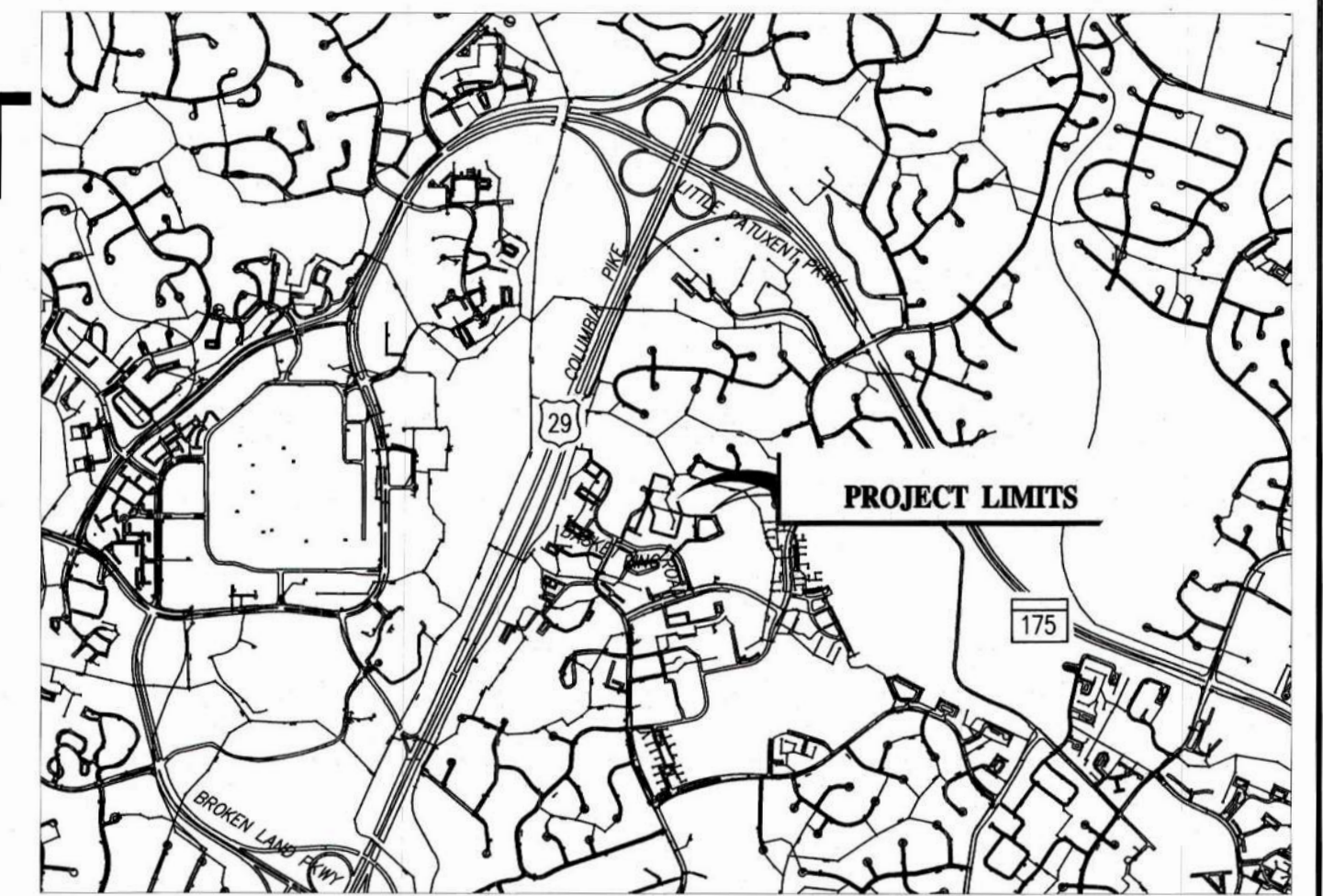


# WATER MAIN AND SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR BASKET RING ROAD

HOWARD COUNTY  
DEPARTMENT OF PUBLIC WORKS  
CAPITAL PROJECT NO. S6268/S6601  
CONTRACT NO. 453D-W&S-ADD 1



LOCATION MAP  
SCALE: 1"=2,000'

## GENERAL NOTES:

- APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON DECEMBER 2019 THROUGH JANUARY 2020 BY DANIEL CONSULTANTS, INC. (DCI). ADDITIONAL BASE MAPPING WAS PROVIDED BY HOWARD COUNTY GIS.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:
  - THE COORDINATES ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NOTED ON THIS SHEET.
  - ALL VERTICAL CONTROLS ARE BASED ON NAVD '88.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOLS IN THE LEGEND AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT THEIR OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 

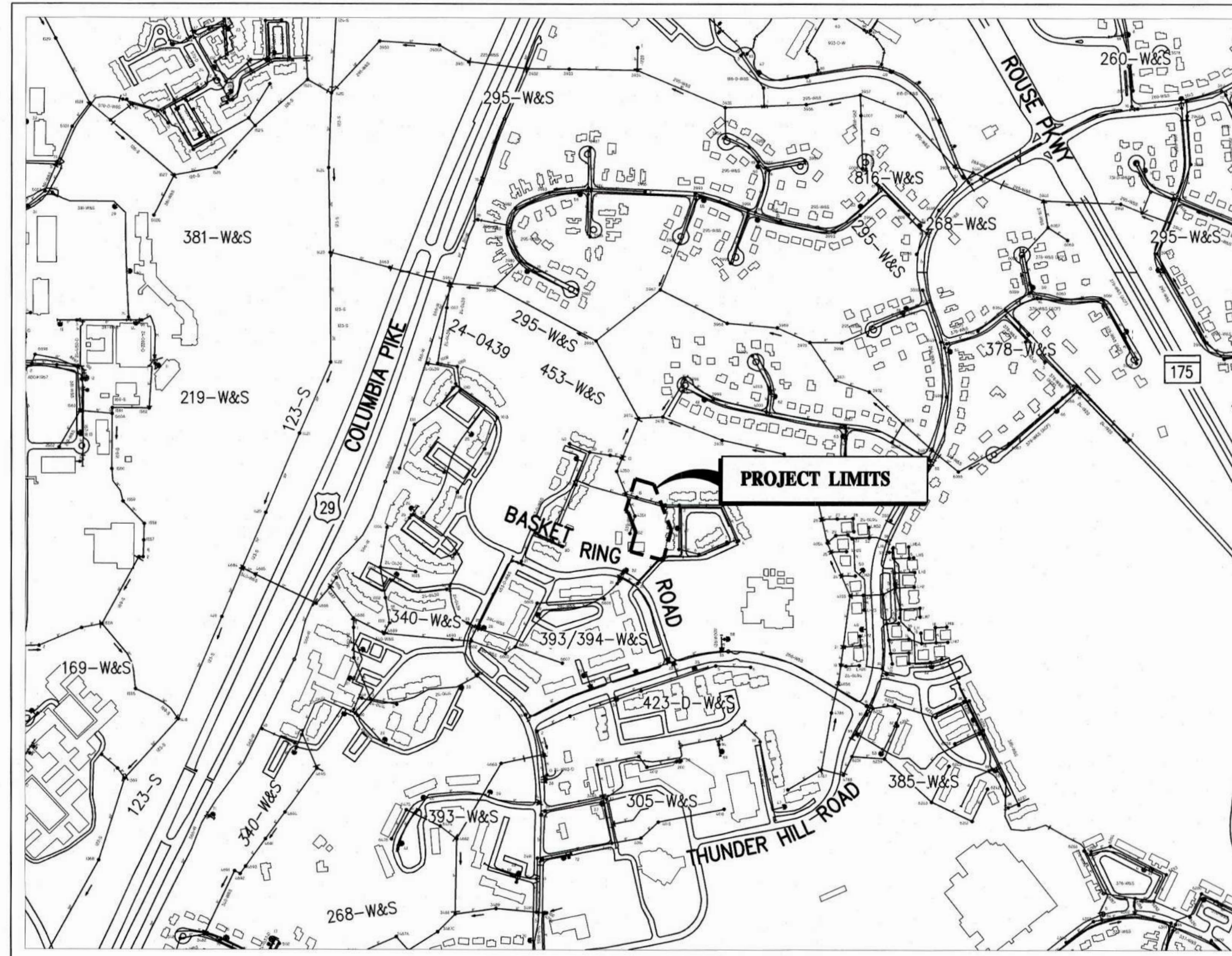
AT&T.....	800-252-1133
BGE (CONTRACTOR SERVICES).....	410-637-8713
BGE (EMERGENCY).....	410-685-0123
BUREAU OF UTILITIES.....	410-313-4900
COLONIAL PIPELINE CO.....	410-795-1390
MISS UTILITY.....	800-257-7777
STATE HIGHWAY ADMINISTRATION.....	410-531-5533
VERIZON.....	800-743-0033
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(A) OF THE HOWARD COUNTY CODE.
- MDE AUTHORIZED CONSTRUCTION PRIOR TO JPA APPROVAL DUE TO THE EMERGENCY NATURE OF THE PROJECT. MDE TRACKING NO. 21-NT-3115.

## GENERAL SEWER PLAN NOTES

- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED
- FORCE MAINS SHALL BE D.I.P. ONLY
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER. STANDARD DETAIL G5.52.  
WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED

## PURPOSE STATEMENT:

CONTRACT NO. 453D-W&S-ADD 1 INVOLVES THE STABILIZATION OF AN EXPOSED 6" DUCTILE IRON WATER MAIN AND A NEARBY SHALLOW 8" ASBESTOS CONCRETE SEWER PIPE. THE PROJECT PURPOSE IS TO PROTECT BOTH UTILITIES BECAUSE THEY ARE CURRENTLY VULNERABLE TO BREAKS OR COLLAPSE.



WATER ZONE: 550  
TEST GRADIENT: N/A  
TYPE OF BUILDINGS: N/A  
NUMBER OF PARCELS: N/A  
NO. OF WATER CONNECTIONS: N/A  
NO. OF SEWER CONNECTIONS: N/A  
DRAINAGE AREA: N/A

VICINITY MAP  
SCALE: 1"=600'

HOWARD COUNTY GEODETIC SURVEY CONTROL POINTS:

POINT NO.	NORTH	EAST	ELEVATION
TRAV 002	561504.2280	1356203.7150	408.25
TRAV 100	562440.1188	1357170.7882	407.06
TRAV 101	562803.7149	1357010.4077	391.80
TRAV 102	562989.1315	1356481.2287	411.03
TRAV 103*	563550.3763	1356253.8856	393.43
TRAV 104*	563755.7447	1356153.9833	375.94
TRAV 107	562991.6758	1356291.2039	409.51
TRAV 108	562853.2758	1356709.8413	405.92
TRAV 109	562414.9128	1357145.6299	405.97
TRAV 110	562135.5360	1357571.6750	416.77

\* SHOWN ON SHEET 2

## INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
01	TITLE SHEET AND INDEX OF DRAWINGS
02	EXISTING AND PROPOSED SITE PLANS
03	ENLARGED SITE PLAN
04	PROFILE AND DETAILS
05	EROSION AND SEDIMENT CONTROL PLAN
06	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
07	VEGETATIVE STABILIZATION NOTES-1
08	VEGETATIVE STABILIZATION NOTES-2

## GENERAL WATER PLAN NOTES

- ALL WATER MAINS SHALL BE D.I.P. CLASS 54 UNLESS OTHERWISE NOTED
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM
- TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE  
PIPES SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE.  
THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. 17 POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. 12 POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON
- PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF THE PVC PIPE.
- ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ONE FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE A VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.
  - PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1 1/2-DEGREE ON EITHER END OF THE COUPLING). SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTIEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.
  - FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR 18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (PEX) BLUE BRUTE DR18 OR EQUAL.
- WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLINGS AND 5-DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATES AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.

**AS-BUILT**  
03/18/2022

600 0 600 1200  
SCALE IN FEET

## OWNER/DEVELOPER CERTIFICATION:

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

Owner's/Developer's Signature: *[Signature]* Date: 10/26/2021

HSCD: EP-21-12

## HOWARD SOIL CONSERVATION DISTRICT:

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT (HSCD).

Howard Soil Conservation District Signature: *[Signature]* Date: 11/2/21

## ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Engineer's Signature: *[Signature]* Registration Number: 20021 Date: 10/1/2021

## EROSION AND SEDIMENT CONTROL NARRATIVE

THE STREAM RESTORATION AND SEWER REPAIR WILL PROTECT NATURAL RESOURCES AND PREVENT POSSIBLE SURFACE WATER CONTAMINATION BY SEWAGE. THE SEWER FLOW AND THE NATURAL CHANNEL FLOW WILL BE TEMPORARILY PUMPED AROUND THE WORK AREA AND RETURNED UPON COMPLETION OF THE REPAIRS. MDE STANDARD PRACTICES FOR WATERWAY CONSTRUCTION AND EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED. ALL DISTURBED AREAS WILL RECEIVE SAME DAY STABILIZATION.

## OWNER/DEVELOPER

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
UTILITY DESIGN DIVISION  
7125 RIVERWOOD DRIVE, SUITE B  
COLUMBIA, MD 21046  
SANJAY KULKARNI, PE, 410-313-6122

ENGINEER  
GANNETT FLEMING, INC.  
7133 RUTHERFORD ROAD, SUITE 300  
BALTIMORE, MD 21233  
JEFFREY STAMM, PE, 443-676-8238

## DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* Date: 10/29/2021  
Chief, Bureau of Engineering: *[Signature]* Date: 10-28-21  
Chief, Bureau of Utilities: *[Signature]* Date: 10-29-21  
Chief, Utility Design Division: *[Signature]* Date: 10/2/2021

PROFESSIONAL CERTIFICATION:  
I HEREBY 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. 20021, EXPIRATION DATE: 05/02/2023

**Gannett Fleming**  
BALTIMORE, MARYLAND

DES:	BY:	NO.:	REVISION:	DATE:
JRW	JMS	1	AS-BUILT	3/22
DRN:	SJM			
CHK:	JMS			
SIGN DATE:	10/1/2021			

OCTOBER 2021  
TITLE SHEET, GENERAL NOTES,  
AND INDEX OF DRAWINGS

600' SCALE MAP NO. 36

PROJECT NO. S6268/S6601  
CONTRACT NO. 453D-W&S-ADD 1  
WATER MAIN AND SANITARY SEWER STABILIZATION  
AT STREAM CROSSING NEAR  
BASKET RING ROAD  
ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SCALE:  
AS SHOWN  
SHEET NO.  
1 OF 8

**SHEET NOTES:**

- EXISTING SITE CONDITIONS ARE BASED ON GIS, RECORD DRAWINGS, AND FIELD MEASUREMENTS OF SURFACE FEATURES COLLECTED ON NOVEMBER 11, 2019. NEITHER THE OWNER OR ENGINEER WARRANTS OR GUARANTEES THE ACCURACY OF THIS PORTRAYAL. VERIFY THE LOCATIONS AND CHARACTERISTICS OF BELOW-GRADE UTILITIES AND OTHER FACILITIES AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL STANDARDS, SPECIFICATIONS, AND REQUIREMENTS.
- STREAM DOES NOT HAVE A USE CLASS, BUT IS A TRIBUTARY TO A USE 1 CLASS STREAM. A USE CLASS 1 STREAM BUFFER OF 75 FEET IS SHOWN.
- STREAM DOES NOT HAVE A USE CLASS OR IMPAIRMENT STATUS, BUT IS A TRIBUTARY TO AN UNNAMED USE CLASS IV-P TRIBUTARY TO THE LITTLE PATUXENT RIVER THAT IS IMPAIRED BY SEDIMENT (CATEGORY 4A) AND CHLORIDES (CATEGORY 5). A USE CLASS IV-P 100-FOOT STREAM BUFFER BOUNDARY IS SHOWN.

**CONSTRUCTION NOTES**

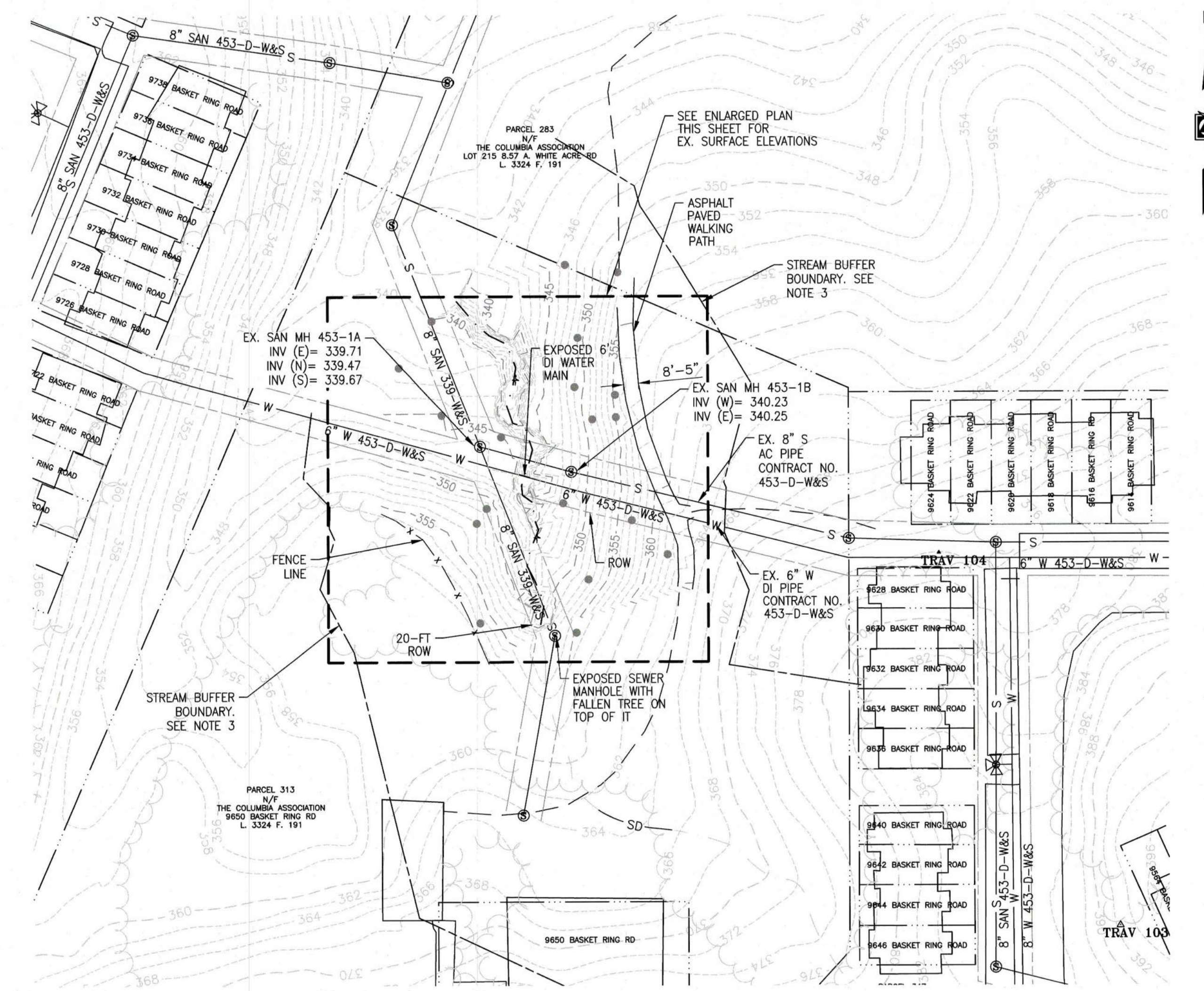
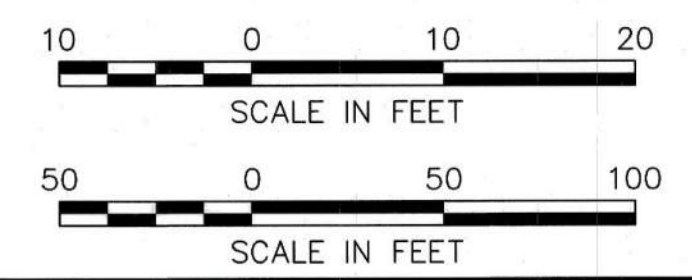
- THE CONTRACTOR SHALL COORDINATE MATERIAL DELIVERY WITH SERENITY CENTER STAFF.
- CONTRACTOR STAFF SHALL NOT PARK IN THE SERENITY CENTER PARKING LOT.
- CONTRACTOR TO REPAIR ANY DAMAGE TO THE PARKING LOT AND/OR WALKING PATH IF ANY DAMAGE OCCURS DURING CONSTRUCTION.

**LEGEND**

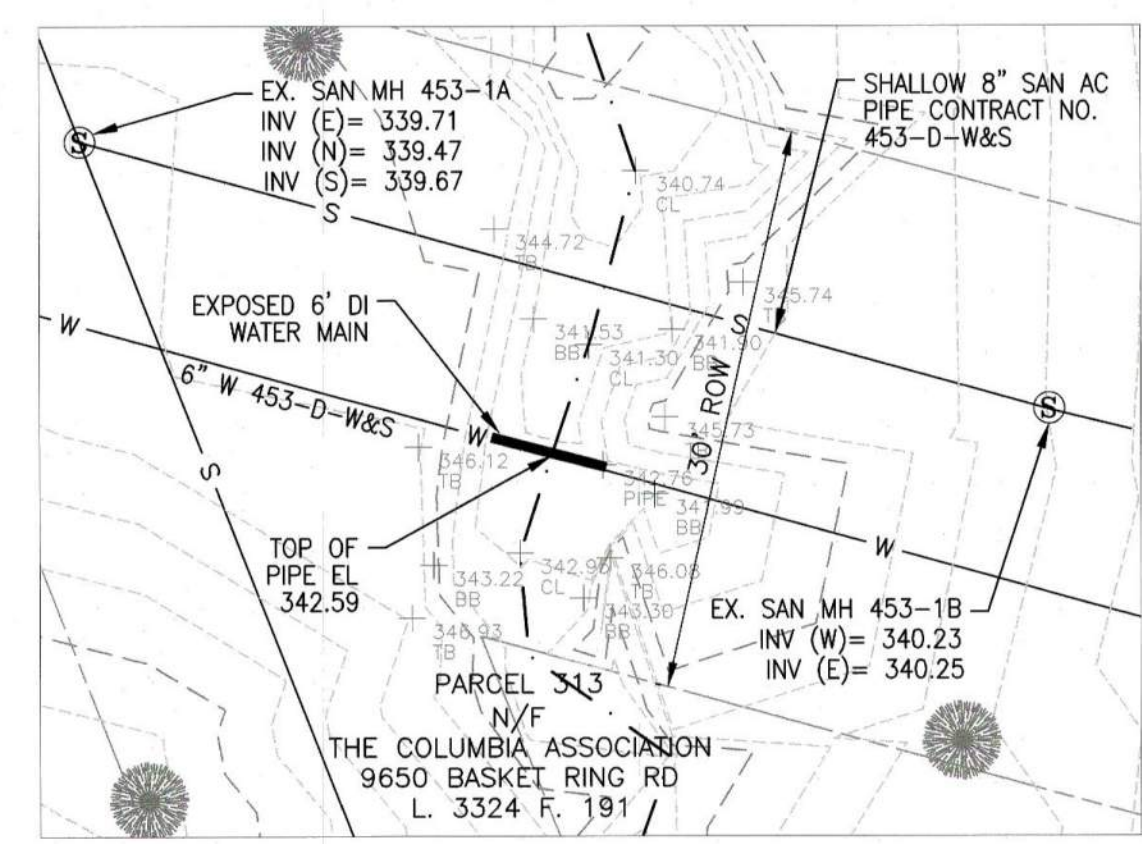
- EXISTING PROPERTY LINE
- EXISTING SANITARY SEWER RIGHT-OF-WAY
- EXISTING STREAM BUFFER BOUNDARY
- EXISTING TREELINE
- EXISTING TREE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- ⊙ EXISTING SANITARY SEWER MANHOLE (SURVEY)
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING STREAM WITH FLOW DIRECTION
- EXISTING SPOT ELEVATION  
BB= BOTTOM BANK  
TB= TOP BANK  
CL= CENTERLINE
- EXISTING STREAM BUFFER (100-FT)
- EXISTING BUILDING
- LIMITS OF STREAM BUFFER (100-FT)
- STABILIZED CONSTRUCTION ENTRANCE
- MULCH ACCESS ROAD
- PAVED PRIVATE ACCESS ROAD
- BYPASS PUMP AND PIPING
- TREE REMOVAL
- ⊙ 2/4 — DETAIL DESIGNATION  
DRAWING NUMBER WHERE SHOWN

**SITE ANALYSIS:**

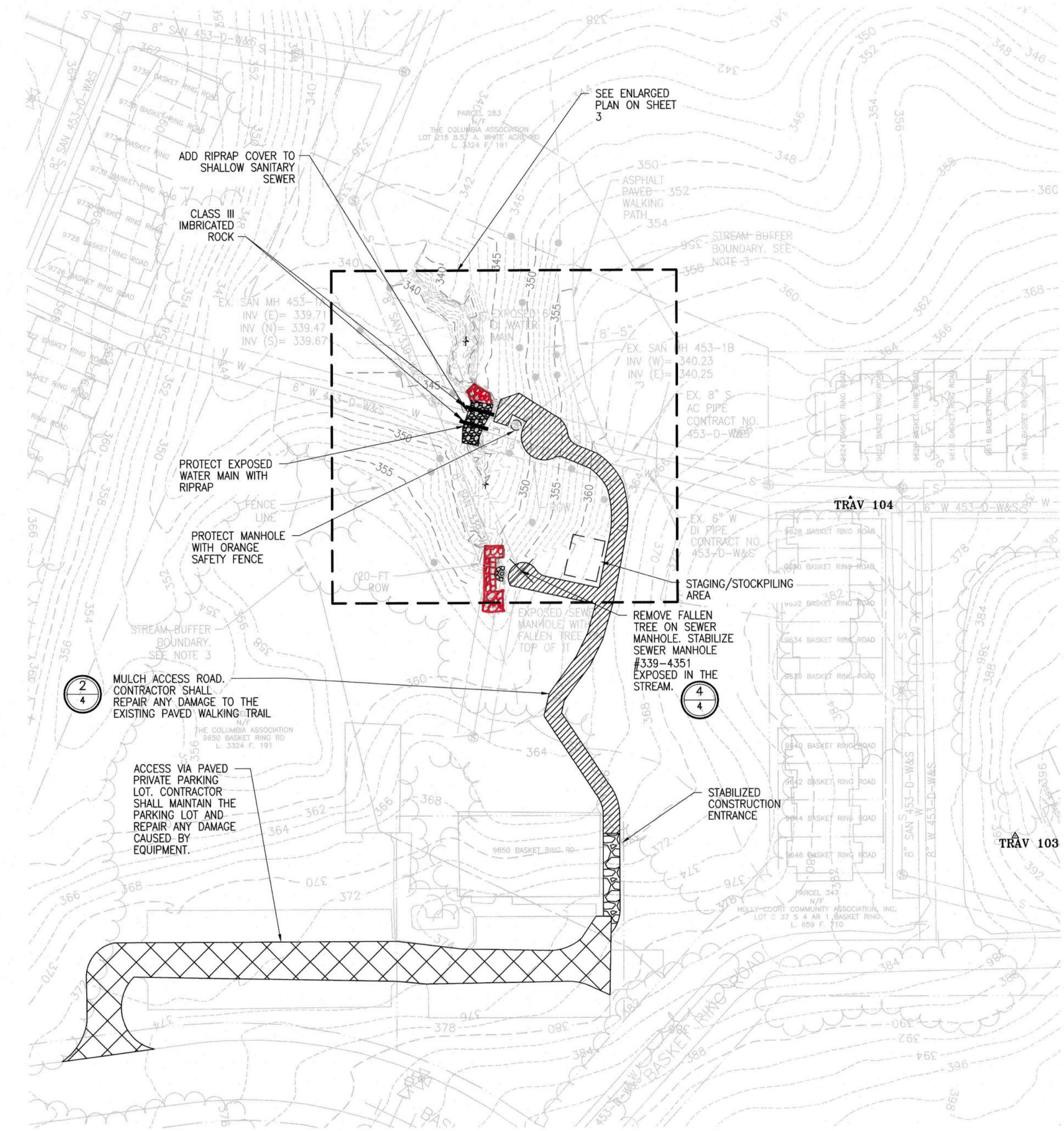
- TOTAL AREA OF SITE: 0.23 ACRES (10,229 SQ. FT.)
- AREA DISTURBED: 0.23 ACRES (10,924 SQ. FT.)
- AREA TO BE ROOFED OR PAVED: 0 ACRES
- AREA TO BE VEGETATIVELY STABILIZED: 0.23 ACRES (10,924 SQ. FT.)
- TOTAL CUT: 0 CU. YDS.
- TOTAL FILL: 32 CU. YDS.
- OFFSITE WASTE/BORROW AREA LOCATION: TO BE DETERMINED
- STREAM CHANNEL AREA DISTURBED: 0.02 ACRES (841 SQ. FT.)
- STREAM BUFFER AREA DISTURBED: 0.22 ACRES (9,388 SQ. FT.) SEE NOTE 3.



**EXISTING SITE PLAN**  
SCALE: 1"=50'



**ENLARGED EXISTING SITE PLAN**  
SCALE: 1"=10'



**SITE PLAN**  
SCALE: 1"=50'

**AS-BUILT**  
03/18/2022

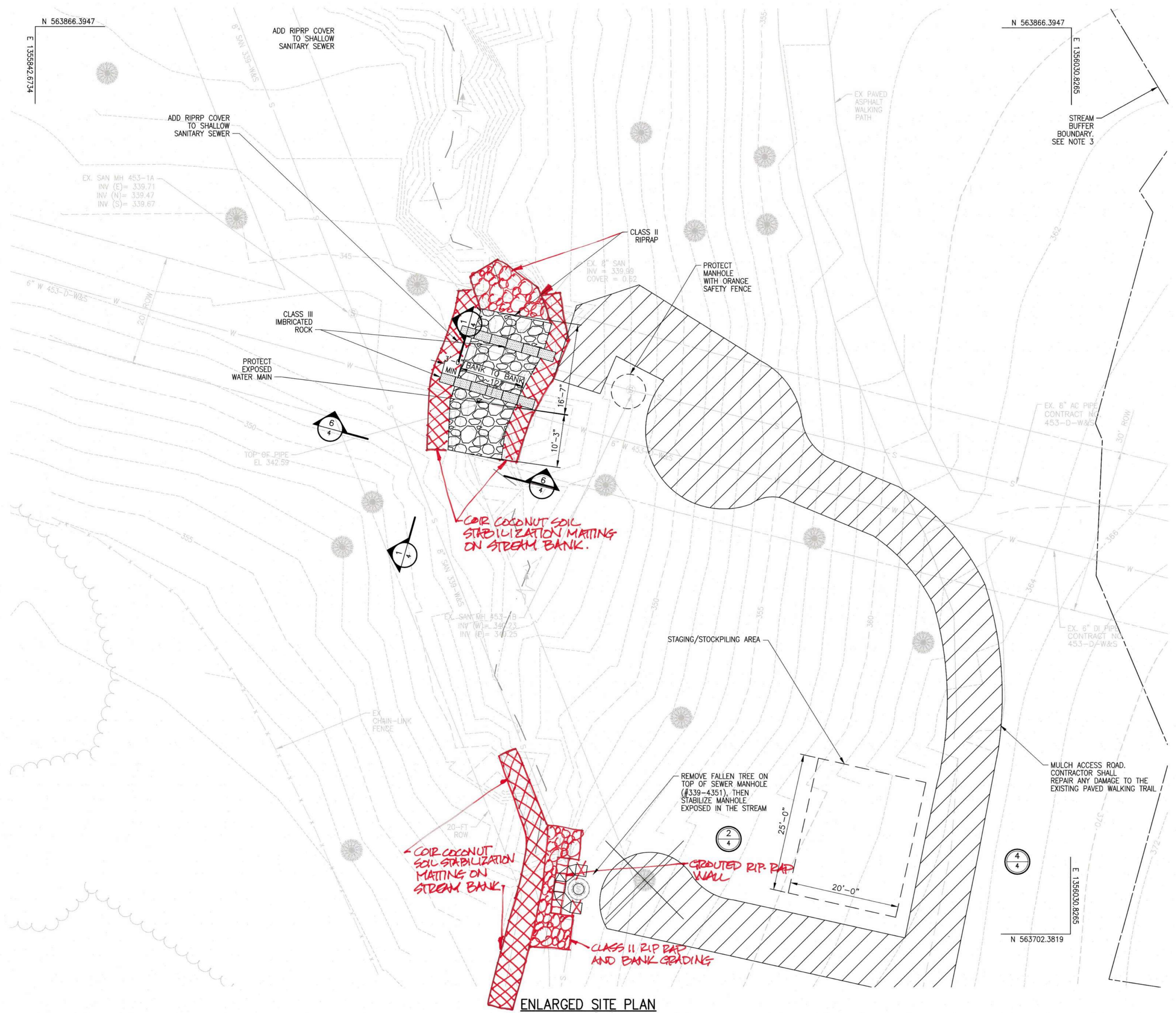
<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>Meyn</i> 10/29/22 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>SRK</i> 10-29-22 CHIEF, BUREAU OF UTILITIES DATE</p> <p><i>SRK</i> 10-28-22 CHIEF, BUREAU OF ENGINEERING DATE</p> <p><i>SRK</i> CHIEF, UTILITY DESIGN DIVISION DATE</p>	<p>PROFESSIONAL CERTIFICATION: I HEREBY 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. 20821, EXPIRATION DATE: 05/02/2023</p> <p><b>Gannett Fleming</b> BALTIMORE, MARYLAND</p>		<p>DES: JRW BY NO. JMS DRN: JRW CHK: JMS SIGN DATE: 10/1/2021</p>	<p>REVISION</p> <p>1. AS-BUILT</p>	<p>DATE: 3/22</p>	<p>OCTOBER 2021</p> <p><b>EXISTING AND PROPOSED SITE PLANS</b></p> <p>600' SCALE MAP NO. 36</p>	<p>CAPITAL PROJECT NO. S6268/S6601 CONTRACT NO. 453D-W&amp;S-ADD 1 <b>WATER MAIN AND SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR BASKET RING ROAD</b></p> <p>ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND</p>	<p>SCALE: AS SHOWN</p> <p>SHEET NO. 2 OF 8</p>
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**SHEET NOTES:**

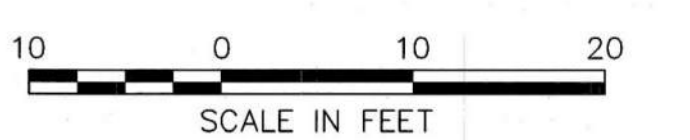
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**LEGEND**

- EXISTING STREAM
- EXISTING UTILITY ROW
- EXISTING TREELINE
- EXISTING TREE
- EXISTING TREE REMOVAL
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- LIMITS OF STREAM BUFFER (100-FT)
- ACCESS ROAD
- CLASS II RIPRAP
- CLASS III IMBRICATED STONE



**AS-BUILT**  
03/18/2022



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/29/2021  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10-28-21  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 10-29-21  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 10/21/2021  
CHIEF, UTILITY DESIGN DIVISION DATE

PROFESSIONAL CERTIFICATION:  
I HEREBY 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. 20821, EXPIRATION DATE: 05/02/2023

**Gannett Fleming**  
BALTIMORE, MARYLAND



DES:	BY:	NO.	REVISION	DATE
JRW	JMS	1	AS-BUILT	3/22
JRW				
JMS				
SIGN DATE: 10/1/2021				

OCTOBER 2021

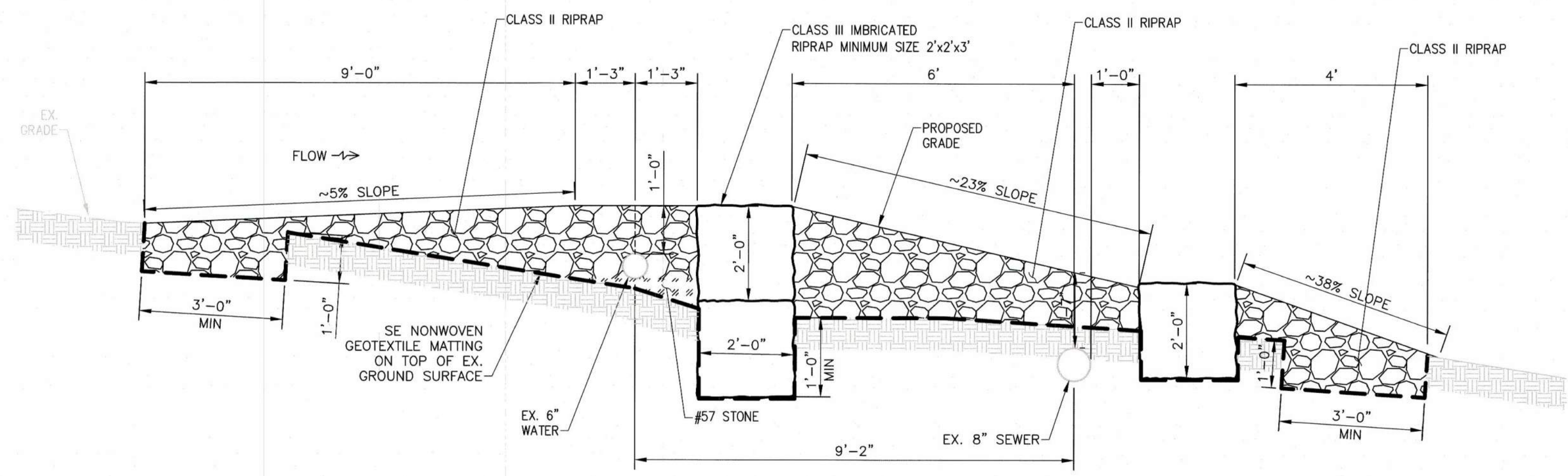
**ENLARGED SITE PLAN**

600' SCALE MAP NO. 36

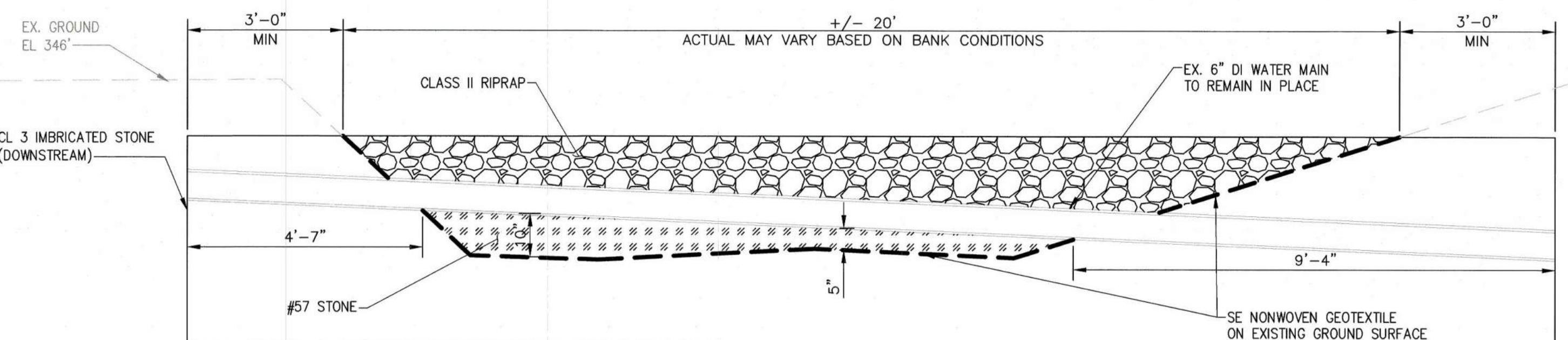
CAPITAL PROJECT NO. S6268/S6601  
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**WATER MAIN AND SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR BASKET RING ROAD**  
ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

SCALE:  
AS SHOWN

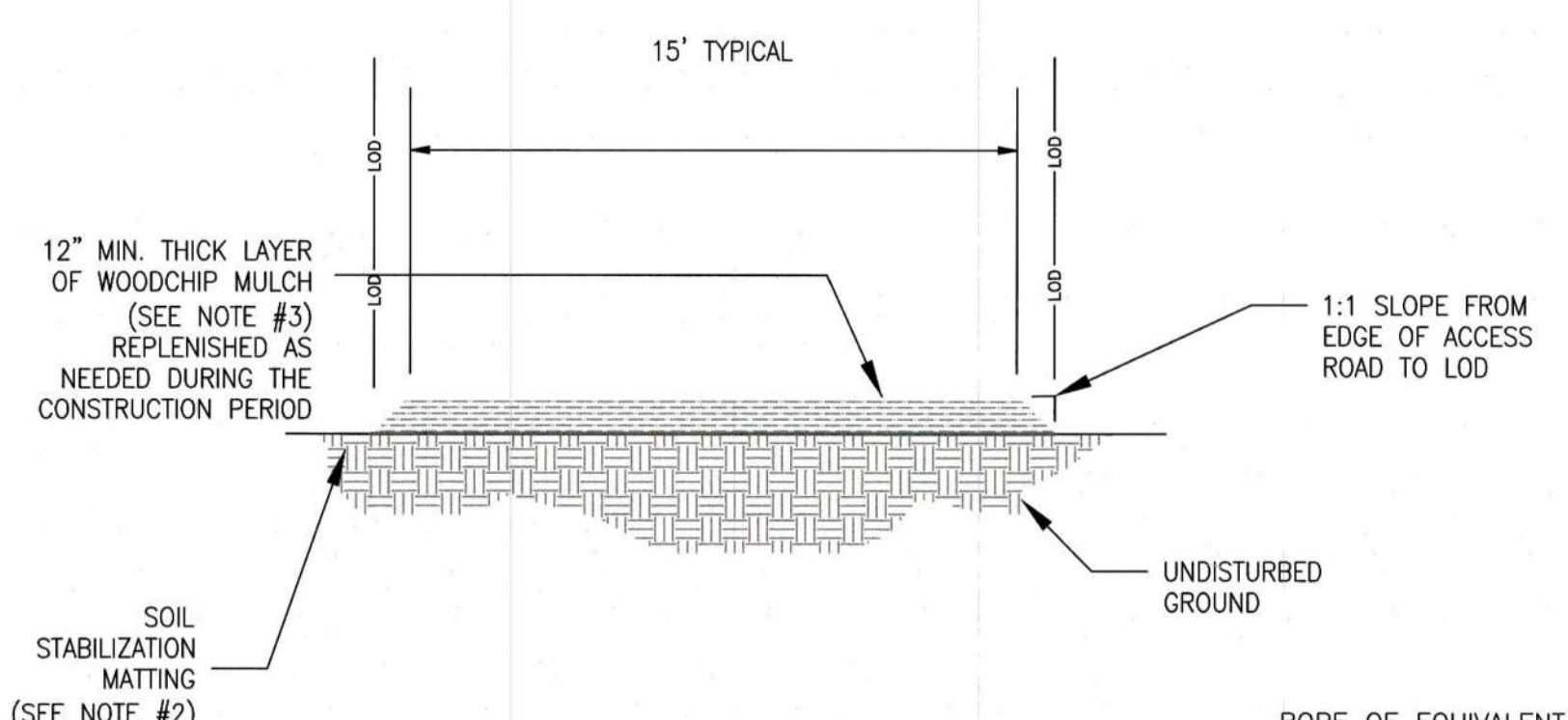
SHEET NO.  
3 OF 8



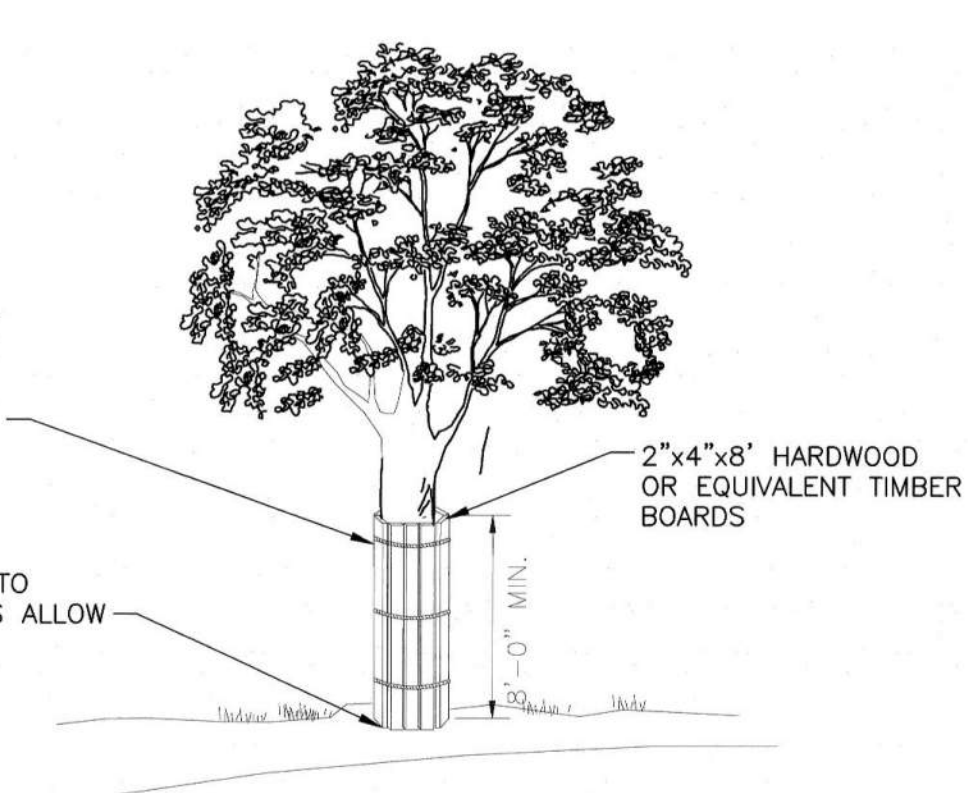
1  
3 STREAM STABILIZATION PROFILE (TYP)  
SCALE: NO SCALE



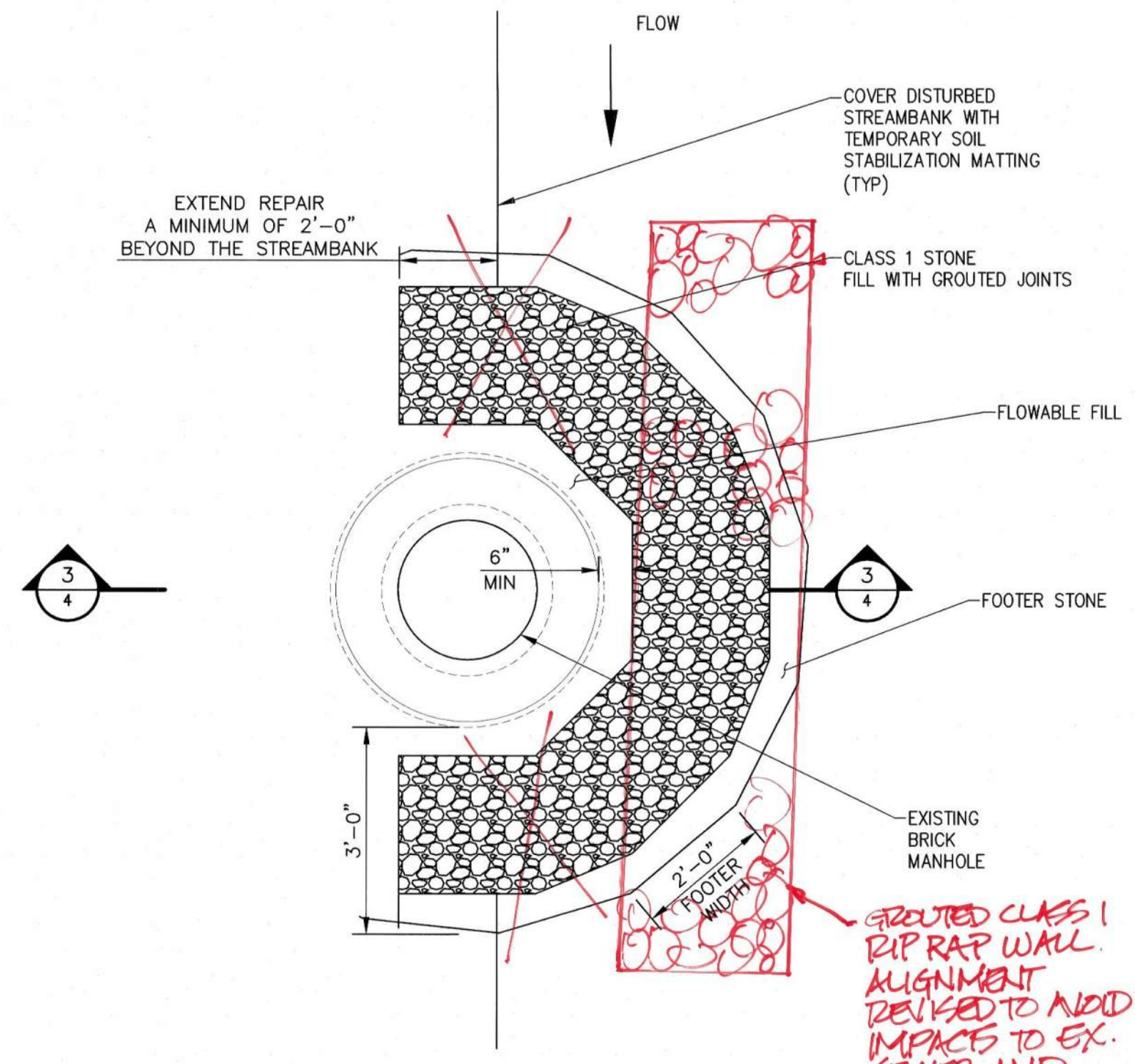
6  
3 STREAM CROSS SECTION (TYP)  
SCALE: NO SCALE



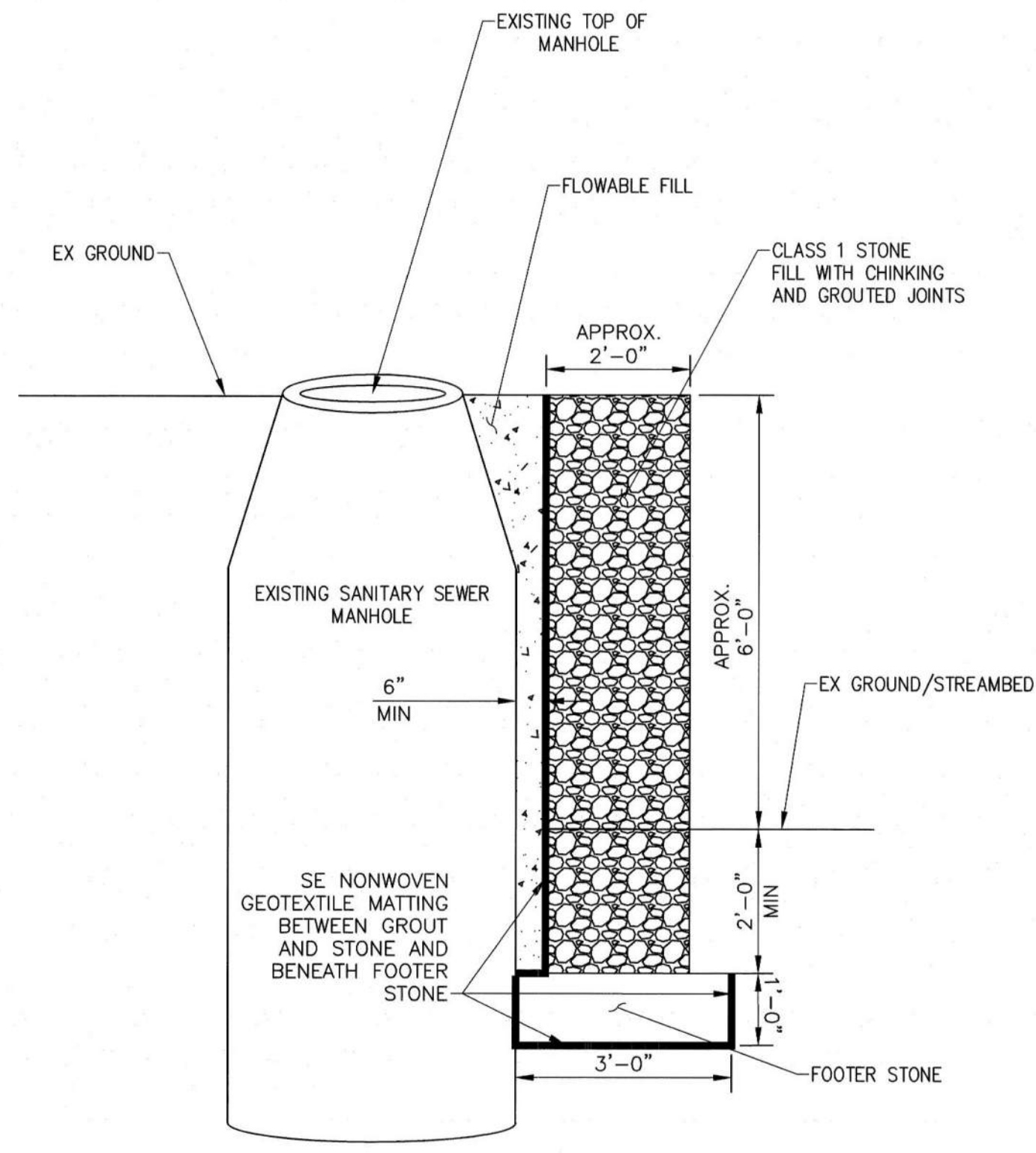
4  
2 MULCH ACCESS ROAD  
SCALE: NO SCALE



5  
2 TREE PROTECTION DETAIL  
SCALE: NO SCALE



2  
3 MANHOLE STABILIZATION PLAN  
SCALE: 6" = 1'-0"



3  
3 MANHOLE STABILIZATION SECTION  
SCALE: 6" = 1'-0"

**SHEET NOTES:**

1. SUB-GRADE BENEATH THE PROPOSED STONE SHALL HAVE A MINIMUM BEARING CAPACITY OF 1,500 PSF. THE CONTRACTOR IS TO PERFORM MECHANICAL CONE PENETRATION TESTING (ASTM D3441-16) TO DETERMINE SUBGRADE STRENGTH.

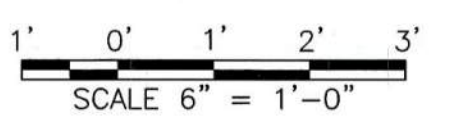
**RIPRAP SPECIFICATIONS**

1. IMBRICATED STONE/RIPRAP: IMBRICATED STONE SHALL BE CLASS 3, AS DEFINED IN HOWARD COUNTY SPECIFICATION VOLUME IV. RIPRAP: IMBRICATED RIPRAP SHALL BE ANGULAR AND BLOCKY IN SHAPE SUCH THAT THEY CAN BE STACKED TO PREVENT DISPLACEMENT.

**TEMPORARY SOIL STABILIZATION MATTING**

1. MATERIALS:
- 1.1. THE MATTING SHALL CONSIST OF 100% HIGH STRENGTH COCONUT FIBER WHICH IS TWISTED AND WOVEN IN A GRID WITH AN OPEN AREA OF 50% (+/- 2%); NO SYNTHETIC FIBERS ARE PERMISSIBLE. THE THICKNESS OF THE MATTING SHALL BE 0.35 INCH WITH A DRY WEIGHT OF 23 OZ/SY.
  - 1.2. STAPLES: LANDSCAPE STAPLES SHALL BE U-SHAPED STEEL WIRE, TWELVE (12) INCHES IN LENGTH AND A MINIMUM OF 1 INCH WIDE.
  - 1.3. DEAD STOUT STAKES: DEAD STOUT STAKES MAY BE PURCHASED OR PREPARED BY THE CONTRACTOR. THESE STAKES ARE CONSTRUCTED FROM UNTREATED, MILLED, 2X4 HARDWOOD LUMBER. THE DEAD STOUT STAKES ARE CONSTRUCTED BY CUTTING THE LUMBER INTO 3-FOOT LENGTHS. EACH LENGTH SHALL BE CUT AGAIN DIAGONALLY AND LONGITUDINALLY ACROSS THE ENTIRE LENGTH TO MAKE TWO TRIANGULAR (OR WEDGED) SHAPED STAKES FROM EACH LENGTH. THE DIAGONAL CUT BEGINS AND ENDS 1/8 INCH FROM THE EDGE OF THE PIECE SO THE FINISHED STAKE WILL HAVE A 1/8 INCH WIDE TIP WHICH WILL BE INSERTED INTO THE SUBSTRATE OR MATERIAL.
  - 1.4. ACCEPTABLE PRODUCTS: ROLANKA BIOD-MAT 70 OR APPROVED EQUAL.
2. CONSTRUCTION
- 2.1. SLOPE TO BE COVERED SHALL BE FINE GRADED, SEEDED AT THE RATE SHOWN ON THE PLANS, AND TAMPED SO THERE ARE NO AIR POCKETS, VOIDS, OR PROTRUSIONS, INCLUDING ROOTS AND SOIL CLODS.
  - 2.2. LAY MATTING BEGINNING AT THE TOE OF THE SLOPE AT THE UPSTREAM LIMIT OF THE MATTING, AND FASTEN EDGE OF MATTING USING STAPLES.
  - 2.3. UNROLL MATTING PARALLEL TO SLOPE, MAKING SURE THERE IS FULL CONTACT BETWEEN SOIL AND MATTING. THERE SHALL BE NO VOIDS BETWEEN THE MATTING AND THE SOIL. CONSECUTIVE ROLLS SPLICED ACROSS THE SLOPE SHALL BE OVERLAPPED 3 INCHES FROM UPSTREAM TO DOWNSTREAM. PLACE STAPLES 1-FOOT APART ALONG EDGES AND WHERE MATTING SECTIONS OVERLAP.
  - 2.4. CONTINUE THE PROCESS MOVING UP-SLOPE. OVERLAP MATTING EDGES 3 INCHES, AND SHINGLE SUCH THAT THE UP-SLOPE MATTING OVERLAPS THE DOWNSLOPE MATTING.
  - 2.5. CONTINUE PROCESS UNTIL THE AREA SHOWN ON THE PLANS IS COVERED. AT THE UP-SLOPE LIMITS OF THE MATTING, CUT A 6-INCH BY 6-INCH TRENCH AND PLACE THE EDGE OF THE MATTING INTO THE TRENCH. SECURE WITH STAPLES, THEN BACKFILL WITH SOIL AND COMPACT.
  - 2.6. AT THE TOE OF SLOPE, SECURE MATTING WITH DEAD STOUT STAKES PLACED IN TRIANGULAR PATTERN IN TWO ROWS AT THE BOTTOM AND APPROXIMATELY 18 INCHES ABOVE THE BOTTOM OF THE MATTING. THE MATTING SHALL BE PROPERLY SECURED SUCH THAT IT WILL NOT BE DISPLACED DURING STORM EVENTS. SPACING BETWEEN THE STAKES SHALL BE 3 FEET.

**AS-BUILT**  
03/18/2022

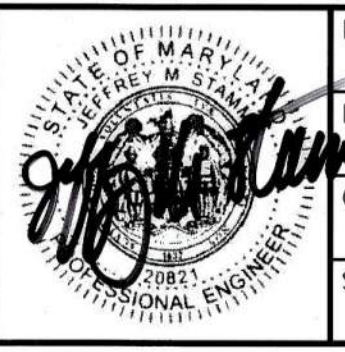


DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *Meyers* 10/29/2021  
 Chief, Bureau of Engineering: *[Signature]* 10-28-21  
 Chief, Bureau of Utilities: *[Signature]* 10-25-21  
 Chief, Utility Design Division: *[Signature]* 10/27/2021

PROFESSIONAL CERTIFICATION:  
I HEREBY 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. 20821, EXPIRATION DATE: 05/02/2023

**Gannett Fleming**  
BALTIMORE, MARYLAND



DES:	BY:	NO.:	REVISION:	DATE:
JRW	JRW	045	AS-BUILT	2/22
CHK:	JMS			
SIGN DATE:	10/1/2021			

OCTOBER 2021

PROFILE AND DETAILS

600' SCALE MAP NO. 36

CAPITAL PROJECT NO. S6268/S6601  
 CONTRACT NO. 453D-W&S-ADD 1  
 WATER MAIN AND SANITARY SEWER STABILIZATION  
 AT STREAM CROSSING NEAR  
 BASKET RING ROAD

ELECTION DISTRICT NO. 2      HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
 SHEET NO. 4 OF 8



**SHEET NOTES:**

- EXISTING SITE CONDITIONS ARE BASED ON GIS, RECORD DRAWINGS, AND FIELD MEASUREMENTS OF SURFACE FEATURES COLLECTED ON NOVEMBER 11, 2019. NEITHER THE OWNER OR ENGINEER WARRANT OR GUARANTEES THE ACCURACY OF THIS PORTRAYAL. VERIFY THE LOCATIONS AND CHARACTERISTICS OF BELOW-GRADE UTILITIES AND OTHER FACILITIES AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL STANDARDS, SPECIFICATIONS, AND REQUIREMENTS.
- STREAM DOES NOT HAVE A USE CLASS OR IMPAIRMENT STATUS, BUT IS A TRIBUTARY TO AN UNNAMED USE CLASS IV-P TRIBUTARY TO THE LITTLE PATUXENT RIVER THAT IS IMPAIRED BY SEDIMENT (CATEGORY 4A) AND CHLORIDES (CATEGORY 5). A USE CLASS IV-P 100-FOOT STREAM BUFFER BOUNDARY IS SHOWN.

**LEGEND**

- EXISTING STREAM
- EXISTING SANITARY SEWER EASEMENT
- EXISTING TREELINE
- EXISTING TREE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING BUILDING
- LIMITS OF STREAM BUFFER (75-FT)
- SOIL TYPE BOUNDARY
- LIMITS OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- ACCESS ROAD
- FILTER BAG
- SUPER SILT FENCE
- BYPASS PUMP AND PIPING
- TREE PROTECTION FENCE
- ESC STRUCTURE DRAINAGE AREA
- EXISTING SLOPE 15%-20%
- EXISTING SLOPE >=20%

**EROSION AND SEDIMENT CONTROL PLAN**  
SCALE: 1"=20'

**AS-BUILT**  
03/18/2022



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 10/29/2021  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 10/28/21  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 10/27/2021  
CHIEF, UTILITY DESIGN DIVISION DATE

*[Signature]* 10/29/21  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* SRK  
CHIEF, UTILITY DESIGN DIVISION DATE

PROFESSIONAL CERTIFICATION:  
I HEREBY 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. 20821, EXPIRATION DATE: 05/02/2023

**Gannett Fleming**  
BALTIMORE, MARYLAND



DES:	JRW	BY:	JMS	NO.:	AS-BUILT	REVISION:		DATE:	3/22
DRN:	JRW	CHK:	JMS	SIGN DATE:	10/1/2021				

OCTOBER 2021

**EROSION AND SEDIMENT CONTROL PLAN**

600' SCALE MAP NO. 36

CAPITAL PROJECT NO. S6268/S6601  
CONTRACT NO. 453D-W&S-ADD 1  
**WATER MAIN AND SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR BASKET RING ROAD**

ELECTION DISTRICT NO. 2  
HOWARD COUNTY, MARYLAND

SCALE:  
AS SHOWN

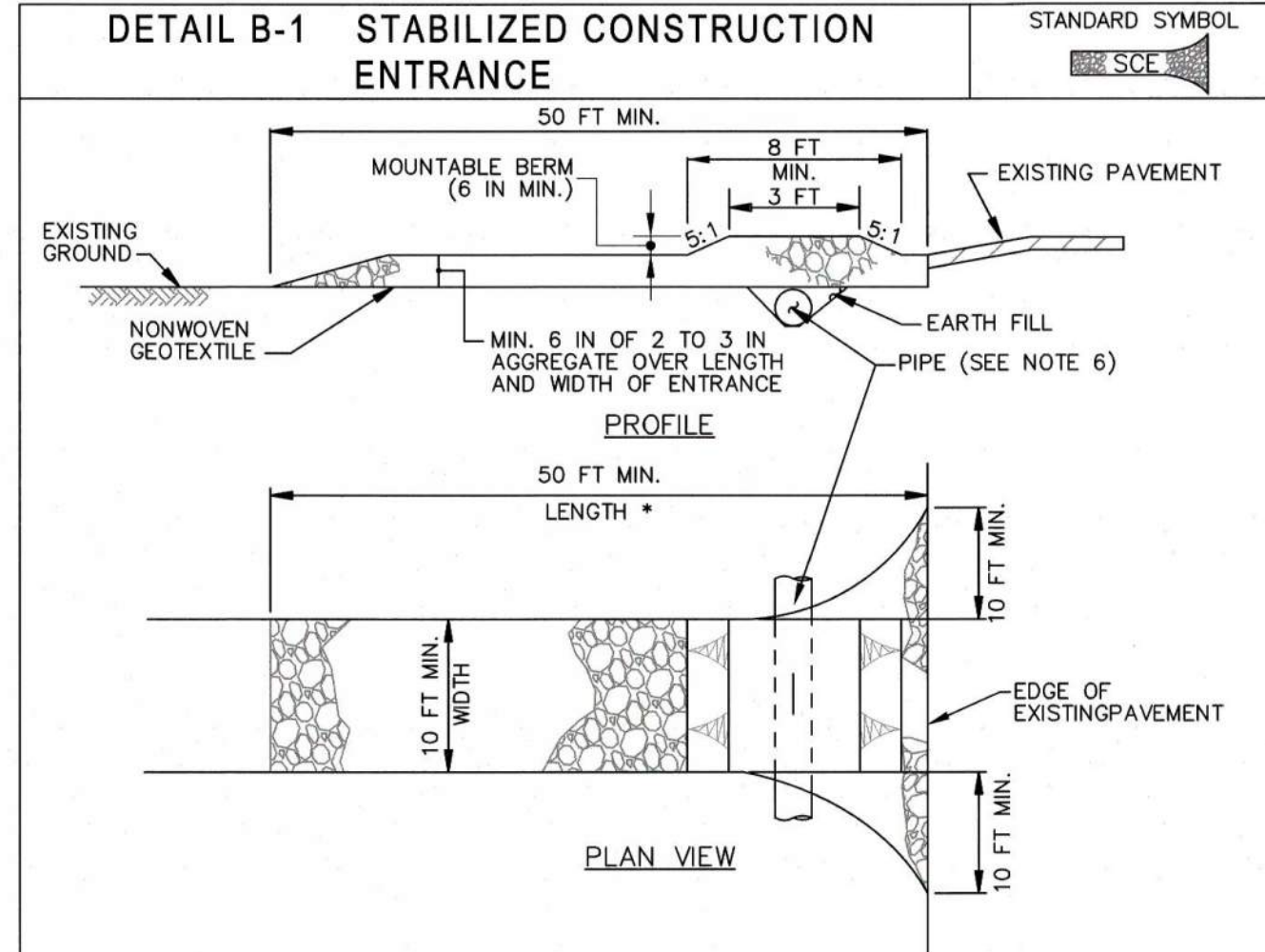
SHEET NO.  
5 OF 8

**HOWARD SOIL CONSERVATION DISTRICT (HSCD)  
STANDARD SEDIMENT CONTROL NOTES**

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
  - a. PRIOR TO THE START OF EARTH DISTURBANCE.
  - b. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
  - c. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
  - d. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
- OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.
6. SITE ANALYSIS:
  - TOTAL AREA OF SITE: 0.23 ACRES (10,229 SQ. FT.)
  - AREA TO BE ROOFED OR PAVED: 0 ACRES
  - AREA TO BE VEGETATIVELY STABILIZED: 0.23 ACRES (10,229 SQ. FT.)
  - TOTAL CUT: 0 CU. YDS.
  - TOTAL FILL: 32 CU. YDS.
  - OFFSITE WASTE/BORROW AREA LOCATION: TO BE DETERMINED BY CONTRACTOR AND HAVE AN ACTIVE GRADING PERMIT
7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
  - INSPECTION DATE
  - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
  - NAME AND TITLE OF INSPECTOR
  - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
  - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
  - EVIDENCE OF SEDIMENT DISCHARGES
  - IDENTIFICATION OF PLAN DEFICIENCIES
  - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
  - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
  - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
  - PHOTOGRAPHS
  - MONITORING/SAMPLING
  - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
  - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UP HILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
  - USE I AND IP MARCH 1 - JUNE 15
  - USE III AND IIIIP OCTOBER 1 - APRIL 30
  - USE IV MARCH 1 - MAY 31
16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

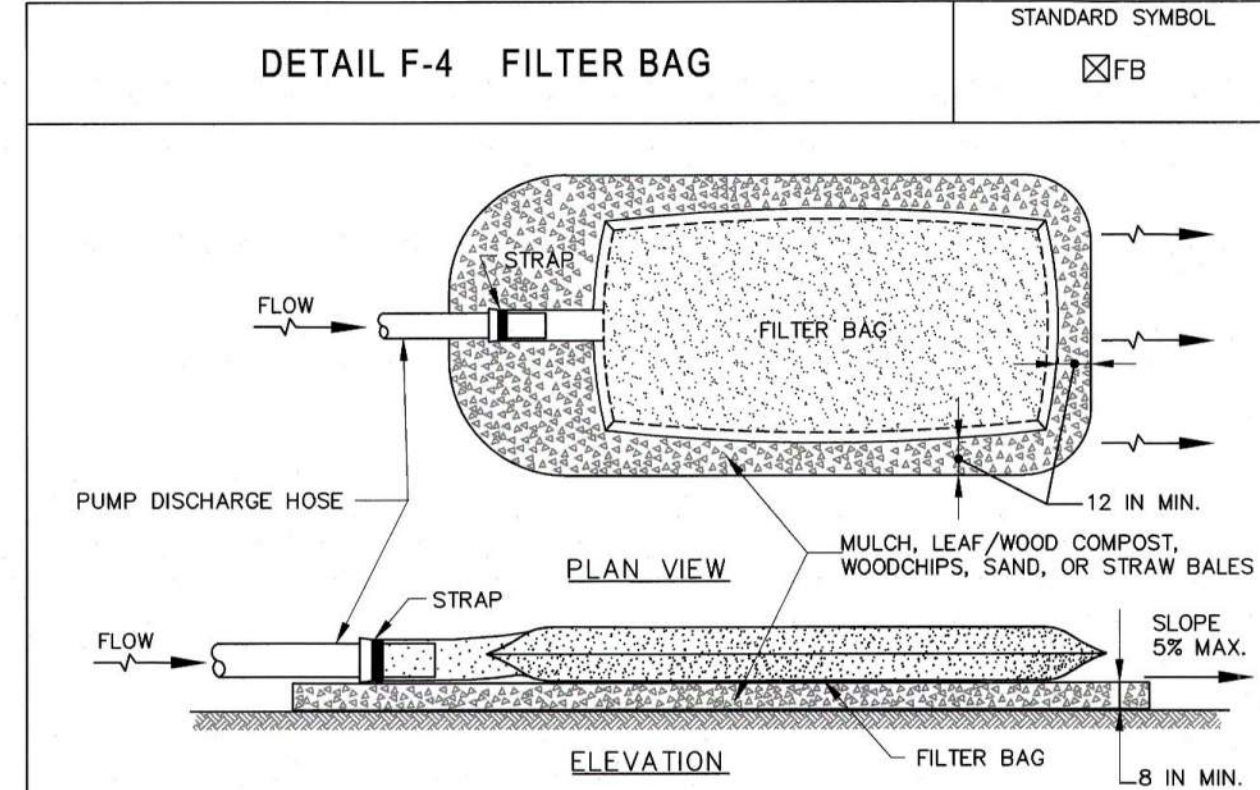
**SEQUENCE OF CONSTRUCTION**

1. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID) AT 410-313-1855 AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EARTH DISTURBANCE ACTIVITIES. MDE TRACKING NO. 21-NT-3115. [1 DAY]
2. CONTACT "MISS UTILITY" AT 1-800-257-7777 FOR FIELD LOCATION OF ALL PUBLIC AND PRIVATE UTILITY LINES, PIPES, CABLES AND ASSOCIATED FEATURES AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION WORK. UTILIZE THE SERVICES OF A PRIVATE UTILITY LOCATOR TO LOCATE AND MARK EXISTING UNDERGROUND UTILITIES NOT MARKED BY "MISS UTILITY". [1 WEEK]
3. SCHEDULE AN ONSITE COORDINATION MEETING BETWEEN THE CID AND ENGINEER TO DISCUSS PROJECT SCOPE AND OBJECTIVES, ON-SITE CONDITIONS, ADDRESS, COORDINATION WITH ON-GOING WORK AND NECESSARY PRACTICES TO PROTECT EXISTING RESOURCES AND PROPERTY. [1 DAY]
4. STAKEOUT LIMITS OF DISTURBANCE PRIOR TO INITIATE WORK. [1 DAY]
5. CLEAR AND GRUB FOR INSTALLATION OF EROSION AND SEDIMENT CONTROLS ONLY. [1 DAY]
6. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND PERIMETER CONTROLS. [2 DAYS]
7. INSTALL ACCESS ROAD AND SAFETY FENCE SHOWN ON SHEET 6. [2 DAYS]
8. INSTALL SANDBAG STREAM DIVERSION, DEWATERING PUMP, AND BYPASS PUMP AND PIPING [2 DAYS]. DEWATERING ACTIVITIES SHALL BE DISCHARGED THROUGH A FILTER BAG OR OTHER APPROVED SEDIMENT CAPTURE DEVICE FOR THE FULL DURATION OF THE WORK.
9. CONSTRUCT IMPROVEMENTS AS SHOWN ON THE SITE PLAN AND SECTION, SHEET 3, 4 & 5. STABILIZE CHANNEL REPAIR WORK EACH DAY. [TWO WEEKS]
10. PERFORM SLOPE GRADING, TOPSOIL, SEED, AND MULCH ON ANY AREAS DISTURBED OUTSIDE OF ROADWAY PAVING. REMOVE THE MULCH ACCESS ROAD AND RESTORE PAVED WALKING PATH AS NEEDED. [1 WEEK]
11. SEED AND MULCH ANY REMAINING DISTURBED AREAS. [1 DAY]
12. WITH WRITTEN APPROVAL OF THE CID INSPECTOR ADDRESS ANY REMAINING ISSUES AND DEMOBILIZE FROM SITE. [1 DAY]



- CONSTRUCTION SPECIFICATIONS**
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (\*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
  2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
  3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
  4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
  5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



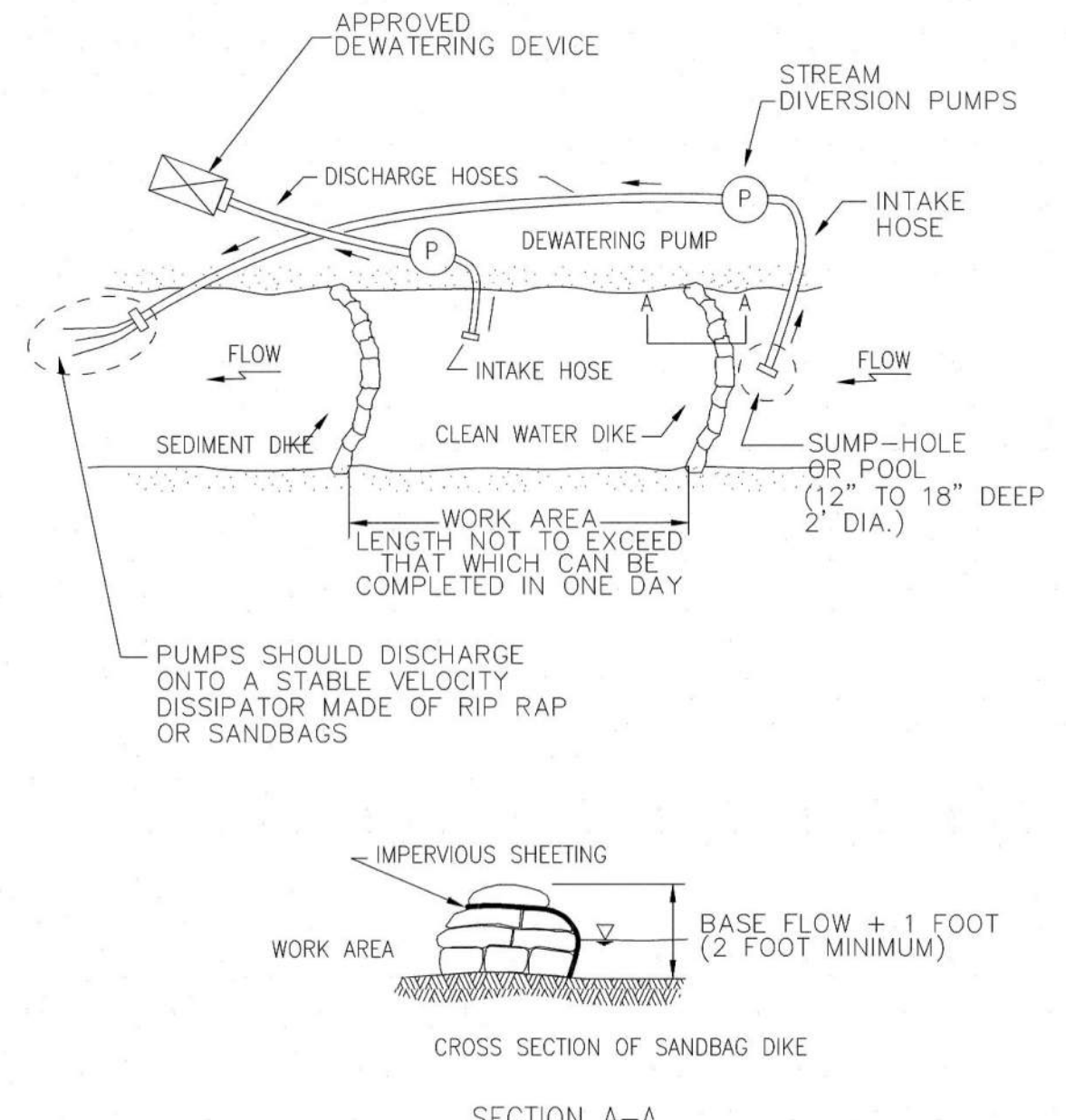
- CONSTRUCTION SPECIFICATIONS**
1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
  2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
  3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
  4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
  5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARY) FOR THE FOLLOWING:
 

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT <sup>2</sup>	ASTM D-4491
PERMITTIVITY (SEC <sup>-1</sup> )	1.2 SEC <sup>-1</sup>	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 50 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632
  6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

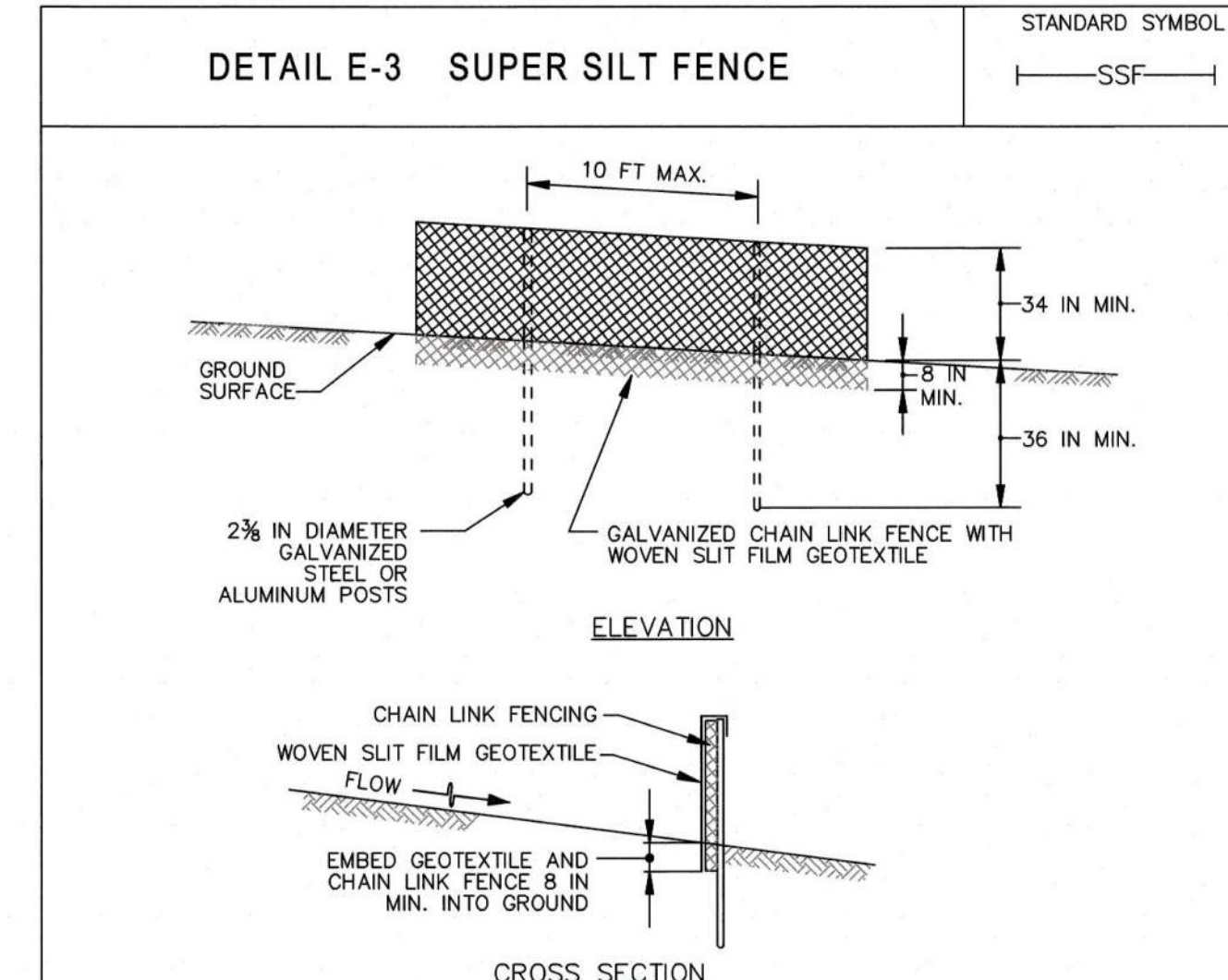
**STANDARD STABILIZATION NOTE:**  
FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
- B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.



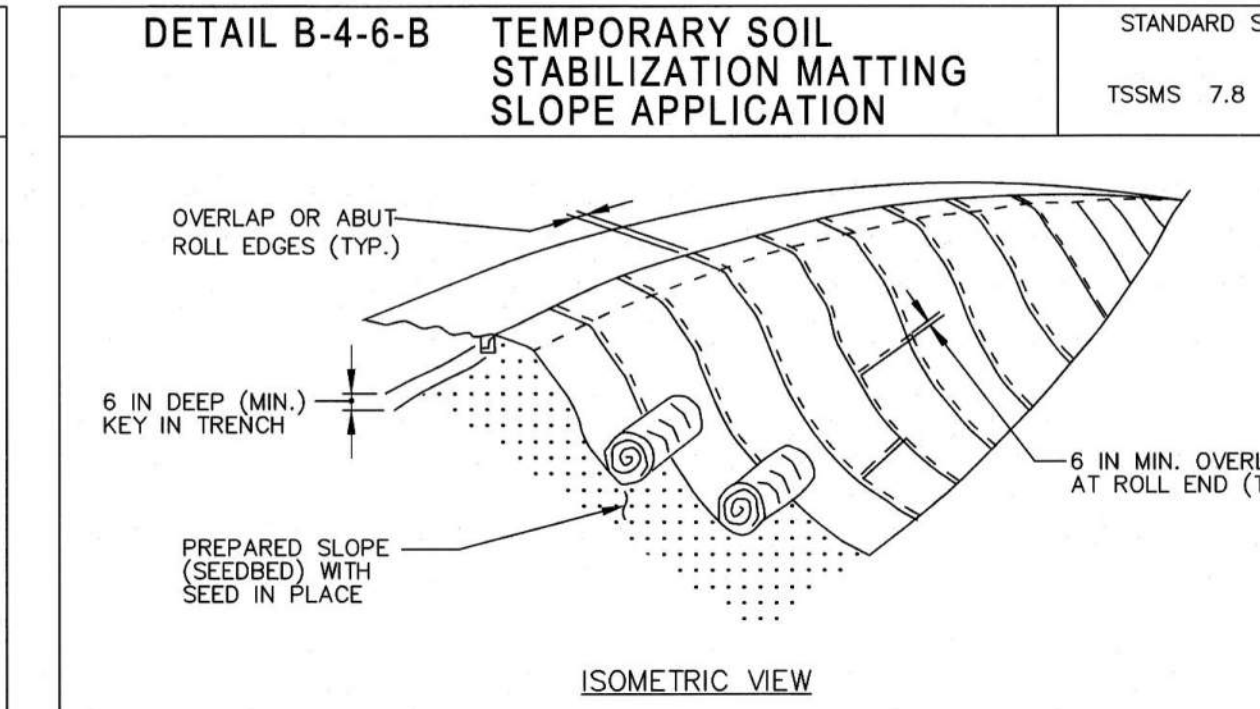
- NOTES**
1. MAINTAIN STREAM FLOW PER HOWARD COUNTY STANDARD SPECIFICATIONS; INCLUDING BUT NOT LIMITED TO, SECTION 101.03.03.30.
  2. IMPLEMENT STREAM PUMP AROUND IN ACCORDANCE WITH MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION (MGWC) SECTION 1.2.

**PUMP-AROUND PRACTICE**  
SCALE: NO SCALE



- CONSTRUCTION SPECIFICATIONS**
1. INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
  2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
  3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
  4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
  5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
  6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
  7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



- CONSTRUCTION SPECIFICATIONS**
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
  2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
  3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
  4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
  5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
  6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
  7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
  8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
  9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4-6 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**AS-BUILT**  
03/10/2022

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *M. Meyani* 10/29/2021  
 Chief, Bureau of Engineering: *J. A. ...* 10-28-21  
 Chief, Bureau of Utilities: *C. ...* 10-29-21  
 Chief, Utility Design Division: *S.R.K.* 10/27/2021

PROFESSIONAL CERTIFICATION:  
I HEREBY 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. 20821, EXPIRATION DATE: 05/02/2023

**Gannett Fleming**  
BALTIMORE, MARYLAND

DES: JRW  
 DRN: JRW  
 CHK: JMS  
 SIGN DATE: 10/1/2021

BY	NO.	REVISION	DATE
JMS	1	AS-BUILT	3/22

OCTOBER 2021

**EROSION AND SEDIMENT CONTROL NOTES AND DETAILS**

600' SCALE MAP NO. 36

CAPITAL PROJECT NO. S6268/S6601  
 CONTRACT NO. 453D-W&S-ADD 1  
**WATER MAIN AND SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR BASKET RING ROAD**

ELECTION DISTRICT NO. 2  
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN  
 SHEET NO. 6 OF 8



**SECTION B-4-4: TEMPORARY STABILIZATION**

DEFINITION: TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE: TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA:

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (from Figure B.3): 7a					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS		
	ANNUAL RYEGRASS	40	2/15 - 4/30 8/15 - 11/30	0.5 in.	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	FOXTAIL MILLET	30	5/1 - 8/14	0.5 in.		

**SECTION B-4-5: PERMANENT STABILIZATION**

DEFINITION: TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE: TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOILS WHERE COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA:

A. SEED MIXTURES

1. GENERAL USE

- a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2, ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
- b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
- c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
- d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

- a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
- b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
  - I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT, IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
  - II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
  - III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
  - IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:  
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

- c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES  
WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)  
CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)  
SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
- d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1/4 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
- e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

HARDINESS ZONE (from Figure B.3): 6b					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (lbs/ac)	**SEEDING DATES	SEEDING DEPTHS	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
1	SWITCH GRASS CREEPING RED FESCUE PARTRIDGE PEA	10 15 4	3/1 - 5/15* 5/16 - 6/15**	1/4"-1/2"	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
11	CREEPING RED FESCUE CHEWING FESCUE KENTUCKY BLUEGRASS ROUGH BLUEGRASS	30 30 20 15	3/1 - 5/15 8/1 - 10/15	1/4"-1/2"	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)

\* WARM-SEASON GRASSES NEED A SOIL TEMPERATURE OF AT LEAST 50 DEGREES F IN ORDER TO GERMINATE. IF SOIL TEMPERATURES ARE COLDER THAN 50 DEGREES, OR MOISTURE IS NOT ADEQUATE, THE SEEDS WILL REMAIN DORMANT UNTIL CONDITIONS ARE FAVORABLE. IN GENERAL, PLANTING DURING THE LATTER PORTION OF THIS PERIOD ALLOWS MORE TIME FOR WEED EMERGENCE AND WEED CONTROL PRIOR TO PLANTING. WHEN SELECTING A PLANTING DATE, CONSIDER THE NEED FOR WEED CONTROL VS. THE LIKELIHOOD OF HAVING SUFFICIENT MOISTURE FOR LATER PLANTINGS, ESPECIALLY ON DROUGHTY SITES.

\*\* ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

- a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
- b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
- c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
- d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION

- a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
- b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
- c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
- d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

3. SOD MAINTENANCE

- a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
- b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
- c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/4 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE.

**STANDARD STABILIZATION NOTE:**

FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
- B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

**AS-BUILT**  
03/18/2022

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*M. G. ...* 10/29/2021  
DIRECTOR OF PUBLIC WORKS DATE

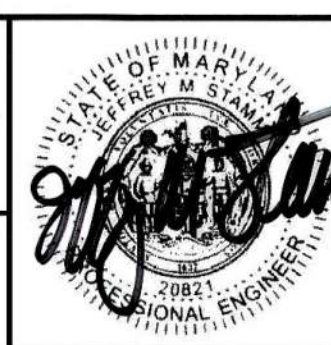
*J. ...* 10-28-21  
CHIEF, BUREAU OF ENGINEERING DATE

*S. ...* 10-25-21  
CHIEF, BUREAU OF UTILITIES DATE

*S. ...* 10-25-21  
CHIEF, UTILITY DESIGN DIVISION DATE

PROFESSIONAL CERTIFICATION:  
I HEREBY 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. 20821, EXPIRATION DATE: 05/02/2023

**Gannett Fleming**  
BALTIMORE, MARYLAND



DES:	BY:	NO.	REVISION	DATE
JRW	JMS	1	AS-BUILT	3/22
JRW				
JMS				
SIGN DATE:	10/1/2021			

OCTOBER 2021

VEGETATIVE STABILIZATION NOTES- 2

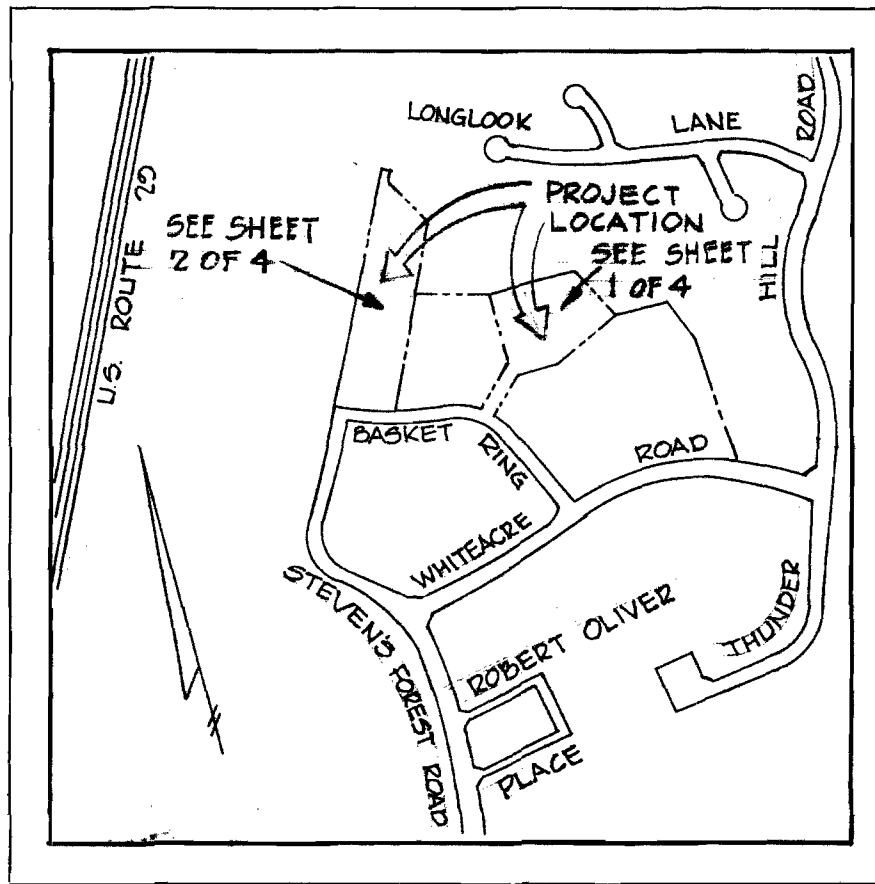
600' SCALE MAP NO. 36

CAPITAL PROJECT NO. S6268/S6601  
CONTRACT NO. 453D-W&S-ADD 1  
WATER MAIN AND SANITARY SEWER STABILIZATION  
AT STREAM CROSSING NEAR  
BASKET RING ROAD

ELECTION DISTRICT NO. 2  
HOWARD COUNTY, MARYLAND

SCALE: NONE  
SHEET NO. 8 OF 8





VICINITY MAP  
Scale: 1"=800'

VILLAGE OF OAKLAND MILLS  
TALBOTT SPRINGS  
SECTION 4 AREA 1  
PLAT BOOK 22 FOLIO 54  
PARCEL "D"

FOR PLAN SEE  
SHEET NO. 2 OF 4

GENERAL NOTES

1. Approximate location of existing mains are shown. The Contractor shall take all necessary precautions to protect existing mains and service connections and maintain uninterrupted supply. Any damage incurred shall be repaired immediately.
2. All pipe elevations shown are invert elevations.
3. The Contractor shall locate existing utilities a minimum of two weeks in advance of construction operations in vicinity of utilities.
4. For all standard details see standards bound in specifications.
5. Clear all utilities by a minimum of 6", all poles by a minimum 2'-0" or tunnel as required.
6. All water mains to have a minimum 3 1/2' of cover unless otherwise noted.
7. Block all fittings with concrete, see standards bound in specifications.
8. Fire hydrants shall be set at the bury line elevations shown on drawings.
9. Fire hydrants shall be strapped to tees and buttressed with concrete in accordance with standard details.
10. All valves shall be strapped to tees in accordance with standard details.
11. Costs of strapping fire hydrants and valves to tees shall be included in the unit price bid for furnishing and laying of water mains.
12. The Contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole walls.
13. Sewer manholes shall be 4'-0" inside except where otherwise noted.
14. The Contractor shall notify The Balto. Gas & Electric Co. 72 hours in advance of excavation by calling 550-8000 Ext. 69.
15. The Contractor shall notify the C&P Telephone prior to any construction in the vicinity of any Telephone Co. facilities by calling collect 683-0400 in Balto. Md.
16. All water mains to be C.I.P., D.I.P., or A.C.R.X. unless otherwise noted.
17. All sewer mains to be V.C.P.X., A.C.P. CLASS 2400, or C.S.P. unless otherwise noted.
18. All water meters to be either twin 3/8" meters (Furnished by others) or single 3/8" meters (Furnished by others) as indicated.
19. Trees are to be protected against damage to the max. extent reasonable.

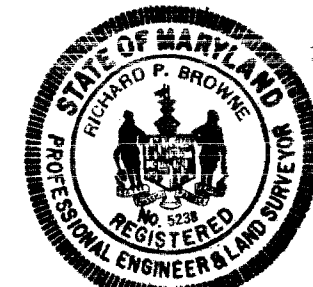
SANITARY HOUSE CONNECTION SCHEDULE				WATER HOUSE CONNECTION SCHEDULE			
LOT NO.	SAN. CONN.	LOT NO.	SAN. CONN.	LOT NO.	WATER CONN.	LOT NO.	WATER CONN.
C-1	SINGLE	C-20	SINGLE	C-1	TWIN	C-20	TWIN
C-2	TWIN	C-21	SINGLE	C-2	TWIN	C-21	TWIN
C-3	SINGLE	C-22	TWIN	C-3	TWIN	C-22	TWIN
C-4	SINGLE	C-23	TWIN	C-4	TWIN	C-23	TWIN
C-5	SINGLE	C-24	TWIN	C-5	TWIN	C-24	TWIN
C-6	TWIN	C-25	TWIN	C-6	TWIN	C-25	SINGLE
C-7	TWIN	C-26	SINGLE	C-7	TWIN	C-26	TWIN
C-8	TWIN	C-27	TWIN	C-8	SINGLE	C-27	TWIN
C-9	TWIN	C-28	TWIN	C-9	TWIN	C-28	TWIN
C-10	SINGLE	C-29	SINGLE	C-10	TWIN	C-29	TWIN
C-11	TWIN	C-30	TWIN	C-11	TWIN	C-30	SINGLE
C-12	TWIN	C-31	TWIN	C-12	TWIN	C-31	TWIN
C-13	SINGLE	C-32	TWIN	C-13	TWIN	C-32	TWIN
C-14	TWIN	C-33	TWIN	C-14	TWIN	C-33	TWIN
C-15	TWIN	C-34	TWIN	C-15	SINGLE	C-34	TWIN
C-16	TWIN	C-35	TWIN	C-16	SINGLE	C-35	TWIN
C-17	TWIN	C-36	SINGLE	C-17	TWIN	C-36	TWIN
C-18	TWIN			C-18	TWIN		

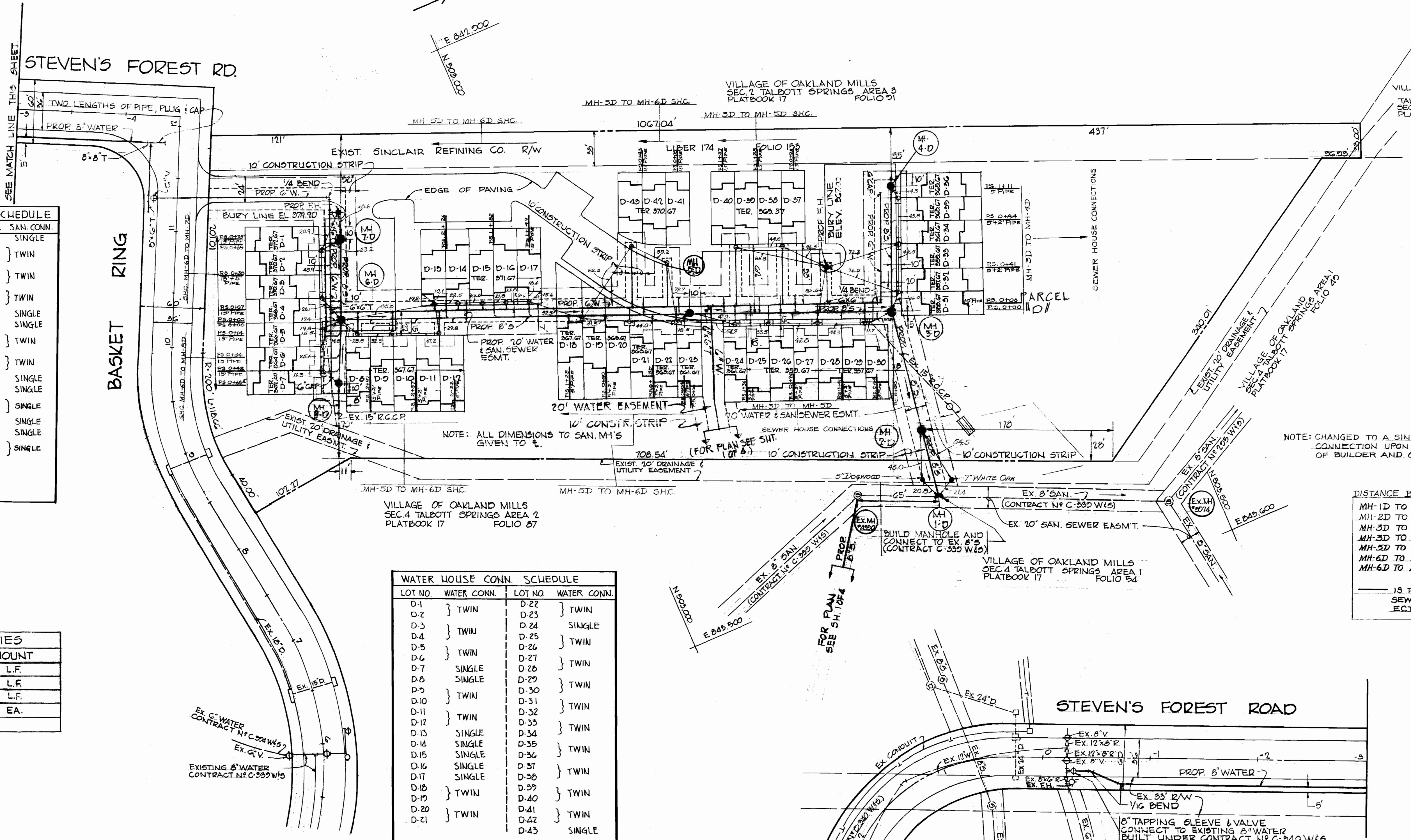
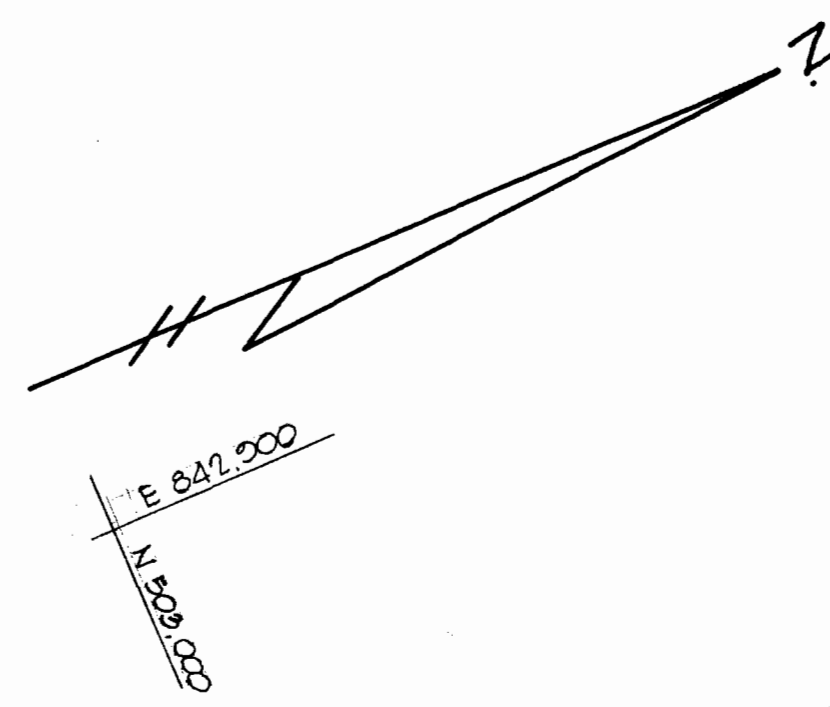
TOTAL TWIN CONN. - 13, TOTAL SINGLE CONN. - 10

LOW ELEVATION - EACH TOWNHOUSE			
LOT NO.	TERR. ELEV.	LOT NO.	TERR. ELEV.
C-1	379.17	C-19	380.27
C-2	379.17	C-20	380.27
C-3	379.17	C-21	381.51
C-4	379.17	C-22	382.84
C-5	378.17	C-23	384.17
C-6	378.17	C-24	386.17
C-7	376.17	C-25	388.17
C-8	374.17	C-26	391.17
C-9	372.17	C-27	393.17
C-10	366.67	C-28	395.17
C-11	368.67	C-29	397.17
C-12	368.67	C-30	398.67
C-13	370.67	C-31	399.67
C-14	372.67	C-32	399.67
C-15	374.67	C-33	399.67
C-16	376.88	C-34	399.67
C-17	378.21	C-35	399.67
C-18	379.54	C-36	389.67

QUANTITIES	
ITEM	AMOUNT
6" W.	1220 L.F.
8" SAN.	1230 L.F.
F.H.	1 EA.

*Richard P. Browne*  
Richard P. Browne, P. E. & L. S.  
Maryland license No. 5238





**SANITARY HOUSE CONN. SCHEDULE**

LOT NO.	SAN. CONN.	LOT NO.	SAN. CONN.
D-1	SINGLE	D-23	SINGLE
D-2	TWIN	D-24	TWIN
D-3	TWIN	D-25	TWIN
D-4	SINGLE	D-26	TWIN
D-5	SINGLE	D-27	TWIN
D-6	SINGLE	D-28	TWIN
D-7	SINGLE	D-29	TWIN
D-8	TWIN	D-30	SINGLE
D-9	TWIN	D-31	SINGLE
D-10	TWIN	D-32	TWIN
D-11	TWIN	D-33	TWIN
D-12	SINGLE	D-34	TWIN
D-13	SINGLE	D-35	TWIN
D-14	TWIN	D-36	SINGLE
D-15	TWIN	D-37	SINGLE
D-16	TWIN	D-38	SINGLE
D-17	SINGLE	D-39	SINGLE
D-18	SINGLE	D-40	SINGLE
D-19	TWIN	D-41	SINGLE
D-20	TWIN	D-42	SINGLE
D-21	TWIN	D-43	SINGLE
D-22	TWIN		

TOTAL TWIN CONN. 14  
TOTAL SINGLE CONN. 15

**QUANTITIES**

ITEM	AMOUNT
8" WATER	195 L.F.
6" WATER	1528 L.F.
8" SAN.	245 L.F.
FIRE HYD.	1 EA.

**WATER HOUSE CONN. SCHEDULE**

LOT NO.	WATER CONN.	LOT NO.	WATER CONN.
D-1		D-22	TWIN
D-2	TWIN	D-23	TWIN
D-3	TWIN	D-24	SINGLE
D-4	TWIN	D-25	TWIN
D-5	TWIN	D-26	TWIN
D-6	TWIN	D-27	TWIN
D-7	SINGLE	D-28	TWIN
D-8	SINGLE	D-29	TWIN
D-9	TWIN	D-30	TWIN
D-10	TWIN	D-31	TWIN
D-11	TWIN	D-32	TWIN
D-12	TWIN	D-33	TWIN
D-13	SINGLE	D-34	TWIN
D-14	SINGLE	D-35	TWIN
D-15	SINGLE	D-36	TWIN
D-16	SINGLE	D-37	TWIN
D-17	SINGLE	D-38	TWIN
D-18	TWIN	D-39	TWIN
D-19	TWIN	D-40	TWIN
D-20	TWIN	D-41	TWIN
D-21	TWIN	D-42	TWIN
		D-43	SINGLE

TOTAL TWIN CONN. 17  
TOTAL SINGLE CONN. 9

**DISTANCE BETWEEN MANHOLES**

MH-1D TO MH-2D	62.0'
MH-2D TO MH-3D	115.0'
MH-3D TO MH-4D	114.0'
MH-3D TO MH-5D	192.0'
MH-5D TO MH-6D	322.2'
MH-6D TO MH-7D	75.0'
MH-6D TO MH-8D	60.0'

15 PLUS STATION OF SEWER HOUSE CONNECTION.

Richard P. Browne  
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**RICHARD P. BROWNE ASSOCIATES ENGINEERS** COLUMBIA, MD.

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
4-27-71 Date  
W. O. Filbert Chief Engineer

CONTRACT NO. 453D-WBS

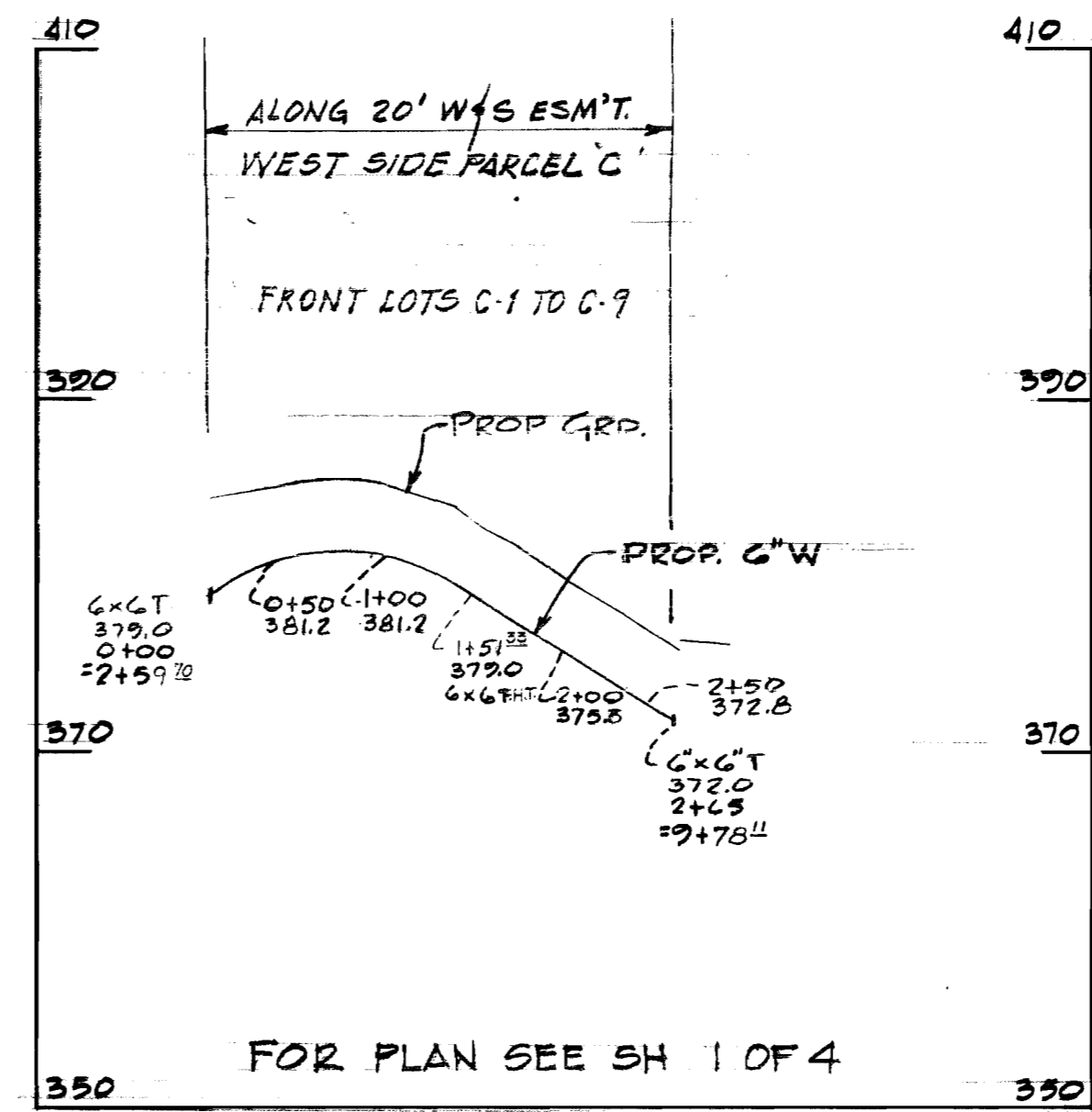
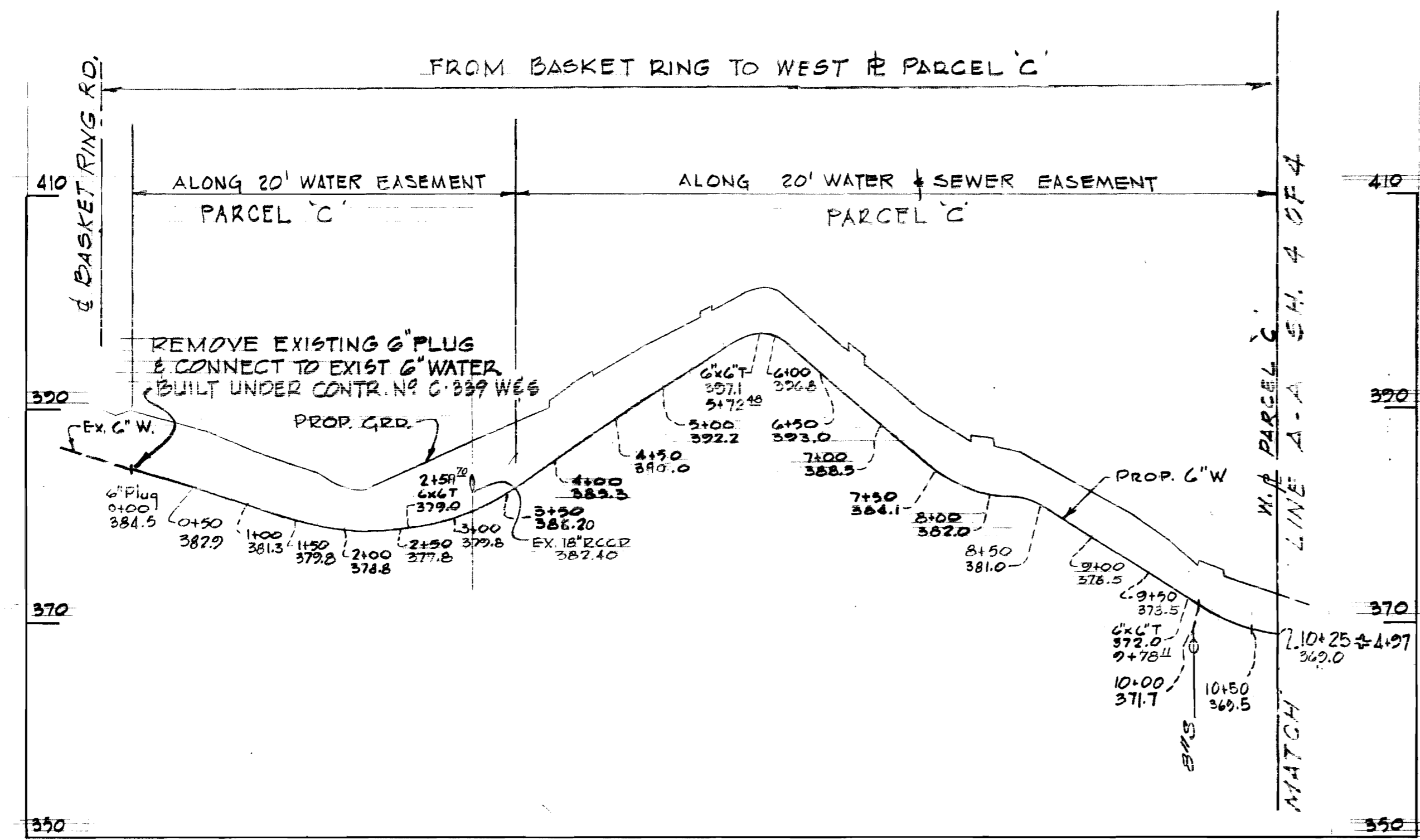
PLAN OF WATER & SEWER MAINS

COLUMBIA VILLAGE OF OAKLAND MILLS TALBOTT SPRINGS SECTION 4 AREA 1 PARCEL D

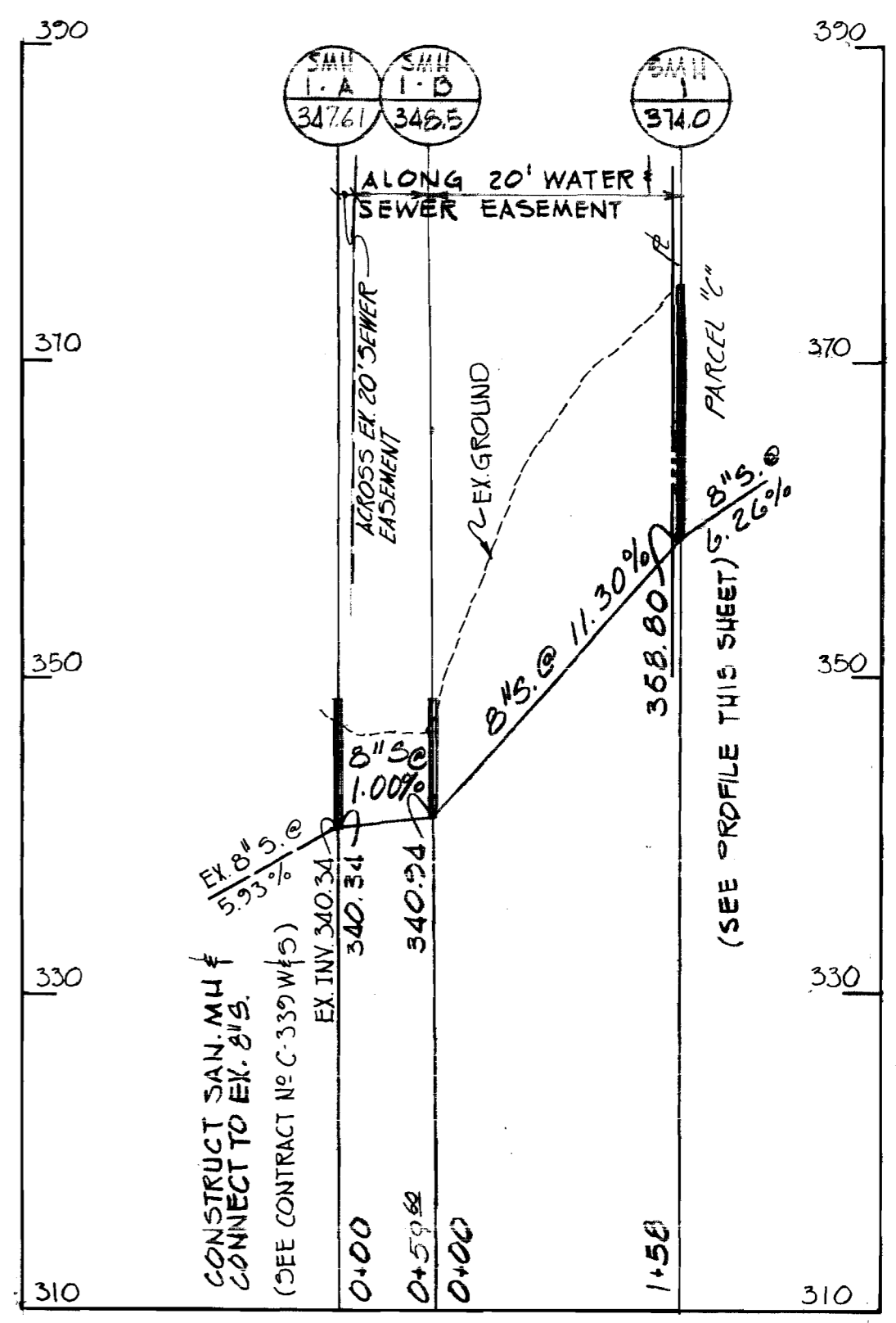
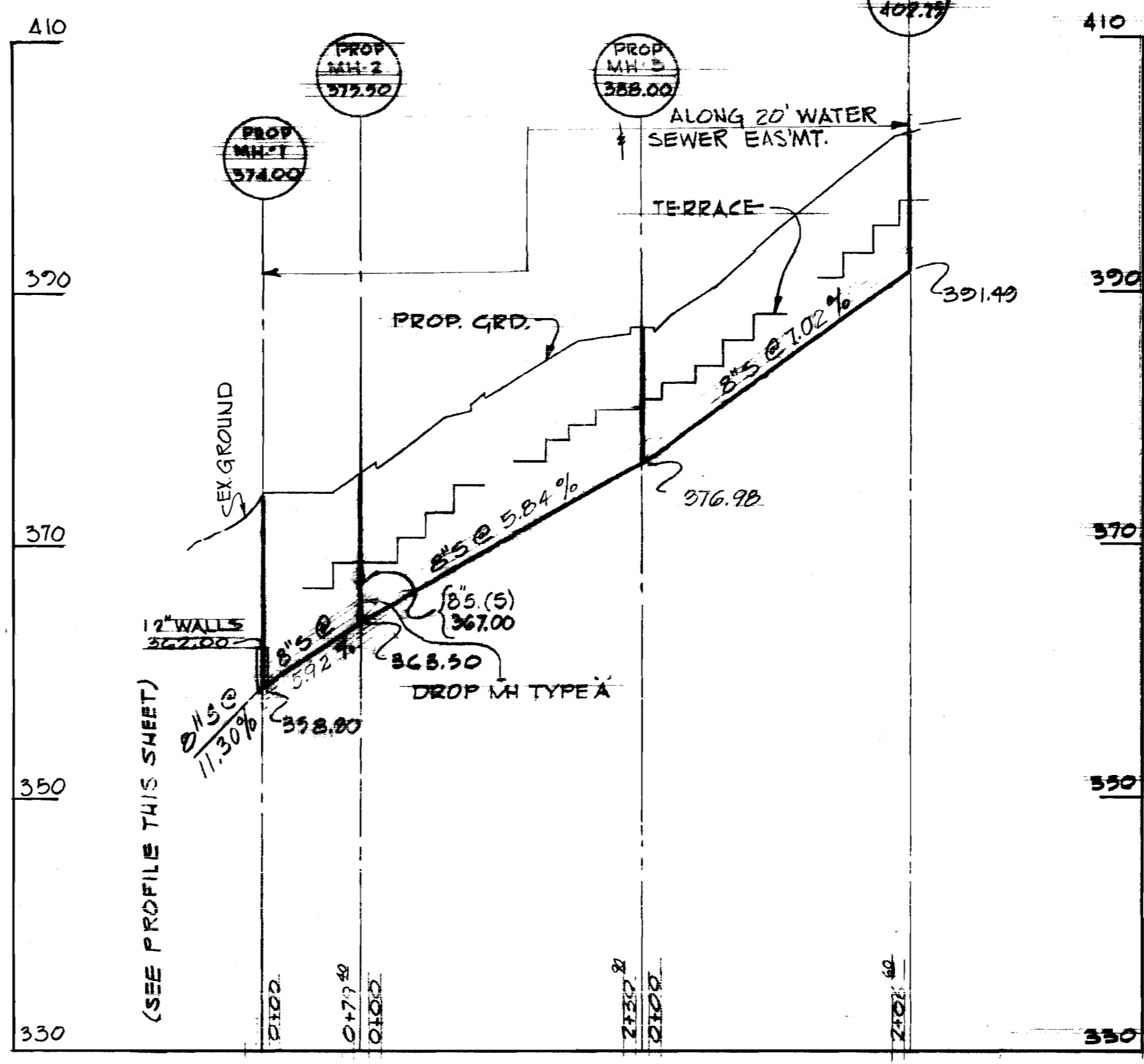
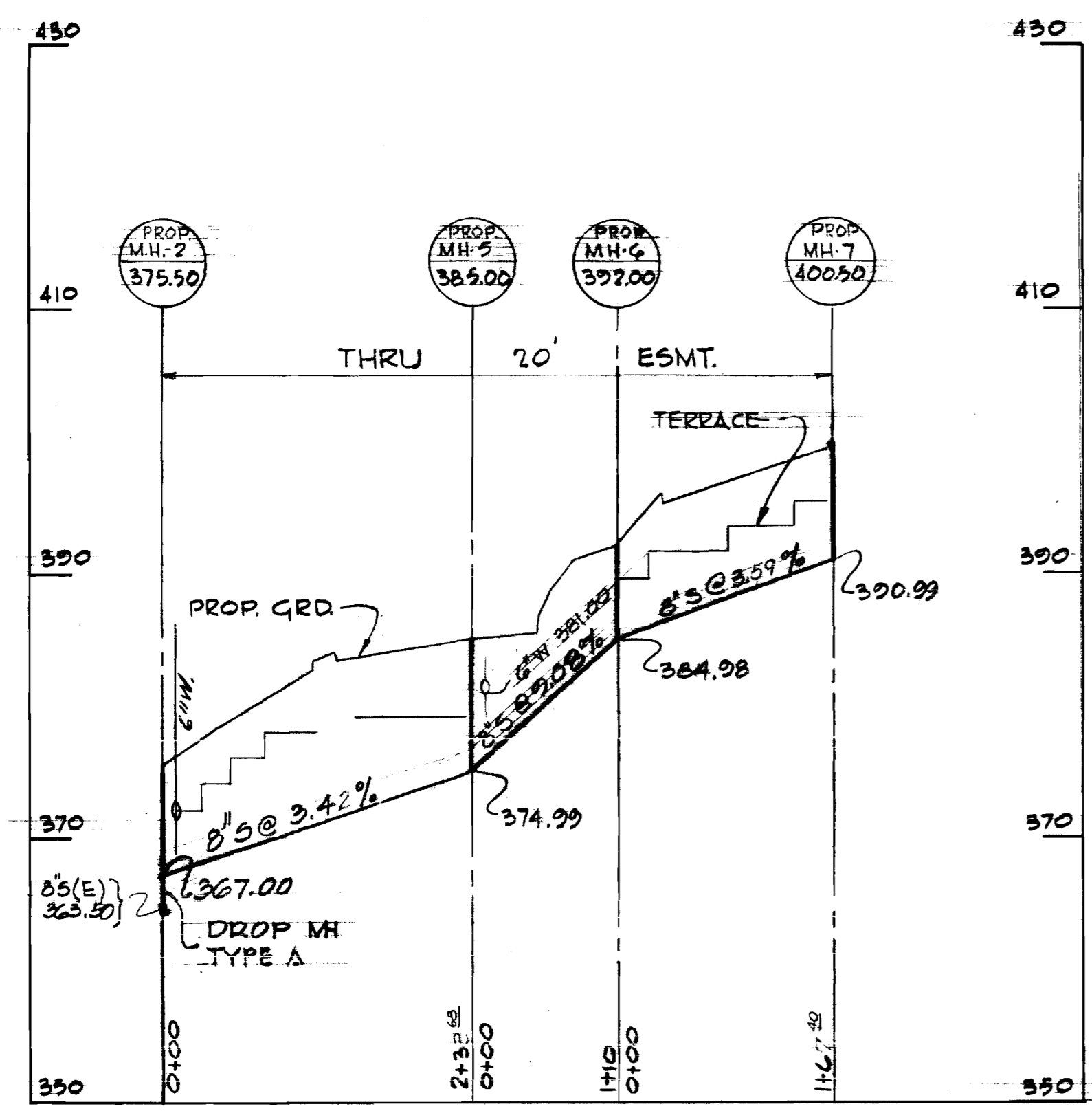
DRAWING NO. 2 OF 4 SCALE 1" = 50'

AS BUILT APRIL 28, 1972

WS 453 W&S/2



FOR PLAN SEE SHEET 1 OF 4



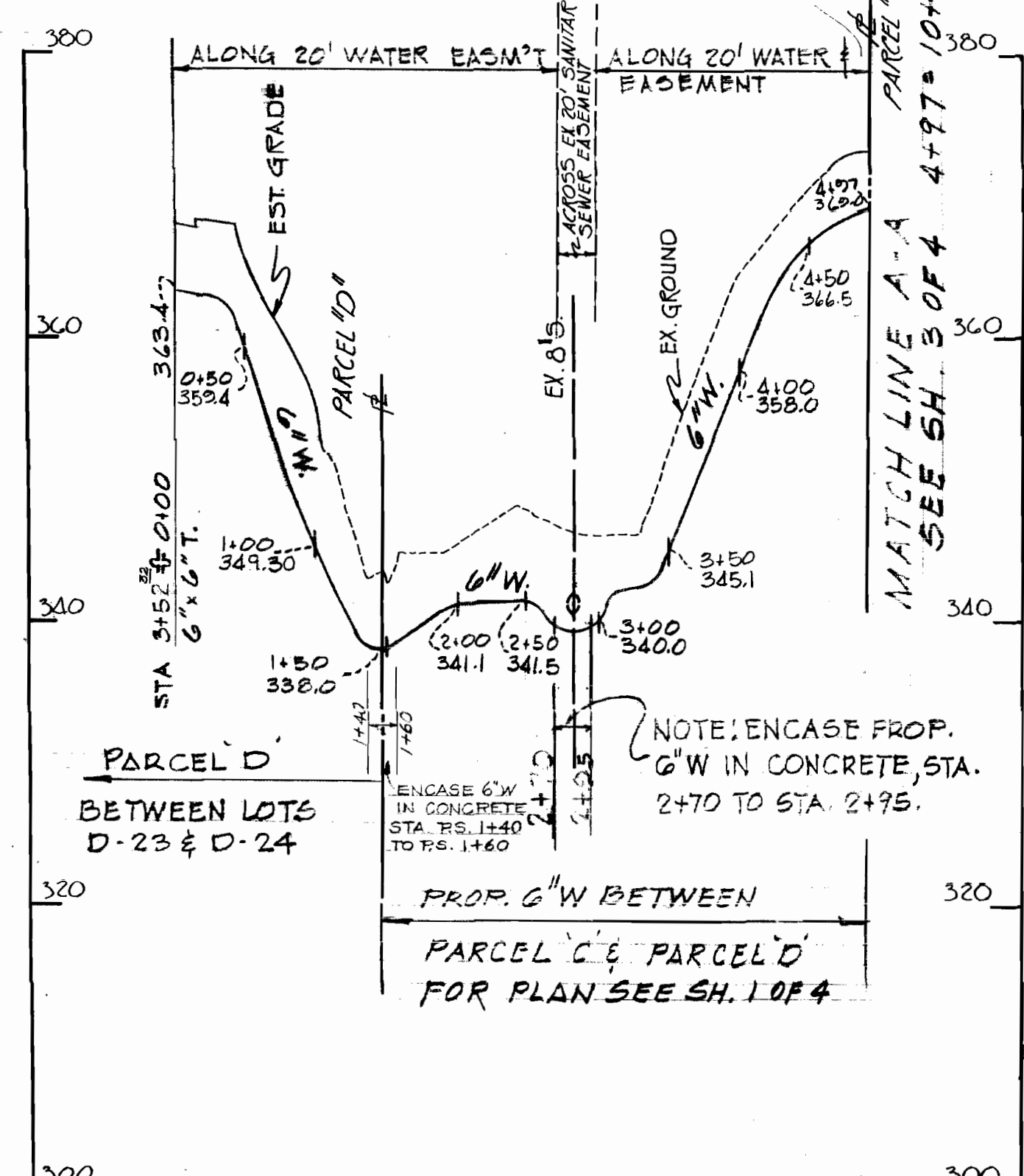
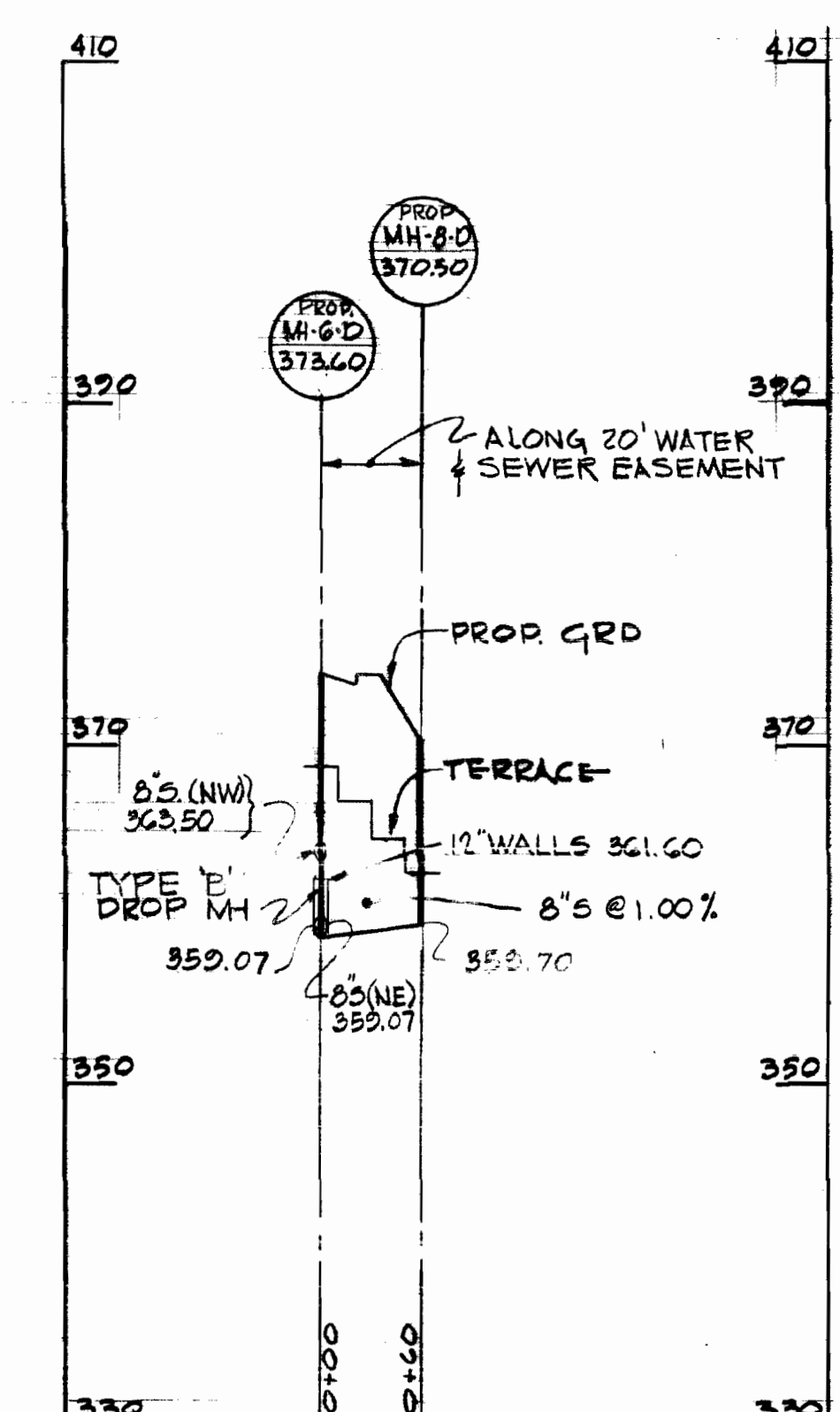
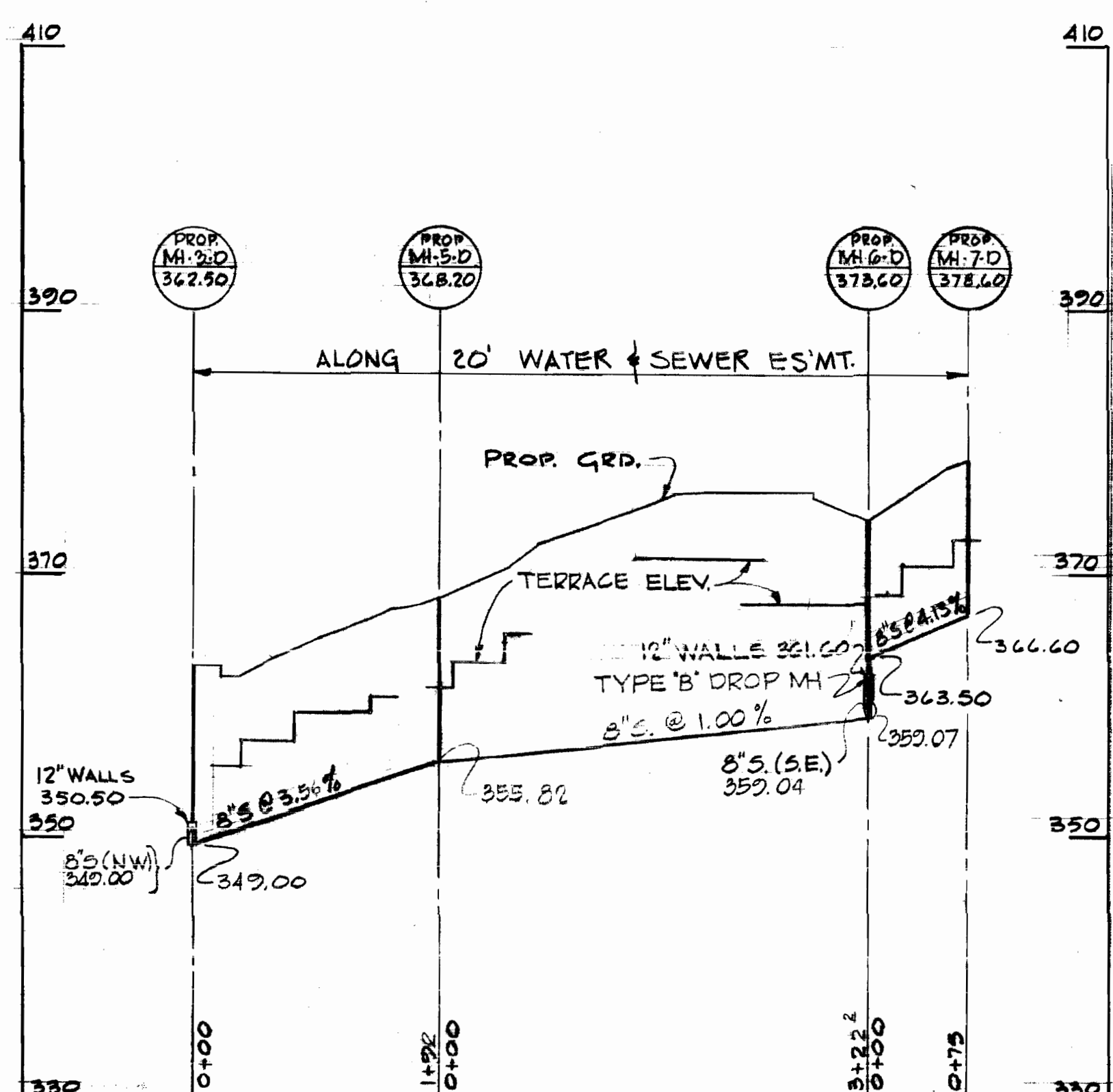
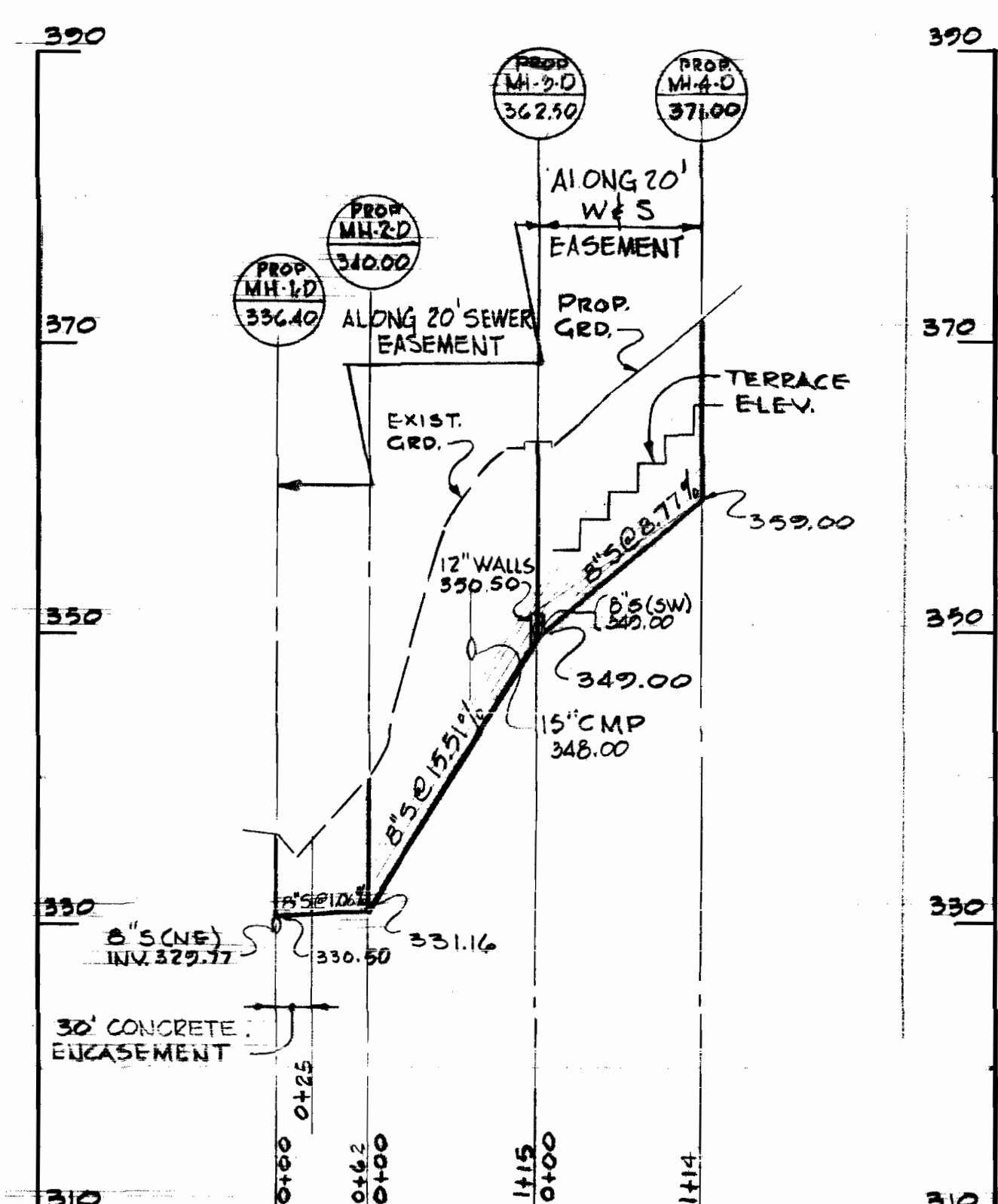
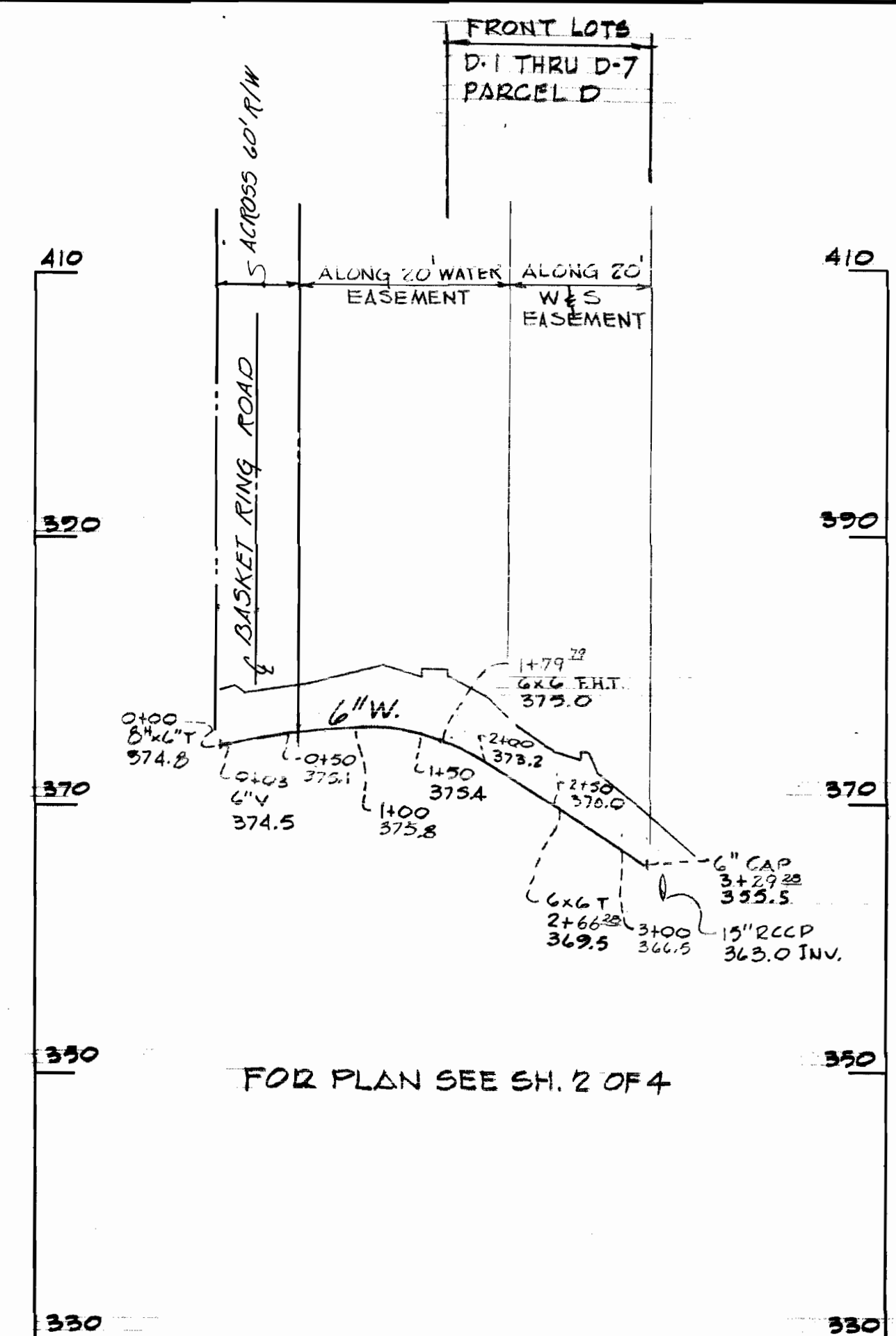
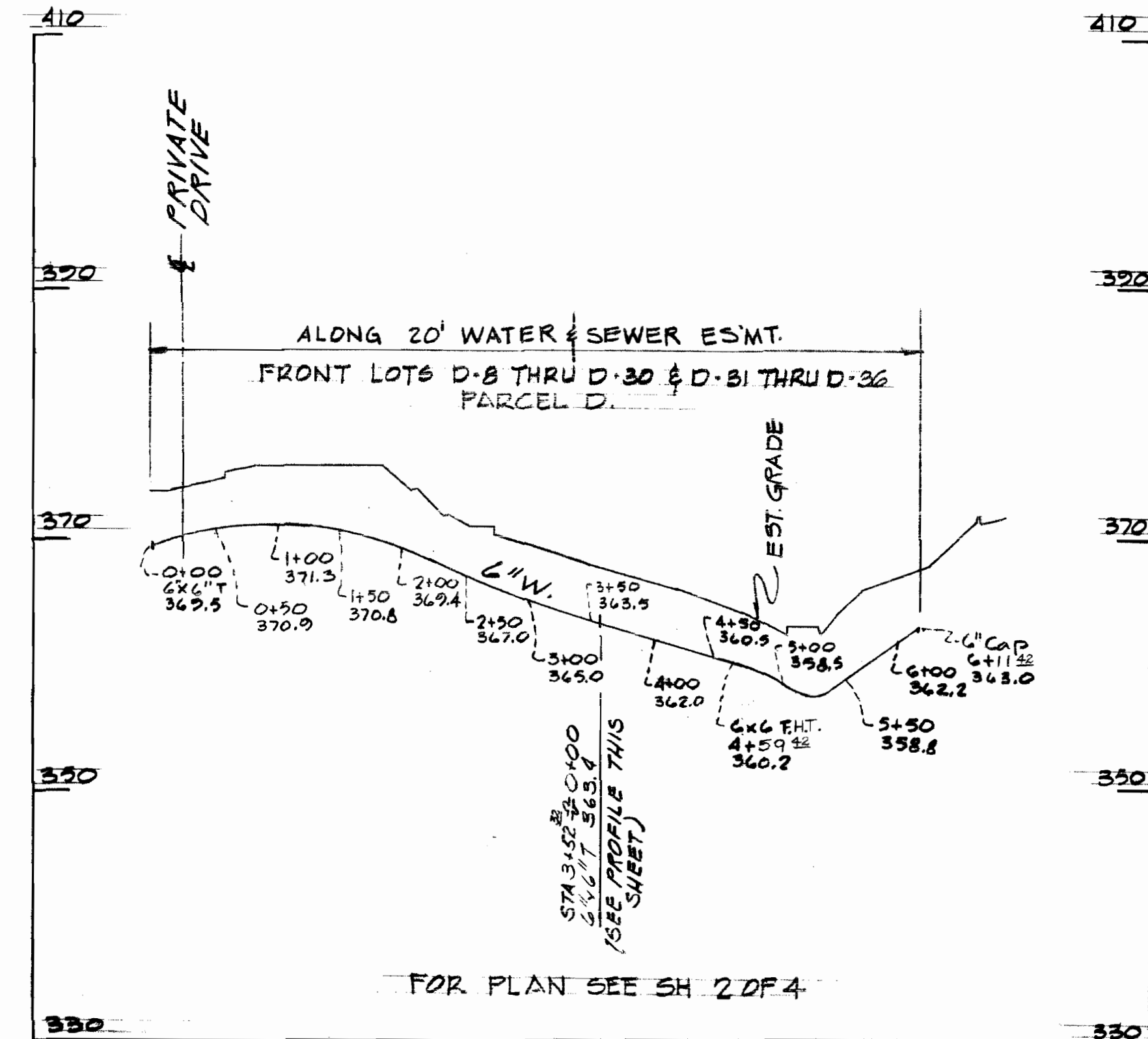
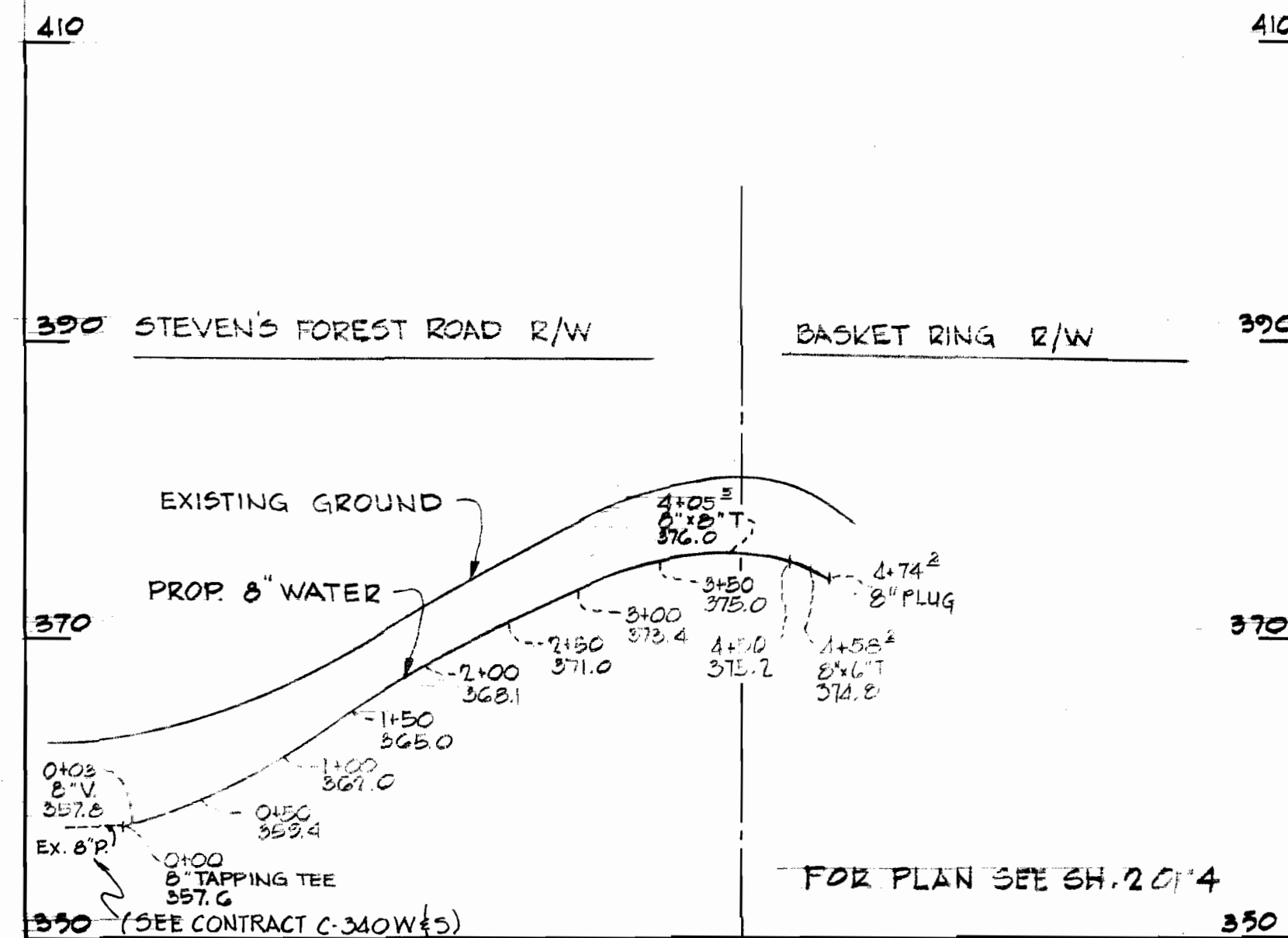
FOR PLAN SEE SHEET 1 OF 4

Richard P. Browne  
 Richard P. Browne, P. E. & L. S.  
 Maryland license No. 5298



<b>RICHARD P. BROWNE ASSOCIATES</b> ENGINEERS COLUMBIA, MD.	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS Date: 9-27-71 Chief Engineer: W. O. Filbert	CONTRACT NO. 453D-W8S	PROFILES OF WATER & SEWER MAINS PARCEL C	VILLAGE OF OAKLAND MILLS TALBOTT SPRINGS SECTION 4 AREA 1 PARCEL C	DRAWING NO. 3 OF 4	SCALE HORIZ. 1"=100' VERT. 1"=10'
					AS BUILT	APRIL 28, 1972

WS 453 W&S/3



Richard P. Browne  
 Richard P. Browne, P. E. & L. E.  
 Maryland License No. 6228

FOR PLAN SEE SHEET 2 OF 4

RICHARD P. BROWNE ASSOCIATES ENGINEERS COLUMBIA, MD.

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 9-27-71  
 Chief Engineer

CONTRACT NO. 453D-W&S

PROFILES OF WATER & SEWER MAINS PARCEL D

COLUMBIA VILLAGE OF OAKLAND MILLS TALBOTT SPRINGS SECTION 4 AREA I PARCEL D

DRAWING NO. 4 OF 4 SCALE HORIZ. 1"=100' VERT. 1"=10'