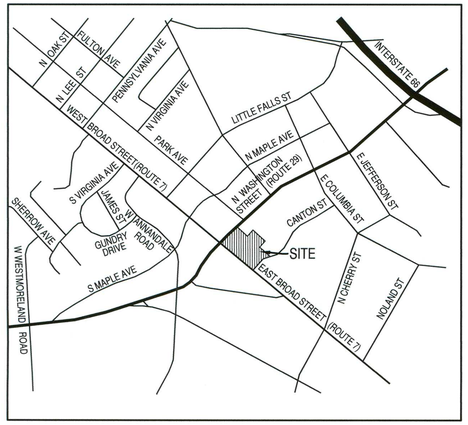
BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

REZONING/SPECIAL EXCEPTION AND CONCEPTUAL DEVELOPMENT PLAN

MUNIS #2015-XX



VICINITY MAP
1"=1000'

SHEET INDEX

C1.0	COVER SHEET
C2.0	NOTES AND SITE TABULATIONS
C3.0	EXISTING CONDITIONS PLAN
C4.0	CONCEPTUAL DEVELOPMENT PLAN
C5.0	CONCEPTUAL LANDSCAPE PLAN
C6.0	CONCEPTUAL STREETSCAPE PLAN EAST BROAD STREET
C7.0	CONCEPTUAL STREETSCAPE PLAN LAWTON STREET AND N. WASHINGTON STREET
C8.0	ROADWAY FRONTAGE EXHIBIT
C9.0	CONCEPTUAL PARKING PLANS
C10.0	LANDSCAPE SCHEDULE, NOTES AND DETAILS
C11.0	EXISTING VEGETATIVE MAP
C12.0	EXISTING TREE INVENTORY
C13.0	CONCEPTUAL SWM AND BMP PLAN AND DRAINAGE MAP
C14.0	CONCEPTUAL SWM AND BMP NOTES AND DETAILS
14	TOTAL SHEETS

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COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6-30-15
LANDSCAPE ARCHITECT

JUNE 30, 2015
SHEET C1.0

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GENERAL NOTES:

1. THE SUBJECT PROPERTIES SHOWN HEREON ARE CURRENTLY LISTED WITHIN THE CITY OF FALLS CHURCH TAX ASSESSMENT RECORDS AS FOLLOWS:

PARCEL I.D.	ADDRESS	OWNER	DEED BOOK/PAGE	EXISTING ZONE:
53-104-051	100 N. WASHINGTON ST	BROAD & WASHINGTON, LLC	4816/936	B-2 (CENTRAL BUSINESS)
53-104-036	127 E. BROAD ST	BROAD & WASHINGTON, LLC.	4816/936	B-2 (CENTRAL BUSINESS)
53-104-050	131 E. BROAD ST	BROAD & WASHINGTON, LLC	4816/936	T-1 (TRANSITIONAL)
53-104-015	N/A	CITY OF FALLS CHURCH	1261/0269	B-2 (CENTRAL BUSINESS)

2. THE APPLICATION PROPERTY IS CURRENTLY ZONED B-2 (CENTRAL BUSINESS) AND T-1 (TRANSITIONAL) ZONING DISTRICT. THIS APPLICATION INCLUDES A REZONING OF THE T-1 DESIGNATED PARCEL TO A PROPOSED B-2 DESIGNATION, AND A SPECIAL EXCEPTION IN ORDER TO DEVELOP THE SUBJECT SITE AS A MIXED USE DEVELOPMENT.

3. THE SUBJECT PROPERTY LIES WITHIN AN AREA DESIGNATED AS "BUSINESS AND TRANSITIONAL" ON THE FUTURE LAND USE PLAN MAP OF THE CITY OF FALLS CHURCH COMPREHENSIVE PLAN.

4. THE SUBJECT PROPERTY IS CURRENTLY SERVED BY FAIRFAX WATER AND CITY OF FALLS CHURCH SANITARY SEWER AND STORM SEWER UTILITIES.

5. BOUNDARY INFORMATION AS SHOWN HEREON IS COMPILED FROM EXISTING LAND RECORDS OF ARLINGTON COUNTY, VIRGINIA AND FAIRFAX COUNTY, VIRGINIA AND A FIELD SURVEY PERFORMED BY BOWMAN CONSULTING GROUP, LTD. DATED SEPTEMBER 17, 2014.

6. THE HORIZONTAL AND VERTICAL DATUM'S AS REFERENCED HEREON WERE ESTABLISHED BY STATIC GPS CONTROL METHODS. THE HORIZONTAL DATUM IS REFERENCED TO VIRGINIA COORDINATE SYSTEM OF 1983 (VCS 83), NORTH ZONE AND IS REFERENCED IN U.S. SURVEY FEET AND THE VERTICAL DATUM IS REFERENCED TO NGVD 83 AND WAS ESTABLISHED BY GPS METHODS.

7. THE TOPOGRAPHICAL FEATURES AS SHOWN HEREON WERE COMPILED FROM CONVENTIONAL SURVEY METHODS.

8. UNDERGROUND UTILITIES SHOWN HEREON ON BASED ON VISUAL OBSERVATION AND HAVE NOT BEEN SPECIFICALLY CONFIRMED.

9. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO UTILITY EASEMENTS HAVING A WIDTH OF TWENTY-FIVE (25) OR GREATER LOCATED WITHIN THE SUBJECT PROPERTY.

10. THERE ARE NO AREAS OF SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PROTECTION OR PRESERVATION ON THE SITE.

11. THERE IS NO FLOODPLAIN WITHIN THE SUBJECT PROPERTY AS DESIGNATED BY THE FEDERAL INSURANCE ADMINISTRATION AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP FOR CITY OF FALLS CHURCH, VIRGINIA, COMMUNITY-PANEL NUMBER 5100540001C, EFFECTIVE DATE JULY 16, 2004. THERE ARE NO RESOURCE PROTECTION AREAS (RPA) OR ENVIRONMENTAL QUALITY CORRIDOR (EQC) WITHIN THE SUBJECT PROPERTY INDICATED ON CITY OF FALL SCHURCH GIS DATA.

12. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ARE PROPOSED WITH THIS APPLICATION AND CONCEPTUAL DESIGN COMPUTATIONS ARE DEMONSTRATED HEREIN. FINAL DESIGN OF SWM/BMP FACILITIES WILL BE PROVIDED AT THE TIE OF FINAL SITE PLAN APPLICATION.

13. THIS SITE SHALL BE DEVELOPED IN ONE PHASE SUBJECT TO REQUIRED PLAN APPROVALS AND PERMIT ISSUANCE.

REZONING NOTES:

THE PURPOSE OF THIS REZONING IS TO REZONE THE PARCEL IDENTIFIED AS 53-104-050 FROM THE T-1(TRANSITIONAL) ZONING DISTRICT TO THE B-2(CENTRAL BUSINESS) ZONING DISTRICT.

SPECIAL EXCEPTION NOTES:

Z.O. SECTION 48-90 (GENERAL REQUIREMENTS) & SECTION 48-488 (B-2 DISTRICT REQUIREMENTS)

1. THE PURPOSE OF THIS SPECIAL EXCEPTION APPLICATION IS TO:
   - A. ALLOW FOR RESIDENTIAL USE WITHIN A MIXED-USE REDEVELOPMENT WITHIN THE B-2 ZONING DISTRICT.
   - B. ALLOW FOR ADDITIONAL BUILDING HEIGHT (OF APPROXIMATELY 10 FT)

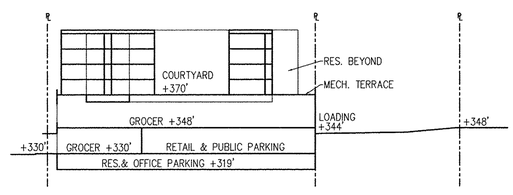
WAIVER / MODIFICATION REQUESTS:

Z.O. SECTION 48-971(2)-PARKING

MODIFICATION OF THE REQUIRED PARKING (907) TO THOSE PROVIDED (XXX SPACES) AS DEMONSTRATED IN THE PARKING STUDY, TRAFFIC REDUCTION PLAN AND TRAFFIC DEMAND MANAGEMENT PLAN AS SHOWN HEREIN.

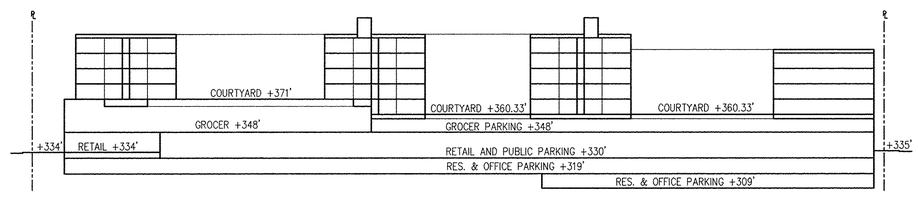
Z.O. SECTION 48-1181: PERIMETER PARKING LOT LANDSCAPING and 48-1182(b): 5% INTERIOR PARKING LOT LANDSCAPING

WAIVER TO ELIMINATE REQUIRED PERIMETER PARKING LOT LANDSCAPING AND FIVE PERCENT INTERIOR PARKING LOT LANDSCAPING, AS ALL PARKING IS ENCLOSED IN AN OFF-STREET PARKING GARAGE STRUCTURE.



CROSS SECTION NORTH-SOUTH EXHIBIT

SCALE: 1" = 50'



CROSS SECTION EAST-WEST EXHIBIT

SCALE: 1" = 50'

SITE TABULATIONS:

Current Zoning:	B-2(Central Business)/T-1(Transitional)	
Proposed Zoning:	B-2 (Business)	
Total Site Area:	3.16 AC (per Field Survey)	
Proposed Use:	Mixed-Use (Residential/Retail/Office)	
FLOOR AREA		
Proposed GFA		
Grocery / Mezzanine / Other Retail	70,250 GFA (1)	
Office	36,000 GFA (1)	
Residential Lobby	3,900 GFA (1)	
Residential Levels	305,700 GFA (1)	
Total Gross Floor Area	415,850 GFA (1)	
FLOOR AREA RATIO (F.A.R.)		
Minimum F.A.R.:	None	
Maximum F.A.R.:	None	
Proposed F.A.R.:	3.02 (2)(3)	
Density		
Total Proposed Dwelling Units:	324 D.U.	
Proposed Residential Density:	103 DU/AC	
Maximum Building Height Allowed:	115 FT W/ Bonus	
	(75 FT By-Right + 40 FT By S.E.)	
Proposed Building Height: (measured from average grade)	±85.0 FT	
Open Space (%):	**REQUIRED** N/A	**PROVIDED** ±5% (Common)

YARD REQUIREMENTS:

	REQUIRED	PROVIDED
Minimum Front Yard Setback E. Broad Street	20 FT	20 FT
Minimum Front Yard Setback N. Washington Street	20 FT	20 FT
Minimum Front Yard Setback Lawton Street	14 FT	14 FT
Minimum Front Yard Setback Park Place	14 FT	14 FT
Minimum Side/Rear Yard Setback:	20 FT (Adjacent 'R' District) 0 FT (Adjacent B-2 District)	20 FT 0 FT

PARKING TABULATIONS:

	REQUIRED	PROVIDED
Parking Retail:		
Shopping Center (1 Space/200 SF @ 70,250 SF Grocery/General Retail)	352 Spaces	304 Spaces
Parking Office: (Business-General) (1 Space/250 SF @ 36,000 SF))	144 Spaces	363 Spaces
Parking Multi-Family Residential:		
Studio/Efficiency Unit (1 Space/ D.U. @ 61 DU)	506 Spaces	
One Bedroom Unit (1.5 Space/ D.U. @ 162 DU)		
Two-Three Bedroom Unit (2 Space/ D.U. @ 101 DU)		
TOTAL PARKING:	1002 Spaces	667 Spaces (4)(5)

LOADING TABULATIONS:

	REQUIRED	PROVIDED
Grocery/General Merchandise	2 Spaces	3 Spaces
Office	1 Space	1 Space
Residential Multi-Family	0 Space	1 Space

(1) Gross Floor Area (GFA) reported per code definition.

(2) F.A.R does not include area of structured parking.

(3) F.A.R. is based on current site area prior to dedication/vacation of road frontage.

(4) Final provided parking quantity for the residential, retail, and office uses is subject to change with final dwelling unit count and mix, and final retail/office GFA as determined at final site plan and final parking reduction plan, by the City Planning Commission under Section 48-971(2) of the city code.

(5) Refer to conceptual parking plan herein, and parking reduction plan under separate cover, for layout and proposed distribution of parking spaces.

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NOTES AND SITE TABULATIONS

BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6.30.15
LANDSCAPE ARCHITECT

PLAN STATUS	
DATE	DESCRIPTION

MT	KF	MT
DESIGN	DRAWN	CHKD

SCALE H: N/A V:

JOB No. 8366-01-001

DATE : June 2015

FILE No. 8366-D-RZ-001

SHEET C2.0

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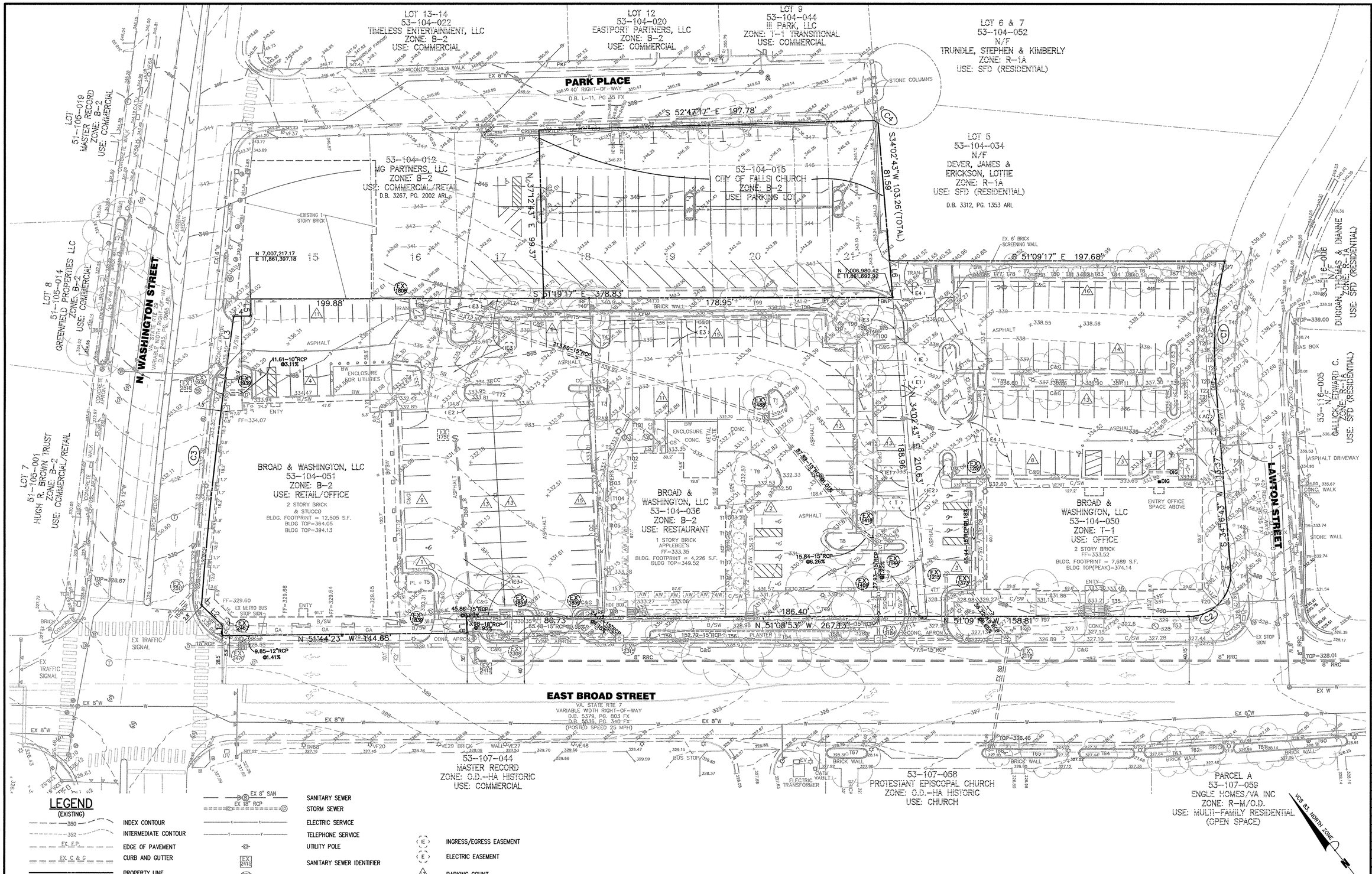

LEGEND

(EXISTING)

- 350 — INDEX CONTOUR
- 352 — INTERMEDIATE CONTOUR
- EX. E.P. — EDGE OF PAVEMENT
- EX. C & G — CURB AND GUTTER
- PROPERTY LINE
- RIGHT-OF-WAY
- CENTERLINE
- FENCE LINE
- EASEMENT
- 8" W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY
- EX 8" SAN — SANITARY SEWER
- EX 18" RCP — STORM SEWER
- ELECTRIC SERVICE
- TELEPHONE SERVICE
- UTILITY POLE
- EX 2415 — SANITARY SEWER IDENTIFIER
- EX 2315 — STORM DRAIN IDENTIFIER
- PARKING COUNT
- GAS VALVE
- TELECOM MANHOLE
- LIGHT POLE
- FIRE HYDRANT
- WATER VALVE
- TREE/TREELINE
- (IE) — INGRESS/EGRESS EASEMENT
- (E) — ELECTRIC EASEMENT

NOTE:
1. REFER TO SHEET X FOR EXISTING TREE INVENTORY LIST.

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 39°23'24" E	6.19'
L2	N 07°25'46" W	16.88'
L3	N 46°29'04" E	37.13'
L4	S 51°35'29" E	9.99'
L5	N 38°24'08" E	9.96'
L6	N 34°02'43" E	21.67'
L7	S 34°02'43" W	0.13'
L8	S 35°45'56" W	10.02'

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	224.41'	70.25'	S 43°14'50" W	69.97'	17°56'14"	35.42'
C2	25.00'	41.26'	S 81°33'43" W	36.74'	94°34'00"	27.08'
C3	2252.83'	134.69'	N 44°45'46" E	134.67'	3°25'52"	67.37'
C4	25.00'	2.76'	S 19°05'05" E	2.76'	6°20'00"	1.38'

GRAPHIC SCALE

25 0 12.5 25 50 100

(IN FEET)
1 inch = 25 ft.

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EXISTING CONDITIONS PLAN

BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
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Lic. No. 000832
6-30-15
LANDSCAPE ARCHITECT

PLAN STATUS

DATE	DESCRIPTION

MT DESIGN	KF DRAWN	MT CHKD
SCALE	H: 1" = 25' V:	
JOB No. 8366-01-001		
DATE : June 2015		
FILE No. 8366-D-RZ-001		
SHEET C3.0		

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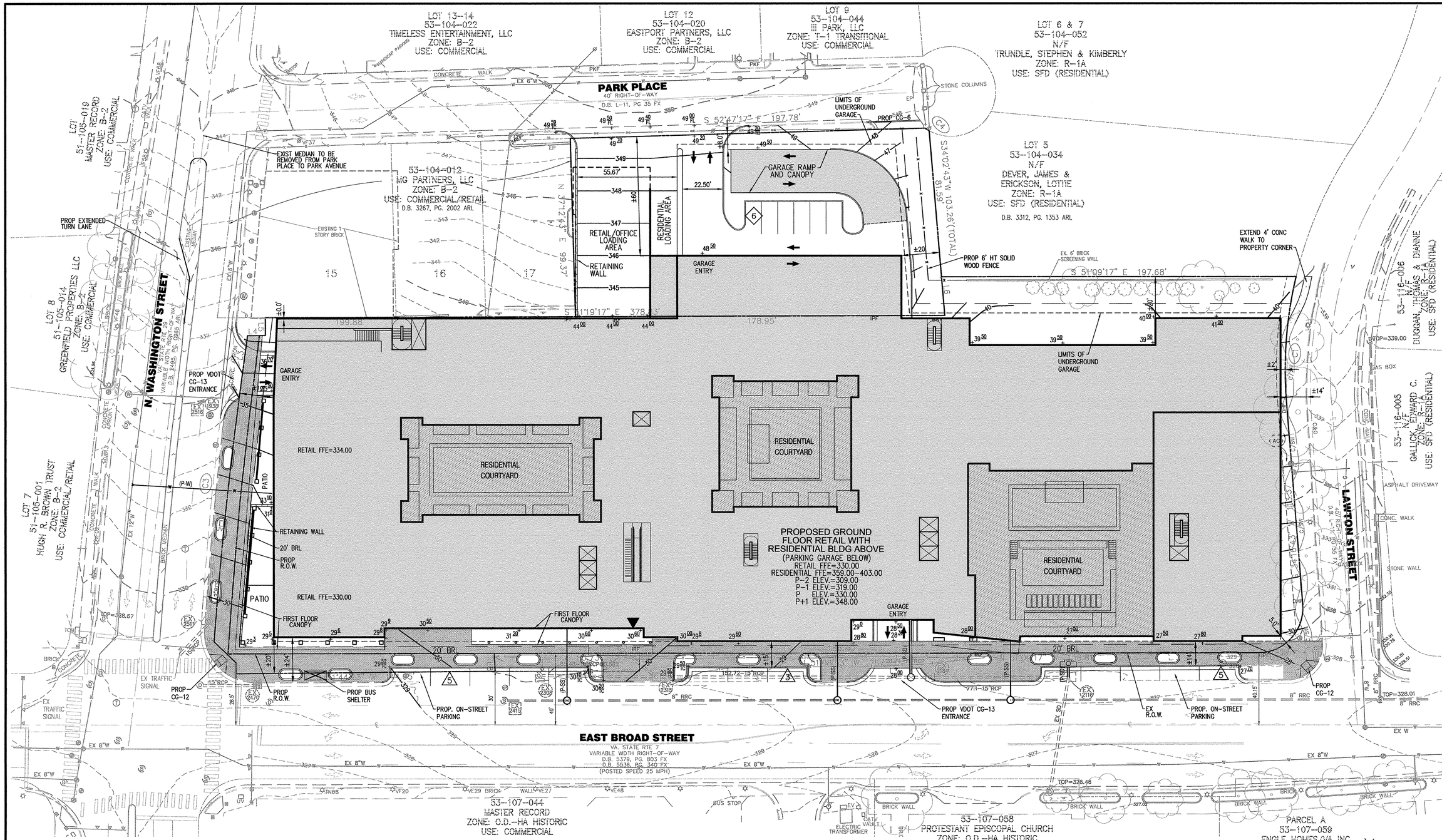

LEGEND

RESIDENTIAL COURTYARD (2nd LEVEL)	(P-SD) PROPOSED STORM DRAIN
AT GRADE ENTRY DOOR	(P-SS) PROPOSED SANITARY SEWER
ELEVATOR	(P-W) PROPOSED WATER LINE
PROPOSED ON-STREET PARKING	292 EXISTING CONTOUR
	292 PROPOSED CONTOUR

NOTE:
1. REFER TO SHEET X FOR CONCEPTUAL STRUCTURAL PARKING GARAGE LAYOUT.

GRAPHIC SCALE

25 0 12.5 25 50 100

(IN FEET)
1 inch = 25 ft.

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CONCEPTUAL DEVELOPMENT PLAN

BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
LANDSCAPE ARCHITECT
6-30-15

PLAN STATUS	
DATE	DESCRIPTION

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DESIGN	DRAWN	CHKD

SCALE H: 1" = 25' V:

JOB No. 8366-01-001

DATE : June 2015

FILE No. 8366-D-RZ-001

SHEET C4.0

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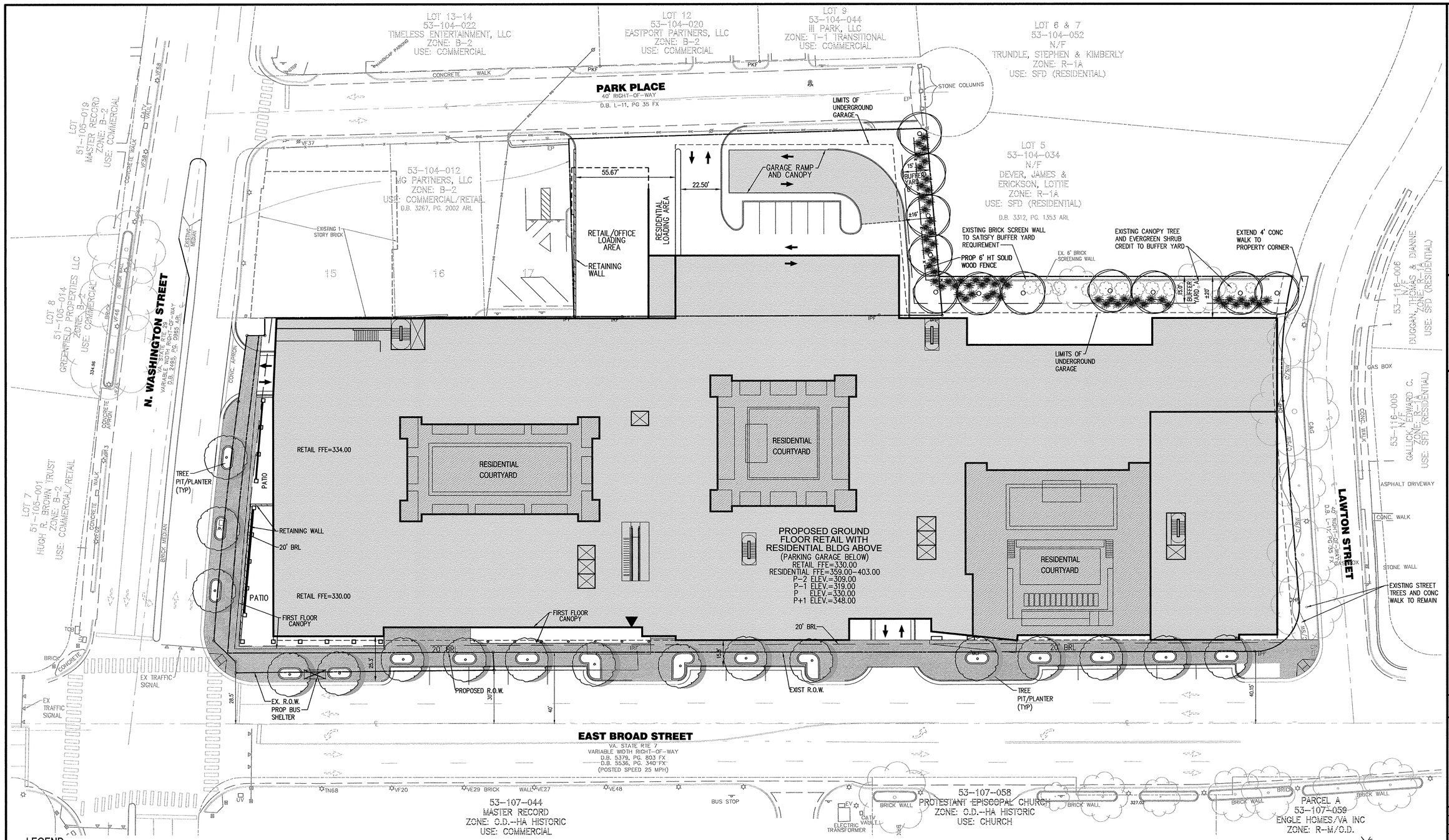

LEGEND

- EXISTING CANOPY TREE TO BE PRESERVED
- EXISTING EVERGREEN TREE TO BE PRESERVED
- PROPOSED DECIDUOUS CANOPY STREET TREE
- PROPOSED DECIDUOUS BUFFER YARD TREE
- PROPOSED EVERGREEN BUFFER YARD TREE
- PROPOSED LARGE SHRUBS
- PROPOSED BUS SHELTER (FINAL LOCATION TO BE DETERMINED WITH SITE PLAN APPLICATION)

NOTE:
1. FINAL STREETSCAPE ELEMENTS INCLUDING FURNITURE, TRASH RECEPTACLES, PAVING MATERIALS, LIGHTING, IRRIGATION, LANDSCAPING WILL BE PROVIDED WITH FINAL SITE PLAN APPLICATION.
2. FINAL SITE LANDSCAPING DESCRIPTIONS INCLUDING BUFFER YARDS AND PRIVATE COURTYARD AREAS WILL BE PROVIDED WITH FINAL SITE PLAN APPLICATION.

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

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CONCEPTUAL LANDSCAPE PLAN
BROAD & WASHINGTON
CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6.30.15
LANDSCAPE ARCHITECT

PLAN STATUS	
DATE	DESCRIPTION

MT	KF	MT
DESIGN	DRAWN	CHKD

SCALE H: 1" = 25' V:
JOB No. 8366-01-001
DATE : June 2015
FILE No. 8366-D-RZ-001
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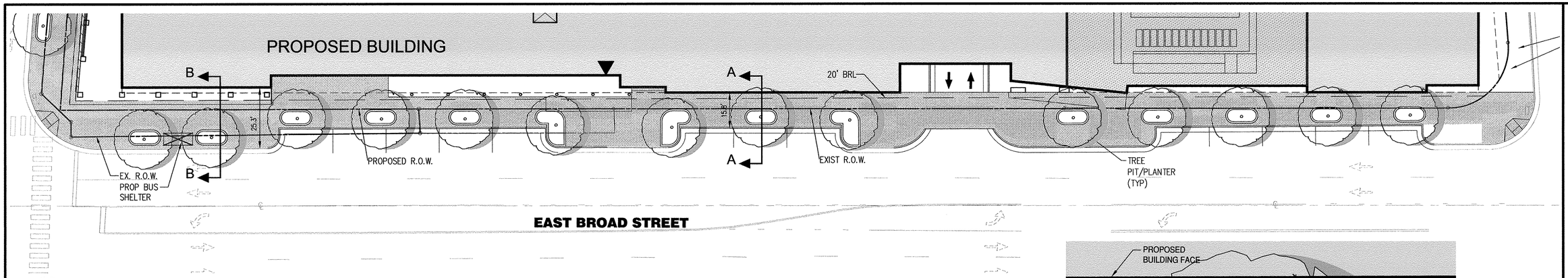
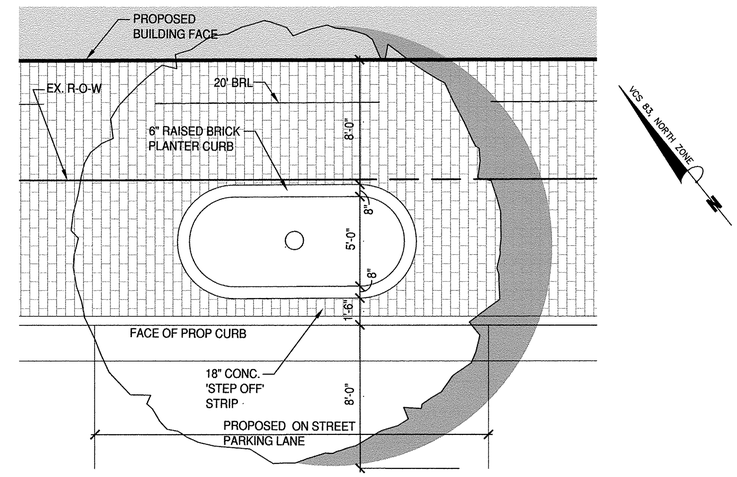


1 EAST BROAD STREET - PLAN

Scale: 1"=20'

LEGEND

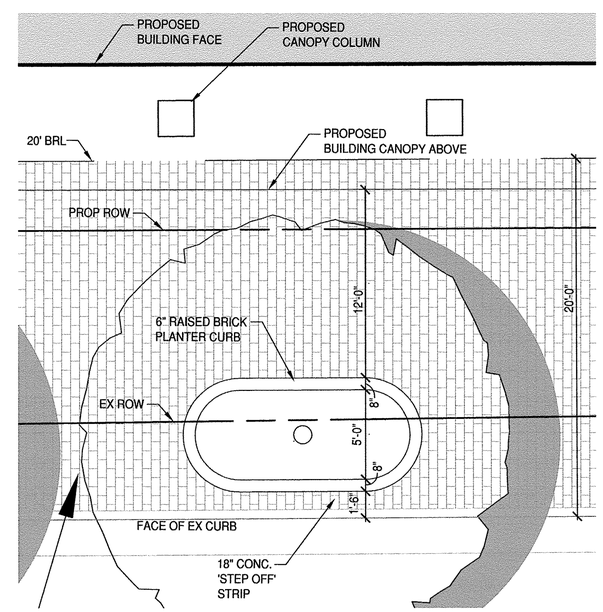
- EXISTING TREE TO BE PRESERVED
- PROPOSED DECIDUOUS CANOPY STREET TREE
- PROPOSED BUS SHELTER (FINAL LOCATION TO BE DETERMINED WITH SITE PLAN APPLICATION)



EAST BROAD STREET

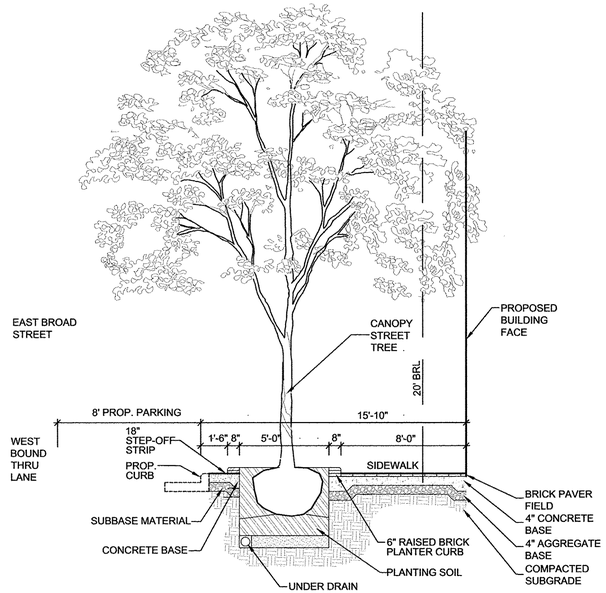
2 EAST BROAD STREET - PLAN - SECTION 'A'

Scale: 1/4" = 1'-0"



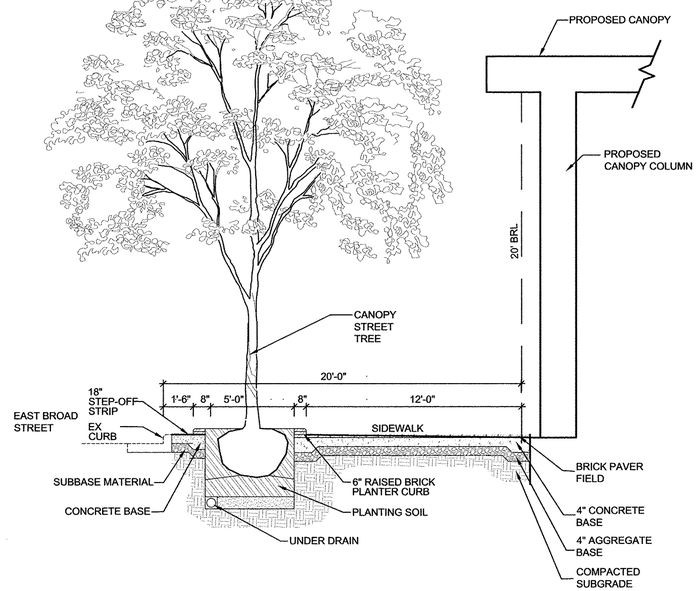
3 EAST BROAD STREET - PLAN - SECTION 'B'

Scale: 1/4" = 1'-0"



4 EAST BROAD STREET-SECTION-'A'

Scale: 1/4" = 1'-0"



4 EAST BROAD STREET-SECTION-'B'

Scale: 1/4" = 1'-0"

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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CONCEPTUAL STREETSCAPE PLAN
EAST BROAD STREET
BROAD & WASHINGTON
CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
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10.30.15
LANDSCAPE ARCHITECT

PLAN STATUS

DATE	DESCRIPTION	
MT	KF	MT
DESIGN	DRAWN	CHKD
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JOB No. 8366-01-001		
DATE : June 2015		
FILE No. 8366-D-RZ-001		
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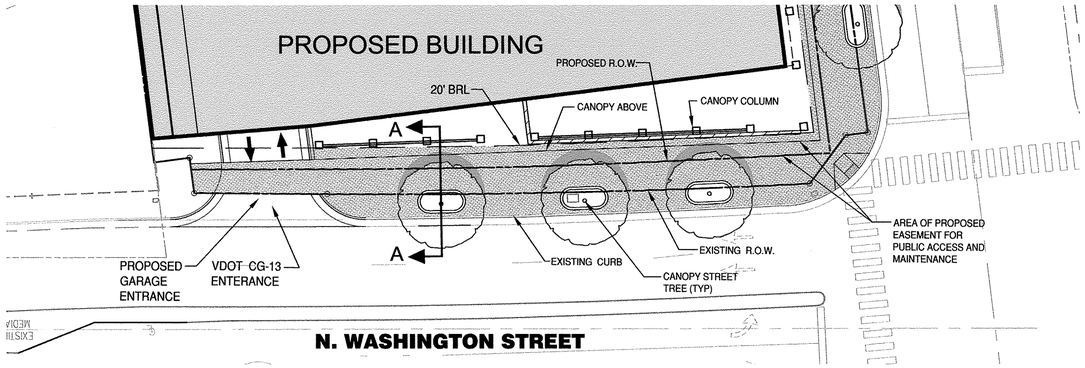
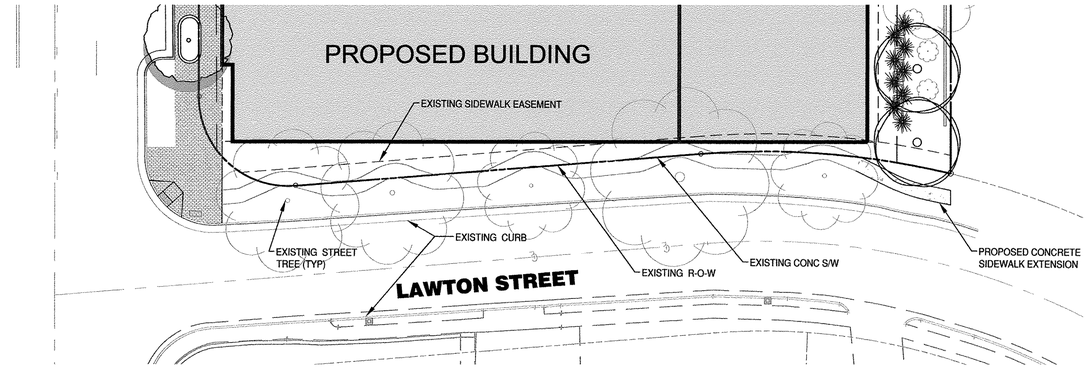


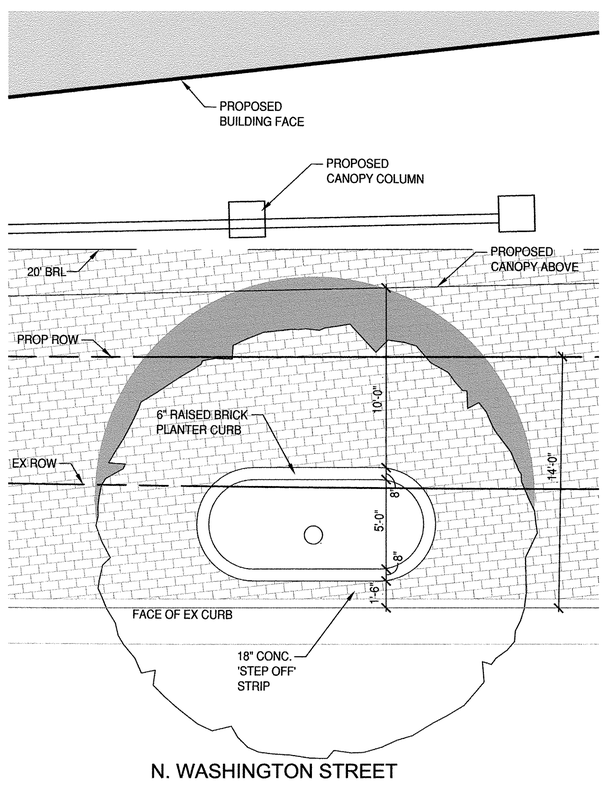
1 N. WASHINGTON STREET PLAN

Scale: 1"=20'



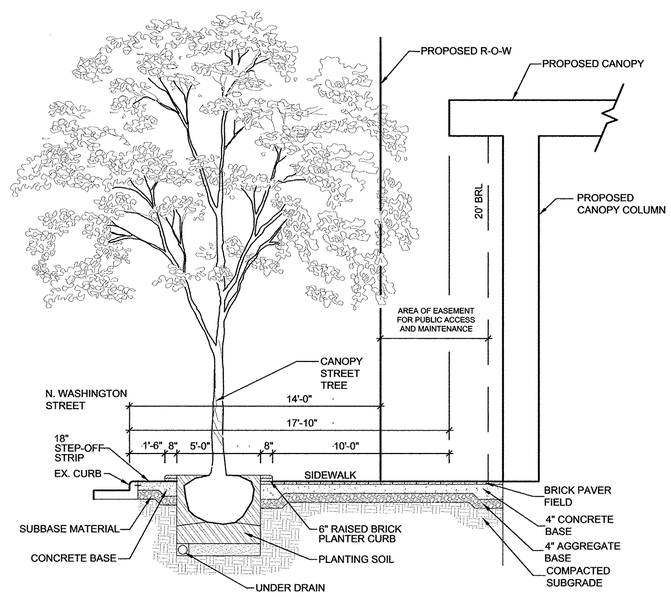
2 LAWTON STREET PLAN

Scale: 1"=20'



3 N. WASHINGTON STREET PLAN ENLARGEMENT - SECTION A

Scale: 1/4" = 1'-0"



4 N. WASHINGTON STREET SECTION

Scale: 1/4" = 1'-0"

LEGEND

EXISTING TREE TO BE PRESERVED

PROPOSED DECIDUOUS CANOPY STREET TREE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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CONCEPTUAL STREETSCAPE PLAN
LAWTON STREET AND N. WASHINGTON STREET
BROAD & WASHINGTON
CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6-30-15
LANDSCAPE ARCHITECT

PLAN STATUS

DATE	DESCRIPTION

MT	KF	MT
DESIGN	DRAWN	CHKD

SCALE H: 1" = 20' V:

JOB No. 8366-01-001

DATE : June 2015

FILE No. 8366-D-RZ-001

SHEET C7.0

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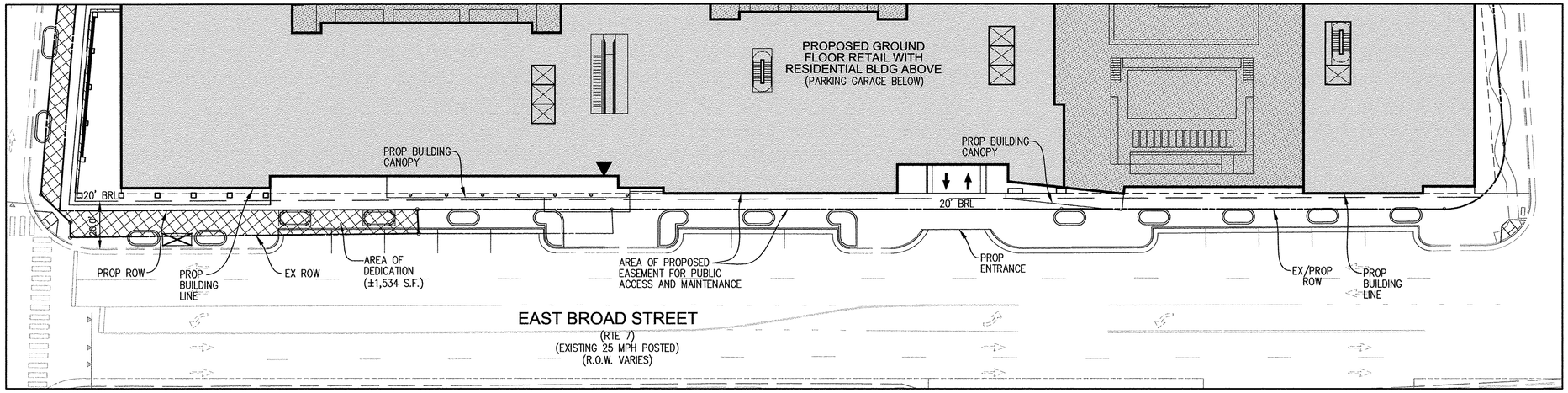
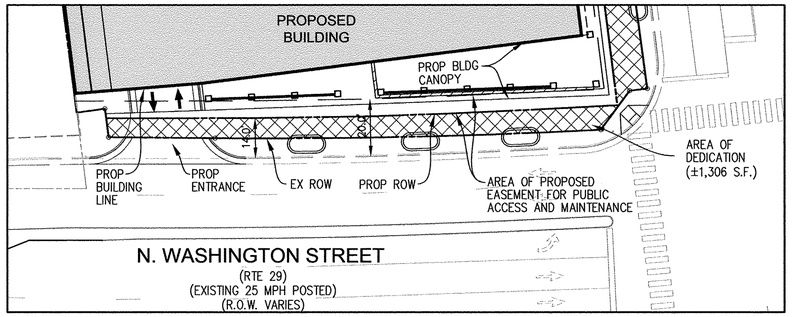


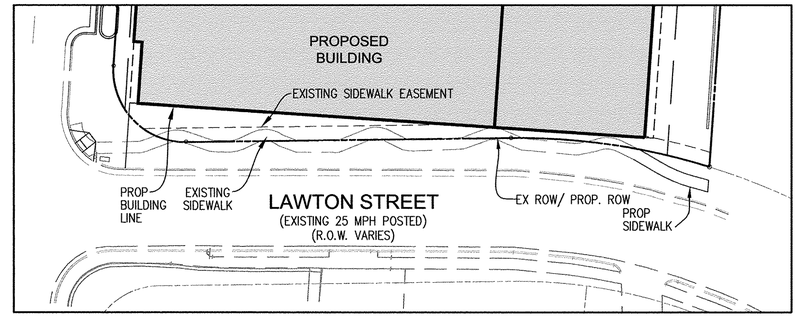
EAST BROAD STREET FRONTAGE EXHIBIT

SCALE: 1"=25'



N. WASHINGTON STREET FRONTAGE EXHIBIT

SCALE: 1"=25'



LAWTON STREET FRONTAGE EXHIBIT

SCALE: 1"=25'

LEGEND:

PROPOSED ROW DEDICATION
(±1,534 S.F.) BROAD STREET
(±1,306 S.F.) N. WASHINGTON STREET

GRAPHIC SCALE

25 0 12.5 25 50 100

(IN FEET)
1 inch = 25 ft.

VCS 83, NORTH ZONE

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ROADWAY FRONTAGE EXHIBIT

BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6-30-15
LANDSCAPE ARCHITECT

PLAN STATUS	
DATE	DESCRIPTION

MT DESIGN	KF DRAWN	MT CHKD
SCALE	H: AS SHOWN V:	
JOB No. 8366-01-001		
DATE : June 2015		
FILE No. 8366-D-RZ-001		
SHEET C8.0		

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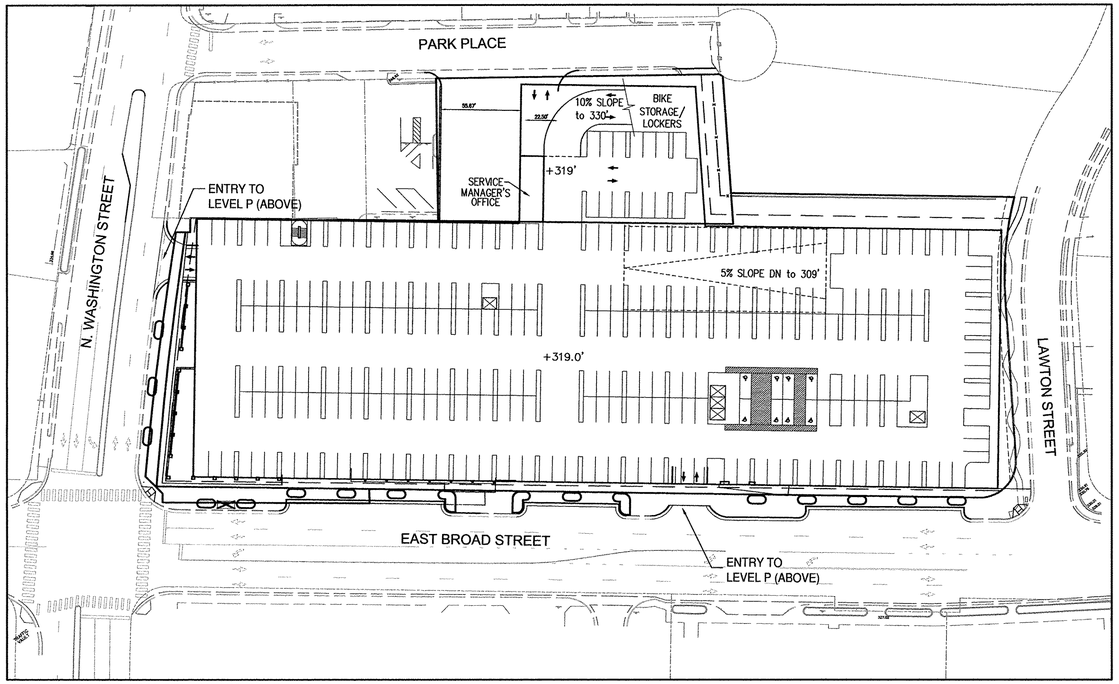
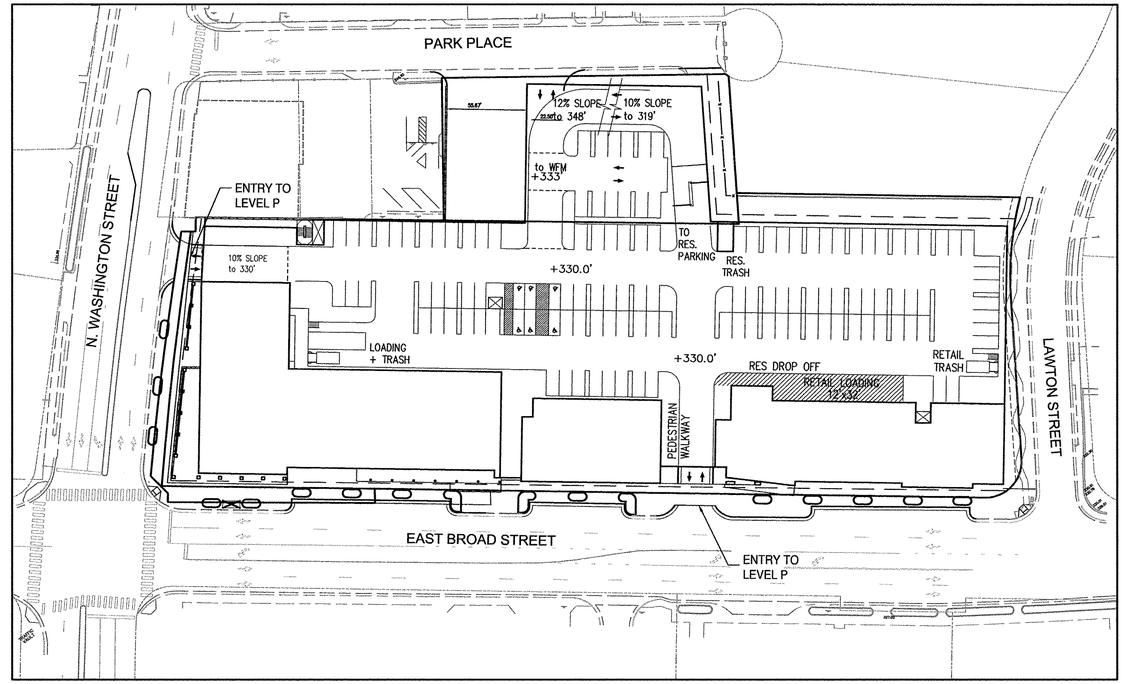


PARKING LEVEL P-1 (RESIDENTIAL)

SCALE: 1"=50'

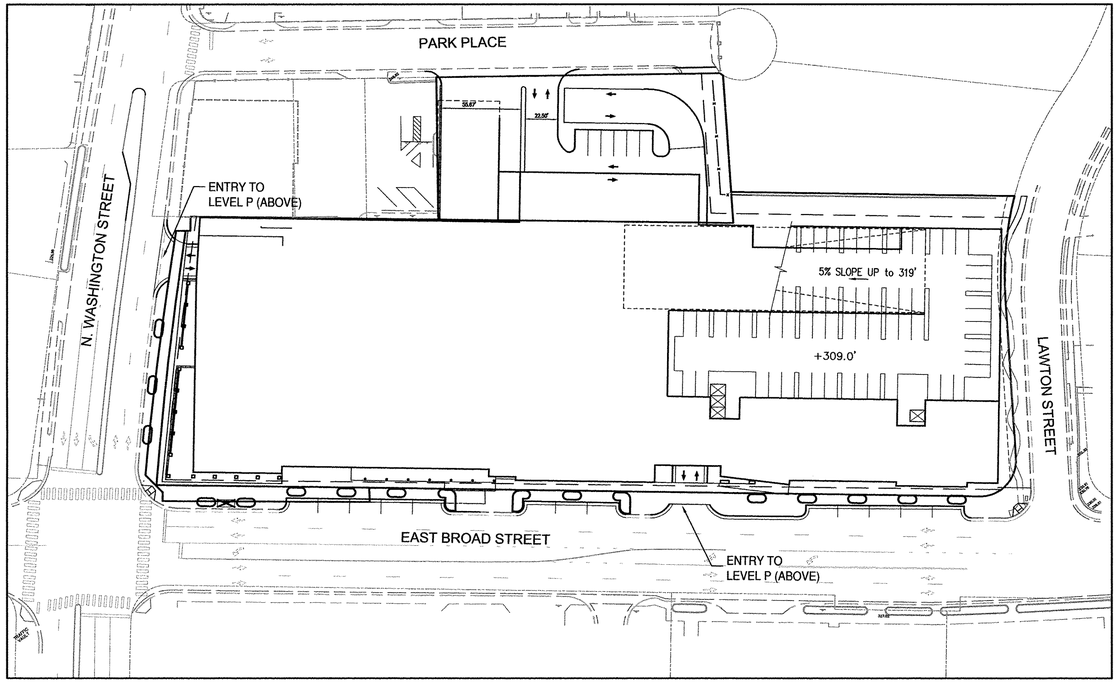
RESIDENTIAL PARKING: 314 SPACES
(INCLUCING 8 HANDICAP)
BIKE TOTAL: 20 SPACES



PARKING LEVEL P (RETAIL AND PUBLIC)

SCALE: 1"=50'

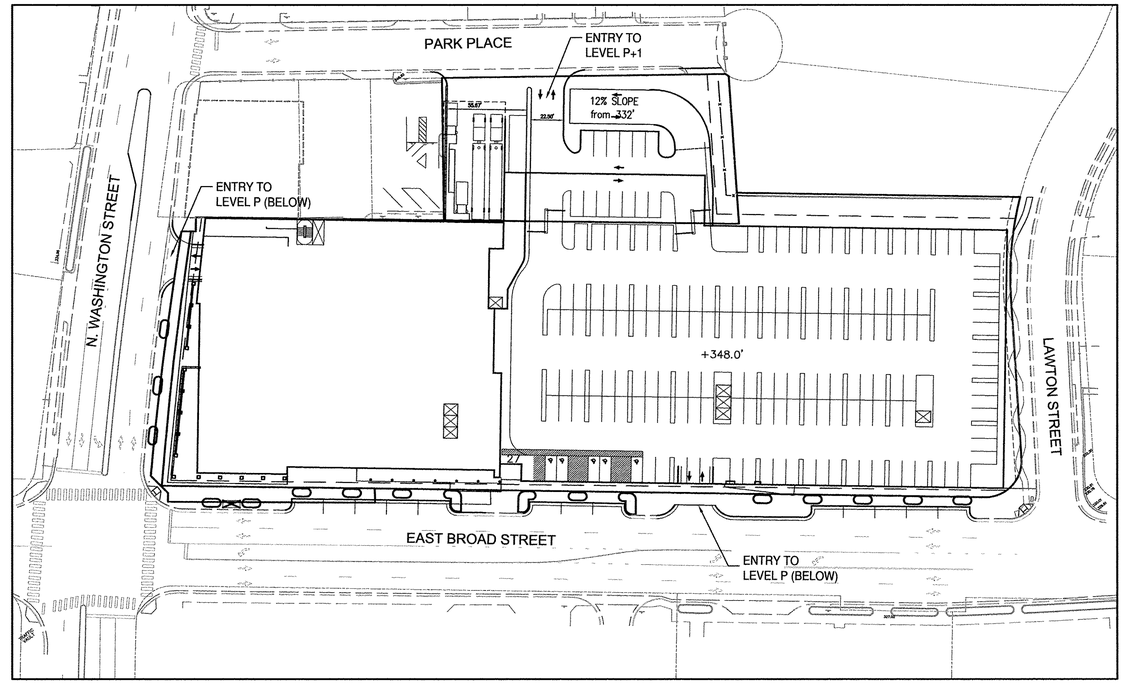
RETAIL AND PUBLIC PARKING: 120 SPACES
(INCLUDING 6 HANDICAP)



PARKING LEVEL P-2 (RESIDENTIAL)

SCALE: 1"=50'

RESIDENTIAL PARKING: 49 SPACES



PARKING LEVEL P+1 (RESIDENTIAL)

SCALE: 1"=50'

RETAIL AND PUBLIC PARKING: 169 SPACES
(INCLUDING 5 HANDICAP)

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTES:

1. GARAGE DIAGRAMS AND PARKING NUMBERS ARE FOR INFORMATION AND ILLUSTRATION PURPOSES ONLY AND ARE SUBJECT TO CHANGE WITH FINAL DESIGN.
2. REFER TO ARCHITECTURAL PLANS WITHIN THE SPECIAL EXCEPTION PACKAGE DOCUMENTS FOR ADDITIONAL INFORMATION.

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CONCEPTUAL PARKING PLANS

BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6-30-15
LANDSCAPE ARCHITECT

PLAN STATUS	
DATE	DESCRIPTION

MT	KF	MT
DESIGN	DRAWN	CHKD

SCALE H: 1"=50' V:

JOB No. 8366-01-001

DATE : June 2015

FILE No. 8366-D-RZ-001

SHEET C9.0

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PLANTING TABULATIONS

BUFFER YARD (PER Z.O. SECTION 48-1183)

BUFFER YARD 'A' TO R-1A ZONING DISTRICT

LINEAR FEET OF BUFFER YARD:	198'
TYPE OF BUFFER YARD REQUIRED:	TYPE 'D' OR TYPE 'E'
BUFFER YARD PROVIDED:	TYPE E – 15' WIDTH
CANOPY TREES REQUIRED:	8 TREES (4 PER 100 L.F.)
CANOPY TREES PROVIDED:	9 TREES (3 EXISTING / 6 PROPOSED)
LARGE SHRUBS REQUIRED:	50 SHRUBS (25 PER 100 L.F.)
LARGE SHRUBS PROVIDED:	50 SHRUBS (12 EXISTING / 38 PROPOSED)
SCREENING ELEMENT REQUIRED:	6 FOOT HIGH SOLID WOOD FENCE
SCREENING ELEMENT PROVIDED:	EXISTING 6 FOOT HIGH BRICK SCREEN WALL

BUFFER YARD 'B' TO R-1A ZONING DISTRICT

LINEAR FEET OF BUFFER YARD:	82'
TYPE OF BUFFER YARD REQUIRED:	TYPE 'D' OR TYPE 'E'
BUFFER YARD PROVIDED:	TYPE E – 15' WIDTH
CANOPY TREES REQUIRED:	4 TREES (4 PER 100 L.F.)
CANOPY TREES PROVIDED:	4 TREES
LARGE SHRUBS REQUIRED:	21 SHRUBS (25 PER 100 L.F.)
LARGE SHRUBS PROVIDED:	21 SHRUBS
SCREENING ELEMENT REQUIRED:	6 FOOT HIGH SOLID WOOD FENCE
SCREENING ELEMENT PROVIDED:	6 FOOT HIGH SOLID WOOD FENCE

SUGGESTED STREETSCAPE PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	HEIGHT/SIZE	CALIPER	CONDITION/ REMARKS
LARGE DECIDUOUS TREES					
QP	QUERCUS PHELLOS	WILLOW OAK		2.5" CAL. MIN.	B&B
SHRUBS					
IG	ILEX GLABRA	INKBERRY HOLLY	30" MIN.		CONT.
JH	JUNIPERUS HORIZONTALIS	CREEPING JUNIPER	6"-12" MIN.		CONT.
PL	PRUNUS LAUROCERASUS 'SCHIPKAENSIS'	CHERRY LAUREL	30" MIN.		CONT.
GROUNDCOVER					
HC	HYPERICUM CALYCINUM	ST. JOHN'S WORT	1 GAL.		CONT.
LM	LIROPE MUSCARI 'BIG BLUE'	LILYTURF	1 GAL.		CONT.

SUGGESTED BUFFER YARD PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	HEIGHT	CALIPER	CONDITION/ REMARKS
LARGE DECIDUOUS TREES					
AR	ACER RUBRUM	RED MAPLE		2" CAL. MIN.	B&B
GT	GLEDITSIA TRIACANTHOS	THORNLESS HONEY LOCUST		2" CAL. MIN.	B&B
PA	PLANTANUS X ACERIFOLIA	LONDON PLANETREE		2" CAL. MIN.	B&B
QP	QUERCUS PALUSTRIS	PIN OAK		2" CAL. MIN.	B&B
EVERGREEN TREES					
IO	ILEX OPACA	AMERICAN HOLLY	6' MIN.		B&B
JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	6' MIN.		B&B
SHRUBS					
CA	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	24"-30"		CONT.
IG	ILEX GLABRA	INKBERRY HOLLY	24"-30"		CONT.
IT	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	24"-30"		CONT.
IV	ILEX VERTICILLATA	WINTERBERRY	24"-30"		CONT.
JS	JUNIPERUS CHINENSIS 'PFITZERIANA'	PFITZER JUNIPER	24"-30"		CONT.
KL	KALMIA LATIFOLIA	MOUNTAIN LAUREL	24"-30"		CONT.
MP	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY	24"-30"		CONT.
PL	PRUNUS LAUROCERASUS 'SCHIPKAENSIS'	CHERRY LAUREL	24"-30"		CONT.
RR	ROSA 'RADRAZZ'	KNOCKOUT ROSE	24"-30"		CONT.
VP	VIBURNUM X PRAGENSE	PRAGUE VIBURNUM	24"-30"		CONT.

GENERAL LANDSCAPE NOTES

MATERIALS

1. THE TREES AND SHRUBS THAT ARE PLANTED SHALL BE OF THE SPECIES AND SIZE SPECIFIED ON THE APPROVED PLANS UNLESS SUBSTITUTIONS ARE APPROVED BY THE CITY.
2. ALL TREE AND SHRUB SIZES SHALL MEET THE STANDARDS SPECIFIED IN THE LATEST EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMEN'S AMERICAN STANDARD FOR NURSERY STOCK, (ANSI Z60.1).

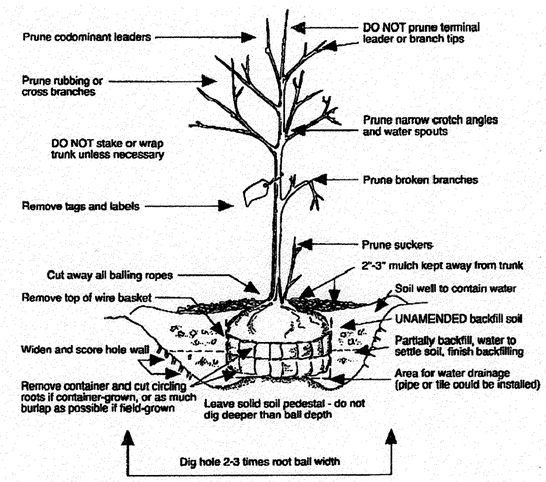
DELIVERY AND TEMPORARY STORAGE

1. PLANTS SHALL BE PROTECTED DURING DELIVERY TO PREVENT DESICCATION OF LEAVES.
2. TREES AND SHRUBS SHOULD BE PLANTED ON DAY OF DELIVERY. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT UNPLANTED PLANTS BY KEEPING THEM IN SHADE, WATERED AND PROTECTED WITH SOIL, MULCH OR OTHER ACCEPTABLE MATERIAL.
3. TREES AND SHRUBS SHALL NOT REMAIN UNPLANTED FOR MORE THAN TWO WEEKS.

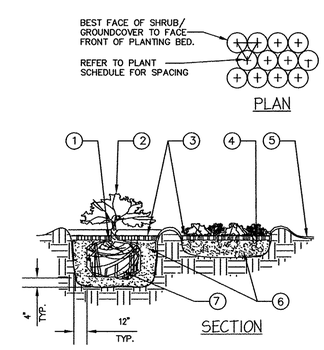
PLANTING OF NURSERY STOCK

1. ALL TREES AND SHRUBS SHALL BE PLANTED AS SPECIFIED IN THE LATEST EDITION OF THE "TREE AND SHRUB PLANTING GUIDELINES" PREPARED BY THE VIRGINIA COOPERATIVE EXTENSION, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY.
2. IF PLANTING IN AREAS THAT HAVE BEEN PREVIOUSLY COMPACTED, THE SOIL SHALL BE PROPERLY PREPARED (TILLED AND AMENDED AS NEEDED BASED ON SOIL SAMPLES) TO A DEPTH OF 1 FOOT (0.3 METERS), PRIOR TO INSTALLATION OF LANDSCAPE MATERIAL. SOIL WITHIN INDIVIDUAL PLANTING HOLES SHALL NOT BE AMENDED.
3. THE STAKING AND GUYING OF TREES IS NOT REQUIRED EXCEPT WHERE SITE CONDITIONS WARRANT THEIR USE. EXAMPLES OF CONDITIONS WHERE THESE METHODS MAY BE NECESSARY INCLUDE: PLANTING IN WINDY LOCATIONS, ON STEEP SLOPES, OR WHERE VANDALISM MAY BE A CONCERN. ALL STAKES AND GUYS MUST BE REMOVED WITHIN ONE YEAR OF PLANT INSTALLATION.
4. ALL TREES AND SHRUBS SHALL BE MULCHED AFTER PLANTING, TO A MINIMUM DEPTH OF 2 INCHES (5.1 CENTIMETERS), BUT NO MORE THAN 3 INCHES (7.6 CENTIMETERS), WITH AN APPROPRIATE MULCH MATERIAL SUCH AS PINE BARK, PINE NEEDLES, WOOD CHIPS OR SHREDDED BARK. MULCH SHALL COVER THE ENTIRE ROOT AREA AND SAUCER; HOWEVER, MULCH SHALL NOT BE PLACED WITHIN 6 INCHES (15.3 CENTIMETERS) OF THE TRUNK.

TREE PLANTING



SHRUB/GROUNDCOVER PLANTING



1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" – 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. WHEN USED IN MASSES– PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT
3. 4" MINIMUM OF HARDWOOD BARK MULCH COMPACTED OR AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. 4" MINIMUM OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. NOTE: WHEN GROUND–COVERS AND SHRUBS USED IN MASSES ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY ROOTBALL SIDES AND BOTTOM.

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LANDSCAPE SCHEDULE, NOTES AND DETAILS

BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6-30-15
LANDSCAPE ARCHITECT

PLAN STATUS	
DATE	DESCRIPTION

MT DESIGN	KF DRAWN	MT CHKD
SCALE	H: 1" = 20' V:	

JOB No. 8366-01-001

DATE : June 2015

FILE No. 8366-D-RZ-001

SHEET C10.0

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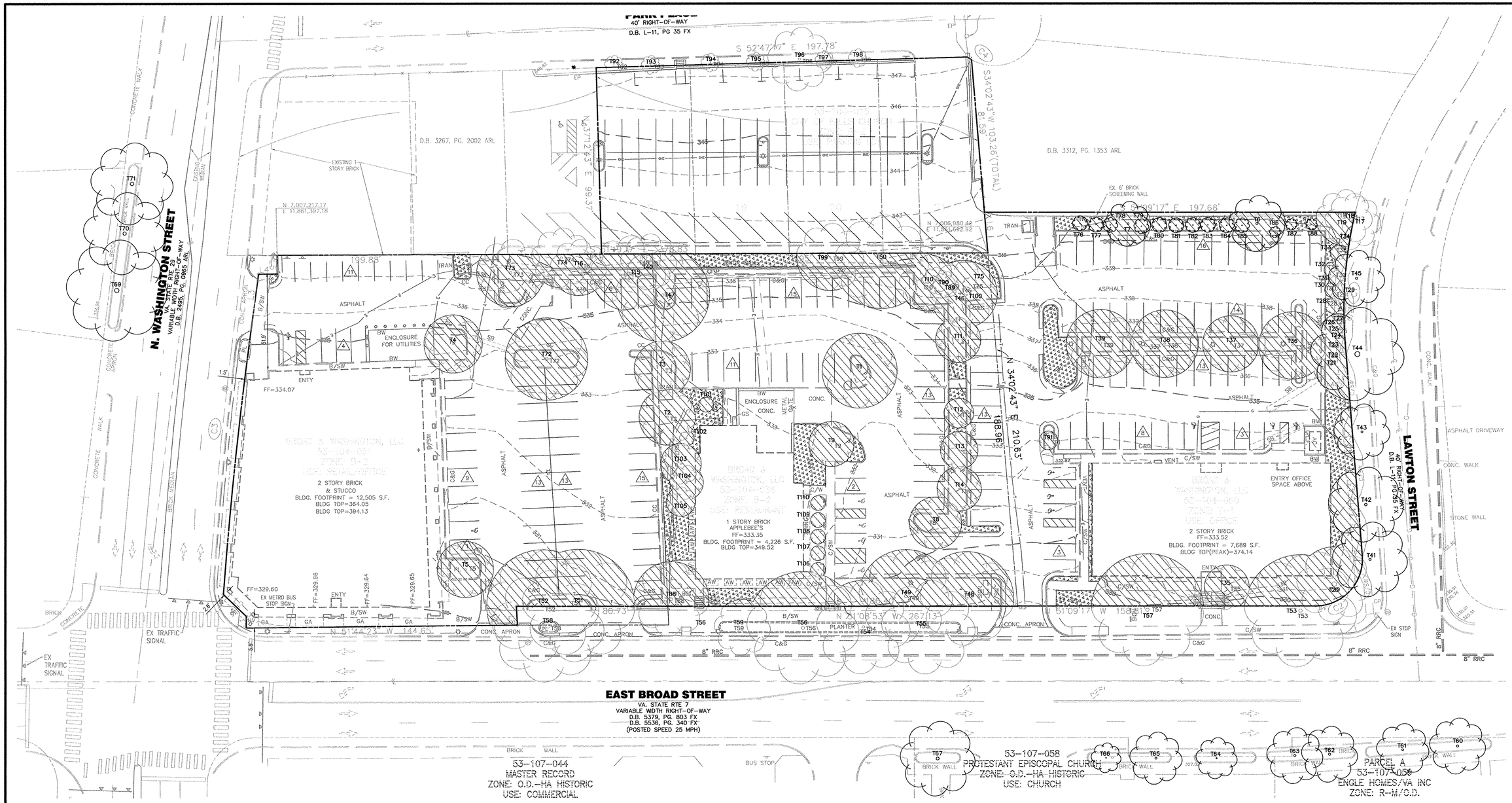

COVER TYPE

KEY	COVER TYPE	COMMON SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
	DEVELOPED LAND	N/A	N/A	N/A	2.33 AC.
	LANDSCAPE TREE CANOPY	SEE TREE INVENTORY	VARIES	FAIR/ GOOD	0.72 AC.
	MISC. (SHRUB AND GROUND COVER)	N/A	N/A	FAIR/ GOOD	0.09 AC.

TOTAL SITE AREA: 3.14 AC.

LEGEND

T12 — EXISTING INDIVIDUAL TREE TO BE REMOVED (SEE TREE INVENTORY TABLE BELOW)

T12 — EXISTING INDIVIDUAL TREE TO BE PRESERVED (SEE TREE INVENTORY TABLE BELOW)

VCS 83, NORTH ZONE

GRAPHIC SCALE

25 0 12.5 25 50 100

(IN FEET)
1 inch = 25 ft.

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EXISTING VEGETATIVE MAP
BROAD & WASHINGTON
CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. RAUSCHER
Lic. No. 000832
LANDSCAPE ARCHITECT
10-30-15

PLAN STATUS	
DATE	DESCRIPTION

MT DESIGN	KF DRAWN	MT CHKD
SCALE	H: 1" = 25' V:	
JOB No. 8366-01-001		
DATE : June 2015		
FILE No. 8366-D-RZ-001		
SHEET C11.0		

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TREE INVENTORY TABLE

Broad Street and Washington Street, Falls Church, VA
Date of site visit: January 20, 2015
Certified Arborist: Gregg D. Eberly MA-4616A

Plan Label	Botanic Name	Common Name	Caliper (DBH)	Condition Rating	Species Rating	Preserve/ Remove
1	Betula nigra	River Birch	12	60	70	
2	Betula nigra	River Birch	14	80	70	
3	Betula nigra	River Birch	12	80	70	
4	Prunus serrulata 'Kwanzan'	Kwanzan Cherry	10	70	50	
5	Prunus serrulata 'Kwanzan'	Kwanzan Cherry	14	70	50	
6	Quercus phellos	Willow Oak	14	80	70	
7	Quercus phellos	Willow Oak	11	80	70	
8	Tilia cordata	Littleleaf Linden	8	80	70	
9	Acer saccharum	Sugar Maple	7	80	70	
10	Tilia cordata	Littleleaf Linden	12	80	70	
11	Tilia cordata	Littleleaf Linden	8	80	70	
12	Tilia cordata	Littleleaf Linden	7	80	70	
13	Tilia cordata	Littleleaf Linden	8	80	70	
14	Tilia cordata	Littleleaf Linden	9	80	70	
15	Gymnocladus dioicus	Kentucky Coffee Tree	19	40	70	
16	Pyrus calleryana	Bradford Pear	10	30	30	
17	Lonicera japonica	Japanese Honeysuckle	28 (Multi)	40	20	
18	Lonicera japonica	Japanese Honeysuckle	14 (Multi)	40	20	
19	Lonicera japonica	Japanese Honeysuckle	18 (Multi)	40	20	
20	Ilex opaca	American Holly	30 (Multi)	80	70	
21	Ilex attenuata 'Fosteri'	Foster's Holly	7 (Multi)	60	70	
22	Ilex attenuata 'Fosteri'	Foster's Holly	4 (Multi)	70	70	
23	Ilex attenuata 'Fosteri'	Foster's Holly	7 (Multi)	70	70	
24	Ilex attenuata 'Fosteri'	Foster's Holly	4 (Multi)	70	70	
25	Ilex attenuata 'Fosteri'	Foster's Holly	8 (Multi)	70	70	
26	Ilex attenuata 'Fosteri'	Foster's Holly	7 (Multi)	60	70	
27	Ilex attenuata 'Fosteri'	Foster's Holly	12 (Multi)	70	70	
28	Ilex attenuata 'Fosteri'	Foster's Holly	9 (Multi)	60	70	
29	Ilex attenuata 'Fosteri'	Foster's Holly	9 (Multi)	60	70	
30	Ilex attenuata 'Fosteri'	Foster's Holly	18 (Multi)	60	70	
31	Ilex attenuata 'Fosteri'	Foster's Holly	15 (Multi)	60	70	
32	Ilex attenuata 'Fosteri'	Foster's Holly	18 (Multi)	60	70	
33	Ilex attenuata 'Fosteri'	Foster's Holly	24 (Multi)	70	70	
34	Ilex attenuata 'Fosteri'	Foster's Holly	12 (Multi)	50	70	
35	Ilex cornuta 'Burfordii'	Burford Holly	15 (Multi)	80	70	
36	Gleditsia triacanthos	Honey Locust	12	70	60	
37	Gleditsia triacanthos	Honey Locust	10	70	60	
38	Gleditsia triacanthos	Honey Locust	11	70	60	
39	Gleditsia triacanthos	Honey Locust	16	70	60	
40	Acer platanoides	Norway Maple	18	50	40	
41	Liquidambar styraciflua	Sweetgum	12	70	60	
42	Liquidambar styraciflua	Sweetgum	14	70	60	
43	Liquidambar styraciflua	Sweetgum	12	70	60	
44	Acer rubrum	Red Maple	36	70	70	
45	Acer campestre	Hedge Maple	12	70	80	
46	Morus alba	White Mulberry	12	50	40	
47	Quercus phellos	Willow Oak	14	80	70	
48	Quercus phellos	Willow Oak	20	80	70	
49	Quercus phellos	Willow Oak	18	60	70	
50	Quercus palustris	Pin Oak	20	40	70	
51	Quercus phellos	Willow Oak	24	80	70	
52	Quercus phellos	Willow Oak	22	80	70	
53	Quercus rubra	Red Oak	22	80	70	
54	Quercus phellos	Willow Oak	16	80	70	
55	Quercus phellos	Willow Oak	16	80	70	
56	Quercus phellos	Willow Oak	20	80	70	
57	Quercus phellos	Willow Oak	22	80	70	
58	Quercus phellos	Willow Oak	28	80	70	
59	Quercus phellos	Willow Oak	16	80	70	
60	Quercus phellos	Willow Oak	14	80	70	
61	Quercus phellos	Willow Oak	12	80	70	
62	Quercus phellos	Willow Oak	14	80	70	
63	Quercus phellos	Willow Oak	14	80	70	
64	Quercus phellos	Willow Oak	8	80	70	
65	Quercus phellos	Willow Oak	13	80	70	
66	Quercus phellos	Willow Oak	5	80	70	
67	Quercus phellos	Willow Oak	19	80	70	
68	Quercus phellos	Willow Oak	24	80	70	
69	Quercus phellos	Willow Oak	28	80	70	
70	Quercus phellos	Willow Oak	21	80	70	
71	Quercus phellos	Willow Oak	23	80	70	
72	Quercus phellos	Willow Oak	20	80	70	
73	Juglans nigra	Black Walnut	18	50	70	
74	Juglans nigra	Black Walnut	13	60	70	
75	Ilex opaca	American Holly	4	70	70	
76	Ilex cornuta 'Burfordii'	Burford Holly	8	60	70	
77	Ilex attenuata 'Fosteri'	Foster's Holly	4	60	70	
78	Ilex attenuata 'Fosteri'	Foster's Holly	3	70	70	
79	Ilex attenuata 'Fosteri'	Foster's Holly	4 (Multi)	80	70	
80	Ilex attenuata 'Fosteri'	Foster's Holly	5 (Multi)	80	70	
81	Ilex attenuata 'Fosteri'	Foster's Holly	4	80	70	
82	Ilex attenuata 'Fosteri'	Foster's Holly	6 (Multi)	80	70	
83	Ilex attenuata 'Fosteri'	Foster's Holly	7 (Multi)	80	70	
84	Ilex attenuata 'Fosteri'	Foster's Holly	3	80	70	
85	Ilex attenuata 'Fosteri'	Foster's Holly	5 (Multi)	80	70	
86	Ilex attenuata 'Fosteri'	Foster's Holly	4	80	70	
87	Ilex attenuata 'Fosteri'	Foster's Holly	4	80	70	
88	Ilex attenuata 'Fosteri'	Foster's Holly	4	80	70	
89	Morus alba	White Mulberry	4	50	40	
90	Morus alba	White Mulberry	4	60	40	
91	Amelanchier arborea	Downey Serviceberry	2	80	80	
92	Amelanchier arborea	Downey Serviceberry	3	80	80	
93	Amelanchier arborea	Downey Serviceberry	3	80	80	
94	Amelanchier arborea	Downey Serviceberry	3	60	80	
95	Amelanchier arborea	Downey Serviceberry	3	70	80	
96	Tilia cordata	Littleleaf Linden	15	60	70	
97	Amelanchier arborea	Downey Serviceberry	3	80	80	
98	Amelanchier arborea	Downey Serviceberry	3	80	80	
99	Quercus rubra	Red Oak	20	80	70	
100	Pinus strobus	White Pine	16	60	50	
101	Cercis canadensis	Redbud	4	80	70	
102	Ilex opaca	American Holly	4	80	70	
103	Cercis canadensis	Redbud	11	60	70	
104	Cercis canadensis	Redbud	9	60	70	
105	Cercis canadensis	Redbud	8	70	70	
106	Thuja occidentalis	Arborvitae	6	80	60	
107	Thuja occidentalis	Arborvitae	6	80	60	
108	Thuja occidentalis	Arborvitae	4	80	60	
109	Thuja occidentalis	Arborvitae	4	80	60	
110	Thuja occidentalis	Arborvitae	4	80	60	

Notes:

1. Condition Rating based on formula provided by the Guide for Plant Appraisal published by the ISA.
   Condition Rating: 90-100 Excellent, 70-89 Good, 50-69 Fair, 25-49 Poor, 05-24 Very Poor
2. Species Rating based on formula provided by the Guide for Plant Appraisal published by the ISA.
3. Off site trees included in this inventory had critical root zones located in or on subject property.
4. All trees with a minimum 2" D.B.H. were rated.
5. * The locations of trees 100-110 are approximate based on adjacent surveyed tree locations and have not been surveyed.

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EXISTING TREE INVENTORY

BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6.30.15
LANDSCAPE ARCHITECT

PLAN STATUS	
DATE	DESCRIPTION

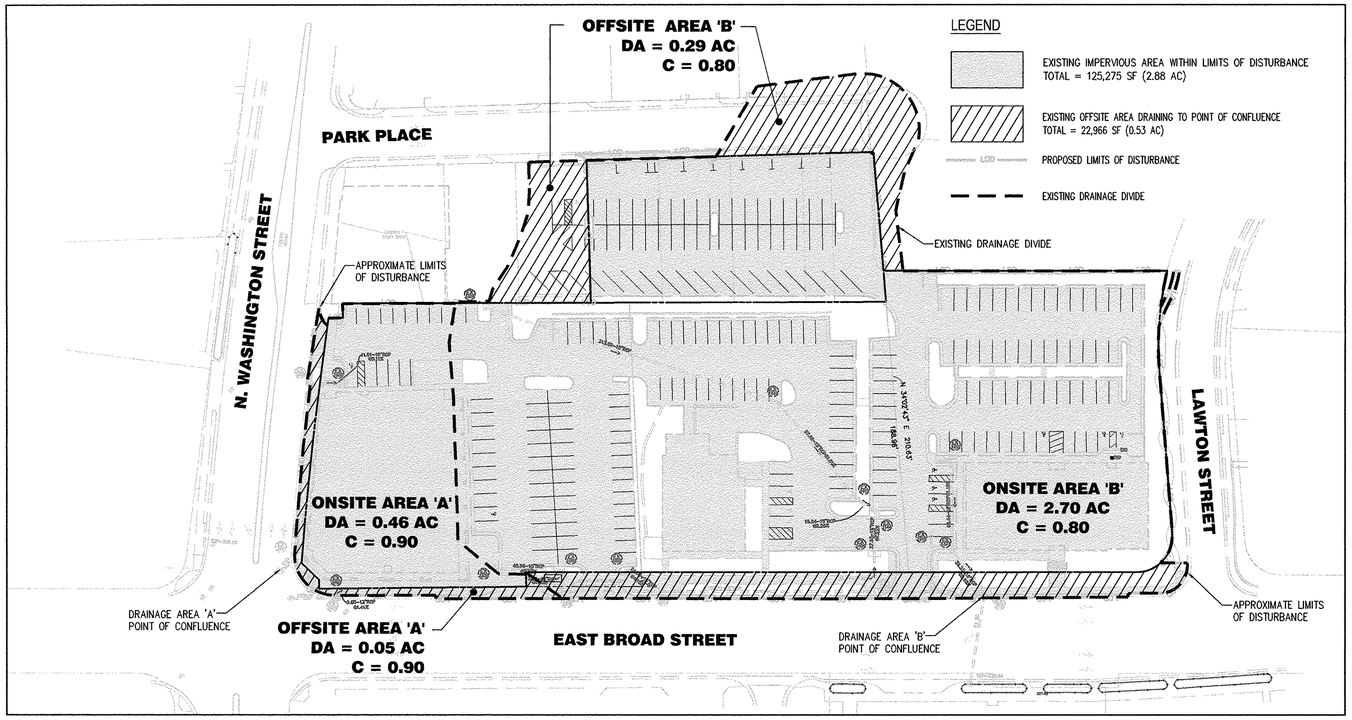
MT	KF	MT
DESIGN	DRAWN	CHKD
SCALE	H: N/A V:	

JOB No. 8366-01-001

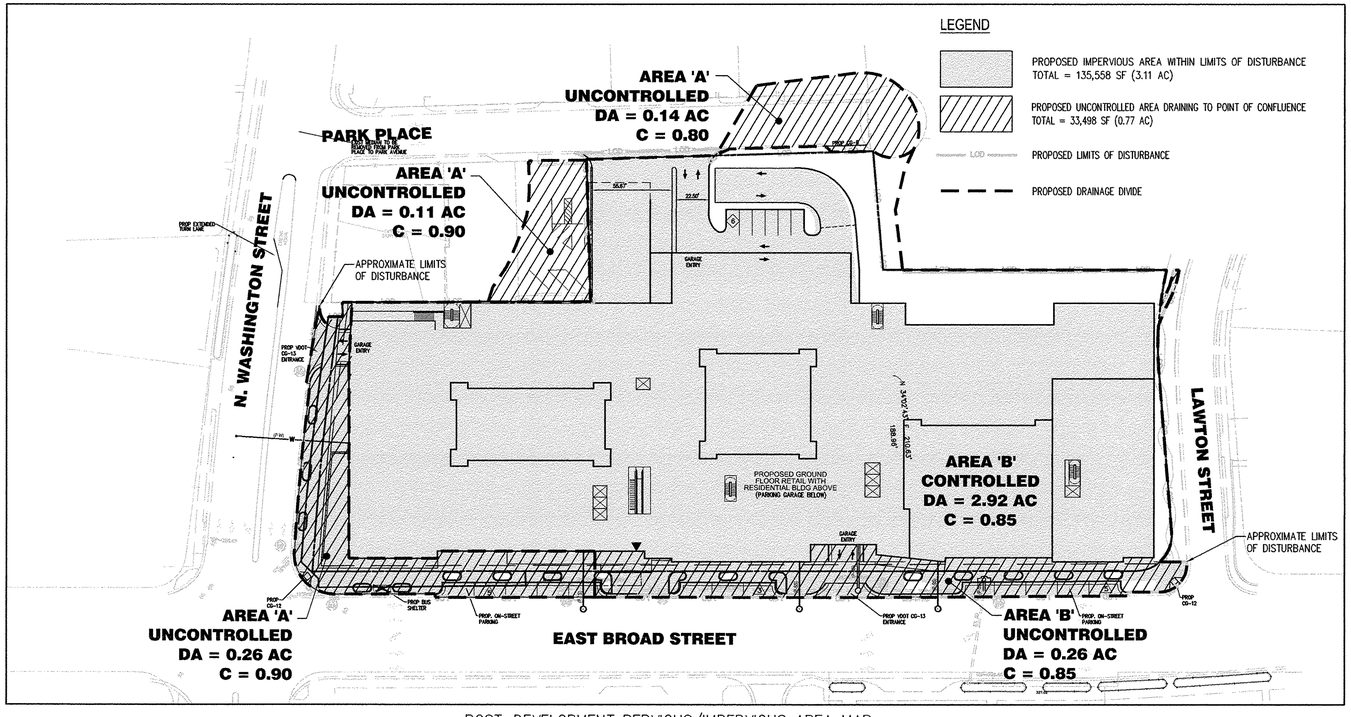
DATE : June 2015

FILE No. 8366-D-RZ-001

SHEET C12.0



PRE-DEVELOPMENT PERVIOUS/IMPERVIOUS AREA MAP



POST-DEVELOPMENT PERVIOUS/IMPERVIOUS AREA MAP

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

STORMWATER MANAGEMENT/BMP NARRATIVE:

SITE LOCATION:

THE SITE IS LOCATED IN THE CITY OF FALLS CHURCH, VIRGINIA, ALONG THE NORTH SIDE OF BROAD EAST BROAD STREET. IT IS BOUNDED BY NORTH WASHINGTON STREET TO THE NORTHWEST, PARK PLACE TO THE NORTHEAST, LAWTON STREET TO THE SOUTHEAST, AND EAST BROAD STREET TO THE SOUTHWEST.

EXISTING CONDITIONS:

THE 3.16 ACRE SITE IS CURRENTLY DIVIDED INTO FOUR SEPARATE LOTS WITHIN TWO PARCELS. THE LARGER, SOUTHERNMOST PARCEL CONTAINS A TWO-STORY BRICK RETAIL/OFFICE BUILDING, A ONE-STORY APPLEBEE'S RESTAURANT, A TWO-STORY BRICK OFFICE BUILDING, AND THEIR RESPECTIVE SURFACE PARKING LOTS. THE NORTHERNMOST PARCEL CONTAINS A PUBLICLY OWNED SURFACE PARKING LOT.

THE EXISTING SITE GENERALLY DRAINS TOWARDS EAST BROAD STREET WHERE RUNOFF IS CAPTURED AND CONVEYED INTO THE PUBLIC STORM DRAIN NETWORK. THERE IS A HIGH POINT ALONG EAST BROAD STREET THAT DIVERTS RUNOFF INTO TWO SEPARATE PUBLIC STORM SYSTEMS. FOR COMPUTATIONAL PURPOSES, THE DRAINAGE AREAS TO THESE TWO POINTS OF CONFLUENCE HAVE BEEN CALLED DRAINAGE AREAS 'A' AND 'B'.

DRAINAGE AREA 'A' IS ALMOST ENTIRELY IMPERVIOUS. IT FLOWS TOWARDS NORTH WASHINGTON STREET, WHERE RUNOFF IS CARRIED DOWNSTREAM TO EAST BROAD STREET. FROM THERE, CAPTURED STORMWATER IS CONVEYED NORTHWEST ALONG EAST BROAD STREET AND AWAY FROM THE SITE. DRAINAGE AREA 'B' ENCOMPASSES THE MAJORITY OF THE SITE WITH SOME OFFSITE RUNOFF FLOWING THROUGH THE SITE FROM THE NORTHEAST. IT CONVERGES AT A SAG INLET (EX STRUCTURE 2116) ALONG EAST BROAD STREET WITHIN THE RIGHT OF WAY ADJACENT TO THE EXISTING TWO STORY OFFICE BUILDING. DRAINAGE AREA 'B' IS APPROXIMATELY 85% IMPERVIOUS.

THE TOTAL EXISTING LIMITS OF LAND DISTURBANCE CONTAIN APPROXIMATELY 2.88 IMPERVIOUS ACRES OF SURFACE AREA AND WITH 0.28 EXISTING ACRES OF MANAGED TURF. DETAILED INFORMATION ON THE PIPE CAPACITY CURRENTLY IN THE CLOSED CONDUIT SYSTEM WITHIN N. WASHINGTON AND E. BROAD STREETS WAS NOT AVAILABLE AT THIS TIME. THE EXISTING PIPES ARE ASSUMED TO BE FLOWING AT 80% CAPACITY.

RE-DEVELOPMENT CONDITIONS:

THE EXISTING PARKING LOT AND BUILDINGS WILL BE DEMOLISHED AND THE SITE RE-DEVELOPED AS A GROUND FLOOR RETAIL BUILDING WITH AN UNDERGROUND PARKING FACILITY BELOW AND RESIDENTIAL UNITS ABOVE, GARAGE ENTRANCES, FRONTAGE IMPROVEMENTS ALONG EAST BROAD STREET AND NORTH WASHINGTON STREET, AND A SERVICE/LOADING DOCK WITH ACCESS FROM PARK PLACE.

THE IMPERVIOUS AREA WITHIN THE LIMITS OF LAND DISTURBANCE WILL INCREASE BY 0.23 ACRES AS A RESULT OF THE RE-DEVELOPMENT. EXISTING DRAINAGE DIVIDES HAVE BEEN HONORED TO THE MAXIMUM EXTENT POSSIBLE, PRESERVING THE SAME POINTS OF CONFLUENCE FOR DRAINAGE AREAS 'A' AND 'B'. THE MAJORITY OF THE SITE WILL BE CAPTURED AND TREATED WITHIN THE UNDERGROUND PARKING FACILITY BY MANUFACTURED BEST MANAGEMENT PRACTICES (BMPS). THESE AREAS ARE NOTED AS "CONTROLLED" AREAS WITHIN THE POST-DEVELOPMENT PERVIOUS/IMPERVIOUS AREA MAP ON THIS SHEET.

WATER QUANTITY:

SITE RUNOFF WITHIN DRAINAGE AREA 'B' WILL INCREASE WITH RE-DEVELOPMENT. IT WILL BE DETAINED WITHIN AN UNDERGROUND DETENTION FACILITY, (I.E. MAXCHAMBER OR APPROVED EQUIVALENT), WHICH WILL RELEASE STORMWATER THROUGH A CONTROL STRUCTURE DESIGNED TO MEET THE CITY OF FALLS CHURCH STORMWATER DISCHARGE REQUIREMENTS. THE MAXIMUM ALLOWABLE RELEASE RATE, BASED ON THE EXISTING PEAK FLOW, SUBTRACTING THE UNCONTROLLED POST-DEVELOPMENT PEAK FLOW, IS 15.78 CFS FOR THE 10-YEAR STORM. THE PROPOSED UNDERGROUND DETENTION FACILITY ON-SITE WILL BE DESIGNED TO MITIGATE STORMWATER GENERATED BY THE RE-DEVELOPMENT IN EXCESS OF THE ALLOWABLE DISCHARGE. SEE DRAINAGE AREA 'A' WATER QUANTITY COMPUTATIONS ON THIS SHEET

SITE RUNOFF WITHIN DRAINAGE AREA 'A' WILL DECREASE WITH RE-DEVELOPMENT AND THEREFORE REQUIRES NO DETENTION.

WATER QUALITY/BMP NARRATIVE:

WATER QUALITY FOR THIS SITE WILL BE ACHIEVED USING MANUFACTURED BMP FACILITIES LOCATED WITHIN THE UNDERGROUND PARKING STRUCTURE. THE NUMBER OF BMPS AND MORE PRECISE LOCATIONS WILL BE DESIGNED AND PROVIDED WITH THE FINAL ENGINEERING SITE PLAN APPLICATION. THESE MANUFACTURED FACILITIES WILL BE DESIGNED TO TREAT THE FIRST 1.0" OF RUNOFF WITH A PHOSPHORUS REMOVAL RATING OF AT LEAST 50%. SEE SHEET C14.0 FOR A SUMMARY OF THE VIRGINIA RUNOFF REDUCTION SPREADSHEET COMPUTATIONS.

DRAINAGE AREA 'A' WATER QUANTITY COMPUTATIONS

Q2(ALLOWABLE) = Q2 (EX) – Q2 (UNCONTROLLED)
Q2 (EX) = (0.90 X 0.05 AC) + (0.90 X 0.46 AC) X 5.45 IN/HR = 2.50 CFS
Q2 (UNCONTROLLED) = (0.90 X 0.26 AC) + (0.90 X 0.11 AC) + (0.80 X 0.14 AC) X 5.45 IN/HR = 2.43 CFS
Q2(ALLOWABLE) = 2.50 CFS – 2.43 CFS = 0.07 CFS
Q2(PROP) < 0.07 CFS

Q10(ALLOWABLE) = Q10 (EX) – Q10 (UNCONTROLLED)
Q10 (EX) = (0.90 X 0.05 AC) + (0.90 X 0.46 AC) X 7.27 IN/HR = 3.33 CFS
Q10 (UNCONTROLLED) = (0.90 X 0.26 AC) + (0.90 X 0.11 AC) + (0.80 X 0.14 AC) X 7.27 IN/HR = 3.24 CFS
Q10(ALLOWABLE) = 3.33 CFS – 3.24 CFS = 0.09 CFS
Q10(PROP) < 0.09 CFS

THE PROPOSED IMPROVEMENTS WITHIN AREA 'A' WILL REDUCE THE TOTAL RUNOFF TO THE POINT OF CONFLUENCE. NO DETENTION IS NECESSARY.

DRAINAGE AREA 'B' WATER QUANTITY COMPUTATIONS

Q2(ALLOWABLE) = Q2 (EX) – Q2 (UNCONTROLLED)
Q2 (EX) = (0.80 X 2.70 AC) + (0.80 X 0.29 AC) X 5.45 IN/HR = 13.04 CFS
Q2 (UNCONTROLLED) = (0.85 X 0.26 AC) X 5.45 IN/HR = 1.20 CFS
Q2(ALLOWABLE) = 13.04 CFS – 1.20 CFS = 11.84 CFS
Q2(PROP) < 11.84 CFS

Q10(ALLOWABLE) = Q10 (EX) – Q10 (UNCONTROLLED)
Q10 (EX) = (0.80 X 2.70 AC) + (0.80 X 0.29 AC) X 7.27 IN/HR = 17.39 CFS
Q10 (UNCONTROLLED) = (0.85 X 0.26 AC) X 7.27 IN/HR = 1.61 CFS
Q10(ALLOWABLE) = 17.39 CFS – 2.84 CFS = 15.78 CFS
Q10(PROP) < 15.78 CFS

Trapezoidal Hydrograph Storage Volume Equation - 10 year

$$V = \left[Q_i T_d + \frac{Q_i t_c}{4} - \frac{q_o T_d}{2} - \frac{3 q_o t_c}{4}\right] 60$$

Qi	Inflow Peak Discharge	17.39 cfs
tc	Post Development Time of Concentration	5 min
qo	Allowable Peak Discharge	15.78 cfs
Td	Critical Storm Duration	5 min
V	**Required Volume**	**603.75 ft^3**

Trapezoidal Hydrograph Storage Volume Equation - 2 year

$$V = \left[Q_i T_d + \frac{Q_i t_c}{4} - \frac{q_o T_d}{2} - \frac{3 q_o t_c}{4}\right] 60$$

Qi	Inflow Peak Discharge	13.04 cfs
tc	Post Development Time of Concentration	5 min
qo	Allowable Peak Discharge	11.84 cfs
Td	Critical Storm Duration	5 min
V	**Required Volume**	**450 ft^3**

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CONCEPTUAL SWM AND BMP PLAN AND DRAINAGE MAP
BROAD & WASHINGTON
CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
10-30-15
LANDSCAPE ARCHITECT

PLAN STATUS	
DATE	DESCRIPTION

BG DESIGN	KF DRAWN	BG CHKD
SCALE	H: 1" =50' V:	
JOB No. 8366-01-001		
DATE : June 2015		
FILE No. 8366-D-RZ-001		
SHEET C13.0		

P:\8366 – Falls Church Assemblage\8366-02-001 (PLN) – Broad & Washington St\Planning\Rezoning\8366-D-RZ-001 DDP.dwg

EXAMPLE UNDERGROUND DETENTION SYSTEM AND MANUFACTURED TREATMENT DEVICE

ADS
ADVANCED DRAINAGE SYSTEMS, INC.

STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MADE FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

BAYSAVER BAYFILTER SPECIFICATIONS

PRODUCTS

A. INTERNAL COMPONENTS: ALL COMPONENTS INCLUDING CONCRETE STRUCTURE(S), PVC MANIFOLD PIPING AND FILTER CARTRIDGES, SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES LLC, 1030 DEER HOLLOW DRIVE, MOUNT AIRY, MD (800.229.7283).

B. PVC MANIFOLD PIPING: ALL INTERNAL PVC PIPE AND FITTINGS SHALL MEET ASTM D1785. MANIFOLD PIPING SHALL BE PROVIDED TO THE CONTRACTOR PARTIALLY PRE-CUT AND PRE-ASSEMBLED.

C. FILTER CARTRIDGES: EXTERNAL SHELL OF THE FILTER CARTRIDGES SHALL BE SUBSTANTIALLY CONSTRUCTED OF POLYETHYLENE OR EQUIVALENT MATERIAL ACCEPTABLE TO THE MANUFACTURER. FILTRATION MEDIA SHALL BE ARRANGED IN A SPIRAL LAYERED FASHION TO MAXIMIZE AVAILABLE FILTRATION AREA. AN ORIFICE PLATE SHALL BE SUPPLIED WITH EACH CARTRIDGE TO RESTRICT THE FLOW RATE TO A MAXIMUM OF 45 GPM.

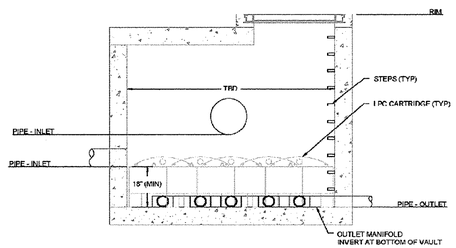
D. FILTER MEDIA: FILTER MEDIA SHALL BE BY BAYSAVER TECHNOLOGIES LLC AND SHALL CONSIST OF THE FOLLOWING MIX: A BLEND OF ZEOLITE, PERLITE AND ACTIVATED ALUMINA.

E. PRECAST CONCRETE VAULT: CONCRETE STRUCTURES SHALL BE PROVIDED ACCORDING TO ASTM C. THE MATERIALS AND STRUCTURAL DESIGN OF THE DEVICES SHALL BE PER ASTM C478, C857 AND C858. PRECAST CONCRETE SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES, LLC.

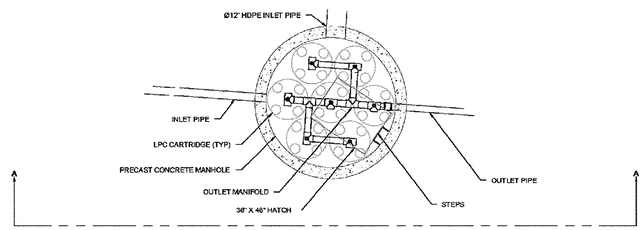
PERFORMANCE

A. THE STORMWATER FILTER SYSTEM SHALL BE AN OFFLINE DESIGN CAPABLE OF TREATING 100% OF THE REQUIRED TREATMENT FLOW AT FULL SEDIMENT LOAD CONDITIONS.
B. THE STORMWATER FILTER SYSTEMS CARTRIDGES SHALL HAVE NO MOVING PARTS.
C. THE STORMWATER TREATMENT UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 85% OF SUSPENDED SOLIDS, 65% OF TOTAL PHOSPHORUS, 85% OF TURBIDITY, 80% OF TOTAL COPPER, AND 60% OF TOTAL ZINC BASED ON FIELD DATA COLLECTED IN COMPLIANCE WITH THE TECHNOLOGY ACCEPTANCE RECIPROCITY PARTNERSHIP TIER II TEST PROTOCOL.
D. THE STORMWATER FILTRATION SYSTEM SHALL REDUCE INCOMING TURBIDITY (MEASURED AS NTUs) BY 50% OR MORE AND SHALL NOT HAVE ANY COMPONENTS THAT LEACH NITRATES OR PHOSPHATES.
E. THE STORMWATER FILTRATION CARTRIDGE SHALL BE EQUIPPED WITH A HYDRODYNAMIC BACKWASH MECHANISM TO EXTEND THE FILTER'S LIFE AND OPTIMIZE ITS PERFORMANCE.
F. THE STORMWATER FILTRATION SYSTEM SHALL BE DESIGNED TO REMOVE A MINIMUM OF 65% OF THE INCOMING TOTAL PHOSPHORUS (TP) LOAD.
G. THE STORMWATER FILTRATION SYSTEM'S CARTRIDGES SHALL HAVE A TREATED SEDIMENT CAPACITY FOR 80% TSS REMOVAL BETWEEN 150-350 LBS.

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPORUS. THE BAYFILTER SYSTEM RELIES ON A SPIRAL WOUND MEDIA FILTER CARTRIDGE WITH APPROXIMATELY 45 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS OFFLINE WITH AN EXTERNAL BYPASS THAT ROUTES HIGH INTENSITY STORMS AROUND THE SYSTEM. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION (INCEPTION/ATTACHMENT) AND ABSORPTION.



SECTION A-A

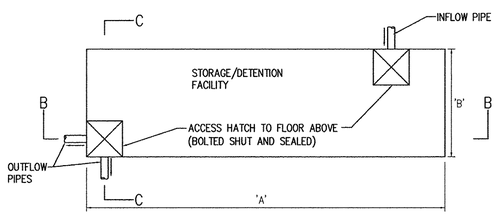


* ONE OUTFLOW PIPE PER VAULT. LOCATION TO BE DETERMINED AT THE TIME OF FINAL ENGINEERING. OUTFALL MAY BE PUMPED.

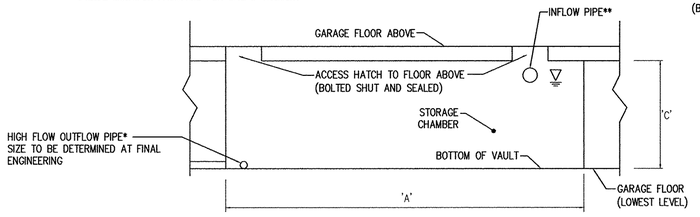
** FINAL NUMBER AND LOCATION OF INFLOW PIPES TO BE DETERMINED BY BUILDING AND PLUMBING DESIGN.

NOTES:

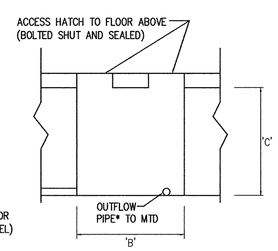
1) FINAL NUMBER, SHAPE, SIZE, LOCATION, AND DESIGN OF SWM VAULTS ARE SUBJECT TO CHANGE AT THE TIME OF FINAL ENGINEERING.
2) SUPPORT AND REINFORCING FOR VAULTS TO BE PROVIDED BY STRUCTURAL ENGINEERING PLANS.
3) PUMPS SHALL BE INTEGRATED INTO VAULTS AT THE TIME OF FINAL ENGINEERING ON A CASE BY CASE BASIS.
4) APPLICANT RESERVES THE RIGHT, AT FINAL SITE PLAN, TO UTILIZE MULTIPLE FACILITIES PER SITE IF NEEDED.



PLAN VIEW



SECTION B-B



SECTION C-C

SWM CONTROL SUMMARY

VAULT ID NAME	REQUIRED VOLUME (CF)	LENGTH (FT) A	WIDTH (FT) B	STORAGE DEPTH (FT) C	VOLUME PROVIDED (CF)
FACILITY 'A'	603.75	8	8	10	640

1 / C14.0 CONCEPTUAL DETENTION FACILITY DETAIL

NOT TO SCALE

NOTE:
1. THIS PLAN IS INTENDED FOR INFORMATION ONLY TO DEMONSTRATE POTENTIAL METHODS OF RAINWATER COLLECTION FOR STORM WATER MANAGEMENT. FINAL METHODS, MEANS, LOCATIONS, SIZES AND SPECIFIC FACILITIES WILL VARY WITH FINAL ENGINEERING DESIGN, AS ALLOWED BY THE REQUIREMENTS OF THE CITY OF FALLS CHURCH.

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	0.30	0.30	*8.80*
Impervious (acres)	0.00	0.00	0.00	3.11	3.11	*91.20*
					3.41	*100.00*

Site Rv	0.89
Post Development Treatment Volume (ft^3)	10997
Post Development TP Load (lb/yr)	6.91
Post Development TN Load (lb/yr)	49.43
Total TP Load Reduction Required (lb/yr)	1.69

Total Runoff Volume Reduction (ft^3)	0
Total TP Load Reduction Achieved (lb/yr)	3
Total TN Load Reduction Achieved (lb/yr)	0.00
Adjusted Post Development TP Load (lb/yr)	4.06
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)	0.00	0.30	0.00	0.00	0.00	*0.30*
Impervious (acres)	0.93	2.18	0.00	0.00	0.00	*3.11*
						3.41

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)	0.73	2.12	0.00	0.00	0.00	*2.85*
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	0.00	0.00	*0.00*
Impervious (acres)	0.00	0.00	0.00	0.93	0.93	*100.00*
					0.93	

BMP Selections

Practice	Credit Area (acres)		Downstream Practice
14. Structural BMP	**Impervious:**	**0.67**	
	Turf (Pervious):	**0**	

Total Impervious Cover Treated (acres)	0.67
Total Turf Area Treated (acres)	0.00
Total TP Load Reduction Achieved in D.A. A (lb/yr)	0.73
Total TN Load Reduction Achieved in D.A. A (lb/yr)	0.00

Drainage Area B 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	0.30	0.30	*12.10*
Impervious (acres)	0.00	0.00	0.00	2.18	2.18	*87.90*
					2.48	

BMP Selections

Practice	Credit Area (acres)		Downstream Practice
14. Structural BMP	**Impervious:**	**1.96**	
	Turf (Pervious):	**0**	

Total Impervious Cover Treated (acres)	1.96
Total Turf Area Treated (acres)	0.00
Total TP Load Reduction Achieved in D.A. A (lb/yr)	2.12
Total TN Load Reduction Achieved in D.A. A (lb/yr)	0.00

Channel and Flood Protection

	Weighted CN	1-year storm Adjusted CN	2-year storm Adjusted CN	10-year storm Adjusted CN
Target Rainfall Event (in)		2.70	3.20	5.20
D.A. A CN	98	98	98	98
D.A. B CN	96	96	96	96
D.A. C CN	0	#N/A	#N/A	#N/A
D.A. D CN	0	#N/A	#N/A	#N/A
D.A. E CN	0	#N/A	#N/A	#N/A

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CONCEPTUAL SWM AND BMP NOTES AND DETAILS

BROAD & WASHINGTON

CITY OF FALLS CHURCH, VIRGINIA

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUSCHER
Lic. No. 000832
6-30-15
LANDSCAPE ARCHITECT

PLAN STATUS

DATE	DESCRIPTION

BG DESIGN	KF DRAWN	BG CHKD
SCALE	H: N/A V:	

JOB No. 8366-01-001

DATE : June 2015

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