

GENERAL NOTES

1. APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES 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' CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED.
6. THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALLS.
7. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER.
8. ALL WATER MAINS TO HAVE A MINIMUM OF 3 1/2' COVER UNLESS OTHERWISE NOTED.
9. BLOCK ALL FITTINGS WITH CONCRETE, SEE STANDARDS BOUND IN SPECIFICATIONS.
10. BURY LINE ELEVATIONS ON FIRE HYDRANTS SHALL BE SET TO THE ELEVATIONS SHOWN ON THE DRAWINGS.
11. ALL FIRE HYDRANTS SHALL BE STRAPPED TO THE TEE AND SHALL BE BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS.

KCI	Δ	HITCHING POST LANE SEWER AND STREAM STABILIZATION, SHEETS 4A THROUGH 4D ADDED	6/20/70
BY	No.	REVISION	DATE

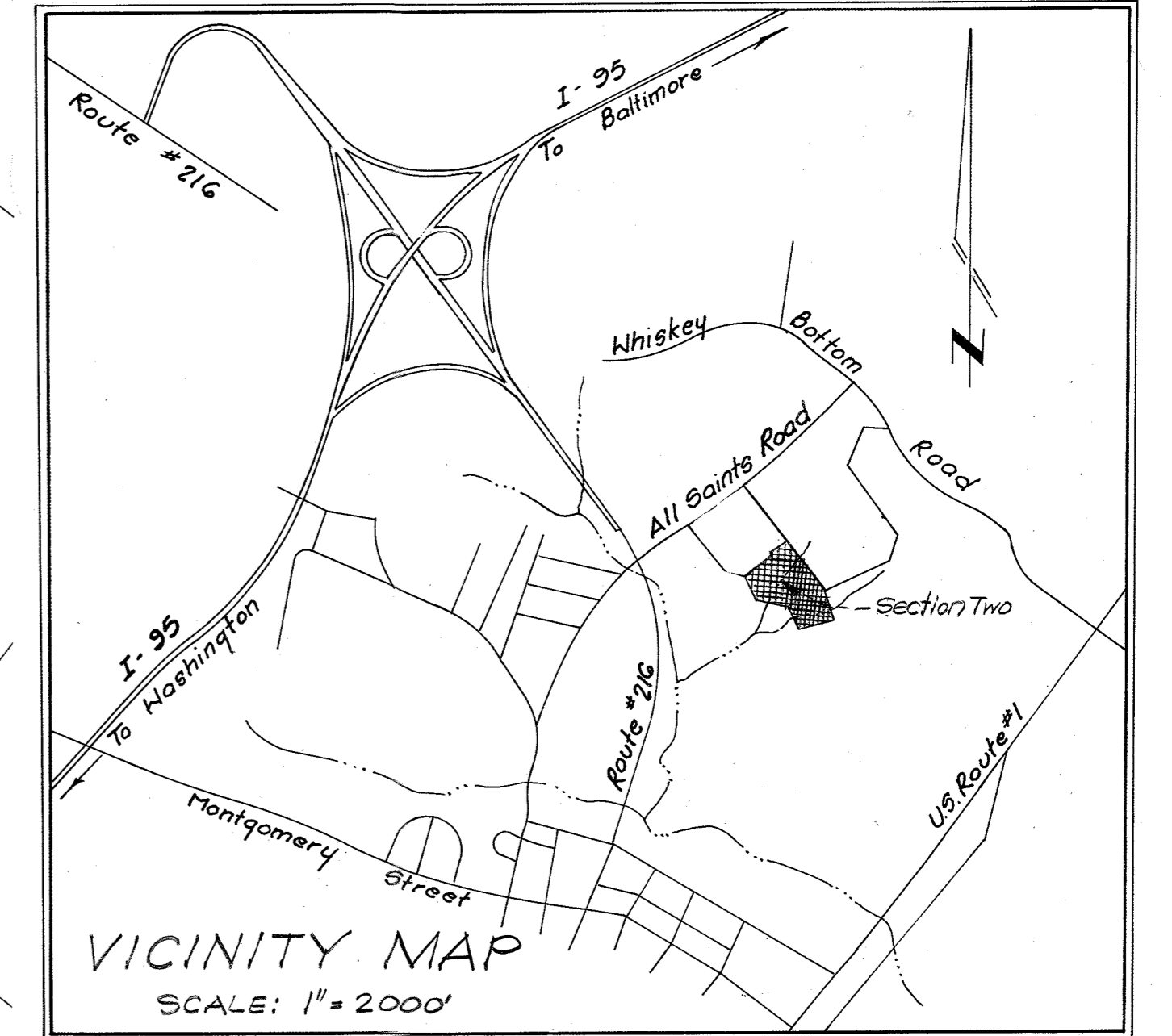
QUANTITIES	
6" WATER	650 L.F.
8" WATER	2443 L.F.
12" WATER	1234 L.F.
8" SEWER	3671 L.F.
10" SEWER	1153 L.F.
FH'S	8 EACH

BM TRAV. STA # 503
TOP OF STAKE
ELEV. 217.54

SEWER AND STREAM STABILIZATION SHEETS 4A-4D

BM TRAV. STA # 500
TOP OF STAKE
ELEV. 217.40

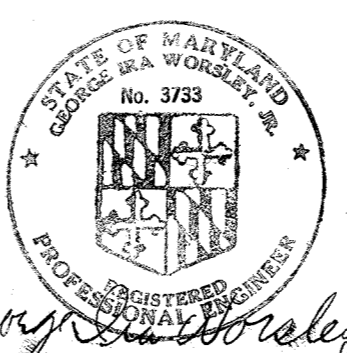
NOTE:
NO. OF DWELLING UNITS INDICATED IN EACH BUILDING



JEROME J. NORRIS & ASSOCIATES
LAND PLANNING - HOUSING CONSULTANTS
6001 32ND STREET, N.W.
WASHINGTON, D.C.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE 1-27-72
W. O. Folwell
CHIEF - BUREAU OF WATER AND SEWER

CONTRACT NO. 491-D-W#5



PLAN OF
WATER & SEWER MAINS

SECTION 2 & 3
WHISKEY BOTTOM APARTMENTS
6TH ELECTION DISTRICT, HOWARD COUNTY, MD.

DRAWING NO. 1 OF 4	SCALE AS SHOWN
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AS BUILT 10-2-73

SUSPENSE

SUSPENSE

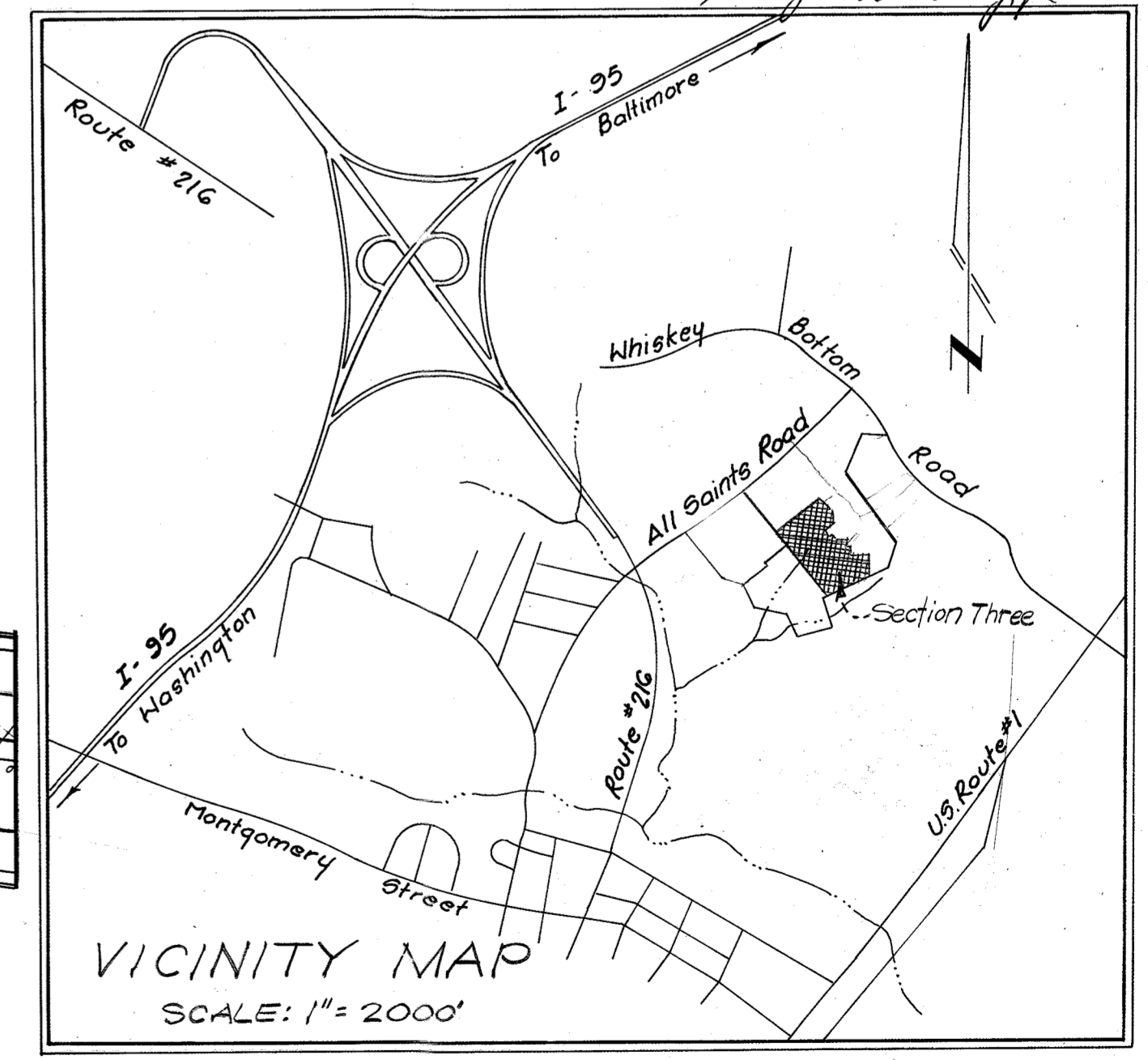
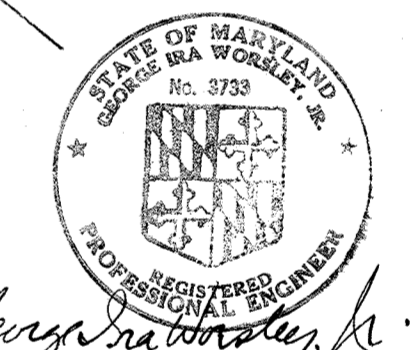
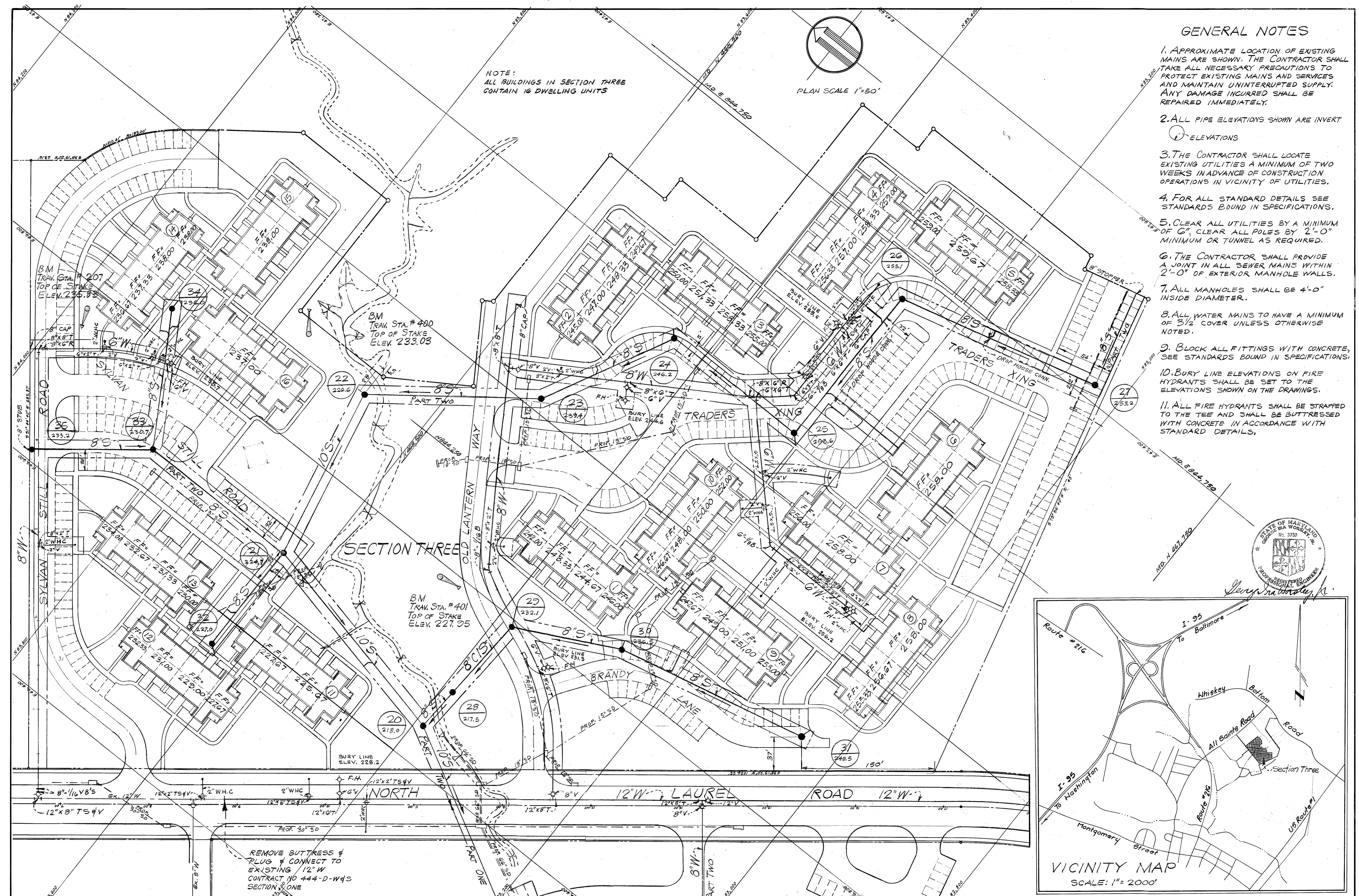
SUSPENSE

GENERAL NOTES

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6. THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALLS.
7. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER.
8. ALL WATER MAINS TO HAVE A MINIMUM OF 3/2 COVER UNLESS OTHERWISE NOTED.
9. BLOCK ALL FITTINGS WITH CONCRETE, SEE STANDARDS BOUND IN SPECIFICATIONS.
10. BURY LINE ELEVATIONS ON FIRE HYDRANTS SHALL BE SET TO THE ELEVATIONS SHOWN ON THE DRAWINGS.
11. ALL FIRE HYDRANTS SHALL BE STRAPPED TO THE TEE AND SHALL BE BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS.

NOTE:
ALL BUILDINGS IN SECTION THREE
CONTAIN 16 DWELLING UNITS

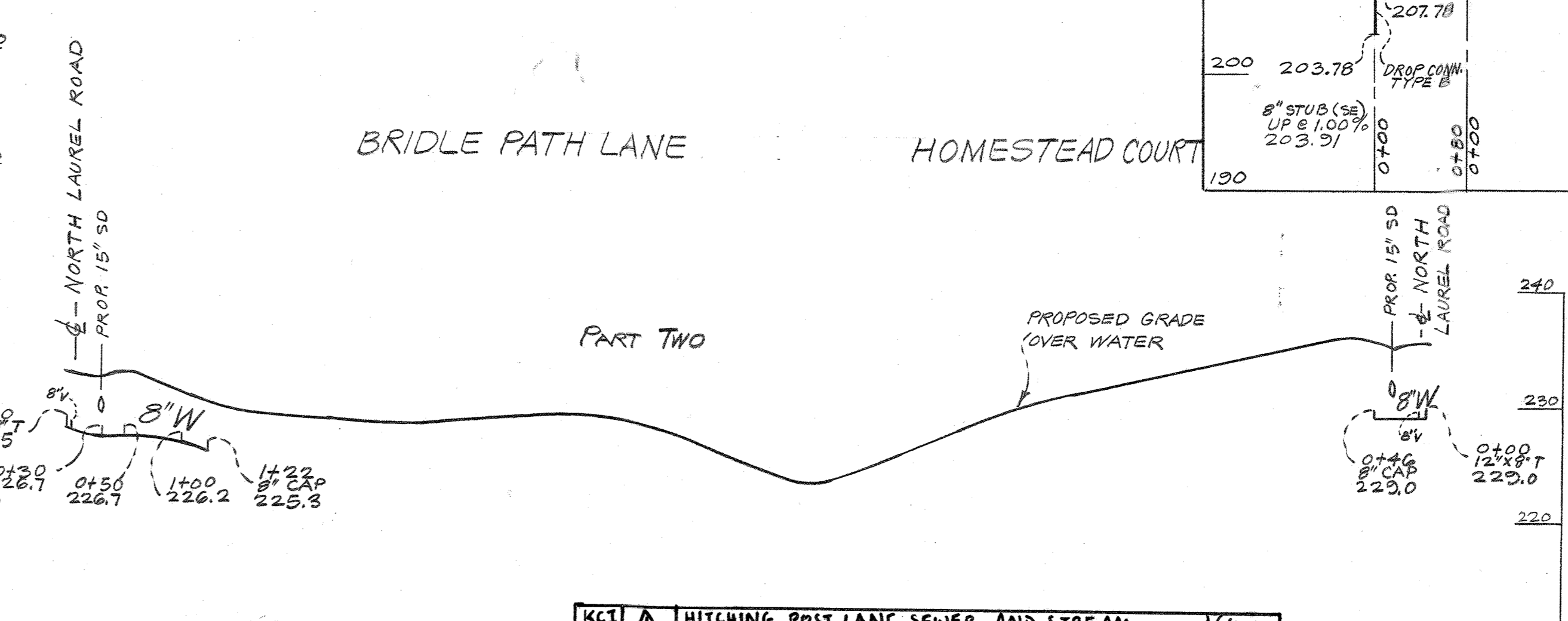
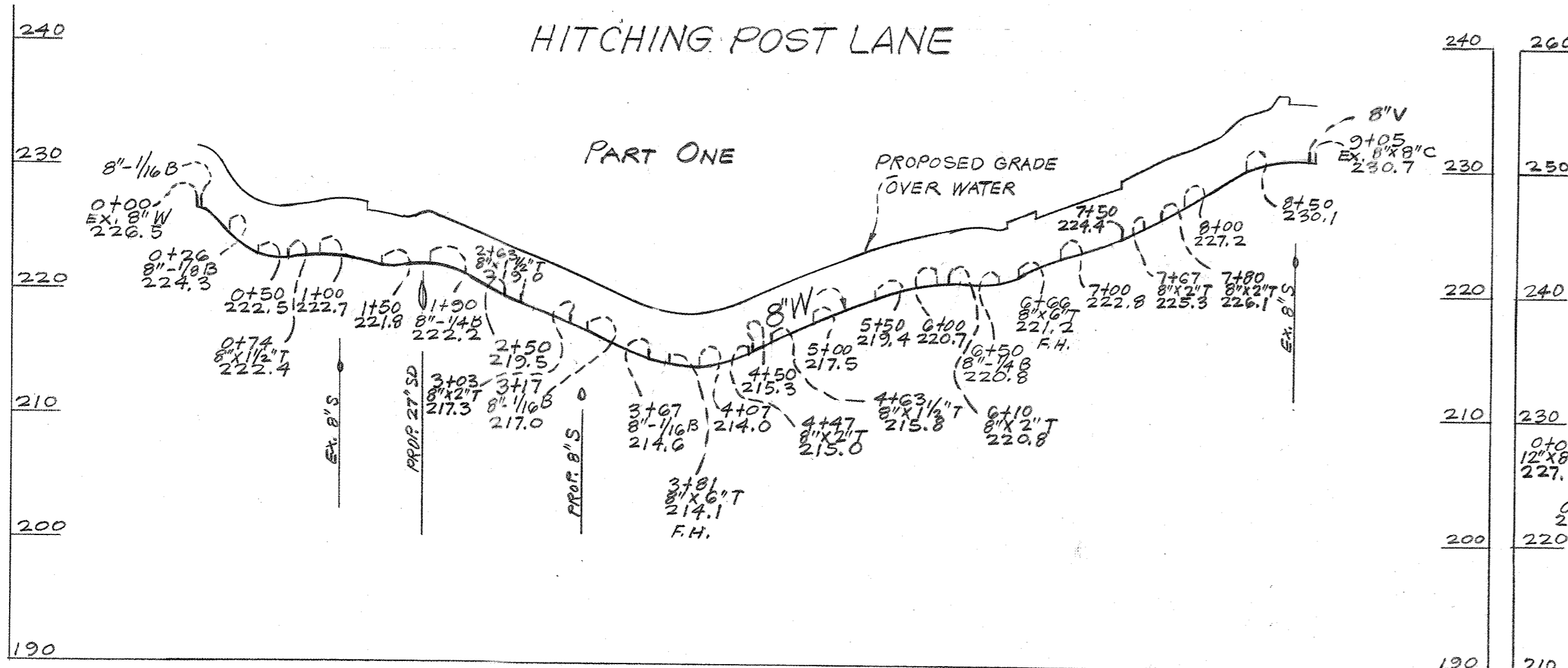
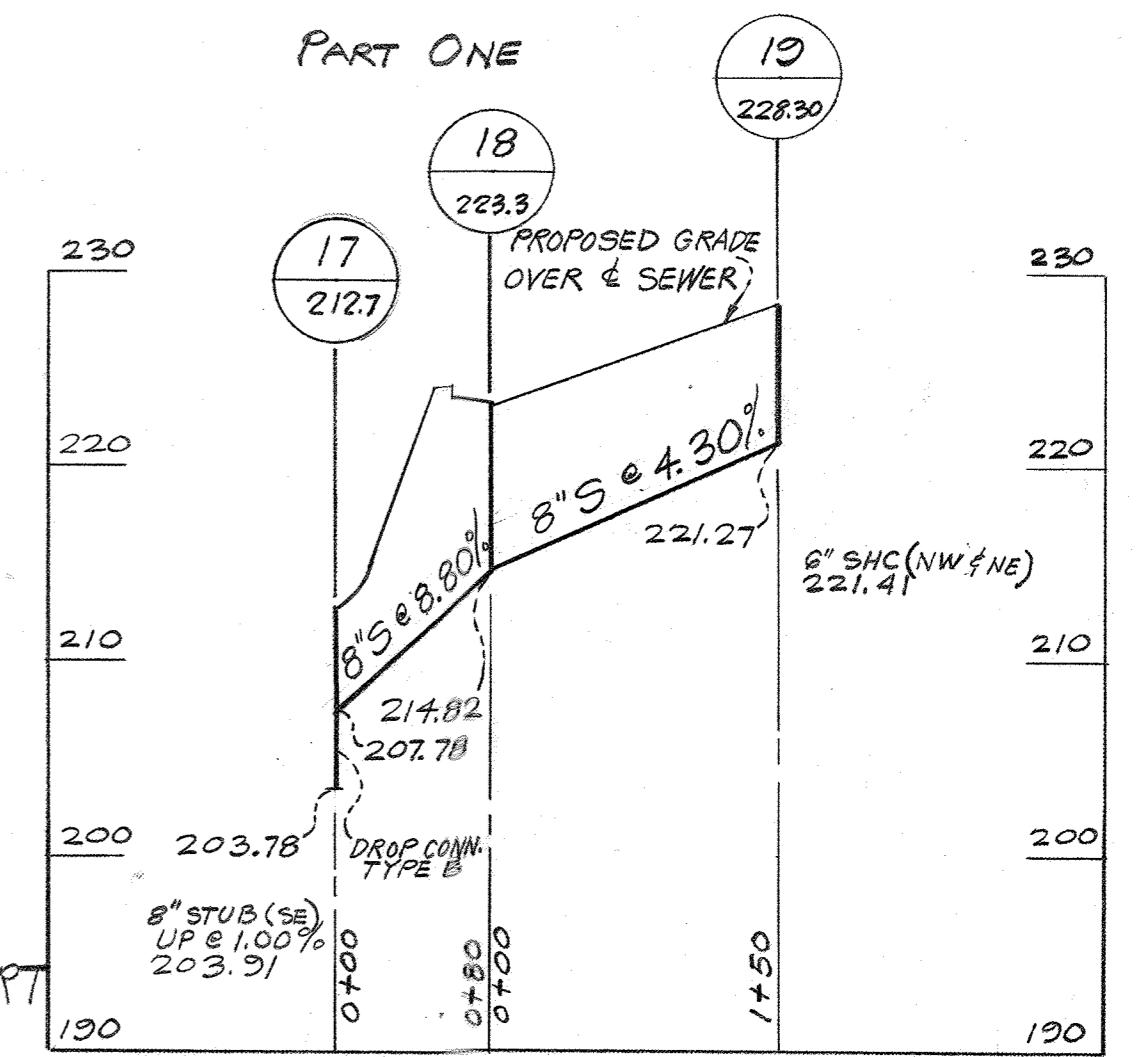
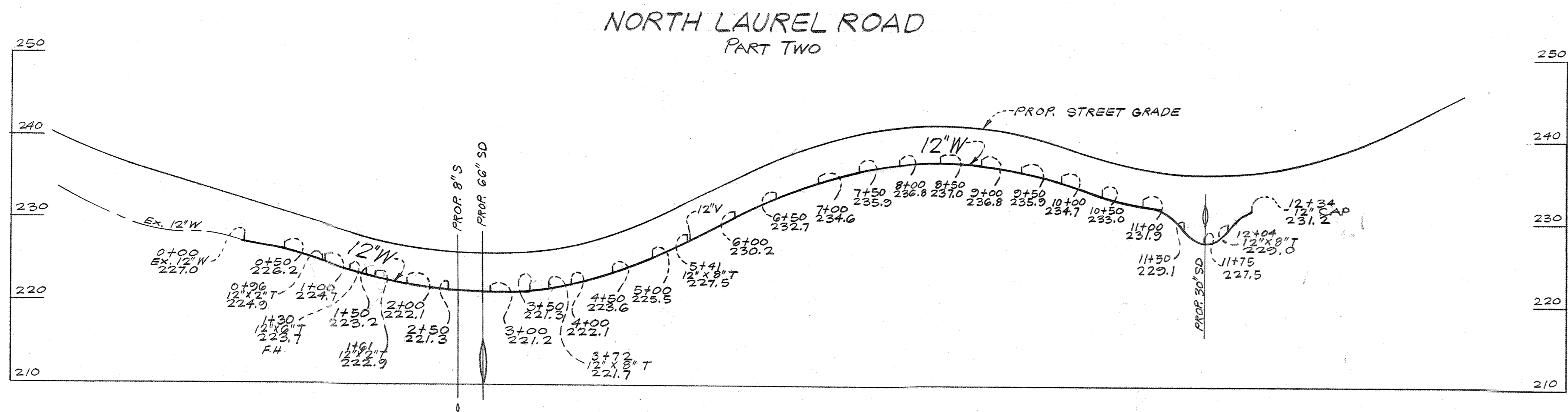
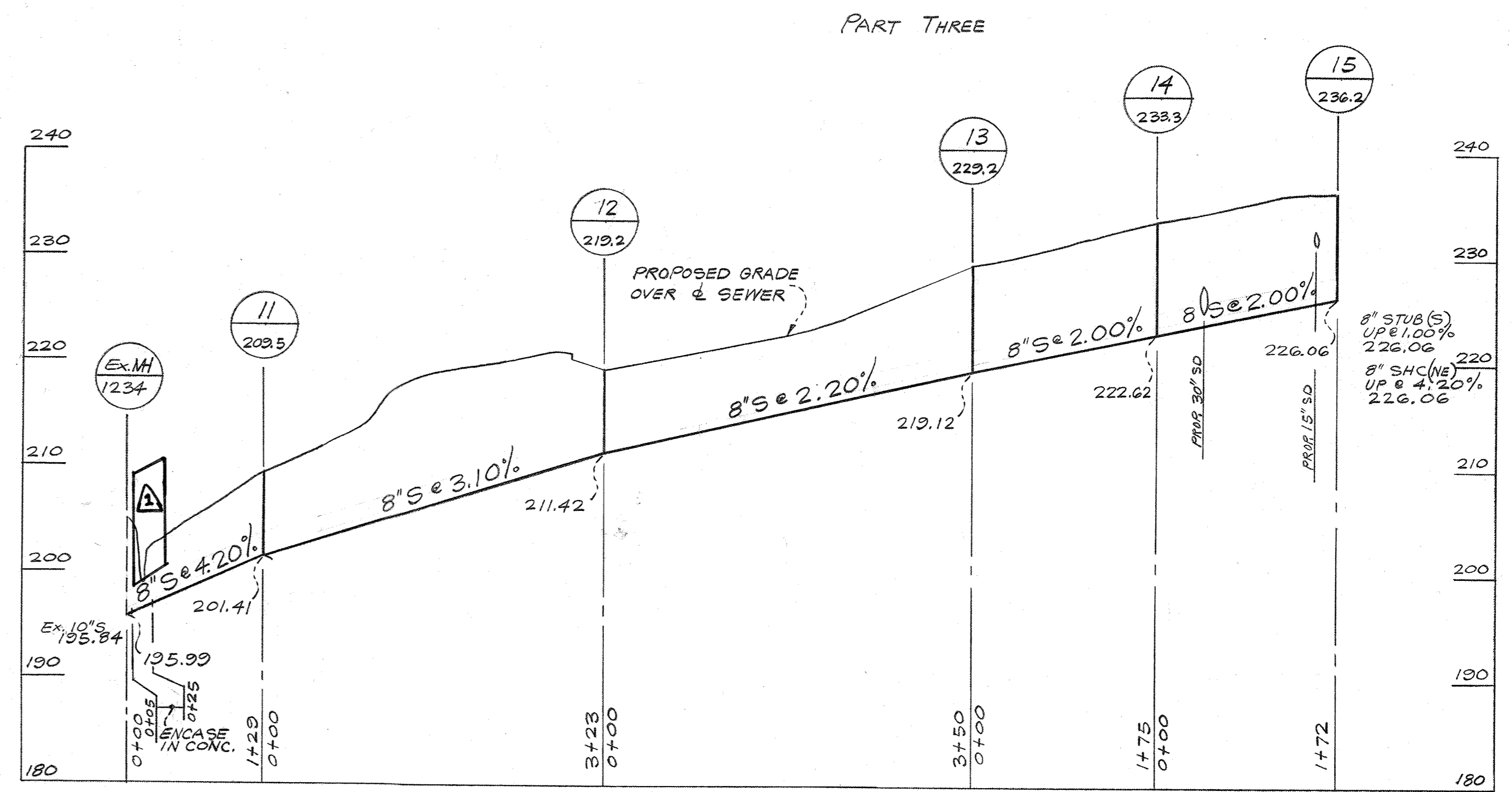
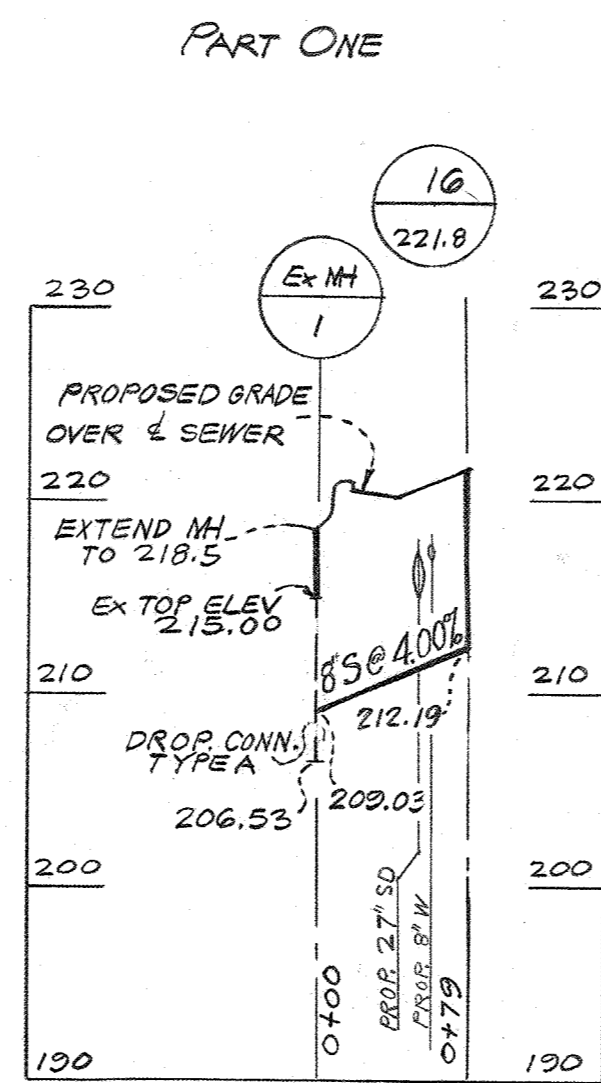
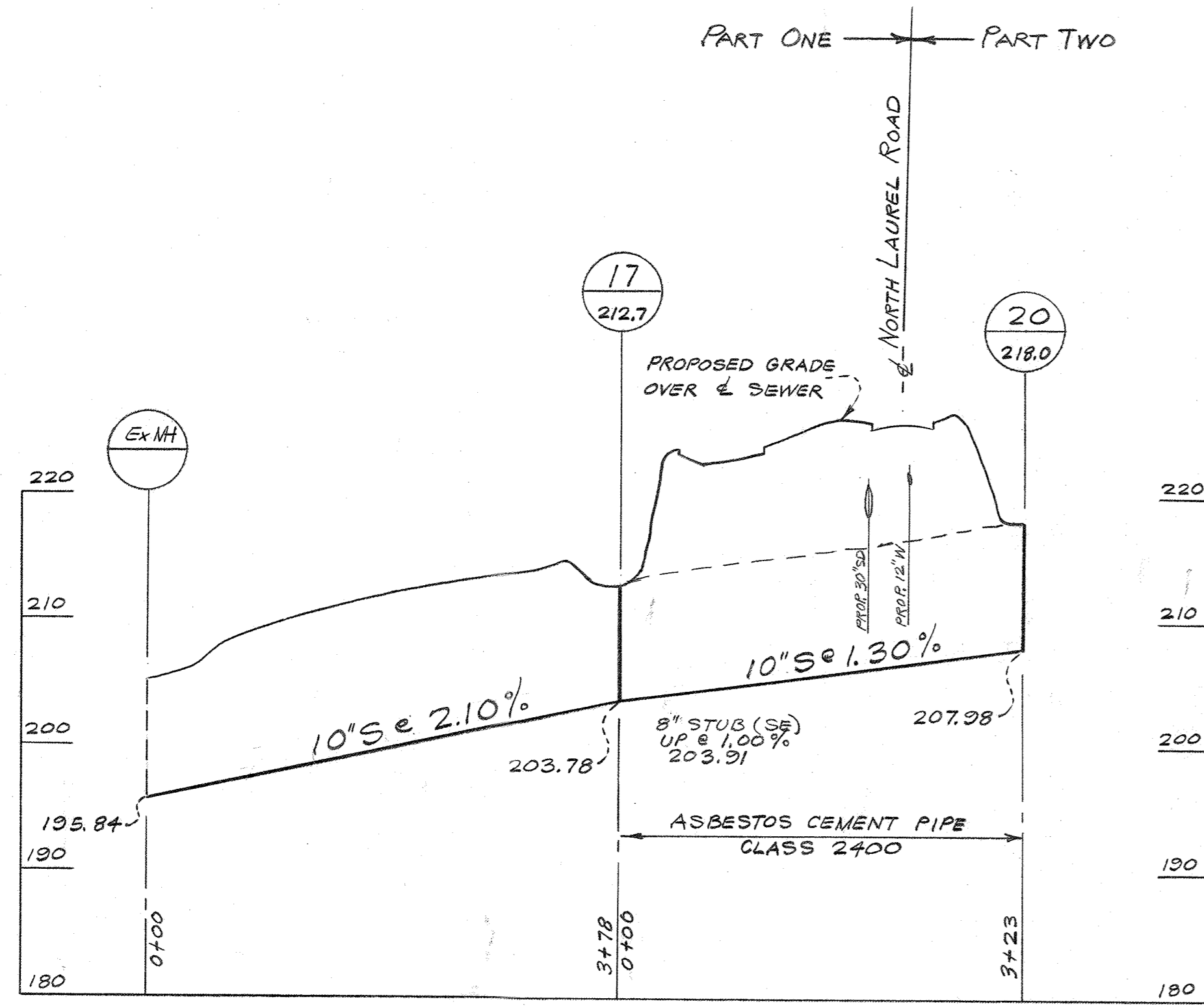
PLAN SCALE 1"=50'



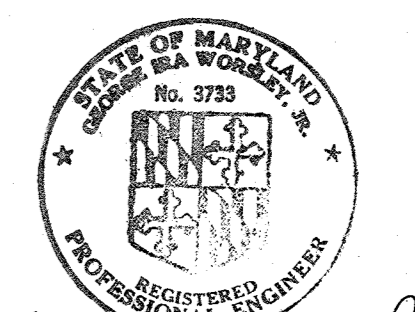
REMOVE BUTTRESS &
PLUG & CONNECT TO
EXISTING 12\"/>

JEROME J. NORRIS & ASSOCIATES LAND PLANNING - HOUSING CONSULTANTS 6001 32 ND STREET, N.W. WASHINGTON, D.C.	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 7-27-72 DATE <i>W.O. ...</i> CHIEF - BUREAU OF WATER AND SEWER	CONTRACT NO. 491-D-W45	PLAN OF WATER & SEWER MAINS	SECTION 2 & 3 WHISKEY BOTTOM APARTMENTS 9 TH ELECTION DISTRICT, HOWARD COUNTY, MD.	DRAWING NO. 2 OF 4 SCALE AS SHOWN
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AS BUILT 10-2-73



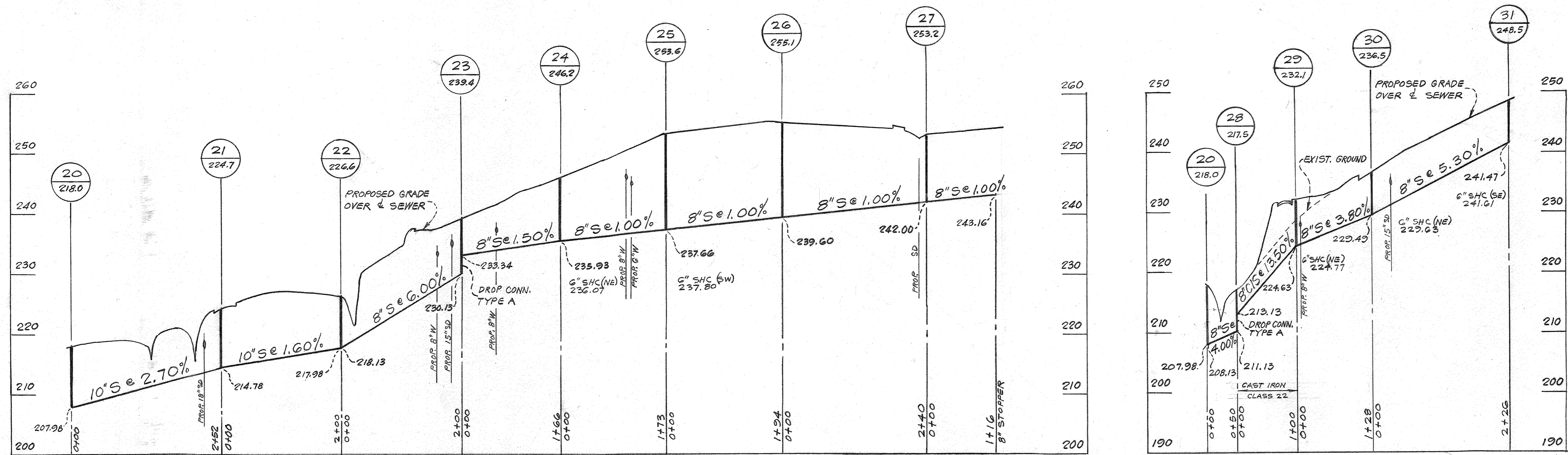
KCI	BY	NO.	REVISION	DATE
1	AW	1	HITCHING POST LANE SEWER AND STREAM STABILIZATION, SHEETS 4A THROUGH 4D ADDED	6/2020



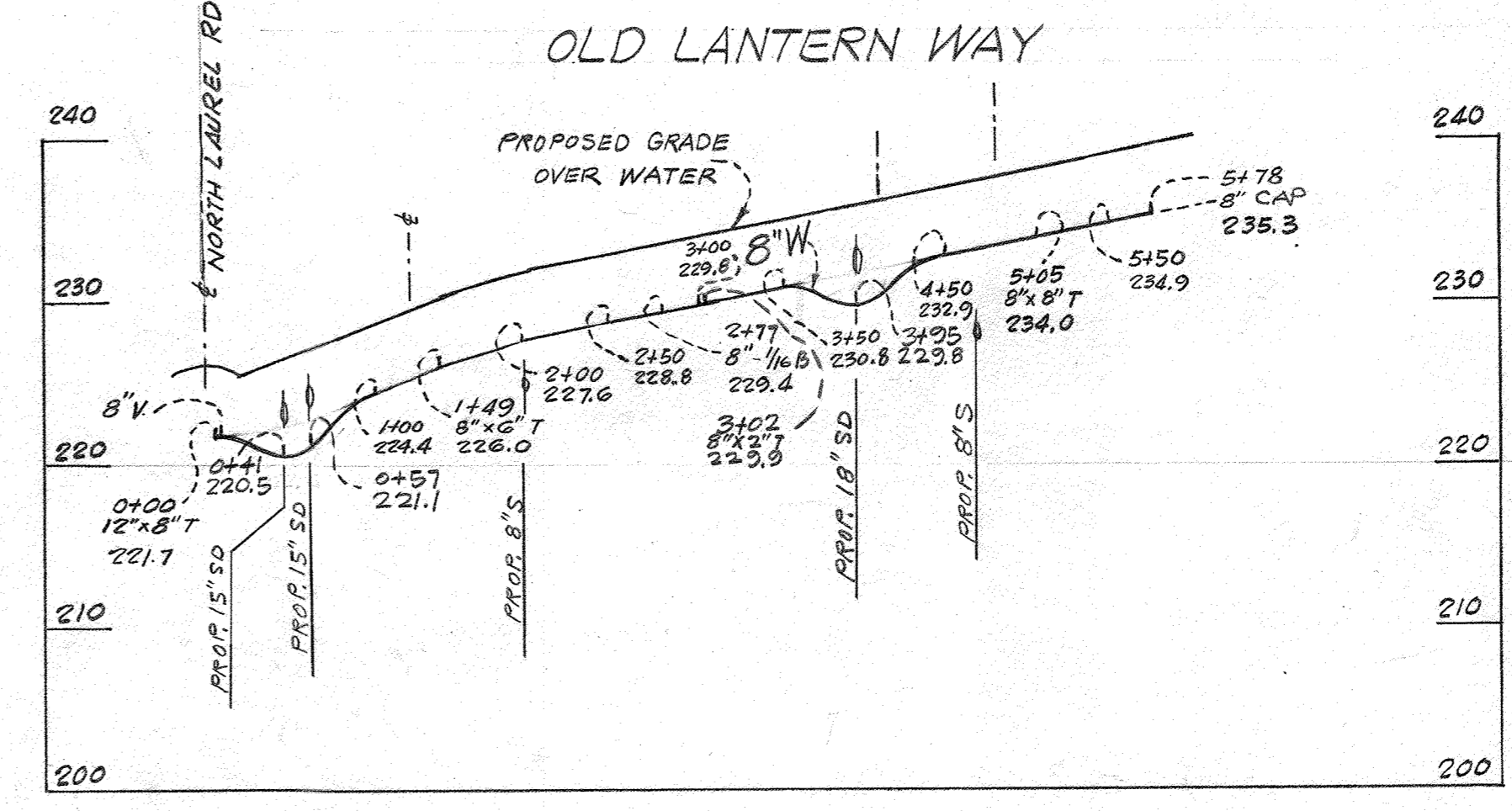
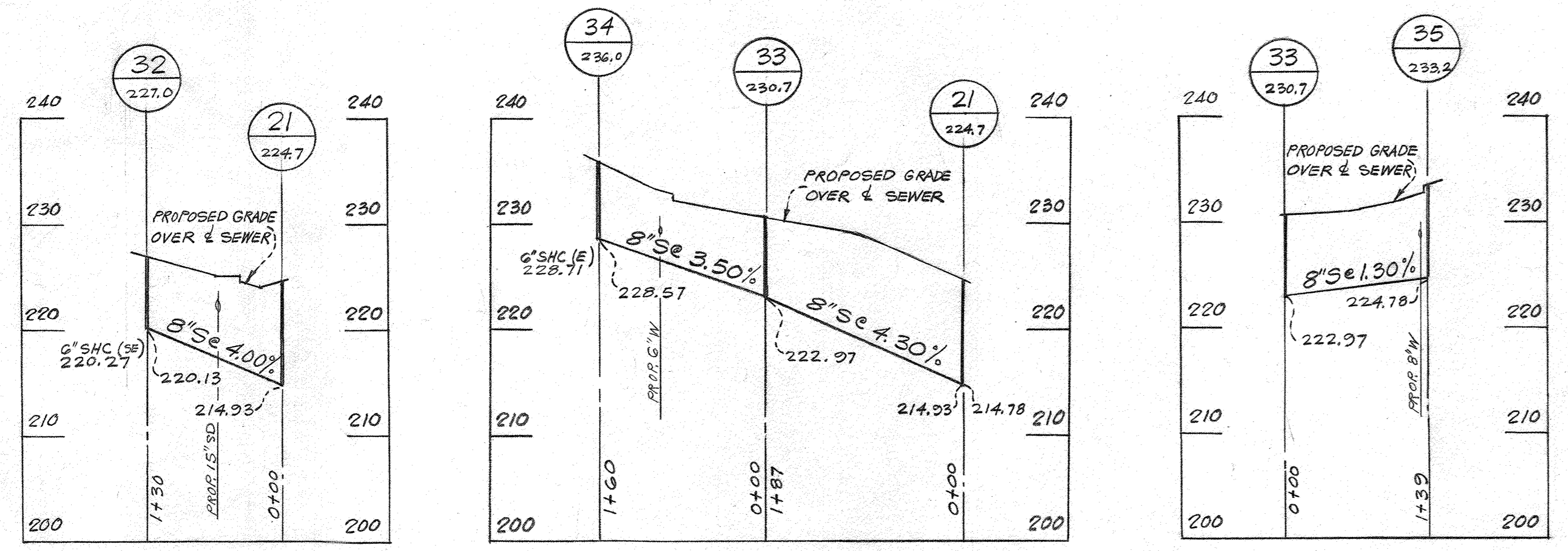
George D. Worsley, Jr.
 PROFILE
 SCALE: HORIZ. 1"=100'
 VERT. 1"=10'

JEROME J. NORRIS & ASSOCIATES LAND PLANNING - HOUSING CONSULTANTS 6001 32ND STREET, N.W. WASHINGTON, D.C.	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 7-27-72 DATE <i>W O Falbert</i> CHIEF - BUREAU OF WATER AND SEWER	CONTRACT NO. 491-D-W&S	PROFILE OF WATER & SEWER MAINS	SECTION 2 & 3 WHISKEY BOTTOM APARTMENTS 6TH ELECTION DISTRICT, HOWARD COUNTY, MD.	DRAWING NO. 3 OF 4	SCALE AS SHOWN
					AS BUILT 10-2-73	

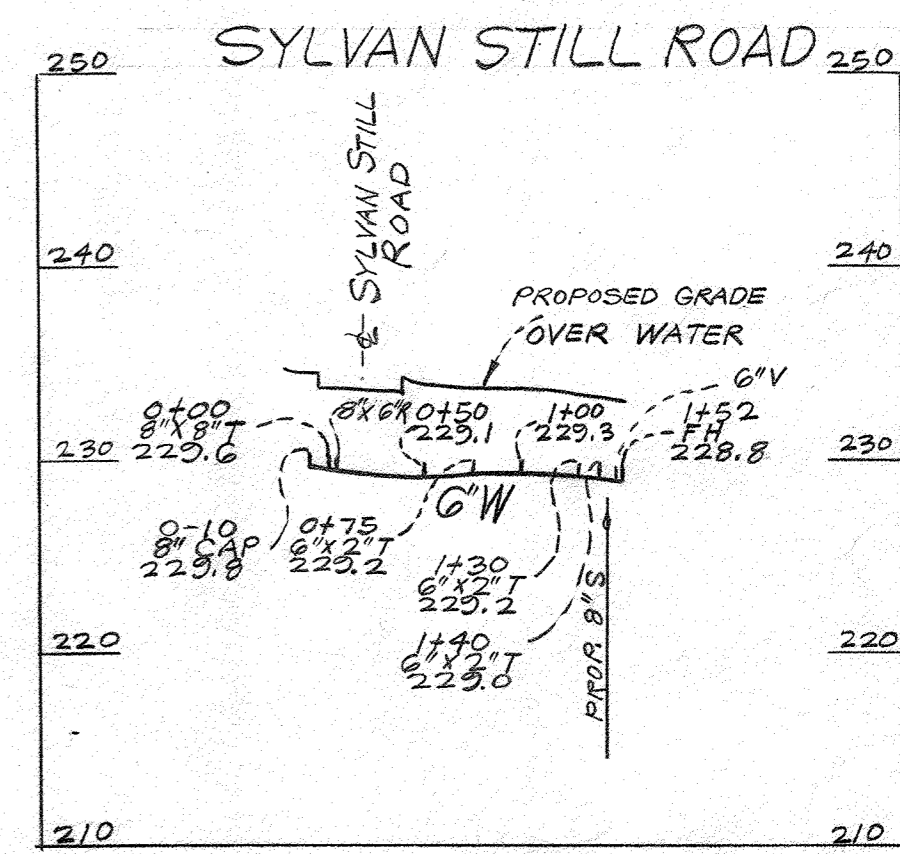
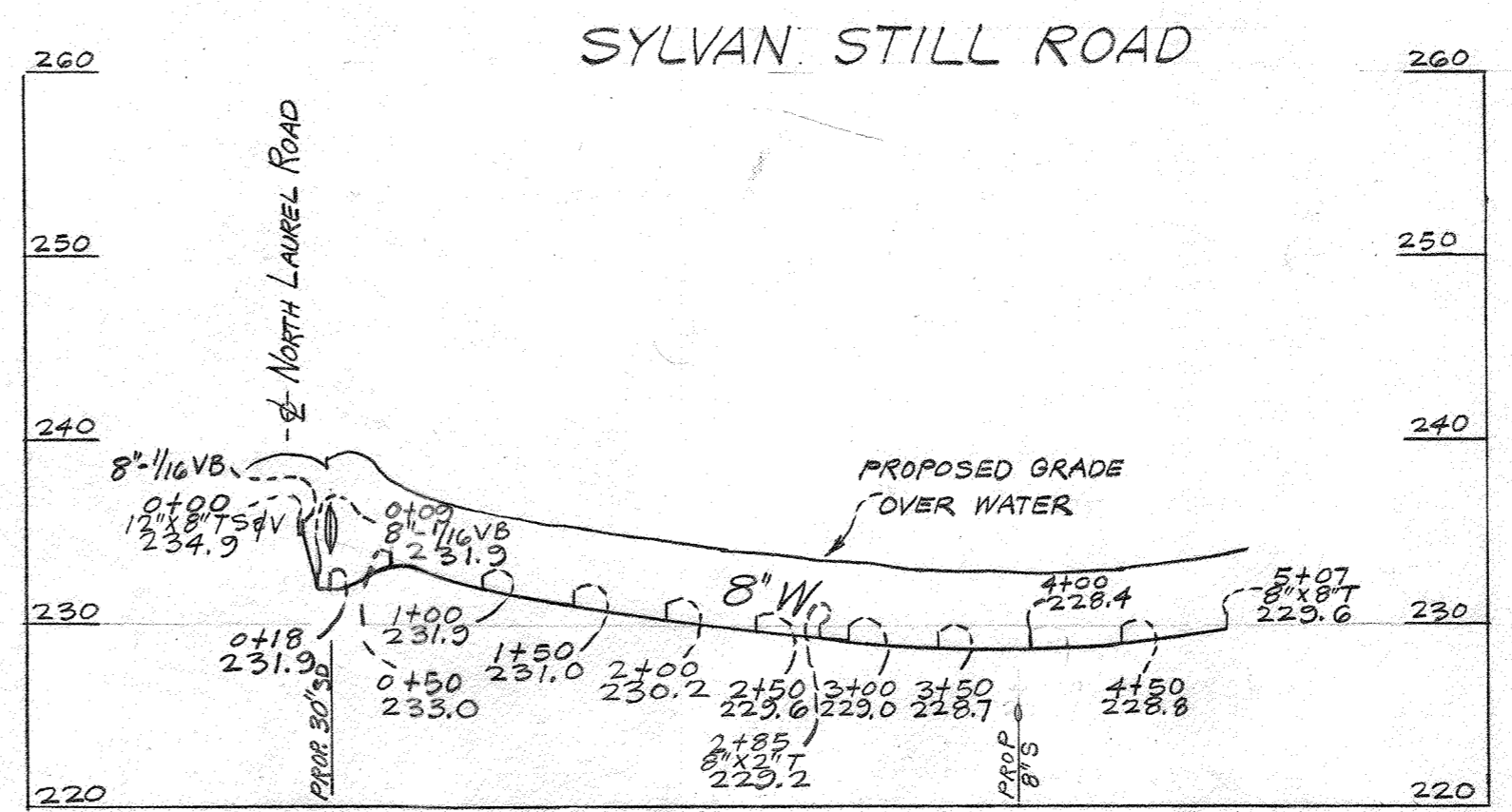
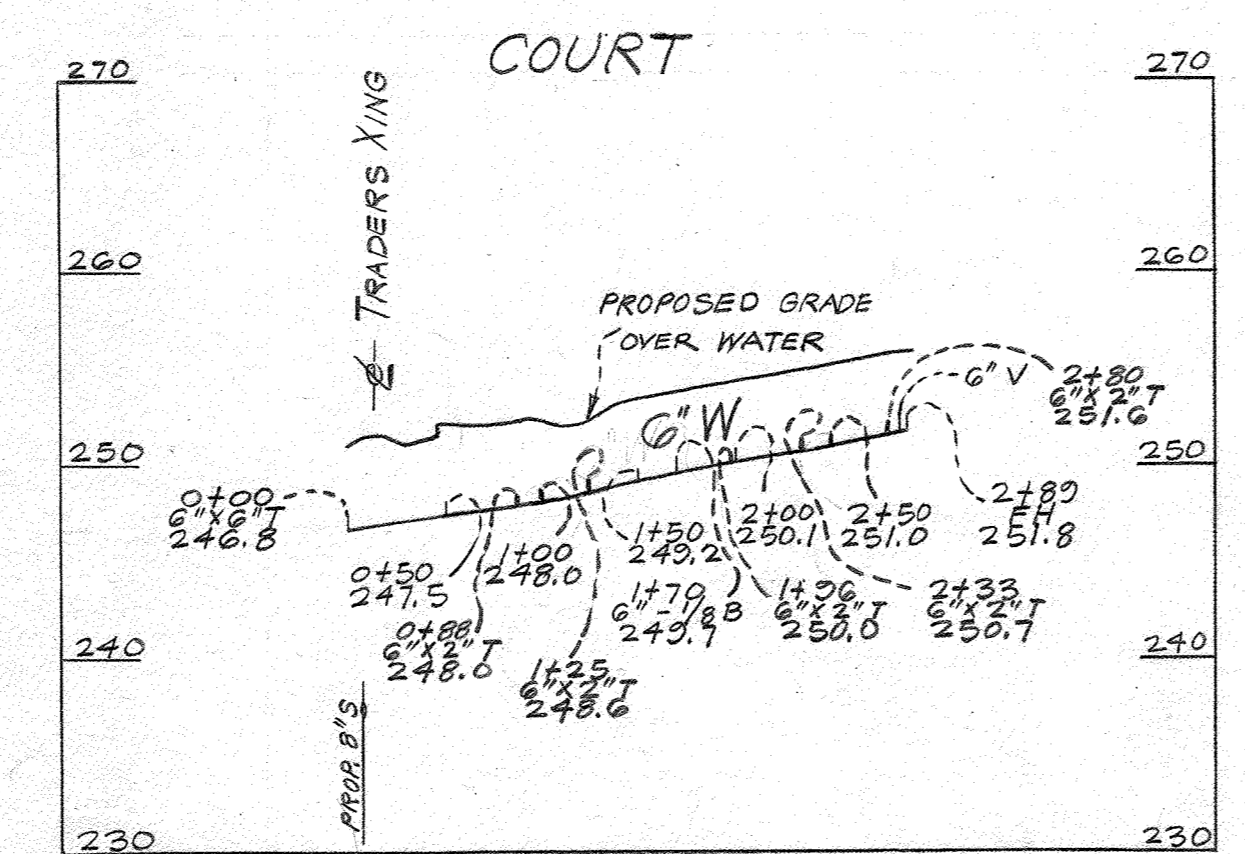
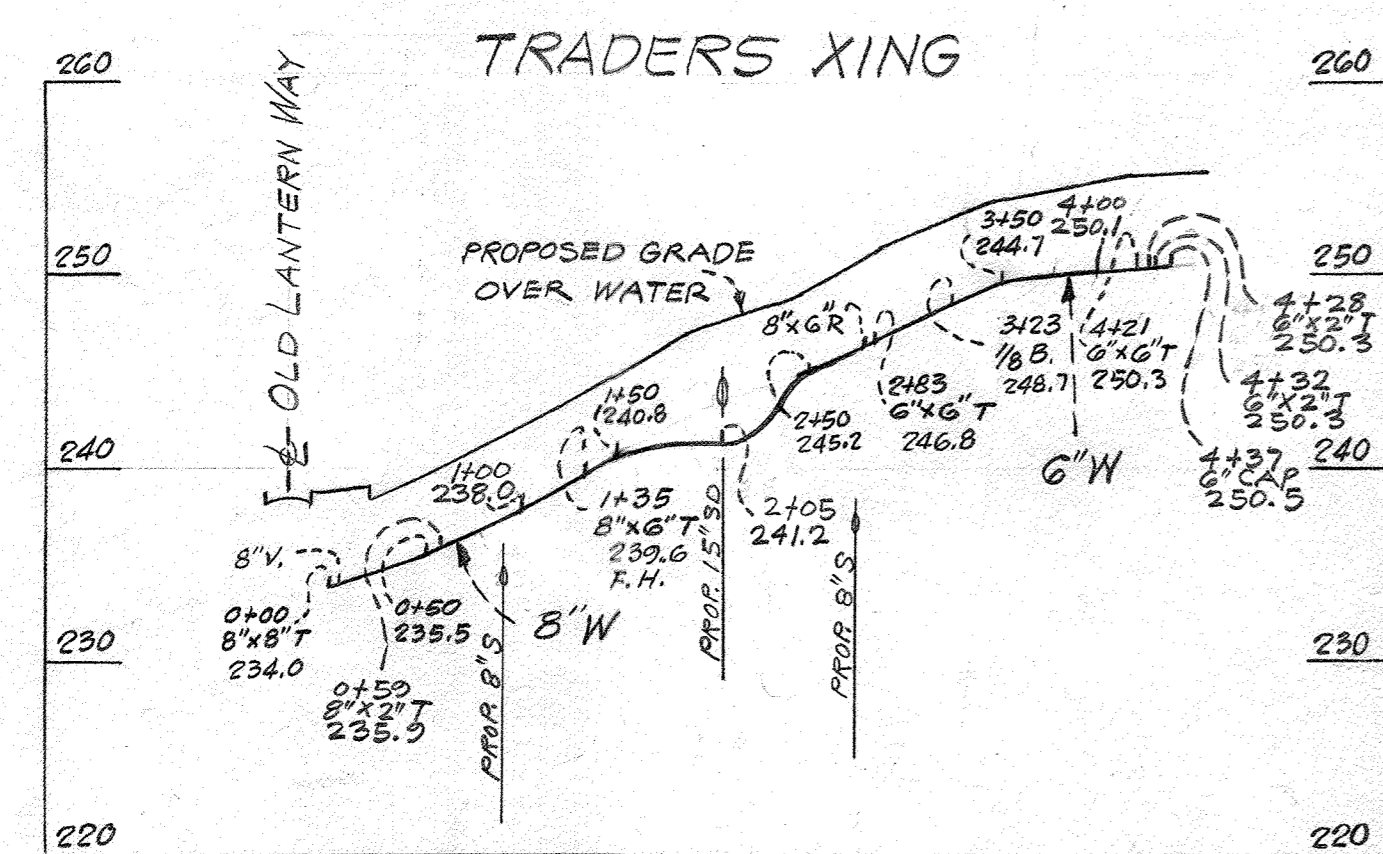
WS 491 W&S/3



ALL PROFILES SHOWN HEREON ARE IN PART TWO



STATE OF MARYLAND
 GEORGE W. WATSON, JR.
 REGISTERED PROFESSIONAL ENGINEER
 No. 3733
 PROFILE
 HORIZ. 1" = 100'
 SCALE: VERT. 1" = 10'



JEROME J. NORRIS & ASSOCIATES LAND PLANNING - HOUSING CONSULTANTS 6001 32ND STREET, N.W. WASHINGTON, D.C.	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 7-27-72 DATE W. O. Falbert CHIEF - BUREAU OF WATER AND SEWER	CONTRACT NO. 491-D-W45	PROFILE OF WATER & SEWER MAINS	SECTION 2 & 3 WHISKEY BOTTOM APARTMENTS 6TH ELECTION DISTRICT, HOWARD COUNTY, MD.	DRAWING NO. 4 OF 4 SCALE A3 SHOWN
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AS BUILT 10-2-73

H/S/M 491 SM

HITCHING POST LANE SEWER AND STREAM STABILIZATION

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
CAPITAL PROJECT S6268
CONTRACT NO. 0491-D

PURPOSE OF PROJECT

THIS PROJECT WILL INSTALL STREAM BED AND BANK STABILIZATION STRUCTURES TO ADDRESS AN EXPOSED SEWER LINE CROSSING IN A SEVERELY ERODED STREAM CHANNEL BETWEEN HITCHING POST LANE AND BRIDLE PATH LANE. THE STABILIZATION WILL BEGIN UPSTREAM OF AND CONTINUE OVER THE EXPOSED SEWER, AND TIE INTO THE EXISTING CHANNEL GRADE AT A RELATIVELY STABLE LOCATION.

NO IMPROVEMENTS TO THE REACH DRAINAGE AREA ARE PROPOSED, THEREFORE WATER QUALITY VOLUME REQUIREMENTS ARE NOT APPLICABLE. NO IMPERVIOUS AREA WITHIN THE SITE TO BE ALTERED, THEREFORE IMPLEMENTATION OF ESD PRACTICES IS NOT APPLICABLE. COMPREHENSIVE EROSION AND SEDIMENT CONTROL WILL BE REQUIRED FOR THE DURATION OF THE PROJECT. WATER HANDLING MEASURES WILL INVOLVE DIVERTING BASEFLOW AROUND THE WORK AREA USING A COMBINATION OF SANDBAG DIKES AND PUMP-AROUND PRACTICES TO A FILTER BAG. PERIMETER CONTROLS WILL BE INSTALLED DIRECTLY DOWNSTREAM OF STAGING AND STOCKPILE AREAS AND CONSTRUCTION ACCESS ROADS. ACCESS WILL BE VIA A STABILIZED CONSTRUCTION ENTRANCE FROM THE ADJACENT CONDOMINIUM COMPLEX PARKING LOT.

GENERAL NOTES

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- THE EXISTING TOPOGRAPHY IS FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY KCI TECHNOLOGIES, INC., ON JULY 12 THROUGH JULY 19, AND JULY 31, 2018.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83/ 2011 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL. HOWARD COUNTY MONUMENT NUMBERS 47GC, 47H2, & 47HG WERE USED FOR THIS SITE. 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 SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS ARE 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 HIS 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&T1-800-252-1133
BGE (CONSTRUCTION SERVICES).....410-637-8713
BGE (EMERGENCY).....410-685-0123
BUREAU OF UTILITIES.....410-313-4900
COLONIAL PIPELINE CO.....410-795-1390
MISS UTILITY.....1-800-257-7777
STATE HIGHWAY ADMINISTRATION.....410-531-5533
VERIZON.....1-800-743-0033
- 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 OF THE MAIN.
- 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.

SEWER GENERAL 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.

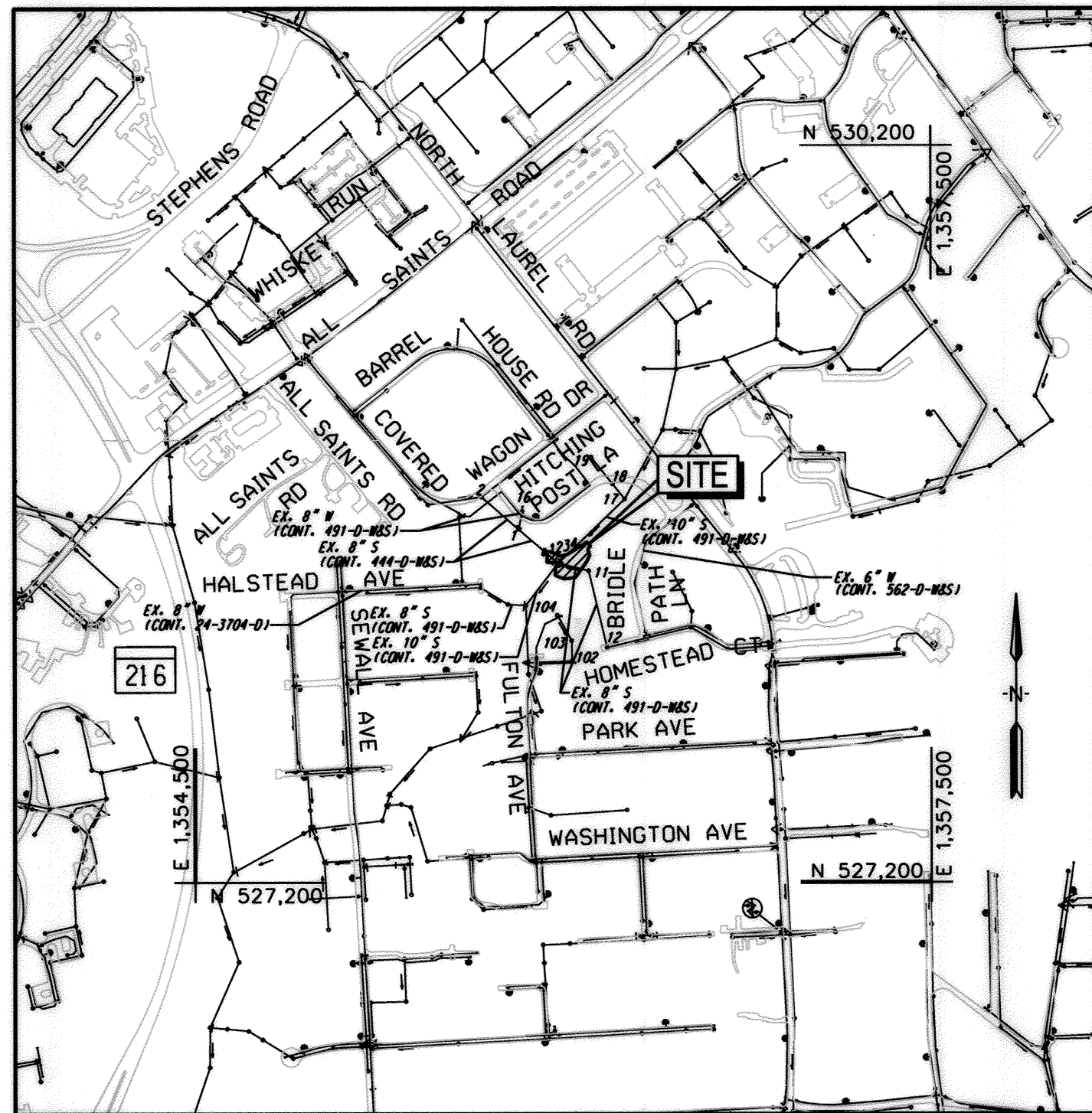
TYPE OF BUILDING: N/A
NUMBER OF PARCELS: N/A
NUMBER OF SEWER HOUSE CONNECTIONS: N/A
DRAINAGE AREA: MIDDLE PATUXENT
TREATMENT PLANT: LITTLE PATUXENT

CONTROL NOTE:
THE HORIZONTAL AND VERTICAL DATUM SHOWN HEREON ARE BASED ON THE FOLLOWING HOWARD COUNTY SURVEY CONTROL SYSTEM:
HORIZONTAL: NAD 1983
VERTICAL: NAVD 1988

HOWARD COUNTY SURVEY CONTROL			
DESIGNATION	NORTHING	EASTING	ELEVATION
47HG	531085.007	1357060.425	294.55
47GC	528939.703	1354223.637	226.31
47H2	529706.408	1355445.416	256.09

DESIGN INFORMATION	
WATERSHED ID	021311040940
IMPERVIOUS AREA (AC)	60.3
IMPERVIOUS TREATED (AC)	0.00*
DRAINAGE AREA (AC)	96
WATER QUALITY VOLUME (CF)	0.00*
% TREATED	0.00*

* SEE DESIGN NARRATIVE THIS SHEET



ADC MAP: 19 / J11

VICINITY MAP
SCALE: 1" = 600'

SITE ANALYSIS DATA	
SITE AREA (AC)	0.33
WETLAND AREA (AC)	0.00
WETLAND BUFFER (AC)	0.00
FLOODPLAIN AREA (AC)	0.00
FOREST LIMITS (AC)	0.00
STEEP SLOPE AREA >15% (AC)	0.13
ERODIBLE SOILS (AC)	0.00
LIMIT OF DISTURBANCE (AC)	0.33
PROPOSED SITE USE	SEWER AND STREAM STABILIZATION
PROPOSED IMPERVIOUS AREA (AC)	0.00

SHEET INDEX

DWG. NO.	SHEET NO.	SHEET TITLE
TI-01	4A	TITLE SHEET
ER-01	4B	ENVIRONMENTAL RESOURCES MAP
GS-01	4C	GEOMETRY PLAN
GR-01	4D	GRADING PLAN
DE-01 - DE-03	4E-4G	STREAM DETAILS
PR-01	4H	PROFILE
ES-01	4I	EROSION & SEDIMENT CONTROL PLAN
ESD-01 - ESD-02	4J-4K	EROSION & SEDIMENT CONTROL DETAILS
ESN-01 - ESN-02	4L-4M	EROSION & SEDIMENT CONTROL NOTES
LS-01	4N	LANDSCAPE PLAN
LD-01	4O	LANDSCAPE DETAILS

LEGEND

	200	EX. CONTOUR		200	PROPOSED CONTOUR
	SD	EX. STORM DRAIN			STONE TOE PROTECTION BANK TREATMENT
	S	EX. SANITARY SEWER			RIFFLE GRADE CONTROL
	W	EX. WATER			STEP CREST / POOL
	X	EX. METAL FENCE			SILL
		EX. MANHOLE			LIMIT OF DISTURBANCE
		EX. WOODS LINE			PUMP AND HOSE
		EX. EASEMENT			FILTER BAG
	WUS	PROPERTY LINE			ORANGE SAFETY FENCE
	SB	WATERS OF THE U.S.			SUPER SILT FENCE
	SB	EX. 75' STREAM BUFFER			SAND BAG DIKE
	FCE	EX. FOREST CONSERVATION AREA			STABILIZED CONSTRUCTION ENTRANCE
		EX. RIPRAP			TEMPORARY ACCESS BRIDGE
		HIGHLY ERODIBLE SOILS (EROSION FACTOR >0.35)			TEMPORARY CONSTRUCTION EASEMENT
		SLOPES 15 - 25%			CURB INLET PROTECTION
		SLOPES 25% OR GREATER			
		MULCH ACCESS ROAD			
		MULCH AND HARDWOOD MATTING ACCESS ROAD			
		RIGHT OF ENTRY			

OWNER'S/DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL 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 MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO THE BEGINNING OF THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Silver Chai 2020-6-9
OWNERS / DEVELOPERS SIGNATURE DATE

SILVER CHAI PROJECT MANAGER
PRINTED NAME & TITLE

HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT EP-19-13

Shannon Lucas 6/16/20
HOWARD SOIL CONSERVATION DISTRICT DATE APPROVED

DESIGN 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."

Shannon C. Lucas 2020-6-15
DESIGNERS SIGNATURE DATE

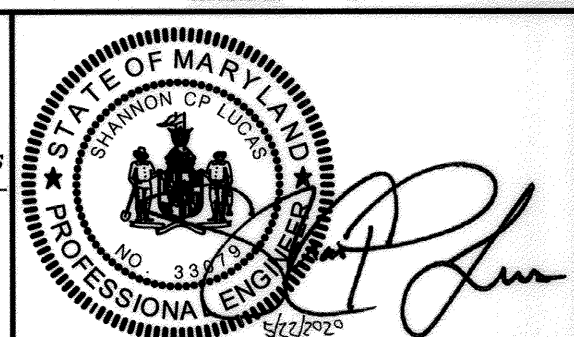
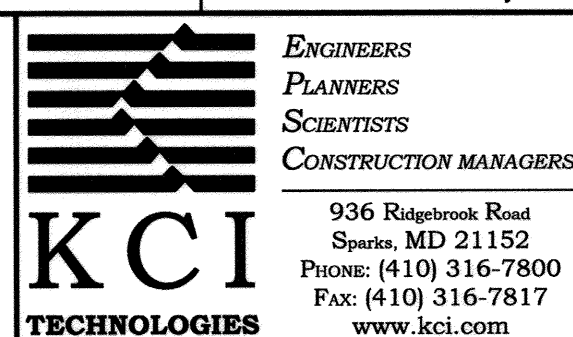
SHANNON C.P. LUCAS MD REGISTRATION NO. 33079
PRINTED NAME (P.E.) R.L.S. OR R.L.A. (CIRCLE ONE)

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	PARCEL#
WHISKEY BOTTOM CONDO NORTH PATUXENT RIDGE		881,374
PLAT# or L.P. #	GRID ZONING	R-1-15, R-SC
14475, O. S. 17	47	6
TAX MAP NO. ELECT. DISTR. CENSUS TRACT	47	6
606906		
WATER CODE	SEWER CODE	
PUBLIC	PUBLIC	

OWNER:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
7125 RIVERWOOD DRIVE, SUITE B
COLUMBIA, MD 21046
410-313-6444

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. 33079, Expiration Date 01-16-2021.



DES:	DRN:	CHK:	DATE:	BY:	NO.:	REVISION:	DATE:
SC	CD, JS	SL	MAY 2020				

DESIGN CERTIFICATION

"I hereby certify, by my seal, that to the best of my knowledge and belief the features shown on this plan were constructed as shown on this 'AS-BUILT' plan meet the Approved Plans and Specifications."

Shannon Lucas 33079 12/10/20
Designer/Consultant (print name) License Number Date

ADDENDUM TITLE SHEET

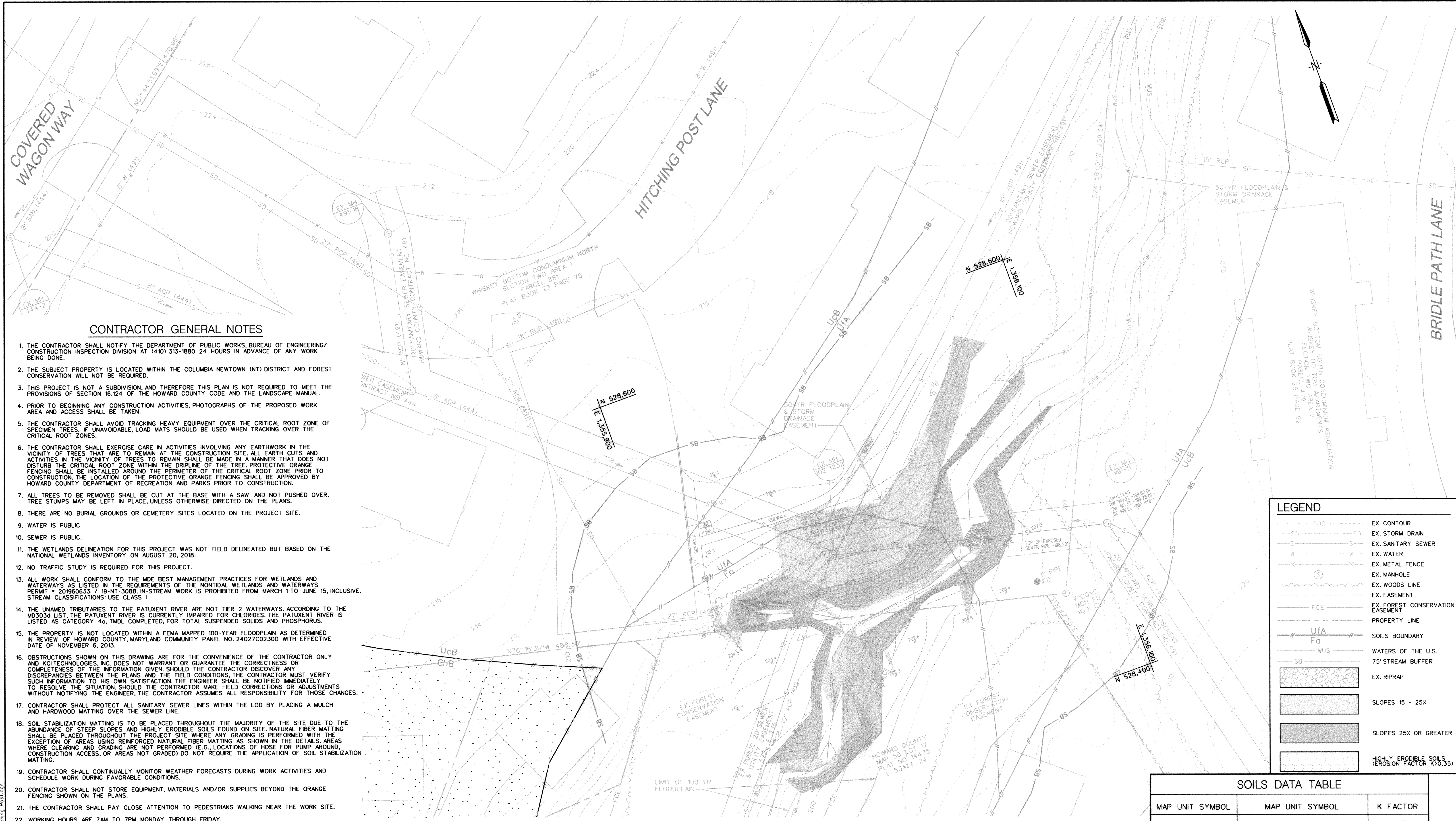
HITCHING POST LANE SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6268
CONTRACT NO. 0491-D

ELECTION DISTRICT NO. 6

HOWARD COUNTY, MARYLAND

DRAWING NO. TI-01
SCALE AS SHOWN
SHEET 4A OF 15



CONTRACTOR GENERAL NOTES

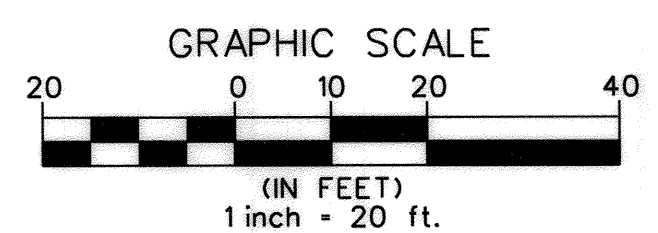
1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 24 HOURS IN ADVANCE OF ANY WORK BEING DONE.
2. THE SUBJECT PROPERTY IS LOCATED WITHIN THE COLUMBIA NEWTOWN (NT) DISTRICT AND FOREST CONSERVATION WILL NOT BE REQUIRED.
3. THIS PROJECT IS NOT A SUBDIVISION, AND THEREFORE THIS PLAN IS NOT REQUIRED TO MEET THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, PHOTOGRAPHS OF THE PROPOSED WORK AREA AND ACCESS SHALL BE TAKEN.
5. THE CONTRACTOR SHALL AVOID TRACKING HEAVY EQUIPMENT OVER THE CRITICAL ROOT ZONE OF SPECIMEN TREES. IF UNAVOIDABLE, LOAD MATS SHOULD BE USED WHEN TRACKING OVER THE CRITICAL ROOT ZONES.
6. THE CONTRACTOR SHALL EXERCISE CARE IN ACTIVITIES INVOLVING ANY EARTHWORK IN THE VICINITY OF TREES THAT ARE TO REMAIN AT THE CONSTRUCTION SITE. ALL EARTH CUTS AND ACTIVITIES IN THE VICINITY OF TREES TO REMAIN SHALL BE MADE IN A MANNER THAT DOES NOT DISTURB THE CRITICAL ROOT ZONE WITHIN THE DRIPLINE OF THE TREE. PROTECTIVE ORANGE FENCING SHALL BE INSTALLED AROUND THE PERIMETER OF THE CRITICAL ROOT ZONE PRIOR TO CONSTRUCTION. THE LOCATION OF THE PROTECTIVE ORANGE FENCING SHALL BE APPROVED BY HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS PRIOR TO CONSTRUCTION.
7. ALL TREES TO BE REMOVED SHALL BE CUT AT THE BASE WITH A SAW AND NOT PUSHED OVER. TREE STUMPS MAY BE LEFT IN PLACE, UNLESS OTHERWISE DIRECTED ON THE PLANS.
8. THERE ARE NO BURIAL GROUNDS OR CEMETERY SITES LOCATED ON THE PROJECT SITE.
9. WATER IS PUBLIC.
10. SEWER IS PUBLIC.
11. THE WETLANDS DELINEATION FOR THIS PROJECT WAS NOT FIELD DELINEATED BUT BASED ON THE NATIONAL WETLANDS INVENTORY ON AUGUST 20, 2018.
12. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
13. ALL WORK SHALL CONFORM TO THE MDE BEST MANAGEMENT PRACTICES FOR WETLANDS AND WATERWAYS AS LISTED IN THE REQUIREMENTS OF THE NONTIDAL WETLANDS AND WATERWAYS PERMIT # 201806633 / 19-NT-3088. IN-STREAM WORK IS PROHIBITED FROM MARCH 1 TO JUNE 15, INCLUSIVE. STREAM CLASSIFICATIONS: USE CLASS 1.
14. THE UNAMED TRIBUTARIES TO THE PATUXENT RIVER ARE NOT TIER 2 WATERWAYS, ACCORDING TO THE MDE 303 LIST. THE PATUXENT RIVER IS CURRENTLY IMPAIRED FOR CHLORIDES. THE PATUXENT RIVER IS LISTED AS CATEGORY 4g, TMDL COMPLETED, FOR TOTAL SUSPENDED SOLIDS AND PHOSPHORUS.
15. THE PROPERTY IS NOT LOCATED WITHIN A FEMA MAPPED 100-YEAR FLOODPLAIN AS DETERMINED IN REVIEW OF HOWARD COUNTY, MARYLAND COMMUNITY PANEL NO. 24027C0230D WITH EFFECTIVE DATE OF NOVEMBER 6, 2013.
16. OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND KCI TECHNOLOGIES, INC. DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
17. CONTRACTOR SHALL PROTECT ALL SANITARY SEWER LINES WITHIN THE LOD BY PLACING A MULCH AND HARDWOOD MATTING OVER THE SEWER LINE.
18. SOIL STABILIZATION MATTING IS TO BE PLACED THROUGHOUT THE MAJORITY OF THE SITE DUE TO THE ABUNDANCE OF STEEP SLOPES AND HIGHLY ERODIBLE SOILS FOUND ON SITE. NATURAL FIBER MATTING SHALL BE PLACED THROUGHOUT THE PROJECT SITE WHERE ANY GRADING IS PERFORMED WITH THE EXCEPTION OF AREAS USING REINFORCED NATURAL FIBER MATTING AS SHOWN IN THE DETAILS. AREAS WHERE CLEARING AND GRADING ARE NOT PERFORMED (E.G. LOCATIONS OF HOSE FOR PUMP AROUND, CONSTRUCTION ACCESS, OR AREAS NOT GRADED) DO NOT REQUIRE THE APPLICATION OF SOIL STABILIZATION MATTING.
19. CONTRACTOR SHALL CONTINUALLY MONITOR WEATHER FORECASTS DURING WORK ACTIVITIES AND SCHEDULE WORK DURING FAVORABLE CONDITIONS.
20. CONTRACTOR SHALL NOT STORE EQUIPMENT, MATERIALS AND/OR SUPPLIES BEYOND THE ORANGE FENCING SHOWN ON THE PLANS.
21. THE CONTRACTOR SHALL PAY CLOSE ATTENTION TO PEDESTRIANS WALKING NEAR THE WORK SITE.
22. WORKING HOURS ARE 7AM TO 7PM MONDAY THROUGH FRIDAY.
23. THE CONTRACTOR SHALL LIMIT THE DAILY DISTURBANCE TO AN AREA THAT CAN AND SHALL BE TEMPORARILY STABILIZED BY THE END OF EACH WORK DAY (PER DAILY PUMP REMOVAL).
24. UPON COMPLETION OF THE WORK, BUT PRIOR TO DE-MOBILIZATION, THE CONTRACTOR SHALL REMOVE ALL REMNANTS OF CONSTRUCTION MATERIALS FROM THE SITE. MULCH APPLIED TO VEGETATED AREAS SHALL BE REMOVED PRIOR TO FINAL PERMANENT SEEDING.
25. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITIONS.

LEGEND

SD	EX. CONTOUR
SD	EX. STORM DRAIN
S	EX. SANITARY SEWER
W	EX. WATER
X	EX. METAL FENCE
⊙	EX. MANHOLE
~	EX. WOODS LINE
- - -	EX. EASEMENT
FCE	EX. FOREST CONSERVATION EASEMENT
---	PROPERTY LINE
Ufa	SOILS BOUNDARY
Fa	SOILS BOUNDARY
WUS	WATERS OF THE U.S.
SB	75' STREAM BUFFER
[Pattern]	EX. RIPRAP
[Pattern]	SLOPES 15 - 25%
[Pattern]	SLOPES 25% OR GREATER
[Pattern]	HIGHLY ERODIBLE SOILS (EROSION FACTOR K30.35)

SOILS DATA TABLE

MAP UNIT SYMBOL	MAP UNIT SYMBOL	K FACTOR
ChB	CHILLUM-RUSSETT LOAM	0.43
UcB	CHILLUM-BELTSVILLE COMPLEX - URBAN LAND	N/A
Ufa	FALLSINGTON COMPLEX - URBAN LAND	0.28
FaaA	FALLSINGTON SANDY LOAM	0.24

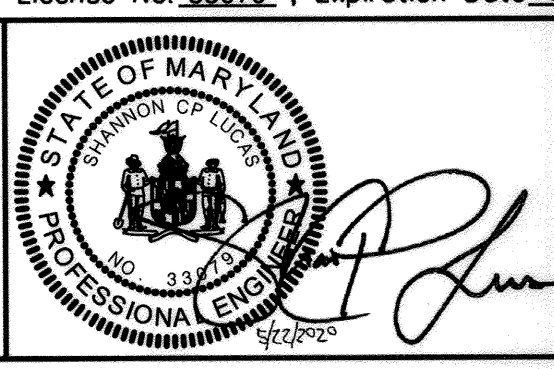


PROFESSIONAL CERTIFICATION. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33079, Expiration Date 01-16-2021.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 6/19/2020
 Chief, Bureau of Engineering: *[Signature]* DATE: 6/19/2020
 Chief, Bureau of Utilities: *[Signature]* DATE: 6/19/2020
 Chief, Utility Design Division: *[Signature]* DATE: 6/19/2020

KCI TECHNOLOGIES
 936 Ridgeway Road
 Sparks, MD 21152
 Phone: (410) 316-7800
 Fax: (410) 316-7817
 www.kci.com



DES: SC	
DRN: CD, JS	
CHK: SL	
DATE: MAY 2020	
BY	NO.
REVISION	

ADDENDUM ENVIRONMENTAL RESOURCES MAP

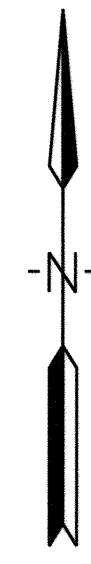
600' SCALE MAP NO. 47.50 BLOCK NO. 3.21

HITCHING POST LANE SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6288
 CONTRACT No. 0491-D
 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE: 1" = 20'
 SHEET: 4B OF 15

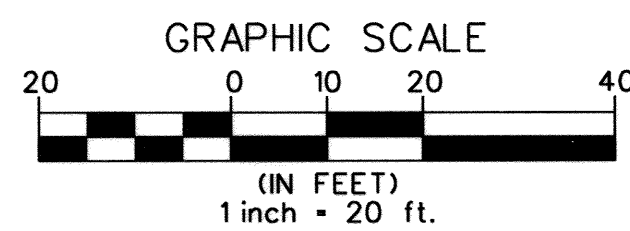
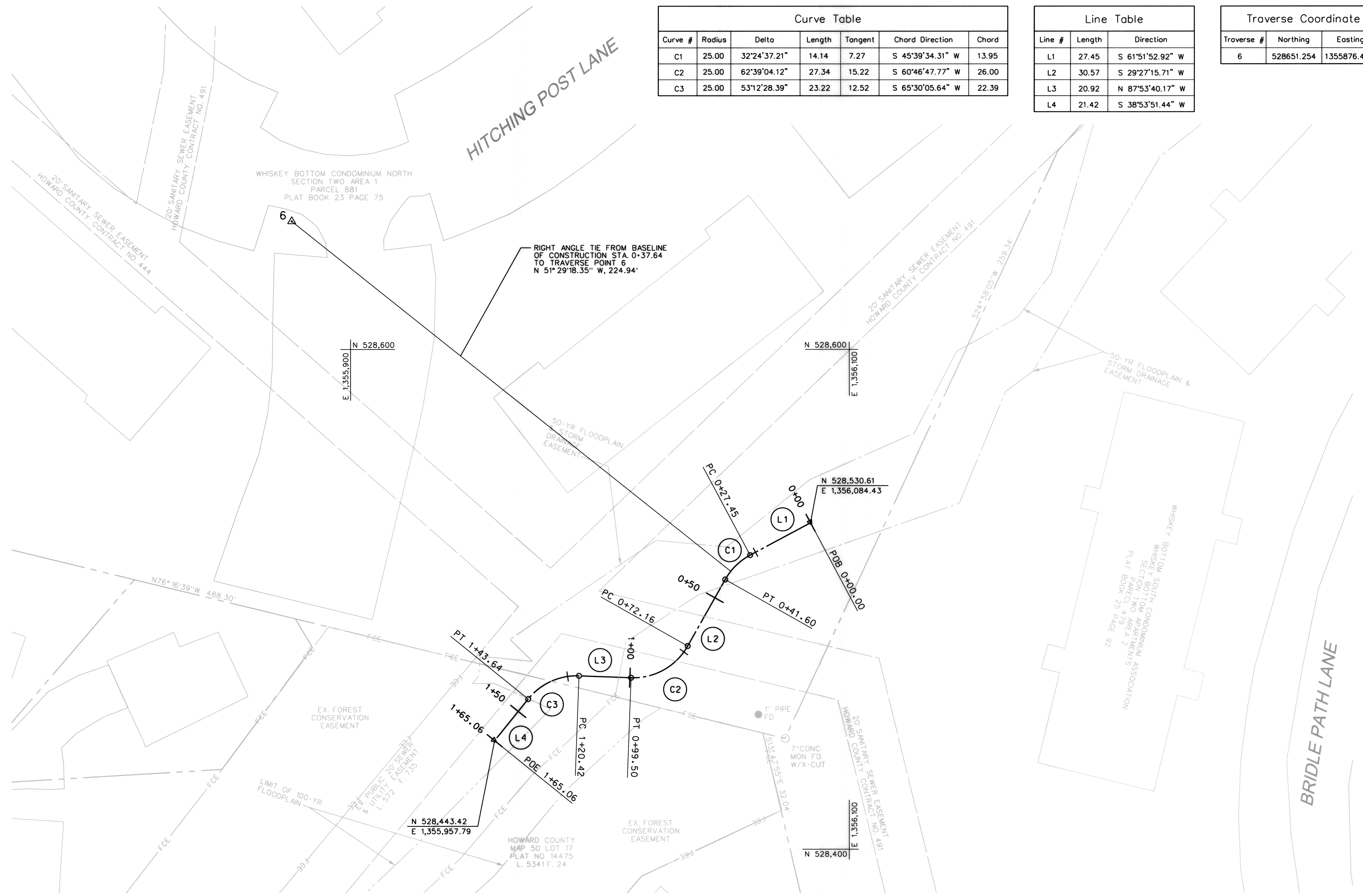
PLOTTED: 02:21 PM on Friday, May 22, 2020
 FILE: M:\2018\13802366\02\Drawing\02-ER-FOU1-Hitching Post.dgn



Curve Table						
Curve #	Radius	Delta	Length	Tangent	Chord Direction	Chord
C1	25.00	32°24'37.21"	14.14	7.27	S 45°39'34.31" W	13.95
C2	25.00	62°39'04.12"	27.34	15.22	S 60°46'47.77" W	26.00
C3	25.00	53°12'28.39"	23.22	12.52	S 65°30'05.64" W	22.39

Line Table		
Line #	Length	Direction
L1	27.45	S 61°51'52.92" W
L2	30.57	S 29°27'15.71" W
L3	20.92	N 87°53'40.17" W
L4	21.42	S 38°53'51.44" W

Traverse Coordinate Table			
Traverse #	Northing	Easting	Elevation
6	528651.254	1355876.438	218.392

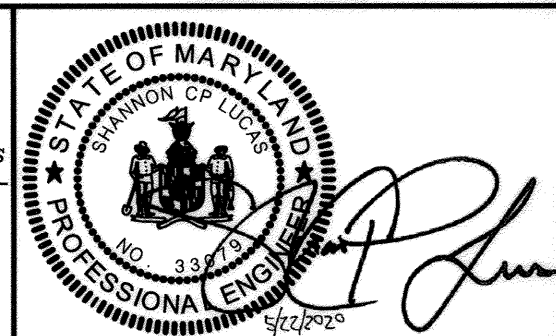


PROFESSIONAL CERTIFICATION: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33072, Expiration Date 01-16-2021.

PLOTTER: HP 9000 Plotter, P2, 2020; FILE: \\A:\2018\131802\66\02\Drawings\03\POS-P001-Hitching Post.dgn

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *[Signature]* DATE: 6/19/2020
 Chief, Bureau of Engineering: *[Signature]* DATE: 6/19/2020
 Chief, Bureau of Utilities: *[Signature]* DATE: 6/19/2020
 Chief, Utility Design Division: *[Signature]* DATE: 6/19/2020

KCI TECHNOLOGIES
 ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS
 936 Ridgely Road
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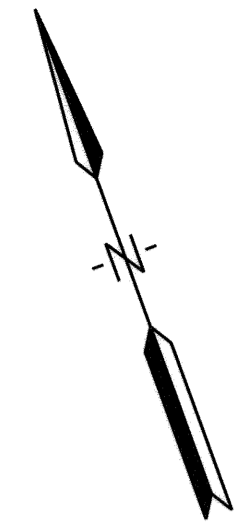


DES: SC
 DRN: CD, JS
 CHK: SL
 DATE: MAY 2020
 BY: NO. REVISION DATE

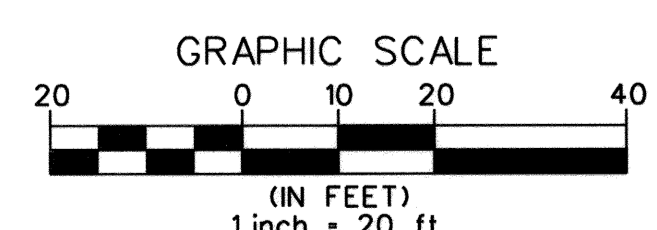
**ADDENDUM
 GEOMETRY SHEET**
 600' SCALE MAP NO. 47.50 BLOCK NO. 3.21

**HITCHING POST LANE
 SEWER AND STREAM STABILIZATION**
 CAPITAL PROJECT S6268
 CONTRACT No. 0491-D
 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO. GS-01
 SCALE 1" = 20'
 SHEET 4C OF 15



LEGEND	
	EX. CONTOUR
	EX. STORM DRAIN
	EX. SANITARY SEWER
	EX. WATER
	EX. METAL FENCE
	EX. MANHOLE
	EX. WOODS LINE
	EX. EASEMENT
	50-YR FLOODPLAIN AND STORM DRAINAGE EASEMENT
	LIMIT OF 100-YR FLOODPLAIN
	EX. FOREST CONSERVATION EASEMENT
	PROPERTY LINE
	WATERS OF THE U.S.
	EX. RIPRAP
	LIMIT OF DISTURBANCE
	PROPOSED CONTOUR
	STEP CREST / POOL
	RIFFLE GRADE CONTROL
	STONE TOE PROTECTION BANK TREATMENT
	RIGHT OF ENTRY



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. 33072, Expiration Date 01-16-2021.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 6/10/20
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 6/9/2020
CHIEF, BUREAU OF UTILITIES DATE

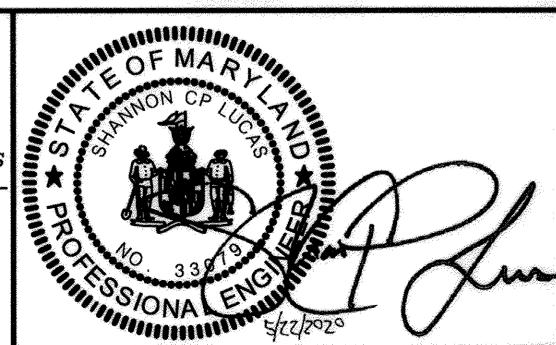
[Signature] 6/10/20
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 6/10/20
CHIEF, UTILITY DESIGN DIVISION DATE

KCI TECHNOLOGIES

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

936 Ridgeway Road
Sparks, MD 21152
PHONE: (410) 316-7800
FAX: (410) 316-7817
www.kci.com



DES: SC			
DRN: CD, JS			
CHK: SL			
DATE: MAY 2020	BY	NO.	REVISION

ADDENDUM GRADING PLAN

600' SCALE MAP NO. 47.50 BLOCK NO. 3.21

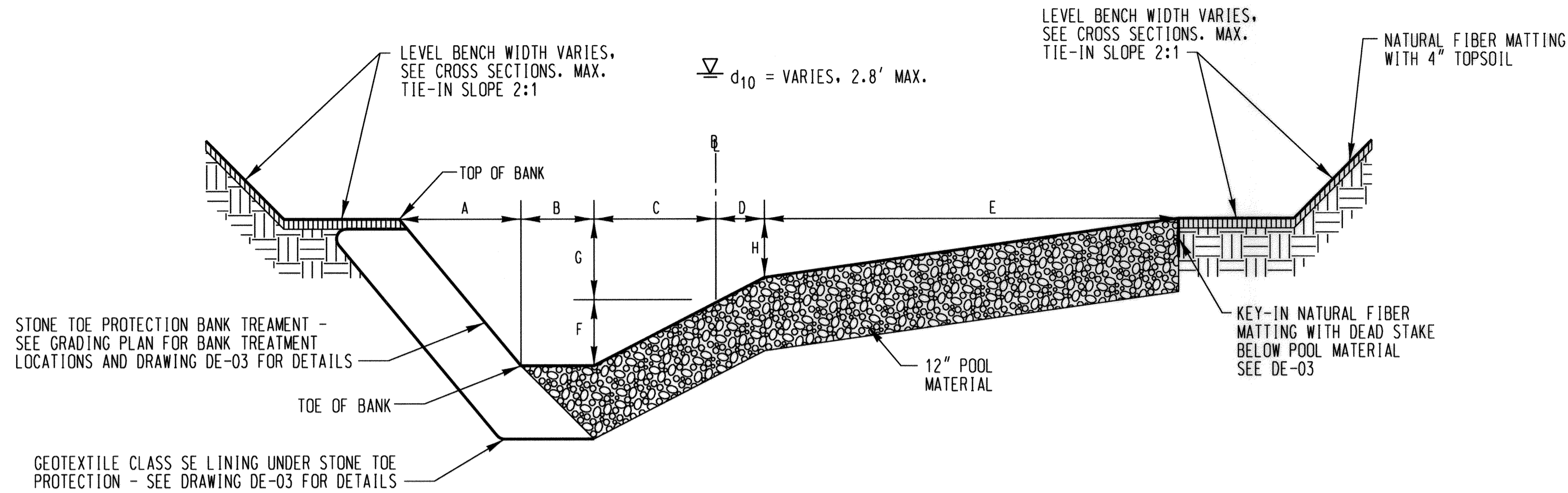
HITCHING POST LANE SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6268
CONTRACT No. 0491-D

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO. GR-01
SCALE 1" = 20'
SHEET 40 OF 15

P:\CTE\1920\21\DWG\1920_P01.dwg, May 22, 2020, FILE: \\1920\13180\2566\02\Drawings\1920_P01.dwg



TYPICAL POOL LEFT CROSS SECTION

NOT TO SCALE

TYPICAL POOL								
PROFILE FEATURE	A	B	C	D	E	F	G	H
POOL STA. 0+27.45 TO 0+41.60	2.5'	1.5'	2.5'	1.0'	8.5'	1.0'	1.0'	0.8'

CROSS SECTION DESIGN PARAMETERS AT Q10											
LOCATION	FEATURE	TREATMENT	Q ₁₀ (cfs)	d ₁₀ MAX DEPTH (ft)	D ₅₀ (inches)	STONE SIZE		VELOCITY (fps)		SHEAR (lb/ft ²)	
						CLASS	MAXIMUM DESIGN	PERMISSIBLE	MAXIMUM DESIGN	PERMISSIBLE	
STA. 0+10 TO 0+27.45 & 0+42 TO 0+72 & 1+08 TO 1+20	RIFFLE	RGC	260	2.8	16	CLASS II	8.5	12-16	3.1	7.0	
STA. 0+74 TO 0+89 & 0+91 TO 1+06	STEP POOL	POOL PAVEMENT	260	3.5	16	CLASS II	7.8	12-16	3.1	7.0	

CHANNEL SAND & GRAVEL, GRANULAR FILTER & POOL MATERIAL	
% LESS THAN	DIAMETER (IN.)
100	2.5
84	1.0
60	0.5
50	NO. 10
30	NO. 40
10	NO. 200

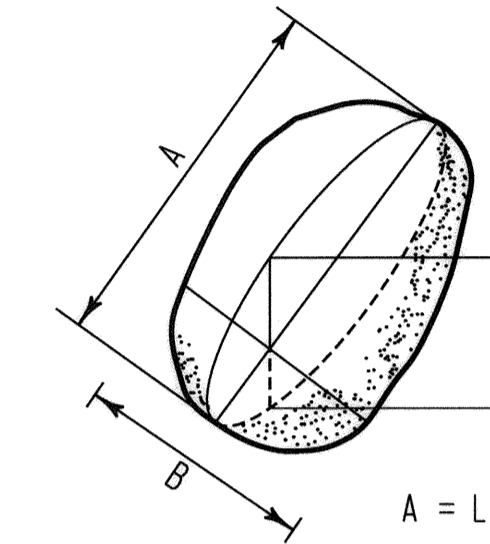
NOTE: POOL MATERIAL SHALL BE SALVAGED WHEN POSSIBLE. ONLY FURNISH POOL MATERIAL WHEN SALVAGED IS NOT AVAILABLE. MATERIAL SHALL NOT BE COMPRISED OF RIPRAP BUT OF A NATURAL STREAM MATERIAL. POOL MATERIAL SHALL BE PLACED IN ALL POOLS FROM THE UPSTREAM TO DOWNSTREAM EXTENTS AS SHOWN ON THE PROFILE SHEETS.

RIFFLE GRADE CONTROL, STEP POOL PAVEMENT MATERIAL	
% LESS THAN	DIAMETER (IN.)
100	20.0
84	19.0
60	17.0
50	16.0
30	13.8
10	8.0

NOTE: RIFFLE GRADE CONTROL MATERIAL SHALL BE SALVAGED WHEN POSSIBLE. ONLY FURNISH RIFFLE GRADE CONTROL MATERIAL WHEN SALVAGED IS NOT AVAILABLE. MATERIAL CAN BE COMPRISED OF CLASS II RIPRAP WELL MIXED TO CONFORM TO THE SPECIFIED GRADATION.

SIZES FOR STONE TYPES			
AXIS	A (LONGEST)	B (INTERMEDIATE)	C (SHORTEST)
STONE TYPE	MAX.	RANGE	MIN.
CREST AND FOOTER STONES	3.0'	1.5' - 2.5'	1.5'
STONE TOE PROTECTION (SELECT CLASS II RIPRAP)	2.0'	1.2' - 1.5'	1.0'

* CREST AND FOOTER STONES SHALL BE BLOCKY IN SHAPE. ALL STONES SHALL BE GREY OR BROWN IN COLOR.



ROCK AXIS DEFINITION

NOT TO SCALE

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. 33079, Expiration Date 01-16-2021.

KCI TECHNOLOGIES
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 936 Ridgebrook Road
 Sparks, MD 21152
 Phone: (410) 316-7800
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 www.kci.com

Thomas R. Stubble
 PROFESSIONAL ENGINEER

DES: SC					
DRN: CD, JS					
CHK: SL					
DATE: MAY 2020	BY:	NO.	REVISION	DATE	

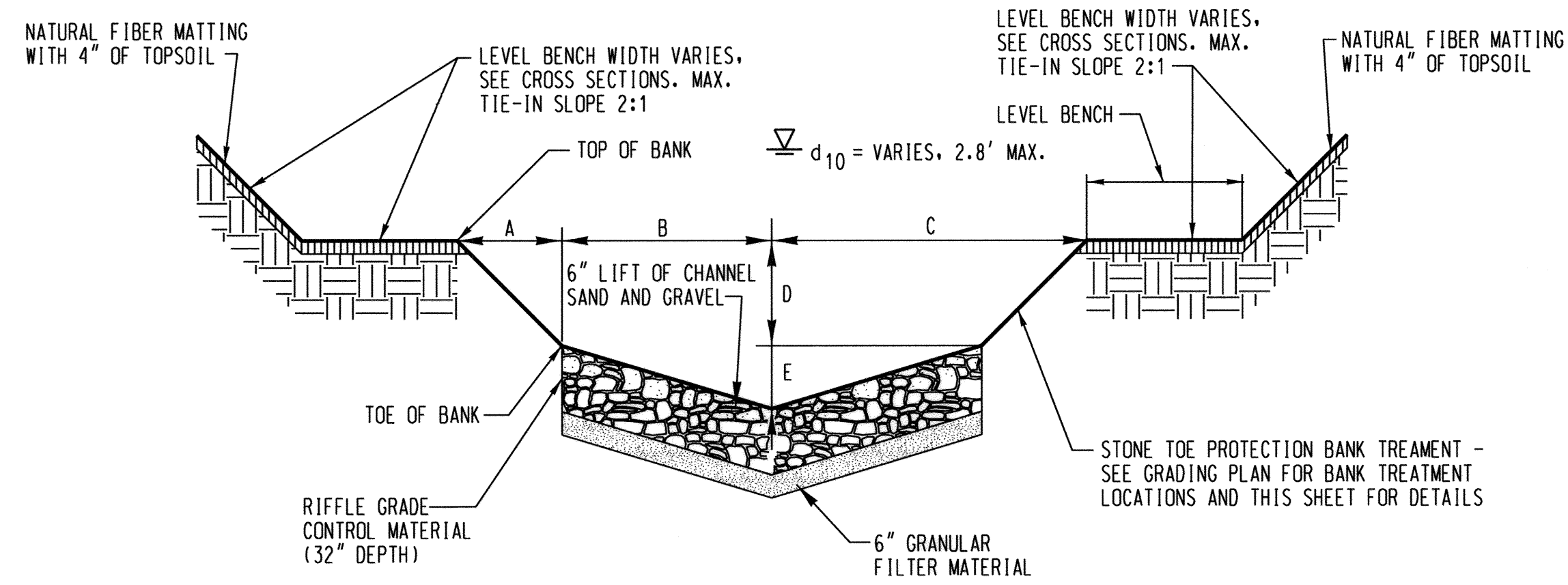
ADDENDUM DETAILS	
600' SCALE MAP NO. 47.50	BLOCK NO. 3.21

HITCHING POST LANE
SEWER AND STREAM STABILIZATION
 CAPITAL PROJECT S6268
 CONTRACT No. 0491-D
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

DRAWING NO. DE-01
SCALE AS SHOWN
SHEET 4E OF 15

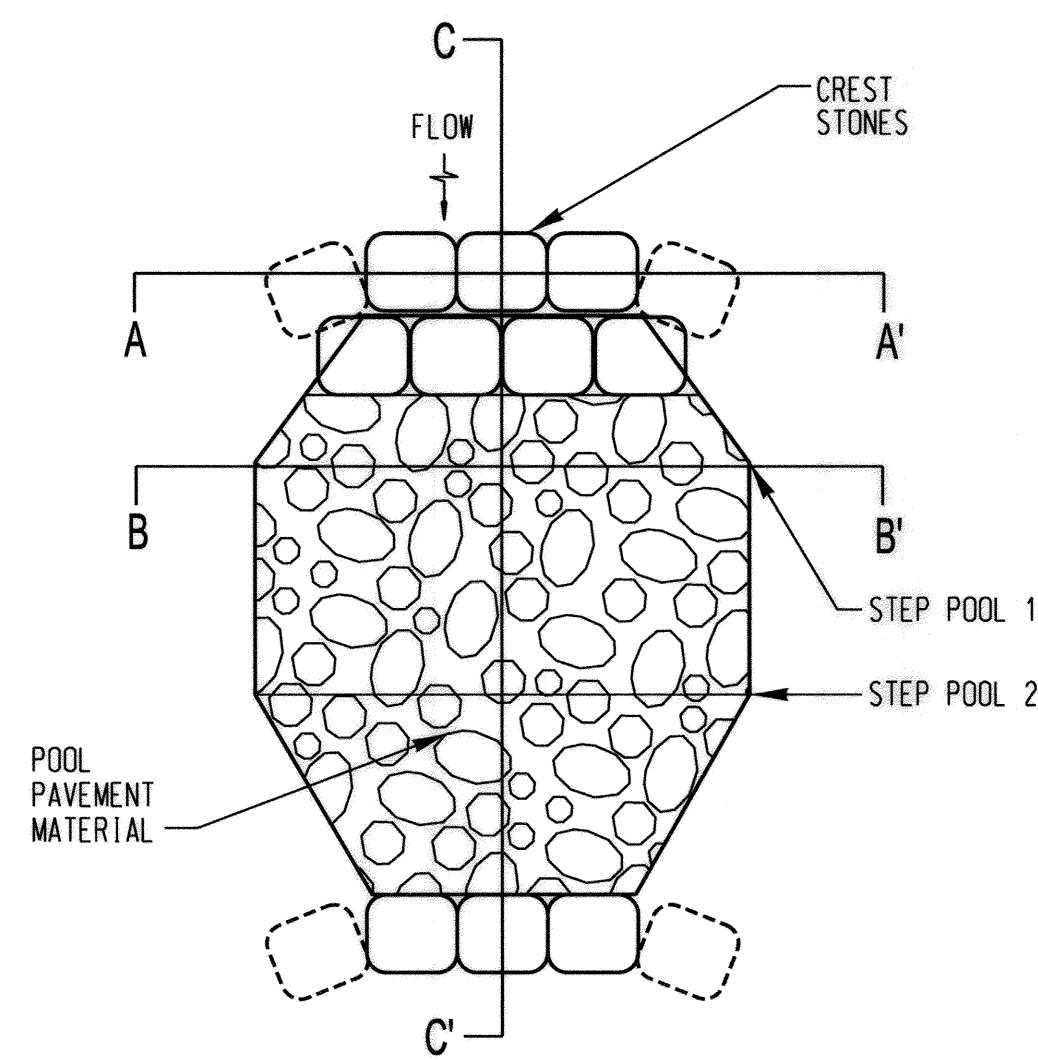
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
 Director of Public Works: *John A. ...*
 Chief, Bureau of Engineering: *Thomas R. Stubble*
 Chief, Bureau of Utilities: *...*
 Chief, Utility Design Division: *...*



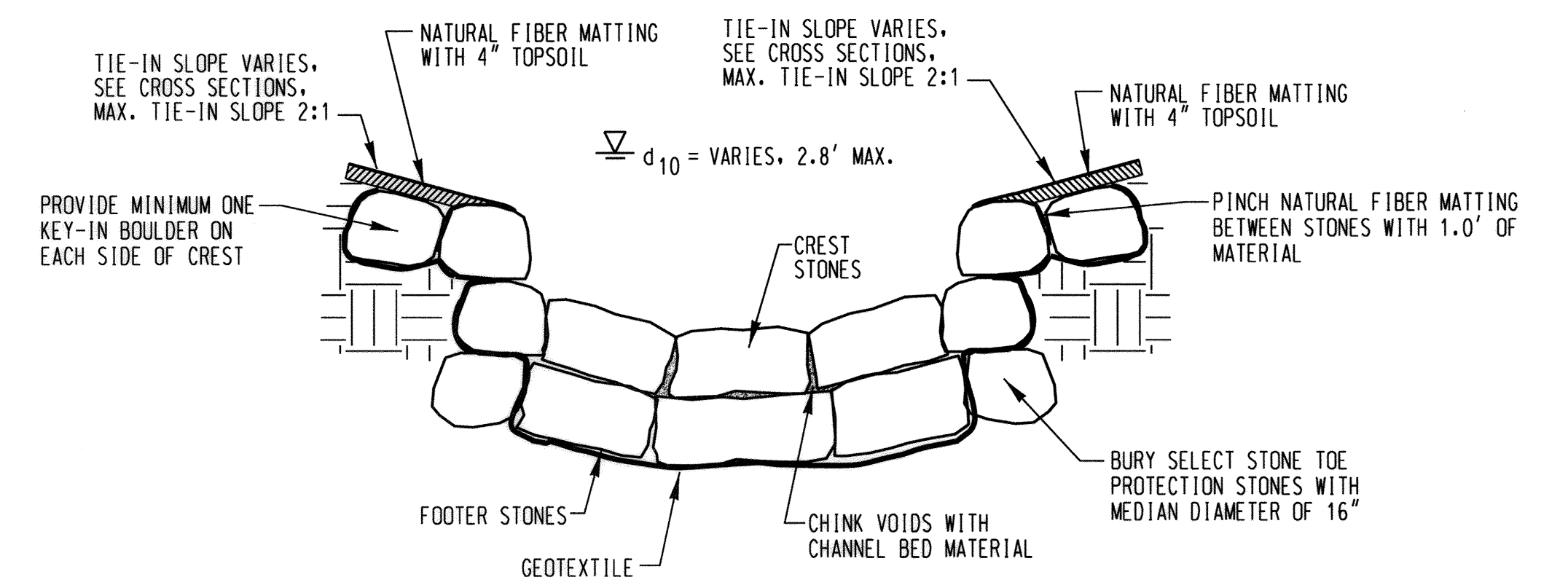
RIFFLE GRADE CONTROL CROSS SECTION

NOT TO SCALE



TYPICAL PLAN VIEW OF STEP-POOL

NOT TO SCALE



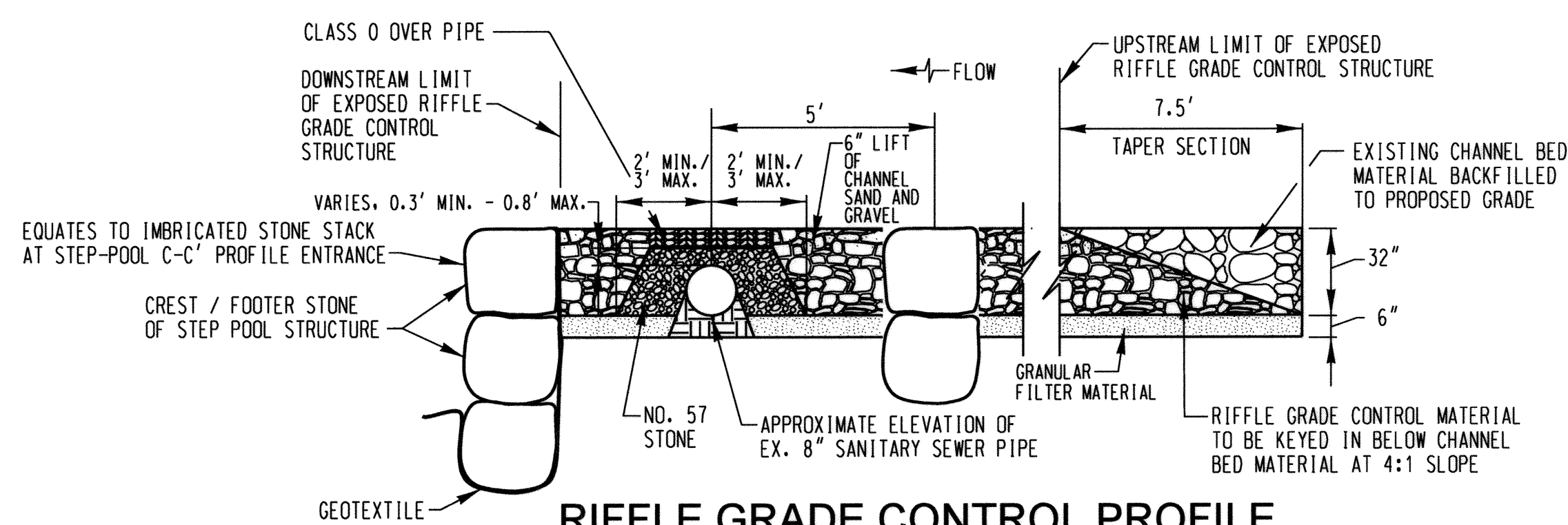
STEP-POOL CREST A-A' STA. 0+72, 0+89 AND 1+06

NOT TO SCALE

NOTE: FOR CROSS SECTION DIMENSIONS SEE RIFFLE GRADE CONTROL CROSS SECTION DETAIL THIS SHEET

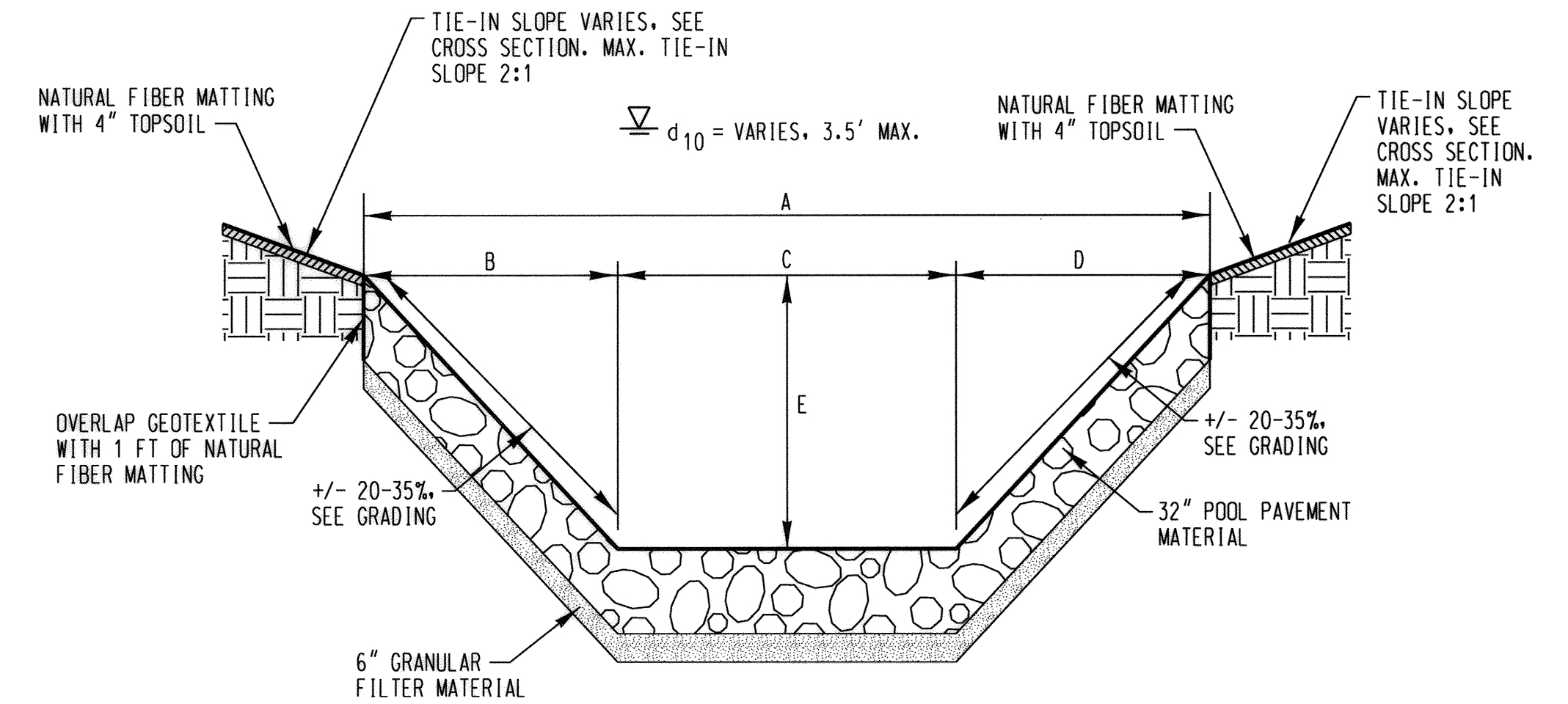
RIFFLE GRADE CONTROL CROSS SECTION					
PROFILE FEATURE	A	B	C	D	E
RIFFLE GRADE CONTROL	2.5'	4.0'	6.5'	1.0'	0.3'

STEP-POOL					
PROFILE FEATURE	A	B	C	D	E
STEP-POOL 1 STA. 0+77 AND STA. 0+92	13.0'	3.5'	6.0'	3.5'	3.3'
STEP-POOL 2 STA. 0+81 AND STA. 0+96	13.0'	3.5'	6.0'	3.5'	3.1'



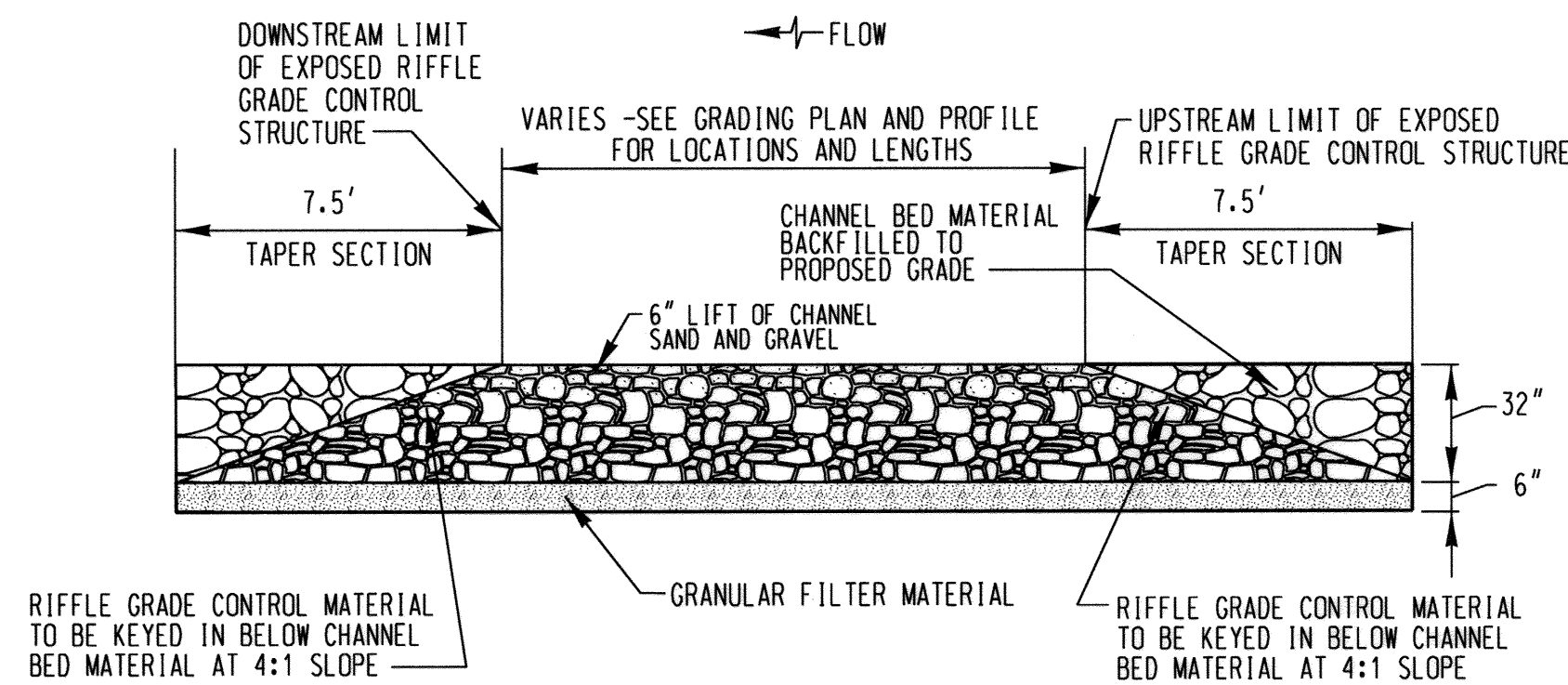
RIFFLE GRADE CONTROL PROFILE WITH UTILITY PIPE PROTECTION FROM STA. 0+42 TO APPROX. STA. 0+72

NOT TO SCALE



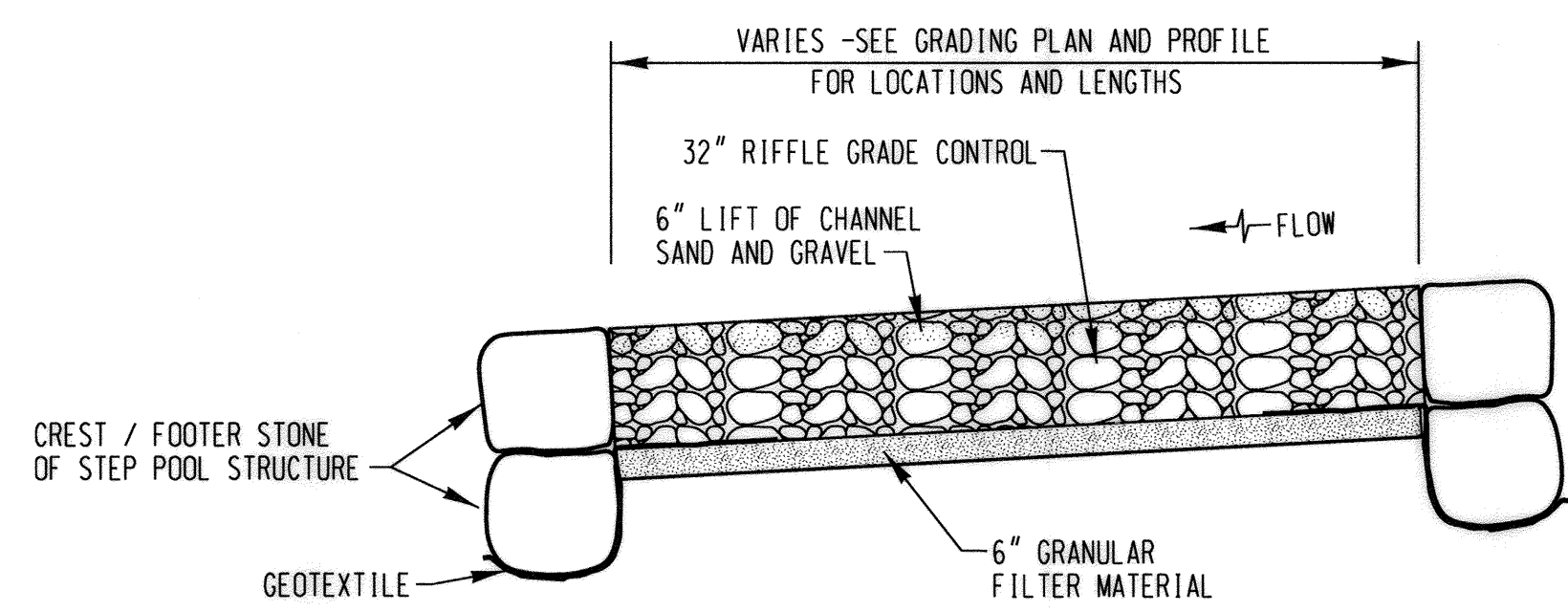
STEP-POOL B-B' STA. 0+77 AND 0+94

NOT TO SCALE



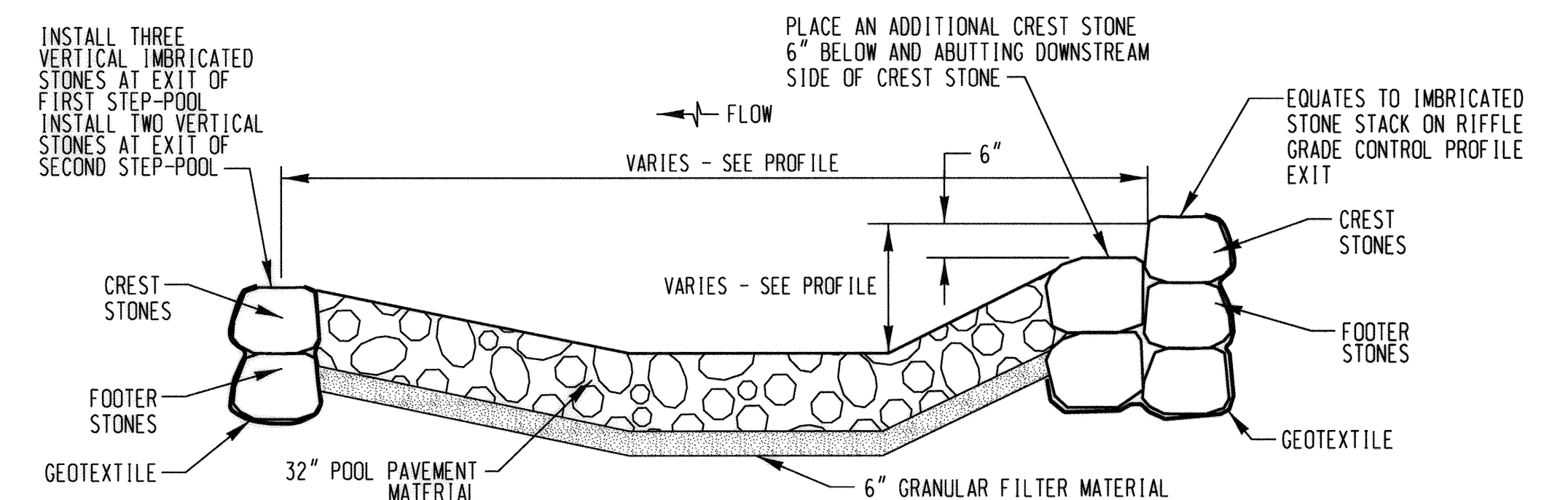
TYPICAL RIFFLE GRADE CONTROL PROFILE FROM STA. 0+10 TO STA. 0+27

NOT TO SCALE



TYPICAL RIFFLE GRADE CONTROL PROFILE FROM APPROX. STA. 1+08 TO APPROX. STA. 1+20

NOT TO SCALE



STEP-POOL C-C' PROFILE

NOT TO SCALE

NOTES:

- ALL RIFFLE GRADE CONTROL STRUCTURES SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM.
- THE RIFFLE GRADE CONTROL MATERIAL SHALL BE PLACED TO ITS FULL DEPTH MOVING FROM ONE BANK TO THE OPPOSING BANK.
- DO NOT EXCAVATE EXISTING SOIL BENEATH OR ON EITHER SIDE OF EXISTING UTILITY PIPE IF THE SOIL IS IN PLACE AND STABLE. VOIDS NEAR UTILITY PIPE TO BE FILLED WITH NO. 57 STONE.
- WHERE THE FINAL COVER OVER THE EXISTING UTILITY PIPE IS LESS THAN 1.0 FOOT THE FOLLOWING SPECIFICATIONS MUST BE MET:
 A. NO LESS THAN 0.3' FEET OF NO. 57 STONE SHALL COVER THE UTILITY PIPE AND THE REMAINING MATERIAL REQUIRED TO MEET THE PROPOSED GRADE SHALL CONSIST OF CLASS 0 RIPRAP.
- ANY DAMAGES TO THE EXISTING UTILITY PIPES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL FINES AND VIOLATIONS DUE TO PIPE DAMAGES AND/OR MATERIAL FLOW STOPPAGES WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY AND WILL BE PAID BY THE CONTRACTOR.
- THE UTILITY PIPE PROTECTION INSTALLATION AT THE PIPE CROSSING MUST BE COORDINATED WITH THE COUNTY DPW REPRESENTATIVE AND THE ENGINEER AT THE TIME OF THE INSTALLATION.

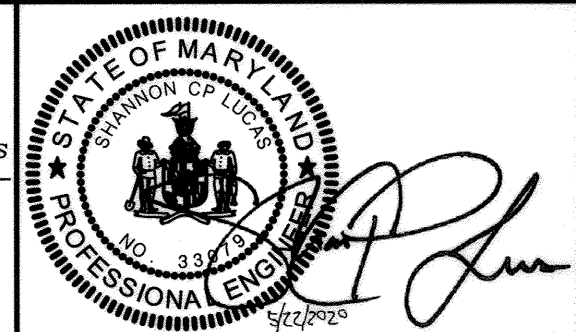
PROFESSIONAL CERTIFICATION: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State Of Maryland, License No. 33079, Expiration Date 01-16-2021.

PLOTTER: 005.P1 Plot File: H.P. 22.0007 FILE: H:\DRAWING\8062666.DWG Drawing No: 005-P1-0002-Hitching Post.dwg

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 [Signature] DATE 6/9/2020
 DIRECTOR OF PUBLIC WORKS
 [Signature] DATE
 CHIEF, BUREAU OF UTILITIES

[Signature] DATE 6/10
 CHIEF, BUREAU OF ENGINEERING
 [Signature] DATE
 CHIEF, UTILITY DESIGN DIVISION

ENGINEERS
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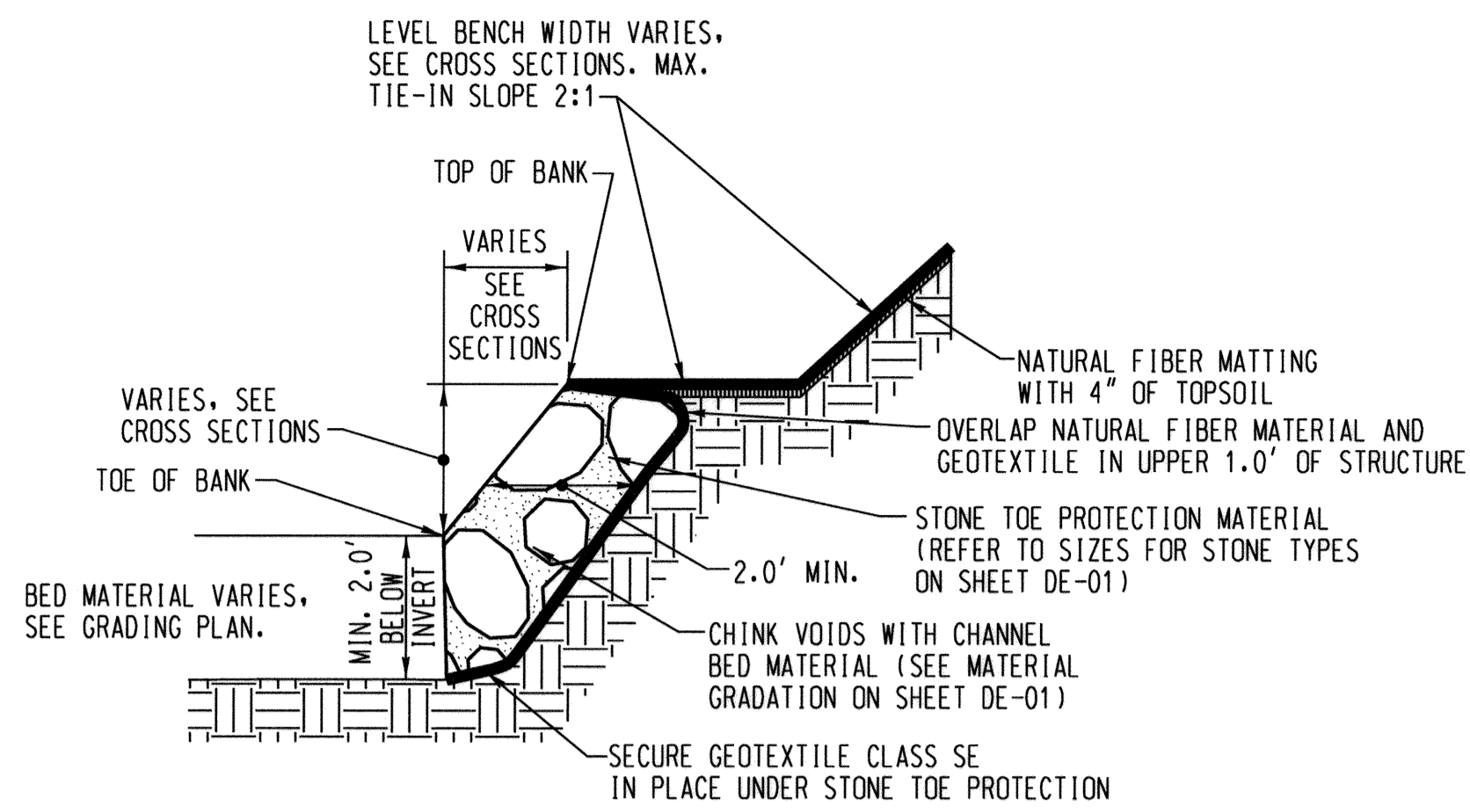


DES: SC	
DRN: CD, JS	
CHK: SL	
DATE: MAY 2020	
BY: NO.	REVISION

**ADDENDUM
 DETAILS**
 DATE: 600' SCALE MAP NO. 47_50 BLOCK NO. 3_21

**HITCHING POST LANE
 SEWER AND STREAM STABILIZATION**
 CAPITAL PROJECT S6268
 CONTRACT No. 0491-D
 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO.
 DE-02
 SCALE
 AS SHOWN
 SHEET
 4F OF 15

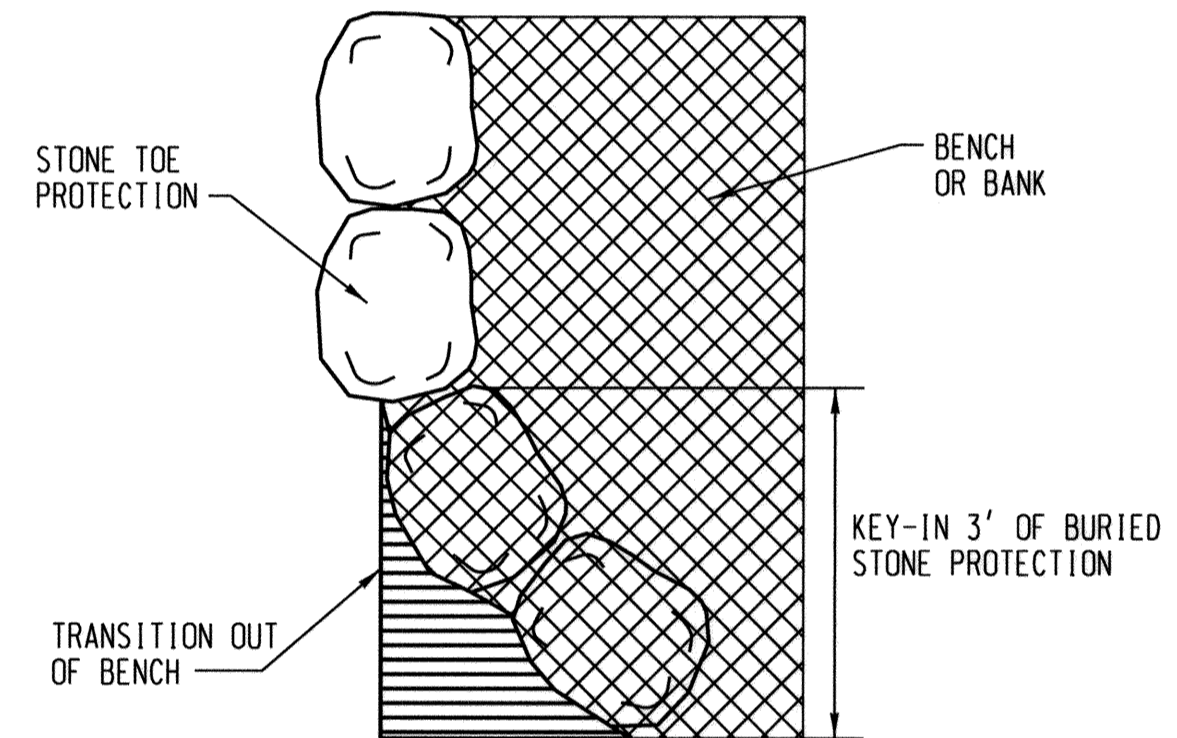


TYPICAL STONE TOE PROTECTION CROSS SECTION

NOT TO SCALE

NOTES:

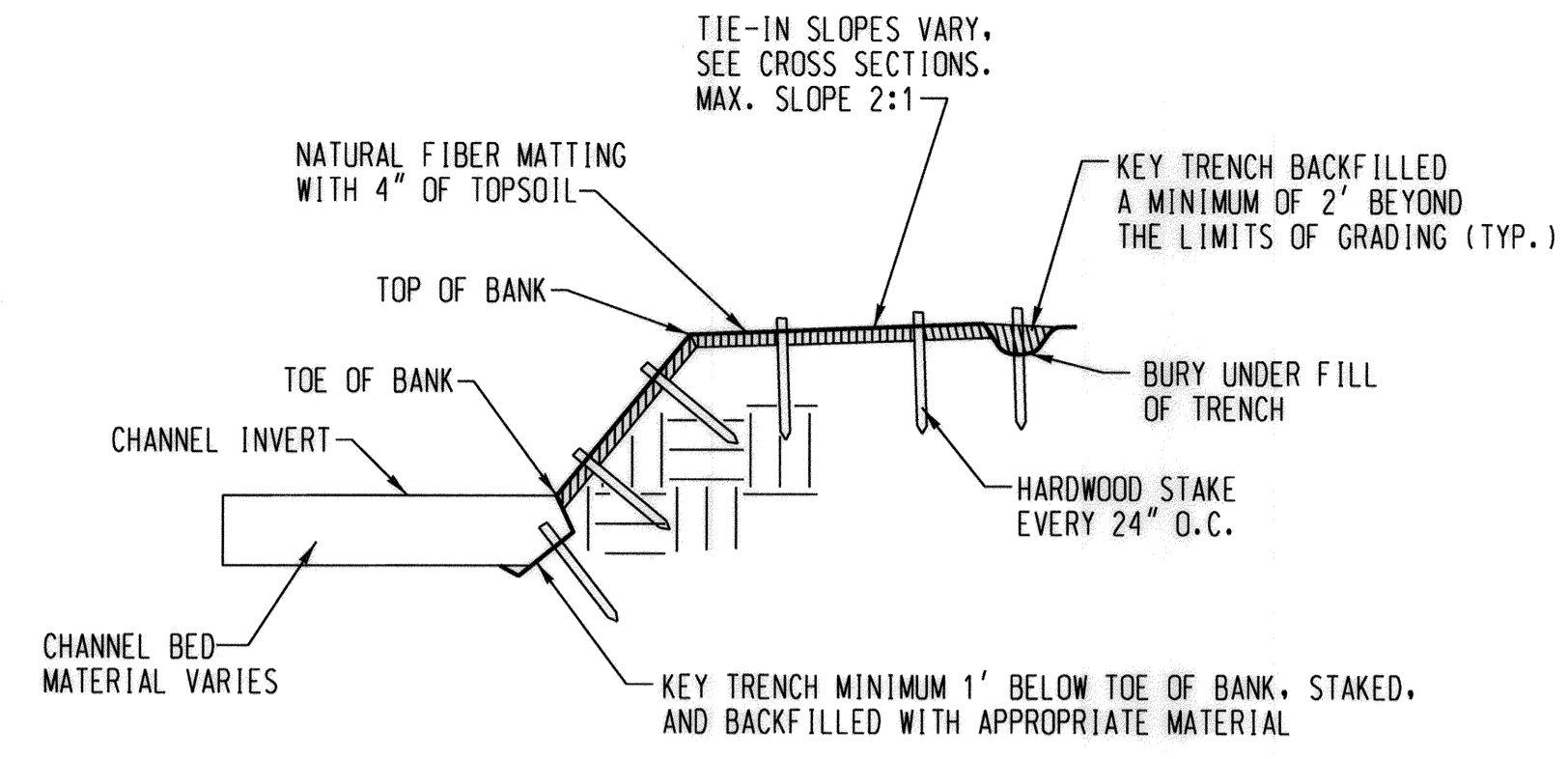
1. STONE TOE PROTECTION SHALL BE STACKED IN POOLS AND AS SIDE SLOPES PERMIT. DUMPED STONE TOE PROTECTION MAY BE ALLOWED IN RIFFLES WITH SIDE SLOPES OF 2:1 OR LESS.
2. KEY-IN STONES SHOULD ALSO BE ADDED TO STONE TOE PROTECTION AT ANY LOCATION WHERE NO OTHER BANK PROTECTION IS ADJUTING THE TREATMENT. 3 FEET OF KEY-IN STONE SHOULD BE USED AND TAPER BACK AND DOWN INTO THE BANK. ONE LESS STONE SHOULD BE USED WITH EACH TAPER STONE. SEE DETAIL THIS SHEET.



STONE TOE PROTECTION KEY-IN

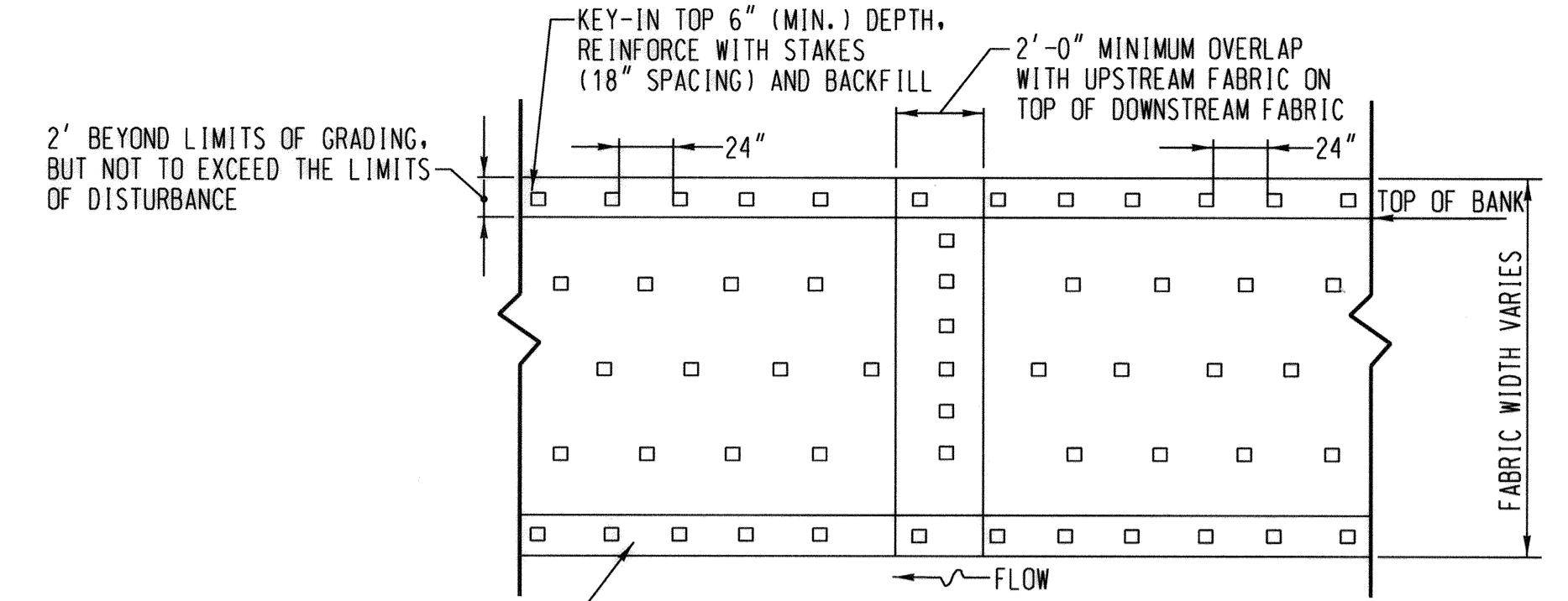
NOT TO SCALE

NOTE:
KEY-IN SHALL BE APPLIED AT UP AND DOWNSTREAM EXTENTS WHEN NO OTHER BANK TREATMENT IS PRESCRIBED. STONE TOE PROTECTION KEY IN ELEVATION SHALL BE TAPERED DOWN WITH GRADE WHEN NO OTHER BANK TREATMENT IS PRESCRIBED.



NATURAL FIBER MATTING CROSS SECTION

NOT TO SCALE



TYPICAL PLAN VIEW NATURAL FIBER MATTING AND REINFORCED NATURAL FIBER MATTING

NOT TO SCALE

NOTES FOR NATURAL AND REINFORCED NATURAL FIBER MATTING:

1. NATURAL FIBER MATTING TO BE ROLLED LENGTHWISE ALONG STREAMBANK EXTENDING FROM UNDER THE BANK PROTECTION STRUCTURE MATERIAL(S) TO A MINIMUM OF TWO FEET PAST THE LIMITS OF GRADING. IF MORE THAN ONE ROLL IS REQUIRED, MID-BANK OVERLAP SHOULD BE A MINIMUM OF ONE FOOT AND SECURELY FASTENED WITH STAKES. AT ANY TRANSITION BETWEEN NATURAL FIBER MATTING AND REINFORCED NATURAL FIBER MATTING, MATTING SHOULD BE OVERLAPPED A MINIMUM OF ONE FOOT AND SECURELY FASTENED WITH STAKES.
2. NATURAL FIBER MATTING IS TO BE INSTALLED ON ALL GRADED SLOPES LESS THAN 2H:1V, HIGHLY ERODIBLE SOILS (SEE SHEET 2), AND WETLAND AREAS.
3. NATURAL FIBER MATTING. MATTING SHALL CONSIST OF A MACHINE PRODUCED MAT OF DEGRADABLE NATURAL FIBERS AND SHALL MEET THE FOLLOWING MINIMUM SPECIFICATIONS:

MATERIAL: WOVEN COIR FIBER YARN OR TWINE
THICKNESS: 0.25 IN.
ELONGATION (DRY/WET): 29%/35%
WEIGHT: 20 OZ/SY
OPEN AREA: 50%
SIZE: 6 FT. WIDE X 150 FT IN LENGTH (100 SY PER ROLL)
SHEAR STRESS: 3.0 PSF
FLOW VELOCITY: 8 FT./SEC.
LIFE EXPECTANCY: 3 YEARS
4. REINFORCED NATURAL FIBER MATTING. MATTING SHALL CONSIST OF A MACHINE PRODUCED MAT OF DOUBLE-LAYERED BIODEGRADABLE FABRIC: A BOTTOM LAYER OF JUTE FABRIC AND A TOP LAYER OF HIGH STRENGTH COIR MATTING, CONNECTED TOGETHER. REINFORCED NATURAL FIBER MATTING SHALL MEET THE FOLLOWING MINIMUM SPECIFICATIONS:

MATERIALS: WOVEN COIR FIBER (TOP LAYER) AND JUTE FABRIC (BOTTOM LAYER)
THICKNESS: 0.35 IN.
ELONGATION (DRY/WET): 30%/26% (TOP LAYER) AND 8%/9% (BOTTOM LAYER)
WEIGHT: 33.3 OZ/SY
SHEAR STRESS: 4.5 PSF
FLOW VELOCITY: 12 FT/SEC
PERMEABILITY: 1.03 IN/SEC
5. REINFORCED NATURAL FIBER MATTING SHOULD BE PLACED AS DESCRIBED ABOVE AND AS SHOWN ON THE LANDSCAPE PLAN SHEET (ALL SLOPES EXCEEDING 2H:1V).
6. MATTING STAKES. STAKES FOR SECURING THE MATTING ALONG OTHER PORTIONS OF THE MATTING MATERIAL ABOVE THE TOE TRENCH AND FOR THE KEY-IN TRENCH AT THE TOP OF THE SLOPE SHALL CONSIST OF 1-1/2" X 1-1/2" HARDWOOD STAKES, 18-INCHES IN LENGTH, TAPERED AT THE BOTTOM END FOR EASY INSERTION INTO THE SOIL AND FLAT AT THE TOP END FOR HAMMERING.

SHEAR STRESS: 4.5 PSF
FLOW VELOCITY: 12 FT./SEC.
LIFE EXPECTANCY: 3 YEARS IN REINFORCED NATURAL FIBER MATTING
7. SEE DETAIL ON THIS SHEET FOR ADDITIONAL INFORMATION ON INSTALLATION.

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. 33079, Expiration Date 01-16-2021.

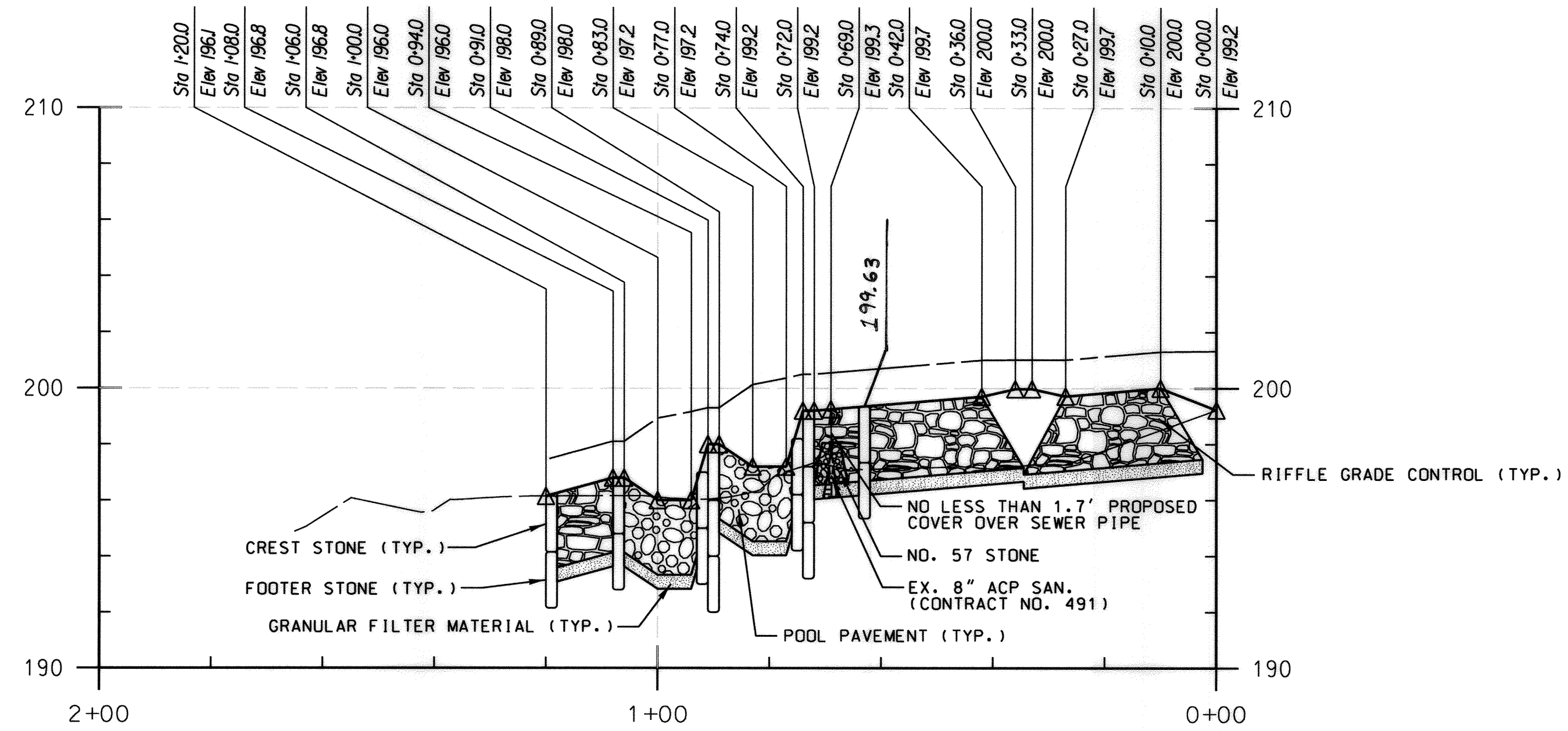
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FILE: M:\2018\131802366\02\Drawings\07.pdf-0003_Hitching Post.dgn

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p>			
<p><i>[Signature]</i> 6/1/20 DIRECTOR OF PUBLIC WORKS DATE</p>	<p><i>[Signature]</i> 6/1/20 CHIEF, BUREAU OF ENGINEERING DATE</p>	<p>936 Ridgeway Road Sparks, MD 21152 Phone: (410) 316-7800 Fax: (410) 316-7817 www.kci.com</p>	
<p><i>[Signature]</i> 6/1/20 CHIEF, BUREAU OF UTILITIES DATE</p>	<p><i>[Signature]</i> 6/1/20 CHIEF, UTILITY DESIGN DIVISION DATE</p>		

DES: SC			
DRN: CD, JS			
CHK: SL			
DATE: MAY 2020	BY	NO.	REVISION

ADDENDUM DETAILS		DATE	600' SCALE MAP NO. 47_50	BLOCK NO. 3_21
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<p>HITCHING POST LANE SEWER AND STREAM STABILIZATION</p>		<p>DRAWING NO. DE-03</p>
<p>CAPITAL PROJECT S6268 CONTRACT No. 0491-D</p>		<p>SCALE AS SHOWN</p>
<p>ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND</p>		<p>SHEET 46 OF 15</p>



LEGEND	
EXISTING GROUND	---
PROPOSED GRADE	---
PROPOSED TOP OF BANK	---

PROFILE DEPICTS ELEVATIONS OVER BASELINE (CENTERLINE), NOT CHANNEL INVERT (THALWEG)

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. 33079, Expiration Date 01-16-2021.

DRAWING NO. PR-01

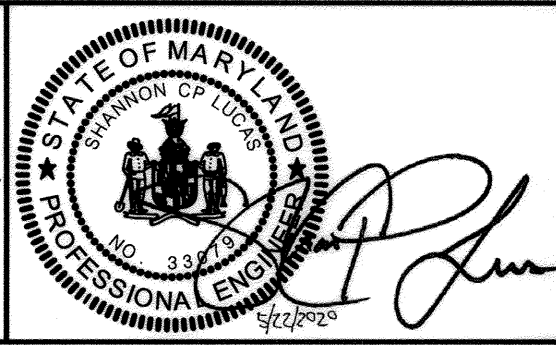
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] *[Signature]*
DIRECTOR OF PUBLIC WORKS DATE CHIEF, BUREAU OF ENGINEERING DATE

[Signature] *[Signature]*
CHIEF, BUREAU OF UTILITIES DATE CHIEF, UTILITY DESIGN DIVISION DATE

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

936 Ridgebrook Road
Sparks, MD 21152
PHONE: (410) 316-7800
FAX: (410) 316-7817
www.kci.com



DES: SC					
DRN: CD, JS					
CHK: SL					
DATE: MAY 2020	BY	NO.	REVISION	DATE	

ADDENDUM
PROFILE

600' SCALE MAP NO. 47.50 BLOCK NO. 3.21

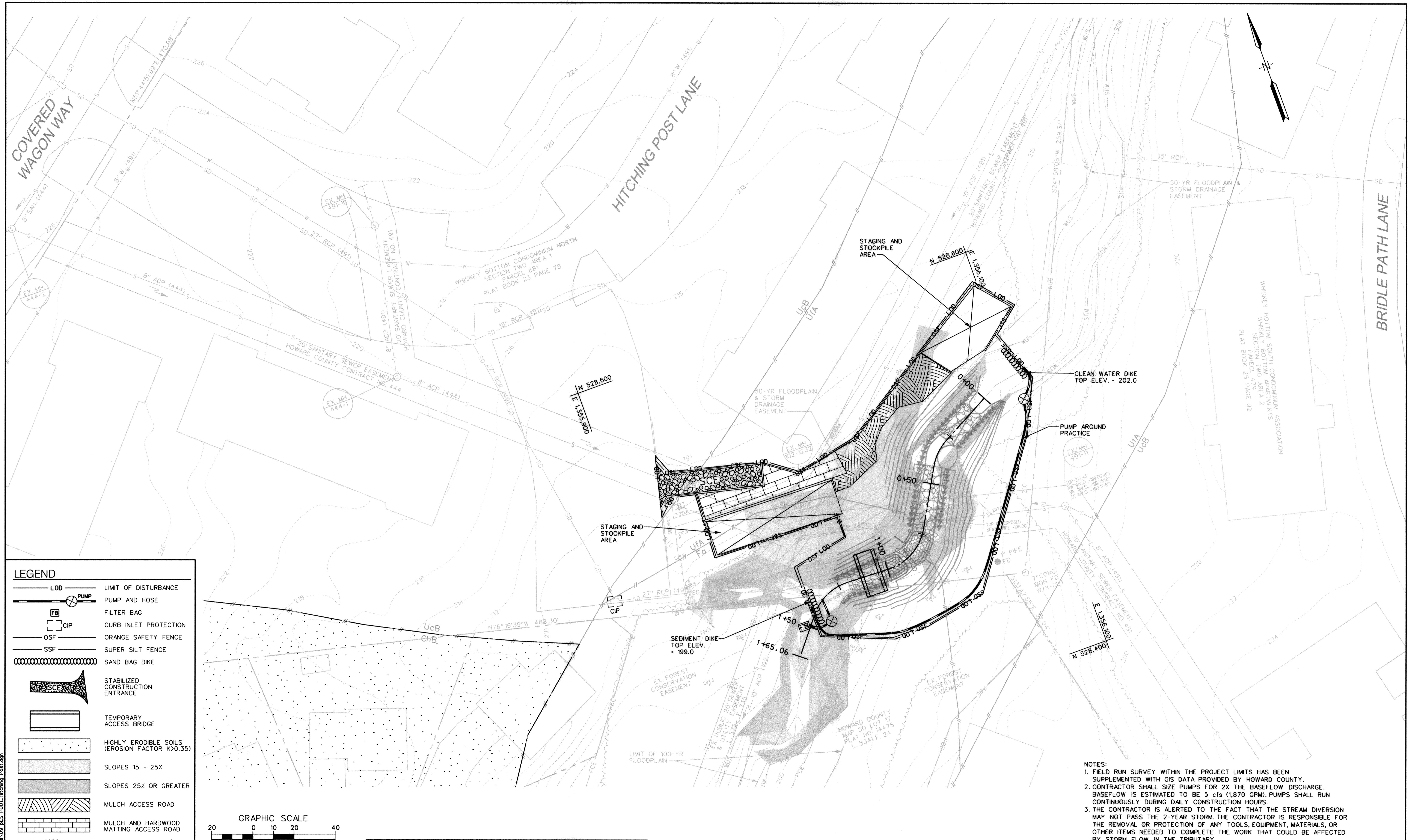
HITCHING POST LANE
SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6268
CONTRACT No. 0491-D

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

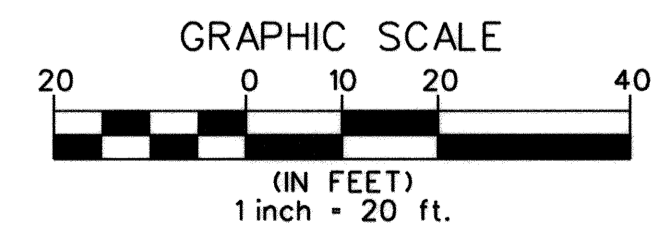
SCALE
HOR. 1"=20'
VERT. 1"=4'
SHEET 4H OF 15

PLOTTED: 02:21 PM on Friday, May 22, 2020
FILE: M:\2019\131802366\DWG\enr\131802366_V08.ppt-POOL-Hitching Post.dgn



LEGEND

- LOD LIMIT OF DISTURBANCE
- PUMP AND HOSE
- FILTER BAG
- CIP CURB INLET PROTECTION
- OSF ORANGE SAFETY FENCE
- SSF SUPER SILT FENCE
- SAND BAG DIKE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- TEMPORARY ACCESS BRIDGE
- HIGHLY ERODIBLE SOILS (EROSION FACTOR K > 0.35)
- SLOPES 15 - 25%
- SLOPES 25% OR GREATER
- MULCH ACCESS ROAD
- MULCH AND HARDWOOD MATTING ACCESS ROAD
- SOILS BOUNDARY



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. 33079, Expiration Date 01-16-2021.

- NOTES:**
1. FIELD RUN SURVEY WITHIN THE PROJECT LIMITS HAS BEEN SUPPLEMENTED WITH GIS DATA PROVIDED BY HOWARD COUNTY.
 2. CONTRACTOR SHALL SIZE PUMPS FOR 2X THE BASEFLOW DISCHARGE. BASEFLOW IS ESTIMATED TO BE 5 cfs (1,870 GPM). PUMPS SHALL RUN CONTINUOUSLY DURING DAILY CONSTRUCTION HOURS.
 3. THE CONTRACTOR IS ALERTED TO THE FACT THAT THE STREAM DIVERSION MAY NOT PASS THE 2-YEAR STORM. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OR PROTECTION OF ANY TOOLS, EQUIPMENT, MATERIALS, OR OTHER ITEMS NEEDED TO COMPLETE THE WORK THAT COULD BE AFFECTED BY STORM FLOW IN THE TRIBUTARY.
 4. THE CONTRACTOR SHALL NOT UNLOAD OR DUMP MATERIALS SUCH AS RIPRAP OR BOULDERS ON TOP OF ANY EXISTING UTILITY LINES.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

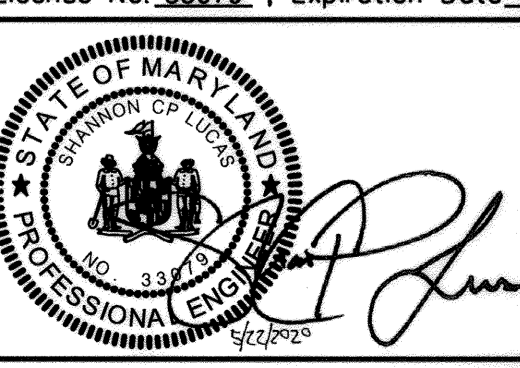
John J. ... *6/19/2020*
 DIRECTOR OF PUBLIC WORKS DATE

... *6/19/2020*
 CHIEF, BUREAU OF UTILITIES DATE

... *6/19/2020*
 CHIEF, UTILITY DESIGN DIVISION DATE

KCI TECHNOLOGIES

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 Sparks, MD 21152
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 Fax: (410) 316-7817
 www.kci.com



DES: SC			
DRN: CD, JS			
CHK: SL			
DATE: MAY 2020	BY: NO.	REVISION	DATE

ADDENDUM
EROSION & SEDIMENT
CONTROL PLAN

DATE 600' SCALE MAP NO. 47.50 BLOCK NO. 3.21

HITCHING POST LANE
SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6268
 CONTRACT No. 0491-D

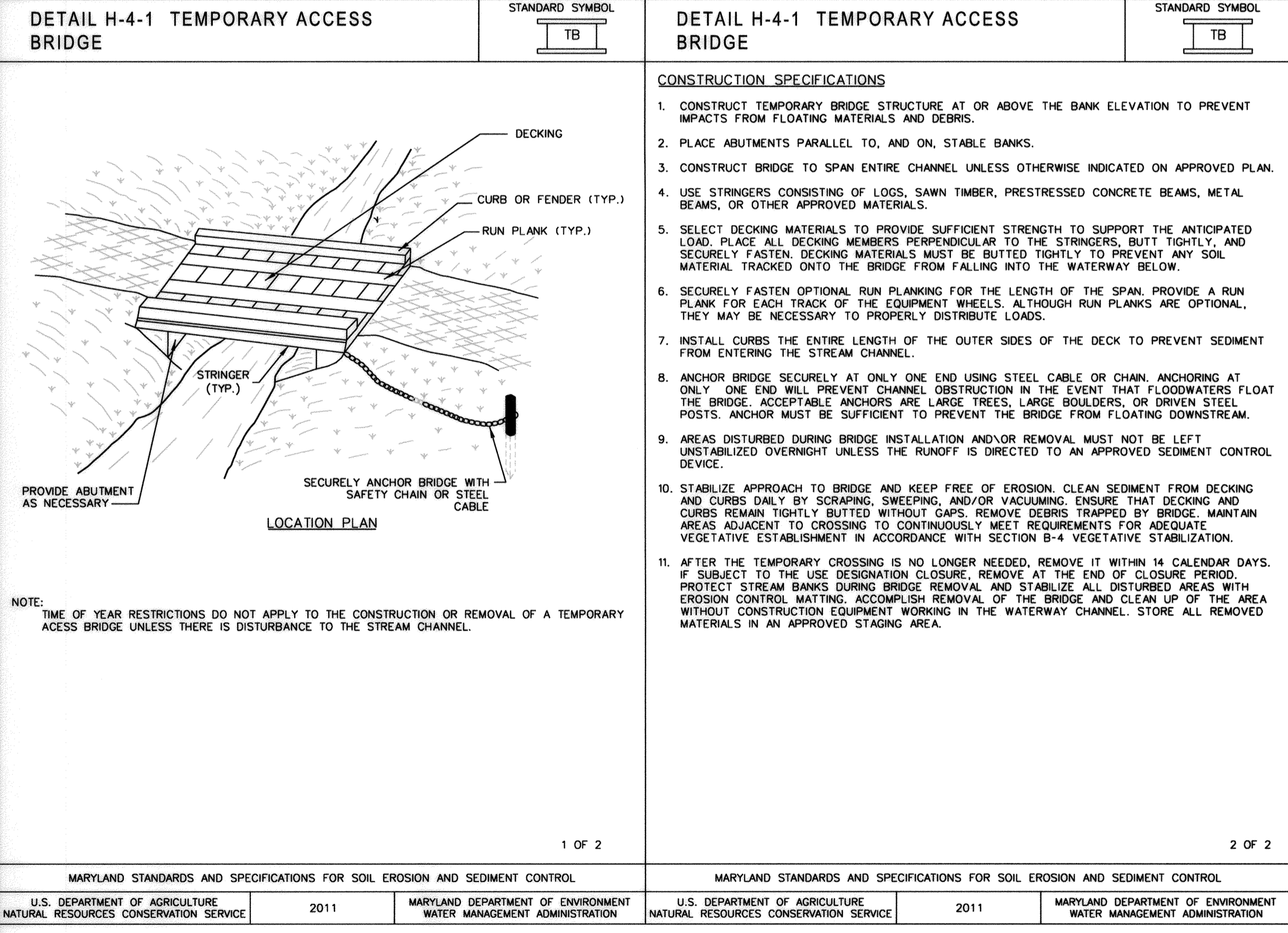
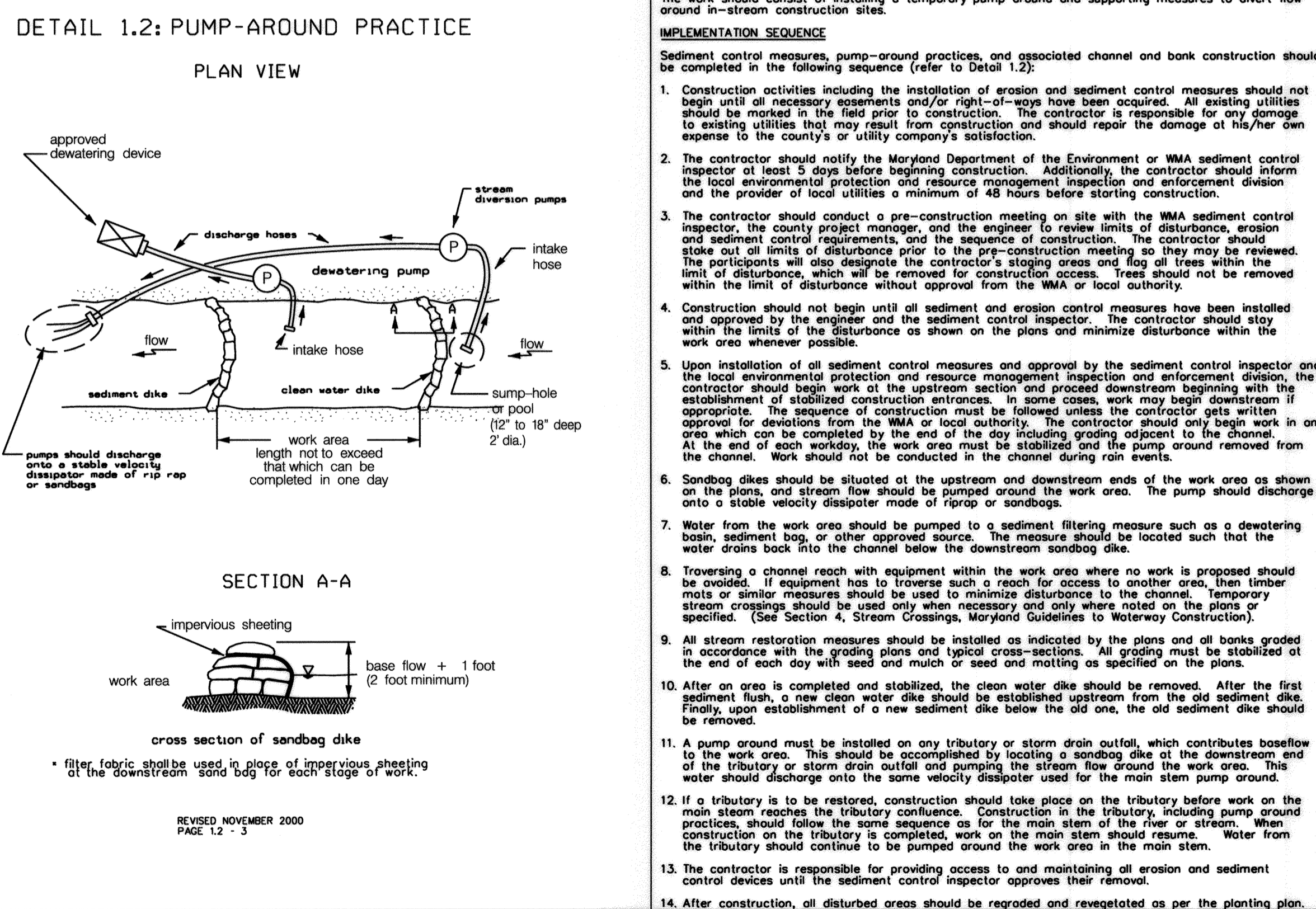
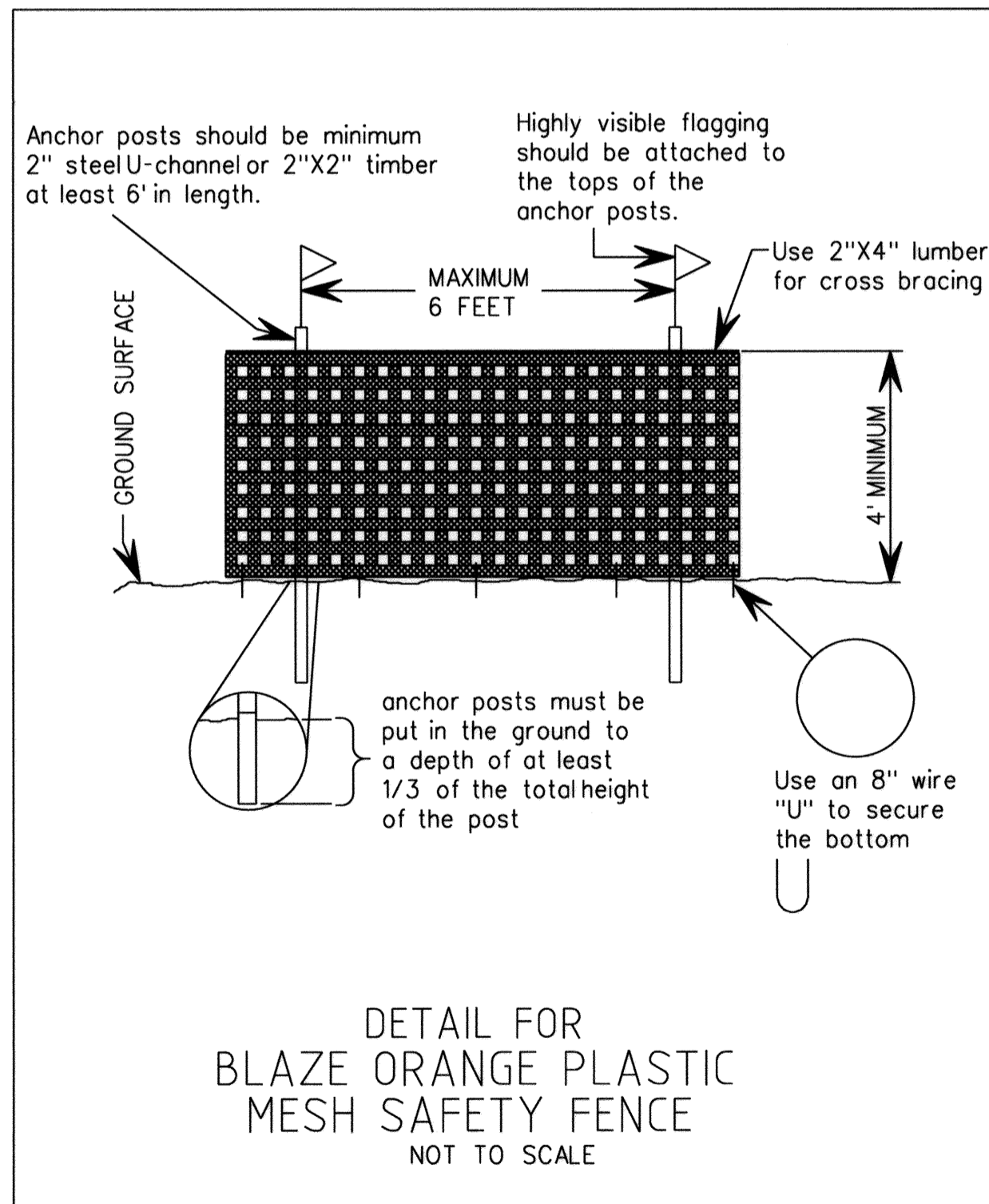
ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO.	ES-01
SCALE	1" = 20'
SHEET	41 OF 15

PLOTTED: 05/21/20, 11:54 AM, F:\Info, May 22, 2020, 10:25 AM
 FILE: H:\2019\1862\666\000\Drawings\05-25-20\ES-01-Hitching Post.dwg

DETAIL F-4 FILTER BAG		STANDARD SYMBOL		DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION		STANDARD SYMBOL		DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION		STANDARD SYMBOL		DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE		STANDARD SYMBOL														
		FB				PSSMS - 4.5 lb/ft ²				TSSMS - 3.0 lb/ft ²				SCE														
<p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE. 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. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE. 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. 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: <table border="1"> <tr><td>GRAB TENSILE</td><td>250 LB</td><td>ASTM D-4632</td></tr> <tr><td>PUNCTURE</td><td>150 LB</td><td>ASTM D-4833</td></tr> <tr><td>FLOW RATE</td><td>70 GAL/MIN/FT²</td><td>ASTM D-4491</td></tr> <tr><td>PERMITTIVITY (SEC⁻¹)</td><td>1.2 SEC⁻¹</td><td>ASTM D-4491</td></tr> <tr><td>UV RESISTANCE</td><td>70% STRENGTH @ 500 HOURS</td><td>ASTM D-4355</td></tr> <tr><td>APPARENT OPENING SIZE (AOS)</td><td>0.15-0.18 MM</td><td>ASTM D-4751</td></tr> <tr><td>SEAM STRENGTH</td><td>90%</td><td>ASTM D-4632</td></tr> </table> <ol style="list-style-type: none"> REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED. 		GRAB TENSILE	250 LB	ASTM D-4632	PUNCTURE	150 LB	ASTM D-4833	FLOW RATE	70 GAL/MIN/FT ²	ASTM D-4491	PERMITTIVITY (SEC ⁻¹)	1.2 SEC ⁻¹	ASTM D-4491	UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355	APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751	SEAM STRENGTH	90%	ASTM D-4632	<p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. 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. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. 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 1.5 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 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. 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 AND SEDIMENT CONTROL PLAN. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEPT AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. 		<p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS. 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. 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 1.5 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. 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. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING. 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. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. 		<p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> 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. 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. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS. 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. 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. 	
GRAB TENSILE	250 LB	ASTM D-4632																										
PUNCTURE	150 LB	ASTM D-4833																										
FLOW RATE	70 GAL/MIN/FT ²	ASTM D-4491																										
PERMITTIVITY (SEC ⁻¹)	1.2 SEC ⁻¹	ASTM D-4491																										
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355																										
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751																										
SEAM STRENGTH	90%	ASTM D-4632																										
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL				MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL				MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL				MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL																
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE				U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE				U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE				U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE																
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* SEE SHEET 9, NATURAL FIBER MATTING DETAIL FOR ADDITIONAL INFORMATION ON THE SPECIFICATIONS OF THE MATTING REQUIRED.



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. 33079, Expiration Date 01-16-2021.

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI TECHNOLOGIES

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Fax: (410) 316-7817
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DES:	SC
DRN:	CD, JS
CHK:	SL
DATE:	MAY 2020
BY:	NO.
REVISION:	

ADDENDUM
EROSION & SEDIMENT
CONTROL DETAILS

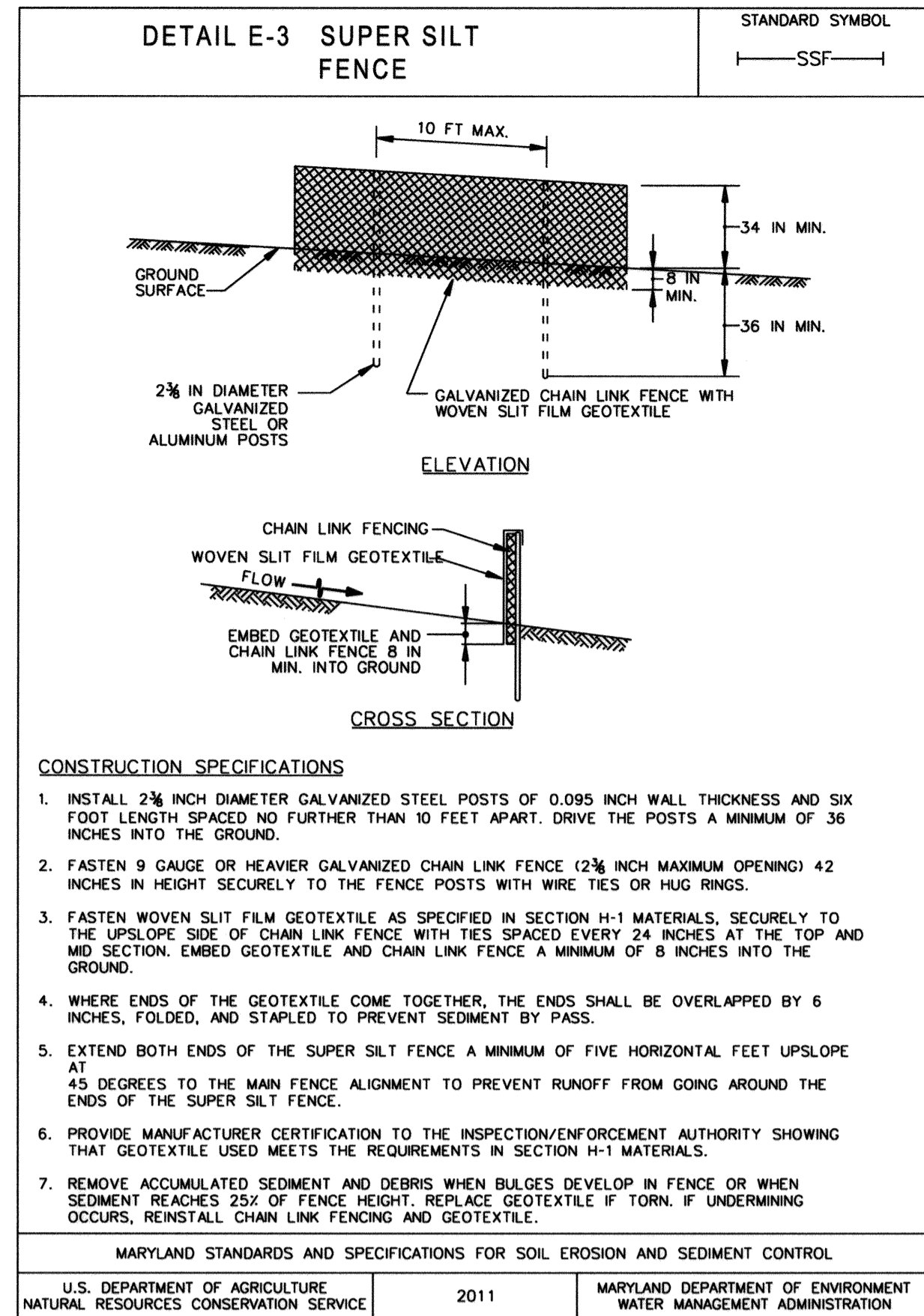
HITCHING POST LANE
SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6268
CONTRACT No. 0491-D

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO.	ESD-01
SCALE	AS SHOWN
SHEET	4 of 15

PLOTED: 02:22 PM on Friday, May 22, 2020
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B-4-8 STANDARDS AND SPECIFICATIONS

FOR STOCKPILE AREA

Definition
A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access the stockpile area from the upgrade side.
- Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

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

B-4-7 STANDARDS AND SPECIFICATIONS

FOR HEAVY USE AREA PROTECTION

Definition
The stabilization of areas frequently and intensively used by surfacing with suitable materials (e.g., mulch and aggregate).

Purpose
To provide a stable, non-eroding surface for areas frequently used and to improve the water quality from the runoff of these areas.

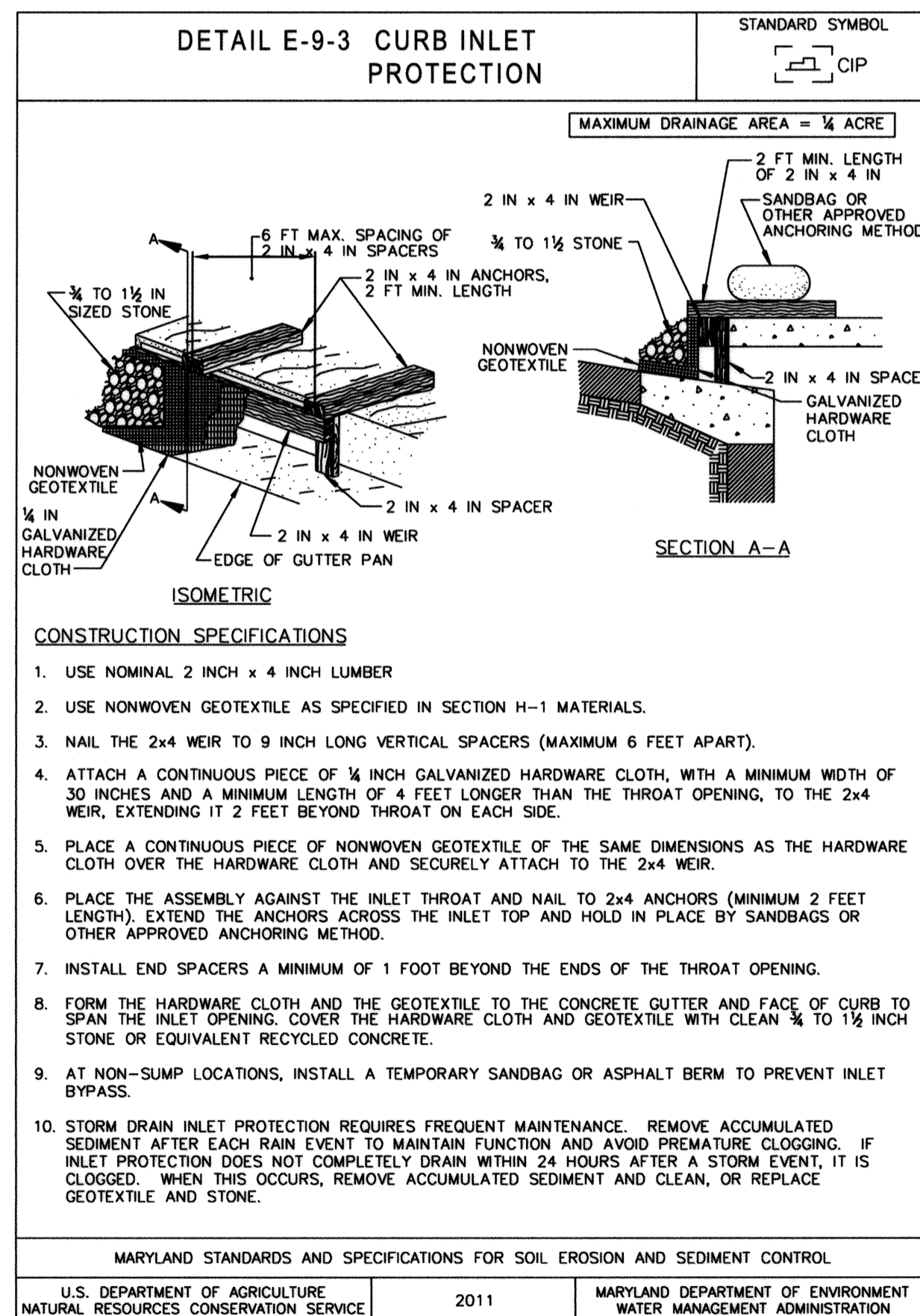
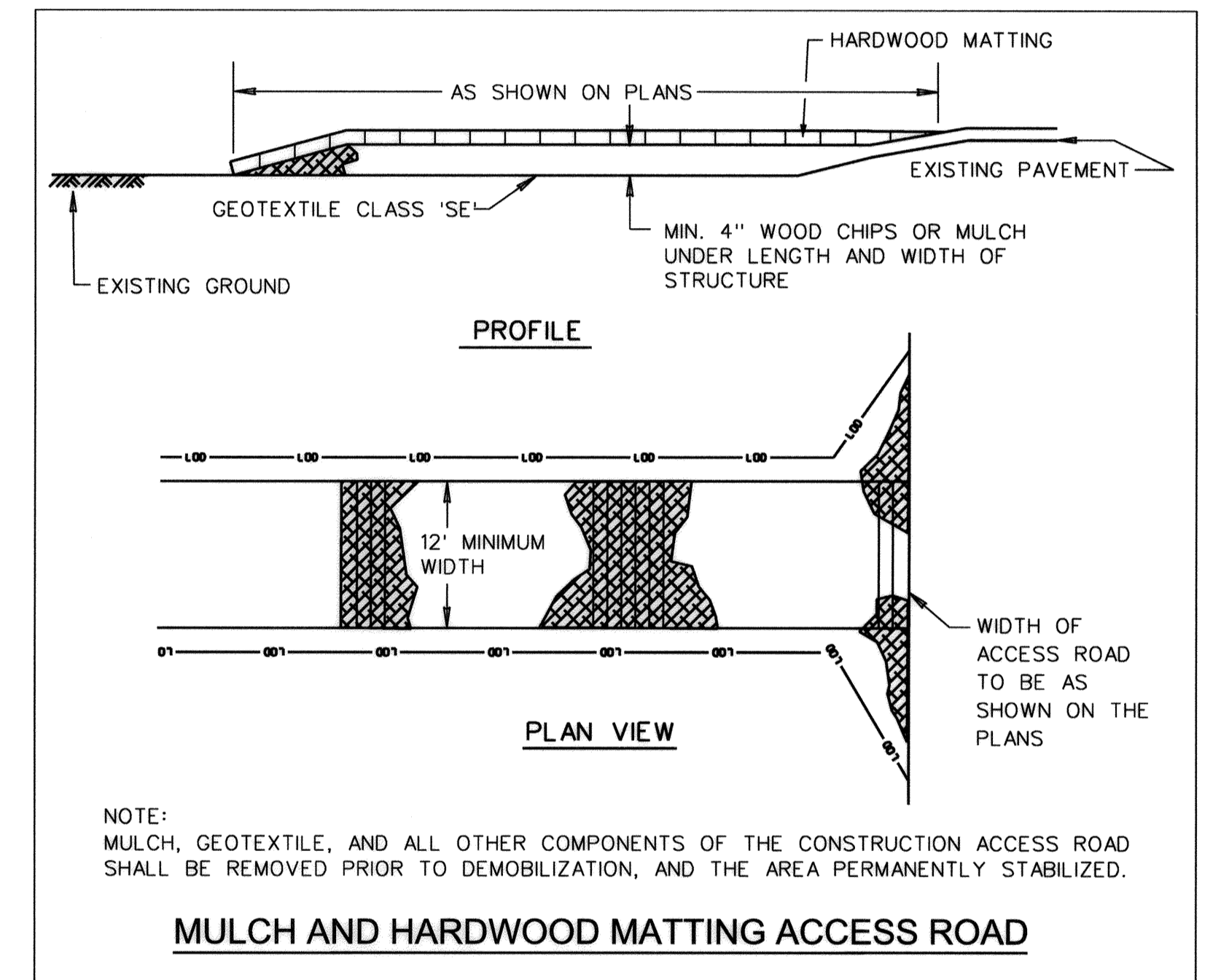
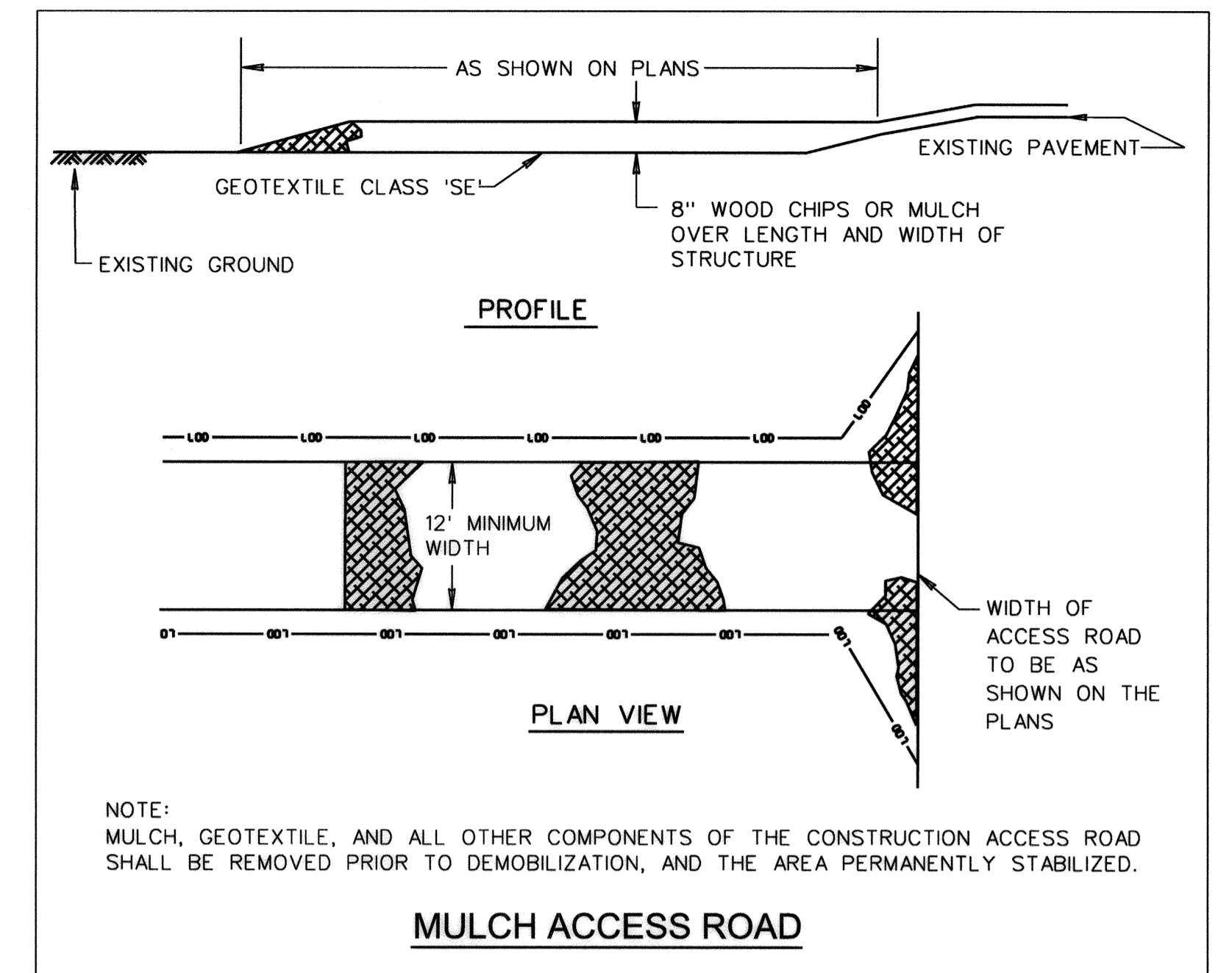
Conditions Where Practice Applies
This practice applies to intensively used areas (e.g., equipment and material storage, staging areas, heavily used travel lanes).

Criteria

- A minimum 4-inch base course of crushed stone or other suitable materials including wood chips over nonwoven geotextile should be provided as specified in Section H-1 Materials.
- Select the stabilizing material based on the intended use, desired maintenance frequency, and runoff control.
- The transport of sediments, nutrients, oils, chemicals, particulate matter associated with vehicular traffic and equipment, and material storage needs to be considered in the selection of material. Additional control measures may be necessary to control some of these potential pollutants.
- Surface erosion can be a problem on large heavy use areas. In these situations, measures to reduce the flow length of runoff or erode velocities need to be considered.

Maintenance
The heavy use areas must be maintained in a condition that minimizes erosion. This may require adding suitable material, as specified on the approved plans, to maintain a clean surface.

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



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. 33079, Expiration Date 01-16-2021.



DES: SC					
DRN: CD, JS					
CHK: SL					
DATE: MAY 2020	BY	NO.	REVISION	DATE	

ADDENDUM
EROSION & SEDIMENT CONTROL DETAILS

600' SCALE MAP NO. 47_50 BLOCK NO. 3_21

HITCHING POST LANE
SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6268
CONTRACT No. 0491-D

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO. ESD-02
SCALE AS SHOWN
SHEET 4K OF 15

PLOTED: 10:08 PM on Wednesday, May 27, 2020
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Yang DIRECTOR OF PUBLIC WORKS DATE 6/9/2020
Thomas E. Suttle CHIEF, BUREAU OF ENGINEERING DATE 6/9/2020
... CHIEF, BUREAU OF UTILITIES DATE 6/9/2020
... CHIEF, UTILITY DESIGN DIVISION DATE 6/9/2020

B-4-3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

- A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory.

Application

- a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.

Mulching

Mulch Materials (in order of preference)

- a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty.
b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.

Application

- a. Apply mulch to all seeded areas immediately after seeding.
b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches.

Anchoring

- a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches.

B-4-4 STANDARDS AND SPECIFICATIONS

FOR

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.
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.

Temporary Seeding Summary

Table with columns: HARDINESS ZONE, SEED MIXTURE, NO., SPECIES, APPLICATION RATE, SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE, LIME RATE. Includes rows for CEREAL RYE and FOXTAIL MILLET.

NOTES:
1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested.
2/ For sandy soils, plant seeds at twice the depth listed above.

B-4-5 STANDARDS AND SPECIFICATIONS

FOR

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 ground cover is needed for 6 months or more.

Criteria

Seed Mixtures

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.
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.

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.

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

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.

PERMANENT SEEDING SUMMARY

Table with columns: HARDINESS ZONE, SEED MIXTURE, NO., SPECIES, APPLICATION RATE, SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE, LIME RATE. Includes rows for SWITCH GRASS, CREEPING RED FESCUE, BUSH CLOVER, etc.

NOTE: ERNST SEED MIX TO BE USED IN FORESTED AREAS AS SHOWN ON THE LANDSCAPE PLANS. THE REMAINING MIXES ARE SUITABLE OUTSIDE OF FOREST AND TURF ZONES.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

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.

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.

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.
b. After the first week, sod watering is required as necessary to maintain adequate moisture content.

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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE
CHIEF, BUREAU OF ENGINEERING DATE
CHIEF, BUREAU OF UTILITIES DATE
CHIEF, UTILITY DESIGN DIVISION DATE

KCI TECHNOLOGIES logo and contact information: 936 Ridgebrook Road, Sparks, MD 21152

Professional Engineer seal for Howard County, Maryland, License No. 33079, Expiration Date 01-16-2021

Table with columns: DES, DRN, CHK, DATE, BY, NO, REVISION

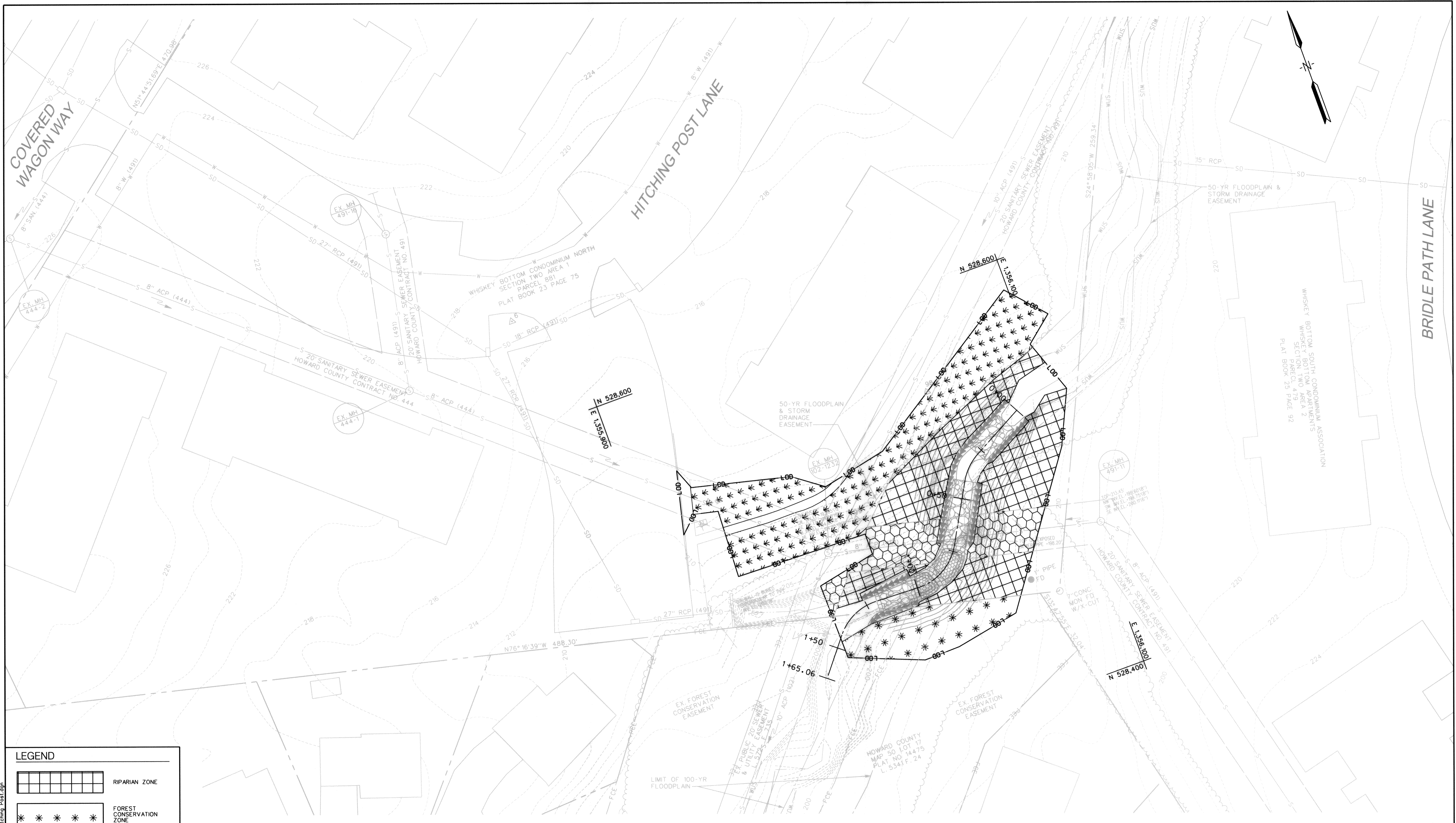
ADDENDUM EROSION & SEDIMENT CONTROL NOTES

HITCHING POST LANE SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6268 CONTRACT NO. 0491-D

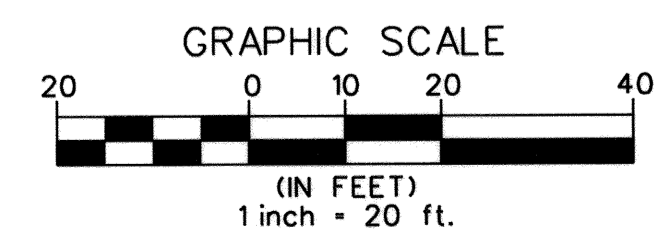
ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO. ESN-02
SCALE AS SHOWN
SHEET 4M OF 15



LEGEND

	RIPARIAN ZONE
	FOREST CONSERVATION ZONE
	TURF GRASS ZONE
	SEED ONLY ZONE



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. 33079, Expiration Date 01-16-2021.

NOTE:
REINFORCED NATURAL FIBER MATERIAL (PERMANENT SOIL STABILIZATION MATTING, PSSM) SHALL BE INSTALLED OVER ANY GRADED AREA THAT RESULTS IN A SLOPE GREATER THAN 2:1, I.E., THE BANK GRADE-IN AREAS AT THE UPSTREAM EXTENT OF THE WORK, AND THE BANK GRADE-OUT AREAS AT THE DOWNSTREAM EXTENT OF THE WORK. THE PSSM MUST BE KEYED (BURIED) INTO THE EXISTING BANKS AND INTO THE PROPOSED BANK STABILIZATION STRUCTURES.

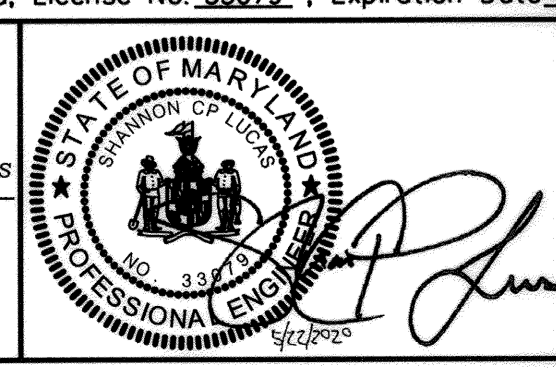
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

	DATE		DATE
DIRECTOR OF PUBLIC WORKS		CHIEF, BUREAU OF ENGINEERING	
	DATE		DATE
CHIEF, BUREAU OF UTILITIES		CHIEF, UTILITY DESIGN DIVISION	

KCI TECHNOLOGIES

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

936 Ridgeway Road
Sparks, MD 21152
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www.kci.com



DES:	SC
DRN:	CD, JS
CHK:	SL
DATE:	MAY 2020
BY:	NO.
REVISION	

ADDENDUM
LANDSCAPE PLAN

DATE: MAY 2020

600' SCALE MAP NO. 47_50 BLOCK NO. 3_21

HITCHING POST LANE
SEWER AND STREAM STABILIZATION

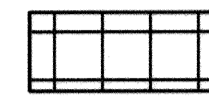
CAPITAL PROJECT S6268
CONTRACT No. 0491-D

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO. LS-01
SCALE 1" = 20'
SHEET 4N OF 15

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MASTER PLANT SCHEDULE +



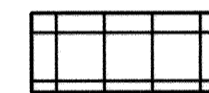
RIPARIAN ZONE (3,992 SQ FT / 0.09 AC)

Qty	Botanical Name	Common Name	Size	Form	Spacing/Rate
TREES					
2	Quercus rubra	Northern Red Oak	5' Height	Container	20' O.C.
2	Quercus palustris	Pin Oak	5' Height	Container	20' O.C.
2	Acer rubrum	Red Maple	5' Height	Container	20' O.C.
1	Quercus alba	White Oak	5' Height	Container	20' O.C.
1	Nyssa sylvatica	Black Gum	5' Height	Container	20' O.C.
8	Carpinus caroliniana	Musclemwood	5' Height	Container/Single stem	6'-8' O.C.
8	Cornus florida	Flowering Dogwood	5' Height	Container/Single Stem	6'-8' O.C.

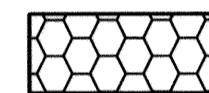


CONSERVATION EASEMENT ZONE (1,444 SQ FT / 0.03 AC)

Qty	Botanical Name	Common Name	Size	Form	Spacing/Rate
TREES					
2	Quercus rubra	Northern Red Oak	5' Height	Container	11' O.C.
2	Quercus palustris	Pin Oak	5' Height	Container	11' O.C.
2	Acer rubrum	Red Maple	5' Height	Container	11' O.C.
2	Quercus alba	White Oak	5' Height	Container	11' O.C.
2	Nyssa sylvatica	Black Gum	5' Height	Container	11' O.C.
3	Carpinus caroliniana	Musclemwood	5' Height	Container/Single stem	6'-8' O.C.
3	Cornus florida	Flowering Dogwood	5' Height	Container/Single Stem	6'-8' O.C.

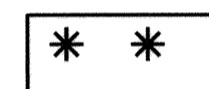


PERMANENT SEEDING FOR RIPARIAN ZONE, FCE ZONE & SEED ONLY ZONE (6,891 SQ FT / 0.16 AC)



Qty(lbs)*	Seed Mix
2.4	ERNMX-722 OR EQUIVALENT

*Seeding shall be applied at a 15 lbs/AC seeding rate.



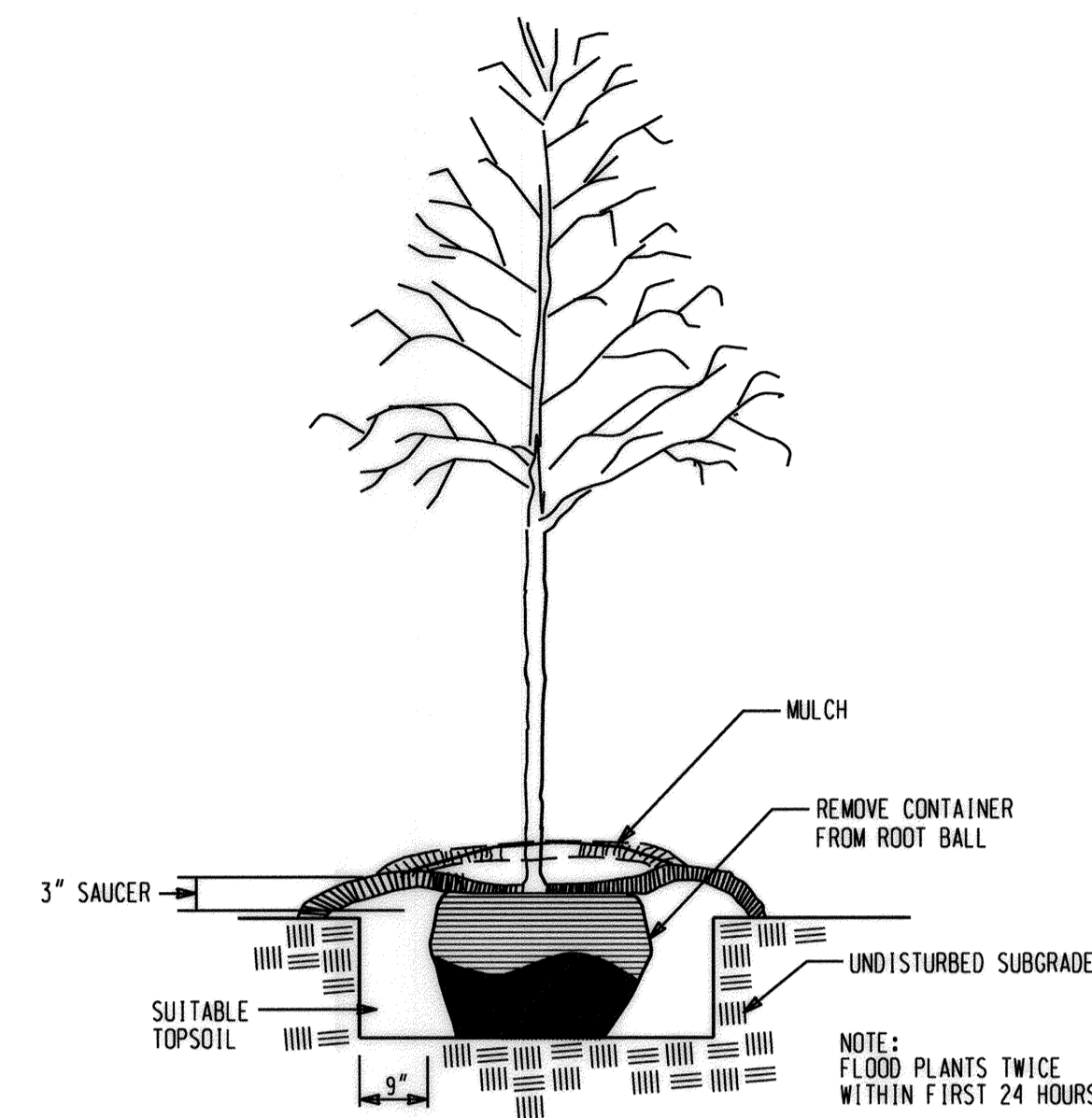
TURF GRASS ZONE (4,529 SQ FT / 0.10 AC)

Qty(lbs)*	Seed Mix
20.0	SHA Seed mix No. 1 (920.06.07 a)

*Seeding shall be applied at a 200 lbs/AC seeding rate.

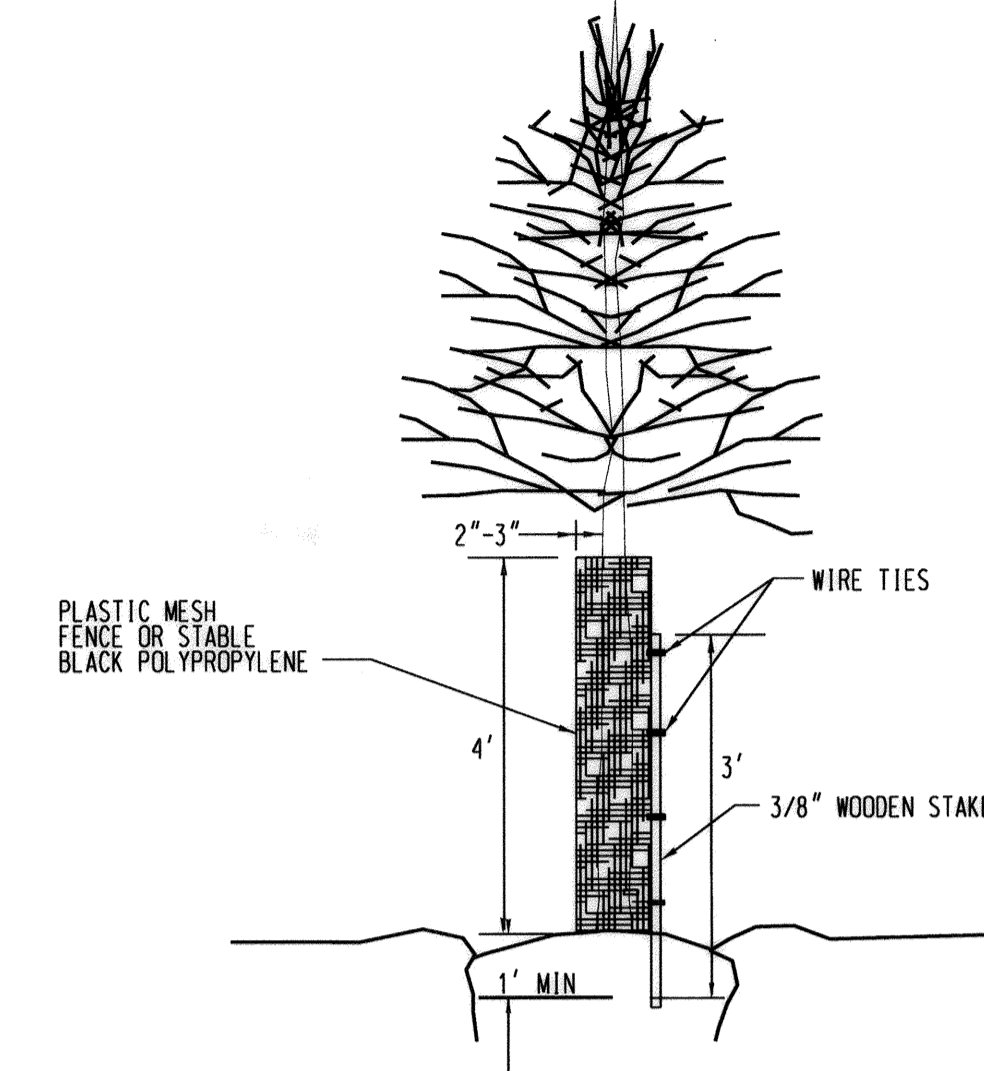
+ NOTES:

- 4 INCHES OF TOPSOIL SHALL BE PLACED THROUGHOUT THE SITE EXCEPT IN EXISTING WETLANDS TO INCREASE SOIL FERTILITY.
- ALL PLANT MATERIAL EXCEPT TEMPORARY SEEDING SHOULD BE INSTALLED AFTER CONSTRUCTION DURING THE DORMANT PERIOD (BEGINNING MID-AUGUST).



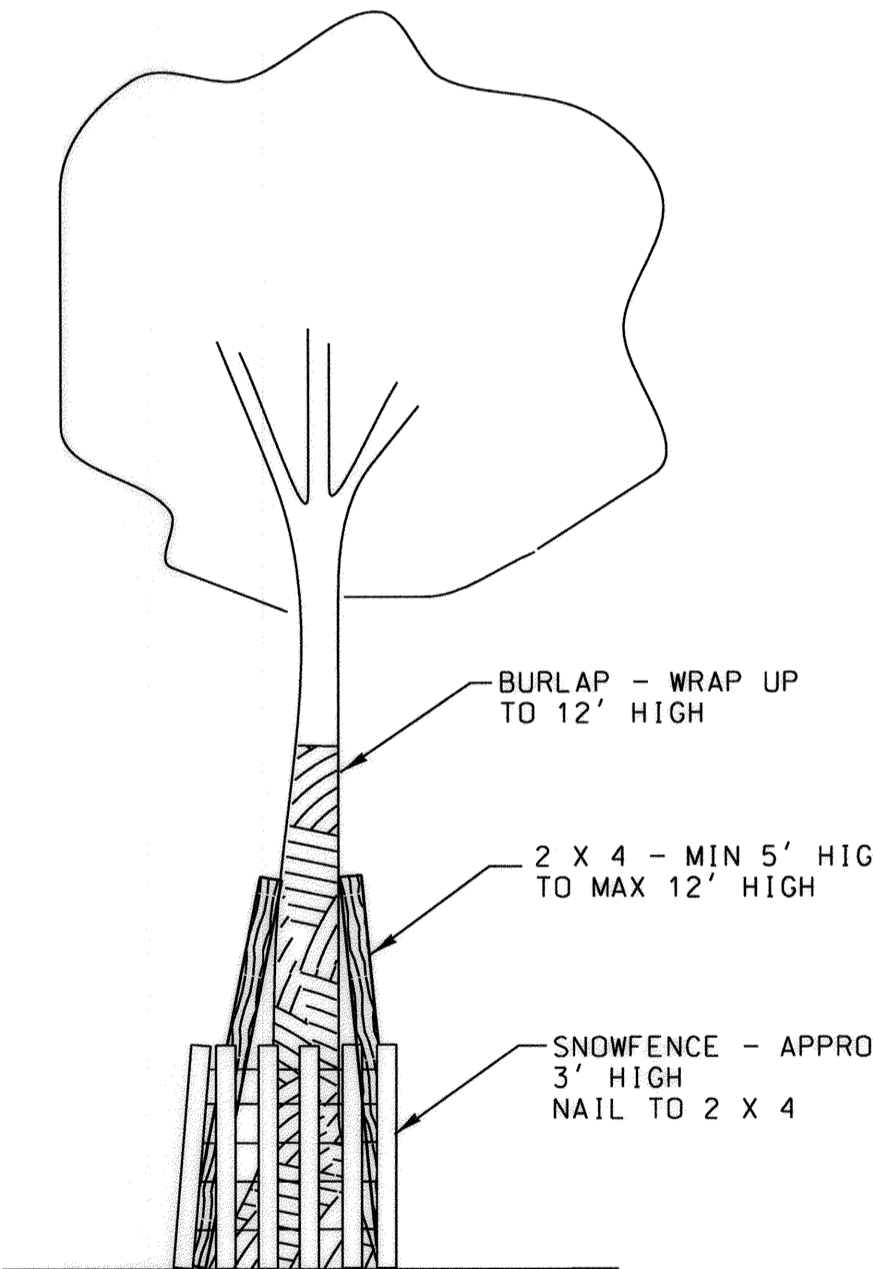
TREE PLANTING DETAIL

NOT TO SCALE



TREE SHELTER DETAIL

NOT TO SCALE



TREE PROTECTION PLANKING DETAIL

NOT TO SCALE

NOTES:

- 12'x4' PLANKS SHALL BE PLACED NO MORE THAN 6 INCHES APART, LESS FOR TREES WITH 12 INCH DIAMETER OR LESS.
- THE SNOWFENCE SHOULD COMPLETELY WRAP AROUND THE PLANKING.

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. 33079, Expiration Date 01-16-2021.

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 6/9/20
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 6/9/20
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 6/9/20
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 6/9/20
CHIEF, UTILITY DESIGN DIVISION DATE

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STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 33079

[Signature]

DES: SC	
DRN: CD, JS	
CHK: SL	
DATE: MAY 2020	
BY NO.	REVISION

DATE	600' SCALE MAP NO. 47.50	BLOCK NO. 3.21
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ADDENDUM
LANDSCAPE DETAILS

HITCHING POST LANE
SEWER AND STREAM STABILIZATION

CAPITAL PROJECT S6268
CONTRACT No. 0491-D

ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DRAWING NO.
LD-01

SCALE
AS SHOWN

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