NAD 83

BOARD OF SUPERVISORS OF FAIRFAX COUNTY, VIRGINIA
D.B. 5625, PG.1371
PID 58-3-06-001

LOT 1
HOLLY PARK
LIBER O-9, PG. 90

BOARD OF SUPERVISORS OF FAIRFAX COUNTY, VIRGINIA
D.B. 5625, PG.1371
PID 58-3-06-001

A PORTION OF LOT 2
HOLLY PARK
LIBER O-9, PG. 90

DAVID NGUYEN AND JULIE NGO
D.B. 19958, PG. 2002
PID 58-3-06-002

A PORTION OF LOT 2
HOLLY PARK
LIBER O-9, PG. 90

WILLIAM ALFRED SMITH AND ANDREA CAMILLE BOYETTE SMITH
D.B. 8772, PG. 914
PID 58-3-06-002-A

A PORTION OF LOT 2
HOLLY PARK
LIBER O-9, PG. 90

HUNG JU YU AND JUNG JA YU
D.B. 9303, PG. 253
PID 58-3-16-001

LOT 1
RIDGECREST
D.B. 7734, PG. 873

LAZA, LLC
D.B. 11358, PG. 2056
PID 58-3-02-004
LOT NUMBER 9909

STEVEN JOHNSON AND JUDY L. JOHNSON
D.B. 13948, PG. 1558
PID 58-3-02-003

DUC MINH NGO AND THUY THANH BUI
D.B. 9294, PG. 1128
PID 58-3-10-010

LOT 10
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

KISHENA C. WADHWANI AND DINH THI WADHWANI
D.B. 9225, PG. 1153
PID 58-3-10-009

LOT 9
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

VIVIAN F. GRIFFIN AND JOAN L. BENNETT
D.B. 15276, PG. 903
PID 58-3-10-008

LOT 8
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

#4000 FFE = 408.01
#4001 FFE = 413.32
#4004 FFE = 418.34
#4006 FFE = 424.28
#4007 FFE = 439.17
#4008 FFE = 431.83
#9809 FFE = 441.86
#9909A FFE = 407.09
#9909B FFE = 407.82

MAIN STREET ROUTE 236 (VARIABLE WIDTH)

BURKE STATION ROAD ROUTE 652 (VARIABLE WIDTH)

REMOVE EX. HYDRANT, VALVE, AND VALVE BOX
PLUG EX. TEE
ABANDON OR REMOVE EX. 6" HYDRANT LINE PER FAIRFAX WATER INSPECTOR

RELOCATE EXISTING WATER METER AND SERVICE LINE METER BOX IS TO BE RELOCATED IN SIDEWALK AND SHALL HAVE SPIKED FRAME WITH TIGHT-FITTING COVER

BASELINE 12+98.10
CUT EX. 8" C.I.P. WATER MAIN
INSTALL 8"X6" SWIVEL TEE (CONC. ANCH.) 8" LONG SOLID SLEEVE. 6" GATE VALVE & BOX
CONNECT TO EX. 8" C.I.P. WATER MAIN.
INSTALL APPROXIMATELY 19 L.F. – 6" D.I.P.WATER MAIN (RESTRAINED) W/ POLYETHYLENE ENCASEMENT (SINGLE WRAPPED)
HYDRANT (NEW)
VERTICAL BENDS TO BE INCLUDED AS DETERMINED NECESSARY BY FAIRFAX WATER INSPECTOR
PROVIDE 1'-MINIMUM VERTICAL CLEARANCE BETWEEN WATER MAIN AND PROPOSED 18" STORM PIPE
PROVIDE 0.5"-MINIMUM VERTICAL CLEARANCE BETWEEN WATER MAIN AND UGT/UGE
SEE WATER MAIN DETAILS AND NOTES ON SHEET 63

INSTALL MANHOLE OVER EXISTING STORM SEWER

TIE-IN EX. 24" STORM SEWER. SEE SHEET 50

ADJUST EX. SERVICE LINE AND EX. METER BOX
PROVIDE 3' OF HORIZONTAL SEPARATION BETWEEN METER AND PROPOSED MAILBOX

ADJUST EX. SERVICE LINE AND EX. METER BOX

ADJUST EX. SERVICE LINE AND RELOCATE EX. METER BOX. INSTALL BETWEEN CURB AND PROPOSED SIDEWALK.

APPROXIMATE LOCATION OF EXISTING WATER SERVICE LINE. CONTRACTOR SHALL VERIFY LOCATION AND DIAMETER AND RELOCATE OR ADJUST LINE TO CLEAR PROPOSED WORK AS DETERMINED NECESSARY BY FAIRFAX WATER INSPECTOR.

MATCHLINE-SEE SHEET 36

LEGEND

EXISTING	DESCRIPTION	PROPOSED
OHE	OVERHEAD ELECTRIC	OHE
OHT	OVERHEAD TELEPHONE	OHT
EX 8" W/M — EX. W/V	WATER LINE / WATER VALVE	8" DIP W/M
	REDUCER	
EX 8" SAN / EX 18" RCP	SANITARY SEWER / STORM SEWER	8" SAN / 18" RCP
CATV	CABLE TV	CATV
UGE	ELECTRIC SERVICE	UGE
UGT	TELEPHONE SERVICE	UGT
G	GAS LINE	G
+ 25.32	SPOT ELEVATION	.00.00
⌀	UTILITY POLE	⌀

EXISTING	DESCRIPTION	PROPOSED
	SIGN	
MH 1 / MH A	SANITARY SEWER IDENTIFIER	1 / A
DI 1 / DI 1/2	STORM DRAIN IDENTIFIER	1 / 1/2
E	EASEMENT IDENTIFIER	W
	WATER METER	
	FIRE HYDRANT	
	STREET LIGHT	
	VEHICLES PER DAY (TRAFFIC COUNT)	200 VPD
	TEST PIT LOCATION RECOMMENDED/REQUIRED	TP
MB	MAILBOX	

25 0 25 50
GRAPHIC SCALE

NOTE:

CONTACT DAVE LAMBERT, SUPERVISOR, ENGINEERING INSPECTION, AT 703-289-6399 AT LEAST 10 DAYS PRIOR TO COMMENCING CONSTRUCTION SO THAT A FAIRFAX WATER INSPECTOR CAN BE SCHEDULED FOR THIS WORK. SERVICE LINE CLEARANCES AND METER BOX LOCATIONS TO BE APPROVED BY THE INSPECTOR ONSITE. WHERE THERE IS ANY DISCREPANCY, THE INSPECTOR ONSITE MAKES THE FINAL DECISION.

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UTILITY PLAN (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB	SB	SD
DESIGN	DRAWN	CHKD

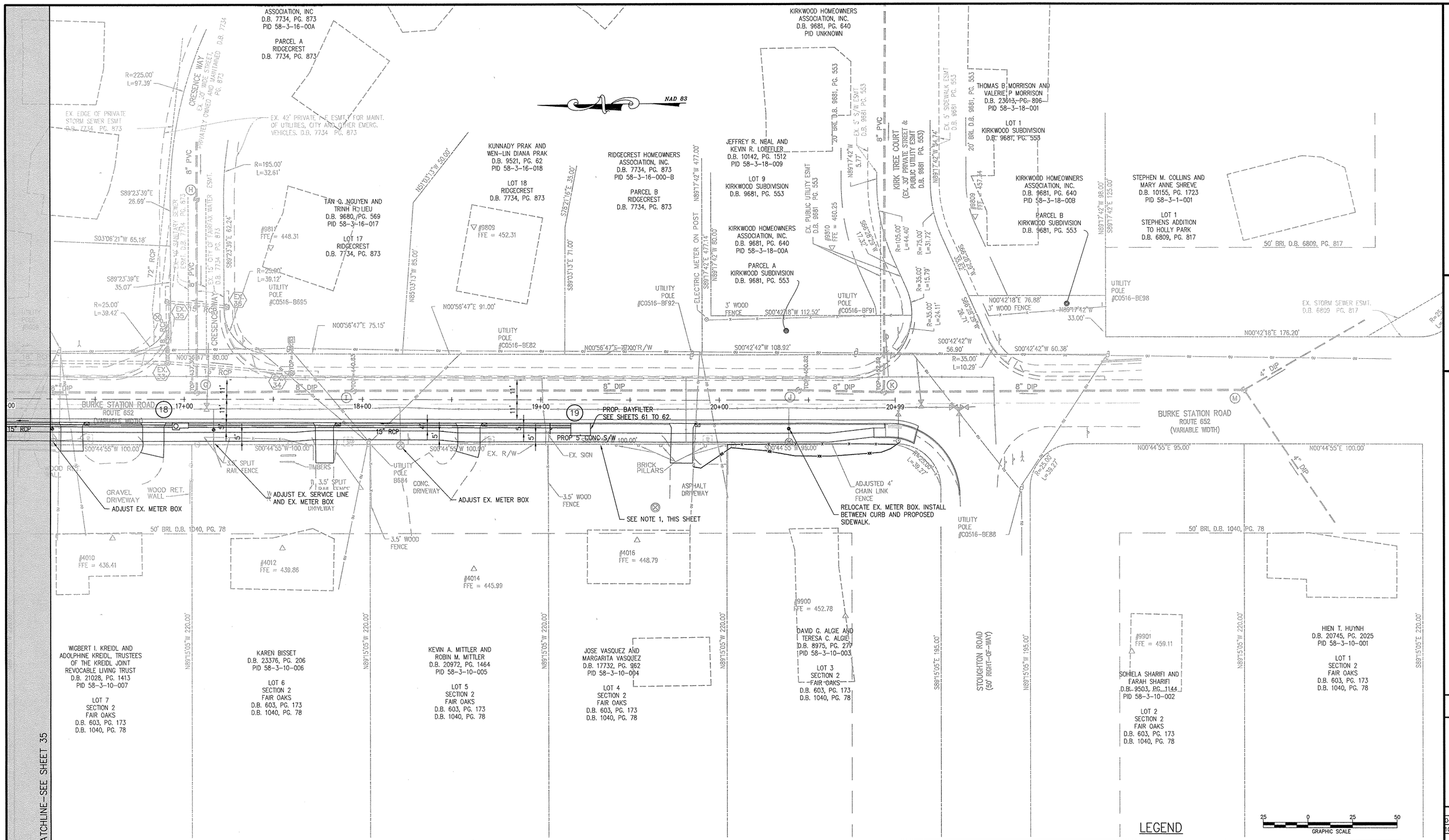
SCALE H: 1"=25' V: N/A

JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 35 OF 63



NOTES:

1. RECORDS INDICATE THAT 4016 BURKE STATION ROAD IS NOT CONNECTED TO PUBLIC WATER. CONTRACTOR SHALL FIELD-VERIFY WHETHER WATER METER AND SERVICE LINE ARE LOCATED WITHIN WORK AREA AND SHALL ADJUST OR RELOCATE THOSE ITEMS IF PRESENT AND IN CONFLICT WITH PROPOSED WORK, AS DETERMINED NECESSARY BY FAIRFAX WATER INSPECTOR.
2. CONTACT DAVE LAMBERT, SUPERVISOR, ENGINEERING INSPECTION, AT 703-289-6399 AT LEAST 10 DAYS PRIOR TO COMMENCING CONSTRUCTION SO THAT A FAIRFAX WATER INSPECTOR CAN BE SCHEDULED FOR THIS WORK. SERVICE LINE CLEARANCES AND METER BOX LOCATIONS TO BE APPROVED BY THE INSPECTOR ONSITE. WHERE THERE IS ANY DISCREPANCY, THE INSPECTOR ONSITE MAKES THE FINAL DECISION.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
OHE	OVERHEAD ELECTRIC	OHE
OHT	OVERHEAD TELEPHONE	OHT
EX 6" W/M / EX W/V	WATER LINE / WATER VALVE	8" DIP W/M
	REDUCER	
EX 8" SAN / EX 18" RCP	SANITARY SEWER / STORM SEWER	8" SAN / 18" RCP
CATV	CABLE TV	CATV
UGE / UGE	ELECTRIC SERVICE	UGE / UGE
UGT / UGT	TELEPHONE SERVICE	UGT
G / G	GAS LINE	G / G
+ 25.32	SPOT ELEVATION	.00
	UTILITY POLE	

EXISTING	DESCRIPTION	PROPOSED
	SIGN	
	SANITARY SEWER IDENTIFIER	
	STORM DRAIN IDENTIFIER	
	EASEMENT IDENTIFIER	
	WATER METER	
	FIRE HYDRANT	
	STREET LIGHT	
	VEHICLES PER DAY (TRAFFIC COUNT)	200 VPD
	TEST PIT LOCATION RECOMMENDED/REQUIRED	
	MAILBOX	

GRAPHIC SCALE: 25 0 25 50

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UTILITY PLAN (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER V
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: 1"=25' V: N/A

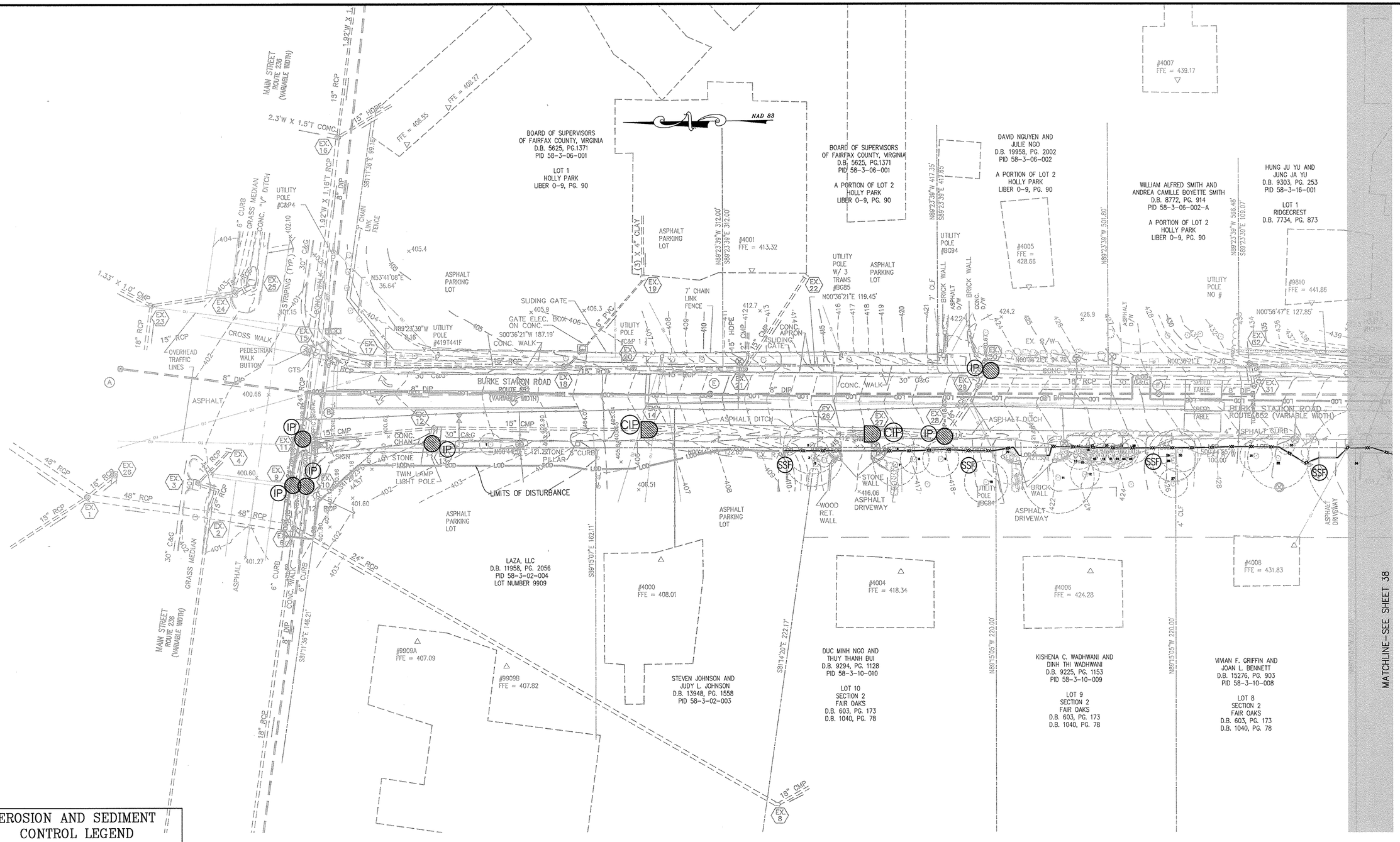
JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 36 OF 63

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-UTL.dwg



EROSION AND SEDIMENT CONTROL LEGEND

NO.	TITLE	KEY	SYMBOL
3.05	SILT FENCE	SF	—— x ——
3.07	STORM DRAIN INLET PROTECTION	IP	
3.08	CULVERT INLET PROTECTION	CIP	
3.38	SUPER SILT FENCE AS TREE PROTECTION	SSF	—— xx ——
	LIMITS OF DISTURBANCE		LOD

INLET PROTECTION DETAIL REFERENCES:

STRUCTURE #:	STRUCTURE TYPE/DETAIL:
EX. 9	CURB INLET – DETAIL 3.07-6
EX. 10	CURB INLET – DETAIL 3.07-6
EX. 11	DROP INLET – DETAIL 3.07-2
EX. 13	CURB INLET – DETAIL 3.07-6
EX. 14	CULVERT INLET – DETAIL 3.07-6
EX. 30	CURB INLET – DETAIL 3.07-6
EX. 27	CULVERT INLET – DETAIL 3.07-6
EX. 28	CURB INLET – DETAIL 3.07-6

NOTE:
1. SEE SHEET 43 FOR EXISTING DRAINAGE DIVIDES.

GRAPHIC SCALE
HORIZONTAL
25 0 12.5 25 50 100
(IN FEET)
1 inch= 25 ft.

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EROSION AND SEDIMENT CONTROL PLAN PHASE 1 (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: 1"=25' V: N/A

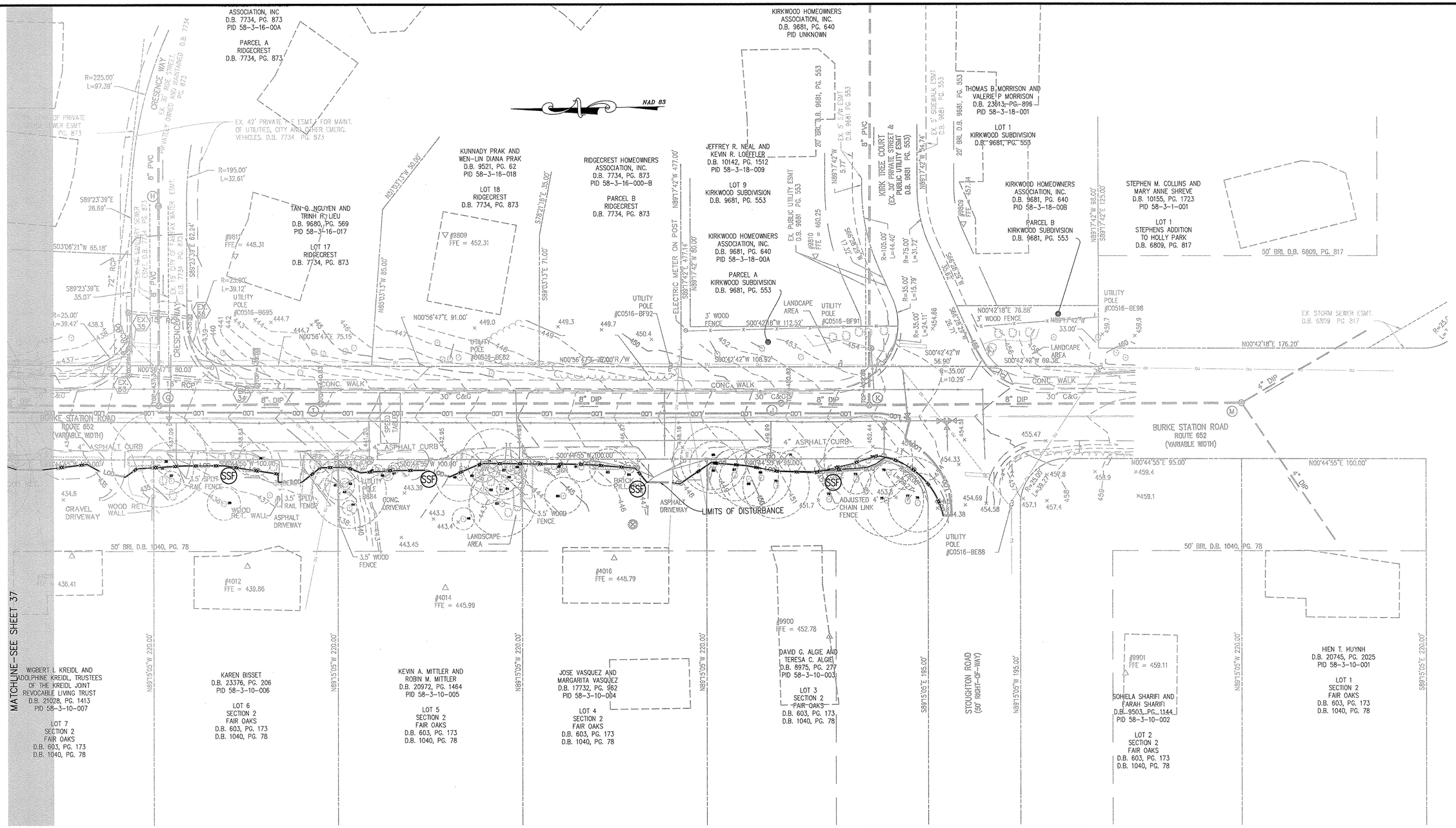
JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 37 OF 63

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-ES1.dwg



EROSION AND SEDIMENT CONTROL LEGEND

NO.	TITLE	KEY	SYMBOL
3.05	SILT FENCE	SF	—— x ——
3.07	STORM DRAIN INLET PROTECTION	IP	
3.08	CULVERT INLET PROTECTION	CIP	
3.38	SUPER SILT FENCE AS TREE PROTECTION	SSF	—— xx ——
	LIMITS OF DISTURBANCE		LOD

NOTE:
1. SEE SHEET 44 FOR EXISTING DRAINAGE DIVIDES.

GRAPHIC SCALE
HORIZONTAL
25 0 12.5 25 50 100
(IN FEET)
1 inch= 25 ft.

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-ES1.dwg

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EROSION AND SEDIMENT CONTROL PLAN PHASE 1 (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

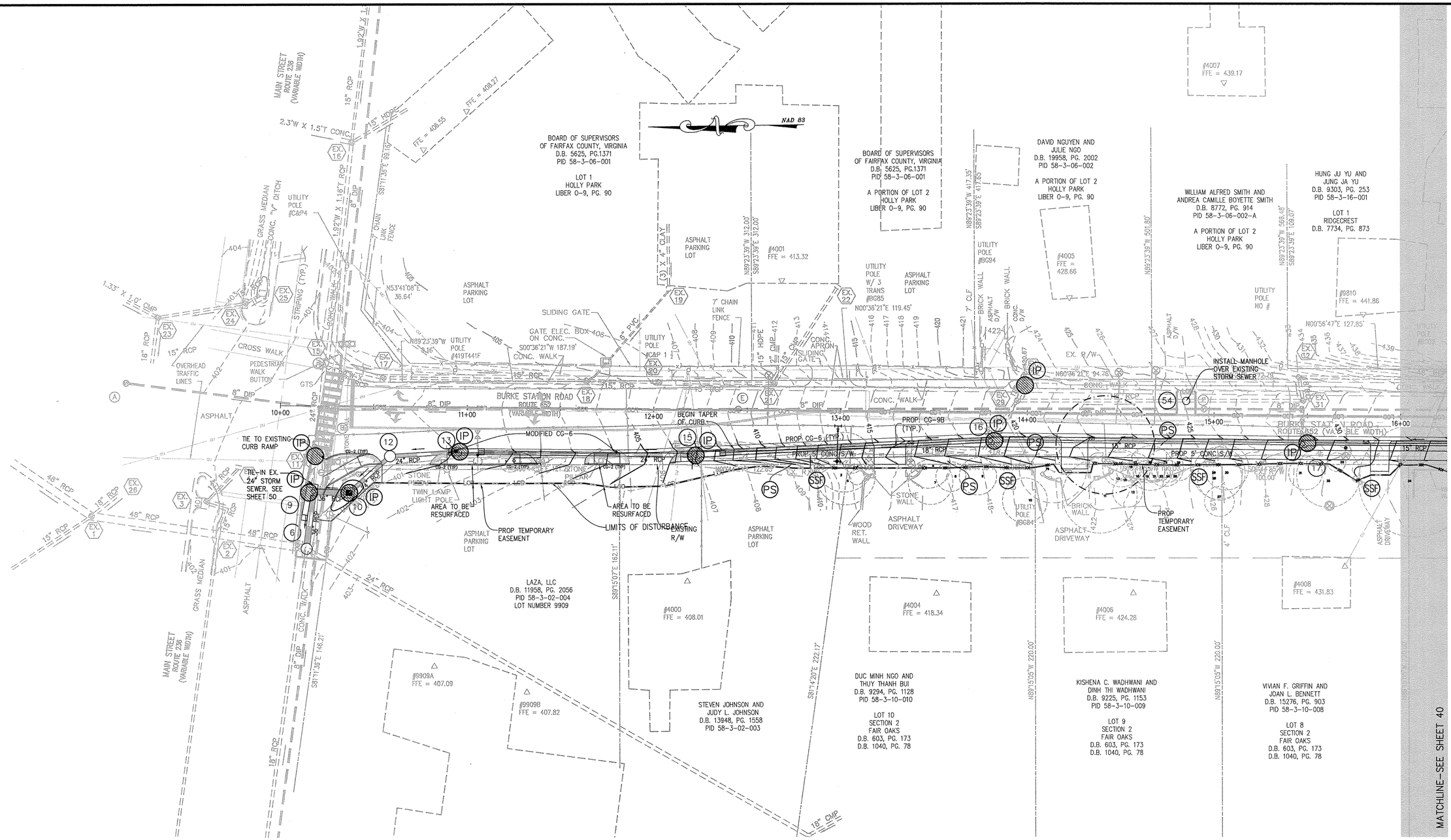
PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: 1"=25' V: N/A
JOB No. 6916-01-002
DATE : JUNE 2015
FILE No. 6916-D-CP-002

SHEET 38 OF 63



INLET PROTECTION DETAIL REFERENCES:

STRUCTURE #:	STRUCTURE TYPE/DETAIL:
9	CURB INLET – DETAIL 3.07-6
10	DROP INLET – DETAIL 3.07-2
EX. 11	DROP INLET – DETAIL 3.07-2
13	CURB W/ GRATE INLET – DETAIL 3.07-6 & 3.07-2
15	CURB INLET – DETAIL 3.07-6
16	CURB INLET – DETAIL 3.07-6
17	CURB INLET – DETAIL 3.07-6
EX. 30	CURB INLET – DETAIL 3.07-6

EROSION AND SEDIMENT CONTROL LEGEND

NO.	TITLE	KEY	SYMBOL
3.07	STORM DRAIN INLET PROTECTION	IP	
3.38	SUPER SILT FENCE AS TREE PROTECTION	SSF	xx
3.32	PERMANENT STABILIZATION	PS	
	LIMITS OF DISTURBANCE		LOD

NOTE:
1. SEE SHEET 45 FOR PROPOSED DRAINAGE DIVIDES.

GRAPHIC SCALE
HORIZONTAL
25 0 12.5 25 50 100
(IN FEET)
1 inch= 25 ft.

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EROSION AND SEDIMENT CONTROL PLAN PHASE 2 (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

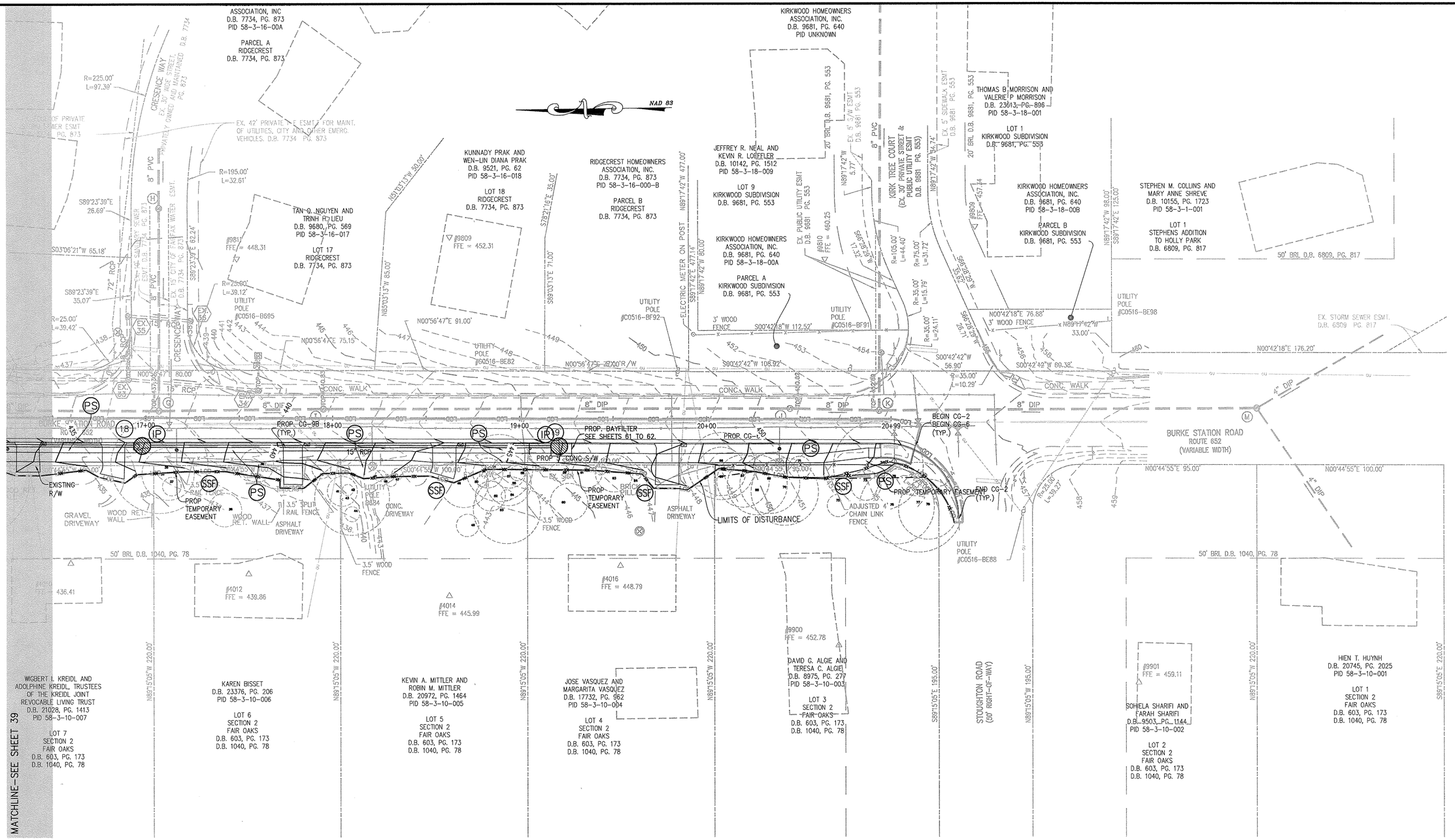
DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: 1"=25' V: N/A
JOB No. 6916-01-002
DATE : JUNE 2015
FILE No. 6916-D-CP-002

SHEET 39 OF 63

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-ES2.dwg



EROSION AND SEDIMENT CONTROL LEGEND

NO.	TITLE	KEY	SYMBOL
3.07	STORM DRAIN INLET PROTECTION	IP	
3.38	SUPER SILT FENCE AS TREE PROTECTION	SSF	xx
3.32	PERMANENT STABILIZATION	PS	
	LIMITS OF DISTURBANCE		LOD

NOTE:
1. SEE SHEET 46 FOR PROPOSED DRAINAGE DIVIDES.

INLET PROTECTION DETAIL REFERENCES:

STRUCTURE #:	STRUCTURE TYPE/DETAIL:
18	CURB INLET – DETAIL 3.07-6
19	CURB INLET – DETAIL 3.07-6

GRAPHIC SCALE
HORIZONTAL
25 0 12.5 25 50 100
(IN FEET)
1 inch= 25 ft.

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EROSION AND SEDIMENT CONTROL PLAN PHASE 2 (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: 1"=25'
V: N/A

JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 40 OF 63

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-E82.dwg

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:

THIS PROJECT CONSISTS OF ROAD IMPROVEMENTS ALONG BURKE STATION ROAD INCLUDING THE INSTALLATION OF CURB AND GUTTER, SIDEWALK, AND ASSOCIATED UNDERGROUND STORM SEWER INFRASTRUCTURE. THE TOTAL LIMITS OF DISTURBANCE ASSOCIATED WITH THESE IMPROVEMENTS IS 0.71 AC.

EXISTING SITE CONDITIONS:

THE SITE WAS OCCUPIED BY A DITCH SECTION ROADWAY WITH CULVERTS UNDER DRIVEWAYS. THE EXISTING SITE DRAINS NORTH TOWARDS MAIN STREET (RTE 236).

ADJACENT AREAS:

THE SITE IS BORDERED TO THE NORTH BY MAIN STREET (RTE 236), TO THE SOUTH BY STOUGHTON ROAD AND THE THE EAST AND WEST BY RESIDENTIAL LOTS.

THE ROAD IS CROWNED AND FLOWS FROM SOUTH TO NORTH WITH A HIGHPOINT SOUTH OF THE LIMITS OF DISTRUBANCE.

OFF-SITE AREAS:

THERE WILL NO OFFSITE DISTURBANCE WITH THIS PROJECT.

SOILS:

WHEATON GLENELG COMPLEX (105B) – THIS COMPLEX IS A MIXTURE OF THE DEVELOPMENT DISTURBED WHEATON SOIL AND THE NATURAL GLENELG SOIL. THE COMPLEX OCCURS IN UPLAND AREAS OF THE PIEDMONT WITH MICACEOUS SCHIST AND PHYLLITE BEDROCK THAT HAVE BEEN DEVELOPED BUT RETAIN A GOOD PORTION OF UNDISTURBED SOIL. HSG C.

URBAN LAND (95) – THIS UNIT CONSISTS OF ENTIRELY MAN–MADE SURFACES SUCH AS PAVEMENT, CONCRETE OR ROOFTOP. HSG D.

CRITICAL EROSION AREAS:

THERE ARE NO CRITICAL EROSION AREAS PRESENT ON THIS SITE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

ES–1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL DEVICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625–02–00 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES–2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE–CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES–3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES–4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES–5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF–SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE APPROVING AUTHORITY.

ES–6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE COUNTY INSPECTOR.

ES–7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING THE SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES–8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE. (IF APPLICABLE)

ES–9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

STRUCTURAL PRACTICES:

1. SILT FENCE–3.05–2
   SILT FENCE SHALL BE INSTALLED ON THE DOWNWARD SLOPE TO PREVENT SEDIMENT RUNOFF AS SHOWN ON THE E&S PLAN.
2. INLET PROTECTION–3.07–2
   INLET PROTECTION SHALL BE INSTALLED AROUND THE EXISTING DROP INLETS AS SHOWN ON THE E&S PLAN.
3. INLET PROTECTION–3.07–6
   INLET PROTECTION SHALL BE INSTALLED AROUND THE EXISTING CURB INLETS AS SHOWN ON THE E&S PLAN.
4. CULVERT INLET PROTECTION–3.07–6
   CULVERT INLET PROTECTION SHALL BE INSTALLED AROUND EXISTING CULVERTS AS SHOWN ON THE E&S PLAN.
5. TREE PROTECTION–3.38–2 & 3.05–1
   SUPER SILT FENCE WILL BE USED AS TREE PROTECTION. TREE PROTECTION SHALL BE INSTALLED IN AREAS WHERE DAMAGE TO TREES COULD OCCUR AS SHOWN ON THE E&S PLAN.

MANAGEMENT STRATEGIES:

1. EROSION AND SEDIMENT CONTROLS SHALL BE PHASED BY THE CONTRACTOR ACCORDING TO THE SEQUENCE OF CONSTRUCTION TO PREVENT SEDIMENT LEAVING THE SITE. TEMPORARY SEEDING AND OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING.
2. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED WITH FLAGGING.
3. THE TEMPORARY STOCKPILING OF EARTH AND CONSTRUCTION MATERIALS SHALL ONLY BE PERMITTED WITHIN THE CLEARING LIMITS.
4. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
5. DISTURBED AREAS SHALL BE STABILIZED AS QUICKLY AS POSSIBLE, AND IN NO INSTANCE SHALL AN AREA REMAIN DENUDED FOR MORE THAN SEVEN (7) DAYS.
6. AFTER CONSTRUCTION IS COMPLETE, WITH ALL AREAS OF THE SITE 100% STABILIZED, AND ONLY AFTER APPROVAL OF THE FAIRFAX COUNTY SITE INSPECTOR, THE TEMPORARY CONTROLS MAY BE REMOVED.

TEMPORARY/PERMANENT STABILIZATION:

AFTER CONSTRUCTION THE ENTIRE SITE WILL BE GRASS SEEDED PER VESCH TABLES 3.31–B&C. LIMING REQUIREMENTS SHOULD BE BASED ON TABLE 3.31–A OF VESCH. FERTILIZERS SHALL BE APPLIED AS 600 LBS PER ACRE. FERTILIZER SHALL BE INCORPORATED INTO TOP 2–4 INCHES OF SOIL. SEED SHALL BE EVENLY APPLIED AND SMALL GRAINS SHALL BE PLANTED NO MORE THAN 11/2 INCHES DEEP. SEEDING MADE IN FALL FOR WINTER COVER AND DURING HOT SUMMER MONTHS SHALL BE MULCHED.

MAINTENANCE:

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. ALL MEASURES ARE TO BE INSPECTED DAILY BY THE SITE SUPERINTENDENT. ANY DAMAGED MECHANICAL DEVICES SHALL BE REPAIRED AND/OR REPLACED BY THE CLOSE OF THE DAY. NO CONTROLS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE SITE INSPECTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES OR PENALTIES CAUSED BY HIS FAILURE TO COMPLY WITH THE EROSION AND SEDIMENT CONTROL PROGRAM OR THE DIRECTION OF THE SITE INSPECTOR. THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY CHANGES TO THIS PROGRAM. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

1. THE SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RE–SEEDED AS NEEDED.
2. THE SILT FENCE SHALL BE CHECKED AFTER EACH STORM EVENT AND SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER.

FOR ADDITIONAL DETAILS AND SPECIFICATIONS NOT SHOWN HEREON, REFER TO THE 1992 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. ADDITIONAL CONSTRUCTION SPECIFICATIONS AND MAINTENANCE REQUIREMENTS FOR THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES SPECIFIED ON THIS PLAN ARE ALSO AVAILABLE IN THE HANDBOOK.

DUST CONTROL:

PROVISION FOR DUST CONTROL SHALL BE MADE IN ACCORDANCE WITH STD. AND SPEC. 3.39 OF VESCH. MORE SPECIFICALLY VEGETATIVE COVER AND/OR IRRIGATION SHALL BE USED FOR DUST CONTROL PURPOSES.

SEQUENCE OF CONSTRUCTION

NOTE: UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, PORTA–POTTY, WHEEL WASH, CONCRETE WASHOUT, MASON'S AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

SEDIMENT CONTROL PLAN:

PHASE 1:
1. CONTRACTOR TO CONTACT INSPECTOR TO SCHEDULE A PRE–CONSTRUCTION MEETING.
2. CONTRACTOR TO INSTALL PERIMETER CONTROLS (SILT FENCE, TREE PROTECTION AND INLET PROTECTION).

PHASE 2:
3. CONTRACTOR SHALL ONLY PROGRESS TO PHASE II UPON APPROVAL FROM E&S INSPECTOR
4. CONTRACTOR TO COMMENCE WITH CONSTRUCTION OF THE BURKE STATION ROAD IMPROVEMENTS.
5. APPLY TEMPORARY SEEDING WHEN REQUIRED. APPLY PERMANENT SEEDING WHEN GRADING IS COMPLETE.
6. APPLY INLET PROTECTION CONTROLS TO NEW INLETS AS THEY ARE CONSTRUCTED.
7. DAILY INSPECTION AND MAINTENANCE OF CONTROLS IS REQUIRED.
8. REMOVE CONTROLS AS DIRECTED BY INSPECTION.

PERMANENT SEEDING (PER VESCH REQUIREMENTS)

1. PERMANENT VEGETATION COVER MUST MEET THE REQUIREMENTS OF MINIMUM STANDARDS #3 (MS #3).
–ALL TAGS ON CONTAINERS OF SEED SHALL BE LABELED TO MEET THE REQUIREMENTS OF THE STATE SEED LAW.
–ALL SEED SHALL BE SUBJECT TO RE–TESTING BY A RECOGNIZED SEED LABORATORY THAT EMPLOYS A REGISTERED SEED TECHNOLOGIST OR BY A STATE SEED LAB.
–ALL SEED USED SHALL HAVE BEEN TESTED WITHIN TWELVE MONTHS.
–THE QUALITY OF THE SEED USED SHALL BE SHOWN ON THE BAG TAGS TO CONFORM TO THE GUIDELINES IN TABLE 3.32–E:
–TURF–TYPE ERNST CONSERVATION MIX: MIN. SEED PURITY––98%/ MIN. GERMINATION––85%
–PERENNIAL RYEGRASS: MIN. SEED PURITY––98%/ MIN. GERMINATION––90%

2. PROVIDE A NOTE WHICH DESCRIBES THE PROCEDURE FOLLOWED IN SELECTING PLANT MATERIAL. THE SELECTION SHOULD BE BASED ON TABLES 3.32 – A&B DEPENDING ON CLIMATE, TOPOGRAPHY, SOILS, AND SITE CONDITIONS.
–GRASS TYPES SHALL BE ERNST CONSERVATION MIX OR APPROVED EQUAL AND APPLIED AT 3–5 POUNDS PER 1,000 SF. MIX SHALL CONSIST OF RED FESCUE, ANNUAL RYE, AND PERENNIAL RYE.

3. THE PLANTING SOIL MUST HAVE ENOUGH FINE GRAINED SOIL, SUFFICIENT PORE SPACE, SUFFICIENT DEPTH, AND FREE FROM TOXIC OR EXCESSIVE QUANTITIES OF ROOTS AND SHALL BE APPLIED IN ACCORDANCE WITH STANDARD 3.30.
–TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN TOPSOIL OR SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 2" ON 3:1 OR STEEPER SLOPES AND 4" ON FLATTER SLOPES. ANY IRREGULARITIES IN THE SURFACE, RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSION OR WATER POCKETS.
–THE TOPSOIL MUST BE COMPACTED ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A LEVEL SEED BED FOR THE ESTABLISHMENT OF HIGH MAINTENANCE TURF. HOWEVER, EXCESSIVE COMPACTION IS TO BE AVOIDED AS IT INCREASES RUNOFF VELOCITY AND VOLUME, AND DETERS SEED GERMINATION.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE WITH GRASS SEED NOT CONTAINING TALL FESCUE AND ACCORDING TO STD. AND SPEC. 3.32, PERMANENT SEEDING, OF THE HANDBOOK. EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING.

STOCKPILES

ALL STOCKPILED MATERIALS MUST BE USED BY THE END OF EACH WORK DAY. NO MATERIAL STOCKPILES ARE PERMITTED OVERNIGHT.

4VAC50–30–40. MINIMUM STANDARDS.

AN EROSION AND SEDIMENT CONTROL PROGRAM ADOPTED BY A DISTRICT OR LOCALITY MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR. **APPLICABLE**

2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE. **APPLICABLE**

3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION. **APPLICABLE**

4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND–DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE. **APPLICABLE**

5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION. **N/A**

6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN. **N/A**

A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.

B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25–YEAR STORM OF 24–HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED. **APPLICABLE**

8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE. **APPLICABLE**

9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED. **N/A**

10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT–LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT. **APPLICABLE**

11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL. **APPLICABLE**

12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS. **N/A**

13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX–MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED. **N/A**

14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. **N/A**

15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED. **N/A**

16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: **APPLICABLE**

A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF–SITE PROPERTY.

D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.

F. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND–DISTURBING ACTIVITIES. **APPLICABLE**

18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION. **APPLICABLE**

19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24–HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA: **APPLICABLE**

ADEQUATE OUTFALL COMPLIANCE

THE SITE WILL PROVIDE ADEQUATE DRAINAGE PATTERNS AND OUTFALLS DURING EROSION AND SEDIMENT CONTROL PHASE I. THE RUNOFF FROM THIS SITE WILL BE COLLECTED IN INLETS WITH APPROPRIATE INLET PROTECTION DEVICES AND IN THE SEDIMENT TRAP. THE EROSION AND SEDIMENT CONTROL DEVICES WILL LIMIT THE AMOUNT SEDIMENT THAT ENTERS THE EXISTING STORM SEWER SYSTEM. THE SYSTEM WAS DESIGNED FOR THE ULTIMATE BUILD OUT OF THE DRAINAGESHED, THEREFORE THE PROPOSED PIPES ARE ADEQUATELY SIZED TO CONVEY THE RUNOFF IN THE UNDERGROUND STORM SEWER CONDUIT SYSTEM

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EROSION AND SEDIMENT CONTROL NARRATIVE

BURKE STATION ROAD
STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS

04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB	SB	SD
DESIGN	DRAWN	CHKD

SCALE H: N/A V: N/A

JOB No. 6916-01-002

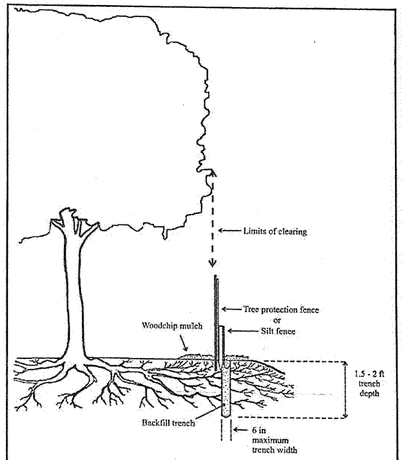
DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 41 OF 63

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-ESD.dwg

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL

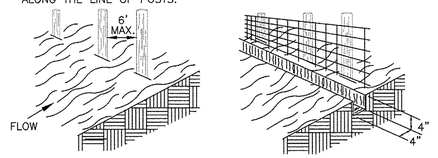


Ref. Sec. 12-0702.1	ROOT PRUNING	PLATE NO.	STD. NO.
Rev. 10-08		7-12	

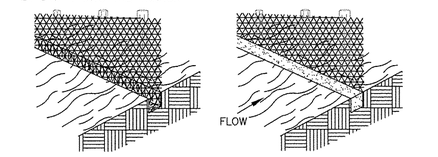
SILT FENCE (WITH WIRE SUPPORT) 3.05-1

SSF

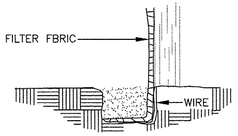
1. SET POST EXCAVATE A 4"x 4" TRENCH UPSLOPE ALONG THE LINE OF POSTS.
2. STAPLE FENCING TO THE POSTS.



3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

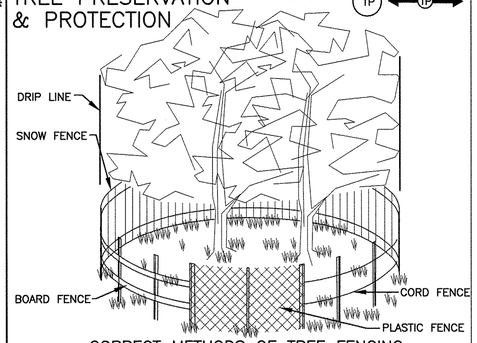


EXTENSION OF FABRIC AND WIRE INTO THE TRENCH

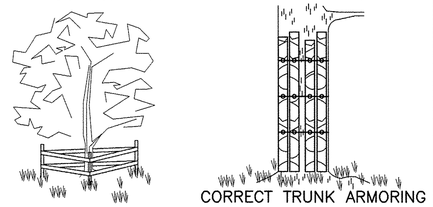


TREE PRESERVATION & PROTECTION 3.38-2

TP TP



CORRECT METHODS OF TREE FENCING



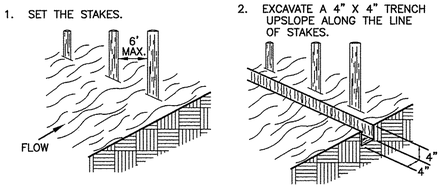
CORRECT TRUNK ARMORING

TRIANGULAR BOARD FENCE

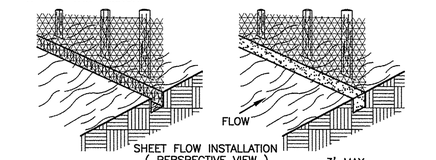
SILT FENCE (WITHOUT WIRE SUPPORT) 3.05-2

SF

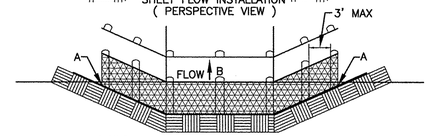
1. SET THE STAKES.
2. EXCAVATE A 4" X 4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



SHEET FLOW INSTALLATION
(PERSPECTIVE VIEW)



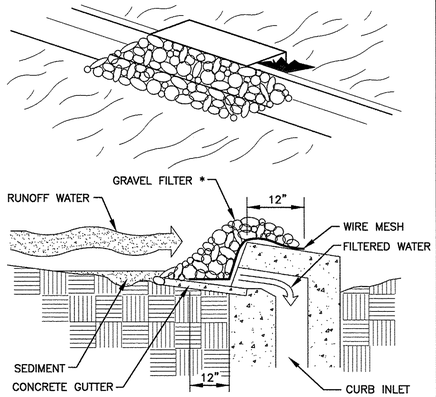
POINTS A SHOULD BE HIGHER THAN POINT B.
DRAINAGEWAY INSTALLATION
(FRONT ELEVATION)

TYPICAL SIGNAGE FOR TREE PRESERVATION AREA
REFERENCE DETAIL II.A.5

STORM DRAIN INLET PROTECTION 3.07-6

IP

GRAVEL CURB INLET SEDIMENT FILTER



SPECIFIC APPLICATION

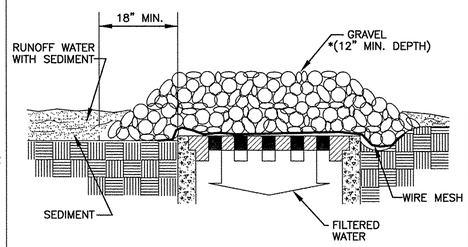
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

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

STORM DRAIN INLET PROTECTION 3.07-2

IP

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

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

NOTE:
NO CONSTRUCTION ENTRANCE WILL BE REQUIRED FOR THIS PROJECT.

GENERAL EROSION & SEDIMENT CONTROL NOTES:

1. UNLESS OTHERWISE NOTED, ALL VEGETATIVE AND EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE 1992 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
2. FOR ADDITIONAL DETAILS AND SPECIFICATIONS NOT SHOWN HEREON, REFER TO THE 1992 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
3. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ONSITE AT ALL TIMES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN HEREON THAT ARE DEEMED NECESSARY BY THE APPROVING AUTHORITY AND/OR THE SITE INSPECTOR.
5. THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL DEVICES DAILY. ANY DAMAGED CONTROLS SHALL BE REPAIRED OR REPLACED BY THE CLOSE OF EACH WORKING DAY.

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EROSION AND SEDIMENT CONTROL DETAILS

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
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SCALE H: N/A V: N/A

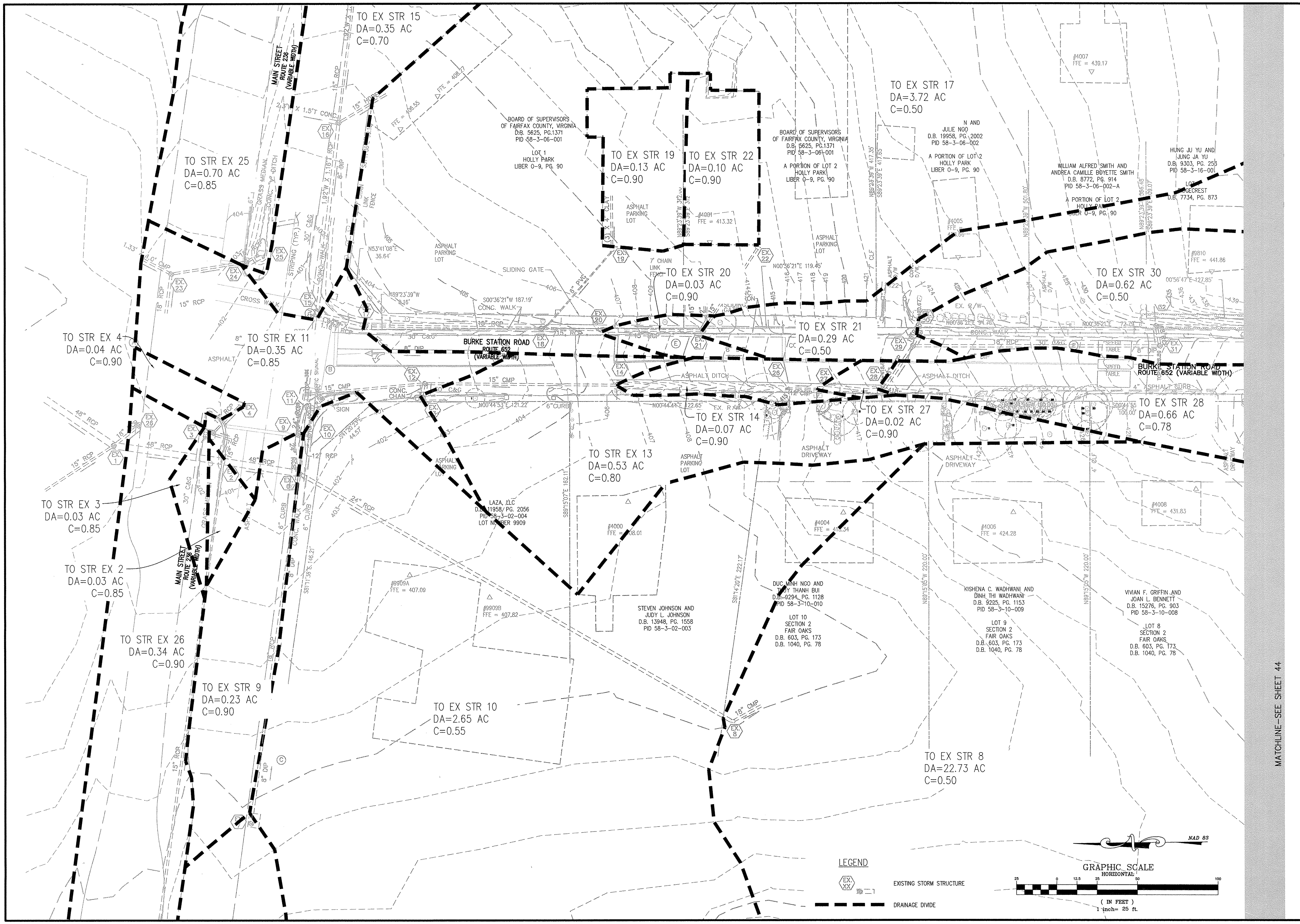
JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 42 OF 63

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-ESD.dwg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TO EX STR 17
DA=3.72 AC
C=0.50
TO EX STR 19
DA=0.13 AC
C=0.90
TO EX STR 22
DA=0.10 AC
C=0.90
TO STR EX 25
DA=0.70 AC
C=0.85
TO EX STR 20
DA=0.03 AC
C=0.90
TO EX STR 30
DA=0.62 AC
C=0.50
TO EX STR 21
DA=0.29 AC
C=0.50
TO STR EX 4
DA=0.04 AC
C=0.90
TO STR EX 11
DA=0.35 AC
C=0.85
BURKE STATION ROAD
ROUTE 652
(VARIABLE WIDTH)
TO EX STR 14
DA=0.07 AC
C=0.90
TO EX STR 27
DA=0.02 AC
C=0.90
TO EX STR 28
DA=0.66 AC
C=0.78
TO STR EX 13
DA=0.53 AC
C=0.80
TO STR EX 3
DA=0.03 AC
C=0.85
TO STR EX 2
DA=0.03 AC
C=0.85
MAIN STREET
ROUTE 236
(VARIABLE WIDTH)
TO STR EX 26
DA=0.34 AC
C=0.90
TO EX STR 9
DA=0.23 AC
C=0.90
TO EX STR 10
DA=2.65 AC
C=0.55
TO EX STR 8
DA=22.73 AC
C=0.50
BOARD OF SUPERVISORS
OF FAIRFAX COUNTY, VIRGINIA
D.B. 5625, PG.1371
PID 58-3-06-001
LOT 1
HOLLY PARK
LIBER 0-9, PG. 90
LAZA, LLC
D.B. 11958/ PG. 2056
PID 58-3-02-004
LOT NUMBER 9909
STEVEN JOHNSON AND
JUDY L. JOHNSON
D.B. 13948, PG. 1558
PID 58-3-02-003
KISHENA C. WADHWANI AND
DINH THI WADHWANI
D.B. 9225, PG. 1153
PID 58-3-10-009
LOT 9
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78
VIVIAN F. GRIFFIN AND
JOAN L. BENNETT
D.B. 15276, PG. 903
PID 58-3-10-008
LOT 8
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78
LEGEND
EXISTING STORM STRUCTURE
DRAINAGE DIVIDE
GRAPHIC SCALE
HORIZONTAL
(IN FEET)
1 inch= 25 ft.
NAD 83
MATCHLINE-SEE SHEET 44

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-DDX.dwg

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EXISTING DRAINAGE DIVIDE PLAN (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX
VIRGINIA

PROJECT NUMBER

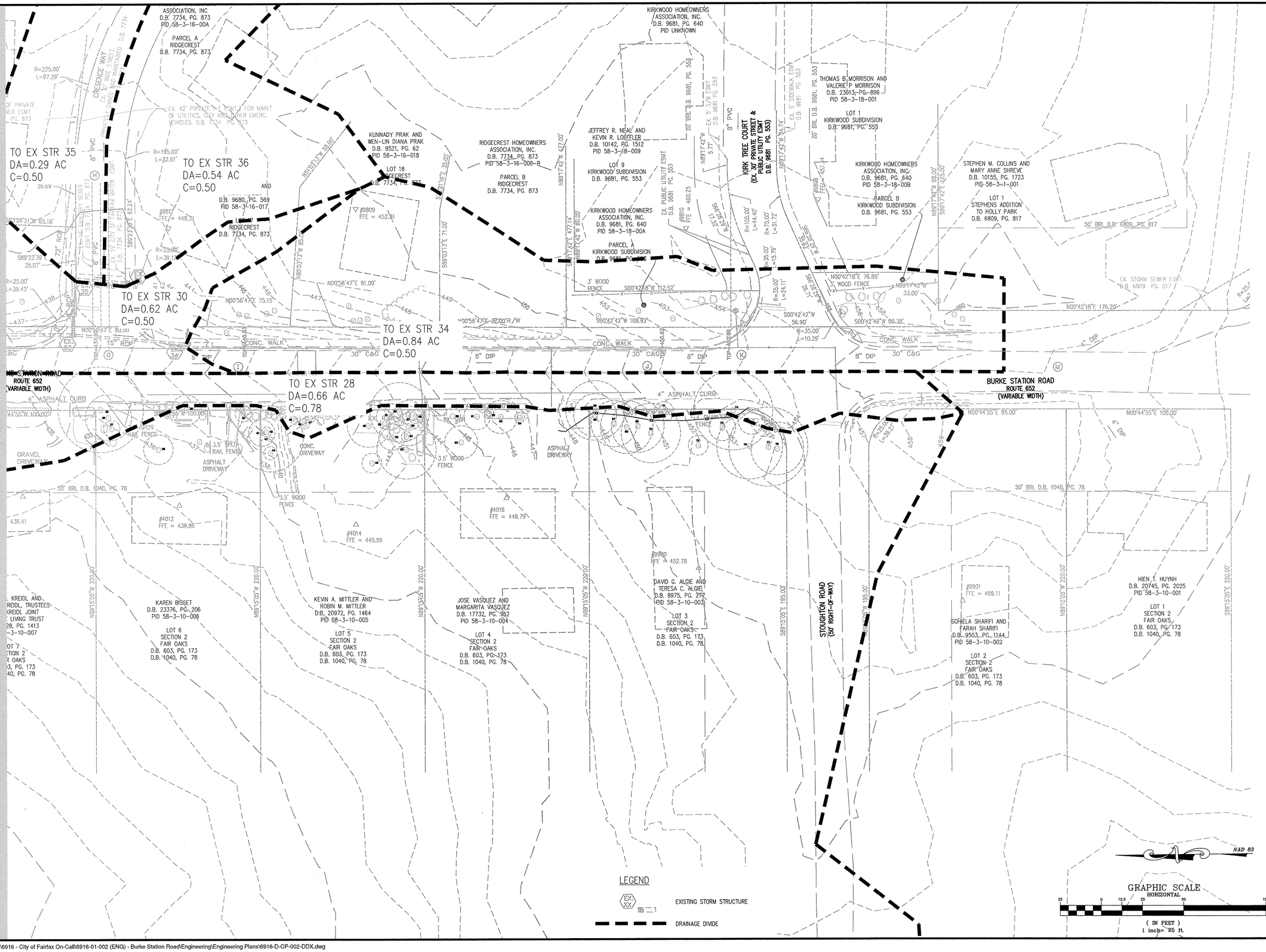
COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT
DATE	DESCRIPTION

SB	SB	SD
DESIGN	DRAWN	CHKD

SCALE H: 1"=25' V: N/A
JOB No. 6916-01-002
DATE : JUNE 2015
FILE No. 6916-D-CP-002

SHEET 43 OF 63



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EXISTING DRAINAGE DIVIDE PLAN (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
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SCALE H: 1"=25' V: N/A

JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 44 OF 63

TO EX STR 15
DA=0.35 AC
C=0.70

TO STR EX 25
DA=0.70 AC
C=0.85

TO EX STR 19
DA=0.13 AC
C=0.90

TO EX STR 22
DA=0.10 AC
C=0.90

TO EX STR 17
DA=3.40 AC
C=0.50

FUTURE
DRAINAGE TO
EX STR 32
DA=0.32 AC
C=0.70

TO EX STR 20
DA=0.03 AC
C=0.90

TO EX STR 21
DA=0.29 AC
C=0.50

TO EX STR 30
DA=0.62 AC
C=0.50

TO STR EX 4
DA=0.04 AC
C=0.90

TO STR EX 11
DA=0.40 AC
C=0.85

TO STR 15
DA=0.08 AC
C=0.90

TO STR 16
DA=0.18 AC
C=0.78

TO STR 13
DA=0.54 AC
C=0.80

TO STR EX 3
DA=0.03 AC
C=0.85

TO STR EX 2
DA=0.03 AC
C=0.85

TO STR 9
DA=0.23 AC
C=0.90

TO STR 10
DA=2.60 AC
C=0.55

TO EX STR 8
DA=22.73 AC
C=0.50

BOARD OF SUPERVISORS
OF FAIRFAX COUNTY, VIRGINIA
D.B. 5625, PG.1371
PID 58-3-06-001

LOT 1
HOLLY PARK
LIBER O-9, PG. 90

BOARD OF SUPERVISORS
OF FAIRFAX COUNTY, VIRGINIA
D.B. 5625, PG.1371
PID 58-3-06-001

A PORTION OF LOT 2
HOLLY PARK
LIBER O-9, PG. 90

N AND
JULIE NGO
D.B. 19958, PG. 2002
PID 58-3-06-002

A PORTION OF LOT 2
HOLLY PARK
LIBER O-9, PG. 90

WILLIAM ALFRED SMITH AND
ANDREA CAMILLE BOYETTE SMITH
D.B. 8772, PG. 914
PID 58-3-06-002-A

A PORTION OF LOT 2
HOLLY PARK
LIBER O-9, PG. 90

HUNG JU YU AND
JUNG JA YU
D.B. 9303, PG. 258
PID 58-3-16-001

LOT 1
CRESTCREST
D.B. 7734, PG. 873

LAZA, LLC
D.B. 11958, PG. 2056
PID 58-3-02-004
LOT NUMBER 9909

STEVEN JOHNSON AND
JUDY L. JOHNSON
D.B. 13948, PG. 1558
PID 58-3-02-003

DUC DINH NGO AND
THUY THANH BUI
D.B. 9294, PG. 1128
PID 58-3-10-010

LOT 10
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

KISHENA C. WADHWANI AND
DINH THI WADHWANI
D.B. 9225, PG. 1153
PID 58-3-10-009

LOT 9
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

VIVIAN F. GRIFFIN AND
JOAN L. BENNETT
D.B. 15276, PG. 903
PID 58-3-10-008

LOT 8
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

TIE-IN EX. 24" STORM SEWER. SEE SHEET 50

MATCHLINE - SEE SHEET 46

LEGEND

PROPOSED STORM STRUCTURE

EXISTING STORM STRUCTURE

DRAINAGE DIVIDE

GRAPHIC SCALE
HORIZONTAL
25 0 12.5 25 50 100
(IN FEET)
1 inch= 25 ft.

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-DDM.dwg

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DRAINAGE DIVIDE PLAN (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

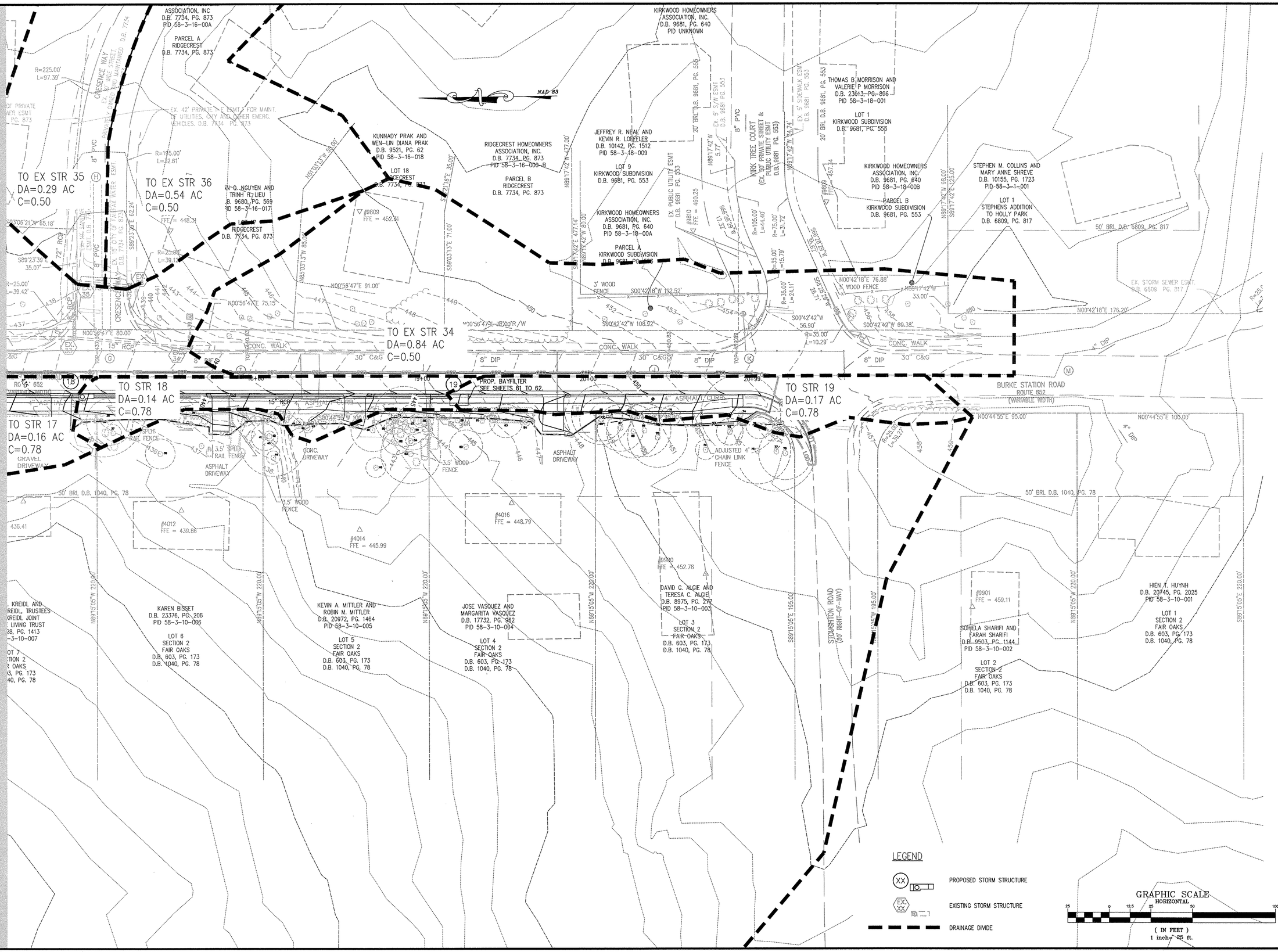
COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD
SCALE	H: 1"=25' V: N/A	
JOB No.	6916-01-002	
DATE :	JUNE 2015	
FILE No.	6916-D-CP-002	

SHEET 45 OF 63



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DRAINAGE DIVIDE PLAN (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

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DATE	DESCRIPTION

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DATE :	JUNE 2015	
FILE No.	6916-D-CP-002	

SHEET 46 OF 63

EXISTING STORM SEWER COMPUTATIONS

STRUCTURE		DRAINAGE AREA	RUN-OFF COEF.	"CA"		INLET TIME	RAIN FALL	RUNOFF "Q"INC	INVERT ELEVATIONS		LENGTH	SLOPE	MANNING'S "n" VALUE	DIAMETER	CAPACITY	Q_{runoff} / $Q_{capacity}$	VELOCITY	FLOW TIME	STRUCTURE TOP ELEVATION	REMARKS
From	To	(ACRES) "A"	"C"	Increment	Accumulated	Min.	In./Hr.	C.F.S.	Upper End	Lower End	Feet	Feet/Feet	RCP	Inches	C.F.S.	%	F.P.S.	Seconds		
Ex 34	Ex 33	0.840	0.50	0.42	0.42	5	7.27	3.05	429.75	428.76	69.92	0.0142	0.013	15	7.68	39.77	6.26	11	439.55	
Ex 33	Ex 32	0.000	0.90	0.00	2.84	5	7.27	20.61	427.06	422.44	145.16	0.0318	0.013	18	18.73	110.05	10.60	14	436.36	Add Flow From Ex 35
Ex 32	Ex 31	0.000	0.90	0.00	2.84	5	7.27	20.61	422.34	421.70	12.69	0.0504	0.013	18	23.58	87.42	13.34	1	429.24	
Ex 31	Ex 29	0.000	0.90	0.00	2.84	5	7.27	20.61	421.60	417.03	152.99	0.0299	0.013	18	18.14	113.59	10.27	15	428.90	
Ex 29	Ex 28	0.000	0.90	0.00	3.15	5	7.27	22.86	416.98	416.34	33.94	0.0189	0.013	18	14.42	158.60	8.16	4	420.13	Add Flow From Ex 30
Ex 28	Ditch	0.660	0.78	0.51	3.66	5	7.27	26.61	417.64	416.24	100.00	0.0140	0.013	18	12.42	214.20	7.03	14	420.13	
Ex 30	Ex 29	0.620	0.50	0.31	0.31	5	7.27	2.25	417.35	417.08	9.14	0.0295	0.013	18	18.04	12.49	10.21	1	420.65	
Ex 36	Ex 35	0.540	0.50	0.27	0.27	5	7.27	1.96	433.64	433.27	33.36	0.0111	0.013	15	6.80	28.89	5.54	6	437.99	
Ex 35	Ex 33	0.290	0.50	0.15	2.42	5	7.27	17.56	428.07	426.96	34.09	0.0326	0.013	18	18.94	92.68	10.72	3	438.27	Add flow from upstream cul-de-sac, 14.6 cfs
Ex 27	Ex 26	0.020	0.90	0.02	3.68	5	7.27	26.74	414.98	413.83	18.46	0.0623	0.013	12	8.88	301.26	11.30	2		
Ex 14	Ex 12	0.070	0.90	0.06	3.74	5	7.27	27.20	403.59	397.79	119.40	0.0486	0.013	15	14.22	191.24	11.59	10	0.00	Add Flow From Ex 27
Ex 12	Ex 11	0.000	0.90	0.00	4.16	5	7.27	30.28	397.69	397.00	73.71	0.0094	0.013	15	6.24	485.03	5.09	14	401.04	Add Flow From Ex 13
Ex 11	Ex 9	0.350	0.85	0.30	7.40	5	7.27	53.81	396.90	396.36	26.16	0.0206	0.013	24	32.51	165.49	10.35	3	399.90	Add Flow From Ex 15
Ex 9	Ex 6	0.230	0.90	0.21	9.07	10	5.92	53.67	396.01	395.52	23.87	0.0205	0.013	24	32.42	165.52	10.32	2	400.71	Add Flow From Ex 10
Ex 6	Ex 2	0.000	0.90	0.00	23.91	10	5.92	141.55	394.02	392.60	47.96	0.0296	0.013	48	247.83	57.12	19.72	2	401.02	Add Flow From Ex 8 and Ex 7
Ex 2	Ex 1	0.030	0.85	0.03	24.49	10	5.92	145.00	392.30	387.18	68.65	0.0746	0.013	48	393.34	36.86	31.30	2	400.60	Add Flow From Ex 3 and Ex 5
Ex 13	Ex 12	0.530	0.80	0.42	0.42	5	7.27	3.08	399.06	398.34	8.82	0.0816	0.013	3	0.25	1228.90	5.11	2	401.71	3.2"x0.6' channel
Ex 4	Ex 3	0.040	0.90	0.04	0.04	5	7.27	0.26	397.35	397.14	24.92	0.0084	0.013	12	3.26	8.02	4.16	6	400.35	
Ex 3	Ex 2	0.030	0.85	0.03	0.06	5	7.27	0.45	396.44	395.80	26.00	0.0246	0.013	15	10.12	4.42	8.25	3	401.44	
Ex 5	Ex 2	0.550	0.90	0.50	0.50	5	7.27	3.60	408.70	397.30	383.25	0.0297	0.013	15	11.13	32.34	9.07	42	413.90	
Ex 7	Ex 6	6.960	0.50	3.48	3.48	5	7.27	25.30	406.78	396.22	218.82	0.0483	0.013	18	23.06	109.70	13.05	17	410.98	
Ex 8	Ex 6	22.730	0.50	11.37	11.37	5	7.27	82.62	405.36	396.62	309.46	0.0282	0.013	24	38.03	217.24	12.11	26	408.11	
Ex 10	Ex 9	2.650	0.55	1.46	1.46	10	5.92	8.63	396.97	396.81	7.32	0.0219	0.013	12	5.26	164.12	6.69	1	400.27	
Ex 22	Ex 21	0.100	0.90	0.09	0.09	5	7.27	0.65	412.08	406.68	61.69	0.0875	0.013	15	19.09	3.43	15.56	4	414.43	
Ex 21	Ex 20	0.290	0.50	0.15	0.24	5	7.27	1.71	405.68	401.54	61.79	0.0670	0.013	15	16.70	10.23	13.61	5	411.19	
Ex 20	Ex 18	0.030	0.90	0.03	0.26	5	7.27	1.90	401.34	401.05	38.53	0.0075	0.013	15	5.60	34.03	4.56	8	406.39	
Ex 18	Ex 17	0.000	0.90	0.00	0.38	5	7.27	2.76	400.90	398.64	109.14	0.0207	0.013	15	9.28	29.68	7.57	14	404.10	Add Flow From Ex 19
Ex 17	Ex 15	3.720	0.50	1.86	2.24	5	7.27	16.28	398.54	397.48	31.62	0.0335	0.013	18	19.22	84.68	10.88	3	401.04	14"x23" ERCP
Ex 31	Ex 30	0.370	0.70	0.26	0.26	5	7.27	1.88	420.00	408.00	150.00	0.0800	0.013	15	18.25	10.32	14.87	10	424.00	
Ex 30	Ex 16	0.280	0.70	0.20	0.46	5	7.27	3.31	408.00	400.14	120.00	0.0655	0.013	15	16.51	20.03	13.46	9		
Ex 16	Ex 15	0.000	0.90	0.00	0.46	5	7.27	3.31	400.04	397.78	118.62	0.0191	0.013	18	14.49	22.83	8.20	14	404.29	14"x23" ERCP
Ex 15	Ex 11	0.350	0.70	0.25	2.94	5	7.27	21.37	397.23	397.00	50.24	0.0046	0.013	24	15.31	139.54	4.87	10	400.03	Add Flow from Ex 17
Ex 19	Ex 18	0.130	0.90	0.12	0.12	5	7.27	0.85	403.44	401.80	65.96	0.0249	0.013	6	0.88	96.55	4.49	15	405.64	

Existing Storm Sewer information was obtained via an As-Built survey conducted by Bowman Consulting.

NOTE: ALL INLETS TO EMPLOY IS-1 INLET SHAPING

EXISTING STORM CURB INLET COMPUTATIONS

NUMBER	TYPE	LENGTH ft.	DRAINAGE AREA Ac.	C	CA	INTENSITY In./Hr.	Q INCRE. C.F.S.	Q Carryover C.F.S.	Qt Gutterflow C.F.S.	S Gutterslope ft./ft	Sx Cross Slope ft./ft	T Spread	W ft.	W/T ft.	Sw ft./ft	Sw/Sx	Eo (App 9C-8)	a	Sw' a/(12W)	Se (Sx+SwEo) ft./ft	REQ. LT Length ft.	L/Lt	E (Chart 16)	Q Intercepted C.F.S.	Qb Carry Over C.F.S.	REMARKS
Ex 13	DI-3B	15	4.63	0.90	4.167	4.0	16.668	0.00	16.668	0.0287	0.02	4.16	2	0.48	0.0833	4.2	1.00	2	0.083	0.103	45.11	0.33	0.52	8.610	8.05	
Ex 9	DI-3B	8	0.23	0.90	0.207	4.0	0.828	0.00	0.828	0.0830	0.02	1.75	2	1.14	0.0833	4.2	1.00	2	0.083	0.103	13.39	0.60	0.81	1.210	0.29	
Ex 41	DI-3B	15	0.37	0.70	0.259	4.0	1.036	0.00	1.036	0.0800	0.02	1.60	2	1.25	0.0833	4.2	1.00	2	0.083	0.103	13.12	1.14	1.00	1.036	0.00	
Ex 40	DI-3B	18	0.28	0.70	0.196	4.0	0.784	0.00	0.784	0.0714	0.02	1.62	2	1.23	0.0833	4.2	1.00	2	0.083	0.103	11.59	1.55	1.00	0.784	0.00	

GRATE INLET DESIGN COMPUTATIONS

					GRATE DESIGN			
Structure #	Area (Ac.)	"C"	"I"	FLOW	GRATE	PERIM	AREA	DEPTH
EX 11	2.69	0.90	4	9.70	III	7.5	5.63	0.790
EX 15	0.27	0.90	4	0.97	III	7.5	5.63	0.200

EXISTING JUNCTION LOSS COMPUTATIONS

INLET NO.	OUTLET WS	Do	Qo	Lo	Sf %	Hf	Vo	Ho	Qi	Vi	QiVi	Vi^2 2g	Hi	ANGLE	K	Hd	Ht	1.30 Ht	0.50 Ht	FINAL H	INLET WATER SURFACE ELEV.	RIM ELEV.
Ex 2	390.38	48	145.09	68.65	1.02056	0.70062	31.3049	3.80434	145.09	19.7192	2861.058	6.03799	2.1133	0	0	0	5.91764	—	2.9588	394.04	394.04	400.60
Ex 6	395.80	48	141.64	47.96	0.97261	0.46646	19.7192	1.5095	141.64	10.3141	1460.8852	1.65186	0.57815	101	0.7	1.15631	3.24396	—	1.622	397.89	397.89	401.02
Ex 9	397.89	24	53.76	23.87	5.64907	1.34843	10.3141	0.41297	54.12	10.3141	558.19758	1.65186	0.57815	14	0.178	0.29403	1.28515	—	0.6426	399.88	399.88	400.71
Ex 11	399.88	24	54.12	26.16	5.72498	1.49766	10.6993	0.44439	51.65	10.6993	552.61964	1.77757	0.62215	0	0	0	1.06654	—	0.5333	401.91	401.91	399.90
Ex 15	401.91	24	21.37	50.24	0.89262	0.44845	4.88576	0.09267	21.37	8.6858	185.61546	1.17148	0.41002	0	0	0	0.50268	—	0.2513	402.61	402.61	401.04
Ex 16	402.61	18	3.31	118.62	0.09932	0.11782	8.21034	0.26168	3.31	11.8229	39.133749	2.17051	0.75968	0	0	0	1.02136	—	0.5107	403.24	403.24	403.59
Ex 30	403.24	15	3.31	120	0.26264	0.31516	13.4559	0.70288	1.88	13.4559	25.297135	2.81152	0.98403	0	0	0	1.68691	2.193	—	405.75	405.75	412.00
Ex 31	409.00	15	1.88	150	0.08473	0.12709	14.8709	0.85848	0	14.8709	0	3.43392	1.20187	0	0	0	2.06035	2.6785	—	411.81	411.81	424.00
Ex 12	401.91	15	30.28	73.71	21.9791	16.2008	5.09749	0.10087	27.2	5.09749	138.65185	0.40349	0.14122	5	0.06	0.02421	0.2663	—	0.1332	418.24	418.24	400.03
Ex 14	418.24	15	27.2	119.4	17.7352	21.1758	11.5907	0.52153	0	11.5907	0	2.0861	0.73014	0	0	0	1.25166	1.6272	—	441.05	441.05	404.29
Ex 3	396.80	15	0.46	26	0.00507	0.00132	8.24632	0.26398	0.26	12.8849	3.3500692	2.57795	0.90228	113	0.7	1.80457	2.97083	3.8621	—	400.66	400.66	401.44
Ex 4	400.66	12	0.26	24.92	0.00533	0.00133	4.14957	0.06684	0	4.14957	0	0.26737	0.09358	0	0	0	0.16042	0.2086	—	400.87	400.87	400.35
Ex 5	398.30	15	3.6	383.25	0.31067	1.19065	9.06089	0.31871	0	9.06089	0	1.27484	0.44619	0	0	0	0.76491	0.9944	—	400.49	400.49	413.90
Ex 7	397.89	18	25.3	309.49	5.80282	17.9592	13.0562	0.66174	0	13.0562	0	2.64697	0.92644	0	0	0	1.58818	2.0646	—	417.91	417.91	410.98
Ex 8	398.22	24	82.62	218.82	13.3422	29.1955	12.097	0.56808	0	12.097	0	2.27232	0.79531	0	0	0	1.36339	1.7724	—	429.19	429.19	408.11
Ex 10	399.88	12	8.47	7.32	5.65352	0.41384	6.70016	0.17427	0	6.70016	0	0.69708	0.24398	0	0	0	0.41825	0.5437	—	400.84	400.84	400.27
Ex 15	398.60	24	21.37	50.24	0.89262	0.44845	4.88576	0.09267	21.37	8.6858	185.61546	1.17148	0.41002	0	0	0	0.50268	—	0.2513	399.30	399.30	401.04
Ex 16	399.30	18	3.31	118.62	0.09932	0.11782	8.21034	0.26168	3.31	11.8229	39.133749	2.17051	0.75968	0	0	0	1.02136	—	0.5107	399.93	399.93	403.59
Ex 30	401.14	15	3.31	120	0.26264	0.31516	13.4559	0.70288	1.88	13.4559	25.297135	2.81152	0.98403	0	0	0	1.68691	2.193	—	403.65	403.65	412.00
Ex 31	409.00	15	1.88	150	0.08473	0.12709	14.8709	0.85848	0	14.8709	0	3.43392	1.20187	0	0	0	2.06035	2.6785	—	411.81	411.81	424.00
Ex 17	403.65	18	16.28	31.62	2.40274	0.75975	10.8734	0.45897	2.76	7.56446	20.877914	0.88853	0.31098	13	0.166	0.1475	0.91745	1.1927	—	405.60	405.60	401.04
Ex 18	405.60	15	2.76	109.14	0.18261	0.1993	7.56446	0.22213	2.76	4.55327	12.567027	0.32193	0.11268	1	0.012	0.00386	0.33867	—	0.1693	405.97	405.97	404.10
Ex 20	405.97	15	1.9	38.53	0.08654	0.03334	4.55327	0.08048	1.71	4.55327	7.786093	0.32193	0.11268	1	0.012	0.00386	0.19702	—	0.0985	406.10	406.10	406.39
Ex 21	406.10	15	1.71	61.79	0.0701	0.04331	13.6091	0.71898	0.65	13.6091	8.8459321	2.87591	1.00657	57	0.542	1.55874	3.28428	4.2696	—	410.41	410.41	411.18
Ex 22	410.41	15	0.65	61.69	0.01013	0.00625	15.5524	0.93896	0	15.5524	0	3.75585	1.31455	0	0	0	2.25351	2.9296	—	413.35	413.35	414.43
Ex 19	405.97	6	0.85	65.96	2.29553	1.51413	4.49027	0.07827	0	4.49027	0	0.31308	0.10958	0	0	0	0.18785	0.2442	—	407.73	407.73	405.64
Ex 28	417.44	18	26.61	4	6.41931	0.25677	7.02924	0.19181	22.86	8.16724	186.70305	1.03577	0.36252	0	0	0	0.55433	—	0.2772	417.97	417.97	418.84
Ex 29	417.97	18	22.86	33.94	4.73752	1.60791	8.16724	0.25894	22.86	10.2726	234.83136	1.6386	0.57351	56	0.536	0.87829	1.71075	—	0.8554	420.44	420.44	420.13
Ex 31	420.44	18	20.61	152.99	3.85083	5.89139	10.2726	0.40965	20.61	10.2726	211.71804	1.6386	0.57351	99	0.7	1.14702	2.13018	—	1.0651	427.39	427.39	428.90
Ex 32	427.39	18	20.61	12.69	3.85083	0.48867	13.337	0.69052	20.61	13.337	274.87645	2.76206	0.96672	100	0.7	1.93344	3.59068	—	1.7953	429.68	429.68	429.24
Ex 33	429.68	18	20.61	145.16	3.85083	5.58987	10.5939	0.43568	20.61	15.2553	314.41143	3.61372	1.2648	4	0.048	0.17346	1.87394	—	0.937	436.20	436.20	436.36
Ex 34	436.20	15	3.05	69.92	0.223	0.15592	6.26523	0.15238	0	6.26523	0	0.60952	0.21333	0	0	0	0.36571	0.4754	—	436.84	436.84	439.55
Ex 30	420.44	18	2.25	9.14	0.04589	0.00419	10.2036	0.40417	0	10.2036	0	1.61668	0.56584	0	0	0	0.97001	1.261	—	421.70	421.70	420.65
Ex 35	436.20	18	17.56	34.09	2.79542	0.95296	10.7264	0.44664	16.42	15.446	253.62305	3.70463	1.29662	95	0.7	2.59324	4.33651	—	2.1683	439.33	439.33	438.27
Ex 36	439.33	15	1.96	33.36	0.09209	0.03072	5.53929	0.11911	0	5.53929	0	0.47646	0.16676	0	0	0	0.28587	0.3716	—	439.73	439.73	437.99

Vi^2/2g Hi=0.35--- Vo^2/2g Ho=0.25--- Vi^2/2g H =K--- Ht=Ho+Hi+H

90 K=0.70 80 K=0.66 70 K=0.61 60 K=0.56

50 K=0.50 40 K=0.43 30 K=0.35 25 K=0.30

20 K=0.25 15 K=0.19 10K = 0.13 5K = 0.06

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EXISTING STORM DRAIN COMPUTATIONS

BURKE STATION ROAD
STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS	
04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: N/A V: N/A

JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 47 OF 63

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-SDC.dwg

PROPOSED STORM SEWER COMPUTATIONS

STRUCTURE		DRAINAGE AREA	RUN-OFF COEF.	"CA"		INLET TIME	RAIN FALL	RUNOFF "Q"INC	INVERT ELEVATIONS		LENGTH	SLOPE	MANNING'S "n" VALUE	DIAMETER	CAPACITY	Q_{runoff} / $Q_{capacity}$	VELOCITY	FLOW TIME	STRUCTURE TOP ELEVATION	REMARKS
From	To	(ACRES) "A"	"C"	Increment	Accumulated	Min.	In./Hr.	C.F.S.	Upper End	Lower End	Feet	Feet/Feet	RCP	Inches	C.F.S.	%	F.P.S.	Seconds		
Ex 34	Ex 33	0.840	0.50	0.42	0.42	5	7.27	3.05	429.75	428.76	69.92	0.0142	0.013	18	12.49	24.44	7.07	10	439.55	
Ex 33	Ex 32	0.000	0.90	0.00	2.84	5	7.27	20.61	427.06	422.44	145.16	0.0318	0.013	18	18.73	110.05	10.60	14	436.36	
Ex 32	Ex 31	0.000	0.90	0.00	3.06	5	7.27	22.24	422.34	421.70	12.69	0.0504	0.013	18	23.58	94.33	13.34	1	429.24	Future Drainage DA=0.32, C=0.7
Ex 31	Ex 29	0.000	0.90	0.00	3.06	5	7.27	22.24	421.60	417.03	152.99	0.0299	0.013	18	18.14	122.57	10.27	15	429.24	
Ex 29	16	0.000	0.90	0.00	3.37	5	7.27	24.49	416.98	416.48	26.07	0.0192	0.013	18	14.54	168.46	8.23	3	429.24	
Ex 30	Ex 29	0.620	0.50	0.31	0.31	5	7.27	2.25	417.35	417.08	9.14	0.0295	0.013	18	18.04	12.49	10.21	1	420.65	
Ex 36	Ex 35	0.540	0.50	0.27	0.27	5	7.27	1.96	433.64	433.27	33.36	0.0111	0.013	15	6.80	28.89	5.54	6	437.99	
Ex 35	Ex 33	0.290	0.50	0.15	2.42	5	7.27	17.56	428.07	426.96	34.09	0.0326	0.013	18	18.94	92.68	10.72	3	438.27	Add flow from upstream cul-de-sac, 14.6 cfs
19	18	0.170	0.78	0.13	0.13	5	7.27	0.96	438.78	431.05	223.46	0.0346	0.013	15	12.00	8.03	9.78	23	445.78	
18	17	0.140	0.78	0.11	0.24	5	7.27	1.76	430.85	423.83	147.84	0.0475	0.013	15	14.06	12.50	11.46	13	436.85	
17	16	0.160	0.78	0.12	0.37	5	7.27	2.67	423.63	413.73	167.34	0.0592	0.013	15	15.69	16.98	12.79	13	429.07	
16	15	0.180	0.78	0.14	3.88	5	7.27	28.18	413.48	401.50	157.95	0.0758	0.013	18	28.91	97.46	16.36	10	419.41	Add from from Ex 29
15	13	0.080	0.90	0.07	3.95	5	7.27	28.70	401.00	396.57	128.52	0.0345	0.013	24	42.02	68.31	13.37	10	406.51	
13	12	0.540	0.80	0.43	4.38	5	7.27	31.84	396.47	396.11	35.28	0.0102	0.013	24	22.86	139.29	7.28	5	401.65	
12	10	0.000	0.60	0.00	4.38	5	7.27	31.84	396.01	395.71	29.48	0.0102	0.013	24	22.83	139.48	7.27	4	401.50	
10	9	2.600	0.55	1.43	5.81	5	7.27	42.24	394.71	394.51	19.16	0.0104	0.013	36	68.26	61.88	9.66	2	400.64	
9	6	0.230	0.90	0.21	9.14	5	7.27	66.42	394.41	394.10	30.70	0.0101	0.013	36	67.14	98.93	9.50	3	400.08	Add flow from Ex 11
6	Ex 2	0.000	0.90	0.00	23.98	10	5.92	141.97	394.02	392.90	47.96	0.0234	0.013	48	220.10	64.50	17.52	3	401.00	Add flow from Ex 8 and Ex 7
Ex 2	Ex 1	0.030	0.85	0.03	24.56	10	5.92	145.41	392.30	387.18	68.65	0.0746	0.013	48	393.34	36.97	31.30	2	399.90	Add flow from Ex 3 and Ex 5
Ex 4	Ex 3	0.040	0.90	0.04	0.04	5	7.27	0.26	397.35	397.14	24.92	0.0084	0.013	12	3.26	8.02	4.16	6	400.35	
Ex 3	Ex 2	0.030	0.85	0.03	0.06	5	7.27	0.45	396.44	395.80	26.00	0.0246	0.013	15	10.12	4.42	8.25	3	401.44	
Ex 5	Ex 2	0.550	0.90	0.50	0.50	5	7.27	3.60	408.70	397.30	383.25	0.0297	0.013	15	11.13	32.34	9.07	42	413.90	
Ex 7	6	6.960	0.50	3.48	3.48	5	7.27	25.30	406.78	396.22	218.82	0.0483	0.013	18	23.06	109.70	13.05	17	410.98	
Ex 8	6	22.730	0.50	11.37	11.37	10	5.92	67.28	405.36	396.62	309.46	0.0282	0.013	24	38.03	176.90	12.11	26	408.11	
Ex 22	Ex 21	0.100	0.90	0.09	0.09	5	7.27	0.65	412.08	406.68	61.69	0.0875	0.013	15	19.09	3.43	15.56	4	414.43	
Ex 21	Ex 20	0.290	0.50	0.15	0.24	5	7.27	1.71	405.68	401.54	61.79	0.0670	0.013	15	16.70	10.23	13.61	5	411.19	
Ex 20	Ex 18	0.030	0.90	0.03	0.26	5	7.27	1.90	401.34	401.05	38.53	0.0075	0.013	15	5.60	34.03	4.56	8	406.39	
Ex 18	Ex 17	0.000	0.90	0.00	0.38	5	7.27	2.76	400.90	398.64	109.14	0.0207	0.013	15	9.28	29.68	7.57	14	404.10	Add Flow from Ex 19
Ex 17	Ex 15	3.400	0.50	1.70	2.08	5	7.27	15.11	398.54	397.48	31.62	0.0335	0.013	18	19.22	78.63	10.88	3	401.04	14"x23" ERCP
Ex 31	Ex 30	0.370	0.70	0.26	0.26	5	7.27	1.88	420.00	408.00	150.00	0.0800	0.013	15	18.25	10.32	14.87	10	424.00	
Ex 30	Ex 16	0.280	0.70	0.20	0.46	5	7.27	3.31	408.00	400.14	120.00	0.0655	0.013	15	16.51	20.03	13.46	9	412.00	
Ex 16	Ex 15	0.000	0.90	0.00	0.46	5	7.27	3.31	400.04	397.78	118.62	0.0191	0.013	18	14.49	22.83	8.20	14	404.29	14"x23" ERCP
Ex 15	Ex 11	0.350	0.70	0.25	2.78	5	7.27	20.20	397.23	397.00	50.24	0.0046	0.013	24	15.31	131.94	4.87	10	400.03	Add Flow from Ex 17
Ex 11	9	0.400	0.85	0.34	3.12	5	7.27	22.68	396.90	396.36	26.23	0.0206	0.013	24	32.47	69.83	10.34	3	399.90	
Ex 19	Ex 18	0.130	0.90	0.12	0.12	5	7.27	0.85	403.44	401.80	65.96	0.0249	0.013	6	0.88	96.55	4.49	15	405.64	

Existing Storm Sewer information was obtained via an As-Built survey conducted by Bowman Consulting.

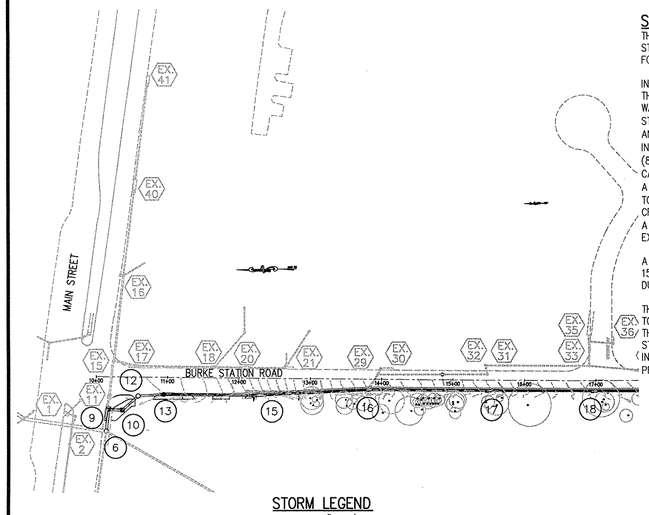
NOTE: ALL INLETS TO EMPLOY IS-1 INLET SHAPING

GRATE INLET DESIGN COMPUTATIONS

					GRATE DESIGN			
Structure #	Area (Ac.)	"C"	"I"	FLOW	GRATE	PERIM	AREA	DEPTH
EX 11	0.43	0.90	4	1.57	III	7.5	5.63	0.240
10	0.963	0.60	4	2.31	III	7.5	5.63	0.320

PROPOSED STORM CURB INLET COMPUTATIONS

NUMBER	TYPE	LENGTH ft.	DRAINAGE AREA Ac.	C	CA	INTENSITY In./Hr.	Q INCRE. C.F.S.	Q Carryover C.F.S.	Qt Gutterflow C.F.S.	S Gutterslope ft./ft	Sx Cross Slope ft./ft	T Spread	W ft.	W/T ft.	Sw ft./ft	Sw/Sx	Eo (App 9C-8)	a	Sw' a/(12W)	Se (Sx+SwEo) ft./ft	REQ. LT Length ft.	L/Lt	E (Chart 16)	Q Intercepted C.F.S.	Qb Carry Over C.F.S.	REMARKS
9	DI-4B	14	0.23	0.90	0.207	4.0	0.828	0.00	0.828	0.0150	0.02	3.61	2	0.55	0.0833	4.2	1.00	2	0.083	0.103	14.44	0.97	1.00	0.826	0.00	
13	DI-2B	14	0.55	0.80	0.440	4.0	1.760	0.00	1.760	0.0290	0.02	5.00	2	0.40	0.0833	4.2	1.00	2	0.083	0.103	9.50	1.47	1.00	1.760	0.00	
15	DI-3B	14	0.07	0.78	0.055	4.0	0.218	0.00	0.218	0.0830	0.02	1.04	2	1.92	0.0833	4.2	1.00	2	0.083	0.103	10.62	1.32	1.00	0.218	0.00	
16	DI-3B	8	0.18	0.78	0.140	4.0	0.562	0.00	0.562	0.0580	0.02	1.59	2	1.26	0.0833	4.2	1.00	2	0.083	0.103	8.01	1.00	1.00	0.562	0.00	
17	DI-3B	8	0.16	0.78	0.125	4.0	0.499	0.00	0.499	0.0550	0.02	1.54	2	1.30	0.0833	4.2	1.00	2	0.083	0.103	7.89	1.01	1.00	0.499	0.00	
18	DI-3B	8	0.14	0.78	0.109	4.0	0.437	0.00	0.437	0.0480	0.02	1.50	2	1.33	0.0833	4.2	0.98	2	0.083	0.102	7.19	1.11	1.00	0.437	0.00	
19	DI-3B	8	0.17	0.78	0.133	4.0	0.530	0.00	0.530	0.0380	0.02	1.68	2	1.19	0.0833	4.2	0.98	2	0.083	0.102	7.30	1.10	1.00	0.530	0.00	



STORM LEGEND
SCALE: 1"=100'

STORMWATER NARRATIVE

THIS PROJECT IS PROPOSING ROAD IMPROVEMENTS CONSISTING MAINLY OF CURB AND SIDEWALK INSTALLATION ALONG BURKE STATION ROAD. THE EXISTING AND PROPOSED STORM SEWER AFFECTING THE PROJECT AREA WERE ANALYZED. SEE THIS SHEET FOR PROPOSED COMPUTATIONS AND SHEET 47 FOR EXISTING COMPUTATIONS.

IN THE EXISTING CONDITION GRATE INLETS 2, 4, 11 AND 15 AND CURB INLET 9, 13, 30 AND 31 WERE ANALYZED TO DETERMINE THE INLET CAPACITY AND FLOODING AT EACH LOCATION. IT WAS ASSUMED THAT THE CULVERT AT EX 14 WAS CLOGGED, DEBRIS WAS OBSERVED AT THIS LOCATION WHICH WOULD PREVENT STORMWATER FROM ENTERING THE PIPE DURING A RAINFALL EVENT. STRUCTURE EX. 14 WAS DETERMINED TO RECEIVE 14.96 CFS OF RUNOFF DURING THE 10 YEAR STORM. EX 13 IS A 15' CURB INLET AND RECEIVES A FLOW OF 16.66 CFS (14.96 CFS BYPASS FLOW FROM EX 14 AND 1.70 CFS PER THE EXISTING GRADING), THE INLET IS ONLY ABLE TO CAPTURE 8.61 CFS WITH A PONDING DEPTH OF 0.45' AND A SPREAD OF 14.25'. THE BYPASS FLOW (8.05 CFS) WILL CONTINUE INTO THE BURKE STATION ROAD, MAIN STREET INTERSECTION AND BE CAPTURED IN EX. 11. INLET 11 CAPTURES 1.36 CFS NATURALLY (9.70 CFS TOTAL). THE PONDING DEPTH AT STRUCTURE 11 WAS CALCULATED TO BE 0.79' WITH A SPREAD OF 37.82'. THE EXISTING CURB INLETS (EX 9, 40 AND 41) ALONG MAIN STREET WERE ANALYZED AND ALL WERE ABLE TO CAPTURE THEIR RESPECTIVE RUNOFF WITH A SPREAD OF LESS THAN 4', NO BYPASS FLOWS FROM EX 40 AND 41 WERE CREATED, STRUCTURE 9 CREATES A BYPASS FLOW OF 0.29 CFS WHICH WILL DRAIN TO EX 11. EXISTING GRATE INLET 15 RECEIVES A FLOW OF 0.98 CFS WHICH PRODUCES A PONDING DEPTH OF 0.16' AND A SPREAD OF 7.6'. THE INLET ANALYSIS REVEALS THAT EX. INLETS 11 AND 13 ARE NOT ADEQUATE TO CAPTURE THE RUNOFF THEY RECEIVE.

A HYDRAULIC GRADE LINE ANALYSIS WAS ALSO PERFORMED. A MAJORITY OF THE STRUCTURES INCLUDING EX 10, 11, 12, 14, AND 15 WILL CAUSE FLOODING PROBLEMS WHERE STORMWATER WILL EXIT THE SYSTEM THROUGH THE TOP OF THE STRUCTURE. THIS IS DUE TO THE PIPES BEING UNDERSIZED FOR THE AMOUNT OF RUNOFF THEY RECEIVE.

THE PROPOSED STORM SEWER IMPROVEMENTS WILL MOVE THE SYSTEM UNDERGROUND. THE PROPOSED STORM SEWERS ARE SIZED TO ACCOMMODATE THE RUNOFF RECEIVED. DRAINAGE PROBLEMS DUE TO INADEQUATE PIPE SIZES HAVE BEEN ALLEVIATED ALONG THE WESTERN PORTION OF BURKE STATION ROAD WHERE THE STORM SEWERS HAVE BEEN UPSIZED. ADDITIONALLY, EXISTING STRUCTURES 11 AND 15 WILL NO LONGER CREATE FLOODING PROBLEMS DUE TO WATER LEAVING THE SYSTEM. THE PROPOSED INLETS WERE SIZED TO CAPTURE THE 10 YEAR STORM. EXISTING GRATE INLET 11 ANALYSIS WAS PERFORMED TO REFLECT THE PROPOSED IMPROVEMENTS, IT WILL NOW RECEIVE 1.36 CFS AND PRODUCE A PONDING DEPTH OF 0.24' WITH A SPREAD OF 11.96'.

PROPOSED JUNCTION LOSS COMPUTATIONS

INLET NO.	OUTLET WS	Do	Qo	Lo	Sf %	Hf	Vo	Ho	Qi	Vi	QiVi	Vi^2 2g	Hi	ANGLE	K	Hd	Ht	1.30 Ht	0.50 Ht	FINAL H	INLET WATER SURFACE ELEV.	RIM ELEV.
Ex 2	390.38	48	145.41	68.65	1.02507	0.70371	31.3049	3.80434	141.96	17.5328	2488.9562	4.77328	1.67065	0	0	0	5.47499	---	2.7375	393.82	393.82	399.90
6	393.82	48	141.96	47.96	0.97701	0.46857	17.5328	1.19332	66.41	9.49938	630.85354	1.40121	0.49042	92	0.7	0.98085	2.66459	---	1.3323	395.62	395.62	401.01
9	396.50	36	66.41	30.7	0.99168	0.30445	9.49938	0.3503	42.23	9.63942	407.07284	1.44283	0.50499	85	0.68	0.98113	1.83642	---	0.9182	397.72	397.72	400.34
10	397.72	36	42.23	20.07	0.401	0.08048	9.63942	0.36071	31.84	7.27534	231.64684	0.8219	0.28767	43	0.451	0.37068	1.01905	1.3248	---	399.13	399.13	399.95
12	399.13	24	31.84	29.48	1.98155	0.58416	7.27534	0.20548	31.84	7.27534	231.64684	0.8219	0.28767	38	0.414	0.34027	0.83341	---	0.4167	400.13	400.13	401.18
13	400.13	24	31.84	35.28	1.98155	0.69909	7.27534	0.20548	28.7	13.5536	388.9885	2.85249	0.99837	4	0.048	0.13692	1.34077	---	0.6704	401.50	401.50	401.65
15	401.50	24	28.7	128.52	1.60999	2.06915	13.5536	0.71312	28.18	16.3561	460.91397	4.15405	1.45392	3	0.036	0.14955	2.31659	---	1.1583	404.73	404.73	406.82
16	404.73	18	28.18	157.95	7.19914	11.371	16.3561	1.03851	2.67	12.7924	34.155839	2.5411	0.88938	0	0	0	1.9279	---	0.9639	417.06	417.06	420.52
17	417.06	15	2.67	167.34	0.17089	0.28597	12.7924	0.63527	1.76	11.4588	20.167512	2.03889	0.71361	0	0	0	1.34889	1.7536	---	419.10	419.10	429.07
18	424.83	15	1.76	147.78	0.07425	0.10973	11.4588	0.50972	0.96	9.77982	9.3886279	1.48517	0.51981	0	0	0	1.02953	1.3384	---	426.28	426.28	436.85
19	432.05	15	0.96	223.46	0.02209	0.04937	9.77982	0.37129	0	0	0	0	0	0	0	0	0.37129	0.4827	---	432.58	432.58	445.78
Ex 3	396.80	15	0.45	26	0.00485	0.00126	8.24632	0.26398	0.26	4.14957	1.0788874	0.26737	0.09358	113	0.7	0.18716	0.54473	0.7081	---	397.51	397.51	401.44
Ex 4	397.94	12	0.26	24.92	0.00533	0.00133	4.14957	0.06684	0	0	0	0	0	0	0	0	0.06684	0.0869	---	398.03	398.03	400.35
Ex 5	398.30	15	3.6	383.25	0.31067	1.19065	9.06089	0.31871	0	9.06089	0	1.27484	0.44619	0	0	0	0.76491	0.9944	---	400.49	400.49	413.90
Ex 7	397.42	18	25.3	309.49	5.80282	17.9592	13.0562	0.66174	0	13.0562	0	2.64697	0.92644	0	0	0	1.58818	2.0646	---	417.44	417.44	410.98
Ex 8	398.22	24	67.28	218.82	8.8477	19.3605	12.097	0.56808	0	12.097	0	2.27232	0.79531	0	0	0	1.36339	1.7724	---	419.35	419.35	408.11
Ex 11	397.96	24	22.68	26.16	1.00541	0.26302	10.3392	0.41498	20.2	4.88576	98.692357	0.37066	0.12973	0	0	0	0.54471	---	0.2724	398.50	398.50	399.90
Ex 15	398.60	24	20.2	50.24	0.79756	0.40069	4.88576	0.09267	18.42	8.21034	151.2344	1.04673	0.36636	0	0	0	0.45902	---	0.2295	399.23	399.23	401.04
Ex 16	399.23	18	3.31	116.62	0.09932	0.11782	8.21034	0.26168	3.31	13.4559	44.539105	2.81152	0.98403	0	0	0	1.24572	---	0.6229	399.97	399.97	403.59
Ex 30	401.14	15	3.31	120	0.26264	0.31516	13.4559	0.70288	1.88	14.8709	27.95733	3.43392	1.20187	0	0	0	1.90475	2.4762	---	403.93	403.93	412.00
Ex 31	409.00	15	1.88	150	0.08473	0.12709	14.8709	0.85848	0	0	0	0	0	0	0	0	0.85848	1.116	---	410.24	410.24	424.00
Ex 17	399.23	18	15.11	31.62	2.0698	0.65447	13.2707	0.68366	2.76	9.09135	25.09213	1.28343	0.4492	13	0.166	0.21305	1.34591	1.7497	---	401.63	401.63	401.04
Ex 18	401.63	15	2.76	109.14	0.18261	0.1993	9.09135	0.32086	1.9	10.5416	20.02901	1.72554	0.60394	1	0.012	0.02071	0.9455	1.2292	---	403.06	403.06	404.10
Ex 20	403.06	15	1.9	38.53	0.08654	0.03334	10.5416	0.43139	1.71	8.27978	14.15842	1.06451	0.37258	1	0.012	0.01277	0.81674	---	0.4084	403.50	403.50	406.39
Ex 21	403.50	15	1.71	61.79	0.0701	0.04331	8.27978	0.26613	0.65	11.7565	7.6417215	2.1462	0.75117	57	0.542	1.16324	2.18054	2.8347	---	406.38	406.38	411.18
Ex 22	407.68	15	0.65	61.69	0.01013	0.00625	11.7565	0.53655	0	0	0	0	0	0	0	0	0.53655	0.6975	---	408.38	408.38	414.43
Ex 19	403.06	6	0.85	65.96	2.29553	1.51413	2.88796	0.03238	0	2.88796	0	0.12951	0.04533	0	0	0	0.0777	0.101	---	404.68	404.68	405.64
Ex 30	419.84	18	2.25	9.14	0.04589	0.00419	10.2036	0.40417	0	0	0	0	0	0	0	0	0.40417	0.5254	---	420.37	420.37	420.65
Ex 29	417.68	18	23.5	26.07	5.0065	1.30519	8.2318	0.26305	21.24	10.2382	217.45882	1.62764	0.56968	56	0.536	0.87242	1.70515	---	0.8526	419.84	419.84	420.24
Ex 31	425.13	18	21.24	62.56	4.08985	2.55861	10.2382	0.40691	21.24	13.337	283.27879	2.76206	0.96672	100	0.7	1.93344	3.30707	---	1.6535	429.34	429.34	428.83
Ex 32	429.34	18	21.24	12.69	4.08985	0.519	13.337	0.69052	19.61	10.5939	207.74732	1.74273	0.60996	100	0.7	1.21991	2.52038	---	1.2602	431.12	431.12	429.91
Ex 33	431.12	18	19.61	145.16	3.48621	5.06058	10.5939	0.43568	3.05	7.07927	21.591772	0.7782	0.27237	4	0.048	0.03735	0.74541	0.969	---	437.15	437.15	436.36
Ex 34	437.15	18	3.05	69.92	0.08433	0.05897	7.07927	0.19455	0	0	0	0	0	0	0	0	0.19455	0.2529	---	437.46	437.46	439.55
Ex 35	437.15	18	17.56	34.09	2.79542	0.95296	10.7264	0.44664	16.51	5.53929	91.453727	0.47646	0.16676	95	0.7	0.33352	0.94692	---	0.4735	438.58	438.58	438.27
Ex 36	438.58	15	1.96	33.36	0.09209	0.03072	5.53929	0.11911	0	0	0	0	0	0	0	0	0.11911	0.1548	---	438.76	438.76	437.99

Vi^2/2g Hi=0.35---- Vo^2/2g Ho=0.25---- Vi^2/2g H =K---- Ht=Ho+Hi+H

90 K=0.70 80 K=0.66 70 K=0.61 60 K=0.56

50 K=0.50 40 K=0.43 30 K=0.35 25 K=0.30

20 K=0.25 15 K=0.19 10K = 0.13 5K = 0.06

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PROPOSED STORM DRAIN COMPUTATIONS

BURKE STATION ROAD
STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
10/17/2016
PROFESSIONAL ENGINEER

PLAN STATUS

04/05/16	FINAL SUBMISSION
10/17/16	CONTRACT DOCUMENT

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: 1"=100' V: N/A

JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

Cad file name : P:\6916 - City of Fairfax On-Call\6916-01-002 (ENG) - Burke Station Road\Engineering\Engineering Plans\6916-D-CP-002-SDC.dwg

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

Project Name: Burke Station Road	
Date:	

data input cells
calculation cells
constant values

Post-ReDevelopment Project & Land Cover Information

Total Disturbed Acreage 0.65

Constants

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

Nitrogen EMC (mg/L) 1.86

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	0.00	0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed	0.00	0.00	0.00	0.11	0.11
Impervious Cover (acres)	0.00	0.00	0.00	0.60	0.60
				Total	0.71

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	0.00	0.12	0.12
Impervious Cover (acres)	0.00	0.00	0.00	0.59	0.59
				Total	0.71
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]**
Forest/Open Space Cover (acres)	0.00	0.00
Composite Rv(forest)	0.00	0.00
% Forest	0%	0%
Managed Turf Cover (acres)	0.11	0.11
Composite Rv(turf)	0.25	0.25
% Managed Turf	15%	15%
Impervious Cover (acres)	0.60	0.60
Rv(impervious)	0.95	0.95
% Impervious	85%	85%
Total Site Area (acres)	0.71	0.71
Site Rv	0.84	0.84
Pre-Development Treatment Volume (acre-ft)	0.0498	0.0498
Pre-Development Treatment Volume (cubic feet)	2,169	2,169
Pre-Development Load (TP) (lb/yr)	1.36	1.36
Pre-Development Load (TN) (lb/yr)	9.75	

Land Cover Summary Post-ReDevelopment	
Forest/Open Space Cover	0.00
Composite Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.12
Composite Rv(turf)	0.25
% Managed Turf	17%
ReDev. Impervious Cover (acres)	0.59
Rv(impervious)	0.95
% Impervious	83%
Total ReDev. Site Area (acres)	0.71
ReDev. Site Rv	0.83
Post-ReDevelopment Treatment Volume (acre-ft)	0.0492
Post-ReDevelopment Treatment Volume (cubic feet)	2,144
Post-ReDevelopment Load (TP) (lb/yr)	1.35
Post-ReDevelopment Load (TN) (lb/yr)	9.63

Land Cover Summary Post-ReDevelopment New Impervious	
New Impervious Cover (acres)	0.00
Rv(impervious)	0.95
% Impervious	Check Area
Total New Dev. Site Area (acres)	0.00
New Dev. Site Rv	0.95
Post-Development Treatment Volume (acre-ft)	0.0000
Post-Development Treatment Volume (cubic feet)	0
Post-Development Load (TP) (lb/yr)	0.00

[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 requirement 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)	0.12
Total Load Reduction Required (lb/yr)	0.12

TP Load Reduction Required for New Impervious Area (lb/yr)	0.00

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

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	0.00	0.12	0.12	*16.90*
Impervious (acres)	0.00	0.00	0.00	0.59	0.59	*83.10*
					0.71	*100.00*

Site Rv	0.83
Post Development Treatment Volume (ft^3)	2144
Post Development TP Load (lb/yr)	1.35
Post Development TN Load (lb/yr)	9.63
Total TP Load Reduction Required (lb/yr)	0.12

Total Runoff Volume Reduction (ft^3)	0
Total TP Load Reduction Achieved (lb/yr)	0
Total TN Load Reduction Achieved (lb/yr)	0.00
Adjusted Post Development TP Load (lb/yr)	1.19
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)	0.12	0.00	0.00	0.00	0.00	*0.12*
Impervious (acres)	0.59	0.00	0.00	0.00	0.00	*0.59*
						0.71

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)	0.16	0.00	0.00	0.00	0.00	*0.16*
TN Load Red. (lb/yr)	0.00	0.00	0.00	0.00	0.00	*0.00*

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)	0.00	0.00	0.00	0.12	0.12	*16.90*
Impervious (acres)	0.00	0.00	0.00	0.59	0.59	*83.10*
					0.71	

BMP Selections

Practice	Credit Area (acres)		Downstream Practice
14. Insert Name of Device	**Impervious:**	**0.14**	
	Turf (Pervious):	**0.03**	

Total Impervious Cover Treated (acres)	0.14
Total Turf Area Treated (acres)	0.03
Total TP Load Reduction Achieved in D.A. A (lb/yr)	0.16
Total TN Load Reduction Achieved in D.A. A (lb/yr)	0.00

STORMWATER QUALITY NARRATIVE

THE BURKE STATION ROAD IMPROVEMENT IS LOCATED IN FAIRFAX VIRGINIA. THE LIMITS OF DISTURBANCE WERE DETERMINED TO BE 30,905 SF (0.71 ACRES). THE ROAD IMPROVEMENTS ARE BOUNDED BY MAIN STREET (RTE 236) AND STOUGHTEN ROAD. CURRENTLY THE SITE IS A PAVED ROAD WITH A ROADSIDE DITCH. THE SITE CONTAINS 4,753 SF (0.11 AC) OF MANAGED TURF AND 26,152 SF (0.60) OF IMPERVIOUS AREA. THE DEVELOPMENT WILL CONSIST OF INSTALLING CURB AND GUTTER AND A SIDEWALK ALONG THE WESTERM SIDE OF BURKE STATION ROAD. THE PROPOSED CONDITIONS WILL INCLUDE 5,100 SF (0.12 AC) OF MANAGED TURF AND 25,805 SF (0.59 AC) OF IMPERVIOUS AREA.
SINCE THE SITE WAS PREVIOUSLY DEVELOPED THE VIRGINIA RUNOFF REDUCTION METHOD FOR REDEVELOPMENT WILL BE USED TO ANALYZE THIS PROJECT.

USING THE VIRGINIA RUNOFF REDUCTION METHOD REDEVELOPMENT WORKSHEET–V2.8–JUNE 2014 THE REQUIRED TOTAL PHOSPHORUS LOAD REDUCTION WAS DETERMINED TO BE 0.12 LB/YEAR. IN ORDER TO SATISFY THIS REDUCTION REQUIREMENT A BAYFILTER, (A MANUFACTURED DEVICE) IS BEING PROPOSED AT STRUCTURE 19. THE DRAINAGE AREA TO THIS STRUCTURE IS 0.17 ACRES THAT IS LOCATED OUTSIDE THE LIMITS OF DISTURBANCE. CURRENTLY NO BMP DEVICES SERVE THIS AREA.

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VRRM SPREADSHEET
BURKE STATION ROAD
STREETSCAPE IMPROVEMENTS
CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
BRADLEY GLATFELTER
Lic. No. 50992
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PROFESSIONAL ENGINEER

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DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: N/A V: N/A

JOB No. 6916-01-002

DATE : JUNE 2015

FILE No. 6916-D-CP-002

SHEET 49 OF 63

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