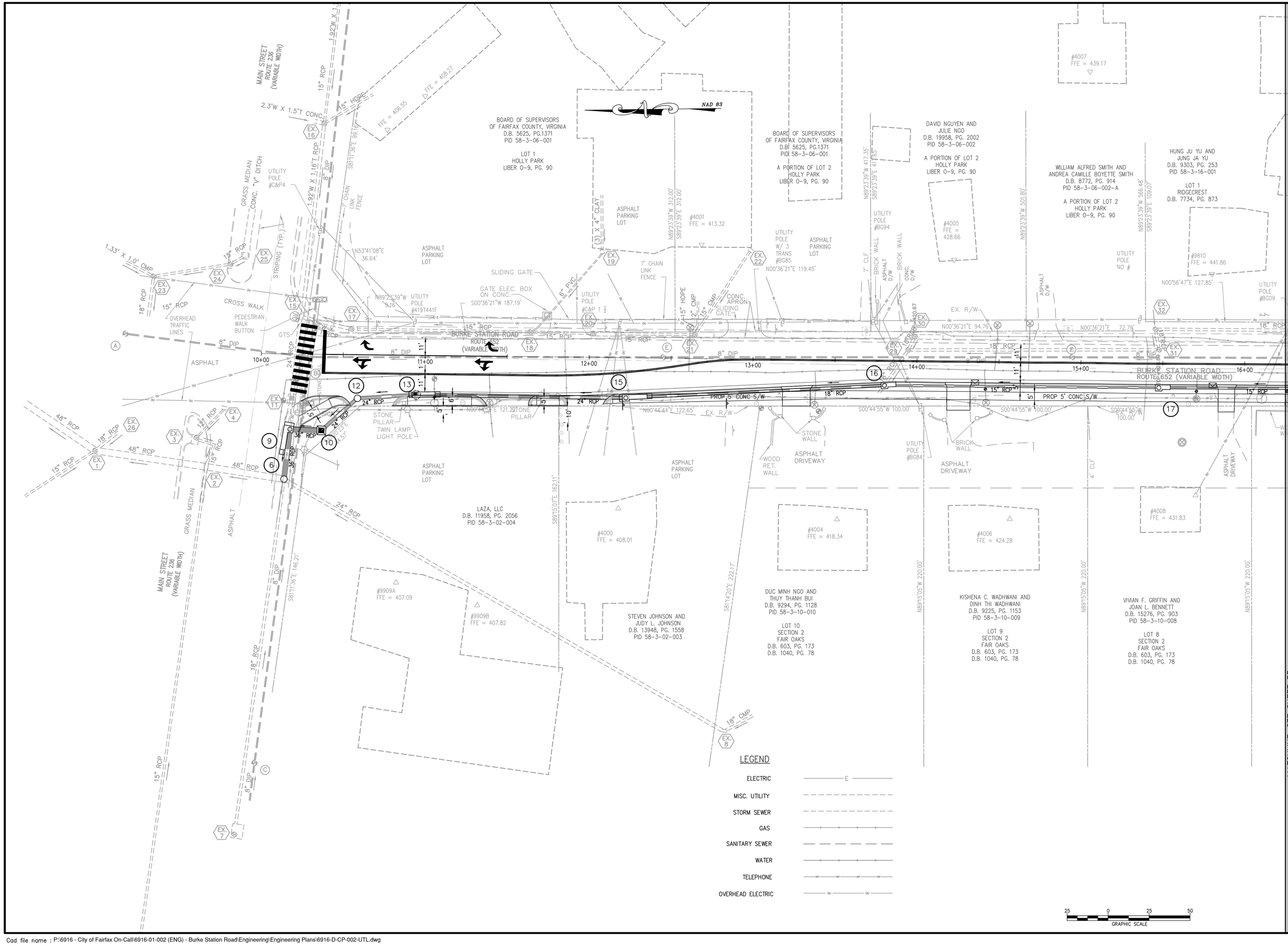

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UTILITY PLAN (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

VIRGINIA

CITY OF FAIRFAX

PROJECT NUMBER

PLAN STATUS	
DATE	DESCRIPTION

SB	SB	SD
DESIGN	DRAWN	CHKD

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

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 32 OF 59

ASSOCIATION, INC
D.B. 7734, PG. 873
PID 58-3-16-00A

PARCEL A
RIDGECREST
D.B. 7734, PG. 873

KIRKWOOD HOMEOWNERS
ASSOCIATION, INC.
D.B. 9681, PG. 640
PID UNKNOWN

NAD 83

R=225.00'
L=97.39'

CRESCENCE WAY
EX. 30' WIDE STREET
PRIVATELY OWNED AND MAINTAINED D.B. 7734 PG. 873

EX. EDGE OF PRIVATE STORM SEWER ESMT D.B. 7734, PG. 873

EX. 42' PRIVATE "E" ESMT. FOR MAINT. OF UTILITIES, CITY AND OTHER EMERG. VEHICLES. D.B. 7734 PG. 873

R=195.00'
L=32.61'

8" PVC

S89°23'39"E
26.69'

S03°06'21"W 65.18'

72" RCP

EX. H/C SANITARY SEWER ESMT. D.B. 7734, PG. 873

8" PVC

EX. 15' CITY OF FAIRFAX WATER ESMT. D.B. 7734 PG. 873

S89°23'39"E 62.24'

S89°23'39"E
35.07'

R=25.00'
L=39.42'

EX 35

EX 36

UTILITY POLE #BG09

CRESCENCE WAY
PRIVATELY OWNED AND MAINTAINED D.B. 7734 PG. 873

#9811
FFE = 448.31

TAN Q. NGUYEN AND
TRINH P. LIEU
D.B. 9680, PG. 569
PID 58-3-16-017

LOT 17
RIDGECREST
D.B. 7734, PG. 873

R=20.00'
L=39.12'

UTILITY POLE #C0516-BE95

N85°03'13"W 85.00'

N85°03'13"W 50.00'

KUNNADY PRAK AND
WEN-LIN DIANA PRAK
D.B. 9521, PG. 62
PID 58-3-16-018

LOT 18
RIDGECREST
D.B. 7734, PG. 873

#9809
FFE = 452.31

S78°21'16"E 35.00'

S89°03'13"E 71.00'

RIDGECREST HOMEOWNERS
ASSOCIATION, INC.
D.B. 7734, PG. 873
PID 58-3-16-000-B

PARCEL B
RIDGECREST
D.B. 7734, PG. 873

JEFFREY R. NEAL AND
KEVIN R. LOEFFLER
D.B. 10142, PG. 1512
PID 58-3-18-009

LOT 9
KIRKWOOD SUBDIVISION
D.B. 9681, PG. 553

KIRKWOOD HOMEOWNERS
ASSOCIATION, INC.
D.B. 9681, PG. 640
PID 58-3-18-00A

PARCEL A
KIRKWOOD SUBDIVISION
D.B. 9681, PG. 553

N00°56'47"E 91.00'

N00°56'47"E 75.15'

UTILITY POLE #C0516-BE82

UTILITY POLE #C0516-BF92

ELECTRIC METER ON POST

S89°17'42"E 477.14'

N89°17'42"W 80.00'

N89°17'42"W 477.00'

3' WOOD FENCE

S00°42'18"W 112.52'

EX. PUBLIC UTILITY ESMT D.B. 9681 PG. 553

#9810
FFE = 460.25

20' BRL D.B. 9681, PG. 553

EX. 5' S/W ESMT. D.B. 9681 PG. 553

N89°17'42"W 5.77'

N89°17'42"W 14.74'

8" PVC

KIRK TREE COURT
(EX. 50' PRIVATE STREET & CUL-DE-SAC D.B. 9681 PG. 553)

EX. 5' SIDEWALK ESMT D.B. 9681 PG. 553

R=105.00'
L=44.40'

R=75.00'
L=31.72'

R=35.00'
L=15.79'

R=35.00'
L=24.11'

S89°26'29"W
56.67'

S89°26'29"W
28.71'

THOMAS B. MORRISON AND
VALERIE P. MORRISON
D.B. 23613, PG. 896
PID 58-3-18-001

LOT 1
KIRKWOOD SUBDIVISION
D.B. 9681, PG. 555

20' BRL D.B. 9681, PG. 553

#9809
FFE = 457.44

KIRKWOOD HOMEOWNERS
ASSOCIATION, INC.
D.B. 9681, PG. 640
PID 58-3-18-00B

PARCEL B
KIRKWOOD SUBDIVISION
D.B. 9681, PG. 553

N89°17'42"W 98.00'

S89°17'42"E 125.00'

STEPHEN M. COLLINS AND
MARY ANNE SHREVE
D.B. 10155, PG. 1723
PID 58-3-1-001

LOT 1
STEPHENS ADDITION
TO HOLLY PARK
D.B. 6809, PG. 817

50' BRL D.B. 6809, PG. 817

UTILITY POLE #C0516-BE98

N00°42'18"E 76.88'

3' WOOD FENCE

N89°17'42"W
33.00'

EX. STORM SEWER ESMT.
D.B. 6809 PG. 817

N00°42'18"E 176.20'

S00°42'42"W
56.90'

R=35.00'
L=10.29'

S00°42'42"W 60.38'

S00°42'42"W 108.92'

N00°56'47"E 80.00'

N00°56'47"E 88.00'R/W

18" RCP

15" RCP

8" DIP

8" DIP

8" DIP

8" DIP

4" DIP

4" DIP

TOP=437.83

TOP=440.83

TOP=450.82

TOP=452.89

BURKE STATION ROAD
ROUTE 652
(VARIABLE WIDTH)

17+00

18+00

19+00

20+00

20+99

PROP 5' CONC S/W

EX. R/W

S00°44'55"W 100.00'

N00°44'55"E 95.00'

N00°44'55"E 100.00'

4' CLF

R=25.00'
L=39.27'

WOOD RET. WALL

GRAVEL DRIVEWAY

WOOD RET. WALL

3.5' SPLIT RAIL FENCE

TIMBERS

3.5' SPLIT RAIL FENCE

WOOD RET. WALL

ASPHALT DRIVEWAY

UTILITY POLE #B684

CONC. DRIVEWAY

3.5' WOOD FENCE

BRICK PILLARS

ASPHALT DRIVEWAY

UTILITY POLE #C0516-BE88

50' BRL D.B. 1040, PG. 78

#4010
FFE = 436.41

#4012
FFE = 439.86

#4014
FFE = 445.99

#4016
FFE = 448.79

#9900
FFE = 452.78

#9901
FFE = 459.11

N89°15'05"W 220.00'

N89°15'05"W 220.00'

N89°15'05"W 220.00'

N89°15'05"W 220.00'

S89°15'05"E 195.00'

N89°15'05"W 195.00'

S89°15'05"E 220.00'

WIGBERT I. KREIDL AND
ADOLPHINE KREIDL, TRUSTEES
OF THE KREIDL JOINT
REVOCABLE LIVING TRUST
D.B. 21028, PG. 1413
PID 58-3-10-007

LOT 7
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

KAREN BISSET
D.B. 23376, PG. 206
PID 58-3-10-006

LOT 6
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

KEVIN A. MITTLER AND
ROBIN M. MITTLER
D.B. 20972, PG. 1464
PID 58-3-10-005

LOT 5
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

JOSE VASQUEZ AND
MARGARITA VASQUEZ
D.B. 17732, PG. 962
PID 58-3-10-004

LOT 4
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

DAVID G. ALGIE AND
TERESA C. ALGIE
D.B. 8975, PG. 279
PID 58-3-10-003

LOT 3
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

STOUGHTON ROAD
(50' RIGHT-OF-WAY)

SOHELA SHARIFI AND
FARAH SHARIFI
D.B. 9503, PG. 1144
PID 58-3-10-002

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

HIEN T. HUYNH
D.B. 20745, PG. 2025
PID 58-3-10-001

LOT 1
SECTION 2
FAIR OAKS
D.B. 603, PG. 173
D.B. 1040, PG. 78

MATCHLINE-SEE SHEET 32

LEGEND

ELECTRIC — E —
MISC. UTILITY
STORM SEWER
GAS
SANITARY SEWER
WATER
TELEPHONE
OVERHEAD ELECTRIC — OU —

25 0 25 50
GRAPHIC SCALE

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UTILITY PLAN (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS	
DATE	DESCRIPTION

SB	SB	SD
DESIGN	DRAWN	CHKD

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

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 33 OF 59

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

TO EX STR 15
DA=0.35 AC
C=0.70

TO EX STR 17
DA=3.72 AC
C=0.50

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 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=0.40 AC
C=0.85

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 EX STR 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

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=2.60 AC
C=0.55

TO EX STR 8
DA=22.73 AC
C=0.50

MAIN STREET
ROUTE 236
(VARIABLE WIDTH)

BURKE STATION ROAD
ROUTE 652
(VARIABLE WIDTH)

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 58-3-061-001

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

N AND
JULIE NOO
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 2
SECREST
D.B. 7734, PG. 873

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

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

#4007 FFE = 439.17
#4001 FFE = 413.32
#4005 FFE = 436
#9810 FFE = 441.86
#4000 FFE = 438.01
#4004 FFE = 434
#4006 FFE = 424.28
#4008 FFE = 431.83
#9909A FFE = 407.09
#9909B FFE = 407.82

MATCHLINE-SEE SHEET 41

LEGEND

EX. XX — EXISTING STORM STRUCTURE

DRAINAGE DIVIDE

NAD 83

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

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EXISTING DRAINAGE DIVIDE PLAN (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS	
DATE	DESCRIPTION

SB	SB	SD
DESIGN	DRAWN	CHKD

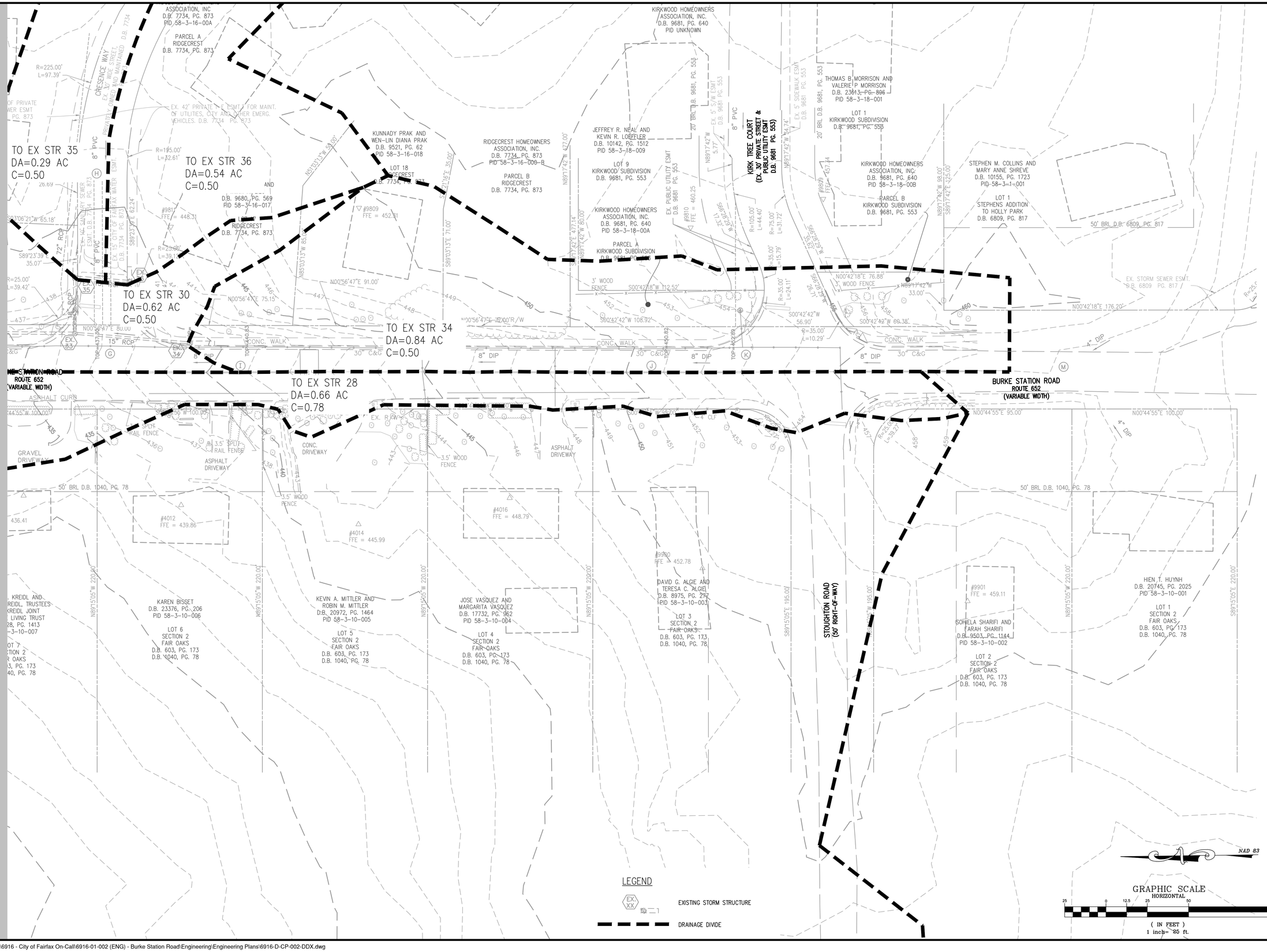
SCALE H: 1"=25' V: N/A

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 40 OF 59



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EXISTING DRAINAGE DIVIDE PLAN (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

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

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 41 OF 59

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

TO EX STR 15
DA=0.35 AC
C=0.70

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 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 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 NOO
D.B. 19958, PG. 2002
PID 58-3-06-002

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

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D.B. 8772, PG. 914
PID 58-3-06-002-A

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JUNG JA YU
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PID 58-3-16-001

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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. 9295, 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

BURKE STATION ROAD
ROUTE 6552
(VARIABLE WIDTH)

MAIN STREET
ROUTE 236
(VARIABLE WIDTH)

#4001 FFE = 413.32
#4005 FFE = 439.66
#4007 FFE = 439.17
#9810 FFE = 441.86
#4000 FFE = 408.01
#4004 FFE = 424.14
#4006 FFE = 424.28
#4008 FFE = 431.83
#9909A FFE = 407.09
#9909B FFE = 407.82

MATCHLINE-SEE SHEET 43

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.

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DRAINAGE DIVIDE PLAN (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS

DATE	DESCRIPTION

SB	SB	SD
DESIGN	DRAWN	CHKD

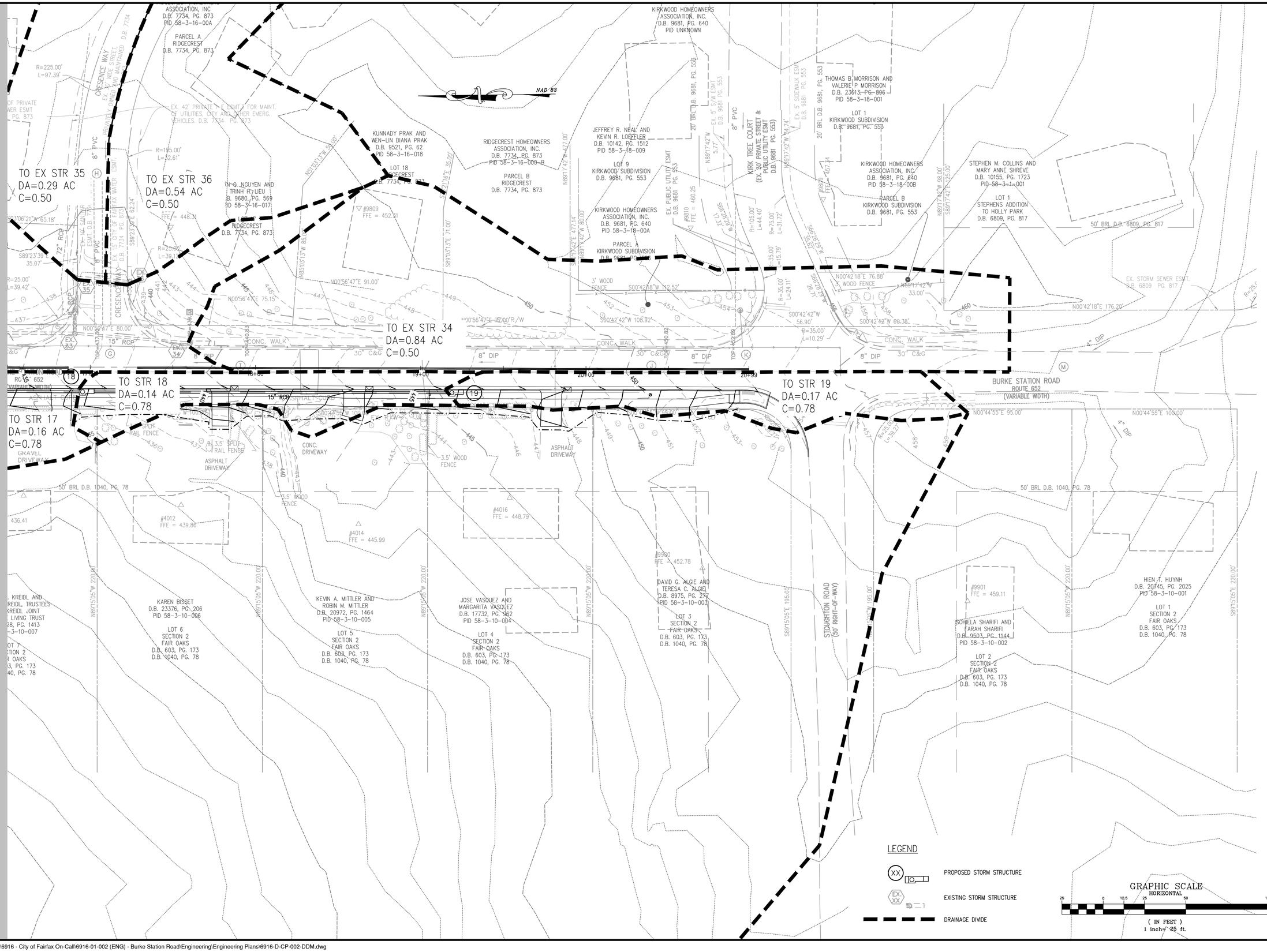
SCALE H: 1"=25'
V: N/A

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 42 OF 59



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DRAINAGE DIVIDE PLAN (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS	
DATE	DESCRIPTION

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

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 43 OF 59

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

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	0.400	0.85	0.34	7.44	5	7.27	54.12	396.90	396.36	26.16	0.0206	0.013	24	32.51	166.44	10.35	3	399.90	Add Flow From Ex 15
Ex 9	Ex 6	0.230	0.90	0.21	9.08	10	5.92	53.76	396.01	395.52	23.87	0.0205	0.013	24	32.42	165.79	10.32	2	400.71	Add Flow From Ex 10
Ex 6	Ex 2	0.000	0.90	0.00	23.93	10	5.92	141.64	394.02	392.60	47.96	0.0296	0.013	48	247.83	57.15	19.72	2	401.02	Add Flow From Ex 8 and Ex 7
Ex 2	Ex 1	0.030	0.85	0.03	24.51	10	5.92	145.09	392.30	387.18	68.65	0.0746	0.013	48	393.34	36.89	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	2.600	0.55	1.43	1.43	10	5.92	8.47	396.97	396.81	7.32	0.0219	0.013	12	5.26	161.03	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

PLAN STATUS

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: N/A V: N/A

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 44 OF 59

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	439.50	431.05	223.46	0.0378	0.013	15	12.55	7.68	10.22	22	445.78	
18	17	0.140	0.78	0.11	0.24	5	7.27	1.76	430.85	423.83	147.78	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	413.68	167.34	0.0595	0.013	15	15.73	16.94	12.82	13	429.07	
16	15	0.180	0.78	0.14	3.88	5	7.27	28.18	413.48	403.62	157.95	0.0624	0.013	18	26.23	107.43	14.84	11	419.41	Add from from Ex 29
15	13	0.080	0.90	0.07	3.95	5	7.27	28.70	403.12	396.57	128.52	0.0510	0.013	24	51.09	56.18	16.26	8	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	20.07	0.0100	0.013	36	66.70	63.33	9.44	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	393.10	392.60	47.96	0.0104	0.013	48	147.06	96.54	11.70	4	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.

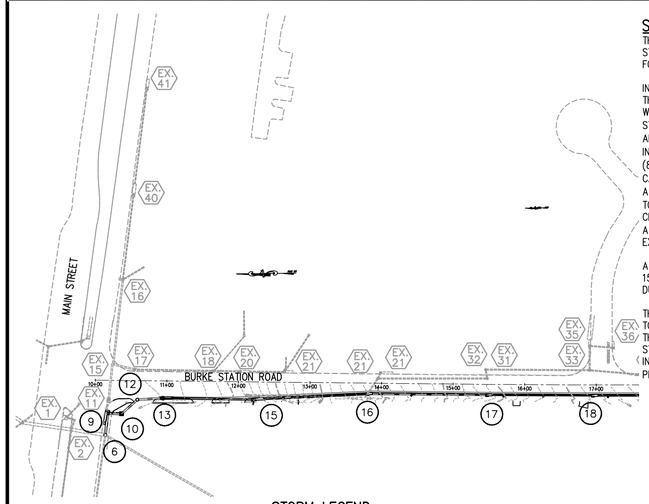
NOTE: ALL INLETS TO EMPLOY IS-1 INLET SHAPING

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-3B	8	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	0.84	0.96	1.697	0.06	
15	DI-3B	8	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	0.75	0.92	0.201	0.02	
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 44 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 SEWER ARE SIZED TO ACCOMMODATE THE RUNOFF RECEIVED. DRAINAGE PROBLEMS DUE TO INADEQUATE PIPE SIZES HAVE BEEN ALLIEVIATED 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	11.6885	1659.3041	2.12146	0.74251	0	0	0	4.54685	---	2.2734	393.36	393.36	399.90
6	395.80	48	141.96	47.96	0.97701	0.46857	11.6885	0.53036	66.41	9.49938	630.85354	1.40121	0.49042	92	0.7	0.98085	2.00164	---	1.0008	397.27	397.27	401.00
9	397.27	36	66.41	30.7	0.99168	0.30445	9.49938	0.3503	42.23	9.45223	399.16776	1.38734	0.48557	85	0.68	0.94339	1.77926	---	0.8896	398.46	398.46	400.08
10	398.46	36	42.23	20.07	0.401	0.08048	9.45223	0.34683	31.84	7.27534	231.64684	0.8219	0.28767	43	0.451	0.37068	1.00518	1.3067	---	399.85	399.85	400.64
12	399.85	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	400.85	400.85	401.50
13	400.85	24	31.84	35.28	1.98155	0.69909	7.27534	0.20548	28.7	16.2682	466.89607	4.10952	1.43833	4	0.048	0.19726	1.84106	---	0.9205	402.47	402.47	401.65
15	402.47	24	28.7	128.52	1.60999	2.06915	16.2682	1.02738	28.18	14.8401	418.19377	3.41969	1.19689	3	0.036	0.12311	2.34738	---	1.1737	405.71	405.71	406.51
16	405.71	18	28.18	157.95	7.19914	11.371	14.8401	0.85492	2.67	12.8248	34.242273	2.55398	0.89389	0	0	0	1.74882	---	0.8744	417.96	417.96	419.41
17	417.96	15	2.67	167.34	0.17089	0.28597	12.8248	0.63849	1.76	11.4588	20.167512	2.03889	0.71361	0	0	0	1.3521	1.7577	---	420.00	420.00	429.07
18	424.83	15	1.76	147.78	0.07425	0.10973	11.4588	0.50972	0.96	10.2221	9.8131848	1.62253	0.56788	0	0	0	1.07761	1.4009	---	426.34	426.34	436.85
19	432.05	15	0.96	223.46	0.02209	0.04937	10.2221	0.40563	0	0	0	0	0	0	0	0	0.40563	0.5273	---	432.63	432.63	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	398.46	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	399.00	399.00	399.90
Ex 15	399.00	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	399.63	399.63	401.04
Ex 16	399.63	18	3.31	118.62	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	400.37	400.37	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	399.63	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	---	402.03	402.03	401.04
Ex 18	402.03	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	---	403.46	403.46	404.10
Ex 20	403.46	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	403.90	403.90	406.39
Ex 21	403.90	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	---	406.78	406.78	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	403.46	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	---	405.08	405.08	405.64
Ex 30	420.37	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	---	420.90	420.90	420.65
Ex 29	417.96	18	24.49	26.07	5.43721	1.41748	8.2318	0.26305	22.24	10.2726	228.46236	1.6386	0.57351	100	0.7	1.14702	1.98359	---	0.9918	420.37	420.37	429.24
Ex 31	418.23	18	22.24	152.99	4.48402	6.86011	10.2726	0.40965	22.24	13.337	296.61583	2.76206	0.96672	4	0.048	0.13258	1.50895	---	0.7545	425.84	425.84	436.36
Ex 32	425.84	18	22.24	12.69	4.48402	0.56902	13.337	0.69052	20.61	10.5939	218.34127	1.74273	0.60996	100	0.7	1.21991	2.52038	---	1.2602	427.67	427.67	429.24
Ex 33	426.34	18	20.61	145.16	3.85083	5.58987	10.5939	0.43568	3.05	7.07927	21.591772	0.7782	0.27237	4	0.048	0.03735	0.74541	0.969	---	432.90	432.90	436.36
Ex 34	432.90	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	---	433.21	433.21	439.55
Ex 35	432.90	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	434.33	434.33	438.27
Ex 36	434.33	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	---	434.51	434.51	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 50 K=0.50 20 K=0.25
80 K=0.66 40 K=0.43 15 K=0.19
70 K=0.61 30 K=0.35 10K = 0.13
60 K=0.56 25 K=0.30 5K = 0.06

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PROPOSED STORM DRAIN COMPUTATIONS

BURKE STATION ROAD
STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

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

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 45 OF 59

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

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 (ft³)	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 (ft³)	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 LITTLE RIVER TURNPIKE (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.

Bowman

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VRRM SPREADSHEET

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS

DATE	DESCRIPTION

SB DESIGN	SB DRAWN	SD CHKD

SCALE H: N/A V: N/A

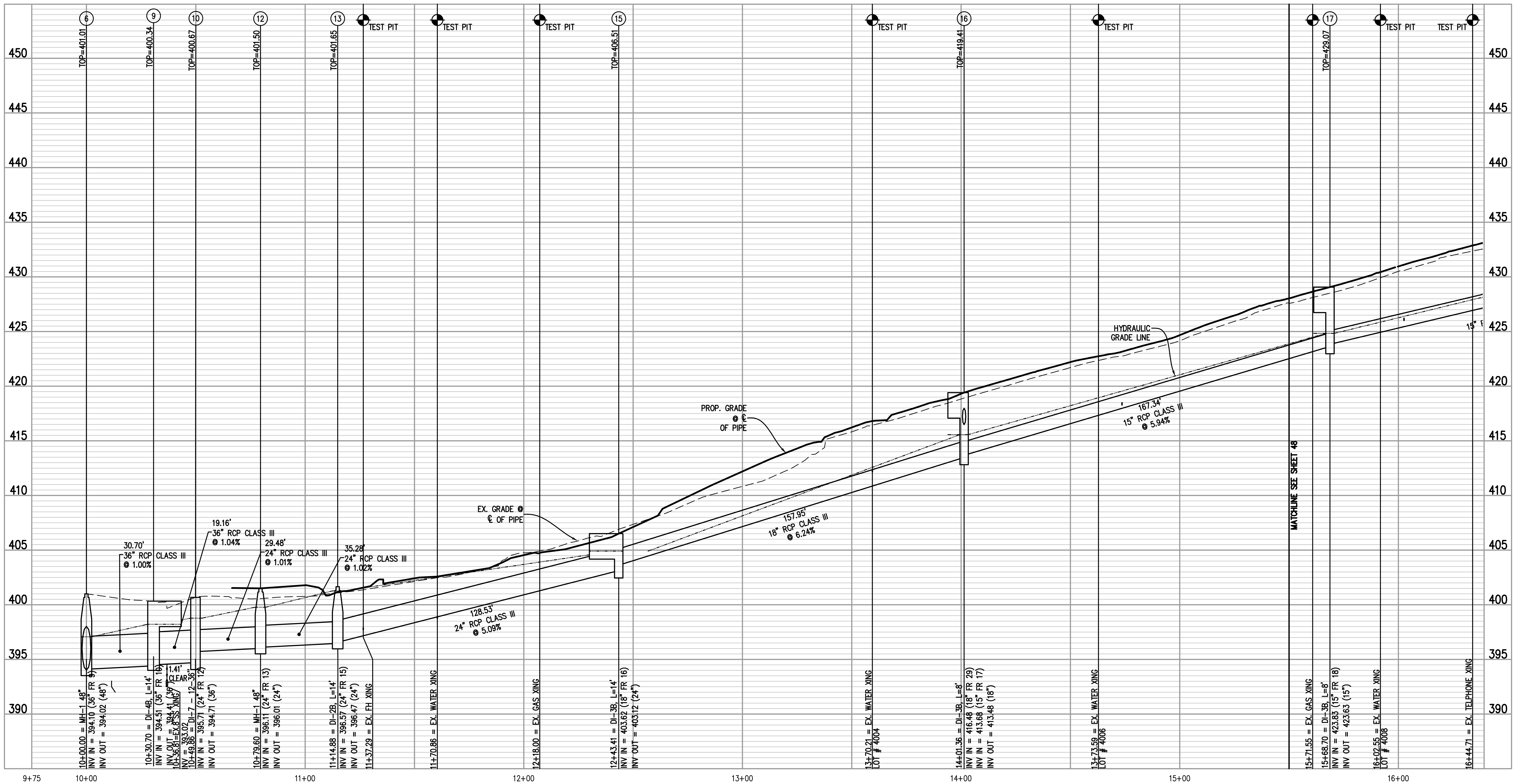
JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 46 OF 59

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



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STORM DRAIN PROFILES (1 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS

DATE	DESCRIPTION

SB	SB	SD
DESIGN	DRAWN	CHKD

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

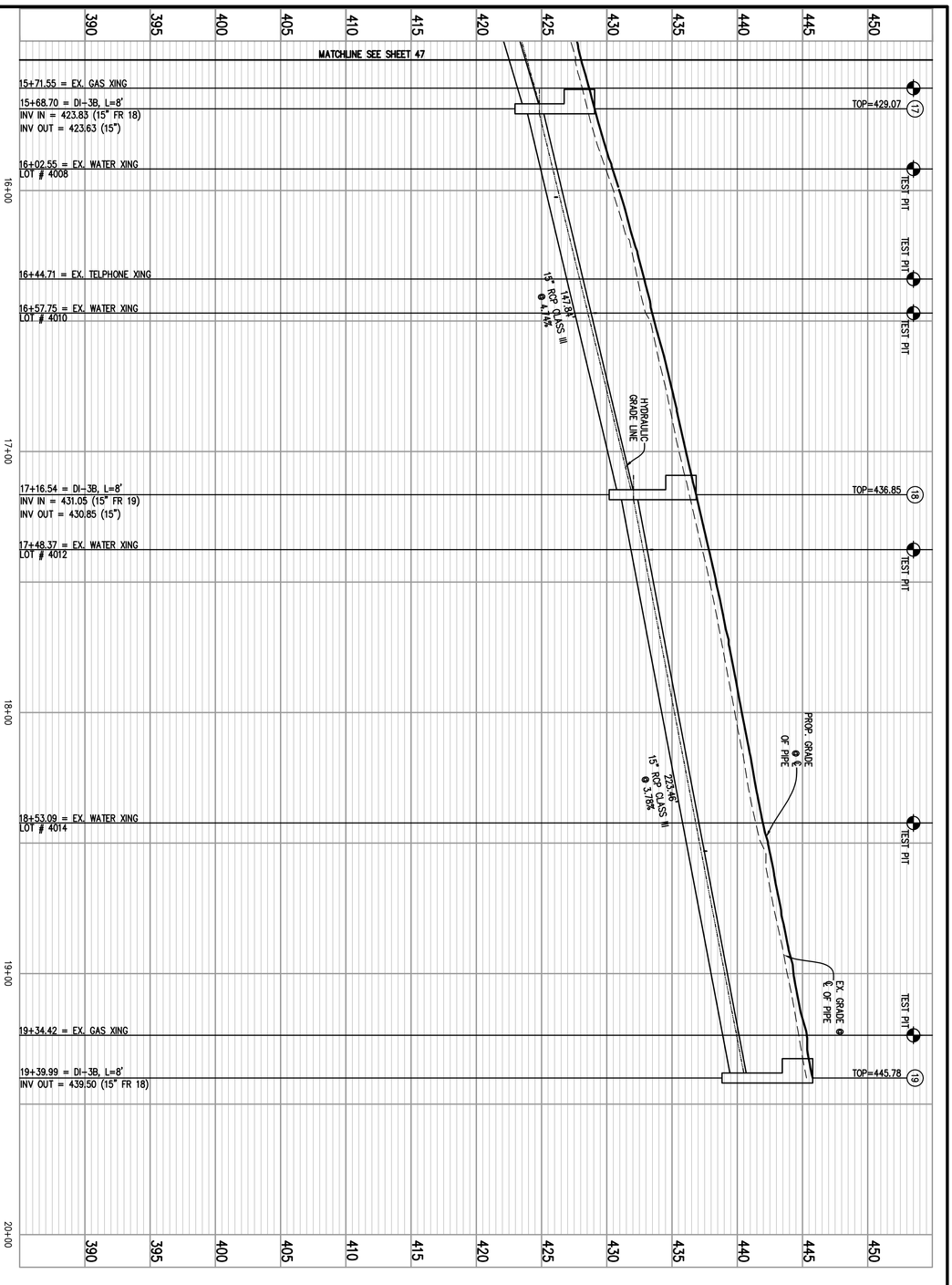
JOB No. 6916-01-002

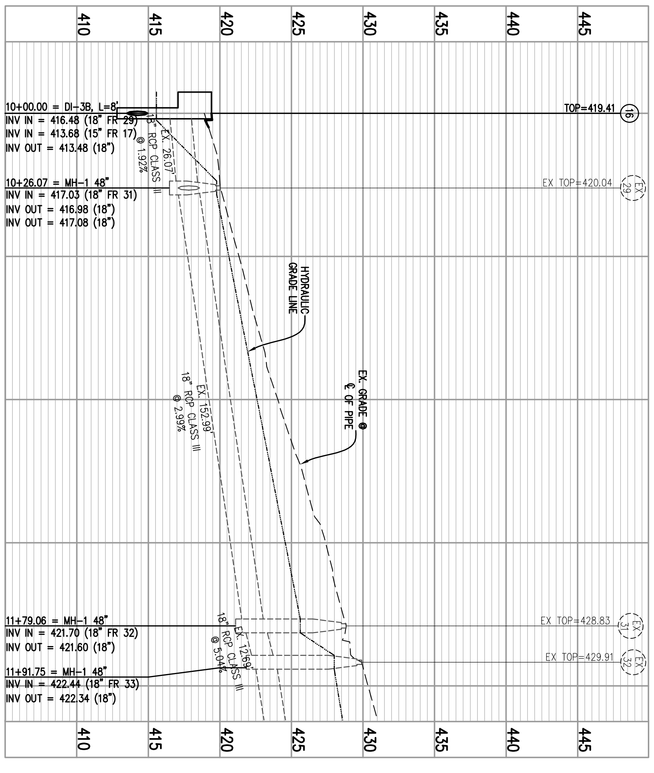
DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

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-SDP.dwg





STORM DRAIN PROFILES (2 OF 2)

BURKE STATION ROAD STREETSCAPE IMPROVEMENTS

CITY OF FAIRFAX VIRGINIA

PROJECT NUMBER

PLAN STATUS

DATE	DESCRIPTION

DESIGN SB DRAWN SB CHKD SD

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

JOB No. 6916-01-002

DATE : DECEMBER, 2014

FILE No. 6916-D-MP-002

SHEET 48 OF 59

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