ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division

2100 Clarendon Boulevard, Suite 414, Arlington, VA 22201
Phone: 703.228.3332 Fax: 703.228.3328 www.arlingtonva.us

LANDSCAPE ARCHITECT/CIVIL ENGINEER

LSG LANDSCAPE ARCHITECTURE

1775 GREENSBORO STATION PL
SUITE 110
TYSONS, VIRGINIA 22102
703-821-2045

COMMONWEALTH OF VIRGINIA
CHIHUI FAN
Lic. No. 001316
4/15/2020
LANDSCAPE ARCHITECT

christopher consultants
engineering · surveying · land planning
9900 main street (fourth floor) · fairfax, va 22031-3907
703.273.6820 · fax 703.273.6820

Plans For:

Rosslyn Highlands Park

Rosslyn Highlands Park Site C

I8TH STREET
ARLINGTON, VIRGINIA

Table of Contents:

1. THE CONTRACTOR SHALL FULLY ACQUAINT HIMSELF WITH THE CONDITIONS OF THE SITE. THE CONTRACTOR SHALL THOROUGHLY EXAMINE AND BE FAMILIAR WITH THE DRAWINGS AND SPECIFICATIONS. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES, OMISSIONS, AMBIGUITIES, OR CONFLICTS IN OR AMONG THE CONTRACT DOCUMENTS OR BE IN DOUBT AS TO THEIR MEANING, HE SHALL BRING THESE ITEMS TO THE ATTENTION OF THE PROJECT OFFICER FOR DIRECTION BEFORE PROCEEDING WITH WORK.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND BE RESPONSIBLE FOR ADHERENCE TO ALL ORDINANCES, REGULATIONS, LAWS AND CODES HAVING JURISDICTION OVER THE PROPERTY.
3. THE CONTRACTOR SHALL SUBMIT A REQUIRED "RESPONSIBLE LAND DISTURBER" CERTIFICATION LETTER AS PART OF OBTAINING A BUILDING (OR DISTURBANCE) PERMIT.
4. THE CONTRACTOR IS RESPONSIBLE FOR LICENSING AS REQUIRED BY APPLICABLE REGULATORY AGENCIES.
5. THE CONTRACTOR IS RESPONSIBLE FOR ALL SALES, USE AND CAPITAL GAINS TAXES.
6. UTILITY LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE LOCATIONS DETERMINED FROM VISIBLE EVIDENCE AND AVAILABLE RECORDS. ADDITIONAL UNDERGROUND UTILITY LINES MAY BE PRESENT THAT ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND PRESERVE EXISTING UTILITIES.
7. CONTRACTOR SHALL NOT SUBSTITUTE PRODUCTS OR MATERIALS WITHOUT PRIOR APPROVAL BY THE PROJECT OFFICER.
8. THE CONTRACTOR SHALL IDENTIFY ALL STAGING AREAS AND LIMITS OF WORK FOR APPROVAL BY THE PROJECT OFFICER PRIOR TO THE START OF WORK. AREAS OUTSIDE LIMITS OF WORK SHALL NOT BE USED FOR STORAGE OR MOVEMENT OF MATERIALS, MACHINERY OR DEBRIS.
9. THE CONTRACTOR SHALL OBTAIN THE PROJECT OFFICER'S APPROVAL FOR TIMES OF DAY DURING WHICH CONSTRUCTION OPERATIONS MAY OCCUR. ALL CONSTRUCTION OPERATIONS SHALL OCCUR WITHIN TIMES SPECIFIED BY LOCAL ORDINANCES.
10. CONSTRUCTION ACTIVITIES FOR THIS PROJECT OCCUR ENTIRELY ON PARK PROPERTY, THEREFORE, A MAINTENANCE OF TRAFFIC (MOT) PLAN IS NOT EXPECTED TO BE REQUIRED. HOWEVER, IF THE ARLINGTON DEPARTMENT OF ENVIRONMENTAL SERVICES (DES) DETERMINES THAT AN MOT PLAN IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE PLAN TO DES FOR THEIR REVIEW AND APPROVAL.
11. THE CONTRACTOR SHALL BE ON SITE AT TIME OF ALL MATERIALS DELIVERIES.
12. THE CONTRACTOR SHALL KEEP THE SITE CLEAN AND FREE OF TRASH AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A TRASH RECEPTACLE TO BE USED ON SITE DURING CONSTRUCTION AND SHALL REMOVE TRASH FROM THE SITE ON A DAILY BASIS.
13. THE CONTRACTOR SHALL KEEP VEHICULAR ACCESS AREAS CLEAN DURING CONSTRUCTION. VEHICULAR AND OTHER PAVED AREAS SHALL BE WASHED FREE OF MUD ON A WEEKLY BASIS DURING CONSTRUCTION.
14. THE CONTRACTOR SHALL SECURE THE CONSTRUCTION AREA WITH FENCING AT END OF WORKDAY AND WHEN CONTRACTOR IS NOT ON SITE.
15. THE CONTRACTOR SHALL DISTRIBUTE ALL PROJECT MATERIALS AND EQUIPMENT AND DISTRIBUTE ANY STOCKPILES IN SUCH A MANNER AS TO PROTECT EXISTING CONDITIONS, SUCH AS UTILITIES, PAVING, VEGETATION, ETC. THE CONTRACTOR SHALL NOT STOCKPILE SOIL OR CONSTRUCTION MATERIALS, OR DRIVE VEHICLES WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES TO REMAIN. THE CONTRACTOR SHALL OBTAIN THE PROJECT OFFICER'S APPROVAL FOR ALL CONSTRUCTION ACCESS AREAS, STAGING AND STOCKPILE AREAS PRIOR TO CONSTRUCTION.
16. THE CONTRACTOR SHALL NOT BLOCK STREETS, PARKING AREAS, HOUSE OR DRIVEWAY ENTRANCES DURING CONSTRUCTION WITHOUT THE PROJECT OFFICER'S PERMISSION AND APPROVAL OF ANY RIGHT-OF-WAY PERMITS IF REQUIRED..
17. THE CONTRACTOR SHALL STAKE THE ALIGNMENT OF ALL PAVEMENT, WALLS, CURBING, SAFETY SURFACING AND SITE FEATURES IN THE FIELD FOR APPROVAL BY THE PROJECT OFFICER PRIOR TO CONSTRUCTION.
18. THE CONTRACTOR SHALL PROMPTLY REPAIR ALL DAMAGE TO EXISTING PAVEMENT, DRIVEWAYS, AND ADJACENT FACILITIES CAUSED BY CONSTRUCTION OPERATIONS. COST OF REPAIRS SHALL BE AT CONTRACTOR'S EXPENSE.
19. CONTRACTOR SHALL REMOVE ALL EXCESS SOIL, TEMPORARY FENCING, EROSION CONTROL MEASURES, STABILIZATION MATERIALS, AND OTHER DEBRIS AND SHALL DISPOSE LEGALLY UPON COMPLETION OF THE PROJECT. CONTRACTOR SHALL THOROUGHLY WASH AND CLEAN ALL PAVED AREAS, WALLS, SITE FURNISHINGS AND FEATURES, ETC. UPON COMPLETION OF THE PROJECT.
20. REFER TO INDIVIDUAL DRAWINGS FOR ADDITIONAL NOTES.

ARLINGTON COUNTY
DEPARTMENT OF ENVIRONMENTAL SERVICES
WATER-SEWER CONSTRUCTION REQUIREMENTS (REVISED MARCH 2005)

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES CONSTRUCTION STANDARDS & SPECIFICATIONS (LATEST EDITION) AND SHALL BE APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL SERVICES. UPON PHYSICAL INSPECTION, THE COUNTY RESERVES THE RIGHT TO REJECT THE USE OF ANY MATERIAL FOUND TO BE DEFECTIVE OR NOT CONFORMING TO THE STANDARDS AND SPECIFICATIONS.
2. BEFORE START OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE FOLLOWING INFORMATION AND/OR EVIDENCE OF COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND LAWS, TO THE ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES:

A. THE NAME AND ADDRESS OF THE CONTRACTOR HIRED TO WORK ON THE PROJECT. THE CONTRACTOR SHALL BE REGISTERED IN THE COMMONWEALTH OF VIRGINIA. SATISFACTORY EVIDENCE SHALL BE FURNISHED OF THE CONTRACTOR'S PRIOR EXPERIENCE AS PRIME CONTRACTOR IN THE CONSTRUCTION OF WATER MAINS AND/OR SANITARY SEWER INSTALLATIONS. FURTHER, THE CONTRACTOR SHALL FURNISH A LETTER WITH A LIST OF MATERIALS AND SUPPLIERS FOR PROPOSED PROJECT.

B. A RIGHT OF WAY PERMIT IS REQUIRED TO WORK IN ARLINGTON COUNTY STREETS. IN INSTANCES OF EXCAVATIONS IN STATE RIGHT OF WAY, THE DATE AND NUMBER OF ALL PERMITS REQUIRED BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) SHALL BE FURNISHED.

C. IF ANY OTHER EASEMENT IS NEEDED, TWO (2) COPIES OF THE DESCRIPTION OF SUCH EASEMENT, AS ACTUALLY RECORDED, SHALL BE FURNISHED, INCLUDING THE PLACE, DATE AND REFERENCE OF SUCH RECORDATION.

D. WRITTEN NOTICE OF TENTATIVE STARTING DATE OF CONSTRUCTION, WHICH SHALL BE A MINIMUM OF ONE (1) WEEK FOLLOWING THE DATE OF NOTICE. IN ADDITION, THE CONTRACTOR SHALL FURNISH THE NAMES AND TELEPHONE NUMBERS OF TWO (2) RESPONSIBLE PERSONS WHO CAN BE CONTACTED IN CASE OF EMERGENCY.

ACTUAL CONSTRUCTION SHALL NOT BEGIN UNTIL THE ABOVE ITEMS HAVE BEEN COMPLETED AND THE ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES APPROVED THE STARTING DATE AND ARRANGEMENTS HAVE BEEN MADE FOR THE REQUIRED INSPECTION SERVICE.

3. ALL CONSTRUCTION SHALL BE ACCOMPLISHED FROM APPROVED PLANS, SPECIFICATIONS AND CUT SHEETS SUBMITTED BY A REGISTERED ENGINEER AND APPROVED BY THE COUNTY. TO AVOID CONSTRUCTION DELAYS ALL NECESSARY TEST HOLE INFORMATION SHALL BE OBTAINED PRIOR TO MOBILIZATION AND CONSTRUCTION PLANS SHALL BE REVISED ACCORDINGLY.
4. NO EXISTING WATER MAINS, FIRE HYDRANTS, OR SANITARY SEWERS MAY BE TAKEN OUT OF SERVICE OR MADE INACCESSIBLE BY THE CONTRACTOR WITHOUT THE PRIOR APPROVAL FROM THE DEPARTMENT OF ENVIRONMENTAL SERVICES.
5. UPON COMPLETION OF CONSTRUCTION, ALL FINAL TESTS, AS REQUIRED, SHALL BE PERFORMED IN THE PRESENCE OF THE COUNTY'S REPRESENTATIVE. WATER AND SEWER SERVICE CONNECTIONS SHALL NOT BE MADE UNTIL THE WATER AND/OR SEWER MAINS AND APPURTENANCES HAVE BEEN APPROVED AND ACCEPTED BY ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES.
6. EXISTING WATER SERVICES MAY BE ALLOWED FOR CONSTRUCTION PURPOSES ONLY FOR WHICH CONTRACTOR SHALL REQUEST TO THE ARLINGTON COUNTY'S UTILITY SERVICES BY CALLING 703-228-3636. PRIOR TO THE FINAL ACCEPTANCE OF THE PROJECT, THE DEVELOPER SHALL REQUEST TO THE UTILITY SERVICES IN WRITING FOR THE DISCONTINUATION OF ALL EXISTING WATER SERVICES. ALSO, THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EXISTING METER BOXES RELATED TO THE SERVICES BEING DISCONTINUED.
7. THE CONTRACTOR SHALL MAINTAIN BACKFILL FOR UTILITY EXCAVATIONS UNTIL ARLINGTON COUNTY HAS FINALLY ACCEPTED THE PROPOSED WATER AND/OR SEWER MAIN. ALSO, ALL SURFACES OVER THE UTILITY EXCAVATIONS SHALL EITHER BE RESTORED TO THE ORIGINAL CONDITION OR FINISHED AS PER THE PROPOSED DESIGN BEFORE THE ACCEPTANCE OF THE PROJECT. PAVEMENT PATCHING FOR UTILITY CUTS IN THE PUBLIC STREETS SHALL BE PERFORMED IN ACCORDANCE WITH ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES CONSTRUCTION STANDARDS AND SPECIFICATIONS OR AS PER VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS DEPENDING UPON THE STREET JURISDICTION. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL ADJUST ALL EXISTING VALVE BOXES AND SANITARY SEWER MANHOLE FRAME AND COVERS AS PER COUNTY STANDARDS, REMOVE ALL ABANDONED SANITARY MANHOLES AND VALVE BOXES OVER THE ABANDONED WATER MAINS, AND COMPLETE ALL NECESSARY WATER MAIN "CUT AND CAPS".
8. UPON COMPLETION, APPROVAL, AND ACCEPTANCE OF WATER AND/OR SEWER MAINS AND APPURTENANCES, THE DEVELOPER'S REGISTERED ENGINEER SHALL SUBMIT TO ARLINGTON COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES, A SET OF MYLAR TRACINGS INDICATING THE AS-BUILT CONDITIONS AND A SIGNED STATEMENT CONFIRMING THAT THE WORK, AS INDICATED, IS ACCEPTABLE TO THE ENGINEER. SUCH SUBMITTALS SHALL BE MADE BEFORE REQUESTING REDUCTION AND/OR RELEASE OF THE SURETY BOND.

PROJECT DESCRIPTION
THIS PROJECT CONSISTS OF AN APPROXIMATELY 9,000 SQUARE FOOT SITE WITH A CHILDREN'S PLAYGROUND SERVING TWO (2) AGE GROUPS: FROM 2-5 YEARS OLD AND FROM 5-12 YEARS OLD, A TERRACED SEATING AREA, URBAN BIORETENTION, TREE CANOPY REQUIREMENT TREE PLANTING, AND A PORTION OF THE I8TH STREET STREETSCAPE. MOST OF THE PROJECT WILL BE CONSTRUCTED ABOVE THE QUEENS COURT PARKING GARAGE STRUCTURE AND ADJACENT TO THE QUEENS COURT MULTI-FAMILY HOUSING BUILDING.

ARLINGTON COUNTY
DEPARTMENT OF ENVIRONMENTAL SERVICES

NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT ARLINGTON COUNTY DES STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL REMOVE AND REPLACE, TO THE CURRENT ARLINGTON COUNTY DES STANDARDS AND SPECIFICATIONS, ANY EXISTING ENTRANCES, CURB AND GUTTER OR SIDEWALK ALONG THE FRONTAGE OF THIS SITE IN POOR CONDITION, OR DAMAGED DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND CLOSING, TO ARLINGTON COUNTY STANDARDS, ANY EXISTING ENTRANCES NOT BEING USED IN CONJUNCTION WITH THIS DEVELOPMENT.
4. THE CONTRACTOR SHALL OBTAIN ARLINGTON COUNTY PERMITS FOR ALL OF THIS SITE.
5. THERE MAY BE UNDERGROUND CONDUIT, CABLES AND TRAFFIC DETECTION DEVICES IN THIS AREA, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY TRAFFIC CONTROLS THAT ARE DISTURBED DURING CONSTRUCTION. NOTIFY THE TRANSPORTATION ENGINEERING & OPERATIONS BUREAU AT (703) 228-3575, 24 HOURS PRIOR TO STARTING WORK.
6. THE CONTRACTOR SHALL NOT DISTURB OR REMOVE ANY TRAFFIC CONTROL SIGNS, PARKING METERS OR ANY OTHER TRAFFIC CONTROL DEVICE WITHOUT PRIOR PERMISSION FROM THE TRANSPORTATION ENGINEERING & OPERATIONS BUREAU. CONTACT TRANSPORTATION ENGINEERING AT (703) 228-3575.
7. THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE TRANSPORTATION ENGINEERING & OPERATIONS BUREAU, PRIOR TO PLACING ANY OBSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY, OR ON SIDEWALKS ALONG THE FRONTAGE OF THIS DEVELOPMENT.
8. THE CONTRACTOR SHALL OBTAIN PERMITS FROM THE INSPECTION SERVICES DIVISION PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION OF ON-SITE FACILITIES. FOR INFORMATION AND PERMIT REQUIREMENTS TELEPHONE (703) 228-3800.

UTILITY MARKING REQUIREMENTS:

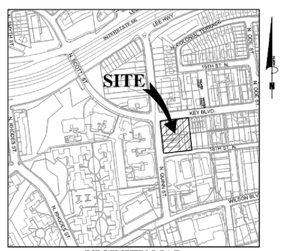
9. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 811, 72 HOURS PRIOR TO THE START OF ANY EXCAVATION OR CONSTRUCTION, FOR THE MARKING OF UNDERGROUND UTILITIES IN THE RIGHT-OF-WAY.
10. UTILITY LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE LOCATIONS DETERMINED FROM VISIBLE EVIDENCE AND AVAILABLE RECORDS. ADDITIONAL UNDERGROUND UTILITY LINES MAY BE PRESENT THAT ARE NOT SHOWN. THE CONTRACTOR SHALL LOCATE AND PRESERVE ALL EXISTING UTILITIES.

HORIZONTAL DATUM:

THE SITE SHOWN HEREON IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983 AS COMPUTED FROM A FIELD RUN BOUNDARY AND HORIZONTAL CONTROL SURVEY.

VERTICAL DATUM:

THE SITE SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 AS COMPUTED FROM A FIELD RUN VERTICAL CONTROL SURVEY.



VICINITY MAP
SCALE: 1"= 250'

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Parks Development Division
2100 Clarendon Boulevard, Suite 414
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Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM# 20-0120

ROSSLYN HIGHLANDS
ROSSLYN HIGHLANDS PARK SITE C

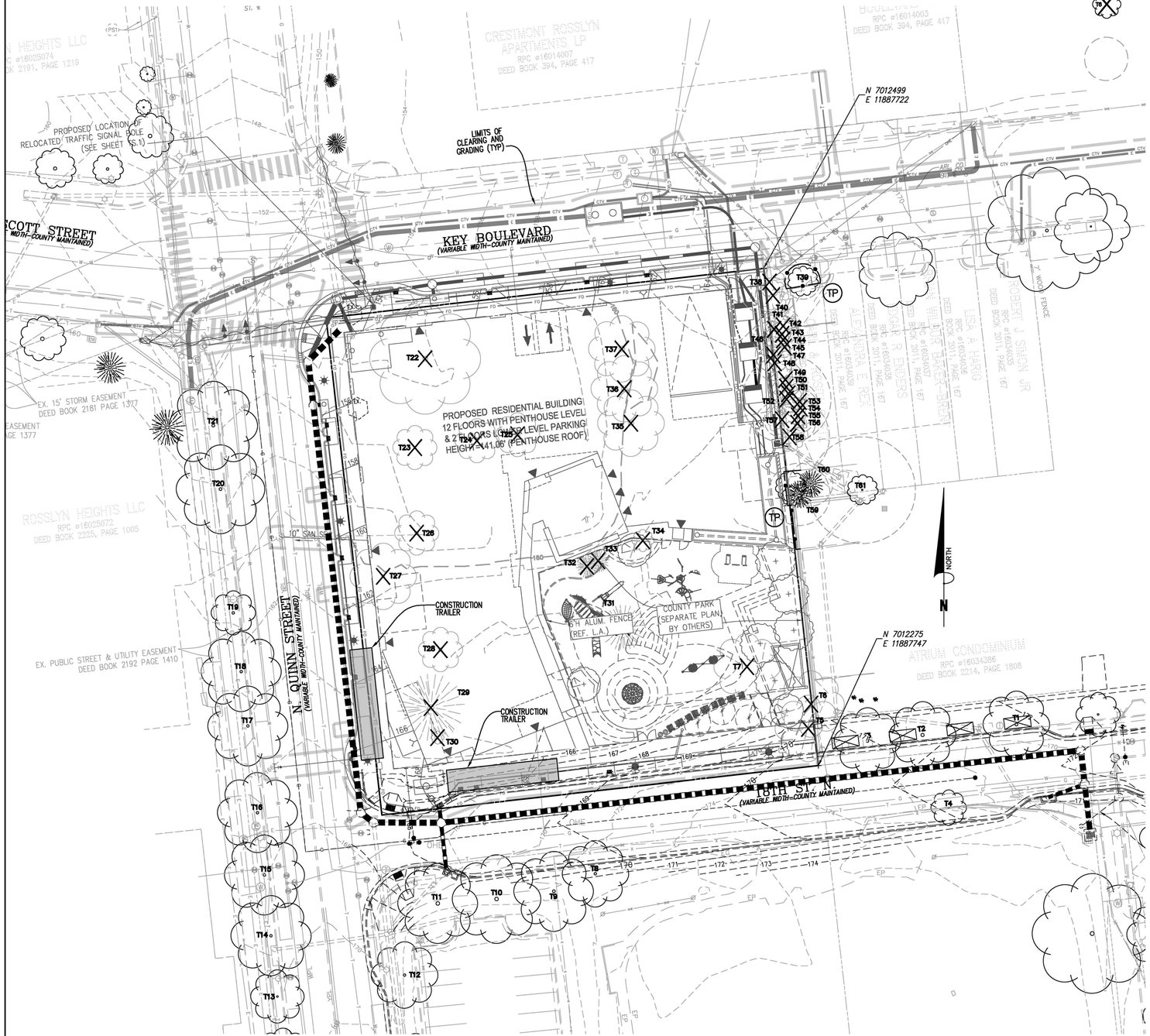
PERMIT SET
09/08/2020
18TH STREET

Approvals Date

Park Development Division Chief

Design Manager

Sheet L0.1



NOTE:
1. FOR INFORMATION ONLY. REFER TO APPROVED SITE PLAN #444 QUEENS COURT.
2. NOT IN CONTRACT.

1 TREE INVENTORY
NTS

LEGEND

EXISTING TREE TO BE PRESERVED	SILT FENCE
EXISTING TREE TO BE REMOVED	LIMITS OF DISTURBANCE
EXISTING TREE CRITICAL ROOT ZONE	TREE PROTECTION FENCE

TREE INVENTORY & REPLACEMENT CALCULATIONS

Queens Court, Arlington, VA
Date of site visit(s): December 4, 2015
Certified Arborist: Gregg D. Eberly (MA-4616A)

Tree #	Botanic Name	Common Name	Caliper (DBH)	Condition Rating	Species Rating	Total Rating	Replacement(s) Required	Preserve/ Remove
1	Quercus phellos	Willow Oak	14	0.80	0.70	7.84	-	Preserve
2	Quercus phellos	Willow Oak	14	0.80	0.70	7.84	-	Preserve
3	Quercus phellos	Willow Oak	12	0.80	0.70	6.72	-	Preserve
4	Ailanthus altissima	Tree of Heaven	6	0.50	0.40	1.60	-	Preserve
5	Prunus serotina	Black Cherry	12	0.80	0.50	4.80	N/A (Note #6)	Remove
6	Ailanthus altissima	Tree of Heaven	5	0.80	0.40	2.56	N/A (Note #6)	Remove
7	Picea abies	Norway Spruce	12	0.60	0.70	5.04	N/A (Note #6)	Remove
8	Fraxinus pennsylvanica	Green Ash	12	0.70	0.40	3.36	-	Preserve
9	Fraxinus pennsylvanica	Green Ash	12	0.70	0.40	3.36	-	Preserve
10	Fraxinus pennsylvanica	Green Ash	18	0.70	0.40	5.04	-	Preserve
11	Fraxinus pennsylvanica	Green Ash	18	0.70	0.40	5.04	-	Preserve
12	Fraxinus pennsylvanica	Green Ash	12	0.70	0.40	3.36	-	Preserve
13	Platanus x acerifolia	London Planetree	9	0.80	0.70	5.04	-	Preserve
14	Platanus x acerifolia	London Planetree	11	0.80	0.70	6.16	-	Preserve
15	Platanus x acerifolia	London Planetree	11	0.80	0.70	6.16	-	Preserve
16	Platanus x acerifolia	London Planetree	11	0.80	0.70	6.16	-	Preserve
17	Platanus x acerifolia	London Planetree	16	0.80	0.70	8.96	-	Preserve
18	Platanus x acerifolia	London Planetree	14	0.80	0.70	7.84	-	Preserve
19	Cedrus deodara	Deodar Cedar	18	0.70	0.60	7.56	-	Preserve
20	Platanus x acerifolia	London Planetree	14	0.80	0.70	7.84	-	Preserve
21	Platanus x acerifolia	London Planetree	15	0.80	0.70	8.40	-	Preserve
22	Acer rubrum	Red Maple	24	0.60	0.70	10.08	3	Remove
23	Tsuga canadensis	Eastern Hemlock	11	0.70	0.60	4.62	1	Remove
24	Pinus strobus	White Pine	5	0.50	0.50	1.25	1	Remove
*25	Tsuga canadensis	Eastern Hemlock	20	0.70	0.60	8.40	2	Remove
26	Tsuga canadensis	Eastern Hemlock	18	0.70	0.60	7.56	2	Remove
27	Prunus serrulata 'Kwanzan'	Kwanzan Cherry	16	0.70	0.50	5.60	2	Remove
28	Tsuga canadensis	Eastern Hemlock	16	0.80	0.60	7.68	2	Remove
29	Cedrus deodara	Deodar Cedar	32	0.70	0.60	13.44	3	Remove
30	Ilex opaca	American Holly	4	0.50	0.70	1.40	1	Remove
31	Picea abies	Norway Spruce	16	0.60	0.70	6.72	N/A (Note #6)	Remove
*32	Chamaecyparis pisifera	Bavara Cypress	12	0.70	0.70	5.88	N/A (Note #6)	Remove
*33	Chamaecyparis pisifera	Bavara Cypress	9	0.70	0.70	4.41	N/A (Note #6)	Remove
34	Cornus florida	Flowering Dogwood	5	0.50	0.60	1.50	N/A (Note #6)	Remove
*35	Betula nigra	River Birch	30	0.70	0.70	14.70	3	Remove
*36	Betula nigra	River Birch	30	0.70	0.70	14.70	3	Remove
*37	Betula nigra	River Birch	23	0.70	0.70	11.27	3	Remove
38	Juglans nigra	Black Walnut	15	0.40	0.70	4.20	1	Remove
39	Cornus florida	Flowering Dogwood	6	DEAD	0.60	0.00	-	Preserve
40	Acer rubrum	Red Maple	8	0.70	0.70	3.92	1	Remove
*41	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*42	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*43	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*44	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*45	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*46	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*47	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*48	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*49	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*50	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*51	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
52	Ulmus americana	American Elm	20	0.60	0.60	7.20	2	Remove
*53	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*54	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*55	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
*56	Juniperus virginiana	Eastern Redcedar	3	0.50	0.70	1.05	1	Remove
57	Ulmus americana	American Elm	8	0.60	0.60	2.88	1	Remove
58	Ulmus americana	American Elm	18	0.60	0.60	6.48	2	Remove
59	Pinus strobus	White Pine	14	0.70	0.50	4.80	-	Preserve
60	Pinus strobus	White Pine	10	0.70	0.50	3.50	-	Preserve
61	Ulmus americana	American Elm	24	0.40	0.60	5.76	-	Preserve
					TOTAL:	48		

Notes:
1. Condition Rating based on formula provided by the *Guide for Plant Appraisal* published by the ISA.
2. Species Rating based on formula provided by the *Guide for Plant Appraisal* published by the ISA.
3. All trees with a minimum 8" D.B.H. were inventoried and rated.
4. The developer agrees to make a contribution to the County's Tree Canopy Fund of at least $2,400 per tree, or a greater amount if the contribution policy changes at the time of payment, for every tree that cannot by planted onsite. The contribution shall be required when tree planting requirements cannot be met on the property. The payment shall be delivered to the Department of Parks and Recreation Office prior to the issuance of the Excavation/Sheeting and Shoring Permit.
5. * Represents multistem trees.
6. Per Site Plan Conditions the applicant shall be responsible for replacement of all existing trees on their site with the exception of any trees in the 9,000 square foot area subject to a public park easement. No replacements are required for the removal of trees T5, T6, T7, T31, T32, T33 & T34.
7. Offsite tree removal consent letter from adjacent property owner is provided on sheet #T2.00.

Bowman CONSULTING
Bowman Consulting Group, Ltd.
14020 Thunderbolt Place, Suite 300
Chantilly, Virginia 20151
Bowman Consulting Group, Ltd.
Phone: (703) 464-1000
Fax: (703) 481-9720
www.bowmanconsulting.com

INTERNATIONAL SOCIETY OF ARBORICULTURE
GREGG D. EBERLY
MA-4616A
11/30/18
CERTIFIED ARBORIST

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

TREE PRESERVATION PLAN
QUEENS COURT
CIVIL ENGINEERING PLAN
SITE PLAN #444
1615 18TH STREET NORTH
ARLINGTON, VIRGINIA 22209
ARLINGTON COUNTY, VIRGINIA

SCALE: 1"=25' | SHEET T1.00

ARLINGTON VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
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Phone: 703.228.3332
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ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location
ROSSLYN HIGHLANDS PARK
BID SET

18TH STREET
ARLINGTON, VIRGINIA

Sheet Title
TREE INVENTORY

Approval	Date
LUKE VANBELLEGHEM, Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: CF
Drawn: SM, LV, KN
Checked: CF, LV

Filename:
Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: JULY 15, 2019

Seal
COMMONWEALTH OF VIRGINIA
YUNHUI FAN
Lic. No. 001316
4/15/2020
LANDSCAPE ARCHITECT

Sheet TP.1

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: TP.1.dwg

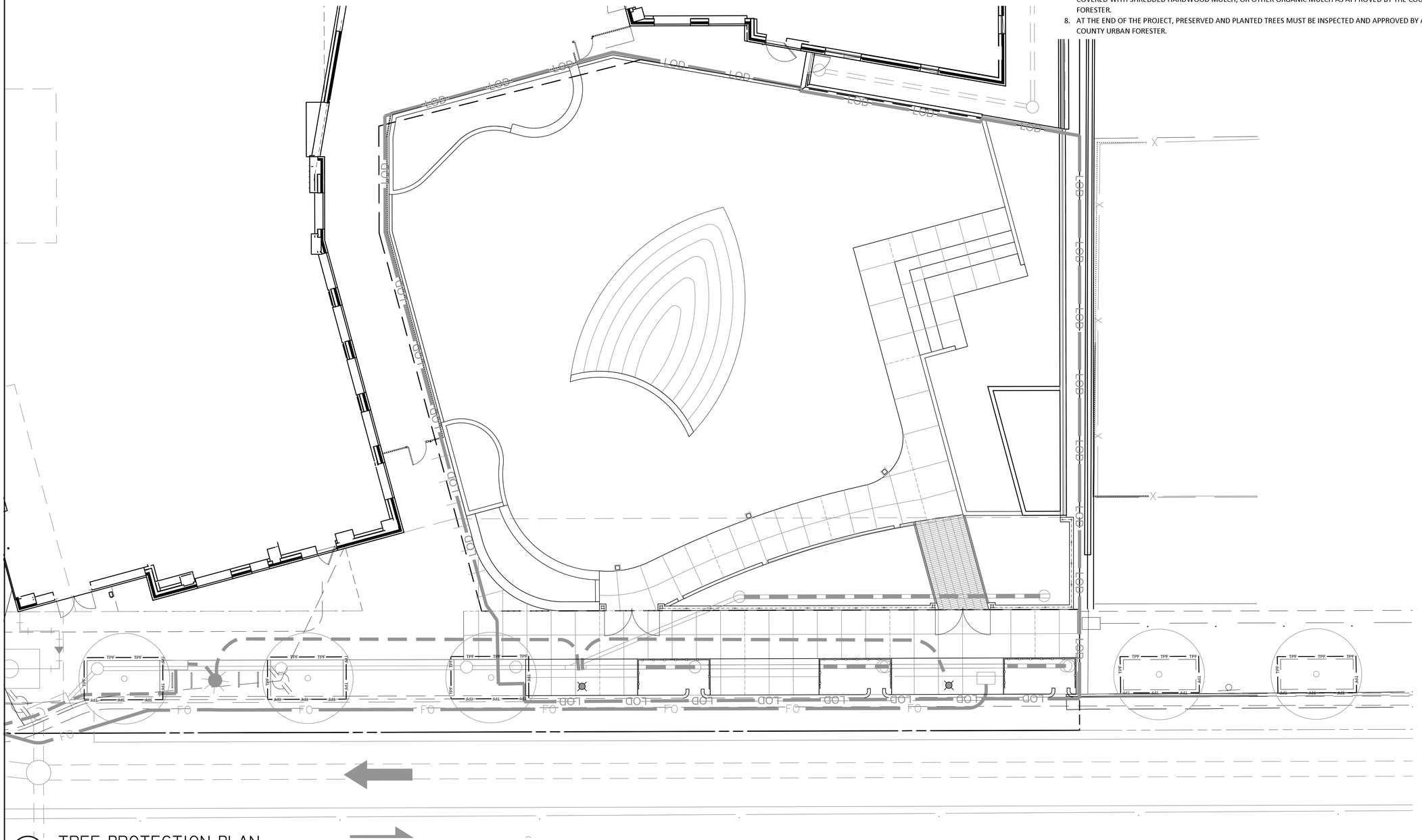
LEGEND

TPF TPF — 4 / TP.3 TREE PROTECTION BARRIERS FOR RESTRICTED SPACE AND TREE PITS, TYP.

NOTE:
1. TREE PROTECTION NOT NECESSARY IF TREES NOT YET INSTALLED.

TREE PRESERVATION

1. BEFORE ANY GRADING, DEMOLITION, OR OTHER DISTURBANCE, INCLUDING TREE REMOVAL, A PRECONSTRUCTION MEETING SHALL BE HELD WITH AN ARLINGTON COUNTY URBAN FORESTER. CHANGES TO THE PLAN, BASED ON FIELD CONDITIONS, MAY BE REQUESTED BY THE URBAN FORESTER AT THE TIME OF THE PRECONSTRUCTION MEETING.
2. TREE PROTECTION SHALL BE INSTALLED PER PLAN, WITH ANY CHANGES REQUESTED AT THE PRECONSTRUCTION MEETING, AND INSPECTED BY AN ARLINGTON COUNTY URBAN FORESTER. EROSION AND SEDIMENT CONTROLS ARE INSPECTED BY THE DEPARTMENT OF ENVIRONMENTAL SERVICES.
3. REMOVAL OF TREES, NOTED FOR REMOVAL ON THE PLAN, INSIDE A TREE PRESERVATION AREA SHALL BE PERFORMED, BY HAND, WITHOUT GROUND DISTURBANCE, OR DISTURBANCE TO NEARBY PRESERVED TREES. TREES IN THESE AREAS SHALL BE CUT FLUSH TO THE GROUND, WITHOUT STUMP GRINDING.
4. NO CHANGES SHALL BE MADE TO TREE PRESERVATION OR PROPOSED LANDSCAPE UNLESS DIRECTED BY AN ARLINGTON COUNTY URBAN FORESTER.
5. FOLLOW ANSI STANDARDS WHEN PRUNING TREES. ANY PRUNING BEYOND 5% OF THE CANOPY SHALL BE COMMUNICATED AND APPROVED TO THE URBAN FORESTER
6. DO NOT REMOVE TREES ON OTHER PROPERTIES, OR RIGHTS-OF-WAY, WITHOUT WRITTEN PERMISSION OF THE OWNER.
7. TREE PROTECTION AREAS SHALL HAVE ALL NON-NATIVE INVASIVE VINES REMOVED AT THE END OF THE PROJECT. WHERE DEEMED NECESSARY BY THE COUNTY URBAN FORESTER TO ENSURE TREE SURVIVAL, THE PROTECTION AREA SHALL BE COVERED WITH SHREDDED HARDWOOD MULCH, OR OTHER ORGANIC MULCH AS APPROVED BY THE COUNTY URBAN FORESTER.
8. AT THE END OF THE PROJECT, PRESERVED AND PLANTED TREES MUST BE INSPECTED AND APPROVED BY AN ARLINGTON COUNTY URBAN FORESTER.



1 TREE PROTECTION PLAN
1/8"=1'-0"

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

TREE PROTECTION PLAN

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: CF
Drawn: SM, LV, KN
Checked: CF, LV

Filename:
Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: JULY 15, 2019

Seal

COMMONWEALTH OF VIRGINIA
YUHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet TP.2

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: TP.2.dwg

TREES 8" DBH AND SMALLER
8' CRZ RADIUS AROUND THE TRUNK OF TREE

TREES 8.1 AND LARGER
1" DBH = 1' CRZ RADIUS

ELEVATION

NOTES:

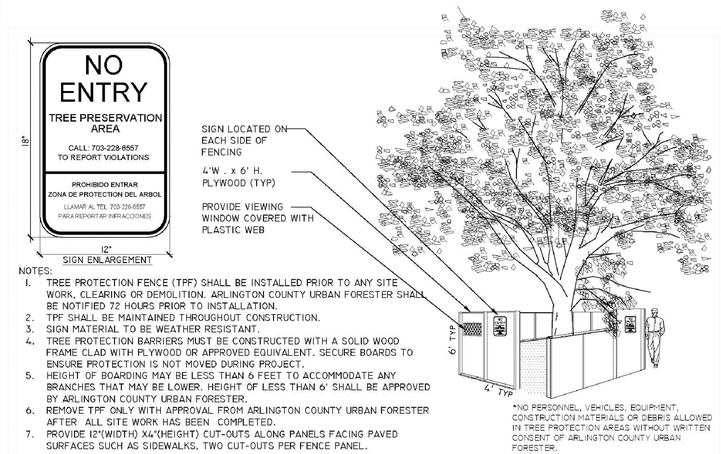
1. GRAPHICALLY, THE CRITICAL ROOT ZONE (CRZ) IS REPRESENTED AS A CIRCULAR REGION MEASURED OUTWARD FROM A TREE TRUNK REPRESENTING THE AREA OF ROOTS THAT MUST BE MAINTAINED OR PROTECTED FOR THE TREE'S SURVIVAL.

2. THE CRZ OF A TREE IS THE ZONE IN WHICH THE MAJORITY OF THE ROOTS LAY. 95% OF THE ROOTS OF MOST TREES WILL BE FOUND IN THE UPPER 12-18" OF THE SOIL. MOST OF THE ROOTS THAT SUPPLY THE NUTRIENTS AND WATER TO THE TREE ARE FOUND JUST BELOW THE SOIL SURFACE. THE TOTAL AMOUNT OF A TREE'S ROOTS ARE GENERALLY PROPORTIONAL TO THE VOLUME OF THE TREE'S CANOPY. THEREFORE, IF THE ROOTS ONLY PENETRATE A THIN LAYER OF SOIL, THEN THE ROOTS MUST SPREAD FAR FROM THE TREE, BEYOND THE EXTENSION OF THE CANOPY.

3. PLOT ACCURATE TRUNK LOCATIONS OF ALL TREES GREATER THAN 3" DIAMETER AT BREAST HEIGHT (DBH) AND/OR TREE STANDS WITHIN DEVELOPMENT AREAS ON ALL PLANS FOR THE PROJECT AND DELINEATE THEIR ESTIMATED CRITICAL ROOT ZONE.

4. PLOT ACCURATE TRUNK LOCATIONS OF OFFSITE TREES WHICH WILL HAVE THEIR CRZ AFFECTED BY DEVELOPMENT AND DELINEATE THEIR ESTIMATED CRITICAL ROOT ZONE.

1 TREE PROTECTION DETAIL FOR DETERMINING CRITICAL ROOT ZONE N.T.S.
311300.3 (2019)



NOTES:
1. TREE PROTECTION FENCE (TPF) SHALL BE INSTALLED PRIOR TO ANY SITE WORK, CLEARING OR DEMOLITION. ARLINGTON COUNTY URBAN FORESTER SHALL BE NOTIFIED 72 HOURS PRIOR TO INSTALLATION.
2. TPF SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
3. SIGN MATERIAL TO BE WEATHER RESISTANT.
4. TREE PROTECTION BARRIERS MUST BE CONSTRUCTED WITH A SOLID WOOD FRAME CLAD WITH PLYWOOD OR APPROVED EQUIVALENT. SECURE BOARDS TO ENSURE PROTECTION IS NOT MOVED DURING PROJECT.
5. HEIGHT OF BOARDING MAY BE LESS THAN 6 FEET TO ACCOMMODATE ANY BRANCHES THAT MAY BE LOWER. HEIGHT OF LESS THAN 6' SHALL BE APPROVED BY ARLINGTON COUNTY URBAN FORESTER.
6. REMOVE TPF ONLY WITH APPROVAL FROM ARLINGTON COUNTY URBAN FORESTER AFTER ALL SITE WORK HAS BEEN COMPLETED.
7. PROVIDE 12"(WIDTH) X4'(HEIGHT) CUT-OUTS ALONG PANELS FACING PAVED SURFACES SUCH AS SIDEWALKS, TWO CUT-OUTS PER FENCE PANEL.

*NO PERSONNEL, VEHICLES, EQUIPMENT, CONSTRUCTION MATERIALS OR DEBRIS ALLOWED IN TREE PROTECTION AREAS WITHOUT WRITTEN CONSENT OF ARLINGTON COUNTY URBAN FORESTER.

2 TREE PROTECTION BARRIERS FOR RESTRICTED SPACE AND TREE PITS N.T.S.
311300.14NS (2019)

ARLINGTON
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SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

TREE PROTECTION DETAILS

Approval	Date
LUKE VANBELLEGHEM	7.9.2018
Design Supervisor	

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

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Checked: CF, LV

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Seal

COMMONWEALTH OF VIRGINIA
YANHUI FAN
Lic. No. 001316
4/15/2020
LANDSCAPE ARCHITECT

Sheet TP.3

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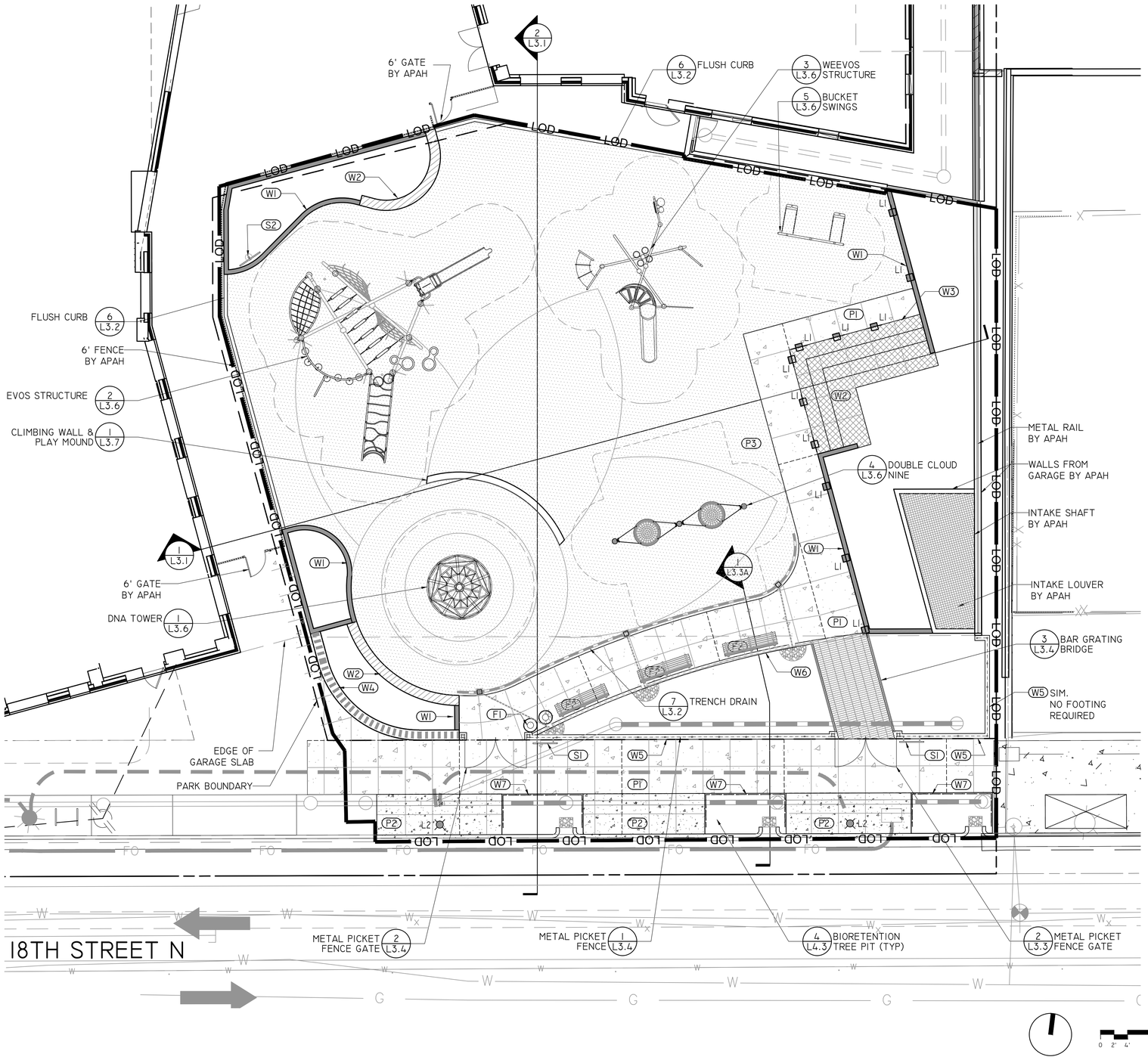

PAVING LEGEND

- P1 — 2 L3.2 CONCRETE JOINTING EXPANSION JOINT; 3 L3.2 CONCRETE PAVING; 2 L3.2 CONCRETE JOINTING CONTROL JOINT
- P2 — 4 L3.2 CONTINUOUS SOIL PANEL
- P3 — 5 L3.2 POURED IN PLACE RUBBER

WALL LEGEND

- W1 — 1 L3.3 PLANTER WALL
- W2 — 2 L3.3 SEAT WALL
- W3 — 3 L3.3 SEAT STEPS
- W4 — 4 L3.3 SIGN WALL
- W5 — 2 L3.3A FLUSH CURB WITH METAL PICKET FENCE
- W6 — 3 L3.3A BIORETENTION EDGE WALL
- W7 — 3 L3.4 TREE PIT FENCE

FURNITURE LEGEND

- F1 — 18.2 L3.5 TRASH/RECYCLING RECEPTACLES
- F2 — 3 L3.5 BENCH

LIGHTING LEGEND

- LI — 4 L3.8 WALL LIGHT ADD ALTERNATE 1
- L2 — 2 L3.8 STREET LIGHT

SIGN LEGEND

- SI — 4 L3.4 PARK ENTRANCE SIGN
- S2 — 5 L3.4 PARK RULES SIGN

NOTE:

BASE BID SHALL NOT INCLUDE THE LI WALL LIGHT 4/L3.8 OR GEOFOAM FOAM

1

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BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

MATERIALS PLAN

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20
ADDENDUM 1 (1)	9/25/20

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COMMONWEALTH OF VIRGINIA
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LANDSCAPE ARCHITECT
4/15/2020

Sheet L1.1

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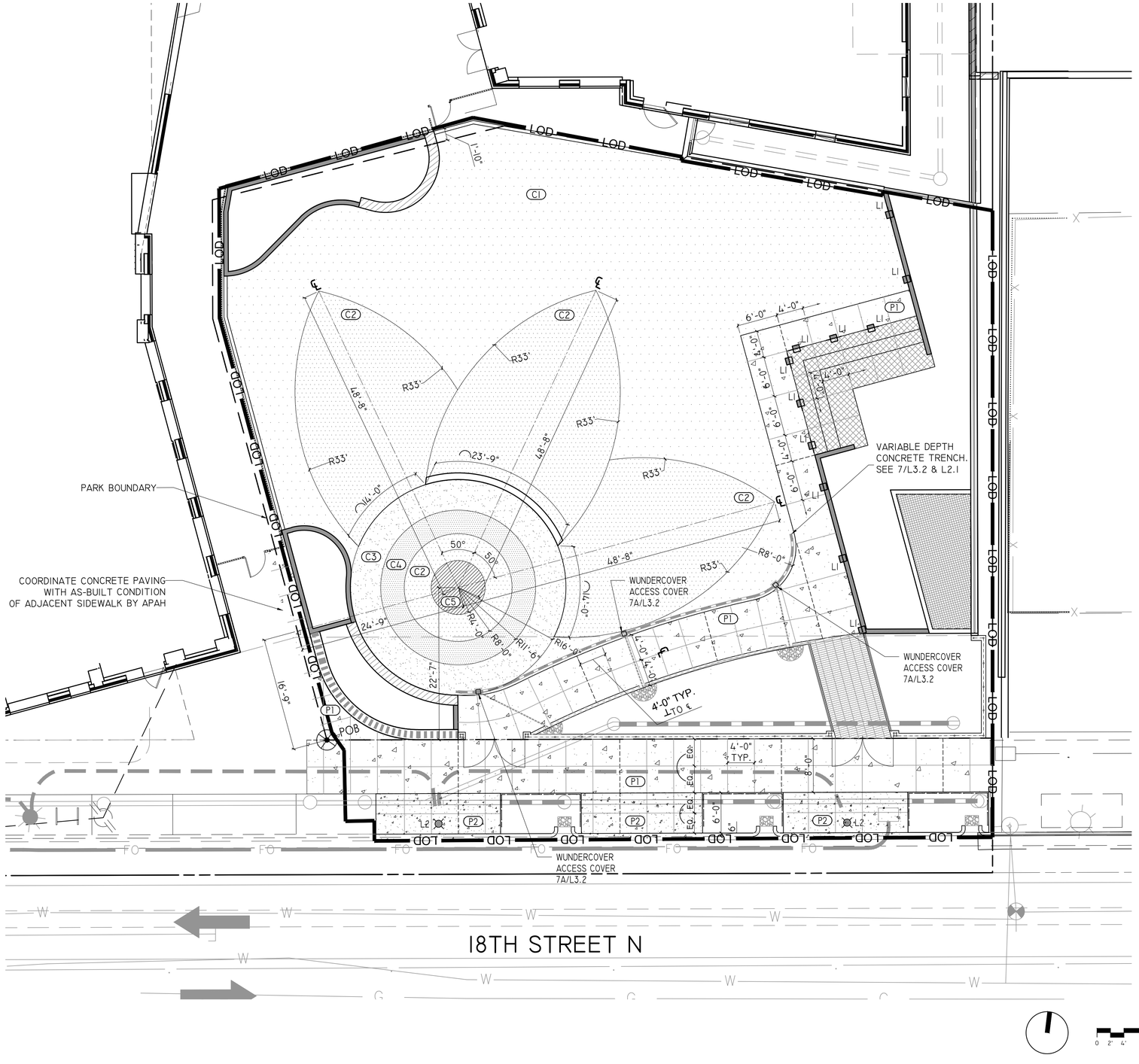

PAVING LEGEND

- P1 — 2/L3.2 CONCRETE JOINTING EXPANSION JOINT; 3/L3.2 CONCRETE PAVING; 2/L3.2 CONCRETE JOINTING CONTROL JOINT
- P2 — 4/L3.2 CONTINUOUS SOIL PANEL
- P3 — 5/L3.2 POURED IN PLACE RUBBER

WALL LEGEND

- W1 — 1/L3.3 PLANTER WALL
- W2 — 2/L3.3 SEAT WALL
- W3 — 3/L3.3 SEAT STEPS
- W4 — 4/L3.3 SIGN WALL
- W5 — 2/L3.3A FLUSH CURB WITH METAL PICKET FENCE
- W6 — 3/L3.3A BIORETENTION EDGE WALL
- W7 — 3/L3.4 TREE PIT FENCE

LIGHTING LEGEND

- L1 — 4/L3.8 WALL LIGHT ADD ALTERNATE 1
- L2 — 2/L3.8 STREET LIGHT

NOTE:

BASE BID SHALL NOT INCLUDE THE L2 WALL LIGHT 4/L3.8 OR GEOFOAM FOAM

ARLINGTON
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18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

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Lic. No. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L1.2

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\

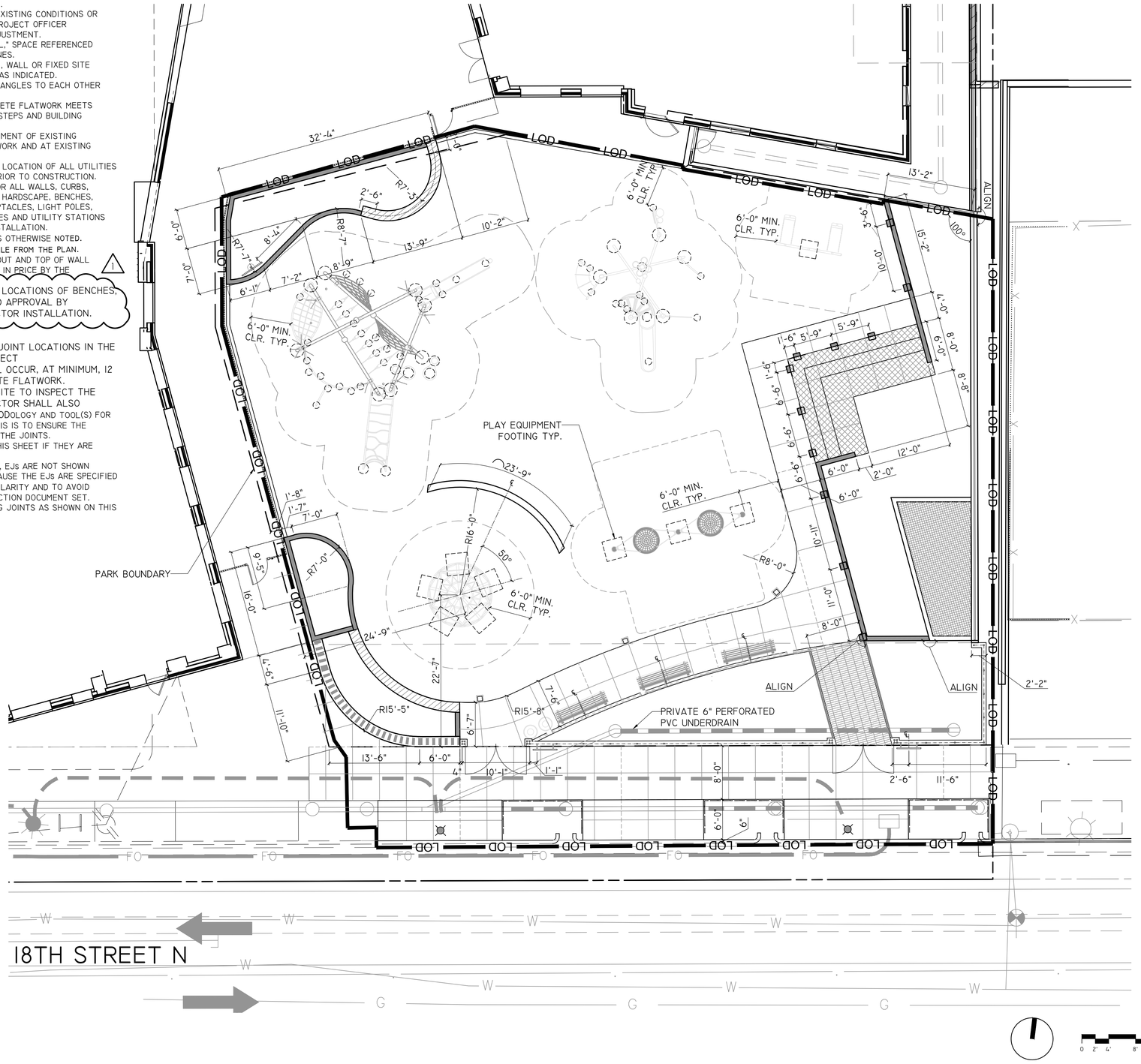
Filename: L1.2.dwg

LAYOUT NOTES:

1. ON-SITE VERIFICATION OF ALL DIMENSIONS AND CONDITIONS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALE, LARGER SCALE OVER SMALLER SCALE, ADDENDA AND CLARIFICATIONS OVER PREVIOUS DOCUMENTS
2. CONTRACTOR TO LAY OUT HARDSCAPE ELEMENTS AND VERIFY LAYOUT WITH PROJECT OFFICER PRIOR TO CONSTRUCTION.
3. ANY DISCREPANCIES OR CONFLICTS WITH EXISTING CONDITIONS OR OTHER DRAWINGS SHALL BE REPORTED TO THE PROJECT OFFICER IMMEDIATELY FOR PROPER CLARIFICATION OR ADJUSTMENT.
4. WHERE DIMENSIONS ARE CALLED AS "EQUAL," SPACE REFERENCED ITEMS EQUALLY, MEASURED TO THEIR CENTER LINES.
5. MEASUREMENTS ARE TO FACE OF BUILDING, WALL OR FIXED SITE IMPROVEMENT. DIMENSIONS TO CENTER LINES IS AS INDICATED.
6. INSTALL INTERSECTING ELEMENTS AT 90° ANGLES TO EACH OTHER UNLESS OTHERWISE NOTED.
7. PROVIDE EXPANSION JOINTS WHERE CONCRETE FLATWORK MEETS VERTICAL STRUCTURES SUCH AS WALLS, CURBS, STEPS AND BUILDING ELEMENTS.
8. NEW WORK SHALL MEET AND MATCH ALIGNMENT OF EXISTING FEATURES AND FINISHED GRADES AT LIMITS OF WORK AND AT EXISTING PAVEMENT OR OTHER FACILITIES TO REMAIN.
9. CONTRACTOR SHALL VERIFY THE CORRECT LOCATION OF ALL UTILITIES AND EXISTING TREES TO REMAIN IN THE FIELD PRIOR TO CONSTRUCTION.
10. CONTRACTOR SHALL STAKE ALIGNMENT FOR ALL WALLS, CURBS, BOULDERS, SIGNS, FURNISHINGS, COURTS, PATHS, HARDSCAPE, BENCHES, TABLES, TRASH RECEPTACLES, RECYCLING RECEPTACLES, LIGHT POLES, STORMWATER MANAGEMENT FACILITIES, MANHOLES AND UTILITY STATIONS FOR PROJECT OFFICER'S APPROVAL PRIOR TO INSTALLATION.
11. FOR LAYOUT, ALL ANGLES ARE 90° UNLESS OTHERWISE NOTED. WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE FROM THE PLAN.
12. MINOR ADJUSTMENTS IN HORIZONTAL LAYOUT AND TOP OF WALL ELEVATIONS SHALL NOT RESULT IN AN INCREASE IN PRICE BY THE CONTRACTOR.
13. CONTRACTOR SHALL STAKE-OUT THE LOCATIONS OF BENCHES, AND TRASH RECPETACLES FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO CONTRACTOR INSTALLATION.

JOINT LAYOUT NOTES:

1. CONTRACTOR SHALL CLEARLY MARK JOINT LOCATIONS IN THE FIELD FOR REVIEW AND APPROVAL BY PROJECT OFFICER. THIS TEMPORARY MARKING SHALL OCCUR, AT MINIMUM, 12 HOURS PRIOR TO THE POURING OF CONCRETE FLATWORK.
2. WHEN THE PROJECT OFFICER IS ON-SITE TO INSPECT THE PROPOSED JOINT LOCATIONS THE CONTRACTOR SHALL ALSO PRESENT THEIR PROPOSED JOINTING METHODOLOGY AND TOOL(S) FOR REVIEW AND APPROVAL BY PROJECT OFFICER. THIS IS TO ENSURE THE ACCEPTABLE QUALITY AND ADEQUATE DEPTH OF THE JOINTS.
3. EXPANSION JOINTS ARE NOT SHOWN ON THIS SHEET IF THEY ARE SPECIFICED ON THE CONSTRUCTION DETAIL FOR THE PARTICULAR STRUCTURE. FOR EXAMPLE, EJs ARE NOT SHOWN HEREON IMMEDIATELY ADJACENT TO WALLS BECAUSE THE EJs ARE SPECIFIED ON THE WALL NOTED. THIS IS FOR GRAPHICAL CLARITY AND TO AVOID REPETITIVE INFORMATION ACROSS THE CONSTRUCTION DOCUMENT SET. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING JOINTS AS SHOWN ON THIS SHEET AND APPLICABLE DETAILS.
4. INSTALL JOINTS PER DETAIL:



PAVING LEGEND

- 2 / L3.2 — CONCRETE JOINTING EXPANSION JOINT
- 3 / L3.2 — CONCRETE PAVING
- 2 / L3.2 — CONCRETE JOINTING CONTROL JOINT

WALL LEGEND

- 1 / L3.3 — PLANTER WALL
- 2 / L3.3 — SEAT WALL
- 3 / L3.3 — SEAT STEPS
- 4 / L3.3 — SIGN WALL
- 2 / L3.3A — FLUSH CURB WITH METAL PICKET FENCE
- 3 / L3.3A — BIORETENTION EDGE WALL
- 3 / L3.4 — TREE PIT FENCE

FURNITURE LEGEND

- 18.2 / L3.5 — TRASH/RECYCLING RECEPTACLES
- 3 / L3.5 — BENCH

LIGHTING LEGEND

- 4 / L3.8 — WALL LIGHT ADD ALTERNATE 1
- 2 / L3.8 — STREET LIGHT

SIGN LEGEND

- 4 / L3.4 — PARK ENTRANCE SIGN
- 5 / L3.4 — PARK RULES SIGN

NOTE:

BASE BID SHALL NOT INCLUDE THE L2 WALL LIGHT 4/L3.8 OR GEOFOAM FOAM

ARLINGTON VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
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Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

LAYOUT PLAN

Approval	Date
LUKE VANBELLEGHEM, Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20
ADDENDUM 1 (1)	9/25/20

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Seal

COMMONWEALTH OF VIRGINIA — CHUNHUI FAN — Lic. No. 001316 — LANDSCAPE ARCHITECT — 4/15/2020

Sheet L1.3

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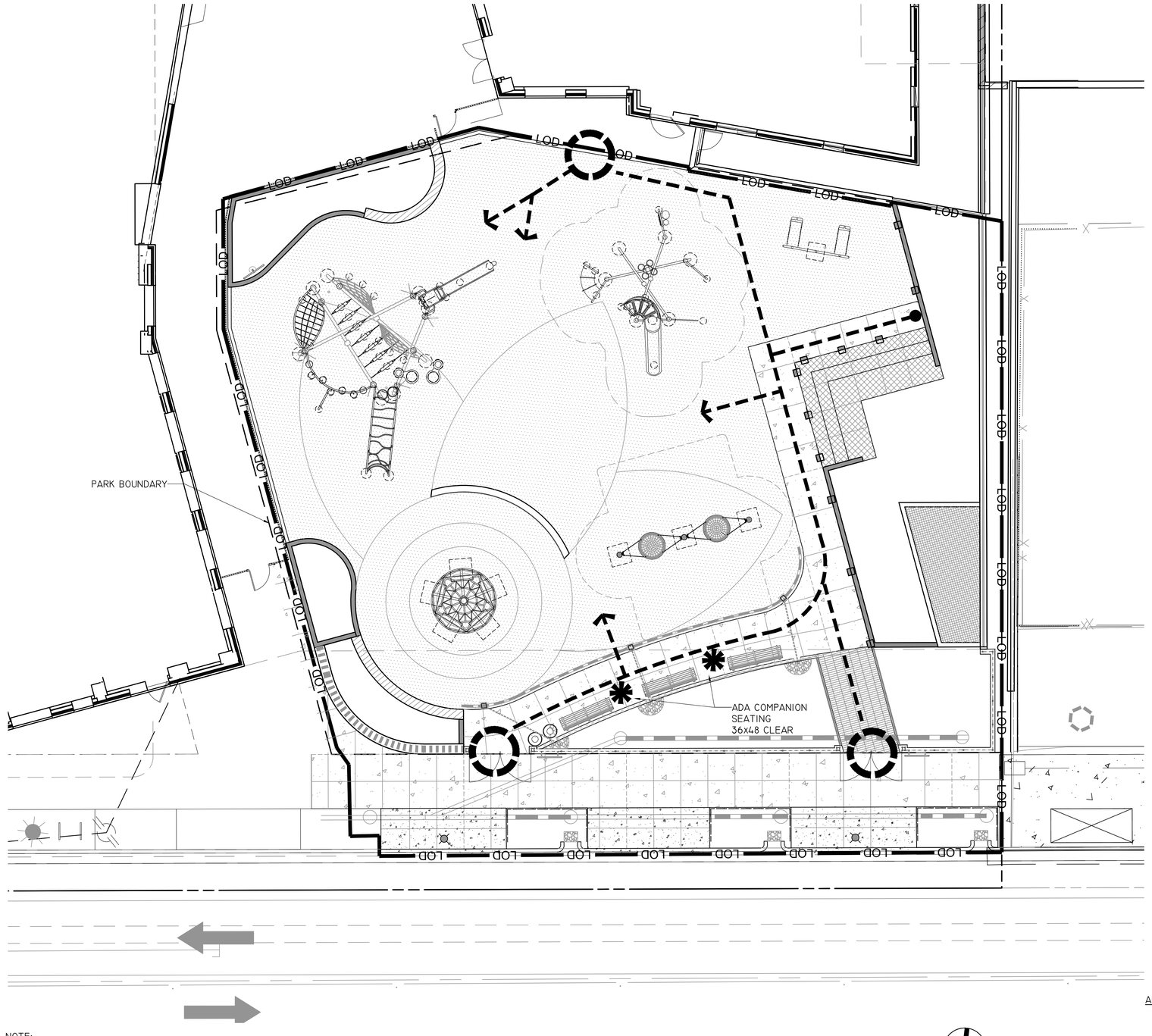

NOTE:

BASE BID SHALL NOT INCLUDE THE L2 WALL LIGHT
4/L3.8 OR GEOFOAM FOAM

0 2' 4' 8' 12'

PAVING LEGEND

- 2 / L3.2 — CONCRETE JOINTING EXPANSION JOINT
- 3 / L3.2 — CONCRETE PAVING
- 2 / L3.2 — CONCRETE JOINTING CONTROL JOINT
- 4 / L3.2 — CONTINUOUS SOIL PANEL
- 5 / L3.2 — POURED IN PLACE RUBBER

WALL LEGEND

- 1 / L3.3 — PLANTER WALL
- 2 / L3.3 — SEAT WALL
- 3 / L3.3 — SEAT STEPS
- 4 / L3.3 — SIGN WALL
- 2 / L3.3A — FLUSH CURB WITH METAL PICKET FENCE
- 3 / L3.3A — BIORETENTION EDGE WALL
- 3 / L3.4 — TREE PIT FENCE

FURNITURE LEGEND

- I&2 / L3.5 — TRASH/RECYCLING RECEPTACLES
- 3 / L3.5 — BENCH

LIGHTING LEGEND

- 4 / L3.8 — WALL LIGHT ADD ALTERNATE I
- 2 / L3.8 — STREET LIGHT

SIGN LEGEND

- 4 / L3.4 — PARK ENTRANCE SIGN
- 5 / L3.4 — PARK RULES SIGN

ADA LEGEND

- ADA ACCESSIBLE PARK ENTRY POINT
- ADA ACCESSIBLE SEATING
- ADA ACCESSIBLE ROUTE
- END OF ADA ACCESSIBLE ROUTE

ADA NOTES

1. ADA COMPLIANCE NOTE: THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL ELEMENTS ARE CONSTRUCTED IN ACCOURDANCE WITH THE LATEST VERSION OF ADA STANDARDS FOR ACCESSIBLE DESIGN, BY THE DEPARTMENT OF JUSTICE. SHOULD ANY QUESTIONS ARISE DURING CONSTRUCTION, INSTALLATION, OR IF ANY CLARIFICATIONS ARE NEEDED, THE CONTRACTOR SHALL CONTACT THE CONSTRUCTION MANAGER.
2. SEE GRADING PLANS FOR SPOT ELEVATIONS AND GENERAL NOTES.

ARLINGTON
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18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

ADA ACCESS PLAN

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
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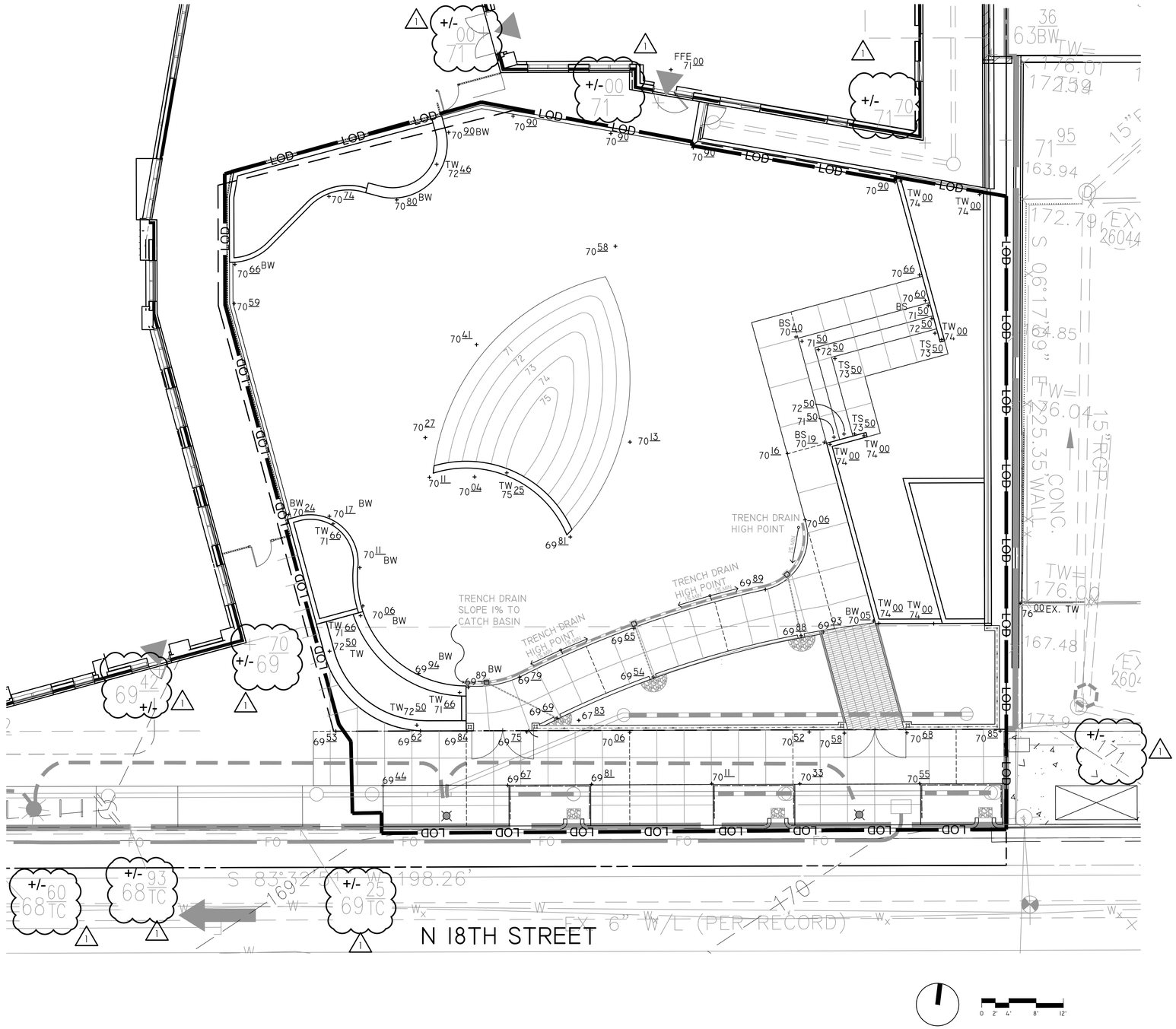
COMMONWEALTH OF VIRGINIA
CHUNHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
6/15/2020

Sheet L1.4

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site Ci\01 Caddocs\ Filename: L1.4.dwg



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18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

FINISHED GRADING PLAN

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
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LDA SUBMISSION REV.	9/08/20
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COMMONWEALTH OF VIRGINIA
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LANDSCAPE ARCHITECT
9/15/2020

Sheet L2.1

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\

Filename: L2.1.dwg

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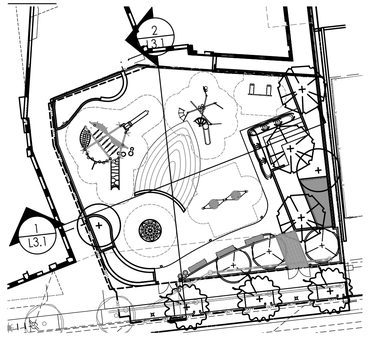


PAVING LEGEND

P1	3 / L3.2	CONCRETE PAVING
P2	4 / L3.2	CONTINUOUS SOIL PANEL
P3	5 / L3.2	POURED IN PLACE RUBBER

WALL LEGEND

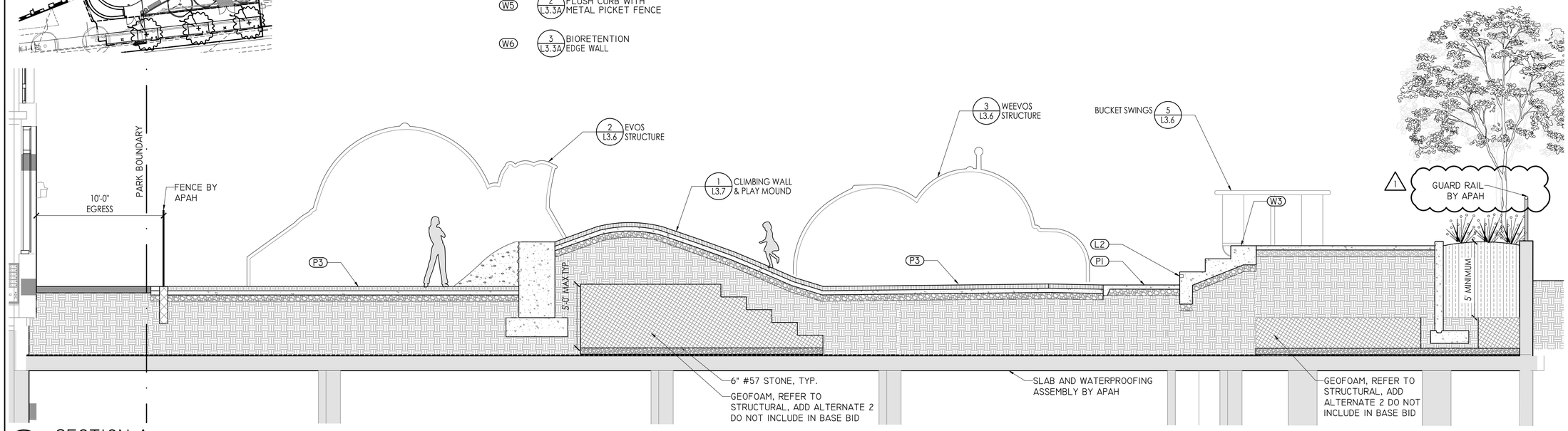
W1	1 / L3.3	PLANTER WALL
W2	2 / L3.3	SEAT WALL
W3	3 / L3.3	SEAT STEPS
W4	4 / L3.3	SIGN WALL
W5	2 / L3.3A	FLUSH CURB WITH METAL PICKET FENCE
W6	3 / L3.3A	BIORETENTION EDGE WALL

LIGHTING LEGEND

L1	1 / L3.8	STREET LIGHT
L2	4 / L3.8	WALL LIGHT ADD ALTERNATE 1

NOTE:

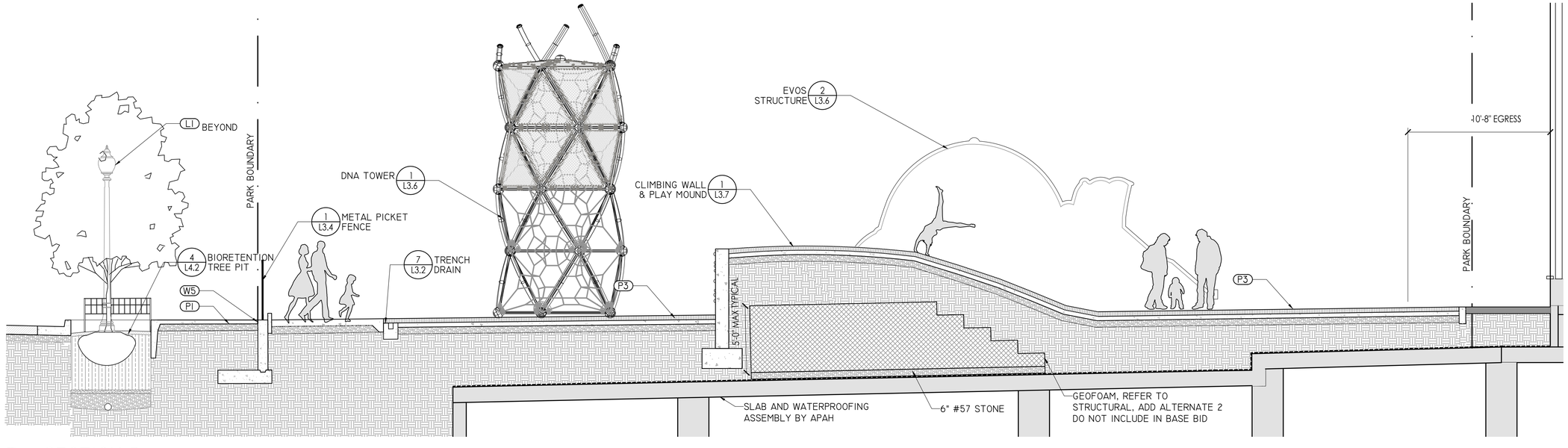
BASE BID SHALL NOT INCLUDE THE L2 WALL LIGHT 4/L3.8 OR GEOFOAM FOAM



1 SECTION A

1/4"=1'

0 1' 2' 4' 6'



2 SECTION B

1/4"=1'

0 1' 2' 4' 6'

ARLINGTON VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

SECTIONS

Approval	Date
LUKE VANBELLEGHEM, Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20
ADDENDUM 1 (1)	9/25/20

Designed: CF
Drawn: SM, LV, KN
Checked: CF, LV

Filename:
Plotted: Sep. 24, 20

Scale: AS SHOWN
Date: JULY 15, 2019

Seal

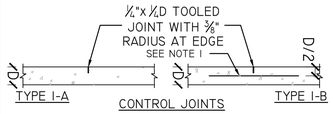
COMMONWEALTH OF VIRGINIA
YUNHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L3.1

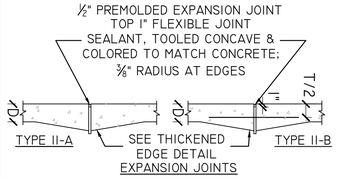
Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L3.1.dwg

1. PROVIDE MOCKUPS, SHOP DRAWINGS, PRODUCT DATA, AND FINISH SAMPLES FOR ARCHITECT'S REVIEW AND APPROVAL PRIOR TO FABRICATION/CONSTRUCTION.
2. ALL METAL IS HOT-DIPPED GALVANIZED STEEL UNLESS OTHERWISE INDICATED.
3. ALL METAL-TO-METAL CONNECTIONS ARE FULL-LENGTH WELDS UNLESS OTHERWISE INDICATED.
4. GRIND SMOOTH ALL WELDS, REMOVE ALL BURRS, AND PRIME ALL BARE SPOTS PRIOR TO FINISHING.
5. WELDING AND GRINDING ARE PROHIBITED FOLLOWING SHOP FINISHING.

1 NOTES



CONTROL JOINTS



EXPANSION JOINTS

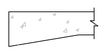
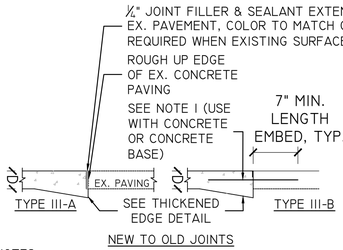


TABLE	
PAVEMENT THICKNESS	DOWEL BAR SIZE
6" TO 8"	1" X 18" @ 12"
9" TO 11"	1¼" x 18" @ 12"
12" & GREATER	1½" x 18" @ 12"

THICKENED EDGE DETAIL
(NOT NEEDED FOR TYPE A JOINTS WIDTH D ≥ 10")
(NOT NEEDED FOR TYPE B JOINTS WIDTH D ≥ 9")

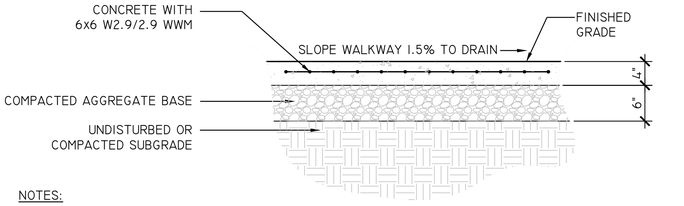


NEW TO OLD JOINTS

NOTES:
1. WHERE REQUIRED AT TRANSVERSE JOINTS, DOWEL BARS SHALL BE SIZED AS SHOWN IN THE TABLE, SMOOTH ROUND GRADE 60 OR BETTER WITH ENDS WRAPPED IN TAR PAPER.
2. TRANSVERSE JOINT SPACE SHALL NOT EXCEED SPACING INDICATED IN PLANS. THE AREA OF THE PAVEMENT PANEL SHALL NOT EXCEED 225 SQUARE FEET.
3. JOINT OFFSETS AT RADIUS POINTS SHOULD BE AT LEAST 1'-6" LONG.
4. JOINT INTERSECTION ANGLES OF LESS THAN 60 DEGREES SHALL BE USED.
5. WHEN A JOINT IS CLOSER THAN 1'-0" TO A CASTING, THEN A MINOR ADJUSTMENT IN THE JOINT LOCATION SHOULD BE MADE BY SKEWING OR SHIFTING THE JOINT ALIGNMENT TO MEET THE CASTING AT 90° OR NORMAL TO THE CASTING.
6. DOWEL BARS SHALL NOT BE PLACED WITHIN 1'-0" OF THE EDGE OF PAVEMENT OR A PARALLEL JOINT.

2 CONCRETE PAVING JOINT DETAILS

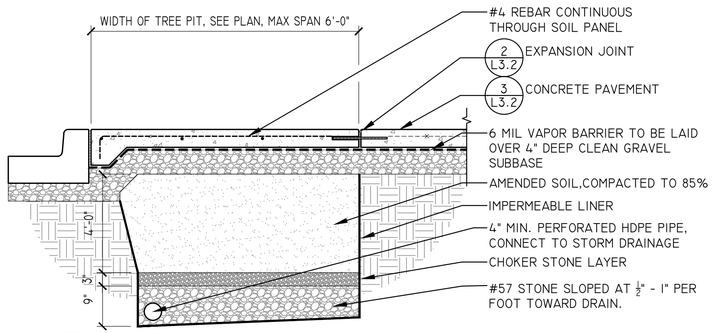
NTS — ARLINGTON COUNTY DETAIL



NOTES:
1. PROVIDE EXPANSION AND CONTROL JOINTS AS SHOWN ON THE PLANS, OR EXPANSION JOINTS EVERY 20' O.C. AND CONTROL JOINTS EVERY 5' O.C. IF NOT SHOWN.
2. ALL EXPANSION JOINTS SHALL BE FINISHED WITH SEALANT. COLOR TO MATCH COLOR OF CONCRETE PAVEMENT.
3. FINISH IN ACCORDANCE WITH VDOT 404.07, SIDEWALK FINISH, WITH CLEAR CURING COMPOUND.
4. DISTURBED LAWN AREAS ADJACENT TO CONCRETE PAVEMENT SHALL BE BACKFILLED AND SEEDED AS DESCRIBED IN SPECIFICATIONS .
5. REFER TO CONCRETE DETAILS, THIS SHEET FOR ADDITIONAL CONDITIONS AND REQUIREMENTS, AS NEEDED.

3 CONCRETE PAVEMENT (4" THICKNESS)

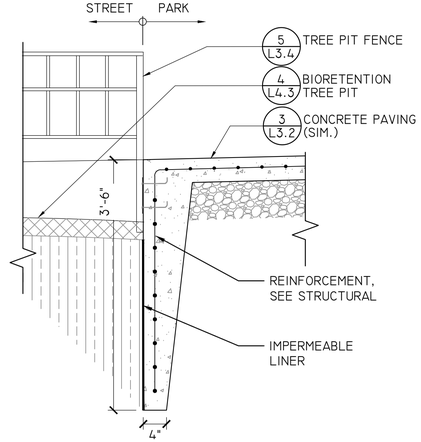
1"=1'-0" — ARLINGTON COUNTY DETAIL



NOTES:
1. #4 @ 12" OC IN 6' LENGTHS ACROSS AMENDED SOIL PANEL
2. PROVIDE CONTINUOUS BAR SUPPORTS @ 3' +/- OC
3. 6x6 #2x#2 WWM CONTINUOUS WITHIN 4' CONCRETE SLAB
4. SIDEWALK SLAB SHALL BE AMENDED AS REQUIRED AND SHOWN ON APPROVED PLANS.

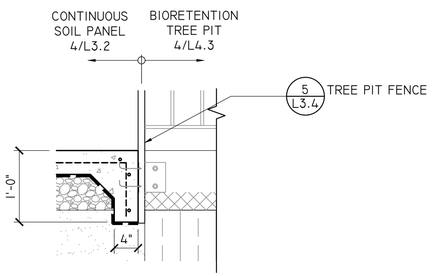
4 CONTINUOUS SOIL PANEL

3/4" =1' — ARLINGTON COUNTY DETAIL



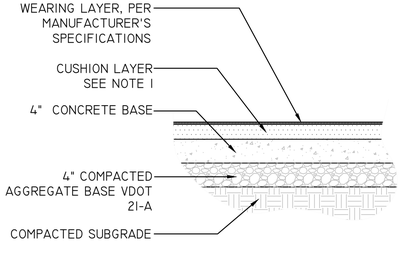
4A THICKENED SLAB AT TREE PIT

1"=1'-0"



4B THICKENED SLAB AT SOIL PANEL

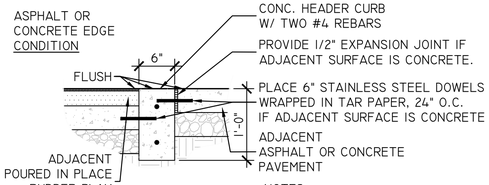
1"=1'-0"



NOTES:
1. POURED-IN-PLACE RUBBER CUSHION LAYER SHALL BE, AT A MINIMUM, AN ADEQUATE THICKNESS FOR THE FALL HEIGHT OF THE PLAY EQUIPMENT IN THE AREA, AS PER THE MANUFACTURER'S RECOMMENDATIONS.
2. IF TRANSITIONS BETWEEN DEPTHS OF POURED-IN-PLACE ARE NEEDED, ACCOMMODATE THE TRANSITIONS BELOW GRADE SO THAT FINISHED GRADE IS ALWAYS FLUSH.
3. WEARING LAYER COLORS SHALL BE SELECTED BY LANDSCAPE ARCHITECT.
4. CONCRETE BASE USED UNDER POURED-IN-PLACE RUBBER SURFACE SHALL HAVE 4" x 4" WELDED WIRE MESH REINFORCEMENT IN THE CONCRETE.

5 POURED IN PLACE PLAY SURFACE (PIP)

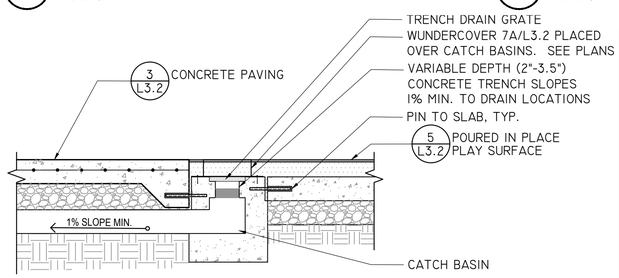
1"=1'-0" — ARLINGTON COUNTY DETAIL



NOTES:
1. SEE PLANS FOR EXACT EDGE CONDITIONS.
2. INSTALL SO THAT NO TRIPPING HAZARDS OR IMPEDIMENTS TO PERSONS WITH DISABILITIES EXIST WHEN COMPLETED.

6 FLUSH CURB

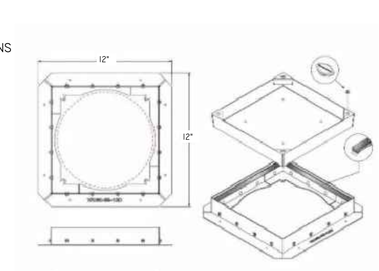
1"=1'-0" — ARLINGTON COUNTY DETAIL



NOTES:
1. TRENCH DRAIN GRATE DOES NOT CONTINUE OVER CATCH BASIN
2. PROVIDE SHOP DRAWINGS FOR REVIEW BY ARCHITECT

7 TRENCH DRAIN

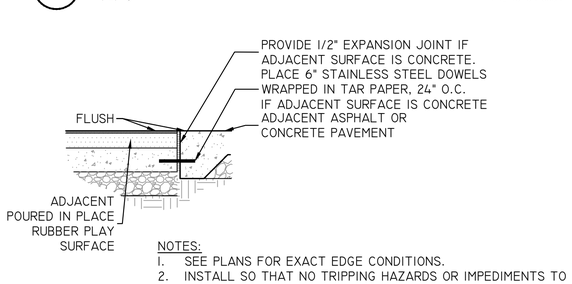
1" = 1'-0"



12"X12", STAINLESS STEEL, CONCRETE TYPE WITH CORNER LUGS.

7A WUNDERCOVER

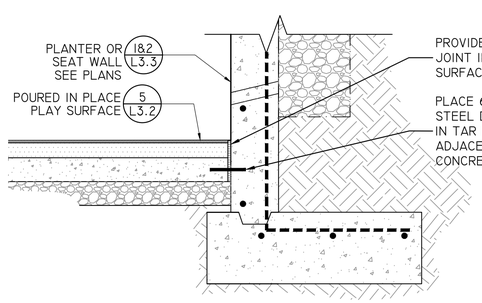
NTS



NOTES:
1. SEE PLANS FOR EXACT EDGE CONDITIONS.
2. INSTALL SO THAT NO TRIPPING HAZARDS OR IMPEDIMENTS TO PERSONS WITH DISABILITIES EXIST WHEN COMPLETED.

8 PIP EDGE CONDITION AT NEW CONCRETE

1"=1'-0"



9 PIP EDGE CONDITION AT SITE WALLS

1"=1'-0"

ARLINGTON
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ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

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LUKE VANBELLEGHEM, Design Supervisor	7.9.2018

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LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: CF
Drawn: SM, LV, KN
Checked: CF, LV

Filename:
Plotted: Sep. 8, 20

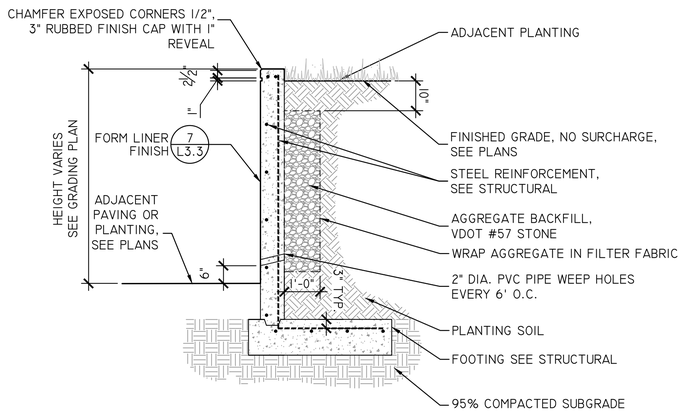
Scale: AS SHOWN
Date: JULY 15, 2019

Seal

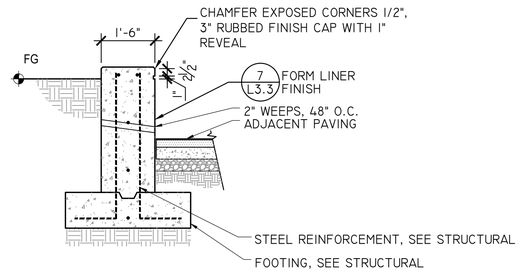
COMMONWEALTH OF VIRGINIA
YANHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L3.2

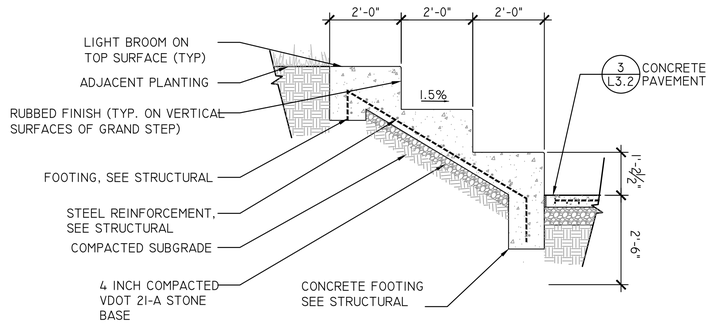
Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L3.2.dwg



1 W1 - PLANTER WALL
1/2"=1'

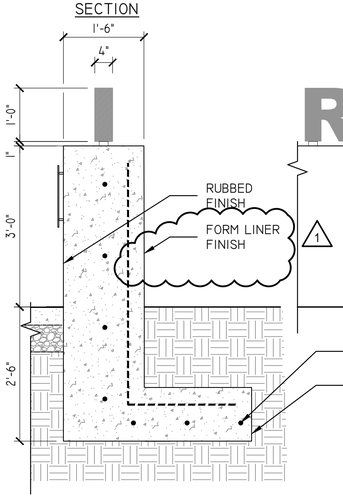


2 W2 - SEAT WALL
1/2"=1'

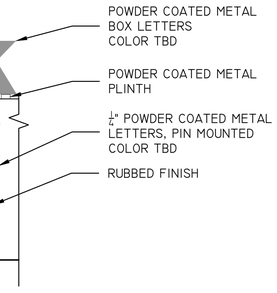


3 W3 - SEAT STEPS
1/2"=1'

SECTION



ROSSLYN HIGHLANDS PARK
Playground

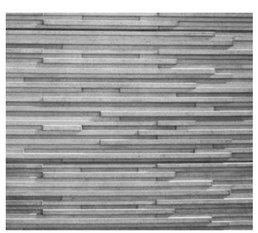


NOTE:
1. COLOR OF BOX AND PIN MOUNTED LETTERS TO MATCH. TO BE APPROVED BY LANDSCAPE ARCHITECT.

4 W4 - SIGN WALL
3/4"=1'

5 NOT USED
NTS

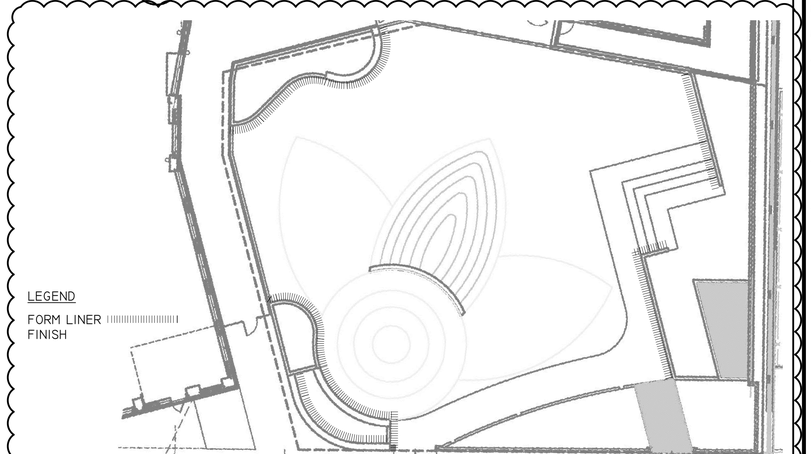
6 NOT USED
1"=1'-0"



MANUFACTURER: FITZGERALD FORMLINERS
PRODUCT: 16938 RANDOM PLANK
PATTERN TO BE APPLIED HORIZONTALLY

OR APPROVED EQUAL

7 FORM LINER FINISH
NTS



1 8 FORM LINER FINISH LOCATIONS
NTS

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION
Park Development Division
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ITB# 21-DPR-ITB-304

SWM# 20-0120

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ROSSLYN HIGHLANDS PARK
BID SET

18TH STREET
ARLINGTON, VIRGINIA

Sheet Title
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ADDENDUM 1 (1)	9/25/20

Designed: CF
Drawn: SM, LV, KN
Checked: CF, LV
Filename:
Plotted: Sep. 28, 20
Scale: AS SHOWN
Date: JULY 15, 2019

Seal
COMMONWEALTH OF VIRGINIA
YUNHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L3.3

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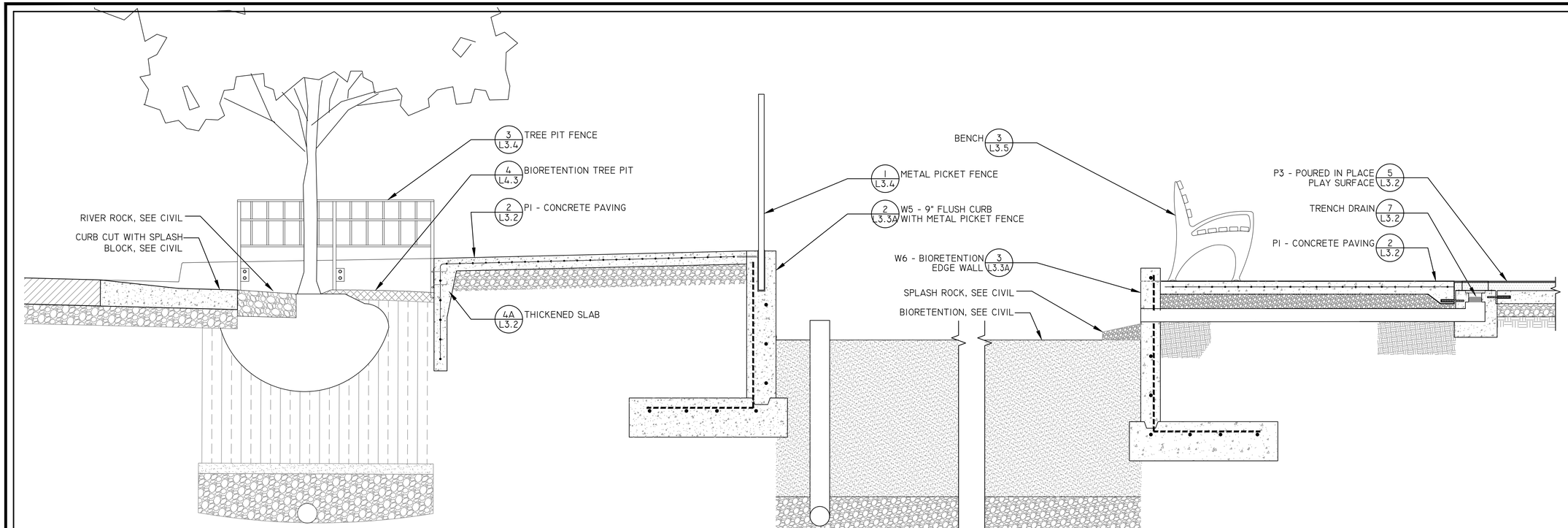
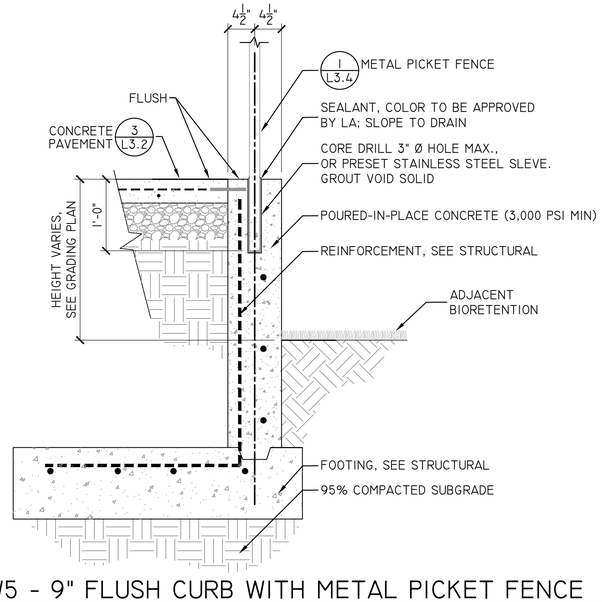


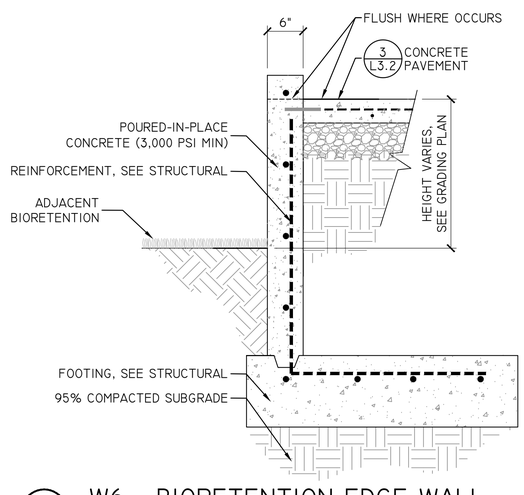
1 WALK AND BIORETENTION SECTION

3/4"=1'



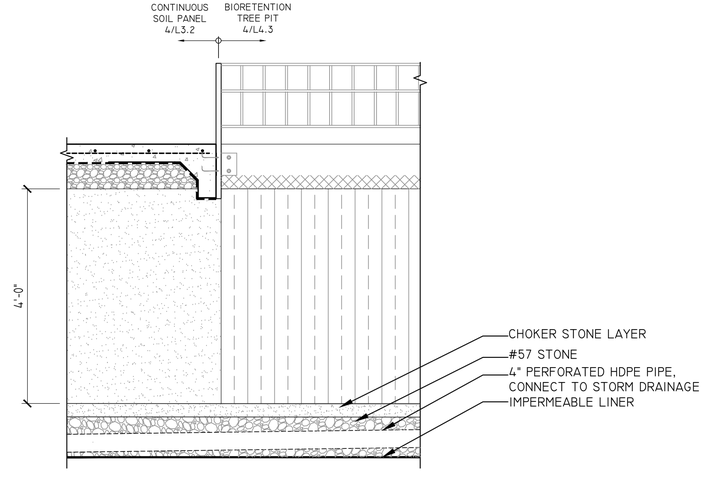
2 W5 - 9" FLUSH CURB WITH METAL PICKET FENCE

1"=1'-0"



3 W6 - BIORETENTION EDGE WALL

1"=1'-0"



4 CONTINUOUS SOIL PANEL AT BIORETENTION TREE PIT

3/4" =1'

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COMMONWEALTH OF VIRGINIA
CHIHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L3.3A

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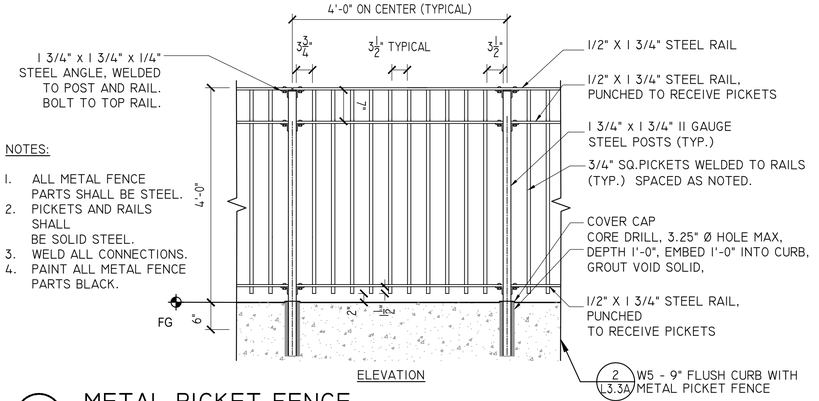
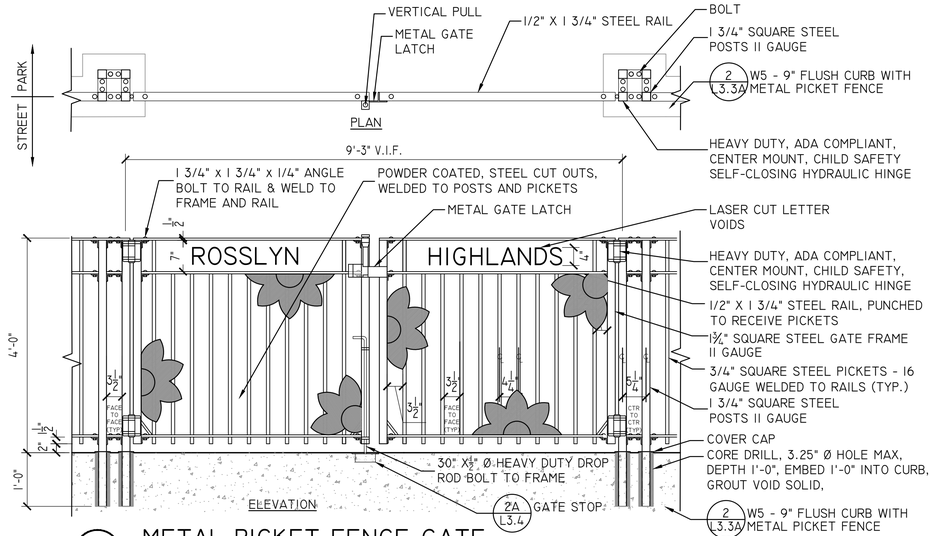


NOTES:

1. ALL METAL FENCE PARTS SHALL BE STEEL.
2. PICKETS AND RAILS SHALL BE SOLID STEEL.
3. WELD ALL CONNECTIONS.
4. PAINT ALL METAL FENCE PARTS BLACK.

1 METAL PICKET FENCE

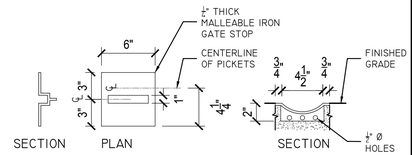
3/4"=1'



2 METAL PICKET FENCE-GATE

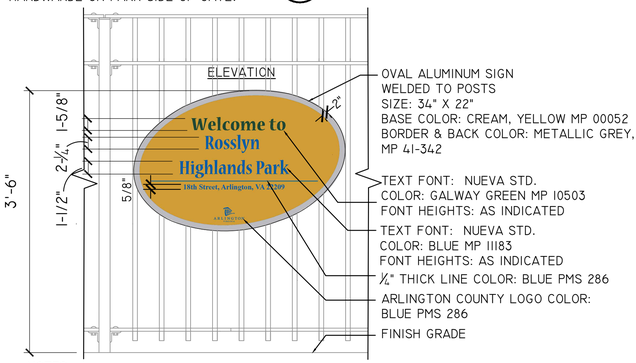
3/4"=1'

NOTE: PROVIDE OPTION FOR PANIC BAR HARDWARDE ON PARK SIDE OF GATE.



2A GATE STOP

1 1/2"=1'



NOTES:

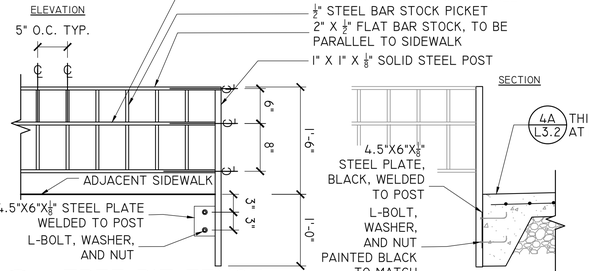
1. PROVIDE SHOP DRAWINGS PRIOR TO ANY FABRICATION.
2. COLORS SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO ANY FABRICATION.
3. SEE LAYOUT PLAN FOR LOCATION(S).
4. SIGNS SHALL BE FABRICATED BY BY ENGRAPHIX ARCHITECTURAL SIGNAGE, 314-781-7878 OR APPROVED EQUAL. SEE SPECIFICATIONS.
6. FINAL TEXT FOR SIGN TO BE PROVIDED BY OWNER
7. LAYOUT OF GRAPHICS APPROVED AS SUBMITTAL

4 PARK ENTRY SIGN

NTS

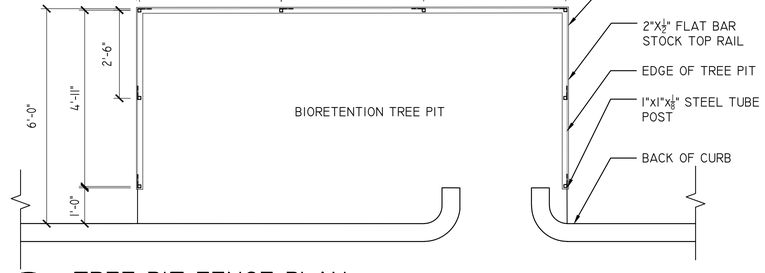
NOTES:

1. FIELD VERIFY ALL DIMENSIONS.
2. FENCE SHALL BE THREE SIDED UNLESS OTHERWISE SPECIFIED, OPEN SIDE TO FACE CURB. SET END POST OF FENCE 12" FROM BACK OF CURB
3. WELD ALL CONNECTIONS.
4. PROVIDE POSTS AT CORNERS AND ONE AT MIDPOINT OF LONG SIDE. IF FENCE EXCEEDS 12' PROVIDE POSTS AT 4' O.C.
5. FINISH: POWDERCOAT COLOR: SATIN BLACK



3 TREE PIT FENCE

1" = 1'-0"

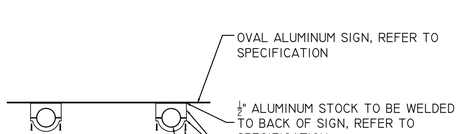


3A TREE PIT FENCE PLAN

1/2" = 1'-0"

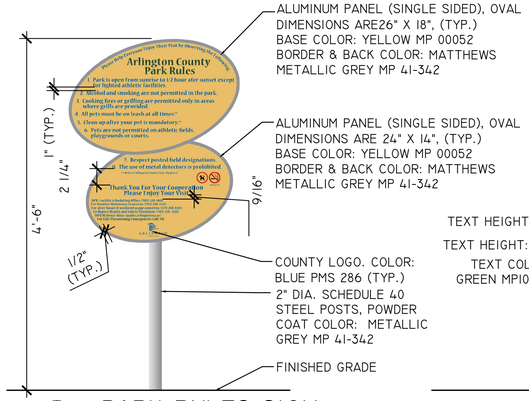
NOTE:

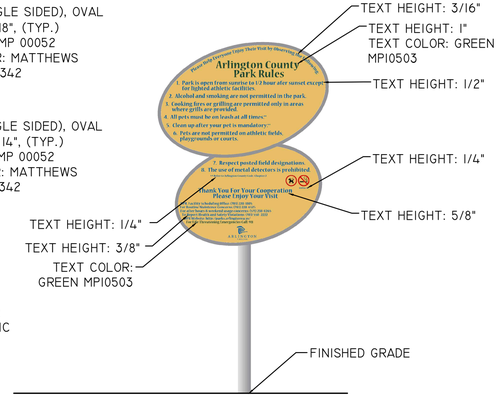
1. CONTRACTOR TO PROVIDE TWO POST ATTACHMENTS PER POST (4 TOTAL PER SIGN).
2. CONTRACTOR TO PROVIDE CONSTRUCTION SUBMITTAL FOR REVIEW AND APPROVAL



4A PARK SIGN MOUNTING

NTS



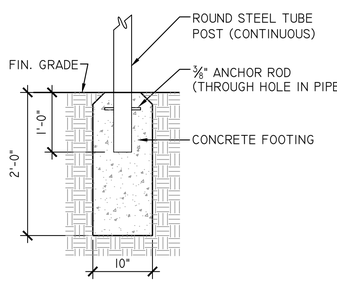


5 PARK RULES SIGN

NTS

NOTES:

1. PROVIDE SHOP DRAWINGS PRIOR TO ANY FABRICATION.
2. LANDSCAPE ARCHITECT SHALL APPROVE FINAL LOCATION.
3. SIGNS SHALL BE AS FABRICATED BY ENGRAPHIX ARCHITECTURAL SIGNAGE, 314-781-7878 OR APPROVED EQUAL. SEE SPECIFICATIONS.
4. TYPICAL TEXT FONT: NUEVA STD., COLOR: BLUE MP 11183, GALWAY GREEN MP 10503, OR UNLESS OTHERWISE SPECIFIED.
5. SEE DETAIL 5A/L3.4 FOR FOOTING.
6. FINAL TEXT FOR SIGN TO BE PROVIDED BY OWNER
7. LAYOUT OF GRAPHICS APPROVED AS SUBMITTAL



5A PARK RULES SIGN FOOTING

1" = 1'-0"

ARLINGTON VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

CONSTRUCTION DETAILS

Approval	Date
LUKE VANBELLEGHEM, Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: CF
Drawn: SM, LV, KN
Checked: CF, LV

Filename:
Plotted: Sep. 3, 20

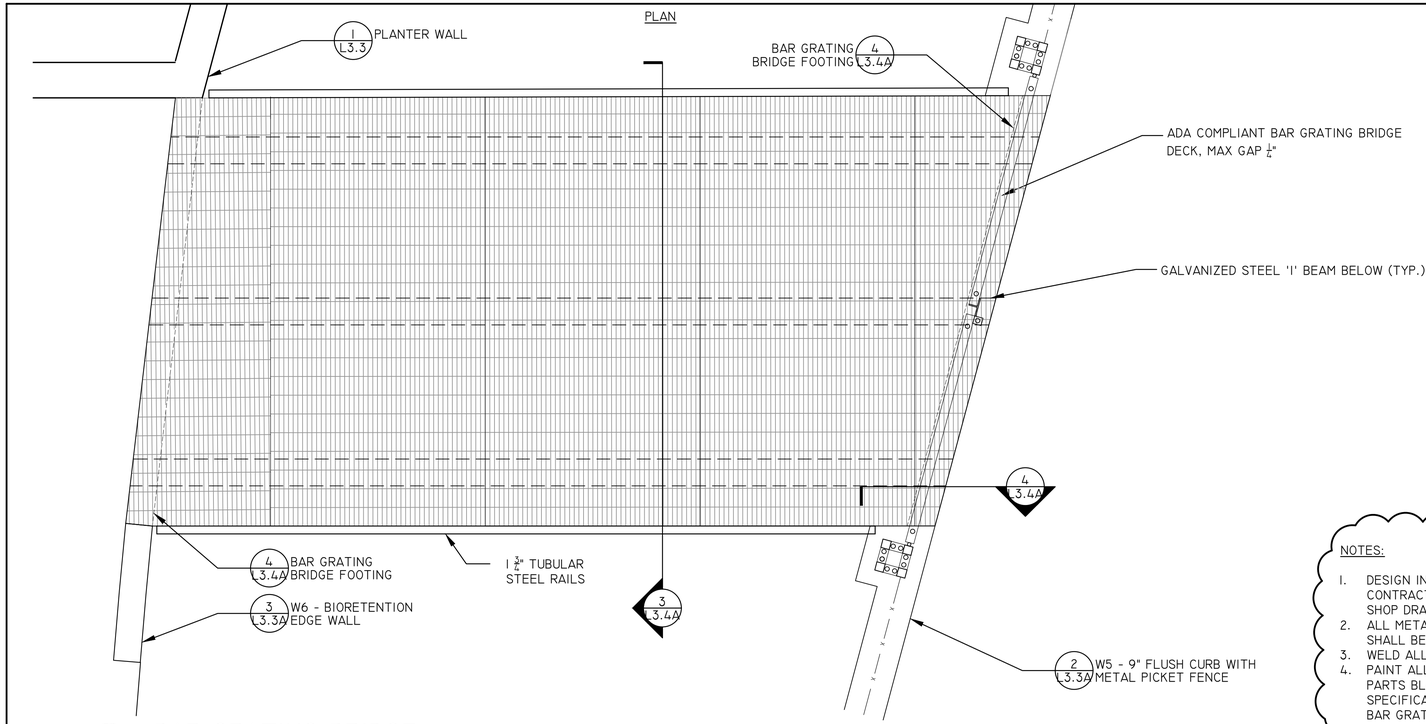
Scale: AS SHOWN
Date: JULY 15, 2019

Seal

COMMONWEALTH OF VIRGINIA
CHUNHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
04/15/2020

Sheet L3.4

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L3.2.dwg



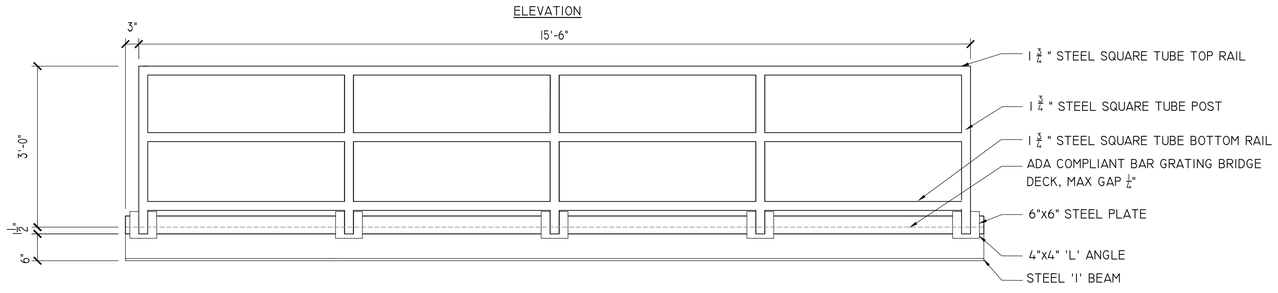
NOTES:

1. DESIGN INTENT ONLY. CONTRACTOR TO PROVIDE SHOP DRAWINGS.
2. ALL METAL BRIDGE PARTS SHALL BE STEEL.
3. WELD ALL CONNECTIONS.
4. PAINT ALL METAL BRIDGE PARTS BLACK PER SPECIFICATIONS EXCEPT FOR BAR GRATING DECK.

1

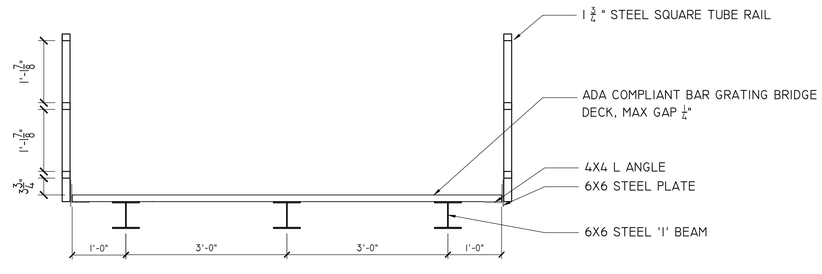
1 BAR GRATING BRIDGE

3/4"=1'-0"



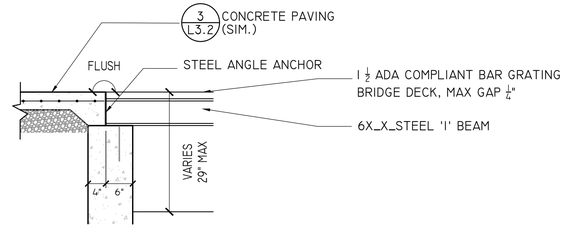
2 BRIDGE RAILING

3/4"=1'-0"



3 BAR GRATING BRIDGE SECTION

3/4"=1'-0"



4 BAR GRATING BRIDGE FOOTING

3/4"=1'-0"

ARLINGTON VIRGINIA

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ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

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ARLINGTON, VIRGINIA

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LDA SUBMISSION REV.	9/08/20
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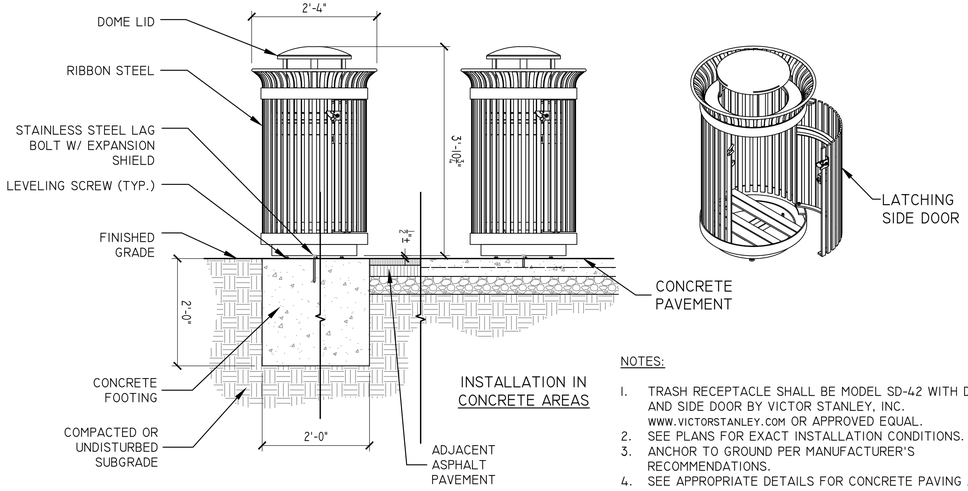
COMMONWEALTH OF VIRGINIA
YUNHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L3.4A

Path: G:\2019\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L3.2.dwg

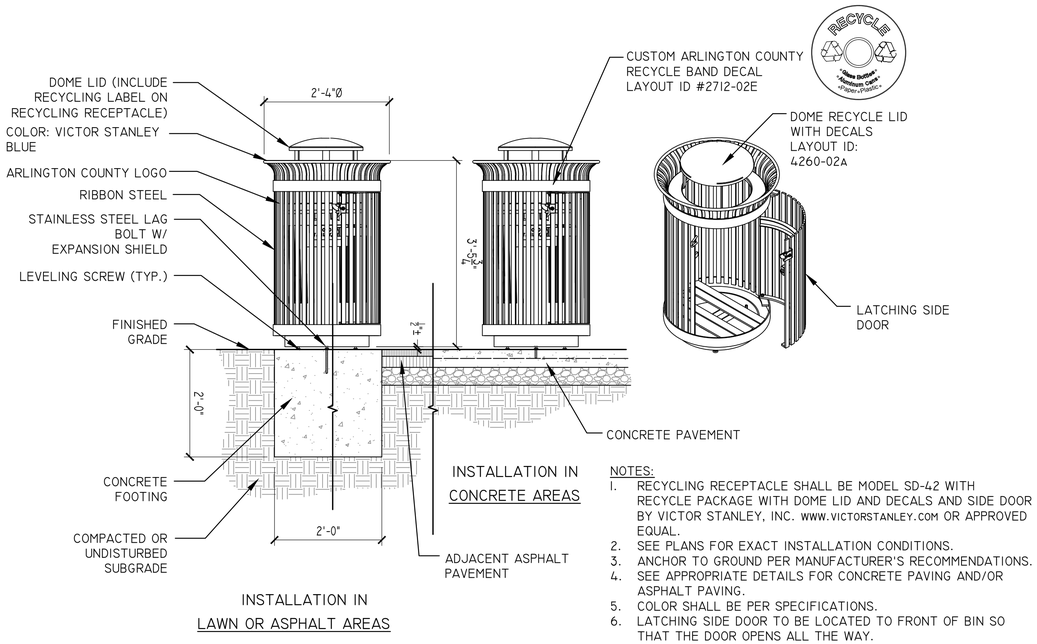


NOTES:

1. TRASH RECEPTACLE SHALL BE MODEL SD-42 WITH DOME LID AND SIDE DOOR BY VICTOR STANLEY, INC. WWW.VICTORSTANLEY.COM OR APPROVED EQUAL.
2. SEE PLANS FOR EXACT INSTALLATION CONDITIONS.
3. ANCHOR TO GROUND PER MANUFACTURER'S RECOMMENDATIONS.
4. SEE APPROPRIATE DETAILS FOR CONCRETE PAVING AND/OR ASPHALT PAVING.
5. METAL COLOR SHALL BE PER PLANS AND SPECIFICATIONS.
6. LATCHING SIDE DOOR TO BE LOCATED TO FRONT OF BIN SO THAT THE DOOR OPENS ALL THE WAY.

1 F1 - TRASH RECEPTACLE

3/4"=1'

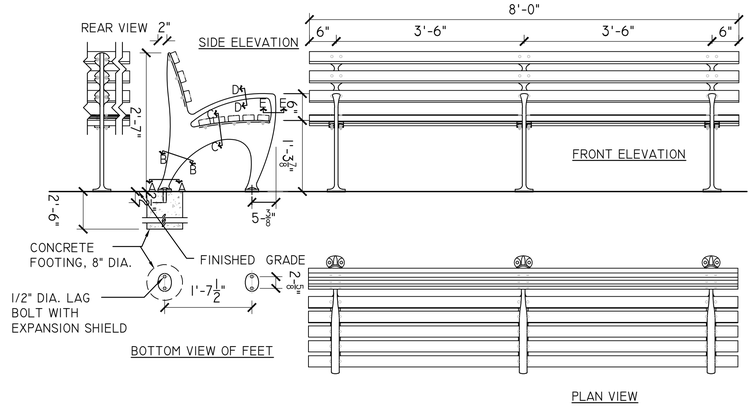


NOTES:

1. RECYCLING RECEPTACLE SHALL BE MODEL SD-42 WITH RECYCLE PACKAGE WITH DOME LID AND DECALS AND SIDE DOOR BY VICTOR STANLEY, INC. WWW.VICTORSTANLEY.COM OR APPROVED EQUAL.
2. SEE PLANS FOR EXACT INSTALLATION CONDITIONS.
3. ANCHOR TO GROUND PER MANUFACTURER'S RECOMMENDATIONS.
4. SEE APPROPRIATE DETAILS FOR CONCRETE PAVING AND/OR ASPHALT PAVING.
5. COLOR SHALL BE PER SPECIFICATIONS.
6. LATCHING SIDE DOOR TO BE LOCATED TO FRONT OF BIN SO THAT THE DOOR OPENS ALL THE WAY.

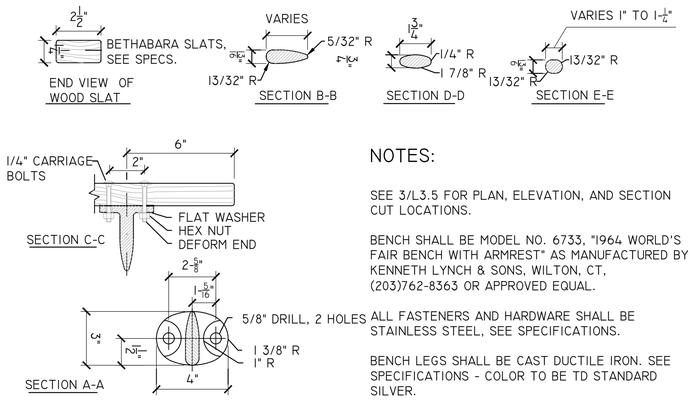
2 F1 - RECYCLING RECEPTACLE

3/4"=1'



3 F2 - 1964 WORLD'S FAIR BENCH

3/4"=1'



NOTES:

SEE 3/L3.5 FOR PLAN, ELEVATION, AND SECTION CUT LOCATIONS.

BENCH SHALL BE MODEL NO. 6733, "1964 WORLD'S FAIR BENCH WITH ARMREST" AS MANUFACTURED BY KENNETH LYNCH & SONS, WILTON, CT, (203)762-8363 OR APPROVED EQUAL.

ALL FASTENERS AND HARDWARE SHALL BE STAINLESS STEEL, SEE SPECIFICATIONS.

BENCH LEGS SHALL BE CAST DUCTILE IRON. SEE SPECIFICATIONS - COLOR TO BE TD STANDARD SILVER.

4 1964 WORLD'S FAIR BENCH ENLARGEMENTS

3"=1'

ARLINGTON
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ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

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LUKE VANBELLEGHEM Design Supervisor	7.9.2018

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LDA SUBMISSION REV.	9/08/20

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Checked: CF, LV

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Seal

COMMONWEALTH OF VIRGINIA
CHUNHUI FAN
Lic. NO. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L3.5

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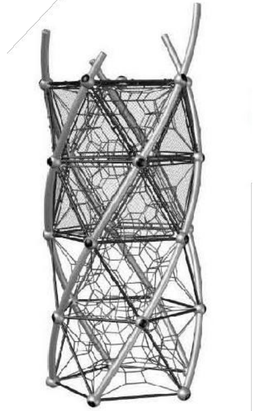
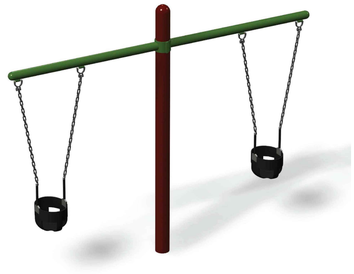


1 DNA TOWER

2 EVOS STRUCTURE

3 WEEVOS STRUCTURE

4 DOUBLE CLOUD NINE



5 BUCKET SWINGS

DESIGNATION	MANUFACTURER	MODEL	SIZE	FINISH	COLOR	OTHER
PLAY EQUIPMENT						
WEEVOS STRUCTURE	LANDSCAPE STRUCTURES; (888) 438-6574 601 7TH STREET SOUTH DELANO, MN 55328 HTTPS://WWW.PLAYLSI.COM/	DESIGN ID: 3464	36X31 FT	MNFR'S STANDARD	TBD	INSTALL PER MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS. COLORS TO BE SELECTED BY LANDSCAPE ARCHITECT FROM MANUFACTURER'S FULL RANGE.
EVOS STRUCTURE		DESIGN ID: 3641	51X38 FT	MNFR'S STANDARD	TBD	
DNA TOWER L.04	BERLINER; 1 (877) 837-367696 BROOKFIELD OAKS DRIVE, SUITE 140, GREENVILLE, SC 29607 HTTPS://WWW.BERLINER-PLAYEQUIPMENT.COM/US/	90.295.014	23x23 FT	MNFR'S STANDARD	TBD	
DOUBLE CLOUD NINE		95.171.311	33X27 FT	MNFR'S STANDARD	TBD	
BUCKET SWINGS	LANDSCAPE STRUCTURES; (888) 438-6574 601 7TH STREET SOUTH DELANO, MN 55328 HTTPS://WWW.PLAYLSI.COM/	DESIGN ID: 3407	22X17 FT	MNFR'S STANDARD	TBD	

6 PLAY EQUIPMENT SCHEDULE

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS
AND RECREATION

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Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

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SWM# 20-0120

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BID SET

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LDA SUBMISSION REV.	9/08/20

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Checked: CF, LV

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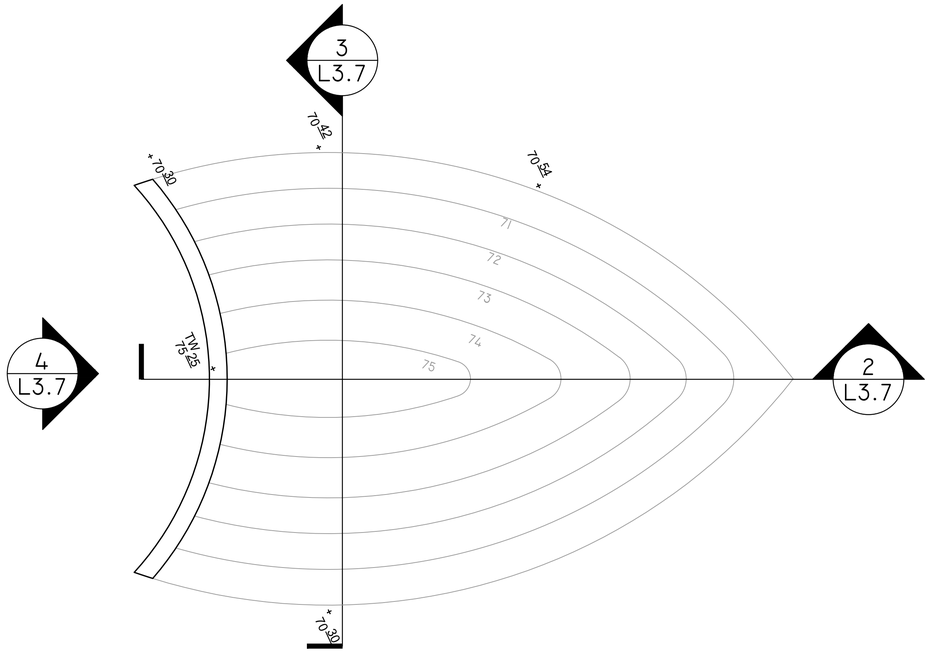
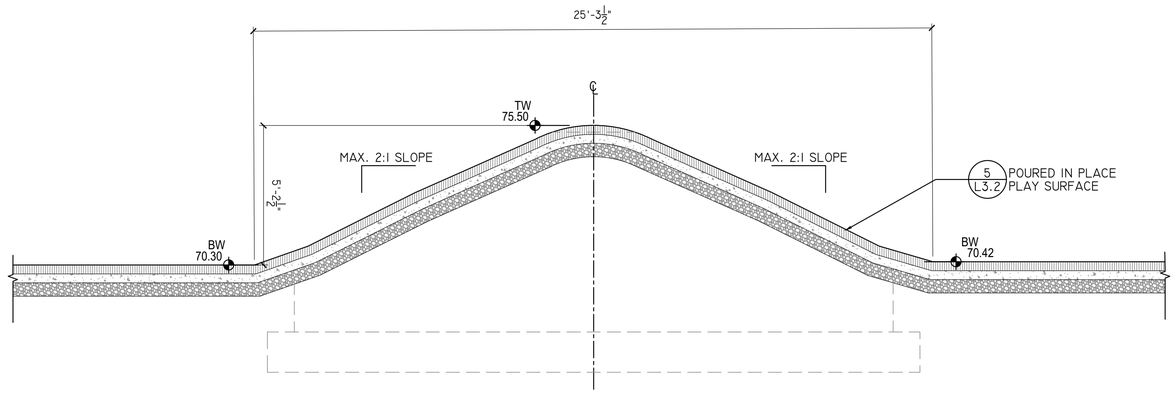
COMMONWEALTH OF VIRGINIA
CHIHUI FAN
Lic. No. 001316
4/15/2020
LANDSCAPE ARCHITECT

Sheet L3.6

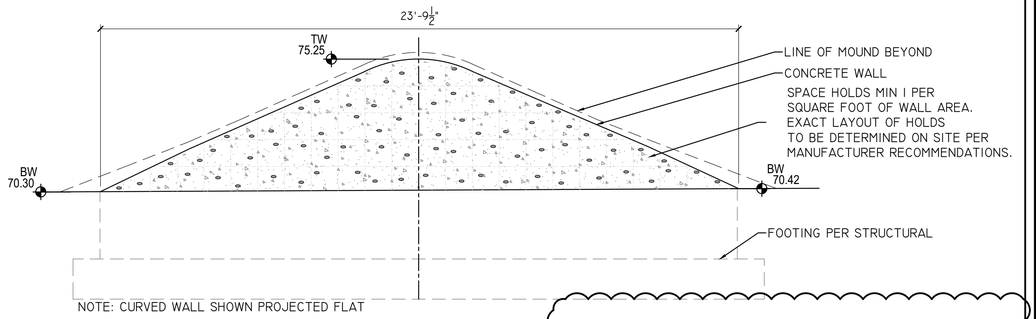
Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L3.2.dwg



1 CLIMBING WALL AND PLAY MOUND
1/4" = 1'-0"



3 CLIMBING WALL AND PLAY MOUND - SECTION
3/8" = 1'-0"



4 CLIMBING WALL AND PLAY MOUND - ELEVATION
3/8" = 1'-0"

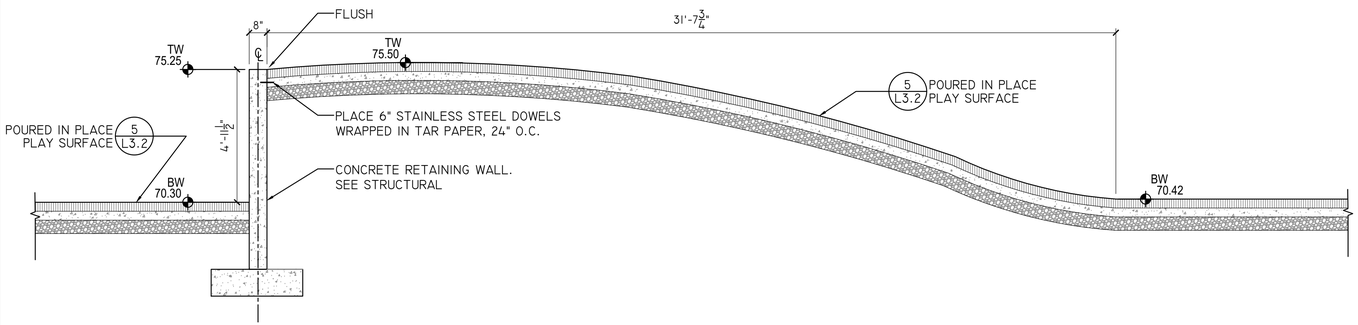
NOTES:
1. PLACE MINIMUM 1 HOLD PER SQUARE FOOT OF WALL AREA.
2. PROVIDE SHOP DRAWINGS AND SAMPLES PRIOR TO CONSTRUCTION.
3. PROVIDE VARIETY OF HANDHOLDS AND FOOTHOLDS.
   60% MEDIUM SIZED BOLT-ON HOLDS OF EVERY STYLE
   (EDGES, POCKETS, PINCHES, SLOPERS, ETC.)
   20% FOOTHOLDS
   10% SMALL HANDHOLDS (SIM TO FOOTHOLDS BUT SLIGHTLY
   LARGER AND MORE POSITIVE)
   10% JUG HOLDS
   OR APPROVED ALTERNATE MIX PER SHOP DRAWINGS

HANDHOLD/FOOTHOLD BASIS OF DESIGN PRODUCT:

MANUFACTURER: EVERLAST CLIMBING, EVERLASTCLIMBING.COM,
800-476-7366

PRODUCT: GROPERZ

1



2 CLIMBING WALL AND PLAY MOUND - SECTION
3/8" = 1'-0"

ARLINGTON
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DEPARTMENT OF PARKS
AND RECREATION

Park Development Division
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18TH STREET

ARLINGTON, VIRGINIA

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LDA SUBMISSION REV.	9/08/20
ADDENDUM 1 (1)	9/25/20

Designed: CF
Drawn: SM, LV, KN
Checked: CF, LV

Filename:
Plotted: Sep. 28, 20

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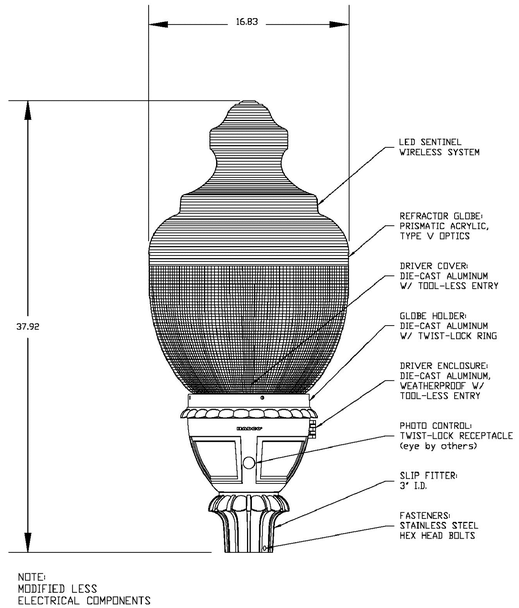
COMMONWEALTH OF VIRGINIA
CHANHUI FAN
Lic. No. 001316
4/15/2020
LANDSCAPE ARCHITECT

Sheet L3.7

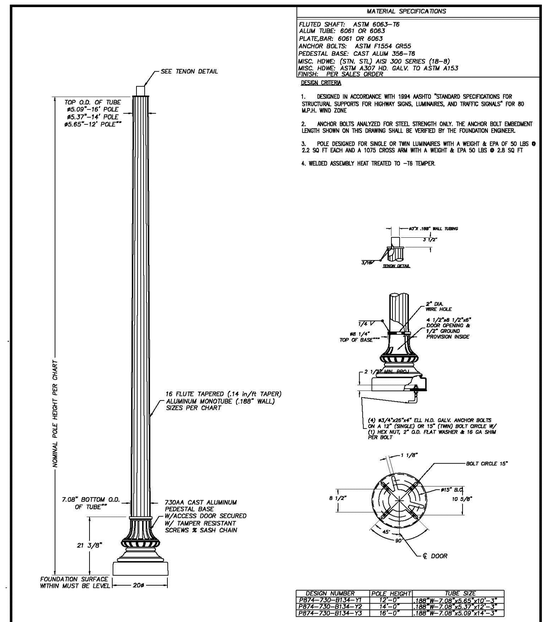
Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L3.2.dwg



NOTE:
MODIFIED LESS
ELECTRICAL COMPONENTS

LUMINAIRE FIXTURE DETAIL	
	REVISION & DATE
ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	DRAWING NO. **LT-5.1**

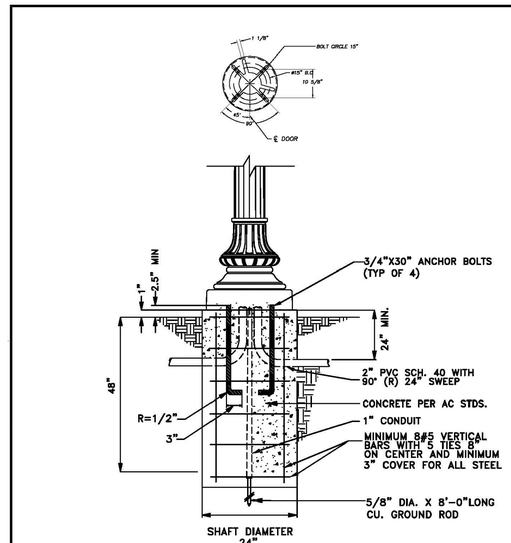
1 LI STREETLIGHT
NTS



DESIGN NUMBER	POLE HEIGHT	TUBE SIZE
P874-730-B134-Y1	12'-0"	1.68"Ø-7.08"x5.60"x10'-4"
P874-730-B134-Y2	14'-0"	1.68"Ø-7.08"x5.57"x12'-4"
P874-730-B134-Y3	16'-0"	1.68"Ø-7.08"x5.09"x14'-4"

CARLYLE ALUMINUM POLE STANDARD	Rev. 1 05/2013
	REVISION & DATE
ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	DRAWING NO. **LT-7**

2 STREETLIGHT - POLE
NTS



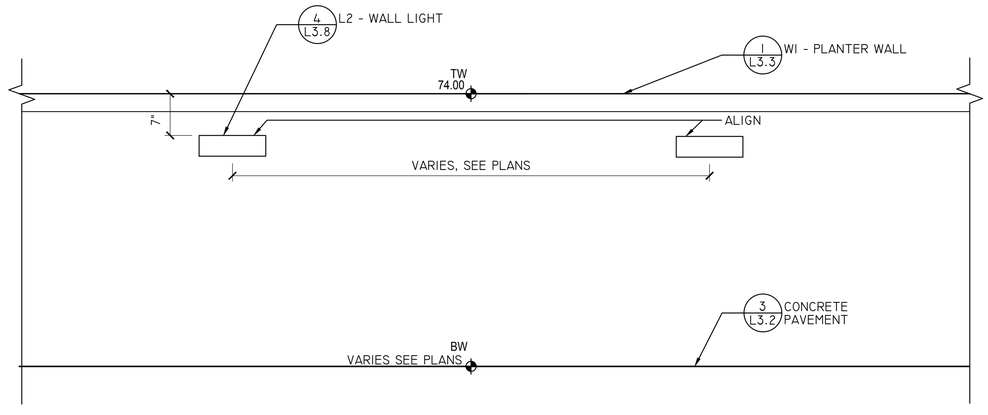
NOTES:
1. FOUNDATION TOP SHALL BE FINISHED AND LEVEL.
2. BOLT HOLE PATTERN SHALL BE PARALLEL TO THE CURB.
3. TOP OF THE FOUNDATION SHALL BE 1" ABOVE FINISHED GRADE.
4. USE 15" BOLT CIRCLE.

CARLYLE POLE FOUNDATION TYPE F-1- DETAIL	REV. 1 04/2014
	REVISION & DATE
ARLINGTON COUNTY, VIRGINIA DEPARTMENT OF ENVIRONMENTAL SERVICES	DRAWING NO. **LT-8**

3 STREETLIGHT - POLE FOUNDATION
NTS

MANUFACTURER: PERFORMANCE LIGHTING
PART NUMBER: 071407
FINISH: IRON GREY
KELVIN: 3000

4 L2 WALL LIGHT
NTS



5 WALL LIGHT ELEVATION
1"=1'-0"

NOTE:

BASE BID SHALL NOT INCLUDE WALL LIGHT 4/L3.8
OR STUCTURAL FOAM

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS
AND RECREATION

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18TH STREET

ARLINGTON, VIRGINIA

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Filename:
Plotted: Sep. 3, 20
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Date: JULY 15, 2019

Seal

Sheet L3.8

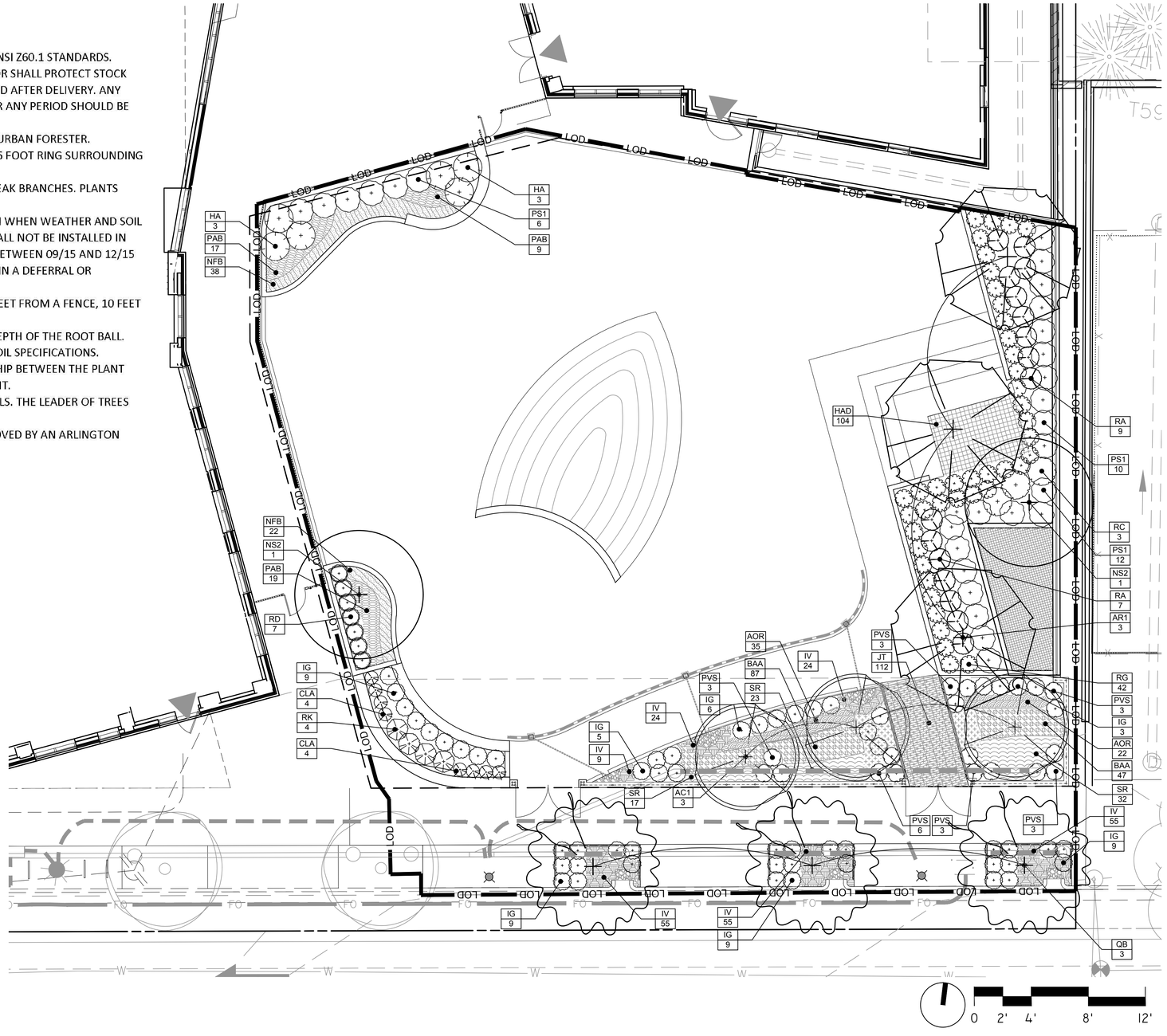
Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L3.2.dwg

NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. MEET REQUIREMENTS OF ANSI Z60.I, LATEST ADDITION, FOR ALL PLANT MATERIAL.
3. QUANTITIES GIVEN ARE FOR INFORMATION ONLY. CONTRACTOR IS RESPONSIBLE FOR MEETING THE DESIGN INTENT, AS INDICATED ON PLANTING PLANS.
4. ALL PLANTS ARE TO BE HEALTHY, FULL, BALANCED, AND EXCEPTIONALLY HEAVY.

WATERING NOTE:
CONTRACTOR SHALL WATER NEWLY PLANTED TREES. IN ACCORDANCE WITH PROJECT SPECIFICATIONS, FOR A TWO YEAR PERIOD FOLLOWING THE CONSTRUCTION COMPLETION.

TREE PLANTING

1. PLANTS SHALL BE FURNISHED AND INSTALLED AS INDICATED ON THE LANDSCAPE PLAN.
2. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, AND COMPLY WITH MOST RECENT ANSI Z60.1 STANDARDS.
3. PLANTS SHALL BE PLANTED ON THE DAY OF DELIVERY. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD AFTER DELIVERY. ANY PLANTS NOT INSTALLED DURING THIS PERIOD SHALL BE REJECTED. ALL PLANTS KEPT ON SITE FOR ANY PERIOD SHOULD BE WATERED AND CARED FOR USING ANSI A300 STANDARDS.
4. NO STAKES SHALL BE USED TO STABILIZE TREES, UNLESS DIRECTED BY THE ARLINGTON COUNTY URBAN FORESTER.
5. TREES PLANTED SHALL RECEIVE A 3 INCH THICK LAYER OF SHREDDED HARDWOOD MULCH, IN A 6 FOOT RING SURROUNDING THE TREE, WITH A 6 INCH CLEAR AREA NEAR THE TRUNK.
6. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE ROOT BALL ONLY.
7. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOP SOIL THAT IS IN MUDDY OR FROZEN CONDITION. TREES AND SHRUBS SHALL BE INSTALLED BETWEEN 09/15 AND 12/15 OR BETWEEN 03/15 AND 06/15. CONTACT THE ARLINGTON COUNTY URBAN FORESTER TO OBTAIN A DEFERRAL OR APPROVAL FOR PLANTING OUT OF SEASON.
8. NO PLANT, EXCEPT GROUNDCOVERS, SHALL BE PLANTED WITHIN TWO FEET OF A SIDEWALK, 5 FEET FROM A FENCE, 10 FEET FROM A BUILDING, OR 15 FEET FROM OVERHEAD UTILITY LINES.
9. TREES AND SHRUBS SHALL BE PLANTED IN HOLES TWO TO THREE TIMES AS WIDE AND TO THE DEPTH OF THE ROOT BALL.
10. PLANTS SHALL BE PLANTED IN HEALTHY, UNCOMPACTED SOIL. SEE THE PLANTING DETAIL FOR SOIL SPECIFICATIONS.
11. SET ALL PLANTS PLUMB AND STRAIGHT AT SUCH LEVEL THAT NORMAL OR NATURAL RELATIONSHIP BETWEEN THE PLANT AND THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE THE PLANT IN THE CENTER OF THE PIT.
12. INJURED ROOTS SHALL BE PRUNED TO CLEAN ENDS BEFORE PLANTING WITH CLEAN, SHARP TOOLS. THE LEADER OF TREES SHALL NOT BE CUT BACK.
13. AT THE END OF THE PROJECT, PRESERVED AND PLANTED TREES MUST BE INSPECTED AND APPROVED BY AN ARLINGTON COUNTY URBAN FORESTER.



ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

PLANTING PLAN

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: CF
Drawn: SM, LV, KN
Checked: CF, LV

Filename:
Plotted: Sep. 8, 20

Scale: AS SHOWN
Date: JULY 15, 2019

Seal

COMMONWEALTH OF VIRGINIA
CHUNHUI FAN
Lic. No. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L4.1

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site Ci\01 Caddocs\ Filename: L4.1.dwg

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE	SPACING	REMARKS
ARI	3	ACER RUBRUM `OCTOBER GLORY` TM	OCTOBER GLORY MAPLE	2.5" CAL	B&B	AS SHOWN	
ACI	3	AMELANCHIER CANADENSIS `AUTUMN BRILLIANCE`	AUTUMN BRILLIANCE SERVICEBERRY	10` HT	B&B	AS SHOWN	
NS2	2	NYSSA SYLVATICA `WILDFIRE`	BLACK GUM	2.5" CAL	B&B	AS SHOWN	
QB	3	QUERCUS BICOLOR	SWAMP WHITE OAK	2.5" CAL	B&B	AS SHOWN	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE	SPACING	REMARKS
HA	6	HYDRANGEA ARBORESCENS `ANNABELLE`	ANNABELLE SMOOTH HYDRANGEA	24"HT.	B&B	48" OC	
IG	50	ILEX GLABRA `SHAMROCK`	SHAMROCK INKBERRY	24"HT.	CONT.	30" OC	
PSI	28	PRUNUS LAUROCERASUS `SCHIPKAENSIS`	SCHIP LAUREL	36" HT.	B&B	42" OC	
RA	16	RHODODENDRON ATLANTICUM	COAST AZALEA	24"HT.	CONT.	36" OC	
RC	3	RHODODENDRON CATAWBIENSE	CATAWBA RHODODENDRON	30" HT.	CONT.	48" OC	
RG	42	RHUS AROMATICA `GRO-LOW`	GRO-LOW FRAGRANT SUMAC	18" HT.	CONT.	30" OC	
RK	4	ROSA X `KNOCKOUT` TM	KNOCK OUT ROSE	36" HT.	CONT.	36" OC	
RD	7	ROSA X `MEIJOCOS`	PINK DRIFT ROSE	3 GAL	CONT.	30" OC	
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE	SPACING	REMARKS
CLA	8	CHASMANTHIUM LATIFOLIUM	NORTHERN SEA OATS	3 GAL	CONT.	24" OC	
PVS	21	PANICUM VIRGATUM `SHENANDOAH`	SWITCH GRASS	3 GAL	CONT.	36" OC	
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE	SPACING	REMARKS
AOR	57	ASTER OBLONGIFOLIUS `RAYDON'S FAVORITE`	AROMATIC ASTER	1 GAL	CONT.	12" OC	
BAA	134	BAPTISIA AUSTRALIS	FALSE INDIGO	1 GAL	CONT.	12" OC	
HAD	73	HEUCHERA AMERICANA `DALE'S STRAIN`	AMERICAN ALUMROOT	1 GAL	CONT.	15" OC	
IV	222	IRIS VERSICOLOR	BLUE FLAG	4" POT	CONT.	9" O.C.	
JT	112	JUNCUS TENUIS	POVERTY RUSH	1 GAL	CONT.	15" OC	
NFB	55	NEPETA X FAASSENII `WALKERS LOW`	CATMINT	1 GAL	CONT.	15" OC	
PAB	44	PEROVSKIA ABROTANOIDES `LITTLE SPIRE`	LITTLE SPIRE RUSSIAN SAGE	1 GAL	CONT.	15" OC	
SR	72	SOLIDAGO RUGOSA `FIREWORKS`	WRINKLELEAF GOLDENROD	1 GAL	CONT.	15" OC	

1 PLANT SCHEDULE
NTS

QUEENS COURT
FOR INFORMATION ONLY

TREE CANOPY COVER CALCULATIONS

AREA WITHIN PROPERTY LINE	44,732 SF (1.03 ACRES)
PUBLIC RIGHT-OF-WAY DEDUCTION	6,900 SF
SITE AREA	37,832 SF
TREE CANOPY COVER REQUIRED	3,783 SF

TREE CANOPY COVER (ESTIMATED CANOPY AT 20 YEARS)

TREE CANOPY COVER PROVIDED BY APAH/QUEEN'S COURT
FOR INFORMATION ONLY

QTY.	TREE TYPE	VALUE	TOTAL
4	LARGE NATIVE SHADE TREE	393.75 SF	1,575 SF
2	MEDIUM NATIVE TREE	218.75 SF	438 SF
4	MEDIUM TREE	175 SF	700 SF

TREE CANOPY COVER PROVIDED BY PARKS DEPARTMENT

QTY.	TREE TYPE	VALUE	TOTAL
3	LARGE SHADE TREE	315 SF	945 SF
2	MEDIUM-LARGE TREE	250 SF	500 SF
3	SMALL TREE	110 SF	330 SF

SUMMARY

MIN. TREE CANOPY COVER PROVIDED BY APAH	2,713 SF
MIN. TREE CANOPY COVER PROVIDED BY PARKS DEPARTMENT	1,775 SF
TOTAL TREE CANOPY PROVIDED	4,488 SF
TREE CANOPY REQUIRED	3,783 SF

2 TREE CANOPY COVERAGE CALCULATIONS
NTS

TREE REPLACEMENT CALCULATIONS
FOR INFORMATION ONLY

TREE REPLACEMENT REQUIRED (REFER TO SHEET TI.00 FOR TREE PRESERVATION PLAN)	48
LARGE-MEDIUM TREES REPLACED ON SITE- PROVIDED BY APAH (1:1 RATIO)	20
LARGE-MEDIUM TREES REPLACED ON SITE- PROVIDED BY PARK (1:1 RATIO)	8
TOTAL ON SITE TREE REPLACEMENT	28

NOTE:
1. THE DEVELOPER OF QUEEN'S COURT AGREES TO MAKE A CONTRIBUTION TO THE COUNTY'S TREE CANOPY FUND OF AT LEAST $2,400 PER TREE, OR A GREATER AMOUNT IF THE CONTRIBUTION POLICY CHANGES AT THE TIME OF PAYMENT, FOR EVERY TREE THAT CANOPY BE PLANTED ONSITE. THE CONTRIBUTION SHALL BE REQUIRED WHEN TREE PLANTING REQUIREMENTS CANNOT BE MET ON THE PROPERTY. THE PAYMENT SHALL BE DELIVERED TO THE DEPARTMENT OF PARKS AND RECREATION OFFICE PRIOR TO THE ISSUANCE OF THE EXCAVATION/SHEETING AND SHORING PERMIT.

3 TREE REPLACEMENT CALCULATIONS
NTS

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS
AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB# 21-DPR-ITB-304

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ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

PLANT SCHEDULE & CALCULATIONS

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LUKE VANBELLEGHEM Design Supervisor	7.9.2018

Revisions	Date
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Seal

COMMONWEALTH OF VIRGINIA
CHANHUI FAN
Lic. NO. 001316
4/15/2020
LANDSCAPE ARCHITECT

Sheet L4.2

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L4.2.dwg

NOTES
1. AT PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS PER ANSI STANDARD A300. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS.

2. CONTRACTOR SHALL MAXIMIZE EXCAVATED AREA FOR TREE PIT WITHOUT ADVERSELY IMPACTING ADJACENT SITE FEATURES.

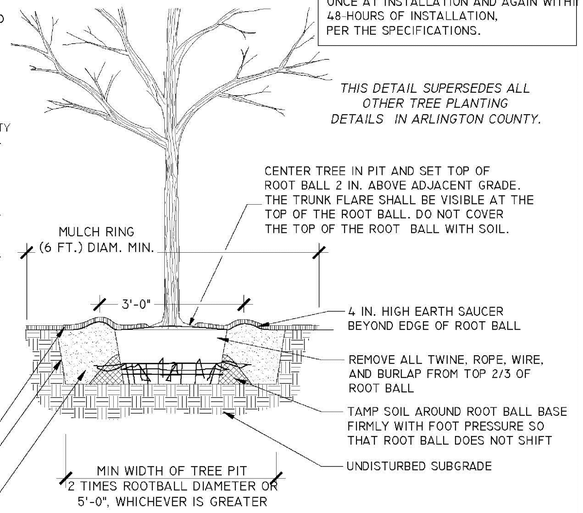
3. UNLESS OTHERWISE DIRECTED BY ARLINGTON COUNTY URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL (COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE URBAN FORESTER; PEAT MOSS SHALL NOT BE USED).

4. CONTRACTOR SHALL LEGALLY REMOVE EXCESS SOIL & DEBRIS FROM SITE.

5. TREES PLANTED WITHOUT THE TRUNK FLARE VISIBLE WILL BE REJECTED.

6. TREES MAY ONLY BE STAKED IF REQUIRED BY THE COUNTY URBAN FORESTER. REFER TO STAKING DETAILS.

ALL PLANTS MUST BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.



1 TREE PLANTING DETAIL
NTS

NOTES
1. AT PLANTING PRUNE ONLY BROKEN OR DEAD BRANCHES

2. PLANTING PIT/TRENCH SHALL BE DUG DEEP ENOUGH TO ALLOW AT LEAST 1/8TH OF ROOT BALL TO SET ABOVE EXISTING GRADE.

3. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS IN THE CENTER OF THE PLANTING PIT. ORIENT BEST FACE OF PLANT TO BE THE MOST VISIBLE.

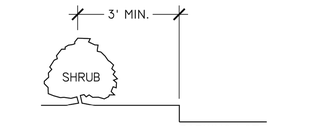
4. UNLESS OTHERWISE DIRECTED BY PROJECT OFFICER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL(COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE PROJECT OFFICER; PEAT MOSS MAY NOT BE USED).

5. CONTRACTOR SHALL REMOVE EXCESS SOIL & DEBRIS FROM SITE.

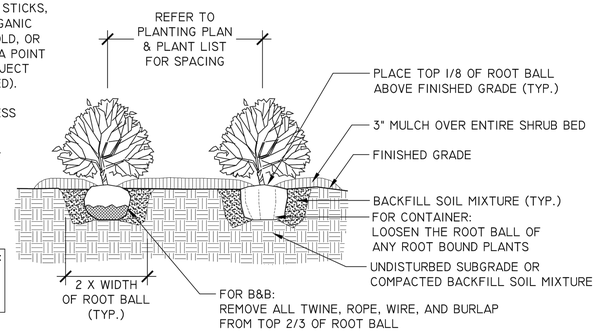
6. DO NOT PLACE MULCH IN CONTACT WITH STEM OF SHRUBS

THIS DETAIL SUPERSEDES ALL OTHER SHRUB PLANTING DETAILS IN ARLINGTON COUNTY.

ALL PLANTS MUST BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.



TYPICAL SHRUB PLACEMENT NEAR PARKING LOTS
NOT TO SCALE



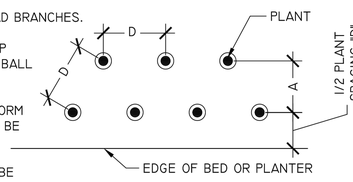
2 SHRUB PLANTING
NTS

NOTES
1. AT PLANTING PRUNE ONLY BROKEN OR DEAD BRANCHES.

2. PLANTING PIT/TRENCH SHALL BE DUG DEEP ENOUGH TO ALLOW AT LEAST 1/8TH OF ROOT BALL TO SET ABOVE EXISTING GRADE.

3. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS. ORIENT BEST FACE OF PLANT TO BE THE MOST VISIBLE.

4. GROUND COVERS AND PERENNIALS SHALL BE INSTALLED WITH TRIANGULAR SPACING. REFER TO CHART.



PLANT SPACING "D" O.C.	ROW "A" O.C.	PLANTS PER S.F.
6"	5"	4.00
8"	7"	2.25
9"	8"	1.77
12"	10"	1.00
15"	13"	0.77
18"	16"	0.44

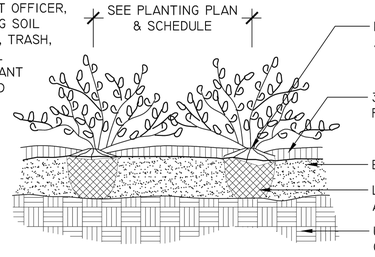
TRIANGULAR SPACING PLAN & CHART
NOT TO SCALE

4. UNLESS OTHERWISE DIRECTED BY PROJECT OFFICER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL (COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE PROJECT OFFICER; PEAT MOSS MAY NOT BE USED).

5. CONTRACTOR SHALL REMOVE EXCESS SOIL & DEBRIS FROM SITE.

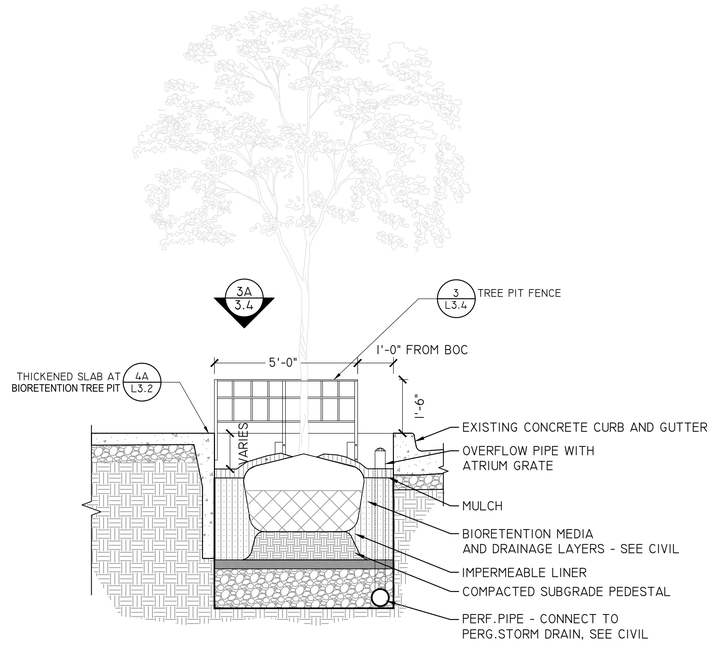
6. DO NOT PLACE MULCH IN CONTACT WITH STEM OF PLANTS.

ALL PLANTS MUST BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.



THIS DETAIL SUPERSEDES ALL OTHER GROUND COVER PLANTING DETAILS IN ARLINGTON COUNTY.

3 GROUND COVERS & PERENNIAL PLANTING
NTS



4 BIORETENTION TREE PIT
NTS

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION
Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location
ROSSLYN HIGHLANDS PARK
BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title
PLANTING DETAILS

Approval	Date
LUKE VANBELLEGHEM, Design Supervisor	7.9.2018

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

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Drawn: SM, LV, KN
Checked: CF, LV
Filename:
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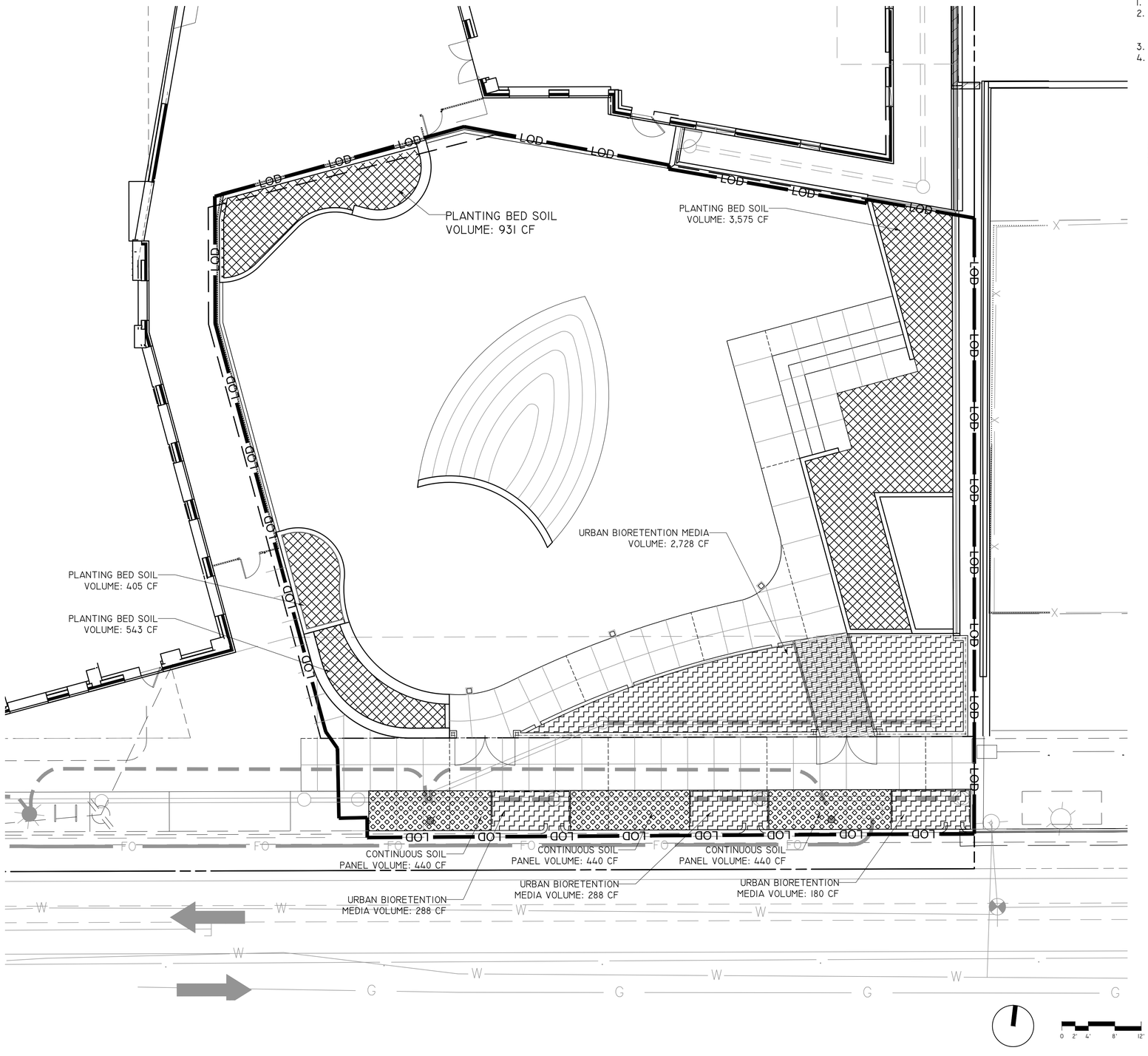
Seal
COMMONWEALTH OF VIRGINIA
CHIHUI FAN
Lic. NO. 001316
LANDSCAPE ARCHITECT
4/15/2020

Sheet L4.3

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\ Filename: L4.2.dwg



NOTE:

1. BIORETENTION SOIL DEPTH: 48"
2. SEE SWM PLANS FOR ADDITIONAL INFORMATION REGARDING STORMWATER MANAGEMENT FACILITY SOIL MEDIA.
3. SEE PLANTING PLANS FOR PLANTING LOCATIONS.
4. SEE PROJECT SPECIFICATIONS AND DETAILS FOR SUBGRADE BENEATH PAVEMENTS AND WALLS.

SOIL LEGEND

- CONTINUOUS SOIL PANEL
- PLANTING BED SOIL
- STORMWATER URBAN BIORETENTION MEDIA

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
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Phone: 703.228.3332
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ARLINGTON, VIRGINIA

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SOIL VOLUME PLAN

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	7.9.2018

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LDA SUBMISSION	4/15/20
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COMMONWEALTH OF VIRGINIA
CHUNHUI FAN
Lic. No. 001316
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4/15/2020

Sheet L4.4

Path: G:\2016\16128.03 - Rosslyn Highlands Park Site C\01 Caddocs\

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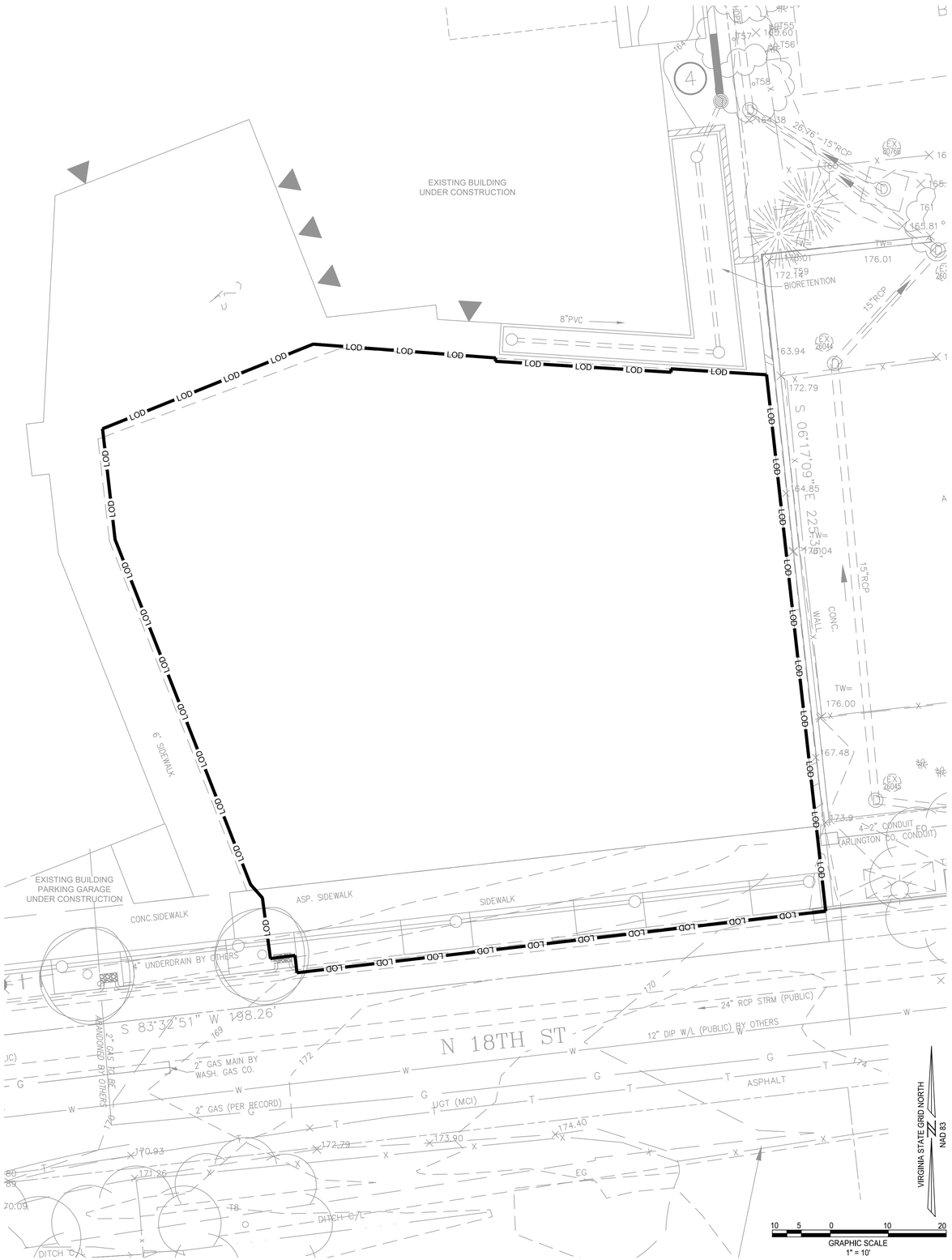

LEGEND

- SIGN
- POWER POLE
- LIGHT POLE
- GUY WIRE
- CLEAN OUT
- STORM MH
- WATER VALVE
- FIRE HYDRANT
- EXISTING STORM SEWER
- EXISTING BUILDING
- EXISTING CONTOUR
- FENCE
- EXISTING LOT LINE
- TELECOM LINE
- OVERHEAD ELECTRIC
- GASLINE
- WATERLINE
- STORM DRAIN
- STEAM LINE
- EDGE OF GRAVEL
- EDGE OF PAVEMENT
- DITCH C/L
- CURB & GUTTER
- BUILDING OUTLINE
- EDGE OF PAVED ROAD
- SIDEWALK
- TELEPHONE EASEMENT
- EX TREES
- LIMITS OF DISTURBANCE

EXISTING STORM SEWER LEGEND

(EX 26043) STM TOP=172.91
IN=161.40 (15"RCP Fr 26044)
IN=161.45 (15"RCP Fr 2683)
OUT=161.17 (15"RCP To 4682)

(EX 26044) STM TOP=172.85
IN=162.10 (15"RCP Fr 26045)
OUT=161.48 (15"RCP To 26043)

(EX 26045) STM TOP=173.62
IN=163.94 (15"RCP Fr 4682)
OUT=163.88 (15"RCP To 26044)

(EX 4682) STM TOP=165.29 (FULL OF DEBRIS)
IN=(NO DIP) (15"RCP Fr 26045)
OUT=(NO DIP) (15"RCP To 4506)

ARLINGTON
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Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

EXISTING CONDITIONS

Approval	Date
LUKE VANBELLEGHEM	4.15.2020
Design Supervisor	

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

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Drawn: EF
Checked: KMM

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Date: APRIL 15, 2020

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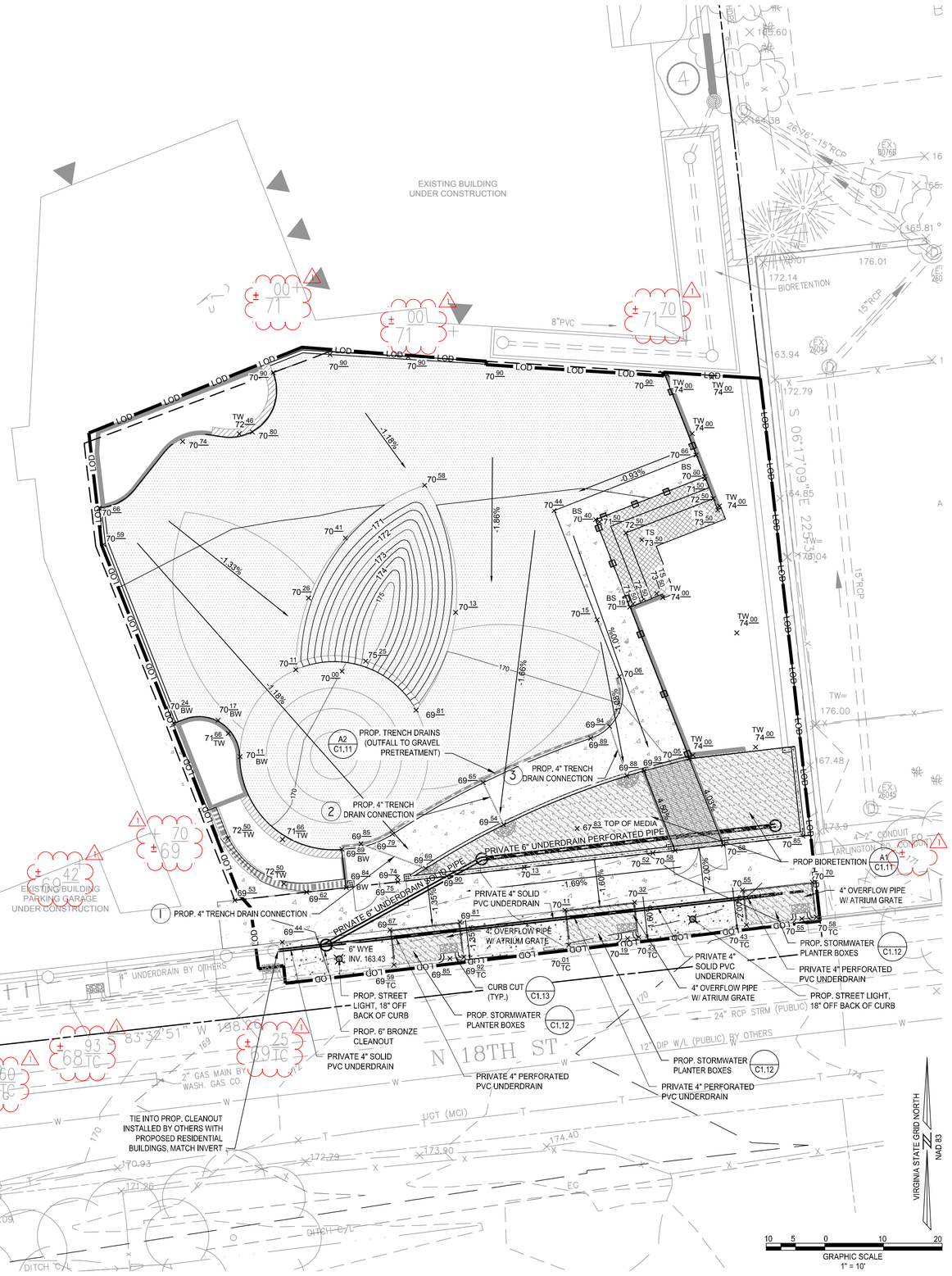
COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.4

Path: P:\FX\Projects\17138\00300\108415 SP\

Filename: C-1.4 EXISTING CONDITIONS.dwg



LEGEND

- EXISTING CONTOUR
- LIGHT POLE
- FENCE
- STORM MH
- STORM DRAIN
- EXISTING STORM SEWER
- ELECTRIC LINE
- FIBER OPTIC LINE
- PROPERTY BOUNDARY
- LIMITS OF DISTURBANCE
- PROP MAJOR CONTOUR
- PROP MINOR CONTOUR
- SPOT ELEVATION
- BUILDING ENTRANCE
- PROP LIGHTING
- PROP SIDEWALK
- PROP BUILDING OUTLINE
- PROP BUILDING OVERHANG
- PROP BUILDING GARAGE
- PROP UNDERDRAIN
- PROP PERFORATED PIPE
- PROP CURB W/ FENCE
- PROP FLUSH CURB
- PROP STORM SLOT DRAIN/CLEANOUT
- PROP PLANTER WALL
- PROP SEAT WALL
- PROP SEAT STEPS
- PROP SIGN WALL
- PROP CONCRETE PAVING
- PROP CONTINUOUS SOIL PANEL
- PROP POUR IN PLACE RUBBER
- PROP BMP PLANTING (BIORETENTION AND PLANTER BOXES)
- PROP BAR GRATING BRIDGE
- PROP GRAVEL PRETREATMENT

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

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GRADING PLAN

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LUKE VANBELLEGHEM Design Supervisor	4.15.2020

Revisions		Date
LDA SUBMISSION		4/15/20
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ADDENDUM 1	1	9/25/20

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COMMONWEALTH OF VIRGINIA
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PROFESSIONAL ENGINEER

Sheet C1.5

3 of 16

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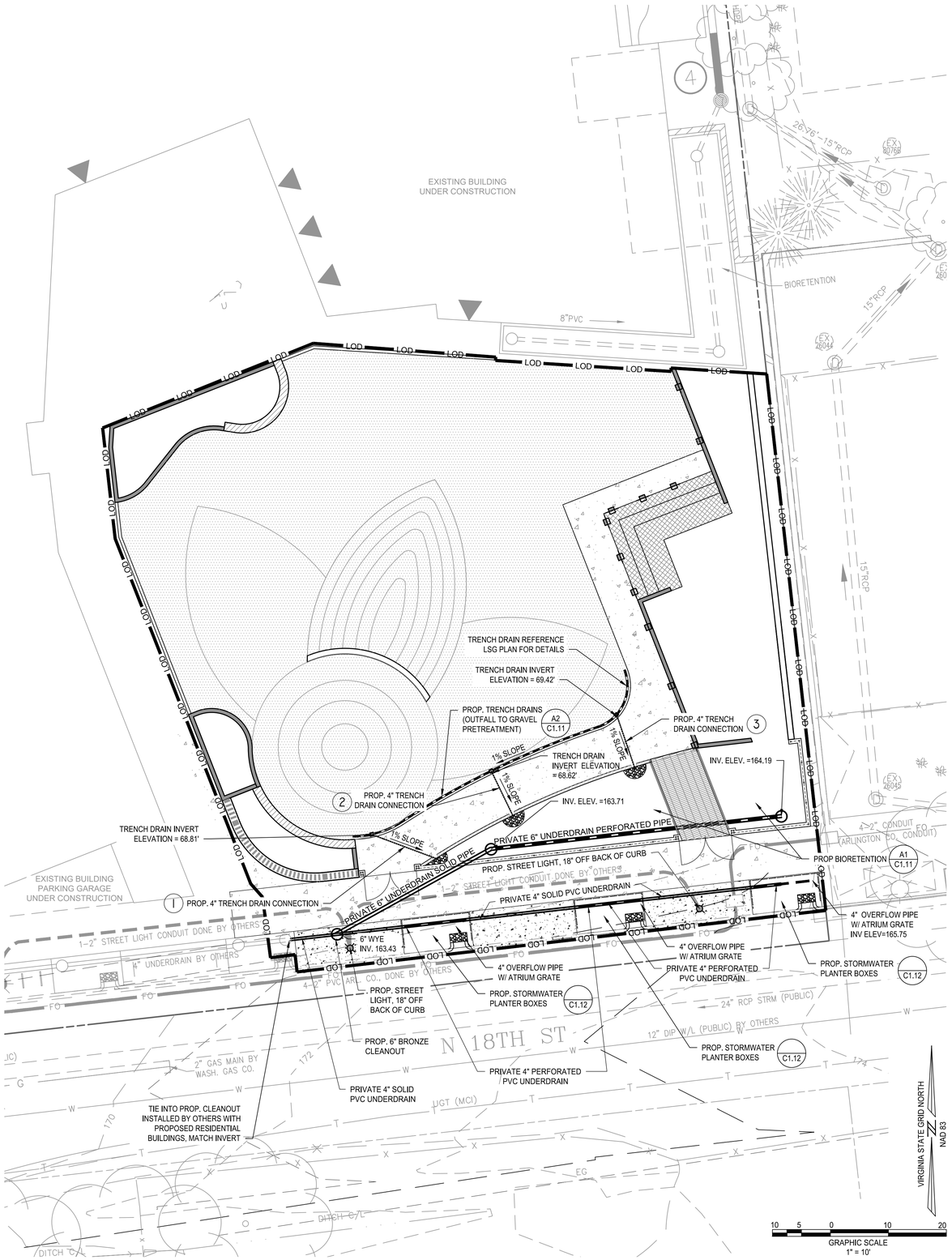
Filename: C-1.5 GRADING.dwg



LEGEND

- SIGN
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- WATER VALVE
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- EXISTING STORM SEWER
- SPOT ELEVATION
- BUILDING ENTRANCE
- PROP LIGHTING
- PROP LIGHT POLE
- PROP STORM SLOT DRAIN/CLEANOUT
- EXISTING CONTOUR
- CHAIN LINK FENCE
- STORM DRAIN
- LIMITS OF DISTURBANCE
- PROP MAJOR CONTOUR
- PROP MINOR CONTOUR
- ELECTRIC LINE
- FIBER OPTIC LINE
- ELECTRIC CONDUIT LIGHTPOLE
- PROP FENCE
- PROP SIDEWALK
- PROP BUILDING OUTLINE
- PROP BUILDING OVERHANG
- PROP BUILDING GARAGE
- PROPERTY BOUNDARY
- PROP UNDERDRAIN
- PROP PERFORATED PIPE
- PROP CURB W/ FENCE
- PROP FLUSH CURB
- PROP PLANTER WALL
- PROP SEAT WALL
- PROP SEAT STEPS
- PROP SIGN WALL
- PROP CONCRETE PAVING
- PROP CONTINUOUS SOIL PANEL
- PROP POUR IN PLACE RUBBER
- PROP GROUND COVER/PERENIALS
- PROP BIORETENTION PLANTING
- PROP BIORETENTION PLANTING
- PROP GRAVEL PRETREATMENT

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS
AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

UTILITY PLAN

Approval	Date
LUKE VANBELLEGHEM	4.15.2020
Design Supervisor	

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: FA
Drawn: EF
Checked: KMM

Filename:
Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: APRIL 15, 2020

Seal

COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

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C1.6
4 of 16

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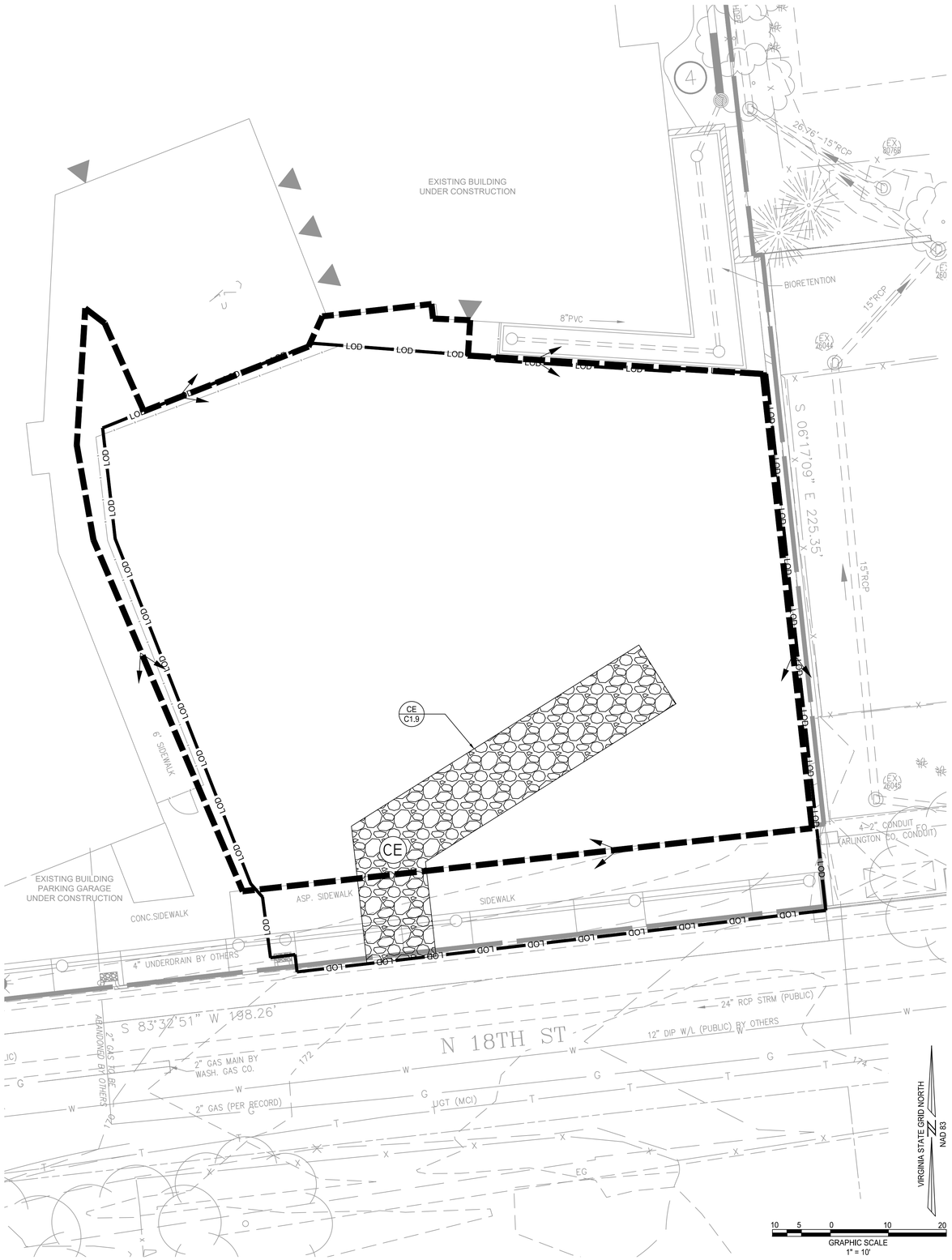
Filename: C-1.6 UTILITY PLAN.dwg



LEGEND

- SIGN
- POWER POLE
- LIGHT POLE
- GUY WIRE
- CLEAN OUT
- STORM MH
- WATER VALVE
- FIRE HYDRANT
- EXISTING STORM SEWER
- EXISTING CONTOUR
- FENCE
- EXISTING LOT LINE
- TELECOM LINE
- OVERHEAD ELECTRIC
- GASLINE
- WATERLINE
- STORM DRAIN
- STEAM LINE
- LIMITS OF DISTURBANCE
- PROPERTY BOUNDARY
- EDGE OF GRAVEL
- EDGE OF PAVEMENT
- DITCH C/L
- CURB & GUTTER
- BUILDING OUTLINE
- EDGE OF PAVED ROAD
- SIDEWALK
- TELEPHONE EASEMENT
- EX TREES

EROSION & SEDIMENT CONTROL LEGEND

- SF — SILT FENCE, SPEC. 3.05
- PRE-DRAINAGE DIVIDE
- CE — TEMPORARY CONSTRUCTION ENTRANCE, SPEC. 3.38

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18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

EROSION & SEDIMENT CONTROL PHASE 1

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	4.15.2020

Revisions	Date
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LDA SUBMISSION REV.	9/08/20

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Sheet C1.7

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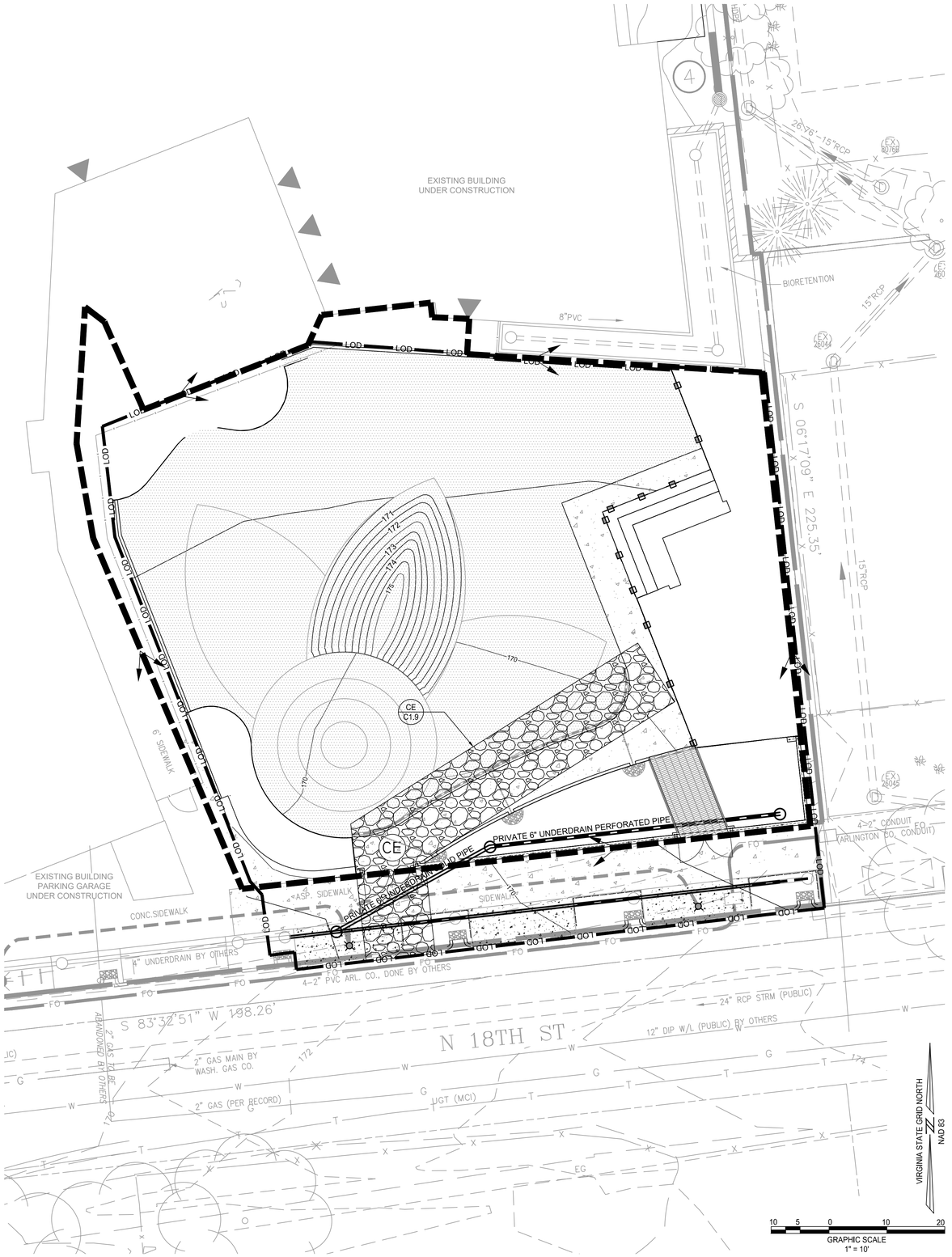
Filename: C-1.7 E&S CONTROL.dwg



LEGEND

- SIGN
- POWER POLE
- LIGHT POLE
- GUY WIRE
- CLEAN OUT
- STORM MH
- WATER VALVE
- FIRE HYDRANT
- EXISTING STORM SEWER
- SPOT ELEVATION
- BUILDING ENTRANCE
- PROP LIGHTING
- PROP LIGHT POLE
- PROP STORM SLOT DRAIN/CLEANOUT
- EXISTING CONTOUR
- CHAIN LINK FENCE
- STORM DRAIN
- LIMITS OF DISTURBANCE
- PROP MAJOR CONTOUR
- PROP MINOR CONTOUR
- ELECTRIC LINE
- FIBER OPTIC LINE
- ELECTRIC CONDUIT LIGHTPOLE
- PROP FENCE
- PROP SIDEWALK
- PROP BUILDING OUTLINE
- PROP BUILDING OVERHANG
- PROP BUILDING GARAGE
- PROPERTY BOUNDARY
- PROP STORM DRAIN
- PROP PERFORATED PIPE
- PROP CURB W/ FENCE
- PROP FLUSH CURB
- PROP PLANTER WALL
- PROP SEAT WALL
- PROP SEAT STEPS
- PROP SIGN WALL
- PROP CONCRETE PAVING
- PROP CONTINUOUS SOIL PANEL
- PROP POUR IN PLACE RUBBER
- PROP BIORETENTION PLANTING
- PROP BIORETENTION PLANTING
- PROP GRAVEL PRETREATMENT

EROSION & SEDIMENT CONTROL LEGEND

- SSF — SF SILT FENCE, SPEC. 3.05
- PRE-DRAINAGE DIVIDE
- CE — CE TEMPORARY CONSTRUCTION ENTRANCE, SPEC. 3.38

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BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

EROSION & SEDIMENT CONTROL PHASE 2

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	4.15.2020

Revisions	Date
LDA SUBMISSION	4/15/20
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COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
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Filename: C-1.7 E&S CONTROL.dwg

EROSION AND SEDIMENT CONTROL PLAN NARRATIVE

WE ACKNOWLEDGE THAT THE TREE PROTECTION/LANDSCAPE PLANS SHALL BE REVIEWED AND APPROVED PRIOR TO THE ISSUANCE OF THE ASSOCIATED LAND DISTURBANCE PERMIT. THE APPROVED TREE PROTECTION AND/OR LANDSCAPE PLAN MUST BE SUBMITTED AS PART OF THE LDA PERMIT PACKAGE ALONG WITH ANY ADDITIONAL REQUIRED ITEMS.

PROJECT DESCRIPTION:
THIS PROJECT IS LOCATED IN ARLINGTON COUNTY, VIRGINIA. THE CURRENT SITE ADDRESS FOR ROSSLYN HIGHLANDS PARK IS 1801 18TH STREET. THIS PROJECT PROPOSES NEW PARK CONSTRUCTION. A TOTAL OF APPROXIMATELY 0.23 ACRES WILL BE DISTURBED WITH THIS PROJECT. THE PROJECT IS EXPECTED TO START SOON FOLLOWING THE APPROVAL OF THESE PLANS.

EXISTING SITE CONDITIONS:
THE EXISTING PROJECT AREA CONSISTS OF A CLEARING DESIGNATED FOR A PLAYGROUND. THE SITE DRAINS SOUTH TOWARD STORM DRAIN INLETS. THE SITE IS STABILIZED AND THERE ARE NO EXISTING DRAINAGE PROBLEMS ON SITE.

DATE OF CONSTRUCTION:
CONSTRUCTION IS ANTICIPATED TO START AT TIME OF PLAN APPROVAL.

ADJACENT PROPERTIES:
THE SITE LIES IS BORDERED BY RESIDENTIAL PROPERTIES IN ALL DIRECTIONS. ADJACENT PROPERTIES WILL BE PROTECTED BY THE SILT FENCE PROTECTING THE PERIMETER OF THE SITE DURING DEMOLITION. THE SITE IS NOT IN THE PROXIMITY OF AN RPA OR A FLOODPLAIN.

OFF-SITE AREAS:
THE PROJECT WILL NOT REQUIRE ANY OFF-SITE LAND DISTURBING ACTIVITIES.

CRITICAL AREAS:
THE SITE IS NOT WITHIN AN RPA OR A FLOODPLAIN. THE SITE IS CURRENTLY STABILIZED AND WILL REMAIN STABILIZED THROUGHOUT CONSTRUCTION.

SOILS:
SEE SHEET C1.9 FOR SOILS INFORMATION.

STRUCTURAL PRACTICES:
1. CONSTRUCTION ENTRANCE - 3.02: TEMPORARY CONSTRUCTION ENTRANCES WITH WASH RACK SHALL BE INSTALLED AS SHOWN ON THE PLAN. CONSTRUCTION VEHICLES SHALL BE REQUIRED TO WASH THEIR WHEELS BEFORE LEAVING THE SITE. A WATER TANK TRUCK SHALL PROVIDE WATER IF PUBLIC WATER IS NOT AVAILABLE. THE ENTRANCE SHALL BE FIELD ADJUSTED AS REQUIRED DURING CONSTRUCTION. DURING PHASE I, THE CONSTRUCTION ENTRANCE WILL UTILIZE THE EXISTING SIDEWALK PARK ENTRANCE ON THE SOUTH SIDE OF THE SITE. THIS IS CURRENTLY LOCATED ON CONCRETE AND GRASS, BUT WILL NOT CONTRIBUTE ANY SEDIMENT. WASHDOWN WILL OCCUR SUCH THAT THE RUNOFF IS CAPTURED BY THE PIT AND TREATED BEFORE BEING RELEASED TO THE EXISTING STORM SYSTEM.
2. SILT FENCE BARRIER - 3.05: SILT FENCE SEDIMENT BARRIERS WITH WIRE SUPPORT SHALL BE INSTALLED AS SHOWN ON THE APPROVED PLAN TO FILTER SEDIMENT-LADEN RUNOFF FROM THE CONSTRUCTION AREA.
3. INLET PROTECTION - 3.07: INLET PROTECTION WILL BE INSTALLED TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.

SEDIMENT CONTROL PROGRAM:
PHASE I EROSION CONTROL

THE INITIAL CONTROL MEASURES SHALL BE AS FOLLOWS:
1. CONSTRUCTION ENTRANCE WITH WASH RACK SHALL BE INSTALLED AS INDICATED IN THE PLAN. MUD AND DEBRIS SHALL BE WASHED FROM ALL VEHICLES AND EQUIPMENT BEFORE LEAVING THE SITE.
2. SILT FENCE SHALL BE INSTALLED WHERE INDICATED IN THE PLAN.
3. AFTER ESTABLISHMENT OF ALL INITIAL CONTROL MEASURES, THE CONTRACTOR SHALL PROCEED WITH DEMOLITION AND INSTALLATION OF IMPROVEMENTS.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

ES-1 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.

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

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

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

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

ES-6 THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

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

ES-8 THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURE PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

GENERAL LAND CONSERVATION NOTES:
1. NO AREA WILL REMAIN DENUDED FOR MORE THAN 7 CALENDAR DAYS UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OR HIS AGENT.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING. FIRST AREAS TO BE CLEARED ARE TO BE THOSE REQUIRED FOR THE PERIMETER CONTROLS.
3. ALL STORM SEWER LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 500 FEET ARE TO BE OPEN AT ANY ONE TIME.
4. DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY INLET PROTECTION DEVICES, MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.
5. ANY DISTURBED AREA NOT COVERED BY NOTE #1 ABOVE AND NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1ST, OR DISTURBED AFTER THAT DATE, SHALL BE MULCHED WITH HAY OR STRAW MULCH AT THE RATE OF 2 TONS PER ACRE AND OVER-SEEDED NO LATER THAN MAY 15TH.
6. AT THE COMPLETION OF CONSTRUCTION PROJECT AND PRIOR TO BOND RELEASE, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED. ARLINGTON COUNTY INSPECTOR TO APPROVE REMOVAL OF ALL TEMPORARY SILTATION MEASURES.

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

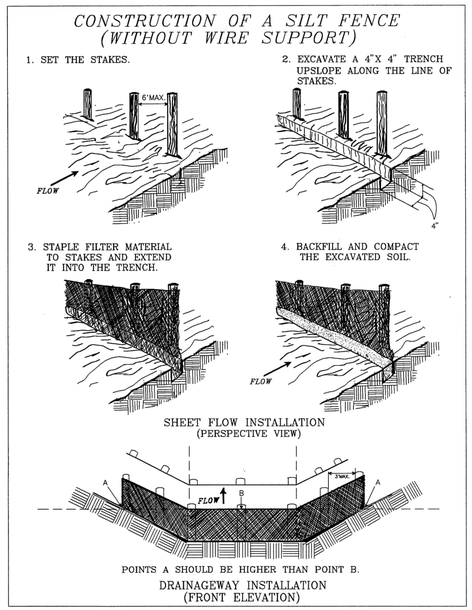
STORMWATER MANAGEMENT:
THIS PROJECT DISTURBS APPROXIMATELY 0.23 ACRES. THE PROJECT SITE IS NOT WITHIN AN RPA OR FLOODPLAIN. IT DISCHARGES INTO EXISTING STORM DRAIN ON THE ADJACENT STREET. PER THE QUEEN'S COURT PLANS FOR THE ADJACENT BUILDING, A BIORETENTION POND AND THREE PLANTER BOXES ARE PROPOSED TO MEET STORMWATER MANAGEMENT AND BMP CRITERIA. THERE ARE, THEREFORE, NO ADVERSE IMPACT TO ADJACENT OR DOWNSTREAM PROPERTIES. THIS MEETS THE STORMWATER MANAGEMENT REQUIREMENTS FOR WATER QUANTITY AND QUALITY. SEE DETAILS ON SHEETS C-1.11-1.15.

MS4 NOTE:
ONLY THE FOLLOWING NON-STORMWATER DISCHARGES ARE AUTHORIZED BY ARLINGTON COUNTY'S MS4 PERMIT, UNLESS THE STATE WATER CONTROL BOARD, THE VIRGINIA SOIL AND WATER CONSERVATION BOARD (BOARD), OR ARLINGTON COUNTY DETERMINES THE DISCHARGE TO BE A SIGNIFICANT SOURCE OF POLLUTANTS TO SURFACE WATERS:

WATER LINE FLUSHING; LANDSCAPE IRRIGATION; DIVERTED STREAM FLOWS; RISING GROUND WATERS;
UNCONTAMINATED GROUND WATER INFILTRATION (AS DEFINED AT 40 CFR 35.2005(20)); UNCONTAMINATED
PUMPED GROUND WATER; DISCHARGES FROM POTABLE WATER SOURCES;
FOUNDATION DRAINS; AIR
CONDITIONING CONDENSATION; IRRIGATION WATER; SPRINGS; WATER FROM CRAWL SPACE PUMPS; FOOTING
DRAINS; LAWN WATERING; INDIVIDUAL RESIDENTIAL CAR WASHING; FLOWS FROM RIPARIAN HABITATS AND
WETLANDS; DECHLORINATED SWIMMING POOL DISCHARGES; DISCHARGES OR
FLOWS FROM FIRE FIGHTING; AND,
OTHER ACTIVITIES GENERATING DISCHARGES IDENTIFIED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY AS NOT REQUIRING VPDES AUTHORIZATION.
APPROPRIATE CONTROLS MUST BE IMPLEMENTED TO PREVENT ANY
NON-STORMWATER DISCHARGES NOT INCLUDED ON THE ABOVE LIST (E.G., CONCRETE WASH WATER, PAINT WASH WATER, VEHICLE WASH WATER, DETERGENT WASH WATER, ETC.) FROM BEING DISCHARGED INTO ARLINGTON COUNTY’S MS4 SYSTEM, WHICH INCLUDES THE CURB AND GUTTER SYSTEM, AS WELL AS CATCH BASINS AND OTHER STORM DRAIN INLETS, OR STREAM NETWORK. PER CHAPTER 26 OF THE ARLINGTON COUNTY CODE, IT SHALL BE UNLAWFUL FOR ANY PERSON TO DISCHARGE DIRECTLY OR INDIRECTLY INTO THE STORM SEWER SYSTEM OR STATE WATERS, ANY SUBSTANCE LIKELY, IN THE OPINION OF THE COUNTY MANAGER, TO HAVE AN ADVERSE EFFECT ON THE STORM SEWER SYSTEM OR STATE WATERS.

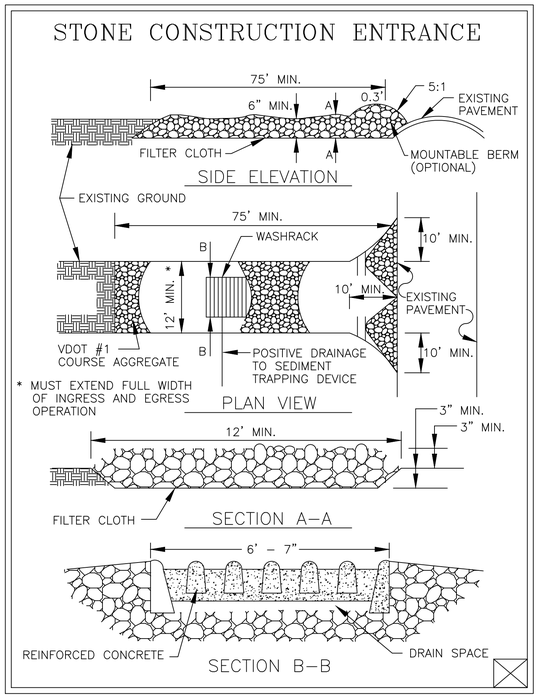
POLLUTION PREVENTION NOTES:
1. ONLY THE FOLLOWING NON-STORMWATER DISCHARGES ARE AUTHORIZED BY ARLINGTON COUNTY'S MS4 PERMIT, UNLESS THE STATE WATER CONTROL BOARD, THE VIRGINIA SOIL AND WATER CONSERVATION BOARD (BOARD), OR ARLINGTON COUNTY DETERMINES THE DISCHARGE TO BE A SIGNIFICANT SOURCE OF POLLUTANTS TO SURFACE WATERS: WATER LINE FLUSHING; LANDSCAPE IRRIGATION; DIVERTED STREAM FLOWS; RISING GROUND WATERS; UNCONTAMINATED GROUND WATER INFILTRATION (AS DEFINED AT 40 CFR 35.2005(20)); UNCONTAMINATED PUMPED GROUND WATER; DISCHARGES FROM POTABLE WATER SOURCES; FOUNDATION DRAINS; AIR CONDITIONING CONDENSATION; IRRIGATION WATER; SPRINGS; WATER FROM CRAWL SPACE PUMPS; FOOTING DRAINS; LAWN WATERING; INDIVIDUAL RESIDENTIAL CAR WASHING; FLOWS FROM RIPARIAN HABITATS AND WETLANDS; DECHLORINATED SWIMMING POOL DISCHARGES; DISCHARGES OR FLOWS FROM FIRE FIGHTING; AND, OTHER ACTIVITIES GENERATING DISCHARGES IDENTIFIED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY AS NOT REQUIRING VPDES AUTHORIZATION.
2. APPROPRIATE CONTROLS MUST BE IMPLEMENTED TO PREVENT ANY NON-STORMWATER DISCHARGES NOT INCLUDED ON THE ABOVE LIST (E.G., CONCRETE WASH WATER, PAINT WASH WATER, VEHICLE WASH WATER, DETERGENT WASH WATER, ETC.) FROM BEING DISCHARGED INTO ARLINGTON COUNTY'S MS4 SYSTEM, WHICH INCLUDES THE CURB AND GUTTER SYSTEM, AS WELL AS CATCH BASINS AND OTHER STORM DRAIN INLETS, OR STREAM NETWORK.
3. PER CHAPTER 26 OF THE ARLINGTON COUNTY CODE, IT SHALL BE UNLAWFUL FOR ANY PERSON TO DISCHARGE DIRECTLY OR INDIRECTLY INTO THE STORM SEWER SYSTEM OR STATE WATERS, ANY SUBSTANCE LIKELY, IN THE OPINION OF THE COUNTY MANAGER, TO HAVE AN ADVERSE EFFECT ON THE STORM SEWER SYSTEM OR STATE WATERS.

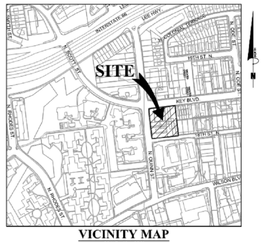
1992 3.05

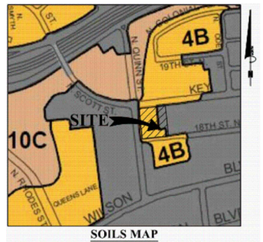


Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

Plate 3.05-2







4B 3 to 8 percent slopes
This unit is gently sloping and consists of about 70 percent Urban land, 15 percent Sassafras, and 10 percent Neabsco soils. Areas disturbed by cutting and grading make up 5 percent of this unit.

12 Urban land-Udorthents complex, 2 to 15 percent slopes
This mapping unit consists of areas where more than 85 percent of the surface is Urban land, covered by buildings, asphalt, concrete, or other impervious materials. The other 15 percent consists of areas of deep to very deep, nearly level to moderately sloping, well and moderately well drained soils. The Urban land and Udorthents are so intermingled it was not practical to map them separately. This complex occurs throughout the survey area but is largely located in the Rosslyn-Ballston and Crystal City areas. This unit is about 85 percent Urban land, 10 percent Udorthents, and 5 percent other soils.

The Udorthents consist of material that has been graded, cut, filled, or otherwise disturbed during urbanization. The disturbed material is loamy and generally reflects the soils in the adjacent area.

Included in this mapping unit are small areas of soils that have not been disturbed. Also included are moderately steep and steep slopes.

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

EROSION & SEDIMENT PLAN & PPP NOTES

Approval	Date
LUKE VANBELLEGHEM	4.15.2020
Design Supervisor	

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
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COMMONWEALTH OF VIRGINIA
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Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.9

7 of 16

Path: P:\FX\Projects\17138\00300\108415 SP\ Filename: C-1.7 E&S CONTROL.dwg

Project Name: ROSSLYN HIGHLANDS PARK					
Address: 18TH STREET				**Date:** 1/16/2019	

	General Items	**yes**	**n/a**	**no**	**sheet**
	Pollution Prevention Plan				
1	Include the following on the Pollution Prevention Plan				
a	Standard notes from Stormwater Manual Section 2.4	X			C-1.10
b	Authorized Non-Stormwater Discharge (Section 2.0), Potential Sources of Pollution & Pollution Prevention Practices (Section 5.0), and Spill Prevention & Response (Section 7.0) from SWPPP Template (Appendix B) of the Stormwater Manual	X			C-1.10

2.0 Authorized Non-Stormwater Discharges

Type of Authorized Non-Stormwater Discharge	Likely Present at Your Project Site?	
External buildings wash down	☐ Yes	☒ No
Uncontaminated foundation or footing drains	☐ Yes	☒ No
Uncontaminated excavation dewatering	☐ Yes	☒ No
Landscape irrigation	☒ Yes	☐ No
Others [describe]	☐ Yes	☒ No

STORMWATER POLLUTION PREVENTION PLAN
Insert Project/Site Name

5.0 Potential Sources of Pollution & Pollution Prevention Practices

Pollutant-Generating Activity	Likely Present at your Project Site?	Sediment	Nutrients	Heavy Metals	pH (acids and bases)	Pesticides & Herbicides	Oil & Grease	Bacteria & Viruses	Trash, Debris, Solids	Other Toxic Chemicals	Pollution Prevention Practice	Responsible Party
Clearing, grading, excavating, and un-stabilized areas	☒ Yes ☐ No	X							X		(1)	Construction Activity Operator (See Cover Page of this SWPPP)
Paving operations	☒ Yes ☐ No	X					X		X		(2)	
Concrete washout and cement waste	☒ Yes ☐ No			X	X				X		(3)	
Structure construction, stucco, painting, and cleaning	☐ Yes ☒ No			X	X				X	X	(4)	
Dewatering operations	☐ Yes ☒ No	X	X						X		(5)	
Material delivery and storage	☒ Yes ☐ No	X	X	X	X		X		X	X	(6)	
Material use during building process	☒ Yes ☐ No		X	X	X		X		X	X	(7)	
Solid waste disposal	☒ Yes ☐ No								X	X	(8)	
Sanitary waste	☒ Yes ☐ No		X		X			X			(9)	
Landscaping operations	☒ Yes ☐ No	X	X			X			X	X	(10)	
Others [describe]	☐ Yes ☒ No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	(11)	

Pre-Storm Erosion and Sediment Control Checklist

Per Erosion and Sediment Control General Note 6, the Contractor is responsible for the installation and maintenance of any additional erosion and sediment control (ESC) measures necessary to prevent erosion and sedimentation as determined by the County. These supplementary practices are in addition to those shown in an ESC plan. ESC practices shall be modified as needed to ensure only clear water is discharged from the site.

The following actions shall be taken prior to storm events with predicted heavy and/or large volume rainfall to prevent sediment discharges from a construction site. A typical summer thunderstorm is an example of a storm event with predicted heavy and/or large volume rainfall.

Perimeter controls

- ☐ Silt fence shall be checked for undermining, holes, or deterioration of the fabric. Fencing shall be replaced immediately if the fabric is damaged or worn. Silt fence must be trenched into the ground per state specifications (Std & Spec 3.09).
- ☐ Wooden stakes or steel posts shall be properly secured upright into the ground. Damaged posts or stakes must be replaced.
- ☐ Sediment that has accumulated against the silt fence should be removed. Accumulated sediment must be removed when the level reaches one-half the height of the fencing.
- ☐ Hay bales or a stone berm should be placed across the construction entrance to prevent sediment from leaving the construction site.

Exposed slopes and soil

- ☐ Exposed slopes not at the final stabilization phase shall be covered with tarps, plastic sheeting, or erosion control matting. Covering material shall be properly secured/anchored.
- ☐ Controls shall be installed to prevent concentrated flow down an exposed slope. Berms or diversion dikes shall be installed at the top of cut / exposed slopes to direct storm flow around the disturbed area.
- ☐ Exposed slopes at the final stabilization phase shall be stabilized using slope stabilization practices such as soil stabilization blankets or matting as specified in the Virginia Erosion and Sediment Control Handbook (VESCH) Std & Spec 3.36. Blankets or mats must be properly secured and anchored to the slope using staples, pins, or stakes.
- ☐ Seeded areas shall be checked and reseeded as necessary to cover exposed soil. Recently seeded areas shall be protected by straw or soil stabilization blankets to prevent seeding from being washed away.

Stockpiles

- ☐ Stockpiled soil and other loose materials that can be washed away shall be covered with a tarp, plastic sheeting, or other stabilization matting. The cover must be properly secured / anchored down to prevent it from being blown off and exposing materials to rain. Controls such as hay bales or booms should be placed along the perimeter of the stock pile (downhill side).

Inlet protection

- ☐ Inlet protection controls shall be inspected to ensure they are functioning properly and flooding will not occur. Clogged or damaged controls must be replaced immediately. Ensure controls allow for overflow / bypass of stormwater runoff during significant storm events.

In addition to these pre-storm actions, all erosion and sediment control (ESC) measures must be checked daily and after each significant rainfall.

Pollution Prevention Practices:

(1) **Clearing, grading, excavating and un-stabilized areas** – Utilize erosion and sediment controls to prevent sediment laden or turbid runoff from leaving the construction site. Dispose of clearing debris at acceptable disposal sites. Apply permanent or temporary stabilization, sodding and/or mulching to denuded areas in accordance with the erosion and sediment control specifications and the general VPDES permit for discharges of stormwater from construction activities.

(2) **Paving operations** – Cover storm drain inlets during paving operations and utilize pollution prevention materials such as drip pans and absorbent/oil dry for all paving machines to limit leaks and spills of paving materials and fluids.

(3) **Concrete washout and cement waste** – Direct concrete wash water into a leak-proof container or leak-proof settling basin that is designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes.

(4) **Structure construction, stucco, painting and cleaning** – Enclose, cover or berm building material storage areas if susceptible to contaminated stormwater runoff. Conduct painting operations consistent with local air quality and OSHA regulations. Mix paint indoors, in a containment area or in a flat unpaved area. Prevent the discharge of soaps, solvents, detergents and wash water from construction materials, including the clean-up of stucco paint, form release oils and curing compounds.

(5) **Dewatering operations** – Construction site dewatering from building footings or other sources may not be discharged without treatment. Sediment laden or turbid water shall be filtered, settled or similarly treated prior to discharge.

(6) **Material delivery and storage** – Designate areas of the construction site for material delivery and storage. Place near construction entrances, away from waterways, and avoid transport near drainage paths or waterways.

(7) **Material use during building process** – Use materials only where and when needed to complete the construction activity. Follow manufacturer's instructions regarding uses, protective equipment, ventilation, flammability and mixing of chemicals.

(8) **Solid waste disposal** – Designate a waste collection area on the construction site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterway. Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible. Schedule waste collection to prevent the containers from overfilling.

(9) **Sanitary waste** – Prevent the discharge of sanitary waste by providing convenient and well-maintained portable sanitary facilities. Locate sanitary facilities in a convenient location away from waterways.

(10) **Landscaping operations** – Maintain as much existing vegetation as practicable. Apply permanent or temporary stabilization, sodding and/or mulching to denuded areas in accordance with the erosion and sediment control specifications and the general VPDES permit for discharges of stormwater from construction activities. Apply nutrients in accordance with manufacturer's recommendations and not during rainfall events.

(11) **Others** – If applicable, describe your Pollution Prevention Practice.

____
date

Qianqian Li, P.E.
ESC Program Administrator
Department of Environmental Sevices
2100 Clarendon Boulevard, Suite 813
Arlington, Virginia 22201

Re: Erosion and Sediment Control Permit Application for:

____
street address

____
lot, block, section subdivision

____
permit number

Dear Mrs. Li:

I hereby certify that I accept the responsibilities of Responsible Land Disturber for the above referenced project. I understand that these responsibilities include:

1. Reviewing the erosion and sedimentation (E&S) plan for the project.
2. Walking the site prior to construction to identify critical areas.
3. Conducting a pre-construction briefing with earth moving and site contractors to present the E&S plan and highlight the presence of critical areas, the limits of clearing and the required E&S controls and tree protection measures to be installed. Call 703-228-0760 to schedule pre-construction meeting.
4. Regularily inspecting the site during construction to ensure that all E&S controls are functioning and are adequate to address erosion and sedimentation. Inspect the site 48 hours after a runoff-generating storm, and provide a copy of the inspection findings to the county.
5. Reporting to the owner the presence inadequate or non functioning E&S controls when they are observed.
6. Ensuring that temporary soil stabilization is applied within 7 days to areas denuded that will remain undisturbed for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
7. Calling (703) 228-0760 at least 80 hours before demolishing any structure.

I may be reached at __________________ (*telephone number*) with questions about this plan or my execution of the duties of Responsible Land Disturber.

Sincerely,

____
signed

____
name printed

____
professional registration (type and number)

7.0 Spill Prevention & Response

Most spills can be cleaned up following manufacturer specifications. Absorbent/oil dry, sealable containers, plastic bags, and shovels/brooms are suggested minimum spill response items that should be available at this location.

1st Priority:	Protect all people
2nd Priority:	Protect equipment and property
3rd Priority:	Protect the environment

1. Check for hazards (flammable material, noxious fumes, cause of spill) – if flammable liquid, turn off engines and nearby electrical equipment. If serious hazards are present leave the area and call 911. LARGE SPILLS ARE LIKELY TO PRESENT A HAZARD.
2. Make Sure the spill area is safe to enter and that it does not pose an immediate threat to health or safety of any person.
3. Stop the spill source.
4. Call co-workers and supervisor for assistance and to make them aware of the spill and potential dangers.
5. If possible, stop spill from entering drains (use absorbent or other material as necessary).
6. Stop spill from spreading (use absorbent or other material)
7. If spilled material has entered a storm sewer; contact locality's storm water department.
8. Clean up spilled material according to manufacturer specifications, for liquid spills use absorbent materials and do not flush area with water.
9. Properly dispose of cleaning materials and used absorbent material according to manufacturer specifications.

Emergency Contacts:

Normal Working Hours

DEQ Northern Regional Office	703-583-3800

Nights, Holidays & Weekends

VA Dept. of Emergency Management 24 Hour Reporting Service	804-674-2400

Local Contacts

Arlington County Fire & Police	703-558-2222
DES Water, Sewer, Streets 24-Hour Emergency	703-228-6555
Washington Gas Emergency	703-750-1400

TABLE 3.31-B
(Revised June 2003)
TEMPORARY SEEDING SPECIFICATIONS
QUICK REFERENCE FOR ALL REGIONS

SEED

APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 -100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

FERTILIZER & LIME

- Apply 10-10-10 **fertilizer** at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
2 - Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means.
3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

TABLE 3.32-D
(Revised June 2003)
PERMANENT SEEDING SPECIFICATIONS FOR PIEDMONT AREA

SEED[1]

LAND USE	SPECIES	APPLICATION PER ACRE
Minimum Care Lawn (Commercial or Residential)	Tall Fescue[1] Perennial Ryegrass Kentucky Bluegrass[1]	95-100% 0-5% 0-5% TOTAL: 175-200 lbs.
High-Maintenance Lawn	Tall Fescue[1]	TOTAL: 200-250 lbs.
General Slope (3:1 or less)	Tall Fescue[1] Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop[2]	128 lbs. 2 lbs. 20 lbs. TOTAL: 150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue[1] Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop[2] Crownvetch[3]	108 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrass variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at http://sudan.cses.vt.edu/html/Turf/turf/publications/publications2.html

2 - Use seasonal nurse crop in accordance with seeding dates as stated below:

February 16th - April ………………………….	Annual Rye
May 1st - August 15th ………………………	Foxtail Millet
August 16th - October ……	Annual Rye
November - February 15th …………………..	Winter Rye

3 - Substitute Sericea lespedeza for Crownvetch east of Farmville, VA (May through September use hulled seed, all other periods, use unhulled Sericea). If Flatpea is used, increase rate to 30 lbs./acre. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30 -40

FERTILIZER & LIME

- Apply 10-20-10 **fertilizer** at a rate of **500** lbs. / acre (or 12 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
- Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means.
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

EROSION & SEDIMENT PLAN & PPP NOTES

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	4.15.2020

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: FA
Drawn: EF
Checked: KMM

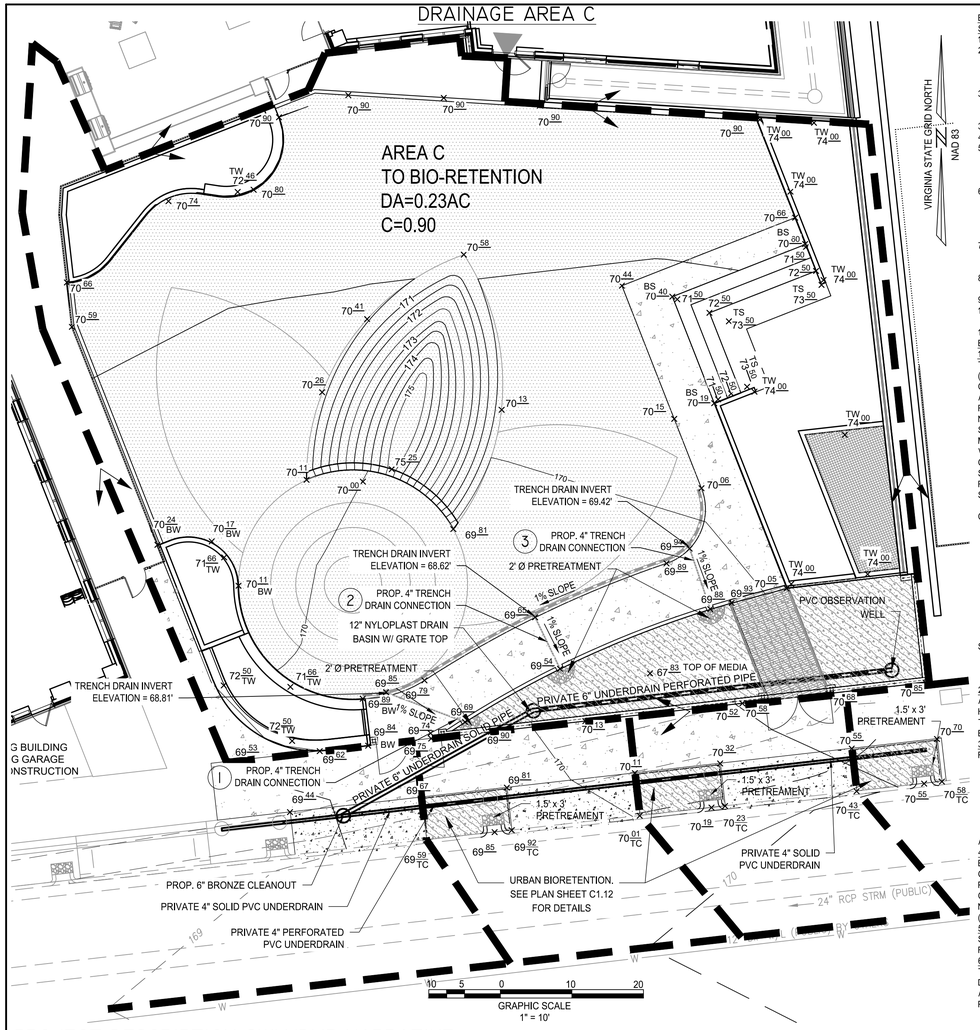
Filename:
Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: APRIL 15, 2020

Seal

COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.10



BIORETENTION FILTER SPECIFICATIONS

SEQUENCE OF CONSTRUCTION

1. INSTALL PHASE I EROSION AND SEDIMENT CONTROL MEASURES FOR THE SITE.
2. GRADE THE SITE TO ELEVATIONS SHOWN ON PLAN. INITIALLY, THE BIORETENTION FILTER FLOOR MAY BE EXCAVATED TO WITHIN ONE FOOT OF ITS FINAL ELEVATION. EXCAVATION TO FINISHED GRADE SHALL BE DEFERRED UNTIL ALL DISTURBED AREAS WITHIN THE WATERSHED HAVE BEEN STABILIZED AND PROTECTED. SILT FENCE AND CONSTRUCTION FENCE SHALL BE USED BETWEEN THE PAVEMENT AND THE BIORETENTION FILTER TO PROHIBIT SEDIMENT-LADEN WATER FROM ENTERING THE BIORETENTION FILTER.
3. COMPLETE CONSTRUCTION WITHIN THE WATERSHED AND STABILIZE ALL AREAS DRAINING TO THE BIORETENTION FILTER. SCHEDULE MEETING WITH THE DESIGNER AND INSTALLER TO CHECK DRAINAGE AREA BOUNDARIES AND INLET ELEVATIONS. THE DESIGNER WILL NOTIFY THE INSTALLER IN WRITING OF ANY CHANGES DETERMINED TO BE NEEDED DURING THE MEETING.
3. REMOVE PHASE I SEDIMENT CONTROL DEVICES FOR BIORETENTION AREA AT DIRECTION OF DESIGNATED INSPECTOR.
4. INSTALL PHASE II EROSION AND SEDIMENT CONTROL MEASURES FOR BIORETENTION AREA.
5. REMOVE ALL ACCUMULATED SEDIMENT AND EXCAVATE BIORETENTION AREA TO PROPOSED DEPTH, STARTING WITH ANY PRE-TREATMENT CELLS. USE RELATIVELY LIGHT, TRACKED EQUIPMENT TO AVOID COMPACTION OF THE FILTER FLOOR. PRE-TREATMENT CELLS MUST BE SEALED TO TRAP SEDIMENTS. AFTER FINAL GRADING IS COMPLETED, DEEPLY TILL THE FILTER FLOOR WITH ROTARY TILLERS OR DISC HARROWS TO PROVIDE A WELL-AERATED, HIGHLY POROUS SURFACE TEXTURE.
6. PLACE GEOTEXTILE FABRIC ON THE SIDES OF THE BIORETENTION AREA WITH A 6-INCH OVERLAP ON THE SIDES. FILL BIORETENTION AREA WITH STONE STORAGE LAYER TO APPROPRIATE DEPTH. INSTALL PERFORATED PVC UNDERDRAIN AND PACK STONE TO 3-INCHES ABOVE THE UNDERDRAIN PIPE AND ADD APPROXIMATELY 3-INCHES OF CHOKER STONE/PEA GRAVEL AS A FILTER BETWEEN THE UNDERDRAIN AND THE SOIL MEDIA LAYER. IF NO STONE STORAGE LAYER IS USED, START WITH 6-INCHES OF STONE AND PROCEED WITH LAYERING DESCRIBED ABOVE.
7. AFTER CONFIRMATION THAT SOIL MEETS SPECS BY PERFORMING THE REQUISITE GRADATION AND CHEMICAL TESTS (SEE BELOW), PLACE PLANTING SOIL IN 12-INCH LIFTS, AS SHOWN IN THE PLANS AND DETAILED IN THE SPECIFICATIONS. WAIT A FEW DAYS TO CHECK FOR SETTLEMENT, AND ADD ADDITIONAL MEDIA, AS NEEDED, TO ACHIEVE DESIGN TOP ELEVATION.
8. INSTALL VEGETATION AND GROUND COVER SPECIFIED IN THE PLANTING PLAN FOR BIORETENTION AREA. INSTALL MULCH LAYER. WATER PLANT MATERIALS DURING WEEKS OF NO RAIN FOR THE FIRST TWO MONTHS.
9. PLACE SEED, FILTER FABRIC, OR NON EROSIVE LINING (DEPENDING ON INFLOW VELOCITIES) IN THE INLET CHANNEL AND/OR FILTER STRIPS.
10. CONDUCT FINAL CONSTRUCTION INSPECTION, THEN LOG THE GPS COORDINATES FOR EACH FACILITY AND SUBMIT THEM FOR ENTRY INTO THE LOCAL MAINTENANCE TRACKING DATABASE.
11. UPON AUTHORIZATION FROM DESIGNATED INSPECTOR, REMOVE ALL SEDIMENT CONTROLS AND STABILIZE ALL DISTURBED AREAS.

BIORETENTION FILTER SOIL SPECIFICATIONS

1. PLANTING SOIL

THE BIORETENTION SOIL MEDIA SHALL MEET THE REQUIREMENTS OF VIRGINIA STORMWATER DESIGN SPECIFICATION NO. 9 BIORETENTION (LATEST VERSION REFERENCED IN THE VSMP REGULATIONS). TOPSOIL USED TO CREATE BIORETENTION SOIL MEDIA SHOULD BE A SANDY LOAM OR LOAMY SAND PER USDA TEXTURAL CLASSIFICATION. THE TEXTURAL CLASS OF THE TOPSOIL SHOULD BE VERIFIED BY A LABORATORY ANALYSIS. TOPSOIL SHALL BE OF UNIFORM COMPOSITION, CONTAINING NO MORE THAN 5 PERCENT CLAY, FREE OF STONES, STUMPS, BRUSH, ROOTS, OR SIMILAR OBJECTS LARGER THAN 2 INCHES. TOPSOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, YEARTHUMB, OR OTHER NOXIOUS WEEDS. SAND SHALL MEET AASHTO M-6, ASTM C-33, OR VDOT SECTION 202 GRADE "A" FINE AGGREGATE SPECIFICATIONS. SAND SHALL BE CLEAN AND FREE OF DELETERIOUS MATERIALS. ANY ORGANIC MATERIAL ADDED TO CREATE THE FINAL SOIL MIXTURE SHALL CONSIST OF LEAF COMPOST OR COMPOST MEETING THE REQUIREMENTS OF VIRGINIA STORMWATER DESIGN SPECIFICATION NO. 4 SOIL COMPOST AMENDMENT. THE FINAL SOIL MIXTURE SHALL NOT CONTAIN ANY MATERIAL OR SUBSTANCE THAT MAY BE HARMFUL TO PLANT GROWTH, OR A HINDRANCE TO PLANT GROWTH OR MAINTENANCE. EACH BIORETENTION AREA SHALL HAVE A MINIMUM OF ONE SOIL TEST PERFORMED ON THE FINAL SOIL MIXTURE TO DEMONSTRATE COMPLIANCE WITH THE MIXTURE REQUIREMENTS FOR SAND, SOIL FINES, ORGANIC MATTER, P-INDEX (PHOSPHORUS CONTENT) AND CATION EXCHANGE CAPACITY (CEC) USING STANDARD TEST METHODS. TEST RESULTS AND MATERIALS CERTIFICATIONS SHALL BE SUBMITTED TO DPWES PRIOR TO BOND RELEASE.

COMPOST SHALL BE TESTED AND MEET THE FOLLOWING CRITERIA:

PH RANGE:	6.0-8.0
ORGANIC MATTER:	50-60% (DRY WEIGHT BASIS)
MOISTURE CONTENT:	40-50% (WET WEIGHT BASIS)
MATURITY INDICATOR:	> 80% OF CONTROL
STABILITY:	0-4 MG CO2C PER G OM PER DAY
MAGNESIUM (MG):	100+ UNITS
NITROGEN:	1% OR ABOVE
PHOSPHOROUS (P_2O_5):	1% OR ABOVE
POTASSIUM (K_2O):	1% OR ABOVE
SOLUBLE SALTS:	<5 DS/M (MMHOS/CM)

SOIL MEDIA SHALL BE TESTED AND MEET THE FOLLOWING CRITERIA:

PH RANGE:	5.5-6.5
ORGANIC MATTER:	> 1.5% (DRY WEIGHT)
SOLUBLE SALTS:	< 500 PPM

2. MULCH

A 3" MULCH LAYER SHALL BE PROVIDED ON TOP OF THE PLANTING SOIL. AN ACCEPTABLE MULCH LAYER SHALL INCLUDE DOUBLE SHREDDED HARDWOOD BARK WITH A PARTICLE SIZE GREATER THAN 0.5 INCHES. THE MULCH PRODUCTS MUST BE WELL AGED(WELL AGED MULCH IS MULCH THAT HAS BEEN STOCKPILED OR STORED FOR 6-12 MONTHS), UNIFORM IN COLOR, FREE OF SALTS AND FREE OF HARMFUL CHEMICALS AND EXTRANEOUS MATERIALS INCLUDING PLANT MATERIAL.

3. FILTER FABRIC

FILTER FABRIC SHALL BE NEEDLED, NON-WOVEN, POLYPROPYLENE GEOTEXTILE MEETING THE FOLLOWING REQUIREMENTS:

GRAB TENSILE STRENGTH:	> 120 LBS
MULLEN BURST STRENGTH:	> 225 LBS/SQ. IN
UV RESISTENCE:	70% STRENGTH AFTER 500 HOURS
FLOWRATE:	> 110 GAL/MIN/SQ. FT

E.G. GEOTEX 351 OR EQUIVALENT

APPLY IN LOCATIONS SHOWN IN THE DETAIL ON THIS SHEET.

4. COMPACTION

BIORETENTION AREAS SHOULD ONLY BE CONSTRUCTED AFTER THE DRAINAGE AREA TO THE FILTER IS COMPLETELY STABILIZED. THE SPECIFIED GROWTH MEDIA SHOULD BE PLACED AND SPREAD BY HAND WITH MINIMAL COMPACTION, IN ORDER TO AVOID COMPACTION AND MAINTAIN THE POROSITY OF THE MEDIA. THE MEDIA SHOULD BE PLACED IN 8 TO 12 INCH LIFTS WITH NO MACHINERY ALLOWED DIRECTLY ON THE MEDIA DURING OR AFTER CONSTRUCTION. THE MEDIA SHOULD BE OVERFILLED ABOVE THE PROPOSED SURFACE ELEVATION, AS NEEDED, TO ALLOW FOR NATURAL SETTLING. LIFTS MAY BE LIGHTLY WATERED TO ENCOURAGE SETTLING. AFTER THE FINAL LIFT IS PLACED, THE MEDIA SHOULD BE RAKED (TO LEVEL IT), SATURATED, AND ALLOWED TO SETTLE FOR AT LEAST ONE WEEK PRIOR TO INSTALLATION OF PLANT MATERIALS.

5. UNDERDRAINS

SHALL BE PVC PIPE CONFORMING TO THE REQUIREMENTS OF ASTM F758, TYPE PS 28 OR ASTM F949. UNDERDRAINS SHALL BE PERFORATED WITH FOUR ROWS OF 3/8-INCH HOLES WITH A HOLE SPACING OF 6 INCHES.

6. CLEANOUTS

THERE SHALL BE A MINIMUM OF ONE OBSERVATION WELL PER 1,000 SF OF SURFACE AREA. OBSERVATION WELL SHALL BE A MINIMUM OF 6" IN DIAMETER WITH A FLANGE TYPE CAP EXTENDING ABOVE THE BMP WATER SURFACE ELEVATION. CLEANOUTS SHALL BE PROVIDED AT THE END OF ALL PIPE RUNS. OBSERVATION WELLS SHALL BE SOLID PIPE EXCEPT FOR THE PORTION BELOW THE PLANTING SOIL BED WHICH MUST BE PERFORATED. OBSERVATION WELLS SHALL BE SCHEDULE 40 PVC.

MAINTENANCE/INSPECTION GUIDELINES

PLANTING SOIL

URBAN PLANT COMMUNITIES TEND TO BECOME VERY ACIDIC DUE TO PRECIPITATION AS WELL AS THE INFLUENCES OF STORM WATER RUNOFF. FOR THIS REASON, IT IS RECOMMENDED THAT THE APPLICATION OF ALKALINE, SUCH AS LIMESTONE, BE CONSIDERED ONCE TO TWICE A YEAR. TESTING OF THE PH OF THE ORGANIC LAYER AND SOIL, SHOULD PRECEDE THE LIMESTONE APPLICATION TO DETERMINE THE AMOUNT OF LIMESTONE REQUIRED.

SOIL TESTING SHOULD BE CONDUCTED ANNUALLY SO THAT THE ACCUMULATION OF TOXINS AND HEAVY METALS CAN BE DETECTED OR PREVENTED. OVER A PERIOD OF TIME, HEAVY METALS AND OTHER TOXIC SUBSTANCES WILL TEND TO ACCUMULATE IN THE SOIL AND THE PLANTS. DATA FROM OTHER ENVIRONS SUCH AS FOREST BUFFERS AND GRASS SWALES SUGGEST ACCUMULATION OF TOXINS AND HEAVY METALS WITHIN FIVE YEARS OF INSTALLATION. HOWEVER, THERE IS NO METHODOLOGY TO ESTIMATE THE LEVEL OF TOXIC MATERIALS IN BIORETENTION AREAS SINCE RUNOFF, SOIL, AND PLANT CHARACTERISTICS WILL VARY FROM SITE TO SITE.

AS THE TOXIC SUBSTANCES ACCUMULATE, THE PLANT BIOLOGIC FUNCTIONS MAY BECOME IMPAIRED, AND THE PLANT MAY EXPERIENCE DWARFED GROWTH FOLLOWED BY MORTALITY. THE BIOTA WITHIN THE SOIL CAN ALSO BECOME VOID AND THE NATURAL SOIL CHEMISTRY MAY BE ALTERED. THE PREVENTATIVE MEASURES WOULD INCLUDE THE REMOVAL OF THE CONTAMINATED SOIL. IN SOME CASES, REMOVAL AND DISPOSAL OF THE ENTIRE SOIL BASE AS WELL AS THE PLANT MATERIAL MAY BE REQUIRED.

PLANT MATERIALS

AN IMPORTANT ASPECT OF LANDSCAPE ARCHITECTURE IS TO DESIGN AREAS THAT REQUIRE LITTLE MAINTENANCE. CERTAIN PLANT SPECIES INVOLVE MAINTENANCE PROBLEMS DUE TO DROPPING OF FRUIT OR OTHER PORTIONS OF THE PLANT. ANOTHER PROBLEM INCLUDES PLANTS, PRIMARILY TREES, THAT ARE SUSCEPTIBLE TO WINDTHROW, WHICH CREATES A POTENTIAL HAZARD TO PEOPLE AND PROPERTY (PARKED CARS). AS A RESULT, SOME PLANT SPECIES WILL BE LIMITED TO USE IN LOW-TRAFFIC AREAS.

ONGOING MONITORING AND MAINTENANCE IS VITAL TO THE OVERALL SUCCESS OF BIORETENTION AREAS. ANNUAL MAINTENANCE WILL BE REQUIRED FOR PLANT MATERIAL, MULCH LAYER, AND SOIL LAYER. A MAINTENANCE SCHEDULE SHOULD INCLUDE ALL OF THE MAIN CONSIDERATIONS DISCUSSED BELOW. THE MAINTENANCE SCHEDULE USUALLY INCLUDES MAINTENANCE AS PART OF THE CONSTRUCTION PHASE OF THE PROJECT AND FOR LIFE OF THE DESIGN. AN EXAMPLE MAINTENANCE SCHEDULE IS SHOWN BELOW AND IN THE VIRGINIA STORMWATER HANDBOOK TABLE 3.11-6.

MAINTENANCE REQUIREMENTS WILL VARY DEPENDING ON THE IMPORTANCE OF AESTHETICS, SOIL AND MULCH LAYER MAINTENANCE WILL BE MOST LIKELY LIMITED TO CORRECTING AREAS OF EROSION. PLANT MATERIAL UPKEEP WILL INCLUDE ADDRESSING PROBLEMS ASSOCIATED WITH DISEASE OR INSECT INFESTATIONS, REPLACING DEAD PLANT MATERIAL, AND ANY NECESSARY PRUNING.

CONTROL OF SEDIMENTS ON THE DRAINAGE SHED

CARE MUST BE TAKEN TO PROTECT THE BIORETENTION FILTER FROM EXCESSIVE SEDIMENTS FROM THE DRAINAGE SHED. WHENEVER ADDITIONAL LAND DISTURBING ACTIVITY TAKES PLACE IN THE AREA DRAINING TO THE FILTER, EFFECTIVE EROSION AND SEDIMENT CONTROL MEASURES MUST FIRST BE PUT IN PLACE TO EXCLUDE SEDIMENTS FROM THE FILTER. PERFORMANCE BASED SPECIAL MEASURES OVER AND ABOVE THOSE SPECIFIED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION, MAY BE REQUIRED TO ASSURE THAT THE BIORETENTION FILTER IS NOT DAMAGED BY SUCH LAND DISTURBANCE.

SPRING MAINTENANCE INSPECTION AND CLEANUP

INSPECTION AND CLEANUP SHALL BE CONDUCTED AT EACH BIORETENTION AREA. THE FOLLOWING IS A LIST OF SOME OF THE KEY MAINTENANCE PROBLEMS TO LOOK FOR:

- CHECK TO SEE IF 75% TO 90% COVER (MULCH PLUS VEGETATIVE COVER) HAS BEEN ACHIEVED IN THE BED, AND MEASURE THE DEPTH OF THE REMAINING MULCH.
- CHECK FOR SEDIMENT BUILDUP AT PAVEMENT EDGES THAT PREVENTS FLOW FROM GETTING INTO THE BED, AND CHECK FOR OTHER SIGNS OF BYPASSING.
- CHECK FOR ANY WINTER- OR SALT-KILLED VEGETATION, AND REPLACE IT WITH HARDIER SPECIES.
- NOTE PRESENCE OF ACCUMULATED SAND, SEDIMENT AND TRASH IN THE FILTER BEDS, AND REMOVE IT.
- INSPECT BIORETENTION SIDE SLOPES AND GRASS FILTER STRIPS FOR EVIDENCE OF ANY RILL OR GULLY EROSION, AND REPAIR IT.
- CHECK THE BIORETENTION BED FOR EVIDENCE OF MULCH FLOTATION, EXCESSIVE PONDING, DEAD PLANTS OR CONCENTRATED FLOWS, AND TAKE APPROPRIATE REMEDIAL ACTION.
- CHECK INFLOW POINTS FOR CLOGGING, AND REMOVE ANY SEDIMENT.
- LOOK FOR ANY BARE SOIL OR SEDIMENT SOURCES IN THE CONTRIBUTING DRAINAGE AREA, AND STABILIZE THEM IMMEDIATELY.
- CHECK FOR CLOGGED OR SLOW-DRAINING SOIL MEDIA, A CRUST FORMED ON THE TOP LAYER, INAPPROPRIATE SOIL MEDIA, OR OTHER CAUSES OF INSUFFICIENT FILTERING TIME, AND RESTORE PROPER FILTRATION CHARACTERISTICS.

BIORETENTION FILTER PLANTING SPECIFICATIONS

1. ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT FROM THE SOURCE TO THE JOB SITE AND UNTIL PLANTED.
2. WALLS OF PLANTING PIT SHALL BE DUG SO THEY ARE VERTICAL.
3. THE DIAMETER OF THE PLANTING PIT MUST BE A MINIMUM OF SIX INCHES (6") LARGER THAN THE DIAMETER OF THE BALL OF THE TREE.
4. THE PLANTING PIT SHALL BE DEEP ENOUGH TO ALLOW 1/8 OF THE OVERALL DIMENSION OF THE ROOT BALL TO BE ABOVE GRADE. LOOSE SOIL AT THE BOTTOM OF THE PIT SHALL BE TAMPED BY HAND.
5. THE APPROPRIATE AMOUNT OF FERTILIZER IS TO BE PLACED AT THE BOTTOM OF THE PIT (SEE BELOW FOR FERTILIZATION RATES).
6. THE PLANT SHALL BE REMOVED FROM THE CONTAINER AND PLACED IN THE PLANTING PIT BY LIFTING AND CARRYING THE PLANT BY ITS' BALL (NEVER LIFT BY BRANCHES OR TRUNK).
7. SET THE PLANT STRAIGHT AND IN THE CENTER OF THE PIT SO THAT APPROXIMATELY 1/8 OF THE DIAMETER OF THE ROOT BALL IS ABOVE THE FINAL GRADE.
8. BACKFILL PLANTING PIT WITH EXISTING SOIL.
9. MAKE SURE PLANT REMAINS STRAIGHT DURING BACKFILLING PROCEDURE.
10. NEVER COVER THE TOP OF THE BALL WITH SOIL. MOUND SOIL AROUND THE EXPOSED BALL.
11. TREES SHALL BE BRACED BY USING 2" BY 2" WHITE OAK STAKES. STAKES SHALL BE PLACED PARALLEL TO WALKWAYS AND BUILDINGS. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL. UTILIZING HOSE AND WIRE. THE TREE IS BRACED TO THE STAKES.
12. BECAUSE OF THE HIGH LEVELS OF NUTRIENTS IN STORMWATER RUNOFF TO BE TREATED, BIORETENTION FILTER PLANTS SHOULD NOT REQUIRE CHEMICAL FERTILIZATION.

PROJECT DESCRIPTION-SWM/BMP NARRATIVE

THE SITE IS LOCATED AT 1801 N. QUINN ST. THE SITE IS ON THE BLOCK ROUGHLY BOUNDED BY KEY BOULEVARD (NORTH), 18TH STREET NORTH (SOUTH) AND NORTH QUINN STREET (WEST). THIS PROJECT CONSISTS OF CONSTRUCTION OF AN URBAN PARK ON A SITE ADJACENT TO QUEENS COURT BUILDING DESIGNED BY BOWMAN PER THE SITE PLAN #444 DATED 11/30/2018. THE SITE AREA FOR THE QUEENS COURT BUILDING BOWMAN PROJECT IS APPROXIMATELY 44,727 SF, AND IS DIVIDED INTO 3 DRAINAGE AREAS (A, B AND C). THE BOWMAN BMP DESIGN ACCOUNTED FOR BMP TREATMENT FOR THE PARK PROJECT UTILIZING A LEVEL I BIORETENTION BASIN FOR QUALITY AND THE REDUCED CURVE NUMBER FOR THE ENERGY BALANCE QUANTITY COMPUTATIONS. THE PROPOSED PARK LAYOUT IN DRAINAGE AREA C INCLUDES 1,886 SF OF PERVIOUS AND 8,212 SF OF IMPERVIOUS, THEREFORE THE ROSSLYN HIGHLANDS PARK PROJECT IS WITHIN THE LIMITS OF TREATMENT FOR WATER QUALITY AND WATER QUANTITY PROVIDED WITH THE BOWMAN DESIGN AS SHOWN ON THIS SHEET. SEE SIZING COMPUTATIONS AND DETAILS ON THIS SHEET FOR THE LEVEL I BIORETENTION. SEE SHEET C1.15 FOR BIORETENTION SIZING COMPUTATIONS.

DRAINAGE AREA C, BMP SIZING AND ROUTING

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs) 1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	Hydrograph Description
1	SCS Runoff	-------	0.806	0.977	-------	-------	1.512	-------	-------	2.622	RHP Bio
2	Reservoir	1	0.084	0.696	-------	-------	1.476	-------	-------	2.102	RHP Bioretention Rtg

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.512	2	716	3,603	-------	-------	-------	RHP Bio
2	Reservoir	1.476	2	718	2,343	1	168.60	1,350	RHP Bioretention Rtg
RHP Bioretention2 lower outfall.gpw			Return Period: 10 Year			Wednesday, 07 / 15 / 2020			

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.806	2	716	1,863	-------	-------	-------	RHP Bio
2	Reservoir	0.084	2	740	603	1	168.28	1,264	RHP Bioretention Rtg
RHP Bioretention2 lower outfall.gpw			Return Period: 1 Year			Wednesday, 07 / 15 / 2020			

Hydrograph Summary Report

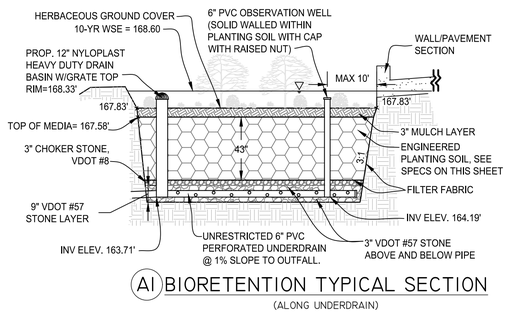
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.622	2	716	6,356	-------	-------	-------	RHP Bio
2	Reservoir	2.102	2	720	5,096	1	168.95	1,529	RHP Bioretention Rtg
RHP Bioretention2 lower outfall.gpw			Return Period: 100 Year			Wednesday, 07 / 15 / 2020			

July 2014 (Revised April 2015). Sizing spreadsheet for bioretention for compliance with Arlington County Stormwater Managment Ordinance

Enter data into highlighted cells. WQV needs to > 100% for credit.

Facility name/type	Design Level	Impervious Area to Facility	Pervious Area to Facility	Total Drainage Area	Total Drainage Area	Rainfall Depth (P)	Rv	Target storage (WQv)	Width	Length	Ponding depth	Filter depth	Gravel depth	Filter : Gravel Depth Ratio	Gravel Sump below underdrain *Required for Level 2 Designs that include an underdrain (No storage credit provided)*	Top Surface Area	Bottom Surface Area (3:1 slopes)	Ponding Volume (1.00 void)	Soil Storage Volume (0.25 void)	Gravel Storage Volume (0.4 void)	Available Storage	% Water Quality Volume Captured
		(SF)	(SF)	(SF)	(acre)	(in)		(CF)	(ft)	(ft)	(in)	(in)	in	Level 1: ≥ 2:1 Level 2: ≥ 3:1	(in)	(SF)	(SF)	(CF)	(CF)	(CF)	(CF)	Must be ≥ 100% (Max. 200%)
Bioretention #2	Level 1	8212	1886	10098	0.2318	1.00	0.81	684.69	11.00	61.30	6	43	12	3.58	N/A	674.30	466.40	285.18	417.82	186.56	**889.55**	**129.9%**



A1 BIORETENTION TYPICAL SECTION

(ALONG UNDERDRAIN)

Material Specifications for Bioretention. The following is the table of material specifications for bioretention basins.

Bioretention Basin Material Specifications

Material	Specification	Notes
Filter Media Composition	Filter Media to contain: • 80%-90% sand with >75% being coarse to very coarse • 10%-20% soil fines • 3%-5% organic matter in the form of plant based compost meeting Clearinghouse Design Specification #4, Section 6.5	The volume of filter media based on 110% of the plan volume, to account for settling or compaction.
Filter Media Testing	Plant available P within Low+ (L+) to Medium (M) per DCR 2014 Nutrient Management Criteria (18-40 mg/kg P for the Mehlich III procedure) and CEC >5	The media can be procured from approved filter media vendors or mixed onsite with testing results meeting standard for both texture and nutrient composition.
Mulch Layer	Use aged, shredded hardwood bark mulch	Lay a 2 to 3 inch layer on the surface of the filter bed.
Geotextile/Liner	Use a non-woven geotextile fabric with a flow rate of > 110 gal./min./sq. ft. (e.g., Geotex 351 or equivalent).	Apply only to the vertical sides and 2' on each side of the underdrain. Do not install at the bottom or between layers.
Choking Layer	3 inch layer of pea gravel or VDOT #8 stone which is laid over the underdrain stone.	
Stone Jacket for Underdrain and/or Storage Layer	1 inch stone should be double-washed and clean and free of all fines (e.g., VDOT #57 stone).	12 inches for the underdrain; 12 to 18 inches for the stone storage layer, if needed
Underdrains, Cleanouts, and Observation Wells	Use 6 inch rigid schedule 40 PVC pipe for bioretention basins, with 3/8-inch perforations at 6 inches on center, maximum of 3 rows of perforations; position each underdrain on a 1% or 2% slope located nor more than 20 feet from the next pipe.	All bioretentions are to have an observation well, cleanout or overflow pipe. Lay the perforated pipe under the length of the bioretention cell, and install non-perforated pipe as needed to connect with the storm drain system. Install T's and Y's as needed, depending on the underdrain
		configuration. Extend cleanout pipes to the surface with vented caps at the Ts and Ys.
Plant Materials	Tree –minimum 1 inch caliper, 15' on-center. Shrub – minimum 30 inches high, 10' on-center. Perennials/Herbaceous - container-grown at 18-24 inches on center	A planting plan is required such that: For Level 1 designs – there is 75% surface coverage within 2 years For Level 2 designs – there is 90% surface coverage within 2 years

Bioretention Maintenance Schedule

Maintenance	Frequency
• Spot weeding, erosion repair, trash removal, and mulch raking • Add reinforcement planting to maintain the desired vegetation density • Remove invasive plants using recommended control methods • Stabilize the contributing drainage area to prevent erosion	Twice during growing season As needed
• Spring inspection and cleanup • Supplement mulch to maintain a 2-3 inch layer • Prune trees and shrubs	Annually
• Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years
• Replace the mulch layer	Every 3 years
• Inspected and certified by a professional licensed in the State of Virginia	Once every 5 years

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS
AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

BMP COMPUTATIONS

Approval	Date
LUKE VANBELLEGHEM	4.15.2020
Design Supervisor	

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: FA
Drawn: EF
Checked: KMM

Filename:
Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: APRIL 15, 2020

Seal

COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.11

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Filename: C-1.11 BMP COMPS.dwg

Construction Inspection Checklist: Bioretention

ARLINGTON VIRGINIA

Address/ Location: _____ Building Permit #: _____

LDA Permit #: _____ SWM#: _____

Contractor: _____ Telephone: _____

Certifying Professional*: _____ Telephone: _____

Date Started: _____ Final Inspection Date: _____

Certifying professional must be a licensed Professional Engineer (PE), Landscape Architect (LA), or Land Surveyor (LS).

The following checklist provides a basic outline of the anticipated items for the construction inspection of bioretention facilities. This checklist does not necessarily distinguish between all the design variations and differences in construction between the family of practices. Inspectors should review the plans carefully, and adjust these items and the timing of inspection verification as needed to ensure the intent of the design is met. The standard for design of this practice is based on Virginia Stormwater BMP Clearinghouse and Arlington County Stormwater Guidance Manual.

All items should be checked when completed. Items labeled "Certification of…" must be crossed off, dated and initialed by certifying inspector.

PRE-CONSTRUCTION MEETING	DATE
☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections.	
☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation or erosion control measures are still in place and stormwater has been diverted around the area.	
☐ Area of bioretention practice has not been impacted during construction.	
☐ Pre-construction meeting with the contractor designated to install the bioretention practice, County DES inspector, and person completing this checklist has been conducted.	

EXCAVATION	DATE
☐ Area of bioretention excavation is marked and the size and location conforms to plan.	
☐ If the excavation area has been used as a sediment trap: verify that the bottom elevation of the proposed stone reservoir is lower than the bottom elevation of the existing trap.	
☐ For Level 2 bioretention, ensure the bottom of the excavation is scarified prior to placement of stone.	
☐ Subgrade surface is free of rocks and roots, and large voids. Any voids should be refilled with the base aggregate to create a level surface for the placement of aggregates and underdrain (if required).	
☐ No groundwater seepage or standing water is present. Any standing water is dewatered to an acceptable dewatering device.	
☐ Excavation of the bioretention practice has achieved proper grades and the required geometry and elevations without compacting the bottom of the excavation. ***Constructed dimensions:*** _____	
☐ Sides of excavation covered with geotextile; no tears or holes, or excessive wrinkles are present.	
☐ **Certification of Excavation Inspection:** Inspector certifies the successful completion of the excavation steps listed above. Photos required include: o Excavated area prior to installation of stone, including measurements (L x W x D); o Non-woven geotextile fabric installed on sides of excavated subgrade only. Material delivery ticket include: o Geotextile installed on sides	

FILTER LAYER, UNDERDRAIN, AND STONE RESERVOIR PLACEMENT	DATE
☐ All aggregates conform to specifications as certified by quarry.	
☐ Underdrain size and perforations meet the specifications (if applicable).	
☐ If the underdrain is directly tied into the public storm sewer system, the connection has been witnessed by DES inspector.	
☐ For Level 2 installations: placement of filter layer and initial lift of stone reservoir layer aggregates with underdrain or infiltration sump, spread (not dumped) to avoid aggregate segregation	
☐ Placement of underdrain, observation wells, and underdrain fittings are in accordance with the approved plans.	
☐ Elevations of underdrain and outlet structure are in accordance with approved plans, or as adjusted to meet field conditions and denoted in Comments section.	
☐ Placement of remaining lift of stone reservoir layer as needed to achieve the required reservoir depth.	
☐ **Certification of Filter Layer and Underdrain Placement Inspection:** Inspector certifies the successful completion of the filter layer and underdrain placement steps listed above. Photos and material delivery tickets for these items are attached. Photos required include: o Perforated underdrain pipe (if applicable) with a solid vertical overflow pipe; o Depth of #57 stone; o Depth of choker stone (pea gravel or #8). Material delivery tickets required include: o 57 stone; o Choker stone (pea gravel or #8).	

BIORETENTION SOIL MEDIA PLACEMENT	DATE
☐ Soil media is certified by supplier or contractor as meeting the project specifications.	
☐ Soil media is placed in 12-inch lifts to the design top elevation of the bioretention area. Elevation has been verified after settlement (2 to 4 days after initial placement).	
☐ Side slopes of ponding area are feathered back at the required slope (no steeper than 3H:1V).	
☐ **Certification of Soil Media Placement Inspection:** Inspector certifies the successful completion of the soil media steps listed above and any necessary photos are attached. Photo required of a measurement of the soil media installed. Material delivery ticket required from an approved soil media vendor.	

PRETREATMENT AND PLANT INSTALLATION	DATE
☐ Riser, overflow weir, or other outflow structure is set to the proper elevation and functional.	
☐ Placement of energy dissipaters and pretreatment practices (forebays, gravel diaphragms, etc.) are installed in accordance with the approved plans.	
☐ Appropriate number and spacing of plants are installed in accordance with the approved plans.	
☐ Ponding depth verification after plant and mulch placement.	
☐ **Certification of Pretreatment and Plant Installation:** Inspector certifies the successful completion of any pretreatment measures, plants and mulch as listed above. Photos required for this step include: o Overall photos of showing mulch and plants installed; o Location of inflow and appropriate energy dissipation; o Any pretreatment measures required per the approved plans; o Distance from the top of the mulch to the top of the overflow (either pipe or berm). Material delivery tickets required for this step include: o Approved plants listing number and species; o Shredded hardwood mulch.	

COMMENTS (CLARIFICATION, DEVIATIONS, ETC.)	DATE

All items checked above have been inspected by me (or by an individual under my responsible charge) and have been completed to my satisfaction and meet the approved plans (or deviations are noted here).

Signature: _____ Date: _____

Certifying Professional's License Number (or Seal): _____

Construction Inspection Checklist: Urban Bioretention

ARLINGTON VIRGINIA

Address/ Location: _____ Building Permit #: _____

LDA Permit #: _____ SWM#: _____

Contractor: _____ Telephone: _____

Certifying Professional*: _____ Telephone: _____

Date Started: _____ Final Inspection Date: _____

Certifying professional must be a licensed Professional Engineer (PE), Landscape Architect (LA), or Land Surveyor (LS).

The following checklist provides a basic outline of the anticipated items for the construction inspection of urban bioretention facilities. This checklist does not necessarily distinguish between all the design variations. Inspectors should review the plans carefully, and adjust these items and the timing of inspection verification as needed to ensure the intent of the design is met. The standard for design of this practice is based on Virginia Stormwater BMP Clearinghouse and Arlington County Stormwater Guidance Manual.

All items should be crossed off when completed. Items labeled "Certification of…" must be crossed off, dated and initialed by the certifying inspector.

PRE-CONSTRUCTION MEETING	DATE
☐ Pre-construction meeting with the contractor designated to install the planter boxes, County DES inspector, and person completing this checklist has been conducted.	
☐ Stormwater has been diverted around the area of the bioretention practice and perimeter erosion control measures to protect the facility during construction have been installed.	

EXCAVATION AND BOX CONSTRUCTION	DATE
☐ Area is marked and the size and location conforms to plan.	
☐ Excavation has achieved proper grades and the required geometry and elevations.	
☐ Box is constructed using the material specified and to the required dimensions as shown on the approved plans. ***Constructed interior dimensions:*** _____	
☐ Waterproofing is installed on sides and bottom of interior of the box as specified.	
☐ **Certification of Excavation and Box Construction Inspection:** Inspector certifies the successful completion of the steps listed above and any necessary photos are attached. Photo required of entire interior (sides and bottom) of planter box waterproofed. Material ticket required of waterproofing membrane if plastic membrane is used (no receipt required for liquid membrane).	

FILTER LAYER, UNDERDRAIN, AND STONE RESERVOIR PLACEMENT	DATE
☐ All aggregates conform to specifications as certified by quarry.	
☐ Underdrain size and perforations meet the specifications (holes should be spaced 6" apart, maximum of 3 rows of holes). Placement of underdrain, observation wells, and underdrain fittings are in accordance with the approved plans.	
☐ Elevations of underdrain and outlet structure are in accordance with approved plans, or as adjusted to meet field conditions and denoted in Comments section below.	
☐ Placement of remaining lift of stone reservoir layer as needed to achieve the required reservoir depth.	
☐ **Certification of Filter Layer and Underdrain Placement Inspection:** Inspector certifies the successful completion of the filter layer and underdrain placement steps listed above. Photos and material delivery tickets for these items are attached. Photos required include: o Perforated underdrain pipe with a solid vertical overflow pipe; o Depth of #57 stone; o Depth of choker stone (pea gravel or #8). Material delivery tickets required: o #57 stone and choker stone (pea gravel or #8)	

BIORETENTION SOIL MEDIA PLACEMENT	DATE
☐ Soil media is certified by supplier or contractor as meeting the project specifications.	
☐ No filter fabric is to be used between the stone layer and the soil layer. Soil media is placed in 12-inch lifts to the design top elevation of the bioretention area. Elevation has been verified after settlement (2 to 4 days after initial placement).	
☐ **Certification of Soil Media Placement Inspection:** Inspector certifies the successful completion of the soil media steps listed above. Photos and material delivery tickets for these items are attached. Photo required includes a measurement of the soil media installed. Material delivery ticket required from an approved soil media vendor	

PRETREATMENT AND PLANT INSTALLATION	DATE
☐ Placement of energy dissipaters and pretreatment practices (splash block/rocks, gutter guards, etc.) are installed in accordance with the approved plans.	
☐ Overflow has atrium grate installed.	
☐ Downspouts are installed in accordance with the approved plans providing the correct drainage area.	
☐ The number and spacing of plants are installed in accordance with the approved plans. If there is no approved landscape plan for the planter boxes, the plant are to be chosen from VA DEQ Stormwater Design Specification No. 9: Table 9.4 Popular Native Plant Materials for Bioretention.	
☐ A 2-3 inch layer of shredded hardwood mulch has been installed.	
☐ **Certification of Pretreatment and Plant Installation Inspection:** Inspector certifies the successful completion of the pretreatment, energy dissipaters, plants, overflow grates and mulch as listed above. Photos and copies of material delivery tickets are attached. Photos required for this step for each planter include: o Overall photo showing the number of plants installed; o Location of downspout/inflow pipe with the appropriate splash block/rocks; o Distance from the top of mulch to the top of the overflow pipe; o Distance from the top of mulch to the top of the planter box. Material delivery tickets required for this step include: o Approved plants listing number and species; o Shredded hardwood mulch.	

DRY WELL OR CONNECTION TO STORM SEWER	DATE
☐ Dry well is constructed to the correct dimensions and proper materials including the proper geotextile, stone, and overflow mechanism (pop-up emitter) per the plan (if applicable).	
☐ Underdrain is directly tied into the public storm sewer system and the connection has been witnessed by DES inspector (if applicable).	
☐ **Certification of Dry Well or Connection to Storm Sewer:** Inspector certifies the successful completion of the dry well or connection to the storm sewer. Photos and material delivery tickets for these items are attached. Photos required for dry well include: o Excavated dry well with fabric installed on sides (no fabric on bottom); o Dimensions of dry well (L x W x D); o Perforated pipe installed inside of dry well; o Solid pipe for any pipe located outside of dry well (above gravel to grade); o Depth of #57 stone; o Fabric installed on top of gravel; o Completed dry well with turf cover and pop-up emitter installed. Material Tickets required: o Geotextile used; o #57 stone.	

COMMENTS (CLARIFICATION, DEVIATIONS, ETC.)	DATE

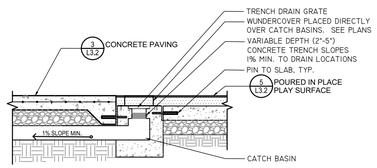
All items checked above have been inspected by me (or by an individual under my responsible charge) and have been completed to my satisfaction and meet the approved plans (or deviations are noted here).

Signature: _____ Date: _____

Certifying Professional's License Number (or Seal): _____

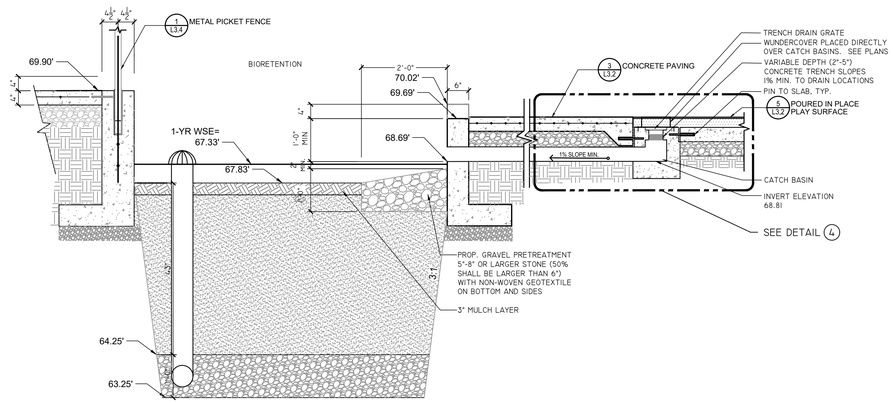
Stormwater Management Facility Information- Revised 9/19/2017

Facility Type**	Description	Location	LDA Permit #	Project SWM #	Building Permit #	Facility ID	BMP downstream of another BMP (in Series)?	Upstream (Primary) BMP	Chesapeake Bay Segment	Watershed	HUC6	Soils	Runoff Treated (in)	Volume Treated (ft³)	Treated Area (acres)	Forest Area (acres)	Turf Area (acres)	Impervious Area (acres)	RPC	Phosphorus Efficiency (%)	Nitrogen Efficiency (%)	Sediment Efficiency (%)	TP load removed (lbs)	TN load removed (lbs)
BIORETENTION LEVEL 1	Bioretention	Queens Ct Park	LDA14382	20-0120		20-0120A	No		POTTF_VA	Colonial Village Branch	PL24	C/D	1.00	689.4	0.2318	0.0000	0.0433	0.1885	16034PCB	55.00	64.00	75.00	0.24	1.98
URBAN BIORETENTION LEVEL 1	Urban Bioretention #16	N. 18th St	LDA14382	20-0120	0	20-0120B			POTTF_VA	Colonial Village Branch		C/D	1.00	72.7	0.0211	0.0000	0.0000	0.0211	16034PCB	55.00	64.00	75.00	0.03	0.21
URBAN BIORETENTION LEVEL 1	Urban Bioretention #17	N. 18th St	LDA14382	20-0120	0	20-0120C			POTTF_VA	Colonial Village Branch		C/D	1.00	71.6	0.0208	0.0000	0.0000	0.0208	16034PCB	55.00	64.00	75.00	0.02	0.21
URBAN BIORETENTION LEVEL 1	Urban Bioretention #18	N. 18th St	LDA14382	20-0120	0	20-0120D			POTTF_VA	Colonial Village Branch		C/D	1.00	46.1	0.0134	0.0000	0.0000	0.0134	16034PCB	55.00	64.00	75.00	0.02	0.13

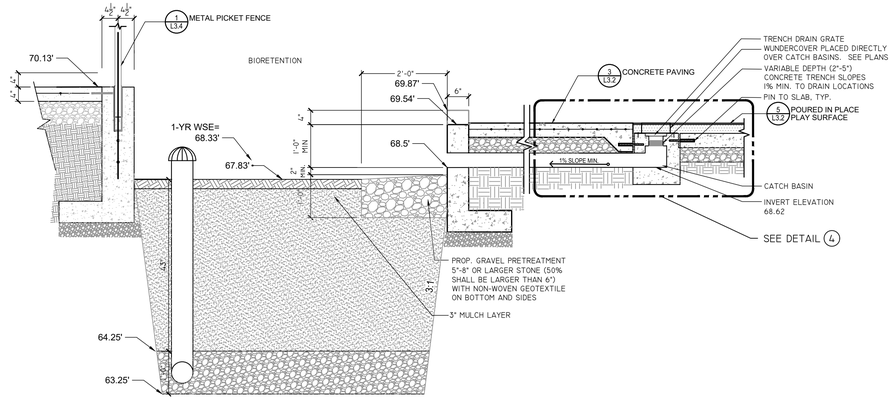


NOTES:
1. TRENCH DRAIN GRATE DOES NOT CONTINUE OVER CATCH BASIN
2. PROVIDE SHOP DRAWINGS FOR REVIEW BY ARCHITECT

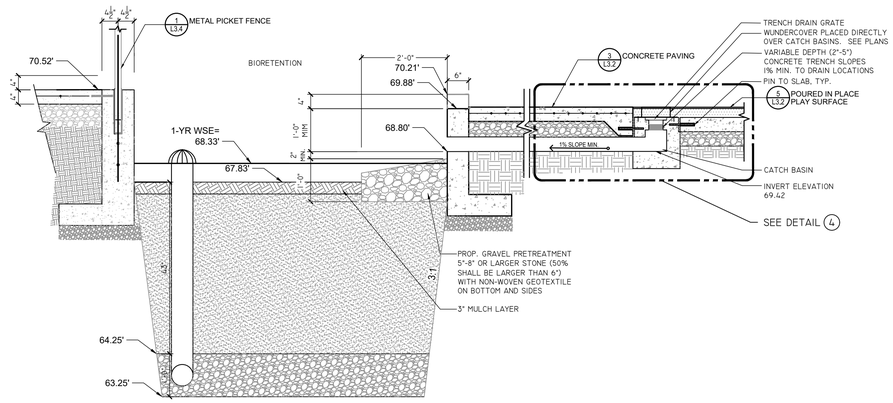
4 TRENCH DRAIN DETAIL
1" = 1'-0"



1 TRENCH DRAIN CONNECTION #1
TYPICAL SECTION
(ALONG UNDERDRAIN)



2 TRENCH DRAIN CONNECTION #2
TYPICAL SECTION
(ALONG UNDERDRAIN)



3 TRENCH DRAIN CONNECTION #3
TYPICAL SECTION
(ALONG UNDERDRAIN)

ARLINGTON VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

BMP COMPUTATIONS

Approval	Date
LUKE VANBELLEGHEM	4.15.2020
Design Supervisor	

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: FA
Drawn: EF
Checked: KMM

Filename:

Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: APRIL 15, 2020

Seal

COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.12

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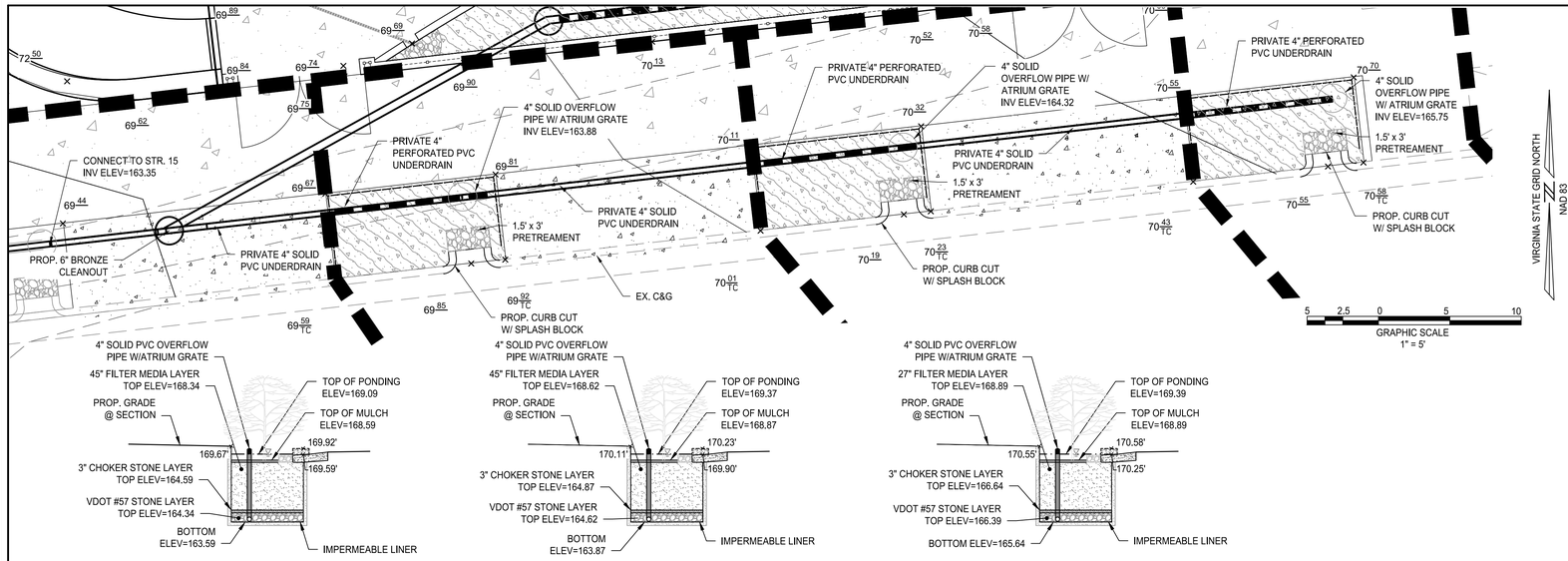
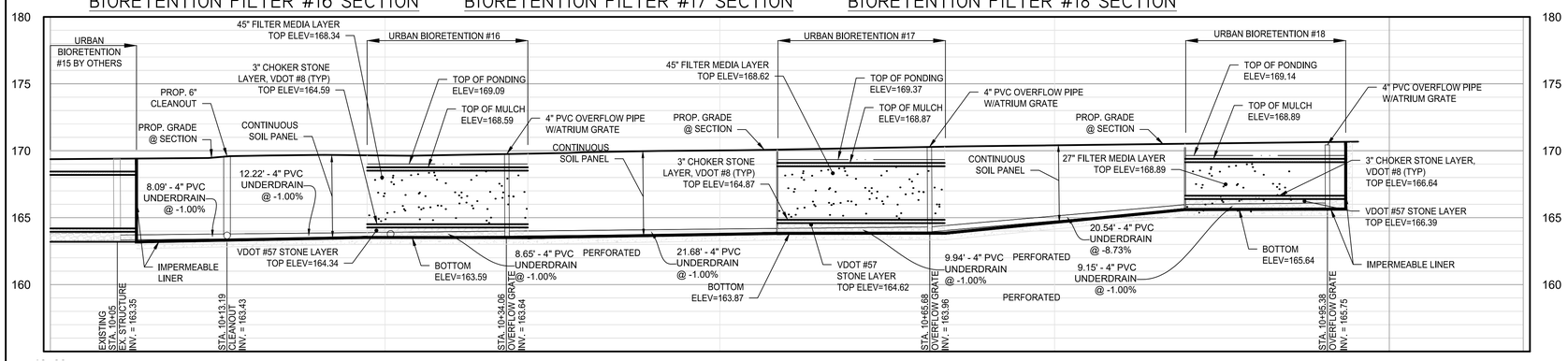
Filename: C-1.11 BMP COMPS.dwg



BIORETENTION FILTER #16 SECTION

BIORETENTION FILTER #17 SECTION

BIORETENTION FILTER #18 SECTION



Pre-Construction Meeting

- ☐ Pre-construction meeting with the contractor designated to install the bioretention practice has been conducted.
- ☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.
- ☐ Subsurface investigation and soils report supports the placement of an bioretention practice in the proposed location.
- ☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.
- ☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.
- ☐ Area of bioretention practice has not been impacted during construction.
- ☐ Stormwater has been diverted around the area of the bioretention practice and perimeter erosion control measures to protect the facility during construction have been installed. .

Excavation

- ☐ Compare the bioretention surface and invert design elevations with the actual constructed elevations of the inflow and outlet inverts and adjust design elevations as needed.
- ☐ Area of bioretention excavation is marked and the size and location conforms to plan.
- ☐ If the excavation area has been used as a sediment trap: verify that the bottom elevation of the proposed stone reservoir is lower than the bottom elevation of the existing trap.
- ☐ For Level 2 bioretention, ensure the bottom of the excavation is scarified prior to placement of stone.
- ☐ Subgrade surface is free of rocks and roots, and large voids. Any voids should be refilled with the base aggregate to create a level surface for the placement of aggregates and underdrain (if required).
- ☐ No groundwater seepage or standing water is present. Any standing water is dewatered to an acceptable dewatering device.
- ☐ Excavation of the bioretention practice has achieved proper grades and the required geometry and elevations without compacting the bottom of the excavation.
- ☐ **Certification of Excavation Inspection**: Inspector certifies the successful completion of the excavation steps listed above.

Filter Layer, Underdrain, and Stone Reservoir Placement

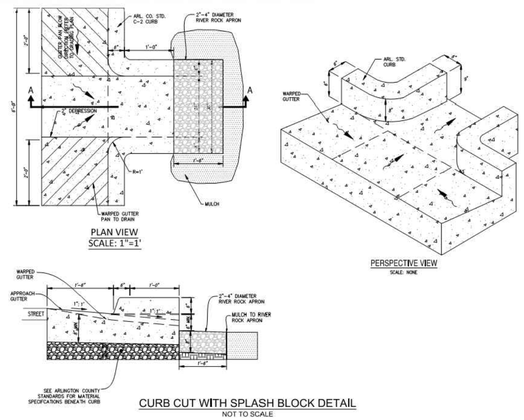
- ☐ All aggregates, including, as required, the filter layer (choker stone & sand), the stone reservoir layer or infiltration sump conform to specifications as certified by quarry.
- ☐ Underdrain size and perforations meet the specifications.
- ☐ For Level 2 installations: placement of filter layer and initial lift of stone reservoir layer aggregates with underdrain or infiltration sump, spread (not dumped) to avoid aggregate segregation; or
- ☐ Impermeable liner, when required, meets project specifications and is placed in accordance with manufacturers specifications.
- ☐ Sides of excavation covered with geotextile, when required, prior to placing stone reservoir aggregate; no tears or holes, or excessive wrinkles are present.
- ☐ Placement of underdrain, observation wells, and underdrain fittings (45 degree wyes, cap at the upstream end, etc.) are in accordance with the approved plans.
- ☐ Elevations of underdrain and outlet structure are in accordance with approved plans, or as adjusted to meet field conditions.
- ☐ Placement of remaining lift of stone reservoir layer as needed to achieve the required reservoir depth.
- ☐ **Certification of Filter Layer and Underdrain Placement Inspection:** Inspector certifies the successful completion of the filter layer and underdrain placement steps listed above.

Bioretention Soil Media Placement

- ☐ Soil media is certified by supplier or contractor as meeting the project specifications.
- ☐ Soil media is placed in 12-inch lifts to the design top elevation of the bioretention area. Elevation has been verified after settlement (2 to 4 days after initial placement).
- ☐ Side slopes of ponding area are feathered back at the required slope (no steeper than 3H:1V).
- ☐ **Certification of Soil Media Placement Inspection:** Inspector certifies the successful completion of the soil media steps listed above.

Pretreatment and Plant Installation

- ☐ Placement of energy dissipators and pretreatment practices (forebays, gravel diaphragms, etc.) are installed in accordance with the approved plans.
- ☐ Riser, overflow weir, or other outflow structure is set to the proper elevation and functional; or.
- ☐ External bypass structure is built in accordance with the approved plans.
- ☐ Appropriate number and spacing of plants are installed in accordance with the approved plans.
- ☐ All erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.



CURB CUT WITH SPLASH BLOCK DETAIL
NOT TO SCALE

July 2014 (Revised April 2015). Sizing spreadsheet for SW planters for compliance with Arlington County Stormwater Managment Ordinance
Enter data into highlighted cells. WQV needs to > 100% for credit.

Facility name/type	Impervious Area to Facility	Pervious Area to Facility	Total Drainage Area	Total Drainage Area	Rainfall Depth (P)	Rv	Target storage (WQv)	Width	Length	Ponding depth	Filter depth	Gravel depth	Surface Area	Ponding Volume (1.00 void)	Soil Storage Volume (0.25 void)	Gravel Storage Volume (0.4 void)	Available Storage	% Water Quality Volume Captured
	(SF)	(SF)	(SF)	(acre)	(in)		(CF)	(ft)	(ft)	(in)	(in)	(in)	(SF)	(CF)	(CF)	(CF)	(CF)	Must be ≥ 100% (Max. 200%)
Stormwater Planter Box #16	918	72	990	0.0227	1.00	0.90	74.00	12.00	6.00	6	45	12	72.00	36.00	67.50	28.80	**132.30**	**178.8%**
Stormwater Planter Box #17	904	75	979	0.0225	1.00	0.89	72.94	12.00	6.00	6	45	12	72.00	36.00	67.50	28.80	**132.30**	**181.4%**
Stormwater Planter Box #18	582	75	657	0.0151	1.00	0.87	47.45	12.00	6.00	3	27	12	72.00	18.00	40.50	28.80	**87.30**	**184.0%**

URBAN BIORTENTION SPECIFICATIONS & MAINTENANCE

Material Specifications. Below is the table of material specifications for stormwater planter boxes.

Planter Box Material Specifications

Material	Specification	Notes
Waterproofing	Watertight shell or impermeable liner	Use a thirty mil (minimum) PVC Geomembrane liner or equivalent.
Filter Media Composition	Filter Media to contain: • 80%-90% sand with >75% being coarse to very coarse • 10%-20% soil fines • 3%-5% organic matter in the form of plant based compost meeting Clearinghouse Design Specification #4, Section 6.5	The volume of filter media based on 110% of the plan volume, to account for settling or compaction.
Filter Media Testing	Plant available P within Low+ (L+) to Medium (M) per DCR 2014 Nutrient Management Criteria (18-40 mg/kg P for the Mehlich III procedure) and CEC >5	The media must be procured from approved filter media vendors.
Mulch Layer	Use aged, shredded hardwood bark mulch	Lay a 2 to 3 inch layer on the surface of the filter bed.
Choking Layer	3 inch layer of pea gravel or VDOT #8 stone which is laid over the underdrain stone.	
Stone Jacket for Underdrain and/or Storage Layer	1 inch stone should be double-washed and clean and free of all fines (e.g., VDOT #57 stone).	12 inches for the underdrain
Underdrains and Overflows	Use 4 inch rigid schedule 40 PVC pipe with 3/8-inch perforations at 6 inches on center, maximum of 3 rows of perforations; position each underdrain on a 1% or 2% slope.	Lay the perforated pipe under the length of the planter box, and install non-perforated pipe as needed to connect with the storm drain system. Install T's and Y's as needed, depending on the underdrain configuration. Extend overflow pipes to the surface with vented caps.
Plant Materials	1 quart-sized perennial installed per 1-2 sf and/or 1 3-gallon shrub installed per 7.5 sf over entire ponding area from DEQ Specification 9: Table 9.5	Choose either herbaceous and/or shrubs

Planter Box Maintenance Schedule

Maintenance	Frequency
• Spot weeding, erosion repair, trash removal, and mulch raking	Twice during growing season
• Add reinforcement planting to maintain the desired vegetation density • Remove invasive plants using recommended control methods • Stabilize the contributing drainage area to prevent erosion	As needed
• Spring inspection and cleanup • Supplement mulch to maintain a 2-3 inch layer • Prune trees and shrubs • Examine for the ponding depth and adjust accordingly • Inspect inflows and overflow for erosion • Inspect for structural deficiencies and repair	Annually
• Remove sediment in pre-treatment cells and inflow points	Once every 2 to 3 years
• Replace the mulch layer	Every 3 years
• Inspected and certified by a professional licensed in the State of Virginia	Once every 5 years

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

BMP COMPUTATIONS

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	4.15.2020

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: FA
Drawn: EF
Checked: KMM

Filename:
Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: APRIL 15, 2020

Seal

COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.13

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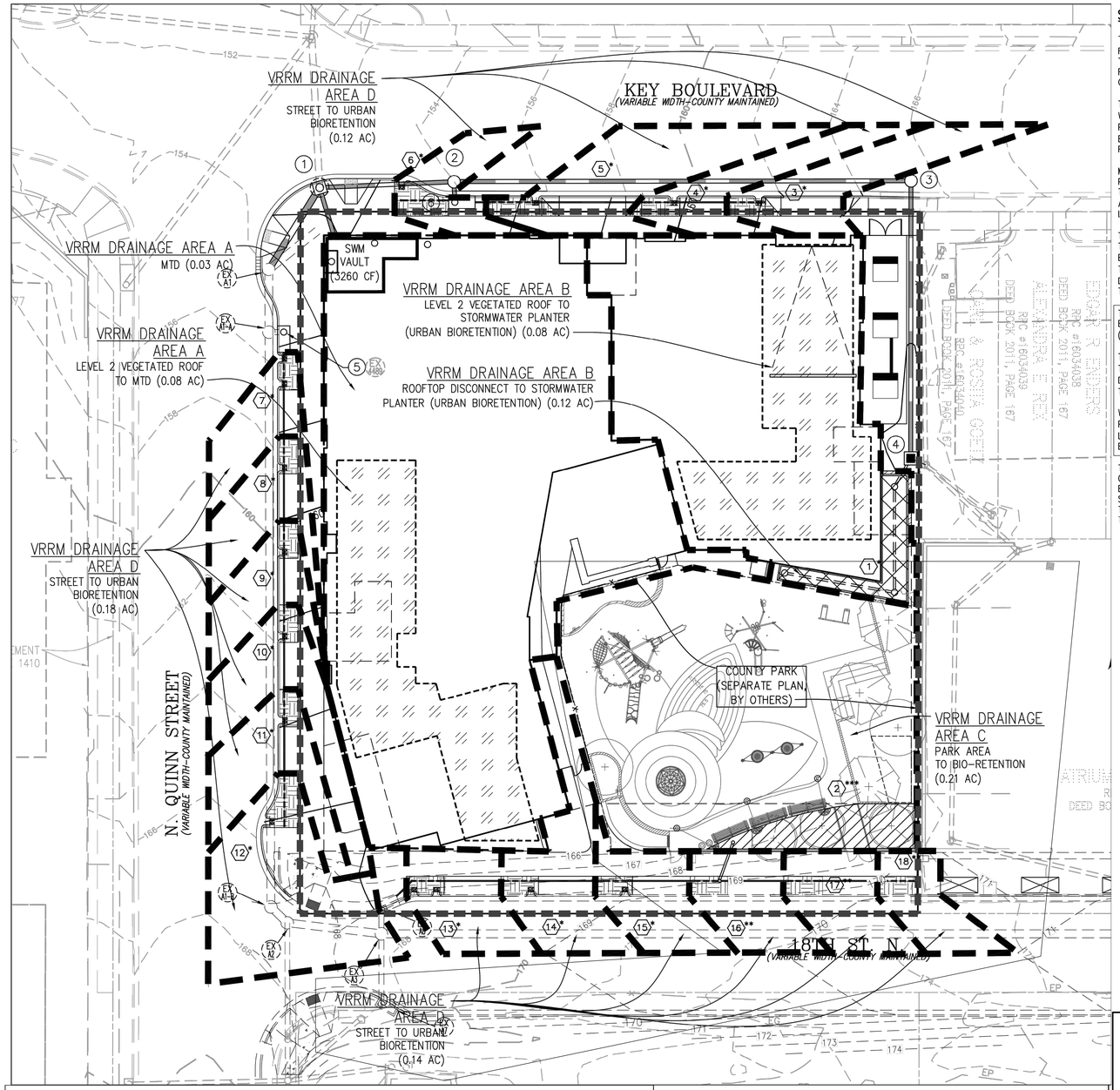
CAPTURE AREA AND BMP MAP



SWM/BMP NARRATIVE:

THE 44,727 SQ. FT (1.03 ACRE) SITE IS LOCATED AT 1801 N. QUINN ST. THE PROJECT PROPOSES REDEVELOPMENT OF THE EXISTING QUEEN'S COURT APARTMENTS, LOCATED AT 1801 N. QUINN ST. IN THE WESTERN ROSSLYN COORDINATED REDEVELOPMENT DISTRICT. THE TOTAL LAND DISTURBED AREA FOR THIS PROJECT IS APPROXIMATELY 1.38 ACRES THIS AREA INCLUDES THE WORK WITHIN THE RIGHT OF WAY.

THE PROPOSED DRAINAGE AREA 'A', CONTAINS A PORTION OF THE ROOFTOP AREA, STORMWATER RUNOFF WITHIN THIS DRAINAGE AREA WILL BE ROUTED THROUGH A STORMWATER MANAGEMENT/BEST MANAGEMENT PRACTICE (SWM/BMP) VAULT, LOCATED WITHIN THE UNDERGROUND PARKING GARAGE. A NON-PROPRIETARY BMP PRACTICE IS PROPOSED IN DRAINAGE AREA 'A' TO REDUCE RUNOFF TO THE PROPOSED SWM/BMP FACILITY. APPROXIMATELY 0.08 ACRES OF ROOF AREA IS GREEN ROOF.

MANUFACTURED TREATMENT DEVICE(MTD) WITH A 50% ACCEPTED PHOSPHORUS REMOVAL RATE WILL BE PLACED WITHIN THE GARAGE TO TREAT THE REQUIRED WATER QUALITY VOLUME THAT WAS COMPUTED USING THE VIRGINIA RUNOFF REDUCTION SPREADSHEET. 0.0809 AC OF THE REMAINING ROOFTOP RUNOFF AS WELL AS TREATMENT TRAINS FROM THE GREEN ROOF IN DRAINAGE AREA 'A' WILL BE TREATED BY THIS MTD LOCATED IN THE NORTHWEST CORNER OF THE PARKING GARAGE.

THE PROPOSED DRAINAGE AREA 'B' CONTAINS PART OF THE PROPOSED BUILDING. STORMWATER RUNOFF WITH THIS DRAINAGE AREA WILL BE ROUTED THROUGH A BIORETENTION, LOCATED EAST OF THE PROPOSED BUILDING. A NON-PROPRIETARY BMP PRACTICE IS PROPOSED IN DRAINAGE AREA 'B' TO REDUCE RUNOFF TO THE PROPOSED SWM/BMP FACILITY. APPROXIMATELY 0.08 ACRES OF ROOF AREA IS GREEN ROOF THAT WILL DRAIN INTO THE PROPOSED STORMWATER PLANTERS(BIORETENTION) LOCATED AT THE SOUTHEAST CORNER OF THE BUILDING.

THE PROPOSED DRAINAGE AREA 'C' CONTAINS THE PARK AREA AND WILL BE TREATED BY TWO LEVEL 1 BIORETENTION AREAS. APPROXIMATELY 0.21 ACRES OF THE PARK AREA WILL DRAIN INTO A BIORETENTION (LEVEL 1) PROVIDED BY OTHERS.

THE PROPOSED DRAINAGE AREA 'D' CONTAINS THE ROW AND SIDEWALK AREA AND WILL BE TREATED BY THIRTEEN(13) LEVEL 1 URBAN BIORETENTION AREAS. APPROXIMATELY 0.44 ACRES OF THE STREET WILL DRAIN INTO THIRTEEN(13) URBAN BIORETENTIONS (LEVEL 1) CONSISTING OF 0.04 AC SURFACE AREA AND THREE (3) URBAN BIORETENTIONS (LEVEL 1) CONSISTING OF 0.04 AC SURFACE AREA.

WATER QUALITY TREATMENT WILL BE PROVIDED IN MANY FORMS FOR THE SUBJECT SITE. THE TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED IS 1.1840 (LB/YEAR) PER THE VRRM SPREADSHEET COMPUTATIONS LOCATED ON SHEET C17.05. 1.1967 LB/YEAR REMOVAL WAS ACHIEVED. THEREFORE WATER QUALITY HAS BEEN MET.

THE SWM/BMP FACILITY TREATING DRAINAGE AREA 'A' HAS BEEN SIZED TO PROVIDE A TOTAL OF 3,260 CUBIC FEET OF STORAGE, EXCEEDING THE 3,158 CUBIC FOOT REQUIREMENT SET FORTH BY THE ENERGY BALANCE EQUATION, FOUND ON SHEET C17.10. FLOW WILL BE DETAINED BEHIND AN INTERNAL CONTROL STRUCTURE BEFORE BEING RELEASED INTO THE EXISTING STORM NETWORK ALONG N QUINN STREET. IT IS THE OPINION OF THE SUBMITTING ENGINEER THAT THE PROPOSED DESIGN WILL HAVE NO ADVERSE IMPACTS TO ADJACENT PROPERTIES.

NOTE:

ARLINGTON COUNTY DOES NOT REVIEW THE WATERPROOFING DESIGN AND THE OWNER/DEVELOPER AGREES TO HOLD ARLINGTON COUNTY HARMLESS IN THE EVENT OF FAILURE.

* INSTALLED AND MAINTAINED BY APAH
** INSTALLED BY DPR AND MAINTAINED BY APAH
*** INSTALLED AND MAINTAINED BY DPR

LEGEND

- BIORETENTION (LEVEL 1) SEPARATE PLAN AND DESIGN BY OTHERS
- GREEN ROOF (LEVEL 2)
- URBAN BIORETENTION
- BMP DRAINAGE AREA
- LAND DISTURBING AREA
- ROOFTOP DISCONNECTION TO STORMWATER PLANTER
- (1) BIORETENTION NUMBER - SEE SIZING SHEET ON C17.05

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY

Matthew K. Koirtyohann
Digitally signed by Matthew K. Koirtyohann
Date: 2019.02.28 14:07:05 -05'00'

Bowman CONSULTING
Bowman Consulting Group, Ltd.
14020 Thunderbolt Place, Suite 300
Chantilly, Virginia 20151
Phone: (703) 464-1000
Fax: (703) 481-9720
www.bowmanconsulting.com

COMMONWEALTH OF VIRGINIA
MATTHEW K. KOIRTYOHANN
Lic. No. 039021
PROFESSIONAL ENGINEER
4/15/2020

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

STORMWATER MANAGEMENT PLAN
QUEENS COURT
CIVIL ENGINEERING PLAN
SITE PLAN #444
1615 18TH STREET NORTH
ARLINGTON, VIRGINIA 22209
ARLINGTON COUNTY, VIRGINIA

SCALE: 1"=25' | SHEET C17.00

ARLINGTON VIRGINIA — DEPARTMENT OF ENVIRONMENTAL SERVICES
DENNIS M. LEACH
DEPUTY DIRECTOR, DES - TRANSPORTATION & DEVELOPMENT
3/18/2019
APPROVAL DATE

ARLINGTON VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

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LUKE VANBELLEGHEM, Design Supervisor	4.15.2020

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Seal

COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.14
12 of 16

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Filename: C-1.11 BMP COMPS.dwg

VIRGINIA RUNOFF REDUCTION METHOD COMPUTATIONS

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

BMP Design Specifications List: **2013 Draft Stds & Specs**

Update Summary Sheet | Print Preview | Print

Site Summary

Total Rainfall (in):	43
Total Disturbed Acreage:	1.3764

Site Land Cover Summary

Pre-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Managed Turf (acres)	0.0000	0.0000	0.0000	0.6264	0.6264	61.0051
Impervious Cover (acres)	0.0000	0.0000	0.0000	0.4004	0.4004	38.9949
					1.0268	100.0000

Post-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	% of Total	
Forest/Open (acres)	0.0000	0.0000	0.0000	0.0160	0.0160	1.5582	*
Managed Turf (acres)	0.0000	0.0000	0.0000	0.0343	0.0343	3.3405	
Impervious Cover (acres)	0.0000	0.0000	0.0000	0.9765	0.9765	95.1013	
* Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method					1.0268	100.0000	

Site Tv and Land Cover Nutrient Loads

	Final Post-Development (Post-ReDevelopment & New Impervious)	Post-ReDevelopment	Post-Development (New Impervious)	Adjusted Pre-ReDevelopment
Site Rv	0.9126	0.8648	0.9500	0.8719
Treatment Volume (ft^3)	3,401.4915	1,414.8107	1,986.6809	1,426.4267
TP Load (lb/yr)	2.1371	0.8889	1.2482	0.8962

Pre-ReDevelopment TP Load per acre (lb/acre/yr)	Final Post-Development TP Load per acre (lb/acre/yr)	Post-ReDevelopment TP Load per acre (lb/acre/yr)
1.9900	2.0800	1.9700

Total TP Load Reduction Required (lb/yr)	1.1840	0.1719	1.0120

	Final Post-Development Load (Post-ReDevelopment & New Impervious)	Pre-ReDevelopment
TN Load (lb/yr)	15.2888	8.7613

Site Compliance Summary

Maximum % Reduction Required Below Pre-ReDevelopment Load	20%

Total Runoff Volume Reduction (ft^3)	1,390.4004
Total TP Load Reduction Achieved (lb/yr)	1.1967
Total TN Load Reduction Achieved (lb/yr)	9.0983
Remaining Post Development TP Load (lb/yr)	0.9405
Remaining TP Load Reduction (lb/yr) Required	0.0000

** TARGET TP REDUCTION EXCEEDED BY 0.0127 LB/YEAR **

VIRGINIA RUNOFF REDUCTION METHOD DRAINAGE AREA A COMPUTATIONS

Drainage Area A Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest/Open (acres)	0.0000	0.0000	0.0000	0.0000	0.0000	0
Managed Turf (acres)	0.0000	0.0000	0.0000	0.0000	0.0000	0
Impervious Cover (acres)	0.0000	0.0000	0.0000	0.1079	0.1079	100
					0.1079	

BMP Selections

Practice	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	BMP Treatment Volume (ft^3)	TP Load from Upstream Practices (lbs)	Untreated TP Load to Practice (lbs)	TP Removed (lb/yr)	TP Remaining (lb/yr)	Downstream Treatment to be Employed
1.b. Vegetated Roof #2 (Spec #5)		0.0809	278.9837		0.1751	0.1051	0.0700	14.a. MTD - Hydrodynamic
14.a. Manufactured Treatment Device-Hydrodynamic		0.0090	142.6300	0.0700	0.0195	0.0448	0.0448	

Total Impervious Cover Treated (acres)	0.0899
Total Turf Area Treated (acres)	0.0000
Total TP Load Reduction Achieved in D.A. (lb/yr)	0.1498
Total TN Load Reduction Achieved in D.A. (lb/yr)	0.7515

VIRGINIA RUNOFF REDUCTION METHOD DRAINAGE AREA B COMPUTATIONS

Drainage Area B Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest/Open (acres)	0.0000	0.0000	0.0000	0.0000	0.0000	0
Managed Turf (acres)	0.0000	0.0000	0.0000	0.0000	0.0000	0
Impervious Cover (acres)	0.0000	0.0000	0.0000	0.2003	0.2003	100
					0.2003	

BMP Selections

Practice	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	BMP Treatment Volume (ft^3)	TP Load from Upstream Practices (lbs)	Untreated TP Load to Practice (lbs)	TP Removed (lb/yr)	TP Remaining (lb/yr)	Downstream Treatment to be Employed
1.b. Vegetated Roof #2 (Spec #5)		0.0787	271.3970		0.1703	0.1022	0.0681	6.a. Bioretention #1
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)		0.1216	527.8964	0.0681	0.2632	0.1822	0.1491	14.a. MTD - Hydrodynamic
14.a. Manufactured Treatment Device-Hydrodynamic			316.7378	0.1491	0.0000	0.0298	0.1193	

Total Impervious Cover Treated (acres)	0.2003
Total Turf Area Treated (acres)	0.0000
Total TP Load Reduction Achieved in D.A. (lb/yr)	0.3142
Total TN Load Reduction Achieved in D.A. (lb/yr)	2.2479

VIRGINIA RUNOFF REDUCTION METHOD DRAINAGE AREA C COMPUTATIONS

Drainage Area C Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest/Open (acres)	0.0000	0.0000	0.0000	0.0160	0.0160	7
Managed Turf (acres)	0.0000	0.0000	0.0000	0.0000	0.0000	0
Impervious Cover (acres)	0.0000	0.0000	0.0000	0.1982	0.1982	93
					0.2142	

BMP Selections

Practice	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	BMP Treatment Volume (ft^3)	TP Load from Upstream Practices (lbs)	Untreated TP Load to Practice (lbs)	TP Removed (lb/yr)	TP Remaining (lb/yr)	Downstream Treatment to be Employed
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)	0.0000	0.1982	683.4927	0.0000	0.4290	0.2359	0.1930	

Total Impervious Cover Treated (acres)	0.1982
Total Turf Area Treated (acres)	0.0000
Total TP Load Reduction Achieved in D.A. (lb/yr)	0.2359
Total TN Load Reduction Achieved in D.A. (lb/yr)	1.9639

VIRGINIA RUNOFF REDUCTION METHOD DRAINAGE AREA D COMPUTATIONS

Drainage Area D Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest/Open (acres)	0.0000	0.0000	0.0000	0.0000	0.0000	0
Managed Turf (acres)	0.0000	0.0000	0.0000	0.0319	0.0319	7
Impervious Cover (acres)	0.0000	0.0000	0.0000	0.4089	0.4089	93
					0.4408	

BMP Selections

Practice	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	BMP Treatment Volume (ft^3)	TP Load from Upstream Practices (lbs)	Untreated TP Load to Practice (lbs)	TP Removed (lb/yr)	TP Remaining (lb/yr)	Downstream Treatment to be Employed
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)	0.0319	0.4089	1,439.0409	0.0000	0.9031	0.4967	0.4064	

Total Impervious Cover Treated (acres)	0.4089
Total Turf Area Treated (acres)	0.0319
Total TP Load Reduction Achieved in D.A. (lb/yr)	0.4967
Total TN Load Reduction Achieved in D.A. (lb/yr)	4.1349

STRUCTURAL BMP POLICY COMPLIANCE:

THE TREATMENT TRAINS IN THIS PLAN WERE DESIGNED IN ACCORDANCE WITH THE ARLINGTON COUNTY MEMO "USE OF STRUCTURAL STORMWATER TREATMENT SYSTEMS", DATED MARCH 30, 2018. SEE MANUFACTURED TREATMENT DEVICE DRAINAGE AREA COMPUTATIONS BELOW:

MTD (FILTERING):

TOTAL TP REMOVED WITH BOTH RR AND NON-RR SWMF: 0.1499 LB/YR
(100% ROOF AREA, 0% VEHICULAR USE)
TOTAL ROOF TP TREATED BY RR SWMF: 0.1051 LB/YR
PERCENTAGE OF TP TREATED PRIOR TO MTD: 0.1051/0.1499 = 70% = ACCEPTABLE

RUNOFF VOLUME AND CN CALCULATIONS

Runoff Volume and CN Calculations

	1-year storm	2-year storm	10-year storm
Target Rainfall Event (in)	2.69	3.10	4.84

Drainage Areas	RV & CN	Drainage Area A	Drainage Area B	Drainage Area C	Drainage Area D	Drainage Area E
CN		98	98	96	97	0
RR (ft^3)		167.3902	373.9967	273.3971	575.6164	0.0000
1-year return period	RV wo RR (ws-in)	2.4597	2.4597	2.2474	2.3514	0.0000
	RV w RR (ws-in)	2.0323	1.9453	1.8958	1.9917	0.0000
	CN adjusted	94	93	92	93	0
2-year return period	RV wo RR (ws-in)	2.8679	2.8679	2.6506	2.7574	0.0000
	RV w RR (ws-in)	2.4405	2.3535	2.2990	2.3977	0.0000
	CN adjusted	94	93	92	93	0
10-year return period	RV wo RR (ws-in)	4.6034	4.6034	4.3736	4.4877	0.0000
	RV w RR (ws-in)	4.1761	4.0891	4.0219	4.1279	0.0000
	CN adjusted	94	93	93	94	0

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY

Matthew K. Koirtyohann
Digitally signed by Matthew K. Koirtyohann
Date: 2019.02.28 14:07:44 -05'00'

Bowman CONSULTING
Bowman Consulting Group, Ltd.
14020 Thunderbolt Place, Suite 300
Chantilly, Virginia 20151
Bowman Consulting Group, Ltd.
Phone: (703) 464-1000
Fax: (703) 481-9720
www.bowmanconsulting.com

COMMONWEALTH OF VIRGINIA
MATTHEW K. KOIRTYOHANN
Lic. No. 039021
PROFESSIONAL ENGINEER
02/28/2019

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

WATER QUALITY COMPUTATIONS
QUEENS COURT
CIVIL ENGINEERING PLAN
SITE PLAN #444
1615 18TH STREET NORTH
ARLINGTON, VIRGINIA 22209
ARLINGTON COUNTY, VIRGINIA

SCALE: 1"=25' | SHEET C17.05

ARLINGTON VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

DENNIS M. LEACH
DEPUTY DIRECTOR, DES - TRANSPORTATION & DEVELOPMENT

3/18/2019
APPROVAL DATE

ARLINGTON VIRGINIA

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Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

BMP COMPUTATIONS

Approval	Date
LUKE VANBELLEGHEM	4.15.2020
Design Supervisor	

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: FA
Drawn: EF
Checked: KMM

Filename:
Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: APRIL 15, 2020

Seal

COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.15

13 of 16

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Filename: C-1.11 BMP COMPS.dwg

STORMWATER MANAGEMENT FACILITY INFORMATION

Stormwater Management Facility Information- Revised6/3/2016

Facility Type**	Description	Location	LDA Permit #	Project SWM #	Building Permit #	Facility ID	BMP downstream of another BMP (in Series)?	Upstream (Primary) BMP	Watershed	Sub-basin	HUC6	Soils	Runoff Treated (in)	Volume Treated (ft^3)	Treated Area (acres)	Forest Area (acres)	Turf Area (acres)	Impervious Area (acres)	RPC	Phosphorus Efficiency (%)	Nitrogen Efficiency (%)	Sediment Efficiency (%)	TP load removed (lbs)	TN load removed (lbs)
BIORETENTION #1	Urban Bioretention #1	East of the building		18-0016		18-0016A	Yes	18-0016D	POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	527.9	0.0000	0.0000	0.0000	0.1216	16034017	55	64	75	0.18	1.52
BIORETENTION #1	Bioretention #2	South of the park		18-0016	0	18-0016B			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	646.5	0.1959	0.0000	0.0178	0.1781	16034017	55	64	75	0.22	1.86
VEGETATED ROOF #1	Vegetated Roof #1	West vegetated rooftop		18-0016	0	18-0016C	No		POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	279.0	0.0809	0.0000	0.0000	0.0809	16034017	45	45	75	0.11	0.75
VEGETATED ROOF #1	Vegetated Roof #2	East vegetated rooftop		18-0016	0	18-0016D			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	271.4	0.0787	0.0000	0.0000	0.0787	16034017	45	45	75	0.10	0.73
UNDERGROUND	Vault	Vault		18-0016	0	18-0016E	Yes	18-0016C	POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	0.00	0.0	0.0000	0.0000	0.0000	0.0000	16034017	0	0	0	0.00	0.00
MANUFACTURED BMP	Jellyfish or approved Equal	MTD		18-0016	0	18-0016F	Yes	18-0016C	POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	204.7	0.0000	0.0000	0.0000	0.0809	16034017	0	0	0	0.00	0.00
BIORETENTION #1	Urban Bioretention #3	Eastern Key Boulevard Urban Bioretention		18-0016	0	18-0016G			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	96.3	0.0295	0.0000	0.0020	0.0275	16034017	55	64	75	0.03	0.00
BIORETENTION #1	Urban Bioretention #4	2nd from the east end of Key Boulevard Urban Bioretentions		18-0016	0	18-0016H			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	73.2	0.0228	0.0000	0.0020	0.0208	16034017	55	64	75	0.03	0.00
BIORETENTION #1	Urban Bioretention #5	2nd from the west end of Key Boulevard Urban Bioretentions		18-0016	0	18-0016I			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	144.8	0.0442	0.0000	0.0028	0.0413	16034017	55	64	75	0.05	0.00
BIORETENTION #1	Urban Bioretention #6	Western Key Boulevard Urban Bioretention		18-0016	0	18-0016J			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	63.5	0.0211	0.0000	0.0034	0.0176	16034017	55	64	75	0.02	0.00
BIORETENTION #1	Urban Bioretention #7	Northern N. Quinn Street Bioretention		18-0016	0	18-0016K			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	59.8	0.0186	0.0000	0.0017	0.0169	16034017	55	64	75	0.02	0.00
BIORETENTION #1	Urban Bioretention #8	2nd from the north end of Quinn Street Urban Bioretentions		18-0016	0	18-0016L			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	71.9	0.0221	0.0000	0.0017	0.0205	16034017	55	64	75	0.03	0.00
BIORETENTION #1	Urban Bioretention #9	3rd from the north end of Quinn Street Urban Bioretentions		18-0016	0	18-0016M			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	64.3	0.0199	0.0000	0.0017	0.0183	16034017	55	64	75	0.02	0.00
BIORETENTION #1	Urban Bioretention #10	3rd from the south end of Quinn Street Urban Bioretentions		18-0016	0	18-0016N			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	88.4	0.0269	0.0000	0.0017	0.0253	16034017	55	64	75	0.03	0.00
BIORETENTION #1	Urban Bioretention #11	2nd from the south end of Quinn Street Urban Bioretentions		18-0016	0	18-0016O			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	88.4	0.0269	0.0000	0.0017	0.0253	16034017	55	64	75	0.03	0.00
BIORETENTION #1	Urban Bioretention #12	Southern N. Quinn Street Urban Bioretention		18-0016	0	18-0016P			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	193.2	0.0595	0.0000	0.0045	0.0550	16034017	55	64	75	0.07	0.00
BIORETENTION #1	Urban Bioretention #13	Western 18th Street Urban Bioretention		18-0016	0	18-0016Q			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	77.3	0.0237	0.0000	0.0017	0.0220	16034017	55	64	75	0.03	0.00
BIORETENTION #1	Urban Bioretention #14	2nd from the west end of 18th Street Urban Bioretentions		18-0016	0	18-0016R			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	90.8	0.0276	0.0000	0.0017	0.0259	16034017	55	64	75	0.03	0.00
BIORETENTION #1	Urban Bioretention #15	3rd from the west end of 18th Street Urban Bioretentions		18-0016		18-0016S			POTTF_VA	COLONIAL VILLAGE BRANCH	PL24	C/D	1.00	75.5	0.0232	0.0000	0.0017	0.0215	16034017	55	64	75	0.03	0.00

SITE INFORMATION

Site Information - Revised 6/3/2016

Project SWM #	LDA Permit #	Disturbed Area (acres)	% Pre-Impervious	% Post-Impervious	Pre-Development TP load (lb/yr)	Post-Development TP load (lb/yr)	TP load reduction achieved (lb/yr)	Pre-Development TN load (lb/yr)	Post-Development TN load (lb/yr)	TN load reduction achieved (lb/yr)	Total Site Area (acres)	Pre-Forest Area (acres)	Pre-Turf Area (acres)	Pre-Impervious Area (acres)	Post-Forest Area (acres)	Post-Turf Area (acres)	Post-Impervious Area (acres)	Site Latitude (Decimal Degrees)	Site Longitude (Decimal Degrees)	Anticipated Start Date
18-0016		1.3764	39.0	95.1	1.22	2.14	1.20	8.76	15.29	9.10	1.0268	0.0000	0.6264	0.4004	0.0160	0.0343	0.9765	38.895734	-77.078044	1/1/2019

URBAN BIORETENTION SIZING

July 2014 (Revised April 2015). Sizing spreadsheet for SW planters for compliance with Arlington County Stormwater Managment Ordinance
Enter data into highlighted cells. WQV needs to > 100% for credit.

Facility name/type	Impervious Area to Facility (SF)	Pervious Area to Facility (SF)	Total Drainage Area (SF)	Total Drainage Area (acre)	Rainfall Depth (P) (in)	Rv	Target storage (WQv) (CF)	Width (ft)	Length (ft)	Ponding depth (in)	Filter depth (in)	Gravel depth (in)	Surface Area (SF)	Ponding Volume (1.00 void) (CF)	Soil Storage Volume (0.25 void) (CF)	Gravel Storage Volume (0.4 void) (CF)	Available Storage (CF)	% Water Quality Volume Captured Must be ≥ 100% (Max. 200%)
Stormwater Planter Box #1	8724	0	8724	0.2003	1.00	0.95	690.65	8.00	67.75	6	18	12	542.00	271.00	203.25	216.80	**691.05**	**100.1%**
Stormwater Planter Box #3	1196	89	1285	0.0295	1.00	0.90	96.32	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**142.0%**
Stormwater Planter Box #4	904	89	993	0.0228	1.00	0.88	73.20	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**186.9%**
Stormwater Planter Box #5	684	152	836	0.0192	1.00	0.82	56.94	6.00	18.00	6	48	12	108.00	54.00	108.00	43.20	**205.20**	**360.4%**
Stormwater Planter Box #7	738	72	810	0.0186	1.00	0.89	59.75	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**229.0%**
Stormwater Planter Box #8	892	72	964	0.0221	1.00	0.90	71.94	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**190.2%**
Stormwater Planter Box #9	795	72	867	0.0199	1.00	0.89	64.26	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**212.9%**
Stormwater Planter Box #10	1320	72	1392	0.0320	1.00	0.91	105.82	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**129.3%**
Stormwater Planter Box #11	1112	72	1184	0.0272	1.00	0.91	89.35	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**153.1%**
Stormwater Planter Box #12	2451	139	2590	0.0595	1.00	0.91	196.59	8.00	17.38	6	48	12	139.04	69.52	139.04	55.62	**264.18**	**134.4%**
Stormwater Planter Box #13	1594	74	1668	0.0383	1.00	0.92	127.55	6.00	12.34	6	48	12	74.04	37.02	74.04	29.62	**140.68**	**110.3%**
Stormwater Planter Box #14	950	72	1022	0.0235	1.00	0.90	76.53	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**178.8%**
Stormwater Planter Box #15	914	72	986	0.0226	1.00	0.90	73.68	6.00	12.00	6	48	12	72.00	36.00	72.00	28.80	**136.80**	**185.7%**

ENERGY BALANCE COMPUTATIONS

SWM Water Quantity Energy Balance Worksheet

SITE AREA (acre) 1.03

	1-year		10-year	
	PRE	POST (adjusted)	PRE	POST (adjusted)
P	2.69	2.69	4.84	4.84
CN	87	93	87	94
S=1000/CN-10	1.49	0.75	1.49	0.64
0.2S	0.30	0.15	0.30	0.13
$RV=(P-0.2S)^2/(P-0.2S)+S$	1.47	1.96	3.42	4.15

QPost Development <= I.F.* (Qpre-development* RVpre-development)/RVDeveloped)

I.F 0.8

CHANNEL PROTECTION			FLOOD CONTROL	
Qpre-development	2.34	From TR55	Qpre-development	5.31
QPost Development	3.03	From TR55	QPost Development	6.1
RVPost Development (with runoff reduction)	1.96	From RRM	RVPost Development (with runoff reduction)	4.15
Qallowable	1.41		Qallowable	4.37
Qallowable/QPost Development	0.46	Fig 11.7 of DEQ Manual	Qallowable/QPost Development	0.72
Vs/Vr	0.29		Vs/Vr	0.20
Vs	0.57		Vs	0.84
Storage required (cf)	2135		Storage required (cf)	3158

$$\frac{V_R}{V_T} = C_0 + C_1\left(\frac{q_R}{q_I}\right) + C_2\left(\frac{q_R}{q_I}\right)^2 + C_3\left(\frac{q_R}{q_I}\right)^3$$

where
V_R/V_T = ratio of storage volume (V_R) to runoff volume (V_T)
q_R/q_I = ratio of peak outflow discharge (q_R) to peak inflow discharge (q_I)
C_0, C_1, C_2, C_3 = coefficients from table F-2

Table F-2 Coefficients for the equation used to generate figures 6-1

Rainfall distribution (appendix B)	C_0	C_1	C_2	C_3
I, IA	0.660	-1.76	1.06	-0.730
II, III	0.682	-1.43	1.64	-0.804

TR-55 COMPUTATION REPORTS

APG

Arlington County, Virginia

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 1-Yr (cfs)	10-Yr (cfs)
SUBAREA3 Pre	2.34	5.31
Post	3.42	6.31
Post 1 YR	3.03	6.01
Post 10 YR	3.14	6.10

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COMMONWEALTH OF VIRGINIA — MATTHEW K. KOIRTYOHANN Lic. No. 039021 — 02/15/2019 — PROFESSIONAL ENGINEER

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

WATER QUANTITY COMPUTATIONS
QUEENS COURT
CIVIL ENGINEERING PLAN
SITE PLAN #444
1615 18TH STREET NORTH
ARLINGTON, VIRGINIA 22209
ARLINGTON COUNTY, VIRGINIA

SCALE: 1"=25' | SHEET C17.10

ARLINGTON VIRGINIA — DEPARTMENT OF ENVIRONMENTAL SERVICES

DENNIS M. LEACH
DEPUTY DIRECTOR, DES - TRANSPORTATION & DEVELOPMENT
3/18/2019
APPROVAL DATE

ARLINGTON VIRGINIA

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ITB#21-DPR-ITB-304

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Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

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LUKE VANBELLEGHEM	4.15.2020
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COMMONWEALTH OF VIRGINIA — KATHRYN M. MCDANIEL Lic. No. 054382 07/15/2020 — PROFESSIONAL ENGINEER

Sheet C1.16

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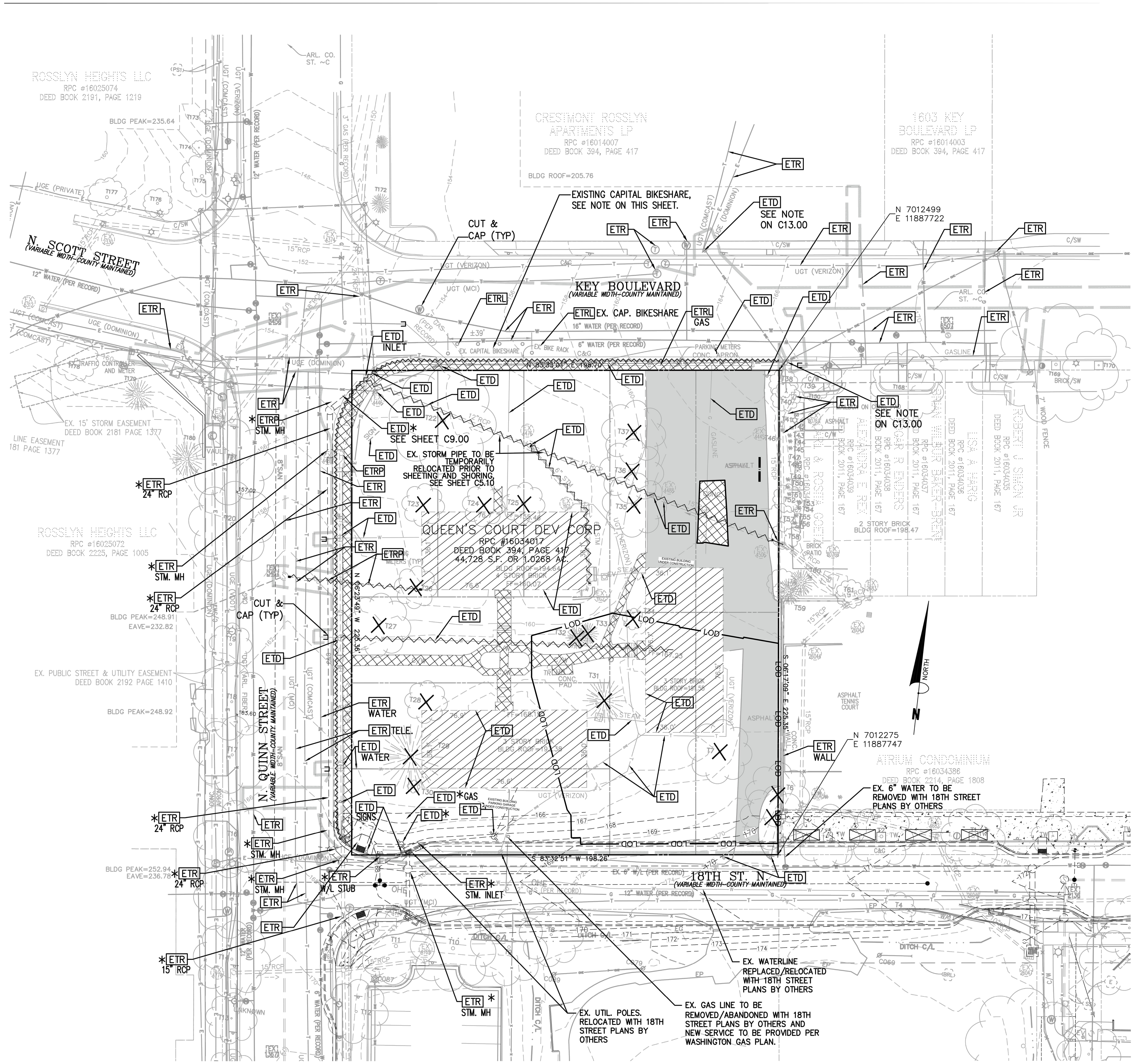
Filename: C-1.11 BMP COMPS.dwg



* DENOTES UTILITY ITEM PROPOSED WITH 18TH STREET ROAD IMPROVEMENTS PLAN (BY OTHERS) *

GRAPHIC SCALE

25 0 12.5 25 50 100

(IN FEET)
1 inch = 25 ft.

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY

MISS UTILITY

CALL "MISS UTILITY" AT 1-800-552-7001, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDER GROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF LOCAL CODES AND REGULATIONS.

CAUTION!!

THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE, THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

NOTE!

CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING OVER AND AROUND EXISTING UTILITY SERVICES WITHIN THE PROJECT LIMITS. EXISTING UTILITY SERVICES TO BE PROTECTED FROM CONSTRUCTION ACTIVITIES AT ALL TIMES.

EXISTING CAPITAL BIKESHARE

TO BE RELOCATED BY CAPITAL BIKESHARE TO A LOCATION REMOTE FROM THE QUEENS COURT PROJECT IN CONSULTATION WITH ARLINGTON COUNTY D.E.S. RELOCATION TO OCCUR BY JUNE, 2018.

HAZARDOUS MATERIALS

ALL HAZARDOUS MATERIALS, INCLUDING ANY DOMESTIC WATER MATERIALS, MUST BE PROPERLY ABATED PRIOR TO DISTURBANCE IN ACCORDANCE WITH ENVIRONMENTAL SITE ASSESSMENTS PHASES I AND II.

DEMOLITION LEGEND:

Symbol	Description
LOD	LIMITS OF CLEARING & GRADING
	DENOTES LIMIT OF EX. CURB/APRON REMOVAL
	SAW CUT PAVEMENT LINE (SEE PAVEMENT PLAN SHEET C11.00
	DENOTES EX. UTILITIES TO BE REMOVED
// // // // // //	DENOTES EX. UTILITIES TO BE ABANDONED
	DENOTES EXISTING BRICK SIDEWALK TO BE REMOVED
	DENOTES EXISTING BUILDING TO BE DEMOLISHED
	DENOTES EXISTING ASPHALT TO BE REMOVED
ETR	EXISTING TO REMAIN
ETD	EXISTING TO BE DEMOLISHED/REMOVED
ETA	EXISTING TO BE ABANDONED
ETRL	EXISTING TO BE RELOCATED
ETRP	EXISTING TO BE REPLACED
X	FOR EXISTING TREE TO BE REMOVED/PRESERVED, REFER TO TREE PRESERVATION PLAN ON SHEET T1.00

NOTE: EXISTING WATER METER(S) MAY BE USED DURING CONSTRUCTION WITH PROPER NOTIFICATION. PRIOR TO FINAL ACCEPTANCE, ALL INACTIVE WATER METERS SHALL BE PERMANENTLY DISCONNECTED BY THE CONTRACTOR AT THE WATER MAIN. ARLINGTON COUNTY WILL REMOVE THE EXISTING WATER METER FROM THE METER BOX AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE REMAINING WATER METER BOX.

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Bowman Consulting Group, Ltd.
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Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

DEMOLITION PLAN BY OTHERS

Approval	Date
LUKE VANBELLEGHEM Design Supervisor	4.15.2020

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
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07/15/2020
PROFESSIONAL ENGINEER

Sheet
C1.17

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GEOTECHNICAL ENGINEERING REPORT

Queens Court Apartments at 1801-1805 North Quinn Street, Arlington, Virginia

Schnabel Reference: 15141024 Task 00
January 15, 2016

Schnabel ENGINEERING

stratum is generally very dense to compact (SPT values varied from 63 bpf to 50 blows per 0 inch penetration).

The soil group symbol included on the boring log in **Appendix A** and in the above generalized subsurface stratigraphy represents the Unified Soil Classification System (USCS) group symbols and is based on visual identification of the soil samples collected at the site, per ASTM D2488. It should be noted that there may be a difference between visual classifications and laboratory classification per ASTM D2487. We will retain soil samples for up to 45 days beyond the issuance of this report, unless you request other disposition.

Groundwater

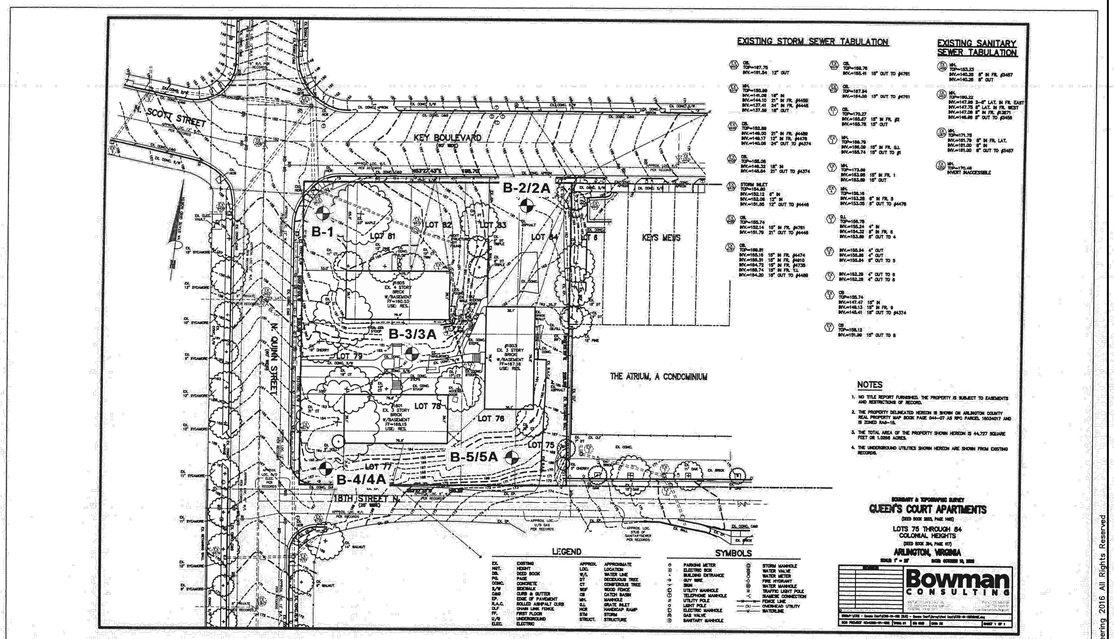
Groundwater level measurements were taken in the borings during drilling, at the completion of drilling (before and after the removal of the augers from the boreholes), and up to 2 days following the completion of drilling. Groundwater level measurements taken during drilling indicated groundwater was encountered from about 14 ft to about 28 ft below existing grades, or from about EL 137 to about EL 148. Groundwater measurements taken upon completion of drilling prior to the removal of the augers from the ground indicated groundwater from about 12.6 ft to about 20 ft below existing grades, or from about EL 145 to about EL 151. Groundwater measurements taken following the removal of the augers from the ground indicated groundwater from about 12 ft to about 20 ft below existing grades, or from about EL 145 to about EL 151. Long-term water level reading taken in the borings up to about 2 days following the removal of the augers from the ground indicated groundwater from about 13 ft to about 17.6 ft below existing grades, or from about EL 145 to about EL 150. The depths that the boring sidewalls caved within the borings were measured from about 9 ft to about 42 ft below existing grades, or from about EL 120 to about EL 153.

A temporary PVC pipe was placed to the bottom of boring B-5 for performing long-term groundwater level readings. Groundwater was observed within the temporary PVC pipe up to about 2 days following the completion of drilling at a depth of about 18 ft below the ground surface, or at about EL 150. The test boring logs in **Appendix A** include observations made during our on-site subsurface exploration.

The groundwater levels on the logs, where encountered, indicate our estimate of the hydrostatic water table at the time of our subsurface exploration. The final design should anticipate the fluctuation of the hydrostatic water table depending on variations in precipitation, surface runoff, pumping, evaporation, leaking utilities, and similar factors.

GEOTECHNICAL RECOMMENDATIONS

We based our geotechnical engineering analysis on the information developed from our subsurface exploration, along with the project information and limited structural details provided to us for the proposed development. As indicated above, the proposed development consists of the construction of a 12-story apartment building with two levels of below-grade parking. Based on topographic plans provide to our office, approximately 10 ft to 30 ft of cut is expected to be required to reach the proposed lowest level top-of-slab elevation considered herein to be at about EL 143 for the new building.



LEGEND

APPROXIMATE BORING LOCATION

Base Plan Provided by Arlington Partnership for Affordable Housing.

Schnabel ENGINEERING	QUEENS COURT APARTMENTS REDEVELOPMENT 1801-1805 NORTH QUINN STREET ARLINGTON, VIRGINIA	Prepared: K. HAGGARD	FIGURE No. 2	SITE AND APPROXIMATE BORING LOCATION PLAN
		Reviewed: B. KHOURI	JANUARY 2016	PROJECT No. 15141024.00 TASK 00

Schnabel ENGINEERING TEST BORING LOG

Project: Queens Court Apartments, 1801-1805 North Quinn Street, Arlington, Virginia
Boring Number: B-5
Contract Number: 15141024.00
Sheet: 1 of 1

Contractor: Recon Drilling, Leesburg, Virginia
Contractor Foreman: U. Rodas
Schnabel Representative: E. Durcan
Equipment: CME 550 ATV
Method: 2-1/4" I.D. Hollow Stem Auger
Hammer Type: Auto Hammer (140 lb)
Dates Started: 11/23/15 **Finished:** 11/23/15
Location: See Location Plan
Ground Surface Elevation: 168± (ft) **Total Depth:** 24.0 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered	11/23	---	20.0'	---	---
Completion	11/23	---	Dry	---	---
Casing Pulled	11/23	---	18.0'	---	---
Temporary Well	11/24	---	18.0'	---	---
Temporary Well	11/25	---	18.0'	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.3	Topsoil - 3 inches		167.7					
	FILL, sampled as sandy fat clay; moist, yellowish brown and dark brown, contains gravel, contains roots	FILL		A		SS 6+6+7 REC=4", 22%		
3.0	CLAYEY SAND; moist, dark yellowish brown, estimated 5 - 10% gravel	SC	165.0	B1		SS 6+10+11 REC=14", 78%		
5.0	SANDY SILT; moist, light brown and brown, estimated 5 - 10% gravel		163.0		5	SS 10+23+21 REC=5", 28%	MC = 15.0%	
	Change: estimated <5% mica, brownish gray with mottles of yellowish brown and streaks of black	ML		B2	10	SS 7+9+11 REC=17", 94%		
	Change: dark orangish brown, estimated 5 - 10% fat clay pockets, estimated 5 - 10% cemented sands				15	SS 5+8+11 REC=18", 100%	MC = 33.0%	
18.5	SILTY SAND; moist, orangish brown with streaks of dark brown and black	SM	149.5	B1	20	SS 10+13+21 REC=18", 100%		
24.0			144.0			SS 50/0" REC=0" SS 50/0" REC=0"		

Bottom of Boring at 24.0 ft.
Auger and spoon refusal on gravel or cobbles at depth of 24.0 ft.
Temporary 1-1/4 inch diameter PVC pipe placed to bottom of borehole for long-term groundwater level readings.
Boring backfilled with cuttings upon completion of long-term groundwater level readings and removal of PVC pipe.

TEST BORING LOG_BORING LOGS.GPJ_SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/14/16

Schnabel ENGINEERING TEST BORING LOG

Project: Queens Court Apartments, 1801-1805 North Quinn Street, Arlington, Virginia
Boring Number: B-5A
Contract Number: 15141024.00
Sheet: 1 of 2

Contractor: Recon Drilling, Leesburg, Virginia
Contractor Foreman: W. Rodas
Schnabel Representative: K. Haggard
Equipment: D-50 ATV
Method: 2-1/4" I.D. Hollow Stem Auger
Hammer Type: Auto Hammer (140 lb)
Dates Started: 12/7/15 **Finished:** 12/7/15
Location: See Location Plan
Ground Surface Elevation: 168± (ft) **Total Depth:** 64.5 ft

Groundwater Observations	Date	Time	Depth	Casing	Caved
Encountered	12/7	---	25.0'	---	---
Completion	12/7	---	16.8'	---	---
Casing Pulled	12/7	---	20.1'	---	38.2'
After Drilling	12/8	---	17.6'	---	20.9'

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
0.3	Topsoil - 3 inches		167.7					
	Auger probe to 28.5 ft				5			
					10			
					15			
					20			
					25			
28.5	CLAYEY SAND WITH GRAVEL; wet, orangish brown, contains cobbles, boulders	SC	139.5	B1	30	SS 33+20+30 REC=2", 11%		
	Change: moist, yellowish brown					SS 35+100/6"		

(continued)

TEST BORING LOG_BORING LOGS.GPJ_SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/14/16

Schnabel ENGINEERING TEST BORING LOG

Project: Queens Court Apartments, 1801-1805 North Quinn Street, Arlington, Virginia
Boring Number: B-5A
Contract Number: 15141024.00
Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	TESTS	REMARKS
	Change: wet	SC	124.5	B1	40	REC=12", 100% SS 100/4" REC=4", 100%		
43.5	DISINTEGRATED ROCK, sampled as sandy silt; moist, olive brown with mottles of orange, estimated 5 - 10% mica, and gray				45	SS 29+53+100/5" REC=17", 100%		
	Change: gray	DR		D	50	SS 100/6" REC=6", 100%		
					55	SS 100/3" REC=3", 100%		
	Change: estimated 5 - 10% rock fragments				60	SS 50/1" REC=1", 100%		
64.5			103.5			SS 50/1" REC=1", 100% SS 50/0.5" REC=0.5", 100%		

Bottom of Boring at 64.5 ft.
Boring offset about 2 ft west of boring B-5.
Auger and spoon refusal at depth of about 64.5 ft.
Boring backfilled with cuttings upon completion of long-term groundwater level readings.

TEST BORING LOG_BORING LOGS.GPJ_SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/14/16

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY

ARLINGTON VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB#21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

GEOTECHNICAL REPORT

Approval	Date
LUKE VANBELLEGHEM, Design Supervisor	4.15.2020

Revisions	Date
LDA SUBMISSION	4/15/20
LDA SUBMISSION REV.	7/14/20
LDA SUBMISSION REV.	9/08/20

Designed: FA
Drawn: EF
Checked: KMM

Filename:
Plotted: Sep. 9, 20

Scale: AS SHOWN
Date: APRIL 15, 2020

Seal

COMMONWEALTH OF VIRGINIA
KATHRYN M. MCDANIEL
Lic. No. 054382
07/15/2020
PROFESSIONAL ENGINEER

Sheet C1.18

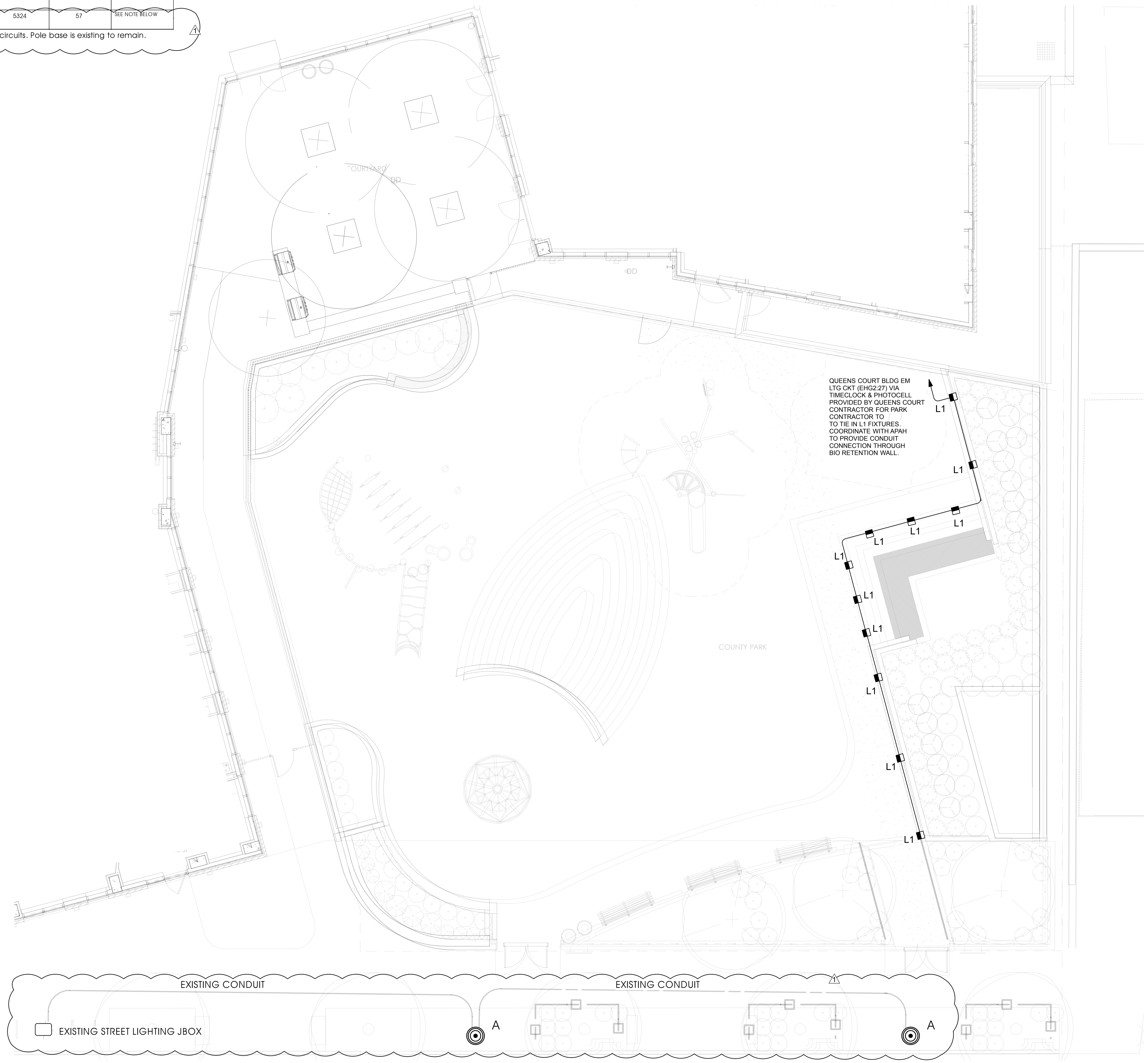
16 of 16

Path: P:\FX\Projects\17138\00300\108415 SP\

Filename: C-1.17 GEOTECHNICAL REPORT.dwg

Luminaire Schedule	L1 LIGHTS SHALL NOT BE INCLUDED IN BASE BID. L1 LIGHTS SHALL BE INCLUDED IN ADD ALTERNATE 1.									
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Lumens Per Lamp	Wattage	Notes
⬒	L1	5	Performance in Lighting	071407	Recessed LED step light 3000K	11 WATT LED	1 LED's	430	11	2' RECESSED MTG HT
◎	A	2	Arlington County Single Carlyle	Arlington Details: LT-5.1, LT-7, LT-8, LT14.1	Arlington Co. Standard "Carlyle" Street Light - 16ft Pole , Single Acorn Globe Fixture	55.4 WATT LED	32 LED's	5324	57	SEE NOTE BELOW

Pull 2-#6 + #6G wire from existing jbox through existing conduit and connect to existing street lighting circuits. Pole base is existing to remain. 1



1 *ELECTRICAL SITE PLAN*

SCALE: 1/8" = 1'-0"

NOTE: LIGHTS ON THE EAST SIDE OF THE PARK ARE NOT TO BE INCLUDED IN BASE BID. LIGHTS SHALL BE INCLUDED IN ADD ALTERNATE 1. LIGHTS WILL BE CONTROLLED BY A TIMER AND WILL PROVIDE MINIMUM FOOT CANDLES REQUIRED TO ILLUMINATE EMERGENCY EGRESS ROUTE FROM QUEENS COURT BUILDING THROUGH THE PARK. THE BUILDING CONTRACTOR SHALL LEAVE A SLEEVE OPEN FOR THE PLAYGROUND LIGHTING CONDUIT TO TIE INTO.

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS
AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
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ITB# 21-DPR-ITB-304

SWM# 20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

ELECTRICAL SITE PLAN

SUMMIT PRJ# 2017102.00

SUMMIT
ENGINEERS, INC
Mechanical Electrical Consultants
5307 Lee Hwy Arlington, VA 22207
703 533 5593 summitengineers.com

Approval	*Date*
---	---

Revisions	*Date*
BID SET	*7/09/20*
ADDENDUM 1	*9/25/20*

Designed: *AW*
Drawn: --
Checked: --

Filename:
Plotted: ----

Scale: *AS SHOWN*
Date: *Sep 23, 2020*

Seal

Sheet

E001

STRUCTURAL NOTES

1. GENERAL

A. THE STRUCTURES ARE DESIGNED UNDER THE PROVISIONS OF THE 2012 INTERNATIONAL BUILDING CODE AND ASCE 7–10.

B. ALLOWANCE FOR LOADS OVER BUILDING STRUCTURE:

LIVE LOAD	100 PSF
DEAD LOAD (5 FT. MAX SOIL + SIDEWALKS, PLAY EQUIP., AND PLANTER WALLS)	660 PSF

C. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING ITEMS. SUBMITTALS INCLUDE BUT MAY NOT BE LIMITED TO:

--CONCRETE MIX DESIGN
--REINFORCING STEEL
--PLAY EQUIPMENT STRUCTURE AND FOUNDATIONS

DO NOT USE CONTRACT DRAWINGS AS A BASE FOR SHOPS. REVIEW IS LIMITED TO DESIGN CONFORMANCE. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS.

2. EARTHWORK

A. FOUNDATIONS ARE DESIGNED TO BEAR ON ENGINEERED FILL WITH A CAPACITY OF 1,500 PSF, THIS VALUE IS TO BE VERIFIED IN THE FIELD BY THE BUILDING INSPECTOR OR A QUALIFIED TESTING AGENCY.

B. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2 FOOT–6 INCH BELOW FINISH EXTERIOR GRADE. WHERE REQUIRED, STEP FOOTINGS IN RATIO OF 2 HORIZONTAL TO 1 VERTICAL.

C. COMPACTED BACKFILL BELOW FOOTINGS: ALL SOIL FILL MATERIAL MUST BE APPROVED BY SOILS ENGINEER PRIOR TO PLACEMENT. PROOFROLL SUBGRADE REMOVING AND REPLACING SOFT OR COMPRESSIVE MATERIALS. FILL MATERIAL SHALL BE PLACED IN LAYERS NOT TO EXCEED 8 INCHES AND COMPACTED TO MIN. 95 PERCENT OF THE DRY MAXIMUM DENSITY AS DETERMINED BY ASTM D698.

3. CONCRETE

A. CONCRETE CONSTRUCTION SHALL BE PER THE APPLICABLE BUILDING CODE, ACI 318 AND ACI 301, LATEST EDITIONS.

B. CONCRETE SHALL ATTAIN THE FOLLOWING 28 DAY COMPRESSIVE STRENGTHS PER ASTM A39.

--FOOTINGS AND FOUNDATION WALLS 3,000 PSI

C. VERIFY CONCRETE STRENGTHS WITH A MINIMUM OF ONE SET OF NINE 4X8–INCH COMPRESSION CYLINDERS, (3 @ 7 DAYS, 3 @ 28, 3 SPARE).

D. EXTERIOR CONCRETE SHALL BE AIR–ENTRAINED TO PROVIDE AN AIR CONTENT OF 6+/–1.5 PERCENT BY VOLUME.

E. PROVIDE CLEAR DISTANCE TO OUTERMOST REINFORCING AS FOLLOWS:

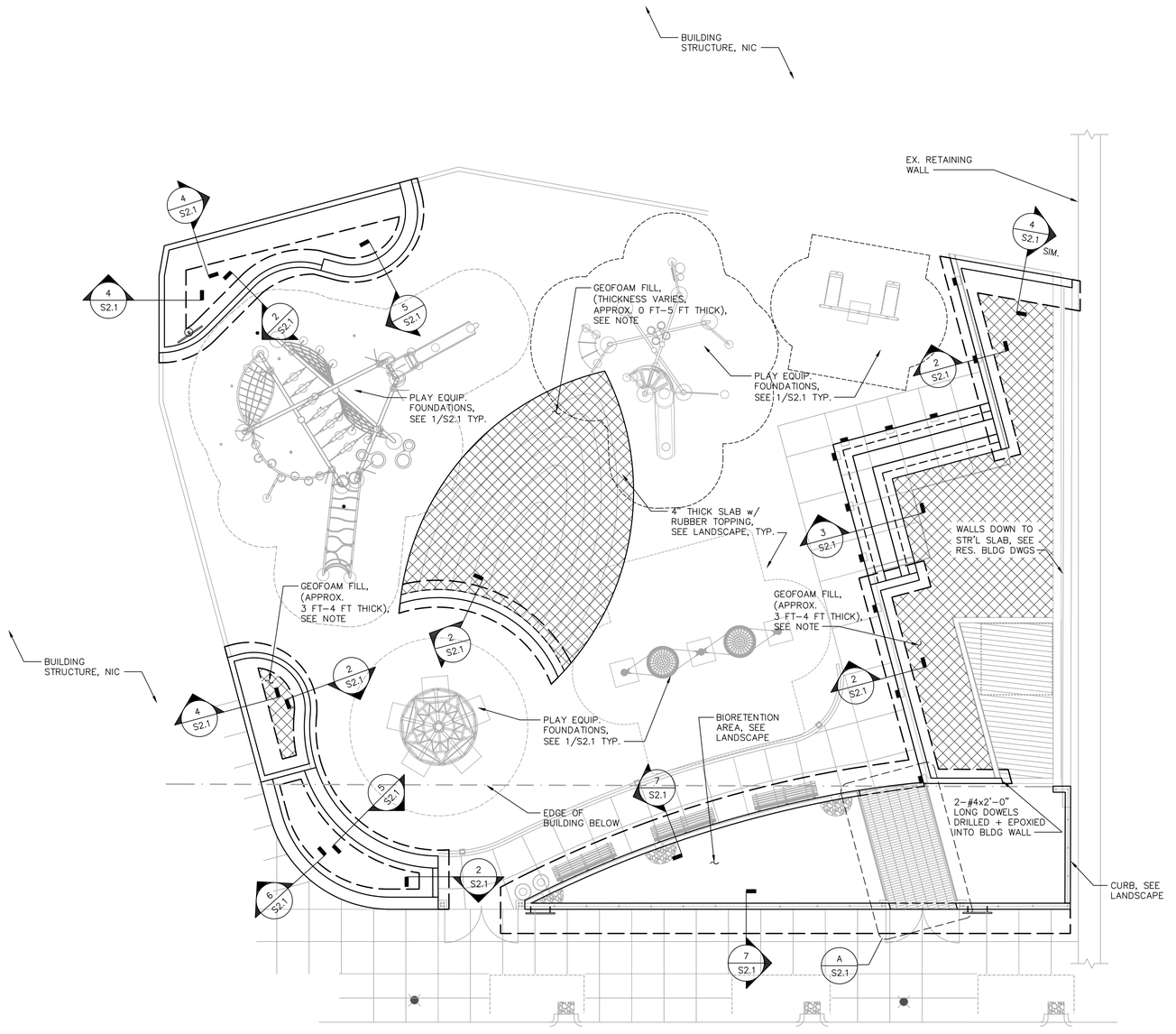
CONCRETE CAST AGAINST EARTH	3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#5 OR SMALLER	1–1/2 INCHES
#6 OR LARGER	2 INCHES

F. REINFORCING STEEL SHALL CONFORM TO A615–GR60; MESH SHALL CONFORM TO ASTM A185 WITH MINIMUM LAPS OF 8 INCHES. PLACING PLANS AND SHOP FABRICATION DETAILS SHALL BE IN ACCORDANCE WITH "THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES". FURNISH SUPPORT BARS AND ACCESSORIES IN ACCORDANCE WITH C.R.S.I. STANDARDS.

G. PROVIDE CORNER BARS TO MATCH HORIZONTAL REINFORCING IN WALLS AND FOOTINGS. SPLICE LAPS SHALL BE A MINIMUM OF 36 BAR DIAMETERS, UNLESS NOTED OTHERWISE. PROVIDE DOWELS BETWEEN FOOTINGS AND WALLS OR PIERS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCING.

ABBREVIATIONS LEGEND

A		**F**		**P**	
AB	ANCHOR BOLT	F	FOOTING MARK	P	PIER MARK
ADDL	ADDITIONAL	FD	FLOOR DRAIN	PC	PRECAST CONCRETE
ADJ	ADJACENT	FDN	FOUNDATION	PEB	PRE–ENGINEERED BUILDING
AFF	ABOVE FINISH FLOOR	FOM	FACE OF MASONRY WALL	PERIM	PERIMETER
ALT	ALTERNATE	FOS	FACE OF STUD	PL	PLATE
APPROX	APPROXIMATE(LY)	FS	FOOTING STEP	PLF	POUNDS PER LINEAR FOOT
ARCH	ARCHITECT(URAL)	FTG	FOOTING	PP	PRECAST PLANK MARK
		FUT	FUTURE	PROJ	PROJECTION
B				PSF	POUNDS PER SQ. FOOT
B	BEAM MARK	**G**		PSI	POUNDS PER SQ. INCH
BF	BOTTOM OF FOOTING ELEVATION	GA	GAGE, GAUGE	PSL	PARALLEL STRAND LUMBER COLUMN
BLKG	BLOCKING	GALV	GALVANIZED	PT	POST TENSION/PRESSURE TREATED
BLDG	BUILDING	GC	GENERAL CONTRACT(OR)		
BM	BEAM	GT	GIRDER TRUSS	**Q**	
BOD	BOTTOM OF DECK			QTY	QUANTITY
BOS	BOTTOM OF STEEL	**H**			
BOTT	BOTTOM	HORIZ	HORIZONTAL	**R**	
BP	BEARING PLATE MARK	HP	HIGH POINT	RAD	RADIUS
BRG	BEARING	HS	HIGH STRENGTH	RD	ROOF DRAIN
BSMT	BASEMENT	HT	HEIGHT	REV	REVISION, REVISE(D)
BTWN	BETWEEN	HTR	HIP TRUSS	REINF	REINFORCE(D), (ING)
				REM	REMAINDER
C		**I**		REQD	REQUIRED
C	COLUMN MARK	INFO	INFORMATION	RTU	ROOF TOP UNIT
CIP	CAST IN PLACE	IF	INSIDE FACE		
CJ	CONTROL JOINT			**S**	
CLR	CLEAR(ANCE)	**J**		SB	SOIL BORING
CMU	CONCRETE MASONRY UNIT	JBE	JOIST BEARING ELEVATION	SC	SLIP CRITICAL
COL	COLUMN	JST	JOIST	SE	SPECIALTY DESIGN ENGINEER
COM	CENTER OF MASONRY WALL	JT	JOINT	SIM	SIMILAR
COMP	COMPOSITE	JTR	JACK TRUSS	SJI	STEEL JOIST INSTITUTE
CONC	CONCRETE			SOG	SLAB ON GRADE
CONN	CONNECTION	**K**		SQ	SQUARE
CONST	CONSTRUCTION	K	KIP	STD	STANDARD
CONT	CONTINUOUS	KO	KNOCK–OUT	STL	STEEL
COORD	COORDINATE(TION)	KSI	KIPS PER SQ. INCH	STRUCT	STRUCTURAL
COS	CENTER OF STUD			SPA	SPACES
		L		SL	SNOW LOAD
D		L	LINTEL MARK	SS	STAINLESS STEEL
DBA	DEFORMED BAR ANCHORS	LLH	LONG LEG HORIZONTAL		
DTL	DETAIL	LLV	LONG LEG VERTICAL	**T**	
DIAM	DIAMETER	LL	LIVE LOAD	TEMP	TEMPORARY
DIAG	DIAGONAL	LP	LOW POINT	TF	TOP OF FOOTING ELEVATION
DN	DOWN	LVL	LAMINATED VENEER LUMBER	THK	THICK(NESS), (ENED)
DWG	DRAWING			TJI	WOOD I JOIST
DBL	DOUBLE	**M**		TO	THROUGH OUT
DL	DEAD LOAD	MANUF	MANUFACTURER(ED)	TOC	TOP OF CONCRETE
		MAS	MASONRY	TOP	TOP OF PIER ELEVATION
E		MAX	MAXIMUM	TOS	TOP OF STEEL ELEVATION
EA	EACH	MIN	MINIMUM	TOW	TOP OF WALL ELEVATION
EE	EACH END	MISC	MISCELLANEOUS	TYP	TYPICAL
EF	EACH FACE	MO	MASONRY OPENING		
ES	EACH SIDE	MATL	MATERIAL	**U**	
EL	ELEVATION	MTL	METAL	UNEXC	UNEXCAVATED
ELEV	ELEVATOR			UNO	UNLESS NOTED OTHERWISE
EOJ	EDGE OF JOIST	**N**		UMD	UNDERSIDE METAL DECK ELEVATION
EQ	EQUAL	NTS	NOT TO SCALE	**V**	
EQUIP	EQUIPMENT	NS	NEAR SIDE	VERT	VERTICAL
EW	EACH WAY	NIC	NOT IN CONTRACT	VIF	VERIFY IN FIELD
EXIST, EX	EXISTING				
EXP	EXPANSION	**O**		**W**	
EXT	EXTERIOR	OC	ON CENTER(S)	W/	WITH
		OPNG	OPENING	WF	WIND FRAME
		OPP	OPPOSITE	WP	WORK POINT
		OF	OUTSIDE FACE	WWF	WELDED WIRE FABRIC



PARK STRUCTURAL PLAN

SCALE: 1/8" = 1'–0"

NOTES: SEE LANDSCAPE DRAWINGS FOR ALL SLABS, SIDEWALKS, CURBS, AND OTHER MISCELLANEOUS ITEMS.

DENOTES GEOFOAM OR OTHER LIGHT WEIGHT FILL (N.I.C.) OVER RES. BUILDING SLAB. COORDINATE DEPTH OF FILL TO MAINTAIN A TOTAL SUPERIMPOSED DEAD LOAD OF LESS THAN 660 PSF OVER STRUCTURAL SLAB. (5'–0" MAX SOIL DEPTH).

BASE BID SHALL NOT INCLUDE GEOFOAM (ADD ALTERNATE 2).

EHLERT BRYAN consulting structural engineers
8609 Westwood Center Drive, Suite 800
Tysons, VA 22182
(703) 827-9552
Fax (703) 356-2031
www.ehlert-bryan.com
EB#1550121

ARLINGTON VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
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Phone: 703.228.3332
Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM#20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

STRUCTURAL NOTES, ABBREVIATIONS AND PLAN

Approval Date

Design Supervisor

Revisions Date

Designed: BG
Drawn: AG
Checked: WB

Filename:

Plotted: APRIL 15, 2020

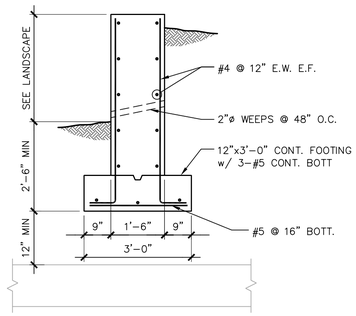
Scale: AS SHOWN
Date: APRIL 16, 2020

Seal

Sheet

S1.1

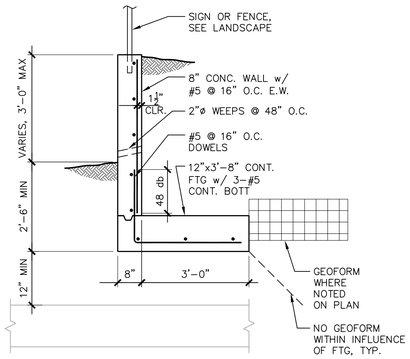
Path: J:\50\1550121.00-Queens Court - Arlington, VA\2-Drafting\ Filename: S1.1 NOTES AND PLAN.dwg



SEAT WALL

SECTION — 5 / S2.1

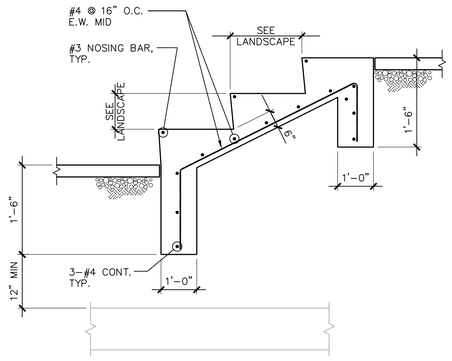
SCALE: 1/2" = 1'-0"



TYPICAL CONC. RETAINING WALL – L-SHAPED FOOTING

SECTION — 4 / S2.1

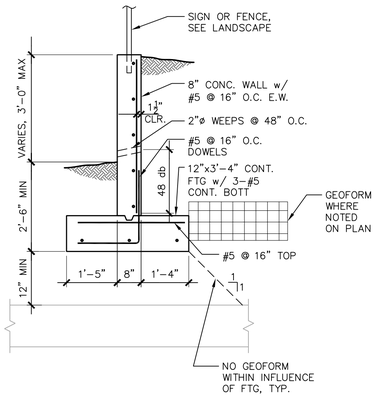
SCALE: 1/2" = 1'-0"



SEAT STEPS

SECTION — 3 / S2.1

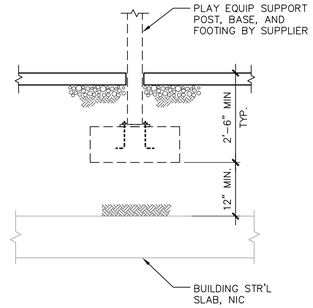
SCALE: 1/2" = 1'-0"



TYPICAL CONC. RETAINING WALL

SECTION — 2 / S2.1

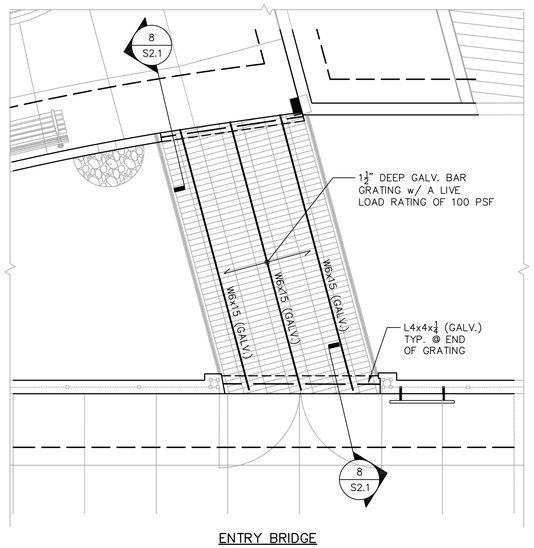
SCALE: 1/2" = 1'-0"



TYPICAL PLAY EQUIPMENT FOOTING

SECTION — 1 / S2.1

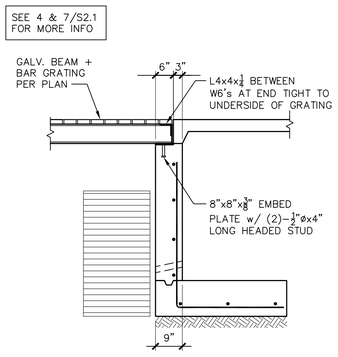
SCALE: 1/2" = 1'-0"



ENTRY BRIDGE

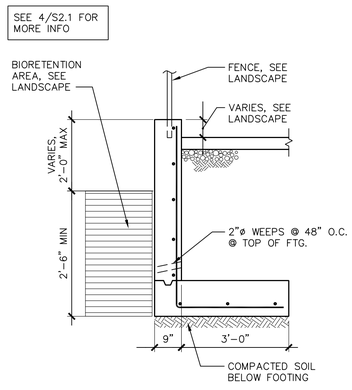
SECTION — A / S2.1

SCALE: 1/2" = 1'-0"



SECTION — 8 / S2.1

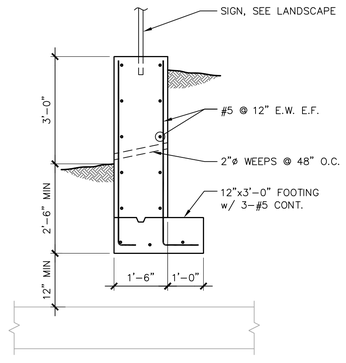
SCALE: 1/2" = 1'-0"



FOOTING @ BIO RETENTION

SECTION — 7 / S2.1

SCALE: 1/2" = 1'-0"



SIGN WALL

SECTION — 6 / S2.1

SCALE: 1/2" = 1'-0"

EHLERT BRYAN
consulting structural engineers
8609 Westwood Center Drive, Suite 800
Tysons, VA 22182
(703) 827-9552
Fax (703) 356-2031
www.ehlert-bryan.com
EB#15501.21

ARLINGTON
VIRGINIA

DEPARTMENT OF PARKS AND RECREATION

Park Development Division
2100 Clarendon Boulevard, Suite 414
Arlington, VA 22201
Phone: 703.228.3332
Fax: 703.228.3328

ITB# 21-DPR-ITB-304

SWM#20-0120

Project Name and Location

ROSSLYN HIGHLANDS PARK

BID SET

18TH STREET

ARLINGTON, VIRGINIA

Sheet Title

FOUNDATION SECTIONS

Approval — Date

Design Supervisor

Revisions — Date

Designed: BG
Drawn: AG
Checked: WB

Filename:

Plotted: APRIL 15, 2020

Scale: AS SHOWN
Date: APRIL 16, 2020

Seal

Sheet

S2.1

Path: J:\50\1550121.00-Queens Court - Arlington, VA\2-Drafting\

Filename: S2.1 FOUNDATION SECTIONS.dwg