ADDENDUM #1
BID DOCUMENTS FOR
Wootton Ave Water Line Replacement
POOLESVILLE, MARYLAND
CONTRACT 100.047
February 12, 2024
4:00 p.m.

This addendum is issued as part of the Bid Documents for the above referenced project. The changes incorporated into this addendum shall be considered as part of the documents and shall supersede, amend, add to, clarify, or subtract from those conditions shown in the original documents. The bidder shall take care to incorporate modifications herein with all trades and disciplines related to the work. The bidder shall acknowledge receipt of this addendum on the Bid Form by addendum number and date. Failure to do so may subject the bidder to disqualification.

Response to question;
See attached

Attachments:

Revised Bid Form
Pre-Bid Meeting sign in sheet
Utility Patch Detail
Section 01000- Summary of Work
Revised Plan set

1) the mill and overlay/paving requirement. The drawings show a 5' minimum full depth asphalt replacement in Utility trenches, and then a mill and overlay that appears to be 10' wide.
The detail on sheet C-208 detail 3.1 confirms the full depth, but only shows an additional 3" each way for the mill and overlay and shows it as 3", not the 1 ½" as shown on the drawings
Answer: please refer to Addendum #1 for Standard Road Patch

2) Are services to be transferred to the new main from the existing main? What is the scope of work for the service renewal? Complete renewal or swap over?
Answer: The existing lateral is to be spliced into a section of lateral from the new main.

3) How will unsuitable fill materials be compensated with a Lump sum bid?
Answer: See addendum #1

4) Is new main to have restrained joints?
Answer: See specifications section 02660.

5) Will the town waive any permit fees required?
Answer: No permit fees required.

6) What are work hours?
Answer: See addendum #1

7) How much are liquidated damages?
Answer: See Agreement Article 3.

9) what is the engineers estimate for the project?
Answer: Cost opinion $750,000. Per contract

10) for the item abandon water main, is it cut and cap only or fill with flow fill?
Answer: drained cut and caped.

11) What station does the main transition from 8" to 10"?
Answers: See revied plan sheets Water Main from Fisher Ave to end on Wooton Ave is now 8"

12) what is the size of the old main?
Answer: DIP

13) What is the materials of the existing mains- both being replaced and lateral connections?

Answer: see previous comments and Revised Wooton Ave plans

24) Station 3+50 what is the size of the connection?
Answer: see previous comments and Revised Wooton Ave plans

25) What are the connections of water service sizes?
Answer: see previous comments and Revised Wooton Ave plans

25) Drawings indicate previous Soil borings were performed. Will you make these available? Sheet C-201 at approx. station 0+70
Answer: See Addendum#1 attachments

26) Please confirm- Station 7+35 approx there is a proposed hydrant- it shows a 10" tee, 10" runout, 10" valve and then a fire hydrant. Would the materials start with a 10 x 6 tee and then 6" materials to the hydrant?
Answer: See Addendum#1 attachments lines servicing fire hydrants are 6"

PRICE SCHEDULE
TOWN OF POOLESVILLE Wootton Avenue Water Line Replacement
BASE BID

The Bidder shall include unit prices for the following items of work. The total of all unit price items shall equal the lump sum price indicated on page BF-4 of the proposal form.

Division	Description		Price
1	General Requirements		_____
2	Excavation for Waterline		_____
3	Placement of watermain and pipe	cost Per foot _____	_____
4	Placement of valves and valves	cost Per Valve _____	_____
5	Fire Hydrant	cost Per Hydrant _____	_____
6	Lateral connection	cost Per Connection _____	_____
7	Abandonment of existing waterline		_____
8	Appurtenances		_____
9	Pavement Patching		_____
10	Mobilization/Demobilization		_____
*11	Unsuitable Material	Per cubic Yard _____	100 cubic Yds_____
*12	Ram Hoe for Rock	Per Day_____	20 Days _____

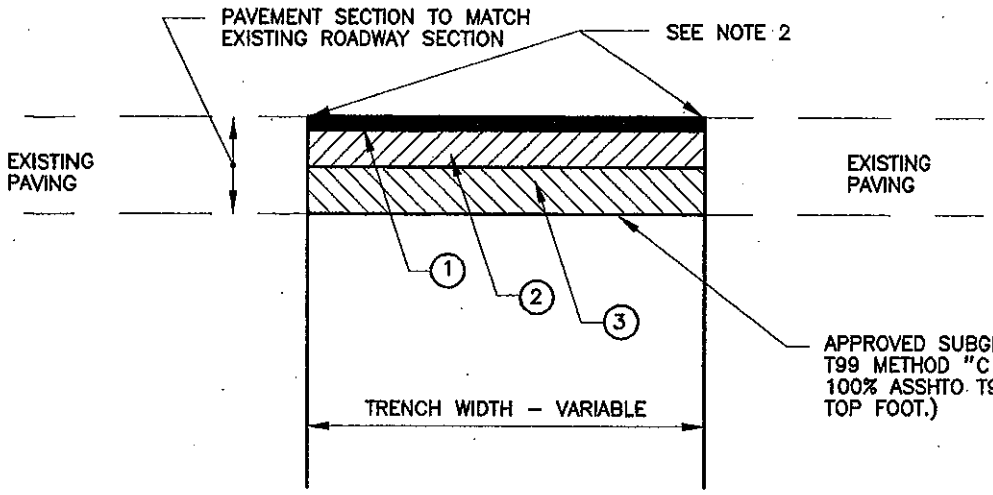
* contingent items to be included in bid total

TOTAL PRICE_____
(Shown on Page BF-4)

Pre-Bid

Wootton Ave Waterline

Name	Company	E-Mail
John Strong	Clark / Azar	JStrong@ClarkAzar.com
David Constanza	ECM	David@ecmcorporation.net
DAVE Kogen	JF Creamen	DAVE.KOGEN@JFCSON.US
Jarred Picarelli	Mid-Atlantic Utilities	Jarredp@mautilities.com
NUNO ALVES	PESSOA	NALVES2PESSOA.COM
Edson Tibincoski	Sagnesconstruction	Edson@Sagnesconstruction
GARY HANN	GABES SERVICES	GARY@GABESSERVICES.COM
William Duriez	SES	wduriez@snyderenv.com
Hugh Humphrey	Humphrey + Son	Hugh@Humphreyandsons.com
Dan Ross	Ross Contracting	Bids@rosscontracting.com
Jesse simoes	Rustler construction	JSimoes2@RCEMD.com
JOE CANDIDO	PAX CONSTRUCTION	JCANDIDO@PATUXENTCONSTRUCTION.COM
Mike Meinck	FLB Constactors Inc	Michaelm@francoslibertybridge.com

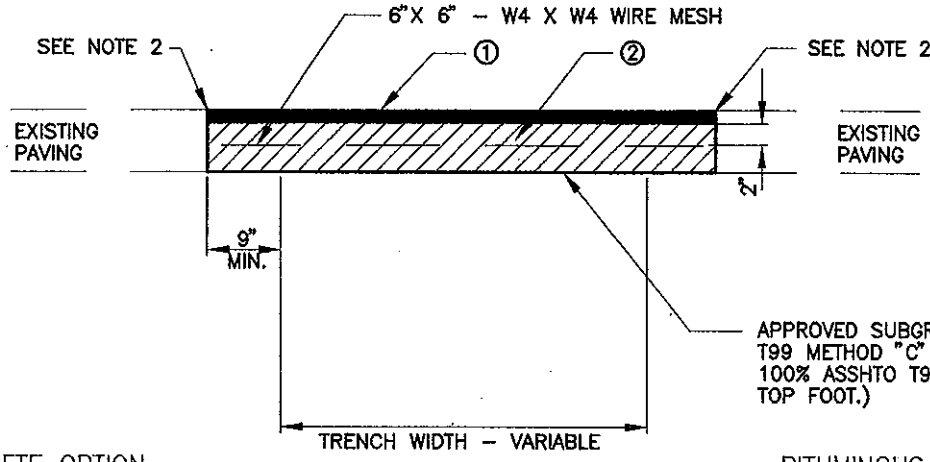


① TWO – 1 1/2" BITUMINOUS CONCRETE SURFACE COURSE

② BITUMINOUS CONCRETE BASE COURSE SEE NOTE 3.

③ SUBBASE MATERIAL SEE NOTE 3

ARTERIAL ROADWAY
(OR HIGHER CLASSIFICATION)



CONCRETE OPTION

① 1 1/2" BITUMINOUS CONCRETE SURFACE COURSE

② 6" MINIMUM CONCRETE PATCH

PRIMARY ROADWAY
(OR LOWER CLASSIFICATION)

BITUMINOUS OPTION

① 1 1/2" BITUMINOUS CONCRETE SURFACE COURSE

② BITUMINOUS CONCRETE BASE COURSE SEE NOTE 3

GENERAL NOTES

1. REFER TO M.C.D.O.T. UTILITY PATCH SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. EXISTING PAVEMENT MUST BE SAW CUT FULL DEPTH PRIOR TO EXCAVATION.
3. BASE COURSE AND SUBBASE MATERIAL SHALL CONFORM TO APPROPRIATE ROADWAY CLASSIFICATION DESIGN STANDARD OR MATCH EXISTING CONDITION, WHICHEVER IS GREATER.

APPROVED JAN 5 '95
DATE

DIRECTOR, DEPT. OF TRANS.

CHIEF, DIV. OF ENG. SERVICES

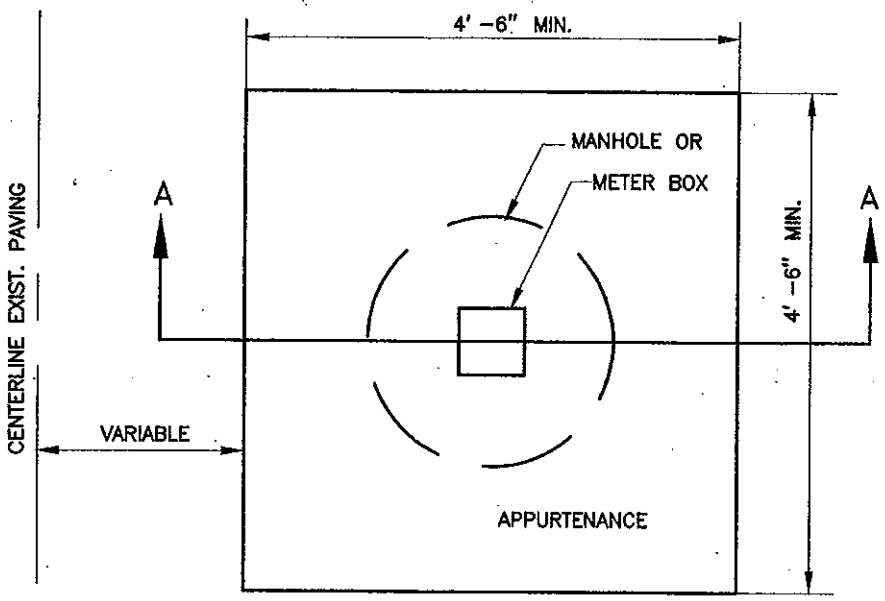
REVISED

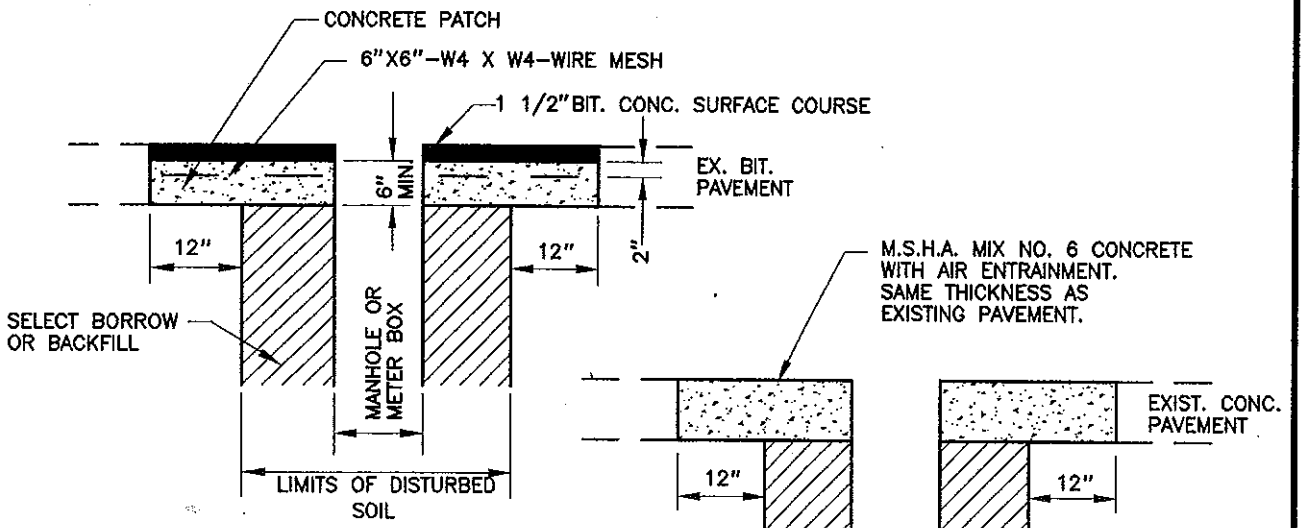
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION

UTILITY PATCH IN FLEXIBLE PAVEMENT

STANDARD NO. MC-801.02

P:\DOTSTD\MC80102 6-24-94 11:2:10 am EST





BITUMINOUS CONCRETE PAVEMENT

SECTION A-A

CONCRETE PAVEMENT

APPROVED JAN 5 / 96
DATE

DIRECTOR, DEPT. OF TRANS.

CHIEF, DIV. OF ENG. SERVICES

REVISED

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION

UTILITY PATCH
FOR APPURTENANCE ADJUSTMENT

STANDARD NO. MC-801.03

P:\DOTSTD\MC80103 6-24-94 1103345 am EST

SECTION 01000

SUMMARY OF WORK

I. GENERAL

A. Contract Documents

The General Conditions and all applicable requirements of the Contract Documents apply to the Work of the Specifications.

B. Scope

1. Provide labor, materials, equipment and services and perform all operations required for completion of work of this contract as specified or indicated in The on the Drawings.

2. The Work of this contract includes, but is not limited to:

Removal of existing roofing and replacement of roofing per specifications.

Please refer to contract documents for specific information.

All work will be constructed in the Town of Poolesville, located in Montgomery County, Maryland.

C. Standards and Publications

Standards and other publications referenced in these specifications shall be of the issues in effect at time of bidding and form a part of this contract.

D. Work Schedule

1. For this Contract, the Owner will observe a five (5) day work week, Monday through Friday, eight hours a day. The Owner observes the following holidays: New Year's Day, Martin Luther King's Birthday, George Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day and the following Friday, Christmas Day, State and National Election Days and Inauguration Day.

2. The Contractor shall limit the workday from 7 a.m. to 5 p.m. The Contractor shall limit work that impedes traffic flow on MSHA and mitigate impediments to Town Roads to between 9 a.m. and 3 p.m. on weekdays. Should the Contractor deem it necessary to work on Saturdays, Sundays, Holidays or longer than eight hours per day in order to comply with his construction schedule, or because of an emergency, the Contractor shall request permission from the Town Engineer to do so. If, in the opinion of the Town Engineer the need is bona fide, he will authorize the Contractor to work such hours as may be necessary.

3. Costs incurred by the Owner and Engineer arising from approved lengthening of hours, including the furnishing of Owner's Representatives for the observation of work, shall be

the Contractor's responsibility and the cost thereof may be deducted from monies owed the Contractor.

4. All work shall be performed in accordance with these Contract Specifications titled Roadway Repairs and Repaving at Various Locations.

II. INSTALLATION AND EXECUTION

A. Workmanship

All work and execution of same shall be completed in a first class workmanlike manner and shall conform to the best practice of the trade. The Engineer shall, if he deems necessary, reject and cause to be redone or replaced any work or manufactured item regardless of any prior approval of data or method and such reconstruction or replacement shall be completed at the sole expense of the Contractor.

B. Construction Location Verification

Contractor shall verify the location of all proposed Work prior to construction.

C. Project Progress Meetings

Project Progress Meetings will be held periodically in order that the Engineer can review the status of the Project. The Contractor's superintendent or project manager shall attend the meeting and accompany the Engineer on observation of the job site. During inclement weather, the Contractor, if required, shall provide space in his field office for the meeting. The date and time of the meetings shall be as directed by the Engineer. The holding of the Project Meetings shall not relieve the Contractor from cooperating with the Engineer should the Engineer desire additional visits to the site.

D. Archaeological Artifacts

All articles of historical or scientific value, including coins, fossils, and articles of antiquity, which may be uncovered or otherwise brought to the attention of the Contractor during the course of the Contract shall remain the property of the Owner of the property on which the articles reside. Such findings shall immediately be reported to the Engineer who will determine the method of removal, where necessary.

E. Contractor Staging Area

The Town Director of the Waste Water Plant.

III. Not Used.

IV. MEASUREMENT AND PAYMENT

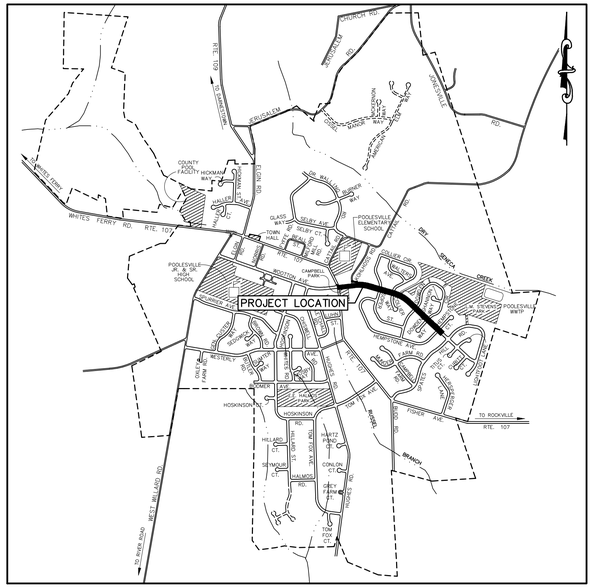
Except as otherwise noted herein, providing for and complying with requirements set forth in this Section will not be measured for payment but the cost thereof will be considered incidental to the Contract.

* * *

TOWN OF POOLESVILLE
WOOTTON AVENUE
WATERLINE REPLACEMENT

WOOTTON AVENUE
POOLESVILLE, MARYLAND 20837

INDEX OF DRAWINGS



VICINITY MAP
SCALE: 1" = 2000'

CLARK | AZAR & ASSOCIATES
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www.clarkazar.com
A Woman Owned Small Business

STATE OF MARYLAND · JASON A. AZAR · 31168 · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE
WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 2000' 4000'
GRAPHIC SCALE

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA
SHEET TITLE	

COVER SHEET

SHEET
G-001

GENERAL NOTES:

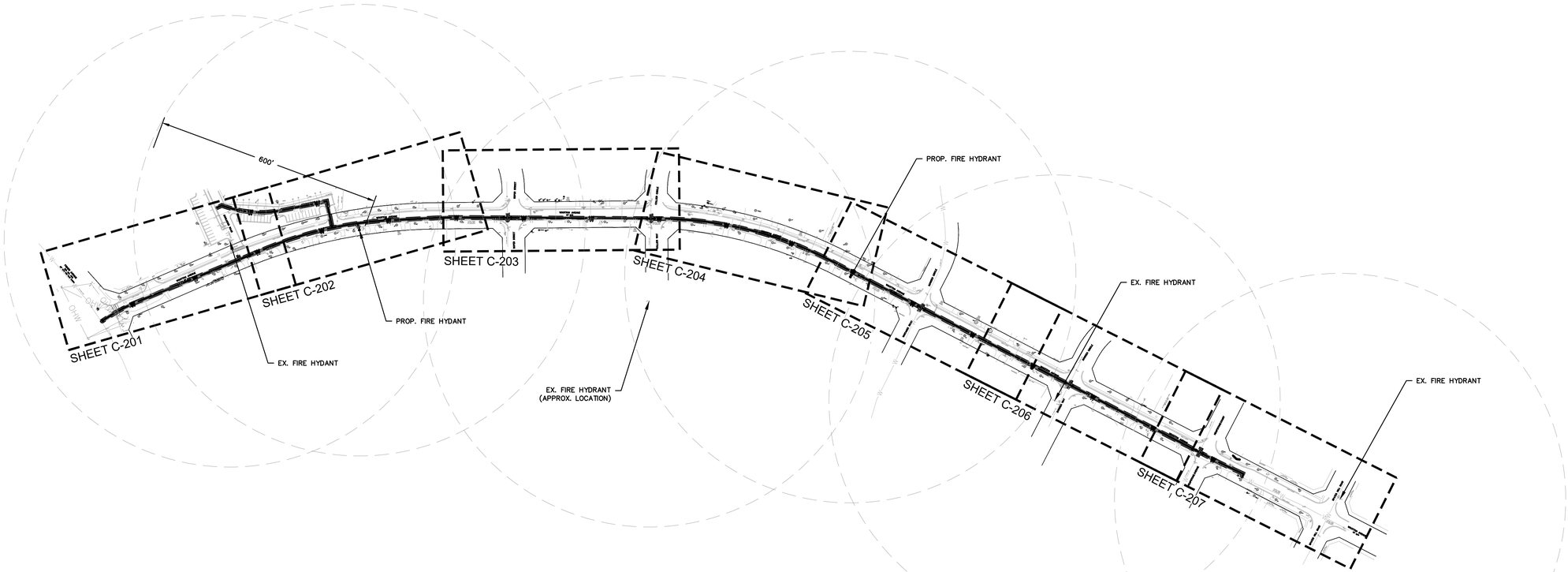
1. EXISTING TOPOGRAPHIC CONDITIONS BASED ON FIELD SURVEY PERFORMED BY POTOMAC VALLEY SURVEYS, DATED JUNE 9, 2022 AND SUPPLEMENTED BY MONTGOMERY COUNTY GIS DATA AND TOWN OF POOLESVILLE RECORDS. NO BOUNDARY SURVEY PERFORMED. PROPERTY LINES SHOWN ARE BASED ON AVAILABLE RECORDS.
2. THE HORIZONTAL DATUM OF THIS SURVEY IS MARYLAND STATE PLANE (NAD83/11). THE VERTICAL DATUM OF THIS SURVEY IS NAVD88.
3. THE LOCATION OF UNDERGROUND UTILITIES IS APPROXIMATE, CONTRACTOR TO VERIFY IN THE FIELD AS NECESSARY. ABOVE GROUND UTILITIES & IMPROVEMENTS FIELD LOCATED BY POTOMAC VALLEY SURVEYS, INC. INVERT ELEVATIONS HAVE BEEN OBTAINED WHERE ACCESS IS AVAILABLE. ALL CONTRACTORS MUST CALL "MISS UTILITY" PRIOR TO ANY EXCAVATIONS.
4. ALL WORK TO OCCUR IN TOWN OF POOLESVILLE RIGHT-OF-WAY.
5. NRCS WEB SOIL SURVEY IDENTIFIES SOILS AT THIS SITE AS PENN SILT LOAM (HSG-'B') AND READINGTON SILT LOAM (HSG-'C').
6. ALL PROPOSED WORK IS OUTSIDE THE MAPPED FLOODPLAIN PER FEMA FLOOD INSURANCE RATE MAPS NUMBER 24031C0143D AND 24031C0144D, BOTH DATED SEPTEMBER 29, 2006.
7. DETAIL DRAWINGS AND SCHEDULES DESCRIBE CONSTRUCTION AT GIVEN AREAS. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL UTILIZE EQUIVALENT CONSTRUCTION METHODS IN ALL AREAS NOT DETAILED.
8. ALL NOTES ON DRAWINGS SHALL BE ASSUMED AS TYPICAL, UNLESS OTHERWISE SHOWN OR NOTED ON THE DRAWINGS.
9. ALL NOTES SUPPLEMENT THE PLANS AND ARE IN NO WAY TO BE CONSIDERED AS EXCLUDING IN ANY ITEM IN THEM.
10. IT SHALL BE THE DUTY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS GIVEN ON THE DRAWINGS AND TO REPORT TO THE ENGINEER ANY ERROR OR INCONSISTENCY WITH THE ACTUAL CIRCUMSTANCES IN THE FIELD BEFORE COMMENCING WORK.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL ITEMS REQUIRED TO PROVIDE A SITE CLEAR OF OBSTRUCTIONS (ABOVE & BELOW GRADE) AND GRADED TO SPECIFIED ELEVATIONS.
12. ALL BIDDERS: THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE HIM/HERSELF WITH THE EXISTING CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED PRIOR TO SUBMITTING BID.
13. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL SITE SUB-CONTRACTORS/BIDDERS WITH FULL AND COMPLETE SETS OF ALL DRAWINGS FOR THEIR USE IN PREPARING BIDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DELAYS AND COSTS ARISING DURING CONSTRUCTION FROM BIDS BASED UPON INCOMPLETE SETS OF SITE BID DOCUMENTS.
14. CLARK | AZAR & ASSOCIATES, INC. WILL RELEASE CAD BASE FILES OF THE SITE CIVIL DRAWINGS TO THE SUCCESSFUL CONTRACTOR AFTER A RELEASE IS SIGNED. NO CAD FILES WILL BE RELEASED PRIOR TO AWARD OF CONTRACT.

GENERAL DEMOLITION NOTES

1. THE CONTRACTOR SHALL BE LIMITED TO STORING MATERIALS IN DESIGNATED STAGING AREAS OR WITHIN THE LIMITS OF DISTURBANCE FOR THIS PROJECT.
2. ALL CONSTRUCTION ACTIVITY SHALL BE COORDINATED WITH THE TOWN OF POOLESVILLE.
3. CONTRACTOR SHALL PROVIDE REQUIRED SIGNAGE AND FLAGMEN ALONG ALL PUBLIC STREETS ALONG THE WORK AREA OR ADJACENT TO THE WORK AREA, TO ASSURE THE SAFETY OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC IF REQUIRED. ALL TRAFFIC CONTROLS MUST BE IN ACCORDANCE WITH THE MOST CURRENT MUTCD AND MDMUTCD REQUIREMENTS AND WITH THE MOST CURRENT MONTGOMERY COUNTY DOT AND TOWN OF POOLESVILLE WORK ZONE TRAFFIC CONTROL STANDARDS AND DETAILS.
4. ALL WORK SHALL BE PERFORMED IN STRICT CONFORMANCE WITH THE MOST CURRENT APPLICABLE EPA, OSHA, AND MOSHA REGULATIONS AND MUST COMPLY WITH THE MOST CURRENT FEDERAL, STATE AND/OR LOCAL REGULATIONS AND CODES APPLICABLE TO SAID WORK.
5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WORK WITH REPRESENTATIVE UTILITY COMPANIES AND IMPLEMENTING REQUIRED UTILITY-RELATED WORK ACCORDINGLY.
6. THE CONTRACTOR SHALL NOTIFY THE OWNER AND/OR OWNERS REPRESENTATIVE IMMEDIATELY UPON ENCOUNTERING ANY HAZARDOUS MATERIALS. THE CONTRACTOR SHALL DOCUMENT SAME TO THE OWNER TO OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
7. WHERE NEW WORK IS TO BE DONE, CARE SHALL BE TAKEN TO PROTECT ALL EXISTING ADJACENT SURFACES, STRUCTURES, AND AREAS FROM DAMAGE. ANY ITEM TO SHOWN TO REMAIN THAT IS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL BACKFILL EXCAVATED AREAS WITH ACCEPTABLE MATERIAL, AS SPECIFIED IN THE CONTRACT DOCUMENTS.
9. IN THE EVENT THAT, DURING DEMOLITION OR CONSTRUCTION ACTIVITIES THE CONTRACTOR ENCOUNTERS ANY EXISTING UTILITIES/STRUCTURES NOT SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE OWNER FOR DIRECTIONS PRIOR TO PROCEEDING WITH ANY WORK.
10. ALL SAWCUTS ARE TO BE STRAIGHT AND EVEN, JAGGED EDGES WILL NOT BE ACCEPTED.
11. PRIOR TO THE START OF CONSTRUCTION AN ON-SITE MEETING WITH TOWN OF POOLESVILLE AND THEIR GENERAL CONTRACTOR SHALL BE HELD TO DISCUSS TIMING OF OPERATIONS AND CONSTRUCTION COORDINATION.
12. BEFORE ANY EXCAVATION BELOW SUBGRADE IS ALLOWED, THE CONTRACTOR SHALL VERIFY THAT NO UTILITY PIPING IS IN THE VICINITY OF EXCAVATION.
13. THE CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL UNDERGROUND UTILITIES IN THE AREA OF PROPOSED WORK ARE LOCATED PRIOR TO COMMENCING CONSTRUCTION WORK.
14. THE CONTRACTOR IS ALSO RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES (NOT LOCATED BY MISS UTILITY) WITHIN CONSTRUCTION LIMITS AT THEIR EXPENSE. ALL UTILITIES SHOWN ON THE PLANS ARE PROVIDED FOR INFORMATION ONLY AND SHALL BE CONSIDERED APPROXIMATE. THE TOWN OF POOLESVILLE WILL NOT LOCATE ANY OF THE EXISTING UNDERGROUND UTILITIES. ANY UTILITIES OR OTHER UNDERGROUND FACILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED/REPLACED AT THE CONTRACTOR'S EXPENSE.
15. WHEN AN ITEM IS STATED TO BE REMOVED, IT SHALL INCLUDE REMOVAL OF ANY AND ALL APPURTENANCES ABOVE OR BELOW GRADE ASSOCIATED WITH SAID ITEM.
16. ALL SIDEWALKS ARE TO BE REMOVED AT THE NEAREST WHOLE PANEL.
17. ALL CURBING TO BE REMOVED AT THE NEAREST JOINT.
18. ALL GRASS AREAS TO BE DISTURBED ARE TO BE STABILIZED WITH SEED AND MULCH.

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL TEST PIT ALL WATER, ELECTRIC, AND GAS LINES, AND AT POINTS OF CONNECTION FOR STORM DRAIN AND SEWER WITHIN THE LIMITS OF DISTURBANCE TO ESTABLISH LOCATION AND EXISTING DEPTHS. THE CONTRACTOR SHALL TEST PIT ALONG THE EXISTING LINES TO REMAIN AT CROSSINGS AND PROVIDE FIELD LOCATED INVERTS TO THE ENGINEER OF RECORD PRIOR TO CLEARING.
2. THE CONTRACTOR SHALL COMPLY WITH ALL TOWN OF POOLESVILLE NOISE ORDINANCES.
3. CONCRETE ENCASING SHALL BE USED WHERE ANY PROPOSED WATER MAIN JOINTS ARE LESS THAN 10 FEET FROM ANY EXISTING SEWER AND LESS THAN 6 FEET VERTICALLY ABOVE ANY EXISTING SEWER. WHERE JOINT-LESS PIPE IS USED, CONCRETE ENCASING SHALL NOT BE REQUIRED.



1 **WOOTTON AVENUE LOCATION PLAN**
SCALE: 1" = 150'

CLARK | AZAR & ASSOCIATES
20440 Century Blvd, Suite 220
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T(301) 528-2010
www.clarkazar.com
A Woman Owned Small Business

STATE OF MARYLAND · JOSEPH ANTHONY AZAR · 31168 · PROFESSIONAL ENGINEER

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WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

GENERAL NOTES

SHEET

G-002

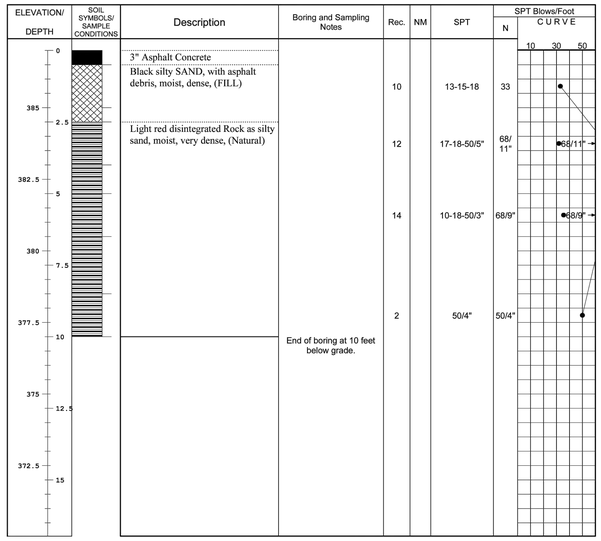
J:\100.000 Poolesville General\100.047 - Wootton Ave Waterline\CAD\DWG\G-002 GENERAL NOTES.dwg 2/12/2024 11:13 AM

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-1
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 387 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER		CAVE IN DEPTH	
AT COMPLETION	Dry	ft.	7	ft.
AFTER 24 HRS.		ft.		ft.
AFTER ___ HRS.		ft.		ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

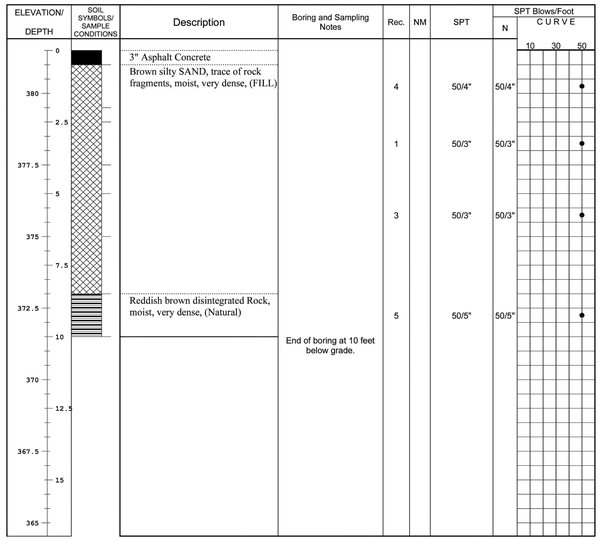
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-2
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 381.5 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER		CAVE IN DEPTH	
AT COMPLETION	Dry	ft.	6.5	ft.
AFTER 24 HRS.		ft.		ft.
AFTER ___ HRS.		ft.		ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

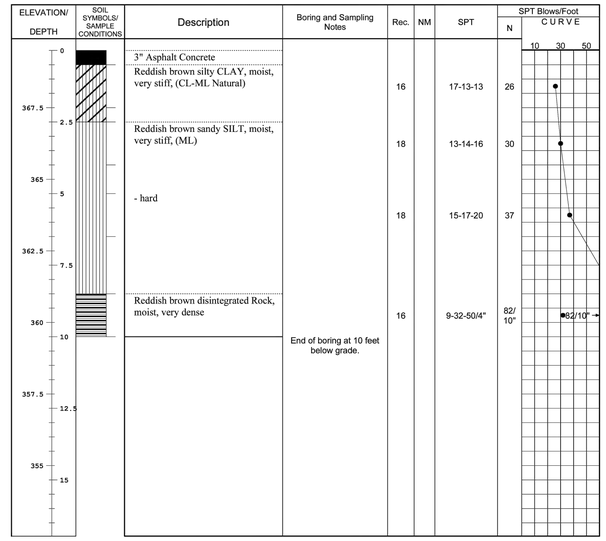
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-3
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 369.5 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER		CAVE IN DEPTH	
AT COMPLETION	Dry	ft.	7	ft.
AFTER 24 HRS.		ft.		ft.
AFTER ___ HRS.		ft.		ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

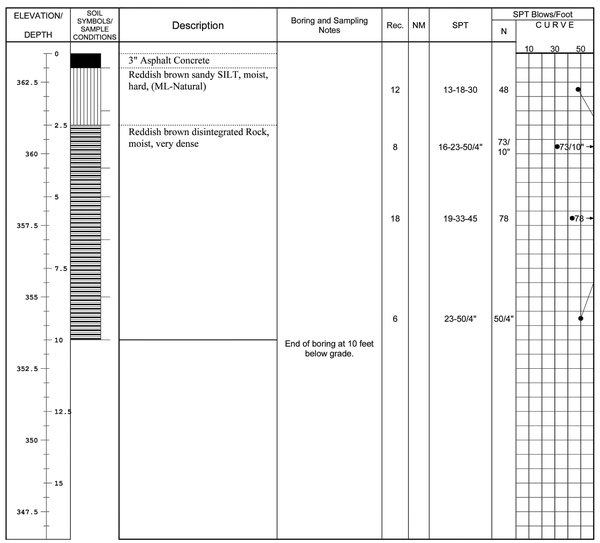
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-4
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 363.5 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER		CAVE IN DEPTH	
AT COMPLETION	Dry	ft.	7	ft.
AFTER 24 HRS.		ft.		ft.
AFTER ___ HRS.		ft.		ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

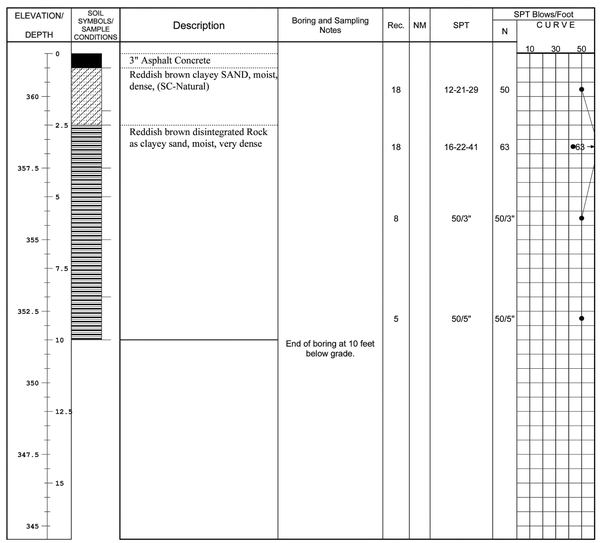
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-5
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 361.5 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER		CAVE IN DEPTH	
AT COMPLETION	Dry	ft.	7	ft.
AFTER 24 HRS.		ft.		ft.
AFTER ___ HRS.		ft.		ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE
WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

SOIL BORING LOGS

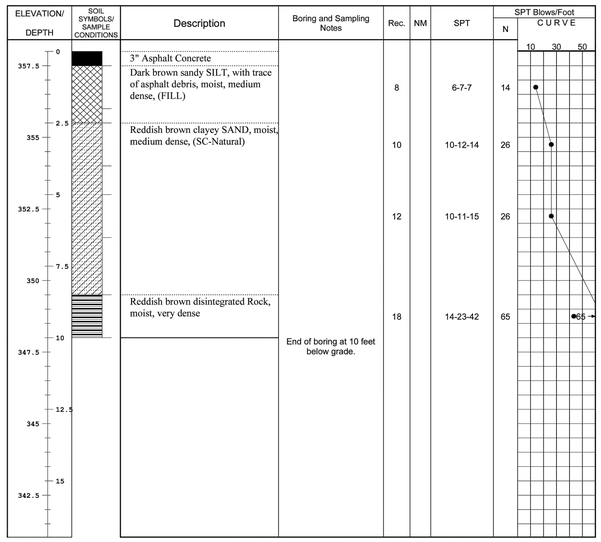
SHEET
G-003

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-6
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 358 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



ELEVATION/ DEPTH	Description	Boring and Sampling Notes	Rec.	NM	SPT	SPT Blows/Foot N	SPT Blows/Foot CURVE (10 30 50)
357.5 / 0	3" Asphalt Concrete						
	Dark brown sandy SILT, with trace of asphalt debris, moist, medium dense, (FILL)		8		6-7-7	14	
355 / 2.5	Reddish brown clayey SAND, moist, medium dense, (SC-Natural)		10		10-12-14	26	
352.5 / 5			12		10-11-15	26	
350 / 7.5	Reddish brown disintegrated Rock, moist, very dense						
347.5 / 10		End of boring at 10 feet below grade.	18		14-23-42	65	65 →
345 / 12.5							
342.5 / 15							

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	7 ft.
AFTER 24 HRS.	ft.	ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

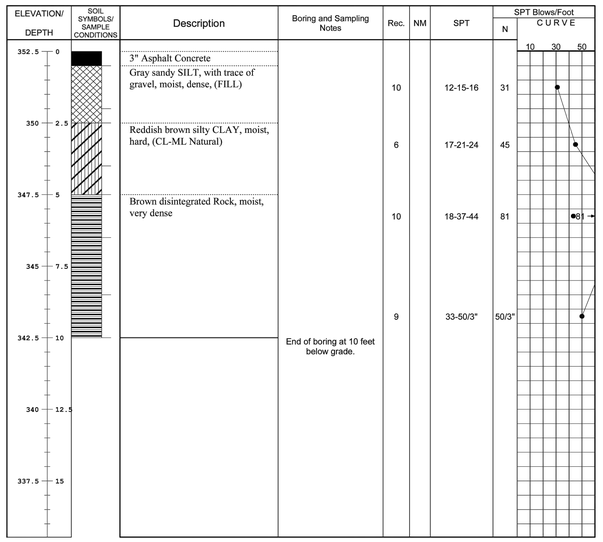
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-7
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 352.5 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



ELEVATION/ DEPTH	Description	Boring and Sampling Notes	Rec.	NM	SPT	SPT Blows/Foot N	SPT Blows/Foot CURVE (10 30 50)
352.5 / 0	3" Asphalt Concrete						
	Gray sandy SILT, with trace of gravel, moist, dense, (FILL)		10		12-15-16	31	
350 / 2.5	Reddish brown silty CLAY, moist, hard, (CL-ML Natural)		6		17-21-24	45	
347.5 / 5			10		18-37-44	81	81 →
345 / 7.5	Brown disintegrated Rock, moist, very dense						
342.5 / 10		End of boring at 10 feet below grade.	9		33-50/3"	50/3"	
340 / 12.5							
337.5 / 15							

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	7 ft.
AFTER 24 HRS.	ft.	ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

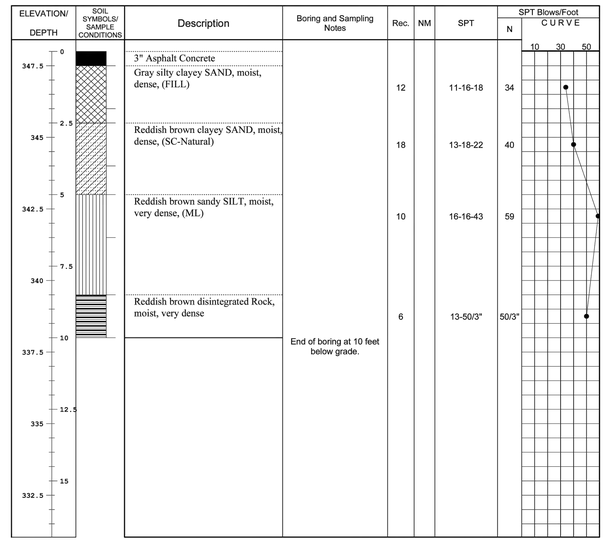
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-8
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 348 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



ELEVATION/ DEPTH	Description	Boring and Sampling Notes	Rec.	NM	SPT	SPT Blows/Foot N	SPT Blows/Foot CURVE (10 30 50)
347.5 / 0	3" Asphalt Concrete						
	Gray silty clayey SAND, moist, dense, (FILL)		12		11-16-18	34	
345 / 2.5	Reddish brown clayey SAND, moist, dense, (SC-Natural)		18		13-18-22	40	
342.5 / 5			10		16-16-43	59	
340 / 7.5	Reddish brown sandy SILT, moist, very dense, (ML)						
337.5 / 10	Reddish brown disintegrated Rock, moist, very dense	End of boring at 10 feet below grade.	6		13-50/3"	50/3"	
335 / 12.5							
332.5 / 15							

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	7 ft.
AFTER 24 HRS.	ft.	ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

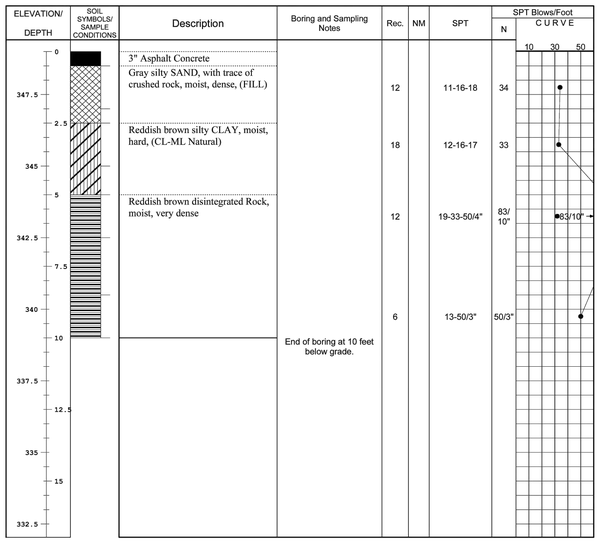
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Wootton Avenue Waterline Replacement — Boring No.: SB-9
Location: Wootton Avenue, Poolesville, Maryland — Job #: F23026

SAMPLER

Datum: MSL — Hammer Wt.: 140 lbs. — Hole Diameter: 6 in. — Foreman: Tony
Surf. Elev.: 349 Ft. — Hammer Drop: 30 in. — Rock Core Diameter: NA — Inspector: Robel
Date Started: 02/13/2023 — Pipe Size: 2 O.D. in. — Boring Method: HSA — Date Completed: 02/13/2023



ELEVATION/ DEPTH	Description	Boring and Sampling Notes	Rec.	NM	SPT	SPT Blows/Foot N	SPT Blows/Foot CURVE (10 30 50)
347.5 / 0	3" Asphalt Concrete						
	Gray silty SAND, with trace of crushed rock, moist, dense, (FILL)		12		11-16-18	34	
345 / 2.5	Reddish brown silty CLAY, moist, hard, (CL-ML Natural)		18		12-16-17	33	
342.5 / 5			12		19-33-50/4"	83/ 10"	83/10" →
340 / 7.5	Reddish brown disintegrated Rock, moist, very dense						
337.5 / 10		End of boring at 10 feet below grade.	6		13-50/3"	50/3"	
335 / 12.5							
332.5 / 15							

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED
PT - PRESSED SHELBY TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	7 ft.
AFTER 24 HRS.	ft.	ft.
AFTER ___ HRS.	ft.	ft.

BORING METHOD
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

KEY TO SYMBOLS

Symbol Description

Strata symbols

- **Paving**
- **Fill**
- **Weathered**
- **Silty low plasticity clay**
- **Silt**
- **Clayey sand**

Notes:

1. Exploratory borings were drilled on 02/13/2023 using a 6-inch outside diameter hand-auger.
2. Water level readings were taken during drilling and upon completion of each boring. Borings were backfilled upon completion.
3. Boring locations were selected by project HCEA and staked in the field by HCEA using existing site features as reference.
4. These logs are subject to the limitations, conclusions, and recommendations in this report.
5. Results of tests conducted on samples recovered are reported on the logs.

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE
WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

SOIL BORING LOGS

SHEET

G-004

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STATE OF MARYLAND
JASON AZAR
PROFESSIONAL ENGINEER

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 100' 200'
GRAPHIC SCALE

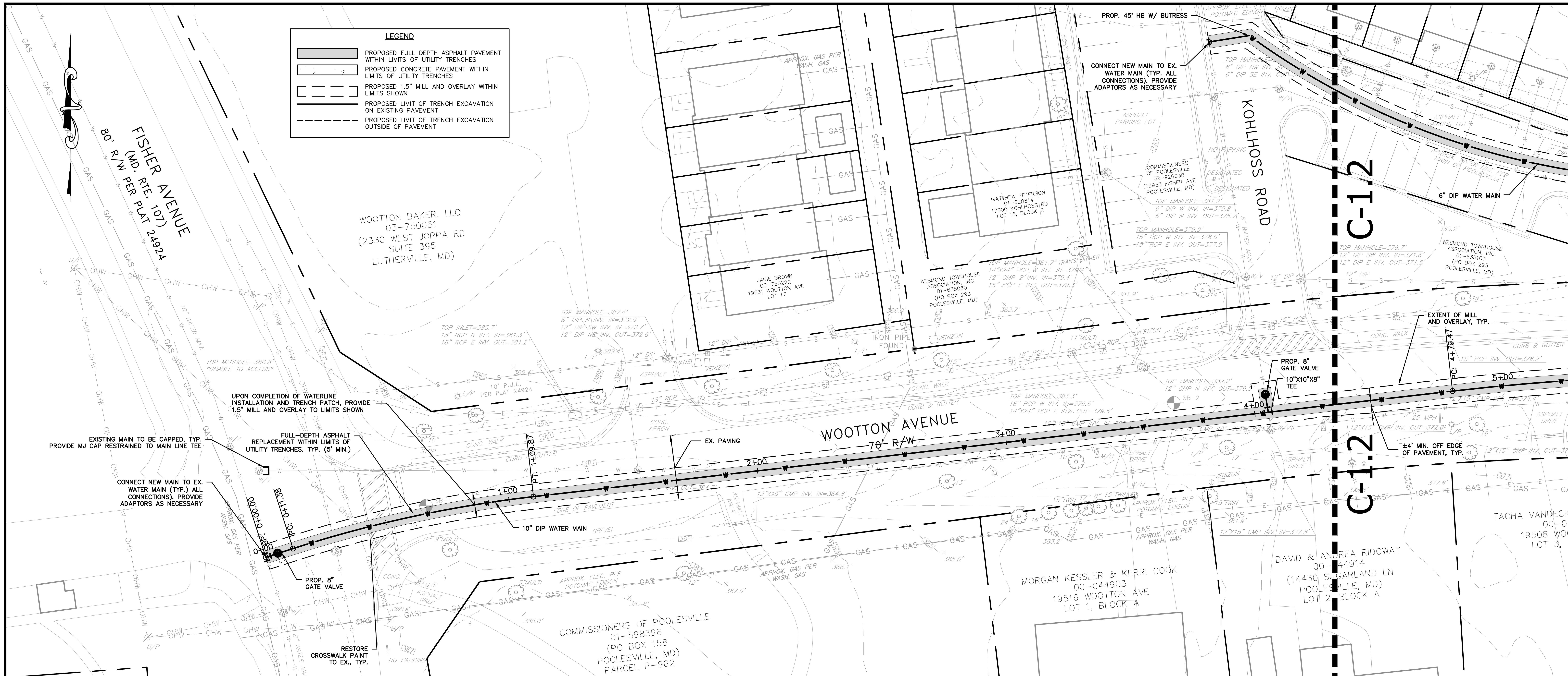
DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

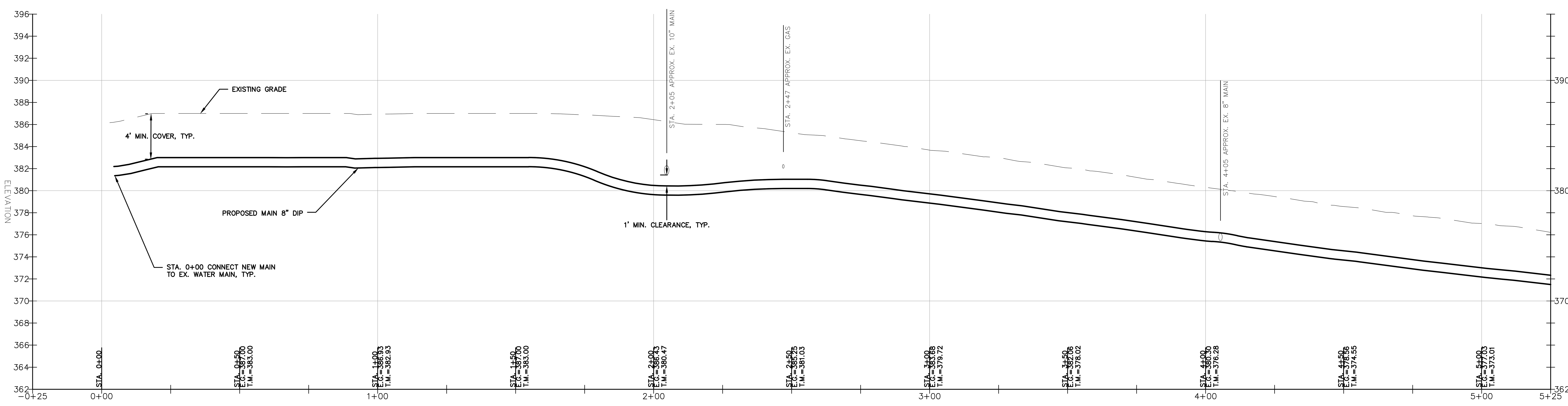
PROPOSED WATERLINE

SHEET

C-200



1 WOOTTON AVENUE PLAN VIEW
SCALE: 1" = 20'



2 WOOTTON AVENUE PROFILE
SCALE: 1" = 5' (VERT.)
1" = 20' (HOR.)

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 20' 40'
GRAPHIC SCALE

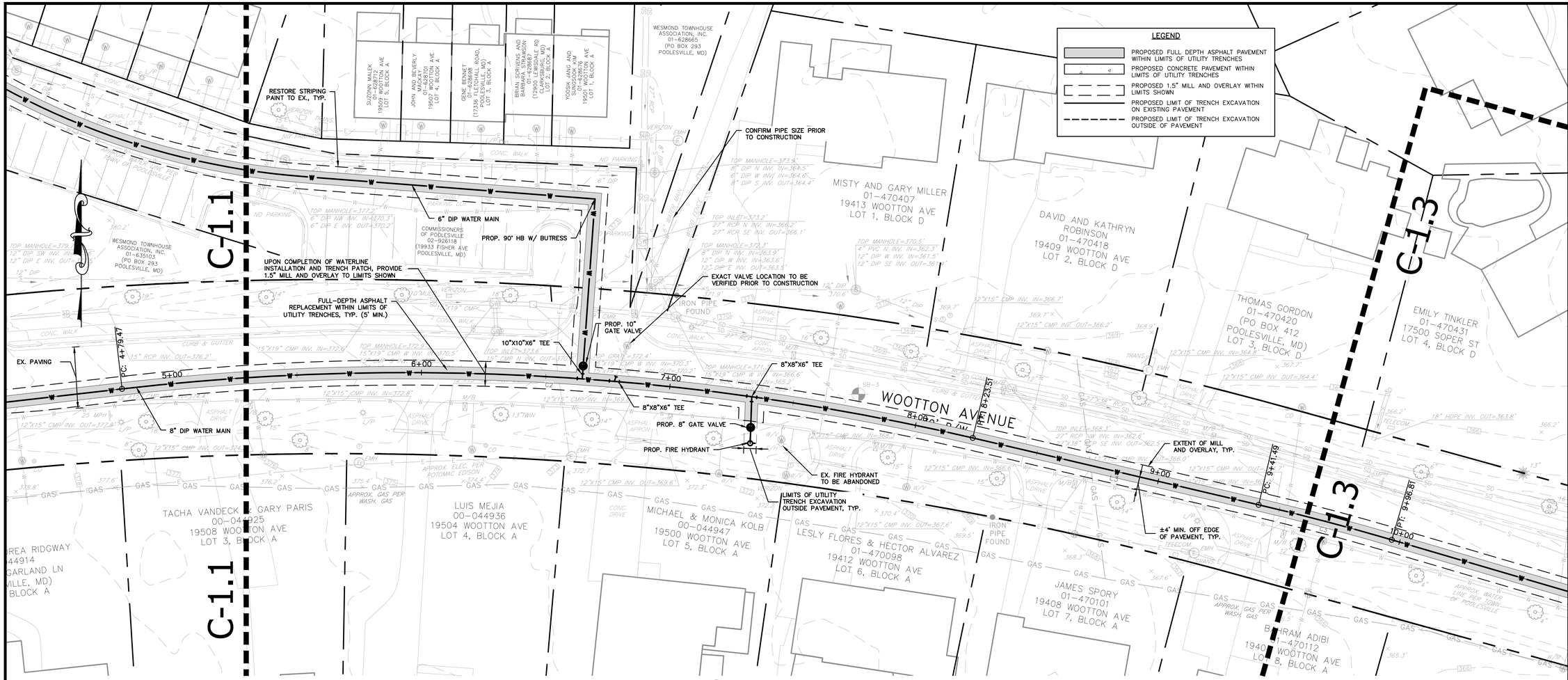
DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

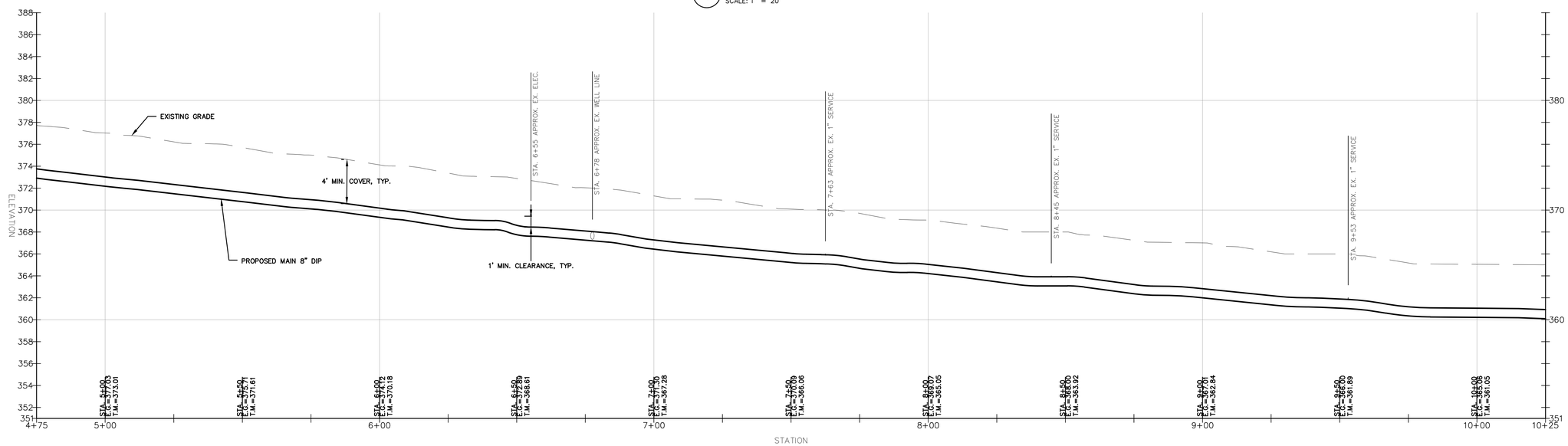
WATERLINE PLAN AND PROFILE

SHEET

C-201



1 **WOOTTON AVENUE PLAN VIEW**
SCALE: 1" = 20'



2 **WOOTTON AVENUE PROFILE**
SCALE: 1" = 5' (VERT.)
1" = 20' (HOR.)

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 20' 40'
GRAPHIC SCALE

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE
WATERLINE PLAN AND PROFILE (CONT.)

SHEET
C-202

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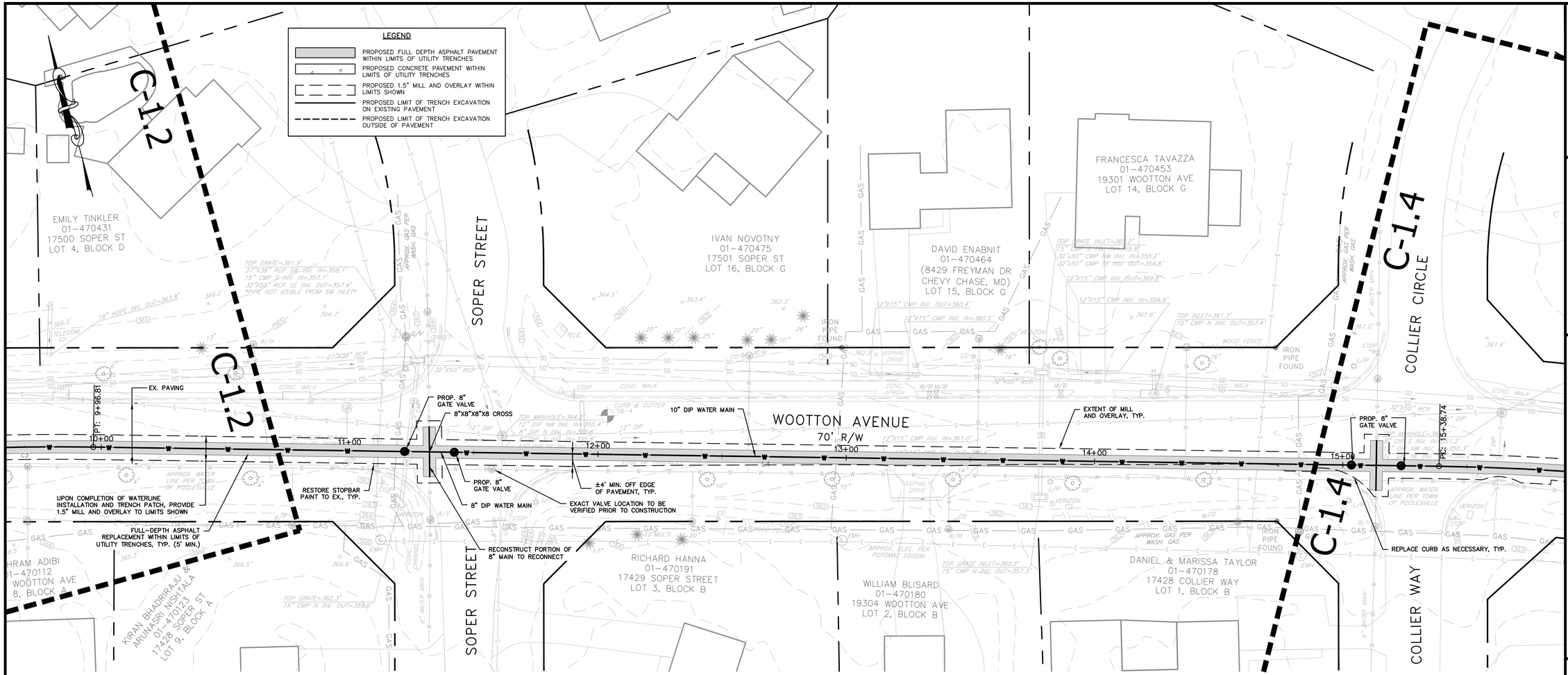
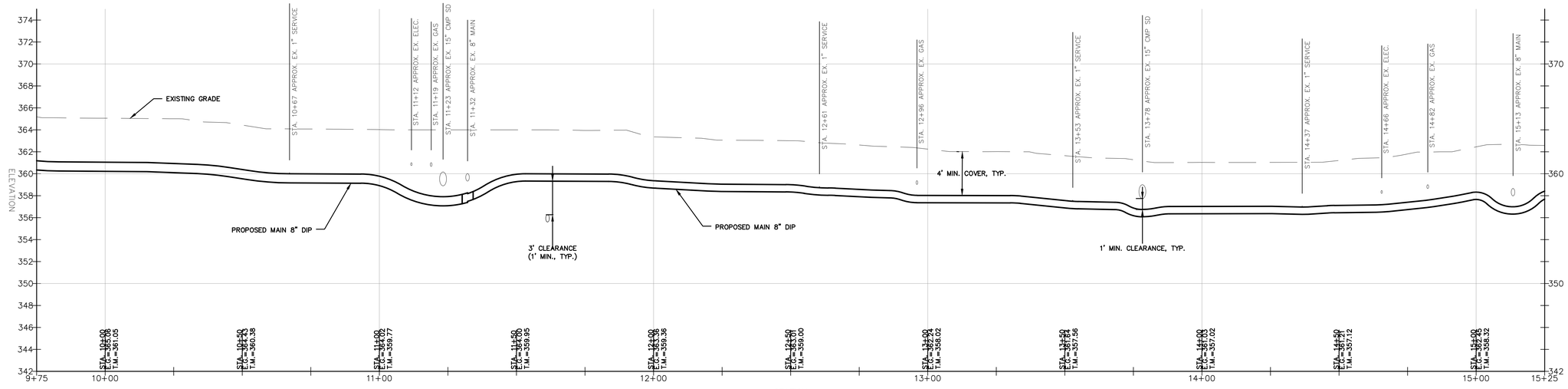


1 **WOOTTON AVENUE PLAN VIEW**
SCALE: 1" = 20'



2 **WOOTTON AVENUE PROFILE**
SCALE: 1" = 5' (VERT.)
1" = 20' (HOR.)

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STATE OF MARYLAND
JASON ALAN AZAR
No. 31168
PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 20' 40'
GRAPHIC SCALE

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE
WATERLINE PLAN AND PROFILE (CONT.)

SHEET
C-203

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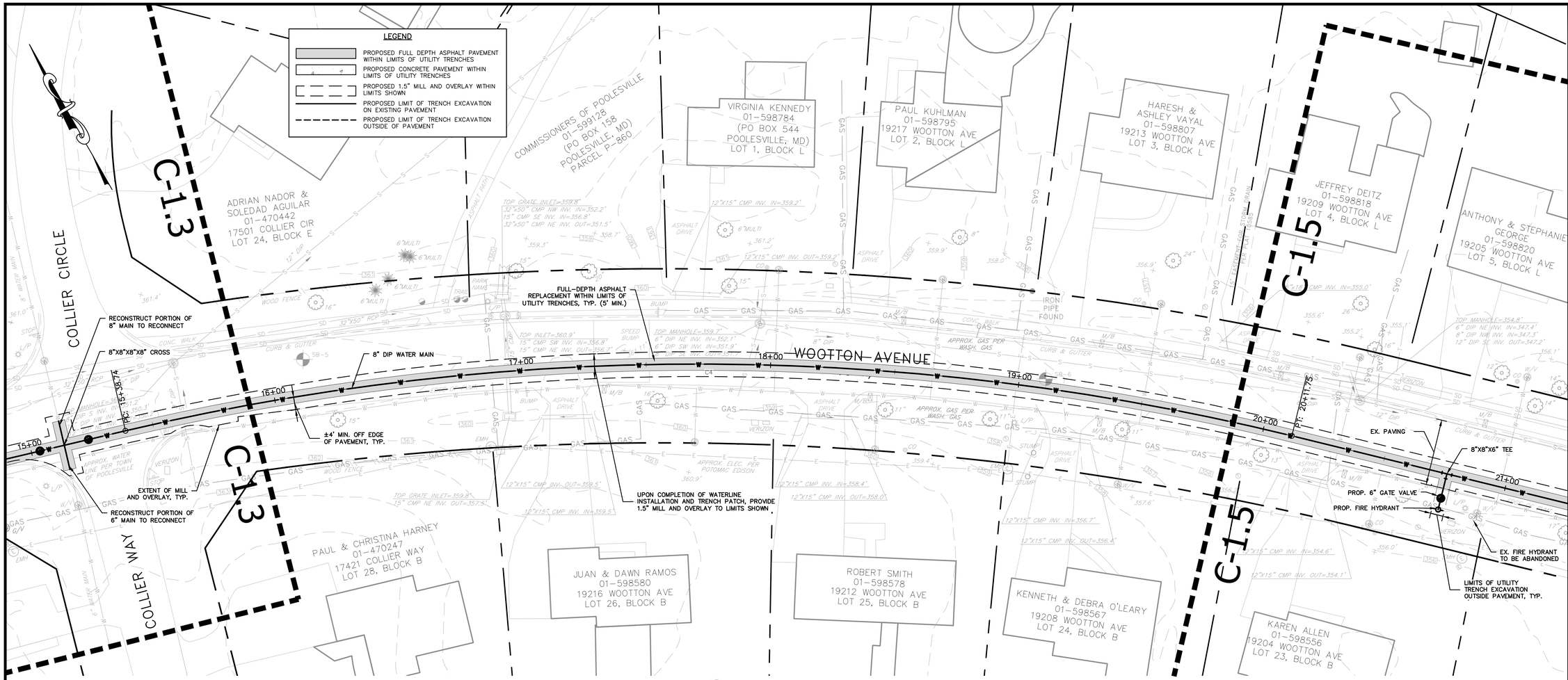
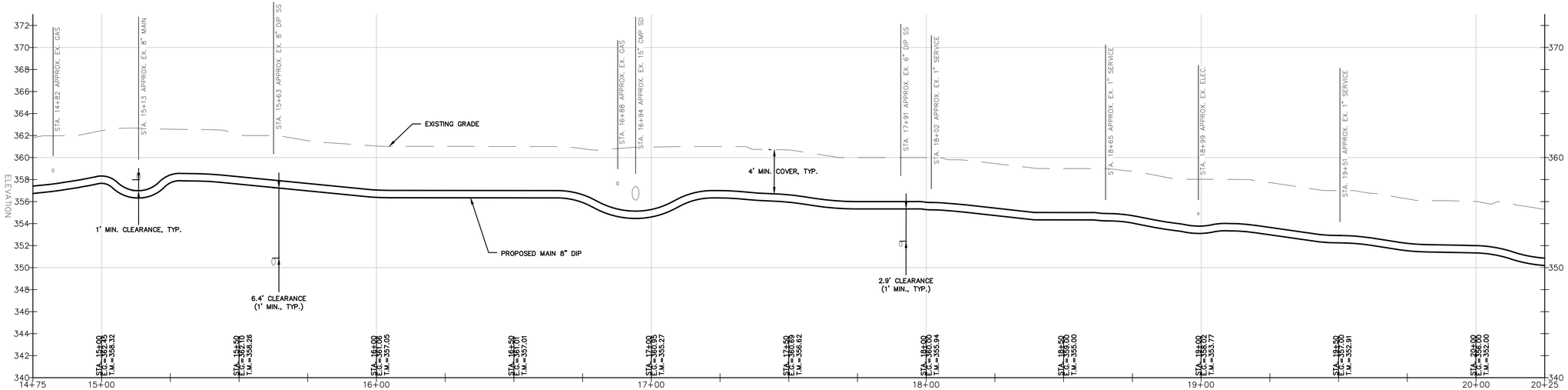


1 **WOOTTON AVENUE PLAN VIEW**
SCALE: 1" = 20'



2 **WOOTTON AVENUE PROFILE**
SCALE: 1" = 5' (VERT.)
1" = 20' (HOR.)

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 20' 40'
GRAPHIC SCALE

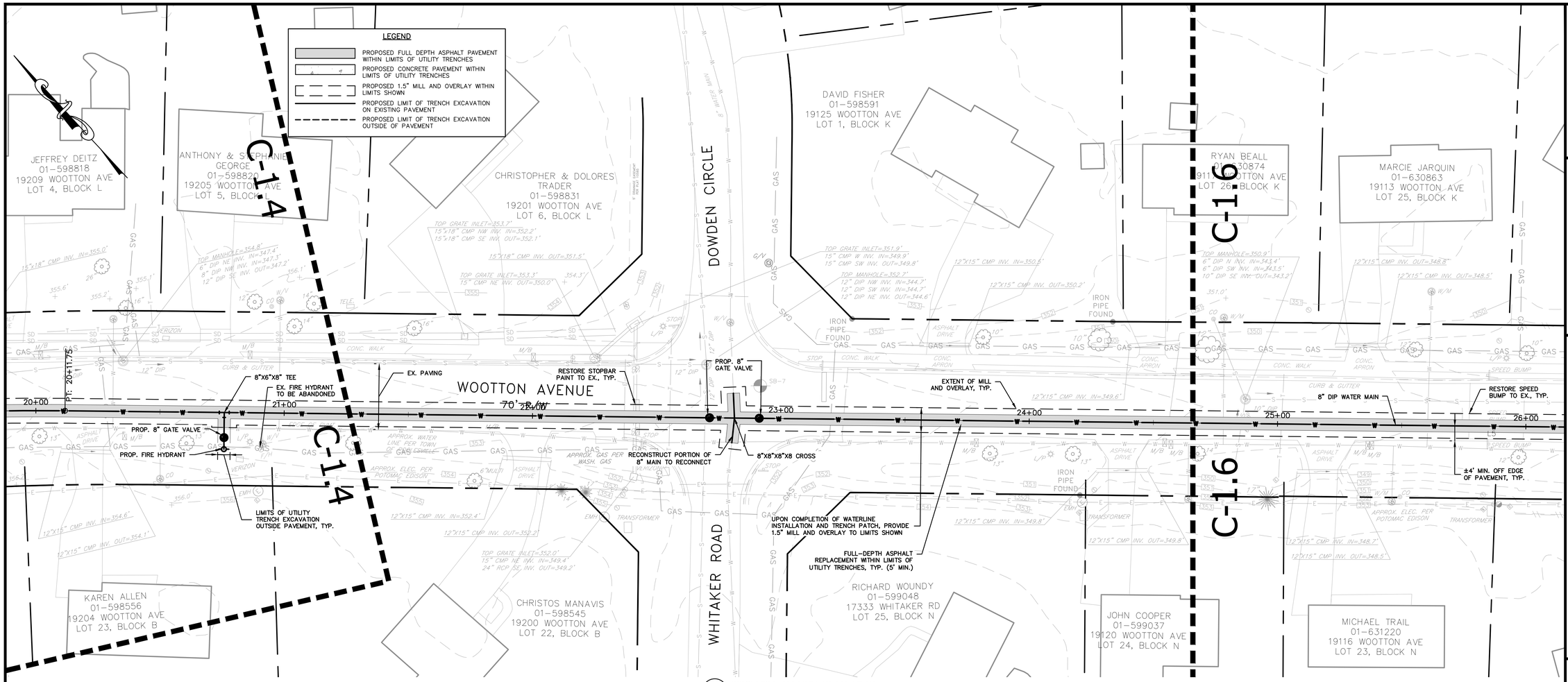
DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

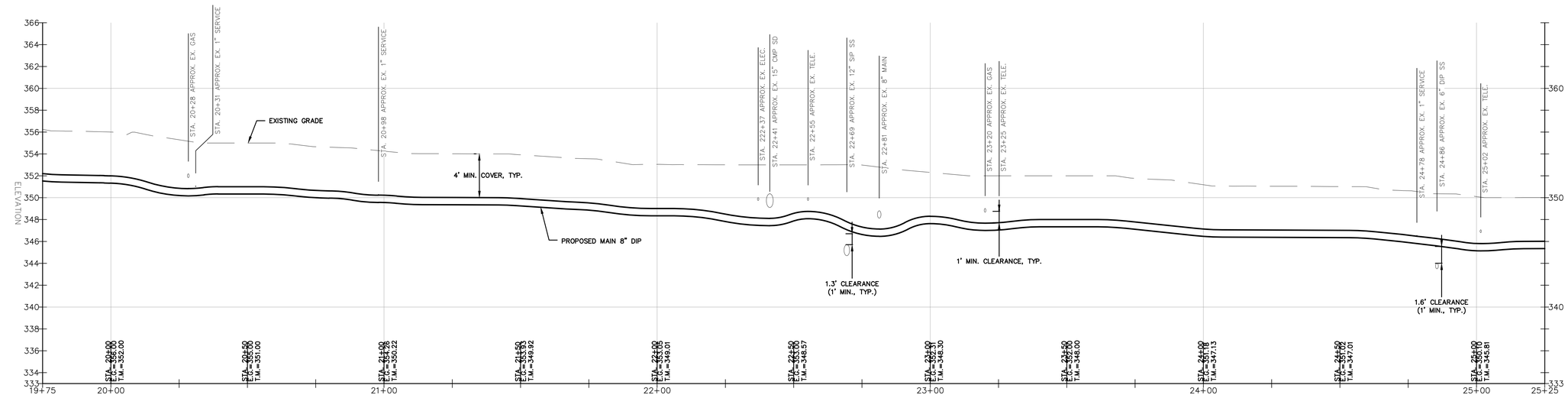
WATERLINE PLAN AND PROFILE (CONT.)

SHEET

C-204



1 **WOOTTON AVENUE PLAN VIEW**
SCALE: 1" = 20'



2 **WOOTTON AVENUE PROFILE**
SCALE: 1" = 5' (VERT.)
1" = 20' (HOR.)

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STATE OF MARYLAND — JASON M. AZAR — 30874 — PROFESSIONAL ENGINEER — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 20' 40'
GRAPHIC SCALE

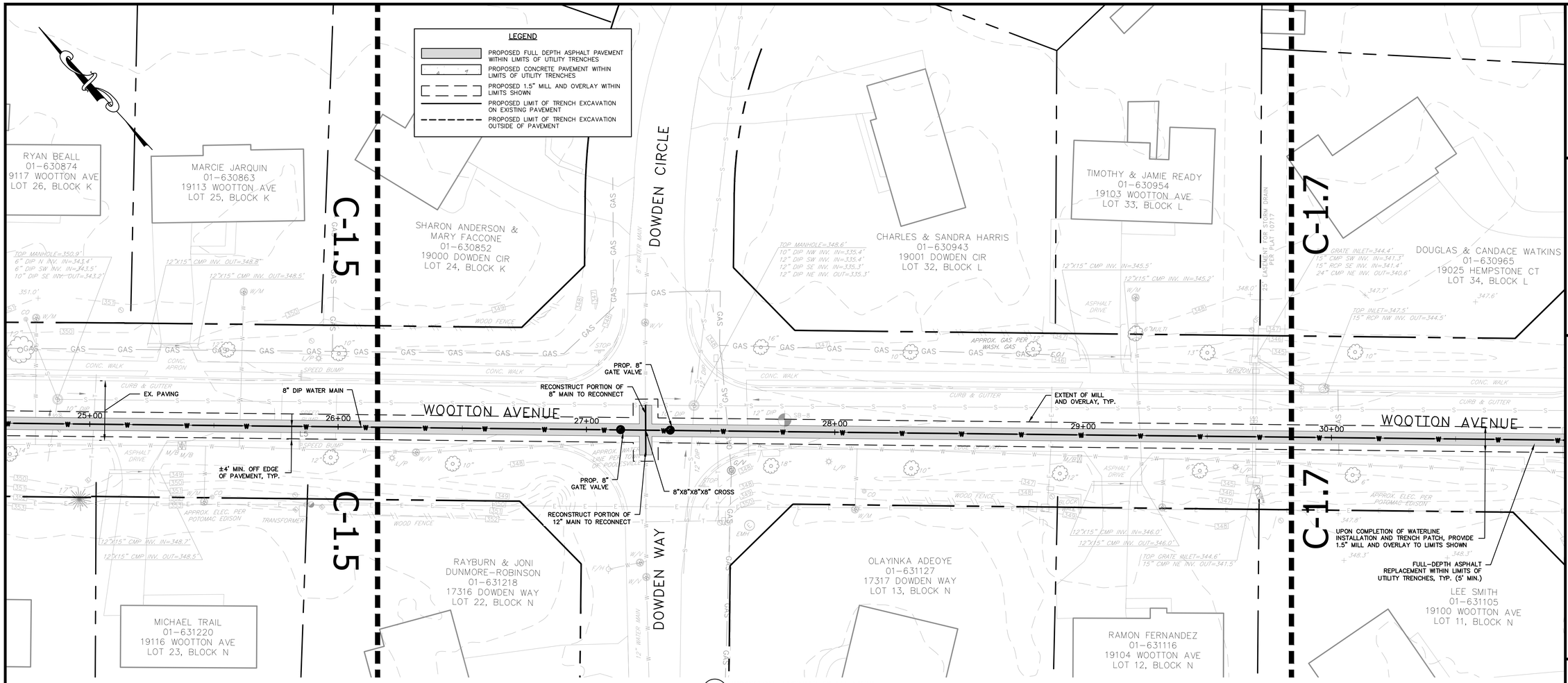
DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

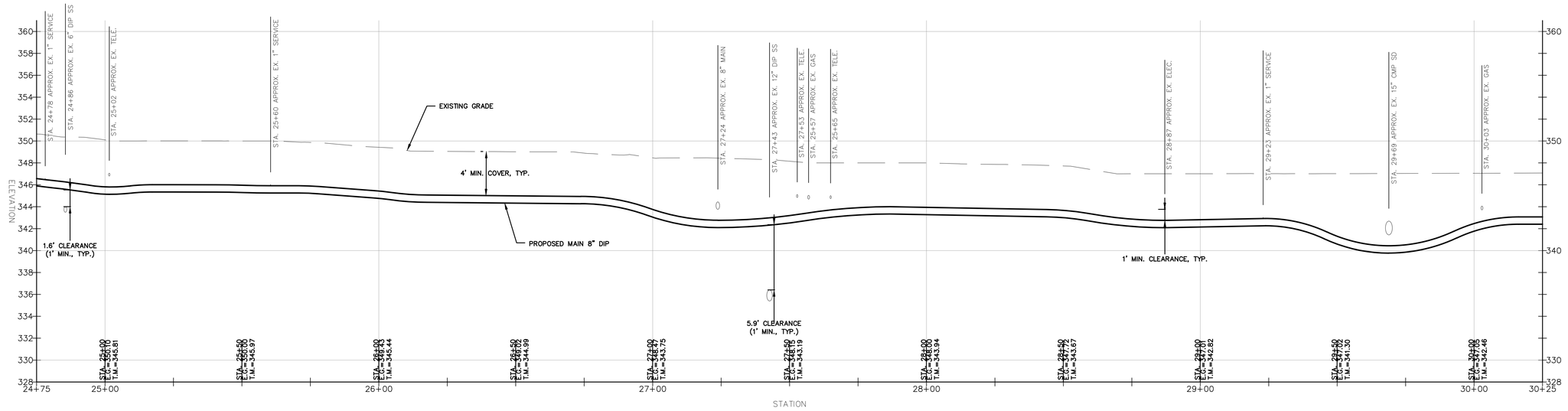
PROPOSED WATERLINE

SHEET
C-205

J:\100.000 Poolesville General\100.047 – Wootton Ave Waterline\CAD\DWG\C-200 WATERLINE PLAN AND PROFILE.dwg 2/12/2024 11:15 AM



1 **WOOTTON AVENUE PLAN VIEW**
SCALE: 1" = 20'



2 **WOOTTON AVENUE PROFILE**
SCALE: 1" = 5' (VERT.)
1" = 20' (HOR.)

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JASON M. ROSS
PROFESSIONAL ENGINEER

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 20' 40"
GRAPHIC SCALE

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

WATERLINE PLAN AND PROFILE (CONT.)

SHEET

C-206

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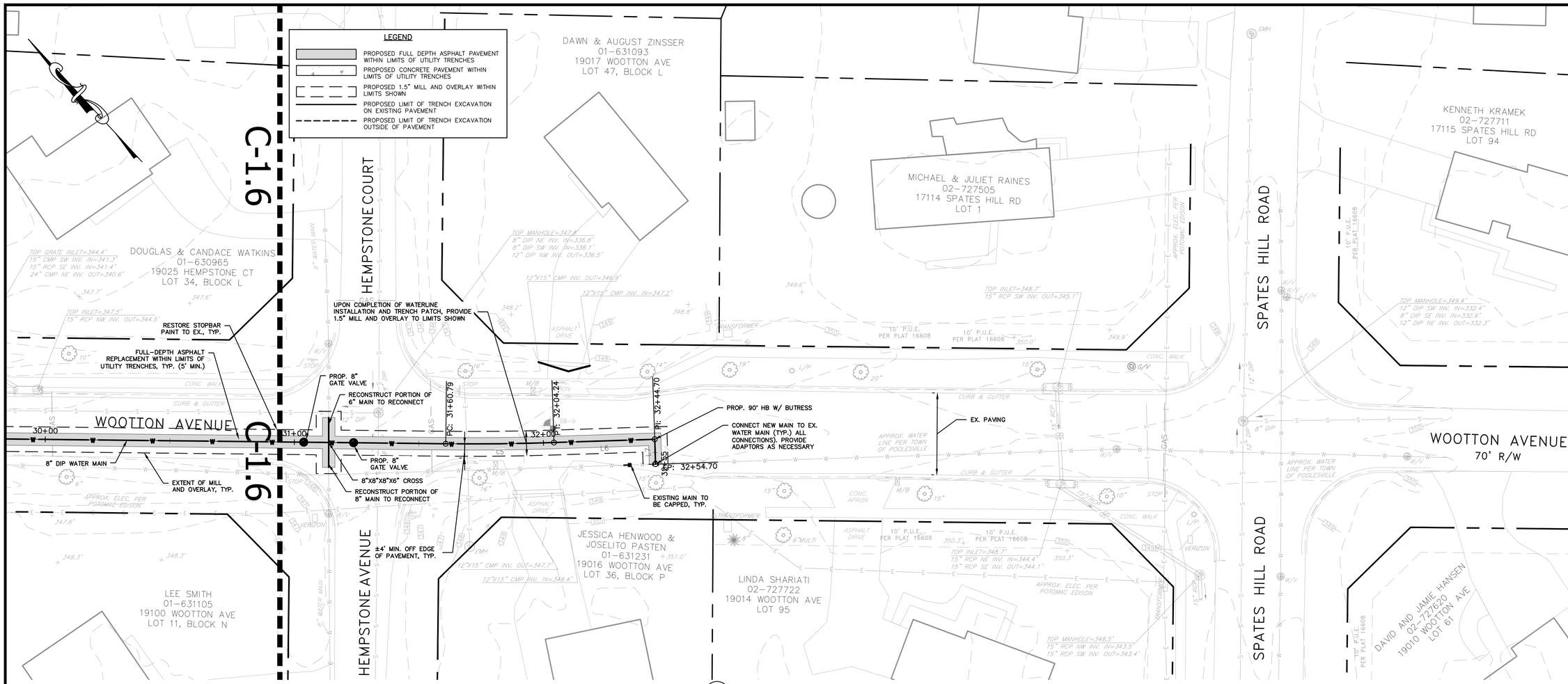
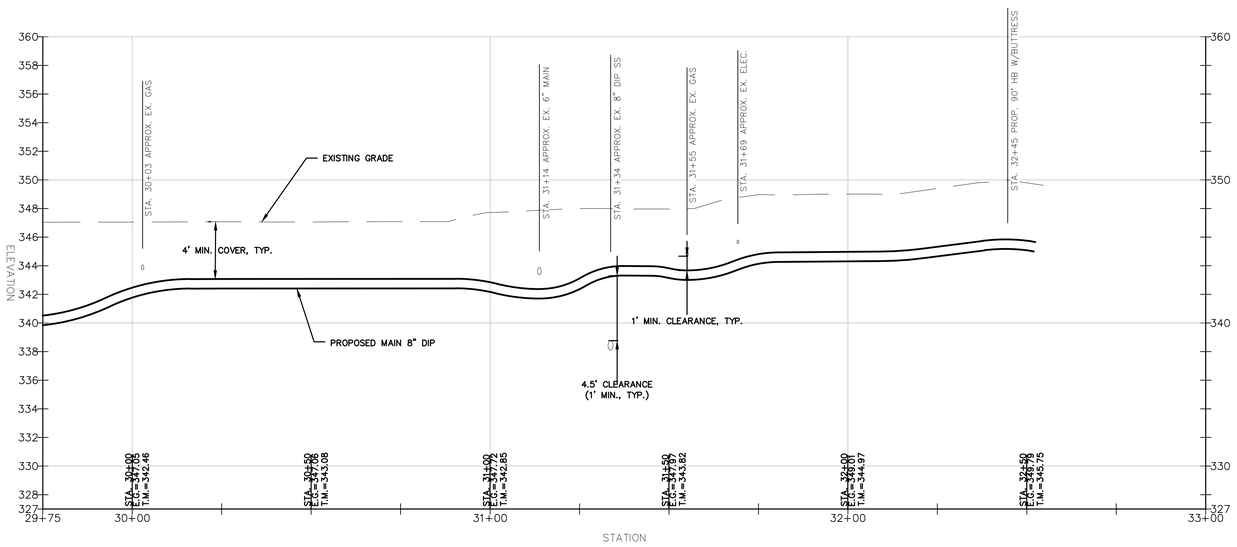


1 **WOOTTON AVENUE PLAN VIEW**
SCALE: 1" = 20'



2 **WOOTTON AVENUE PROFILE**
SCALE: 1" = 5' (VERT.)
1" = 20' (HOR.)

WATERLINE GEOMETRIC DATA (LINE)				
LINE #	LENGTH (FT)	BEARING	START COORDINATES	END COORDINATES
L1	11.38	N72° 09' 27.56"E	N 537671.4130, E 1196746.8303	N 537674.8984, E 1196757.6585
L2	369.60	N83° 26' 39.76"E	N 537695.6775, E 1196853.7740	N 537737.8744, E 1197220.9615
L3	117.98	S76° 50' 37.22"E	N 537718.1656, E 1197562.7379	N 537691.3133, E 1197677.6170
L4	541.93	S73° 40' 26.73"E	N 537677.2389, E 1197731.1090	N 537524.9025, E 1198251.1857
L5	1149.05	S46° 34' 21.63"E	N 537291.4711, E 1198657.5190	N 536501.5770, E 1199492.0111
L6	40.46	S49° 03' 42.69"E	N 536472.4064, E 1199524.2012	N 536445.8922, E 1199554.7689
L7	10.00	S40° 56' 17.31"W	N 536445.8922, E 1199554.7689	N 536438.3380, E 1199548.2165

WATERLINE GEOMETRIC DATA (CURVE)					
CURVE #	RADIUS (FT)	LENGTH (FT)	CHORD DIRECTION	START COORDINATES	END COORDINATES
C1	500.00	98.50	N77° 48' 03.66"E	N 537674.8984, E 1196757.6585	N 537695.6775, E 1196853.7740
C2	1000.00	344.04	S86° 41' 58.73"E	N 537737.8744, E 1197220.9615	N 537718.1656, E 1197562.7379
C3	1000.00	55.32	S75° 15' 31.97"E	N 537691.3133, E 1197677.6170	N 537677.2389, E 1197731.1090
C4	1000.00	473.01	S60° 07' 24.18"E	N 537524.9025, E 1198251.1857	N 537291.4711, E 1198657.5190
C5	1000.00	43.44	S47° 49' 02.16"E	N 536501.5770, E 1199492.0111	N 536472.4064, E 1199524.2012

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LICENSE NO. 31168
EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

0 20' 40'
GRAPHIC SCALE

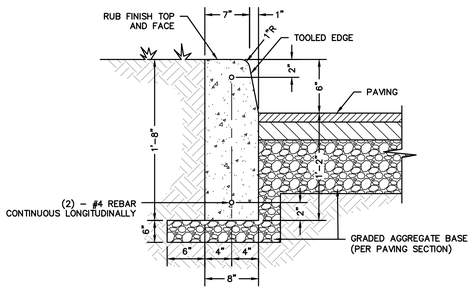
DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

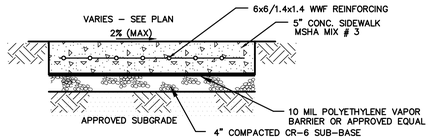
PROPOSED WATERLINE

SHEET
C-207

z:\100.000 Poolesville General\100.047 - Wootton Ave Waterline\CAD\DWG\C-200 WATERLINE PLAN AND PROFILE.dwg 2/12/2024 11:15 AM

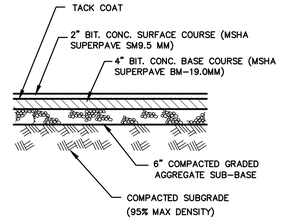


1 6" CONCRETE HEADER CURB
NOT TO SCALE

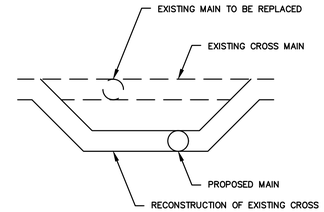


NOTES:
1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS.
2. EXPANSION JOINT MATERIAL SHALL BE PLACED AROUND POLES, AND HYDRANTS, ETC. WHEN THE SIDEWALK ABUTS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE.
3. EXPANSION JOINT MATERIAL SHALL HAVE A MAXIMUM LONGITUDINAL SPACING OF 100 FEET. THE MATERIAL SHALL BE 1/2-INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING, TWO-COMPONENT POLYSULFIDE OR POLYURETHANE ELASTOMERIC TYPE SEALANT COMPLYING WITH FS TT-S-00227.
4. SCORE THE CONCRETE TO A DEPTH OF 1/3 THE SLAB THICKNESS TO PROVIDE WEAKENED PLANE TRAVERSE JOINTS AT 5'-0" INTERVALS, PARALLEL WITH AND PERPENDICULAR TO THE CURBING OR AS INDICATED ON THE SCORING PLAN.

2 CONCRETE SIDEWALK SECTION
NOT TO SCALE

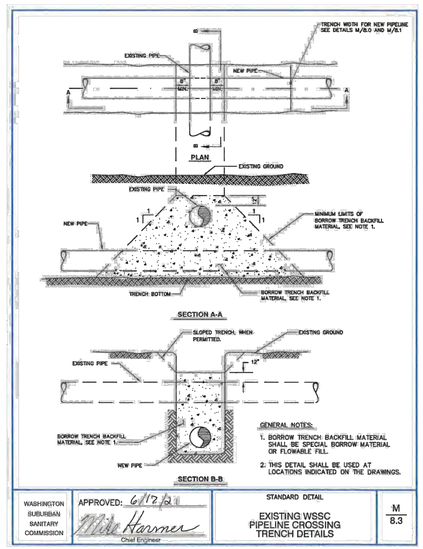


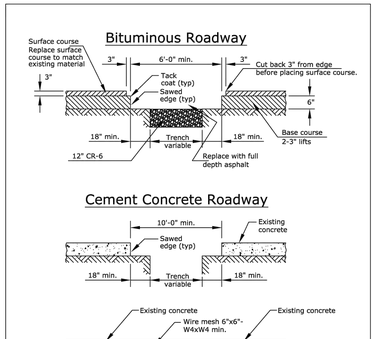
3 BITUMINOUS PAVEMENT SECTION
NOT TO SCALE



NOTES:
1. A PORTION OF THE EXISTING CROSS MAIN WILL NEED TO BE RECONSTRUCTED AFTER THE NEW MAIN IS OPERATIONAL, AS SHOWN.

4 MAIN CROSS CONNECTIONS TYPICAL DETAIL
NOT TO SCALE





1: County roads shall be repaired as above unless the County Road crossing permit requires other repairs - then perform the work in accordance with the permit.
2: Measurement and payment for these items shall be the number of square yards of surface course materials furnished and installed in-place and in accordance with the project specific details (note any variations) and to the limits as shown on the drawings.

Revisions Date	Note	County Road Repair Over Water and Sewer Trenches	Detail No. 3.1
			Date: 01-24-2013

Mechanical Joint Pipe

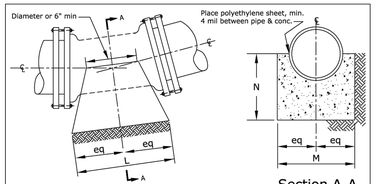
Nominal Pipe Size	Max. Deflection				Minimum Radius-Feet	
	18 Ft Length		20 Ft Length		18 Ft Length	20 Ft Length
	Inches	Degrees	Inches	Degrees		
4	31	8.17	35	8.30	125	140
6	27	7.13	30	7.13	145	160
8	20	5.29	22	5.24	195	220
10	20	5.29	22	5.24	195	220
12	20	5.29	22	5.24	195	220
16	13.5	3.57	15	3.58	285	320
18	11	2.92	12	2.86	340	380
20	11	2.92	12	2.86	340	380
24	9	2.39	10	2.39	450	500
36	9	2.39	10	2.39	450	500
42	7.5	1.99	8	1.91	510	570
48	7.5	1.99	8	1.91	510	570

Push-on Joint Pipe

Nominal Pipe Size	Max. Deflection				Minimum Radius-Feet	
	18 Ft Length		20 Ft Length		18 Ft Length	20 Ft Length
	Inches	Degrees	Inches	Degrees		
4	19	5.03	21	5.00	205	230
6	19	5.03	21	5.00	205	230
8	19	5.03	21	5.00	205	230
10	19	5.03	21	5.00	205	230
12	19	5.03	21	5.00	205	230
16	11	2.92	12	2.86	340	380
18	11	2.92	12	2.86	340	380
20	11	2.92	12	2.86	340	380
24	11	2.92	12	2.86	340	380
36	11	2.92	12	2.86	340	380
42	7.5	1.99	8	1.91	510	570
48	7.5	1.99	8	1.91	510	570

The Above Charts Are in Accordance With AWWA C600.

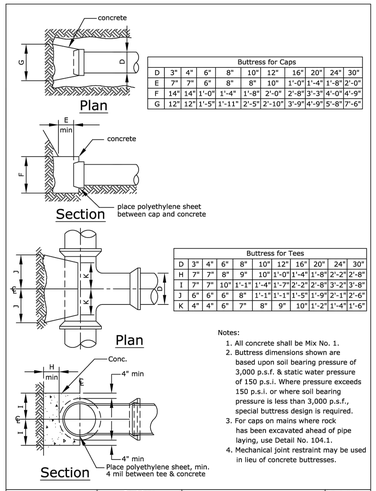
Revisions Date	Note	Curvature of Water Mains	Detail No. 101.1
			Date: 01-24-2013



Bend		Buttress Dimensions Size							
		3"	4"	6"	8"	10"	12"	16"	20"	24"	30"
11 1/4°	L	6"	6"	6"	8"	8"	8"	1'-1"	1'-5"	1'-10"	2'-8"
	M	1'-0"	1'-0"	1'-2"	1'-4"	1'-6"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"
1/32	N	8"	8"	8"	8"	8"	8"	9"	10"	12"	12"
22 1/2°	L	6"	8"	10"	11"	1'-3"	1'-4"	2'-1"	2'-9"	3'-7"	5'-3"
	M	1'-0"	1'-0"	1'-2"	1'-4"	1'-6"	2'-0"	2'-4"	2'-8"	3'-0"	3'-2"
1/16	N	8"	8"	8"	8"	9"	9"	12"	1'-2"	1'-4"	1'-6"
45°	L	10"	1'-0"	1'-2"	1'-9"	2'-5"	2'-8"	4'-0"	5'-6"	6'-0"	8'-2"
	M	1'-0"	1'-0"	1'-2"	1'-4"	1'-6"	2'-0"	2'-4"	2'-8"	3'-6"	4'-0"
1/8	N	8"	8"	8"	8"	12"	1'-2"	1'-6"	2'-0"	2'-6"	3'-0"
90°	L	1'-0"	1'-4"	2'-0"	2'-8"	3'-4"	3'-8"	5'-6"	6'-8"	8'-0"	9'-8"
	M	9"	10"	12"	1'-4"	1'-9"	2'-3"	2'-8"	3'-6"	4'-0"	4'-7"
1/4	N	1'-8"	1'-8"	1'-8"	1'-8"	1'-8"	1'-8"	2'-0"	2'-3"	2'-9"	3'-5"

Notes:
1. All concrete to be Md. S.H.A. mix No. 1.
2. All bearing surfaces shall be placed against undisturbed ground with a min. soil bearing pressure of 3,000 lbs. per s.f. & static water pressure of 150 p.s.i. Where pressure exceeds 150 p.s.i. or where soil bearing pressure is less than 3,000 p.s.f., special buttress design is required.
3. These buttresses shall be used for horizontal and lower vertical bends.
4. Mechanical joint restraint may be used in lieu of concrete buttresses.

Revisions Date	Note	Buttresses for Use at Horizontal and Lower Vertical Bends	Detail No. 102.1
			Date: 01-24-2013



Buttress for Caps								
D	3"	4"	6"	8"	10"	12"	16" 20"	24" 30"
E	7"	7"	6"	8"	8"	10"	1'-0"	1'-4" 1'-8" 2'-0"
F	14"	14"	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-3" 4'-0" 4'-9"
G	12"	12"	1'-5"	1'-11"	2'-5"	2'-10"	3'-9"	4'-9" 5'-8" 7'-6"

Buttress for Tees								
D	3"	4"	6"	8"	10"	12"	16" 20"	24" 30"
H	7"	7"	8"	9"	10"	1'-0"	1'-4"	1'-8" 2'-2" 2'-8"
I	7"	7"	10"	1'-1"	1'-4"	1'-7"	2'-2"	2'-8" 3'-2" 3'-8"
J	6"	6"	6"	8"	1'-1"	1'-1"	1'-5"	1'-9" 2'-1" 2'-6"
K	4"	4"	6"	7"	8"	9"	10"	1'-2" 1'-4" 1'-6"

Notes:
1. All concrete shall be Mix No. 1.
2. Buttress dimensions shown are based upon soil bearing pressure of 3,000 p.s.f. & static water pressure of 150 p.s.i. Where pressure exceeds 150 p.s.i. or where soil bearing pressure is less than 3,000 p.s.f., special buttress design is required.
3. For caps on mains where rock has been excavated ahead of pipe laying, use Detail No. 104.1.
4. Mechanical joint restraint may be used in lieu of concrete buttresses.

Revisions Date	Note	Buttresses for Caps and Tees on Water Mains	Detail No. 103.1
			Date: 01-24-2013

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE
WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

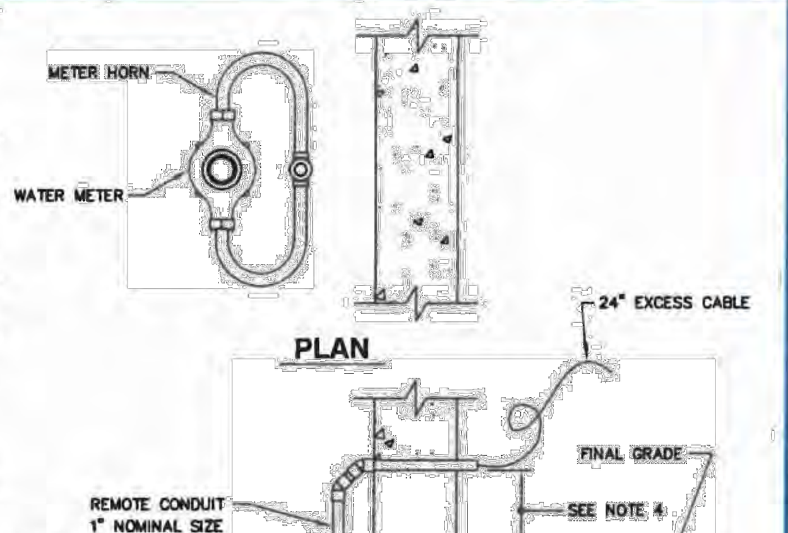
DATE: JUNE 2023
CAA PROJECT NO.: 100.047
DRAWN BY: MC
CHECKED BY: JA
SHEET TITLE

SITE DETAILS

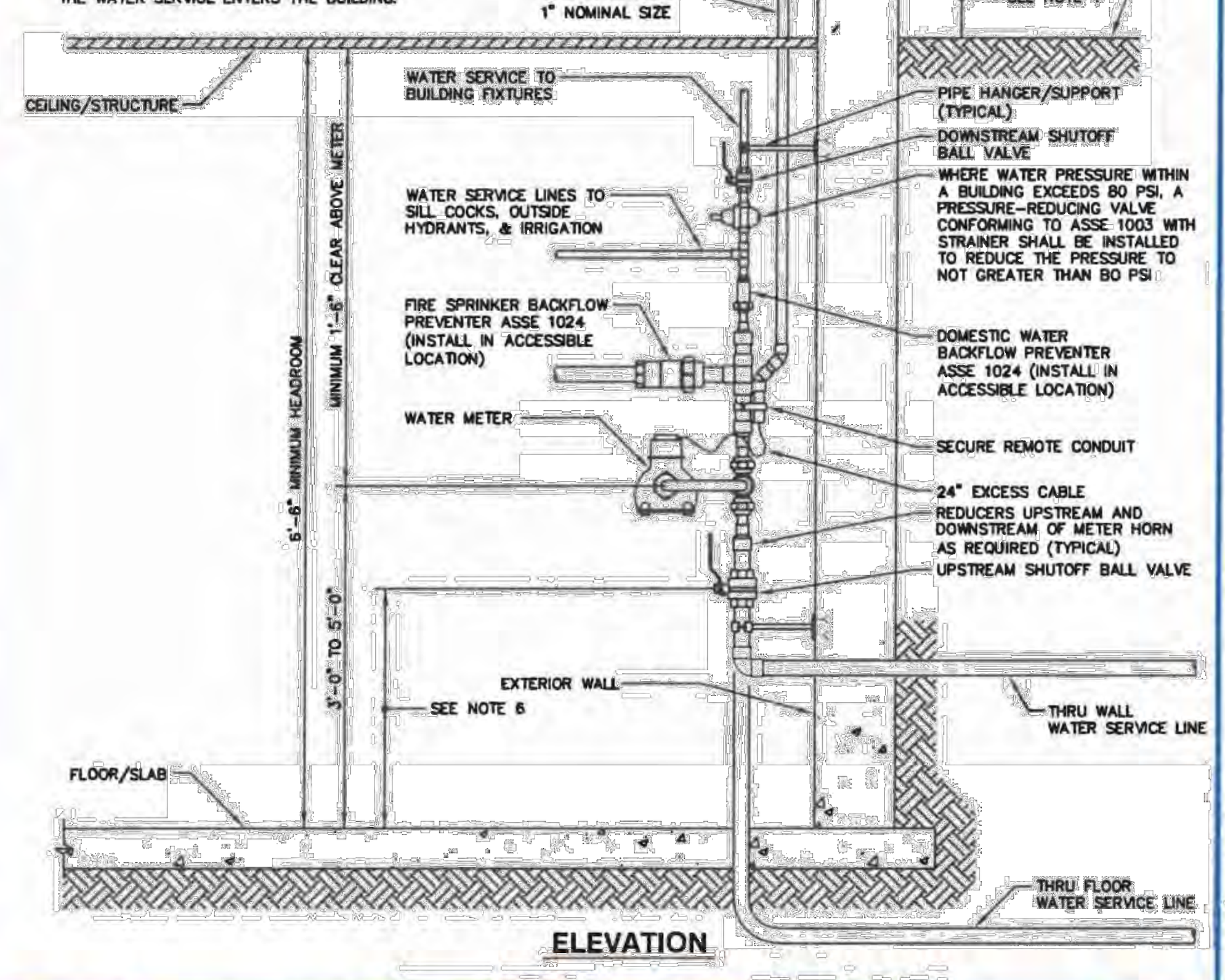
SHEET
C-208

NOTES:

1. METER TO BE SET HORIZONTALLY.
2. BENDS IN REMOTE READER CONDUIT NO GREATER THAN 45° EXCEPT PER FITTING (EXCEPTION FOR 90° SWEEP FITTING)
3. SECURE METER HORN ABOVE AND BELOW TO PREVENT STRAIN ON PIPING.
4. LOCATE EXIT POINT FOR REMOTE READING DEVICE 1-1/2' TO 4' ABOVE FINISHED GRADE ON SAME WALL AS ELECTRIC METER. IF ELECTRIC METER IS LOCATED AT REAR OF BUILDING, LOCATE EXIT POINT IN FRONT OF BUILDING. REMOTE READER AND CABLE TO BE SUPPLIED BY WSSC.
5. PIPE BETWEEN UPSTREAM AND DOWNSTREAM SHUTOFF BALL VALVES SHALL BE COPPER.
6. A FULL-FLOW BUILDING WATER SERVICE VALVE SHALL BE INSTALLED WITHIN 3-FEET OF WHERE THE WATER SERVICE ENTERS THE BUILDING.



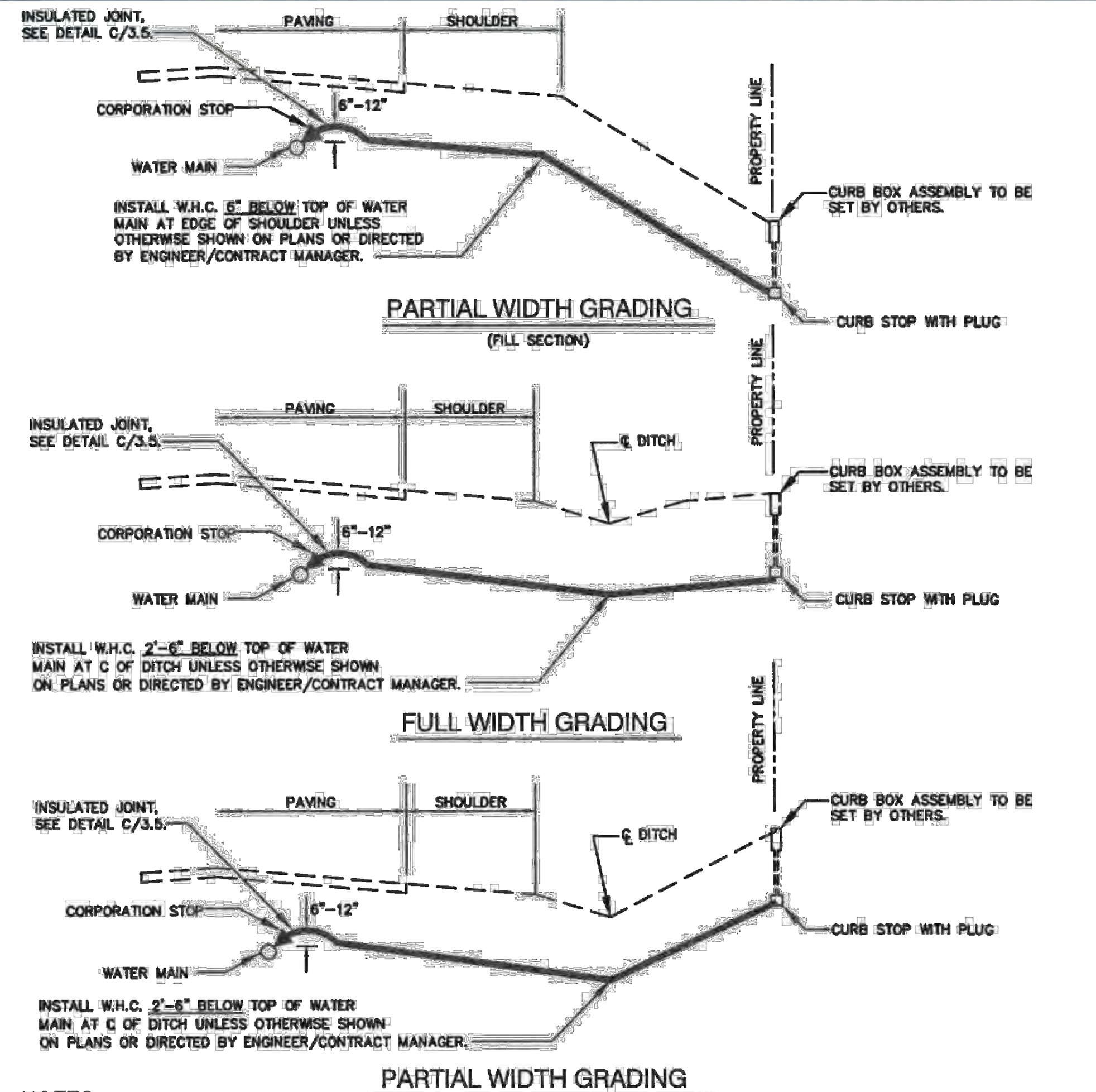
PLAN



ELEVATION

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 10/20/21 Chief Engineer	STANDARD DETAIL 1-INCH AND SMALLER INSIDE WATER METER SETTING	W 7.1

W71



PARTIAL WIDTH GRADING (FILL SECTION)

FULL WIDTH GRADING

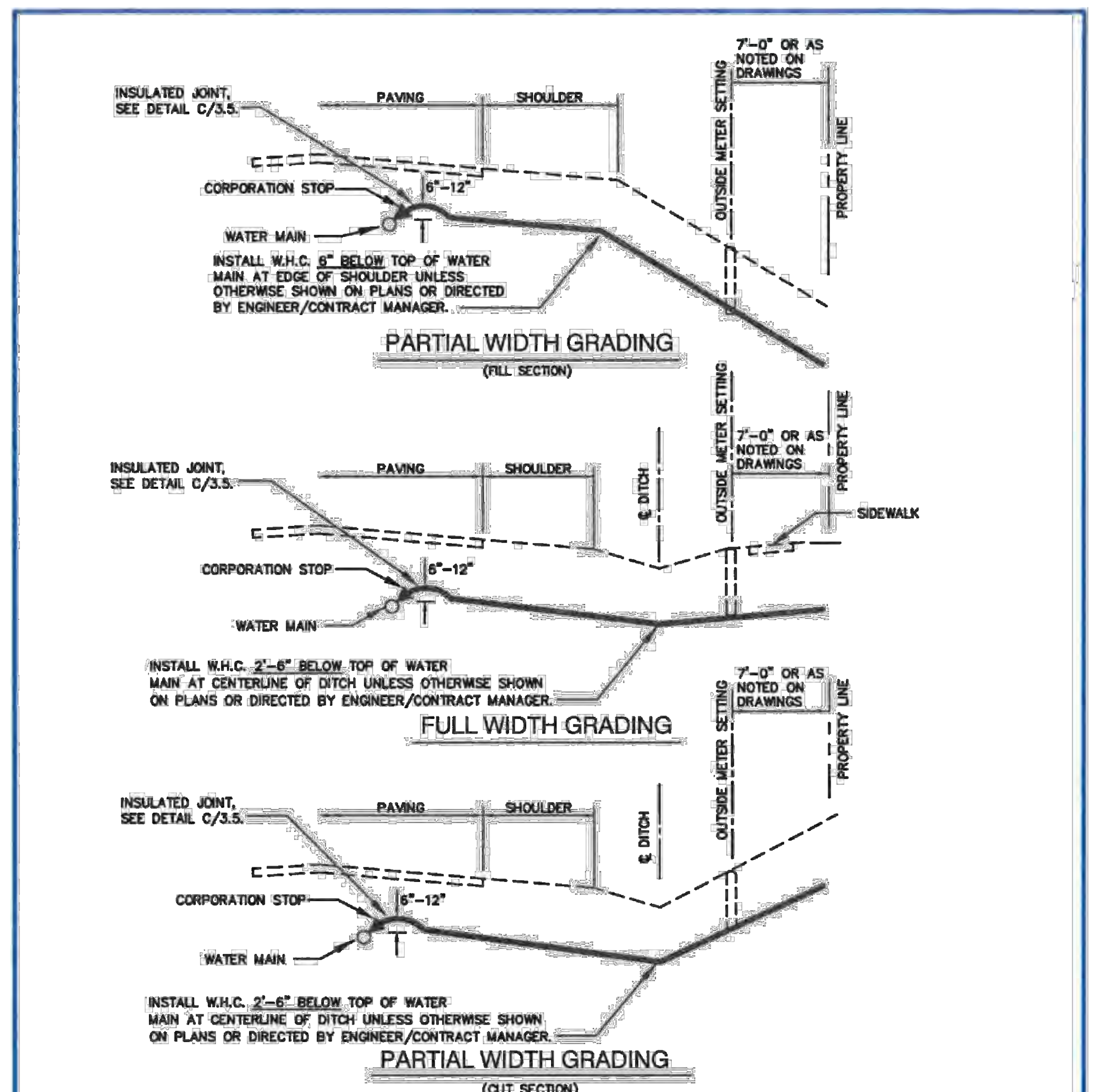
PARTIAL WIDTH GRADING (CUT SECTION)

NOTES:

1. INSTALL W.H.C. 3'-6" MINIMUM BELOW FINISHED GRADE, UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.
2. WHEN W.H.C. AND S.H.C. ARE INSTALLED IN SAME TRENCH, SEE DETAIL M/18.0.
3. END OF W.H.C. AT THE PROPERTY LINE. PROVIDE 4'-0" COVER OVER END ON W.H.C., UNLESS OTHER DIRECTED BY THE ENGINEER/CONTRACT MANAGER.
4. CORPORATION STOP TO BE LEFT OPEN AND CURB STOP TO STAY CLOSED.
5. AN APPROVED BENDING TOOL REQUIRED FOR MAKING BENDS IN ALL SIZES OF TYPE "K" COPPER PIPE.
6. FOR CONNECTIONS TO NEW WATER PIPE, V-BIO POLYETHYLENE ENCASEMENT IS REQUIRED ON NEW COPPER PIPE, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 1-INCH, 1-1/2-INCH AND 2-INCH WATER HOUSE CONNECTIONS FOR INSIDE METERS RURAL TYPE PAVING SECTION	W 5.11

W511



PARTIAL WIDTH GRADING (FILL SECTION)

FULL WIDTH GRADING

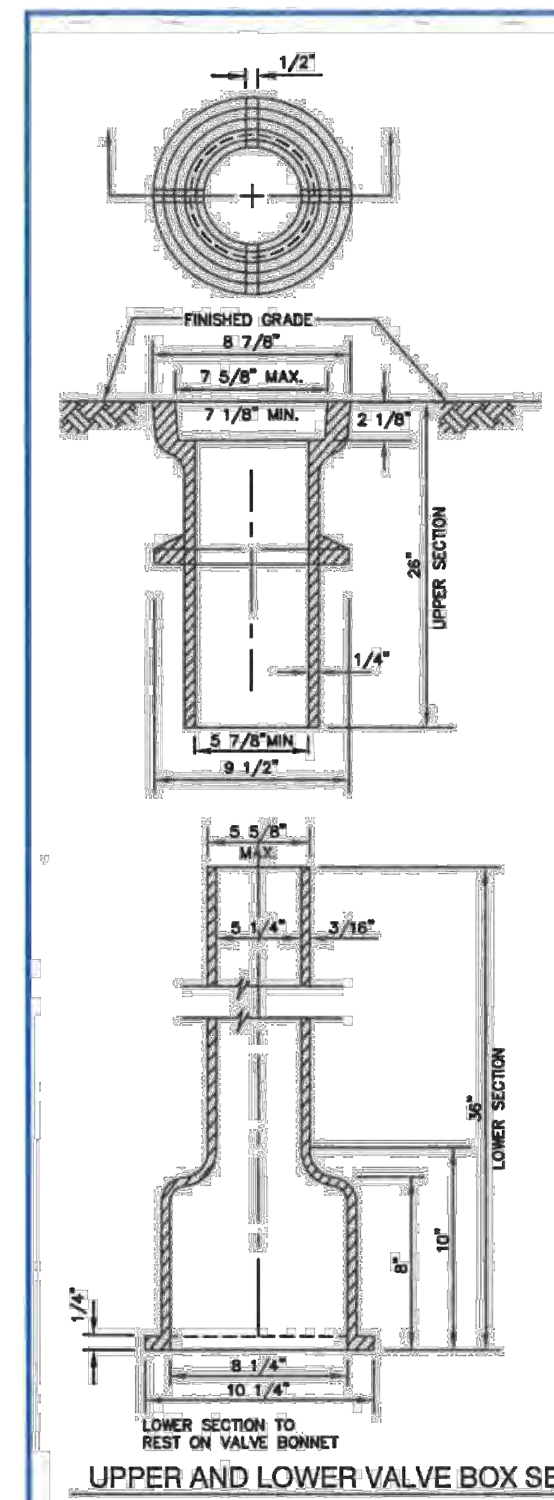
PARTIAL WIDTH GRADING (CUT SECTION)

NOTES:

1. INSTALL W.H.C. 3'-6" MINIMUM BELOW FINISHED GRADE, UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.
2. WHEN W.H.C. AND S.H.C. ARE INSTALLED IN SAME TRENCH, SEE DETAIL M/18.0.
3. END OF W.H.C. AT THE PROPERTY LINE. PROVIDE 4'-0" COVER OVER END ON W.H.C., UNLESS OTHER DIRECTED BY THE ENGINEER/CONTRACT MANAGER.
4. CORPORATION STOP TO BE LEFT OPEN AND CURB STOP TO STAY CLOSED.
5. AN APPROVED BENDING TOOL REQUIRED FOR MAKING BENDS IN ALL SIZES OF TYPE "K" COPPER PIPE.
6. FOR CONNECTIONS TO NEW WATER PIPE, V-BIO POLYETHYLENE ENCASEMENT IS REQUIRED ON NEW COPPER PIPE, SEE SPECIFICATIONS.

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL 1-INCH, 1-1/2-INCH AND 2-INCH WATER HOUSE CONNECTIONS AND OUTSIDE METER LOCATIONS RURAL PAVING SECTIONS	W 5.14

W514



NOTE:

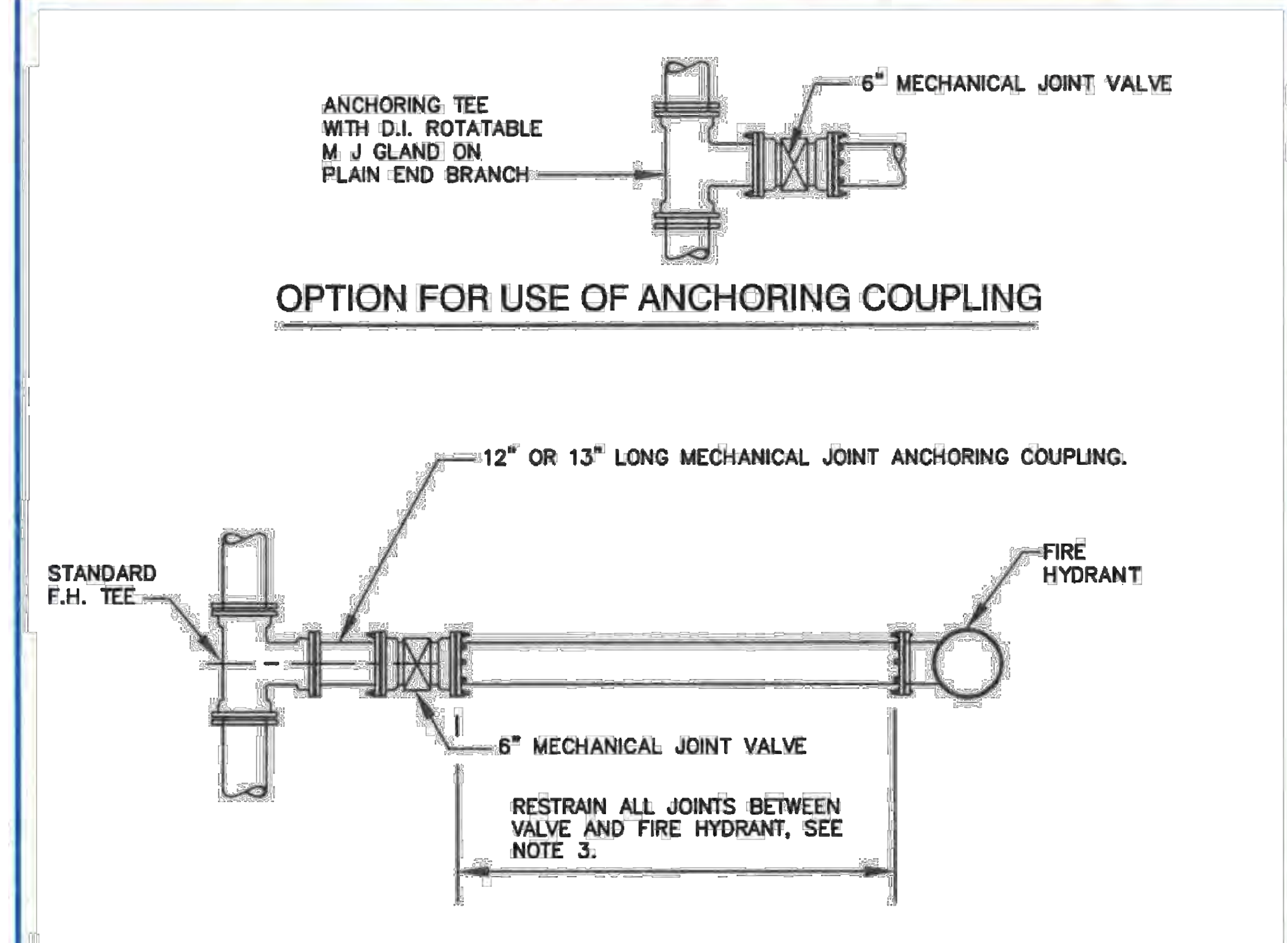
ALL SECTIONS SHOWN TO BE GRAY IRON CASTINGS, CLASS NO. 25 ASTM A-48

WEIGHTS:
LID – 15 LBS.
TOP SECTION – 52 LBS.
BOTTOM SECTION – 48 LBS
TOTAL – 115
MINUS WEIGHT TOLERANCE 5%

UPPER AND LOWER VALVE BOX SECTION

WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL ADJUSTABLE VALVE BOX ROUND HEAD SLIDING TYPE	W 2.1

W21



PLAN

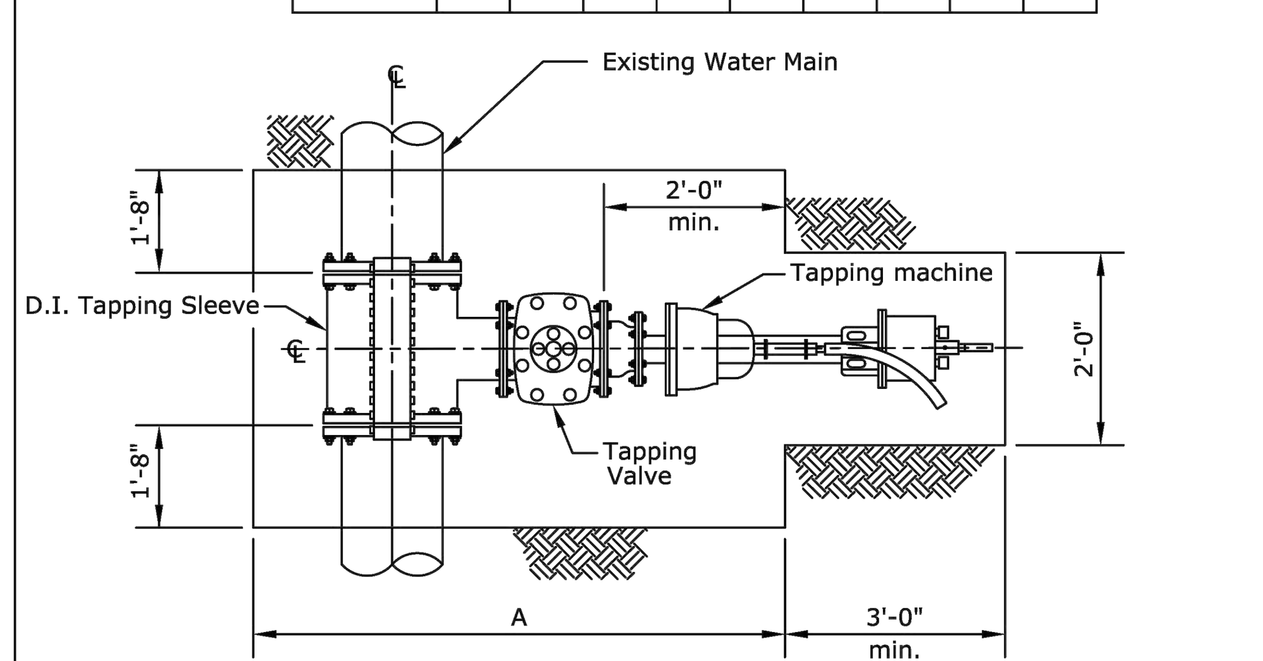
NOTES:

1. DO NOT BLOCK FIRE HYDRANT TEE OR FIRE HYDRANT.
2. RESTRAIN ALL JOINTS BETWEEN FIRE HYDRANT TEE AND VALVE, USING ANCHORING TEE OR ANCHORING COUPLING.
3. RESTRAIN ALL JOINTS FROM VALVE TO FIRE HYDRANT,USING WEDGE ACTION RESTRAINING GLANDS OR RESTRAINED JOINT GASKETS, SEE SPECIFICATIONS.
4. PLACE RESTRAINED JOINT PIPE TAPE ON TOP OF PIPE FROM FIRE HYDRANT TEE TO FIRE HYDRANT, SEE SPECIFICATIONS.

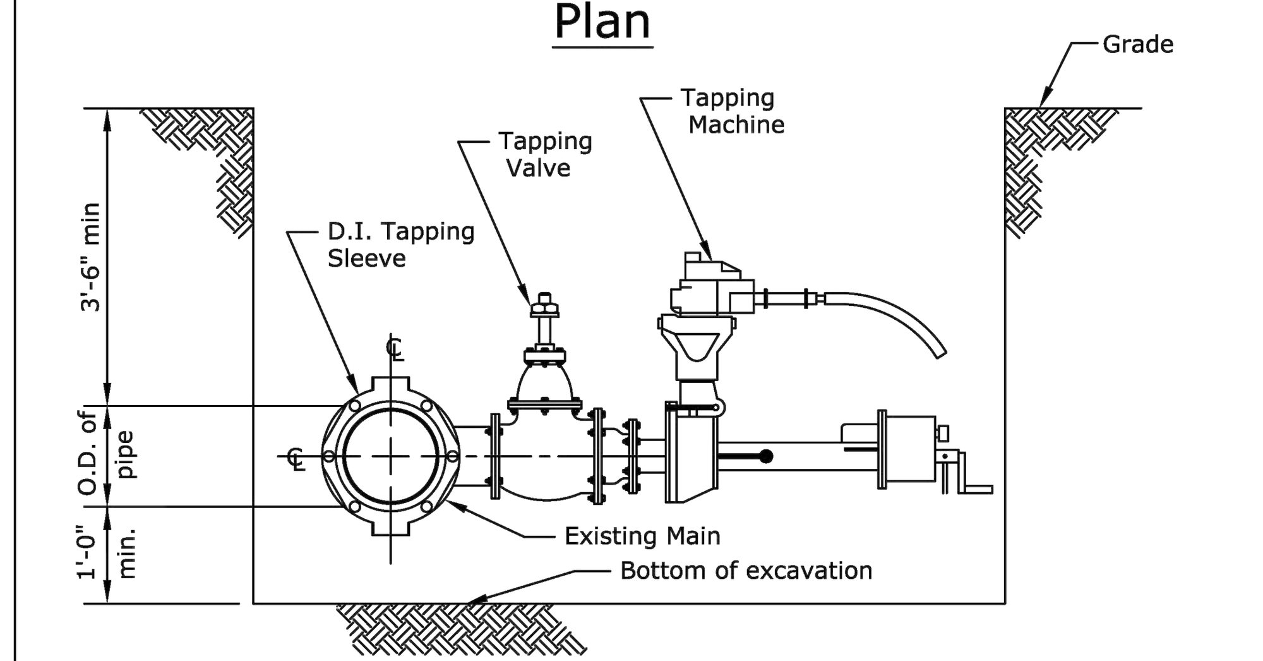
WASHINGTON SUBURBAN SANITARY COMMISSION	APPROVED: 7-26-21 Chief Engineer	STANDARD DETAIL METHOD OF RESTRAINING FIRE HYDRANT TO MAIN 12-INCH AND SMALLER	B 2.1

B21

Main Dia.	4"	6"	8"	10"	12"	14"	16"	18"	20"
A (min)	4'-10"	5'-3"	5'-6"	5'-9"	6'-0"	6'-2"	6'-8"	7'-3"	7'-6"



Plan



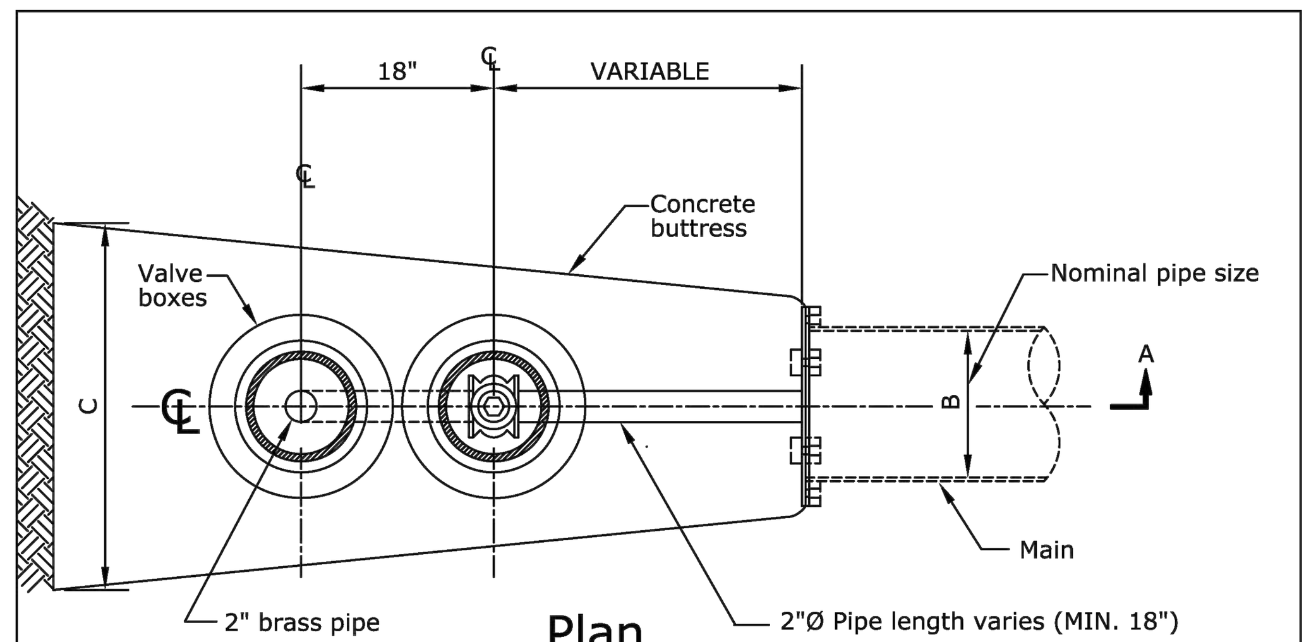
After tapping, buttress per Detail No. 103.1

Elevation

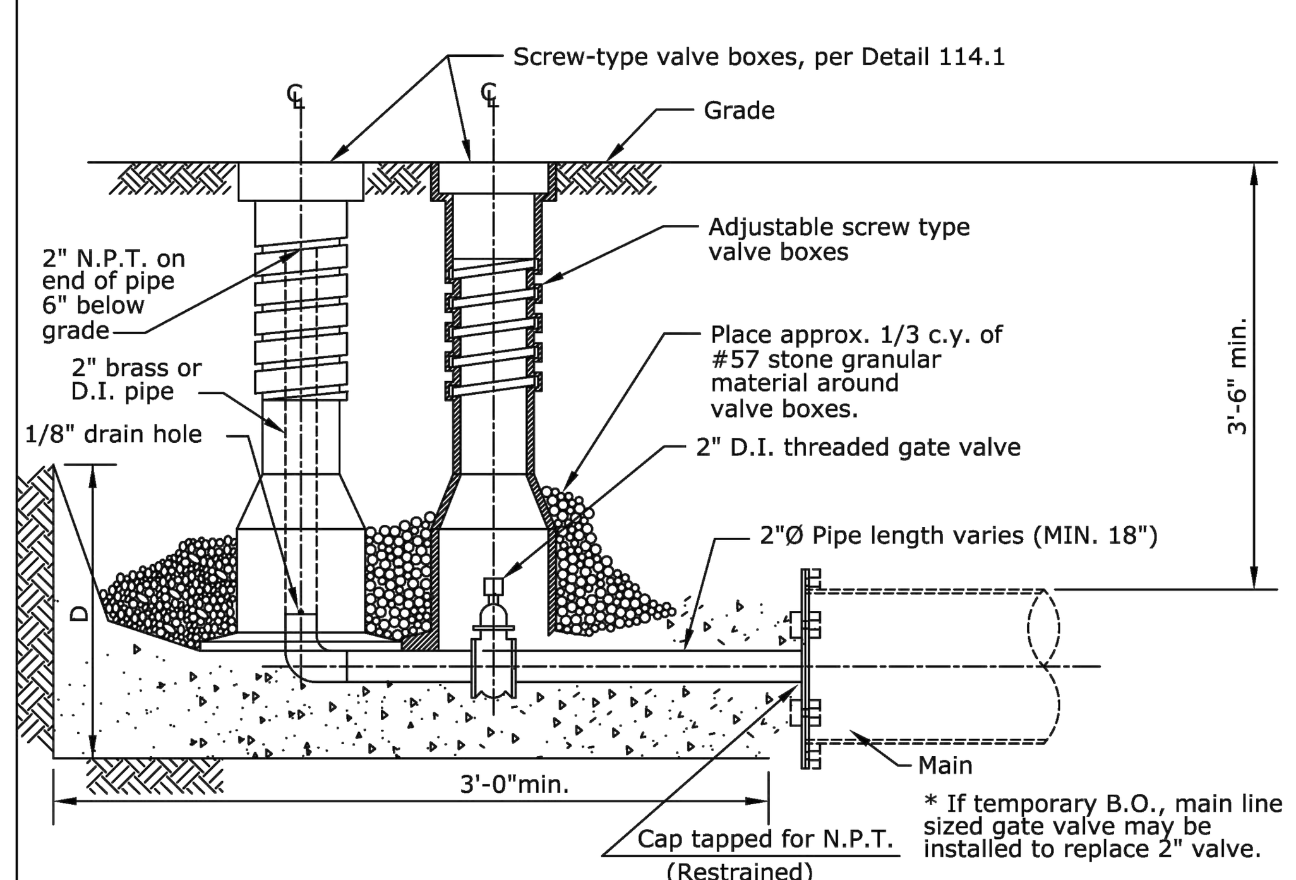
Not to scale

NOTE:
NO STAINLESS STEEL

F Div Solid Engi	Revisions Note	Tapping Sleeve and Valve Installation	Detail No. 117.1 Date: 01-24-2013



Plan



To undisturbed ground (Limit of measurement for payment)

Section A-A

Concrete shall be Mix. No. 1.

Buttress Dimensions in Inches

B	4	6	8	10	12	16
C	17	17	23	29	34	45
D	10	12	16	20	24	32

Frederick County Division of Utilities & Solid Waste Management Department of Engineering & Planning	Revisions Date / Note	Cap and Blow-off at End of Main Modified	Detail No. 116.1 Date: 01-24-2013

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

SITE DETAILS (CONT.)

SHEET

C-209

GENERAL NOTES

1. ALL TEMPORARY TRAFFIC CONTROL MEASURES SHALL BE SETUP PRIOR TO STARTING ALL WORK AND TAKEN DOWN AT THE END OF EACH WORK DAY.
2. ALL TEMPORARY TRAFFIC CONTROL MEASURES SHALL BE IMPLEMENTED AND MAINTAINED PER THE LATEST MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD) AND FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS LOCATED WITHIN THE TEMPORARY TRAFFIC CONTROL AREA ALONG THE AFFECTED ROADWAY(S). CONTRACTOR SHALL NOTIFY ALL AFFECTED PROPERTY OWNERS OF THE INTENDED WORK A MINIMUM OF 72 HOURS IN ADVANCE. ALL TEMPORARY DRIVEWAY CLOSURE TIMEFRAMES SHALL BE COORDINATED WITH THE PROPERTY OWNER A MINIMUM OF 72 HOURS IN ADVANCE.
4. ANY MODIFICATIONS TO THE TEMPORARY TRAFFIC CONTROL MEASURES MUST BE APPROVED BY THE SHA TRAFFIC CONTROL INSPECTOR AND TOWN OF POOLESVILLE INSPECTOR/REPRESENTATIVE IN WRITING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING ALL PRE-CONSTRUCTION MEETINGS AND INSPECTIONS RELATED TO THE TEMPORARY TRAFFIC CONTROL PERMIT.
6. ALL ROADWAY PAVEMENT MARKINGS THAT ARE REMOVED/DAMAGED AS A RESULT OF THE PROPOSED WORK SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.

PHASING NOTES

WOOTTON AVENUE:

1. INSTALL TEMPORARY TRAFFIC CONTROL SIGNAGE, CHANNELIZING DEVICES, AND FLAGGERS FOR SINGLE-LANE OPERATION AS SHOWN ON PLAN.
2. BEGIN WATER LINE CONNECTION TRENCH EXCAVATION AND EXISTING DRIVEWAY PAVEMENT REMOVAL. CONTRACTOR SHALL PROVIDE NECESSARY SHEETING AND SHORING FOR INSTALLATION.
3. AT THE END OF EACH WORK DAY STEEL PLATES AND ASSOCIATED ADVANCED WARNING SIGNS MUST BE USED TO COVER EXCAVATED TRENCH AREA WITHIN ROADWAY. CONTRACTOR SHALL TAKE DOWN FLAGGER OPERATION SIGNAGE AND MOVE CHANNELIZING DEVICES TO EDGE OF ROADWAY TO PROVIDE (2) TEN-FOOT WIDE MINIMUM TRAVEL LANES.
4. ONCE ALL WATER LINE CONNECTION, DRIVEWAY ENTRANCE, AND ROADWAY PAVEMENT RESTORATION WORK HAS BEEN COMPLETED WITHIN PHASE I WORK ZONE, CONTRACTOR SHALL RESTORE ANY ROADWAY PAVEMENT MARKINGS, SIGNAGE, AND PAVEMENT THAT WAS DAMAGED OR REMOVED AS PART OF THE PROPOSED WORK TO EXISTING CONDITIONS PER MDSHA STANDARDS AND SPECIFICATIONS. WITH WRITTEN APPROVAL FROM THE TOWN OF POOLESVILLE INSPECTOR/REPRESENTATIVE, CONTRACTOR SHALL REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

- REPEAT STEPS 1 THRU 3 UNTIL WORK HAS BEEN COMPLETED WITHIN EAST F STREET PHASE I WORK ZONE.

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION – TYPICAL APPLICATION NOTES (MD 104.01-81)

NOTES:
1. MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES:

TAPER CHANNELIZATION - SHALL BE EQUAL IN FEET TO THE POSTED SPEED LIMIT FOR POSTED SPEEDS EQL/LESS THAN 40 MPH AND 40 FEET FOR POSTED SPEEDS GREATER THAN 40 MPH

TANGENT CHANNELIZATION - SHALL BE EQUAL IN FEET TO TWICE THE POSTED SPEED LIMIT IN THE BUFFER AND EQUAL IN FEET TO THE POSTED SPEED ADJACENT TO THE WORK AREA FOR POSTED SPEEDS EQL/LESS THAN 40 MPH. SPACING SHALL BE 80 FEET IN THE BUFFER AND 40 FEET ADJACENT TO THE WORK AREA FOR POSTED SPEEDS GREATER THAN 40 MPH

2. THE MINIMUM BUFFER LENGTH (BL) SHALL BE AS FOLLOWS:

BUFFER LENGTH (BL)

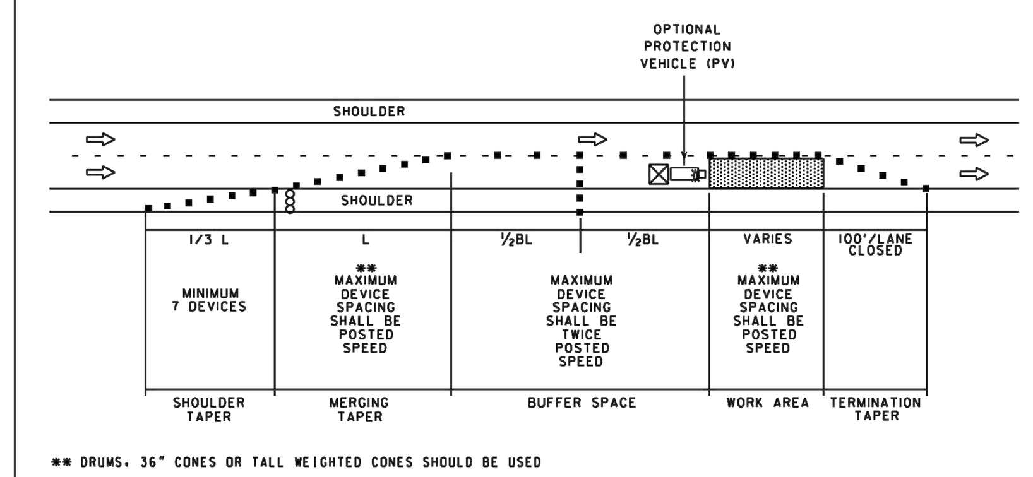
TYPICAL BUFFER LENGTH	
PREVAILING SPEED (MPH)	LENGTH (FEET)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

REFER TO LATEST PART VI OF THE MUTCD FOR ADDITIONAL SPEEDS/BUFFER LENGTHS AND ADJUSTMENTS TO BUFFER LENGTH DUE TO THE EFFECT OF GRADE ON STOPPING AND VARIATION FOR TRUCKS.

3. REFER TO STANDARD NO. MD 104.01-80 (TAPER LENGTH CRITERIA TABLE) FOR MINIMUM TAPER LENGTHS.

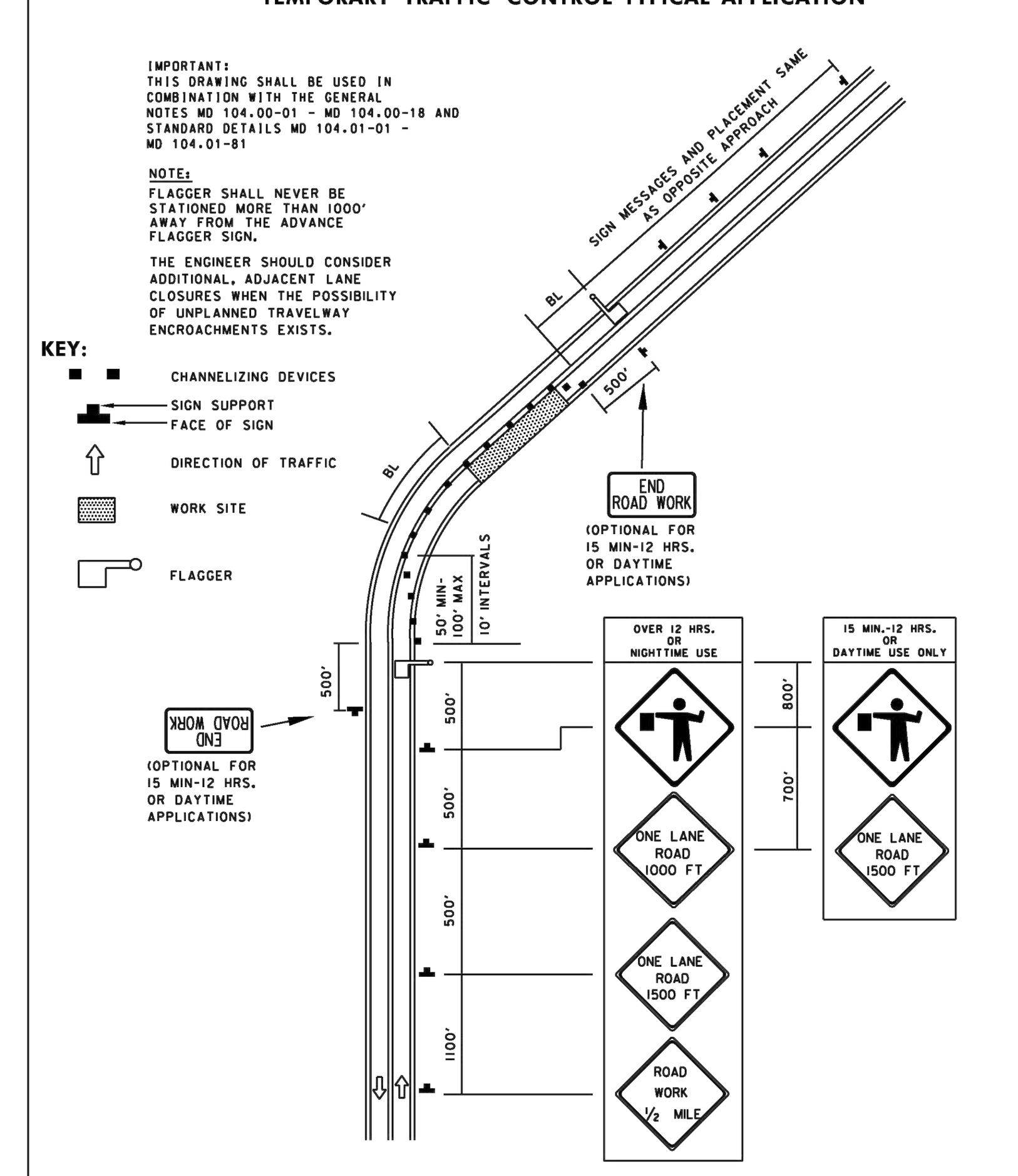
Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION – STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES – TYPICAL APPLICATION NOTES – STANDARD NO. MD 104.01-81

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION – CHANNELIZATION DEVICE SPACING EQL/LESS THAN 40 MPH (MD 104.01-30 B)



Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION – STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES – CHANNELIZATION DEVICE SPACING EQL/LESS THAN 40 MPH – STANDARD NO. MD 104.01-30 B

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION – FLAGGING OPERATION/2-LANE, 2-WAY EQL/LESS THAN 40 MPH (MD 104.02-10)



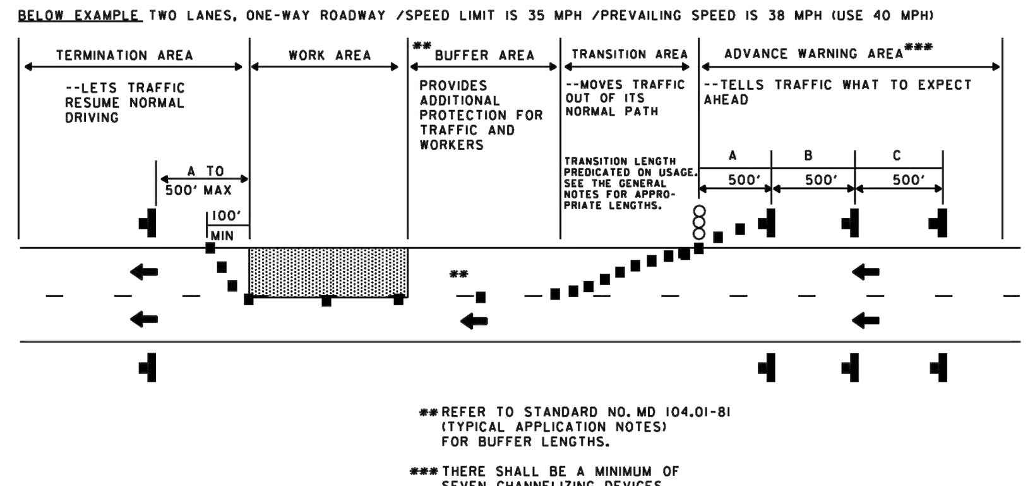
Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION – STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES – FLAGGING OPERATION/2-LANE, 2-WAY EQL/LESS THAN 40 MPH – STANDARD NO. MD 104.02-10

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION – SIGN SPACING CHART – STANDARD TEMPORARY TRAFFIC CONTROL OPERATIONS (MD 104.01-02)

* SPEED (MPH)	MINIMUM DISTANCE FROM TAPER TO FIRST SIGN & FOR SIDE STREET SIGN DISTANCE A	ADDITIONAL SIGNS IN SERIES TO BE SPACED AT A MINIMUM B	C	D	MINIMUM COMBINED ADVANCED WARNING
≤ 25	200'	200'	200'	-	600'
26 - 35	300'	300'	300'	-	900'
36 - 40	500'	500'	500'	-	1500'
41 - 65	800'	700'	1100'	2600' (1/2 MILE)	5200' (1 MILE)
EXPRESSWAY/FREEWAY	1000'	500'	1100'	2600' (1/2 MILE)	5200' (1 MILE)

* SPEED LIMIT OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER.

BELOW EXAMPLE TWO LANES, ONE-WAY ROADWAY /SPEED LIMIT IS 35 MPH /PREVAILING SPEED IS 38 MPH (USE 40 MPH)



** REFER TO STANDARD NO. MD 104.01-81 (TYPICAL APPLICATION NOTES) FOR BUFFER LENGTHS.

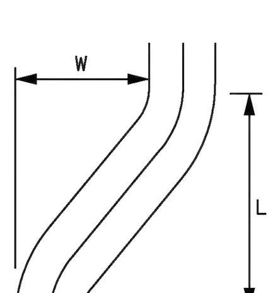
*** THERE SHALL BE A MINIMUM OF SEVEN CHANNELIZING DEVICES IN THE SHOULDER TAPER.

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION – STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES – SIGN SPACING CHART – STANDARD NO. MD 104.01-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION – TAPER LENGTH CRITERIA TABLE (MD 104.01-80)

SPEED (S) IN MPH	WIDTH OF OFFSET (W) IN FEET 1	2	3	4	5	6	7	8	9	10	11	12
	TAPER LENGTH (L) IN FEET WHERE $L = WS^2/60$											
25	11	21	32	42	53	63	73	84	94	105	115	125
30	15	30	45	60	75	90	105	120	135	150	165	180
35	21	41	62	82	103	123	143	164	184	205	225	245
40	27	54	80	107	134	160	187	214	240	267	294	320
	TAPER LENGTH (L) IN FEET WHERE L = WS											
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840

TYPE OF TAPER	TAPER LENGTH
MERGING TAPER	L MINIMUM (ON EXPRESSWAYS AND FREEWAYS, MERGING LANE CLOSURE TAPERS SHALL BE 1000 FEET, UNLESS DIRECTED BY THE ENGINEER)
SHIFTING TAPER	L (WHEN CONDITIONS DO NOT PERMIT SHIFTING TAPERS OF LENGTH L, SHIFTING TAPERS DOWN TO LENGTH 1/2 L (MIN.) MAY BE USED)
SHOULDER TAPER	1/3 L MINIMUM
TWO-WAY TAPER (FLAGGING)	100 FEET MAX., 50 FEET MIN.
TERMINATION TAPER	100 FEET MINIMUM

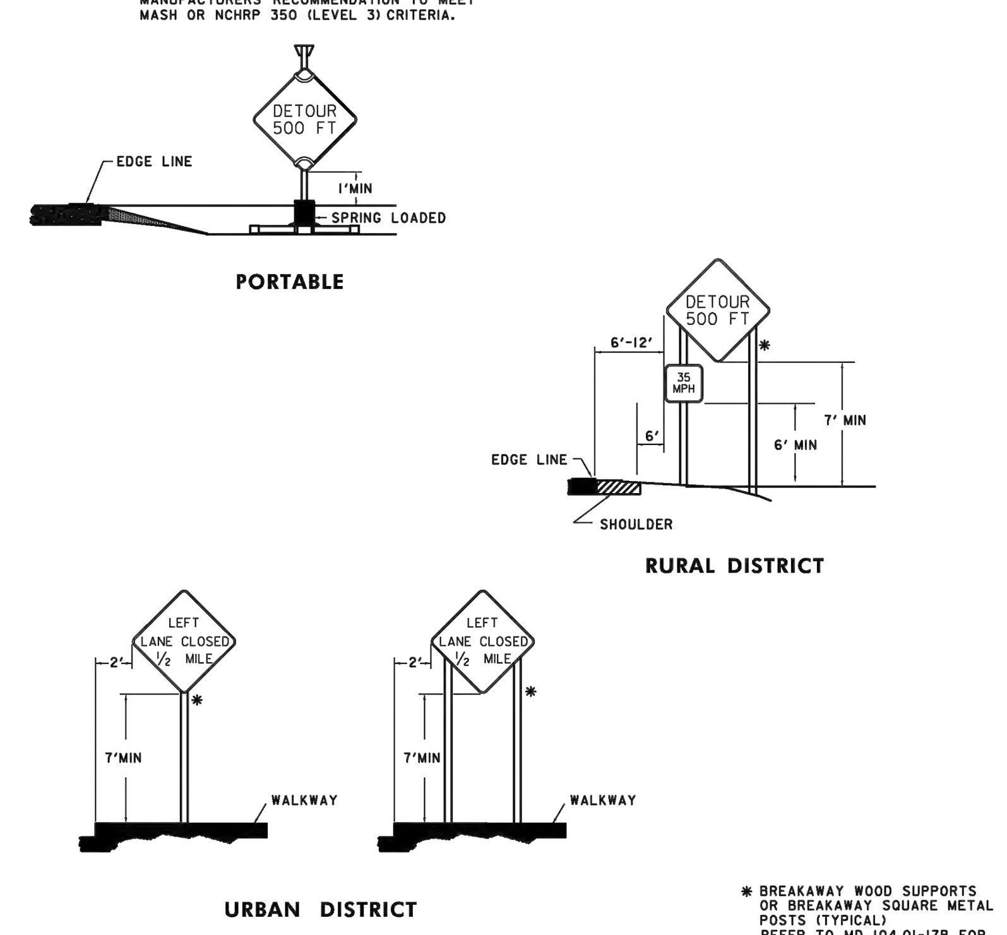


NOTE: AN "ABRUPT" LANE SHIFT IS ANY SHIFT WITH A TAPER LENGTH (L) LESS THAN THE VALUE SPECIFIED IN THE TABLE ABOVE.

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION – STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES – TAPER LENGTH CRITERIA TABLE – STANDARD NO. MD 104.01-80

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION – ROADSIDE SIGN /SIGN SUPPORT PLACEMENT (MD 104.01-17 A)

MD SHA'S OFFICE OF TRAFFIC AND SAFETY MAINTAINS A LIST OF APPROVED PORTABLE SIGN SUPPORTS. SIGN SUPPORTS SHALL BE USED AT HEIGHT WHICH MEETS MANUFACTURERS' RECOMMENDATION TO MEET MASH OR NCHRP 350 (LEVEL 3) CRITERIA.



* BREAKAWAY WOOD SUPPORTS OR BREAKAWAY SQUARE METAL POSTS (TYPICAL). REFER TO MD 104.01-17B FOR WOOD SUPPORT AND MD 104.01-17C FOR TUBULAR STEEL BREAKAWAY INFORMATION.

MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION – STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES – ROADSIDE SIGN SUPPORTS PLACEMENT – STANDARD NO. MD 104.01-17 A

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION – PROJECT LIMITS SIGNS (MD 104.01-03)

NOTES:

DRAWING SHOWS SIGNING FOR TWO-LANE, TWO-WAY.

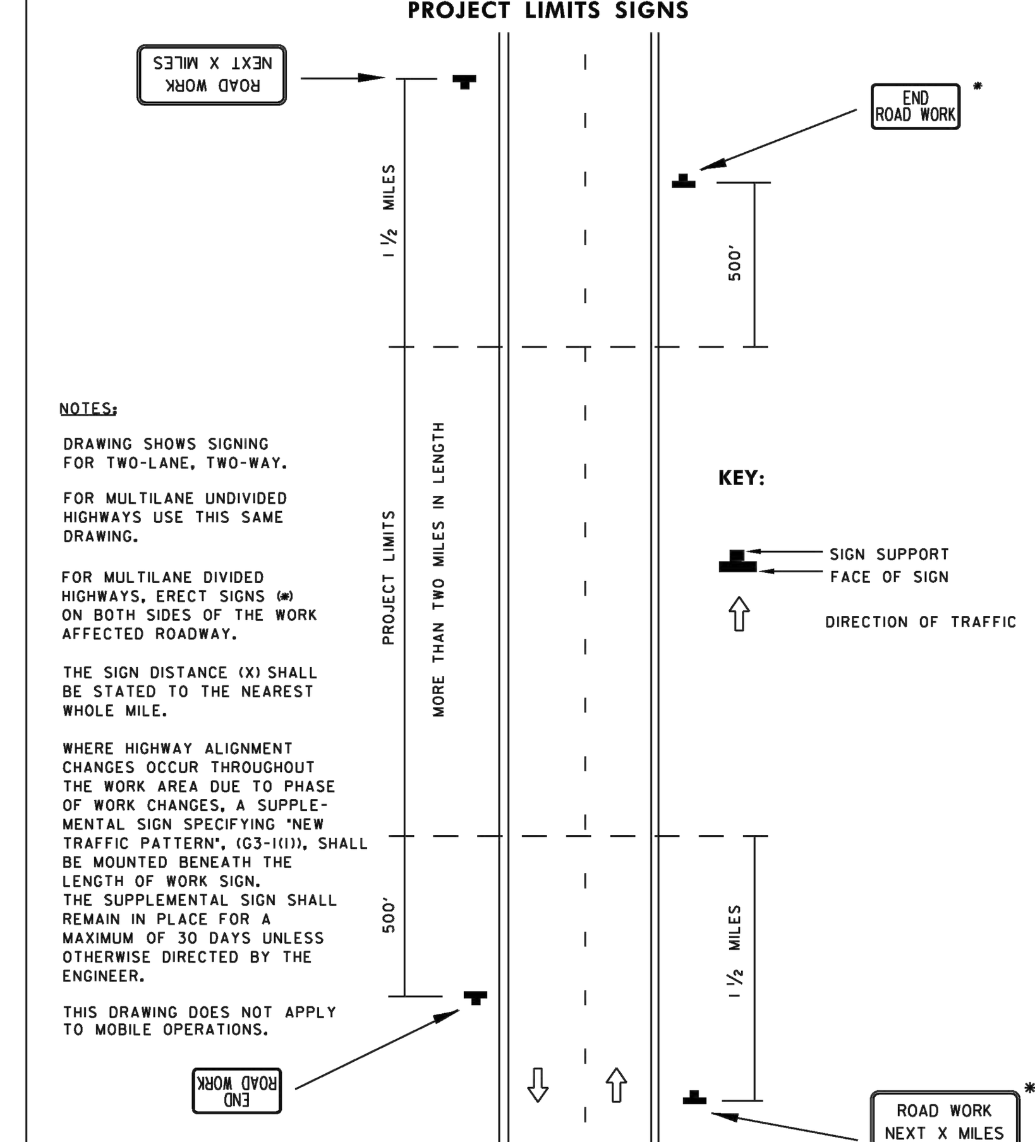
FOR MULTILANE UNDIVIDED HIGHWAYS USE THIS SAME DRAWING.

FOR MULTILANE DIVIDED HIGHWAYS, ERECT SIGNS ON BOTH SIDES OF THE WORK AFFECTED ROADWAY.

THE SIGN DISTANCE (X) SHALL BE STATED TO THE NEAREST WHOLE MILE.

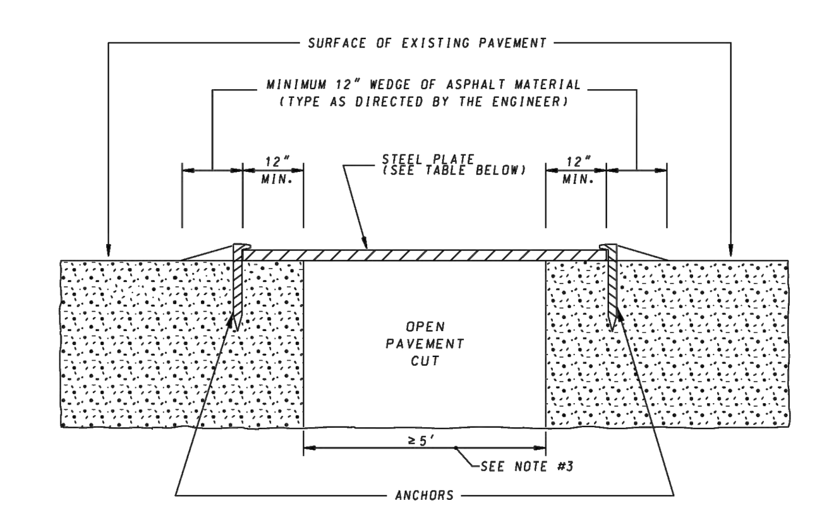
WHERE HIGHWAY ALIGNMENT CHANGES OCCUR THROUGHOUT THE WORK AREA DUE TO PHASE OF WORK CHANGES, A SUPPLEMENTAL SIGN SPECIFYING "NEW TRAFFIC PATTERN", SHALL BE MOUNTED BENEATH THE LENGTH OF WORK SIGN. THE SUPPLEMENTAL SIGN SHALL REMAIN IN PLACE FOR A MAXIMUM OF 30 DAYS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THIS DRAWING DOES NOT APPLY TO MOBILE OPERATIONS.



Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION – STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES – PROJECT LIMITS SIGNS – STANDARD NO. MD 104.01-03

STANDARD DETAIL: STEEL PLATE METHOD 2, EQUAL TO OR LESS THAN 40 MPH (MD 104.01-86)



STEEL PLATE DETAIL (METHOD 2, EQUAL TO OR LESS THAN 40 MPH)
NOT TO SCALE

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION – STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES – STEEL PLATE METHOD 2, EQUAL TO OR LESS THAN 40 MPH – STANDARD NO. MD 104.01-86

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LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE

WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

TEMPORARY TRAFFIC CONTROL NOTES AND DETAILS

SHEET

C-800

J:\100.000 Poolesville General\100.047 - Wootton Ave Waterline\CAD\DWG\C-800 TEMPORARY TRAFFIC CONTROL NOTES AND DETAILS.dwg 2/12/2024 11:16 AM

GENERAL NOTES FOR TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA)

1.0 INTRODUCTION

1.1 The General Notes (GN) supplement the Standard Details and the TTCTAs, and have been assembled to provide additional direction on the installation and application of traffic control devices shown in these standards. The GNs also provide additional guidelines and other useful information that will facilitate the installation of appropriate temporary traffic controls. Users of these standards shall also comply with provisions of FHWA's Manual on Uniform Traffic Control Devices (MUTCD) and SHA's Supplement to the MUTCD, Standard Specifications for Construction and Materials, and General Provisions for Construction Contracts.

1.2 The TTCTA show the minimum requirements necessary to plan for the safety of workers, motorists, pedestrians, and other system users throughout the temporary traffic control zone for various types of work activities. Typically, more traffic control devices are required for long-term stationary work activities than for short-term stationary work activities. Additional temporary traffic control devices may be necessary because of other traffic factors, such as the roadway's accident history, expected traffic backups, high truck traffic, roadway geometrics or characteristics, and other conditions that may adversely affect the flow of traffic. Users of these TTCTA should review the temporary traffic control setup once in place to ensure that traffic is traveling smoothly throughout the traffic control zone, driver expectancy is being met, and no other adjustments to the temporary traffic control devices are necessary. This review is to be repeated on a regular basis as noted elsewhere.

1.3 The TTCTA address a wide variety of different conditions; however, every situation could not be shown. Therefore, charts have been provided showing standard devices to be used for the proposed work zone activity and the placement of these devices for certain roadway conditions and work durations. The user is expected to combine the information from these charts into a workable traffic control plan.

1.4 In applying these standards and guidelines, questions about applications and interpretations should be referred to the State Highway Administration's Assistant District Engineer–Traffic, County Traffic Engineer, City Traffic Engineer, Public Works Engineer, or other responsible party, who has expertise in traffic engineering and has jurisdiction on the appropriate roadways. Such consultation may be required, for example, to determine the appropriate TTCTA for the work zone condition.

1.5 The General Notes address the following topics:

- Definitions
- Abbreviations
- Signs
- Portable Variable Message Signs
- Arrow Panels
- Channelizing Devices
- Pavement Markings
- Flagging
- Vehicles
- Work Restrictions
- Traffic Control Plans
- Sign and Buffer Spacing Charts/Standard Temporary
- Traffic Control (TTC) Operations
- Project Limits Signs
- Identification Hat and Shovel Signs
- Placement of Regulatory Speed Signs
- TTC Device Selection Charts (for various roadway types)
- Warning, Regulatory and Special Signs/Sign Designations
- Sign/Sign Support Placement
- Vehicle Conspicuity
- Protection Vehicle/Paint Train Vehicle Signing

2.0 DEFINITIONS

Administration – Maryland Department of Transportation, State Highway Administration.

Average Daily Traffic – The number of vehicles flowing in both directions along a particular segment of roadway during an average 24–hour period.

Divided Highway – A highway consisting of two roadways, with traffic in one direction of travel separated from traffic in the opposite direction by a median or barrier.

Divided Uncontrolled Highway – A divided highway having at–grade access to/from adjoining roads or driveways.

Driver Expectancy – Temporary traffic control should be designed and applied in a manner equal to or better than permanent/existing conditions, so as to compensate for the unexpectancy of the work zone situation, thus providing positive guidance for the road users traversing the area.

Engineer – A person designated by the Administration acting directly or through his duly authorized representative, such representative acting within the scope of the particular authority and duties assigned to that person.

Emergency Repair Operation – An unplanned work operation resulting from a failure or imminent failure of a structure or system that, if not controlled or corrected immediately, may present a hazard to the public.

Expressway – A high–speed divided highway with full or partial control of access and grade separations at major intersections.

Freeway – An expressway with full control of access.

High Bus/Truck Volumes – Bus/truck volumes representing more than 10 percent of the total volume of traffic.

★ High Speed – Greater than 40 mph.

Line of Sight – Decision sight distance for the following rate of speed:

Decision MPH	Sight Distance Feet
30	450–625
40	600–825
50	750–1025
60	1000–1275
70	1100–1450

Long–Term Stationary Work Activity – Work that occupies a location more than 12 hours or is conducted during darkness.

★ Low Speed – Equal to or less than 40 mph.

Mobile Operation – Work activity that moves along the road either intermittently or continuously; may involve stops as long as 15 minutes.

Moving Normal – Mobile work operation traveling at, or within 15 mph of, the posted speed limit.

Moving Slow – Mobile work operation traveling more than 15 mph below the posted speed limit.

Multi–Lane Undivided Highway – A two–way highway having three or more lanes that typically provides at least two lanes in each direction, with traffic separated by a center line as defined by the Manual on Uniform Traffic Control Devices.

Physical Barrier – A device which provides a physical limitation through which a vehicle would not normally pass. It is intended to contain or redirect an errant vehicle.

★ Posted or prevailing speed, whichever is higher; also, see definition for "Speed".

Prevailing (Travel) Speed – The speed at which the majority of the traffic is traveling at or below (normally the 85th percentile). If the prevailing speed is not known, it shall be determined by the Engineer using the "floating car" method (in which the driver approximates the median speed by passing as many vehicles as pass the driver) or another suitable method, at the discretion of the Engineer.

Protection Vehicle (PV) – A work vehicle with approved flashing lights, a truck or trailer–truck mounted attenuator (TMA/TTMA) with support structure designed for attaching the system to the work vehicle, and arrow panel that is used to provide protection for workers, motorists, equipment, and work operations.

Queue – A line of vehicles, or traffic backup, that forms on a section of roadway where traffic volume exceeds capacity.

Service Vehicle – The work vehicle typically used to maintain traffic control devices, such as PCMS and traffic signals.

Short–Term Stationary Work Activity – Daylight work that occupies a location from 15 minutes to 12 hours.

Specifications – The Administration's Standard Specifications for Construction and Materials, latest edition.

Speed – The term "speed" may mean the 85th percentile speed, prevailing speed, posted speed, design speed, or advisory speed. Vehicle speed should be carefully considered in determining the design, use, placement, and location of various traffic control devices.

Two–Lane, Two–Way Roadway – A roadway that provides a single travel lane in each direction. Traffic is separated by a center line as defined in the Manual on Uniform Traffic Control Devices.

3.0 ABBREVIATIONS

ADE–T – Assistant District Engineer–Traffic
ADT – Average Daily Traffic
ASST – Assistant
BL – Buffer Length
CD or CHAN – Channelizing Devices
DARK – Darkness (nighttime)
DAY – Daytime
EQL – Equal
EXP – Expressway
FT – Feet
FOHPWA – Fluorescent Orange High–Performance Wide Angle
GN – General Notes
HRS – Hours
INTERSECT – Intersection
L – Taper Length
LT – Left
LGTS – Lights
LOC – Location
MASH – Manual for Assessing Safety Hardware
MUTCD – Manual on Uniform Traffic Control Devices
MDOT – Maryland Department of Transportation
MAX – Maximum
MPH – Miles per hour
MIN – Minimum
15 MIN – 15 minutes (title block)
NCHRP – National Cooperative Highway Research Program
OOTS/OOT&S – Office of Traffic & Safety
PED – Pedestrian
PCMS – Portable Changeable Message Sign
PV – Protection Vehicle
RT – Right
SHA – State Highway Administration
STD – Standard
TEMP – Temporary
TTC – Temporary Traffic Control
TTCTA – Temporary Traffic Control Typical Application(s)
TMA – Truck Mounted Attenuator
TYP – Typical
UNCON – Uncontrolled
UNDIV – Undivided
VEH – Vehicle
VP–1 – Vertical Panel–1 (object marker designation)

4.0 SIGNS

4.1 Signs should be spaced at the distances shown on the TTCTA diagrams.

4.2 See the "Sign and Buffer Spacing Charts/Standard Temporary Traffic Control Operations" for the appropriate spacing of the advance warning signs for lower speed highway facilities.

4.3 At locations where queues extend beyond the first advance warning sign, additional advance warning signs (static and/or PCMS) shall be placed in advance of the longest observed queue.

4.4 When bus and/or truck volumes are high, an initial advance warning sign may be placed on the left side of a multilane undivided roadway.

4.5 Administration approved Fluorescent Orange Sign Sheeting Material shall be used on all temporary warning signs erected in work zones (post–mounted, roll–up, etc.).

4.6 Administration approved temporary roll–up, composite, and plastic signs on approved portable sign stands may be used for work along all roadways, as directed in Specification 104.08.

4.7 When work zone speed limits along 65 and 60 mph roadways are reduced, temporary regulatory speed signing shall be posted for work activities of one–hour duration or longer, unless otherwise directed by the Engineer. These signs are to be placed as directed in Standard Nos. MD 104.01–06 and MD 104.01–07.

4.8 Sign designations and messages for the signs most commonly used in work zones are shown within these General Notes. See Specification 104.08–03 for information on other temporary traffic signs.

4.9 G2–1 (Hat and Shovel) signs shall be used for projects lasting greater than two months in duration, unless otherwise specified by the Engineer.

4.10 Along streets in urban areas where the prevailing speed is 35 mph or less, and along secondary roads where the Average Daily Traffic (ADT) is less than 1000 vehicles, the minimum sign size of 36" x 36" may be used.

4.11 Where the use of Automated Speed Enforcement (ASE) is determined, the design of signs to be used (i.e. dimensions & legend) and placement shall be approved by OOTS.

4.12 For utility operations, the word "AHEAD" may be used on warning signs in lieu of distance messages for warning signs placed up to and including 1500 feet in advance of the work area. At greater distances, the correct distance messages shall be used. Where such warning signs Also, the message UTILITY WORK may be used in lieu of ROAD WORK or SHOULDER WORK. ROAD WORK AHEAD signs may also be used in lieu of distance messages on side streets and entrance ramps that intersect roads where work is being performed (as shown in the Typical Applications) and on the main road during mobile and mowing operations.

4.13 ROAD WORK AHEAD signs shall be installed on all side streets and entrance ramps that intersect roads within work zones. The signing shall be placed along the intersection approach to the right of the travel lane. Refer to Standard Detail 104.01–02 for guidance on sign placement. For side streets intersecting roads outside of work zone boundaries, no advanced signing should be installed.

4.14 Warning signs mounted on wood posts, and those mounted on approved portable supports, shall be mounted in conformance with Standard No. MD 104.01–17. Signs mounted on concrete barrier shall be installed using clamps that are on the Office of Traffic & Safety's Approved Product List. Supplementary signs may be mounted on portable sign stands using additional brackets obtained from the stand manufacturer. Supplementary signs shall not cover any part of the face of the primary sign.

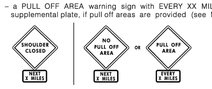
4.15 For shoulder closures greater than a half (1/2) mile in length, advance warning signs should be placed as follows:

a. A NEXT XX MILES supplemental plate should be provided with the first SHOULDER CLOSED sign in the sequence

b. The second SHOULDER CLOSED sign in the sequence should be replaced with either:

– a NO PULL OFF AREA warning sign with NEXT XX MILES supplemental plate, if there are no pull off areas throughout the work area, or

– a PULL OFF AREA warning sign with EVERY XX MILES supplemental plate, if pull off areas are provided (see MD 104.06–18).



4.16 A BUMP sign should be placed when there is a temporary pavement wedge along a transverse joint, a transverse construction trench with temporary backfill, or a similar transverse disturbance. Signs should be placed according to Shoulder Work Typical Applications for the appropriate prevailing speed and work duration, with BUMP signs replacing the SHOULDER WORK signs.

4.17 TRUCK CROSSING signs (W11–(10)1 shall be used as specified in 11.0, Strategies for Safe Entry/Exit of Work Zone Vehicles to/from the Work Area

5.0 PORTABLE VARIABLE MESSAGE SIGNS (PVMS)

5.1 The PVMS shall not replace standard traffic control devices, but is to supplement these devices.

5.2 PVMS shall be used where a new traffic signal has been installed along State routes having a prevailing speed of 50 mph or greater.

5.3 PVMS shall display a message regarding new traffic signal installation up to 3 days prior to signal turn–on. PVMS shall be removed no later than 7 days after the signal is operational.

5.4 When PVMS are used to advise/warn motorists regarding a new traffic signal installation, they shall be installed along all the major approaches to the intersection, and shall be used in such a way as to supplement the standard traffic control devices required for a new traffic signal installation.

5.5 No more than two displays shall be used within any message cycle unless approved by the District Engineer or ADE–T.

5.6 For a list of standard messages/abbreviations, contact appropriate District Engineer or ADE–T. All customized messages shall be approved by the ADE–T.

5.7 A single message shall be displayed for 2–3 seconds with an "off" interval of 0.5 to 1.0 second. When two messages comprise a message cycle, neither message shall exceed 2 seconds duration. The second message shall follow the first message immediately without any "off" interval. If an off–interval is used between the first and second messages, it shall not exceed 0.5 second.

5.8 The text of the message shall not scroll or travel (horizontally or vertically) across the face of the sign.

5.9 A PVMS should not be used for more than 14 continuous days as part of the same application. A PVMS should be used 3 to 5 days in advance of planned roadwork, if needed.

5.10 PVMS should be used if there is significant change in traffic patterns, unexpected road conditions, or safety concerns that may result in delays/queues and may require caution/diversion.

5.11 PVMS should not be used in place of an arrow panel. The PVMS should be visible from 0.5 mile under day and night conditions and should be legible from a minimum distance of 900 feet.

5.12 PVMS should be placed on the shoulder of the roadway or, if practical, farther from the traveled lane (Standard MD 104.01–22).

5.13 In order to reduce the effect of sun behind the PVMS, the PVMS should be placed so that the sun is not directly behind it (such as during sunrise or sunset).

5.14 The entire message should be readable at least twice at the off–peak 85th–percentile speed prior to work starting or the anticipated prevailing speed.

6.0 ARROW PANELS

6.1 Arrow panels that are installed along roadways with prevailing speeds greater than 40 mph shall be provided with a minimum shoulder closure taper of 1/3 the taper length, (see 7.0 Channelizing Devices). For all other roadways a 100–foot minimum shoulder closure taper shall be used.

7.0 CHANNELIZING DEVICES

7.1 Taper Formulas:

L = WS for speeds greater than (>) 40 mph

L = WS^2/60 for speeds equal to or less than (<) 40 mph

Where: L = minimum length of taper (ft)
S = numerical value of prevailing travel speed or speed limit (MPH), whichever is higher, prior to work starting,
W = width of offset (ft)

7.2 Maximum spacing between channelizing devices:

Taper Channelization – Shall be equal in feet to the posted speed limit for posted speeds eq4less than 40 mph and 40 feet for posted speeds greater than 40 mph.

Tangent Channelization – Shall be equal in feet to twice the posted speed limit in the buffer and equal in feet to the posted speed adjacent to the work area for posted speeds eq4less than 40 MPH. Spacing shall be 80 feet in the buffer and 40 feet adjacent to the work area for posted speeds greater than 40 MPH.

7.3 At horizontal or vertical curves, channelizing devices should be extended to a point where they are visible to approaching traffic. On two–lane, two–way roadways, a full taper length shall always be provided in advance of curves.

7.4 Drums, not cones, shall be used to form the taper on expressways/freeways. Drums, not cones, should be used to form the taper on all other roadways having a prevailing travel speed greater than 40 MPH.

7.5 Storing channelizing devices within 30 feet of the edge of open section roadway or 15 feet of a closed section roadway along any roadway is prohibited without approval of the Engineer.

7.6 Type 3 object markers (VP–1) are required for barrier flare / tangent points.

7.7 The appropriate channelizing devices (including approved barrier) to separate opposing traffic shall be as shown on the plans or as directed by the Engineer.

7.8 On straight sections of roadway with full dimension center and / or lane lines, but without edge lines, channelizing drums shall be used to delineate the edge of the roadway, except at locations designated by the Engineer. Examples would include roadways with curbs, parking, bicycle lanes, or other markings. The channelizing drums may be spaced up to 500' apart where no undue hazards exist unless otherwise directed by the Engineer. On curves, these spacings shall be reduced to a value equal to the posted speed limit, unless otherwise directed by the Engineer.

8.0 PAVEMENT MARKINGS

8.1 Temporary pavement markings should be installed according to Section 104.02–03(1), Specific Requirements for Temporary Pavement Markings, from the Standard Specifications for Construction and Materials and from SHA's "Pavement Marking Policy and Guidelines" issued by OOTS.

8.2 Pavement markings that are no longer applicable shall be completely removed or obliterated. Temporary markings shall be used as necessary. Operations less than 12 hours or undertaken during the daytime may require that the permanent markings be temporarily covered with black tape as specified in Section 8.3.

8.3 Pavement marking lines adjacent to any long duration lane transition or lane closure taper shall be removed (or covered with SHA approved black pavement marking tape), unless otherwise directed by the Engineer. Pavement marking lines shall be re–installed (or uncovered) prior to re–opening the closed lane(s).

8.4 Temporary markings on intermediate pavement surfaces (e.g. base course) shall be placed to full dimensions per the Contract Documents (i.e. continuous double yellow center lines, single dashed yellow center line @ 10' segments, 30' gaps where passing is allowed; lane lines @ 10' segments, 30' gaps).

8.5 Guidance on UNMARKED PAVEMENT signing:

1. Daytime: If the pavement is not marked to SHA's standards/specifications during the daytime, no sign is needed, provided item #3 below is adhered to.

2. Nighttime: If, due to unforeseen circumstances as determined by the Engineer, the pavement is left in a condition overnight that does not meet SHA pavement marking standards/specifications, then UNMARKED PAVEMENT signing shall be used.

3. In all instances where less than standard markings are in place (permanent or short–term), appropriate channelizing devices and other traffic control devices shall be used to guide traffic through the work zone in an effective, safe, and positive manner.

9.0 FLAGGING

9.1 Where two or more flaggers are used and are unable to see each other, two–way radio communications shall be used.

9.2 If the entire work area is visible from one station, a single flagger may be used, subject to other safety considerations.

9.3 Guidance on flagging at signalized intersections:

1. Issues regarding flagging at signalized intersections should be discussed in the planning/design stages of the project and the recommended intersection control strategy should be specified in the contract documents.

2. At the pre–construction conference, SHA staff and the contractor should discuss the need for flagging operations, MSP (or local police) presence, and the Standard Operating Procedures to request signal operating mode modifications (if needed).

3. In general, all persons (contractors, maintenance, and utility) should contact the Assistant District Engineer – Traffic (ADE–T) to determine the best method for temporary traffic control at a signalized intersection from the following two (2) cases:

Case 1: The signal is turned to flashing mode during flagging operation.

Case 2: The signal is turned off (dark mode) during flagging operation.

Note: Except for police, flagging shall not occur at a signalized intersection operating in a full–color stop–and–go mode (Normal Operation).

10.0 VEHICLES

10.1 If work vehicles need to be stopped in a lane beyond a horizontal curve or a vertical curve (hill), non–essential vehicles are to be pulled as far off the road as possible or be otherwise parked in a manner as to inhibit the movement of traffic as little as possible. If no protection vehicle is available, channelizing devices shall be placed as specified in 7.0, Channelizing Devices.

10.2 Work vehicles should not occupy any part of the buffer area.

10.3 Vehicle safety lights (amber in color), as specified in Standard MD 104.01–18A & 18B shall be Class I, as determined by the Society of Automotive Engineers (SAE) and as directed by the Office of Maintenance.

10.4 A protection vehicle is required when opening or closing a lane on freeways, expressways, and roadways with posted speeds greater than or equal to 55 mph during the installation of temporary traffic control devices.

A protection vehicle is required for all lane closure work along freeways, expressways, and roadways with posted speeds greater than or equal to 55 mph.

A protection vehicle is also required for mobile operations (e.g. highway marking) and other work conditions to provide protection for workers or as directed by the Engineer. The protection vehicle may be considered as a substitute for the initial advance warning sign for some mobile work operations. A protection vehicle should also be used in advance of a work operation that is located beyond a horizontal and/or vertical curve. Consideration should also be given to placing an additional temporary advance warning sign(s) or truck mounted variable message sign no less than 500' and no more than 1500' (1/2 mile for expressway conditions) in advance of the protection vehicle, when one or more of the traffic factors listed under General Notes 1.2 exist.

10.5 When a police vehicle is required, the vehicle shall not be located in the buffer and/or taper, but should be located as directed by the Engineer, depending on the type of work. It is sometimes preferable to deploy the police vehicle in advance of the work zone or queue (if queue exists) to encourage speed reduction prior to the work zone.

11.0 STRATEGIES FOR SAFE ENTRY/EXIT OF WORK ZONE VEHICLES TO/FROM THE WORK AREA

11.1 Use TRUCK CROSSING signs (W11–(10)1 when:

1) A work area entrance is allowed along a controlled access highway; OR

2) A work area entrance provided along highways other than controlled access does not have adequate decision sight distance for approaching traffic and the entrance cannot be relocated to provide adequate decision sight distance. Refer to Standard No. MD 104.00–03 of the General Notes for decision sight distance criteria.

TRUCK CROSSING signs shall be placed according to the Shoulder Work Typical Applications, with TRUCK CROSSING signs replacing all SHOULDER WORK signs.

Any distances to be displayed on the TRUCK CROSSING sign shall be installed using supplemental distance plaques.

11.2 All work zone vehicles when entering/exiting the work area or operating within the work zone shall display flashing warning lights, as specified in Standards MD 104.01–18A & B.

11.3 PVMS may be used as a supplementary sign to warn drivers of work zone vehicles entering or exiting the work area.

11.4 Coordinate deliveries of materials with proposed lane closures, preferably during occurences when traffic volumes are low.

12.0 WORK HOUR RESTRICTIONS

12.1 Unless otherwise specified in the Contract Document or permitted by the Engineer, work within a lane, or within 15 feet of the nearest edge line (open section roadway), or within 2 feet of the face of curb (closed section roadway), is prohibited during peak hours 6 a.m. – 9 a.m. and 3 p.m. – 7 p.m., Monday – Friday. Also, such work is not permitted on Saturdays, Sundays, National or State holidays, or days preceding and following said holidays.

13.0 TEMPORARY LIGHTING

13.1 Roadway lighting shall be considered during the planning of temporary traffic control plans. Lighting may be required due to nighttime work zone traffic operations or for new traffic patterns (e.g., new exit or lane shift). Once the need for temporary lighting is identified, it should be provided in one of two ways:

1. If practical, permanent lighting that is being installed as part of the project should be installed in the early stages so that it can be used for illuminating travel lanes through the work zone throughout the project.

2. If installation of permanent lighting is not a part of project, then temporary lighting (temporary light poles or flood lights) should be provided to illuminate travel path.

Contractor shall maintain existing lighting.

13.2 The Contractor shall submit a Situation Plan to the Engineer showing the locations and aiming of floodlights. The floodlighting system shall be capable of maintaining 20 ft–c without producing a disabling glare condition for approaching road users. The adequacy of the floodlight placement and the absence of glare should be field–verified by the Engineer and Contractor. This involves driving through and observing the floodlighted area from each direction on all approaching roadways immediately after the initial floodlight setup, at night, and periodically.

14.0 PAVEMENT DROP–OFF

14.1 When pavement drop–offs are present, the placement of temporary traffic control devices, including signs, channelizing devices, and barriers, as well as slope fillet wedges, shall follow SHA Standard Nos. MD 104.06–15, MD 104.06–16, MD 104.06–17, MD 104.06–18, MD 104.06–19, and MD 104.01–28. The Engineer may recommend alternative methods to protect the pavement edge drop–off, considering factors such as: pedestrian, bicycle, and traffic volumes, vehicle speeds, size of work zone, duration of work, etc.

15.0 SIGHT DISTANCE

15.1 Temporary traffic control devices, including drums, barriers, and vertical panels, and construction equipment, shall be placed to ensure that adequate sight distance is not restricted at ramp junctions and intersections. If sight distance restrictions are unavoidable, additional applicable warning signs must be installed. The placement of vertical panels on concrete barrier and the close spacing of approved drums may, in some instances, contribute to restricted sight distance at roadway junctions. For additional guidance on channelizing device placement at intersections, driveways, and/or ramp junctions, see Standard Detail MD 104.01–29.

The following additional criteria should be considered when placing traffic control devices at intersections or ramp junctions:

- TCDs installed at or near intersections, including median openings or driveways, should be designed/installed with adequate corner sight distance (as suggested for intersections in Chapter 9 of AASHTO's "A Policy on Geometric Design of Highways and Streets", 2001 ed.). The area around the intersection should be kept free of obstacles.
- Sight distance along a ramp should be, at a minimum, equal to the safe stopping sight distance based on prevailing speed.
- There should be a clear view of the entire exit terminal, including the exit nose and a section of the ramp roadway behind the gore.

16.0 WORK ZONE SPEED LIMITS ALONG 65 AND 60 MPH ROADWAYS

16.1 Where it is necessary to reduce work zone speed limits along 65 and 60 MPH roadways, such reduced speed limits should be based on adequate engineering study /judgment and approved by the District Engineer. The reduced speed limit should usually be 5 MPH less than the normally posted speed limit, but shall be no more than 10 MPH less than the posted speed. The following guidelines are to be used in consideration of speed limit reduction in work zones:

- Work zone traffic controls should be designed to ensure adequate safety and mobility through work zones and provide site conditions consistent with prevailing operating speeds and driver expectations.
- Where the Engineer is considering reducing the posted speed limits to improve safety, such reduced speed limits should be based on adequate engineering study /judgment and approved by the District Engineer.
- Reduced speed limits should be posted only when the conditions that necessitate the reduced speed are actually present. It is essential to cover or remove reduced speed limit signs if work is not actually underway and site conditions do not require a reduced speed limit.
- Where the use of automated speed enforcement (ASE) is expected, any reduction in speed limits in work zones shall be jointly approved by District Engineer (DE) and Director of OOTS or shall be approved by DE in consultation with Director of OOTS.
- Use advisory speed limits for spot situations, such as sharp alignment changes or short section of narrow lanes.
- Advisory speed signing shall not be used with general warning signs (e.g. W20–1), or along sections of the work zone.
- The use of regulatory work zone speed limits should be made in conjunction with State Police usage.
- All traffic control devices are to be placed and maintained in accordance with SHA requirements and the MUTCD.
- Work zone speed limit signs shall be placed in accordance with SHA guidelines and standards (see MD 104.01–06 and MD 104.01–07 for additional information).

17.0 HIGHWAY/RAIL GRADE CROSSINGS

17.1 Where vehicles might be stopped within a highway–rail grade crossing, the limits of which are defined as 15 feet on either side of the outside rail, the following guidelines apply:

- Coordinate with appropriate agency or company having jurisdiction over the affected rail line prior to the start of road work. Do not set up any portion of the work zone within railroad right of way. The OOTS Railroad Coordinator (Phone (410) 787–5867) should be contacted if this information is not known.
- When a two–way flagging operation will result in a queue that extends across the highway–rail grade crossing, an additional flagger shall be provided at the approach to highway–rail grade crossing.
- Consider the railroad gate operation in the placement of traffic control devices.
- The DO NOT STOP ON TRACKS sign (design) shall be used on all approaches to a highway–rail grade crossing within the limits of a temporary traffic control zone.

18.0 TRAFFIC CONTROL PLANS

18.1 Alternate traffic control plans may be presented to the SHA District Office for approval in conformance with Section 104.01 of the Standard Specifications for Construction and Materials.

18.2 For emergency repair operations, a lesser number of traffic control devices (TCDs) than the full compliment may be used. This generally will consist of one sign per direction, flashing lights on the vehicle, and minimum number of channelizing devices, flags, or high level warning devices. Additional TCDs such as arrow panel(s), additional signing, etc., shall be placed as soon as possible in accordance with the standard TTCTA.

18.3 Where closely spaced work zones create conflicting traffic patterns (e.g. left–lane closure followed by right–lane closure), they should be no closer than 1.5 miles apart (last sign to first sign). Where work zones are closely spaced, but where traffic patterns are not significantly altered and no conflicts exist, no minimum spacing is required; however, care should be exercised to present appropriate and non–conflicting guidance to the public.

18.4 All signs, channelizing devices, and other traffic control devices shall be in conformance with the latest edition of the MUTCD.

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A Woman Owned Small Business

PROFESSIONAL CERTIFICATION:
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 31168

EXPIRATION DATE: 1/12/2025

WOOTTON AVENUE WATERLINE
WOOTTON AVENUE
POOLESVILLE, MARYLAND

NO.	DATE	DESCRIPTION

DATE:	JUNE 2023
CAA PROJECT NO.:	100.047
DRAWN BY:	MC
CHECKED BY:	JA

SHEET TITLE

TEMPORARY TRAFFIC CONTROL NOTES AND DETAILS (CONT.)

SHEET
C-801

J:\100.000 Poolesville General\100.047 – Wootton Ave Waterline\CAD\DWG\C–800 TEMPORARY TRAFFIC CONTROL NOTES AND DETAILS.dwg 2/12/2024 11:16 AM

ADDENDUM #2
BID DOCUMENTS FOR
Wootton Ave Water Line Replacement
POOLESVILLE, MARYLAND
CONTRACT 100.047
February 16, 2024
4:00 p.m.

This addendum is issued as part of the Bid Documents for the above referenced project. The changes incorporated into this addendum shall be considered as part of the documents and shall supersede, amend, add to, clarify, or subtract from those conditions shown in the original documents. The bidder shall take care to incorporate modifications herein with all trades and disciplines related to the work. The bidder shall acknowledge receipt of this addendum on the Bid Form by addendum number and date. Failure to do so may subject the bidder to disqualification.

Response to question;
See attached
Note some questions in this addendum reference Addendum #1 answers.

Attachments:

1) Typically, the project follows WSSC specifications which would require flowable fill of existing main and existing valves removed as well as returned to WSSC for salvage purposes. Is Flowable fill required and are the existing valves required removed/salvaged or can they be abandoned in place with boundaries capped or bulkheaded?
   Answer: Please see addendum #1, existing line is to be drained and caped, valves are to be abandoned in place.

2) The plans don't call for Proposed Fire Hydrants as discussed at Pre-bid, are contractors to include furnishing & installing new fire hydrants and if so is the WSSC detail applicable for installation & backfill requirements?
   Answer: Yes
3) Are existing Fire Hydrants that get removed to be disposed of or will the Town's maintenance personnel be coming by the project to pick them up for salvage purposes?
   Answer: You may dispose of them at Town WWTP.
4) Contractors in attendance at Pre-bid were instructed to proceed under the premise that no galvanized or Pex lines would be encountered and replacing Copper. Is there a salvage requirement (return to Town staff) for the existing Copper removed?
   Answer: what copper is required to be removed to make the connection is the property of the contractor.
5) At some of the boundary locations an 8" valve is called for; however, a Frederick Co. detail no. 116.1 depicts a 2" gate valve & valve box - kindly confirm if an additional 8" gate valve is to be installed at each boundary in addition to the 2" valve & blowoff shown on the detail?
   Answer: Please flow blow off a Frederick Co. detail no. 116.1 a 2" gate valve & valve box, only.

6) The Detail No. 4 on Sheet C-209, depicts a vertical drop w bends used to accommodate crossing all existing mains and states therein

that a portion of the existing cross main will need to be reconstructed after new main is operational - please clarify the intent and prescribed steps and if applicable to the existing watermain to be abandoned in place?

Answer: The it is envisioned that the contractor will need to leave the existing main an the new main active during connection to the laterals and the main connections. This may require the isolation of segments of the new main and existing main at various time during this process.

7) Buttresses are only called out at proposed 1/4 or 90 degree bends at a few locations on the plans however a few 1/32 bends, 1/16 bends may be required so as to not over-deflect the curvature of water mains called to attention on Detail No. 101.1 - will the Town also require buttresses at locations and bends not shown on the plans if and when installed?
   Answer: Please refer to WSSC standard detail B 1.0

8) Trench repair details provide a standard for repairing concrete roadway pavements, will contractors be repairing any concrete pavement roadway on this project and if so, are you able to provide dimensions or known locations?
   Answer: yes contractor will be replacing the flexible pavement (Asphalt).Please see addendum #1 for that detail. There are no concrete roads in this section of work.

9) Regarding Asphalt pavement full depth repairs, detail 3.1 stipulates a 6' minimum width for full depth asphalt including stone and an additional 3' cut back of full depth asphalt or total of 9' full depth. Is 9' the final mill / overlay width or is an additional 1' on either side required for surface layer of asphalt yielding a final 11' width in place restoration? Scaling off area on plans returns a 5' width which does not correlate to the detail?
   Answer: Please see answer to previous question.

10) Water House Connection details on Sheet C-209 stipulate insulated joints and V-Bio Polyethylene encasement of copper services, is V-Bio poly required on all proposed watermains and copper installation(s)?
Answer: this is waved for this project.

11) On Sheet C-208, WSSC detail M8.3 stipulates a full depth encasement in concrete totally encompassing both proposed water main deflected under the existing water main, please confirm this is required of if only applicable to sewer crossings and if so required will the mains require wrapped in Neoprene Rubber where contact with concrete is made?
Answer: Only under sewer is encasement required, protection of concrete interface is required.

12) On Sheet C-209, detail 2 for Concrete Sidewalk stipulates reinforcing bars used but the note for type and spacing is cut off – are you able to provide these details for use in including costs accordingly?
Answer: concrete sidewalk repairs will not require reinforcement.

13) The Town has advised a laydown area will be provided for storage of materials for the project, valves are required stored on pallets and under roof per the Spec; please provide the location of the staging area and confirm the area covered by a roof will be provided by the Town as well? Additionally, will a separate staging area be required for equipment if not allowed parked in the Right of Way?
Answer: there are two lay down areas available the skate park and Steven's park neither are covered, due to construction at WWTP the roofed area is unavailable, contractor should plan on supplying a temporary structure such as a container if required.

Parking of equipment in Right of Way will not be practical due to the limited space for the residents.

14) Rock is mentioned in the documents to be incidental, but no sub surface exploration records were provided for determining accurate quantities of rock demo / excavation and disposal to include as costs to the Town. Will the Town consider making this a unit price – Contingency line pay item - on this project to assure actual service rendered for funds expended?
Answer: Please see Addendum #1

15) Contract documents advise that at the forthcoming Pre - construction meeting, the contractor will be told how many chlorination points (taps and corp stops) will be introduced on the proposed main for subsequent use - will the Town consider making this a unit price Contingent line pay item to assure payment is only made for accurate quantities provided?
Answer: No

16) At the pre-bid it was discussed that no Environmental and or State Right of Way permits were to be secured by the Contractor, please confirm which if any permits the Contractor must secure from a Town, County, State or Department (i.e. Roadside Tree, ROW, Plumbing, etc)?
Answer: this is a Town project, as stated at the completion of each days work the site must be stabilized.

17) At Prebid it was discussed that - parking appeared to be an issue on this project and enforcing No Parking & onsite Re-location of vehicles not adhering to "No Parking signs" might be an issue. Will the TOWN be towing / relocating the vehicles in a prompt and expedient manner to not delay planned daily construction activities and eliminate potential costs and impacts to the Contractor?

Answer: The Town will conduct removal of vehicles as soon as practical. The contractor will need to post the site of the schedule of work three days in advance and notify the residents indviauly using a flyer. Within that flyer there should be a note directing to the Town's web site for additional details.
Please note it will be important to notify the Town weekly of an updated schedule.

18) At Prebid it was discussed that no plumbing cards or tabulated data for the Water House connections is known at this time. Contractors were instructed to include costs for 1 1/2" taps on existing 8" main which introduce (WSSC 2510, 3.6.B.4) the need for a Service Saddle where costs for this saddle as well as reducers might not be required had this info been known and 1" taps made, will the Town consider unit price Contingency line pay items for various sizes to address actual project needs or should the aforementioned worst case scenario materials be priced as instructed?
Answer: No

19) Will the Town consider requests for additional time as discussed at Pre-Bid based on actual lead times provided from Suppliers for materials at the actual time of award or post verification of existing main sizes by Contractor under award?
Answer: yes it will be considered due to supply chain issues.

20) Has the Town exercised the valves on existing main and assured ability to shut down the water for tie in purposes, and in the event of failures to control flow for tie in purposes will claims be entertained by the Town for the additional cost(s)?
Answer: the Town has exercised the existing valves, if unforeseen

conditions are found Change orders will be considered.

21) As discussed at Pre-bid the water main materials per WSSC spec are to be Class 54, please confirm the Class of pipe and that B.A.B.A. requirements are not applicable.
Answer: See Addendum #1

Do you have a suggested staging area you recommend?
Answer: please see Previous answers

May we have a geotechnical report?
Answer: Wooton Avenue Addendum #1 shows Boring Logs
Kohlhoss project no Borings were conducted

Will the owner reimburse for existing utilities damaged if not shown on the plans?
Answer: Contractor is to coordinate with Miss Utility if marks are not correct and plans do not show a utility correctly and a utility is damaged then the Town would reimburse. Please note test pitting should also take place to confirm depth of noted utilities as need by the contractor.

Due to current supply chain issues, will the owner consider issuing a second NTP for delays due to material availability?
Answer: The Town is aware of the continuing Supply chain issue and will consider on a as needed basis.

When actual conditions are different from the geotechnical report/information provided, will the contractor be entitled for additional compensation?
Answer: Yes please see addendum #1

Can you provide a website or documentation showing actual existing utilities?
Answer: no Town records are incomplete

Is there a minority or small and/or local business goal affiliated with this contract?
Answer: please see contract documents.
If so, what is the goal?
Answer: Please see contract Documents.

Do prevailing wages apply? If so, may I please have a copy of the applicable wages?
Answer: Please see Previous Answer to similar questions.

Please confirm the size of the water house connections.
If the size of the water house connections is larger or smaller,
If we exceed 3' reconnections, will owner reimburse for additional linear footage?
Answer: please refer to plans for dimensions, if for some reason at the connection point from the Main to the Existing lateral is longer than depicted on the plan then yes. Please note this will need to be confirmed by Town staff and reason why.

Will you provide technician for compaction?
Answer: Geotechnical technician will be the responsibility of the contractor for testing.

Please provide a Pipe Trench Detail.
Answer: Please follow WSSC standard Details

Please Clarify if the existing Hydrants will be replaced or they will stay in place.
Answers: Please see previous Answers.

Do we have to abandon existing pipe?
Answer: Please see previous Answers.

Do we have to provide a temporary water main in order to keep the houses with service?
Answer: Please Previous answers.

Do we have to abandon the existing water main with Flowable fill?
Answer: please see Previous answers

The plans are clear what portion of the trench has to be a proposed full depth asphalt pavement replacement within the limit of utility trenches and it is clear that the width between the dashed lines has to be 1.5" mill and overlay. Please confirm that we have to follow the plans.
Answer: Please see addendum #1

Please clarify also that the width of the patch trench has to follow the provided detail.
Answer: Please see addendum #1