TOWN OF VIENNA, VIRGINIA

DEVELOPMENT STANDARDS

ZONE : RS-12.5

MINIMUM LOT AREA: 12,500 SQ. FT.

SIDE SETBACK: 15 FEET FRONT SETBACK: 30 FEET **REAR SETBACK: 35 FEET**

SIDE STREET (CORNER) SETBACK: 25 FEET

LOT WIDTH

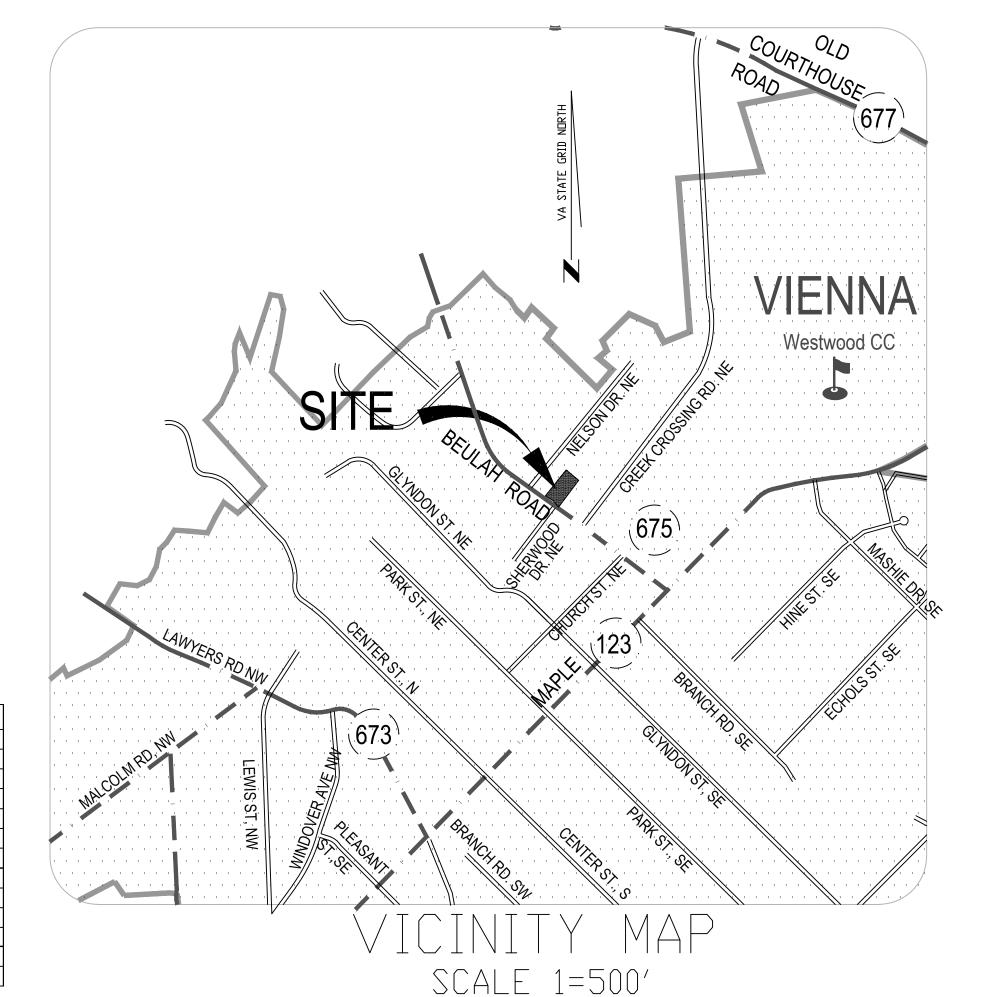
STREET BUILDING MID POINT

PROJECT DATA

PROJECT AREA: 41,185 S.F. NUMBER OF LOTS: 2 MINIMUM LOT SIZE RS-12.5: 12,500 S.F. AREA OF LOTS: 41,185 S.F. AVERAGE LOT SIZE:20,593 S.F.

S	ITE ANALYSIS 1-C1		SITE	SITE ANALYSIS 1-D1				
DESCRIPTION	REQUIRED	PROVIDED/EXISTING	DESCRIPTION	REQUIRED	PROVIDED/EXISTING			
ZONING	RS-12.5	RS-12.5	ZONING	RS-12.5	RS-12.5			
LOT AREA	12500	20488	LOT AREA	12500	20697			
MAX LOT COVERAGE	25.00%	20.99%	MAX LOT COVERAGE	25.00%	20.78%			
SETBACK			SETBACK					
FRONT	30	59.1	FRONT	30	92.9			
SIDE	15	15.0/15.4	SIDE	15	15.3/15.9			
SIDE (STREET)	25		SIDE (STREET)	25				
REAR	35	163.1	REAR	35	126.9			
DECK COVERAGE	5% OF LOT AREA OR	1.93%	DECK COVERAGE	5% OF LOT AREA OR	1.91%			
DECK COVERAGE	625	395	DECK COVERAGE	625	395			
BUILDING HEIGHT	35	34.60	BUILDING HEIGHT	35	34.70			
TREE COVER	20.0%	33.8%	TREE COVER	20.0%	21.1%			

MAY 30, 2016



SHEET INDEX

- **COVER SHEET**
- **EROSION & SEDIMENT CONTROL NOTES**
- **EXISTING CONDITIONS PLAN**
- LOT GEOMETRY PLAN
- **GRADING PLAN**
- **EROSION & SEDIMENT CONTROL PLAN**
- STORM & NUTRIENT COMPUTATIONS
- INFILTRATION TRENCH PLAN
- INFILTRATION TRENCH & MISC. DETAILS
- 10. TREE PRESERVATION PLAN
 - TREE PRESERVATION NARRATIVE
- 12. STORM SEWER PROFILE
- 13. NOTES & DETAILS

PROPERTY OWNER

OWNER: JDA CUSTOM HOMES, INC PO BOX 1208 VIENNA, VIRGINIA 22183

AREA: 41,892 SF PER LAND RECORDS

DEVELOPER/SUBDIVIDER

JDA CUSTOM HOMES, INC PO BOX 1208 VIENNA, VIRGINIA 22183 (703) 938-1119

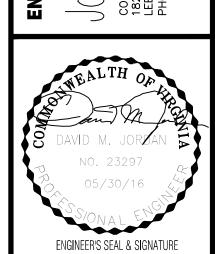
EXISTING PROPERTY ADDRESS

(1C) 409 BEULAH ROAD, NE VIENNA, VIRGINIA 22180 (1D) 411 BEULAH ROAD, NE VIENNA, VIRGINIA 22180

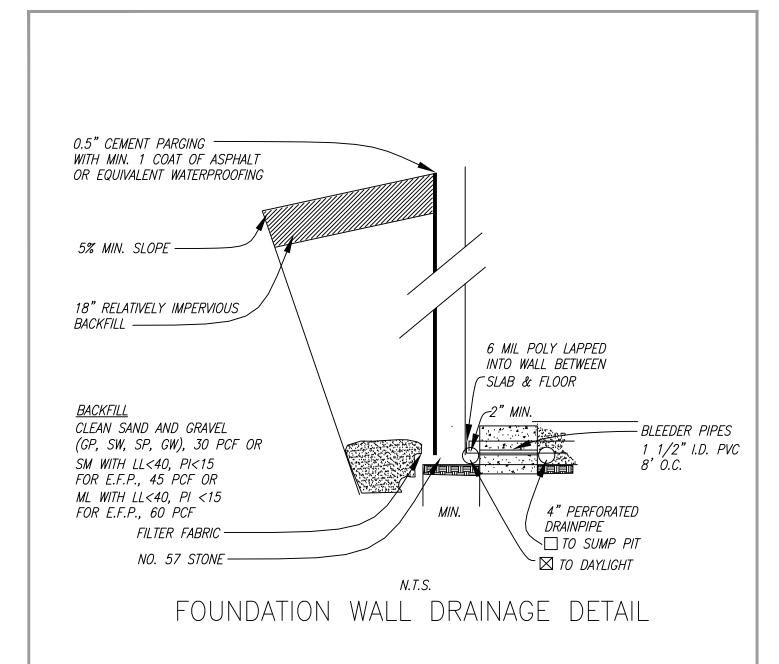
MISS UTILITY
FOR LOCATION OF UTILITIES CALL 1-800-257-7777
48 HOURS IN ADVANCE OF ANY WORK IN THIS AREA

						AUTH.
FIRST SUBMISSION	NOISSIMBNS GNODES	THIRD SUBMISSION	05/06/16 BOUNDARY LINE ADJUSTMENT SUBMISSION	5 05/30/16 BOUNDARY LINE ADJUSTMENT 2nd SUB		DESCRIPTION
51/11/80	2 09/15/15	3 10/04/15	91/90/50	91/02/30		DATE
1	2	3	4	2		9

Design OD OSTORY
E COURT
830 CONTACT: DAVID 18267 CHANNEL LEESBURG, VA 2 PHONF. (571) 2



DESIGN BY: DMJ

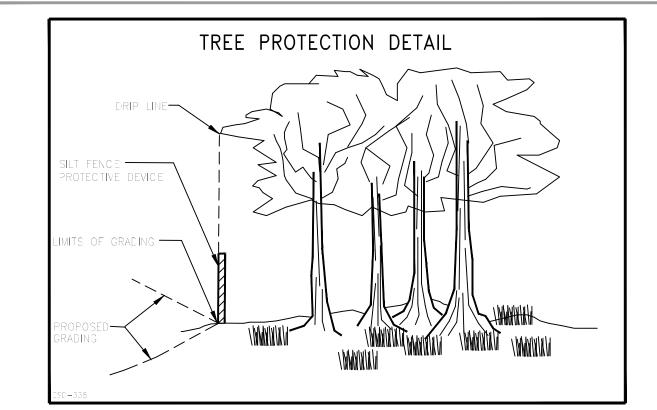


BASEMENT WALL BACKFILL:

BACKFILL MATERIAL FOR BASEMENT WALLS SHOULD CONSIST OF SOIL THAT WOULD CLASSIFY IN ACCORDANCE WITH UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) AS GW, GM, SW OR SM. THE MAXIMUM ALLOWABLE ROCK PARTICLE SIZE SHOULD BE FOUR INCHES. SUITABLE BACKFILL MATERIAL SHOULD HAVE A LIQUID LIMIT LESS THAN 40, A PLASTICITY INDEX LESS THAN 15, A MAXIMUM OF 45 PERCENT PASSING A STANDARD NO. 200 SIEVE AND MAXIMUM OF 30 PERCENT RETAINED ON A STANDARD 3/4 INCH SIEVE.

SILTATION AND EROSION CONTROLS MUST BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITY. CALL 24 HOURS PRIOR TO START TO SCHEDULE AND INSPECTION OF THE SITE.

ALL DENUDED AREAS TO BE SEEDED, MULCHED, TACKED OR SODDED AND PEGGED WITHIN 14 DAYS AFTER START OF GRADING.



LEGEND

EXISTING INTERMEDIATE CONTOUR	190
	186
EXISTING CONTOUR INDEX	186
PROPOSED CONTOUR	103
EXISTING EDGE OF PAVEMENT	EX. E.P.
PROPOSED EDGE OF PAVEMENT - PROPOSED HEADER CURB -	PROP. E.P.
EXISTING CURB	
PROPOSED CG-6	CG-6
TRANSITION FROM CG-6 TO CG-6R :	CG-6 / CG-6R
EXISTING WATERLINE W/TEE	
PROPOSED WATERLINE W/TEE	
EXISTING TELEPHONE LINE	
PROPOSED TELEPHONE LINE	TT
EXISTING STORM SEWER	
PROPOSED STORM SEWER	15" RCP
EXISTING SANITARY SEWER	
PROPOSED SANITARY SEWER	-
EXISTING ELECTRIC SERVICE	E E
PROPOSED ELECTRIC SERVICE EXISTING GAS LINE	— E — E — G — G — G — G — G — G — G — G
PROPOSED GAS LINE	
PROPERTY LINE	
EASEMENT LINE	
CENTER LINE	
YARD LINE	
LIMITS OF CLEARING & GRADING EXISTING SPOT ELEVATIONS	40.0
PROPOSED SPOT ELEVATION	12.0 +12 ⁰
EXISTING TREE LINE	T1Z
EXISTING TREE W/TRUNK DIAMETER	0 8"
EXISTING TREE W/DRIPLINE	E. 3
PROPOSED TREE	
FLOW LINE OF SWALE -	
FENCE LINE EXISTING UTILITY POLE	<u> </u>
PROPOSED UTILITY POLE	
EXISTING FIRE HYDRANT	-Ó-O+I
PROPOSED FIRE HYDRANT	- -
PROP. CURB STOP —	o cs
EXISTING WATER VALVE	· · · · · · · · · · · · · · · · · · ·
PROPOSED WATER VALVE —	•
EXISTING REDUCER	W
PROPOSED REDUCER	W
WATER METER(SINGLE & DOUBLE)	
OVERLAND RELIEF	—
STOP SIGN	•
HANDICAP RAMP DENOTES LOCATION OF STD VDOT CG-1: JURISDICTIONAL STANDARD RAMP CONSTR HANDICAP PARKING SIGN	
HANDICAP PARKING SIGN, VAN ACCESSIBLI	E VAN P
PARKING INDICATOR INDICATES THE NUMBER OF PARKING SPACE	ces 9
TEST PIT	lacktriangle
STREET LIGHT	•
TELE. JUNCTION BOX	
ELEC. TRANSFORMER CRITICAL SLOPE SLOPES TO BE SEEDED, MULCHED & TACKEI WITHIN 14 DAYS AFTER START OF GRADING	D
OR SODDED & PEGGED WITHIN 14 DAYS AFT START OF GRADING. BENCH MARK	TER TER
SANITARY LATERAL CLEAN OUT	•
BUILDING POINT OF EGRESS	
BUILDING POINT OF EGRESS SIDEWALK	
	4

EROSION AND SEDIMENT CONTROL NARRATIVE

1. PROJECT DESCRIPTION THIS PROJECT CONSISTS OF 41892 SF OF WHICH APPROXIMATELY 35,000 SF ARE DISTURBED WITH THIS PLAN. THE AREA BEING DISTURBED IS FOR THE CONSTRUCTION OF TWO FAMILY DETACHED HOUSES. 2. EXISTING SITE CONDITIONS

THE SITE IS VEGETATED WITH MOSTLY GRASSES AREA, AND APPROXIMATELY 50 TREES OVER 10" IN DIAMETER. TOPOGRAPHY OF MOST OF THE SITE SLOPES FROM 0 TO 10% AND SLOPES FROM THE REAR NORTHWEST CORNER OF THE LOT TO THE FRONT YARD INLET AT BEULAH ST, NE.

3. SOILS SEE SOILS INFORMATION THIS SHEET.

4. ADJACENT AREAS

THE SITE IS BOUNDED BY SINGLE FAMILY RS-12.5 TO THE EAST AND WEST RS-16 TO THE NORTH BOUNDARIES.

CONSTRUCTION IS SCHEDULED TO BEGIN IN THE SUMMER 2015 AND COMPLETED BY SUMMER 2016.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED ON THE DRAWINGS AND IN THIS NARRATIVE ALL /EGETATIVE AND STRUCTURAL CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS REQUIREMENTS OF THE CURRENT EDITION OF THE VIRGINIA EROSION AND SEDIMENT HANDBOOK (VESCH) AND THE PUBLIC FACILITIES MANUAL OF FAIRFAX COUNTY. THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VESCH SHALL BE ADHERED TO UNLESS WAIVED BY A WAIVER APPROVED BY THE REVIEWING AUTHORITIES. UNLESS OTHERWISE INDICATED ALL SPECIFICATION REFERENCES IN THIS NARRATIVE AND ON 7. THE CONTRACTOR SHALL CONFORM TO MODIFIED SILTATION/EROSION CONTROLS AS REQUIRED BY THE PLAN REFER TO VESCH.

OFF-SITE AREAS:

NO OFF-SITE LAND DISTURBING ACTIVITIES ARE ANTICIPATED FOR THE DEMO. GRADING. AND CONSTRUCTION OF THIS LOT. ANY EXCESS MATERIAL FROM THE SITE SHALL BE COORDINATED BY THE CONTRACTOR. ANY OFF SITE LAND DISTURBING OR OFF SITE STOCKPILING TO OCCUR ON A PERMITTED SITE OR APPROVED LANDFILL OPERATION. THIS INCLUDES ANY MATERIAL HAULED FROM THIS SITE.

CRITICAL EROSION AREAS: THERE ARE NO CRITICAL AREAS ON SITE

EROSION CONTROL PROGRAM

1. NO DISTURBED AREA IS TO REMAIN DENUDED FOR MORE THAN 7 DAYS UNLESS AUTHORIZED BY THE DIRECTOR OR HIS AGENT (SPECIFIC AREAS TO BE AUTHORIZED BY THE DIRECTOR OR HIS AGENT (SPECIFIC AREAS TO BE DETERMINED AT THE

PRE-CONSTRUCTION MEETING). 2. NO MORE THAN 50 PERCENT SHALL BE DENUDED AT ONE TIME.

3. POWER, TELEPHONE, STORM, SANITARY, CABLE AND GAS SUPPLY TRENCHES

BACKFILLING. NO MORE THAN 500 FEET OF TRENCH IS TO BE OPEN AT ONE TIME. 4. TOPSOIL WHICH HAS BEEN STOCKPILED IS TO BE SURROUNDED BY SILT TEMPORARY VEGETATION IMMEDIATELY AFTER GRADING.

5. ALL TEMPORARY BERMS, DIVERSIONS, AND SEDIMENT TRAP EMBANKMENTS ARE TO BE MACHINE—COMPACTED, SEEDED, MULCHED AND/OR TEMPORARY VEGETATED IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED.

6. ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS OPERATION.

7. ALL CUT AND FILLS ARE TO BE SEEDED AND MULCHED IMMEDIATELY AFTER GRADING

8. ANY DISTURBED AREAS NOT SODDED BY NOVEMBER 1 ARE TO BE SEEDED WITHIN 15 DAYS WITH OATS, ABRUZZI RYE, OR EQUI/ALENT AND MULCHED WITH STRAW OR HAY AT THE RATE OF TWO TONS PER ACRE.

9. DRAINAGE SWALES SHALL BE STABILIZED UNTIL VEGETATION HAS BEEN WELL ESTABLISHED. 10. EXISTING BEALUH ST, NE SHALL BE CLEAN OF SEDIMENT AND DEBRIS. ANY DISTURBED AREAS DRAINING TO BEULAH ST, NE

SHALL HAVE SEDIMENT AND EROSION CONTROLS. E & S CONTROL INSPECTOR SHALL HAVE AUTHORITY TO ADD OR DELETE E&S

11. E & S CONTROL INSPECTOR SHALL HAVE THE AUTHORITY TO ADD OR DELETE EROSION AND SEDIMENT CONTROLS AS NEEDED IN THE FIELD, AS SITE CONDITIONS WARRANT. IN ADDITION, SEDIMENT CONTROLS MAY NOT BE REMOVED WITHOUT PRIOR APPROVAL OF

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

13. WHEN SEDIMENT IS TRANSPORTED ON TO THE PAVED ROAD (BEULAH ST, NE) THE ROAD SURFACE SHALL BE THOROUGHLY CLEANED AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A CONTROL DISPENSE AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED ON THIS

14. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE, TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS. THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE

APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR. 15. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE SITE.

16. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY.

17. MATERIAL USED FOR BACKFILLING SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 18. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE VESCH.

19. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCH

AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION SEDIMENT CONTROL PROGRAM

PHASE I

1. INSTALL A TEMPORARY CONSTRUCTION ENTRANCE WITH A WASH RACK, IF REQUIRED. MUD AND DEBRIS SHALL BE WASHED FROM ALL CONSTRUCTION VEHICLES AND EQUIPMENT PRIOR TO LEAVING THE SITE. THE SEDIMENT LADEN WATER SHALL BE DIVERTED TO A SEDIMENT TRAP. WATER TRUCKS WILL BE USED IF PUBLIC METERED WATER IS NOT AVAILABLE. 2. INSTALL SILT FENCE AT THE LIMITS OF DISTURBANCE.

3. INSTALL TREE PROTECTION USING THE METHODS OUTLINED BY THE VIRGINIA STATE EROSION AND SEDIMENT CONTROL HANDBOOK

4. INSTALL SUPER SILT FENCE IN LOCATION OF INFILTRATION TRENCHES 5. CLEAR AND GRUB THE AREAS NECESSARY FOR THE CONSTRUCTION OF SILT FENCE.

6. CLEAR AND GRUB THE SITE WITHIN THE LIMITS OF CLEARING AND GRADING

PHASE II

1. STABILIZE IMMEDIATELY AFTER THE COMPLETION OF GRADING OPERATIONS.

2. HOUSE CONSTRUCTION, INSTALL STORM, SANITARY LATERAL AND WATER SERVICE.

3. INSTALLATION OF INFILTRATION TRENCH AFTER AREA UPSTREAM STABILIZED.

4. PHASE I E&S CONTROLS SHOULD REMAIN INTACT AS LONG AS THEY CAN REMAIN OPERABLE FOR THE STAGE OF CONSTRUCTION. 5. AFTER ALL INLET PROTECTION DEVICES HAVE BEEN COMPLETED AND ALL AREAS HAVE BEEN STABILIZED MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED AND THE GRADING PERMANENTLY STABILIZED WITH THE APPROVAL OF THE INSPECTOR. FOLLOW VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION; STD & SPEC 3.32 FOR PERMANENT SEEDING; STD. & SPEC 3.31 FOR TEMPORARY SEEDING; STD AND SPEC 3.35 FOR MULCHING.

6. THE SITE SUPERINTENDENT SHALL INSPECT THE EROSION CONTROLS ON A DAILY BASIS, ESPECIALLY AFTER RAINFALL TO INSURE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY BY THE SUPERINTENDENT. THE CERTIFIED LAND DISTURBER FOR THE SITE IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES. THE FOLLOWING INSPECTIONS AND MAINTENANCE TASKS ARE PARTICULARLY IMPORTANT AND SHALL BE PERFORMED AS INDICATED:

THE PERIMETER CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY MEASURABLE RAINFALL. THE SEDIMENT SHALL BE REMOVED. FROM THE TRAPS AND RESTORED TO THE DESIGN DIMENSIONS AND VOLUMES WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF OF THE DESIGN VOLUME OF THE WET STORAGE. THE SEDIMENT REMOVED FROM THE CONTROLS SHALL BE SPREAD ON SITE IN A SUITABLE LOCATION ABOVE IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS.

2. THE CONTROLS SHALL BE INSPECTED REGULARLY FOR STRUCTURAL SOUNDNESS AND INTEGRITY AND DAMAGE BY CONSTRUCTION EQUIPMENT.

3. THE CONSTRUCTION ENTRANCE AND WASH RACK SHALL BE INSPECTED WEEKLY. IN CASE THE GRAVEL IS CLOGGED WITH SEDIMENT BUILD UP AND IS NO LONGER FUNCTIONAL, THE GRAVEL SHALL BE REMOVED, CLEANED AND REPLACED. 4. SEEDED AREAS SHALL BE INSPECTED DAILY DURING THE ESTABLISHMENT PERIOD TO ENSURE SEED GERMINATION

5. AFTER ESTABLISHMENT OF GOOD STAND OF VEGETATION IN THE SEEDED AREAS, INSPECTIONS SHALL BE CONDUCTED ON A WEEKLY BASIS TO ENSURE THAT THE SEEDED AREAS ARE NOT DAMAGED. ANY AREAS WHERE VEGETATION DIED, DRIED OR WAS OTHERWISE DAMAGED SHALL BE RESEEDED IMMEDIATELY.

6. EROSION AND SEDIMENT CONTROL MEASURES MAY BE REMOVED ONLY WITH THE APPROVAL OF THE INSPECTOR.

LAND CONSERVATION NOTES - GENERAL

1. NO DISTURBED AREA SHALL REMAIN DENUDED FOR MORE THAN 14 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. ELECTRIC POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE COMPACTED, SEEDED AND

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 No. 1 ABOVE AND NOT PAVED, SEEDED OR BUILT UPON BY NOV. 1, OR DISTURBED AFTER THAT DATE, IS TO BE MULCHED WITH HAY OR STRAW MULCH AT THE RATE OF TWO TONS PER ACRE AND OVER-SEEDED NO LATER THAN MARCH 15.

6. AT THE COMPLETION OF THE CONSTRUCTION PROJECT AND PRIOR TO RELEASE OF THE BOND, ALL SEDIMENT AND EROSION CONTROLS SHALL BE REMOVED AND ALL DISTURBED AREAS SHALL BE STABILIZED.

THE INSPECTOR TO INCREASE EFFICIENCY OF THE SEDIMENT CONTROL PLAN DURING EITHER PHASE. CONTRACTORS NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO AND/OR DURING CONSTRUCTION AND TO NOTIFY JORDAN LAND DESIGN LLC.(571/233-5830) IMMEDIATELY IF NOT IN CONFORMANCE WITH THE APPROVED PLAN. FURTHER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY JORDAN LAND DESIGN LLC IF A FIELD DESIGN PROBLEM OCCURS.

2. CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT (800) 257-7777 48 HOURS PRIOR TO THE START ANY EXCAVATION OR CONSTRUCTION FOR THE MARKING OF EXISTING UNDERGROUND UTILITIES.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL IDENTIFIED TREES AND SHALL COORDINATE TREE PRESERVATION WITH THE OWNER PRIOR TO ANY CONSTRUCTION.

4.IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THE WORK IN SUCH A MANNER AS TO PREVENT THE WASHING OF ANY TOPSOIL, SILT OR DEBRIS ONTO ADJACENT PROPERTIES.

RESPONSIBLE LAND DISTURBER INFORMATION

OWNER/ DEVELOPER/ PERMITEE INFORMATION

MULCHED WITHIN FIVE DAYS AFTER BACKFILL.

PROJECT NAME: 409 BEULAH STREET, NE TM # 038-2 ((12)) 1 DISTRICT: HUNTER MILL OWNER/ DEVELOPER/PERMITEE JDA CUSTOM HOMES PHONE 703 938 1119

RESPONSIBLE LAND DISTURBER INFORMATION

ADDRESS PO BOX 1208 VIENNA, VA 22183

CERTIFICATE/ LICENSE HOLDER NAME DENNIS RICE PHONE 703 938 1119 ADDRESS PO BOX 1208 VIENNA, VA 22183

TYPE CERTIFICATE LAND DISTURBER CERTIFICATE/ LICENSE 32491 APPLICANT/ AGENT SIGNATURE:

TOWN OF VIENNA NOTES:

1 NOTIFY THE TOWN OF VIENNA DEPARTMENT OF PUBLIC WCRKS AT 703-255-6380 WHEN WORK IS TO BE STARTED.

2. ALL CONTRACTOR GENERATED DEBRIS MUST BE HAULED AWAY BY THE CONTRACTOR OR OWNER.

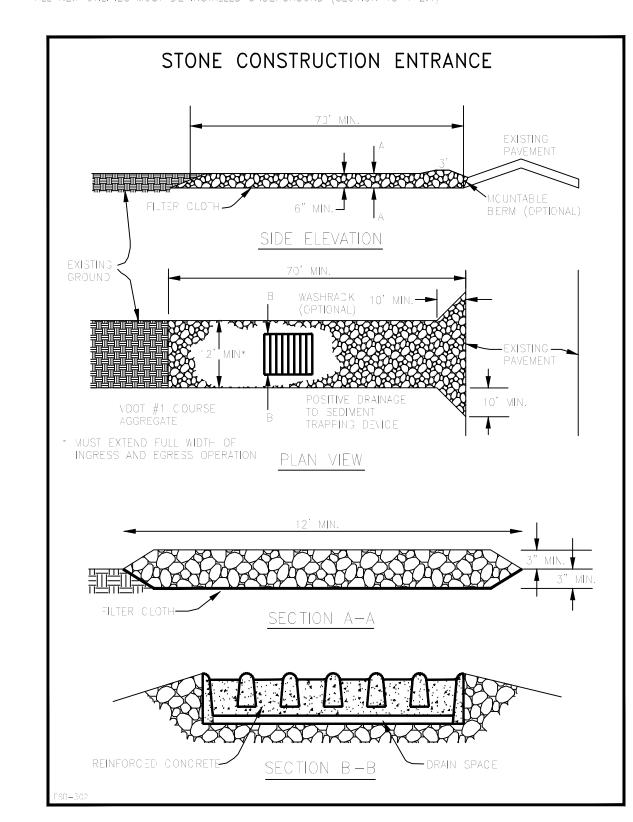
3. ALL RUNOFF MUST SHEET FLOW ACROSS PROPERTY LINES UNLESS APPROVED BY THE DIRECTOR OF PUBLIC WORKS.

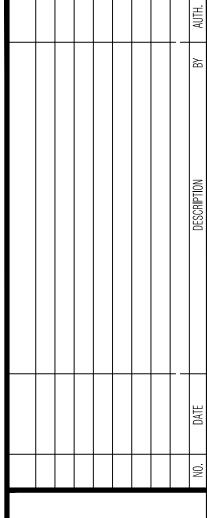
4. ALL PRIVATE STORM DRAINS (I.E. ROOF DRAINS, SUMP PUMPS, ETC.) MUST DAYLIGHT AT A MINIMUM OF 1C FEET FROM

 $_{\mathtt{s}}$ prior to the removal of any town trees (trees within the right of way), the applicant or their REPRESENTATIVE SHALL CONTACT THE TOWN OF VIENNA ARBORIST AT 703-255-6360 TO COORDINATE HAVING THE TOWN ARBORIST ONSITE DURING ALL TOWN TREE REMOVAL.

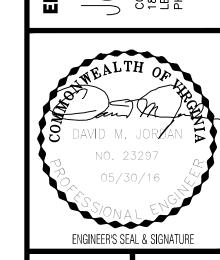
6. TREE PROTECTION FOR ANY TOWN TREE AS SHOWN ON PLAN, MUST BE INSTALLED PRIOR TO ANY SITE WORK.

7. ALL NEW UTILITIES MUST BE INSTALLED UNDERGROUND (SECTION 18-172.1)



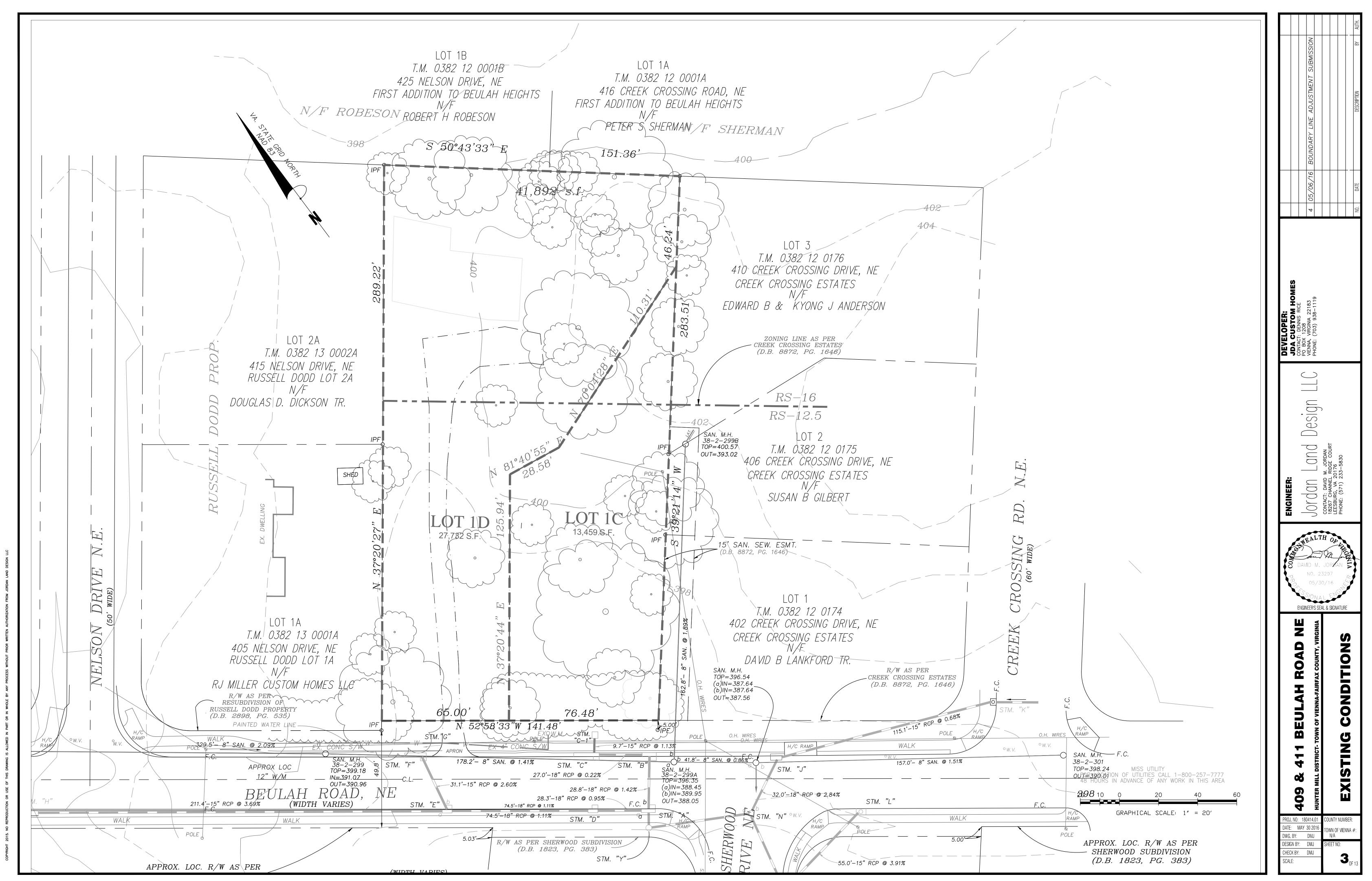


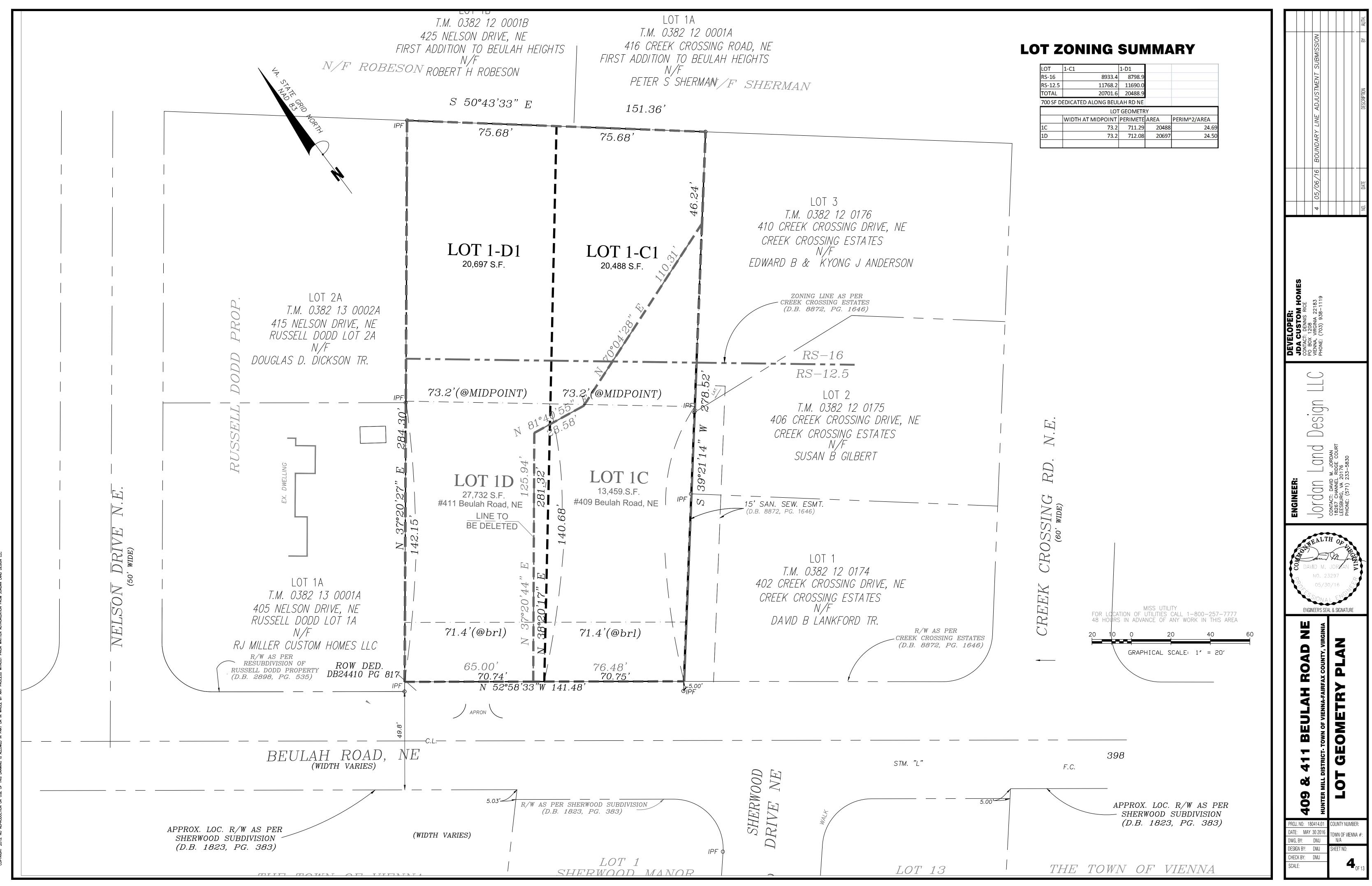
Siĝ \bigcirc CONTACT: DAVID
18267 CHANNEL
LEESBURG, VA

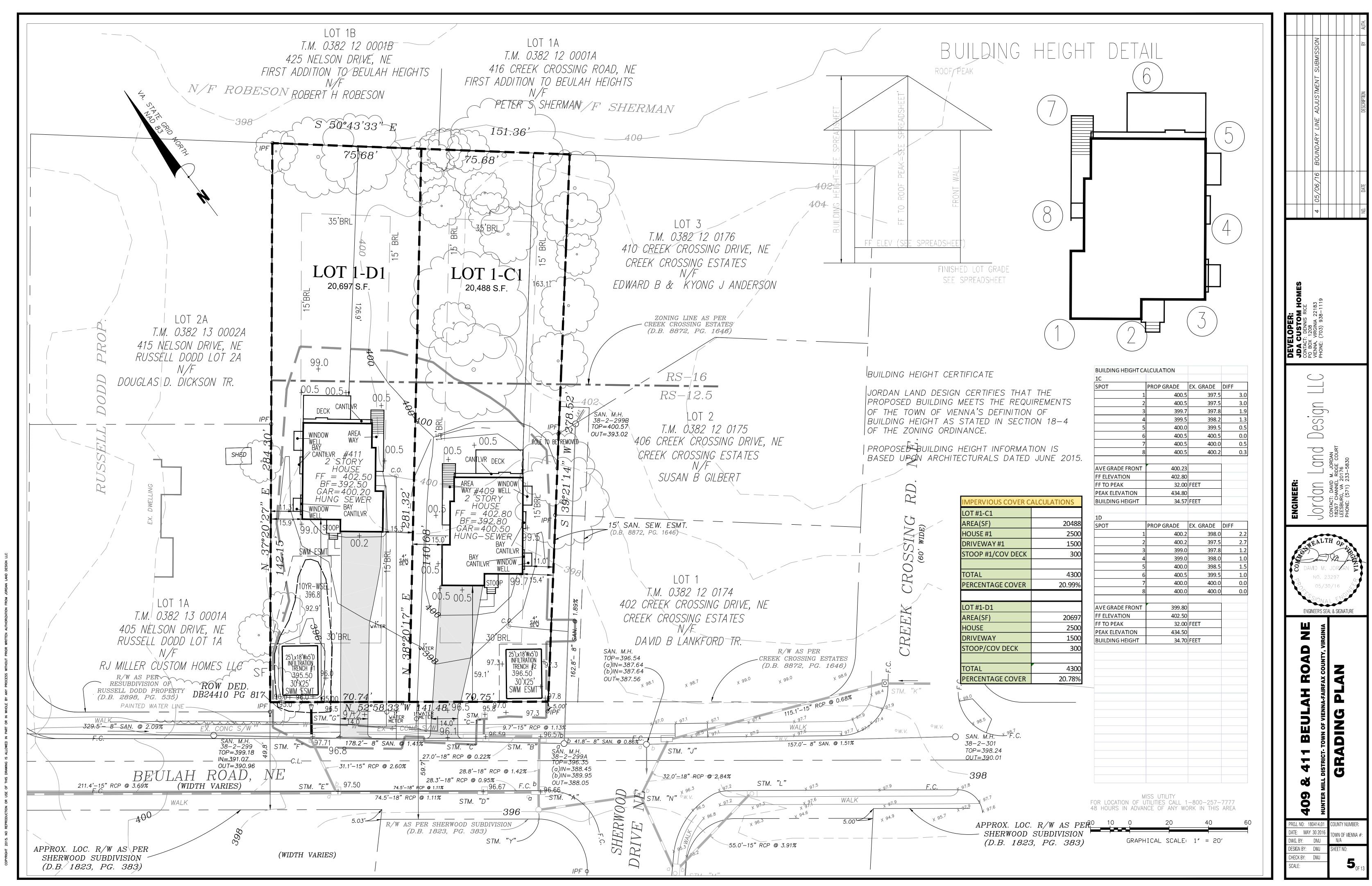


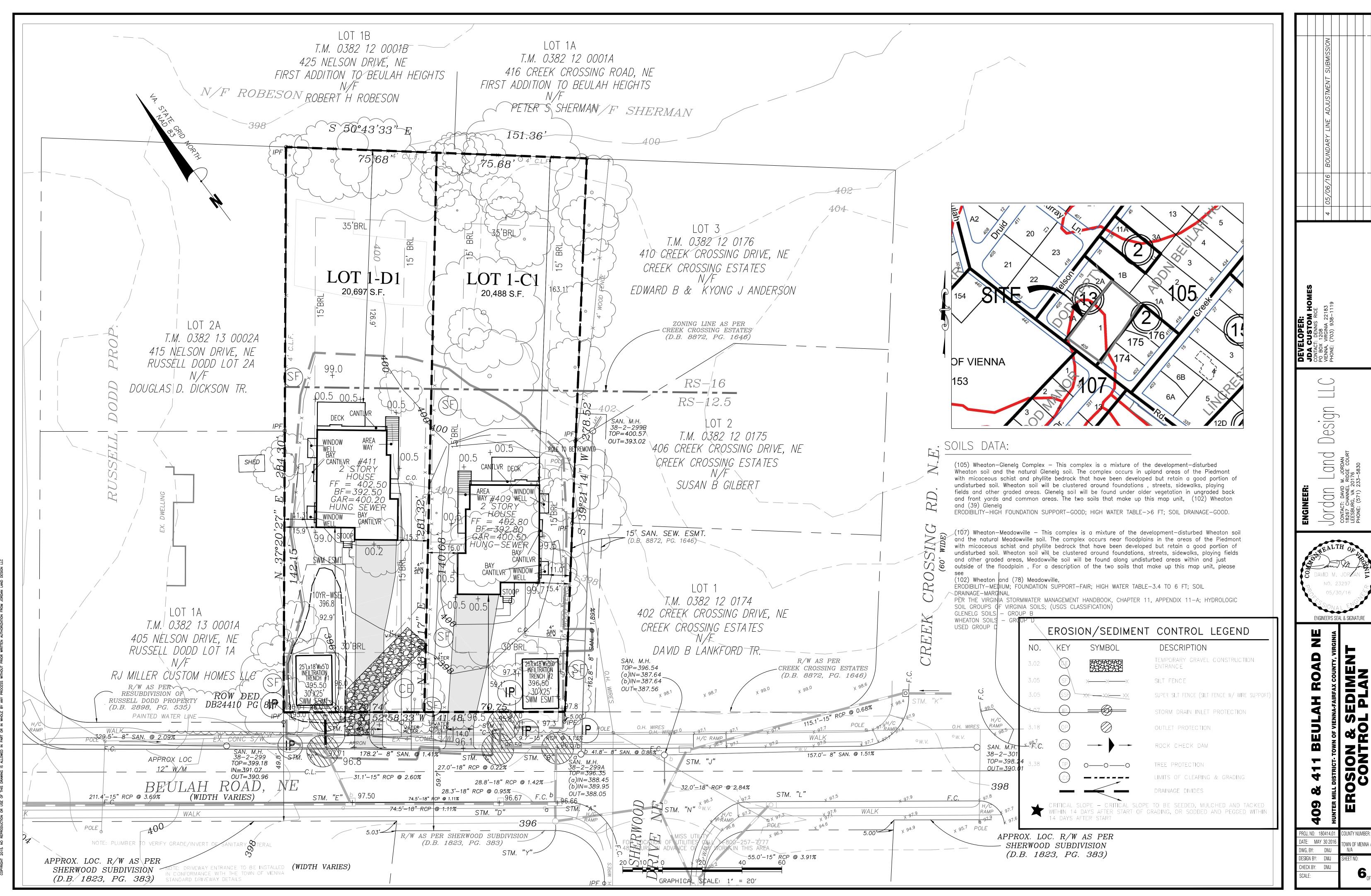
:OJ. NO: 180414.0 DATE: MAY 30 20 DWG. BY: DMJ DESIGN BY: DMJ CHECK BY: DMJ

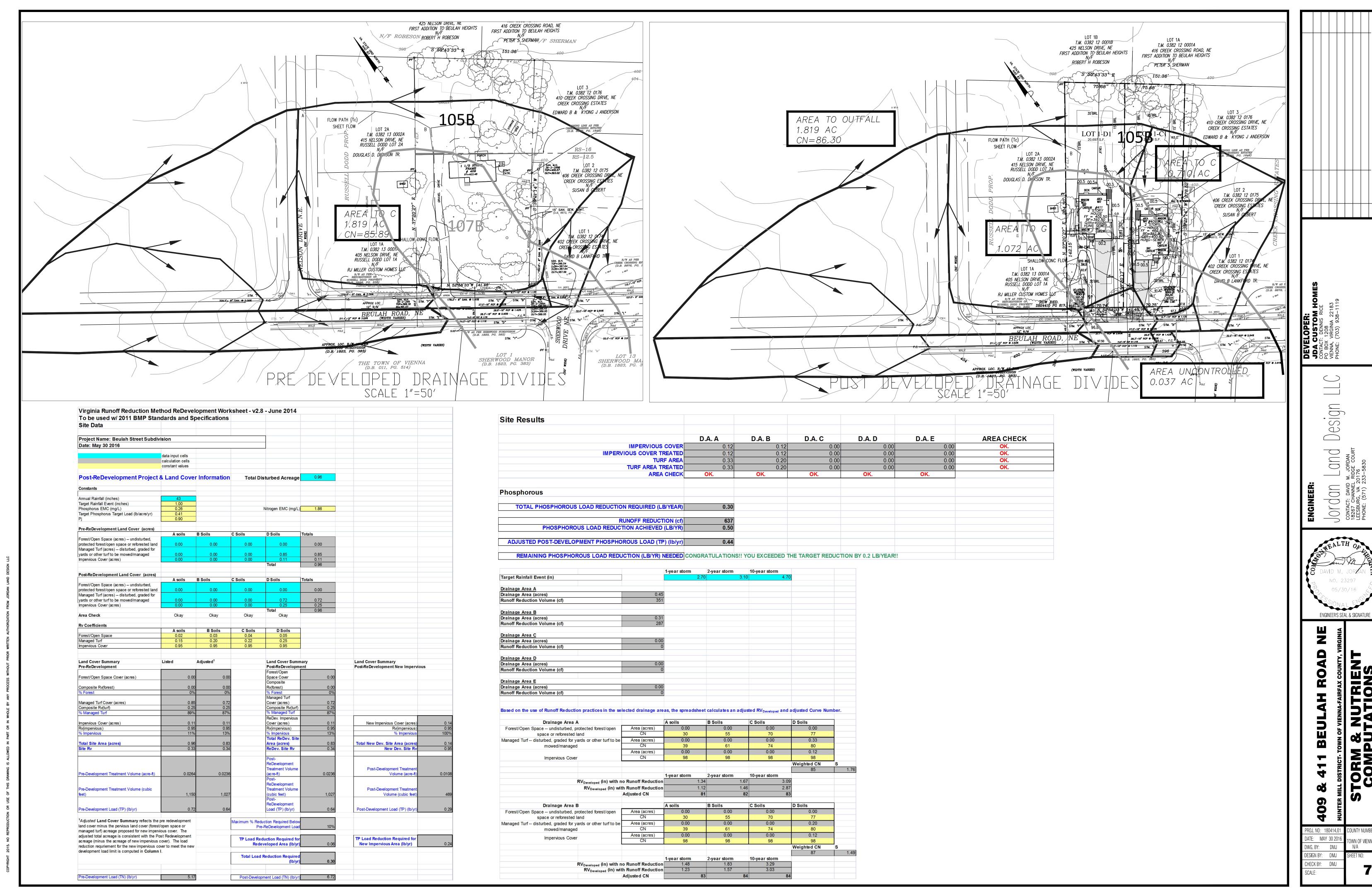
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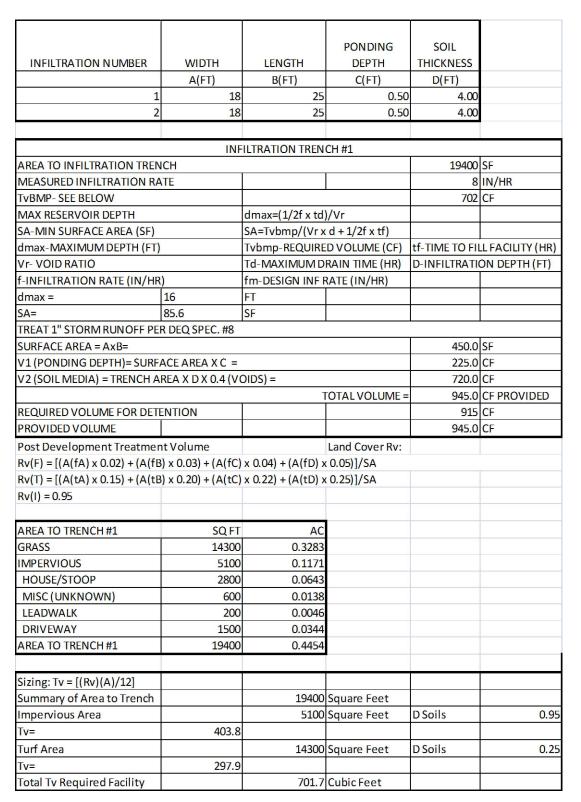




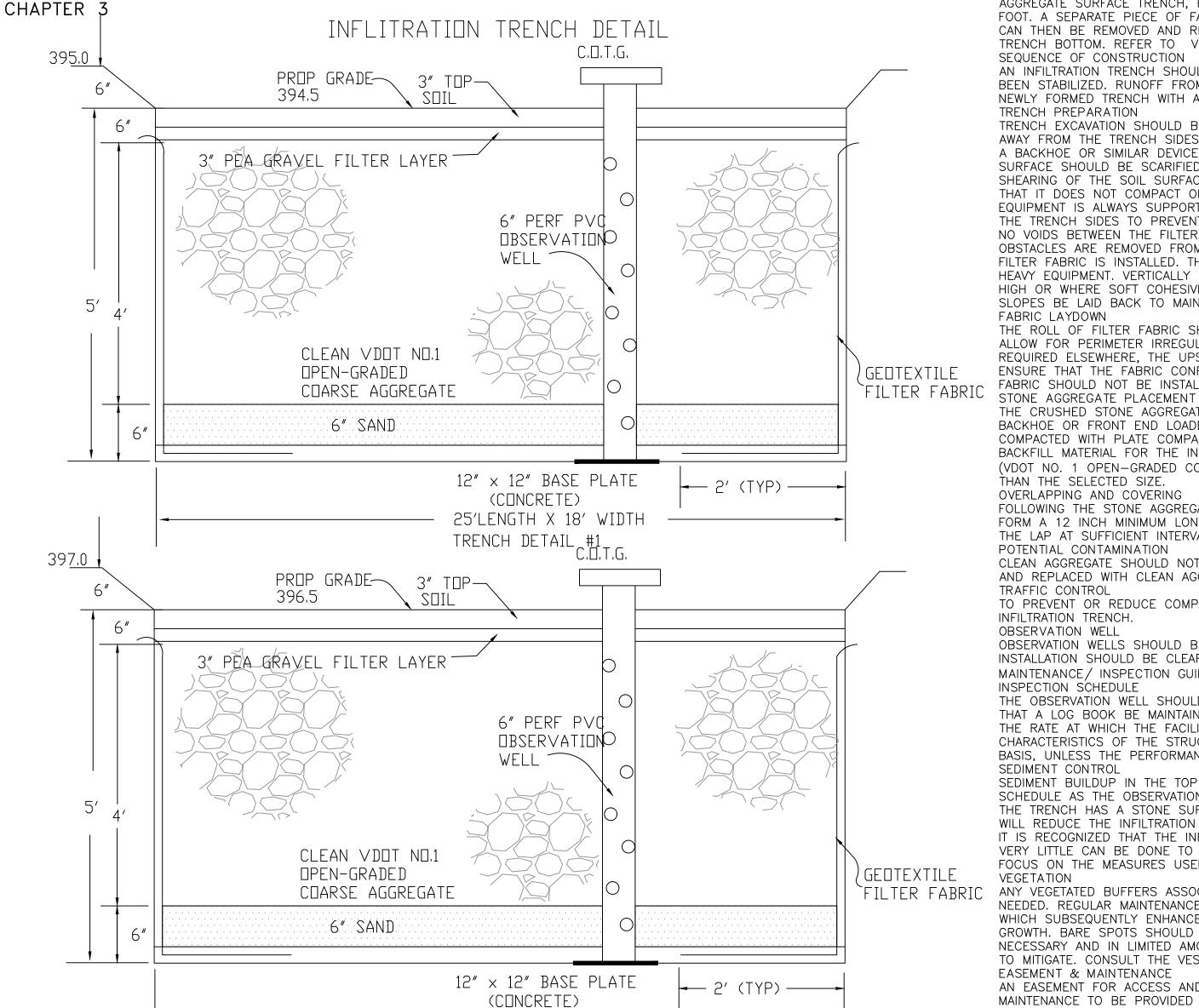




OUNTY NUMBER:



NOTE: TRENCH DETAILS TAKEN FROM THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK MINIMUM STANDARDS.



25'LENGTH X 18' WIDTH

TRENCH DETAIL #2

INFILTRATION TRENCH #2 **AREA TO INFILTRATION TRENCH** 13500 SF MEASURED INFILTRATION RATE 6 IN/HR VBMP- SEE BELOW 573 CF MAX RESERVOIR DEPTH dmax=(1/2f x td)/VrSA-MIN SURFACE AREA (SF) SA=Tvbmp/(Vr x d + 1/2f x tf)Tvbmp-REQUIRED VOLUME (CF) tf-TIME TO FILL FACILITY (HR max-MAXIMUM DEPTH (FT) r- VOID RATIO Td-MAXIMUM DRAIN TIME (HR) D-INFILTRATION DEPTH (FT -INFILTRATION RATE (IN/HR) fm-DESIGN INF RATE (IN/HR) 92.4 TREAT 1" STORM RUNOFF PER DEQ SPEC. #8 SURFACE AREA = AxB= 450.0 SF 225.0 CF /1 (PONDING DEPTH)= SURFACE AREA X C = 720.0 CF 2 (SOIL MEDIA) = TRENCH AREA X D X 0.4 (VOIDS) = 945.0 CF PROVIDED TOTAL VOLUME = REQUIRED VOLUME FOR DETENTION 915 CF 945.0 CF PROVIDED VOLUME AREA TO TRENCH #2 SQ FT 8500 0.1951 5000 0.1148 MPERVIOUS 2800 0.0643 HOUSE/STOOP 200 0.0046 LEADWALK 1500 0.0344 DRIVEWAY 0.0115 MISC (UNKNOWN) 500 AREA TO TRENCH #2 13500 0.3099 sizing: Tv = [(Rv)(A)/12]mmary of Area to Trench 13500 Square Feet 5000 Square Feet D Soils pervious Area 395.8 urf Area 8500 Square Feet D Soils 177.1

572.9 Cubic Feet

INFILTRATION TRENCH NOTES:

BACKFILL MATERIAL FOR THE INFILTRATION TRENCH SHOULD BE CLEAN AGGREGATE WITH A MAXIMUM DIAMETER OF 1.5 INCHES (IE VDOT NO.1 OPEN-GRADED COARSE AGGREGATE OR EQUIVALENT). THE AGGREGATE SHOULD CONTAIN FEW AGGREGATES SMALLER THAN THE SELECTED SIZE. VOID SPACES FOR VDOT NO. 1 IS ASSUMED TO BE 40 PERCENT. AN 8 INCH DEEP BOTTOM SAND LAYER (VDOT FINE AGGREGATE, GRADE A OR B) IS REQUIRED FOR ALL TRENCHES TO

PROMOTE BETTER DRAINAGE AND REDUCE THE RISK OF SOIL COMPACTION WHEN THE TRENCH IS BACKFILLED WITH STONE FILTER FABRIC

Total Tv Required Facility

THE AGGREGATE FILL MATERIAL SHOULD BE SURROUNDED WITH AN ENGINEERED FILTER FABRIC AS SHOWN IN FIGURE. FOR AN AGGREGATE SURFACE TRENCH, FILTER FABRIC SHOULD SURROUND ALL OF THE AGGREGATE FILL MATERIAL EXCEPT TOP ONE FOOT. A SEPARATE PIECE OF FABRIC SHOULD BE USED FOR THE TOP LAYER TO ACT AS A FAILURE PLANE. THIS TOP PIECE CAN THEN BE REMOVED AND REPLACED UPON CLOGGING. NOTE, THAT FILTER FABRIC SHOULD NOT BE PLACED ON THE TRENCH BOTTOM. REFER TO VESCH 1992 EDITION FOR FILTER FABRIC SPECIFICATIONS. SEQUENCE OF CONSTRUCTION

AN INFILTRATION TRENCH SHOULD NOT BE CONSTRUCTED OR PLACED IN SERVICE UNTIL ALL OF THE CONTRIBUTING AREA HAS BEEN STABILIZED. RUNOFF FROM UNTREATED, RECENTLY CONSTRUCTED AREAS WITHIN THE DRAINAGE AREA MAY LOAD THE NEWLY FORMED TRENCH WITH A LARGE VOLUME OF FINE SEDIMENT. TRENCH PREPARATION

TRENCH EXCAVATION SHOULD BE LIMITED TO THE SPECIFIC TRENCH DIMENSIONS. EXCAVATED MATERIALS SHOULD BE PLACED AWAY FROM THE TRENCH SIDES TO AVOID IMPACTING THE TRENCH WALL STABILITY. THE TRENCH SHOULD BE EXCAVATED WITH A BACKHOE OR SIMILAR DEVICE THAT ALLOWS THE EQUIPMENT TO STAND AWAY FROM THE TRENCH BOTTOM. THIS BOTTOM SURFACE SHOULD BE SCARIFIED WITH THE EXCAVATOR BUCKET TEETH ON THE FINAL PASS TO FLIMINATE ANY SMEARING OR SHEARING OF THE SOIL SURFACE. SIMILARLY, THE SAND FILTER MATERIAL SHOULD BE PLACED ON THE TRENCH BOTTOM SO THAT IT DOES NOT COMPACT OR SMEAR THE SOIL SURFACE. THE SAND MUST BE DEPOSITED AHEAD OF THE LOADER SO THE EQUIPMENT IS ALWAYS SUPPORTED BY A MINIMUM OF 8 INCHES OF SAND. LARGE TREE ROOTS MUST BE TRIMMED FLUSH WITH THE TRENCH SIDES TO PREVENT THE FABRIC FROM PUNCTURING OR TEARING DURING SUBSEQUENT INSTALLATION PROCEDURES. NO VOIDS BETWEEN THE FILTER FABRIC AND THE EXCAVATION WALLS SHOULD BE PRESENT. IF BOULDERS OR SIMILAR OBSTACLES ARE REMOVED FROM THE EXCAVATED WALLS, NATURAL SOILS SHOULD BE PLACED IN THESE VOIDS BEFORE THE FILTER FABRIC IS INSTALLED. THE SIDE WALLSOF THE TRENCH SHOULD BE ROUGHENED WHERE SHEARED AND SEALED BY HEAVY EQUIPMENT. VERTICALLY EXCAVATED WALLS MAY BE DIFFICULT TO MAINTAIN IN AREAS WHERE THE SOIL MOISTURE IS HIGH OR WHERE SOFT COHESIVE OR COHESIONLESS SOILS PREDOMINATE. THESE CONDITIONS MAY REQUIRE THAT THE SIDE SLOPES BE LAID BACK TO MAINTAIN STABILITY: TRAPEZOIDAL RATHER THAN RECTANGULAR CROSS SECTIONS MAY RESULT. FABRIC LAYDOWN

THE ROLL OF FILTER FABRIC SHOULD BE CUT TO THE PROPER WIDTH BEFORE INSTALLATION. THE WIDTH SHOULD ALWAYS ALLOW FOR PERIMETER IRREGULARITIES PLUS A MINIMUM 12 INCH OVERLAP AT THE TOP. WHEN A FABRIC OVERLAP IS REQUIRED ELSEWHERE, THE UPSTREAM SECTION SHOULD OVERLAP THE DOWNSTREAM SECTION BY A MINIMUM OF 2 FEET TO ENSURE THAT THE FABRIC CONFORMS TO THE EXCAVATION SURFACE DURING AGGREGATE PLACEMENT. NOTE THAT THE FILTER FABRIC SHOULD NOT BE INSTALLED ON THE TRENCH BOTTOM.

THE CRUSHED STONE AGGREGATE SHOULD BE PLACED IN THE TRENCH IN LOOSE LIFTS OF ABOUT 12 INCHES USING A BACKHOE OR FRONT END LOADER WITH A DROP HEIGHT NEAR THE BOTTOM OF THE TRENCH, AND SHOULD BE LIGHTLY COMPACTED WITH PLATE COMPACTORS. AGGREGATE SHOULD NOT BE DUMPED INTO TRENCH BY A TRUCK. BACKFILL MATERIAL FOR THE INFILTRATION TRENCH SHOULD BE CLEAN, WASHED AGGREGATE 1.5 TO 3.5 INCHES IN DIAMETER

(VDOT NO. 1 OPEN-GRADED COARSE AGGREGATE OR EQUIVALENT). AGGREGATE SHOULD CONTAIN FEW AGGREGATES SMALLER THAN THE SELECTED SIZE. OVERLAPPING AND COVERING

FOLLOWING THE STONE AGGREGATE PLACEMENT, THE FILTER FABRIC SHOULD BE FOLDED OVER THE STONE AGGREGATE TO FORM A 12 INCH MINIMUM LONGITUDINAL OVERLAP. THE DESIRED FILL SOIL OR STONE AGGREGATE SHOULD BE PLACED OVER THE LAP AT SUFFICIENT INTERVALS TO MAINTAIN THE LAP DURING SUBSEQUENT BACKFILLING.

CLEAN AGGREGATE SHOULD NOT BE MIXED WITH NATURAL OR FILL SOILS. ALL CONTAMINATED AGGREGATE SHOULD BE REMOVED AND REPLACED WITH CLEAN AGGREGATE. TRAFFIC CONTROL

TO PREVENT OR REDUCE COMPACTION OF THE HEAVY SOIL, HEAVY EQUIPMENT AND TRAFFIC SHOULD NOT TRAVEL OVER THE INFILTRATION TRENCH OBSERVATION WELL

OBSERVATION WELLS SHOULD BE PROVIDED A SPECIFIED IN THE DESIGN CRITERIA. THE DEPTH OF THE WELL AT THE TIME OF INSTALLATION SHOULD BE CLEARLY MARKED ON THE WELL CAP.

MAINTENANCE / INSPECTION GUIDELINES INSPECTION SCHEDULE

THE OBSERVATION WELL SHOULD BE MONITORED QUARTERLY AND AFTER EVERY LARGE STORM EVENT. IT IS RECOMMENDED THAT A LOG BOOK BE MAINTAINED SHOWING DEPTH OF WATER IN THE WELL AT EACH OBSERVATION IN ORDER TO DETERMINE THE RATE AT WHICH THE FACILITY DEWATERS AFTER RUNOFF PRODUCING STORM EVENTS. ONCE THE PERFORMANCE CHARACTERISTICS OF THE STRUCTURE HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS, UNLESS THE PERFORMANCE DATA SUGGESTS THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

SEDIMENT BUILDUP IN THE TOP FOOT OF STONE AGGREGATE OR SURFACE INLET SHOULD BE MONITORED ON THE SAME SCHEDULE AS THE OBSERVATION WELL. A MONITORING WELL IN THE TOP OF STONE AGGREGATE SHOULD BE PROVIDED WHEN THE TRENCH HAS A STONE SURFACE. SEDIMENT DEPOSITED SHOULD NOT BE ALLOWED TO BUILD UP TO THE POINT WHERE IT WILL REDUCE THE INFILTRATION RATE INTO THE TRENCH.

IT IS RECOGNIZED THAT THE INFILTRATION FACILITIES ARE SUBJECT TO CLOGGING. ONCE A TRENCH FACILITY HAS CLOGGED, VERY LITTLE CAN BE DONE TO CORRECT IT, SHORT OF EXCAVATING THE FACILITY. MAINTENANCE EFFORTS, THEREFORE, SHOULD FOCUS ON THE MEASURES USED FOR PRETREATMENT OF RUNOFF, IN ADDITION TO THE FACILITY ITSELF VEGETATION

FILTER FABRIC ANY VEGETATED BUFFERS ASSOCIATED WITH AN INFILTRATION TRENCH SHOULD BE INSPECTED REGULARLY AND MAINTAINED AS NEEDED. REGULAR MAINTENANCE OF THE BUFFER IS NECESSARY TO PROMOTE DENSE TURF WITH EXTENSIVE ROOT GROWTH, WHICH SUBSEQUENTLY ENHANCES RUNOFF FILTERING, PREVENTS EROSION AND SEDIMENTATION, AND DETERS INVASIVE WEED GROWTH. BARE SPOTS SHOULD BE IMMEDIATELY STABILIZED AND REVEGETATED. FERTILIZERS SHOULD BE APPLIED ONLY AS NECESSARY AND IN LIMITED AMOUNTS TO AVOID CONTRIBUTING TO POLLUTION PROBLEMS WHICH THE INFILTRATION BASIN HELPS TO MITIGATE. CONSULT THE VESCH 1992 EDITION FOR APPROPRIATE FERTILIZER TYPES AND APPLICATION RATES.

AN EASEMENT FOR ACCESS AND MAINTENANCE WILL BE RECORDED WITH THE RESUBDIVISION OF THE LOT. MONITORING AND MAINTENANCE TO BE PROVIDED BY THE HOMEOWNER AS PER THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK CHAPTER 3. LANGUAGE NOTING THE MAINTENANCE RESPONSIBILITY OF THE HOMEOWNER SHALL BE NOTED ON THE DEED, PLAT AND SALES CONTRACT FOR LOTS #1C, & 1D (409 & 411 BEULAH ST, NE.)

TOWN OF VIENNA SHALL OBSERVE THE SOIL INTERFACE PRIOR TO THE INSTALLATION OF THE SAND/GEOTEXTILE AND STONE.

SECTION 8: CONSTRUCTION

8.1. Construction Sequence

The following is a typical construction sequence to properly install infiltration practices. The sequence may need to be modified to reflect the scale of infiltration, site conditions, and whether or not an underdrain needs to be installed. Infiltration practices are particularly vulnerable to failure during the construction phase for two reasons. First, if the construction sequence is not followed correctly, construction sediment can clog the practice. In addition, heavy construction can result in compaction of the soil, which can then reduce the soil's infiltration rate. For this reason, a careful construction sequence needs to be followed.

During site construction, the following steps are absolutely critical:

- ☐ Avoid excessive compaction by preventing construction equipment and vehicles from traveling over the proposed location of the infiltration practice.
- Keep the infiltration practice "off-line" until construction is complete. Prevent sediment from entering the infiltration site by using super silt fence, diversion berms or other means. In the erosion and sediment (E&S) control plan, indicate the earliest time at which stormwater runoff may be directed to a conventional infiltration basin The E&S control plan must also indicate the specific methods to be used to temporarily keep runoff from the infiltration site.

Infiltration practice sites should never serve as the sites for temporary sediment control devices (e.g., sediment traps, etc.) during construction.

☐ Upland drainage areas need to be completely stabilized with a thick layer of vegetation prior to commencing excavation for an infiltration practice, as verified by the local erosion and sediment control inspector/program. The actual installation of an infiltration practice is done using the following steps:

1. Excavate the infiltration practice to the design dimensions from the side, using a backhoe or excavator. The floor of the pit should be completely level, but equipment should be kept off the floor area to prevent soil

2. Correctly install filter fabric on the trench sides. Large tree roots should be trimmed flush with the sides of infiltration trenches to prevent puncturing or tearing of the filter fabric during subsequent installation procedures. When laying out the geotextile, the width should include sufficient material to compensate for perimeter irregularities in the trench and for a 6-inch minimum overlap at the top of the trench. The filter fabric itself should be tucked under the sand layer on the bottom of the infiltration trench. Stones or other anchoring objects should be placed on the fabric at the trench sides, to keep the trench open during windy periods. Voids may occur between the fabric and the excavated sides of a trench. Natural soils should be placed in all voids, to ensure the fabric conforms smoothly to the sides of excavation.

3. Scarify the bottom of the infiltration practice, and spread 6 inches of sand on the bottom as a filter layer. 4. Install the underdrain, if one is needed.

5. Anchor the observation well(s), and add stone to the practice in 1-foot lifts.

6. Use sod to establish a dense turf cover for at least 10 feet on each side of the infiltration practice, to reduce erosion and sloughing. If the vegetation is seeded instead, use native grasses primarily due to their adaptability to local climates and soil conditions.

8.2. Construction Inspection

Inspections are needed during construction to ensure that the infiltration practice is built in accordance with the approved design and this specification. Qualified individuals should use detailed inspection checklists to include sign-offs at critical stages of construction, to ensure that the contractor's interpretation of the plan is consistent with the designer's intentions. An example construction phase inspection checklist for Infiltration practices can be accessed at the CWP website at:

http://www.cwp.org/Resource_Library/Controlling_Runoff_and_Discharges/sm.htm

SECTION 9: MAINTENANCE

9.1. Maintenance Agreements Section 4 VAC 50-60-124 of the regulations specifies the circumstances under which a maintenance agreement must be executed between the owner and the local program. This section sets forth inspection requirements, compliance procedures if maintenance is neglected, notification of the local program upon transfer of ownership, and right-of-entry for local program personnel.

When micro-scale or small-scale infiltration practices are installed on private residential lots, homeowners will need to (1) be educated about their routine maintenance needs, (2) understand the long-term maintenance plan, and (3) be subject to a deed restriction, drainage easement or other mechanism enforceable by the qualifying local program to ensure that infiltrating areas are not converted or disturbed. The mechanism should, if possible grant authority for local agencies to access the property for inspection or corrective action. In addition, the GPS

be logged for all infiltration practices, upon facility acceptance, and submitted for entry into the local BMP maintenance tracking database.

9.2. Maintenance Inspections Annual site inspections are critical to the performance and longevity of infiltration practices, particularly for

small-scale and conventional infiltration practices. Maintenance of infiltration practices is driven by annual inspections that evaluate the condition and performance of the practices, including the following: ☐ The drawdown rate should be measured at the observation well for three days following a storm event in

excess of 1/2 inch in depth. If standing water is still observed in the well after three days, this is a clear sign that that clogging is a problem.

☐ Check inlets, pre-treatment cells, and any flow diversion structures for sediment buildup and structural damage. Note if any sediment needs to be removed.

Inspect the condition of the observation well and make sure it is still capped.

Check that no vegetation forms an overhead canopy that may drop leaf litter, fruits and other vegetative materials that could clog the infiltration device.

Evaluate the vegetative quality of the adjacent grass buffer and perform spot-reseeding if the cover density is less than 90%.

Generally inspect the upland CDA for any controllable sources of sediment or erosion.

Look for weedy growth on the stone surface that might indicate sediment deposition or clogging.

Inspect maintenance access to ensure it is free of woody vegetation, and check to see whether valves, manholes and/or locks can be opened and operated. Inspect internal and external infiltration side slopes for evidence of sparse vegetative cover,

erosion or slumping, and make necessary repairs immediately. Based on inspection results, specific maintenance tasks will be triggered. Example maintenance inspection checklists for Infiltration practices can be accessed in Appendix C of Chapter 9 of the

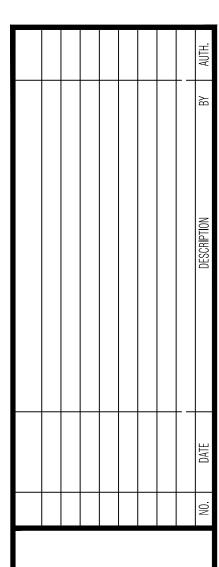
Virginia Stormwater Management Handbook (2010) or at the CWP website at: http://www.cwp.org/Resource_Library/Controlling_Runoff_and_Discharges/sm.htm

9.3. Ongoing Maintenance Effective long-term operation of infiltration practices requires a dedicated and routine maintenance inspection

schedule with clear guidelines and schedules, as shown in Table 8.9 below. Where possible, facility maintenance should be integrated into routine landscaping maintenance tasks. Table 8.9. Typical Maintenance Activities for Infiltration Practices

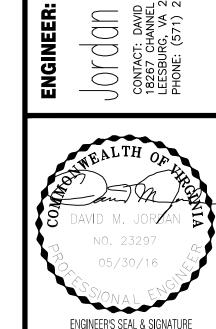
Maintenance Activity Schedule As needed

- Replace pea gravel/topsoil and top surface filter fabric (when clogged).
- Mow vegetated filter strips as necessary and remove the clippings.
- op Ensure that the contributing drainage area, inlets, and facility surface are clear of debris.
- Ensure that the contributing drainage area is stabilized.
- Remove sediment and oil/grease from pre—treatment devices, as well as from overflow structures.
- Repair undercut and eroded areas at inflow and outflow structures. Semi-annual inspection
- Check observation wells 3 days after a storm event in excess of 1/2 inch in depth. Standing water observed in the well after three days is a clear indication of clogging Inspect pre-treatment devices and diversion structures for sediment build-up and structural damage. Remove trees that start to grow in the vicinity of the infiltration facility.
- Annually Clean out accumulated sediments from the pre-treatment cell.



DEVELOPER:
JDA CUSTOM HON
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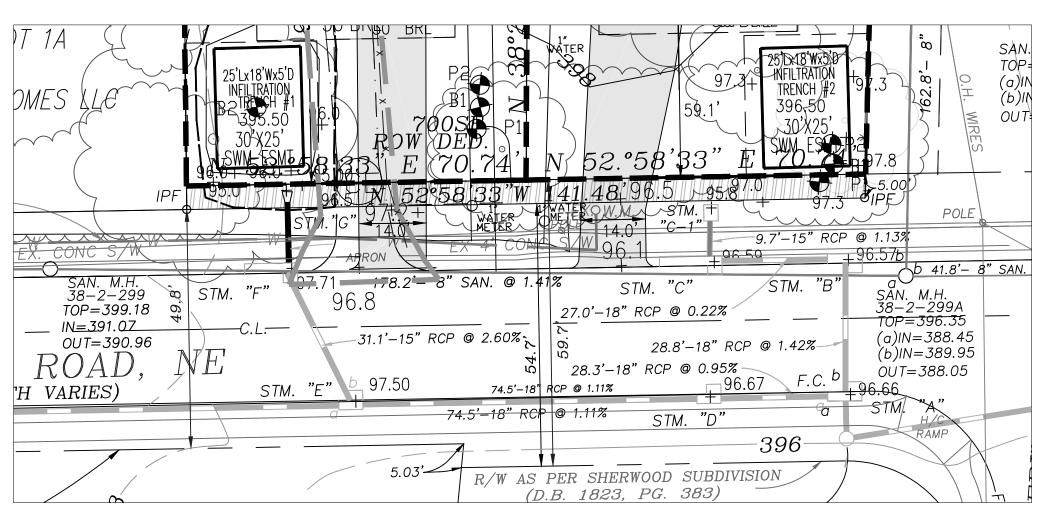
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May 30, 2016 - 2:01pm J:\Job Files\Rice\Beulah 409\409 BEULAH BASE 05302016.dwg



INFILTRATION TRENCH BORING LOCATIONS (I"=20'SCALE)

Drainage Area A										
Drainage Area A Land Cover (acres)										
	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv				
Forest/Open Space (acres) undisturbed, protected forest/open										
space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00				
Managed Turf (acres) disturbed, graded for yards or other turf to be										
mowed/managed	0.00	0.00	0.00	0.33	0.33	0.25				
Impervious Cover (acres)	0.00	0.00	0.00	0.12	0.12	0.95				
				Total	0.45		Post Develo	oment Treatme	nt Volume (cf)	701

7. Infiltration												
7.a. Infiltration #1 (Spec #8)	impervious acres draining to infiltration	50% runoff volume reduction	0.50	0.12	0	202	202	25	0.00	0.25	0.16	0.09
7.a. Illilitation #1 (Opec #0)	turf acres draining to infiltration	50% runoff volume reduction	0.50	0.33	0	149	149	25	0.00	0.19	0.12	0.07
7.b. Infiltration #2 (Spec #8)	impervious acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00
7.b. militration #2 (Spec #6)	turf acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00
Drainage Area B												

Drainage Area B								
Drainage Area B Land Cover (acres)								
	A soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv		
Forest/Open Space (acres) – undisturbed,								
protected forest/open space or reforested land	0.00	0.00	0.00	0.00	0.00	0.00		
Managed Turf (acres) - disturbed, graded for								
yards or other turf to be mowed/managed	0.00	0.00	0.00	0.20	0.20	0.25		
Impervious Cover (acres)	0.00	0.00	0.00	0.12	0.12	0.95		
				Total	0.31		Post Development Treatment Volume (cf)	574

							_					
7. Infiltration												
7.a. Infiltration #1 (Spec #8)	impervious acres draining to infiltration	50% runoff volume reduction	0.50	0.12	0	198	198	25	0.00	0.25	0.16	0.09
7.a. Illilitation #1 (Spec #6)	turf acres draining to infiltration	50% runoff volume reduction	0.50	0.20	0	88	88	25	0.00	0.11	0.07	0.04
7.b. Infiltration #2 (Spec #8)	impervious acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00
7.5. Illilitation #2 (Spec #o)	turf acres draining to infiltration	90% runoff volume reduction	0.90	0.00	0	0	0	25	0.00	0.00	0.00	0.00

BMP NARRATIVE STATEMENT

THE PROPOSED INFILTRATION TRENCHES ARE PROPOSED TO PROVIDE BMP FOR THE PROPOSED SUBDIVISION. THE COMPLIANCE FORM FOR THE 2014 VDCR RRM RE-DEV STANDARDS.

THE TYPE #1 DESIGN OF THE INFILTRATION TRENCH REQUIRES TWO PRETREATMENT METHODS. IT IS RECOMMENDED THAT THIS BE ACHIEVED WITH;

1. LEAF GUARDS

2. GRASS FILTER STRIP PRIOR TO INFILTRATION

DUTFALL NARRATIVE & DVERLAND RELIEF STATEMENT

THE SUBDIVISION PLAN IS FOR TWO FAMILY DETACHED HOUSE BUILT AT 409 BEULAH ST, NE. FLOW FROM THE LOT SHEET FLOWS FROM THE LOT TO THE SOUTHEAST CORNERS OF THE LOT AT A YARD INLET IN FRONT OF BEULAH STREET, NE.

THE EXISTING IMPERVIOUS AREA IS 4751 SF IMPERVIOUS (3040 SF EX DRIVEWAY, 1395 EX HOUSE, 316 SHED) FOR A C-FACTOR OF 0.369.

THE PROPOSED IMPERVIOUS AREA IS INCREASED TO 9700 SF. THE OVERLOT DRAINAGE IS CONVEYED TO 2 INFILTRATION TRENCHES TO REDUCE FLOW TO PRE DEVELOPED FLOW. FLOW IS CONVEYED TO A THE SAME INLET AND INLETS ALONG BEULAH ST, NE,

THE PROPOSED IMPERVIOUS AREA IS ON LOT IS 9700SF FOR A C FACTOR OF 0.434. THE STORMWATER MODEL IS ANALYZED IN TWO METHODS. FIRST THE ADEQUACY OF THE OUTFALL IS ANALYZED. THIS IS DONE USING RATIONAL METHOD. THE STORM SEWER UPSTREAM OF INLET "A" IS ANALYZED. FIRST FOR CAPACITY, THE EXISTING SEWER IS LIMITED IN THAT THE 1.81 ACRES OF THE SITE AND SURROUNDING AREAS DRAIN TO AN EXISTING GRATE INLET AT THE SOUTH EASTERN PORTION OF THE PROPERTY. IN ADDITION, THE YARD SLOPE TO THIS INLET IS LESS THAN 2%.

IN ORDER TO PROVIDE BETTER DRAINAGE, A CULVERT IS PROPOSED AT THE FRONT WESTERN CORNER OF THE PROPERTY AND CONNECTED TO STORM INLET F. SINCE IT IS NOT POSSIBLE TO OBTAIN 2% FALL WITH A YARD INLET (NOT ADEQUATE COVER OVER PIPE), OR TO DRAIN DIRECTLY TO BEULAH STORM F, AN OPEN CULVERT IS EXTENDED TO THE INFILTRATION TRENCH.

SINCE THE STORM SEWER IN THE STREET SLOPES 0.2-1.5%, THE HYDRAULIC GRADELINE WAS ANALYZED TO FIND THE WATER SURFACE ELEVATION AT THE OPEN CULVERT. THE WSEL IS 1.3 FEET ABOVE THE INFILTRATION TRENCH AT THE 10 YEAR STORM.

SEE SHEET 7 FOR FLOWS, INFILTRATION AND DRAINAGE DIVIDES

THE REDUCTION IN OUTFALL FOR THE SITE IS CALCULATED USING THE STEPS OUTLINED IN THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, CHAPTER 11.6 WATER QUANTITY CONTROL. VSMP REGULATIONS FOR CHANNEL PROTECTION CRITERIA (OF THE ENERGY BALANCE METHOD) IS DEFINED USING THE NRCS TR-55 RUNOFF EQUATION. THE VSM HANDBOOK;

FOLLOWING THE STEPS OUTLINED IN THE VSM HANDBOOK (PAGE 13-74) STEP 5. QUANTITY CONTROL REQUIREMENTS, THE PRE-DEVELOPED AND POST DEVELOPED ARE DETERMINED. THE CHART TO THE LEFT WAS COMPUTED USING THE 2014 COMPLIANCE SPREADSHEET TO ESTIMATE PRE AND POST RUNOFF COLUMNS. TO DETERMINE THE DETENTION VOLUME REQUIRED THE 2 AND 10 YEAR STORMS WERE ROUTED USING BENTLEY SYSTEMS PONDPAK 81; THE CN, TC, AND AREAS WERE USED AS CALCULATED;

PRE; AREA 1.816AC Tc=0.544HR, CN 85.88, RESULTING FLOW Q2=2.53 CFS, Q10=4.62 CFS POST; AREA 1.916, Tc=0.529, CN 86.30, Q2=2.64 CFS, Q10=4.78 CFS, RUNOFF FOR 10 YEAR STORM REDUCED TO PRE-DEVELOPED CONDITIONS. 4.62 CFS RUNOFF POST DEVELOPED TO TWO TRENCHES (2.84 & 1.77 CFS FOR TRENCH 1 & 2 RESPECTIVELY), 0.2 CFS. 0.15 CFS UNCONTROLLED TO ROAD. 4.74 CFS TOTAL TO FRONT DUTFALL, REDUCED TO 4.34 REDUCTION PROVIDED IN BOTH TRENCHES TO REDUCE DUTFALL TO BELOW PRE-DEVELOPED CONDITION OF 4.51 CFS TO BEULAH ROAD. 0.21 ACRES FOR 0.98 CFS IS RELEASED UNCONTROLLED ON NORTH OF SITE, MATCHING EXISTING 10 YEAR RUNOFF.

FROM PONDPAK, 10 YEAR VOLUME= 1829 CF OR 915 CF PER TRENCH;

PLEASE NOTE, DEQ DOCUMENTS STATE THAT UNDISTURBED AREA PRE AND POST SHOULD BE CONSIDERED AS OPEN SPACE, BUT TOWN OF VIENNA STATES THAT TO BE CONSIDERED OPEN SPACE, AREA MUST BE IN EASEMENT, EVEN IF OFFSITE, THEREFORE AREA CALCULATED FOR BMP IS 1470CFK 1830 PROVIDED.

A MAJORITY OF THE SITE DRAINS TO THE EXISTING YARD INLET, AN ADDITIONAL INLET IS PROPOSED. SYSTEM MODELED IN SPREADSHEET ON SHEET 12. FLOWS TO EXISTING STORM NODE A ARE ADEQUATE WITH DETENTION PROVIDED WITH INFILTRATION TRENCHES. THE STORM SEWER IN THE STREET WAS ANALYZED TWO PIPE RUNS FROM THE SITE. AREA IN REAR TO SHEET FLOW AS IN EXISTING CONDITION.

Soil Tech Inc. 14630-F FLINT LEE ROAD CHANTILLY, VIRGINIA 20151 (703) 631-9647 (703) 631-2156: FAX JDA Custom Homes P.O. Box 1208 Vienna, VA 22180

Re: Infiltration Studies at 409 Beulah St.(Lot 2), Vienna, VA

A soil boring and other observations were made in the vicinity of an alternative infiltration trench located at the referenced parcel. The test was conducted in general accordance with the *Testing* Guidelines for Infiltration Facilities. The test boring was made in the center of the proposed infiltration basin to identify soil materials and determine the depth to restrictive horizons such as bedrock and water table. The following is a description of the soil materials encountered at the test

October 5, 2015

Horizon	No. B2 s.e. ≈395 Depth	5.0 Meadowville Description	Soil Hydrologic Group B
Ap	0.0-0.8'	Brown (10YR 5/3) loam, very friable	e (loose sandy SILT, ML), moist.
Bt	0.8-2.5	Reddish yellow (7.5YR 6/6) clay loa	m, firm, (very stiff lean CLAY, CL), moist.
ВС	2.5-2.8	Strong brown (7.5YR 5/6), light clay moist.	loam, very firm, (very stiff sandy SILT, ML)
C1	2.8-4.5	Reddish yellow (7.5YR 6/6) loam, fr	riable (stiff sandy SILT, ML), moist.
C2	4.5-10.0		ellow (7.5YR 6/6), yellow (10YR 7/6), sive (medium dense silty SAND (SM), moist. on.
The infi concave clay loa	e foot slope. The um. The subsoil	soil consists of a thin layer of top	I Lot 2 test site, on a nearly level, slightly osoil grading to friable to firm loam and andy loam. Ground water or evidence of ter than 10 feet.

Lot 2: 7.9 in./ hr In my opinion the alternative site has smilar soil co thens as the original. The design rate is $\frac{1}{2}$ nended that the minimum trench install depth is 5 feet. the measured rate or 4 in./hr. WILLIAM F. SLEDJESKI il Scientis \$401000327 SOIL SCIENCE • GEODOS ENVIRONMENTAL SCIENCE

Infiltration Test Results (original infiltration trench site)

Soil Tech Inc. 14630-F FLINT LEE ROAD CHANTILLY, VIRGINIA 20151 (703) 631-2156: FAX

JDA Custom Homes P.O. Box 1208 Vienna, VA 22180

Re: Infiltration Studies at 409 Beulah St. NE, Vienna, VA

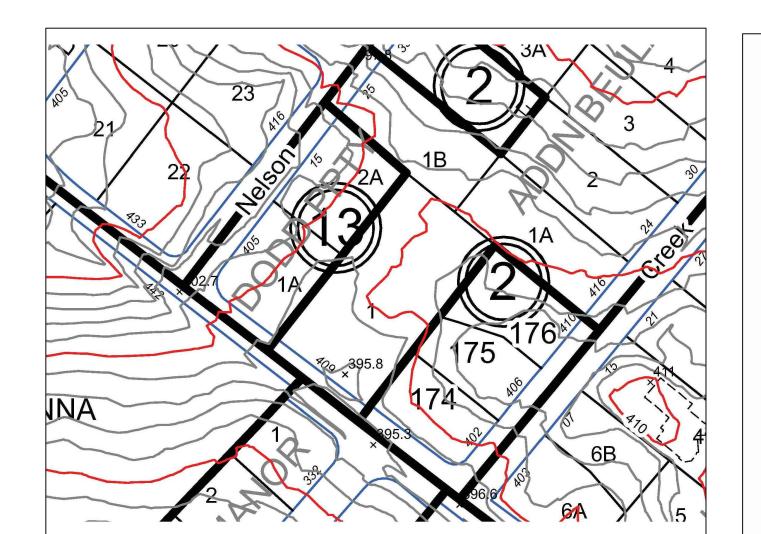
August 7, 2015

Gentlemen,

Soil borings, infiltration tests and other observations were made in the vicinity of the proposed infiltration facilities located at the referenced parcel. The tests were conducted in general accordance with the <u>Testing Guidelines for Infiltration Facilities</u>, FCPWES rev. July 2012. The first test boring was made in the center of the proposed infiltration basin to identify soil materials and determine the depth to restrictive horizons such as bedrock and water table. The second and third borings were used for infiltration tests. These borings were presoaked for 24 hours with 24 inches of water. On the test date water level readings were made every ½ hour. The test holes were backfilled to 24 inches following each reading. The following is a description of the soil materials encountered at the test

Horizon	No. B1 s.e. ≈3	Meadowville Description	Soil Hydrologic Group B
HOHZOH	Бериі	Description	
Ap	0.0-0.5'	Dark yellowish brown (10YR 4/4) loa moist.	am, very friable (loose sandy SILT, ML),
Е	0.5-2.0	Yellowish brown (10YR 5/6), brownis (medium dense sandy SILT, ML), dry	•
Bt1	2.0-4.0'	Strong brown (7.5YR 5/6), yellowish moist.	red (5YR 5/6), clay loam, very firm,
2Bt1	4.0-5.0	Yellowish red (5YR 5/6, 5/8), strong the (medium dense silty GRAVEL, GM),	brown (7.5YR 5/6), gravelly heavy loam, moist.
3Bt1	5.0-6.0	Yellowish red (5YR 5/6), strong brow 6/8) heavy loam, firm, (medium dene	rn (7.5YR 5/6), brownish yellow (10YR sandy SILT, ML), moist.
С	6.0-10.0*	Brownish yellow (10YR 6/6), yellowisandy loam, slightly micaceous, massiv DRY on completion	ve (medium dense silty SAND (SM), moist

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Boring No. B1 s.e. ≈397.5 Soil Hydrologic Group B Brown (7.5YR 4/4) loam, very friable (loose sandy SILT, ML), moist. Bt1 0.6-2.0° Strong brown (7.5YR 5/6, 4/6) clay loam, friable (stiff lean CLAY, CL), moist. Yellowish red (5YR 4/6, 5/6) clay loam, firm, (very stiff lean CLAY, CL), moist. Reddish yellow (7.5YR 6/8, 7/8), yellowish red (5YR 5/6), gravelly loam, rigid, (dense silty SAND with gravel, SM-GM), dry. Brownish yellow (10YR 6/6), yellowish red (5YR 5/6), yellow (10YR 7/6), sandy loam, slightly micaceous, massive (medium dense silty SAND (SM), moist. DRY on completion.

Site Description

The infiltration trench sites are located on a nearly level, slightly concave foot slope. The soil consists of a thin layer of topsoil grading to friable to firm loam and clay loam underlain by a dense gravelly horizon at 4.5-5.5 feet. The subsoil at 5.5 to 10 feet is very friable loam and sandy loam. Ground water or evidence of ground water was not noted. The depth to bedrock is greater than 10 feet. The observation borings were dry on completion and after 24 hours.

Lot 2: 7.9 in./ hr.

Infiltration Test Results Lot 1: 5.9 in./hr.

> **Textural Analysis (USDA)** Boring Depth Gravel Sand Silt Clay (ft.) (%) (%) (%) (%) Lot 1-B1 6.0 <5 51 28 21 Lot 2-B1 6.0 <5 60 23 17

The depth to rock and water table is greater than 10 feet at both lots. The design rates are ½ the measured rate or 3 in./hr. at lot 1 and 4 in./hr. at lot 2. The infiltration rates at the regulatory test depth (2.0 ft. below the proposed installation depth) are not representative of the soil materials at 4.0 feet. It is recommended that the minimum install depth be 6 feet

or at least 6 inches into the 3°C horizon. William F. Sledjeski, PSS, Soil Scientist

No. 3401000327 SOIL SCIENCE • GEOLOGY • ENVI

WILLIAM F. SLEDJESKI

esign

CONTACT: DAVID
18267 CHANNEL
LEESBURG, VA 2
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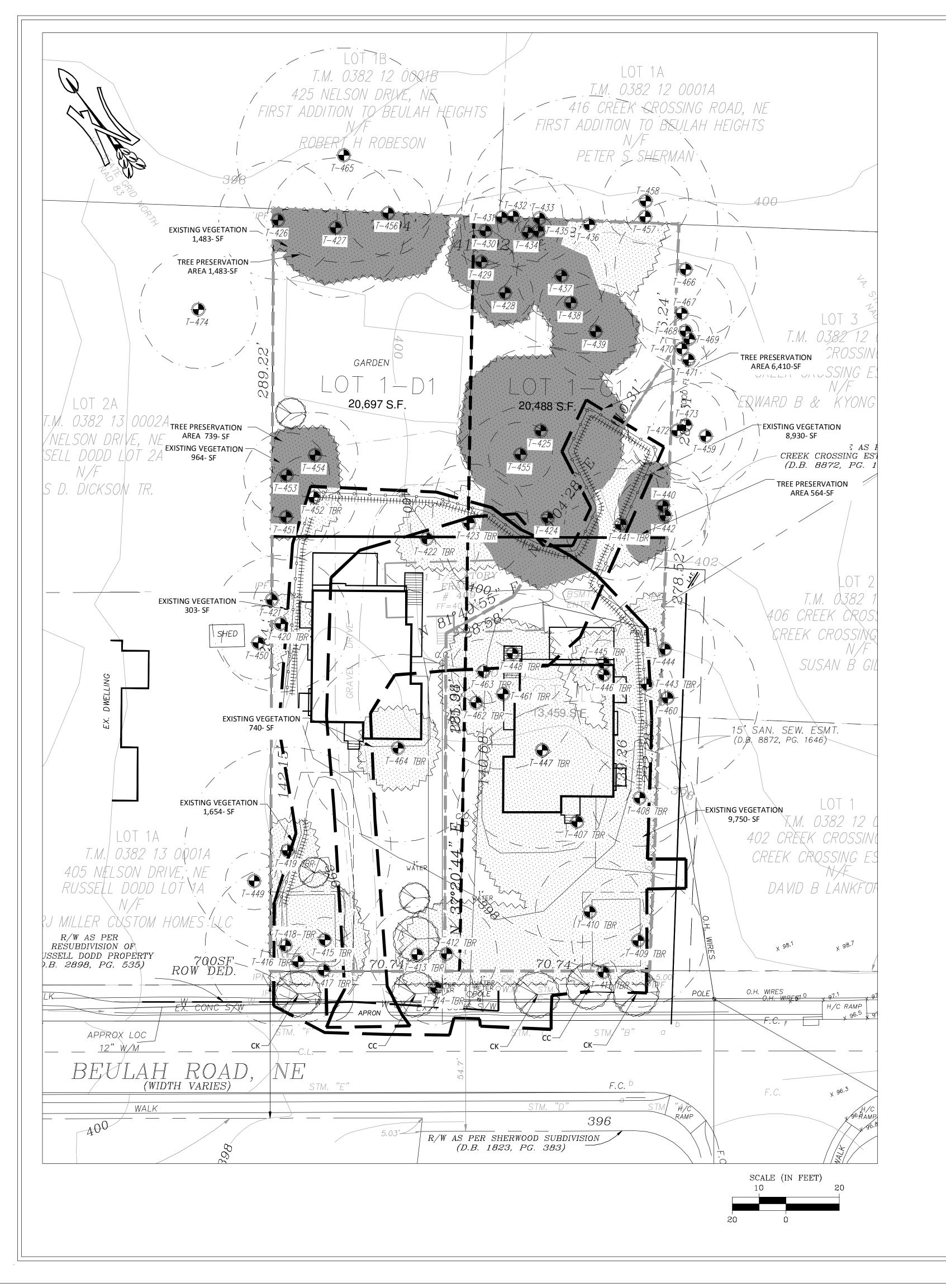
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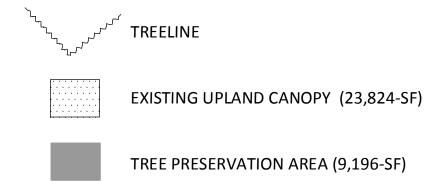
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CHECK BY: DMJ

May 30, 2016 - 2:02pm J:\Job Files\Rice\Beulah 409\409 BEULAH BASE 05302016.dwg







TREE PRESERVATION AREA (9,196-SF)

CRITICAL ROOT ZONE (CRZ)

TREE LOCATION

TREE PROTECTION FENCING

++++++ ROOT PRUNING

PROPOSED TREE

- 1. THE PROPERTY DELINEATED HEREON IS LOCATED AT 409 BEULAH ROAD, N.E.
- 2. BOUNDARY INFORMATION FROM FIELD SURVEY BY RAMSEY SURVEYS, 2015. TOPOGRAPHY IS BASED ON
- CURRENT TOPOGRAPHIC SURVEY PREPARED BY BYRON LEAVITT SURVEY.
- 3. PROPOSED DEVELOPMENT PLAN BY JORDAN LAND DESIGN, 2016. 4. TREE EVALUATIONS AND COMPUTATIONS BY TNT ENVIRONMENTAL, INC., AUGUST 2015 (MR. AVI M.
- SAREEN, CERTIFICATION #: MA-4727A).
- 5. CRZ MEASUREMENTS IN RADIUS.
- 6. TOTAL EXISTING CANOPY COVER: 23,824 SQUARE FEET.
- 7. TOTAL SITE AREA: 41,185 SQUARE FEET. 8. PERCENT OF SITE COVERED: 57.8%
- 9. PERCENT COVER REQUIRED BY ZONING: 20%
- 10. CANOPY TO BE PRESERVED: 9,196-SQUARE FEET (22.3%)
- 11. MINIMUM CANOPY AREA TO BE PLANTED TO MEET REQUIREMENT OVERALL: 0.0-SF (0.0%)

LANDSCAPE TRE	EE COVER - LOT 1-D1	
TOTAL SITE AREA		20,697
TOTAL CANOPY COVERAGE REQUIRED (20	0%)	4,139
LANDSCAPE ELEMENTS		
TREE COVER TO REMAIN		2,222
ADDITIONAL PLANTING REQUIRED		1,917
ADDITIONAL PLANTING PROPOSED		1,250
1	LARGE CANOPY TREE @1,250SF/EA	1,250
3	UNDERSTORY TREES @ 300SF/EA	900
PROPOSED PLANT CANOPY		2,150
TOTAL PROPOSED TREE COVER		4,372

	TOTAL CANOPY COVERAGE						
		% OF LOT AREA					
LOT 1-C1	(Preservation) 6,974 SF	34.0					
LOT 1-D1	(Preservation and Landscaping) 4,372 SF	21.1					
Total Cand	Total Canopy Coverage (Lot 1-C1 and Lot 1-D1 Together) 27						

	PROPOSED STREET TREES								
LEN	GTH OF ROAD FRONTAGE		141						
	1 TREE PER 30 FEET FRONTAGE		4.7						
	TREES REQUIRED		5						
	PROPOSED TREES								
СК	CORNUS KOUSA	KOUSA DOGWOOD	3						
CC	CERCIS CANADENSIS	EASTERN REDBUD	2						

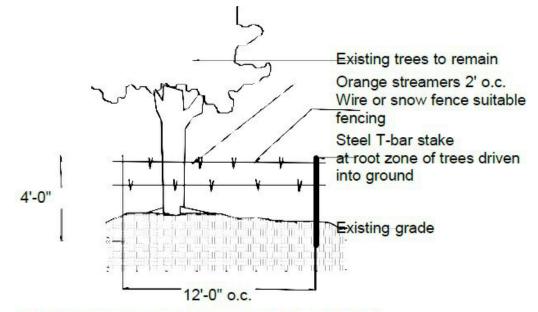


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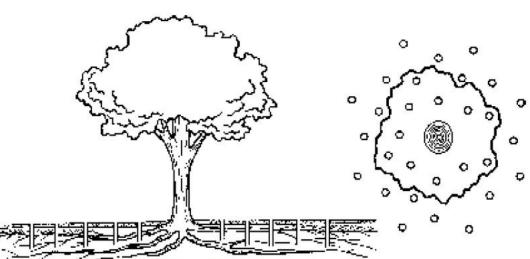
PRESERVATION

REVISIONS DATE COMMENTS 9/11/15 AMS 10/7/15 AMS 5-5-16 REV BY LAD (NEW LAYOUT) 5-31-16 LAD (TOWN COMMENTS) SHEET 10 OF 13SCALE: 1" - 20' PROJECT DATE: 8/10/15 DRAFT: CHECK: SSS

> FILE NUMBER: *398*



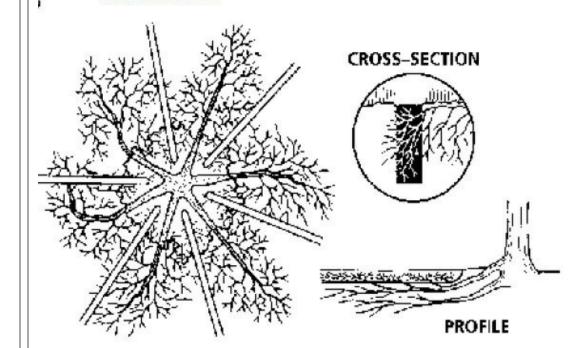
CONSTRUCTION FENCE FOR TREE PROTECTION



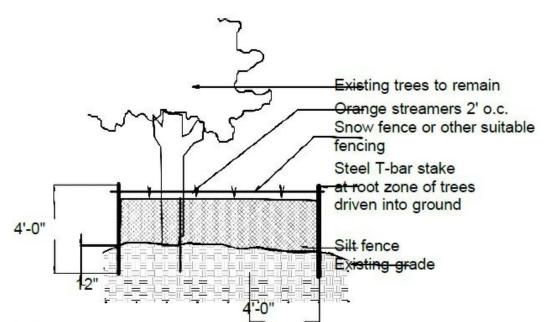
ROOT ZONE AERATION DETAIL - Radial Aeration *NOTE: Narrow trenches are to be dug in a radial pattern throughout the root zone. Begin the trenches 4-8 feet from the trunk of the tree to avoid cutting any major support roots. Trenches are to extend at least as far as the dripline of the tree. Trenches are to be a minimum of 1 foot in depth and may need to be deeper if the soil grade has been raised. Trenches are to be backfilled with topsoil or compost. Finish top layer of trench with a minimum 3 layer of wood chips. This technique is to be used for only isolated trees, where the roots of other trees would not be damaged.* Source: International Society of Arboriculture

ROOT ZONE AERATION DETAIL - Drilling Holes/Vertical Mulching *

NOTE: Holes are to be 2-4 inches in diameter and made about 3 feet on center, throughout the root zone of the tree. Depth shall be at least 12 inches and may be deeper if the soil grade has been raised. Holes are to be filled with peat moss, wood chips, pea gravel or other materials that maintain aeration and support root growth. * Source: International Society of Arboriculture



OVERHEAD



COMBINED SILT AND
TREE PROTECTION FENCE

* Source: Steve Clark and Associates

Town of Vienna TREE PROTECTION PLAN NOTES

The following tree protection practices are to be followed. The information listed below is required on the landscape plan:

- A pre-construction meeting shall be held on-site to explain protection measures to operators, construction supervisors, or contractor's representatives with the Town Arborist or their representative.
- Contractor on the site shall stake clearing limits in order to facilitate location for trenching and fencing installation for tree protection.
- No clearing or grading shall begin in areas where tree preservation measures have not been completed.
- 4. The sequence of tree preservation measures, if required, shall be as follows:
 - a. Root pruning trenching; c. Tree pruning and chemical treatment;
 - b. Tree protection fencing; d. Aeration systems installed;
- 6. Tree protection fencing shall be maintained by the contractor for the duration construction. No alteration shall occur without prior approval by a town representative.
- 7. Access to fenced preservation areas by construction equipment and materials will not be allowed. Only
- 8. All designated aeration zones shall be protected with the prior approval of the town inspector.
- Removal of trees, shrubs, or undergrowth from protected areas shall be performed only when necessary and with hand tools only.

The preceding measures shall be directed in the field by the construction supervisor.

- 10. Attachment of any construction signs, fencing, etc. to any tree to be saved is strictly prohibited.
- Upon construction completion, all temporary barriers, fencing, debris, etc. shall be removed from the site by the contractor.
- 12. All required protective fencing shall be installed along the clearing disturbance limits of the site.
- 13. Protective fencing shall be installed along the edge of all critical root zones of saved and impacted trees within the disturbed areas.

INVASIVE SPECIES CONTROL NARRATIVE:

1. ANY APPLICATION OF ENVIRONMENTALLY SENSITIVE APPROVED HERBICIDES SHALL BE APPLIED BY A VIRGINIA CERTIFIED APPLICATOR OR REGISTERED TECHNICIAN.

2. ENGLISH IVY: REMOVE FROM TREES BY CUTTING ALL VINES AT GROUND LEVEL. VINES SHOULD BE CUT AGAIN SEVERAL FEET UP THE TRUNK. PEAL THE CUT SECTION OF IVY OFF BUT CARE SHOULD BE TAKEN NOT TO STRIP THE BARK OFF THE TREE. PULL GROUND IVY BACK A FEW FEET FROM THE BASE OF THE TREE TO SLOW REGROWTH UP THE TREE TRUNK. REMOVE GROUND IVY BY HAND PULLING, CUTTING AND MULCHING OVER TOP, AND/OR APPLYING A SYSTEMIC HERBICIDE LIKE TRICLOPYR TO LEAVES OR FRESHLY CUT LARGE STEMS. RETREATMENT MAY BE NECESSARY FOR COMPLETE ERADICATION. THE ENGLISH IVY REMNANTS SHALL BE BAGGED AND REMOVED FROM THE PROJECT SITE.

3. JAPANESE HONEYSUCKLE: SHALL BE REMOVED BY HAND TO MINIMIZE SITE DISTURBANCE. IN THE GROWING SEASON, AN APPLICATION OF AN ENVIRONMENTALLY SENSITIVE APPROVED HERBICIDE MAY BE APPLIED BY A VIRGINIA CERTIFIED APPLICATOR. TO REDUCE DAMAGE TO NON-TARGET PLANTS, HERBICIDES SUCH AS GLYPHOSATE AND TRICLOPYR MAY BE APPLIED TO FOLIAGE BY A CERTIFIED APPLICATOR IN AUTUMN, SINCE JAPANESE HONEYSUCKLE CONTINUES TO PHOTOSYNTHESIZE AFTER MANY OTHER SPECIES LOSE THEIR LEAVES.

4. INVASIVE SPECIES CONTROL SHALL BE CONDUCTED UNTIL THE PLANTS NOTED ABOVE ARE NO LONGER IN ABUNDANCE OR UNTIL BOND RELEASE, WHICHEVER IS LATER.

Tree	Common Name	Scientific Name	Size (inches	Critical Root	Condition	Remove?	Notes & Arborists Recommendations
Number			DBH)	Zone (feet)			
407 408	Tulip Poplar Black Cherry	Liriodendron tulipifera Prunus serotina	45.0 18.1	45.0 18.1	Fair Poor	х	Dead limbs, vines at base Covered in vines, several dead limbs
408	Norway Spruce	Picea abies	24.8	24.8	Fair	X	Some dead limbs, English Ivy at base
410	Norway Spruce	Picea abies	20.3	20.3	Fair	X	Some dead limbs, English Ivy at base
411	American Holly	Ilex opaca	5.0	5.0	Good	X	English Ivy at base
412	Redbud	Cercis canadensis	19.0	19.0	Fair	х	Double trunk, several dead limbs, vines present
413	American Holly	Ilex opaca	18.0	18.0	Fair	Х	Multi trunk, vines present
414	American Holly	Ilex opaca	13.9	13.9	Fair	Х	Offsite, multi trunk, vines present
415	Dogwood	Cornus florida	8.4	8.4	Fair	Х	English Ivy, One-sided, wounds present
416	American Holly	Ilex opaca	14.0	14.0	Good	Х	Double trunk, English Ivy at base
417	American Holly	Ilex opaca	12.5	12.5	Good	Х	Double trunk, English Ivy at base
418	Silver Maple	Acer saccharinum	30.0	30.0	Fair	Х	Small dead limbs and English Ivy
419	Saucer Magnolia	Magnolia soulangiana	38.6	38.6	Fair	X	Multi trunk, trunk damage, some dead limbs
420 421	Eastern Redcedar Eastern Redcedar	Juniperus virginiana Juniperus virginiana	25.5 7.2	25.5 7.2	Fair Fair	X	Double trunk, Wood Pecker damage, English Ivy Shared. Remove English Ivy, poor form
421	Redbud	Cercis canadensis	20.1	20.1	Poor	X	Multi trunk, dead wood, cavities
423	Eastern White Pine	Pinus strobus	22.0	22.0	Good	X	Double trunk, English Ivy
424	Chestnut	Castanea, spp.	43.0	43.0	Fair	,	Double trunk, prune dead limbs
425	Pin Oak	Quercus palustris	31.5	31.5	Fair		Remove English Ivy and prune dead limbs
426	American Holly	Ilex opaca	22.2	22.2	Fair		Double trunk, remove English Ivy up trunk and other vines
427	Eastern White Pine	Pinus strobus	26.0	26.0	Fair		Remove English Ivy up trunk, one-sided
428	Black Cherry	Prunus serotina	10.4	10.4	Fair		Leaning
429	Bradford Pear	Pyrus calleryana	12.2	12.2	Fair		One-sided, poor form
430	Sassafras	Sassafras albidum	12.6	12.6	Fair		One-sided, remove English Ivy
431	Sassafras	Sassafras albidum	11.8	11.8	Fair		Shared, One-sided, remove English Ivy
432	Sassafras	Sassafras albidum	18.5	18.5	Fair		Shared, One-sided, remove English Ivy
433	Sassafras	Sassafras albidum	15.9	15.9 4.9	Fair		Shared, One-sided, remove English Ivy
434 435	Sassafras Sassafras	Sassafras albidum Sassafras albidum	4.9 5.4	5.4	Fair Fair		Remove English Ivy at base Remove English Ivy at base
436	Black Cherry	Prunus serotina	48.0	48.0	Poor		Prune Dead leaders, Remove English Ivy
437	Pignut Hickory	Carya glabra	16.8	16.8	Fair		Remove English Ivy and dead limbs
438	Persimmon	Diospyros virginiana	11.6	11.6	Fair		Remove English Ivy and dead limbs
439	Pignut Hickory	Carya glabra	17.8	17.8	Fair		Remove English Ivy and dead limbs
440	Black Walnut	Juglans nigra	16.8	16.8	Fair		Some wounds, remove dead limbs and English Ivy at base
441	Redbud	Cercis canadensis	20.9	20.9	Fair	Х	Double trunk, some wounds
442	Eastern Redcedar	Juniperus virginiana	17.8	17.8	Fair		Double trunk, remove dead limbs
443	Dogwood	Cornus florida	10.0	10.0	Poor	Х	Dead wood, hollow sound
444	Black Cherry	Prunus serotina	18.6	18.6	Fair		Offsite, English Ivy, several dead limbs
445	Dogwood	Cornus florida	8.7	8.7	Fair	X	Covered in vines
446	Redbud	Cercis canadensis	4.7	4.7	Fair	X	English Ivy and other vines
447 448	Redbud American Holly	Cercis canadensis Ilex opaca	36.5 22.6	36.5 22.6	Fair Fair	X X	Multi trunk, English Ivy Double trunk, cavity in trunk, English Ivy
448	Silver Maple	Acer saccharinum	10.7	10.7	Fair/Poor	^	Offsite, English Ivy, insect damage
450	Black Cherry	Prunus serotina	13.8	13.8	Poor		Offsite, English Ivy, many dead limbs
451	American Holly	Ilex opaca	16.0	16.0	Fair		Remove English Ivy and Prune dead limbs
452	American Holly	Ilex opaca	16.0	16.0	Fair	Х	English Ivy and small dead limbs
453	American Holly	llex opaca	16.0	16.0	Fair		Remove English Ivy and Prune dead limbs
454	American Holly	Ilex opaca	16.0	16.0	Fair		Remove English Ivy and Prune dead limbs
455	American Holly	Ilex opaca	12.0	12.0	Fair		Double trunk, remove English Ivy
456	Black Cherry	Prunus serotina	16.0	16.0	Fair		Shared, remove English Ivy up trunk and prune dead limbs
457	Tulip Poplar	Liriodendron tulipifera	7.0	7.0	Good		Offsite
458	Tulip Poplar	Liriodendron tulipifera	16.0	16.0	Good		Offsite
459	Tulip Poplar	Liriodendron tulipifera	20.0	20.0	Good		Offsite, some small dead limbs
460	Black Locust	Robinia pseudoacacia	34.0	34.0	Fair		Offsite, English Ivy, some dead limbs
461 462	Dogwood Black Walnut	Cornus florida	28.0 6.0	28.0 6.0	Poor Fair	X	Multi trunk, mostly dead English lyv and other vines
462	American Holly	Juglans nigra Ilex opaca	12.0	12.0	Fair Fair	X X	English Ivy and other vines Double trunk, English Ivy
464	American Holly	Ilex opaca	35.0	35.0	Fair	X	English Ivy
465	Silver Maple	Acer saccharinum	40.0	40.0	Fair	^	Offsite, double trunk, dead limbs
466	Sugar Maple	Acer saccharum	26.5	26.5	Fair/Poor		Offsite, many dead limbs, English Ivy
467	Black Walnut	Juglans nigra	18.6	18.6	Fair		Offsite, several dead limbs, English Ivy, mostly one-sided
468	Eastern Hemlock	Tsuga canadensis	5.0	5.0	Good		Offsite
469	Black Cherry	Prunus serotina	8.8	8.8	Good		Offsite
470	Dogwood	Cornus florida	8.3	8.3	Fair		Offsite, some broken limbs
., 0		Prunus serotina	6.8	6.8	Good		Offsite
471	Black Cherry	Fruitus serotinu	0.8		3 000		
	Black Cherry Black Walnut Redbud	Juglans nigra Cercis canadensis	18.4	18.4 21.7	Good		Offsite, some dead limbs Offsite, Double trunk

NOTE:

- 1. **SHARED TREES SHALL NOT BE REMOVED WITHOUT WRITTEN PERMISSION FROM AFFECTED ADJACENT PROPERTY OWNERS.
- 2. TREES NOTED FOR REMOVAL WITHIN THE SAVE AREAS SHALL BE DONE SO BY HAND WITHOUT THE USE OF HEAVY MACHINERY.
- 3. OFFSITE TREES WERE ASSESSED FROM THE SUBJECT PROPERTY SO NOT TO TRESPASS ONTO ADJACENT PROPERTY. DBH MEASUREMENTS ARE APPROXIMATE.



ENWEDNIE 101
Chantilly, VA 20151

409 BEULAH ROAD, N.E

TREE PRESERVATION NARRATIVE & DETAILS

DATE COMMENTS

9/11/15 AMS

10/7/15 AMS

5-5-16 REV BY LAD (NEW LAYOUT)

SHEET 11

OF 13

SCALE: NTS

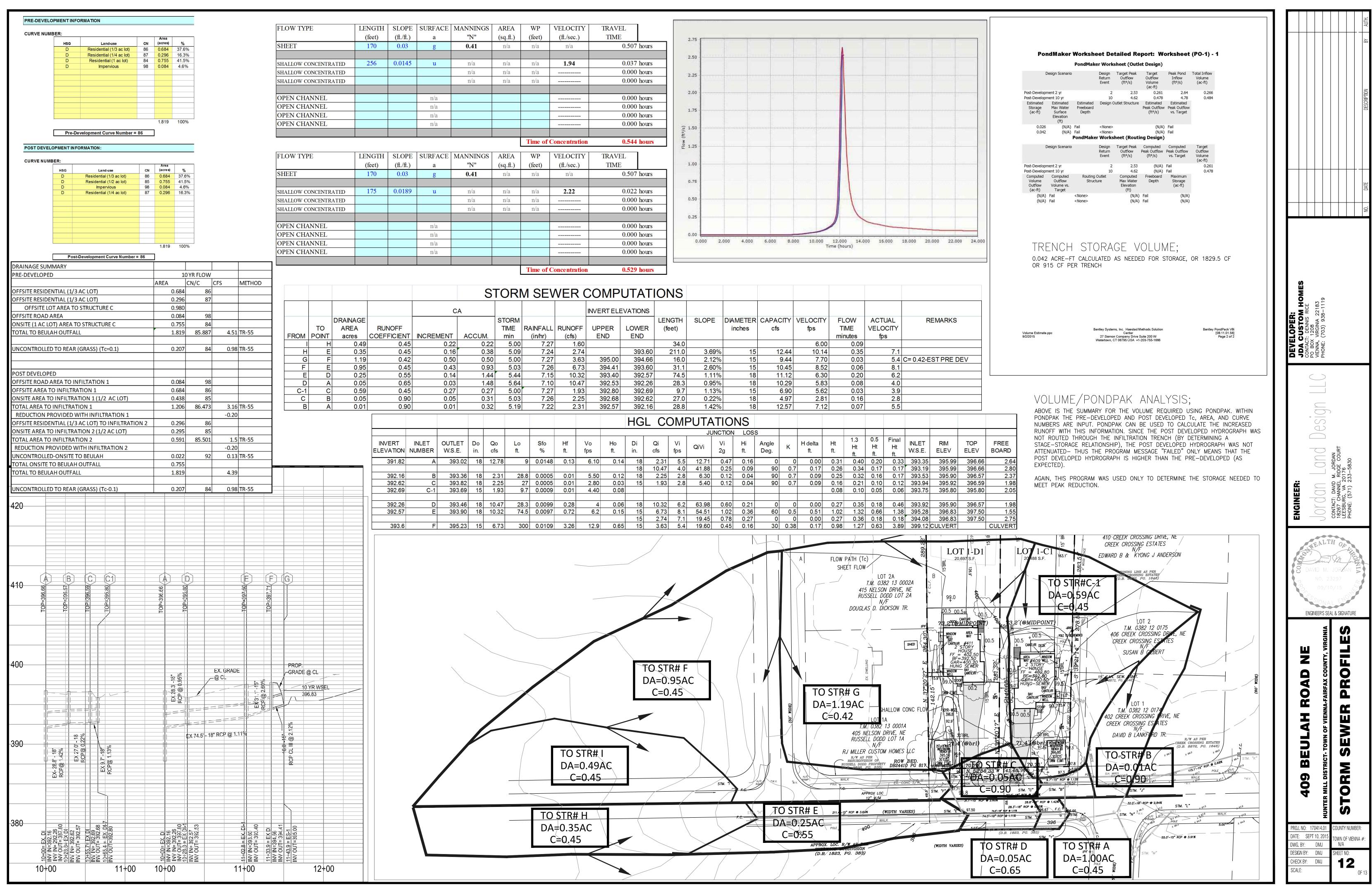
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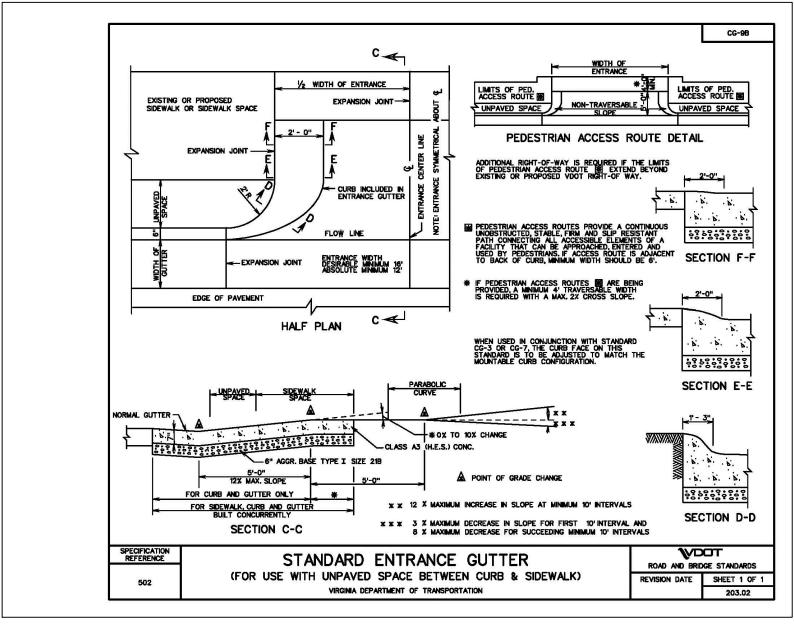
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DRIVEWAY APRON LOT 1C & 1D



STANDARD DRIVEWAY DETAIL CG-9B

NOTES;

1. DETAIL FROM "TOWN OF VIENNA CONSTRUCTION SPECIFICATIONS AND DETAILS" 2. PER SECTION 18-134, 18-144 AND 18-145; ALL PARKING AREAS IN THE SINGLE FAMILY RESIDENTIAL ZONING DISTRICTS SHALL BE CONSTRUCTED OF PERMANENT MATERIALS, WITH AN ASPHALT, CONCRETE, OR GRID PAVER SURFACE MEETING THE SPECIFICATIONS OF THE TOWN. INGRESS AND EGRESS TO A PUBLIC STREET SHALL BE PROVIDED BY MEANS OF A DRIVEWAY MEETING THESE SAME SPECIFICATIONS AND MEETING A WIDTH OF NOT LESS THAN TWELVE (12) NOR MORE THAN TWENTY-FIVE (25) FEET AT THE STREET RIGHT-OF-WAY LINE.

INFILTRATION TRENCH NOTES: SECTION 715 BACKWATER VALVES

Where plumbing fixtures are installed on a floor elevation below the elevation of the manhole cover of the next upstream manhole in the public sewer, such fixtures shall be protected by a backwater valve installed in the building drain, or horizontal branch serving such fixtures. Plumbing

715.2 Material.

through a backwater valve.

All bearing parts of backwater valves shall be of corrosion–resistant material. Backwater valves shall comply with ASME A112.14.1, CSA B181.1 or CSA B181.2.

fixtures installed on a floor elevation above the elevation of the manhole cover of the next upstream manhole in the public sewer shall not discharge

715.3 Seal.

Backwater valves shall be so constructed as to provide a mechanical seal against backflow.

715.4 Diameter.

Backwater valves, when fully opened, shall have a capacity not less than that of the pipes in which they are installed.

715.5 Location.

Backwater valves shall be installed so that access is provided to the working parts for service and repair.

604.1 General.

The design of the water distribution system shall conform to accepted engineering practice. Methods utilized to determine pipe sizes shall be approved.

604.2 System interconnection.

At the points of interconnection between the hot and cold water supply piping systems and the individual fixtures, appliances or devices, provisions shall be made to prevent flow between such piping systems.

604.3 Water distribution system design criteria.

The water distribution system shall be designed, and pipe sizes shall be selected such that under conditions of peak demand, the capacities at the fixture supply pipe outlets shall not be less than shown in Table 604.3. The minimum flow rate and flow pressure provided to fixtures and appliances not listed in Table 604.3 shall be in accordance with the manufacturer's installation instructions.

604.3 Water distribution system design criteria.

The water distribution system shall be designed, and pipe sizes shall be selected such that under conditions of peak demand, the capacities at the fixture supply pipe outlets shall not be less than shown in Table 604.3. The minimum flow rate and flow pressure provided to fixtures and appliances not listed in Table 604.3 shall be in accordance with the manufacturer's installation instructions.

TABLE 604.3 WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQUIRED CAPACITY AT FIXTURE SUPPLY PIPE **OUTLETS**

FIXTURE SUPPLY OUTLET SERVING	FLOW RATEa (gpm)	FLOWPRESSURE (psi)
Bathtub, balanced-pressure, thermostatic or	4	20
combination balanced-pressure/thermo-		
static mixing valve		
Bidet, thermostatic mixing valve	2	20
Combination fixture	4	8
Dishwasher, residential	2.75	8
Drinking fountain	0.75	8
Laundry tray	4	8
Lavatory	2	8
Shower	3	8
Shower, balanced-pressure, thermostatic or		
combination balanced-pressure/thermo-		
static mixing valve	3	20
Sillcock, hose bibb	5	8
Sink, residential	2.5	8
Sink, service	3	8
Urinal, valve	12	25
Water closet, blow out, flushometer valve	25	45
Water closet, flushometer tank	1.6	20
Water closet, siphonic, flushometer valve	25	35
Water closet, tank, close coupled	3	20
Water closet, tank, one piece	6	20

For SI: 1 pound per square inch = 6.895 kPa1 gallon per minute = 3.785 L/m.

a. For additional requirements for flow rates and quantities, see Section 604.4.

VA DEQ STORMWATER DESIGN SPECIFICATION NO. 8	INFILTRAT
SIDES	BERM OVERFLOW WEIR F ABRIC S ONLY) FREGROUND JE STORAGE AN AGGREGATE)
PRETREATMENT SURFACE STORAGE INFILTRATION BASIN	OVERFLOW WEIR
Figure 8.1B. Infiltration Trench or Basin Section	n View

DEVELOPER:
JDA CUSTOM HOME
CONTACT: DENNIS RICE
PO BOX 1208
VIENNA, VIRGINIA 22183
PHONE: (703) 938-1119 esign CONTACT: DAVID
18267 CHANNEL
LEESBURG, VA 2

ENGINEER'S SEAL & SIGNATURE

R0

409 DATE: MAY 30 201

DWG. BY: DMJ DESIGN BY: DMJ CHECK BY: DMJ