

Water Meter Sizing per AWWA M22, Third Edition

Project: 444 Maple Ave - RESIDENTIAL  
 STRAP #(s):  
 Address: 444 Maple Ave  
 City: Vienna State: VA Zip Code: 22180  
 Type of Occupancy: Residential Apartment

Fixture	Fixture Value 60 psi		No. of Fixtures	Fixture Value
Bathtub	8	x	=	
Bedpan Washers	10	x	=	1584
Bidet	2	x	=	
Dental Unit	2	x	=	
Drinking Fountain - Public	2	x	=	
Kitchen Sink	2.2	x	150	= 330
Lavatory	1.5	x	198	= 297
Showerhead (Shower Only)	2.5	x	=	
Service Sink	4	x	=	
Toilet - Flush Valve	35	x	=	
- Tank Type	4	x	198	= 792
Urinal - Pedestal Flush Valve	35	x	=	
- Wall Flush Valve	16	x	=	
Wash Sink (Each Set of Faucets)	4	x	=	
Dishwasher	2	x	150	= 300
Washing Machine	6	x	150	= 900
Hose (50 ft. Wash Down) - 1/2 in.	5	x	=	
- 3/4 in.	9	x	=	
- 1 in.	12	x	10	= 120

Combined Fixture Total = 4323  
 Water-flow Demand per Fixture Value from Figure 4-2 or 4-3 x Pressure Adjustment Factor = 90 gpm  
 \*For Residual Pressures at Fixture Outlet from 60-80 psi, Pressure Adjustment Factor is 1.00 per Table 4-3  
 Add Irrigation - 47 Sections \* x 1.16 or 0.40† = 55 gpm  
 - 10 Hose Bibs x Fixture Value x 1.0 Press. Adj. Factor = 120 gpm  
 Added Fixed Load = gpm  
 TOTAL FIXED DEMAND = 265 gpm

\*100 ft² area = 1 section  
 †Spray systems - Use 1.16; Rotary systems - Use 0.40  
 Meter size chosen per Table 6-1 = 4 in.

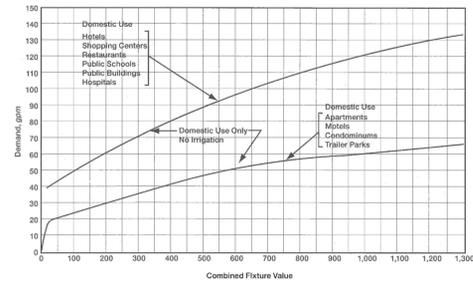


Figure 4-2 Water-flow demand per fixture value—enlarged scale from Figure 4-1

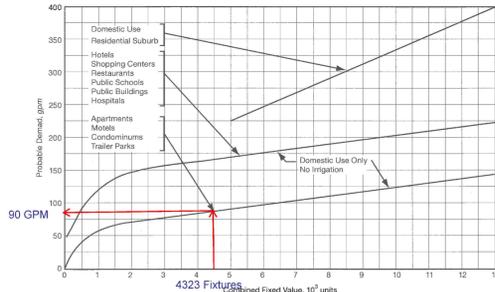


Figure 4-3 Water-flow demand per fixture value

Table 4-3 Example of fixture value adjustment for pressure (based on Figure 4-6)

Residual Pressure at Fixture Outlet, psi	Kitchen Faucet Fixture Value Adjustment		
	Baseline Flow Rate at 60 psi	Actual Flow Rate at Residual Pressure (Fixture Value)	Pressure Adjustment Factor
15	1.8	1.0	0.56
20	1.8	1.1	0.61
25	1.8	1.2	0.67
30	1.8	1.3	0.72
35	1.8	1.4	0.78
40	1.8	1.5	0.83
50	1.8	1.7	0.94
60	1.8	1.8	1.00
70	1.8	1.8	1.00
80	1.8	1.8	1.00

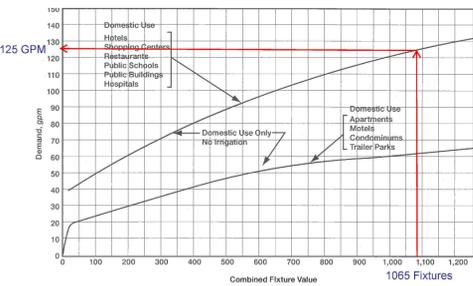


Figure 4-2 Water-flow demand per fixture value—enlarged scale from Figure 4-1

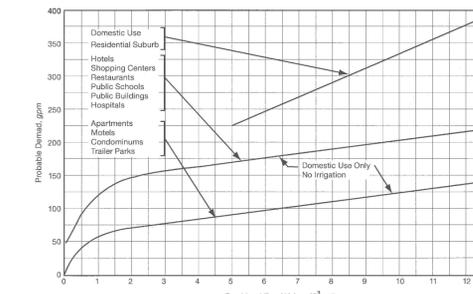


Figure 4-3 Water-flow demand per fixture value

Table 4-3 Example of fixture value adjustment for pressure (based on Figure 4-6)

Residual Pressure at Fixture Outlet, psi	Kitchen Faucet Fixture Value Adjustment		
	Baseline Flow Rate at 60 psi	Actual Flow Rate at Residual Pressure (Fixture Value)	Pressure Adjustment Factor
15	1.8	1.0	0.56
20	1.8	1.1	0.61
25	1.8	1.2	0.67
30	1.8	1.3	0.72
35	1.8	1.4	0.78
40	1.8	1.5	0.83
50	1.8	1.7	0.94
60	1.8	1.8	1.00
70	1.8	1.8	1.00
80	1.8	1.8	1.00

Table 6-1 AWWA meter standards

Meter	Minimum Flow Rate, gpm	Low-Normal Flow Rate, gpm	Change-over Range (Compound Meters)	High-Normal Flow Rate, gpm	Head Loss at Maximum Flow, psi	
					Maximum Flow Rate, gpm	Maximum Flow, psi
<b>Positive displacement</b>						
1/2 in.	0.25	1	N/A	7.5	15	15
3/4 in.	0.25	1	N/A	10	20	15
1 in.	0.50	2	N/A	15	30	15
1 1/2 in.	0.75	3	N/A	25	50	15
2 in.	1.50	5	N/A	50	100	15
2 1/2 in.	2.00	8	N/A	80	160	15
<b>Multijet</b>						
1/2 in.	0.25	1	N/A	10	20	15
3/4 in.	0.50	2	N/A	15	30	15
1 in.	0.75	3	N/A	25	50	15
1 1/2 in.	1.50	5	N/A	50	100	15
2 in.	2.00	8	N/A	80	160	15
<b>Turbine class II</b>						
1 1/2 in.	N/A	4	N/A	90	120	7
2 in.	N/A	4	N/A	160	190	7
3 in.	N/A	8	N/A	350	435	7
4 in.	N/A	15	N/A	650	750	7
6 in.	N/A	30	N/A	1,400	1,600	7
8 in.	N/A	50	N/A	2,400	2,800	7
10 in.	N/A	75	N/A	3,500	4,200	7
12 in.	N/A	120	N/A	4,400	5,300	7
16 in.	N/A	200	N/A	6,500	7,800	7
20 in.	N/A	300	N/A	10,000	12,000	7
<b>Compound class II</b>						
2 in.	0.25	1	13	80	160	15
3 in.	0.50	2	15	175	350	15
4 in.	0.75	3	18	300	600	15
6 in.	1.50	5	20	675	1,350	15
8 in.	2.00	8	35	900	1,800	15
<b>Fire service, type II—compound</b>						
3 in.	* see note	2	30	250	350	12
4 in.	* see note	4	40	400	700	12
6 in.	* see note	5	90	900	1,600	12
8 in.	* see note	8	150	1,600	2,800	12
10 in.	* see note	8	200	2,200	4,400	12

Source: Data are drawn from AWWA Standards C700, C701, C702, C703, C704, C708, C710, C712, C713, and C714, latest revision.  
 N/A = not applicable.  
 \*Minimum flow rate is per the applicable AWWA standard for the bypass meter employed.

(Table continued on next page.)

Table 6-1 AWWA meter standards (continued)

Meter	Minimum Flow Rate, gpm	Low-Normal Flow Rate, gpm	Change-over Range (Compound Meters)	High-Normal Flow Rate, gpm	Head Loss at Maximum Flow, psi	
					Maximum Flow Rate, gpm	Maximum Flow, psi
<b>Fire service, type III—turbine</b>						
3 in.	4	5	N/A	250	350	11
4 in.	10	15	N/A	400	700	11
6 in.	20	30	N/A	900	1,600	11
8 in.	30	35	N/A	1,600	2,800	11
10 in.	35	55	N/A	2,500	4,400	11
<b>Propeller (main line)</b>						
2 in.	N/A	45	N/A	100	120	5
3 in.	N/A	80	N/A	250	300	5
4 in.	N/A	85	N/A	500	600	2
6 in.	N/A	160	N/A	1,200	1,350	1
8 in.	N/A	190	N/A	1,500	1,800	0.5
10 in.	N/A	260	N/A	2,000	2,400	0.5
12 in.	N/A	275	N/A	2,800	3,375	0.5
14 in.	N/A	350	N/A	3,750	4,500	0.5
16 in.	N/A	450	N/A	4,750	5,700	0.5
18 in.	N/A	550	N/A	5,625	6,750	0.25
20 in.	N/A	650	N/A	6,875	8,250	0.25
24 in.	N/A	1,000	N/A	10,000	12,000	0.25
30 in.	N/A	1,600	N/A	15,000	18,000	0.25
36 in.	N/A	2,400	N/A	20,000	24,000	0.25
42 in.	N/A	2,800	N/A	28,000	40,000	0.1
48 in.	N/A	3,500	N/A	35,000	50,000	0.1
54 in.	N/A	5,000	N/A	45,000	55,000	0.1
60 in.	N/A	6,000	N/A	60,000	80,000	0.1
66 in.	N/A	7,500	N/A	75,000	95,000	0.1
72 in.	N/A	9,000	N/A	90,000	115,000	0.1
<b>Fluidic oscillator</b>						
1/2 in.	0.25	1	N/A	7.5	15	15
3/4 in.	0.25	1	N/A	10	20	15
1 in.	0.50	2	N/A	15	30	15
1 1/2 in.	0.75	3	N/A	25	50	15
2 in.	1.50	5	N/A	50	100	15
2 1/2 in.	2.00	8	N/A	80	160	15
<b>Singlejet</b>						
1/2 in.	0.25	1	N/A	10	20	15
3/4 in.	0.50	2	N/A	15	30	15
1 in.	0.75	3	N/A	20	40	15
1 1/2 in.	1.50	5	N/A	50	100	15
2 in.	2.00	8	N/A	80	160	15

Source: Data are drawn from AWWA Standards C700, C701, C702, C703, C704, C708, C710, C712, C713, and C714, latest revision.  
 N/A = not applicable.  
 \*Minimum flow rate is per the applicable AWWA standard for the bypass meter employed.

(Table continued on next page.)

Table 6-1 AWWA meter standards (continued)

Meter	Minimum Flow Rate, gpm	Low-Normal Flow Rate, gpm	Change-over Range (Compound Meters)	High-Normal Flow Rate, gpm	Head Loss at Maximum Flow, psi	
					Maximum Flow Rate, gpm	Maximum Flow, psi
2 in.	0.50	2.0	N/A	80	160	15
3 in.	0.50	2.5	N/A	160	320	15
4 in.	0.75	3.0	N/A	250	500	15
6 in.	1.50	4.0	N/A	500	1,000	15
<b>Residential Fire Sprinkler</b>						
3/4 in.	0.5	2	N/A	15	30	10.1
1 in.	0.75	2	N/A	25	50	10.7
1 1/2 in.	1.5	3	N/A	50	100	7.7
2 in.	2.0	4	N/A	80	160	7.7
<b>Residential Fire Sprinkler w/strainer</b>						
3/4 in.	0.5	2	N/A	15	30	14.5
1 in.	0.75	2	N/A	25	50	15.3
1 1/2 in.	1.5	3	N/A	50	100	11
2 in.	2.0	4	N/A	80	160	11

Source: Data are drawn from AWWA Standards C700, C701, C702, C703, C704, C708, C710, C712, C713, and C714, latest revision.  
 N/A = not applicable.  
 \*Minimum flow rate is per the applicable AWWA standard for the bypass meter employed.

Table 6-2 Typical uses for each type of meter classification

Meter Type	Typical Use
Positive displacement, fluidic oscillator, multijet, singlejet, static, turbine, electromagnetic, or ultrasonic	Single-family residential, apartment buildings with fewer than 100 units; small businesses (e.g., filling stations, restaurants, small hotels, motels, small office buildings, retail stores, etc.); schools and other public buildings without large irrigation demands
Turbine, singlejets, static, electromagnetic or ultrasonic	Large hotels, factories, hospitals, irrigation, large office buildings, pump discharge, laundries, nursing homes
Compound, singlejets, turbine, multijet, static, electromagnetic or ultrasonic	Schools (with irrigation), apartment buildings with more than 100 units, dormitories, assisted living centers, retail shopping centers
Residential fire meters	One- and two-family dwellings and manufactured homes (NFPA 13D applications)
Fire-line meters	Fire service (for various NFPA 13 and NFPA 13R applications)
Differential pressure (venturi, flow tube), electromagnetic or ultrasonic meters	Pump discharge, wholesale water purchasers, research applications, subsystem metering

Source: Data are drawn from AWWA Standards C700, C701, C702, C703, C704, C708, C710, C712, C713, and C714, latest revision.  
 N/A = not applicable.  
 \*Minimum flow rate is per the applicable AWWA standard for the bypass meter employed.

(Table continued on next page.)

WATER METER SIZING

444 MAPLE AVENUE WEST

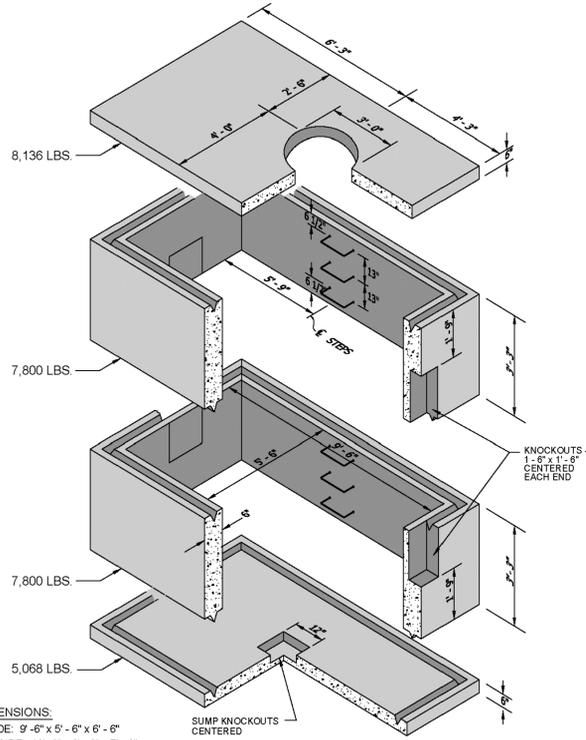
SITE PLAN

TOWN OF VIENNA, VIRGINIA



Engineers • Surveyors • Planners  
 Landscape Architects • Arborists  
**WALTER L. PHILLIPS**  
 207 PARK AVENUE  
 FALLS CHURCH, VIRGINIA 22046  
 (703) 532-6163 Fax (703) 533-1301  
 www.WLPINC.com  
 I.N.C.O.R.P.O.R.A.T.E.D.  
 ESTABLISHED 1945  
 DATE SUBMITTED: 05/07/2021 SUB#: 05072021 SUB03: 4/19/2021  
 SCALE: 1" = 30'  
 DRAWN: DL  
 CHECKED: KW

NO.	DESCRIPTION	DATE	APPROVED BY	DATE



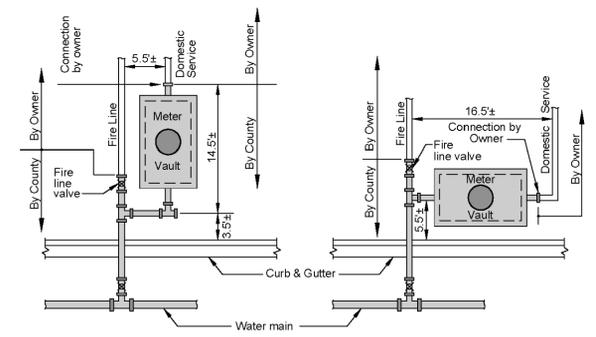
**DIMENSIONS:**  
 INSIDE: 9'-6" x 5'-6" x 6'-6"  
 OUTSIDE: 10'-6" x 6'-6" x 7'-6"  
 KNOCKOUTS SIZED & LOCATED AS SHOWN

**UTILITY VAULT  
 PRECAST REINFORCED CONCRETE**

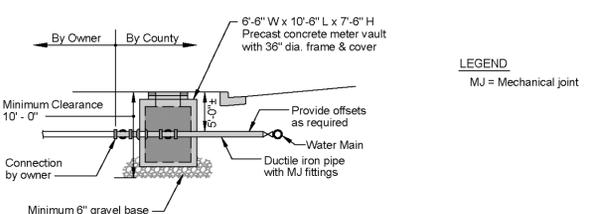
REVISION & DATE

**ARLINGTON COUNTY, VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL SERVICES

**DRAWING NO. W-8.3**



**PLAN ALTERNATE PLAN**



**TYPICAL SECTION**

- NOTES:**
- Services will be installed by County after all fees have been paid and all site conditions for setting the meter have been met.
  - The property owner's plumber shall be responsible for connecting to the County's meter installation. Plumber shall not enter meter vault.
  - Fire line valve will be omitted if no fire line is required.
  - Separate fire line installation shall be similar to the one shown in W-8.0.
  - Alternate piping configuration will be installed as necessary for special situations as approved.
  - A permanent clear space 20' x 15' x 10' deep shall be provided behind the curb for water meter vault.

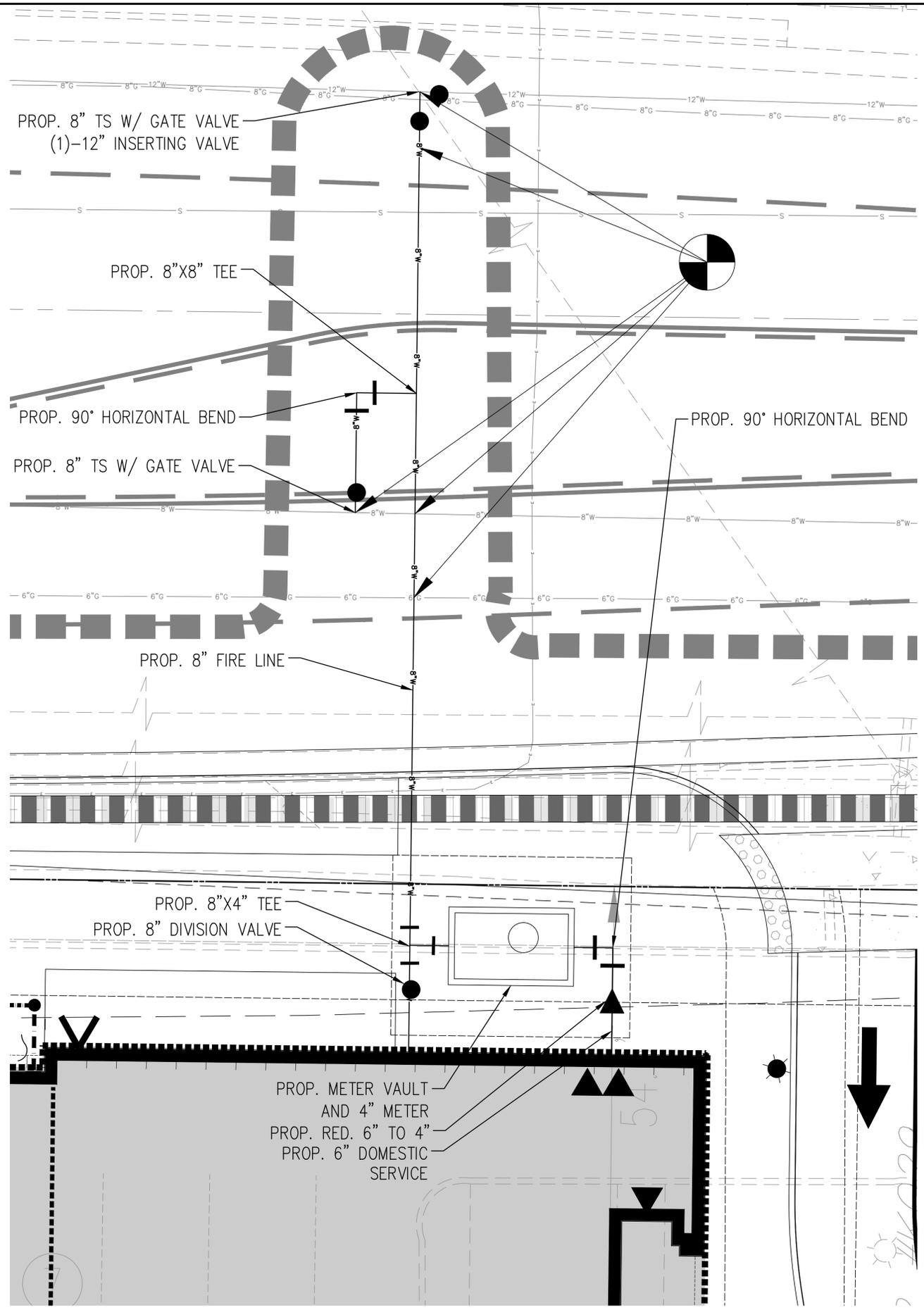
**WATER SERVICE CONNECTIONS  
 3 - INCH AND 4 - INCH**

Vault Dim 7/11/2013

REVISION & DATE

**ARLINGTON COUNTY, VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL SERVICES

**DRAWING NO. W-8.1**



**WATER METER ENLARGEMENT**

**LEGEND**

PROPOSED	DESCRIPTION	EXISTING
[Symbol]	CURB & GUTTER CG-2	[Symbol]
[Symbol]	TRANSITION FROM CG-6 TO CG-6R	[Symbol]
[Symbol]	SANITARY SEWER	[Symbol]
[Symbol]	SANITARY LATERAL	[Symbol]
[Symbol]	CLEAN OUT	[Symbol]
[Symbol]	STORM SEWER	[Symbol]
[Symbol]	WATER MAIN	[Symbol]
[Symbol]	FIRE HYDRANT PLUG	[Symbol]
[Symbol]	OVERHEAD WIRES	[Symbol]
[Symbol]	UTILITY POLE	[Symbol]
[Symbol]	UNDERGROUND ELECTRIC	[Symbol]
[Symbol]	TELEPHONE	[Symbol]
[Symbol]	GAS MAIN	[Symbol]
[Symbol]	ELECTRICAL	[Symbol]
[Symbol]	TRANSFORMER	[Symbol]
[Symbol]	HANDICAP RAMP (CG-12)	[Symbol]
[Symbol]	GUARDRAIL	[Symbol]
[Symbol]	FENCE	[Symbol]
[Symbol]	TRAFFIC FLOW	[Symbol]
[Symbol]	LIGHT	[Symbol]
[Symbol]	DOOR	[Symbol]
[Symbol]	TREES	[Symbol]
[Symbol]	CONTOURS	[Symbol]
[Symbol]	SPOT ELEVATION	[Symbol]
[Symbol]	DRAINAGE FLOW DIRECTION	[Symbol]
[Symbol]	TOP OF CURB	[Symbol]
[Symbol]	BOTTOM OF CURB	[Symbol]
[Symbol]	TOP OF WALL	[Symbol]
[Symbol]	BOTTOM OF WALL	[Symbol]
[Symbol]	HIGH POINT	[Symbol]
[Symbol]	TEST PIT	[Symbol]
[Symbol]	LIMITS OF CLEARING AND GRADING	[Symbol]

**Town of Vienna**  
**Approved**  
 06/09/2021

**WATER METER ENLARGEMENT**

**444 MAPLE AVENUE WEST**

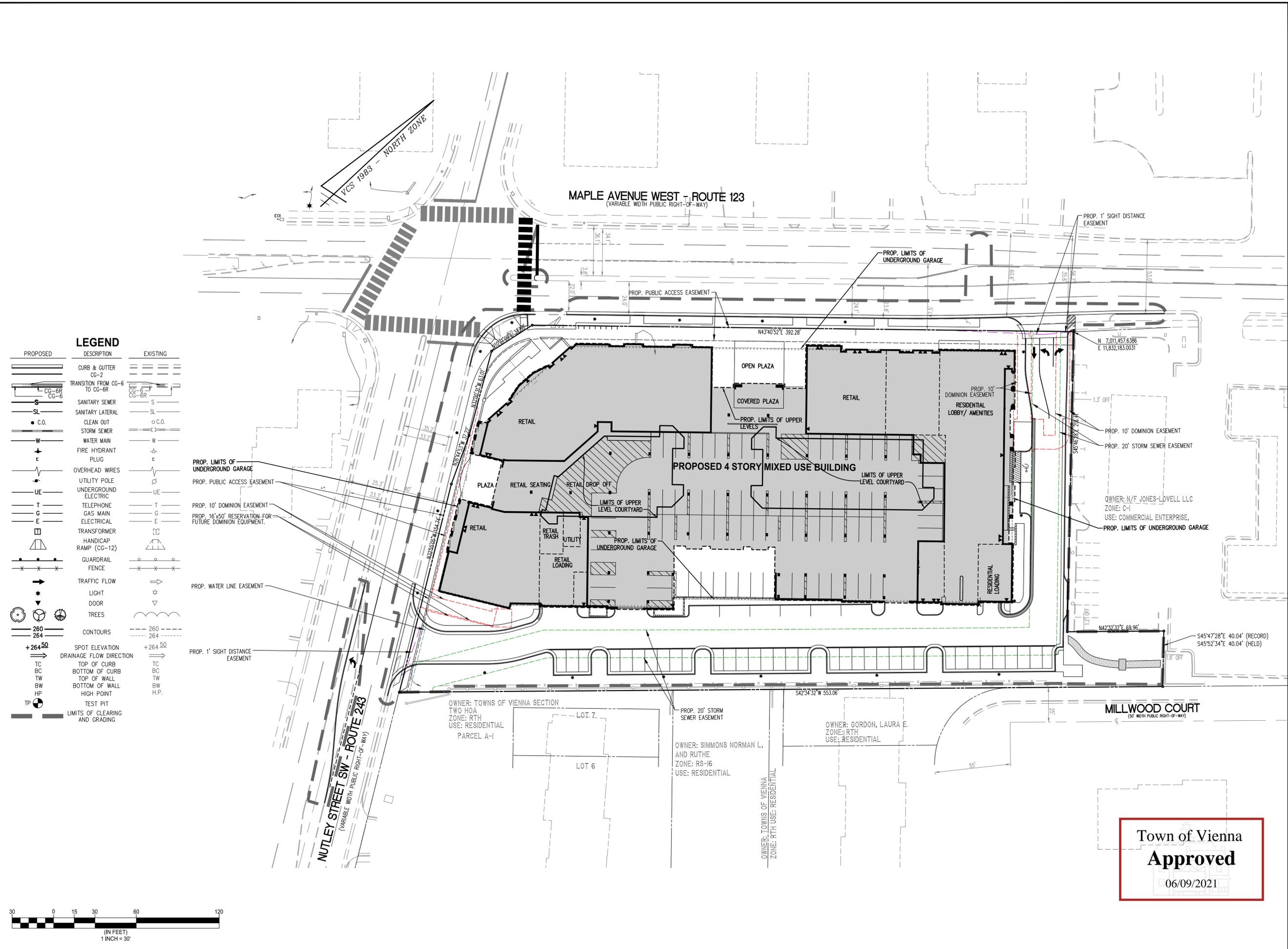
**SITE PLAN**

**TOWN OF VIENNA, VIRGINIA**

**WALTER L. PHILLIPS**  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ARBORISTS  
 207 PARK AVENUE  
 FALLS CHURCH, VIRGINIA 22046  
 (703) 532-6163 Fax (703) 533-1301  
 www.WLPINC.com

DATE SUBMITTED: 05/25/2021  
 DATE SUBMITTED: 05/07/2020, SUB03: 4/19/2021  
 DATE SUBMITTED: 05/25/2021  
 SCALE: 1" = 30'

DATE: [ ] [ ] [ ]  
 APPROVED BY: [ ]  
 REVISION: [ ]  
 DESCRIPTION: [ ]  
 NO.: [ ]



**LEGEND**

PROPOSED	DESCRIPTION	EXISTING
[Symbol]	CURB & GUTTER CG-2	[Symbol]
[Symbol]	TRANSITION FROM CG-6 TO CG-6R	[Symbol]
[Symbol]	SANITARY SEWER	[Symbol]
[Symbol]	SANITARY LATERAL	[Symbol]
[Symbol]	CLEAN OUT	[Symbol]
[Symbol]	STORM SEWER	[Symbol]
[Symbol]	WATER MAIN	[Symbol]
[Symbol]	FIRE HYDRANT PLUG	[Symbol]
[Symbol]	OVERHEAD WIRES	[Symbol]
[Symbol]	UTILITY POLE	[Symbol]
[Symbol]	UNDERGROUND ELECTRIC	[Symbol]
[Symbol]	TELEPHONE	[Symbol]
[Symbol]	GAS MAIN	[Symbol]
[Symbol]	ELECTRICAL	[Symbol]
[Symbol]	TRANSFORMER	[Symbol]
[Symbol]	HANDICAP RAMP (CG-12)	[Symbol]
[Symbol]	GUARDRAIL	[Symbol]
[Symbol]	FENCE	[Symbol]
[Symbol]	TRAFFIC FLOW	[Symbol]
[Symbol]	LIGHT	[Symbol]
[Symbol]	DOOR	[Symbol]
[Symbol]	TREES	[Symbol]
[Symbol]	CONTOURS	[Symbol]
[Symbol]	SPOT ELEVATION	[Symbol]
[Symbol]	DRAINAGE FLOW DIRECTION	[Symbol]
[Symbol]	TOP OF CURB	[Symbol]
[Symbol]	BOTTOM OF CURB	[Symbol]
[Symbol]	TOP OF WALL	[Symbol]
[Symbol]	BOTTOM OF WALL	[Symbol]
[Symbol]	HIGH POINT	[Symbol]
[Symbol]	TEST PIT	[Symbol]
[Symbol]	LIMITS OF CLEARING AND GRADING	[Symbol]



**WALTER L. PHILLIPS**  
INCORPORATED  
ESTABLISHED 1945  
DATE SUBMITTED: 05/25/21  
SUBJECT: 05/07/2020, SUB03: 4/19/2021  
DRAWN: DL  
CHECKED: KW

Engineers • Surveyors • Planners  
Landscape Architects • Arborists  
207 PARK AVENUE  
FALLS CHURCH, VIRGINIA 22046  
(703) 532-6163 Fax (703) 533-1301  
www.WLPINC.com

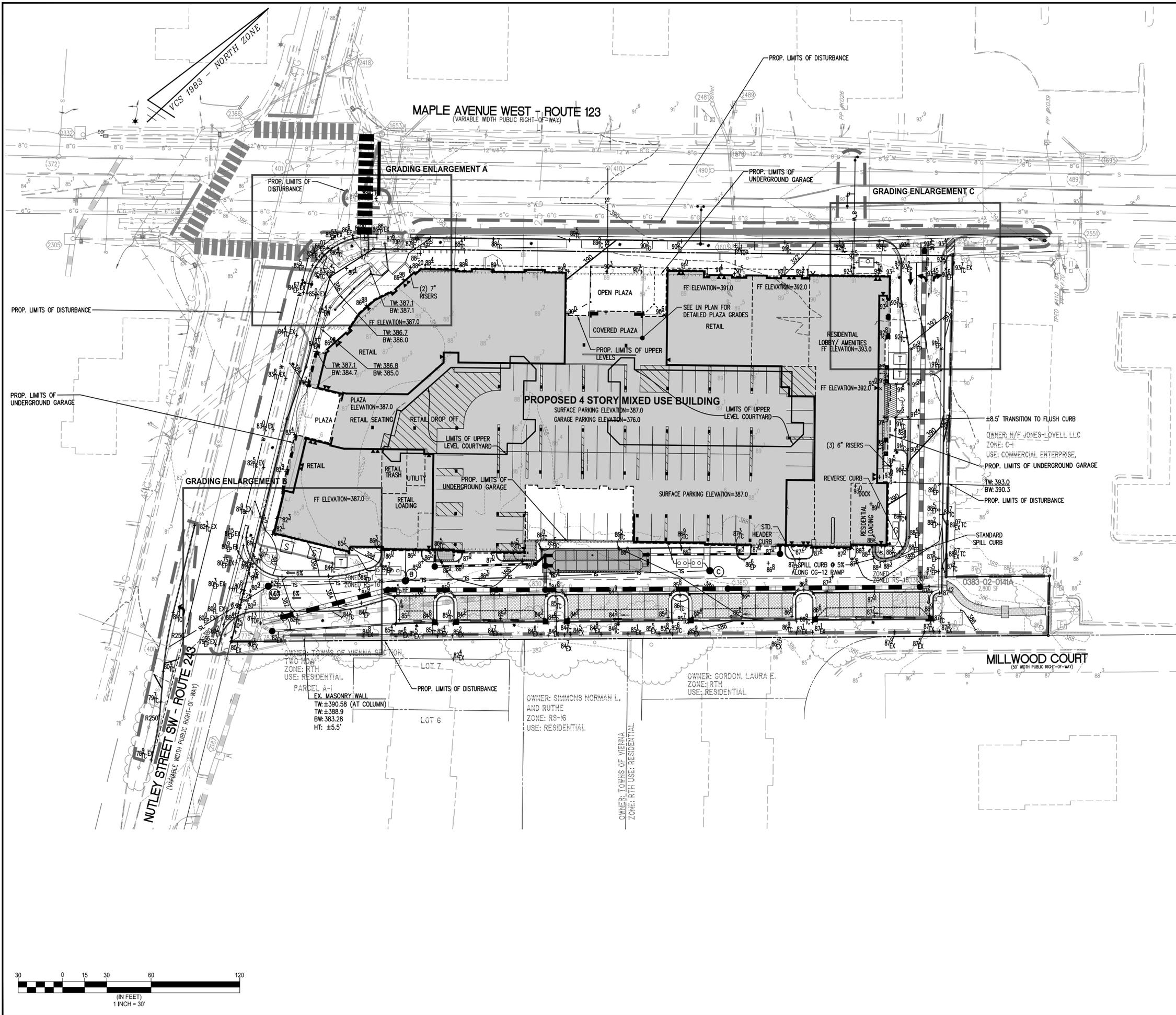


REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED

**EASEMENT PLAN**

**444 MAPLE AVENUE WEST**  
SITE PLAN  
TOWN OF VIENNA, VIRGINIA



PROPOSED	DESCRIPTION	EXISTING
	CURB & GUTTER CG-2	
	TRANSITION FROM CG-6 TO CG-6R	
	SANITARY SEWER	
	SANITARY LATERAL	
	CLEAN OUT	
	STORM SEWER	
	WATER MAIN	
	FIRE HYDRANT	
	PLUG	
	OVERHEAD WIRES	
	UTILITY POLE	
	UNDERGROUND ELECTRIC	
	TELEPHONE	
	GAS MAIN	
	ELECTRICAL	
	TRANSFORMER	
	HANDICAP RAMP (CG-12)	
	GUARDRAIL	
	FENCE	
	TRAFFIC FLOW	
	LIGHT	
	DOOR	
	TREES	
	CONTOURS	
	SPOT ELEVATION	
	DRAINAGE FLOW DIRECTION	
	TOP OF CURB	
	BOTTOM OF CURB	
	TOP OF WALL	
	BOTTOM OF WALL	
	HIGH POINT	
	TEST PIT	
	LIMITS OF CLEARING AND GRADING	

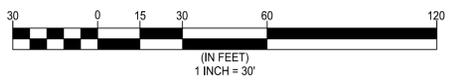
**NOTES**

- SEE SHEET C-0402 FOR LAYOUT PLAN.
- SEE SHEETS C-0202 - C-0205 FOR CONSTRUCTION DETAILS AND NOTES.
- SEE SHEET C-1201 FOR TREE PRESERVATION PLAN.
- SEE BUILDING PLANS FOR ARCHITECTURAL INFORMATION.
- ALL ACCESSIBILITY RAMPS TO MEET "2010 ADA STANDARDS FOR ACCESSIBLE DESIGN" AND VIRGINIA USBC.
- PROPOSED ADA ACCESSIBLE RAMPS SHALL BE INSTALLED WITH 12:1 MAXIMUM RAMP SLOPE. ADA ACCESSIBLE RAMPS SHALL HAVE A MINIMUM 4'x4' LANDING AT THE TOP OF THE RAMP WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
- EXISTING SITE FEATURES DEPICTED ON THIS PLAN ARE FROM A FIELD RUN SURVEY PERFORMED BY THIS FIRM AND DATED 06/08/07.
- CONTRACTOR RESPONSIBLE FOR ENSURING EXISTING UTILITIES TO REMAIN ARE PROTECTED THROUGHOUT CONSTRUCTION.
- A LETTER OF PERMISSION IS REQUIRED FOR OFFSITE DISTURBANCE IF IT IS DETERMINED TO BE NECESSARY AT THE TIME OF CONSTRUCTION.

**GRADING NOTES**

- CONTRACTOR TO CONFIRM WITH ARCHITECT AND/OR STRUCTURAL ENGINEER, STRUCTURAL INTEGRITY OF EXISTING SITE FEATURES INCLUDING BUILDING WALLS, RETAINING WALLS, GUARD TOWERS, ETC. PRIOR TO ALTERING GRADE ADJACENT TO THE EXISTING FEATURE. ADDITIONAL STRUCTURAL BRACING MAY BE REQUIRED WHEN ALTERING THE GRADE AGAINST AN EXISTING SITE FEATURE.
- PROPOSED ROADS TO HAVE 2% CROSS SLOPE UNLESS OTHERWISE NOTED.
- ALL PROPOSED STRUCTURE TOP ELEVATIONS ARE TO BE VERIFIED BY THE CONTRACTOR WITH THE SITE GRADING PLANS PRIOR TO MANUFACTURE. IN CASE OF CONFLICT, CONTACT ENGINEER FOR ADDITIONAL INFORMATION PRIOR TO CONSTRUCTING IMPROVEMENTS.
- CONTRACTOR TO ENSURE POSITIVE GRADING AWAY FROM BUILDINGS TO PREVENT THE PONDING OF WATER ADJACENT TO FOUNDATIONS.
- TOP AND BOTTOM OF WALL SPOTS PROVIDED AS A GUIDE FOR STRUCTURAL DESIGN PURPOSES ONLY (BY OTHERS). ACTUAL BOTTOM OF WALL SPOTS SHALL BE IN ACCORDANCE WITH APPROVED BUILDING PLANS (BY OTHERS).

**Approved**  
 06/09/2021



ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ARBORISTS  
**WALTER L. PHILLIPS**  
 INCORPORATED  
 DATE SUBMITTED: 05/19/2021  
 SUBJOB: 05/07/2020, SUBJOB3: 4/19/2021  
 SCALE: 1" = 30'  
 DRAWN: DL  
 CHECKED: KW

444 MAPLE AVENUE WEST  
 SITE PLAN  
 TOWN OF VIENNA, VIRGINIA

NO.	DESCRIPTION	DATE	REV.	APPROVED BY

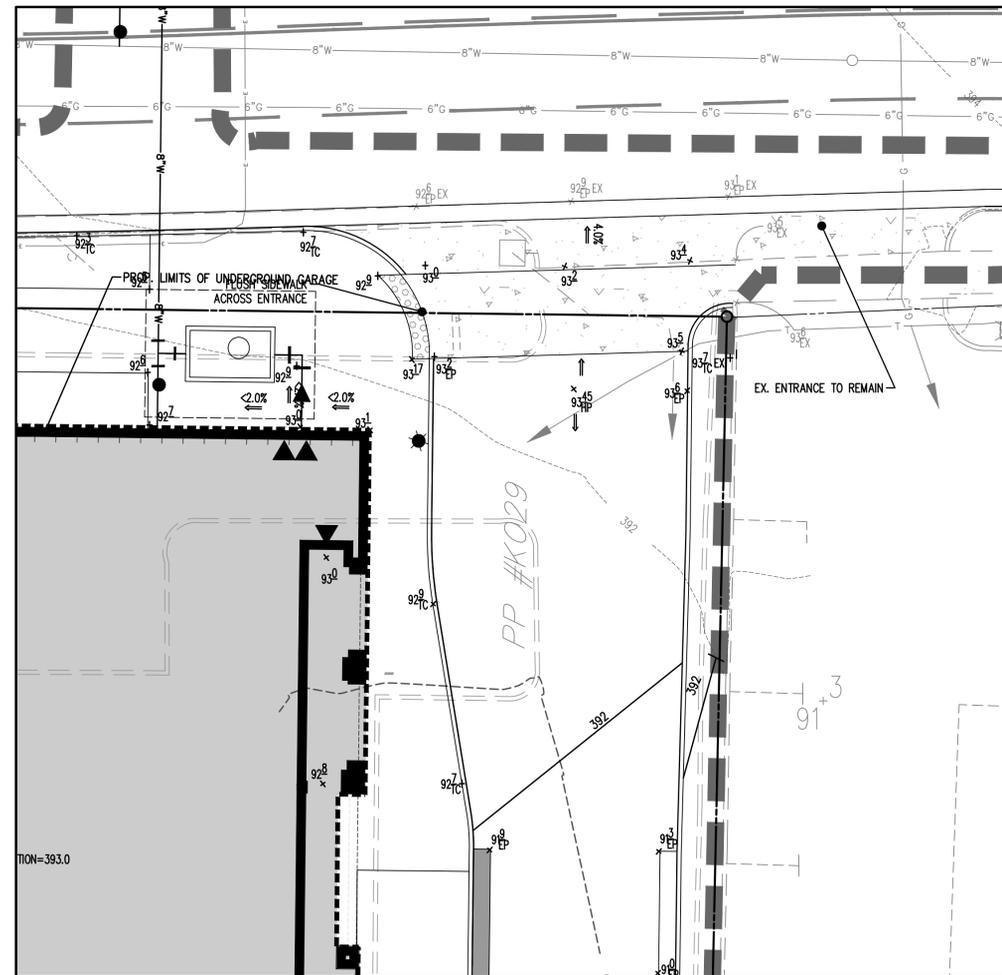
**GRADING PLAN**

**444 MAPLE AVENUE WEST**

**SITE PLAN**

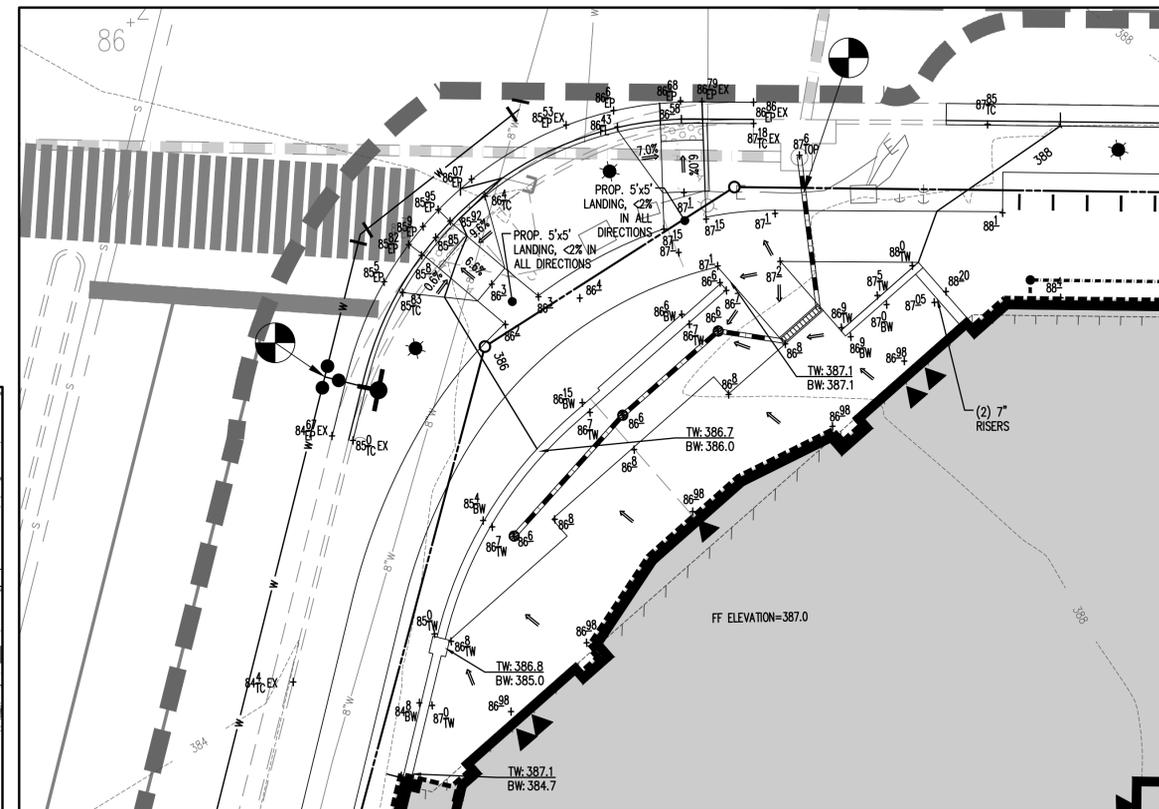
**TOWN OF VIENNA, VIRGINIA**

PROPOSED	DESCRIPTION	EXISTING
	CURB & GUTTER CG-2	
	TRANSITION FROM CG-6 TO CG-6R	
	SANITARY SEWER	
	SANITARY LATERAL	
	CLEAN OUT	
	STORM SEWER	
	WATER MAIN	
	FIRE HYDRANT	
	PLUG	
	OVERHEAD WIRES	
	UTILITY POLE	
	UNDERGROUND ELECTRIC	
	TELEPHONE	
	GAS MAIN	
	ELECTRICAL	
	TRANSFORMER	
	HANDICAP RAMP (CG-12)	
	GUARDRAIL	
	FENCE	
	TRAFFIC FLOW	
	LIGHT	
	DOOR	
	TREES	
	CONTOURS	
	SPOT ELEVATION	
	DRAINAGE FLOW DIRECTION	
	TOP OF CURB	
	BOTTOM OF CURB	
	TOP OF WALL	
	BOTTOM OF WALL	
	HIGH POINT	
	TEST PIT	
	LIMITS OF CLEARING AND GRADING	



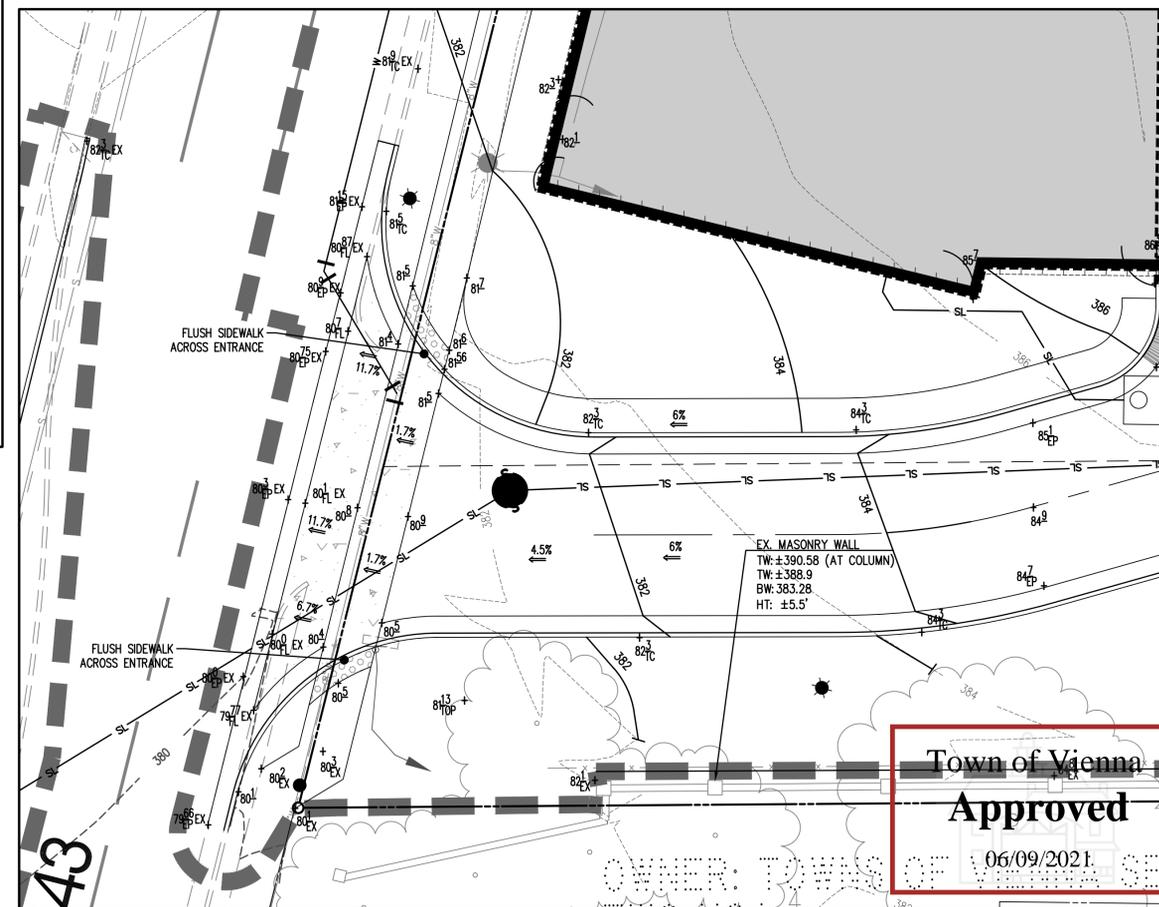
**GRADING ENLARGEMENT C**

SCALE: 1" = 10'



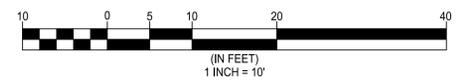
**GRADING ENLARGEMENT A**

SCALE: 1" = 10'



**GRADING ENLARGEMENT B**

SCALE: 1" = 10'



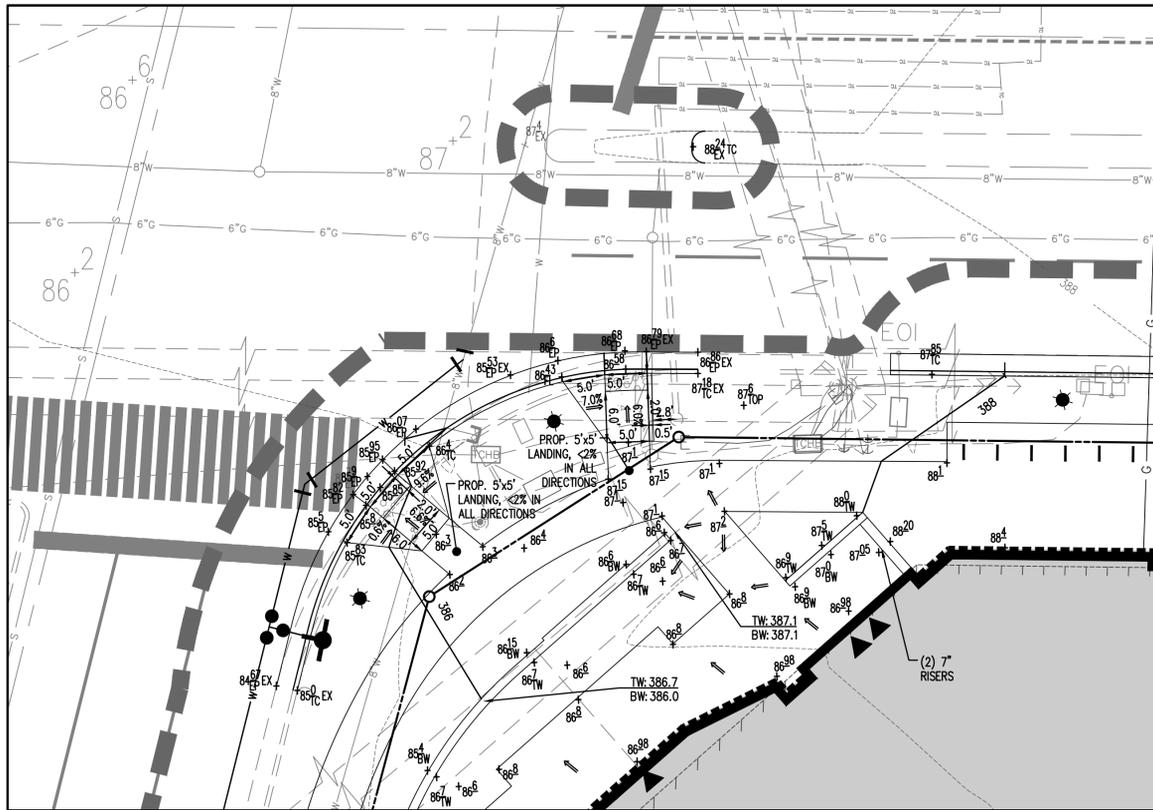
Engineers • Surveyors • Planners  
Landscape Architects • Arborists  
**WALTER L. PHILLIPS**  
INCORPORATED ESTABLISHED 1945  
FALLS CHURCH, VIRGINIA 22046  
(703) 532-6163 Fax (703) 533-1301  
www.WLPINC.com  
DATE SUBMITTED: 05/07/2021 SUBJOB: 05/07/2021 SUBJOB3: 4/19/2021  
DRAWN: DL  
CHECKED: KW



NO.	DESCRIPTION	DATE	REV. BY	APPROVED

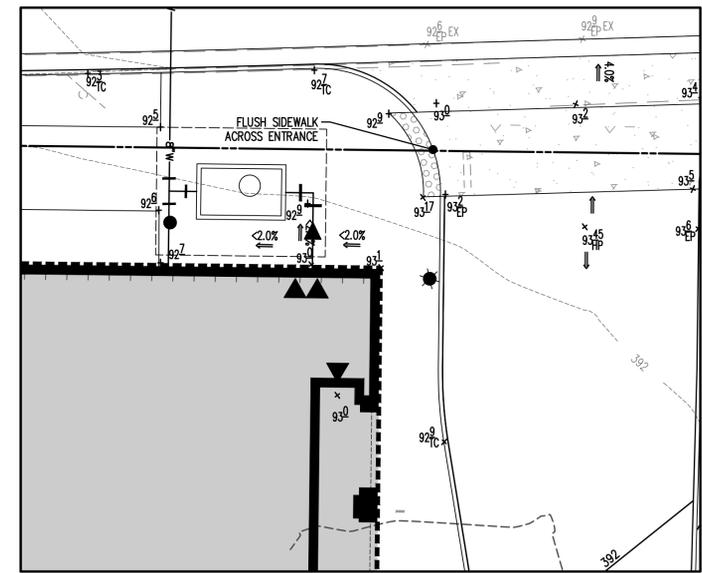
**GRADING ENLARGEMENTS**  
**444 MAPLE AVENUE WEST**  
SITE PLAN  
TOWN OF VIENNA, VIRGINIA

Town of Vienna  
**Approved**  
06/09/2021



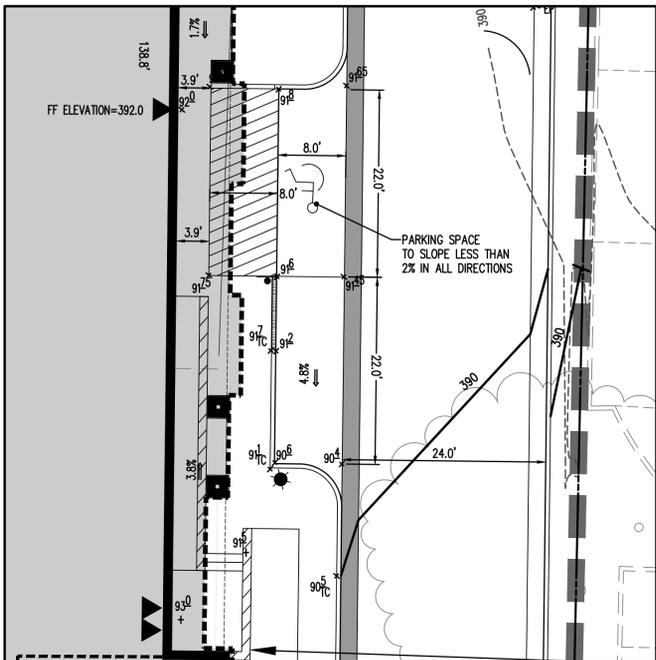
**ADA RAMP ENLARGEMENTS**

SCALE: 1" = 10'



**RESIDENTIAL LOBBY ENTRANCE ENLARGEMENT**

SCALE: 1" = 10'



**ADA VAN PARKING SPACE ENLARGEMENT**

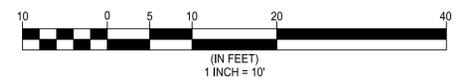
SCALE: 1" = 10'

PROPOSED	DESCRIPTION	EXISTING
	CURB & GUTTER CG-2	
	TRANSITION FROM CG-6 TO CG-6R	
	SANITARY SEWER	
	SANITARY LATERAL	
	CLEAN OUT	
	STORM SEWER	
	WATER MAIN	
	FIRE HYDRANT PLUG	
	OVERHEAD WIRES	
	UTILITY POLE UNDERGROUND ELECTRIC	
	TELEPHONE	
	GAS MAIN	
	ELECTRICAL	
	TRANSFORMER	
	HANDICAP RAMP (CG-12)	
	GUARDRAIL	
	FENCE	
	TRAFFIC FLOW	
	LIGHT	
	DOOR	
	TREES	
	CONTOURS	
	SPOT ELEVATION	
	DRAINAGE FLOW DIRECTION	
	TOP OF CURB	
	BOTTOM OF CURB	
	TOP OF WALL	
	BOTTOM OF WALL	
	HIGH POINT	
	TEST PIT	
	LIMITS OF CLEARING AND GRADING	

**NOTES**

- SEE SHEETS C-0501 FOR OVERALL GRADING PLAN.
- SEE SHEETS C-0201 - C-0205 FOR CONSTRUCTION DETAILS AND NOTES.
- ALL CURB RAMPS TO MEET ADA AND VDOT GUIDELINES. SEE SHEET C-0203 FOR CG-12 DETAILS.
- PROPOSED ADA ACCESSIBLE RAMPS SHALL BE INSTALLED WITH 12:1 MAXIMUM RAMP SLOPE. ADA ACCESSIBLE RAMPS SHALL HAVE A MINIMUM 4'x4' LANDING AT THE TOP OF THE RAMP WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
- ADA PARKING SPACE TO MEET CURRENT ADA GUIDELINES INCLUDING SIZE, SLOPES, STRIPING AND SIGNAGE.

Town of Vienna  
**Approved**  
06/09/2021



Engineers • Surveyors • Planners  
**WALTER L. PHILLIPS**  
 Landscape Architects • Arborists  
 207 PARK AVENUE  
 FALLS CHURCH, VIRGINIA 22046  
 (703) 532-6163 Fax (703) 533-1301  
 www.WLPINC.com

INCORPORATED ESTABLISHED 1945  
 DATE SUBMITTED: 05/07/2021  
 SUB02: 05/07/2021, SUB03: 4/19/2021  
 DATE: 05/25/2021  
 SCALE: 1" = 30'  
 DRAWN: DL  
 CHECKED: KW

NO.	DESCRIPTION	DATE	APPROVED BY

**ADA ENLARGEMENTS**  
**444 MAPLE AVENUE WEST**  
 SITE PLAN  
 TOWN OF VIENNA, VIRGINIA

AREA TO HIGH POINT WEIR  
 DA= 3.47 AC (1.20 AC OFFSITE (HEADWALL))  
 CN = 98  
 $Q_{100} = 32.08$  CSF

AREA TO HEADWALL  
 A= 1.20 AC  
 CN = 98  
 $Q_{100} = 11.1$  CSF

### LEGEND

PROPOSED	DESCRIPTION	EXISTING
[Symbol]	CURB & GUTTER CG-2	[Symbol]
[Symbol]	TRANSITION FROM CG-6 TO CG-6R	[Symbol]
[Symbol]	SANITARY SEWER	[Symbol]
[Symbol]	SANITARY LATERAL	[Symbol]
[Symbol]	CLEAN OUT	[Symbol]
[Symbol]	STORM SEWER	[Symbol]
[Symbol]	WATER MAIN	[Symbol]
[Symbol]	FIRE HYDRANT PLUG	[Symbol]
[Symbol]	OVERHEAD WIRES	[Symbol]
[Symbol]	UTILITY POLE	[Symbol]
[Symbol]	UNDERGROUND ELECTRIC	[Symbol]
[Symbol]	TELEPHONE	[Symbol]
[Symbol]	GAS MAIN	[Symbol]
[Symbol]	ELECTRICAL	[Symbol]
[Symbol]	TRANSFORMER	[Symbol]
[Symbol]	HANDICAP RAMP (CG-12)	[Symbol]
[Symbol]	GUARDRAIL	[Symbol]
[Symbol]	FENCE	[Symbol]
[Symbol]	TRAFFIC FLOW	[Symbol]
[Symbol]	LIGHT	[Symbol]
[Symbol]	DOOR	[Symbol]
[Symbol]	TREES	[Symbol]
[Symbol]	CONTOURS	[Symbol]
[Symbol]	SPOT ELEVATION	[Symbol]
[Symbol]	DRAINAGE FLOW DIRECTION	[Symbol]
[Symbol]	TOP OF CURB	[Symbol]
[Symbol]	BOTTOM OF CURB	[Symbol]
[Symbol]	TOP OF WALL	[Symbol]
[Symbol]	BOTTOM OF WALL	[Symbol]
[Symbol]	HIGH POINT	[Symbol]
[Symbol]	TEST PIT	[Symbol]
[Symbol]	LIMITS OF CLEARING AND GRADING	[Symbol]
[Symbol]	PROP OLR DRAINAGE AREA	[Symbol]
[Symbol]	PROP PONDING AREA	[Symbol]

Scale: 1" = 30'

IN FEET  
1 INCH = 30'

### HEADWALL CLOGGING ANALYSIS

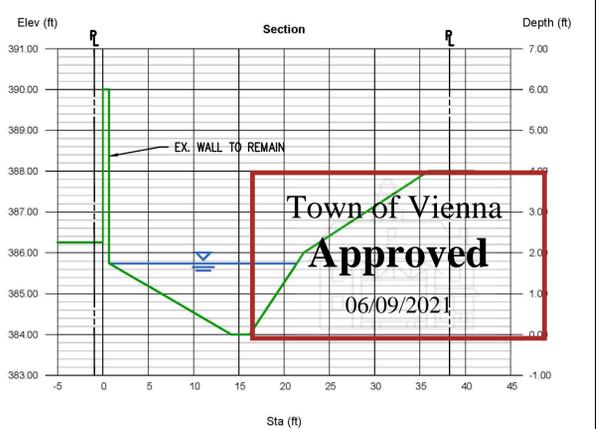
1. A SWALE ANALYSIS WAS PERFORMED ON THE ONSITE HEADWALL TO EXAMINE THE ELEVATION OF RUNOFF ASSUMING THE HEADWALL IS 100% CLOGGED. THIS ANALYSIS ASSUMES ONLY THE HEADWALL IS EXPERIENCING 100% CLOGGING. A SWALE SECTION IS SHOWN ACROSS THE EXISTING CHANNEL TO THE HEADWALL. IF THE HEADWALL IS EXPERIENCING 100% CLOGGING DURING THE 1% STORM, THE PONDING IN THE CHANNEL WILL REACH THE ELEVATION 385.74. THEREFORE, AN EVENT RESULTING IN 100% CLOGGING OF THE ONSITE HEADWALL SHOULD REMAIN CONTAINED IN THE EXISTING CHANNEL AND NOT RESULT IN A NEGATIVE IMPACT ON THE ADJACENT PROPERTIES.

Section X-X (Headwall Clogging Analysis)

User-defined	Highlighted
Invert Elev (ft) = 384.00	Length (ft) = 1.74
Slope (%) = 0.01	Q (cfs) = 11.10
N-Value = 0.025	Area (sqft) = 19.70
	Velocity (ft/s) = 0.56
	Wetted Perim (ft) = 21.04
	Crit Depth, Yc (ft) = 0.61
	Top Width (ft) = 20.64
	EGL (ft) = 1.74

Calculations  
 Compute by: Known Q  
 = 11.10

(Sta. El. n)-(Sta. El. n)...  
 (0.00, 385.25; 0.67, 390.00; 0.025; 0.67, 385.75; 0.025; 14.17, 384.00; 0.025; 22.17, 386.00; 0.025; 35.96, 388.00; 0.025)



### OVERLAND RELIEF ANALYSIS

- THE GOAL OF THIS ANALYSIS IS TO CONFIRM THAT ADEQUATE OVERLAND RELIEF (OLR) EXISTS ON THE PROPERTY LOCATED AT 444 MAPLE AVENUE WEST.
- ADEQUATE OVERLAND RELIEF IS DEFINED AS NO PONDING WOULD REACH THE PROPOSED BUILDING'S FINISHED FLOOR ELEVATION AT 387.0 OR IMPACT ANY ADJACENT PROPERTIES DURING A 100-YEAR FREQUENCY STORM EVENT THAT HAPPENS TO OCCUR WHEN THE PROPOSED STORM NETWORK ON THIS PROPERTY HAVE COMPLETELY FAILED.
- THE PEAK STORMWATER FLOW BEING ANALYZED IS THE FLOW FROM THE PROPOSED SITE POST-DEVELOPMENT ASSUMING A FAILED STORM SEWER SYSTEM PLUS ALL OTHER FLOW THAT DRAINS TO THE POINT OF INTEREST. THE ANALYSIS ASSUMES THE WORST CASE SITUATION WHEREBY THE HEADWALL UPSTREAM OF STRUCTURE 1388 IS 100% CLOGGED AND FLOWING ONTO THE SITE. IN THIS CASE THE STORM SEWERS DRAINING TO THIS STRUCTURE WOULD BACK UP ON THE EAST PORTION OF THE PROPERTY BEFORE FLOWING OVERLAND TO THE POINT OF INTEREST.
- TO ESTIMATE PONDING DEPTH, A BROAD CRESTED WEIR COMPUTATION FOR STORMWATER OVERTOPPING A HIGH POINT/CREST AREA IN THE SOUTHEAST CORNER OF THE PROPERTY WAS PERFORMED. THE WEIR SECTION PROFILE SHOWS THE EXISTING/PROPOSED GROUND ALONG THE HIGH POINT FUNCTIONING AS A WEIR CREST SIMILAR TO A POND EMBANKMENT OVERTOPPING. SINCE THE "WEIR" DOES NOT HAVE A UNIFORM AND LEVEL CREST ELEVATION, THE WEIR ANALYSIS IS PERFORMED BY BREAKING THE LENGTH OF THE CREST INTO SECTIONS. AN AVERAGE CREST ELEVATION IS SELECTED FOR EACH WEIR SECTION (SEE WEIR PROFILE FOR ASSUMED AVERAGE ELEVATIONS). THE TOTAL FLOW OVER THE WEIR CREST IS THE SUM OF THE FLOWS OVER EACH OF THE WEIR SECTIONS. USING A TRIAL AND ERROR PROCESS A 100-YR WATER SURFACE PONDING ELEVATION WAS DETERMINED THAT CORRESPONDS WITH THE 100-YEAR STORM PEAK RUNOFF RATE FLOWING OVER THE WEIR.
- TO BE CONSERVATIVE, THIS ANALYSIS IGNORED THE EFFECT THAT THE VOLUME OF RUNOFF STORED IN LOW POINT PONDING MAY HAVE ON PEAK RUNOFF FLOWS.
- THE ANALYSIS SHOWS THAT THE WATER WOULD REACH AN ELEVATION OF 385.85 FOR 34.55 CFS OF FLOW WHICH IS APPROX. 2.45 CFS GREATER THAN THE ANTICIPATED 100-YR FLOW. THE ELEVATION 385.85 IS 1.15' LOWER THAN THE PROPOSED FIRST FLOOR ELEVATION. ADDITIONALLY, THE EXISTING MASONRY WALL ALONG THE SOUTHEAST PROPERTY LINE WILL PREVENT ANY OF THE PONDING FROM LEAVING THE PROPERTY AND IMPACTING ADJACENT PROPERTIES BEFORE THE OVERLAND RELIEF ENTERS THE ROW AT NUTLEY STREET. THEREFORE, THERE IS ADEQUATE OVERLAND RELIEF IN A 100-YEAR STORM.

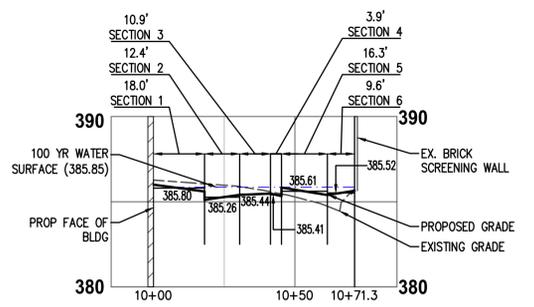
Overland relief computations using the weir equation  $Q=CLH^{3/2}$

385.85 100-Year Water Surface Elevation

Section	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Total
Weir Length L (ft)	18.04	12.43	10.88	3.9	16.26	9.62	
Weir Crest Avg. Elev.	385.80	385.26	385.44	385.41	385.61	385.52	
Head H (ft)	0.05	0.59	0.41	0.44	0.24	0.33	
Breadth of Crest of Weir (ft)	5.00	5.00	5.00	5.00	5.00	5.00	
Discharge Coef. C	2.34	2.7	2.5	2.5	2.34	2.42	
Flow Q (cfs)	0.47	15.21	7.14	2.85	4.47	4.41	34.55

Anticipated  $Q_{100}$  to section (cfs) = 32.1  
 Max. water depth (ft) = 7.1

Note: C value based on Table 21-15 from Frederick S. Merritt Standard Handbook for Civil Engineers, Second Edition.



OVERLAND RELIEF WEIR SECTION PROFILE  
 HORIZONTAL SCALE: 1"=30'  
 VERTICAL SCALE: 1"=5'

Engineers • Surveyors • Planners  
 Landscape Architects • Arborists

**WALTER L. PHILLIPS**  
 INCORPORATED  
 DATE: 05/07/2021  
 SUBJOB: 05/07/2021, SUBJOB3: 4/19/2021  
 SCALE: 1" = 30'  
 CHECKED: DL  
 DRAWN: DL

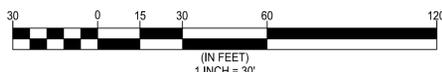
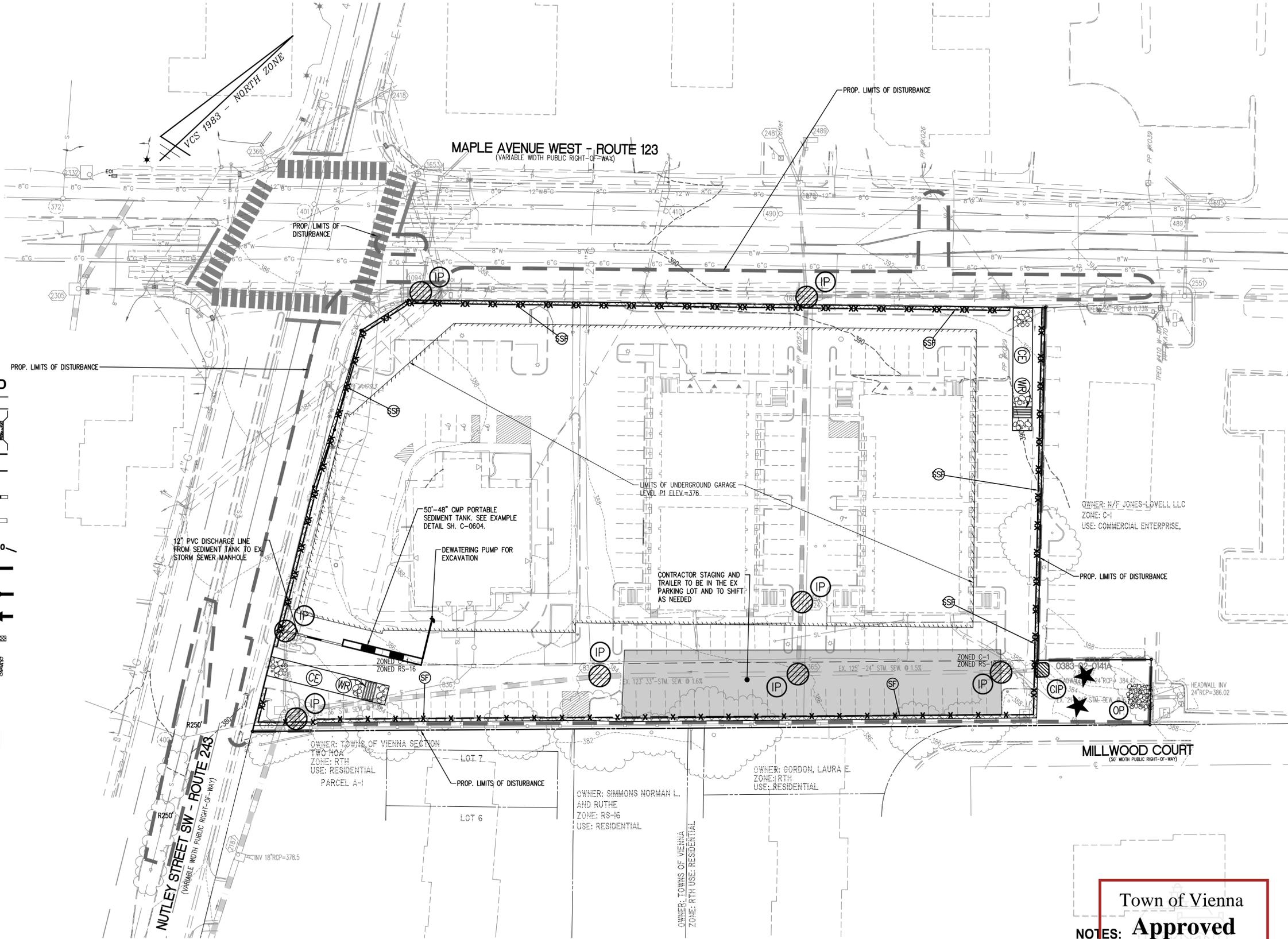
444 MAPLE AVENUE WEST  
 TOWN OF VIENNA, VIRGINIA  
 SITE PLAN

REVISION APPROVED BY: [ ] DATE: [ ] APPROVED BY: [ ]  
 NO. DESCRIPTION DATE REV. BY

06/09/2021  
 Town of Vienna  
 Approved

**EROSION CONTROL LEGEND**

KEY	TITLE	SYMBOL
CE	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE WITH WASH RACK	
SF	SILT FENCE	
SSF	SUPER SILT FENCE	
IP	STORM DRAIN INLET PROTECTION	
CIP	CULVERT INLET PROTECTION	
TP	TREE PROTECTION	
SC	DRAINAGE DIVIDES (STORM SEWER COMPUTATIONS)	
DD	TEMPORARY DIVERSION DIKE	
ST	TEMPORARY SEDIMENT TRAP	
SAF	SAFETY FENCE	
OP	OUTLET PROTECTION	
CD	CHECK DAM	
STB	STRAW BALE BARRIER	
	CRITICAL SLOPES 2:1 OR 3:1 SLOPES	



Town of Vienna  
**NOTES: Approved**  
 06/09/2022

- REFER TO EXISTING CONDITIONS AND DEMOLITION PLAN (SHEET C-0301 -) FOR SEQUENCING INFORMATION.
- PERIMETER CONTROLS SHOWN ON THIS SHEET MUST BE IN PLACE PRIOR TO DEMOLITION.

**FOR EROSION CONTROL PURPOSES ONLY!!**

**EROSION AND SEDIMENT CONTROL PLAN - PHASE 1**

**444 MAPLE AVENUE WEST**

SITE PLAN

TOWN OF VIENNA, VIRGINIA

NO.	DESCRIPTION	DATE	REV.	APPROVED BY

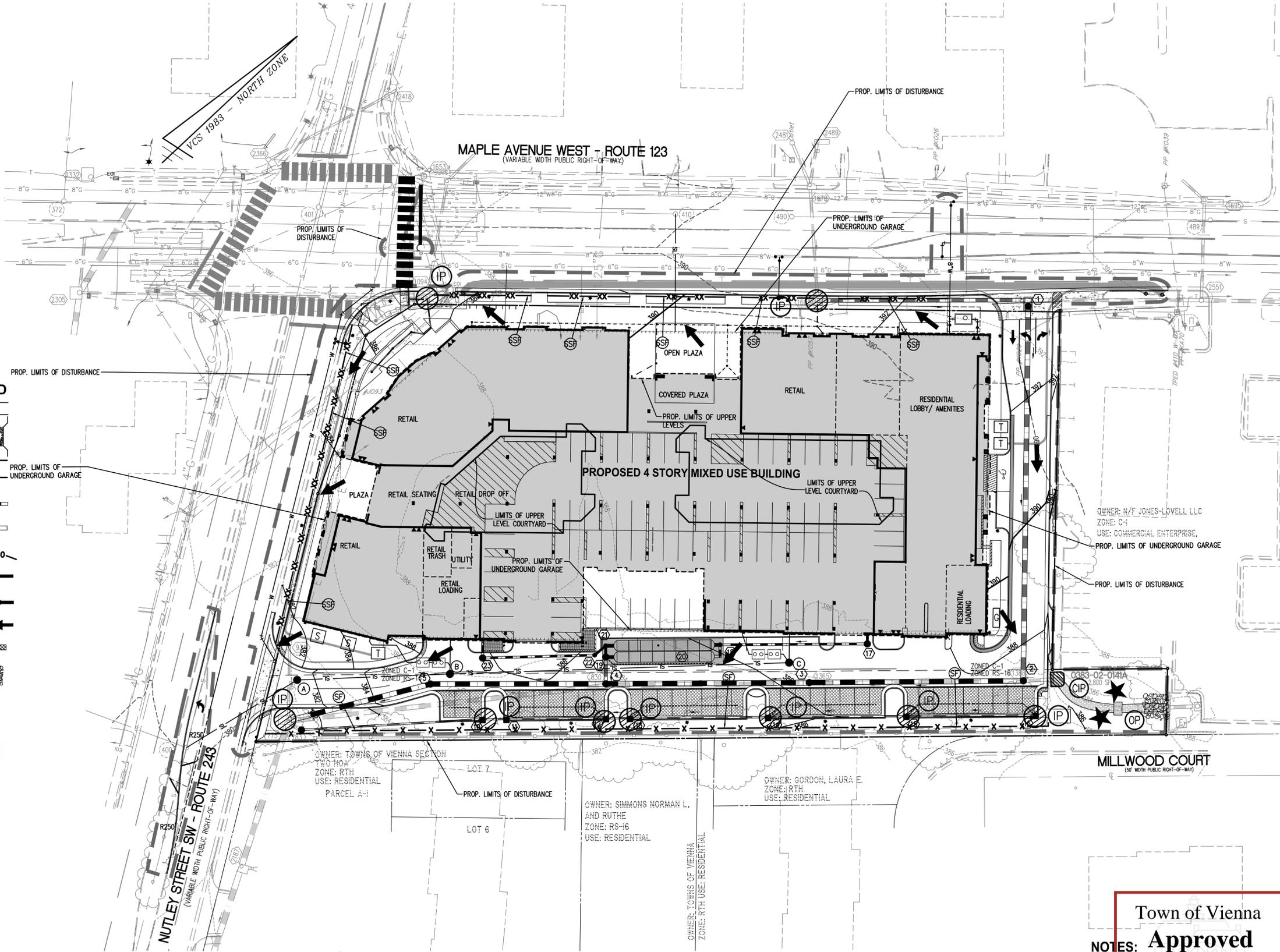


**WALTER L. PHILLIPS**  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ARBORISTS  
 207 PARK AVENUE  
 FALLS CHURCH, VIRGINIA 22046  
 (703) 532-6163 Fax (703) 533-1301  
 www.WLPINC.com

DATE SUBMITTED: 05/07/2020, SUB02: 05/07/2020, SUB03: 4/19/2021  
 DATE: 11-30-20  
 SCALE: 1" = 30'  
 DRAWN: DL  
 CHECKED: KW

**EROSION CONTROL LEGEND**

KEY	TITLE	SYMBOL
CE	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE WITH WASH RACK	
SF	SILT FENCE	
SSF	SUPER SILT FENCE	
IP	STORM DRAIN INLET PROTECTION	
CIP	CULVERT INLET PROTECTION	
TP	TREE PROTECTION	
SC	DRAINAGE DIVIDES (STORM SEWER COMPUTATIONS)	
DD	TEMPORARY DIVERSION DIKE	
ST	TEMPORARY SEDIMENT TRAP	
SAF	SAFETY FENCE	
OP	OUTLET PROTECTION	
CD	CHECK DAM	
STB	STRAW BALE BARRIER	
	CRITICAL SLOPES 2:1 OR 3:1 SLOPES	



**OVERLAND RELIEF** →  
 STORMWATER FROM THE SITE DISCHARGES AS CONCENTRATED FLOW TO THE MUNICIPAL STORM SYSTEM. IN THE EVENT THAT OVERLAND FLOW OCCURS, THE SITE HAS BEEN DESIGNED TO ENSURE THAT WATER SHEETFLOWS AWAY FROM THE PROPOSED BUILDING. ALL WATER IS DIRECTED AWAY FROM THE PROPOSED BUILDINGS AND FLOWS AWAY FROM THE SITE. THE SHEET FLOW ENTERS ONSITE CURB AND GUTTER AND/OR ADJACENT INLETS LOCATED ON THE PERIPHERAL OF THE SITE (MAPLE AVE AND NUTLEY ST). THE

Town of Vienna  
**NOTES: Approved**  
 05/25/21

- REFER TO EXISTING CONDITIONS AND DEMOLITION PLAN (SHEET C-0301 -) FOR SEQUENCING INFORMATION.
- PERIMETER CONTROLS SHOWN ON THIS SHEET MUST BE IN PLACE PRIOR TO DEMOLITION.

**FOR EROSION CONTROL PURPOSES ONLY!!**

**EROSION AND SEDIMENT CONTROL PLAN - PHASE 2**

**444 MAPLE AVENUE WEST**

SITE PLAN

TOWN OF VIENNA, VIRGINIA

NO.	DESCRIPTION	DATE	REV. BY	APPROVED BY



**WALTER L. PHILLIPS**  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ARBORISTS  
 207 PARK AVENUE  
 FALLS CHURCH, VIRGINIA 22046  
 (703) 532-6163 Fax (703) 533-1301  
 www.WLPINC.com

DATE SUBMITTED: 05/19/2021  
 DATE: 05/25/2021  
 SUB02: 05/07/2020, SUB03: 4/19/2021  
 DRAWN: DL  
 CHECKED: KW

**EROSION AND SEDIMENT CONTROL NARRATIVE:**

**PROJECT DESCRIPTION:**  
THIS PROJECT WILL INVOLVE REDEVELOPMENT OF THE EXISTING 2.76 ACRE PROPERTY. THE EXISTING BUILDINGS, PARKING, AND OTHER INFRASTRUCTURE WILL BE DEMOLISHED IN PHASES AND A PROPOSED MIXED USE BUILDING, PARKING GARAGE, AND SITE INFRASTRUCTURE WILL BE CONSTRUCTED. THE SITE IS LOCATED IN THE TOWN OF VIENNA AT MAPLE AVENUE AND NUTLEY STREET.

**EXISTING SITE CONDITIONS:**  
THE SITE CURRENTLY CONTAINS FIVE EXISTING BUILDINGS (ONE RESTAURANT AND FOUR MOTELS), AN EXISTING PARKING LOT, UTILITIES, DRIVE AISLES, WALLS, FENCES, ETC. GENERALLY, THE DEVELOPED PORTIONS OF SITE ARE FLAT, WHILE THE UNDEVELOPED PORTIONS OF THE SITE CONTAIN SOME STEEP SLOPES AS WELL AS LOW-LYING DRAINAGE AREAS. THE MAJORITY OF THE SITE DRAINS SOUTHEASTERN CORNER BY WAY OF ON-SITE STORM SEWER. THE EAST CORNER OF THE SITE CONTAINS A DEPRESSED AREA WITH TWO HEADWALLS THE SITE IS PREDOMINANTLY COVERED IN IMPERVIOUS AREA AND BUILDINGS.

**ADJACENT PROPERTIES:**  
NORTH: COMMERCIAL PROPERTY  
EAST: MILLWOOD COURT AND RESIDENTIAL PROPERTIES  
SOUTH: NUTLEY STREET  
WEST: MAPLE AVENUE

**OFFSITE AREAS:**  
1. STREETSCAPE IMPROVEMENTS AND SITE ENTRANCE CONSTRUCTION.  
2. UTILITY CONNECTIONS

**CRITICAL AREAS:**  
AN DEPRESSED AREA IS LOCATED ON THE EAST SIDE OF THE SITE WHICH CONTAINS STEEP SLOPES AND A DITCH BETWEEN TWO HEADWALLS. THESE CRITICAL SLOPES HAVE BEEN IDENTIFIED ON THE PHASE 1 EROSION AND SEDIMENT CONTROL PLAN. THESE SLOPES ARE TO REMAIN UNDISTURBED THROUGHOUT CONSTRUCTION.

FAIRFAX COUNTY SOILS MAP SHOWS A MAJORITY OF THE SITE IS MAPPED AS URBAN LAND (95). THE REMAINING PORTIONS OF THE SITE ARE WHEATON-MEADOWVILLE COMPLEX (107B).

**EROSION CONTROL PROGRAM:**  
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATION OF THE VIRGINIA AND EROSIONS AND SEDIMENT CONTROL HANDBOOK.

EROSION CONTROL MEASURES FOR THIS PROJECT SHALL BE GENERALLY ACCOMPLISHED IN TWO PHASES, THOUGH GIVEN THE SIZE OF THE SITE, ADDITIONAL SUB PHASES WILL BE NECESSARY. THE CONTRACTOR SHALL COORDINATE IN DETAIL WITH THE SITE INSPECTOR REGARDING SEQUENCING OF WORK IN SMALLER INCREMENTS THAN THE TWO PRIMARY PHASES DEPICTED ON THESE PLANS. THE FIRST SUB PHASES SHALL INVOLVE ONLY THE WORK NECESSARY TO MOBILIZE ON THE PROPERTY AND TO INSTALL THE PERIMETER CONTROLS PRIOR TO LAND CLEARING ACTIVITIES THAT CREATE DENUDE SOIL AREAS. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH THE VARIOUS STAGES OF CONSTRUCTION. THE CONTRACTOR SHALL STAGE CONSTRUCTION IN SUCH MANNER TO LIMIT THE AMOUNT OF DENUDE AREA EXPOSED. ADDITIONALLY, UNWORKED DENUDE AREAS SHALL BE TEMPORARILY STABILIZED TO MINIMIZE THE AMOUNT OF DENUDE AREA EXPOSED AT ANY GIVEN TIME. THE FIRST PHASE MEASURES SHALL REMAIN IN PLACE UNTIL THEIR UPSTREAM DRAINAGE AREAS ARE COMPLETELY STABILIZED. THE EROSION AND SEDIMENT FACILITIES MUST REMAIN OPERATIONAL UNTIL THE AREAS DRAINING TO THE FACILITIES HAVE BEEN STABILIZED AND THE SITE INSPECTOR AUTHORIZES THEIR REMOVAL. ONCE SPECIFIC AREAS CONTAINING PHASE 1 MEASURES HAVE BEEN INSPECTED AND APPROVED BY THE SITE INSPECTOR, THE CONTRACTOR MAY BEGIN THE CLEARING AND GRADING ASSOCIATED WITH THAT AREA. THE CONTRACTOR SHALL PROVIDE ADEQUATE DUST CONTROL THROUGHOUT CONSTRUCTION. THE CONSTRUCTION PHASING SHALL DICTATE THE REQUIRED CONTROLS. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH SITE INSPECTORS AS CONSTRUCTION PROGRESSES.

THE SECOND PHASE MEASURES SHALL REMAIN IN PLACE UNTIL THEIR UP STREAM DRAINAGE AREAS ARE COMPLETELY STABILIZED AND FINAL GRADING IS ACHIEVED. STORM INLETS MUST BE PROTECTED BY INLET PROTECTION ONCE THE STRUCTURES HAVE BEEN INSTALLED AND ACTIVATED. TEMPORARY SEEDING AND MULCHING ARE TO BE APPLIED TO ANY DISTURBED AREA NOT WORKED FOR 7 DAYS AND EXPECTED TO BE DORMANT FOR MORE THAN 30 DAYS. A PERMANENT VEGETATIVE COVER CONSISTING OF SOD AND /OR MULCH LANDSCAPED AND PLANTING AREAS SHALL BE ESTABLISHED ON DENUDE AREAS AFTER ALL THE DISTURBED ACTIVITY HAS BEEN FINISHED.

**PHASE 1**  
THE CONTRACTOR SHALL GENERALLY FOLLOW THE EROSION AND SEDIMENT CONTROL AND DEMOLITION MEASURES DETAILED BELOW. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL ALSO BE ESTABLISHED AS NEEDED IN THOSE AREAS ACTIVELY UNDER CONSTRUCTION IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (INCLUDING MINIMUM STANDARDS 1 THRU 19) LATEST EDITION. DRAINAGE AREAS WHICH WILL NOT BE IMPACTED BY CONSTRUCTION DO NOT NEED DOWNSTREAM EROSION & SEDIMENT CONTROL DEVICES. IF DISTURBANCE OCCURS WITHIN A DRAINAGE AREA, THE APPROPRIATE DOWN STREAM CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THAT LAND DISTURBANCE. THE FOLLOWING SEQUENCE IS SUBJECT TO CHANGE PER CONTRACTORS CONSTRUCTION SCHEDULE. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSTRUCTION PROGRESS AND REQUIRED EROSION AND SEDIMENT CONTROLS DEVICES AT VARIOUS STAGES OF CONSTRUCTION WITH SITE INSPECTOR.

- CONSTRUCTION ENTRANCES, WITH WASH RACKS, SHALL BE INSTALLED AT TWO LOCATIONS ALONG THE SITE FRONTAGE ON MAPLE AVENUE AND NUTLEY STREET AS DEPICTED ON SHEETS C-0601. A SPRAY NOZZLE IS TO BE PROVIDED ADJACENT TO THE WASH RACK TO CLEAN CONSTRUCTION VEHICLES BEFORE THEY ENTER THE RIGHT-OF-WAY. THE HOSE WILL BE CONNECTED AT THE CLOSEST WATER SOURCE. (IF NO WATER SOURCE IS AVAILABLE, THEN, A WATER TRUCK IS REQUIRED).
- ALL PERIMETER CONTROL MEASURES FOR THE SITE, EXCEPT THE TEMPORARY SEDIMENT TANK, SHALL BE ESTABLISHED BEFORE ANY LAND DISTURBANCE OR BUILDING DEMOLITION CAN OCCUR. THESE INITIAL MEASURES INCLUDE BUT MAY NOT BE LIMITED TO CONSTRUCTION ENTRANCE, INLET PROTECTION, SILT FENCE, AND SUPER SILT FENCE (TO BE USED AS TREE PROTECTION).
- ONCE THESE INITIAL MEASURES HAVE BEEN ESTABLISHED, BUILDING DEMOLITION CAN BEGIN. CONSTRUCTION OF THE TEMPORARY SEDIMENT TANK AND THE TEMPORARY STORM CONNECTION CAN BEGIN. SEE SHEET C-0601 FOR SEDIMENT TANK LOCATION.
- FOLLOWING CONSTRUCTION OF THE TEMPORARY SEDIMENT TANK THE GARAGE EXCAVATION CAN BEGIN.
- CONTRACTOR SHALL ENSURE ALL STOCKPILE AREAS FROM EXCAVATION SHALL BE PLACED ON THE UPHILL SIDE OF BUILDING EXCAVATION AND UTILITY TRENCHES.
- WHEN ALL OF THE NECESSARY PHASE 1 MEASURES ARE IN PLACE FOR SPECIFIC CONSTRUCTION AREA, AN INSPECTION MUST BE MADE. (INSPECTION REQUESTS MUST BE MADE 48 HOURS IN ADVANCE.) FOLLOWING THE INSPECTOR'S APPROVAL OF THE PHASE 1 CONTROL MEASURES, COMMENCEMENT OF PHASE 2 PER CONSTRUCTION PERMIT APPROVAL WILL THEN BE AUTHORIZED. IT IS RECOMMENDED THAT THE CONTRACTOR LIMIT THE AMOUNT OF DISTURBED AREA AT ANY ONE TIME.
- IT IS ASSUMED THAT NOT ALL PHASE 1 EROSION AND SEDIMENT CONTROL DEVICES WILL BE REQUIRED TO BE INSTALLED PRIOR TO LAND DISTURBING ACTIVITIES. ONLY THOSE SPECIFIC DRAINAGE AREAS WHERE CONSTRUCTION SHALL TAKE PLACE SHALL BE REQUIRED TO BE PROTECTED. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH SITE INSPECTORS TO ENSURE NECESSARY CONTROLS ARE IN PLACE BEFORE ANY LAND DISTURBING ACTIVITIES TAKE PLACE.
  - PERIMETER CONTROL WILL REQUIRE SAFETY FENCE (VESCH STD & SPEC 3.01)
  - SEDIMENT BARRIERS WILL REQUIRE SUPER SILT FENCE (FAIRFAX COUNTY PFM SECTION 11-0110. 3J AND PLATE 7-11) AND STORM DRAIN INLET PROTECTION (VESCH STD & SPEC. 3.07)
  - A CONSTRUCTION ENTRANCE IS REQUIRED (VESCH STD & SPEC. 3.02)
  - A DEWATERING STRUCTURE IS REQUIRED (VESCH STD & SPEC. 3.26)
  - DUST CONTROL IS REQUIRED (VESCH STD & SPEC. 3.39)
  - ESTABLISHING VEGETATION IS REQUIRED (VESCH STD & SPEC. 3.30, 3.31, 3.32, 3.33, 3.35, 3.35, AND SECTION 11 OF THE FAIRFAX COUNTY PFM)

- PHASE 2**
- ALL CONTROL MEASURES NOTED IN PHASE 1 WILL REMAIN IN PLACE DURING THE LAND DISTURBING ACTIVITIES. SUPPLEMENTAL CONTROLS ARE TO BE PROVIDED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN - PHASE 2. (SEE SHEET C-0602). ALL CONTROLS ARE TO BE ADJUSTED AS REQUIRED AS THE SITE CONSTRUCTION PROGRESSES AND AS DIRECTED BY THE INSPECTOR. CONTRACTOR SHALL MAINTAIN ADJACENT ROADS IN A MUD AND DUST FREE CONDITION AT ALL TIMES.
  - THIS PHASE WILL CONSIST OF COMPLETION OF THE PROPOSED BUILDINGS, ROADS, UTILITIES AND OTHER INFRASTRUCTURE AS PROPOSED WITH THIS PLAN. ALL SITE RUNOFF SHALL BE CONTROLLED BY EROSION AND SEDIMENT CONTROL MEASURES.
  - ALL OF THE STORM SEWER INLETS WILL BE PROTECTED. ALL THE STANDARD AND SUPER SILT FENCE IS TO BE INSPECTED DAILY.
  - ANY SOIL STOCKPILE ONSITE SHALL BE LOCATED WITHIN THE LIMITS OF SITE DISTURBANCE, GRADED WITH SLOPES NOT STEEPER THAN 2:1 AND SHALL BE SEEDED AND MULCHED TO ESTABLISH A GROUND COVER IMMEDIATELY AFTER THE GRADING HAS BEEN COMPLETED. SILT FENCE AROUND THE TEMPORARY STOCKPILE SHALL BE PROVIDED.
  - STORMWATER MANAGEMENT FACILITIES SHALL BE CONSTRUCTED NEAR THE END OF CONSTRUCTION IN ORDER TO PREVENT SEDIMENT FROM CLOGGING THE FACILITY. FURTHER, A BARRIER (SUPERSILT FENCE, DIVERSION DIKES, SAFETY FENCE) SHALL BE PROVIDED AROUND PROPOSED INFILTRATION AREAS IN ORDER TO PREVENT CONSTRUCTION VEHICLES FROM INADVERTENTLY COMPACTING IN-SITU SOILS.
  - THE CONTRACTOR SHALL PERMANENTLY SEED AND/OR SOD ALL NON-PAVED AREAS DISTURBED BY CONSTRUCTION IN ACCORDANCE WITH SECTION 3.31 AND 3.32 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. ALSO SEE SEED SPECIFICATIONS IN SHEET C-0621, EXCEPT THOSE AREAS TO BE LANDSCAPED. ALL LANDSCAPED AREAS WILL RECEIVE SURFACE TREATMENTS (STONE, MULCH, ETC.) AS SHOWN ON THE LANDSCAPE PLANS. FILL SLOPES SHALL PERMANENTLY STABILIZED ONCE THE SLOPE HAS BEEN BROUGHT TO FINAL GRADE BY SEEDING AND EROSION CONTROL BLANKETS TO PREVENT RILL AND GULLY EROSION OF THE CRITICAL SLOPES. DISTURBED FLAT AREAS SHALL BE SEEDED PRIOR TO BEING MULCHED.
  - ALL TEMPORARY EROSION SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION AFTER THE PERMISSION OF THE INSPECTOR.

**MAINTENANCE PROGRAM:**

THE SITE SUPERINTENDENT, OR REPRESENTATIVE, SHALL MAKE A VISUAL INSPECTION OF ALL STRUCTURAL AND VEGETATIVE CONTROLS AND NEWLY STABILIZED AREAS (I.E. SEEDED AND MULCHED AREAS) ON A DAILY BASIS, ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO INSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY INCLUDING RE-SEEDING AND MULCHING IF NECESSARY.

**MAINTENANCE NOTES:**

- MAINTENANCE OF THE TEMPORARY CONSTRUCTION ENTRANCE SHALL BE AS REQUIRED TO PREVENT MUD DEPOSITS IN THE RIGHT-OF-WAY.
- SILT FENCE SHALL BE INSPECTED AT THE END OF EACH DAY AND AFTER EACH RAINFALL. ANY REQUIRED REPAIRS OR REPLACEMENTS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS WILL BE REMOVED AFTER EACH RAINFALL AND AT ANY TIME THE DEPOSITS REACH APPROXIMATELY 1/2 THE HEIGHT OF THE BARRIER.
- INLET PROTECTION SHALL BE INSPECTED AT THE END OF EACH DAY AND AFTER EACH RAINFALL AND REQUIRED REPAIRS MADE IMMEDIATELY.
- EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED IN PLACE UNTIL GROUND DISTURBING CONSTRUCTION AND PERMANENT STABILIZATION IS COMPLETE AND SHALL BE REMOVED BY PERMISSION OF THE FAIRFAX COUNTY INSPECTOR.
- FILTER STONE SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED. STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED.

**EROSION AND SEDIMENT CONTROL MEASURES:**

- SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE INSTALLED AT THE START OF GRADING.
- SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL GROUND DISTURBING ACTIVITY CEASES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS IS COMPLETE.
- ALL STANDARDS AND SPECIFICATIONS REFER TO THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE FAIRFAX COUNTY CHECKLIST.
- TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILE LOCATIONS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR TO PROVIDE APPROPRIATE EROSION CONTROL MEASURES FOR ANY STOCKPILED AREA.
- A CONSTRUCTION ENTRANCE SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF ALL DISTURBING ACTIVITIES AS SHOWN ON THE PLAN PER STD. AND SPEC. NO. 3.02 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. NO CONSTRUCTION TRAFFIC SHALL BE PERMITTED TO ENTER THE SITE OTHER THAN THROUGH THIS ENTRANCE UNTIL PARKING LOT IS PAVED.
- ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT TO BE CONSTRUCTED UPON SHALL BE TEMPORARILY STABILIZED IMMEDIATELY FOLLOWING FINISH GRADING BY SEEDING AND MULCHING PER STD. AND SPEC. NO. 3.31 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
- BARE SOIL SURFACES NOT AT FINISH GRADE, WHICH WILL BE EXPOSED MORE THAN 7 DAYS, SHALL BE STABILIZED WITH TEMPORARY SEEDING AND MULCHING PER STD. AND SPEC. NO. 3.32 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
- ALL AREAS NOT BUILT OR LANDSCAPED SHALL BE SODDED FOR PERMANENT GROUND COVER. ALL SODDING SHALL CONFORM TO VESCH SPECIFICATION 3.33
- THE FOLLOWING EROSION AND SEDIMENT CONTROL MEASURES ARE ANTICIPATED TO BE REQUIRED AT A MINIMUM:
  - PERIMETER CONTROL WILL REQUIRE SAFETY FENCE (VESCH STD & SPEC 3.01)
  - SEDIMENT BARRIERS WILL REQUIRE SUPER SILT FENCE (FAIRFAX COUNTY PFM SECTION 11-0110. 3J AND PLATE 7-11) AND STORM DRAIN INLET PROTECTION (VESCH STD & SPEC. 3.07)
  - A CONSTRUCTION ENTRANCE IS REQUIRED (VESCH STD & SPEC. 3.02)
  - A DEWATERING STRUCTURE IS REQUIRED (VESCH STD & SPEC. 3.26)
  - DUST CONTROL IS REQUIRED (VESCH STD & SPEC. 3.39)
  - ESTABLISHING VEGETATION IS REQUIRED (VESCH STD & SPEC. 3.30, 3.31, 3.32, 3.33, 3.35, 3.35, AND SECTION 11 OF THE FAIRFAX COUNTY PFM)

**GENERAL LAND CONSERVATION NOTES**

- NO DISTURBED AREA WILL BE LEFT DENUDE AND UNWORKED FOR MORE THAN 7 CALENDAR DAYS WITHOUT STABILIZATION UNLESS OTHERWISE AUTHORIZED BY THE DIRECTOR OR HIS AGENT.
- ALL EROSION AND SILTATION 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 PERMETER CONTROLS.
- ALL STORM AND SANITARY LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL. NO MORE THAN 500 FEET ARE TO BE OPEN AT ANY ONE TIME.
- ELECTRIC POWER, TELEPHONE, AND GAS SUPPLY TRENCHES AREA TO BE COMPACTED, SEEDED, AND MULCHED WITHIN 5 DAYS AFTER BACKFILL.
- DURING CONSTRUCTION, ALL STORM SEWER INLETS WILL BE PROTECTED BY INLET PROTECTION DEVICES, MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.
- ANY DISTURBED AREA NOT COVERED BY NOTE #1 ABOVE AND NOT PAVED, SODDED OR BUILT IS TO BE MULCHED WITH HAY OR STRAW MULCH AT THE RATE OF TWO TONS PER ACRE AND OVERSEEDED.
- AT THE COMPLETION OF THE CONSTRUCTION PROJECT, AND PRIOR TO THE RELEASE OF THE BOND, ALL TEMPORARY SILTATION AND EROSION CONTROLS SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED.
- IF THE MAXIMUM PERIOD FOR DENUDATION IS EXCEEDED AND ANY AREAS REMAIN EXPOSED WITHOUT COVER OR SURFACE, THE COUNTY MAY (IN THE EVENT THE DEVELOPER DOES NOT) INSTALL SUCH GROUND COVER OR OTHER STABILIZING DEVICES AND/OR MATERIAL TO THE MINIMUM EXTENT NECESSARY TO ACHIEVE EROSION AND SEDIMENT CONTROL EQUAL TO THAT WHICH WOULD HAVE BEEN FURNISHED BY THE PERMANENT COVER SHOWN ON THE APPROVED PLANS. THE COST OF ANY SUCH TEMPORARY MEASURES TAKEN BY THE COUNTY SHALL BE BORNE BY THE DEVELOPER AND SHALL BE A CHARGE AGAINST THE CONSERVATION DEPOSIT.
- TEMPORARY DIVERSIONS, SEEDED AND MULCHED AREAS OR SILT FENCE AND OTHER CONTROL MEASURES AS NECESSARY ARE TO BE PLACED AS INDICATED ON THE DRAWINGS PRIOR TO OR AS THE FIRST STEP IN EXCAVATION.
- WHERE CONSISTENT WITH JOB SAFETY REQUIREMENTS, ALL EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES. NO MATERIAL IS TO BE PLACED IN STREAM BEDS. NO STOCKPILE IS PERMITTED, WHERE SOIL IS PLACED ON DOWNHILL SIDE OF TRENCHES, IT IS TO BE BACK SLOPED TO DRAIN TOWARD THE TRENCH. WHEN NECESSARY TO DEWATER THE TRENCHES, THE PUMP DISCHARGE HOSTS MUST OUTLET IN A STABILIZED AREA TO AN EXISTING STORM INLET.
- ANY SOIL REMOVED FROM THE SITE SHALL BE PLACED IN A PERMITTED SITE. ANY SOIL THAT IS BROUGHT ONTO THE SITE WILL BE OBTAINED FROM A PERMITTED SITE.
- THE CONTRACTOR SHALL TAKE STEPS TO MINIMIZE THE RELEASE OF DUST FROM THE CONSTRUCTION SITE. STABILIZING GROUND SURFACES WITH TEMPORARY OR PERMANENT VEGETATION IS THE PREFERRED METHOD BUT THE CONTRACTOR SHALL UTILIZE OTHER MEASURES IN ACCORDANCE WITH VESCH STD & SPEC. 3.39.

**SEEDING AND MULCH SPECIFICATION**

SEEDING AND MULCH SHALL ACCORDANCE WITH 3.31, 3.32, AND 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

**TABLE 6-1**  
**GENERAL EROSION AND SEDIMENT CONTROL NOTES**

**ES-1:** Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook and Virginia Regulations 4VAC50-30-1 Erosion and Sediment Control Regulations.

**ES-2:** The plan approving authority must be notified one week prior to the pre-construction conference, one week prior to the commencement of land disturbing activity, and one week prior to the final inspection.

**ES-3:** All erosion and sediment control measures are to be placed prior to or as the first step in clearing.

**ES-4:** A copy of the approved erosion and sediment control plan shall be maintained on the site at all times.

**ES-5:** Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the owner for review and approval by the plan approving authority.

**ES-6:** The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.

**ES-7:** All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final stabilization is achieved.

**ES-8:** During dewatering operations, water will be pumped into an approved filtering device.

**ES-9:** The contractor shall inspect all erosion control measures periodically and after each runoff-producing rainfall event. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately.

		<b>PLAN REVIEW MS CHECKLIST</b> (For Local Program Review Only)	
		Local Program:	
Project Name and Description:			
Reviewed By:		Review Date:	
File Number:	Date Plan Approved:	RLD Identified?	
In accordance with the VESCH narrative checklist, the project narrative is:			
		Adequate	Inadequate
Does the plan address the maintenance responsibilities of the permittee? Yes No			
MS	YES	NO	NA
<b>MINIMUM STANDARD DESCRIPTION (4VAC50-30-40)</b>			
1	X		
Have temporary and permanent stabilization been addressed?			
Are practices shown on the plan?			
Are limits of clearing and grading shown on the plan?			
Seed specifications?			
2	X		
Are soil stockpiles and borrow areas stabilized with sediment trapping measures?			
3	X		
Has establishment of permanent vegetation been addressed?			
4	X		
Are sediment trapping facilities to be constructed as a first step in land disturbing activity?			
5	X		
Has stabilization of earthen structures been addressed?			
6	X		
Are sediment traps and basins properly sized?			
Are detailed drawings in the plans?			
Are calculations included in the narrative or the plan?			
7	X		
Has design (i.e. with surface roughening, outlet protection) of cut and fill slopes been adequately addressed to minimize erosion?			
8		X	
Are paved flumes, channels, or slope drains required where necessary?			
9		X	
Has the potential for water seeps from slope faces been addressed with adequate drainage or other protection?			
10	X		
Is adequate inlet protection required on all storm sewer inlets prior to becoming operational?			
11		X	
Are channel lining and/or outlet protection required on stormwater conveyance channels?			
12		X	
Are in-stream construction measures required so that channel damage is minimized?			
13		X	
Are temporary stream crossings of non-erodible material required where applicable?			
14		X	
Is there evidence that all applicable federal, state, and local regulations pertaining to working in or crossing live watercourses have been addressed?			
15		X	
Has restabilization of areas subject to in-stream construction been adequately addressed?			
16	X		
Is stabilization and dewatering of utility trenches addressed?			
17	X		
Is the transport of soil and mud onto public roadways properly controlled (i.e. construction entrances, wash racks, daily cleaning of roadways, transport of sediment to a trapping facility)?			
18	X		
Has the removal of temporary control structures been addressed?			
Has maintenance of control structures been addressed?			
19	X		
Are properties and waterways downstream from development described and adequately protected from erosion and sediment deposition due to increases in stormwater runoff volume, velocity and peak flow rate?			
Are off-site, contributing areas accounted for?			
Are off-site, receiving areas and channels described and adequate?			
Are calculations included in the narrative or plan?			
COMMENTS: (use back if additional space is needed)			

Rev. 09-14-04

**FAIRFAX COUNTY PRIORITY RATING FORM FOR EROSION & SEDIMENT CONTROL**

PROJECT NAME: NAVY FEDERAL CREDIT UNION PROJECT NUMBER: \_\_\_\_\_  
TAX MAP: 39-3 EVALUATOR: \_\_\_\_\_ DATE: \_\_\_\_\_

<del>A. Percentage of Denuded Area to Total Site Area</del>	<del>B. Watercourse Crossing</del>	<del>C. Distance Between the Site Outfall and any Downstream, Wet Pond, Wetland, Parkland or other Land Deemed Environmentally Sensitive by the Director.</del>
<del>D. Distance of Denuded Area to Downstream Adjacent Property</del>	<del>E. Distance of Any Portion of the Denuded Area to a Natural Watercourse</del>	<del>F. Soil Erodibility (Based on Physiographic Setting)</del>

**Rating**

High  X  
Medium \_\_\_\_\_  
Low \_\_\_\_\_

**TOTAL OVERALL RATING:** N/A

**OVERALL RATING**

If > 22 \_\_\_\_\_  
If > 14 and < or = 22 \_\_\_\_\_  
If < or = 14 \_\_\_\_\_

PROJECT PRIORITY LEVEL: HIGH

\*\* Reserved for Fairfax County use \*\*

APPROVED BY: \_\_\_\_\_  
Plan Reviewer 06/09/2021

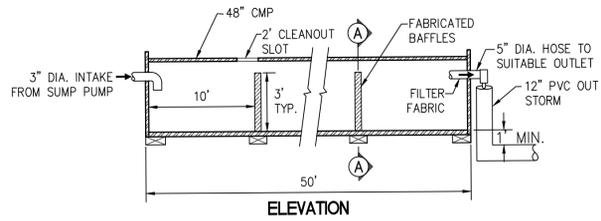
Descriptions on Reverse Side

**EROSION AND SEDIMENT CONTROL NOTES**

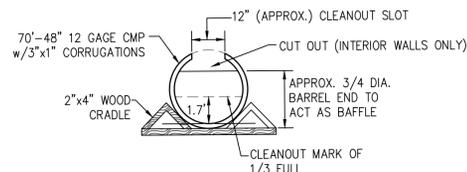
**444 MAPLE AVENUE WEST**  
SITE PLAN  
TOWN OF VIENNA, VIRGINIA

Engineers • Planners  
 Landscape Architects • Arborists  
**WALTER L. PHILLIPS**  
 FALLS CHURCH, VIRGINIA 22046  
 (703) 532-6163 Fax (703) 533-1301  
 www.WLPINC.com  
 ESTABLISHED 1945  
 DATE SUBMITTED: 05/07/2021  
 SUBJOB: 05/25/2021  
 SCALE: NONE  
 IN CORP. A T E D  
 DRAWN: DL  
 CHECKED: KVV

NO.	DESCRIPTION	DATE	APPROVED	REVISION



ELEVATION



CROSS-SECTION A-A

NOTE: TANK TO BE CLEANED OF ALL SEDIMENT WHEN 1/3 FULL OR AS DIRECTED BY COUNTY INSPECTOR. SEDIMENT TO BE PLACED AND STABILIZED ON SITE OR HAULED OFFSITE. SEDIMENT NOT TO BE INTRODUCED TO DRAINAGE OUTFALL SYSTEM.

VOLUME COMPUTATIONS:

REQUIRED:  $16 \times \text{PUMP RATE IN GPM} = 16 \times 36 = 576 \text{ CF}$   
(PUMP DISCHARGE RATE @ 14' HEAD USE 36 GPM)

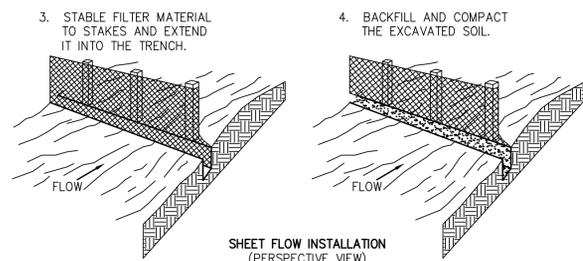
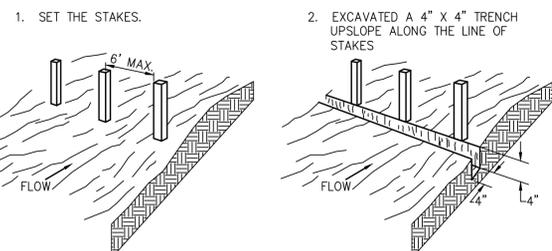
PROVIDED:  $\pi R^2 \times L = \pi (2)^2 \times 50' = 628 \text{ CF}$

NOTES:

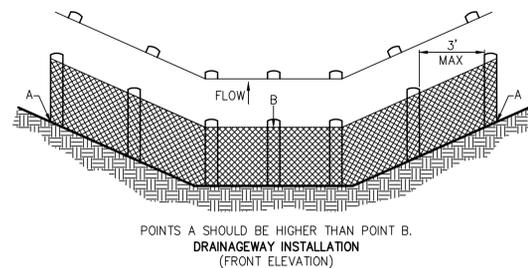
- TANK SHALL BE PROVIDED IN ACCORDANCE WITH VESCH STD & SPEC. 3.26.
- FINAL SIZING OF PUMP FLOW RATE AND PUMP TO BE DETERMINED BY THE CONTRACTOR. THE SEDIMENT TANK SIZE SHALL BE ADJUSTED AS NECESSARY IN ACCORDANCE WITH THE VESCH.

**PORTABLE SEDIMENT TANK**

NOT TO SCALE  
DETAIL FROM VESCH PLATE 3.26-1

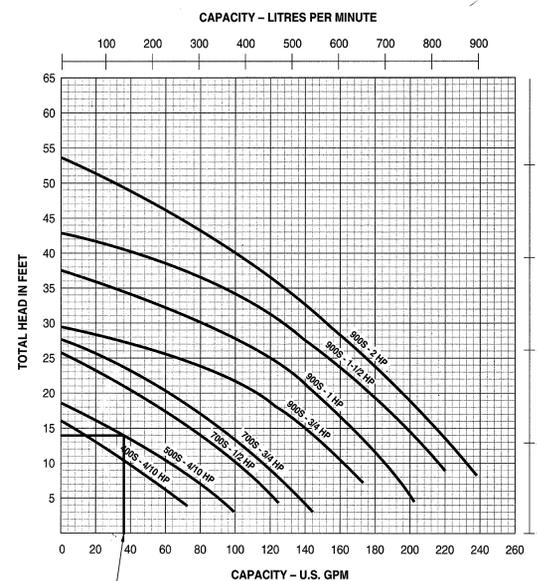


SHEET FLOW INSTALLATION (PERSPECTIVE VIEW)



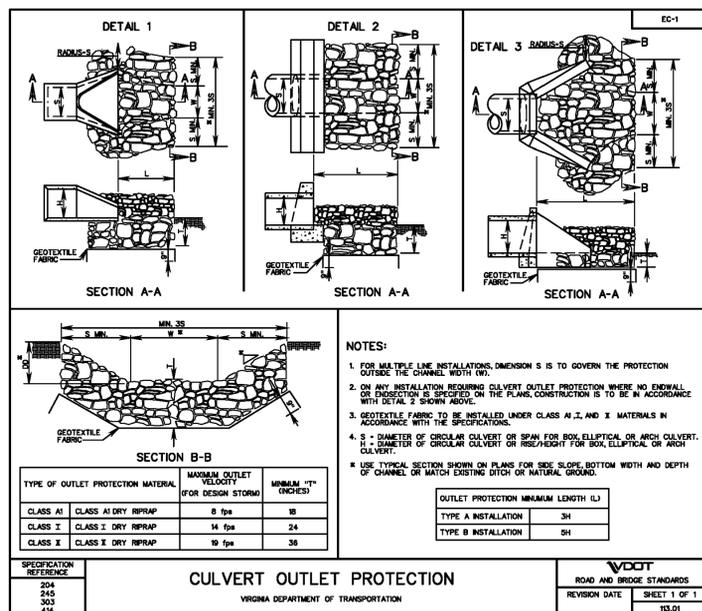
POINTS A SHOULD BE HIGHER THAN POINT B.  
DRAINAGEWAY INSTALLATION (FRONT ELEVATION)

**CONSTRUCTION OF SILT FENCE (WITHOUT WIRE SUPPORT)**  
NOT TO SCALE



CAPACITY = 36 GPM  
CONTRACTOR TO USE 5005-4/10 HP PUMP MAXIMUM

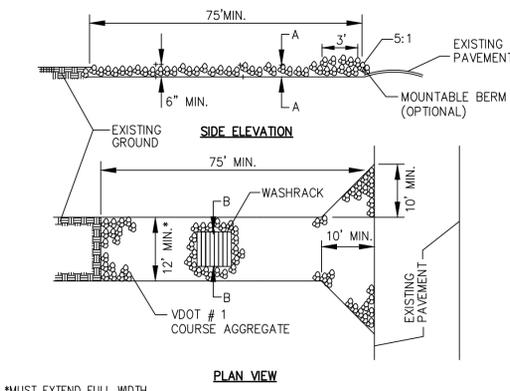
**PUMP SELECTION CHART**



**CULVERT OUTLET PROTECTION**

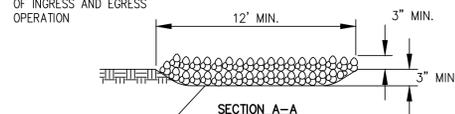
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS  
REVISION DATE: SHEET 1 OF 1  
103.01

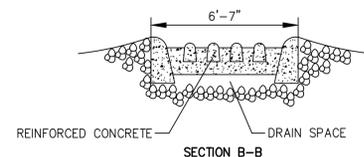


PLAN VIEW

\*MUST EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION



SECTION A-A



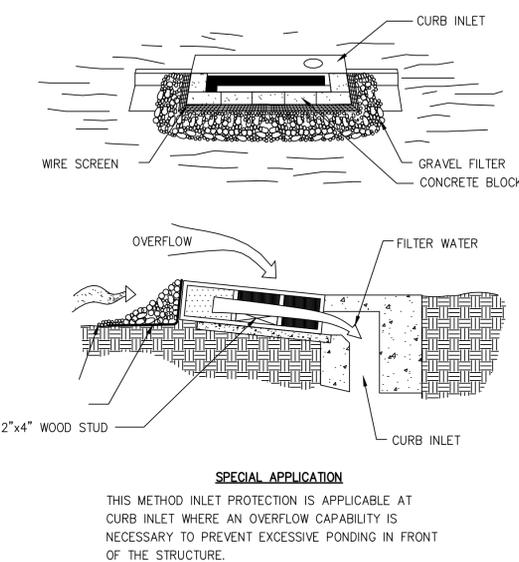
SECTION B-B

NOTE: WATER TRUCK IS TO BE PROVIDED ONSITE THROUGHOUT CONSTRUCTION FOR WATER SOURCE.

**CONSTRUCTION ENTRANCE**

NOT TO SCALE

DETAIL FROM VESCH PLATE 3.02-1 MODIFIED PER FAIRFAX COUNTY PFM SECTION 11-0110.3H.



**SPECIAL APPLICATION**

THIS METHOD INLET PROTECTION IS APPLICABLE AT CURB INLET WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

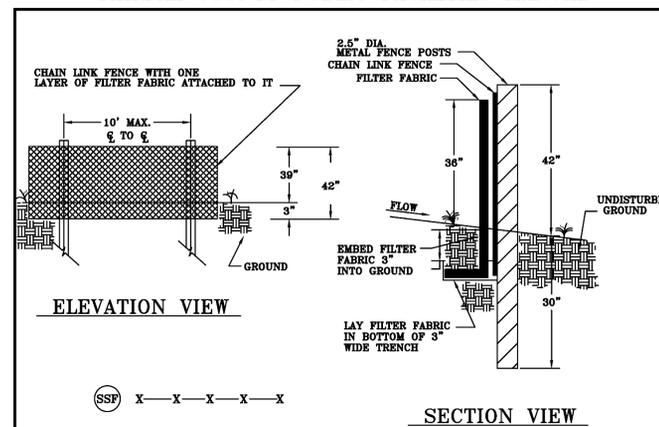
\* GRAVEL SHALL BE V.D.O.T. #3, #357 OR #5 COARSE AGGREGATE

**BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER**

NOT TO SCALE

DETAIL FROM VESCH PLATE 3.07-8

**FAIRFAX COUNTY PUBLIC FACILITIES MANUAL**



ELEVATION VIEW

SECTION VIEW

**SUPER SILT FENCE**  
NO SCALE

**FENCING**

Chain link fence shall be fastened securely to fence posts with wire ties. Filter fabric shall be fastened securely to chain link fence with ties spaced horizontally 24" at the top and midsection.

**NOTES**

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

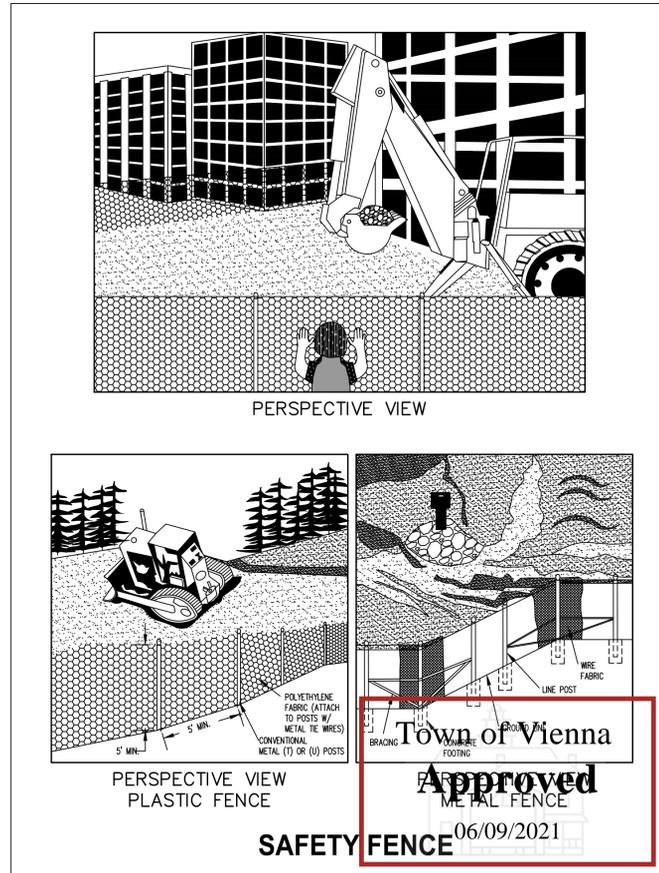
Ref. Sec. 11-0110.3, 11-0110.3J

**SUPER SILT FENCE**  
NO SCALE  
(TREE PROTECTION)  
NO SCALE

PLATE NO. 7-11  
STD. NO.

1992

3.01



PERSPECTIVE VIEW PLASTIC FENCE

**SAFETY FENCE**

SOURCE: ADAPTED FROM CONWED PLASTICS AND VDOT ROAD AND BRIDGE STANDARDS

PLATE 3.01-1

DETAIL FROM VESCH PLATE 3.01-1

Engineers • Surveyors • Planners  
Landscape Architects • Arborists  
**WALTER L. PHILLIPS**  
207 PARK AVENUE  
FALLS CHURCH, VIRGINIA 22046  
(703) 532-6163 Fax (703) 533-1301  
www.WLPHINC.com  
INCORPORATED ESTABLISHED 1945  
DATE SUBMITTED: 05/07/2021 SUB03: 4/19/2021  
SCALE: NONE  
DRAWN: DL  
CHECKED: KVV

APPROVED  
KAREN L. S. WHITE  
Lic. No. 041850  
05/25/21

NO.	DESCRIPTION	DATE	APPROVED BY	REVISION

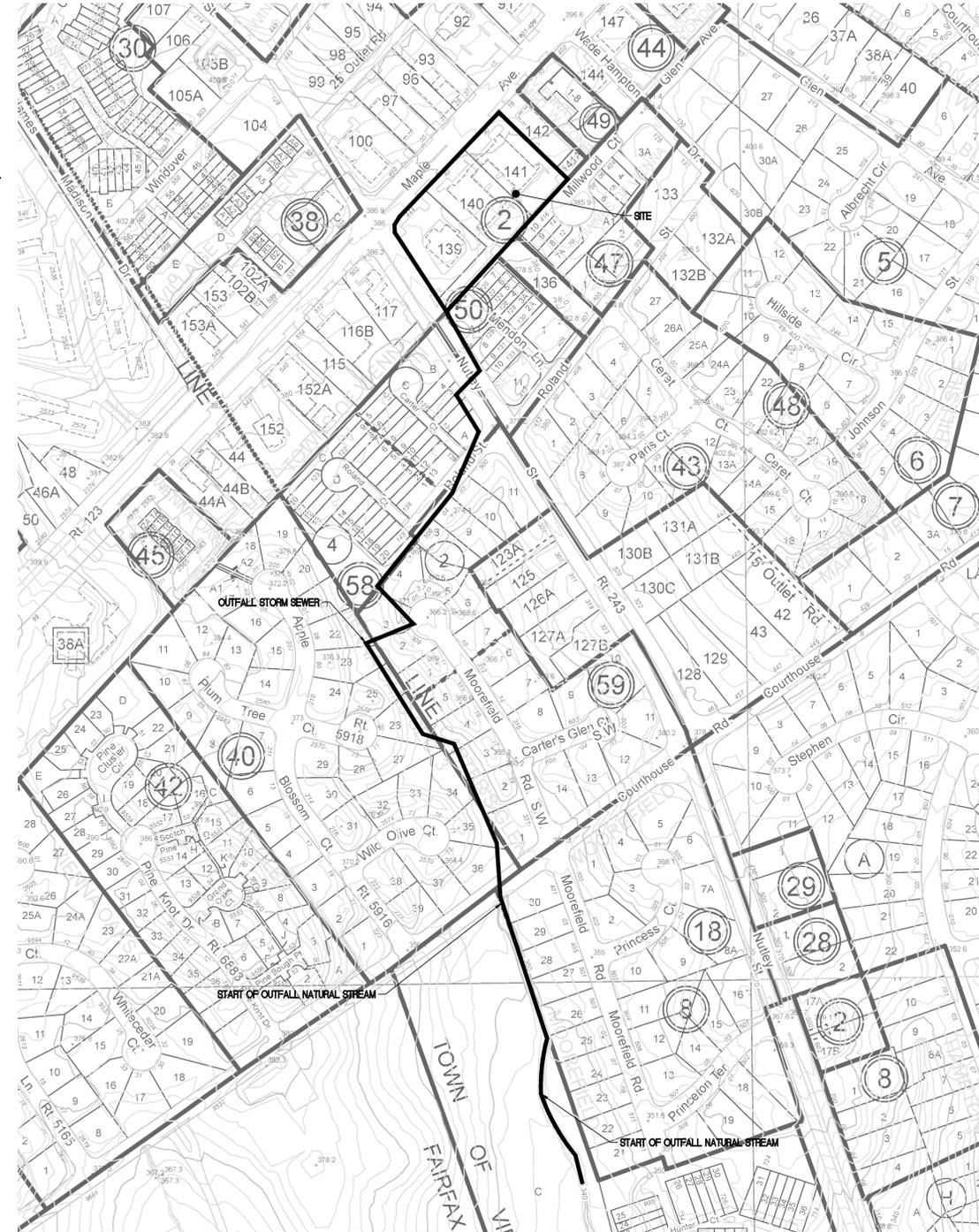
**EROSION AND SEDIMENT CONTROL DETAILS**

**444 MAPLE AVENUE WEST**  
SITE PLAN  
TOWN OF VIENNA, VIRGINIA

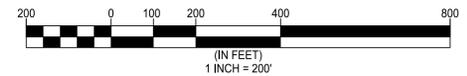
**OUTFALL NARRATIVE**

STORMWATER RUNOFF FROM THE SITE WILL BE COLLECTED IN PROPOSED DRAINAGE INLETS ONSITE. THE PROPOSED SITE DRAINAGE SYSTEM WILL CONNECT TO AN EXISTING STORM SEWER SYSTEM THAT CURRENTLY CROSSES THE PROPERTY. THIS EXISTING SYSTEM LEAVES THE PROPERTY AT THE PROPERTY'S SOUTHERN CORNER AND THEN HEADS SOUTH ALONG NUTLEY STREET. AFTER CROSSING NUTLEY STREET, THE STORM SEWER TURNS SOUTHWEST DOWN ROLAND STREET. IT THEN CONNECTS TO A LARGER STORM SEWER SYSTEM LOCATED BEHIND HOMES BETWEEN MOOREFIELD ROAD AND BLOSSOM COURT. THE STORM SEWER THEN CROSSES COURTHOUSE ROAD BEFORE OUTLETING INTO A STREAM CHANNEL THAT BEGINS ON THE SOUTH SIDE OF COURTHOUSE ROAD. THIS CHANNEL WAS RESTORED USING NATURAL DESIGN CONCEPTS UNDER THE HUNTERS BRANCH STREAM RESTORATION PLANS PREPARED BY WETLANDS STUDIES AND SOLUTIONS. SHEET 27 OF 32 OF THE FINAL PLANS INDICATES THAT THE RESTORED STREAM HAS A DRAINAGE AREA OF 389.4 ACRES WHICH IS MORE THAN 100 TIMES THE SITE AREA. THEREFORE, THE SITE OUTFALL CONSISTS OF STORM SEWER AND RESTORED CHANNEL AND NOT NATURAL STREAM.

THE RESTORATION PLAN ALSO SHOWS OUR SITE IN AREA THAT IS LARGELY IMPERVIOUS. HOWEVER, THE PROJECT WILL RESULT IN AN INCREASE IN IMPERVIOUS AREA. THE ENERGY BALANCE EQUATION WAS APPLIED TO THE SITE FOR THE 1-YEAR AND 10-YEAR STORM EVENTS. THE ADJUSTED FLOW RATES FOR EACH STORM EVENT WILL BE MET THROUGH THE USE OF PROPOSED PERVIOUS PAVEMENT PARKING SPACES OUTSIDE THE GARAGE AND AN UNDERGROUND DETENTION FACILITY. THEREFORE, STORMWATER RUNOFF FROM THE RESTORED CHANNEL'S 389 ACRE DRAINAGE AREA WILL STILL BE CONSISTENT WITH THE DESIGN FOR THE RESTORED CHANNEL WHICH SATISFIES THE VIRGINIA STORMWATER REGULATIONS. SEE NARRATIVE AND CHARTS ON SHEET C-0703 FOR ADDITIONAL INFORMATION.



Town of Vienna  
**Approved**  
06/09/2021



**STORMWATER OUTFALL ANALYSIS**

**444 MAPLE AVENUE WEST**

SITE PLAN

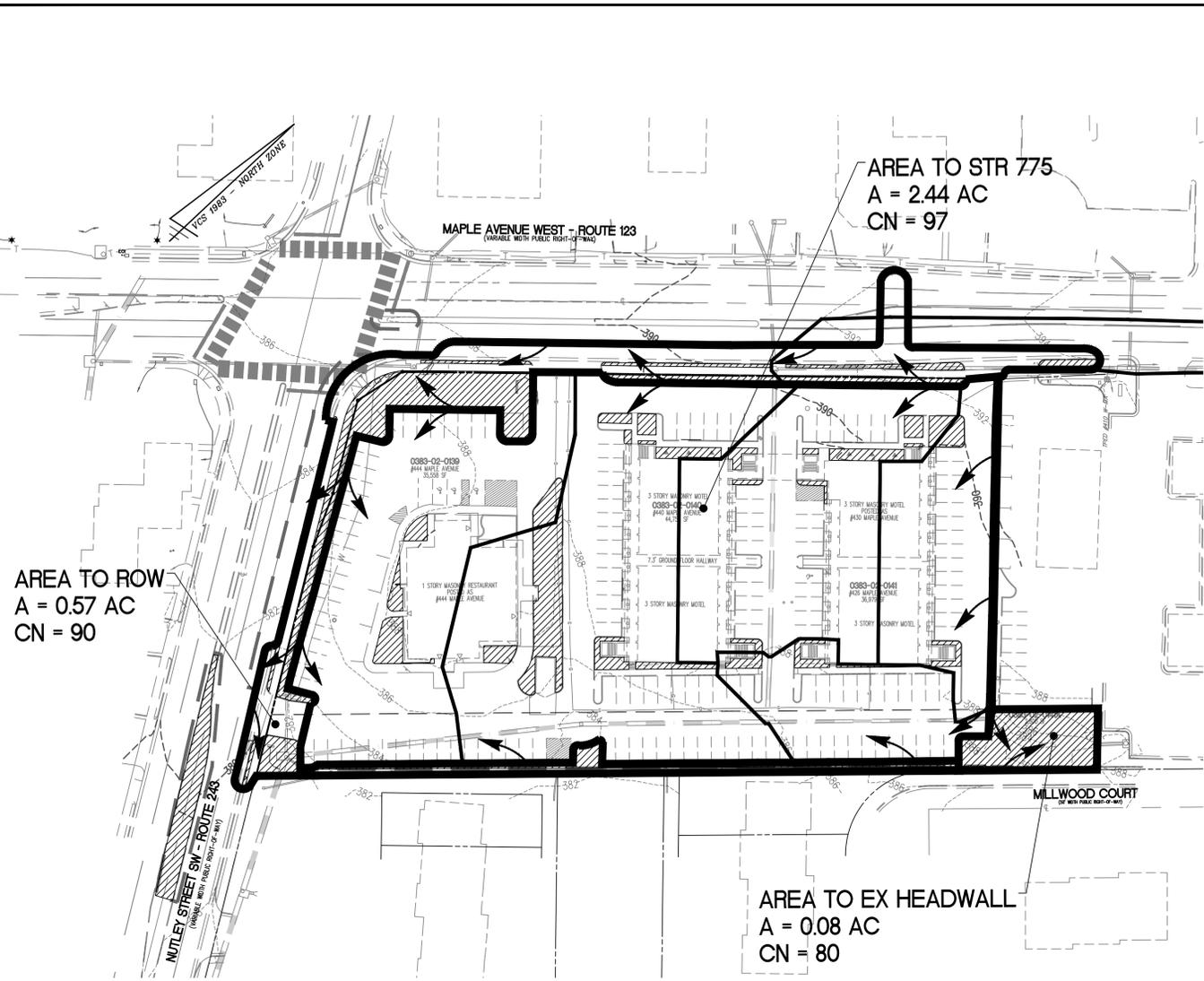
TOWN OF VIENNA, VIRGINIA

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

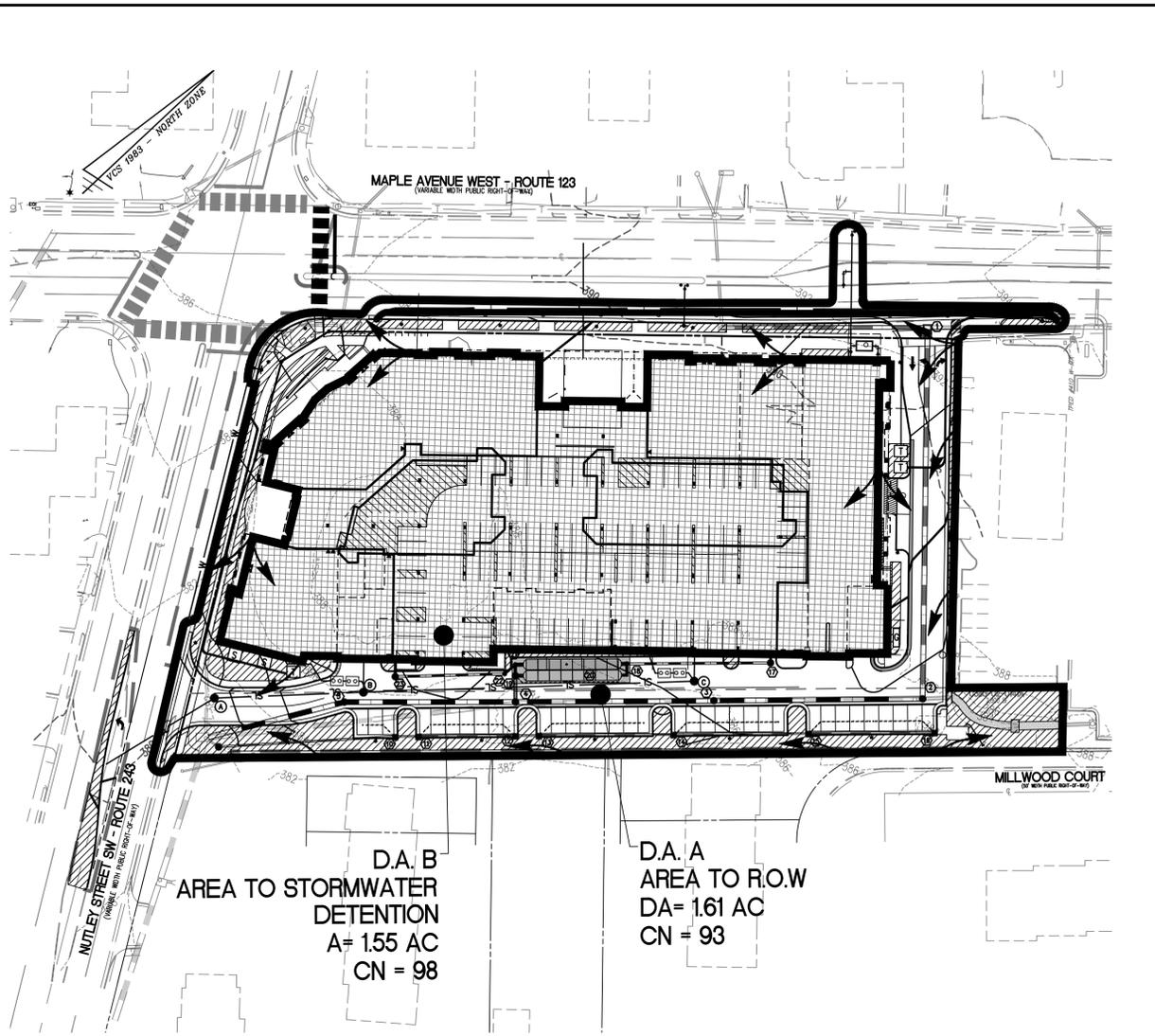


**WALTER L. PHILLIPS**  
INCORPORATED  
ESTABLISHED 1945  
DATE SUBMITTED: 05/07/2021  
SUBJOB: 05072020, SUBJOB3: 4/19/2021  
DRAWN: DL  
CHECKED: KW

Engineers • Surveyors • Planners  
Landscape Architects • Arborists  
207 PARK AVENUE  
FALLS CHURCH, VIRGINIA 22046  
(703) 532-6163 Fax (703) 533-1301  
www.WLPINC.com



**PRE-DEVELOPMENT DRAINAGE DIVIDES**



**POST-DEVELOPMENT DRAINAGE DIVIDES**

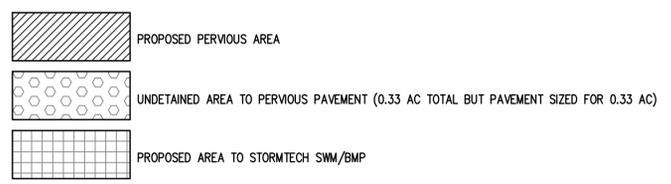
**LEGEND**



**EXISTING IMPERVIOUS AREA**

DISTURBED AREA = 3.15 AC  
 IMPERVIOUS AREA = 2.65 AC

**LEGEND**



**PROPOSED IMPERVIOUS AREA**

DISTURBED AREA = 3.15 AC  
 IMPERVIOUS AREA = 2.77 AC

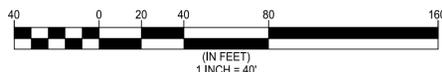
**SWM Water Quantity Energy Balance Worksheet**

SITE AREA (acre)	1-year		10-year	
	PRE	POST (adjusted)	PRE	POST (adjusted)
P	2.62	2.62	4.87	4.87
CN	95	95	95	96
S=1000/CN-10	0.53	0.53	0.53	0.42
0.2S	0.11	0.11	0.11	0.08
RV=(P-0.2S) <sup>2</sup> /(P-0.2S)+S	2.08	2.08	4.29	4.40

$Q_{Post Development} \leq I.F. * (Q_{pre-development} * RV_{pre-development}) / RV_{Developed}$

I.F.		0.8
<b>CHANNEL PROTECTION</b>		
Qpre-development	8.312	From TR55
QPost Development	8.312	From TR55
RVPost Development (with runoff reduction)	2.13	From RRM
Qallowable	6.49	

FLOOD CONTROL	
Qpre-development	16.37
QPost Development	16.55
RVPost Development (with runoff reduction)	4.36
Qallowable	16.11



**STORMWATER MANAGEMENT AND WATER QUALITY NARRATIVES**

- 1) THE 2014 STORMWATER REGULATIONS ARE APPLICABLE TO THIS PROJECT.
- 2) THE SITE IS CURRENTLY DEVELOPED WITH A RESTAURANT AND MOTEL. THEREFORE, THIS IS A REDEVELOPMENT PROJECT. THE WATER QUALITY REQUIREMENT IS TO REDUCE THE PRE-DEVELOPMENT PHOSPHOROUS LOAD RELEASED FROM THE SITE BY THE AMOUNT DETERMINED USING THE VRRM SPREADSHEET ISSUED BY THE VIRGINIA DEQ. SOME OF THE BMP REQUIREMENT WILL BE MET BY CONSTRUCTING PERMEABLE PAVEMENT. THESE FACILITIES ARE BEING DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE 2013 VERSION OF THE VIRGINIA DEQ STORMWATER DESIGN SPECIFICATIONS. THE OTHER PROPOSED BMP IS AN ADS STORMTECH CHAMBERS WITH ISOLATOR ROW SWM/BMP FACILITY. BETWEEN THESE TWO FACILITIES, THE PHOSPHOROUS LOAD REDUCTION WILL EXCEED THE REQUIREMENTS. PLEASE REFER TO COPIES OF THE VRRM SPREADSHEETS FOUND ON THIS SHEET.
- 3) THE CONCENTRATED RUNOFF FROM THE SITE WILL BE CONVEYED TO AN EXISTING STORM SEWER SYSTEM THAT HEADS SOUTH ALONG NUTLEY STREET. THERE IS NO NATURAL STREAM WITHIN THE OUTFALL (REFER TO THE OUTFALL NARRATIVE AND MAP SHEET C-0701). HOWEVER, THE INCREASE IN PROPOSED IMPERVIOUS AREA DOES NOT FOLLOW THE DESIGN INTENT OF THE HUNTERS BRANCH STREAM RESTORATION. THEREFORE THE ENERGY BALANCE EQUATION WILL BE SATISFIED FOR THE 1-YEAR PEAK RUNOFF RELEASE RATE FROM THE SITE TO SATISFY A CHANNEL PROTECTION REQUIREMENT.
- 4) THE FLOOD PROTECTION REQUIREMENT FOR THE SITE WILL BE MET THROUGH THE ENERGY BALANCE EQUATION. THEREFORE AN UNDERGROUND DETENTION SYSTEM IS PROPOSED TO REDUCE THE FLOW RATES FOR THE TEN-YEAR 24-HOUR STORMS TO COMPLY WITH THE FLOOD PROTECTION REQUIREMENTS. RUNOFF FLOW RATES HAVE BEEN MODELED USING HYDROFLOW HYDROGRAPHS SOFTWARE. PRINT-OUTS OF THE HYDROGRAPHS AND DETENTION FACILITY DESIGN DATA CAN BE FOUND ON FOLLOWING SHEETS.

Town of Vienna  
**Approved**  
 06/09/2021

**PRE AND POST DEVELOPMENT DRAINAGE AREAS**

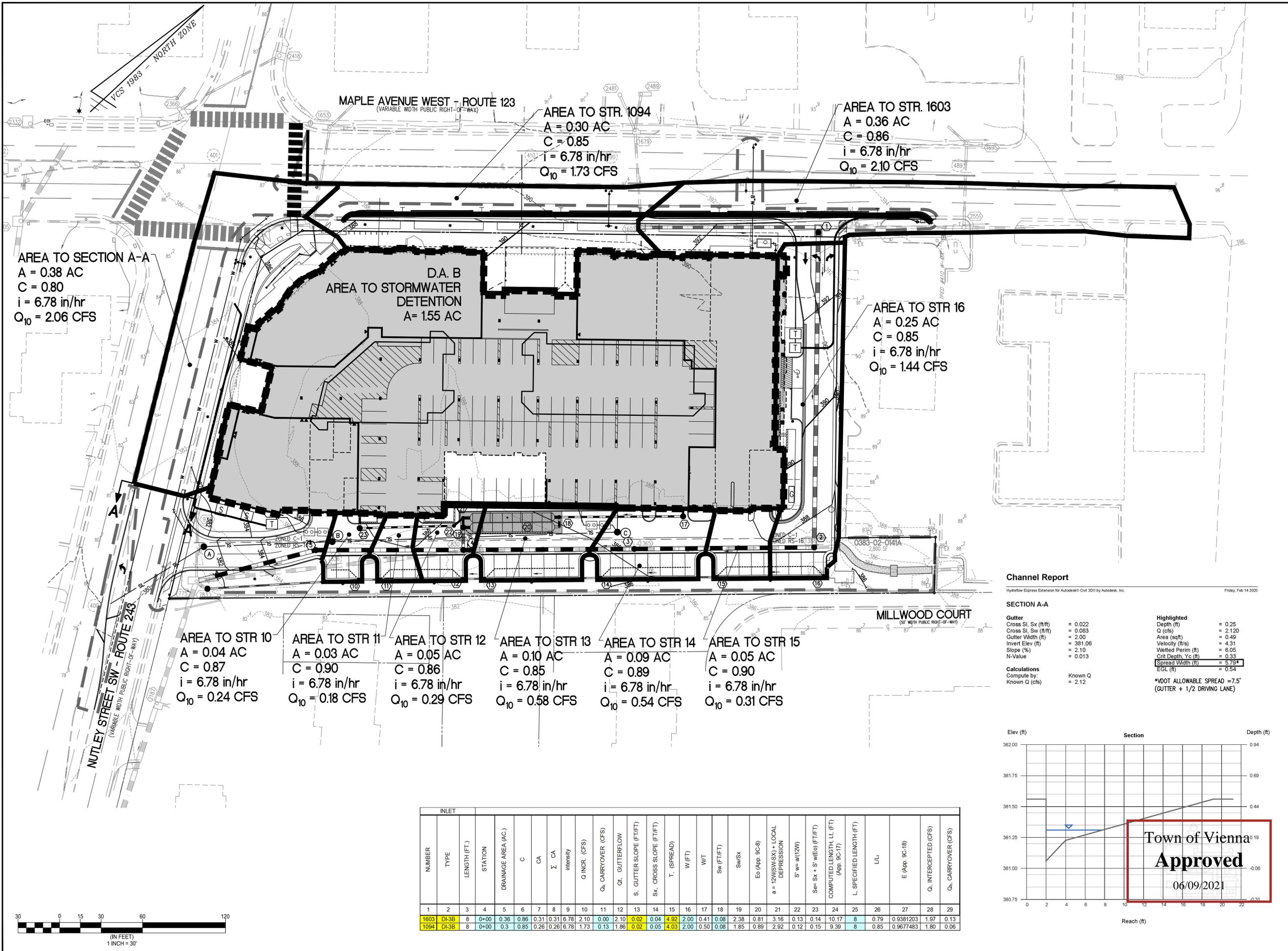
**444 MAPLE AVENUE WEST**

SITE PLAN

TOWN OF VIENNA, VIRGINIA

ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ARBORISTS  
**WALTER L. PHILLIPS**  
 INCORPORATED ESTABLISHED 1945  
 FALLS CHURCH, VIRGINIA 22046  
 207 PARK AVENUE  
 (703) 532-6163 Fax (703) 533-1301  
 www.WLPINC.com  
 DATE SUBMITTED: 05/19/2021  
 SUB02: 05/07/2020; SUB03: 4/19/2021  
 SUB04: 05/25/2021  
 SCALE: 1" = 40'  
 DRAWN: DL  
 CHECKED: KW

NO.	DESCRIPTION	DATE	REV. BY	APPROVED BY	DATE



AREA TO SECTION A-A  
 A = 0.38 AC  
 C = 0.80  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 2.06 CFS

AREA TO STR. 1094  
 A = 0.30 AC  
 C = 0.85  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 1.73 CFS

AREA TO STR. 1603  
 A = 0.36 AC  
 C = 0.86  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 2.10 CFS

D.A. B  
 AREA TO STORMWATER  
 DETENTION  
 A = 1.55 AC

AREA TO STR 16  
 A = 0.25 AC  
 C = 0.85  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 1.44 CFS

AREA TO STR 10  
 A = 0.04 AC  
 C = 0.87  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 0.24 CFS

AREA TO STR 11  
 A = 0.03 AC  
 C = 0.90  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 0.18 CFS

AREA TO STR 12  
 A = 0.05 AC  
 C = 0.86  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 0.29 CFS

AREA TO STR 13  
 A = 0.10 AC  
 C = 0.85  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 0.58 CFS

AREA TO STR 14  
 A = 0.09 AC  
 C = 0.89  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 0.54 CFS

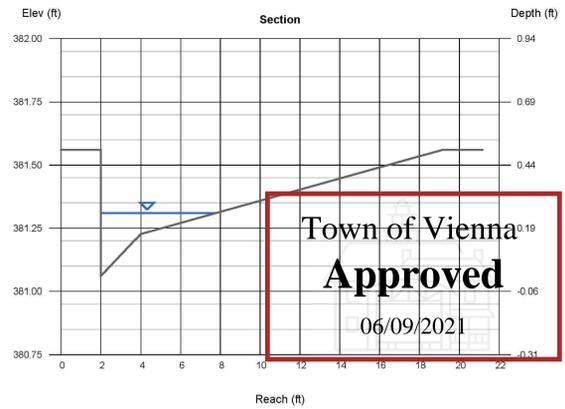
AREA TO STR 15  
 A = 0.05 AC  
 C = 0.90  
 i = 6.78 in/hr  
 Q<sub>10</sub> = 0.31 CFS

**Channel Report**

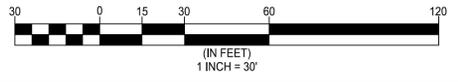
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Feb 14 2020

**SECTION A-A**

<b>Gutter</b>	Cross Sl, Sx (ft/ft) = 0.022	<b>Highlighted</b>	Depth (ft) = 0.25
	Cross Sl, Sw (ft/ft) = 0.083		Q (cfs) = 2.120
	Gutter Width (ft) = 2.00		Area (sqft) = 0.49
	Invert Elev (ft) = 381.06		Velocity (ft/s) = 4.31
	Slope (%) = 2.10		Wetted Perim (ft) = 2.05
	N-Value = 0.013		Crit Depth, Yc (ft) = 0.33
			Spread Width (ft) = 5.79*
			EGL (ft) = 0.54
<b>Calculations</b>	Known Q = 2.12		*VDOT ALLOWABLE SPREAD = 7.5'
Compute by:			(GUTTER + 1/2 DRIVING LANE)
Known Q (cfs)			



INLET																												
NUMBER	TYPE	LENGTH (FT.)	STATION	DRAINAGE AREA (AC.)	C	CA	Σ CA	intensity	Q INCR. (CFS)	Q <sub>0</sub> CARRYOVER (CFS)	Q <sub>1</sub> GUTTERFLOW	S <sub>1</sub> GUTTER SLOPE (FT/FT)	S <sub>x</sub> CROSS SLOPE (FT/FT)	T. (SPREAD)	W (FT)	WT	Sw (FT/FT)	Sw/Sx	E <sub>0</sub> (App. 9C-8)	a = 12(W/SW-SX) + LOCAL DEPRESSION	S' = w' a/(12W)	S <sub>1</sub> = S <sub>x</sub> + S' wE <sub>0</sub> (FT/FT)	COMPUTED LENGTH L <sub>1</sub> (FT)	L. SPECIFIED LENGTH (FT)	L/L	E (App. 9C-16)	Q <sub>1</sub> INTERCEPTED (CFS)	Q <sub>0</sub> CARRYOVER (CFS)
1603	DI-3B	8	0+00	0.36	0.86	0.31	0.31	6.78	2.10	0.00	2.10	0.02	0.04	4.92	2.00	0.41	0.08	2.38	0.81	3.16	0.13	0.14	10.17	8	0.79	0.9381203	1.97	0.13
1094	DI-3B	8	0+00	0.3	0.85	0.26	0.26	6.78	1.73	0.13	1.86	0.02	0.05	4.03	2.00	0.50	0.08	1.85	0.89	2.92	0.12	0.15	9.39	8	0.85	0.9677483	1.80	0.06



Engineers • Surveyors • Planners  
 Landscape Architects • Arborists  
**WALTER L. PHILLIPS**  
 INCORPORATED ESTABLISHED 1945  
 207 PARK AVENUE  
 FALLS CHURCH, VIRGINIA 22046  
 (703) 532-6163 Fax (703) 533-1301  
 www.WLPINC.com  
 DATE SUBMITTED: 05/07/2020, SUBJOB: 05/07/2020, SUBJOB: 4/19/2021  
 SCALE: 1" = 30'  
 DRAWN: DL  
 CHECKED: KW

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED

**INLET DRAINAGE DIVIDES**  
**444 MAPLE AVENUE WEST**  
 SITE PLAN  
 TOWN OF VIENNA, VIRGINIA  
**Town of Vienna Approved**  
 06/09/2021  
 SHEET: C-0702A

