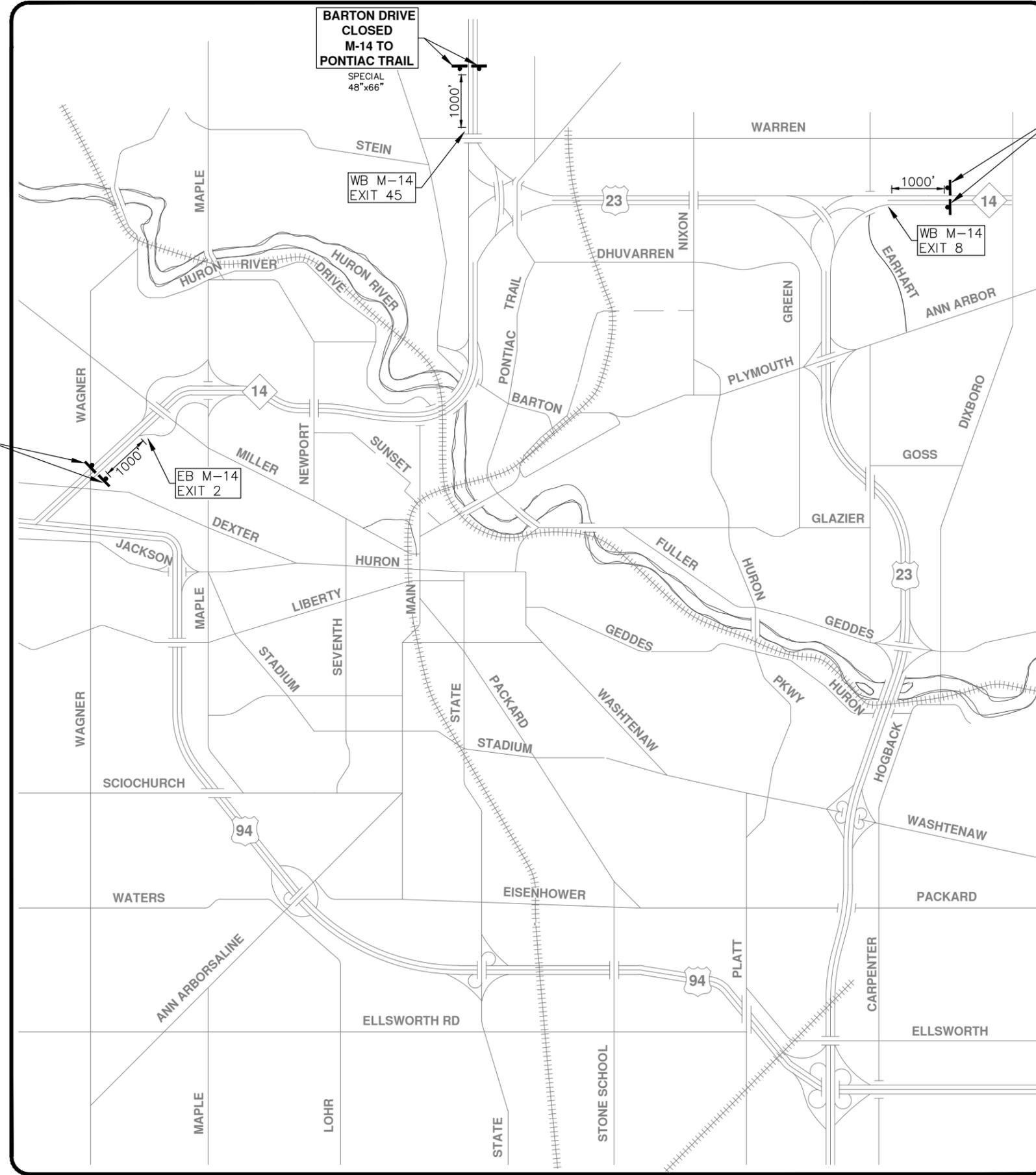
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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
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TPAR WALKWAY DEVICES

SCALE: N.T.S.
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**BARTON DRIVE
CLOSED
M-14 TO
PONTIAC TRAIL**
SPECIAL
48"x66"

**BARTON DRIVE
CLOSED
M-14 TO
PONTIAC TRAIL**
SPECIAL
48"x66"

**BARTON DRIVE
CLOSED
M-14 TO
PONTIAC TRAIL**
SPECIAL
48"x66"



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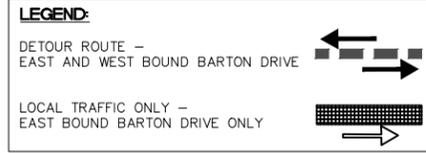
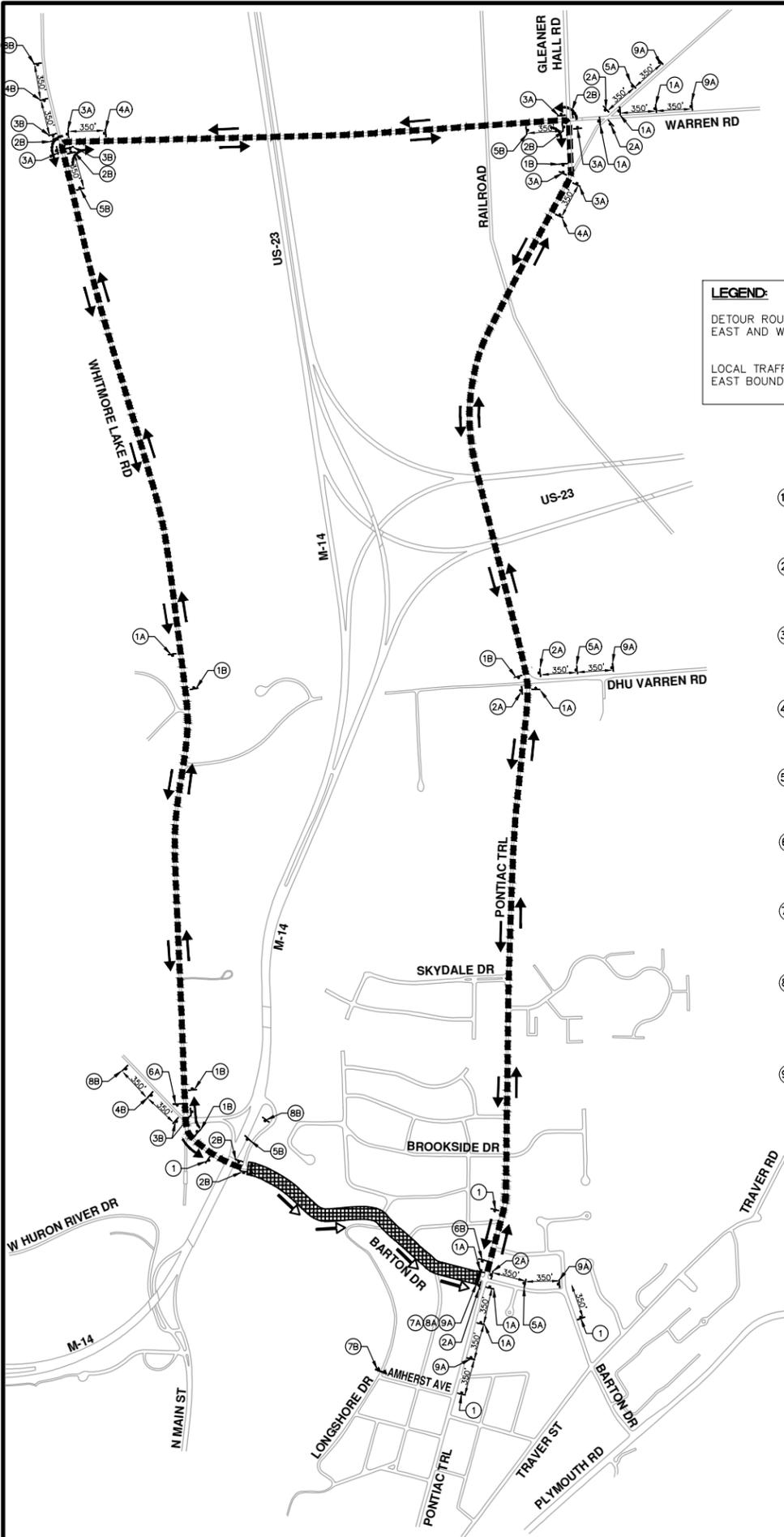


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS

SCALE PLAN: N/A
DRAWING No. 2019005-15

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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 BARTON DRIVE IMPROVEMENTS. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR WILL CLOSE AND DETOUR EAST AND WEST BOUND BARTON DRIVE TRAFFIC. SEE "SPECIAL PROVISION FOR MAINTAINING TRAFFIC AND CONSTRUCTION SEQUENCING" FOR DETAILS ON CONSTRUCTION STAGING, SEQUENCING, CLOSURE AND DETOUR LIMITATIONS, AND OTHER DETAILS.
5. REFERENCE THE "SPECIAL PROVISION FOR MAINTAINING TRAFFIC AND CONSTRUCTION SEQUENCING" FOR ADDITIONAL PROJECT REQUIREMENTS. THE CONTRACTOR'S ATTENTION IS SPECIFICALLY DIRECTED TO THE SECTION OF SAME SPECIAL PROVISION REGARDING COORDINATION WITH THE CITY SIGNS AND SIGNALS UNIT FOR MODIFICATIONS TO TRAFFIC SIGNALS FOR THE DETOUR.
6. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN SIGNS AS SHOWN ON THE PLANS OR OTHERWISE DIRECTED BY THE ENGINEER.
7. CONSTRUCTION WARNING SIGNS SHALL HAVE AN ORANGE, HIGH-INTENSITY, REFLECTORIZED BACKGROUND.
8. SIGNS SHALL CONFORM TO THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. THE CONTRACTOR SHALL DRIVE ALL SIGNS INTO EXPOSED GROUND OR INSERT INTO A BORED HOLE IN PAVEMENT AS NECESSARY TO PERMANENTLY SECURE. ALL HOLES IN PAVEMENT SHALL BE FILLED WITH ENGINEER-APPROVED MORTAR WHEN THE SIGN IS REMOVED AND NO LONGER NEEDED. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE PAY ITEM "TEMPORARY SIGN, TYPE B, FURNISH AND OPERATE"
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 EAST AND WEST BOUND BARTON DRIVE DETOUR. MESSAGE BOARDS TO BE PLACED 7 DAYS PRIOR TO IMPLEMENTATION OF DETOUR.

WEST BOUND BARTON DRIVE			
SIGN	NUMBER	QUANTITY	
1A 	WB BARTON DRIVE	D3-1	8
	DETOUR	M4-9S 30"x24"	8
2A 	WB BARTON DRIVE	D3-1	2
	DETOUR	M4-9R 30"x24"	2
3A 	WB BARTON DRIVE	D3-1	6
	DETOUR	M4-9L 30"x24"	6
4A 	WB BARTON DRIVE	D3-1	2
	DETOUR	M4-9L (MOD) 30"x24"	2
5A 	WB BARTON DRIVE	D3-1	1
	DETOUR	M4-9R (MOD) 30"x24"	1
6A 	WB BARTON DRIVE	D3-1	1
	END DETOUR	M4-8A 24"x18"	1
7A 	ROAD CLOSED	R11-2 48"x30"	1
8A 	WB BARTON DRIVE	D3-1	4
	DETOUR AHEAD	W20-2 36"x36"	4
BARRICADE, TYPE III, LIGHTED, FURNISH AND OPERATE - 2 EACH			
SIGN, PORTABLE CHANGEABLE MESSAGE, FURNISH AND OPERATE - 2 EACH			
VERIFY EXACT QUANTITY AND LOCATION WITH ENGINEER PRIOR TO ORDERING			

EAST BOUND BARTON DRIVE			
SIGN	NUMBER	QUANTITY	
1B 	EB BARTON DRIVE	D3-1	5
	DETOUR	M4-9S 30"x24"	5
2B 	EB BARTON DRIVE	D3-1	6
	DETOUR	M4-9R 30"x24"	6
3B 	EB BARTON DRIVE	D3-1	2
	DETOUR	M4-9L 30"x24"	2
4B 	EB BARTON DRIVE	D3-1	1
	DETOUR	M4-9L (MOD) 30"x24"	1
5B 	EB BARTON DRIVE	D3-1	3
	DETOUR	M4-9R (MOD) 30"x24"	3
6B 	EB BARTON DRIVE	D3-1	1
	END DETOUR	M4-8A 24"x18"	1
7B 	ROAD CLOSED AHEAD	W20-3 36"x36"	1
8B 	EB BARTON DRIVE	D3-1	3
	DETOUR AHEAD	W20-2 36"x36"	3
BARRICADE, TYPE III, LIGHTED, FURNISH AND OPERATE - 2 EACH			
SIGN, PORTABLE CHANGEABLE MESSAGE, FURNISH AND OPERATE - 2 EACH			
VERIFY EXACT QUANTITY AND LOCATION WITH ENGINEER PRIOR TO ORDERING			

TRAFFIC CONTROL SIGNS			
SIGN	NUMBER	QUANTITY	
1 	ROAD WORK AHEAD	W20-1 36"x36"	9
	BARTON DRIVE	D3-1	9

PRCMS MESSAGE PHASING		
PRIOR TO CONSTRUCTION	DURING CONSTRUCTION	DURING CONSTRUCTION

NOTE: PRCMS 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.



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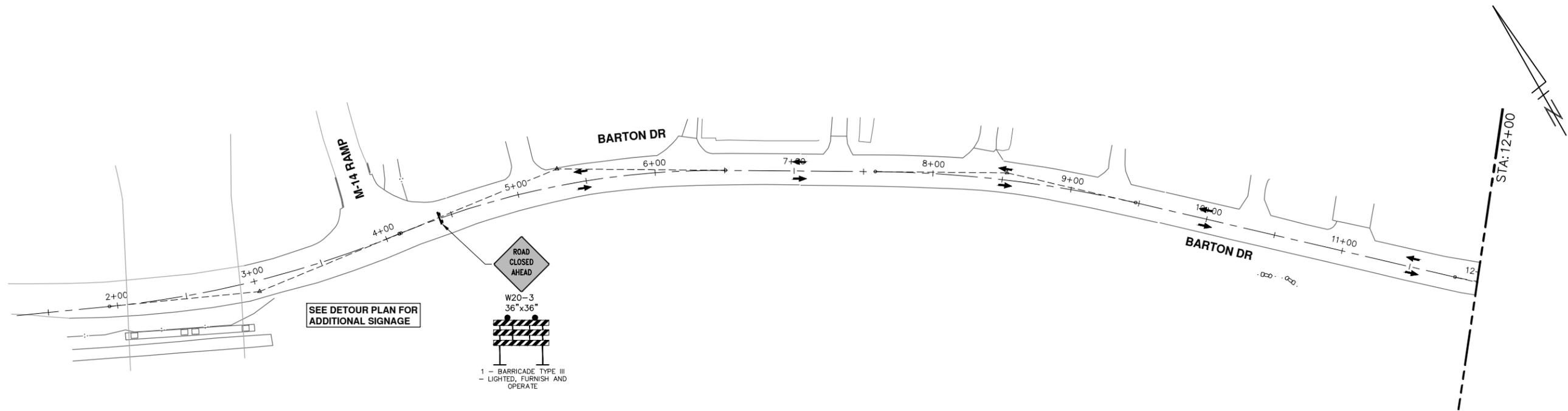
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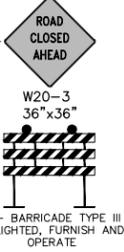
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DETOUR PLAN

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SEE DETOUR PLAN FOR ADDITIONAL SIGNAGE

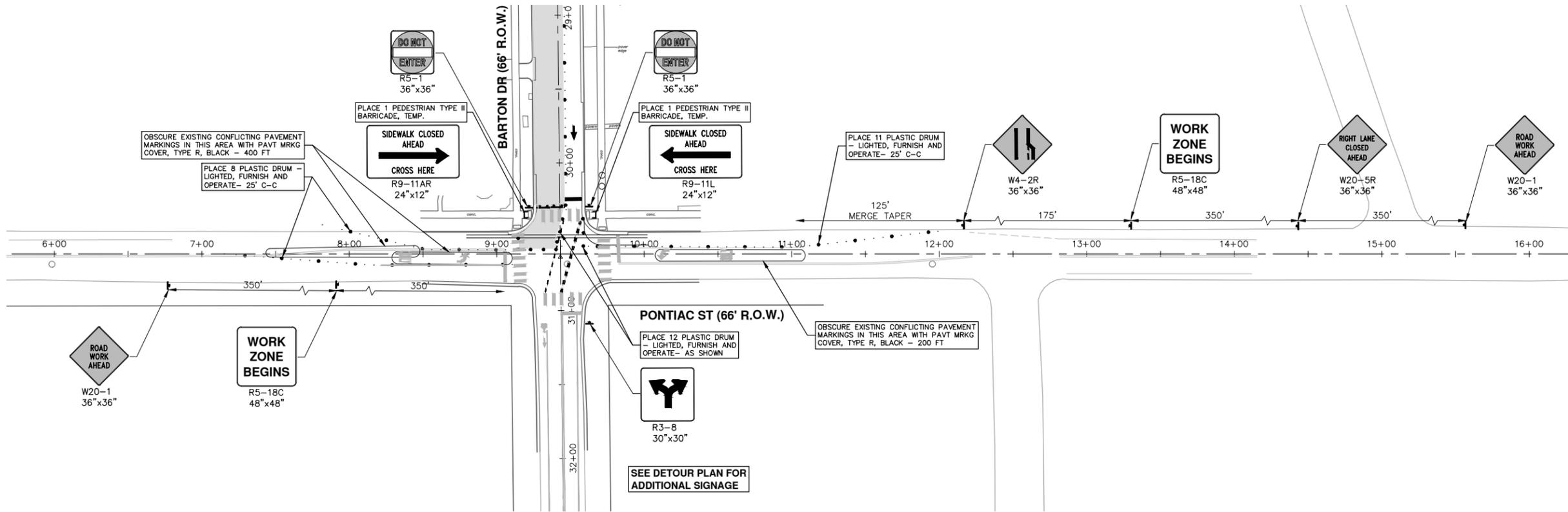


NOTES:

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. COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
5. REMOVE CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
6. 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.

	
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SCALE: 1" = 40' DRAWING No. 2019005-17	SHEET No. 17 OF 61
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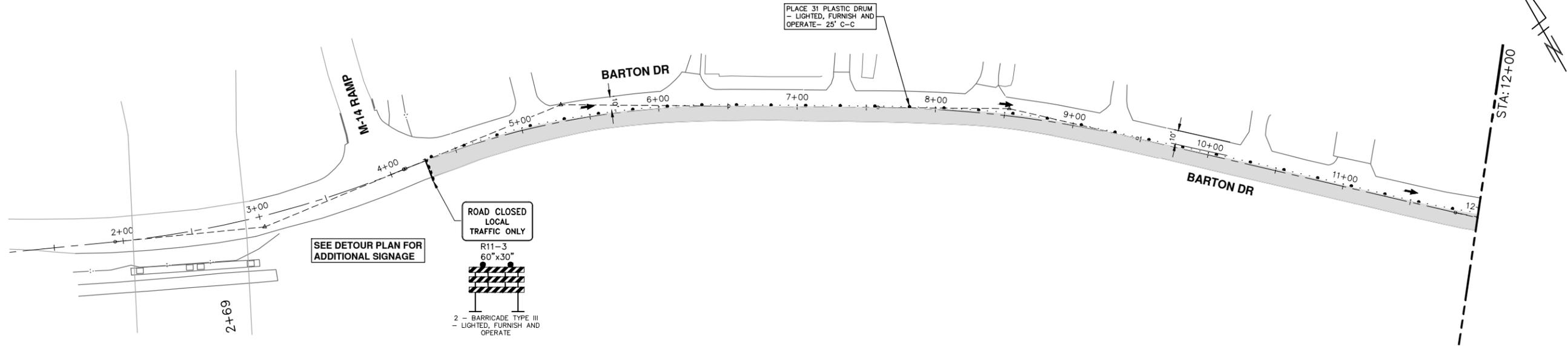
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NOTES:

1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE AS DIRECTED BY ENGINEER.
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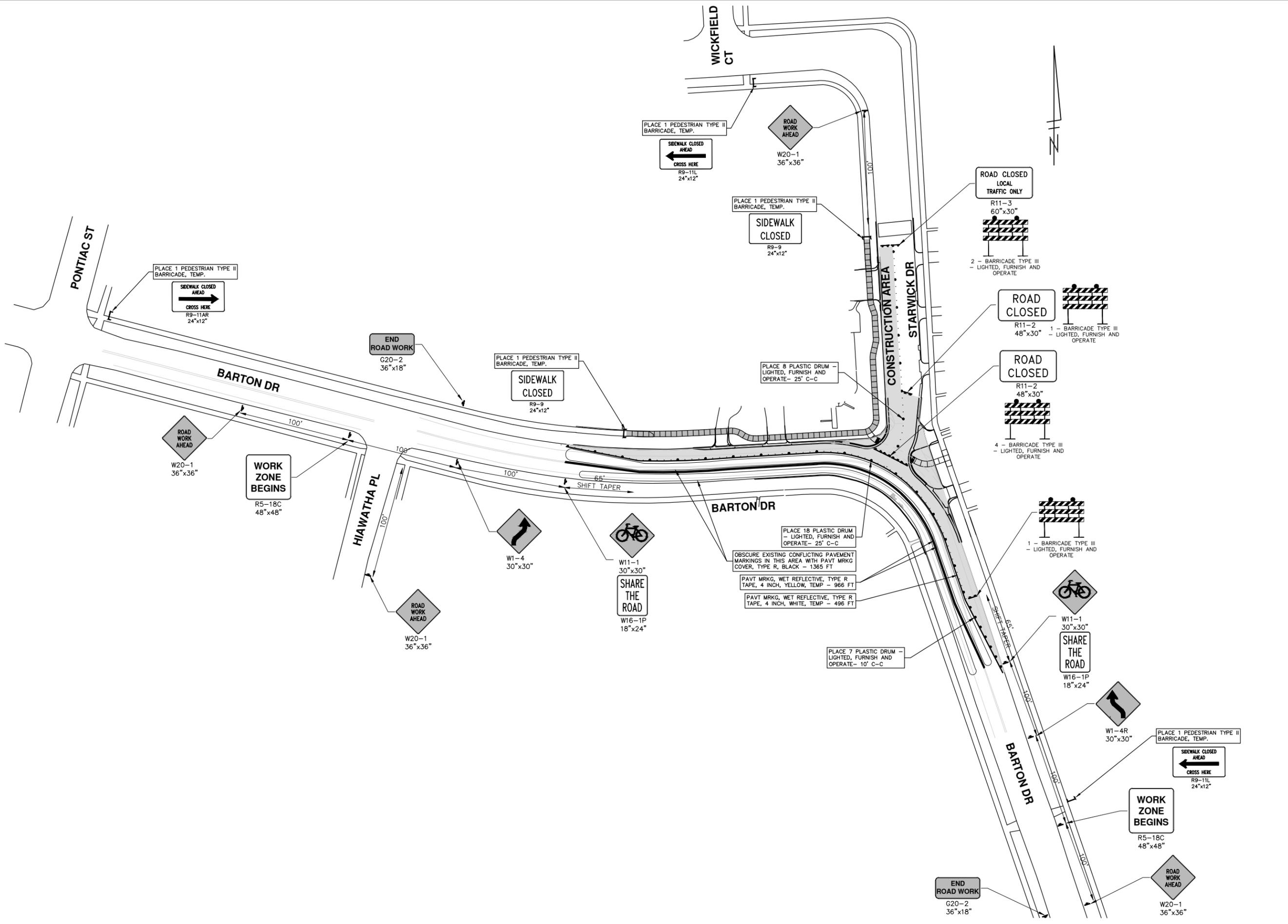
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TRAFFIC CONTROL - PHASE II
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BARTON DRIVE IMPROVEMENTS
 TRAFFIC CONTROL - PHASE III
 BARTON DRIVE AT STARWICK DRIVE

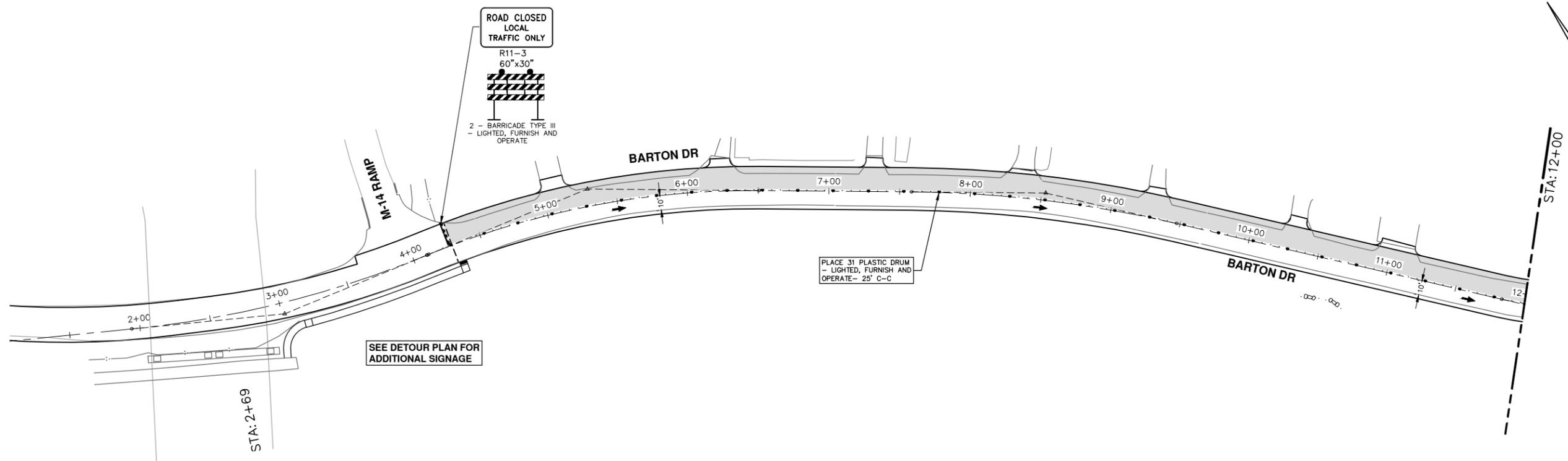
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REV.	DATE	DESCRIPTION
00	2-28-20	OUT FOR BID
01		REV.

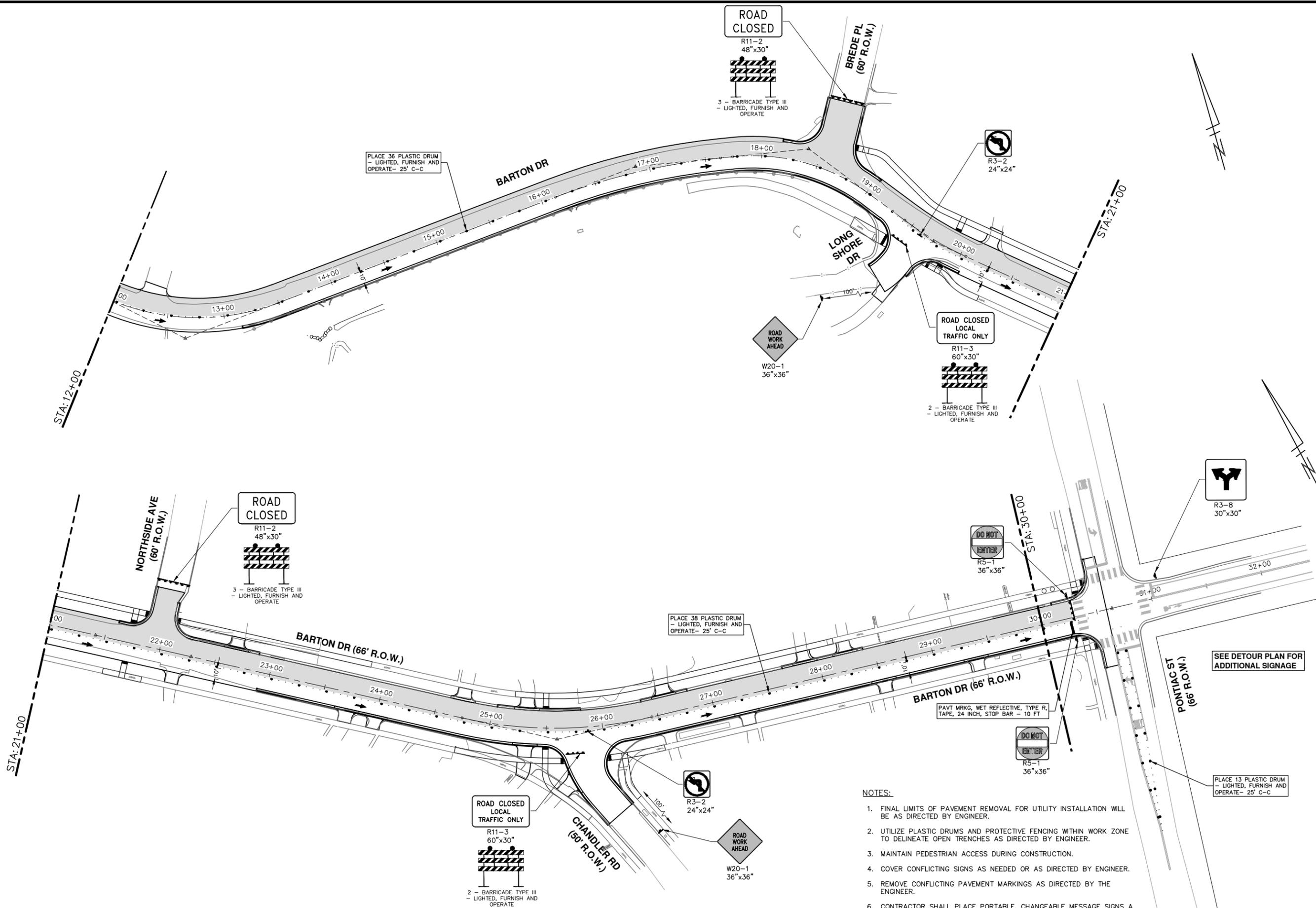
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- NOTES:**
1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE AS DIRECTED BY ENGINEER.
 2. UTILIZE PLASTIC DRUMS AND PROTECTIVE FENCING WITHIN WORK ZONE TO DELINEATE OPEN TRENCHES AS DIRECTED BY ENGINEER.
 3. MAINTAIN PEDESTRIAN ACCESS DURING CONSTRUCTION.
 4. COVER CONFLICTING SIGNS AS NEEDED OR AS DIRECTED BY ENGINEER.
 5. REMOVE CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
 6. 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 BARTON DRIVE IMPROVEMENTS TRAFFIC CONTROL - PHASE IV P.O.B. - STA. 12+00		CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 8667 ANN ARBOR, MI 48106-8667 www.a2gov.org	
SCALE: 1" = 40' 	DRAWING No. 2019005-23	OUT FOR BID REV.	DESCRIPTION DATE DRAWN CHECKED
SHEET No. 23 OF 61		Know what's below. Call Before you dig.	

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- NOTES:**
1. FINAL LIMITS OF PAVEMENT REMOVAL FOR UTILITY INSTALLATION WILL BE AS DIRECTED BY ENGINEER.
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 5. REMOVE CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
 6. 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

BARTON DRIVE IMPROVEMENTS

TRAFFIC CONTROL - PHASE IV

SCALE: 1" = 40'

DRAWING No. 2019005-24

SHEET No. 24 OF 61

STA. 12+00 - STA. 30+00

SEE DETOUR PLAN FOR ADDITIONAL SIGNAGE

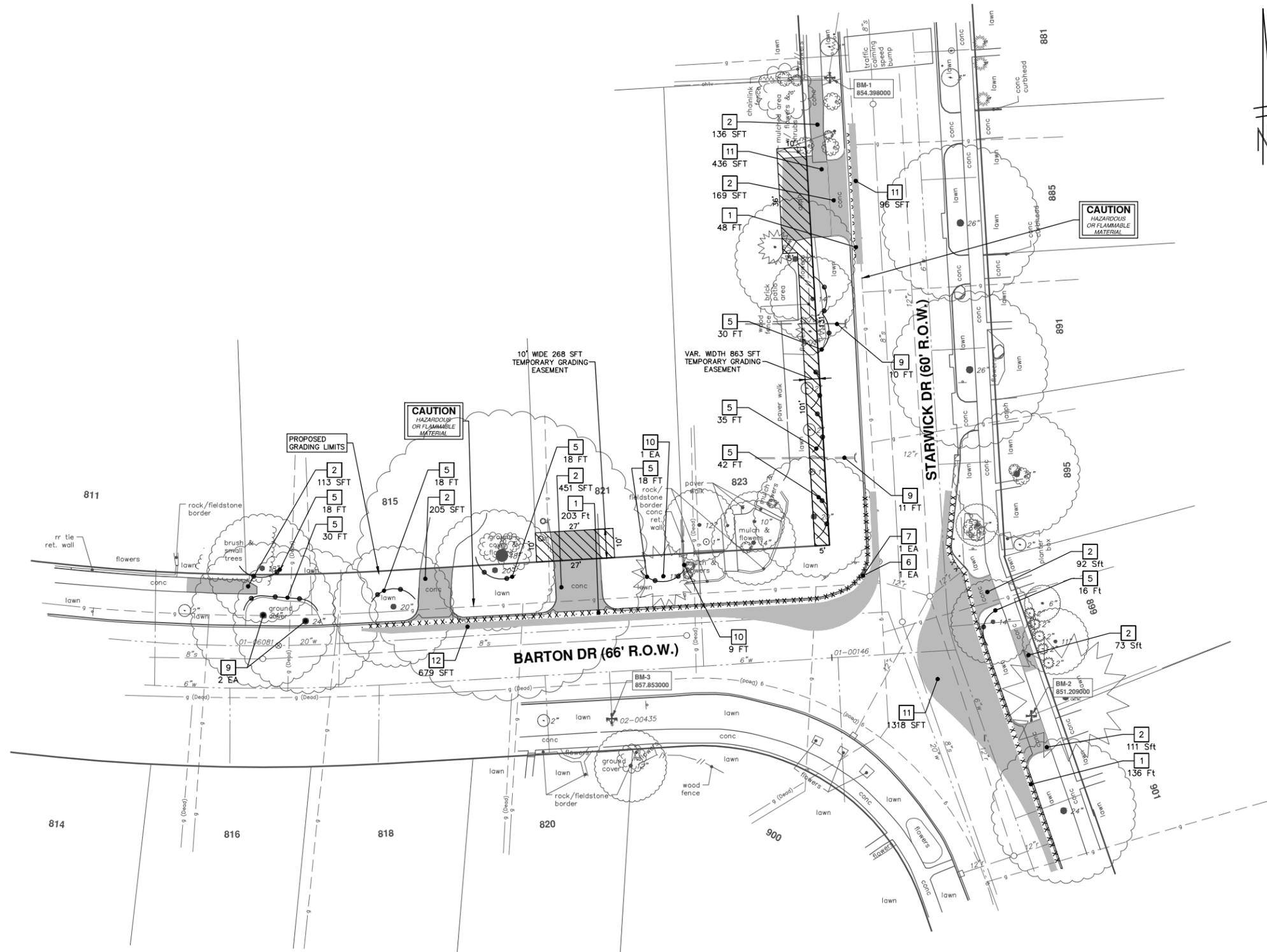
PLACE 13 PLASTIC DRUM - LIGHTED, FURNISH AND OPERATE- 25' C-C

REV.	DATE	DESCRIPTION	BY	CHECKED					
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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	COLD MILLING HMA SURFACE
4	STUMP REMOVAL, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM
8	GUARDRAIL, REM
9	SEWER, REM, LESS THAN 24 INCH
10	TRIMMING TREE
11	HMA SURFACE REMOVE
12	MACHINE GRADING, MODIFIED

* SAWCUT FULL DEPTH AT REMOVAL LIMITS

NOTE: THE CONTRACTOR SHALL NEATLY PRUNE ALL TREE ROOTS ENCOUNTERED WHILE EXCAVATING FOR THE CONSTRUCTION OF THE PROPOSED SIDEWALK WITH CLEAN, SHARP TOOLS DESIGNED FOR THIS PURPOSE. TREE ROOTS SHALL BE NEATLY CUT AT A RIGHT ANGLE TO THE ROOT. DO NOT TEAR OR DAMAGE THE "BARK" ON ROOTS WHILE PRUNING. ALL PRUNING SHALL BE COMPLETED WITHIN THE SAME DAY THE ROOTS ARE EXPOSED.

THE CONTRACTOR SHALL SAVE AND PROTECT ALL TREES NOT DESIGNATED FOR REMOVAL.

ALL BITUMINOUS PAVEMENT AND CONCRETE CURB AND GUTTER SHALL BE SAW-CUT FULL DEPTH AT ITS REMOVAL LIMITS. THE CONTRACTOR SHALL PRESERVE A 2-FOOT LONG SEGMENT OF EXISTING REINFORCEMENT TO TIE THE NEW AND OLD POURS TOGETHER.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

BARTON DRIVE IMPROVEMENTS

PROPOSED REMOVALS

BARTON DRIVE AT STARWICK DRIVE

SHEET No. **26 OF 61**

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DESCRIPTION: REV.

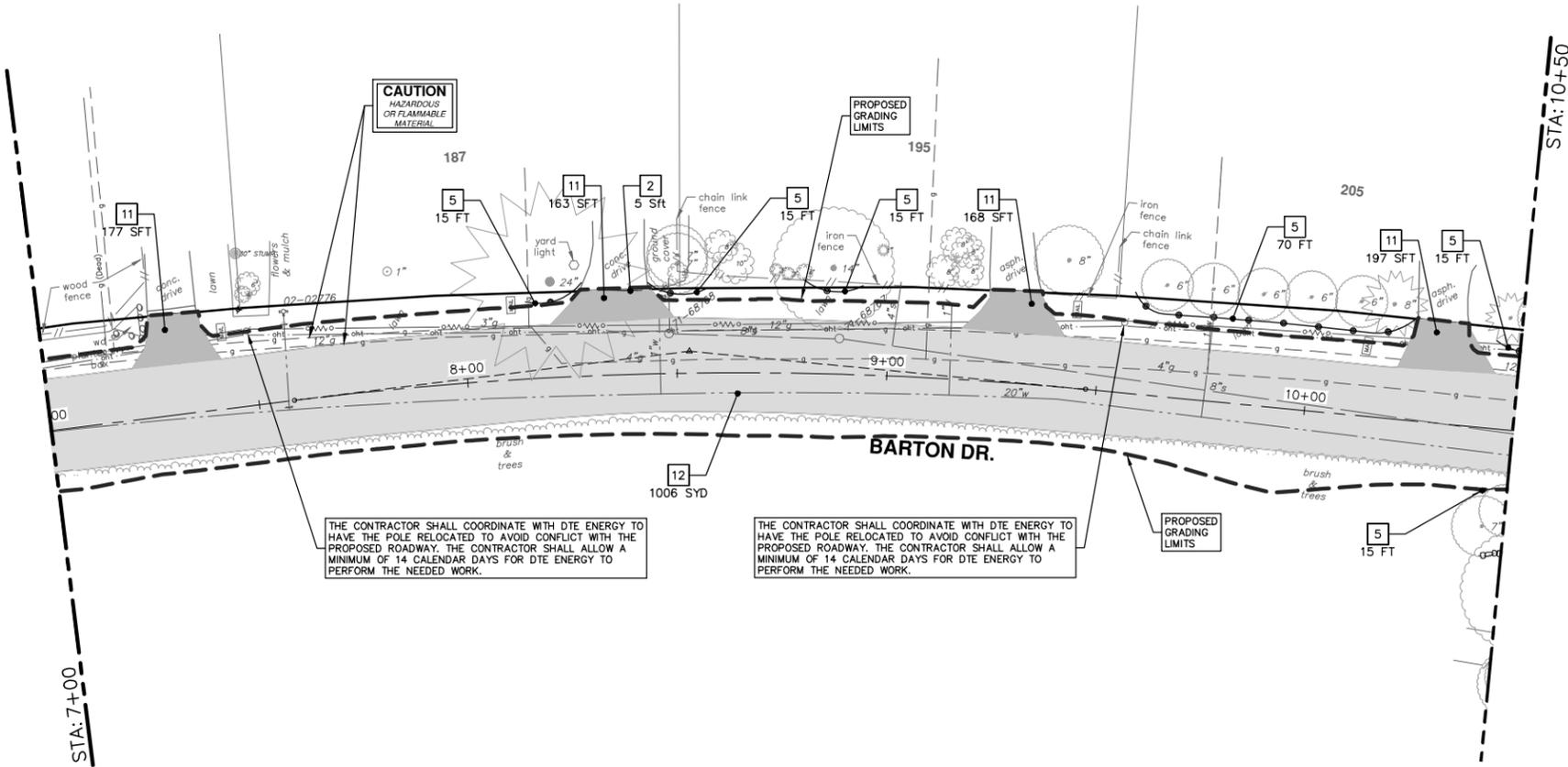
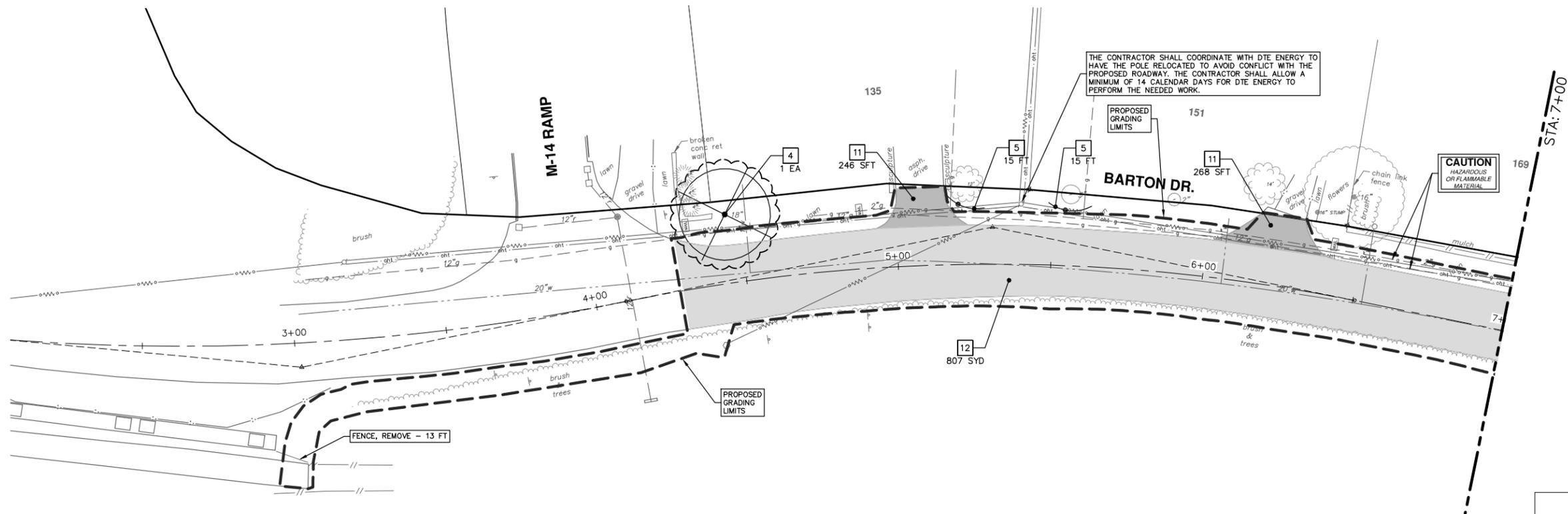
DO: OUT FOR BID
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SCALE PLAN: 1" = 20'
DRAWING No. **2019005-26**

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REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR GUTTER - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	COLD MILLING HMA SURFACE
4	STUMP REMOVAL, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM
8	GUARDRAIL, REM
9	SEWER, REM, LESS THAN 24 INCH
10	TRIMMING TREE
11	HMA SURFACE REMOVE
12	MACHINE GRADING, MODIFIED

* SAWCUT FULL DEPTH AT REMOVAL LIMITS

NOTE: ALL TREES THAT ARE SHOWN FOR REMOVAL AND DESIGNATED AS A SEPARATE PAY ITEM WILL BE REMOVED BY CITY FORCES PRIOR TO THE COMMENCEMENT OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE THE REMAINING STUMPS.

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DESCRIPTION: BARTON DRIVE IMPROVEMENTS
PROPOSED REMOVALS

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

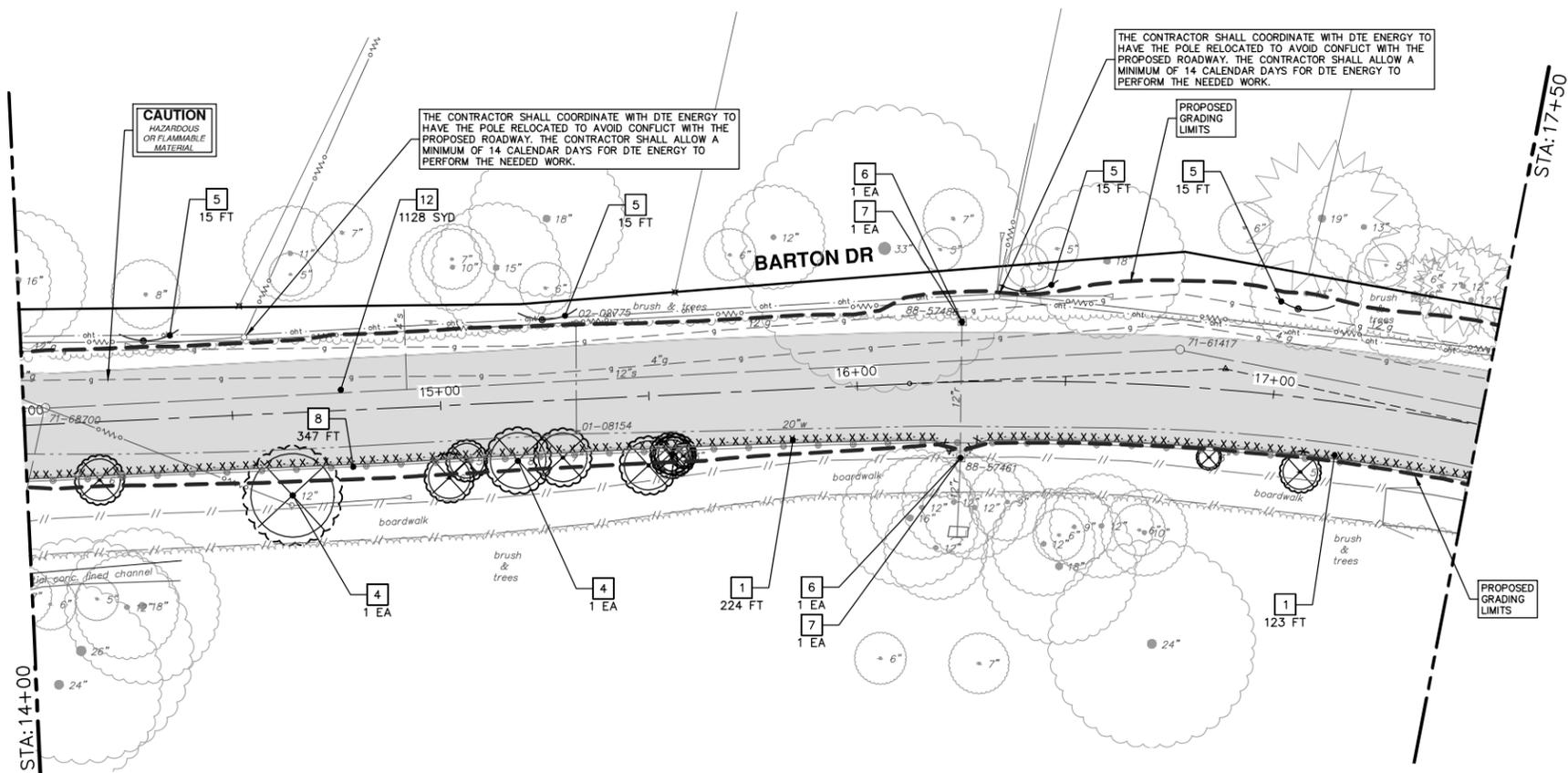
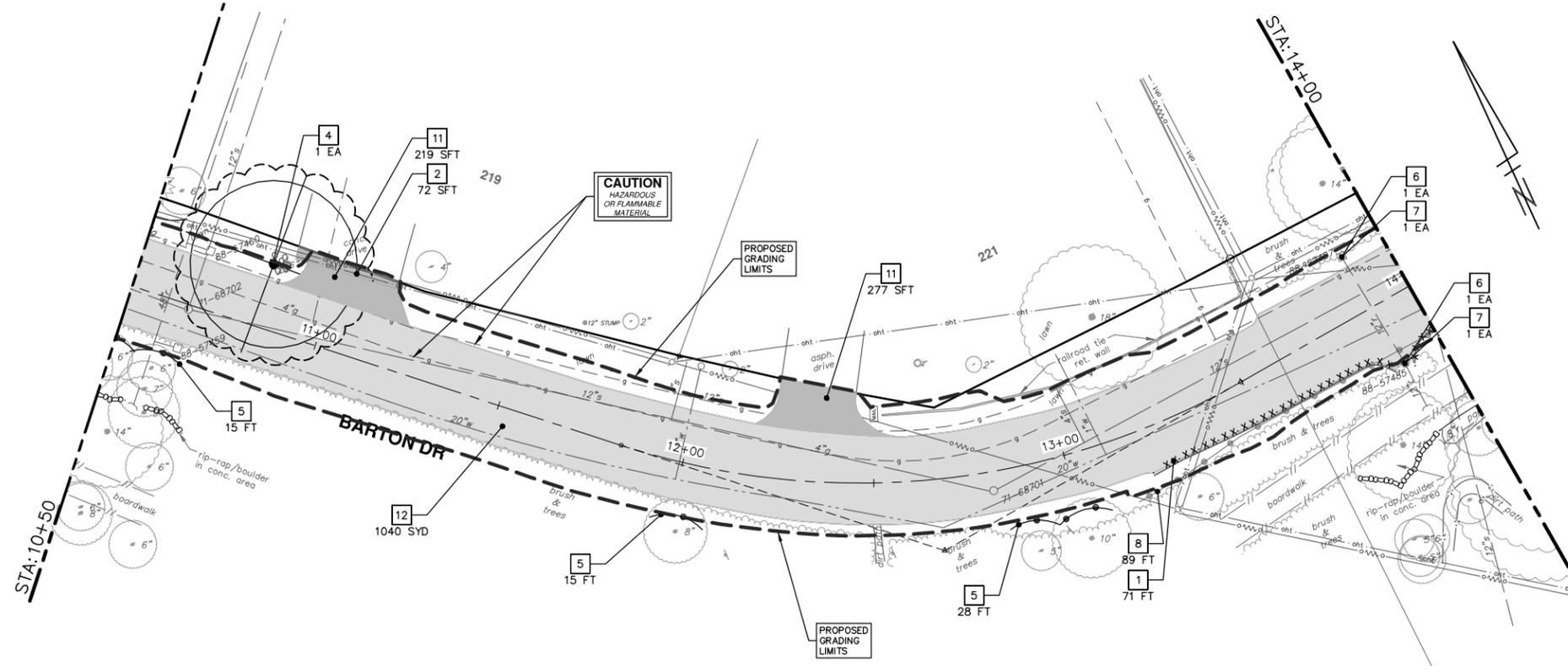
STA. 3+50 - STA. 10+50

SCALE PLAN: 1" = 20'

DRAWING No. 2019005-27

SHEET No. 27 OF 61

27 OF 61



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR CURB AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	COLD MILLING HMA SURFACE
4	STUMP REMOVAL, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM
8	GUARDRAIL, REM
9	SEWER, REM, LESS THAN 24 INCH
10	TRIMMING TREE
11	HMA SURFACE REMOVE
12	MACHINE GRADING, MODIFIED

• SAWCUT FULL DEPTH AT REMOVAL LIMITS

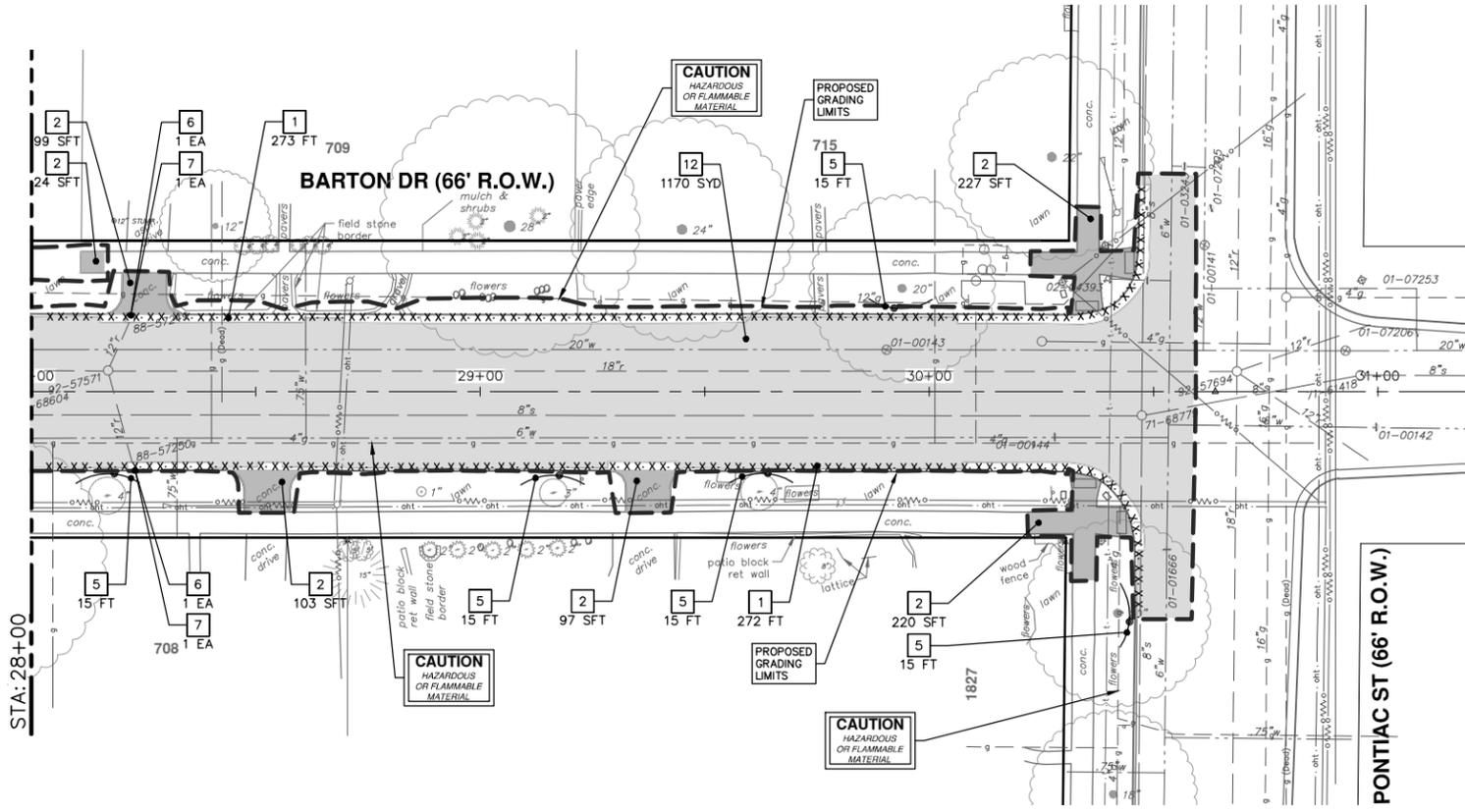
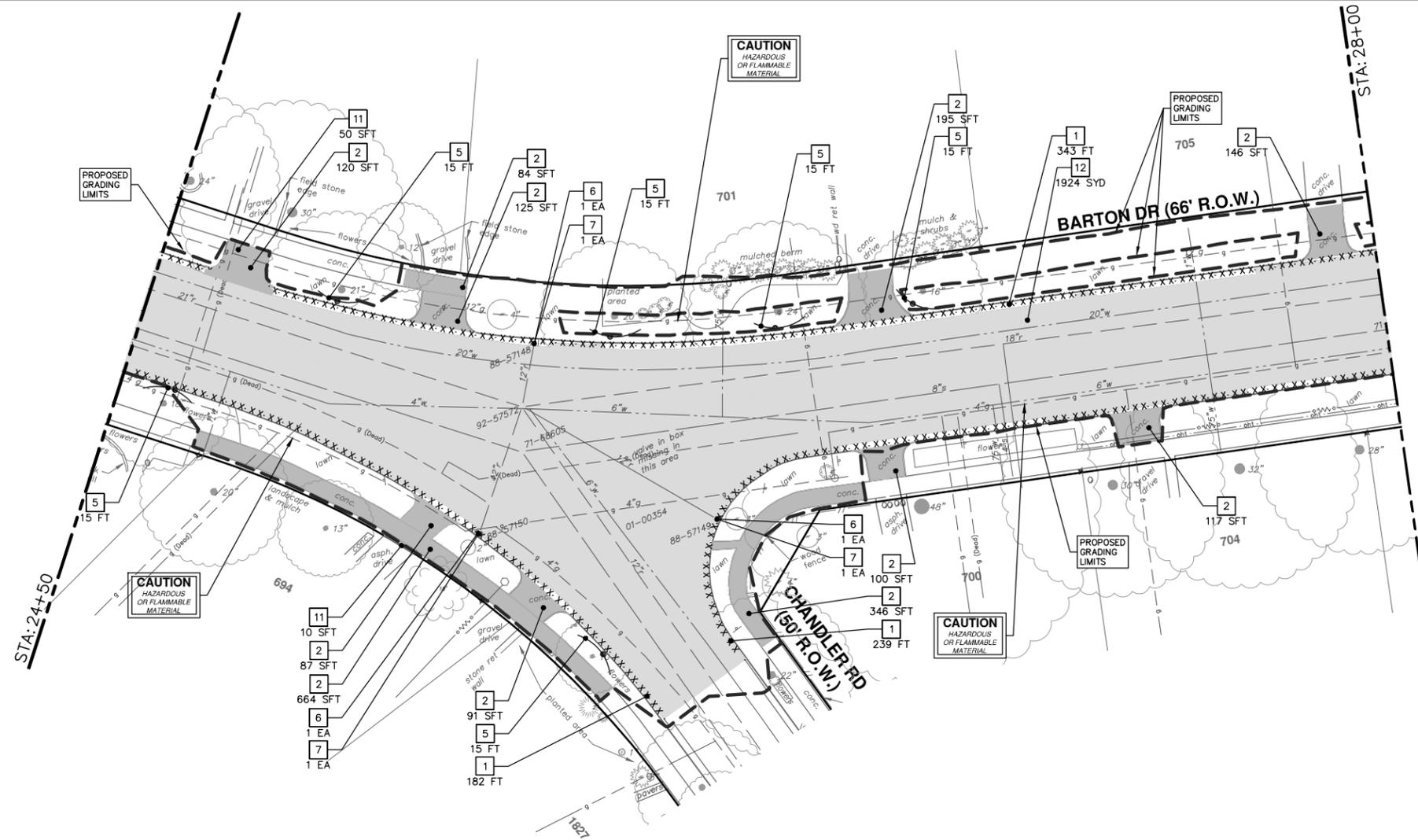


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BARTON DRIVE IMPROVEMENTS
PROPOSED REMOVALS

SHEET No. 28 OF 61
SCALE PLAN: 1" = 20'
DRAWING No. 2019005-28



REMOVAL KEY	
KEY	DESCRIPTION
1	REMOVE CONCRETE CURB OR GUTTER AND GUTTER, - ANY TYPE
2	REMOVE CONCRETE SIDEWALK AND DRIVE - ANY THICKNESS
3	COLD MILLING HMA SURFACE
4	STUMP REMOVAL, 8" OR LARGER, MODIFIED
5	PROTECTIVE FENCING
6	INLET FILTER
7	DR STRUCTURE, REM
8	GUARDRAIL, REM
9	SEWER, REM, LESS THAN 24 INCH
10	TRIMMING TREE
11	HMA SURFACE REMOVE
12	MACHINE GRADING, MODIFIED

* SAWCUT FULL DEPTH AT REMOVAL LIMITS

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BARTON DRIVE IMPROVEMENTS
PROPOSED REMOVALS

STA. 24+50 - STA. 30+50

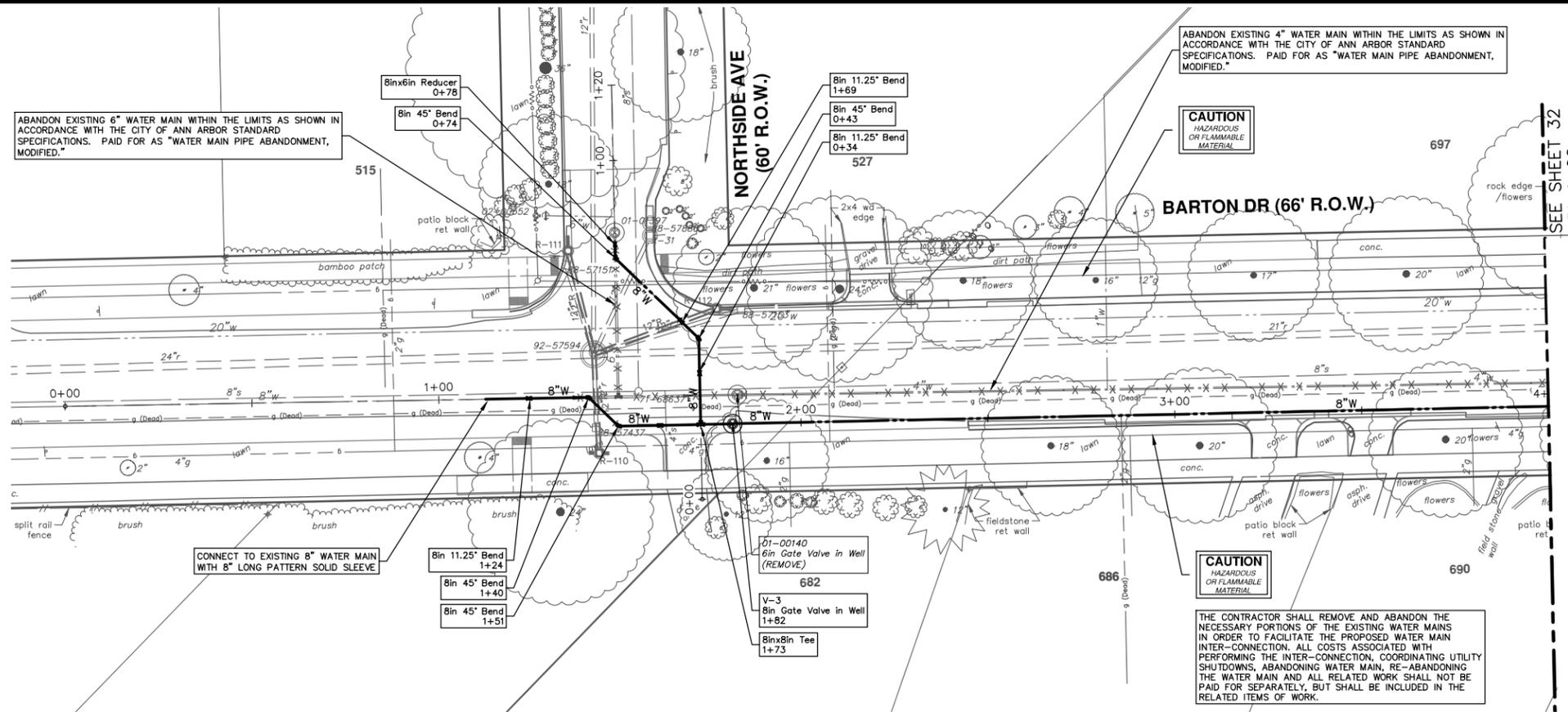
SCALE PLAN: 1" = 20'

DRAWING No. 2019005-30

SHEET No. 30 OF 61

2019005-30

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WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	ALIGNMENT	STATION	CENTERLINE ELEV
V-3	8in Gate Valve in Well	Pr Water	1+82	813.17

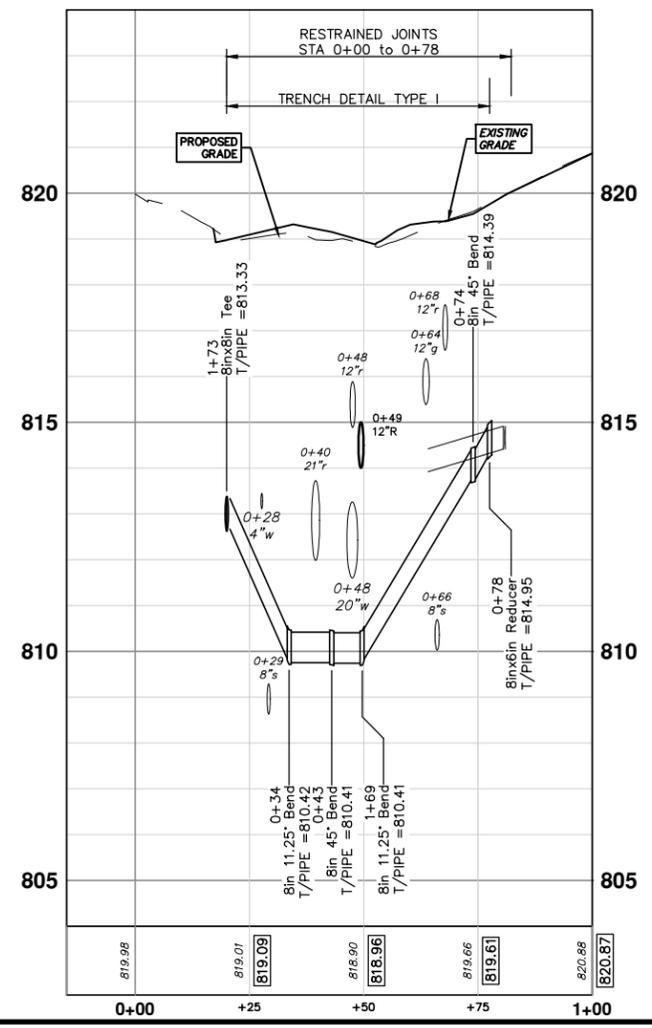
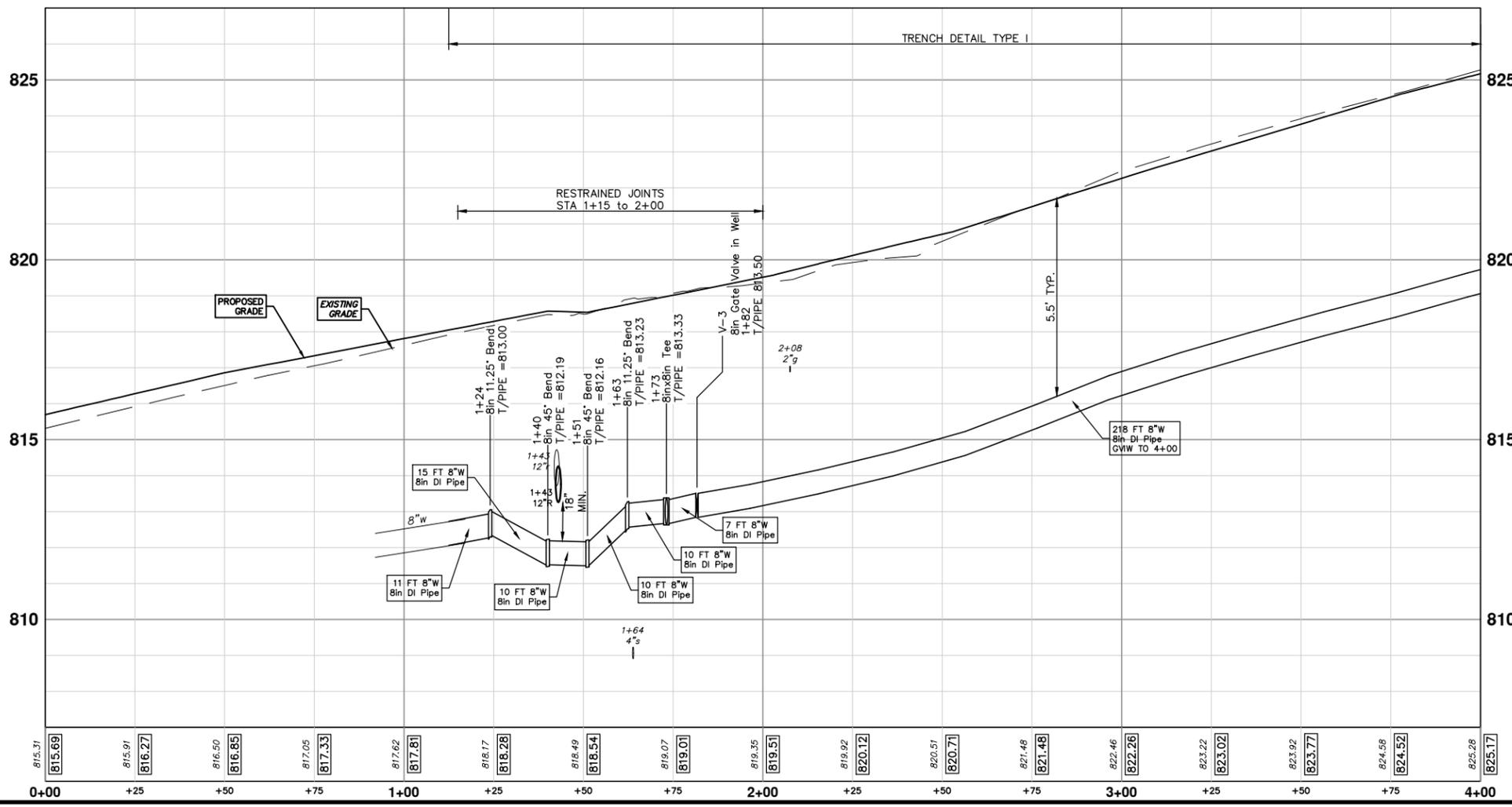
ABANDON EXISTING 4" WATER MAIN WITHIN THE LIMITS AS SHOWN IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD SPECIFICATIONS. PAID FOR AS "WATER MAIN PIPE ABANDONMENT, MODIFIED."

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."

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

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.



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CHECKED: JKA

DESCRIPTION: REV.

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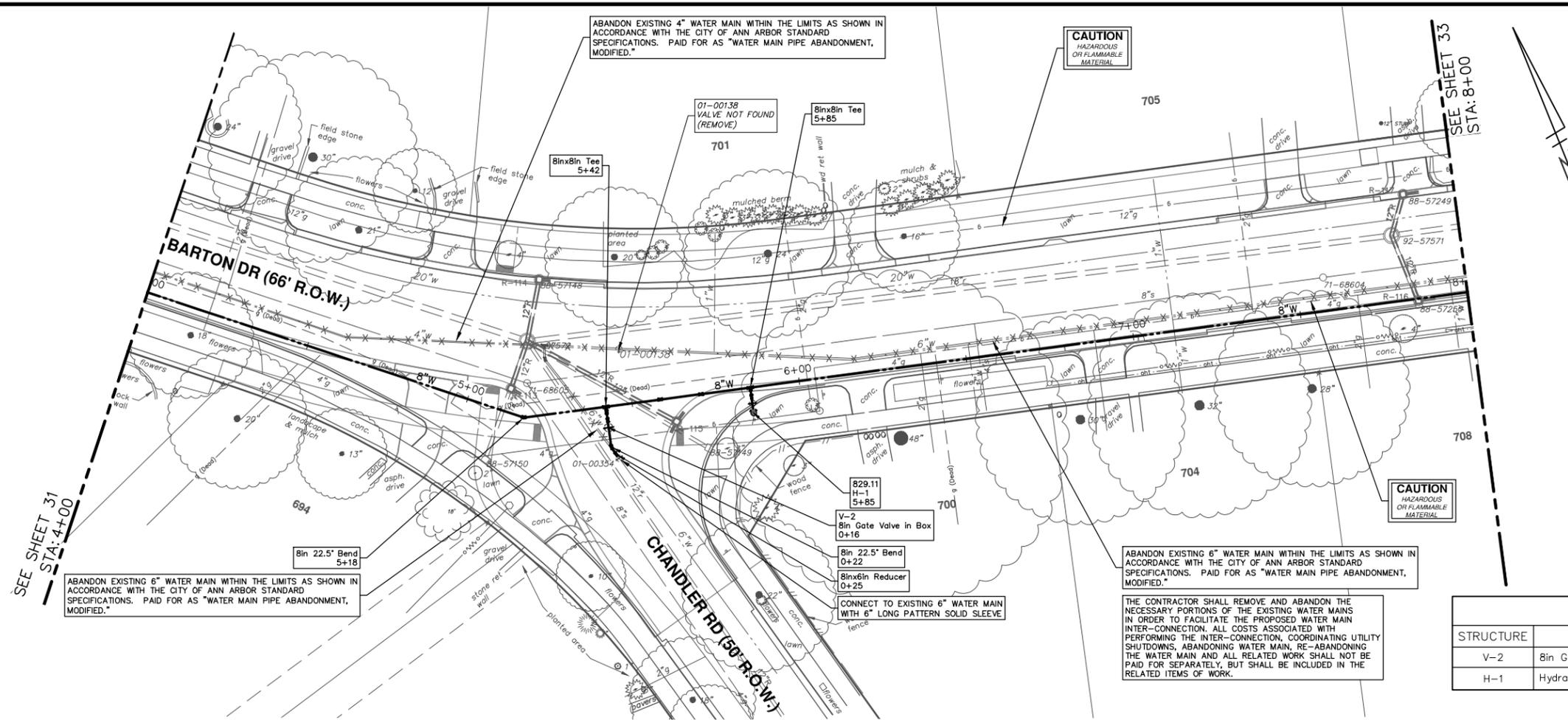
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ANN ARBOR
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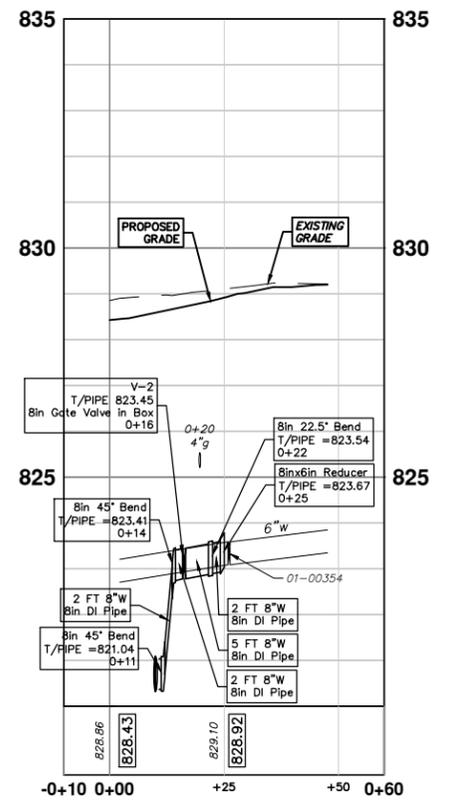
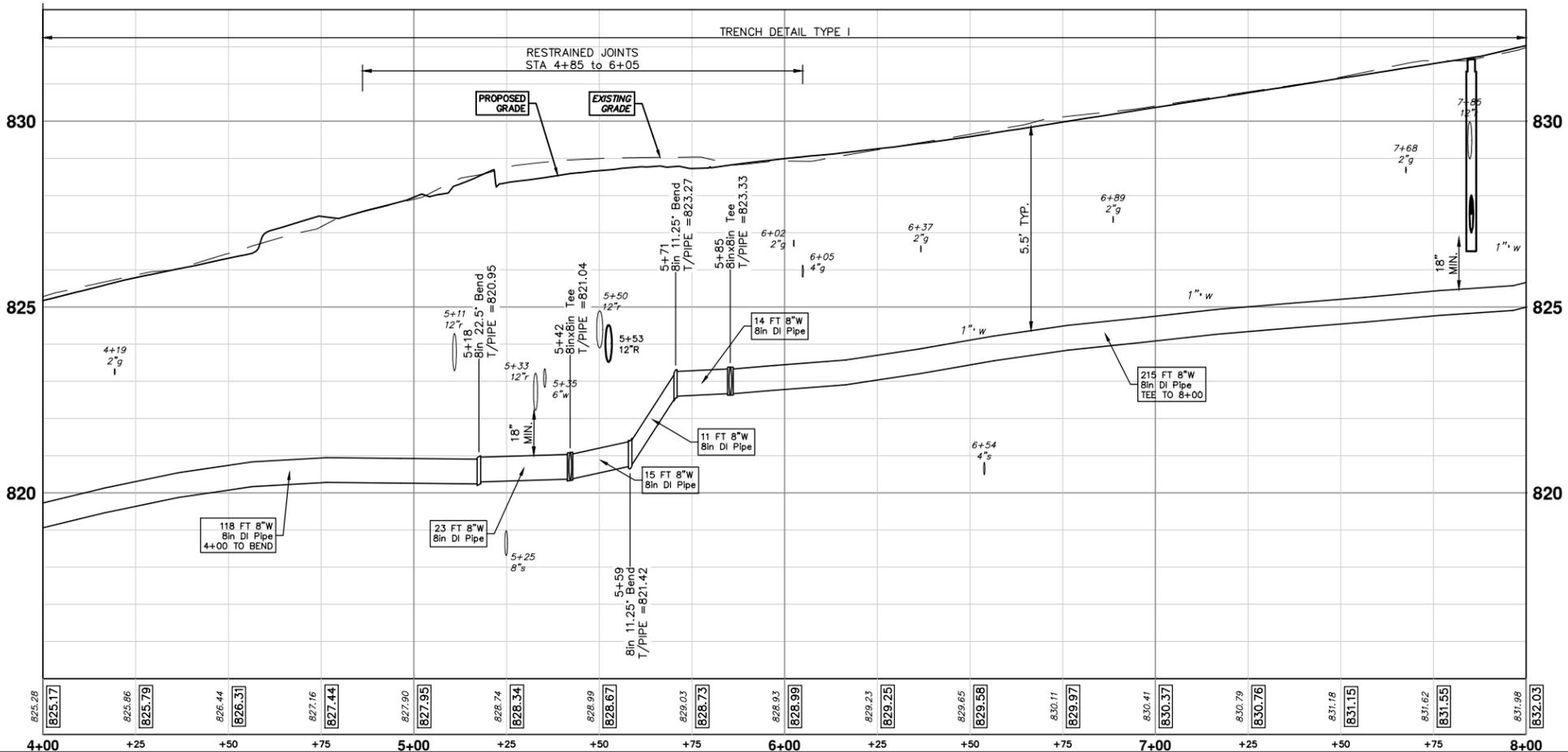
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS
PROPOSED WATER MAIN
STA. 0+00 - STA. 4+00

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING NO.: 2019005-31
SHEET NO.: 31 OF 61

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WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	ALIGNMENT	STATION	CENTERLINE ELEV
V-2	8in Gate Valve in Box	Chandler WM	0+16	823.12
H-1	Hydrant	Pr Water	5+85	829.25



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JKA		DRAWN
EC,DP,FAE		CHECKED

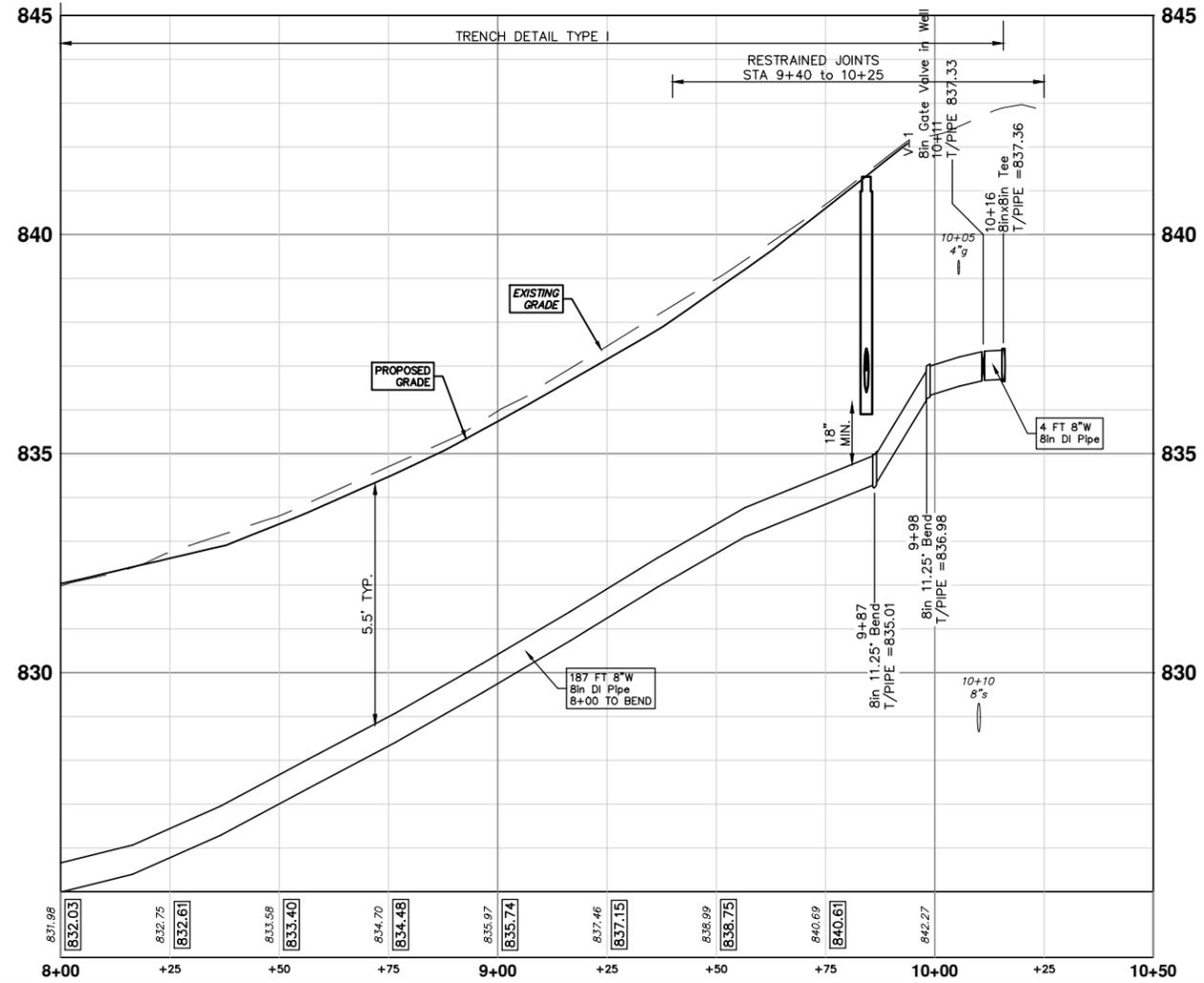
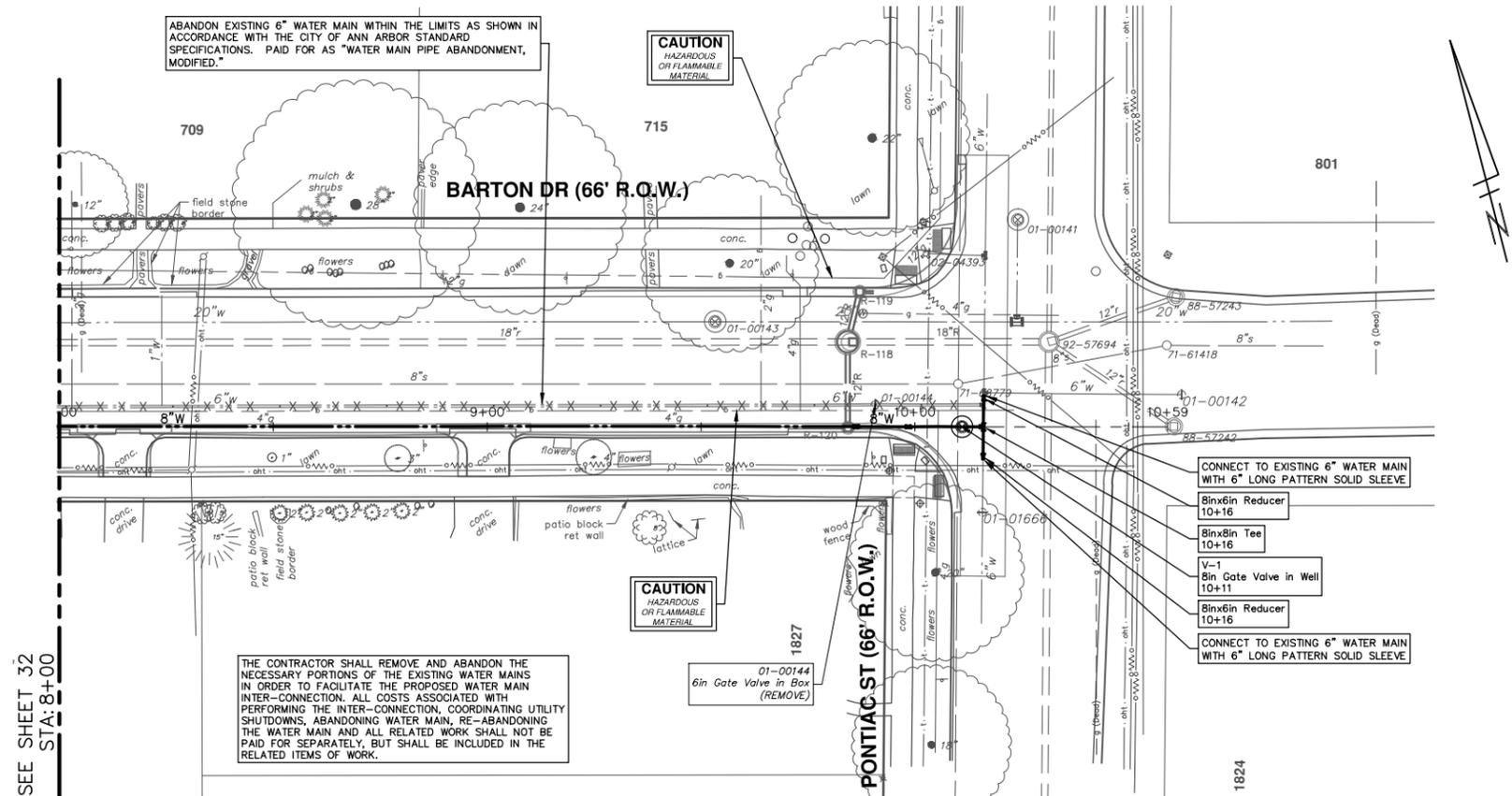
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS
 PROPOSED WATER MAIN
 STA. 4+00 - STA. 8+00

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

DRAWING NO. 2019005-32

SHEET NO. 32 OF 61



WATER MAIN STRUCTURE TABLE				
STRUCTURE	TYPE	ALIGNMENT	STATION	CENTERLINE ELEV
V-1	6in Gate Valve in Well	Pr Water	10+11	837.00

SEE SHEET 32
STA: 8+00

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."

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

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.

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

01-00144
6in Gate Valve in Box
(REMOVE)

CONNECT TO EXISTING 6" WATER MAIN WITH 6" LONG PATTERN SOLID SLEEVE

8inx6in Reducer
10+16

8inx8in Tee
10+16

V-1
6in Gate Valve in Well
10+11

8inx6in Reducer
10+16

CONNECT TO EXISTING 6" WATER MAIN WITH 6" LONG PATTERN SOLID SLEEVE



REV.	DATE	DESCRIPTION
00	2-28-20	OUT FOR BID
JKA		REC.DP/FAE
		DRAWN
		CHECKED

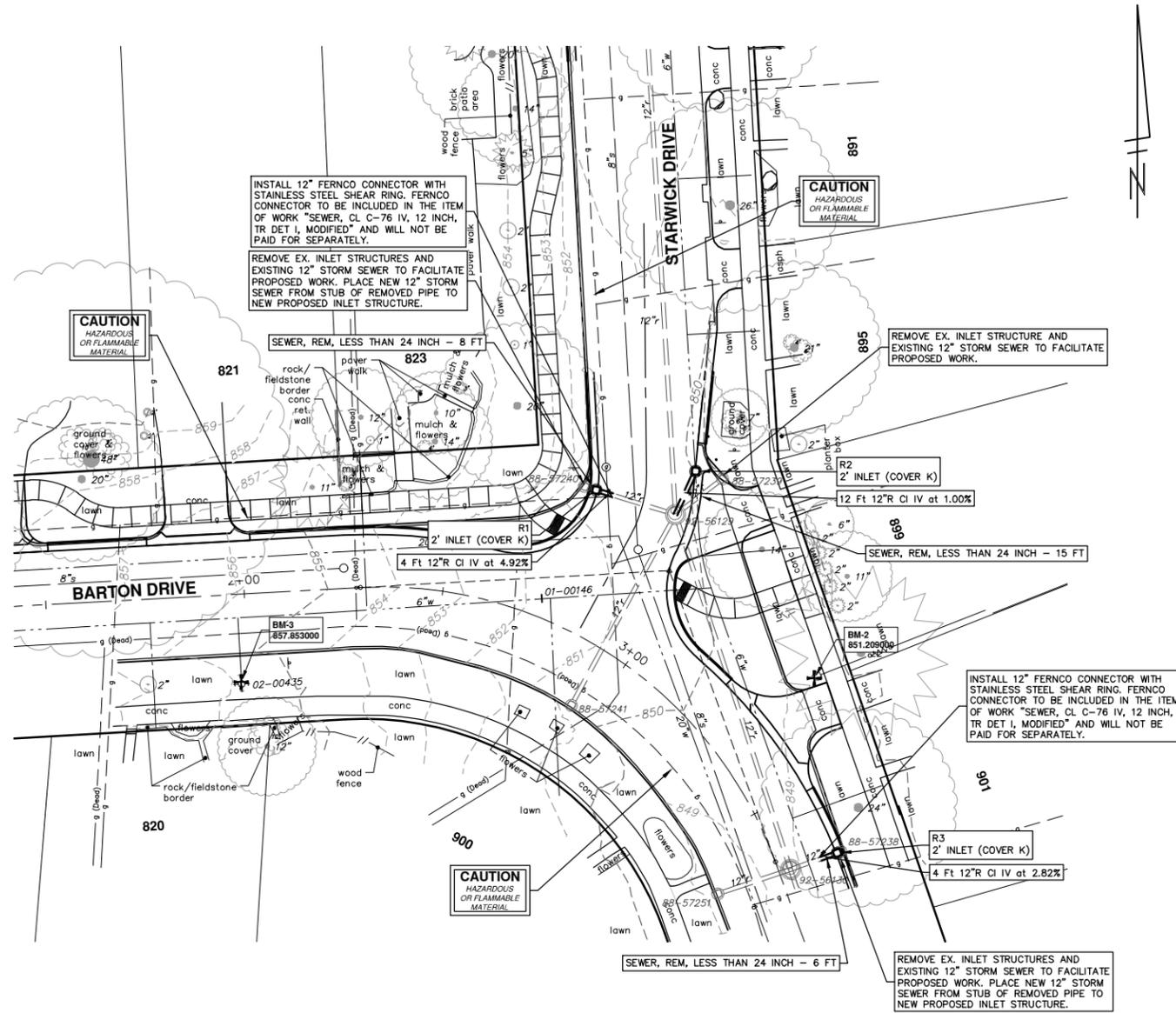
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BARTON DRIVE IMPROVEMENTS
PROPOSED WATER MAIN
STA. 8+00 - STA. 10+16

SHEET No. 33 OF 61
SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING No. 2019005-33

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STRUCTURE	DEPTH (Feet)	REMOVE
88-57238	4.00	TO BE REMOVED
88-57239	4.00	TO BE REMOVED
88-57240	4.00	TO BE REMOVED

STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R1	2' Inlet (Cover K)	850.65	12"E 846.36	4 LF OF 12" @ 4.92%	2'
R2	2' Inlet (Cover K)	849.96	12"SW 845.84	12 LF OF 12" @ 1.00%	2'
R3	2' Inlet (Cover K)	848.50	12"W 844.43	4 LF OF 12" @ 2.82%	2'



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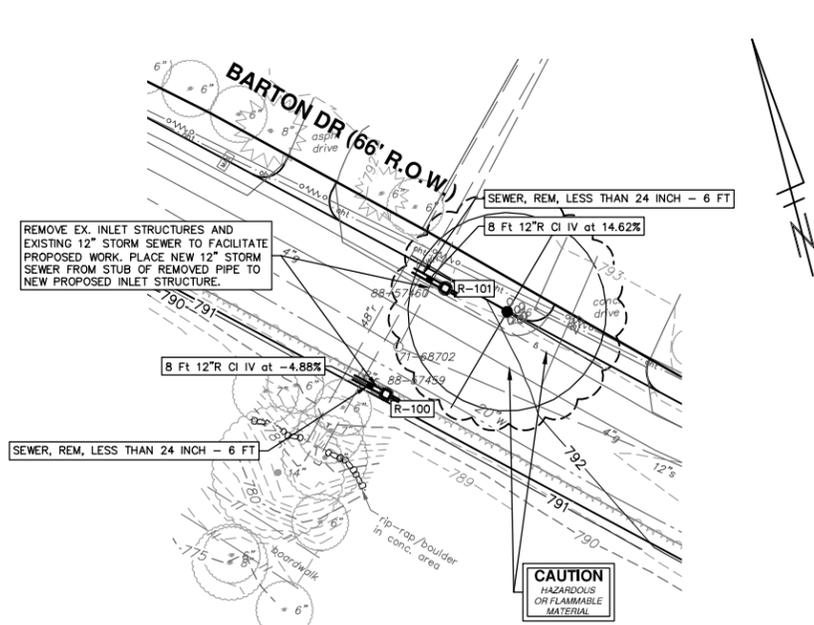


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS
PROPOSED STORM SEWER
BARTON DRIVE AT STARWICK DRIVE

SCALE PLAN: 1" = 20'
DRAWING No. 2019005-34

REV.	DESCRIPTION	DATE	BY	CHECKED
00	OUT FOR BID	2-28-20	JKA	
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			DRAWN	

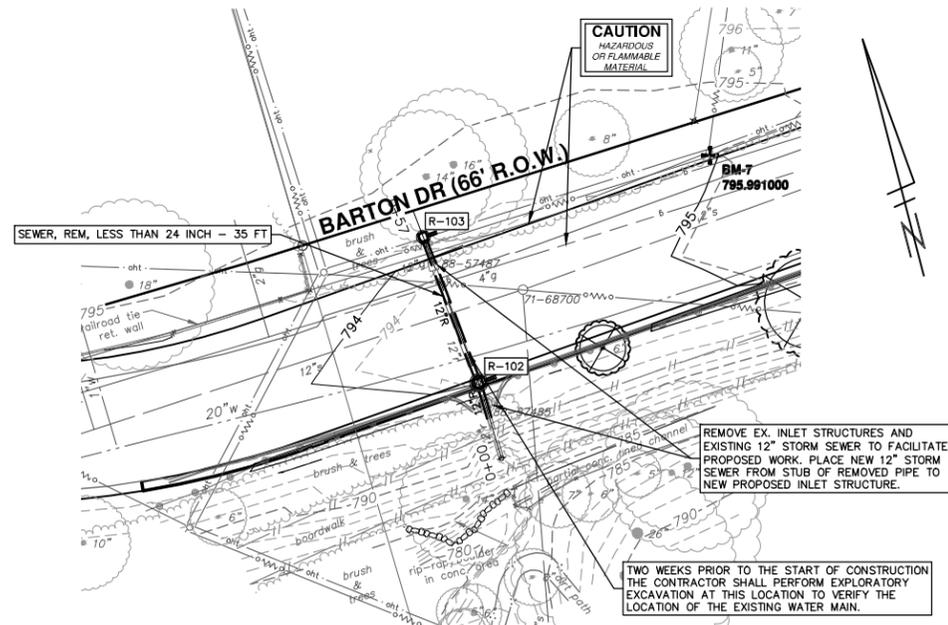
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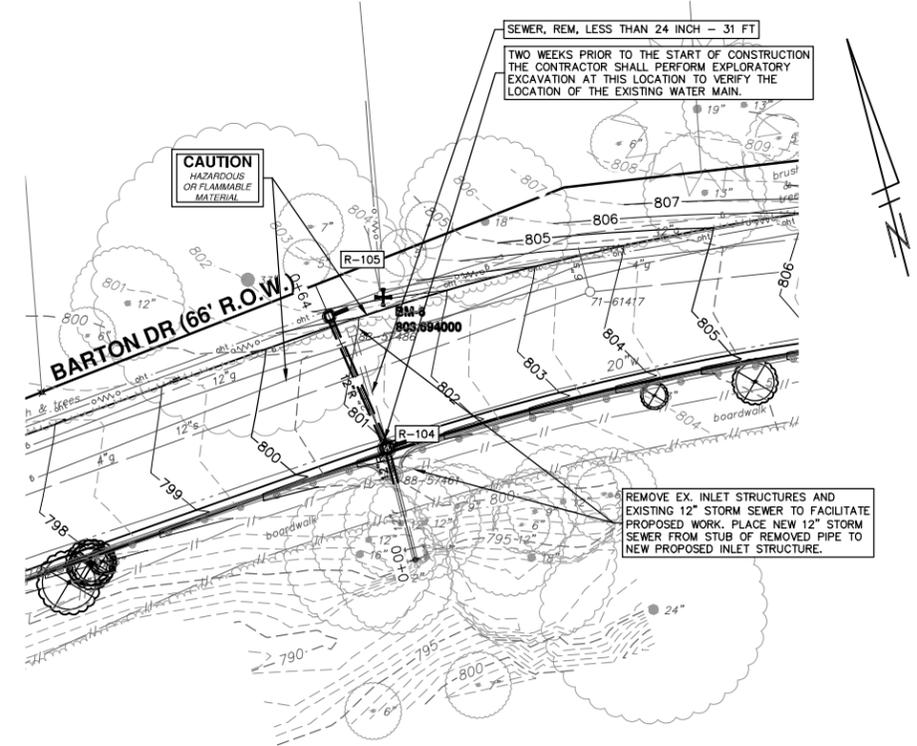
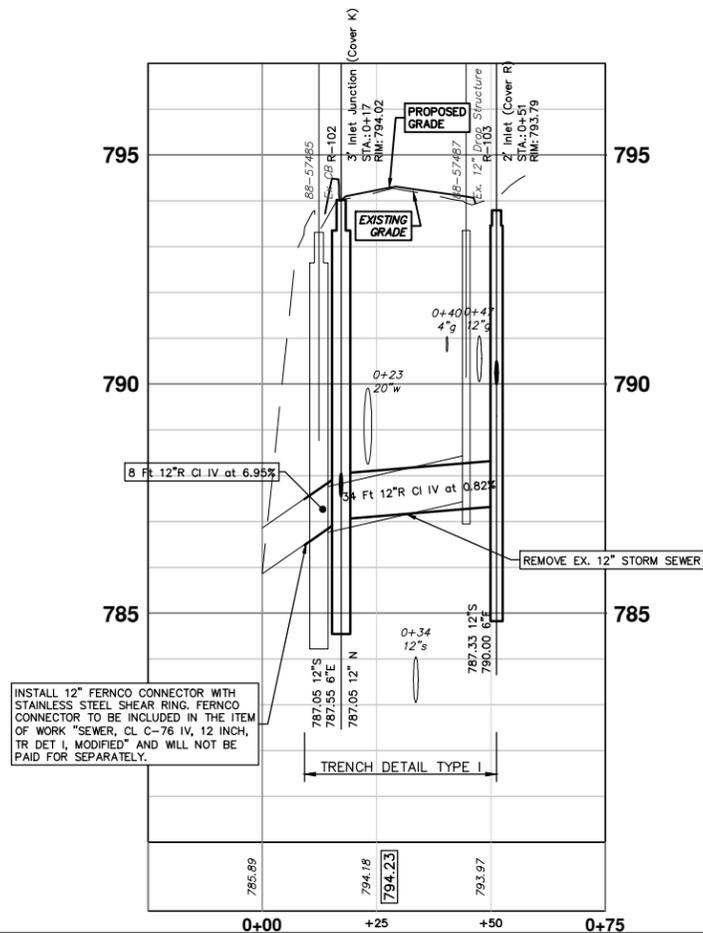
NOTE: PLACE 5' EDGE DRAIN STUBS W/PLUGGED ENDS IN EACH INLET STRUCTURE. BACKFILL WITH MDOT CL II GRANULAR MATERIAL COMPACTED TO 95% OF ITS MAX. DRY DENSITY. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL INCLUDED IN THE UNIT PRICE OF THE STRUCTURE BEING CONSTRUCTED.

STORM STRUCTURE TABLE					
STRUCTURE	TYPE	RIM	INVERTS	PIPE	SUMP
R-100	2' Inlet (Cover R)	791.54	12"NW 785.50 6"SE 787.50	8 LF OF 12" @ 4.88% 3 LF OF 6" @ 0.78%	2'
R-101	2' Inlet (Cover R)	791.92	12"NW 787.33 6"SE 787.83	8 LF OF 12" @ 14.62% 3 LF OF 6" @ 2.63%	2'

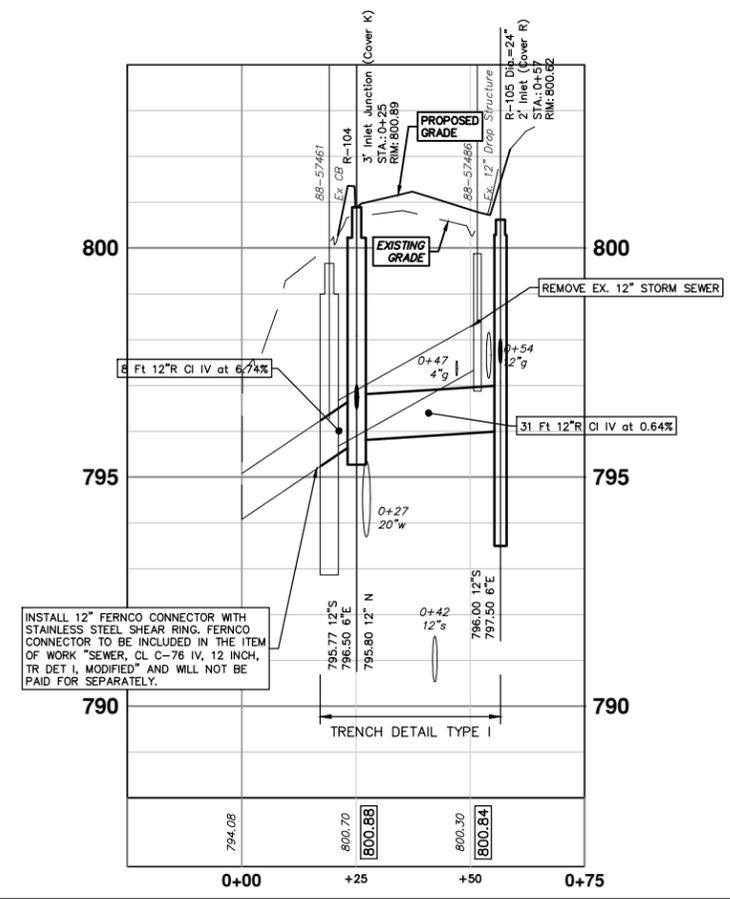
EXISTING STORM SEWER STRUCTURE REMOVAL TABLE	
STRUCTURE	REMOVE
88-57459	Ex. 12" Drop Structure
88-57460	Ex. 12" Drop Structure
88-57485	Ex CB
88-57487	Ex. 12" Drop Structure
88-57461	Ex CB
88-57486	Ex. 12" Drop Structure



STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
R-102	0+17	12" N 787.05 12" S 787.05 6" E 787.55	794.02	8.97	36" Dia.	3' Inlet Junction (Cover K)
R-103	0+51	12" S 787.33 6" E 790.00	793.79	8.46	24" Dia.	2' Inlet (Cover R)



STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
R-104	0+25	12" N 795.80 12" S 795.77 6" E 796.50	800.89	5.12	36" Dia.	3' Inlet Junction (Cover K)
R-105	0+57	12" S 796.00 6" E 797.50	800.62	6.62	24" Dia.	2' Inlet (Cover R)



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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

BARTON DRIVE IMPROVEMENTS

PROPOSED STORM SEWER

MISC STORM SEWER

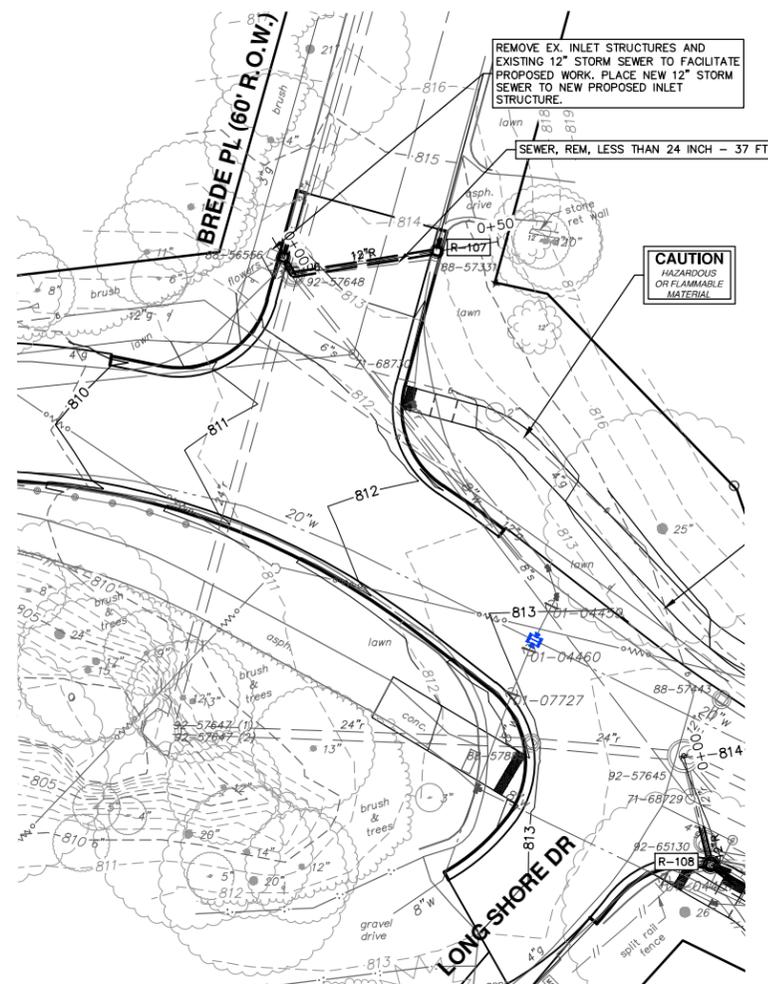
SCALE PLAN: 1" = 20'

PROFILE: 1" = 2'

DRAWING No. 2019005-35

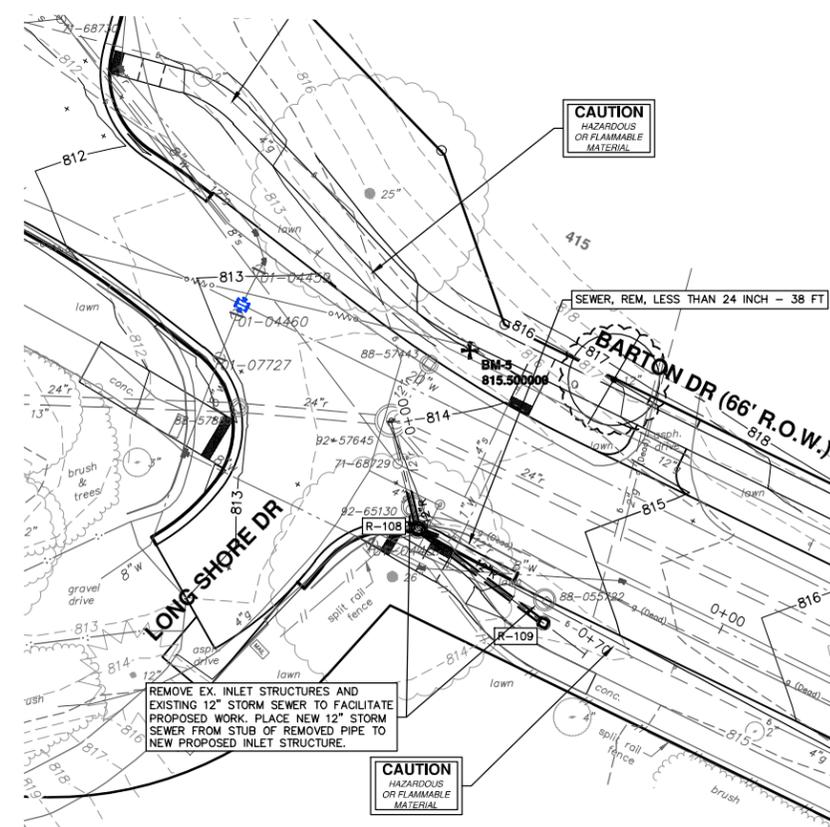
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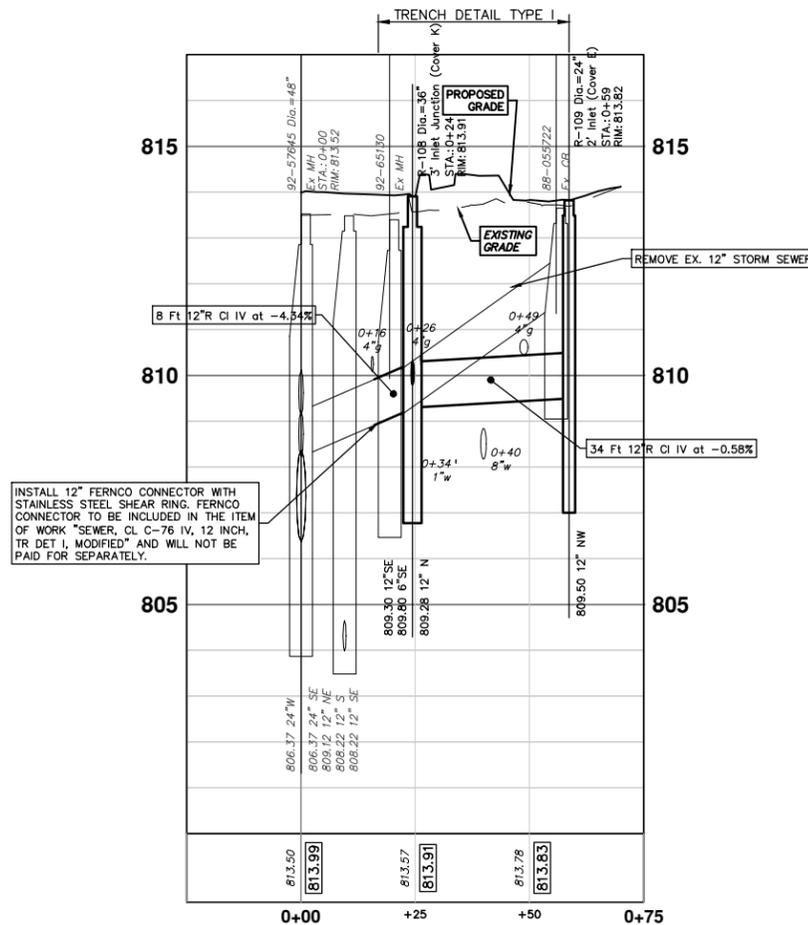
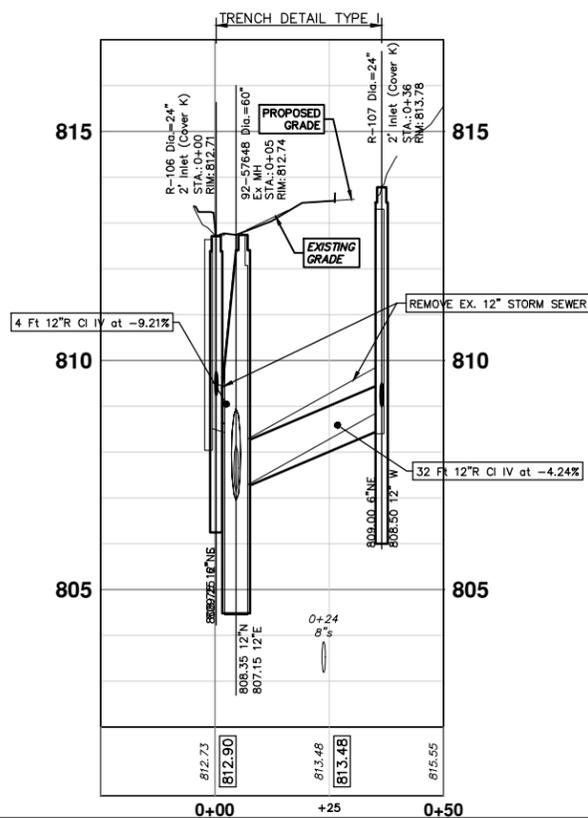


STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
92-57645	0+00	24" SE 806.37 12" NE 809.12 12" S 808.22 12" SE 808.22 24" W 806.37	813.52	9.15	48" Dia.	Ex MH
R-108	0+24	12" N 809.28 12" SE 809.30 6" SE 809.80	813.91	6.63	36" Dia.	3' Inlet Junction (Cover K)
R-109	0+59	12" NW 809.50	813.82	6.32	24" Dia.	2' Inlet (Cover E)

STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
92-57648	0+05	12" N 808.35 12" E 807.15	812.74	7.59	60" Dia.	Ex MH
R-106	0+00	12" S 808.75 6" NE 809.25	812.71	5.96	24" Dia.	2' Inlet (Cover K)
R-107	0+36	12" W 808.50 6" NE 809.00	813.78	7.28	24" Dia.	2' Inlet (Cover K)



EXISTING STORM SEWER STRUCTURE REMOVAL TABLE	
STRUCTURE	REMOVE
88-055722	Ex. CB
88-56556	Ex. 12" Drop Structure
88-57331	Ex. 12" Drop Structure
92-65130	Ex MH
92-57648	Ex MH





Know what's below.
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REV.	DATE	DESCRIPTION
2-28-20		EC, DP, JKA
		DRAWN
		CHECKED



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CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

BARTON DRIVE IMPROVEMENTS

PROPOSED STORM SEWER

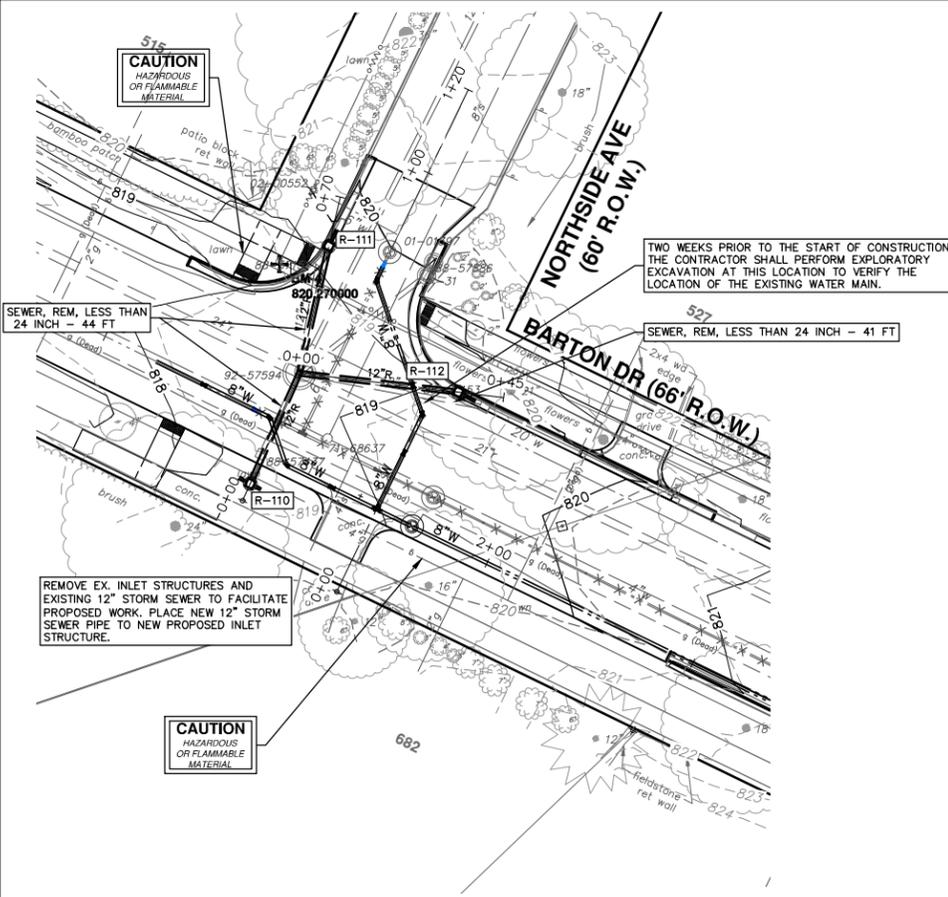
MISC STORM SEWER

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

DRAWING NO. 2019005-36

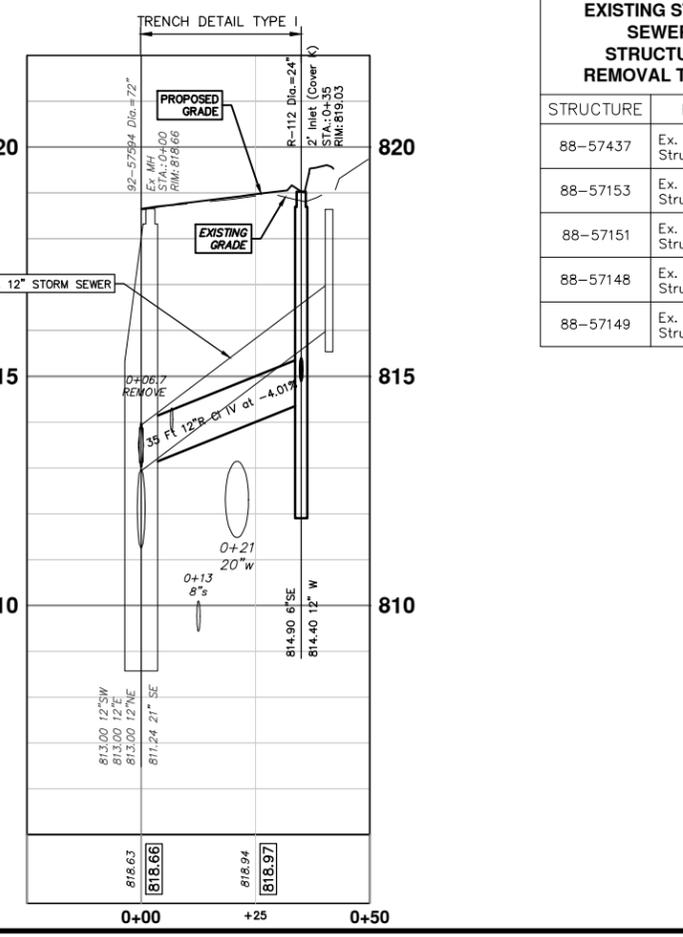
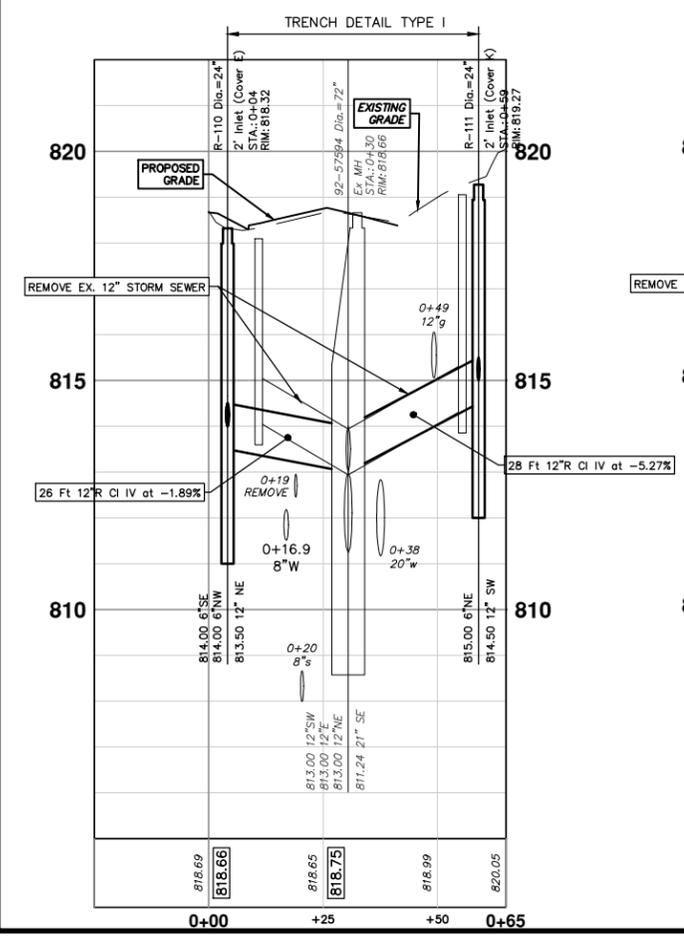
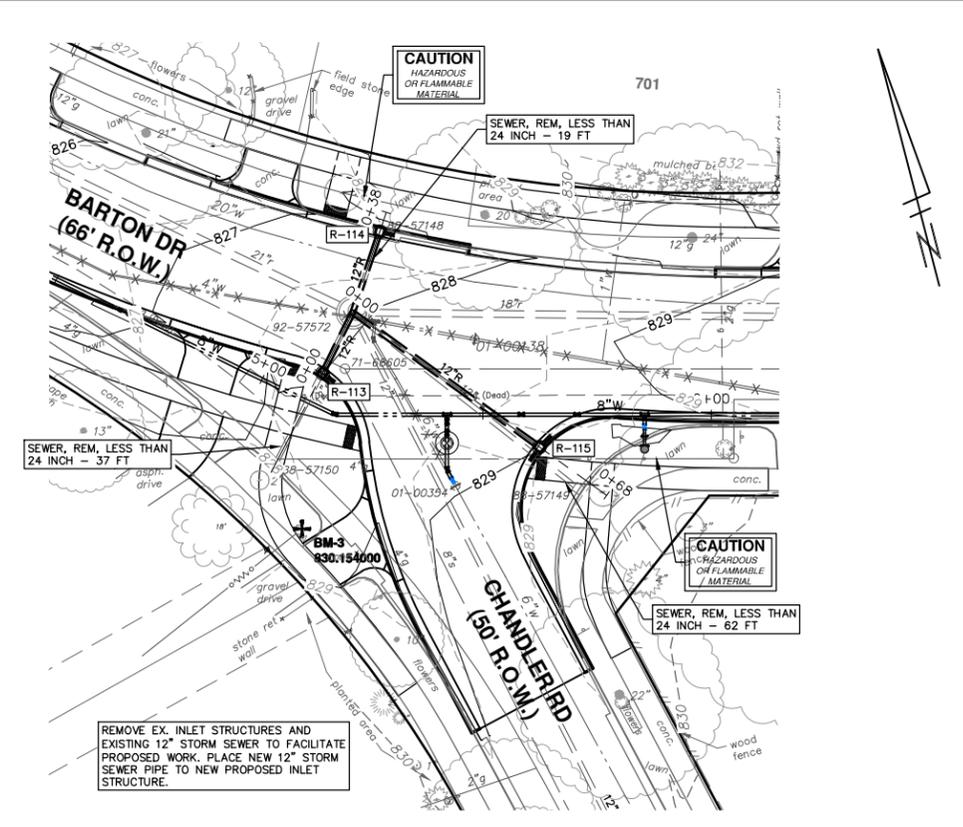
SHEET NO. 36 OF 61

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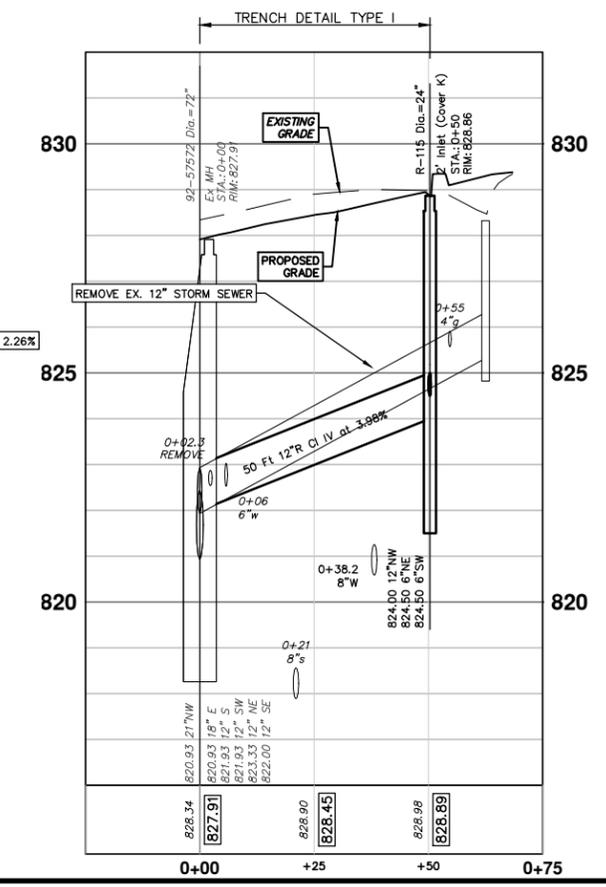
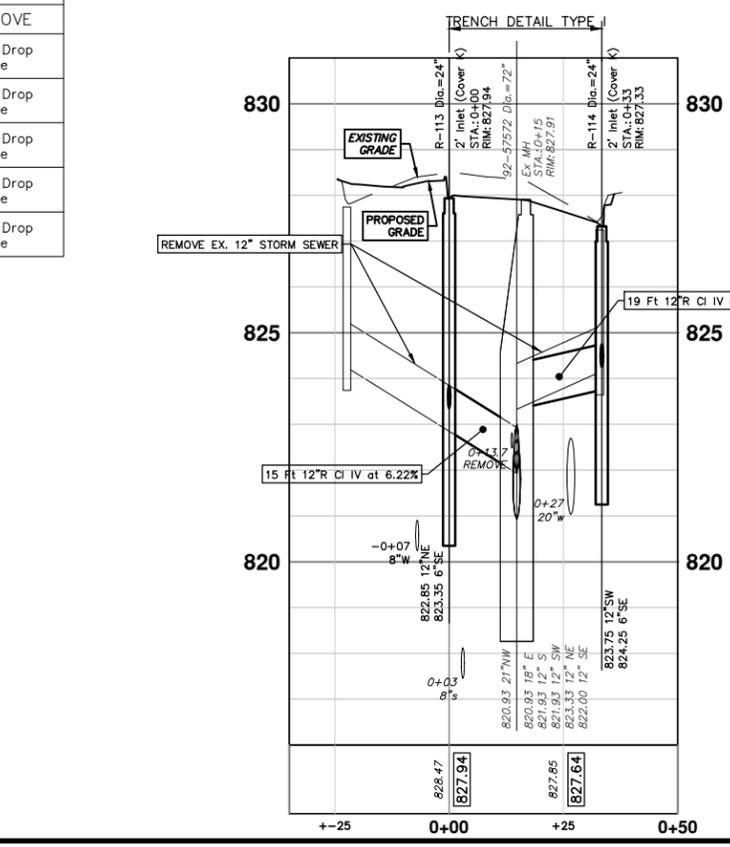


STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
92-57594	0+00	21" SE 811.24 12" SW 813.00 12" E 813.00 12" NE 813.00	818.66	9.42	72" Dia.	Ex MH
R-110	0+04	12" NE 813.50 6" SE 814.00 6" NW 814.00	818.32	6.82	24" Dia.	2' Inlet (Cover E)
R-111	0+59	12" SW 814.50 6" NE 815.00	819.27	6.77	24" Dia.	2' Inlet (Cover K)
R-112	0+35	12" W 814.40 6" SE 814.90	819.03	6.62	24" Dia.	2' Inlet (Cover K)

STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
92-57572	0+00	18" E 820.93 12" S 821.93 12" SW 821.93 12" NE 823.33 12" SE 822.00 21" NW 820.93	827.91	8.98	72" Dia.	Ex MH
R-113	0+00	12" NE 822.85 6" SE 823.35	827.94	7.09	24" Dia.	2' Inlet (Cover K)
R-114	0+33	12" SW 823.75 6" SE 824.25	827.33	5.58	24" Dia.	2' Inlet (Cover K)
R-115	0+50	12" NW 824.00 6" NE 824.50 6" SW 824.50	828.86	6.86	24" Dia.	2' Inlet (Cover K)



EXISTING STORM SEWER STRUCTURE REMOVAL TABLE	
STRUCTURE	REMOVE
88-57437	Ex. 12" Drop Structure
88-57153	Ex. 12" Drop Structure
88-57151	Ex. 12" Drop Structure
88-57148	Ex. 12" Drop Structure
88-57149	Ex. 12" Drop Structure



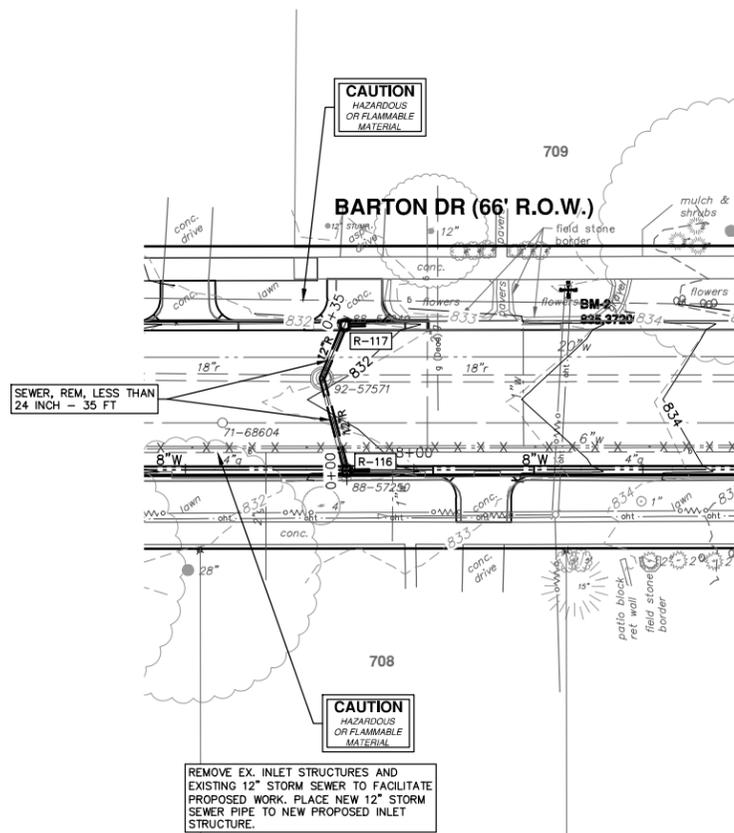


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BARTON DRIVE IMPROVEMENTS
 PROPOSED STORM SEWER
 MISC STORM SEWER

SHEET No.	37 OF 61	SCALE PLAN: 1" = 20'	PROFILE: 1" = 2'	DRAWING No.	2019005-37
REV.	DESCRIPTION	DATE	CHECKED	JKA	Drawn by
00	OUT FOR BID	2-28-20	EC,DP,FAE		

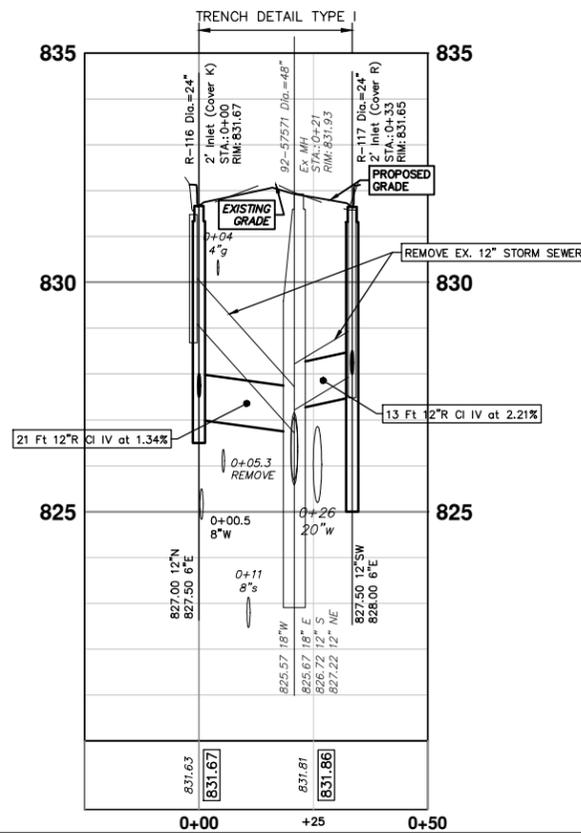
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R:\2019027 Barton Dr.\Plan Production\2019027Strm.dwg Dwg Created: 26-Feb-20 - a2 standard bw.stb - Plot Date: 27-Feb-20

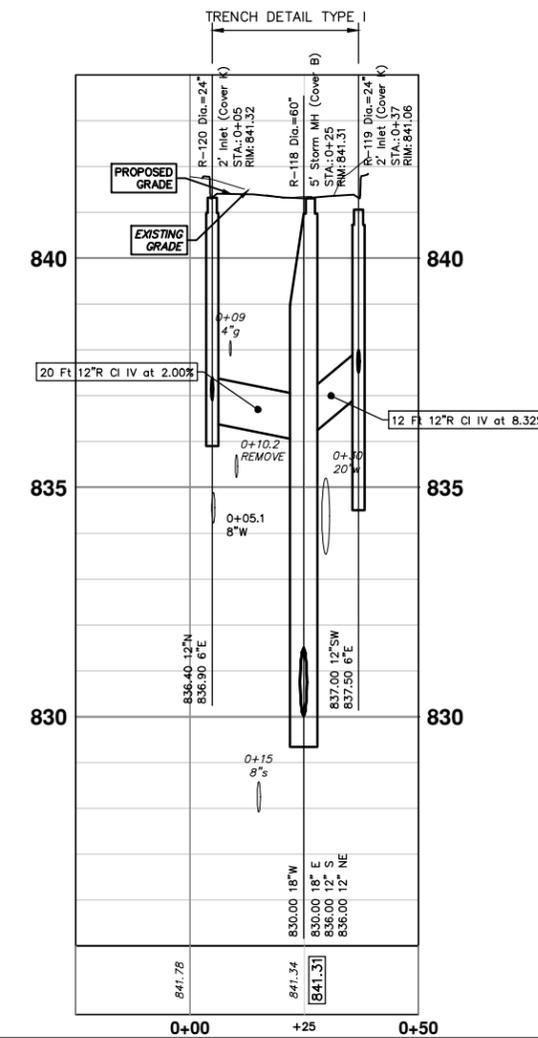
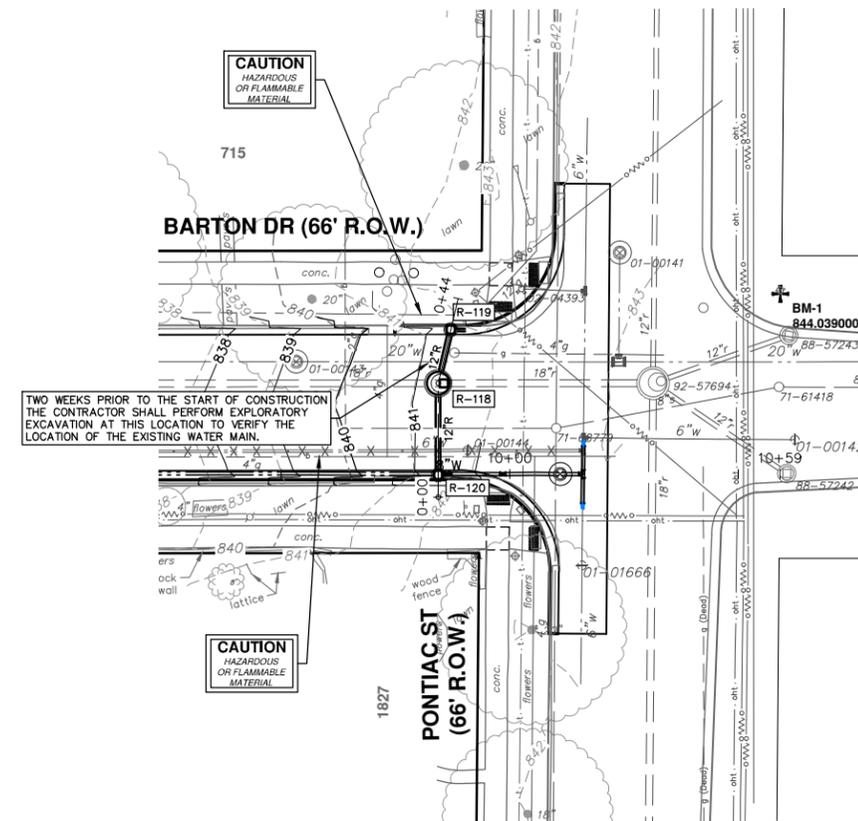


STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
R-118	0+25	18" E 830.00 12" S 836.00 12" NE 836.00 18" W 830.00	841.31	11.30	60" Dia.	5' Storm MH (Cover B)
R-119	0+37	12" SW 837.00 6" E 837.50	841.06	6.06	24" Dia.	2' Inlet (Cover K)
R-120	0+05	12" N 836.40 6" E 836.90	841.32	4.92	24" Dia.	2' Inlet (Cover K)

STORM SEWER STRUCTURE TABLE						
STRUCTURE	UTILITY STATION	INVERT ELEVATION, SIZE & DIRECTION	TOP OF CASTING ELEVATION	DEPTH (Feet)	SIZE	APPLICATION/CONSTRUCTION
R-117	0+33	12" SW 827.50 6" E 828.00	831.65	6.15	24" Dia.	2' Inlet (Cover R)
R-116	0+00	12" N 827.00 6" E 827.50	831.67	4.67	24" Dia.	2' Inlet (Cover K)
92-57571	0+21	18" E 825.67 12" S 826.72 12" NE 827.22 18" W 825.57	831.93	8.36	48" Dia.	Ex MH



EXISTING STORM SEWER STRUCTURE REMOVAL TABLE	
STRUCTURE	REMOVE
88-57250	Ex. 12" Drop Structure
88-57249	Ex. 12" Drop Structure



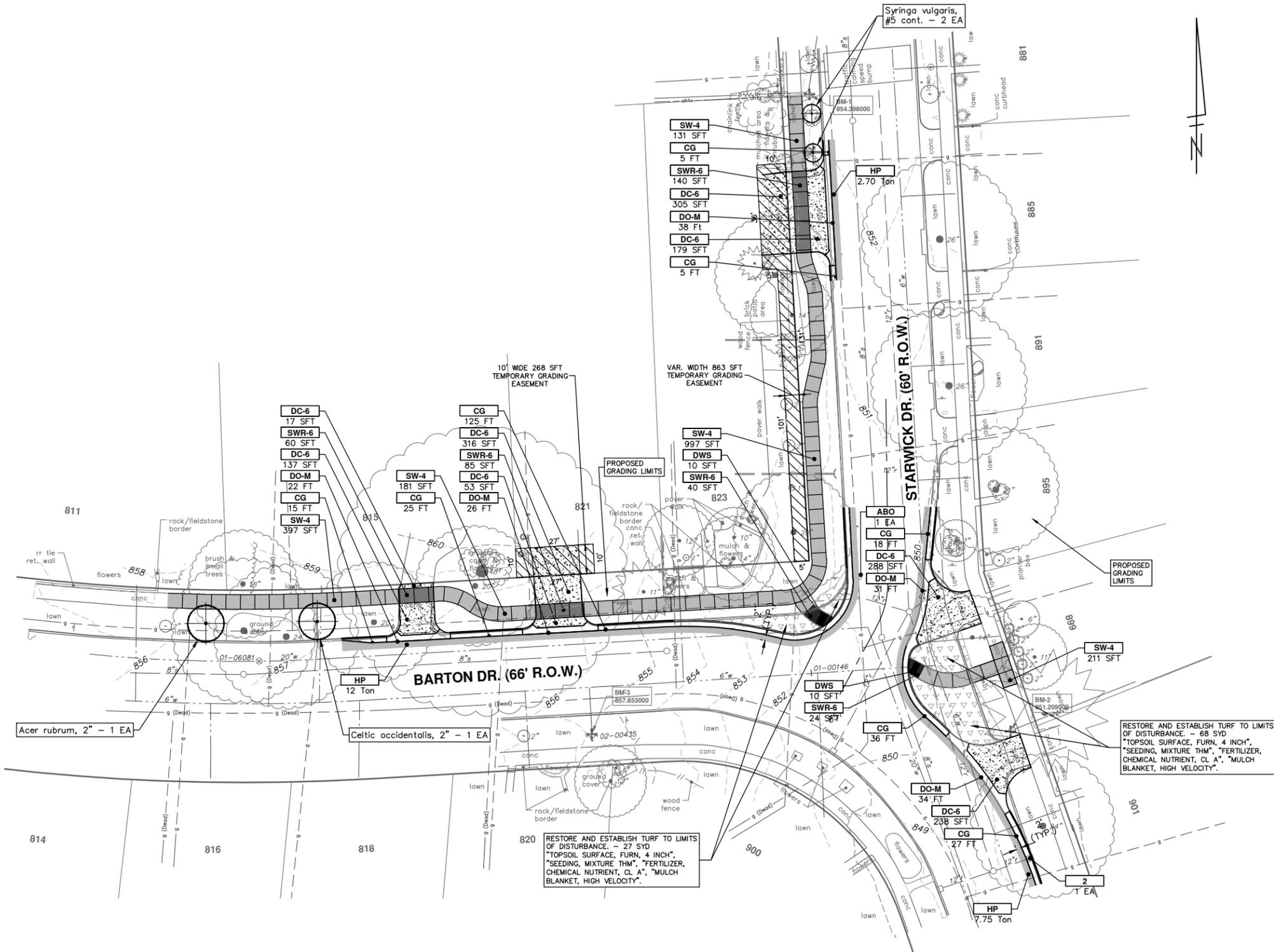
REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	2-28-20	JKA	

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BARTON DRIVE IMPROVEMENTS
PROPOSED STORM SEWER
MISC STORM SEWER

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING NO. 2019005-38



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
HMA APP	PLACE HMA APPROACH
HP	HAND PATCHING
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, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
SW-RWS	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18" (SFT)
SW-RWT	INTEGRAL SIDEWALK RETAINING WALL, 19" TO 36" (SFT)
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

RESTORE AND ESTABLISH TURF TO LIMITS OF DISTURBANCE. - 68 SYD
 TOPSOIL SURFACE, FURN, 4 INCH,
 SEEDING, MIXTURE THM, *FERTILIZER,
 CHEMICAL NUTRIENT, CL A*, *MULCH
 BLANKET, HIGH VELOCITY*.

RESTORE AND ESTABLISH TURF TO LIMITS OF DISTURBANCE. - 27 SYD
 TOPSOIL SURFACE, FURN, 4 INCH,
 SEEDING, MIXTURE THM, *FERTILIZER,
 CHEMICAL NUTRIENT, CL A*, *MULCH
 BLANKET, HIGH VELOCITY*.



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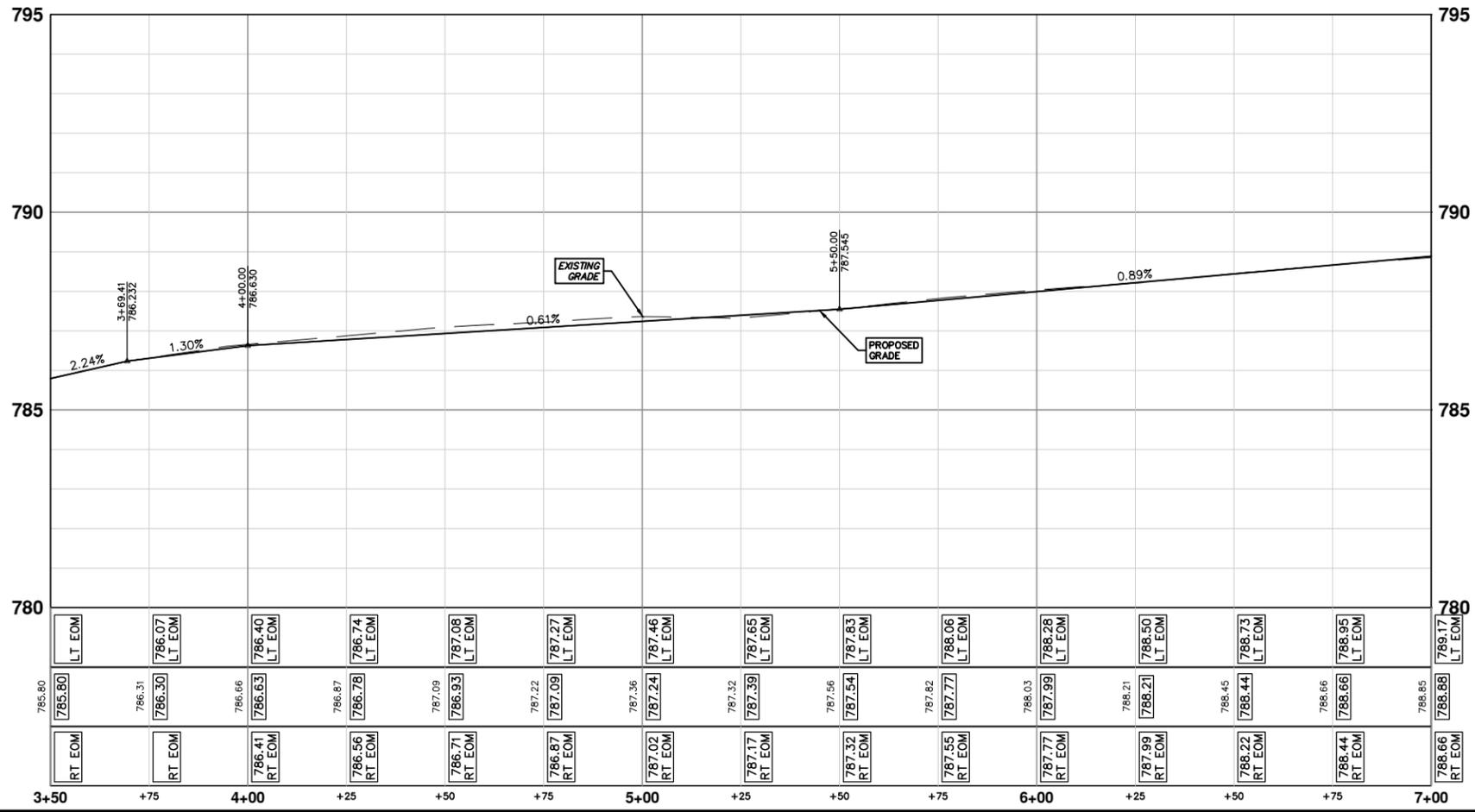
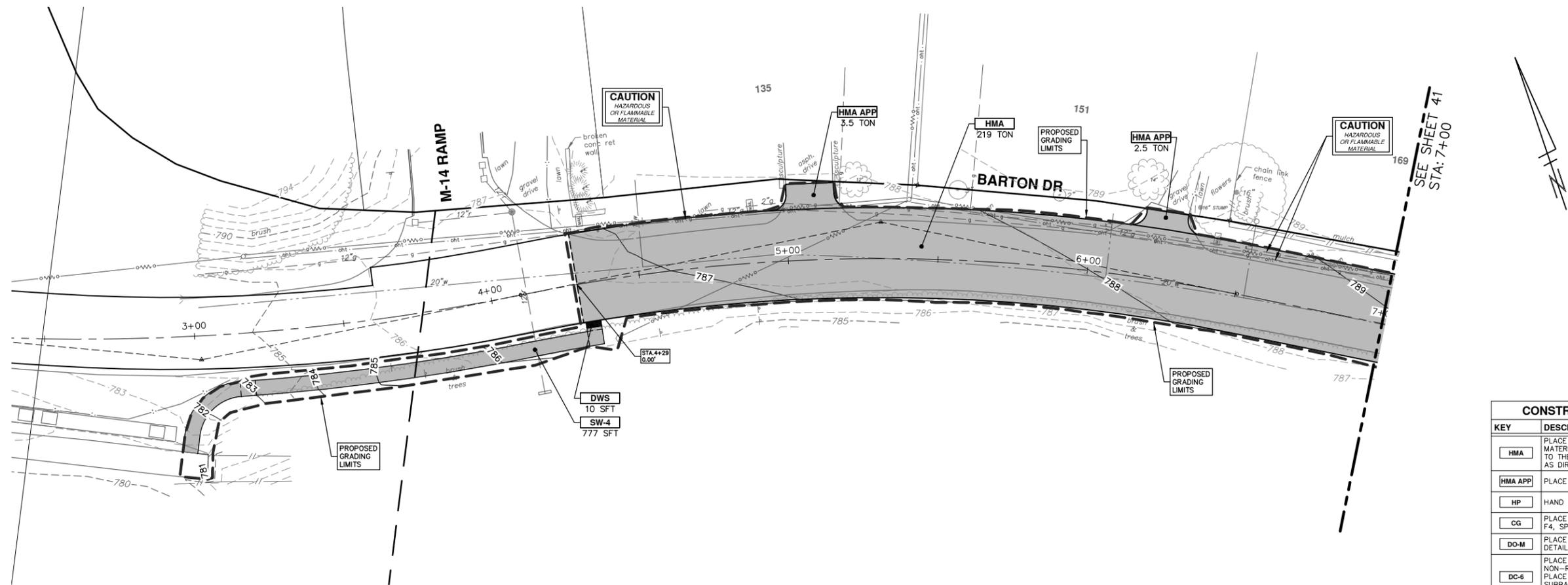


CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
BARTON DRIVE IMPROVEMENTS
 PROPOSED ROAD & SIDEWALK
 BARTON DRIVE AT STARWICK DRIVE

SCALE PLAN: 1" = 20'
 DRAWING No. 2019005-39

REV.	DATE	DRAWN	CHECKED	DESCRIPTION

R:\2019027 Barton Dr.\Plan Production\2019027Pfrd.dwg Dwg Created: 27-Feb-20 - _a2 standard bw.stb - Plot Date: 27-Feb-20



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
HMA APP	PLACE HMA APPROACH
HP	HAND PATCHING
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, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
SW-RWS	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18" (SFT)
SW-RWT	INTEGRAL SIDEWALK RETAINING WALL, 19" TO 36" (SFT)
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

BARTON DRIVE IMPROVEMENTS

PROPOSED ROAD & SIDEWALK

STA. 3+50 - STA. 7+00

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

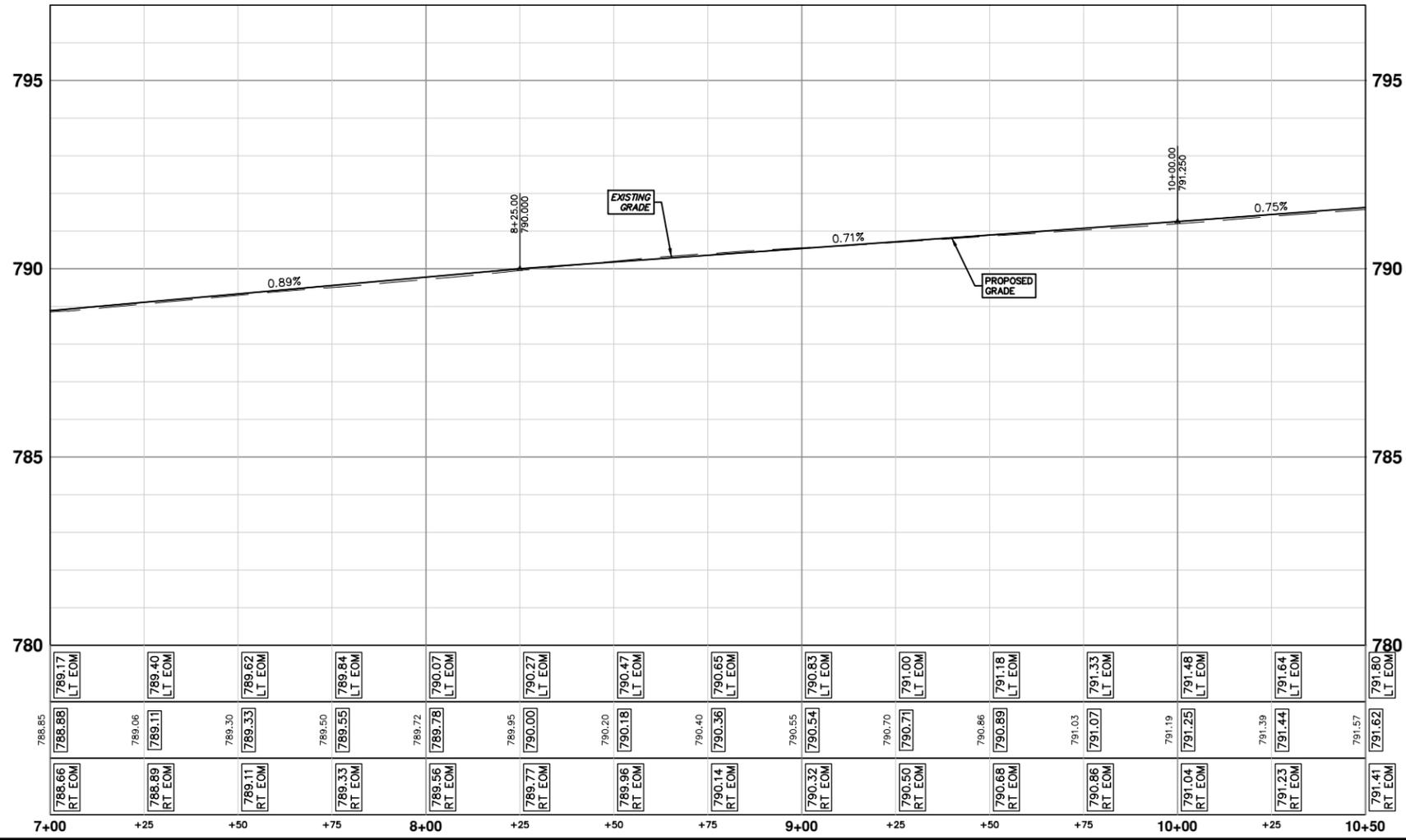
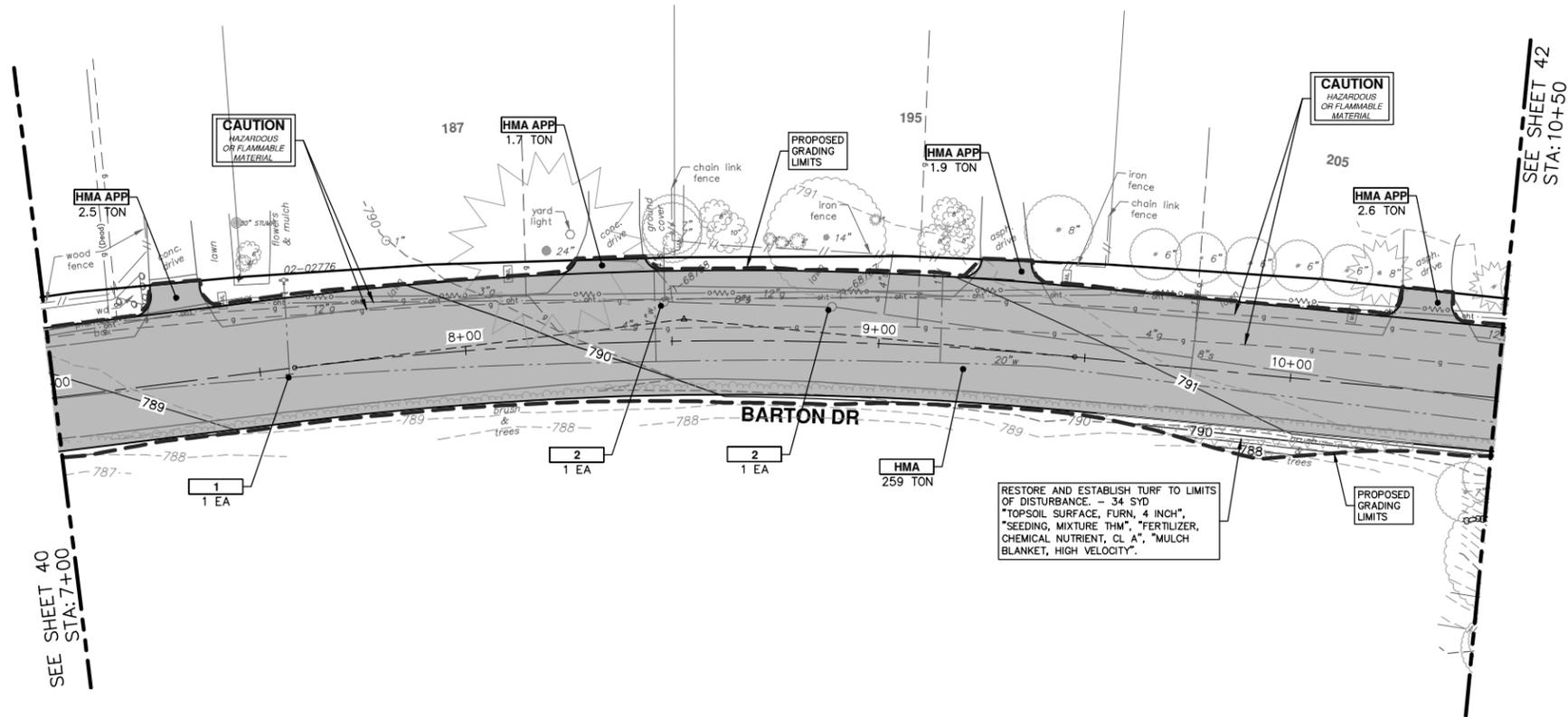
DRAWING No. **2019005-40**

SHEET No. **40 OF 61**

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REV.	DATE	DESCRIPTION
00	2-28-20	OUT FOR BID
JKA		CHECKED
EC,DP,FAE		DRAWN

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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
HMA APP	PLACE HMA APPROACH
HP	HAND PATCHING
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, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
SW-RWS	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18" (SFT)
SW-RWT	INTEGRAL SIDEWALK RETAINING WALL, 19" TO 36" (SFT)
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER



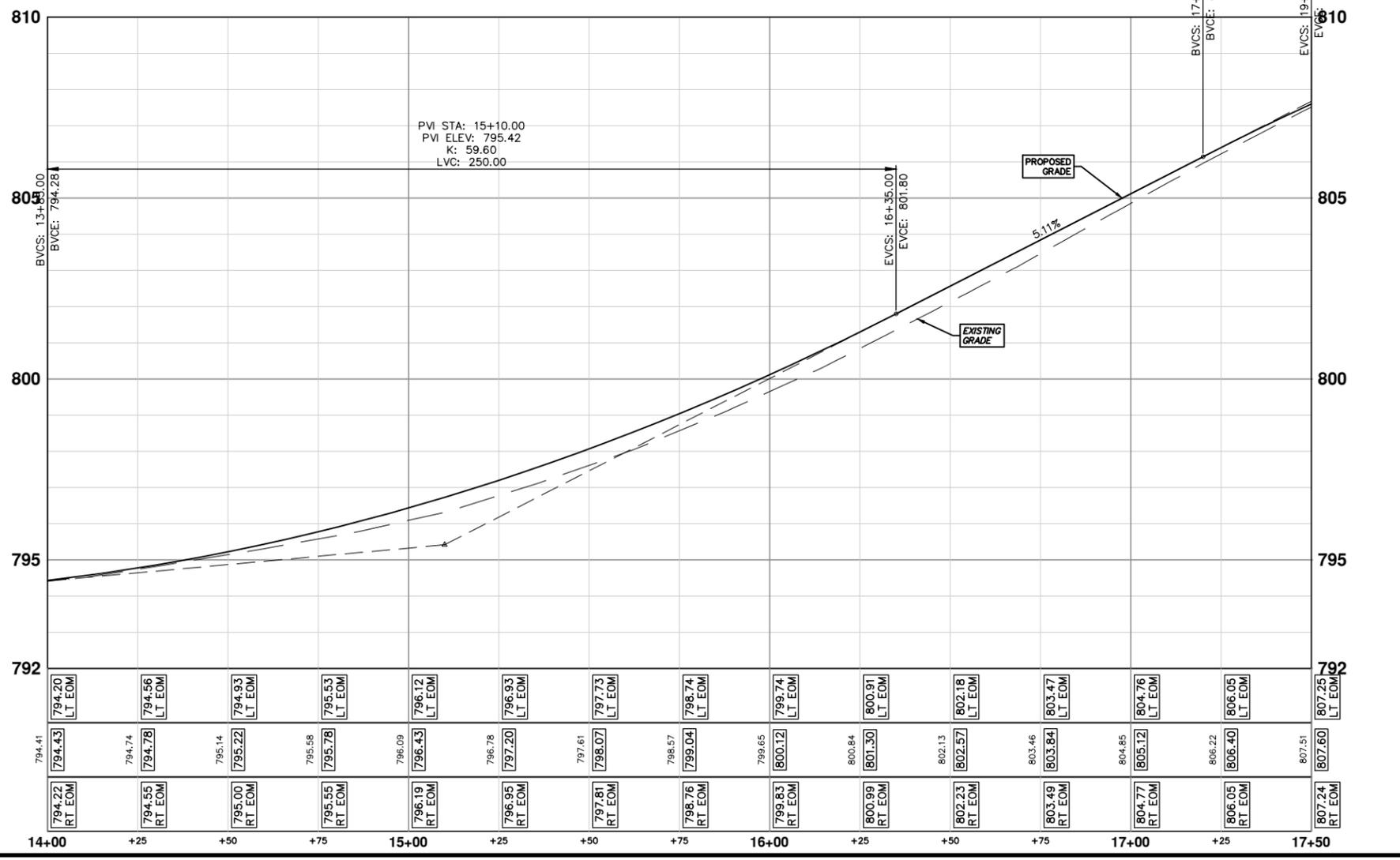
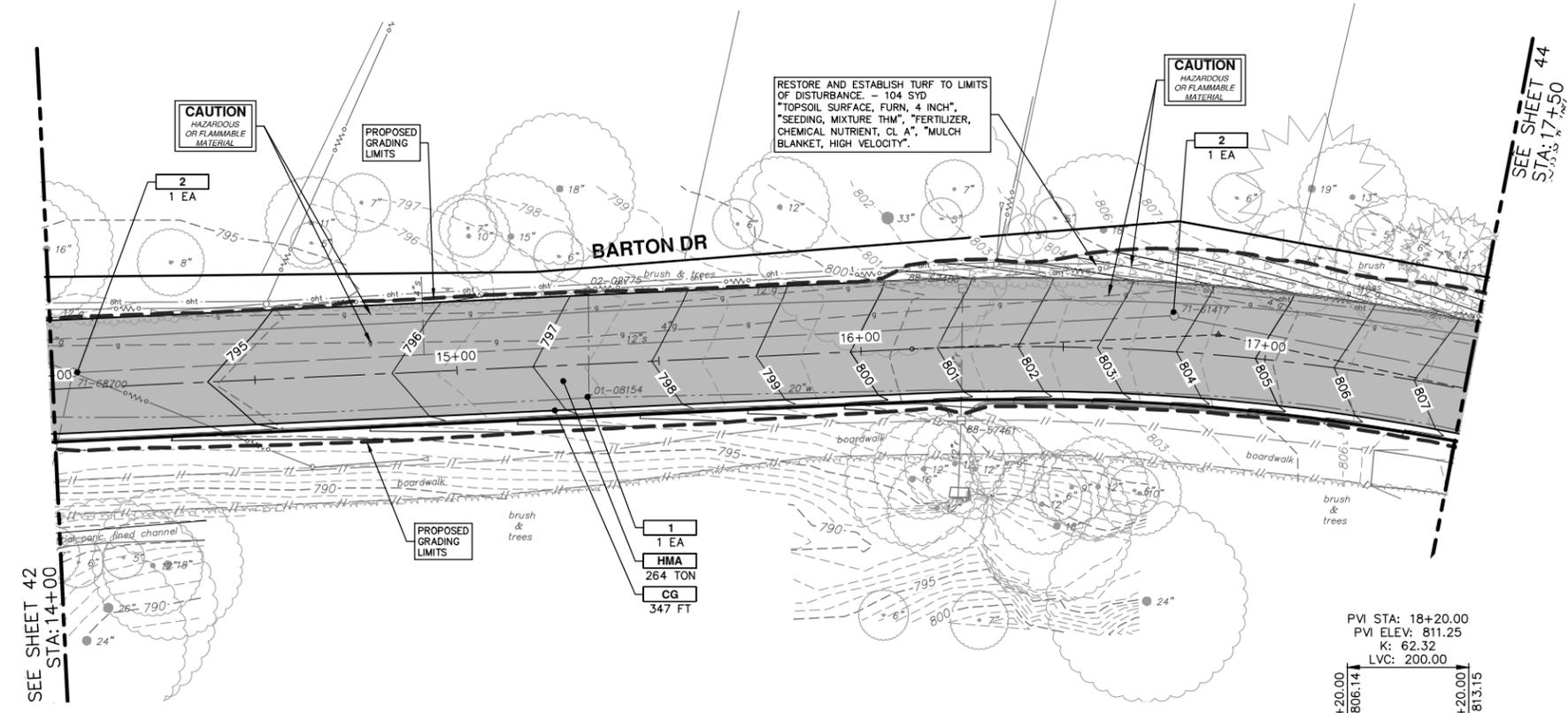
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BARTON DRIVE IMPROVEMENTS
PROPOSED ROAD & SIDEWALK

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING No. 2019005-41

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	2-28-20	JKA	



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
HMA APP	PLACE HMA APPROACH
HP	HAND PATCHING
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, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
SW-RWS	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18" (SFT)
SW-RWT	INTEGRAL SIDEWALK RETAINING WALL, 19" TO 36" (SFT)
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

BARTON DRIVE IMPROVEMENTS

PROPOSED ROAD & SIDEWALK

STA. 14+00 - STA. 17+50

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

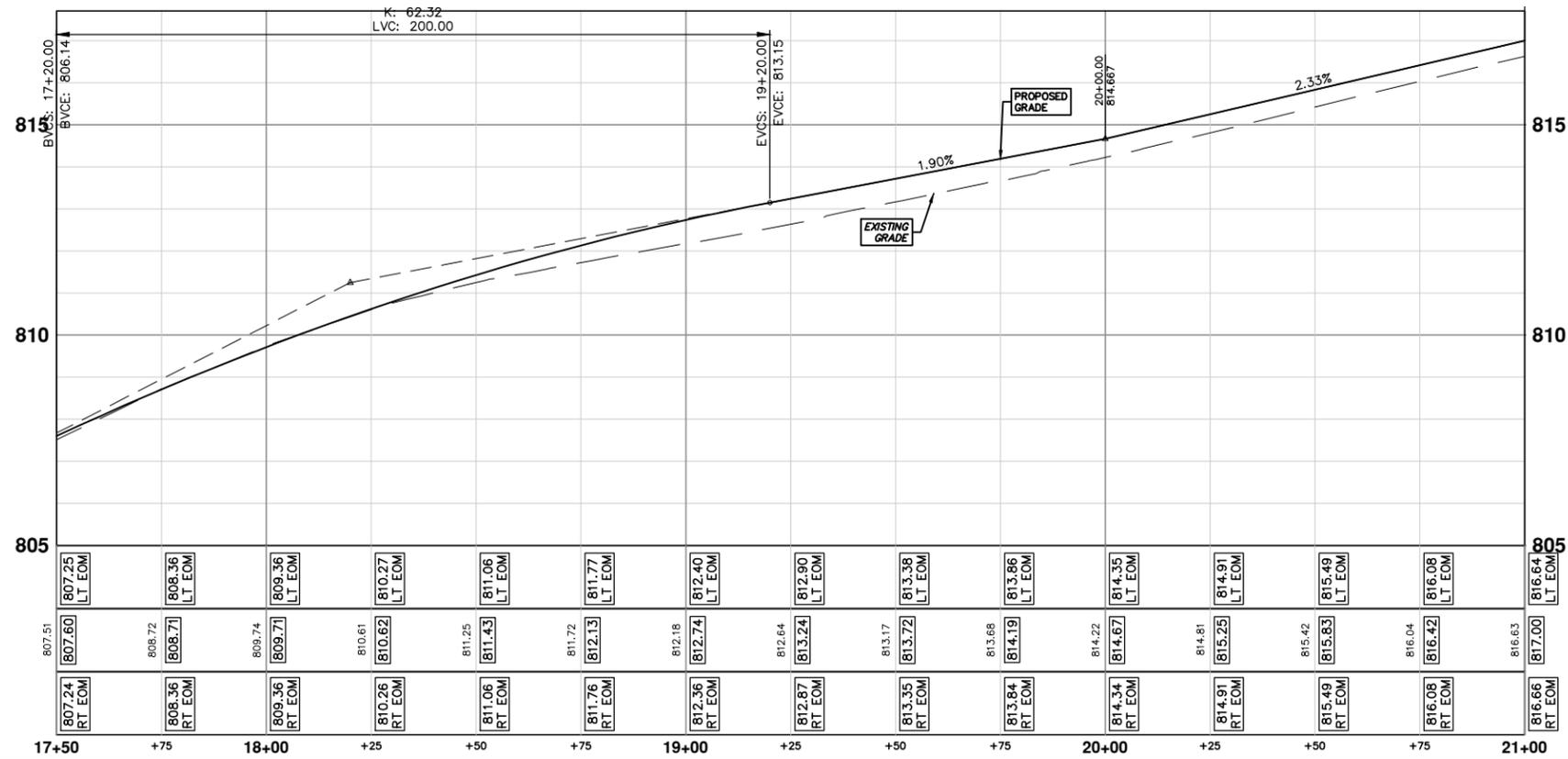
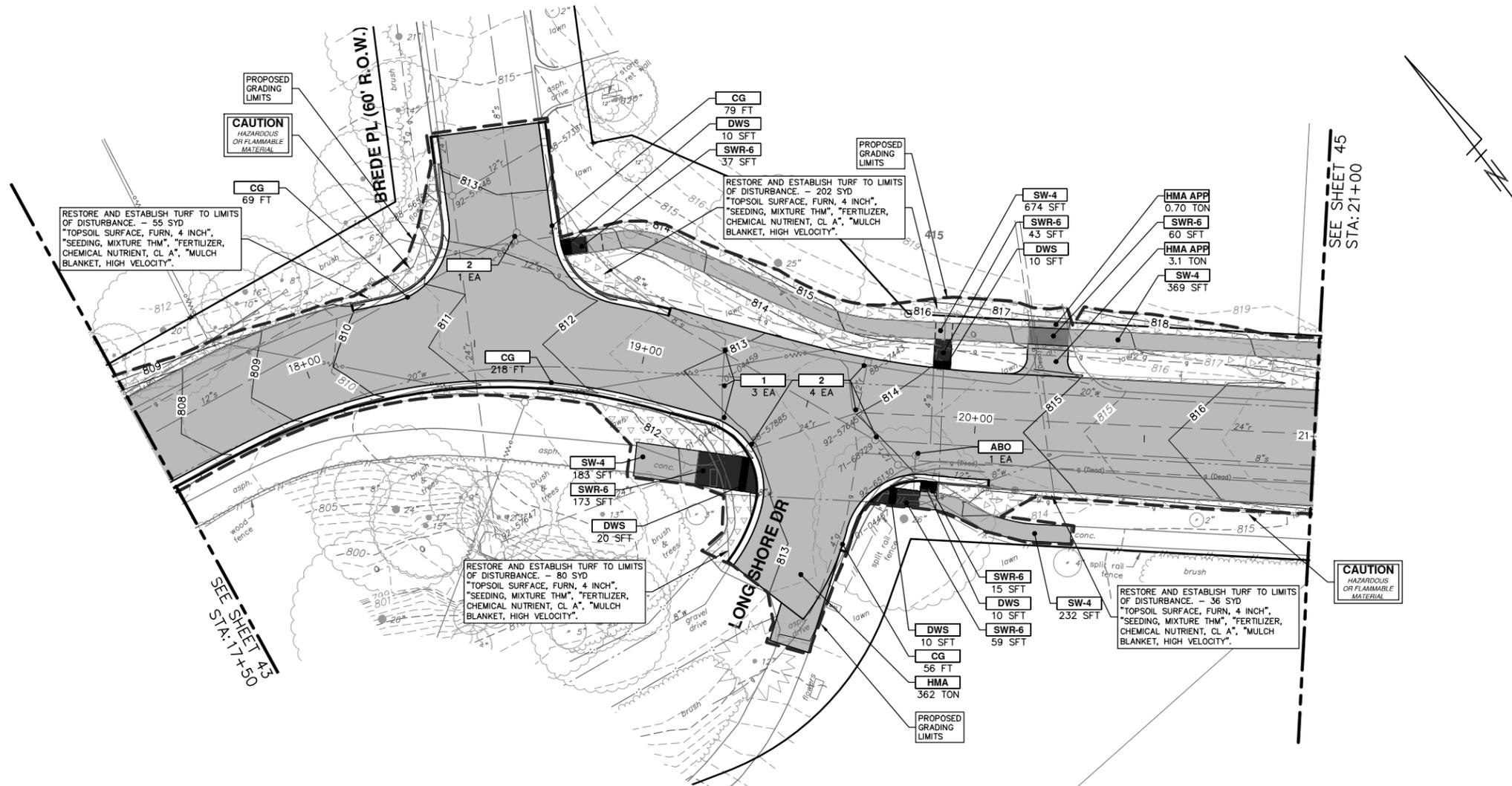
DRAWING NO. 2019005-43

SHEET No. 43 OF 61

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REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	2-28-20	JKA	

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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
HMA APP	PLACE HMA APPROACH
HP	HAND PATCHING
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, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
SW-RWS	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18" (SFT)
SW-RWT	INTEGRAL SIDEWALK RETAINING WALL, 19" TO 36" (SFT)
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

BARTON DRIVE IMPROVEMENTS

PROPOSED ROAD & SIDEWALK

STA. 17+50 - STA. 21+00

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

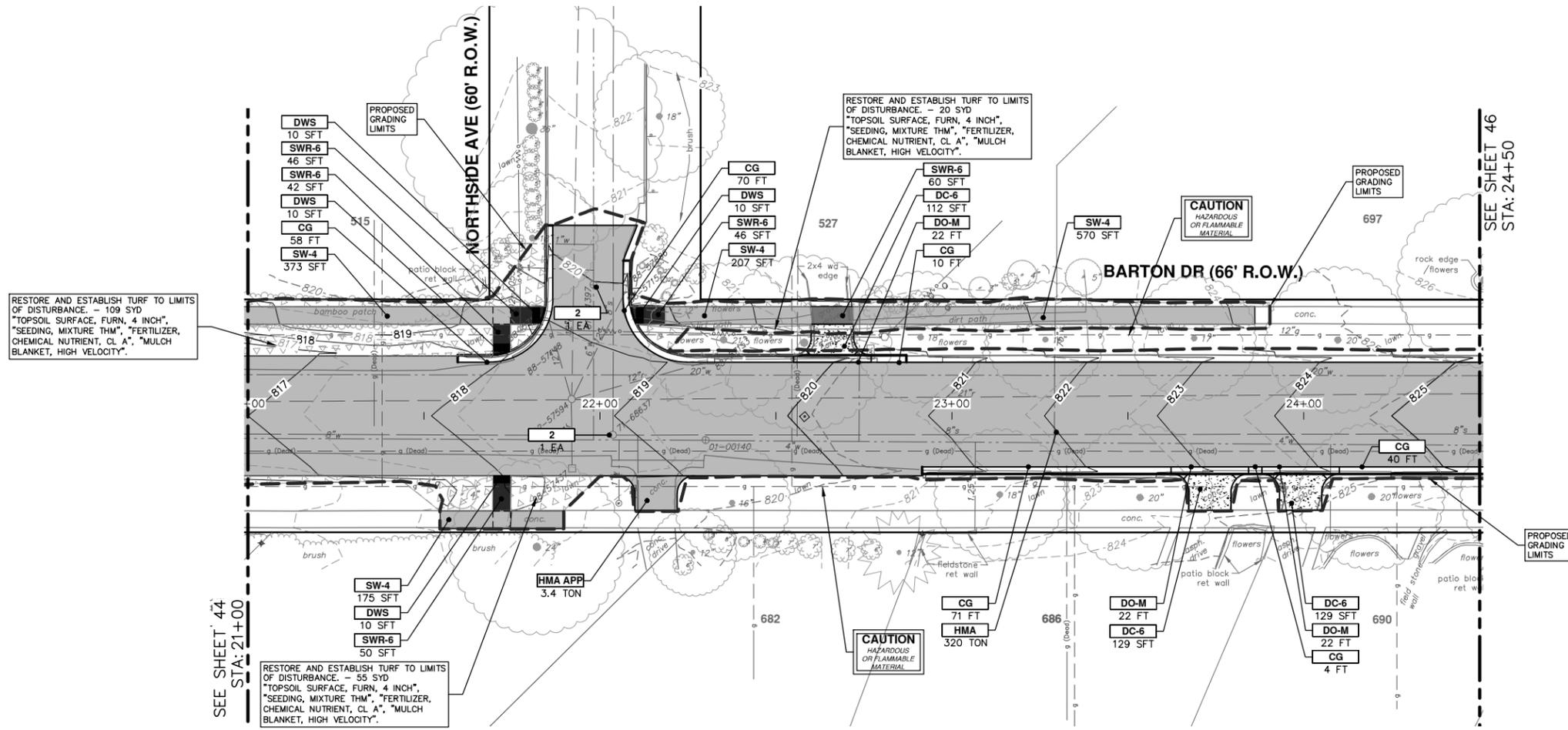
DRAWING NO. 2019005-44

SHEET NO. 44 OF 61

811
Know what's below.
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REV.	DATE	DESCRIPTION	DRAWN	CHECKED
00	2-28-20	OUT FOR BID	JKA	
		REV. DATE		

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RESTORE AND ESTABLISH TURF TO LIMITS OF DISTURBANCE - 109 SYD
 TOPSOIL SURFACE, FURN, 4 INCH,
 SEEDING, MIXTURE THM, *FERTILIZER,
 CHEMICAL NUTRIENT, CL A*, *MULCH
 BLANKET, HIGH VELOCITY*.

RESTORE AND ESTABLISH TURF TO LIMITS OF DISTURBANCE - 20 SYD
 TOPSOIL SURFACE, FURN, 4 INCH,
 SEEDING, MIXTURE THM, *FERTILIZER,
 CHEMICAL NUTRIENT, CL A*, *MULCH
 BLANKET, HIGH VELOCITY*.

RESTORE AND ESTABLISH TURF TO LIMITS OF DISTURBANCE - 55 SYD
 TOPSOIL SURFACE, FURN, 4 INCH,
 SEEDING, MIXTURE THM, *FERTILIZER,
 CHEMICAL NUTRIENT, CL A*, *MULCH
 BLANKET, HIGH VELOCITY*.

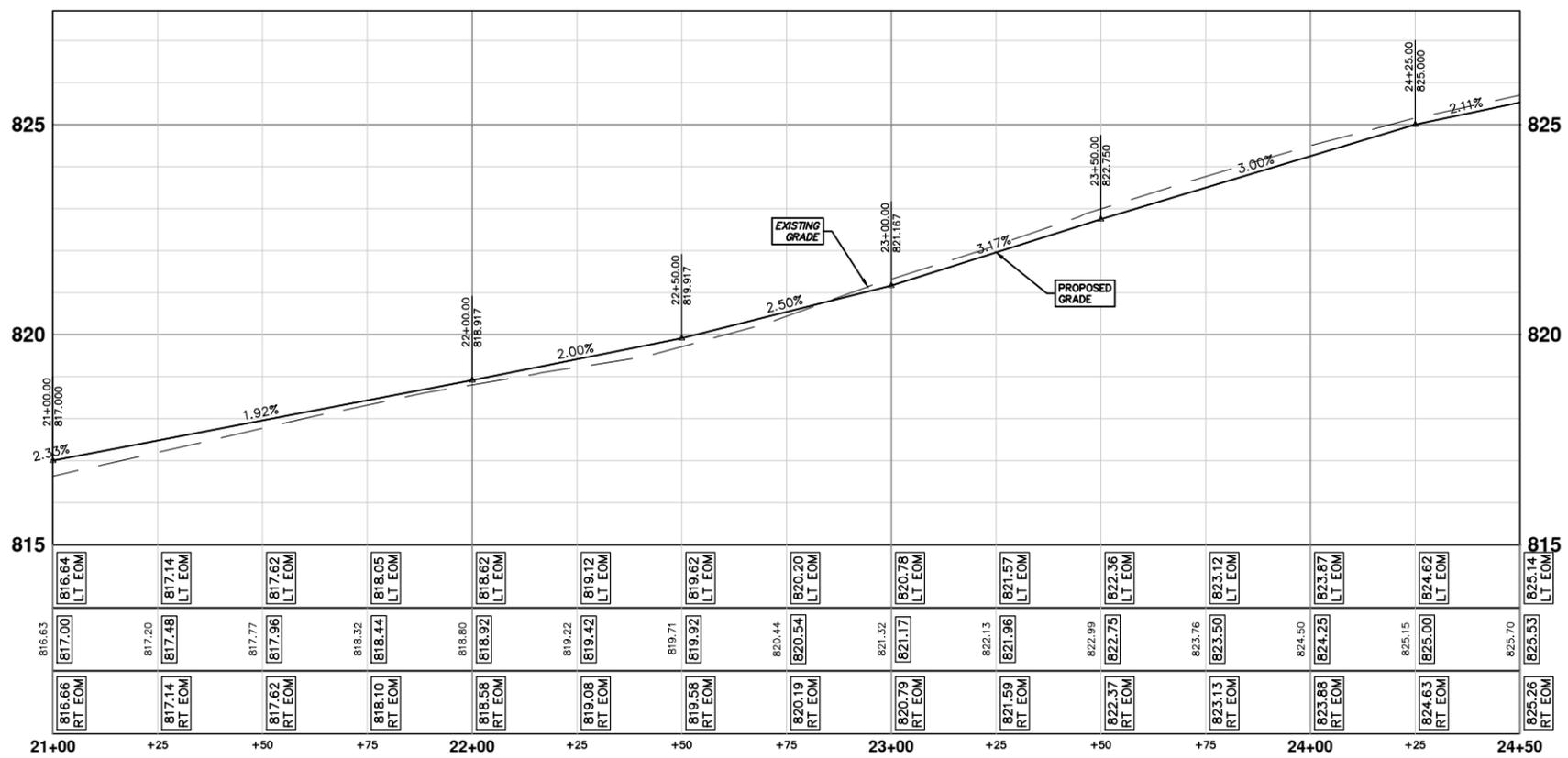
CAUTION
 HAZARDOUS
 OR FLAMMABLE
 MATERIAL.

CAUTION
 HAZARDOUS
 OR FLAMMABLE
 MATERIAL.

SEE SHEET 44
 STA: 21+00

SEE SHEET 46
 STA: 24+50

CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
HMA APP	PLACE HMA APPROACH
HP	HAND PATCHING
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, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
SW-RWS	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18" (SFT)
SW-RWT	INTEGRAL SIDEWALK RETAINING WALL, 19" TO 36" (SFT)
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

BARTON DRIVE IMPROVEMENTS

PROPOSED ROAD & SIDEWALK

STA. 21+00 - STA. 24+50

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

DRAWING NO. 2019005-45

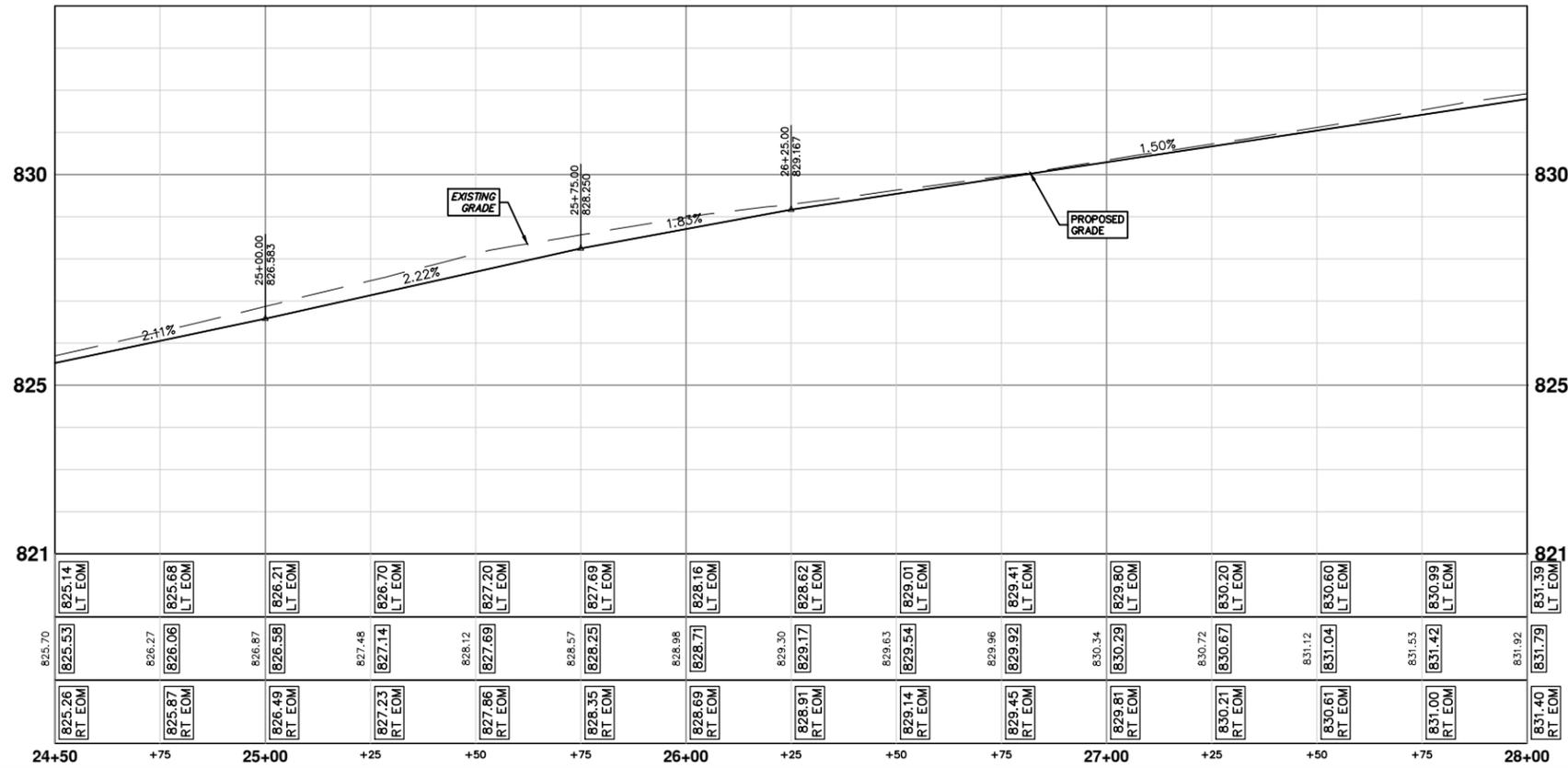
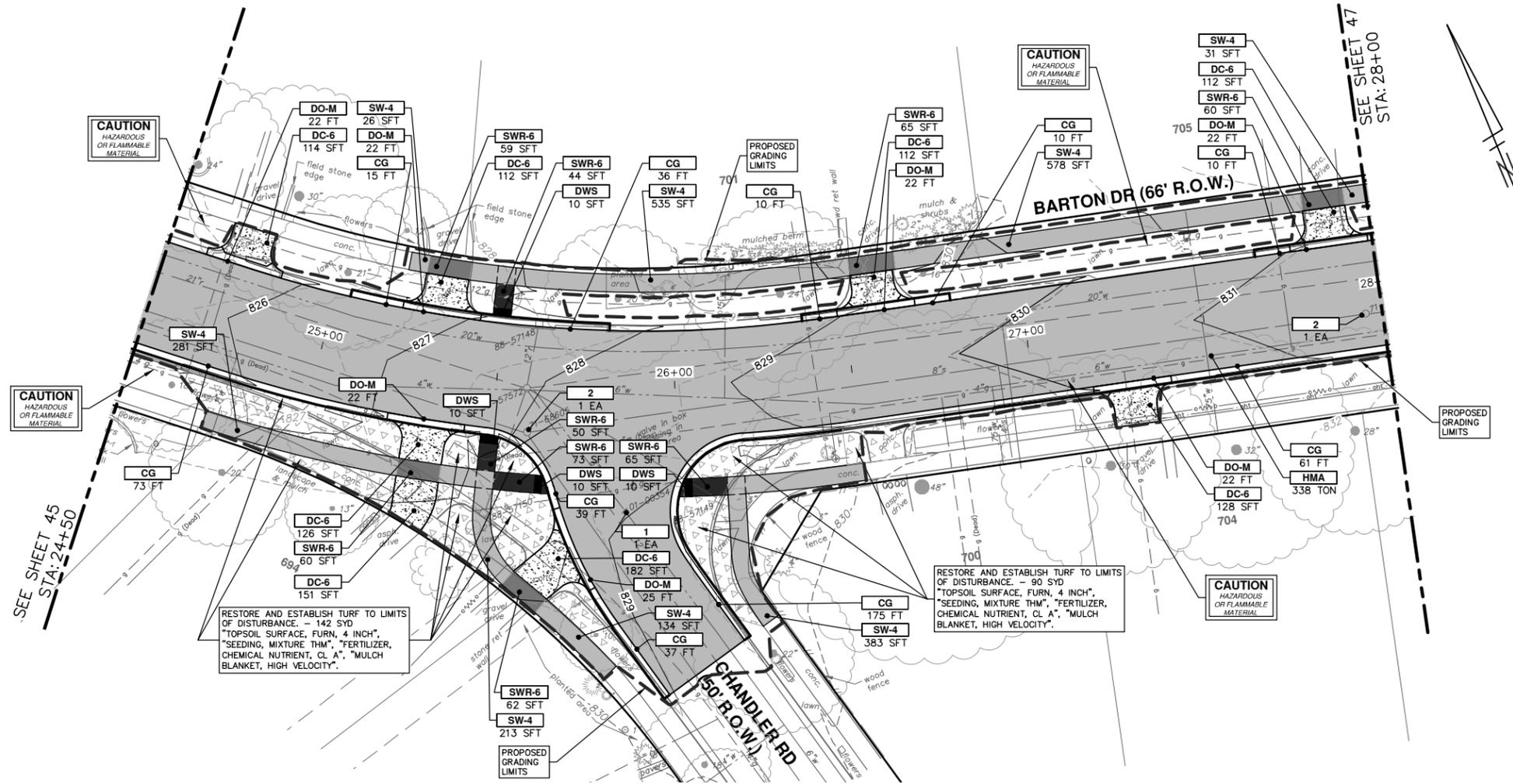
SHEET NO. 45 OF 61

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OUT FOR BID
 DATE: 2-28-20
 DRAWN: JKA
 CHECKED: JKA

DESCRIPTION: REV.

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CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
HMA APP	PLACE HMA APPROACH
HP	HAND PATCHING
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, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
SW-RWS	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18" (SFT)
SW-RWT	INTEGRAL SIDEWALK RETAINING WALL, 19" TO 36" (SFT)
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

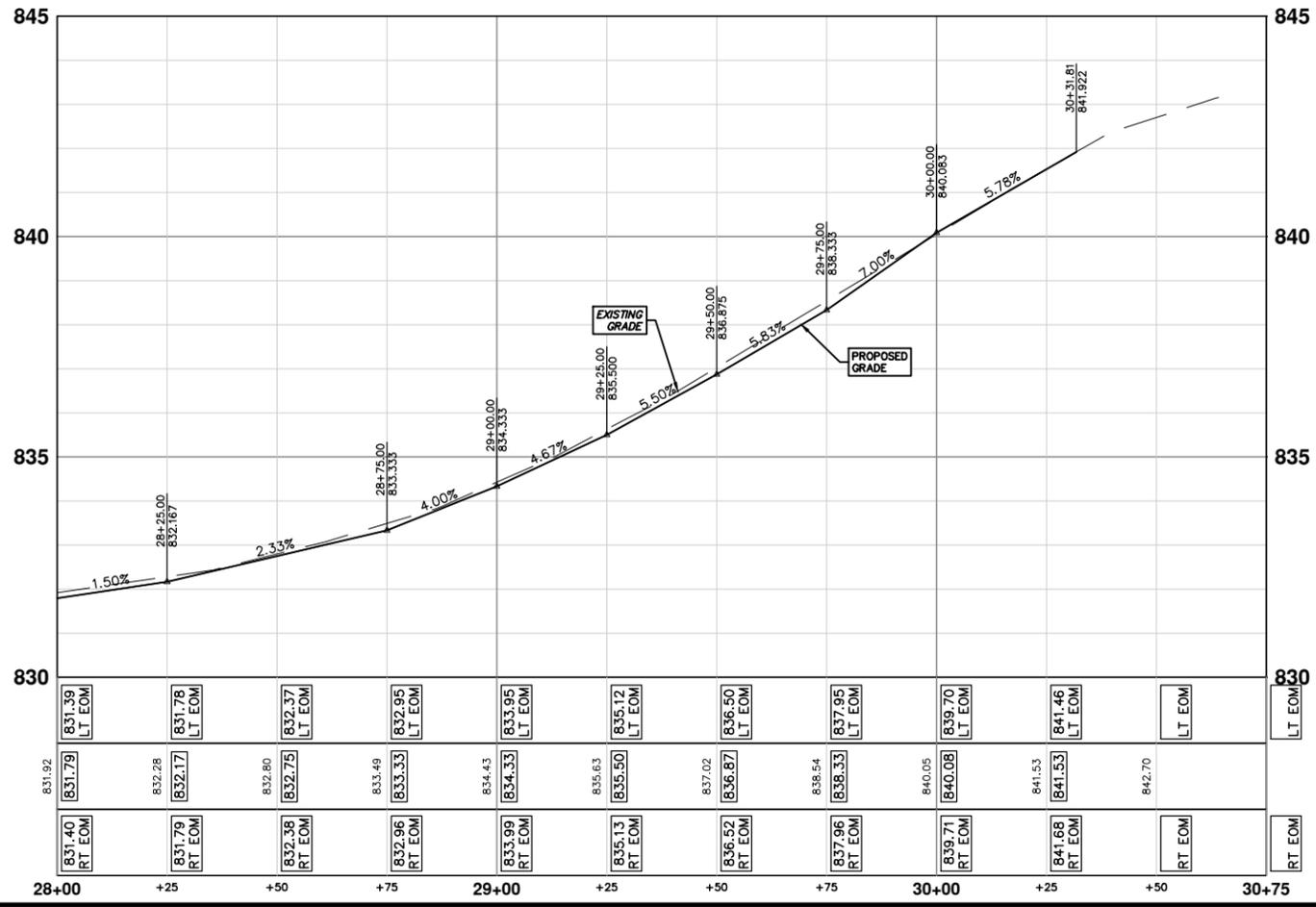
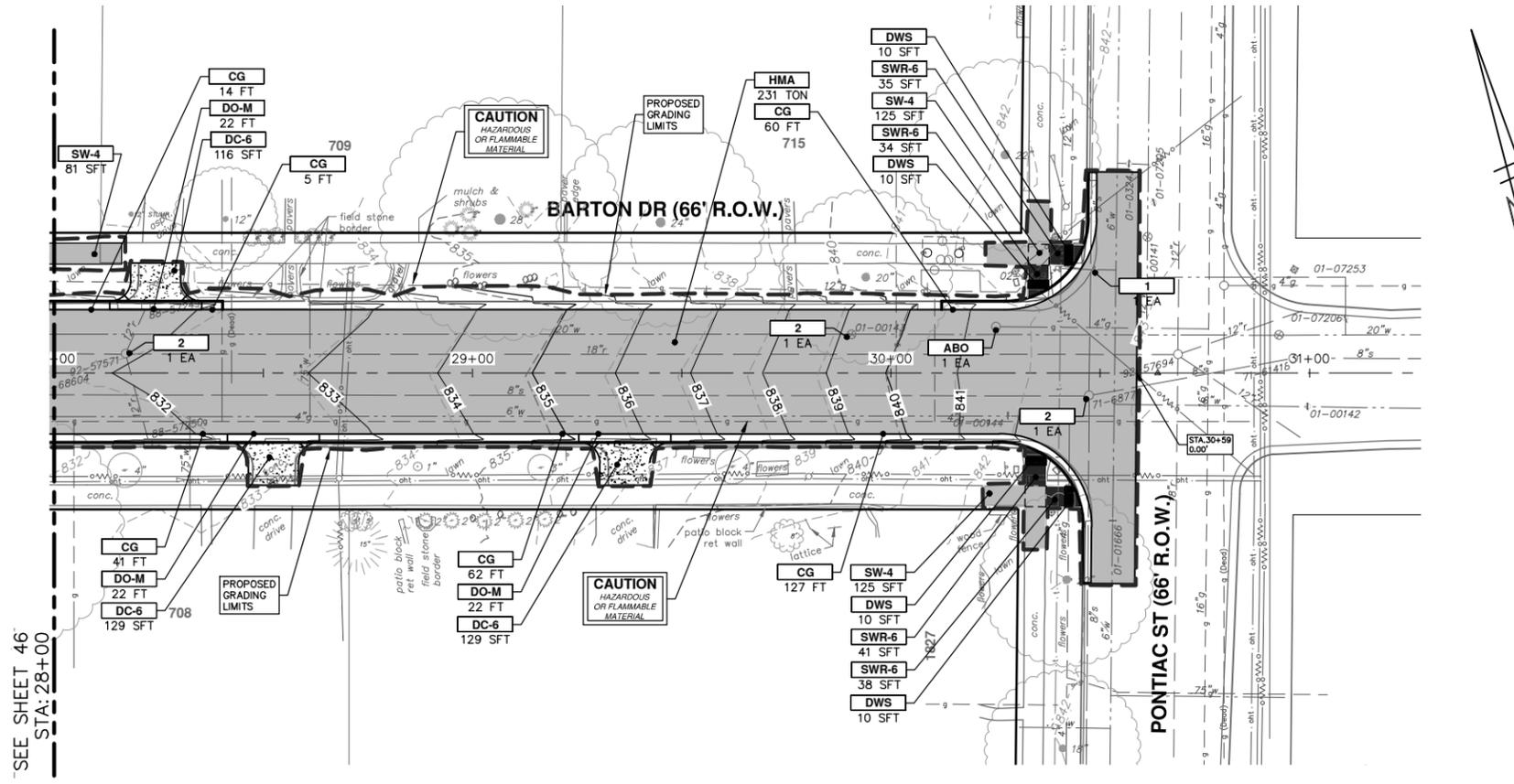


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BARTON DRIVE IMPROVEMENTS
PROPOSED ROAD & SIDEWALK

SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING NO. 2019005-46
SHEET NO. 46 OF 61



CONSTRUCTION KEY	
KEY	DESCRIPTION
HMA	PLACE HMA, LVSP. PLACE MATERIAL IN LIFTS ACCORDING TO THE TYPICAL SECTION AND AS DIRECTED BY THE ENGINEER.
HMA APP	PLACE HMA APPROACH
HP	HAND PATCHING
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, SIDEWALK RAMP, CONC, 6 INCH, MODIFIED
DWS	DETECTABLE WARNING, CAST IN PLACE
SW-RWS	INTEGRAL SIDEWALK RETAINING WALL, 6" TO 18" (SFT)
SW-RWT	INTEGRAL SIDEWALK RETAINING WALL, 19" TO 36" (SFT)
ABO	ADJUST BY OTHERS
1	ADJUST GATE VALVE BOX, MONUMENT BOX, OR GAS BOX.
2	ADJUST STRUCTURE COVER

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BARTON DRIVE IMPROVEMENTS

PROPOSED ROAD & SIDEWALK

STA. 28+00 - STA. 30+75

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

DRAWING No. 2019005-47

SHEET No. 47 OF 61

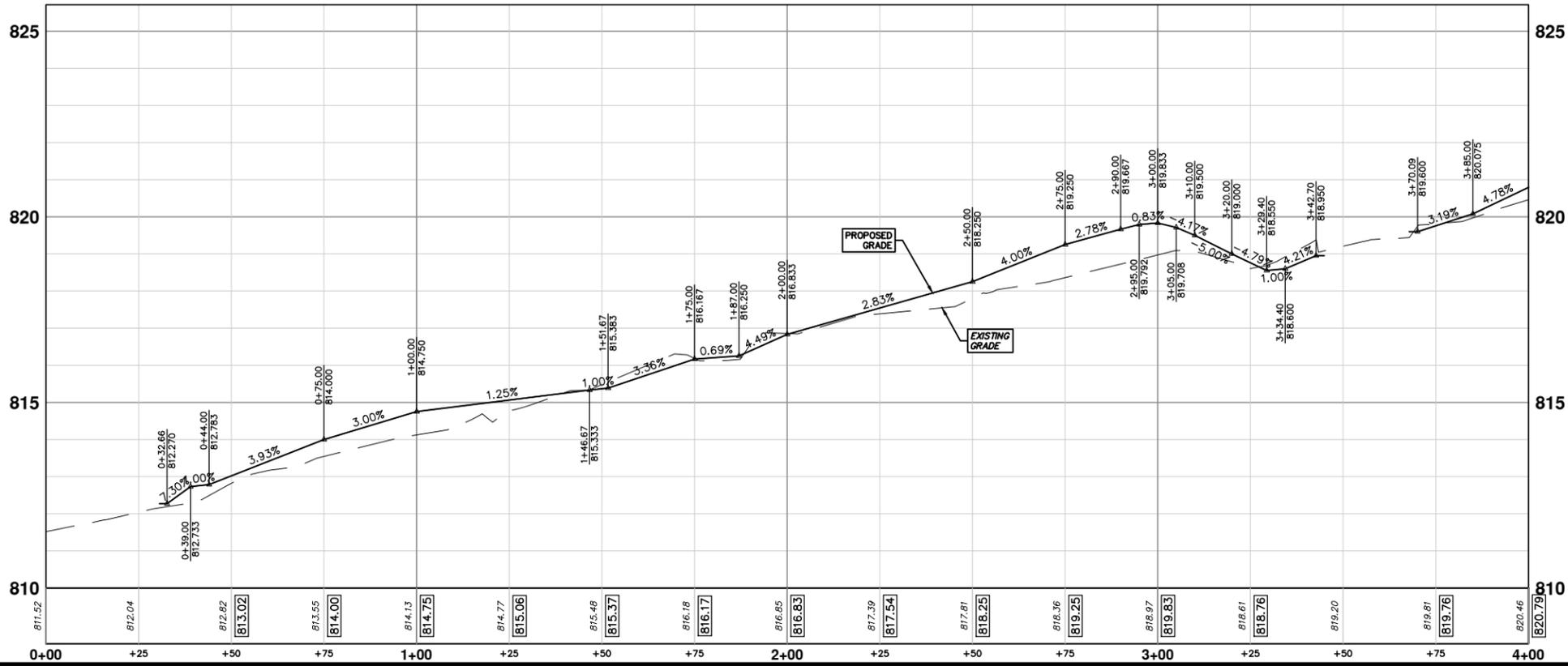
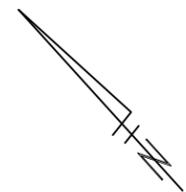
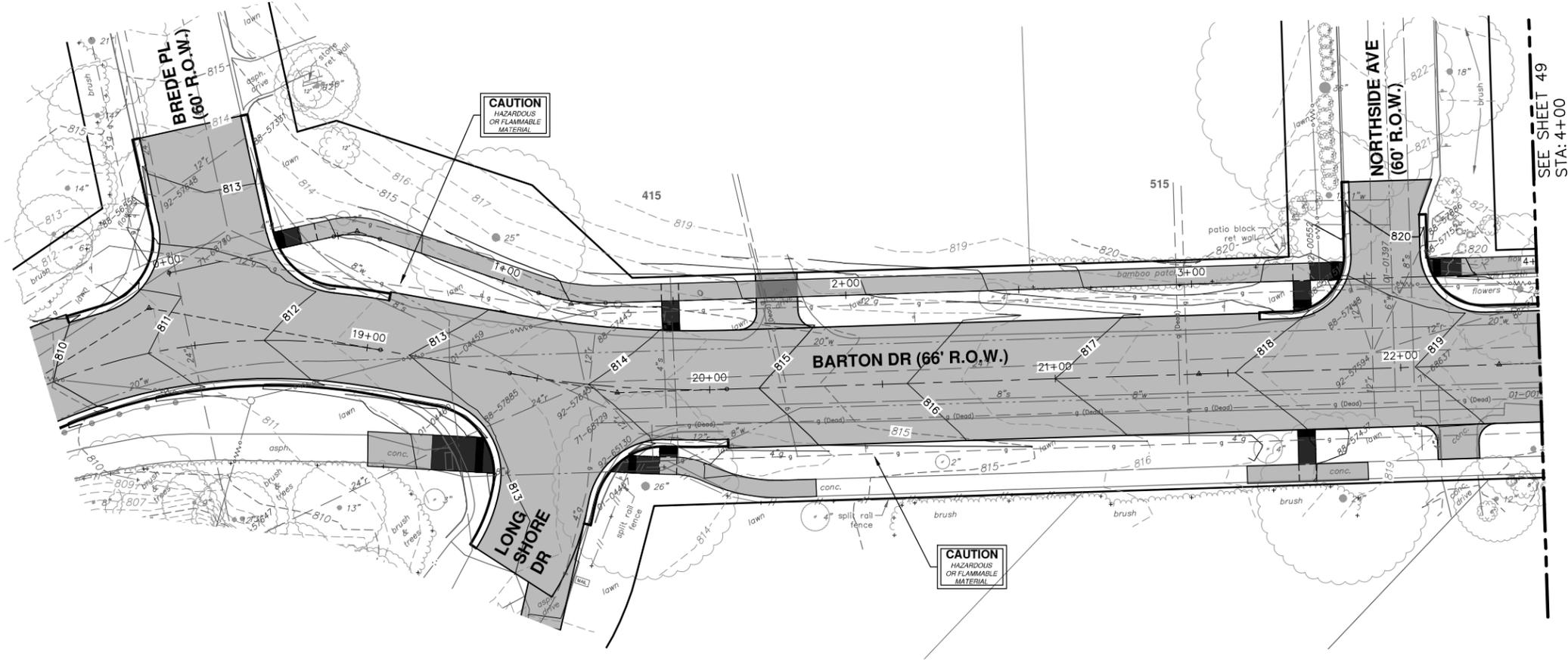
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REV.	DATE	DESCRIPTION
00	2-28-20	OUT FOR BID
		REV. CHECKED
		DRAWN
		JKA

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BARTON DRIVE IMPROVEMENTS

PROPOSED SIDEWALK PLAN & PROFILE

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

DRAWING No. **2019005-48**

SHEET No. **48 OF 61**

STA. 0+00 - STA. 4+00

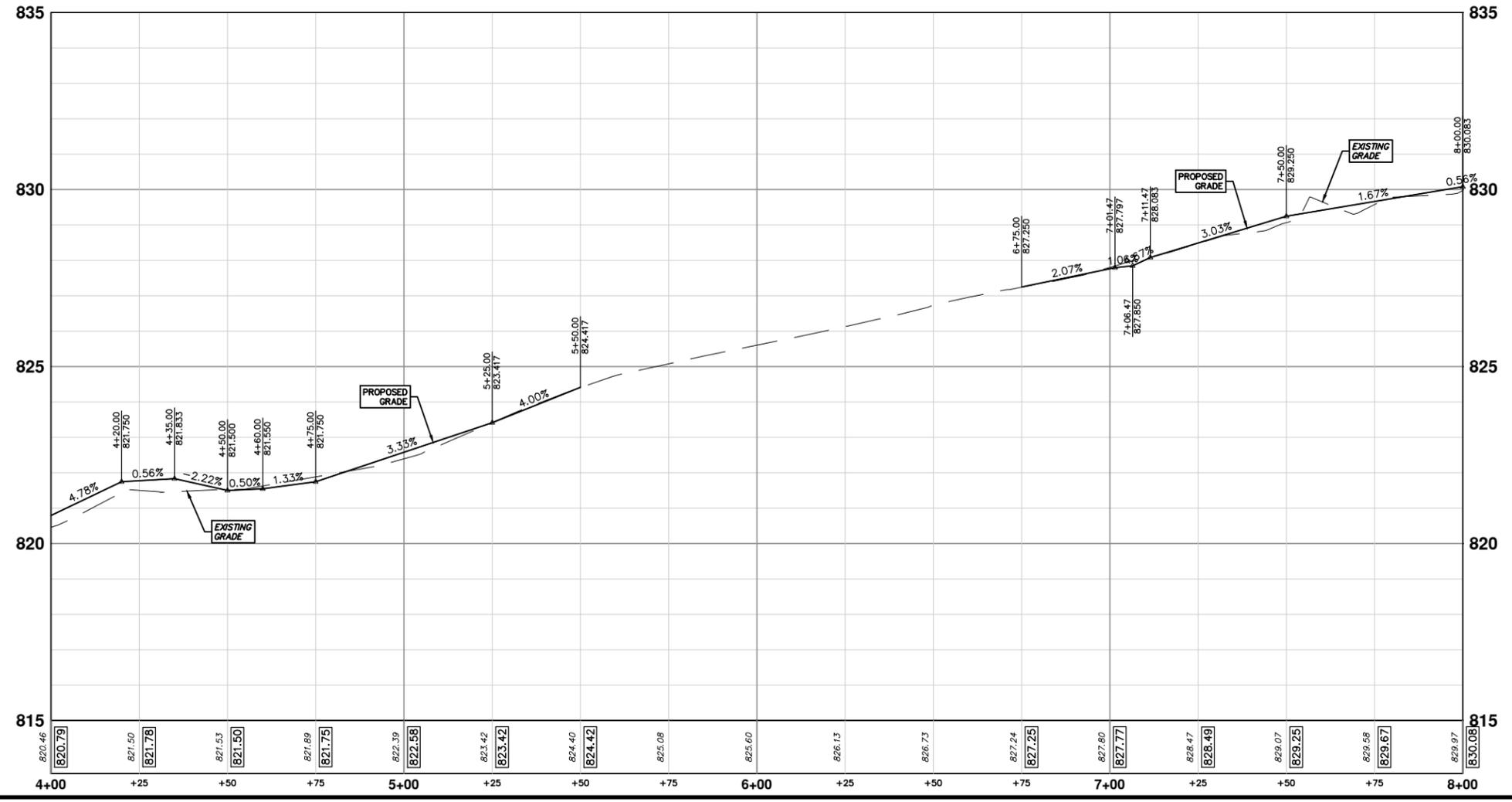
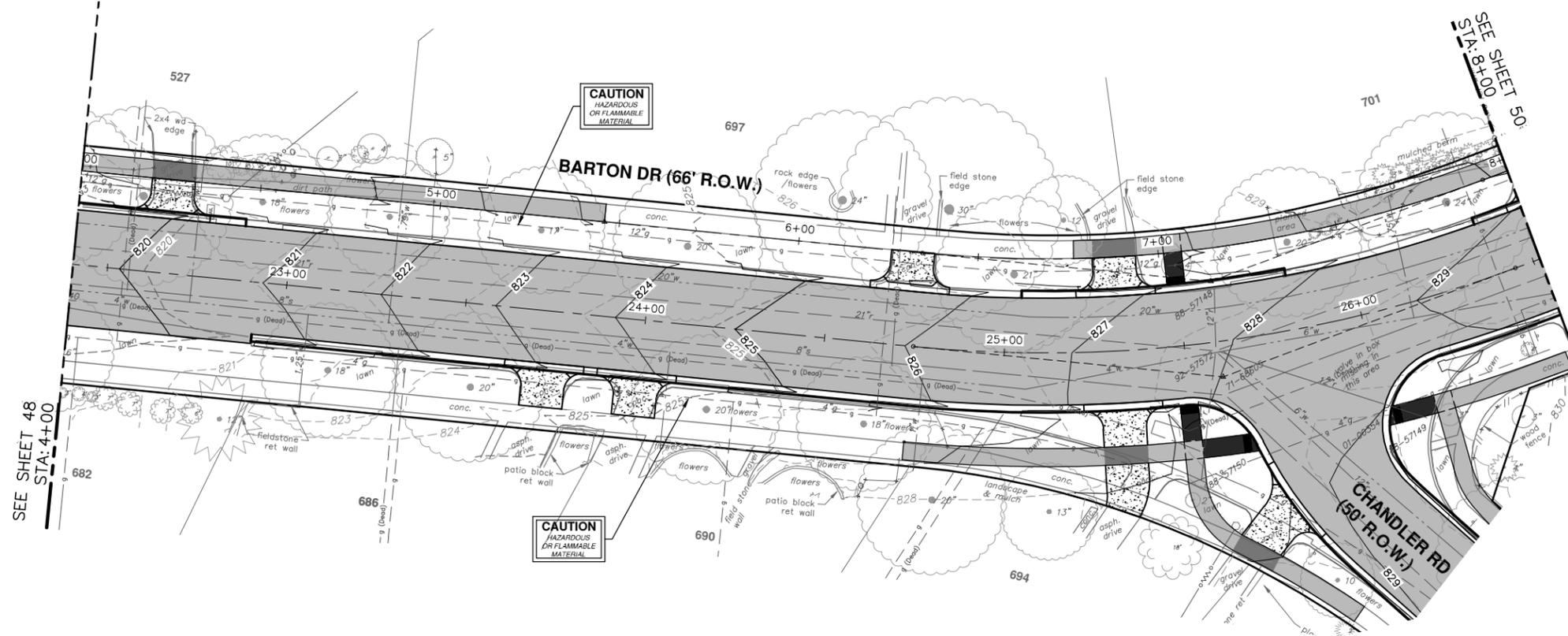
SEE SHEET 49
STA: 4+00

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DATE: 2-28-20
DRAWN: JKA
CHECKED: JKA

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BARTON DRIVE IMPROVEMENTS
 PROPOSED SIDEWALK PLAN & PROFILE
 STA. 4+00 - STA. 8+00

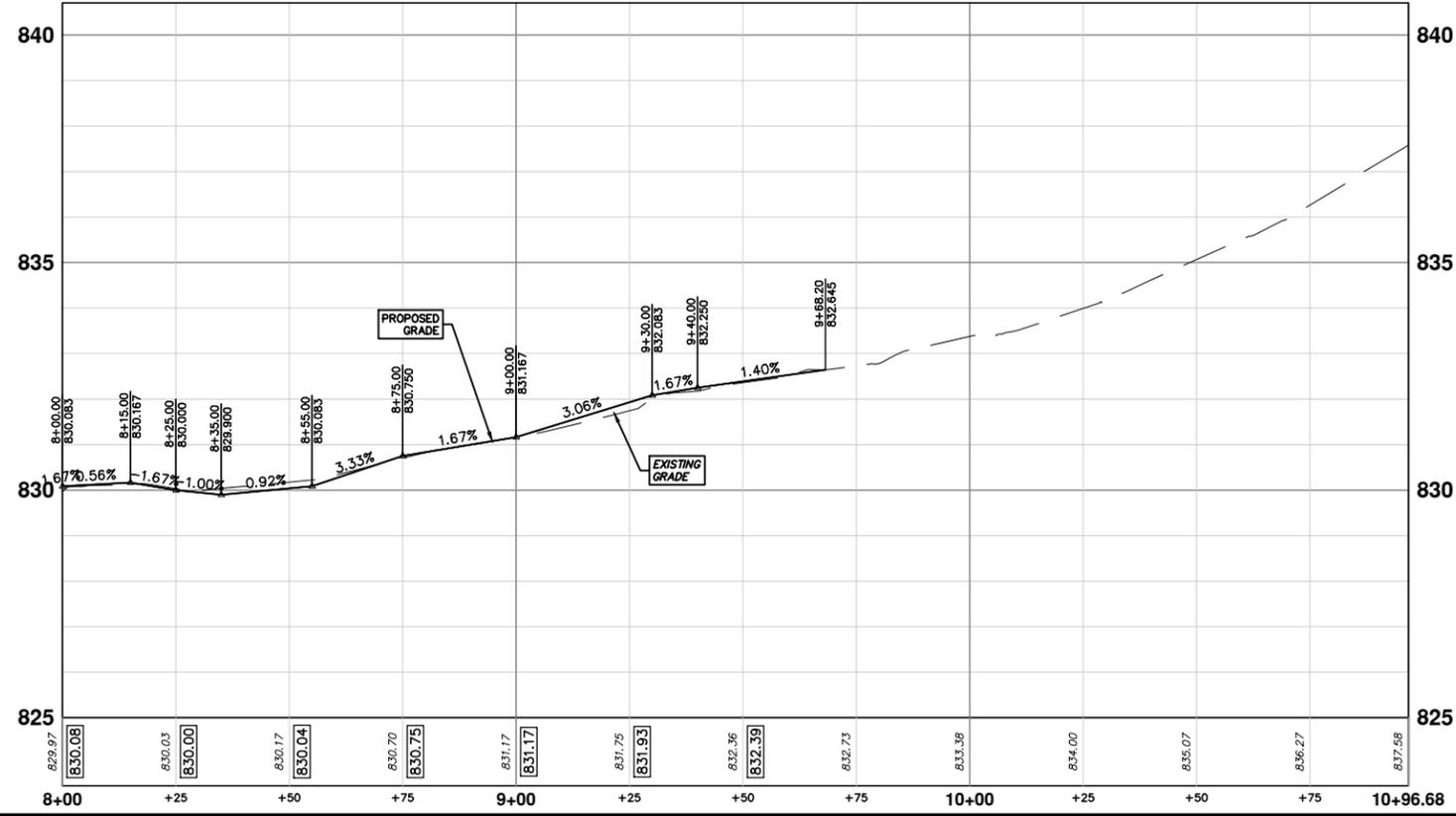
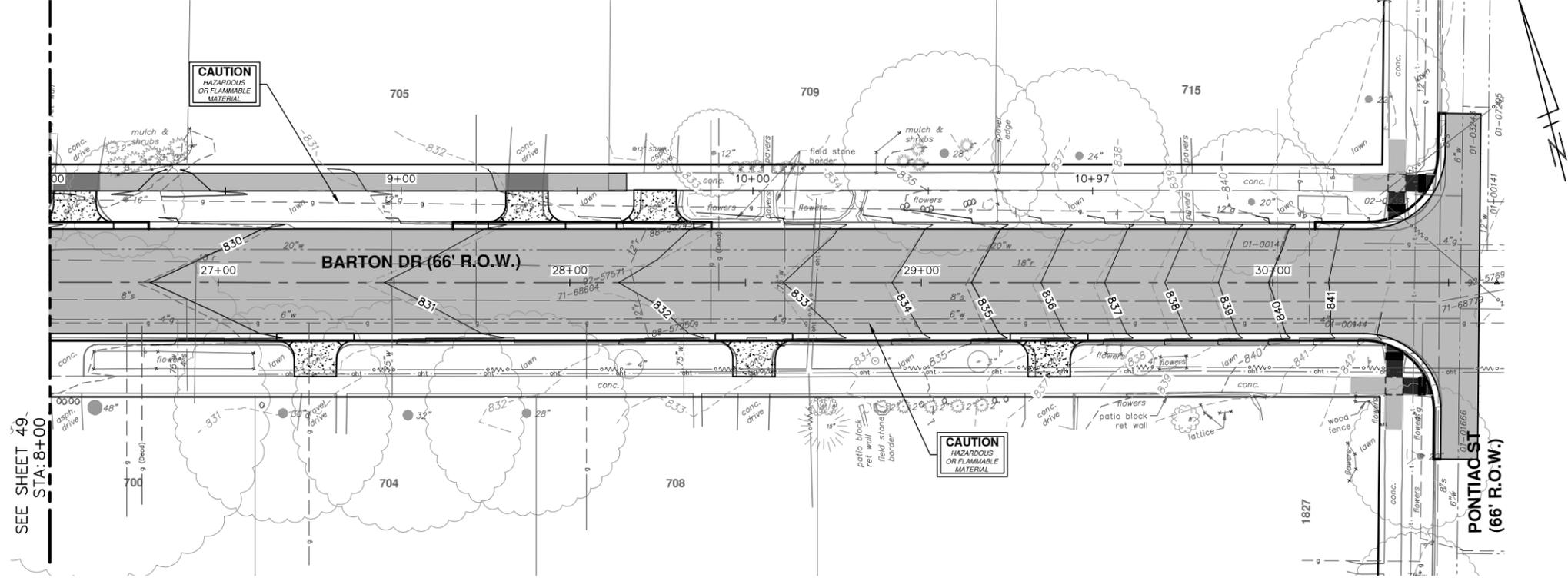
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ANN ARBOR: 734-784-4410
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SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'

DRAWING No. 2019005-49

SHEET No. 49 OF 61

REV. DESCRIPTION



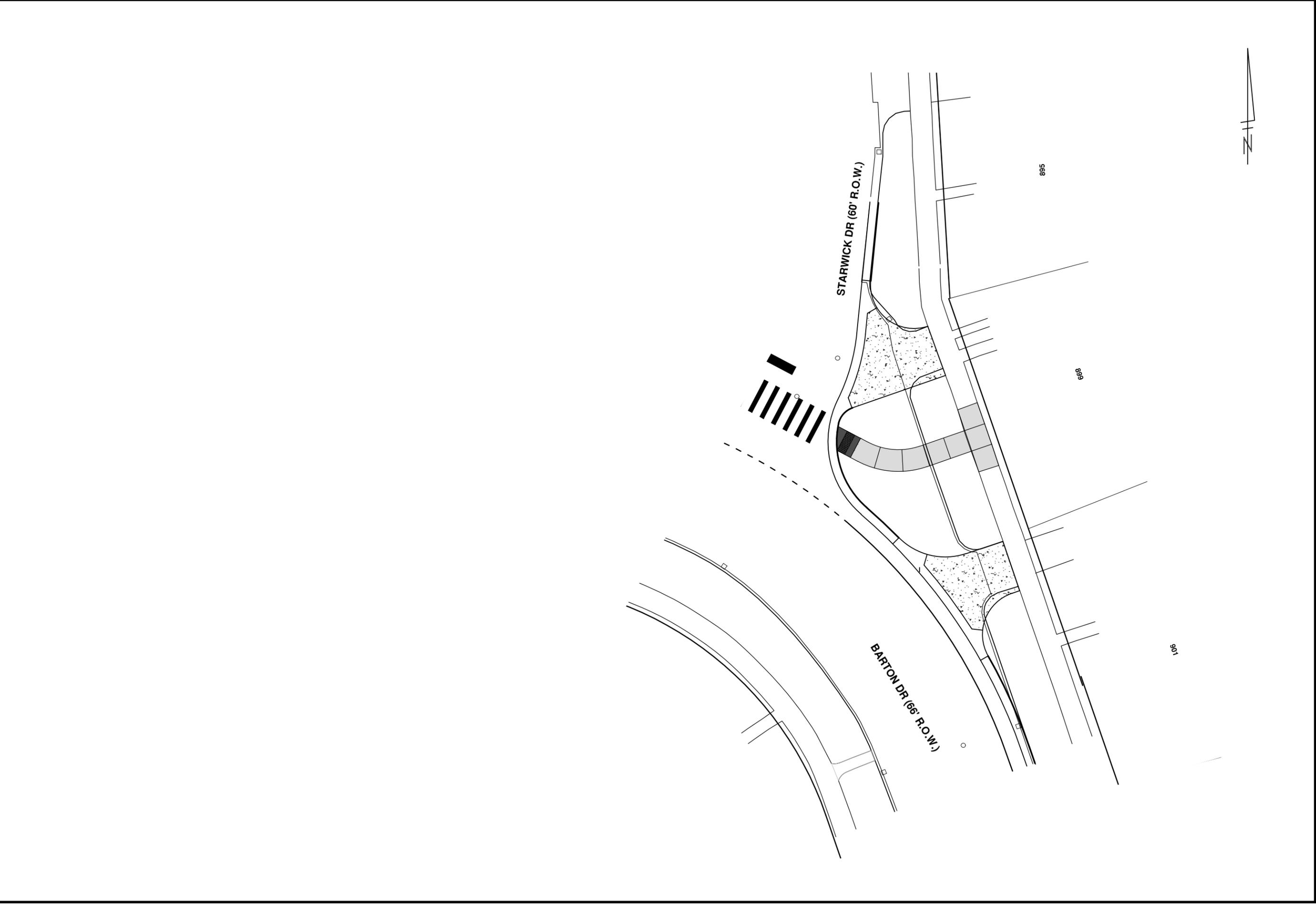
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00	OUT FOR BID	2-28-20	JKA	

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BARTON DRIVE IMPROVEMENTS
PROPOSED SIDEWALK PLAN & PROFILE
STA. 8+00 - STA. 9+69

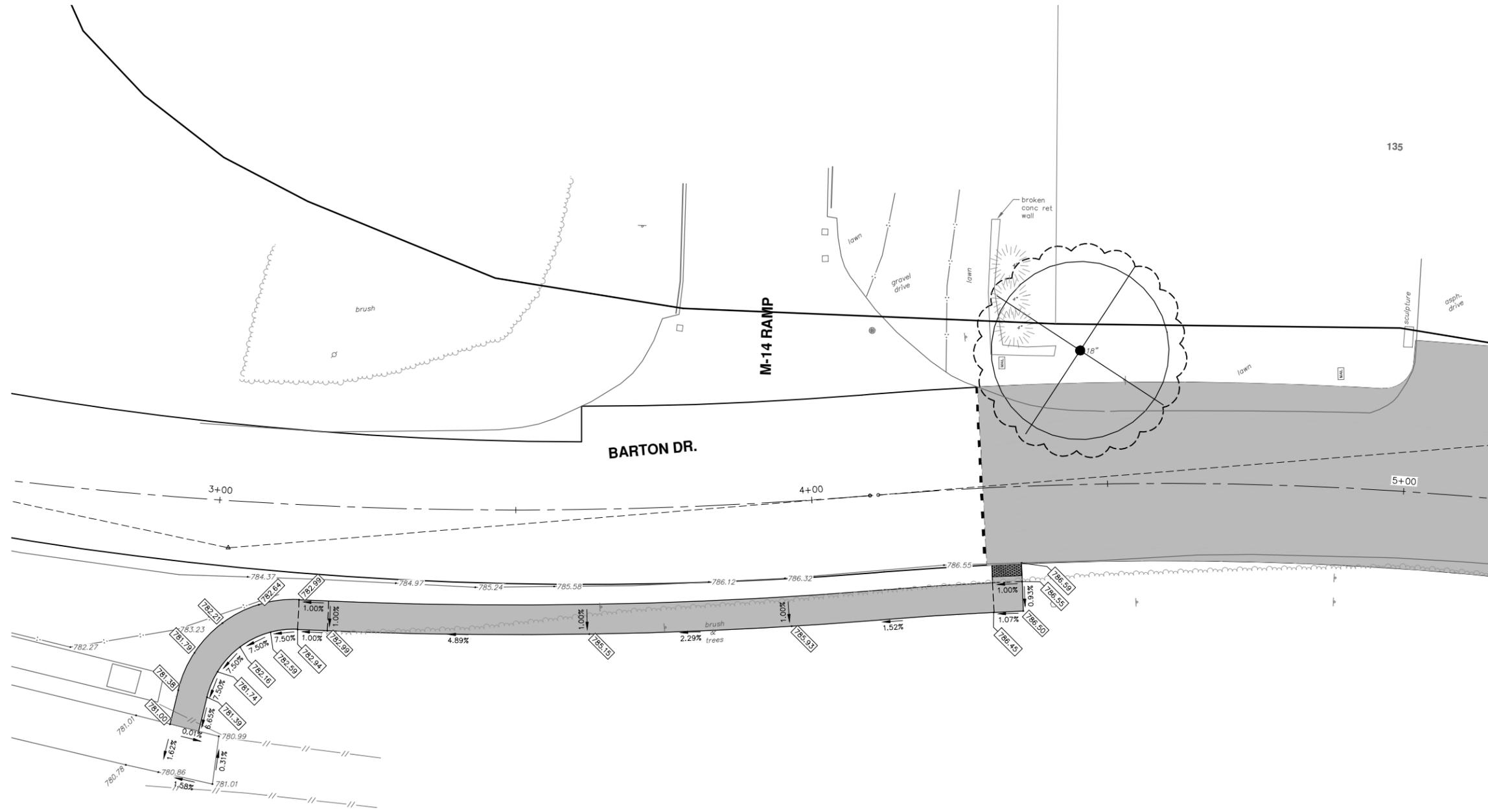
SCALE PLAN: 1" = 20'
PROFILE: 1" = 2'
DRAWING No. 2019005-50



REV.	DATE	DESCRIPTION	BY	CHECKED
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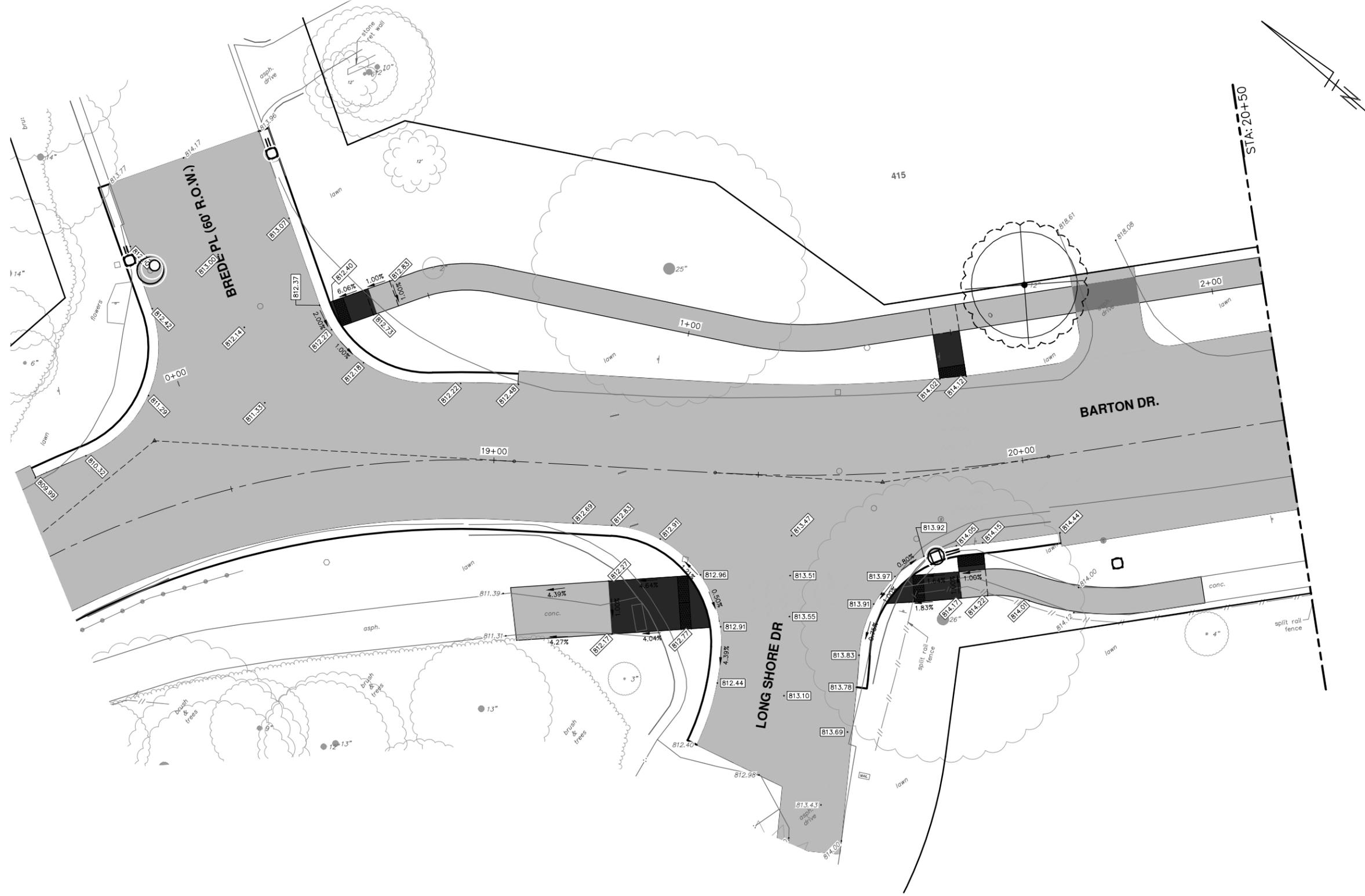
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BARTON DRIVE IMPROVEMENTS
INTERSECTION GRADES
BARTON DR AT M-14

SCALE: 1"=10'
DRAWING No. 2019005-53



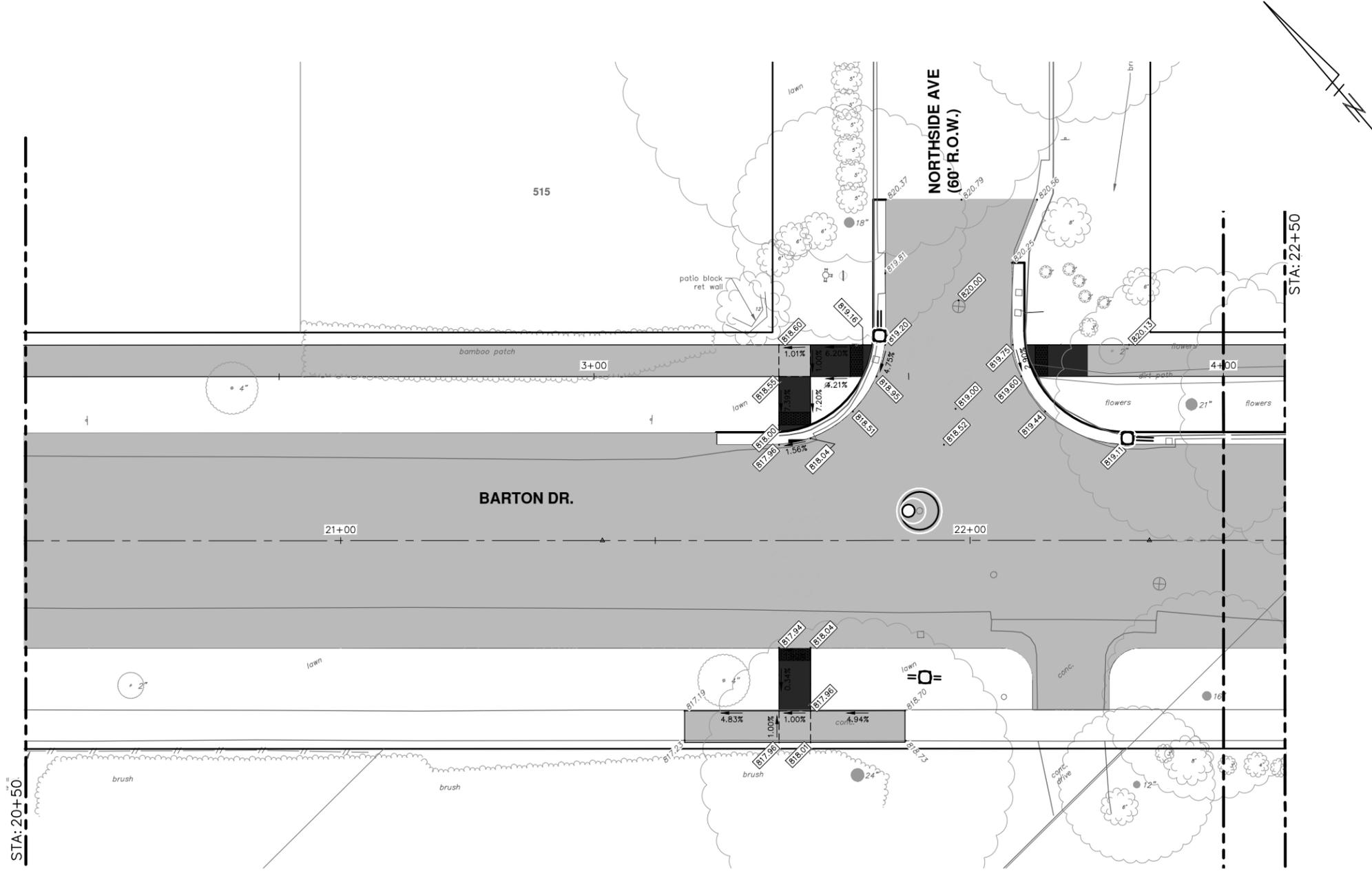
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00	OUT FOR BID	2-28-20	JKA	CHECKED

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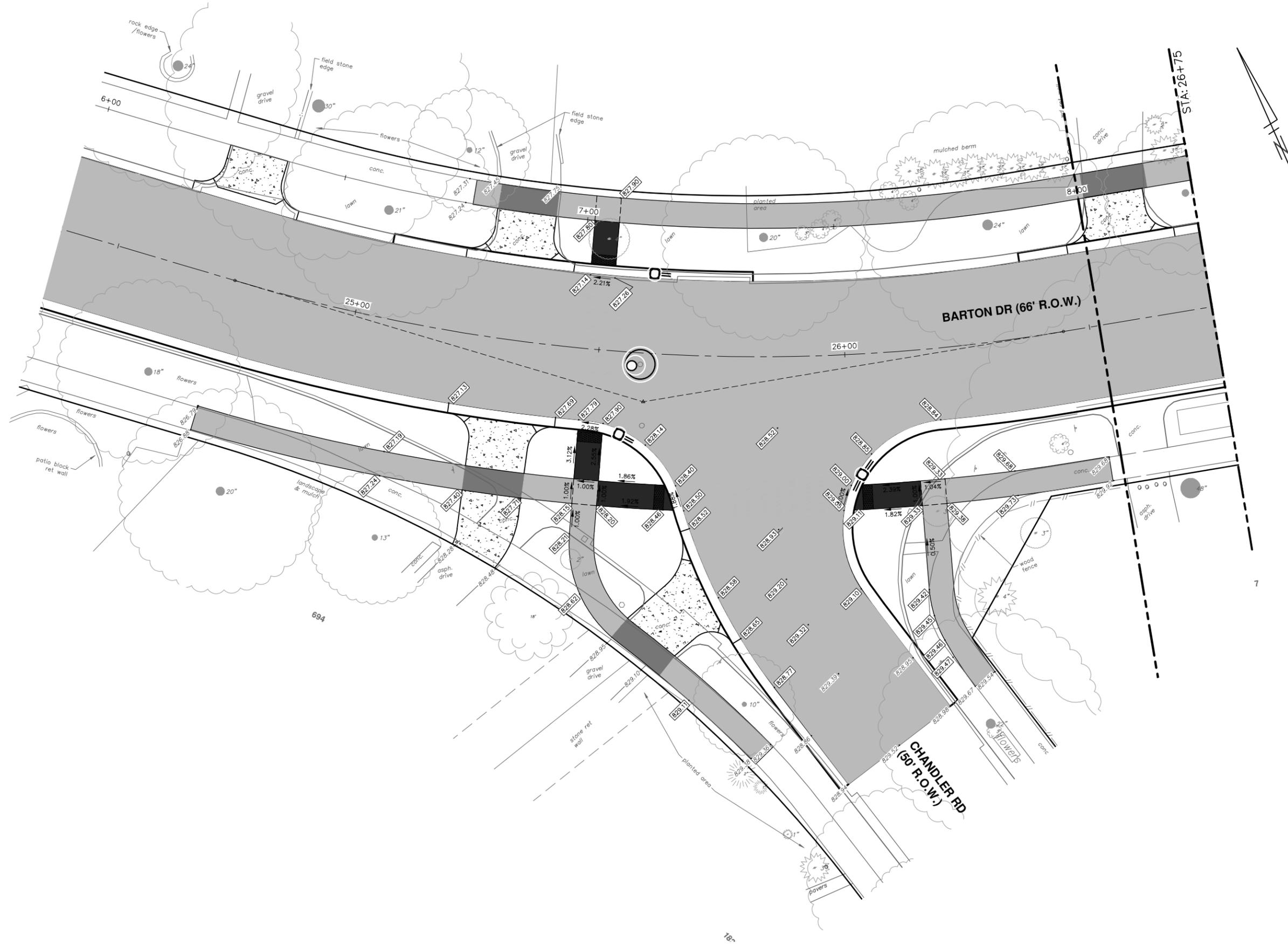


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BARTON DRIVE IMPROVEMENTS
 INTERSECTION GRADES
 BARTON DR AT BREDE PL AND LONG SHORE DR

SCALE: 1"=10'
 DRAWING No. 2019005-54



REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	2-28-20	JKA	JKA

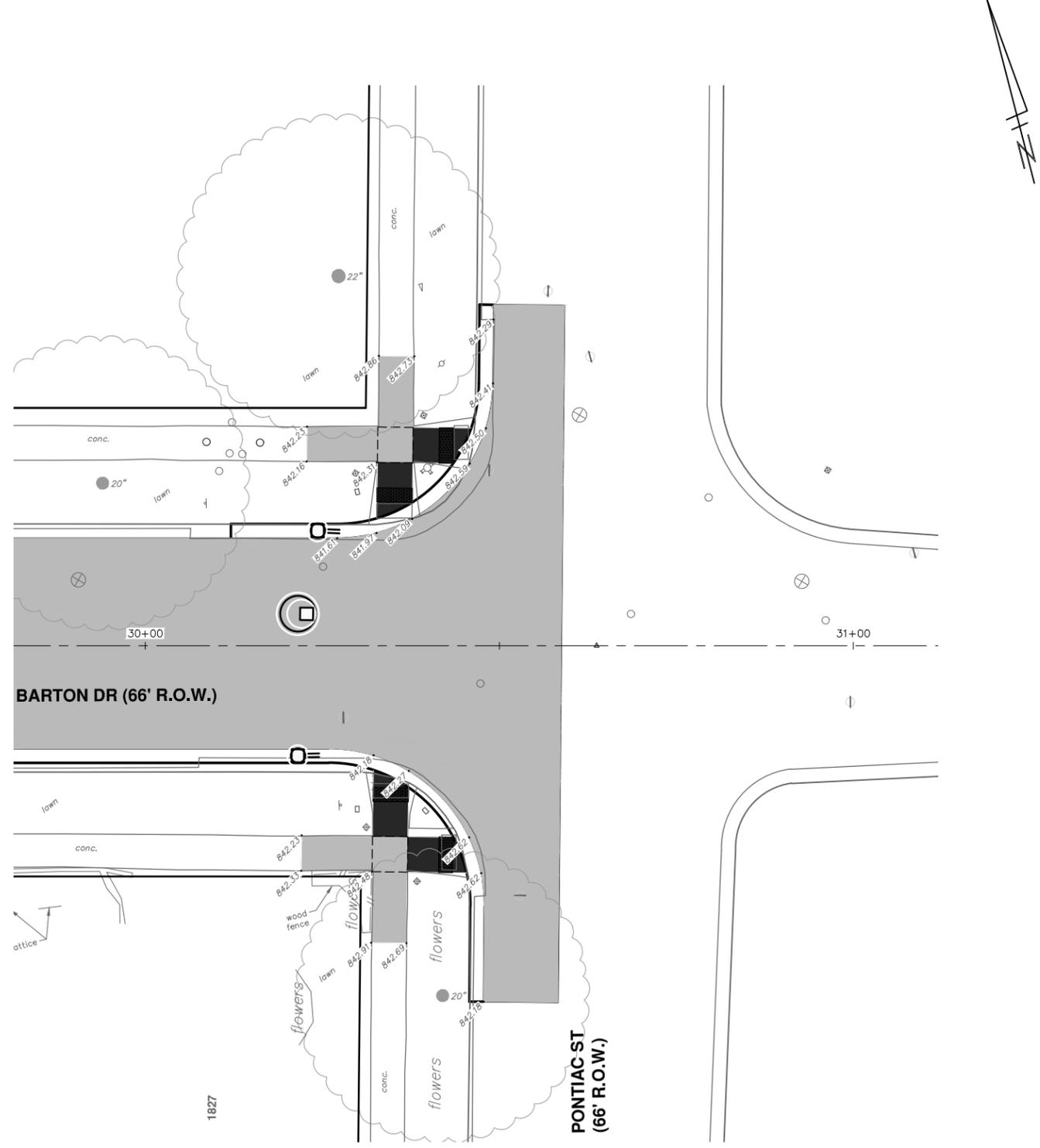


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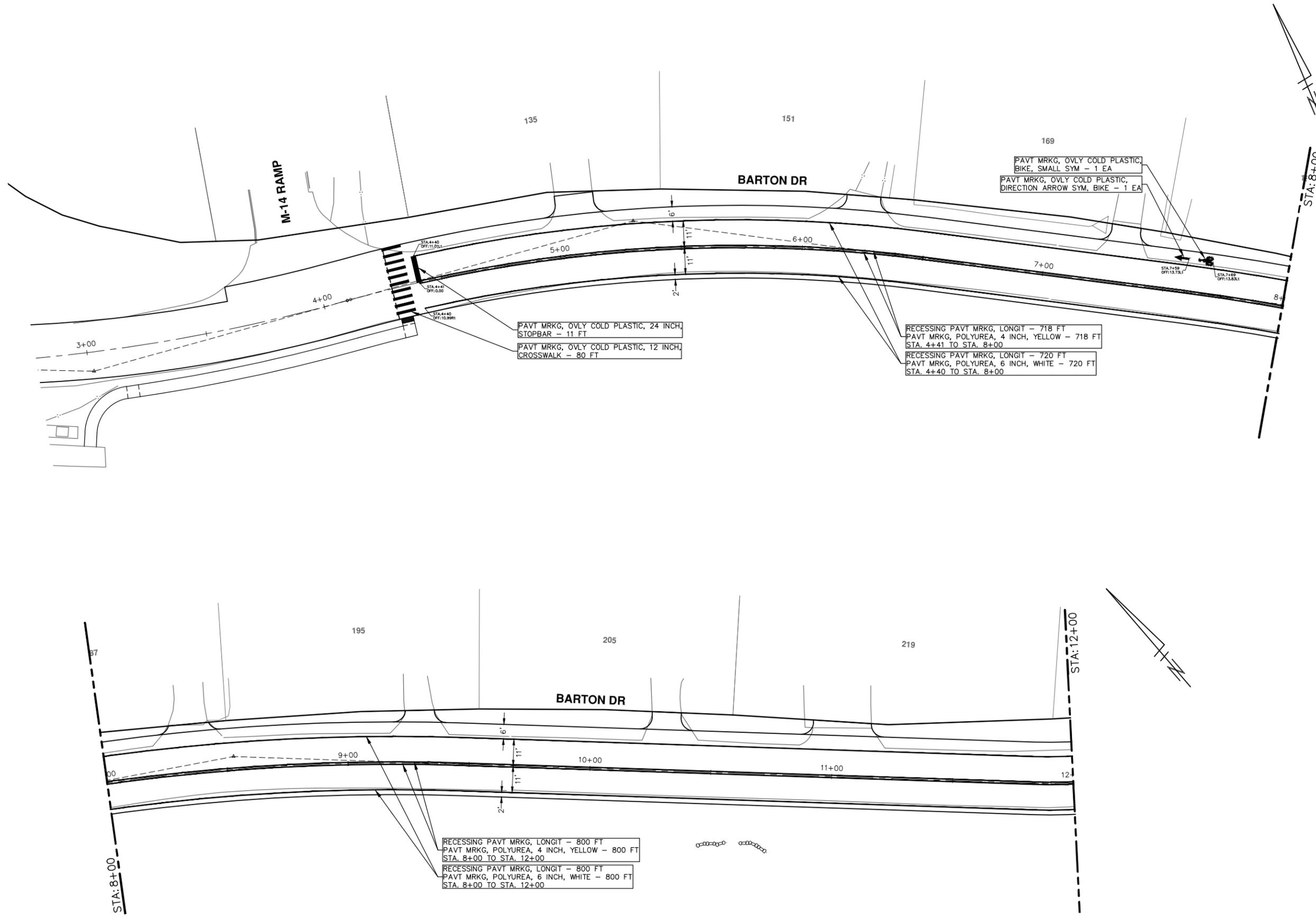


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PAVT MRKG, OVLY COLD PLASTIC, 24 INCH, STOPBAR - 11 FT
 PAVT MRKG, OVLY COLD PLASTIC, 12 INCH, CROSSWALK - 80 FT

RECESSING PAVT MRKG, LONGIT - 718 FT
 PAVT MRKG, POLYUREA, 4 INCH, YELLOW - 718 FT
 STA. 4+41 TO STA. 8+00
 RECESSING PAVT MRKG, LONGIT - 720 FT
 PAVT MRKG, POLYUREA, 6 INCH, WHITE - 720 FT
 STA. 4+40 TO STA. 8+00

RECESSING PAVT MRKG, LONGIT - 800 FT
 PAVT MRKG, POLYUREA, 4 INCH, YELLOW - 800 FT
 STA. 8+00 TO STA. 12+00
 RECESSING PAVT MRKG, LONGIT - 800 FT
 PAVT MRKG, POLYUREA, 6 INCH, WHITE - 800 FT
 STA. 8+00 TO STA. 12+00

PAVT MRKG, OVLY COLD PLASTIC, BIKE, SMALL SYM - 1 EA
 PAVT MRKG, OVLY COLD PLASTIC, DIRECTION ARROW SYM, BIKE - 1 EA

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BARTON DRIVE IMPROVEMENTS

PAVEMENT MARKINGS AND PERMANENT SIGNING

SCALE: 1" = 20'

DRAWING No. 2019005-58

SHEET No. 58 OF 61

STA. 3+50 - STA. 12+00

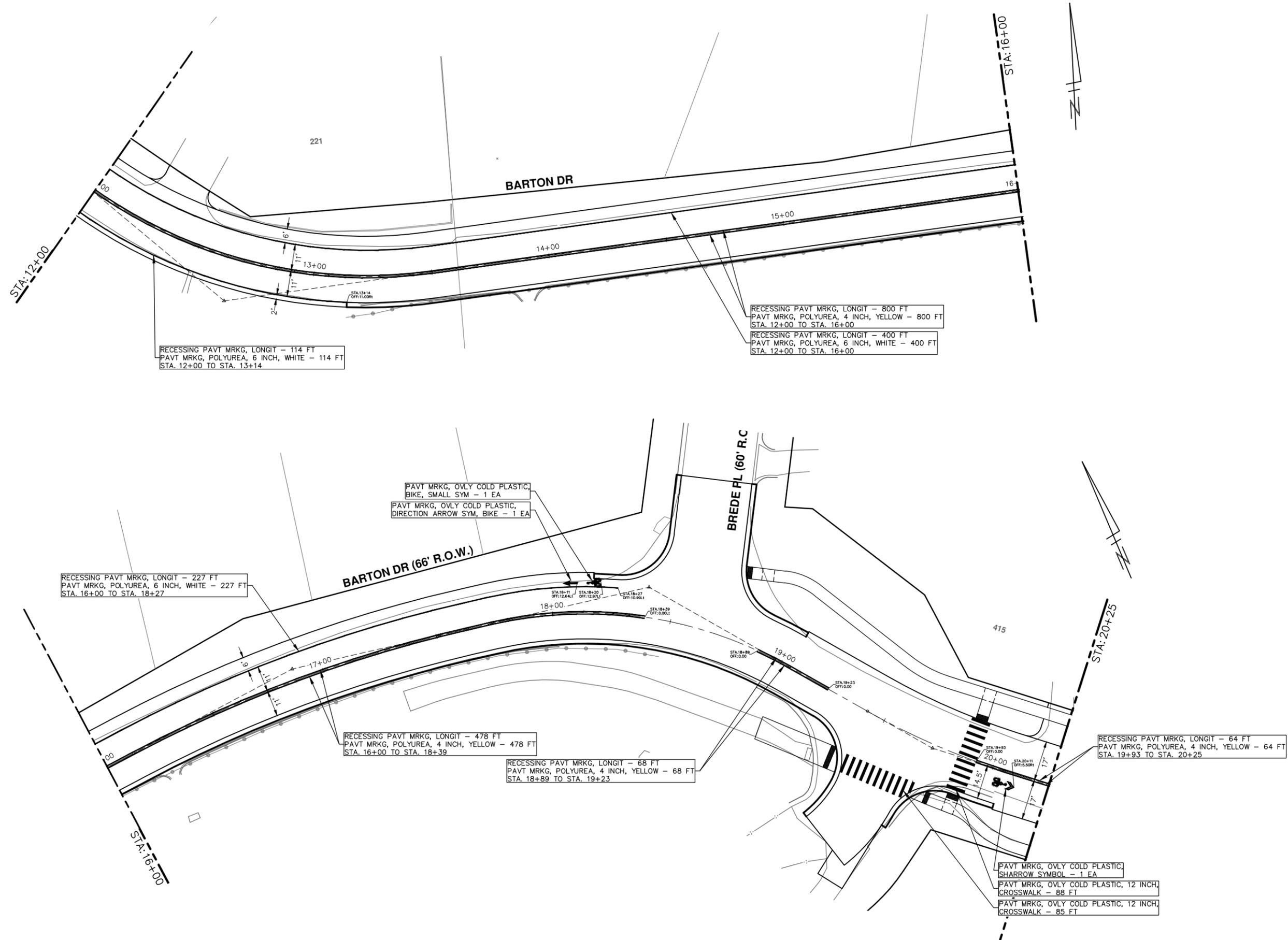
REV. DESCRIPTION

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
00	OUT FOR BID	2-28-20	JKA	

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00	OUT FOR BID	2-28-20	JKA	
			EC,DPF,AE	
			DRAWN	

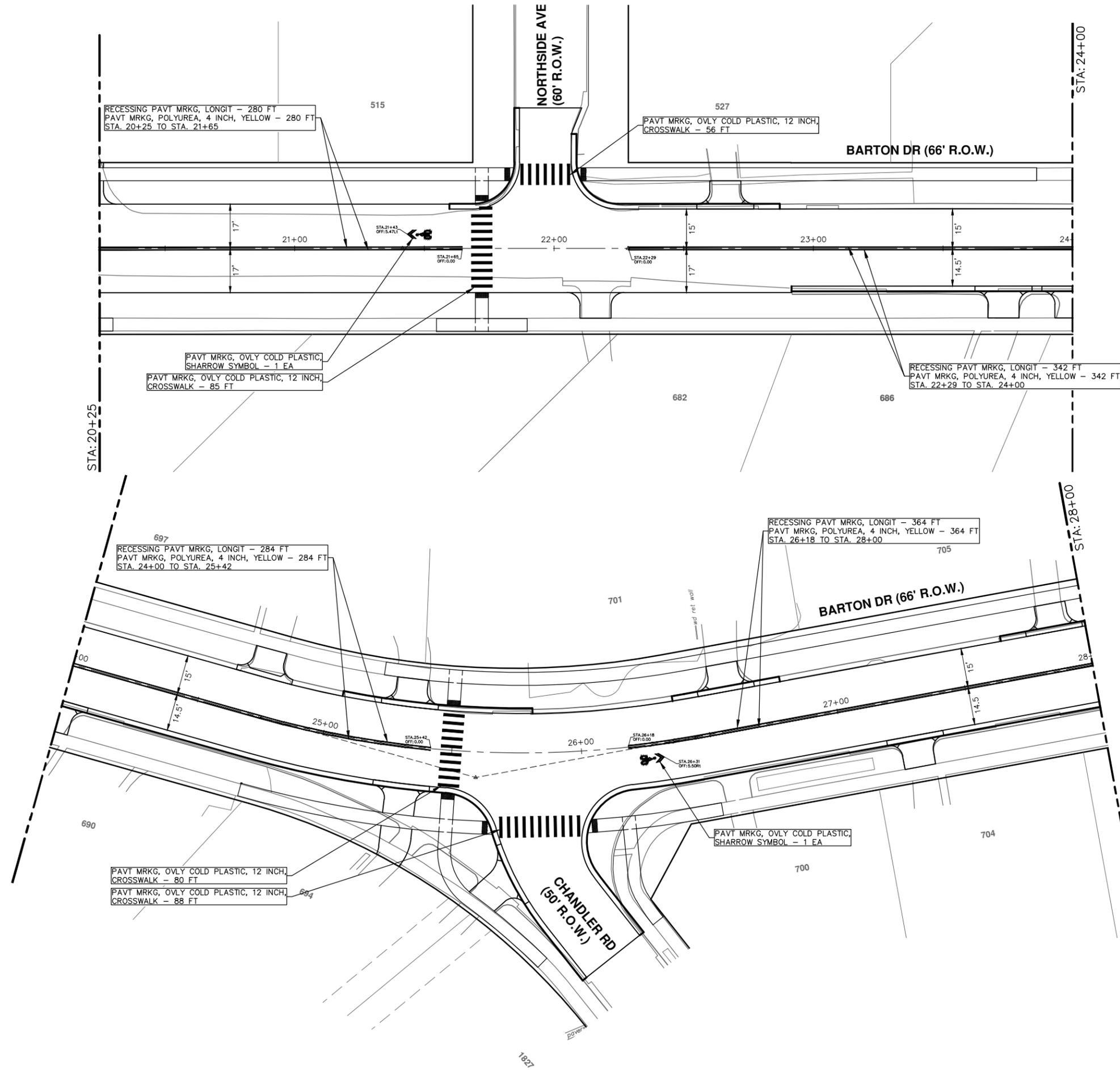
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BARTON DRIVE IMPROVEMENTS
PAVEMENT MARKINGS AND PERMANENT SIGNING

SCALE: 1" = 20'
DRAWING No. 2019005-59

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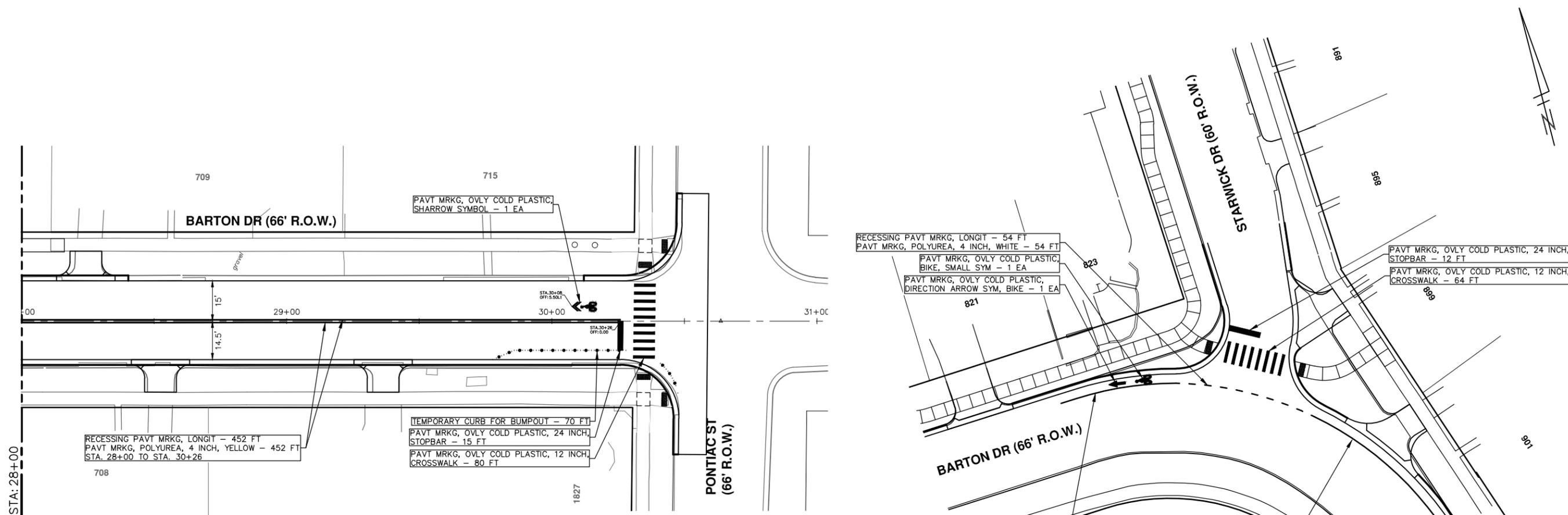


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BARTON DRIVE IMPROVEMENTS
PAVEMENT MARKINGS AND PERMANENT SIGNING

SCALE: 1" = 20'
DRAWING No. 2019005-60

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
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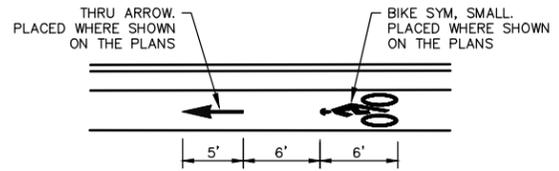
RECESSING PAVT MRKG, LONGIT - 452 FT
PAVT MRKG, POLYUREA, 4 INCH, YELLOW - 452 FT
STA. 28+00 TO STA. 30+26

TEMPORARY CURB FOR BUMPOUT - 70 FT
PAVT MRKG, OVLY COLD PLASTIC, 24 INCH, STOPBAR - 15 FT
PAVT MRKG, OVLY COLD PLASTIC, 12 INCH, CROSSWALK - 80 FT

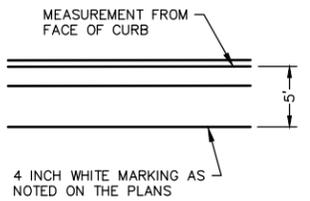
RECESSING PAVT MRKG, LONGIT - 54 FT
PAVT MRKG, POLYUREA, 4 INCH, WHITE - 54 FT
PAVT MRKG, OVLY COLD PLASTIC, BIKE, SMALL SYM - 1 EA
PAVT MRKG, OVLY COLD PLASTIC, DIRECTION ARROW SYM, BIKE - 1 EA

PAVT MRKG, OVLY COLD PLASTIC, 24 INCH, STOPBAR - 12 FT
PAVT MRKG, OVLY COLD PLASTIC, 12 INCH, CROSSWALK - 64 FT

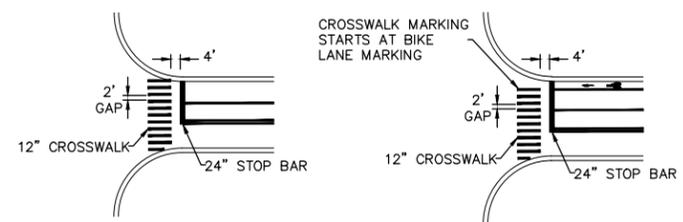
RECESSING PAVT MRKG, LONGIT - 44 FT
PAVT MRKG, POLYUREA, 6 INCH, WHITE - 44 FT
RECESSING PAVT MRKG, LONGIT - 70 FT
PAVT MRKG, POLYUREA, 6 INCH, WHITE - 70 FT



BIKE SYMBOL DETAIL



BIKE LANE MARKINGS



CROSSWALK AND STOP BAR DETAIL

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

BARTON DRIVE IMPROVEMENTS

PAVEMENT MARKINGS AND PERMANENT SIGNING

SCALE: 1" = 20'

DRAWING No. 2019005-61

SHEET No. 61 OF 61

STA. 28+00 - P.O.E.

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		EC:DPF/AE
		JKA
		CHECKED