GENERAL DEVELOPMENT PLAN (GDP)

VAN METRE HOMES AT MANASSAS

REZ #2021-01

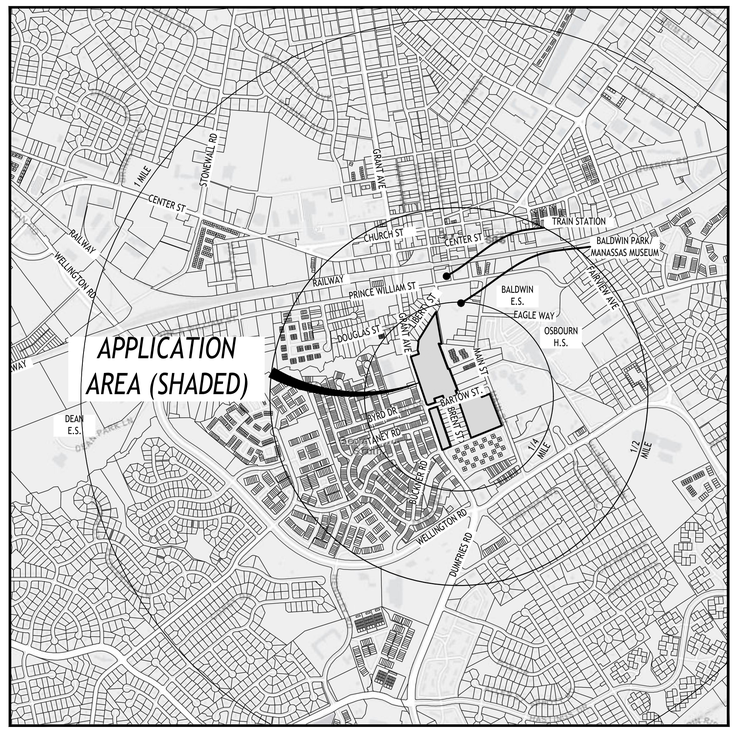
CITY OF MANASSAS, VIRGINIA

SUBMISSION NARRATIVE

THIS APPLICATION IS FOR A REZONING OF THE SUBJECT PROPERTY TO THE "CITY CENTER PLANNED (B-3.5)" ZONING DISTRICT FOR A RESIDENTIAL DEVELOPMENT CONSISTING OF SINGLE-FAMILY DETACHED HOMES, SINGLE-FAMILY ATTACHED HOMES (TOWNHOUSES), AND MULTIFAMILY (BACK-TO-BACK) UNITS. THE SUBMISSION PACKAGE CONTAINED HEREIN INCLUDES A GENERAL DEVELOPMENT PLAN (GDP). THE GDP FOR THE PROPOSED RESIDENTIAL UNITS AIMS TO CREATE A CONNECTED, URBAN COMMUNITY THAT IS WALKABLE AND WHICH INCLUDES AMENITIES AND RECREATIONAL SPACES.

GENERAL NOTES

1. THE REZONING APPLICATION INCLUDES A TOTAL OF 44 SUBDIVIDED LOTS ON GRANT AVENUE AND BRENT STREET, AND TWO ADJACENT PARCELS OF 1.67 AND 5.71 ACRES IN SIZE AS WELL AS THE PLATTED PUBLIC STREET RIGHT-OF-WAY OF BRENT STREET, NORTH OF BARTOW STREET, AND BEE STREET BETWEEN GRANT AVENUE AND BRENT STREET. THE TOTAL GROSS APPLICATION AREA IS: 753,932 SQUARE FEET OR 17.31 ACRES.
2. THE SUBJECT PROPERTY SHOWN IS CURRENTLY ZONED R-2-S (SMALL LOTS, SINGLE FAMILY RESIDENTIAL). THE POTENTIAL DEVELOPMENT YIELD UNDER THE EXISTING ZONING WAS CALCULATED BY ADDING THE 44 EXISTING SFD LOTS, AND THE PROJECTED YIELD OF 7 SFD FROM THE 1.67 ACRE PARCEL AND 24 SFD FROM THE 5.71 ACRE PARCEL, FOR A TOTAL OF 75 BY-RIGHT SFD.
3. TOPOGRAPHIC INFORMATION IS FROM THE CITY OF MANASSAS, VIRGINIA GEOGRAPHIC INFORMATION SYSTEM.
4. THE PHYSICAL IMPROVEMENTS AND BOUNDARY SURVEY SHOWN HEREON IS BASED ON A FIELD SURVEY BY J2 ENGINEERS IN JUNE 2020.
5. TO THE BEST KNOWLEDGE AND BELIEF, THERE ARE NO GRAVES OR BURIAL SITES LOCATED ON THE SUBJECT PROPERTY.
6. TO THE BEST KNOWLEDGE AND BELIEF, THERE ARE NO HAZARDOUS OR TOXIC SUBSTANCES ON THE SUBJECT PROPERTY.
7. THERE ARE NO SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PROTECTION AND PRESERVATION ON THE SUBJECT PROPERTY.
8. NO GEOTECHNICAL, SUBSURFACE, FIELD REVIEWS, RESEARCH, AGENCY OR GOVERNMENTAL RECORD REVIEWS, OR OTHER INVESTIGATIONS HAVE BEEN MADE FOR THE PURPOSE OF LOCATING, OR DETERMINING THE EXISTENCE OF WETLANDS, GROUNDWATER ELEVATION, HAZARDOUS MATERIALS, OR OTHER ENVIRONMENTAL CONCERNS ON THE SUBJECT PROPERTY.
9. THE SUBJECT PROPERTY LIES WITHIN ZONE AE AS SHOWN ON THE FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL 51153C0176D WITH AN EFFECTIVE DATE OF JANUARY 5, 1995. THE FLOODPLAIN LIMITS SHOWN THEREON DO NOT REFLECT CURRENT CONDITIONS IN THIS AREA. A FLOODPLAIN STUDY/ALTERATION WILL BE REQUIRED TO CORRECTLY ESTABLISH THE LIMITS OF THE BASE FLOOD ELEVATION. A PRELIMINARY ANALYSIS BY THIS FIRM HAS SHOWN THAT THE CULVERT UNDER GRANT AVENUE CREATES A TAILWATER CONDITION UP THE EXISTING CONCRETE TRAPEZOIDAL DRAINAGE CHANNEL TO THE OUTFALL POINT WITHIN THE SUBJECT PROPERTY.
10. THE SUBJECT PROPERTY IS LOCATED IN THE WINTER BRANCH TRIBUTARY WITHIN THE BROAD RUN WATERSHED.
11. THE SUBJECT PROPERTY IS SERVED BY PUBLIC WATER AND SEWER.
12. PROPOSED ZONING: B-3.5 CITY CENTER PLANNED.
13. TO THE BEST KNOWLEDGE AND BELIEF, THIS GDP CONFORMS TO ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, UNLESS OTHERWISE SPECIFICALLY NOTED.
14. NO ADVERSE EFFECTS TO THE NEIGHBORING PROPERTIES ARE ANTICIPATED WITH THIS DEVELOPMENT.
15. PROPOSED SIGNAGE WILL CONFORM TO ARTICLE IV OF THE ZONING ORDINANCE.
16. THE SUBJECT PROPERTIES ARE WITHIN ONE-HALF MILE OF AN ACTIVE RAILROAD LINE. THIS WILL BE DISCLOSED TO FUTURE PROPERTY OWNERS.
17. ALL LIGHTING ALONG PUBLIC STREETS WILL BE IN CONFORMANCE WITH THE DCSM.
18. UNLESS OTHERWISE MODIFIED HEREIN, BUFFERS SHALL BE PROVIDED IN ACCORDANCE WITH ARTICLE 3, SECTION 3-400 OF THE DCSM.
19. MAINTENANCE OF COMMON OPEN SPACE, LANDSCAPING, PRIVATE STREETS AND BMP FACILITIES SHALL BE THE RESPONSIBILITY OF FUTURE HOME OWNERS' ASSOCIATION.
20. REASONABLE ADJUSTMENTS DUE TO FINAL DESIGN OR ENGINEERING SHALL BE PERMITTED IF SUCH ADJUSTMENTS ARE DEEMED TO BE IN SUBSTANTIAL CONFORMANCE WITH THE GDP BY THE ZONING ADMINISTRATOR.
21. ALL TRASH AND RECYCLING CONTAINERS WILL BE STORED INTERNAL TO THE UNIT.
22. STORMWATER MANAGEMENT AND BMPS WILL BE PROVIDED IN SEVERAL LOCATIONS THROUGHOUT THE SITE TO PROVIDE THE REQUIRED QUALITY TREATMENT AND QUANTITY REDUCTION. FOR PRELIMINARY COMPUTATIONS AND NARRATIVES REGARDING STORMWATER MANAGEMENT AND ADEQUATE OUTFALL, SEE SHEETS 12-14.



VICINITY MAP

SCALE : 1"=1000'

VA. STATE GRID NORTH

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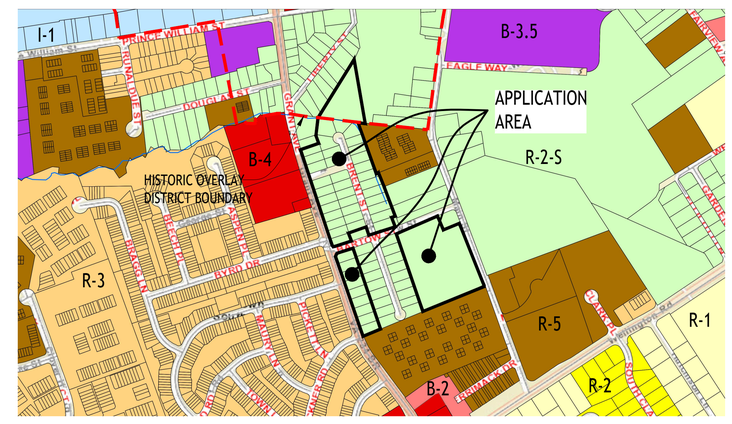
Sheet List Table

01 COVER SHEET
02 OVERALL PLAN & SITE TABULATIONS
03 EXISTING CONDITIONS PLAN
04 EXISTING CONDITIONS PLAN
05 EXISTING CONDITIONS PLAN
06 LAYOUT PLAN
07 LAYOUT PLAN
08 LAYOUT PLAN
09 UTILITY LAYOUT
10 UTILITY LAYOUT
11 UTILITY LAYOUT
12 SWM POST-DEVELOPMENT MAP
13 SWM COMPUTATIONS
14 SWM COMPUTATIONS
15 STREET SECTIONS
16 LOT TYPICALS
17 OVERALL CONCEPTUAL LANDSCAPE PLAN
18 CONCEPTUAL LANDSCAPE PLAN
19 CONCEPTUAL LANDSCAPE PLAN
20 CONCEPTUAL LANDSCAPE PLAN
21 OPEN SPACE EXHIBIT
22 LANDSCAPE NOTES AND COMPUTATIONS
23 FIRE ACCESS AND TURNING MOVEMENTS
24 EXISTING VEGETATION MAP
25 CERTIFIED PLAT
26 SANITARY SEWER CAPACITY STUDY



EX. ZONING MAP

SCALE : 1"=500'

ENGINEER

J2 ENGINEERS
4080 LAFAYETTE CENTER DRIVE
SUITE 330
CHANTILLY, VA. 20151
703.361.1550

APPLICANT

VAN METRE HOMES AT MANASSAS LLC
9900 MAIN STREET
SUITE 500
FAIRFAX, VA 22031
703.425.2600

OWNERS

MARSHALL ENTERPRISES,
a Virginia general partnership
STEELE ENTERPRISES,
a Virginia general partnership
STEELE PROPERTIES,
a Virginia general partnership
SMITH HOLMES TRUSTEE
9111 GRANT AVENUE
MANASSAS, VA 20110

TRAFFIC ENGINEER

VHB
1775 GREENSBORO STATION PLACE
SUITE 200
TYSONS, VA 22102
703.847.3071

I HEREBY PROFFER THAT THE DEVELOPMENT OF THE SUBJECT PROPERTY OF THIS APPLICATION SHALLBE IN STRICT ACCORDANCE WITH THE CONDITIONS SET FORTH IN THIS SUBMISSION, UNLESS AMENDMENT THERETO IS MUTUALLY AGREED UPON BY THE CITY COUNCIL AND THE UNDERSIGNED.

ROY BARNETT (GROUP PRESIDENT, LAND ACQUISITION PLANNING DEVELOPMENT)

PLAN STATUS

DATE	DESCRIPTION
12-17-20	INITIAL CHECKLIST REVIEW
12-21-20	1ST SUBMISSION TO CITY
04-12-21	2ND SUBMISSION TO CITY

J2 Engineers, Inc.
4080 Lafayette Center Drive
Suite 330
Chantilly, Va. 20151

703.361.1550 (office)
703.956.6845 (fax)
www.j2engineers.com

COMMONWEALTH OF VIRGINIA
ROBERT W. BROWN
Lic. No. 037041
04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: AS NOTED

PLAN DATE
12.17.20
12.21.20
04.12.21

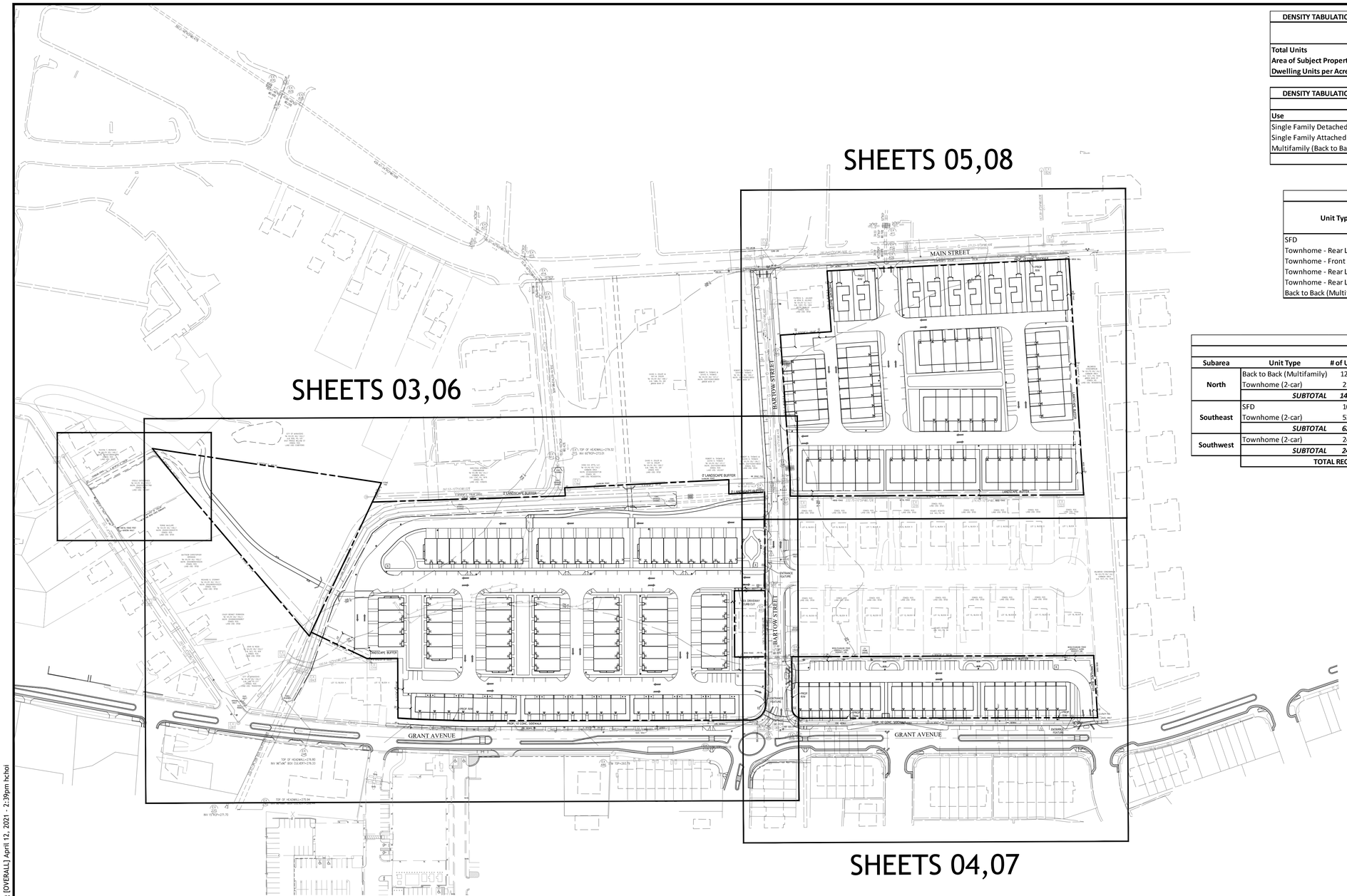
COVER SHEET
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET
01
OF
26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-01-COVER.dwg [COVER] April 12, 2021 - 2:39pm hchol



DENSITY TABULATIONS						
	Southwest Assemblage	North Assemblage	Steele Lot 2	Southeast Assemblage	Acquired ROW	TOTAL
Total Units	24	145		62		**231**
Area of Subject Property (Ac.)	1.7	7.0	1.7	5.7	1.2	**17.3**
Dwelling Units per Acre (Avg)	13.7	20.8		10.9		**13.3**

DENSITY TABULATIONS			
	Comp Plan Density		
Use	**# of Units**	**Units / Acre**	**Acres**
Single Family Detached	10		0.9
Single Family Attached	97	12	8.1
Multifamily (Back to Back)	124	15	8.3
TOTAL	**231**		**17.3**

RESIDENTIAL UNIT TABULATIONS					
Unit Type	**Size**	**Southwest Assemblage**	**North Assemblage**	**Southeast Assemblage**	**Unit Type Subtotal**
SFD	*100' wide lot*			10	**10**
Townhome - Rear Load	*20' wide unit*			13	**13**
Townhome - Front Load	*24' wide unit*			39	**39**
Townhome - Rear Load Cottage	*28' wide unit*		21		**21**
Townhome - Rear Load	*20' wide unit*	24			**24**
Back to Back (Multifamily)	*24' wide unit*		124		**124**
	Dwelling Units	**24**	**145**	**62**	**231**

PARKING TABULATIONS								
			Parking Required		Parking Provided			
Subarea	**Unit Type**	**# of Units**	**Ratio**	**Spaces**	**Garage**	**Driveway**	**Surface**	**TOTAL**
North	Back to Back (Multifamily)	124	1.75	217	124	124	62	
	Townhome (2-car)	21	2.5	53	42	0		
	SUBTOTAL	***145***		***270***	***166***	***124***	***62***	***352***
Southeast	SFD	10	2.0	20	20	20	28	
	Townhome (2-car)	52	2.5	130	104	104		
	SUBTOTAL	***62***		***150***	***124***	***124***	***28***	***276***
Southwest	Townhome (2-car)	24	2.5	60	48	0	36	
	SUBTOTAL	***24***		***60***	***48***	***0***	***36***	***84***
	TOTAL REQUIRED SPACES			**480**			**TOTAL PROVIDED SPACES**	***712***

OFF-SITE ON-STREET PARKING	
Grant Avenue	39
Main Street	0
Bartow Street	24
SUBTOTAL OFF-SITE SPACES	***63***
OVERALL TOTAL PROVIDED SPACES	**775**

ZONING REQUIREMENTS, B-3.5, CITY CENTER PLANNED				
	REQUIREMENT		**PROVIDED**	
Mimimum Height	35	Feet	35	Feet min.
Maximum Height	65	Feet	65	Feet max.
Min. Front Street Setback[1]	12	Feet	12	Feet min.
Max. Front Street Setback[1]	22	Feet	44	Feet max.*
[1]Measured from back of curb on front side of unit. Private street on driveway side is not considered a front.				
Landscape Buffer				
Adj. to "R" Districts	25	Feet	5	Feet min.*
Open Space @ 7%	1.21	Acres	4.29	Acres

***See Requested Modification**

REQUESTED MODIFICATIONS		
SYMBOL	**Z.O. REFERENCE**	**DESCRIPTION**
M1	130-304.D.1.B	A modification to permit an increase in the maximum allowed frontage setback of 22-feet from the back of curb of any street to 44-feet.
M2	130-304.D.4	A modification to permit a reduction in the required 25-foot perimeter buffer strip to a minimum of 5-feet with additional landscape / screening techniques, eliminate the 6' fence where existing fence or vegetation exists and to eliminate buffer where existing constraints will not allow for the installation of trees and/or fence.

VA. STATE GRID NORTH

GRAPHIC SCALE

0 50 100 200

(IN FEET)
1 INCH =100 FEET

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04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 100'

PLAN DATE
12.17.20
12.21.20
04.12.21

OVERALL PLAN & SITE TABULATIONS

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

CITY OF MANASSAS,
VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET
02
OF
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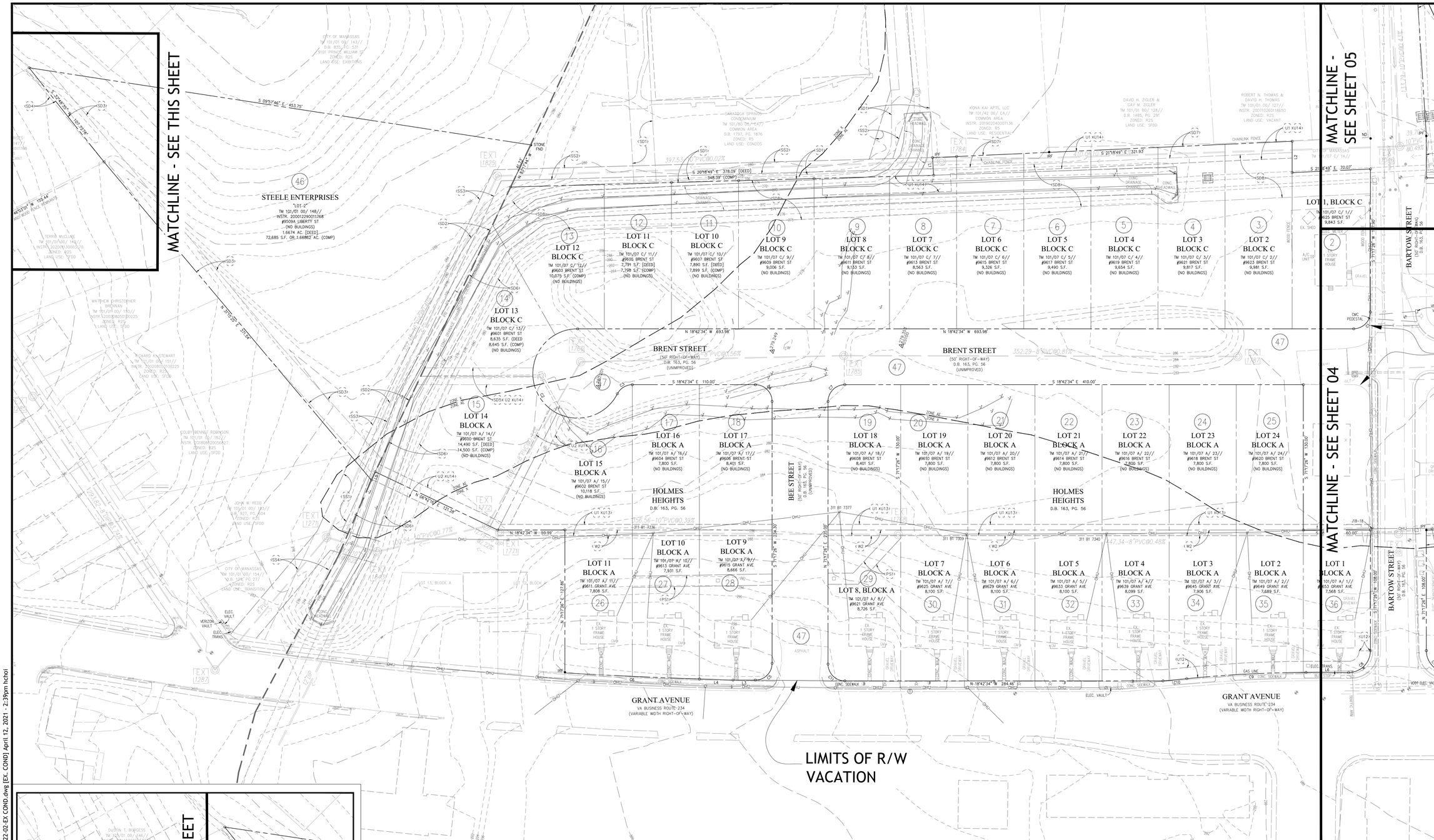

SYMBOL LEGEND

IPF	DENOTES IRON PIPE FOUND
IRF	DENOTES IRON ROD FOUND
	CLEANOUT
	CROSSWALK SIGNAL
GM	GAS METER
	GAS VALVE
	GUY WIRE
	HYDRANT
	LIGHT POLE
	SANITARY MANHOLE
	STORM GRATE
	STORM MANHOLE
	UTILITY MARKER POST
	UTILITY POLE
	UTILITY POLE w/ LIGHT
	WATER METER
	WATER VALVE
	WOOD BOLLARD
	EDGE OF GRAVEL
	EDGE OF PAVEMENT
OHU	OVERHEAD UTILITY LINE
	UNDERGROUND COMMUNICATIONS AS MARKED IN THE FIELD
	UNDERGROUND GAS LINE AS MARKED IN THE FIELD
	UNDERGROUND TELEPHONE AS MARKED IN THE FIELD
	UNDERGROUND WATERLINE AS MARKED IN THE FIELD
300	EXISTING CONTOUR LINE
T	TELEPHONE MANHOLE
T	TELEPHONE PEDESTAL
	TRAFFIC LIGHT POLE
	UNDERGROUND ELECTRIC AS MARKED IN THE FIELD
	UNDERGROUND FIBER OPTIC AS MARKED IN THE FIELD
	EXISTING WETLANDS

VA STATE GRID NAD 83 NORTH

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 INCH = 40 FEET

SEE SHEET 04 FOR OWNER INFORMATION
SEE SHEET 05 FOR EASEMENT LEGEND

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Robert Brown
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04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 40'

PLAN DATE
12.17.20
12.21.20
04.12.21

EXISTING CONDITIONS PLAN

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET 03 OF 26

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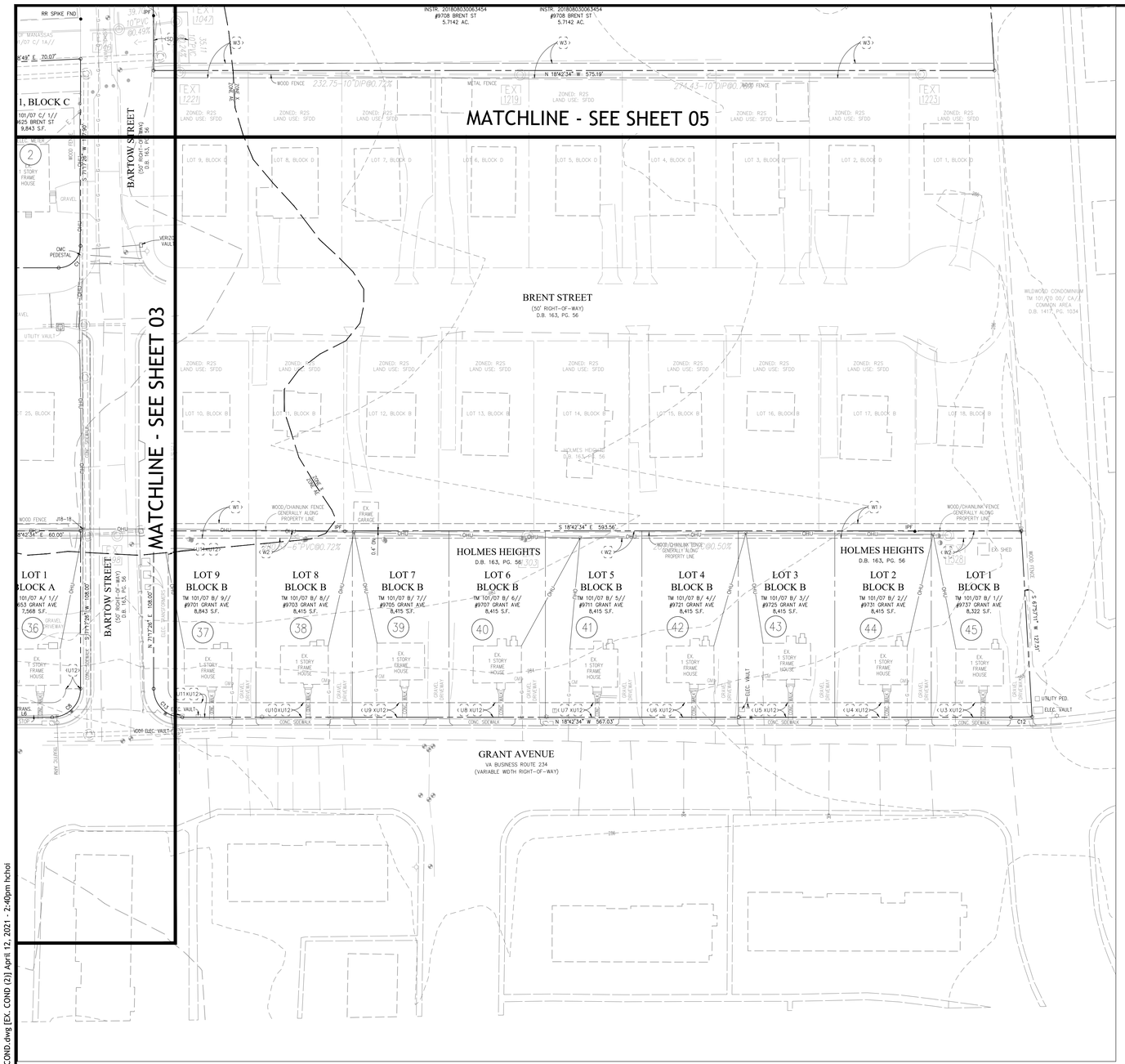

OWNERSHIP TABLE

	OWNER (NOW OR FORMERLY)	TAX MAP #	ADDRESS	EX. ZONING	AREA (SF)	AREA (AC)
1	SMITH HOLMES TRUSTEE	101/07 D/ 10A/ /	9708 MAIN ST.	R2S	248,914	5.7143
2	STEELE ENTERPRISES	101/07 C/ 1/ /	9625 BRENT ST.	R2S	9,843	0.2260
3	STEELE ENTERPRISES	101/07 C/ 2/ /	9623 BRENT ST.	R2S	9,981	0.2291
4	STEELE ENTERPRISES	101/07 C/ 3/ /	9621 BRENT ST.	R2S	9,817	0.2254
5	STEELE ENTERPRISES	101/07 C/ 4/ /	9619 BRENT ST.	R2S	9,654	0.2216
6	STEELE ENTERPRISES	101/07 C/ 5/ /	9617 BRENT ST.	R2S	9,490	0.2179
7	STEELE ENTERPRISES	101/07 C/ 6/ /	9615 BRENT ST.	R2S	9,326	0.2141
8	STEELE PROPERTIES	101/07 C/ 7/ /	9613 BRENT ST.	R2S	8,563	0.1966
9	STEELE PROPERTIES	101/07 C/ 8/ /	9611 BRENT ST.	R2S	9,134	0.2097
10	STEELE PROPERTIES	101/07 C/ 9/ /	9609 BRENT ST.	R2S	9,007	0.2068
11	STEELE ENTERPRISES	101/07 C/ 10/ /	9607 BRENT ST.	R2S	7,899	0.1813
12	STEELE ENTERPRISES	101/07 C/ 11/ /	9605 BRENT ST.	R2S	7,798	0.1790
13	STEELE ENTERPRISES	101/07 C/ 12/ /	9603 BRENT ST.	R2S	10,076	0.2313
14	STEELE ENTERPRISES	101/07 C/ 13/ /	9601 BRENT ST.	R2S	8,645	0.1985
15	STEELE ENTERPRISES	101/07 A/ 14/ /	9600 BRENT ST.	R2S	14,500	0.3329
16	STEELE ENTERPRISES	101/07 A/ 15/ /	9602 BRENT ST.	R2S	10,117	0.2323
17	STEELE ENTERPRISES	101/07 A/ 16/ /	9604 BRENT ST.	R2S	7,800	0.1791
18	STEELE ENTERPRISES	101/07 A/ 17/ /	9606 BRENT ST.	R2S	8,402	0.1929
19	STEELE ENTERPRISES	101/07 A/ 18/ /	9608 BRENT ST.	R2S	8,402	0.1929
20	STEELE ENTERPRISES	101/07 A/ 19/ /	9610 BRENT ST.	R2S	7,800	0.1791
21	STEELE ENTERPRISES	101/07 A/ 20/ /	9612 BRENT ST.	R2S	7,800	0.1791
22	STEELE ENTERPRISES	101/07 A/ 21/ /	9614 BRENT ST.	R2S	7,800	0.1791
23	STEELE ENTERPRISES	101/07 A/ 22/ /	9616 BRENT ST.	R2S	7,800	0.1791
24	STEELE ENTERPRISES	101/07 A/ 23/ /	9618 BRENT ST.	R2S	7,800	0.1791
25	STEELE ENTERPRISES	101/07 A/ 24/ /	9620 BRENT ST.	R2S	7,800	0.1791
26	MARSHALL ENTERPRISES	101/07 A/ 11/ /	9611 GRANT AVE.	R2S	7,808	0.1792
27	MARSHALL ENTERPRISES	101/07 A/ 10/ /	9613 GRANT AVE.	R2S	7,931	0.1821
28	MARSHALL ENTERPRISES	101/07 A/ 9/ /	9615 GRANT AVE.	R2S	8,666	0.1989
29	MARSHALL ENTERPRISES	101/07 A/ 8/ /	9621 GRANT AVE.	R2S	8,727	0.2003
30	MARSHALL ENTERPRISES	101/07 A/ 7/ /	9625 GRANT AVE.	R2S	8,100	0.1860
31	MARSHALL ENTERPRISES	101/07 A/ 6/ /	9629 GRANT AVE.	R2S	8,100	0.1860
32	MARSHALL ENTERPRISES	101/07 A/ 5/ /	9633 GRANT AVE.	R2S	8,100	0.1860
33	MARSHALL ENTERPRISES	101/07 A/ 4/ /	9639 GRANT AVE.	R2S	8,099	0.1859
34	MARSHALL ENTERPRISES	101/07 A/ 3/ /	9645 GRANT AVE.	R2S	7,906	0.1815
35	MARSHALL ENTERPRISES	101/07 A/ 2/ /	9649 GRANT AVE.	R2S	7,689	0.1765
36	MARSHALL ENTERPRISES	101/07 A/ 1/ /	9653 GRANT AVE.	R2S	7,568	0.1737
37	MARSHALL ENTERPRISES	101/07 B/ 9/ /	9701 GRANT AVE.	R2S	8,843	0.2030
38	MARSHALL ENTERPRISES	101/07 A/ 8/ /	9703 GRANT AVE.	R2S	8,415	0.1932
39	MARSHALL ENTERPRISES	101/07 A/ 7/ /	9705 GRANT AVE.	R2S	8,415	0.1932
40	MARSHALL ENTERPRISES	101/07 A/ 6/ /	9707 GRANT AVE.	R2S	8,415	0.1932
41	MARSHALL ENTERPRISES	101/07 A/ 5/ /	9711 GRANT AVE.	R2S	8,415	0.1932
42	MARSHALL ENTERPRISES	101/07 A/ 4/ /	9721 GRANT AVE.	R2S	8,415	0.1932
43	MARSHALL ENTERPRISES	101/07 A/ 3/ /	9725 GRANT AVE.	R2S	8,415	0.1932
44	MARSHALL ENTERPRISES	101/07 A/ 2/ /	9731 GRANT AVE.	R2S	8,415	0.1932
45	MARSHALL ENTERPRISES	101/07 A/ 1/ /	9737 GRANT AVE.	R2S	8,322	0.1910
46	STEELE ENTERPRISES	101/01 00/ 148/ /	9509A LIBERTY ST.	R2S	72,685	1.6686
			TOTAL AREA OF REAL PROPERTY:		**701,617**	**16.1069**
47	PLATTED RIGHT-OF-WAY	N/A	N/A	N/A	52,315	1.2010
			TOTAL GROSS APPLICATION AREA:		**753,932**	**17.3079**

SYMBOL LEGEND

IPF	DENOTES IRON PIPE FOUND		UTILITY MARKER POST		UNDERGROUND GAS LINE AS MARKED IN THE FIELD
IRF	DENOTES IRON ROD FOUND		UTILITY POLE		UNDERGROUND TELEPHONE AS MARKED IN THE FIELD
	CLEANOUT		UTILITY POLE w/ LIGHT		UNDERGROUND WATERLINE AS MARKED IN THE FIELD
	CROSSWALK SIGNAL		WATER METER	300	EXISTING CONTOUR LINE
GM	GAS METER		WATER VALVE		EXISTING WETLANDS
	GAS VALVE		WOOD BOLLARD		
	GUY WIRE		EDGE OF GRAVEL		
	HYDRANT		EDGE OF PAVEMENT		
	LIGHT POLE	OHU	OVERHEAD UTILITY LINE		
	SANITARY MANHOLE		UNDERGROUND COMMUNICATIONS AS MARKED IN THE FIELD		
	STORM GRATE		UNDERGROUND ELECTRIC AS MARKED IN THE FIELD		
	STORM MANHOLE		UNDERGROUND FIBER OPTIC AS MARKED IN THE FIELD		
	TELEPHONE MANHOLE				
	TELEPHONE PEDESTAL				
	TRAFFIC LIGHT POLE				

VA. STATE GRID NAD 83 NORTH

GRAPHIC SCALE

0 20 40 80

(IN FEET)
1 INCH = 40 FEET

SEE SHEET 05 FOR EASEMENT LEGEND

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DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 40'

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12.17.20
12.21.20
04.12.21

EXISTING CONDITIONS PLAN

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

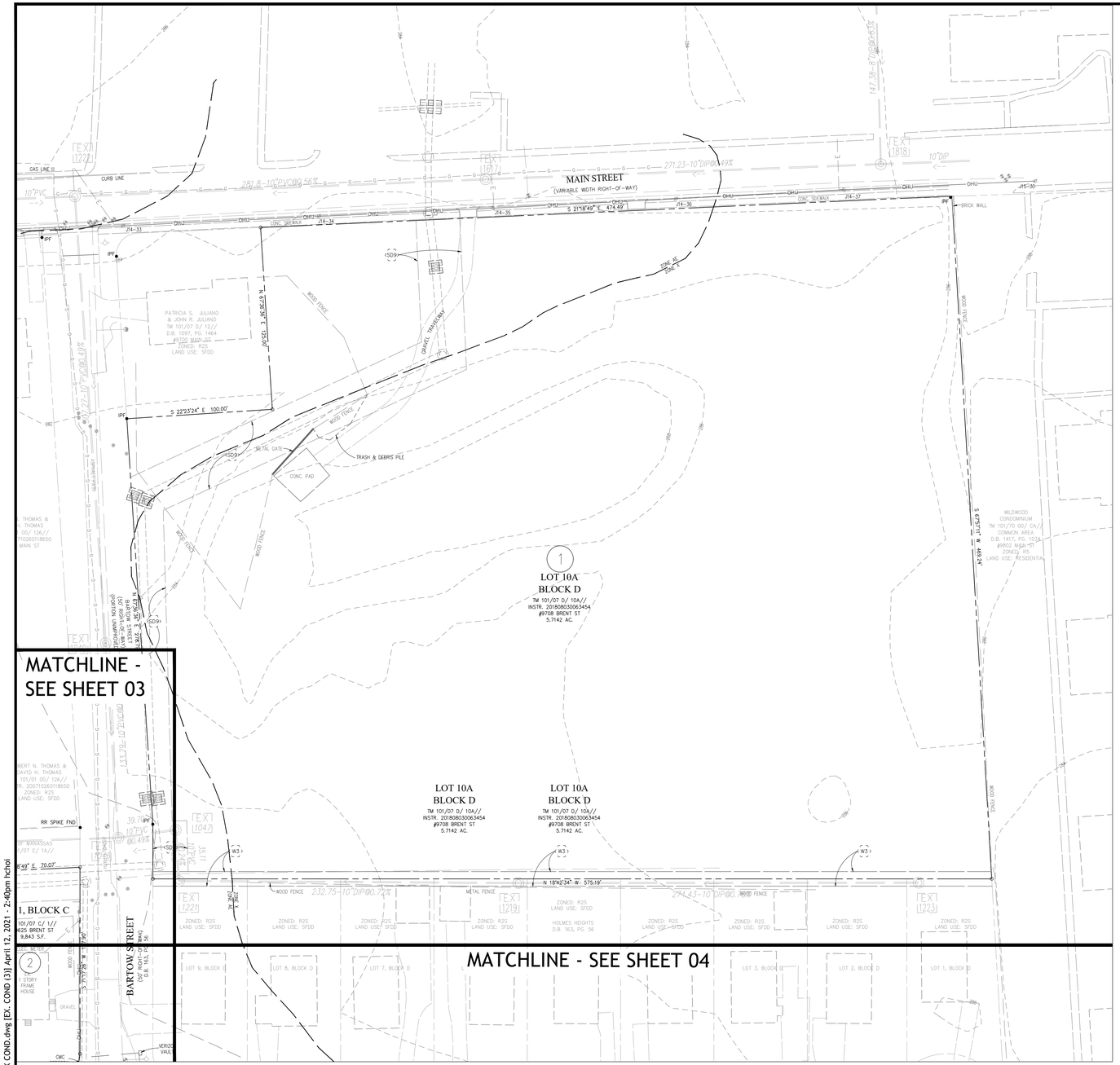
CITY OF MANASSAS,
VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET
04
OF
26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-02-EX COND.dwg [EX. COND (2)] April 12, 2021 - 2:40pm hchol



SYMBOL LEGEND

IPF	DENOTES IRON PIPE FOUND
IRF	DENOTES IRON ROD FOUND
	CLEANOUT
	CROSSWALK SIGNAL
GM	GAS METER
	GAS VALVE
	GUY WIRE
	HYDRANT
	LIGHT POLE
	SANITARY MANHOLE
	STORM GRATE
	STORM MANHOLE
	TELEPHONE MANHOLE
	TELEPHONE PEDESTAL
	TRAFFIC LIGHT POLE
	UTILITY MARKER POST
	UTILITY POLE
	UTILITY POLE w/ LIGHT
	WATER METER
	WATER VALVE
	WOOD BOLLARD
	EDGE OF GRAVEL
	EDGE OF PAVEMENT
OHU	OVERHEAD UTILITY LINE
	UNDERGROUND COMMUNICATIONS AS MARKED IN THE FIELD
	UNDERGROUND ELECTRIC AS MARKED IN THE FIELD
	UNDERGROUND FIBER OPTIC AS MARKED IN THE FIELD
	UNDERGROUND GAS LINE AS MARKED IN THE FIELD
	UNDERGROUND TELEPHONE AS MARKED IN THE FIELD
	UNDERGROUND WATERLINE AS MARKED IN THE FIELD
300	EXISTING CONTOUR LINE
	EXISTING WETLANDS

EASEMENT LEGEND

PS1	EX. 10' PRIVATE SANITARY SEWER EASEMENT D.B. 2835, PG. 1723
SD1	EX. STORM SEWER EASEMENT D.B. 1567, PG 1650
SD2	EX. STORM SEWER EASEMENT D.B. 1766, PG. 325 (APPROX. LOC.)
SD3	EX. 15' STORM DRAINAGE EASEMENT D.B. 2033, PG. 657
SD4	EX. STORM DRAINAGE EASEMENT D.B. 2033, PG. 664
SD5	EX. DRAINAGE EASEMENT D.B. 2033, PG. 671
SD6	EX. STORM SEWER EASEMENT D.B. 2871, PG. 127
SD7	EX. 10' STORM SEWER EASEMENT D.B. 2871, PG. 127
SD8	EX. 40' STORM SEWER EASEMENT D.B. 2871, PG. 127
SD9	EX. 30' STORM SEWER EASEMENT D.B. 2871, PG. 131 INSTR. 201508030063455
SS1	EX. 10' SANITARY SEWER EASEMENT INSTRUMENT UNKNOWN
SS2	EX. 10' SANITARY SEWER EASEMENT D.B. 1567, PG 1650
SS3	EX. 10' SANITARY SEWER EASEMENT D.B. 1766, PG. 325
SS4	EX. 25' STORM AND SANITARY SEWER EASEMENT D.B. 1835, PG. 502
U1	EX. 10' UTILITY EASEMENT D.B. 163, PG. 56 [UTILITIES & DRAINAGE FACILITIES]
U2	EX. 15' UTILITY EASEMENT D.B. 163, PG. 56 [UTILITIES & DRAINAGE FACILITIES]
U3	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 316 [NO SPECIFIC UTILITY NOTED IN DEED]
U4	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 320 [NO SPECIFIC UTILITY NOTED IN DEED]
U5	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 324 [NO SPECIFIC UTILITY NOTED IN DEED]
U6	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 328 [NO SPECIFIC UTILITY NOTED IN DEED]
U7	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 332 [NO SPECIFIC UTILITY NOTED IN DEED]
U8	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 336 [NO SPECIFIC UTILITY NOTED IN DEED]
U9	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 340 [NO SPECIFIC UTILITY NOTED IN DEED]
U10	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 344 [NO SPECIFIC UTILITY NOTED IN DEED]
U11	EX. 10' UTILITY EASEMENT D.B. 1815, PG. 348 [NO SPECIFIC UTILITY NOTED IN DEED]
U12	EX. 10' UTILITY EASEMENT D.B. 2871, PG. 120 [NO SPECIFIC UTILITY NOTED IN DEED]
U13	EX. 10' UTILITY EASEMENT D.B. 2871, PG. 127 [NO SPECIFIC UTILITY NOTED IN DEED]
U14	EX. 15' UTILITY EASEMENT D.B. 2871, PG. 127 [NO SPECIFIC UTILITY NOTED IN DEED]
W1	EX. 10' WATER & SEWER EASEMENT D.B. 163, PG. 56
W2	EX. 5' WATER & SEWER EASEMENT D.B. 2871, PG. 120
W3	EX. 10' WATER & SEWER EASEMENT D.B. 2871, PG. 131 INSTR. 201508030063455

VA. STATE GRID NAD 83 NORTH

GRAPHIC SCALE

0 20 40 80

(IN FEET)
1 INCH = 40 FEET

SEE SHEET 04 FOR OWNER INFORMATION

J2 Engineers, Inc.
4080 Lafayette Center Drive
Suite 330
Chantilly, Va. 20151

703.361.1550 (office)
703.956.6845 (fax)
www.j2engineers.com

COMMONWEALTH OF VIRGINIA
ROBERT W. BROWN
Lic. No. 037041
04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 40'

PLAN DATE
12.17.20
12.21.20
04.12.21

EXISTING CONDITIONS PLAN

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

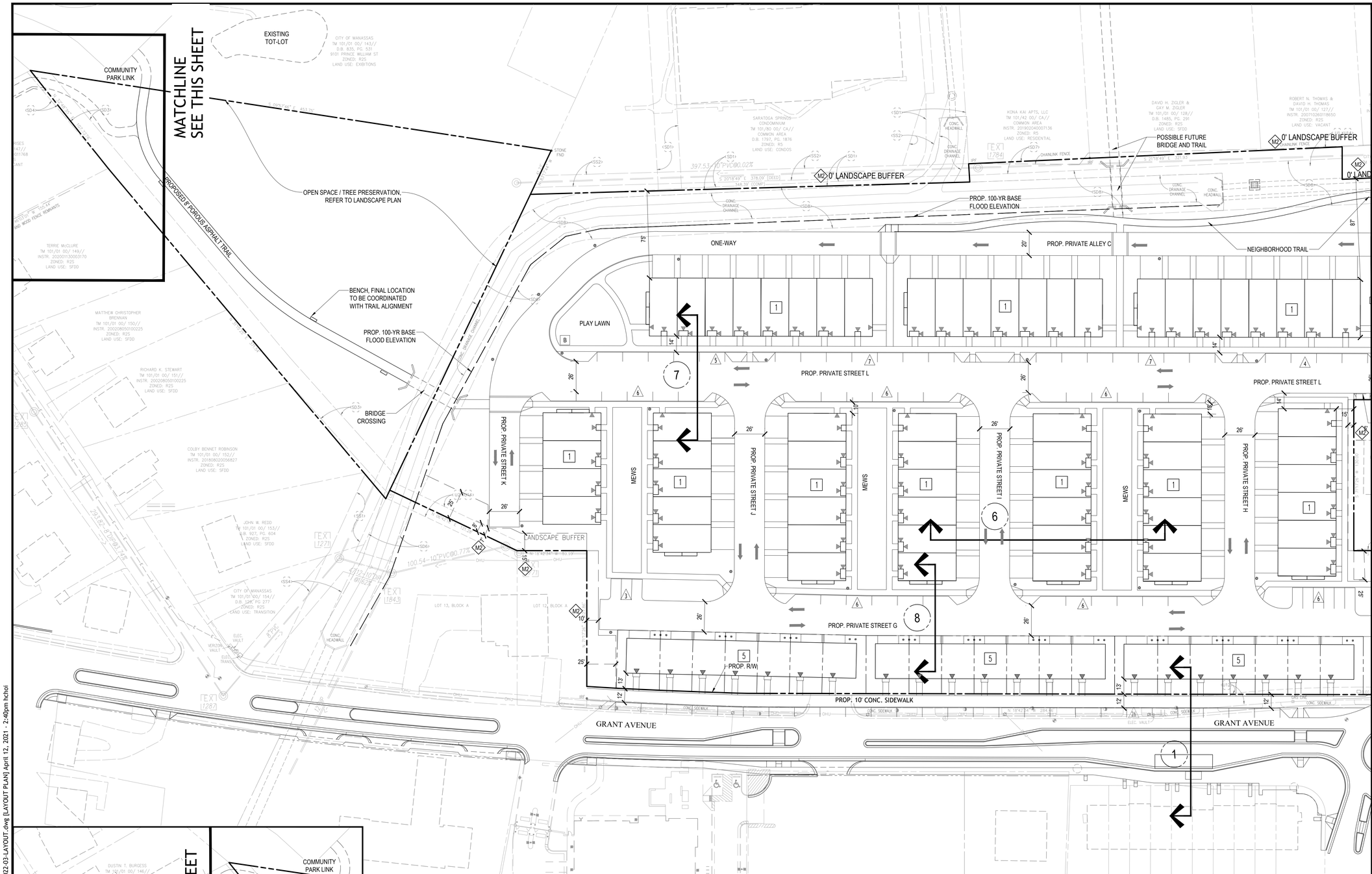
CITY OF MANASSAS,
VIRGINIA

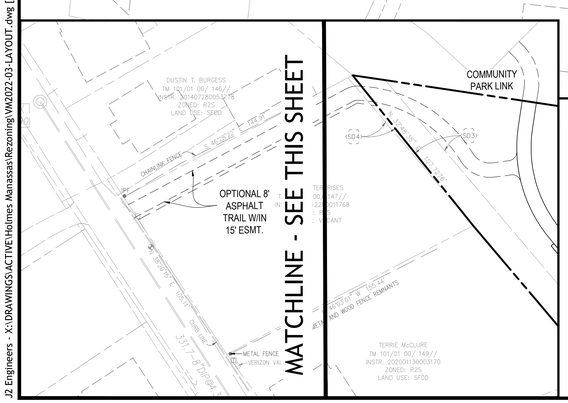
No.	DATE	DESCRIPTION

REVISIONS

SHEET
05
OF
26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-02-EX COND.dwg [EX. COND (3)] April 12, 2021 - 2:40pm hchoi





NOTES

1. FUTURE GRANT AVENUE IMPROVEMENTS SHOWN PER CITY OF MANASSAS DESIGN PLANS.
2. ALL PROPOSED UNITS SHALL BE SERVED BY PUBLIC WATER AND SEWER.
3. STORMWATER MANAGEMENT FACILITY LOCATIONS ARE ILLUSTRATIVE ONLY. ACTUAL QUANTITY, TYPE(S), AND LOCATION(S) WILL BE DETERMINED WITH FINAL ENGINEERING DESIGN.
4. BARTOW STREET TO REMAIN A PUBLIC STREET.
5. LOCATION AND QUANTITY OF LIGHT POLES IS SUBJECT TO CHANGE WITH FINAL ENGINEERING.

REQUESTED MODIFICATIONS

SYMBOL	Z.O. REFERENCE	DESCRIPTION
M1	130-304.D.1.B	A modification to permit an increase in the maximum allowed frontage setback of 22-feet from the back of curb of any street to 44-feet.
M2	130-304.D.4	A modification to permit a reduction in the required 25-foot perimeter buffer strip to a minimum of 5-feet with additional landscape / screening techniques, eliminate the 6' fence where existing fence or vegetation exists and to eliminate buffer where existing constraints will not allow for the installation of trees and/or fence.

UNIT TYPE LEGEND

1	BACK TO BACK
2	TOWNHOME- FRONT LOAD
3	TOWNHOME- REAR LOAD
4	SINGLE FAMILY HOME
5	TOWNHOME - REAR LOAD COTTAGE

LEGEND

4	TYPICAL ROAD SECTION (SEE SHEET 15)
	LIGHT POLE
	BENCH
S	POSSIBLE ENTRANCE FEATURE
B	BIKE RACK

VA. STATE GRID NAD 83 NORTH

GRAPHIC SCALE

0 20 40 80

(IN FEET)
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COMMONWEALTH OF VIRGINIA
ROBERT W. BROWN
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04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
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CONTOUR INT.= N/A
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PLAN DATE
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12.21.20
04.12.21

LAYOUT PLAN

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

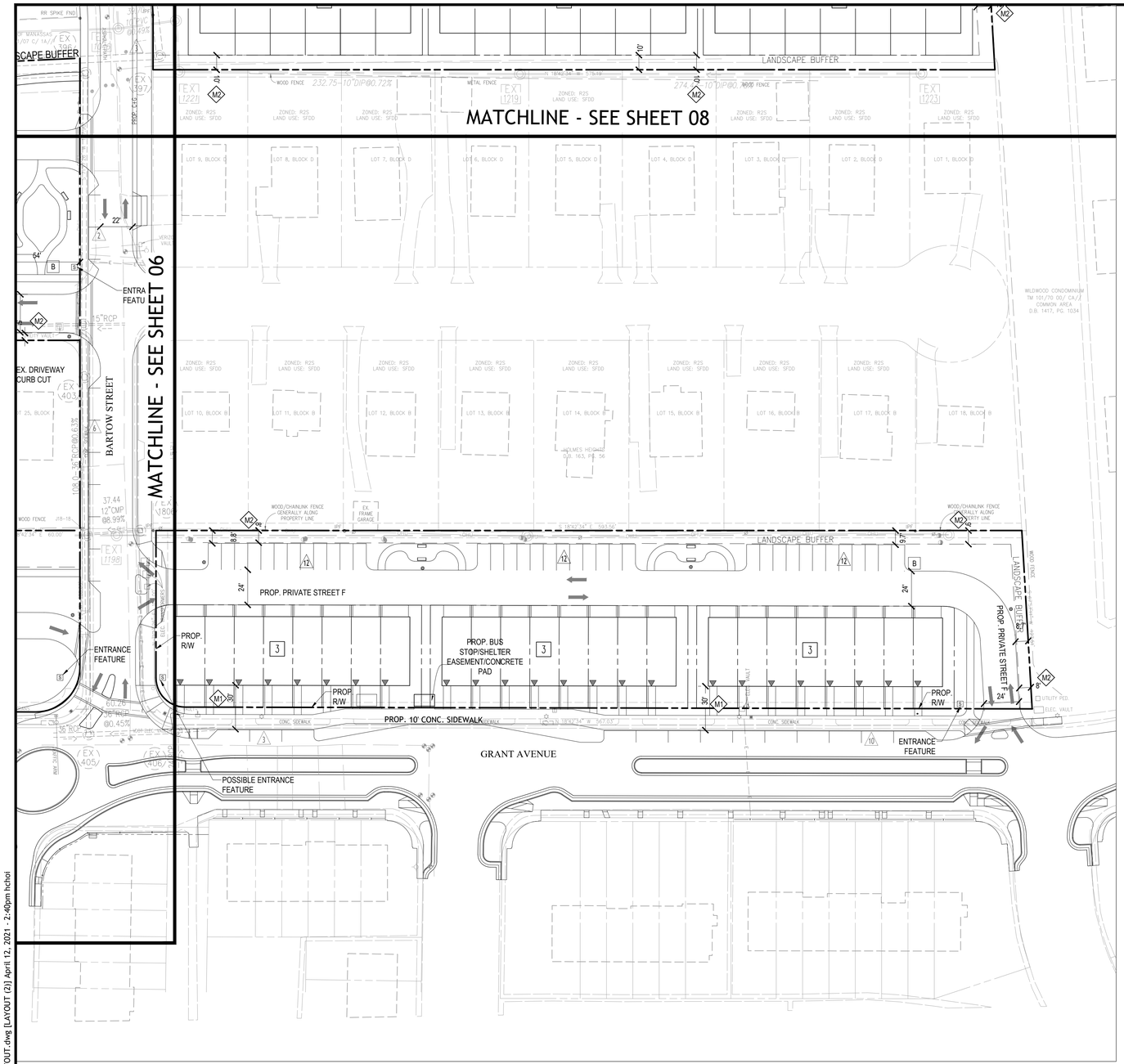
CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET 06 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-03-LAYOUT.dwg [LAYOUT PLAN] April 12, 2021 - 2:40pm hchoi



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LEGEND

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- LIGHT POLE
- BENCH
- S POSSIBLE ENTRANCE FEATURE
- B BIKE RACK

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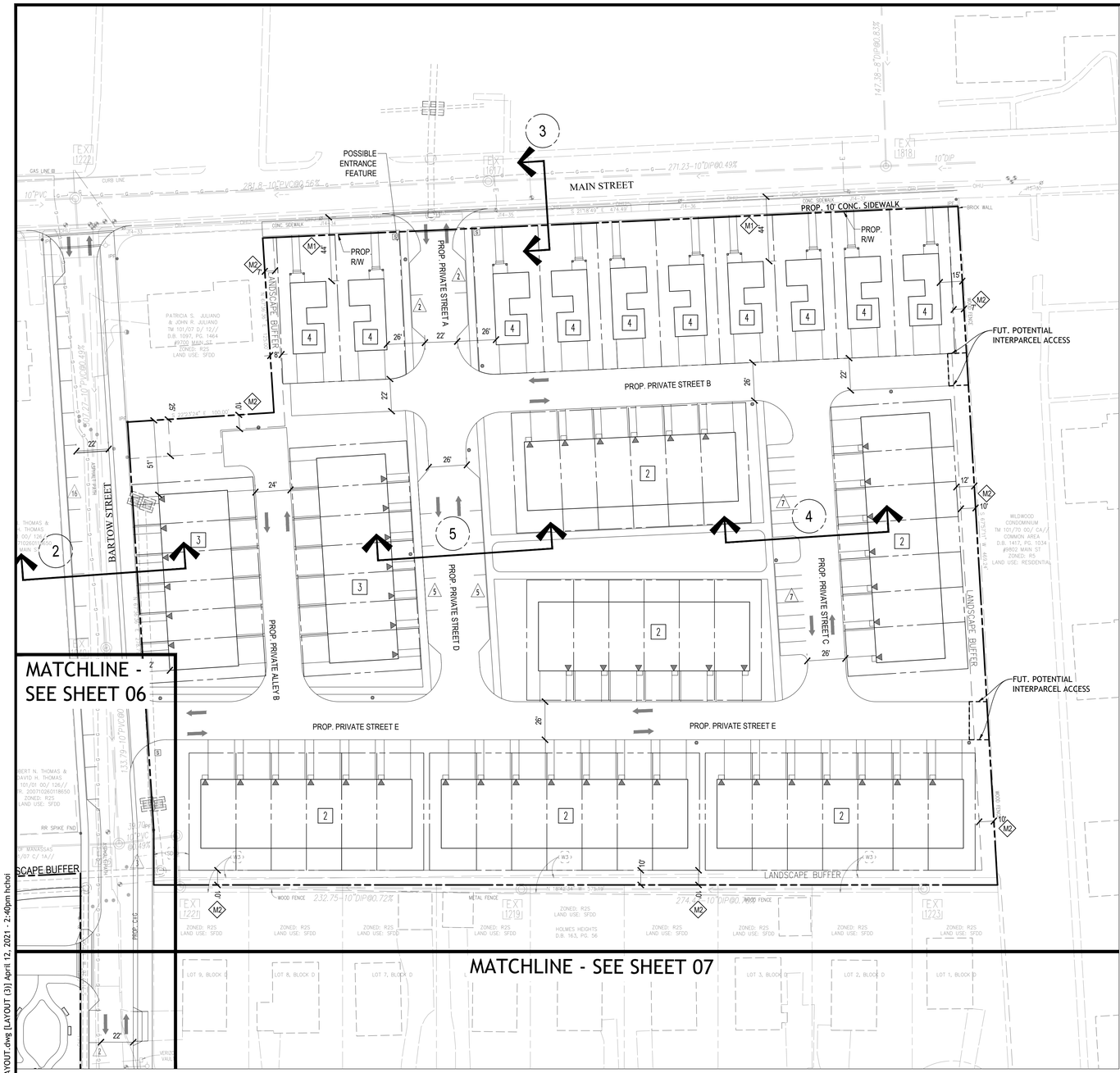
LAYOUT PLAN
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 07 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-03-LAYOUT.dwg,[LAYOUT (2)] April 12, 2021 - 2:40pm hchoi



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LEGEND

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	LIGHT POLE
	BENCH
S	POSSIBLE ENTRANCE FEATURE
B	BIKE RACK

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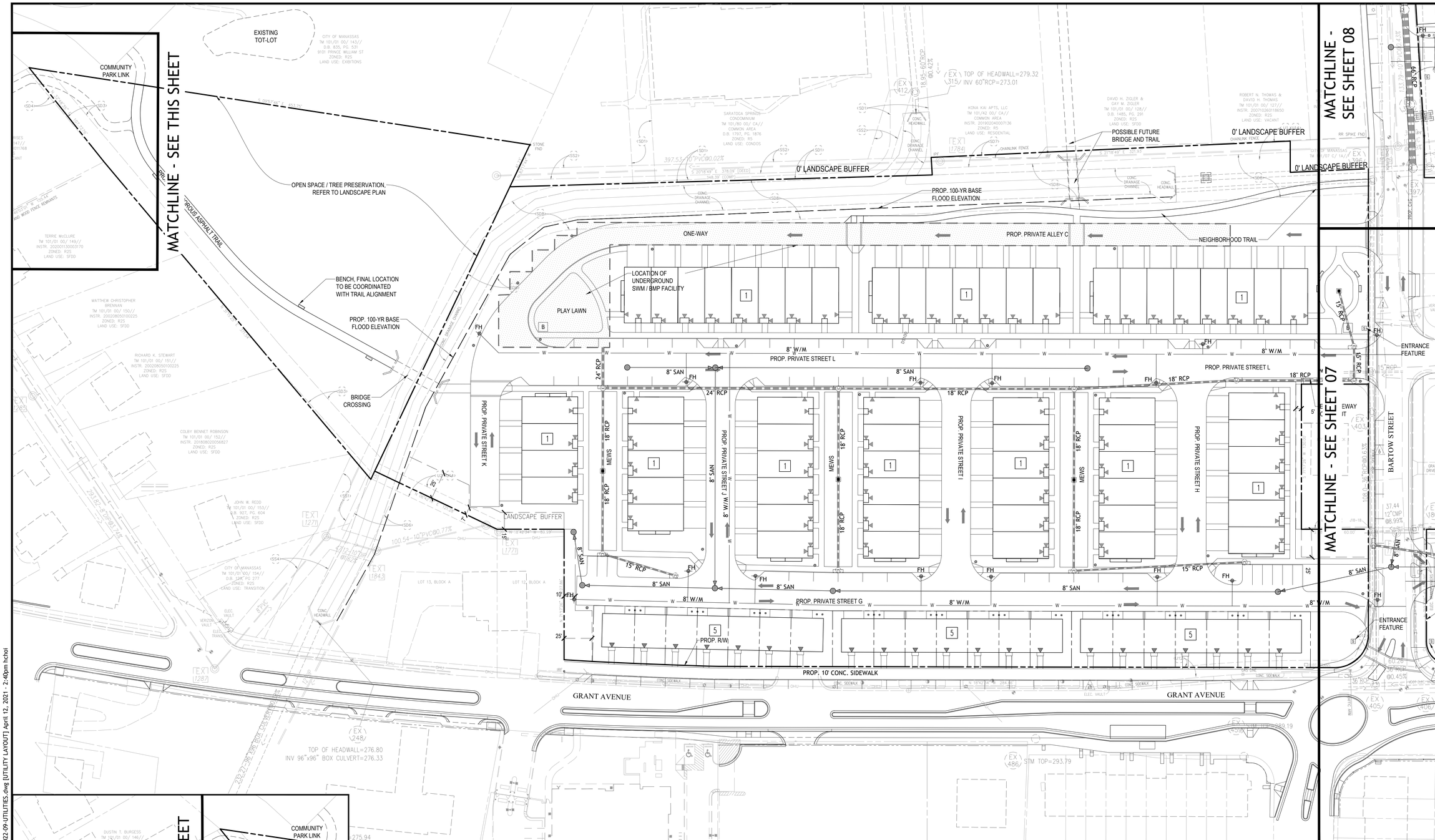
LAYOUT PLAN
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

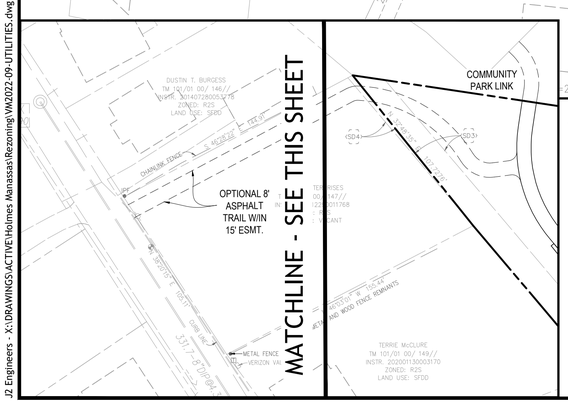
REVISIONS

No.	DATE	DESCRIPTION

SHEET 08 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-03-LAYOUT.dwg [LAYOUT (3)] April 12, 2021 - 2:40pm hchoi





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GRAPHIC SCALE

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UTILITY LAYOUT

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

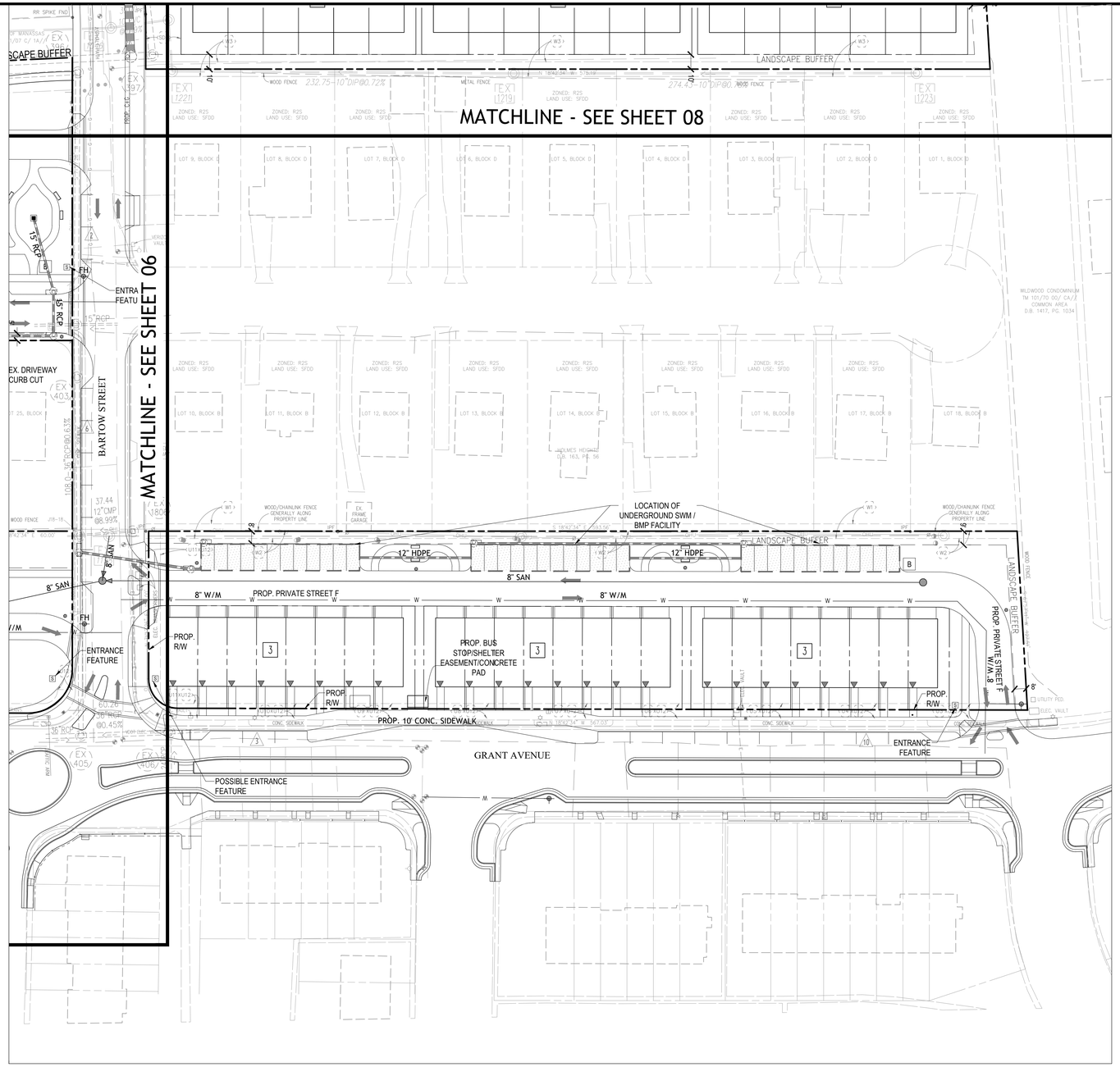
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 09 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-09-UTILITIES.dwg [UTILITY LAYOUT] April 12, 2021 - 2:40pm hchoi



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PROFESSIONAL ENGINEER

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DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
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PLAN DATE
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12.21.20
04.12.21

UTILITY LAYOUT

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

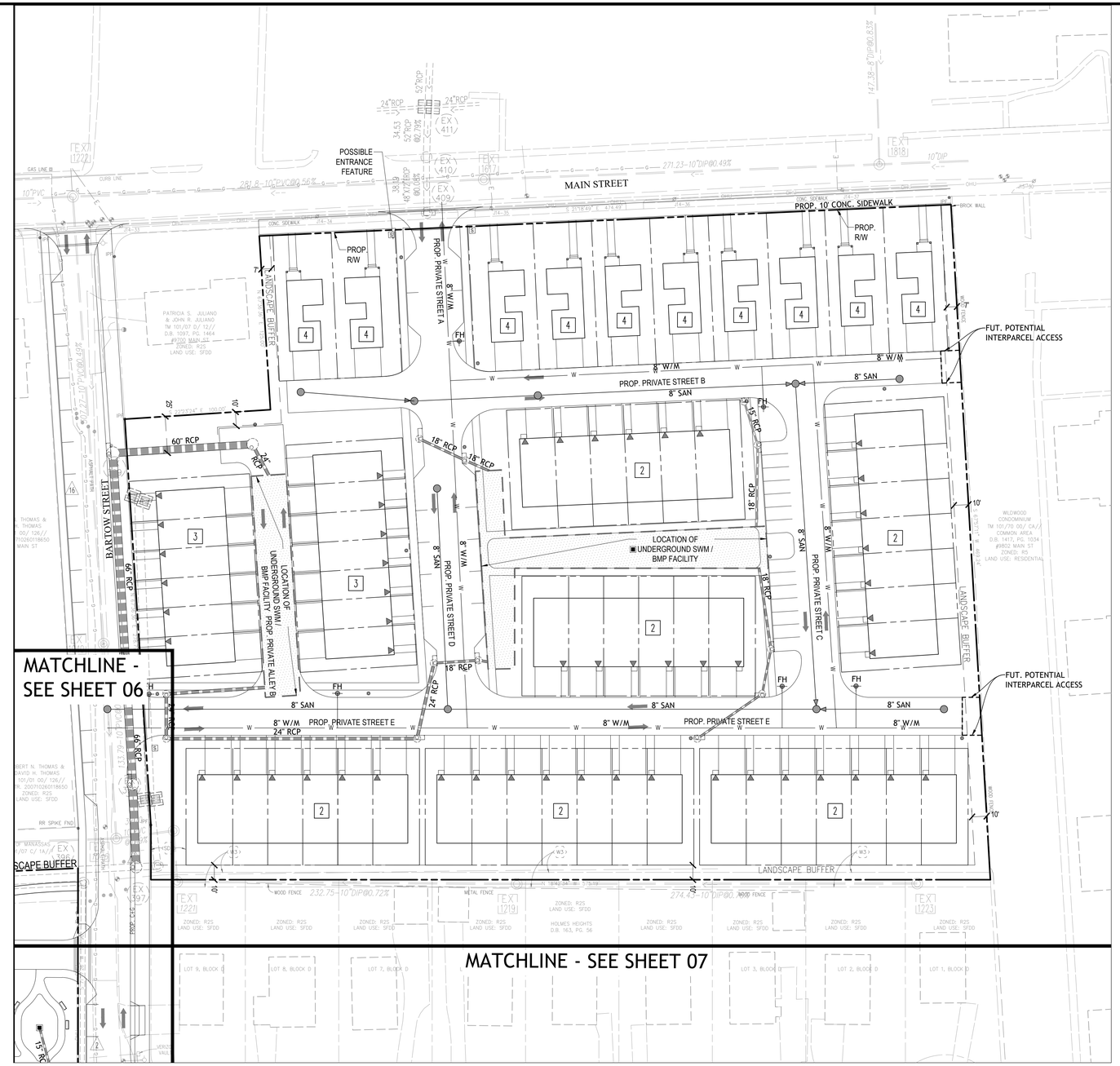
CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET 10 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-09-UTILITIES.dwg [UTILITY LAYOUT (2)] April 12, 2021 - 2:41pm hchoi



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UTILITY LAYOUT

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

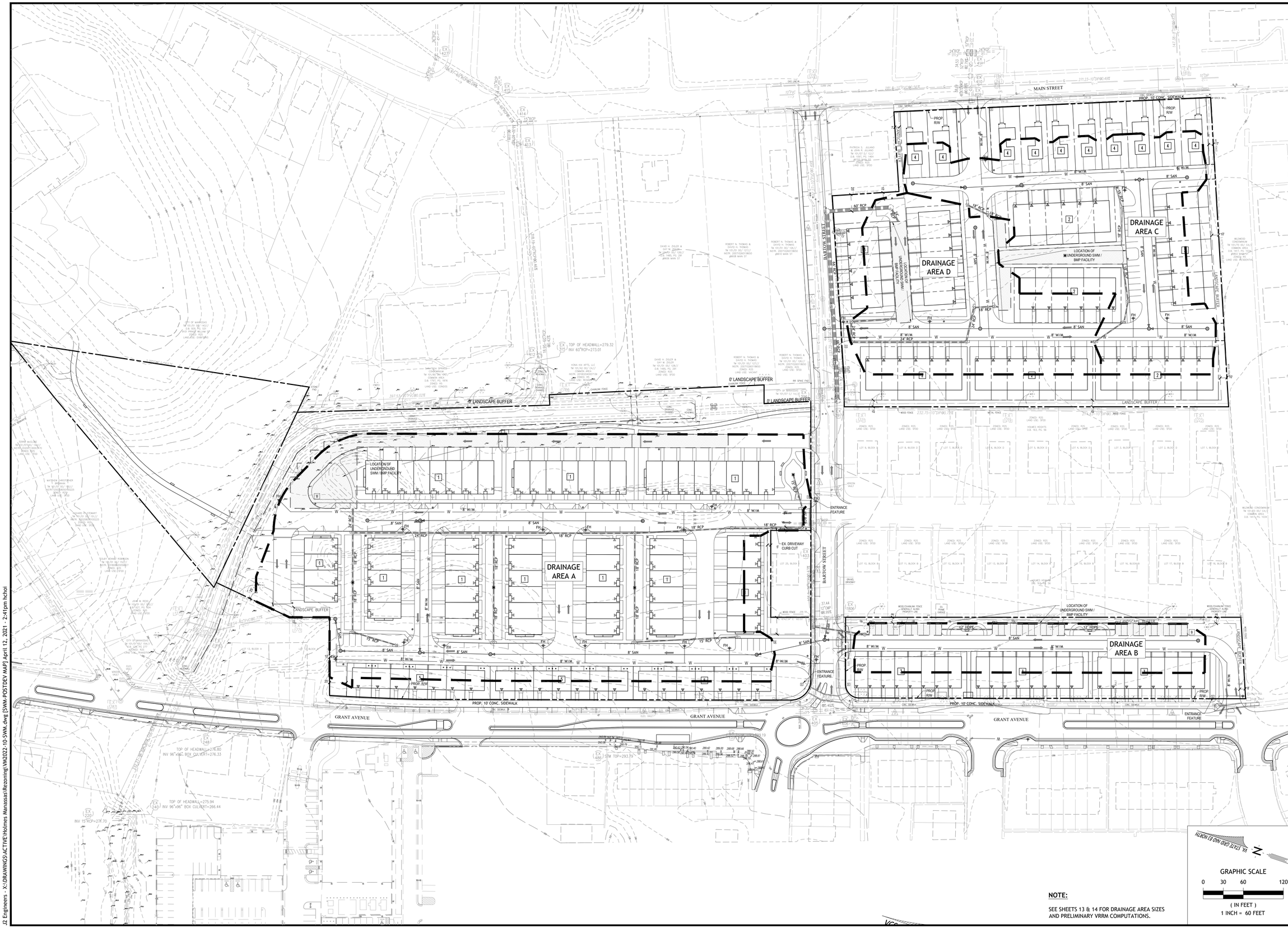
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 11 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-09-UTILITIES.dwg [UTILITY LAYOUT (3)] April 12, 2021 - 2:41pm hchoi



NOTE:

SEE SHEETS 13 & 14 FOR DRAINAGE AREA SIZES AND PRELIMINARY VRRM COMPUTATIONS.

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COMMONWEALTH OF VIRGINIA
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DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 40'

PLAN DATE
12.17.20
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SWM POST-DEVELOPMENT MAP

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET 12 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-10-SWM.dwg (SWM-POSTDEV MAP) April 12, 2021 - 2:41pm hchoi

Project Name:	HOLMES MANASSAS
Date:	4/8/2021
Linear Development Project?	No

CLEAR ALL (Ctrl+Shift+R)

data input cells
constant values
calculation cells
final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area *(acres)* → 17.91

Maximum reduction required:	*20%*
The site's net increase in impervious cover (acres) is:	*10.18*
Post-Development TP Load Reduction for Site (lb/yr):	*19.19*

Check:
BMP Design Specifications List: 2013 Draft Stds & Specs
Linear project? No
Land cover areas entered correctly? ✓
Total disturbed area entered? ✓

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space				11.54	11.54
Managed Turf (acres) -- disturbed, graded for yards or other turf to be				4.59	4.59
Impervious Cover (acres)				1.78	1.78
					17.91

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested				1.56	1.56 *
Managed Turf (acres) -- disturbed, graded for yards or other turf to be				4.39	4.39
Impervious Cover (acres)				11.96	11.96
Area Check	OK.	OK.	OK.	OK.	17.91

** Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method*

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	19.19

Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	5.47	0.79	2.04	1.51	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	5.47	0.79	2.04	1.51	0.00	OK.
MANAGED TURF AREA (ac)	0.61	0.09	0.23	0.17	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.61	0.09	0.23	0.17	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft^3) 45,511

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft^3)	0	0	0	0	0	0
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	12.20	1.76	4.55	3.37	0.00	21.88
TP LOAD REDUCTION ACHIEVED (lb/yr)	8.53	1.23	3.18	2.36	0.00	15.30
TP LOAD REMAINING (lb/yr)	3.67	0.53	1.37	1.01	0.00	6.58
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	28.59
TP LOAD REDUCTION REQUIRED (lb/yr)	19.19
TP LOAD REDUCTION ACHIEVED (lb/yr)	15.30
TP LOAD REMAINING (lb/yr):	13.29
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	3.89

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	204.56
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	0.00
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	204.56

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

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

Update Summary Sheet
Print Preview
Print

Site Summary

Project Title: HOLMES MANASSAS
Date: 44294

Total Rainfall (in):	43
Total Disturbed Acreage:	17.91

Site Land Cover Summary

Pre-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.00	0.00	0.00	11.54	11.54	64
Managed Turf (acres)	0.00	0.00	0.00	4.59	4.59	26
Impervious Cover (acres)	0.00	0.00	0.00	1.78	1.78	10
					17.91	100

Post-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.00	0.00	0.00	1.56	1.56	9 *
Managed Turf (acres)	0.00	0.00	0.00	4.39	4.39	25
Impervious Cover (acres)	0.00	0.00	0.00	11.96	11.96	67
					17.91	100

*** Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method**

Site Tv and Land Cover Nutrient Loads

	Final Post-Development (Post-ReDevelopment & New Impervious)	Post-ReDevelopment	Post-Development (New Impervious)	Adjusted Pre-ReDevelopment
Site Rv	0.70	0.37	0.95	0.37
Treatment Volume (ft^3)	45,511	10,405	35,106	10,405
TP Load (lb/yr)	28.59	6.54	22.06	6.54

Total TP Load Reduction Required (lb/yr)	19.19	1.31	17.88

Pre-ReDevelopment TP Load per acre (lb/acre/yr)	Final Post-Development TP Load per acre (lb/acre/yr)	Post-ReDevelopment TP Load per acre (lb/acre/yr)
0.85	1.60	0.85

	Final Post-Development Load (Post-ReDevelopment & New Impervious)	Pre-ReDevelopment
TN Load (lb/yr)	204.56	55.73

STORMWATER MANAGEMENT NARRATIVE

THE DEVELOPMENT ASSOCIATED WITH THE PROPOSED REZONING APPLICATION WILL RESULT IN APPROXIMATELY 17.91 ACRES OF DISTURBANCE, WITH SOME DISTURBANCE IN THE EXISTING RIGHT-OF-WAY WHERE THE PROPOSED DEVELOPMENT ABUTS MAIN STREET AND GRANT AVENUE. THIS PROJECT IS CONSIDERED RE-DEVELOPMENT AND, WITH 17.91 ACRES OF DISTURBANCE, WILL REQUIRE A TOTAL PHOSPHOROUS LOAD REDUCTION OF 19.19 LBS/YEAR.

DUE TO THE PROPOSED DEVELOPMENT'S LAYOUT AND THE LOCATION OF EXISTING STORM INFRASTRUCTURE, THE REQUIRED TREATMENT FOR THE SITE WILL BE PROVIDED BY MULTIPLE FACILITIES/DEVICES LOCATED IN EACH OF THE SITE'S THREE SECTIONS. ALL DRAINAGE AREAS SHOWN ON SHEET 12 WILL BE CONTROLLED THROUGH THE USE OF AN UNDERGROUND FACILITY (ADS STORMTECH WITH ISOLATOR ROW, OR APPROVED EQUIVALENT) AND ADDITIONAL MANUFACTURED BMPS (FILTRATION), CREATING A TREATMENT TRAIN EFFECT.

WITH A POLLUTANT REMOVAL EFFICIENCY OF 40%, THE UNDERGROUND SWM FACILITIES REMOVE APPROXIMATELY 8.74 LBS/YR OF PHOSPHOROUS WHEN CAPTURING 10.91 AC ON-SITE (SEE VRRM SPREADSHEET ON SHEET 14 FOR DRAINAGE AREA BREAKDOWN), WHICH EQUATES TO APPROXIMATELY 45% OF THE REQUIRED 19.19 LBS/YR LOAD REDUCTION. PROVIDING ADDITIONAL MANUFACTURED TREATMENT DEVICES (SUCH AS A STORMFILTER, JELLYFISH FILTER, OR APPROVED EQUIVALENT) WITH A REMOVAL EFFICIENCY OF 50% AND TREATING THE EQUIVALENT OF APPROXIMATELY 6.5 ACRES ON-SITE WITH THESE DEVICES WOULD YIELD AN ADDITIONAL 6.5 LBS OF POLLUTANT REMOVAL. IN TOTAL, THE COMBINATION OF UNDERGROUND TREATMENT AND MANUFACTURED FILTERING DEVICES PROVIDE APPROXIMATELY 15.3 LBS/YEAR OF POLLUTANT REMOVAL. THIS MEETS THE REQUIREMENT OF PROVIDING 75% OF THE REQUIRED TREATMENT ON-SITE (15.3 LBS/19.19 LBS = ~80%), AND ANY REMAINING POLLUTANT LOAD REMOVAL WOULD BE PROVIDED THROUGH PURCHASING NUTRIENT CREDITS OFF-SITE.

SEE PRELIMINARY VRRM CALCULATIONS ON THIS SHEET AND SHEET 14.

ADEQUATE OUTFALL NARRATIVE

THE DEVELOPMENT ASSOCIATED WITH THE PROPOSED REZONING APPLICATION WILL RESULT IN APPROXIMATELY 17.91 ACRES OF DISTURBANCE, WITH SOME DISTURBANCE IN THE EXISTING RIGHT-OF-WAY WHERE THE PROPOSED DEVELOPMENT ABUTS MAIN STREET AND GRANT AVENUE.

THE PROPOSED DEVELOPMENT WILL OUTFALL DIRECTLY IN TO AN EXISTING CONCRETE-LINED CHANNEL WHICH RUNS ALONG THE EASTERN AND NORTHERN BOUNDARIES OF THE SITE BEFORE CROSSING UNDER GRANT AVENUE TO THE WEST, AFTER WHICH THE CHANNEL CHANGES TO NATURAL SURFACE. STORM WATER MANAGEMENT SHALL BE PROVIDED ON SITE TO CONTROL THE POST-DEVELOPMENT PEAK RUNOFF RATE AND RELEASE IT AT OR BELOW THE PRE-DEVELOPMENT RATE. BECAUSE THE OUTFALL CHANNEL CHANGES FROM CONCRETE TO NATURAL WITHIN A SHORT DISTANCE OF THE POINT OF DISCHARGE FROM THE SITE, BOTH THE 2-YEAR AND 10-YEAR DESIGN STORMS SHALL BE ANALYZED TO ENSURE THAT THE PERMISSIBLE VELOCITY OF THE CHANNEL IS NOT EXCEEDED AND THAT THE POST-DEVELOPMENT PEAK RUNOFF DOES NOT OVERTOP THE BANKS OF THE CHANNEL.THE LIMITS OF ANALYSIS SHALL BE LOCATED DOWNSTREAM OF THE GRANT AVENUE CROSSING (A MINIMUM OF 300 FEET DOWNSTREAM) TO SUCH A POINT THAT CONFIRMS THE ADEQUACY OF THE EXISTING CHANNEL, AS DESCRIBED IN SECTION 8-200 OF THE CITY OF MANASSAS DESIGN & CONSTRUCTION STANDARDS MANUAL.

J2 Engineers, Inc.
4080 Lafayette Center Drive
Suite 330
Chantilly, Va. 20151

703.361.1550 (office)
703.956.6845 (fax)
www.j2engineers.com

COMMONWEALTH OF VIRGINIA
ROBERT W. BROWN
Lic. No. 037041
04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 40'

PLAN DATE
12.17.20
12.21.20
04.12.21

SWM COMPUTATIONS
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-10-SWM.dwg [SWM COMPS] April 12, 2021 - 2:41pm hchoi

Drainage Area A

CLEAR BMP AREAS

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)				0.00	0.00	0.00
Managed Turf (acres)				0.61	0.61	0.25
Impervious Cover (acres)				5.47	5.47	0.95
				Total	6.08	

Total Phosphorus Available for Removal in D.A. A (lb/yr)	12.20
Post Development Treatment Volume in D.A. A (ft^3)	19,417

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device-Hydrodynamic	0	0.61	5.47	0	0	19,417	19,417	40	0.00	12.19	4.87	7.31	14.b. MTD - Filtering
14.b. Manufactured Treatment Device-Filtering	0			19,417	0	19,417	19,417	50	7.31	0.00	3.66	3.66	
14.c. Manufactured Treatment Device-Generic	0			0	0	0	0		0.00	0.00	0.00	0.00	

Drainage Area B

CLEAR BMP AREAS

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)				0.09	0.09	0.25
Impervious Cover (acres)				0.79	0.79	0.95
				Total	0.88	

Total Phosphorus Available for Removal in D.A. B (lb/yr)	1.76
Post Development Treatment Volume in D.A. B (ft^3)	2,806

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device-Hydrodynamic	0	0.09	0.79	0	0	2,806	2,806	40	0.00	1.76	0.70	1.06	14.b. MTD - Filtering
14.b. Manufactured Treatment Device-Filtering	0			2,806	0	2,806	2,806	50	1.06	0.00	0.53	0.53	

Drainage Area C

CLEAR BMP AREAS

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)				0.00	0.00	0.00
Managed Turf (acres)				0.23	0.23	0.25
Impervious Cover (acres)				2.04	2.04	0.95
				Total	2.27	

Total Phosphorus Available for Removal in D.A. C (lb/yr)	4.55
Post Development Treatment Volume in D.A. C (ft^3)	7,244

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device-Hydrodynamic	0	0.23	2.04	0	0	7,244	7,244	40	0.00	4.55	1.82	2.73	14.b. MTD - Filtering
14.b. Manufactured Treatment Device-Filtering	0			7,244	0	7,244	7,244	50	2.73	0.00	1.36	1.36	

Drainage Area D

CLEAR BMP AREAS

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)				0.00	0.00	0.00
Managed Turf (acres)				0.17	0.17	0.25
Impervious Cover (acres)				1.51	1.51	0.95
				Total	1.68	

Total Phosphorus Available for Removal in D.A. D (lb/yr)	3.37
Post Development Treatment Volume in D.A. D (ft^3)	5,362

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device-Hydrodynamic	0	0.17	1.51	0	0	5,362	5,362	40	0.00	3.36	1.35	2.02	14.b. MTD - Filtering
14.b. Manufactured Treatment Device-Filtering	0			5,362	0	5,362	5,362	50	2.02	0.00	1.01	1.01	

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4080 Lafayette Center Drive
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Lic. No. 037041
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PROFESSIONAL ENGINEER

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CONTOUR INT.= N/A
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SWM COMPUTATIONS
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VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

REVISIONS

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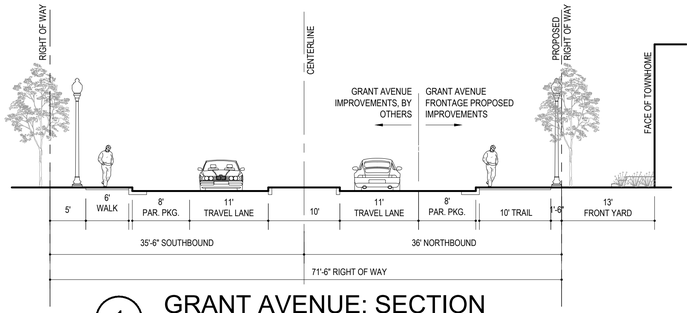
J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-10-SWM.dwg [SWM COMPS (2)] April 12, 2021 - 2:41pm hchoi



1 GRANT AVENUE: SECTION
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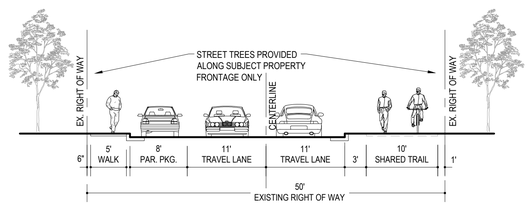

2 BARTOW STREET: SECTION
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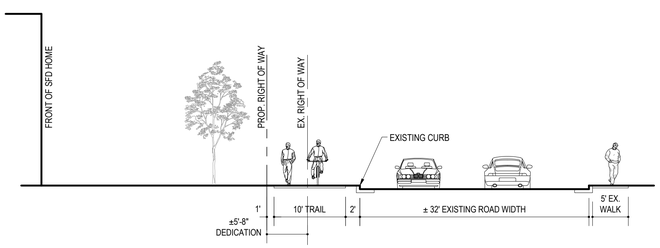

3 MAIN STREET: SECTION
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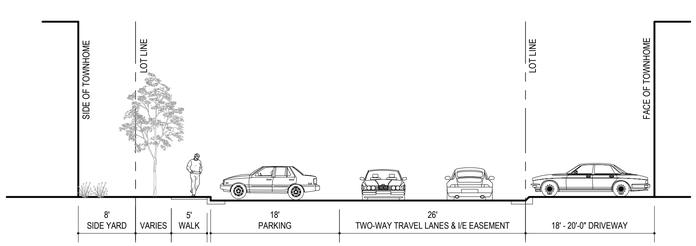

4 PRIVATE ROAD: SECTION
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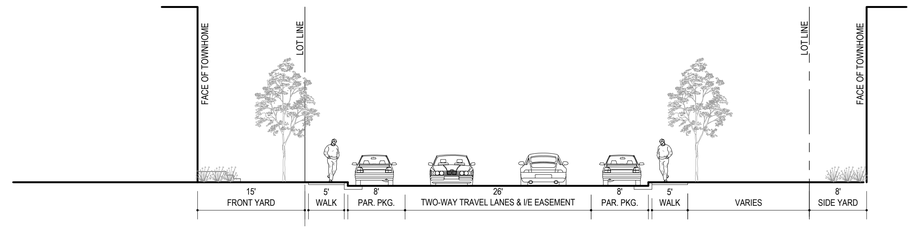

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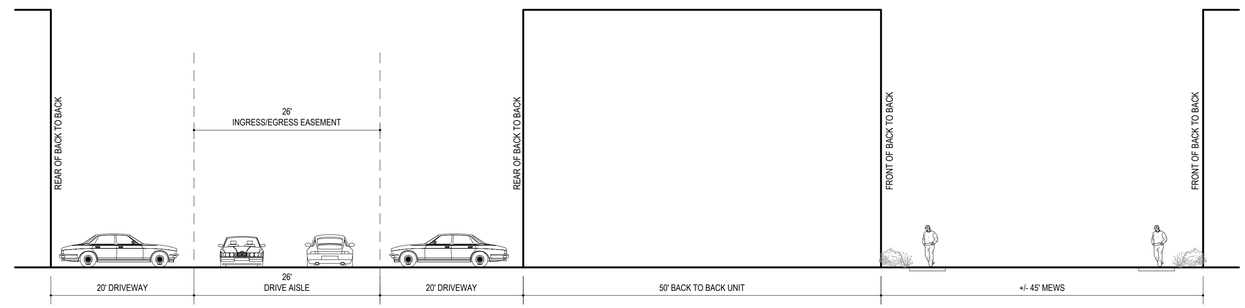

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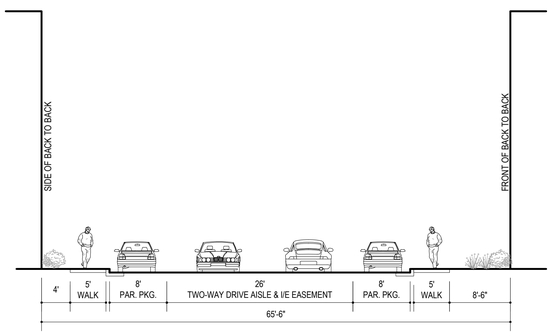

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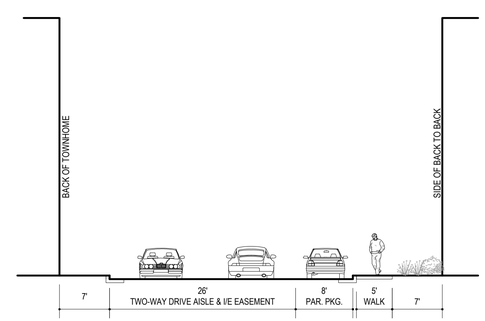
Scale: 1"= 10'-0"



8 PRIVATE ROAD: SECTION
Scale: 1"= 10'-0"

J2 engineers
J2 Engineers, Inc.
4080 Lafayette Center Drive
Suite 330
Chantilly, Va. 20151

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STREET SECTIONS
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET
15
OF
26

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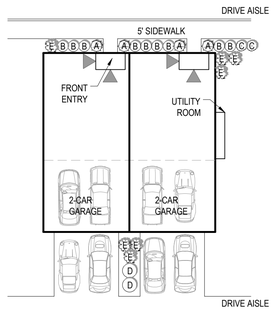

BACK TO BACK: LOT TYPICAL
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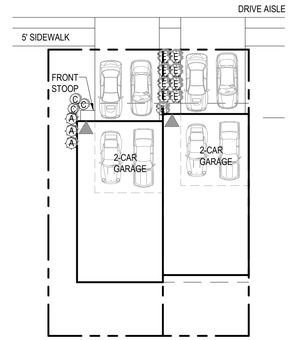

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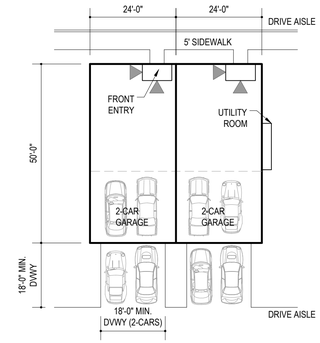

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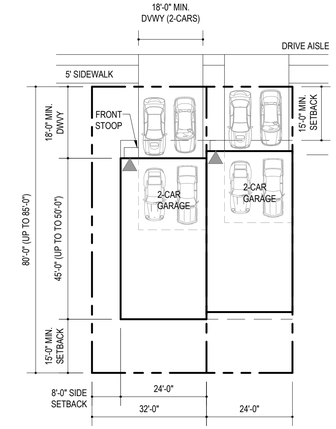

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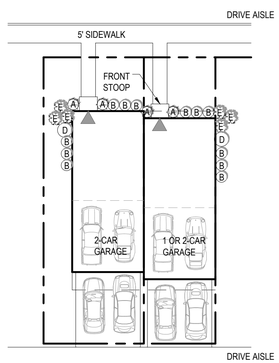

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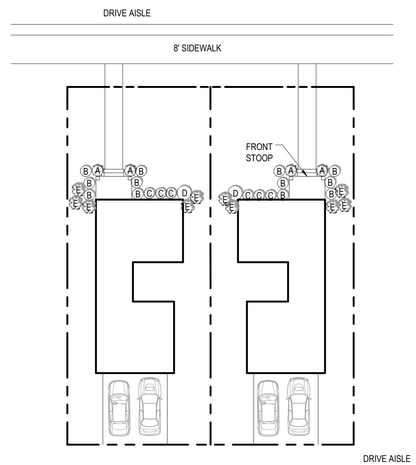

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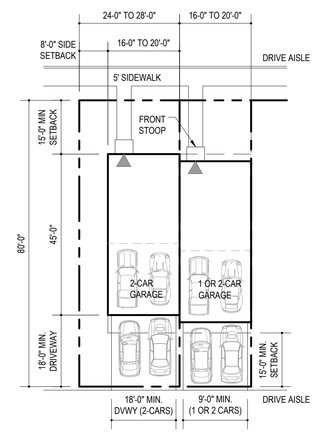

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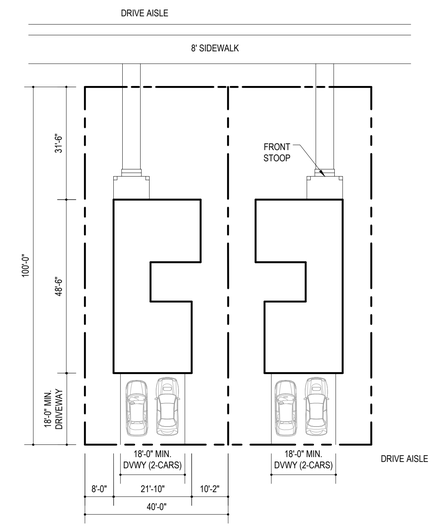

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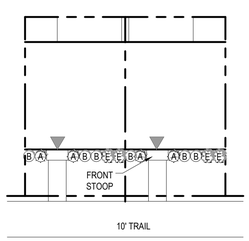


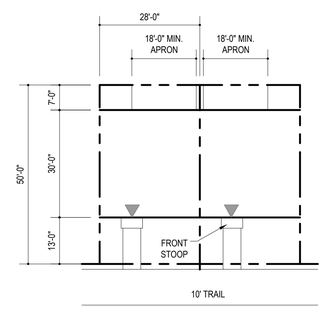
REAR LOAD TH - COTTAGE
Scale: 1"= 20'-0"

KEY

PLANT A - FOUNDATION EVERGREEN
PLANT B - ALTERNATE EVERGREEN SHRUB
PLANT C - FLOWERING OR DECIDUOUS SHRUB
PLANT D - UPRIGHT SHRUB
PLANT E - ACCENT SHRUB OR ORNAMENTAL GRASS

NOTE: ADJUST PLANTINGS FOR FINAL SITE CONDITIONS

1 TYPICAL LOT LANDSCAPE
SCALE :1" = 20'-0"



REAR LOAD TH - COTTAGE
Scale: 1"= 20'-0"

NOTES:
1. REFER TO SHEET 02 FOR REQUESTED YARD SETBACK MODIFICATIONS.
2. REFUSE STORAGE OCCURS INTERNALLY TO EACH UNIT (GARAGE).
3. THE 18' MINIMUM DRIVEWAY SHALL REMAIN FOR THE PROVISION OF PARKING AND DOES NOT CONFLICT WITH THE SETBACK FOR THE TOWNHOMES AS THE 15' SETBACK SHALL PROVIDE ALLOWANCES FOR POTENTIAL OVERHANGS OF UPPER FLOORS.

2 TYPICAL LOT DIMENSIONS
SCALE :1" = 20'-0"

J2 Engineers, Inc.
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LOT TYPICALS

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 16 OF 26

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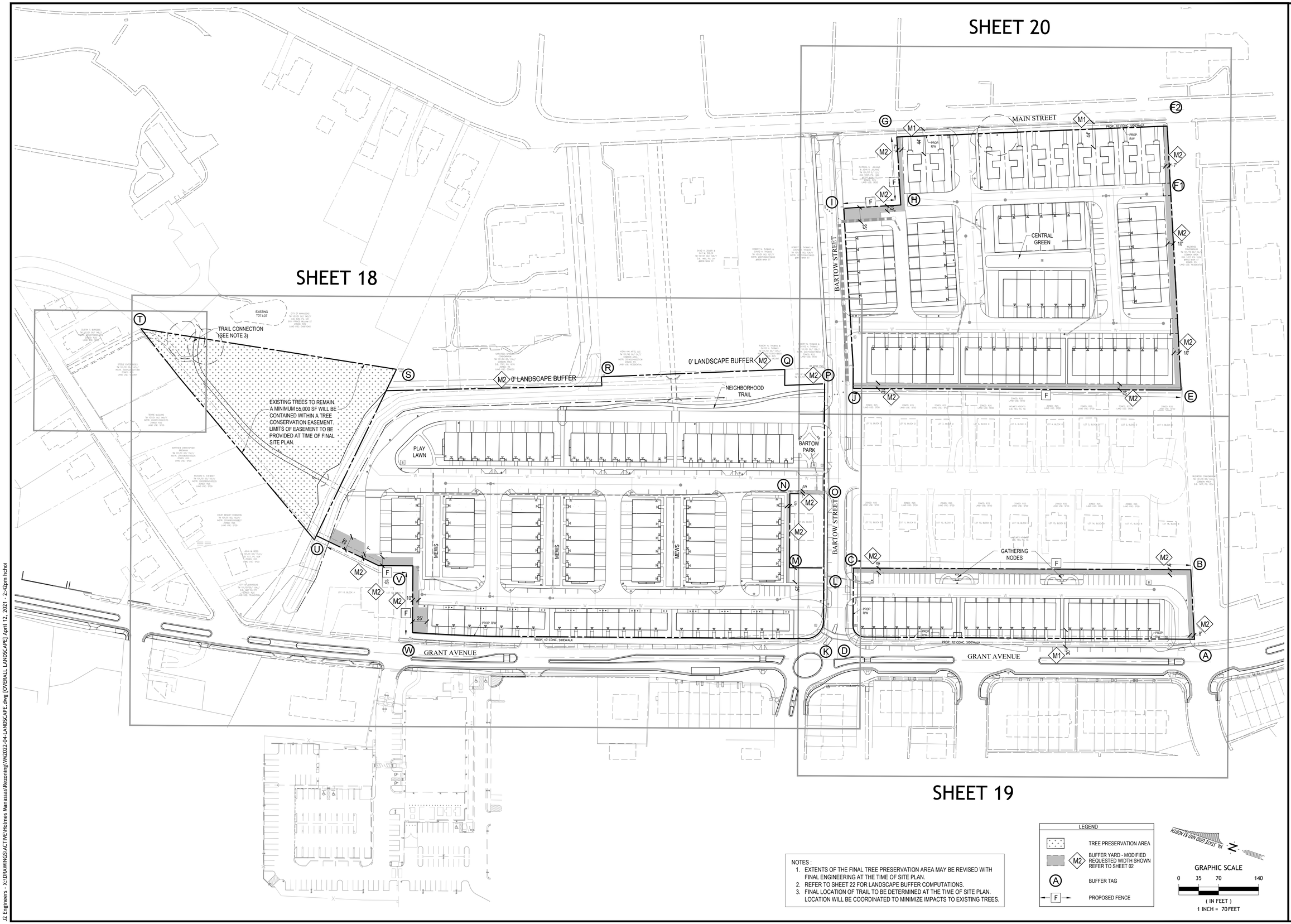


NOTES :

1. EXTENTS OF THE FINAL TREE PRESERVATION AREA MAY BE REVISED WITH FINAL ENGINEERING AT THE TIME OF SITE PLAN.
2. REFER TO SHEET 22 FOR LANDSCAPE BUFFER COMPUTATIONS.
3. FINAL LOCATION OF TRAIL TO BE DETERMINED AT THE TIME OF SITE PLAN. LOCATION WILL BE COORDINATED TO MINIMIZE IMPACTS TO EXISTING TREES.

LEGEND

- TREE PRESERVATION AREA
- M2 — BUFFER YARD - MODIFIED REQUESTED WIDTH SHOWN REFER TO SHEET 02
- A — BUFFER TAG
- F — PROPOSED FENCE

VA STATE GRID NAD 83 NORTH

GRAPHIC SCALE

0 35 70 140

(IN FEET)
1 INCH = 70 FEET

J2 Engineers, Inc.
4080 Lafayette Center Drive
Suite 330
Chantilly, Va. 20151

703.361.1550 (office)
703.956.6845 (fax)
www.j2engineers.com

COMMONWEALTH OF VIRGINIA
ROBERT W. BROWN
Lic. No. 037041
04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 70'

PLAN DATE
12.17.20
12.21.20
04.12.21

OVERALL CONCEPTUAL LANDSCAPE PLAN

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

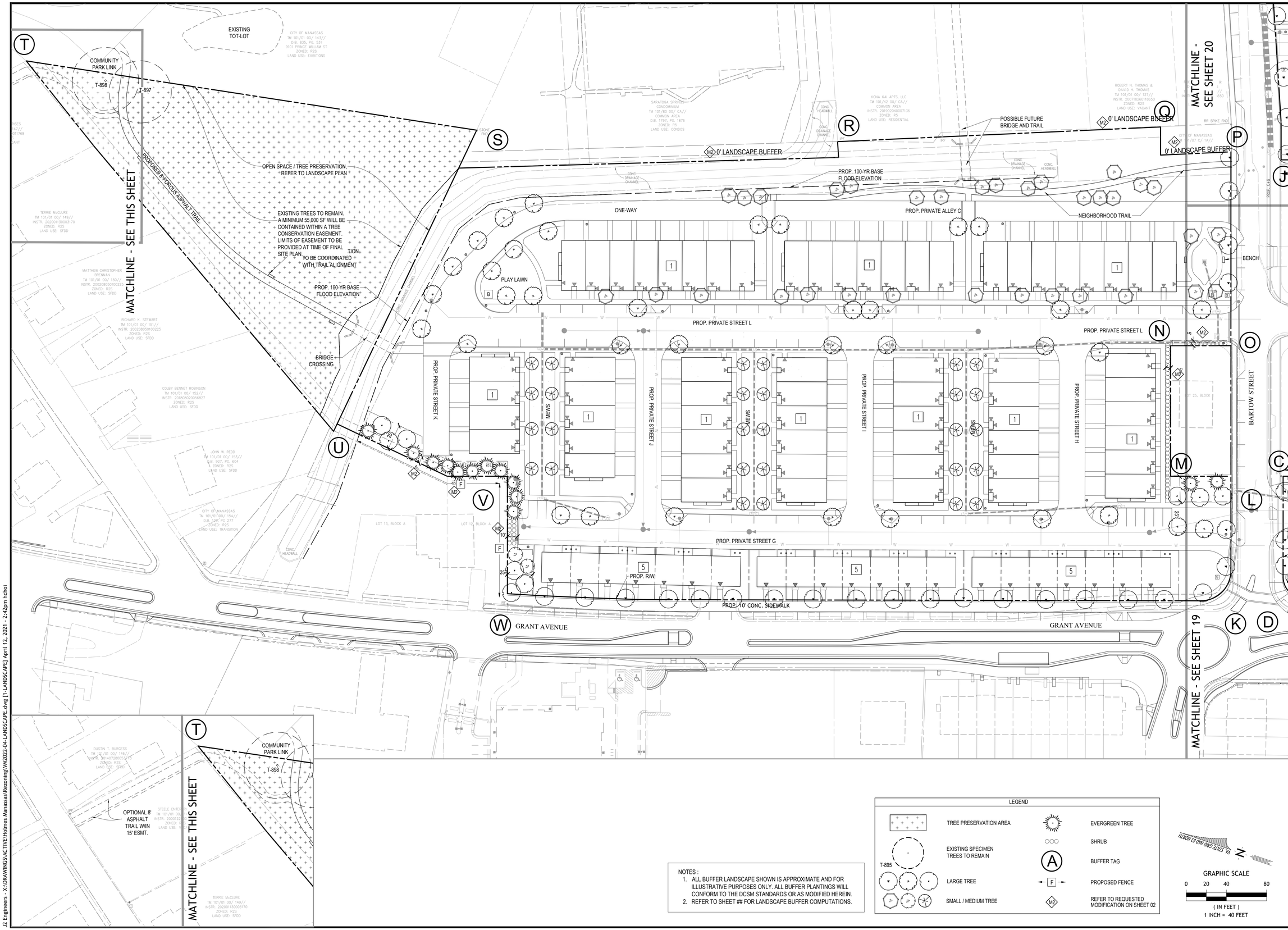
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 17 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-04-LANDSCAPE.dwg [OVERALL LANDSCAPE] April 12, 2021 - 2:42pm hchoi



NOTES :
1. ALL BUFFER LANDSCAPE SHOWN IS APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES ONLY. ALL BUFFER PLANTINGS WILL CONFORM TO THE DCSM STANDARDS OR AS MODIFIED HEREIN.
2. REFER TO SHEET ## FOR LANDSCAPE BUFFER COMPUTATIONS.

LEGEND

TREE PRESERVATION AREA	EVERGREEN TREE
EXISTING SPECIMEN TREES TO REMAIN (T-895)	SHRUB
LARGE TREE	BUFFER TAG (A)
SMALL / MEDIUM TREE	PROPOSED FENCE (F)
	REFER TO REQUESTED MODIFICATION ON SHEET 02 (M2)

VA. STATE GRID NAD 83 NORTH

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 INCH = 40 FEET

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PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 40'

PLAN DATE
12.17.20
12.21.20
04.12.21

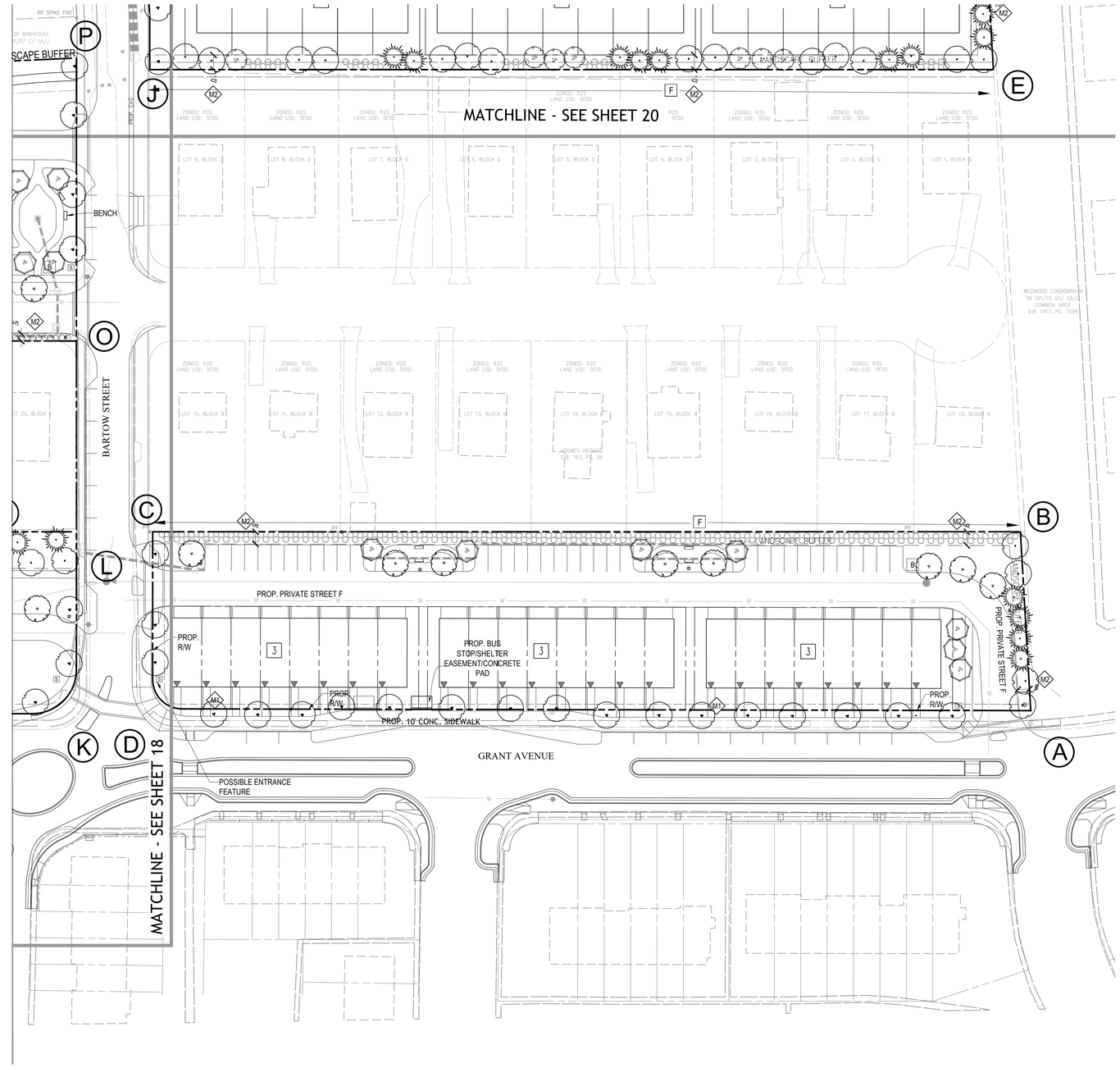
CONCEPTUAL LANDSCAPE PLAN
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET 18 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-04-LANDSCAPE.dwg [1-LANDSCAPE] April 12, 2021 - 2:42pm hchoi



NOTES :

1. ALL BUFFER LANDSCAPE SHOWN IS APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES ONLY. ALL BUFFER PLANTINGS WILL CONFORM TO THE DCSM STANDARDS OR AS MODIFIED HEREIN.
2. REFER TO SHEET 15 FOR LANDSCAPE BUFFER COMPUTATIONS.

LEGEND

	TREE PRESERVATION AREA		EVERGREEN TREE
T-895	EXISTING SPECIMEN TREES TO REMAIN		SHRUB
		A	BUFFER TAG
	LARGE TREE	F	PROPOSED FENCE
	SMALL / MEDIUM TREE	M2	REFER TO REQUESTED MODIFICATION ON SHEET 02

VA STATE GRID NAD 83 NORTH

GRAPHIC SCALE

0 20 40 80

(IN FEET)
1 INCH = 40 FEET

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04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 40'

PLAN DATE
12.17.20
12.21.20
04.12.21

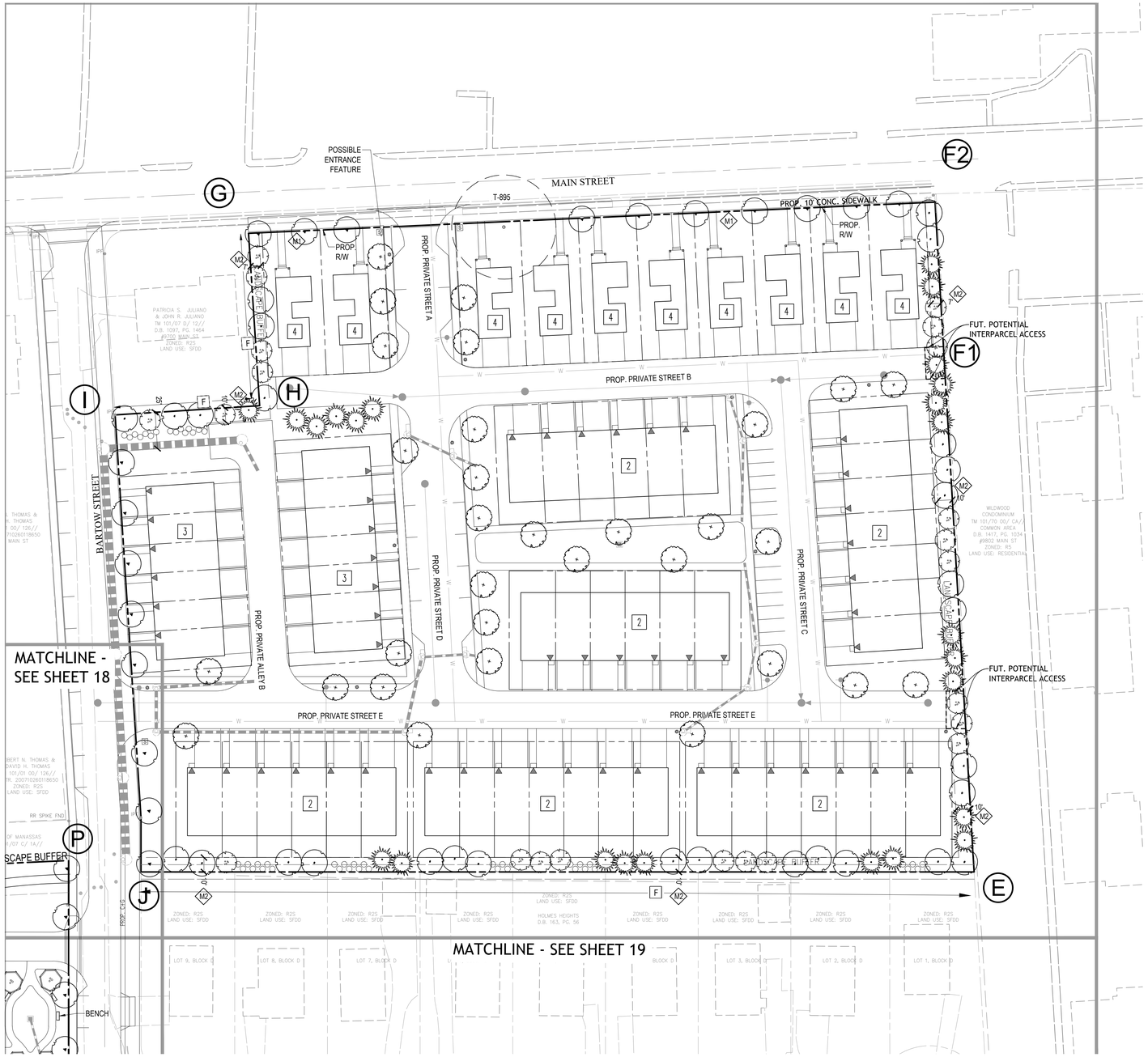
CONCEPTUAL LANDSCAPE PLAN
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 19 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-04-LANDSCAPE.dwg [2-LANDSCAPE] April 12, 2021 - 2:42pm hchoi



LEGEND			
	TREE PRESERVATION AREA		EVERGREEN TREE
T-895	EXISTING SPECIMEN TREES TO REMAIN		SHRUB
	LARGE TREE	A	BUFFER TAG
	SMALL / MEDIUM TREE	F	PROPOSED FENCE
		M2	REFER TO REQUESTED MODIFICATION ON SHEET 02

NOTES :
1. ALL BUFFER LANDSCAPE SHOWN IS APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES ONLY. ALL BUFFER PLANTINGS WILL CONFORM TO THE DCSM STANDARDS OR AS MODIFIED HEREIN.
2. REFER TO SHEET ## FOR LANDSCAPE BUFFER COMPUTATIONS.

VA. STATE GRID NAD 83 NORTH

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 INCH = 40 FEET

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Suite 330
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PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 40'

PLAN DATE
12.17.20
12.21.20
04.12.21

CONCEPTUAL LANDSCAPE PLAN

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

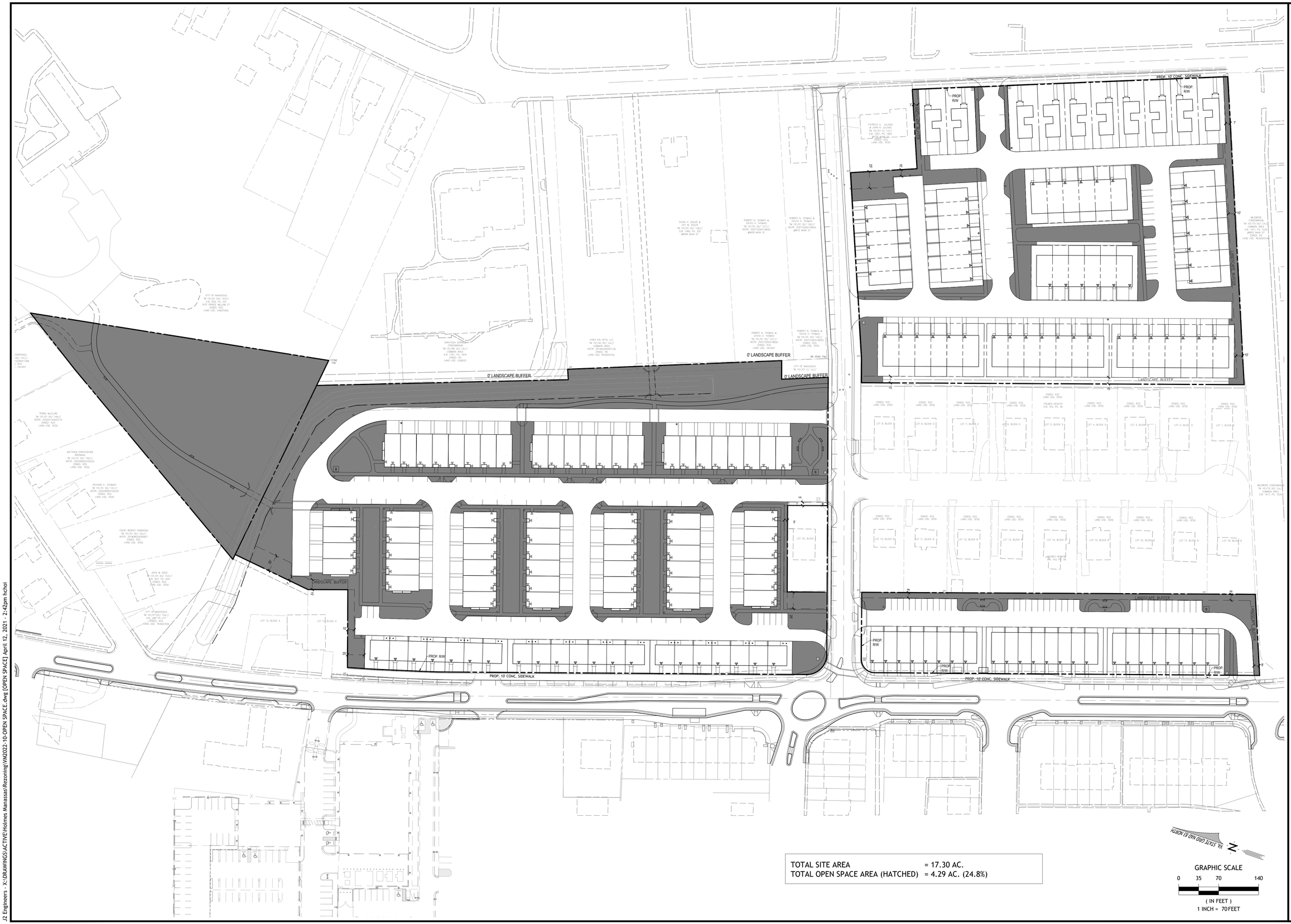
CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET 20 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-04-LANDSCAPE.dwg [3-LANDSCAPE] April 12, 2021 - 2:42pm hchoi



TOTAL SITE AREA = 17.30 AC.
TOTAL OPEN SPACE AREA (HATCHED) = 4.29 AC. (24.8%)

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04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 70'

PLAN DATE
12.17.20
12.21.20
04.12.21

OPEN SPACE EXHIBIT

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 21 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-10-OPEN SPACE.dwg [OPEN SPACE] April 12, 2021 - 2:42pm hchoi

PERIMETER LANDSCAPE BUFFER REQUIREMENTS

Buffer Segment	Proposed Use	Adjacent Use (Note 1)	Length (l.f.)	Provided Yard	Width (l.f.)	ACI per 100 l.f.	Total Provided ACI	Fence (6' High) (Note 2)	Modification Requested	Notes / Description
A-B	Townhome	Condominium	110	Type B Option 2: Opaque Buffer	8	12	14	*Existing*	Yes	*Reduce Buffer width from 25' to 10'.*
B-C	Townhome	SFD	590	Type B Option 2: Opaque Buffer	8			●	Yes	*Reduce Buffer width from 25' to 8'. Due to existing easement constraints, a contiguous evergreen hedge is provided.*
C-D	Townhome	Street R.O.W. (Bartow Street)	65							*Required : 1 Street Tree @ 35 l.f.*
D-A	Townhome	Street R.O.W. (Grant Avenue)	540							*Required : 1 Street Tree @ 35 l.f.*
E-F1	Townhome	Condominium	350	Type B Option 2: Opaque Buffer	10	12	42	*Existing*	Yes	*Reduce Buffer width from 25' to 10'.*
F1-F2	SFD	Condominium	100	Type B Option 2: Opaque Buffer	7	12	12	*Existing*	Yes	*Reduce Buffer width from 25' to 7'.*
F2-G	SFD	Street R.O.W. (Main Street)	420							*Required : 1 Street Tree @ 35 l.f. Credit for existing specimen tree to remain.*
G-H	SFD	SFD	120	Type B Option 2: Opaque Buffer	7	12	15	●	Yes	*Reduce Buffer width from 25' to 7'.*
H-I	Townhome	SFD	95	Type B Option 2: Opaque Buffer	10	12	as shown	●	Yes	*Reduce Buffer width from 25' to 10'. A portion of the buffer area includes a proposed storm easement. Trees will be provided outside the easement where feasible with shrubs in remainder of buffer area.*
I-J	Townhome	Street R.O.W. (Bartow Street)	250							*Required : 1 Street Tree @ 35 l.f.*
J-E	Townhome	SFD	570	Type B Option 2: Opaque Buffer	10		as shown	●	Yes	*Reduce Buffer width from 25' to 10'. A portion of the buffer area includes an existing water easement. Trees will be provided outside the easement where feasible with shrubs in remainder of buffer area.*
K-L	Townhome	Street R.O.W. (Bartow Street)	60							*Required : 1 Street Tree @ 35 l.f.*
L-M	Townhome	SFD	55	Type B Option 2: Opaque Buffer	25	12	7	*Existing*		*Required : 25' Buffer*
M-N	Back to Back	SFD	130	Type B Option 2: Opaque Buffer	5		as shown	*Existing*	Yes	*Reduce Buffer width from 25' to 5'. A contiguous evergreen hedge is provided.*
N-O	Back to Back	SFD	55	Alternate Screening Buffer	5		as shown	*Existing*	Yes	*Reduce Buffer width from 25' to 5'. A contiguous evergreen hedge is provided.*
O-P	Back to Back	Street R.O.W. (Bartow Street)	90							*Required : 1 Street Tree @ 35 l.f.*
P-Q	Back to Back	Pumping Station	80	No Buffer					Yes	*Required Buffer cannot be provided due to concrete drainage channel and existing easement constraints.*
Q-R	Back to Back	SFD & Multifamily	320	No Buffer					Yes	*Required Buffer cannot be provided due to concrete drainage channel and existing easement constraints.*
R-S	Back to Back	Multifamily	375	No Buffer					Yes	*Required Buffer cannot be provided due to concrete drainage channel and existing easement constraints.*
S-T	Open Space	Manassas Museum	450	No Buffer						*Existing forest to be preserved in lieu of buffer plantings.*
T-U	Open Space	SFD	475	No Buffer						*Existing forest to be preserved in lieu of buffer plantings.*
U-V	Back to Back	SFD	150	Type B Option 2: Opaque Buffer	25	12	18	●	Yes	*Reduce a portion of the Buffer width from 25' to 7' - 15'.*
V-W	Townhome	SFD	100	Type B Option 2: Opaque Buffer	25	12	12	●	Yes	*Reduce a portion of the Buffer width from 25' to 10'.*
W-K	Townhome	Street R.O.W. (Grant Avenue)	700							*Required : 1 Street Tree @ 35 l.f.*

Notes

1. All adjacent land uses are in "R" district.
2. For proposed fence detail, see this sheet. Existing fences on adjacent properties may contribute to screening. Proposed fence may only be installed in areas where existing fence is not present or is in despair and will be replaced.
3. Evergreen trees may be incorporated into buffers to enhance screening. ACI for evergreen trees will be measured relative to height in lieu of caliper (DBH).

NOTES:

1. PROPOSED BATTEN BOARD FENCE TO BE 6' HIGH AND OPAQUE.
2. FENCE MATERIAL TO BE PRESSURE-TREATED WOOD.

FENCE

N.T.S.

STREET TREES

Requirement:	1	Tree /	35 LF
Main Street			
Length of R/W		400	LF
Street Trees Required		12	
Street Trees Provided		**9**	
Grant Avenue			
Length of R/W		1,250	LF
Street Trees Required		36	
Street Trees Provided		**36**	
Bartow Street			
Length of R/W		470	LF
Street Trees Required		14	
Street Trees Provided		**16**	

Note : Credit taken for existing speciment tree to remain.

CANOPY COVERAGE CALCULATIONS

		Square Feet	Acres
Net Site Area		740,091	16.99
Total Canopy Required	**15%**	**111,014**	**2.55**
Canopy Provided			
Canopy from Landscaping		56,500	1.30
Canopy from Tree Preservation		55,000	1.26
Total Canopy Provided		**111,500**	**2.56**
Proposed Canopy Coverage		**15.07%**	

INTERIOR PARKING LOT LANDSCAPING :

1. INTERIOR PARKING LOT LANDSCAPING IN CONFORMANCE WITH DCSM SECTION 3-460(A) SHALL BE PROVIDED FOR PARKING AREAS THAT PROVIDE MORE THAN TEN (10) SPACES.
2. CANOPY TREES WILL BE PROVIDED IN LANDSCAPE AREAS ADJACENT TO PARALLEL PARKING SPACES LOCATED ON PRIVATE STREETS.

LANDSCAPE NOTES :

1. ALL PROTECTION AND PRESERVATION MEASURES FOR EXISTING VEGETATION SHALL BE ADDRESSED AT THE TIME OF FINAL SITE PLAN AND ARE SUBJECT TO CHANGE BASED ON FINAL ENGINEERING.
2. ALL UTILITIES SHALL BE LOCATED PRIOR TO CONSTRUCTION AND PLANTING.
3. PROPOSED EASEMENTS AND LANDSCAPING SHOWN ARE SUBJECT TO CHANGE BASED ON FINAL ENGINEERING.
4. TREE COVER CALCULATIONS SHALL BE SHOWN AT THE TIME OF FINAL SITE PLAN AND ARE SUBJECT TO CHANGE BASED ON FINAL ENGINEERING. THE PROPOSED PRESERVATION AREA DOES NOT ACCOUNT FOR ADDITIONAL CREDIT EVEN THOUGH TREES ARE IN GOOD CONDITION. THE PROPOSED LANDSCAPING AREA HAS BEEN CALCULATED USING APPROXIMATE CANOPY VALUES AND IS SUBJECT TO CHANGE AT THE TIME OF FINAL SITE PLAN ONCE SPECIFIC SPECIES HAVE BEEN CHOSEN.

J2 Engineers, Inc.
4080 Lafayette Center Drive
Suite 330
Chantilly, Va. 20151

703.361.1550 (office)
703.956.6845 (fax)
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COMMONWEALTH OF VIRGINIA
ROBERT W. BROWN
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04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: AS NOTED

PLAN DATE
12.17.20
12.21.20
04.12.21

LANDSCAPE NOTES AND COMPUTATIONS

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

CITY OF MANASSAS, VIRGINIA

REVISIONS

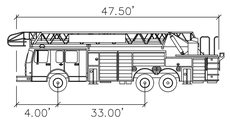
No.	DATE	DESCRIPTION

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-04-LANDSCAPE.dwg [COMPS & NOTES] April 12, 2021 - 2:42pm hchoi

FIRE ACCESS ROADWAY

250' REMOTE DISTANCE (HOSE PULL)

SEE SHEETS 06-08 FOR STREET DIMENSIONS



CUSTOM CITY OF MANASSAS EMERGENCY VEHICLE

	feet
Width	: 10.33'
Track	: 8.00'
Lock to Lock Time	: 6.0'
Steering Angle	: 39.0'

VA. STATE GRID NORTH

N

GRAPHIC SCALE

0 30 60 120

(IN FEET)
1 INCH = 60 FEET

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04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 60'

PLAN DATE
12.17.20
12.21.20
04.12.21

FIRE ACCESS AND TURNING MOVEMENTS

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

SHEET 23 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-05-AUTOTURN.dwg [FIRE ACCESS AND TURNING MOVEMENTS] April 12, 2021 - 2:43pm hchoi

LEGEND

- EXISTING NORTHERN RED MAPLE STAND (222,383-SF)
- EXISTING SOUTHERN RED MAPLE STAND (234,556-SF)
- EXISTING LANDSCAPED TREES (17,771-SF)
- T– SPECIMEN TREE
- CRITICAL ROOT ZONE (CRZ)
- STUDY AREA

EXISTING VEGETATION NOTES:

1. PROPERTY BOUNDARY, TOPOGRAPHY AND OTHER SURVEY INFORMATION PROVIDED BY J2 ENGINEERS (2020).

2. TNT ENVIRONMENTAL, INC. (TNT) CONDUCTED A SITE RECONNAISSANCE TO EVALUATE THE VEGETATION COVER TYPES ON THE PROJECT SITE IN DECEMBER 2020. A MEDIUM TO MATURE-AGED (8"-35" DBH) RED MAPLE STAND COMPRISES MUCH OF THE SITE AND IS DOMINATED BY GREEN ASH, RED MAPLE, TREE OF HEAVEN, TULIP POPLAR, NORTHERN RED OAK, BLACK LOCUST, BLACK CHERRY AND AMERICAN ELM. THE SOUTHERN PORTION OF THE SITE CONSISTS OF A MEDIUM TO MATURE-AGED ("8-45" DBH) RED MAPLE STAND DOMINATED BY WILLOW OAK, RED MAPLE, EASTERN REDCEDAR, TULIP POPLAR, BLACK CHERRY, AND GREEN ASH. THE REMAINDER OF THE SITE CONSISTS OF (8"-20" DBH) LANDSCAPED EASTERN REDBUD, EASTERN REDCEDAR, CREPE MYRTLE, NORTHERN RED OAK, RED MAPLE AND SILVER MAPLE. INVASIVE SPECIES LOCATED ONSITE INCLUDE ENGLISH IVY, TREE OF HEAVEN, JAPANESE HONEYSUCKLE, PERIWINKLE AND TATARIAN HONEYSUCKLE. INVASIVE SPECIES NOTED ARE IN HIGH ABUNDANCE.

3. DURING THE SITE RECONNAISSANCE, THREE (3) SPECIMEN TREES WERE OBSERVED WITHIN THE PROPERTY BOUNDARY, APPROXIMATED BY TNT ENVIRONMENTAL, INC. (2020).

Tree Number	Common Name	Size (inches DBH)	Critical Root Zone (feet)	Condition	Remove	Offsite or Shared	Notes & Arborist Recommendations
621	Southern Red Oak	33.9	33.9	Good			English ivy on trunk, some dead/broken limbs.
622	Red Maple	30.0	30.0	Fair			Covered in English ivy, many dead/broken limbs.
623	Red Maple	44.3	44.3	Fair			Double trunk, covered in English ivy, some dead/broken limbs, twisted trunk, girdled roots.
895	Pin Oak	36.0	36.0	Fair			Several dead limbs, improperly pruned for power lines.
896	Norway Spruce	36.0	36.0	Fair			English ivy up trunk, several weeping wounds, many small dead limbs, dense vines in canopy.

SCALE (IN FEET)
50 100
100 0

CERTIFIED ARBORIST
ISA
Avinash M. Sareen
Certified Arborist
Certification # MA-4727A

TNT ENVIRONMENTAL
4455 Brookfield Corporate Drive, Suite 100
Chantilly, VA 20151
PH: 703-466-5123 WWW.TNTENVIRONMENTALINC.COM

HOLMES & SMITH PROPERTIES
CITY OF MANASSAS

EXISTING VEGETATION MAP

REVISIONS

DATE	COMMENTS
3/18/21	REV BY MMS

SHEET 1 OF 1

SCALE: 1" – 100'

PROJECT DATE: 12/17/20

DRAFT: MMS | CHECK: AMS

FILE NUMBER: 2053-A

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COMMONWEALTH OF VIRGINIA
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04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 100'

PLAN DATE
12.17.20
12.21.20
04.12.21

EXISTING VEGETATION MAP
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-07-EVM.dwg [EXISTING VEGETATION MAP] April 12, 2021 - 2:43pm hchoi

LEGAL DESCRIPTION (TRACT 3)

Beginning at a point lying on the easterly right-of-way line of Grant Avenue; said point also being a shared property corner with Holmes Heights Lot 12, Block A.

Thence departing the easterly right-of-way of Grant Avenue and running with Holmes Heights Lot 12, Block A the following courses and distances:

N 71°17'26" E a distance of 127.86' to a point;

Thence N 18°42'34" W a distance of 60.00' to a point; said point also being the southeastern property corner of Holmes Heights Lot 13, Block A;

Thence departing Lot 12 and running with Lot 13 the following courses and distances:

N 06°42'16" E a distance of 121.28' to a point;

Thence N 83°17'44" W a distance of 8.18' to a point; said point also being the southeastern property corner of N/F Redd;

Thence departing Holmes Heights Lot 13, Block A and running with the eastern boundary of N/F Redd N 31°15'25" E a distance of 371.54' to a point; said point also being a shared property corner with N/F McClure and N/F Steele Enterprises;

Thence running along the eastern boundary of N/F Steele Enterprises N 32°48'35" E a distance of 107.73' to a point being the northeast property corner of N/F Steele Enterprises; said point also being a shared property corner with N/F Burgess and N/F City of Manassas;

Thence departing Steele and running with the western boundary of N/F City of Manassas S 09°57'46" E a distance of 453.75' to a point; said point also being the northern boundary of N/F Saratoga Springs Condominium;

Thence departing N/F City of Manassas and running with boundary of N/F Saratoga Springs Condominium the following courses and distances:

N 83°17'44" W a distance of 41.73' to a point;

S 20°18'49" E a distance of 378.39' to a point;

N 67°36'36" E a distance of 15.75' to a point lying on the southern boundary line of N/F Saratoga Springs Condominium; said point also being the northwestern property corner of N/F Kona Kia Apts;

Thence departing N/F Saratoga Springs Condominium and running with the western boundary of N/F Kona Kia Apts, N/F Ziegler, and N/F Thomas S 21°18'49" E a distance of 321.93' to a point being the western boundary of N/F Thomas and also being the northeastern property corner of N/F City of Manassas;

Thence departing N/F Thomas and running with N/F City of Manassas the following courses and distances:

S 71°17'26" W a distance of 28.00' to a point;

S 21°18'49" E a distance of 70.07' to a point being the southwestern property corner of N/F City of Manassas and also lying on the northern right-of-way of Bartow Street;

Thence departing N/F City of Manassas and running with the northern right-of-way line of Bartow Street S 71°17'26" W a distance of 127.90' to a point on the northern right-of-way line of Bartow Street where the right-of-way begins a curve to the right the signifies the paper right-of-way of Brent Street;

Thence continuing across Brent Street and within the right-of-way S 71°17'26" W a distance of 65.00' to a point;

Thence turning and running with the westerly right-of-way of Brent Street N 18°42'34" W a distance of 60.00' to a point; said point also being the northeastern property corner of Holmes Heights Lot 21, Block 1;

Thence departing the westerly right-of-way of Brent Street and running with Holmes Heights Lot 21, Block 1 the following courses and distances:

S 71°17'26" W a distance of 130.00' to a point;

S 18°42'34" E a distance of 60.00' to a point being the southwestern property corner of Holmes Heights Lot 21, Block 1 and also lying on the northern right-of-way line of Bartow Street;

Thence departing Holmes Heights Lot 21, Block 1 and running with the northern right-of-way line of Bartow Street the following courses and distances:

S 71°17'26" W a distance of 108.00' to a point;

Thence with a curve turning to the right with an arc length of 30.63', with a radius of 19.50', with a chord bearing of N 63°42'34" W, with a chord length of 27.58',to a point lying on the eastern right-of-way of Grant Avenue;

Thence departing the right-of-way of Bartow Street and running with the eastern right-of-way of Grant Avenue the following courses and distances:

N 18°42'34" W a distance of 38.18' to a point;

Thence with a curve turning to the left with an arc length of 106.72', with a radius of 1030.50', with a chord bearing of N 21°40'35" W, with a chord length of 106.67',to a point;

Thence with a reverse curve turning to the right with an arc length of 21.42', with a radius of 969.50', with a chord bearing of N 24°00'37" W, with a chord length of 21.42',to a point;

Thence N 18°42'34" W a distance of 284.46' to a point on the eastern right-of-way line of Grant Avenue where the right-of-way begins a curve to the right the signifies the paper right-of-way of Bee Street;

Thence continuing across Bee Street within the right-of-way N 18°12'30" W a distance of 80.00' to a point on the eastern right-of-way of Grant Avenue where the curve for the Bee Street right-of-way joins the eastern right-of-way line of Grant Avenue;

Thence continuing to run with the eastern right-of-way of Grant Avenue the following courses and distances:

N 18°42'34" W a distance of 20.00' to a point;

N 16°48'24" W a distance of 30.02' to a point;

Thence with a curve turning to the right with an arc length of 120.43', with a radius of 5,000.00', with a chord bearing of N 16°07'00" W, with a chord length of 120.43',to the point of beginning, and having an area of 428,945.8 square feet of land or 9.847 acres, more or less, inclusive of the existing public street right-of-way of Brent and Bee Streets that falls within the described boundary.

LEGAL DESCRIPTION (TRACT 1)

Beginning at a point lying on the southwest corner of Lot 10A, Block D; said point also being a shared property corner with Lot 1, Block D.

Thence, running with the easterly property line of Lot 1, Block D N 18°42'34" W a distance of 575.19' to a point lying on the southern right-of-way of Bartow Street; said point also being the northeastern property property corner of Lot 9, Block D;

Thence, departing Lot 9, Block D and running with the southern right-of-way of Barton Street and the northerly line of Lot 10A, Block D the following courses and distances:

N 71°17'26" E a distance of 37.51' to a point;

N 67°36'36" E a distance of 278.79' to a point; said point also being the northwestern property corner of N/F Juliano; thence leaving the right-of-way of Bartow Street and running with the boundary of N/F Juliano the following courses and distances:

S 22°23'24" E a distance of 100.00' to a point;

N 67°36'36" E a distance of 125.00' to a point; said point lying on the westerly right-of-way line of Main Street;

Thence departing the lands of N/F Juliano and running with the westerly right-of-way line of Main Street S 21°18'49" E a distance of 474.49' to a point; said point being the northeastern property corner of N/F Wildwood Condominium;

Thence departing the right-of-way of Main Street and running with the northerly property line of N/F Wildwood Condominium S 67°57'11" W a distance of 469.24' to the point of beginning and having an area of 248,913.5 square feet of land or 5.714 acres, more or less.

LEGAL DESCRIPTION (TRACT 2)

Beginning at a point lying on the easterly right-of-way of Grant Avenue, said point also being the northwestern property corner of N/F Wildwood Condominimum;

Thence departing the right-of-way of Grant Avenue and running with the northly property line of N/F Wildwood Condominimum N 67°57'11" E a distance of 127.51' to a point; said point also being the southwestern property corner of Holmes Heights Lot 18 Block B;

Thence departing N/F Wildwood Condominimum and running with Block B of Holmes Heights N 18°42'34" W a distance of 593.56' to a point lying on the southern right-of-way line of Bartow Street; said point being the northwestern property corner of Holmes Heights Lot 10 Block B;

Thence departing the lands of Holmes Heights Lot 10 Block B and running with the southern right-of-way line of Bartow Street the following courses and distances:

S 71°17'26" W a distance of 108.00' to a point;

Thence with a curve turning to the left with an arc length of 30.63', with a radius of 19.50', with a chord bearing of S 26°17'26" W, with a chord length of 27.58',to a point lying on the eastern right-of-way line of Grant Avenue;

Thence departing the right-of-way line of Bartow Street and running with the easterly right-of-way line of Grant Avenue the following courses and distances:

S 18°42'34" E a distance of 567.03' to a point;

Thence with a curve turning to the left with an arc length of 14.46', with a radius of 499.89', with a chord bearing of S 19°32'17" E, with a chord length of 14.46', to the point of beginning and having an area of 76,070.8 square feet of land or 1.746 acres, more or less.

HATCH LEGEND

DENOTES REAL PROPERTY TO BE ZONED B-3.5

DENOTES EX. PUBLIC R/W TO BE VACATED & ZONED B-3.5

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA ANGLE	TANGENT
C1	15.00'	23.56'	N 63°42'34" W	21.21'	90°00'00"	15.00'
C2	40.00'	169.62'	S 39°48'33" W	68.22'	242°57'46"	65.32'
C3	15.00'	16.47'	S 50°13'01" E	15.66'	62°54'39"	9.18'
C4	15.00'	23.56'	S 26°17'12" W	21.21'	89°59'33"	15.00'
C5	15.00'	23.56'	N 63°42'48" W	21.21'	89°59'33"	15.00'
C6	5000.00'	120.44'	N 16°07'00" W	120.44'	1°22'49"	60.22'
C7	15.00'	23.56'	S 63°42'34" E	21.21'	90°00'00"	15.00'
C8	19.50'	30.63'	N 63°42'34" W	27.58'	90°00'00"	19.50'
C9	1030.50'	106.72'	N 21°40'35" W	106.67'	5°56'01"	53.41'
C10	969.50'	21.42'	N 24°00'37" W	21.42'	1°15'57"	10.71'
C11	15.00'	23.56'	N 26°17'39" E	21.21'	89°59'33"	15.00'
C12	499.89'	14.46'	N 19°32'17" W	14.46'	1°39'26"	7.23'

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 67°36'36" E	15.75'
L2	S 71°17'26" W	28.00'
L3	N 18°42'34" W	20.00'
L4	N 16°48'24" W	30.02'
L5	N 83°17'44" W	8.18'
L6	N 18°42'34" W	38.18'

W. STATE GRID NAD 83 NORTH

GRAPHIC SCALE

0 30 60 120

(IN FEET)
1 INCH = 60 FEET

J2 Engineers, Inc.
4080 Lafayette Center Drive
Suite 330
Chantilly, Va. 20151

703.361.1550 (office)
703.956.6845 (fax)
www.j2engineers.com

COMMONWEALTH OF VIRGINIA
Robert Brown
ROBERT W. BROWN
Lic. No. 037041
04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= N/A
SCALE: 1" = 60'

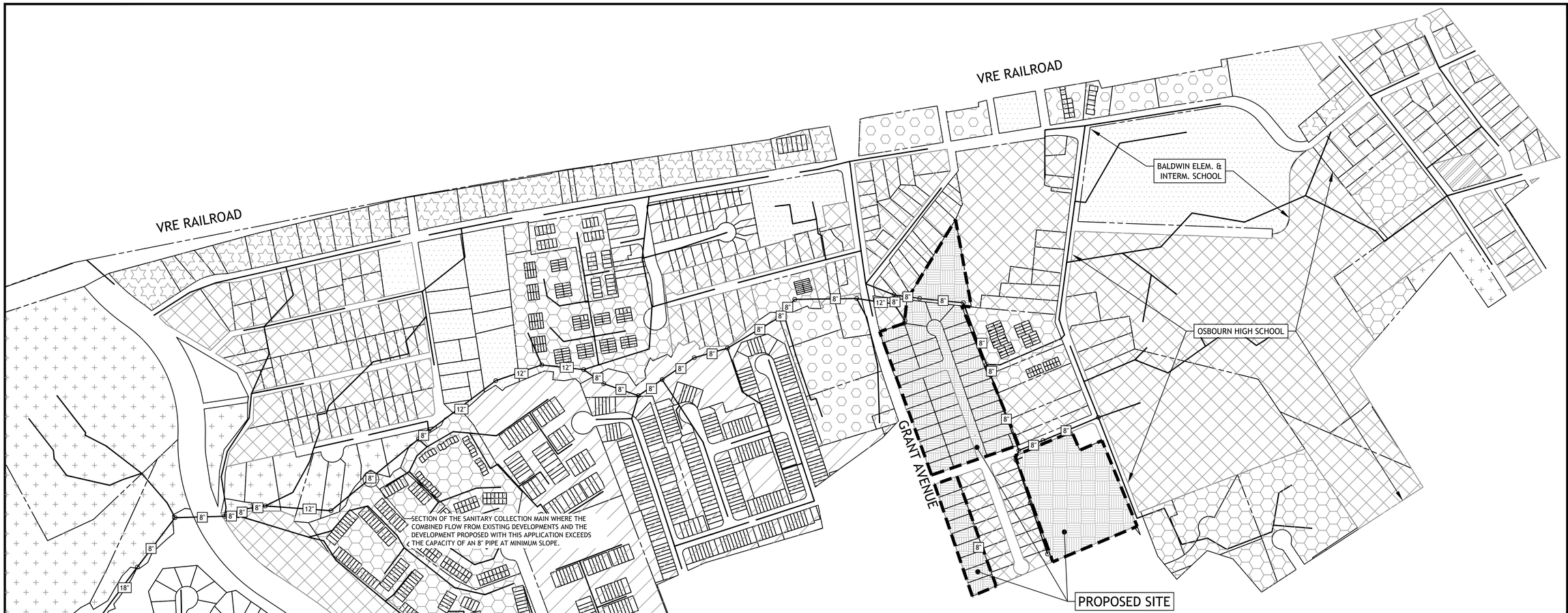
PLAN DATE
12.17.20
12.21.20
04.12.21

CERTIFIED PLAT
GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS
CITY OF MANASSAS, VIRGINIA

No.	DATE	DESCRIPTION

REVISIONS

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\VM2022-06-CERT PLAT.dwg [CERTIFIED PLAT] April 12, 2021 - 2:43pm hchol



Sanitary Sewer Design Computation Table - Revised 12/2014

Pipe Characteristics		Total Flow		Capacity Information
Diameter (inches)	Slope %	Peak Flow Factor	Peak Hour Flow (MGD)	Full Capacity of Pipe (MGD)
8	0.50	4	0	0.598243197
10	0.34	4	0	0.894455887
12	0.26	4	0	1.271909267
15	0.18	4	0	1.918811936
18	0.14	4	0	2.751757547

ZONE	DESCRIPTION	DENSITY (DU/AC)	AREA (AC)	Units	Design Flow GPD/unit	Design Flow GPD/Acre	GPD
R1	Low Density Single Family	2.9	1.42	5	370	x	1850
R2S	Small Lot Single Family	4.3	71.43	308	370	x	113960
R3	Townhouse	12	35.49	426	300	x	127800
R5	Multi-Family	15	49.58	744	300	x	223200
B3.5	Multi-Family	15	6.32	95	300	x	28500
B3.5	Townhouses	x	x	40	300	x	12000
B3.5 & R2S	Schools (w/ Showers & Café)	x	x	3330	16	x	53280
B2	Neighborhood (General) Commercial	x	0.75	x	x	2000	1500
B4	General Commercial	x	12.75	x	x	2000	25500
I1	Light Industrial	x	6.96	x	x	10000	69600
						Existing Flow	**657190**

ZONE	Proposed Development	Units	Design Flow GPD/unit	GPD
R3	Townhouses	159	300	47700
R3	SFD	10	370	3700
			Prop Total	**51400**
			Prop + Ex Flow	**708590**

SANITARY CAPACITY NARRATIVE

THE SANITARY SEWER LAYOUT, PARCEL BOUNDARY, AND ZONING DISTRICT INFORMATION SHOWN HEREON IS TAKEN FROM AVAILABLE RECORD (CITY OF MANASSAS GIS INFORMATION) AND DOES NOT REPRESENT FIELD RUN INFORMATION.

IN THE ABSENCE OF DETAILED PLAN INFORMATION TO DETERMINE THE FLOW WITHIN THE SYSTEM DUE TO EXISTING DEVELOPMENT, AN APPROXIMATE EXISTING FLOW WAS CALCULATED USING THE DESIGN FLOWS PROVIDED IN THE CITY OF MANASSAS DESIGN & CONSTRUCTION STANDARDS MANUAL (DCSM) AND APPLYING THEM TO THE VARIOUS ZONING DISTRICTS FOR THE SURROUNDING AREAS THAT FLOW THROUGH THE SYSTEM.

FOR ZONING DISTRICTS AND LAND USES WHERE DESIGN FLOW IS CALCULATED BASED ON THE NUMBER OF DWELLING UNITS (RESIDENTIAL - SINGLE-FAMILY DETACHED, APARTMENTS, TOWNHOMES), THE MAXIMUM DENSITY FOR THAT DISTRICT WAS ASSUMED, AND AN APPROXIMATION OF THE TOTAL NUMBER OF UNITS WAS ACHIEVED AND THE ASSOCIATED DESIGN FLOW WAS APPLIED.

FOR DISTRICTS AND USES WHERE THE DESIGN FLOW IS CALCULATED BASED ON THE LAND AREA (NEIGHBORHOOD COMMERCIAL, GENERAL COMMERCIAL, LIGHT INDUSTRIAL), THE LAND AREA WAS MULTIPLIED BY THE DESIGN FLOW PROVIDED BY THE DCSM FOR THOSE USES.

FOR THE TWO SCHOOLS LOCATED UPSTREAM OF THE PROPOSED DEVELOPMENT, THE NUMBER OF FACULTY AND STUDENTS WAS TAKEN FROM AVAILABLE RECORDS AND THE ASSOCIATED DESIGN FLOW WAS APPLIED.

THE SANITARY SEWER DESIGN COMPUTATION TABLE SHOWN ABOVE INDICATES THE AVAILABLE CAPACITY IN PIPES SIZED 8" THROUGH 18". SINCE NO FIELD RUN INFORMATION HAS BEEN GATHERED FOR THE ACTUAL AS-BUILT SLOPES IN THE EXISTING SYSTEM, THE ABSOLUTE MINIMUM SLOPE FOR EACH PIPE DIAMETER WAS ASSUMED IN DETERMINING THE AVAILABLE CAPACITY.

ACCORDING TO CITY OF MANASSAS GIS INFORMATION, MUCH OF THE EXISTING SYSTEM BETWEEN THE PROPOSED DEVELOPMENT AND THE LIMIT OF ANALYSIS (18" TRUNK MAIN, LOCATED APPROXIMATELY 4,540 FEET DOWNSTREAM OF THE SITE) IS 8" DIAMETER PIPE, WITH SOME FLUCTUATIONS BETWEEN 8" PIPE AND 12" PIPE. BASED ON THE ASSUMPTIONS STATED ABOVE, THE EXISTING FLOW EXCEEDS THE CAPACITY OF AN 8" DIAMETER PIPE AT A MINIMUM SLOPE OF 0.50% (LIKEWISE, THE COMBINED FLOW OF EXISTING + PROPOSED CONDITIONS EXCEEDS THE CAPACITY OF THE SYSTEM AT THIS POINT. THIS LOCATION IS APPROXIMATELY 3,150 FEET DOWNSTREAM OF WHERE THE PROPOSED DEVELOPMENT TIES IN TO THE EXISTING SYSTEM.

IN ORDER TO PROVIDE A MORE ACCURATE ANALYSIS OF THE ADEQUACY OF THE EXISTING SYSTEM, A COMBINATION OF EXISTING RECORDS AND FIELD-RUN SURVEY WILL NEED TO BE PERFORMED IN ORDER TO DETERMINE ACTUAL SLOPES AND SIZES OF PIPE BETWEEN THE PROPOSED SITE AND THE 18" TRUNK MAIN.

GRAPHIC SCALE
0 125 250 500
(IN FEET)
1 INCH = 250 FEET

VA. STATE GRID NORTH
N

LEGEND

PROPOSED SITE
R1
R2S
R3
R5
B2
B3.5
B4
I1

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COMMONWEALTH OF VIRGINIA
ROBERT W. BROWN
Lic. No. 037041
04/12/2021
PROFESSIONAL ENGINEER

PLAN# VM2022
DATE: DECEMBER 21, 2020
CONTOUR INT.= 2'
SCALE: AS NOTED

PLAN DATE
12.17.20
12.21.20
04.12.21

SANITARY SEWER CAPACITY STUDY

GENERAL DEVELOPMENT PLAN
VAN METRE HOMES AT MANASSAS

CITY OF MANASSAS, VIRGINIA

REVISIONS

No.	DATE	DESCRIPTION

SHEET 26 OF 26

J2 Engineers - X:\DRAWINGS\ACTIVE\Holmes Manassas\Rezoning\San Sewer Study.dwg [SANSEW CAP STUDY] April 12, 2021 - 2:43pm hchoi