GOVERNMENT ROAD GREEN STREET FULTON HILL

Project Summary:

THIS PROJECT IS A GREEN STREET RETROFIT THAT WILL CONVERT IMPERVIOUS AREA TO COMPOST AMENDED CONSERVATION LANDSCAPES, INSTALL THREE RAIN GARDENS, AND CONVERT IMPERVIOUS SURFACE TO PERMEABLE PAVEMENT..

ESC Quantities:

SAFETY FENCE (3.01) - 1,254 LF SILT FENCE (3.05) - 932 LF INLET PROTECTION (3.07) - 3 EA

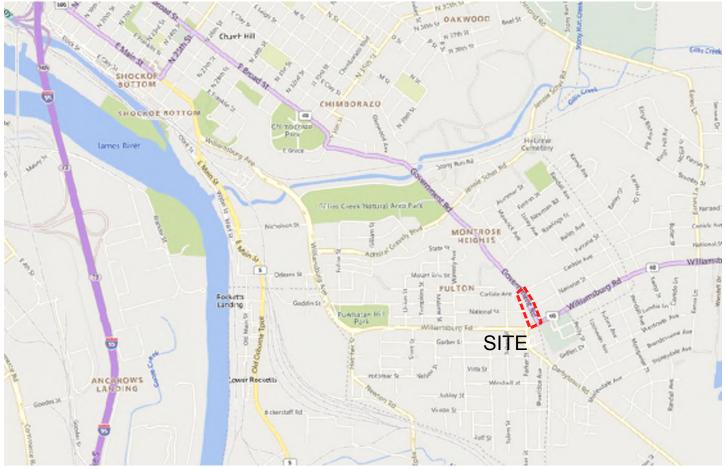
Permits Required:

1. LDIS

2. STORM DRAIN PERMIT 3. WORK-IN-STREET

Abbreviations:

&	AND	Е	EAST	OA	OVERALL
@	AT	ELEC	ELECTRICAL	OPP	OPPOSITE
<	CENTERLINE	EL.	ELEVATION	PTD	PAINTED
~	DIAMETER OR ROUND	EQ.	EQUAL	PWD	PLYWOOD
#	NUMBER	EX.	EXISTING	PVC	POLYVINYL CHLORIDE
>	PROPERTY LINE	EXP.	EXPANSION	PSF	POUNDS PER SQUARE FOOT
		E.J.	EXPANSION JOINT	PSI	POUNDS PER SQUARE INCH
ABV.	ABOVE	FT	FEET OR FOOT	P.I.P.C.	POURED IN PLACE CONCRETE
ALUM.	ALUMINUM	FF	FINISH FLOOR	P.C.C.	PRECAST CONCRETE
	APPROXIMATE	FIN	FINISH (ED)	PT	PRESSURE TREATED
ASPH.	ASPHALT	FTG	FOOTING	PVMT.	PAVEMENT
BD.	BOARD	F.O.C.	FACE OF CURB	RAD	RADIUS
BEL.	BELOW	GA	GAUGE	RCP	REINFORCED CONCRETE PIPE
BITUM.	BITUMINOUS	GALV.	GALVANIZED	REF	REFERENCE
BLDG.	BUILDING	GC	GENERAL CONTRACTOR	REINF	REINFORC (ED) (ING)
B.O.C.	BACK OF CURB	HT	HEIGHT	RND.	ROUND
BRK.	BRICK	HP	HIGH POINT	SCH.	SCHEDULE
BS	BOTTOM OF STEP	HORIZ	HORIZONTAL	SECT.	SECTION
B/T	BETWEEN	HB	HOSE BIB	SIM	SIMILAR
BW	BOTTOM OF WALL	INCL.	INCLUDE (D) (ING)	SD	STORM DRAIN
C.B.	CATCH BASIN	I.D.	INSIDE DIAMETER	S	SOUTH
C.E.J.	CAULKED EXPANSION JOINT	INV	INVERT	SFCMU	SPLIT FACE CONC. MASONRY UNIT
CF	CUBIC FEET	JT	JOINT	SPEC.	SPECIFICATION (S)
C.I.P.C.	CAST IN PLACE CONCRETE	LF	LINEAR FOOT	SQ.	SQUARE
C.I.	CAST IRON	LP	LOW POINT	S.S.	STAINLESS STEEL
CO	CLEAN OUT	MH	MANHOLE	S.S. STD.	STANDARD
COL.	COLUMN	MFR.	MANUFACTURE (R)	STD. ST	STEEL
CONTR.	CONTRACTOR	MAS	MASONRY	THK	THICK
C.J.	CONTROL JOINT	MTL	METAL	T&G	TONGUE AND GROOVE
CLR.	CLEAR	MAX	MAXIMUM	T.O.C.	TOP OF CURB
CONC.	CONCRETE	MED	MEDIUM	T.O.O. TS	TOP OF STEP
CMU	CONC. MASONRY UNIT	MTL	METAL	T.O.W.	TOP OF WALL
	CONSTRUCTION	MIN	MINIMUM	TYP.	TYPICAL
CONT.	CONTINUOUS	MISC	MISCELLANEOUS	U.O.N.	UNLESS OTHERWISE NOTED
CTR.	CENTER	NO.	NUMBER	V.I.F.	VERIFY IN FIELD
CY	CUBIC YARD	NOM	NOMINAL	VERT.	VERTICAL
DET	DETAIL	N	NORTH	W/	WITH
DIA	DIAMETER	N.I.C.	NOT IN CONTRACT	W/O	WITHOUT
DIM	DIMENSION	N.T.S.	NOT TO SCALE	WD.	WOOD
DWG	DRAWING	0/C	ON CENTER	WWF	WELDED WIRE FABRIC
EA.	EACH	0,C 0.D.	OUTSIDE DIAMETER	****	
LA.		0.0.			



VICINITY MAP

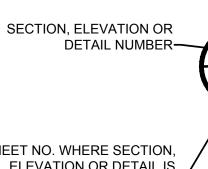


SHEET NO.	SHEET TITLE
C0.00	COVER SHEET
C1.02	COMPILED EXISTING CONDITIONS
C1.10	DEMOLITION PLAN
C2.00	EROSION & SEDIMENT CONTROL PLAN PH1
C2.01	EROSION & SEDIMENT CONTROL PLAN PH2
C2.10	EROSION & SEDIMENT CONTROL NOTES
C2.11	EROSION & SEDIMENT CONTROL DETAILS
C3.00	SITE LAYOUT & MATERIALS PLAN
C5.00	GRADING AND DRAINAGE PLAN
C5.10	DRAINAGE PROFILE & SCHEDULE
C7.00	SITE DETAILS
C7.20	STORM DRAIN DETAILS
C8.00	DRAINAGE AREA MAP
L3.00	ILLUSTRATIVE SECTIONS
L5.00	PLANTING PLAN OVERVIEW
L5.11	PLANTING ENLARGEMENTS
L5.12	PLANTING ENLARGMENTS
L5.20	PLANTING DETAILS & SCHEDULE

Site Data:

- 1. OWNER / DEVELOPER: CITY OF RICHMOND, DEPARTMENT OF PUBLIC UTILITIES C/O BILL BOSTON, CAPITAL IMPROVEMENT PROGRAM MANAGER 900 E. BROAD ST., RICHMOND, VA 23219 P: (804) 646-8161 E: WILLIAM.BOSTON2@RVA.GOV
- 2. ENGINEER: VHB, C/O CHARLENE HARPER, PE 5701 GROVE AVE, RICHMOND, VA 23226 P: (804) 340-7500 E: CHARPER@VHB.COM
- 3. <u>PARCEL ID(S):</u> XX
- 4. ADDRESSES: XX
- 5. <u>ZONING</u>: XX
- USE: 6. EXISTING: COMMERCIAL & PUBLIC ROAD R.O.W. PROPOSED: COMMERCIAL & PUBLIC ROAD R.O..W.
- 7. AREAS: PROJECT AREA: 0.50 ACRES (PUBLIC R/W) 0.02 ACRES (PRIVATE)
- 8. UTILITIES: WATER: CITY OF RICHMOND SANITARY: CITY OF RICHMOND GAS: CITY OF RICHMOND ELECTRIC: DOMINION POWER
- 9. SURVEY:

Symbol Legend:



SHEET NO. WHERE SECTION, ELEVATION OR DETAIL IS DRAWN-

General Notes:

- DISCREPANCIES TO THE ENGINEER OF RECORD.

NORTH 1" = 2,000'

COMBINATION OF FIELD SURVEY BY NYFELER ASSOCIATES & CITY GIS RECORD DATA

-1 C2.01	ENLARGED PLAN OR PLAN DETAIL	? C1.00
	DETAIL TITLE	DETAIL NAME SCALE:
	REVISION CLOUD	

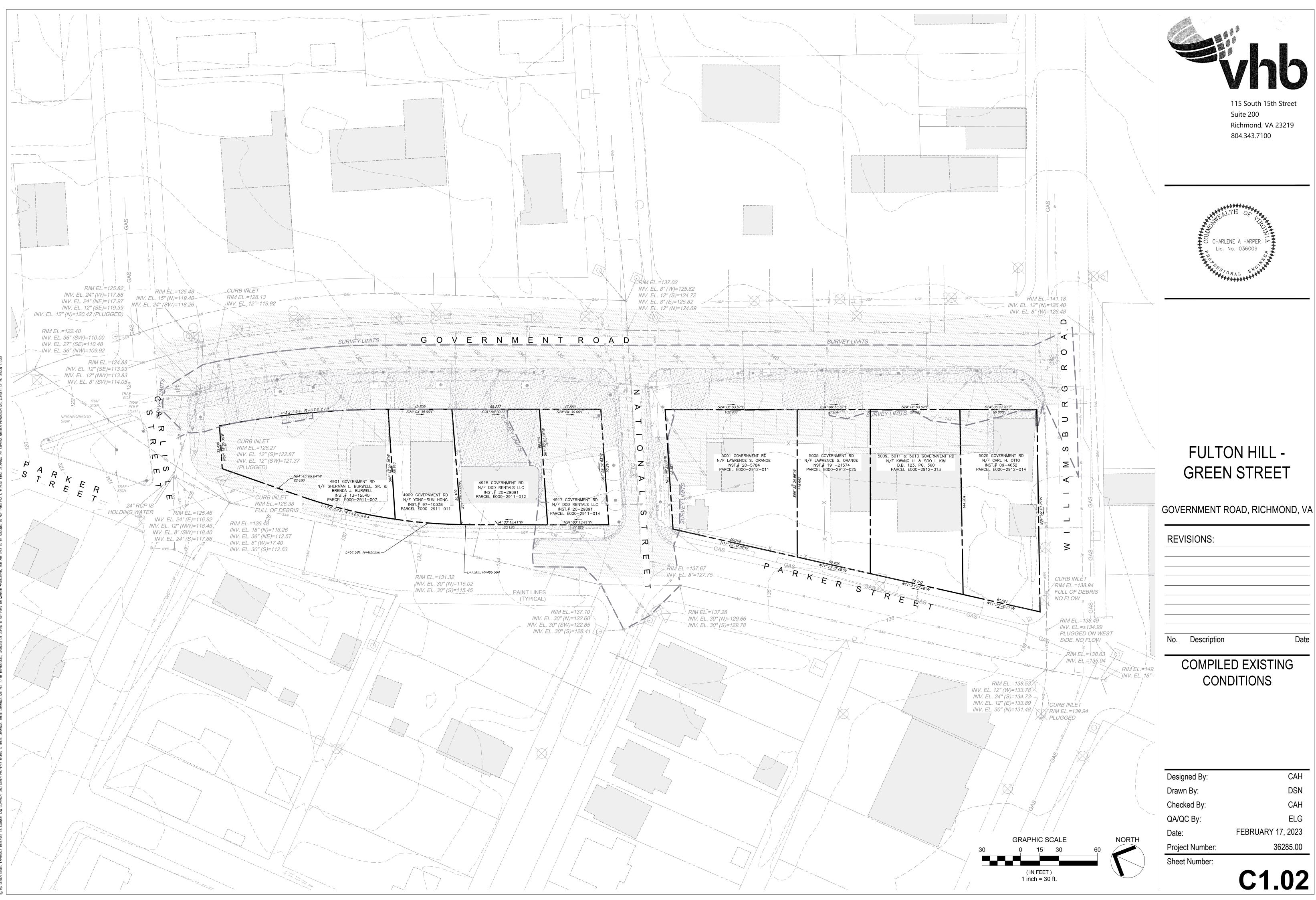
1. CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 811 AND HAVE ALL UNDERGROUND UTILITIES MARKED PRIOR TO ANY LAND DISTURBANCE OPERATIONS. IN ADDITION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE ALL PRIVATE UNDERGROUND UTILITIES MARKED PRIOR TO ANY DEMOLITION OR LAND DISTURBANCE OPERATIONS.

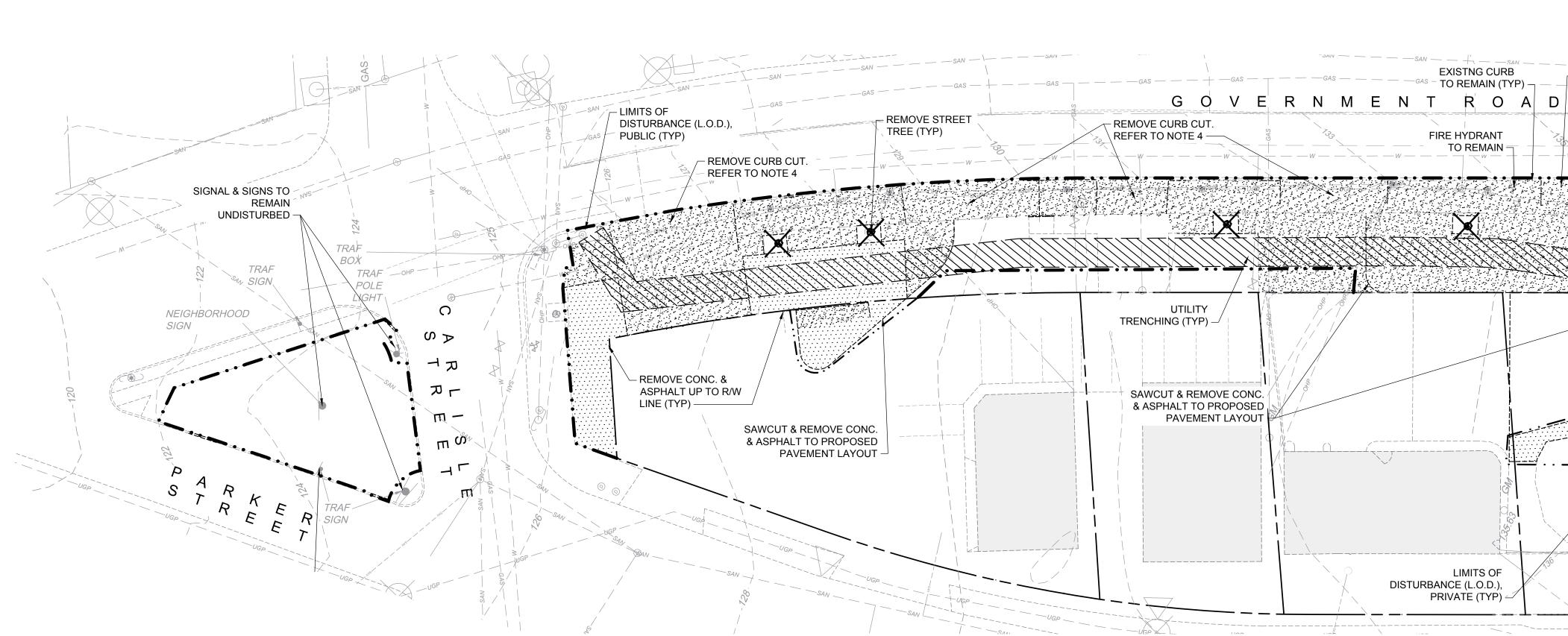
2. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS AT JOB SITE AND REPORT ALL

3. LAYOUT - CONTRACTOR SHALL VERIFY ALL LAYOUT DATA PROVIDED. CONTRACTOR SHALL NOTIFY HG OF ANY DISCREPANCIES. NOTIFY HG DESIGN STUDIO AT THE COMPLETION OF FIELD STAKING FOR REVIEW AND COORDINATION.

Approval:



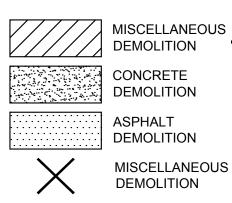




DEMOLITION NOTES

- 1. REFER TO EROSION AND SEDIMENT CONTROL PLANS FOR SEQUENCE OF CONSTRUCTION.
- 2. DEMOLITION CANNOT COMMENCE UNTIL ALL PRELIMINARY E&S MEASURES ARE
- IN PLACE, AND APPROVED BY THE ENVIRONMENTAL INSPECTOR. 3. ITEMS INDICATED ON THE PLAN REPRESENT GENERAL EXTENT OF DEMOLITION. DEMOLISH ALL ELEMENTS WITHIN THE LIMITS OF DISTURBANCE TO THE EXTENT
- NECESSARY TO ACCOMMODATE PROPOSED IMPROVEMENTS AND PROVIDE SMOOTH TRANSITIONS BETWEEN EXISTING AND PROPOSED ELEMENTS.
- 4. PROPERTIES WILL CONTINUE TO OPERATE DURING CONSTRUCTION. COORDINATE CURB CUT CLOSURES TO ENSURE CONTINUOUS ACCESS TO BUSINESS OPERATIONS. AREA A OF THE 5000 BLOCK MUST BE COMPLETED PRIOR TO DEMOLITION OF AREA B. DURING CLOSURES, BUSINESSES MUST REMAIN ACCESSIBLE TO PEDESTRIANS AT ALL TIMES.
- 5. DISPOSE OF ALL REMOVED MATERIAL OFF SITE IN AN APPROVED/PERMITTED MANNER UNLESS OTHERWISE SPECIFIED. SECURELY STORE AND PROTECT FROM DAMAGE ANY ITEMS TO BE REINSTALLED OR RETURNED TO OWNER.
- 6. INFORM OWNER AND ENGINEER OF ANY UTILITIES FOUND UNEXPECTEDLY PRIOR TO ACTION. 7. SAWCUT ALL HARDSCAPE SURFACES TO BE REMOVED AT THE EDGES OF AREA
- TO BE REMOVED. SAWCUT CONCRETE AT/TO NEAREST JOINT. SAWCUTS SHALL BE STRAIGHT, SQUARE AND TRUE.
- 8. WHERE ASPHALT IS TO BE REPLACED AND/OR WHERE PROPOSED ASPHALT ABUTS TO EXISTING ASPHALT, STEP SAWCUT FROM LAYER TO LAYER TO ALLOW FOR A STAGGERED SEAM. REFER TO DETAIL 3 ON SHEET C7.00.
- 9. CONDUCT DEMOLITION OPERATION IN A MANNER THAT WILL PREVENT DAMAGE TO ADJACENT STRUCTURES, UTILITIES, PAVEMENTS, AND OTHER FACILITIES TO REMAIN. REPAIR ANY DAMAGE TO IMPROVEMENTS TO REMAIN CAUSED BY CONSTRUCTION OPERATIONS AT NO EXPENSE TO THE OWNER.
- 10. PHASE SIDEWALK DEMOLITION TO ALLOW FOR CONTINUOUS PEDESTRIAN CIRCULATION AROUND/PAST THE SITE AT ALL TIMES. INSTALL PEDESTRIAN SIGNS AT NEAREST CROSSWALK TO DIVERT FOOT TRAFFIC.
- 11. COORDINATE ANY REQUIRED UTILITY OUTAGES WITH THE OWNER AND UTILITY PROVIDER. COORDINATE ANY TRAFFIC DISRUPTIONS WITH THE OWNER AND AUTHORITY HAVING JURISDICTION.
- 12. MAINTAIN MINIMUM REQUIRED COVER OVER EXISTING UTILITIES AT ALL TIMES DURING DEMOLITION AND CONSTRUCTION.

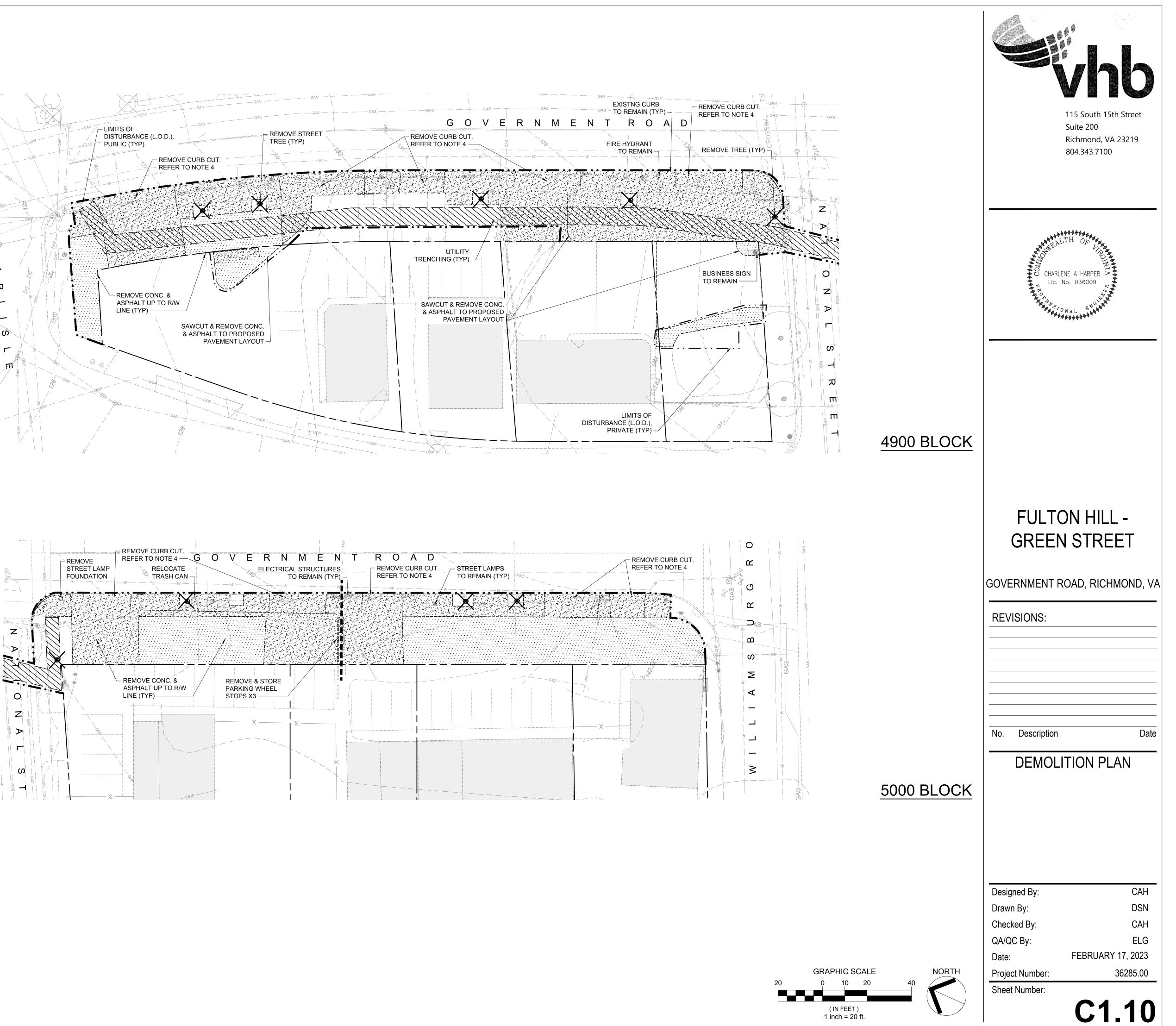
LEGEND:

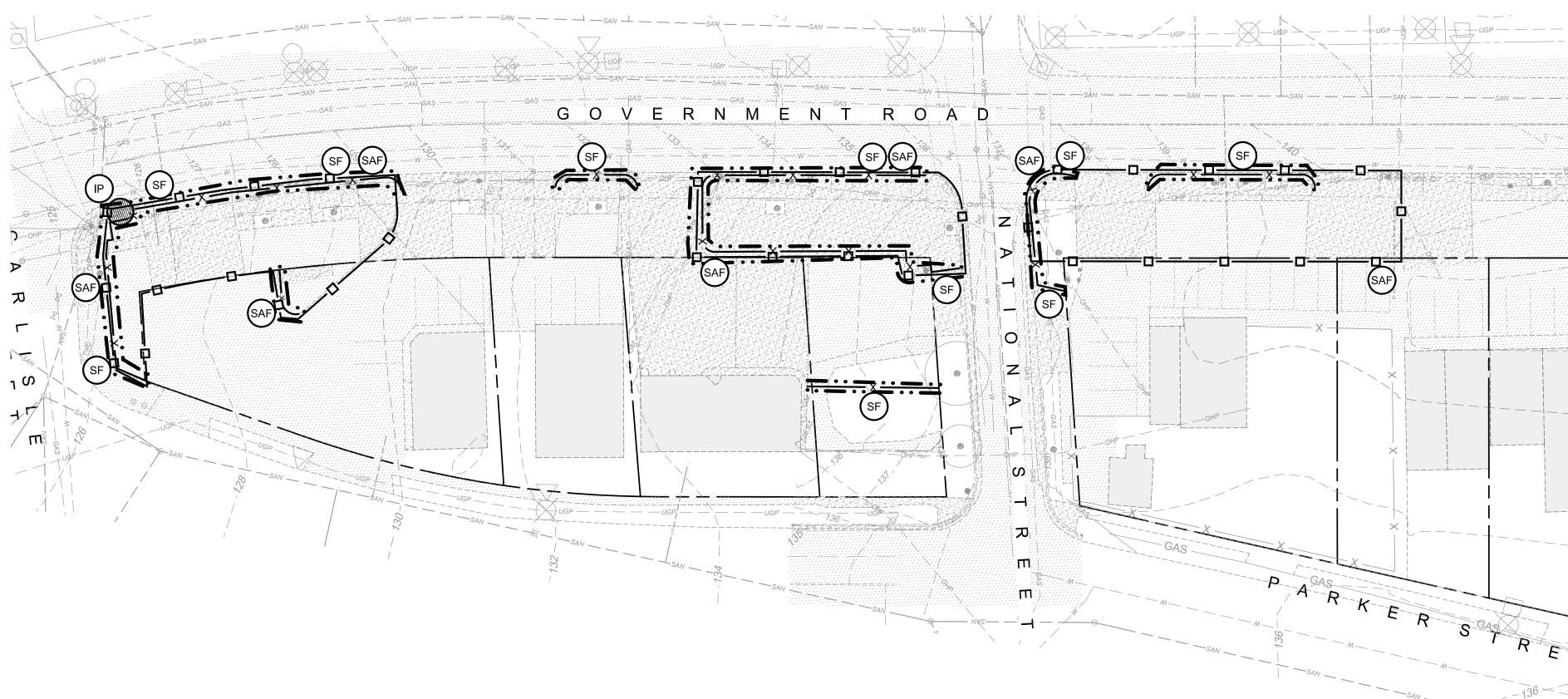


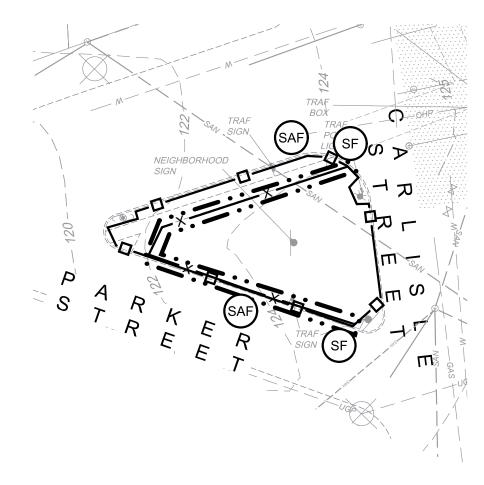
MISCELLANEOUS CONCRETE DEMOLITION ASPHALT DEMOLITION

LIMITS OF •••
 DISTURBANCE (PUBLIC, R/W ONLY) LIMITS OF

-··-··- DISTURBANCE (PRIVATE)







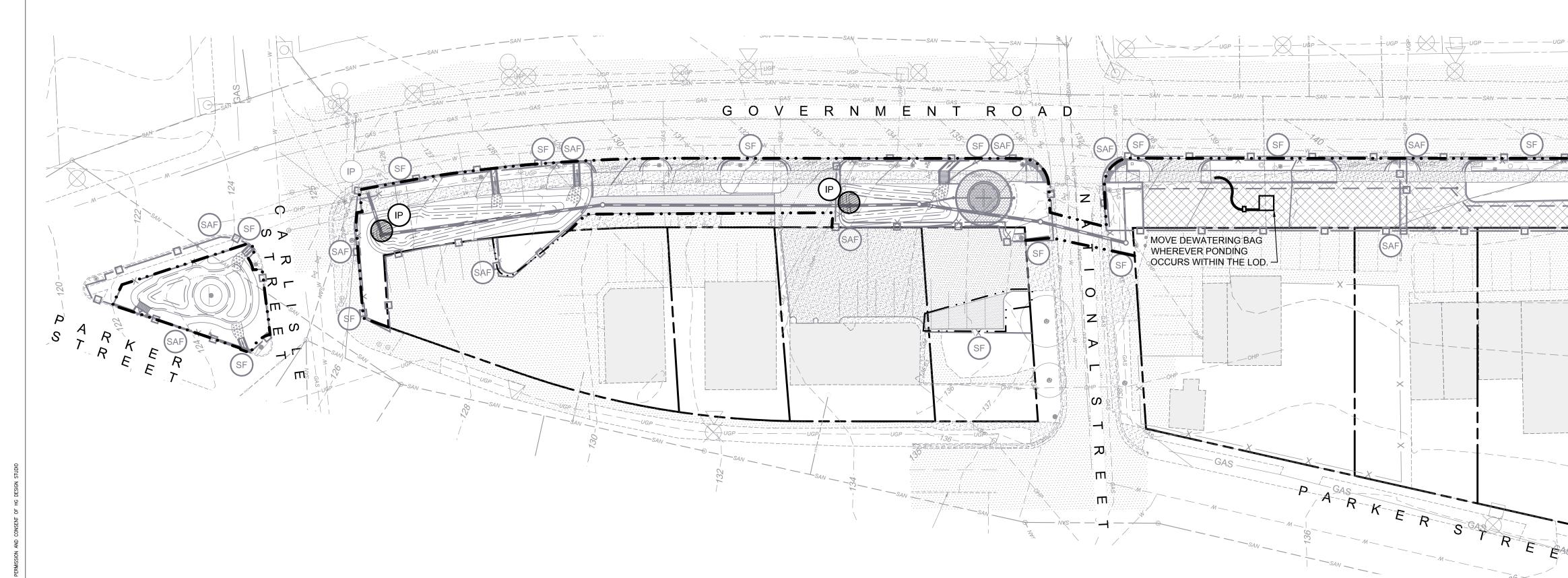
PHASE 1 SEQUENCE OF CONSTRUCTION:

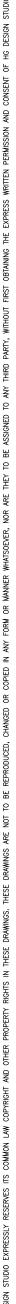
- 1. SCHEDULE PRE-CONSTRUCTION CONFERENCE WITH ENGINEER AND ENVIRONMENTAL INSPECTOR AT LEAST 72 HOURS BEFORE BEGINNING CONSTRUCTION.
- 2. INSTALL CHAIN-LINK PERIMETER SAFETY FENCE WITH GATES AS SHOWN. SAFETY FENCE WITH WEIGHTED ANCHORS IS PREFERRED FOR HARDSCAPE SURFACES. INSTALL SIGNAGE TO ROUTE PEDESTRIANS AROUND SITE.
- 3. INSTALL INLET PROTECTION AS SHOWN.
- 4. INSTALL SILT FENCE AS SHOWN. ONLY DEMO SIDEWALK NECESSARY TO INSTALL SILT FENCE.
- 5. AFTER EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE, BEGIN PHASE 2 WITH PERMISSION OF INSPECTOR.



PHASE 1A

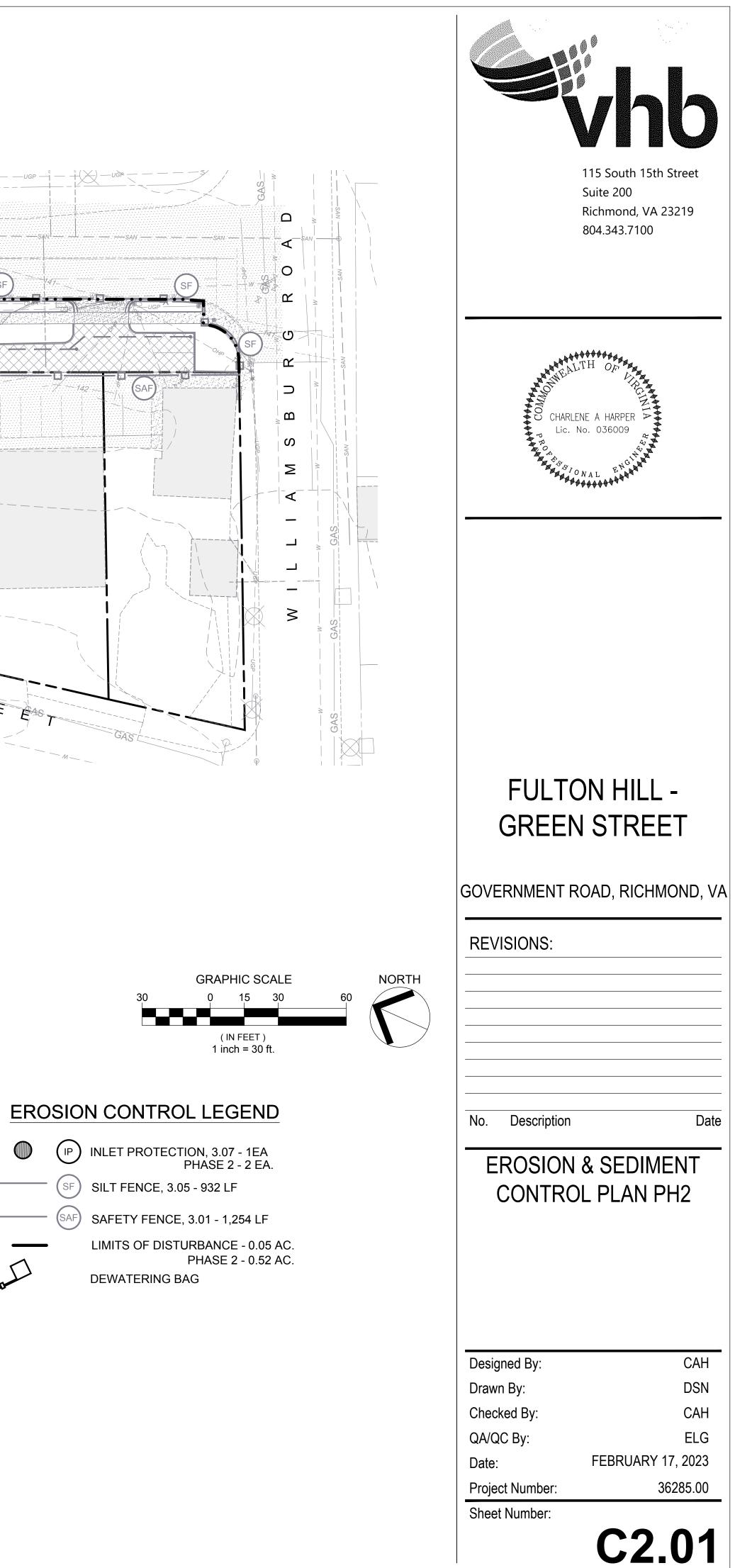
EROSION CONTROL LEGEND





PHASE 2 SEQUENCE OF CONSTRUCTION:

- 1. BEGIN SITE DEMOLITION.
- 2. BEGIN SITE CONSTRUCTION.
- 3. ENSURE ALL RUNOFF FROM SITE IS DIRECTED TO AN EROSION AND SEDIMENT CONTROL DEVICE DOWNSTREAM.
- 4. ONCE CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED, AND ONLY WITH THE APPROVAL OF THE ENVIRONMENTAL INSPECTOR, REMOVE EROSION AND SEDIMENT CONTROL (ESC) MEASURES. STABILIZE ESC MEASURE AREAS AS NEEDED.



9VAC25-840-40 MINIMUM STANDARDS (EFFECTIVE 11/17/16)

A VESCP MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS

- 1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN d. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS. SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL e. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED 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 ONF YFAR.
- 2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES 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.
- 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 i. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON INHIBIT EROSION.
- 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.
- 5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- 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.
- 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
- 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.
- 9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- 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.
- 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**
- 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 § 62.1-44.15:52 OF THE CODE OF VIRGINIA. THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED HISTORICAL NOTES FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- 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 21, 2012; AMENDED AND RENUMBERED, VIRGINIA REGISTER VOLUME 30, ISSUE 2, EFF. OCTOBER 23, OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
- 14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- 15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- 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 THIS CHAPTER.
- f. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.
- 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 7. 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 MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- 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 VESCP AUTHORITY. TRAPPED SEDIMENT AND PERMANENT SEEDBED PREPARATION THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- 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 2. RIP THE ENTIRE AREA TO 6 INCHES DEPTH. 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN 3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS:
- a. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED ⁴. DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.

b. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER: (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS 100 TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR

(A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY 8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESENDING WITHIN THE THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED

(b) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND

TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.

c. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:

IMPROVE THE CHANNELS TO A CONDITION WHERE A 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; OR

IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;

(3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR

(4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION

- CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT
- f. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
- g. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL

h. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.

- ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
- I. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
- . ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.
- ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS: (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.
- m. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES (I) ARE IN ACCORDANCE WITH PROVISIONS FOR TIME LIMITS ON APPLICABILITY OF APPROVED DESIGN CRITERIA IN 9VAC25-870-47 OR GRANDFATHERING IN 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION, IN WHICH CASE THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT SHALL APPLY, OR (II) ARE EXEMPT PURSUANT TO § 62.1-44.15:34 C 7 OF THE ACT.
- . COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF THIS SUBDIVISION 19.

STATUTORY AUTHORITY

FORMER 4VAC50-30-40, DERIVED FROM VR625-02-00 § 4; EFF. SEPTEMBER 13, 1990; AMENDED,

VIRGINIA REGISTER VOLUME 11, ISSUE 11, EFF. MARCH 22, 1995; VOLUME 29, ISSUE 4, EFF. NOVEMBER 2013; AMENDED, VIRGINIA REGISTER VOLUME 31, ISSUE 24, EFF. AUGUST 26, 2015; VOLUME 33, ISSUE 4, EFF. NOVEMBER 17, 2016.

TEMPORARY SEEDBED PREPARATION

- 1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
- 2. RIP THE ENTIRE AREA TO SIX INCHES DEEP
- 3. REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS, LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME, FERTILIZER AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE ADMIXTURE BELOW).
- 5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED FOUR TO SIX INCHES DEEP.
- 6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE MORE THAN 60% DAMAGED, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
- CONSULT S&EC ENVIRONMENTAL ENGINEERS ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONED, IF AVAILABLE.
- SMOOTH AND UNIFORM.
- APPLY ALL AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE TABLES 3.32-B & 3.32-D THIS SHEET).
- CONTINUE TILLAGE UNTIL A WELL PULVERIZED, FIRM, REASONABLY UNIFORM 4 TO 6 INCHES DEEP SEEDBED IS PREPARED
- SEED ON A FRESHLY PREPARED SEED BED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
- INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESENDING WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 50% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES AND LANDSCAPING PLANS.
- PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM 10. SEE LANDSCAPING PLANS FOR ADDITIONAL PERMANENT SEEDING, MULCHING, AND FERTILIZING RATES. ALL AREAS NOT DESIGNATED TO RECEIVE PLANTS SHALL BE SEEDED PER THE LANDSCAPING PLANS.

OR BANKS

	TABLE 3.31-B (Revised June 2003) TEMPORARY SEEDING SPECIFICATION QUICK REFERENCE FOR ALL REGION	
	SEED	
APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (Iolium multi- florum) & Cereal (Winter) Rye (Secale cereale)	50 -100 (ibs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (Iolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (Ibs/acre)
	FERTILIZER & LIME	
Apply Pulver NOTE: 1 - A soil test is necessa	10 fertilizer at a rate of 450 lbs. / acre (or 10 lbs. / 1,0 ized Agricultural Limestone at a rate of 2 tons/acre ry to determine the actual amount of lime required to and fertilizer into the top 4 – 6 inches of the soil by dis	(or 90 lbs. / 1,000 sq. ft.) adjust the soil pH of site.

TABLE 3.32-D SITE SPECIFIC SEEDING MIXTURES FOR PIEDMO	NT 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 * Low-Maintenance Slope (Steeper than 3:1) Kentucky 21 Ference	128 lbs. 2 lbs. <u>20 lbs.</u> 150 lbs. 108 lbs.
 Kentucky 31 Fescue Red Top Grass Seasonal Nurse Crop * Crownvetch ** 	2 lbs. 20 lbs. <u>20 lbs.</u> 150 lbs.
* Use seasonal nurse crop in accordance with seeding dates as February 16th through April May 1st through August 15th	Annual Rye Foxtail Millet Annual Rye
** Substitute Sericea lespedeza for Crownvetch east of Far through September use hulled Sericea, all other periods, use u If Flatpea is used in lieu of Crownvetch, increase rate to 30 lbs. seed must be properly inoculated. Weeping Lovegrass may be a or low-maintenance mix during warmer seeding periods; add	unhulled Sericea). /acre. All legume added to any slope

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

mixes.

THE PROJECT CONSISTS OF IMPROVING THE PEDESTRIAN CORRIDOR OF THE RIGHT-OF-WAY FOR SAFETY AND STORMWATER MANAGEMENT. PEDESTRIAN IMPROVEMENTS INCLUDE SIDEWALKS, ACCESSIBLE RAMPS, AS WELL AS HARD AND SOFT SAFETY BUFFERS FROM VEHICULAR AREAS. STORMWATER IMPROVEMENTS INCLUDE CONSERVATION PLANTING BEDS, PERMEABLE PAVEMENT AND BIORETENTION FILTERS. THE LIMITS OF DISTURBANCE IS 0.50 AC. IN THE PUBLIC RIGHT-OF-WAY AND 0.02 AC. ON PRIVATE PROPERTY. EXISTING SITE CONDITIONS

THE EXISTING SITE CONSISTS OF A MIXTURE OF CONCRETE AND ASPHALT WITH TREE WELLS THROUGHOUT.

PER WEB SOIL SURVEY, THE MAJORITY OF THE SITE CONSIST OF TYPE 41 URBAN LAND. NO DRAINAGE CHARACTERISTICS OR CLASS INFORMATION AVAILABLE. HYDROLOGIC SOIL GROUP IS D. A SMALL PORTION, ON THE NORTHERN END OF THE SITE, IS TYPE 44E - WATEREE-WEDOWEE COMPLEX, WHICH IS HYDROLOGIC SOIL GROUP A.

ADJACENT PROPERTY

SOILS

GOVERNMENT ROAD ABUTS THE PROJECT TO THE EAST. TO THE WEST, ONE AND TWO STORY COMMERCIAL BUILDINGS AND ASSOCIATED PARKING BORDER THE PROJECT. AREAS OF THE RIGHT-OF-WAY SERVE AS THE PARKING LOT'S DRIVE LANE

OFF-SITE AREAS

NO OFF-SITE AREAS ARE INCLUDED WITHIN THE SCOPE OF THIS PROJECT. REMOVAL OF EXCAVATION AND SPOIL MATERIAL, OR IMPORT OF MATERIAL, TO, OR FROM, OFF-SITE FACILITIES ARE THE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR TO VERIFY ANY OFF-SITE FACILITY HAS AN ACTIVE LAND DISTURBANCE PERMIT. CRITICAL AREAS

THERE ARE NO CRITICAL AREAS, WATERS, OR WETLANDS ON-SITE.

STORMWATER RUNOFF CONSIDERATIONS REFER TO 'COMBINED SEWER SYSTEM

COMBINED SEWER SYSTEM

REDUCTION OF IMPERVIOUS COVER AND INTRODUCTION OF LID/VOLUME REDUCING PRACTICES WILL DECREASE FLOW TO THE EXISTING CSS.

MANAGEMENT STRATEGIES

1. SITE MUST BE STABILIZED AT THE END OF EACH DAY.

LIMITS OF DISTURBANCE IMMEDIATELY.

2. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MAINTAINED UNTIL THEY ARE NO LONGER REQUIRED TO COMPLY WITH THE CONTRACT DOCUMENTS OR STATE LAW. 3. CONTRACTOR SHALL INSPECT DAILY AND CLEAN-UP ANY SEDIMENTS TRACKED OUTSIDE THE

PERMANENT STABILIZATION

POST CONSTRUCTION, THE ENTIRE SITE WILL BE PERMANENTLY STABILIZED USING HARDSCAPE, SOD AND LANDSCAPING.

STRUCTURAL PRACTICES

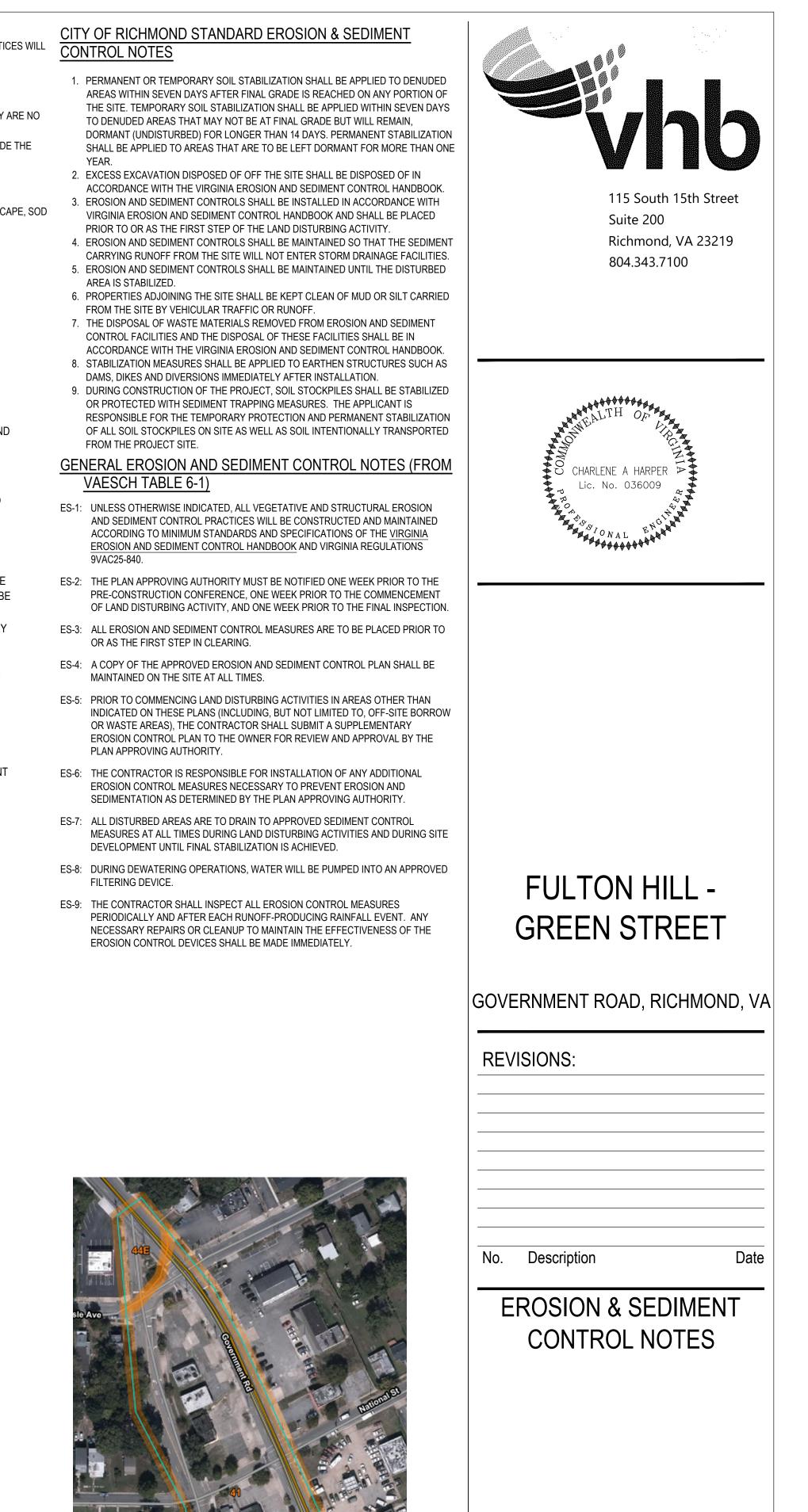
3.01 SAFETY FENCE:

3.32

- SAFETY FENCE SHALL BE CHECKED REGULARLY FOR WEATHER-RELATED OR OTHER DAMAGE. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY.
- CARE SHOULD BE TAKEN TO SECURE ALL ACCESS POINTS (GATES) AT THE END OF EACH WORKING DAY. ALL LOCKING DEVICES MUST BE REPAIRED OR REPLACED AS NECESSARY.

3.05 SILT FENCE

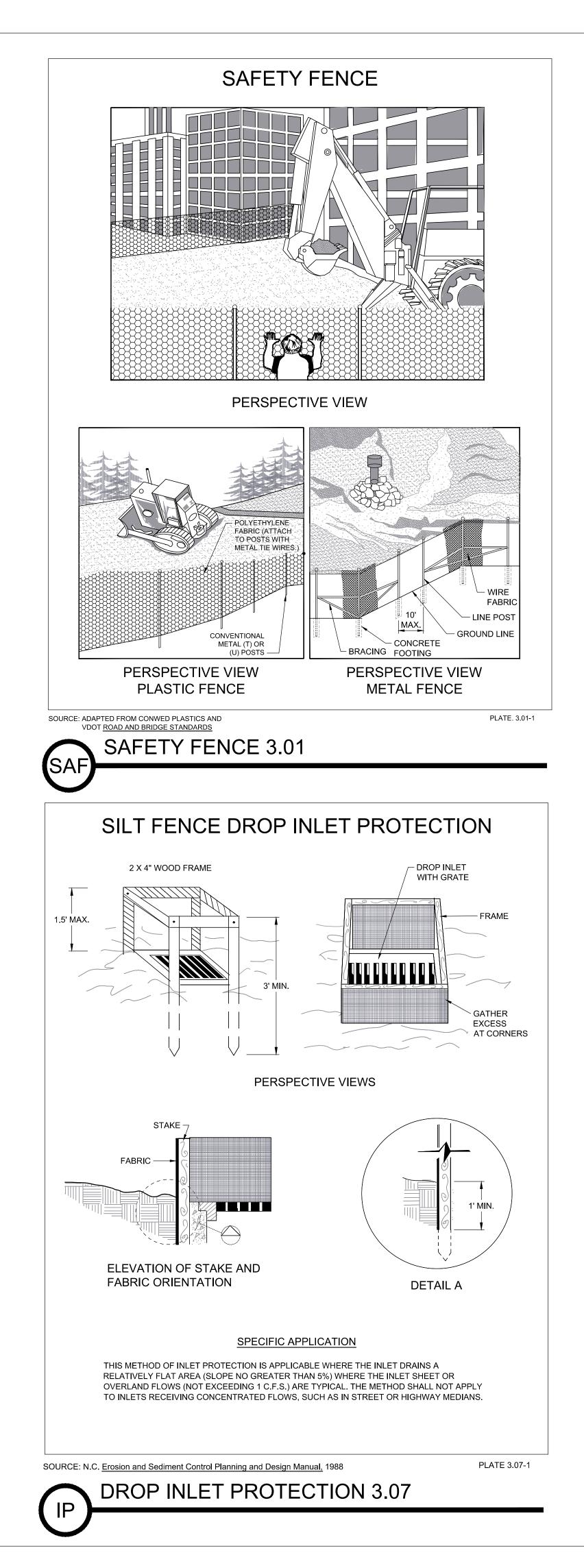
- 1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- 2. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING.
- 3. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY
- 4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
- 5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
- 3.07 STORM DRAIN INLET PROTECTION
- 1. INSPECT STRUCTURE AFTER EACH RUNOFF-PRODUCING STORM EVENT AND REPAIR AS NECESSARY.
- 2. REMOVE SEDIMENT AND RESTORE TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 OF THE ORIGINAL DEPTH OF INLET PROTECTION. DEPOSIT SEDIMENT IN SUITABLE AREA AND STABILIZE.
- 3. REMOVE STRUCTURE AND STABILIZE FORMER LOCATION WHEN DRAINAGE AREA IS PERMANENTLY AND PROPERLY STABILIZED



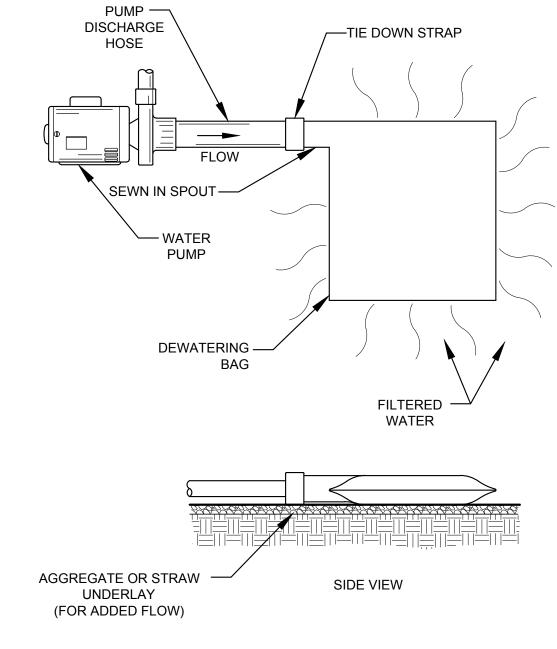
Designed By:	CAH
Drawn By:	DSN
Checked By:	CAH
QA/QC By:	ELG
Date:	FEBRUARY 17, 2023
Project Number:	36285.00
Sheet Number:	

SOILS MAPS

SCALE 1" = 100'







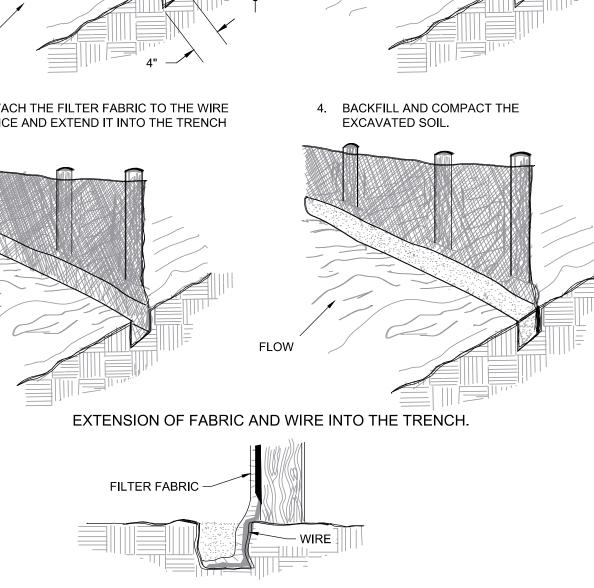
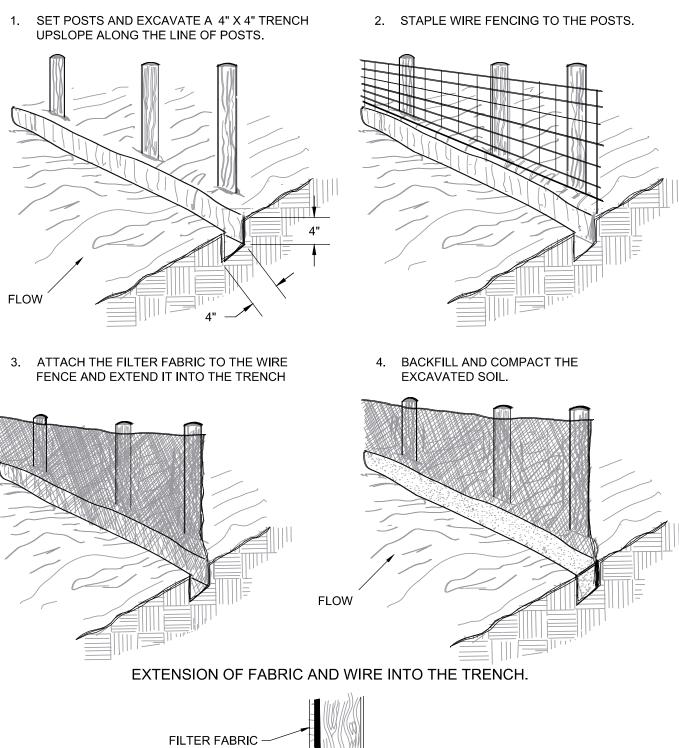


PLATE 3.05-1

SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood & Wyant

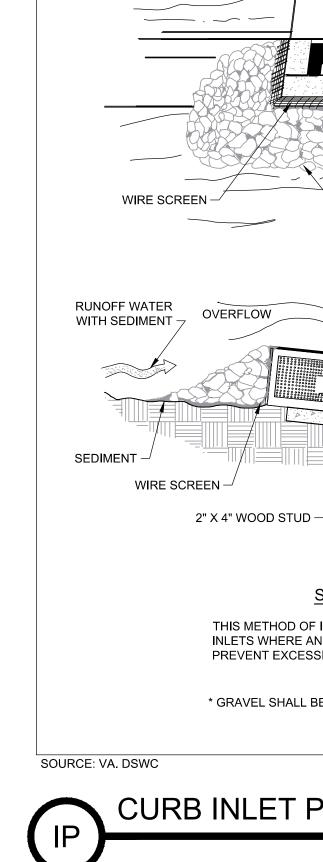
SILT FENCE 3.05

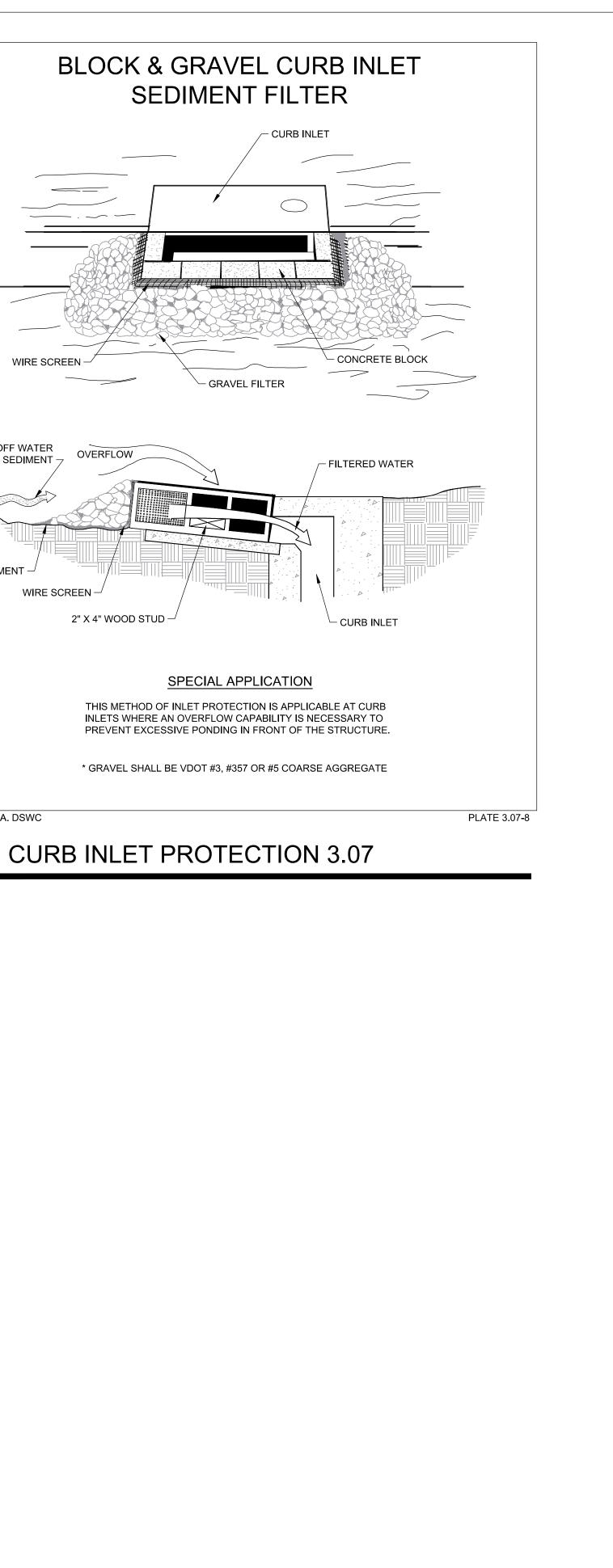
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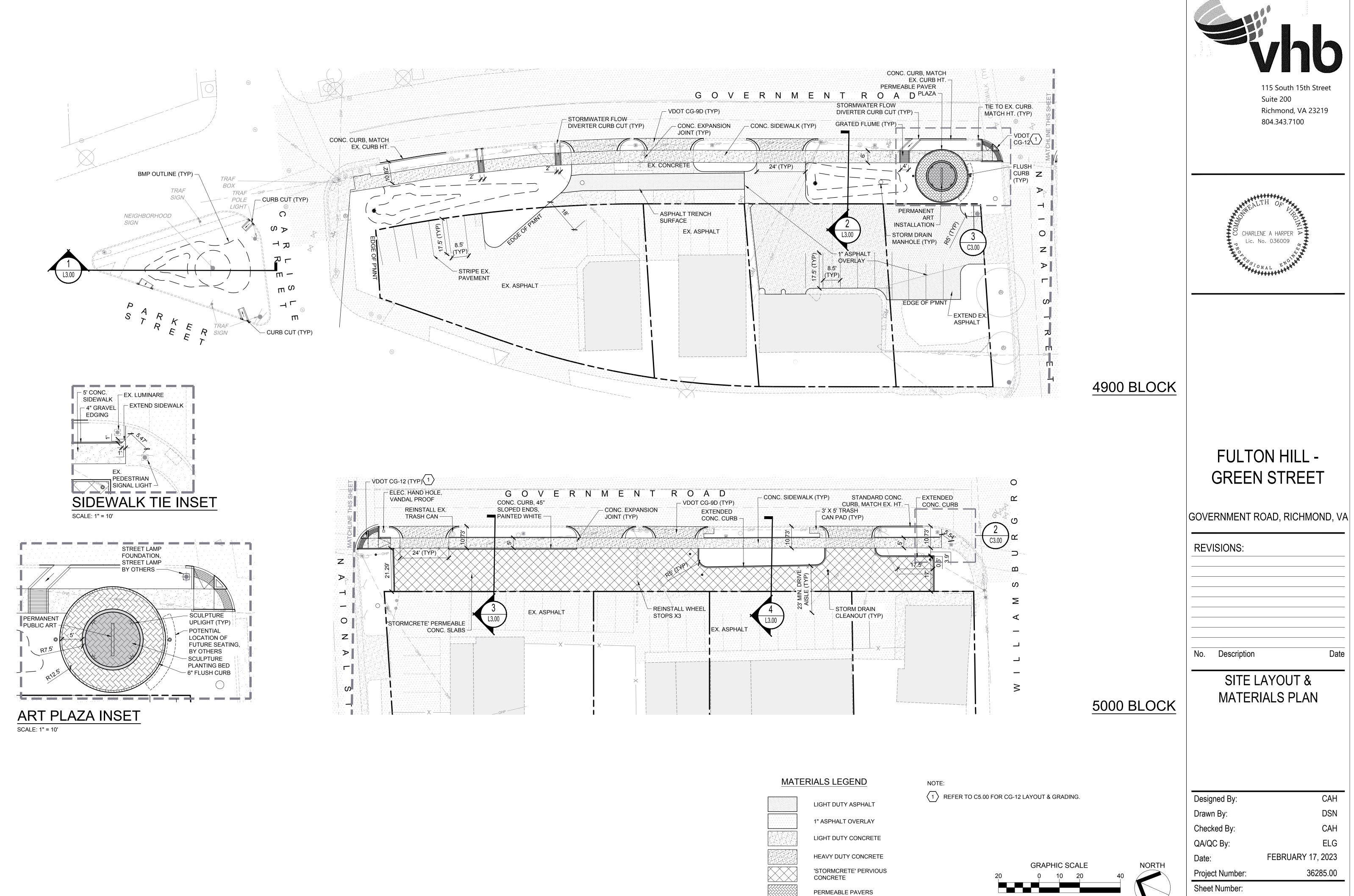
CONSTRUCTION OF A SILT FENCE

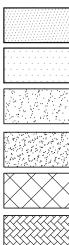
(WITH WIRE SUPPORT)





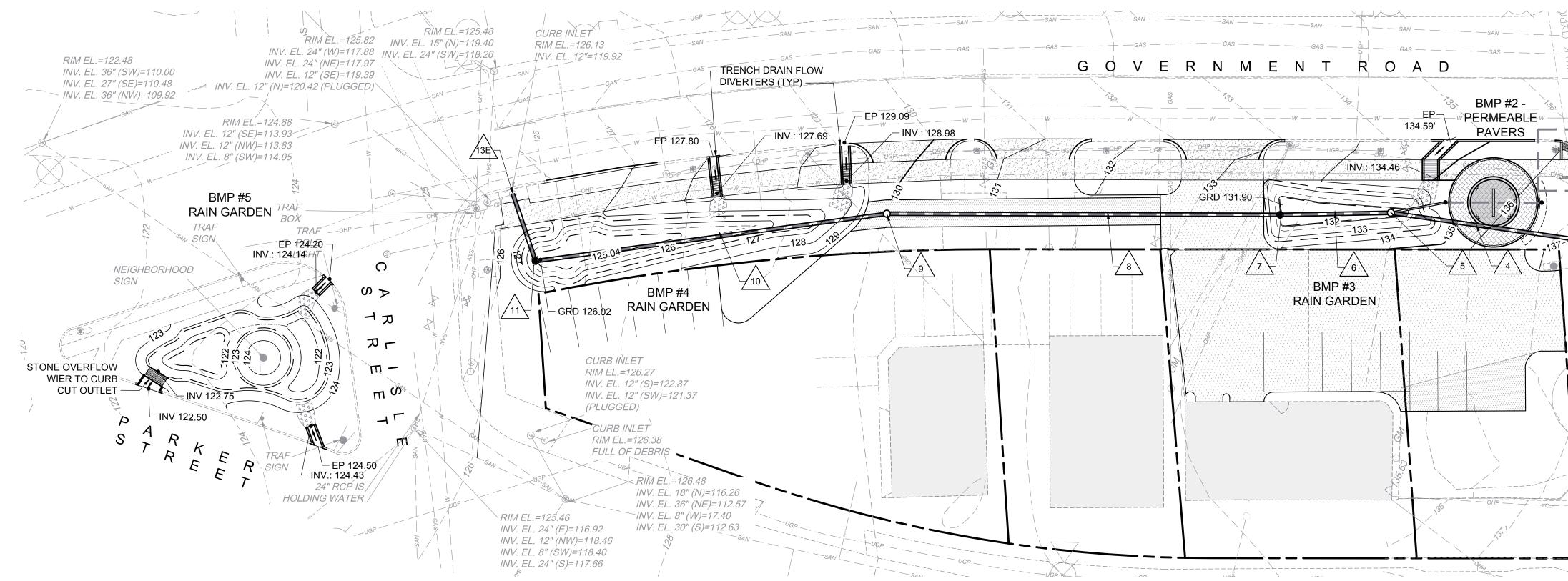


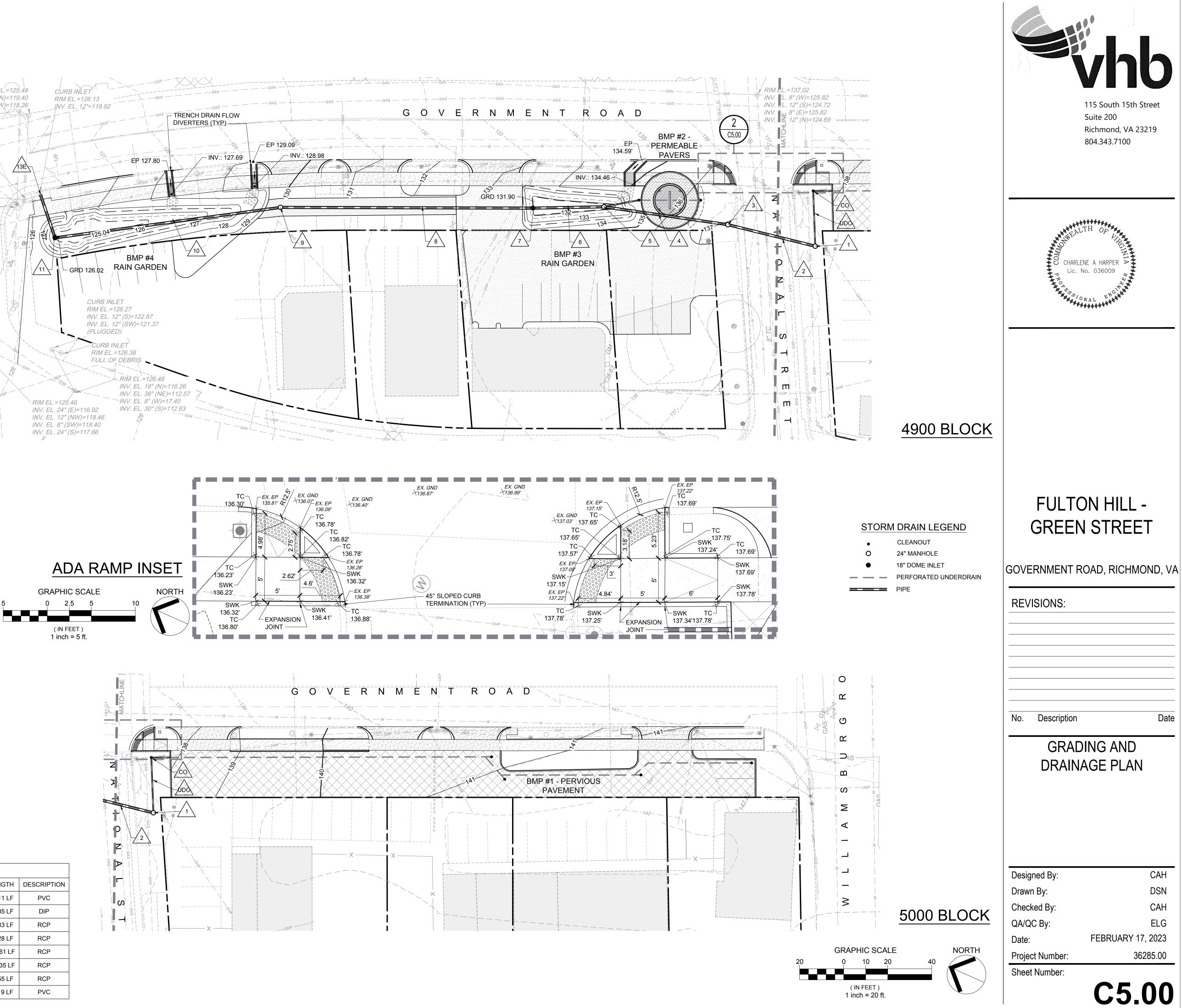




(IN FEET) 1 inch = 20 ft.

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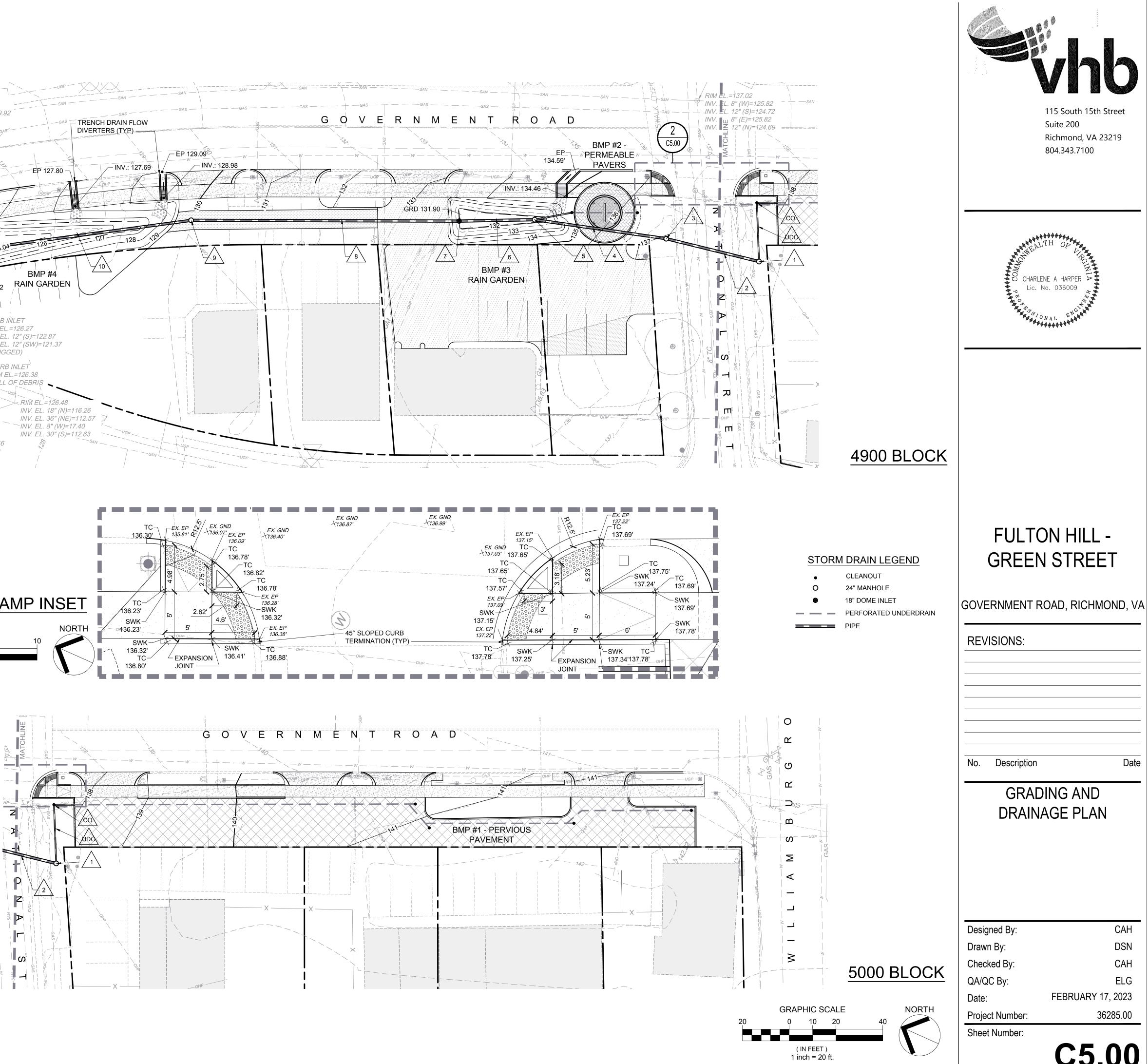




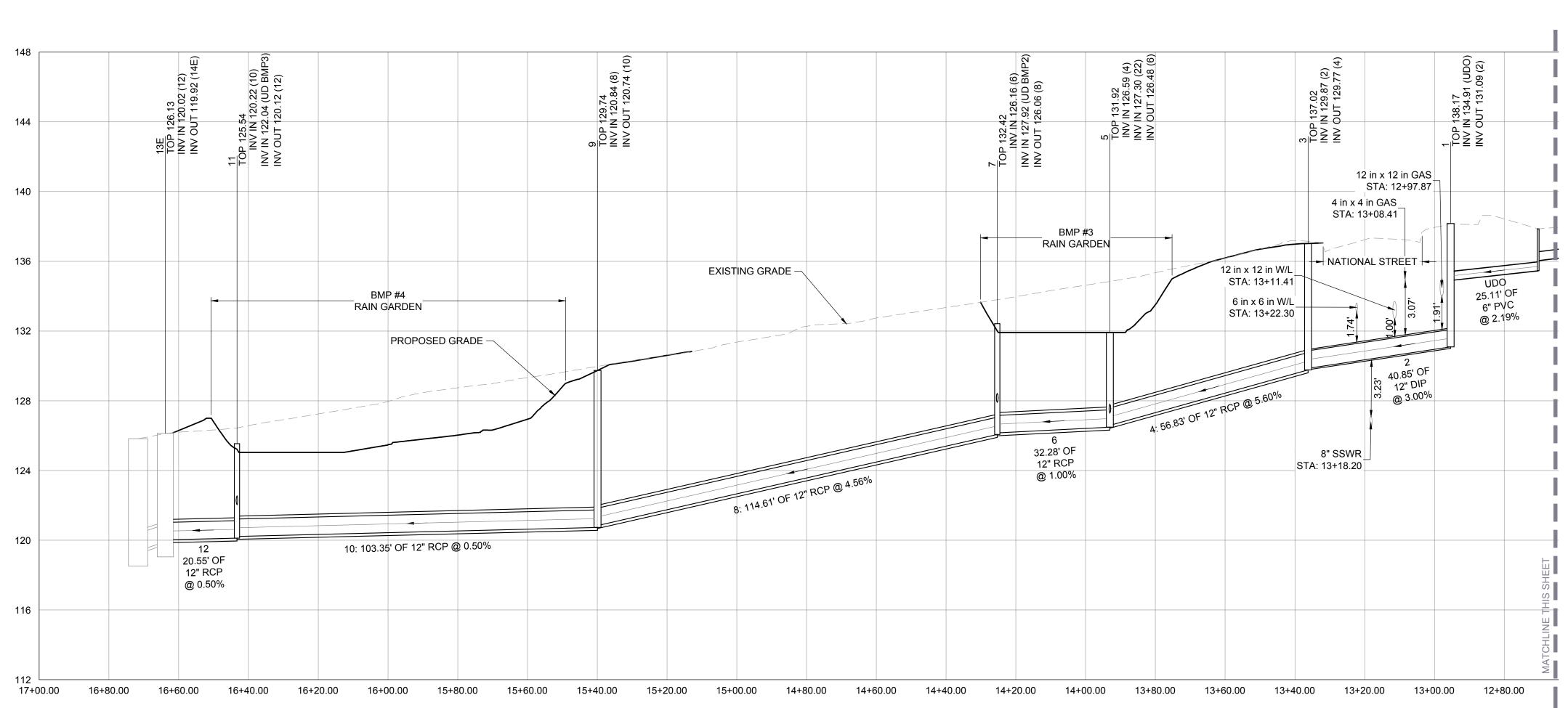
1. REFER TO C5.10 FOR STORM DRAIN PROFILES.

Structure Table STRUCTURE # | TOP | STRUCTURE HEIGHT DESCRIPTION CO 137.87 6" CLEANOUT 2.41' 138.17 7.08' 24" MANHOLE 1 137.02 7.25' 3 24" MANHOLE 131.92 5.44' 24" MANHOLE 5 7 132.42 6.36' 18" DOME INLET 129.74 9.00' 24" MANHOLE 9 125.54 18" DOME INLET 11 5.42' 21 134.81 3.07' 6" CLEANOUT

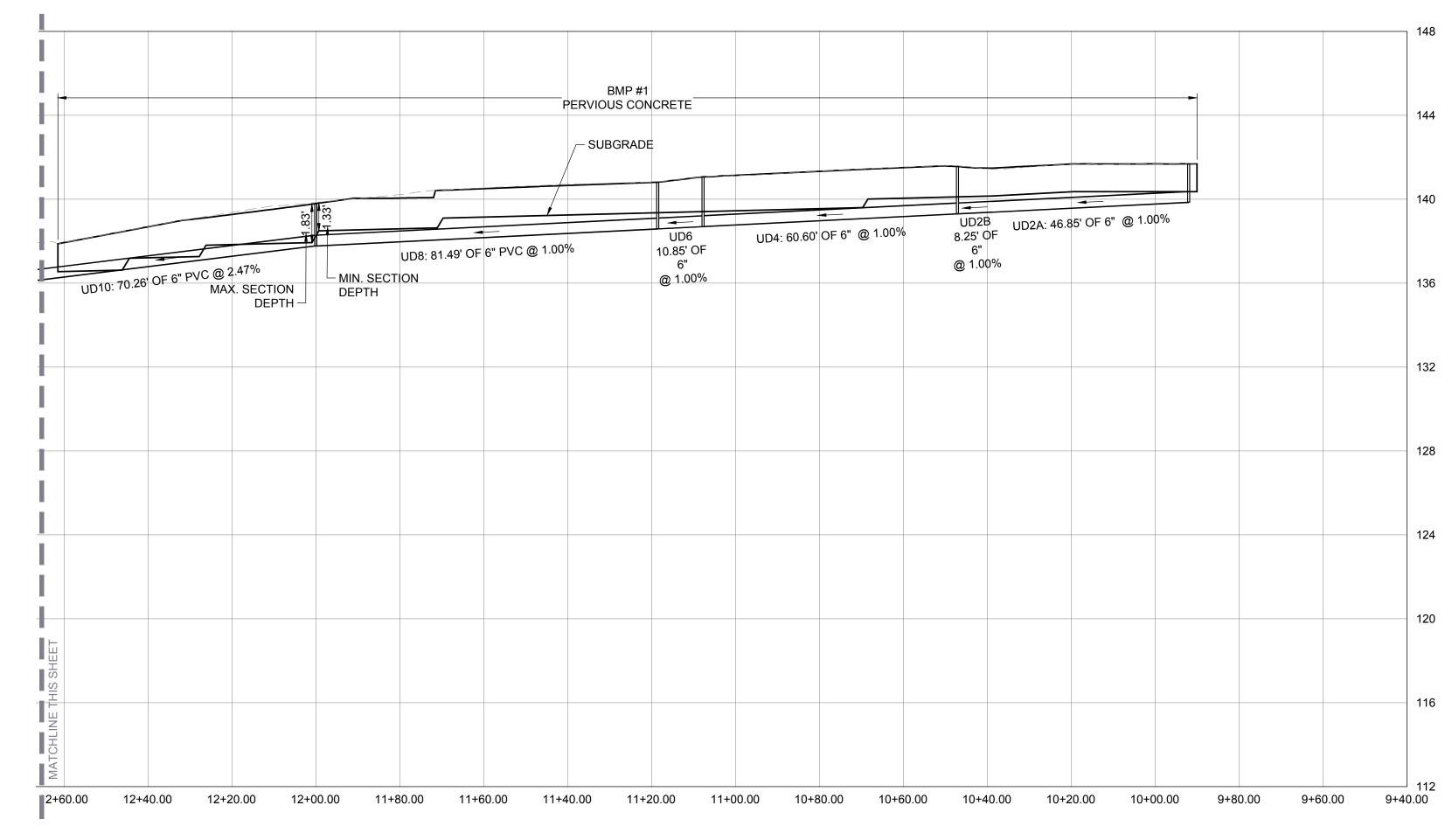
	Pipe Table							
PIPE NAME	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION	
UDO	6"	CO - 1	135.46	134.91	2.19%	25.11 LF	PVC	
2	12"	1 - 3	131.09	129.87	3.00%	40.85 LF	DIP	
4	12"	3 - 5	129.77	126.59	5.60%	56.83 LF	RCP	
6	12"	5 - 7	126.48	126.16	1.00%	32.28 LF	RCP	
8	12"	7 - 9	126.06	120.84	4.56%	114.61 LF	RCP	
10	12"	9 - 11	120.74	120.22	0.50%	103.35 LF	RCP	
12	12"	11 - 13E	120.12	120.02	0.50%	20.55 LF	RCP	
22	6"	21 - 5	131.74	127.30	27.45%	16.19 LF	PVC	







PERVIOUS CONCRETE PROFILE



STORM DRAIN PROFILE

Pipe Table							
PIPE NAME	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
UDO	6"	CO - 1	135.46	134.91	2.19%	25.11 LF	PVC
2	12"	1 - 3	131.09	129.87	3.00%	40.85 LF	DIP
4	12"	3 - 5	129.77	126.59	5.60%	56.83 LF	RCP
6	12"	5 - 7	126.48	126.16	1.00%	32.28 LF	RCP
8	12"	7 - 9	126.06	120.84	4.56%	114.61 LF	RCP
10	12"	9 - 11	120.74	120.22	0.50%	103.35 LF	RCP
12	12"	11 - 13E	120.12	120.02	0.50%	20.55 LF	RCP
22	6"	21 - 5	131.74	127.30	27.45%	16.19 LF	PVC

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115 South 15th Street Suite 200 Richmond, VA 23219 804.343.7100

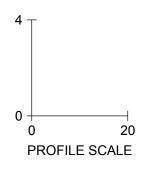


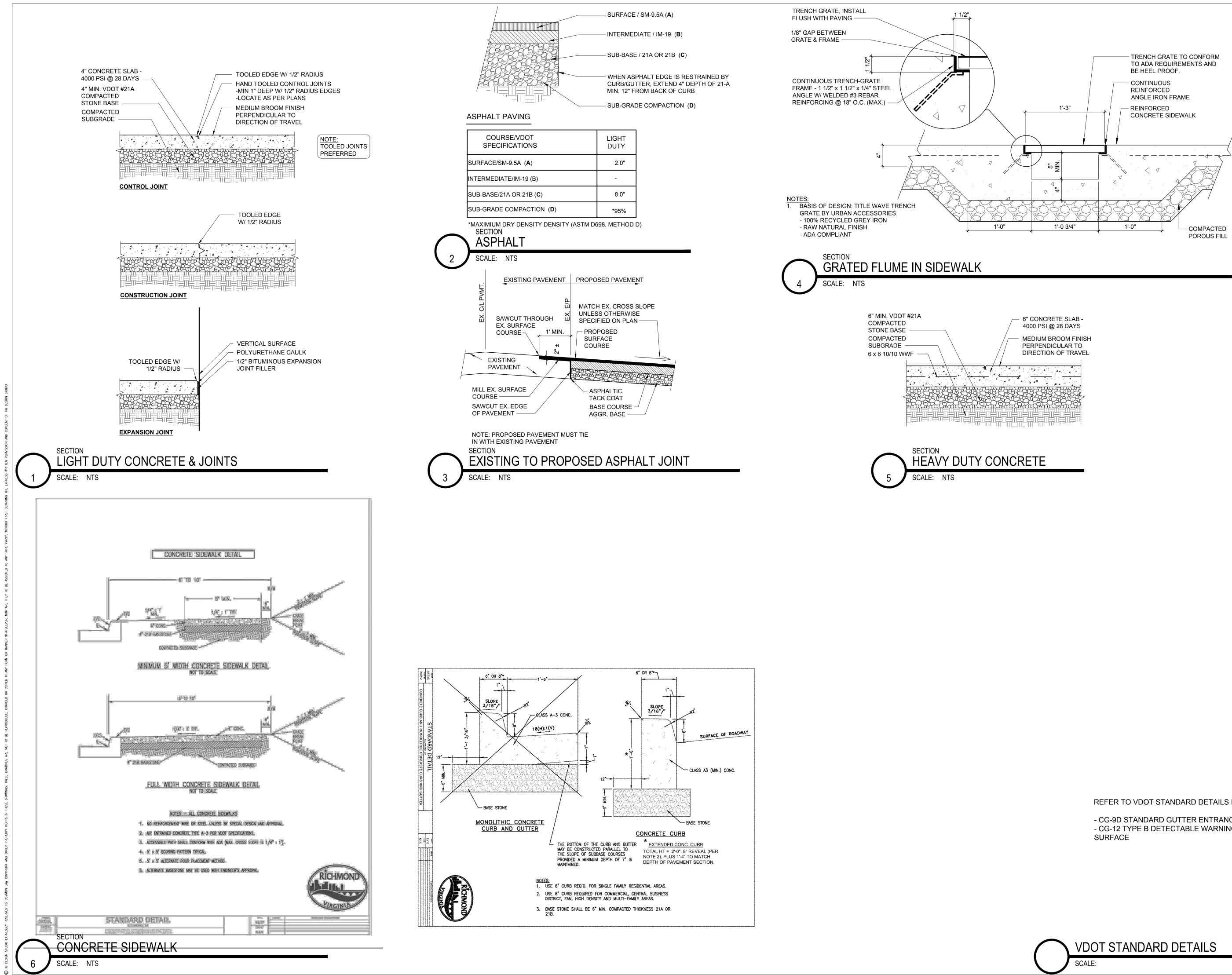
FULTON HILL -	
GREEN STREET	

GOVERNMENT ROAD, RICHMOND, VA

REVISIONS: No. Description Date DRAINAGE PROFILE & SCHEDULE Designed By: CAH Drawn By: DSN Checked By: CAH QA/QC By: ELG FEBRUARY 17, 2023 Date: 36285.00 Project Number: Sheet Number: **C5.10**

Structure Table						
RUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION			
СО	137.87	2.41'	6" CLEANOUT			
1	138.17	7.08'	24" MANHOLE			
3	137.02	7.25'	24" MANHOLE			
5	131.92	5.44'	24" MANHOLE			
7	132.42	6.36'	18" DOME INLET			
9	129.74	9.00'	24" MANHOLE			
11	125.54	5.42'	18" DOME INLET			
21	134.81	3.07'	6" CLEANOUT			

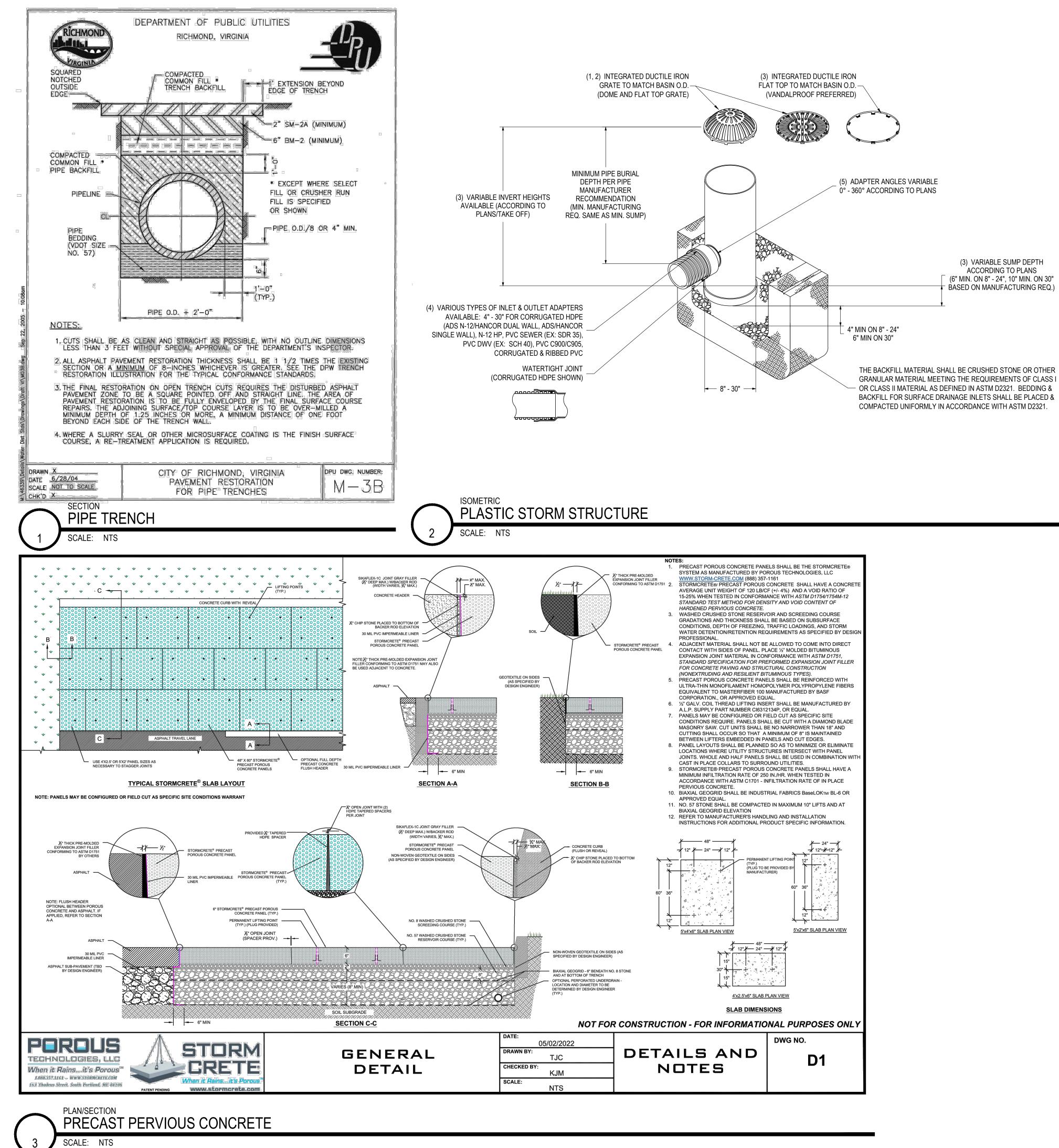




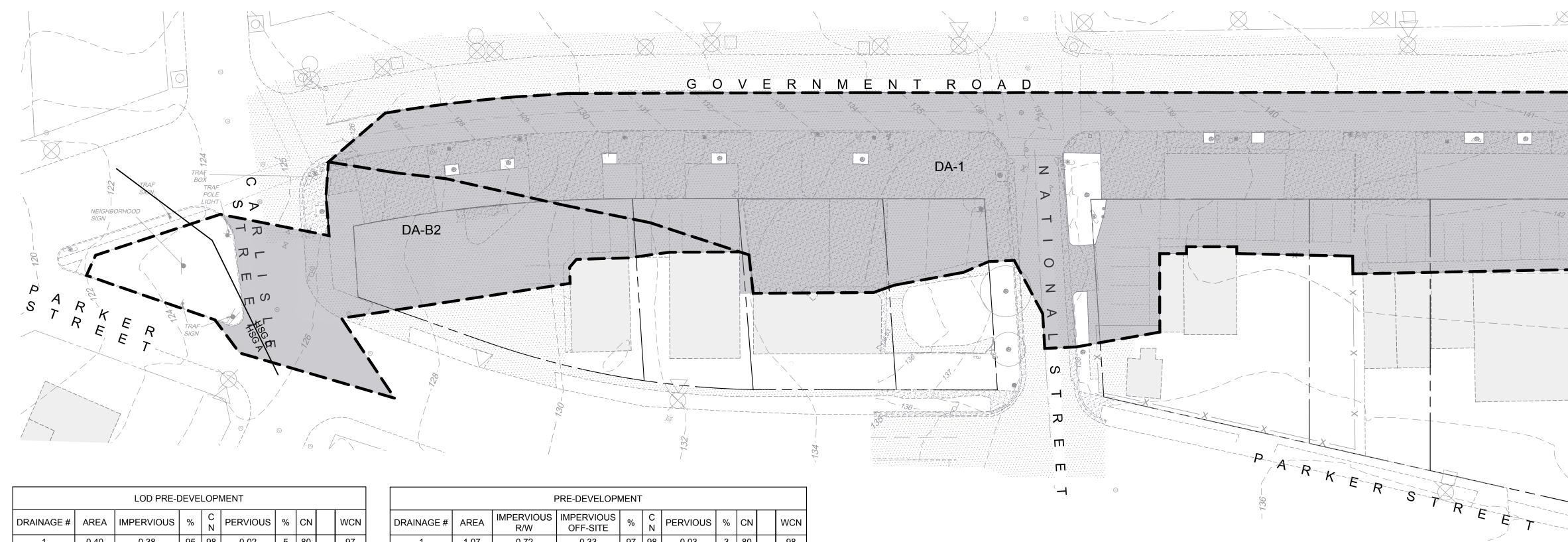
REFER TO VDOT STANDARD DETAILS FOR:

- CG-9D STANDARD GUTTER ENTRANCE - CG-12 TYPE B DETECTABLE WARNING



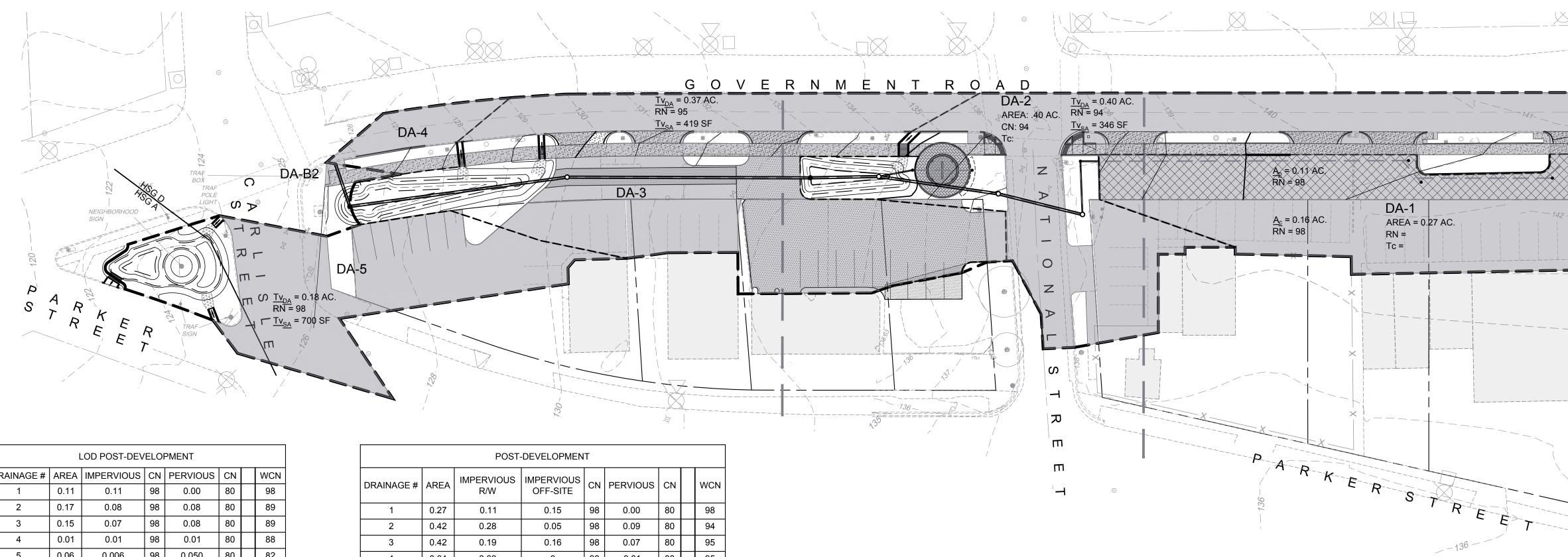


Suite 20	nd, VA 23219
CHARLENE A HARP	-
FULTON H GOVERNMENT ROAD, F REVISIONS:	REET
No. Description	Details
Project Number: Sheet Number:	CAH DSN CAH ELG UARY 17, 2023 36285.00



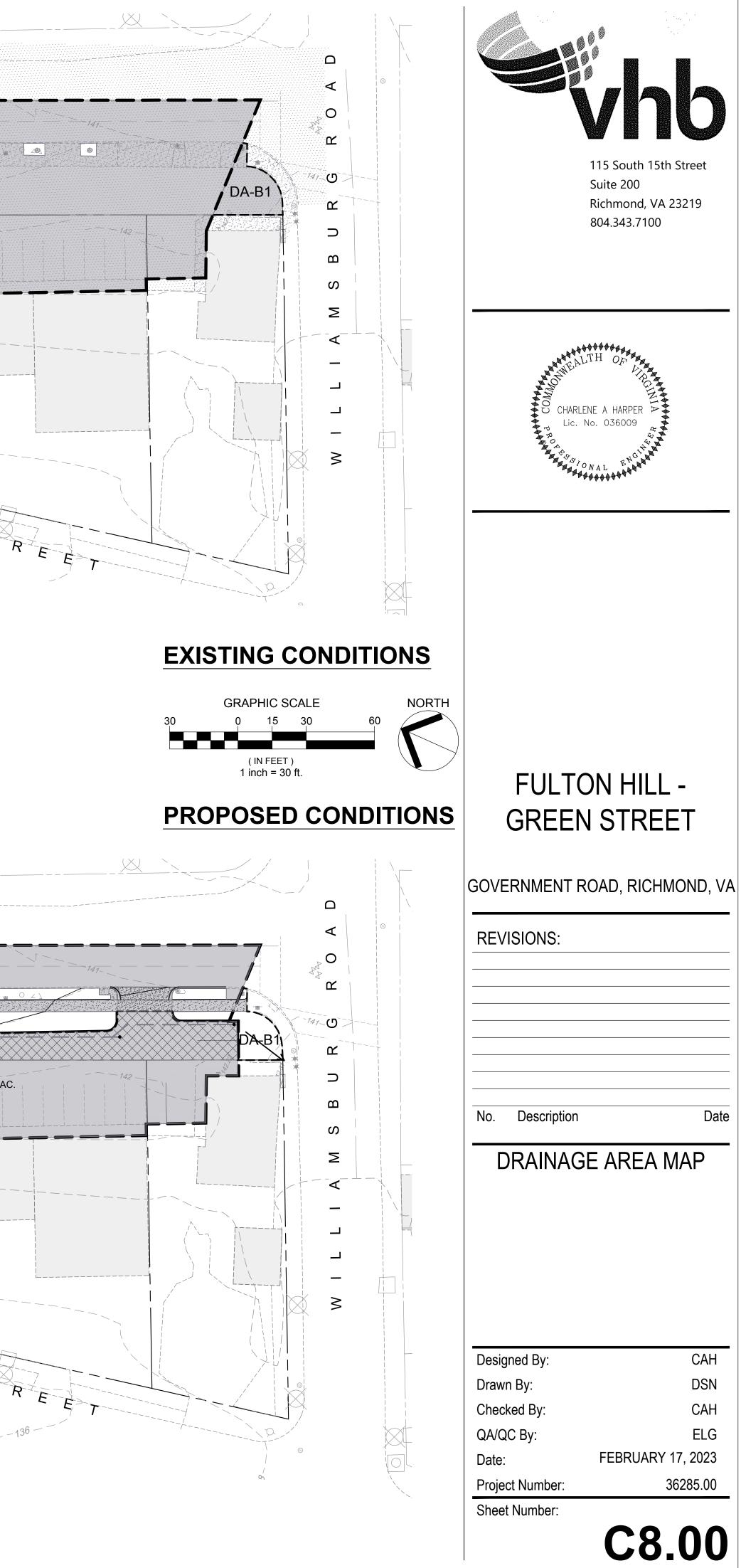
	LOD PRE-DEVELOPMENT							
DRAINAGE #	AREA	IMPERVIOUS	%	C N	PERVIOUS	%	CN	WCN
1	0.40	0.38	95	98	0.02	5	80	97
B1	0.01	0.01	100	98	0.00	0	80	98
B2	0.10	0.05	53	98	0.05	47	80	90
OVERALL	0.51 AC	0.45 AC	87	98	0.07 AC	13	80	96

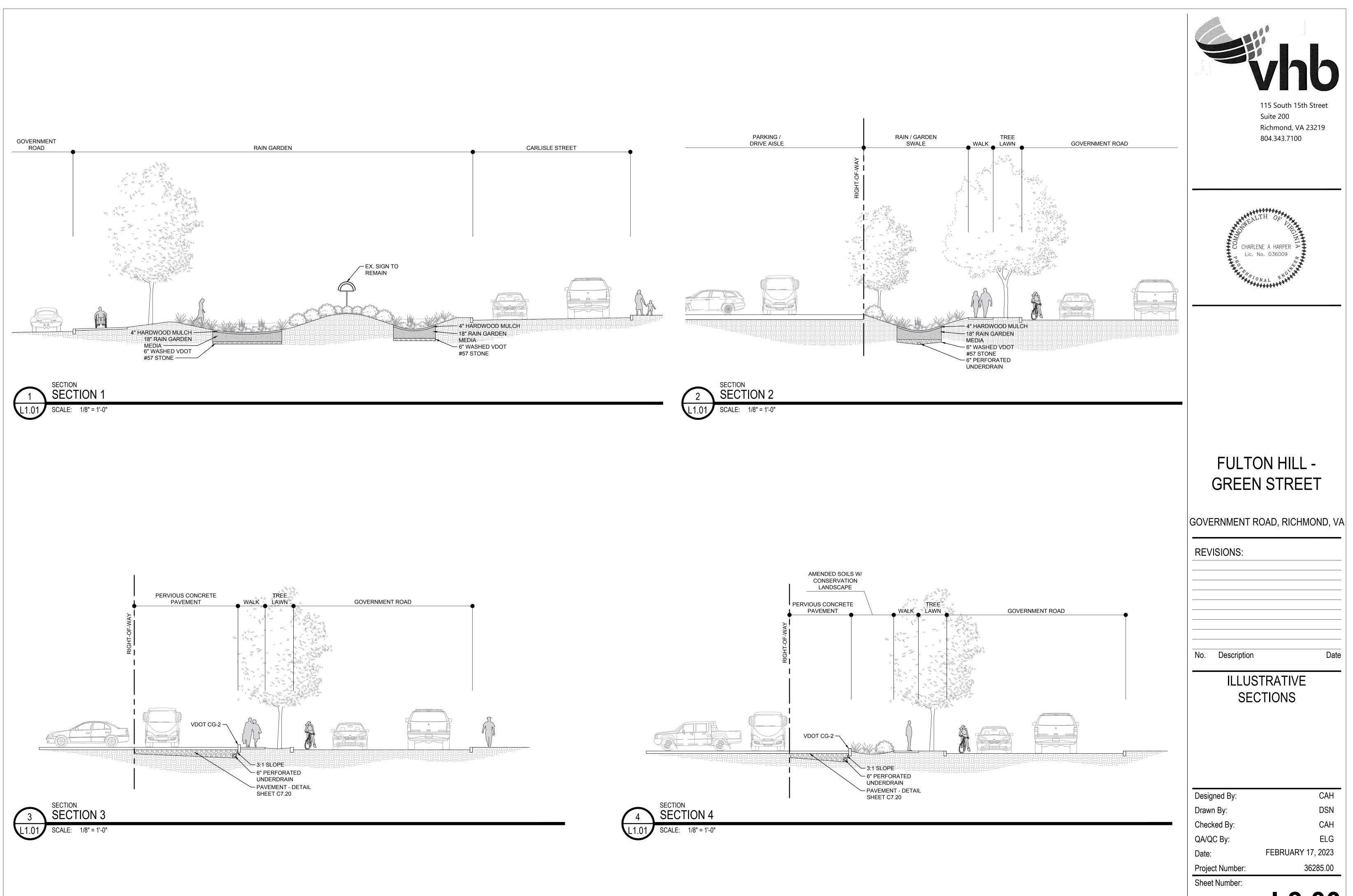
PRE-DEVELOPMENT									
DRAINAGE #	AREA	IMPERVIOUS R/W	IMPERVIOUS OFF-SITE	%	C N	PERVIOUS	%	CN	WCN
1	1.07	0.72	0.33	97	98	0.03	3	80	98
B1	0.01	0.01	0	100	98	0.00	0	80	98
B2	0.30	0.13	0.12	85	98	0.05	15	80	95
OVERALL	1.38 AC	0.86 AC	0.45 AC	95	98	0.07 AC	5	80	97



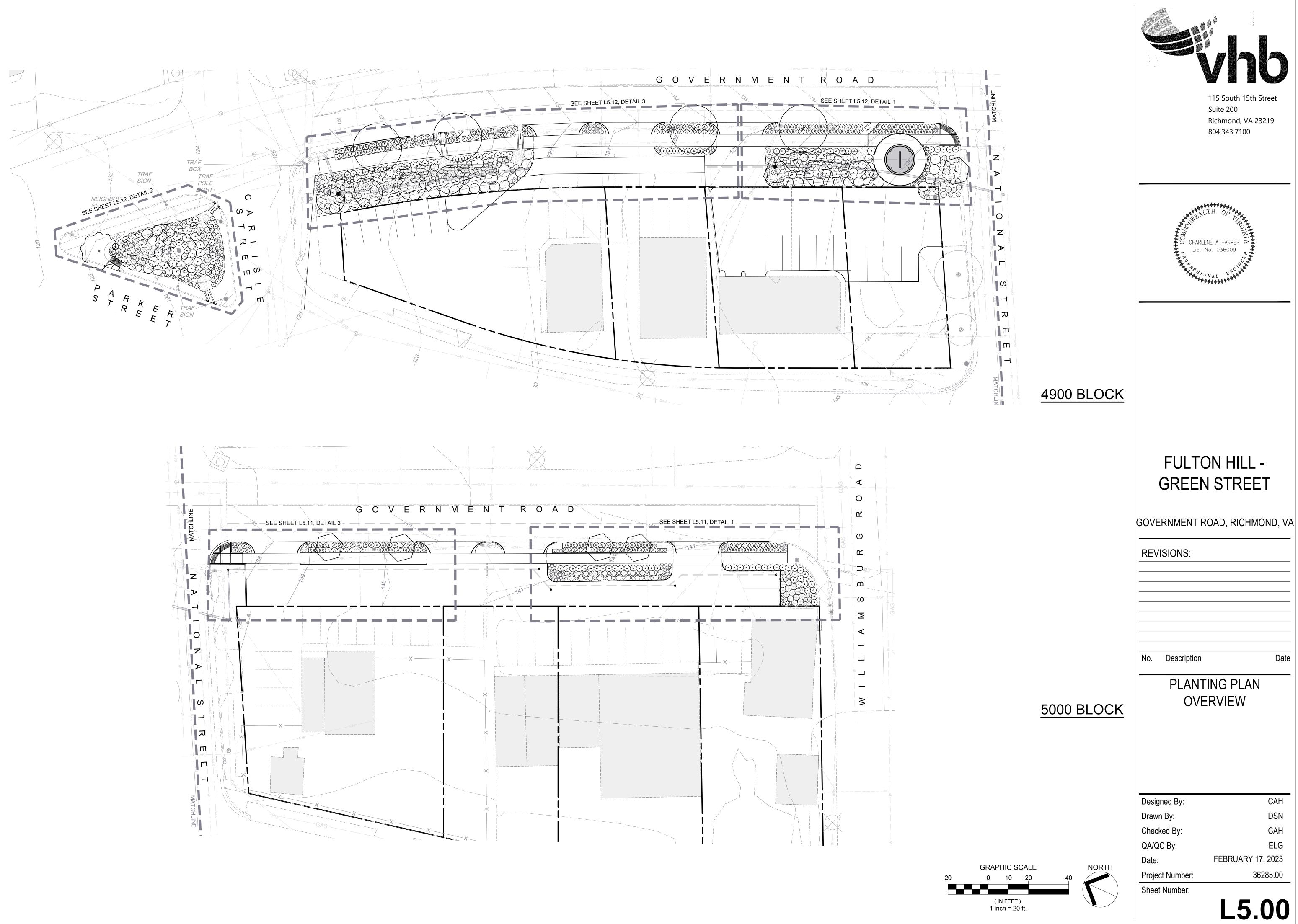
	LOD POST-DEVELOPMENT					
DRAINAGE #	AREA	IMPERVIOUS	CN	PERVIOUS	CN	WCN
1	0.11	0.11	98	0.00	80	98
2	0.17	0.08	98	0.08	80	89
3	0.15	0.07	98	0.08	80	89
4	0.01	0.01	98	0.01	80	88
5	0.06	0.006	98	0.050	80	82
B1	0.01	0.001	98	0.008	80	82
B2	0.01	0.003	98	0.01	80	85
OVERALL	0.51 AC	0.28 AC	98	0.23 AC	80	90

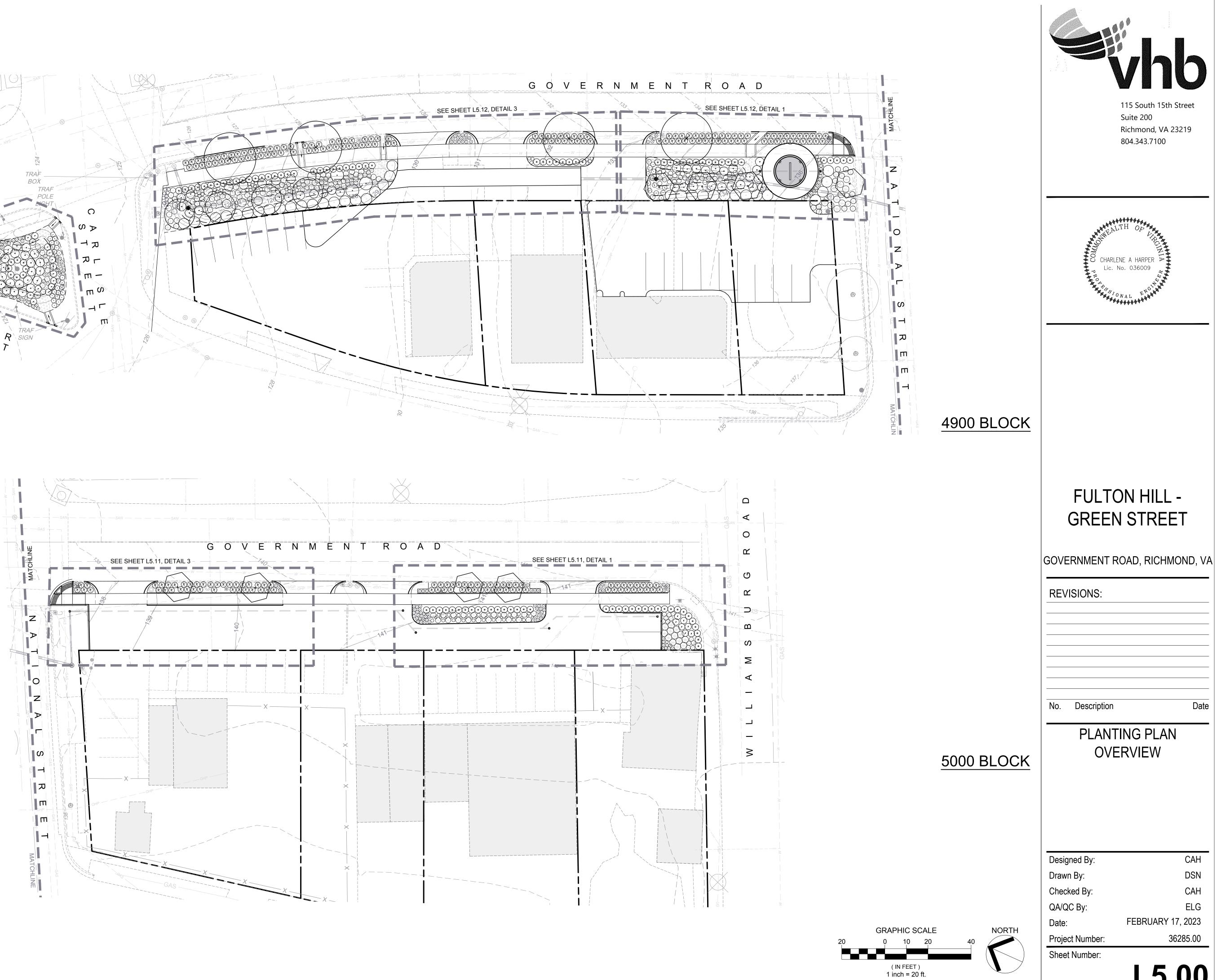
POST-DEVELOPMENT								
DRAINAGE #	AREA	IMPERVIOUS R/W	IMPERVIOUS OFF-SITE	CN	PERVIOUS	CN		WCN
1	0.27	0.11	0.15	98	0.00	80		98
2	0.42	0.28	0.05	98	0.09	80		94
3	0.42	0.19	0.16	98	0.07	80		95
4	0.04	0.03	0	98	0.01	80		95
5	0.22	0.08	0.08	98	0.06	80		93
B1	0.01	0.001	0	98	0.01	80		81
B2	0.01	0.004	0	98	0.01	80		87
OVERALL	1.39 AC	0.70 AC	0.44 AC	98	0.24 AC	80		95

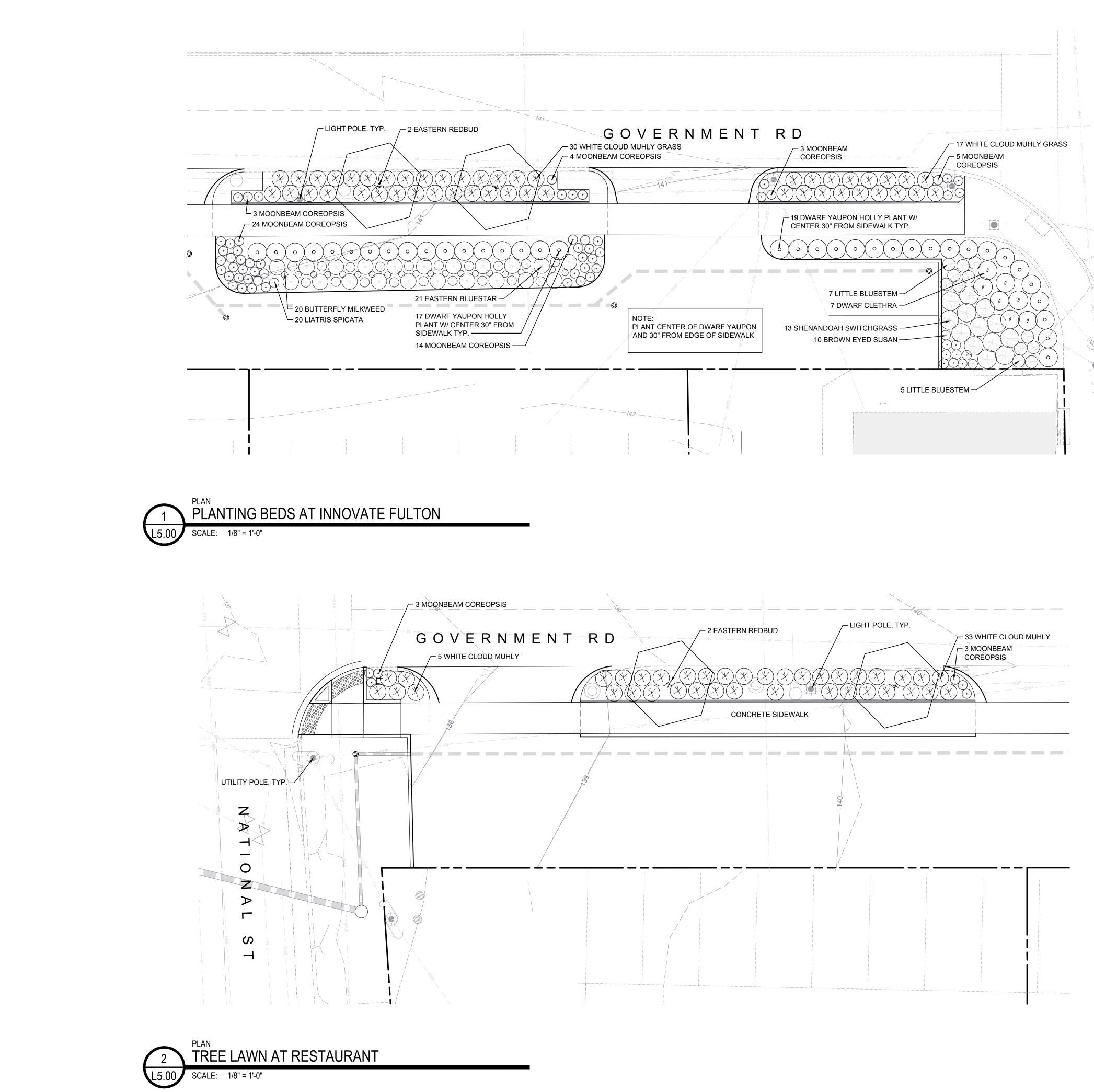


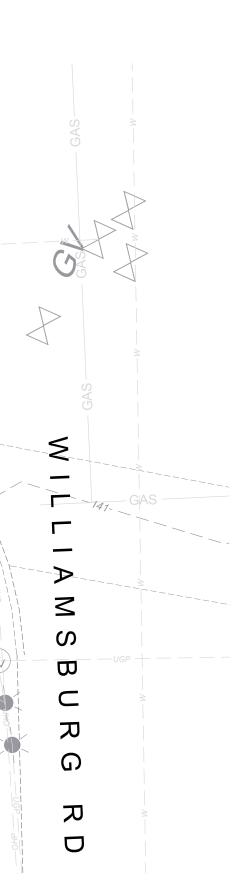


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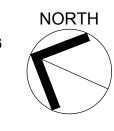


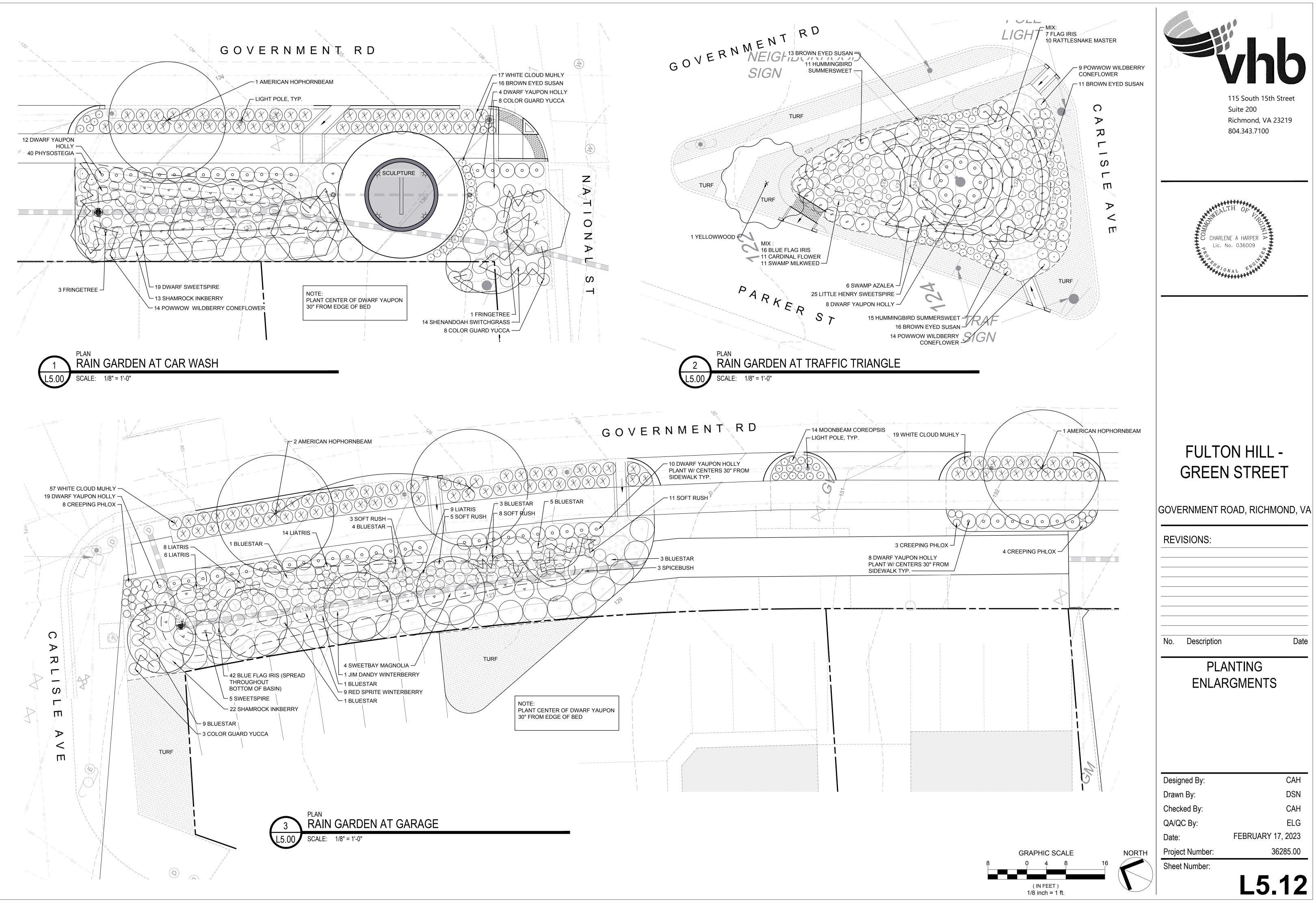


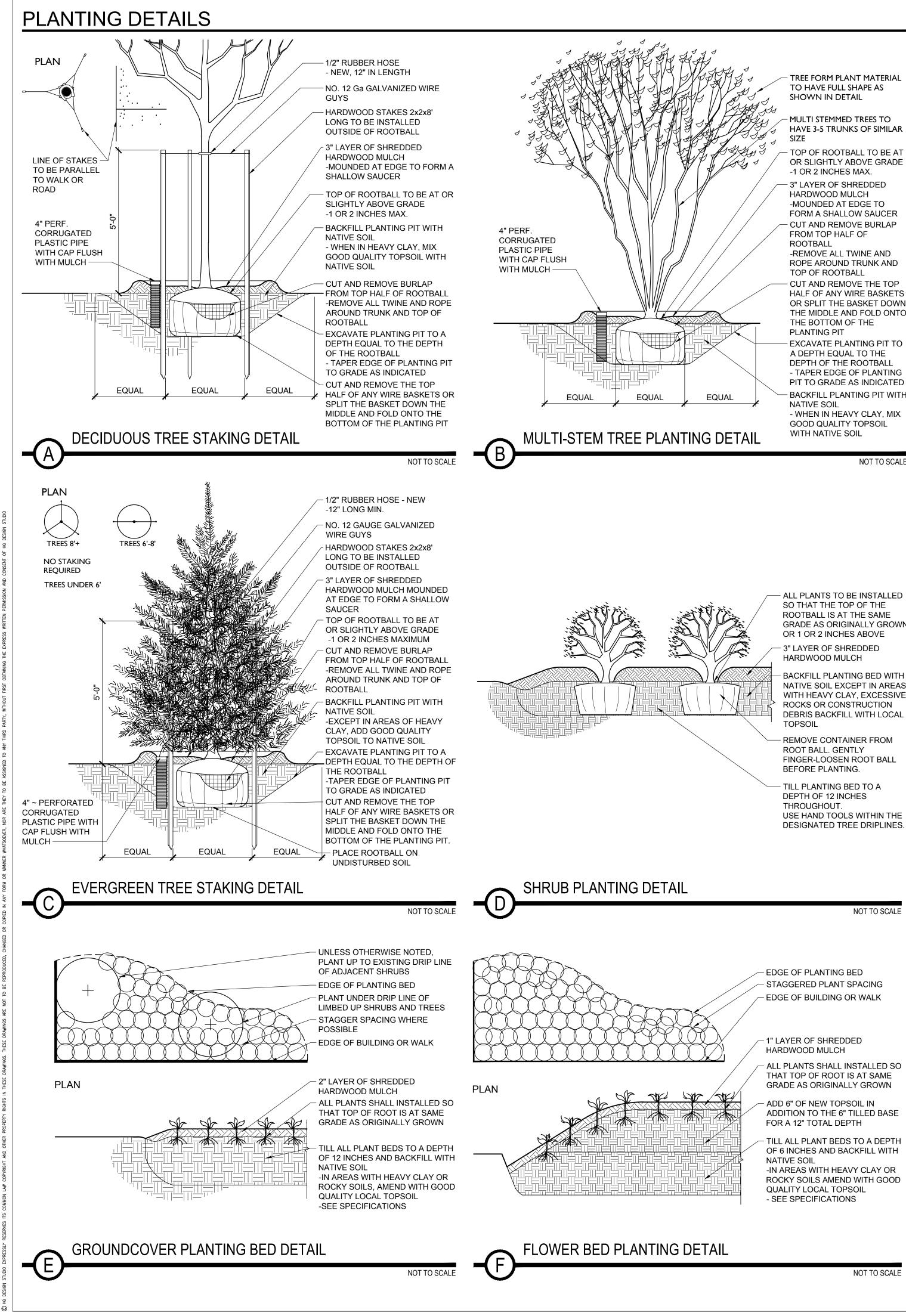


	115 South 15th Street Suite 200 Richmond, VA 23219 804.343.7100
	RLENE A HARPER No. 036009
GREE	ON HILL - N STREET ROAD, RICHMOND, VA
REVISIONS:	
	ANTING RGEMENTS

GRAPHIC SCALE 8 0 4 8 (IN FEET) 1/8 inch = 1 ft.







PLANT MATERIAL SCHEDULE

TREE FORM PLANT MATERIAL TO HAVE FULL SHAPE AS SHOWN IN DETAIL

MULTI STEMMED TREES TO HAVE 3-5 TRUNKS OF SIMILAR

TOP OF ROOTBALL TO BE AT OR SLIGHTLY ABOVE GRADE -1 OR 2 INCHES MAX. - 3" LAYER OF SHREDDED

HARDWOOD MULCH -MOUNDED AT EDGE TO FORM A SHALLOW SAUCER - CUT AND REMOVE BURLAP FROM TOP HALF OF

-REMOVE ALL TWINE AND ROPE AROUND TRUNK AND TOP OF ROOTBALL - CUT AND REMOVE THE TOP HALF OF ANY WIRE BASKETS

OR SPLIT THE BASKET DOWN THE MIDDLE AND FOLD ONTO THE BOTTOM OF THE PLANTING PIT EXCAVATE PLANTING PIT TO

A DEPTH EQUAL TO THE DEPTH OF THE ROOTBALL - TAPER EDGE OF PLANTING PIT TO GRADE AS INDICATED - BACKFILL PLANTING PIT WITH

NATIVE SOIL - WHEN IN HEAVY CLAY, MIX GOOD QUALITY TOPSOIL

NOT TO SCALE

UANTITY	BOTANICAL NAME	COMMON NAME	SPACING	CALIPER	HEIGHT	ROOT TYPE	DETAIL	REMARKS
TREES					I			
5	CERCIS CANADENSIS	EASTERN REDBUD	AS SHOWN	8-10'		B&B	А	SPECIMEN QUALITY, MATCHED
3	CHIONANTHUS VIRGINICUS	FRINGETREE	AS SHOWN	6-8'		B&B	В	MATCHED
1	CLADRASTIS KENTUKEA	YELLOWWOOD	AS SHOWN	2.5"		B&B	Α	SPECIMEN QUALITY
4	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	AS SHOWN	8-10'		B&B	В	MATCHED
4	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	AS SHOWN	2.5"		B&B	Α	SPECIMEN QUALITY, MATCHED
SHRUBS								
33	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	AS SHOWN		18" MIN.	CONT.	D	
36	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	AS SHOWN		24" MIN.	CONT.	D	
1	ILEX VERTICILLATA 'JIM DANDY'	JIM DANDY WINTERBERRY (MALE)	AS SHOWN		24" MIN.	CONT.	D	
9	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY	AS SHOWN		24" MIN.	CONT.	D	
100	ILEX VOMITORIA 'BORDEAUX'	DWARF YAUPON HOLLY	AS SHOWN		18" MIN.	CONT.	D	
57	ITEA VIRGINICA 'LITTLE HENRY'	LITTLE HENRY SWEETSPIRE	AS SHOWN		24" MIN.	CONT.	D	
3	LINDERA BENZOIN	NORTHERN SPICEBUSH	AS SHOWN		24" MIN.	CONT.	D	
6	RHODODENDRON VISCOSUM	SWAMP AZALEA	AS SHOWN		21" MIN.	CONT.	D	
17	YUCCA FILAMENTOSA 'COLOR GUARD'	COLOR GUARD YUCCA	AS SHOWN		18" MIN.	CONT.	D	
	IALS, GROUNDCOVER, AND ORNAMENTAL GRASSES							
48	AMSONIA TABERNAEMONTANA	EASTERN BLUESTAR	AS SHOWN			1 GAL.	E	
40 11	AMSONIA TABERINALMONTANA ASCLEPIAS INCARNATA	SWAMP MILKWEED	AS SHOWN			1 GAL.	E	
20	ASCLEPIAS INCARINATA ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	AS SHOWN			1 GAL.	E	
81	COREOPSIS 'MOONBEAM'	MOONBEAM COREOPSIS	AS SHOWN			1 GAL.	E	
37	ECHINACEA PURPUREA 'POWWOW WILDBERRY'	POWWOW WILDBERRY	AS SHOWN			1 GAL.	E	
10	ERYNGIUM YUCCIFOLIUM	RATTLESNAKE MASTER	AS SHOWN			1 GAL.	E	
65	IRIS VERSICOLOR	BLUE FLAG IRIS	AS SHOWN			1 GAL.	E	
27	JUNCUS EFFUSUS	SOFT RUSH	AS SHOWN			1 GAL.	E	
57	LIATRIS SPICATA	BLAZING STAR	AS SHOWN			1 GAL.	E	
	LOBELIA CARDINALIS	CARDINAL FLOWER	AS SHOWN			1 GAL.	E	
209	MUHLENBERGIA CAPILLARIS 'WHITE CLOUD'	WHITE CLOUD MUHLY GRASS	AS SHOWN			1 GAL.	E	
209	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	AS SHOWN			3 GAL.	E	
 15	PHLOX SUBULATA	CREEPING PHLOX	AS SHOWN			1 GAL.	E	
40	PHEOX SUBULATA PHYSOSTEGIA VIRGINIANA	FALL OBEDIENT PLANT	AS SHOWN			1 GAL.	E	
66	RUDBECKIA TRILOBA	BROWN EYED SUSAN	AS SHOWN			1 GAL.	E	
12	SCHIZACHYRIUM SCOPARIUM 'THE BLUES'	LITTLE BLUESTEM	AS SHOWN			1 GAL.	E	
12						T GAL.		

- ALL PLANTS TO BE INSTALLED SO THAT THE TOP OF THE ROOTBALL IS AT THE SAME GRADE AS ORIGINALLY GROWN OR 1 OR 2 INCHES ABOVE

3" LAYER OF SHREDDED HARDWOOD MULCH

- BACKFILL PLANTING BED WITH NATIVE SOIL EXCEPT IN AREAS WITH HEAVY CLAY, EXCESSIVE ROCKS OR CONSTRUCTION DEBRIS BACKFILL WITH LOCAL

- REMOVE CONTAINER FROM ROOT BALL. GENTLY FINGER-LOOSEN ROOT BALL BEFORE PLANTING.

TILL PLANTING BED TO A DEPTH OF 12 INCHES THROUGHOUT. USE HAND TOOLS WITHIN THE DESIGNATED TREE DRIPLINES.

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PLANTING NOTES:

- CONTRACTOR SHALL VERIFY PLANT MATERIAL QUANTITIES SHOWN ON PLAN WITH TOTALS IN PLANTING SCHEDULE. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES PRIOR TO FINAL BIDDING. UNIT PRICES SHALL BE SUBMITTED AS PART OF FINAL BID
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE FULL YEAR TO BE IN A HEALTHY GROWING CONDITION. PLANT MATERIALS WHICH DO NOT FULFILL THIS GUARANTEE SHALL BE REPLACED AT NO COST TO THE OWNER. REPLACEMENT SHALL BE GUARANTEED THROUGHOUT THE ORIGINAL GUARANTEE PERIOD. PLANTS THAT DIE SHALL BE REPLACED IMMEDIATELY.
- CONTRACTOR IS RESPONSIBLE FOR WATERING ALL PLANT MATERIAL DURING INSTALLATION AND UNTIL FINAL INSPECTION AND ACCEPTANCE BY OWNER. AN IRRIGATION SYSTEM IS NOT PROPOSED WITH THIS PROJECT.
- 4. CONTRACTOR RESPONSIBLE FOR CONTACTING MISS UTILITY PRIOR TO BEGINNING OF CONSTRUCTION FOR LOCATION OF ALL UTILITY LINES. TREES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM SEWER/WATER CONNECTIONS. NOTIFY LANDSCAPE ARCHITECT IF ANY CONFLICTS OCCUR.
- THE LANDSCAPE ARCHITECT IS THE OWNERS REPRESENTATIVE AND SHALL BE THE APPROVING AUTHORITY FOR INFORMATION PROVIDED IN THESE PLANS AND SPECIFICATIONS.
- ALL PLANT MATERIALS, TOPSOIL, MULCH, FERTILIZERS, SOIL AMENITIES, PLANTING SUPPLIES AND METHODS SHALL BE SUBJECT TO LANDSCAPE ARCHITECTS APPROVAL REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE WITHOUT DELAY.
- ALL PLANT MATERIALS AND PLANTING METHODS SHALL CONFORM TO A.A.N. STANDARDS.
- CONTRACTOR SHALL LAYOUT AND MARK LOCATION FOR ALL PLANT MATERIAL, PLANTING, 8. AND IMPROVEMENTS SHOWN AND REQUEST IN FIELD APPROVAL FROM LANDSCAPE ARCHITECT.
- BEDS TO CONTAIN SHRUBS OR GROUND COVER SHALL BE TILLED TO A DEPTH OF 6" AND THE SOIL CONDITIONED BY ADDING CLEAN, WELL ROTTED MANURE. IF EXISTING SOIL IS CONSIDERED TO BE UNUSABLE BY OWNER, BEDS SHALL BE TREATED TO ELIMINATE WEEDS AND WEED SEEDS.
- 10. ALL PLANTING BED AREAS SHALL BE COVERED WITH A 3" MINIMUM LAYER OF MEDIUM TEXTURE SHREDDED HARDWOOD MULCH UNLESS OTHERWISE NOTED.
- 11. ALL SUBSTITUTIONS OF PLANT MATERIAL SHALL BE REQUESTED IN WRITING TO THE

19. THE ONE YEAR GUARANTEE PERIOD SHALL BEGIN UPON THE OWNER'S APPROVAL AND ACCEPTANCE OF THE PLANTING INSTALLATION. THE OWNER SHALL ASSUME RESPONSIBILITY FOR MAINTENANCE INCLUDING WATERING, WEEDING, PEST CONTROL, AND FERTILIZATION. 20. CONTRACTOR SHALL REMOVE STAKING FROM TREES AT THE END OF THE ONE YEAR WARRANTY PERIOD.

NOT TO SCALE



115 South 15th Street Suite 200 Richmond, VA 23219 804.343.7100



FULTON HILL -GREEN STREET

GOVERNMENT ROAD, RICHMOND, VA

REVISIONS:

No. Description

Date

PLANTING NOTES, DETAILS, AND SCHEDULE

Designed By:	CAH
Drawn By:	DSN
Checked By:	CAH
QA/QC By:	ELG
Date:	FEBRUARY 17, 2023
Project Number:	36285.00
Sheet Number:	

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LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER.

12. ALL PLANTING OPERATIONS SHALL BE UNDER THE SUPERVISION OF AN EXPERIENCED PLANTSMAN.

13. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO SELECT PLANT MATERIALS IN THE NURSERY.

14. FOR TREES BALLED IN WIRE BASKETS, CUT AND REMOVE TOP AND SIDES OF BASKET AFTER INSTALLATION.

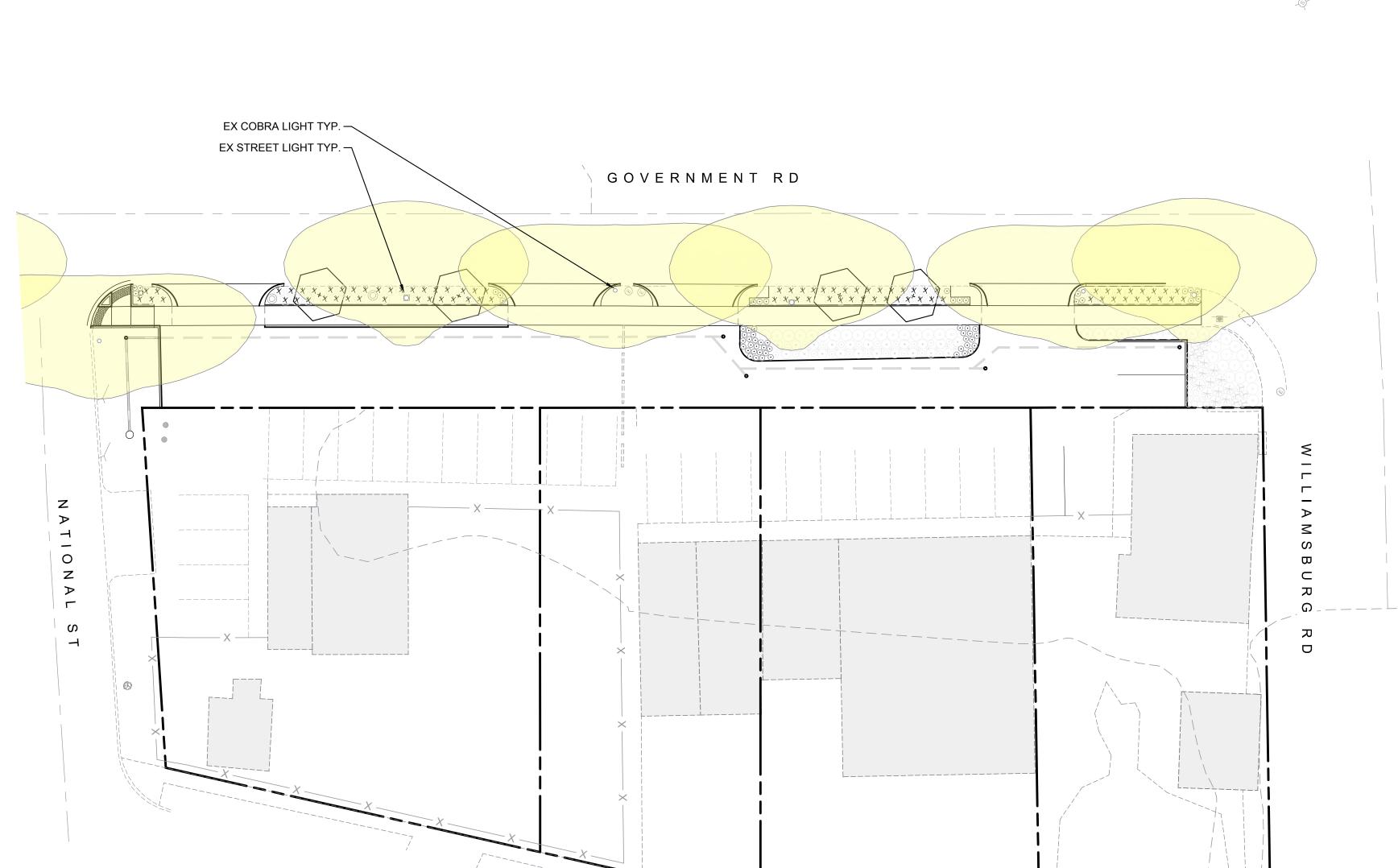
15. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS AND MATERIALS THAT ARE IN AN UNHEALTHY OR UNSIGHTLY CONDITION, AS WELL AS PLANTS AND MATERIALS THAT DO NOT CONFORM TO A.A.N. STANDARDS. SEE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-(CURRENT EDITION).

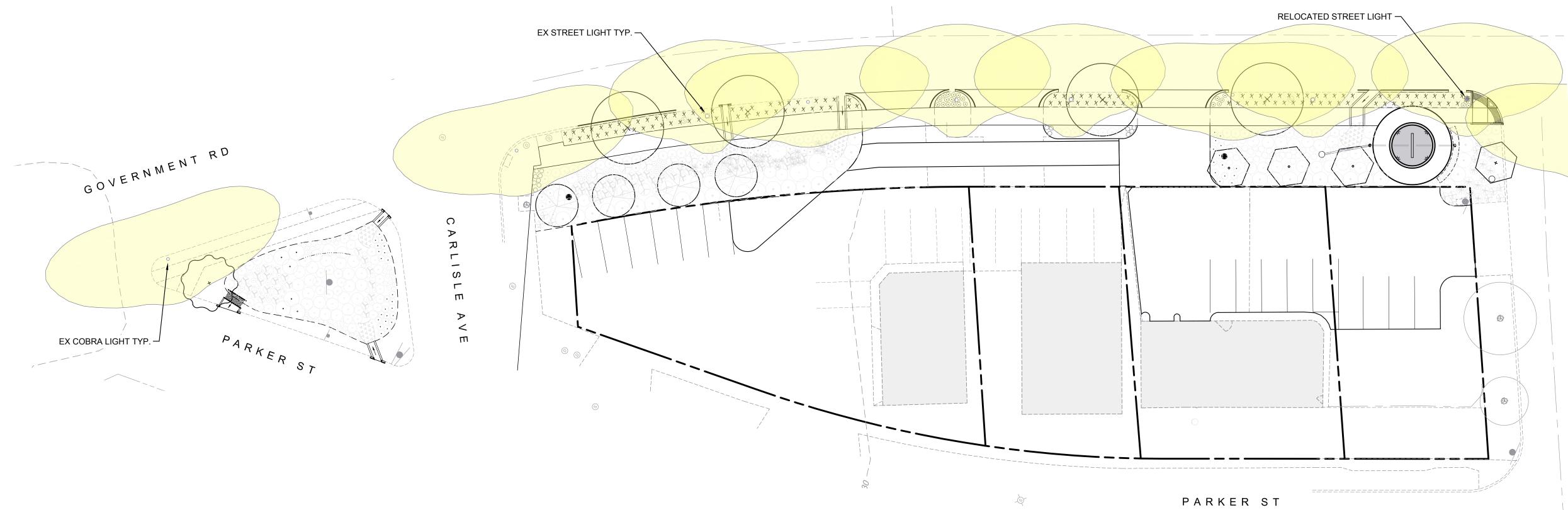
16. SOIL SHALL BE FREE OF ALL WEEDS.

17. PLANT SIZES, QUANTITIES, AND SPECIES WILL BE CHECKED BY COUNTY INSPECTION FOR COMPLIANCE WITH PLANT SCHEDULE AS APPROVED BY THE COUNTY. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DELAY IN ISSUANCE OF CERTIFICATE OF OCCUPANCY BY THE COUNTY RESULTING FROM UNATHORIZED SUBSTITUTIONS OR DOWNSIZING.

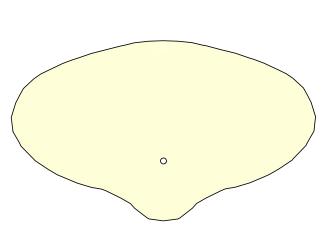
18. UPON COMPLETION OF LANDSCAPE INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR WHO WILL VERIFY COMPLETENESS, INCLUDING THE REPLACEMENT OF ALL DEAD PLANT MATERIAL, AND SCHEDULE A FINAL INSPECTION FOR ACCEPTANCE BY OWNER



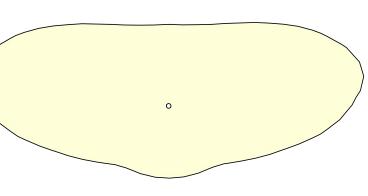




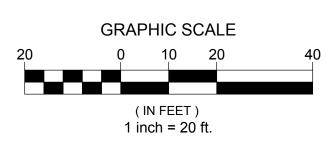
GOVERNMENT RD



EXISTING 12' STREET LIGHT - 1 FC



EXISTING TALL COBRA LIGHT - 1 FC



NORTH

Sheet Number:

115 South 15th Street Suite 200 Richmond, VA 23219 804.343.7100 CHARLENE A HARPER Lic. No. 036009 FULTON HILL -**GREEN STREET** GOVERNMENT ROAD, RICHMOND, VA **REVISIONS**: No. Description Date LIGHTING EXHIBIT Designed By: CAH Drawn By: DSN Checked By: CAH QA/QC By: ELG FEBRUARY 17, 2023 Date: 36285.00 Project Number:

