

GENERAL NOTES

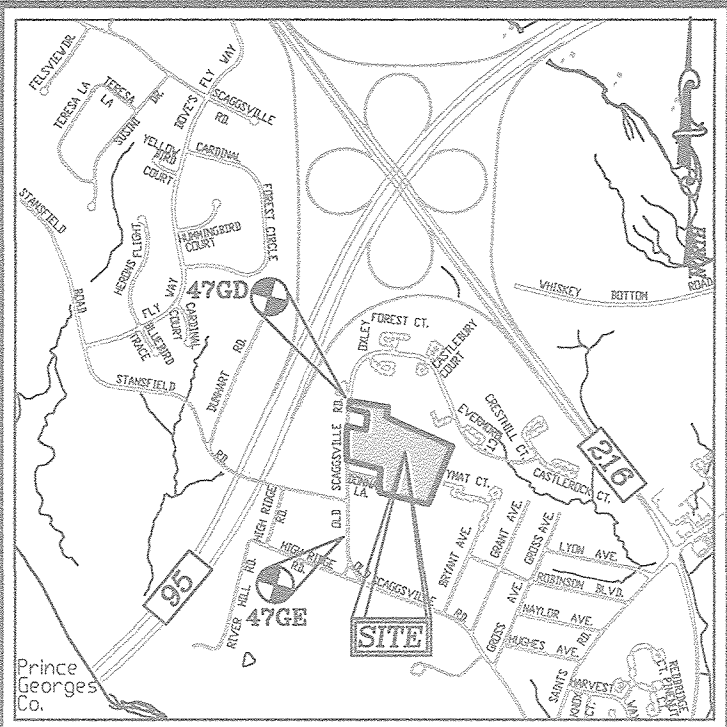
- 1. PROJECT BACKGROUND:
SUBDIVISION NAME: MAGNOLIA MANOR
TAX MAP 47 GRID 19
SECTION/AREA: N/A
LOT/PARCEL: 163 & 465
ZONING: R-SC (MIN 6,000 SF LOT)
TR/FIN REFERENCE: N/A
ELECTION DISTRICT: 6TH
TOTAL TRACT AREA: 15.33± AC.
NUMBER OF LOTS: 61 LOTS
PROPOSED HOMES: 44 SINGLE FAMILY ATTACHED HOMES, 15 SINGLE FAMILY DETACHED HOMES
EXISTING DWELLINGS TO REMAIN: 2
NET AREA OF PROJECT: (GROSS-STEEP SLOPES & FLOODPLAIN): 15.33 ACRES±
AREA OF RESIDENTIAL LOTS: 5.27 AC.
OPEN SPACE REQ'D: 3.83 AC.
OPEN SPACE PROVIDED: 7.54 AC.
PUBLIC WATER & SEWER: SEE NOTES 13 & 14
DPZ REF.'S: F-88-153, ECP-17-005, WP-16-04, WP-17-058, S-17-002.

MINIMUM LOT SIZE CHART
Table with columns: LOT, GROSS AREA, PIPESTEM AREA, NET AREA, MIN. LOT SIZE

PRELIMINARY PLAN
MAGNOLIA MANOR
LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
A SUBDIVISION OF TAX MAP 47 - PARCEL 465 AND
A RESUBDIVISION OF TAX MAP 47 - PARCEL 163
GIDDINGS PROPERTY - SECTION 1 AREA 1 - LOTS 1-4 (PLAT 9114)
HOWARD COUNTY, MD

COORDINATE TABLE
Table with columns: NO., NORTH, EAST

BENCHMARKS
HOWARD COUNTY BENCHMARK - 47GE
N 529044.94 E 1350855.03 ELEV.: 337.61
HOWARD COUNTY BENCHMARK 47GD
N 530494.49 E 1350872.35 ELEV.: 312.28



SHEET INDEX
Table with columns: DESCRIPTION, SHEET NO.

LEGEND

- EXISTING CURB AND GUTTER
PROPOSED CURB AND GUTTER
EXISTING LIGHT POLE
EXISTING MAILBOX
EXISTING SIGN
PROPERTY LINE
RIGHT-OF-WAY LINE
PROPOSED SIDEWALK
EX. FOREST CONSERVATION EASEMENT (PROFESSIONAL) PLATS 23048-23055
EX. WETLANDS
EX. WETLAND BUFFER
EX. STREAM
EX. STREAM BUFFER

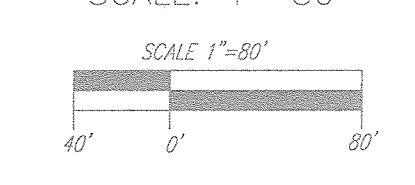
OPEN SPACE TABULATION:

IN ACCORDANCE WITH SECTION 16.121(A)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS THE OPEN SPACE REQUIREMENTS FOR THIS R-SC PROJECT IS 25% OF GROSS AREA.
(15.33 AC. GROSS AREA x 25% = 3.83 AC.)
OPEN SPACE PROVIDED IS 7.54 ACRES±
CREDITED 7.24 ACRES±
NON-CREDITED 0.30 ACRES±

OWNER:
MARANATHA MAGNOLIA MANOR, LLC
MICHAEL PFAU, MEMBER
3675 PARK AVE., SUITE 301
ELLCOTT CITY, MD 21043
(410) 480-0023
DEVELOPER:
TRINITY HOMES MARY LAND, LLC
3675 PARK AVE., SUITE 301
ELLCOTT CITY, MD 21043
(410) 480-0023



COVER SHEET
SCALE: 1"=80'



RECREATION OPEN SPACE TABULATION:

MAGNOLIA MANOR - SINGLE FAMILY HOMES (SFD)
RECREATION OPEN SPACE REQUIRED PER SECTION 16.121(A)(4)(c)
MAGNOLIA MANOR - SINGLE FAMILY HOMES (SFD)
MAGNOLIA MANOR - SINGLE FAMILY ATTACHED (SFA)
TOTAL RECREATION OPEN SPACE REQUIRED = 22,700 SF
TOTAL RECREATION OPEN SPACE TO BE PROVIDED FOR MAGNOLIA MANOR
LAND AREAS:
1. P/O OPEN SPACE 68 - 9,140 SF
2. P/O OPEN SPACE 67 - 2,375 SF
PLUS AMENITIES: TBD
TOTAL LAND = 11,590 SF
REQUIREMENT MET IN COMBINATION WITH THE JUNE 2012 POLICY REGARDING THE ALLOWANCE OF A MAXIMUM 50% CREDIT FOR RECREATIONAL OPEN SPACE IN LIEU OF LAND AREA.
AMENITIES:
-PLAY EQUIPMENT, BENCHES, ET. (SEE SHEET 3 FOR DETAILS)
-NEIGHBORHOOD CONNECTION PATHWAY
TOTAL = 11,515 SF CREDIT

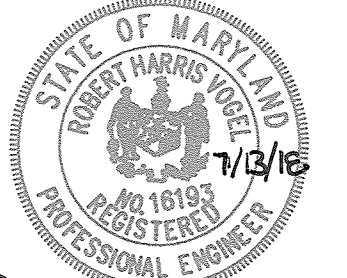
PARKING TABULATION:

TOTAL NUMBER OF DWELLING UNITS PROPOSED: 61
SINGLE FAMILY ATTACHED (SFA) = 44 LOTS
SINGLE FAMILY DETACHED (SFD) = 17 LOTS
TOTAL OFF-STREET PARKING SPACES PROVIDED: 156 SPACES
OFF-STREET
2. VISITOR PARKING REQUIRED:
SFA - 44 UNITS @ 0.5 SPACES PER UNIT = 22 SPACES REQUIRED
SFD - 17 UNITS @ 0.5 SPACES PER UNIT = 8 SPACES REQUIRED
REFER TO 34 OFF-STREET EXCESS FOR SFD

- GENERAL NOTES CONTINUED:
42. TRAFFIC CONTROL DEVICES:
A. THE R1-1 (STOP) SIGN AND STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAYING IS COMPLETE.
B. A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DRIVEWAY ACCESS POINT ON OLD SCAGGSVILLE ROAD AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
C. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
D. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
E. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED "QUICK PUNCH" SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
43. ON THE APPROACH SIDE OF A STOP SIGN AND ALL OTHER TRAFFIC CONTROL SIGNS NOT ATTACHED TO A STREET LIGHT POLE, NO STREET TREE CAN BE PLANTED WITHIN 30' OF THE SIGN.
44. THE PROPOSED PEDESTRIAN PATHWAY SHALL BE MAINTAINED BY HOA AND INCLUDE AN EASEMENT FOR THAT PURPOSE.
45. NO STORM WATER MANAGEMENT DEVICES OR RECREATIONAL OPEN SPACE SHALL BE LOCATED WITHIN THE FEE OPEN SPACE LOT 64 WHICH SHALL BE OWNED BY HOWARD COUNTY AND MAINTAINED BY THE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS.
46. 5' ASPHALT PATHWAY THROUGH OPEN SPACE 69 SHALL BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOA INCLUDING THROUGH WYOMINGERS SEC-2 50' ROW RESERVED.
47. THIS PLAN IS SUBJECT TO WP-18-085, ON MARCH 28, 2018, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR AN ALTERNATIVE COMPLIANCE OF SECTION 16.116(A) WHICH PROHIBITS GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES WITHIN 100 FEET OF A PERENNIAL STREAMBANK, AND WITHIN 25 FEET OF A WETLAND BUFFER TO INSTALL A SEWER LINE WITH A TRADITIONAL OPEN CUT TRENCH. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1. COMPLIANCE WITH THE SUBDIVISION REVIEW COMMITTEE COMMENTS ISSUED FOR P-17-004.
2. THE ALTERNATIVE COMPLIANCE NUMBER AND ITS CONDITIONS OF APPROVAL MUST BE ADDED TO ALL SUBDIVISION PLANS.
3. SUBJECT TO OBTAINING ALL THE REQUIRED WETLAND PERMITS FROM MDE AND/OR THE U.S. ARMY OF CORP. OF ENGINEERS, CASE OR PERMIT NUMBERS MUST BE PROVIDED WITHIN NOTES OF ALL SUBDIVISION PLANS FOR THIS PROPOSED DEVELOPMENT.
4. THE PROPOSED IF MIT OF DISTURBANCE WITHIN THE 25' WETLANDS BUFFER FOR THE CONSTRUCTION OF THE SEWER LINE SHALL BE THE MINIMUM NECESSARY FOR THE SEWER INSTALLATION.
48. THIS PROJECT IS SUBJECT TO A DESIGN MANUAL WAIVER. ON APRIL 11, 2018, THE CHIEF OF THE DEVELOPMENT ENGINEERING DIVISION APPROVED THE REQUEST TO WAIVE THE REQUIREMENTS OF DESIGN MANUAL VOLUME III, APPENDIX A PUBLIC ROADWAY DESIGN CRITERIA ALLOWING A REDUCTION TO THE MINIMUM CURVE RADIUS OF 210 FEET SUBJECT TO THE INSTALLATION OF SIX "NO PARKING" SIGNS ON THE ACCESS PLACE PORTION OF LAURENS WAY.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Signature: [Handwritten Signature]
PLANNING DIRECTOR
DATE: 8-1-18



ROBERT H. VOGEL, INC.
ENGINEERS • SURVEYORS • PLANNERS
3300 N. RIDGE ROAD, SUITE 110, ELLCOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE PROFESSIONAL ENGINEERING ACT OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 08-28-2018

DESIGN BY: RHY
DRAWN BY: KG
CHECKED BY: RHY
DATE: JULY 2018
SCALE: AS SHOWN
W.O. NO.: 16-15

1 SHEET OF 11

ROAD	STATIONS	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
LAURENS WAY	0+53.72-1+42.97	89.26'	270.00'	18°30'03"	45.04'	S81°30'03"E	88.85'
LAURENS WAY	3+78.43-5+07.71	129.28'	90.00'	82°18'12"	78.65'	S27°40'55"E	118.45'
LAURENS WAY	5+12.46-7+48.71	236.26'	150.00'	90°14'40"	150.64'	S31°39'09"E	212.58'
LAURENS WAY	7+77.49-8+64.31	86.82'	112.00'	44°24'49"	45.72'	S81°01'00"W	84.66'
GIDDINGS CROSSING	0+38.22-0+66.43	28.21'	210.00'	07°41'48"	14.13'	S17°19'05"W	28.19'

LEGEND

- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING LIGHT POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- MICRO-BIOTEXTURE
- PROPOSED SIDEWALK
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN
- DRAIN INLET
- EX. FOREST CONSERVATION EASEMENT (RESTORATION) PLATS 23048-23055
- EX. PUBLIC STORMWATER MANAGEMENT DRAINAGE & UTILITY EASEMENT
- EX. WETLANDS
- EX. WETLAND BUFFER
- EX. STREAM
- EX. STREAM BUFFER
- NON-CREDITED OPEN SPACE
- 24' PRIVATE USE IN COMMON ACCESS EASEMENT
- PUBLIC WATER, SEWER, AND UTILITY EASEMENT
- FOREST CONSERVATION EASEMENT (RESTORATION)
- FOREST CONSERVATION EASEMENT (RETENTION)
- EXISTING SPECIMEN TREE
- EXISTING TREES
- SIGHT DISTANCE EASEMENT

NOTE:

1. PATHWAY SHALL INCLUDE PUBLIC ACCESS EASEMENT WITHIN HOA.
2. 5' ASPHALT PATHWAY THROUGH OPEN SPACE 69 SHALL BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOA INCLUDING THROUGH WYDEMERE SEC-2 50' ROW RESERVED.

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DEVELOPER
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 3675 PARK AVE., SUITE 301
 ELLICOTT CITY, MD 21043
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REVISION _____ DATE _____

PRELIMINARY PLAN
SITE LAYOUT
MAGNOLIA MANOR
 LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
 A SUBDIVISION OF TAX MAP 47 - PARCEL 465 AND A RESUBDIVISION OF
 TAX MAP 47 - PARCEL 163 - GIDDINGS PROPERTY - SECTION 1 AREA 1 - LOTS 1-4 (PLAT 9114)
 TAX MAP: 47 PARCELS: 163 & 465 BLOCK: 19 ZONING: R-SC
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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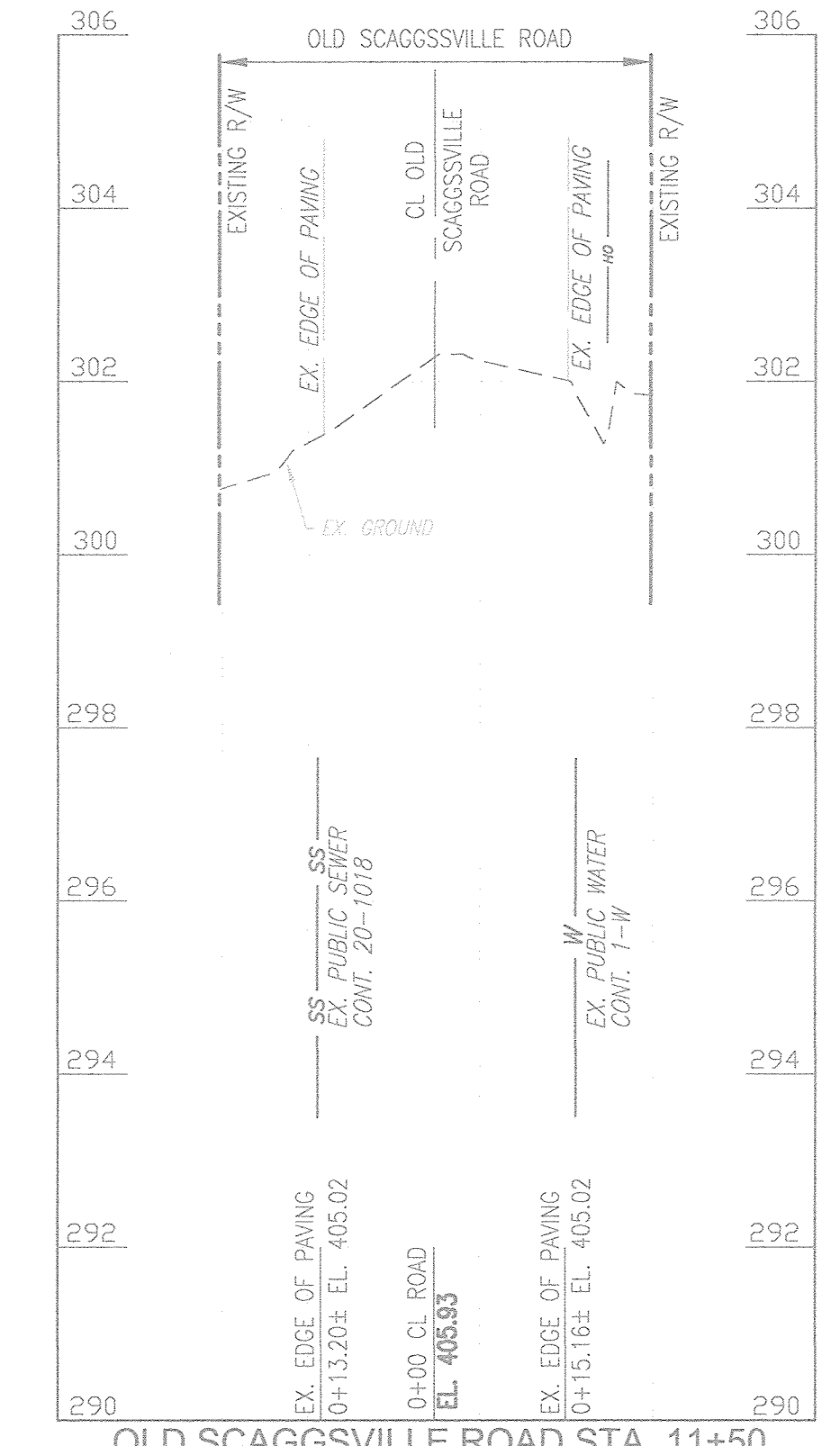
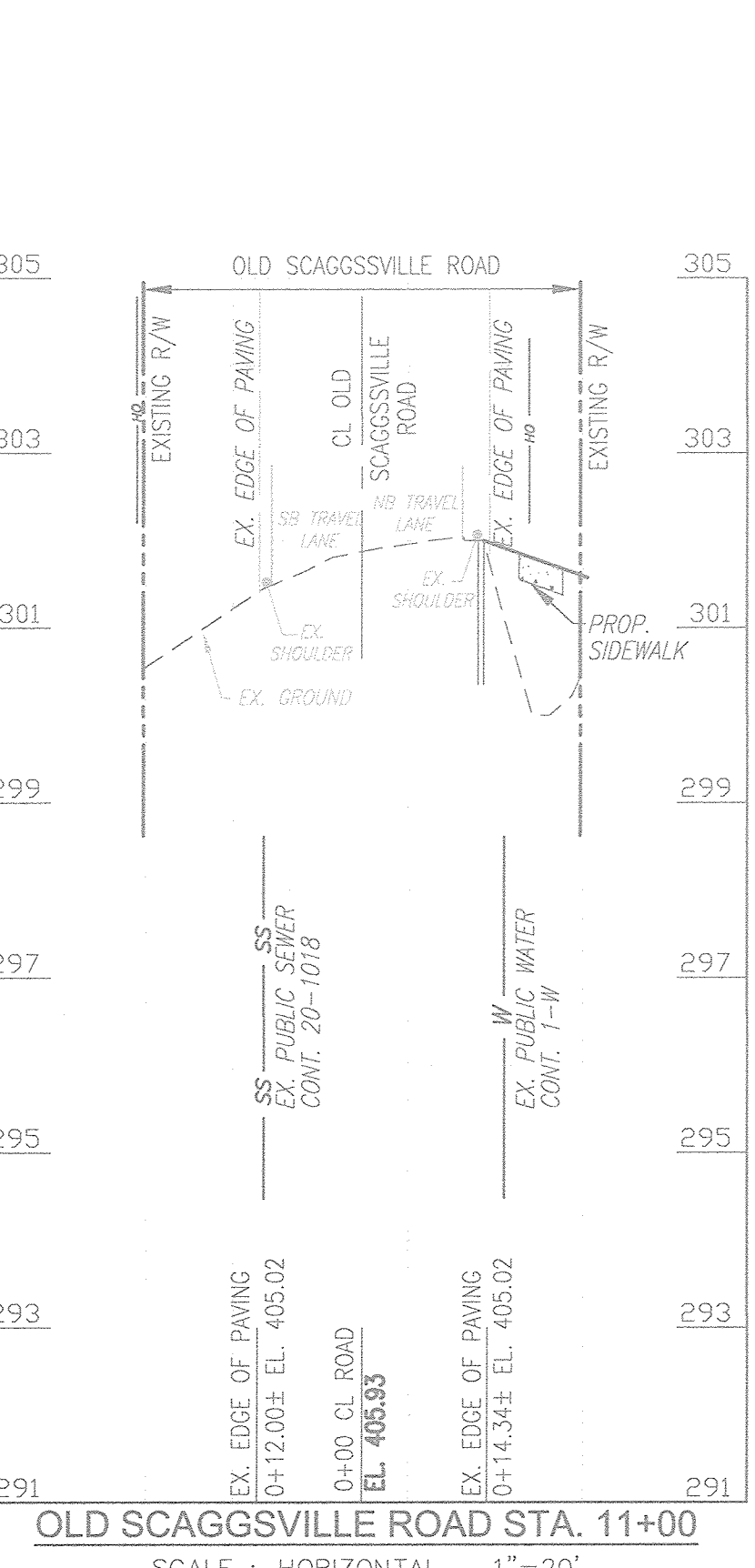
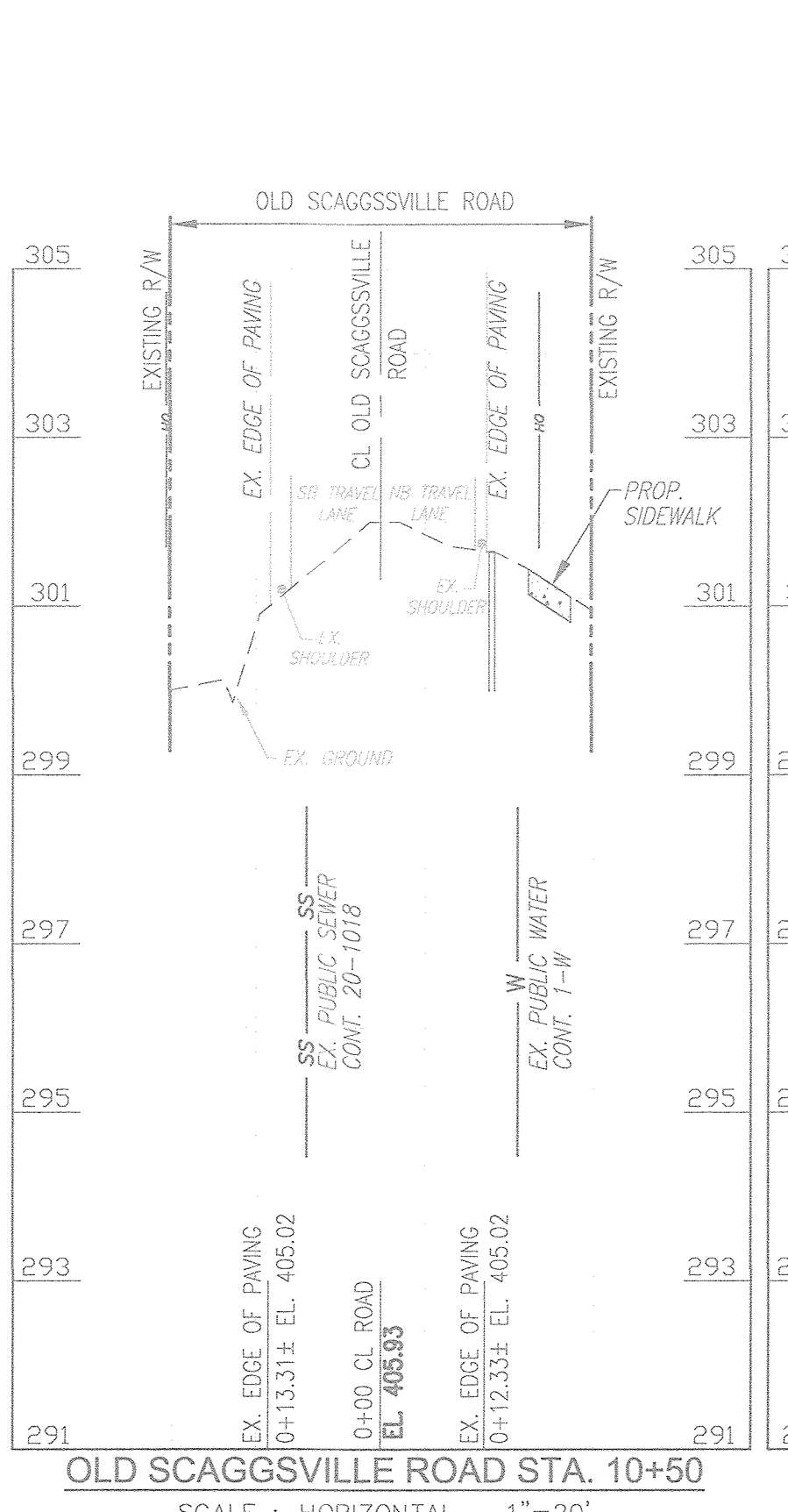
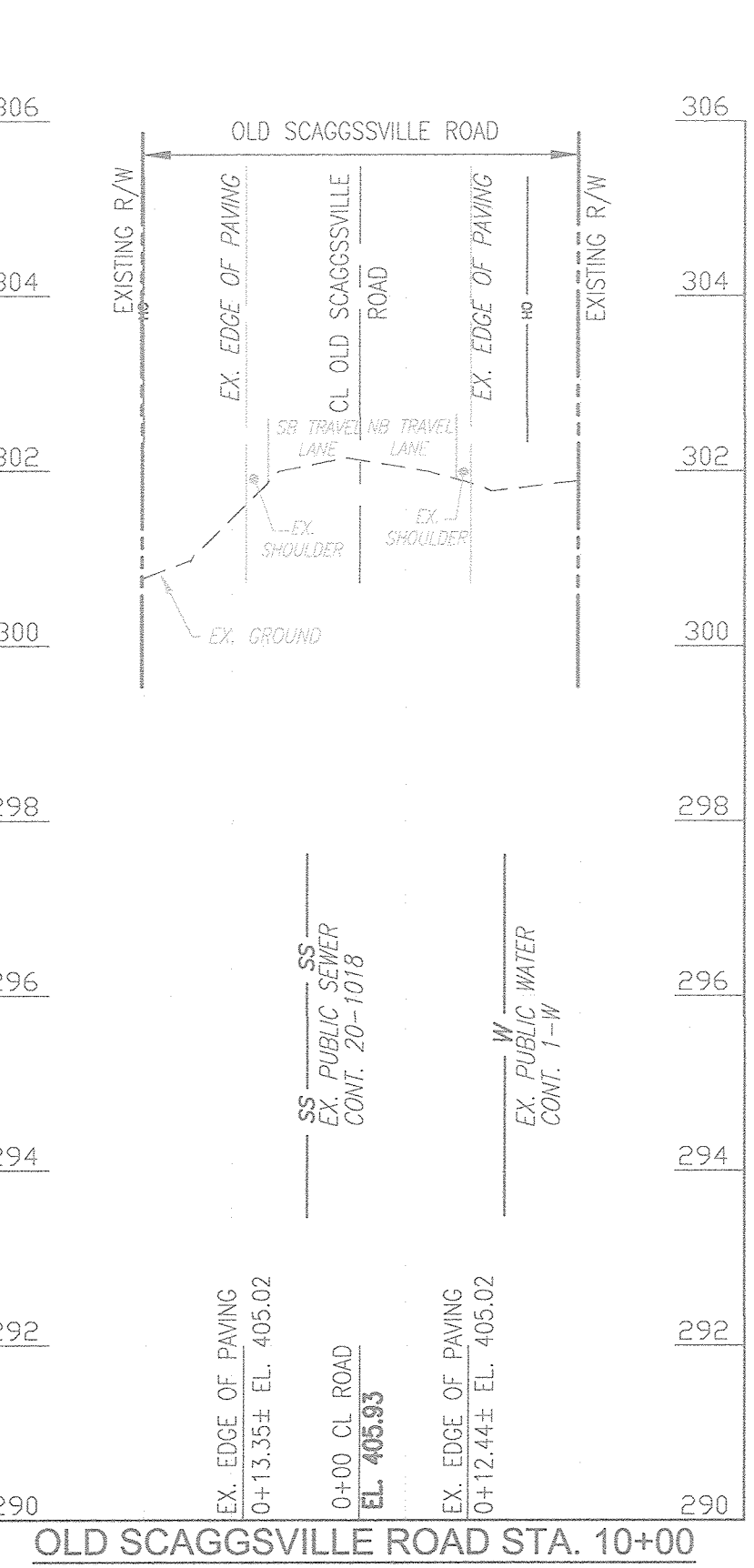
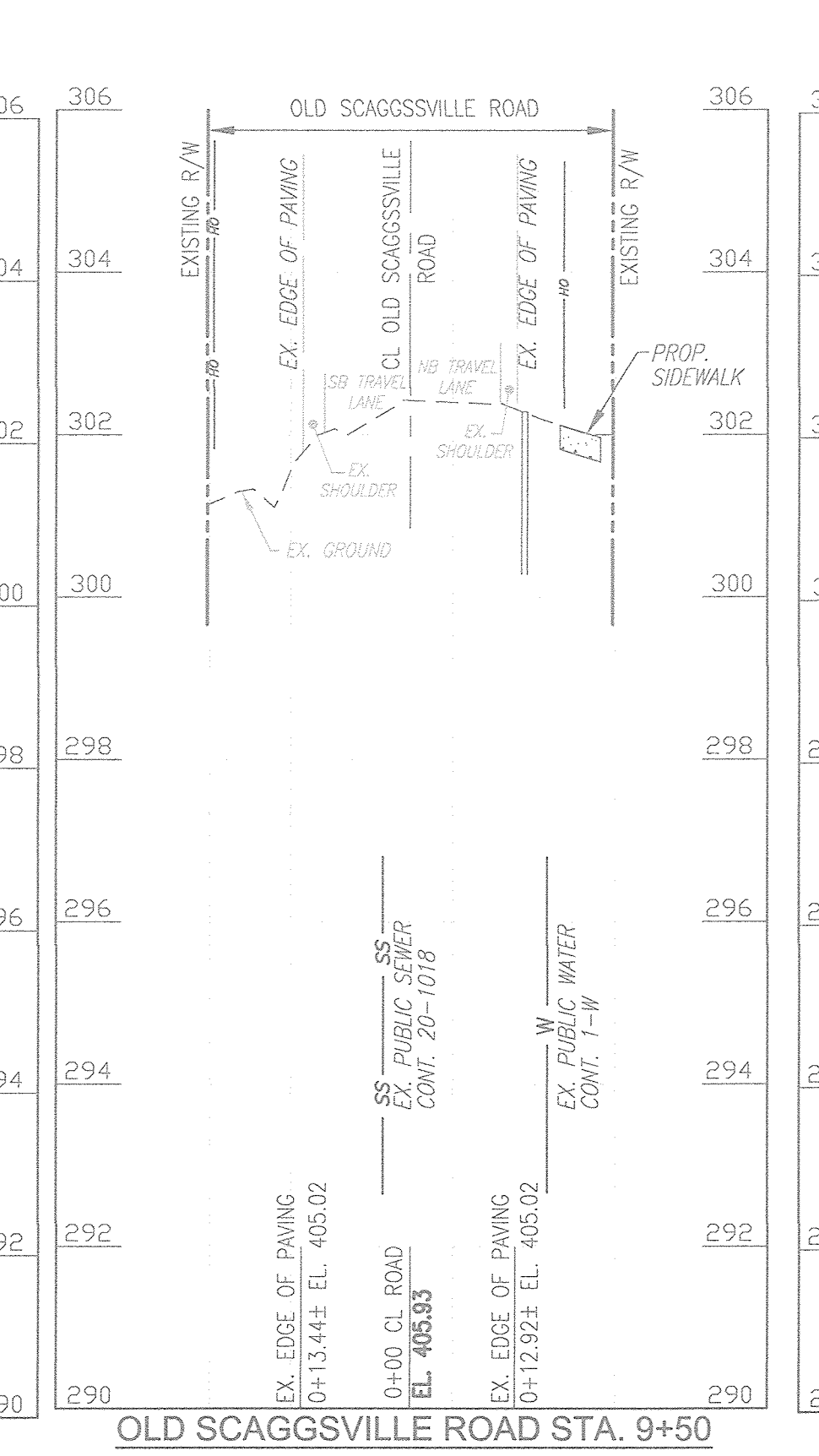
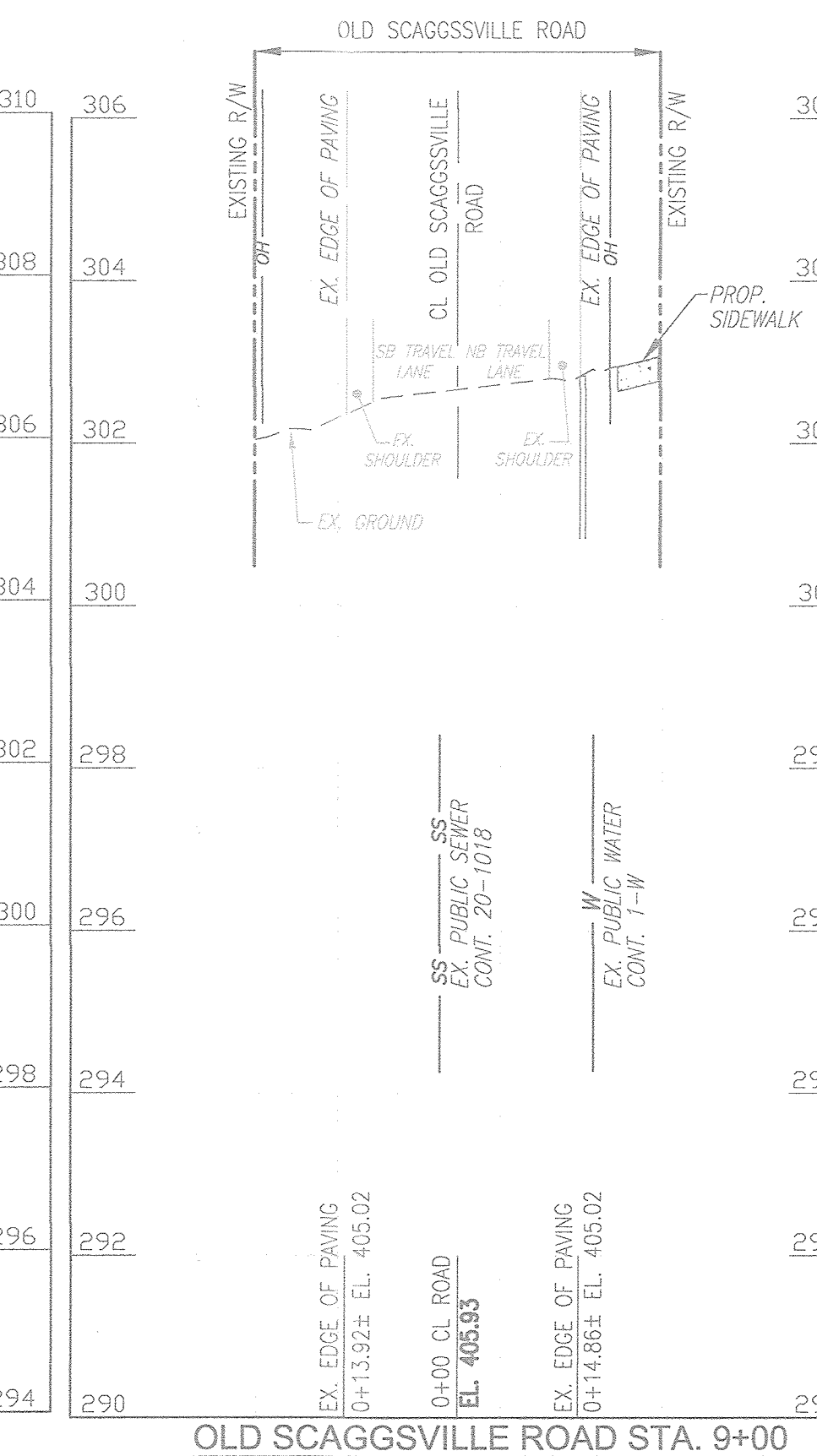
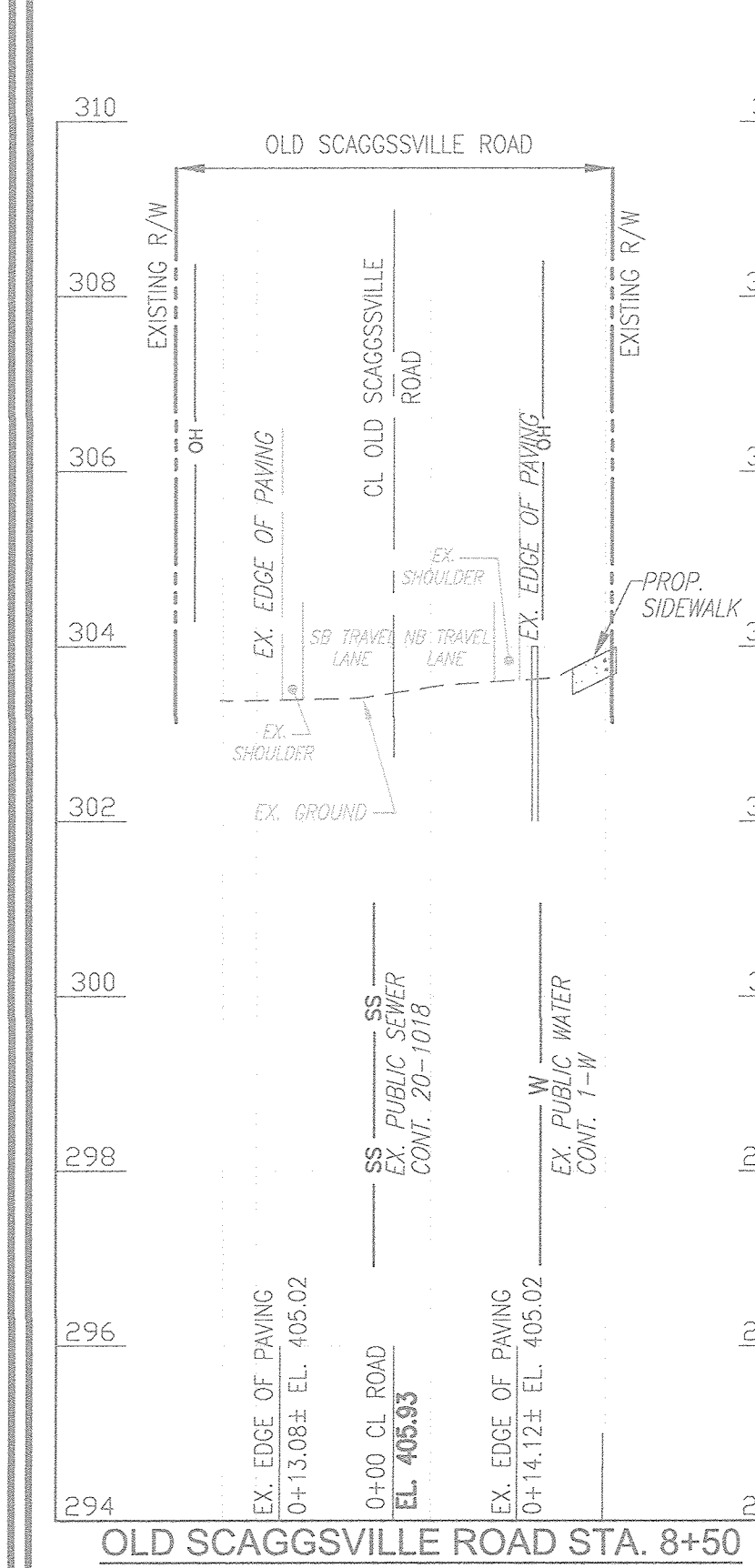
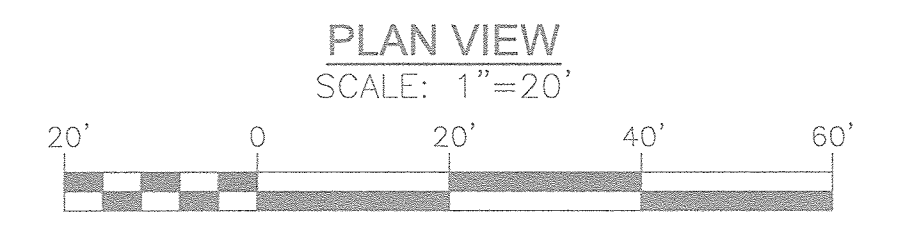
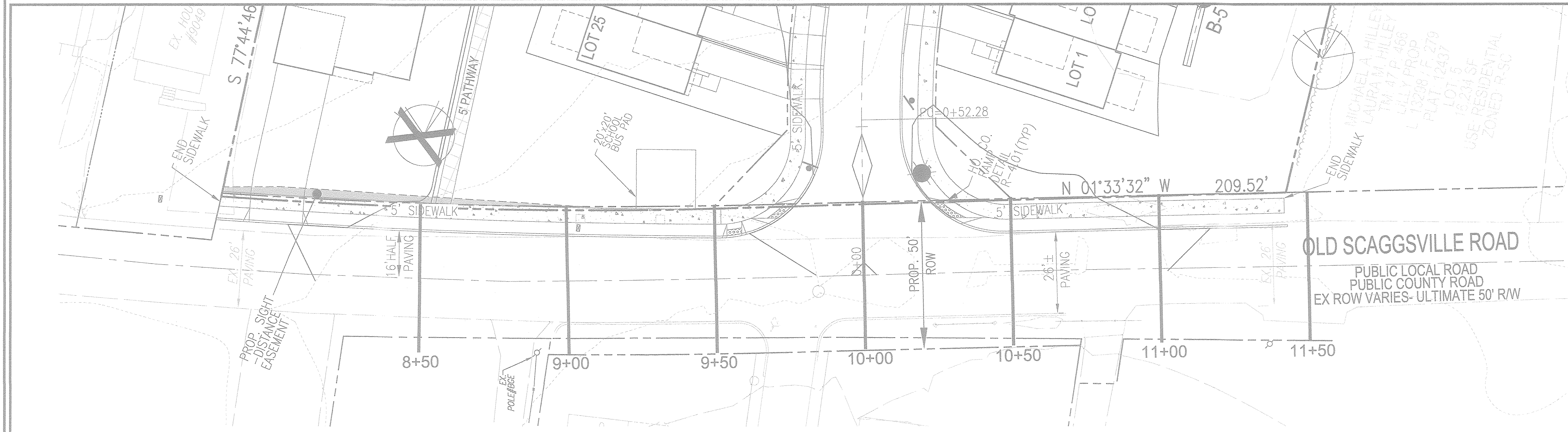
PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
 DRAWN BY: KG
 CHECKED BY: RHV
 DATE: JULY 2018
 SCALE: AS SHOWN
 W.O. NO.: 16-15

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2 SHEET OF 11





OLD SCAGGSVILLE ROAD STA. 8+50
SCALE: HORIZONTAL - 1"=20'
VERTICAL - 1"=2'

OLD SCAGGSVILLE ROAD STA. 9+00
SCALE: HORIZONTAL - 1"=20'
VERTICAL - 1"=2'

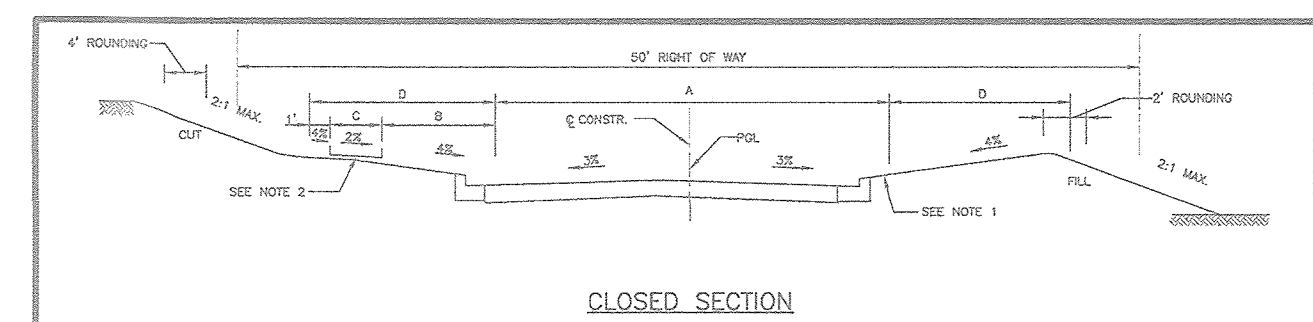
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SCALE: HORIZONTAL - 1"=20'
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OLD SCAGGSVILLE ROAD STA. 10+00
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VERTICAL - 1"=2'

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SCALE: HORIZONTAL - 1"=20'
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SCALE: HORIZONTAL - 1"=20'
VERTICAL - 1"=2'

OLD SCAGGSVILLE ROAD STA. 11+50
SCALE: HORIZONTAL - 1"=20'
VERTICAL - 1"=2'



- NOTES:
- TYPE OF CURB VARIES (COURT CURB OR GUTTER OR CONCRETE CURB & GUTTER - SEE DESIGN MANUAL, VOLUME II FOR DETAILS)
 - 4" CONCRETE SIDEWALK AS REQUIRED BY SUB-DIVISION REGULATIONS.
 - 4'-0" SHOULDER REQUIRES A PAVING AREA (SEE DETAIL B-4-01).

CLASSIFICATION	A	B	C	D	PROPOSED
MINOR COLLECTOR	1/2"	1/2"	1/2"	1/2"	P-3
ACCESS STREET	1/2"	1/2"	1/2"	1/2"	P-2
ACCESS DRIVE	1/2"	1/2"	1/2"	1/2"	P-2

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
TYPICAL SECTIONS - Residential Streets
Access Place, Access Street, Minor Collector
(Closed Section)
Detail R-1.02

OWNER: MARANATHA MAGNOLIA MANOR, LLC
DEVELOPER: TRINITY HOMES MARY LAND, LLC
3675 PARK AVE., SUITE 301
ELLICOTT CITY, MD 21043
(410) 480-0023

REVISION	DATE

PRELIMINARY PLAN
IMPROVEMENTS & CROSS SECTIONS
MAGNOLIA MANOR
LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
A SUBDIVISION OF TAX MAP 47 - PARCEL 465 AND A RESUBDIVISION OF
TAX MAP 47 - PARCEL 163 - ODDINGS PROPERTY - SECTION 1 AREA 1 - LOTS 1-4 (PLAT 9114)
TAX MAP 47 PARCELS: 163 & 465
BLOCK: 19 ZONING: R-SC
8TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
PLANNING DIRECTOR
8-1-18
DATE



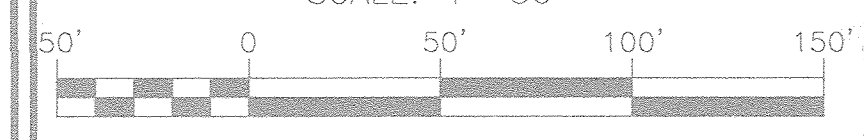
NOTE:
 FALLSINGTON SOIL IS POORLY DRAINED, HAS SEASONAL HIGH GROUNDWATER AND THE WATER TABLE CAN BE SHALLOW. FUTURE PLANS FOR HOUSE CONSTRUCTION SHALL ADDRESS THE POTENTIAL FOR GROUNDWATER ISSUES IN THE AREA(S) OF Fc SOILS.

LEGEND	
	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING SPOT ELEVATION
	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	MICRO-BORETENTION
	PROPOSED SIDEWALK
	EXISTING TREELINE
	PROPOSED TREELINE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	EX. FOREST CONSERVATION EASEMENT (RESTORATION) PLATS # 23048-23005
	EX. PUBLIC STORMWATER MANAGEMENT, DRAINAGE & UTILITY EASEMENT
	EX. WETLANDS
	24' PRIVATE USE IN COMMON ACCESS EASEMENT
	PUBLIC WATER, SEWER, AND UTILITY EASEMENT
	EX. WETLAND BUFFER
	EX. STREAM
	EX. STREAM BUFFER
	NON-CREDITED OPEN SPACE
	SILT FENCE
	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
	CURB INLET PROTECTION
	AT GRADE INLET PROTECTION
	STABILIZED CONSTRUCTION ENTRANCE
	ERODIBLE SOILS
	NRSC A/B/C/D SLOPES
	MODERATE SLOPES (15% - 24.99%)
	SOILS BOUNDARY
	FOREST CONSERVATION EASEMENT (RESTORATION)
	FOREST CONSERVATION EASEMENT (RETENTION)

NOTE:
 APPROVAL OF THIS PRELIMINARY PLAN (P) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME.

- NOTE:**
1. PATHWAY SHALL INCLUDE PUBLIC ACCESS EASEMENT WITHIN HOA.
 2. 5' ASPHALT PATHWAY THROUGH OPEN SPACE 69 SHALL BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOA INCLUDING THROUGH WYNDMERE SEC-2 60' ROW RESERVED.
 3. MAXIMUM CROSS-SLOPE SHALL NOT EXCEED 2%.

GRADING PLAN
 SCALE: 1"=50'



TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Naheem J. J. Ali
 PLANNING DIRECTOR

8-1-18
 DATE

SOILS LEGEND HOWARD COUNTY SOILS MAP #14			
SYMBOL	NAME / DESCRIPTION	GROUP	K FACTOR/ERODIBLE
Fca	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	D	0.02 NO
CeB	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	C	0.24 NO
SIB	SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	0.20 NO
S/D	SASSAFRAS AND CROOK SOILS, 10 TO 15 PERCENT SLOPES	B	0.32 NO
UcB	URBAN LAND CHILLUM BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	C	0.37 YES

NOTE: 1. TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY.
 2. FALLSINGTON SOILS HAVE SEVERE LIMITATIONS FOR HOME CONSTRUCTION.
 3. HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL LIQUIDITY FACTOR, K, GREATER THAN 0.45 AND WITH A SLOPE GREATER THAN 5 PERCENT.

OWNER
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PRELIMINARY PLAN
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MAGNOLIA MANOR
 LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
 A SUBDIVISION OF TAX MAP 47 - PARCEL 163 AND A RESUBDIVISION OF
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 8TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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PROFESSIONAL CERTIFICATE

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 CHECKED BY: _____
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5 SHEET OF 11

NOTE:
 1. PATHWAY SHALL INCLUDE PUBLIC ACCESS EASEMENT WITHIN HOA.
 2. 5' ASPHALT PATHWAY THROUGH OPEN SPACE 69 SHALL BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOA INCLUDING THROUGH WYDEMERE SEC-2 50' ROW RESERVED.

**DRAINAGE IMPACTS @ PROPERTY LINE
 STUDY POINT SUMMARY**

EXISTING CONDITIONS	2 YEAR	10 YEAR	100 YEAR
PROPOSED CONDITIONS ECP-17-002 / S-17-002	14 CFS	54 CFS	94 CFS
	18 CFS	62 CFS	104 CFS

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- SOILS BOUNDARY
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SIGHT DISTANCE EASEMENT
- PROPOSED SIDEWALK
- EXISTING TREE LINE
- PROPOSED TREE LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN DRAIN INLET
- EX. FOREST CONSERVATION EASEMENT (RESTORATION) PLANS 20046-20056
- 24' PRIVATE USE IN COMMON ACCESS EASEMENT
- PUBLIC WATER, SEWER, AND UTILITY EASEMENT
- EX. WETLANDS
- EX. WETLAND BUFFER
- EX. STREAM
- EX. STREAM BUFFER
- DRAINAGE AREA DIVIDE

AREA	INLET	ZONE	% IMP
FOREST CONSERVATION EASEMENT (RESTORATION)			
FOREST CONSERVATION EASEMENT (RETENTION)			

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DEVELOPER
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 ELLICOTT CITY, MD 21043
 (410) 480-0023

REVISION	DATE

PRELIMINARY PLAN
STORM DRAIN DRAINAGE AREA MAP
MAGNOLIA MANOR
 LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
 A SUBDIVISION OF TAX MAP 47 - PARCEL 465 AND A RESUBDIVISION OF
 TAX MAP 47 - PARCEL 163 - GIDDINGS PROPERTY - SECTION 1 AREA 1 - LOTS 1-4 (PLAT 9114)
 TAX MAP 47 PARCELS: 163 & 465 BLOCK: 19 ZONING: R-SC
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 3300 N. RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 TEL: 410.461.7666 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE 09-27-2018

DESIGN BY: RHY
 DRAWN BY: KG
 CHECKED BY: RHY
 DATE: JULY 2018
 SCALE: AS SHOWN
 W.O. NO.: 16-15

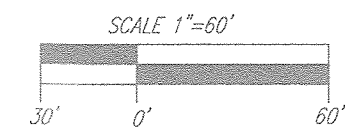
6 SHEET OF 11

SOILS LEGEND
 HOWARD COUNTY SOILS MAP #14

SYMBOL	NAME / DESCRIPTION	GROUP	K	FACTOR	ERODIBLE
FpaA	FALLSINGTON SANDY LOAMS, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	D	0.02		NO
CaB	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	C	0.24		NO
S1B	SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	0.20		NO
S1D	SASSAFRAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES	B	0.32		NO
UaB	URBAN LAND CHILLUM BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	C	0.37		YES

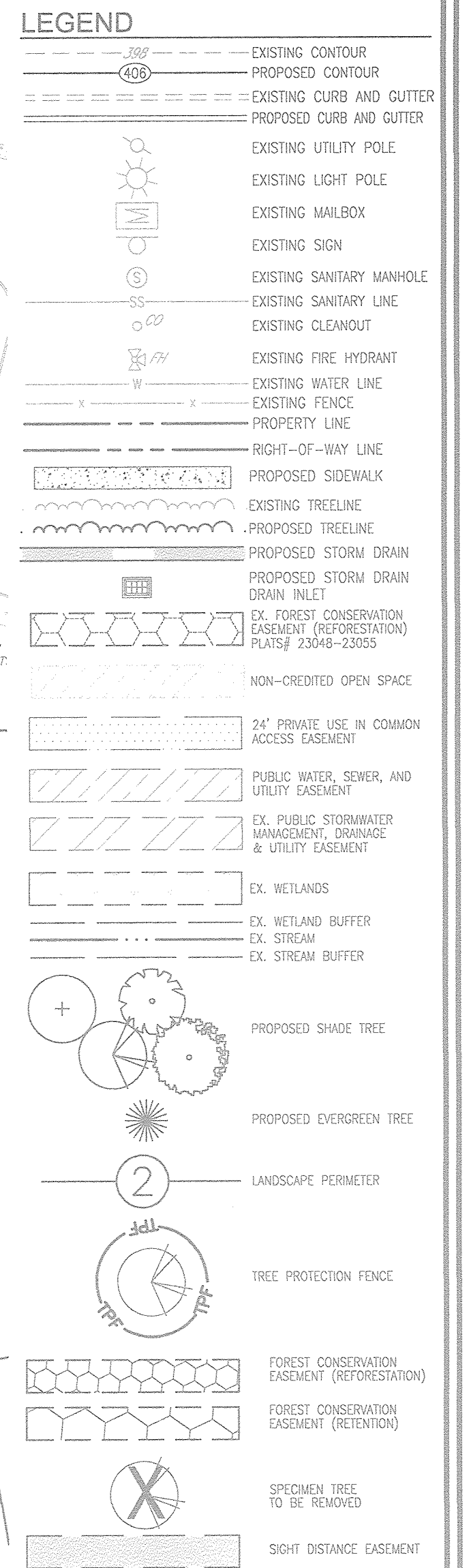
NOTE 1: TAKEN FROM: USDA, SCS - WEBB SOIL SURVEY, HOWARD COUNTY.
 2: FALLSINGTON SOILS HAVE SEVERE LIMITATIONS FOR HOME CONSTRUCTION.
 3: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

STORM DRAIN DRAINAGE AREA MAP
 SCALE: 1"=60'



TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

William J. J...
 PLANNING DIRECTOR
 8-7-18
 DATE



NOTE:
 1. PATHWAY SHALL INCLUDE PUBLIC ACCESS EASEMENT WITHIN HOA.
 2. 5' ASPHALT PATHWAY THROUGH OPEN SPACE 69 SHALL BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOA INCLUDING THROUGH WYDEMERE SEC-2 5' ROW RESERVED.

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 ELLICOTT CITY, MD 21043
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REVISION	DATE

PRELIMINARY PLAN
LANDSCAPE PLAN
MAGNOLIA MANOR
 LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
 A SUBDIVISION OF TAX MAP 47 - PARCEL 465 AND A RESUBDIVISION OF
 TAX MAP 47 - PARCEL 163 - GIDDINGS PROPERTY - SECTION 1 AREA 1 - LOTS 1-4 (PLAT 9114)
 TAX MAP 47 PARCELS: 163 & 465 BLOCK 19 ZONING: R-S2
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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DESIGN BY: RHV
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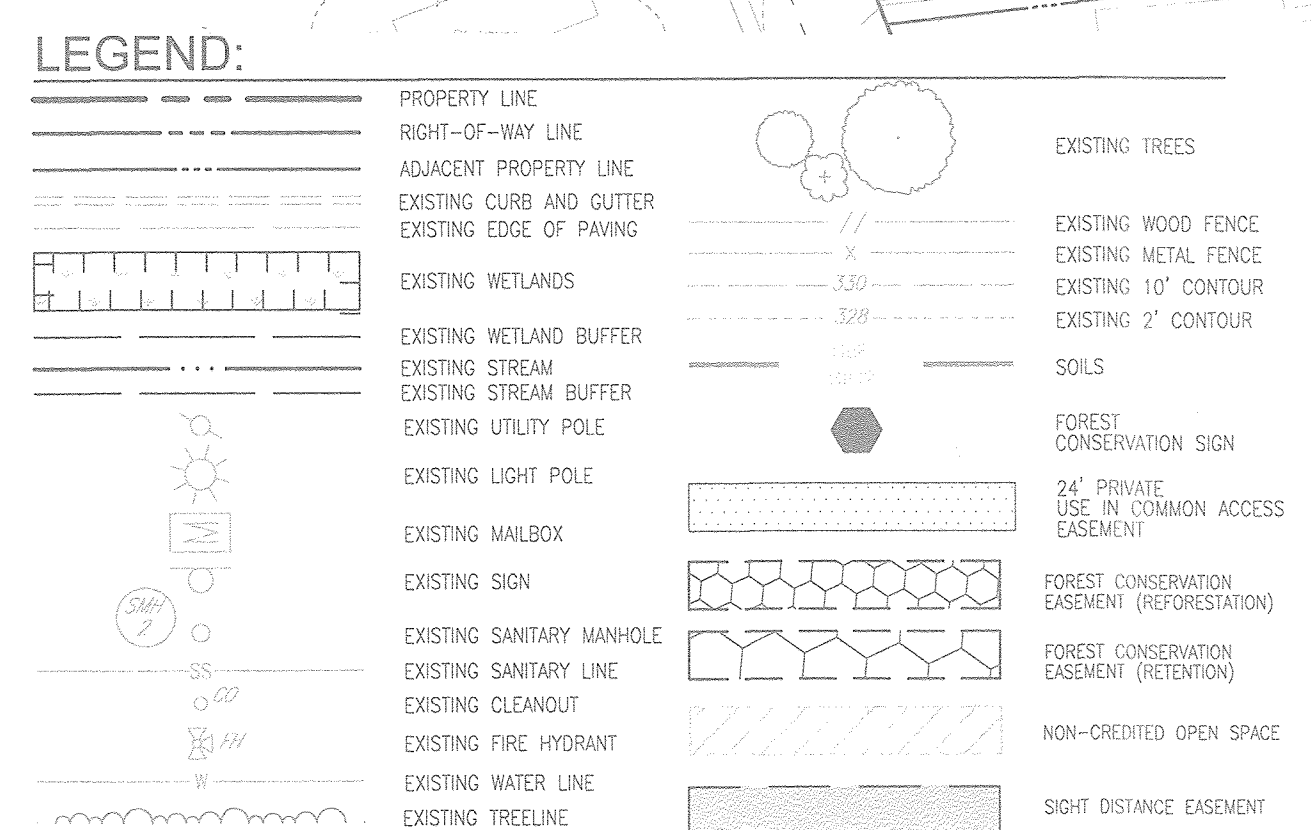
7 SHEET OF 11

LANDSCAPE PLAN
 SCALE: 1"=50'
 50' 0 50' 100' 150'

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Valerie J. Allen
 PLANNING DIRECTOR

8-7-18
 DATE

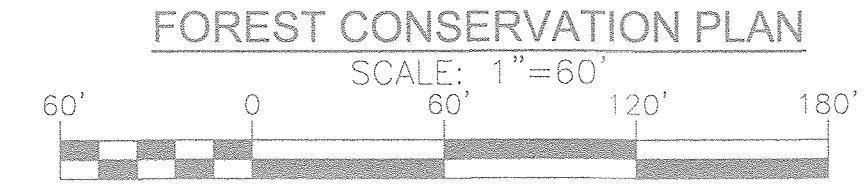


SOILS LEGEND HOWARD COUNTY SOILS MAP #14			
SYMBOL	NAME / DESCRIPTION	GROUP	FACTOR/RODIBLE
Fcga	FALLSINGTON SANDY LOAMS, 0 TO 2 PERCENT SLOPES, NORTHERN COASTAL PLAIN	D	0.02 NO
Chst	CHILLUM LOAM, 2 TO 5 PERCENT SLOPES	C	0.24 NO
SrB	SASSAFRAS GRAVELLY SANDY LOAM, 2 TO 5 PERCENT SLOPES	B	0.20 NO
SrD	SASSAFRAS AND CROOK SOILS, 10 TO 15 PERCENT SLOPES	B	0.32 NO
UcB	URBAN LAND CHILLUM BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES	C	0.37 YES

NOTE: 1. TAKEN FROM USDA SOCS-WEBS SOIL SURVEY, HOWARD COUNTY.
2. FALLSINGTON SOILS HAVE SEVERE LIMITATIONS FOR HOME CONSTRUCTION.
3. HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL EROSION FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 8006 Glen Arve, Maryland 21057 Telephone: (410) 833-2469 Fax: (410) 833-2468

MD DNR Qualified Professional
USACE Wetland Delimiter
Certification # WDC993MD061004432
John P. Canoles



- FSID NOTES:**
- No rare, threatened or endangered species, or their habitats, were observed on the property.
 - Surrounding land use is primarily high density residential development.
 - Approximately 1.2 acres of forest is present within 100 feet of the subject property.
 - The site lies within a Use 1 portion of the Patuxent River (02-13-11) watershed. The wetlands will require a 25 foot buffers and the perennial stream channel requires a 75 foot buffer.
 - No historic statements or commentaries are known to occur on the property.
 - No 100 year floodplain is present on the property.
 - There are steep slopes are present on the site.
 - There are specimen trees on the site. The trees are located within the wetland/buffer complex and were not specifically located. No specimen trees were noted outside these protected areas.

FOREST CONSERVATION LEGEND:

[Symbol]	EXISTING FOREST CONSERVATION EASEMENT	15.33 AC.
[Symbol]	FOREST CONSERVATION EASEMENT (RETENTION)	0.00 AC.
[Symbol]	FOREST CONSERVATION EASEMENT (REFORESTATION)	2.9 AC. +/-
[Symbol]	EXISTING FOREST (FSD)	1.9 AC. +/-
[Symbol]	F. ZONED:	0.00 AC.
[Symbol]	G. EXISTING USE:	3.54 AC.
[Symbol]	H. PROPOSED USE:	R-SC
[Symbol]	* AREAS OVERLAP	RESIDENTIAL

GENERAL NOTES

WATERSHED NAME: PATUXENT RIVER UPPER
WATERSHED NUMBER: 2131104

A. GROSS SITE AREA:	15.33 AC.
B. NET SITE AREA:	15.33 AC.
C. AREA OF 100-YEAR FLOODPLAIN:	0.00 AC.
D. AREA OF WETLANDS AND BUFFERS(ONSITE):	2.9 AC. +/-
E. AREA OF STREAM AND BUFFERS(ONSITE):	1.9 AC. +/-
F. ZONED:	0.00 AC.
G. EXISTING FOREST (FSD):	3.54 AC.
H. PROPOSED USE:	R-SC
* AREAS OVERLAP	RESIDENTIAL

VICINITY MAP
SCALE: 1"=1,000'
ADC MAP COORDINATE: 40-A & A7

BENCHMARKS

HOWARD COUNTY BENCHMARK 47H2 (CONC. MON.)
N 529706.4221 E 1354445.3364 ELEV. 256.088
LOCATION: ALL SAINTS ROAD, 240' +/- SOUTH OF NORTH LAUREL ROAD 2.89 FEET FROM STORM DRAIN INLET, 1' EAST OF CURB, 0.6' BELOW SURFACE

HOWARD COUNTY BENCHMARK 470C (CONC. MON.)
N 528939.7281 E 1354223.5536 ELEV. 226.272
LOCATION: MEDIUM ISLAND 29 FEET WEST OF ALL SAINTS RD RT 216 INTERSECTION; 1.4 FEET WEST OF SOUTHWEST INLET CORNER

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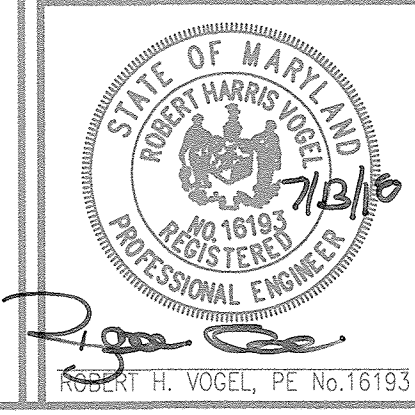
REVISION	DATE

PRELIMINARY PLAN
FOREST CONSERVATION PLAN
MAGNOLIA MANOR
LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
A SUBDIVISION OF TAX MAP 47 - PARCEL 465 AND A RESUBDIVISION OF TAX MAP 47 - PARCEL 163 - GIDDINGS PROPERTY - SECTION 1 AREA 1 - LOTS 1-4 (PLAT 9114)

TAX MAP: 47 PARCELS: 163 & 465
6TH ELECTION DISTRICT

BLOCK: 19 ZONING: R-SC
HOWARD COUNTY, MARYLAND

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PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 16183 EXPIRATION DATE: 08-27-2018

DESIGN BY: RHV
DRAWN BY: KG
CHECKED BY: RHV
DATE: JULY 2018
SCALE: AS SHOWN
W.O. NO.: 16-15

8 SHEET OF 11

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Valley
PLANNING DIRECTOR

07-18
DATE

HOWARD COUNTY FOREST CONSERVATION WORKSHEET

ZONED R-3C NET TRACT AREA:

A. TOTAL TRACT AREA = 15.33 AC.
 B. AREA WITHIN 100 YEAR FLOODPLAIN = 0.00 AC.
 C. AREA TO REMAIN IN AG. PRODUCTION = 0.00 AC.
 D. NET TRACT AREA = 15.33 AC.

LAND USE CATEGORY:

INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED R-ED-MXD-3

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. AFFORESTATION THRESHOLD = 15% X 15.33 = 2.30 AC
F. CONSERVATION THRESHOLD = 20% X 15.33 = 3.07 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER = 3.54 AC
 H. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 1.24 AC
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 0.47 AC

BREAK EVEN POINT:

(2 X I) + F = BREAK EVEN POINT (O AC)

J. BREAK EVEN POINT / FOREST RET. ABOVE THRESHOLD W/ NO MIT. = 3.16 AC
 K. FOREST CLEARING PERMITTED WITHOUT MITIGATION = 0.38 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED = 0.47 AC
 M. TOTAL AREA OF FOREST TO BE RETAINED = 3.07 AC (IN FCE)

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 25) = 0.12 AC
 O. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 0.00 AC
 P. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F) = 0.00 AC
 R. TOTAL REFORESTATION REQUIRED (N+P-O) = 0.12 AC
 S. TOTAL AFFORESTATION REQUIRED = 0.00 AC
 T. TOTAL PLANTING REQUIREMENT (REFORESTATION AND AFFORESTATION) = 0.12 AC

FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL A PORTION OF THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL.

NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY ON-SITE RETENTION OF 3.07 AC, AND ON-SITE REFORESTATION PLANTINGS OF 0.12 AC, TO BE PLANTED IN AN ON-SITE FOREST CONSERVATION EASEMENT.

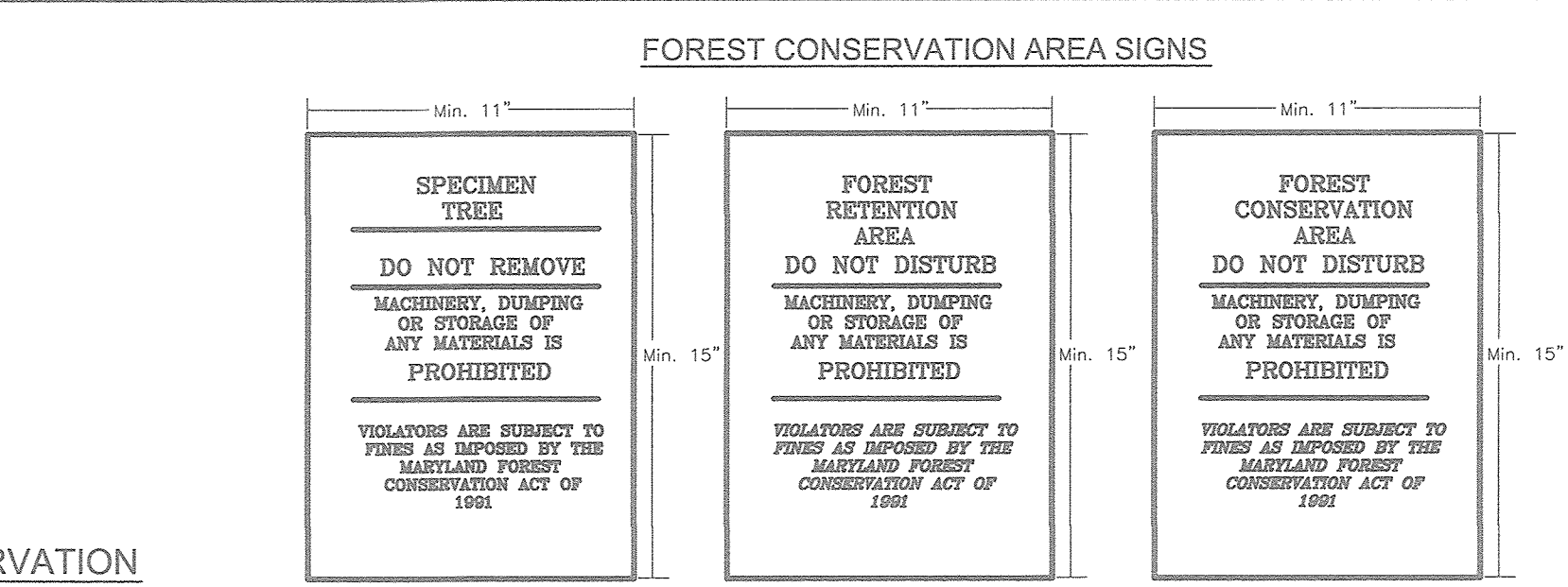
FINANCIAL SURETY SHALL BE POSTED WITH THE FOREST CONSERVATION MAINTENANCE AGREEMENT.

ADDITIONAL PLANTING AREAS EQUAL TO 0.99 ACRES HAS BEEN PROVIDED FOR FOREST BANKING PURPOSES.

FOREST CONSERVATION EASEMENT TABLE

EASEMENT	RETENTION	REFORESTATION	TOTAL
FCE#1	0.28 AC	0.23 AC	0.51 AC
FCE#2	0.85 AC	0.00 AC	0.85 AC
FCE#3	1.94 AC	0.87 AC	2.81 AC
TOTAL	3.07 AC	1.10 AC	4.17 AC

NOTE: -TOTAL FOREST CONSERVATION REQUIREMENT IS PROVIDED ON-SITE-



- NOTE:**
- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
 - SIGNS TO BE PLACED APPROXIMATELY 50-100 FEET APART, CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FURTHER APART, WHERE SIGNS ARE TO BE PLACED AT THE REAR OF PROPOSED LOTS, SPACING SHALL BE APPROX. 25'-30' +/-
 - ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
 - ALL FOREST CONSERVATION SIGNS SHALL BE IN PLACE FOR PERPETUITY.
 - SIGN LOCATION SYMBOL = ●

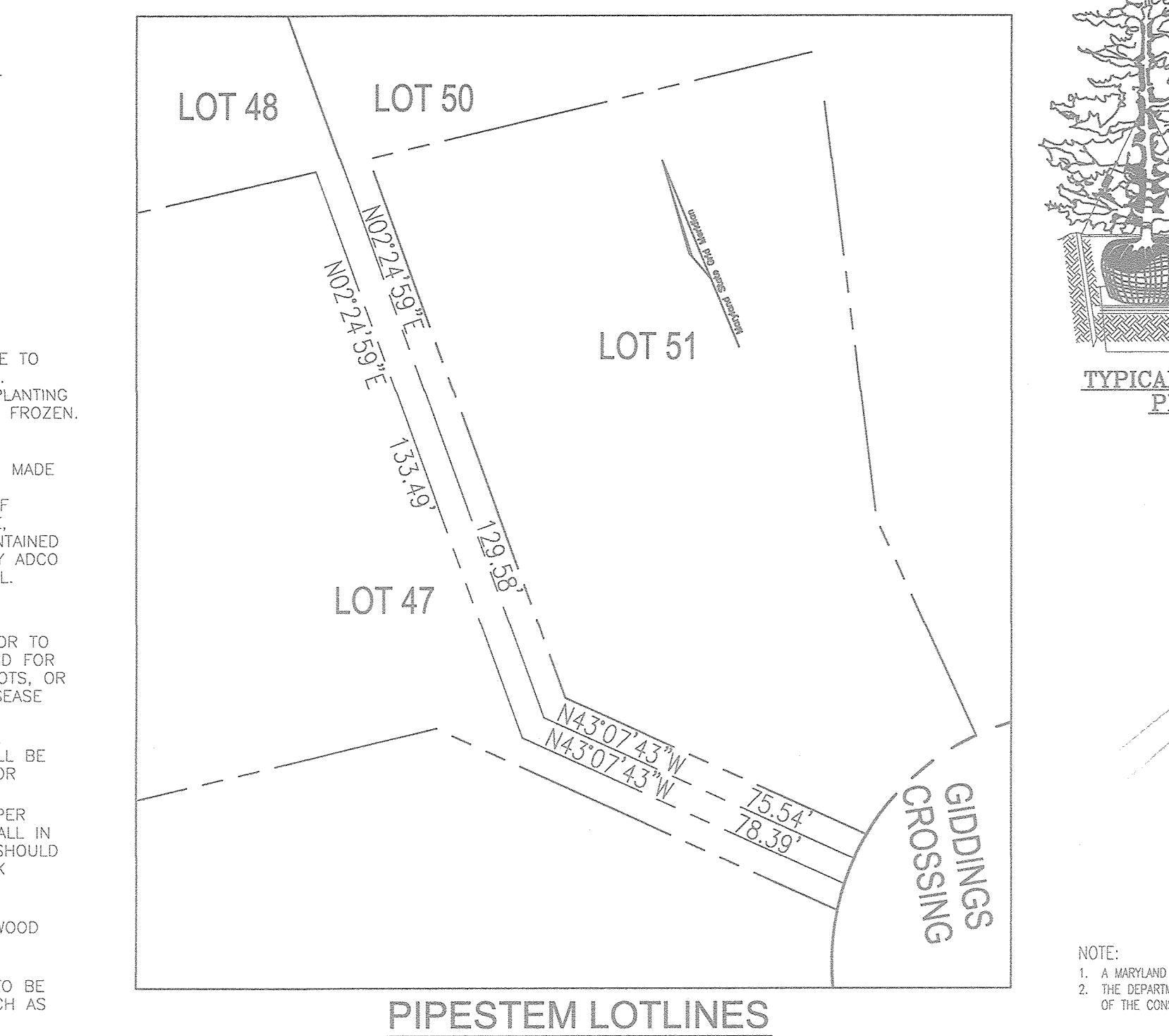
- ### CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT NOTES FOR FOREST CONSERVATION
- PRE-CONSTRUCTION PHASE**
- FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
 - FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
 - A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNING TREES AS REQUIRED, WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.
- CONSTRUCTION PHASE**
- NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
 - NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
 - IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.
- POST-CONSTRUCTION PHASE**
- AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
 - FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
 - DO NOT REMOVE SIGNS.

- ### SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION
- PRE-CONSTRUCTION MEETING / SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
 - STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
 - INSTALL TREE PROTECTION FENCING; FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
 - PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
 - TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTIL CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

- ### FOREST RETENTION AREAS AND NOTES
- THE WETLANDS AND WETLAND BUFFERS ARE LOCATED ON AN OPEN SPACE LOT 169.
 - NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
 - FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAM BUFFERS ARE SUBSTANTIALLY RETAINED IN OPEN SPACE LOTS.
 - CHANGES IN GRADING AND RUNOFF WITHIN CONSTRUCTION/INSTALLATION AREAS WILL NOT ADVERSELY AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. SEDIMENT CONTROL MEASURES WILL REDIRECT CONCENTRATED FLOW RUNOFF TO STORMWATER MANAGEMENT FACILITIES. PROTECT THE SEDIMENT WITHIN THE CONSTRUCTION SITE, AND/OR REDIRECT CLEAN WATER AWAY FROM CONSTRUCTION AREAS.
 - THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

- ### REFORESTATION AREA MONITORING NOTES
- MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL, OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT SUMMER KILL.
 - THE MINIMUM SURVIVAL RATE SHALL BE 75% OF THE TOTAL NUMBER OF TREES PLANTED PER ACRE AT THE END OF THE TWO YEAR MAINTENANCE PERIOD. WILD TREE SEEDLINGS FROM NATURAL REGENERATION ON THE PLANTING SITE MAY BE COUNTED UP TO 50% TOWARD THE TOTAL SURVIVAL NUMBER IF THEY ARE HEALTHY NATIVE SPECIES AT LEAST 12 INCHES TALL.
 - SURVIVAL WILL BE DETERMINED BY A STRATIFIED RANDOM SAMPLING OF THE PLANTINGS. THE SPECIES COMPOSITION OF THE SAMPLE POPULATION SHOULD BE PROPORTIONATE TO THE AMOUNT OF EACH SPECIES IN THE ENTIRE PLANTING TO BE SAMPLED.
 - EFFECTIVE MONITORING WILL ASSESS PLANT SURVIVABILITY DURING THE FIRST GROWING SEASON AND MAKE RECOMMENDATIONS FOR REINFORCEMENT PLANTINGS IF REQUIRED AT THAT TIME.

- ### AFFORESTATION PLANTING NOTES
- AFFORESTATION AREAS MAY BE PLANTED AS SOON AS REASONABLE TO DO SO. LATE WINTER-EARLY SPRING PLANTINGS ARE PREFERRED. EARLIEST PLANTING DATES WILL VARY FROM YEAR TO YEAR BUT PLANTING MAY GENERALLY BEGIN AS SOON AS THE GROUND IS NO LONGER FROZEN. ALTERNATE PLANTING DATES MAY BE CONSIDERED AS CONDITION WARRANTS.
 - SOIL AMENDMENTS AND FERTILIZATION RECOMMENDATIONS WILL BE MADE BASED UPON THE RESULTS OF SOIL ANALYSIS FOR NITROGEN, PHOSPHORUS, POTASSIUM, ORGANIC MATTER CONTENT AND pH. IF REQUIRED, FERTILIZER WILL BE PROVIDED USING A SLOW RELEASE, SOLUBLE 16-8-16 ANALYSIS DESIGNED TO LAST 5-8 YEARS CONTAINED IN POLYETHYLENE PERFORATED BAGS SUCH AS MANUFACTURED BY ADCO WORKS, P.O. BOX 310 HOLLIS, N.Y. 11423 OR APPROVED EQUAL.
 - PLANT MATERIALS WILL BE PLANTED IN ACCORDANCE WITH THE PLANTING DETAILS AND PLANT SCHEDULE.
 - PLANT MATERIAL SHALL BE NURSERY GROWN AND INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO THE AMERICAN STANDARD FOR NURSERY STOCK SPECIFICATIONS FOR SIZE, FORM, VIGOR, OR ROOTS, OR DUE TO TRUNK WOUNDS, BREAKAGE, DESICATION, INSECT OR DISEASE MUST BE REPLACED.
 - PLANTING STOCK MUST BE PROTECTED FROM DESICATION AT ALL TIMES PRIOR TO PLANTING. MATERIALS HELD FOR PLANTING SHALL BE MOISTENED AND PLACED IN COOL SHADED AREAS UNTIL READY FOR PLACEMENT.
 - NEWLY PLANTED TREES MAY REQUIRE WATERING AT LEAST ONCE PER WEEK DURING THE FIRST GROWING SEASON DEPENDING ON RAINFALL IN ORDER TO GET ESTABLISHED. THE INITIAL PLANTING OPERATION SHOULD ALLOW FOR WATERING DURING INSTALLATION TO COMPLETELY SOAK BACKFILL MATERIAL.
 - MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE DIAGRAM PROVIDED AND SHALL CONSIST OF COMPOSTED, SHREDDED HARDWOOD BARK MULCH, FREE OF WOOD ALCOHOL.
 - ALL NURSERY STOCK TO BE SPRAYED WITH DEER REPELLENT CONTAINING BITREX, SUCH AS REPELLEX. ALL NURSERY STOCK TO BE GROWN WITH DEER REPELLENT TABLETS IN GROWING MEDIUM, SUCH AS REPELLEX TABLETS.



Specimen Tree Chart

Key (X)	Species	Size (in dbh)	CRZ (feet radius)	Comments	Action
1	White oak	33	49.5	good condition	TO BE REMOVED
2	Tulip poplar	41.5	62.25	fair condition	TO REMAIN
3	Tulip poplar	34.5	51.75	fair condition	TO REMAIN
4	Red maple	34	51	fair condition, trunk rot	TO REMAIN
5	Willow oak	34	51	good condition	TO BE REMOVED
6	Willow oak	33	49.5	good condition	TO REMAIN
7	Sweet Gum	33	49.5	poor condition, substantial crown dieback	TO BE REMOVED
8	Southern red oak	35	52.5	dead	TO REMAIN
9	Black oak	37	55.5	good condition	TO REMAIN
10	Chestnut oak	33	49.5	fair condition, leaning	TO REMAIN
11	Chestnut oak	34.5	51.75	good condition, multi-stem	TO REMAIN
12	Tulip poplar	36	54	good condition	TO REMAIN
13	Chestnut oak	33.5	50.25	fair condition, leaning	TO REMAIN
14	White oak	32.5	48.75	good condition	TO REMAIN
15	Black oak	44	66	fair condition, trunk rot noted	TO REMAIN
16	Slippery elm	31	46.5	fair condition	TO REMAIN
17	Willow oak	36	54	good condition, some trimming noted	TO BE REMOVED

- ### LANDSCAPE NOTES
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
 - PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.
 - SURETY FOR THE PROPOSED LANDSCAPING SHALL BE BASED ON THE NUMBER OF PLANTINGS REQUIRED.

- ### GENERAL NOTES:
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE LANDSCAPE REQUIREMENTS FOR THIS PROJECT ARE 115 SHADE TREES, 77 EVERGREENS, AND 10 SHRUBS (TRASH PAD).
 - PUBLIC STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(e)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. THE REQUIRED STREET TREES FOR THIS PROJECT IS 53 STREET TREES.
 - THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERMES, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
 - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS LISTED HERewith AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
 - NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
 - THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED APRIL 27, 2017.
 - THE EXISTING TOPOGRAPHY SHOWN HEREON IS TAKEN FROM AERIAL TOPOGRAPHIC SURVEY WITH 2 FOOT CONTOUR INTERVALS, DATED MAY, 2017.
 - THE REMOVAL OF TREES 30" OR GREATER DBH IS PROHIBITED WITHOUT COUNTY APPROVAL.
 - A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
 - ON THE APPROACH SIDE OF A STOP SIGN AND ALL OTHER TRAFFIC CONTROL SIGNS NOT ATTACHED TO A STREET LIGHT POLE, NO STREET TREE CAN BE PLANTED WITHIN 30' OF THE SIGN.

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES						TOTAL
	1A	1B	1C	1E	2	3	
PERIMETER/FRONTAGE DESIGNATION	NA	NA	NA	C	B	B	
LANDSCAPE TYPE	NA	NA	NA	C	B	B	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	81'	602'	71'	124'	121'	1,133'	1,925'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	138'	327'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	-	180	-	140	3	140	3
SHRUBS	-	-	-	120	6	140	25
EVERGREEN TREES	-	-	-	-	-	-	-
SHRUBS	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED	-	-	-	-	-	-	-
SHADE TREES	-	10	-	3	3	14'	32
EVERGREEN TREES	-	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-	-
EX. SPECIMEN TREES TO REMAIN	-	-	-	-	-	6'	-
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	-	-	-	-	-	-	-

* TAKE CREDIT OF 6 SPECIMEN TREE AT PERIMETER 2.

STREET TREE CALCULATIONS

STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
LAURENS WAY	1728/40	43	43
GIDDINGS CROSSING	412/40	10	10
TOTAL		53	53

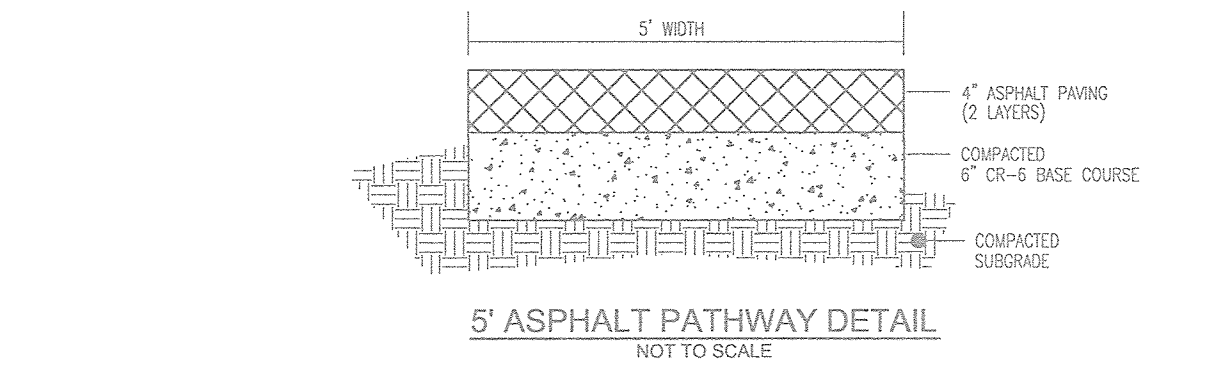
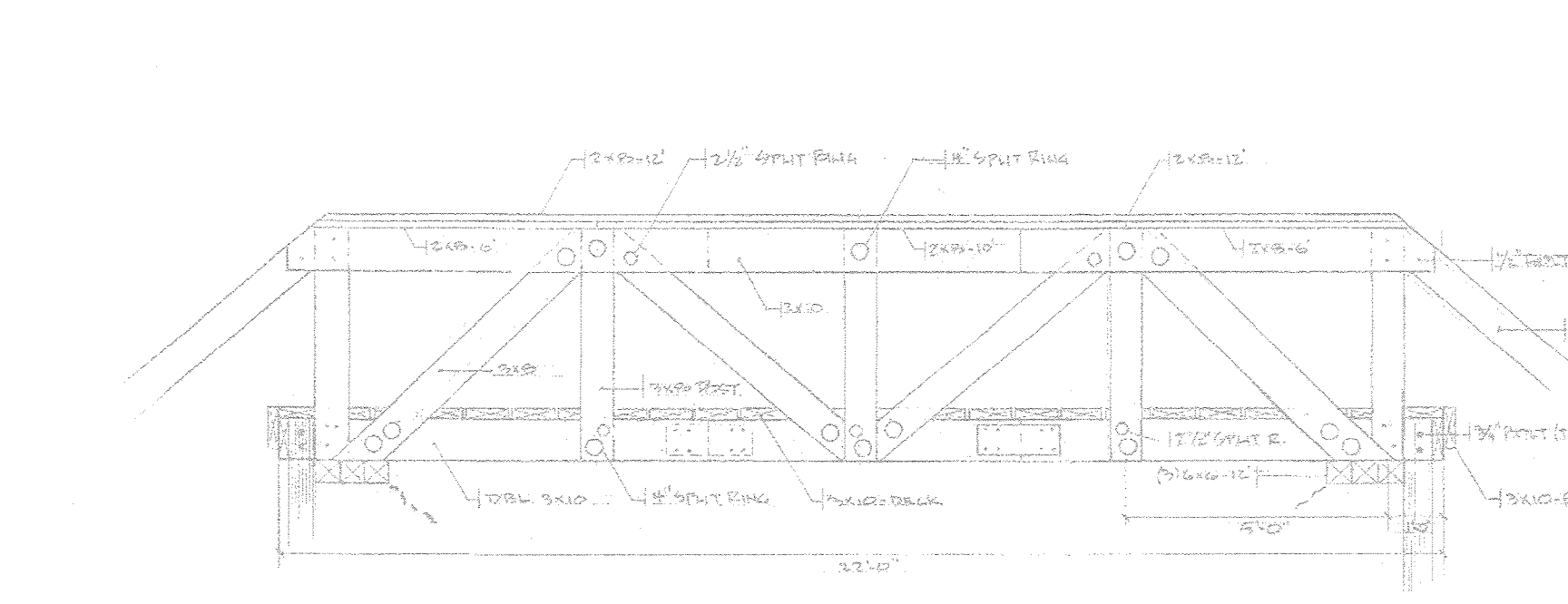
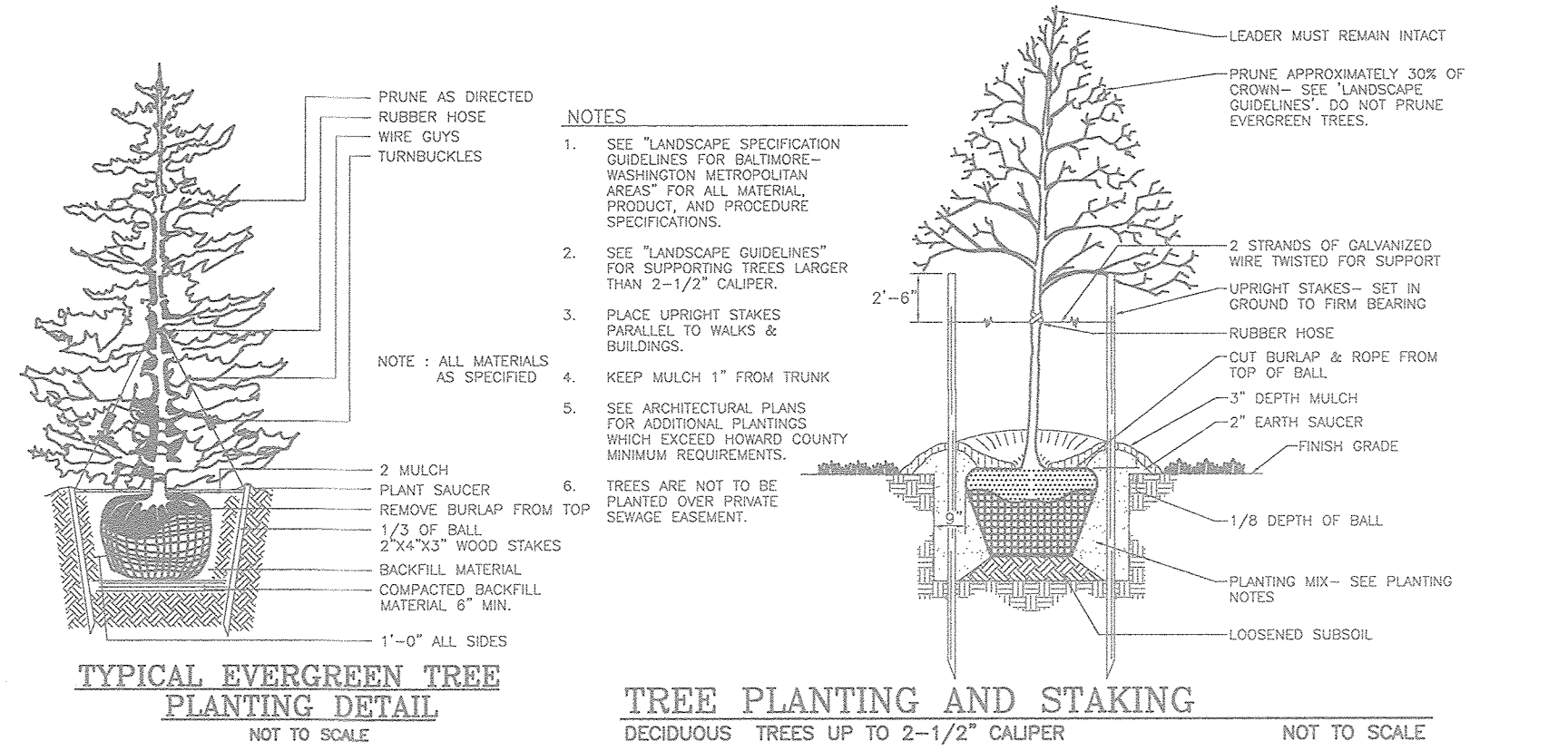
LANDSCAPE SCHEDULE 'C'

NUMBER OF DWELLING UNITS	44 SFA
NUMBER OF TREES REQUIRED (1:20 SFA)	44 SFA
NUMBER OF TREES PROVIDED	-
SHADE TREES	44
OTHER TREES (2:1 SUBSTITUTION)	-
SHRUBS (10:1 SUBSTITUTION)	-

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	22
NUMBER OF TREES REQUIRED	3
NUMBER OF TREES PROVIDED	-
SHADE TREES	3
OTHER TREES (2:1 SUBSTITUTION)	-

- ### LANDSCAPE SCHEDULE NOTE:
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT MAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRD PLANTING SPECIFICATIONS.
 - CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
 - FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS.
 - CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.



OWNER: MARAMATHA MAGNOLIA MANOR, LLC
 MICHAEL P. FIFAL, MANAGER
 3675 PARK AVE., SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023

DEVELOPER: TRINITY HOMES MARY LAND, LLC
 3675 PARK AVE., SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023

PRELIMINARY PLAN
LANDSCAPE, FOREST CONSERVATION NOTES AND DETAILS
MAGNOLIA MANOR
 LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
 A SUBDIVISION OF TAX MAP 47 - PARCEL 163 - PARCEL 465 AND A RESUBDIVISION OF TAX MAP 47 - PARCEL 163 - GIDDINGS PROPERTY - SECTION 1 AREA 1 - LOTS 1-4 (PLAT 9114)

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 3300 N. RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RHV
 DRAWN BY: KG
 CHECKED BY: RHV
 DATE: JULY 2018
 SCALE: AS SHOWN
 W.O. NO.: 16-15

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MY LICENSE NUMBER IS 16199. EXPIRATION DATE: 06-27-2018

9 SHEET OF 11

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

N. Valdes
 PLANNING DIRECTOR

8-1-18
 DATE



LEGEND

(---)	EXISTING CONTOUR
(---)	PROPOSED CONTOUR
(+)	EXISTING SPOT ELEVATION
(+)	PROPOSED SPOT ELEVATION
(---)	EXISTING CURB AND GUTTER
(---)	PROPOSED CURB AND GUTTER
(---)	EXISTING UTILITY POLE
(---)	PROPOSED UTILITY POLE
(---)	EXISTING LIGHT POLE
(---)	PROPOSED LIGHT POLE
(---)	EXISTING MAILBOX
(---)	PROPOSED MAILBOX
(---)	EXISTING SIGN
(---)	PROPOSED SIGN
(---)	EXISTING SANITARY MANHOLE
(---)	PROPOSED SANITARY MANHOLE
(---)	EXISTING SANITARY LINE
(---)	PROPOSED SANITARY LINE
(---)	EXISTING CLEANOUT
(---)	PROPOSED CLEANOUT
(---)	EXISTING FIRE HYDRANT
(---)	PROPOSED FIRE HYDRANT
(---)	EXISTING WATER LINE
(---)	PROPOSED WATER LINE
(---)	EXISTING FENCE
(---)	PROPOSED FENCE
(---)	SOILS BOUNDARY
(---)	PROPERTY LINE
(---)	RIGHT-OF-WAY LINE
(---)	MICRO-BIOTENTION
(---)	PROPOSED SIDEWALK
(---)	EXISTING TREELINE
(---)	PROPOSED TREELINE
(---)	EXISTING STORM DRAIN
(---)	PROPOSED STORM DRAIN
(---)	EXISTING FOREST CONSERVATION EASEMENT (REFORESTATION) PLATS# 23048-23055
(---)	PROPOSED FOREST CONSERVATION EASEMENT (REFORESTATION) PLATS# 23048-23055
(---)	24' PRIVATE USE IN COMMON ACCESS EASEMENT
(---)	PUBLIC WATER, SEWER, AND UTILITY EASEMENT
(---)	EX. WETLANDS
(---)	EX. WETLAND BUFFER
(---)	EX. STREAM
(---)	EX. STREAM BUFFER
(---)	EX. PUBLIC STORMWATER MANAGEMENT, DRAINAGE & UTILITY EASEMENT
(---)	FOREST CONSERVATION EASEMENT (REFORESTATION)
(---)	FOREST CONSERVATION EASEMENT (RETENTION)
(---)	SIGHT DISTANCE EASEMENT

NOTE:

1. PATHWAY SHALL INCLUDE PUBLIC ACCESS EASEMENT WITHIN HOA.
2. 5' ASPHALT PATHWAY THROUGH OPEN SPACE 69 SHALL BE CONSTRUCTED BY THE DEVELOPER AND MAINTAINED BY THE HOA INCLUDING THROUGH WYNDMERE SEC-2 50' ROW RESERVED.

OWNER
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 MICHAEL PFAU, MEMBER
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DEVELOPER
 TRINITY HOMES MARYLAND, LLC
 3675 PARK AVE., SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023

REVISION	DATE

PRELIMINARY PLAN
DRAINAGE AREA MAP FOR ESDV
STORMWATER MANAGEMENT
MAGNOLIA MANOR
 LOTS 1 - 61 AND OPEN SPACE LOTS 62 - 69
 A SUBDIVISION OF TAX MAP 47 - PARCEL 465 AND A RESUBDIVISION OF
 TAX MAP 47 - PARCEL 163 - GIDDINGS PROPERTY - SECTION 1 AREA 1 - LOTS 1-4 (PLAT 9114)

TAX MAP: 47 PARCELS: 163 & 465 BLOCK: 19 ZONING: R-SC
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

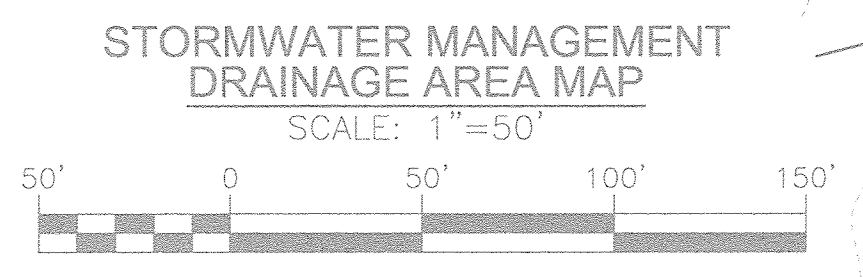
ROBERT H. VOGEL
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PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
 DRAWN BY: KG
 CHECKED BY: RHV
 DATE: JULY 2018
 SCALE: AS SHOWN
 W.O. NO.: 16-15

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 08-27-2018

10 SHEET OF 11



TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Nia DiNapoli
 PLANNING DIRECTOR

8-1-18
 DATE

APPENDIX B.A.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

- 1. MATERIAL SPECIFICATIONS**
- THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAIL IN TABLE B.A.1.
- 2. FILTERING MEDIA OR PLANTING SOIL**
- THE SOIL SHALL BE A UNIFORM MIX OF STAKES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION FACILITY THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVIDE A HINDERANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BEDROCK, CLAY, SAND, GRAVEL, STONES, JUNK, OR OTHER HARMFUL WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
- * SOIL COMPOSITION - LIGHT SAND OR SANDY LOAM (SOIL SOL TEXTURE CLASSIFICATION)
 - * ORGANIC CONTENT - MINIMUM 1.0% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (50%), COARSE SAND (20%), AND COMPOST (30%).
 - * CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
 - * PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE THE PH RANGE.
- THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILE TISSUE, IF TISSUE IS WORKED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TISSUE WAS EXCAVATED.

- 3. COMPACTION**
- IT IS VERY IMPORTANT TO MAINTAIN COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL, WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LONGER EQUIPMENT, THE CONTRACTOR SHOULD USE THE TIGHTER OR MEDIUM THICK EQUIPMENT, OR LIGHT EQUIPMENT WITH TIGHT TIRE TREAD. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL CONSIDERABLY CONTRIBUTE TO SOIL SEALING.
- COMPACTION CAN BE ACHIEVED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILTING OPERATION SUCH AS CHASEL PLOU, DRAPER, OR SUBSIDER. THESE TILTING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT FULLY DEEP ENOUGH TO REMOVE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

- 4. PLANT MATERIAL**
- RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
- 5. PLANT INSTALLATION**
- COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED WOODSHED MULCH IS THE MOST ACCEPTED MULCH. FINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL ACID (6 TO 12 MONTHS) FOR ACCEPTANCE.
- THE ROOTS OF THE PLANT MATERIAL SHALL BE KEPT MOST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/4TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRANDED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
- BRANDED AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLANTS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
- THE TISSUE SPECIFICATIONS PROVIDE ORGANIC MATERIAL TO ACCURATELY SUPPORT MICROBIALS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFLECTS, OR AT A MINIMUM IMPEDS THE DAILY SOIL FERTILIZER IF BIOD CHIPS OR MULCH ARE USED TO NURTURE THE SOIL. ADDITIONAL FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

- 6. UNDERDRAINS**
- UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
- * PERFORATIONS SHOULD BE 1" TO 2" DIAMETER, SLOTTED OR PERFORATED BIOD PLASTIC PIPE (ASTM F756, TYPE PS 26, OR AASHTO-M-276) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED. 4" ROD PIPE (E.G., PVC OF HDPE).
 - * PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4" (NO. 4 OR NO. 6) GALVANIZED HARDWARE CLOTH.
 - * GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
 - * THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
 - * A BIOD, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1000 SQUARE FEET) TO PROVIDE A CLEAN-OUT POINT AND MONITOR PERFORMANCE OF THE FILTER.
 - * A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT BLOCKAGE BY DEBRIS. IN THE UNDERDRAIN, THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
- THIS MAIN COLLECTION PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT TRENCHES MUST BE PROVIDED ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA.

- 7. MISCELLANEOUS**
- THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

Appendix B.4.1 Construction Specifications for Environmental Site Design Practices

Material	Specification	Notes
Planting soil	see Appendix A, Table A.4.1	plantings are site-specific
Planting soil (2" to 4" deep)	loamy sand (60-65%) & compost (35-40%) or sandy loam (30%), coarse sand (30%) & compost (30%)	USDA soil types (loamy sand or sandy loam; clay content < 5%)
Organic content	Min. 1.0% by dry weight (ASTM D 2974)	
Clay content	shredded hardwood	aged 6 months, minimum; no pine or wood chips
Permeable geotextile	see Appendix A, Table A.4.4	
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6
Underdrain piping	F 756, Type PS 26 or AASHTO M-276	4" to 6" rigid schedule 40 PVC or SDR35
Perforated pipe (if required)	MSSA Min No. 3, P, 1" x 3500 psi @ 78 days, nominal weight, aluminum (conforming to meet ASTM-B1-60)	4" to 6" rigid schedule 40 PVC or SDR35
Sand	AASHTO-M-6 or ASTM-C-33	0.075 to 0.04"

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3), MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), AND ENHANCED FILTERS (M-9)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL. PRUNING, ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 HANLAN STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIPES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PERFORATED MULCH LAYER SHALL BE REMOVED DURING THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CONDUCT SOIL OBSERVATION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

DRAINAGE AREA #	AREA TREATED	FACILITY NUMBER	ENVIRONMENTAL SITE DESIGN PRACTICE (SP)										
			PERMEABLE PAVEMENT	BELOW PP	GRAVEL	SAWS	GRAVEL FILTER	BELOW BF	DRY WELL	X	ESD# VOLUME		
1	1240	1C	0	0	173	0	0	0	0	0	0	0	81
2	1240	2A,B	0	0	0	0	0	0	0	114	0	0	173
3	1240	2C	0	0	173	0	0	0	0	0	0	0	173
4	1240	3B	0	0	173	0	0	0	0	0	0	0	173
5	1240	4A	0	0	173	0	0	0	0	0	0	0	173
6	2318	5A	0	0	1108	0	0	0	0	0	0	0	1108
7	2400	6A,B,C,D	0	0	2943	0	0	0	0	345	0	0	2943
8	1083	8A,B	0	0	0	0	0	0	0	484	0	0	484
9	1825	7G	0	0	229	0	0	0	0	0	0	0	229
10	1104	9A,B	0	0	2379	0	0	0	0	0	0	0	2379
11	1020	8E,F,G	0	0	0	0	0	0	0	147	0	0	147
12	1883	8C,D,E	0	0	0	0	0	0	0	280	0	0	280
13	1920	8F	0	0	0	0	0	0	0	173	0	0	173
14	1458	14A	0	0	0	0	0	0	0	290	0	0	290
15	1600	16A-E	0	0	0	0	0	0	0	173	0	0	173
16	1336	18F	0	0	0	0	0	0	0	314	0	0	314
17	2008	19F	0	0	480	0	0	0	0	0	0	0	480
18	3587	11A	0	0	45	0	0	0	0	0	0	0	45
19	2876	12A	0	0	160	0	0	0	0	0	0	0	160
20	1920	13A	0	0	0	0	0	0	0	818	0	0	818
21	1458	14A	0	0	0	0	0	0	0	0	0	0	0
22	1600	16A-E	0	0	0	0	0	0	0	0	0	0	0
23	1336	18F	0	0	0	0	0	0	0	0	0	0	0
24	2008	19F	0	0	0	0	0	0	0	0	0	0	0
25	3587	11A	0	0	45	0	0	0	0	0	0	0	45
26	3420	19E,F	670	0	0	0	0	0	0	0	0	0	670
27	2876	12A	0	0	160	0	0	0	0	0	0	0	160
28	1920	13A	0	0	0	0	0	0	0	818	0	0	818
29	1458	14A	0	0	0	0	0	0	0	0	0	0	0
30	1600	16A-E	0	0	0	0	0	0	0	0	0	0	0
31	1336	18F	0	0	0	0	0	0	0	0	0	0	0
32	2008	19F	480	0	0	0	0	0	0	0	0	0	480
33	3587	11A	0	0	45	0	0	0	0	0	0	0	45
34	2876	12A	0	0	160	0	0	0	0	0	0	0	160
35	1920	13A	0	0	0	0	0	0	0	818	0	0	818
36	1458	14A	0	0	0	0	0	0	0	0	0	0	0
37	1600	16A-E	0	0	0	0	0	0	0	0	0	0	0
38	1336	18F	0	0	0	0	0	0	0	0	0	0	0
39	2008	19F	480	0	0	0	0	0	0	0	0	0	480
40	3587	11A	0	0	45	0	0	0	0	0	0	0	45

PROJECT:	MAGNOLIA MANOR	AREA:	14.33 AC	GROSS AREA:	14.33 AC
AREA:	14.33 AC	AREA:	9.52 AC	LIMIT OF DISTURBANCE:	9.52 AC
PERMEABLE:	0.00 AC	PERMEABLE:	0.00 AC		
TARGET P.I.:	0.00	ESDV:	23113 CF	TOTAL ESDV/TARGET:	23113 CF

DRAINAGE AREA #	AREA TREATED	PERCENT IMPERVIOUS	ESDV	ESDV TARGET	ESDV PROVIDED
1*	1240	0	173	173	173
2*	1240	0	0	0	0
3*	1240	0	173	173	173
4*	1240	0	173	173	173
5*	1240	0	173	173	173
6*	2318	0	1108	1108	1108
7*	2400	0	2943	2943	2943
8*	1083	0	484	484	484
9*	1825	0	229	229	229
10*	1104	0	2379	2379	2379
11*	1020	0	147	147	147
12*	1883	0	280	280	280
13*	1920	0	173	173	173
14*	1458	0	290	290	290
15*	1600	0	173	173	173
16*	1336	0	314	314	314
17*	2008	0	480	480	480
18*	3587	0	45	45	45
19*	2876	0	160	160	160
20*	1920	0	818	818	818
21*	1458	0	0	0	0
22*	1600	0	0	0	0
23*	1336	0	0	0	0
24*	2008	0	0	0	0
25*	3587	0	45	45	45
26*	2876	0	160	160	160
27*	1920	0	818	818	818
28*	1458	0	0	0	0
29*	1600	0	0	0	0
30*	1336	0	0	0	0
31*	2008	0	0	0	0
32*	3587	0	45	45	45
33*	2876	0	160	160	160
34*	1920	0	818	818	818
35*	1458	0	0	0	0
36*	1600	0	0	0	0
37*	1336	0	0	0	0
38*	2008	0	0	0	0
39*	3587	0	45	45	45
40*	2876	0	160	160	160
41*	1920	0	818	818	818
42*	1458	0	0	0	0
43*	1600	0	0	0	0
44*	1336	0	0	0	0
45*	2008	0	0	0	0
46*	3587	0	45	45	45
47*	2876	0	160	160	160
48*	1920	0	818	818	818
49*	1458	0	0	0	0
50*	1600	0	0	0	0
51*	1336	0	0	0	0
52*	2008	0	0	0	0
53*	3587	0	45	45	45
54*	2876	0	160	160	160
55*	1920	0	818	818	818
56*	1458	0	0	0	0
57*	1600	0	0	0	0
58*	1336	0	0	0	0
59*	2008	0	0	0	0
60*	3587	0	45	45	45
61*	2876	0	160	160	160
62*	1920	0	818	818	818
63*	1458	0	0	0	0
64*	1600	0	0	0	0
65*	1336	0	0	0	0
66*	2008	0	0	0	0
67*	3587	0	45	45	45
68*	2876	0	160	160	160
69*	1920	0			