

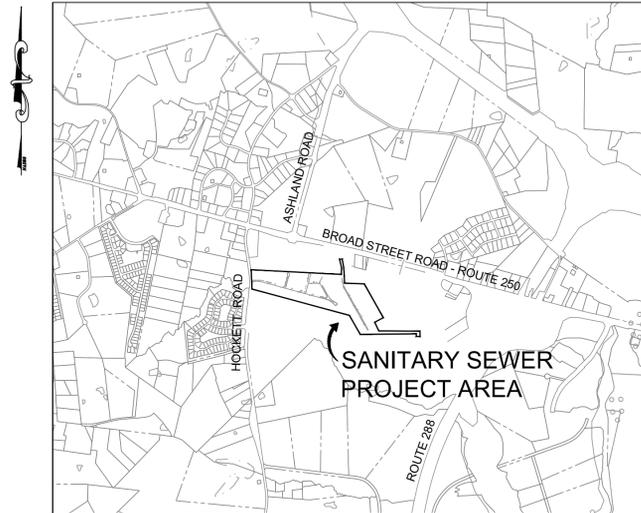
HICKORY HAVEN AND SAMARY FOREST SANITARY SEWER GOOCHLAND COUNTY, VIRGINIA



SITE DATA

OWNER/OPERATOR
GOOCHLAND COUNTY
1800 SANDY HOOK ROAD
P.O. BOX 119
GOOCHLAND, VA 23063
CONTACT: WAYNE STEPHENS, P.E.
PHONE: (804) 556-5835
FAX: (804) 556-5176
EMAIL: WSTEPHENS@CO.GOOCHLAND.VA.US

ENGINEER
TIMMONS GROUP
1001 BOULDERS PARKWAY, SUITE 300
RICHMOND, VA 23225
CONTACT: BRUCE STRICKLAND, P.E.
PHONE: (804) 200-6389
FAX: (804) 560-1438
EMAIL: BRUCE.STRICKLAND@TIMMONS.COM



VICINITY MAP
SCALE: 1" = 2,000'

GOOCHLAND COUNTY

APRIL 20, 2020
REVISED: JUNE 16, 2021

APPROXIMATE MATERIAL QUANTITIES - SEWER		
ITEM	QUANTITY	
MANHOLE FRAME AND COVER	36	EA.
48" DIAMETER MANHOLE	335	V.F.
8" PVC SANITARY SEWER PIPE	8267	L.F.
6" PVC SANITARY SEWER PIPE	600	L.F.
4" PVC PIPE FOR SEWER LATERALS	1080	L.F.
8" X 6" PVC SERVICE TEE	3	EA.
8" X 4" PVC SERVICE TEE	36	EA.
6" X 4" WYE FOR SERVICE CONNECTIONS	6	EA.
4" PVC CLEANOUT	55	EA.
2" HDPE FORCEMAIN	306	L.F.
RESIDENTIAL PRESSURE SERVICE CONNECTION	3	EA.

NOTE: QUANTITIES SHOWN ARE APPROXIMATE ONLY. CONTRACTORS ARE RESPONSIBLE FOR MAKING THEIR OWN TAKE-OFF QUANTITIES.

NOTE: A VSMP REGISTRATION STATEMENT IS NOT REQUIRED FOR THIS LINEAR DEVELOPMENT PROJECT IN ACCORDANCE WITH DEQ GUIDANCE MEMO NO. 15-2003. ADDITIONALLY, THIS PROJECT ACHIEVES COMPLIANCE WITH PART IIB OF VSMP TECHNICAL CRITERIA BY A NEGLIGIBLE INCREASE IN IMPERVIOUSNESS AND NEGLIGIBLE CHANGE IN WATER QUALITY/QUANTITY.

SHEET INDEX

SHEET	DRAWING	TITLE
1	C-1	COVER SHEET
2	C-2	SHEET INDEX
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4	D-1	GENERAL NOTES
5	D-2	UTILITY NOTES AND DETAILS
6	D-3	UTILITY NOTES AND DETAILS
7	D-4	UTILITY NOTES AND DETAILS
8	E-1	EROSION AND SEDIMENT CONTROL NARRATIVE
9	E-2	EROSION AND SEDIMENT CONTROL NOTES
10	E-3	EROSION AND SEDIMENT CONTROL DETAILS
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MISS UTILITY OF VIRGINIA

THE CONTRACTOR SHALL CALL "MISS UTILITY" 48 HOURS PRIOR TO THE START OF EXCAVATION. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE ENGINEER IMMEDIATELY IF THE LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLAN. IF THERE APPEARS TO BE A CONFLICT, AND/OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON PLAN, THE DEVELOPER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN THE EXISTING AND/OR RIGHT-OF-WAY REQUIRED BY THE DEVELOPMENT. CONTACT MISS UTILITY OF VIRGINIA: 1-800-552-7001 (TOLL FREE) OR DIAL 811.



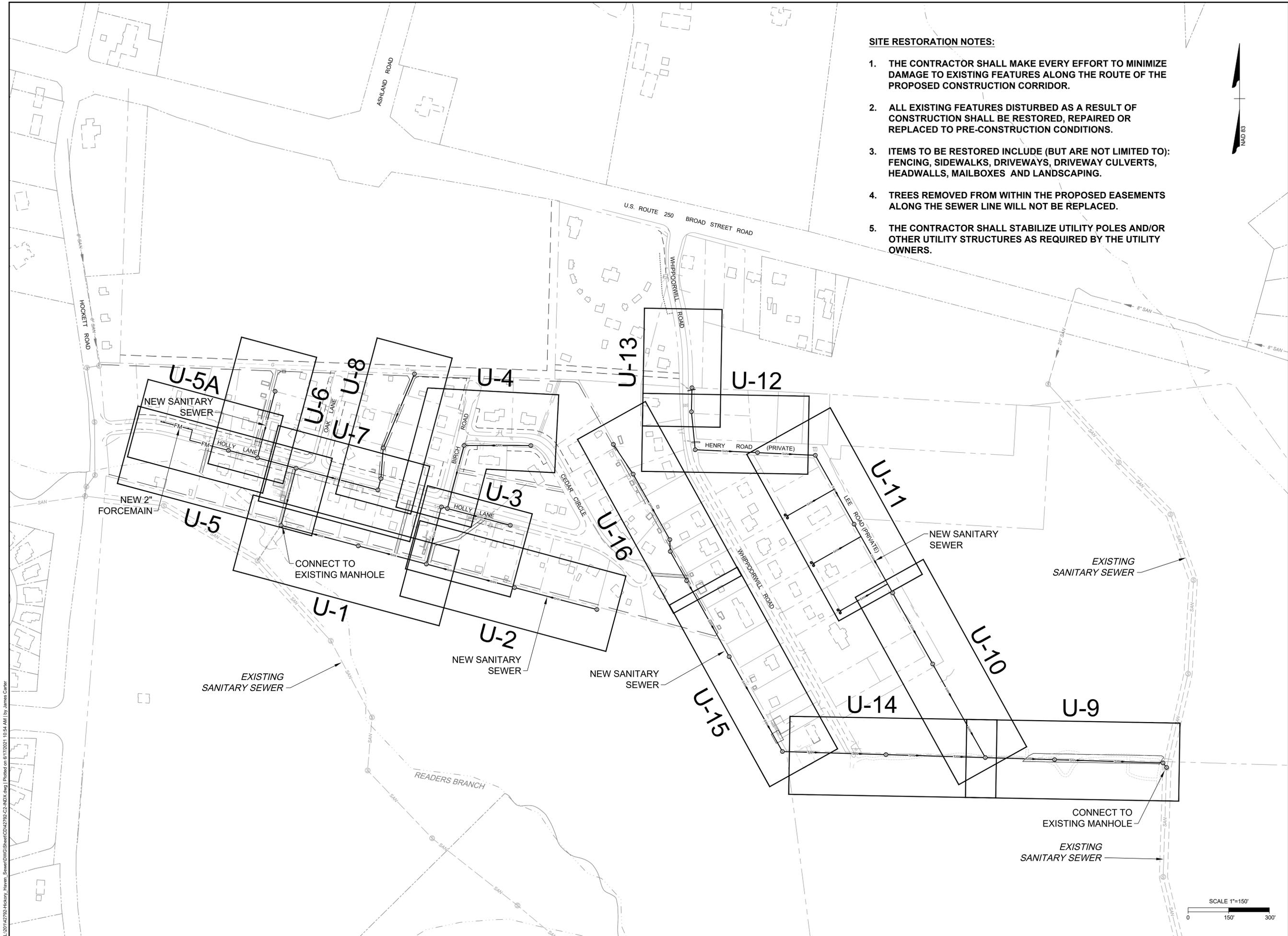
THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL: 804.200.6390 FAX: 804.560.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.
DATE: 04/20/2020
DRAWN BY: J. CARTER
DESIGNED BY: J. CARTER
CHECKED BY: B. STRICKLAND
SCALE: AS SHOWN

REVISION DESCRIPTION
REVISED PER VDOT AND COUNTY COMMENTS
DATE: 6/16/2021
REVISED PER VDOT AND COUNTY COMMENTS
DATE: 6/16/2021
REVISED PER VDOT AND COUNTY COMMENTS
DATE: 6/16/2021

TIMMONS GROUP
HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
COVER SHEET
JOB NO. 42792
SHEET NO. C-1

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SITE RESTORATION NOTES:

1. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE DAMAGE TO EXISTING FEATURES ALONG THE ROUTE OF THE PROPOSED CONSTRUCTION CORRIDOR.
2. ALL EXISTING FEATURES DISTURBED AS A RESULT OF CONSTRUCTION SHALL BE RESTORED, REPAIRED OR REPLACED TO PRE-CONSTRUCTION CONDITIONS.
3. ITEMS TO BE RESTORED INCLUDE (BUT ARE NOT LIMITED TO): FENCING, SIDEWALKS, DRIVEWAYS, DRIVEWAY CULVERTS, HEADWALLS, MAILBOXES AND LANDSCAPING.
4. TREES REMOVED FROM WITHIN THE PROPOSED EASEMENTS ALONG THE SEWER LINE WILL NOT BE REPLACED.
5. THE CONTRACTOR SHALL STABILIZE UTILITY POLES AND/OR OTHER UTILITY STRUCTURES AS REQUIRED BY THE UTILITY OWNERS.



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 1001 Builders Parkway, Suite 300 | Richmond, VA 23225
 TEL: 804.200.0500 FAX: 804.580.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
04/20/2020 <td>REVISED PER VDOT AND COUNTY COMMENTS</td>	REVISED PER VDOT AND COUNTY COMMENTS
06/16/2021	BID SET

DATE	04/20/2020
DRAWN BY	J. CARTER
DESIGNED BY	J. CARTER
CHECKED BY	B. STRICKLAND
SCALE	1" = 150'

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER

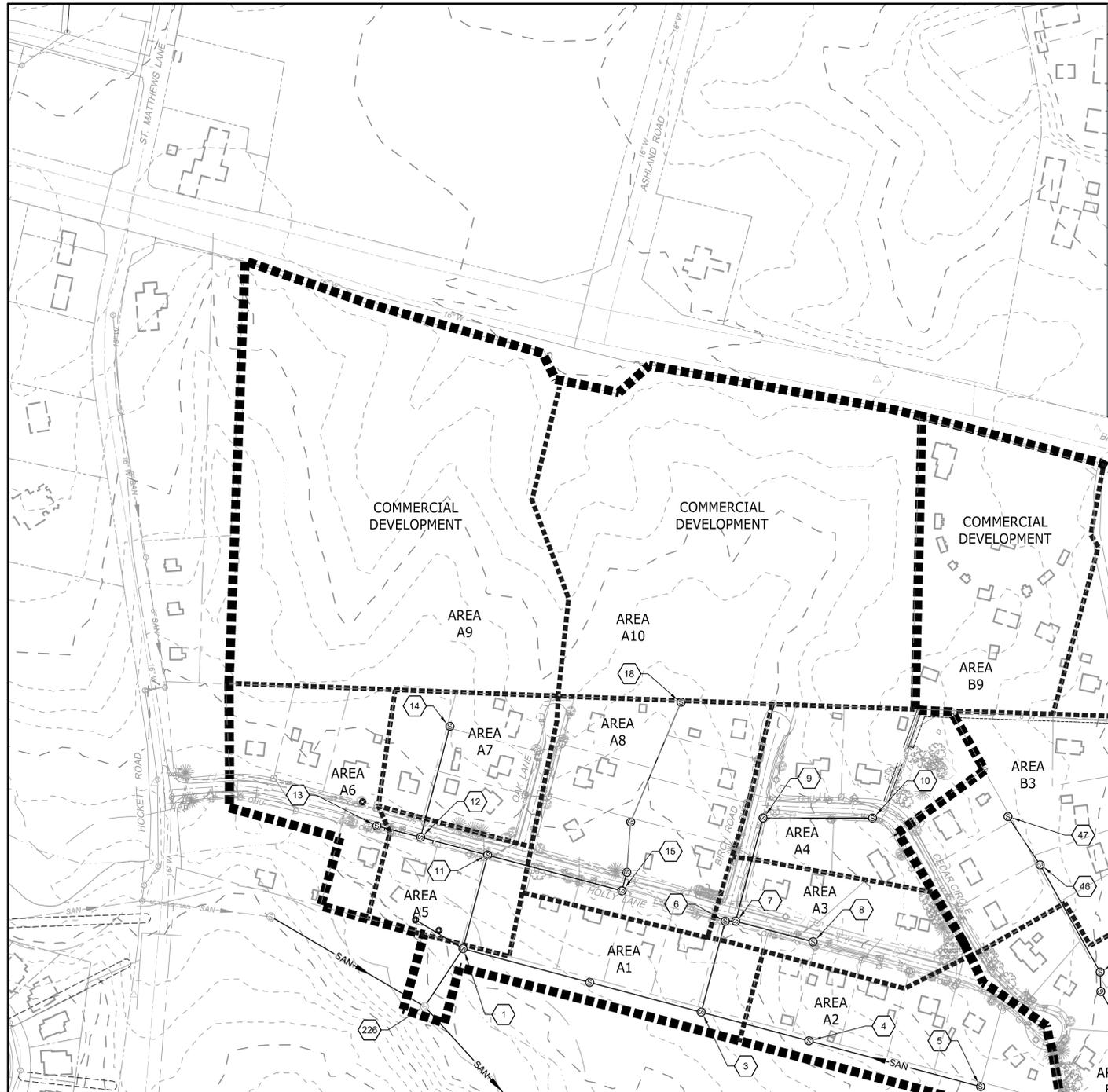
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA

SHEET INDEX

JOB NO.	42792
SHEET NO.	C-2

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SANITARY SEWER HYDRAULIC ANALYSIS

SAMARY FOREST

PIPE RUN DESCRIPTION	MH #	FLOW DETERMINATION	MGD	PIPE RUN			PIPE CAPACITY (FULL)			ELEVATIONS			REMARKS											
				From	To	See "Predicted Average Wastewater Flow" Table (This Sheet)	Incr.	Total Avg.	Std. Peak Factor	Peak Flow	Manning's "n"	0.013		MGD	CFS	Vel. (FPS)	Proportional Flow	Proportional Depth (ft/in)	Proportional Velocity	Upper (Inv. Out)	Fall (Pipe Run)	Lower (Inv. In)	MH Top	
	30	29	B9, B8	0.009	0.009	8.6	0.073	112.60	8	1.08%	0.81	1.28	4.1	9%	1.6	2.2	206.30	1.21	205.09	216.03	9.73			
	29	28	B7	0.001	0.010	8.4	0.082	115.66	8	1.08%	0.81	1.28	4.1	10%	1.7	2.3	204.99	1.25	203.74	214.53	9.54			
	28	27				0.010	8.4	0.082	230.96	8	1.52%	0.97	1.50	4.9	8%	1.6	2.8	203.64	3.51	200.13	213.04	9.40		
	27	26				0.010	8.4	0.082	213.65	8	0.44%	0.52	0.81	2.6	16%	2.1	1.7	200.03	0.95	199.08	208.01	7.98		
	26	25	B6	0.002	0.012	8.1	0.096	290.42	8	0.44%	0.52	0.80	2.6	18%	2.3	1.8	198.98	1.28	197.70	206.29	7.31			
	25	24	B5	0.002	0.014	7.9	0.107	290.00	8	0.44%	0.52	0.80	2.6	21%	2.5	1.8	197.60	1.27	196.33	206.68	9.06			
	24	23	B4	0.002	0.015	7.7	0.117	300.00	8	3.02%	1.36	2.11	6.9	9%	1.6	3.7	196.23	9.07	187.16	207.11	10.88			
	23	22				0.015	7.7	0.117	394.63	8	0.44%	0.52	0.80	2.6	22%	2.6	1.9	187.06	1.74	185.32	198.32	11.26		
	47	46	B3	0.002	0.002	11.2	0.023	130.00	8	3.48%	1.46	2.26	7.4	2%	0.7	2.4	222.21	4.62	217.69	230.34	8.13			
	46	45				0.002	11.2	0.023	275.95	8	3.48%	1.46	2.26	7.4	2%	0.7	2.4	217.59	9.80	207.99	228.04	8.45		
	45	44	B2	0.002	0.004	9.8	0.041	43.44	8	2.08%	1.13	1.75	5.7	4%	1.0	2.4	207.89	0.90	206.99	219.10	11.21			
	44	43				0.004	9.8	0.041	123.46	8	2.08%	1.13	1.75	5.7	4%	1.0	2.4	206.89	2.57	204.32	218.86	11.97		
	43	42	B1	0.002	0.006	9.3	0.053	320.00	8	0.84%	0.72	1.11	3.6	7%	1.5	1.9	204.22	2.69	201.53	213.99	9.37			
	42	41				0.006	9.3	0.053	400.00	8	0.48%	0.54	0.84	2.7	10%	1.7	1.5	201.43	1.92	199.51	213.89	12.46		
	41	40				0.006	9.3	0.053	382.02	8	0.48%	0.54	0.84	2.7	10%	1.7	1.5	199.41	1.83	197.58	206.32	6.91		
	40	22				0.006	9.3	0.053	366.78	8	3.32%	1.43	2.21	7.2	4%	1.1	3.0	197.48	12.16	185.32	206.34	8.86		
	22	21				0.015	0.021	7.3	0.151	400.00	8	2.32%	1.19	1.84	6.0	13%	1.9	3.6	185.22	9.27	175.95	195.58	10.36	
	21	20	B4-B9	0.001	0.021	7.3	0.151	255.86	8	6.88%	2.05	3.18	10.4	7%	1.5	5.3	175.85	17.80	158.25	181.96	6.11			
	20	246				0.021	7.3	0.151	23.50	8	15.00%	3.03	4.69	15.3	5%	1.2	7.0	158.15	3.63	154.63	167.33	8.18		

PROJECTED AVERAGE WASTEWATER FLOW

AREA B1			
TYPE	UNITS	GPD/UNIT	FLOW (GPD)
SINGLE FAMILY HOUSE	5	300	1,500
AREA B1 TOTAL			1,500
AREA B2			
SINGLE FAMILY HOUSE	7	300	2,100
AREA B2 TOTAL			2,100
AREA B3			
SINGLE FAMILY HOUSE	7	300	2,100
AREA B3 TOTAL			2,100
AREA B4			
SINGLE FAMILY HOUSE	5	300	1,500
AREA B4 TOTAL			1,500
AREA B5			
SINGLE FAMILY HOUSE	6	300	1,800
AREA B5 TOTAL			1,800
AREA B6			
SINGLE FAMILY HOUSE	7	300	2,100
AREA B6 TOTAL			2,100
AREA B7			
SINGLE FAMILY HOUSE	4	300	1,200
AREA B7 TOTAL			1,200
AREA B8			
SINGLE FAMILY HOUSE	2	300	600
AREA B8 TOTAL			600
AREA B9			
COMMERCIAL	5	1,500	7,500
AREA B9 TOTAL			7,500

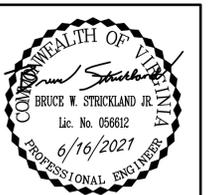
SANITARY SEWER HYDRAULIC ANALYSIS

HICKORY HAVEN

PIPE RUN DESCRIPTION	MH #	FLOW DETERMINATION	MGD	PIPE RUN			PIPE CAPACITY (FULL)			ELEVATIONS			REMARKS										
				From	To	See "Predicted Average Wastewater Flow" Table (This Sheet)	Incr.	Total Avg.	Std. Peak Factor	Peak Flow	Manning's "n"	0.013		MGD	CFS	Vel. (FPS)	Proportional Flow	Proportional Depth (ft/in)	Proportional Velocity	Upper (Inv. Out)	Fall (Pipe Run)	Lower (Inv. In)	MH Top
	18	17	A8, A10	0.022	0.022	7.2	0.158	291.26	8	1.76%	1.04	1.61	5.2	15%	2.1	3.3	194.80	5.13	189.67	205.93	11.13		
	17	16				0.022	7.2	0.158	113.12	8	0.44%	0.52	0.80	2.6	30%	3.0	2.0	189.57	0.50	189.07	198.96	9.39	
	16	15				0.022	7.2	0.158	43.01	8	0.49%	0.55	0.85	2.8	29%	2.9	2.1	188.97	0.21	188.76	195.24	6.27	
	15	11				0.022	7.2	0.158	312.42	8	6.60%	0.61	0.94	3.1	25%	2.8	2.3	188.66	1.88	186.78	194.26	5.60	
	14	12	A7, A9	0.022	0.022	7.2	0.160	297.00	8	4.32%	1.63	2.52	8.2	10%	1.7	4.6	197.35	11.10	186.25	204.48	7.13		
	13	12	A6	0.001	0.001	12.4	0.015	101.82	8	0.45%	0.53	0.81	2.7	3%	0.9	1.0	184.86	0.46	184.40	190.88	6.02		
	12	11	A5, A7, A9	0.023	0.024	7.1	0.172	156.25	8	0.45%	0.53	0.81	2.7	33%	3.1	2.1	184.30	0.70	183.80	193.54	9.24		
	11	1	A8, A10	0.022	0.046	6.3	0.289	217.00	8	2.44%	1.22	1.89	6.2	24%	2.6	4.4	183.50	5.29	178.21	192.63	9.13		
	10	9	A4	0.002	0.002	11.9	0.018	246.55	8	5.44%	1.83	2.83	9.2	1%	0.6	2.6	213.30	13.41	199.89	225.54	12.24		
	9	7				0.002	11.9	0.018	239.45	8	2.76%	1.30	2.01	6.6	1%	0.7	2.0	199.79	6.61	193.18	210.53	10.74	
	8	7	A3	0.001	0.001	14.2	0.008	180.00	8	3.92%	1.55	2.40	7.8	1%	0.4	1.8	200.24	7.06	193.18	208.86	8.62		
	7	6	A4	0.002	0.002	11.2	0.023	23.54	8	3.92%	1.55	2.40	7.8	2%	0.7	2.5	193.08	0.92	192.16	200.71	7.63		
	6	3				0.002	11.2	0.023	211.00	8	3.92%	1.55	2.40	7.8	2%	0.7	2.5	192.06	8.28	183.78	200.94	8.88	
	5	4	A2	0.002	0.002	11.5	0.021	400.00	8	4.20%	1.60	2.48	8.1	1%	0.6	2.5	208.11	16.80	191.31	224.64	16.53		
	4	3				0.002	11.5	0.021	350.86	8	2.96%	1.35	2.08	6.8	2%	0.7	2.2	191.21	7.43	183.78	205.42	14.21	
	3	2	A1, A3, A4	0.004	0.005	9.4	0.051	260.00	8	2.36%	1.20	1.85	6.1	4%	1.1	2.1	183.68	6.14	177.54	190.14	6.46		
	2	1				0.005	9.4	0.051	295.00	8	1.44%	0.94	1.45	4.7	5%	1.3	2.2	177.44	4.25	173.19	186.15	8.71	
	1	226	A5-A10	0.046	0.052	6.1	0.316	155.88	12	0.24%	1.13	1.75	2.5	28%	4.3	1.9	172.86	0.37	172.49	181.73	8.87		

PROJECTED AVERAGE WASTEWATER FLOW

AREA A1			
TYPE	UNITS	GPD/UNIT	FLOW (GPD)
SINGLE FAMILY HOUSE	5	300	1,500
AREA A1 TOTAL			1,500
AREA A2			
SINGLE FAMILY HOUSE	5	300	1,500
AREA A2 TOTAL			1,500
AREA A3			
SINGLE FAMILY HOUSE	2	300	600
AREA A3 TOTAL			600
AREA A4			
SINGLE FAMILY HOUSE	5	300	1,500
AREA A4 TOTAL			1,500
AREA A5			
SINGLE FAMILY HOUSE	3	300	900
AREA A5 TOTAL			900
AREA A6			
SINGLE FAMILY HOUSE	4	300	1,200
AREA A6 TOTAL			1,200
AREA A7			
SINGLE FAMILY HOUSE	4	300	1,200
AREA A7 TOTAL			1,200
AREA A8			
COMMERCIAL	14	1,500	21,000
AREA A8 TOTAL			21,000
AREA A9			
COMMERCIAL	14	1,500	21,000
AREA A9 TOTAL			21,000
AREA A10			
COMMERCIAL	13	1,500	19,500
AREA A10 TOTAL			19,500



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 1001 Builders Parkway, Suite 300 | Richmond, VA 23225
 TEL: 804.200.0500 FAX: 804.560.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE: 04/20/2020
 DRAWN BY: A. CHIODINI
 DESIGNED BY: J. CARTER
 CHECKED BY: B. STRICKLAND
 SCALE: 1" = 150'

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VA
SANITARY SEWER HYDRAULIC ANALYSIS

JOB NO. 42792
 SHEET NO. C-3

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EXISTING UTILITY OWNERS

SEWER AND WATER:

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES
1800 SANDY HOOK ROAD
P.O. BOX 119
GOOCHLAND, VA 23063
CONTACT: WAYNE STEPHENS, P.E.
PHONE: (804) 556-5835
EMAIL: WSTEPHENS@CO.GOOCHLAND.VA.US

ELECTRICAL:

DOMINION ENERGY
7500 WEST BROAD STREET
RICHMOND, VA 23294
PHONE: (804) 366-4357 (866)-DOM-HELP

NATURAL GAS:

COLUMBIA GAS OF VIRGINIA
1809 COVOTE DRIVE
CHESTER, VA 23836
PHONE: (800) 543-8911

TELECOM:

COMCAST-XFINITY
5401 STAPLES MILL ROAD
RICHMOND, VA 23228
PHONE: (804) 915-6256

VERIZON
2617 STUART AVENUE
RICHMOND, VA 23220
PHONE: (804) 355-0196

EARTHLINK
980 HAMMOND DRIVE
SUITE 400
ATLANTA, GA 30328
PHONE: (404) 815-0770

SPECIAL NOTE:



THE PROJECT AREA CONTAINS EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND CONFIRM THE LOCATION AND STATUS OF ALL EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION.



ABBREVIATIONS

APPROX	APPROXIMATE	LOD	LIMITS OF DISTURBANCE
ARV	AIR RELEASE VALVE	MAX	MAXIMUM
ASSY	ASSEMBLY	MECH	MECHANICAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MH	MANHOLE
AWWA	AMERICAN WATER WORKS ASSOCIATION	MIN	MINIMUM
BI	BLACK IRON	NIF	NOW OR FORMERLY
BLDG	BUILDING	NIC	NOT IN CONTRACT
BM	BENCHMARK	NPT	NATIONAL PIPE THREAD
OC	ON CENTER	OC	ON CENTER
BMP	BEST MANAGEMENT PRACTICE	OCEW	ON CENTER EACH WAY
BV	BALL VALVE	OEH	OVERHEAD ELECTRIC
CL	CLASS	MPT	MALE PIPE THREAD
CO	CLEAN OUT	PE	PLAIN END / POLYETHYLENE
CONC	CONCRETE	PEP	POLYETHYLENE PIPE
DI	DUCTILE IRON	PROP	PROPOSED
DIA	DIAMETER	PVC	POLYVINYL CHLORIDE
DIP	DUCTILE IRON PIPE	REQ	REQUIRED
EA	EACH	RCQ	REINFORCED CONCRETE PIPE
ELEV	ELEVATION	ROW	RIGHT OF WAY
ESC	EROSION AND SEDIMENT CONTROL	SCH	SCHEDULE
ESMT	EASEMENT	SF	SQUARE FEET / SILT FENCE
EX	EXISTING	SS	STAINLESS STEEL
FFE	FINISHED FLOOR ELEVATION	STA	STATION
FH	FIRE HYDRANT	STD	STANDARD
FLG	FLANGE	STR	STRUCTURE
FO	FIBER OPTIC	TW	TOP OF WALL
FPT	FEMALE PIPE THREAD	TYP	TYPICAL
HDPE	HIGH DENSITY POLYETHYLENE	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
HORIZ	HORIZONTAL	WV	WATER VALVE
INV	INVERT	WI	WITH

GENERAL NOTES:

- THE CONTRACTOR SHALL PAY FOR AND OBTAIN ALL REQUIRED PERMITS AND DELIVER COPIES TO THE OWNER AT THE PRE-CONSTRUCTION MEETING.
- CONTRACTOR SHALL NOTIFY PROPERTY OWNERS (IN WRITING) OF ANY WORK SCHEDULED ADJACENT TO OR THROUGH THEIR PROPERTY A MINIMUM OF ONE WEEK IN ADVANCE PRIOR TO THE COMMENCEMENT OF ANY STAKING OR CONSTRUCTION ACTIVITY.
- HORIZONTAL DATUM: NAD 83
VERTICAL DATUM: NAVD 88
- STAKING FOR CONSTRUCTION, TO ASSURE PROPER LOCATION OF PROJECT COMPONENTS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR.
- ALL EXISTING PROPERTY MARKERS ARE TO REMAIN UNDISTURBED. IF DISTURBANCE OCCURS, REPLACEMENT MUST BE PERFORMED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
- PREVIOUSLY ARRANGED ACCESS EASEMENTS, STAGING AREAS, STORAGE AREAS, ETC., IF ANY, ARE SHOWN ON THE DRAWINGS. ADDITIONAL LAND USE RIGHTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- WORK AREAS SHALL BE KEPT AT ALL TIMES FREE OF DEBRIS AND HAZARDOUS MATERIAL TO THE SATISFACTION OF THE INSPECTOR.
- THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH THE INSPECTOR.
- CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL EXISTING FEATURES (EXCEPT TREES), SUCH AS GUARDRAIL, SIDEWALKS, BRICKWORK, CULVERTS, FENCES, SHRUBS, PLANTERS, ETC. TO THEIR ORIGINAL LOCATION AND CONDITION WHICH EXISTED PRIOR TO CONSTRUCTION. TOTAL REPLACEMENT MAY BE NECESSARY.
- THE LOCATION OF EXISTING UTILITIES ACROSS OR ALONG THE ROUTE OF THE PROPOSED WORK IS NOT NECESSARILY SHOWN ON THE PLANS, AND WHEN SHOWN, IS ONLY APPROXIMATELY CORRECT. IN ADDITION TO CONTACTING MISS UTILITY PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL, ON HIS OWN INITIATIVE, HORIZONTALLY AND VERTICALLY LOCATE ALL EXISTING UNDERGROUND LINES, FACILITIES, AND STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY UNDERGROUND LINES, FACILITIES, AND STRUCTURES DAMAGED.
- CONTRACTOR SHALL COORDINATE WITH THE LOCAL UTILITY COMPANIES PRIOR TO CONSTRUCTING PORTIONS OF WORK IMMEDIATELY ADJACENT TO UTILITY STRUCTURES. THE COSTS OF POLE AND/OR OTHER STRUCTURE STABILIZATION DURING WORK SHALL BE BORNE BY THE CONTRACTOR.
- ALL WORK SHALL BE SUBJECT TO INSPECTION BY BOTH STATE AND LOCAL INSPECTORS.
- FINAL ACCEPTANCE BY THE OWNER WILL NOT BE MADE UNTIL ALL WORK SHOWN ON THE APPROVED CONTRACT DOCUMENTS IS COMPLETED, INCLUDING PAVING, GRADING, RESTORATION AND ALL ADJUSTMENTS.
- CONTRACTOR SHALL RESTORE EXISTING DITCH TO ORIGINAL CONDITION AND ENSURE THAT POSITIVE DRAINAGE IS MAINTAINED WITHIN THE DITCH. PAVEMENT AND SHOULDERS MUST ALSO BE RESTORED TO THEIR ORIGINAL CONDITION.
- CONTRACTOR SHALL ENSURE THAT PUBLIC AND PRIVATE ENTRANCE CULVERTS ARE FREE OF ANY CONSTRUCTION DEBRIS.

UTILITY NOTES:

- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT AND MAINTAIN UNINTERRUPTED SERVICE EXCEPT AS ALLOWED BY THE INSPECTOR.
- ANY DAMAGE TO EXISTING STRUCTURES SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE INSPECTOR, AT THE CONTRACTOR'S EXPENSE.
- NEW WATER AND SEWER PIPES SHALL HAVE A MINIMUM OF 3.5 FEET OF COVER, UNLESS NOTED OTHERWISE.
- ALL TIE-IN CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR PRIOR TO BACKFILLING.
- COMPACT EACH LAYER OF FILL OR BACKFILL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF THE MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 698 (AASHTO T-99). REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR ADDITIONAL BACKFILL AND COMPACTION REQUIREMENTS.
 - 5A. 100 PERCENT BENEATH AND WITHIN 25 FEET OF BUILDINGS AND STRUCTURES, INCLUDING THOSE SHOWN FOR FUTURE CONSTRUCTION.
 - 5B. 95 PERCENT BENEATH PAVEMENTS, WALKS, AND ROAD SHOULDERS, INCLUDING THOSE SHOWN FOR FUTURE CONSTRUCTION.
 - 5C. 90 PERCENT IN OTHER UNPAVED AREAS.
- AFTER BACKFILLING, FINISHED GRADE ABOVE TRENCH SHALL BE RESTORED TO AS GOOD OR BETTER THAN EXISTING CONDITIONS WHICH EXISTED PRIOR TO CONSTRUCTION.
- BLASTING OF ROCK IS STRICTLY PROHIBITED WITHOUT WRITTEN PRIOR AUTHORIZATION FROM THE OWNER.
- TRENCHES WITHIN PRIVATE PAVED (ASPHALT AND CONCRETE) DRIVEWAYS SHALL BE BACKFILLED WITH SELECT AGGREGATE MATERIAL (21A OR 21B).

**COUNTY OF GOOCHLAND DEPARTMENT OF PUBLIC UTILITIES
WATER AND SEWER NOTES:**

- ALL CONSTRUCTION, MATERIALS AND INSTALLATIONS SHALL CONFORM TO THE LATEST EDITION OF STANDARDS AND SPECIFICATIONS, DEPARTMENT OF PUBLIC UTILITIES (DPU), GOOCHLAND COUNTY, VIRGINIA.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING DPU TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST 48 HOURS (TWO WORKING DAYS) PRIOR TO STARTING ANY WORK ON THIS PROJECT. ALL WORK SHALL BE SUBJECT TO INSPECTION. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO REQUESTING A PRE-CONSTRUCTION MEETING.
- THE CONTRACTOR SHALL INCLUDE IN HIS BID PRICE THE COSTS FOR LOCATING AND UNCOVERING ALL SEWER MANHOLES AND VALVE BOXES AFTER SURFACE TREATMENT OF ROADS, AND FOR ADJUSTING THEM TO THE FINAL ROAD GRADES AS NEEDED.
- PRIOR TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL FLUSH AND CLEAN OUT GRAVITY SEWER MAINS AS NEEDED, PERFORM CCTV RECORDINGS OF ALL GRAVITY SEWER MAINS AND MANHOLES, AND SUBMIT CCTV RECORDINGS TO DPU FOR REVIEW.
- CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ACROSS OR ALONG THE LINE OF THE PROPOSED WORK MAY NOT BE SHOWN ON THE PLANS AND WHERE SHOWN MAY BE ONLY APPROXIMATELY CORRECT. THE CONTRACTOR SHALL INCLUDE IN HIS BID PRICE THE COST OF LOCATING ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY TO COMPLETE THE WORK. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR DUE TO THE PRESENCE OF EXISTING UTILITIES OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO UNDERGROUND STRUCTURES.
- CONTRACTOR SHALL CALL "MISS UTILITY" TOLL FREE AT 811 PRIOR TO START OF CONSTRUCTION.
- DATUM FOR ALL ELEVATIONS SHOWN IS NATIONAL GEOODETIC SURVEY.
- MINIMUM DESIGN COVER OVER WATER LINES IS 3.5 FEET. EXCEPTIONS DUE TO UNUSUAL CIRCUMSTANCES IN THE FIELD MUST BE APPROVED BY DPU.
- SERVICE SADDLES MUST BE USED ON ALL WATER SERVICE CONNECTIONS.
- FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING FIR-01.
- MINIMUM DESIGN COVER OVER GRAVITY SEWER LINES IS 3.5 FEET. EXCEPTIONS DUE TO UNUSUAL CIRCUMSTANCES IN THE FIELD MUST BE APPROVED BY DPU. DUCTILE IRON PIPE (DIP) MUST BE USED WHERE COVER IS LESS THAN 5 FEET IN PUBLIC ROADS, AND WHERE COVER IS LESS THAN 3.5 FEET IN OTHER AREAS.
- MINIMUM DESIGN COVER OVER SANITARY SEWER FORCE MAINS IS 3.5 FEET. EXCEPTIONS DUE TO UNUSUAL CIRCUMSTANCES IN THE FIELD MUST BE APPROVED BY DPU.
- VANDAL PROOF COVERS SHALL BE USED ON ALL MANHOLES IN EASEMENTS. WATER TIGHT COVERS SHALL BE USED IN FLOOD PLAINS. THE MANHOLE COVERS SHALL BE IN ACCORDANCE WITH STANDARD DRAWINGS MAN-11 AND MAN-12.
- DESIGN ENGINEER SHALL CERTIFY THAT UNPAVED STREETS ARE TO SUBGRADE PRIOR TO CONTRACTOR INSTALLING WATER SYSTEM. CURB AND GUTTER, IF REQUIRED, SHALL BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY COUNTY.
- NO PERMANENT STRUCTURES OR TREES SHALL BE LOCATED WITHIN ANY UTILITY EASEMENT.
- FINAL ACCEPTANCE BY COUNTY WILL NOT OCCUR UNTIL ALL WORK SHOWN ON APPROVED UTILITY PLANS IS COMPLETED INCLUDING PAVING, GRADING AND ALL REQUIRED ADJUSTMENTS.
- A WETLANDS PERMIT MAY BE REQUIRED FROM THE U.S. ARMY CORPS OF ENGINEERS FOR THIS PROJECT. FOR INFORMATION CONCERNING SUCH REQUIREMENT, CONTACT THE APPROPRIATE LOCAL U.S. ARMY CORPS OF ENGINEERS FIELD OFFICE.
- DPU WILL INSPECT ALL PUBLIC WATER AND SANITARY SEWER MAINS, CONNECTIONS AND APPURTENANCES THERETO, AS SHOWN ON THE APPROVED UTILITY PLANS. LOCATED WITHIN DEDICATED EASEMENTS AND/OR PUBLIC RIGHTS-OF-WAY. OTHER LINES TO BE INSTALLED ON SITE SUCH AS ROOF DRAINS, FOUNDATION DRAINS, PRIVATE WATER SUPPLY LINES, PRIVATE SANITARY SEWER LINES, ETC., MUST BE APPROVED BY THE DEPARTMENT OF BUILDING INSPECTIONS PRIOR TO INSTALLATION AND ARE TO BE INSPECTED BY THEM BEFORE BACKFILLING/COVERING.
- CONCURRENT INSPECTIONS BY THE DEPARTMENT OF BUILDING INSPECTIONS AND DPU WILL BE PERFORMED FOR THE FOLLOWING: MAINLINE BACKFLOW PREVENTERS; MONITORING MANHOLES; GREASE TRAPS; EXCLUSION METERS; IRRIGATION METERS. DPU WILL INSPECT TO ENSURE THAT THE PROPER APPURTENANCE, AS SHOWN ON THE APPROVED UTILITY PLANS, HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH DPU STANDARDS.

VDOT GENERAL NOTES:

- ALL MATERIALS AND CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE SPECIFICATIONS, ROAD AND BRIDGE STANDARDS AND WORK AREA PROTECTION MANUAL.
- LAND USE PERMIT (LUP) SHALL BE OBTAINED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO BEGINNING ANY CONSTRUCTION WITHIN THE EXISTING STATE MAINTAINED RIGHT OF WAY (INCLUDING ACCESS).
- VDOT REQUIRES NOTIFICATION 48 HOURS PRIOR TO COMMENCING WITH INITIAL CONSTRUCTION ACTIVITIES. PLEASE CONTACT THE APPROPRIATE PERMIT OFFICE IN WHICH YOUR PROPOSED ACTIVITIES ARE TO OCCUR.
- APPROVAL OF A DETAILED CONSTRUCTION SEQUENCING AND MAINTENANCE OF TRAFFIC PLAN FOR THE WORK ZONE IS A PREREQUISITE FOR ISSUANCE OF A LAND USE PERMIT. THE PLAN SHALL ACCOMMODATE ACCESS TO AND CONSTRUCTION WITHIN VDOT MAINTAINED RIGHT-OF-WAY.
- WORK ZONES - THE DEPARTMENT SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY ANTICIPATED ROAD/SHOULDER CLOSURES. ADDITIONALLY, THE PERMITTEE OR HIS OR HER DESIGNEE SHALL INPUT ALL WORK ZONES ON ROADWAYS CLASSIFIED AS COLLECTOR ROADS OR HIGHER. LCAMS REQUESTS MUST BE RECEIVED BY THE THURSDAY PRIOR TO THE WEEK IN WHICH ACTIVITIES ARE PROPOSED FOR REVIEW AND APPROVAL. CALL 804-796-4452 FOR ADDITIONAL INFORMATION ON LCAMS. THE PERMITTEE OR HIS OR HER DESIGNEE SHALL INPUT THE WORK ZONES INTO VA TRAFFIC. CONTACT VDOT'S SMART TRAFFIC CENTER AT 804-796-4520 TO NOTIFY WHEN THE WORK ZONE IS ACTIVATED AND DEACTIVATED.
- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONSULT THE DEVELOPER'S ENGINEERING CONSULTANT AND VERIFY THE APPROVAL OF THE PLANS BY ALL APPLICABLE FEDERAL, STATE AND LOCAL AGENCIES.
- CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE DEVELOPER'S ENGINEERING CONSULTANT IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON PLAN. IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THIS PLAN, CALL "MISS UTILITY" AT 811. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN EXISTING AND PROPOSED RIGHT OF WAY REQUIRED BY THE DEVELOPMENT.
- TO LOCATE VDOT UTILITIES ON THE RIGHT OF WAY, SUBMIT A REQUEST TO VDOT'S CUSTOMER SERVICE CENTER AT 800-367-7623 AT LEAST 48 HOURS IN ADVANCE OF PLANNED EXCAVATION. "MISS UTILITY" DOES NOT LOCATE VDOT UTILITIES.
- THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL POINTS OF CONNECTION OR PROPOSED WORK TO EXISTING CURBS, SANITARY LINES, WATER LINES, ETC. PRIOR TO CONSTRUCTION.
- DESIGN CHANGES, SPECIFIED MATERIALS CHANGES AND FIELD CHANGES FROM THE APPROVED PLANS SHALL BE RE-SUBMITTED TO VDOT FOR APPROVAL PRIOR TO PROCEEDING WITH THE WORK. A LETTER OF EXPLANATION SHALL ACCOMPANY THE PROPOSED REVISION ALONG WITH DRAINAGE CALCULATIONS WHEN APPROPRIATE.
- VDOT APPROVAL OF CONSTRUCTION PLANS DOES NOT PRECLUDE THE RIGHT TO REQUIRE ADDITIONAL FACILITIES AS DEEMED NECESSARY FOR ACCEPTANCE OF THE ROADS INTO THE VDOT SECONDARY ROAD SYSTEM BASED ON FIELD CONDITIONS OR UNAPPROVED PLAN CHANGES.
- VDOT APPROVAL OF THESE PLANS WILL EXPIRE FIVE (5) YEARS FROM THE DATE OF APPROVAL FOR SITE PLANS AND SUBDIVISION PLANS IF CONSTRUCTION HAS NOT STARTED.
- PRELIMINARY DESIGN OF THE PAVEMENT STRUCTURE FOR ALL SUBDIVISION STREETS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE PAVEMENT DESIGN GUIDE OR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA. THE COMPLETED DESIGN WORKSHEET APPENDIX IV SHALL BE INCLUDED WITH THE INITIAL PLAN SUBMITTAL FOR EACH PROPOSED PAVEMENT SECTION UTILIZING THE PREDICTED SOIL SUPPORT VALUE SHOWN IN APPENDIX I OF THE PAVEMENT DESIGN GUIDE OR AS REPORTED IN A GEOTECHNICAL ANALYSIS OF THE ON-SITE SOILS.
- A COPY OF THE COMPLETE CBR REPORT SHALL BE SUBMITTED TO VDOT IN CONJUNCTION WITH FINAL PAVEMENT DESIGNS. ALL PAVEMENT DESIGN RECOMMENDATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA.
- ALL VEGETATION AND ORGANIC MATERIAL SHALL BE REMOVED FROM THE RIGHT OF WAY LIMITS PRIOR TO CONDITIONING OF THE SUBGRADE.
- UPON DISCOVERY OF SOILS THAT ARE UNSUITABLE FOR FOUNDATIONS, SUBGRADES, OR OTHER ROADWAY CONSTRUCTION PURPOSES, THE DEVELOPER OR HIS DESIGNEE, WHICH MAY BE THE CONTRACTOR, SHALL IMMEDIATELY ENGAGE A GEOTECHNICAL ENGINEER AND NOTIFY VDOT. THESE AREAS SHALL BE EXCAVATED BELOW PLAN GRADE AS DIRECTED BY THE GEOTECHNICAL ENGINEER, BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED IN ACCORDANCE WITH CURRENT VDOT SPECIFICATIONS.
- THE NECESSITY AND LOCATIONS FOR ADDITIONAL VDOT STANDARD UNDERDRAINS SHALL BE DETERMINED AT TIME OF SUBGRADE INSPECTION. VIDEO INSPECTION OF ACCESSIBLE OUTLET LOCATIONS, MAINLINE LONGITUDINAL CONNECTIONS, AND LONGITUDINAL PIPE FOR ALL PAVEMENT UNDERDRAINS, CROSS DRAINS, EDGE DRAINS AND PREFABRICATED GEOCOMPOSITE PANEL DRAINS SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 501 OF THE ROAD AND BRIDGE SPECIFICATIONS AND VIRGINIA TEST METHOD 108 - POST INSTALLATION INSPECTION OF UNDERDRAINS, CROSSDRAINS, AND EDGE DRAINS.
- VDOT SHALL HAVE ACCESS TO THE REQUIRED FIELD INSPECTION (PROOF ROLL) PRIOR TO PLACEMENT OF THE AGGREGATE BASE COURSE(S). CONTACT VDOT FOR SUBGRADE INSPECTION 48 HOURS PRIOR TO SCHEDULING PLACEMENT OF AGGREGATE BASE COURSE(S).
- THE SCHEDULING OF AGGREGATE BASE INSTALLATION AND SUBSEQUENT PAVING ACTIVITIES SHALL ACCOMMODATE FORECASTED WEATHER CONDITIONS PER SECTION 315 OF THE ROAD AND BRIDGE SPECIFICATIONS.
- VDOT SHALL HAVE APPROVED THE AGGREGATE BASE COURSE(S) FOR DEPTH, TEMPLATE AND PERFORMED THE REQUIRED FIELD INSPECTION (PROOF ROLL) PRIOR TO PLACEMENT OF ANY ASPHALT CONCRETE SURFACE COURSE(S). CONTACT VDOT FOR INSPECTION OF THE AGGREGATE BASE COURSE(S) 48 HOURS PRIOR TO APPLICATION OF THE SURFACE COURSE(S).
- A LICENSED GEOTECHNICAL ENGINEER OR HIS DESIGNEE SHALL ASCERTAIN CAUSE AND CERTIFY RECOMMENDED METHOD OF REPAIR FOR ALL PAVEMENT STRUCTURAL FAILURES PRIOR TO STATE ACCEPTANCE.
- VDOT SHALL BE PROVIDED DOCUMENTATION BY A LICENSED GEOTECHNICAL ENGINEER, CERTIFYING THAT ALL IN-PLACE PAVEMENTS MEET OR EXCEED THE APPROVED PAVEMENT DESIGN THICKNESS PRIOR TO STATE ACCEPTANCE OF THE STREET. CORES ARE TO BE OBTAINED VERIFYING PAVEMENT THICKNESS UNLESS OTHERWISE DIRECTED BY VDOT. THE PERMITS INSPECTOR SHALL BE CONTACTED 24 HOURS PRIOR TO THE CORE SAMPLES BEING TAKEN.
- ALL STORM SEWER DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST VDOT DRAINAGE MANUAL, ROAD AND BRIDGE STANDARDS, AND IIMS.
- ALL PRE-CAST UNITS SHALL BE VDOT APPROVED. CERTIFICATION AND VDOT STAMP IS REQUIRED ON ALL UNITS.
- ALL CONCRETE SHALL BE CLASS A3-AE (AIR ENTRAINED 3,000 PSI) UNLESS OTHERWISE SPECIFIED.
- ALL ROADSIDE DITCHES SHOWN AS PAVED ON PLANS ARE TO BE PAVED IN ACCORDANCE WITH THE STANDARD TYPICAL SECTION AS SHOWN ON THE PLANS. ANY ADDITIONAL PAVING OF THE DITCHES, OTHER THAN THOSE SHOWN ON THE ROAD PLANS WILL BE DETERMINED PRIOR TO ACCEPTANCE OF THE ROADS INTO THE VDOT SECONDARY ROAD SYSTEM.
- ROAD & BRIDGE SPECIFICATIONS SECTION 302, DRAINAGE STRUCTURES ADDRESSES POST INSTALLATION VISUAL/VIDEO CAMERA INSPECTION OF STORM SEWER PIPES AND PIPE CULVERTS. INSPECTION FREQUENCY SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND/OR AS NECESSITATED BY THE ENGINEER. VIDEO INSPECTION SHALL BE CONDUCTED IN ACCORDANCE WITH VIRGINIA TEST METHOD (VTM) 123, POST INSTALLATION INSPECTION OF BURIED STORM SEWER PIPE AND PIPE CULVERTS.
- A CONSTRUCTION ENTRANCE SHALL BE INSTALLED ON EACH INDIVIDUAL LOT PRIOR TO ANY LOT GRADING OR HOME CONSTRUCTION ACTIVITIES AND SHALL BE ADEQUATELY MAINTAINED UNTIL ALL CONSTRUCTION TRAFFIC AREAS WITHIN THE LOT HAVE BEEN STABILIZED.
- ALL ENTRANCES SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH CURRENT VDOT STANDARDS. RESIDENTIAL LOT ACCESS SHALL BE PROVIDED PER THE FOLLOWING CRITERIA:
 - ALL DRIVEWAY ENTRANCES AND ENTRANCE CULVERTS SHALL CONFORM TO PE-1 PRIVATE ENTRANCE STANDARDS UNLESS OTHERWISE APPROVED BY VDOT. NO ENTRANCE CULVERTS ARE TO BE INSTALLED WITHIN FIVE (5) FEET OF A PROPERTY CORNER.
 - VDOT STANDARD CG-9D ENTRANCES SHALL BE USED WHEN AN ENTRANCE IS REQUIRED IN CURB AND GUTTER NEIGHBORHOODS UNLESS OTHERWISE APPROVED BY VDOT.
- DRY GUTTER IS NOT ALLOWED IN VDOT RIGHT OF WAY EXCEPT AS SHOWN ON VDOT'S ENTRANCE STANDARD COMPONENTS.
- THE DEVELOPER SHALL FURNISH AND INSTALL STOP SIGNS AND STOP BARS AT STREET INTERSECTIONS AND ALL REGULATORY SIGNAGE PER THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL SIGNS MUST BE INSTALLED ON VDOT STANDARD STP-1 SIGN POSTS.
- INSTALLATION, MAINTENANCE AND OPERATION OF STREET LIGHTING SHALL BE PROVIDED BY AND AT THE SOLE EXPENSE OF OTHERS. VDOT WILL ALLOW LIGHTING WITHIN THE RIGHT OF WAY BY LUP ONLY.
- LIGHTING ON CURB SECTIONS SHALL BE PLACED BEHIND THE CURB AND PREFERABLY BEHIND THE SIDEWALK. FOR SHOULDER SECTIONS, THE POLE SHALL BE PLACED A MINIMUM OF 10' FROM EDGE OF PAVEMENT AND BEHIND THE DITCH LINE. ALL LIGHTING PROPOSED WITHIN THE RIGHT OF WAY MUST BE DESIGNED IN ACCORDANCE WITH THE AASHTO GUIDE FOR ROADWAY LIGHTING AND SHALL MEET THE CURRENT ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA) STANDARDS.
- TRAFFIC SIGNALS REQUIRE AN INDIVIDUAL LAND USE PERMIT. THE APPLICANT SHALL BE RESPONSIBLE FOR THE DESIGN COSTS OF ANY TRAFFIC SIGNAL INSTALLATION OR MODIFICATION OF EXISTING SIGNALS. DESIGN PLANS MUST BE PREPARED AND SUBMITTED TO VDOT BY A LICENSED PROFESSIONAL ENGINEER FOR REVIEW AND APPROVAL. THIS INCLUDES THE FOUNDATION DESIGN AND ANY EQUIPMENT ASSOCIATED WITH THE COMPLETED TRAFFIC SIGNAL. ALL EQUIPMENT MUST BE APPROVED BY VDOT. SHOP DRAWINGS MUST BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO FABRICATING ANY SIGNAL STRUCTURAL COMPONENTS.
- SOIL STABILIZATION IS REQUIRED WITHIN 7 DAYS FOR ALL AREAS WHERE CLEARING, GRADING, EXCAVATION OR OTHER LAND DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED OR WHERE LAND DISTURBANCE ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED FOR AN ANTICIPATED DURATION OF GREATER THAN 7 DAYS, OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIED AREA. SOIL STABILIZATION SHALL BEGIN AS SOON AS PRACTICABLE, BUT NOT LATER THAN THE SEVEN DAYS FOLLOWING THE DAY WHEN LAND DISTURBING ACTIVITIES TEMPORARILY OR PERMANENTLY CEASED.
- NO STRUCTURE SHALL BE CONSTRUCTED ON STATE MAINTAINED RIGHTS OF WAY, OR ON RIGHT OF WAYS INTENDED TO BE MAINTAINED BY VDOT UNLESS SAID STRUCTURES ARE SHOWN ON CONSTRUCTION PLANS APPROVED BY VDOT OR SUCH STRUCTURES ARE COVERED BY A VDOT LAND USE PERMIT (OR BY A LETTER OF INTENT FROM THE RESIDENT ADMINISTRATOR/RESIDENT ENGINEER TO ISSUE SAID PERMIT AT THE TIME OF STATE ACCEPTANCE).



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DATE	REVISION DESCRIPTION
8/10/2020	REVISED PER VDOT AND COUNTY COMMENTS
6/16/2021	BID SET

DATE: 04/20/2020

DRAWN BY	J. CARTER
DESIGNED BY	J. CARTER
CHECKED BY	B. STRICKLAND
SCALE	AS SHOWN

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA

GENERAL NOTES

JOB NO. 42792
SHEET NO. D-1

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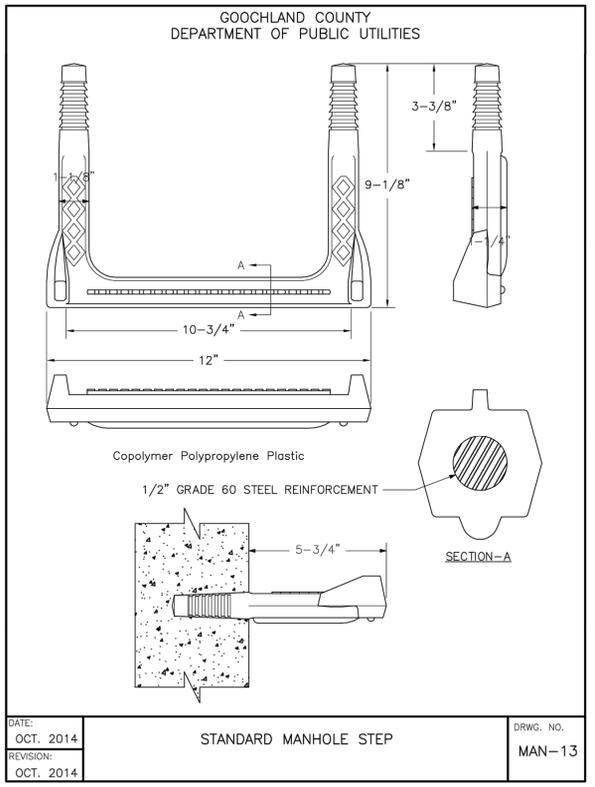
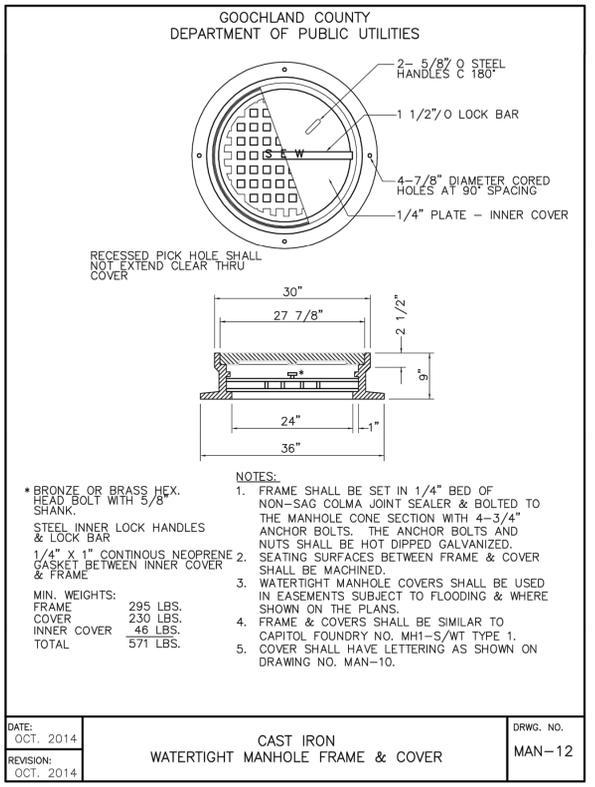
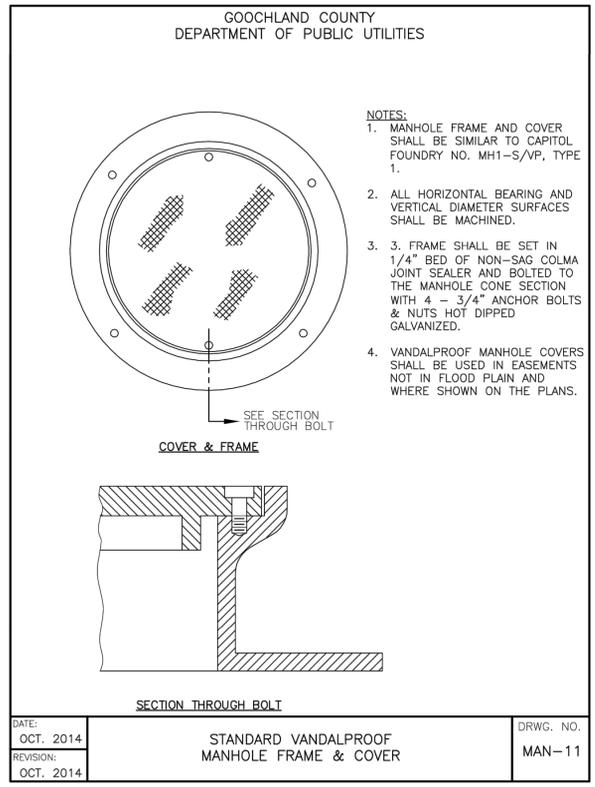
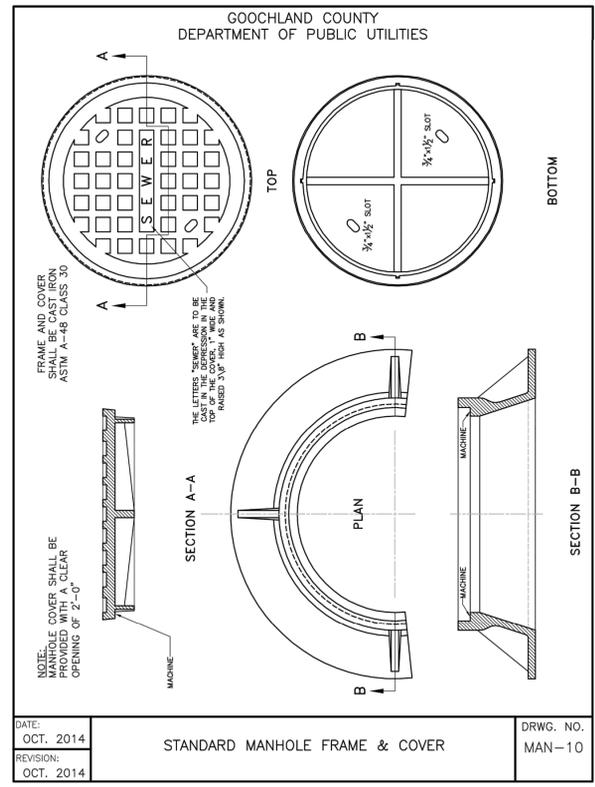
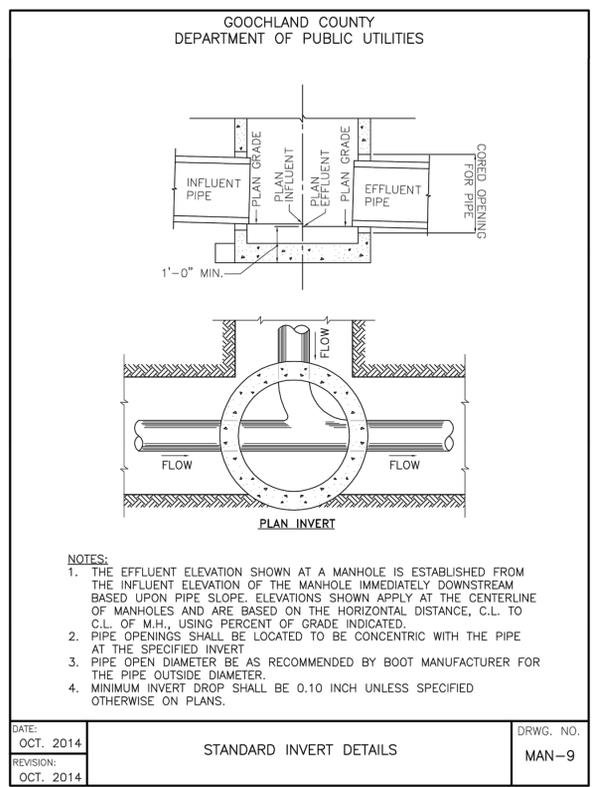
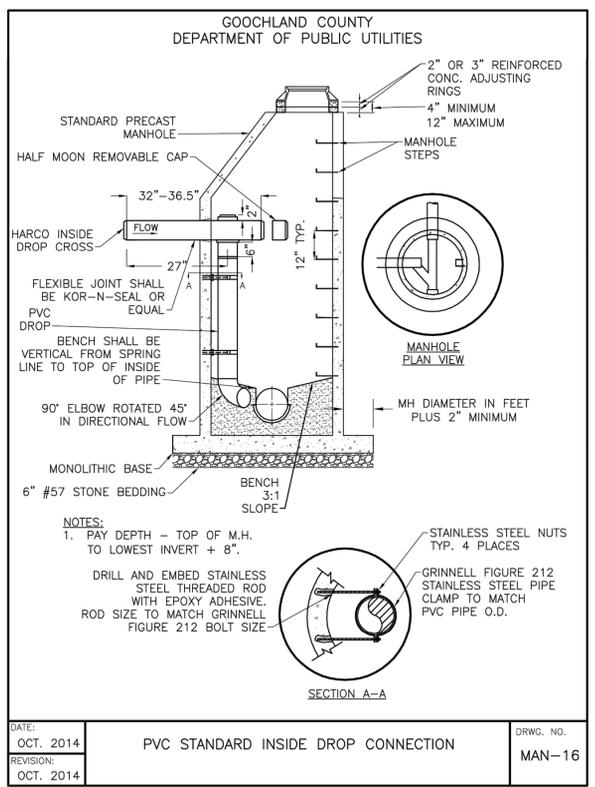
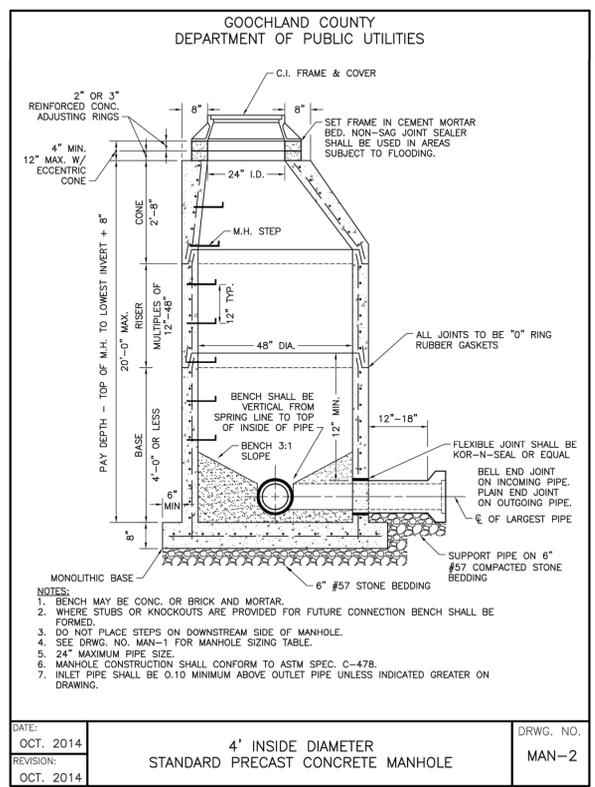
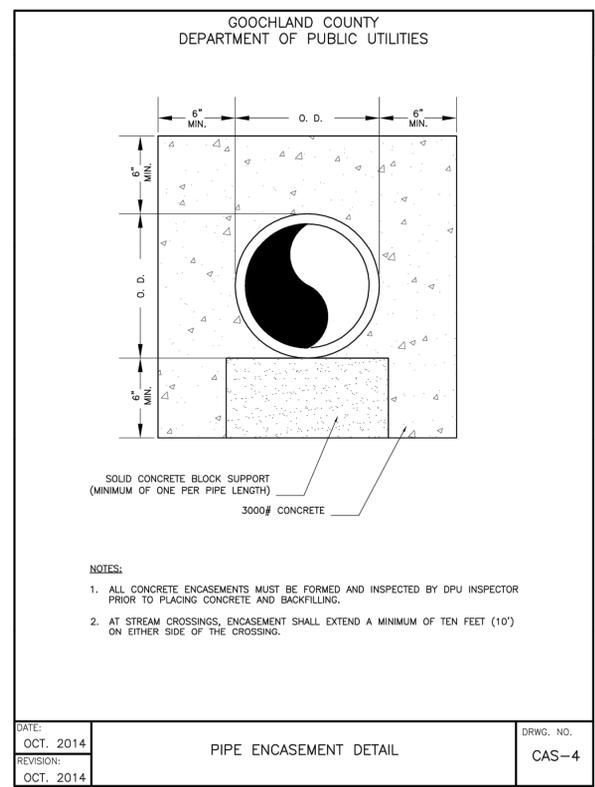
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DATE	8/10/2020	REVISION DESCRIPTION	
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DATE	04/20/2020	BID SET	
DRAWN BY	J. CARTER		
DESIGNED BY	J. CARTER		
CHECKED BY	B. STRICKLAND		
SCALE	AS SHOWN		

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
 UTILITY NOTES AND DETAILS

JOB NO. 42792
 SHEET NO. D-2



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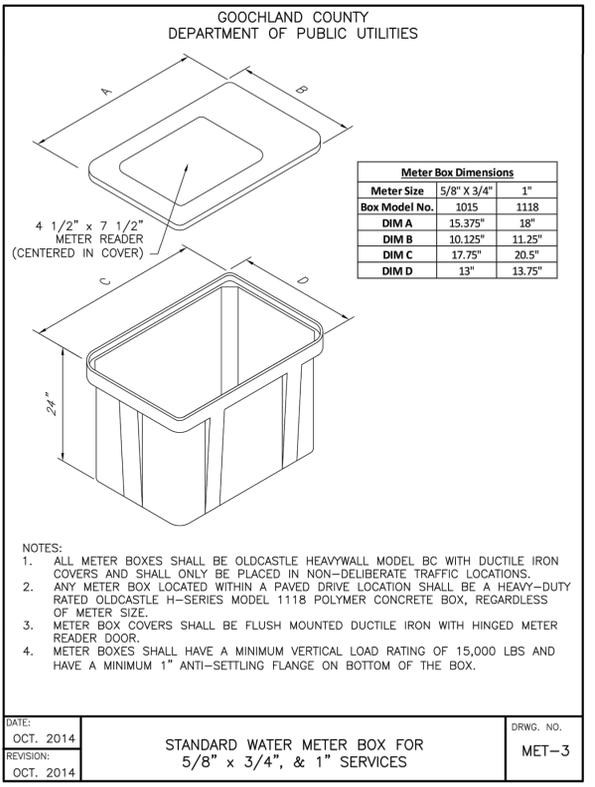
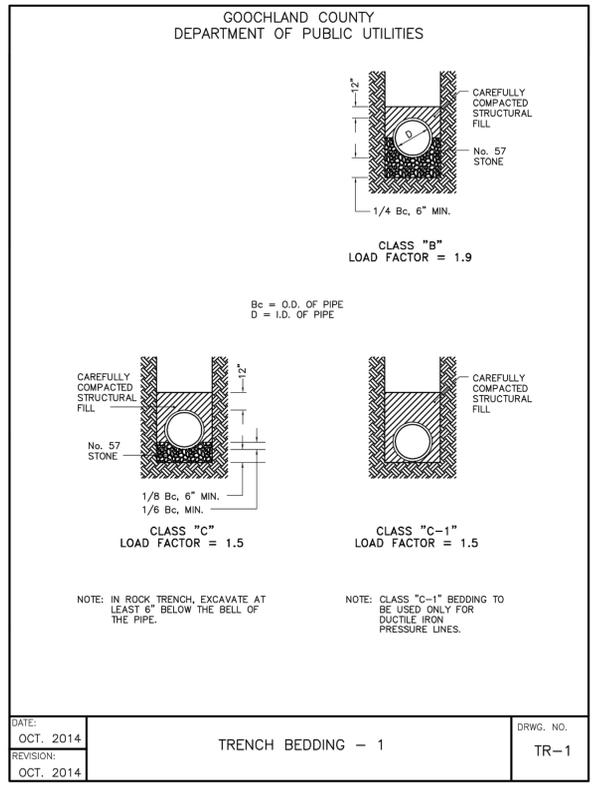
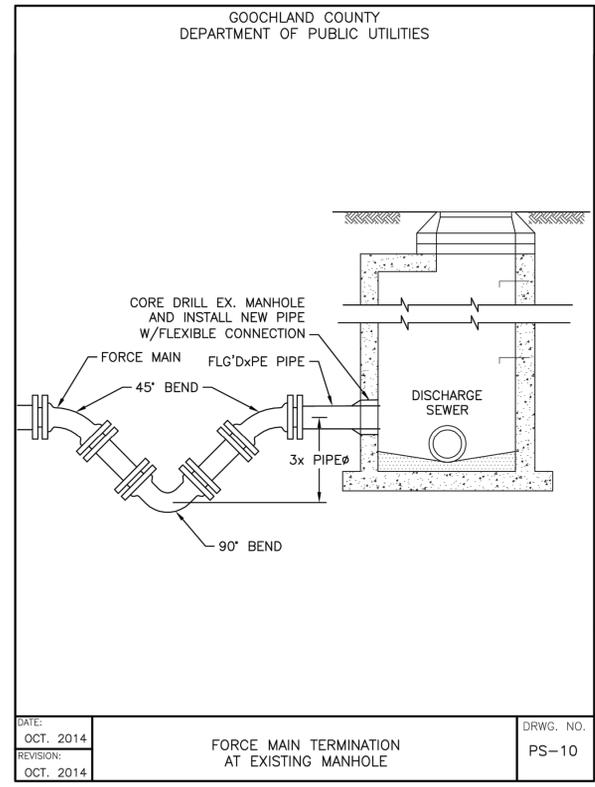
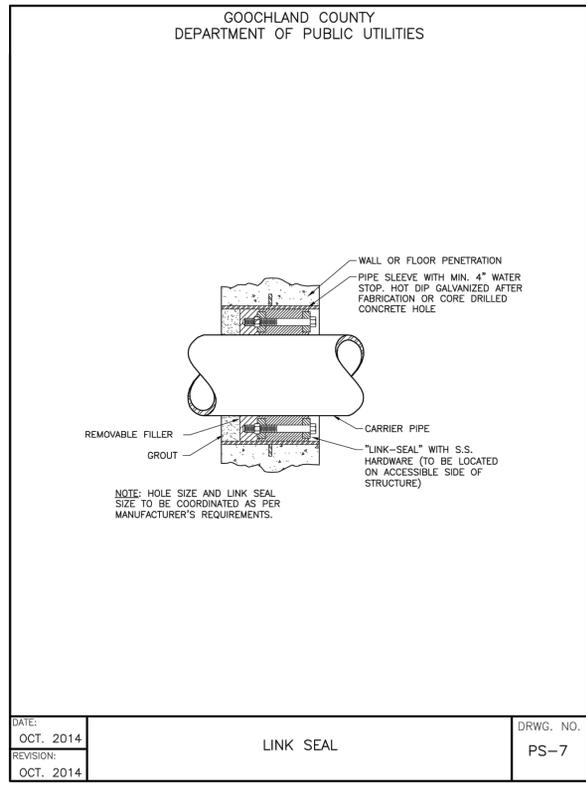
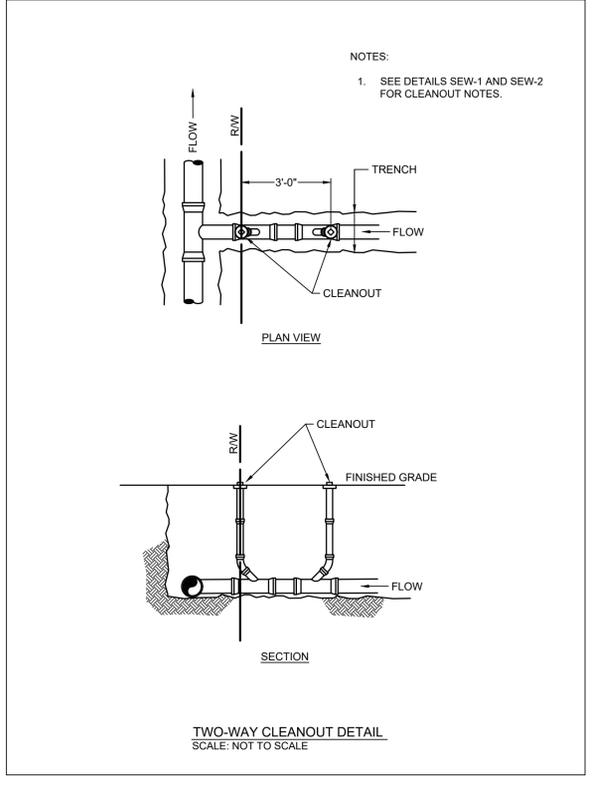
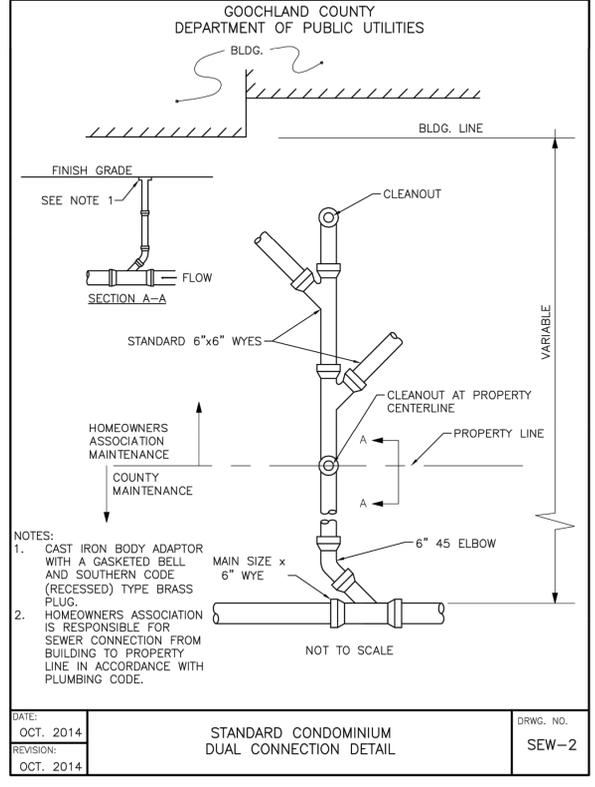
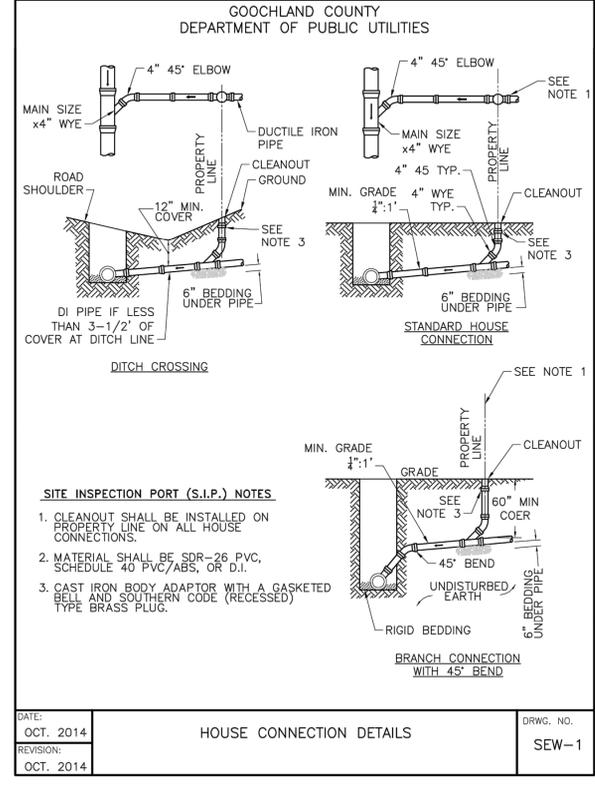
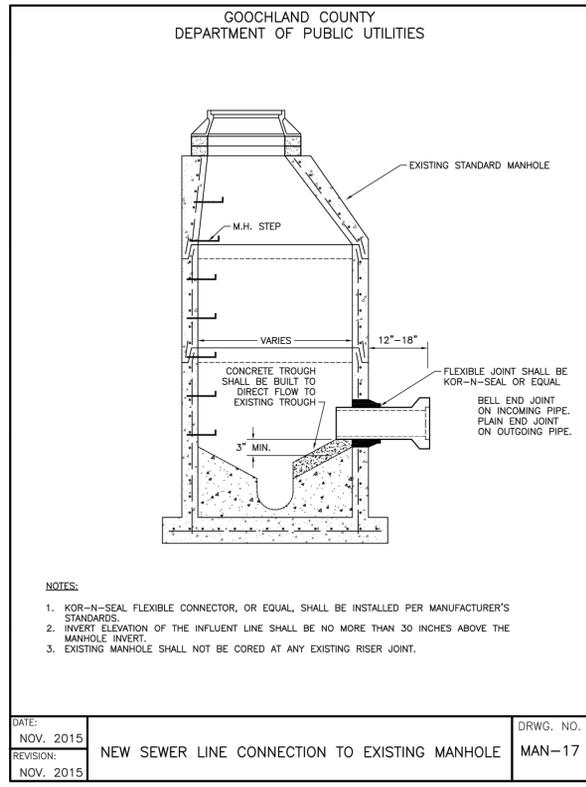
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8/10/2020	REVISED PER VDOT AND COUNTY COMMENTS
6/16/2021	BID SET
DATE	
04/20/2020	
DRAWN BY	
J. CARTER	
DESIGNED BY	
J. CARTER	
CHECKED BY	
B. STRICKLAND	
SCALE	
AS SHOWN	

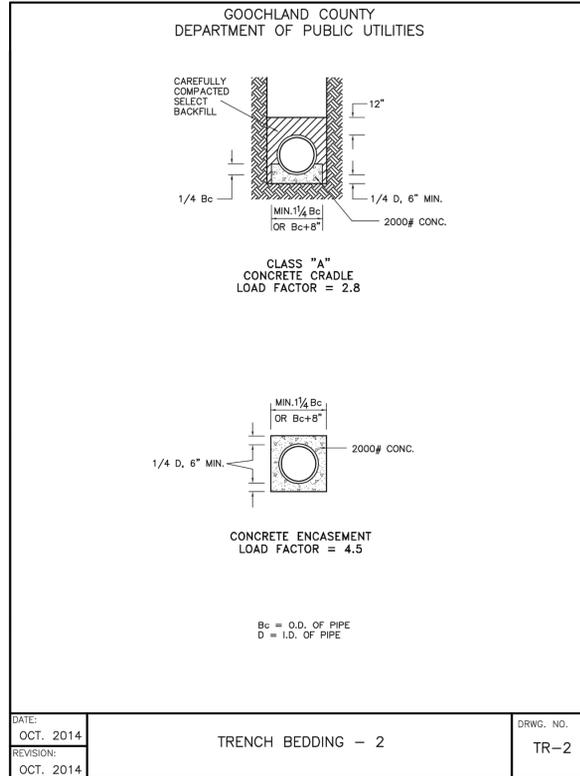
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HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
 UTILITY NOTES AND DETAILS

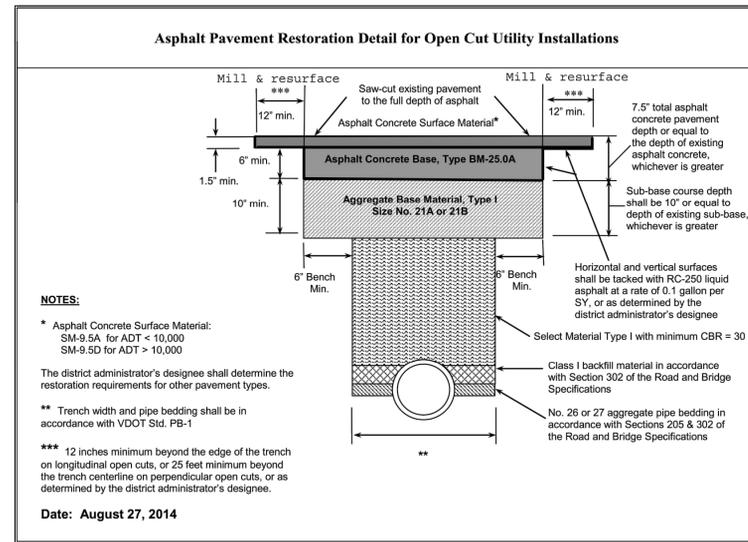
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JOB NO.	42792
SHEET NO.	D-3





VDOT Virginia Department of Transportation
**LAND USE PERMIT
LUP-OC
Open-Cut Pavement Restoration Requirements**

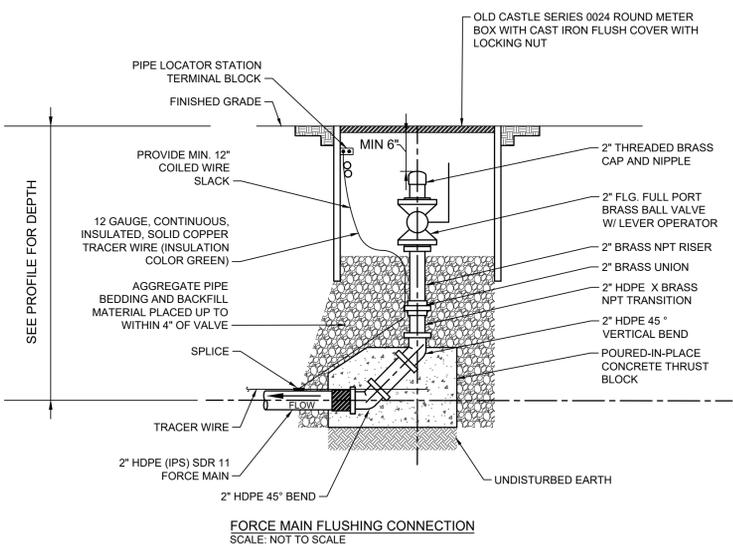
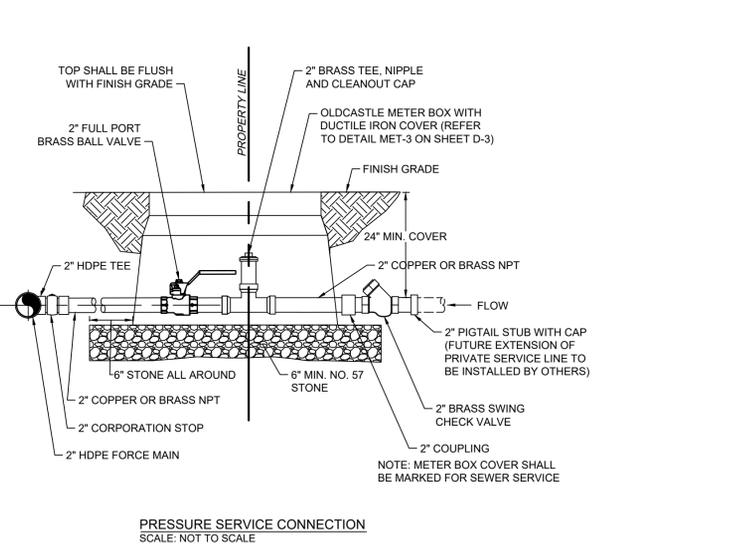


PRIVATE PAVED DRIVEWAY RESTORATION NOTE:
ALL PIPE TRENCHES WITHIN PRIVATE PAVED (ASPHALT AND CONCRETE) DRIVEWAYS SHALL BE BACKFILLED WITH IMPORTED SELECT MATERIAL (21A OR B).

VDOT Virginia Department of Transportation
**LAND USE PERMIT
LUP-OC
Open-Cut Pavement Restoration Requirements**

Any of the following provisions that may apply, shall apply:

- The permittee shall be responsible for the restoration of pavement on state maintained highways in accordance with all applicable sections of the VDOT Road and Bridge Specifications, VDOT Road and Bridge Standards and this document.
- Whenever existing pavement is permitted to be cut, not over one-half of the roadway width shall be disturbed at one time and the first open cut trench section shall be satisfactorily restored to allow for the passage of traffic prior to the second half of the roadway surface can be disturbed.
- All trench backfill material shall be Select Material Type I having a minimum CBR of 30 and free from any wood, decaying material, asphalt, concrete, ice, frost, large clods, stone or debris.
- Trench backfill material shall be compacted to a minimum of 95% of the theoretical maximum density at optimum moisture content, as determined by VDOT testing procedures (VTM1), using mechanical tamping throughout the depth of the trench in 6-inch lifts to ensure that the adequate support is provided for the aggregate sub-base layer is adequately supported.
- For roadways with a bituminous concrete asphalt pavement section the compacted trench backfill shall be capped with 10 inches (10") of Type I, Size 21-A or 21-B aggregate compacted to 100% of the theoretical maximum density at optimum moisture content covering the entire trench width and a minimum six inch (6") bench on each side of the excavated trench or as determined by the district administrator's designee.
- A bituminous concrete asphalt base course (BM-25) having a minimum thickness of six inches (6"), or matching the existing base course thickness, shall be placed over the benched aggregate sub-base to the bottom elevation of the existing asphalt concrete surface course.
- All sides of the excavated trench shall be saw-cut trimmed to neat straight lines and a tack coat of RC-250 liquid asphalt applied at a rate of 0.1 gallon per square yard (or as determined by the district administrator's designee) prior to placing the bituminous concrete asphalt base course (BM-25.0) and/or replacement of the bituminous concrete asphalt surface course (SM-9.5A or SM-9.5D).
- The existing pavement surface course adjacent to the excavated trench shall be milled and repaved with bituminous concrete asphalt (SM-9.5A or SM-9.5D) having a minimum thickness of 1-1/2 inches (1.5"). This operation shall cover the entire trench width and extend 12 inches (12") beyond the edge of the trench on longitudinal open cuts and 25 feet (25') beyond the trench centerline on perpendicular open cuts, or as determined by the district administrator's designee.
- Open cuts in surface treated roadway sections with an aggregate base course shall be replaced with the same layer(s) as roadway sections with a bituminous concrete asphalt pavement structure except the sub-base layer (Type I, Size 21-A or 21-B) may be reduced to six inches (6") and the bituminous concrete asphalt base layer (BM-25.0) may be reduced to four inches (4") while maintaining the required six inch (6") bench on both sides of the excavated trench. The surface course restoration material and thickness shall match the existing surface.
- Replacement of all bituminous concrete asphalt and surface treated courses shall be rolled with equipment having a manufacturer's rating of ten (10) tons until the aggregate is keyed into the bitumen. Where rolling is not possible, a mechanical tamper shall be utilized.
- Full depth aggregate stone may be placed in the trench daily up to maximum length of 500 feet, at which time either temporary or permanent pavement restoration procedures must be implemented.
- Should the application of the bituminous concrete asphalt surface course be delayed due to adverse weather conditions, the contractor shall provide and maintain a temporary pavement section that is acceptable to the district administrator's designee until such time as the appropriate permanent pavement restoration can be achieved.
- The permittee shall be responsible for any settlement in the backfill or pavement for a period of two (2) years after the completion date of permit and for the continuing maintenance of the facilities placed within the highway right-of-way.
- A one-year restoration warranty period may be considered, provided the permittee adheres to the following criteria:
 - The permittee retains the services of a professional engineer (or certified technician under the direction of the professional engineer) to observe the placement of all fill embankments, pavement, and storm sewer and utility trench backfill.
 - The professional engineer (or certified technician under the direction of the professional engineer) performs any required inspection and testing in accordance with all applicable sections of VDOT's Road and Bridge Specifications.
 - The professional engineer submits all testing reports for review and approval, and provides written certification that all restoration procedures have been completed in accordance with all applicable sections of VDOT's Road and Bridge Specifications prior to completion of the work authorized by the permit.
- The district administrator's designee may request and review the backfill compaction test results and/or authorize an inspector to monitor the trench backfill and compaction operations.
- The use of steel plates to provide a temporary riding surface will not be allowed between November 1 and April 1. The use of steel plates between April 2 and October 31 shall be in accordance with VDOT standards and specifications.
- Traffic shall be maintained at all times in accordance with the Virginia Work Area Protection Manual and a VDOT approved Maintenance of Traffic (MOT) plan.
- The permittee shall notify the district administrator's designee a minimum of 72 hours prior to initiating any pavement open cutting operations.
- The trench to be backfilled shall be made as dry as practicable at the time of backfilling by pumping, bailing, draining, or other approved dewatering method.
- All asphalt pavement restoration activities shall be in accordance with the Asphalt Pavement Restoration Detail for Open Cut Utility Installations contained herein.



TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
UTILITY NOTES AND DETAILS

JOB NO. 42792	
SHEET NO. D-4	

LAND DISTURBANCE AND EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
 THE PURPOSE OF THIS PROJECT IS THE CONSTRUCTION OF APPROXIMATELY 8,300 L.F. OF 8" Ø SANITARY SEWER AND APPROXIMATELY 320 L.F. OF 2" SANITARY FORCEMAIN TO SERVE TWO EXISTING RESIDENTIAL SUBDIVISIONS: HICKORY HAVEN AND SAMARY FOREST. DESIGNATED CONSTRUCTION LIMITS FOR THE PROJECT COVER APPROXIMATELY 6.18+/- ACRES. SOME TREES WITHIN THE PROJECT AREA WILL BE REMOVED, THERE WILL BE NO SIGNIFICANT INCREASE IN IMPERVIOUS AREA ASSOCIATED WITH THIS PROJECT. DRAINAGE PATTERNS WILL BE IMPROVED AS PART OF THIS PROJECT.

FEMA INFORMATION:
 FEMA COMMUNITY PANEL NUMBER: 51075C02458
 EFFECTIVE DATE: DECEMBER 02, 2008

AREA OF DISTURBANCE:
 TOTAL AREA DISTURBED: 6.18+/- ACRES
 AREA TAKEN FROM CONSTRUCTION PLAN "LIMITS OF DISTURBANCE" DELINEATION (LOD).

EXISTING SITE CONDITIONS:
 THE ROUTE FOR THE PROPOSED SEWER MAINS CONSIST OF A MIX OF WOODED AND OPEN SPACES WITHIN THE EXISTING SUBDIVISIONS. THE PROPOSED GRAVITY SEWER WILL BE INSTALLED IN EXISTING PUBLIC RIGHTS OF WAY AND EXISTING AND PROPOSED EASEMENTS ALONG ESTABLISHED PROPERTY BOUNDARY LINES.

ADJACENT AREAS:
 THE GRAVITY SEWER WITHIN HICKORY HAVEN WILL CONNECT TO THE EXISTING 12" TRUNK SEWER LOCATED TO THE SOUTH OF THE SUBDIVISION. THE GRAVITY SEWER WITHIN SAMARY FOREST WILL CONNECT TO THE EXISTING 21" TRUNK SEWER LOCATED TO THE EAST OF THE SUBDIVISION.

STOCKPILE AREAS:
 ALL STOCKPILES SHALL BE KEPT WITHIN THE TEMPORARY CONSTRUCTION/PERMANENT UTILITY EASEMENTS, BUT MUST STAY CLEAR OF ALL CONSTRUCTION ACTIVITY. SILT FENCE SHALL BE PLACED AROUND THE LIMITS OF THE STOCKPILES TO PREVENT EROSION. STOCKPILES LEFT DORMANT FOR MORE THAN SEVEN (7) DAYS SHALL BE SEEDED WITH TEMPORARY SEED MIXTURE AND MULCHED.

OFF-SITE AREAS:
 THERE WILL BE NO OFF-SITE LAND DISTURBANCE ASSOCIATED WITH THIS PROJECT. SPOILS WILL BE DISPOSED OF IN STRICT ACCORDANCE WITH COUNTY AND STATE REQUIREMENTS.

SOIL TYPES AND CHARACTERISTICS:
 SEE SOILS MAP, SHEET E-2

CRITICAL AREAS:
 WETLANDS AND STREAMS HAVE BEEN DELINEATED FOR THE PROJECT AREA AND ARE SHOWN ON THE PLANS. A USACE NATIONWIDE 12 PERMIT IS BEING OBTAINED FOR THE WORK SHOWN ON THESE PLANS. THE IMPACTS CONSIST OF 77 L.F. OF STREAM CHANNEL AND 0.62 ACRES OF WETLAND DISTURBANCE. OF THE 0.62 ACRES, 0.31 ACRES WILL BE TEMPORARY IMPACTS AND 0.31 ACRES WILL BE A CONVERSION FROM PALUSTRINE FORESTED (PFO) TO PALUSTRINE EMERGENT (PEM) WETLANDS.

STORMWATER RUNOFF CONSIDERATIONS:
 A VSMF REGISTRATION STATEMENT WILL NOT BE REQUIRED. SEE VSMF GUIDANCE MEMO 9VAC25-870, THIS SHEET.

MANAGEMENT STRATEGIES

1. PROVIDE SEDIMENT TRAPPING MEASURES AS A FIRST STEP IN GRADING AND SEED AND MULCH IMMEDIATELY FOLLOWING INSTALLATION.
2. PROVIDE TEMPORARY SEEDING OR OTHER STABILIZATION IMMEDIATELY AFTER GRADING.
3. ISOLATE TRENCHING FOR UTILITIES AND DRAINAGE FROM DOWNSTREAM CONVEYANCES IN ORDER TO MINIMIZE PERIMETER CONTROLS.
4. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MAINTAINED UNTIL THEY ARE NO LONGER REQUIRED TO COMPLY WITH THE CONTRACT DOCUMENTS OR STATE LAW.

PERMANENT STABILIZATION

ALL NON-PAVED AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. TOPSOIL SHALL BE PLACED TO A DEPTH OF 4" & SEEDING SHALL BE IN ACCORDANCE WITH STD. & SPEC. 3.32. PERMANENT SEEDING, IMPORTED TOPSOIL SHALL BE OBTAINED FROM A SITE WITH AN APPROVED ESC PLAN. SEED TYPE SHALL BE AS SPECIFIED FOR "MINIMUM CARE LAWNS" AND "GENERAL SLOPES" IN THE HANDBOOK. MULCH (STRAW OR FIBER) IN ACCORDANCE WITH STD. & SPEC. 3.35, SHALL BE USED ON ALL SEEDED SURFACES. EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL & GULLY EROSION AND TO ALLOW THE SEED TO GERMINATE PROPERLY. IN ALL SEEDING OPERATIONS SEED, FERTILIZER AND LIME SHALL BE APPLIED PER RECOMMENDATIONS OF THE SOIL TEST PRIOR TO MULCHING.

STRUCTURAL PRACTICES

- 3.01 SAFETY FENCE: A PROTECTIVE BARRIER INSTALLED TO PROHIBIT ACCESS TAN AN AREA.
- 3.02 TEMPORARY STONE CONSTRUCTION ENTRANCE: A STONE PAD LOCATED AT POINTS OF INGRESS AND EGRESS TO REDUCE THE SOIL TRANSPORTED ONTO PUBLIC ROADS AND OTHER PAVED AREAS.
- 3.05 SILT FENCE: A TEMPORARY SEDIMENT BARRIER CONSTRUCTED OF POSTS, FILTER FABRIC AND, IN SOME CASES, A WIRE SUPPORT FENCE, PLACED ACROSS OR AT THE TOE OF A SLOPE OR IN A MINOR DRAINAGE WAY TO INTERCEPT AND DETAIN SEDIMENT AND DECREASE FLOW VELOCITIES FROM DRAINAGE AREAS OF LIMITED SIZE; APPLICABLE WHERE SHEET AND RILL EROSION OR SMALL CONCENTRATED FLOWS MAY BE A PROBLEM. MAXIMUM EFFECTIVE LIFE OF 6 MONTHS.
- 3.08 CULVERT INLET PROTECTION: A SEDIMENT FILTER LOCATED IT THE THE INLET TO STORM SEWER CULVERTS WHICH PREVENTS SEDIMENT FROM ENTERING.
- 3.18 OUTLET PROTECTION: THE INSTALLATION OF RIPRAP CHANNEL SECTIONS AND/OR STILLING BASINS BELOW STORM DRAIN OUTLETS TO REDUCE EROSION AND UNDERCUTTING FROM SCOURING AT OUTLETS.
- 3.24 TEMPORARY VEHICULAR STREAM CROSSING: A TEMPORARY STRUCTURAL SPAN INSTALLED ACROSS A FLOWING WATERCOURSE TO PROVIDE A MEANS FOR CONSTRUCTION TRAFFIC TO CROSS FLOWING STREAMS WITHOUT DAMAGING THE CHANNEL OR BANKS.
- 3.25 UTILITY STREAM CROSSING: A STRATEGY FOR CROSSING SMALL WATERWAYS WHERE IN-STREAM UTILITY CONSTRUCTION IS INVOLVED. THE STRATEGY HELPS TO PREVENT SEDIMENT FROM ENTERING THE AFFECTED WATERCOURSE AND MINIMIZES THE AMOUNT OF DISTURBANCE WITHIN THE STREAM ITSELF.
- 3.38 TREE PRESERVATION AND PROTECTION: PROTECTION OF DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY, DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY, TO ENSURE THE SURVIVAL OF THE TREES THAT WILL BE EFFECTIVE FOR EROSION AND SEDIMENT CONTROL, WATERSHED PROTECTION, LANDSCAPE BEAUTIFICATION, DUST AND POLLUTION CONTROL, NOISE REDUCTION, SHADE AND OTHER ENVIRONMENTAL BENEFITS WHILE THE LAND IS BEING CONVERTED FROM FOREST TO URBAN-TYPE USES.

TIMBER MATTING: TEMPORARY MATTING WHICH PROVIDES ACCESS THROUGH AREAS SUCH AS WETLANDS AND WATERBODIES, SOME AGRICULTURAL FIELDS, STEEP SLOPES, AND OTHER APPROPRIATE AREAS. PROVIDES A STABLE TRAVEL LANE THAT REDUCES SOIL COMPACTION, PROTECTS THE PROJECT RIGHT-OF-WAY AND MINIMIZES LAND DISTURBANCE. THIS PRACTICE MAY BE INCORPORATED IN ADDITION TO THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK PRACTICES AND REQUIREMENTS.

VEGETATIVE PRACTICES

- 3.32 PERMANENT SEEDING: ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER BY PLANTING SEED ON ROUGH-GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE OR WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED ON FINE-GRADED AREAS.
- 3.35 MULCHING: APPLICATION OF PLANT RESIDUES OR OTHER SUITABLE MATERIALS TO DISTURBED SURFACES TO PREVENT EROSION AND REDUCE OVERLAND FLOW VELOCITIES. FOSTERS PLANT GROWTH BY INCREASING AVAILABLE MOISTURE AND PROVIDING INSULATION AGAINST EXTREME HEAT OR COLD. SHOULD BE APPLIED TO ALL SEEDING OPERATIONS, OTHER PLANT MATERIALS WHICH DO NOT PROVIDE ADEQUATE SOIL PROTECTION BY THEMSELVES AND BARE AREAS WHICH CANNOT BE SEEDED DUE TO THE SEASON BUT WHICH STILL NEED PROTECTION TO PREVENT SOIL LOSS.
- 3.36 SOIL STABILIZATION BLANKETS AND MATTING: THE INSTALLATION OF A PROTECTIVE BLANKET (TREATMENT1) OR A SOIL STABILIZATION MAT (TREATMENT2) ON A PREPARED PLANTING OF A STEEP SLOPE, CHANNEL OR HILLSIDE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS 9VAC25-840.
- ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING EACH PIPELINE ROUTE.
- ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
- ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-8: DURING ANY DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

VESCH (MS-19) MINIMUM STANDARDS:

- AN EROSION AND SEDIMENT CONTROL PROGRAM ADOPTED BY A DISTRICT OR LOCALITY MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:
- MS-1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
 - MS-2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
 - MS-3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
 - MS-4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
 - MS-5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
 - MS-6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
 - A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
 - B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.
 - MS-7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
 - MS-8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
 - MS-9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
 - MS-10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
 - MS-11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
 - MS-12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
 - MS-13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
 - MS-14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
 - MS-15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
 - MS-16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
 - A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
 - B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
 - C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
 - D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
 - E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
 - F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.
 - MS-17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
 - MS-18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
 - MS-19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE STANDARDS AND CRITERIA LISTED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, CHAPTER 8 PAGES 20-24.

Postdevelopment Stormwater Management Implementation Guidance for Linear Utility Projects under the Virginia Stormwater Management Program Regulation, 9VAC25-870

Definitions:
 "Land disturbance" or "land-disturbing activity" means a manmade change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation, except that the term shall not include those exemptions specified in § 62.1-44.15:34 of the Code of Virginia.
 "Linear development project" means a land-disturbing activity that is linear in nature such as, but not limited to, (i) the construction of electric and telephone utility lines, and natural gas pipelines; (ii) construction of tracks, rights-of-way, bridges, communication facilities and other related structures of a railroad company; (iii) highway construction projects; (iv) construction of stormwater channels and stream restoration activities; and (v) water and sewer lines. Private subdivision roads or streets shall not be considered linear development projects.
 "Postdevelopment" refers to conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site.
 "Predevelopment" refers to the conditions that exist at the time that plans for the land development of a tract of land are submitted to the VSMF authority. Where phased development or plan approval occurs (preliminary grading, demolition of existing structures, roads and utilities, etc.), the existing conditions at the time prior to the first item being submitted shall establish predevelopment conditions.
 "Stabilized" means land that has been treated to withstand normal exposure to natural forces without incurring erosion damage.
 "Stormwater management plan" means a document(s) containing material for describing methods for complying with the requirements of the VSMF Regulation, 9VAC25-870.
 "Virginia Stormwater Management Program (VSMF) authority" means an authority approved by the Board after September 13, 2011 to operate a Virginia Stormwater Management Program or the Department.

Regulatory Text:
 9VAC25-870-76. Linear development projects.
 Linear development projects shall control postdevelopment stormwater runoff in accordance with a site-specific stormwater management plan or a comprehensive watershed stormwater management plan developed in accordance with these regulations.
Guidance:
 Section 76 of the VSMF Regulation, 9VAC25-870, establishes the requirement that linear development projects control postdevelopment stormwater runoff in accordance with a site-specific stormwater management plan or a comprehensive watershed stormwater management plan. The purpose of this guidance document is to clarify the implementation of Section 76 with regard to the construction of linear utilities (e.g., waterlines, sewer lines, electric lines, telephone lines, oil and gas distribution pipelines, etc.) and was developed for use by the Department and local VSMF Authorities.

The VSMF Regulation does not distinguish between various types of linear development projects such as aboveground or underground utilities, highway construction, rights-of-way, bridges, tracks and related structures of a railroad company. The Department of Environmental Quality (DEQ) recognizes that the construction of aboveground or underground linear utilities may not result in changes to the predevelopment runoff characteristics of the land surface after the completion of construction and final stabilization. Also, the application of the postdevelopment water quantity and water quality controls to these types of projects and the preparation and implementation of a stormwater management plan may provide minimum water quality benefit. Examples of such projects include:

- The installation of underground utilities (e.g., waterlines, sewer lines, oil and gas distribution pipelines) beneath existing impervious cover (e.g., asphalt pavement, concrete pavement) that will be returned to its predevelopment condition after the completion of construction and final stabilization;
- The installation of underground utilities (e.g., waterlines, sewer lines, oil and gas distribution pipelines) beneath existing pervious cover (e.g., forest/open space, managed turf) that will be returned to its predevelopment condition after the completion of construction and final stabilization; or
- The installation of aboveground (i.e., overhead) utility lines.

DEQ staff or the local VSMF authority should utilize their best professional judgment when evaluating aboveground or underground linear utility projects. If the project will not result in significant changes to the predevelopment runoff characteristics of the land surface after the completion of construction and final stabilization, then DEQ or the local VSMF authority, at their discretion, may waive the requirement for the preparation and implementation of a stormwater management plan. DEQ recognizes that on a site specific basis a stormwater management plan may be required especially if the linear utility project will significantly alter the predevelopment runoff characteristics of the land surface.

In addition, the construction of aboveground or underground linear utilities may be conducted without requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities (Construction General Permit) provided that:

- The project does not significantly alter the predevelopment runoff characteristics of the land surface after the completion of construction and final stabilization;
- The project is managed so that less than one (1) acre of land disturbance occurs on a daily basis;
- The disturbed land where work has been completed is adequately stabilized on a daily basis;
- The environment is protected from erosion and sedimentation damage associated with the land-disturbing activity;
- The owner and/or construction activity operator designs, installs, implements, and maintains pollution prevention measures to:
 - Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters;
 - Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on-site to precipitation and to stormwater;
 - Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures;
 - Prohibit the discharge of wastewater from the washout of concrete;
 - Prohibit the discharge of wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and
 - Prohibit the discharge of fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
- The owner and/or construction activity operator provides reasonable assurance to DEQ or the local VSMF Authority that all of the above conditions will be satisfied. This may be accomplished by incorporating these conditions into an erosion and sediment control plan developed for the project.

As previously noted, DEQ staff or the local VSMF authority should utilize their best professional judgment when evaluating aboveground or underground linear utility projects. If the owner and/or construction activity operator provides reasonable assurance to DEQ or the local VSMF Authority that all of the aforementioned conditions will be satisfied, then the linear utility project may be conducted without requiring coverage under the Construction General Permit. Please note that this does not relieve the owner and/or construction activity operator from complying with any and all other applicable federal, state, and local requirements. DEQ or the local VSMF Authority reserves the right to require a registration statement for Construction General Permit coverage if the aforementioned conditions are not satisfied.

If the linear utility project will significantly alter the predevelopment runoff characteristics of the land surface requiring postdevelopment stormwater management or if other site specific conditions warrant Construction General Permit coverage, DEQ or the local VSMF authority may require a registration statement for permit coverage.



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	BID SET	04/20/2020

DRAWN BY	J. CARTER
DESIGNED BY	J. CARTER
CHECKED BY	B. STRICKLAND
SCALE	AS SHOWN

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA

EROSION AND SEDIMENT CONTROL NARRATIVE

JOB NO.	42792
SHEET NO.	E-1

SEEDING NOTES

- ALL STABILIZATION/ SEEDING WILL BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENTATION CONTROL HANDBOOK, AS WELL AS THE ACCOMPANYING SEEDING SCHEDULE.
- ANY DISTURBED AREA NOT PAVED, SODDED, OR BUILT UPON, WILL HAVE A MINIMUM OF 80% VEGETATIVE COVER PRIOR TO FINAL INSPECTION, AND IN THE OPINION OF THE COUNTY INSPECTOR WILL BE MATURE ENOUGH TO CONTROL SOIL EROSION SATISFACTORILY AND SURVIVE SEVERE WEATHER CONDITIONS.
- STREAM DIVERSION AREAS, WATERWAYS, BANKS AND RELATED AREAS SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER WORK IN WATERCOURSE IS COMPLETED.
- WINTERIZATION - ANY DISTURBED AREA NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 15 IS TO BE SEED AND MULCHED ON THAT DATE UNLESS WAIVED BY THE DIRECTOR OF PUBLIC WORKS.
- ALL TEMPORARY EARTH BERMS, DIVERSIONS, AND SILT DAMS ARE TO BE MULCHED AND SEED FOR VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. THE SAME APPLIES TO ALL STOCKPILES, ON SITE AS WELL AS SOIL (INTENTIONALLY) TRANSPORTED FROM THE PROJECT SITE.

SEEDING FOR WETLAND STABILIZATION

WETLAND SEEDING SCHEDULE NOTES:

- ALL WETLAND AREAS DISTURBED ARE TO BE SEED.
- RIPARIAN BUFFER SEED MIX (ERNMX-865) IS RECOMMENDED FOR APPLICATION IN THE FOLLOWING WETLAND IMPACT AREAS:
 - TEMPORARY EMERGENT WETLAND IMPACTS
 - PERMANENT SCRUB-SHRUB WETLAND IMPACTS
 - PERMANENT FORESTED WETLAND IMPACTS
- ERNMX-865 IS AVAILABLE FROM ERNST CONSERVATION SEEDS, MEADVILLE, PA. (800-873-3321).
- SEED MIX SHOULD BE APPLIED PER THE MANUFACTURER'S RECOMMENDATIONS.
- TOTAL WETLAND IMPACT AREA TO BE RESEED.
- THE WETLAND IS TO BE PREPARED FOR SEEDING IMMEDIATELY UPON COMPLETION OF THE FINAL GRADING.
- THE WETLAND IS TO BE FERTILIZED PER SPECIFICATION PROVIDED BY SUPPLIER OF SEED MIX.
- THE WETLAND AREA IS TO BE SEED USING A HAND HELD "CYCLONE" SPREADER (OR EQUIVALENT BY HAND).
- ONCE SEED HAS BEEN APPLIED, THE SEED IS TO BE RAKED IN, TO INSURE GOOD SEED/SOIL CONTACT.

TABLE 3.32-D (FROM THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992)
SITE SPECIFIC PERMANENT SEEDING MIXTURES FOR PIEDMONT AREA

MINIMUM CARE LAWN	TOTAL LBS PER ACRE
-COMMERCIAL OR RESIDENTIAL -KENTUCKY 31 OR TURF-TYPE TALL FESCUE -IMPROVED PERENNIAL RYEGRASS -KENTUCKY BLUEGRASS	175-200 LBS 95-100% 0-5% 0-5%
HIGH-MAINTENANCE LAWN	200-250 LBS
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	100%
GENERAL SLOPE (3:1 OR LESS)	
-KENTUCKY 31 FESCUE -RED TOP GRASS -SEASONAL NURSE CROP*	128 LBS 2 LBS 20 LBS 150 LBS
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
-KENTUCKY 31 TALL FESCUE -RED TOP GRASS -SEASONAL NURSE CROP* -CROWNVEITCH**	108 LBS 2 LBS 20 LBS 20 LBS 150 LBS
* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:	
FEBRUARY 16, THROUGH APRIL	ANNUAL RYE
MAY 1ST THROUGH AUGUST 15	FOXTAIL MILLET
AUGUST 16 THROUGH OCTOBER	ANNUAL RYE
NOVEMBER THROUGH FEBRUARY 15	WINTER RYE
** SUBSTITUTE SERICEA LESPEDEZA FOR CROWNVEITCH EAST OF FARMVILLE, VA. (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA) IF FLATPEA IS USED IN LIEU OF CROWNVEITCH, INCREASES RATE TO 30 LBS/AC. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS/AC IN MIXES.	

TABLE 3.31-C (FROM THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992)
TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

SPECIES	SEEDING RATE	COASTAL PLAIN AREA			PLANT CHARACTERISTICS	
		ACRE	1000 SQ.FT	2/15 TO 4/30		5/1 TO 9/1
OATS (AVENA SATIVA)	3 BU. (UP TO 100 LBS, NOT LESS THAN 50 LBS)	2 LBS	X	-	-	USE SPRING VARIETIES (E.G. NOBLE).
RYE ^d (SECALE CEREALE)	2 BU. (UP TO 110 LBS, NOT LESS THAN 50 LBS)	2.5 LBS	X	-	X	USE LATE FALL SEEDINGS, WINTER COVER, TOLERATES COLD AND LOW MOISTURE.
GERMAN MILLET (SETARIA ITALICA)	50 LBS	APPROX. 1 LB	-	X	-	WARM-SEASON ANNUAL. DIES AT FIRST FROST. MAY BE ADDED TO SUMMER MIXES.
ANNUAL RYEGRASS ^c (LOLIUM MULTIFLORUM)	60 LBS	1.5 LBS	X	-	X	MAY BE ADDED IN MIXES. WILL MOW OUT OF MOST STANDS.
WEEPING LOVEGRASS (ERAGROSTIS CURVULA)	15 LBS	5.5 OZS	-	X	-	WARM-SEASON PERENNIAL. MAY BUNCH. TOLERATES HOT, DRY SLOPES AND ACID, INFERTILE SOILS. MAY BE ADDED TO MIXES.
KOREAN LESPEDEZA ^c (LESPEDEZA STIPULACEA)	25 LBS	APPROX. 1.5 LBS	X	X	-	WARM SEASON ANNUAL LEGUME. TOLERATES ACID SOILS. MAY BE ADDED TO MIXES.

^c MAY BE USED AS A COVER CROP WITH SPRING SEEDING
^d MAY BE USED AS A COVER CROP WITH FALL SEEDING
X MAY BE PLANTED BETWEEN THESE DATES
- MAY NOT BE PLANTED BETWEEN THESE DATES

LIME, FERTILIZER, AND MULCH RATE SCHEDULE

I. LIME

PIEDMONT : 2 TONS / ACRE PULVERIZED AGRICULTURAL GRADE LIMESTONE (90 LBS/1000 SQ.FT.)
NOTE : AN AGRICULTURAL GRADE OF LIMESTONE SHOULD ALWAYS BE USED.

II. FERTILIZER

- MIXED GRASSES AND LEGUMES : 1000 LBS/ACRE 10-20-10 OR EQUIVALENT NUTRIENTS (23 LBS/1000 SQ.FT.)
- LEGUME STANDS ONLY : 1000 LBS/ACRE 5-20-10 (23 LBS/1000 SQ.FT.) IS PREFERRED; HOWEVER, 1000 LBS/ACRE OF 10-20-10 OR EQUIVALENT MAY BE USED.
- GRASS STANDS ONLY : 1000LBS/ACRE 10-20-10 OR EQUIVALENT NUTRIENTS, (23 LBS/1000 SQ.FT.)

FERTILIZATION: COOL SEASON GRASSES SHOULD BEGIN TO BE FERTILIZED 90 DAYS AFTER PLANTING TO ENSURE PROPER STAND AND DENSITY. WARM SEASON FERTILIZATION SHOULD BEGIN AT 30 DAYS AFTER PLANTING.

- COOL SEASON GRASSES

4 LBS NITROGEN (N)
1 LB PHOSPHORUS (P) > PER 1000 SQ.FT. PER YEAR
2 LBS POTASH (K)

SEVENTY-FIVE PERCENT OF THE TOTAL REQUIREMENTS SHOULD BE APPLIED BETWEEN SEPTEMBER 1 AND DECEMBER 31ST. THE BALANCE SHOULD BE APPLIED DURING THE REMAINDER OF THE YEAR. MORE THAN 1 LB OF SOLUBLE NITROGEN PER 1000 SQ.FT. SHOULD NOT BE APPLIED AT ANY ONE TIME.

- WARM SEASON GRASSES

APPLY 4-5 LBS NITROGEN (N) BETWEEN MAY 1 AND AUGUST 15TH PER 1000 SQ.FT. PER YEAR.
PHOSPHORUS (P) AND POTASH (K) SHOULD ONLY BE APPLIED ACCORDING TO SOIL TEST.

NOTE : THE USE OF SLOW-RELEASE FERTILIZER FORMULATIONS FOR MAINTENANCE OF TURF IS ENCOURAGED TO REDUCE THE NUMBER OF APPLICATIONS AND THE IMPACT ON GROUNDWATER.

III. MULCH

ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCH	MULCHING RATES		NOTES
	PER ACRE	PER 1000 SQ.FT	
STRAW AND HAY	1.5 - 2 TONS (MINIMUM 2 TONS FOR WINTER COVER)	70-90 LBS	FREE FROM WEEDS AND COARSE MATTER. MUST BE ANCHORED. SPREAD WITH MULCH BLOWER OR BY HAND.

EROSION CONTROL LEGEND			
LABEL	SYMBOL	STANDARD NAME	SPEC.#
(SAF)	— SAF —	SAFETY FENCE	3.01
(CE)	⊠	CONSTRUCTION ENTRANCE	3.02
(SF)	— X —	SILT FENCE	3.05-2
(CIP)	⊞	CULVERT INLET PROTECTION	3.08
(OP)	⊞	OUTLET PROTECTION	3.18
(SC)	—) —	VEHICULAR STREAM CROSSING	3.24
(JSC)	—) —	UTILITY STREAM CROSSING	3.25
(PS)	⊞	PERMANENT SEEDING	3.32
(MU)	⊞	MULCHING	3.35
(B/M)	⊞	SOIL STABILIZATION BLANKETS AND MATTING	3.36
(TP)	— TP —	TREE PROTECTION	3.38
(SFB)	⊞	SILT FENCE BREAK	
(LOD)	— LOD —	LIMITS OF DISTURBANCE	
(CLR)	— CLR —	CLEARING LIMITS	

*NOTE: ⊞ (PS) AS LABELED ON PLAN SHEETS IS

INTENDED TO INCLUDE ⊞ (MU)



SOILS MAP LEGEND

Map Unit Symbol	Map Unit Name
3B	Bolling soils, 2 to 7 percent slopes
8B	Creedmoor fine sandy loam, 2 to 7 percent slopes
8C2	Creedmoor fine sandy loam, 7 to 15 percent slopes, eroded
11B2	Fluvanna fine sandy loam, 2 to 7 percent slopes, eroded
11C2	Fluvanna fine sandy loam, 7 to 15 percent slopes, eroded
12	Forestdale fine sandy loam
14B2	Georgville fine sandy loam, 2 to 7 percent slopes, eroded
14C2	Georgville fine sandy loam, 7 to 15 percent slopes, eroded
22B	Maydan fine sandy loam, 2 to 7 percent slopes
23	Monacan silt loam
24	Monacan complex
28C3	Pacolet clay loam, 7 to 15 percent slopes, severely eroded
31C2	Pinkston fine sandy loam, 7 to 15 percent slopes, eroded
34B	Sedgefield fine sandy loam, 2 to 7 percent slopes
44C2	Wedowee fine sandy loam, 7 to 15 percent slopes, eroded



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DESIGNED BY
J. CARTER

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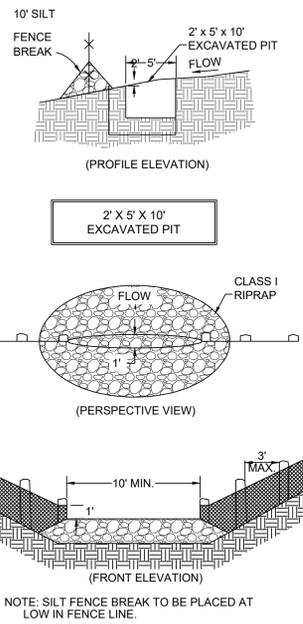
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EROSION AND SEDIMENT CONTROL NOTES AND SOILS MAPPING

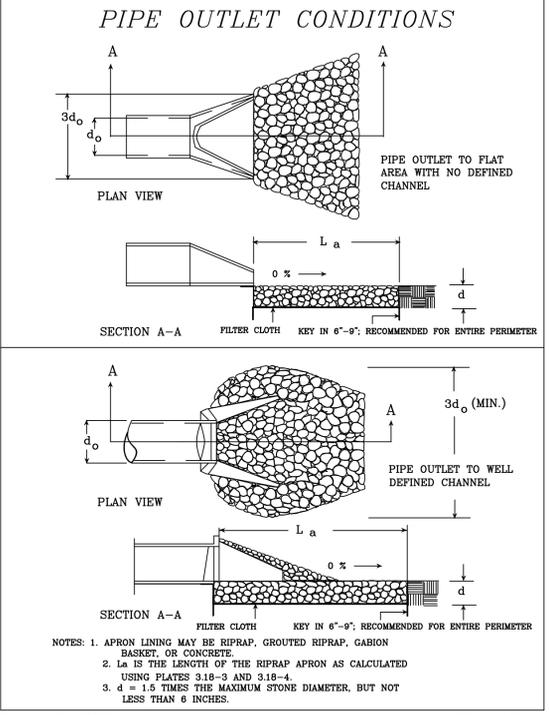
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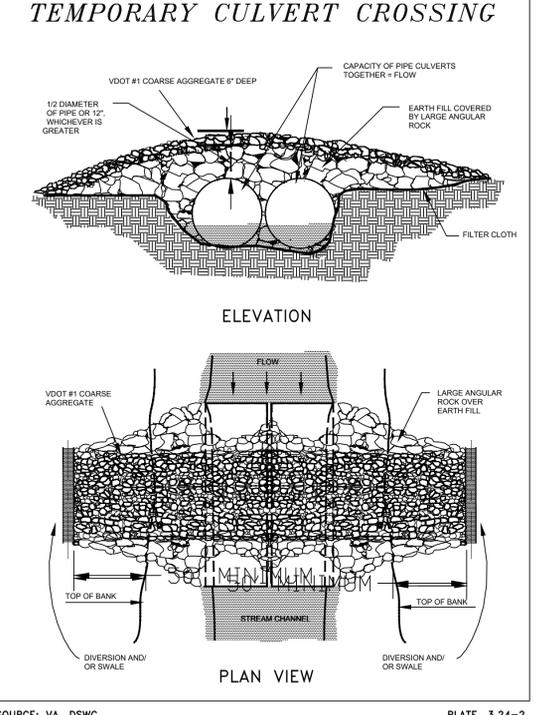
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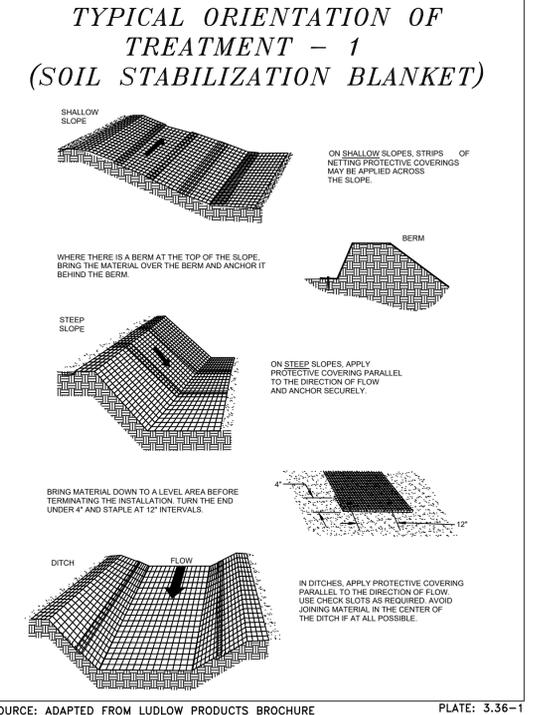
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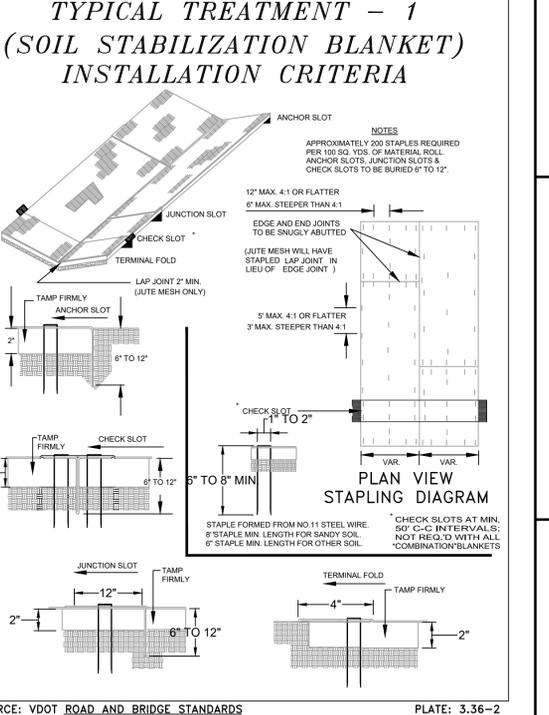
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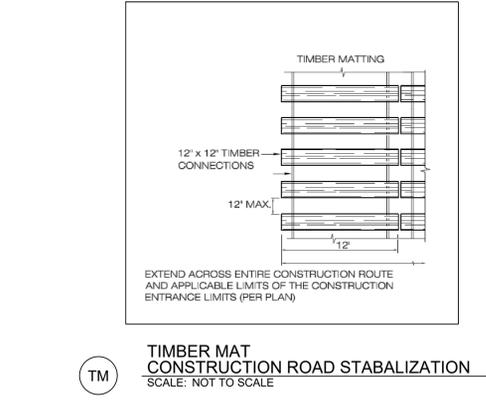
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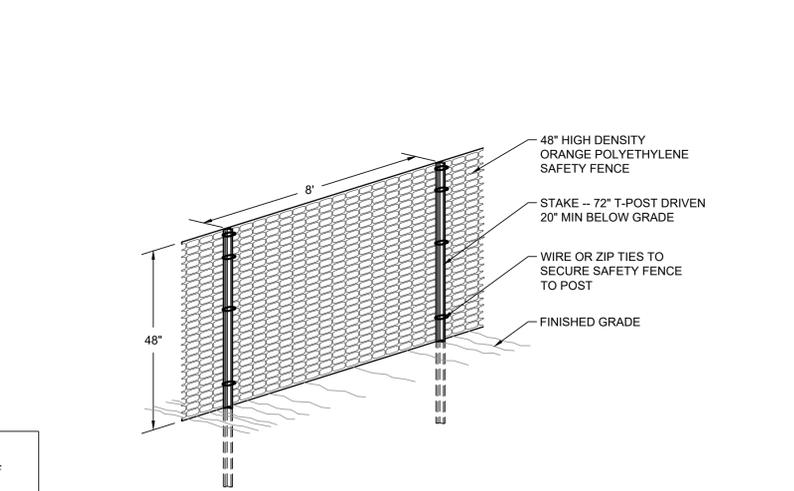
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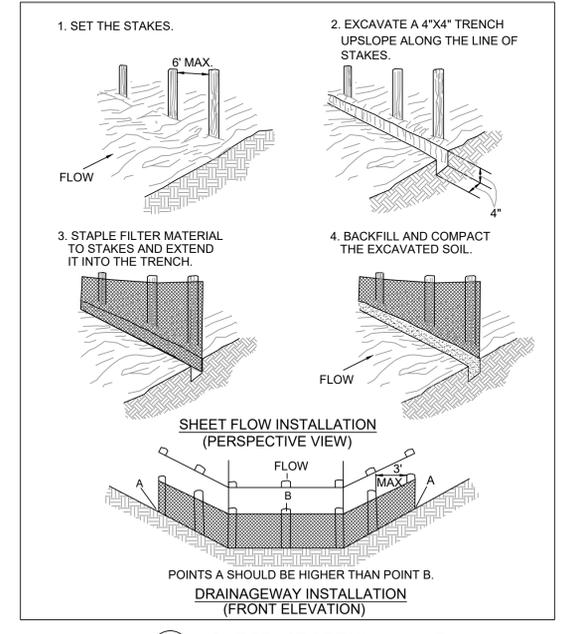
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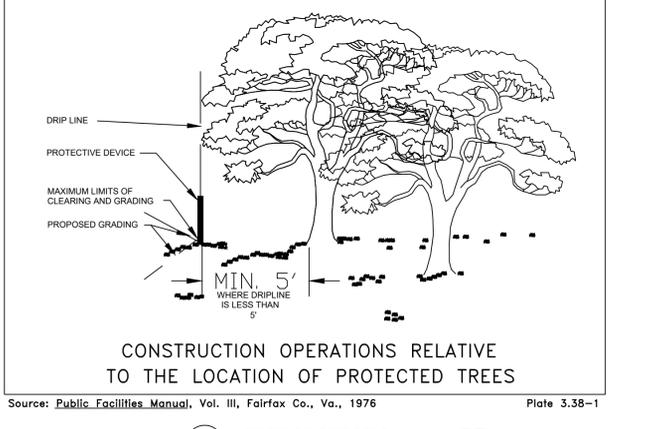
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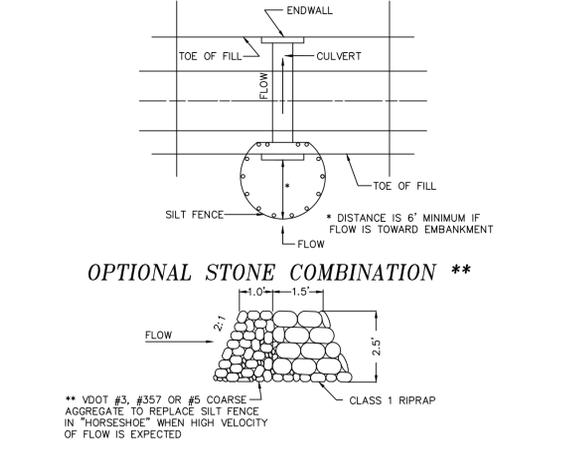
SAF SAFETY FENCE DETAIL
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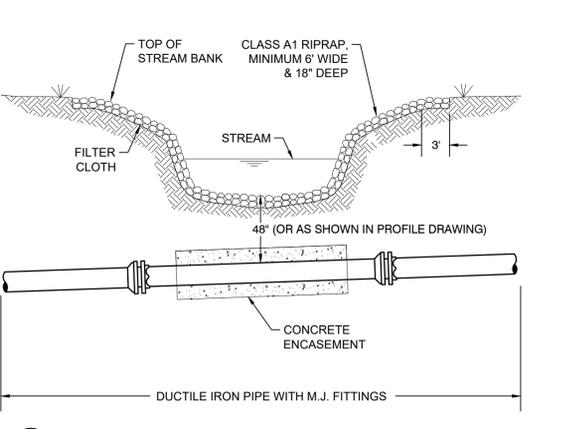
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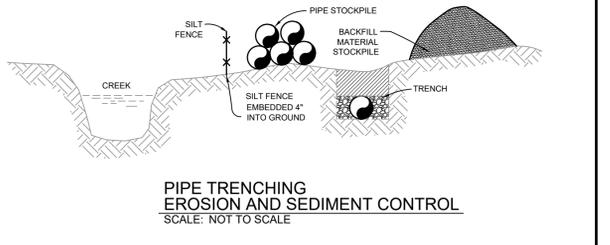
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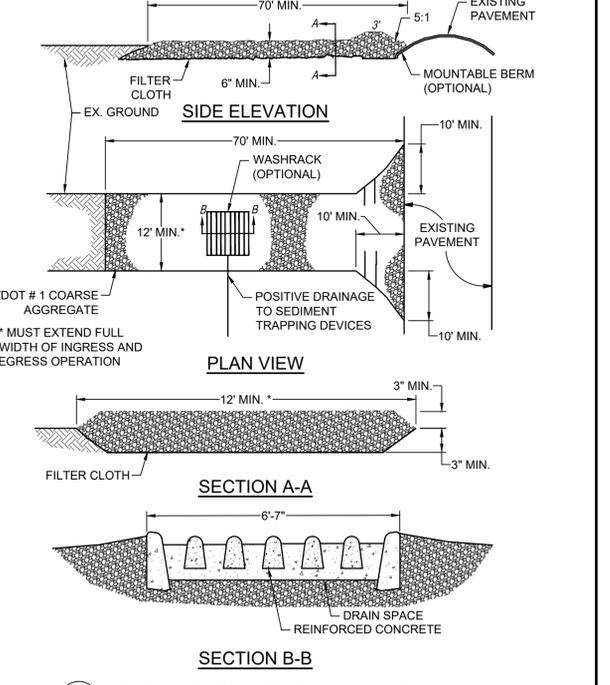
CIP SILT FENCE CULVERT INLET PROTECTION
NO SCALE **3.08**



USC UTILITY STREAM CROSSING
SCALE: NOT TO SCALE **3.25**



CE STONE CONSTRUCTION ENTRANCE
SCALE: NOT TO SCALE **3.02**



CE STONE CONSTRUCTION ENTRANCE
SCALE: NOT TO SCALE **3.02**



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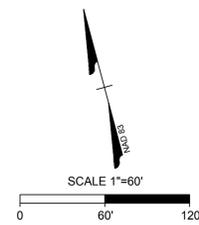
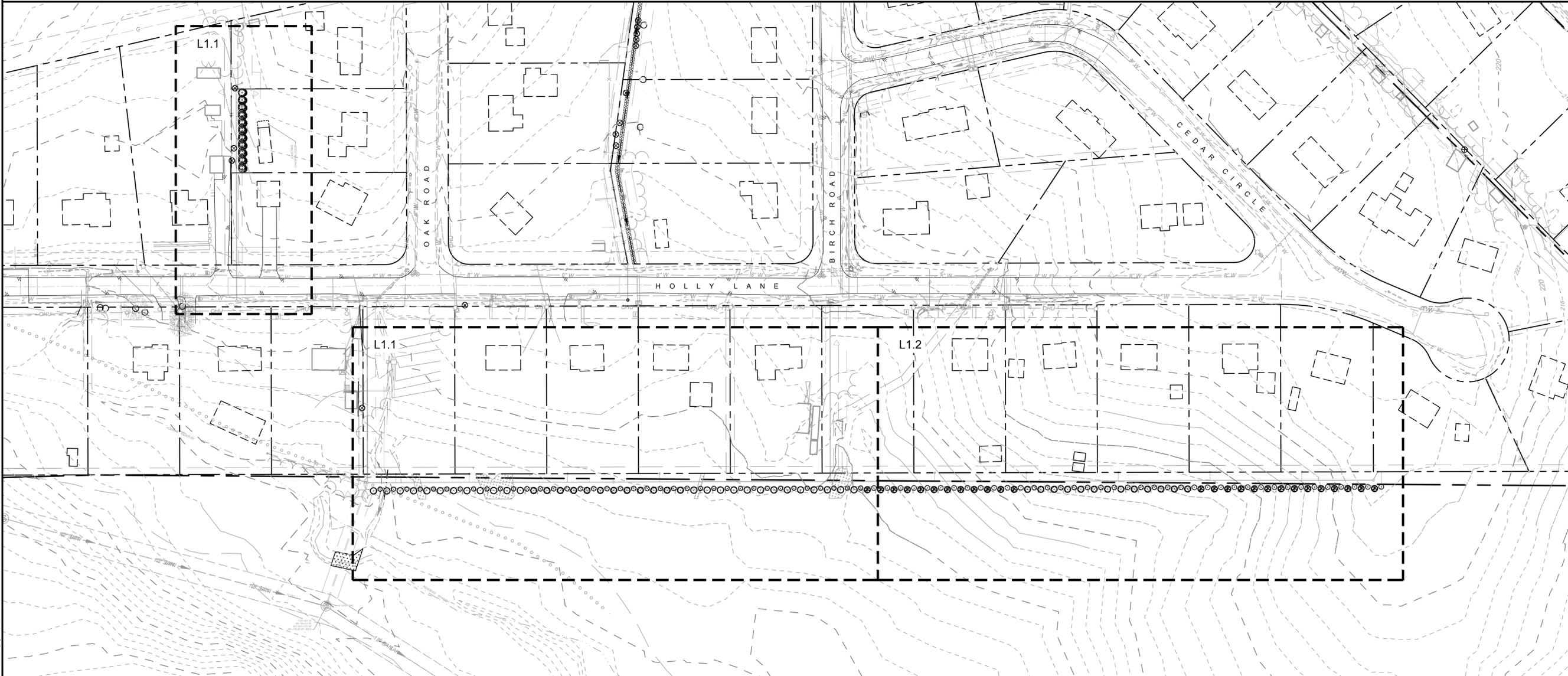
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07/10/2020	REVISED PER VDOT AND COUNTY COMMENTS
06/16/2021	BID SET

DATE
04/20/2020

DRAWN BY
M. RACHNER

DESIGNED BY
F. HANCOCK

CHECKED BY
F. HANCOCK

SCALE
1" = 60'

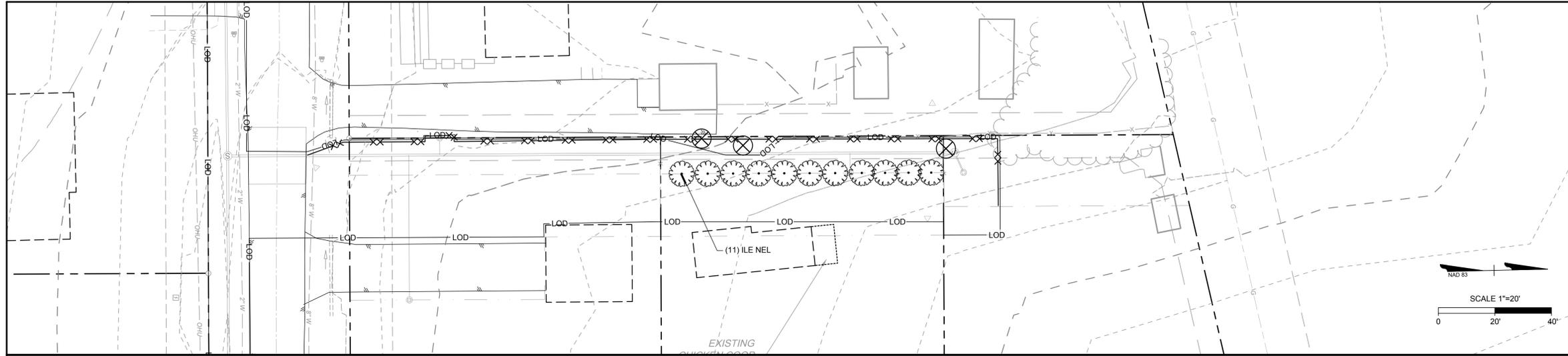
TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
OVERALL LANDSCAPE PLAN

JOB NO.
42792

SHEET NO.
L1.0

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TREES	BOTANICAL NAME
ILE AME	ILEX OPACA
ILE NEL	ILEX X 'NELLIE R. STEVENS'
MAH BEA	MAHONIA BEALEI
MYR CER	MYRICA CERIFERA
PIN TAE	PINUS TAEDA
PIN VIR	PINUS VIRGINIANA
RHO MAX	RHODODENDRON MAXIMUM

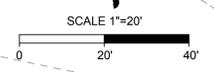
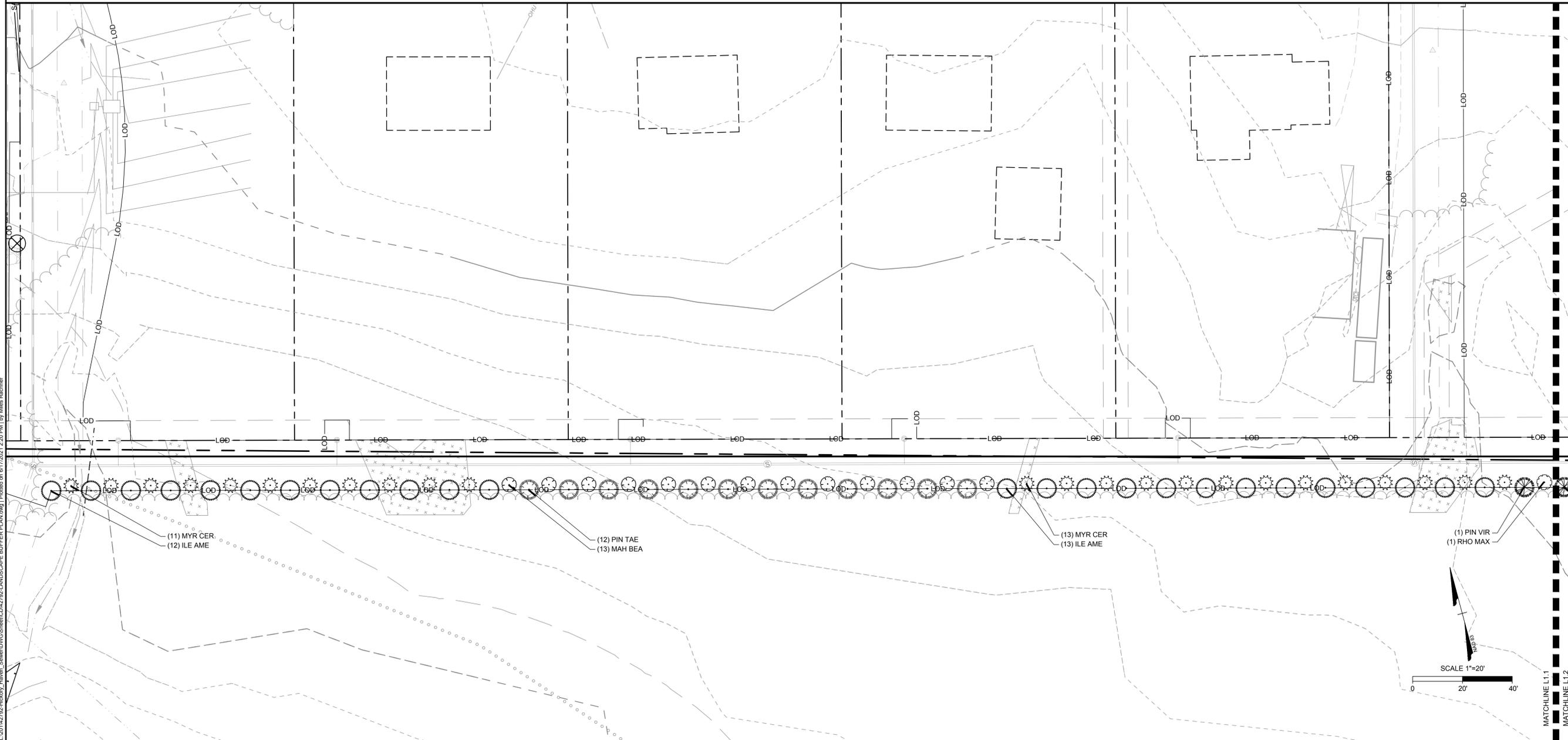


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	DESIGNED BY F. HANCOCK
	CHECKED BY F. HANCOCK
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HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
 LANDSCAPE PLAN

JOB NO.	42792
SHEET NO.	L1.1

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PLANT SCHEDULE	
TREES	BOTANICAL NAME
ILE AME	ILEX OPACA
ILE NEL	ILEX X 'NELLIE R. STEVENS'
MAH BEA	MAHONIA BEALEI
MYR CER	MYRICA CERIFERA
PIN TAE	PINUS TAEDA
PIN VIR	PINUS VIRGINIANA
RHO MAX	RHODODENDRON MAXIMUM

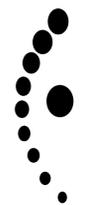


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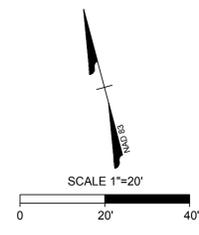
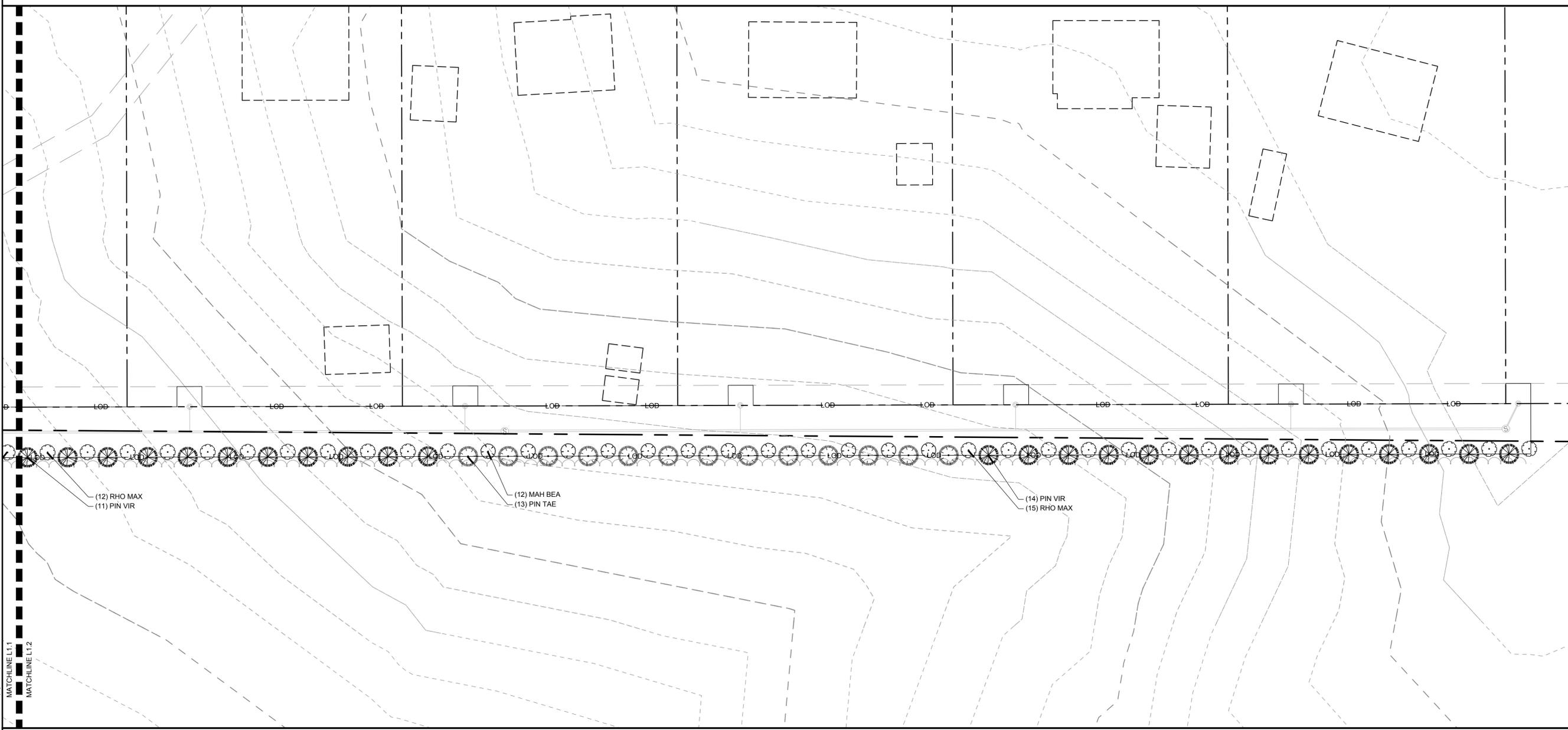


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HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
 LANDSCAPE PLAN

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MATCHLINE L1.1
 MATCHLINE L1.2

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TREES	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT
ILE AME	25	ILEX OPACA	AMERICAN HOLLY	4' HT. MIN.	B&B
ILE NEL	11	ILEX X 'NELLIE R. STEVENS'	NELLIE R. STEVENS HOLLY	4' HT. MIN.	B&B
MAH BEA	25	MAHONIA BEALEI	LEATHERLEAF MAHONIA	4' HT. MIN.	CONTAINER
MYR CER	24	MYRICA CERIFERA	WAX MYRTLE	4' HT. MIN.	CONTAINER
PIN TAE	25	PINUS TAEDA	LOBLOLLY PINE	4' HT. MIN.	B&B
PIN VIR	26	PINUS VIRGINIANA	VIRGINIA PINE	4' HT. MIN.	B&B
RHO MAX	27	RHODODENDRON MAXIMUM	ROSE BAY	4' HT. MIN.	CONTAINER

GENERAL NOTES

PRE-CONSTRUCTION

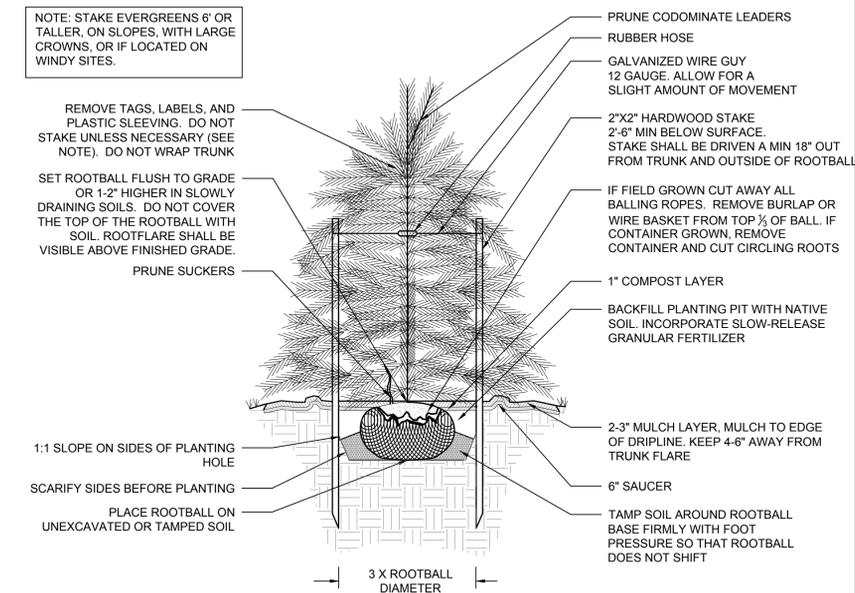
- CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1.800.552.7001 FOR LOCATION OF ALL UTILITY LINES. TREES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM SEWER/WATER CONNECTIONS. NOTIFY LANDSCAPE ARCHITECT OF CONFLICTS.
- VERIFY ALL PLANT MATERIAL QUANTITIES ON THE PLAN PRIOR TO BIDDING. PLANT LIST TOTALS ARE FOR CONVENIENCE ONLY AND SHALL BE VERIFIED PRIOR TO BIDDING.
- PROVIDE PLANT MATERIALS OF QUANTITY, SIZE, GENUS, SPECIES, AND VARIETY INDICATED ON PLANS. ALL PLANT MATERIALS AND INSTALLATION SHALL COMPLY WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK". IF SPECIFIED PLANT MATERIAL IS NOT OBTAINABLE, SUBMIT PROPOSAL FOR USE OF EQUIVALENT MATERIAL.
- PROVIDE AND INSTALL ALL PLANTS AS IN ACCORDANCE WITH DETAILS AND CONTRACT SPECIFICATIONS

CONSTRUCTION/INSTALLATION

- LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS AND MATERIALS THAT ARE IN AN UNHEALTHY OR UNSIGHTLY CONDITION, AS WELL AS PLANTS AND MATERIALS THAT DO NOT CONFORM TO ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK"
- LABEL AT LEAST ONE TREE AND ONE SHRUB OF EACH VARIETY AND CALIPER WITH A SECURELY ATTACHED, WATERPROOF TAG BEARING THE DESIGNATION OF BOTANICAL AND COMMON NAME.
- INSTALL LANDSCAPE PLANTINGS AT ENTRANCES/EXITS AND PARKING AREAS ACCORDING TO PLANS SO THAT MATERIALS WILL NOT INTERFERE WITH SIGHT DISTANCES.
- CONTRACTOR IS RESPONSIBLE FOR WATERING ALL PLANT MATERIAL DURING INSTALLATION AND UNTIL FINAL INSPECTION AND ACCEPTANCE BY OWNER. CONTRACTOR SHALL NOTIFY OWNER OF CONDITIONS WHICH AFFECTS THE GUARANTEE.

INSPECTIONS/GUARANTEE

- UPON COMPLETION OF LANDSCAPE INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR WHO WILL VERIFY COMPLETENESS, INCLUDING THE REPLACEMENT OF ALL DEAD PLANT MATERIAL. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A FINAL INSPECTION BY THE LANDSCAPE ARCHITECT.
- ALL EXTERIOR PLANT MATERIALS SHALL BE GUARANTEED FOR ONE FULL YEAR AFTER DATE OF FINAL INSPECTION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH. DEFECTS RESULTING FROM NEGLIGENCE BY THE OWNER, ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE BEYOND THE CONTRACTORS CONTROL ARE NOT THE RESPONSIBILITY OF THE CONTRACTOR
- PLANT MATERIAL QUANTITIES AND SIZES WILL BE INSPECTED FOR COMPLIANCE WITH APPROVED PLANS BY A SITE PLAN REVIEW AGENT OF THE PLANNING DEPARTMENT PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY.
- REMOVE ALL GUY WIRES AND STAKES 12 MONTHS AFTER INSTALLATION.



1 EVERGREEN TREE - STAKING SPECIFIED
NOT TO SCALE

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F. HANCOCK

CHECKED BY
F. HANCOCK

SCALE
N/A

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
LANDSCAPE NOTES AND DETAILS

JOB NO.
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TRANSPORTATION MANAGEMENT PLAN

GENERAL:

1. THIS PROJECT IS CLASSIFIED AS TYPE A, UNDER THE VDOT CLASSIFICATION SYSTEM.
2. THE TOTAL PROJECT LENGTH IS APPROXIMATELY 7,100 FEET. THE WIDTH OF THE WORK ZONE IS LESS THAN 80'.
3. THE PURPOSE OF THIS PROJECT IS TO PROVIDE PUBLIC SEWER SERVICE TO THE HICKORY HAVEN COMMUNITY, RESIDENTS ALONG ROUTE 1010 (WHIPPOORWILL ROAD), AND WILL ALLOW FOR FUTURE DEVELOPMENT WITHIN THE AREA. WORK WILL TAKE PLACE ALONG ROUTE 1006 (HOLLY LANE) FROM EAST OF THE INTERSECTION OF ROUTE 623 (HOCKETT ROAD) TO EAST OF THE INTERSECTION OF ROUTE 1008 (BIRCH ROAD), AND ALONG ROUTE 1010 (WHIPPOORWILL ROAD) SOUTH OF THE INTERSECTION OF US ROUTE 250 (BROAD STREET), WITH MINOR ENCROACHMENT INTO THE TRAFFIC PATTERN.
4. TRAFFIC ALONG ROUTE 1006 (HOLLY LANE), ROUTE 1008 (BIRCH ROAD), ROUTE 1009 (CEDAR CIRCLE), AND ROUTE 1010 (WHIPPOORWILL ROAD) CONSISTS OF LOCAL RESIDENTS.
5. THE EXISTING POSTED SPEED LIMIT FOR ROUTE 623 (HOCKETT ROAD) IS 55 MPH. THE EXISTING POSTED SPEED LIMIT FOR ROUTE 1006 (HOLLY LANE), ROUTE 1008 (BIRCH ROAD), ROUTE 1009 (CEDAR CIRCLE), AND ROUTE 1010 (WHIPPOORWILL ROAD) IS 25 MPH. ALL EXISTING SPEED LIMITS ARE EXPECTED TO BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.

TEMPORARY TRAFFIC CONTROL (TTC) / MAINTENANCE OF TRAFFIC (MOT):

1. LANE CLOSURES, SHOULDER CLOSURES, AND FLAGGING OPERATIONS ARE ANTICIPATED FOR THIS PROJECT AND SHALL BE PROVIDED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL, 2011 EDITION, (REVISION 2.1, NOVEMBER 1, 2020). THE FOLLOWING TEMPORARY TRAFFIC MEASURES SHALL BE USED:
 - 1.1. TTC-4.2 - STATIONARY OPERATION ON A SHOULDER.
 - 1.2. TTC-23.2 - LANE CLOSURE ON A TWO-LANE ROADWAY USING FLAGGERS.
 - 1.3. TTC-67.1 - LANE CLOSURE OPERATION THROUGH AN UNSIGNALIZED INTERSECTION.
2. ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

PUBLIC COMMUNICATION PLAN:

1. IF ANY MAJOR TRAFFIC CHANGES ARE TO TAKE PLACE (LANE CLOSURES, SHOULDER CLOSURES, ETC.), THE CONTRACTOR SHALL ENSURE THAT THE LOCAL NEWSPAPERS AND RADIO STATIONS ARE INFORMED A MINIMUM OF 72 HOURS IN ADVANCE OF THE CHANGE.
2. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE USED TO NOTIFY THE TRAVELING PUBLIC OF ANY SUCH MAJOR TRAFFIC CHANGES 72 HOURS IN ADVANCE OF THE CHANGE.

TRANSPORTATION OPERATION PLAN:

1. THE CONTRACTOR SHALL INFORM THE PROJECT PERSONNEL WHEN A LANE OR ROAD CLOSURE IS PLANNED. THE PROJECT PERSONNEL SHALL NOTIFY THE "REGIONAL TRAFFIC OPERATIONS CENTER" (RTOC) WHEN THE CLOSURE IS IMPLEMENTED, AND AGAIN WHEN IT IS REMOVED. THE RTOC WILL IN TURN PLACE THE INFORMATION INTO THE "511 VIRGINIA" TRAFFIC ALERT SYSTEM (A SERVICE OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION TRAFFIC SYSTEM).
2. IN CASE OF EMERGENCY, CALL 911.

THE FOLLOWING IS A LIST OF LOCAL NON-EMERGENCY NUMBERS:
 FIRE: 804-556-5304
 COUNTY SHERIFF: 804-556-5672
 STATE POLICE: 804-379-8645
 PROJECT PERSONNEL:
 ENGINEER CONTACT: BRUCE STRICKLAND, TIMMONS GROUP: 804-200-6389
 INSPECTOR: TBD
 REGIONAL TRAFFIC OPERATIONS CENTER, SHIFT SUPERVISOR: 804-796-4520
 VDOT RICHMOND DISTRICT WORK ZONE SAFETY COORDINATOR:
 DONNIE SMITH, 804-524-6122
 VDOT DISTRICT PUBLIC AFFAIRS OFFICER: BETHANIE GLOVER, 804-524-6032; 804-586-4455
3. ANY TRAFFIC INCIDENT (IF APPLICABLE) THAT OCCURS DURING THE LIFE OF THIS PROJECT WILL BE DISCUSSED BY THE CONTRACTOR, VDOT, AND THE ENGINEER OF RECORD TO DETERMINE WHETHER ANY CHANGES NEED TO BE MADE TO THE TRAFFIC CONTROL ON THE PROJECT.

TMP GENERAL NOTES:

1. ANY REQUIRED LANE CLOSURES MUST BE APPROVED IN ADVANCE BY THE VDOT ENGINEER.
2. LANE CLOSURES AND STOPPING OF TRAFFIC SHALL ONLY BE ALLOWED ON ROUTE 623 (HOCKETT ROAD), ROUTE 1006 (HOLLY LANE), ROUTE 1008 (BIRCH ROAD), ROUTE 1009 (CEDAR CIRCLE), ROUTE 1010 (WHIPPOORWILL ROAD), OR ANY OTHER CONNECTING ROAD BETWEEN THE HOURS OF 9:00 AM TO 3:00 PM, MONDAY THROUGH FRIDAY, UNLESS OTHERWISE DIRECTED BY VDOT & THE ENGINEER. FOR MORE INFORMATION, SEE SEQUENCE OF CONSTRUCTION ON THIS SHEET.
3. ALL AREAS EXCAVATED DEEPER THAN 2" (TWO INCHES) BELOW EXISTING PAVEMENT SURFACE AND WITHIN THE CLEAR ZONE, AT THE CONCLUSION OF EACH WORKDAY, SHALL BE BACK FILLED TO FORM AN APPROXIMATE 6:1 WEDGE AGAINST THE PAVEMENT SURFACE FOR THE SAFETY AND PROTECTION OF VEHICULAR TRAFFIC. ALL COST PLACING, MAINTAINING, AND REMOVING THE 6:1 WEDGE SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS IN THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. IN LIEU OF BACKFILLING EXCAVATED AREAS WITHIN THE ROADWAY, THE CONTRACTOR MAY USE TEMPORARY STEEL PLATES FOR THE SAFETY AND PROTECTION OF VEHICULAR TRAFFIC. THE PLACEMENT OF TEMPORARY STEEL PLATES SHALL BE PER VIRGINIA WORK AREA PROTECTION MANUAL SPECIFICATIONS, SECTION 6G.15. TEMPORARY STEEL PLATES SHALL BE AFFIXED TO THE ROADWAY SURFACE VIA AN ASPHALT WEDGE. ADVANCED WARNING SIGNS W8-1 ("BUMP") AND W8-24 ("STEEL PLATES AHEAD") SHALL BE PLACED IN ADVANCE OF THE TEMPORARY STEEL PLATE. CONTRACTOR SHALL ONLY USE STEEL PLATES THAT ARE CERTIFIED FOR USE IN ROADWAYS AND PER INDUSTRY STANDARDS.
4. TRAFFIC SHALL NOT BE STOPPED ON ROUTE 623 (HOCKETT ROAD), ROUTE 1006 (HOLLY LANE), OR ANY CONNECTOR ROAD FOR LONGER THAN FIVE MINUTES AT ANY TIME UNLESS OTHERWISE DIRECTED BY VDOT AND THE ENGINEER.
5. LANE CLOSURES WILL NOT BE PERMITTED ON HOLIDAYS, WEEKENDS, OR ON FRIDAY-SATURDAY-SUNDAY SURROUNDING HOLIDAY WEEKENDS UNLESS OTHERWISE APPROVED IN ADVANCE BY THE ENGINEER AND VDOT.
6. ANY CONTRACT ITEM(S) NOT SPECIFICALLY NOTED IN THE MAINTENANCE OF TRAFFIC MAY BE SCHEDULED FOR CONSTRUCTION AT THE CONTRACTOR'S OPTION, AS APPROVED BY THE ENGINEER AND VDOT.
7. VEHICULAR AND PEDESTRIAN ACCESS TO ADJACENT PROPERTIES AND CONNECTING STREETS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. PROPERTY OWNERS SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO ANY ACTIVITIES WHICH WOULD IMPEDE ACCESS TO THEIR PROPERTY. IN ALL CASES IN WHICH EXISTING OR ESTABLISHED TRAFFIC PATTERNS WILL BE DISRUPTED, THE CONTRACTOR WILL NOTIFY ALL AFFECTED RESIDENTS AND/OR BUSINESSES A MINIMUM OF 48 HOURS IN ADVANCE OF THE ANTICIPATED DISRUPTION BY DISTRIBUTING DOOR-TO-DOOR NOTICES. A COPY OF THE NOTICE SHALL BE FORWARDED TO THE PROJECT ENGINEER AND VDOT FOR REVIEW AND APPROVAL PRIOR TO THE BEGINNING OF WORK. ALL COMMERCIAL/BUSINESS ENTRANCES SHALL MAINTAIN TWO-WAY TRAFFIC DURING CONSTRUCTION, WITH 20-FOOT MINIMUM WIDTH ENTRANCES. CONTRACTOR IS TO COORDINATE WITH BUSINESS OWNERS TO MINIMIZE IMPACTS, OVERNIGHT CONSTRUCTION OPERATIONS MAY BE NECESSARY TO MINIMIZE IMPACTS.
8. ALL TRAFFIC CONTROL SHALL BE SET UP AND SPACED ACCORDING TO THE VIRGINIA WORK AREA PROTECTION MANUAL, 2011 EDITION, (REVISION 2.1, NOVEMBER 1, 2020).
9. CONTRACTOR SHALL PROVIDE ADDITIONAL TRAFFIC CONTROL AS DIRECTED BY VDOT, SHOULD FIELD CONDITIONS WARRANT.
10. CONTRACTOR MAY REDUCE LANE WIDTHS TO 10' MINIMUM DURING CONSTRUCTION. ANY TEMPORARY PAVEMENT MARKINGS THAT ARE REQUIRED ARE THE RESPONSIBILITY OF THE CONTRACTOR.
11. CONTRACTOR IS RESPONSIBLE FOR PLACEMENT AND MAINTENANCE OF ALL TEMPORARY PAVEMENT MARKINGS AND SIGNAGE THAT ARE REQUIRED OR IMPLIED IN THE CONSTRUCTION PHASING SHEETS THAT FOLLOW. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TRAFFIC CONTROL DEVICES, SIGNAGE, EQUIPMENT, PERSONNEL, INCLUDING CERTIFIED TRAFFIC CONTROL PERSONNEL, ETC. TO CONTROL TRAFFIC DURING CONSTRUCTION WITHIN VDOT MAINTAINED RIGHT-OF-WAY. ALL TRAFFIC CONTROL SHALL BE IN STRICT ACCORDANCE WITH THE STANDARDS, GUIDELINES, POLICIES, AND OBJECTIVES OF THE LATEST EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL, 2011 EDITION, (REVISION 2.1, NOVEMBER 1, 2020), MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND ALL VDOT PERMITS.
12. AT NO TIME SHALL CONSTRUCTION TAKE PLACE ON BOTH THE RIGHT AND LEFT SIDES OF VEHICLES, UNLESS OTHERWISE SPECIFIED BY VDOT AND THE ENGINEER.

TMP GENERAL NOTES (CONTD):

13. ALL CONSTRUCTION MATERIALS AND EQUIPMENT CAN BE STORED ALONG THE WORKZONE CORRIDOR OR STORED OFF-SITE. ALL CONSTRUCTION MATERIALS AND EQUIPMENT STORED ALONG THE CONSTRUCTION CORRIDOR SHALL BE OUTSIDE OF THE CLEARZONE/SIGHT DISTANCE RESTRICTIVE AREAS OR BEHIND GUARDRAIL AND ITS RESPECTIVE DEFLECTION AREA. ALL CONTRACTOR AND SUBCONTRACTOR EMPLOYEES SHALL PARK OFF-SITE.
14. EMERGENCY VEHICLE, BUS, AND MAIL ROUTES SHALL BE MAINTAINED AT ALL TIMES.
15. CONTRACTOR SHALL LIMIT WORK ZONES TO 500 FT LENGTHS DURING ALL PHASES OF CONSTRUCTION.

SEQUENCE OF CONSTRUCTION:

PHASE 1 HICKORY HAVEN COMMUNITY AND ROUTE 1010 (WHIPPOORWILL ROAD)

CONSTRUCTION CONSISTS OF THE INSTALLATION OF A SEWER LINE VIA OPEN TRENCHING OPERATIONS. CONSTRUCTION SHALL TAKE PLACE WITHIN THE HICKORY HAVEN COMMUNITY EAST OF THE INTERSECTION OF ROUTE 623 (HOCKETT ROAD) AND ALONG ROUTE 1010 (WHIPPOORWILL ROAD) SOUTH OF THE INTERSECTION OF US ROUTE 250 (BROAD STREET).

WHEN CONSTRUCTION OCCURS WITHIN THE CLEAR ZONE, 4 FEET FROM THE EDGE OF TRAVEL WAY, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE TO TTC-23.2 DURING THE ALLOWABLE WORKING HOURS, AS PRESCRIBED IN THE GENERAL NOTES, TTC/MOT NOTES, AND THROUGH THE USE OF GROUP II CHANNELIZING DEVICES AND PROPER SIGNAGE.

WHEN CONSTRUCTION CONSISTS OF TRENCHING OPERATIONS PERPENDICULAR TO THE ROADWAY, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE TO TTC-67.1 DURING THE ALLOWABLE WORKING HOURS, AS PRESCRIBED IN THE GENERAL NOTES, TTC/MOT NOTES, AND THROUGH THE USE OF GROUP II CHANNELIZING DEVICES AND PROPER SIGNAGE.

IF TRENCH IS TO BE LEFT OPEN AND WITHIN THE CLEAR ZONE OVERNIGHT, OR DURING NON-WORKING HOURS, ALL EXCAVATIONS WITHIN THE CLEAR ZONE SHALL BE BACKFILLED OR HAVE STEEL PLATES PLACED OVER THE OPEN PITS, PER GENERAL NOTE 3, AS PRESCRIBED IN THE GENERAL NOTES, TTC/MOT NOTES, AND THROUGH THE USE OF GROUP II CHANNELIZING DEVICES AND PROPER SIGNAGE. CONTRACTOR SHALL NOTIFY ALL ADJACENT PROPERTY OWNERS OF CONSTRUCTION ACTIVITIES AND IMPACTS, PER GENERAL NOTE 7. CONSTRUCTION SHALL BE COMPLETED IN A MANNER TO MINIMIZE IMPACTS TO PROPERTY OWNERS.

PHASE 2 OUTSIDE OF VDOT RIGHT-OF-WAY

CONSTRUCTION CONSISTS OF THE INSTALLATION OF A SEWER LINE VIA TRENCHING OPERATIONS. CONSTRUCTION SHALL TAKE PLACE OUTSIDE OF THE VDOT RIGHT-OF-WAY AND WITHIN UTILITY EASEMENTS.

WHEN CONSTRUCTION OCCURS WITHIN THE CLEAR ZONE, 4 FEET FROM THE EDGE OF TRAVEL WAY, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE TO TTC-23.2 DURING THE ALLOWABLE WORKING HOURS, AS PRESCRIBED IN THE GENERAL NOTES, TTC/MOT NOTES, AND THROUGH THE USE OF GROUP II CHANNELIZING DEVICES AND PROPER SIGNAGE.

WHEN CONSTRUCTION OCCURS OUTSIDE OF THE CLEAR ZONE, 4 FEET FROM THE EDGE OF TRAVELWAY AND DURING NON-WORKING HOURS, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE TO TTC-4.2, AS PRESCRIBED IN THE GENERAL NOTES, TTC/MOT NOTES, AND THROUGH THE USE OF GROUP II CHANNELIZING DEVICES AND PROPER SIGNAGE.

NOTE: PER FIGURE 2, CLEAR ZONE AND DROP-OFF REQUIREMENTS, FOUND ON PAGE A-4 OF APPENDIX A OF THE VIRGINIA WORK AREA PROTECTION MANUAL, 2011 EDITION, (REVISION 2.1, NOVEMBER 1, 2020), THE CLEAR ZONE WITHIN THE HICKORY HAVEN COMMUNITY WAS DETERMINED TO BE 4 FEET, FROM THE EDGE OF TRAVEL WAY.

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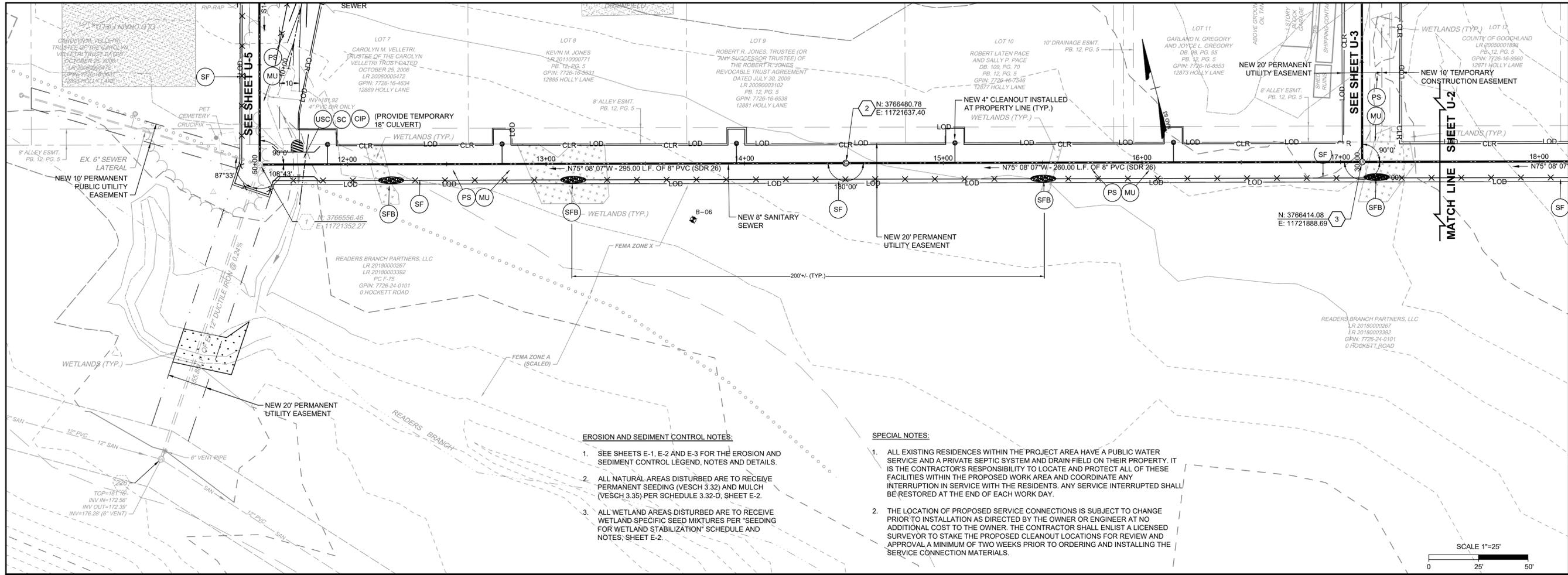
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HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 DISTRICT - GOOCHLAND COUNTY - VIRGINIA
TRAFFIC MANAGEMENT PLAN

GREGORY T. STECHER
ADVANCED WORK ZONE TRAFFIC
CONTROL VERIFICATION #04022112

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42792
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T-1

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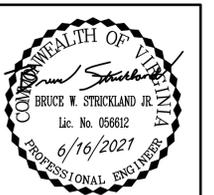
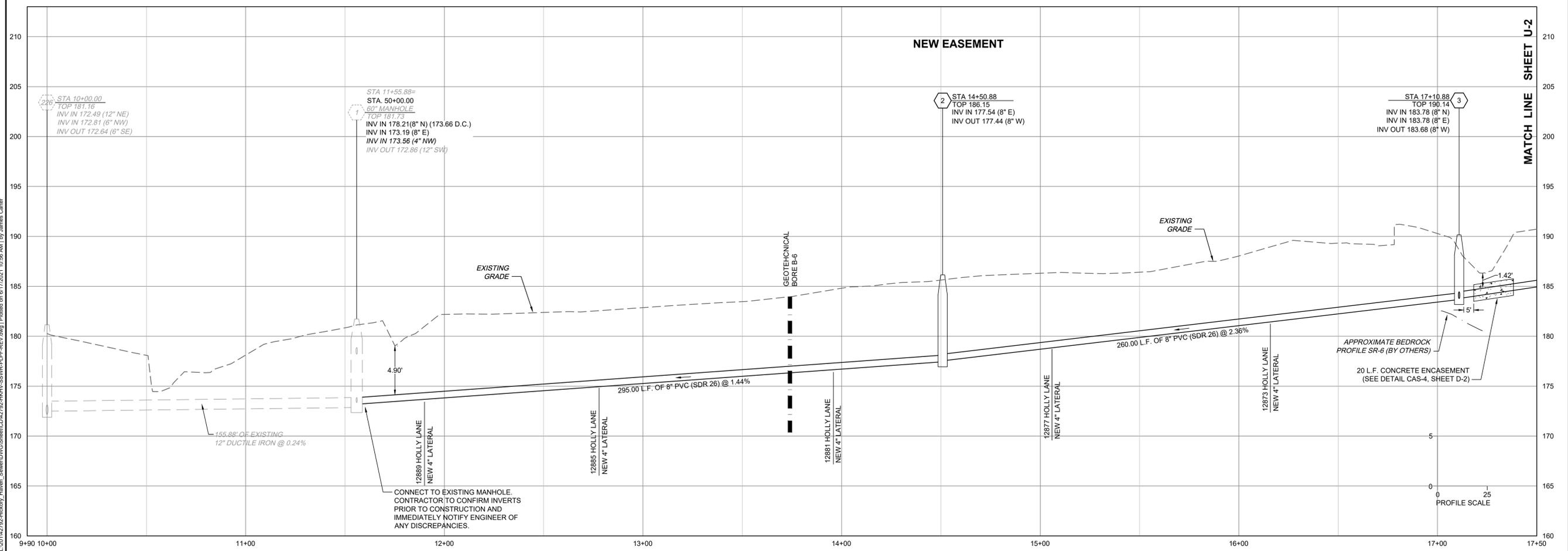
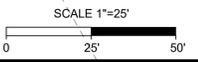


EROSION AND SEDIMENT CONTROL NOTES:

- SEE SHEETS E-1, E-2 AND E-3 FOR THE EROSION AND SEDIMENT CONTROL LEGEND, NOTES AND DETAILS.
- ALL NATURAL AREAS DISTURBED ARE TO RECEIVE PERMANENT SEEDING (VESCH 3.32) AND MULCH (VESCH 3.35) PER SCHEDULE 3.32-D, SHEET E-2.
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SPECIAL NOTES:

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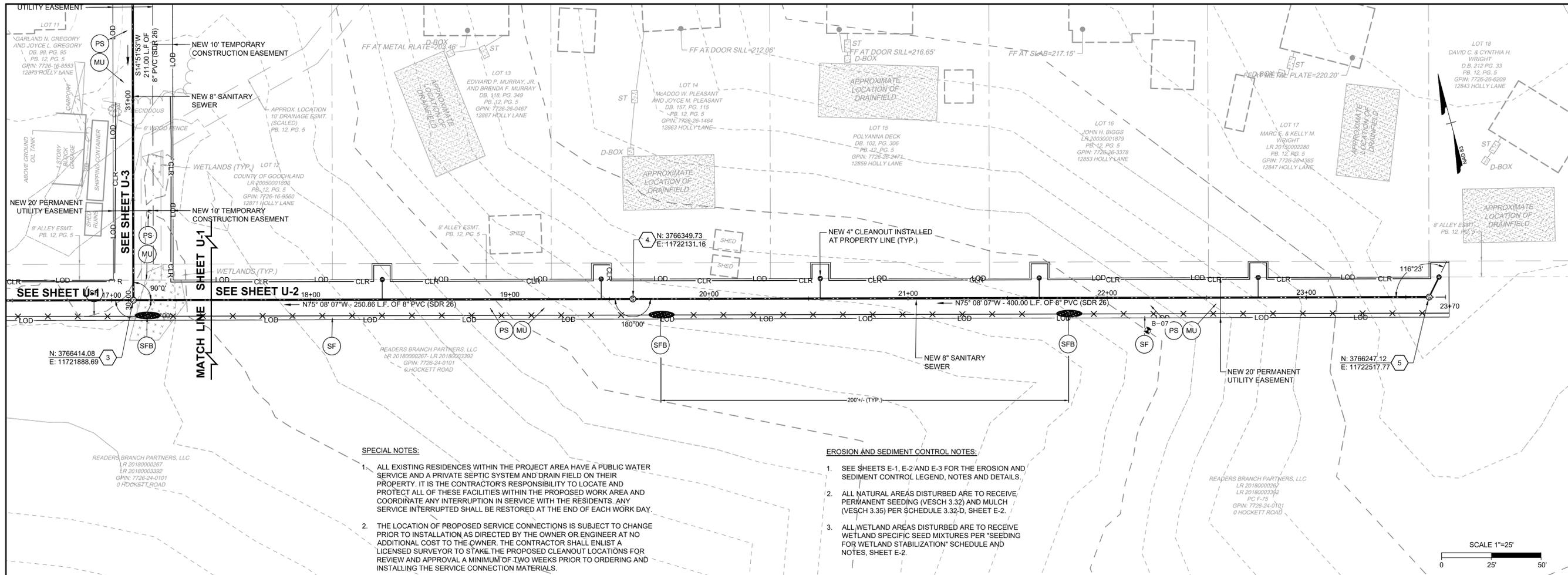
DATE	04/20/2020
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CHECKED BY	B. STRICKLAND
SCALE	H: 1" = 25' V: 1" = 5'

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
HICKORY HAVEN PLAN AND PROFILE

JOB NO. 42792
 SHEET NO. U-1

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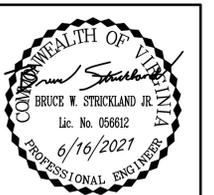
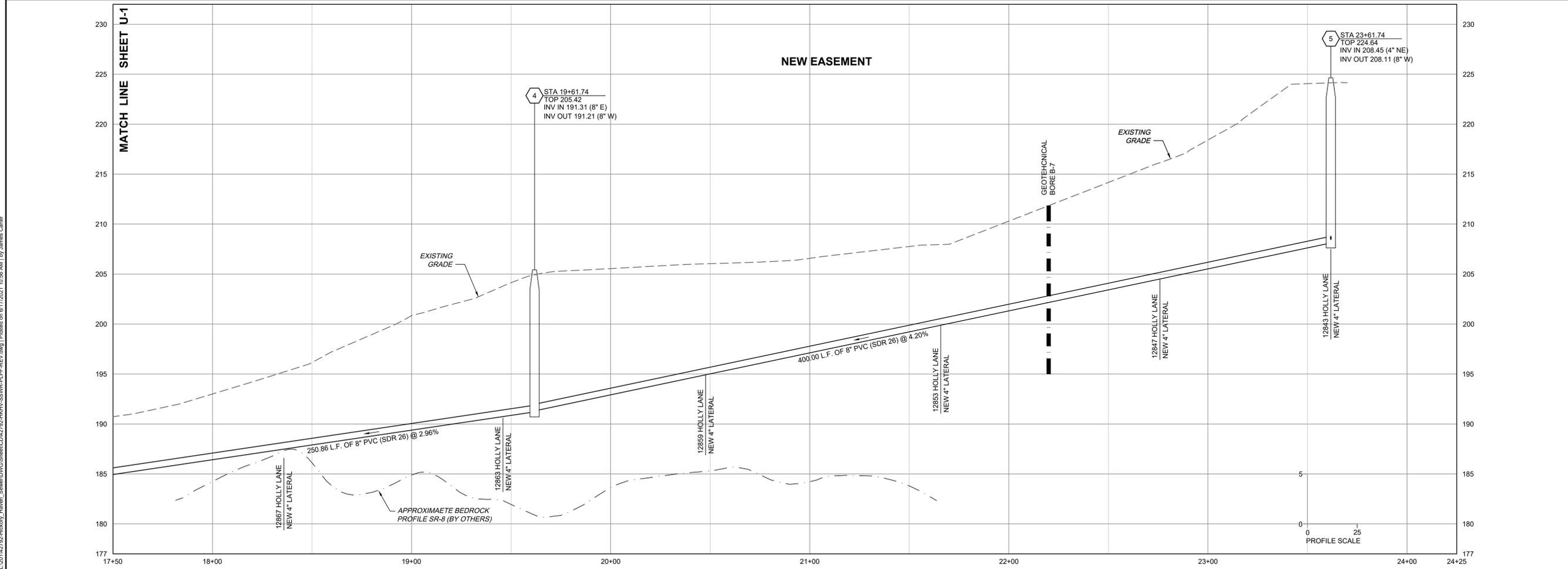
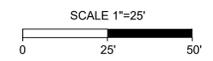


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 DESIGNED BY: J. CARTER
 CHECKED BY: B. STRICKLAND
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 V: 1" = 5'

TIMMONS GROUP

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HICKORY HAVEN PLAN AND PROFILE

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 SHEET NO. U-2

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VIEW AND APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO ORDERING AND TALLING THE SERVICE CONNECTION MATERIALS.

SEE SHEETS S-1.0 THRU S-2.0 FOR DRAINAGE IMPROVEMENTS AND DETAILS.

SANITARY SEWER IMPROVEMENTS ARE TO BE INSTALLED PRIOR TO TALLATION OF DRAINAGE IMPROVEMENTS

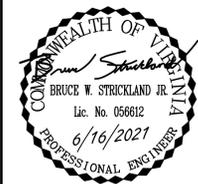
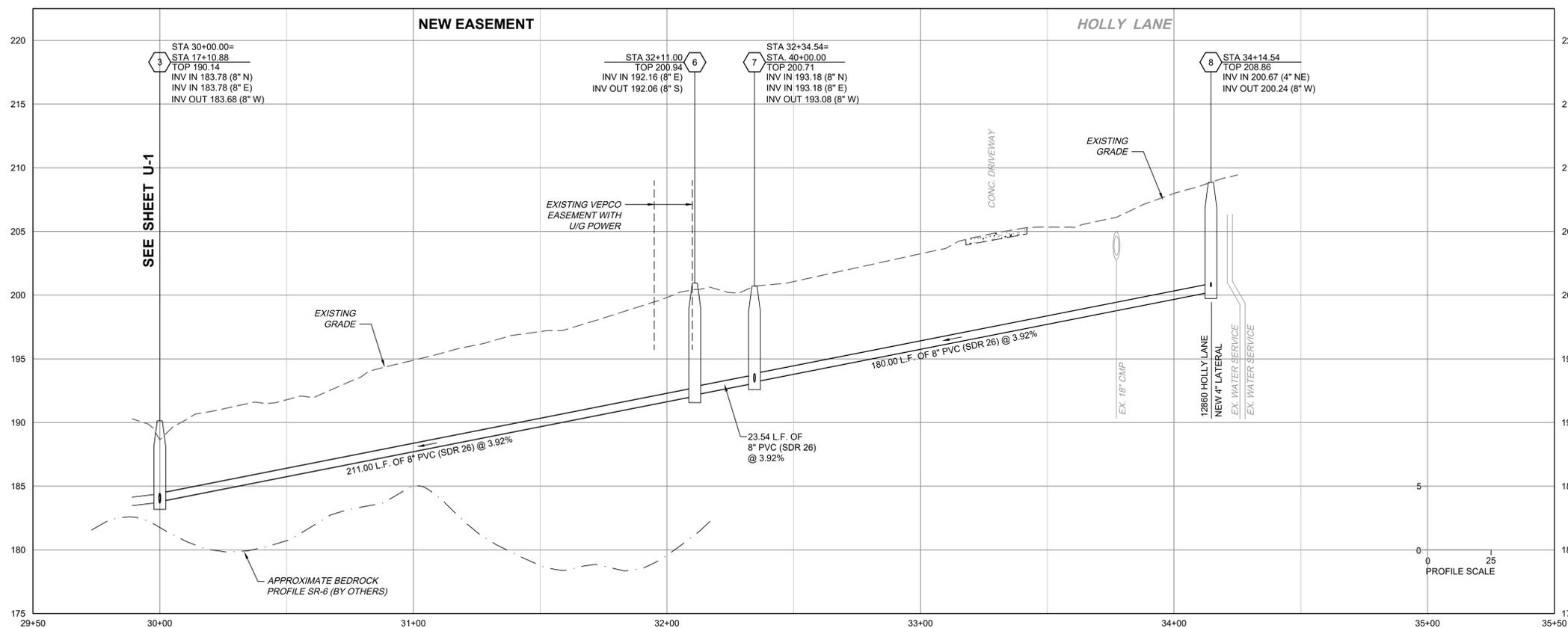
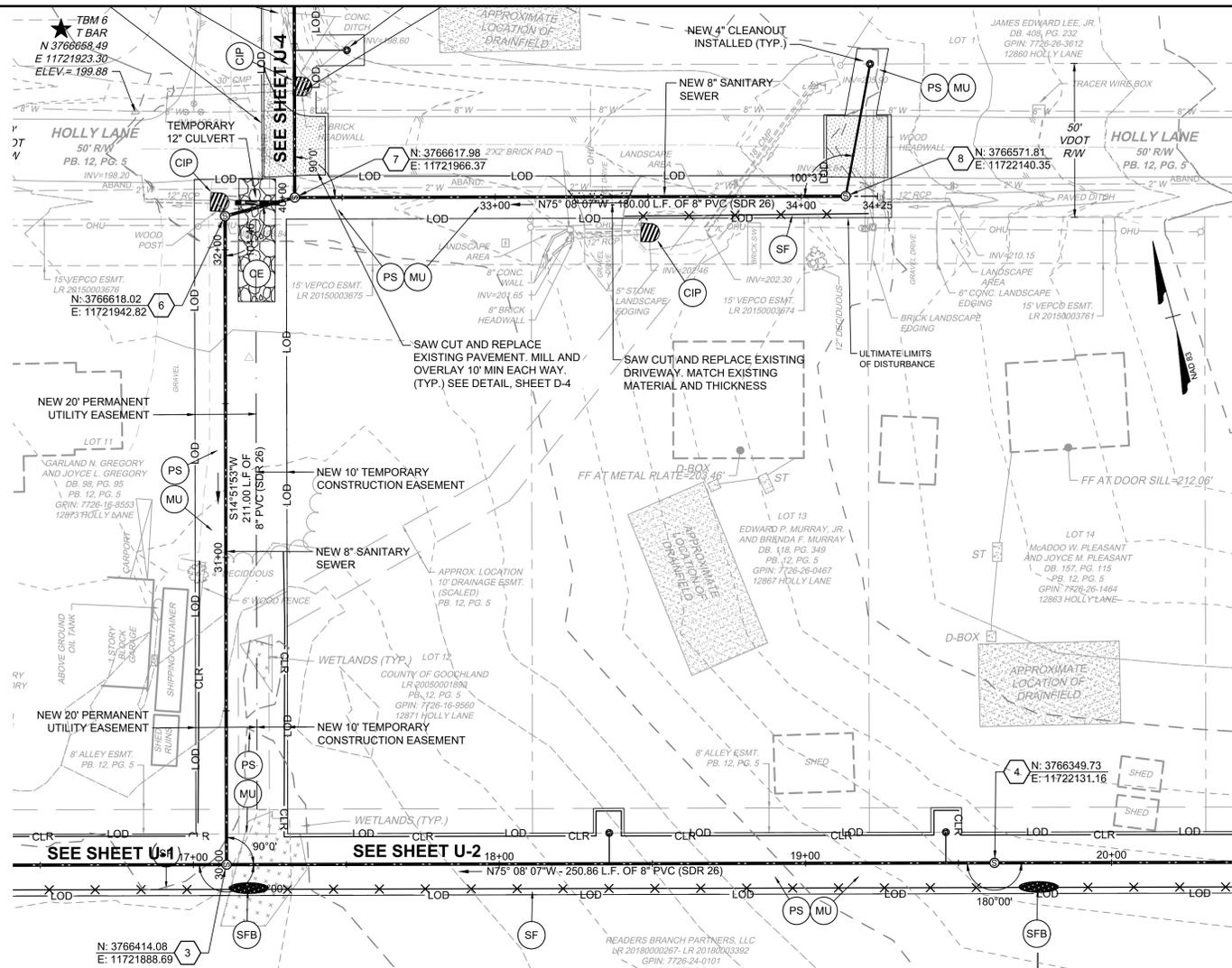
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NEW CLEANOUT AND LATERAL CONNECTED TO EXISTING MANHOLE 227 FOR 5 HOCKETT ROAD TO BE INSTALLED AS PART OF THIS PROJECT (SEE INSET SHEET U-6)

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HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
HICKORY HAVEN PLAN AND PROFILE

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SHEET NO. U-3

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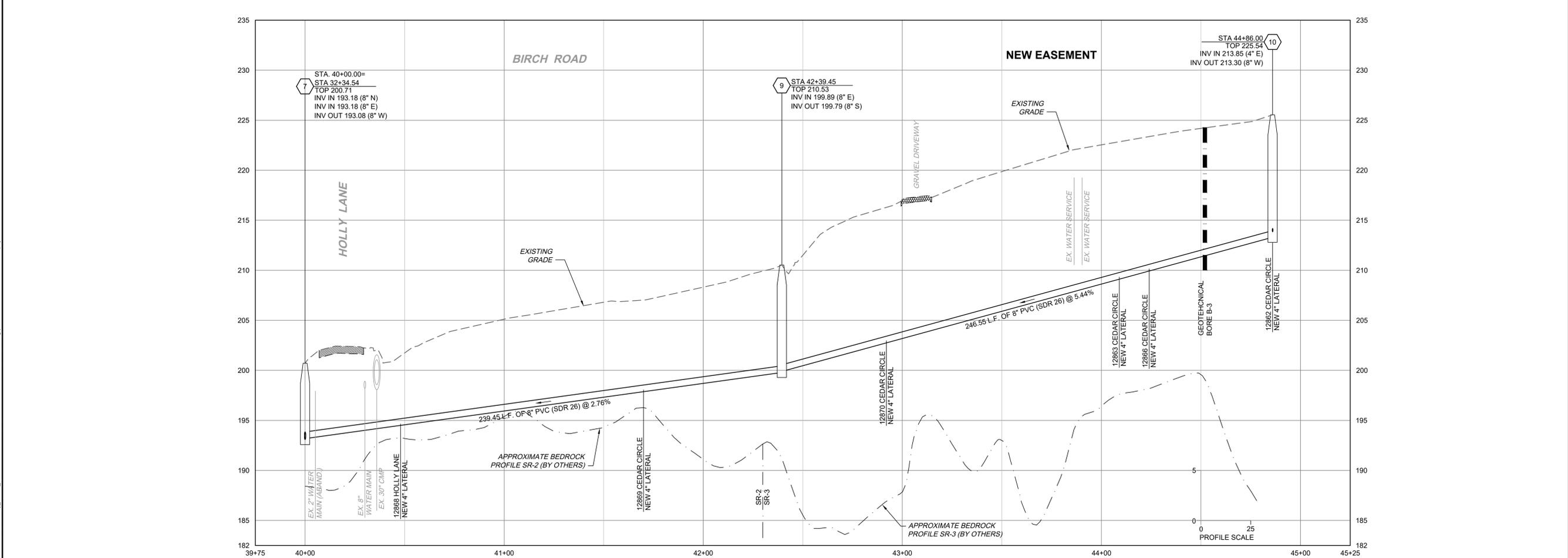
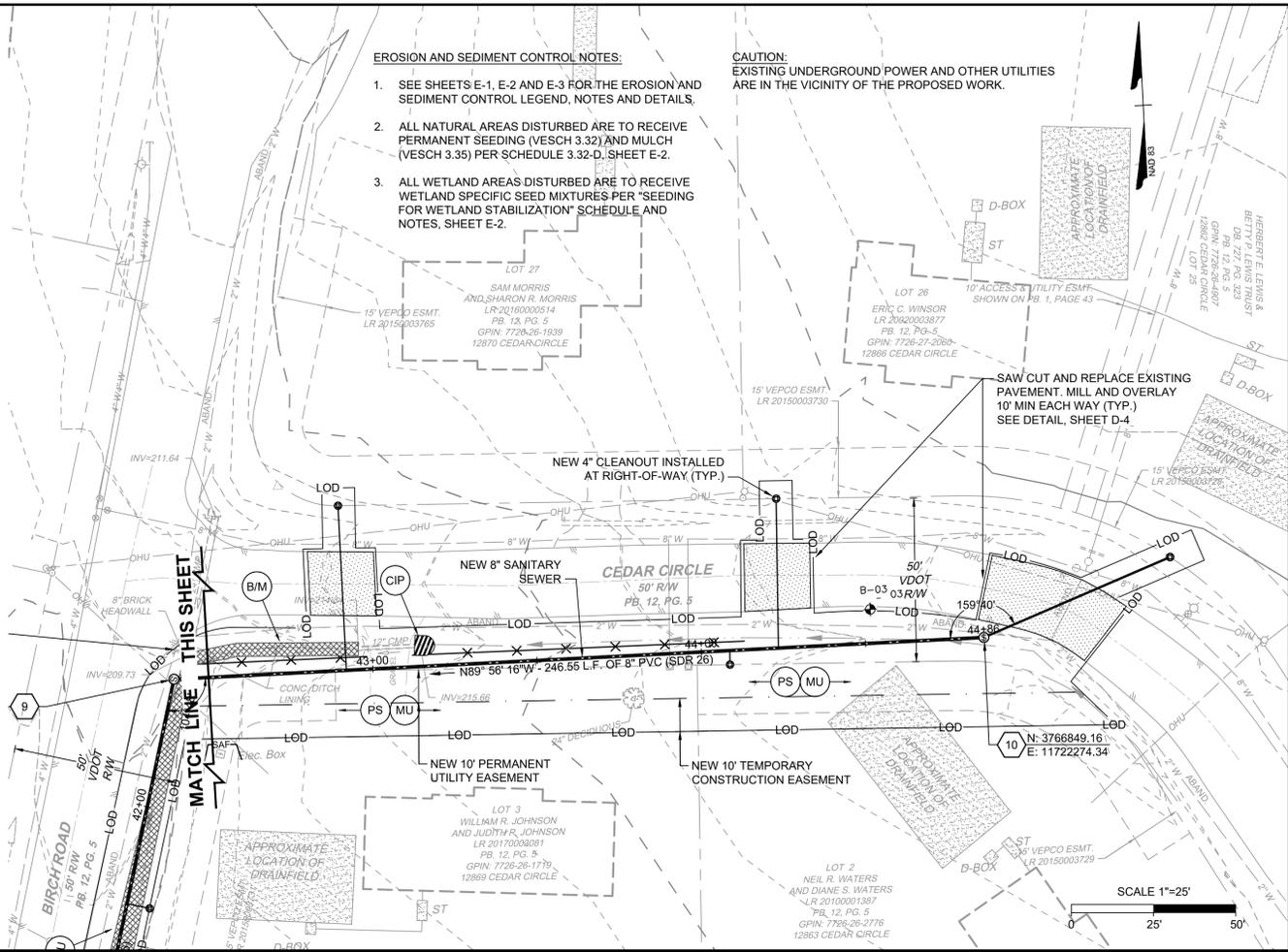
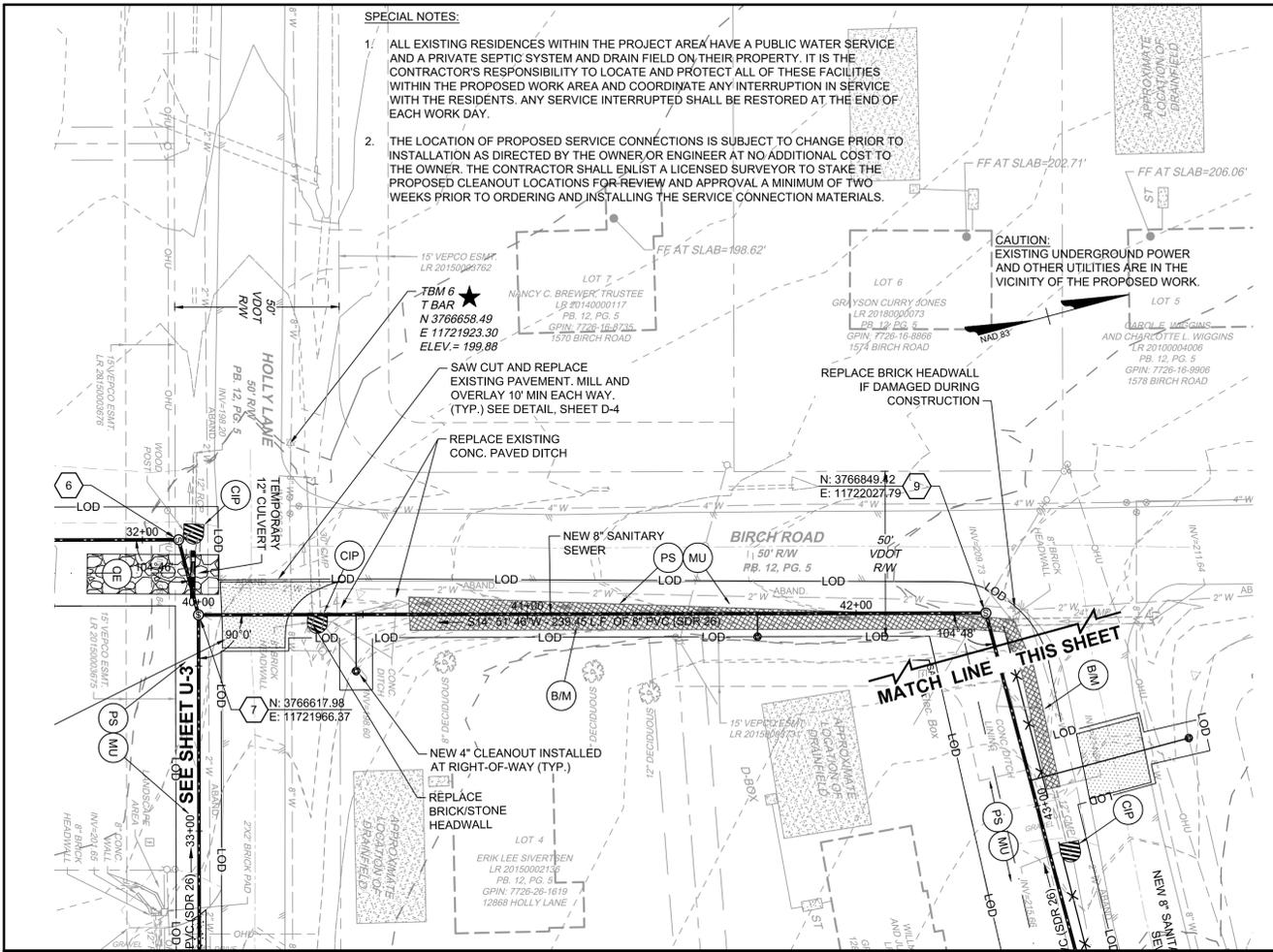
DATE	DESCRIPTION
04/20/2020	
	DRAWN BY J. CARTER
	DESIGNED BY J. CARTER
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	SCALE H: 1" = 25' V: 1" = 5'

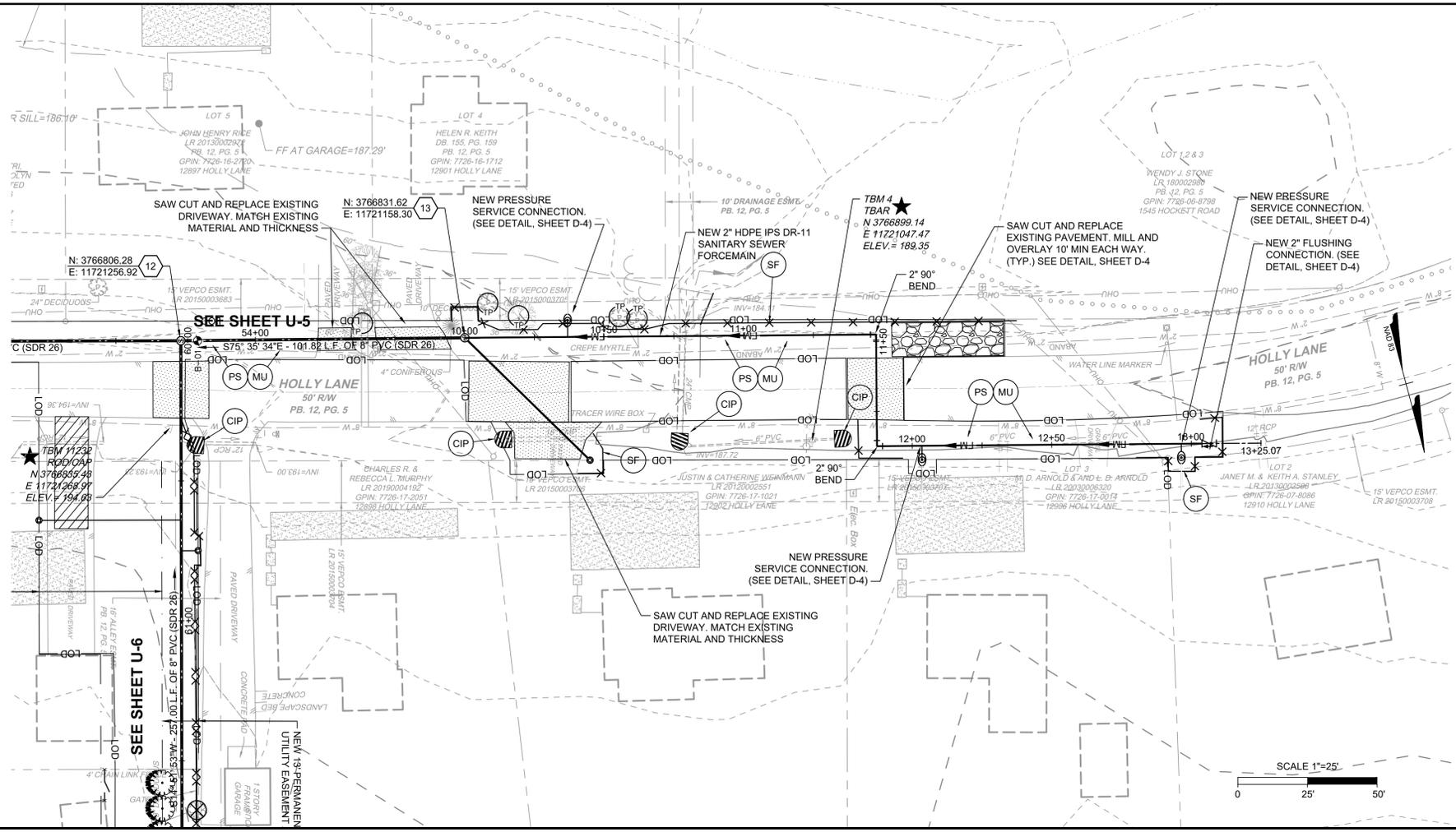
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HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
HICKORY HAVEN PLAN AND PROFILE

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SHEET NO.	U-4

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ENSED SURVEYOR TO STAKE THE PROPOSED CLEANOUT LOCATIONS FOR REVIEW AND APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO ORDERING AND TALLING THE SERVICE CONNECTION MATERIALS.

3 SHEETS S-1.0 THRU S-2.0 FOR DRAINAGE IMPROVEMENTS AND DETAILS.

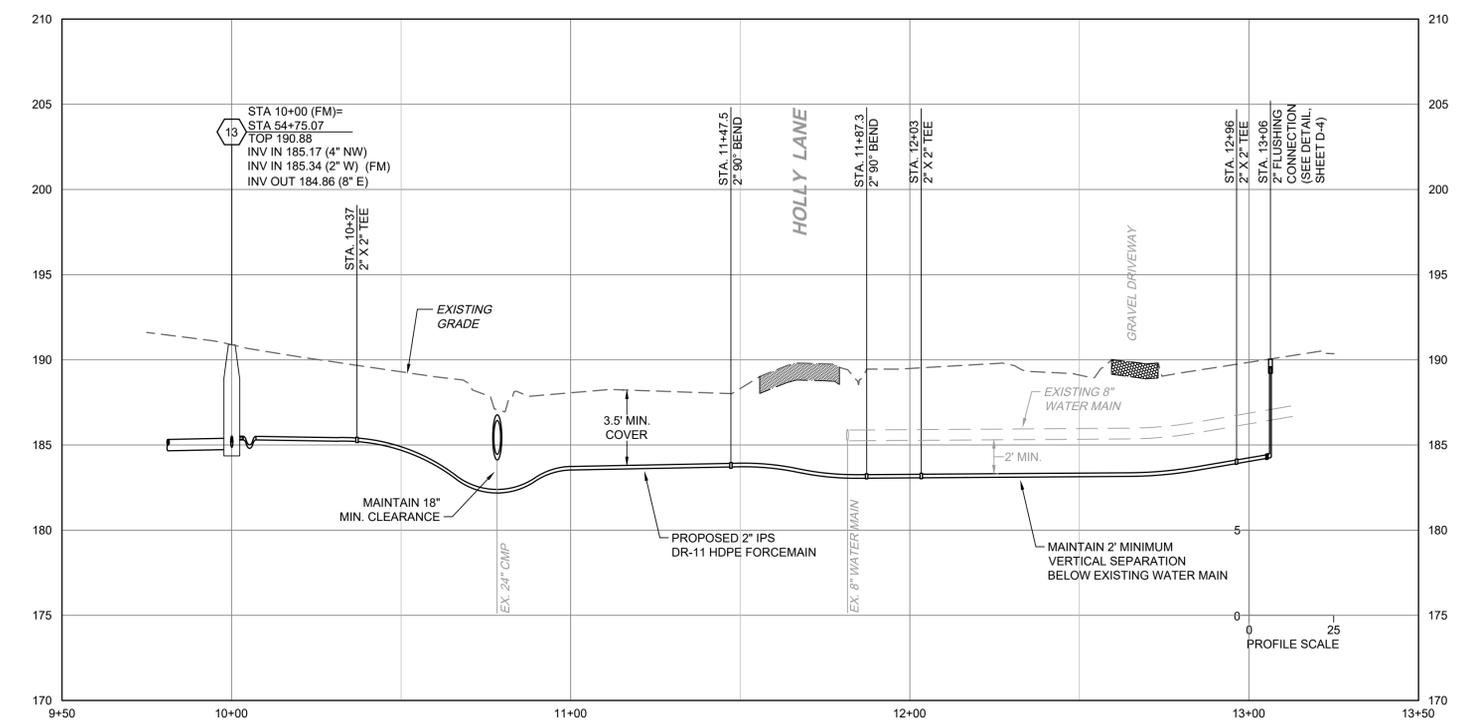
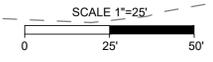
UTILITY SEWER IMPROVEMENTS ARE TO BE INSTALLED PRIOR TO TALLATION OF DRAINAGE IMPROVEMENTS

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NEW CLEANOUT AND LATERAL CONNECTED TO EXISTING MANHOLE 227 FOR 5 HOCKETT ROAD TO BE INSTALLED AS PART OF THIS PROJECT (SEE INSET SHEET U-6)

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HDPE JOINING NOTES:

- THE PIPE SHALL BE JOINED WITH ELECTROFUSION COUPLINGS AS OUTLINED IN ASTM F1055 AND CONFORM TO THE GENERIC ELECTROFUSION PROCEDURE FOR FIELD JOINING OF 12-INCH AND SMALLER POLYETHYLENE (PE) PIPE. PUBLISHED BY THE MUNICIPAL ADVISORY BOARD (MAB), OR WITH BUTT (THERMAL) FUSION WELDS AND CONFORM TO THE GENERAL BUTT FUSION JOINING PROCEDURE FOR FIELD JOINING OF POLYETHYLENE PIPE, TECHNICAL REPORT 33 (TR-33) PUBLISHED BY THE PLASTICS PIPE INSTITUTE (PPI). ALL JOINTS SHALL BE MADE IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. A FACTORY QUALIFIED JOINING TECHNICIAN AS DESIGNATED BY PIPE MANUFACTURER OR EXPERIENCED, TRAINED TECHNICIAN SHALL PERFORM ALL ELECTROFUSION AND BUTT FUSION JOINTS.
- LENGTHS OF PIPE SHALL BE ASSEMBLED INTO SUITABLE INSTALLATION LENGTHS BY THE FUSION PROCESS BEING PERFORMED. ALL PIPES SO JOINED SHALL BE MADE FROM THE SAME CLASS AND TYPE OF RAW MATERIAL MADE BY THE SAME RAW MATERIAL SUPPLIER. PIPE SHALL BE FURNISHED IN STANDARD LAYING LENGTHS, NO SHORTER THAN 20 FEET.



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DESIGNED BY	J. CARTER
CHECKED BY	B. STRICKLAND
SCALE	H: 1" = 25' V: 1" = 5'

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA

2-INCH SANITARY SEWER FORCEMAIN

JOB NO. 42792
SHEET NO. U-5A

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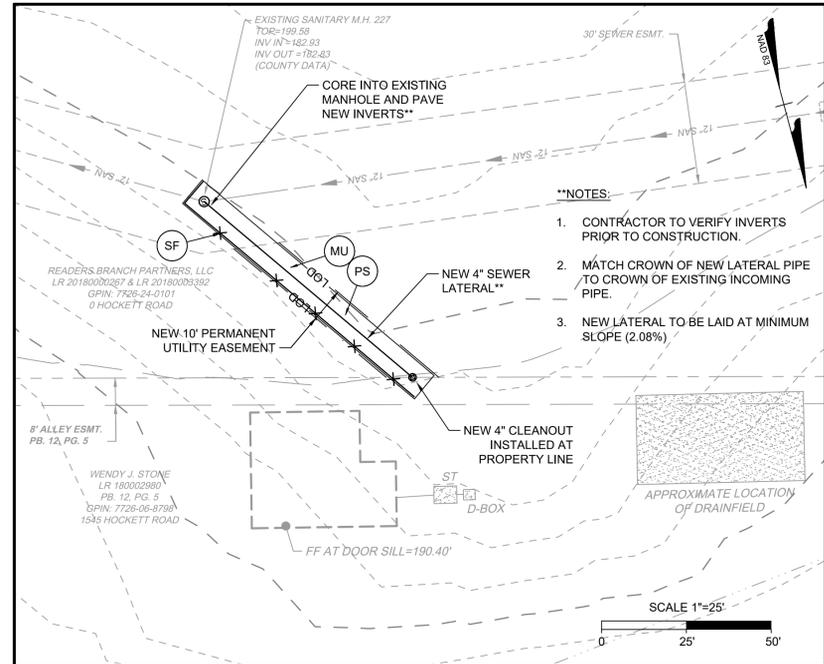
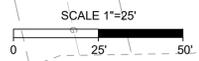
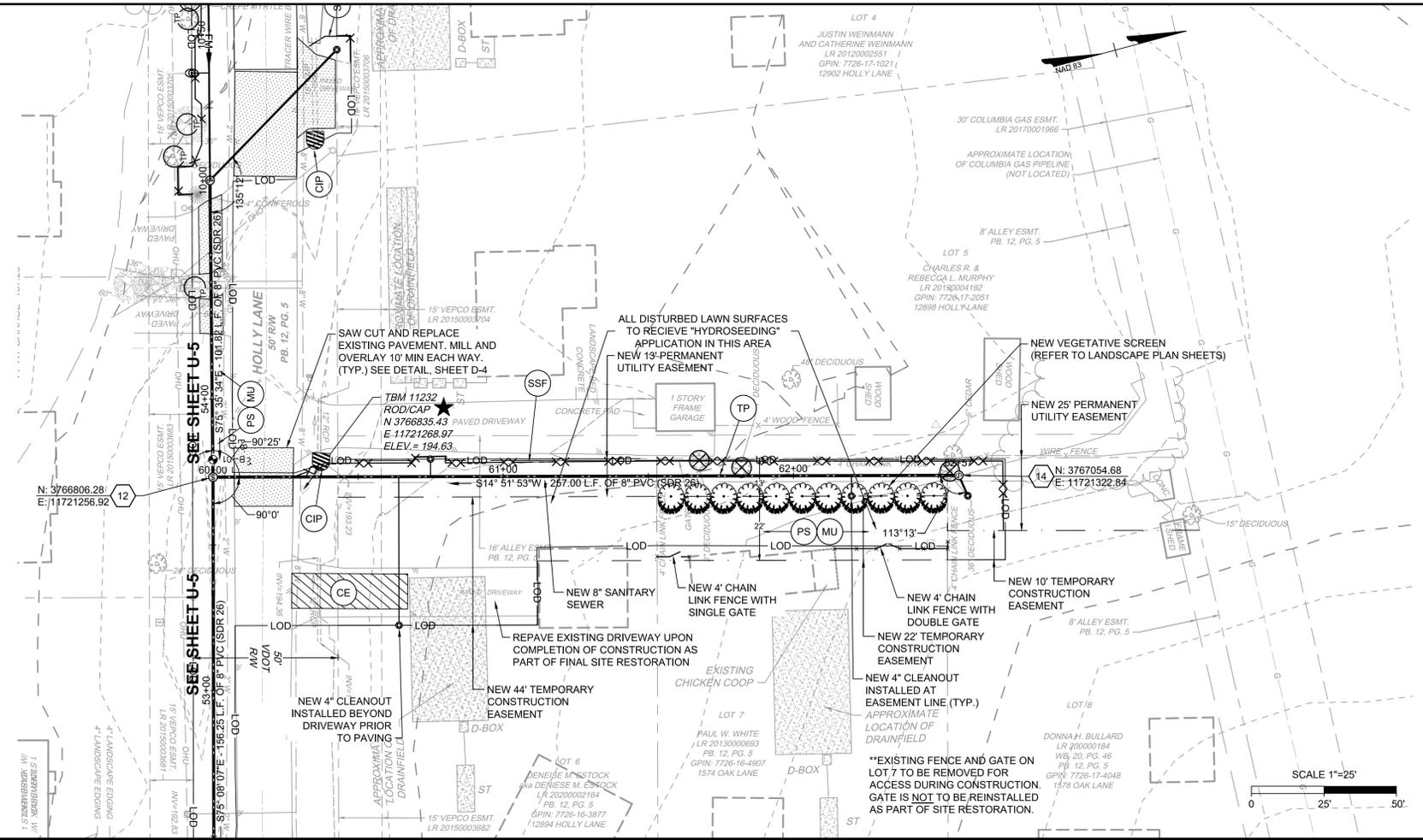
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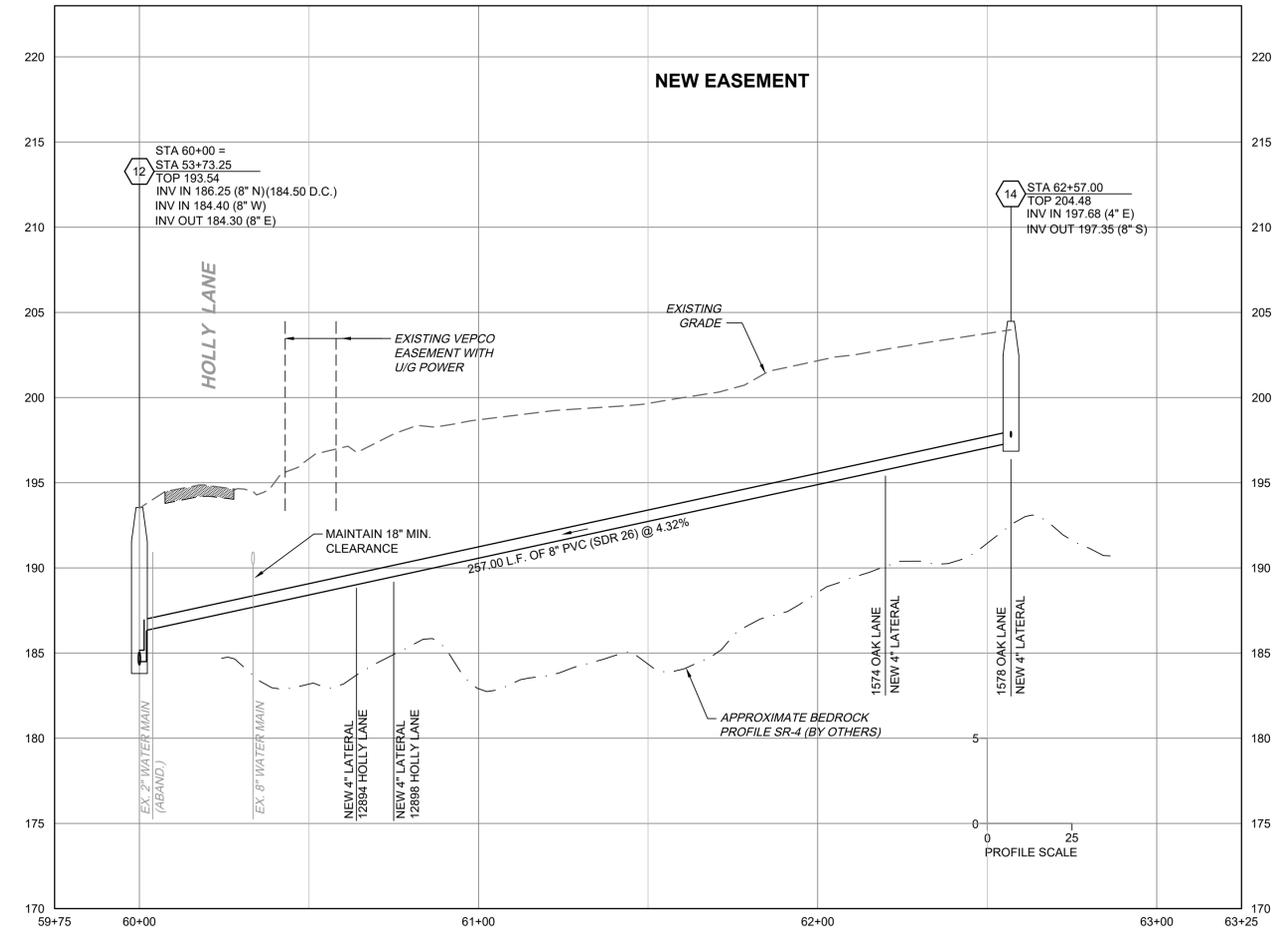
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INSET 'A'
(SEE SHEET U-5)



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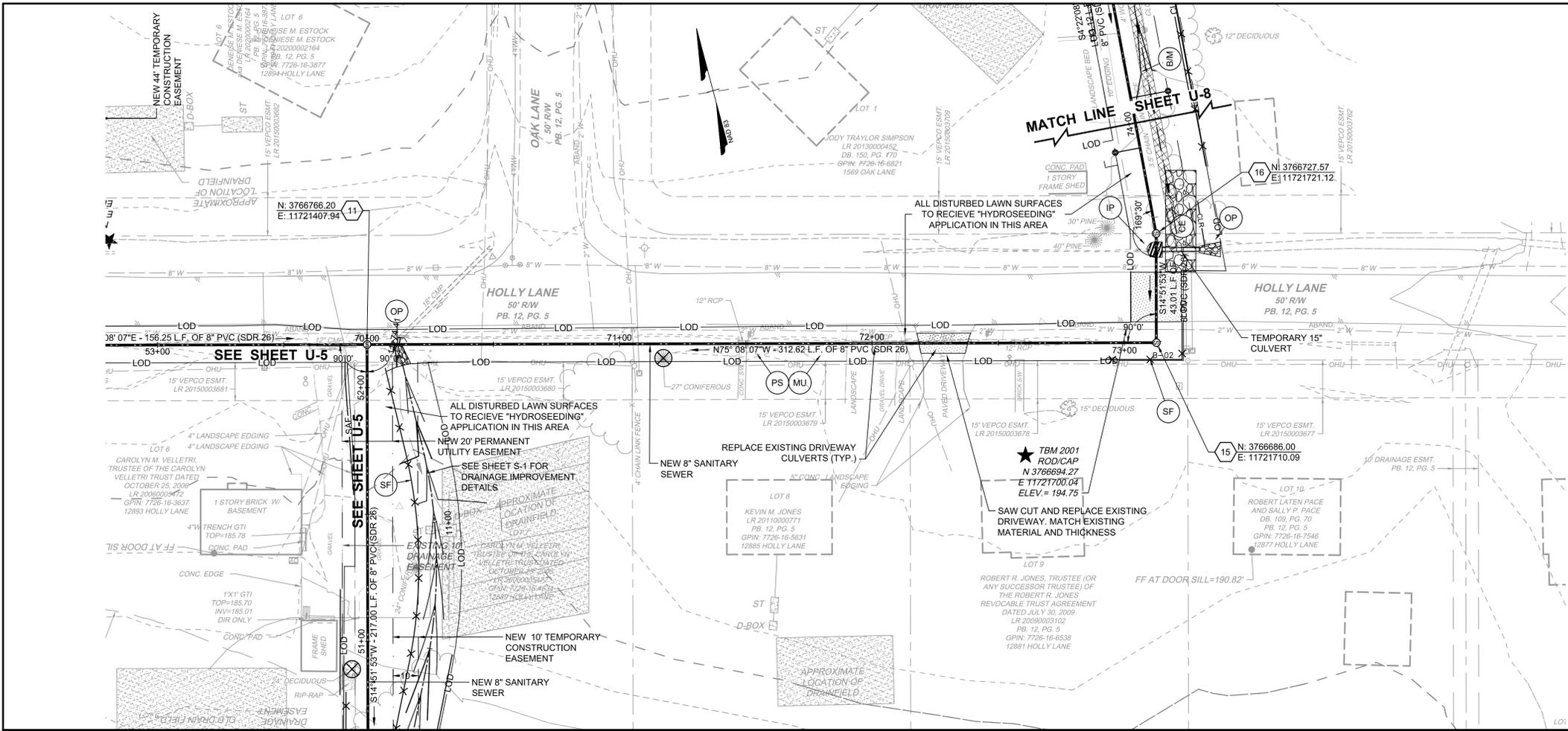
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FIELD SURVEYOR TO STAKE THE PROPOSED CLEANOUT LOCATIONS FOR APPROVAL AND APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO ORDERING AND INSTALLING THE SERVICE CONNECTION MATERIALS.

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SEWAGE OUT AND LATERAL CONNECTED TO EXISTING MANHOLE 227 FOR JACKETT ROAD TO BE INSTALLED AS PART OF THIS PROJECT (SEE INSET).

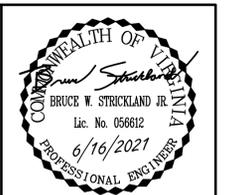
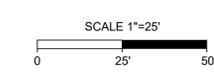
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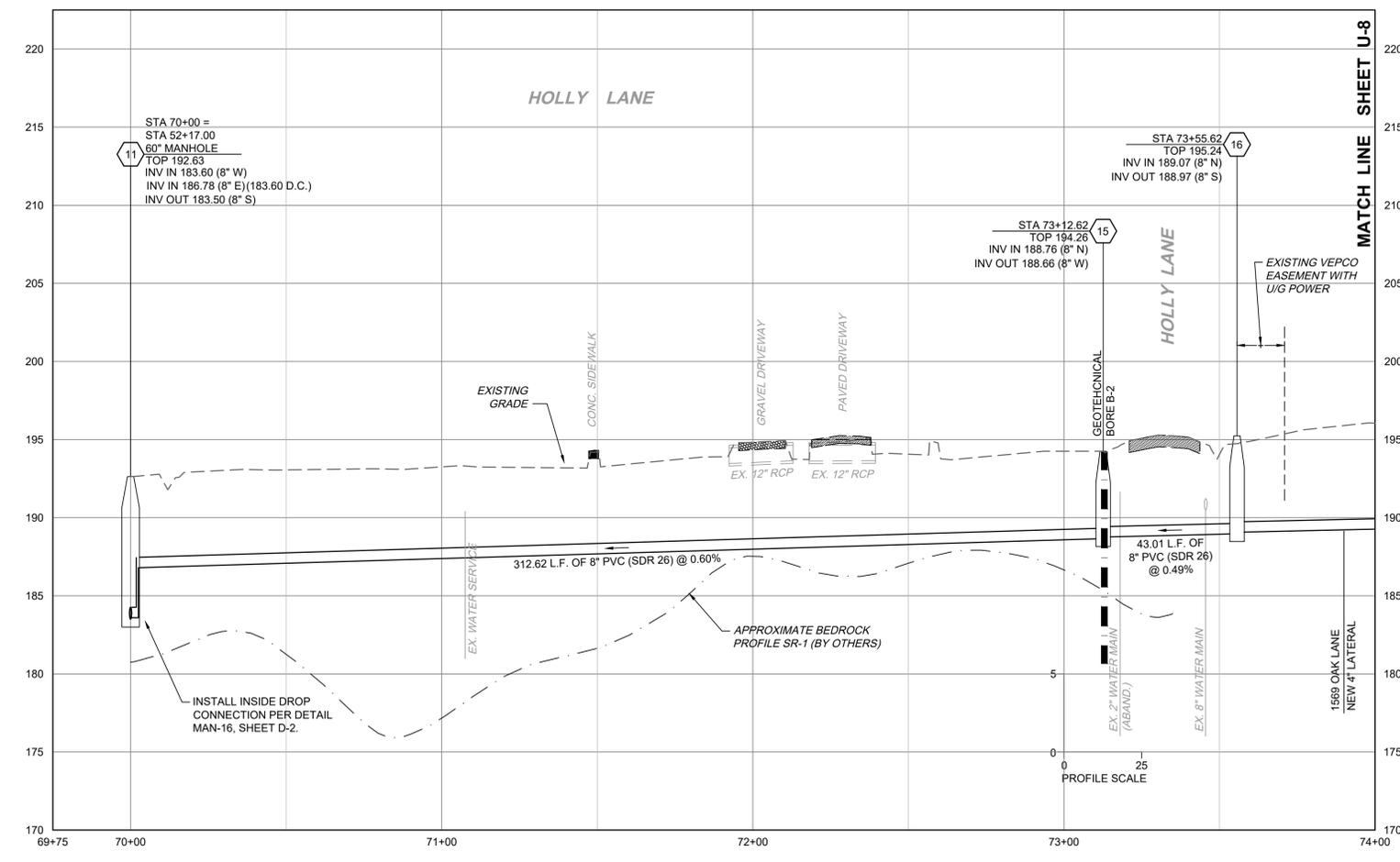
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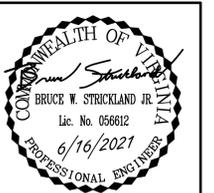
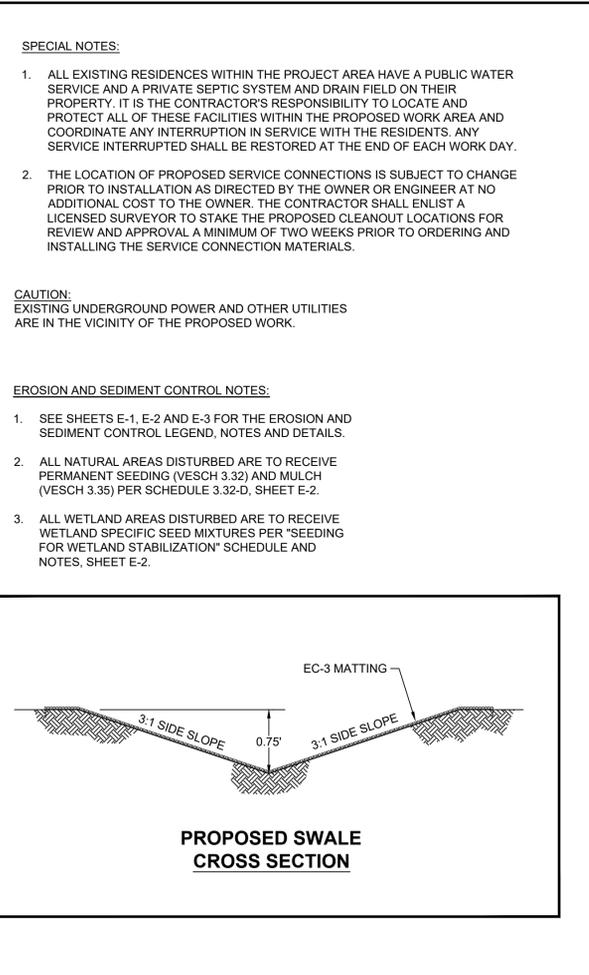
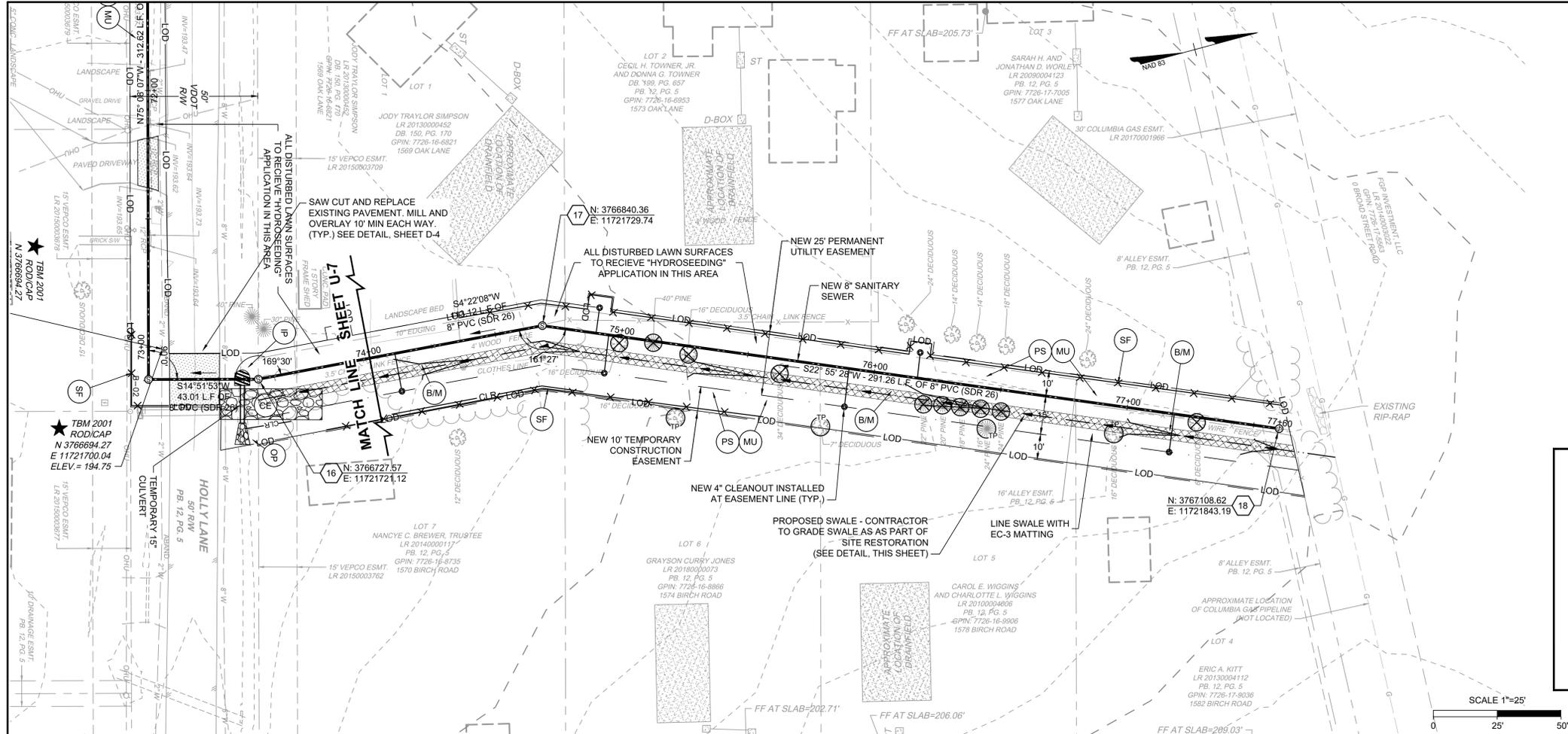
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HICKORY HAVEN PLAN AND PROFILE

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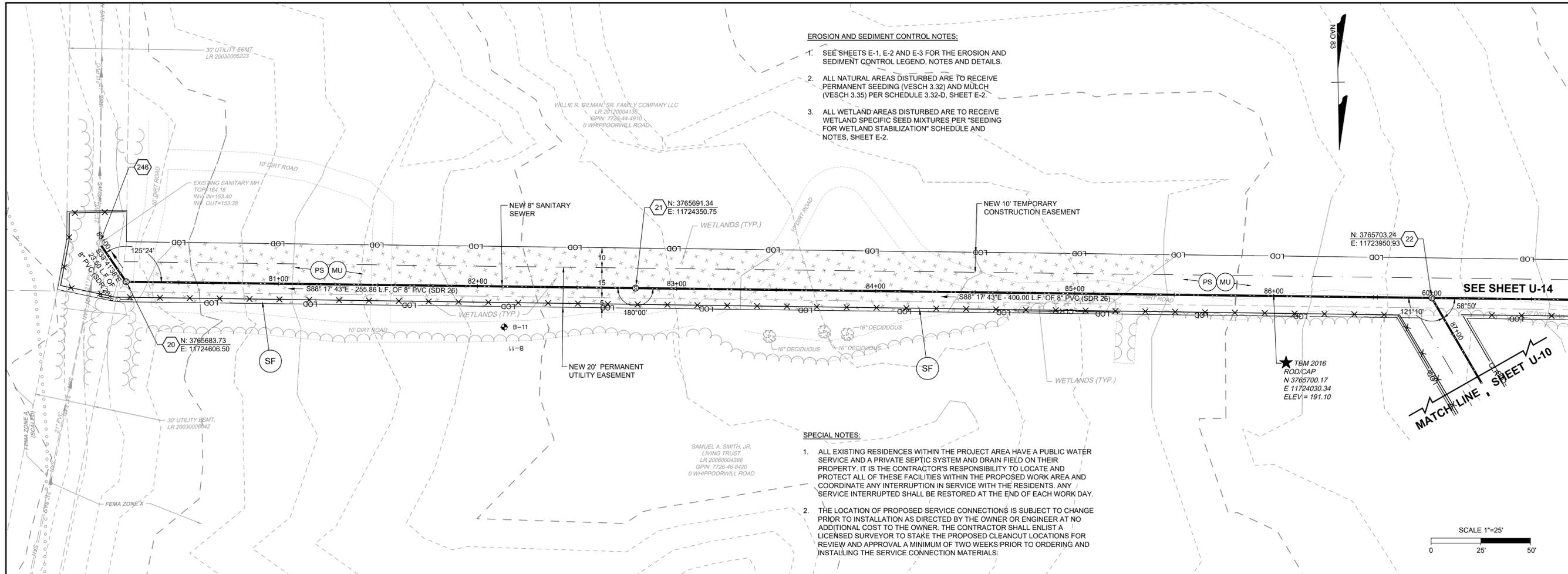
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DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
HICKORY HAVEN PLAN AND PROFILE

JOB NO. 42792
SHEET NO. U-8

L201142792-Hickory Haven_SewerDWGSheetCD42792-HHV-SW-PL-PF-REV.dwg | Plotted on 6/17/2021 11:02 AM | by James Carter

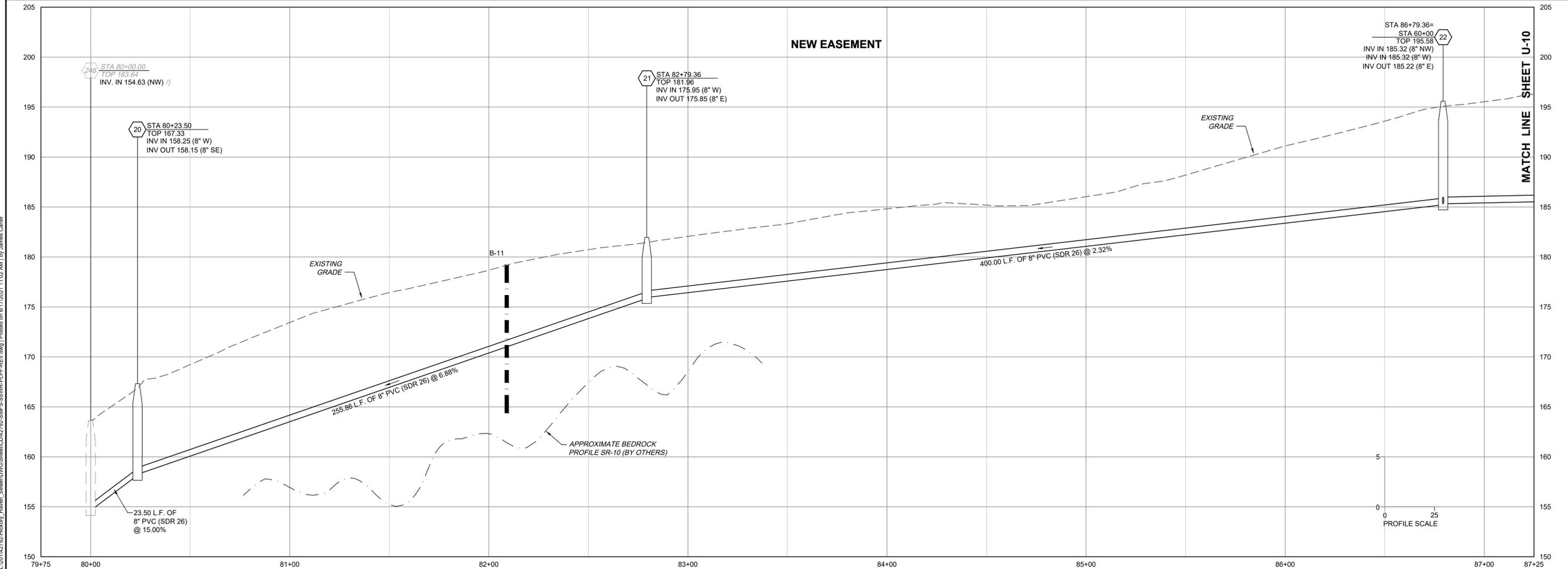


EROSION AND SEDIMENT CONTROL NOTES:

- SEE SHEETS E-1, E-2 AND E-3 FOR THE EROSION AND SEDIMENT CONTROL LEGEND, NOTES AND DETAILS.
- ALL NATURAL AREAS DISTURBED ARE TO RECEIVE PERMANENT SEEDING (VESCH 3.32) AND MULCH (VESCH 3.35) PER SCHEDULE 3.32-D, SHEET E-2.
- ALL WETLAND AREAS DISTURBED ARE TO RECEIVE WETLAND SPECIFIC SEED MIXTURES PER "SEEDING FOR WETLAND STABILIZATION" SCHEDULE AND NOTES, SHEET E-2.

SPECIAL NOTES:

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8/10/2020	REVISED PER VDOT AND COUNTY COMMENTS
6/16/2021	BID SET

DATE: 04/20/2020
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 DESIGNED BY: J. CARTER
 CHECKED BY: B. STRICKLAND
 SCALE:
 H: 1" = 25'
 V: 1" = 5'

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
 SAMARY FOREST PLAN AND PROFILE

JOB NO. 42792
 SHEET NO. U-9

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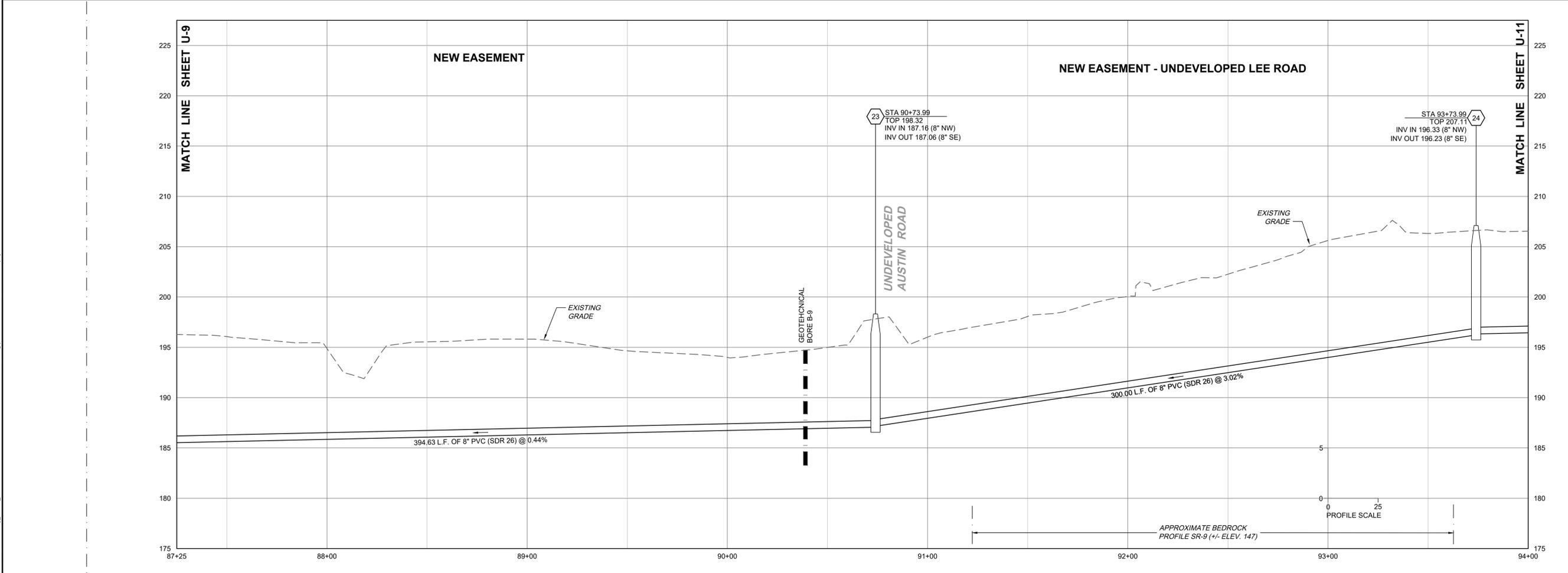
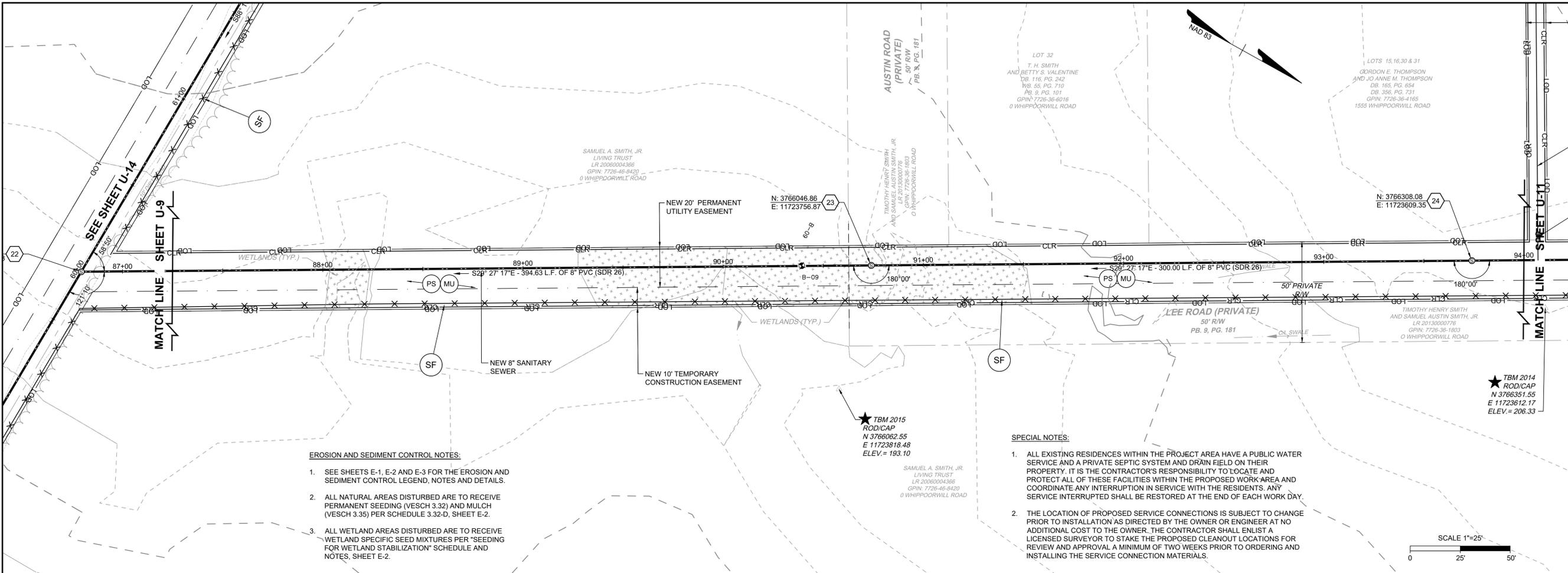
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04/20/2020 <td>REVISED PER VDOT AND COUNTY COMMENTS</td>	REVISED PER VDOT AND COUNTY COMMENTS
6/16/2021 <td>BID SET</td>	BID SET

DATE: 04/20/2020
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 SCALE:
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HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
SAMARY FOREST PLAN AND PROFILE

JOB NO. 42792
 SHEET NO. U-10



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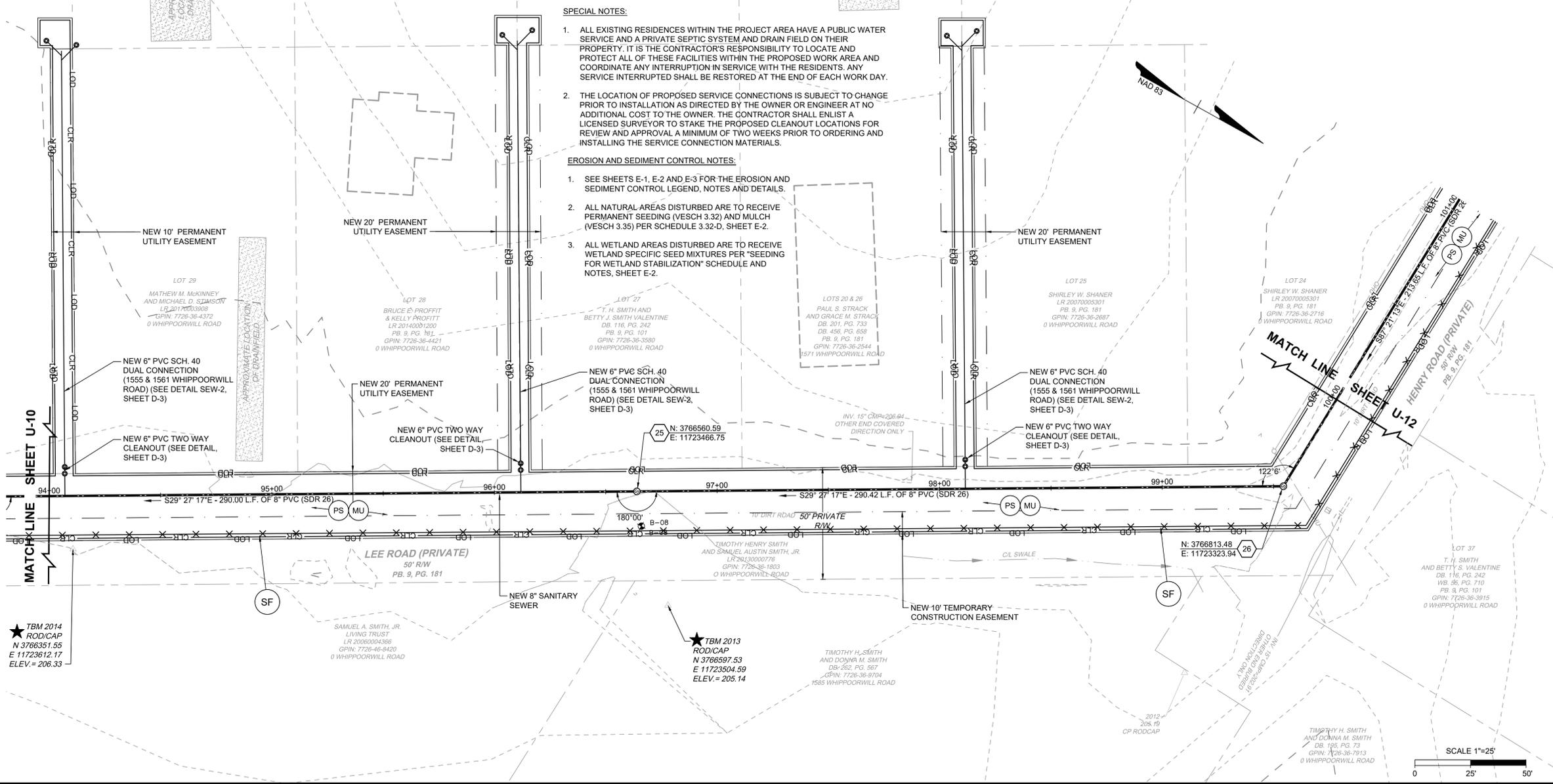
DATE	REVISION DESCRIPTION
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6/16/2021	BID SET

DATE: 04/20/2020
 DRAWN BY: J. CARTER
 DESIGNED BY: J. CARTER
 CHECKED BY: B. STRICKLAND
 SCALE:
 H: 1" = 25'
 V: 1" = 5'

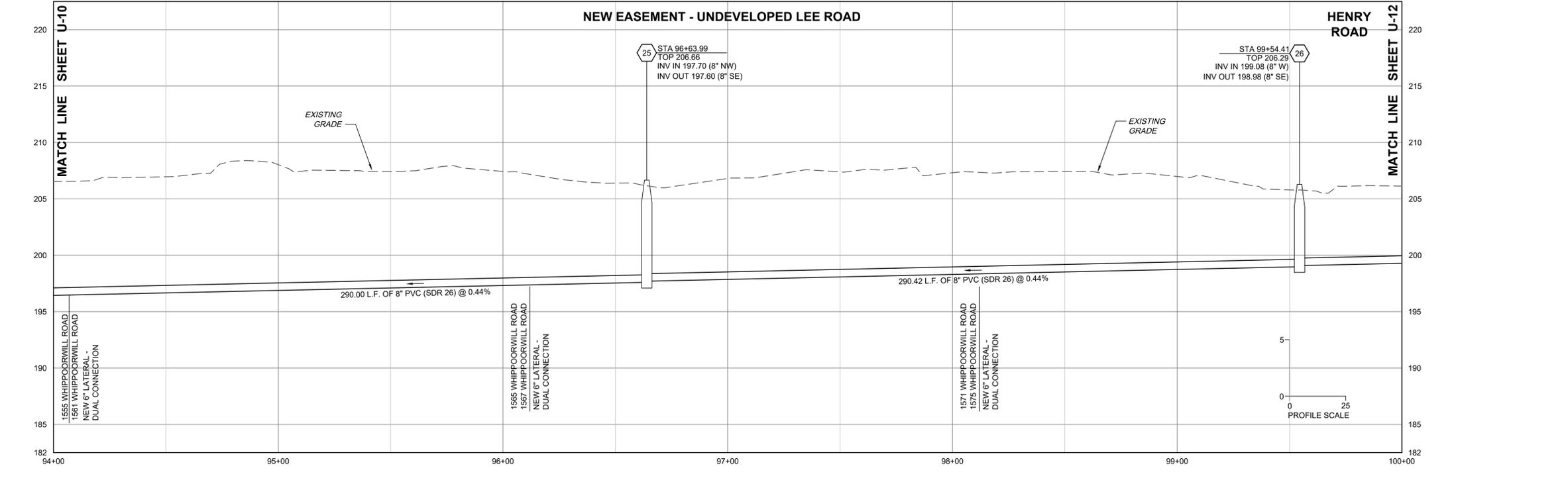
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HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
SAMARY FOREST PLAN AND PROFILE

JOB NO. 42792
 SHEET NO. U-11



- SPECIAL NOTES:**
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- EROSION AND SEDIMENT CONTROL NOTES:**
- SEE SHEETS E-1, E-2 AND E-3 FOR THE EROSION AND SEDIMENT CONTROL LEGEND, NOTES AND DETAILS.
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ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL ENLIST A REGISTERED SURVEYOR TO STAKE THE PROPOSED CLEANOUT LOCATIONS FOR THE SANITARY SEWER AND APPROVAL OF A MINIMUM OF TWO WEEKS PRIOR TO ORDERING AND INSTALLING THE SERVICE CONNECTION MATERIALS.

SHEETS S-1.0 THRU S-2.0 FOR DRAINAGE IMPROVEMENTS AND DETAILS.

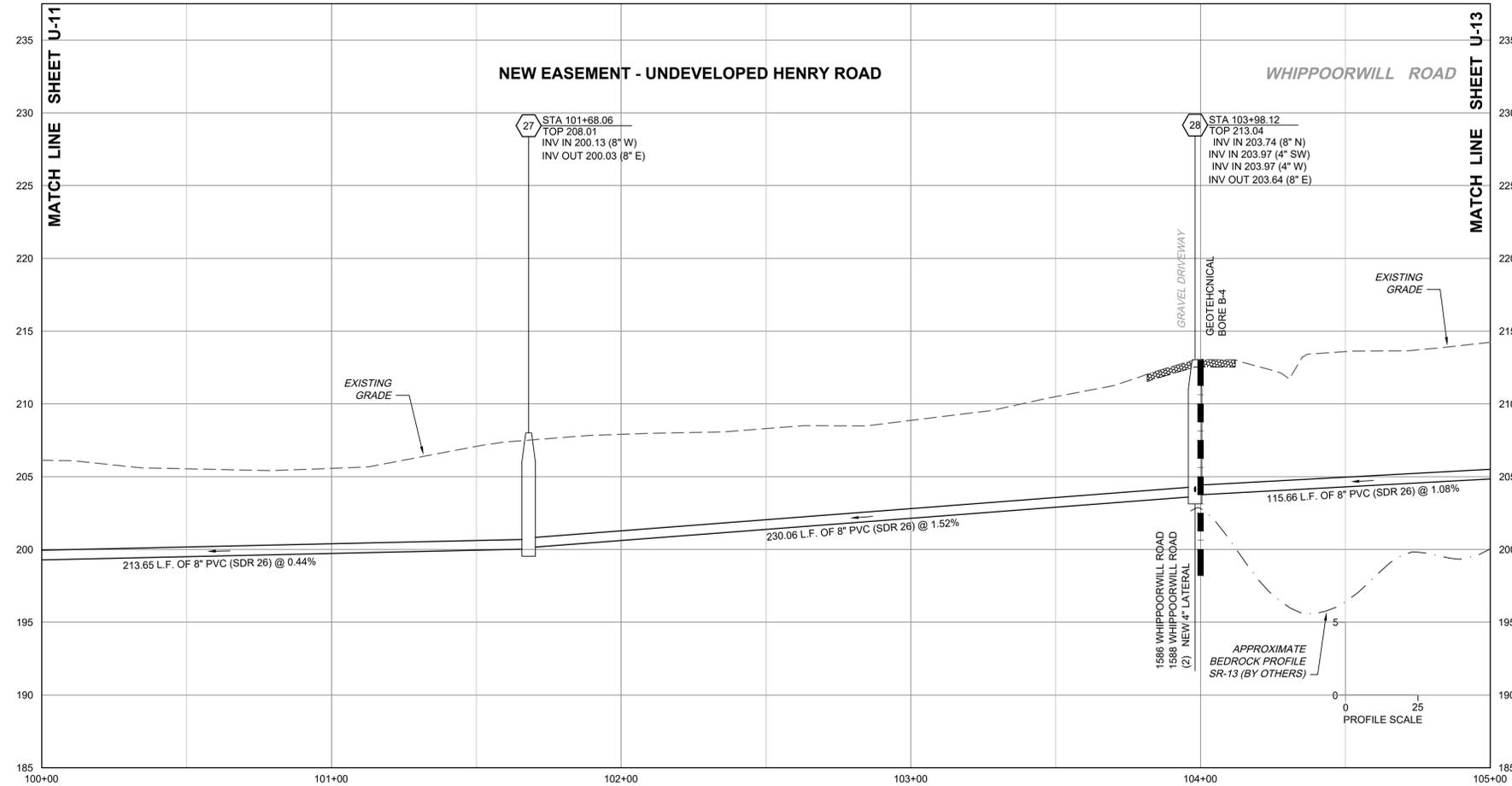
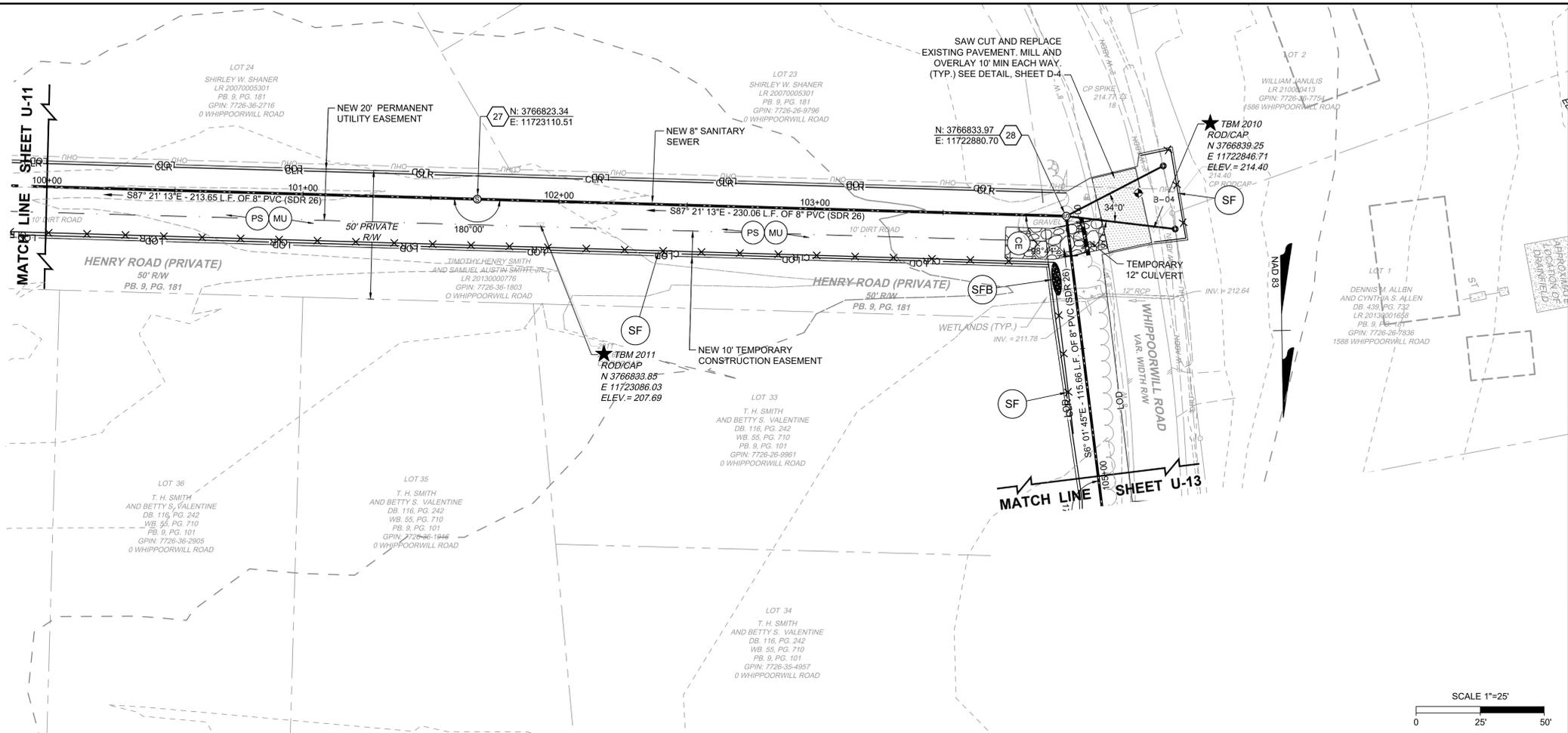
NECESSARY SEWER IMPROVEMENTS ARE TO BE INSTALLED PRIOR TO INSTALLATION OF DRAINAGE IMPROVEMENTS

EXISTING UNDERGROUND POWER AND OTHER UTILITIES ARE IN THE VICINITY OF THE PROPOSED WORK.

CLEANOUT AND LATERAL CONNECTED TO EXISTING MANHOLE 227 FOR HOCKETT ROAD TO BE INSTALLED AS PART OF THIS PROJECT (SEE INSET SHEET U-6)

EROSION AND SEDIMENT CONTROL NOTES:

- SEE SHEETS E-1, E-2 AND E-3 FOR THE EROSION AND SEDIMENT CONTROL LEGEND, NOTES AND DETAILS.
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SCALE:
 H: 1" = 25'
 V: 1" = 5'

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
 SAMARY FOREST PLAN AND PROFILE

JOB NO.	42792
SHEET NO.	U-12

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LOCATION OF PROPOSED SERVICE CONNECTIONS IS SUBJECT TO CHANGE PRIOR TO INSTALLATION AS DIRECTED BY THE OWNER OR ENGINEER AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL ENLIST A REGISTERED SURVEYOR TO STAKE THE PROPOSED CLEANOUT LOCATIONS FOR FIELD AND APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO ORDERING AND INSTALLING THE SERVICE CONNECTION MATERIALS.

SHEETS S-1.0 THRU S-2.0 FOR DRAINAGE IMPROVEMENTS AND DETAILS.

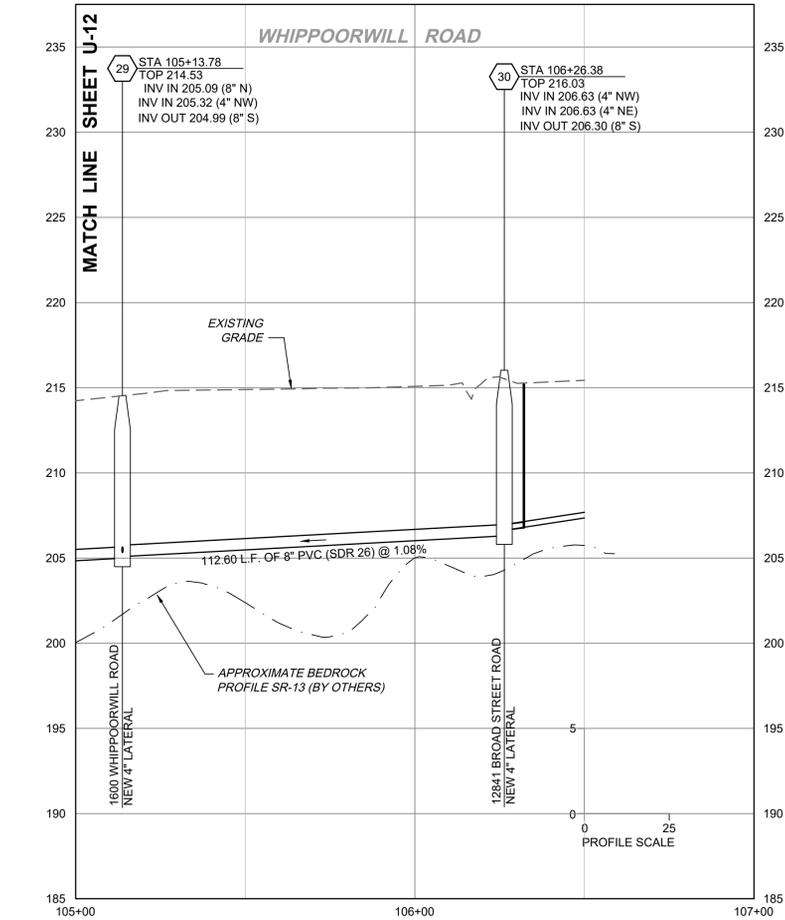
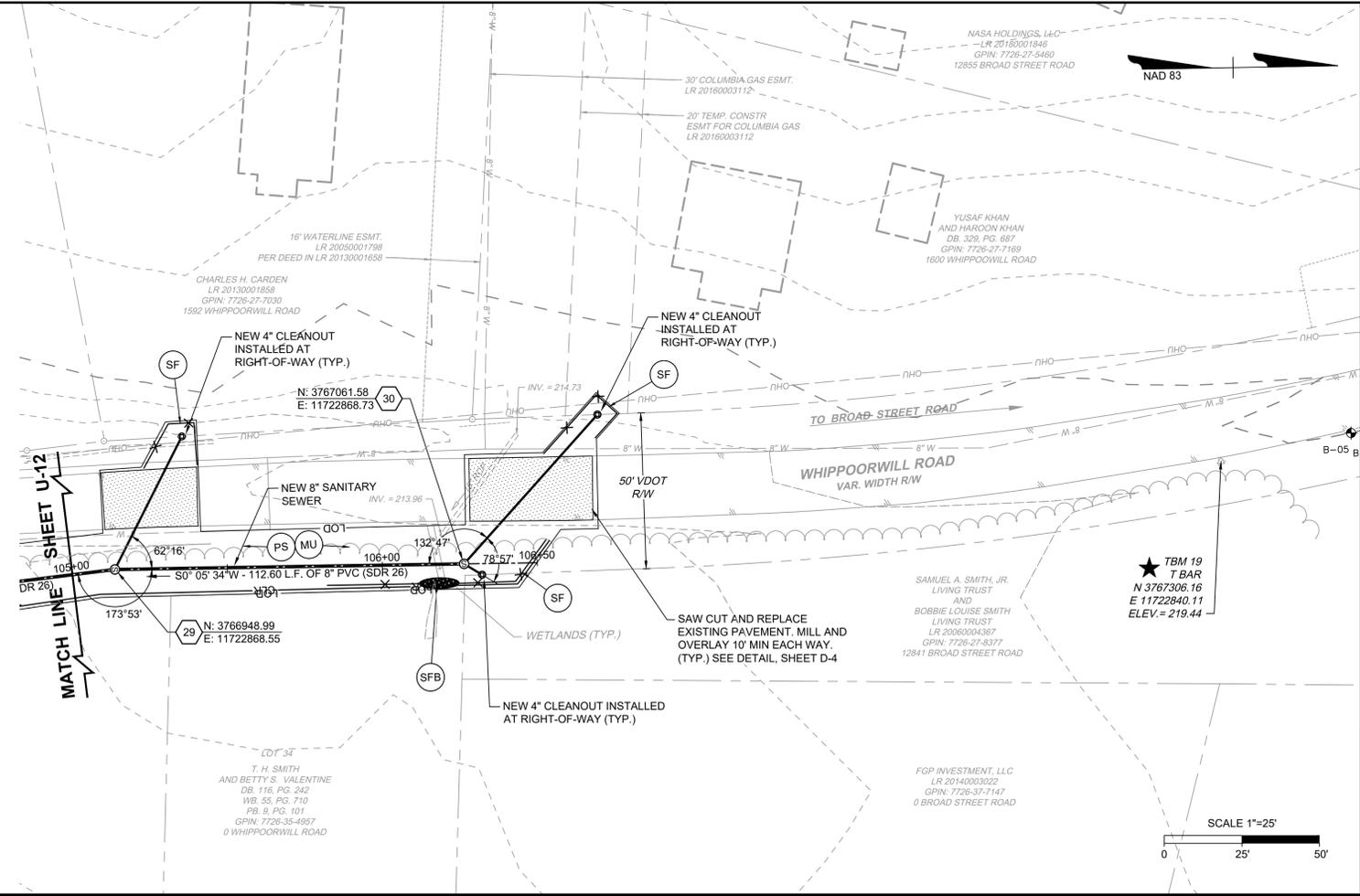
PRIMARY SEWER IMPROVEMENTS ARE TO BE INSTALLED PRIOR TO INSTALLATION OF DRAINAGE IMPROVEMENTS.

EXISTING UNDERGROUND POWER AND OTHER UTILITIES ARE IN THE VICINITY OF PROPOSED WORK.

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6/16/2021	BID SET

DATE	04/20/2020
DRAWN BY	J. CARTER
DESIGNED BY	J. CARTER
CHECKED BY	B. STRICKLAND
SCALE	H: 1" = 25' V: 1" = 5'

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
SAMARY FOREST PLAN AND PROFILE

JOB NO.	42792
SHEET NO.	U-13

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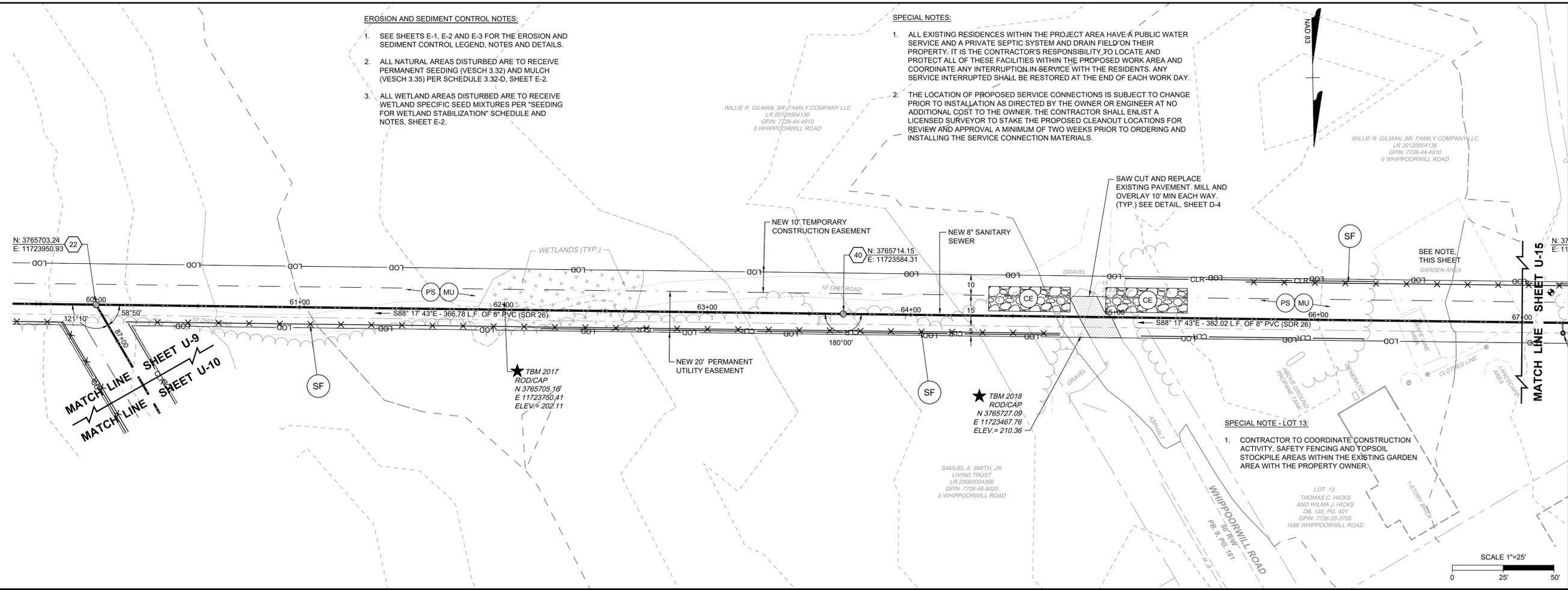


EROSION AND SEDIMENT CONTROL NOTES:

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SPECIAL NOTES:

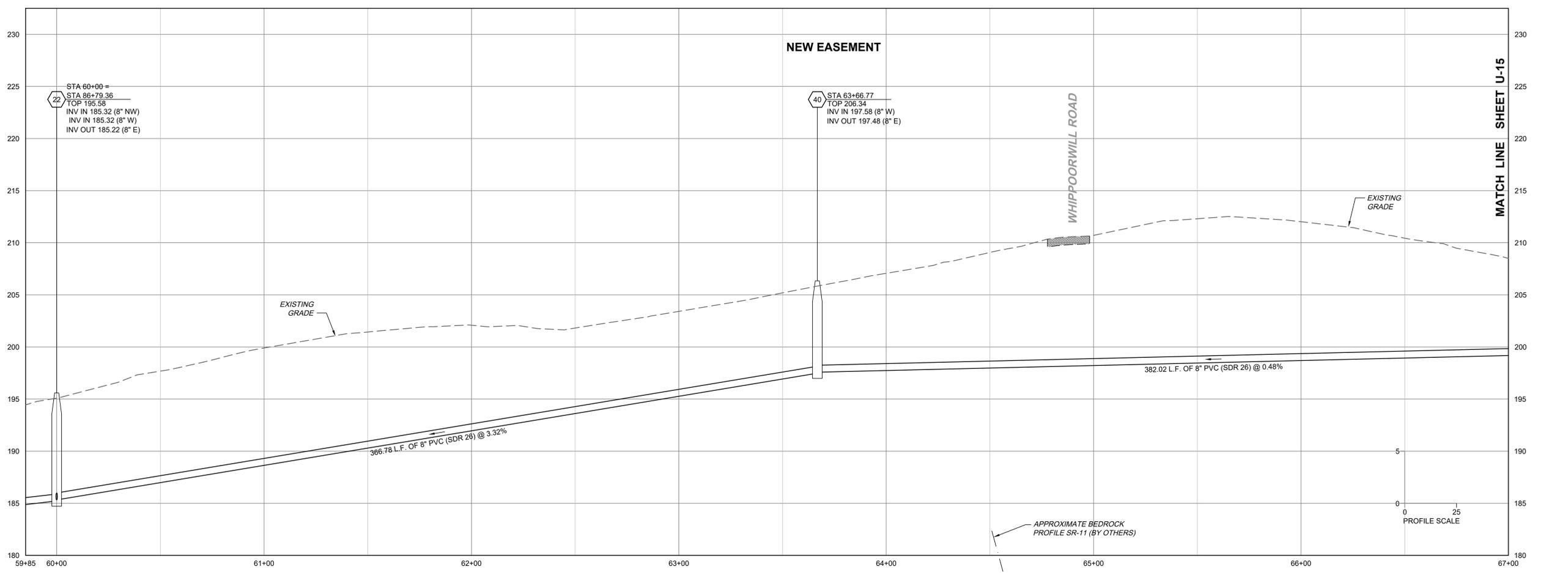
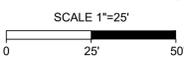
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MATCH LINE SHEET U-9
MATCH LINE SHEET U-10

MATCH LINE SHEET U-15

SPECIAL NOTE - LOT 13:
1. CONTRACTOR TO COORDINATE CONSTRUCTION ACTIVITY, SAFETY FENCING AND TOPSOIL STOCKPILE AREAS WITHIN THE EXISTING GARDEN AREA WITH THE PROPERTY OWNER.



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6/16/2021	BID SET

DATE: 04/20/2020
DRAWN BY: J. CARTER
DESIGNED BY: J. CARTER
CHECKED BY: B. STRICKLAND

SCALE:
H: 1" = 25'
V: 1" = 5'

TIMMONS GROUP

HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
SAMARY FOREST PLAN AND PROFILE

JOB NO. 42792
SHEET NO. U-14

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 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
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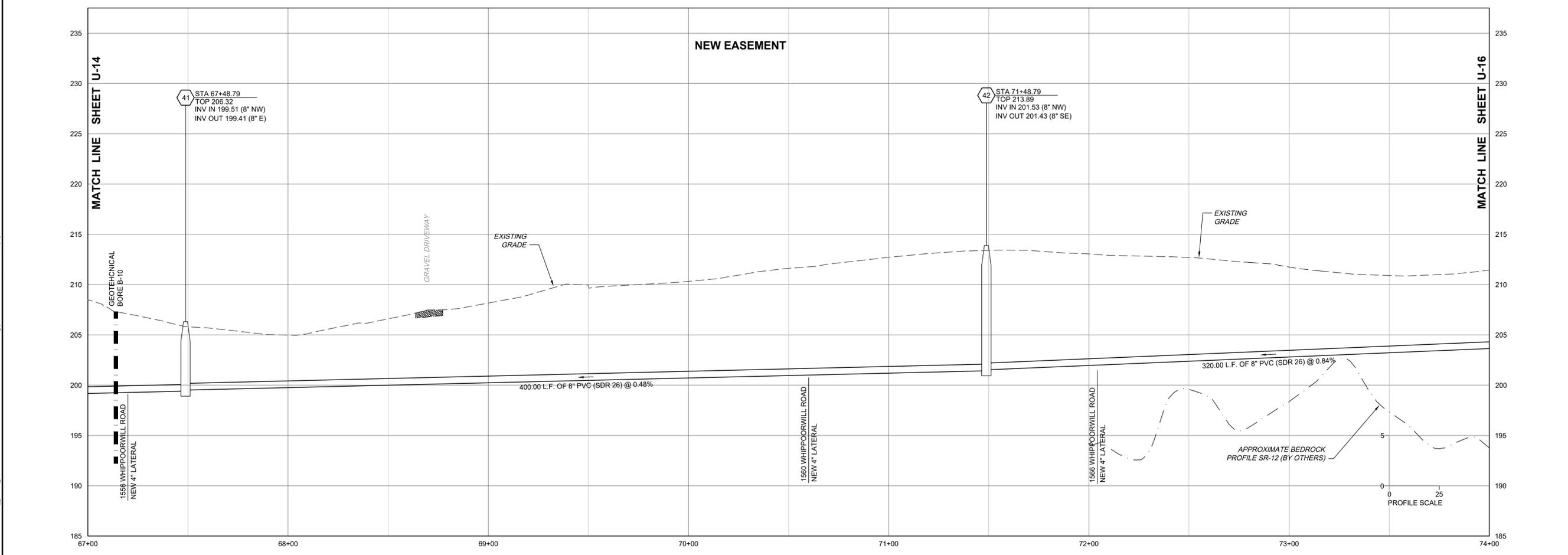
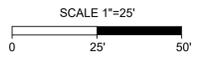
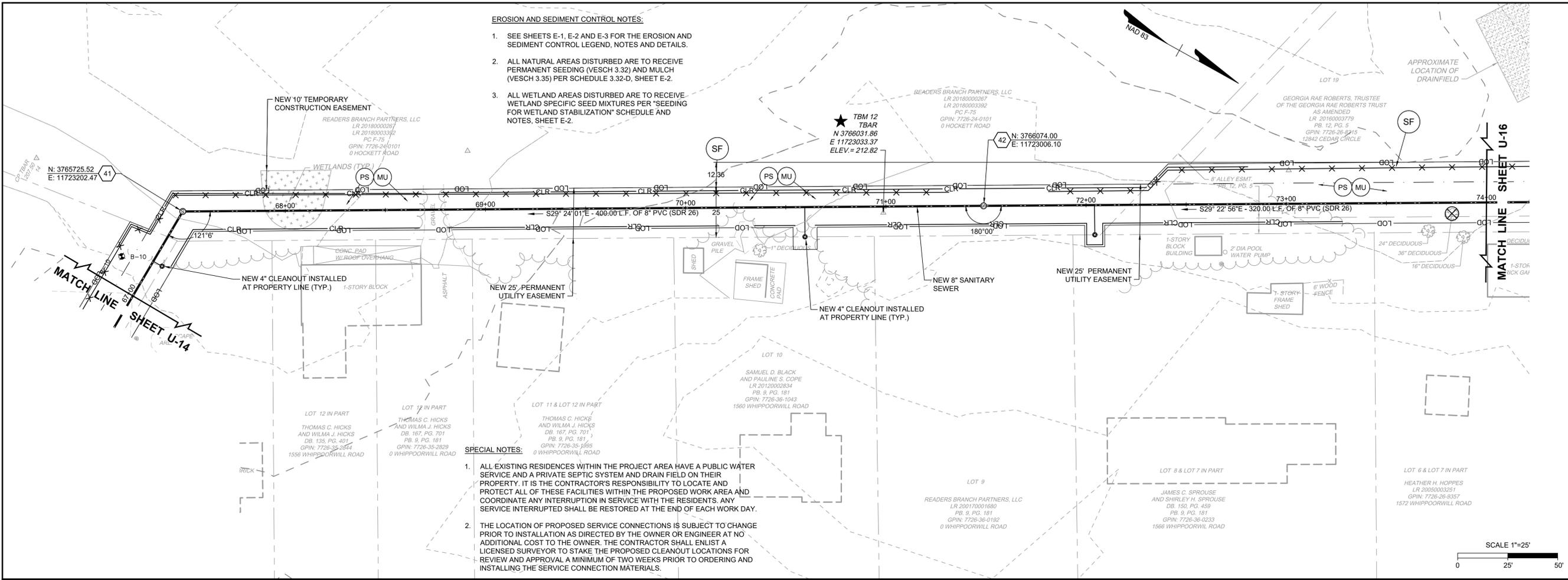
JOB NO. 42792
 SHEET NO. U-15

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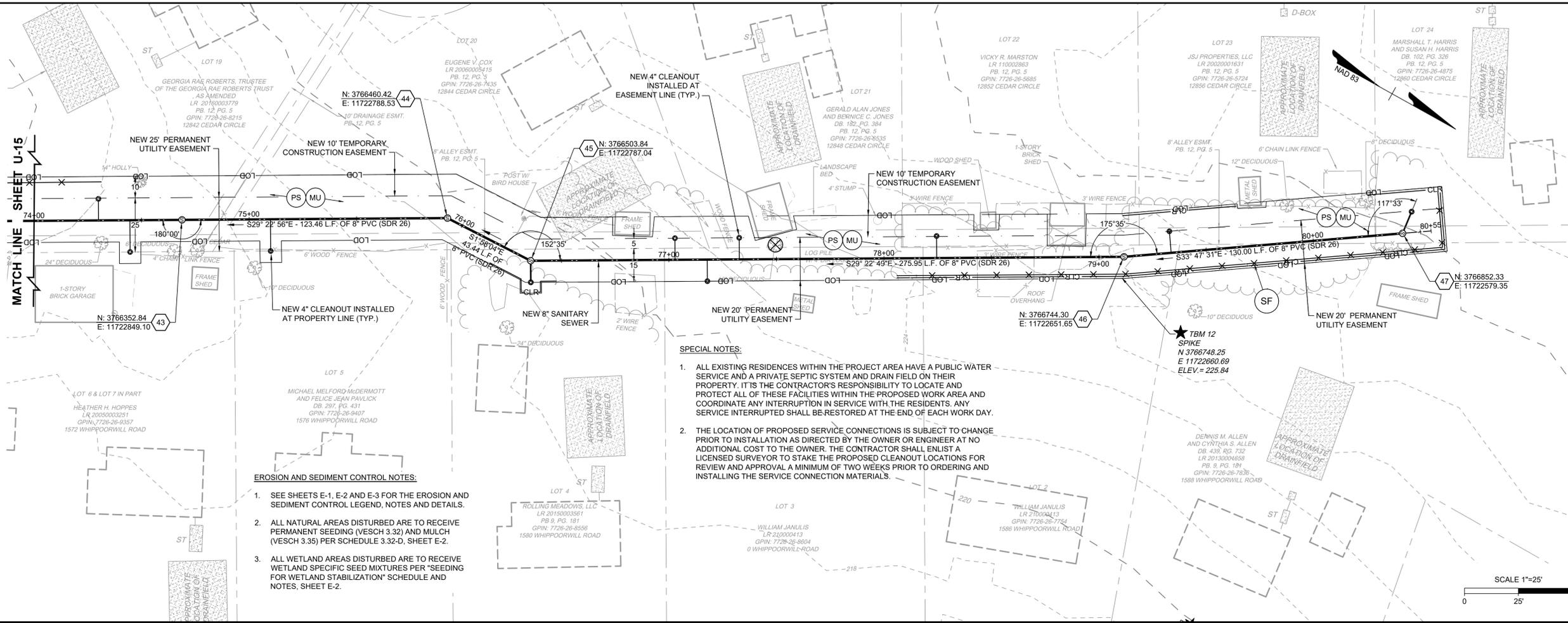
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6/16/2021	BID SET

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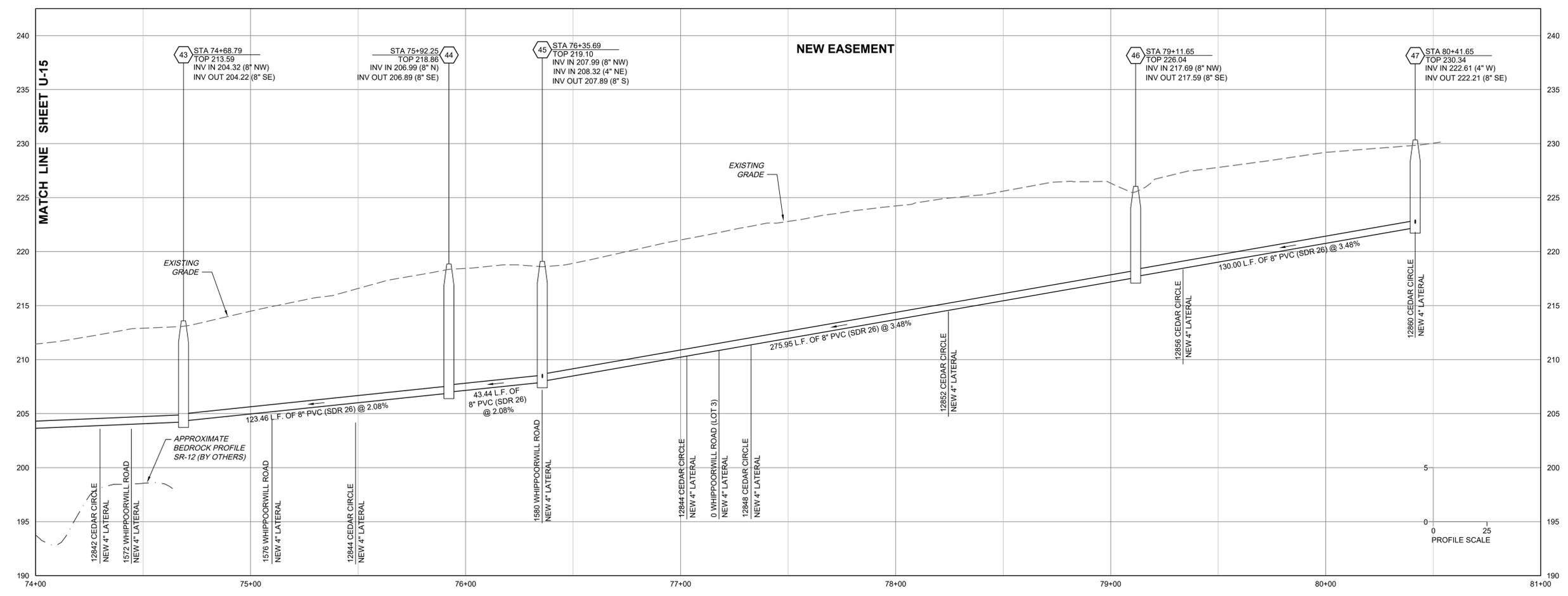
HICKORY HAVEN & SAMARY FOREST SANITARY SEWER
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
SAMARY FOREST PLAN AND PROFILE

JOB NO.	42792
SHEET NO.	U-16

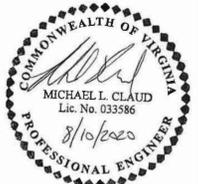


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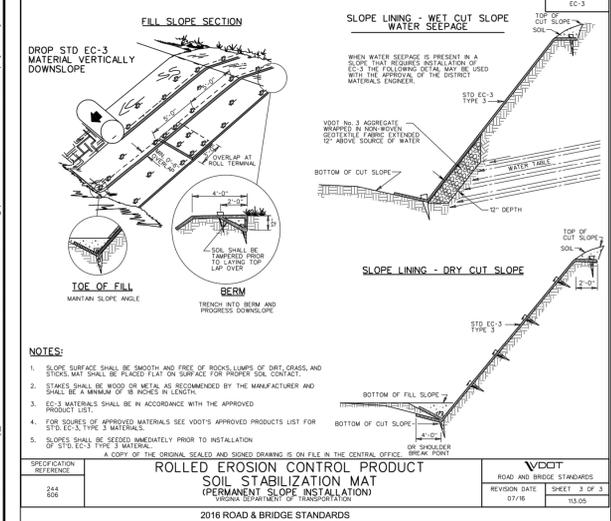
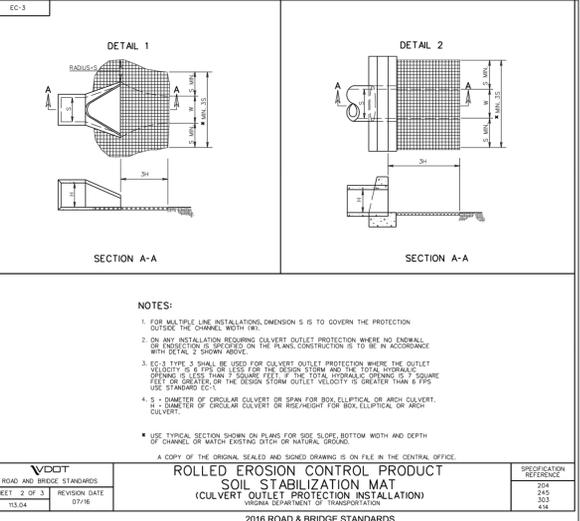
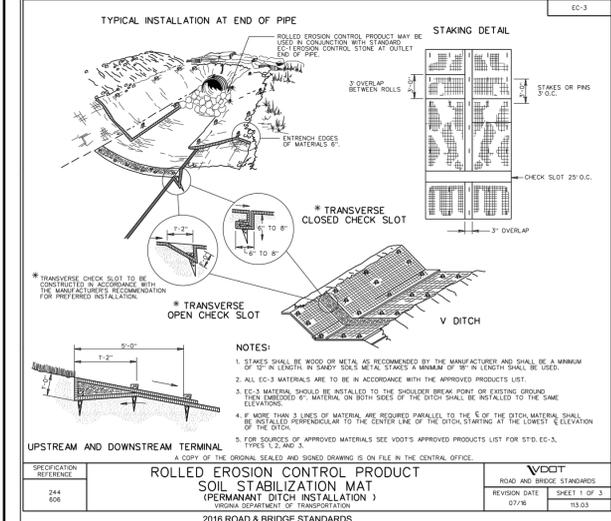
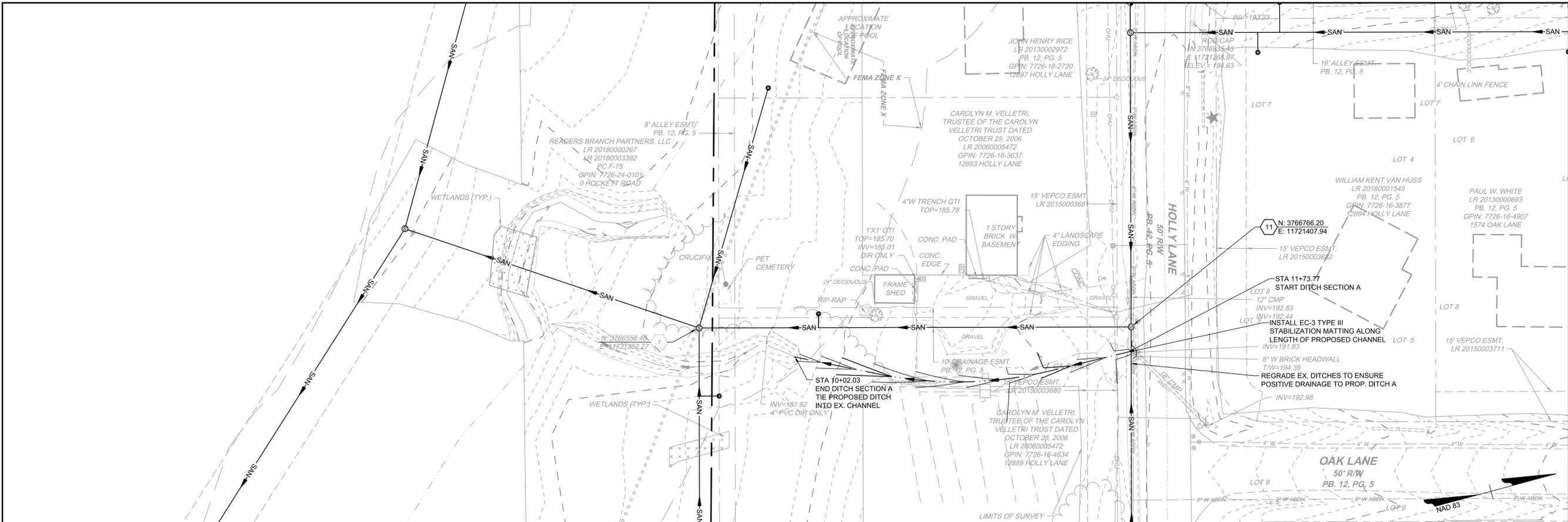
DATE	REVISION DESCRIPTION
8/10/2020	REVISED PER COUNTY AND VDOT COMMENTS
12/02/2020	DITCH ALIGNMENT REVISED ALONG 12889 HOLLY LANE

DATE: 04/20/2020
 DRAWN BY: K. REDMAN
 DESIGNED BY: K. REDMAN
 CHECKED BY: M. CLAUD
 SCALE: H: 1"=25'
 V: 1"=5'

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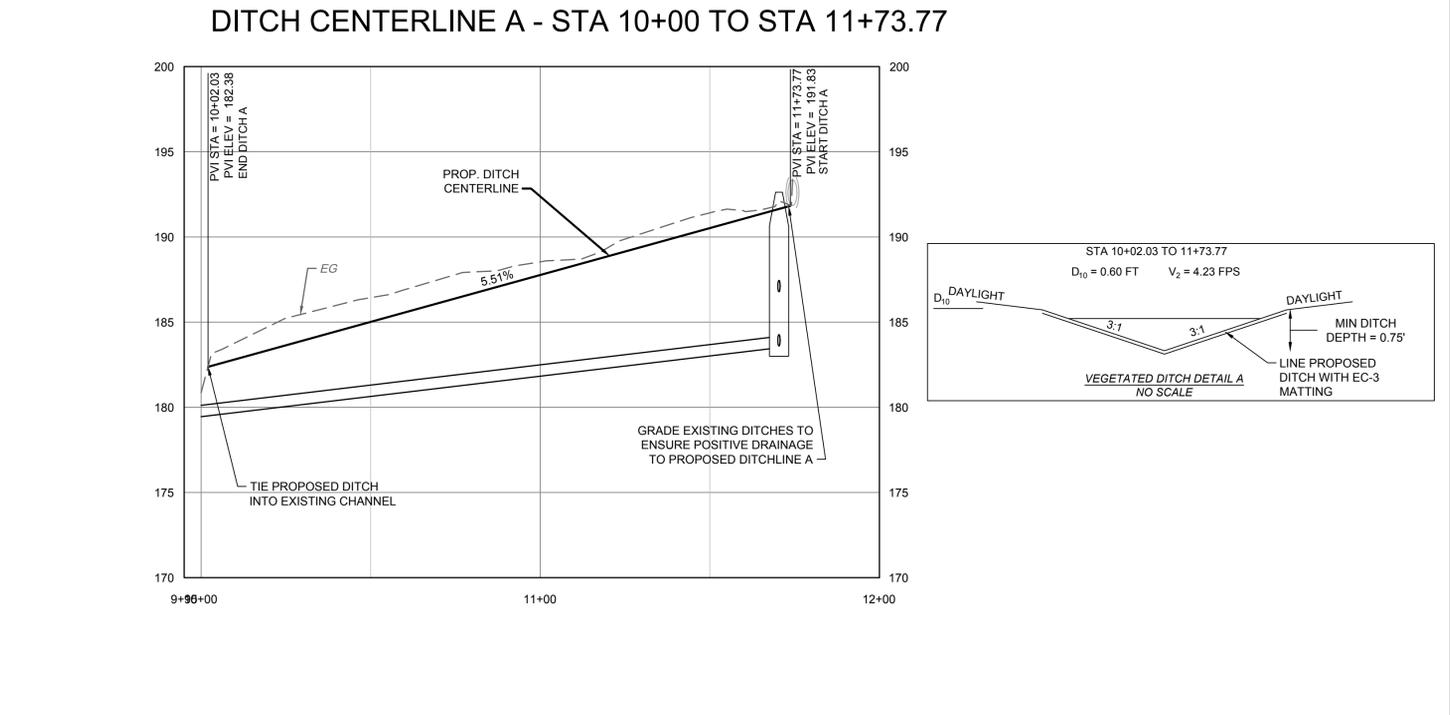
HICKORY HAVEN DRAINAGE IMPROVEMENTS
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
PLAN AND PROFILE - DITCHLINE A

JOB NO. 42792
 SHEET NO. S-1



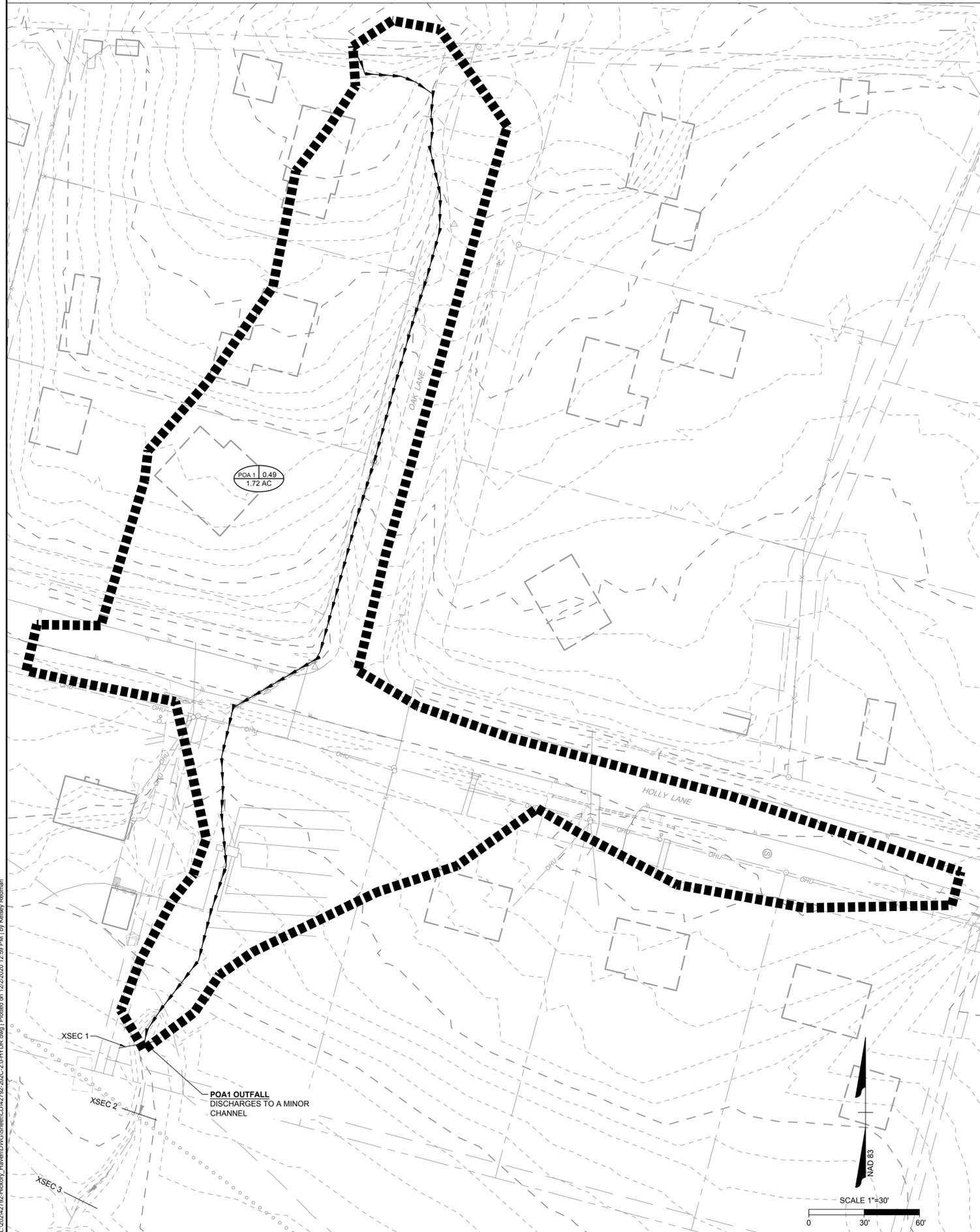
SPECIAL NOTES:

- PROPOSED DITCH DESIGN IS BASED ON 10-YEAR STORM CONTAINMENT AND LINED FOR 2-YEAR EROSION PROTECTION.
- ALL TREES ADJACENT TO PROPOSED DITCHES TO BE KEPT UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- DAYLIGHT PROPOSED DITCHES TO ENSURE POSITIVE DRAINAGE TO DITCH.
- THE CONTINUITY OF DRAINAGE THROUGH EXISTING STRUCTURES MUST BE MAINTAINED DURING CONSTRUCTION.
- ALL CONSTRUCTION IS TO OCCUR WITHIN PROPERTY LINES AND CURRENT OR PROPOSED EASEMENTS AS SHOWN ON THE PLANS.
- REFER TO SHEET U-1 FOR LIMITS OF DISTURBANCE AND EROSION AND SEDIMENT CONTROL REQUIREMENTS.



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DRAINAGE AREA MAP

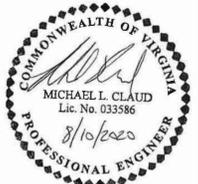


HYDROLOGY CALCULATIONS - RATIONAL METHOD

Drainage Area ID:	POA1	By:	K. REDMAN	
Land Cover	C-factor	Area (sf)	Area (ac)	C*A
Paved	0.90	24963	0.57	0.52
Lawn	0.30	30536	0.70	0.21
Forest	0.25	19427	0.45	0.11
Cultivated Areas	0.60	0	0.00	0.00
			0.00	0.00
			Total Area (ac)	Total C-factor
			1.72	0.49

Time of Concentration:	
Overland:	
Length =	56.00 ft
Slope =	8.71 %
C-factor =	0.30
Tc =	6.5 minutes
Concentrated:	
Length =	563 ft
H =	33 ft
Tc =	3.2 minutes
Total Tc =	9.70 minutes

I ₂ =	4.30	Q ₂ =	3.60 cfs	
I ₁₀ =	5.76	Q ₁₀ =	4.83 cfs	
I ₂₅ =	6.49	Q ₂₅ =	5.44 cfs	
I ₅₀ =	6.94	Q ₅₀ =	5.81 cfs	
I ₁₀₀ =	7.29	Q ₁₀₀ =	6.10 cfs	
SpreadCalcs	I _{SPREAD} =	4.3	Q _{SPREAD} =	3.60 cfs



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YOUR VISION ACHIEVED THROUGH OURS.

DATE: 04/20/2020
 DRAWN BY: K. REDMAN
 DESIGNED BY: K. REDMAN
 CHECKED BY: M. CLAUD
 SCALE: 1"=30'

TIMMONS GROUP

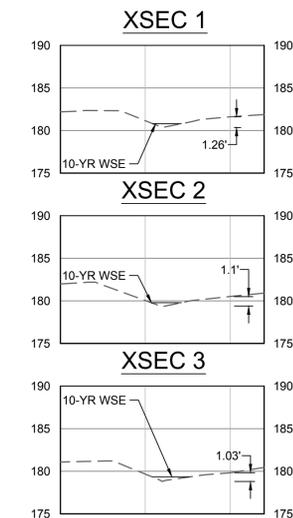
HICKORY HAVEN DRAINAGE IMPROVEMENTS
 DISTRICT 4 - GOOCHLAND COUNTY - VIRGINIA
 DRAINAGE AREA MAP AND CALCULATIONS

JOB NO. 42792
 SHEET NO. S-2

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FLOOD PROTECTION COMPLIANCE CROSS SECTIONS

POA1
 Q10 = 4.83 CFS
 (10-YR DEPTH**, D10 = 0.55 FT
 2-YR VELOCITY**, V2 = 5.30 FPS)



**NOTE: HIGHEST DEPTH AND VELOCITY CALCULATED THROUGH ALL SECTIONS