DGN $REF001 $REF002 $REF003 $REF004 $REF005 $REF006
$DGNLEV $LEV001 $LEV002 $LEV003 $LEV004 $LEV005 $LEV006

PROJECT MANAGER __W.Sanford_(703)385-7810_(City_Of_Fairfax)
SURVEYED BY __M.Hogan_(703)263-2220,_08/08/2014
DESIGNED BY __S.Yanavitz_(410)741-3500_(SabraWang_&_Assoc.,Inc.)
SUBSURFACE UTILITY BY __Bradley_Leatherman_(703)928-0649_(ZAYO,04/15)

INDEX OF SHEETS

THIS PROJECT WAS DEVELOPED UTILIZING THE DEPARTMENT'S ENGINEERING DESIGN PACKAGE (GEOPAK).
GEOPAK Computer Identification No. 100410

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
CITY,TOWN OR VILLAGE
RIGHT OF WAY LINE
FENCE LINE
UNFENCED PROPERTY LINE
FENCED PROPERTY LINE
WATER LINE
SANITARY SEWER LINE
GAS LINE
ELECTRIC UNDERGROUND CABLE
TRAVELED WAY
GUARD RAIL
RETAINING WALL
RAILROADS
BASE OR SURVEY LINE
LEVEE OR EMBANKMENT
BRIDGES
CULVERTS
DROP INLET
POWER POLES
TELEPHONE OR TELEGRAPH POLES
TELEPHONE OR TELEGRAPH LINES
HEDGE
TREES
HEAVY WOODS
GROUND ELEVATION
GRADE ELEVATION

THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY AS AWARDED, HAS BEEN SEALED AND SIGNED USING DIGITAL SIGNATURES AND THE OFFICIAL PLAN ASSEMBLY IN ELECTRONIC FORMAT IS STORED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY, INLCUDING ALL SUBSEQUENT REVISIONS, WILL BE THE OFFICIAL CONSTRUCTION PLANS. FOR INFORMATION RELATIVE TO ELECTRONIC FILES AND LAYERED PLANS, SEE THE GENERAL NOTES.

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT'S 2007 ROAD AND BRIDGE SPECIFICATIONS, 2008 ROAD AND BRIDGE STANDARDS, 2005 WORK AREA PROTECTION MANUAL AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC .PDF VERSION OF THE PLAN ASSEMBLY.

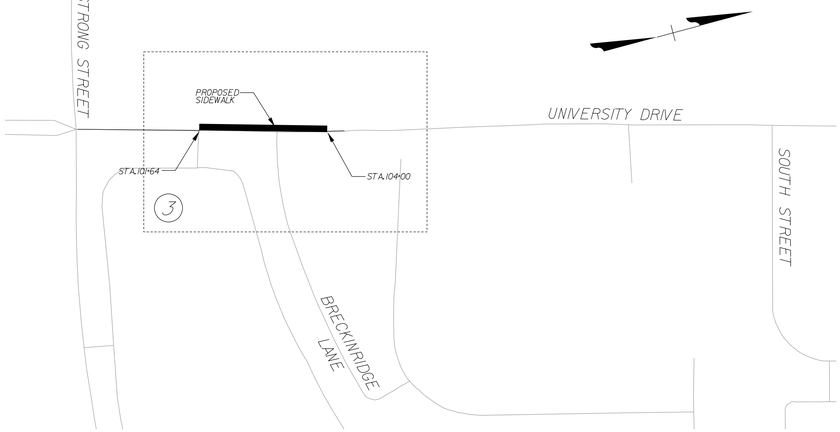
THE ORIGINAL APPROVED TITLE SHEET(S), INCLUDING ORIGINAL SIGNATURES, ARE FILED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY. ANY MISUSE OF ELECTRONIC FILES, INCLUDING SCANNED SIGNATURES, IS ILLEGAL AND ENFORCED TO THE FULL EXTENT OF THE LAW.

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED SIDEWALK IMPROVEMENTS

CITY OF FAIRFAX, UNIVERSITY DRIVE
FROM: ARMSTRONG STREET
TO: SOUTH STREET



SCALE
0' 300' 600'

POPULATION OF CITY OF FAIRFAX, VIRGINIA (24,486 CENSUS)

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	PPMS NO.	LENGTH INCLUDING BRIDGE(S) FEET	LENGTH INCLUDING BRIDGE(S) MILES	LENGTH EXCLUDING BRIDGE(S) FEET	LENGTH EXCLUDING BRIDGE(S) MILES	TYPE PROJECT	DESCRIPTION
U000-151-149	M-501			100410		N/A	N/A	N/A	N/A	CONSTRUCTION	SIDEWALK
	P-101	RSTP-5A01(232)		100410		N/A	N/A	232	0.04	PRELIM. ENGINEERING	
	R-201	RSTP-5A01(598)		100410		N/A	N/A	232	0.04	R.O.W.	

NOTE: PROJECT LENGTH BASED ON CONSTRUCTION BASELINE

FHWA 534 DATA - 2H024

STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.		00	U000-151-149 (SEE TABULATION BELOW FOR SECTION NUMBERS)	1

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA	
Collector 25mph	
	Fr: ARMSTRONG STREET To: SOUTH STREET
ADT (2014)	13000
ADT (2015)	14000
DHV	1400
D (%) (design hour)	25
T (%) (design hour)	3
V (MPH)	25 (MPH)

100% SUBMISSION
January 14, 2016

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR ACQUISITION OF RIGHT OF WAY

REVISED

TIER 1 PROJECT

LOCALLY ADMINISTERED PROJECTS

CITY OF FAIRFAX
NAME OF LOCALITY

(SIGNATURE)
MR. DAVID SUMMERS
RECOMMENDED FOR APPROVAL FOR RIGHT OF WAY

DATE	DIRECTOR, DEPARTMENT OF PUBLIC WORKS
08/31/15	TITLE OF POSITION

(SIGNATURE)
WENDY SANFORD
RECOMMENDED FOR APPROVAL FOR CONSTRUCTION

DATE	PROJECT MANAGER
08/31/15	TITLE OF POSITION

RECOMMENDED FOR APPROVAL FOR RIGHT OF WAY ACQUISITION

DATE — DISTRICT PLANNING AND INVESTMENT MANAGER

DATE — DISTRICT PROJECT DEVELOPMENT ENGINEER

APPROVED FOR RIGHT OF WAY ACQUISITION

DATE — DISTRICT ADMINISTRATOR

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION

DATE — DISTRICT PLANNING AND INVESTMENT MANAGER

DATE — DISTRICT PROJECT DEVELOPMENT ENGINEER

APPROVED FOR CONSTRUCTION

DATE — DISTRICT ADMINISTRATOR

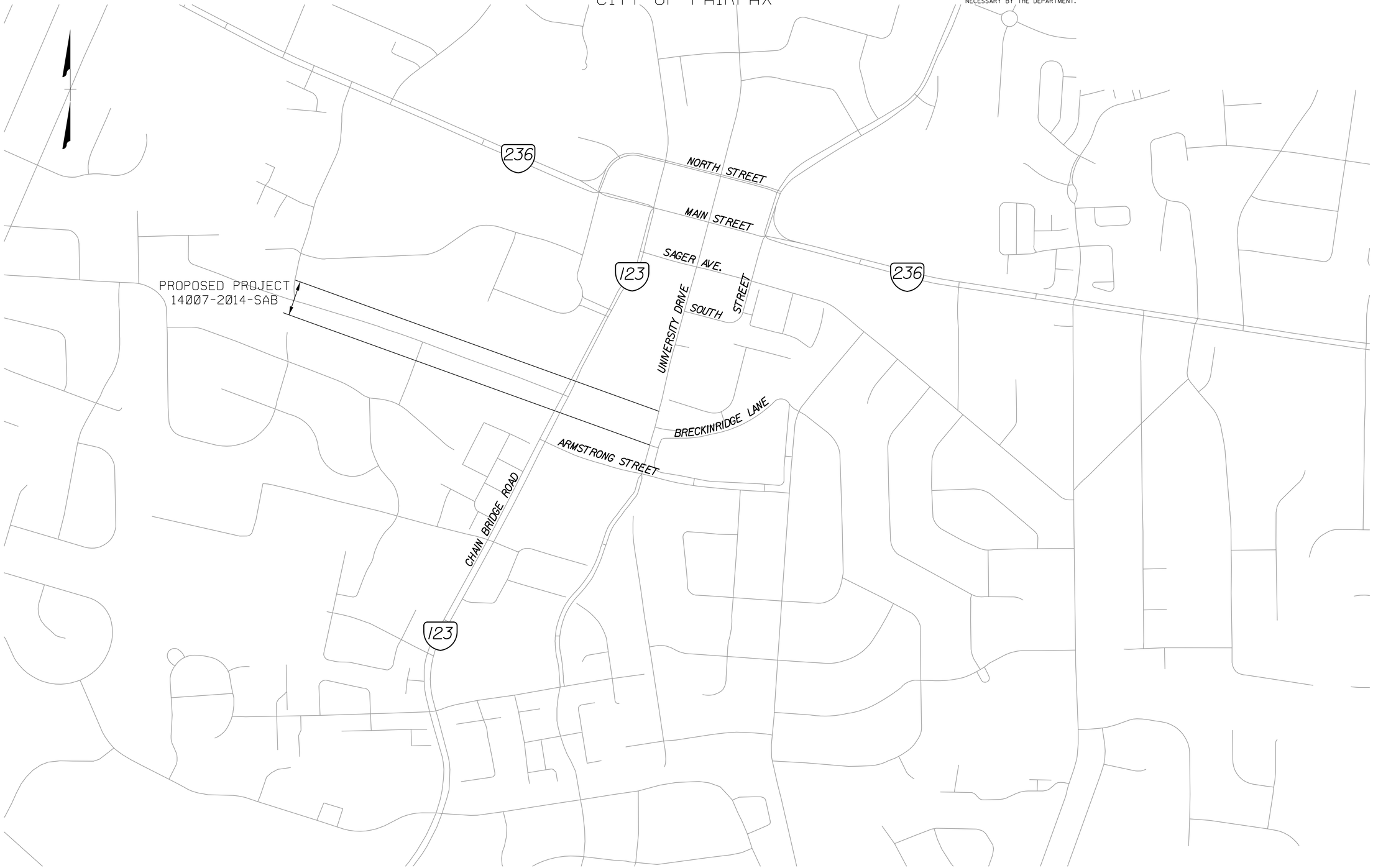
$TIME$STAMP$

PROJECT 14007-2014-SAB | SHEET NO. 1

LOCATION MAP

CITY OF FAIRFAX

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.



SCALE (FEET)

0 300 600

CITY OF FAIRFAX VIRGINIA 1805

SABRA, WANG & ASSOCIATES, INC.
7055 SAMUEL MORRIS DRIVE
SUITE 100
COLUMBIA, MD 21046
(410)741-3700
WWW.SABRA-WANG.COM

Stantec

UNIVERSITY DRIVE SIDEWALK IMPROVEMENTS

BETWEEN ARMSTRONG STREET AND SOUTH STREET

REVISIONS

No.	Description	Date

Drawing Title

LOCATION MAP

COF Project No.:	14007-2014-SAB
Scale:	AS SHOWN
Designed By:	S. YANOVITZ
Drawn By:	C. KELLER
Checked By:	P. SILBERMAN
Date:	JANUARY, 2016

Sheet No. 1A of 09

PLOTTED: Monday, January 18, 2016 AT 09:39 AM
FILE: R:\2014\17 City of Fairfax Transportation Engineering_14-007_$500K\Task 01 University Drive\dwg\14007p000A_UniversityDr.dgn
BY: ckeller –

City/County: CITY OF FAIRFAX

UPC No.: 100410

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PRELIMINARY
RIGHT OF WAY DATA SHEET

PARCEL NO.	LANDOWNER	SHEET NO.	AREA																PROFFERS
			TOTAL	FEE TAKING		PRESCRIPTIVE R/W		FEE REMAINDER		EASEMENTS									
										PERMANENT		UTILITY		TEMPORARY		TEMPORARY(ENTRANCES)			
			ACRES OR SQUARE FEET	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	ACRES OR SQ. FEET	HECTARES/ OR SQ. METERS	YES / NO
001	F&M BANK NORTHERN VIRGINA	001	134 SF											134 SF				
002	HOPE C.DAVIS AND BANKDEAD T.DAVIS	001	2,815 SF											2,815 SF				

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Stantec

UNIVERSITY DRIVE SIDEWALK IMPROVEMENTS
BETWEEN ARMSTRONG STREET AND SOUTH STREET

REVISIONS

No.	Description	Date

Drawing Title

RIGHT OF WAY DATA

COF Project No.: 14007-2014-SAB
Scale: N.T.S.
Designed By: S. YANOVITZ
Drawn By: C. KELLER
Checked By: P. SILBERMAN
Date: JANUARY, 2016

Sheet No. 1B of 09

PLOTTED: Monday, January 18, 2016 AT 09:39 AM
FILE: R:\2014\17 City of Fairfax Transportation Engineering_14-007_$500K\Task 01 University Drive\dwg\14007b00f1b_UniversityDr.dgn
BY: ckeller –

'95 CADD LEVEL STRUCTURE

SURVEY

LEVEL 1	CENTERLINE, TRAVERSE, CONTROL STATION
LEVEL 2	BRIDGES
LEVEL 3	EDGE OF PAVEMENT, GRAVEL, CONCRETE, ASPHALT PARKING LOT
LEVEL 4	CURB AND GUTTER
LEVEL 5	CURB & CONCRETE ISLANDS
LEVEL 6	PAVED & GRAVEL SHOULDER
LEVEL 7	SIDEWALK (ALONG ROADS); WHEELCHAIR RAMPS
LEVEL 8	BUILDINGS, PORCHES, DECKS, PATIOS & SWIMMING POOLS
LEVEL 9	WALKS (AROUND HOUSES & BUILDINGS)
LEVEL 10	STEPS
LEVEL 11	FENCES & GATES
LEVEL 12	WOOD LINE, TREES, SHRUBS, HEDGEROWS
LEVEL 13	RETAINING WALLS
LEVEL 14	CONCRETE SLABS, BALLARDS, COLUMNS, SIGNS, POSTS, GAS ISLANDS & PLAYSETS
LEVEL 15	ABOVE GROUND TANKS, DUMPSTERS, PROPANE TANKS
LEVEL 16	GUARDRAIL & JERSEY BARRIER
LEVEL 17	BODIES OF WATER, STREAMS, LAKES, ETC.
LEVEL 18	PAVED DITCHES, RIPRAP
LEVEL 19	DRAINAGE ITEMS DAMS, ENDWALLS & ENDSECTIONS CATCH BASINS, DROP INLETS & DI MANHOLES CULVERT PIPES
LEVEL 20	ALL RAILROAD ITEMS, RAILROAD TIES
LEVEL 21	SEPTIC TANKS, DRAIN FIELDS, WELLS
LEVEL 22	CEMETERY LOCATION & GRAVES
LEVEL 23	RIGHT OF WAY AND RIGHT OF WAY MONUMENTS
LEVEL 24	PROPERTY LINES, TEMPORARY EASEMENT, PERMANENT EASEMENT, PROPERTY PINS
LEVEL 25	STATE, COUNTY AND CITY BOUNDARY LINES
LEVEL 26	UTILITY EASEMENTS
LEVEL 27	WELANDS
LEVEL 28	GAS PUMPS, GAS TANKS, FILLER CAPS, MONITORING WELLS, VENT PIPES, ETC.
LEVEL 29	MINE INFORMATION
LEVEL 30	EXISTING NOISE BARRIER WALLS
LEVEL 31-60	ANNOTATION FOR LEVELS 1 - 30
LEVEL 61	TRAFFIC SIGNES IN R/W, BASE PLAN SHEET, NORTH ARROW, SCALE BAR, ETC.
LEVEL 62	GRID AND LABELS: ELEVATION TICKS, PROJECT NOTES
LEVEL 63	NOT ASSIGNED

NOTE: Survey Utility Information will be in a separate file. Digital Terrain Model information will be in separate files.

DESIGN

LEVEL 1	BASELINE & SUB-TANGENTS
LEVEL 2	BRIDGES
LEVEL 3	EDGE OF PAVEMENT & PRIVATE ENTRANCES
LEVEL 4	CURB AND GUTTER
LEVEL 5	CURB
LEVEL 6	PAVED SHOULDER
LEVEL 7	SIDEWALK AND/OR BICYCLE TRAIL
LEVEL 8	NOT ASSIGNED
LEVEL 9	NOT ASSIGNED
LEVEL 10	STEPS
LEVEL 11	FENCES
LEVEL 12	DIRECTIONAL ARROWS, PAVEMENT STRIPING & FLUSH MEDIAN DELINEATION
LEVEL 13	RETAINING WALLS
LEVEL 14	CONCRETE SLABS, COLUMNS, SIGNS, POSTS
LEVEL 15	NOT ASSIGNED
LEVEL 16	GUARDRAIL & JERSEY BARRIER
LEVEL 17	NOT ASSIGNED
LEVEL 18	PAVED DITCHES
LEVEL 19	RESERVED FOR MISC. DRAIN. ITEMS TO BE PLACED BY ROAD DESIGNERS
LEVEL 20	RAILROADS, ETC.
LEVEL 21	NOT ASSIGNED
LEVEL 22	LIMITS OF CONSTRUCTION
LEVEL 23	RIGHT-OF-WAY, TEMP. & PERM. EASEMENTS
LEVEL 24	NOT ASSIGNED
LEVEL 25-29	NOT ASSIGNED
LEVEL 30	PROPOSED NOISE BARRIER WALLS & ANNOTATION
LEVEL 31-54	ANNOTATION FOR LEVELS 1 - 24
LEVEL 55-60	NOT ASSIGNED
LEVEL 61	BASE PLAN SHEET, SCALE BAR, NORTH ARROW, MATCH LINES, SEALING & SIGNING BLOCKS
LEVEL 62	NOT ASSIGNED
LEVEL 63	NOT ASSIGNED

HYDRAULICS - DRAINAGE

LEVEL 1	PIPES FROM 4" TO 42" (CUSTOM LINE STYLES)
LEVEL 2	PIPES 48" AND LARGER (CUSTOM LINE STYLE)
LEVEL 3	STANDARD BOX CULVERTS LC-0, WT-5
LEVEL 4	ENDWALLS (CELLS)
LEVEL 5	END SECTIONS (CELLS)
LEVEL 6	DITCHES AND FLUMES WT-4, LC-0 (CUSTOM LINE STYLE)
LEVEL 7	ENERGY DISSIPATORS, PIPE SPILLOUT AND SPRING BOXES (CELLS)
LEVEL 8	MANHOLES AND JUNCTION BOXES (CELLS)
LEVEL 9	DROP INLETS DI-1, DI-5 AND DI-9 SERIES (CELLS)
LEVEL 10	DROP INLETS DI-2 SERIES (CELLS)
LEVEL 11	DROP INLETS DI-3 SERIES (CELLS)
LEVEL 12	DROP INLETS DI-4 SERIES (CELLS)
LEVEL 13	DROP INLETS DI-7 SERIES (CELLS)
LEVEL 14	DROP INLETS DI-10 SERIES (CELLS)
LEVEL 15	DROP INLETS DI-11 AND DI-13 SERIES (CELLS)
LEVEL 16	DROP INLETS DI-12 SERIES (CELLS)
LEVEL 17	DROP INLETS DI-14 SERIES (CELLS)
LEVEL 18	SPECIAL DESIGN ITEMS (ENDWALLS, INLETS, ETC.)
LEVEL 19	UNDERDRAINS (CD-1 & 2, UD-1, UD-2, ETC.) (CUSTOM LINE STYLE)
LEVEL 20	UNDERDRAIN OUTLET PIPE AND EW-12 ENDSECTIONS (CUSTOM LINE STYLE & CELLS)
LEVEL 21	STONE & OUTLET PROTECTION (EC-1, RIPRAP CHANNEL, ETC.) (CELLS)
LEVEL 22	SWM BASIN ITEMS (BASIN, RISERS, WEIRS, ETC.)
LEVEL 23	SWM BASIN (BASELINE/ALIGNMENT)
LEVEL 24	SWM BASIN (PLAN VIEW/CONTOURS)
LEVEL 25	SWM BASIN (MISCELLANEOUS/ITEMS)
LEVEL 26	SWM BASIN (DESCRIPTIONS/NOTES)
LEVEL 27	TYPICAL DITCH DETAILS
LEVEL 28-30	NOT ASSIGNED
LEVEL 31-60	ANNOTATION FOR LEVELS 1 - 30 NOTE: ALL DRAINAGE STRUCTURE LABELS ON LEVEL 31
LEVEL 61	BASE PLAN SHEET, SCALE BAR, NORTH ARROW, MATCH LINES, ETC. WT- 5, LC- 0
LEVEL 62	NOT ASSIGNED
LEVEL 63	PROJECT NOTES

EROSION & SEDIMENT CONTROL

LEVEL 1	PHASE I - EROSION CONTROL ITEMS (TFB, TSF, TURB. CURTAIN) (CUSTOM LINE STYLE)
LEVEL 2	PHASE I - EROSION CONTROL DITCH ITEMS (EC-2, EC-3, ETC.)(CUSTOM LINE STYLE)
LEVEL 3	PHASE I - EROSION CONTROL STONE (EC-1, RIPRAP, CHECK DAMS) (CELLS)
LEVEL 4	PHASE I - EROSION CONTROL ITEMS (SEDIMENT TRAPS & BASINS)
LEVEL 5	PHASE I - EROSION CONTROL ITEMS (DIVERSION DIKES & DITCHES) (CUSTOM LINE STYLE)
LEVEL 6	PHASE I - EROSION CONTROL ITEMS (TEMPORARY DIVERSION CHANNELS) (CUSTOM LINE STYLE)
LEVEL 7	PHASE I - EROSION CONTROL ITEMS (MISCELLANEOUS DIVERSION ITEMS)
LEVEL 8	PHASE I - EROSION CONTROL ITEMS (BRUSH BARRIERS, LEVEL SPREADERS, ETC.)
LEVEL 9	PHASE I - MISCELLANEOUS EROSION CONTROL ITEMS
LEVEL 10	PHASE I - TEMPORARY DRAINAGE (PIPES) (CUSTOM LINE STYLE)
LEVEL 11	PHASE I - PROPOSED DRAINAGE (PIPES) (CUSTOM LINE STYLE)
LEVEL 12	PHASE I - PROPOSED DRAINAGE (SWM)
LEVEL 13	PHASE I - EXISTING CONTOURS (LC- 1, WT- 1)
LEVEL 14	PHASE I - PROPOSED CONTOURS
LEVEL 15	PHASE I - SYMBOLS, LEGEND AND NOTES
LEVEL 16	PHASE II - EROSION CONTROL ITEMS (TFB, TSF, TURB. CURTAIN) (CUSTOM LINE STYLE)
LEVEL 17	PHASE II - EROSION CONTROL DITCH ITEMS (EC-2, EC-3, ETC.)(CUSTOM LINE STYLE)
LEVEL 18	PHASE II - EROSION CONTROL STONE (EC-1, RIPRAP, CHECK DAMS) (CELLS)
LEVEL 19	PHASE II - EROSION CONTROL ITEMS (SEDIMENT TRAPS & BASINS)
LEVEL 20	PHASE II - EROSION CONTROL ITEMS (DIVERSION DIKES & DITCHES) (CUSTOM LINE STYLE)
LEVEL 21	PHASE II - EROSION CONTROL ITEMS (TEMPORARY DIVERSION CHANNELS) (CUSTOM LINE STYLE)
LEVEL 22	PHASE II - EROSION CONTROL ITEMS (MISCELLANEOUS DIVERSION ITEMS)
LEVEL 23	PHASE II - EROSION CONTROL ITEMS (BRUSH BARRIERS, LEVEL SPREADERS, ETC.)
LEVEL 24	PHASE II - MISCELLANEOUS EROSION CONTROL ITEMS
LEVEL 25	PHASE II - TEMPORARY DRAINAGE (PIPES) (CUSTOM LINE STYLE)
LEVEL 26	PHASE II - PROPOSED DRAINAGE (PIPES) (CUSTOM LINE STYLE)
LEVEL 27	PHASE II - PROPOSED DRAINAGE (SWM)
LEVEL 28	PHASE II - EXISTING CONTOURS (LC- 1, WT- 1)
LEVEL 29	PHASE II - PROPOSED CONTOURS
LEVEL 30	PHASE II - SYMBOLS, LEGEND AND NOTES
LEVEL 31-60	ANNOTATION FOR LEVELS 1 - 30
LEVEL 61	BASE PLAN SHEET, SCALE BAR, NORTH ARROW, ETC. WT- 5, LC- 0
LEVEL 62	NOT ASSIGNED
LEVEL 63	PROJECT NOTES

TRAFFIC ENGINEERING

LEVEL 1	PROPOSED AND EXISTING SIGNAL FACES & NUMBERS SIGN FACES & NUMBERS (Legend)
LEVEL 2	PROPOSED UNDERGROUND SIGNAL EQUIPMENT CONDUIT, JUNCTION BOXES, MANHOLES
LEVEL 3	UNDERGROUND EQUIPMENT LABELS CONDUIT, WIRE, JUNCTION BOXES
LEVEL 4	PROPOSED ABOVE GROUND MINOR SIGNAL EQUIPMENT SIGNS ON SPANWIRE, MAST ARMS, POLES, SIGNAL HEADS, PEDESTRIAN PUSHBUTTONS, ETC.
LEVEL 5	ABOVE GROUND EQUIPMENT LABELS SIGNAL POLE LABELS SIGNAL HEAD LABELS, SIGN LABELS, PHASE INFO, SIGNAL POLE DETAIL
LEVEL 6	PROPOSED LOOPS/VIDEO DETECTION ZONES LOOPS, VIDEO DETECTION ZONES, MICROLOOP PROBE
LEVEL 7	SIGNAL CHARTS COLOR SEQUENCE CHART, PHASING DIAGRAM, PREEMPTION DIAGRAM, TIMING CHART
LEVEL 8	OVERHEAD UTILITY HEIGHT INFORMATION
LEVEL 9	EXISTING UNDERGROUND SIGNAL EQUIPMENT CONDUIT, JUNCTION BOXES, MANHOLES
LEVEL 10	EXISTING ABOVE GROUND MINOR SIGNAL EQUIPMENT POLE, MAST ARM, SPAN WIRE, SIGNAL HEADS, PEDESTRIAN PUSHBUTTONS, CONTROLLER/CABINET&FOUNDATION, ETC.
LEVEL 11	EXISTING LOOPS/VIDEO DETECTION ZONES LOOPS, VIDEO DETECTION ZONES, MICROLOOP PROBES
LEVEL 12	EXISTING PAVEMENT MARKINGS (LONGITUDINAL)
LEVEL 13	EXISTING TRANSVERSE MARKINGS (STOP BARS & CROSSWALKS)
LEVEL 14	EXISTING HATCHING
LEVEL 15	EXISTING LETTERS/ARROWS/SYMBOLS
LEVEL 16	GUARDRAIL AND JERSEY BARRIER
LEVEL 17	PROPOSED PAVEMENT MARKINGS (LONGITUDINAL)
LEVEL 18	PROPOSED TRANSVERSE MARKINGS (STOP BARS & CROSSWALKS)
LEVEL 19	PROPOSED HATCHING
LEVEL 20	PROPOSED LETTERS/ARROWS/SYMBOLS
LEVEL 21	PAVEMENT MARKINGS LABELS
LEVEL 22	DIRECTIONAL ARROWS (LANE ARRANGEMENTS ARROWS)
LEVEL 23	EXISTING AND PROPOSED ROW PROPOSED R/W FOR TCD's, LABELS AND LEADERS
LEVEL 24	EXISTING SIGN LOCATIONS INCLUDING STRUCTURES (SYMBOLS)
LEVEL 25	EXISTING SIGN FACES & LEADERS EXISTING SIGN FACES, EXISTING SIGN LEADERS, 'X' FOR EXISTING SIGNS TO BE REMOVED
LEVEL 26	PROPOSED SIGN LOCATIONS, INCLUDING STRUCTURES (SYMBOLS)
LEVEL 27	PROPOSED SIGN FACES & LEADERS, PROPOSED SIGN FACES, PROPOSED SIGN LEADERS
LEVEL 28	SIGN NUMBER/CALL-OUTS PROPOSED SIGN CALL-OUT, EXISTING SIGN CALL-OUT
LEVEL 29	SIGN DETAIL SHEET
LEVEL 30	SIGN SCHEDULE SHEET
LEVEL 31	OVERHEAD SIGN SUPPORT DATA SUMMARY & NOTES
LEVEL 32	VA AND VIA STRUCTURE SHEET
LEVEL 33	PROPOSED ABOVE GROUND EQUIPMENT POLES, LUMINAIRES, ARMS, ELECTRICAL SERVICE, CONTROL CENTER
LEVEL 34	PROPOSED UNDERGROUND EQUIPMENT CONDUIT, JUNCTION BOXES, FOUNDATIONS, DUCT CABLE
LEVEL 35	PROPOSED UNDER BRIDGE LIGHTING
LEVEL 36	LIGHTING LABELS POLE LOCATION LABEL, LUMINAIRE LABEL, CONDUIT/CABLE IDENTIFIER LABEL, EXIST. CONDUIT/CABLE IDENTIFIER LABLE
LEVEL 37	EXISTING ABOVE GROUND EQUIPMENT -- LIGHTING LUMINAIRES (INCLUDING UNDER BRIDGE), POLES, CONTROL CENTER, ELECTRICAL SERVICE, ARMS
LEVEL 38	EXISTING UNDERGROUND EQUIPMENT -- LIGHTING CONDUIT, JUNCTION BOXES, DUCT CABLE
LEVEL 39	SIGNAL LEGEND
LEVEL 40	SIGNAL POLE LEGEND
LEVEL 41	SIGNING LEGEND
LEVEL 42	PAVEMENT MARKING LEGEND
LEVEL 43	LIGHTING LEGEND
LEVEL 44	SUMMARY OF QUANTITIES
LEVEL 45	GENERAL NOTES & PLAN NOTES
LEVEL 46	LOCATION INFORMATION ROADWAY NAMES, BASELINE NAME, DIRECTIONAL ARROWS, DIRECTIONAL ARROW TEXT
LEVEL 47	DIMENSIONS, TERMINATORS
LEVEL 48	PROP. ABOVE GROUND MAJOR SIGNAL EQUIPMENT POLE - MAST ARM, COMBO MAST ARM, STRAIN, COMBO STRAIN, PF-2, PF-3 MAST ARM, SPAN WIRE, CONTROLLER / CABINET AND FOUNDATION, UTILITY POLES
LEVEL 49	EXIST. ABOVE GROUND MAJOR SIGNAL EQUIPMENT POLE - MAST ARM, COMBO MAST ARM, STRAIN, COMBO STRAIN, PF-2, PF-3 MAST ARM, SPAN WIRE, CONTROLLER / CABINET AND FOUNDATION, UTILITY POLES
LEVEL 50	'CLIP MASK' BOUNDARIES
LEVEL 51	'CLIP BOUNDARY' BOUNDARIES
LEVEL 52	PROPOSED SIGNAL POLES FOUNDATIONS
LEVEL 53	CLEARZONE TEMPLATES FOR SIGNAL/LIGHT POLES
LEVEL 54	SIGNAL HEAD SIGHT LINES - NB
LEVEL 55	SIGNAL HEAD SIGHT LINES - SB
LEVEL 56	SIGNAL HEAD SIGHT LINES - EB
LEVEL 57	SIGNAL HEAD SIGHT LINES - WB
LEVEL 58	SIGNAL DESIGNER WORKING LEVEL PAVEMENT MARKING LAYOUTS, SIGNAL WORKING LEVEL, LIGHTING WORKING LEVEL, SIGNING WORKING LEVEL
LEVEL 59	STAGING AREAS DIRECTIONAL BORE STAGING AREA, JACKING PIT - 20' PIPE SLEEVE JACKING PIT - 10' PIPE SLEEVE
LEVEL 60	BORDER TEXT - FILL-IN PRELIMINARY PLANS TITLE
LEVEL 61	SHEET INFORMATION NORTH ARROW, SCALE BAR, MATCHLINES, BORDER, STANDARD BORDER TEXT, VDOT LOGO, CONSULTANT LOGO
LEVEL 62	BORDER SNAP LOCATIONS
LEVEL 63	PRINT BOUNDARY

CITY OF FAIRFAX 1805 VIRGINIA

SABRA, WANG & ASSOCIATES, INC.
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Stantec

UNIVERSITY DRIVE SIDEWALK IMPROVEMENTS

BETWEEN ARMSTRONG STREET AND SOUTH STREET

REVISIONS

No.	Description	Date

Drawing Title
95 CADD LEVEL STRUCTURE

COF Project No.:	14007-2014-SAB
Scale:	N.T.S.
Designed By:	S. YANOVITZ
Drawn By:	C. KELLER
Checked By:	P. SILBERMAN
Date:	JANUARY, 2016

Sheet No. IC of 09

PLOTTED: Monday, January 18, 2016 AT 09:28 AM
FILE: R:\2014\17 City of Fairfax Transportation Engineering_14-007_8006\Task 01 University Drive\dwg\14007x001C_UniversityDr.dgn
BY: ckeller –

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL CALL MISS UTILITY (1-800-552-7000) FOURTEEN (14) DAYS PRIOR TO CONSTRUCTION TO LOCATE ALL EXISTING UTILITIES.
2. THE APPROXIMATE LOCATION, SIZE AND TYPE OF EXISTING UNDERGROUND UTILITIES, SERVICES AND FACILITIES ARE SHOWN FOR CONVENIENCE ONLY. NEITHER THE CITY OF FAIRFAX NOR THE ENGINEER ASSURES OR GUARANTEES THE ACCURACY OF THE INFORMATION SHOWN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION BEFORE STARTING WORK, BY MEANS OF TEST PITS OR FIELD MEASUREMENTS. NO ADDITIONAL COST OR TIME EXTENSIONS SHALL BE GRANTED FOR UNCHARTERED UTILITIES, SERVICES, OR FACILITIES WHICH DO NOT CAUSE A CHANGE IN THE SCOPE OF WORK.
3. TEST PITS BY THE CONTRACTOR SHALL BE DONE AT LEAST ONE (1) WEEK IN ADVANCE OF CONSTRUCTION AND RESULTS PRESENTED TO THE REPRESENTATIVE OF CITY OF FAIRFAX ON PLANS THAT SHOW VERTICAL AND HORIZONTAL LOCATION. TEST PIT AREAS SHALL BE FILLED AND RESTORED TO EXISTING CONDITION.
4. CONTRACTOR SHALL RESTORE ALL PAVED AREAS, ROADS, ENTRANCES, CURBS, GUTTERS, SIDEWALKS, DRIVES, GRASS AREAS, DRAINAGE SWALES, OR ANY OTHER SURFACE TO ORIGINAL CONDITIONS AS SHOWN IF DISTURBED DURING THE CONSTRUCTION.
5. REPAIRING OF TOP OF UTILITIES OR PROPERTY DAMAGE RESULTING FROM CONTRACTOR'S NEGLIGENCE OR METHOD OF CONSTRUCTION SHALL BE MADE AT HIS OWN EXPENSE.
6. NO TRENCHES DUG BY THE CONTRACTOR ARE TO BE LEFT OPEN OVERNIGHT.
7. REFER TO THE SPECIAL PROVISIONS FOR ALLOWABLE LANE CLOSURES AND WORKING HOURS.
8. STANTEC ENGINEERING PREPARED THE GROUND TOPOGRAPHY. DATUM IS VA. STATE NORTH (1983).
9. UNLESS MORE STRINGENT COMPACTION REQUIREMENTS ARE INDICATED IN THE PLANS OR SPECIFICATIONS, THE BACKFILL OF ALL EMBANKMENT MATERIAL, THE INSTALLATION OF TRENCH BACKFILL AND THE RESTORATION OF DISTURBED AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF THEORETICAL MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT WITHIN THE TOLERANCE SPECIFIED IN THE CURRENT EDITION OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS. COMPACTION REPORTS VERIFYING THESE REQUIREMENTS HAVE BEEN MET SHALL BE SUBMITTED TO THE CITY.
10. ALL SUBGRADE, SUBBASE, BASE, AND SHOULDER MATERIAL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS. COMPACTION REPORTS VERIFYING THESE REQUIREMENTS HAVE BEEN MET SHALL BE SUBMITTED TO THE CITY.
11. ALL CONSTRUCTION, INCLUDING ANY PROPOSED LANDSCAPING, SHALL CONFORM TO CITY OF FAIRFAX, AND VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) STANDARDS AND SPECIFICATIONS, AS APPLICABLE.
12. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO LEAVING THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ALL STREETS, ALLAY DUST, AND TO TAKE MEASURES TO ENSURE THE ROAD(S) ARE MAINTAINED IN A CLEAN, MUD AND DUST-FREE CONDITION AT ALL TIMES.
13. THE TOP ELEVATION OF ALL EXISTING UTILITIES SUCH AS MANHOLES, VALVES, METER BOX COVERS, ETC. SHALL BE ADJUSTED TO MEET THE FINAL PAVEMENT AND SIDEWALK ELEVATION.
14. ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED BY CONTRACTOR PRIOR TO THE BEGINNING OF ANY CONSTRUCTION IN THE VICINITY OF THESE UTILITIES.
15. WHERE A PROPOSED PIPE CROSSES OR PARALLELS A STREET, THE ASPHALT SHALL BE SAW CUT. AFTER PIPE INSTALLATION, THE ROADWAY SHALL BE PATCHED IN ACCORDANCE WITH VDOT STANDARDS AND AS SHOWN IN PLANS AND SPECS.
16. ALL PRIVATE WALKWAYS AND DRIVEWAYS SHALL BE CONNECTED WITH THE SAME MATERIAL AS EXISTING, TO THE BACK SIDE OF THE CURB OR SIDEWALK WHERE APPLICABLE. IF STEPS ARE REQUIRED, THEY ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT VDOT ROAD AND BRIDGE STANDARDS. NO STEPS ALLOWED FOR DRIVEWAY TIE-INS.
17. EXISTING STRUCTURE TOPS ARE NOT TO BE DISTURBED UNLESS OTHERWISE NOTED.
18. EXISTING SIGNS WITHIN THE RIGHT-OF-WAY ARE TO BE REMOVED AND RESET.
19. ALL EXISTING SIGNS OUTSIDE THE RIGHT-OF-WAY SHALL NOT BE DISTURBED UNLESS OTHERWISE NOTED.
20. TEMPORARY OR PERMANENT PLANT MIX PATCHES ARE TO BE PLACED IN ALL ROAD CUTS THE SAME DAY CUT IS MADE. AT LEAST (1) LANE TRAFFIC IN EACH DIRECTION TO BE MAINTAINED.
21. THE FOLLOWING PROVISIONS SHALL APPLY TO THE USE OF SHEETING AND SHORING:
    (A) SHEETING AND SHORING OR OTHER APPROVED METHODS FOR TRENCH BRACING WILL BE REQUIRED ON THIS CONTRACT AS NEEDED TO MEET SAFETY EWQUIREMENTS.
    (B) UNLESS OTHERWISE DIRECTED BY THE ENGINEER, SHEETING AND SHORING WILL BE REMOVED FROM ALL TRENCHES.
    (C) UNLESS SPECIFICALLY IDENTIFIED IN THE CONTRACT DOCUMENTS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR SHEETING AND SHORING.
22. CONTRACTOR SHALL START WORK AFTER SUBMITTAL AND APPROVAL OF A SCHEDULE COORDINATION WITH THE RESIDENT, TO BE HANDELED BY THE CITY OF FAIRFAX OFFICE ENGINEER. PARKING RESTRICTIONS INCLUDE 72 HOURS ADVANCE NOTICE.

ROADWAY LEGEND

- EXISTING
- PROPOSED
- ℄ BASE LINE OF CONSTRUCTION
- CONCRETE
- GRASS BUFFER
- PROPOSED SPOT GRADE
- PROPOSED CURB & GUTTER
- EXISTING CURB & GUTTER
- 315.01 EXISTING R/W OR EASEMENT
- SF SILT FENCE
- 301 EXISTING CONTOURS
- 301 PROPOSED CONTOURS
- LOD LIMIT OF DISTURBANCE
- WIRE FENCE
- EXISTING TRAFFIC MOVEMENT
- PROPERTY BOUNDARY/RIGHT-OF-WAY
- GROUND MOUNTED SIGN
- TREE
- TREE TO BE REMOVED

UTILITY LEGEND

- OHW OVERHEAD WIRE
- UGO ORANGE MARKINGS (COMMS)
- Ⓓ DRAINAGE MANHOLE
- Ⓢ SEWER MANHOLE
- UTILITY POLE
- WV WATER VALVE
- LIGHT POLE
- E ELECTRIC TRANSFORMER

UTILITIES

1. CONTRACTOR SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION AT LEAST FIVE (5) WORKING DAYS, BUT NOT MORE THAN TEN (10) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION IN ACCORDANCE WITH CHAPTER 63 OF CITY OF FAIRFAX CODE. THESE NUMBERS MAY ALSO BE USED TO SERVE EMERGENCY CONDITION NOTICE AS REQUIRED BY CHAPTER 63 OF CITY OF FAIRFAX CODE.
2. PROVIDE A MINIMUM 5' HORIZONTAL AND 1' VERTICAL CLEARANCE BETWEEN PROPOSED FACILITIES AND EXISTING CABLE, TELEPHONE, SANITARY SEWER LATERALS, WATER AND ELECTRICAL LINES.
3. PROVIDE A MINIMUM OF 5' HORIZONTAL AND 1' VERTICAL CLEARANCE BETWEEN 12" DIAMETER AND LOWER DISTRIBUTION GAS FACILITIES AND PROPOSED FACILITIES.
4. PROVIDE A MINIMUM OF 5' HORIZONTAL AND 2' VERTICAL CLEARANCE BETWEEN 16" OR GREATER TRANSMISSION GAS FACILITIES AND PROPOSED FACILITIES.
5. THE CONTRACTOR SHALL HAND DIG TEST PITS AT ALL GAS CROSSINGS TO DETERMINE THE EXACT LOCATION AND DEPTH WELL IN ADVANCE OF CONSTRUCTION.
6. FOR MARKING OF WASHINGTON GAS FACILITIES, PLEASE NOTIFY "MISS UTILITY", 72 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.
7. ALL ADJUSTMENTS OF STORM SEWER, WATER AND SANITARY SEWER WITHIN THE WORK AREA SHALL BE PERFORMED BY THE CITY. THE CONTRACTOR SHALL COORDINATE WITH THE DEPARTMENT OF PUBLIC WORKS 10 BUSINESS DAYS PRIOR TO THE START OF WORK. ALL OTHER UTILITY STRUCTURES SHALL BE ADJUSTED BY THE RESPECTIVE UTILITY COMPANY. COORDINATION OF ANY IMPACTS TO ANY OTHER UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

SURVEY

1. SURVEY DATUM IS BASED UPON THE CITY OF FAIRFAX CONTROL MONUMENT IPF WHICH PURPORT TO BE ON NAD 83/07 VIRGINIA STATE PLANE COORDINATE SYSTEM, NORTH ZONE AND NAVD88 ELEVATIONS.

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UNIVERSITY DRIVE SIDEWALK IMPROVEMENTS

BETWEEN ARMSTRONG STREET AND SOUTH STREET

REVISIONS

No.	Description	Date

Drawing Title

GENERAL NOTES

COF Project No.:	14007-2014-SAB
Scale:	N.T.S.
Designed By:	S. YANOVITZ
Drawn By:	C. KELLER
Checked By:	P. SILBERMAN
Date:	JANUARY, 2016

MAINTENANCE OF TRAFFIC NOTES:

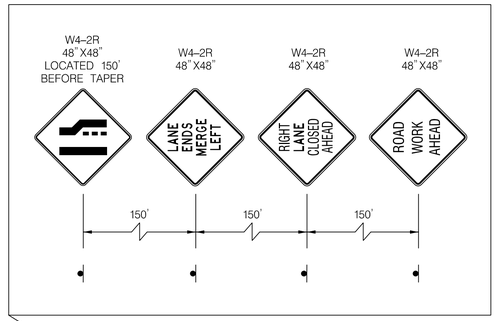
1. A minimum of one lane of through traffic in each direction on all parts of University Drive and all other streets in project area shall be maintained at all times during the project.

2. Access to all businesses within the project area shall be maintained with minimal disruption (to be coordinated with each business).

3. Construction shall be permitted 9:00AM-3:30PM Monday-Thursday and 9:00AM-12:00PM on Fridays.

4. All work shall be in accordance with the highway permit issued by the City of Fairfax with VDOT Road and Bridge Specifications 2007, VA Road & Bridge Stds. 2008, The Manual of Uniform Traffic Control Devices (MUTCD 2009), its Virginia Supplement, and the Virginia Work Area Protection Manual (VWAPM)-2011, Revision 1-April 2015).

5. Illuminated flashing amber arrow board and shadow vehicle shall be installed and utilized according to VWAPM TTC-16J.



SEQUENCE OF TRAFFIC:

1. Utilize VWAPM TTC-16J to temporarily close SB University Drive right lane to construct proposed sidewalk.

2. Utilize VWAPM TTC-35.0 and Install R9-11a "Sidewalk Closed - Cross Here" signs for sidewalk closure at signalized intersections along University Drive at Armstrong St and Fairfax Volunteer Fire Department station 3.

LEGEND

- GROUP 2 CHANNELIZING DEVICE
- PROPOSEDTEMPORARY SIGN
- EXISTING TRAFFIC MOVEMENT
- MOT TRAFFIC MOVEMENT

20' 0 20' 40'
SCALE: 1" = 20'

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REVISIONS

No.	Description	Date

Drawing Title

MAINTENANCE OF TRAFFIC

COF Project No.:	14007-2014-SAB
Scale:	1"=20'
Designed By:	S. YANOVITZ
Drawn By:	C. KELLER
Checked By:	P. SILBERMAN
Date:	JANUARY, 2016

Sheet No. 1E of 09

PLOTTED: Monday, January 18, 2016 AT 09:39 AM
FILE: R:\2014\17 City of Fairfax Transportation Engineering_14-007_$2006\Task 01 University Drive\dwg\14007-PDSTE_UniversityDr.dgn
BY: ckeller

TRANSPORTATION MANAGEMENT PLAN

1). Project Category (Minimum TMP Requirements)

A). This will be a "Type A Category I" project.
- Construction will consist of the installation of the new sidewalk at the following sites:
  a. University Drive from Armstrong Street to South Street

B). The length and width of the work area will remaine within the right of way or acquired permanent easement

C). The work zones will be active as directed by the Engineer.

D). The traffic volume (Average Daily Traffic) for each location as follows:
  a. University Drive from Armstrong Street: 14,000 vehicles

E). The work shall begin Monday morning at 9:00AM and close everyday by 3:30PM. The work area shall be steel plated before opening the roadway to peak-hour traffic

F). There are no identified areas within the right of way for the contractor to store equipment & materials. The contractor must request in writing, permission to use the ROW and to describe the location of each ROW area and under what circumstances the ROW will be used during the life of the contract. No ROW usage will be permitted without proper notification and approval by the Engineer.

2). Temporary Traffic Control (TTC) Plan (Component 1)

A). Major components will consist of General Notes and special details.

B). Specific traffic control figures and notes from the current 2011 Virginia Work Area Protection Manual, Revision 1 include, but are not limited to:

Pg. 6H-8	and 6H-9	Figure TTC-1.1
Pg. 6H-14	and 6H-15	Figure TTC-4.1
Pg. 6H-16	and 6H-17	Figure TTC-5.1
Pg. 6H-38	and 6H-39	Figure TTC-16.1
Pg. 6H-76	and 6H-77	Figure TTC-35.0
Pg. 6H-112	and 6H-113	Figure TTC-53.0

C). Allowed Lane Closure Hours

The Contractor is hereby advised that construction activities requiring temporary lane closures or other types of limitations be allowed as follows:

Route	Category	Time of Day
University Drive Fairfax, VA	Single lane closures, allowed hours	9:00AM-3:30PM Mon-Thurs, 9:00AM-12:00PM Fri

3). Public Communication Strategies: (Component 2)

A. Public Communications Plan:
- a. VDOT Northern District
- b. Project Number: TBD
- c. UPC Number: U000-151-149
- d. Locations
  1. University Drive Fairfax, VA

B. Traffic Impacts:
- a. Traffic control shall consist of temporary single lane closures
- b. The project will be accomplished through an advertising process.
- c. Motorists should be alerted to the possibility of daytime lane and shoulder closures when work begins.

C. Goals
- a. To inform the public about the project
- b. To minimize disruption through proactive information dissemination efforts
- c. To establish a crisis communications plan

D. Messages:
- a. Benefits and purpose of the project
- b. Contacts for more information

4). Transportation Operations (TO) Plan

A). This plan is not required on this project, however, a contact list of local Emergency response agencies must be kept and maintained throughtout the project lifecycle.

Contact Information for All Locations		
Route	Contact Method	Phone Number, E-mail, or Address
Motorists	News Release, weekly traffic information (Roadwatch) and the TOC	See Public Affairs news release distrbution list (e-mail and fax)
Police	Virginia State Police	(703) 385-7940
Contact Information for the City of Fairfax, VA		
Route	Contact Method	Phone Number, E-mail, or Address
Chief of Police	Phone	(703) 385-7924
City of Fairfax Fire Department	Phone	(703) 385-7940
Inova Fairfax Hospital	Phone	(703) 776-4001

B). Crisis Communications Plan:
- a. As with any crisis, emergency responders (911) should be notified immediately if necessary.
- b. The Area Construction Engineer (ACE) or their designee should be notified immediately: TBD
- c. If the emergency is traffic related, the ACE or his designee should immediately notify the Traffic Operations Center at (804) 796-4522
- d. The Traffic Operations Center (TOC) should immediately notify Public Affairs: Jenni McCord (703) 259-1779
- e. The ACE, public affairs, and smart traffic center will work to inform the traveling public, emergency responders, and the media about delays and unexpected changes in traffic patterns using the contact list on this sheet, and other resources if necessary.

C). The process to notify the Transportation Operations Center to place lane closure information on the 511 system and VA Traffic will be:
- a. Contractor is to provide the VDOT project inspector &/or Construction Manager with a tentative lane closure schedule a minimum of two weeks prior to the planned work to begin & updated every Thursday.
- b. Construction Manager to advise Resident Administrator of proposed lane closure. Maintenance Manager is to have VA Traffic operator enter data into VA Traffic, and also advise Transportation Operations Center.

D). The following is a list of local emergency contact agencies: Virginia State Police (703) 791-3101 or 1-800-552-9965 or *77 Cellular. If spill is involved, Haz-Mat center via 911.

E). Procedures to respond to traffic incidents that may occur in the work zone:
- a. Contractor to notify Virginia State Police and VDOT Inspector in charge and Smart Traffic Center.
- b. Depending upon severity of incident, contractor may have to shut down work.
- c. Upon arrival on scene, Virginia State Police to determine response necessary to allow traveling public around incident.
- d. Inspector to notify Construction Manager/Resident Administrator of incident and take pictures as necessary, especially pictures of contractor's work zone to verify the proper setup.

F). Process of notification of incident to be followed is:
- a. Contractor to call: TBD
- b. Transportation Operations, Shift Supervisor: TBD
- c. Project Maintenance of Traffic Coordinators (Inspector): TBD
- d. Area Construction VDOT Engineer: William Cuttler, (703) 259-2990
- e. Resident Administrator: Helen Cuervo, (703) 259-2345
- f. District Workzone Safety Coordinator: TBD
- g. District Public Affairs Manager: Jenni McCord, (703 259-1779

G). The Virginia State Police will take control of the incident and direct its clearing and restoration to normal traffic conditions.

H). The Virginia State Police report of the incident will be reviewed by the Resident Administrator to determine if any modification of the Temporary Traffic Control Plan is necessary. If it is determined that it is necessary to alter the plan, then a meeting will be called with the contractor, VDOT project personnel, VDOT traffic safety representatives, and the Virginia State Police (if necessary) to discuss modification and implementation of an improved traffic control plan.

LEGEND

- EXISTING
- PROPOSED
- CONCRETE SIDEWALK
- GRASS BUFFER
- EXISTING TRAFFIC MOVEMENT

10' 0 10' 20'
SCALE: 1" = 10'

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UNIVERSITY DRIVE
SIDEWALK IMPROVEMENTS
BETWEEN ARMSTRONG STREET
AND SOUTH STREET

REVISIONS

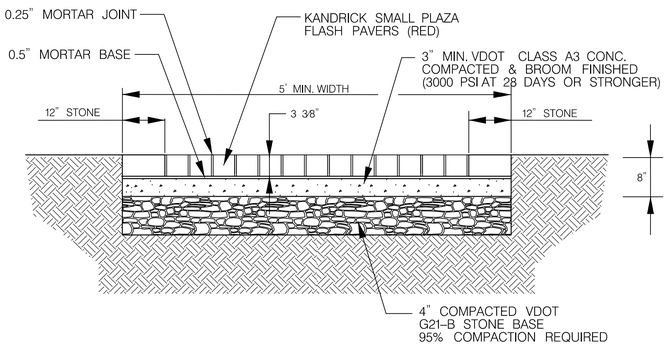
No.	Description	Date

Drawing Title

COF Project No.:	14007-2014-SAB
Scale:	1"=20'
Designed By:	S. YANOVITZ
Drawn By:	C. KELLER
Checked By:	P. SILBERMAN
Date:	JANUARY, 2016

Sheet No. 1F of 09

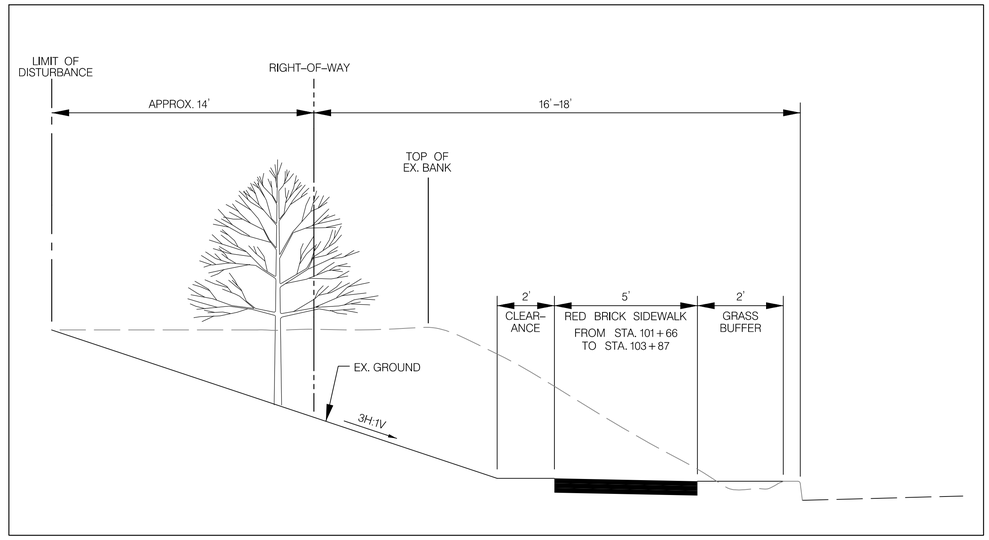
PLOTTED: Monday, January 18, 2016 AT 08:49 AM
FILE: P:\2014\17 City of Fairfax Transportation Engineering_14-007_$500K\Task 01 University Drive\dwg\14007p001F_UniversityDr.dgn
BY: ckeller



DETAIL – SIDEWALK
N.T.S.

NOTE:

SIDEWALK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE AMERICAN DISABILITIES ACT ACCESSIBILITY GUIDELINES AND THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE.



TYPICAL SECTION
N.T.S.

NOTE:

ALL PAVEMENT WIDENING SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD WP-2.

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UNIVERSITY DRIVE SIDEWALK IMPROVEMENTS

BETWEEN ARMSTRONG STREET AND SOUTH STREET

REVISIONS

No.	Description	Date

Drawing Title
TYPICAL SECTIONS

COF Project No.:	14007-2014-SAB
Scale:	AS SHOWN
Designed By:	S. YANOVITZ
Drawn By:	C. KELLER
Checked By:	P. SILBERMAN
Date:	JANUARY, 2016

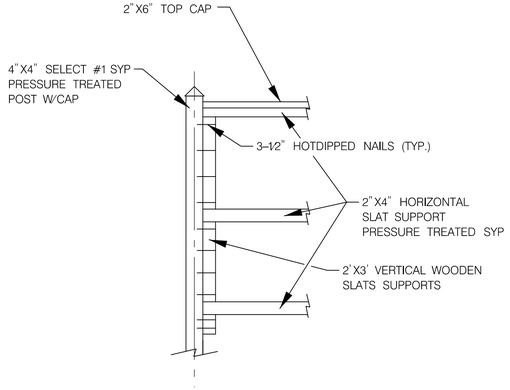
DGN $REF001 $REF002 $REF003 $REF004 $REF005 $REF006

$DGNLEV $LEV001 $LEV002 $LEV003 $LEV004 $LEV005 $LEV006

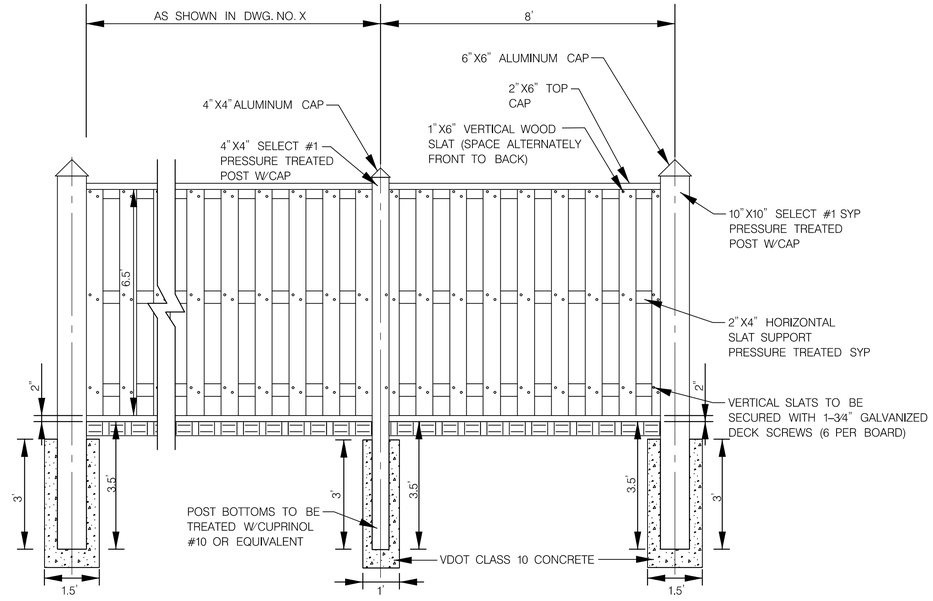
PROJECT MANAGER W. Sanford (703) 385-7889 (City Of Fairfax)
SURVEYED BY, DATE Survey Proj manager name (301) 220-1887 (Stantec) 08/2014
DESIGN BY S. Yanovitz (410) 741-3500 (Sabra-Wang & Assoc., Inc.)
SUBSURFACE UTILITY BY, DATE Bradley Leatherman (703) 928-0649 (Zaya, 4/15)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	·	U000-151-149	2A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



VERTICAL WOODEN SLAT SUPPORT STRINGER DETAIL
SCALE: 1" = 50'



SYP= SOUTHERN YELLOW PINE

WOODEN PRIVACY FENCE DETAIL
SCALE: 1" = 50'

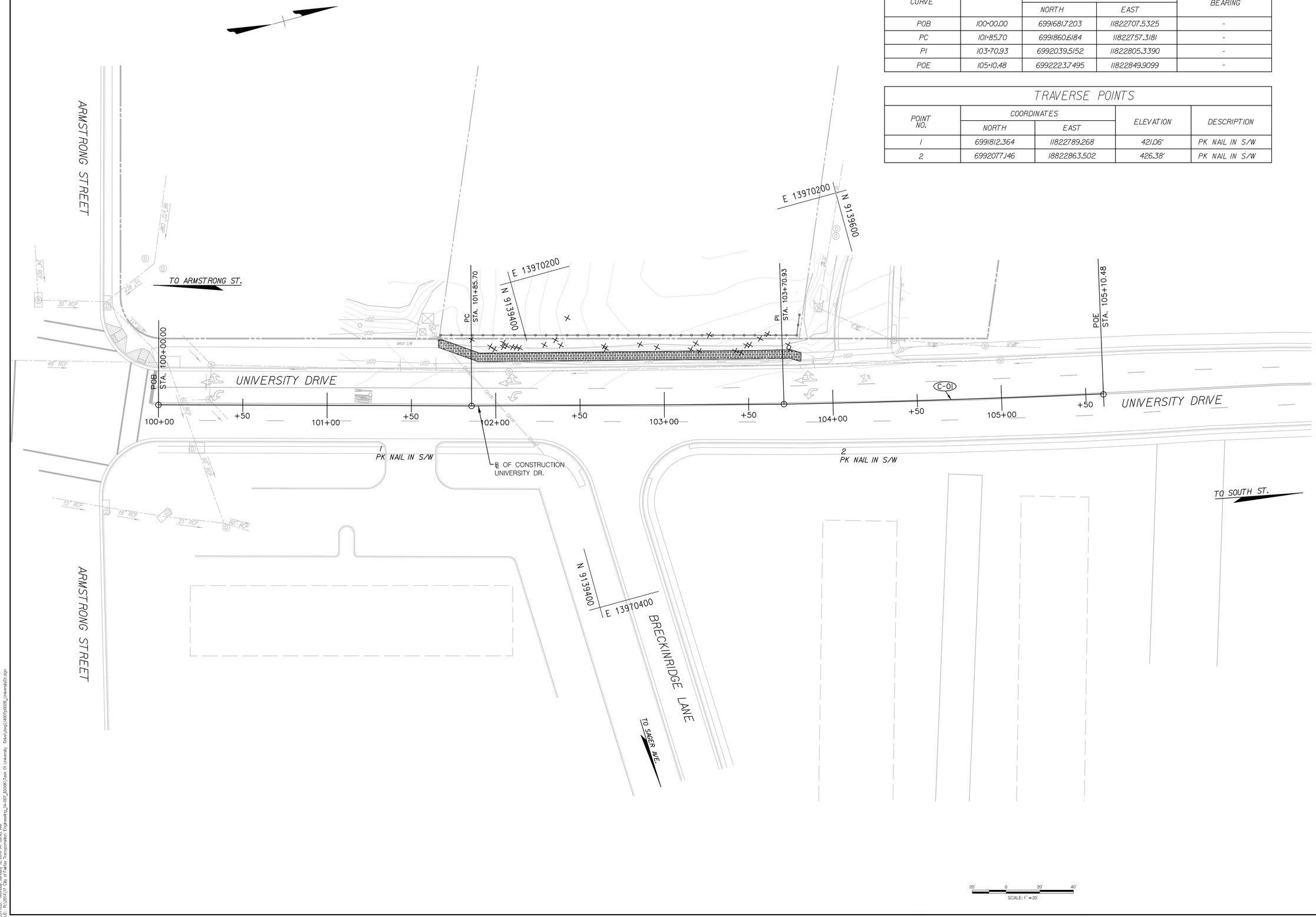
$TIME&STAMP$

MISCELLANEOUS DETAILS

PROJECT	SHEET NO.
14007-2014-SAB	2A

UNIVERSITY DR. BASELINE CONTROL COORDINATES				
CURVE		COORDINATES		BEARING
		NORTH	EAST	
POB	100+00.00	6991681.7203	11822707.5325	-
PC	101+85.70	6991860.6184	11822757.3181	-
PI	103+70.93	6992039.5152	11822805.3390	-
POE	105+10.48	6992223.7495	11822849.9099	-

TRAVERSE POINTS				
POINT NO.	COORDINATES		ELEVATION	DESCRIPTION
	NORTH	EAST		
1	6991812.364	11822789.268	421.06'	PK NAIL IN S/W
2	6992077.146	11822863.502	426.38'	PK NAIL IN S/W



CITY OF FAIRFAX VIRGINIA 1805

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UNIVERSITY DRIVE SIDEWALK IMPROVEMENTS

BETWEEN ARMSTRONG STREET AND SOUTH STREET

REVISIONS

No.	Description	Date

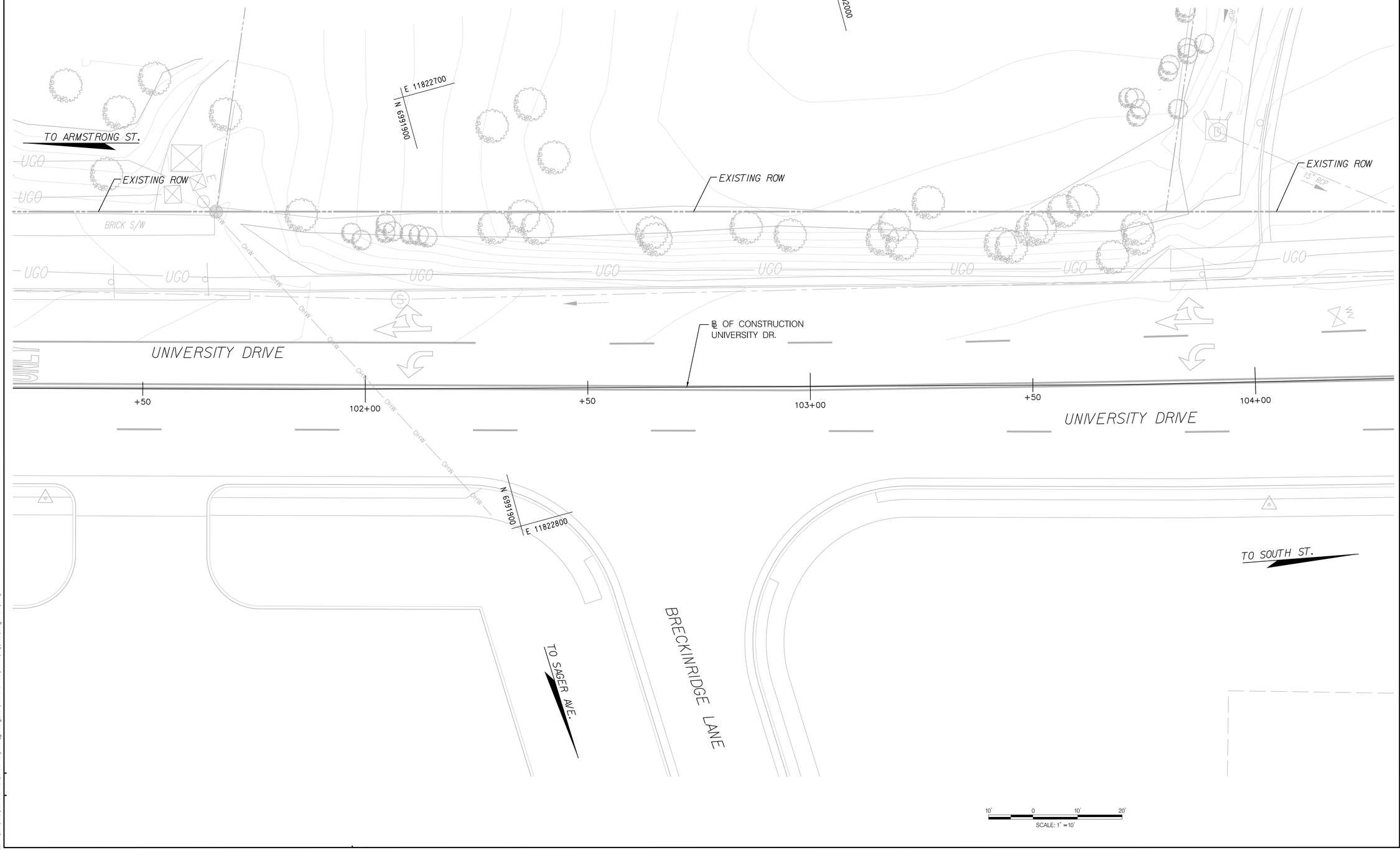
Drawing Title

GEOMETRIC LAYOUT

COF Project No.:	14007-2014-SAB
Scale:	1"=25'
Designed By:	S. YANOVITZ
Drawn By:	C. KELLER
Checked By:	P. SILBERMAN
Date:	JANUARY, 2016

Sheet No. 2B of 09

PLOTTED: Monday, January 18, 2016 AT 09:43 AM
FILE: R:\2014\17 City of Fairfax Transportation Engineering_14-007_&008\Task 01 University Drive\Uwg\14007x008_UniversityDr.dgn
BY: ckeller –



CITY OF FAIRFAX VIRGINIA 1805

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Stantec

UNIVERSITY DRIVE SIDEWALK IMPROVEMENTS

BETWEEN ARMSTRONG STREET AND SOUTH STREET

REVISIONS

No.	Description	Date

Drawing Title

EXISTING CONDITIONS

COF Project No.:	14007-2014-SAB
Scale:	1"=10'
Designed By:	S. YANOVITZ
Drawn By:	C. KELLER
Checked By:	P. SILBERMAN
Date:	JANUARY, 2016

Sheet No. 03 of 09

PLOTTED: Monday, January 18, 2016 AT 09:44 AM
FILE: R:\2014\17 City of Fairfax Transportation Engineering_14-007_ESDM\Task 01 University Drive\dwg\14007s003_UniversityDr.dgn
BY: cketler –

DGN $REF001 $REF002 $REF003 $REF004 $REF005 $REF006

$DGNLEV $LEV001 $LEV002 $LEV003 $LEV004 $LEV005 $LEV006

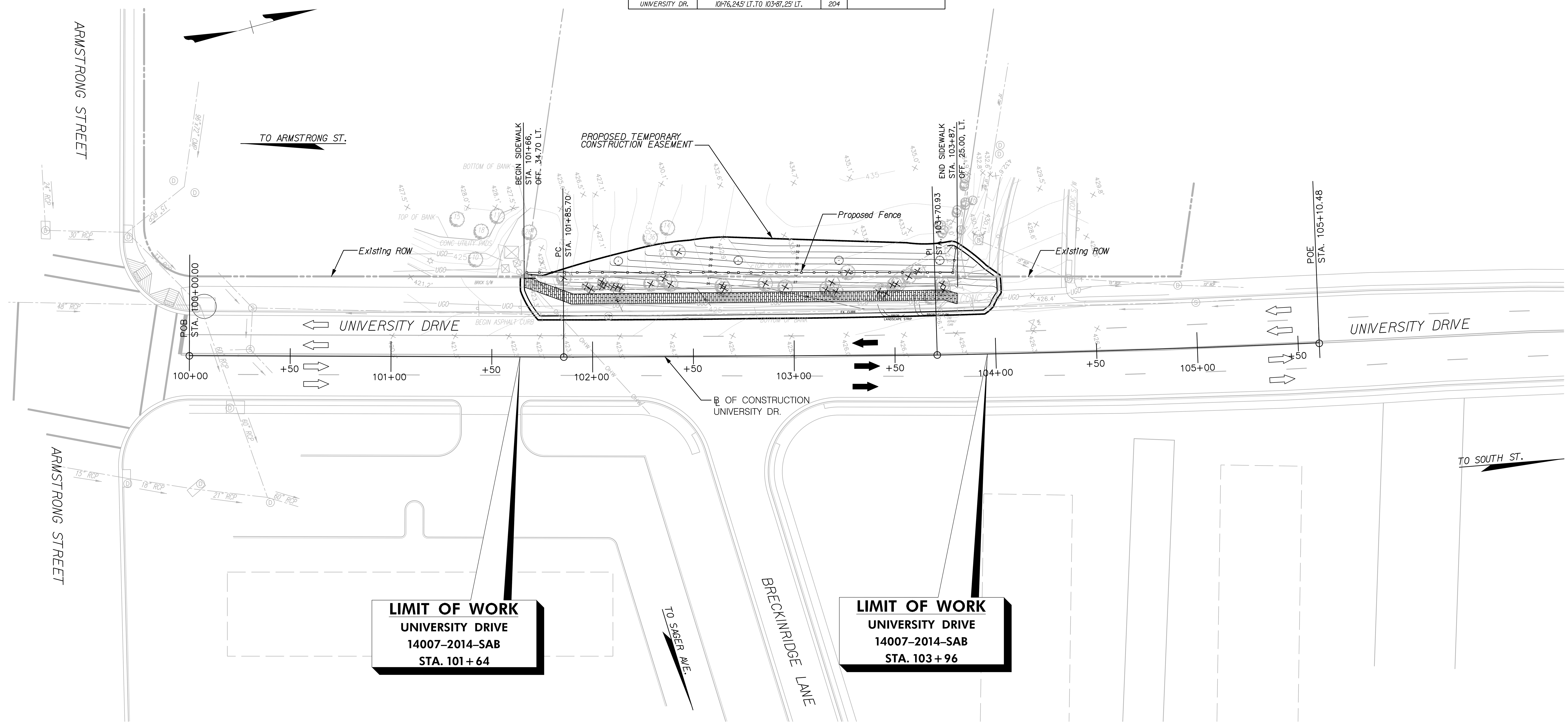
PROJECT MANAGER W.Sanford (703) 385-7889 (City Of Fairfax)
SURVEYED BY, DATE Survey Proj manager name (301) 220-1887 (Stantec),08/2014
DESIGN BY S.Yanovitz (410) 741-3500 (Sabra-Wang & Assoc.,Inc.)
SUBSURFACE UTILITY BY, DATE Bradley Leatherman (703) 928-0649 (Zayo,4/15)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	·	U000-151-149	

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

BRICK SIDEWALK

℄	STA.TO STA., OFFSET DIR.	L.F.	REMARKS
UNIVERSITY DR.	101+66,35' LT.TO 101+76,24.5' LT.	14.5	
UNIVERSITY DR.	101+76,24.5' LT.TO 103+87,25' LT.	204	



LEGEND:

- EXISTING
- PROPOSED
- PROPOSED SIDEWALK
- LIMIT OF DISTURBANCE
- TREE TO BE REMOVED

ROADWAY PLAN

PROJECT	SHEET NO.
14007-2014-SAB	4

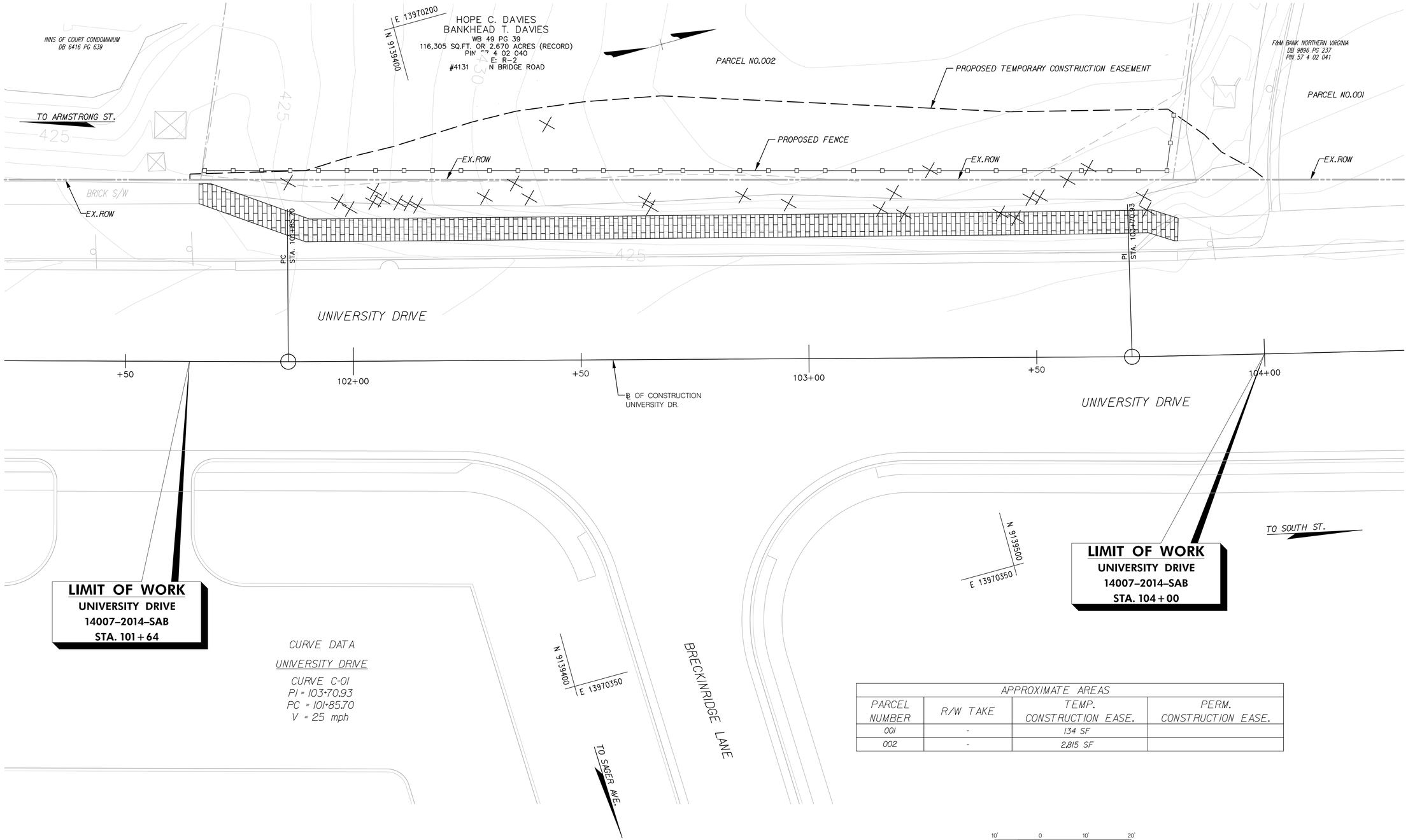
$TIME$STAMP$

PRELIMINARY
RIGHT OF WAY DATA

ROUTE: UNIVERSITY DRIVE
COUNTY/CITY: CITY OF FAIRFAX
COMPILED BY: CLK
REVISED BY:
REVISED BY:

COF PROJECT NO.: 14007-2014-SAB
DATE: OCT.10,2014
DATE:
DATE:

PARCEL NUMBER	LANDOWNER	SHEET NO.	TOTAL ACRES	FEE TAKING ACRES	PRESCRIPTIVE R / W ACRES	FEE REMAINDER ACRES	EASEMENTS				PROFFERS YES / NO	QUIT CLAIM	REMARKS
							PERMANENT	UTILITY	TEMPORARY	TEMP.ENTR.			
							SQ.FT	SQ.FT	SQ.FT	SQ.FT		ACRES	
001	F&M BANK NORTHERN VIRGINIA	001	.0031	-	-	-	-	-	134	-	-	-	DB 9896 PG 237 PIN 57 4 02 041
002	HOPE C.DAVIES AND BANKDEAD T.DAVIES	001	.0646	-	-	-	-	-	2,815	-	-	-	PARCEL NO.WB49/PG39 PIN 57 4 02 040



APPROXIMATE AREAS			
PARCEL NUMBER	R/W TAKE	TEMP. CONSTRUCTION EASE.	PERM. CONSTRUCTION EASE.
001	-	134 SF	
002	-	2,815 SF	

10' 0 10' 20'
SCALE: 1" = 10'

CITY OF FAIRFAX 1805 VIRGINIA

SABRA, WANG & ASSOCIATES, INC.
7055 SAMUEL MORRIS DRIVE
SUITE 100
COLUMBIA, MD 21046
(410)741-3700
WWW.SABRA-WANG.COM

Stantec

UNIVERSITY DRIVE SIDEWALK IMPROVEMENTS

BETWEEN ARMSTRONG STREET AND SOUTH STREET

REVISIONS

No.	Description	Date

Drawing Title

RIGHT-OF-WAY PLAN

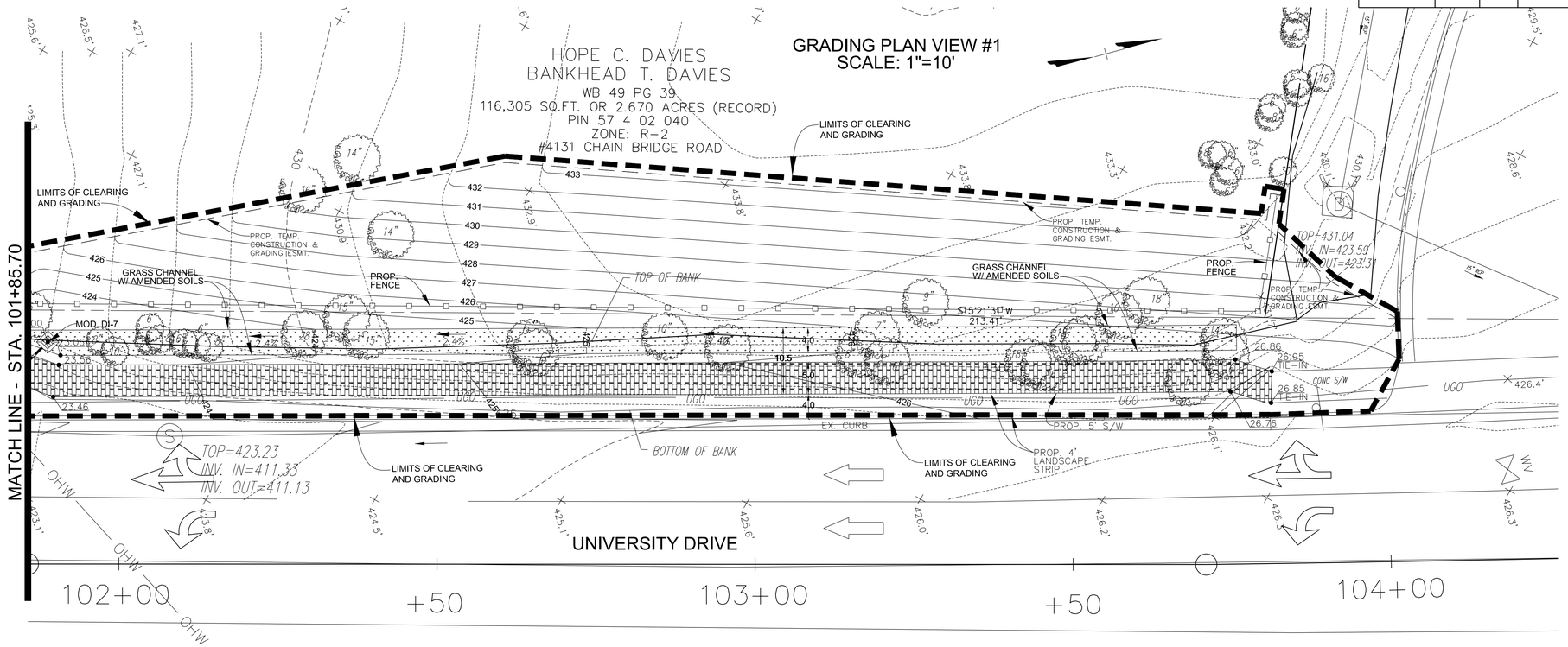
COF Project No.: 14007-2014-SAB
Scale: 1"=10'
Designed By: S. YANOVITZ
Drawn By: C. KELLER
Checked By: P. SILBERMAN
Date: JANUARY, 2016

PLOTTED: Monday, January 18, 2016 AT 09:43 AM
FILE: R:\2014\17 City of Fairfax Transportation Engineering_14-007_$5006\Task 01 University Drive\dwg\14007p005_UniversityDr.dgn
BY: ckeller –

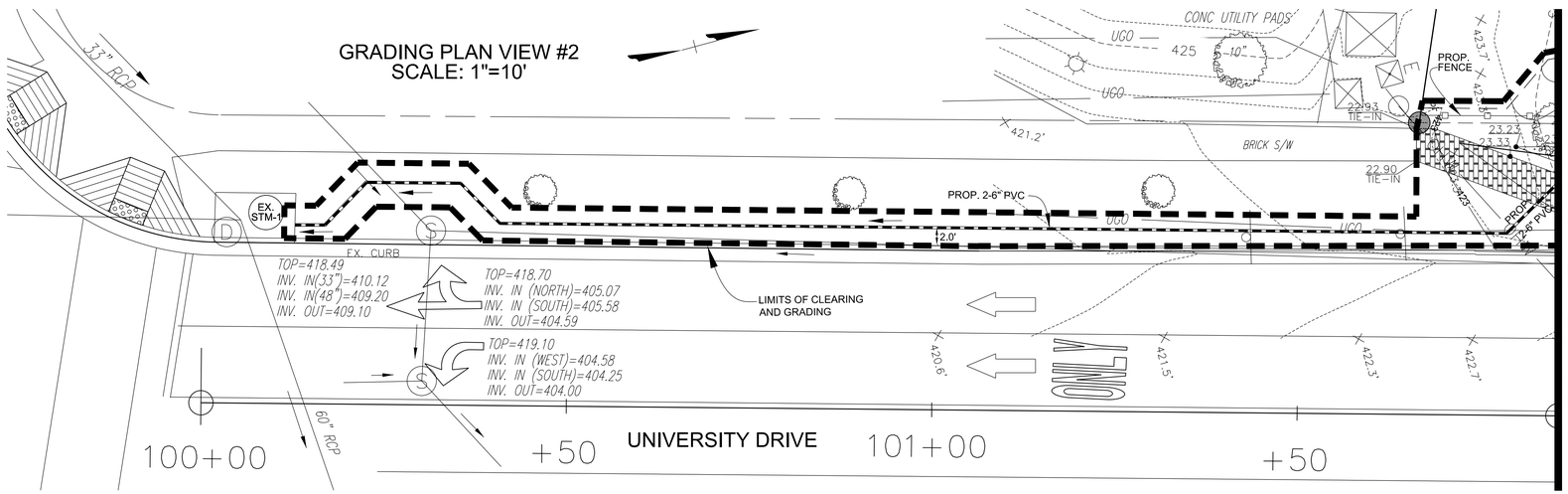
PROJECT MANAGER W. Sanford (703) 385-7889 (Fairfax County)
SURVEYED BY, DATE Stantec (301) 220-1887
DESIGN BY S. Yanovitz (410) 741-3500 (Sabra-Wang & Assoc., Inc.)
SUBSURFACE UTILITY BY, DATE <Surveyor Name (000)-000-0000 (District)>

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	·	U000-151-149	5A

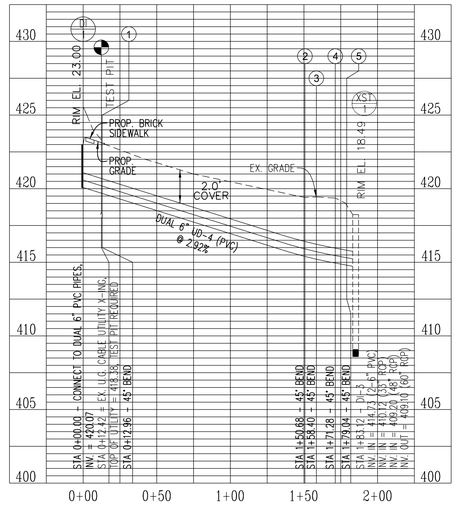
GRADING PLAN VIEW #1
SCALE: 1"=10'



GRADING PLAN VIEW #2
SCALE: 1"=10'



UNDERDRAIN (2-6" PVC) PROFILE
(HOR. SCALE 1"=50', VER. SCALE 1"=5')



SOIL COMPOST AMENDMENT NOTE:
GRASS CHANNEL SOIL COMPOST SHALL BE IN CONFORMANCE WITH VIRGINIA DEQ STORMWATER DESIGN SPECIFICATION NO.4 SOIL COMPOST AMENDMENT VERSION 1.8.

NOTE:
THE EXISTING STORM DRAINAGE SYSTEM WITHIN THE PROJECT LIMITS WILL BE CLEANED AND FLUSH.

GRADING PLAN

PROJECT	SHEET NO.
I4007-2014-SAB	5A

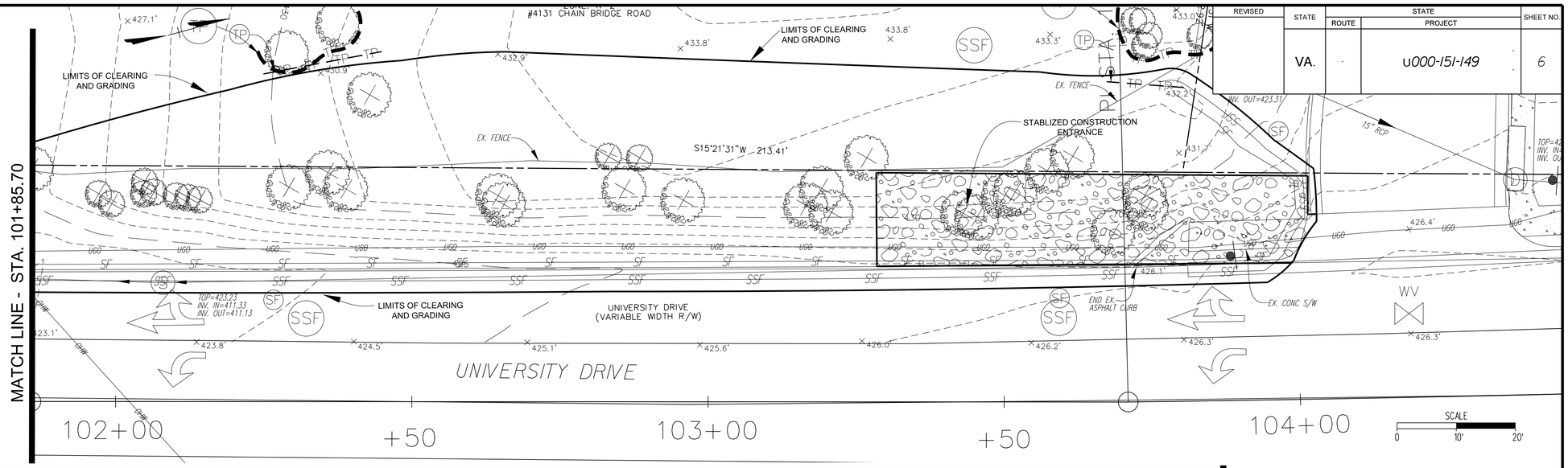
1/15/2016
4:13:48 PM

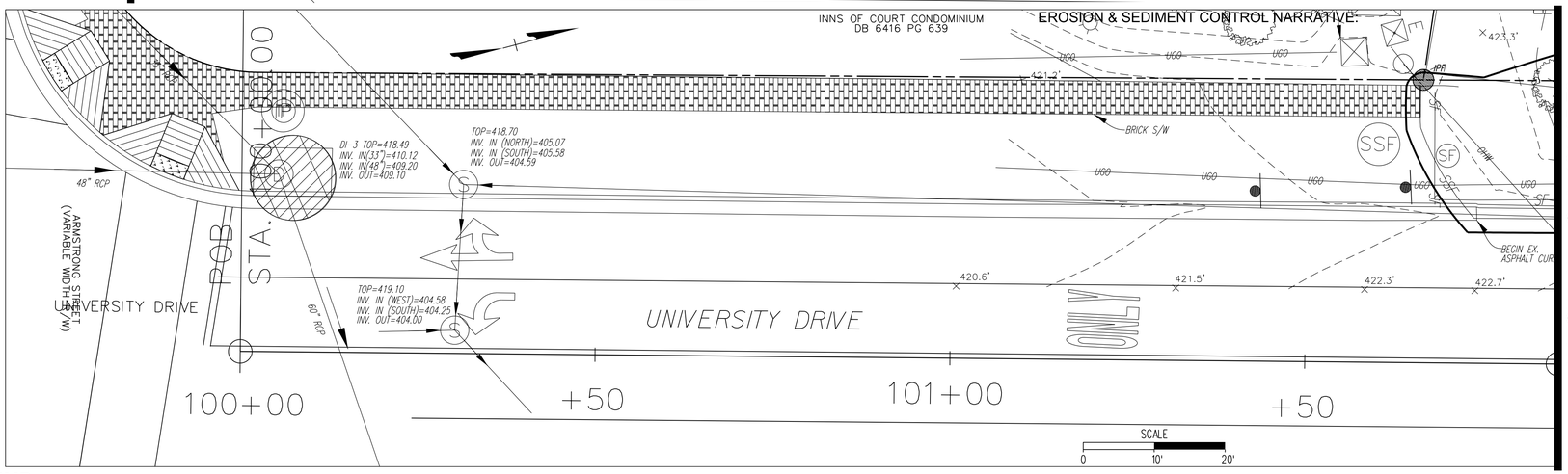
14007p0068A_University Dr.dgn
Plotted By: mmenglish

PROJECT MANAGER _W. Matthew Hogan 385-7889 (Edit for County)_____
SURVEYED BY, DATE _Staff - (301) 220-1867_____
DESIGN BY S.Yanovitz (Matthew Hogan Cabra-Wang & Assoc, Inc.)_____
SUBSURFACE UTILITY BY, DATE _Surveyor Name (000)-000-0000, (District)_____

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.		U000-151-149	6

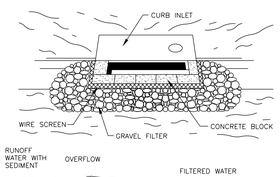




E&S CONTROL LEGEND

NO.	TITLE	KEY	SYMBOL
	LIMITS OF CLEARING & GRADING	LCG	
3.05	SUPER SILT FENCE	SSF	SSF SSF
3.07	STORM DRAIN INLET PROTECTION	IP	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.38	TREE PROTECTION FENCE	TP	TP TP
107 303	STABILIZED CONSTRUCTION ENTRANCE		
	TREE TO BE REMOVED		

BLOCK & GRAVEL CURB INLET SEDIMENT FILTER

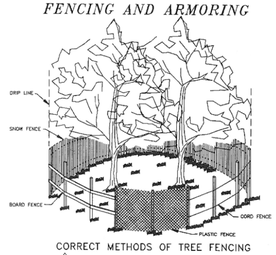


SPECIAL APPLICATION

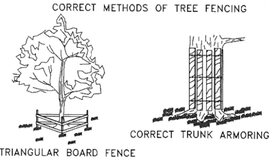
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE

FENCING AND ARMORING



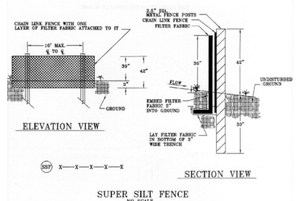
CORRECT METHODS OF TREE FENCING



TRIANGULAR BOARD FENCE

CORRECT TRUNK ARMORING

NOTE: WELDED WIRE FENCING TO BE USED FOR TREE PROTECTION.



ELEVATION VIEW

SUPER SILT FENCE
NO SCALE

FENCING

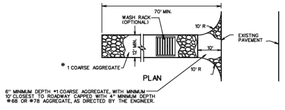
Chain link fence shall be 39" above grade with 3" embedded for a total fabric width of 42". The post shall be 42" above grade with 30" placed below grade (without concrete) for a total length of 72".

NOTES

1. Chain link fence shall be fastened securely to fence posts with wire ties.
2. Filter fabric shall be fastened securely to chain link fence with ties spaced horizontally 24" at the top and midsection.
3. Physical properties of the filter fabric shall conform to the requirements listed in the EROSION & SEDIMENT CONTROL HANDBOOK.
4. When two sections of filter fabric adjoin each other, they shall be overlapped by 6".
5. Maintenance shall be performed as needed and material shall be removed when sediment build-up reaches 50% of the height of the super silt fence.

EC-15

MINIMUM REQUIREMENTS FOR STABILIZED CONSTRUCTION ENTRANCE



1. SURFACE WATER SHALL BE PIPED UNDER THE CONSTRUCTION ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
3. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER HEAVY USE AND EACH RAIN.

SPECIFICATION REFERENCE	STABILIZED CONSTRUCTION ENTRANCE	VDOT ROAD AND BRIDGE STANDARDS
107 303	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE: 7/1/15 — SHEET 1 OF 1

EROSION & SEDIMENT CONTROL PLAN

PROJECT	SHEET NO.
14007-2014-SAB	6

PROJECT MANAGER _W. Sanford_(703) 385-7889_(Fairfax County)_ _ _ _ _ _ _
SURVEYED BY, DATE _Stantec_(301) 220-1887_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
DESIGN BY S.Yanovitz_(410).741-3500_(Sabra-Wang_& _Assoc._Inc) _ _ _ _ _ _ _ _.
SUBSURFACE UTILITY BY, DATE <Surveyor Name (000)000-0000, (District)>.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	·	U000-151-149	6A

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF THE CONSTRUCTION OF 217 LF OF SIDEWALK AND 382 LF OF CURB AND GUTTER (CG-6) WITH UNDERDRAIN (UD-4). THIS WILL BE CONSTRUCTED TO REMOVE A GAP IN THE SIDEWALK AND PROVIDE PEDESTRIAN CONNECTIVITY ALONG THE WEST SIDE OF UNIVERSITY DRIVE. THE TOTAL DRAINAGE AREA FOR THIS PROJECT IS 2.43 AC AND THE TOTAL DISTURBED AREA IS 0.21 AC.

EXISTING SITE CONDITIONS:
THE SITE CONSISTS OF OVERGROWN BRUSH ALONG AN 6' HIGH RIDGE THAT RUNS PARALLEL TO THE ROADWAY WITH A STEEP SLOPE OF 1.5:1. THE SITE DRAINS TOWARD THE ROADWAY AND INTO THE GUTTER PAN WHERE THE RUNOFF IS ADEQUATELY CONVEYED TO AN EXISTING DROP INLET, STM STRUCTURE 1. RUNOFF FROM SITE UTIMATELY FLOWS AWAY FROM THE SITE THROUGH PUBLICLY MAINTAINED STORM SEWER SYSTEM. VEGETATION CONSISTS OF A MIX OF DECIDUOUS AND EVERGREEN TREES AND BRUSH ALONG THE FRONTAGE OF UNIVERSITY DRIVE.

ADJACENT PROPERTIES:
THE SIDEWALK IMPROVEMENTS ARE PROPOSED ENTIRELY IN THE VDOT RIGHT OF WAY WITH TEMPORARY GRADING ON PARCEL 57402040 (DAVIES PROPERTY) TO THE WEST AND PARCEL 57402041 (F&M BANK) TO THE NORTH. THE SITE IS BOUNDED TO THE SOUTH BY A FAIRFAX CITY BUILDING. ADJACENT PROPERTIES ARE PROTECTED FROM EROSION BY THE EROSION CONTROLS PROPOSED WITH THIS PLAN.

OFF-SITE AREAS:
THERE IS A TEMPORARY CONSTRUCTION AND GRADING EASEMENT THAT WILL BE REQUIRED FOR GRADING ACTIVITIES ON DAVIES PROPERTY (PARCEL TO THE WEST) AND TO A LESSER EXTENT THE F&M BANK PROPERTY (PARCEL TO THE NORTH).

SOILS:
THE FOLLOWING SOIL TYPES WERE DETERMINED TO BE ON THE SITE PER THE NRCS SOILS SURVEY: 95: URBAN LAND: IV B, HYDROLOGIC GROUP N/A
101: URBAN LAND - WHEATON COMPLEX: IV B, HYDROLOGIC GROUP D
105C: WHEATON - GLENELG COMPLEX: IV B, HYDROLOGIC GROUP D

CRITICAL AREAS:
THE EXISTING STEEP SLOPE IS STABILIZED. THERE ARE NO PROPOSED CRITICAL AREAS.

EROSION AND SEDIMENT CONTROL MEASURES:

SAFETY FENCE: PROTECTIVE BARRIER INSTALLED TO PREVENT ACCESS TO AN EROSION CONTROL MEASURE

CONSTRUCTION ACCESS ENTRANCE: CONSTRUCTION VEHICLE INGRESS & EGRESS ACCESS TO THE SITE WITH WATER STATION FOR CLEANING CONSTRUCTION VEHICLE TIRES.

CONSTRUCTION ROAD STABILIZATION: TEMPORARY STABILIZATION OF ACCESS ROADS AND OTHER ON-SITE VEHICLE TRANSPORTATION WITH STONE IMMEDIATELY AFTER GRADING.

SUPER SILT FENCE: TEMPORARY SEDIMENT BARRIER CONSISTING OF SYNTHETIC FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED.

STORM DRAIN INLET PROTECTION: SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET

TEMPORARY SEEDING:THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS.

PERMANENT SEEDING: THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS BY PLANTING SEED.

TREE PROTECTION FENCE: PROTECTION OF DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY DURING LAND DISTURBING CONSTRUCTION ACTIVITY.

PERMANENT STABILIZATION:
DISTURBED AREAS THAT ARE TO REMAIN UNPAVED ARE TO BE STABILIZED USING VEGETATION/GRASSES. DETAILS FOR SEEDING (3.32 VESCH), MULCHING (3.35 VESCH), AND OTHER ACTIVITIES RELATED TO STABILIZATION AFTER CONSTRUCTION CAN BE FOUND IN VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

MAINTENANCE PROGRAM:

THE FOLLOWING IS A PROGRAM OF MAINTENANCE FOR THE MECHANICAL CONTROLS SPECIFIED IN THIS NARRATIVE AND ON THE PLAN:

1. THE SITE SUPERINTENDENT OR HIS/HER REPRESENTATIVE SHALL MAKE A VISUAL INSPECTION OF ALL MECHANICAL CONTROLS AND NEWLY STABILIZED AREA (I.E. SEEDED AND MULCHED AND/OR SODDED AREAS) ON A DAILY BASIS; ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO INSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE PREPARED PRIOR TO THE END OF THE WORK DAY INCLUDING RE-SEEDING AND MULCHING OR RE-SODDING IF NECESSARY.

2. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PREVENT MUD AND/OR OTHER DEBRIS FROM ENTERING EXISTING SWM/BMP FACILITIES OR DOWN STREAM WATER WAYS. SHOULD OFF SITE AREAS BECOME POLLUTED BY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE EFFECTED AREAS TO THE SATISFACTION OF THE INSPECTOR.

3, AT THE COMPLETION OF CONSTRUCTION, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ANY REMAINING DENUDED AREAS SHALL BE STABILIZED. CERTAIN DEVICES MAY BE REMOVED PRIOR TO CONSTRUCTION COMPLETION BUT ONLY WITH THE APPROVAL OF THE COUNTY INSPECTOR.

4. AFTER CONSTRUCTION OPERATIONS HAVE ENDED, ALL DISTURBED AREAS SHALL BE STABILIZED. UPON APPROVAL OF THE COUNTY INSPECTOR, MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED AND THE GROUND PERMANENTLY STABILIZED WITH VEGETATION WITHIN 30 DAYS.

TEMPORARY SEEDING:

SEE SHEET III-288 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) FOR ALLOWABLE PLANTING MATERIAL, SEEDING RATES, AND DATES. THE REQUIREMENTS OF THE "SOUTH" PLANTING REQUIREMENTS SHALL BE FOLLOWED. LIMING SHALL BE BASED ON TABLE 3.31-A OF VESCH. FERTILIZERS SHALL BE APPLIED AS 600 LB/ACRE. THE FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2-4" OF SOIL. SEED SHALL BE EVENLY APPLIED AND SMALL GRAINS SHALL BE PLANTED NO MORE THAN 1.5" DEEP. SEEDING MADE IN FALL FOR WINTER COVER AND DURING HOT SUMMER MONTHS SHALL BE MULCHED.

PERMANENT SEEDING:

THE SUBJECT SITE IS LOCATED IN THE COASTAL PLAIN AREA OF VIRGINIA, SO SHEET III-303 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK SHALL BE FOLLOWED FOR FINAL SEEDING MATERIAL, SEEDING RATES, AND DATES OF APPLICATION. (3.32 VESCH)

SODDING:

SODDED AREAS SHALL BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLANS. SOIL TEST SHOULD BE MADE TO DETERMINE THE EXACT REQUIREMENTS FOR LIME AND FERTILIZER. PRIOR TO LAYING SOD, SOIL SURFACE SHALL BE CLEAR OF TRASH, DEBRIS AND LARGE OBJECTS. QUALITY OF SOD SHALL BE STATE CERTIFIED AND ENSURE GENETIC PURITY AND HIGH QUALITY. SOD SHALL NOT BE LAID IN EXCESSIVELY WET OR DRY WEATHER AND BE DELIVERED AND INSTALLED WITHIN 36 HOURS. SOD SHOULD NOT BE LAID ON FROZEN SOIL SURFACE AND SHALL BE INSTALLED PER PAGE III-339 OF VESCH.

DUST CONTROL:

DUST SHALL BE CONTROLLED USING A VARIETY OF METHODS TO INCLUDE VEGETATIVE COVER, MULCH, TILLAGE, IRRIGATION, SPRAY-ON ADHESIVES, STONE, BARRIERS, AND CALCIUM CHLORIDE. THE IMPLEMENTATION OF THE DUST CONTROL METHODS SHALL BE INSTALLED PER SECTION 3.39 OF VESCH.

SECTION 8: CONSTRUCTION

8.1. CONSTRUCTION SEQUENCE

THE CONSTRUCTION SEQUENCE FOR COMPOST AMENDMENTS DIFFERS DEPENDING WHETHER THE PRACTICE WILL BE APPLIED TO A LARGE AREA OR A NARROW FILTER STRIP, SUCH AS IN A ROOFTOP DISCONNECTION OR GRASS CHANNEL. FOR LARGER AREAS, A TYPICAL CONSTRUCTION SEQUENCE IS AS FOLLOWS:

STEP 1. PRIOR TO BUILDING, THE PROPOSED AREA SHOULD BE DEEP TILLED TO A DEPTH OF 2 TO 3 FEET USING A TRACTOR AND SUB-SOILER WITH TWO DEEP SHANKS (CURVED METAL BARS) TO CREATE RIPS PERPENDICULAR TO THE DIRECTION OF FLOW. (THIS STEP IS USUALLY OMITTED WHEN COMPOST IS USED FOR NARROWER FILTER STRIPS.)

STEP 2. A SECOND DEEP TILLING TO A DEPTH OF 12 TO 18 INCHES IS NEEDED AFTER FINAL BUILDING LOTS HAVE BEEN GRADED.

STEP 3. IT IS IMPORTANT TO HAVE DRY CONDITIONS AT THE SITE PRIOR TO INCORPORATING COMPOST.

STEP 4. AN ACCEPTABLE COMPOST MIX IS THEN INCORPORATED INTO THE SOIL USING A ROTO-TILLER OR SIMILAR EQUIPMENT AT THE VOLUMETRIC RATE OF 1 PART COMPOST TO 2 PARTS SOIL.

STEP 5. THE SITE SHOULD BE LEVELED AND SEEDS OR SOD USED TO ESTABLISH A VIGOROUS GRASS COVER. LIME OR IRRIGATION MAY INITIALLY BE NEEDED TO HELP THE GRASS GROW QUICKLY.

STEP 6. AREAS OF COMPOST AMENDMENTS EXCEEDING 2500 SQUARE FEET SHOULD EMPLOY SIMPLE EROSION CONTROL MEASURES, SUCH AS SILT FENCE, TO REDUCE THE POTENTIAL FOR EROSION AND TRAP SEDIMENT.

8.2. CONSTRUCTION INSPECTION

CONSTRUCTION INSPECTION INVOLVES DIGGING A TEST PIT TO VERIFY THE DEPTH OF MULCH, AMENDED SOIL AND SCARIFICATION. A ROD PENETROMETER SHOULD BE USED TO ESTABLISH THE DEPTH OF UNCOMPACTED SOIL AT ONE LOCATION PER 10,000 SQUARE FEET.

SECTION 9: MAINTENANCE

9.1. MAINTENANCE AGREEMENTS

WHEN SOIL COMPOST AMENDMENTS ARE APPLIED ON PRIVATE RESIDENTIAL LOTS, HOMEOWNERS WILL NEED TO BE EDUCATED ON THEIR ROUTINE MAINTENANCE NEEDS, UNDERSTAND THE LONG-TERM MAINTENANCE PLAN, AND BE SUBJECT TO A DEED RESTRICTION OR OTHER MECHANISM ENFORCEABLE BY THE QUALIFYING LOCAL PROGRAM TO ENSURE THAT INFILTRATING AREAS ARE NOT CONVERTED OR DISTURBED. THE MECHANISM SHOULD, IDEALLY, GRANT AUTHORITY FOR LOCAL AGENCIES TO ACCESS THE PROPERTY FOR INSPECTION OR CORRECTIVE ACTION. IN ADDITION, THE GPS COORDINATES FOR ALL AMENDED AREAS SHOULD BE PROVIDED UPON FACILITY ACCEPTANCE TO ENSURE LONG TERM TRACKING.

A SIMPLE MAINTENANCE AGREEMENT SHOULD BE PROVIDED IF SOIL RESTORATION IS ASSOCIATED WITH MORE THAN 10,000 SQUARE FEET OF REFORESTATION. A CONSERVATION EASEMENT OR DEED RESTRICTION, WHICH ALSO IDENTIFIES A RESPONSIBLE PARTY, MAY BE REQUIRED TO MAKE SURE THE NEWLY DEVELOPING FOREST CANNOT BE CLEARED OR DEVELOPED MANAGEMENT IS ACCOMPLISHED (I.E., THINNING, INVASIVE PLANT REMOVAL, ETC.). SOIL COMPOST AMENDMENTS WITHIN A FILTER STRIP OR GRASS CHANNEL SHOULD BE LOCATED IN A PUBLIC RIGHT-OF-WAY, OR WITHIN A DEDICATED STORMWATER OR DRAINAGE EASEMENT.

9.2. FIRST YEAR MAINTENANCE OPERATIONS

IN ORDER TO ENSURE THE SUCCESS OF SOIL COMPOST AMENDMENTS, THE FOLLOWING TASKS MUST BE UNDERTAKEN IN THE FIRST YEAR FOLLOWING SOIL RESTORATION:

INITIAL INSPECTIONS. FOR THE FIRST SIX MONTHS FOLLOWING THE INCORPORATION OF SOIL AMENDMENTS, THE SITE SHOULD BE INSPECTED AT LEAST ONCE AFTER EACH STORM EVENT THAT EXCEEDS 1/2-INCH OF RAINFALL.

SPOT RESEEDING. INSPECTORS SHOULD LOOK FOR BARE OR ERODING AREAS IN THE CONTRIBUTING DRAINAGE AREA OR AROUND THE SOIL RESTORATION AREA AND MAKE SURE THEY ARE IMMEDIATELY STABILIZED WITH GRASS COVER.

FERTILIZATION. DEPENDING ON THE AMENDED SOILS TEST, A ONE-TIME, SPOT FERTILIZATION MAY BE NEEDED IN THE FALL AFTER THE FIRST GROWING SEASON TO INCREASE PLANT VIGOR.

WATERING. WATER ONCE EVERY THREE DAYS FOR THE FIRST MONTH, AND THEN WEEKLY DURING THE FIRST YEAR (APRIL-OCTOBER), DEPENDING ON RAINFALL.

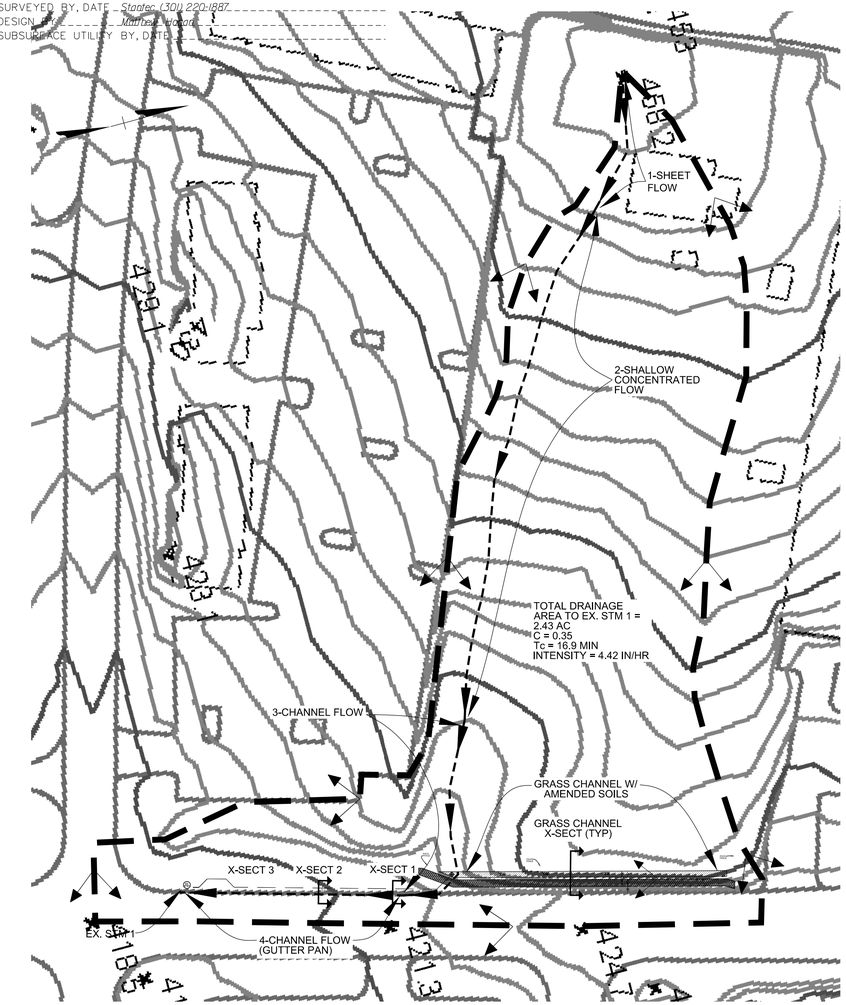
9.3.ONGOING MAINTENANCE

THERE ARE NO MAJOR ON-GOING MAINTENANCE NEEDS ASSOCIATED WITH SOIL COMPOST AMENDMENTS, ALTHOUGH THE OWNERS MAY WANT TO DE-THATCH THE TURF EVERY FEW YEARS TO INCREASE PERMEABILITY. THE OWNER SHOULD ALSO BE AWARE THAT THERE ARE MAINTENANCE TASKS NEEDED FOR FILTER STRIPS, GRASS CHANNELS, AND REFORESTATION AREAS. AN EXAMPLE MAINTENANCE INSPECTION CHECKLIST FOR AN AREA OF SOIL COMPOST AMENDMENTS CAN BE ACCESSED IN APPENDIX C OF CHAPTER 9 OF THE *VIRGINIA STORMWATER MANAGEMENT HANDBOOK* (2010).

EROSION & SEDIMENT CONTROL PLAN

	PROJECT	SHEET NO.
	14007-2014-SAB	6A

PROJECT MANAGER: Matthew Hogan
SURVEYED BY, DATE: Stantec (301) 220-1887
DESIGN BY, DATE: Matthew Hogan
SUBSURFACE UTILITY BY, DATE:



SOURCE OF OVERALL TOPO: FAIRFAX COUNTY GIS

DRAINAGE AREA MAP
SCALE: 1" = 50'

STORMWATER MANAGEMENT NARRATIVE:

THE SUBJECT SITE IS LOCATED ON THE WEST SIDE OF UNIVERSITY BOULEVARD BETWEEN ARMSTRONG AND SOUTH STREET AND IS IN FRONT OF PARCEL 57402040 IN FAIRFAX CITY, VA. THIS PROJECT PROPOSES 217 LINEAR FEET OF 5 FOOT WIDE BRICK SIDEWALK TO PROVIDE PEDESTRIAN CONNECTIVITY. THE PROPOSED SIDEWALK AND CURB IMPROVEMENTS WILL BE LOCATED ENTIRELY IN THE VDOT RIGHT-OF-WAY.

AS PART OF THIS PEDESTRIAN CONNECTIVITY PROJECT, THE EXISTING ROLLED CURB SECTION LOCATED ALONG THE PROPOSED SIDEWALK IS TO BE REPLACED WITH VDOT STANDARD CURB AND GUTTER (CG-6) WITH AN UNDERDRAIN (UD-4). THE EXISTING CURB & GUTTER TO THE SOUTH OF THE PROPOSED SIDEWALK WILL ALSO BE REPLACED WITH STANDARD CURB & GUTTER (CG-6) AND AN UNDERDRAIN (UD-4). THE PROPOSED UNDERDRAIN SYSTEM OUTFALLS INTO EXISTING STORM STRUCTURE 1.

IN THE EXISTING CONDITION, THE RUNOFF SHEET FLOWS INTO UNIVERSITY DRIVE AND IS CONVEYED ALONG THE ROLLED CURB WHICH TRANSITIONS INTO A CURB & GUTTER SECTION TO THE SOUTH. THE RUNOFF TRAVELS APPROXIMATELY 150' IN THE EXISTING CURB & GUTTER SECTION AND DRAINS INTO STORM STRUCTURE #1 (DI-3B WITH A 10' OPENING). THE RATIONAL METHOD WAS USED FOR STORMWATER CALCULATIONS. THE DRAINAGE AREA WAS MEASURED TO BE 2.43 AC. THE C-FACTOR WAS DETERMINED TO BE 0.35 FOR THE SUBJECT AREA. THE TIME OF CONCENTRATION WAS CALCULATED TO BE 16.9 MINUTES. THE TIME OF CONCENTRATION WAS DETERMINED BY SUMMING THE TIME OF RUNOFF SHEET FLOW, SHALLOW CONCENTRATED FLOW, AND CHANNEL FLOW. PER APPENDIX 6C-2, THE 10-YR INTENSITY WAS DETERMINED TO BE 4.42 IN/HR FOR A 16.9 MINUTE TC IN FAIRFAX, VA. THEREFORE, THE THE 10-YR PEAK RUNOFF TO EXISTING STORM INLET #1 WAS DETERMINED TO BE 3.83 CFS.

IN THE PROPOSED CONDITION, A GRASS CHANNEL WITH MODIFIED SOILS INTERCEPTS 1.92 AC OF RUNOFF WHICH DRAINS INTO A PROPOSED YARD INLET AT THE SOUTH END OF THE GRASS CHANNEL. THE YARD INLET TIES INTO THE PROPOSED UD-4 WHICH DRAINS INTO EX. STORM STRUCTURE 1. THE PROPOSED GRASS CHANNEL IS DESIGNED TO MEET BMP QUALITY AND QUANTITY REQUIREMENTS BY INCREASING INFILTRATION. THE RUNOFFF-REDUCTION METHOD SHOWN ON THIS SHEET WAS USED TO DEMONSTRATE THAT SWM CRITERIA HAS BEEN MET.

THE 10-YR FLOW WAS DETERMINED TO BE CONTAINED WITHIN THE GRASS CHANNEL AS SHOWN IN THE PROVIDED TYPICAL GRASS CHANNEL CROSS SECTION ON THIS SHEET. THE 10-YR MAXIMUM VELOCITY WAS DETERMINED TO BE 2.75 FT/SEC WHICH IS ACCEPTABLE FOR A GRASS CHANNEL. THE RELATIVELY DRAINAGE AREA LOCATED BETWEEN THE PROPOSED SIDEWALK TO THE CURB WHICH DRAINS INTO THE GUTTER PAN WAS ALSO DETERMINED TO BE ADEQUATELY CONVEYED TO EXISTING STORM STRUCTURE 1. SEE CROSS SECTIONS 1, 2, AND 3 ON THIS SHEET.

IN SUMMATION, THIS PROJECT PROPOSES TO MEET SWM REQUIREMENTS BY A GRASS CHANNEL WITH MODIFIED SOILS WHICH WILL INTERCEPT AND TREAT THE RUNOFF IN ACCORDANCE WITH THE RUNOFF-REDUCTION METHOD. GIVEN THIS, AND THE NEGLIGIBLE INCREASE IN IMPERVIOUSNESS ASSOCIATED WITH THIS SIDEWALK IMPROVEMENT PROJECT, IT IS OUR OPINION THAT SWM REQUIREMENTS HAVE BEEN MET.

Worksheet for Irregular Section - 1

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02600	ft/ft
Discharge	1.05	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	422.10
0+09	422.00
0+09	421.50
0+11	421.67
0+18	422.20

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 422.10)	(0+18, 422.20)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.21	ft
Elevation Range	421.50 to 422.20	ft
Flow Area	0.27	ft²
Wetted Perimeter	2.80	ft
Hydraulic Radius	0.10	ft
Top Width	2.58	ft
Normal Depth	0.21	ft
Critical Depth	0.29	ft
Critical Slope	0.00529	ft/ft
Velocity	3.88	ft/s

Worksheet for Irregular Section - 2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02900	ft/ft
Discharge	1.20	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	420.58
0+09	420.40
0+09	419.83
0+11	420.07
0+18	420.60

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 420.58)	(0+18, 420.60)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.25	ft
Elevation Range	419.83 to 420.60	ft
Flow Area	0.27	ft²
Wetted Perimeter	2.45	ft
Hydraulic Radius	0.11	ft
Top Width	2.18	ft
Normal Depth	0.25	ft
Critical Depth	0.35	ft
Critical Slope	0.00524	ft/ft
Velocity	4.46	ft/s

Worksheet for Irregular Section - 3

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02100	ft/ft
Discharge	1.37	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	421.13
0+09	420.95
0+09	420.45
0+11	420.62
0+18	421.15

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 421.13)	(0+18, 421.15)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	0.25	ft
Elevation Range	420.45 to 421.15	ft
Flow Area	0.36	ft²
Wetted Perimeter	3.26	ft
Hydraulic Radius	0.11	ft
Top Width	3.00	ft
Normal Depth	0.25	ft
Critical Depth	0.32	ft
Critical Slope	0.00510	ft/ft
Velocity	3.81	ft/s

Worksheet for Grass Channel (Typical)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.02400	ft/ft
Discharge	3.83	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	425.00
0+03	424.00
0+07	424.00
0+10	424.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 425.00)	(0+10, 424.50)	0.030

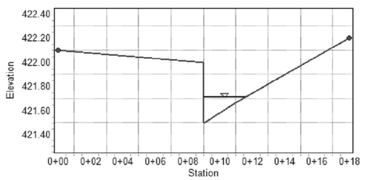
Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

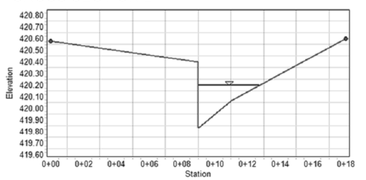
Results

Normal Depth	0.27	ft
Elevation Range	424.00 to 425.00	ft
Flow Area	1.39	ft²
Wetted Perimeter	6.47	ft
Hydraulic Radius	0.21	ft
Top Width	6.41	ft
Normal Depth	0.27	ft
Critical Depth	0.27	ft
Critical Slope	0.02197	ft/ft
Velocity	2.75	ft/s

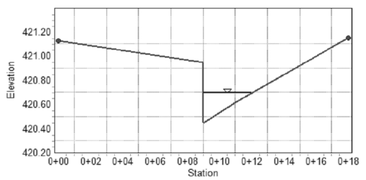
CROSS SECTION 1



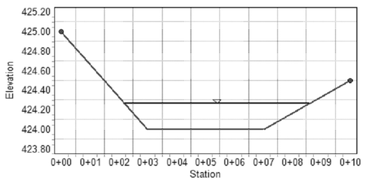
CROSS SECTION 2



CROSS SECTION 3



GRASS CHANNEL SECTION (TYP)



REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	.	U000-151-149	7

Virginia Runoff Reduction Method ReDevelopment Worksheet - v2.8 - June 2014

Update Summary Sheet

Print

Site Data Summary

Total Rainfall = 43 inches

Site Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
Turf (acres)	0.00	0.00	1.92	0.22	2.14	*88.07*
Impervious (acres)	0.00	0.00	0.00	0.29	0.29	*11.93*
					2.43	*100.00*

Site Rv	0.31
Post Development Treatment Volume (ft³)	2733
Post Development TP Load (lb/yr)	1.72
Post Development TN Load (lb/yr)	12.28
Total TP Load Reduction Required (lb/yr)	0.31

Total Runoff Volume Reduction (ft³)	309
Total TP Load Reduction Achieved (lb/yr)	0
Total TN Load Reduction Achieved (lb/yr)	2.48
Adjusted Post Development TP Load (lb/yr)	1.41
Remaining Phosphorous Load Reduction (Lb/yr) Required	0.00

Drainage Area Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
Turf (acres)	2.14	0.00	0.00	0.00	0.00	*2.14*
Impervious (acres)	0.29	0.00	0.00	0.00	0.00	*0.29*
						2.43

Drainage Area Compliance Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
TP Load Red. (lb/yr)	0.31	0.00	0.00	0.00	0.00	*0.31*
TN Load Red. (lb/yr)	2.48	0.00	0.00	0.00	0.00	*2.48*

Drainage Area A Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	*0.00*
Turf (acres)	0.03	0.00	1.92	0.19	2.14	*88.07*
Impervious (acres)	0.00	0.00	0.00	0.29	0.29	*11.93*
					2.43	

BMP Selections

Practice	Credit Area (acres)	Downstream Practice

Total Impervious Cover Treated (acres)	0.00
Total Turf Area Treated (acres)	1.92
Total TP Load Reduction Achieved in D.A. A (lb/yr)	0.31
Total TN Load Reduction Achieved in D.A. A (lb/yr)	2.48

Channel and Flood Protection

	Weighted CN	1-year storm Adjusted CN	2-year storm Adjusted CN	10-year storm Adjusted CN
Target Rainfall Event (in)		2.51	3.04	4.67
D.A. A CN	77	76	76	76
D.A. B CN	0	44	#N/A	#N/A
D.A. C CN	0	44	#N/A	#N/A
D.A. D CN	0	44	#N/A	#N/A
D.A. E CN	0	44	#N/A	#N/A

SWM PLAN & DETAIL SHEET

PROJECT	SHEET NO.
14007-2014-SAB	7

PLOTTED: $DATE$

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	.	U000-151-149	7A

PROJECT MANAGER ____________________
SURVEYED BY, DATE _Stantec (301) 220-1887_
DESIGN BY ____________________
SUBSURFACE UTILITY BY, DATE ____________________

Virginia Runoff Reduction Method ReDevelopment Worksheet - v2.8 - June 2014
To be used w/ DRAFT 2013 BMP Standards and Specifications

Site Data

Project Name: University Drive Sidewalk Improvements
Date: 02 / 27 / 2015

(cyan)	data input cells
(grey)	calculation cells
(yellow)	constant values

Post-ReDevelopment Project & Land Cover Information — **Total Disturbed Acreage** 0.21

Constants

Annual Rainfall (inches)	43		
Target Rainfall Event (inches)	1.00		
Phosphorus EMC (mg/L)	0.26	Nitrogen EMC (mg/L)	1.86
Target Phosphorus Target Load (lb/acre/yr)	0.41		
Pj	0.90		

Pre-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.25	0.25
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.00	1.92	0.00	1.92
Impervious Cover (acres)	0.00	0.00	0.00	0.26	0.26
				Total	2.43

Post-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.00	1.92	0.22	2.14
Impervious Cover (acres)	0.00	0.00	0.00	0.29	0.29
				Total	2.43
Area Check	Okay	Okay	Okay	Okay	

Rv Coefficients

	A soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Land Cover Summary Pre-ReDevelopment	**Listed**	**Adjusted[1]**	**Land Cover Summary Post-ReDevelopment**		**Land Cover Summary Post-ReDevelopment New Impervious**	
Forest/Open Space Cover (acres)	0.25	0.22	Forest/Open Space Cover (acres)	0.00		
Composite Rv(forest)	0.05	0.05	Composite Rv(forest)	0.00		
% Forest	10%	9%	% Forest	0%		
Managed Turf Cover (acres)	1.92	1.92	Managed Turf Cover (acres)	2.14		
Composite Rv(turf)	0.22	0.22	Composite Rv(turf)	0.22		
% Managed Turf	79%	80%	% Managed Turf	89%		
Impervious Cover (acres)	0.26	0.26	ReDev. Impervious Cover (acres)	0.26	New Impervious Cover (acres)	0.03
Rv(impervious)	0.95	0.95	Rv(impervious)	0.95	Rv(impervious)	0.95
% Impervious	11%	11%	% Impervious	11%	% Impervious	100%
Total Site Area (acres)	2.43	2.40	**Total ReDev. Site Area (acres)**	2.40	**Total New Dev. Site Area (acres)**	0.03
Site Rv	0.28	0.28	**ReDev. Site Rv**	0.30	**New Dev. Site Rv**	0.95
Pre-Development Treatment Volume (acre-ft)	0.0568	0.0567	Post-ReDevelopment Treatment Volume (acre-ft)	0.0604	Post-Development Treatment Volume (acre-ft)	0.0024
Pre-Development Treatment Volume (cubic feet)	2,475	2,470	Post-ReDevelopment Treatment Volume (cubic feet)	2,630	Post-Development Treatment Volume (cubic feet)	103
Pre-Development Load (TP) (lb/yr)	1.56	1.55	Post-ReDevelopment Load (TP) (lb/yr)	1.65	Post-Development Load (TP) (lb/yr)	0.07

[1]*Adjusted* **Land Cover Summary** reflects the pre redevelopment land cover minus the pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover. The adjusted total acreage is consistent with the Post Redevelopment acreage (minus the acreage of new impervious cover). The load reduction requriement for the new impervious cover to meet the new development load limit is computed in **Column I**.

Maximum % Reduction Required Below Pre-ReDevelopment Load	10%
TP Load Reduction Required for Redeveloped Area (lb/yr)	0.26
TP Load Reduction Required for New Impervious Area (lb/yr)	0.05
Total Load Reduction Required (lb/yr)	**0.31**
Pre-Development Load (TN) (lb/yr)	11.13
Post-Development Load (TN) (lb/yr)	12.28

Drainage Area A

Drainage Area A Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.03	0.00	1.92	0.19	2.14	0.22
Impervious Cover (acres)	0.00	0.00	0.00	0.29	0.29	0.95
				Total	2.43	

Post Development Treatment Volume (cf) 2722

Apply Runoff Reduction Practices to Reduce Treatment Volume & Post-Development Load in Drainage Area A

Credit	Unit	Description of Credit	Credit	Credit Area (acres)	Volume from Upstream RR Practice (cf)	Runoff Reduction (cf)	Remaining Runoff Volume (cf)	Phosphorus Efficiency (%)	Phosphorus Load from Upstream RR Practices (lbs)	Untreated Phosphorus Load to Practice (lbs.)	Phosphorus Removed By Practice (lbs.)	Remaining Phosphorus Load (lbs.)	Downstream Treatment to be Employed	Nitrogen Efficiency (%)	Nitrogen Load from Upstream RR Practices (lbs)	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By Practice (lbs.)	Remaining Nitrogen Load (lbs.)
1. Vegetated Roof														**1. Green Roof**				
1.a. Vegetated Roof #1 (Spec #5)	acres of green roof	45% runoff volume reduction	0.45	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
1.b. Vegetated Roof #2 (Spec #5)	acres of green roof	60% runoff volume reduction	0.60	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2. Rooftop Disconnection														**2. Impervious Surface Disconnection**				
2.a. Simple Disconnection to A/B Soils (Spec #1)	impervious acres disconnected	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.b. Simple Disconnection to C/D Soils (Spec #1)	impervious acres disconnected	25% runoff volume reduction for treated area	0.25	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils) (Spec #4)	impervious acres disconnected	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1 (Microinfiltration #1) (Spec #8)	impervious acres disconnected	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.e. To Dry Well or French Drain #2 (Micro-infiltration #2) (Spec #8)	impervious acres disconnected	90% runoff volume reduction for treated area	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.f. To Rain Garden #1 (Micro-Bioretention #1) (Spec #9)	impervious acres disconnected	40% of volume captured	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
2.g. To Rain Garden #2 (Micro-Bioretention #2) (Spec #9)	impervious acres disconnected	80% runoff volume reduction for treated area	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (Spec #6)	impervious acres captured	based on tank size and design spreadsheet (See Spec #6)	0.00	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.i. To Stormwater Planter (Urban Bioretention) (Spec #9, Appendix A)	impervious acres disconnected	40% runoff volume reduction for treated area	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
3. Permeable Pavement														**3. Permeable Pavement**				
3.a. Permeable Pavement #1 (Spec #7)	acres of permeable pavement + acres of "external" (upgradient) impervious pavement	45% runoff volume reduction	0.45	0.00	0	0	0	25	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
3.b. Permeable Pavement #2 (Spec #7)	acres of permeable pavement	75% runoff volume reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
4. Grass Channel														**4. Grass Channel**				
4.a. Grass Channel A/B Soils (Spec #3)	impervious acres draining to grass channels	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	turf acres draining to grass channels	20% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (Spec #3)	impervious acres draining to grass channels	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	turf acres draining to grass channels	10% runoff volume reduction	0.10	0.00	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.c. Grass Channel Compost Amended Soils as per specs (see Spec #4)	impervious acres draining to grass channels	30% runoff volume reduction	0.20	0.00	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	turf acres draining to grass channels	30% runoff volume reduction	0.20	1.92	0	309	1236	15	0.00	0.97	0.31	0.66		20	0.00	6.88	2.48	4.41
5. Dry Swale														**5. Dry Swale**				
5.a. Dry Swale #1 (Spec #10)	impervious acres draining to dry swale	40% runoff volume reduction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
	turf acres draining to dry swale	40% runoff volume reduction	0.40	0.00	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (Spec #10)	impervious acres draining to dry swale	60% runoff volume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
	turf acres draining to dry swale	60% runoff volume reduction	0.60	0.00	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
6. Bioretention														**6. Bioretention**				
6.a. Bioretention #1 or Urban Bioretention (Spec #9)	impervious acres draining to bioretention	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
	turf acres draining to bioretention	40% runoff volume reduction	0.40	0.00	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
6.b. Bioretention #2 (Spec #9)	impervious acres draining to bioretention	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
	turf acres draining to bioretention	80% runoff volume reduction	0.80	0.00	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
7. Infiltration														**7. Infiltration**				
7.a. Infiltration #1 (Spec #8)	impervious acres draining to infiltration	50% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
	turf acres draining to infiltration	50% runoff volume reduction	0.50	0.00	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
7.b. Infiltration #2 (Spec #8)	impervious acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
	turf acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
8. Extended Detention Pond														**8. Extended Detention Pond**				
8.a. ED #1 (Spec #15)	impervious acres draining to ED	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
	turf acres draining to ED	0% runoff volume reduction	0.00	0.00	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
8.b. ED #2 (Spec #15)	impervious acres draining to ED	15% runoff volume reduction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
	turf acres draining to ED	15% runoff volume reduction	0.15	0.00	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
9. Sheetflow to Filter/Open Space														**9. Sheetflow to Conservation Area or Filter Strip**				
9.a. Sheetflow to Conservation Area with A/B Soils (Spec #2)	impervious acres draining to conserved open space	75% runoff volume reduction for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
	turf acres draining to conserved open space	75% runoff volume reduction for treated area	0.75	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.b. Sheetflow to Conservation Area with C/D Soils (Spec #2)	impervious acres draining to conserved open space	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
	turf acres draining to conserved open space	50% runoff reduction volume for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.c. Sheetflow to Vegetated Filter Strip in A Soils or Compost Amended B/C/D Soils (Spec #2 & #4)	impervious acres draining to conserved open space	50% runoff volume reduction for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
	turf acres draining to conserved open space	50% runoff reduction volume for treated area	0.50	0.00	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac)	0.00
TOTAL TURF AREA TREATED (ac)	1.92
AREA CHECK	OK.
TOTAL PHOSPHOROUS REMOVAL REQUIRED ON SITE (lb/yr)	0.31
TOTAL RUNOFF REDUCTION IN D.A. A (cf)	309
PHOSPHORUS REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.31
TOTAL RUNOFF REDUCTION IN D.A. A (cf)	309
NITROGEN REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	2.48

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

Apply Practices that Remove Pollutants but Do Not Reduce Runoff Volume

Practice	Unit	Description of Credit	Credit	Area (excluding areas treated by upstream practices)	Runoff from Upstream RR Practices (cf)	Runoff Reduction (cf)	Remaining Runoff Volume (cf)	Phosphorus Efficiency (%)	Phosphorus Load from Upstream RR Practices (lbs)	Untreated Phosphorus Load to Practice (lbs.)	Phosphorus Removed By Practice (lbs.)	Remaining Phosphorus Load (lbs.)	Downstream Treatment to be Employed	Nitrogen Efficiency (%)	Nitrogen Load from Upstream RR Practices (lbs)	Untreated Nitrogen Load to Practice (lbs.)	Nitrogen Removed By Practice (lbs.)	Remaining Nitrogen Load (lbs.)
10. Wet Swale (Coastal Plain)														**10. Wet Swale (Coastal Plain)**				
10.a. Wet Swale #1 (Spec #11)	impervious acres draining to wet swale	0% runoff volume reduction	0.00	0.00	0.00	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
	turf acres draining to wet swale	0% runoff volume reduction	0.00	0.00	0.00	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
10.b. Wet Swale #2 (Spec #11)	impervious acres draining to wet swale	0% runoff volume reduction	0.00	0.00	0.00	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
	turf acres draining to wet swale	0% runoff volume reduction	0.00	0.00	0.00	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
11. Filtering Practices														**11. Filtering Practices**				
11.a. Filtering Practice #1 (Spec #12)	impervious acres draining to filter	0% runoff volume reduction	0.00	0.00	0.00	0	0	60	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
	turf acres draining to filter	0% runoff volume reduction	0.00	0.00	0.00	0	0	60	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
11.b. Filtering Practice #2 (Spec #12)	impervious acres draining to filter	0% runoff volume reduction	0.00	0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		45	0.00	0.00	0.00	0.00
	turf acres draining to filter	0% runoff volume reduction	0.00	0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		45	0.00	0.00	0.00	0.00
12. Constructed Wetland														**12. Constructed Wetland**				
12.a. Constructed Wetland #1 (Spec #13)	impervious acres draining to wetland	0% runoff volume reduction	0.00	0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
	turf acres draining to wetland	0% runoff volume reduction	0.00	0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
12.b. Constructed Wetland #2 (Spec #13)	impervious acres draining to wetland	0% runoff volume reduction	0.00	0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		55	0.00	0.00	0.00	0.00
	turf acres draining to wetland	0% runoff volume reduction	0.00	0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		55	0.00	0.00	0.00	0.00
13. Wet Ponds														**13. Wet Ponds**				
13.a. Wet Pond #1 (Spec #14)	impervious acres draining to wet pond	0% runoff volume reduction	0.00	0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
	turf acres draining to wet pond	0% runoff volume reduction	0.00	0.00	0.00	0	0	50	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	impervious acres draining to wet pond	0% runoff volume reduction	0.00	0.00	0.00	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
	turf acres draining to wet pond	0% runoff volume reduction	0.00	0.00	0.00	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.c. Wet Pond #2 (Spec #14)	impervious acres draining to wet pond	0% runoff volume reduction	0.00	0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
	turf acres draining to wet pond	0% runoff volume reduction	0.00	0.00	0.00	0	0	75	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)	impervious acres draining to wet pond	0% runoff volume reduction	0.00	0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
	turf acres draining to wet pond	0% runoff volume reduction	0.00	0.00	0.00	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
14. Manufactured BMP														**14. Manufactured BMP**				
14. Insert Name of Device	impervious acres draining to device	0% runoff volume reduction	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
	turf acres draining to device	0% runoff volume reduction	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac)	0.00
TOTAL TURF AREA TREATED (ac)	1.92
AREA CHECK	OK.
PHOSPHORUS REMOVAL BY PRACTICES THAT DO NOT REDUCE RUNOFF VOLUME IN D.A. A	0.00
TOTAL PHOSPHORUS REMOVAL IN D.A. A (lb/yr)	0.31
NITROGEN REMOVAL BY PRACTICES THAT DO NOT REDUCE RUNOFF VOLUME IN D.A. A	0.00
TOTAL NITROGEN REMOVAL IN D.A. A (lb/yr)	2.48

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

Site Results

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
IMPERVIOUS COVER	0.29	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED	0.00	0.00	0.00	0.00	0.00	OK.
TURF AREA	2.14	0.00	0.00	0.00	0.00	OK.
TURF AREA TREATED	1.92	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Phosphorous

TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR)	0.31
RUNOFF REDUCTION (cf)	309
PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR)	0.31
ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr)	1.41
REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED	CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 0 LB/YEAR!

Nitrogen (for information purposes)

RUNOFF REDUCTION (cf)	309
NITROGEN LOAD REDUCTION ACHIEVED (LB/YR)	2.48
ADJUSTED POST-DEVELOPMENT NITROGEN LOAD (TP) (lb/yr)	9.81

	1-year storm	2-year storm	10-year storm
Target Rainfall Event (in)	2.51	3.04	4.67

Drainage Area A	
Drainage Area (acres)	2.43
Runoff Reduction Volume (cf)	309
Drainage Area B	
Drainage Area (acres)	0.00
Runoff Reduction Volume (cf)	0
Drainage Area C	
Drainage Area (acres)	0.00
Runoff Reduction Volume (cf)	0
Drainage Area D	
Drainage Area (acres)	0.00
Runoff Reduction Volume (cf)	0
Drainage Area E	
Drainage Area (acres)	0.00
Runoff Reduction Volume (cf)	0

Based on the use of Runoff Reduction practices in the selected drainage areas, the spreadsheet calculates an adjusted $RV_{Developed}$ and adjusted Curve Number.

Drainage Area A		A soils	B Soils	C Soils	D Soils	
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.00	0.00	0.00	0.00	
	CN	30	55	70	77	
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.03	0.00	1.92	0.19	
	CN	39	61	74	80	
Impervious Cover	Area (acres)	0.00	0.00	0.00	0.29	
	CN	98	98	98	98	
					Weighted CN	**S**
					77	2.99
		1-year storm	2-year storm	10-year storm		
$RV_{Developed}$ (in) with no Runoff Reduction		0.75	1.10	2.35		
$RV_{Developed}$ (in) with Runoff Reduction		0.71	1.06	2.31		
	Adjusted CN	76	76	76		

Drainage Area B		A soils	B Soils	C Soils	D Soils	
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.00	0.00	0.00	0.00	
	CN	30	55	70	77	
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.00	0.00	0.00	0.00	
	CN	39	61	74	80	
Impervious Cover	Area (acres)	0.00	0.00	0.00	0.00	
	CN	98	98	98	98	
					Weighted CN	**S**
					0	1000.00
		1-year storm	2-year storm	10-year storm		
$RV_{Developed}$ (in) with no Runoff Reduction		0.00	0.00	0.00		
$RV_{Developed}$ (in) with Runoff Reduction		0.00	0.00	0.00		
	Adjusted CN	44	#N/A	#N/A		

Drainage Area C		A soils	B Soils	C Soils	D Soils	
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.00	0.00	0.00	0.00	
	CN	30	55	70	77	
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.00	0.00	0.00	0.00	
	CN	39	61	74	80	
Impervious Cover	Area (acres)	0.00	0.00	0.00	0.00	
	CN	98	98	98	98	
					Weighted CN	**S**
					0	1000.00
		1-year storm	2-year storm	10-year storm		
$RV_{Developed}$ (in) with no Runoff Reduction		0.00	0.00	0.00		
$RV_{Developed}$ (in) with Runoff Reduction		0.00	0.00	0.00		
	Adjusted CN	44	#N/A	#N/A		

Drainage Area D		A soils	B Soils	C Soils	D Soils	
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.00	0.00	0.00	0.00	
	CN	30	55	70	77	
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.00	0.00	0.00	0.00	
	CN	39	61	74	80	
Impervious Cover	Area (acres)	0.00	0.00	0.00	0.00	
	CN	98	98	98	98	
					Weighted CN	**S**
					0	1000.00
		1-year storm	2-year storm	10-year storm		
$RV_{Developed}$ (in) with no Runoff Reduction		0.00	0.00	0.00		
$RV_{Developed}$ (in) with Runoff Reduction		0.00	0.00	0.00		
	Adjusted CN	44	#N/A	#N/A		

Drainage Area E		A soils	B Soils	C Soils	D Soils	
Forest/Open Space -- undisturbed, protected forest/open space or reforested land	Area (acres)	0.00	0.00	0.00	0.00	
	CN	30	55	70	77	
Managed Turf -- disturbed, graded for yards or other turf to be mowed/managed	Area (acres)	0.00	0.00	0.00	0.00	
	CN	39	61	74	80	
Impervious Cover	Area (acres)	0.00	0.00	0.00	0.00	
	CN	98	98	98	98	
					Weighted CN	**S**
					0	1000.00
		1-year storm	2-year storm	10-year storm		
$RV_{Developed}$ (in) with no Runoff Reduction		0.00	0.00	0.00		
$RV_{Developed}$ (in) with Runoff Reduction		0.00	0.00	0.00		
	Adjusted CN	44	#N/A	#N/A		

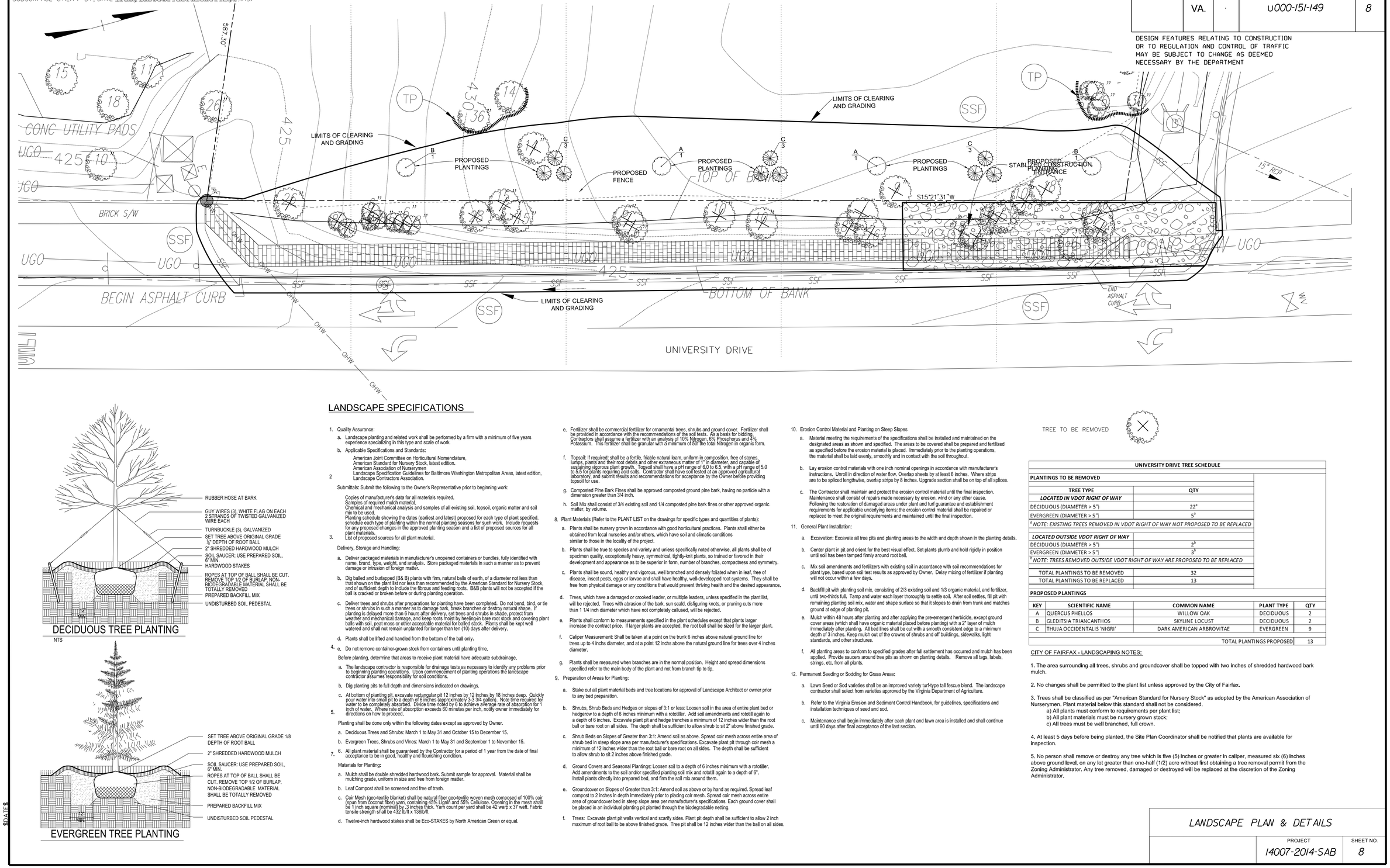
SWM CALCULATION

PROJECT	SHEET NO.
14007-2014-SAB	7A

PROJECT MANAGER _ W. Sanford (703) 385-7889 (City Of Fairfax) _ _ _ _ _ _
SURVEYED BY, DATE _ Survey Proj manager name (301) 220-1887 (Stantec) 08/2014
DESIGN BY _ S.Yanovitz (410) 741-3500 (Sabra-Wang & Assoc. Inc.) _ _ _ _ _ _
SUBSURFACE UTILITY BY, DATE Bradley Leatherman (703) 928-0649 (Zayo, 4/15)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	·	U000-151-149	8

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



LANDSCAPE SPECIFICATIONS

1. Quality Assurance:
   a. Landscape planting and related work shall be performed by a firm with a minimum of five years experience specializing in this type and scale of work.
   b. Applicable Specifications and Standards:

      American Joint Committee on Horticultural Nomenclature,
      American Standard for Nursery Stock, latest edition,
      American Association of Nurserymen
      Landscape Specification Guidelines for Baltimore Washington Metropolitan Areas, latest edition,
      Landscape Contractors Association.

2. Submittals: Submit the following to the Owner's Representative prior to beginning work:

   Copies of manufacturer's data for all materials required.
   Samples of required mulch material.
   Chemical and mechanical analysis and samples of all existing soil, topsoil, organic matter and soil mix to be used.
   Planting schedule showing the dates (earliest and latest) proposed for each type of plant specified, schedule each type of planting within the normal planting seasons for such work. Include requests for any proposed changes in the approved planting season and a list of proposed sources for all plant materials.

3. List of proposed sources for all plant material.

   Delivery, Storage and Handling:

   a. Deliver packaged materials in manufacturer's unopened containers or bundles, fully identified with name, brand, type, weight, and analysis. Store packaged materials in such a manner as to prevent damage or intrusion of foreign matter.
   b. Dig balled and burlapped (B& B) plants with firm, natural balls of earth, of a diameter not less than that shown on the plant list nor less than recommended by the American Standard for Nursery Stock, and of sufficient depth to include the fibrous and feeding roots. B&B plants will not be accepted if the ball is cracked or broken before or during planting operation.
   c. Deliver trees and shrubs after preparations for planting have been completed. Do not bend, bind, or tie trees or shrubs in such a manner as to damage bark, break branches or destroy natural shape. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by heeling-in bare root stock and covering plant balls with soil, peat moss or other acceptable material for balled stock. Plants shall be kept well watered and shall not remain unplanted for longer than ten (10) days after delivery.
   d. Plants shall be lifted and handled from the bottom of the ball only.

4. e. Do not remove container-grown stock from containers until planting time.

   Before planting, determine that areas to receive plant material have adequate subdrainage.

   a. The landscape contractor is responsible for drainage tests as necessary to identify any problems prior to beginning planting operations. Upon commencement of planting operations the landscape contractor assumes responsibility for soil conditions.
   b. Dig planting pits to full depth and dimensions indicated on drawings.
   c. At bottom of planting pit, excavate rectangular pit 12 inches by 12 inches by 18 inches deep. Quickly pour water into small pit to a depth of 6 inches (approximately 3-3 3/4 gallon). Note time required for water to be completely absorbed. Divide time noted by 6 to achieve average rate of absorption for 1 inch of water. Where rate of absorption exceeds 60 minutes per inch, notify owner immediately for

5. directions on how to proceed.

   Planting shall be done only within the following dates except as approved by Owner.

   a. Deciduous Trees and Shrubs: March 1 to May 31 and October 15 to December 15.
   b. Evergreen Trees, Shrubs and Vines: March 1 to May 31 and September 1 to November 15.

7. 6. All plant material shall be guaranteed by the Contractor for a period of 1 year from the date of final acceptance to be in good, healthy and flourishing condition.

   Materials for Planting:

   a. Mulch shall be double shredded hardwood bark. Submit sample for approval. Material shall be mulching grade, uniform in size and free from foreign matter.
   b. Leaf Compost shall be screened and free of trash.
   c. Coir Mesh (geo-textile blanket) shall be natural fiber geo-textile woven mesh composed of 100% coir (spun from coconut fiber) yarn, containing 45% Lignin and 55% Cellulose. Opening in the mesh shall be 1 inch square (nominal) by .3 inches thick. Yarn count per yard shall be 42 warp x 37 weft. Fabric tensile strength shall be 432 lb/ft x 138lb/ft
   d. Twelve-inch hardwood stakes shall be Eco-STAKES by North American Green or equal.
   e. Fertilizer shall be commercial fertilizer for ornamental trees, shrubs and ground cover. Fertilizer shall be provided in accordance with the recommendations of the soil tests. As a basis for bidding, Contractors shall assume a fertilizer with an analysis of 10% Nitrogen, 6% Phosphorus and 4% Potassium. This fertilizer shall be granular with a minimum of 50% of the total Nitrogen in organic form.
   f. Topsoil: If required; shall be a fertile, friable natural loam, uniform in composition, free of stones, lumps, plants and their root debris and other extraneous matter of 1" in diameter, and capable of sustaining vigorous plant growth. Topsoil shall have a pH range of 6.0 to 6.5, with a pH range of 5.0 to 5.5 for plants requiring acid soils. Contractor shall have soil tested at an approved agricultural laboratory, and submit results and recommendations for acceptance by the Owner before providing topsoil for use.
   g. Composted Pine Bark Fines shall be approved composted ground pine bark, having no particle with a dimension greater than 3/4 inch.
   h. Soil Mix shall consist of 3/4 existing soil and 1/4 composted pine bark fines or other approved organic matter, by volume.

8. Plant Materials (Refer to the PLANT LIST on the drawings for specific types and quantities of plants):
   a. Plants shall be nursery grown in accordance with good horticultural practices. Plants shall either be obtained from local nurseries and/or others, which have soil and climatic conditions similar to those in the locality of the project.
   b. Plants shall be true to species and variety and unless specifically noted otherwise, all plants shall be of specimen quality, exceptionally heavy, symmetrical, tightly-knit plants, so trained or favored in their development and appearance as to be superior in form, number of branches, compactness and symmetry.
   c. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf, free of disease, insect pests, eggs or larvae and shall have healthy, well-developped root systems. They shall be free from physical damage or any conditions that would prevent thriving health and the desired appearance.
   d. Trees, which have a damaged or crooked leader, or multiple leaders, unless specified in the plant list, will be rejected. Trees with abrasion of the bark, sun scald, disfiguring knots, or pruning cuts more than 1 1/4 inch diameter which have not completely callused, will be rejected.
   e. Plants shall conform to measurements specified in the plant schedules except that plants larger increase the contract price. If larger plants are accepted, the root ball shall be sized for the larger plant.
   f. Caliper Measurement: Shall be taken at a point on the trunk 6 inches above natural ground line for trees up to 4 inchs diameter, and at a point 12 inchs above the natural ground line for trees over 4 inches diameter.
   g. Plants shall be measured when branches are in the normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to tip.

9. Preparation of Areas for Planting:
   a. Stake out all plant material beds and tree locations for approval of Landscape Architect or owner prior to any bed preparation.
   b. Shrubs, Shrub Beds and Hedges on slopes of 3:1 or less: Loosen soil in the area of entire plant bed or hedgerow to a depth of 6 inches minimum with a rototiller. Add soil amendments and rototill again to a depth of 6 inches. Excavate plant pit and hedge trenches a minimum of 12 inches wider than the root ball or bare root on all sides. The depth shall be sufficient to allow shrub to sit 2" above finished grade.
   c. Shrub Beds on Slopes of Greater than 3:1: Amend soil as above. Spread coir mesh across entire area of shrub bed in steep slope area per manufacturer's specifications. Excavate plant pit through coir mesh a minimum of 12 inches wider than the root ball or bare root on all sides. The depth shall be sufficient to allow shrub to sit 2 inches above finished grade.
   d. Ground Covers and Seasonal Plantings: Loosen soil to a depth of 6 inches minimum with a rototiller. Add amendments to the soil and/or specified planting soil mix and rototill again to a depth of 6". Install plants directly into prepared bed, and firm the soil mix around them.
   e. Groundcover on Slopes of Greater than 3:1: Amend soil as above or by hand as required. Spread leaf compost to 2 inches in depth immediately prior to placing coir mesh. Spread coir mesh across entire area of groundcover bed in steep slope area per manufacturer's specifications. Each ground cover shall be placed in an individual planting pit planted through the biodegradable netting.
   f. Trees: Excavate plant pit walls vertical and scarify sides. Plant pit depth shall be sufficient to allow 2 inch maximum of root ball to be above finished grade. Tree pit shall be 12 inches wider than the ball on all sides.

10. Erosion Control Material and Planting on Steep Slopes
    a. Material meeting the requirements of the specifications shall be installed and maintained on the designated areas as shown and specified. The areas to be covered shall be prepared and fertilized as specified before the erosion material is placed. Immediately prior to the planting operations, the material shall be laid evenly, smoothly and in contact with the soil throughout.
    b. Lay erosion control materials with one inch nominal openings in accordance with manufacturer's instructions. Unroll in direction of water flow. Overlap sheets by at least 6 inches. Where strips are to be spliced lengthwise, overlap strips by 8 inches. Upgrade section shall be on top of all splices.
    c. The Contractor shall maintain and protect the erosion control material until the final inspection. Maintenance shall consist of repairs made necessary by erosion, wind or any other cause. Following the restoration of damaged areas under plant and turf guarantee and establishment requirements for applicable underlying items; the erosion control material shall be repaired or replaced to meet the original requirements and maintained until the final inspection.

11. General Plant Installation:
    a. Excavation: Excavate all tree pits and planting areas to the width and depth shown in the planting details.
    b. Center plant in pit and orient for the best visual effect. Set plants plumb and hold rigidly in position until soil has been tamped firmly around root ball.
    c. Mix soil amendments and fertilizers with existing soil in accordance with soil recommendations for plant type, based upon soil test results as approved by Owner. Delay mixing of fertilizer if planting will not occur within a few days.
    d. Backfill pit with planting soil mix, consisting of 2/3 existing soil and 1/3 organic material, and fertilizer, until two-thirds full. Tamp and water each layer thoroughly to settle soil. After soil settles, fill pit with remaining planting soil mix, water and shape surface so that it slopes to drain from trunk and matches ground at edge of planting pit.
    e. Mulch within 48 hours after planting and after applying the pre-emergent herbicide, except ground cover areas (which shall have organic material placed before planting) with a 2" layer of mulch immediately after planting. All bed lines shall be cut with a smooth consistent edge to a minimum depth of 3 inches. Keep mulch out of the crowns of shrubs and off buildings, sidewalks, light standards, and other structures.
    f. All planting areas to conform to specified grades after full settlement has occurred and mulch has been applied. Provide saucers around tree pits as shown on planting details. Remove all tags, labels, strings, etc. from all plants.

12. Permanent Seeding or Sodding for Grass Areas:
    a. Lawn Seed or Sod varieties shall be an improved variety turf-type tall fescue blend. The landscape contractor shall select from varieties approved by the Virginia Department of Agriculture.
    b. Refer to the Virginia Erosion and Sediment Control Handbook, for guidelines, specifications and installation techniques of seed and sod.
    c. Maintenance shall begin immediately after each plant and lawn area is installed and shall continue until 90 days after final acceptance of the last section.

DECIDUOUS TREE PLANTING
NTS

EVERGREEN TREE PLANTING

TREE TO BE REMOVED

UNIVERSITY DRIVE TREE SCHEDULE

PLANTINGS TO BE REMOVED	
TREE TYPE	QTY
LOCATED IN VDOT RIGHT OF WAY	
DECIDUOUS (DIAMETER > 5")	22[a]
EVERGREEN (DIAMETER > 5")	5[a]
[a] *NOTE: EXISTING TREES REMOVED IN VDOT RIGHT OF WAY NOT PROPOSED TO BE REPLACED*	
LOCATED OUTSIDE VDOT RIGHT OF WAY	
DECIDUOUS (DIAMETER > 5")	2[b]
EVERGREEN (DIAMETER > 5")	3[b]
[b] *NOTE: TREES REMOVED OUTSIDE VDOT RIGHT OF WAY ARE PROPOSED TO BE REPLACED*	
TOTAL PLANTINGS TO BE REMOVED	32
TOTAL PLANTINGS TO BE REPLACED	13

PROPOSED PLANTINGS				
KEY	SCIENTIFIC NAME	COMMON NAME	PLANT TYPE	QTY
A	QUERCUS PHELLOS	WILLOW OAK	DECIDUOUS	2
B	GLEDITSIA TRIANCANTHOS	SKYLINE LOCUST	DECIDUOUS	2
C	THUJA OCCIDENTALIS 'NIGRI'	DARK AMERICAN ARBROVITAE	EVERGREEN	9
		TOTAL PLANTINGS PROPOSED		13

CITY OF FAIRFAX - LANDSCAPING NOTES:

1. The area surrounding all trees, shrubs and groundcover shall be topped with two inches of shredded hardwood bark mulch.

2. No changes shall be permitted to the plant list unless approved by the City of Fairfax.

3. Trees shall be classified as per "American Standard for Nursery Stock" as adopted by the American Association of Nurserymen. Plant material below this standard shall not be considered.
   a) All plants must conform to requirements per plant list;
   b) All plant materials must be nursery grown stock;
   c) All trees must be well branched, full crown.

4. At least 5 days before being planted, the Site Plan Coordinator shall be notified that plants are available for inspection.

5. No person shall remove or destroy any tree which is five (5) inches or greater in caliper, measured six (6) inches above ground level, on any lot greater than one-half (1/2) acre without first obtaining a tree removal permit from the Zoning Administrator. Any tree removed, damaged or destroyed will be replaced at the discretion of the Zoning Administrator.

LANDSCAPE PLAN & DETAILS

PROJECT	SHEET NO.
14007-2014-SAB	8

$DATE$

1/15/2016
3:50:48 PM

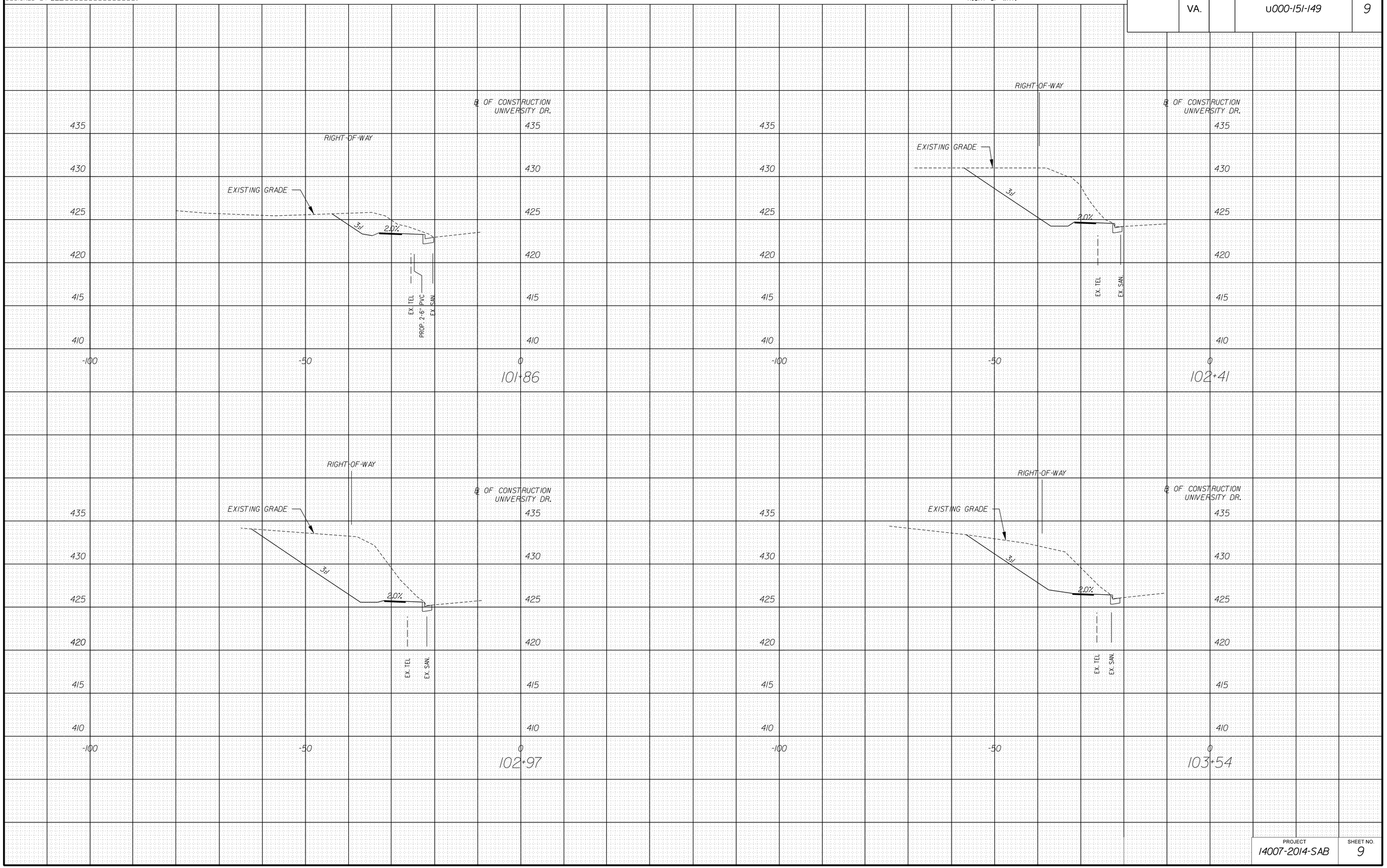
PROJECT MANAGER W. Sanford (703) 385-7889 (Fairfax County)
SURVEYED BY Stantec (301) 220-1887
DESIGN SUPERVISED BY S. Yanoltz (410) 741-3500 (Sabra-Wang & Assoc., Inc)
DESIGNED BY ZZZ

CROSS SECTIONS

SCALE 1 IN. = 10 FT

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.		u000-151-149	9



PROJECT	SHEET NO.
14007-2014-SAB	9