SITE NOTES:

- 1. THIS PROPERTY IS LOCATED IN THE ROUTE 28 TAXING DISTRICT AND IS THEREFORE SUBJECT TO THE REQUIREMENTS OF THE 1972 ZONING ORDINANCE.
- 2. WHERE PARKING, SERVICE OR LOADING AREAS ARE ILLUMINATED THE LIGHTS SHALL BE FULLY SHIELDED, DOWNWARD DIRECTED, BE GLARE FREE, CONFINED TO THE SITE AND SHOULD HAVE ILLUMINATION LEVELS THAT ARE NO GREATER THAN NECESSARY FOR LIGHT'S INTENDED PURPOSE. ALL LIGHTING SHOULD BE MOUNTED AS LOW AS PRACTICABLE AND DESIGNED TO PRECLUDE LIGHT TRESPASS ONTO ADJOINING PROPERTIES, GLARE TO PASSERBY, SKYGLOW, AND DETERIORATION OF THE NIGHTTIME ENVIRONMENT.
- 3. AS PER PRE-APPLICATION MEETING PRAP 2014-0112, THE PARKING RATE OF MINIMUM 2.5 PARKING SPACES PER 1,000 SF OF GFA (GROSS FLOOR AREA) OF "SERVICE RETAIL", PER REVISED 1993 ZONING ORDINANCE, WILL BE UTILIZED TO PARK THE ANIMAL HOSPITAL. THE OFFICE USE REQUIRES ONE SPACE FOR EVERY 375 SF OF NFA (NET FLOOR AREA).
- 4. NO BUILDING OR OTHER STRUCTURES SHALL BE LOCATED IN A MANNER OR BUILT TO A HEIGHT WHICH CONSTITUTES A HAZARD TO AERIAL NAVIGATION (SEC.520.2.2)
- 5. THE ESTIMATED TOTAL 200 ADT IS BASED ON 5 PEAK HOUR (PM) TRIPS FOR LAND USE 715 (2,979 SF, OFFICE); AND 15 PEAK HOUR (PM) TRIPS FOR LAND USE 640 (3,060 SF, ANIMAL/VETERINARY CLINIC), FOR A TOTAL OF 20 PEAK HOUR (PM) TRIPS, AS INDICATED ON 9TH EDITION OF THE TRIP GENERATION MANUAL BY "INSTITUTE OF TRANSPORTATION ENGINEERS". WEEKDAY ADT ASSUMED TO BE 10 TIMES THE PM TOTAL PEAK HOUR TRIPS.
- 6. THIS SITE MAY PROVIDE CUSTOMER SERVICES AFTER 5:00 PM. THEREFORE, THE LIGHTING SHALL STABLISH THE MOUNTING HEIGHT, ILLUMINANCE, AND SPACING TO PROVIDE AN AVERAGE HORIZONTAL ILLUMINATION OF 0.6 FOOT-CANDLES OR GREATER WITHIN THE PARKING AREAS AND AT PRIMARY BUILDING ENTRANCES. (FSM 7.120.B.2)
- ALL LIGHTING AND GLARE PERFORMANCE STANDARDS MUST CONFORM TO ARTICLE 535.
- 7. NO TITLE REPORT FURNISHED.
- 8. THE FIELD RUN TOPOGRAPHY, WITH TWO FEET INTERVALS, UPDATED OCT-2015 BY SITECH CONSULTING GROUP. THE TOPO IS BASED ON "NAVD 1988".
- 9. NO SPITE STRIPS CONTROLLING ACCESS TO PUBLIC ROADS ARE PROPOSED WITH THIS SITE PLAN
- 10. THIS SITE PLAN IS SUBMITTED TO PERMIT AN ANIMAL HOSPITAL USE ON THE LOWER LEVEL, BASED ON APPROVED SPEX PLAN 2015-0009 AND BY-RIGHT OFFICE USE ON SECOND FLOOR.
- 11. THIS SITE IS SERVED WITH PUBLIC WATER AND PUBLIC SEWER.
- 12. ALL SIGNAGE MUST CONFORM TO ARTICLE 523 OF THE 1972 ZONING ORDINANCE.
- 13. AT NO TIME DURING CONSTRUCTION SHALL THE APPLICANT OR ITS AGENTS CLEAR, GRADE, PLACE SILTATION FENCE OR IMPACT THE W&OD RAILROAD PARK IN ANYWAY WITHOUT WRITTEN APPROVAL FROM NOVA PARKS, FURTHER, THE TRAIL SHALL NOT BE USED AS A MEANS OF ACCESS TO THE SUBJECT SITE.

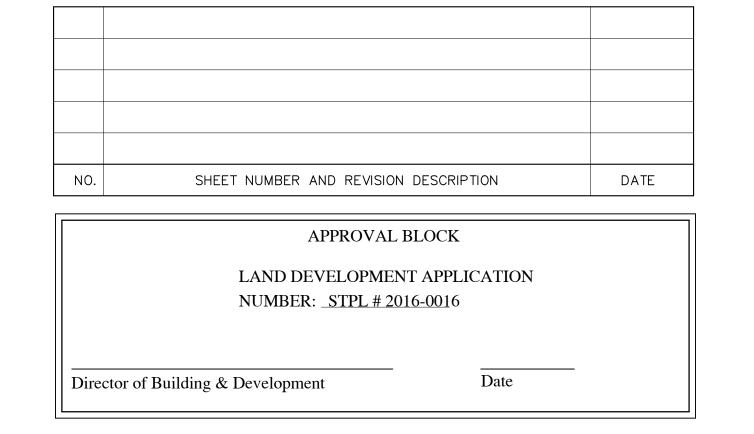
CHURCH ROAD ANIMAL HOSPITAL

SITE PLAN

STPL# 2016-0016

ASSOCIATED PLAN: SPEX 2015-0009, APPROVED DEC-17, 2015





SHEET INDEX SHEET NO. COVER SHEET NOTES, DETAILS & LEGENDS SOILS, BOUNDARY, STAKEOUT, SPEX APPROVAL & SIGHT DISTANCE PROFILE 5. E/S CONTROL. PHASE-1 6. E/S CONTROL, PH-2 & FIRE HYDRANT COVERAGE 7. LANDSCAPING, LIGHTING, DETAILS & COMPS 8. UTILITY PROFILES & COMPS VIRGINIA STANDARD E/S CONTROL DETAILS 10. LOUDOUN WATER & SEWER STANDARD DETAILS 11. FYI ONLY - COPY OF APPROVED SPEX 2015-0009

SITE TABULATION:

CURRENT ZONING MAP CLASSIFICATION: C-1

EXISTING SITE CONDITION:

THIS SITE IS LESS THAN HALF AN ACRE. IT WAS USED AS A RESIDENTIAL PROPERTY. THE OLD HOUSE ON THIS LOT WAS DEMOLISHED AND REMOVED A FEW YEARS AGO. THE SITE DOES NOT CONTAIN ANY SIGNIFICANT TREES. THERE ARE SOME UNDERGROWTH BRUSH ONSITE. THE DOMINION VIRGINIA POWER HAS A POWER EASEMENT ON THE W&OD TRAIL SIDE AND ALONG RURITAN CIRCLE. VDOT HAS TAKEN ALL REQUIRED R.O.W. PREVIOUSLY FOR CHURCH ROAD AND RURITAN CIRCLE WITH DEVELOPMENT OF THE CHURCH ROAD AND EXTENSION OF THE ATLANTIC BLVD. NO R.O.W. DEDICATION IS PROPOSED WITH THIS PLAN. THIS SITE IS SURROUNDED BY VDOT R.O.W. IN FRONT AND BACK, W&OD TRAIL ON

EAST AND AN OUTLOT [GORE] TO THE WEST. THE OUTLOT HAS A MINIMAL AREA AND IS NON-DEVELOPABLE DUE TO ITS SIZE. ANY EXCESS DIRT FROM THIS SITE HAS TO BE HAULED AWAY. THERE WILL BE A

SMALL STOCKPILE AREA AT THE LEFT SIDE OF THE ENTRANCE. THE TOPOGRAPHY OF THE SITE WAS ALTERED WITH ROAD IMPROVEMENTS AND IT

THERE SEEMS TO BE NO VALUABLE ARCHEOLOGICAL IMPORTANCE TO THIS SITE. THIS SITE WAS PREVIOUSLY APPROVED FOR OFFICE USE, STPL#2002-0057. THE APPROVED PLAN WAS DIVERTED BACK TO PRE-APPROVED CONDITON VIA SPAM-2012-0024.

SITE INFORMATION:

PROPOSED USE: ANIMAL HOSPITAL / OFFICE TOTAL CURRENT SITE AREA=19,339 SF= 0.444 AC PROPOSED TOTAL GROSS OFFICE SPACE: 2,979 S.F.(G.F.A.) PROPOSED TOTAL GROSS ANIMAL HOSPITAL SPACE: 3,060 S.F.(G.F.A.) PROPOSED TOTAL NET OFFICE SPACE: 2,234 S.F.(N.F.A.)= 75% OF G.F.A. PROPOSED TOTAL NET ANIMAL HOSPITAL SPACE: 2,295 S.F.(N.F.A.) = 75% OF G.F.A. PROPOSED BUILDING FOOTPRINT: 3,060 S.F. MAXIMUM LOT COVERAGE: 40% OR 7,736 S.F. PROPOSED LOT COVERAGE: 15.8% PROPOSED BUILDING HEIGHT: 35 FEET APPROXIMATE PROPOSED DISTURBED AREA: 18,000 SF

YARDS:

FRONT YARD: 30 FT. FROM CHURCH ROAD, RTE. 625 FRONT YARD: 30 FT. FROM RURITAN CIRCLE, RTE. 859 SIDE YARD: NONE; 25' SETBACK FROM W&OD TRAIL PROVIDED YARDS: FRONT YARD: 30 FT. FROM CHURCH ROAD, RTE. 625 FRONT YARD: 30 FT. FROM RURITAN CIRCLE, RTE. 859 SIDE YARD: 9' WEST YARD; 25' SETBACK FROM W&OD TRAIL

PARKING/LOADING:

OFFICE USE: 1 SPACE PER 375 SF OF N.F.A. PARKING REQUIRED= 2,234/375=6 SPACES ANIMAL HOSPITAL USE: 2.5 SPACE PER 1,000 SF OF G.F.A. (USE: SAME AS SERVICE RETAIL, AS PER REVISED 1993 Z.O.) PARKING REQUIRED= 2.5x[3,060/1,000]= 8 SPACES TOTAL PARKING REQUIRED: 14 SPACES TOTAL PARKING PROVIDED: 14 SPACES HANDICAP PARKING REQUIRED= 1 SPACE HANDICAP PARKING PROVIDED= 1 SPACE VAN ACCESSIBLE PARKING REQUIRED= 1 SPACE VAN ACCESSIBLE PARKING PROVIDED= 1 SPACE LOADING BAYS REQUIRED: NONE LOADING BAYS PROVIDED: NONE

LANDSCAPING:

DETAILED LANDSCAPING PLAN PROVIDED ON SHEET-7.

OPEN SPACE: REQUIRED: 1,934 S.F. OR 10% PROVIDED: 3,700 S.F. OR 19%

BUFFER YARDS:

REFER TO LANDSCAPING PLAN, SHEET-7, FOR FULL BUFFER YARD REQUIREMENTS.

STORM WATER MANAGEMENT FACILITY:

PROVIDED ONSITE. SEE SHEETS 4 & 8.

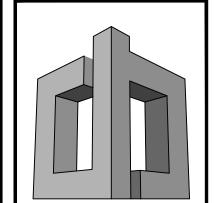
PROPERTY OWNER/APPLICANT:

SHARMA, NAVDEEP KUMAR & RITU KANWAR 43470 ROCKFOREST CT, STERLING VA 20166-2167 TEL: (757) 288-0503

PROPERTY INFORMATION:

LOT 4037 [FORMERLY KNOWN AS: 1009 RURITAN CIRCLE, STERLING, VIRGINIA 20164] TAX MAP /80///////76/ PIN: 032-45-4037-000 INSTRUMENT# 201501050000394 INSTRUMENT# 200406280065735 D/C 2055 --1789, 1012-589

ÎNSTRUMENT# 200501240008647-8648P



SITECH **CONSULTING GROUP**

> **ENGINEERING SURVEYING ARCHITECTURE** CONSTRUCTION

> www.SitechCG.com

12146 Paper Birch Ln Gainesville, VA 20155 703-927-2300

Nasser@SitechCG.com

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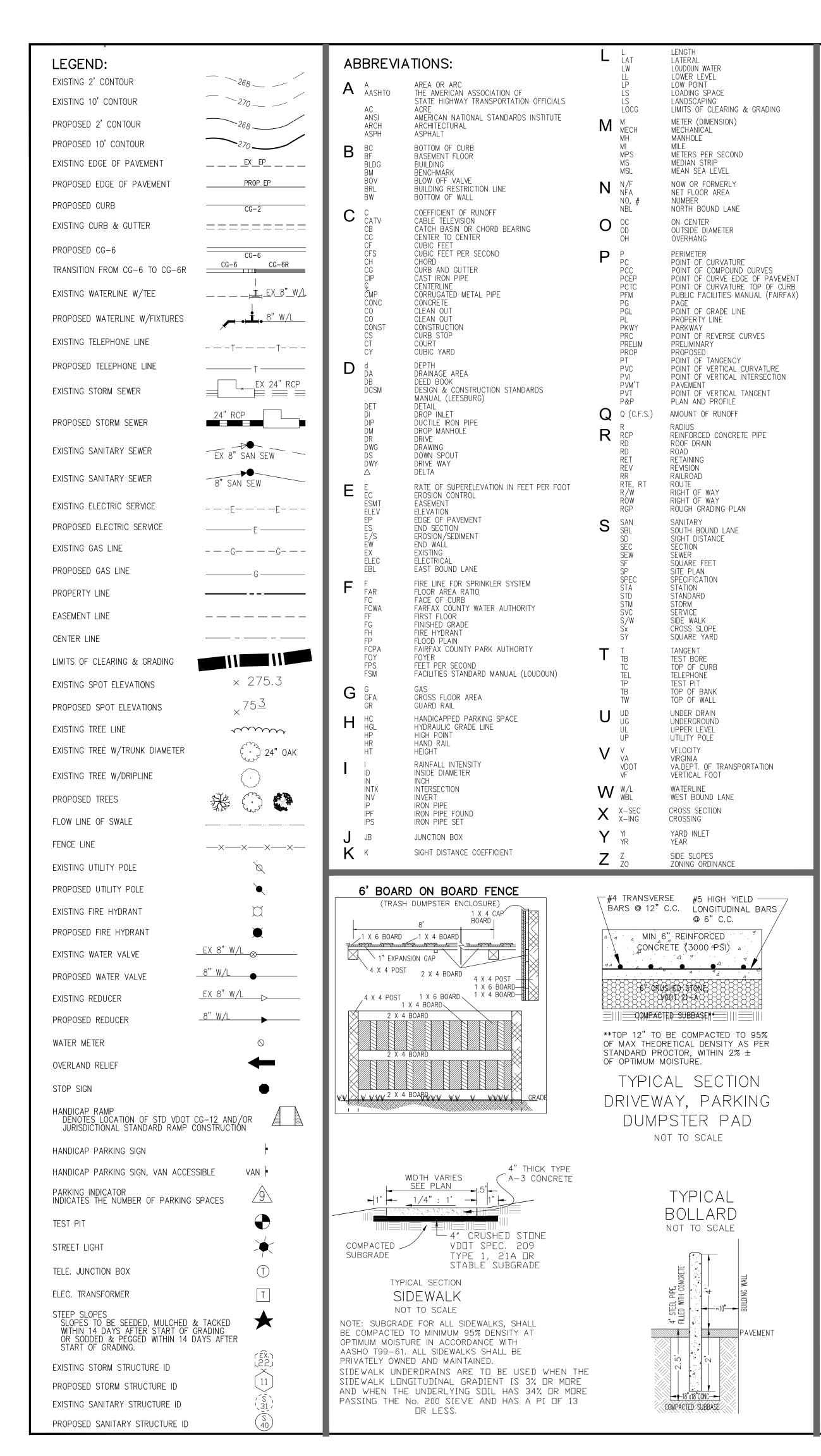
DATE: **MAR 2016 REVISIONS:**

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OF SHEET: 141201 | (7)



LOUDOUN COUNTY STANDARD CONSTRUCTION PLANS NOTES:

- A. SUB-BASE DEPTH IS BASED ON CBR VALUE OF 4. WHICH MAY BE REVISED ONCE SOIL TESTS OF SUBGRADE ARE PERFORMED.
- B. A SMOOTHING GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD TO THE CURB & GUTTER TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF ANY WATER ON THE ROADWAY.
- C. STANDARD GUARD RAILS AND HANDRAILS SHALL BE INSTALLED AT THOSE LOCATIONS AS DESIGNATED DURING FINAL FIELD INSPECTION BY LOUDOUN COUNTY OR VDOT.
- D. APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE OWNER OF COMPLYING WITH OTHER APPLICABLE LOCAL, STATE AND FEDERAL REQUIREMENTS.

LOUDOUN WATER NOTES

- ALL WATER MAINS AND SANITARY SEWERS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT LOUDOUN WATER STANDARDS AND SPECIFICATIONS.
- NO BLASTING IS PERMITTED WITHIN 25' OF EXISTING LOUDOUN WATER UTILITIES. WATER SERVICES MUST MAINTAIN A MINIMUM 6' HORIZONTAL SEPARATION
- FROM SANITARY LATERALS. 4. ALL LOUDOUN WATER SANITARY AND WATER MAIN EASEMENTS MUST BE 10', UNLESS
- 5. SANITARY SEWERS AND WATER MAINS TRAVERSING LOT LINES MUST MAINTAIN A MINIMUM 15' HORIZONTAL SEPARATION FROM PROPOSED OR
- ALL HYDRANTS AND METER CROCKS MUST MAINTAIN 5' HORIZONTAL SEPARATION FROM EDGE OF DRIVEWAY APPRONS.
- WATER MAINS MUST MAINTAIN A MINIMUM 5' HORIZONTAL SEPARATION FROM EDGE OF GUTTER PAN, EXCEPT AT DESIGNED CROSSINGS.
- 8. LANDSCAPING IS NOT PERMITTED WITHIN LOUDOUN WATER EASEMENTS. ALL WATER MAINS MUST BE CLASS 52 DUCTILE IRON PIPE, UNLESS
- OTHERWISE NOTED 10. A 2" DETECTABLE MARKING TAPE MUST BE PLACED ABOVE ALL WATER
- MAINS OUTSIDE OF PAVEMENT.
- 11. ALL SANITARY SEWERS MUST BE DR-25 PER AWWA C-900, UNLESS OTHERWISE NOTED.
- 12. ALL SANITARY SEWER LATERALS MUST BE 4" PVC AT 2.08% SLOPE
- JNLESS OTHERWISE NOTED AND MUST ENTER THE MAIN AT 90°. 13. A 2" DETECTABLE MARKING TAPE MUST BE PLACED ABOVE ALL
- SANITARY SEWER MAINS.
- PROVIDE POSITIVE DRAINAGE FOR SANITARY MANHOLES LOCATED OUTSIDE OF PAVEMENT AREAS.
- TOP OF MANHOLES LOCATED OUTSIDE OF PAVEMENT AREAS MUST BE 1'
- ABOVE FINISHED GRADE. THIS REQUIREMENTS SHALL NOT APPLY IN
- 16. EXISTING SANITARY MANHOLE SHALL BE CORE BORED IN ORDER TO RECEIVE PROPOSED PIPE.
- 17. METER CROCKS SHALL BE 30" DEEP MINIMUM.
- 18. ALL SANITARY SEWER SHALL BE PVC, DR-25 (C-900) UNLESS OTHERWISE APPROVED.
- 19. ALL WATER MAINS TO BE CLASS 52 DUCTILE IRON PIPE (D.I.P.) (ANSIA21.50 OR A21.51). CEMENT MORTAR LINED (ANSI A21.4). UNLESS
- 20. MAINTAIN THE MINIMUM VERTICAL CLEARANCE OF 1'6" BETWEEN CROSSING OF WATER AND SANITARY SEWER LINES UNLESS OTHERWISE NOTED.
- 21. ALL WATER MAINS ARE TO BE INSTALLED WITH A MINIMUM OF 4' COVER, UNLESS OTHERWISE INDICATED.
- 22. EXISTING MANHOLES ARE TO BE CORE BORED TO RECEIVE THE

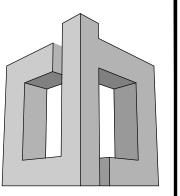
CONSTRUCTION NOTES:

- 1. ALL CONSTRUCTION SHALL CONFORM TO CURRENT LOUDOUN COUNTY AND VDOT STANDARDS AND SPECIFICATIONS EXCEPT AS ALTERED BY NOTES OR DETAILS HEREON.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNERS AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO PERMITS OBTAINED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION, LOUDOUN COUNTY, OR ANY OTHER AUTHORITY ISSUING PERMITS.
- 4. A SUB-SOIL INVESTIGATION AND GEOTECHNICAL ANALYSIS WILL BE PROVIDED VIA A SEPARATE PACKAGE.
- 5. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
- 6. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL TREES, BUILDINGS, FOUNDATIONS, ETC. WITHIN THE LIMITS OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR CAUSING UTILITIES TO BE DISCONNECTED
- 7. SITECH CONSULTING GROUP DOES NOT CERTIFY TO THE LOCATION OF OR TO THE EXISTENCE OF ANY UNDERGROUND UTILITIES. THIS DOES NOT CONSTITUTE A GUARANTEE OF THEIR ACTUAL LOCATION OR THAT THEY HAVE ALL BEEN SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF TEST HOLES PRIOR TO BEGINNING ANY CONSTRUCTION, THESE TEST HOLES WILL BE MADE TO VERIFY ALL CROSSINGS BETWEEN NEW AND EXISTING FACILITIES AND AT CRITICAL GRADE CHANGES, IF CONDITIONS ARE FOUND IN THE FIELD WHICH ARE MATERIALLY DIFFERENT FROM THE PLANS, THE CONTRACTOR SHALL NOTIFY HUNTLEY, NYCE & ASSOCIATES, LTD. SO THAT APPROPRIATE REVISIONS WILL BE MADE TO THE PLANS.
- 8. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION.
- 9. ALL STREETS AND PARKING AREAS OUTSIDE DEDICATED RIGHT-OF-WAY ARE PRIVATELY OWNED AND MAINTAINED.
- 11. THE STREET LIGHT LOCATION AND CONDUIT LOCATION SHOWN ON THIS PLAN (IF ANY) ARE APPROXIMATE AND ARE SUBJECT TO CHANGE (WITHOUT NOTICE) WHEN FIELD AND/OR DESIGN CONDITIONS WARRANT
- 12. ALL FILL MATERIAL UNDER PAVEMENTS AND UTILITIES SHALL BE COMPACTED TO 95% DENSITY AS DETERMINED BY AASHTO T-99 OR ASTM-d-698. DENSITY MUST BE VERIFIED BY A QUALIFIED SOILS ENGINEER. CONTROLLED FILL SHALL BE COMPACTED IN 8" (EIGHT INCH) LIFTS (LOOSE THICKNESS) TO THE SPECIFIED DENSITY, BEGINNING FROM THE EXISTING GROUND SURFACE, UNLESS OTHERWISE APPROVED IN WRITING BY A QUALIFIED SOILS ENGINEER.

VDOT GENERAL NOTES

Revised 3/28/13

- These plans were prepared in accordance with requirements of (select one):
 - N/A-NO ROADS PROPOSED WITH THIS SITE PLAN.
 - ---- VDOT Subdivision Street Requirements (SSR 24VAC-30-91 effective January 1, 2005 and VDOT Road Design Manual Appendix
 - ---- VDOT Secondary Street Acceptance Requirements (SSAR 24VAC-30-90 effective march 9, 2009 and VDOT Road and Design manual Appendix B1). Schematic street layout and computations of Connectivity Index are provided within these plans per 24VAC
 - ---- VDOT Secondary Street Acceptance Requirements (SSAR 24VAC-30-92 effective December 31, 2011 and VDOT Road and Design Manual Appendix B1). Schematic street layout with phasing diagram for street acceptance are provided with these plans per 24VAC 30-92-60.
- Methods and materials used shall conform to current county/town and VDOT standards and specifications:
- All utilities, including all pipes, are to be relocated at the developer's expense, prior to construction;
- Open cutting of paved or surface treated roads is not permitted. All utilities which will be under existing streets are to be bored or jacked. Any exceptions, due to extenuating circumstances, are to be addressed at the permit stage;
- Any type of reverse curb (spill curb, CG-6R, etc.) and transition to these curbs shall not be used within public right of way;
- The developer is responsible for any damage to the existing roads and utilities which occur as a result of project construction within or contiguous to existing right of way;
- A smooth grade shall be maintained from the centerline of the existing road to the proposed edge of pavement to preclude the forming of false gutter and/or the ponding of any water on the roadway;
- Standard guard rails and/or handrails shall be installed at hazardous locations as designated during field review by the county/town inspector or VDOT;
- The developer is responsible for all traffic control. The developer shall submit a signing, striping and/or signalization plan to the VDOT Land Development Section a minimum thirty days prior to permit application. The developer shall not commence construction of any pavement course without an approved striping plan;
- Pavement design is based on an assumed CBR value of 10 (use CBR value of 4 in Loudoun Co). Soils test of subgrade must be submitted for actual determination of required thickens of the pavement including layers of asphalt and subbase prior to subbase placement;
- All untreated aggregate used in base or subbase courses shall be 21B, except on roads with ADT of 1000 vpd or less where 21A aggregate
- may be used. When 21B aggregate is used, UD-4 underdrains must be provided; A 4" (min.) layer of stone is required beneath curb and gutter (may be shown in typical section in lieu of a note);
- Additional ditch linings or siltation and erosion control measures shall be provided, at the developer's expense, as determined necessary by VDOT and/or the county/town during field review. All costs shall be assumed by the developer;
- The entire surface of the roadway (old and new portions) shall be overlaid and re-striped as required by VDOT personnel. Overlay of existing pavement shall be minimum 1.25" deep; any costs associated with pavement overlay, or the milling of existing pavement to obtain required depth, shall be assumed by the developer;
- Developer is responsible for design and construction of any traffic signal installation or modification which will be necessary as a result of
- All right of way dedicated to public use shall be clear and unencumbered;
- The county/town shall obtain a permit for all sidewalks within right of way that do not qualify for VDOT maintenance;
- Traffic control devices or advisory signs, such as multiway stops, speed limits, Watch for Children, Pedestrian Traffic, etc., shall not be installed unless specifically shown on these plans or a VDOT approved plan revision. Speed study certified be professional engineer should be submitted for VDOT approval prior to the street acceptance for any road to be posted other than the statutory speed limit. Should unapproved signs be noted at the time of VDOT inspection, the road acceptance process shall be terminated and not recommended until a determination is made regarding the approval of any additional signs. Immediate removal of such signs shall not negate the need for the
- Landscaping and irrigation systems shall not be installed within the public right of way, except as shown on these plans or a VDOT approved
- Beginning July 1, 2009 all Land use Permit applications are required to provide at least one (1) person who, at minimum, is verified by VDOT in Basic Work Zone Traffic Control for all permitted activities within state maintained right of way which involves installing, maintaining or removing work zone traffic control devices. This person shall be responsible for the placement, maintenance and removal of all work zone traffic control devices.



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12146 Paper Birch Ln Gainesville, VA 20155

www.SitechCG.com

703-927-2300 Nasser@SitechCG.com

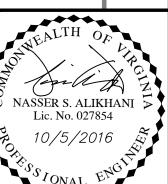
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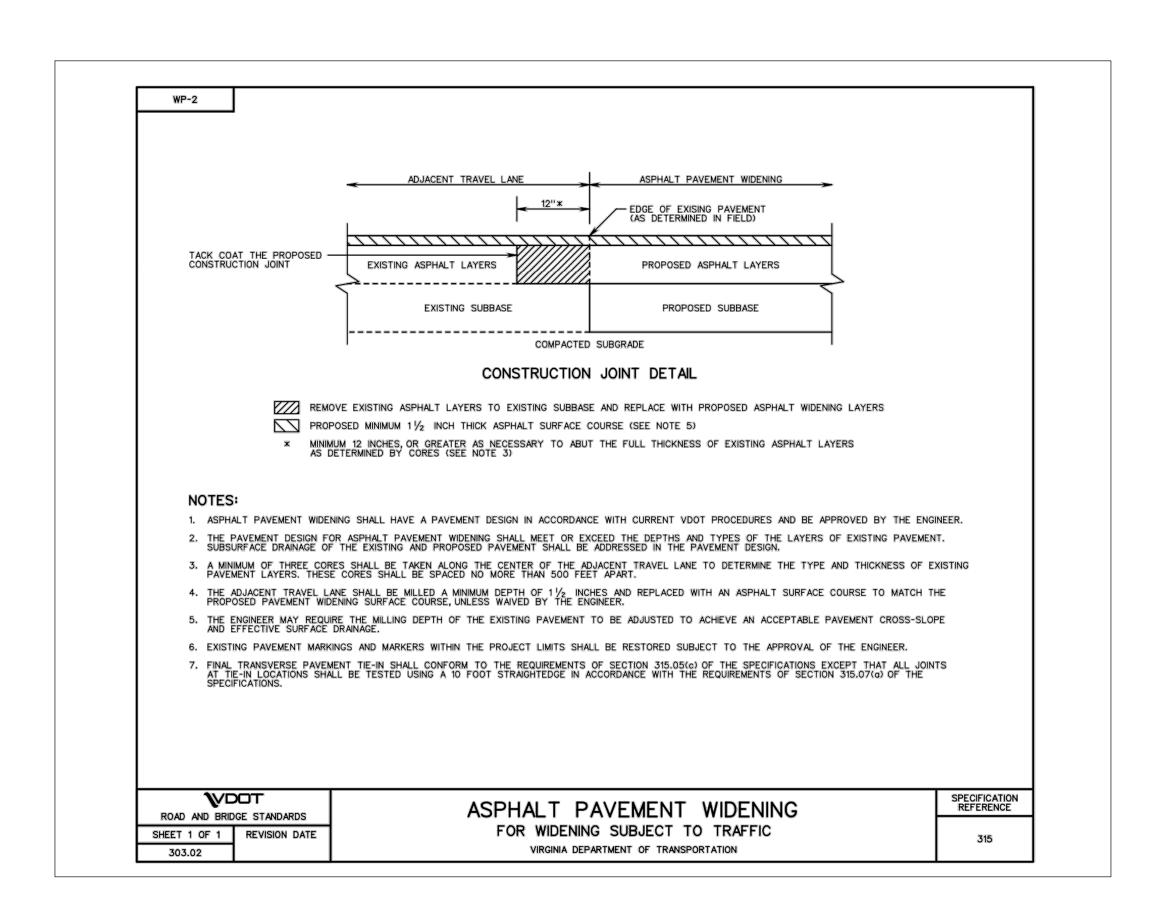
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STAKEOUT NOTE:

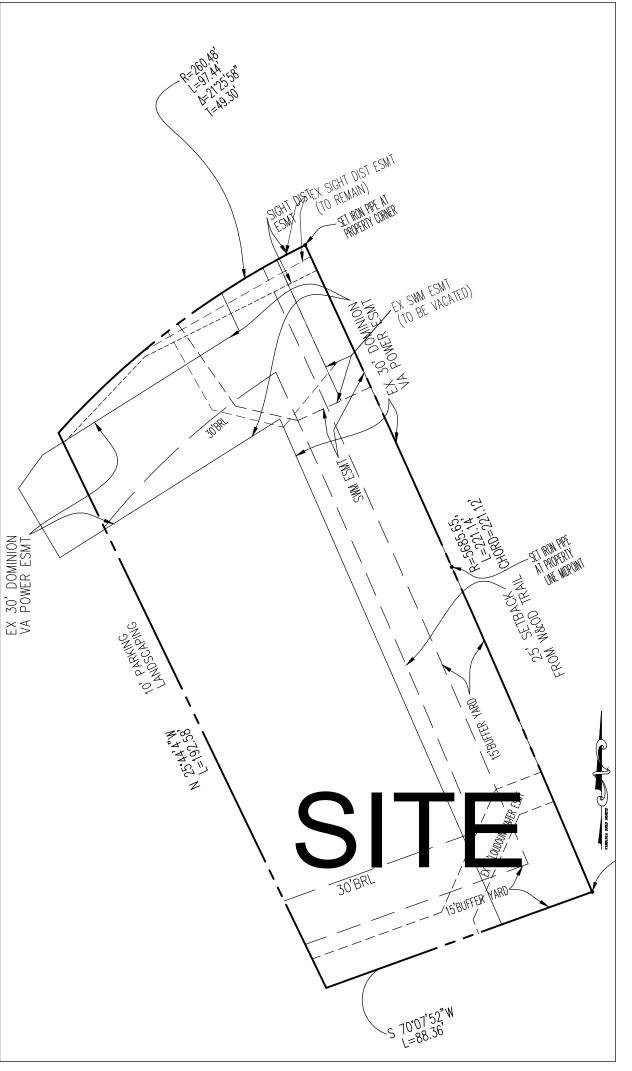
If requested by the Director, the approximate location of the entrances from State-maintained roads will be staked.

We will respond to the Director's request for the field assistance, when required, to identify specific areas of proposed development as related to existing site

Contact Person: Nasser Alikhani 703-927-2300; nasser@sitechcg.com 12146 Paper Birch Ln, Gainesville VA 20155



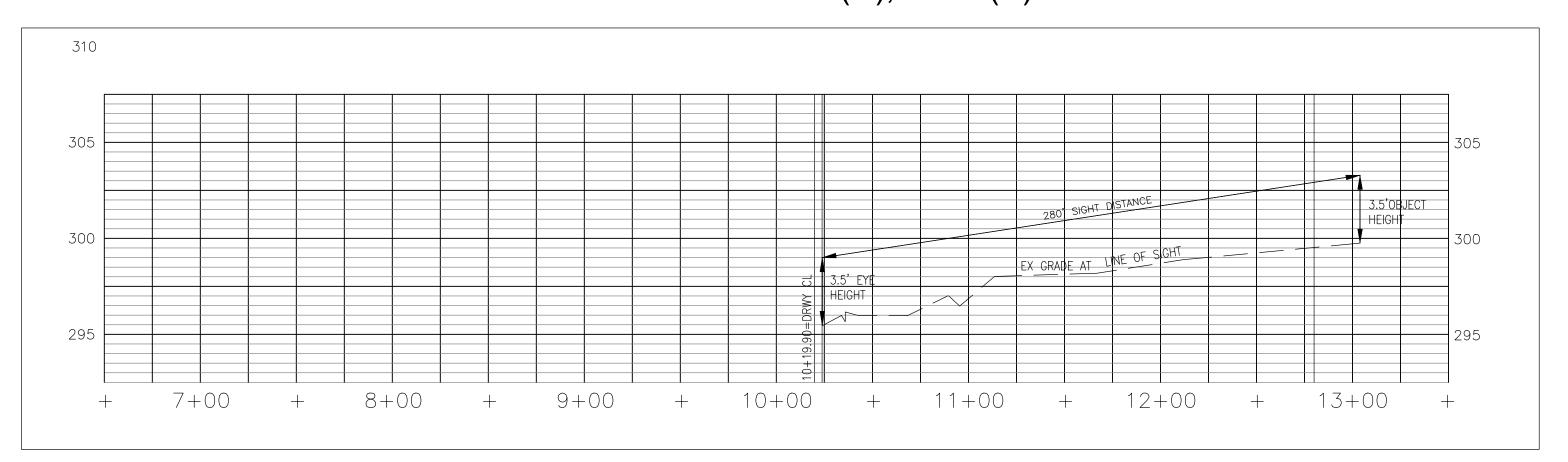
PROPOSED & EXISTING EASEMENTS SCALE: 1"=30'



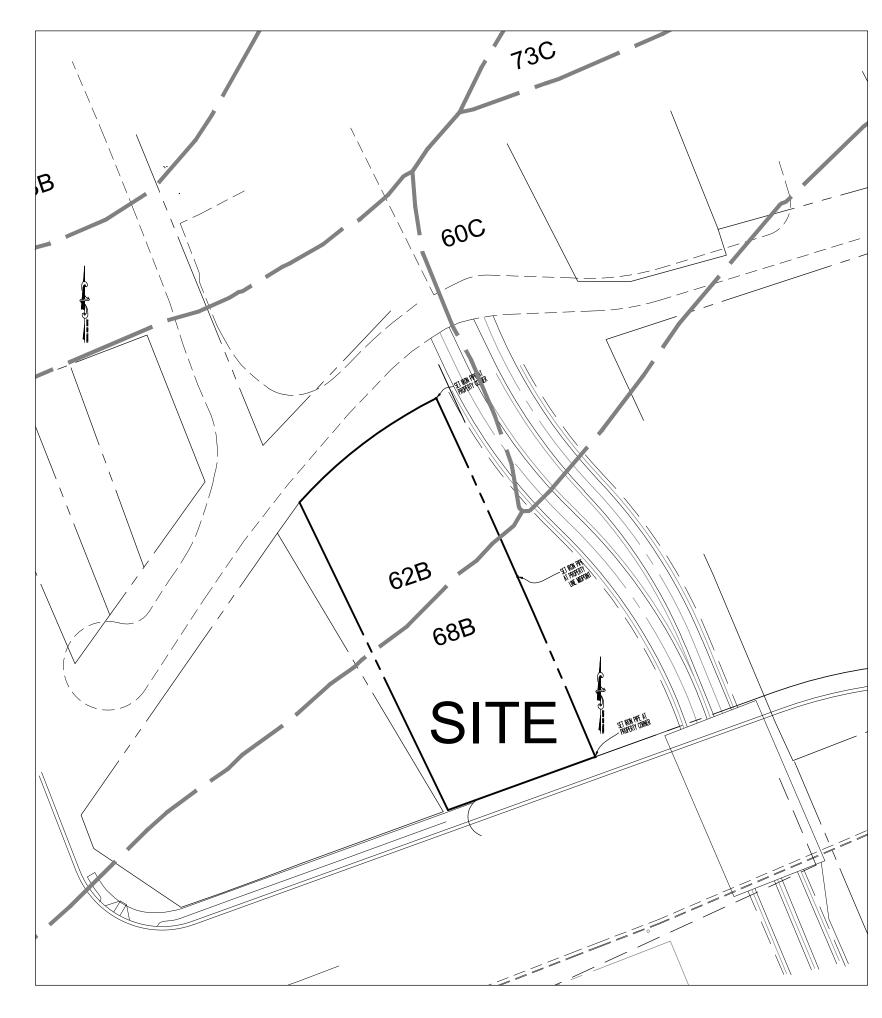
EX RECORDATIONS: THE SHOWN BOUNDARY & EASEMENTS ARE RECORDED UNDER THE FOLLOWING INSTRUMENT NUMBERS: 20050124-0008647 & 20050124-0008648

SIGHT DISTANCE PROFILE

SCALE: 1"=50' (H), 1"=5' (V)



SOILS MAP SCALE: 1"=50'



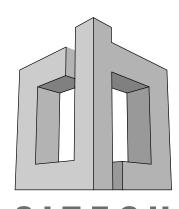
SOILS CERTIFICATION NOTE:

THE SUBJECT DEVELOPMENT DOES NOT CONTAIN CLASS III AND/OR CLASS IV SOILS, AS PER LATEST COUNTY SOILS MAP AS IDENTIFIED BY THE INTERPRETIVE GUIDE TO SOILS MAPS, LOUDOUN COUNTY, VIRGINIA, OR PER THE APPROVED PRELIMINARY SOILS REVIEW INVESTIGATION AND REPORT. LOUDOUN COUNTY RECOMMENDS NO CONSTRUCTION OF STRUCTURES WITH SUBGRADE LEVELS WITHIN NATURAL DRAINAGE SWALES OR WITHIN SOILS OR SPOTS SPECIFICALLY IDENTIFIED AS WET PER THE LATEST COUNTY SOILS MAP AS IDENTIFIED BY THE INTERPRETIVE GUIDE TO SOILS MAPS, LOUDOUN COUNTY, VIRGINIA.

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVIDED GEOTECHNICAL

SOILS PROPERTIES:

1, 3		Jnit Potential Subclasses I Development Convent Central Water and Sewer/ Depth to rock	tional Agricultural Septic Tank	Forestry and Horicultural	Erosion Factor, k
62B Kelly- Sycoline complex, (3-8%) (D/C)	complex of moderately deep, moderately well to somewhat poorly drained, yellowish-brown silty (Sycoline) soils; and deep, somewhat poorly drained gray and grayish-brown clayey (Kelly) soils with	water table	III-poor potential; high water tables	II-secondary cropland	0. 37
	seasonal perched water table on gently slopin to nearly level ridge crests; developed from hornfel and granulites	9		2E, 4W	
68B Haymarket and Jackland soils, very stony (3-8%)	complex of very deep stony moderately well drained yellowish-brown to olive-brown (Jackland) and strong	IV P-very poor potential; wetness and high shrink-swell clays	IV-very poor potential tables and high shrink-swell clays	V-forestry and wildlife	0. 32
(D)	brown (Haymarket) claypan soils with perched water tables and common rock outcrop on convex sloping side slopes; developed from diabase			55, 55	



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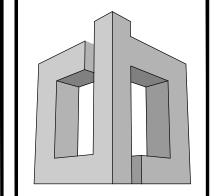
BOUNDARY,

SOILS, NASSER S. ALIKHANI

DATE: **FEB 2016 REVISIONS:**

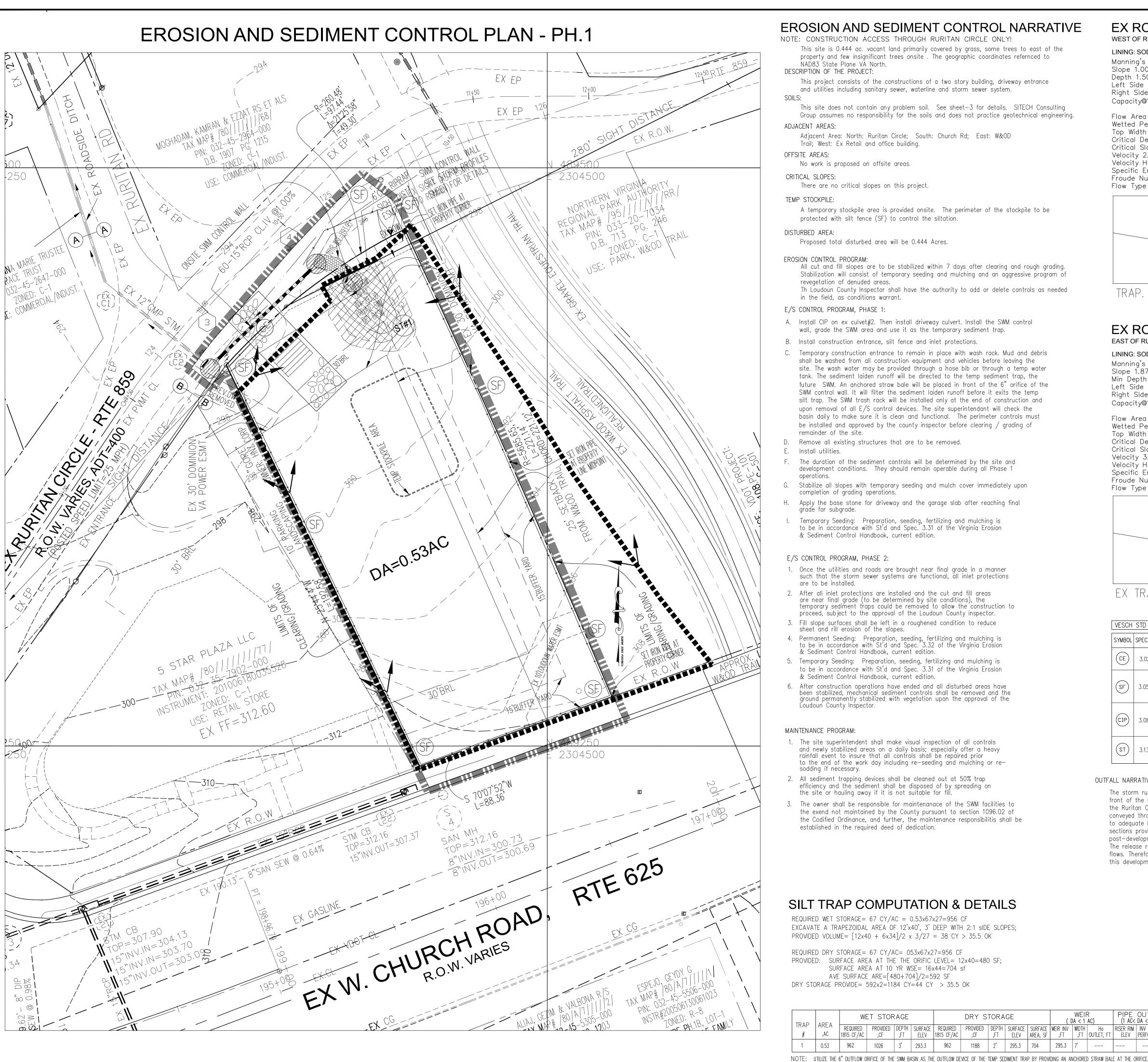
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12146 Paper Birch Ln Gainesville, VA 20155

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EROSION AND SEDIMENT CONTROL NARRATIVE

NOTE: CONSTRUCTION ACCESS THROUGH RURITAN CIRCLE ONLY!

This site is 0.444 ac. vacant land primarily covered by grass, some trees to east of the property and few insignificant trees onsite. The geographic coordinates refernced to NAD83 State Plane VA North.

DESCRIPTION OF THE PROJECT:

This project consists of the constructions of a two story building, driveway entrance and utilities including sanitary sewer, waterline and storm sewer system.

This site does not contain any problem soil. See sheet—3 for details. SITECH Consulting Group assumes no responsibility for the soils and does not practice geotechnical engineering.

Adjacent Area: North: Ruritan Circle; South: Church Rd; East: W&OD Trail; West: Ex Retail and office building.

OFFSITE AREAS:

No work is proposed on offsite areas.

CRITICAL SLOPES:

There are no critical slopes on this project.

A temporary stockpile area is provided onsite. The perimeter of the stockpile to be protected with silt fence (SF) to control the siltation.

Proposed total disturbed area will be 0.444 Acres.

EROSION CONTROL PROGRAM:

All cut and fill slopes are to be stabilized within 7 days after clearing and rough grading. Stabilization will consist of temporary seeding and mulching and an aggressive program of Th Loudoun County Inspector shall have the authority to add or delete controls as needed

E/S CONTROL PROGRAM, PHASE 1:

- A. Install CIP on ex culvet#2. Then install driveway culvert. Install the SWM control wall, grade the SWM area and use it as the temporary sediment trap.
- B. Install construction entrance, silt fence and inlet protections.
- C. Temporary construction entrance to remain in place with wash rack. Mud and debris shall be washed from all construction equipment and vehicles before leaving the site. The wash water may be provided through a hose bib or through a temp water tank. The sediment laiden runoff will be directed to the temp sediment trap, the future SWM. An anchored straw bale will be placed in front of the 6" orifice of the SWM control wall. It will filter the sediment laiden runoff before it exits the temp silt trap. The SWM trash rack will be installed only at the end of construction and upon removal of all E/S control devices. The site superintendant will check the basin daily to make sure it is clean and functional. The perimeter controls must be installed and approved by the county inspector before clearing / grading of remainder of the site.
- Remove all existing structures that are to be removed.
- E. Install utilities.
- The duration of the sediment controls will be determined by the site and development conditions. They should remain operable during all Phase 1
- Stabilize all slopes with temporary seeding and mulch cover immediately upon
- Apply the base stone for driveway and the garage slab after reaching final
- Temporary Seeding: Preparation, seeding, fertilizing and mulching is to be in accordance with St'd and Spec. 3.31 of the Virginia Erosion & Sediment Control Handbook, current edition.

E/S CONTROL PROGRAM, PHASE 2:

- 1. Once the utilities and roads are brought near final grade in a manner such that the storm sewer systems are functional, all inlet protections
- 2. After all inlet protections are installed and the cut and fill areas are near final grade (to be determined by site conditions), the temporary sediment traps could be removed to allow the construction to proceed, subject to the approval of the Loudoun County inspector.
- 3. Fill slope surfaces shall be left in a roughened condition to reduce sheet and rill erosion of the slopes.
- 4. Permanent Seeding: Preparation, seeding, fertilizing and mulching is to be in accordance with St'd and Spec. 3.32 of the Virginia Erosion & Sediment Control Handbook, current edition.
- 5. Temporary Seeding: Preparation, seeding, fertilizing and mulching is to be in accordance with St'd and Spec. 3.31 of the Virginia Erosion & Sediment Control Handbook, current edition.
- 6. After construction operations have ended and all disturbed areas have been stabilized, mechanical sediment controls shall be removed and the ground permanently stabilized with vegetation upon the approval of the Loudoun County Inspector.

MAINTENANCE PROGRAM:

- 1. The site superintendent shall make visual inspection of all controls and newly stabilized areas on a daily basis; especially after a heavy rainfall event to insure that all controls shall be repaired prior to the end of the work day including re-seeding and mulching or re-
- 2. All sediment trapping devices shall be cleaned out at 50% trap efficiency and the sediment shall be disposed of by spreading on the site or hauling away if it is not suitable for fill.
- 3. The owner shall be responsible for maintenanace of the SWM facilities to the exend not maintained by the County pursuant to section 1096.02 of the Codified Ordinance, and further, the maintenance responsibilitis shall be established in the required deed of dedication.

SILT TRAP COMPUTATION & DETAILS

REQUIRED WET STORAGE= $67 \text{ CY/AC} = 0.53 \times 67 \times 27 = 956 \text{ CF}$ EXCAVATE A TRAPEZOIDAL AREA OF 12'x40', 3' DEEP WITH 2:1 sIDE SLOPES; PROVIDED VOLUME= $[12x40 + 6x34]/2 \times 3/27 = 38 \text{ CY} > 35.5 \text{ OK}$

REQUIRED DRY STORAGE= 67 CY/AC= 053x67x27=956 CF PROVIDED: SURFACE AREA AT THE THE ORIFIC LEVEL= 12x40=480 SF; SURFACE AREA AT 10 YR WSE= 16x44=704 sf AVE SURFACE ARE=[480+704]/2=592 SF DRY STORAGE PROVIDE= 592x2=1184 CY=44 CY > 35.5 OK

EX ROADSIDE DITCH

WEST OF RURITAN ROAD

LINING: SOD

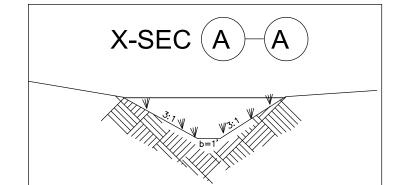
Manning's Coefficient 0.05(Grass) Slope 1.00 % Depth 1.50 ft Left Side Slope 3.00 H : V Right Side Slope 3.00 H : V

Capacity@1.5' Depth = 20.9 cfs

Flow Area 8.3 sf Wetted Perimeter 10.5 ft Top Width 10.0 ft

Critical Depth 1.09 ft Critical Slope 4.54 % Velocity 2.53 fps Velocity Head 0.10 ft Specific Energy 1.60 ft Froude Number 0.49

Flow Type Subcritical



TRAP. ROADSIDE DITCH SECTION (NOT TO SCALE)

EX ROADSIDE DITCH EAST OF RURITAN CIRCLE

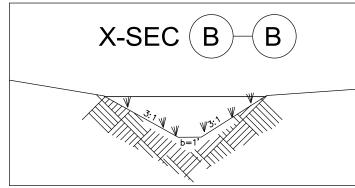
LINING: SOD Manning's Coefficient 0.05(Grass) Slope 1.87 % Min Depth 1.50 ft Left Side Slope 3.00 H : V Right Side Slope 3.00 H : V

Capacity@1.5' Depth =28.58 cfs

Flow Area 8.25 sf Wetted Perimeter 10.5 ft Top Width 10.0 ft Critical Depth 1.25 ft Critical Slope 4.75 % Velocity 3.46 fps Velocity Head 0.18 ft Specific Energy 1.69 ft

Froude Number 0.67

Flow Type Subcritical



EX TRAP. ROADSIDE DITCH SECTION (NOT TO SCALE)

VESCH STD E/S CONTROL DEVICES USED:

SYMBOL	SPEC #	DESCRIPTION OF THE PROPOSED E/S CONTROL DEVICE
CE	3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE: A stabilized stone pad with a filter fabric underliner located at points of vehicular ingress/egress on a construction site. Purpose: To reduce the amount of mud transported onto paved public roads by motor vehicles or runoff.
SF	3.05	SILT FENCE: A temporary sediment barrier consisting of a synthetic filter fabric stretched across and attached to supporting posts and entrenched. Purpose: 1. To intercept and detain small amounts of sediment from disturbed areas during construction opertains in order to prevent sediment from leaving the site. 2. To reduce the velocity of sheet flows and low—to—moderate level channel flows.
CIP	3.08	CULVERT INLET PROTECTION: A sediment filter located at the inlet to storm sewer culverts. Purpose: 1. To prevent sediment from entering, accumulating in and being transferred by a culvert and associated drainage system prior to permanent stabilization of a disturbed project area. 2. To provide erosion control at culvert inlets during the phase of a project where elevation and drainage patterns change, causing original comtrol measures to be ineffective or in need of removal.

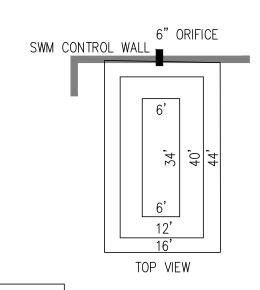
TEMPORARY SEDIMENT TRAP: To temporary ponding area formed by constructing an earthen embankment with a stone outlet.

Purpose: To detain sediment—laden runoff from small disturbed areas long enough to allow the majority of the sediment to settle out.

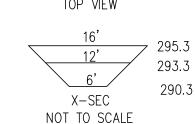
OUTFALL NARRATIVE:

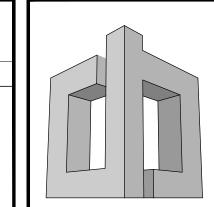
The storm runoff from this site outfalls to existing roadside ditch along the front of the site on Ruritan Circle; the runoff is conveyed to the north side of the Ruritan Circle via an exiting culvert under Ruritan Circle. The runoff is then conveyed through roadside ditch at Ruritan Road and underground storm system to adequate bed and banks downstream. Please see the existing roadside ditch sections provided at these locations. Based on our outfall analysis and post-development runoff from this site.

The release rate for 2yr and 10yr runoff is much less than the pre-development flows. Therefore, no adverse impact is on the existing drainage system due to this development. Hence, We believe adequate outfall exists.



PIPE OUTLET (1 AC< DA <3 AC) WET STORAGE DRY STORAGE (DA < 1 AC) AREA REQUIRED PROVIDED DEPTH SURFACE REQUIRED PROVIDED DEPTH SURFACE SURFACE WEIR INV WIDTH HO RISER RIM INV LOWEST TOP HEIGHT AREA, SF ,FT ,FT OUTLET, FT ELEV PERFORATION ELEV ,FT REMARKS 962 | 1188 | 2' | 295.3 | 704 | 295.3 | 7' SEE NOTE BELOW





E/S CONTROL LEGEND

3.04 | STRAW BALE BARRIER | (STB) |

SILT FENCE

TEMPORARY RIGHT-OF-WAY

DIVERSION

TEMPORARY SEDIMENT BASIN

3.18 | OUTLET PROTECTION | (DP)

3.38 | TREE PROTECTION | (TP)

3.20 ROCK CHECK DAMS

3.05

3.13

3.19

FOR FULL DETAILS REFER TO CURRENT VESCH

(VIRGINIA EROSION/SEDIMENT CONTROL HANDBOOK)

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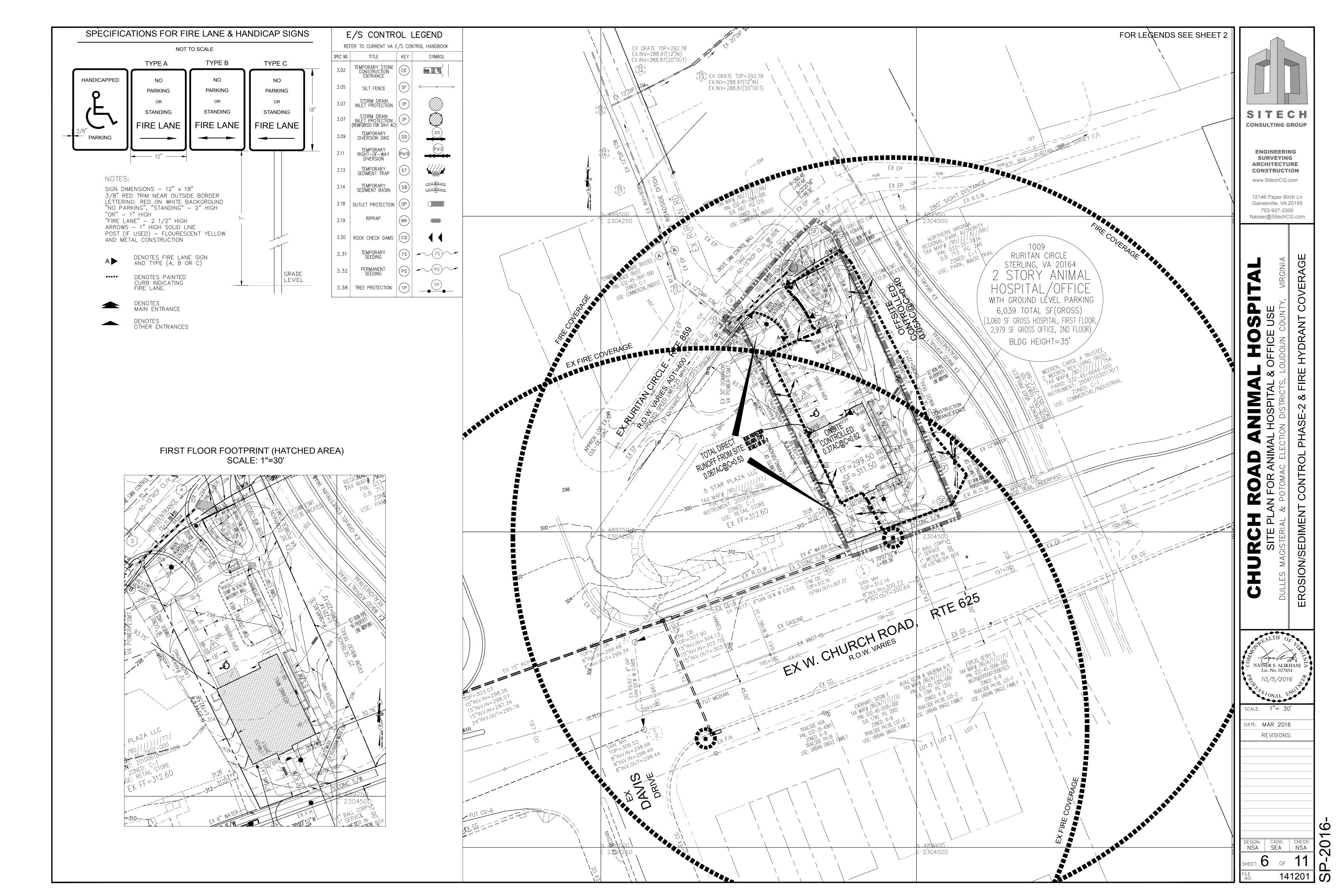
Nasser@SitechCG.com

EROSION/SEDIMENT

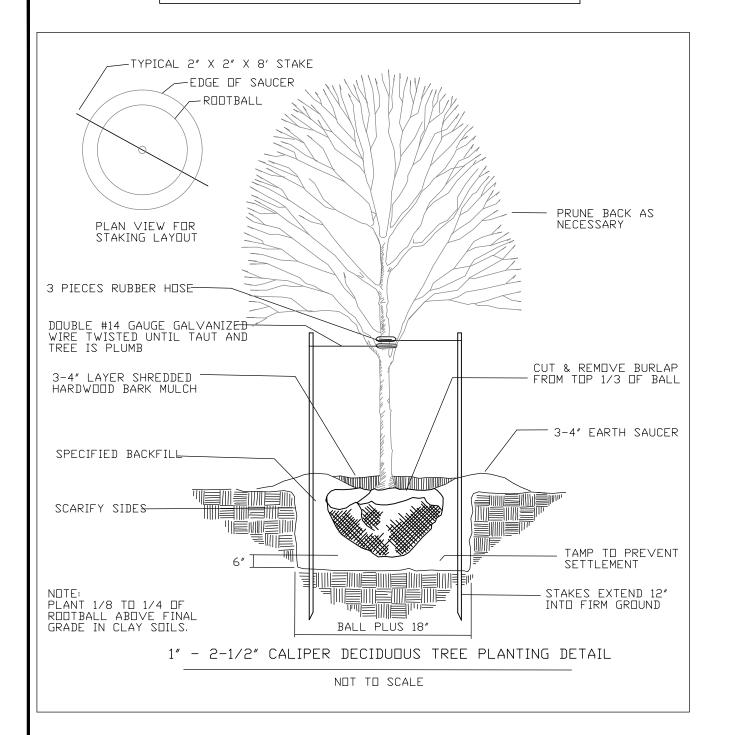
NASSER S. ALIKHANI

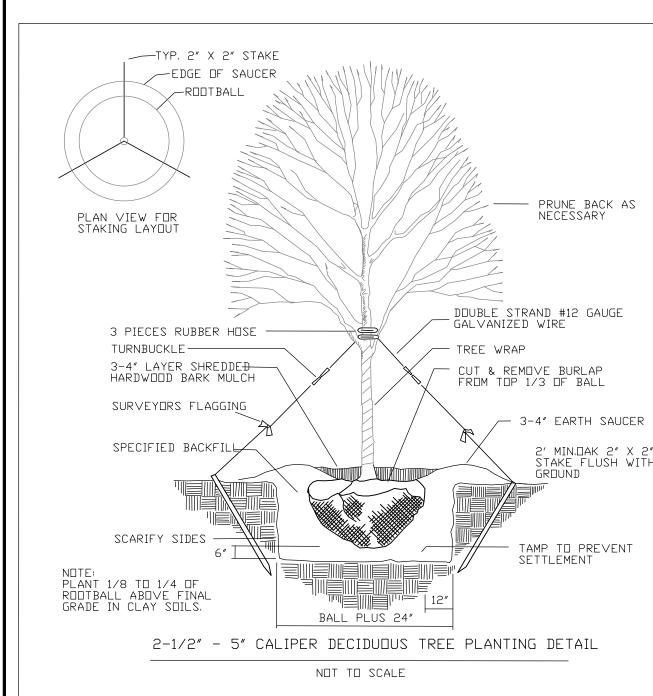
DATE: MAR 2016 **REVISIONS:**

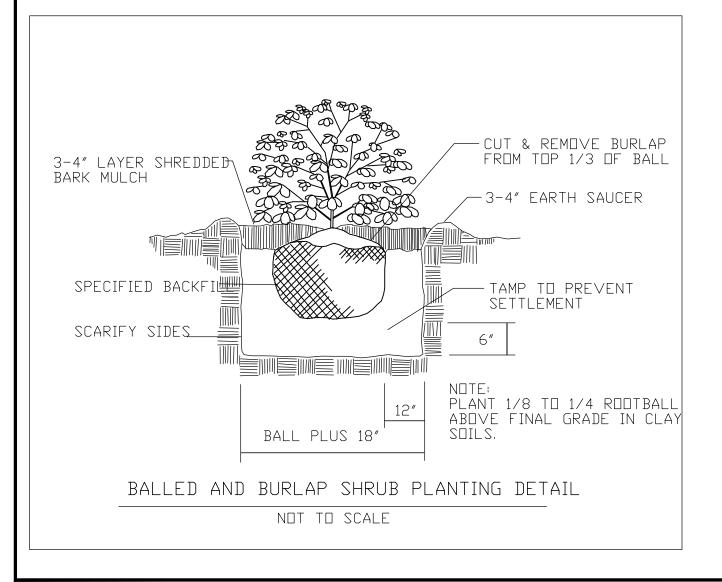
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PLANTING & MAINTENANCE OF MATERIAL: PLEASE REFER TO CURRENT VESCH (VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK) FOR THE GUIDELINES ON PLANTING AND MAINTENANCE OF THE MATERIAL.







BUFFER YARDS REQUIREMENTS: (LOUDOUN COUNTY ZONING)

			FRO	NT ,	YAR[)				REA	R Y	ARD					SIDE	E YA	\RD		
		TREE	S/10	0 LF	4		*		TREE	S/10	0 LF	LF		*		TREE	S/10	0 LF	4		*
BUFFER TYPE	HLOIM NIM	CANOPY	UNDERSTORY	EVERGREEN	SHRUBS/100	BERM ***	WALL/FENCE *	HLQIM NIW	CANOPY	UNDERSTORY	EVERGREEN	SHRUBS/100	BERM ***	* MALL/FENCE	MIN WIDTH	CANOPY	UNDERSTORY	EVERGREEN	SHRUBS/100	BERM ***	WALL/FENCE *
TYPE 1	10'	2	_	_	_	1	1	10'	1	4	-	6	_	_	5'	_	4	_	6	_	_
TYPE 2	15'	3	2	ı	10	ı	1	20'	2	6	ı	10*	_	ı	15'	2	3	ı	8*	ı	-
TYPE 3	20'	3	3	ı	24	1	_	25'	4	7	ı	30*	_	**	20'	2	5	ı	20	-	**
TYPE 4	20'	4	3	_	20	-	-	30'	4	7	10	15	_	**	20'	2	3	6	25	_	**

NOTES: * 75% OF WHICH MUST BE EVERGREENS.

** A SIX FOOT HIGH STOCKADE FENCE, PROVIDING MINIMUM OPACITY OF 95%, OR A SIX FOOT HIGH MASONRY WALL. *** AN EARTHEN BERM WITH A MINIMUM HEIGHT OF 4 FEET WITH A SLOPE NOT TO EXCEED 3:1, PLANTED WITH TURF OR GROUND COVER MATERIAL, REQUIRED WHEN ADJACENT TO AN ARTERIAL ROAD.

BUFFER YARDS PLANTING:

	REQUIRED			EXISTING					A[DD. I	POSE	ED_	TOTAL PROVIDED							
LOCATION & BUFFER YARD TYPE	CANOPY	UNDERSTORY	SHRUBS	EVERGREEN	ORNAMENTAL	CANOPY	UNDERSTORY	SHRUBS	EVERGREEN	ORNAMENTAL	CANOPY	UNDERSTORY	SHRUBS	EVERGREEN	ORNAMENTAL	CANOPY	UNDERSTORY	SHRUBS	EVERGREEN	ORNAMENTAL
ADJACENT TO EX W. CHURCH ROAD 89' TYPE 2 FRONT YARD BUFFER (15' WIDE)	3	2	9	ı	ı	ı	ı	ı	_	_	3	2	9	_	-	3	2	9	_	_
ADJACENT TO EX RURITAN CIRCLE 97' PARKING BUFFER, 1 TREE/25' (10' WIDE)	4	_	_						_	_	4	_		_		4		_	_	_
ADJACENT TO EX W&OD TRAIL 221' TYPE 2 SIDE YARD BUFFER (15' WIDE)	5	7	18	ı	ı		-		_	_	5	7	18	_	-	5	7	18	_	_
ADJACENT TO WESTERN LOT LINE —RETAIL/OFFICE 70' PARKING LANDSCAPING	2	_	11	_	_	_	_	_	_	_	2	_	11	_	_	2	ı	11	_	_

PARKING LOT & LOADING SPACE LANDSCAPING/SCREENING:

PROVIDE 6 SHRUBS/40' + 1 CANOPY TREE/35' ALONG WESTSIDE OF PARKING LOT, REF: SECTION 560.13(C)(1). PROVIDE 6' HIGH MASONRY SCREEN WALLS AT THE LOADING SPACE, COMPATIBLE WITH THE BUILDING DESIGN.

TREE CANOPY REQUIREMENT:

TREE COVERAGE REQUIRED: TOTAL SITE AREA = 0.4440 AC OR 19,339 SF

-R.O.W DEDICATION: NONE NET SITE AREA = 19.339 SF SF

TOTAL CANOPY REQUIRED (10%) = 1,934 SF

CANOPY COVERAGE PROVIDED: CANOPY FROM BUFFER YARD TREES (THIS PROJECT):

(6 MAPLE)200+(7 OAK)200+(1 LONDON)200

+(3 REDBUD)100+(4 CHERRY)150+(2 PEAR)150 = 4,000 SF

TOTAL CANOPY PROVIDED:

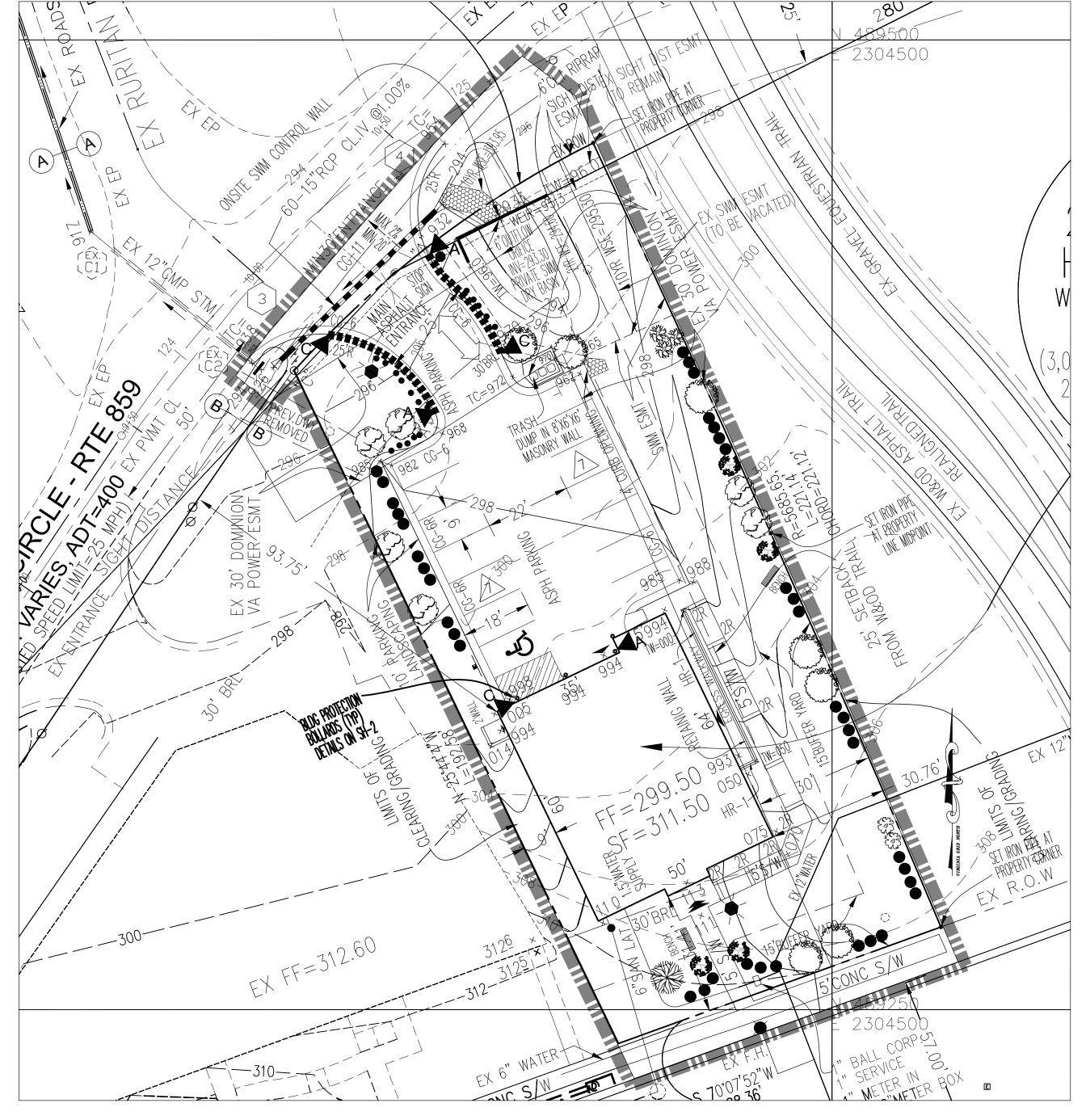
4,000 SF PROVIDED >> 1,934 SF REQUIRED. OK

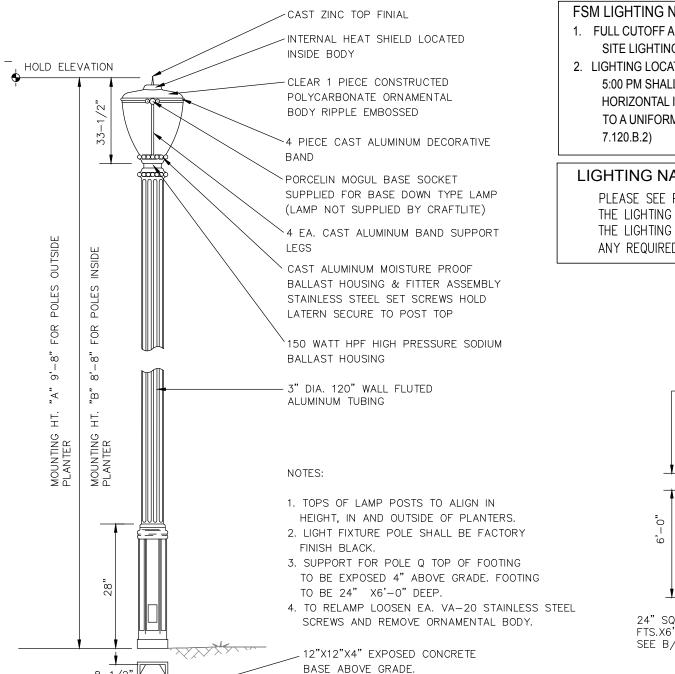
PLANTING LIST

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	REMARKS	CANOPY AREA					
		CANO	PY TRI	EES							
	ACER RUBRUM	RED MAPLE	6	2" CAL.	В & В	200 SF					
	QUERCUS RUBRA (BOREALIS)	NORTHERN RED OAK	7	2" CAL.	B & B	200 SF					
	PLATANUS ACERFOLIA	LONDON PLANETREE	1	2" CAL.	B & B	200 SF					
UNDERSTORY TREES											
***	CERCIS CANADENSIS	REDBUD	3	2" CAL.	B & B	100 SF					
£3	PYRUS CALLERYANA	CALLERY PEAR	2	2" CAL.	B & B	150 SF					
6	PRUNUS YEDOENSIS	YOSHINO CHERRY	4	2" CAL.	В & В	150 SF					
		E	VERGR	REEN TREES							
*											
*		SH	RUBS								
*/ * **	VARIOUS SPECIES	SH VIBURNUM	RUBS 14	MIN. 30"	В & В	NOTE: 75%					
**				MIN. 30" MIN. 18"	B & B B & B						

NOTES:

- 1. BACKFILL TREES AND SHRUBS WITH TOPSOIL AND PEAT MOSS (OR LEAF MOLD) 3:1 RATIO BY VOLUME.
- 2. ALL PLANT MATERIAL TO BE NURSERY GROWN AND COMPLY WITH CURRENT "AMERICAN STANDARD FOR NURSERY STOCK" PRACTICES.
- 3. SPRAY TREES AND SHRUBS WITH ANTI-DESICCANT, IF FOLIAGE IS PRESENT.
- 4. EVERGREEN TREES AND SHRUBS SHALL BE PLANTED THE SAME AS DECIDUOUS PLANTS. PRUNE EVERGREENS TO GIVE COMPACT UNIFORM APPEARANCE.





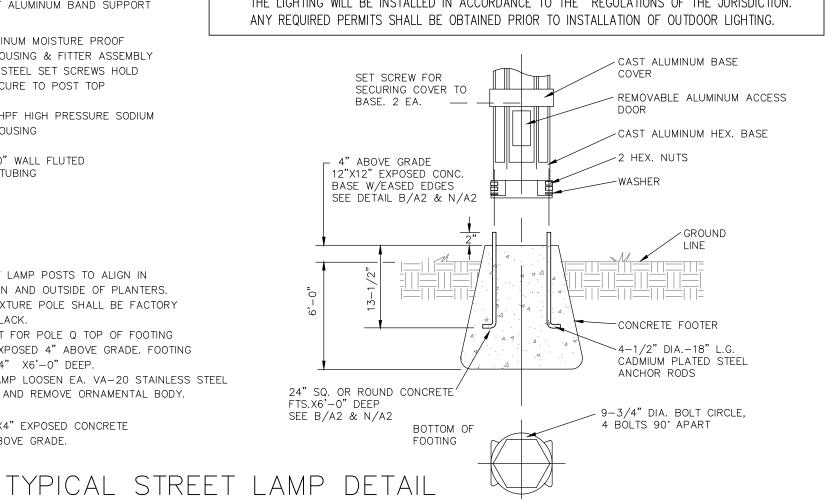
FSM LIGHTING NOTES: 1. FULL CUTOFF AND FULLY SHIELDED LIGHT FIXTURES SHALL BE UTILIZED TO MEET THE STREET AND SITE

SITE LIGHTING REQUIREMENTS OF THE FSM. (FSM 7.110.A) 2. LIGHTING LOCATED WITHIN DEVELOPMENTS WHICH PROVIDE CUSTOMER SERVICE TO THE PUBLIC AFTER 5:00 PM SHALL HAVE A MINIMUM OF SIX TENTH (0.6) FOOT-CANDLE AT GRADE AND THE AVERAGE HORIZONTAL ILLUMINATION SHALL NOT EXCEED FORTY (40) FOOT-CANDLES AT GRADE LEVEL, SUBJECT TO A UNIFORMITY RATIO (RATIO OF AVERAGE MINIMUM ILLUMINANCE) NO GREATER THAN 4:1. (FSM

LIGHTING NARRATIVE:

NOT TO SCALE

PLEASE SEE PROVIDED DETAILS ON THIS SHEET FOR THE LIGHTING SPECS. THE LIGHTING WILL BE PRIVATELY OWNED AND MAINTAINED BY THE OWNER. THE LIGHTING WILL BE INSTALLED IN ACCORDANCE TO THE REGULATIONS OF THE JURISDICTION.



FOR LEGENDS SEE SHEET 2

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ENGINEERING

12146 Paper Birch Ln 703-927-2300

Gainesville, VA 20155 Nasser@SitechCG.com

NASSER S. ALIKHANI Lic. No. 027854

DATE: MAR 2016 **REVISIONS:** DESIGN: CADD: CHECK: NSA SEA NSA OF 11

TOTAL SITE AREA = 0.444AC = 19.339 SF SF

PRE-DEVELOPMENT RUNOFF:

EXISTING Cw=0.43 (3,991 SF @ 0.95 + 15,348 SF @ 0.30) Q10pre=CIA=0.43x6.75x0.444= 1.29 CFS Q2pre =CIA=0.43x5.01x0.444= 0.96 CFS

POST-DEVELOPMENT RUNOFF: ROOF=3,060 SF=0.07 AC; PARKING/SIDEWALK=5.893 SF=0.14 AC YARDS=10,386 SF= 0.24 AC

PROPOSED Cw=0.60 [(0.07@0.95+0.14@0.90+0.24@0.30)/0.444]

Q100 post=CIA=0.60x9.42x0.444= 2.50 CFS Q10 post=CIA=0.60x6.75x0.444= 1.80 CFS Q2 post=CIA=0.60x5.01x0.444= 1.33 CFS

TOTAL INCREASE IN RUNOFF:

Q10=P0ST-PRE=1.80-1.29=0.51 CFS Q2=2post-2pre=1.33-0.96=0.37 CFS

..... 1113.3860 ft3

SWM COMPS

2 YEAR FLOW:

Basin Output Pond Name. Distribution Type Type II Frequency Type 0.4440 ac 1.3300 cfs Peak Inflow . Peak Outflow 1.0300 cfs 2.9300 in Runoff Volume 5528.8582 ft3

Maximum Storage Elevation 294.600 ft

Basin Output Pond Name .. Distribution Type .. Type II Frequency Type . 0.4440 ac Peak Inflow. 1.8000 cfs Peak Outflow 1.4400 cfs 4.4082 in .. 8294.0676 ft3 Runoff Volume .. Storage Volume 1676.9608 ft3 Maximum Storage Elevation 295.3010 ft

10 YEAR FLOW

DUE TO THE SIZE OF THE DEVELOPMENT AND VERY MINOR INCREASE IN THE POST-DEV RUNOFFS, THE REQUIRED SWM STORAGE FOR DETENTION IS DERIVED FROM THE BASIN STORAGE" ESTIMATE, WHICH IS MORE CONSERVATIVE

FOR THE SAME REASON, WE BELIEVE PROVIDING INFLOW/OUTFLOW HYDROGRAPHS FOR THESE MINOR RUNOFFS ARE NOT NEEDED

THE OUTFLOW ORIFICE, A 6" DIAMETER ORIFICE, IS PROVIDED TO CONTROL THE FLOW TO LESS THAN PRE-DEV CONDITIONS AT ANY STAGE.

FLOWS INTO THE BASIN:

DIRECT RUNOFF FROM SITE: 981 SF @ 0.95 + 3,138 SF @ 0.30 =0.0214+ 0.0216=> TOTAL DIRECT RUNOFF C.A.= 0.043

4,967 SF @ 0.30 (W&OD TRAIL) =0.11 AC @ 0.30 => TOTAL OFFSITE C.A.= 0.034

ALLOWABLE RELEASE RATES:

OFFSITE THROUGH SITE:

Q rel = Q pre - Q dir + Q offsiteQ10=1.39 - (0.05-0.03)6.75=1.15 CFS Q2=1.10 - (0.05-0.03)5.01=0.92 CFS

WEIR SIZING:

TOP OF CONTROL WALL = 296.00ORIFICE INV=293.30

10 YR WSE=295.30 2 YR WSE=294.60

 $Q100 = (0.60 \times 0.444 - 0.043 + 0.034)9.42 = 2.42 CFS$ WEIR LENGTH FOR 100YR OVERFLOW = 7' Q100=2.57 CFS=CLH¹.5=3(7)H¹.5

=> H=0.25'=3" => WEIR HEIGHT = 3"

THUS THE ORIFICE SIZE IS O.K.

=> 100 YR WSE=295.30 +0.25 =295.55; LET SET WEIR INV. AT 295.55, AND TOP OF CONTROL WALL AT 296.00

ORIFICE SIZING:

ALLOWABLE Q2 = 0.96 cfs, Q=CA(2gH) $^0.5$ ALLOWABLE Q10=1.29 cfs, $Q=CA(2gH)^0.5$ LET USE A 6" DIAMETER ORIFICE, C=0.60 h2 = (294.60 - 293.3 - 0.25)/2 = 0.53, $Q2 = 0.60 \times [3.1415 \times (0.25)^2] \times [2g(0.53)]^0.5 = 0.38 \text{ CFS}$ Q2release = 0.38 CFS < Q2allowable= 0.96 2 YEAR RELEASE RATE IS LESS THAN ALLOWABLE RATE. THUS THE ORIFICE SIZE IS O.K.

h10 = (295.30 - 293.3 - 0.25)/2 = 0.88, $Q10 = 0.60 \times [3.1415 \times (0.25)^2] \times [2g(0.88)]^0.5 = 0.49 \text{ CFS}$ Q10release = 0.49 CFS < Q10allowable= 1.29 10 YEAR RELEASE RATE IS LESS THAN ALLOWABLE RATE.

STAGE / STORAGE:

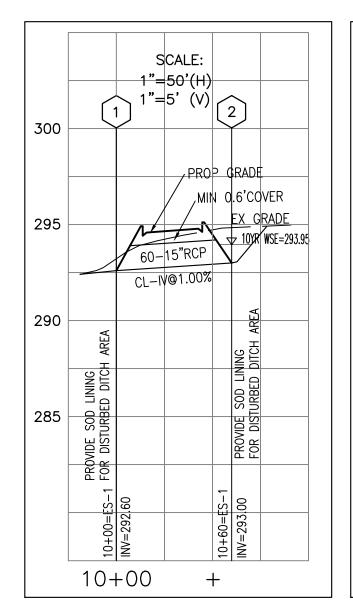
#Units=Elevation,ft,Volume,ft3 #Stage-Storage Curve Data #Stage - ft Volume - ft3

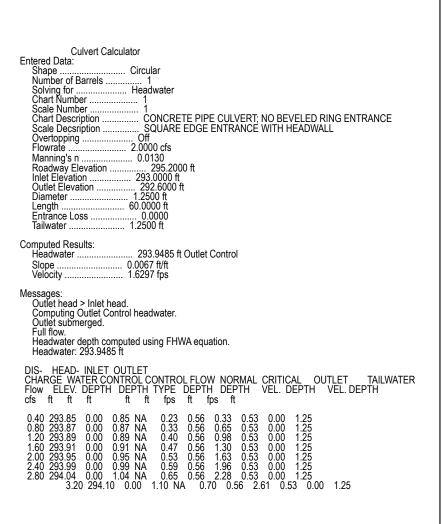
#-----296.00000000, 2253.11333987 294.00000000, 243.79540964 293.30000000. 0.00000000

STAGE / DISCHARGE:

ORIFICE INV=		293.3	DIA=	6"	WEIR EL= 295.75
TOP OF WALL=		296.00			WEIR L= 7'
ELEVATION	h	Qorif	Qweir	Qtot	
293.30	0.00	0.00		0.00	
293.75	0.20	0.42		0.42	
294.00	0.45	0.63		0.63	
294.25	0.70	0.79		0.79	
294.50	0.95	0.92		0.92	
294.75	1.20	1.04		1.04	
295.00	1.45	1.14		1.14	
295.25	1.70	1.23		1.23	
295.50	1.95	1.32		1.32	
295.55	2.00	1.34		1.34	
295.75	2.20	1.40	0.00	1.40	
296.00	2.45	1.48	2.63	4.10	

DRIVEWAY CULVERT PROFILE & COMPS





SWM & BMP NARRATIVE

THE OUTFLOW FROM THIS SITE IS CONTROLLED AND THE ACTUAL POST-DEVELOPMENT WILL BE DECREASED BY PROVIDING A SMALL DETENTION BASIN ONSITE. PRE-DEVLOPMENT 10YR FLOW FROM THIS SITE=1.29 CFS MAX OUTFLOW FROM POST-DEVELOPMENT Q10=0.49 CFS TOTAL 10YR RUNOFF DECREASE FROM THIS SITE: Q10=Q10allowbale-Q10release=1.29-0.49=0.80 cfs NO BMP IS REQUIRED FOR THIS SITE, BASED ON THE TOTAL PROPOSED IMPERVIOUS AREA.

a. PRE AND POST-DEVLOPMENT SITE CONDITIONS:

THIS SITE IS A SMALL VACANT LOT WITH MODERATE SOLPE FRON W CHURCH ROAD TO RURITAN CIRCLE. A BUILDING WITH FOORT PRINT OF APPROX 3000 SF WILL BE ERRECTED ON THIS LOT WITH ITS 18 PARKING SPACES ON AN ASPHALT SURFACE. A SMALL SWM BASIN WILL CONTRL THE FLOWS TO LESS THAN PRE-DEV CONDITIONS.

b. SWM STARTEGY:

THIS SITE IS EXEMPT FROM BMP REQUIREMENTS; HOWERVE PROPOSED SWALES WILL ENHANCED THE QUALITY OF THE RUNOFF BEFORE IT ENTERS THE SWM BASIN FOR QUANTITATIVE REDUCTION.

c. A DESCRPTION OF THE SWM FACILITY:

i. TYPE OF FACILITY: THIS IS DRY EXTENDED RELEASE SWM; ii. THE SWM IS LOCATED TO THE LEFT OF DRIVEWAY. SEE SITE PLAN FOR NAD83 STATE NORTH COORDINATES.

iii. 0.53 ACRES WILL BE TREATED BY THIS SWM. iv. DISCRIPTION OF THE DISCHARGE POINT: THE OUTFALL FROM THE SWM IS INTO A ROAD SIDE DITCH ALONG RURITAN CIRCLE, IT IS CONVEYED TO THE NORTH OF RURITAN CIRCLE VIA A CMP CULVERT AFTER PASSING UNDER THE DRIVEWAY CULVER FOR THIS SITE.

d. THE MECHANISIM THROUGH WHICH THE SWM WILL BE OPERTAED AND MAINTAINED AFTER CONSTRUCTION IS COMPLETE: THE FACILTY WILL BE SEEDED/SODDED AND ROUTINLEY MAINTAINED BY THE OWNER AND THE TRASH RACK WILL BE CLEANED PERIODICALLY TO KEEP IT IN A CLEAN AND FUCNTIOANL STATUS. SWM AREAS SHALL NOT BE USED FOR ANY SORT OF STORGAE.

MAINTENANCE PLAN: THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE SWM FACILITIES TO THE EXTEND NOT MAINTAINED BY THE COUNTY, PURSUANT TO SECTION 1096.02 OF CODEFIED ORDINANCE, AND FURTHER, THE MAINTENANCE RESPONSIBILITIES SHALL BE ESTABLSIHED IN THE REQUIRED DEED OF

SWM GEOGRAPHICAL COORDINATES, BASED ON NAD83 STATE PLANE VIRGINIA NORTH 39.005866* LONGITUTDE: -77.42851°

OUTFALL NARRATIVE

THERE WILL BE NO INCREASE IN THE VELOCITY FOR 2YR FLOW NOR INCREASE IN THE RUNOFF RATE FOR 10YR FLOWS, DUE TO RUNOFF CONTROL BY PROPOSED SWM BASIN.

THE RUNOFF FROM THE SWM BASIN IS CONVEYED THROUGH THE EX ROADSIDE DITCH, THEN IS CONVEYED TO THE OPEN CHANNEL ON THE NORTH SIDE OF THE RURITAN CIRCLE AFTER PASSING THROUGH THE DRIVEWAY CULVERT.

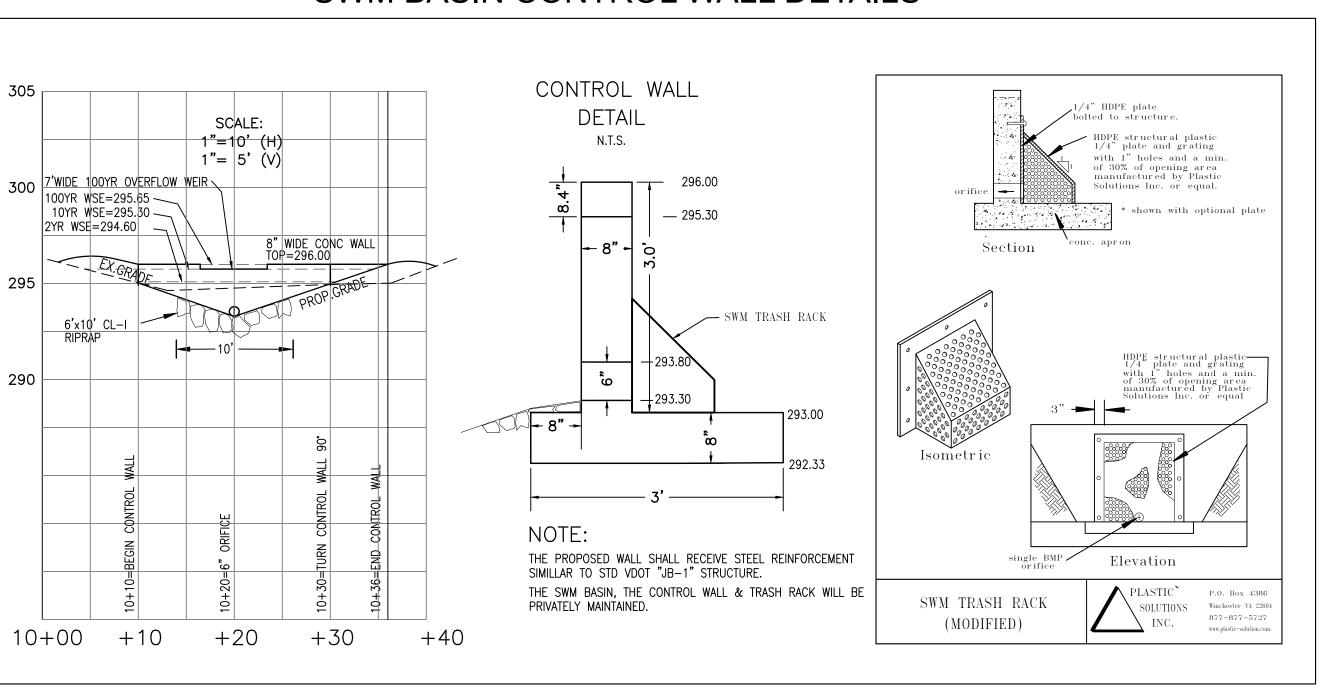
THE POST-DEVELOPMENT 10YR AND 2YR OUTFLOW RATE FROM THE SWM BASIN IS MUCH LESS THAN THE PRE-DEVELOPMENT RUNOFFS.

SINCE THE 2YR VELOCITY AND 10YR RUNOFF IS NOT BEING INCREASED WE BELIEVE ADEQUATE OUTFALL REQUIREMENTS FOR THIS SITE IS MET.

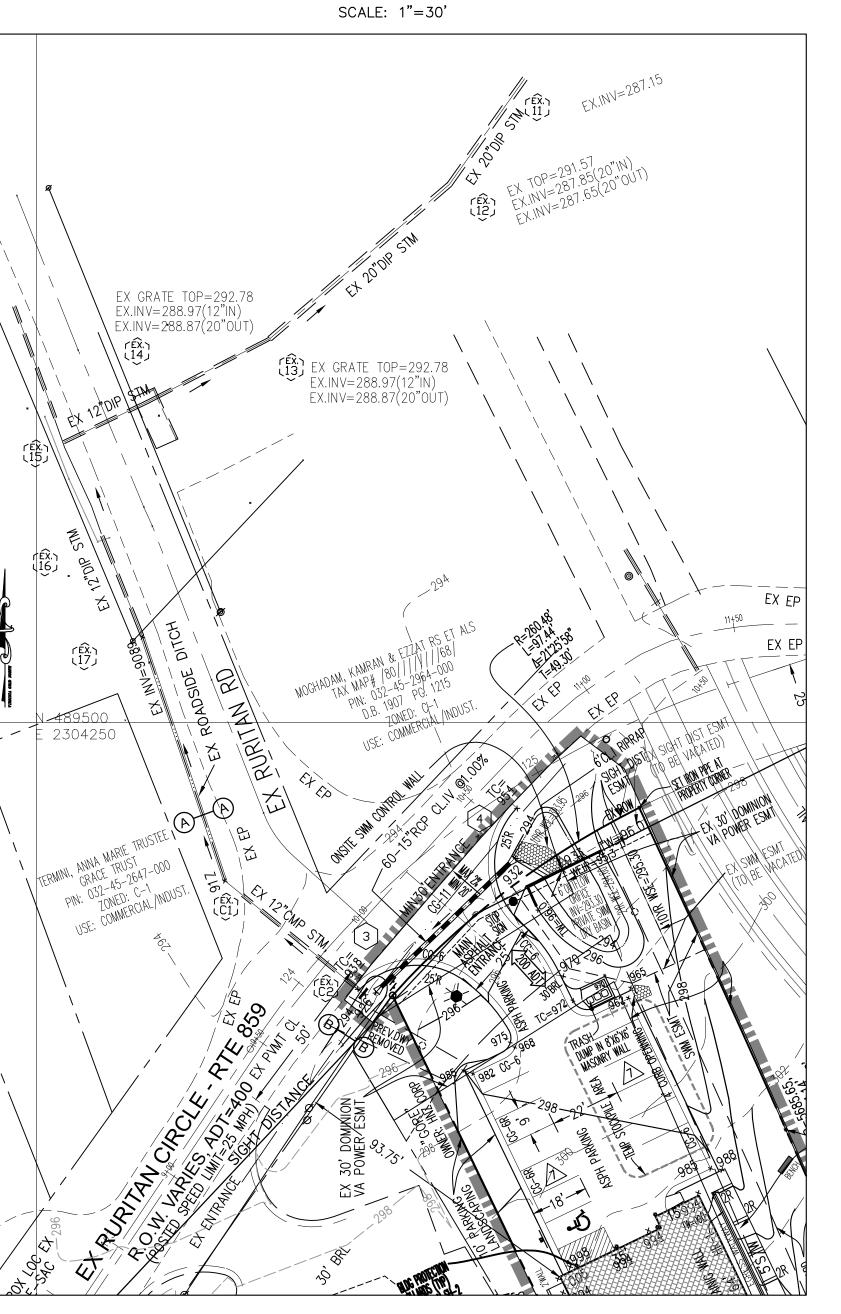
OVERLAND RELIEF

THE EXISTING RURITAN CIRCLE WILL GENERALLY PROVIDE OVERLAND RELIEF FOR AREAS FROM THIS SITE. THE 100YR FLOW WILL BE CONVEYED TO THE TRIBUTARY OF THE CABIN BRANCH THROUGH THE EXISTING SWALES ALONG THE RURITAN ROAD AND EXISTING SWALE BY THE W&OD TRAIL. DUE TO THE MAGNITUDE OF THE DEVELOPMENT, 0.44 ACRE TOTAL, WE DO NOT BELIEVE THERE WILL BE ANY ADVERSE IMPACT ON THE DOWNSTREAM PROPERTIES.

SWM BASIN CONTROL WALL DETAILS



OUTFALL MAP



EX ROADSIDE DITCH WEST OF RURITAN ROAD

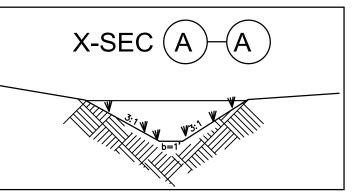
LINING: SOD

Manning's Coefficient 0.05(Grass) Slope 1.00 % Depth 1.50 ft Left Side Slope 3.00 H : V Right Side Slope 3.00 H : V Capacity@1.5' Depth =20.9 cfs

Flow Area 8.3 sf Wetted Perimeter 10.5 f Top Width 10.0 ft Critical Depth 1.09 ft Critical Slope 4.54 % Velocity 2.53 fps Velocity Head 0.10 ft Specific Energy 1.60 ft

Froude Number 0.49

Flow Type Subcritical



TRAP. ROADSIDE DITCH SECTION (NOT TO SCALE)

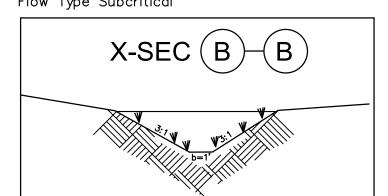
EX ROADSIDE DITCH

EAST OF RURITAN CIRCLE LINING: SOD Manning's Coefficient 0.05(Grass)

Slope 1.87 % Min Depth 1.50 ft Left Side Slope 3.00 H: V Right Side Slope 3.00 H : V Capacity@1.5' Depth =28.58 cfs

Flow Area 8.25 sf Wetted Perimeter 10.5 ft Top Width 10.0 ft Critical Depth 1.25 ft

Critical Slope 4.75 % Velocity 3.46 fps Velocity Head 0.18 ft Specific Energy 1.69 ft Froude Number 0.67 Flow Type Subcritical



EX TRAP. ROADSIDE DITCH SECTION (NOT TO SCALE)

SEE SHEET 2 FOR LEGEND

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ENGINEERING

12146 Paper Birch Ln Gainesville, VA 20155 703-927-2300

Nasser@SitechCG.com

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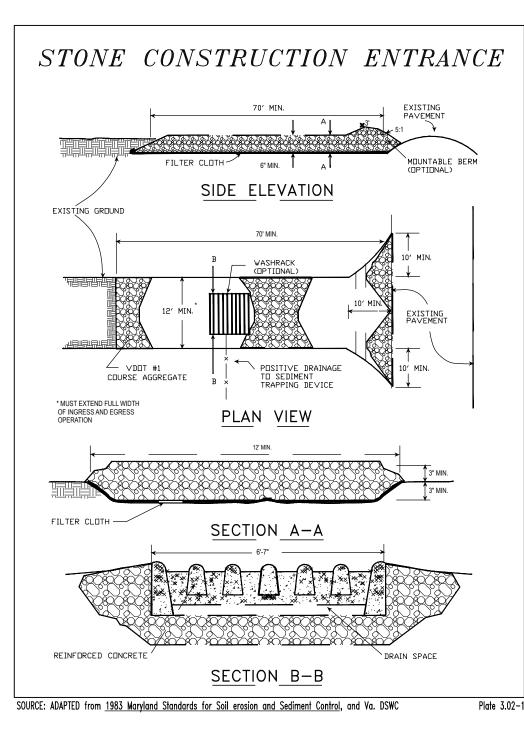
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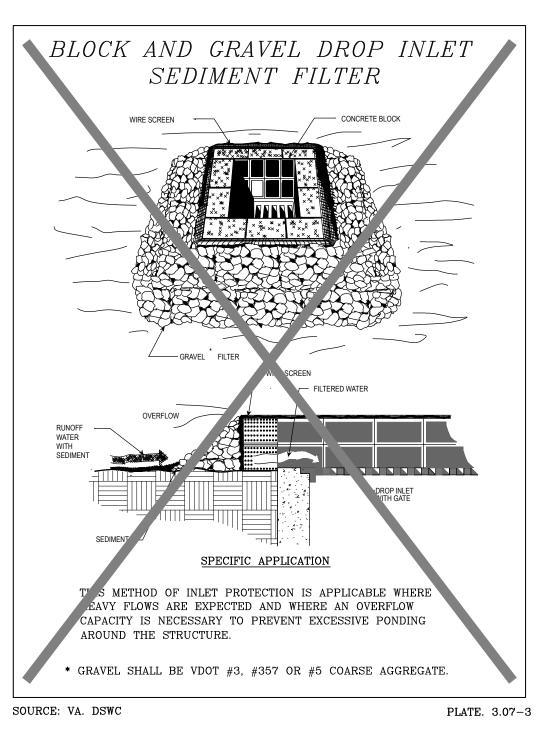
NASSER S. ALIKHANI Lic. No. 027854 12/10/2016

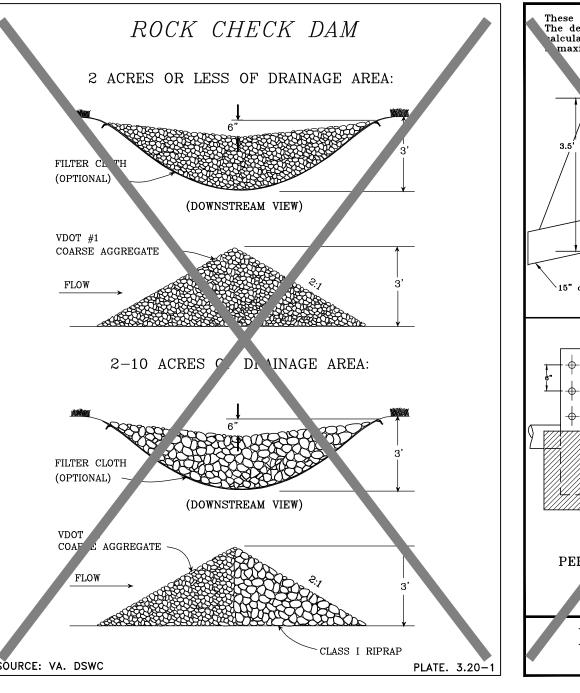
AS NOTED DATE: **MAR 2016 REVISIONS:**

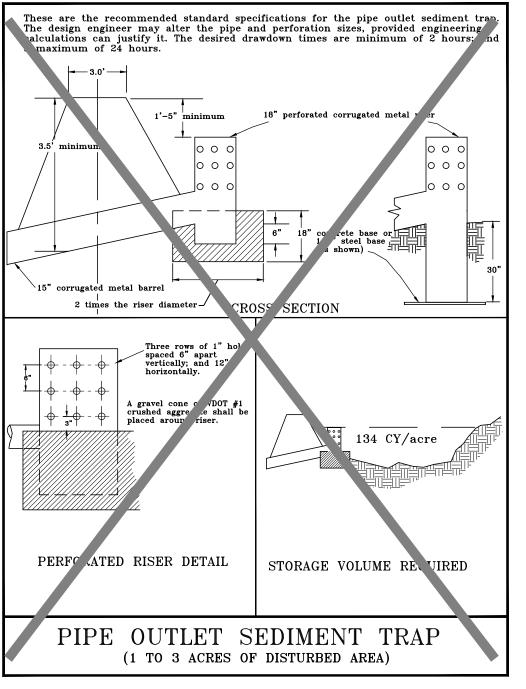
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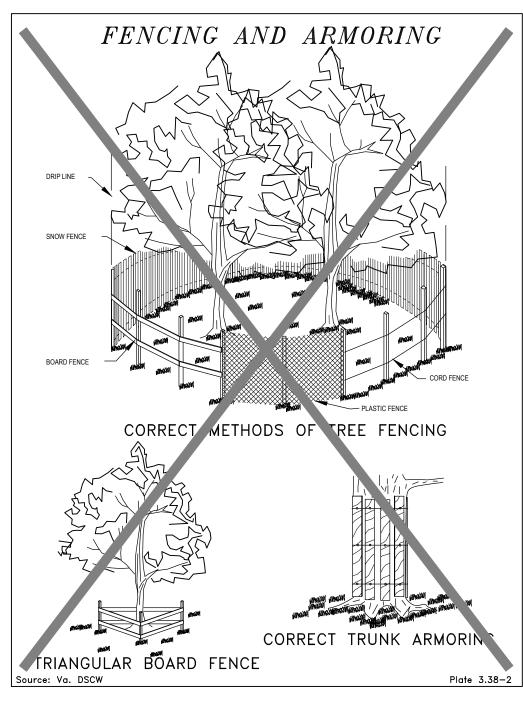
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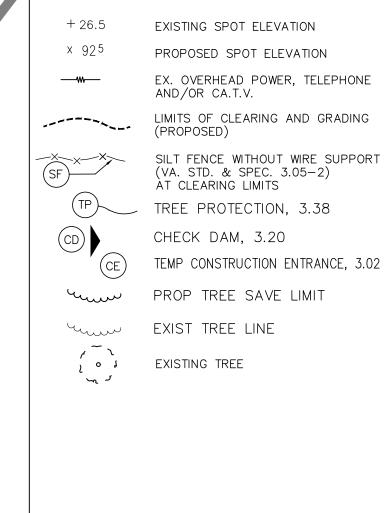




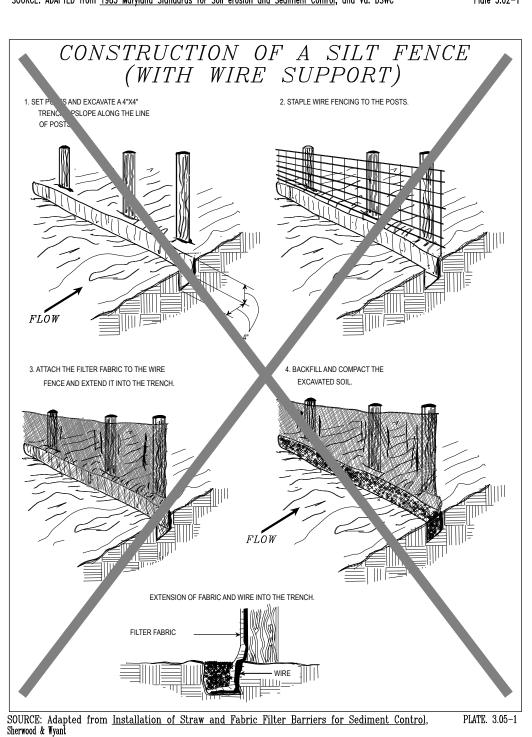


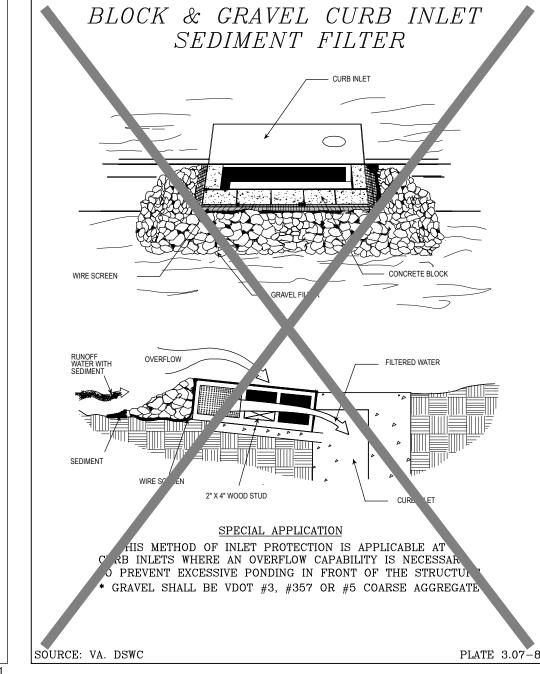




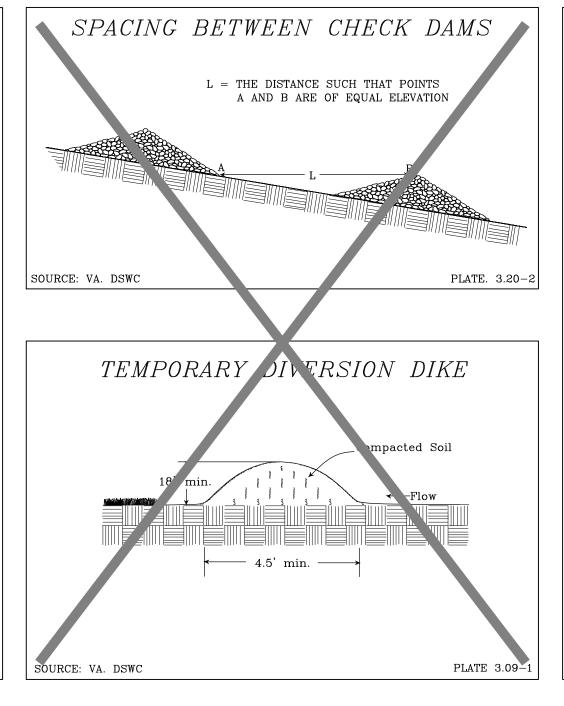


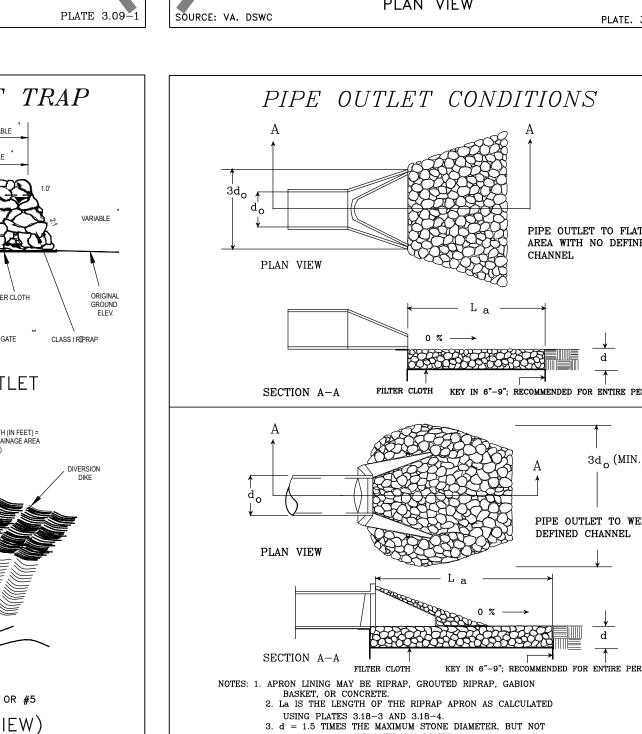
<u>LEGEND</u>

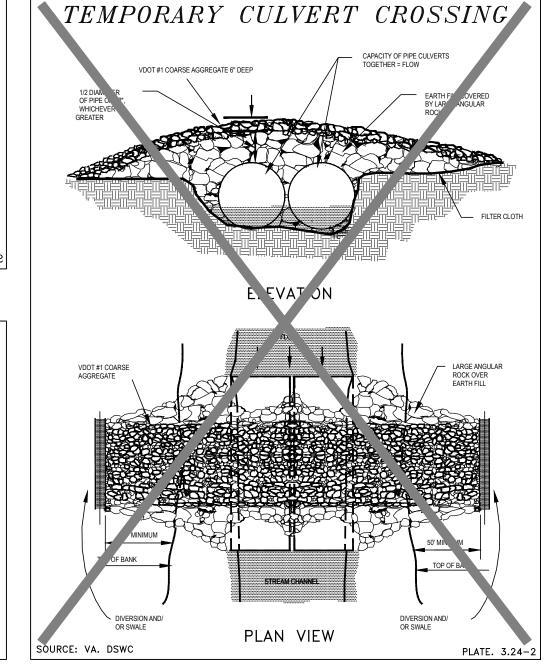


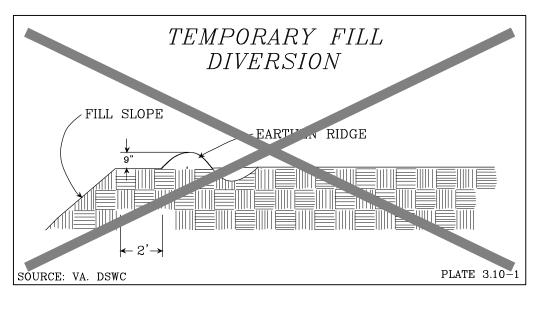


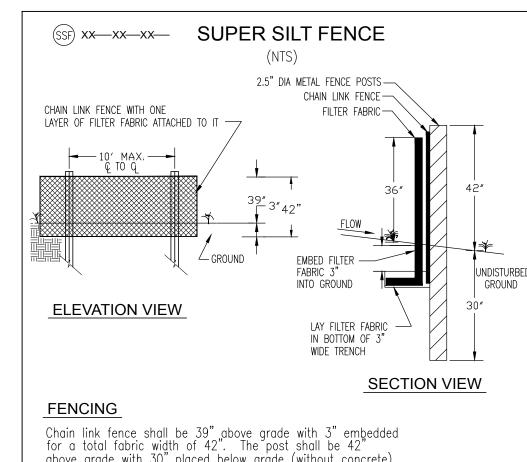
SOURCE: ADAPTED from VDOT Standard Sheets and Va. DSWC











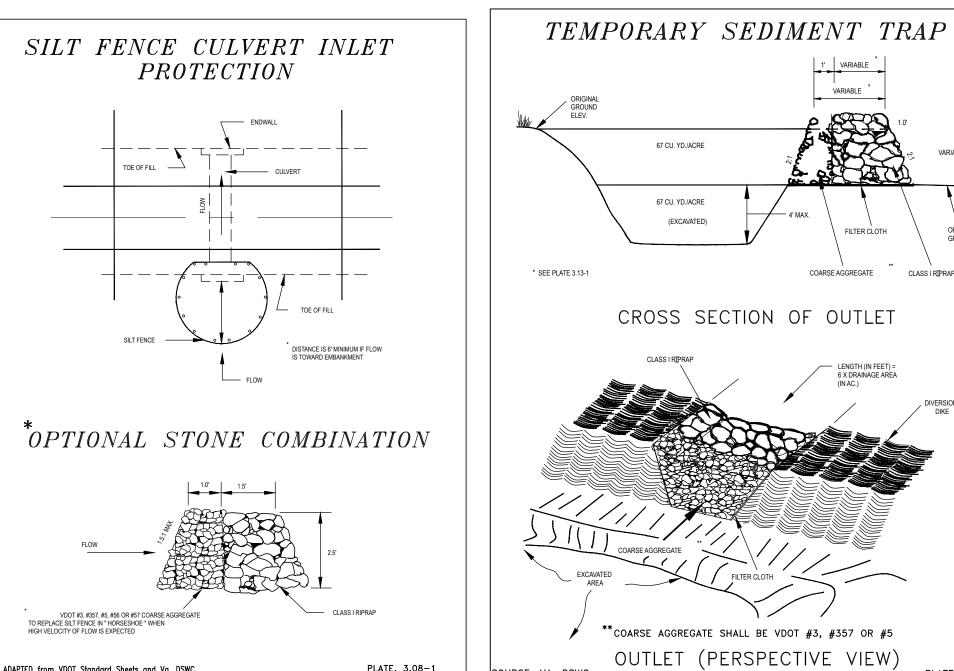
Chain link fence shall be 39" above grade with 3" embedded for a total fabric width of 42". The post shall be 42" above grade with 30" placed below grade (without concrete) for a total length of 72".

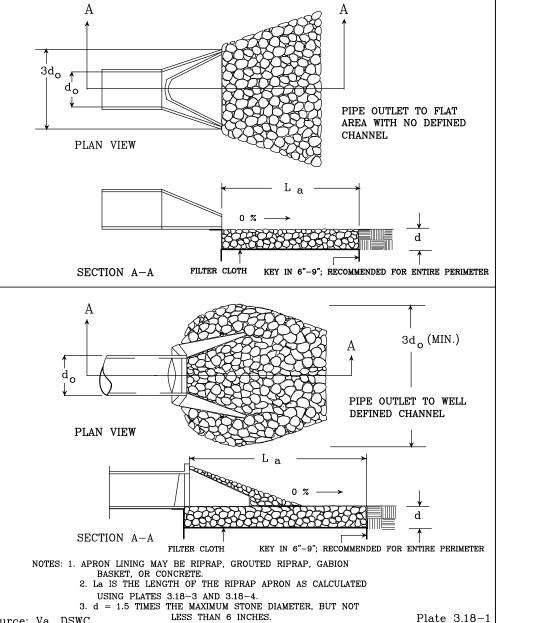
Filter fabric shall be fastened securely to chain link fence with ties spaced horizontally 24" at the top and midsection. Physical properties of the filter fabric shall conform to the latest edition of THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK

When two sections of filter fabric adjoin each other, they shall be

Chain link fence shall be fastened securely to fence posts with wire ties.

overlapped by 6". Maintenance shall be performed as needed and material shall be removed when sediment build-up reaches 50% of the height of the super silt fence.





SOIL CONSERVATION NOTES

- 1. NO AREA SHALL BE LEFT DENUDED FOR ANY PERIOD LONGER THAN 7 DAYS. 2. ALL EROSION AND SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING.
- 3. ALL STORM AND SANITARY SEWER LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED IMMEDIATELY AFTER BACKFILL. NO MORE THAN 500 FEET ARE TO BE OPEN AT ANY ONE TIME.
- 4. ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE COMPACTED,
- SEEDED AND MULCHED IMMEDIATELY AFTER BACKFILL. 5. ALL TEMPORARY EARTH BERMS DIVERSIONS AND SILT DAMS ARE TO BE MULCHED AND SEEDED FOR TEMPORARY VEGETATIVE COVER IMMEDIATELY AFTER GRADING.
- STRAW OR HAY MULCH IS REQUIRE. THE SAME APPLIES TO SOILS STOCKPILES. 6. DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY SILT TRAPS, MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.
- 7. ANY DISTURBED AREA NOT COVERED BY ITEM #1 ABOVE AND NOT PAVED, SODDED, OR BUILT UPON BY NOVEMBER 1ST, OR DISTURBED AFTER THAT DATE, IS TO BE SEEDED IMMEDIATELY WITH OATS, ABRUZZI RYE, OR EQUIVALENT AND MULCHED WITH HAY OR STRAW MULCH AT THE RATE OF TWO TONS PER ACRE. (MODIFY AS
- APPLICABLE DEPENDING ON PROPOSED TIME OF CONSTRUCTION.) 8. ANY AREA DENOTED ON THIS PLAN AS A NATURAL WATERCOURSE AREA IS NOT TO BE DISTURBED DURING CONSTRUCTION. THIS AREA WILL NOT BE USED BY CONSTRUCTION EQUIPMENT OR FOR TEMPORARY STORAGE OS SOIL OR OTHER MATERIAL OR DISPOSAL OF ANY TYPE OF DEBRIS. NATURAL CONDITIONS ARE TO
- BE CAREFULLY PRESERVED. 9. NO UNPROTECTED, DISTURBED AREA SHALL DRAIN TO ROADWAY PAVEMENTS SUCH THAT THE SUBBASE, BASE, OR WEARING SURFACE ARE CONTAMINATED BY THE SILT TRAPPED AT LOW POINTS OR INLETS.

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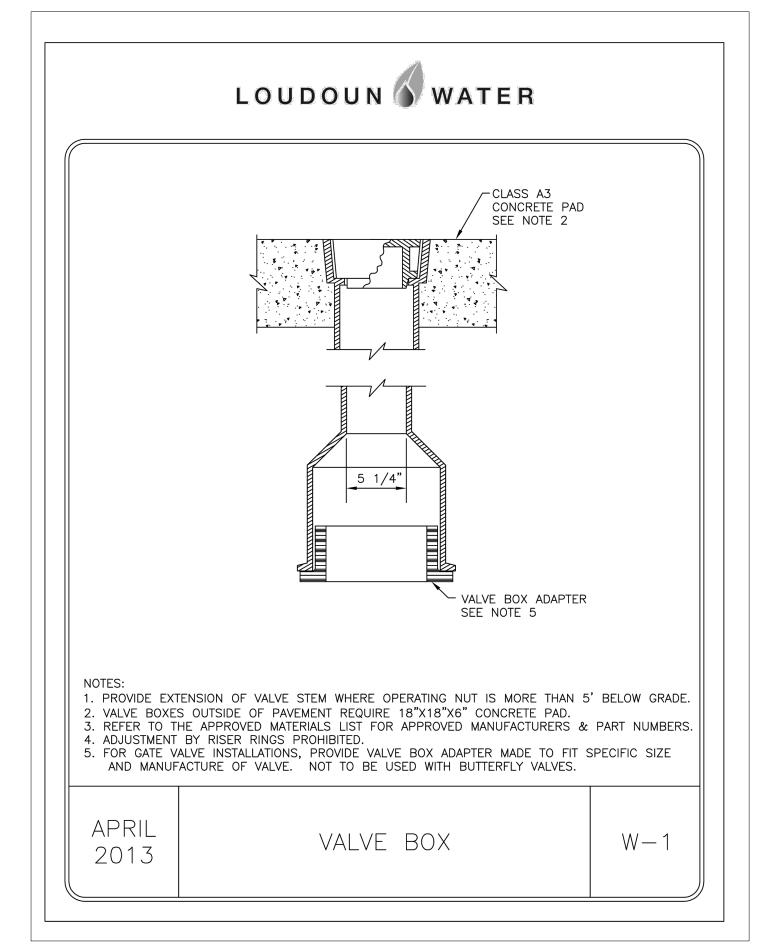
NASSER S. ALIKHANI Lic. No. 027854

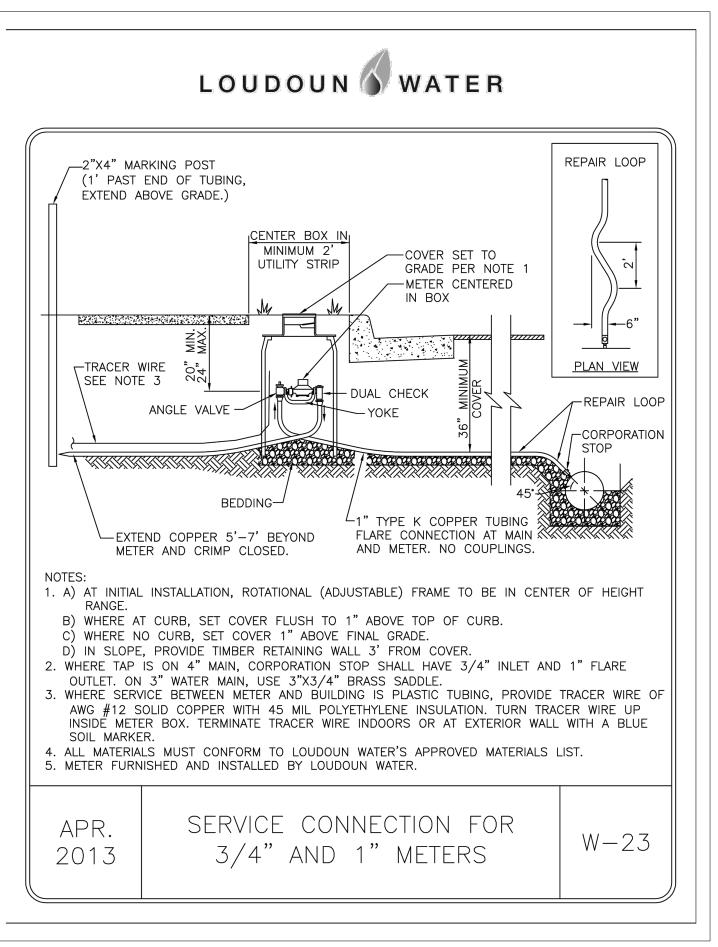
DATE: MAR 2016 **REVISIONS:**

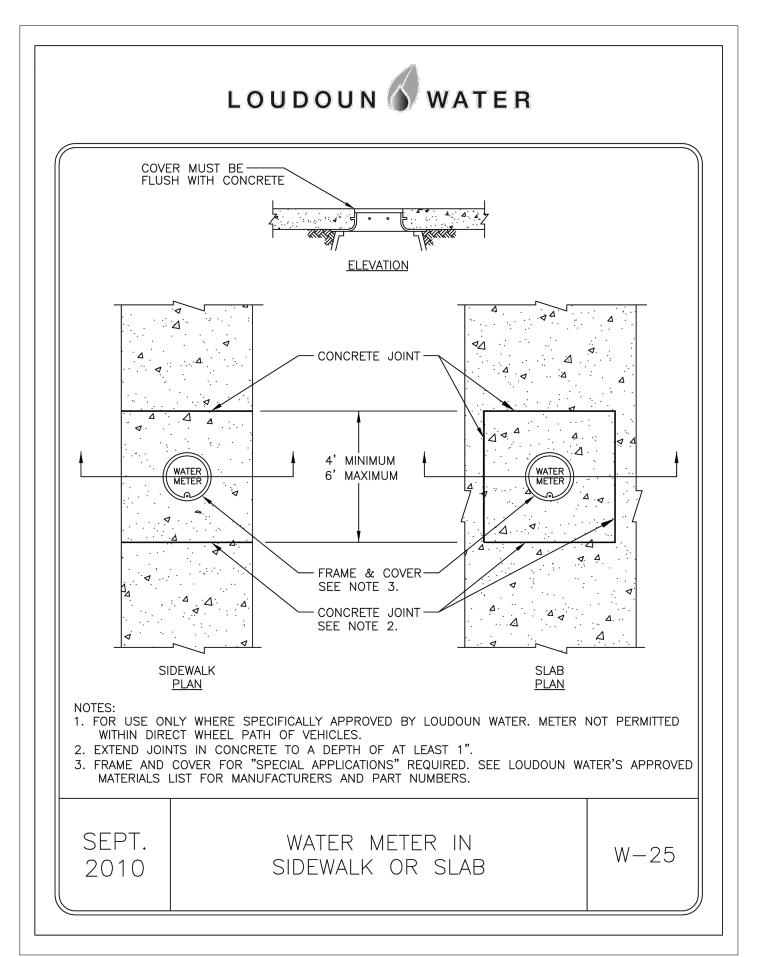
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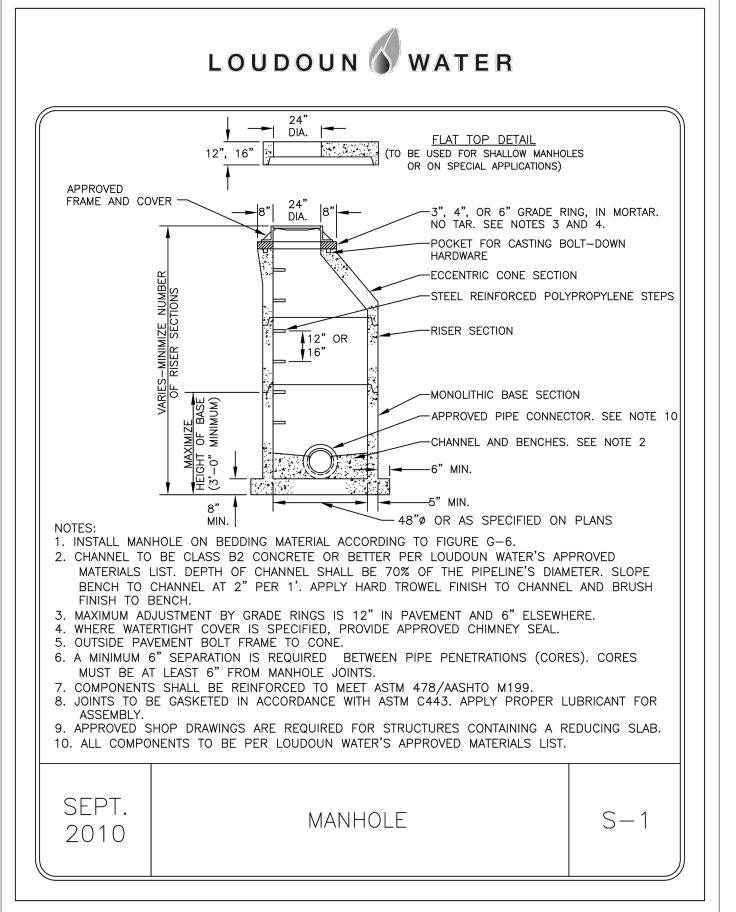
LOUDOUN STANDARD WATER CONSTRUCTION DETAILS:

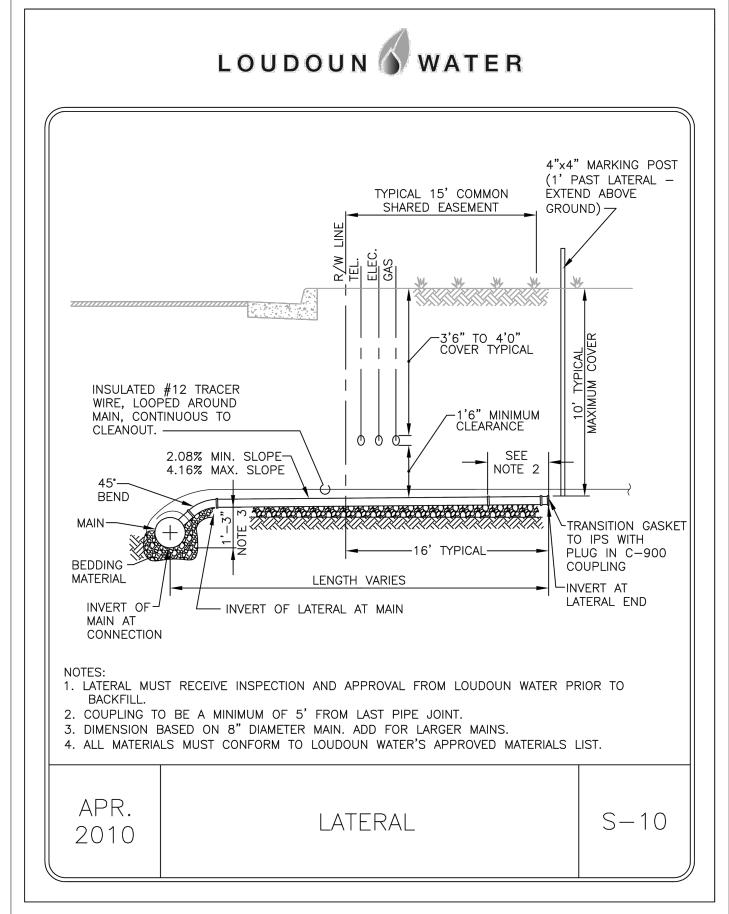


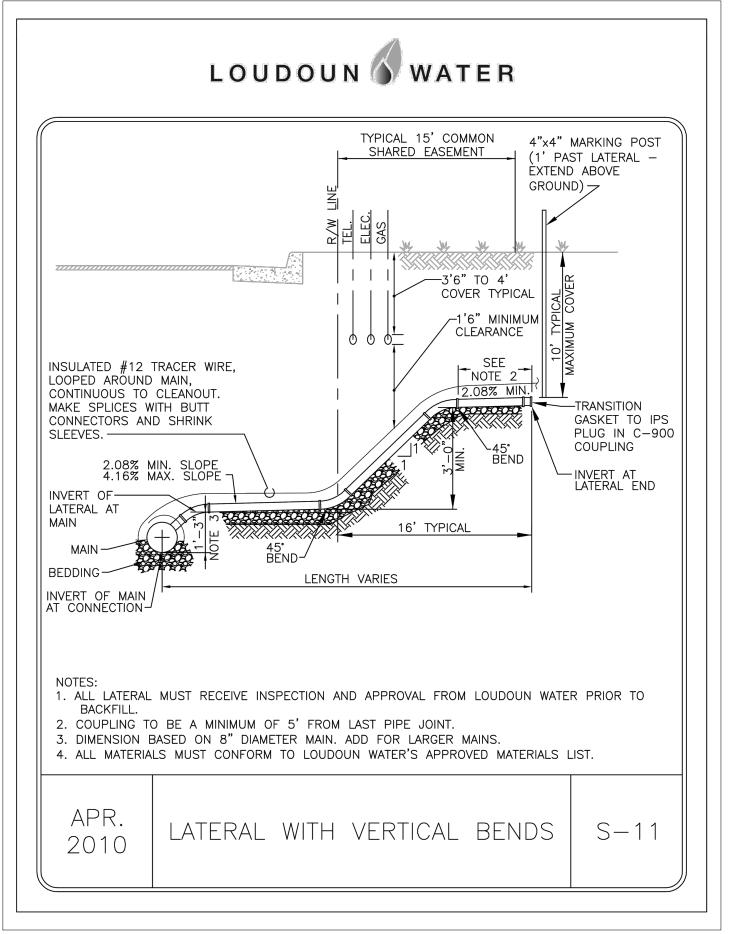


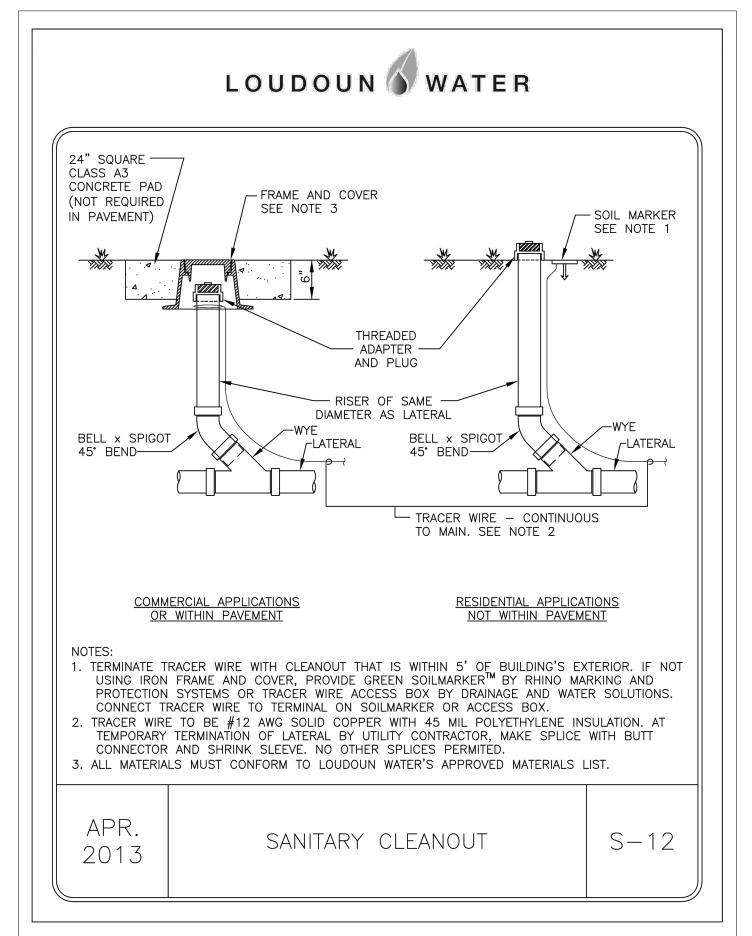


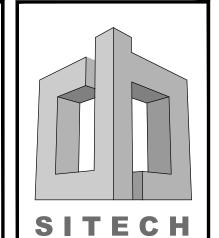
LOUDOUN STANDARD SEWER CONSTRUCTION DETAILS:











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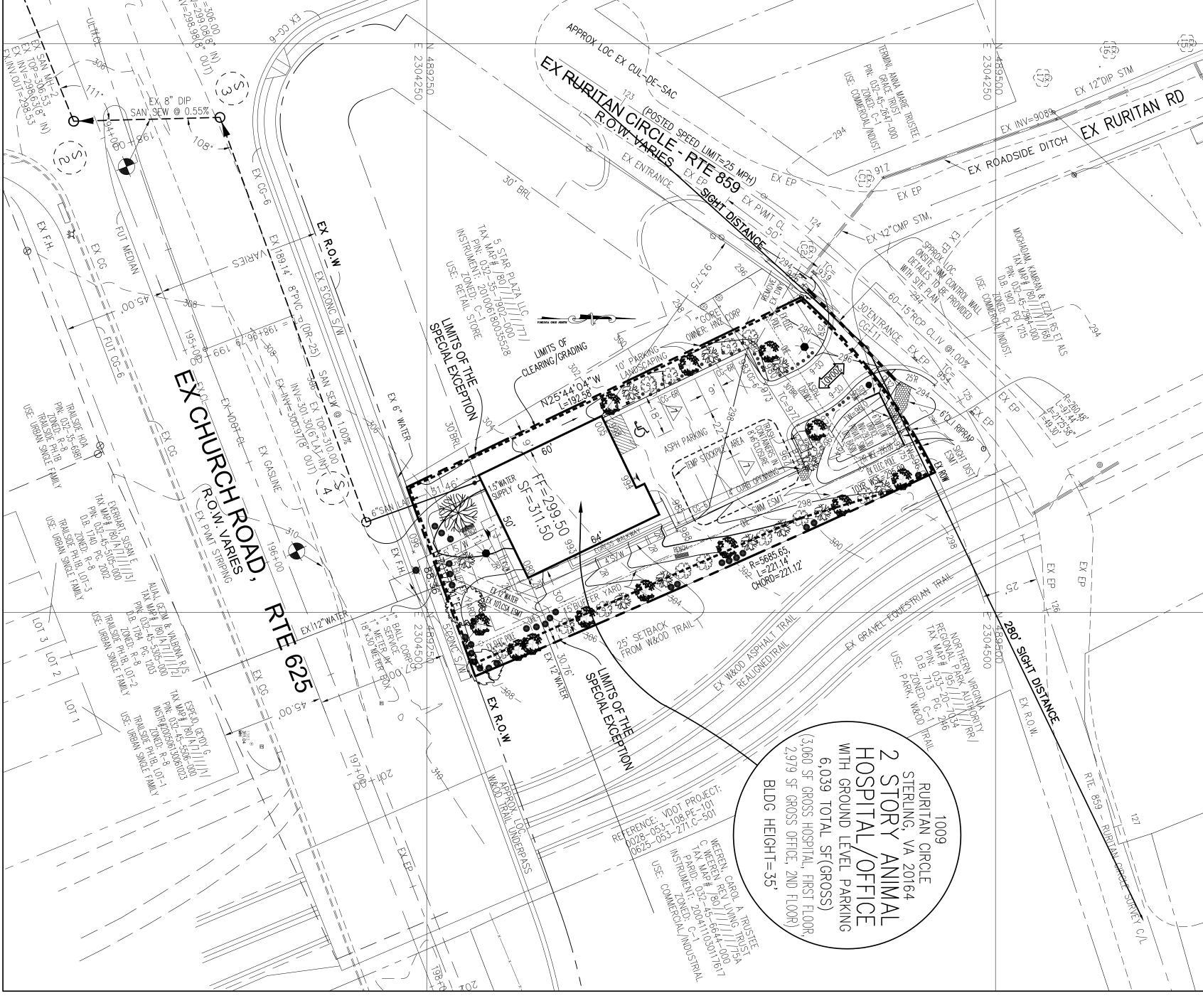
NASSER S. ALIKHANI

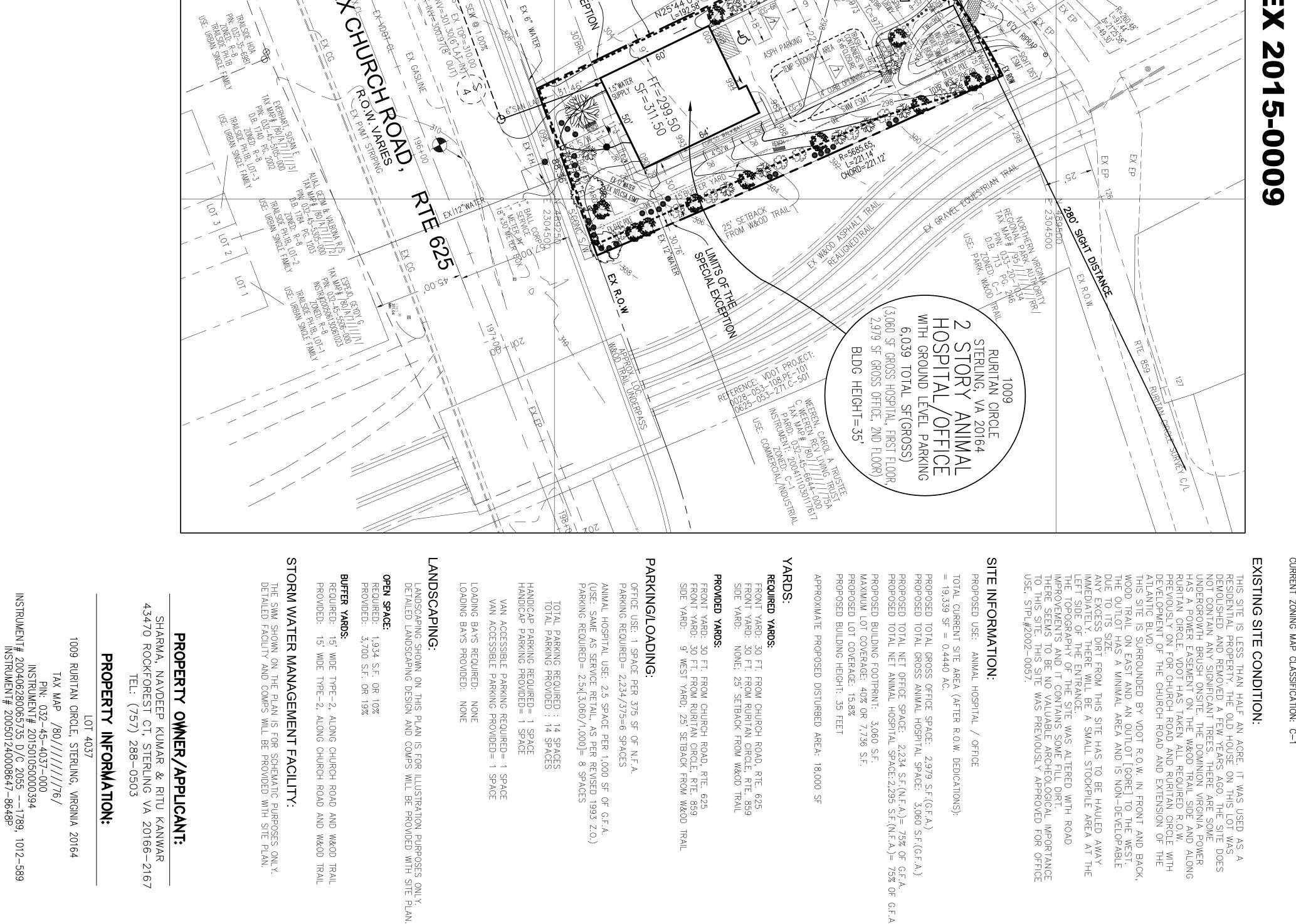
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DATE: MAR 2016 REVISIONS:

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12. LIGHTS SHALL BE FULLY SHIELDED, DOWN FREE, CONFINED TO THE SITE AND SHOUL LEVELS THAT ARE NO GREATER THAN NEINTENDED PURPOSE. ALL LIGHTING SHOUL PRACTICABLE AND DESIGNED TO PRECLUICABLE ADJOINING PROPERTIES, GLARE TO PASSED DETERIORATION OF THE NIGHTTIME ENVIRONE. THIS SITE MAY PROVIDE CUSTOMER SERVICES AFTER 5:00 PM. THEREFORE, THE LIGHTING SHALL STABLISH THE MOUNTING HEIGHT, ILLUMINANCE, AND SPACING TO PROVIDE AN AVERAGE HORIZONTAL ILLUMINATION OF 0.6 FOOT—CANDLES OR GREATER WITHIN THE PARKING AREAS AND AT PRIMARY BUILDING ENTRANCES. (FSM 7.120.B.2) ALL LIGHTING AND GLARE PERFORMANCE STANDARDS MUST CONFORM TO ARTICLE 535. AS PER PRE—APPLICATION MEETING PRAP 2014—0112, THE PARKING RATE OF MINIMUM 2.5 PARKING SPACES PER 1,000 SF OF GFA (GROSS FLOOR AREA) OF "SERVICE RETAIL", PER REVISED 1993 ZONING ORDINANCE, WILL BE UTILIZED TO PARK THE ANIMAL HOSPITAL. THE OFFICE USE REQUIRES ONE SPACE FOR EVERY 375 SF OF NFA (NET FLOOR AREA). THIS SPEX PLAN IS SUBMITTED TO A SEPARATE ADMINISTRATIVE SITE ESTABLISH THAT USE AND THE BY-USE. NO TITLE REPORT FURNISHED. THE ESTIMATED TOTAL 200 ADT IS BASED ON 5 PEAK HOUR (PM) TRIPS FOR LAND USE 715 (2,979 SF, OFFICE); AND 15 PEAK HOUR (PM) TRIPS FOR LAND USE 640 (3,060 SF, ANIMAL/VETERINARY CLINIC), FOR A TOTAL OF 20 PEAK HOUR (PM) TRIPS, AS INDICATED ON 9TH EDITION OF THE TRIP GENERATION MANUAL BY "INSTITUTE OF TRANSPORTATION ENGINEERS". WEEKDAY ADT ASSUMED TO BE 10 TIMES THE PM TOTAL PEAK HOUR TRIPS. THIS PROPERTY IS LOCATED IN DISTRICT AND IS THEREFORE SLOF THE 1972 ZONING ORDINANC THIS SITE IS SERVED WITH PUBLIC BUILDING OR OTHER STRUCTURES SHALL BE LOCATED IN A MANNER OR LT TO A HEIGHT WHICH CONSTITUTES A HAZARD TO AERIAL NAVIGATION E EXISTING TOPO IS BASED OF UPDATED FIELD-RUN TOPO STRIPS CONTROLLING SITE PLAN VICINITY MAP SCALE: 1"=1000" ON THE AVAILABLE COUNTY RECORDS.) WILL BE PROVIDED WITH THE SITE PLAN. PERMIT AN ANIMAL HOSPITAL USE. PLAN PROCESS IS REQUIRED TO "-RIGHT SECOND FLOOR OFFICE DOWNWARD DIRECTED, BE GLARE SHOULD HAVE ILLUMINATION AN NECESSARY FOR LIGHT'S SHOULD BE MOUNTED AS LOW AS RECLUDE LIGHT TRESPASS ONTO PASSERBY, SKYGLOW, AND ENVIRONMENT. AND PUBLIC SEWER PUBLIC RE





SHARMA, NAVDEEP KUMAR & RITU KANWAR 43470 ROCKFOREST CT, STERLING VA 20166-TEL: (757) 288-0503 1009 RURITAN CIRCLE, STERLING, VIRGINIA 20164 PROPERTY INFORMATION:

PROPERTY OWNER/APPLICANT:

-2167

FOR REFERENCE ONLY - APPROVED SPECIAL EXCEPTION PLAN

REVISIONS:

MAR 2015

CHURCH ROAD

AND AND

SSER S. ALIKHANI Lic. No. 027854

CHURCH ROAD ANIMAL HOSPITAL

STERLING, VIRGINIA

SPECIAL EXCEPTION PLAN

ANIMAL HOSPITAL / OFFICE USE

ANIMAL HOSPITAL / OFFICE

S.F.(G.F.A.)

CONSULTING GROUP SITECH 12146
PAPER BIRCH LANE
GAINESVILLE
VA 20155
T :703-927-2300
F :703-722-8718



SITE TABULATION: CURRENT ZONING MAP CLA

CLASSIFICATION:

EXISTING SITE CONDITION:

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