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SITE ANALYSIS DATA CHART

A. TOTAL AREA OF THIS SUBMISSION = 9.25 AC.
 B. LIMIT OF DISTURBED AREA = 5.25 AC.
 C. L.O.D. WITHIN PROJECT BOUNDARY 3.26 AC.
 D. L.O.D. WITHIN MSHA RIGHT-OF-WAY 2.03 AC.

ZONING PLAN

C. PRESENT ZONING DESIGNATION = R-SA-8 PER 10/16/13 COMPREHENSIVE ZONING PLAN

D. PROPOSED USE: RESIDENTIAL (SINGLE FAMILY ATTACHED HOUSING)

E. TOTAL NUMBER OF UNITS PROPOSED: 30 UNITS

F. OPEN SPACE TABULATION (SEE TABULATION SUMMARY THIS SHEET)

G. RECREATIONAL OPEN SPACE (SEE TABULATION SUMMARY THIS SHEET)

H. PREVIOUS HOWARD COUNTY FILES: SDP-86-80, 5-94-07, P-95-07, F-95-174, ECP-14-072, SP-16-001, WP-16-069

I. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 3.18 AC.
 J. TOTAL AREA OF SLOPES IN EXCESS OF 25% = 0.54 AC.
 K. TOTAL IMPERVIOUS AREA = 2.61 AC.
 L. IMPERVIOUS AREA WITHIN PROJECT BOUNDARY 1.25 AC.
 M. IMPERVIOUS AREA WITHIN MSHA RIGHT-OF-WAY 1.36 AC.

NET TRACT AREA = 5.53 AC.

NET SITE AREA - FLOODPLAIN - STEEP SLOPES IN EXCESS OF 25% (9.25 AC. - 3.18 AC. - 0.54 AC. = 5.53 AC.)

N. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.59 AC.
 O. TOTAL FOREST O.D. AC. = 7.02 AC.
 P. AREA OF ERODIBLE SOILS = 1.03 AC.

Q. TOTAL NUMBER OF PARKING SPACES REQUIRED = 75 SPACES
 (1) TOWNHOUSE PARKING REQUIRED = 60 SPACES (30 SFA X 2 SPACES/UNITS)
 (2) OVERFLOW PARKING REQUIRED = 15 SPACES (5 SPACES X 3 SFA UNITS)

R. TOTAL NUMBER OF PARKING SPACES PROVIDED = 134 SPACES
 (1) SINGLE FAMILY ATTACHED PARKING AREAS = 120 SPACES (2 SPACES IN GARAGE + 2 SPACES ON PAD/LOT X 29 LOTS)
 (2) ON-STREET PARKING SPACES = 14 SPACES

TABULATION SUMMARY

A. TOTAL SITE LOCATION: TAX MAP 16, TAX PARCEL 25
 B. TOTAL SITE AREA: 9.25 AC.
 C. REQUIRED OPEN SPACE = 2.31 AC. (9.25 ACRES X 25%)
 D. TOTAL PROVIDED OPEN SPACE = 6.268 ACRES
 E. TOTAL CREDITED AREA = 5,567 ACRES
 F. TOTAL NON-CREDITED AREA = 0.730 ACRES
 G. REQUIRED RECREATIONAL AREA = 13,500 SQUARE FEET (400 SQ.FT./UNIT X 30 UNITS) + (300 SQ.FT. X 5 UNITS (LOTS 16-20))
 H. PROVIDED RECREATIONAL AREA = 16,032 SQUARE FOOT
 (1) RECREATIONAL AREA (OPEN SPACE LOT 32) = 7,080 SQUARE FOOT
 (2) PATHWAY
 3,476 SQ.FT. (CONCRETE PATH) X 2 SQ.FT. REC. AREA/1 SQ.FT. PATHWAY) = 6,952 SQ.FT. REC. AREA.
 (SEE NOTE (1) BELOW)
 (3) GAZEBO (12' DIAMETER) = 2,000 SQUARE FEET

NOTE (1)
 AMENITY CREDITS BASED ON SQUARE FOOTAGE:
 2 SQ.FT. OF RECREATIONAL AREA PER 1 SQ.FT. OF CONCRETE PATHWAY
 (2)
 A 15' USEABLE REAR YARD HAS BEEN PROVIDED FOR LOTS 1-15 & 21-30.

This Subdivision Will Create 30 New Lots Which Will be Subject to Providing M.H.U. On-Site Or A Fee-In-Lieu Calculated And Paid At The Time Of Building Permit Issuance.

STORMWATER MANAGEMENT PRACTICES						
STREET ADDRESS	AREA ID	DRY WELLS (Y/N)	BIO-RETENTION (Y/N)	BIO-RETENTION (Y/N)	PERMEABLE (Y/N)	FILTERRA INLET (Y/N)
10512 MY GIRL PLACE	LOT 1	Y	Y	Y	Y	Y
10514 MY GIRL PLACE	LOT 2	Y	Y	Y	Y	Y
10516 MY GIRL PLACE	LOT 3	Y	Y	Y	Y	Y
10518 MY GIRL PLACE	LOT 4	Y	Y	Y	Y	Y
10520 MY GIRL PLACE	LOT 5	Y	Y	Y	Y	Y
10524 MY GIRL PLACE	LOT 6	Y	Y	Y	Y	Y
10526 MY GIRL PLACE	LOT 7	Y	Y	Y	Y	Y
10528 MY GIRL PLACE	LOT 8	Y	Y	Y	Y	Y
10530 MY GIRL PLACE	LOT 9	Y	Y	Y	Y	Y
10532 MY GIRL PLACE	LOT 10	Y	Y	Y	Y	Y
10536 MY GIRL PLACE	LOT 11	Y	Y	Y	Y	Y
10538 MY GIRL PLACE	LOT 12	Y	Y	Y	Y	Y
10540 MY GIRL PLACE	LOT 13	Y	Y	Y	Y	Y
10542 MY GIRL PLACE	LOT 14	Y	Y	Y	Y	Y
10544 MY GIRL PLACE	LOT 15	Y	Y	Y	Y	Y
10548 MY GIRL PLACE	LOT 16	Y	Y	Y	Y	Y
10541 MY GIRL PLACE	LOT 17	Y	Y	Y	Y	Y
10539 MY GIRL PLACE	LOT 18	Y	Y	Y	Y	Y
10537 MY GIRL PLACE	LOT 19	Y	Y	Y	Y	Y
10535 MY GIRL PLACE	LOT 20	Y	Y	Y	Y	Y
10531 MY GIRL PLACE	LOT 21	Y	Y	Y	Y	Y
10529 MY GIRL PLACE	LOT 22	Y	Y	Y	Y	Y
10527 MY GIRL PLACE	LOT 23	Y	Y	Y	Y	Y
10525 MY GIRL PLACE	LOT 24	Y	Y	Y	Y	Y
10523 MY GIRL PLACE	LOT 25	Y	Y	Y	Y	Y
10519 MY GIRL PLACE	LOT 26	Y	Y	Y	Y	Y
10517 MY GIRL PLACE	LOT 27	Y	Y	Y	Y	Y
10515 MY GIRL PLACE	LOT 28	Y	Y	Y	Y	Y
10513 MY GIRL PLACE	LOT 29	Y	Y	Y	Y	Y
10511 MY GIRL PLACE	LOT 30	Y	Y	Y	Y	Y
OPEN SPACE LOT 31					Y	Y
MARYLAND ROUTE 99					Y	Y

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 05/22/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 6-28-17

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 DATE: 5-31-17

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SERVICE OFFICE PARK - 10272 BALTIMORE NATIONAL PkE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2899

REVISIONS

NO.	DESCRIPTION	DATE
1	REMOVE STREET INDEX CHART, STORMWATER MANAGEMENT PRACTICES CHART & STORMWATER MANAGEMENT INFORMATION (MAINTAINED BY OWNERS)	1/6/18

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

WAVERLY GROVE

LOTS 1 THRU 30, OPEN SPACE LOTS 31 THRU 35

ZONING: R-SA-8 (RESIDENTIAL: SINGLE CLUSTER) DISTRICT

TAX MAP No. 16 GRID No. 6 PARCEL No. 25

LEGEND

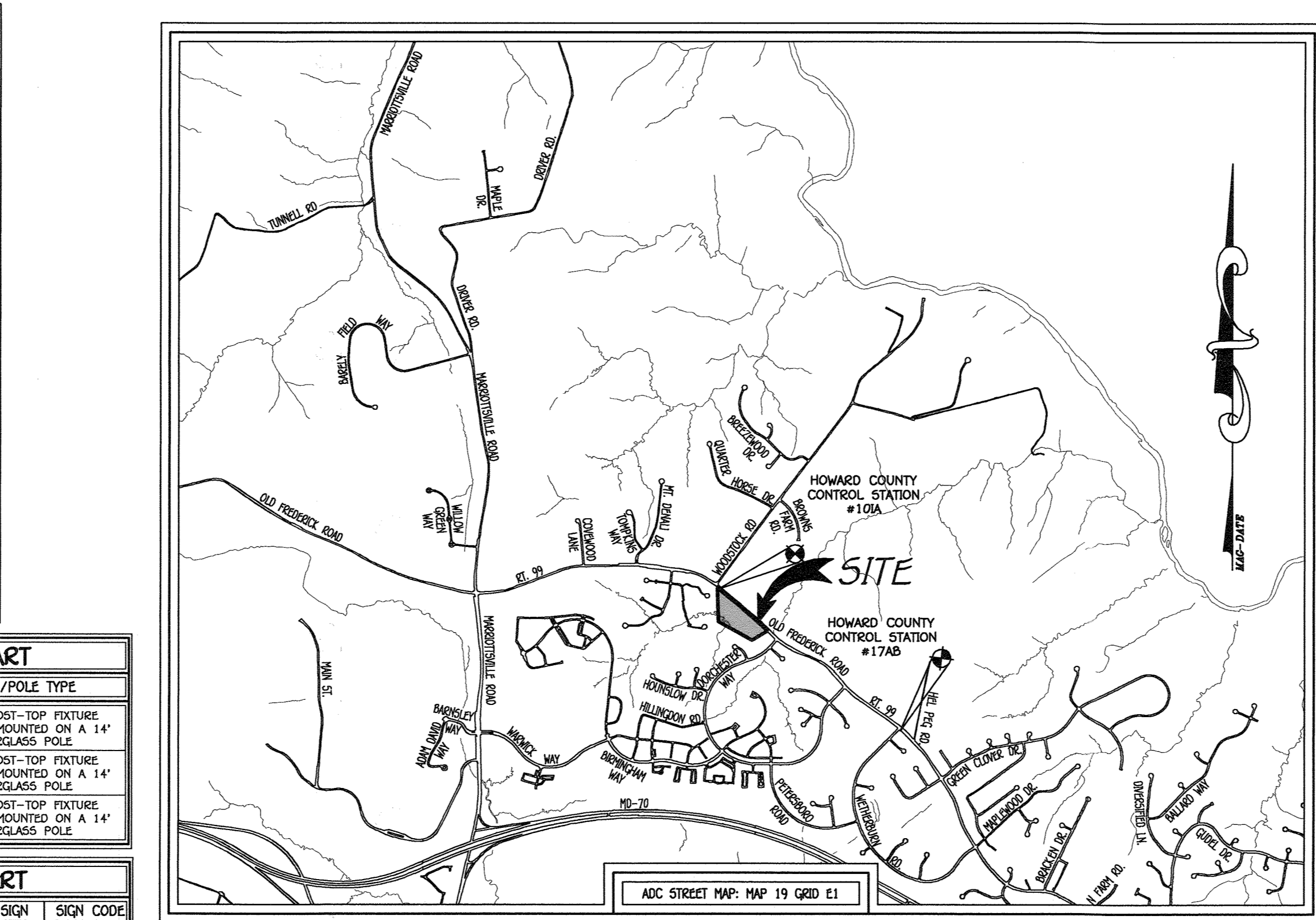
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	LIMIT OF DISTURBANCE
---	SUPER SILT FENCE
---	SILT FENCE
---	15-24% SLOPES
---	25% AND GREATER
---	FOREST CONSERVATION EASEMENT
---	ERODIBLE SOILS
---	SWM BODIES
---	EXISTING TREE
---	PROPOSED TREES
---	65 DIA UNUTILITATED LINE
---	50 DIA UTILITATED LINE
---	PUBLIC WATER & SEWER UTILITY EASEMENT
---	STORMWATER MANAGEMENT EASEMENT
---	RECREATIONAL OPEN SPACE
---	PRIVATE PATH, RETAINING WALL AND MAINTENANCE EASEMENT

PRIVATE ALLEY LIGHT CHART

STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
MY GIRL PLACE	0+62.5	27RT	COLONIAL POST-TOP FIXTURE (LED-100) MOUNTED ON A 14' BLACK FIBERGLASS POLE
MY GIRL PLACE	1+36.5	10LT	COLONIAL POST-TOP FIXTURE (LED-100) MOUNTED ON A 14' BLACK FIBERGLASS POLE
MY GIRL PLACE	0+25.1	10LT	COLONIAL POST-TOP FIXTURE (LED-100) MOUNTED ON A 14' BLACK FIBERGLASS POLE

PRIVATE ALLEY SIGN CHART

STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
MY GIRL PLACE	0+71	22' LT	STOP	R1-1
MY GIRL PLACE	1+57	16' RT	SPEED LIMIT 25 MPH	R2-1



HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 101A
 N 600995.133
 E 1349540.393
 ELEVATION: 441.902'

HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 174B
 N 998435.302
 E 1349815.301
 ELEVATION: 508.401'

VICINITY MAP
 SCALE: 1" = 2000'

THIRD ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT INFORMATION (PRIVATELY OWNED AND MAINTAINED BY OWNERS)

STREET ADDRESS	LOT / PARCEL	FACILITY NAME AND NUMBER	DRAINAGE	SUB AREA (FILTERRA INLET)	TYPE	% IMPERVIOUS	Pe=1.0% ESQ. REQUIRED CUFT.	Pe=1.0% ESQ. PROVIDED CUFT.	OWNERSHIP AND MAINTENANCE
10512 MY GIRL PLACE	LOT 1	H-5 LOT 1	510		DRWELL	100%	79	83	PRIVATE
10514 MY GIRL PLACE	LOT 2	H-5 LOT 2	510		DRWELL	100%	79	83	PRIVATE
10516 MY GIRL PLACE	LOT 3	H-5 LOT 3	510		DRWELL	100%	79	83	PRIVATE
10518 MY GIRL PLACE	LOT 4	H-5 LOT 4	510		DRWELL	100%	79	83	PRIVATE
10520 MY GIRL PLACE	LOT 5	H-5 LOT 5	510		DRWELL	100%	79	83	PRIVATE
10524 MY GIRL PLACE	LOT 6	H-5 LOT 6	510		DRWELL	100%	79	83	PRIVATE
10526 MY GIRL PLACE	LOT 7	H-5 LOT 7	510		DRWELL	100%	79	83	PRIVATE
10528 MY GIRL PLACE	LOT 8	H-5 LOT 8	510		DRWELL	100%	79	83	PRIVATE
10530 MY GIRL PLACE	LOT 9	H-5 LOT 9	510		DRWELL	100%	79	83	PRIVATE
10532 MY GIRL PLACE	LOT 10	H-5 LOT 10	510		DRWELL	100%	79	83	PRIVATE
10536 MY GIRL PLACE	LOT 11	H-5 LOT 11	510		DRWELL	100%	79	83	PRIVATE
10538 MY GIRL PLACE	LOT 12	H-5 LOT 12	510		DRWELL	100%	79	83	PRIVATE
10540 MY GIRL PLACE	LOT 13	H-5 LOT 13	510		DRWELL	100%	79	83	PRIVATE
10542 MY GIRL PLACE	LOT 14	H-5 LOT 14	510		DRWELL	100%	79	83	PRIVATE
10544 MY GIRL PLACE	LOT 15	H-5 LOT 15	510		DRWELL	100%	79	83	PRIVATE

STORMWATER MANAGEMENT INFORMATION (PRIVATELY OWNED AND MAINTAINED BY HOA)

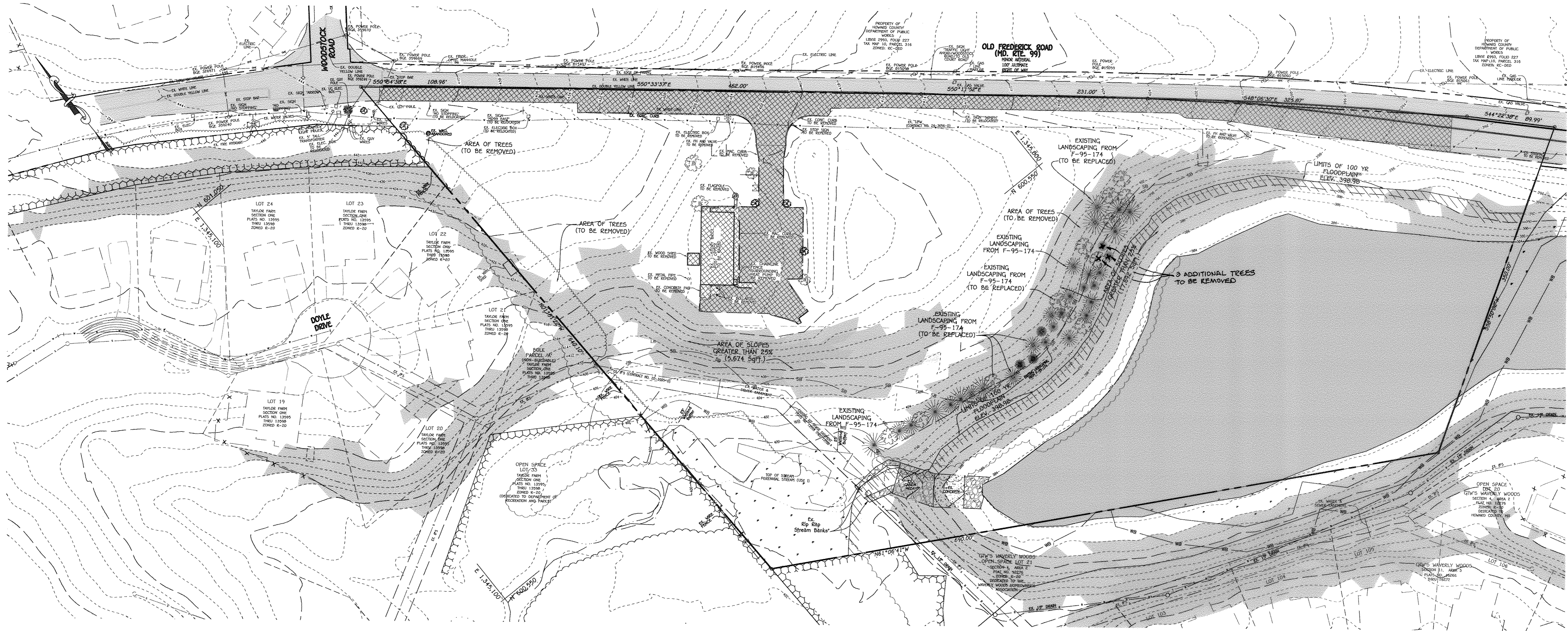
STREET ADDRESS	LOT / PARCEL	FACILITY NAME AND NUMBER	DRAINAGE	SUB AREA (FILTERRA INLET)	TYPE	% IMPERVIOUS	Pe=1.0% ESQ. REQUIRED CUFT.	Pe=1.0% ESQ. PROVIDED CUFT.	OWNERSHIP AND MAINTENANCE
OPEN SPACE LOT 31		INITIAL P Pe TREATED BY THREE FILTERRA INLETS RETAINING PLY IN BIO-RETENTION FACILITY	10271		FE (1)	66%	137.75 (STORAGE)	137.75 (STORAGE)	PRIVATE (HOA)
OPEN SPACE LOT 31			4,966		FE (2)	66%	102.86 (STORAGE)	102.86 (STORAGE)	PRIVATE (HOA)
OPEN SPACE LOT 31			7,021		FE (3)	66%	144.00 (STORAGE)	144.00 (STORAGE)	PRIVATE (HOA)
OPEN SPACE LOT 31			7,247		FE (4)	66%	147.63 (STORAGE)	147.63 (STORAGE)	PRIVATE (HOA)
OPEN SPACE LOT 31			32,824 (TOTAL)			78%	1,218 (STORAGE)	1,203 (STORAGE)	PRIVATE (HOA)
OPEN SPACE LOT 32			41,283		NO	23%	1,720.26 (STORAGE)	1,807.26 (STORAGE)	PRIVATE (HOA)
OPEN SPACE LOT 32			64,960		NO	50%	2,011 (STORAGE)	2,045 (STORAGE)	PRIVATE (HOA)
OPEN SPACE LOT 32					NO	50%	5,000 (STORAGE)	3,441 (STORAGE)	PRIVATE (HOA)

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

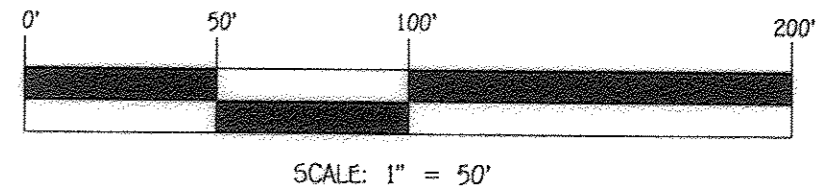
GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-SA-8 PER 10/16/13 COMPREHENSIVE ZONING PLAN.
- THIS PLAN IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE 10/06/13 COMPREHENSIVE ZONING PLAN. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH THESE REGULATIONS AND BUFFER REQUIREMENTS SET FORTH AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WATER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
- AREA TABULATION:
 - GROSS AREA OF TRACT = 9.25 AC.
 - AREA OF FLOODPLAIN = 3.18 AC.
 - AREA OF 25% OR GREATER SLOPES = 0.54 AC.
 - NET AREA OF TRACT = 5.53 AC.
 - AREA OF PROPOSED ROAD R/W = 1.45 AC.
 - AREA OF PROPOSED BUILDABLE LOTS = 1.47 AC.
 - MAXIMUM UNITS ALLOWED = 44 UNITS (5.53 ACRES X 8 UNITS/NET ACRE) = 44 UNITS
 - UNITS PROPOSED = 30 UNITS
- TOTAL NUMBER OF "MODERATE INCOME HOUSING UNITS" (M.I.H.U.) REQUIRED FOR THIS SUBDIVISION PER THE R-SA-8 ZONING DISTRICT IS 10% OF THE TOTAL NUMBER OF UNITS CALCULATED AS FOLLOWS:
 - TOTAL NUMBER OF PROPOSED RESIDENTIAL UNITS = 30 UNITS
 - TOTAL NUMBER OF SFA UNITS PROPOSED = 30 UNITS
 - TOTAL NUMBER OF M.I.H.U. REQUIRED = 3.0 M.I.H.U. (30 SFA X 10%)
- A MODERATE INCOME HOUSING UNIT (M.I.H.U.) AGREEMENT AND M.I.H.U. COVENANTS HAVE BEEN RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY, MARYLAND SIMULTANEOUSLY WITH THE RECORDED OF THE FINAL RECORD PLAN.
- EXISTING UTILITIES ARE BASED ON CONTR. NO. 20-2099-0 AND CONTR. NO. 24-3656-D.
- SOILS INFORMATION TAKEN FROM NCS WISCONSIN SURVEY.
- BOUNDARY INFORMATION IS BASED ON A SURVEY PERFORMED ON OR ABOUT MAY, 2014 BY FISHER, COLLINS & CARTER, INC.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD SURVEY WITH 2' CONTOUR INTERVALS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED MAY, 2014.
- A NOISE STUDY DATED SEPTEMBER, 2015 HAS BEEN PERFORMED BY MARS GROUP INC. AND APPROVED ON 3/14/16 WITH SP-16-001. NOISE MITIGATION HAS BEEN PROVIDED BY A NOISE WALL ALONG MARYLAND ROUTE 99 (OLD FREDERICK ROAD).
- STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE R.C.E. STORM WATER DESIGN MANUAL VOLUMES 1 & 2, REVISED 2009. WE ARE PROVIDING STORMWATER MANAGEMENT THROUGH THE USE OF M-6 MICRO BIO-RETENTION FACILITIES, F-6 BIO-RETENTION FACILITIES, A-2 PERMEABLE PAVING, M-5 DRY WELLS AND THE USE OF "FILTERRA" INLETS. THE "FILTERRA" INLETS LOCATED WITHIN THE SHA RIGHT-OF-WAY WILL BE OWNED AND MAINTAINED BY SHA. ALL OTHER SWM DEVICES, INCLUDING THE FILTERRA INLETS LOCATED ALONG THE PRIVATE ROADWAY WILL BE OWNED AND MAINTAINED BY THE WAVERLY GROVE HOMEOWNERS ASSOCIATION.
- THE TRAFFIC STUDY DATED JUNE, 2015 FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP AND APPROVED ON 3/14/16 WITH SP-16-001.
- FOREST STAND DELINEATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. MARCH, 2015 AND APPROVED ON 3/14/16 WITH SP-16-001.
- AN ENVIRONMENTAL STUDY DETAILING THE STREAMS, WETLANDS AND OTHER ENVIRONMENTAL FEATURES WAS CONDUCTED BY ECO-SCIENCE PROFESSIONALS INC. DATED MARCH 2015 AND APPROVED ON 3/14/16. THERE'S A PERENNIAL STREAM AND WETLANDS LOCATED ON THE PROPERTY. THESE ENVIRONMENTAL FEATURES SHALL BE LOCATED WITHIN OPEN SPACE LOTS 32 AND 35 AND SHALL BE FURTHER PROTECTED BY A 75' STREAM BANK BUFFER AND A 25' FOOT WETLAND BUFFER.
- THE GEO-TECHNICAL INFORMATION, RELATING TO THE LOCATION OF ROCK OR GROUND WATER BENEATH THE PROPOSED SWM DEVICES FOR THIS PROJECT BY FISHER, COLLINS AND CARTER INC., WILL BE SUBMITTED WITH THIS PLAN.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. MONUMENT NOS. 101A AND 174B WERE USED FOR THIS PROJECT.

HOWARD COUNTY GEODETIC CONTROL MONUMENT NO. 101A	N 600995.133 FT	E 1349540.393 FT	ELEV. 441.902'
HOWARD COUNTY GEODETIC CONTROL MONUMENT NO. 174B	N 998435.302 FT	E 1349815.301 FT	ELEV. 508.401'
- THE FOREST CONSERVATION EASEMENTS SHOWN ON THIS PLAN HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION ARE ALLOWED. THE FOREST CONSERVATION REQUIREMENTS OF 0.51 ACRES FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE REFORESTATION OF 0.97(CREDITED 0.51 ACRES) ACRES AND A FEE-IN-LIEU PAYMENT OF \$13,066.00 FOR THE REMAINING 0.40 ACRES(0.91 ACRES-0.51 ACRES). SURVEY IN THE AMOUNT OF \$12,414.60 IS REQUIRED FOR THE ON-SITE REFORESTATION.
- NO CEMETERIES ARE LOCATED ON THIS PROPERTY NO HISTORIC STRUCTURES EXIST ON-SITE.
- THIS SITE IS NOT ADJACENT TO A SCENIC ROAD.
- THERE ARE A TOTAL OF 23,366 SQUARE FEET(0.54 AC.) OF SLOPES IN EXCESS OF 25%. HOWEVER THE INDIVIDUAL AREAS ARE LESS THAN 20,000 SQUARE FEET OF AREA BUT QUALITY AS STEEP SLOPE AREA IN THE NET AREA CALCULATION.
- THE EXISTING 100 YEAR FLOODPLAIN WAS APPROVED BY HOWARD COUNTY WITH F-95-174.
- DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT ON '80 GRID.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).
 - SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING.
 - MINIMUM
 - MINIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS.
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H2S-LOADING).
 - DRAINAGE ELEMENTS IS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER SURFACE.
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- ARTICLES OF INCORPORATION FOR THE WAVERLY GROVE HOMEOWNERS ASSOCIATION, INC. WILL BE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO RECORDED OF THE FINAL PLAN.
- THE PROJECT WILL CONFORM WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVES HAVE BEEN APPROVED.
- A PRE-SUBMISSION MEETING WAS HELD FOR THIS PROJECT ON SEPTEMBER 16, 2014 IN ACCORDANCE WITH SECTION 16.128 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THE SWM FACILITY (O.D.A.) OPEN SPACE WILL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- THE PERMETER LANDSCAPE OBLIGATION IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A LANDSCAPE SURETY IN THE AMOUNT OF \$17,250.00 BASED ON 50 SHADE TREES @ \$300/SHADE TREE AND 9 EVERGREEN TREES @ \$1,950/EVERGREEN SHALL BE BONDED AS PART OF THE AGREEMENT.
- SURETY FOR INSTALLATION OF STREET TREES HAS BEEN POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PROJECT.
- SHOULD DISTURBANCE OCCUR IN THE FOREST CONSERVATION EASEMENT AREAS DURING OR AFTER CONSTRUCTION, CIVIL PENALTIES OR MITIGATION MAY BE REQUIRED.
- THE CONSTRUCTION SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEER/CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MGS UTILITIES" AT 800-227-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME 1(2005), SECTION 5.5.4. A MINIMUM SPACE OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
- WELL AND SEPTIC SYSTEM COMPONENTS MUST BE PROPERLY ABANDONED AND NOTIFICATION OF SUCH SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH SIGNATURE OF THE RECORD PLAN.
- ONLY PASSIVE RECREATION IS ALLOWED WITHIN THE PORTION RESERVED AS RECREATION AREA THAT FALLS WITHIN THE 50' STRUCTURE AND SETBACK.
- TRAFFIC CONTROL DEVICES:
 - THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - 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.
 - 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).
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE STATE RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" DIA. GALVANIZED STEEL PERFORATED (DUCK 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



PLAN
SCALE: 1" = 50'



LEGEND	
SYMBOL	DESCRIPTION
--- 272 ---	EXISTING CONTOUR 2' INTERVAL
--- 270 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
--- 272 ---	PROPOSED CONTOUR 2' INTERVAL
--- 270 ---	PROPOSED CONTOUR 10' INTERVAL
X279.30	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	LIMIT OF RESTRICTION
---	SUPER SILT FENCE
---	SWM BORINGS
---	EXISTING TREE
---	PROPOSED TREES
---	PUBLIC WATER & SEWER UTILITY EASEMENT
---	STORMWATER MANAGEMENT EASEMENT
---	DEMOLITION AREAS
---	FULL DEPTH PAVEMENT
---	WELL AND RESURFACE AREAS

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
 Chief, Bureau of Highways
 DATE: 05/22/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
 Chief, Division of Land Development
 DATE: 6-22-17

[Signature]
 Chief, Development Engineering Division
 DATE: 5-31-17

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLEOTT CITY, MARYLAND 21042
 (410) 461-2999

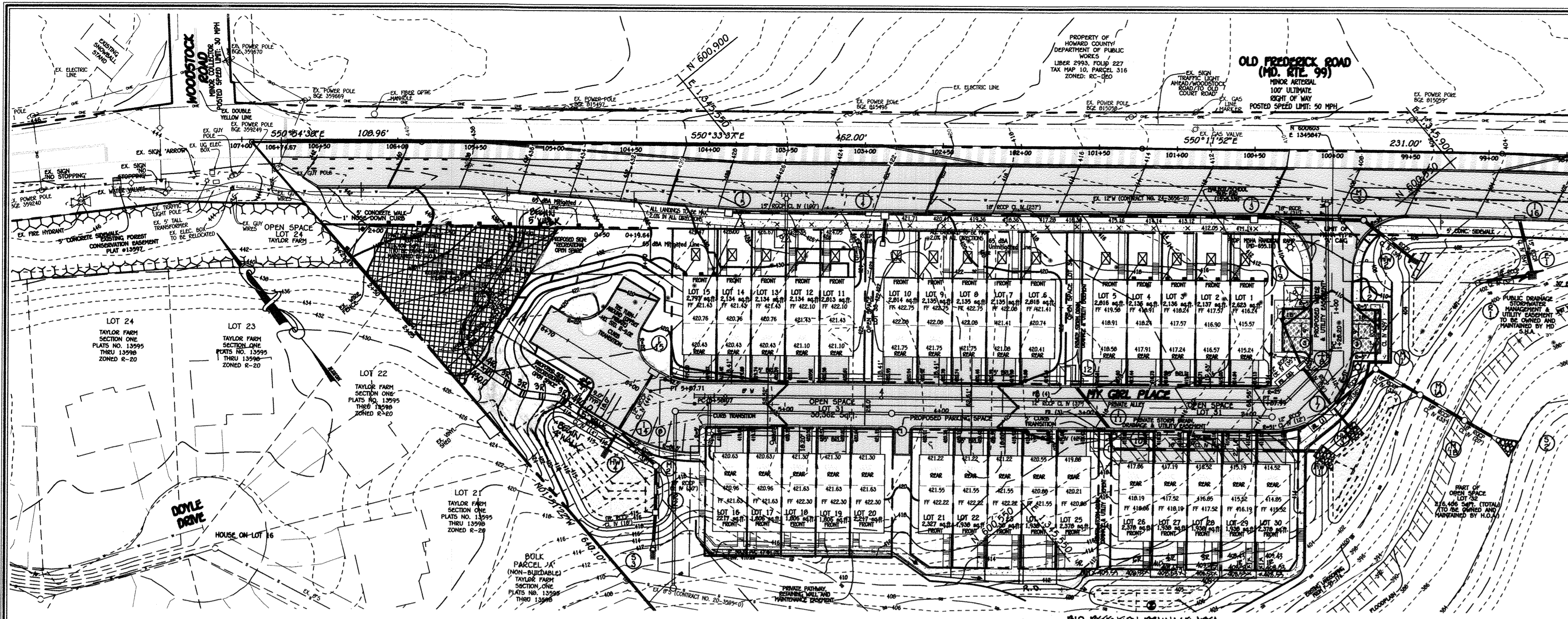
REVISIONS		
NO.	DESCRIPTION	DATE

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADAPLHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

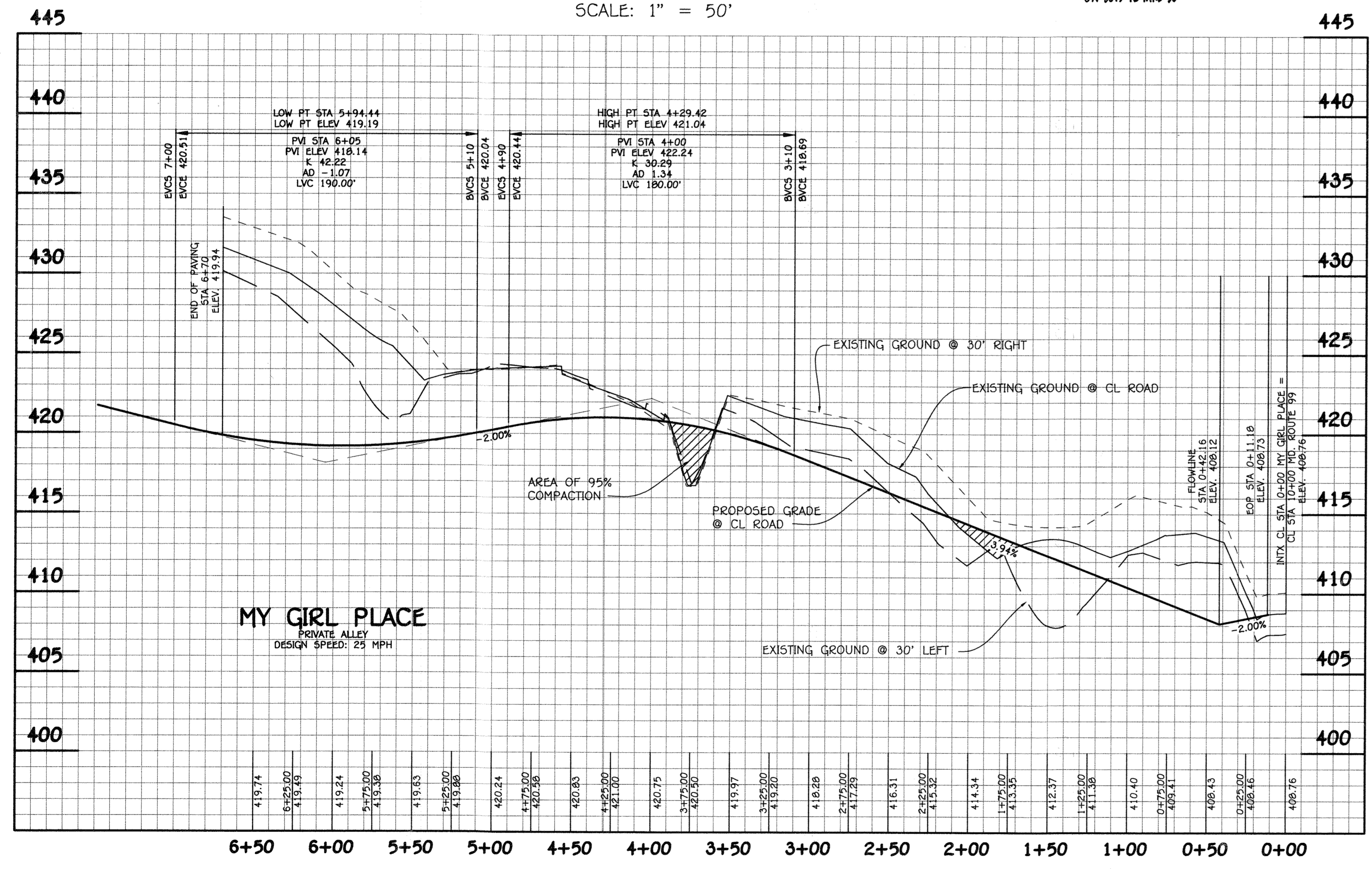


PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/1/17.
[Signature]
 FRANK J. MANALANSAN II
 DATE: 4/18/17

EXISTING CONDITIONS & DEMOLITION PLAN
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-B
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-88, S-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: APRIL 4, 2017
 SHEET 2 OF 39



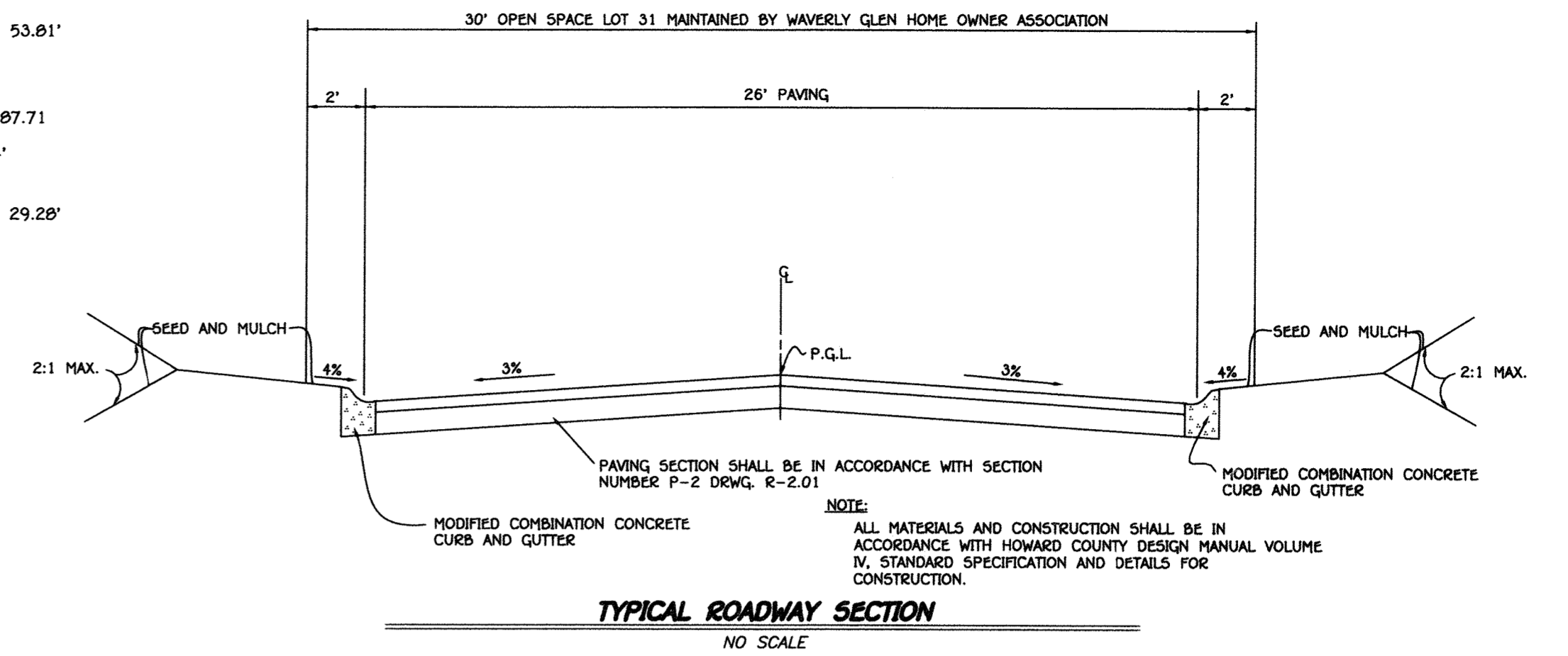
PLAN
SCALE: 1" = 50'



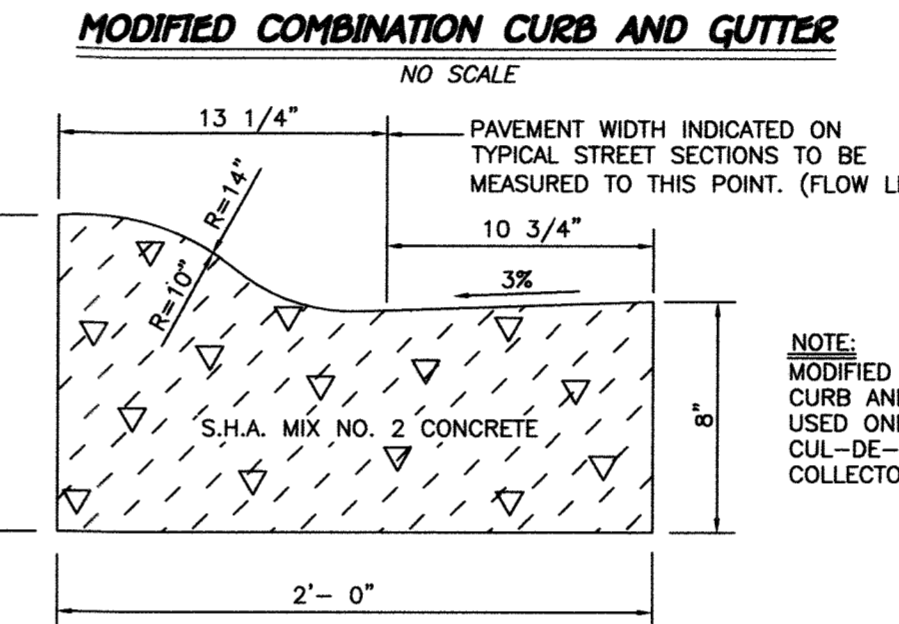
MY GIRL PLACE
SCALE HORZ. 1" = 50'
VERT. 1" = 5'

MY GIRL PLACE
STA. 1+28.20 TO STA. 1+87.99
RAD. = 38.00'
ARC LENGTH = 59.795'
TAN = 38.11'
 $\Delta = 09^{\circ}15'7''$
CHORD = 5 04'29.50" W, 53.81'

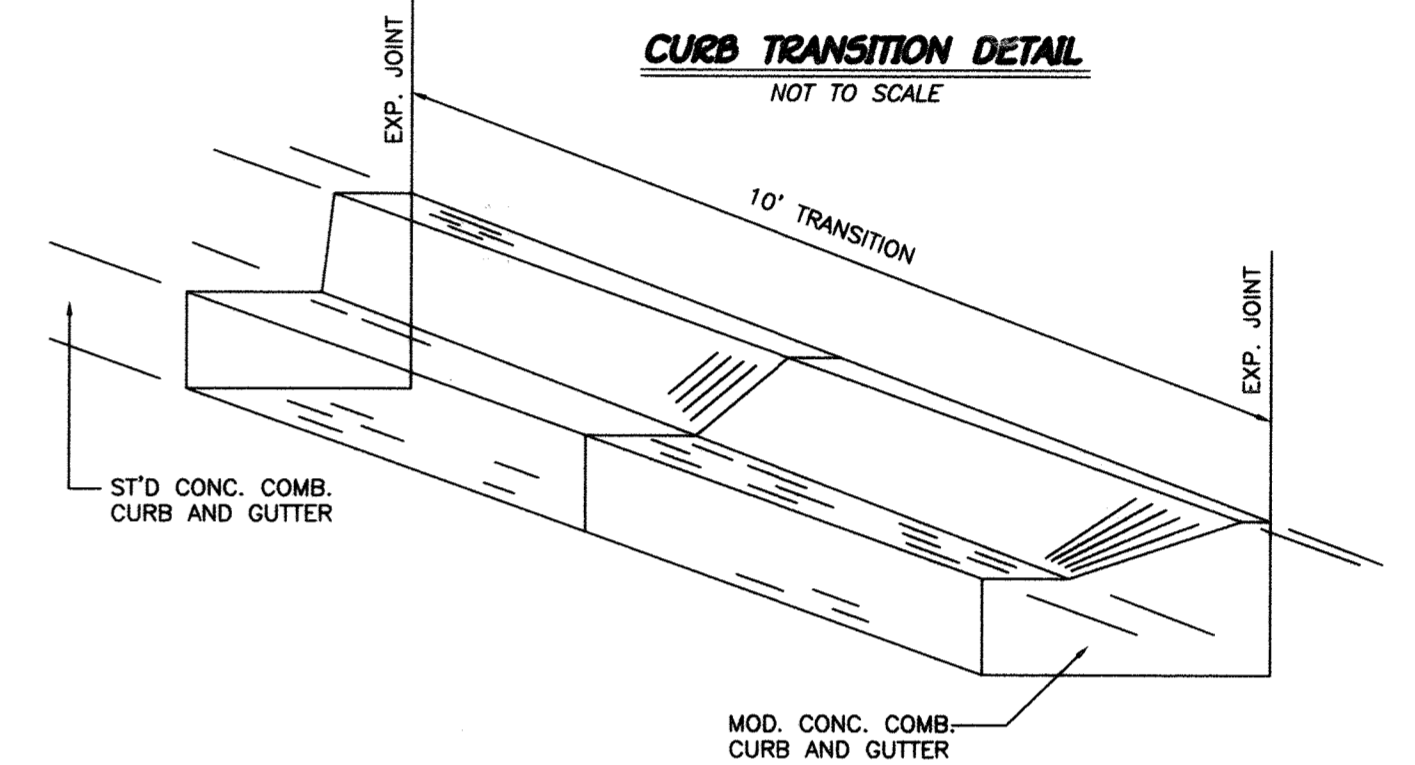
MY GIRL PLACE
STA. 5+58.07 TO STA. 6+87.71
RAD. = 55.50'
ARC LENGTH = 29.64'
TAN = 15.18'
 $\Delta = 30^{\circ}59'39''$
CHORD = N 35^{\circ}07'37" W, 29.28'



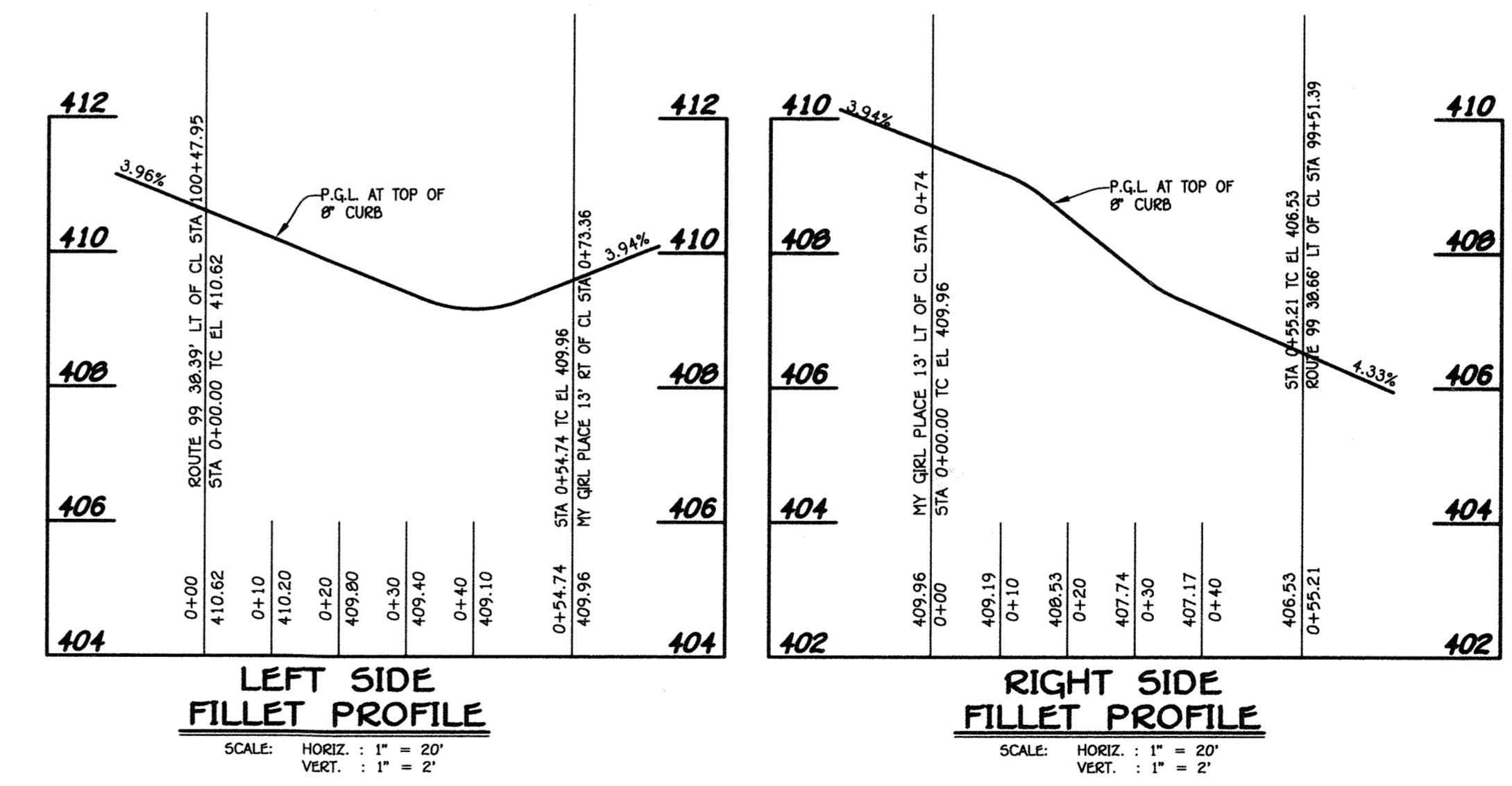
TYPICAL ROADWAY SECTION
NO SCALE



MODIFIED COMBINATION CURB AND GUTTER
NO SCALE



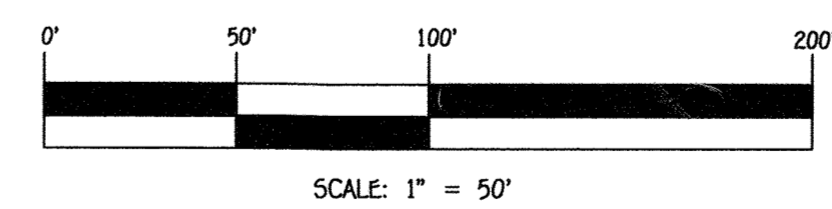
CURB TRANSITION DETAIL
NOT TO SCALE



LEFT SIDE FILLET PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

RIGHT SIDE FILLET PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

MY GIRL PLACE - ROUTE 99 INTERSECTION



SCALE: 1" = 50'

NOTE: FOR PLANTING PLAN, STREET TREES, SCHEDULE AND DETAILS SEE SHEET 16 AND 17.

SYMBOL	DESCRIPTION
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	PROPOSED STORM DRAIN PIPE
---	PROPOSED SEWER
---	PROPOSED WATER
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	EXISTING TREE
---	DEWELL (M-5)-TYPICAL
---	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
Chief, Bureau of Highways

2/17/2018
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
Chief, Division of Land Development

2-27-18
DATE

[Signature]
Chief, Development Engineering Division

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-3995

NO.	DESCRIPTION	DATE
1	REVISE STORM DRAIN, SWM AND REMOVE ASSOCIATED EASEMENT	1-8-18
2	REVISE LANDSCAPE WALL & REPAIR REAR OF LOTS 15 THRU 30	10/9/18
3	REVISE PAVEMENT PAD, RES. WALK & BRACKIN IN OR LOT 32	6/4/20

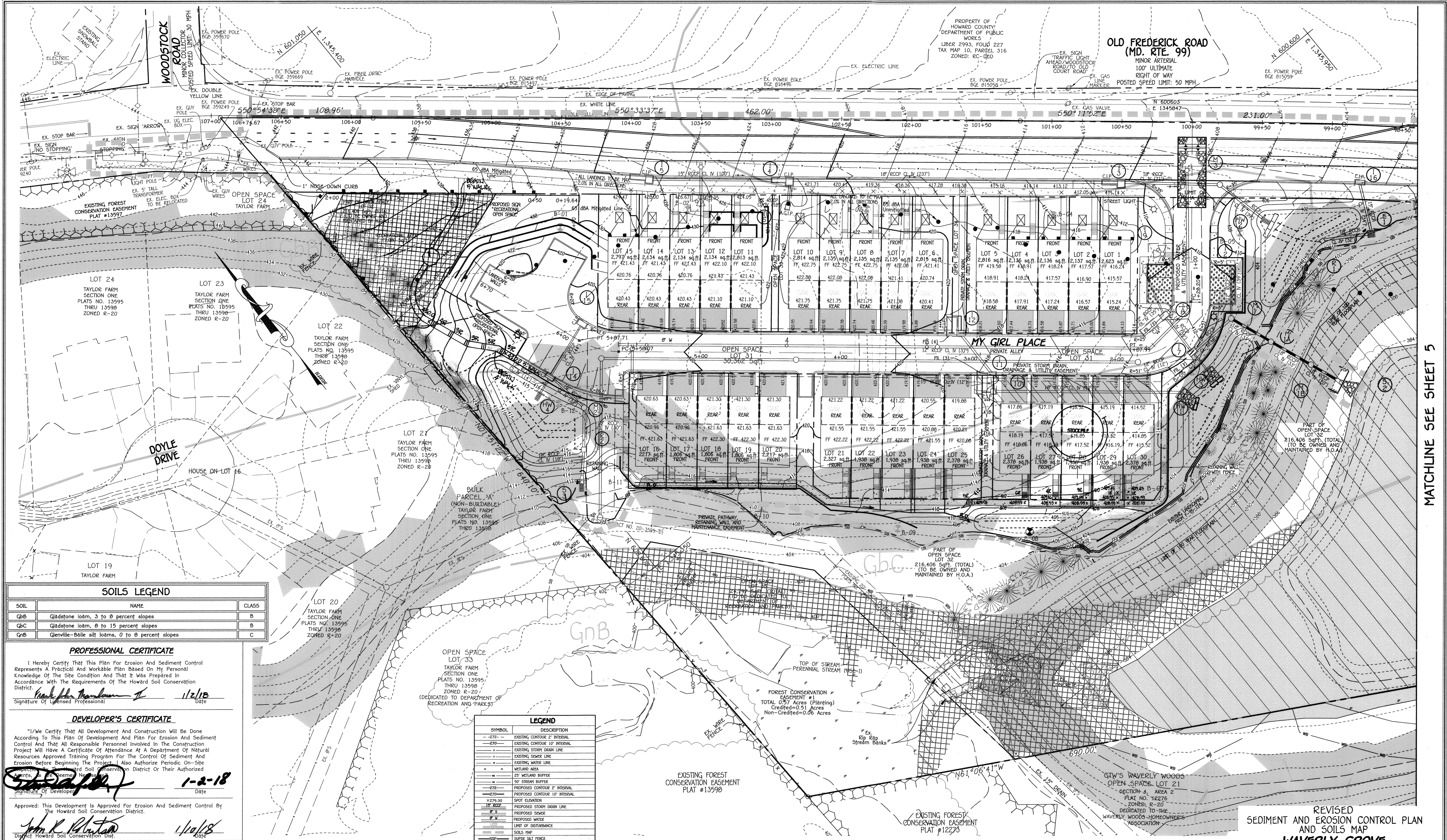
OWNER/DEVELOPER
WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRIADAPLHIA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/19.

[Signature]
FRANK J. MANALANGAN II
DATE: 1/2/18

REVISED
MY GIRL PLACE
ROAD PLAN AND PROFILE
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-SA-8
PREVIOUS HOWARD COUNTY FILES:
SDP-86-08, S-94-07, P-95-07, F-95-174,
ECP-14-072, SP-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER 6, 2017
SHEET 3 OF 39



SOILS LEGEND

SOIL	NAME	CLASS
GbB	Gladstone loam, 3 to 8 percent slopes	B
GbC	Gladstone loam, 8 to 15 percent slopes	B
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C

PROFESSIONAL CERTIFICATE

I hereby certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site condition and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Licensed Professional: *Frank J. Manalansan II* Date: 1/2/18

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a certificate of attendance at a Department of Natural Resources approved training program for the control of sediment and erosion before beginning the project. I also authorize periodic on-site inspections by the Howard Soil Conservation District or their authorized agents."

Signature of Developer: *John K. Blanton* Date: 1-2-18

Approved: This Development is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

Signature: *John K. Blanton* Date: 1/10/18

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *John K. Blanton* Date: 2/17/2018
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *J. Marchand Fu KS* Date: 2/27/18
 Chief, Division of Land Development

Signature: *Ch. Chubb* Date: 2-23-18
 Chief, Development Engineering Division

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PkE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2299

NO.	REVISIONS	DATE
1	REVISE STORM DRAIN, SWM AND REMOVE ASSOCIATED EASEMENT	1-8-18
2	REMOVE LANDSCAPE WALL & REARARD ROADS OF LOTS 15 THRU 30	10/9/18
3	REMOVE EXISTING PAV. REMOVE WALK & DECKING IN OPEN LOT 26	2/14/20

LEGEND

SYMBOL	DESCRIPTION
-272-	EXISTING CONTOUR 2' INTERVAL
-270-	EXISTING CONTOUR 10' INTERVAL
-	EXISTING STORM DRAIN LINE
-	EXISTING SEWER LINE
-	EXISTING WATER LINE
-	WETLAND AREA
-	25' WETLAND BUFFER
-	50' STREAM BUFFER
-272-	PROPOSED CONTOUR 2' INTERVAL
-270-	PROPOSED CONTOUR 10' INTERVAL
x279.30	SPOT ELEVATION
-	PROPOSED STORM DRAIN LINE
-	PROPOSED SEWER
-	PROPOSED WATER
-	LINE OF DISTURBANCE
-	SOILS MAP
-	SUPER SALT FENCE
-	SILT FENCE
-	15-24 PERCENT SLOPES
-	25% AND GREATER
-	FOREST CONSERVATION EASEMENT
-	ERODIBLE SOILS
-	SWM BASINS
-	EXISTING TREE
-	PROPOSED TREES
-	PUBLIC WATER & SEWER UTILITY EASEMENT
-	STORMWATER MANAGEMENT EASEMENT
-	RECREATIONAL OPEN SPACE
-	FRONTIER PATH, RETAINING WALL AND MAINTENANCE EASEMENT

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADAPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

- (1) CURB INLET PROTECTION TO BE MODIFIED TO ENCOMPASS I-7 AND FILL 1.
- (2) CURB INLET PROTECTION TO BE MODIFIED TO ENCOMPASS I-8 AND FILL 2.
- (3) CURB INLET PROTECTION TO BE MODIFIED TO ENCOMPASS I-10, I-11 AND FILL 3.
- (4) CURB INLET PROTECTION TO BE MODIFIED TO ENCOMPASS I-12 AND FILL 4.



PROFESSIONAL CERTIFICATION

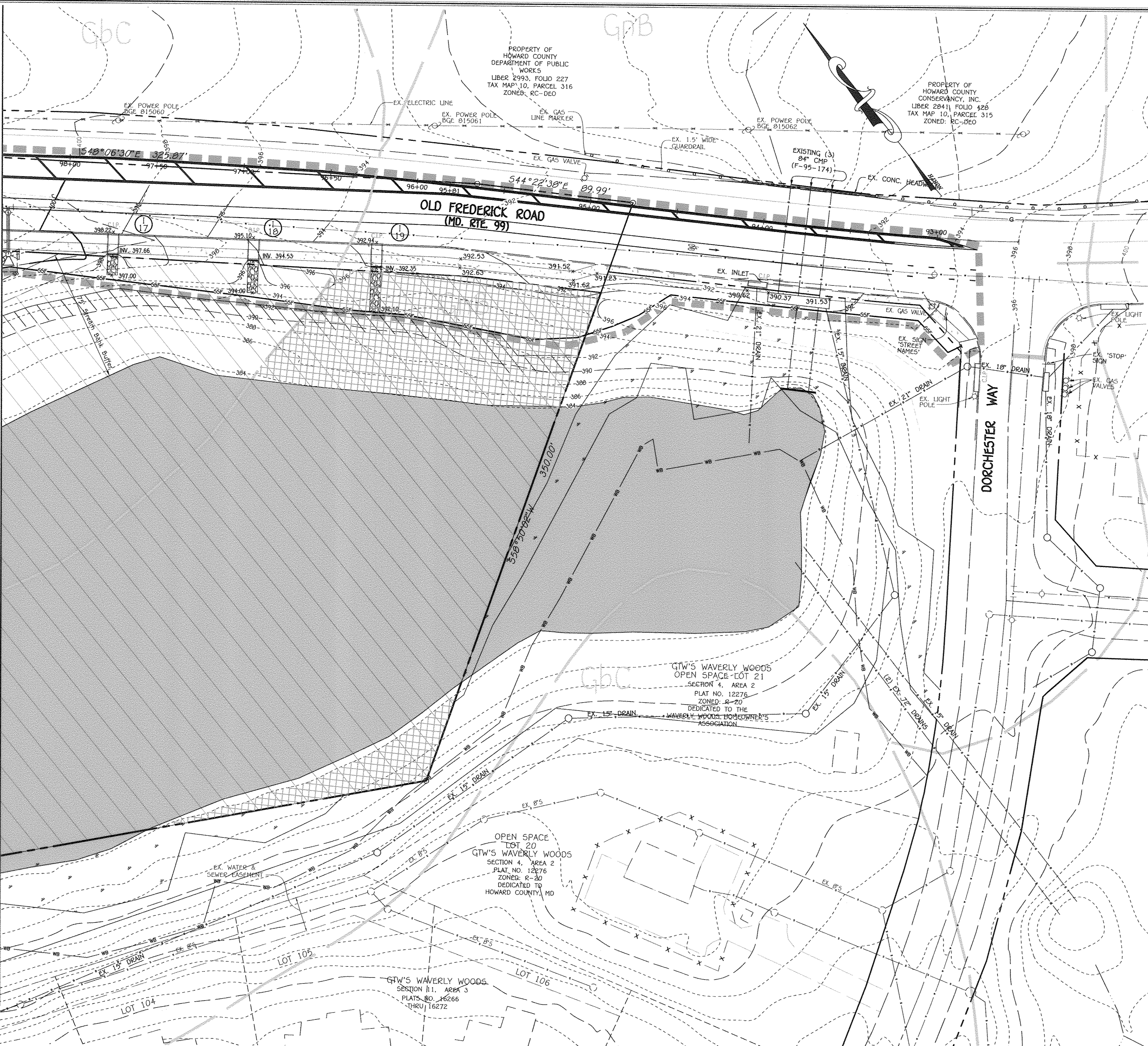
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/19.

Signature: *Frank J. Manalansan II* Date: 1/2/18

REVISED SEDIMENT AND EROSION CONTROL PLAN AND SOILS MAP
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-B
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-88, S-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: DECEMBER 6, 2017
 SHEET 4 OF 39

MATCHLINE SEE SHEET 5

MATCHLINE SEE SHEET 4



PROFESSIONAL CERTIFICATE
 I Herby Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.
 Signature: *Frank J. Manalangan II* Date: 4/12/17
 Signature Of Licensed Professional

DEVELOPER'S CERTIFICATE
 "I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Appropriate."
 Signature: *John R. Hunter* Date: 4/12/17
 Signature Of Developer

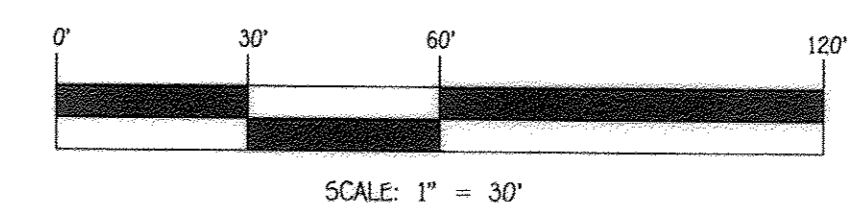
Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
 Signature: *John R. Hunter* Date: 4/12/17
 District Howard Soil Conservation Dist.

LEGEND

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	LIMIT OF DISTURBANCE
---	SOILS MAP
---	SUPER SILT FENCE
---	SILT FENCE
---	15-24.99% SLOPES
---	25% AND GREATER
---	FOREST CONSERVATION EASEMENT
---	PROBABLE SOILS
---	SWM BORDERS
---	EXISTING TREE
---	PROPOSED TREES
---	PUBLIC WATER & SEWER UTILITY EASEMENT
---	STORMWATER MANAGEMENT EASEMENT
---	RECREATIONAL OPEN SPACE
---	PRIVATE PATH, STORMWATER, WALL AND MAINTENANCE EASEMENT

SOILS LEGEND

SOIL	NAME	CLASS
Gbc	Gladstone loam, 3 to 8 percent slopes	B
Gbc	Gladstone loam, 8 to 15 percent slopes	B
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C



SEDIMENT AND EROSION CONTROL PLAN AND SOILS MAP
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-B
 PREVIOUS HOWARD COUNTY FILES:
 SDP-06-00, 5-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: APRIL 4, 2017
 SHEET 5 OF 39

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 05/22/2017

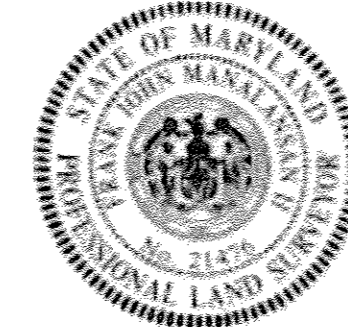
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 5-28-17

Chief, Development Engineering Division
 DATE: 5-31-17

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLESDOTT CITY, MARYLAND 21042
 (410) 461-2295

NO.	DESCRIPTION	DATE

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRADELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
 Signature: *Frank J. Manalangan II* Date: 4/12/17
 FRANK J. MANALANGAN II

SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)

A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
a. SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT...
2. PERMANENT STABILIZATION
a. A SOIL TEST IS REQUIRED FOR EVERY EXPOSED SURFACE OF 5 ACRES OR MORE...
b. TOPSOILING
1. TOPSOILING IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION...
2. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES...
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
a. THE TEXTURE OF THE CARGOED/SUBSOIL MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATION...
c. SOIL AMENDMENTS (FERTILIZER & LIME SPECIFICATIONS)
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATES AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER...

PERMANENT SEEDING NOTES (B-4-3)

A. SEED MIXTURES
1. GENERAL USE
a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE...
2. TURFGRASS MIXTURES
a. AREAS WITH TURFGRASS MUST BE DESIGNED TO INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MAJOR TO HIGH LEVEL OF MAINTENANCE...
3. MULCHING
a. MULCH MATERIALS (IN ORDER OF PREFERENCE)
1. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY...
2. WOOD CELLULOSE FIBER MULCH (WCM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE FIBER INTO UNIFORM PHYSICAL STATE...
b. APPLICATION
1. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING...
2. MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...
3. MAINTENANCE
a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK...
4. WATER THE SOIL IMMEDIATELY FOLLOWING ROLLING AND TAMPING...
5. CHECK FOR WEEDS, MOULDS, AND OTHER ADVERSE EFFECTS...
c. ANCHORING
1. MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...
2. MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE...
3. WOOD CELLULOSE FIBRE MULCH IS TO BE USED FOR ANCHORING STRAW APPLY THE FIBRE UNDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE...
4. ANCHORING RIBBERS SUCH AS ACRYLIC ROLL (ACR-1), RCA-70, PERSECT, TRON TRK 10, TRONN TACK, OR, OTHER APPROVED EQUIPMENT CAN BE USED...
5. APPROVED EQUIPMENT MUST BE USED TO FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER'S APPLICATION OF LIQUID RIBBERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH...
6. LIGHTWEIGHT PLASTIC NETTING MAY BE SUBSTITUTED FOR MULCH ANCHORING...
7. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

PERMANENT SEEDING NOTES (B-4-3)

A. SEED MIXTURES
1. GENERAL USE
a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE...
2. TURFGRASS MIXTURES
a. AREAS WITH TURFGRASS MUST BE DESIGNED TO INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MAJOR TO HIGH LEVEL OF MAINTENANCE...
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2. WOOD CELLULOSE FIBER MULCH (WCM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE FIBER INTO UNIFORM PHYSICAL STATE...
b. APPLICATION
1. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING...
2. MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...
3. MAINTENANCE
a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK...
4. WATER THE SOIL IMMEDIATELY FOLLOWING ROLLING AND TAMPING...
5. CHECK FOR WEEDS, MOULDS, AND OTHER ADVERSE EFFECTS...
c. ANCHORING
1. MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...
2. MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE...
3. WOOD CELLULOSE FIBRE MULCH IS TO BE USED FOR ANCHORING STRAW APPLY THE FIBRE UNDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE...
4. ANCHORING RIBBERS SUCH AS ACRYLIC ROLL (ACR-1), RCA-70, PERSECT, TRON TRK 10, TRONN TACK, OR, OTHER APPROVED EQUIPMENT CAN BE USED...
5. APPROVED EQUIPMENT MUST BE USED TO FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER'S APPLICATION OF LIQUID RIBBERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH...
6. LIGHTWEIGHT PLASTIC NETTING MAY BE SUBSTITUTED FOR MULCH ANCHORING...
7. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

Table with columns: SPECIES, APPLICATION RATE (LB./AC), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (LBS./AC), LIME RATE (TONS/AC). Rows include BULL PERSISTENT and TURFGRASS MIXTURES.

SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER)

1. GENERAL SPECIFICATIONS
a. CLASS OF TURFGRASS MUST BE MARYLAND STATE CERTIFIED...
b. SOD MUST BE MAINE CUT AT A UNIFORM SOD THICKNESS TO 3/4 INCH...
c. UNIFORM ERGS WILL NOT BE ACCEPTABLE...
d. SOD MUST BE STORED UNDER COVER OR TRANSPORTED WHEN HUMIDITY CONTROL (EXCESSIVE DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL...
2. SOD INSTALLATION
a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL...
b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT...
c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS...
3. SOD MAINTENANCE
a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK...
b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE HUMIDITY CONTENT...
4. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING...
5. CHECK FOR WEEDS, MOULDS, AND OTHER ADVERSE EFFECTS...
c. ANCHORING
1. MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...
2. MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE...
3. WOOD CELLULOSE FIBRE MULCH IS TO BE USED FOR ANCHORING STRAW APPLY THE FIBRE UNDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE...
4. ANCHORING RIBBERS SUCH AS ACRYLIC ROLL (ACR-1), RCA-70, PERSECT, TRON TRK 10, TRONN TACK, OR, OTHER APPROVED EQUIPMENT CAN BE USED...
5. APPROVED EQUIPMENT MUST BE USED TO FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER'S APPLICATION OF LIQUID RIBBERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH...
6. LIGHTWEIGHT PLASTIC NETTING MAY BE SUBSTITUTED FOR MULCH ANCHORING...
7. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING & MULCHING

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATION COVER TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERMITTED CONTROL, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA
A. ALL SEED MUST MEET THE REQUIREMENT OF THE MARYLAND STATE SEED LAW...
B. MULCH ALONE MAY BE APPLIED BEFORE THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN...
C. INCULCANTS: THE INCULCANT FOR TREATING LEGUME SEEDS IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA...
D. SOOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEEDCONTROL...
E. APPLICATION
1. APPLY SEED IN TWO DIRECTIONS, PROPORTIONATE TO EACH OTHER...
2. TURFGRASS MIXTURES
a. AREAS WITH TURFGRASS MUST BE DESIGNED TO INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MAJOR TO HIGH LEVEL OF MAINTENANCE...
3. MULCHING
a. MULCH MATERIALS (IN ORDER OF PREFERENCE)
1. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY...
2. WOOD CELLULOSE FIBER MULCH (WCM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE FIBER INTO UNIFORM PHYSICAL STATE...
b. APPLICATION
1. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING...
2. MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...
3. MAINTENANCE
a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK...
4. WATER THE SOIL IMMEDIATELY FOLLOWING ROLLING AND TAMPING...
5. CHECK FOR WEEDS, MOULDS, AND OTHER ADVERSE EFFECTS...
c. ANCHORING
1. MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...
2. MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE...
3. WOOD CELLULOSE FIBRE MULCH IS TO BE USED FOR ANCHORING STRAW APPLY THE FIBRE UNDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE...
4. ANCHORING RIBBERS SUCH AS ACRYLIC ROLL (ACR-1), RCA-70, PERSECT, TRON TRK 10, TRONN TACK, OR, OTHER APPROVED EQUIPMENT CAN BE USED...
5. APPROVED EQUIPMENT MUST BE USED TO FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER'S APPLICATION OF LIQUID RIBBERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH...
6. LIGHTWEIGHT PLASTIC NETTING MAY BE SUBSTITUTED FOR MULCH ANCHORING...
7. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

PERMANENT SEEDING SUMMARY

Table with columns: HARDNESS ZONE, SEED MIXTURE, APPLICATION RATE, SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE, LIME RATE. Rows include TURFGRASS MIXTURES and BULL PERSISTENT.

B-4-2 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION
A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

CRITERIA
1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrate side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary awale or diversion fence.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as standard B-4-1 Incremental Stabilization and standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

SEQUENCE OF CONSTRUCTION
1. OBTAIN A GRADING PERMIT. (2 WEEKS)
2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION INSPECTOR AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK.
3. REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY.
4. ONCE PERMISSION HAS BEEN OBTAINED, CLEAR AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS. (2 DAYS)
5. INSTALL THE STABILIZED CONSTRUCTION ENTRANCES AND PERIMETER CONTROLS SHOWN ON SHEETS 12 AND 13. (1 WEEK)
6. REMOVE EXISTING PAVING AND ITEMS SHOWN SHEET 2 NOTED TO BE DEMOLISHED. (2 WEEKS)
7. COMPLETE ANY REMAINING CLEARING AND GRUBBING WITHIN INSTALLED PERIMETER CONTROLS. (3 DAYS)
8. CONSTRUCT SITE GRADING AND RETAINING WALL CONSTRUCTION. (1 MONTH)
9. COMMENCE INSTALLATION OF WATER AND SEWER MAINS AND APPURTENANCES. (3 WEEKS)
10. COMMENCE INSTALLATION OF STORM DRAIN SYSTEMS AND ROUGH GRADE BIO-RETENTION FACILITY TO ALLOW FOR OUTFALL CONSTRUCTION. (1 MONTH)
11. COMMENCE CONSTRUCTION OF CURB & GUTTER AND INSTALL ROAD GRADE COURSE FOR "MY GIRL PLACE". (2 WEEKS)
12. STABILIZE ALL DISTURBANCE WITH TEMPORARY SEEDING. (1 WEEK)
13. OBTAIN APPROVAL FROM SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING. (2 DAYS)
14. COMMENCE INSTALLATION OF SWM FACILITIES. (2 WEEKS)
15. INSTALL FINISHED SURFACE COURSE, SIDEWALKS AND STREET TREES. (2 WEEKS)
16. OBTAIN APPROVAL OF APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO REMOVAL OF PERIMETER CONTROLS. (3 DAYS)
17. REMOVE PERIMETER CONTROLS AND STABILIZATION OF AREAS DISTURBED BY REMOVAL EFFORT. (3 DAYS)

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Signature: Frank J. Mullanbaw II
Date: 4/12/17

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District Or Their Authorized Agents As A Deemed Necessary."
Signature: Frank J. Mullanbaw II
Date: 4-2-17

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1895 after the future LOD and protected areas are marked clearly in the field.
2. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
3. Prior to the start of another phase of construction or opening of another grading unit, d. Prior to the removal or modification of sediment control practices.
4. Other grading or grading inspection approvals may not be authorized until this initial approval by the inspection Agency is made.
5. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
6. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereof.
7. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, awales, ditches, perimeter slopes, and all slopes steeper than 3:1 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
8. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3).
9. Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15% of cut and/or fill. Stockpiles (Sec. B-4-2) in excess of 20 ft. must be bench with stable outer. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
10. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
11. Site Analysis For Total Site Area:
Total Area of Site: 9.25 Acres
Area Disturbed: 5.30 Acres
Area to be roofed or paved: 2.14 Acres
Area to be vegetatively stabilized: 3.16 Acres
Total Cut: 13,332 Cu. Yds.
Total Fill: 6,277 Cu. Yds.
Off-site water/borrow area location:
12. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
13. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly, and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
- Inspection date
- Inspection type (routine, pre-storm event, during rain event)
- Name and title of inspector
- Weather information (current conditions as well as time and amount of last recorded precipitation)
- Brief description of project status (e.g., percent complete) and/or current activities
- Evidence of sediment discharges
- Identification of plan deficiencies
- Identification of sediment control practices that require maintenance
- Identification of missing or improperly installed sediment controls
- Compliance status regarding the sequence of construction and stabilization requirements
- Photographs
- Monitoring/sampling
- Maintenance and/or corrective action performed
- Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
14. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
15. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.
16. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD. Unless otherwise specified and approved by the HSCD no more than 30 acres cumulatively may be disturbed at a given time.
17. Wash water from any equipment, vehicles, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
18. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
19. All Site Erosion and Super Silt Fence shall be placed on-the-contour, and be imbedded at 25' minimum intervals, with lower ends curved up by 2' in elevation.
20. Stream channels must not be disturbed during the following restricted time periods:
- Use I and II March 1 - June 15
- Use III and IIII October 1 - April 30
- Use IV March 1 - May 31
21. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

TEMPORARY SEEDING NOTES (B-4-4)

DEFINITION
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.
PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS UNDER INTERMITTENT OR SEASONAL WETTING CONDITIONS.
CRITERIA
1. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE...
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY...
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH SEEDING SEASON MULCH ALONE AS PRESCRIBED IN SECTION B-4-3. A.1.6 AND MAINTAIN UNTIL THE MULCH SEEDING SEASON.

Table with columns: SPECIES, APPLICATION RATE, SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE, LIME RATE. Rows include BULL PERSISTENT and TURFGRASS MIXTURES.

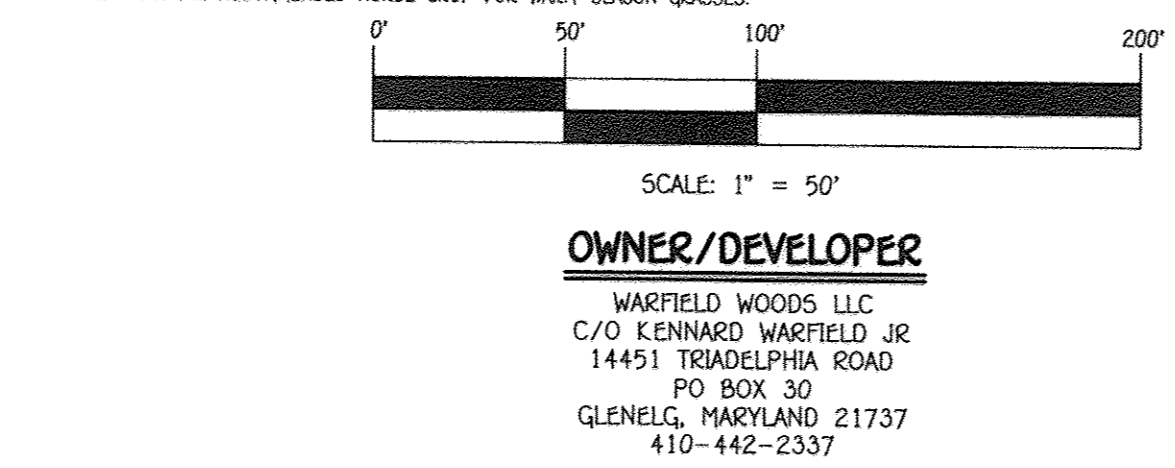
TEMPORARY SEEDING SUMMARY

Table with columns: SPECIES, APPLICATION RATE, SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE, LIME RATE. Rows include BULL PERSISTENT and TURFGRASS MIXTURES.

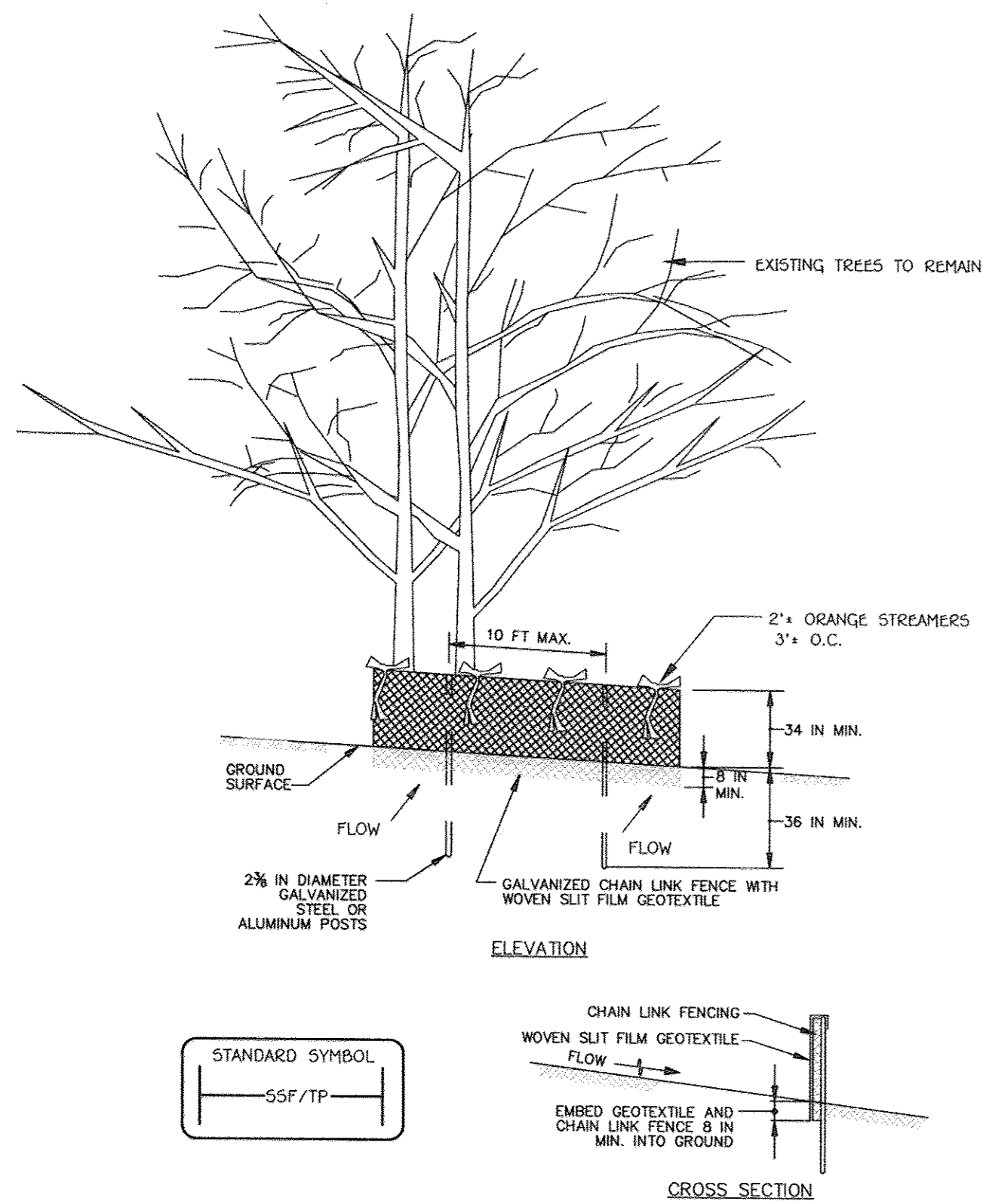
TABLE B.1 TEMPORARY SEEDING FOR SITE STABILIZATION

Table with columns: PLANT SPECIES, SEEDING RATE (LB./AC., LB./1000 FT.2), SEEDING DEPTH (INCHES), RECOMMENDED SEEDING DATES BY PLANT HARDINESS ZONE (5b AND 6a, 6b, 7a AND 7b).

NOTES:
1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIME SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED.
2. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXTURES. USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS AND WHEAT...
3. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXTURES. USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS AND WHEAT...
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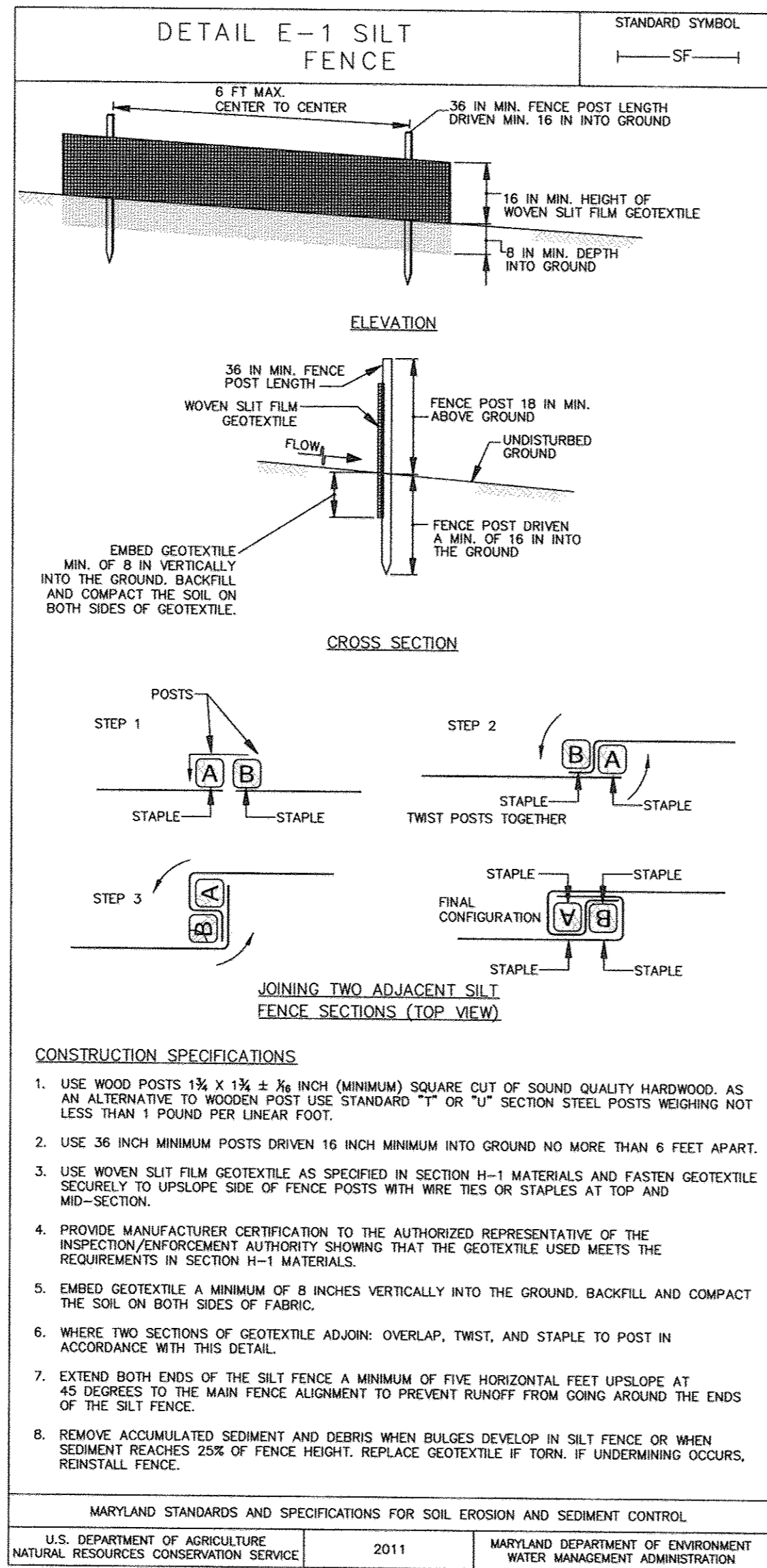
SHA SPECIFICATIONS FOR TEMPORARY & PERMANENT STABILIZATION, REFER TO THE SHA SPECIFICATIONS FOR TEMPORARY & PERMANENT STABILIZATION, REFER TO THE...



CONSTRUCTION SPECIFICATIONS

- INSTALL 2 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 3/8 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

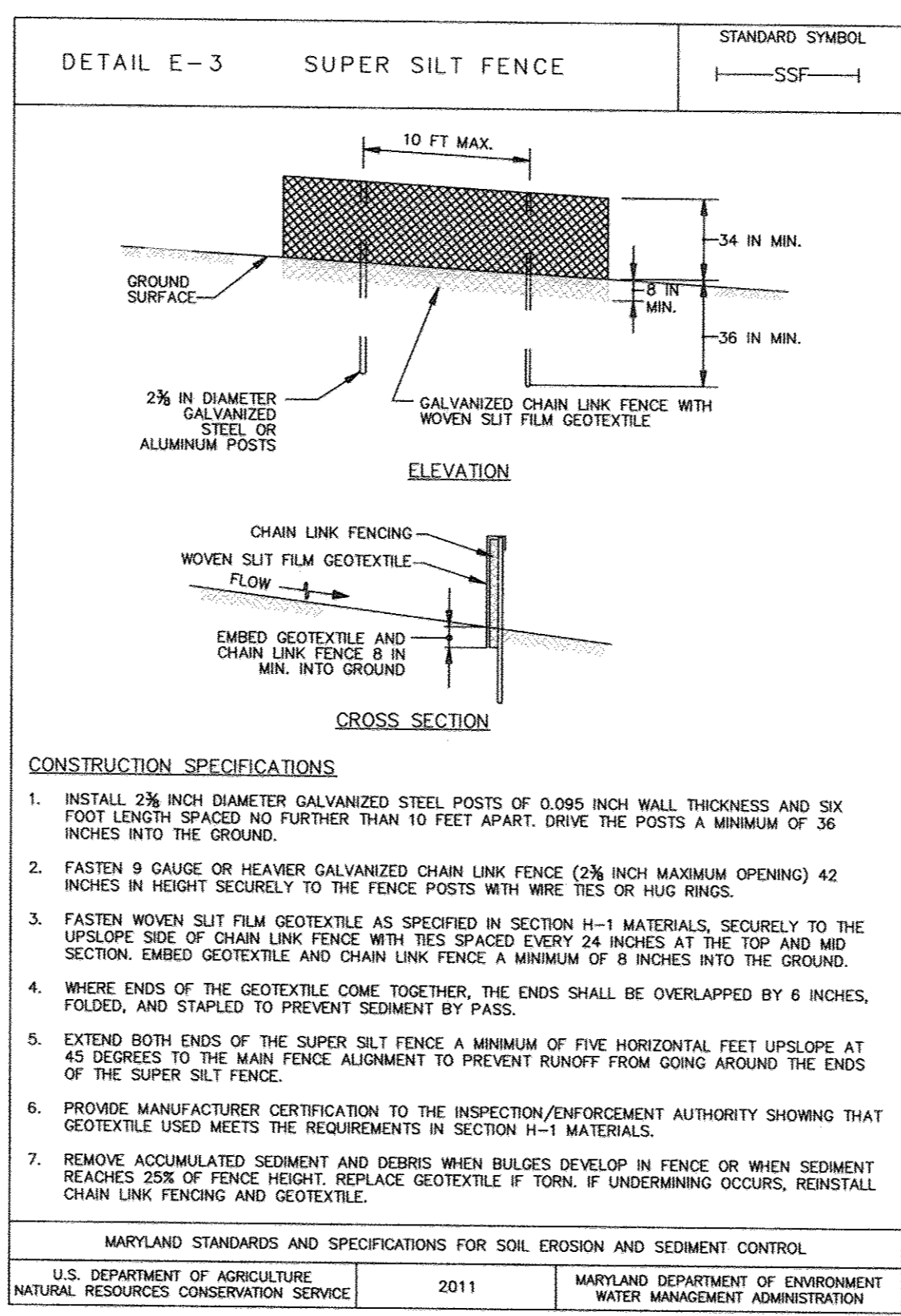
SUPER SILT FENCE, TREE PROTECTION FENCE
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/2 X 1 1/2 X 3/4 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

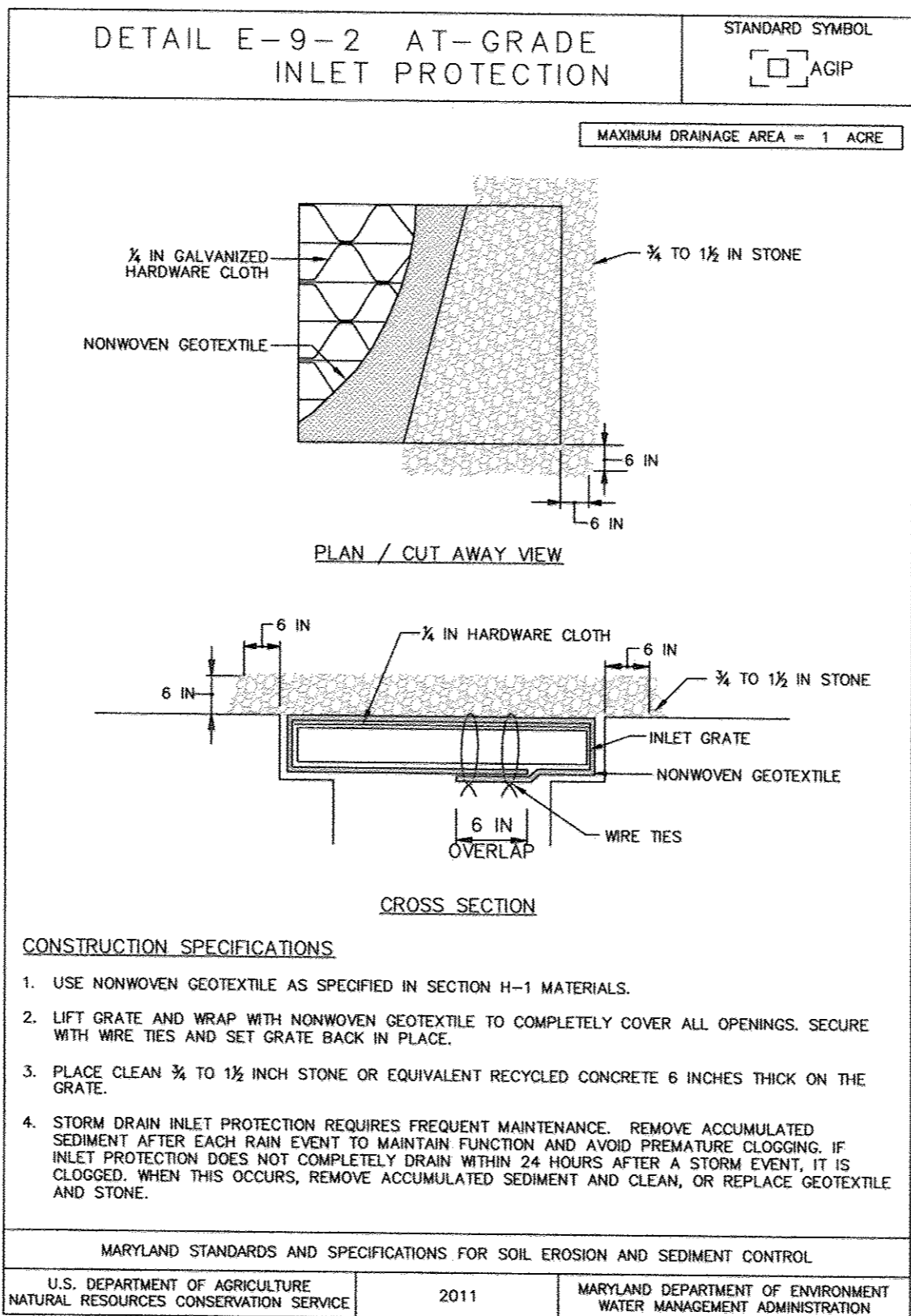
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- INSTALL 2 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 3/8 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

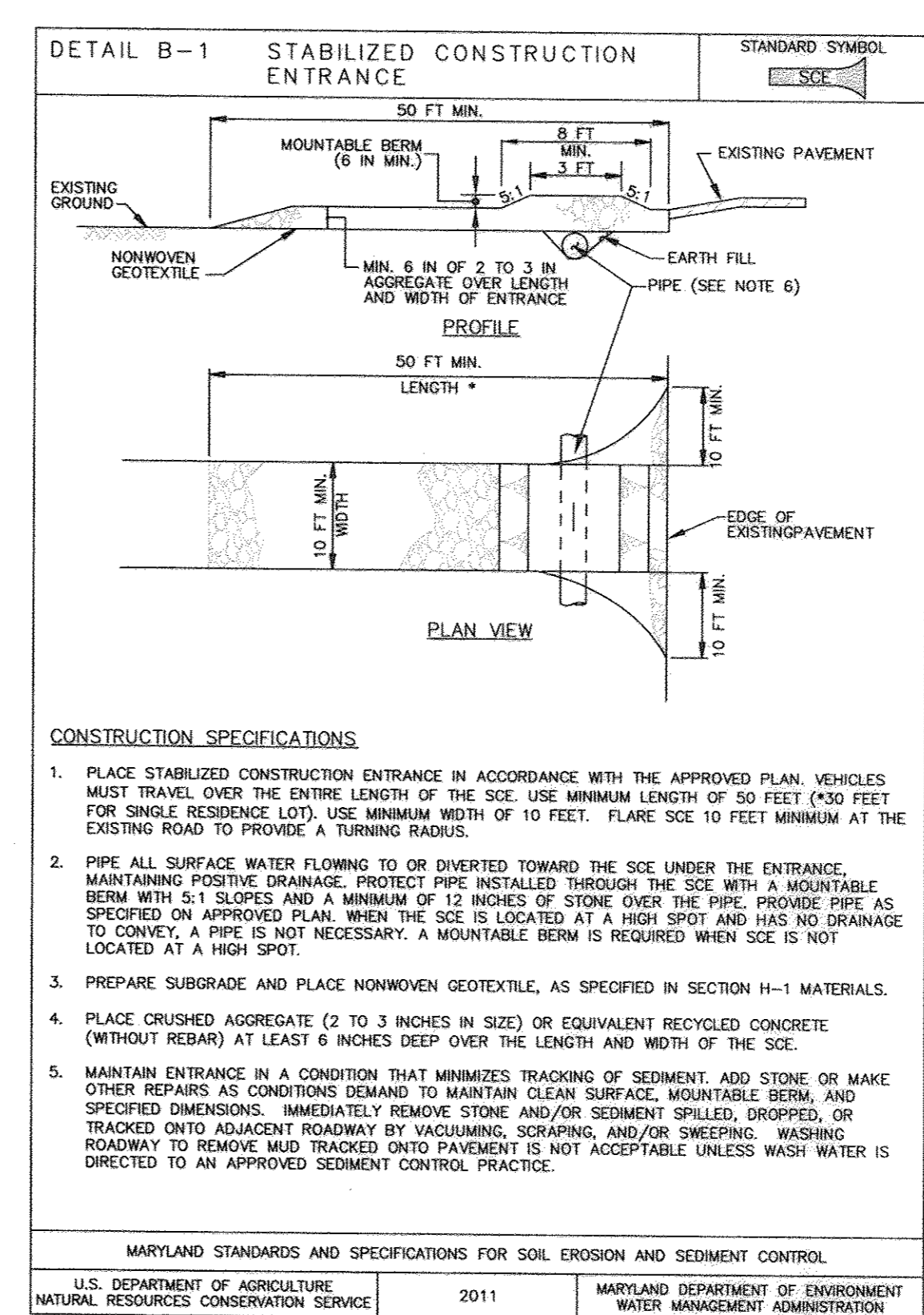
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CONSTRUCTION SPECIFICATIONS

- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
- PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

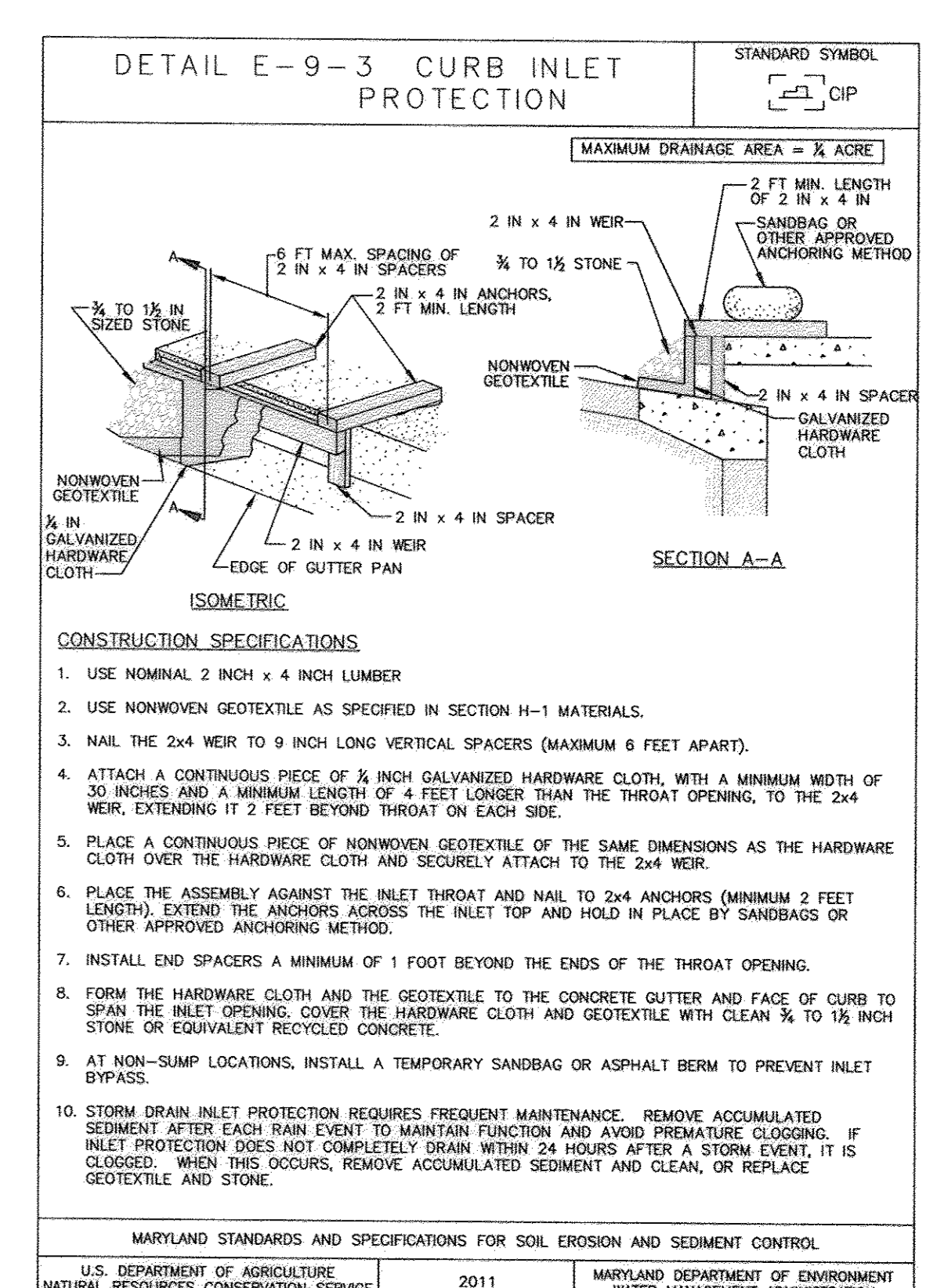
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (40 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SIZE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT, ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

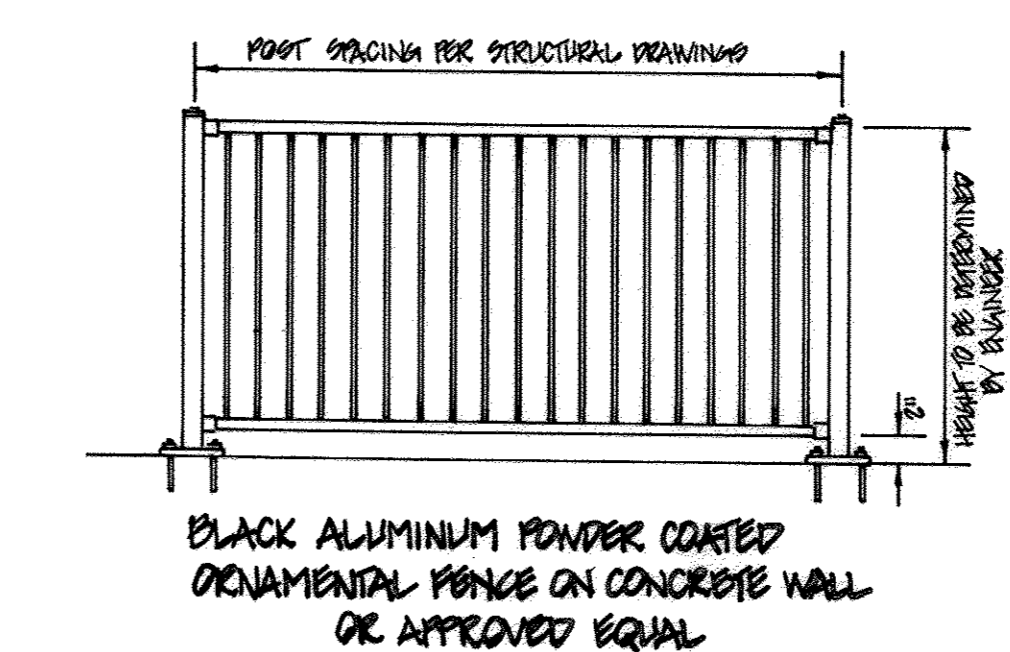
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

- USE NOMINAL 2 INCH X 4 INCH LUMBER
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
- ATTACH A CONTINUOUS PIECE OF 1/2 INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
- PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
- PLACE THE ASSEMBLY AGAINST THE WEIR THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
- INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
- FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
- AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BY-PASS.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



SHA SPECIFICATIONS FOR TEMPORARY & PERMANENT STABILIZATION. REFER TO THE TABLE OF SHA LANDSCAPE NOTES IN THIS PLAN SET FOR REQUIREMENTS RELATED TO TOPSOIL, SEED, FERTILIZERS, PLANTS, AND OTHER MATERIALS. SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS SHALL SUPERSEDE ALL OTHER SPECIFICATIONS FOR LANDSCAPE CONSTRUCTION WITHIN PROPERTY OF THE MARYLAND STATE HIGHWAY ADMINISTRATION (SHA), AND ALL LANDSCAPE CONSTRUCTION ON SHA PROPERTY SHALL CONFORM TO THE REQUIREMENTS OF THE SHA LANDSCAPE NOTES AND CURRENT SHA STANDARDS AND SPECIFICATIONS.

PROFESSIONAL CERTIFICATE
I hereby certify that this Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.
Frank John Mariani II 4/12/17
Signature Of Licensed Professional Date

DEVELOPER'S CERTIFICATE
"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."
Frank John Mariani II 4-7-17
Signature Of Developer Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
John R. Blain 4/12/17
District Howard Soil Conservation Dist.
APPROVED: DEPARTMENT OF PUBLIC WORKS
James 05/22/2017
Chief, Bureau of Highways DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kate Schell 6-29-17
Chief, Division of Land Development DATE
Al Ch... 5-31-17
Chief, Development Engineering Division DATE

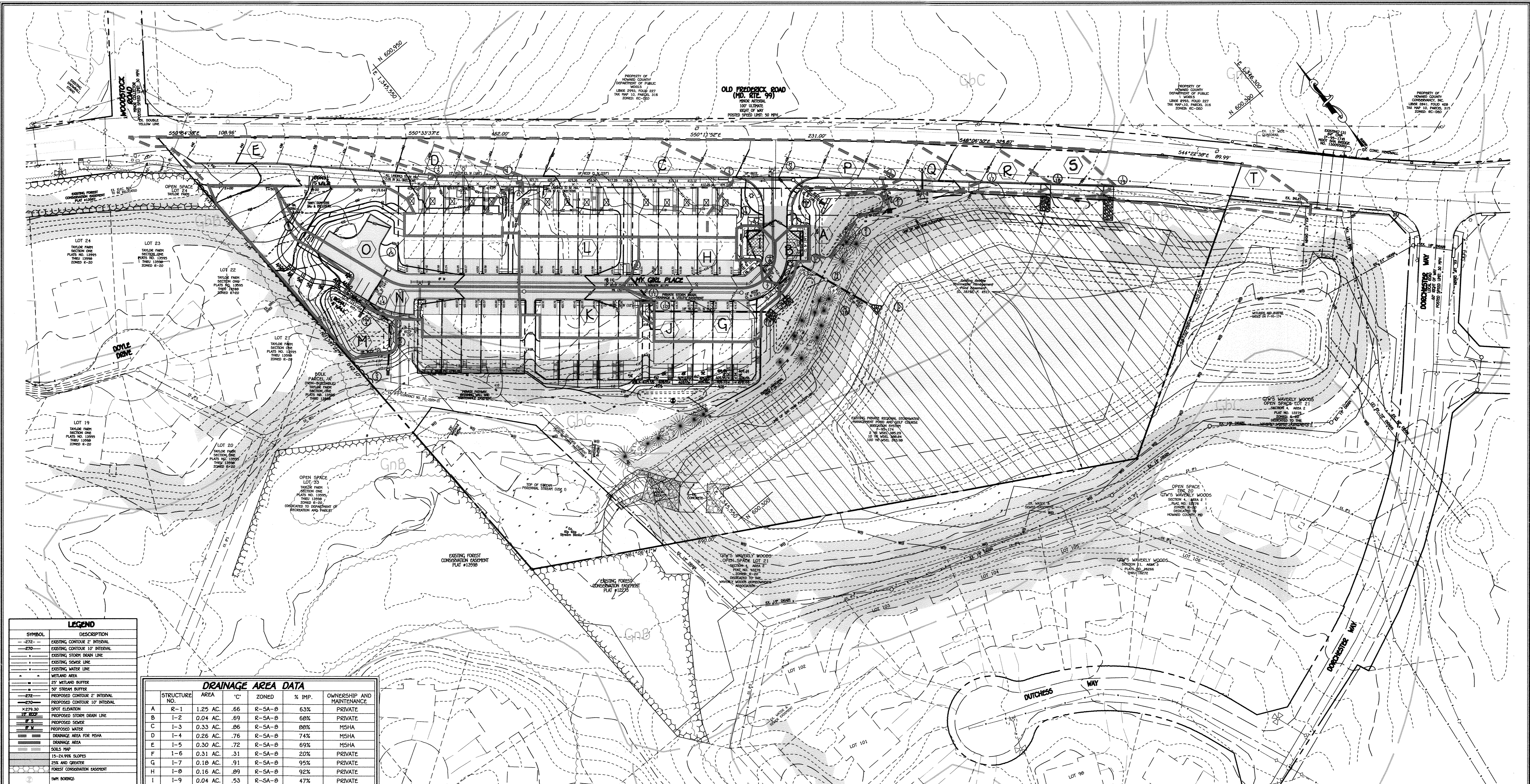
REVISIONS		
NO.	DESCRIPTION	DATE
1	APPROVED ORNAMENTAL FENCE ON CONCRETE WALL DETAIL	1/8/18

0' 50' 100' 200'
SCALE: 1" = 50'
OWNER/DEVELOPER
WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TROADELPHIA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/11/17.
Frank John Mariani II 4/12/17
FRANK J. MARIANI II DATE

SEDIMENT & EROSION CONTROL NOTES AND DETAILS
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-5A-8
PREVIOUS HOWARD COUNTY FILES:
SDP-86-8B, 5-94-07, P-95-07, F-95-174,
ECP-14-072, 5P-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 7 OF 39



LEGEND

SYMBOL	DESCRIPTION
--- 2'70	EXISTING CONTOUR 2' INTERVAL
--- 10'00	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	50' WETLAND BUFFER
---	50' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	DRAINAGE AREA FOR MSHA
---	DRAINAGE AREA
---	SOILS MAP
---	15-24.9% SLOPES
---	25% AND GREATER
---	FOREST CONSERVATION EASEMENT
---	SWM BORINGS
---	EXISTING TREE
---	PROPOSED TREES
---	65 DBA UNIMPAVED LINE
---	65 DBA IMPAVED LINE
---	PUBLIC WATER & SEWER UTILITY EASEMENT
---	SEWER/WATER MANAGEMENT EASEMENT
---	DRAINAGE AREA
---	PRIVATE PATH, RETAINING WALL AND MAINTENANCE EASEMENT
---	OROWELL (H-5)-TYPICAL
---	BIO RETENTION FACILITY (F-6) OR (H-6) AS NOTED

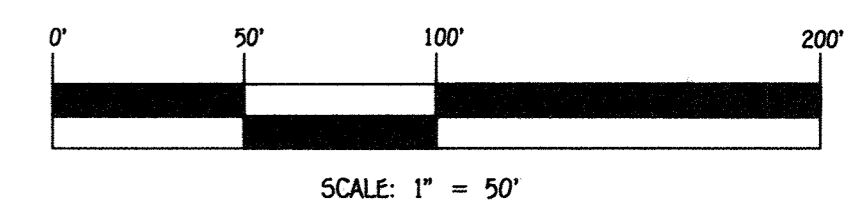
DRAINAGE AREA DATA

STRUCTURE NO.	AREA	'C'	ZONED	% IMP.	OWNERSHIP AND MAINTENANCE	
A	R-1	1.25 AC.	.66	R-SA-B	63%	PRIVATE
B	I-2	0.04 AC.	.69	R-SA-B	68%	PRIVATE
C	I-3	0.33 AC.	.86	R-SA-B	88%	MSHA
D	I-4	0.26 AC.	.76	R-SA-B	74%	MSHA
E	I-5	0.30 AC.	.72	R-SA-B	69%	MSHA
F	I-6	0.31 AC.	.31	R-SA-B	20%	PRIVATE
G	I-7	0.18 AC.	.91	R-SA-B	95%	PRIVATE
H	I-8	0.16 AC.	.89	R-SA-B	92%	PRIVATE
I	I-9	0.04 AC.	.53	R-SA-B	47%	PRIVATE
J	I-10	0.02 AC.	.40	R-SA-B	30%	PRIVATE
K	I-11	0.16 AC.	.85	R-SA-B	88%	PRIVATE
L	I-12	0.17 AC.	.85	R-SA-B	88%	PRIVATE
M	R-2	0.94 AC.	.88	R-SA-B	91%	PRIVATE
N	I-14	0.23 AC.	.65	R-SA-B	62%	PRIVATE
O	I-15	0.45 AC.	.29	R-SA-B	17%	PRIVATE
P	I-16	0.31 AC.	.81	R-SA-B	81%	MSHA
Q	I-17	0.07 AC.	.95	R-SA-B	100%	MSHA
R	I-18	0.08 AC.	.95	R-SA-B	100%	MSHA
S	I-19	0.07 AC.	.95	R-SA-B	100%	MSHA
T	EX. INLET	0.20 AC.	.95	R-SA-B	100%	MSHA

SOILS LEGEND

SOIL	NAME	CLASS
Gb-B	Gladstone loam, 3 to 8 percent slopes	B
Gb-C	Gladstone loam, 8 to 15 percent slopes	B
Gb-B	Glenville-Baile silt loams, 0 to 8 percent slopes	C

PLAN
SCALE: 1" = 50'



APPROVED: DEPARTMENT OF PUBLIC WORKS
M. Meunier
 Chief, Bureau of Highways
 DATE: 2/17/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
L. M. ...
 Chief, Division of Land Development
 DATE: 2/27/18

Ch. ...
 Chief, Development Engineering Division
 DATE: 2.25.18

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2895

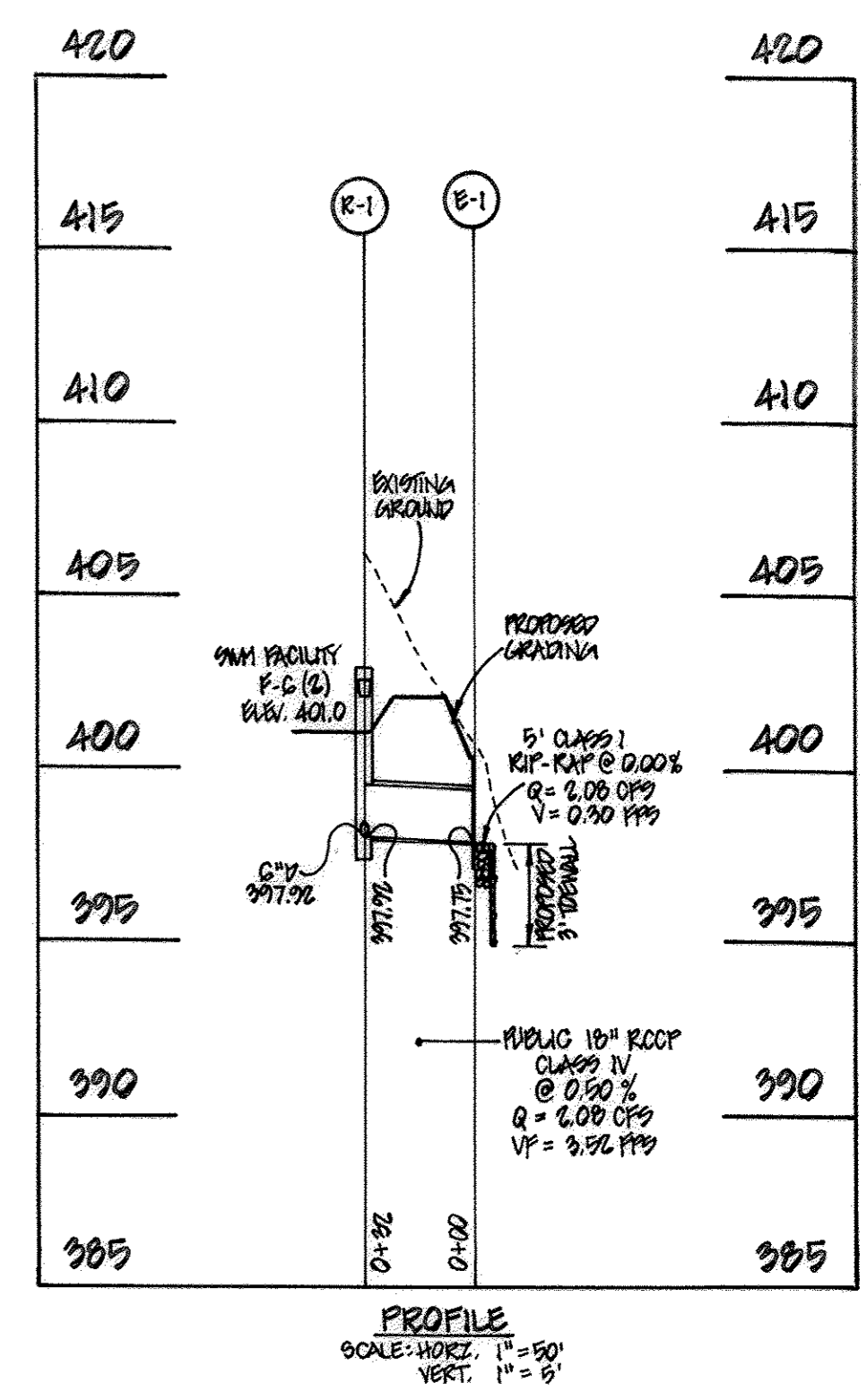
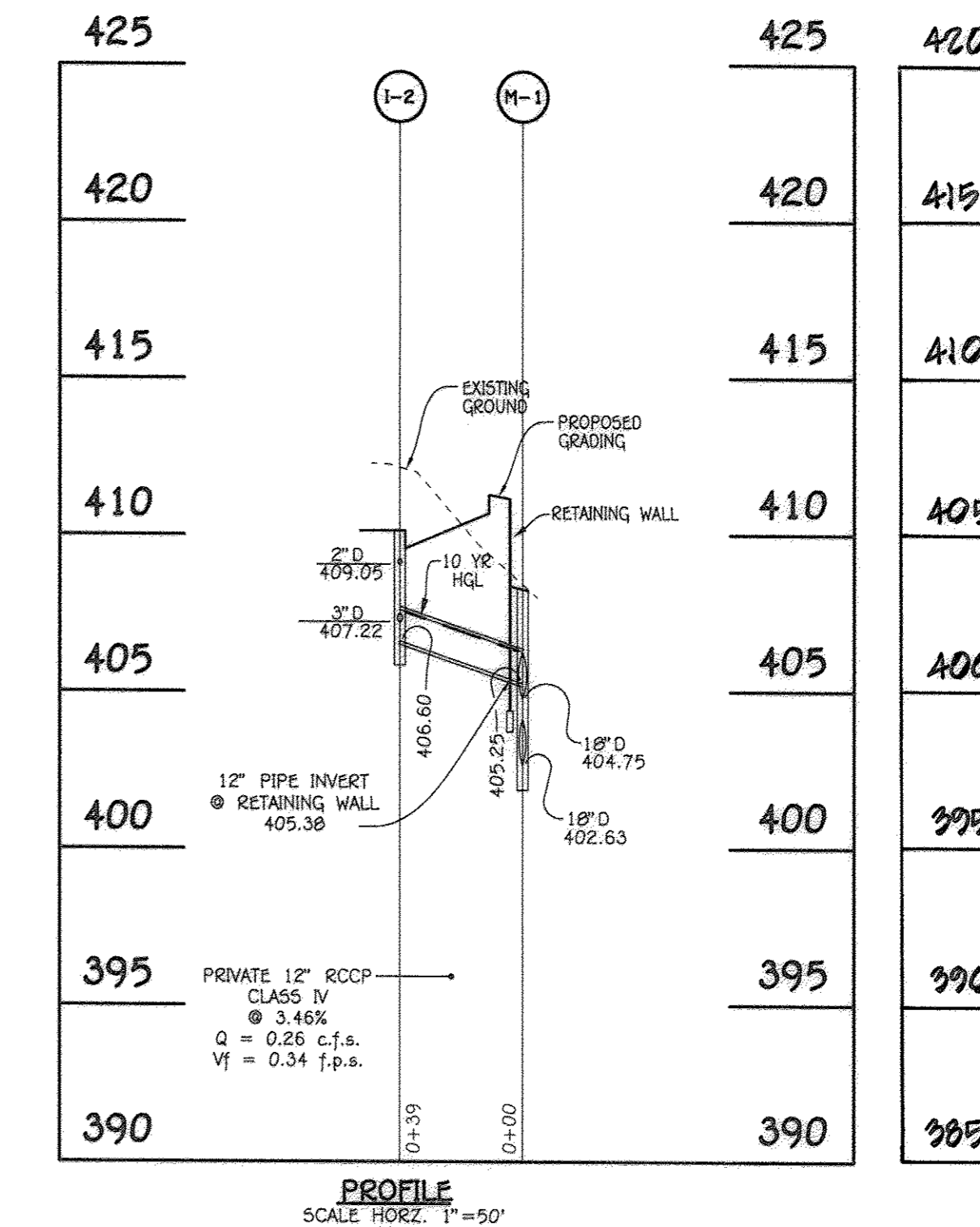
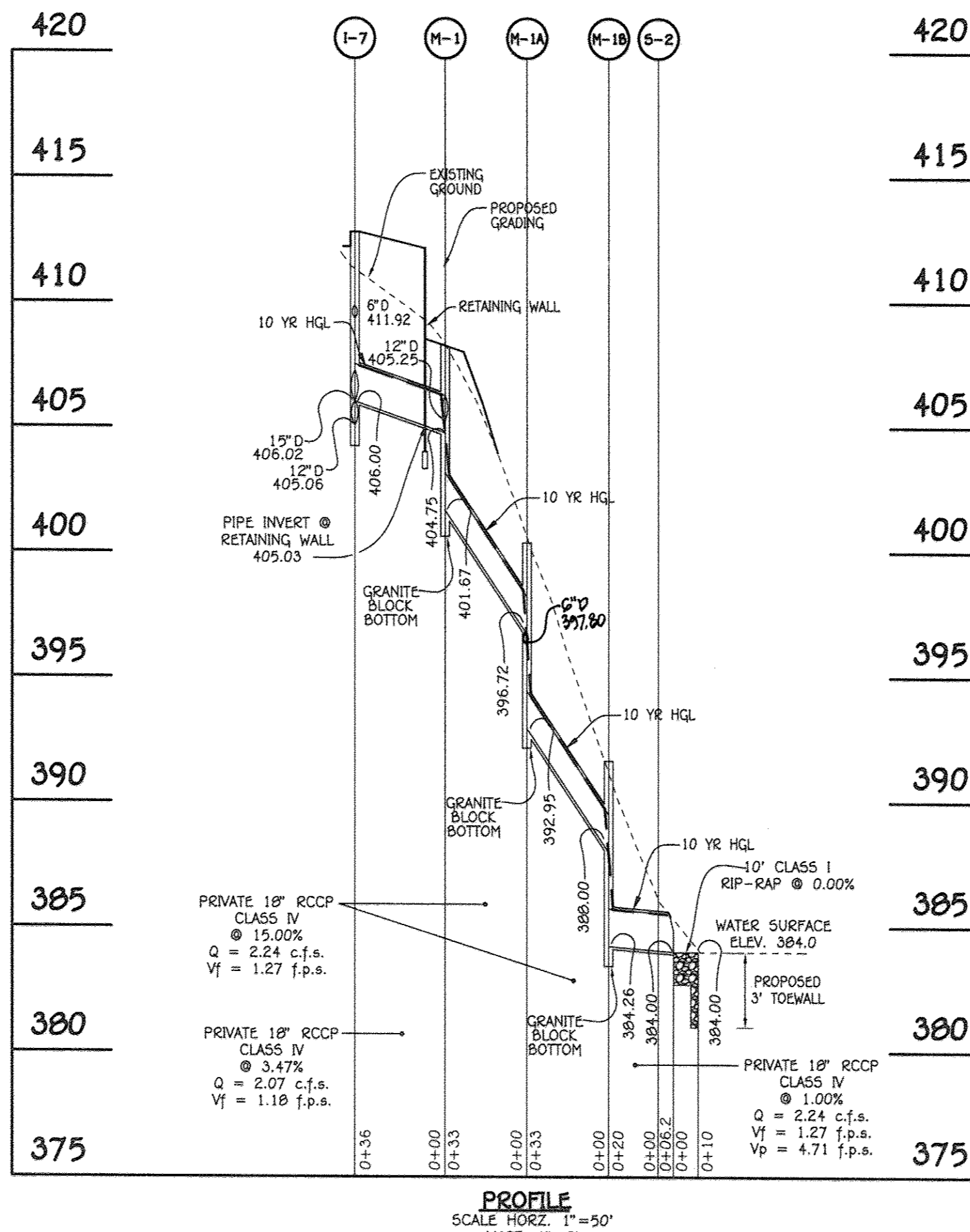
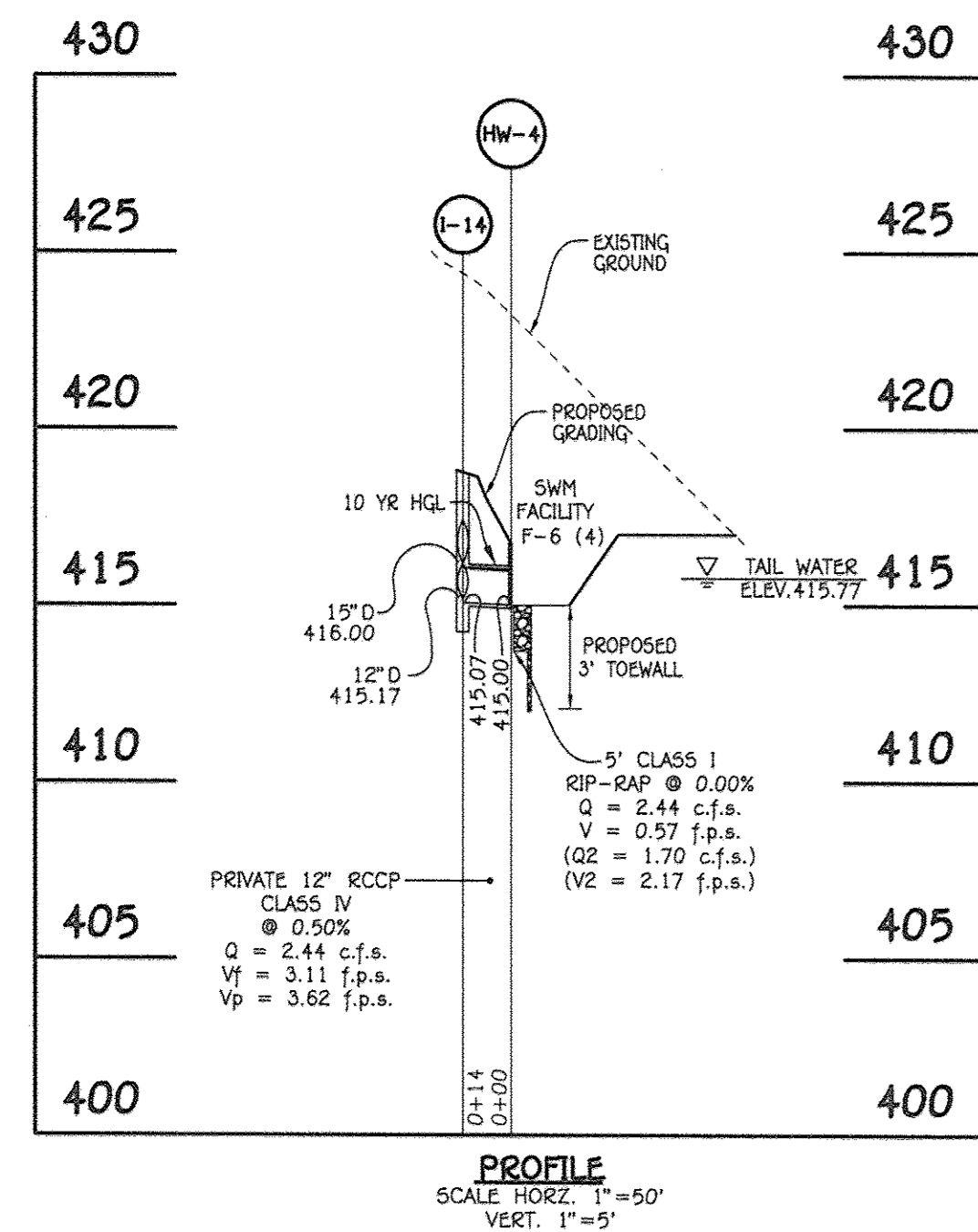
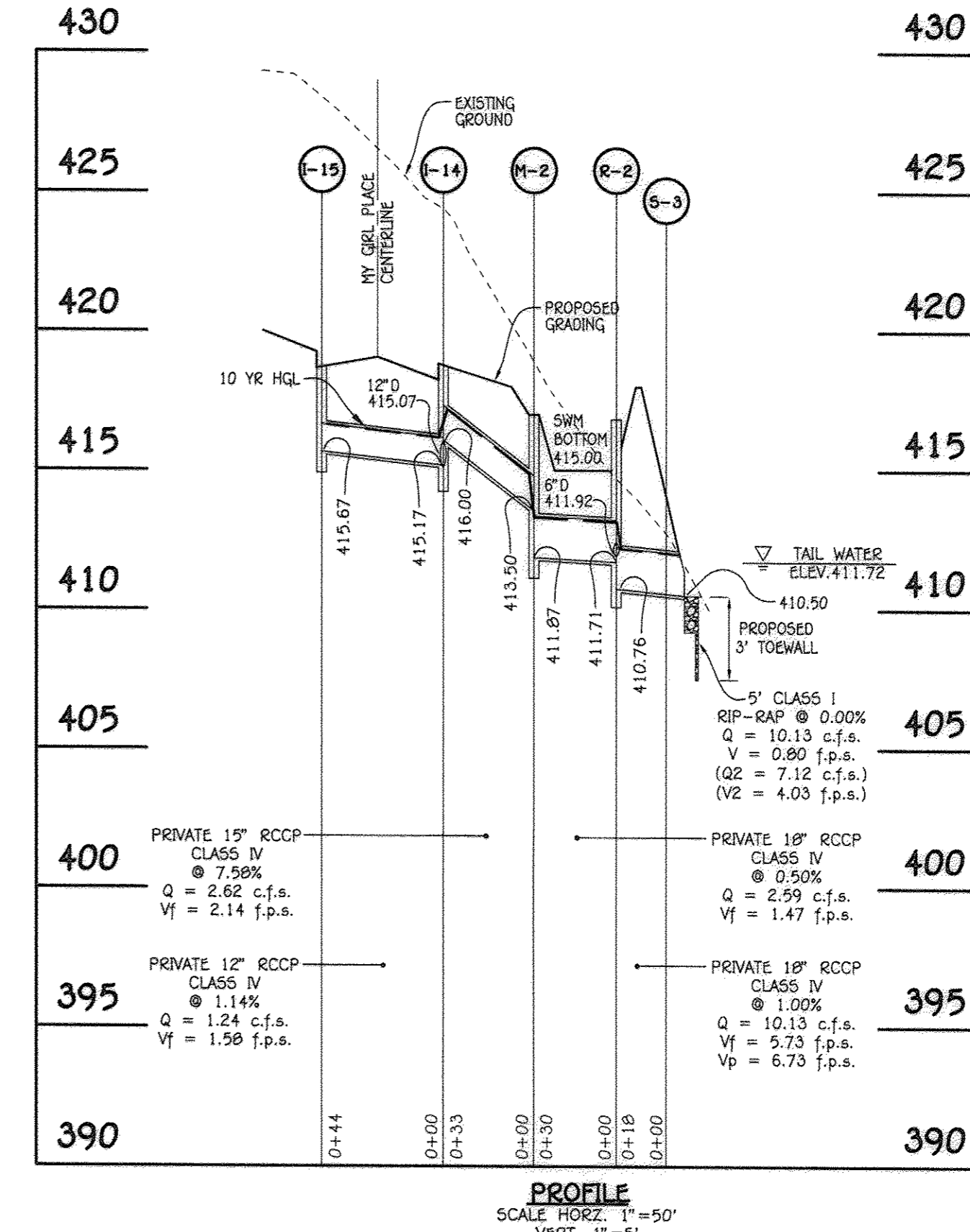
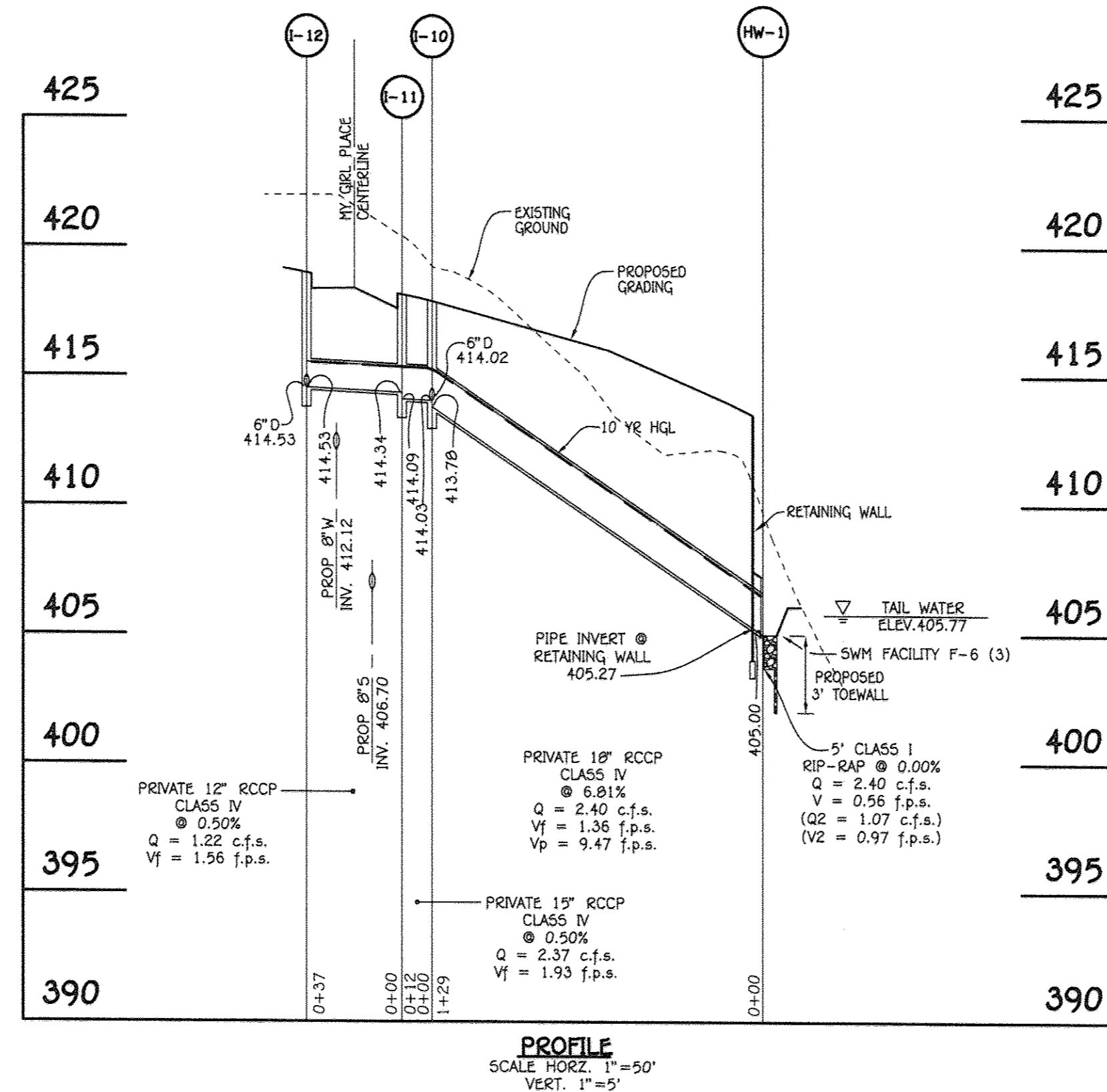
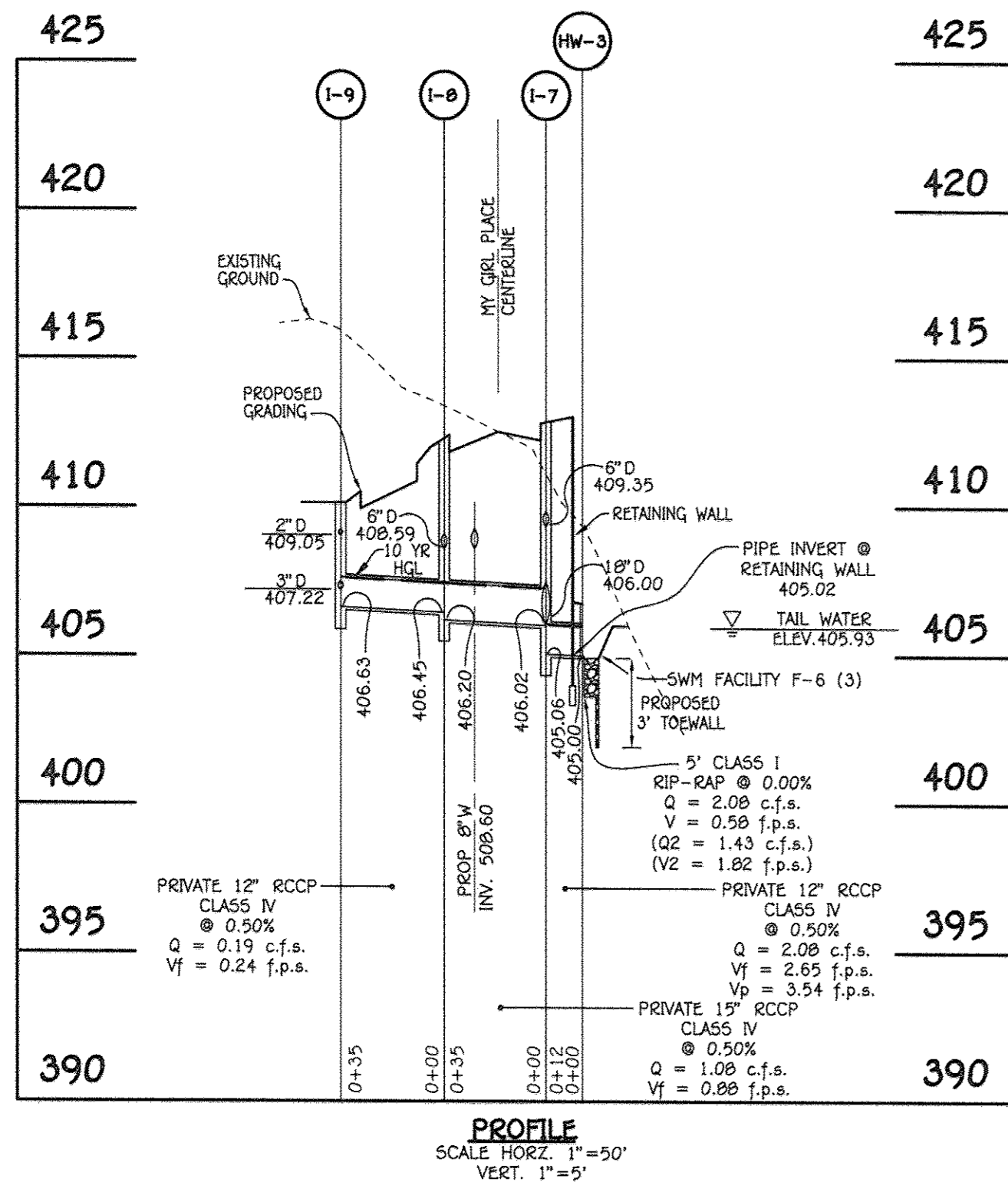
NO.	DESCRIPTION	DATE
1	REVISE STORM DRAIN, SWM AND REMOVE ASSOCIATED EASEMENT	1-8-18
2	REMOVE LANDSCAPE WALL & RECONSTRUCT REAR OF LOT 29-30-31	10/15/18
3	REMOVE UNIMPAVED PAV. REAR WALK & CURB IN ON LOT 32	6/4/18

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADDELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/11/19.
Frank J. Manalang
 FRANK J. MANALANG
 DATE: 1/2/18

REVISED
 STORM DRAIN DRAINAGE AREA MAP
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-B
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-08, S-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: DECEMBER 6, 2017
 SHEET 8 OF 39



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 6/21/2017
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 6-28-17
 Chief, Division of Land Development

[Signature] 6-23-17
 Chief, Development Engineering Division

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 BLDG 201 CITY, MARYLAND 21042
 (410) 461-8229

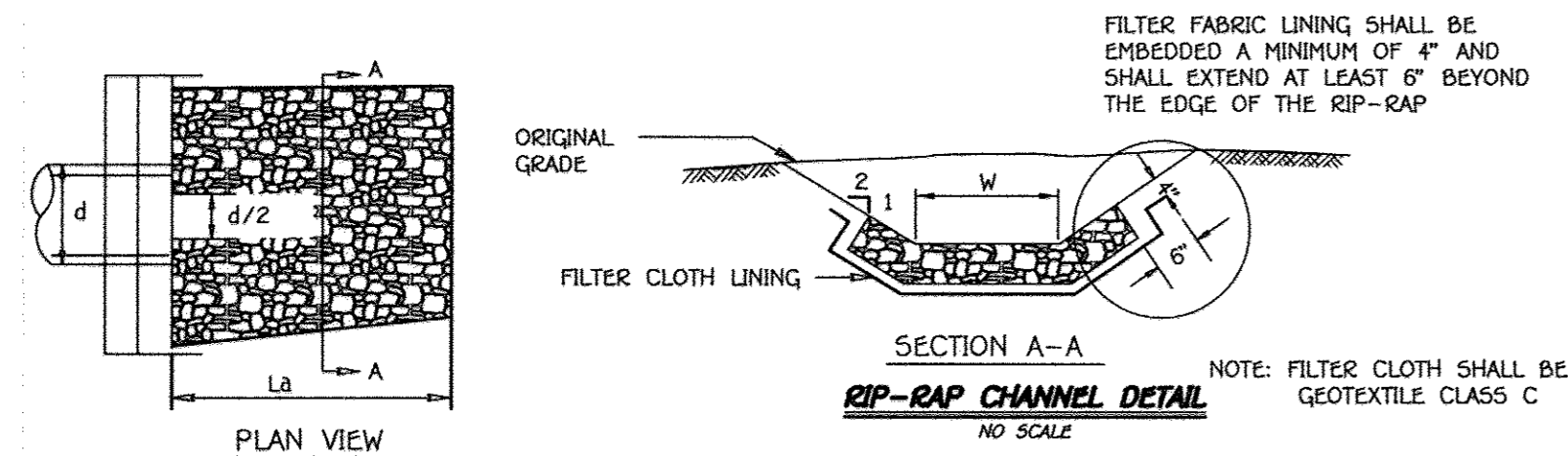
NO.	DESCRIPTION	DATE
1	APPROVED STORM DRAIN PROFILE (0-1 TO R-1)	1/2/18

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21037
 410-442-2337



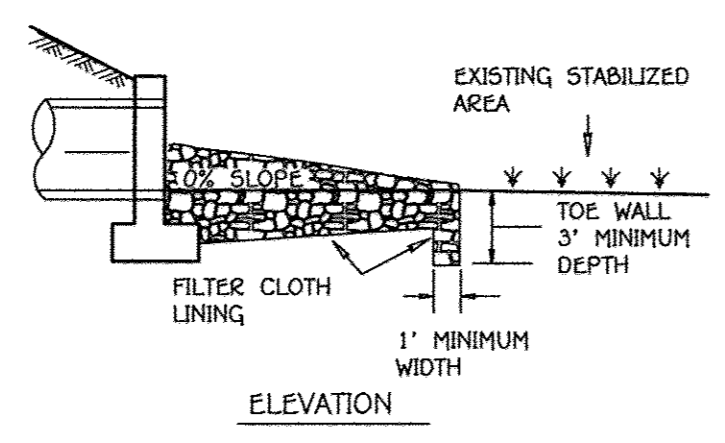
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
[Signature] 6/21/17
 FRANK J. MANALANSAN II

STORM DRAIN PROFILES
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-5A-8
 PREVIOUS HOWARD COUNTY FILES:
 50P-86-88, 5-94-07, P-95-07, F-95-174,
 ECP-14-072, 5P-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: APRIL 4, 2017
 SHEET 9 OF 39



CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

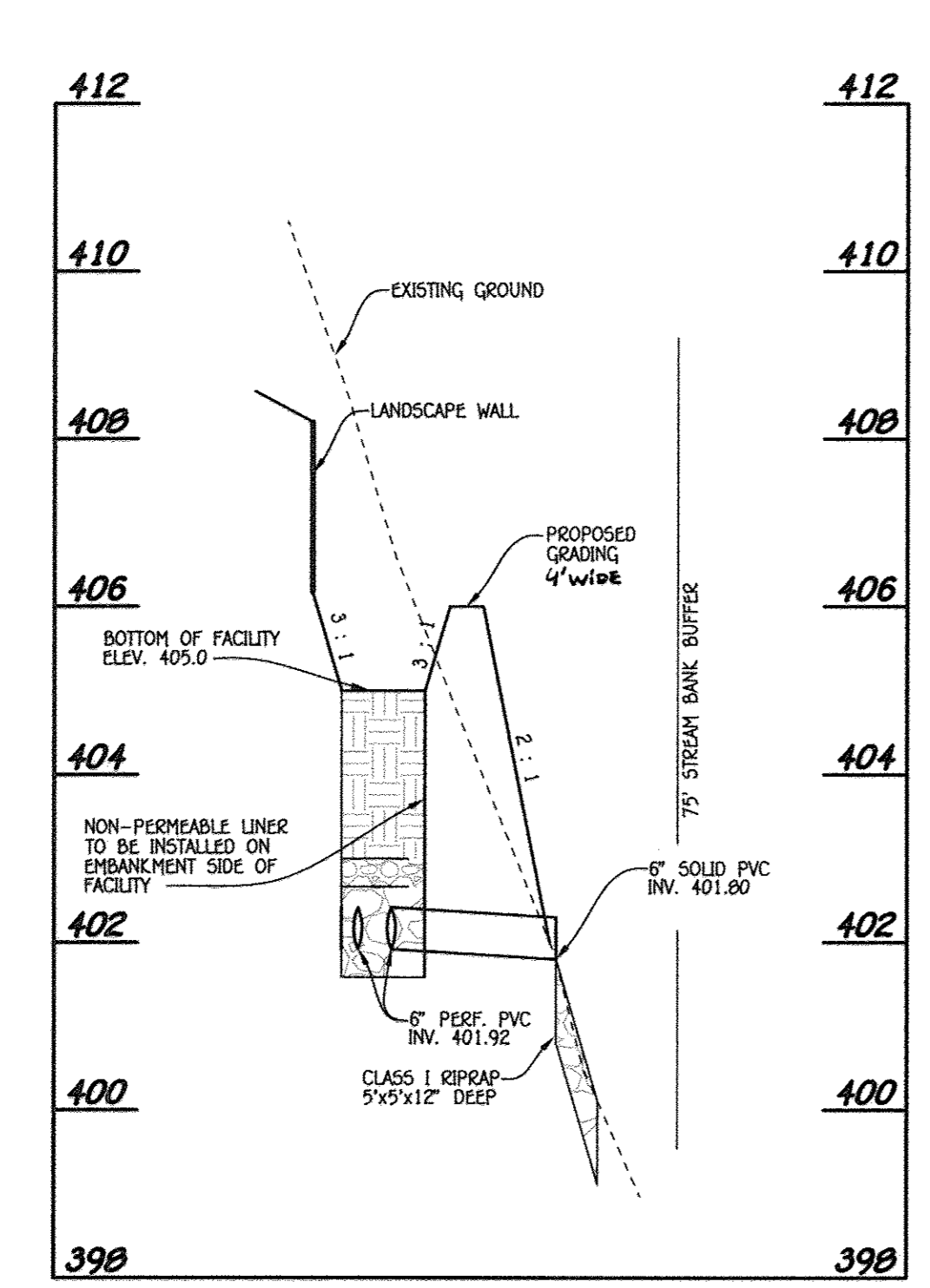


RIP-RAP CHANNEL DESIGN DATA														
STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	n	V ((p.s.))	Q ((c.f.s.))	RIPP-RAP SIZE D ₅₀ D ₈₅	BLANKET THICKNESS SIZE	LA
E-1	4.06	6.91	0.5789	0.6677	0.005	0.0707	5.0'	0.99	0.04	0.30	2.08	9.5" 15"	19" 18"	5'
S-2	4.06	7.31	0.5554	0.6757	0.005	0.0707	4.0'	0.74	0.04	0.55	2.24	9.5" 15"	19" 18"	5'
S-3	12.74	13.46	0.9465	0.9640	0.005	0.0707	8.0'	1.22	0.04	0.80	10.13	9.5" 15"	19" 18"	5'
HW-1	4.27	7.44	0.5739	0.6906	0.005	0.0707	4.0'	0.77	0.04	0.56	2.40	9.5" 15"	19" 18"	5'
HW-3	3.59	6.16	0.5827	0.6977	0.005	0.0707	4.0'	0.93	0.04	0.58	2.08	9.5" 15"	19" 12"	5'
HW-4	4.27	7.44	0.5739	0.6906	0.005	0.0707	4.0'	0.77	0.04	0.57	2.44	9.5" 15"	19" 12"	5'

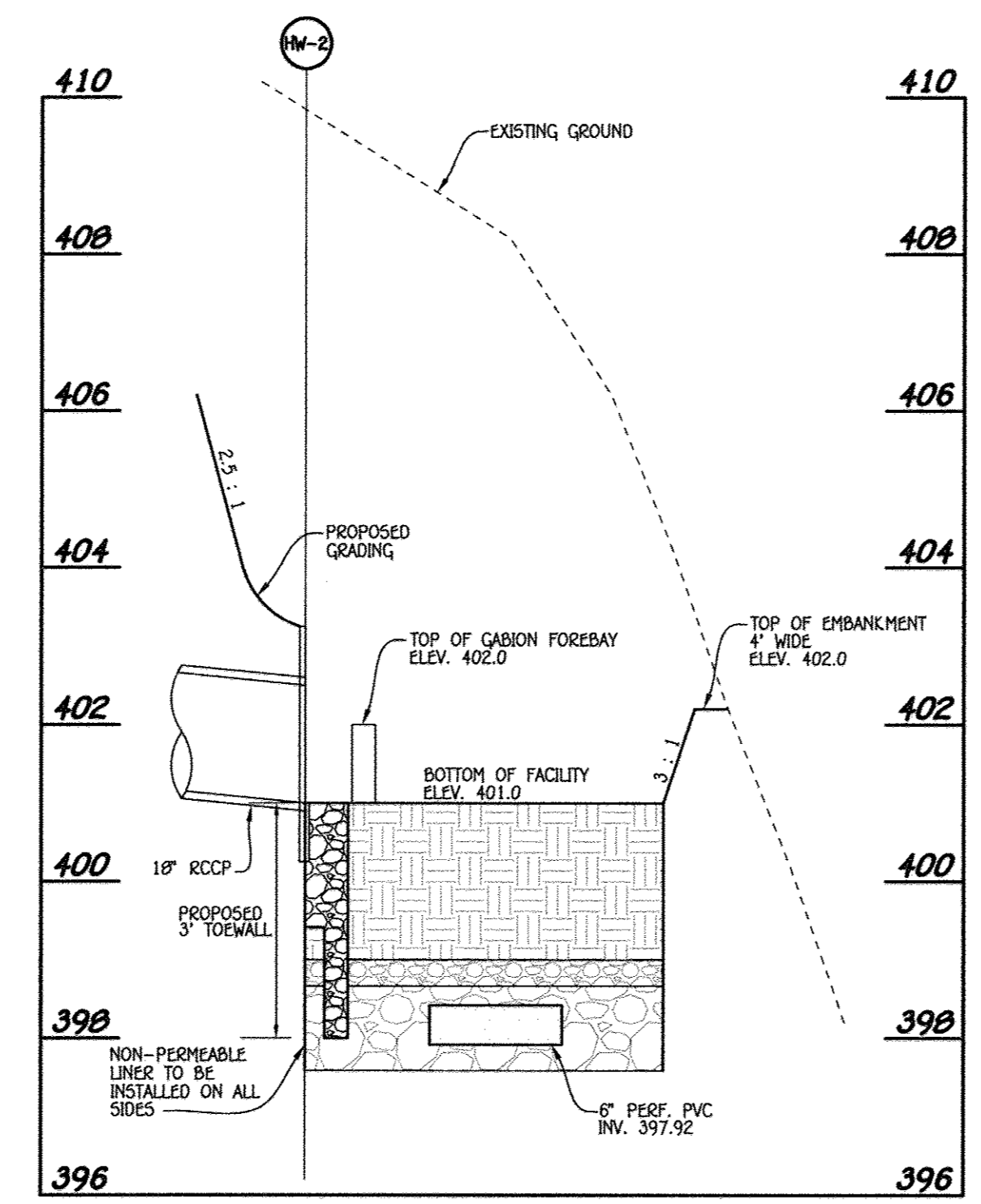
PIPE SCHEDULE (PRIVATE)		
SIZE	CLASS	LENGTH
3"	PERFORATED PVC, SCH.40	54 L.F.
6"	PERFORATED PVC, SCH.40	702 L.F.
6"	PVC, SCH.40	45 L.F.
12"	RCCP, CL. IV	181 L.F.
15"	RCCP, CL. IV	80 L.F.
18"	RCCP, CL. IV	259 L.F.

PIPE SCHEDULE (MSHA)		
SIZE	CLASS	LENGTH
15"	RCCP, CL. IV	203 L.F.
18"	RCCP, CL. IV	336 L.F.

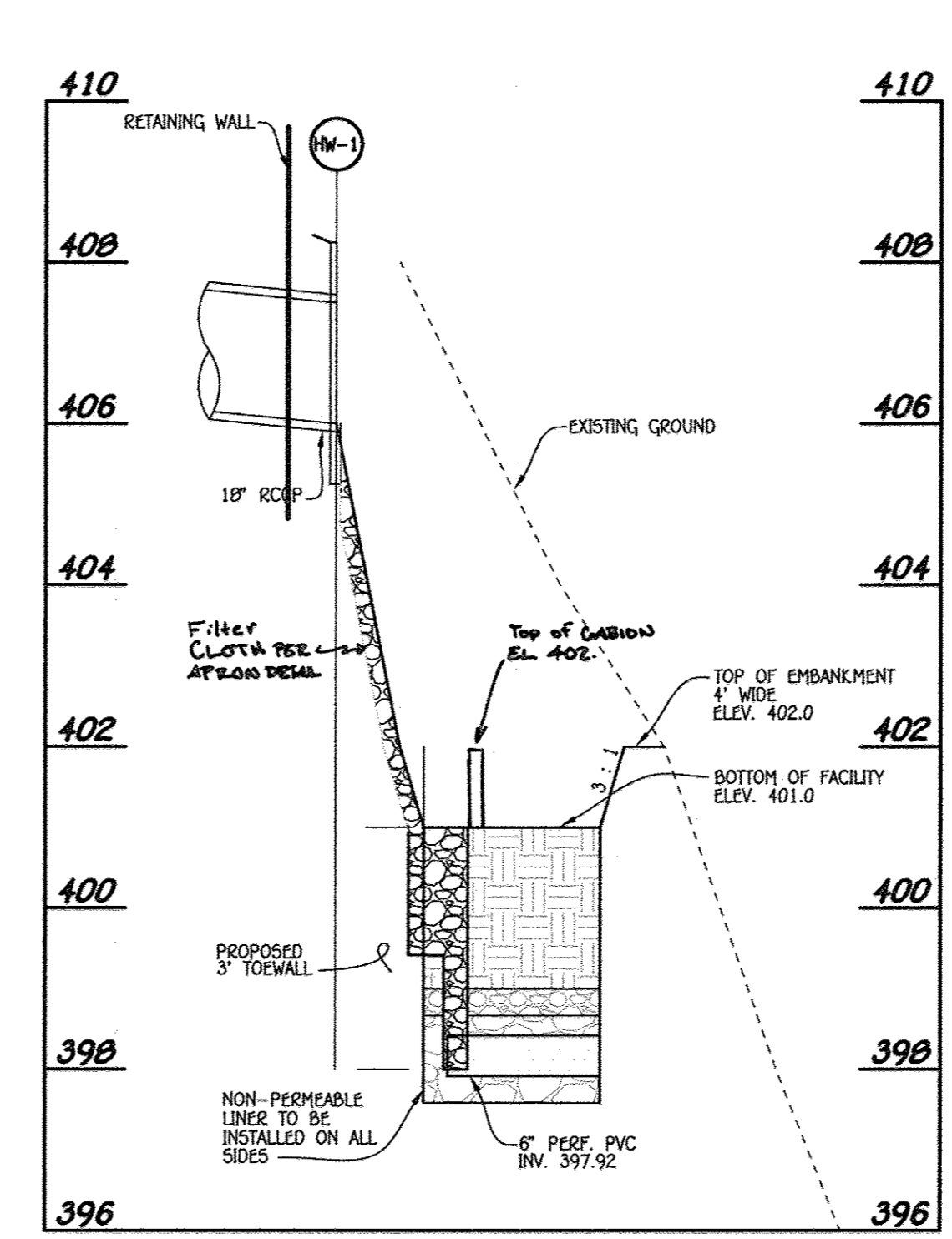
STRUCTURE SCHEDULE									
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV IN	INV OUT	COORDINATES	WIDTH	TYPE	REMARKS	
HW-1	PRIVATE	407.25	405.00 (I-10) 18"	-----	N 600461.97 E 1345715.45	---	TYPE 'C' ENDWALL	D5.21	
HW-3	PRIVATE	406.75	405.00 (I-7) 12"	-----	N 600462.67 E 1345743.40	---	TYPE 'C' ENDWALL	D5.21	
HW-4	PRIVATE	416.75	415.00 (I-14) 12"	-----	N 600748.51 E 1345367.38	---	TYPE 'C' ENDWALL	D5.21	
I-2	PRIVATE	409.55 (THROAT) 410.13 (TOP)	409.05 (O.D.) 2" 407.22 (U.D.) 3"	406.60 12"	N 600506.98 E 1345803.25	2.5'	A-5	SD 4.01	
I-7	PRIVATE	412.22 (THROAT) 412.80 (TOP)	406.02 (I-8) 15" 409.35 (I-7A) 6"	406.00 18"	N 600506.93 E 1345744.39	2.5'	A-5	SD 4.01	
I-8	PRIVATE	411.84 (THROAT) 412.42 (TOP)	406.45 (I-9) 12" 408.59 (I-8A) 6"	406.20 15"	N 600506.93 E 1345744.39	2.5'	A-5	SD 4.01	
I-9	PRIVATE	409.55 (THROAT) 410.13 (TOP)	409.05 (O.D.) 2" 407.22 (U.D.) 3"	406.63 12"	N 600542.01 E 1345756.00	2.5'	A-5	SD 4.01	
I-10	PRIVATE	417.88	414.03 (I-11) 15" 414.02 (I-11A) 6"	413.78 18"	N 600544.20 E 1345615.82	2.58'	S	SD 4.22	
I-11	PRIVATE	417.59 (THROAT) 418.17 (TOP)	414.34 (I-12) 12"	414.09 15"	N 600555.37 E 1345623.30	2.5'	A-5	SD 4.01	
I-12	PRIVATE	418.36 (THROAT) 418.94 (TOP)	414.53 (I-12A) 6"	414.53 12"	N 600590.82 E 1345623.97	2.5'	A-5	SD 4.01	
R-2	PRIVATE	416.00 (THROAT) 416.83 (TOP)	411.71 (M-2) 18"	410.76 18"	N 600696.70 E 1345363.10	2.5'	'D' INLET	SD 4.10	
I-14	PRIVATE	418.24 (THROAT) 418.82 (TOP)	415.17 (I-15) 12"	415.07 12" 416.00 15"	N 600752.63 E 1345378.86	2.5'	A-5	SD 4.01	
I-15	PRIVATE	418.67	-----	415.67 12"	N 600766.95 E 1345418.57	2.58'	DOUBLE 'S' INLET	SD 4.23	
M-1	PRIVATE	408.25	404.75 (I-7) 18"	401.67 18" 405.25 12"	N 600477.07 E 1345779.81	---	4' DIA. MANHOLE	G 5.12	
M-2	PRIVATE	417.00	413.50 (I-14) 15"	411.87 18"	N 600719.65 E 1345382.07	---	4' DIA. MANHOLE	G 5.12	
S-2	PRIVATE	385.50	384.06 (M-1B) 18"	-----	N 600396.89 E 1345810.43	---	18" CONC. END SECTION	D 5.51	
S-3	PRIVATE	413.40	410.50 (R-2) 18"	-----	N 600685.37 E 1345352.67	---	18" CONC. END SECTION	D 5.51	
FL (1)	PRIVATE	412.60 (THROAT) 413.18 (TOP)	-----	409.35	N 600477.82 E 1345743.43	6'X16'	FILTERBA WITH SEDIMENTATION CHAMBER	CONTECH	
FL (2)	PRIVATE	412.42 (THROAT) 413.00 (TOP)	-----	409.17	N 600477.83 E 1345731.93	4'X16'	FILTERBA WITH SEDIMENTATION CHAMBER	CONTECH	
FL (3)	PRIVATE	417.85 (THROAT) 418.43 (TOP)	-----	414.60	N 600599.51 E 1345618.29	6'X12'	FILTERBA WITH SEDIMENTATION CHAMBER	CONTECH	
FL (4)	PRIVATE	418.56 (THROAT) 419.14 (TOP)	-----	415.31	N 600593.61 E 1345617.85	6'X12'	FILTERBA WITH SEDIMENTATION CHAMBER	CONTECH	
M-1A	PRIVATE	404.40	396.72 (M-1) 18"	392.95 18"	N 600446.35 E 1345791.45	---	4' DIA. MANHOLE	G 5.12	
M-1B	PRIVATE	391.70	388.00 (M-1A) 18"	384.26 18"	N 600415.58 E 1345803.36	---	4' DIA. MANHOLE	G 5.12	
R-1	PRIVATE	402.00 (THROAT)	-----	397.92 18"	N 600479.03 E 1345865.26	4'X4'	'D' INLET	SD-4.10	
E-1	PRIVATE	400.00	-----	397.75 18"	N 600463.72 E 1345895.00	---	TYPE 'E' HEADWALL	SHA DETAIL MD 356.01	



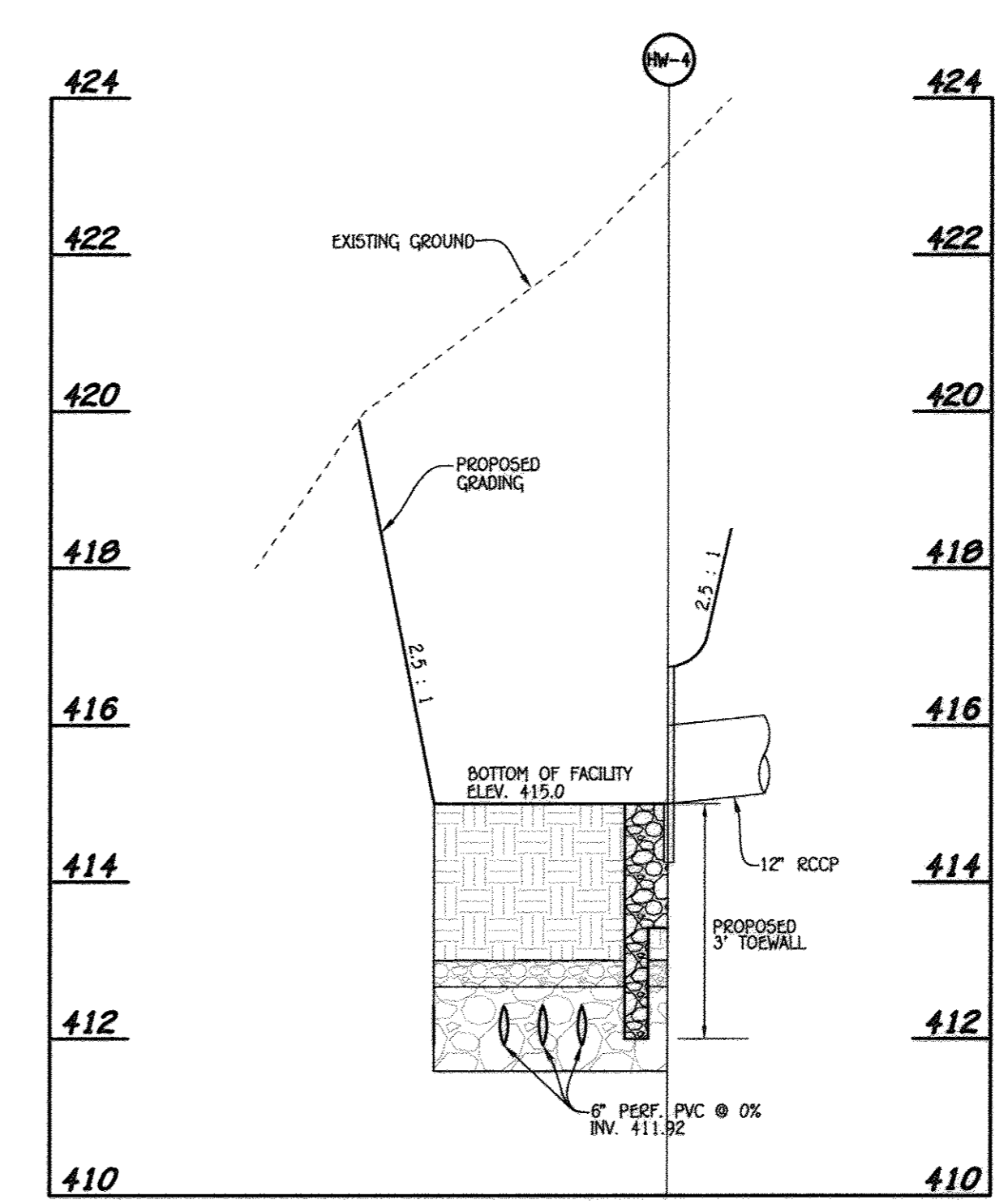
M-6 (1)
SECTION THRU FACILITY
SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'



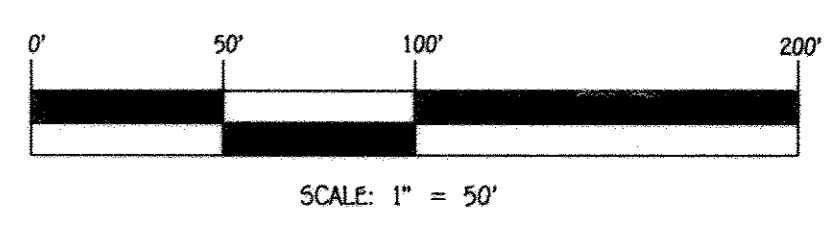
F-6 (2)
SECTION THRU FACILITY
SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'



F-6 (3)
SECTION THRU FACILITY
SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'



F-6 (4)
SECTION THRU FACILITY
SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
Chief, Bureau of Highways
DATE: 2/17/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
Chief, Division of Land Development
DATE: 2-27-18

[Signature]
Chief, Development Engineering Division
DATE: 2-23-18

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE STRUCTURE SCHEDULE AND SECTION PROFILES	1-8-18

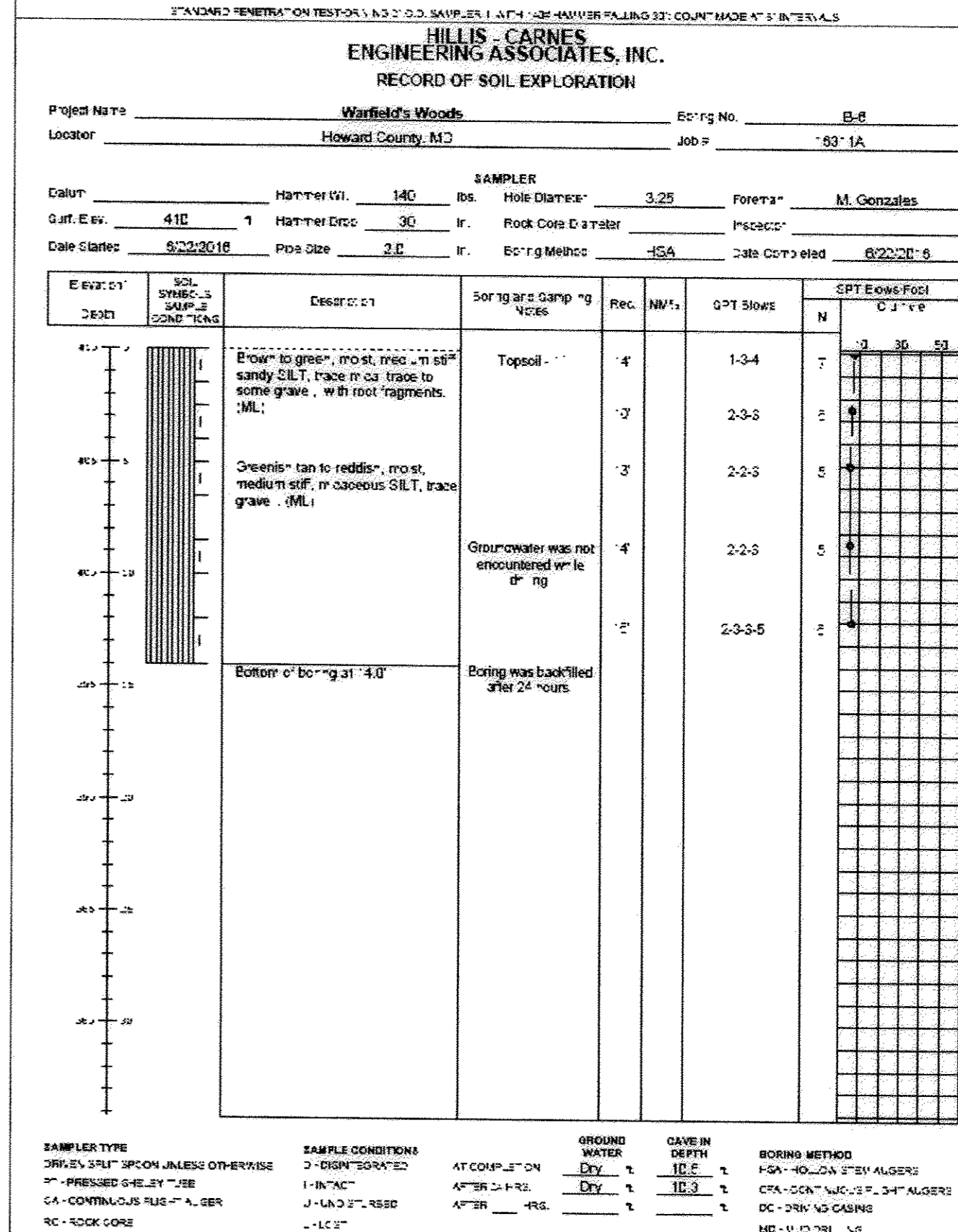
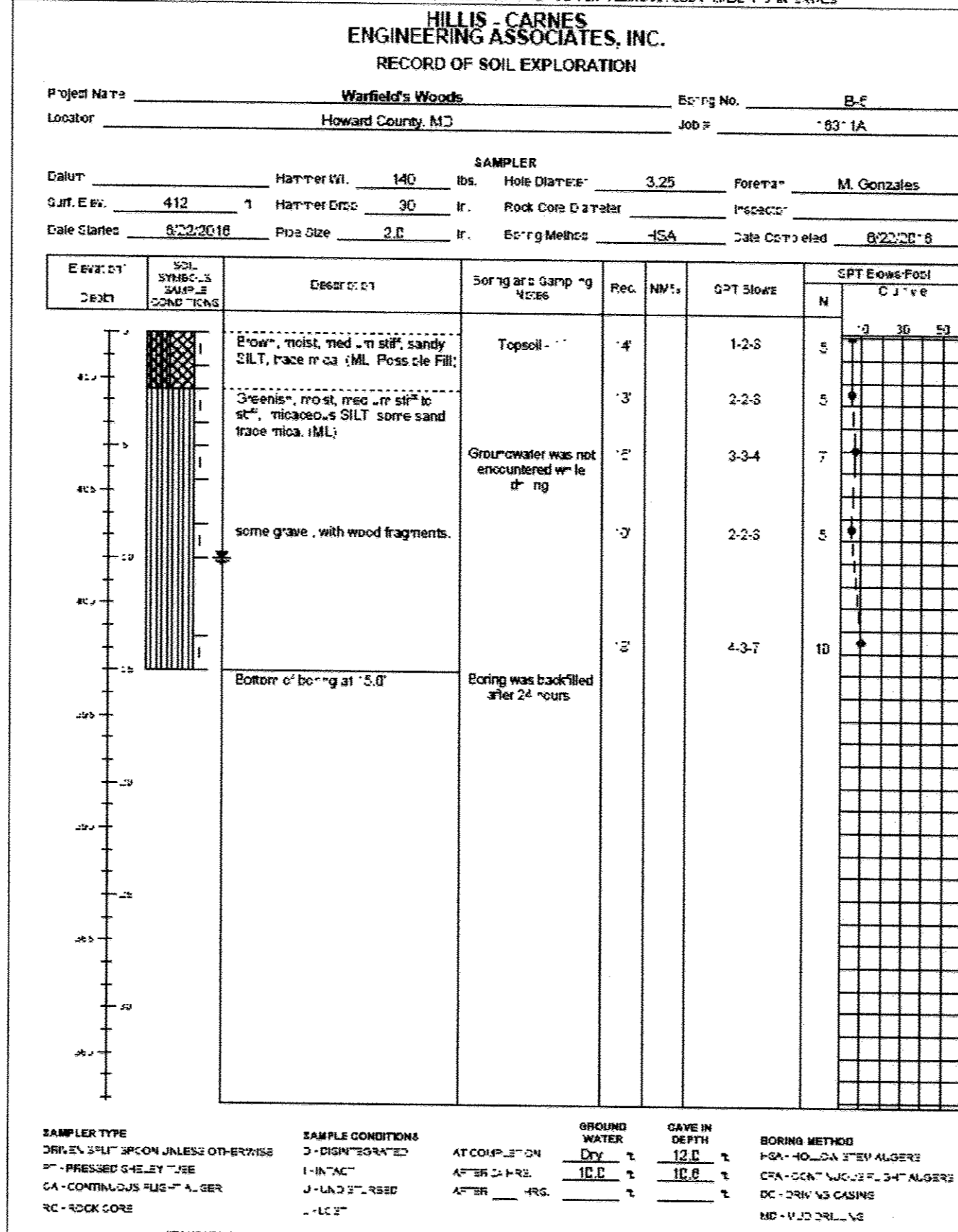
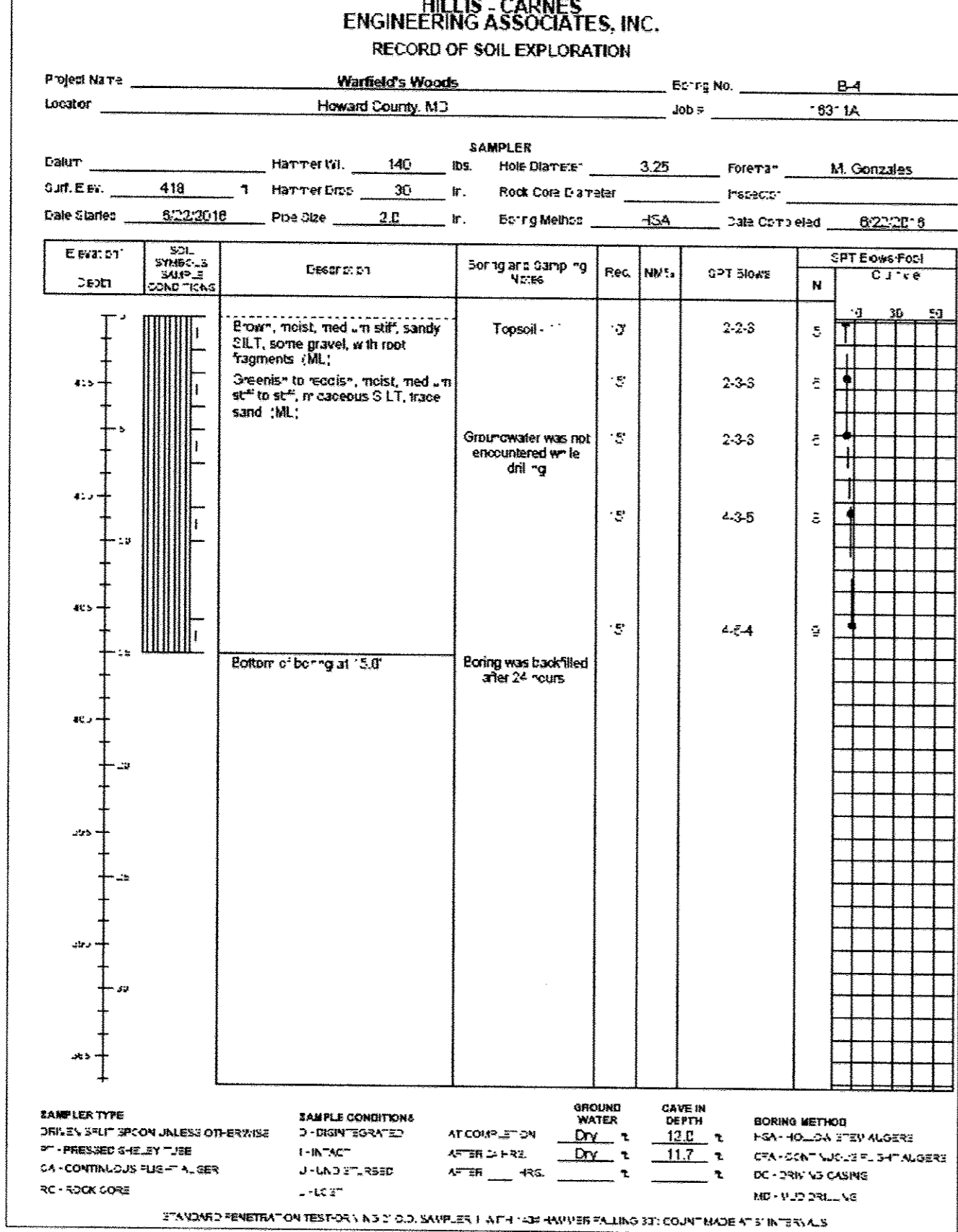
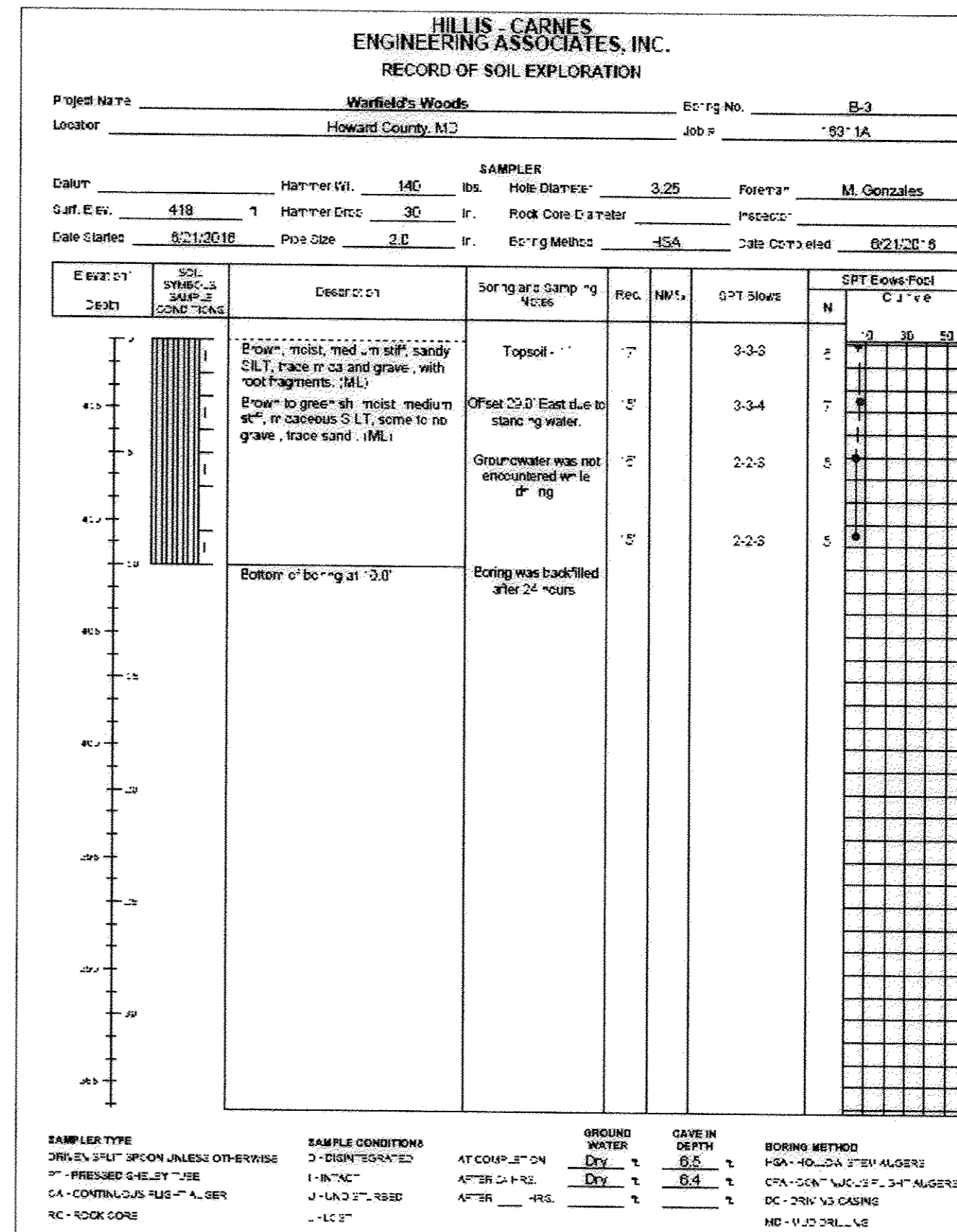
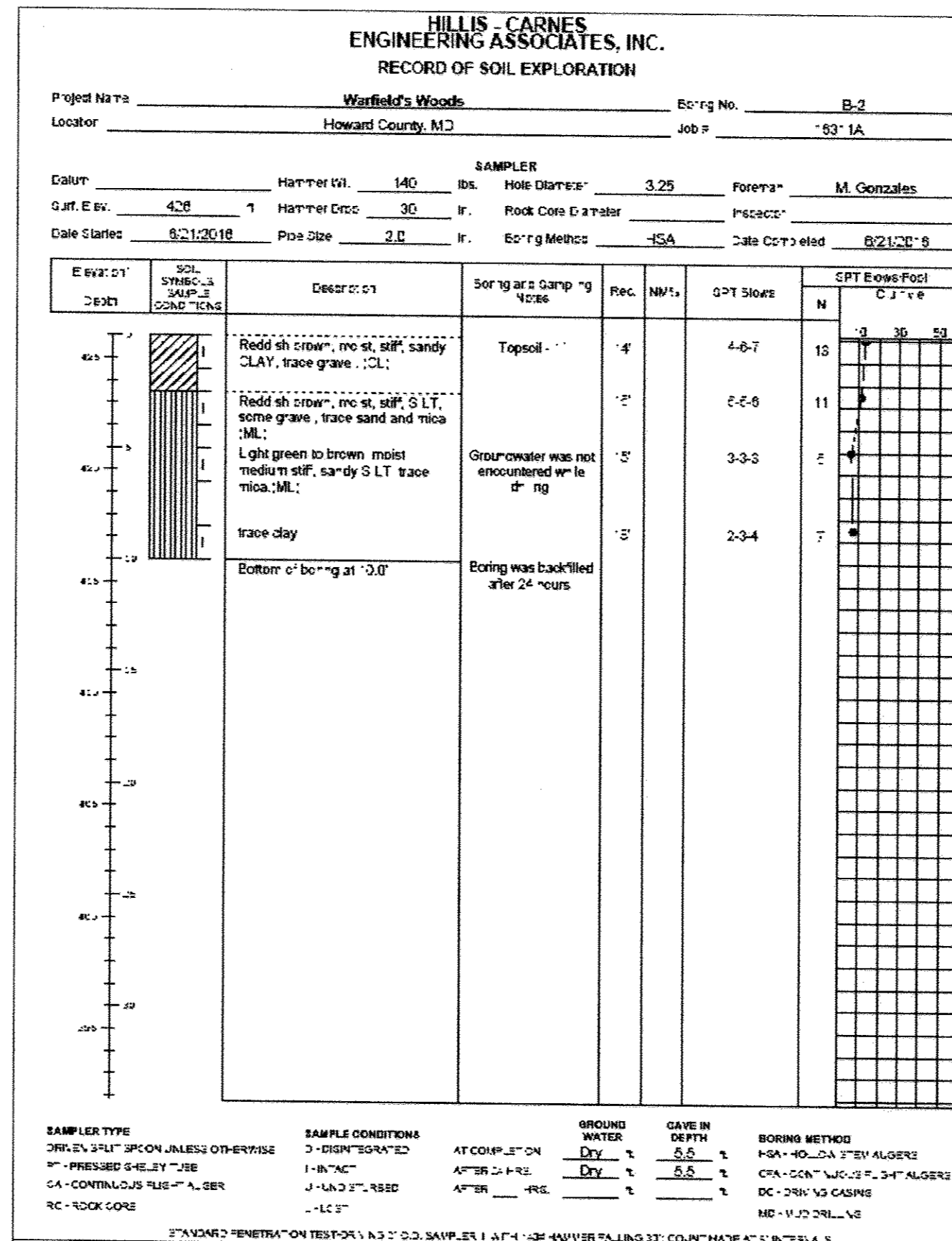
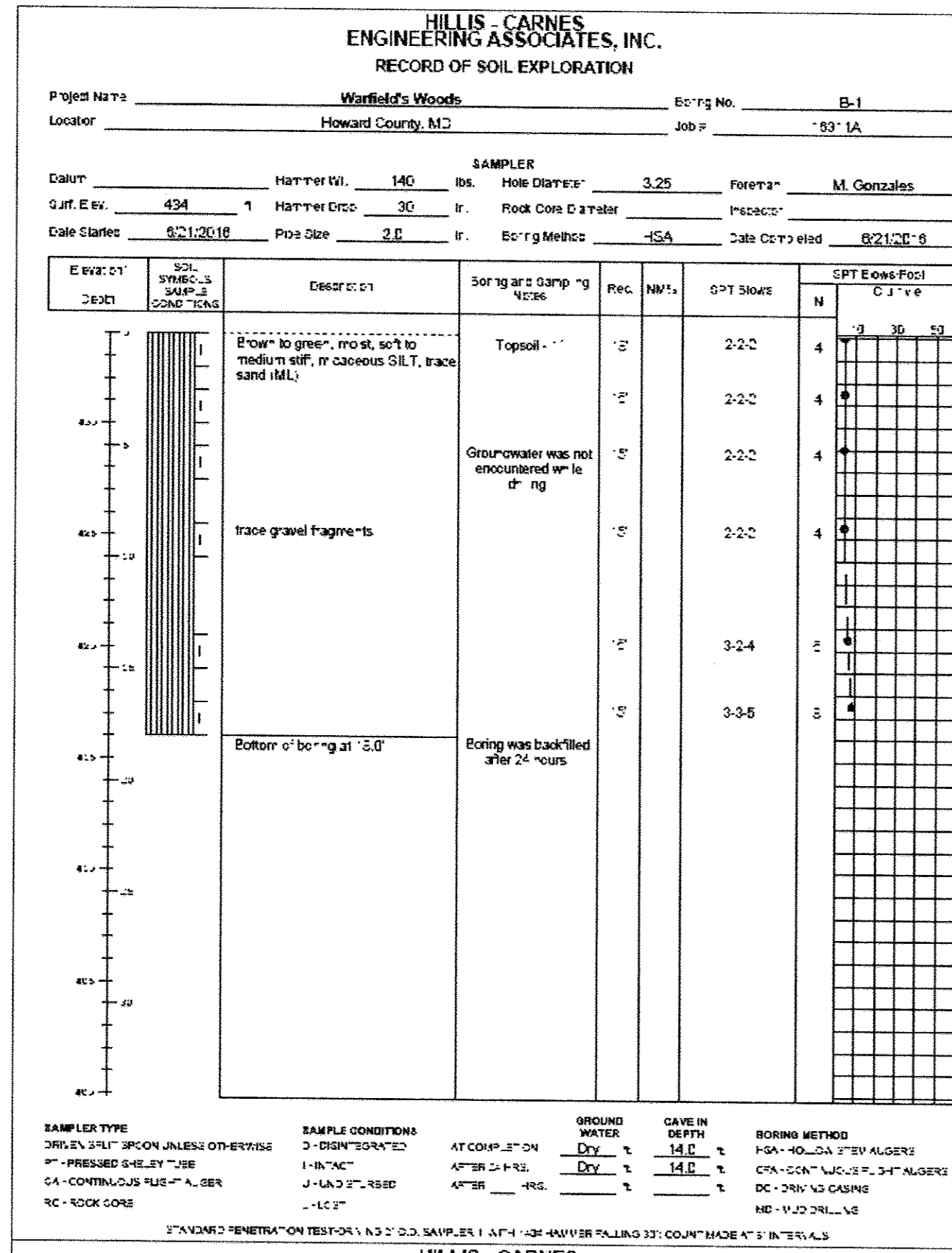
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21046
(410) 461-2895

OWNER/DEVELOPER
WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRADAPLUMIA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/19.
[Signature]
FRANK J. MANALANSAN II
DATE: 1/2/18

REVISED
STORM DRAIN DETAILS
& STRUCTURE SCHEDULE
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-SA-B
PREVIOUS HOWARD COUNTY FILES:
SOP-86-88, 5-94-07, P-95-07, F-95-174,
ECP-14-072, 5P-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER 6, 2017
SHEET 10 OF 39



APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 05/23/2017
Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 6-28-17
Chief, Division of Land Development

[Signature] 5-31-17
Chief, Development Engineering Division

FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2999

NO.	DESCRIPTION	DATE

OWNER/DEVELOPER

WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRIADAPLHA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337

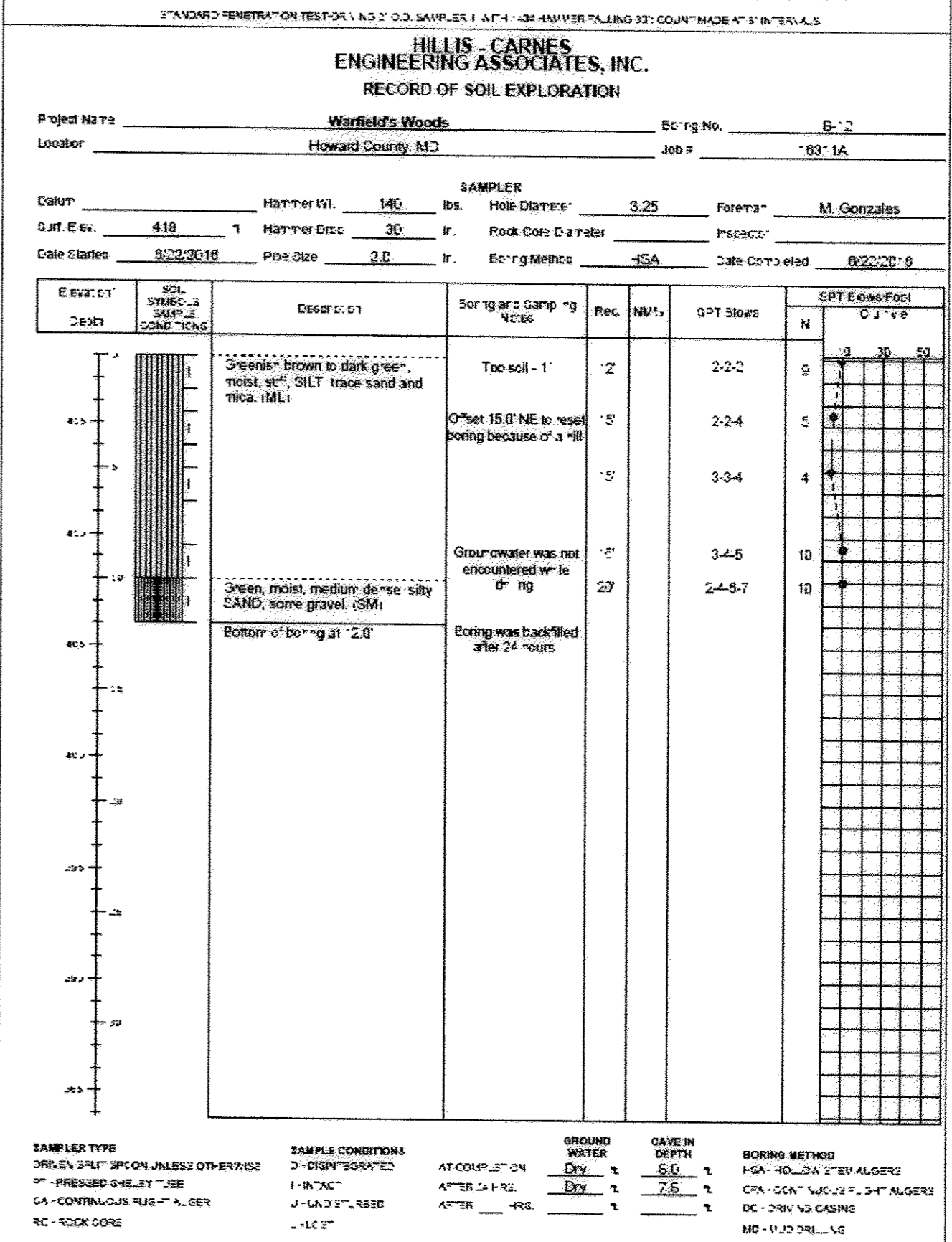
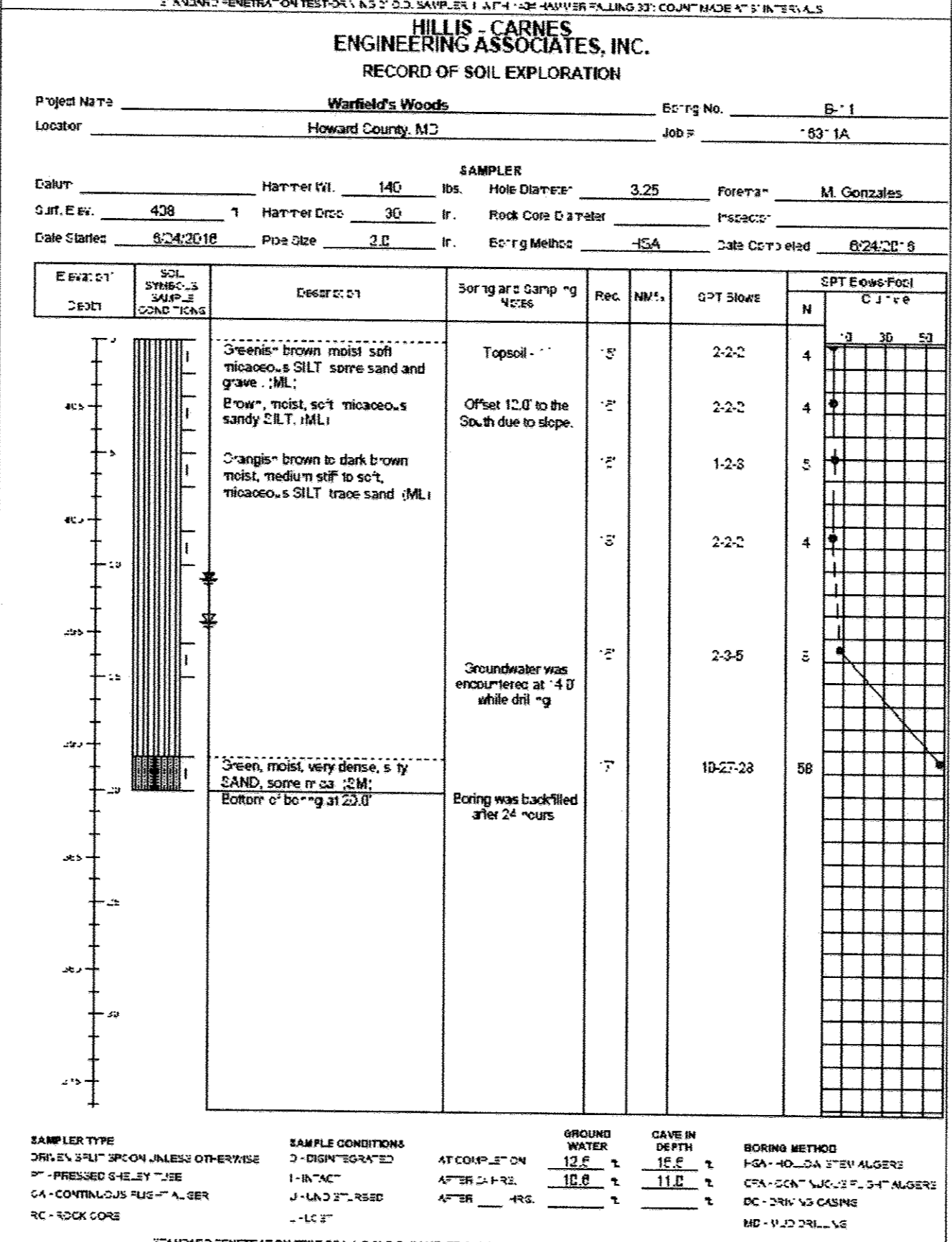
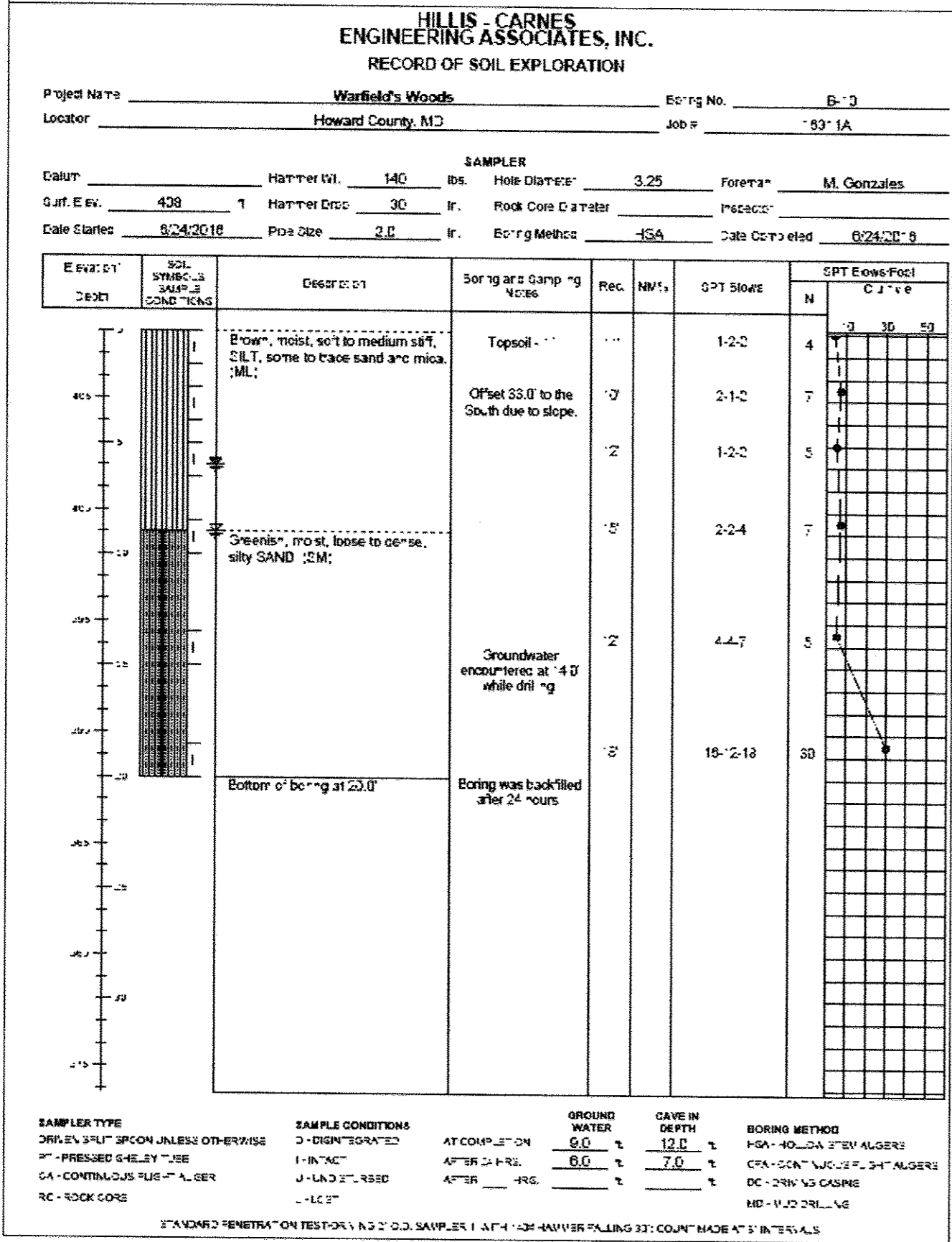
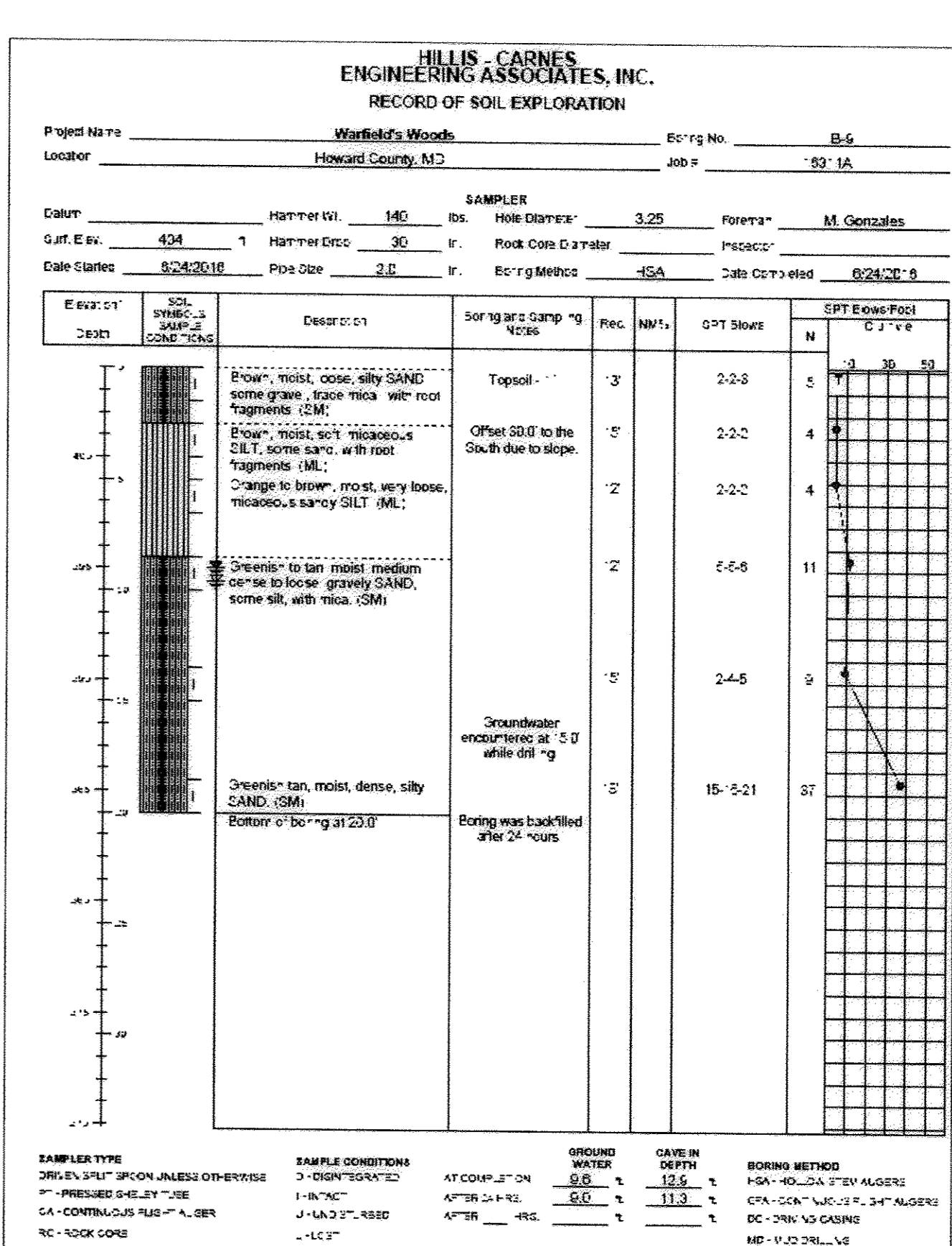
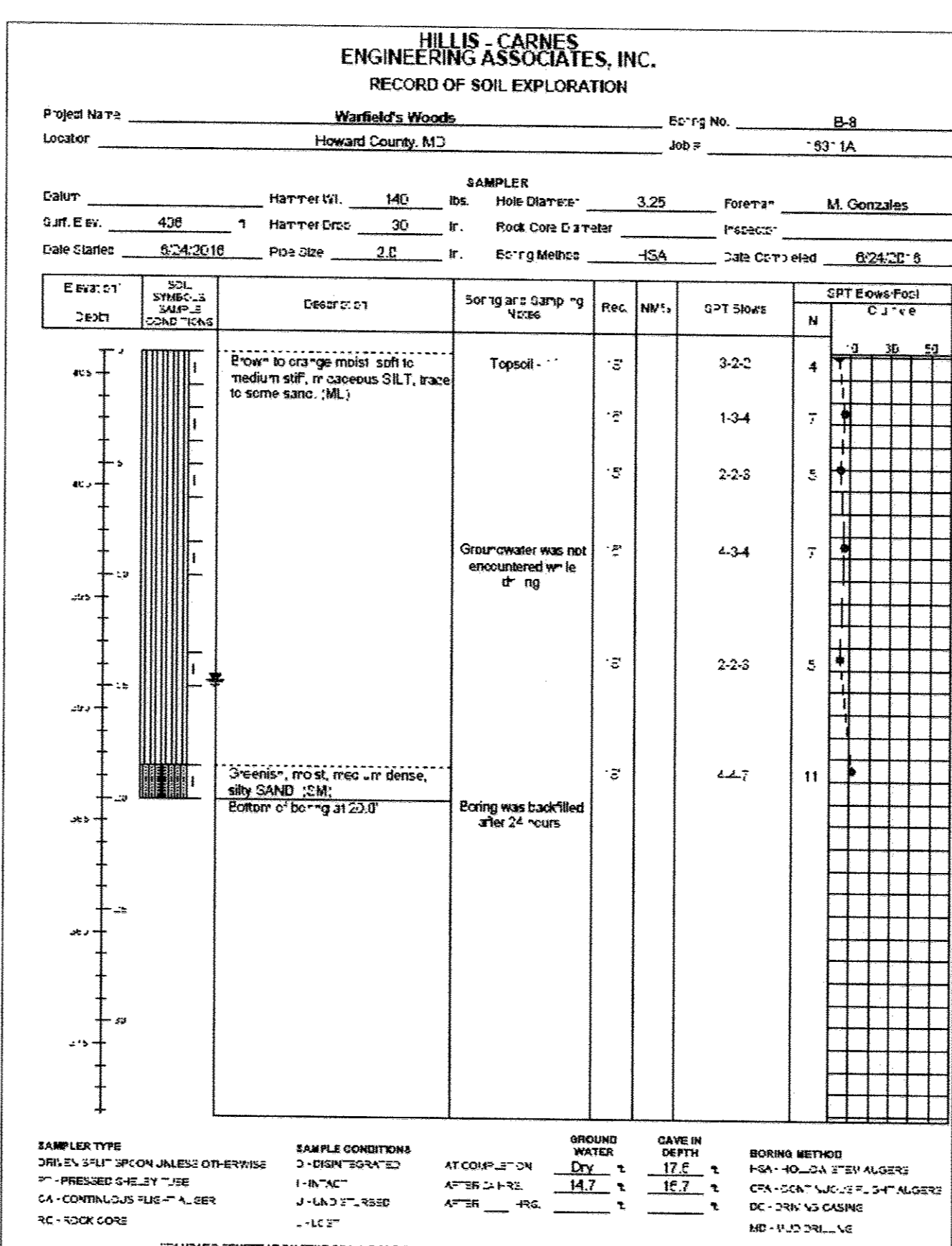
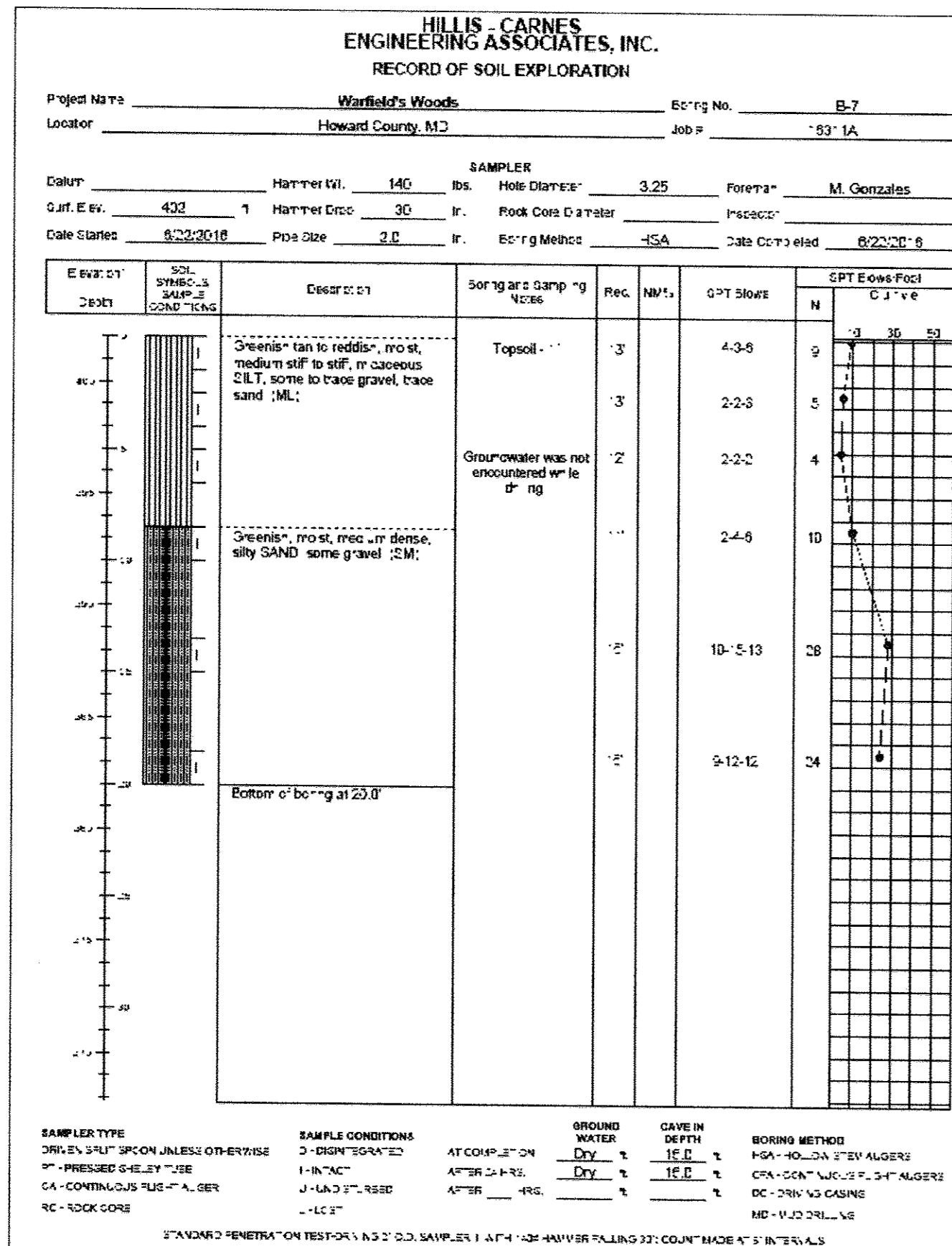


PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

[Signature] 4/18/17
FRANK J. MAMLANSAN II DATE

BORING LOGS
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 55
10501 ROUTE 99
ZONED: R-SA-8
PREVIOUS HOWARD COUNTY FILES:
SDP-86-88, S-94-07, P-95-07, F-95-174,
ECP-14-072, SP-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 11 OF 39



APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 05/22/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 6-3-17

Chief, Development Engineering Division
 DATE: 5-31-17

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLSWORTH CITY, MARYLAND 21042
 (410) 461-2895

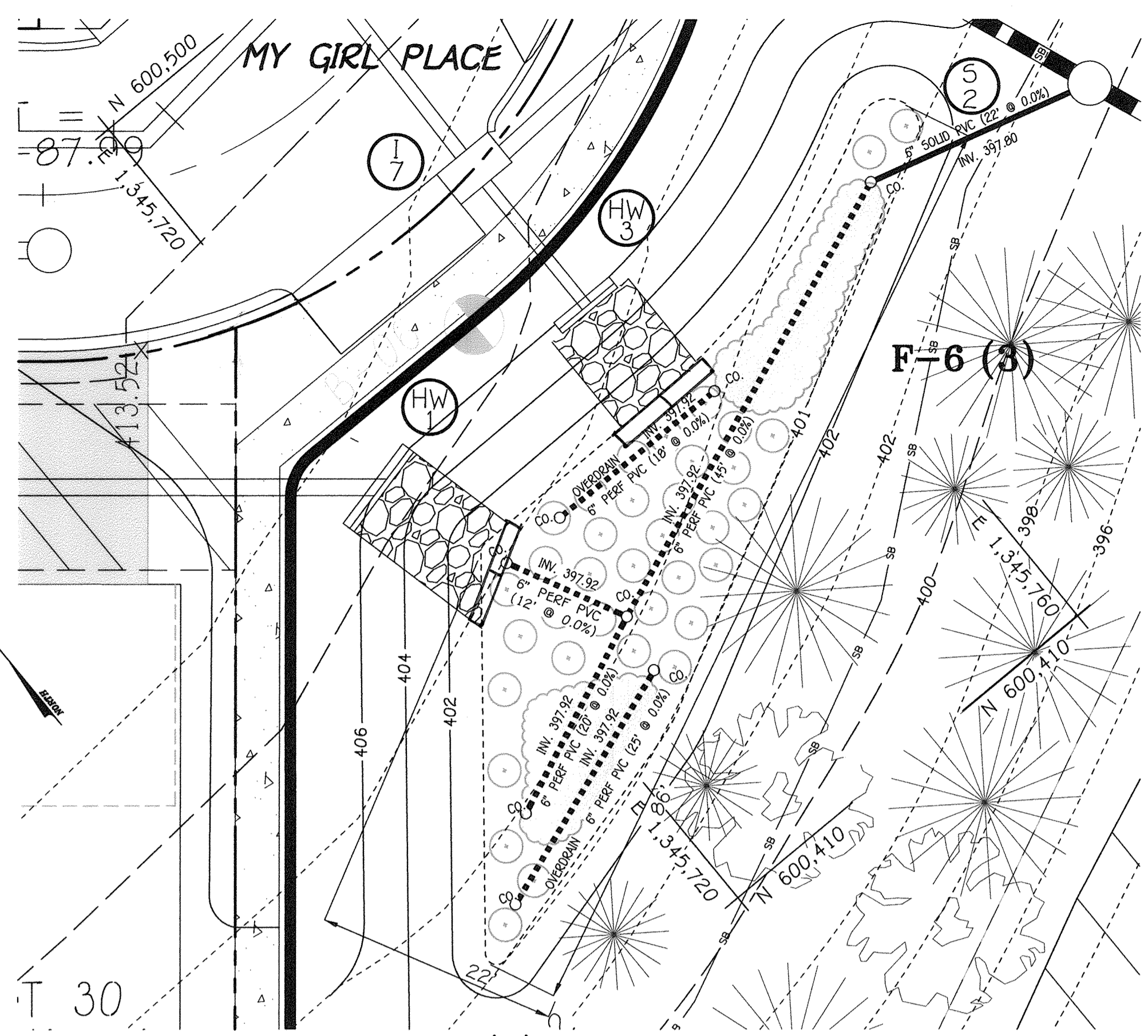
NO.	REVISIONS DESCRIPTION	DATE

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRADAPLUM ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337



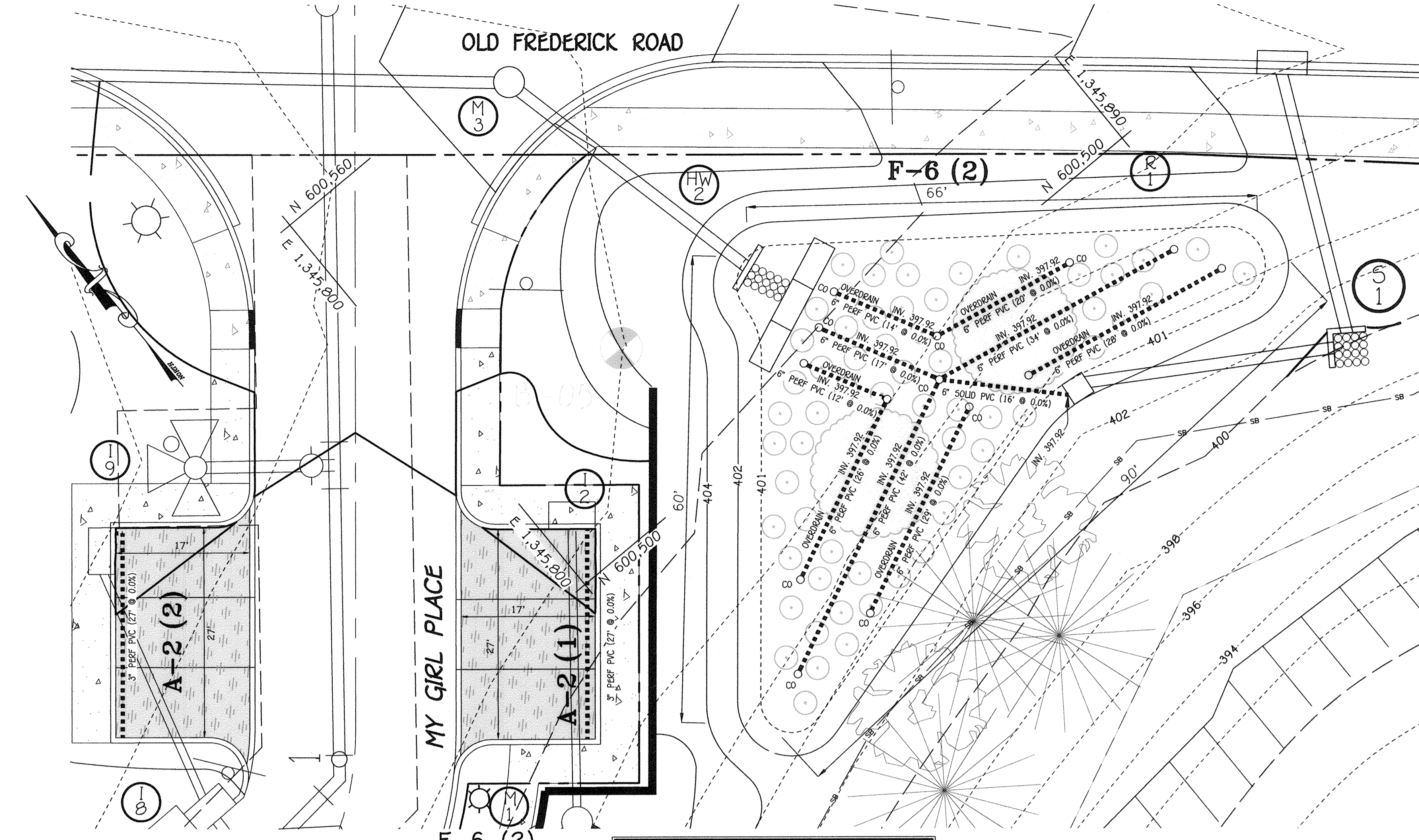
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
 DATE: 4/12/17

BORING LOGS
 WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-08, 5-94-07, P-95-07, F-95-174,
 ECP-14-072, 5P-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: APRIL 4, 2017
 SHEET 12 OF 39



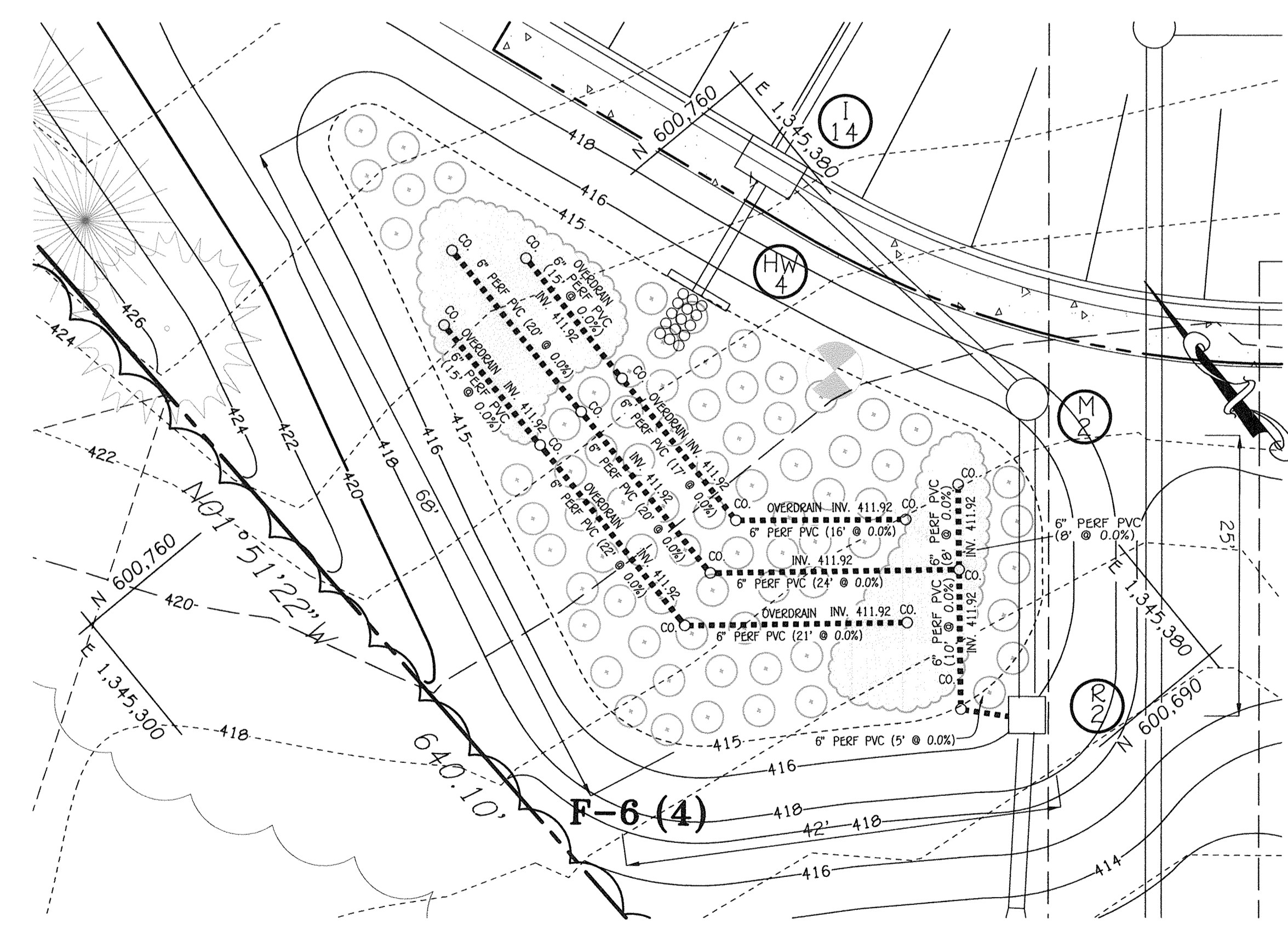
F-6 (3)
 (BIO-RETENTION FACILITY)
 SCALE: 1" = 10'
 DRAINAGE AREA: 32,434 SqFt.
 FILTER AREA: 1,012' SqFt.
 BOTTOM ELEVATION 401'
 PERIMETER 194'
 TOP OF DAM ELEVATION 402'

PLANT MATERIAL- BIO-RETENTION F-6 (3)		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
85 (295 sq.ft.)	GRASSES	36" o.c.
36	SHRUBS	36"-40" o.c.



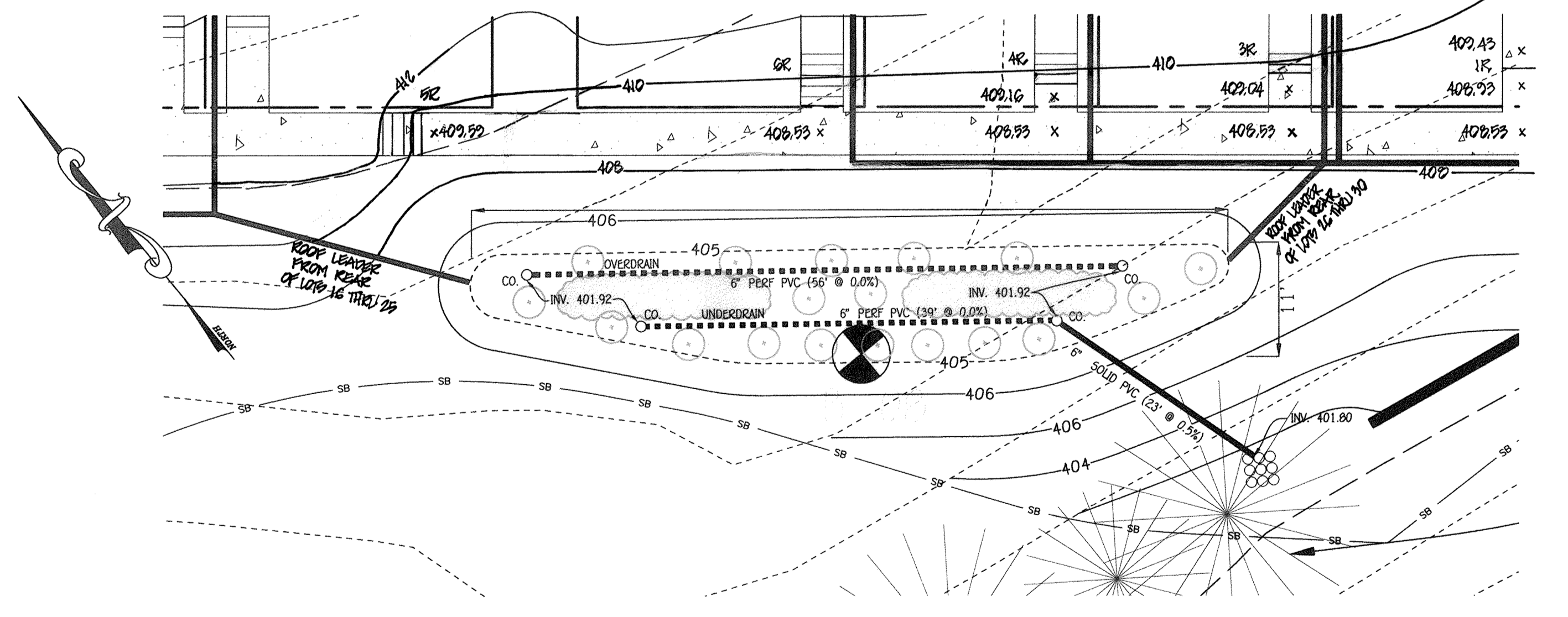
F-6 (2)
 (BIO-RETENTION FACILITY)
 SCALE: 1" = 10'
 DRAINAGE AREA: 54,550 SqFt.
 FILTER AREA: 2,075' SqFt.
 BOTTOM ELEVATION 401'
 PERIMETER 224'
 TOP OF DAM ELEVATION 402'

PLANT MATERIAL- BIO-RETENTION F-6 (2)		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
138 (413 sq.ft.)	GRASSES	36" o.c.
53	SHRUBS	36"-40" o.c.



F-6 (4)
 (MICRO BIO-RETENTION FACILITY)
 SCALE: 1" = 10'
 DRAINAGE AREA: 44,689 SqFt.
 FILTER AREA: 2,142' SqFt.
 BOTTOM ELEVATION 415'
 PERIMETER 202'
 TOP OF DAM ELEVATION 416'

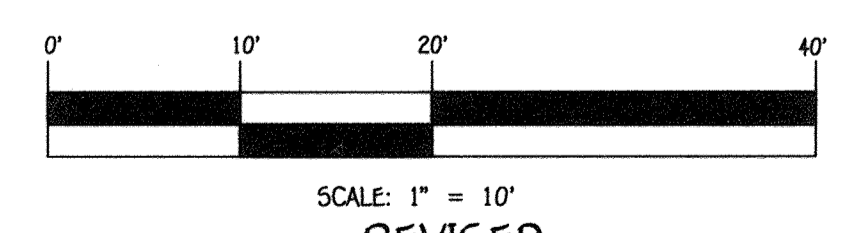
PLANT MATERIAL- BIO-RETENTION F-6 (4)		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
179 (536 sq.ft.)	GRASSES	36" o.c.
76	SHRUBS	36"-40" o.c.



M-6 (1)
 (MICRO BIO-RETENTION FACILITY)
 SCALE: 1" = 10'
 DRAINAGE AREA: 12,228 SqFt.
 FILTER AREA: 621' SqFt.
 BOTTOM ELEVATION 405'
 PERIMETER: 149'
 TOP OF DAM ELEVATION 406'

PLANT MATERIAL- BIO-RETENTION M-6 (1)		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
52 (154 sq.ft.)	GRASSES	36" o.c.
18	SHRUBS	36"-40" o.c.

- SHRUBS**
- BAYBERRY
 - SPICEBUSH
 - ARROWWOOD
 - WINTERBERRY
 - INK BERRY
 - WITCH HAZEL
 - BUTTONBRUSH
 - BUCKEYE
 - BOTTLEBRUSH
 - BUCKEYE
- ANY OF THE SHRUBS LISTED MAY BE USED
- GRASS**
- SWITCHGRASS
 - HEAVY METAL SWITCHGRASS
- ANY OF THE GRASS LISTED MAY BE USED



APPROVED: DEPARTMENT OF PUBLIC WORKS

 Chief, Bureau of Highways
 DATE: 2/17/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING

 Chief, Division of Land Development
 DATE: 2/23/18

Chief, Development Engineering Division
 DATE: 2-23-18

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855

NO.	DESCRIPTION	DATE
1	REVISE STORM DRAIN, SWM AND REMOVE ASSOCIATED EASEMENT	1-8-18
2	REVISE LANDSCAPE WALL & REVERSE SLOPE OF LOT 29 FROM 30	10/5/18

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRINDELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/19.

 FRANK J. MANALANSAN II
 DATE: 1/1/18

NOTE: FOR BIORETENTION DETAILS AND NOTES SEE SHEET 14.

REVISED
STORMWATER MANAGEMENT DETAILS
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-5A-B
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-08, 5-94-07, P-95-07, F-95-174,
 ECP-14-072, 5P-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: DECEMBER 6, 2017
 SHEET 13 OF 39

Construction Specifications for Environmental Site Design Practices

B.4.B Specifications for Permeable Pavements & Reinforced Turf

These specifications include information on acceptable materials for typical applications and are not exclusive or limiting. The designer is responsible for developing detailed specifications for individual projects and specific conditions.

1. Pervious Concrete Specifications

Design Thickness -- Pervious concrete applications shall be designed so that the thickness of the concrete slab shall support the traffic and vehicle types that will be carried. Applications may be designed using either standard pavement procedures (e.g., AASHTO, ACI 325.9R, ACI 330R) or using structural values derived from flexible pavement design procedures.

Mix & Installation -- Traditional Portland cements (ASTM C 150, C 1157) may be used in pervious concrete applications. Phosphorus admixtures may also be used. Materials should be tested (e.g., trial batching) prior to construction so that critical properties (e.g., setting time, rate of strength development, porosity, permeability) can be determined.

Aggregate -- Pervious concrete contains a limited fine aggregate content. Commonly used gradations include ASTM C 33 No. 67 (3/8 in. to No. 4), No. 8 (1/2 in. to No. 16) and No. 89 (3/4 in. to No. 50) sieves. Single-sized aggregate (up to 1 inch) may also be used.

Water Content -- Water-to-cement ratios between 0.27 and 0.30 are used routinely with proper inclusion of chemical admixtures. Water quality should meet ACI 308. As a general rule, potable water should be used although recycled concrete production water meeting ASTM C 94 or AASHTO M 157 may also be used.

Admixtures -- Chemical admixtures (e.g., retarders or hydration-stabilizers) are used to obtain special properties in pervious concrete. Use of admixtures should meet ASTM C 494 (chemical admixtures) and ASTM C 260 (air entraining admixtures) and closely follow manufacturer's recommendations.

Base Course -- The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% (n = 0.30).

2. Permeable Interlocking Concrete Pavements (PICP)

Paver Blocks -- Blocks should be either 3 1/8 in. or 4 in. thick, and meet ASTM C 936 or CSA A23 1.2 requirements. Applications should have 20% or more (40% preferred) of the surface area open. Installation should follow manufacturer's instructions, except that infill and base course materials and dimensions specified in this Appendix shall be followed.

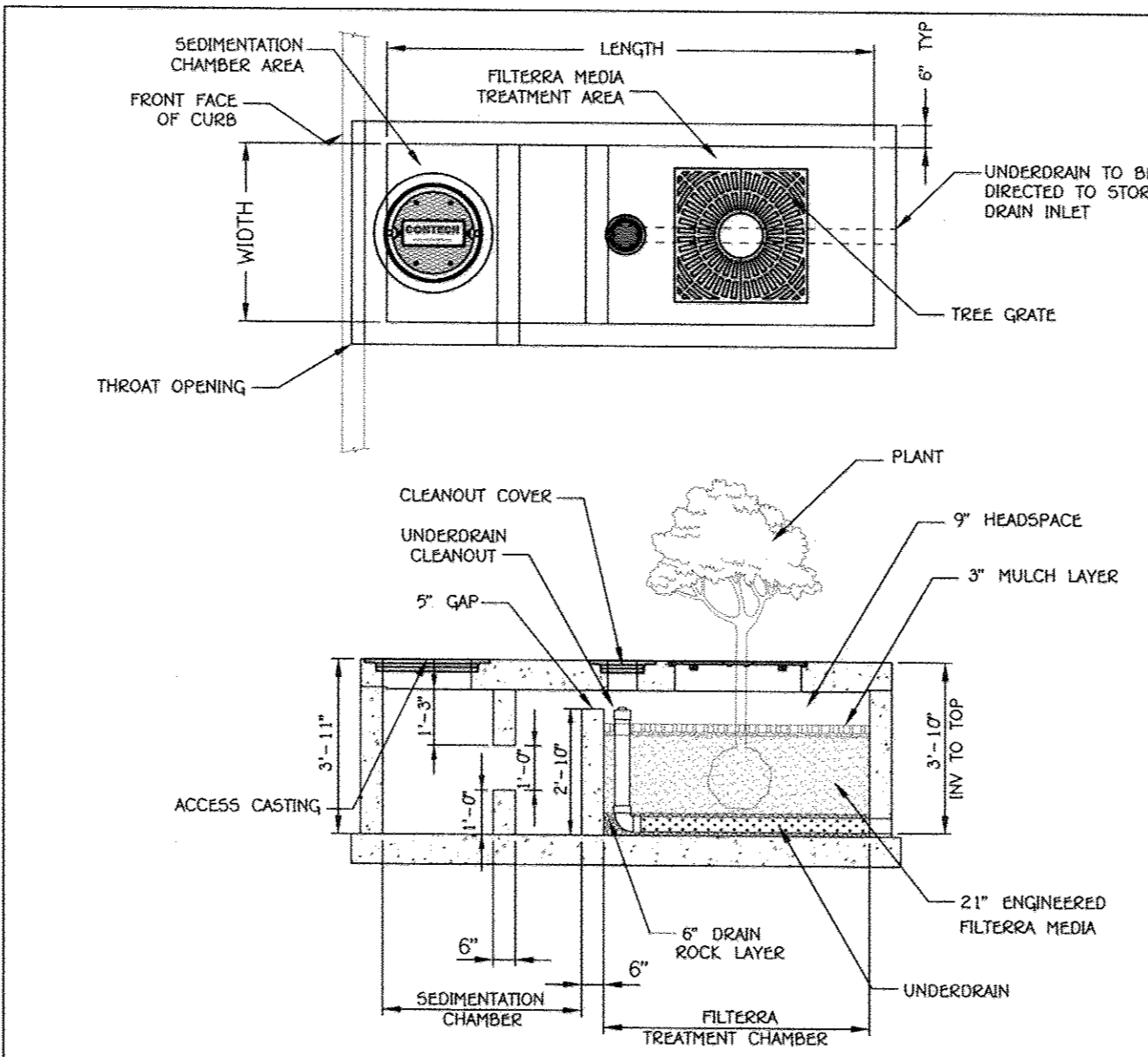
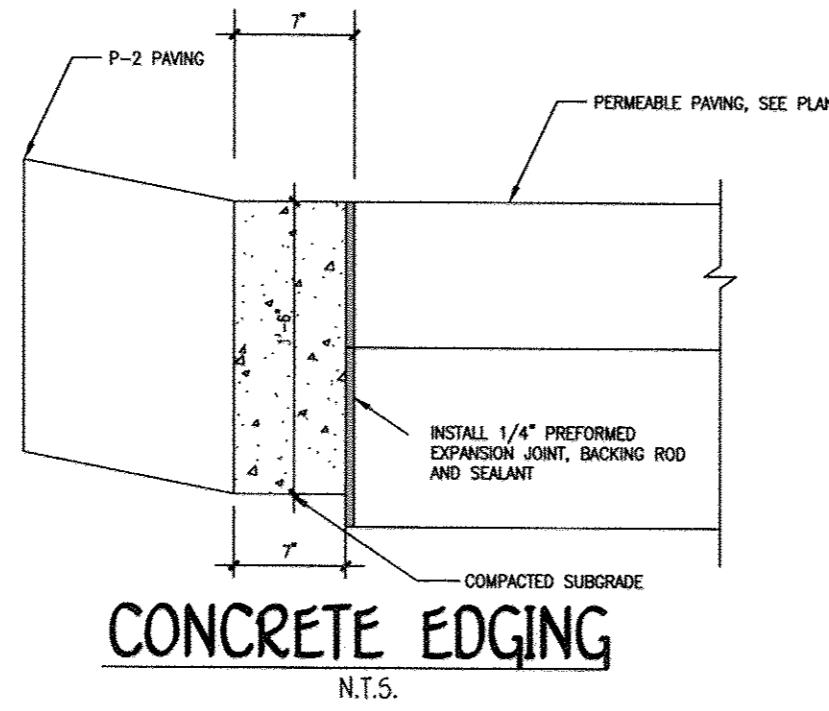
Infill Materials and Leveling Course -- Openings shall be filled with ASTM C-33 graded sand or sandy loam. PICP blocks shall be placed on a one-inch thick leveling course of ASTM C-33 sand.

Base Course -- The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% (n = 0.30).

Underdrains -- Underdrains should meet the following criteria:

- Pipes -- should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 750, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations -- If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel -- The gravel layer shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter section.
- A 4" layer of sand shall be located between the filter media and underdrain to prevent migration of fines into the underdrain.

Note: These practices may not be constructed until all contributing drainage area has been stabilized

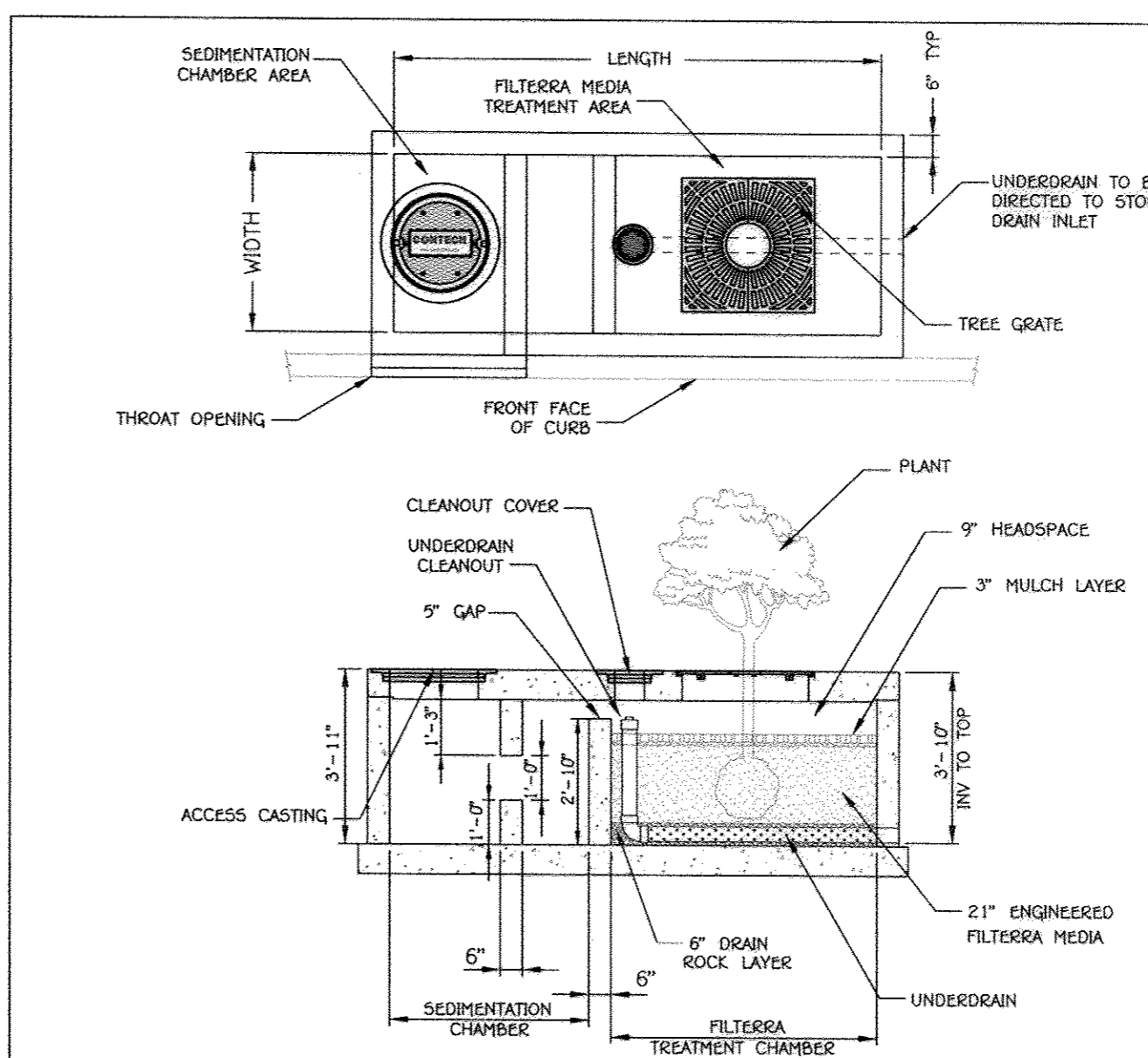


STRUCTURE No.	UNIT DESIGNATION	INSIDE VAULT DIMENSIONS	FILTERRA TREATMENT AREA	MAXIMUM DRAINAGE AREA TREATED (SF)	WQV STORAGE CAPACITY (CF)
-	FTSC 6' x 4'	12' x 4'	6' x 4'	5,216	103
-	FTSC 8' x 4'	16' x 4'	8' x 4'	7,141	141
1-11A & 1-12A	FTSC 6' x 6'	12' x 6'	6' x 6'	7,847	155
-	FTSC 8' x 6'	16' x 6'	8' x 6'	10,734	212
-	FTSC 10' x 6'	19' x 6'	10' x 6'	12,630	250
-	FTSC 10' x 8'	20' x 8'	10' x 8'	18,178	360
-	FTSC 11' x 8'	22' x 8'	11' x 8'	20,000	398

NOTE: 1. MAXIMUM DRAINAGE AREA TREATED ASSUMES 25% WQV AND FILTER SURFACE AREA REQUIREMENTS ARE BOTH MET.
2. STORAGE CAPACITY ASSUMES 40% VOIDS IN UNDERDRAIN STONE AND 30% VOIDS IN MULCH AND MEDIA.
3. ALL INFORMATION IS BASED ON STANDARD 3.82 RIM TO OUTLET DEPTH CONTACT CONTACT FOR CUSTOM SIZING IF DEPTH IS NOT 3.82. ACCEPTABLE DEPTH IS 3.33 MIN. TO 5.00 MAX. RIM TO INVERT OUT.

CONTECH ENGINEERED SOLUTIONS LLC
www.conteches.com
1000 Global Way, Suite 113, Lutherville, MD 21092
800-378-2118 OFFICE 800-378-0511 FAX

FILTERRA WITH SEDIMENTATION CHAMBER



STRUCTURE No.	UNIT DESIGNATION	INSIDE VAULT DIMENSIONS	FILTERRA TREATMENT AREA	MAXIMUM DRAINAGE AREA TREATED (SF)	WQV STORAGE CAPACITY (CF)
-	FTSC 6' x 4'	12' x 4'	6' x 4'	5,216	103
1-8A	FTSC 8' x 4'	16' x 4'	8' x 4'	7,141	141
-	FTSC 6' x 6'	12' x 6'	6' x 6'	7,847	155
1-7A	FTSC 8' x 6'	16' x 6'	8' x 6'	10,734	212
-	FTSC 10' x 6'	19' x 6'	10' x 6'	12,630	250
-	FTSC 10' x 8'	20' x 8'	10' x 8'	18,178	360
-	FTSC 11' x 8'	22' x 8'	11' x 8'	20,000	398

NOTE: 1. MAXIMUM DRAINAGE AREA TREATED ASSUMES 25% WQV AND FILTER SURFACE AREA REQUIREMENTS ARE BOTH MET.
2. STORAGE CAPACITY ASSUMES 40% VOIDS IN UNDERDRAIN STONE AND 30% VOIDS IN MULCH AND MEDIA.
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www.conteches.com
1000 Global Way, Suite 113, Lutherville, MD 21092
800-378-2118 OFFICE 800-378-0511 FAX

FILTERRA WITH SEDIMENTATION CHAMBER

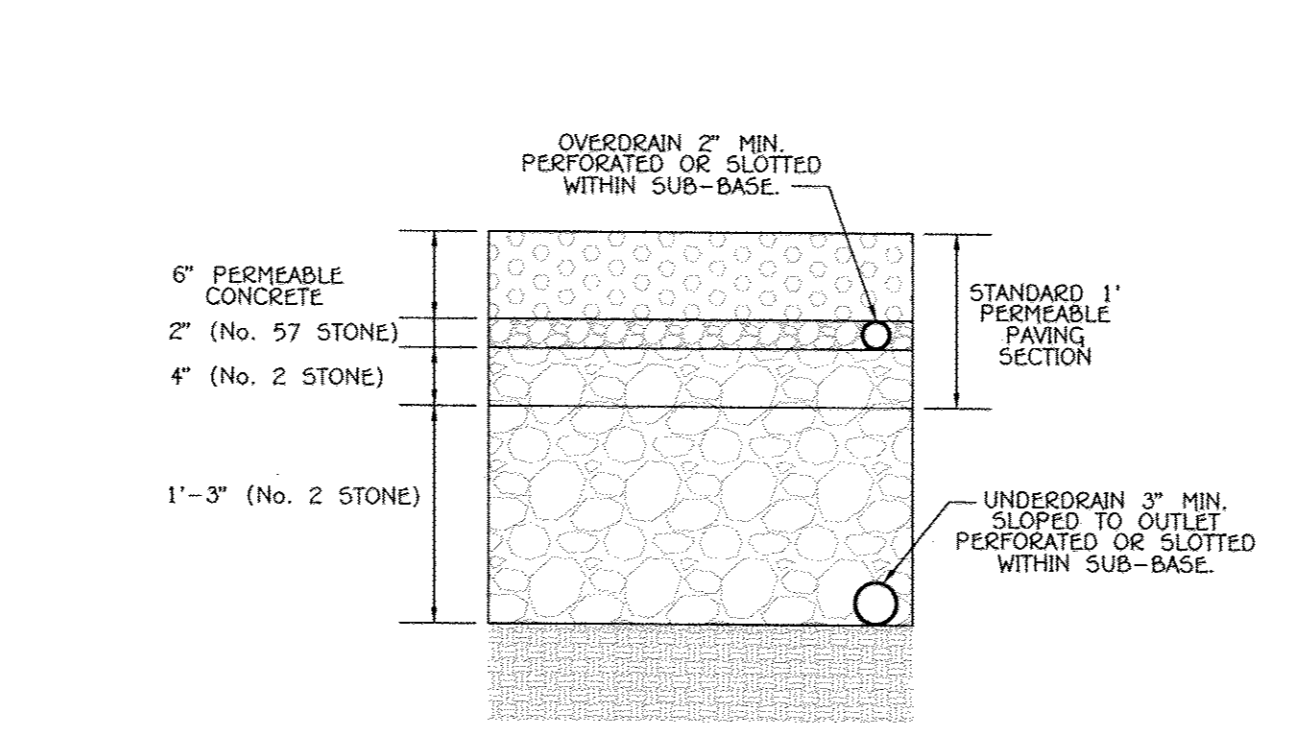
STORMWATER MANAGEMENT PRACTICES (PRIVATELY OWNED AND MAINTAINED)										
STREET ADDRESS	AREA ID	DRAINAGE AREA	SUB AREA (FILTERRA INLET)	% IMPERVIOUS	Pe=1.0 ⁸ ESDV REQUIRED CUFT.	Pe=1.0 ⁸ ESDV PROVIDED CUFT.	DRY WELLS M-5 (Y/N)	MICRO-BIORETENTION F-6 (Y/N)	BIO-RETENTION F-6 (Y/N)	PERMEABLE A-2 (Y/N)
10512 MY GRL PLACE	LOT 1	510		100%	79	83				
10514 MY GRL PLACE	LOT 2	510		100%	79	83	Y			
10516 MY GRL PLACE	LOT 3	510		100%	79	83	Y			
10518 MY GRL PLACE	LOT 4	510		100%	79	83	Y			
10520 MY GRL PLACE	LOT 5	510		100%	79	83	Y			
10524 MY GRL PLACE	LOT 6	510		100%	79	83	Y			
10526 MY GRL PLACE	LOT 7	510		100%	79	83	Y			
10528 MY GRL PLACE	LOT 8	510		100%	79	83	Y			
10530 MY GRL PLACE	LOT 9	510		100%	79	83	Y			
10532 MY GRL PLACE	LOT 10	510		100%	79	83	Y			
10534 MY GRL PLACE	LOT 11	510		100%	79	83	Y			
10538 MY GRL PLACE	LOT 12	510		100%	79	83	Y			
10540 MY GRL PLACE	LOT 13	510		100%	79	83	Y			
10542 MY GRL PLACE	LOT 14	510		100%	79	83	Y			
10544 MY GRL PLACE	LOT 15	510		100%	79	83	Y			
10531 MY GRL PLACE	LOT 21	550		100%	79	83	Y			
10529 MY GRL PLACE	LOT 22	550		100%	79	83		Y		
10527 MY GRL PLACE	LOT 23	550		100%	79	83		Y		
10525 MY GRL PLACE	LOT 24	550		100%	79	83		Y		
10523 MY GRL PLACE	LOT 25	550		100%	79	83		Y		
10519 MY GRL PLACE	LOT 26	550		100%	79	83		Y		
10517 MY GRL PLACE	LOT 27	550		100%	79	83		Y		
10515 MY GRL PLACE	LOT 28	550		100%	79	83		Y		
10513 MY GRL PLACE	LOT 29	550		100%	79	83		Y		
10511 MY GRL PLACE	LOT 30	550		100%	79	83		Y		
OPEN SPACE LOT 31	A-2 (1)	1,746		100%	279 (STORAGE)	279 (STORAGE)				Y
OPEN SPACE LOT 32	A-2 (2)	1,703		100%	273 (STORAGE)	273 (STORAGE)				Y
OPEN SPACE LOT 32	F-6 (1)	4,009		78%	330 (STORAGE)	436 (STORAGE)				Y
OPEN SPACE LOT 32	F-6 (3)				10,271	137.73 (STORAGE)				Y
OPEN SPACE LOT 31	INITIAL 1" Pe TREATED BY THREE FILTERRA INLETS REMAINING Pe IN BIO-RETENTION FACILITY	6,965	FIL (1)	66%	137.73 (STORAGE)	137.73 (STORAGE)				Y
OPEN SPACE LOT 31			FIL (2)	89%	123.82 (STORAGE)	123.82 (STORAGE)				Y
OPEN SPACE LOT 31			FIL (3)	89%	124.98 (STORAGE)	124.98 (STORAGE)				Y
OPEN SPACE LOT 31			FIL (4)	89%	117.83 (STORAGE)	117.83 (STORAGE)				Y
OPEN SPACE LOT 32				78%	1,216 (STORAGE)	1,303 (STORAGE)				Y
OPEN SPACE LOT 32	F-6 (4)	41,053		43%	1,720.06 (STORAGE)	1,807.06 (STORAGE)				Y
OPEN SPACE LOT 32	F-6 (2)	54,592		50%	2,011 (STORAGE)	2,045 (STORAGE)				Y
OPEN SPACE LOT 32					3,081 (STORAGE)	2,411 (STORAGE)				Y

FILTERRA: Operation and Maintenance

- Annual maintenance consists of a maximum of (2) scheduled visits. The visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands. The fall visit helps the system by removing excessive leaf litter.
- Each maintenance inspection consists of the following tasks:
 1. Filterra unit inspection
 2. Foreign debris, silt, mulch and trash removal
 3. Filter media evaluation and recharge as necessary
 4. Plant health evaluation and pruning or replacement as necessary
 5. Replacement of mulch
 6. Disposal of all maintenance refuse items
 7. Maintenance records updated and stored

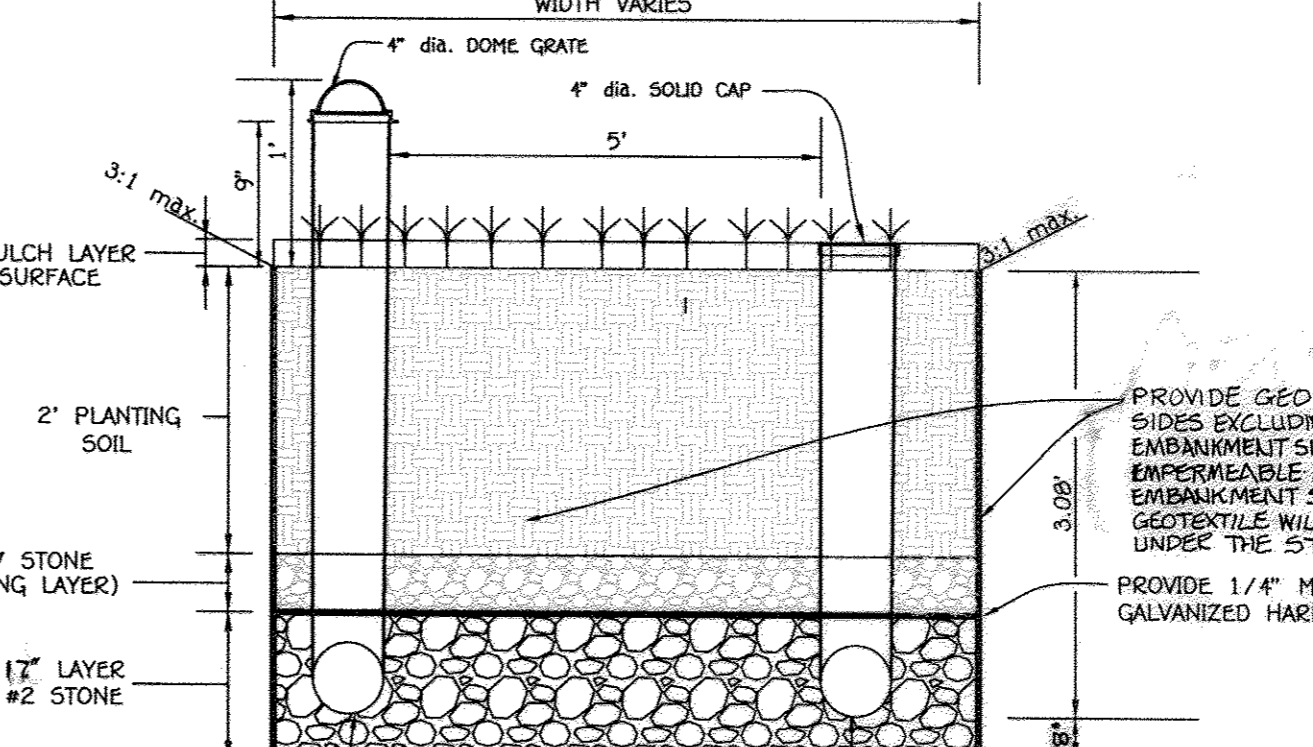
MICRO-BIORETENTION (F-6) OPERATION & MAINTENANCE SCHEDULE

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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 AND PRUNING.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



TYPICAL SECTION - A-2 PERMEABLE SECTION w/ OVERDRAIN & UNDERDRAIN
NO SCALE
(SEE CHART ABOVE FOR PAVEMENT THICKNESS)

PERM. PAV. AREA NO.	DEPTH
A-2(1)	2.25'
A-2(2)	2.25'



TYPICAL SECTION - BIO-RETENTION FACILITY
NO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways
DATE: 05/22/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development
DATE: 6-28-17

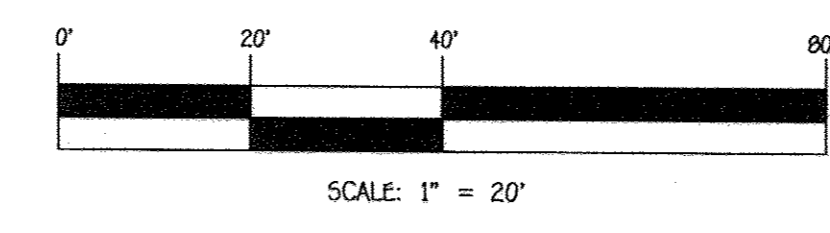
Chief, Development Engineering Division
DATE: 5-31-17

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 441-2292

NO.	REVISIONS	DATE
1	REVISE STORMWATER MANAGEMENT PRACTICES CHART	1/8/17

NOTE: FOR BIORETENTION LANDSCAPING SEE SHEET 13.

OWNER/DEVELOPER
WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRADELPHIA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/11/17.
FRANK J. MANLANSAN II
DATE: 4/12/17

FILTERRA STANDARD PLAN NOTES

- Construction & Installation
- Each unit shall be constructed at the locations and elevations according to the sizes shown on the approved drawings. Any modifications to the elevation or location shall be at the direction of and approved by the Engineer.
 - If the Filterra is stored before installation, the top slab must be placed on the box using the 2x4 wood provided, to prevent any contamination from the site. All internal fittings supplied (if any), must be left in place as per the delivery.
 - The unit shall be placed on a compacted sub-grade with a minimum 6-inch gravel base matching the final grade of the curb line in the area of the unit. The unit is to be placed such that the unit and top slab match the grade of the curb in the area of the unit. Compact undisturbed sub-grade materials to 95% of maximum density at +1- 2% of optimum moisture. Unusable material below sub-grade shall be replaced to the site engineer's approval.
 - Outlet connections shall be aligned and sealed to meet the approved drawings with modifications necessary to meet site conditions and local regulations.
 - Once the unit is set, the internal wooden forms and protective mesh cover must be left intact. Remove only the temporary wooden shipping blocks between the box and top slab. The top lid should be sealed onto the box section before backfilling, using a non-shrink grout, butyl rubber or similar waterproof seal. The boards on top of the lid and boards sealed in the unit's throat must NOT be removed. The Supplier (America's) or its authorized dealer will remove these sections at the time of activation. Backfilling should be performed to a careful manner, bringing the appropriate fill material up in 6" lifts on all sides. Precast sections shall be set in a manner that will result in a watertight joint. In all instances, installation of Filterra unit shall conform to ASTM specification C991 "Standard Practice for Installation of Underground Precast Utility Structures", unless directed otherwise in contract documents.
 - The contractor is responsible for inlet protection/sediment control and cleaning around each Filterra unit.
 - Curb and gutter construction (where present) shall ensure that the flow-line of the Filterra units is at a greater elevation than the flow-line of the bypass structure or relief (drop inlet, curb cut or similar). Failure to comply with this guideline may cause failure and/or damage to the Filterra environmental device.
 - Each Filterra unit must receive adequate irrigation to ensure survival of the living system during periods of arid weather. This may be achieved through a piped system, gutter flow or through the tree grate.
- Activation
- A. Activation of the Filterra unit is performed ONLY by the Supplier. Purchaser is responsible for Filterra inlet protection and subsequent clean out cost. This process cannot commence until the project site is fully stabilized and cleaned (full landscaping, grass cover, final paving and street sweeping completed), negating the chance of construction materials contaminating the Filterra system. Care shall be taken during construction not to damage the protective throat and top plates.
- B. Activation includes installation of plant(s) and mulch layers as necessary.

- Included Maintenance
- A. Each correctly installed Filterra unit is to be maintained by the Supplier, or a Supplier approved contractor for a minimum period of 1 year. The cost of this service is to be included in the price of each Filterra unit. Extended maintenance contracts are available at extra cost upon request.
- B. Annual included maintenance consists of a maximum of (2) scheduled visits. The visits are scheduled seasonally; the spring visit aims to clean up after winter loads that may include salts and sands. The fall visit helps the system by removing excessive leaf litter.
- C. Each Included Maintenance visit consists of the following tasks:
1. Filterra unit inspection
 2. Foreign debris, silt, mulch & trash removal
 3. Filter media evaluation and recharge as necessary
 4. Plant health evaluation and pruning or replacement as necessary
 5. Replacement of mulch
 6. Disposal of all maintenance refuse items
 7. Maintenance records updated and stored (reports available upon request)
- D. The beginning and ending date of Supplier's obligation to maintain the installed system shall be determined by the Supplier at the time the system is activated. Owners must promptly notify the Supplier of any damage to the plant(s), which constitute an integral part of the bio-retention technology.

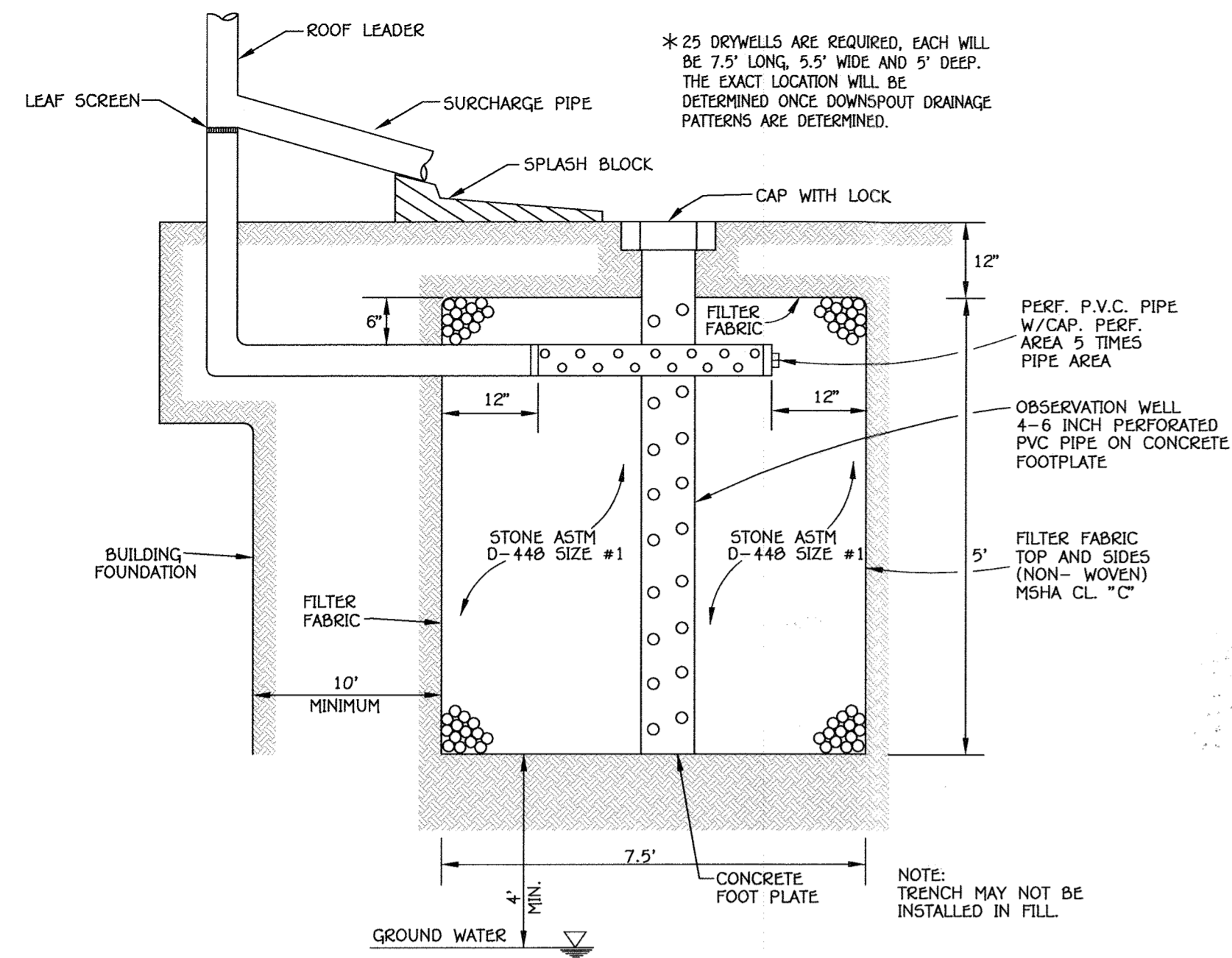
DESIGN GUIDELINES FOR USING FILTERRA

1. Do not place in a sump condition. The Standard Filterra cannot be used as a stand alone inlet - it will need effective bypass during higher intensity rainfall events. For sump conditions please contact Filterra.
- Plans must show Filterra Top Curb (TC) and Flow Line (FL) spot elevations and also bypass TC (where applicable) and bypass FL spot elevations.
- The Filterra TC and FL elevations MUST be higher than the bypass TC and FL elevations for effective bypass. Use Drawing FLP-2 (p.24) as a detail on the project plans.
3. Do not direct surface flow to the standard Filterra in a "head-on" configuration. Refer to Guidelines GJ1-A (p.13) and GJ2 (p.18) for grading design that encourages flow to enter a Filterra in a cross linear flow - left-to-right or right-to-left in the throat, as per a wet curb which prevents system damage. During extreme storm events the excess flow should continue past the Filterra to a bypass inlet or other means of relief. Guideline GJ3, Parking Lot Corners, shows common situations (p.19).
4. To calculate which size Filterra is required, use Table 1, Filterra Quick Sizing Table, appropriate to the project's geographical region and target treatment regime (p.12). The entire contributing drainage area to the Filterra should be considered and the minimum allowable C factors noted. The maximum contributing drainage area will vary with site conditions, for further information relating to sizing please contact Filterra.
5. To ensure correct installation, include the Standard Filterra Plan Notes (p.26-27) on your Filterra detail project sheet, as well as detailed drawings FLP-2 and CGT-5 (p.24,25).
6. Positive drainage of each Filterra unit's effluent treatment pipe is required to prevent free standing water from accumulating in the system or underdrain. This could occur due to tidal influences or improper connection of Filterra's effluent pipe to a bypass structure or other outlet.

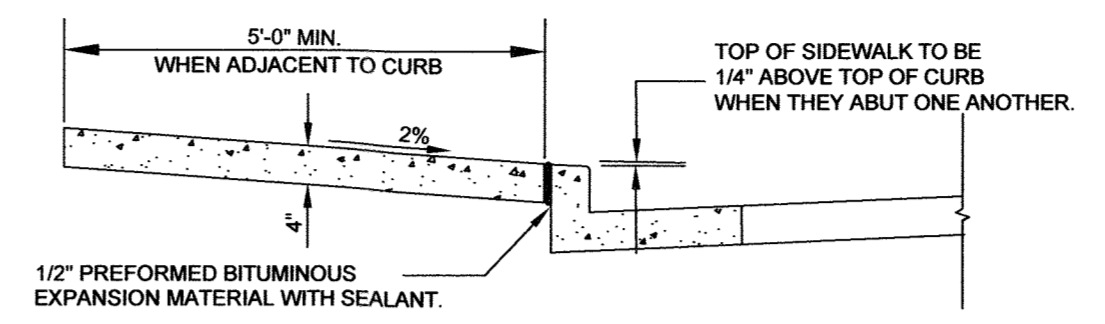
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

- a. The owner shall periodically sweep (or vacuum porous concrete pavement) the pavement surfaces to reduce sediment accumulation and insure continued surface porosity. Sweeping should be performed at least twice annually with a commercial cleaning unit. Washing or compressed air units should not be used to perform surface cleaning.
- b. The owner shall periodically clean drainage pipes, inlets, stone edge drains and other structures within or draining to the subbase.
- c. The owner shall use deicers in moderation. Deicers should be non-toxic and be applied either as calcium magnesium acetate or as pretreated salt.
- d. The owner shall ensure snow plowing is performed carefully with blades set one inch above the surface. Plowed snow piles and snowmelt should not be directed to permeable pavement.

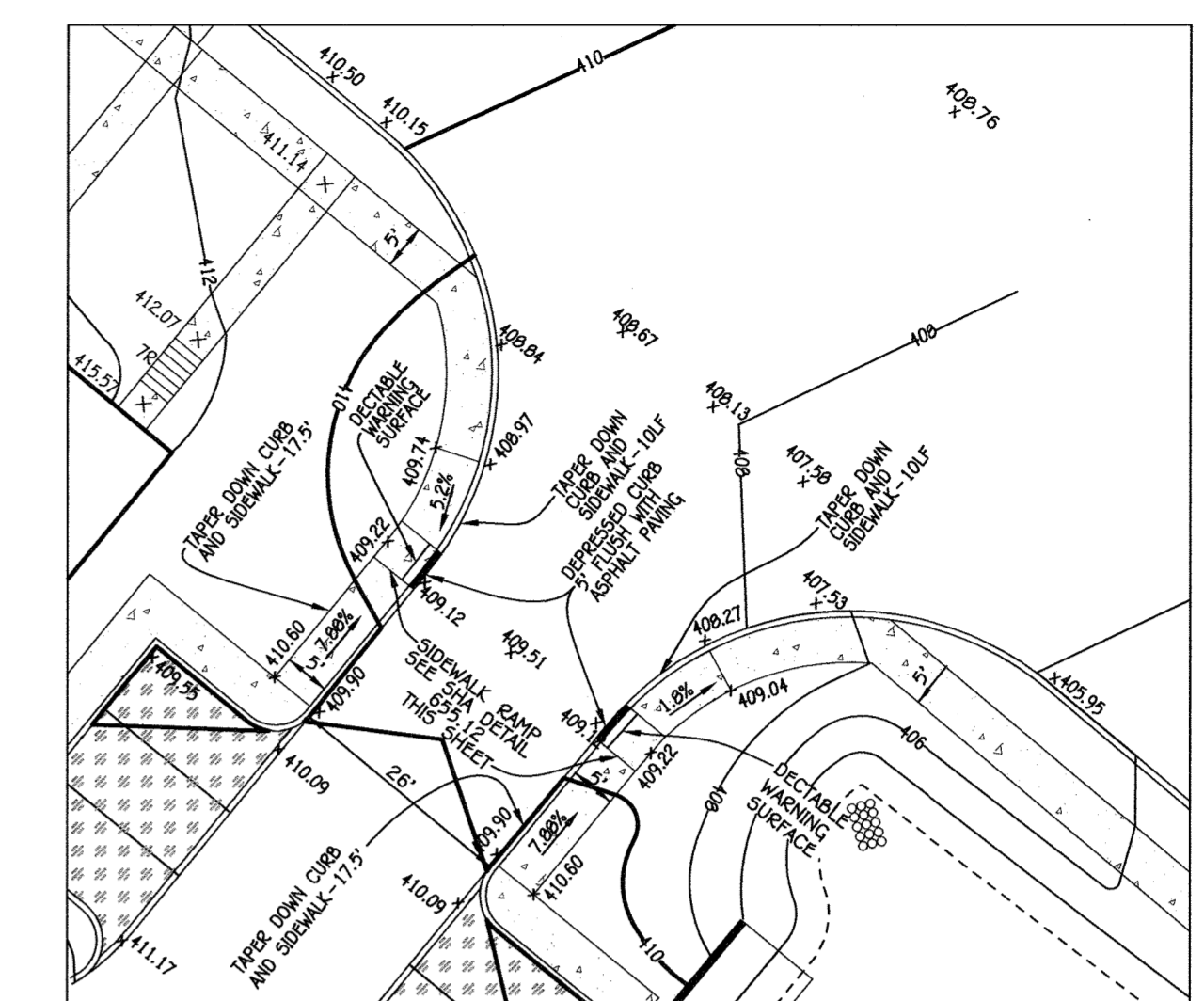
STORMWATER MANAGEMENT DETAILS
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-5A-B
PREVIOUS HOWARD COUNTY FILES:
SDP-06-08, 5-94-07, P-95-07, F-95-174,
ECP-14-072, 5P-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 14 OF 39



M-5 DRY WELL DETAIL
NOT TO SCALE



- CONCRETE SIDEWALK DETAIL**
NO SCALE
- NOTES:
- SIDEWALK TO BE SCRIBED IN EQUALLY 5'-0" MAXIMUM SQUARES.
 - EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO MORE THAN 15' APART.
 - 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK. FILL WITH SEALANT.
 - 4000 PSI AIR ENTRAINED CONCRETE SHALL BE USED.
 - WHEN SIDEWALK ABUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB.
 - ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 48 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.
 - SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5'-0" MIN.
 - SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 5' X 5' PAVED SECTION PLACED 200' APART.
 - PROVIDE 1/2" EXPANSION JOINT WHERE WALKS ABUT EXISTING CONCRETE SURFACES TO REMAIN.

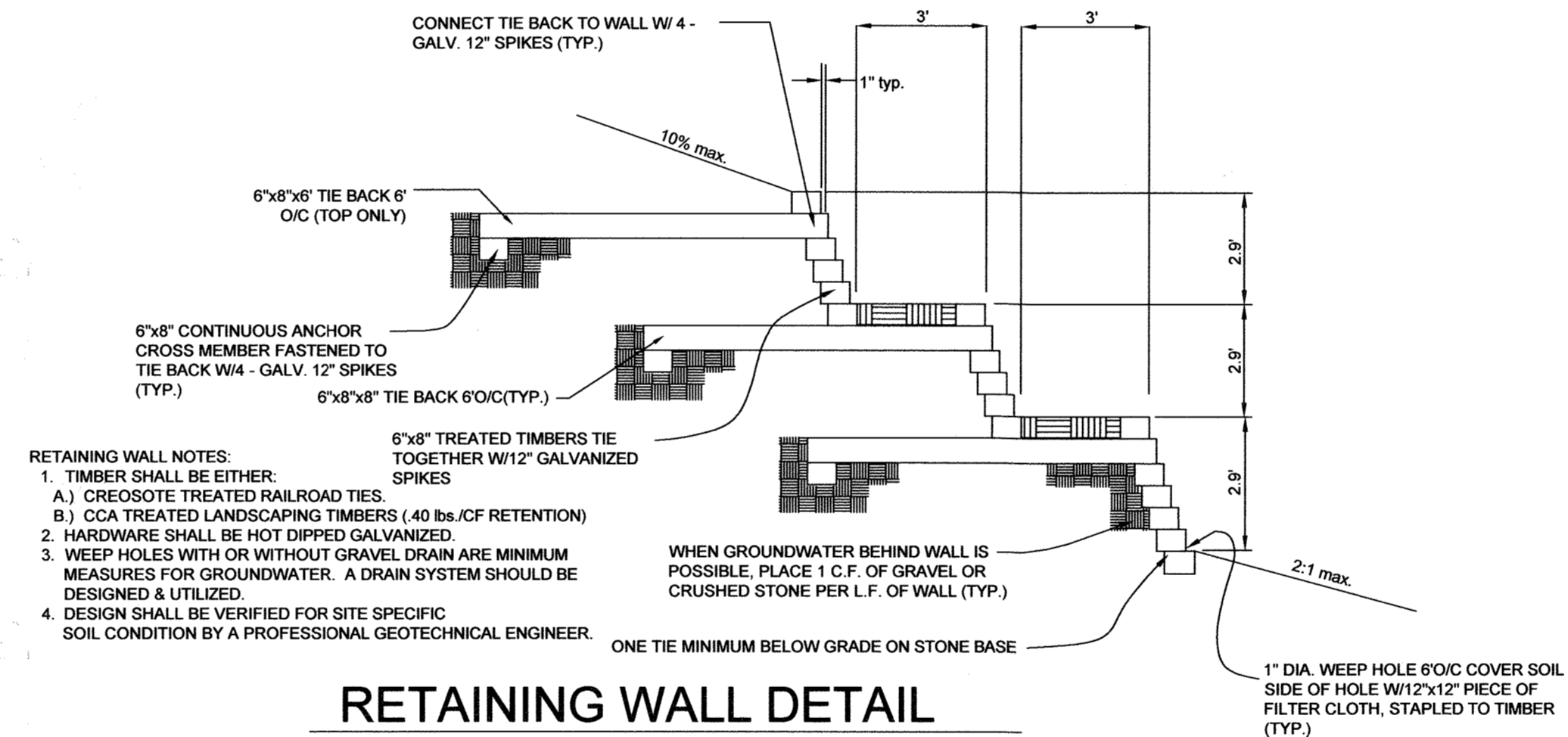


HANDICAP ACCESS PLAN
SCALE: 1" = 20'

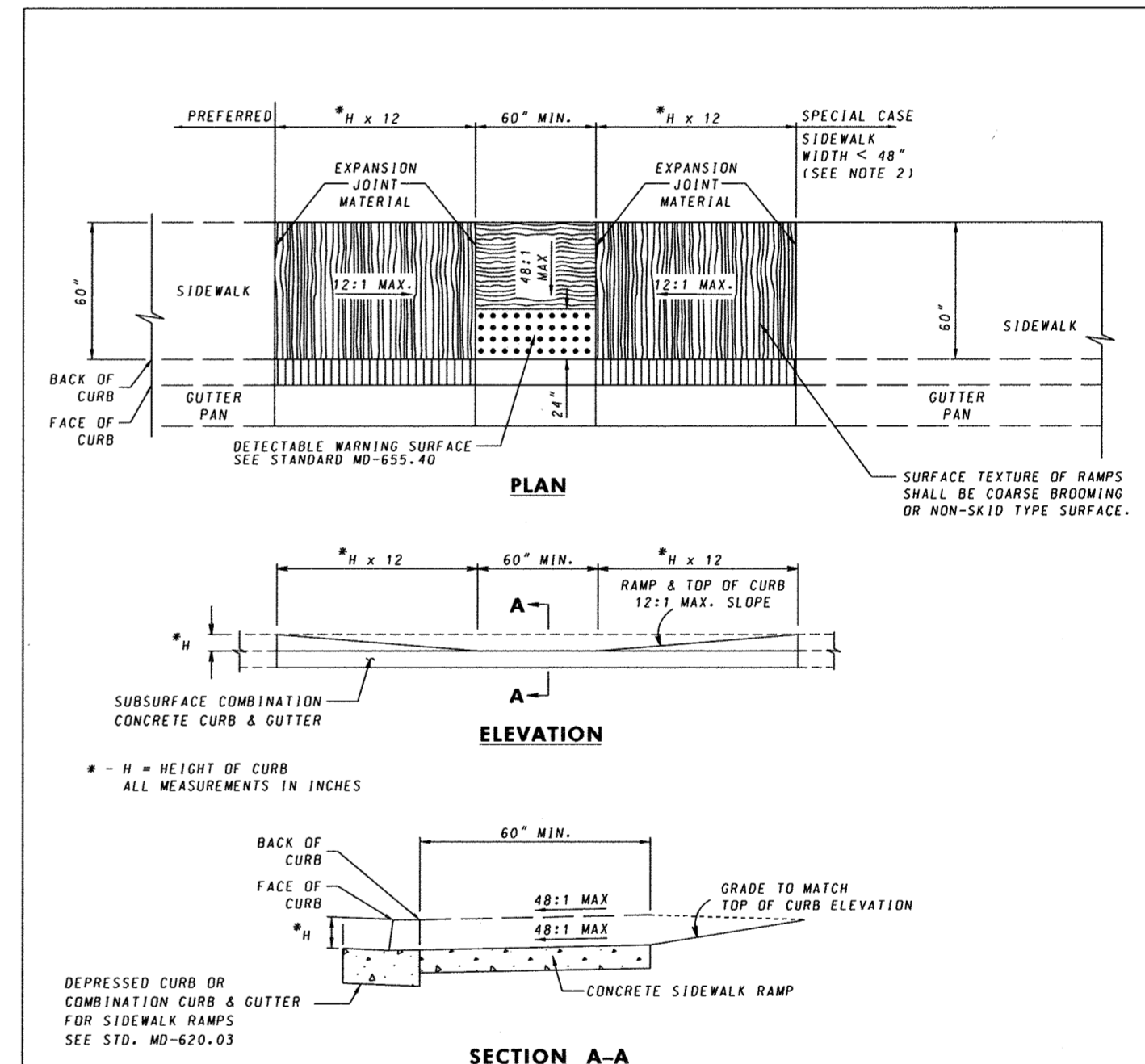
DRY WELL CHART

LOT NO.	NO. OF DOWNSPOUTS	AREA OF ROOF	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF STORAGE	AREA OF TREATMENT	NO. OF DRYWELLS	DIMENSIONS OF DRYWELLS
10512 MY GIRL PLACE LOT 1	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10514 MY GIRL PLACE LOT 2	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10516 MY GIRL PLACE LOT 3	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10518 MY GIRL PLACE LOT 4	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10520 MY GIRL PLACE LOT 5	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10524 MY GIRL PLACE LOT 6	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10526 MY GIRL PLACE LOT 7	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10528 MY GIRL PLACE LOT 8	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10530 MY GIRL PLACE LOT 9	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10532 MY GIRL PLACE LOT 10	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10536 MY GIRL PLACE LOT 11	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10538 MY GIRL PLACE LOT 12	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10540 MY GIRL PLACE LOT 13	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10542 MY GIRL PLACE LOT 14	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'
10544 MY GIRL PLACE LOT 15	2	550 SqFt	79 CuFt	83 CuFt	100%	100%	1	7.5' X 5.5' X 5'

NOTES:
1) A MODIFICATION TO THE STORAGE REQUIREMENT (DRYWELL SIZE) MAY BE DETERMINED WHEN THE ACTUAL HOUSE TYPE IS SITED ON THE INDIVIDUAL LOT.



RETAINING WALL DETAIL
NOT TO SCALE



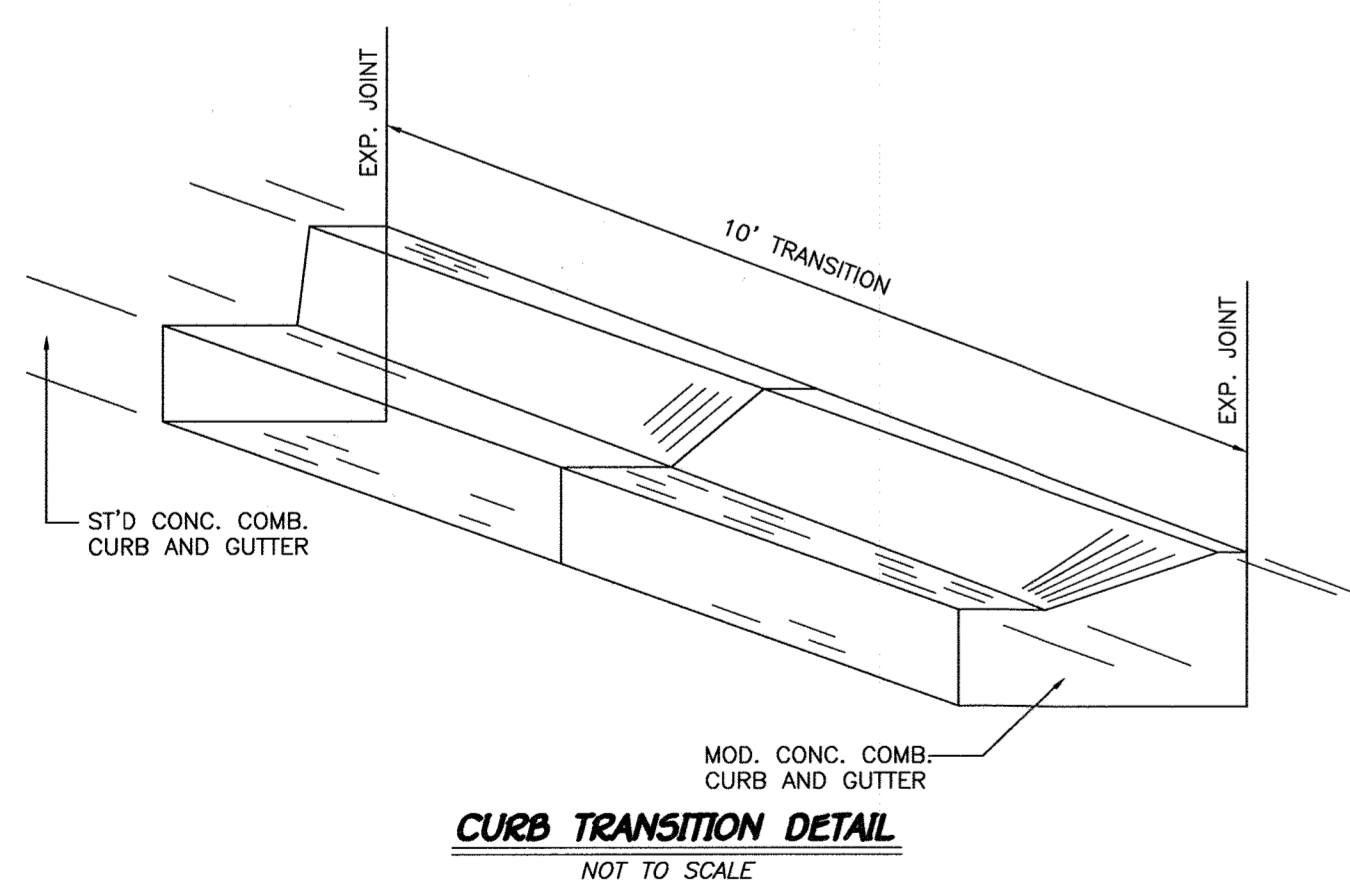
- NOTES**
- TO BE USED WHERE SIDEWALK IS ADJACENT TO THE CURB. THIS STANDARD MAY BE MODIFIED TO SUIT A PARTICULAR LOCATION.
 - WHERE 60" SIDEWALK CAN NOT BE PROVIDED, A DESIGN WAIVER MUST BE REQUESTED.
 - NO TRAVERSABLE SLOPE ON THE RAMP OR SIDEWALK SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL, OR 48:1 PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL. THE CROSS-SLOPE OF THE LANDING AREA CANNOT EXCEED GRADE OF ROADWAY.
 - EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STD. MD-655-01.
 - SIDEWALK RAMP TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE RAMP ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASES.
 - TRANSITION PANELS TO TIE INTO EXISTING SIDEWALK MUST BE A MINIMUM OF 5' IN LENGTH.

Specification 603 & 611

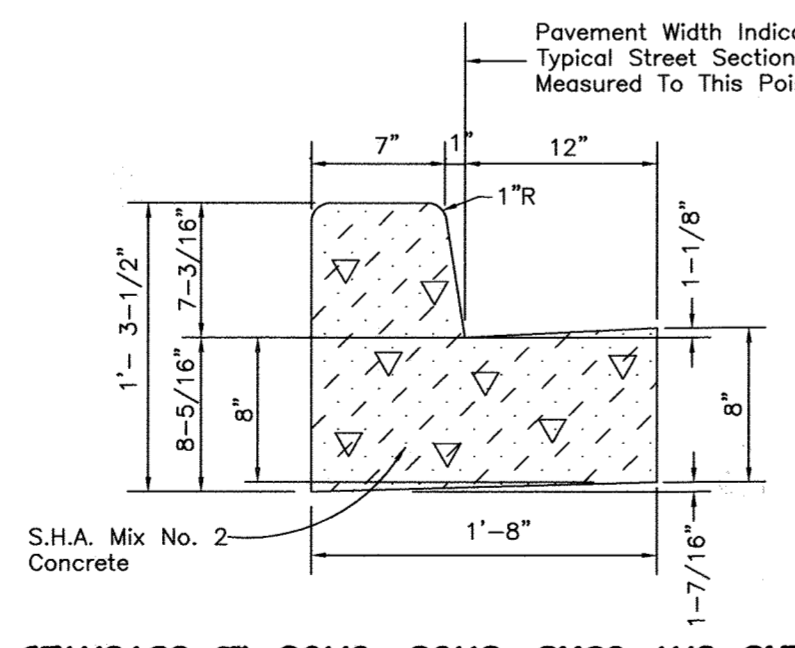
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SIDEWALK RAMP PARALLEL

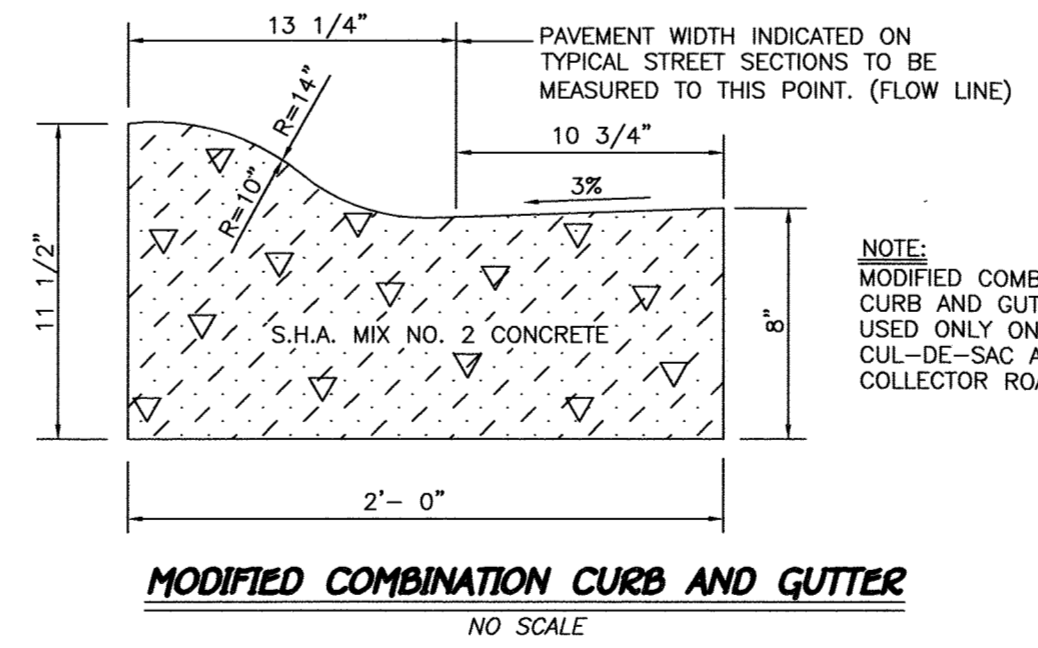
STANDARD NO. MD 655.12



CURB TRANSITION DETAIL
NOT TO SCALE



STANDARD 7' COMB. CONC. CURB AND GUTTER
NO SCALE



MODIFIED COMBINATION CURB AND GUTTER
NO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways

05/22/2017 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development

6-28-17 DATE

Chief, Development Engineering Division

5-31-17 DATE

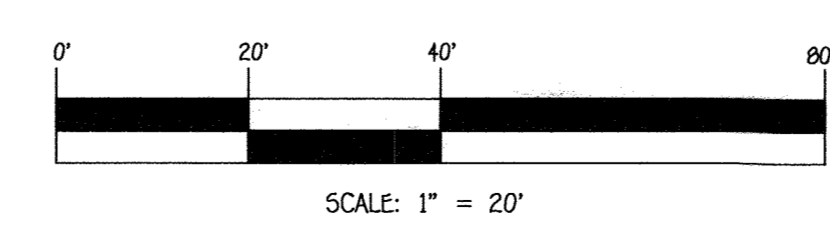
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CONTINENTAL SQUARE OFFICE PARK - 10222 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2855

NO.	DESCRIPTION	DATE
1	REMOVE DRY WELL CHART NOTE	1/9/10
2	REMOVE SOLID WASTE SERVICE AND DETAIL	6/4/10

OWNER/DEVELOPER

WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRIADAPLHIA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337

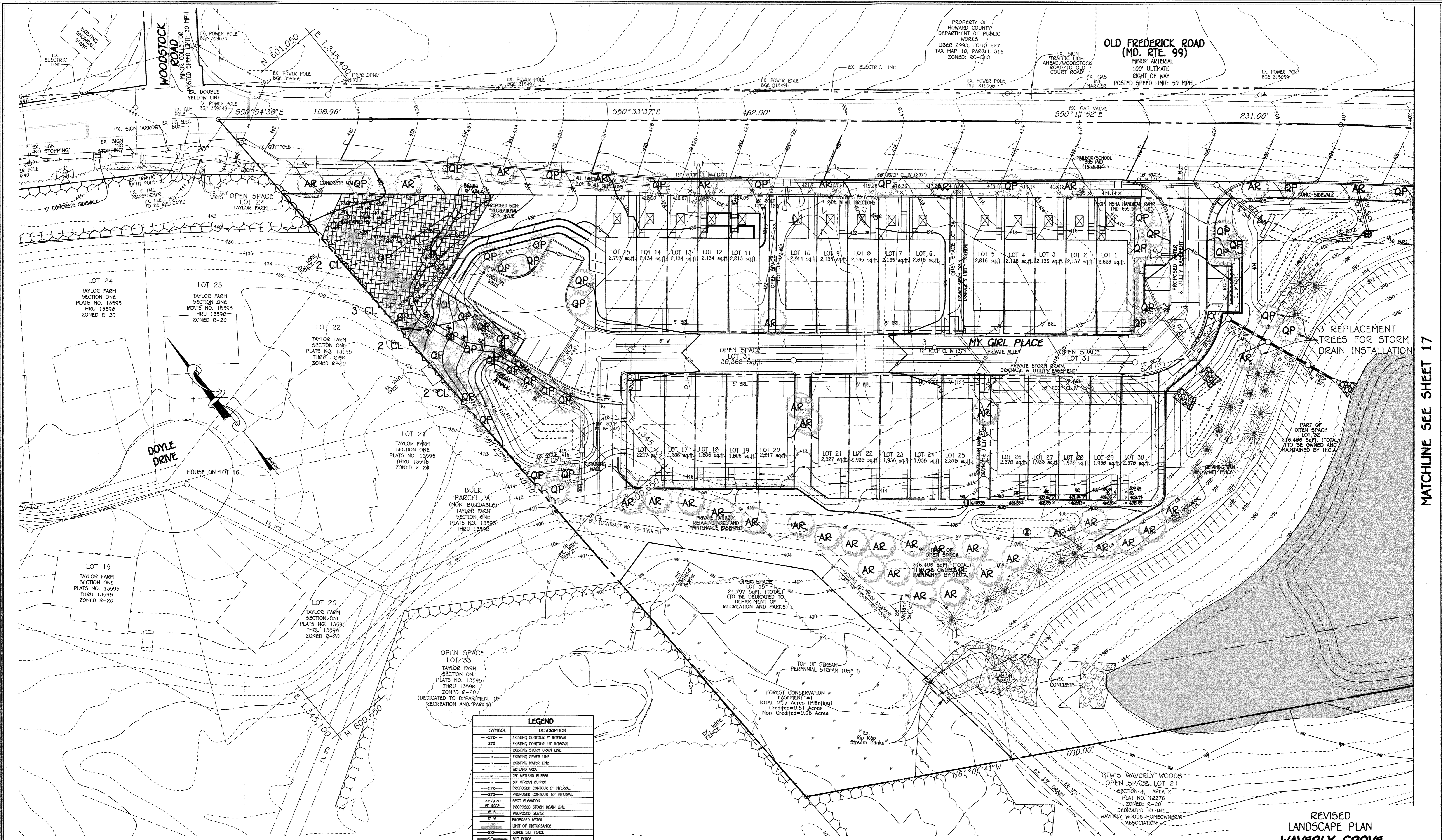


PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

Frank J. Manalangan II DATE: 4/16/17

DETAILS
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-SA-B
PREVIOUS HOWARD COUNTY FILES:
SDP-86-88, 5-94-07, P-95-07, F-95-174,
ECP-14-072, 5P-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 15 OF 39



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
 Chief, Bureau of Highways
 DATE: 2/12/18

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
 Chief, Division of Land Development
 DATE: 2-27-18

[Signature]
 Chief, Development Engineering Division
 DATE: 2-23-18

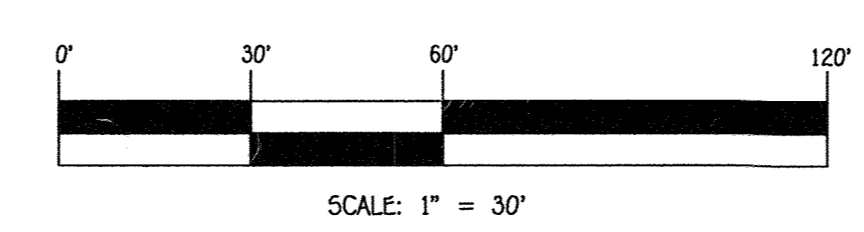
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2895

NO.	REVISIONS	DATE
1	REVISE STORM DRAIN, SWM AND REMOVE ASSOCIATED EASEMENT	1-8-18
2	REMOVE LANDSCAPE WALL & REGRADE REAR OF LOTS 15 THRU 20	10/9/18
3	REMOVE HUMPER BOX, REMOVE WALK & GRASSMATS IN OPEN LOT 32	6/4/20

LEGEND

SYMBOL	DESCRIPTION
-272-	EXISTING CONTOUR 2' INTERVAL
-270-	EXISTING CONTOUR 10' INTERVAL
-	EXISTING STORM DRAIN LINE
-	EXISTING SEWER LINE
-	EXISTING WATER LINE
-	WETLAND AREA
-	25' WETLAND BUFFER
-	50' STREAM BUFFER
-272-	PROPOSED CONTOUR 2' INTERVAL
-270-	PROPOSED CONTOUR 10' INTERVAL
X279.30	SPOT ELEVATION
-	PROPOSED STORM DRAIN LINE
-	PROPOSED SEWER
-	PROPOSED WATER
-	LIMIT OF DISTURBANCE
-	SURFER SALT FENCE
-	SILT FENCE
-	15-24.99% SLOPES
-	25% AND GREATER
-	FOREST CONSERVATION EASEMENT
-	SWM BOILING
-	EXISTING TREE
-	PROPOSED STREET TREES
-	PROPOSED TREES
-	PUBLIC WATER & SEWER UTILITY EASEMENT
-	STORMWATER MANAGEMENT EASEMENT
-	RECREATIONAL OPEN SPACE
-	PRIVATE PATH, RETAINING WALL AND MAINTENANCE EASEMENT

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADELPHIA ROAD
 PO BOX 30
 GLENELL, MARYLAND 21137
 410-442-2337



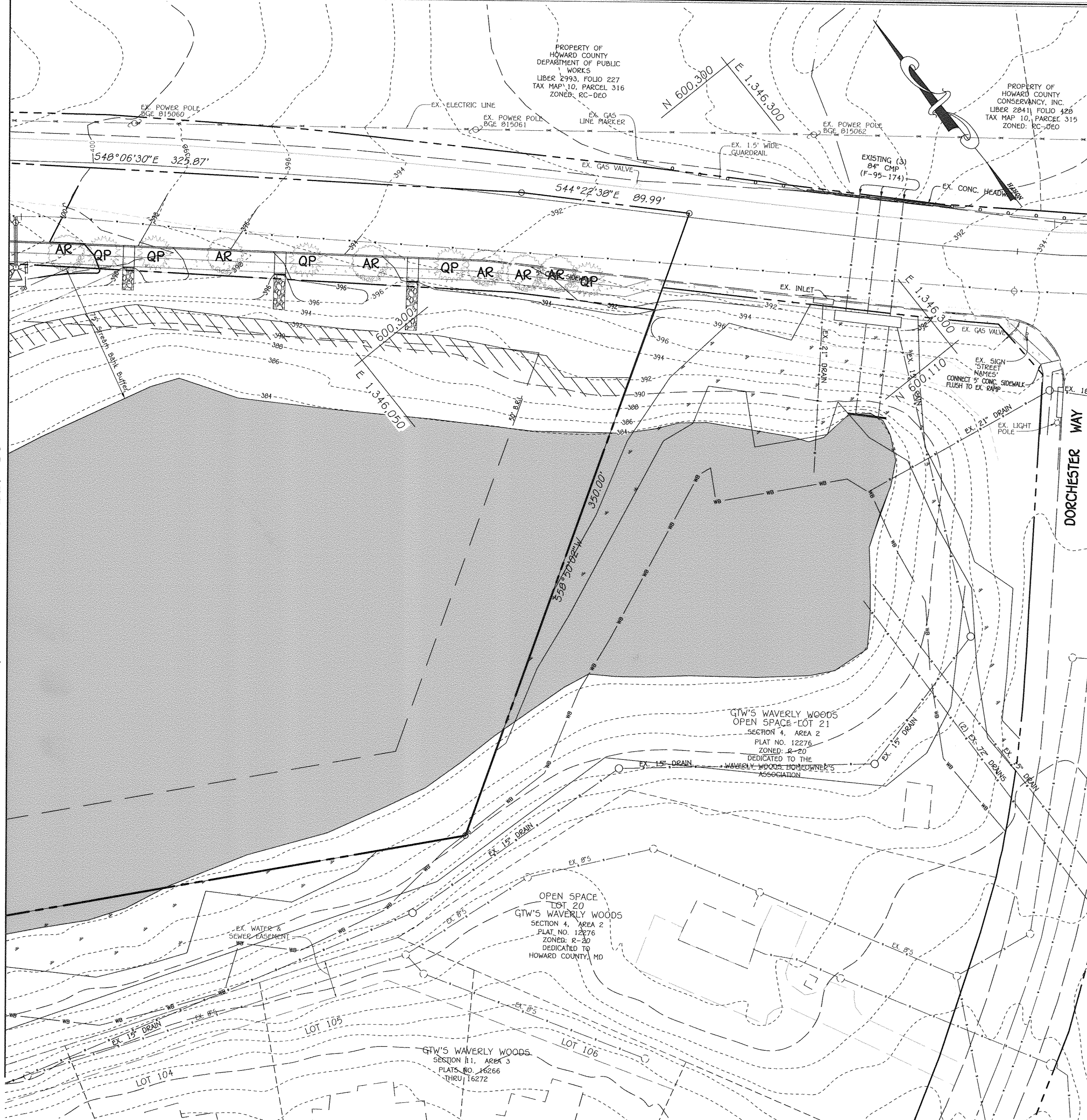
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/11/19.
[Signature]
 FRANK J. MANALANSAN II
 DATE: 1/2/18

**REVISED LANDSCAPE PLAN
 WAVERLY GROVE**

LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-08, 5-94-07, P-95-07, F-95-174,
 ECP-14-072, 5P-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: DECEMBER 6, 2017
 SHEET 16 OF 39

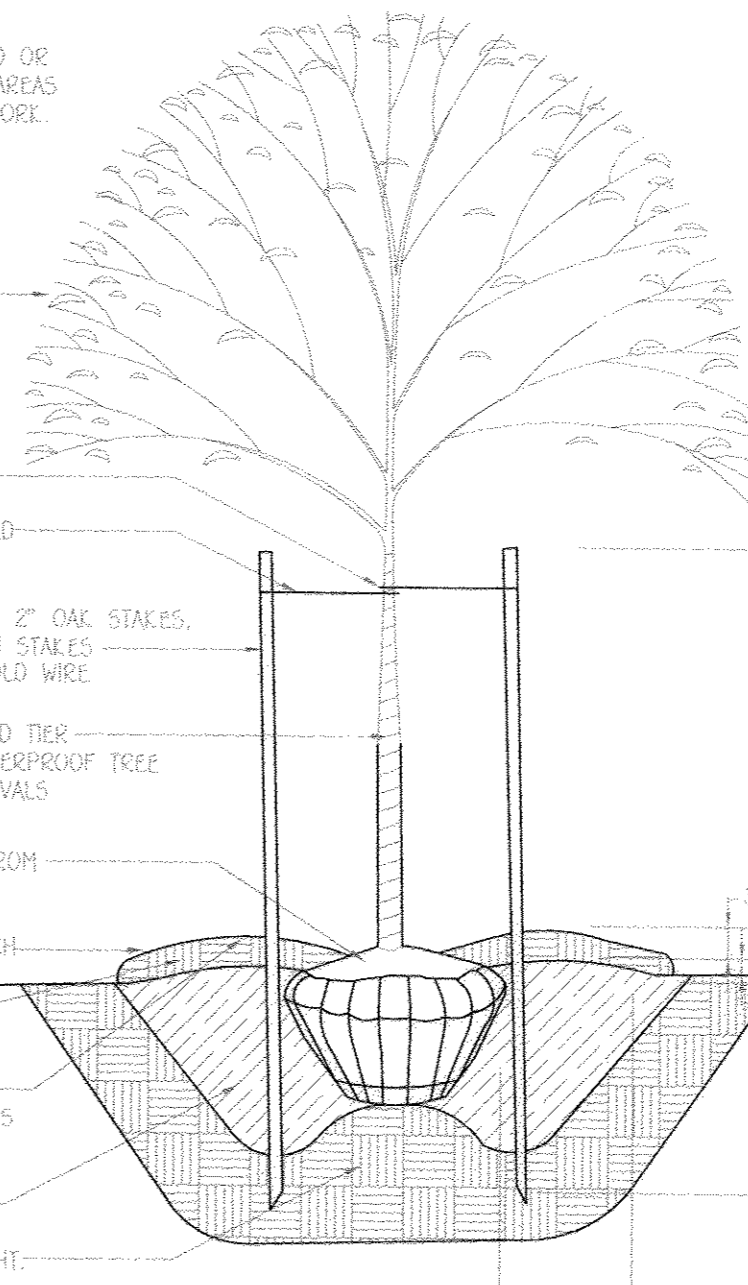
MATCHLINE SEE SHEET 17

MATCHLINE SEE SHEET 16



NOTE: CONTRACTOR TO REGRADE SOIL OR HYDROSEED AND STRAW MULCH ALL AREAS DISTURBED AS A RESULT OF THEIR WORK.
SPRAY WITH WILT-PROOF ACCORDING TO MANUFACTURER'S STANDARDS

PRUNE 1/3 LEAF AREA BUT RETAIN NATURAL FORM OF TREE
2 PIECES OF REINFORCED RUBBER HOSE
DOUBLE #12 GALVANIZED WIRE TWIN TWISTED
3-2" X 2" OAK STAKES, NOTCH STAKES TO HOLD WIRE
WRAP TRUNK TO SECOND TIER OF BRANCHES WITH WATERPROOF TREE WRAP, TIE AT 24" INTERVALS (EXCEPT EVERGREENS)
REMOVE ANY COVERING FROM TOP OF ROOT CROWN
3" MULCH
MAINTAIN GROUND LINE WITH TOP OF ROOT CROWN
CONSTRUCT 3" SAUCER RIM-FLOOD WITH WATER TWICE WITHIN 24 HOURS
TOP SOIL MIXTURE
CONVEX BOTTOM OF MIN. HT.



TREE PLANTING DETAIL

NOT TO SCALE

QTY	SIZE	COMMENTS
670/40 = 17 (17 x 2)	2 1/2 - 3" CAL	40' APART (1st Grd Place)
29 TREES	QP	Quercus Phellos Willow Oak

SINGLE FAMILY ATTACHED	
NUMBER OF PARKING SPACES	15
NUMBER OF TREES REQUIRED (1:10)	1 (substituted 10 Shrubs)

SINGLE FAMILY ATTACHED	
NUMBER OF DWELLING UNITS	30
NUMBER OF TREES REQUIRED (1:10) SFA	30
NUMBER OF TREES PROVIDED	30
SHADE TREES	30
OTHER TREES (2:1 SUBSTITUTE)	-

SYMBOL	DESCRIPTION
- - - - -	EXISTING CONTOUR 2' INTERVAL
- - - - -	EXISTING CONTOUR 10' INTERVAL
- - - - -	EXISTING STORM DRAIN LINE
- - - - -	EXISTING SEWER LINE
- - - - -	EXISTING WATER LINE
- - - - -	WETLAND AREA
- - - - -	20' WETLAND BUFFER
- - - - -	50' STREAM BUFFER
- - - - -	PROPOSED CONTOUR 2' INTERVAL
- - - - -	PROPOSED CONTOUR 10' INTERVAL
- - - - -	PROPOSED STORM DRAIN LINE
- - - - -	PROPOSED SEWER
- - - - -	PROPOSED WATER
- - - - -	LINE OF DISTURBANCE
- - - - -	50'X8' SLOPE
- - - - -	15-24.9% SLOPES
- - - - -	25% AND GREATER
- - - - -	FOREST CONSERVATION EASEMENT
- - - - -	SHRUB BUFFER
- - - - -	EXISTING TREE
- - - - -	PROPOSED STREET TREES
- - - - -	PUBLIC WATER & SEWER UTILITY EASEMENT
- - - - -	STORMWATER MANAGEMENT EASEMENT
- - - - -	RECREATIONAL OPEN SPACE
- - - - -	PRIVATE PATH, RETAINING WALL AND MAINTENANCE EASEMENT

SHA SPECIFICATIONS FOR TEMPORARY & PERMANENT STABILIZATION. REFER TO THE TABLE OF SHA LANDSCAPE NOTES IN THIS PLAN SET FOR REQUIREMENTS RELATED TO TOPSOIL, SEED, FERTILIZER, PLANTS, AND OTHER MATERIALS. SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS SHALL SUPERSEDE ALL OTHER SPECIFICATIONS FOR LANDSCAPE CONSTRUCTION WITHIN PROPERTY OF THE MARYLAND STATE HIGHWAY ADMINISTRATION (SHA), AND ALL LANDSCAPE CONSTRUCTION ON SHA PROPERTY SHALL CONFORM TO THE REQUIREMENTS OF THE SHA LANDSCAPE NOTES AND CURRENT SHA STANDARDS AND SPECIFICATIONS.

PLANTING SPECIFICATIONS

PLANTS, RELATED MATERIALS AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS SHOWN ON THE PLANS AND AS DESCRIBED HEREIN.
ALL PLANT MATERIAL UNLESS OTHERWISE SPECIFIED SHALL BE NURSERY GROWN, UNBROWNEDED, HAVE A WELLSIDE ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, SOIL AND SHADE REQUIREMENTS OF THE PLANT LIST AND THE AMERICAN ASSOCIATION OF PROFESSIONAL LANDSCAPE ARCHITECTS (AASLA) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, INJURY, DISEASE, ROOTS, SOIL BOUND, AND/OR OTHER DEFECTS. PLANT MATERIAL SHALL BE PLANTED TO MEET SPECIFIED REQUIREMENTS. PLANT MATERIAL SHALL BE PLANTED TO MEET SPECIFIED REQUIREMENTS. PLANT MATERIAL SHALL BE PLANTED TO MEET SPECIFIED REQUIREMENTS.
UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, LOCALS AND PLANTING OPERATIONS SHALL CONFORM TO "LANDSCAPE SPECIFICATION" PUBLISHED BY THE AMERICAN ASSOCIATION OF PROFESSIONAL LANDSCAPE ARCHITECTS (AASLA) AND THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS (ASLA).
CONTRACTOR SHALL BE RESPONSIBLE FOR GUARANTEEING ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE SPECIFICATIONS. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.
CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES, UTILITY LOCATIONS AND "TWO UTILITY" A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID COLLISIONS WITH UTILITIES. DAMAGE TO EXISTING STRUCTURES AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED BY THE TEMPORARY INSTALLATION OF A FOUR FOOT HIGH CHAIN FENCE OR PLASTIC COVERING SAFETY FENCE AT THE TREE LINE.
CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION.
SOIL SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA FERTILIZER SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS ARISING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.
PLANT QUANTITIES AND PROVIDED FOR THE CONSTRUCTION OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLANS AND THESE QUANTITIES ON THE PLANT LIST, THE QUANTITIES ON THE PLANT LIST PRECEDE.
ALL SHRUBS SHALL BE PLANTED IN CONTAINERS, FREEMAN OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HAYWOOD MULCH AS SHOWN AND SPECIFIED (EIGHT INCHES DEEP FOR SHRUBS).
POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS (2 PERCENT SLOPE).
PLANTING BEDS SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PART TOPSOIL, ONE PART WELL-COMPOSTED FERTILIZER OR HORSE MANURE. ADD 3 LBS. OF STIMULATED FERTILIZER FOR EACH TREE OF PLANTING BED. EVERGREEN PLANTS - TWO PART TOPSOIL, ONE PART WELL-COMPOSTED FERTILIZER OR HORSE MANURE. ADD 3 LBS. OF FERTILIZER PER TREE. FERTILIZER FOR EACH TREE OF PLANTING BED. FERTILIZER SHALL CONFORM TO THE LANDSCAPE SPECIFICATIONS.
WATERING: RECOMMEND A FIRE-RESISTANT HERRINGBONE OR FIBER REINFORCED POLYESTER NETTING OR LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE OPERATIONAL USE TO ASSURE ITS APPLICABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.
ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND TREES SHALL BE FINE GRADED AND SEEDED.
THIS PLAN IS PREPARED FOR LANDSCAPE USE ONLY. SEE OTHER PLAN SHEETS FOR MORE INFORMATION ON GRADING, SEWER, CONCRETE, LAYOUT, ETC.

QTY	SIZE	COMMENTS
1,218.73/40 = 30.47	2 1/2 - 3" CAL	40' APART (MD RT 99)
30 TREES	AR	Acer Rubrum 'Armstrong' Red Maple
	QP	Quercus Phellos Willow Oak

SYMBOL	QUANTITY	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
QP	5	Quercus Phellos Willow Oak	2 1/2 - 3" CAL	
AR	30	Acer Rubrum 'Armstrong' Columnar Red Maple	2 1/2 - 3" CAL	
CL	9	Cupressocyparis Leylandii Leyland Cypress	5' - 6' HT	
	10	Abelia x Grandiflora Glossy Abelia	18" - 24" SP.	

NOTE: THE PERIMETER LANDSCAPE OBLIGATION IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A LANDSCAPE SURETY IN THE AMOUNT OF \$17,250.00 BASED ON 53 SHADE TREES @ \$300/SHADE TREE, 9 EVERGREEN TREES @ \$150/EVERGREEN SHALL BE BONDED AS PART OF THE DPW DEVELOPERS AGREEMENT.

LANDSCAPE DEVELOPER'S CERTIFICATE
I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/we further certify that upon completion a certification of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.
[Signature]
Developer
4-7-17
Date

This plan has been prepared in accordance with the provision of Section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required landscaping will be posted as part of the developer's agreement.

PERIMETER CATEGORY	ADJACENT TO ROADWAY (SFA FRONT TO ROADWAY)	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	NONE	A	C	A
LINEAR FEET OF PERIMETER	1,182 LF	1,400 LF	166 LF	197 LF
CREDIT FOR EXISTING VEGETATION (LINEAR FEET (LF) OF CREDIT REMAINING PERIMETER (LF))	0	YES: 400' ALTERNATE PERIMETER CONSERVATION EASEMENT	NO	YES: 197' ALTERNATE PERIMETER CONSERVATION EASEMENT
NUMBER OF PLANTS REQUIRED	0	17	5	9
SHADE TREES	0	17	5	9
EVERGREEN TREES	0	0	0	0
CREDIT FOR EXISTING VEGETATION (SHADE TREES)	0	YES: PERIMETER PLANTINGS FROM F-95-174	0	0
SHADE TREES	0	0	0	0
EVERGREEN TREES (2:1 SUBSTITUTE)	0	0	0	0
NUMBER OF PLANTS PROVIDED	0	0	5	9
SHADE TREES	0	0	5	9
SMALL/MEDIUM DECIDUOUS OR EVERGREEN TREES (2:1 SUBSTITUTE)	0	0	0	0
SHRUBS (10:1 SUBSTITUTE)	0	0	0	0

LANDSCAPE PLAN
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-5A-8
PREVIOUS HOWARD COUNTY FILES:
SDP-06-08, S-94-07, P-95-07, F-95-174,
ECP-14-072, SP-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 17 OF 39

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
[Signature]
FRANK J. MANALANSAN II
DATE: 4/12/17

OWNER/DEVELOPER
WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRIANGLE ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337

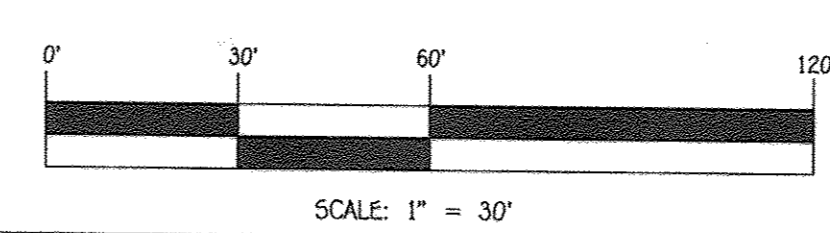
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
Chief, Bureau of Highways
05/22/2017
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
Chief, Division of Land Development
6-28-17
DATE

[Signature]
Chief, Development Engineering Division
5-21-17
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2895

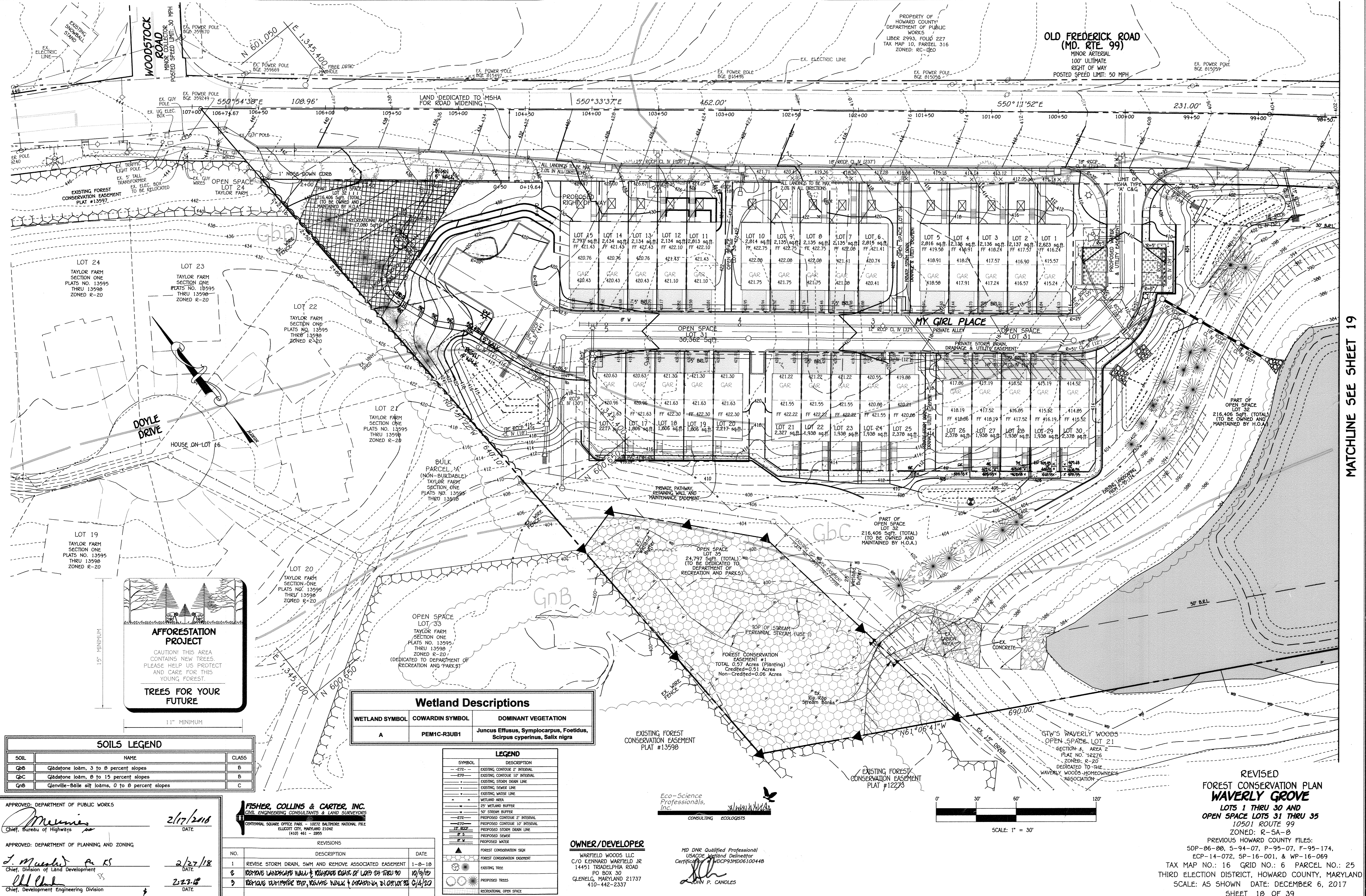
NO.	REVISIONS DESCRIPTION	DATE



**OLD FREDERICK ROAD
(MD. RTE. 99)**
MINOR ARTERIAL
100' ULTIMATE
RIGHT OF WAY
POSTED SPEED LIMIT: 50 MPH

WOODSTOCK ROAD
MINOR COLLECTOR
POSTED SPEED LIMIT: 30 MPH

PROPERTY OF
HOWARD COUNTY
DEPARTMENT OF PUBLIC
WORKS
LIBER 2993, FOLIO 227
TAX MAP 10, PARCEL 316
ZONED: RC-100



MATCHLINE SEE SHEET 19

AFFORESTATION PROJECT

CAUTION! THIS AREA CONTAINS NEW TREES. PLEASE HELP US PROTECT AND CARE FOR THIS YOUNG FOREST.

TREES FOR YOUR FUTURE

Wetland Descriptions

WETLAND SYMBOL	COWARDIN SYMBOL	DOMINANT VEGETATION
A	PEM1C-R3UB1	Juncus Effusus, Symlocarpus, Foetidus, Scirpus cyperinus, Salix nigra

SOILS LEGEND

SOIL	NAME	CLASS
Gbb	Gladstone loam, 3 to 8 percent slopes	B
GbC	Gladstone loam, 8 to 15 percent slopes	B
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C

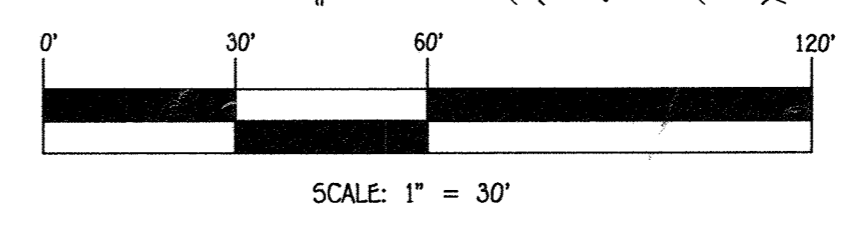
LEGEND

SYMBOL	DESCRIPTION
- - - - -	EXISTING CONTOUR 2' INTERVAL
- - - - -	EXISTING CONTOUR 10' INTERVAL
- - - - -	EXISTING SEWER LINE
- - - - -	EXISTING WATER LINE
- - - - -	WETLAND AREA
- - - - -	25' WETLAND BUFFER
- - - - -	50' STREAM BUFFER
- - - - -	PROPOSED CONTOUR 2' INTERVAL
- - - - -	PROPOSED CONTOUR 10' INTERVAL
- - - - -	PROPOSED STORM DRAIN LINE
- - - - -	PROPOSED SEWER
- - - - -	PROPOSED WATER
▲	FOREST CONSERVATION SIGN
○	FOREST CONSERVATION EASEMENT
○	EXISTING TREE
○	PROPOSED TREES
○	RECREATIONAL OPEN SPACE

OWNER/DEVELOPER
WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRIADAPHIA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACE Wetland Designer
Certified # WDCP93MD0610044B
JOHN P. CANOLES



APPROVED: DEPARTMENT OF PUBLIC WORKS
M. Munnies
Chief, Bureau of Highways
DATE: 2/17/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING
L. Munnies
Chief, Division of Land Development
DATE: 2/27/18

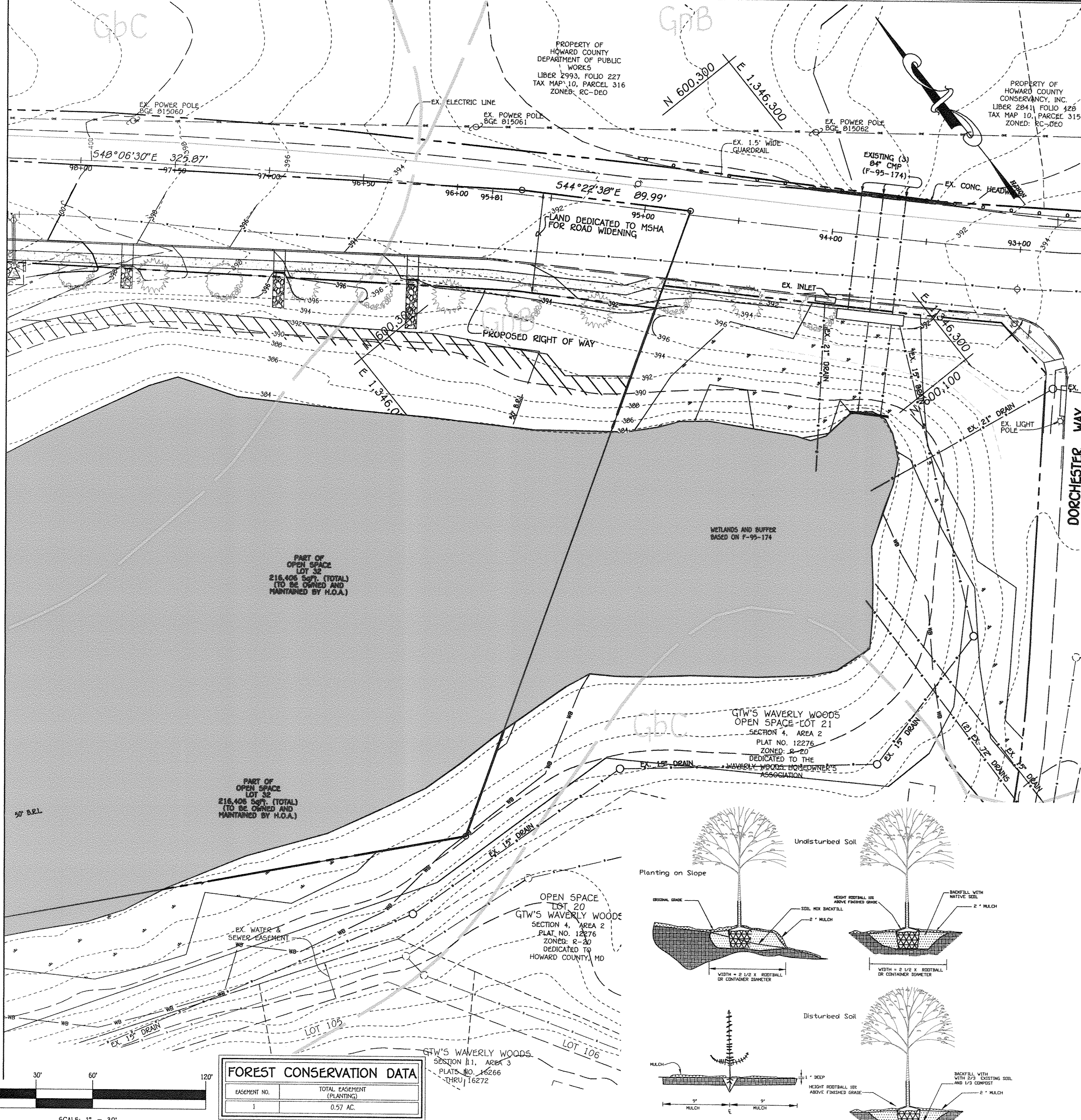
ell ch
Chief, Development Engineering Division
DATE: 2-23-18

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 481-2895

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISE STORM DRAIN, SWM AND REMOVE ASSOCIATED EASEMENT	1-8-18
2	REMOVE LANDSCAPE WALL & REPAIR REAR OF LOTS 29 THRU 30	10/9/18
3	REMOVE EXISTING PAV, RESUME WALK & CURBING IN OPEN LOT 31	2/4/20

REVISED
**FOREST CONSERVATION PLAN
WAVERLY GROVE**
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-SA-8
PREVIOUS HOWARD COUNTY FILES:
SDP-86-08, S-94-07, P-95-07, F-95-174,
ECP-14-072, SP-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER 6, 2017
SHEET 18 OF 39



SITE PREPARATION PLANTING

Undisturbed Sites
Soils disturbance should be limited to the planting field for each plant. Planting field is a new term that reflects a change in recommended planting specifications. Research has shown that root systems of trees planted in the traditional holes with amended soils are likely to remain confined to the amended soil area. Such trees have lower survival rates. A planting field of radius = 5 x diameter of the root ball is recommended.
On steep slopes or erodible soils, soil disturbance should be limited to the planting field whose radius is equal to 2.5 diameter of the root ball.

PLANTING / SOIL SPECIFICATIONS

1. Planting of Nursery Stock Shall Take Place Between March 15th and April 30th or September 15th and November 15th.
2. A Twelve (12) Inch Layer of Topsoil Shall be Spread Over All Reforestation Areas Impacted by Site Grading To Assure A Suitable Planting Area. If Applicable, Disturbed Areas Shall be Seeded and Stabilized in Accordance With The Sediment & Erosion Control Plan For This Project. Planting Areas Not Impacted by Site Grading Shall Have No Additional Topsoil Installed.
3. All Bare Root Planting Stock Shall Have Their Root System Dipped Into An Anti-Dessicant Gel Prior To Planting.
4. Plants Shall be Installed So That The Top of The Root Mass is Level With The Top of Existing Grade. Backfill in the Planting Pit Shall Consist of 3 Parts Existing Soil to 1 Part Pine Fines or Equivalent.
5. Fertilizer Shall Consist of Agriform 22-8-2, Or Equivalent, Applied As Per Manufacturer's Specifications.
6. A Two (2) Inch Layer of Hardwood Mulch Shall be Placed Over The Root Area of All Plantings. See Planting Detail.
7. Plant Material Shall be Transported To The Site In A Tarped Or Covered Truck. Plants Shall be Kept Moist Prior To Planting.
8. All Non-Organic Debris Associated With The Planting Operation Shall be Removed From The Site By The Contractor.

SEQUENCE OF CONSTRUCTION FOR AFFORESTATION AREAS

1. Sediment Controls And Tree Protective Devices Shall be Installed in Accordance With Sediment & Erosion Control Plans For This Site. If Applicable, Site Shall be Graded In Accordance With The Plans. (2 Days)
2. Proposed Reforestation Area Impacted by the Site Grading Shall be Topsoiled And Stabilized As Per Note 2 Of The "Planting / Soil Specifications". (1 Day)
3. Plants Shall be Installed And Maintained As Per Notes And Specifications For This Project. (1 Week)
4. Upon Completion Of The Plantings, Signage Shall be Installed As Per The Signage Detail. (1 Week)
5. Plantings Shall be Guaranteed And Maintained in Accordance With The "Guarantee Requirements" And "Maintenance Of Plantings" Associated With This Project. (2 Years)

MAINTENANCE OF PLANTINGS

1. Maintenance Of Plantings Shall Last For A Period Of 26 Months.
2. All Plant Material Shall be Generally Watered Twice A Month During The 1st Growing Season. Watering May be More Or Less Frequent Depending On Weather Conditions.
3. During The 2nd Growing Season, Plant Material Shall be Watered Once A Month From May To September, As Needed.
4. Invasive Exotics And Noxious Weeds Shall be Removed From The Reforestation Area(s). Old Field Successional Species Shall be Retained.
5. Plants Shall be Examined A Minimum Of Two (2) Times During The Growing Season For Serious Plant Pests And Diseases With The Appropriate Agent.
6. Dead Branches Shall be Pruned From The Plantings.

DEAD BRANCHED PRUNED PROTECTION PROGRAM

It is crucial to protect forest conservation areas from damage or degradation when approved development projects are under construction. In addition to not clearing the trees themselves, the developer must ensure that soil is not compacted, that site drainage is not drastically altered, and that no harmful practices such as washing of equipment or storage of materials will occur where they will create stresses on future health of communities. Areas set aside for reforestation or afforestation must also be protected or adequately prepared for the proposed planting. Compliance with the construction period protection program is necessary to secure the release of obligations and bonds established by the developers agreement. The survival rate for afforestation and reforestation areas shall be a minimum of 100 trees per acre or at least 75% of the total number of trees planted per acre under the approved plan, whichever is greater.
To protect the integrity of forest retention, reforestation or afforestation areas the construction period protection program must specify the following:
- Limit of disturbance lines.
- Treatment of the edge of surviving forest stands to adjust them to the new environmental conditions (selective thinning, pruning, removal of species susceptible to windthrow).
- Protective measures such as fencing, signs, etc. that will prevent unpermitted intrusions into the forest conservation areas.
- Designation of appropriate areas for storage of equipment, vehicles (including employee parking), building materials, debris, etc.
- Treatments to restore or enhance suitability for planting (soil preparation, removal of noxious weeds or invasive species).
- Project construction sequence.
- Timing of reforestation or afforestation plantings during construction period and how they will be coordinated with development activities.
- Qualified professional(s) responsible for monitoring forest conservation requirements and performing any necessary construction period management, stress reduction, watering, or corrective activities.
- Installation of any permanent protective devices required by the approved forest conservation plan.
Appendix C contains information on soil and forest protection techniques. Activities that will not cause damage to forest resources may be permitted during the construction period as long as they have been specified in the approved forest conservation plan. Such activities would include:
- Maintenance activities (watering, spraying, control of noxious weeds and invasives).
- Selective thinning and pruning to remove diseased trees or damaged vegetation.
- Planting of supplemental plant material.
- Stabilization measures to check existing erosion problems.
- Trails located and built as specified in Chapter V.
- Passive recreation facilities.
- Utility lines installed.
- Removal and replacement of dead reforestation or afforestation plantings.
Certification that specified survival rates have been met.

POST CONSTRUCTION PROTECTION PROGRAM

A post-construction protection and management program is required to give the forest resources saved or planted as part of the development proposal a high probability of achieving the survival rates required for release of surety, as well as long-term survival. Post-construction management includes:
- Maintaining necessary site measures (e.g. fences) to prevent unwarranted intrusions and activities.
- Removal of all temporary structures after construction.
- Periodic inspection for continued compliance with the forest conservation requirements.
- Thinning, watering, fertilizing or other required measures to ensure survival and growth.
- Removal and replacement of dead reforestation or afforestation plantings.
Certification that specified survival rates have been met.
The post-construction protection shall be for a minimum of 2 growing seasons, but may be longer when specific conditions warrant (e.g., use of seedlings or natural regeneration). In most cases, the professional responsible for construction period supervision of forest conservation requirements should also be responsible for the post-construction requirements.
A signed agreement detailing these post-construction activities shall be submitted for approval as part of the developers agreements for the project. The agreement shall also include bonding covering all costs of the necessary protection and management activities required by the post-construction protection program.
When the developer will not be the subsequent occupant or owner of the project, post-construction responsibilities include informing new owners or occupants (e.g. residents purchasing homes within the development) of the nature of all restrictions on their use of forest retention, reforestation areas and of the type and duration of the post-construction management activities. Such information can be conveyed by letters, signs posted on the property, submission of copies of the forest conservation plan or other methods chosen by the developer. Such communications should stress the developer's duties and a statement citing when new owners of the property, or their common legal representative (e.g. a home owners association) will assume full responsibility for the forest areas and restrictions imposed by the approved forest conservation plan.
The minimum post-construction protection period referenced above shall go into effect upon certification of the developer's completion of the construction period reforestation or afforestation activities. Successful completion of the post-construction protection shall be certified in writing by the responsible qualified professional and approved by the County. If a development is phased, separate agreements can be used for each separate phase, as long as completed forest conservation measures for prior phases will not be affected by construction activities for subsequent phases. For plantings to be certified as surviving a growing season, the planting must be completed by June 30. Credit is not granted for shorter segments of a growing season.
Appendix H contains the inspection certification form to be used for both initial installation certification and final two growing season survival certification. It also includes an inspection checklist that can be used as a guide to help identify problems and maintenance activities to ensure the required survival rate is achieved.

AFFORESTATION PLANTING NOTES

1. Plants, Related Material, And Operations Shall Meet The Detailed Description As Given On The Plans And As Described Herein.
2. Plant Material, Unless Otherwise Specified, Shall be Nursery Grown, Uniformly Branched And Have A Vigorous Root System. Plant Material Shall be Healthy, Vigorous Plants Free From Defects, Decay, Disturbing Roots, Sunscald Injuries, Abrasions Of The Bark, Plant Disease, Insect Pest Eggs, Bores, Infestations Or Objectionable Disfigurements. Plant Material That is Weak, Or Which Has Been Cut Back From Larger Grades To Meet Specified Requirements Will be Rejected. Trees With Forked Leaders Will Not be Accepted. Plants Shall be Freshly Dug; No Heeled-in Plants Or Plants From Cold Storage Will be Accepted.
3. Unless Otherwise Specified, Plant Material Shall Conform To "American Standard For Nursery Stock" ANSI Z60.1-1990, Published By The American Association Of Nurserymen, Including All Addenda.
4. Contractor Will be Required to Guarantee Plant Material For A Period of Two (2) Years After The Date Of Acceptance And Maintain A 75% Survivability At The End of The Two (2) Years.
5. To Lessen The Chance Of Loss, The Plantings Should be Checked From Time to Time to Insure That They Are Receiving Sufficient Water. See "Maintenance Of Plantings" For Guidelines.
6. The Location And Orientation Of All Plant Material Shall be Randomly Planted In Designated Reforestation Areas by the Contractor. Contractor Shall be Responsible For Moving Any Plant Material Installed Without Approval.
7. Mowing And Applying Herbicides To The Reforestation Area is Prohibited At Any All Stages Of The Planting Process In Order To Encourage The Existing Saplings To Grow.
8. Contractor is Responsible For Installing And Pruning Plant Material In The Proper Planting Season For Each Plant Type. See Tree Planting & Maintenance Calendar.
9. Upon Completion Of Installation, Signage Shall be Installed As Shown.

GUARANTEE REQUIREMENTS

A 75% Survival Rate For The Reforestation Plantings is Required At The End Of The 24 Month Maintenance Period. All Plant Material Below The 75% Threshold is Required To be Replaced At The Beginning Of The Next Growing Season.

FOREST CONSERVATION WORKSHEET VERSION 1.0

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	9.25
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	3.18
C. LAND DEDICATED FOR ROADS OR UTILITIES	0.00
D. NET TRACT AREA	6.07
LAND USE CATEGORY: HIGH DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 15%)	0.91
F. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 20%)	1.21
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	0.00
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	0.00
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	0.00
BREAKEVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	0.00
BREAKEVEN POINT	
K. CLEARING PERMITTED WITHOUT MITIGATION	0.00
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	0.00
M. TOTAL AREA OF FOREST TO BE RETAINED	0.00
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	0.00
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD	0.00
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	0.00
K. TOTAL REFORESTATION REQUIRED	0.00
S. TOTAL AFFORESTATION REQUIRED	0.91
T. TOTAL PLANTING REQUIREMENT	0.91

FCP NOTES

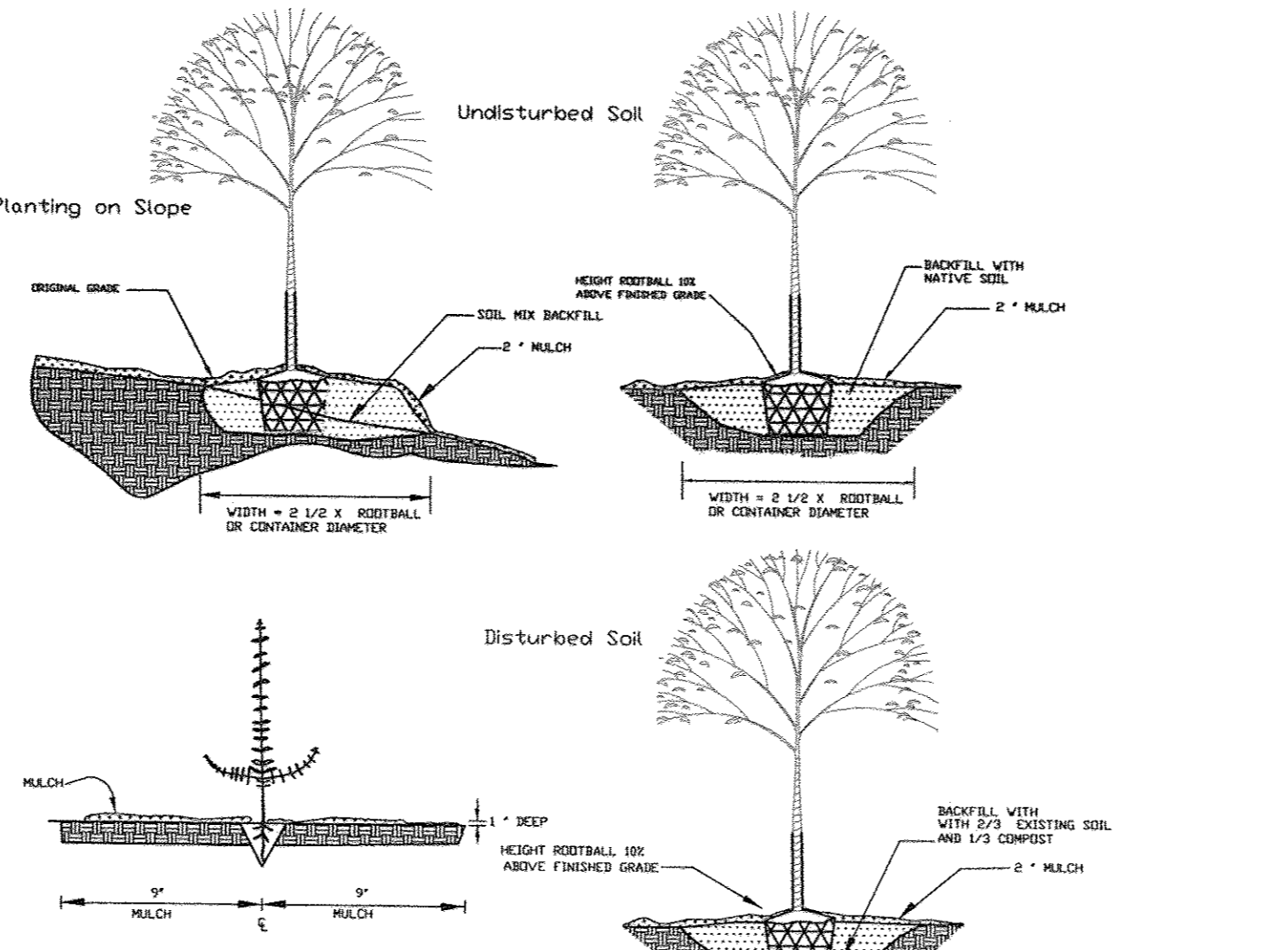
1. Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
2. Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
3. Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
4. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
5. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
6. Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 15 feet of the proposed limits of disturbance.
7. Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements. This signage will remain in perpetuity.
8. The Forest Conservation Act requirements will be met through the planting of 0.57 acres (Credited 0.51 acres) of forest onsite, and the remaining 0.40 acres - 0.51 acres) provided by a fee-in-lieu to be paid with the recording of the final plat.
9. No rare, threatened or endangered species or their habitats were observed on the property.
10. Surrounding land use consists of high density residential development, golf course use and County parkland.
11. The site is located in the Patapsco River watershed (02-13-09) and all wetlands and waters are classified as Use I - Water Contact Recreation by the Maryland Department of the Environment.
12. No forest or specimen trees are present on the project site.
13. No historic elements or cemeteries are known to occur on the property.
14. 100 year floodplains enclose approximately 3.18 acres of the property.
15. Approximately 0.5 acres of forest is present within 100 feet of property boundary. This signage shall stay in perpetuity.

FCE#1 Planting Area - 0.57 acres

Planting units required: 400
Planting units provided: 400 (130 whips and 40 trees)

Qty	Species	Size	Spacing	Total FCA Units
20	Acer rubrum - Red maple	1" cal.	15' o.c.	
20	Quercus palustris - Pin oak	1" cal.	15' o.c.	
No Total 1" caliper trees (2.5 planting units per tree) = 140 Total FCA unit credit				
30	Acer rubrum - Red maple	2-3" whip	11' o.c.	
26	Betula nigra - Sweet birch	2-3" whip	11' o.c.	
26	Quercus palustris - Pin oak	2-3" whip	11' o.c.	
26	Platanus occidentalis - Sycamore	2-3" whip	11' o.c.	
22	Salix nigra - Black willow	2-3" whip	11' o.c.	
130 Total whip plantings (2 planting units per tree) = 260 Total FCA unit credit				
Total Unit Credit (260 + 140) = 400				

1" CAL. TREES = 200/ACRE (40 TREES/200 = 0.2 AC.) = 140 Planting Units
WHIPS w/shelter = 500/ACRE = 350 x 0.37 AC. = 130 WHPS (260 Planting Units)
3.5 Planting units = 1" 1" Cal. Tree
2 Planting units = 1 whip



Seeding and Whip Planting Specification

THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT, NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

OWNER/DEVELOPER

WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRIADDELPHIA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS
MD DNR Qualified Professional
USACB Maryland Delineator
Certification # WDCP93M006100448
JOHN P. CANOLES

FOREST CONSERVATION DATA

EASEMENT NO.	TOTAL EASEMENT (PLANTING)
1	0.57 AC.

APPROVED: DEPARTMENT OF PUBLIC WORKS
James
Chief, Bureau of Highways
DATE: 05/22/2017

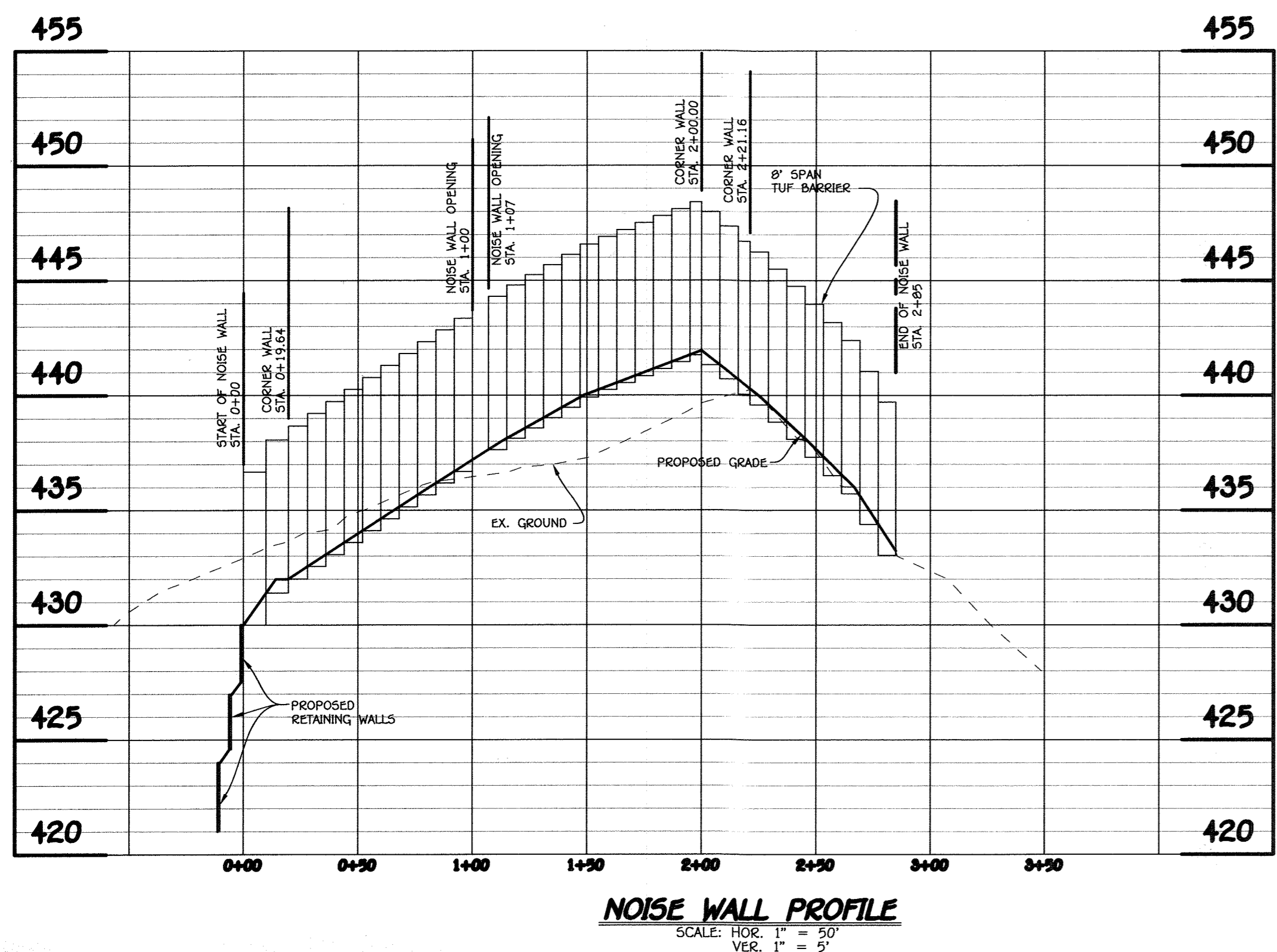
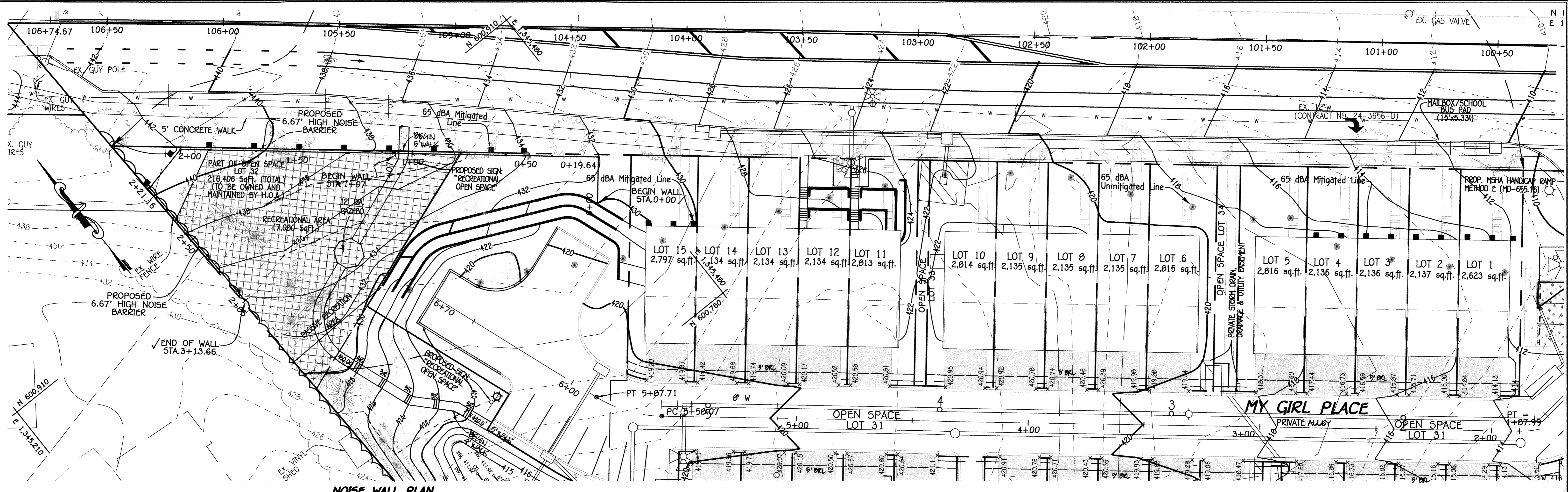
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Walter Salvo
Chief, Division of Land Development
DATE: 6-22-17

John P. Canoles
Chief, Development Engineering Division
DATE: 5-21-17

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2999

NO.	REVISIONS	DESCRIPTION	DATE

FOREST CONSERVATION PLAN AND DETAILS
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-SA-8
PREVIOUS HOWARD COUNTY FILES:
SDP-86-08, 5-94-07, P-95-07, F-95-174,
ECP-14-072, SP-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 19 OF 39



Product Specifications

	Silent Protector® (Absorptive)	Tuf Barrier® (Reflective)
Span	88'-12" (2.44 m - 3.66 m)	88'-14" (2.44 m - 4.27 m)
Panel Width	2.70 in (68.38 mm)	2.70 in (68.38 mm)
Panel Height	5.96 in ± .10 in (151.38 mm ± 0.25 mm)	5.96 in ± .10 in (151.38 mm ± 0.25 mm)
Weight	4.20 lb/ft² (20 kg/m²)	Min. 4.20 lb/ft² (20 kg/m²)
Wall Height	Greater than 307.9 m	Greater than 307.9 m
STC Rating	up to 32	up to 32
NRC Rating	1.0*	n/a

Sound Transmission Loss ASTM E90 / E413

Octave Band Number	2	3	4	5	6	7	STC
Center Frequency (Hz)	125	250	500	1000	2000	4000	
Silent Protector®	20	21	26	40	40	44	BATTINGS UP TO STC 36
Silent Protector® Plus	23	27	31	41	41	53	ASK FOR DETAILS
Tuf Barrier®	16	22	31	39	41	49	

Sound Absorption Coefficients ASTM C423 / E795

Octave Band Number	2	3	4	5	6	7	NRC
Center Frequency (Hz)	125	250	500	1000	2000	4000	
Silent Protector®	0.41	0.84	1.19	1.06	1	0.81	1.0
Silent Protector® Plus	0.38	0.68	1.11	0.99	1.01	0.87	0.95

STC - Sound Transmission Class
STC is an integer rating used to measure the decibel reduction through a partition. It states the number of decibels lost through that partition in a laboratory environment.

NRC - Noise Reduction Coefficient
NRC is a rating between 0 and 1 to indicate how absorbent a material is. An NRC of 0 means no sound waves are absorbed whereas a rating of 1 means all of the sound waves are absorbed.

NRC - Qualitative

0.4 or less	Poor
0.5 to 0.6	Moderate
0.6 to 0.7	Good
0.7 to 0.85	Very Good
> 0.85	Excellent
1.0	All Silent Protector®

AIL SOUND WALLS

Easy to install with local crews and reduced need for lifting equipment.

All Sound Walls are constructed with tongue and groove PVC panels. Panels are stacked and placed within standard steel posts to the required height and capped with a top panel. A standard panel is 10 ft. (3.0 m) in length and weighs only 21 lbs. (9.5 kg).

Legend:

- Top Panel
- Accidental Mineral Wool
- Flange Mounted Footing
- Direct Bury Footing

Legend:

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	SMI BORINGS
---	EXISTING TREE
---	PROPOSED TREES
---	65 dBA UNMITIGATED LINE
---	65 dBA MITIGATED LINE
---	PUBLIC WATER & SEWER UTILITY EASEMENT
---	RECREATIONAL OPEN SPACE
---	PRIVATE PATH, RETAINING WALL AND MAINTENANCE EASEMENT
---	DOWNWELL (R-5) TYPICAL
---	PROPOSED SEWER
---	BIO RETENTION FACILITY (F-5) OR (M-5) AS NOTED

NOISE WALL DETAIL
(OR APPROVED EQUAL)

AIL SOUND WALLS

For project planning and assistance call toll-free 1-866-231-7867, or email: info@ailsoundwalls.com

Easy to install with local crews and reduced need for lifting equipment.

All Sound Walls are constructed with tongue and groove PVC panels. Panels are stacked and placed within standard steel posts to the required height and capped with a top panel. A standard panel is 10 ft. (3.0 m) in length and weighs only 21 lbs. (9.5 kg).

Legend:

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
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---	DOWNWELL (R-5) TYPICAL
---	PROPOSED SEWER
---	BIO RETENTION FACILITY (F-5) OR (M-5) AS NOTED

NOISE WALL DETAILS
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-SA-0
PREVIOUS HOWARD COUNTY FILES:
SDP-06-08, 5-94-07, P-95-07, F-95-174,
ECP-14-072, 5P-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 20 OF 39

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways
DATE: 05/24/2017

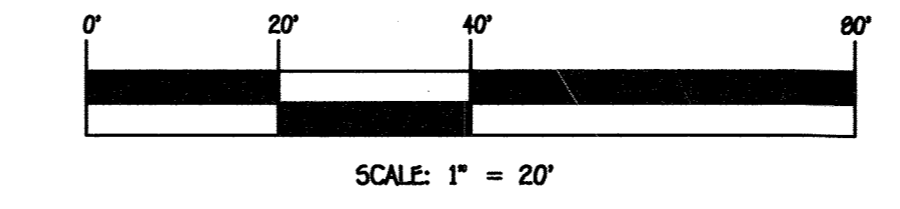
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development
DATE: 6-28-17

Chief, Development Engineering Division
DATE: 5-31-17

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL Pk.
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2995

NO.	DESCRIPTION	DATE
1	ADD LANDSCAPE WALLS ON LOTS 11 & 12	1/8/10
2	REMOVE DUMPER PAD, REMOVE WALK & GRASSY IN ON LOT 11 & 12	6/4/10

OWNER/DEVELOPER
WAGFIELD WOODS LLC
C/O KENNEDY WAGFIELD JR
14451 TRADELPHIA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
DATE: 4/12/17

CODES

- INTERNATIONAL BUILDING CODE (IBC) 2015
- AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 2012".

GENERAL NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL WORK SHOWN IN THIS STRUCTURAL SECTION OF THE DRAWINGS WITH ALL WORK SHOWN IN ALL THE OTHER SECTIONS OF THE CONTRACT DRAWINGS. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE CONTRACTOR'S FAILURE TO PROVIDE THIS COORDINATION EFFORT.
- DIMENSIONS, LOCATIONS, AND ELEVATIONS OF EXISTING STRUCTURES SHOWN ON THE CONTRACT DRAWINGS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- SIZES AND LOCATIONS OF EQUIPMENT RELATED TO OPENINGS, ARE DEPENDENT UPON THE ACTUAL EQUIPMENT FURNISHED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATE SUCH ITEMS. NO DIMENSIONS ON THESE DRAWINGS SHALL BE ALTERED WITHOUT THE ENGINEER'S APPROVAL. ALL EQUIPMENT SUPPORTS REQUIRED MAY NOT BE SHOWN ON THIS DRAWING. SEE CIVIL AND ELECTRICAL DRAWINGS FOR SIZES AND LOCATIONS OF SUCH SUPPORTS.
- PRINCIPAL OPENINGS ARE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL REVIEW THE CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS FOR THE REQUIRED OPENINGS TO BE PROVIDED WHETHER SHOWN ON THESE DRAWINGS OR NOT. VERIFY THE SIZE AND LOCATION OF ALL OPENINGS WITH THE MECHANICAL AND ELECTRICAL CONTRACTOR AND SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL.

DESIGN LOADS / PARAMETERS

- LIVE LOAD SURCHARGE = 100 PSF
- F.S. 2.0 FOR OVERTURNING FAILURE
- F.S. 2.0 FOR SLIDING FAILURE
- BACKFILL ANGLE OF INTERNAL FRICTION = 35° (ASTM #57 STONE)
- BACKFILL ANGLE OF INTERNAL FRICTION = 25° (SITE SOIL)
- ALLOWABLE BEARING PRESSURE = 2000 PSF

FORMWORK

- FORMWORK SHALL BE DESIGNED IN ACCORDANCE WITH ACI 347 "GUIDE TO FORMWORK FOR CONCRETE."

FOUNDATIONS

- EXCAVATION FOR FOOTING SHALL BE NEAT. PLACE CONCRETE IMMEDIATELY AFTER EXCAVATION AND INSPECTION. WATER ACCUMULATION IN FOOTING SHALL BE PUMPED OUT.
- SEE GEOTECHNICAL REPORT BY HILLIS CARNES DATED JULY 1, 2016 FOR SOIL PREPARATION AND REQUIREMENTS FOR BACKFILL AND LEVELING PAD. ANGLE OF INTERNAL FRICTION OF SOIL = 25 DEGREES NOTED IN THE REPORT, AND MIN. DENSITY 110 PCF; ANGLE OF INTERNAL FRICTION OF SOIL = 35 DEGREES USED FOR DESIGN SINCE BACKFILL WILL BE #57 STONE. ALLOWABLE BEARING PRESSURE = 2000 PSF, WHERE SOFT OR LOOSE POCKETS ARE ENCOUNTERED THE UNSUITABLE MATERIALS SHOULD BE UNDERCUT AND REPLACED WITH NEW FILL PLACED AND COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

CONCRETE WORK

1. CODES:

- BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318", AMERICAN CONCRETE INSTITUTE.
- ACI MANUAL OF CONCRETE PRACTICE - PARTS 1 THROUGH 5, AMERICAN CONCRETE INSTITUTE.

2. STANDARD SPECIFICATIONS AND REFERENCE STANDARDS:

- "MANUAL OF STANDARD PRACTICE", CONCRETE REINFORCING STEEL INSTITUTE.
- FOLLOW THE LATEST RECOMMENDATIONS AND SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE:
 - ACI 301 STRUCTURAL CONCRETE FOR BUILDINGS
 - ACI 302 CONCRETE FLOOR AND SLAB CONSTRUCTION
 - ACI 304 MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE
 - ACI 305 HOT WEATHER CONCRETING
 - ACI 306 COLD WEATHER CONCRETING
 - ACI 315 DETAILING REINFORCING STEEL
 - ACI 318 GENERAL DESIGN OF ITEMS NOT OTHERWISE SPECIFIED
 - ACI 347 FORMWORK

3. CONCRETE MIX PROPERTIES:

A. ELEMENT (NORMAL WEIGHT UNO)	28-DAY STRENGTH	W/C MAX(d)	AIR CONTENT(a)	SLUMP
ALL CONCRETE:	4,000 PSI	0.48	6% +/- 1.5	4"

PUMP MIXES: MAXIMUM WATER/CEMENT (W/C) RATIO MUST BE MAINTAINED. IF ADDITIONAL WORKABILITY IS REQUIRED FOR PUMPED PLACEMENT, THE HIGH OR MID-RANGE WATER REDUCERS SHALL BE USED IN LIEU OF ADDITIONAL WATER.

- PORTLAND CEMENT: ASTM C150, TYPE II.
- CEMENT SUBSTITUTES: ASTM C595, TYPE IS (LIMIT TO 50% MAX OF CEMENTITIOUS CONTENT BY WEIGHT)
- AGGREGATES / DENSITY: ASTM C33 / 145 PCF - NORMAL WEIGHT
ASTM C330 / 115 PCF - STRUCTURAL LIGHTWEIGHT
- AIR-ENTRAINMENT: ASTM C260

4. STEEL REINFORCEMENT:

- DEFORMED REINFORCING BARS: ASTM A615 GRADE 60

5. CONCRETE COVER:

- MILD REINFORCED CONCRETE
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3 IN.
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BAR OR LARGER 2 IN.
 - #5 BAR OR SMALLER 1 1/2 IN.
 - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
 - SLABS, WALLS AND JOISTS: #11 BAR OR SMALLER 3/4 IN.
 - BEAMS AND COLUMNS: TO TIES, STIRRUPS, OR SPIRALS 1 1/2 IN.

6. GENERAL REQUIREMENTS:

- REINFORCEMENT AT OPENINGS: UNLESS DETAILED OTHERWISE, PROVIDE 2 - #6 AT EACH SIDE OF ALL OPENINGS IN WALLS AND SLABS AND EXTEND 2 FT-6 IN. BEYOND THE OPENING OR AS DETAILED, EXCEPT VERTICAL BARS AT SIDES OF OPENINGS IN WALLS ARE TO EXTEND FROM FLOOR TO FLOOR. BARS MAY BE MOVED ASIDE AT OPENINGS OR SLEEVES, BUT DO NOT CUT OR OMIT.
- MINIMUM REINFORCEMENT: REINFORCE ALL WALLS WITH AT LEAST #4 @ 12 IN. EACH WAY EACH FACE AND 2 - #6 EACH EDGE, UNLESS DETAILED OTHERWISE.
- EXISTING SURFACE TREATMENT: ROUGHEN ALL EXISTING CONCRETE SURFACES COMMON WITH NEW CONCRETE TO AMPLITUDE OF 1/4 INCH.
- FORMWORK, SHORING AND RESHORING: SHALL BE DESIGNED AND SUBMITTED BY THE CONTRACTOR'S ENGINEER REGISTERED IN THE PROJECTS JURISDICTION WITH ALL SUBMISSIONS BEARING THE ENGINEER'S SEAL AND SIGNATURE.
- INSERTS AND SLEEVES: CONTRACTOR SHALL FURNISH DIMENSIONED SHOP DRAWINGS AT ALL LEVELS SHOWING LOCATIONS OF ALL CAST-IN-PLACE SLEEVES, INSERTS AND OPENINGS REQUIRED BY ALL TRADES FOR REVIEW BY THE MEP, ARCHITECT AND STRUCTURAL ENGINEER, IN THAT ORDER. NO SLEEVE SHALL BE PLACED THROUGH ANY CONCRETE ELEMENT UNLESS SHOWN ON THE APPROVED SHOP DRAWINGS OR SPECIFICALLY AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.
- CHAMFER ALL EXPOSED CONCRETE CORNERS, 3/4 IN. X 3/4 IN. MINIMUM, UNLESS NOTED OTHERWISE ON THE ARCHITECTURAL DRAWINGS.
- LOADS GREATER THAN THE DESIGN LIVE LOADS SHALL NOT BE PLACED ON THE STRUCTURE. A CONCRETE STRUCTURE MAY NOT SUPPORT ITS DESIGN LIVE LOAD UNTIL IT HAS REACHED ITS SPECIFIED STRENGTH. CONTRACTOR SHALL SUPPORT ADJACENT STRUCTURES, UTILITIES, AND EXCAVATIONS AS REQUIRED FOR COMPLETION OF WORK.

7. SPLICING AND PLACEMENT OF REINFORCEMENT:

- NO SPLICES OF REINFORCEMENT SHALL BE PERMITTED EXCEPT AS DETAILED OR AUTHORIZED BY THE STRUCTURAL ENGINEER. MAKE BARS CONTINUOUS AROUND CORNERS. WHEN PERMITTED, SPLICES SHALL BE MADE BY CONTACT TENSION LAP SPLICE, UNLESS NOTED OTHERWISE.
- SPLICE WELDED WIRE REINFORCEMENT TWO FULL MESH LENGTHS AND WIRE TOGETHER.
- SPLICE BARS AS SHOWN ON DRAWINGS BUT NOT LESS THAN 50 BAR DIAMETERS FOR SLABS AND BEAM BOTTOM BARS, AND NOT LESS THAN 65 BAR DIAMETERS FOR WALLS AND BEAM TOP STEEL.
- NO WELDING OF REINFORCING SHALL BE PERMITTED UNLESS SPECIFICALLY CALLED FOR OR APPROVED BY THE STRUCTURAL ENGINEER.
- PROVIDE #4 CHAIR BARS, HIGH CHAIRS, TIES, CLIPS, SLAB BOLSTERS AND OTHER ACCESSORIES WHERE NOT SPECIFIED ON THE DRAWINGS IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE OR DETAILING REINFORCING CONCRETE STRUCTURES ACI 315 OR CRSI-WRSI MANUAL OF STANDARD PRACTICE. USE PLASTIC TIPS ON ALL CHAIRS PLACED ON THE SIDES OF CONCRETE FORMWORK.
- PROVIDE PLASTIC TIPPED BOLSTERS AND CHAIRS AT ALL LOCATIONS WHERE THE CONCRETE SURFACE IS IN CONTACT WITH THE BOLSTERS OR CHAIRS IS EXPOSED.

8. REINFORCEMENT SHOP DRAWINGS:

- SUBMIT FOR APPROVAL, COMPLETE BENDING AND PLACING DETAILS OF ALL REINFORCEMENT INCLUDING WELDED WIRE REINFORCEMENT, INDICATING POSITION OF SPLICES. INCLUDE ACCESSORY DRAWINGS.
- UNAUTHORIZED REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RE-SUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED.

9. CONSTRUCTION JOINTS:

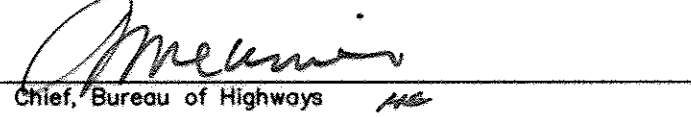
- CONSTRUCTION AND CONTROL JOINTS IN SLAB ON GRADE SHALL BE ARRANGED TO LIMIT MAXIMUM LENGTH BETWEEN JOINTS TO 30'-0" IN ANY DIRECTION. ALLOW A MINIMUM OF 48 HOURS TIME BETWEEN PLACEMENT OF ADJACENT SECTIONS.
- CONSTRUCTION JOINTS FOR MILD-REINFORCED CONCRETE SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF THE SPAN. PROPOSED CONSTRUCTION JOINT LOCATIONS SHALL BE SHOWN ON THE REINFORCING STEEL SHOP DRAWINGS. ANY STOP IN CONCRETE WORK MUST BE MADE WITH VERTICAL BULKHEADS AND HORIZONTAL KEYS, UNLESS INDICATED OTHERWISE. FOUNDATIONS AND SLABS SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE UNLESS DETAILED OTHERWISE.


BACKFILL


SAMPLES OF ALL MATERIALS THAT THE CONTRACTOR PROPOSES TO USE FOR COMPACTED FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. WALL BACKFILL SHALL CONSIST OF AASHTO #57 STONE COMPACTED TO 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557. FOR WALL 1: SITE SOIL SHALL BE USED AS BACKFILL AS SHOWN IN DETAIL 1/24. FOR WALL 3: THE #57 STONE BACKFILL SHALL BE ON TOP OF THE SITE SOIL AS SHOWN IN DETAIL 1/26. PRIOR TO PLACEMENT OF ANY FILLS, THE SITE SHALL BE STRIPPED OF ALL TOPSOIL, VEGETATION, ROCKS, AND ORGANIC MATERIALS AND THE EXPOSED SUBGRADE SHALL BE COMPACTED IN PLACE TO A CONFIRMED DENSITY OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8" IN THICKNESS AND SHALL BE MIXED, SPREAD AND PLACED IN SUCH A WAY AS TO PRODUCE A UNIFORM THICKNESS OF MATERIAL AFTER PLACING. EACH LAYER OF FILL SHALL BE COMPACTED WITH A MINIMUM OF 6 COMPLETE PASSES ON ALL PORTIONS OF THE SURFACE OF EACH LIFT OF FILL BY RUBBER TIRE ROLLERS, SHEEPS' FOOT ROLLERS OR OTHER MECHANICAL EQUIPMENT APPROVED BY THE GEOTECHNICAL ENGINEER. COMPACTED FILL PLACED WITHIN 4 FEET OF STRUCTURES AND PIPES SHOULD BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED 4 INCHES THICKNESS AND COMPACTED WITH HAND TAMPERS OR LIGHT COMPACTION EQUIPMENT TO THE SAME STANDARD. HEAVY COMPACTION EQUIPMENT SHOULD NOT BE ALLOWED WITHIN 4 FEET OF STRUCTURES UNLESS A MINIMUM 2 FEET DEPTH OF FILL COVERS THE STRUCTURES. WHENEVER IN PLACE DENSITIES ARE FOUND BELOW ACCEPTABLE LIMITS, ADDITIONAL ROLLING TO PRODUCE THE SPECIFIED DENSITIES SHALL BE REQUIRED. THE CONTRACTOR SHALL TAKE ALL MEASURES REQUIRED TO PROVIDE FOR FREE DRAINAGE OF THE SITE AND TO PREVENT PONDING OF WATER. SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. PLACING OF FILL CONTAINING ORGANIC MATTER; PLACING OF FILL WITH MOISTURE CONTENT TOO HIGH OR TOO LOW FOR PROPER COMPACTION; PLACING OF FILL WHEN FREE WATER IS STANDING ON THE EXISTING FILL SURFACE; PLACING OF FILL IN A FROZEN CONDITION OR ON TOP OF FROZEN MATTER WILL NOT BE PERMITTED. THE SOILS ENGINEER SHALL SUPERVISE THE PLACING OF THE COMPACTED FILL AND ALL THE MATERIAL AND EQUIPMENT USED FOR THIS PURPOSE AND SHALL MAKE SUCH SOILS TESTS AS MAY BE REQUIRED FOR THE COMPLETION OF THE WORK PERFORMING AT LEAST 6 IN PLACE DENSITY TESTS DURING EACH EIGHT HOUR SHIFT. GEOTEXTILE FILTER FABRIC SHALL BE 4.0 oz/sy. POLYPROPYLENE, NEEDLE-PUNCHED NON-WOVEN FABRIC.

INSPECTION AND TESTING

- THE OWNER SHALL ENGAGE A TESTING AGENCY TO PROVIDE SERVICES AS INDICATED BELOW AND SUBMIT REPORTS.
- CAST-IN-PLACE CONCRETE:
 - THE AGENCY SHALL INSPECT THE FORMWORK AND REINFORCING STEEL PLACEMENT FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. THE AGENCY SHALL MONITOR ALL STRUCTURAL CONCRETE PLACEMENT FOR CONFORMANCE WITH APPLICABLE ACI REQUIREMENTS.
 - SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172. MOLD TEST CYLINDERS IN ACCORDANCE WITH ASTM C31.
 - THE FOLLOWING NUMBER OF TEST CYLINDERS SHALL BE CAST FOR EACH DAYS POUR OR EACH 50 CUBIC YARDS, WHICHEVER RESULTS IN MORE TEST CYLINDERS.
 - FOR ELEVATED SLAB (TO INCLUDE BEAMS, JOISTS, GIRDERS):
 - LAB CURED 2@7 DAYS, 2@28 DAYS
 - FIELD CURED 2@7 DAYS, 2@28 DAYS
 - FOR FOOTINGS AND OTHER STRUCTURAL CONCRETE:
 - LAB CURED 2@7 DAYS, 2@28 DAYS
 - FOR WALLS AND COLUMNS:
 - LAB CURED 2@7 DAYS, 2@28 DAYS
 - FIELD CURED 2@7 DAYS, 2@28 DAYS
 - THE AGENCY WILL MAKE ADDITIONAL TESTS OF IN-PLACE CONCRETE AT THE CONTRACTOR'S EXPENSE WHEN THE TEST RESULTS INDICATE SPECIFIED CONCRETE STRENGTHS HAVE NOT BEEN ATTAINED, AS DIRECTED BY THE STRUCTURAL ENGINEER.
- RETAINING WALL GENERAL NOTES:
 - RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
 - THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO THE HOWARD HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER ASTM STP-399.
 - THE SUITABILITY OF FILL MATERIAL (#57 STONE) SHALL BE CONFIRMED BY THE ONSITE SOILS TECHNICIAN. EACH EIGHT (8) INCH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTER DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
 - COPIES OF ALL BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION.

APPROVED: DEPARTMENT OF PUBLIC WORKS

 Chief, Bureau of Highways
 DATE: 2/17/2018

APPROVED: DEPARTMENT OF PLANNING AND ZONING

 Chief, Division of Land Development
 DATE: 2/27/18


 Chief, Development Engineering Division
 DATE: 2-23-18

REVISIONS		
NO.	DESCRIPTION	DATE


OWNER/DEVELOPER

WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

TEC **TARANTINO**
 engineering consultants, pc
 7678 MIDTOWN ROAD
 FULTON, MD 20759
 410.921.7678
 tarantinoec.com



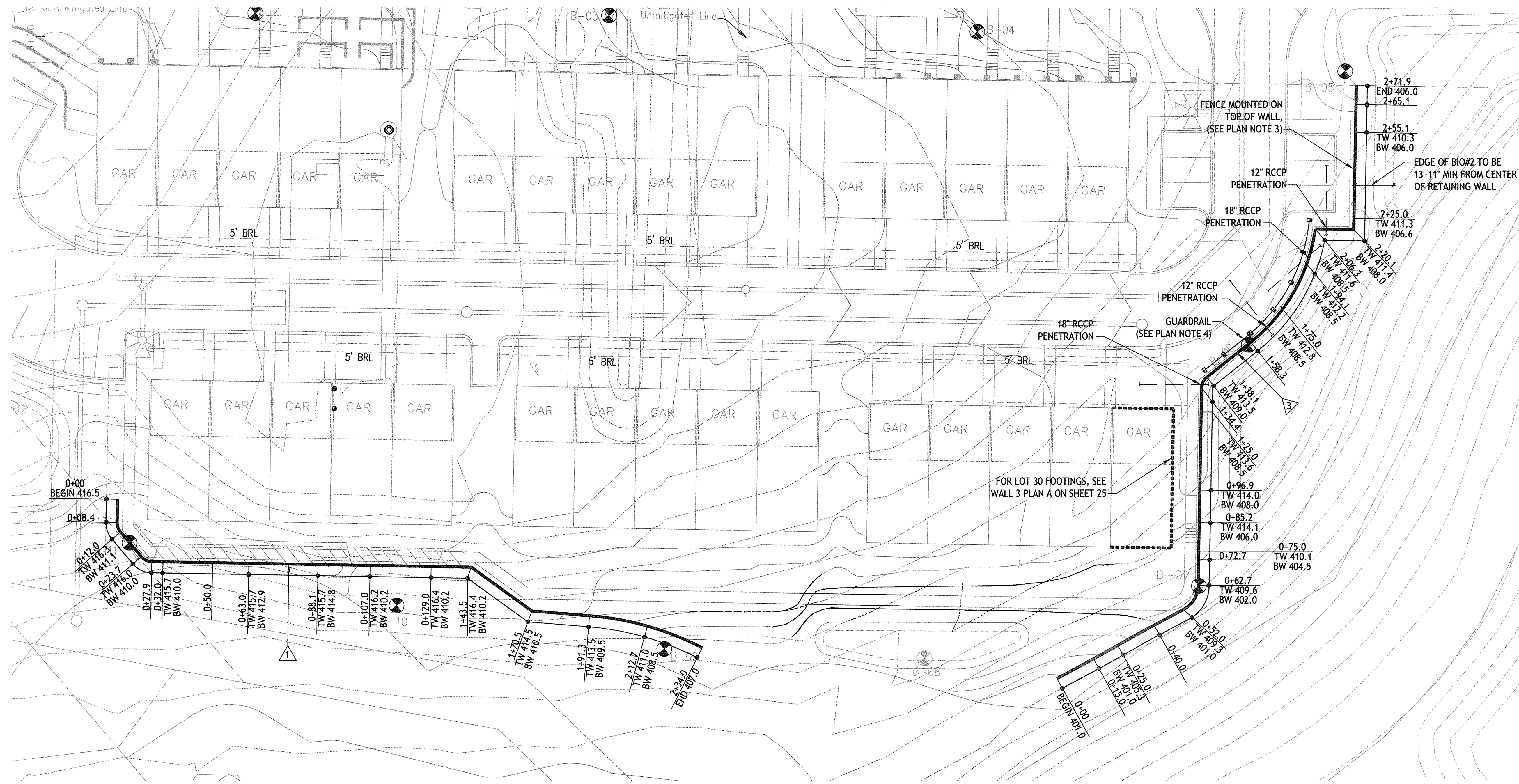
PROFESSIONAL CERTIFICATION

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.
 BRIAN TARANTINO, LICENSE NO. 24871
 EXPIRATION DATE: 2/28/2018

 BRIAN TARANTINO
 DATE: 1/2/18

WAVERLY GROVE

LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-88, S-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069

TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER 27, 2017
 SHEET 21 OF 39



A SITE RETAINING WALL OVERALL LAYOUT SCALE: 1" = 20'

- NOTES:**
1. DENOTES CONCRETE SITE RETAINING WALLS SEE SHEETS 23 & 25 FOR WALL PLANS AND ELEVATIONS.
 2. FOR DRAINAGE AND ALL GRADING SEE DRAWINGS BY FCC.
 3. DENOTES CONCRETE SITE RETAINING WALL WITH FENCE MOUNTED ON TOP. PROVIDE FENCE ALONG ENTIRE LENGTH OF WALL WITH A MINIMUM FENCE HEIGHT OF 36", OPENING LESS THAN 4" IN WIDTH. SEE 5/26 FOR ADDITIONAL REQUIREMENTS. PROVIDE TAPERED ENDS TO PREVENT ACCESS.
 4. PROVIDE SHA TYPE A TRAFFIC BARRIER WITH BEAM NEAR ROADWAYS. SEE 4/26 & 10/27 FOR ADDITIONAL REQUIREMENTS.
 5. NO TREE PLANTING WITHIN 10 FT BEHIND THE TOP OF WALLS.
 6. #57 STONE COMPACTED BACKFILL OVER SITE SOIL BACKFILL SHALL BE USED FOR SITE RETAINING WALL 3, SEE 1/26.
 7. SITE SOIL BACKFILL SHALL BE USED FOR SITE RETAINING WALL 1, SEE 1/24.
 8. TW: INDICATES TOP OF GRADE ELEVATION.
BW: INDICATES BOTTOM OF GRADE ELEVATION.
 9. DENOTES LOT 30 FOUNDATION WALL AND FOOTING.

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[Signature] 2/17/2018
 Chief, Bureau of Highways DATE

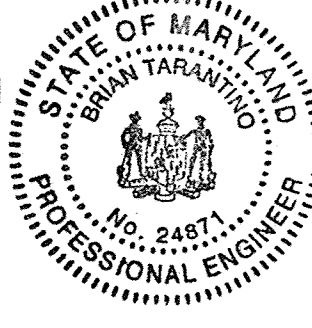
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 2/27/18
 Chief, Division of Land Development DATE

[Signature] 2-23-18
 Chief, Development Engineering Division DATE

REVISIONS		
NO.	DESCRIPTION	DATE
1	REMOVE LANDSCAPE WALL & REPAIRS REAR OF LOTS 31 THRU 30	10/9/18

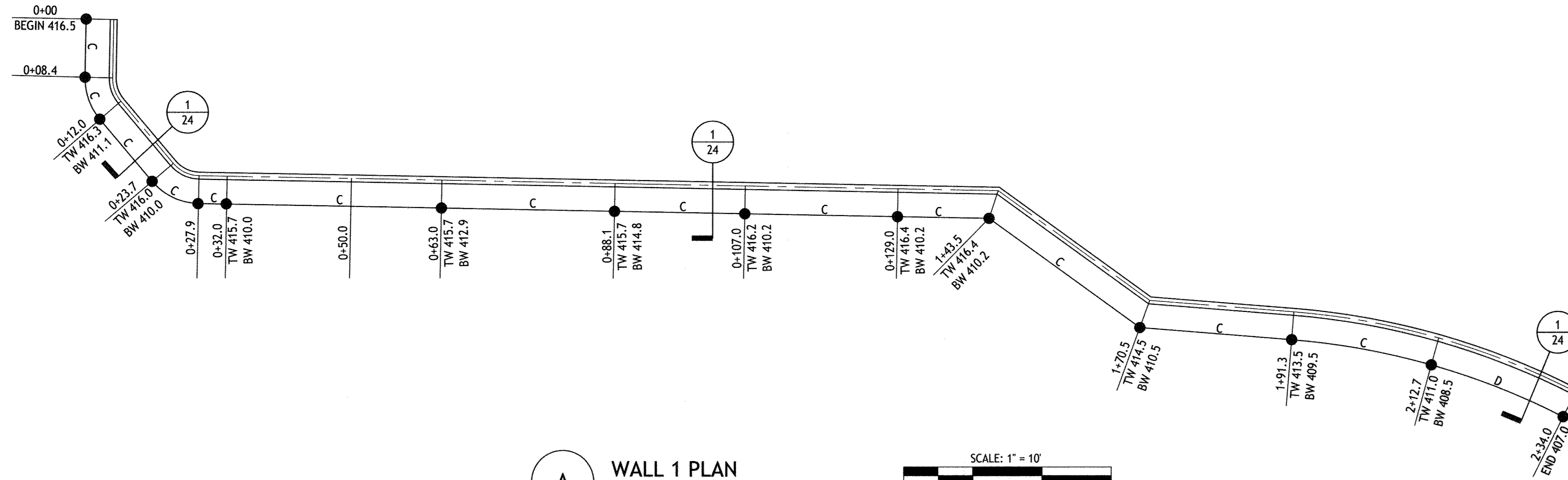
OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

TEC TARANTINO
 engineering consultants, pc
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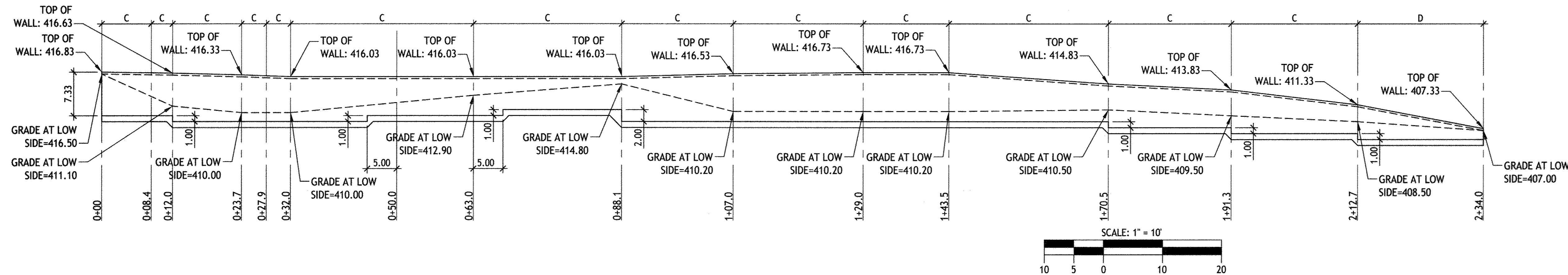
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 BRIAN TARANTINO, LICENSE NO. 24871
 EXPIRATION DATE: 2/28/2018
 12-25
 BRIAN TARANTINO DATE 1/2/18

SITE RETAINING WALL OVERALL LAYOUT
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-88, S-94-07, P-95-07, F-95-174,
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 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER 27, 2017
 SHEET 22 OF 39



A WALL 1 PLAN

- TW : INDICATES TOP OF GRADE ELEVATION
- BW : INDICATES BOTTOM OF GRADE ELEVATION



B WALL 1 ELEVATION

NOTES

1. STATION DIMENSIONS ARE TO THE CENTERLINE OF THE WALL
2. SEE SHEET 24 FOR WALL 1 SCHEDULE

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[Signature] 2/17/2018
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 2/22/18
 Chief, Division of Land Development

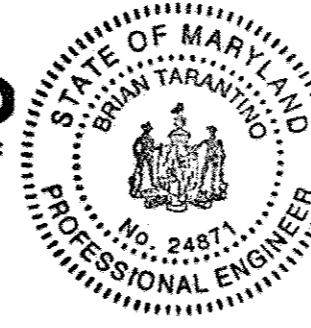
[Signature] 2/23/18
 Chief, Development Engineering Division

NO.	DESCRIPTION	DATE
1	Revised Retaining Wall Heights	1/8/18

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADAPLHIA ROAD
 PO BOX 30
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 410-442-2337

TEC
 structural design and forensic engineering

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 engineering consultants, pc
 7678 MIDTOWN ROAD
 FULTON, MD 20759
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PROFESSIONAL CERTIFICATION

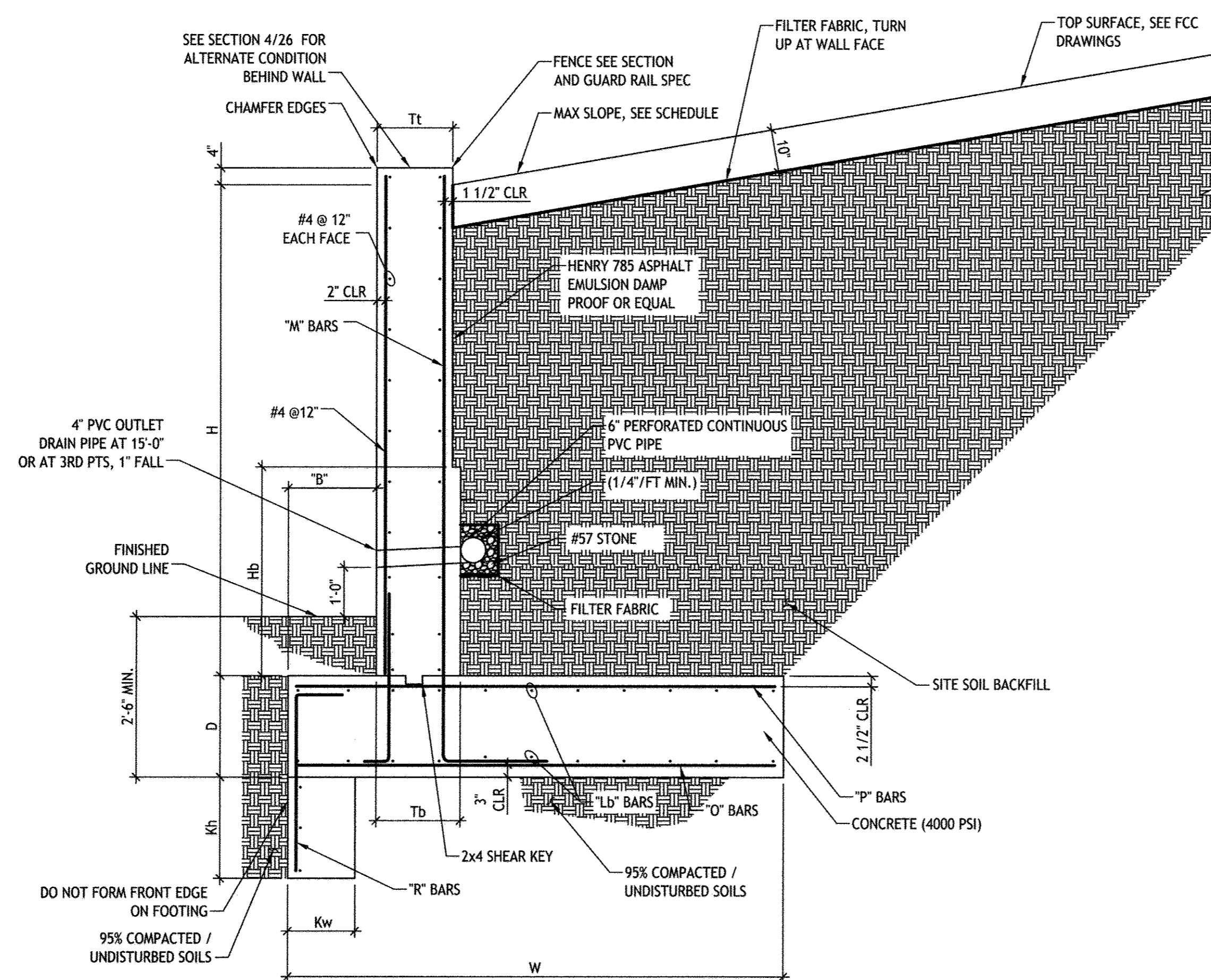
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 BRIAN TARANTINO, LICENSE NO. 24871
 EXPIRATION DATE: 2/28/2018

[Signature] 1/2/18
 BRIAN TARANTINO DATE

SITE WALL 1 PLAN AND ELEVATION

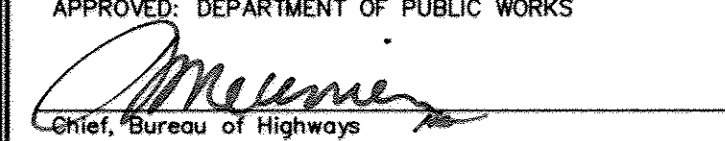
WAVERLY GROVE
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 PREVIOUS HOWARD COUNTY FILES:
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TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER 27, 2017
 SHEET 23 OF 39

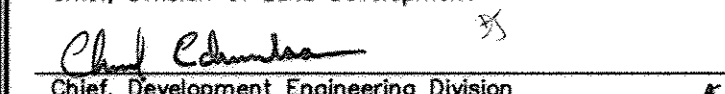


1 RETAINING WALL 1 SECTION
1/2" = 1'-0"

CONCRETE WALL 1 SCHEDULE																	
WALL						FOOTING			KEY		REINFORCEMENT					BACKFILL SLOPE V:H	SURCHARGE (PSF)
MARK	H	Tl	Tb	TAPERED STEM	Hb	D	B	W	Kh	Kw	"R" BARS	"M" BARS	"O" BARS	"P" BARS	"Lb" BARS		
C	8'-3" MAX.	10"	12"	Y	4'-0"	1'-0"	2'-9"	7'-0"	24"	14"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	0:1	100
D	5'-9" MAX.	10"	12"	Y	5'-0"	1'-2"	3'-6"	8'-6"	24"	14"	#5@12"	#6@12"	#5@12"	#5@12"	#5@12"	1:2	100

APPROVED: DEPARTMENT OF PUBLIC WORKS

 Chief, Bureau of Highways
 DATE: 2/17/18

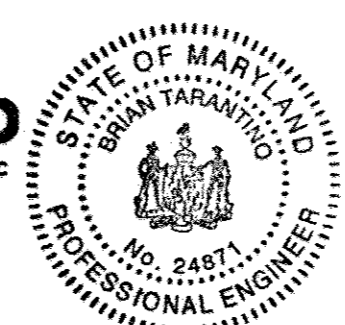
APPROVED: DEPARTMENT OF PLANNING AND ZONING

 Chief, Division of Land Development
 DATE: 2/27/18


 Chief, Development Engineering Division
 DATE: 2-23-18

REVISIONS		
NO.	DESCRIPTION	DATE
1	Revised Retaining Wall Heights	1/8/18

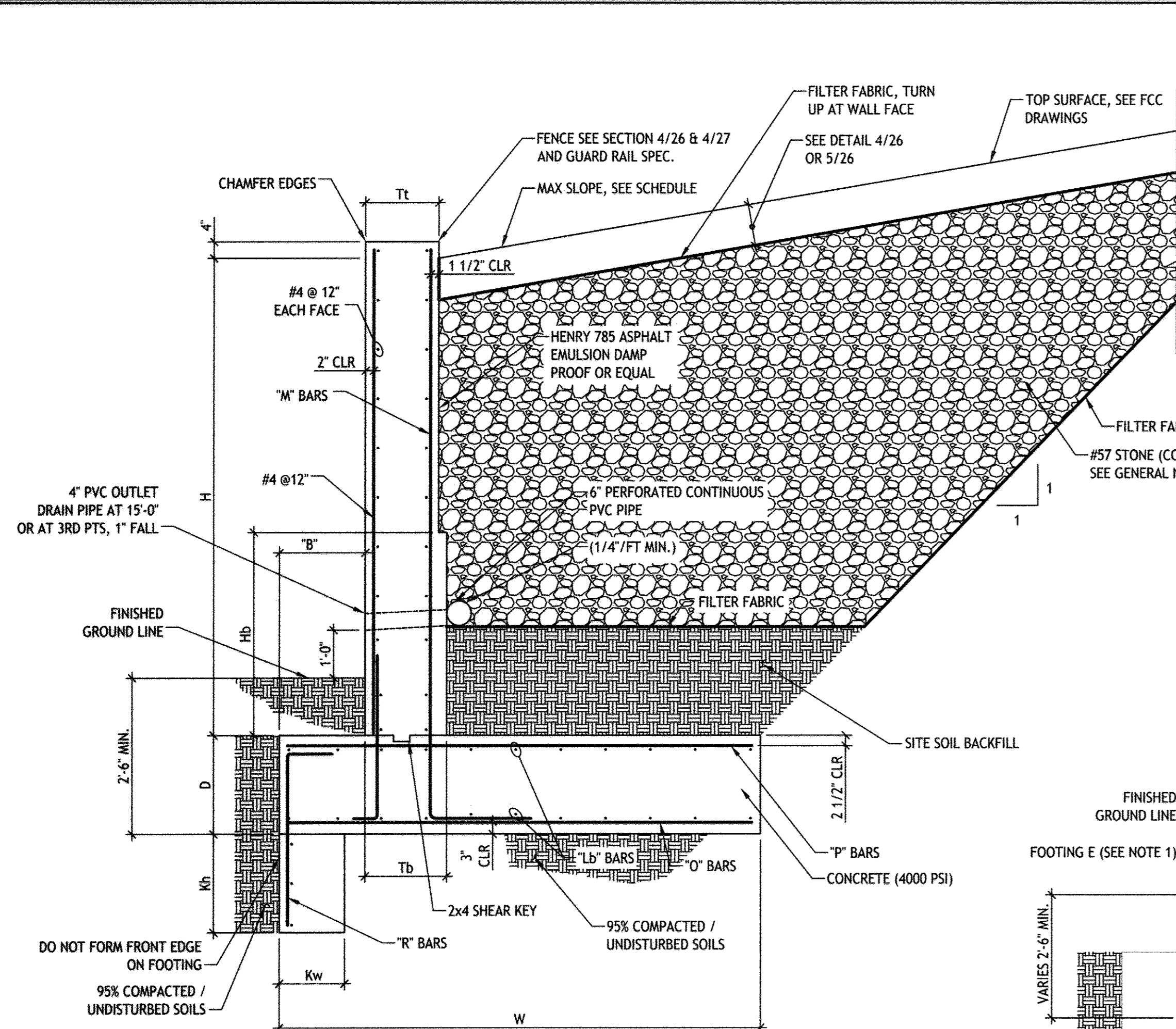
OWNER/DEVELOPER
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 C/O KENNARD WARFIELD JR
 14451 TRIADDELPHIA ROAD
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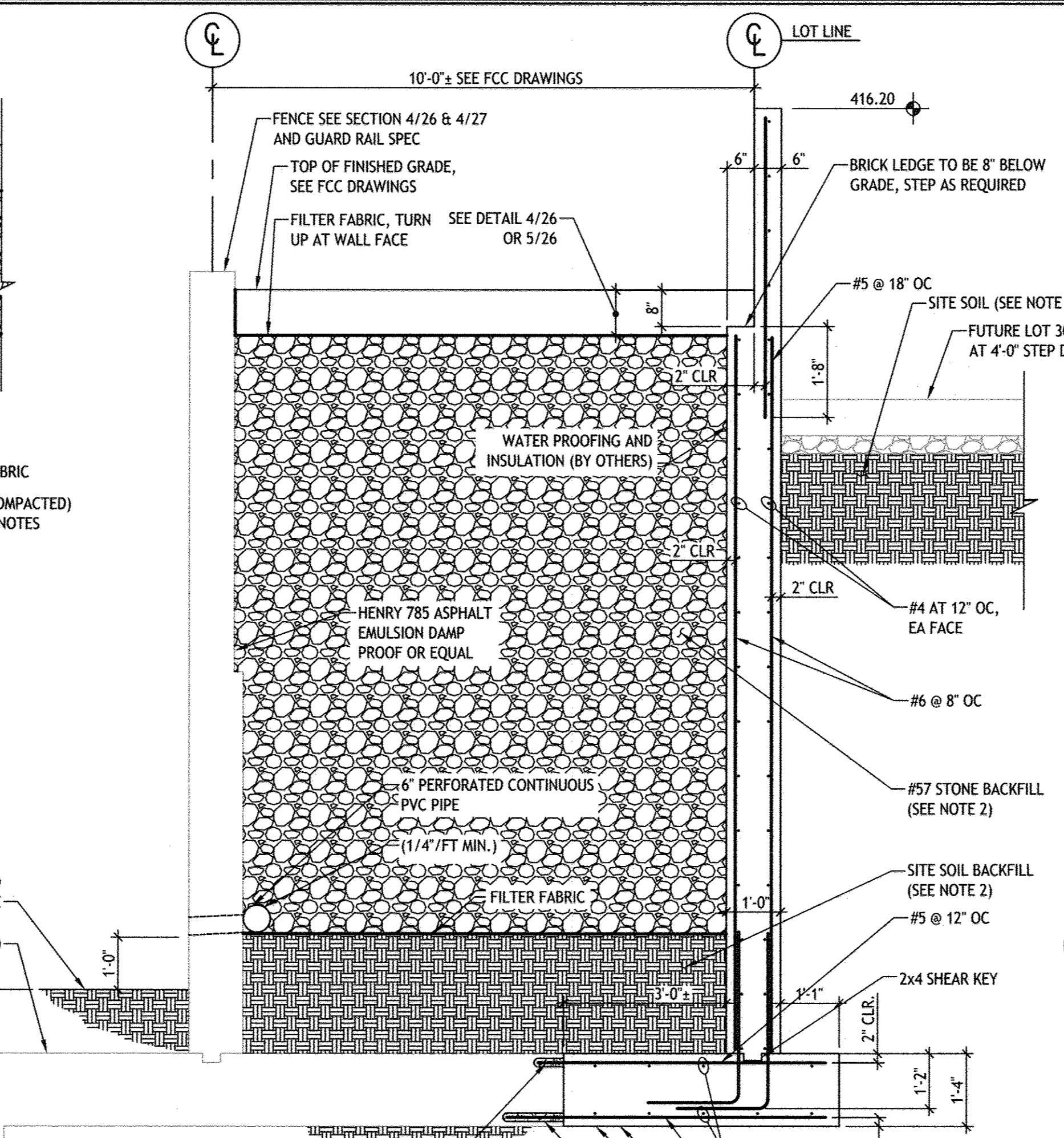


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 BRIAN TARANTINO, LICENSE NO. 24871
 EXPIRATION DATE: 2/28/2018
 Brian Tarantino
 DATE: 1/2/18

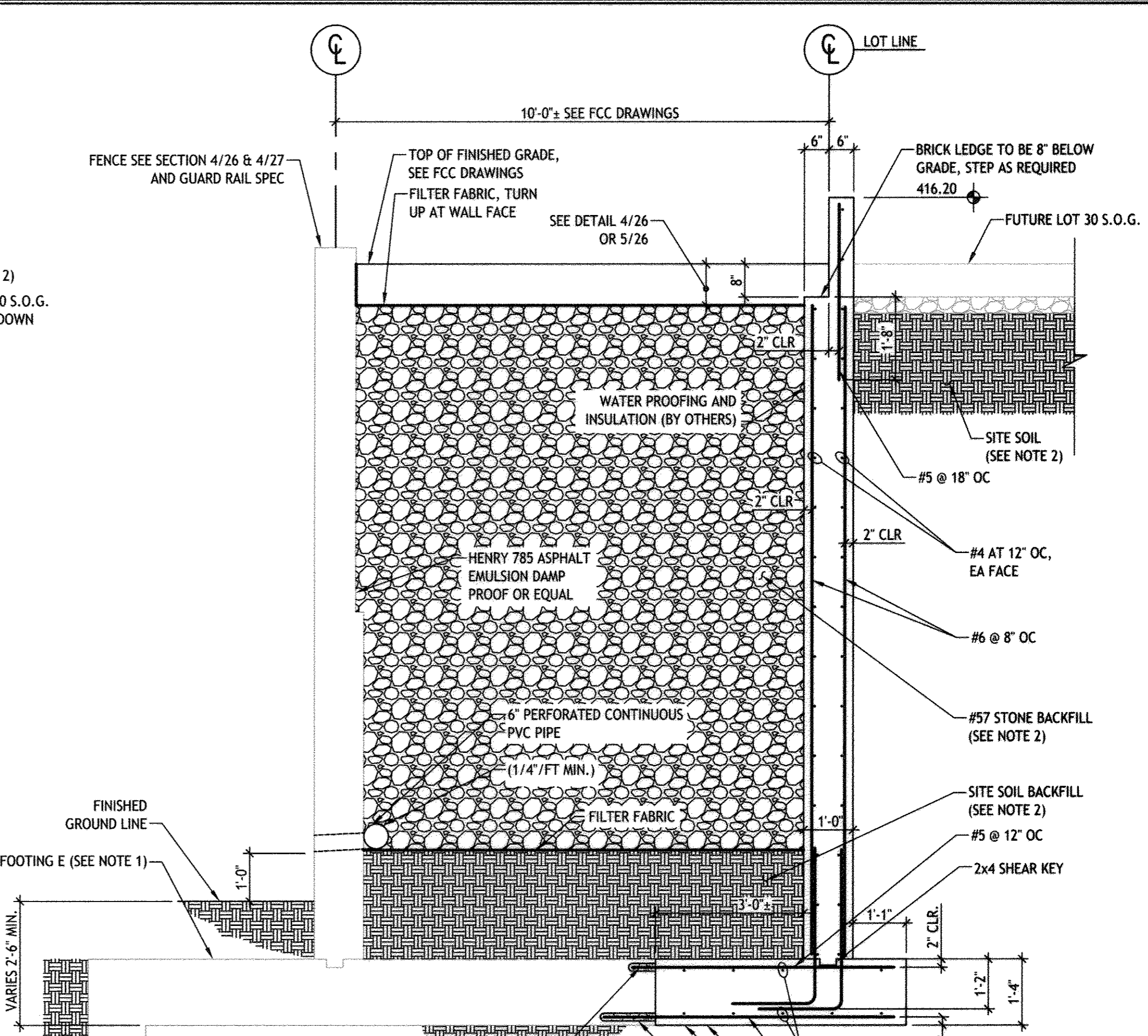
SITE WALL 1 DETAILS
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
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 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER 27, 2017
 SHEET 24 OF 39



1 RETAINING WALL 3 SECTION
1/2" = 1'-0"



2 SECTION AT LOT 30 AT 4'-0" STEP DOWN
1/2" = 1'-0"

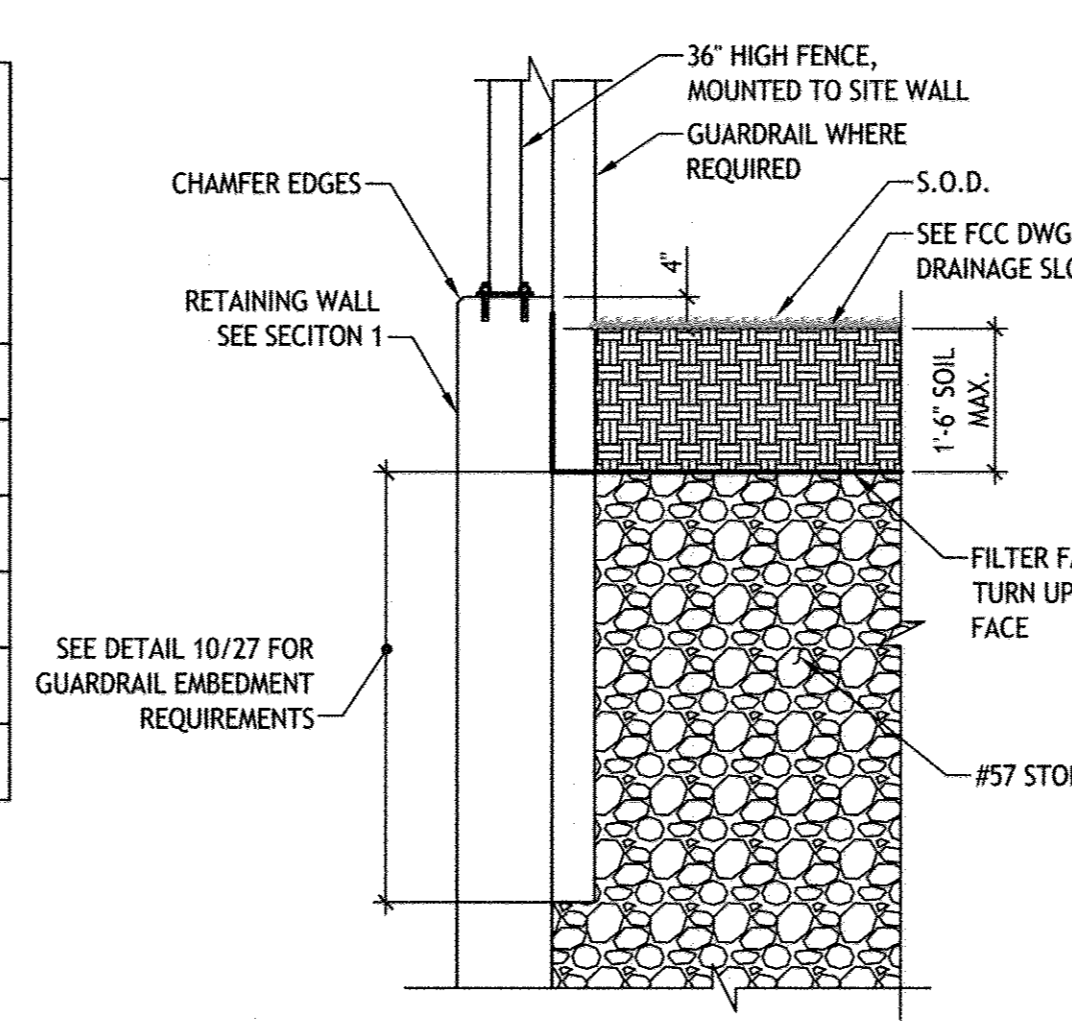


3 SECTION AT LOT 30
1/2" = 1'-0"

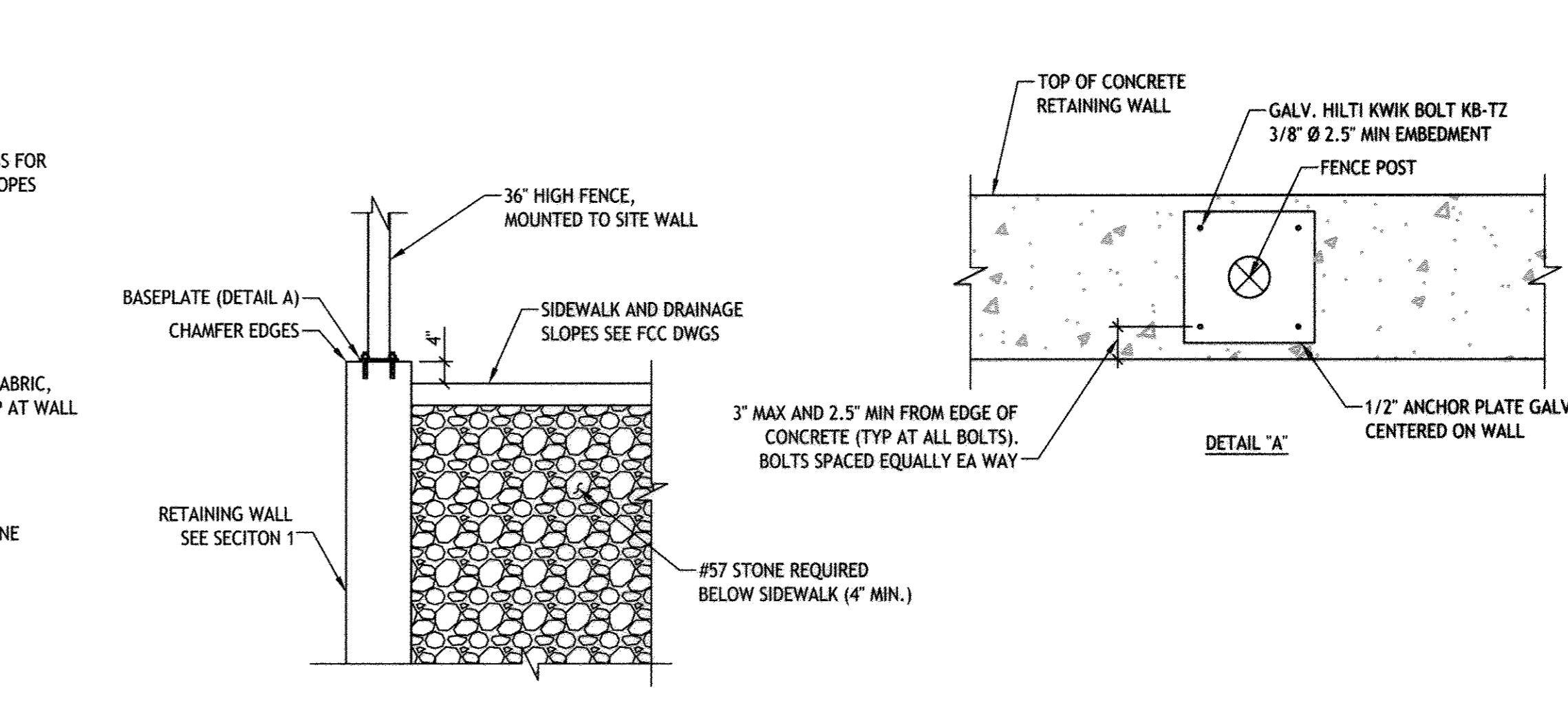
NOTES:
1. SEE RETAINING WALL SECTION 1 ON PAGE 26 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
2. WHERE THE FINAL GRADE ELEVATIONS ARE APPROXIMATELY EQUAL ON BOTH SIDES OF A WALL, BACKFILL IN LIFTS TO MAINTAIN LEVEL ELEVATIONS WITHIN 12 IN. ON BOTH SIDES AT ANY TIME.

NOTES:
1. SEE RETAINING WALL SECTION 1 ON PAGE 26 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
2. WHERE THE FINAL GRADE ELEVATIONS ARE APPROXIMATELY EQUAL ON BOTH SIDES OF A WALL, BACKFILL IN LIFTS TO MAINTAIN LEVEL ELEVATIONS WITHIN 12 IN. ON BOTH SIDES AT ANY TIME.

CONCRETE WALL 3 SCHEDULE																	
MARK	WALL					FOOTING			KEY		REINFORCEMENT					BACKFILL SLOPE V:H	SURCHARGE (PSF)
	H	Tt	Td	TAPERED STEM	Hb	D	B	W	Kh	Kw	"R" BARS	"M" BARS	"O" BARS	"P" BARS	"Lb" BARS		
A	6'-0" MAX.	10'	10'	N	-	1'-0"	1'-4"	4'-0"				#5@12"	#5@12"	#5@12"	#5@12"	0:1	100
B	7'-9" MAX.	10'	10'	N	-	1'-0"	2'-0"	6'-3"				#5@12"	#5@12"	#5@12"	#5@12"	0:1	100
C	10'-0" MAX.	10'	12'	Y	4'-0"	1'-0"	2'-9"	7'-0"	24"	14"	#5@12"	#5@12"	#5@12"	#5@12"	0:1	100	
C1 (NOT USED)	9'-8" MAX.	10'	12'	Y	4'-0"	1'-2"	4'-6"	10'-6"	24"	14"	#5@12"	#6@12"	#5@12"	#5@12"	1:2	100	
D	12'-0" MAX.	10'	12'	Y	5'-0"	1'-2"	3'-6"	8'-6"	24"	14"	#5@12"	#6@12"	#5@12"	#5@12"	0:1	100	
E	14'-0" MAX.	10'	12'	Y	7'-0"	1'-4"	4'-6"	11'-6"	24"	14"	#5@12"	#6@6"	#5@12"	#5@12"	0:1	100	



4 GUARDRAIL DETAIL
1/2" = 1'-0"



5 FENCE DETAIL
1/2" = 1'-0"

APPROVED: DEPARTMENT OF PUBLIC WORKS

 Chief, Bureau of Highways
 DATE: 2/17/18

APPROVED: DEPARTMENT OF PLANNING AND ZONING

 Chief, Division of Land Development
 DATE: 2/27/18

APPROVED: DEPARTMENT OF PLANNING AND ZONING

 Chief, Development Engineering Division
 DATE: 2-23-18

REVISIONS		
NO.	DESCRIPTION	DATE
1	Revised Retaining Wall Heights	1/8/18

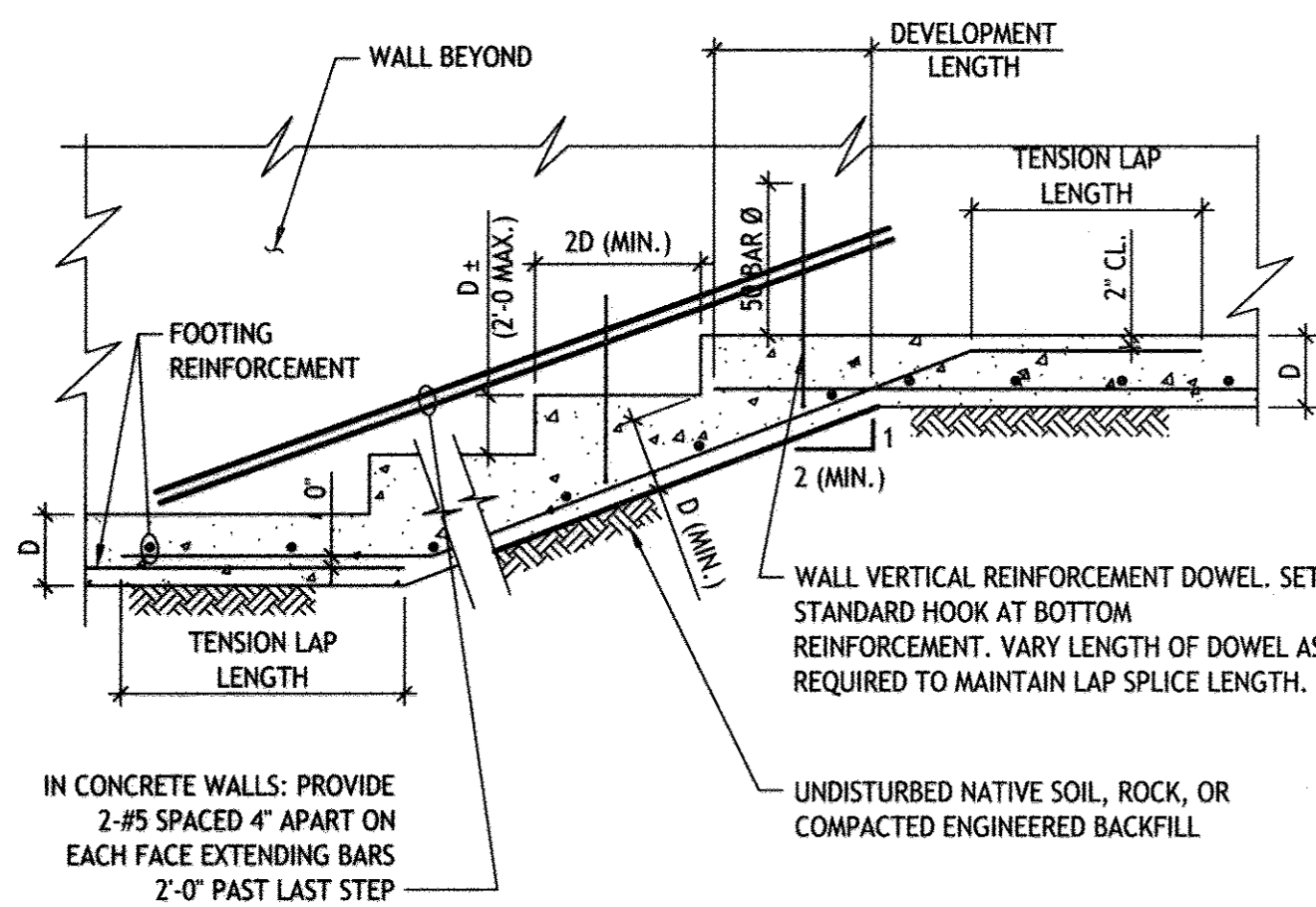
OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRADELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
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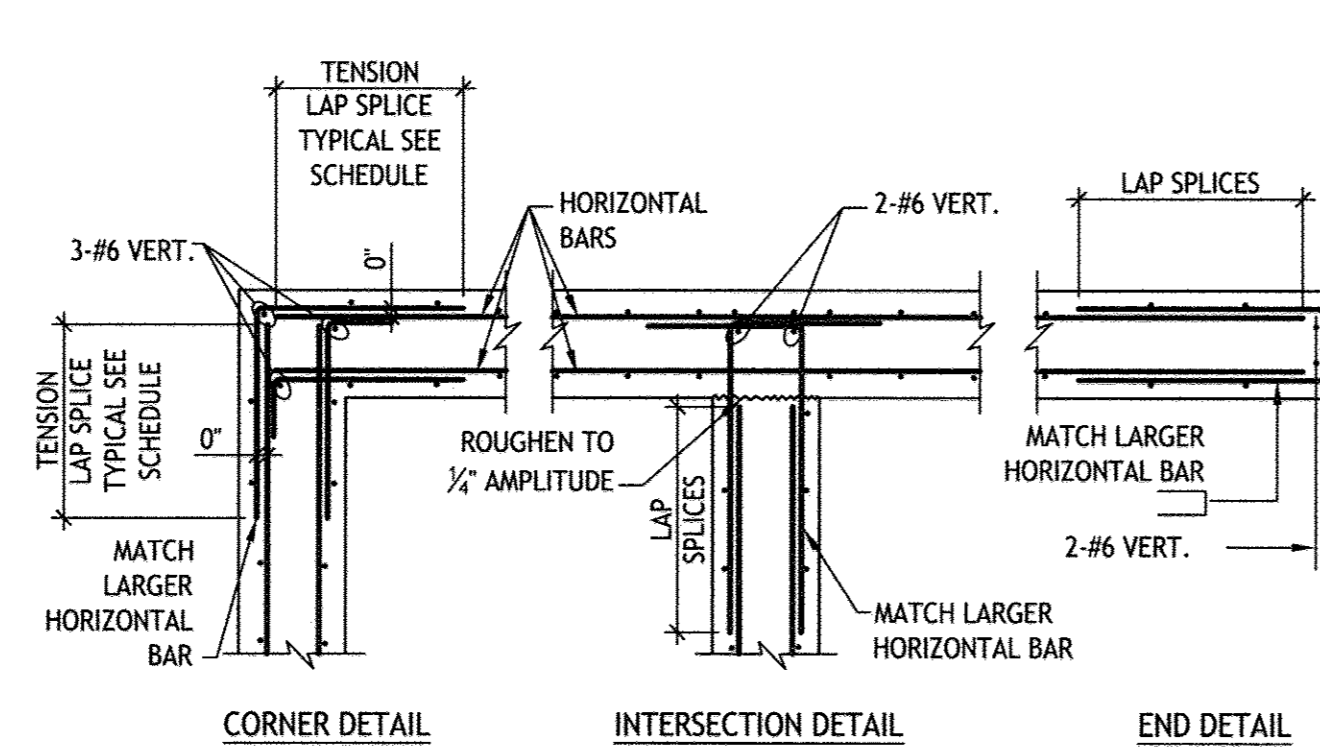


PROFESSIONAL CERTIFICATION
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 BRIAN TARANTINO, LICENSE NO. 24871
 EXPIRATION DATE: 2/28/2018
 DATE: 1/2/18

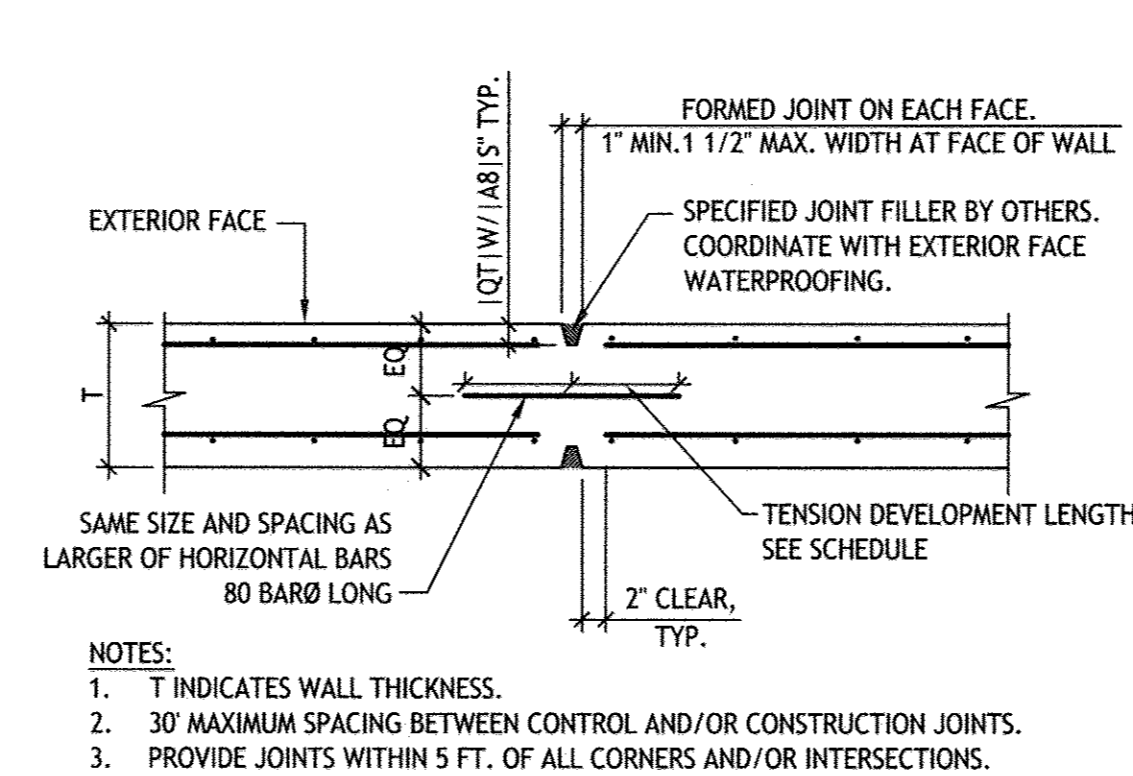
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SOP-86-88, S-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER 27, 2017
 SHEET 26 OF 39



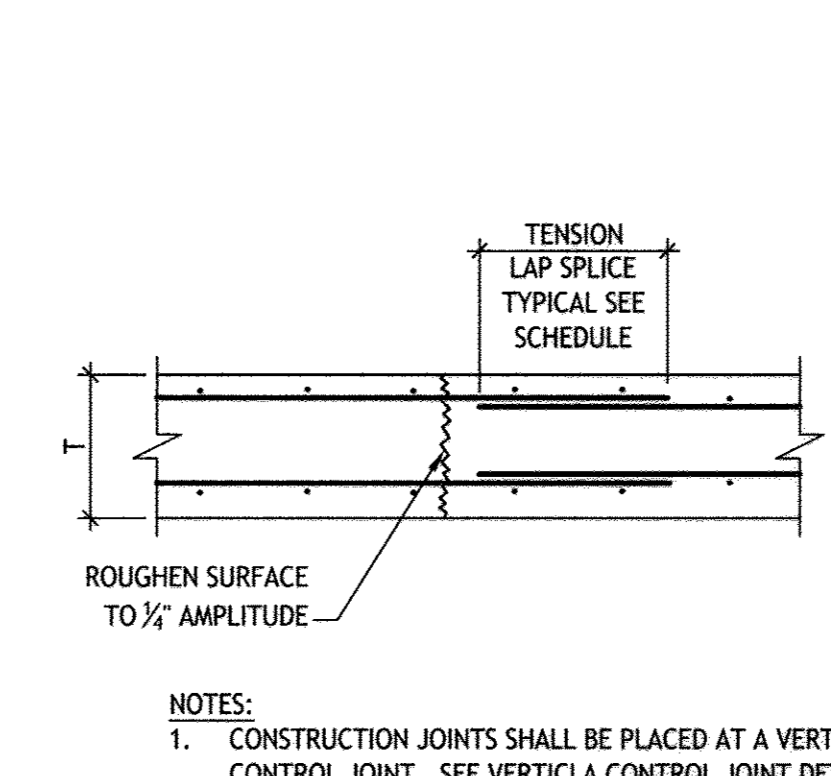
1 STEPPED WALL FOOTING 3/4" = 1'-0"



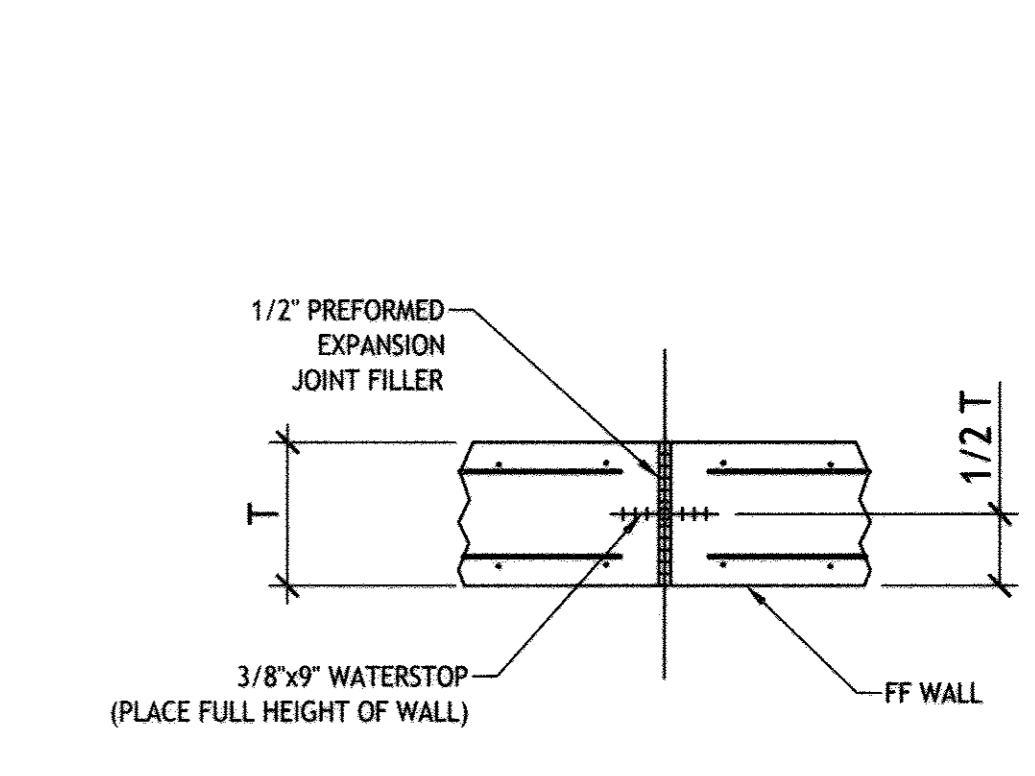
2 HORIZONTAL WALL REINFORCEMENT DETAILS 3/4" = 1'-0"



3 VERTICAL CONTROL JOINT 3/4" = 1'-0"



4 VERTICAL CONSTRUCTION JOINT 3/4" = 1'-0"



5 SECTION THRU EXPANSION JOINT 3/4" = 1'-0"

WALL THICKNESS	VERT REINF.	HORIZ REINF.
LESS THAN 10"	#4@12" MID	#5@12" MID
10" TO 12" INCL	#4@12" EF	#4@12" EF
OVER 12"	#5@12" EF	#5@12" EF

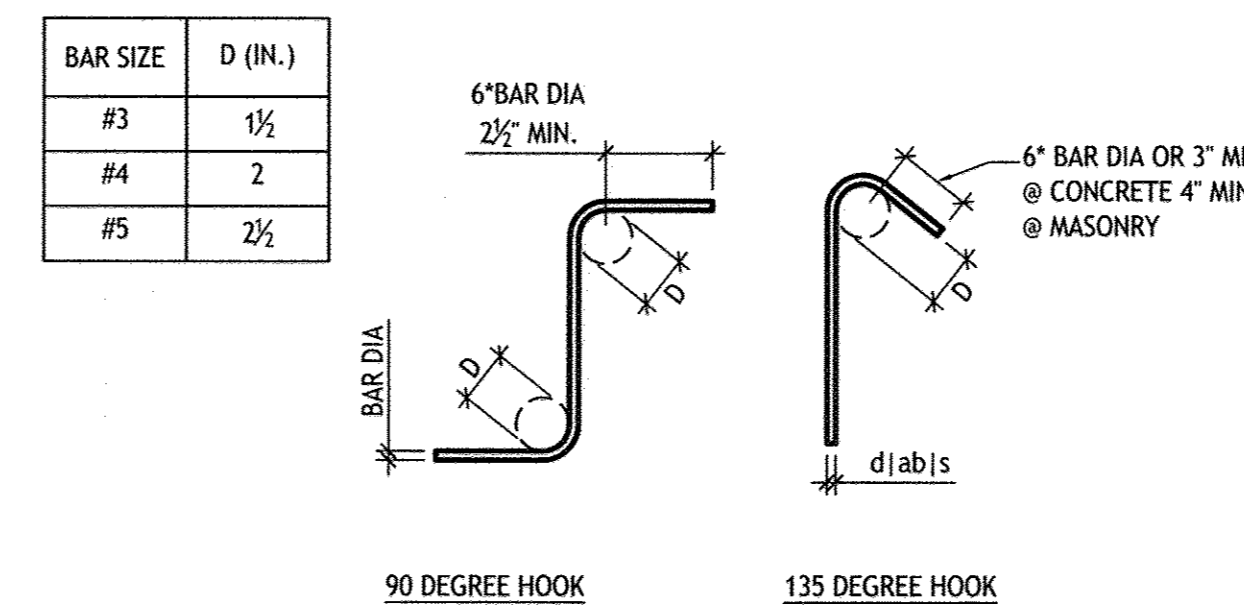
PROVIDE THE ABOVE MINIMUM REINFORCEMENT IN ALL CONCRETE WALLS WHERE REINFORCEMENT IS NOT INDICATED ON THE DRAWINGS.

6 MINIMUM WALL REINFORCEMENT SCHEDULE 3/4" = 1'-0"

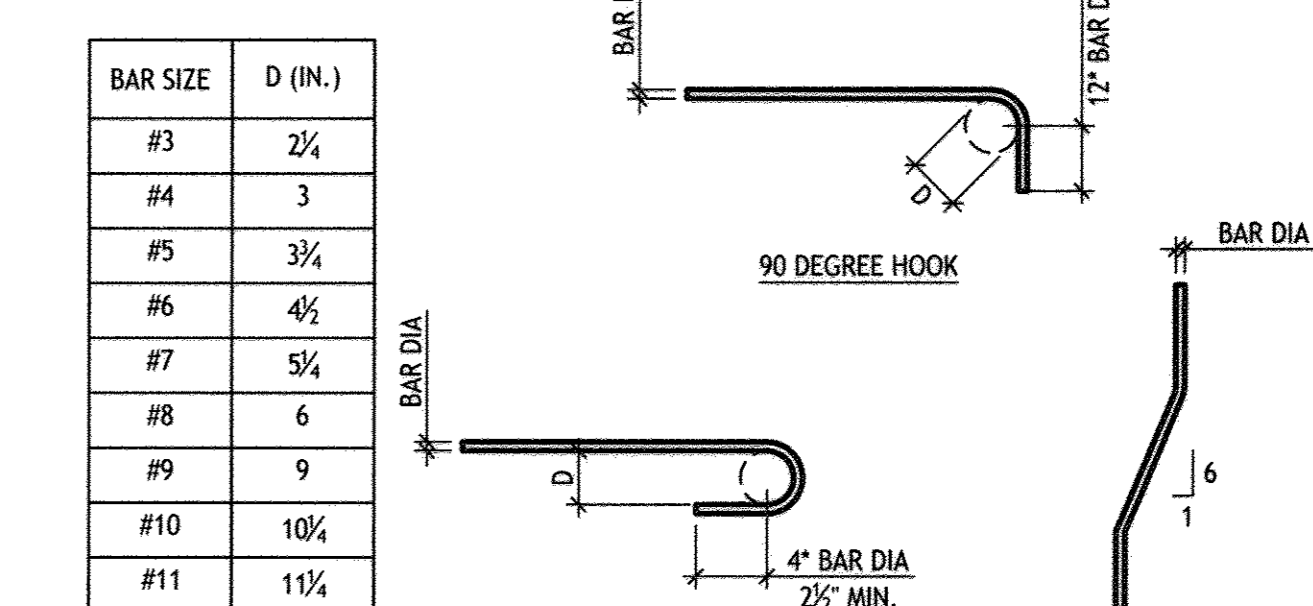
MINIMUM SPLICE AND DEVELOPMENT LENGTH SCHEDULE (UNLESS OTHERWISE SHOWN ON DRAWINGS)		#3	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH	TOP BARS	16"	22"	27"	33"	41"	55"	69"	88"	108"
	OTHER BARS	12"	16"	20"	24"	30"	39"	49"	83"	77"
DEVELOPMENT LENGTH	TOP BARS	13"	17"	21"	25"	32"	42"	53"	67"	83"
	OTHER BARS	12"	12"	15"	18"	23"	30"	38"	48"	59"

- AVOID SPLICES IN REGIONS OF MAXIMUM MOMENT. IF THIS IS NOT POSSIBLE STAGGER SPLICES SO THAT NOT MORE THAN 50% OF THE BARS ARE SPLICED WITHIN A REQUIRED SPLICE LENGTH OTHERWISE INCREASE SPLICE LENGTH BY 30%.
- TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12' OF FRESH CONCRETE CAST IN THE MEMBER BELOW THE REINFORCEMENT. WALL REINFORCING IS CLASSIFIED AS OTHER BARS.

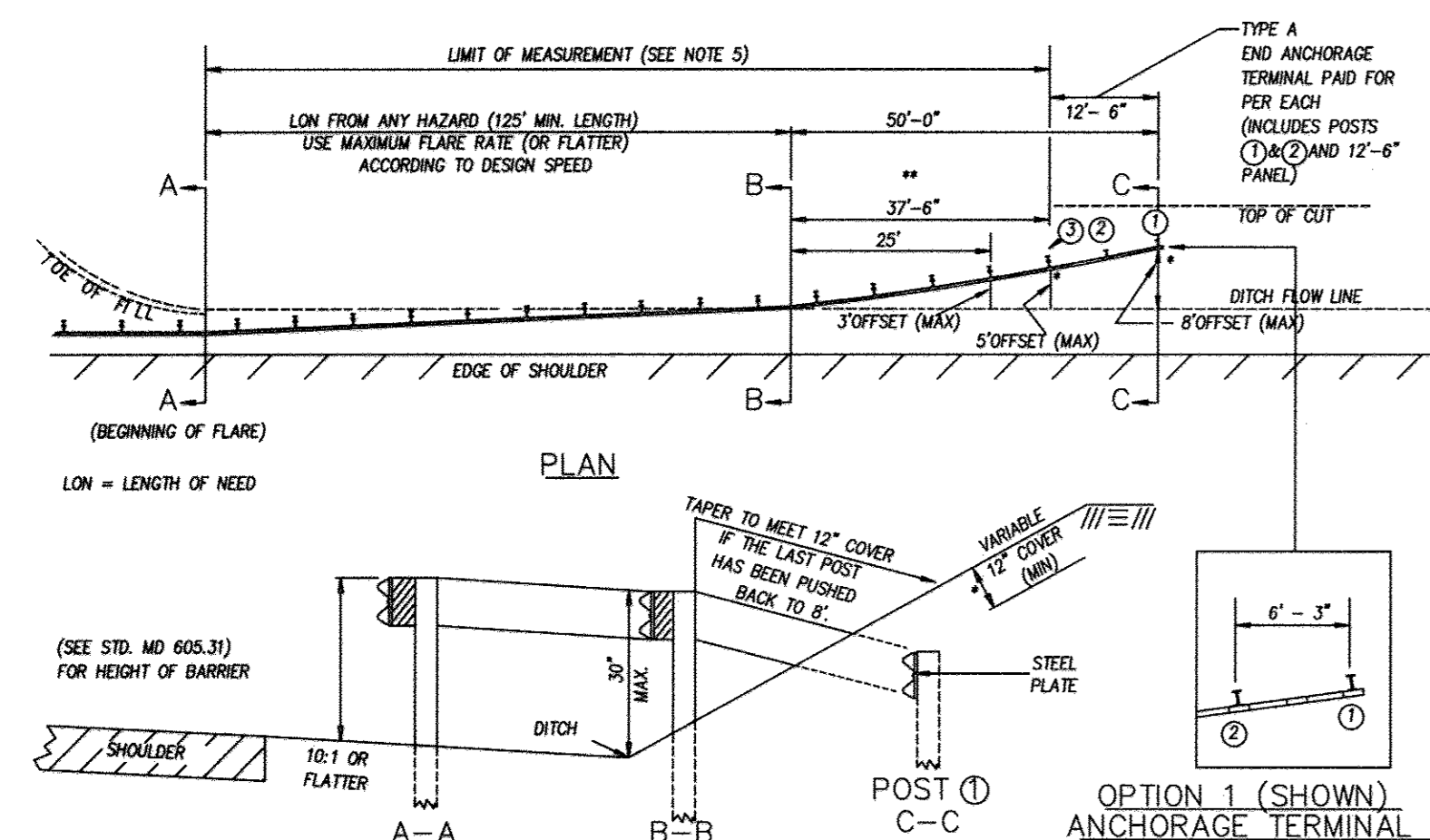
7 TYPICAL STEEL REINFORCEMENT SPLICE AND DEVELOPMENT LENGTH SCHEDULE 3/4" = 1'-0"



8 TYPICAL TIE AND STIRRUP HOOKS 3/4" = 1'-0"

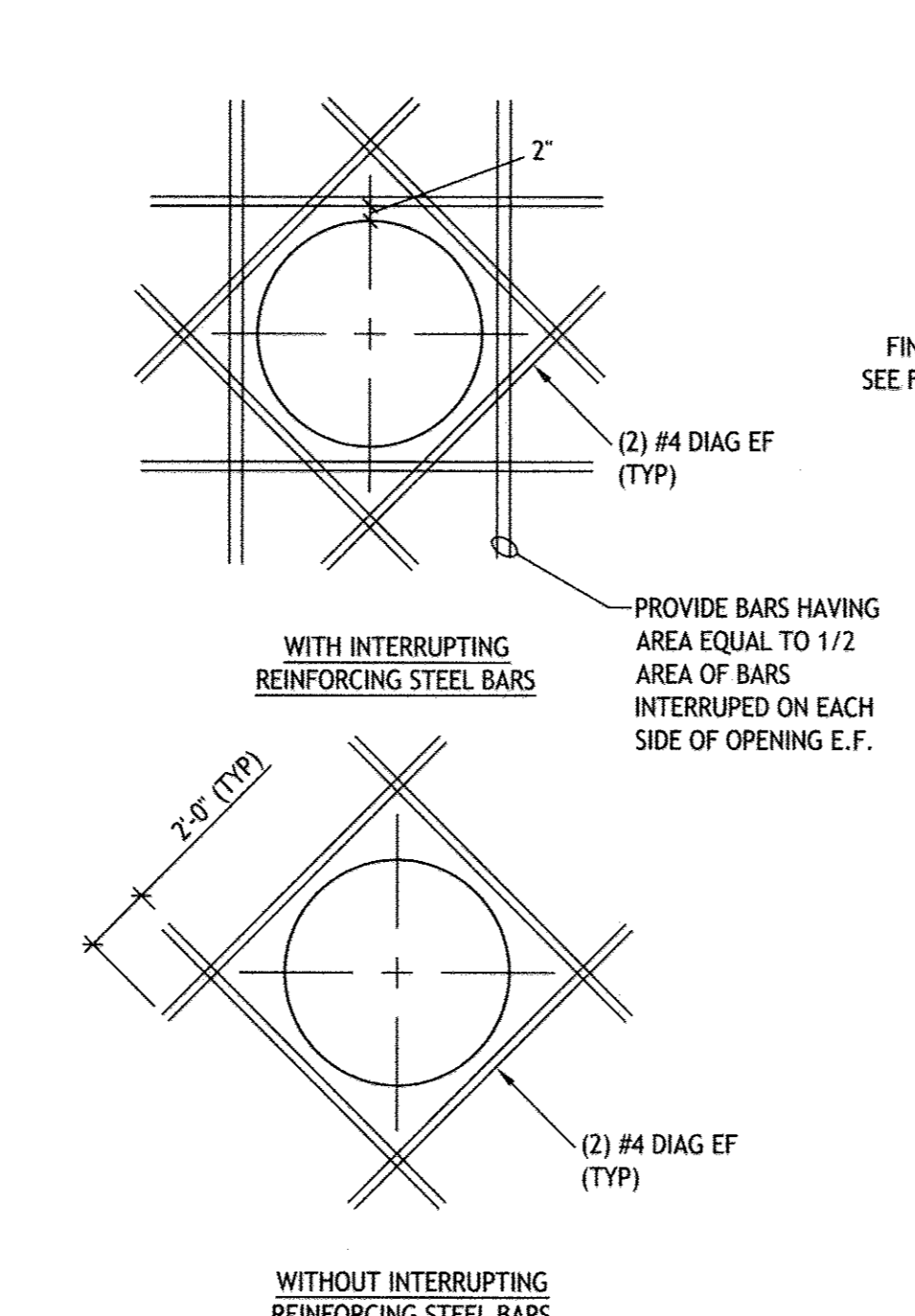


9 TYPICAL REINFORCEMENT BENDS 3/4" = 1'-0"

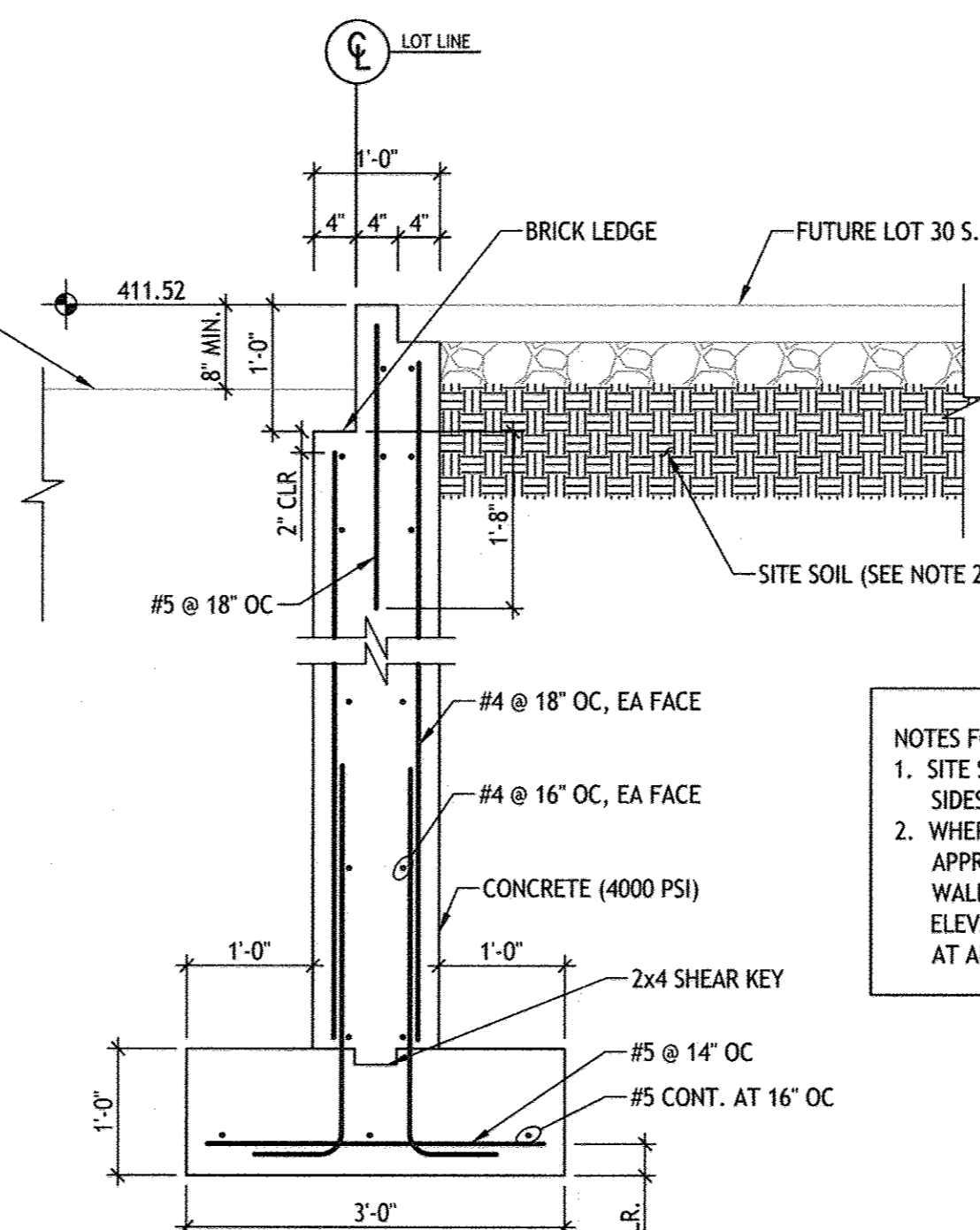


- WHEN EARTH COVER OVER POST EXCEEDS 12", OFFSET DISTANCES S' & B' MAY BE LESSENED. HEIGHT OF THE PANEL MUST REMAIN CONSTANT RELATIVE TO DITCH ELEVATION.
- POSTS IN BACK OF DITCH BOTTOM MAY BE SHORTENED - MINIMUM EMBEDMENT INTO SITE SOIL IS 4".
- MINIMUM EMBEDMENT INTO #57 STONE IS 6".
- ALL POSTS SHALL BE 6" MIN. IN LENGTH. POSTS (1) AND (2) SHALL BE 4'-0" IN LENGTH.
- THE SLOPE BACK FILL MATERIAL SHALL BE COMPACTED FIRMLY TO THE ESTABLISHED SLOPE AND STABILIZED AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR HAS THE OPTION TO CONSTRUCT THE END ANCHORAGE TERMINAL USING ONE OF THE TWO OPTIONS. OPTION 1 - 4" STEEL POSTS (SEE STD. MD 605.01-02). OPTION 2 - CONCRETE ANCHOR BLOCK (SEE STD. MD 605.01-03).
- LOW SPEED INSTALLATIONS REQUIRES 50 FEET (MINIMUM) "LON".
- PAID FOR PER LINEAR FOOT OF "TRAFFIC BARRIER W BEAM USING 6 FOOT POST." THE "END ANCHORAGE TERMINAL FOR TYPE A END TREATMENT EITHER OPTION." PAID FOR PER EACH.
- FOR ALTERNATIVE OFFSET BLOCKS SEE STD. MD 605.21 NOTE 5.

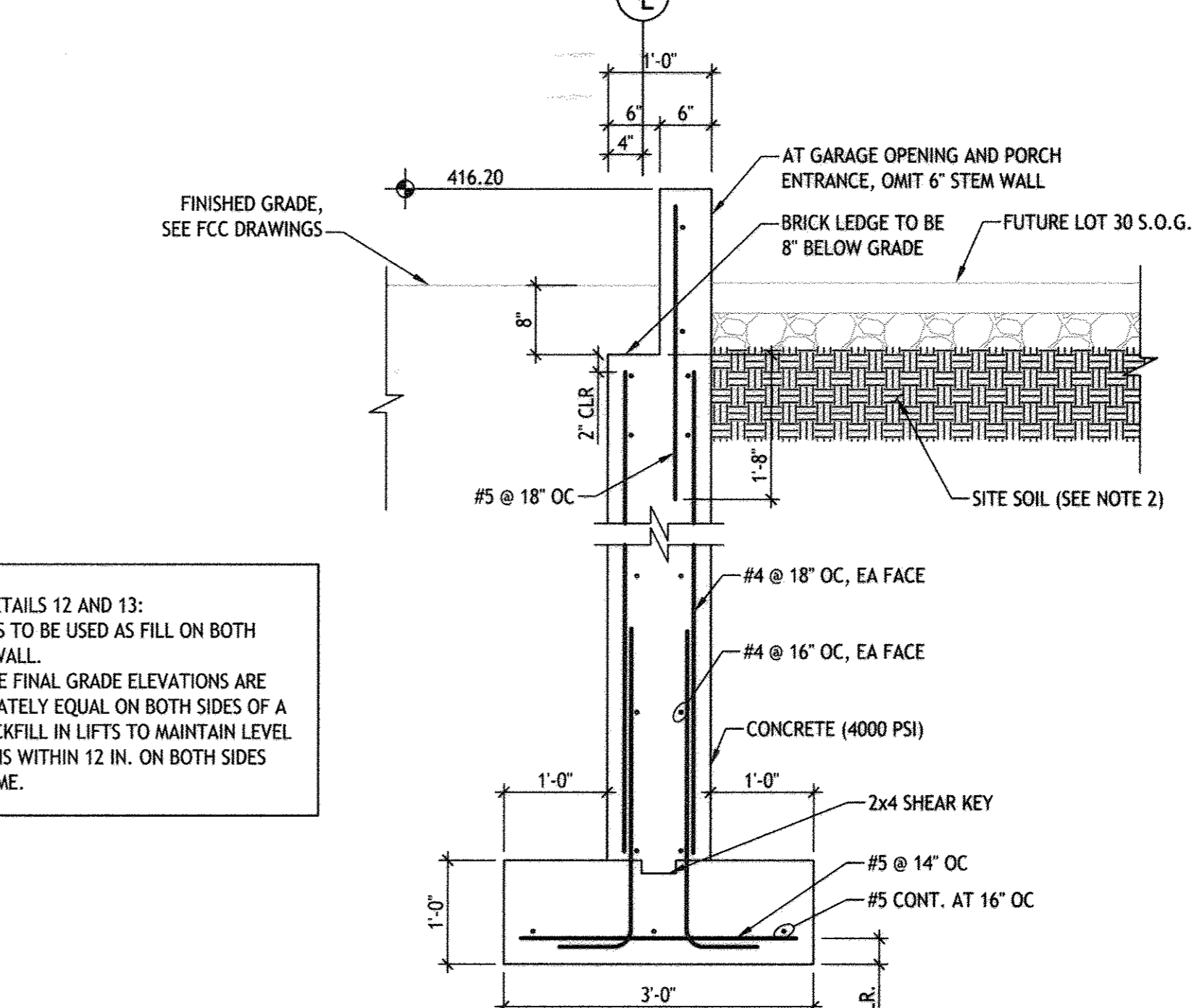
10 SHA TYPE A VEHICLE BARRIER 1/2" = 1'-0"



11 TYPICAL REINFORCEMENT FOR CONCRETE PENETRATION 1/2" = 1'-0"



12 SECTION AT BACK OF LOT 30 3/4" = 1'-0"



13 SECTION AT FRONT OF LOT 30 3/4" = 1'-0"

- NOTES FOR DETAILS 12 AND 13:
- SITE SOIL IS TO BE USED AS FILL ON BOTH SIDES OF WALL.
 - WHERE THE FINAL GRADE ELEVATIONS ARE APPROXIMATELY EQUAL ON BOTH SIDES OF A WALL, BACKFILL IN LIFTS TO MAINTAIN LEVEL ELEVATIONS WITHIN 12 IN. ON BOTH SIDES AT ANY TIME.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 2/17/2018

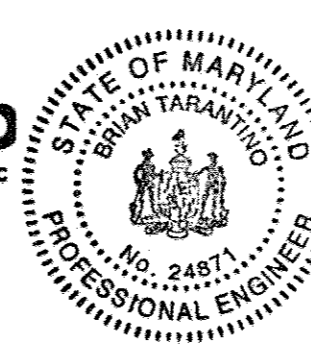
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 2/22/18

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 DATE: 2-22-18

NO.	DESCRIPTION	DATE
1	Revised Retaining Wall Heights	1/8/18

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADAPLHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

TEC structural design and forensic engineering
TARANTINO engineering consultants, pc
 7678 MIDTOWN ROAD
 FULTON, MD 20759
 410.921.7678
 tarantinoec.com



PROFESSIONAL CERTIFICATION
 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.
 BRIAN TARANTINO, LICENSE NO. 24871
 EXPIRATION DATE: 2/28/2018
 DATE: 1/2/18

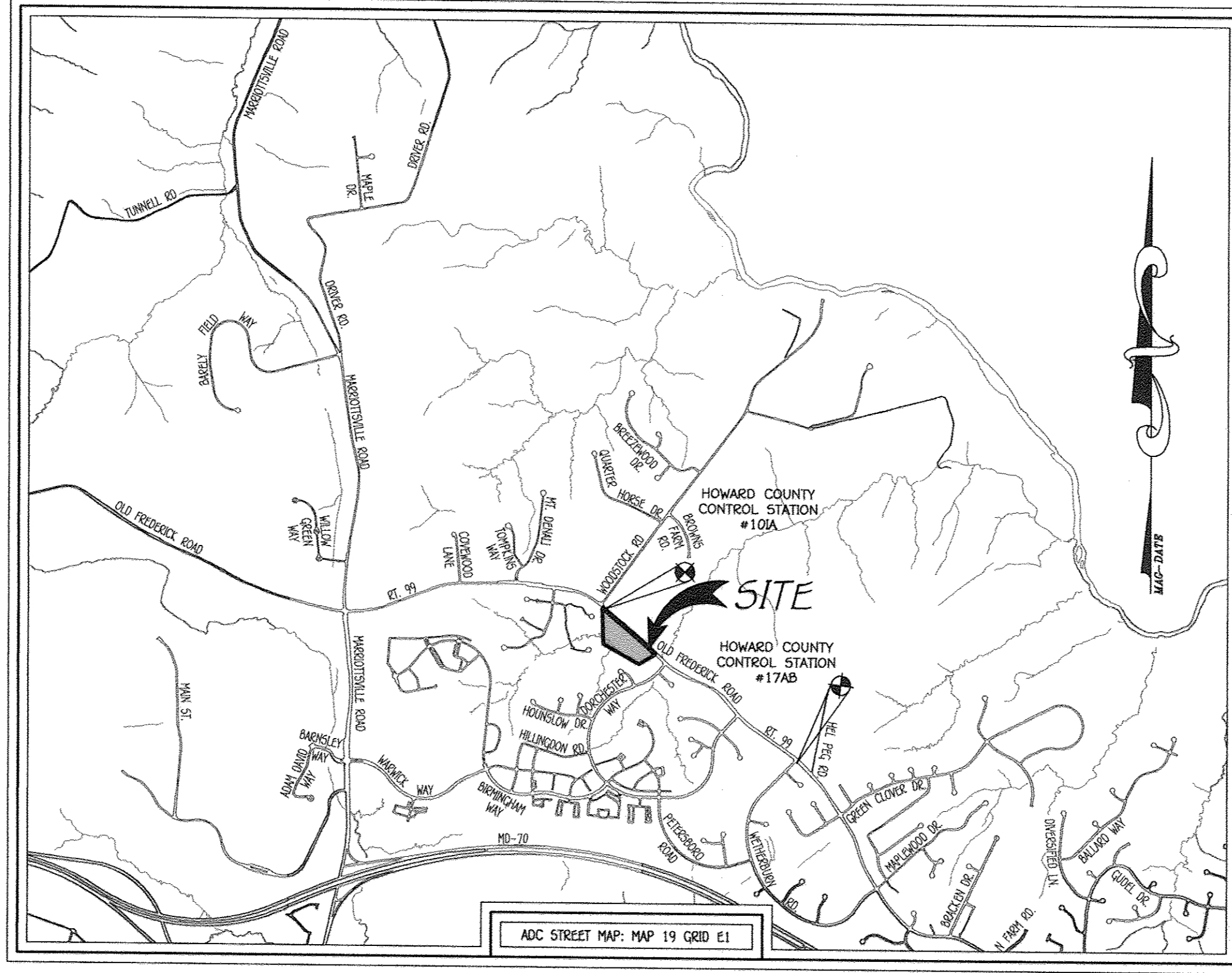
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SDP-86-88, S-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER 27, 2017
 SHEET 27 OF 39

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	DEMOLITION PLAN
3-4	OLD FREDERICK ROAD (MD ROUTE 99) - ROAD PLAN AND PROFILE
5	GEOMETRY PLAN AND LANDSCAPE PLAN FOR OLD FREDERICK ROAD (MD ROUTE 99)
6-8	OLD FREDERICK ROAD (MD ROUTE 99) - ROAD CROSS-SECTIONS
9	STRIPING PLAN AND DETAILS - OLD FREDERICK ROAD (MD ROUTE 99)
10	TRAFFIC CONTROL PLANS AND DETAILS - OLD FREDERICK ROAD (MD ROUTE 99)
11	SHA LANDSCAPE NOTES AND DETAILS
12	STORMRAIN PROFILES & STRUCTURE SCHEDULE

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN WAVERLY GROVE

LOTS 1 THRU 30, OPEN SPACE LOTS 31 THRU 35 ZONING: R-SA-8 (RESIDENTIAL: SINGLE CLUSTER) DISTRICT

SYMBOL	DESCRIPTION
---272---	EXISTING CONTOUR 2' INTERVAL
---270---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	LINE OF OBSTRUCTION
---	SUPER OILT FENCE
---	SILT FENCE
---	15-24.9% SLOPES
---	25% AND GREATER
---	FOREST CONSERVATION EASEMENT
---	SWT BORING
---	EXISTING TREE
---	PROPOSED TREES
---	65 DBA UNMITIGATED LINE
---	65 DBA MITIGATED LINE
---	PUBLIC WATER & SEWER UTILITY EASEMENT
---	STORMWATER MANAGEMENT EASEMENT
---	RECREATIONAL OPEN SPACE
---	PRIVATE PATH, RETAINING WALL, AND MAINTENANCE EASEMENT



HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 101A
N 600995.133
E 1349540.293
ELEVATION: 441.902'

HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 17AB
N 598435.302
E 1349615.301
ELEVATION: 508.401'

LOCATION MAP
SCALE: 1" = 2000'

STREET LIGHT CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
MD ROUTE 99	100+52	43'L	COLONIAL POST-TOP FIXTURE (LED-100) MOUNTED ON A 14" BLACK FIBERGLASS POLE

STREET SIGN CHART			
STREET NAME	STATION	OFFSET	POSTED SIGN / SIGN CODE
MD ROUTE 99	99+75	55'L	STOP R1-1

GENERAL NOTES

- REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE FOR PRIVATE ROADS ARE PROVIDED BY THE WAVERLY GROVE HOMEOWNERS ASSOCIATION, INC. FOR THE TOWNHOUSE LOTS FRONTING PRIVATE STREETS.
- THIS PLAN IS SUBJECT TO A LETTER DATED SEPTEMBER 29, 2015 ON WHICH DATE THE PLANNING DIRECTOR GRANTED APPROVAL TO A WAIVER FROM DESIGN MANUAL, VOLUME 1, SECTION 5.2.3.1 WHICH REQUIRES BORINGS TO BE PROVIDED WITH THE DESIGN OF THE STORMWATER MANAGEMENT FACILITIES TO ALLOW THE REQUIRED SOIL BORINGS TO BE DEFERRED UNTIL THE SUBMISSION OF THE FINAL PLAN.
- OPEN SPACE LOTS 31 THRU 34 ARE OWNED/MANTAINED BY THE WAVERLY GROVE HOMEOWNERS ASSOCIATION, INC. OPEN SPACE LOT 35 IS OWNED BY HOWARD COUNTY MARSHLAND AND MAINTAINED BY THE DEPARTMENT OF RECREATION AND PARKS. OPEN SPACE LOTS 31 THRU 34, SHOWN HEREON ARE HEREBY DEDICATED TO THE WAVERLY GROVE HOMEOWNERS ASSOCIATION, INC. FOR THE RESIDENTS OF THIS SUBDIVISION AND THE RECORDING REFERENCE FOR THE ARTICLES OF INCORPORATION AND RESTRICTIONS ARE SHOWN IN GENERAL NOTE NO. 26.

SHEETS 28-39 WILL BE SUBMITTED AS A MSHA ACCESS PERMIT FOR MARYLAND STATE HIGHWAY ADMINISTRATION'S REVIEW AND APPROVAL.



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

FRANK J. MANALANGAN II
 DATE: 4/12/17

GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-SA-8 PER 10/6/13 COMPREHENSIVE ZONING PLAN.
- THIS PLAN IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 10/08/13 COMPREHENSIVE ZONING PLAN. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
- AREA TABULATIONS:
 - GROSS AREA OF TRACT = 9.25 AC.
 - AREA OF FLOODPLAIN = 3.18 AC.
 - AREA OF 2% OR GREATER SLOPES = .54 AC.
 - NET AREA OF TRACT = 5.53 AC.
 - AREA OF PROPOSED ROAD R/W = 1.45 AC.
 - AREA OF PROPOSED BUILDABLE LOTS = 1.47 AC.
- MODERATE INCOME HOUSING UNITS REQUIRED = 3 MHU (30 UNITS X 10% = 3 MHU).
- PUBLIC WATER AND SEWER SHALL BE UTILIZED WITHIN THIS DEVELOPMENT.
- EXISTING UTILITIES ARE BASED ON CONTR. NO. 20-3995-D, CONTR. NO. 24-3656-D AND CONTR. NO. 7.
- SOILS INFORMATION TAKEN FROM NCS WEB SOIL SURVEY.
- BOUNDARY INFORMATION IS BASED ON A SURVEY PERFORMED ON OR ABOUT MAY, 2014 BY FISHER, COLLINS & CARTER, INC.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY WITH 2' CONTOUR INTERVALS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED MAY, 2014.
- A NOISE STUDY DATED SEPTEMBER, 2015 HAS BEEN PERFORMED BY MARS GROUP INC. AND APPROVED ON 3/14/16 WITH SP-16-001. NOISE MITIGATION HAS BEEN PROVIDED BY A NOISE WALL ALONG MARYLAND ROUTE 99 (OLD FREDERICK ROAD).
- STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES 1 & II, REVISED 2009. WE ARE PROVIDING STORMWATER THROUGH THE USE OF 11-6 MICRO BIO-RETENTION FACILITIES, F-6 BIO-RETENTION FACILITIES, A-2 PERMEABLE PAVING, H-5 DEEP WELLS AND THE USE OF "FILTERBA" INLETS. THE "FILTERBA" INLETS LOCATED WITHIN THE SHA RIGHT-OF-WAY WILL BE OWNED AND MAINTAINED BY SHA. ALL OTHER SWM DEVICES, INCLUDING THE FILTERBA INLETS LOCATED ALONG THE PRIVATE ROADWAY WILL BE OWNED AND MAINTAINED BY THE WAVERLY GROVE HOMEOWNERS ASSOCIATION.
- THE TRAFFIC STUDY DATED JUNE, 2015 FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP AND APPROVED ON 3/14/16 WITH SP-16-001.
- FOREST STAND DELINEATION PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. MARCH, 2015 AND APPROVED ON 3/14/16 WITH SP-16-001.
- AN ENVIRONMENTAL STUDY DETAILING THE STREAMS, WETLANDS AND OTHER ENVIRONMENTAL FEATURES WAS CONDUCTED BY ECO-SCIENCE PROFESSIONALS INC. DATED MARCH 2015 AND APPROVED ON 3/14/16.
- THE GEO-TECHNICAL INFORMATION, RELATING TO THE LOCATION OF ROCK OR GROUND WATER BENEATH THE PROPOSED SWM DEVICES FOR THIS PROJECT BY FISHER, COLLINS & CARTER, INC. WILL BE SUBMITTED WITH THIS PLAN.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. MONUMENT NOS. 101A AND 17AB WERE USED FOR THIS PROJECT:

HOWARD COUNTY GEODETIC CONTROL MONUMENT NO. 101A	N 600995.133 FT	E 1349540.293 FT	ELEV. 441.902'
HOWARD COUNTY GEODETIC CONTROL MONUMENT NO. 17AB	N 598435.302 FT	E 1349615.301 FT	ELEV. 508.401'
- THE FOREST CONSERVATION EASEMENTS SHOWN ON THIS PLAN HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, REFORESTATION OF 0.91 ACRES FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE REFORESTATION OF 0.91 ACRES AND A FEE-IN-LIEU PAYMENT OF \$13,068.00 FOR THE REMAINING 0.40 ACRES (0.91 ACRES - 0.51 ACRES). SURETY IN THE AMOUNT OF \$12,414.60 IS REQUIRED FOR THE ON-SITE REFORESTATION.
- NO CEMETERIES ARE LOCATED ON THIS PROPERTY NO STRUCTURES EXIST ON-SITE.
- SITE IS NOT ADJACENT TO A SCENIC ROAD.
- THERE ARE A TOTAL OF 23,266 SQUARE FEET OF SLOPES IN EXCESS OF 25%. HOWEVER THE INDIVIDUAL AREAS ARE LESS THAN 20,000 SQUARE FEET OF AREA BUT MAINTAIN A 15-STEP SLOPE AREA IN THE NET AREA CALCULATION.
- THE EXISTING 100 YEAR FLOODPLAIN WAS APPROVED APPROVED BY HOWARD COUNTY WITH F-95-174.
- ALL LOT/PARCEL AREAS ARE MORE OR LESS.
- DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT REDUCED TO HAD '83 GRID.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING REQUIREMENTS:
 - WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
 - SURFACE - 5X (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING;
 - GRADE - 1/2" MINIMUM;
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS;
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING);
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER SURFACE;
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET;
 - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- ARTICLES OF INCORPORATION FOR THE WAVERLY GROVE WOODS HOMEOWNERS ASSOCIATION, INC. WILL BE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO RECORDATION OF THE FINAL PLAN.
- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON SEPTEMBER 18, 2014 IN ACCORDANCE WITH SECTION 16.127 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THE SWM FACILITIES LOCATED ON H.O.A. OPEN SPACE WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
- THE PESTICIDES LANDSCAPE OBLIGATION IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A LANDSCAPE SURETY IN THE AMOUNT OF \$17,250 BASED ON 3 SHADE TREES @ \$300/SHADE, 9 EVERGREEN TREES @ \$150/EVERGREEN TREE SHALL BE BONDED AS PART OF THE OPEN DEVELOPERS AGREEMENT.
- SURETY FOR INSTALLATION OF STREET TREES HAS BEEN POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS PROJECT.
- EXISTING UTILITIES ARE BASED ON CONTR. 20-3995-D AND NO. 24-3656-D.
- SHOULD DISTURBANCE OCCUR IN THE FOREST CONSERVATION EASEMENT AREA DURING OR AFTER CONSTRUCTION, CIVIL PENALTIES OR MITIGATION MAY BE IMPOSED.
- THE CONSTRUCTION SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERS/CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-297-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM SPACE OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
- WELL AND SEPTIC SYSTEM COMPONENTS MUST BE PROPERLY ABANDONED AND NOTIFICATION OF SUCH SUBMITTED TO THE HEALTH DEPARTMENT PRIOR TO HEALTH SIGNATURE OF THE RECORD PLAT.
- ONLY PASSIVE RECREATION IS ALLOWED WITHIN THE PORTION RESERVED AS RECREATION AREA THAT FALLS WITHIN THE 50' STRUCTURE AND USE SETBACK.
- TRAFFIC CONTROL DEVICES:
 - THE R1-1 (STOP) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2450) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
 - 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).
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE STATE RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED (GRID PUNCH), SQUARE TUBE POST (1 1/2" GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE, SLEEVE (1/2" GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO (2) QUARTER PUNCH HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- THE DEPARTMENT OF PLANNING AND ZONING HAS APPROVED DISTURBANCE OF THE STREAM BUFFER FOR SIDEWALKS ALONG MD ROUTE 99 AND FOR THE PUBLIC SEWER AS AN ESSENTIAL DISTURBANCE PER SECTION 16.116 (c)(1)(i) AND SECTION 16.116 (c)(1)(ii) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- PLAT SUBJECT TO WP-16-069 WHICH THE PLANNING DIRECTOR ON DECEMBER 17, 2015 APPROVED TO WAIVE SECTION 16.120(c)(4) REQUIRING SINGLE-FAMILY ATTACHED (SFA) LOTS HAVE A MINIMUM OF 15' OF FRONTAGE ON A PUBLIC ROAD. SFA LOTS MAY BE APPROVED WITHOUT PUBLIC ROAD FRONTAGE, PROVIDED THEY FRONT ON A COMMONLY OWNED AREA CONTAINING A PARKING AREA OR PRIVATE ROAD NOT EXCEEDING A LENGTH OF 200' MEASURED FROM THE EDGE OF THE PUBLIC RIGHT-OF-WAY ALONG THE CENTERLINE OF THE PRIVATE ROAD. APPROVAL IS SUBJECT TO:
 - THE INTERIOR PRIVATE STREET AND PARKING AREAS SHALL BE PRIVATELY OWNED AND MAINTAINED BY A HOMEOWNERS ASSOCIATION FOR THE WAVERLY GROVE SUBDIVISION.
 - THE LENGTH OF EACH DRIVEWAY FOR ALL SINGLE FAMILY DETACHED DWELLING UNITS IN THE WAVERLY GROVE WOODS TOWNHOUSE DEVELOPMENT SHALL BE A MINIMUM OF 18' FROM THE FRONT OF THE GARAGE TO SIDEWALK OR CURB LINE OF THE INTERIOR PRIVATE ROAD IF NO SIDEWALK IS PROVIDED.
 - THE PRIVATE ROADWAY SHALL BE CONSTRUCTED TO COUNTY DESIGN STANDARDS AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION FOR THIS DEVELOPMENT.
- COMPLIANCE WITH SUBDIVISION REVIEW COMMITTEE AGENCY COMMENTS FOR SP-16-001/WARFIELD WOODS. ALL OR PARTS OF THIS SUBDIVISION PLAT ARE SUBJECT TO A FEE OR ASSESSMENT TO COVER OR DEFRAY TO THE HOWARD COUNTY CODE SECTION 16.112. THIS FEE OR ASSESSMENT, WHICH RUNS WITH THE LAND, IS A CONTRACTUAL OBLIGATION BETWEEN THE DEVELOPER AND EACH OWNER OF THIS PROPERTY AND IS NOT IN ANY WAY A FEE OR ASSESSMENT OF HOWARD COUNTY.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELKLOTT CITY, MARYLAND 21042
 (410) 461-2995

REVISIONS		
NO.	DESCRIPTION	DATE

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRADITIONAL ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

APPROVED: DEPARTMENT OF PUBLIC WORKS

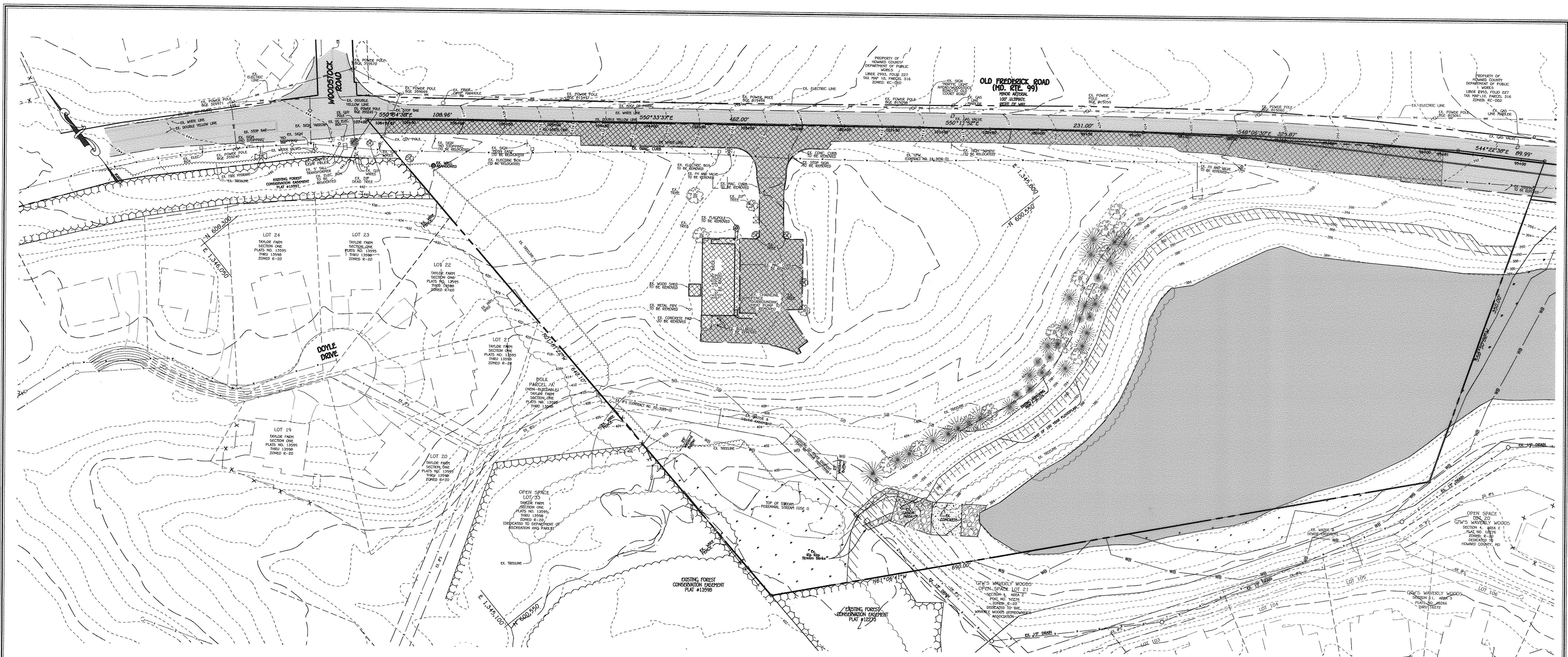
 Chief, Bureau of Highways
 DATE: 05/22/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING

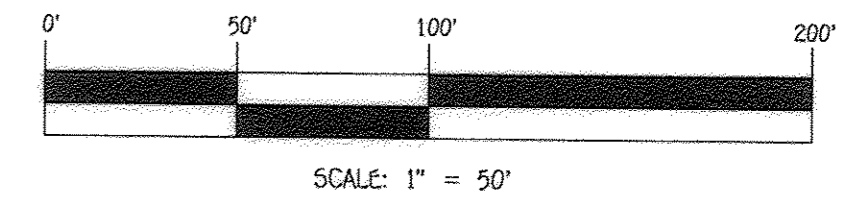
 Chief, Division of Land Development
 DATE: 6-28-17

Chief, Development Engineering Division
 DATE: 5-31-17

TITLE SHEET
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SDP-06-08, 5-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: APRIL 4, 2017
 SHEET 28 OF 39



PLAN
SCALE: 1" = 50'



LEGEND	
SYMBOL	DESCRIPTION
---272---	EXISTING CONTOUR 2' INTERVAL
---270---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
▲	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	FOREST CONSERVATION EASEMENT
○	EXISTING TREE
○	EXISTING TREE TO BE REMOVED
---	APPROXIMATE DEMOLITION AREA

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2895

REVISIONS		
NO.	DESCRIPTION	DATE

OWNER/DEVELOPER
WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 FOULDALE ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337

APPROVED: DEPARTMENT OF PUBLIC WORKS
James
Chief, Bureau of Highways *ms* 05/22/2017
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Karl Se... ..
Chief, Division of Land Development *js* 6-28-17
DATE

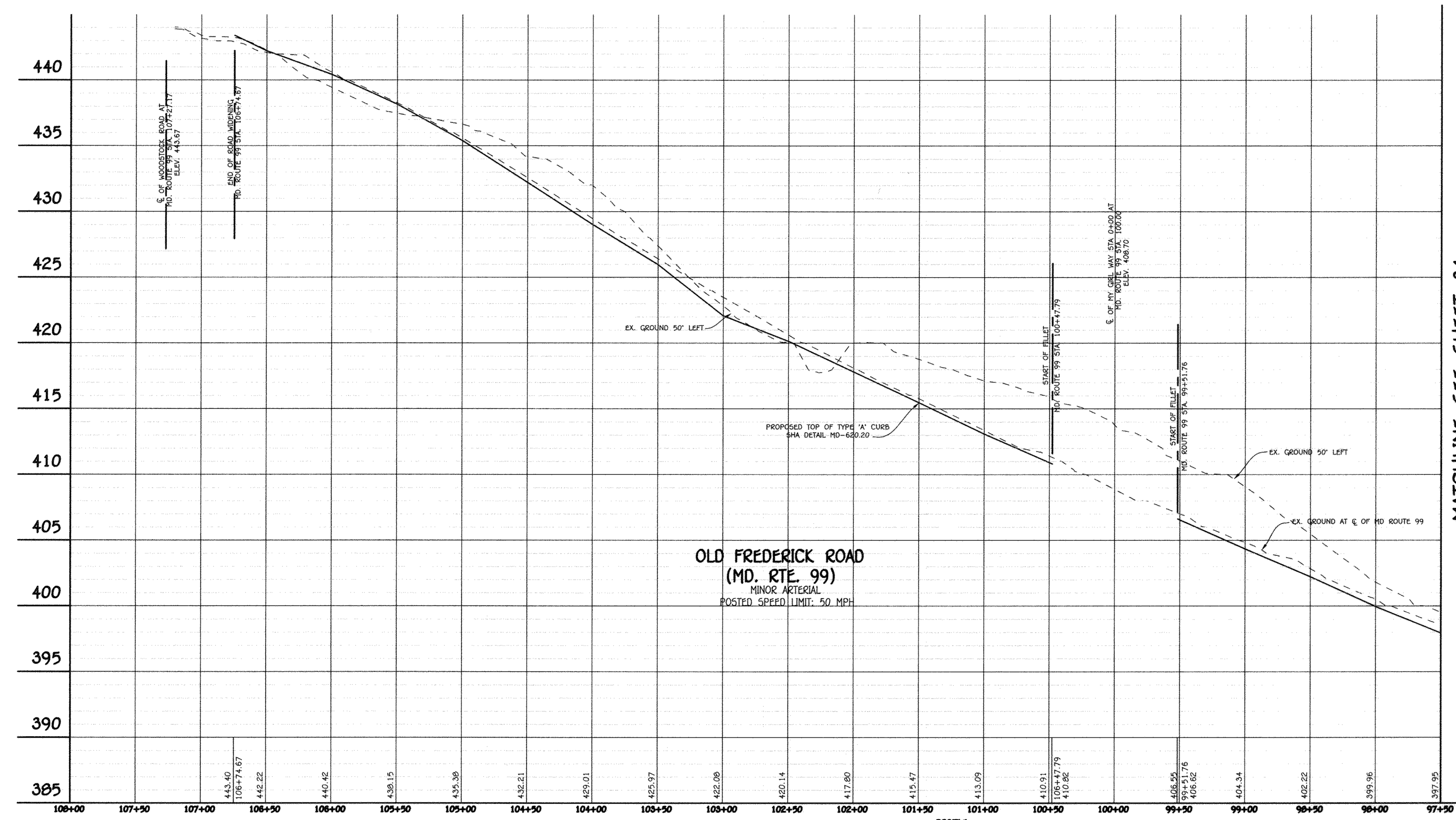
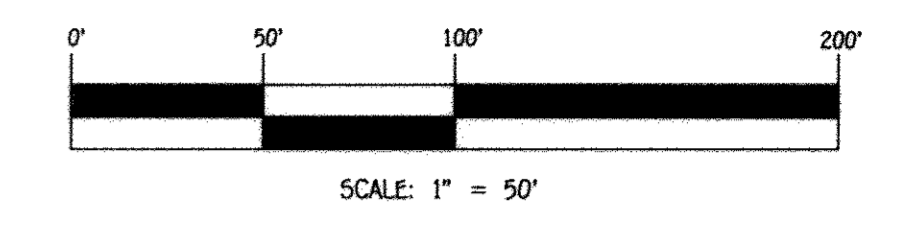
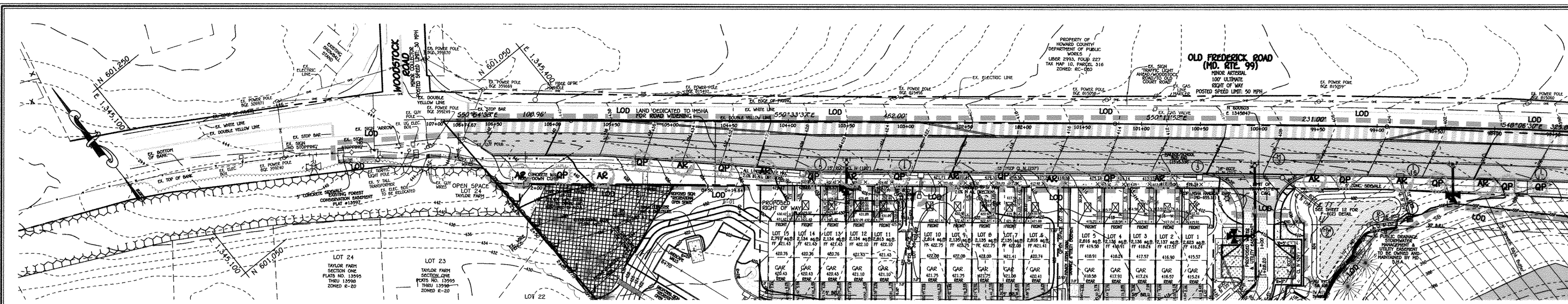
Ch...
Chief, Development Engineering Division *+* 5-31-17
DATE



SHEETS 28-39 WILL BE SUBMITTED AS A MSHA ACCESS PERMIT FOR MARYLAND STATE HIGHWAY ADMINISTRATION'S REVIEW AND APPROVAL.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
Frank J. Manalansan II 4/18/17
FRANK J. MANALANSAN II DATE

DEMOLITION PLAN
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-SA-B
PREVIOUS HOWARD COUNTY FILES:
SOP-06-08, 5-94-07, P-95-07, F-95-174,
ECP-14-072, 5P-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 29 OF 39



LEGEND	
SYMBOL	DESCRIPTION
-272-	EXISTING CONTOUR 2' INTERVAL
-270-	EXISTING CONTOUR 10' INTERVAL
-	EXISTING STORM DRAIN LINE
-	EXISTING SEWER LINE
-	EXISTING WATER LINE
-	WETLAND AREA
-	25' WETLAND BUFFER
-	50' STREAM BUFFER
-272-	PROPOSED CONTOUR 2' INTERVAL
-270-	PROPOSED CONTOUR 10' INTERVAL
x275.30	SPOT ELEVATION
-	PROPOSED STORM DRAIN LINE
-	PROPOSED SEWER
-	PROPOSED WATER
-	LIST OF OBSTURANCE
-	SUPPLY SALT FENCE
-	SALT FENCE
-	15-24 9/16 SLOPES
-	25% AND GREATER
-	FOREST CONSERVATION EASEMENT
-	SWM BOODINGS
-	EXISTING TREE
AR	PROPOSED STREET TREES
AR	PROPOSED STREET TREES
-	PUBLIC WATER & SEWER UTILITY EASEMENT
-	STORMWATER MANAGEMENT EASEMENT
-	RECREATIONAL OPEN SPACE
-	PRIVATE PATH, RETAINING WALL AND MAINTENANCE EASEMENT
-	PROPOSED MACADAM FINISH
-	1-1/2" MILLING AND SURFACE OVERLAY

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2899

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE STORM DRAIN, SWM AND REMOVE ASSOCIATED EASEMENT	1-8-18

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADLEPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 2/17/2018
 Chief, Bureau of Highways
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 2/23/18
 Chief, Division of Land Development
 DATE

[Signature] 2-23-18
 Chief, Development Engineering Division
 DATE

PROFILE
 SCALE HORZ.: 1" = 50'
 VERT.: 1" = 5'



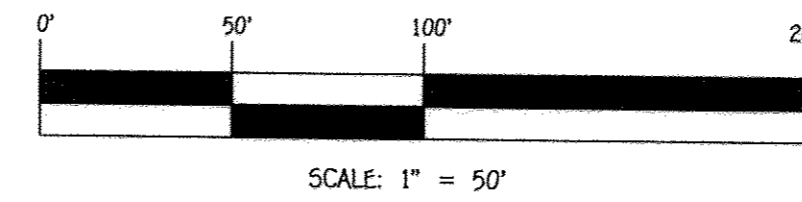
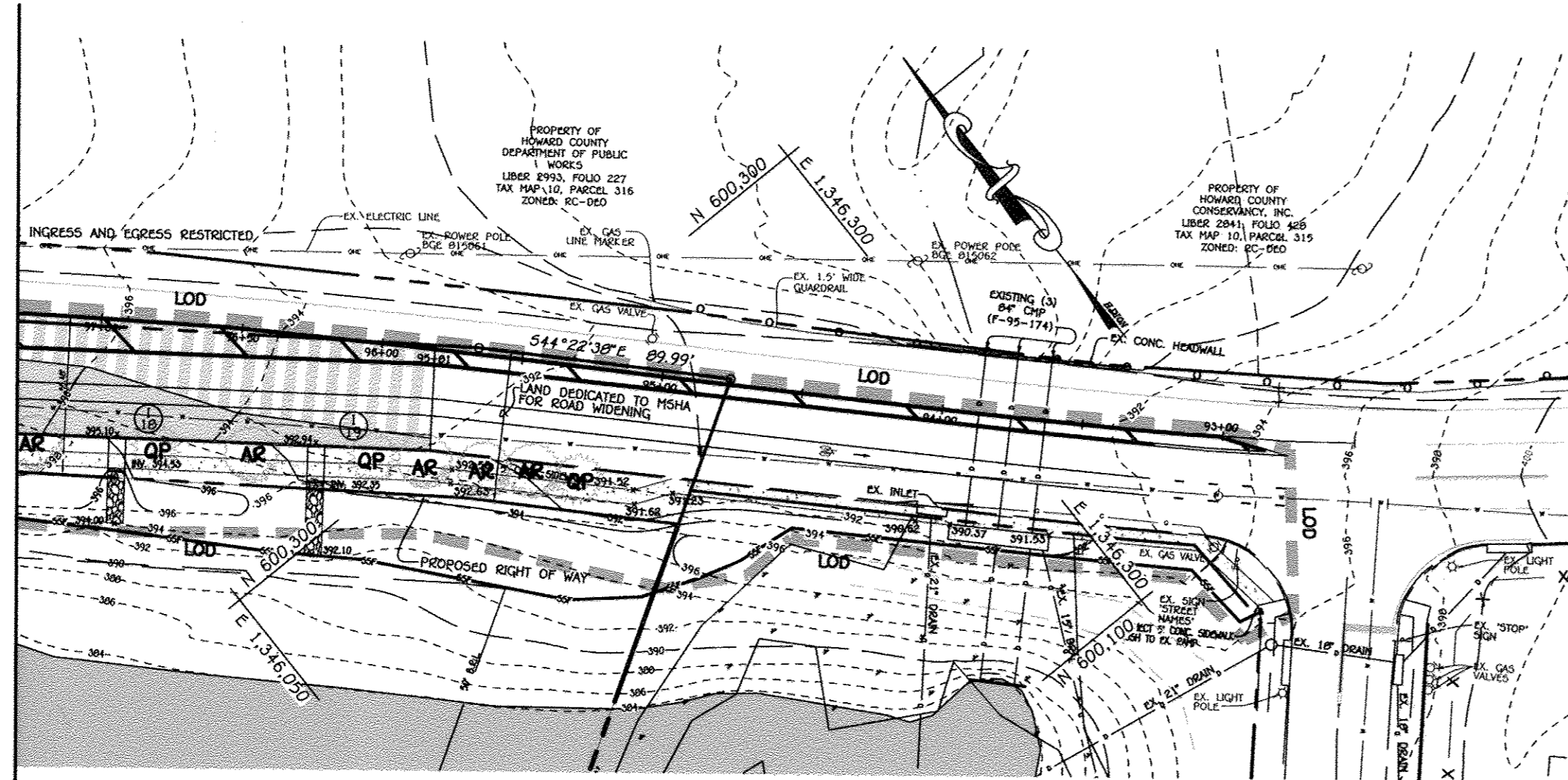
SHEETS 28-39 WILL BE SUBMITTED AS A MSHA ACCESS PERMIT FOR MARYLAND STATE HIGHWAY ADMINISTRATION'S REVIEW AND APPROVAL.

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/19.

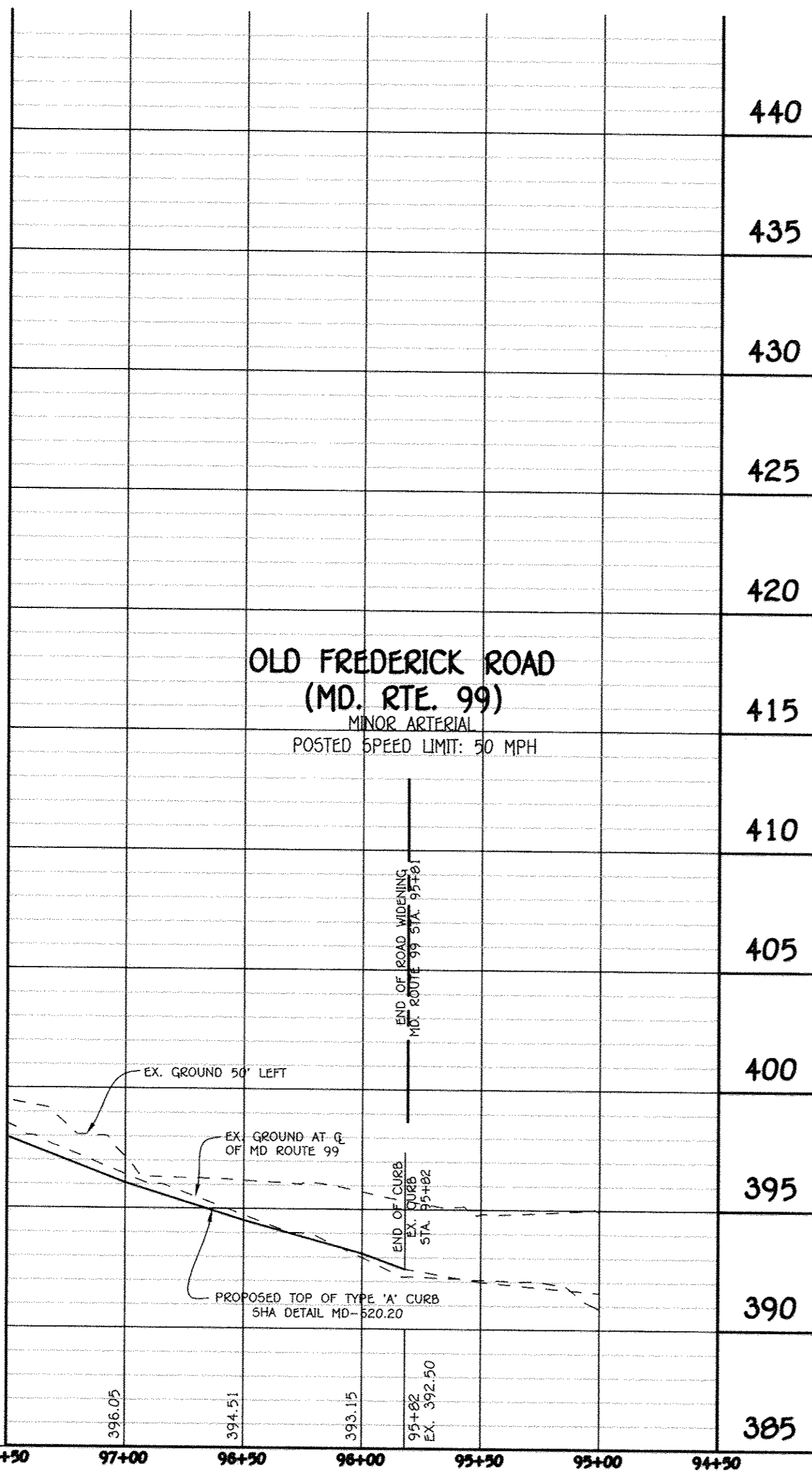
[Signature] 1/2/18
 FRANK J. MAJALANSKI II
 DATE

REVISED
 OLD FREDERICK ROAD
 (MD. ROUTE 99)
 ROAD PLAN AND PROFILE
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SDP-06-08, 5-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JANUARY 8, 2018
 SHEET 30 OF 39

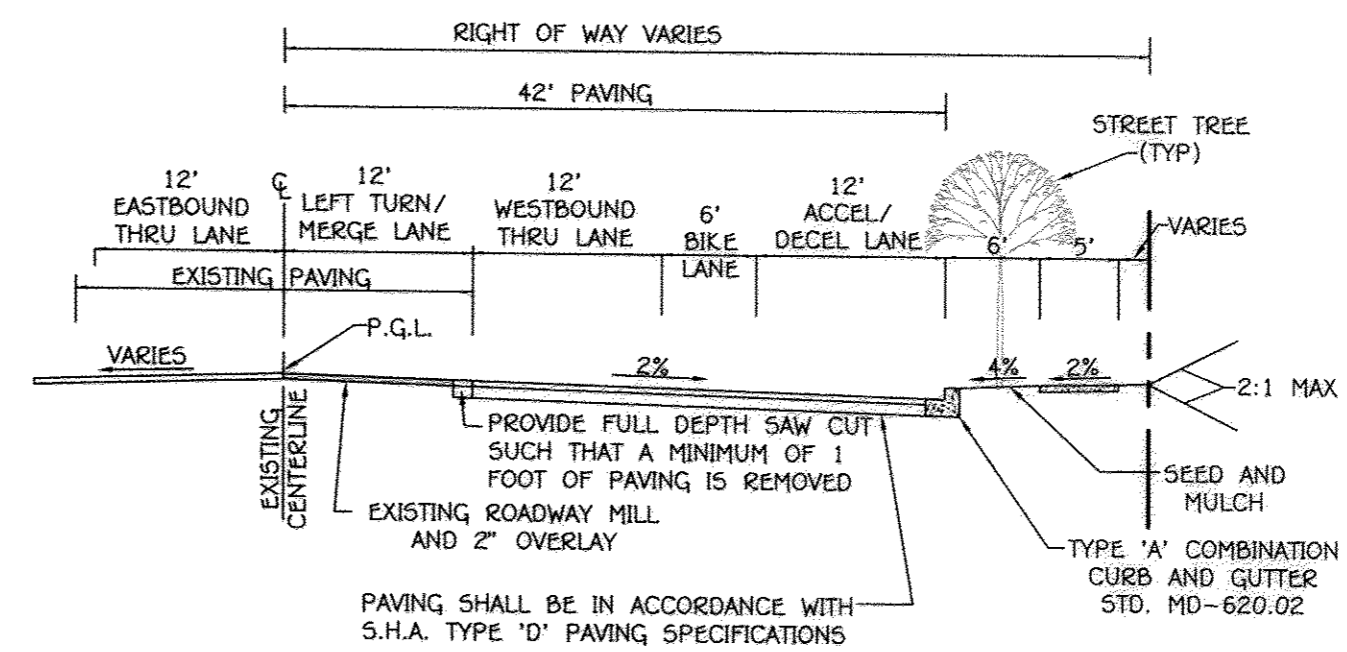
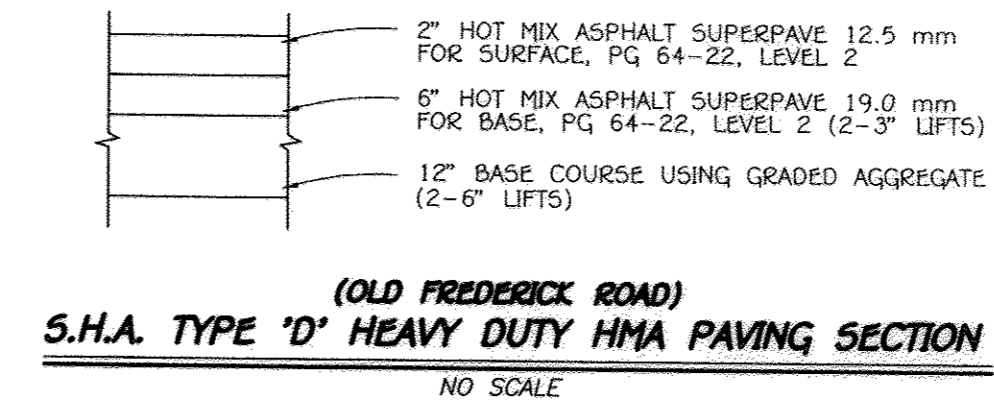
MATCHLINE SEE SHEET 30



MATCHLINE SEE SHEET 30



OLD FREDERICK ROAD
(MD. RTE. 99)
MINOR ARTERIAL
POSTED SPEED LIMIT: 50 MPH



TYPICAL ROAD WIDENING (OLD FREDERICK ROAD)
NO SCALE

LEGEND	
--- 2' ---	EXISTING CONTOUR 2' INTERVAL
--- 10' ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
▲	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
●	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	LIMIT OF DISTURBANCE
---	SUPER SILT FENCE
---	SILT FENCE
---	15-24 PER SLOPES
---	25% AND GREATER
---	FOREST CONSERVATION EASEMENT
---	SWM BORINGS
---	EXISTING TREE
---	PROPOSED STREET TREES
---	PUBLIC WATER & SEWER UTILITY EASEMENT
---	STORMWATER MANAGEMENT EASEMENT
---	RECREATION/OPEN SPACE
---	PRIVATE PATH/RETAINING WALL AND MAINTENANCE EASEMENT
---	PROPOSED MACADAM PAVING
---	1/2" MILLING AND SURFACE OVERLAY

PUBLIC STREET TREE SCHEDULE (MSHA)

QTY.	SIZE	COMMENTS
1,218.73/40 = 30.47	2 1/2" - 3" CAL.	40' APART (MD RT 99)
30 TREES	AR	ACER RUBRUM 'ARMSTRONG' RED MAPLE
	QP	Quercus Phellos Willow Oak

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21144
(410) 461-2895

OWNER/DEVELOPER
WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRIADAPHA ROAD
PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337

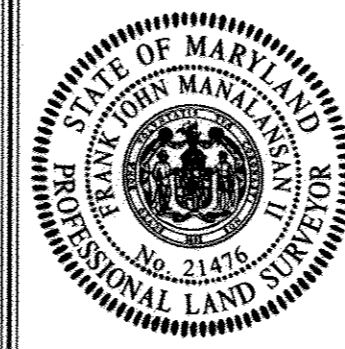
APPROVED: DEPARTMENT OF PUBLIC WORKS

James
Chief, Bureau of Highways
05/22/2017
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kurt
Chief, Division of Land Development
6-28-17
DATE

Frank J. Manalansan II
Chief, Development Engineering Division
5-31-17
DATE



SHEETS 28-39 WILL BE SUBMITTED AS A MSHA ACCESS PERMIT FOR MARYLAND STATE HIGHWAY ADMINISTRATION'S REVIEW AND APPROVAL.

PROFESSIONAL CERTIFICATION

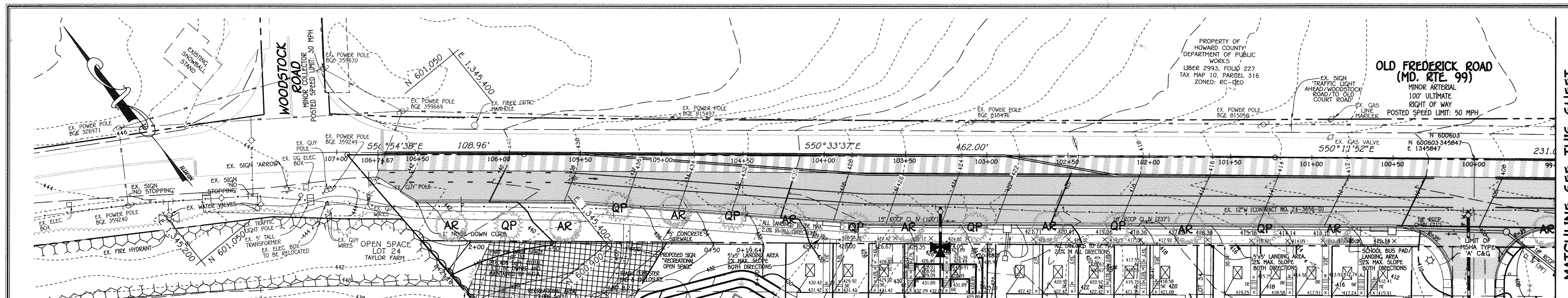
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Frank J. Manalansan II
FRANK J. MANALANSAN II
4/18/17
DATE

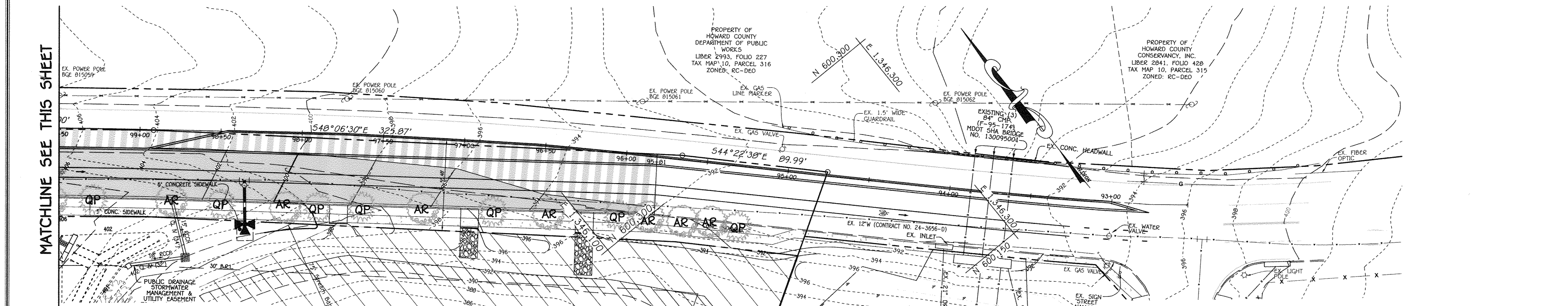
OLD FREDERICK ROAD
(MD ROUTE 99)
ROAD PLAN AND PROFILE
WAVERLY GROVE

LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-SA-B

PREVIOUS HOWARD COUNTY FILES:
SDP-06-08, S-94-07, P-95-07, F-95-174,
ECP-14-072, SP-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 31 OF 39



MATCHLINE SEE THIS SHEET



MATCHLINE SEE THIS SHEET

PLANTING SPECIFICATIONS

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.

ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF NURSERYMEN (AAO) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BOGIES AND ALL FORMS OF INSECT INFESTATIONS OR OBSTRUCTIVE DISFIGUREMENTS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FREELY DUG, NO HEADED-IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" (DESIGNATED "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS, LATEST EDITION, INCLUDING ALL AMENDMENTS.

CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.

CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES, UTILITY CONTRACTORS AND "MESH UTILITY" A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.

PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED BY THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE OR BLAZE ORANGE SAFETY FENCE AT THE DUMP LINE.

CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION.

BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.

PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE.

ALL TREES SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.

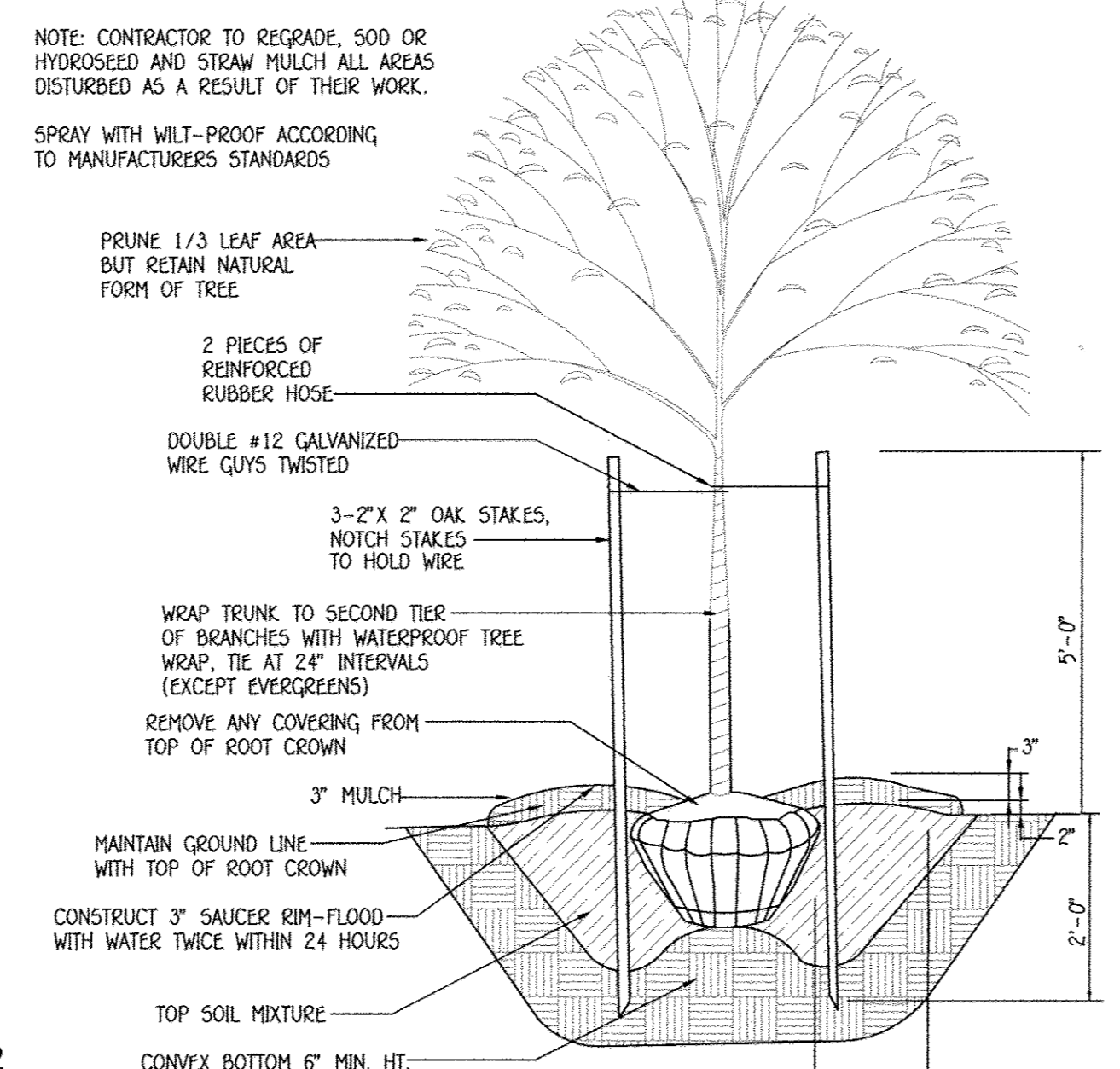
POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE.

PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE. ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS - TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL. ADD 3 LBS. OF EVERGREEN (ACIDIC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.

ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDDED.

THIS PLAN IS INTENDED FOR LANDSCAPE USE ONLY. SEE OTHER PLAN SHEETS FOR MORE INFORMATION ON GRADING, SEDIMENT CONTROL, LAYOUT, ETC.



TREE PLANTING DETAIL
NOT TO SCALE

STREET TREE SCHEDULE		
QTY.	SIZE	COMMENTS
1,218.73/40 = 30.47	2 1/2" - 3" GAL.	40' APART (MD RT 99)
30 TREES		

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	FOREST CONSERVATION EASEMENT
---	EXISTING TREE
---	PROPOSED STREET TREES
---	PUBLIC WATER & SEWER UTILITY EASEMENT
---	STORMWATER MANAGEMENT CASHEMENT
---	RECREATIONAL OPEN SPACE
---	PRIVATE PATH, RETAINING WALL, AND MAINTENANCE EASEMENT

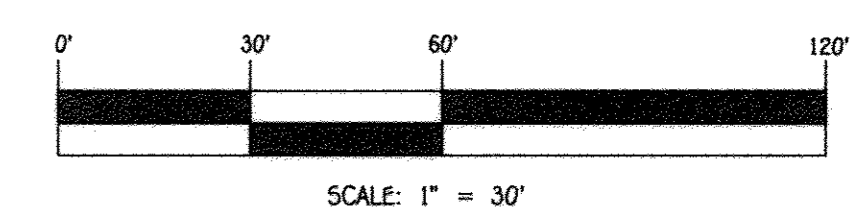
APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 2/17/2018
Chief, Bureau of Highways DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 2/27/18
Chief, Division of Land Development DATE

[Signature] 2.23.18
Chief, Development Engineering Division DATE



REVISED
GEOMETRY PLAN AND LANDSCAPE PLAN
FOR OLD FREDERICK ROAD
(MD ROUTE 99)
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-5A-B
PREVIOUS HOWARD COUNTY FILES:
SDP-06-08, 5-94-07, P-95-07, F-95-174,
ECP-14-072, SP-16-001, & WP-16-069
TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 8, 2018
SHEET 32 OF 39



PROFESSIONAL CERTIFICATION

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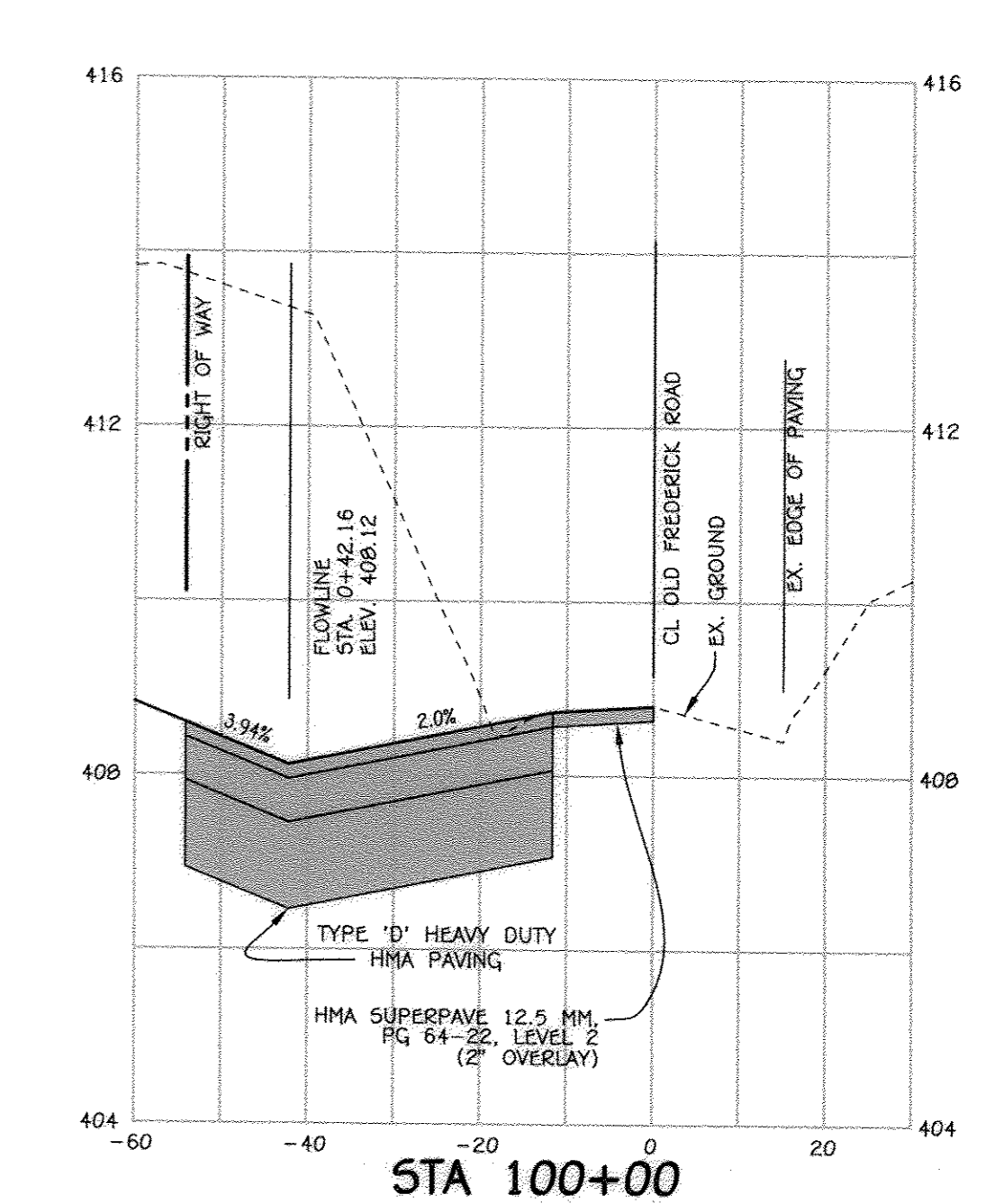
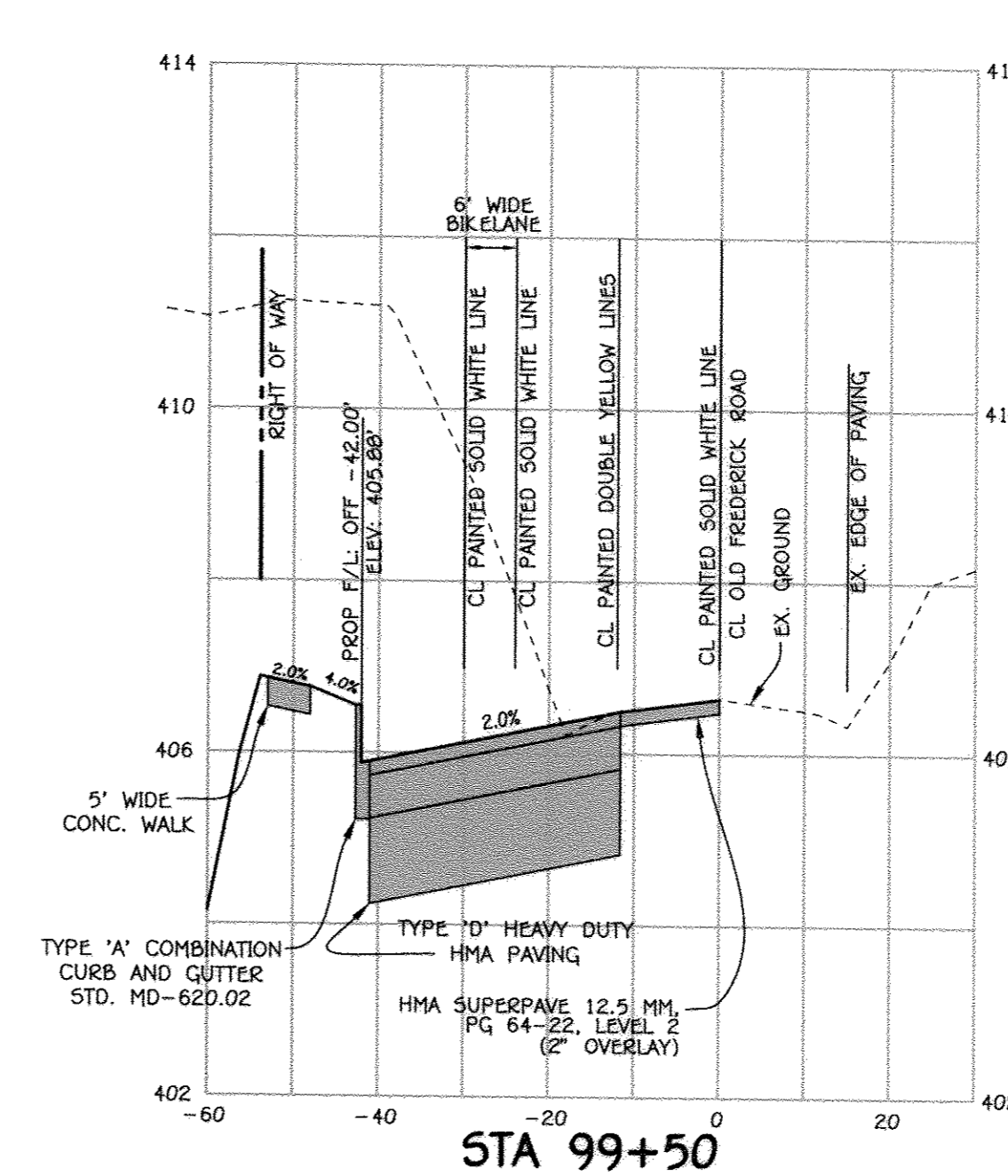
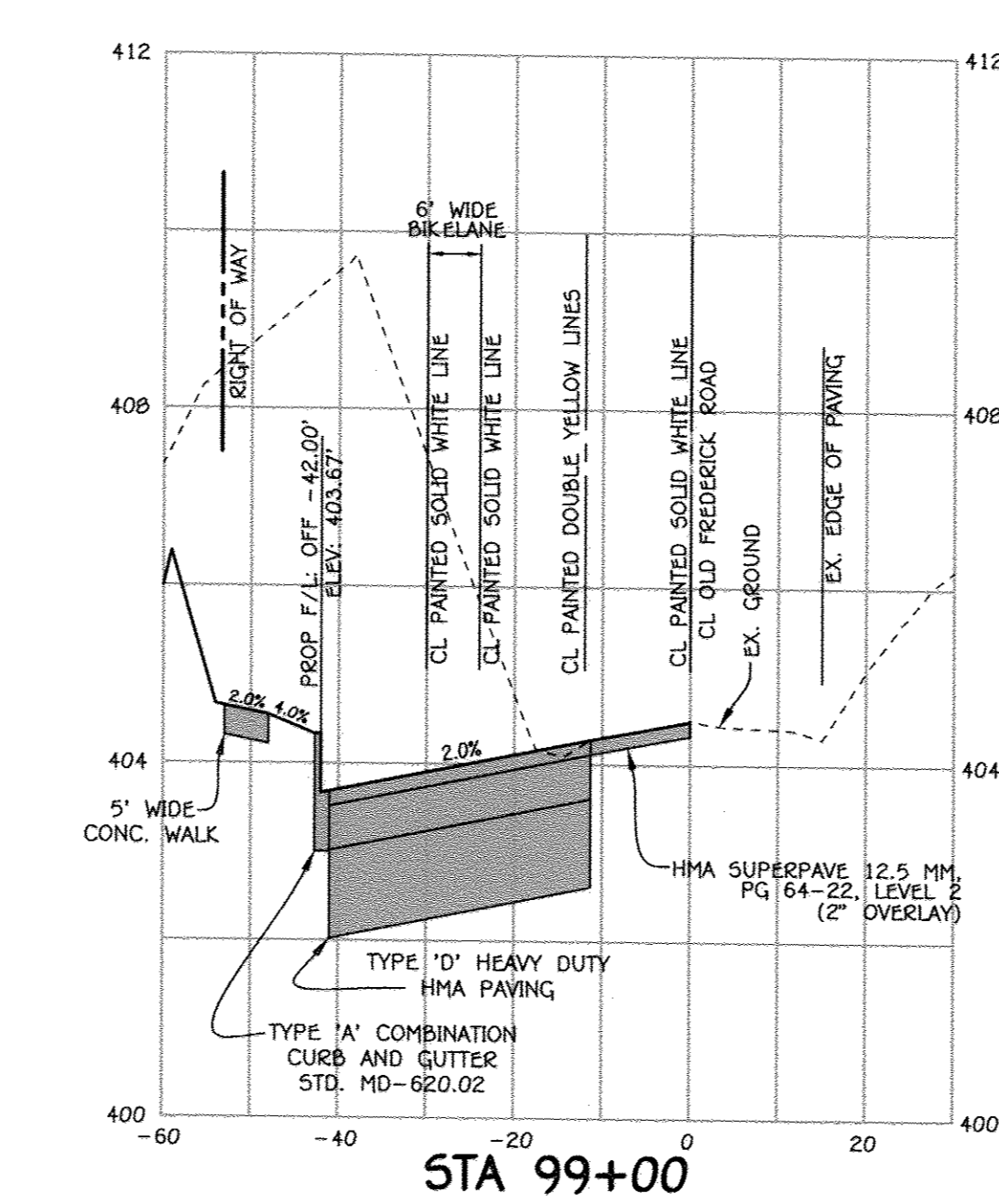
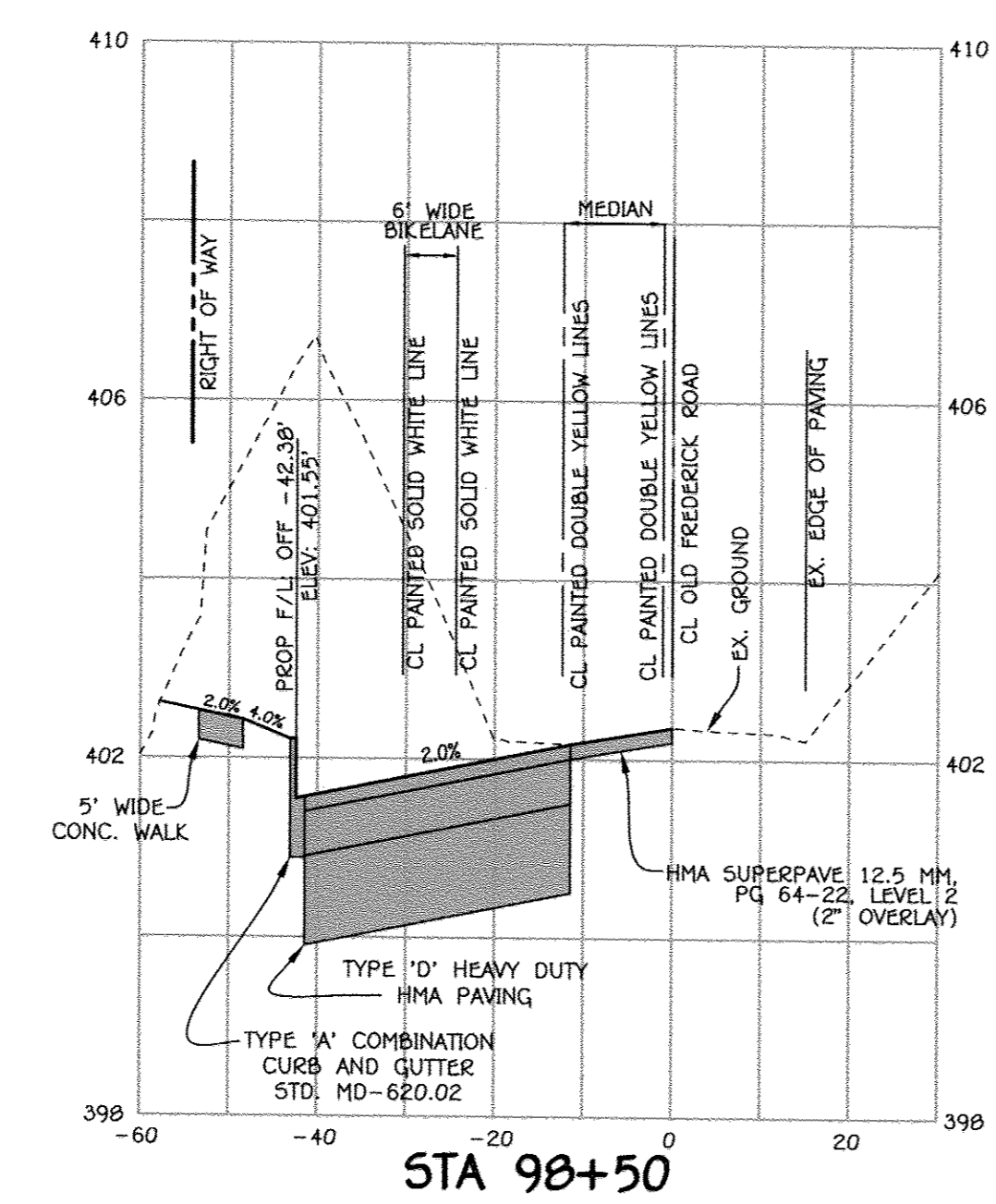
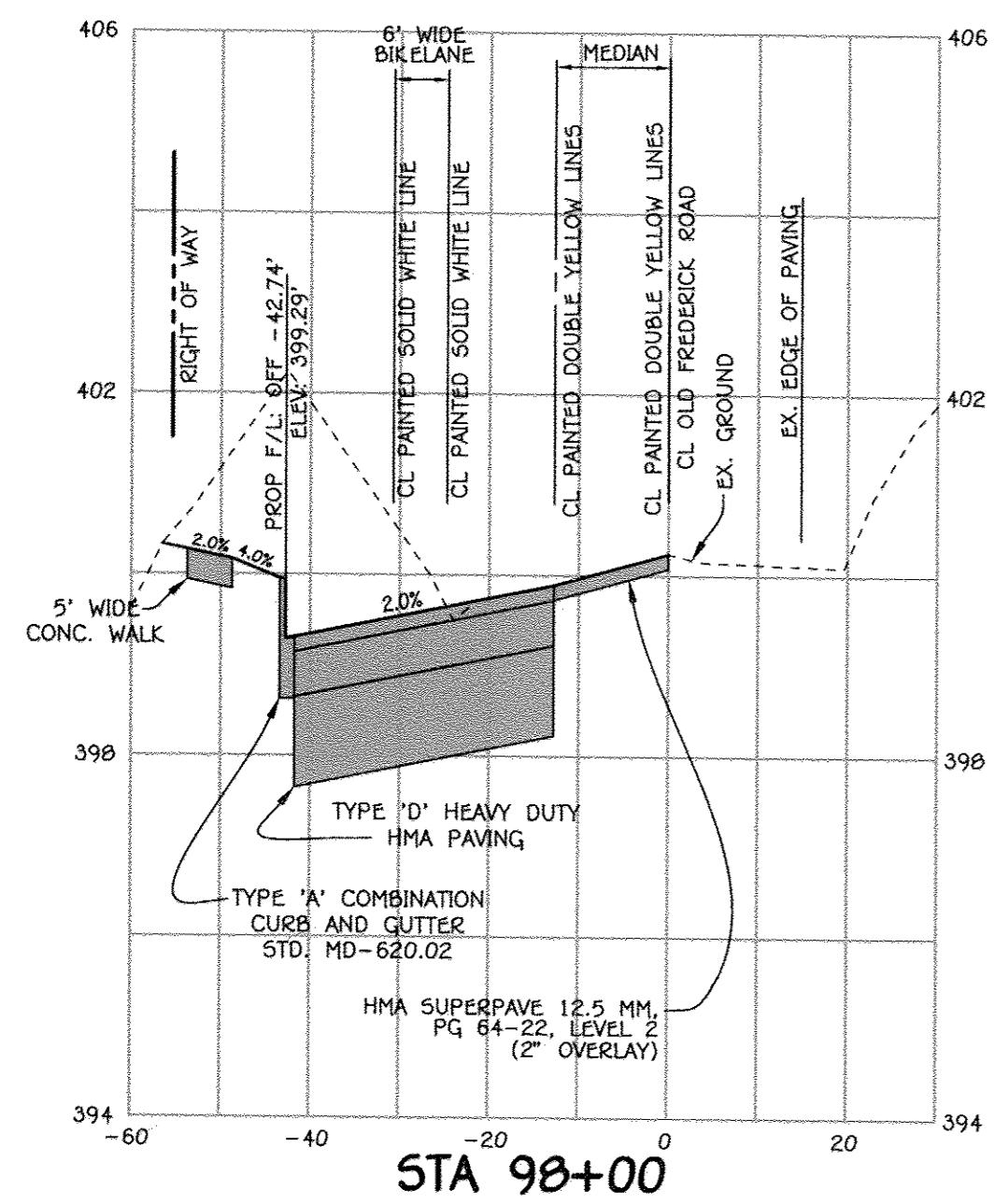
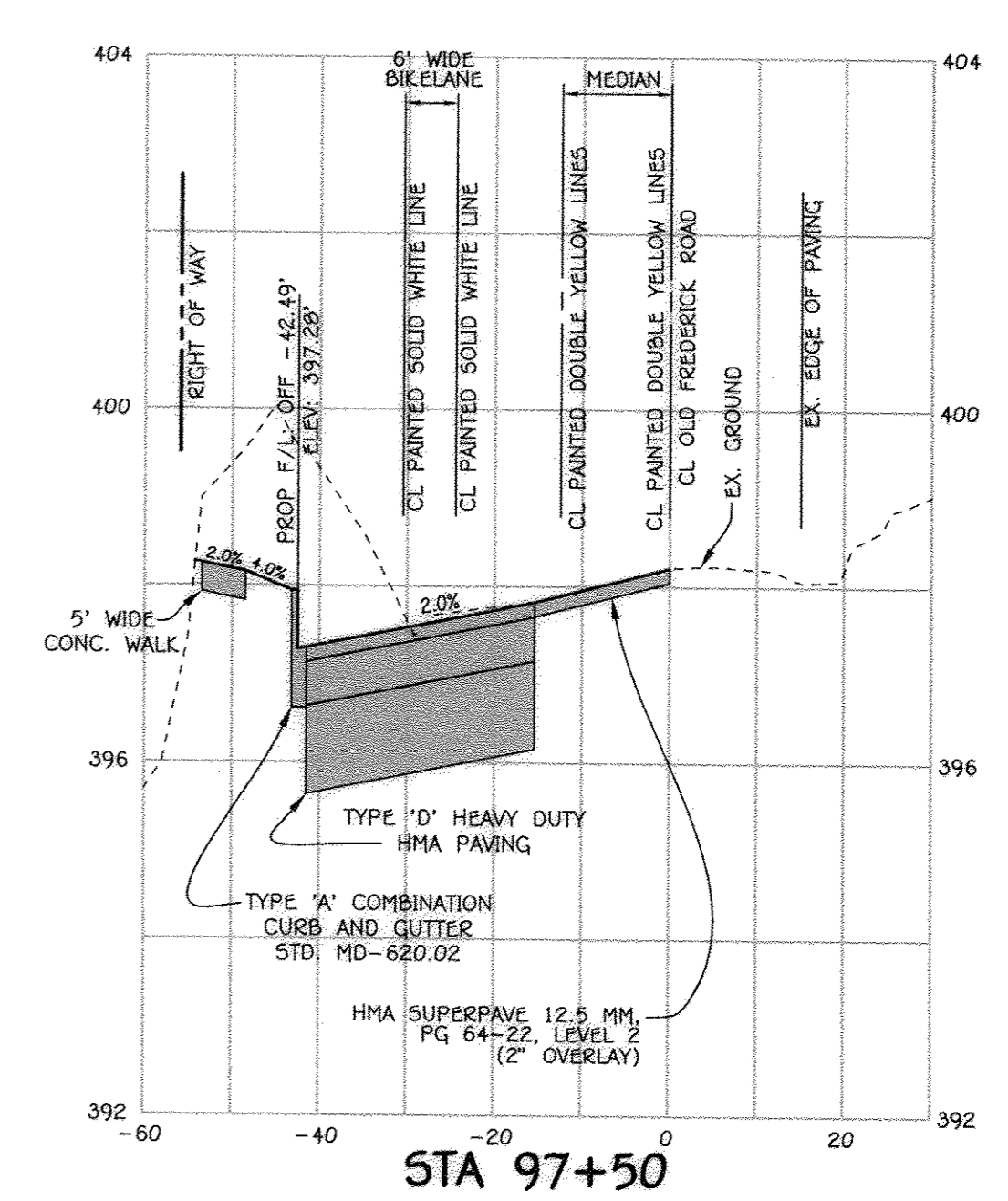
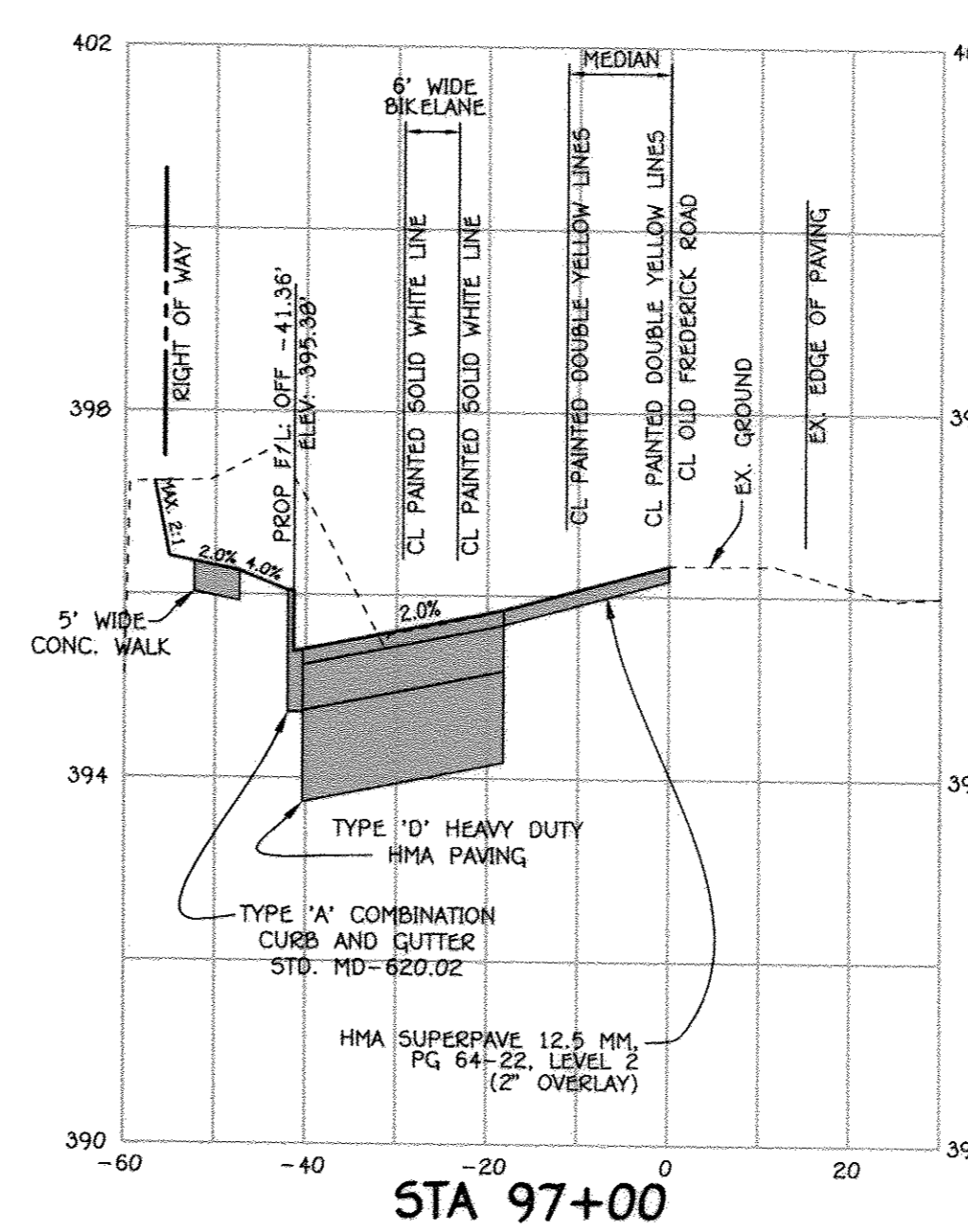
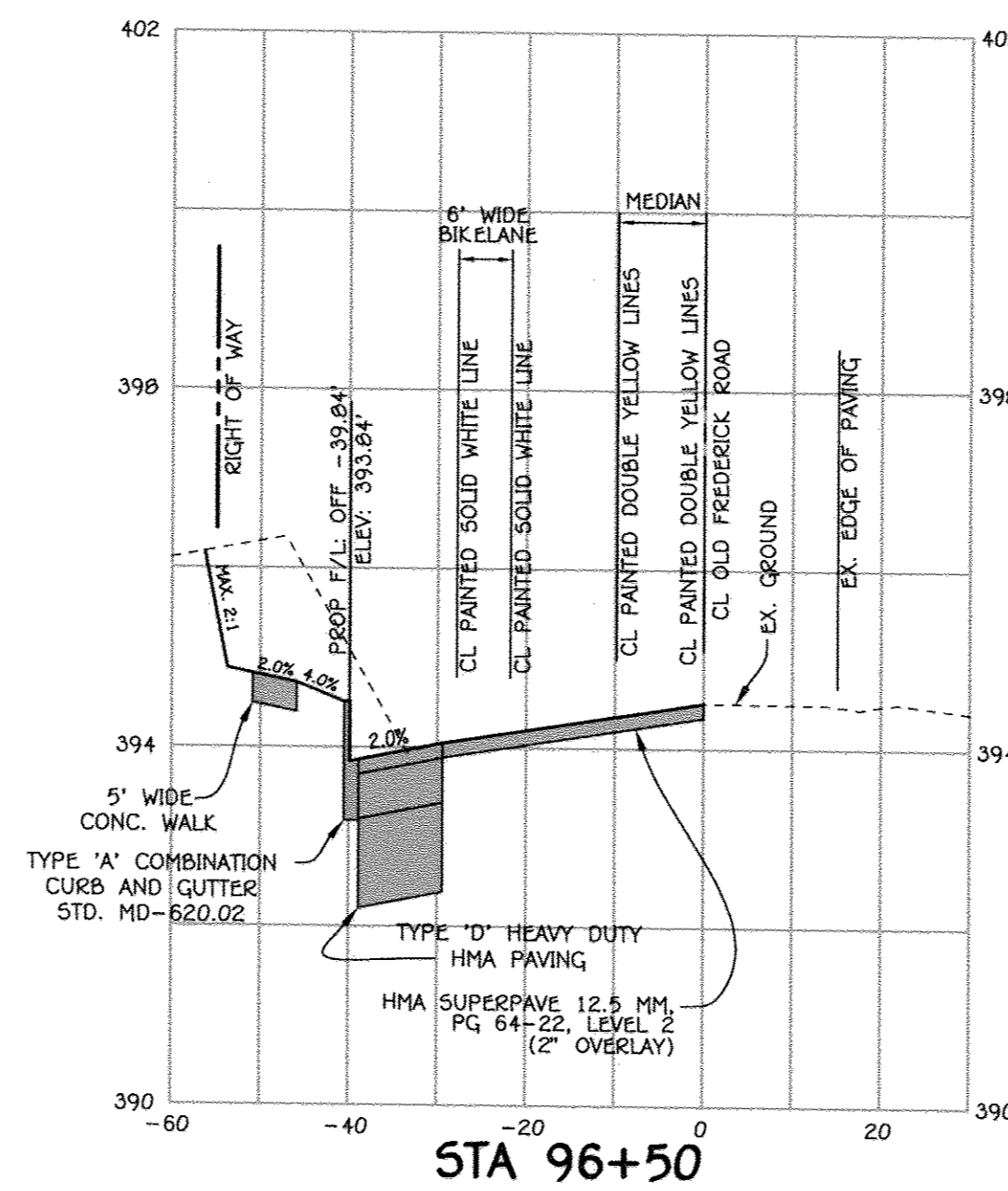
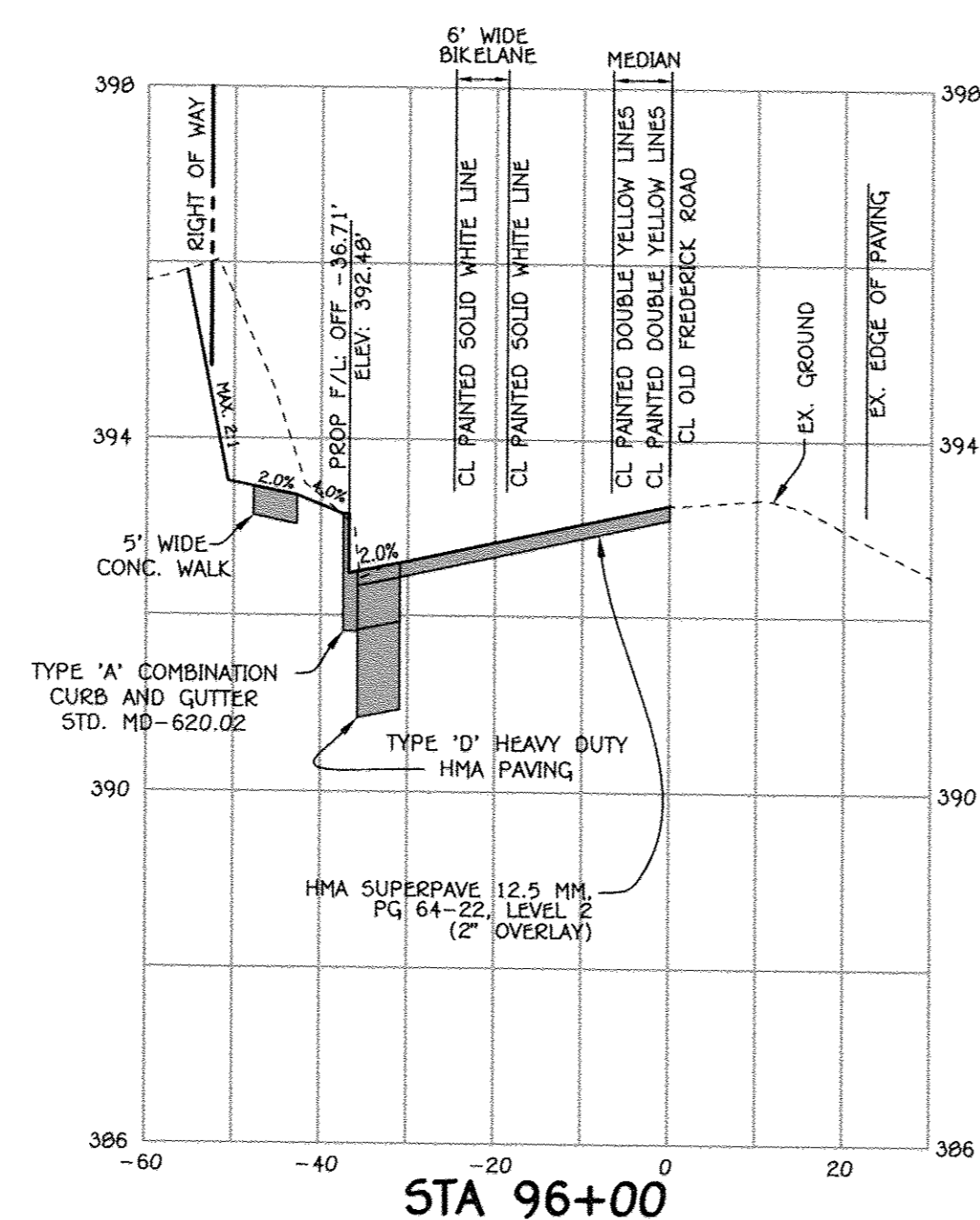
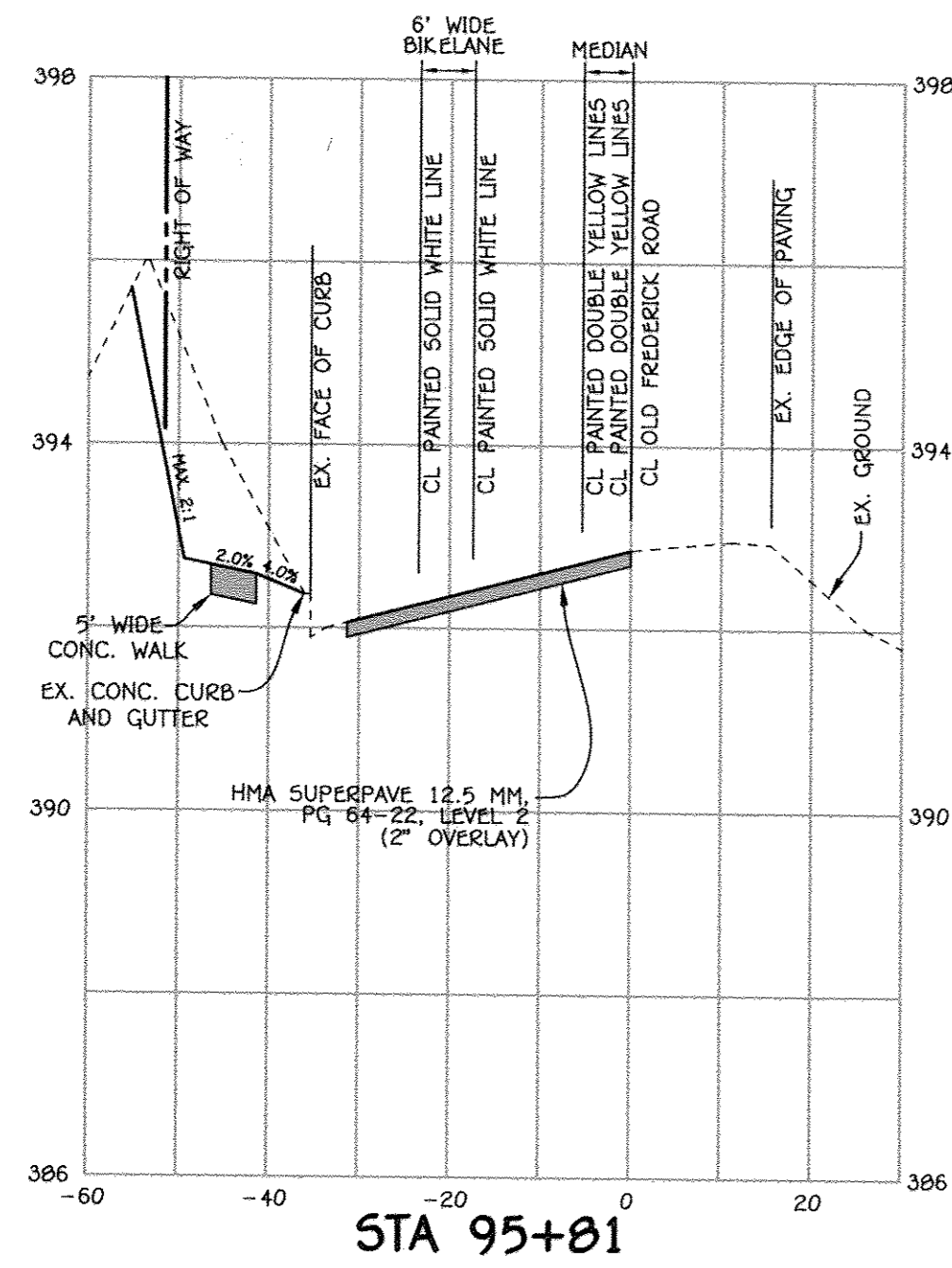
[Signature] 1/2/18
FRANK J. MANLAPAN II DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2295

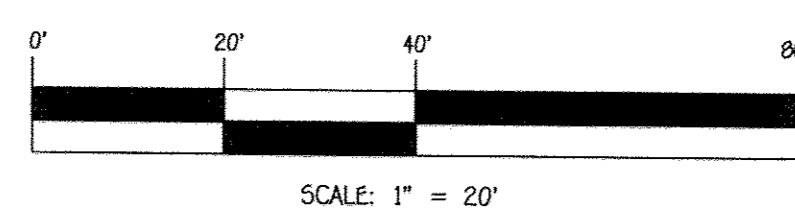
OWNER/DEVELOPER

WARFIELD WOODS LLC
C/O KENNARD WARFIELD JR
14451 TRIADAPLHIA ROAD
PO BOX 30
GLENELLG, MARYLAND 21737
410-442-2337

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE STORM DRAIN, SWM AND REMOVE ASSOCIATED EASEMENT	1-8-18



SCALE HORIZ.: 1" = 20'
 VERT.: 1" = 2'



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK 10272 BALTIMORE NATIONAL PIKE
 ELIZOVT CITY, MARYLAND 21046
 (410) 461-2895

REVISIONS		
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 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADDELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
 Chief, Bureau of Highways *ms* **05/22/2017** DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
 Chief, Division of Land Development *ms* **6-29-17** DATE

[Signature]
 Chief, Development Engineering Division *f* **5-31-17** DATE



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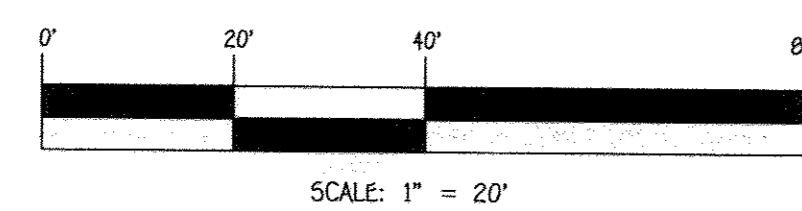
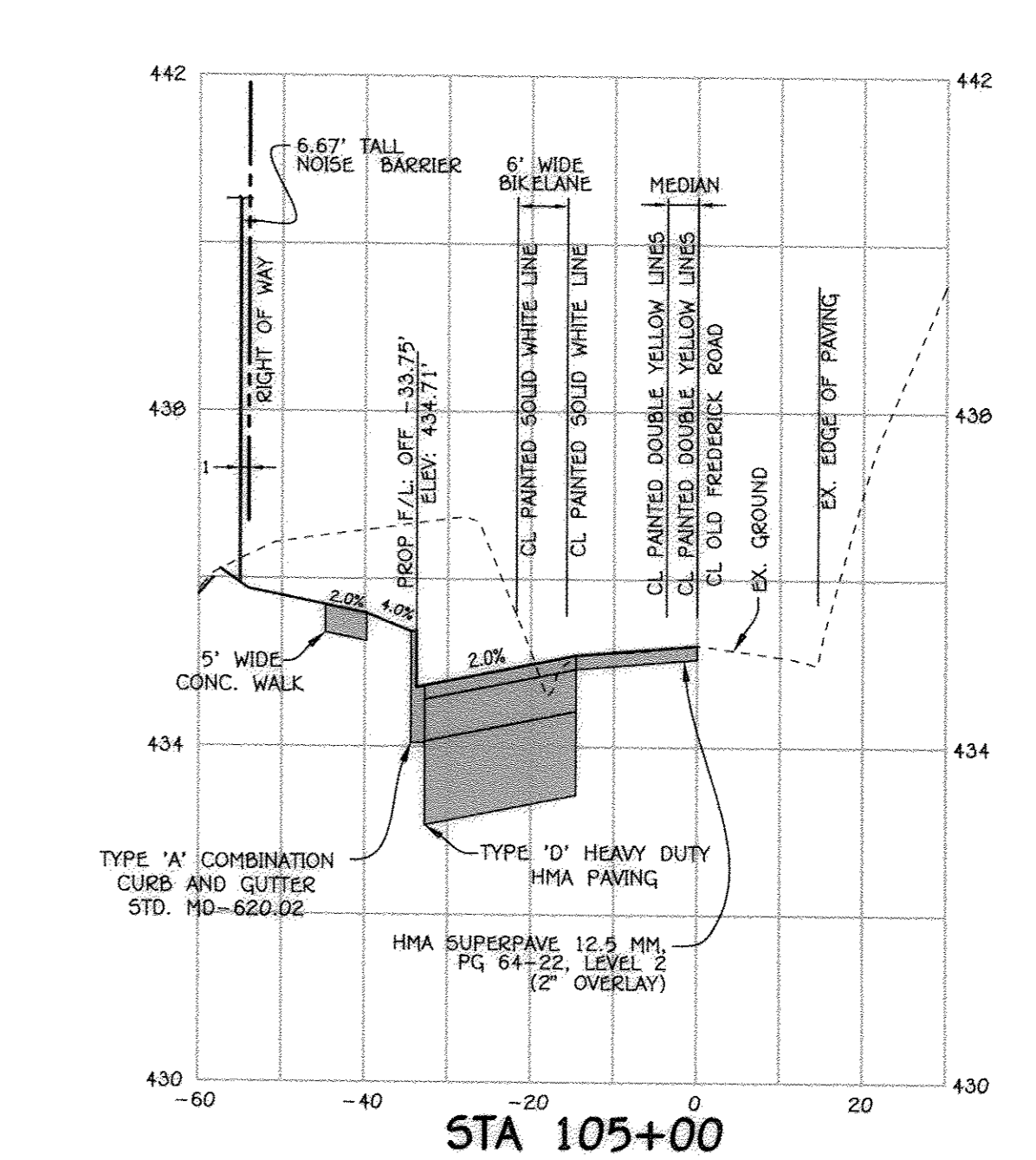
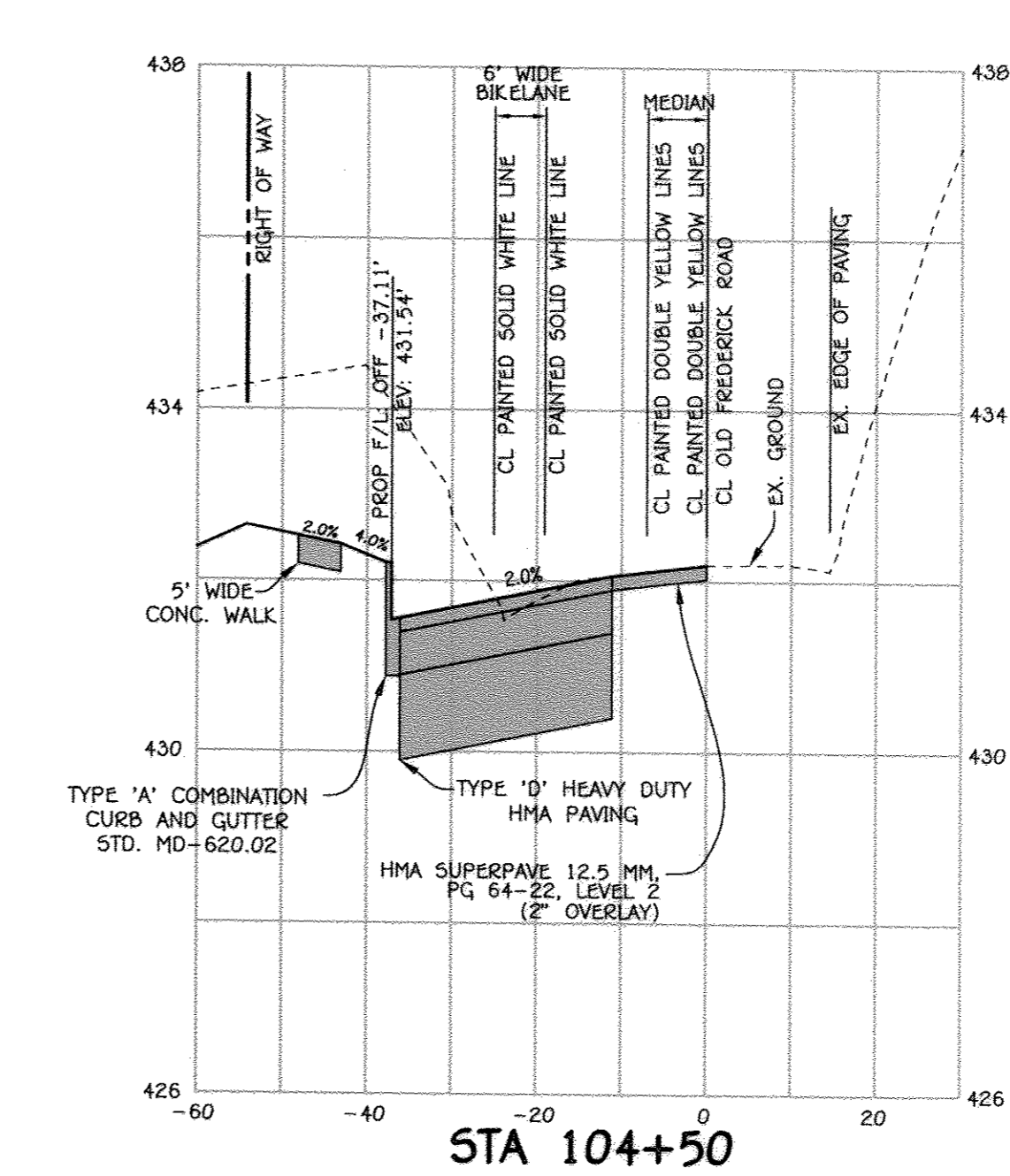
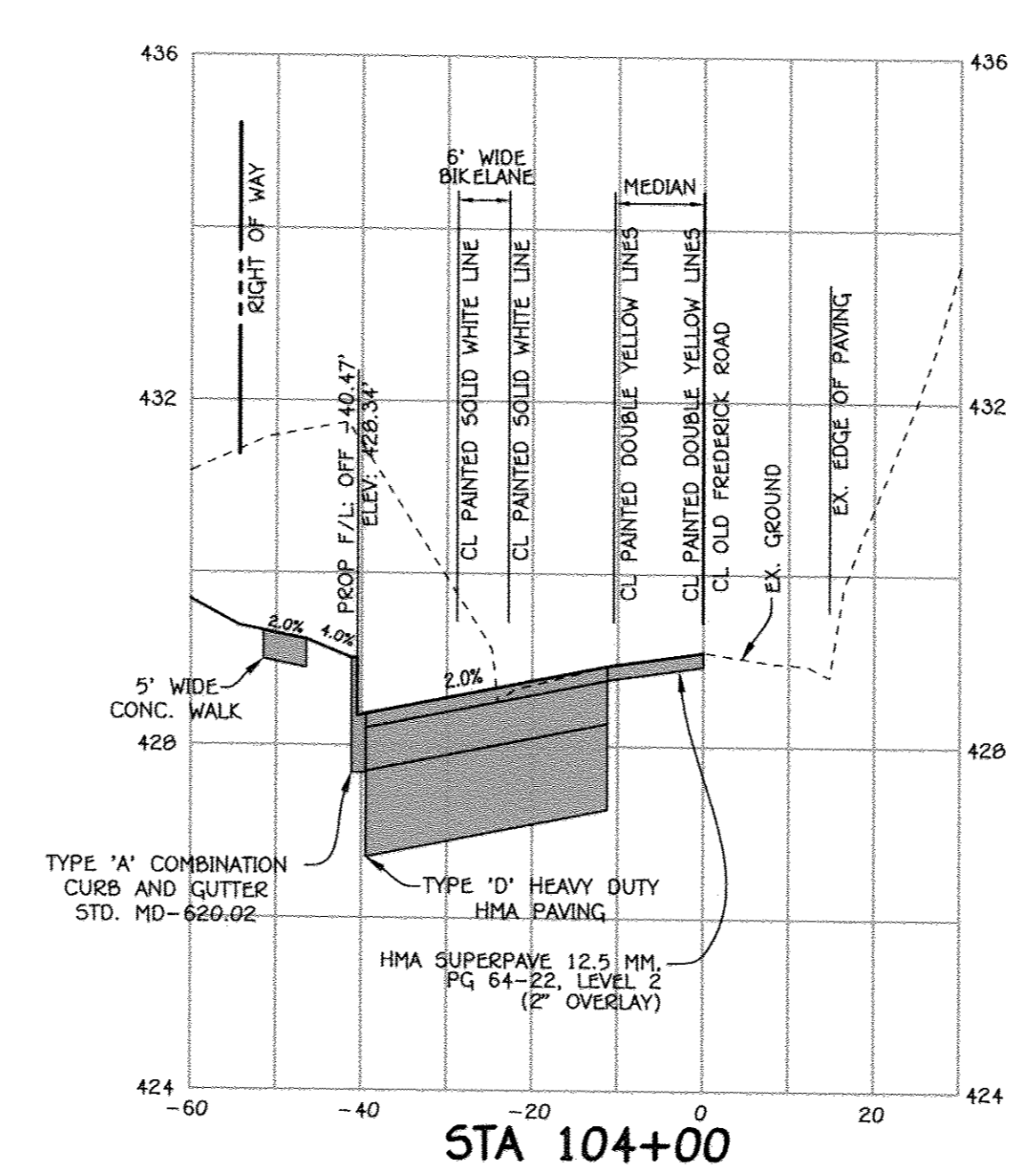
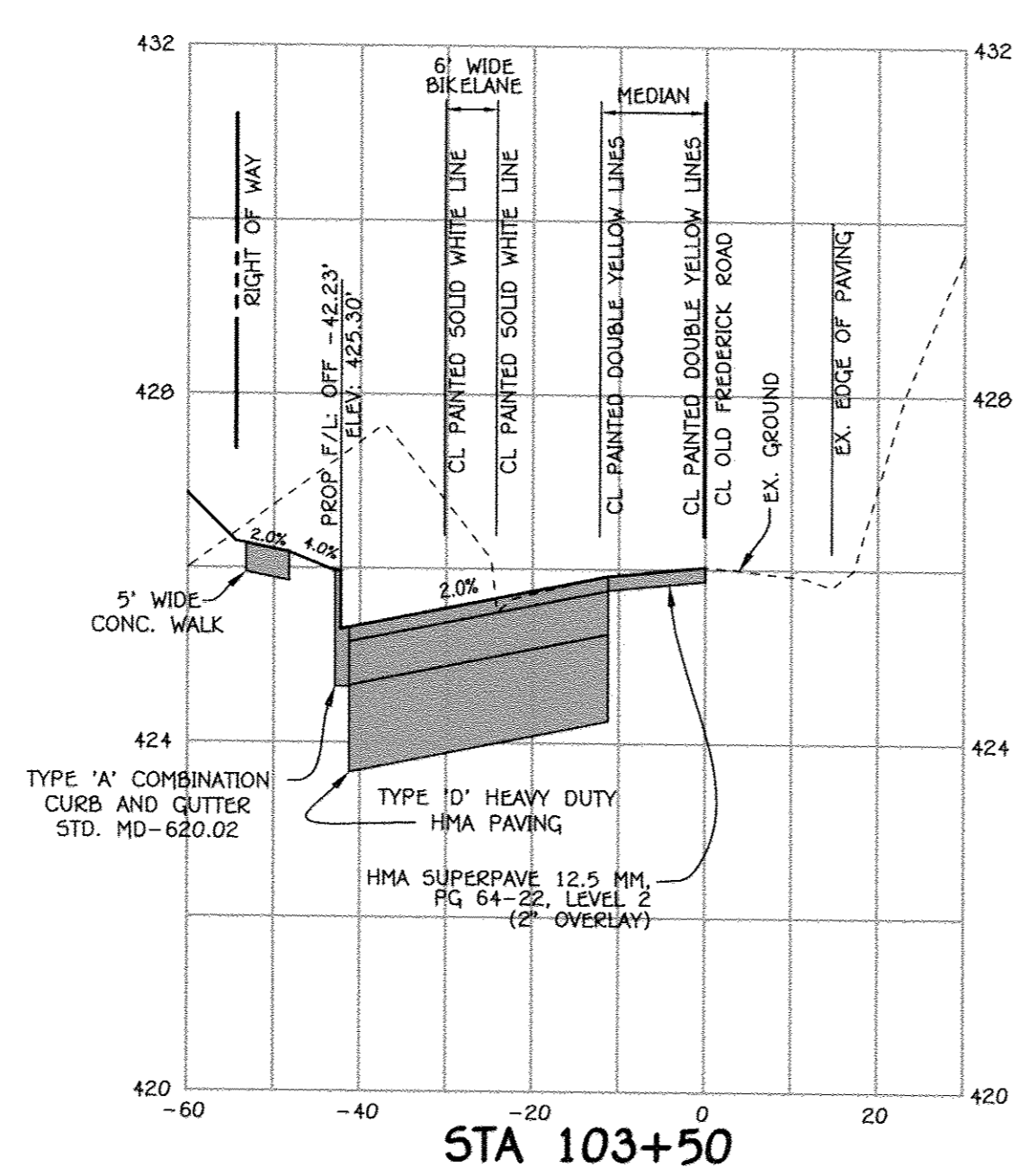
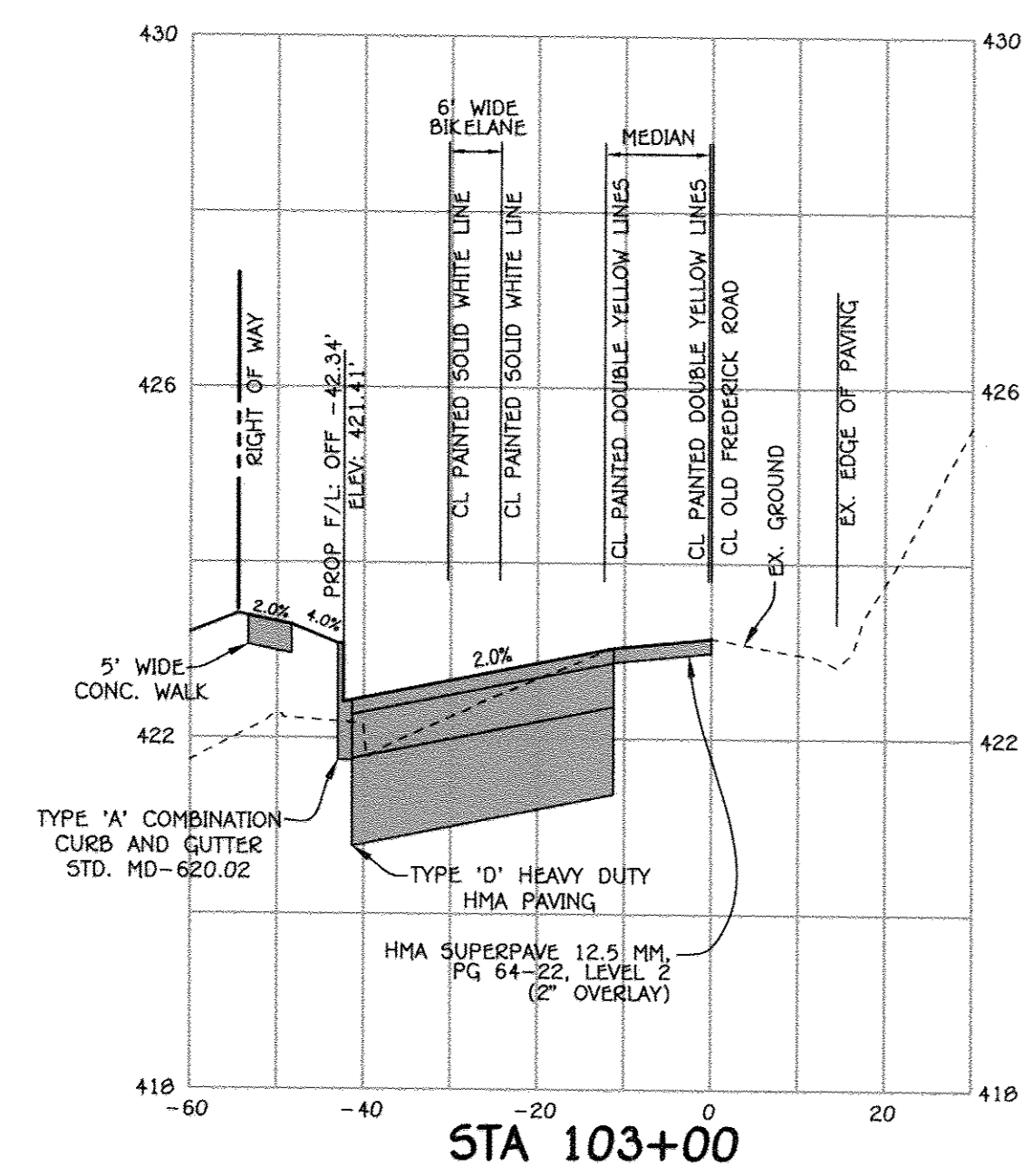
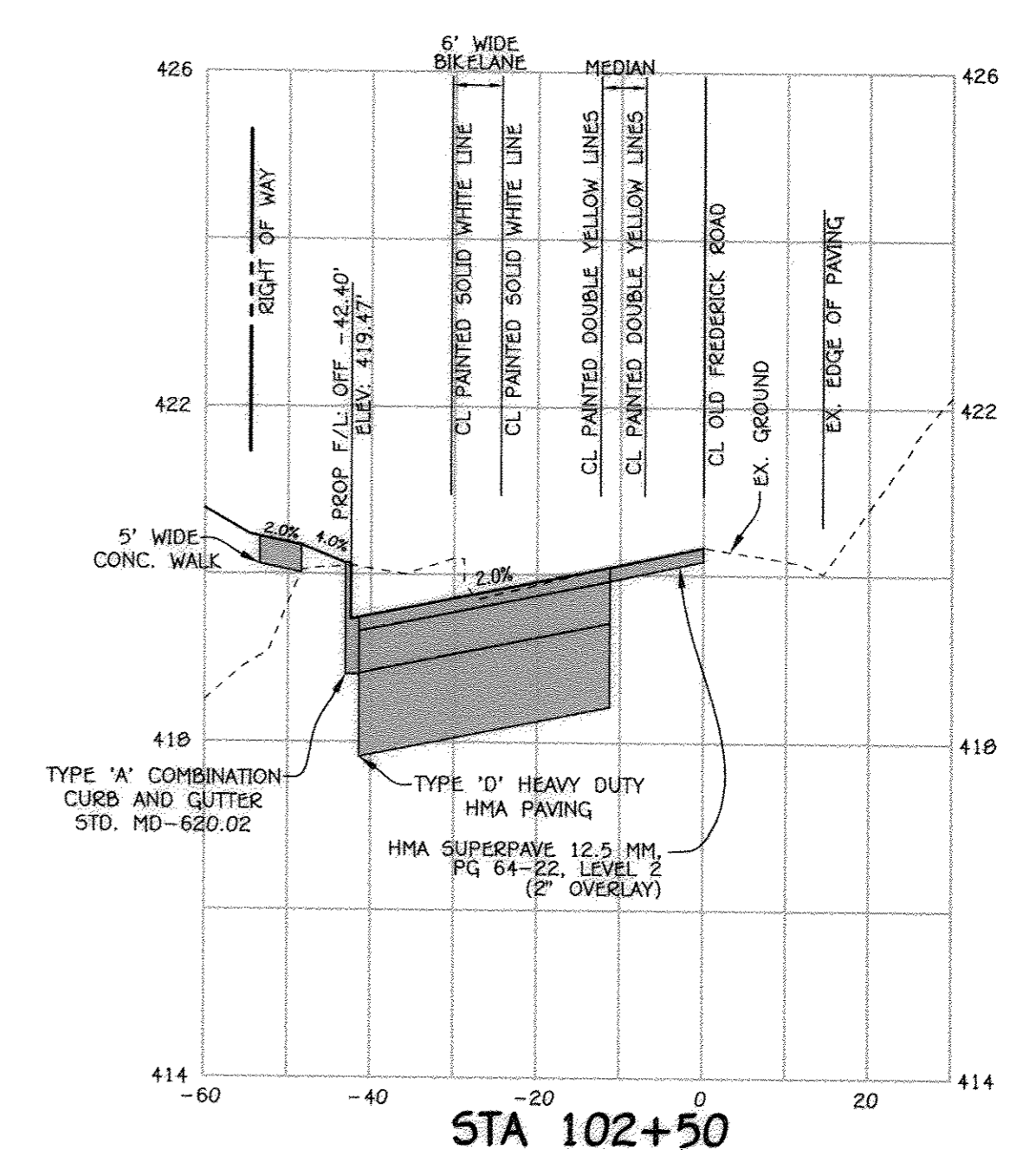
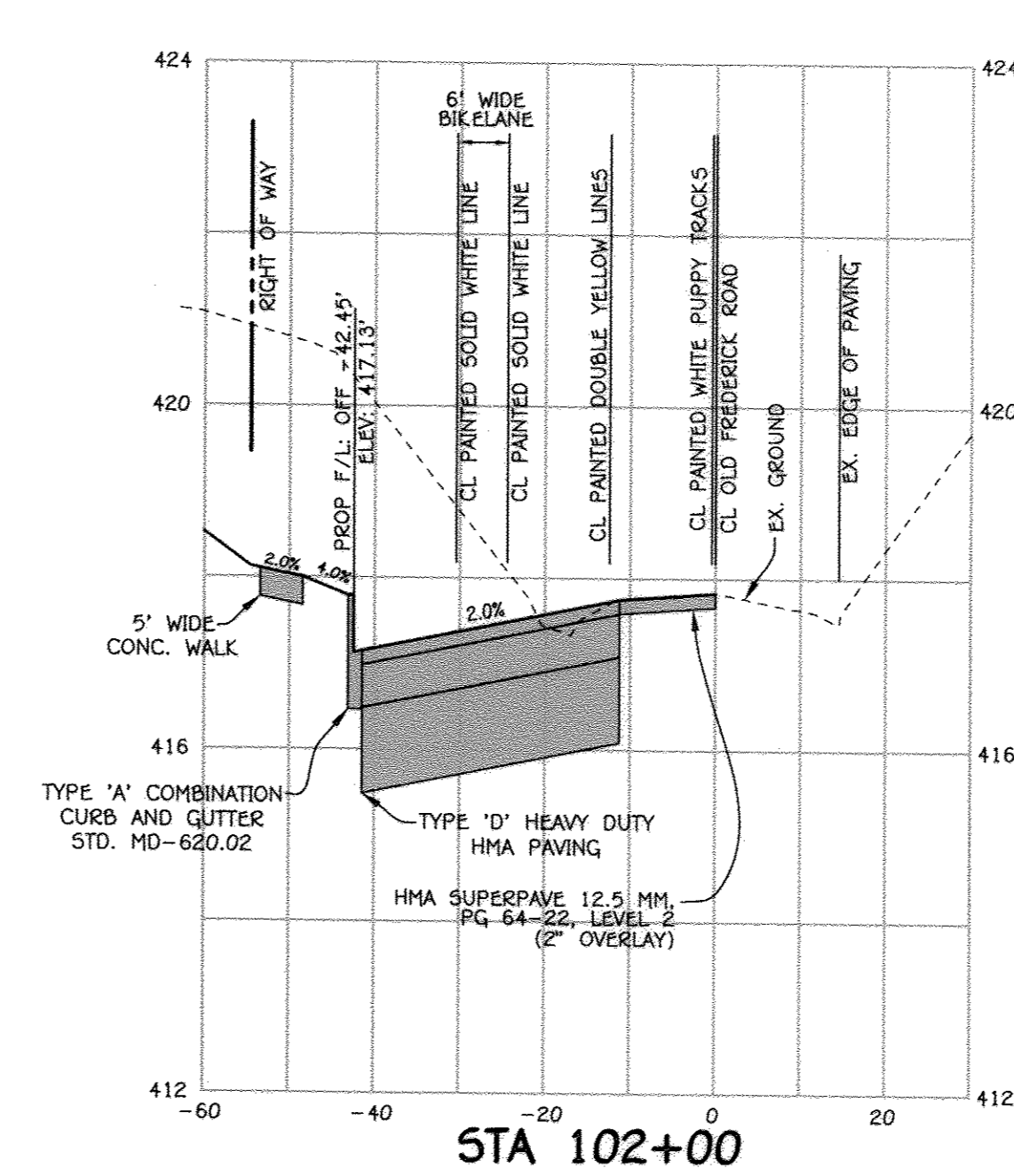
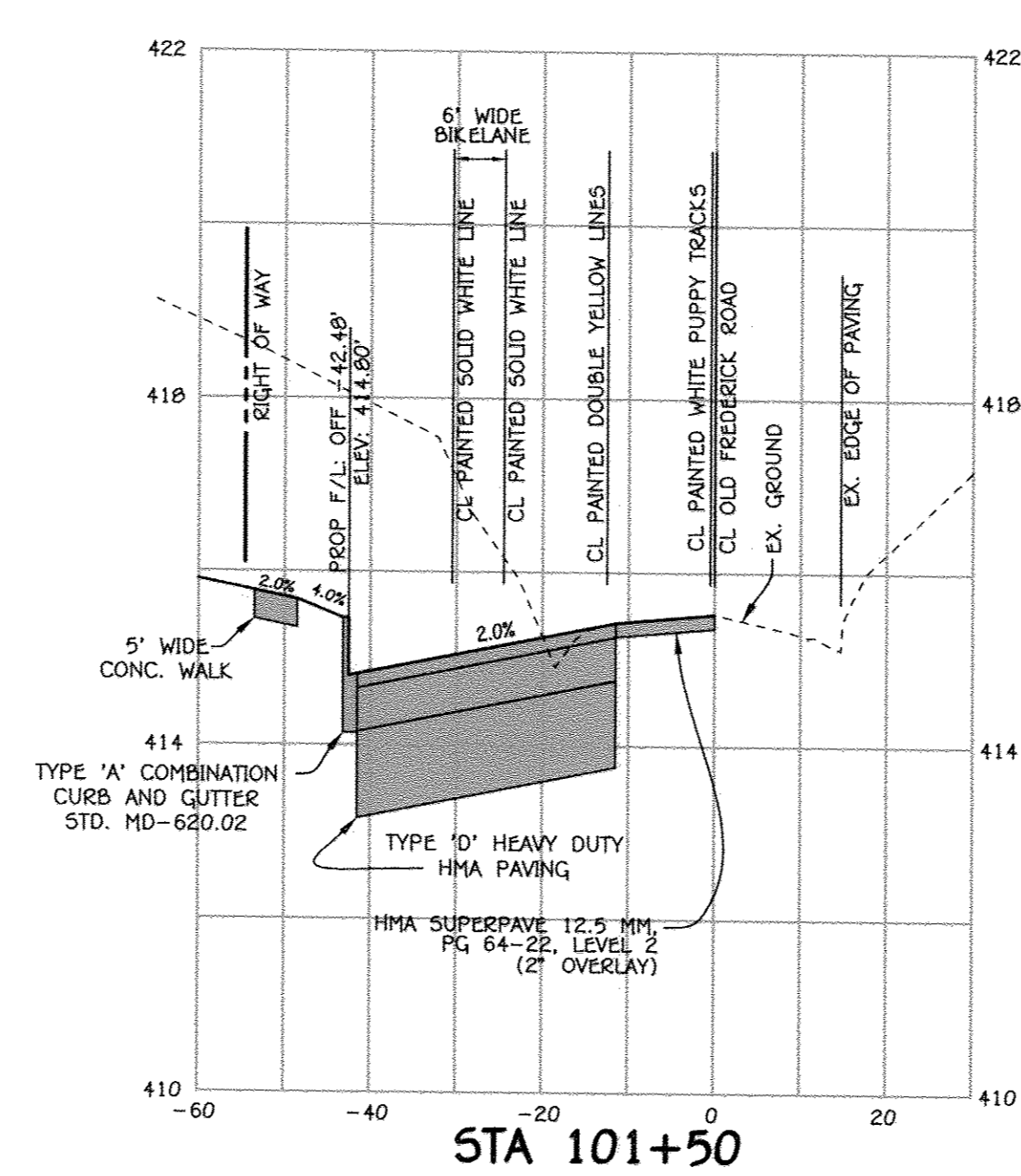
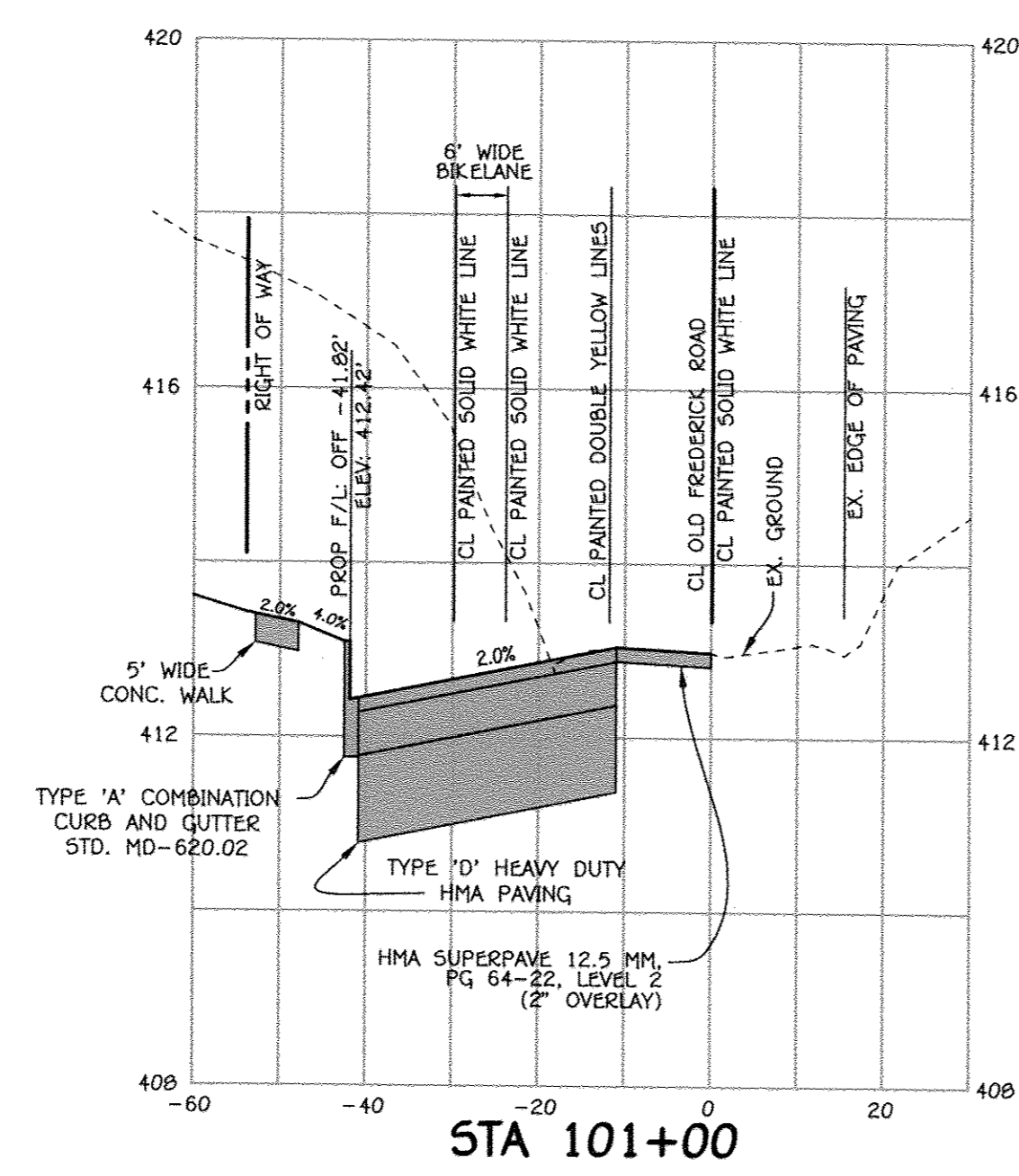
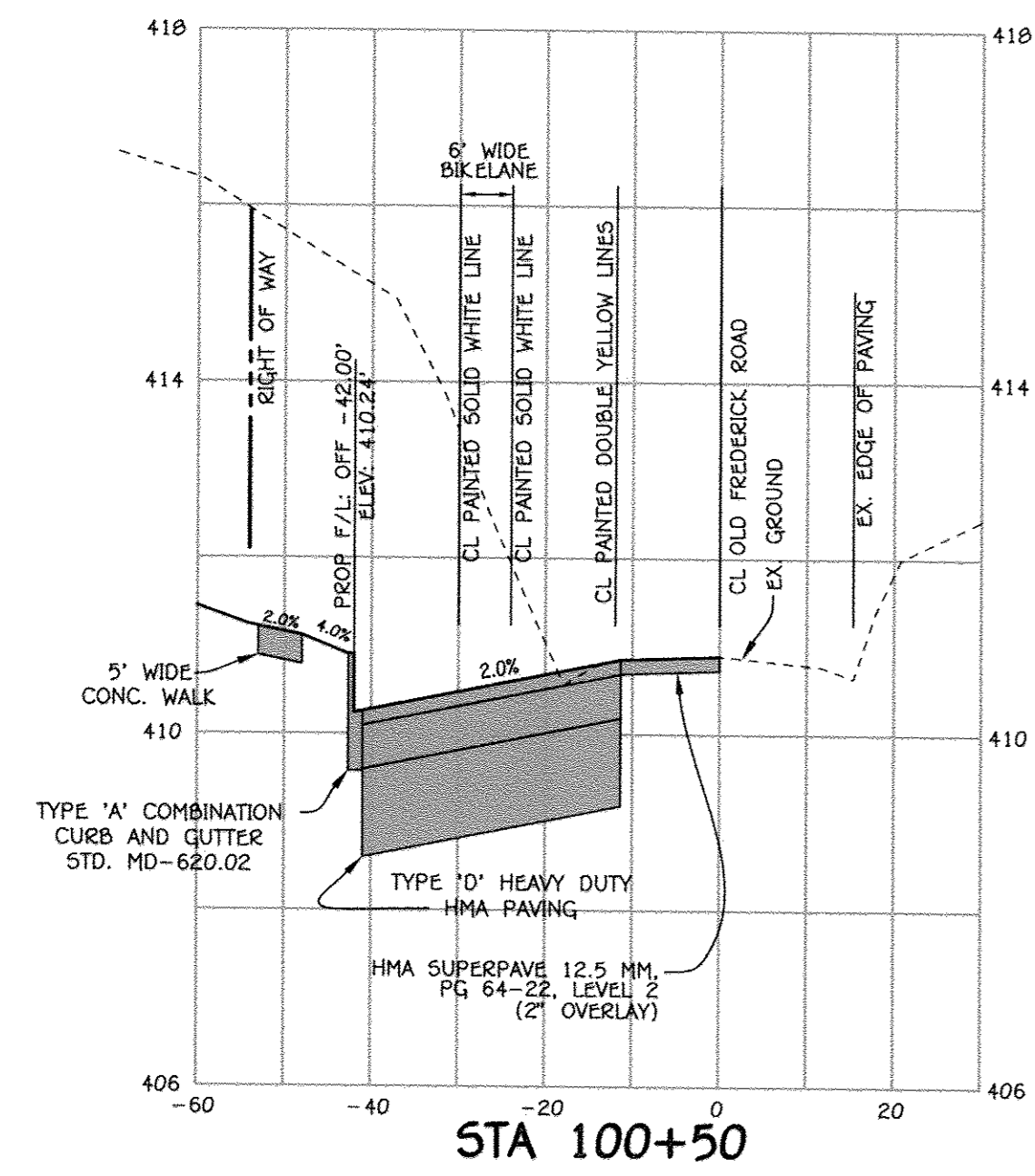
[Signature] **4/23/17**
 FRANK J. MANALANSAN II DATE

OLD FREDERICK ROAD
 (MD ROUTE 99)
 ROAD CROSS-SECTIONS
WAVERLY GROVE

LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8

PREVIOUS HOWARD COUNTY FILES:
 SDP-06-08, S-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-089

TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: APRIL 4, 2017
 SHEET 33 OF 39



SCALE HORZ.: 1" = 20'
VERT.: 1" = 2'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21116
(410) 461-2895

REVISIONS		
NO.	DESCRIPTION	DATE

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C/O KENNARD WARFIELD JR
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PO BOX 30
GLENELG, MARYLAND 21737
410-442-2337

APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature]
Chief, Bureau of Highways
DATE: 05/23/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature]
Chief, Division of Land Development
DATE: 6-28-17

[Signature]
Chief, Development Engineering Division
DATE: 5-31-17



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[Signature]
FRANK J. MANALANSAN II
DATE: 4/10/17

OLD FREDERICK ROAD
(MD ROUTE 99)
ROAD CROSS-SECTIONS
WAVERLY GROVE

LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35

10501 ROUTE 99

ZONED: R-5A-B

PREVIOUS HOWARD COUNTY FILES:
SDP-06-00, S-94-07, P-95-07, F-95-174,

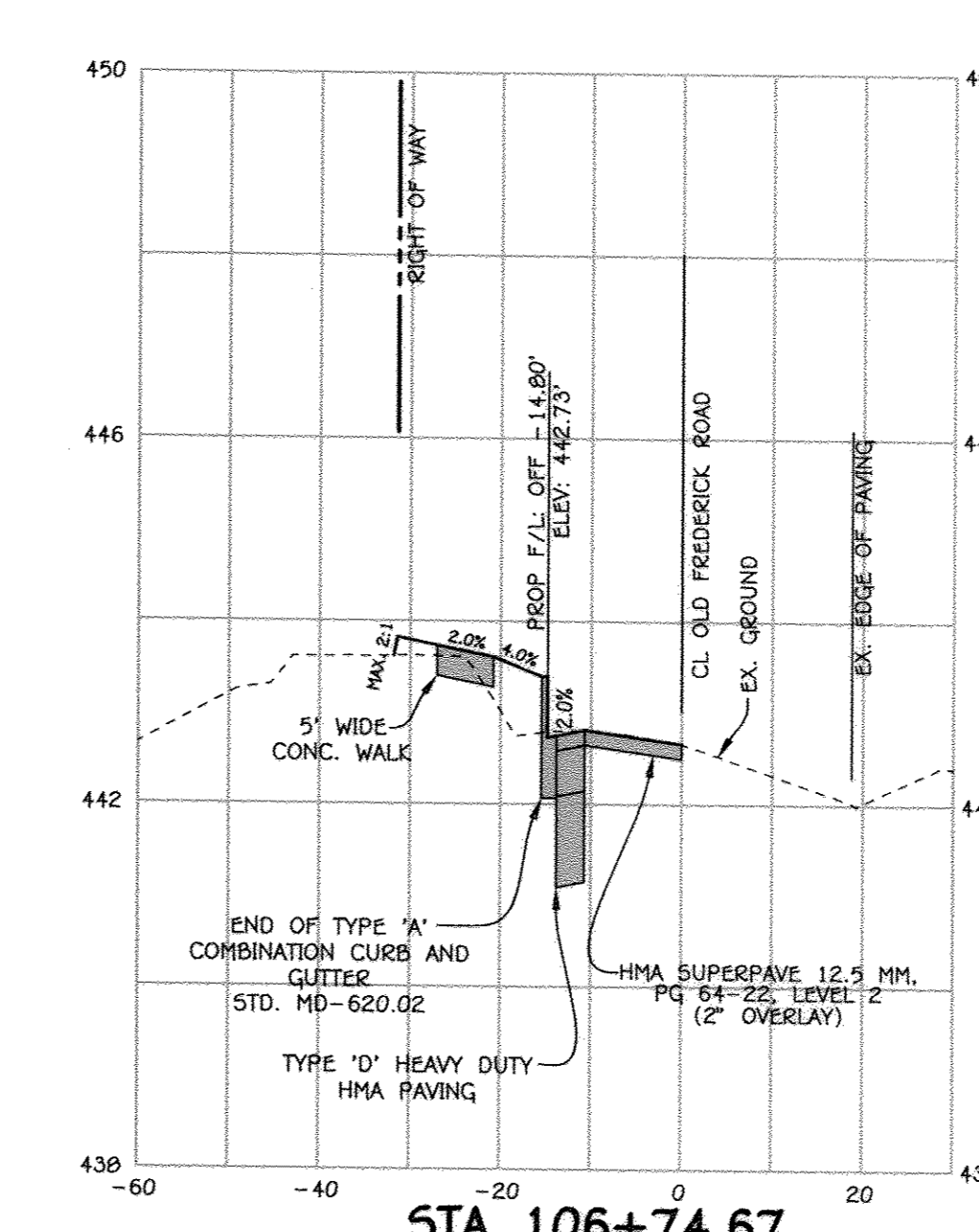
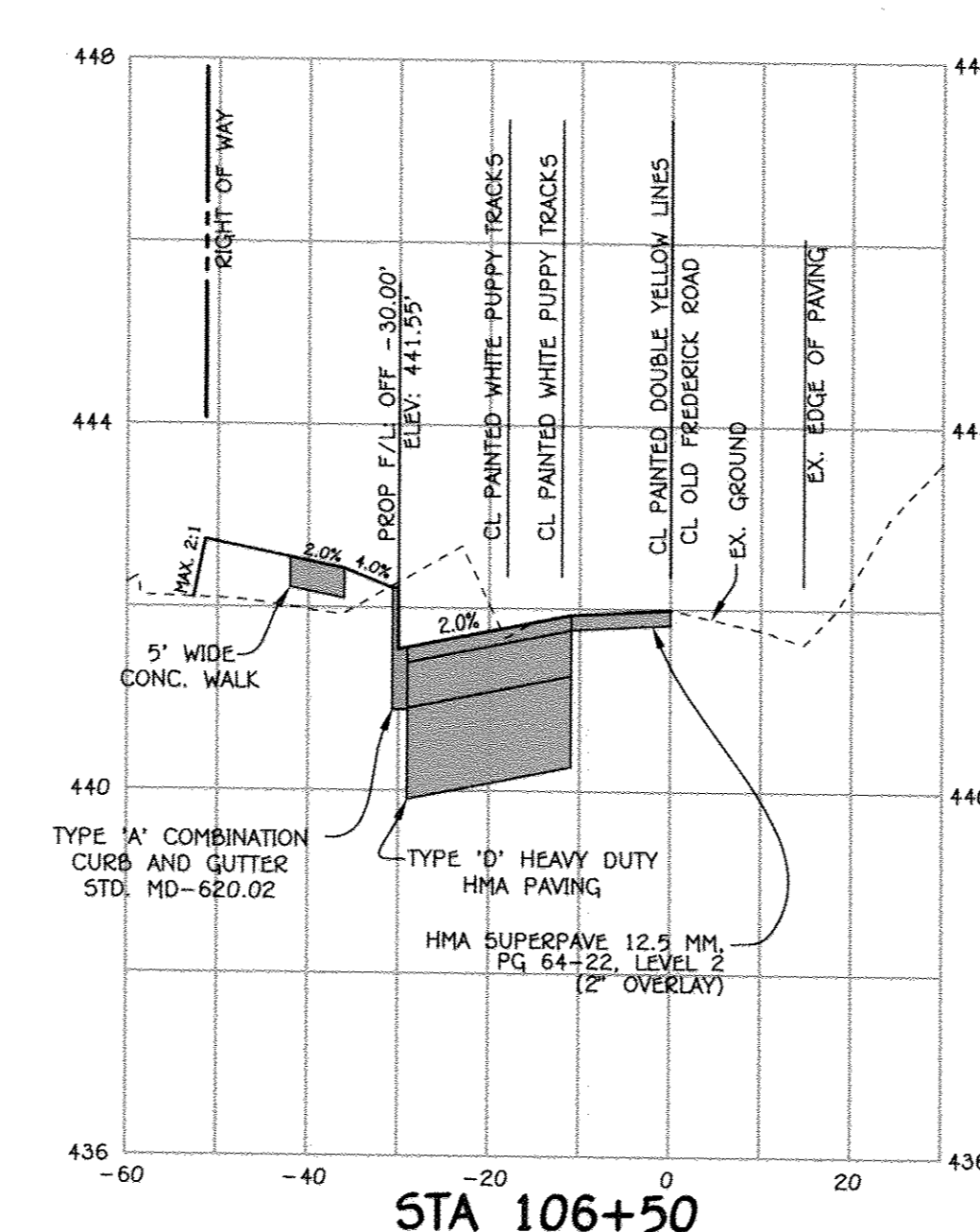
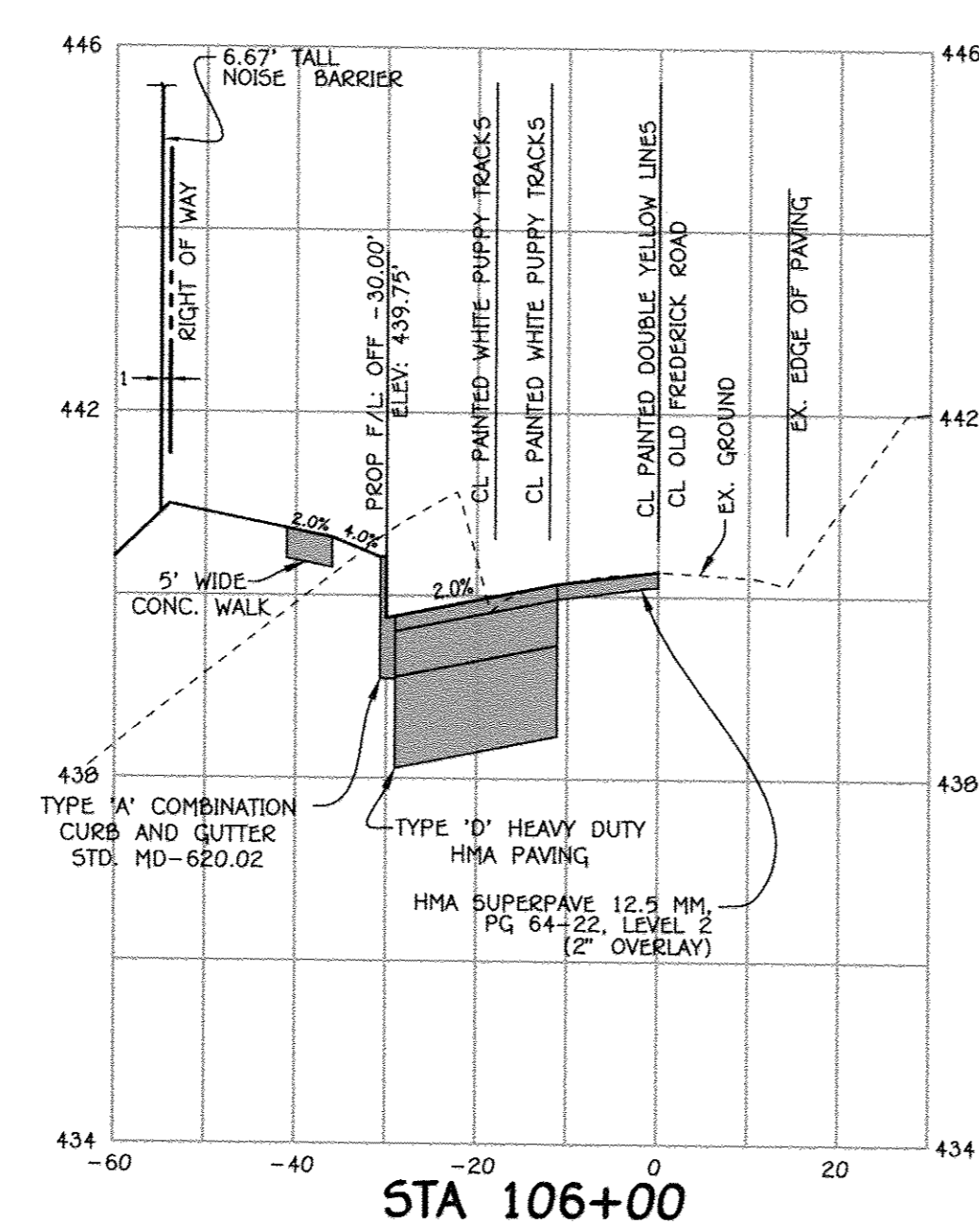
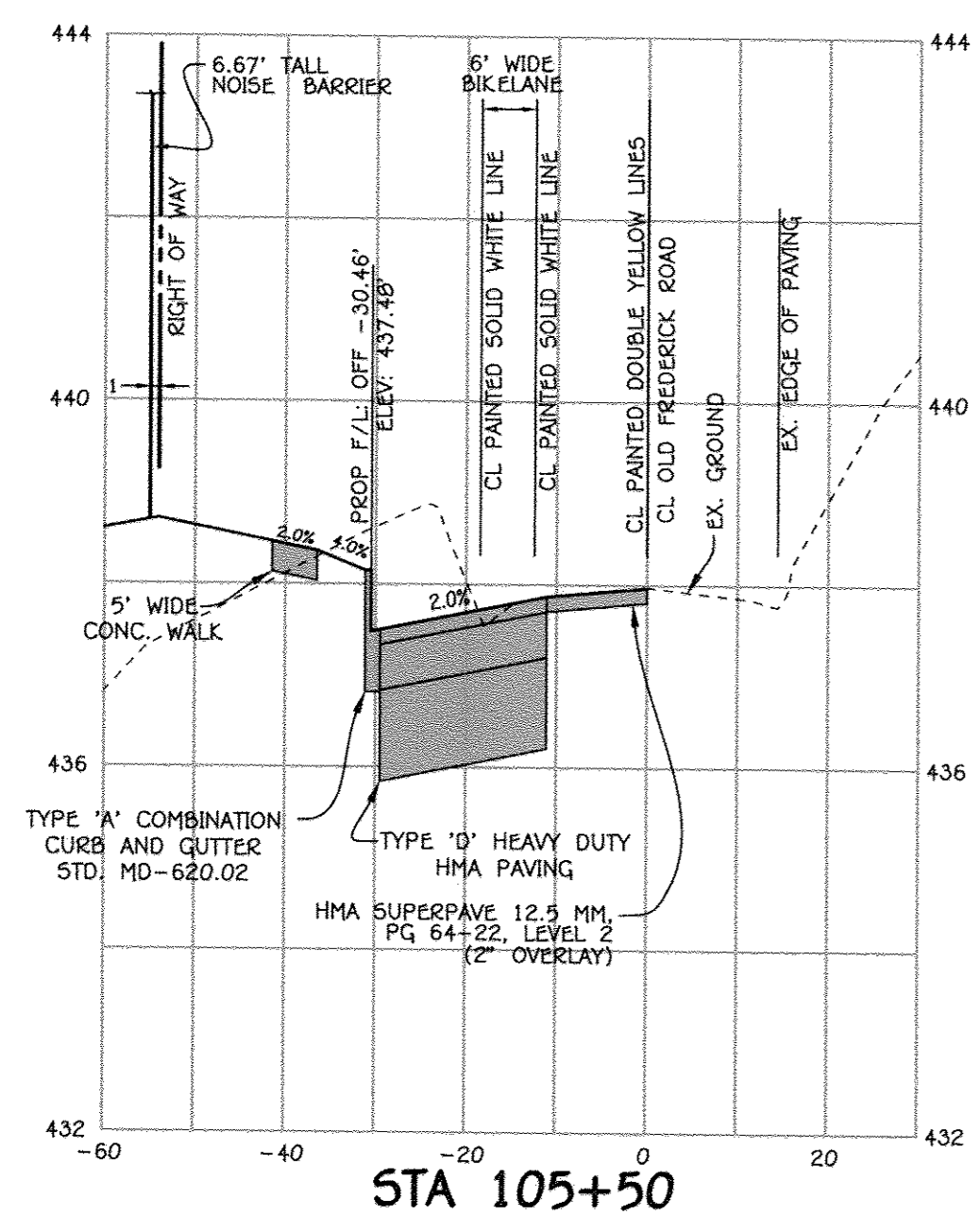
ECP-14-072, SP-16-001, & WP-16-069

TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25

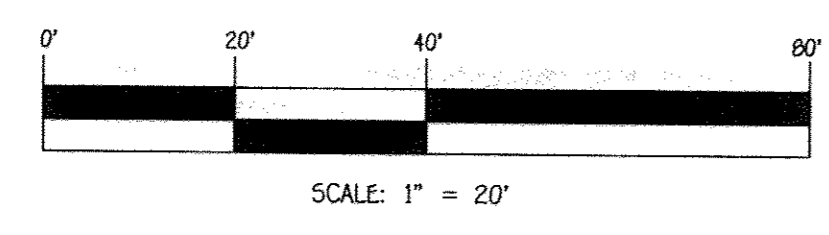
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: APRIL 4, 2017

SHEET 34 OF 39



SCALE HORZ.: 1" = 20'
 VERT.: 1" = 2'



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING, CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELLSWORTH CITY, MARYLAND 21042
 (410) 461-2895

NO.	REVISIONS DESCRIPTION	DATE

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TRIADDELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

APPROVED: DEPARTMENT OF PUBLIC WORKS
James
 Chief, Bureau of Highways
 DATE: 05/22/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kathleen
 Chief, Division of Land Development
 DATE: 6-28-17

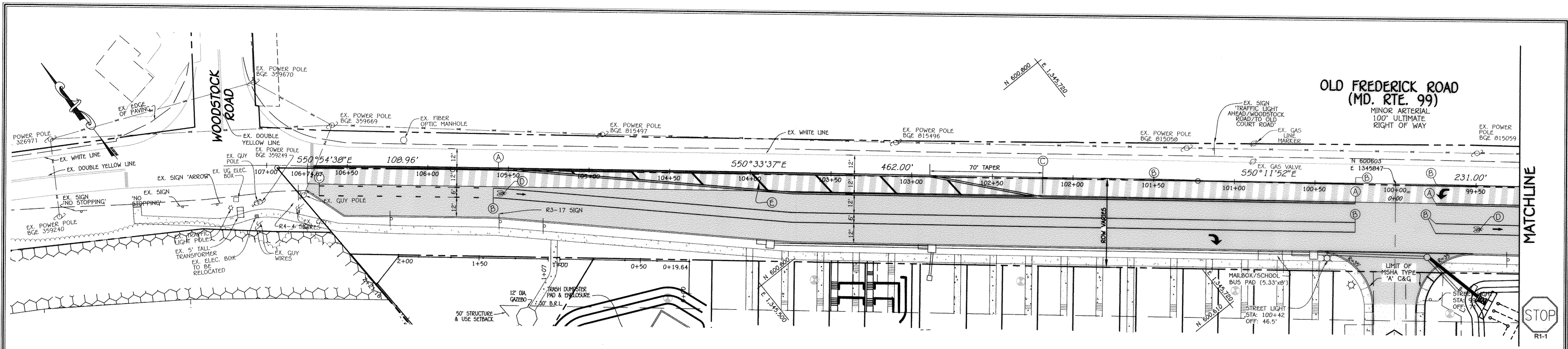
W. J. ...
 Chief, Development Engineering Division
 DATE: 5-31-17



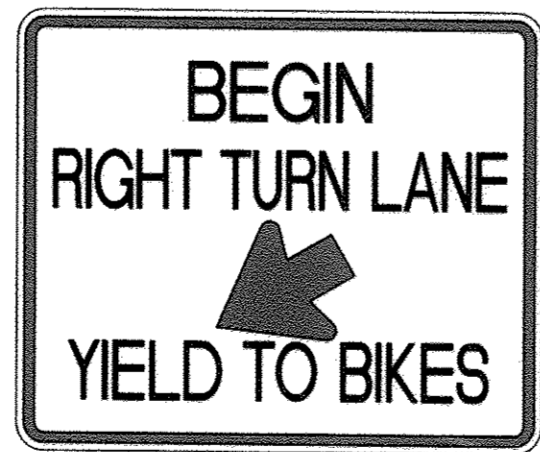
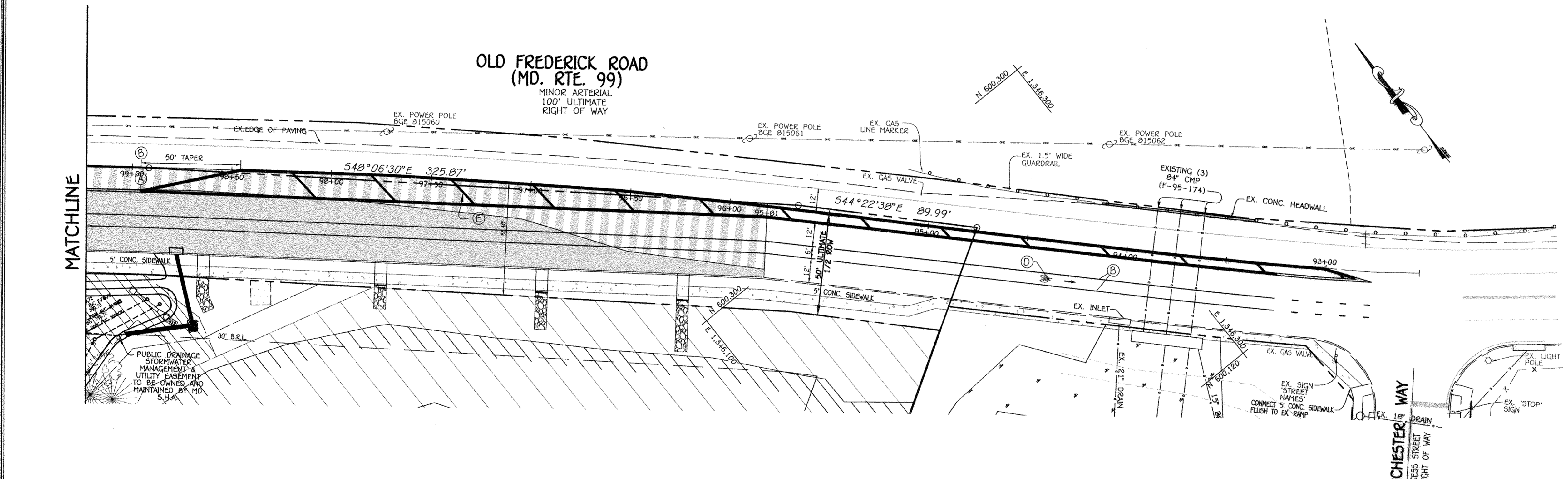
SHEETS 28-39 WILL BE SUBMITTED AS A MSHA ACCESS PERMIT FOR MARYLAND STATE HIGHWAY ADMINISTRATION'S REVIEW AND APPROVAL.

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
Frank J. Manalansan II
 FRANK J. MANALANSAN II
 DATE: 4/2/17

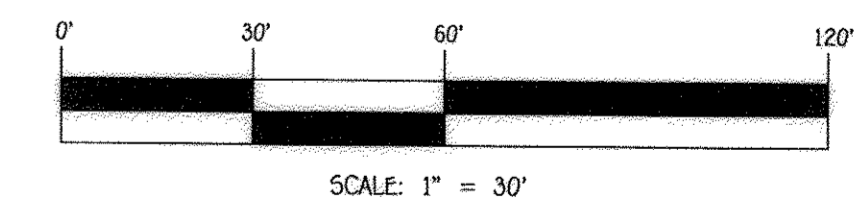
OLD FREDERICK ROAD
 (MD ROUTE 99)
 ROAD CROSS-SECTIONS
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-0
 PREVIOUS HOWARD COUNTY FILES:
 SDP-06-00, S-94-07, P-95-07, F-95-174,
 ECP-14-072, SP-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: APRIL 4, 2017
 SHEET 35 OF 39



- PAVEMENT MARKING LEGEND**
- ⓐ 5" DOUBLE YELLOW CENTERLINE
 - ⓑ 5" SOLID WHITE LINE
 - ⓒ 5" WHITE PUPPY TRACKS (3'-9" SPACE/3'...)
 - ⓓ BICYCLE SYMBOL
 - ⓔ 10" SOLID YELLOW SPACED 40' APART
 - ⓕ 5" SOLID YELLOW LINE



- PAVEMENT MARKING NOTES**
- ALL PAVEMENT MARKING LINES SHALL BE REFLECTIVE THERMOPLASTIC AS SPECIFIED IN THE SHA "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS".
 - THE STOP LINE SHALL BE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS.
 - ALL PROPOSED PAVEMENT MARKINGS ARE TO MATCH THE EXISTING PAVEMENT MARKING MATERIAL.
 - EXISTING PAVEMENT MARKING TO BE REMOVED BY MILLING AND OVERLAYING.
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED ALONG THE SHA RIGHT-OF-WAY SHALL BE MOUNTED ON BREAK-AWAY WOOD POSTS.



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 Frank J. Manalansan II 4/13/17
 FRANK J. MANALANSAN II

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 14451 TRIADDELPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

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APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 05/23/2017
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 6-22-17
 Chief, Division of Land Development

[Signature] 5-31-17
 Chief, Development Engineering Division

STRIPING PLAN AND DETAILS
OLD FREDERICK ROAD
(MD ROUTE 99)
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-B
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 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
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 SHEET 36 OF 39

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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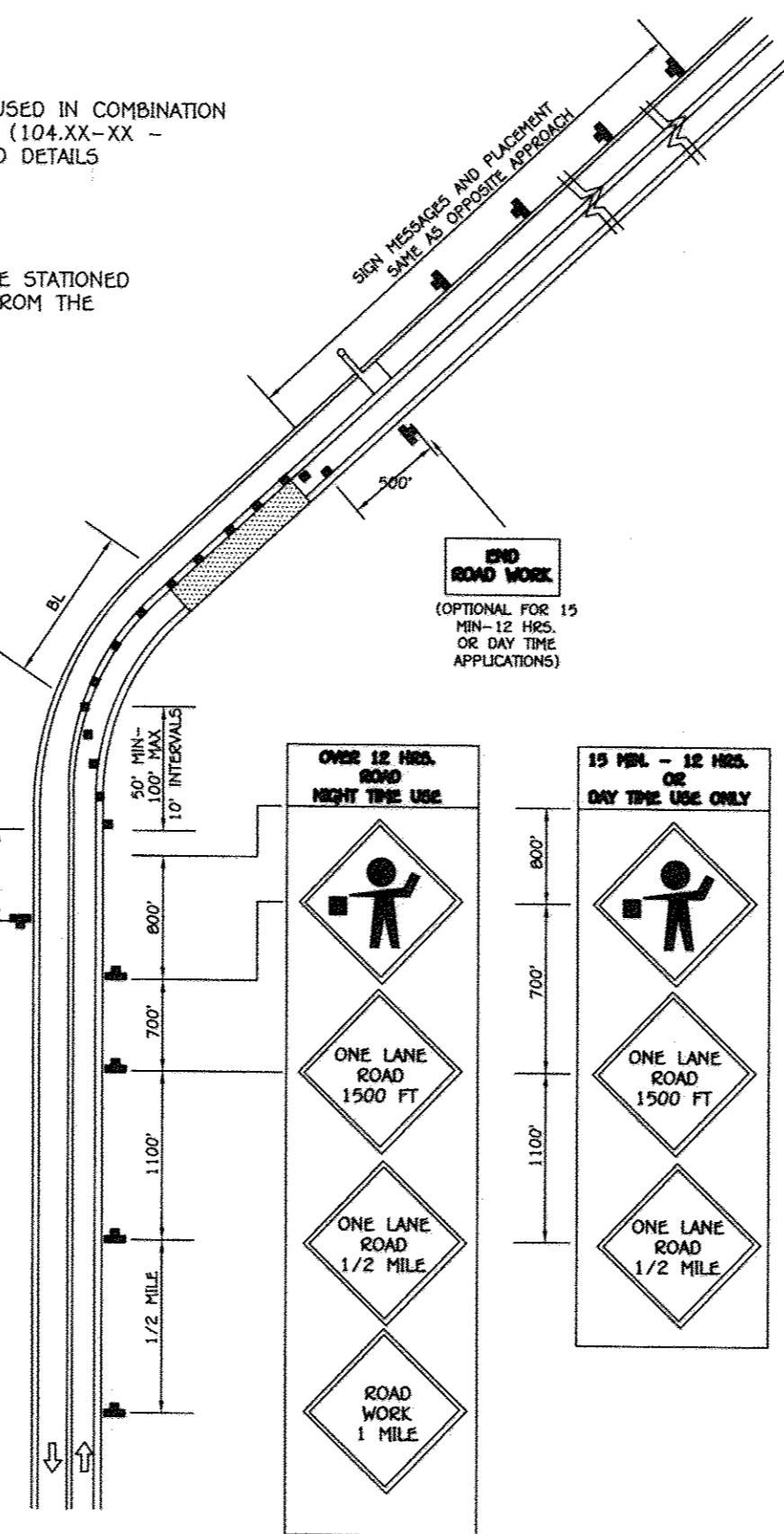
NO.	REVISIONS	DESCRIPTION	DATE
1	ADD LANDSCAPE VALUES		

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES (104.XX-XX - 104.XX-XX) AND STANDARD DETAILS (104.XX-XX-104.XX-XX).

NOTE:
FLAGGERS SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

KEY:

- CHANNELIZING DEVICES
- ▲ SIGN SUPPORT FACE OF SIGN
- ↑ DIRECTION OF TRAFFIC
- ▨ WORK SITE
- FLAGGER



**FLAGGING OPERATION 1/2-LANE, 2-WAY
GREATER THAN 40 MPH**

NO SCALE

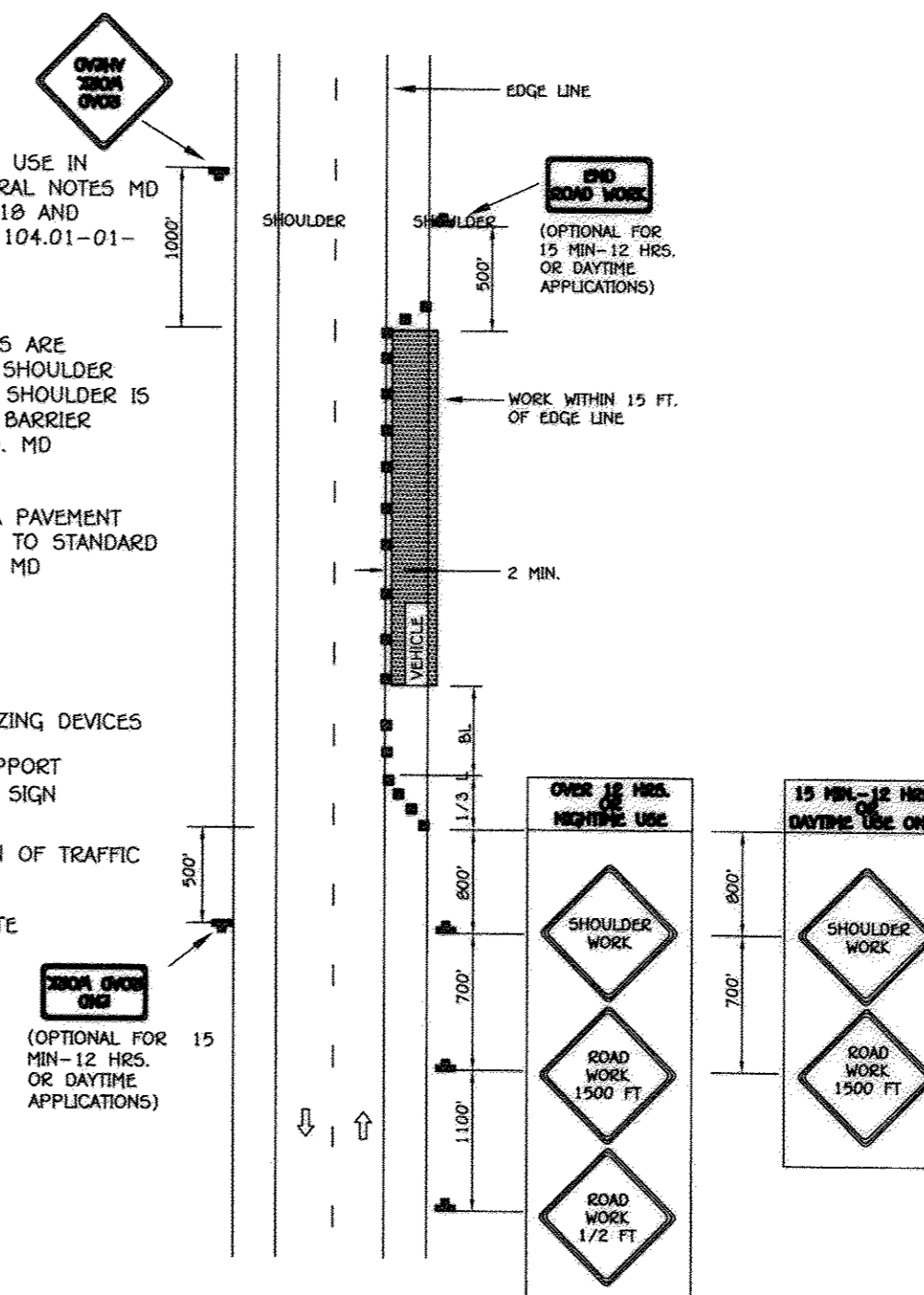
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH GENERAL NOTES MD 104.00-01-MD 104.00-18 AND STANDARD DETAILS MD 104.01-01-MD 104.01-62

NOTES:
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14

WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

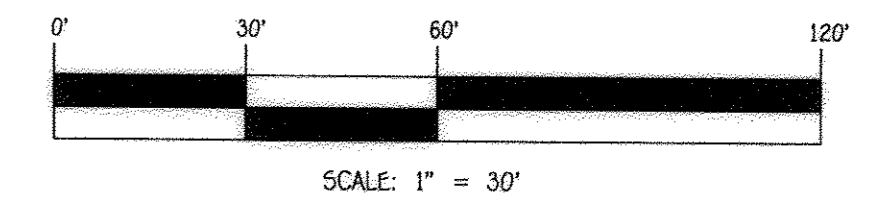
KEY:

- CHANNELIZING DEVICES
- ▲ SIGN SUPPORT FACE OF SIGN
- ↑ DIRECTION OF TRAFFIC
- ▨ WORK SITE



**SHOULDER WORK 1/2-LANE, 2-WAY
GREATER THAN 40 MPH**

NO SCALE



TRAFFIC CONTROL PLANS
AND DETAILS
OLD FREDERICK ROAD
(MD ROUTE 99)

WAVERLY GROVE

LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99

ZONED: R-5A-B

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TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
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SHEET 37 OF 39

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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REVISIONS		
NO.	DESCRIPTION	DATE

OWNER/DEVELOPER

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APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature]
Chief, Bureau of Highways
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Chief, Division of Land Development
DATE: 6-28-17

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Chief, Development Engineering Division
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[Signature]
FRANK J. MANALASAN II
DATE: 4/12/17

SHA LANDSCAPE NOTES:

7.2 SHA STANDARD SPECIFICATIONS, LANDSCAPE CONSTRUCTION SHALL CONFORM TO SECTIONS 701 THROUGH 716, AND LANDSCAPE MATERIALS SHALL CONFORM TO SECTION 920 OF THE SHA 2008 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, INCLUDING ALL REVISIONS AND SUPPLEMENTS, AND AS SPECIFIED IN THESE NOTES. THESE REQUIREMENTS SHALL SUPERSEDE ALL OTHER SPECIFICATIONS FOR WORK WITHIN SHA RIGHT OF WAY. ALL SHA SPECIFICATIONS FOR LANDSCAPING AND LANDSCAPE MATERIALS PUBLISHED IN 2008 HAVE BEEN REPLACED. CURRENT SPECIFICATIONS ARE AT <http://www.roads.maryland.gov/index.aspx?PageId=44>

7.3 EROSION AND SEDIMENT CONTROL MANAGER (ESCM), SOIL DISTURBANCE SUCH AS GRADING, EXCAVATION, SOIL PLACEMENT OR OTHER ACTIVITIES THAT INVOLVE SOIL DISTURBANCE WITHIN THE SHA RIGHT OF WAY SHALL BE SUPERVISED BY AN ESCM MANAGER WITH A VALID SHA "YELLOW CARD" IN CONFORMANCE WITH SHA 2008 SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND ANY APPLICABLE EROSION AND SEDIMENT CONTROL PERMIT.

7.4 SHA STANDARD DETAILS FOR TREES, SHRUBS AND PLANTING BEDS, THE INSTALLATION OF TREES, SHRUBS, PLANTING BEDS AND OTHER LANDSCAPE CONSTRUCTION IN THE SHA RIGHT OF WAY RELATED TO SECTION 710 OF THE SHA STANDARD SPECIFICATIONS SHALL CONFORM TO THE "SHA BOOK OF STANDARDS FOR HIGHWAY & INCIDENTAL STRUCTURES - CATEGORY 7" - CURRENT SHA STANDARD DETAILS ARE AT <http://apps.roads.maryland.gov/BusinesswithSHA/bizstds5pecs/desManualStdPub/publicationonline/ohd/bookstd/toccaf7.asp>.

7.5 TEMPORARY STABILIZATION SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 704 TO ENSURE THAT AREAS OF SOIL DISTURBANCE ARE PROTECTED FROM WIND, RAINFALL AND FLOWING WATER UNTIL PERMANENT STABILIZATION IS INSTALLED.

1. TEMPORARY MULCH, EITHER AS TEMPORARY STRAW MULCH OR TEMPORARY MATTING MULCH, SHALL BE INSTALLED AT THE END OF EACH WORKING DAY TO PROVIDE "SAME DAY STABILIZATION" UNLESS OTHER APPROVED STABILIZATION IS INSTALLED.
2. TEMPORARY STRAW MULCH SHALL BE INSTALLED ON AREAS AND SLOPES FLATTER THAN 4:1; TEMPORARY MATTING MULCH SHALL BE APPLIED ON SLOPES 4:1 AND STEEPER, AND TO AREAS WITHIN CHANNELS.
3. TEMPORARY SEED SHALL BE INSTALLED IN LIEU OF TEMPORARY MULCH WHEN SOIL REDISTURBANCE IS EXPECTED MORE THAN 30 DAYS AFTER SOIL DISTURBANCE. THE REQUIRED APPLICATION RATE OF 15-30-15 FERTILIZER SHALL BE REDUCED TO 150 LBS PER ACRE.

7.6 ROADWAY PAVEMENT REMOVAL, AREAS OF ROADWAY PAVEMENT REMOVAL WITHIN THE SHA RIGHT OF WAY SHALL BE EXCAVATED TO REMOVE PAVEMENTS, AGGREGATE BASE, AND COMPACTED SOIL TO A MINIMUM DEPTH OF 10 INCHES BELOW THE PAVEMENT SURFACE, OR AS NECESSARY TO REMOVE ALL MATERIALS UNSUITABLE FOR LANDSCAPING. THE EXCAVATED AREAS SHALL BE RESTORED WITH SUBSOIL AND TOPSOIL AS PART OF SOIL RESTORATION.

7.7 EXCAVATION AND DEBRIS REMOVAL, DEBRIS RELATED TO THE DEMOLITION OF SIDEWALKS, DRIVEWAYS, CURBS, TREES, STUMPS, ROOTS, FENCING, PIPES, AND OTHER MATERIALS THAT MAY INTERFERE WITH LANDSCAPE INSTALLATION OR FUTURE MAINTENANCE, WITHIN THE SHA RIGHT OF WAY SHALL BE EXCAVATED AS NECESSARY FOR THEIR COMPLETE REMOVAL AND DISPOSAL.

7.8 SOIL RESTORATION, AREAS OF PAVEMENT REMOVAL, EXCAVATION OR DRILLING IN LANDSCAPED AREAS SHALL REMOVE EXCAVATED DEBRIS AND RESTORE THE SUBGRADE WITH APPROVED SUBSOIL AND TOPSOIL PLACED IN CONFORMANCE WITH SECTION 701 OF THE SHA STANDARD SPECIFICATIONS.

1. A LAYER OF APPROVED TOPSOIL OF AT LEAST 4 INCH DEPTH SHALL BE PLACED ON ALL DISTURBED AREAS FLATTER THAN 2:1 AND IN ALL CHANNELS PRIOR TO SEEDING, SODDING OR OTHER LANDSCAPING, UNLESS OTHERWISE SPECIFIED.
2. A LAYER OF APPROVED TOPSOIL OF AT LEAST 2 INCH DEPTH SHALL BE PLACED ON ALL DISTURBED AREAS 2:1 AND STEEPER PRIOR TO SEEDING, SODDING OR OTHER LANDSCAPING, UNLESS OTHERWISE SPECIFIED.
3. BIORETENTION SOIL MIX (BSM) AND OTHER MATERIALS INSTALLED IN CONJUNCTION WITH SPI 316 - STORMWATER FILTRATION FACILITIES SHALL BE INSTALLED IN CONFORMANCE WITH THE SHA LANDSCAPE NOTES, PLANS, AND PERTINENT SPECIFICATIONS.

7.9 TURFGRASS SOOD ESTABLISHMENT SHALL BE PERFORMED IN ALL DISTURBED AREAS OF THE SHA RIGHT OF WAY, OR WITHIN THE AREAS INDICATED IN THE PLANS, IN CONFORMANCE WITH SECTION 708 OF THE SHA STANDARD SPECIFICATIONS. THE REQUIRED APPLICATION RATE 20-16-12 FERTILIZER SHALL BE REDUCED TO 200 LBS PER ACRE, AND NO FERTILIZER SHALL BE APPLIED FROM NOV. 15 TO MAR. 1.

7.10 TURFGRASS ESTABLISHMENT SHALL BE PERFORMED IN ALL DISTURBED AREAS OF THE SHA RIGHT OF WAY, OR WITHIN THE AREAS INDICATED IN THE PLANS, IN CONFORMANCE WITH SECTION 708 OF THE SHA STANDARD SPECIFICATIONS. THE REQUIRED APPLICATION RATE OF 20-16-12 FERTILIZER SHALL BE REDUCED TO 200 LBS PER ACRE, AND NO FERTILIZER SHALL BE APPLIED FROM NOV. 15 TO MAR. 1.

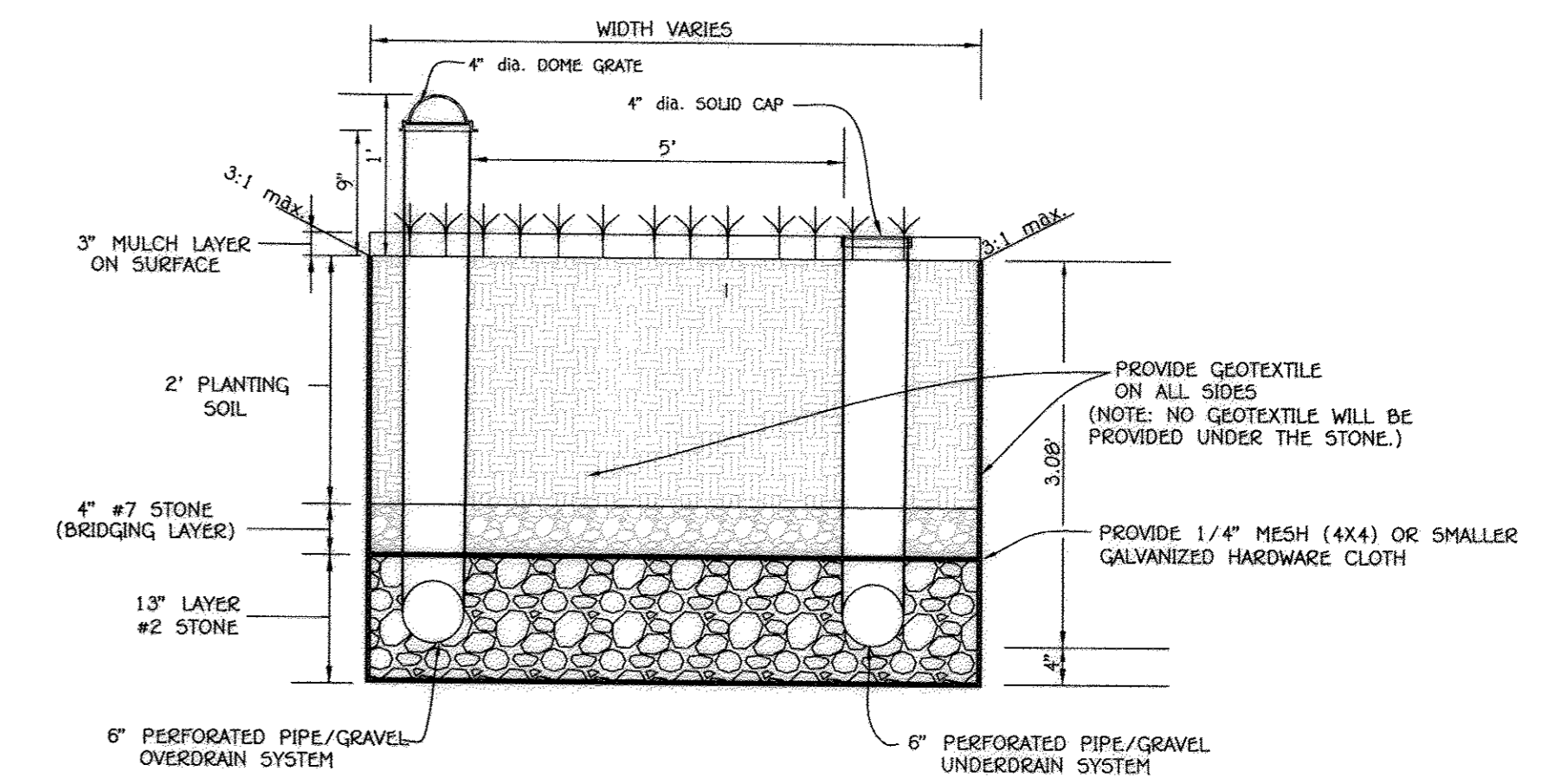
7.11 STABILIZATION MATTING SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 709 OF THE SHA STANDARD SPECIFICATIONS, IN CONJUNCTION WITH TURFGRASS ESTABLISHMENT PER SECTION 705 OR MEADOW ESTABLISHMENT PER SECTION 707 AS FOLLOWS:

1. AREAS FLATTER THAN 6:1, TYPE A OR TYPE E MATTING MAY BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER IN CONJUNCTION WITH TURFGRASS ESTABLISHMENT.
2. AREAS STEEPER THAN 6:1 AND FLATTER THAN 4:1, TYPE A OR TYPE E MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER IN CONJUNCTION WITH TURFGRASS ESTABLISHMENT, UNLESS DELINEATED AND NOTED OTHERWISE ON THE PLANS.
3. CHANNELS, STORMWATER MANAGEMENT FACILITIES, AND SLOPES 4:1 AND STEEPER TYPE A SOIL STABILIZATION MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER IN CONJUNCTION WITH TURFGRASS ESTABLISHMENT, UNLESS DELINEATED AND NOTED OTHERWISE ON THE PLANS.
4. IN AREAS OF MEADOW ESTABLISHMENT WITH TYPE D SOIL STABILIZATION MATTING, THE MATTING SHALL BE INSTALLED IN LIEU OF STRAW MULCH AND HYDROMULCH BINDER WITHIN THE DELINEATED AREAS.

7.14 ROADSIDE TREE PERMIT, TREE REMOVAL, TREE INSTALLATION, TREE ROOT AND BRANCH PRUNING, AND OTHER REGULATED IMPACTS TO TREES IN THE SHA RIGHT OF WAY SHALL CONFORM TO THE REQUIREMENTS OF THE ROADSIDE TREE PERMIT (RTP) OF THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, OR THE FOREST CONSERVATION ACT (FCA) APPROVAL OF THE LOCAL AUTHORITY.

1. A COPY OF THE RTP OR FCA APPROVAL SHALL BE SUBMITTED TO THE SHA OFFICE OF ENVIRONMENTAL DESIGN BEFORE WORK IS PERFORMED, AND A COPY OF THE RTP OR FCA APPROVAL SHALL BE REPRODUCED IN THE PLANS OR BE IN POSSESSION OF THE APPLICANT AT THE PROJECT SITE WHEN THE PERMITTED WORK IS PERFORMED.
2. A MARYLAND LICENSED TREE EXPERT SHALL PERFORM THE SPECIFIED TREE OPERATIONS IN CONFORMANCE WITH THE SHA STANDARD SPECIFICATIONS AND ANSI A300 STANDARDS FOR TREE CARE OPERATIONS.

7.15 TREES AND OTHER PLANT MATERIAL INSTALLATION, TREES, SHRUBS, PERENNIALS, ANNUALS, BULBS, LANDSCAPE BEDS AND SIMILAR MATERIALS INSTALLED IN THE SHA RIGHT OF WAY SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 710 AND 711 OF THE SHA STANDARD SPECIFICATIONS. TREE AND SHRUBS SHALL BE PRUNED AT THE TIME OF INSTALLATION TO ENSURE SIDEWALK CLEARANCE FOR PEDESTRIANS IS MAINTAINED TO A HEIGHT OF 8 FEET. NO TREE OR SHRUB SHALL BE INSTALLED WITHIN 3 FEET OF CURBS, SIDEWALKS, OR PAVEMENT EDGES.



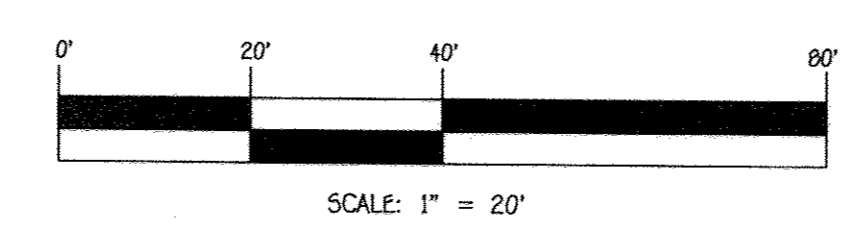
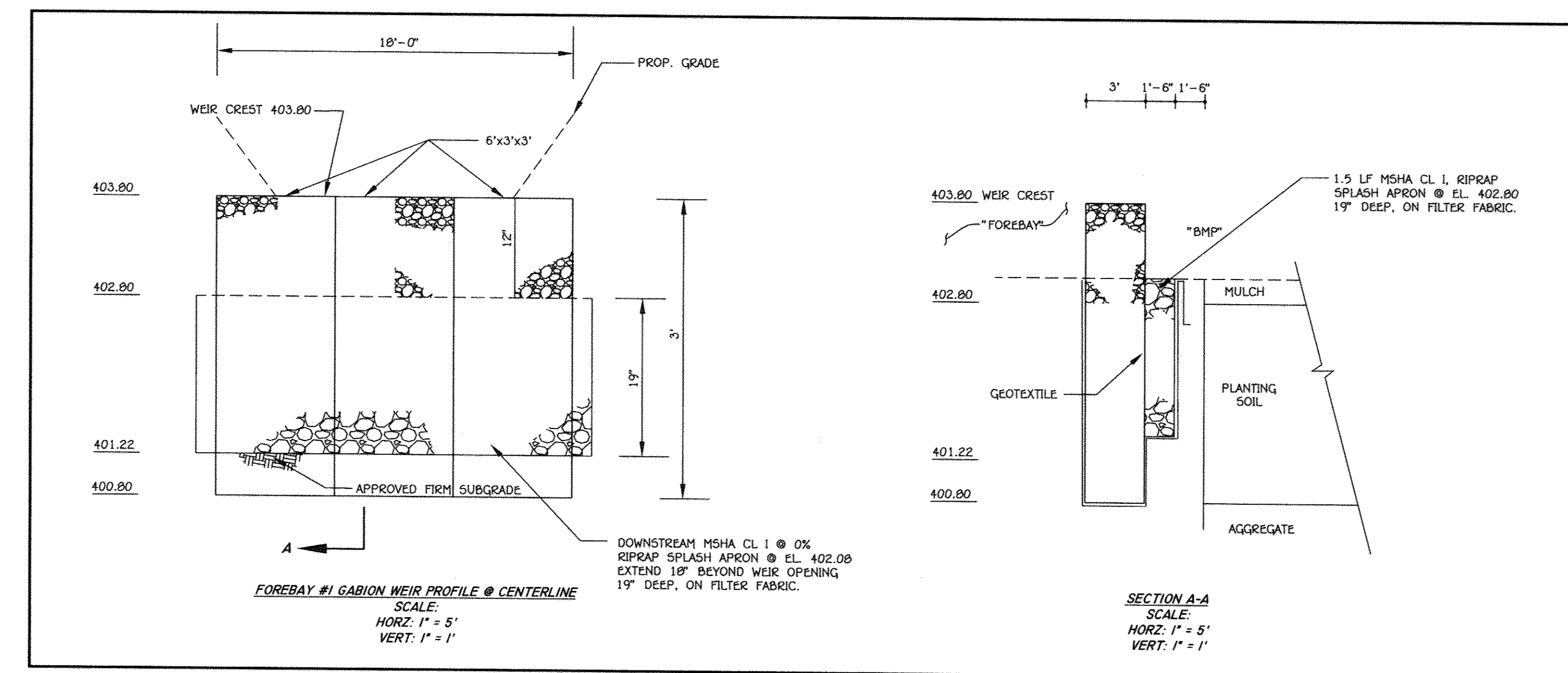
NOTE: THE BOTTOM OF BIO-RETENTION FACILITY (F-6) SHALL BE ROTOTILLED PRIOR TO STONE INSTALLATION.

SECTION - BIO-RETENTION FACILITY (F-6)

NO SCALE

**MICRO-BIORETENTION (F-6)
OPERATION & MAINTENANCE SCHEDULE**

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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 AND PRUNING.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



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ELLSWORTH CITY, MARYLAND 21142
(410) 461-2099

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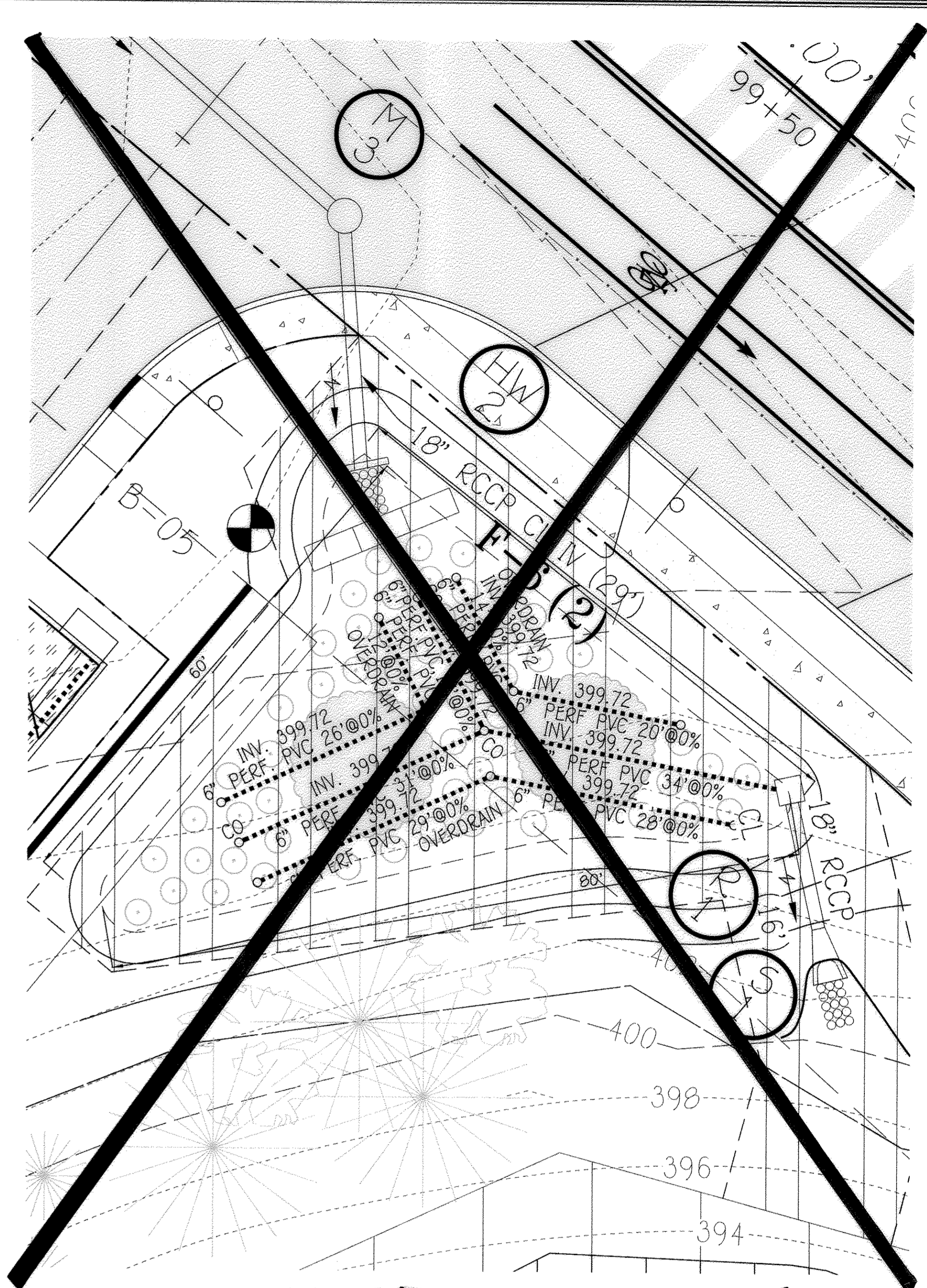
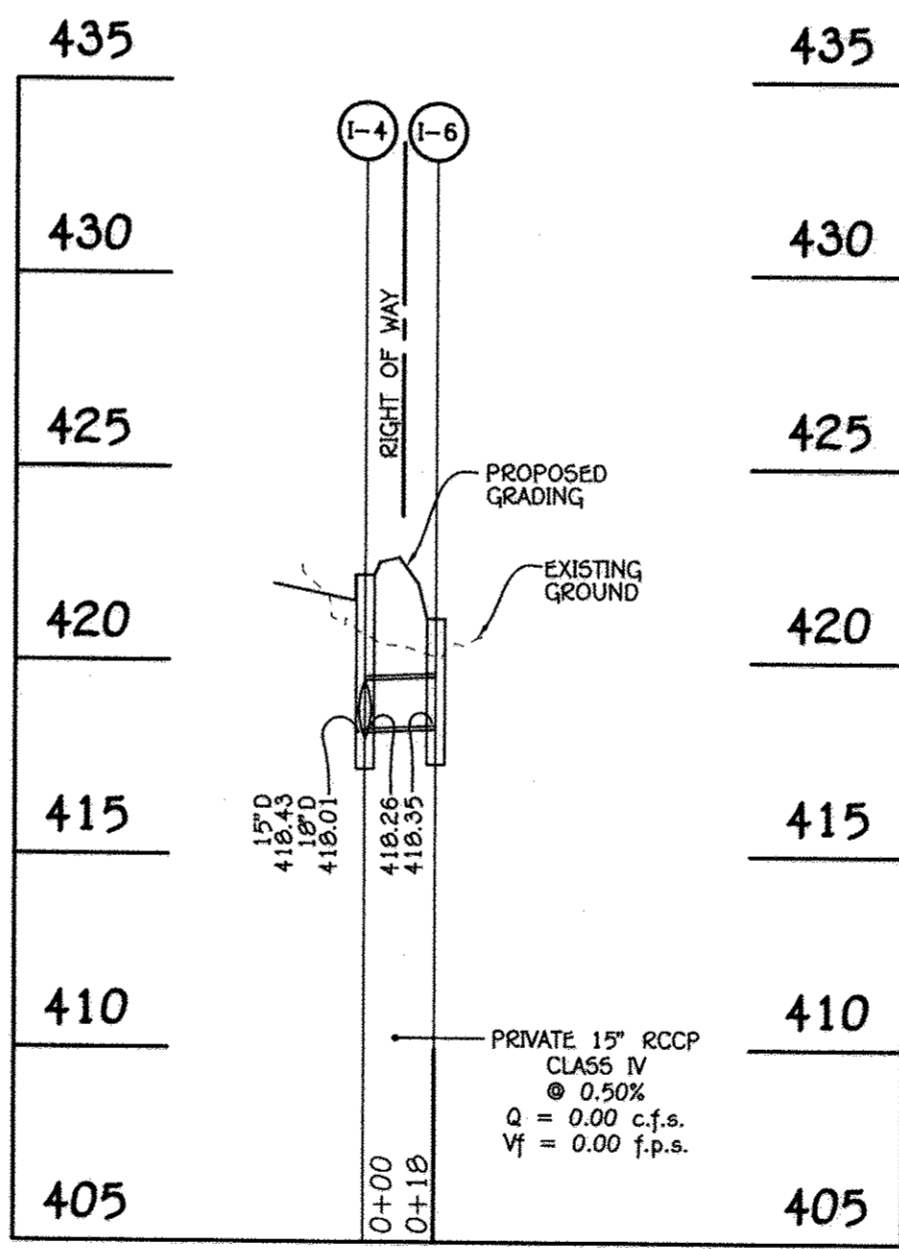
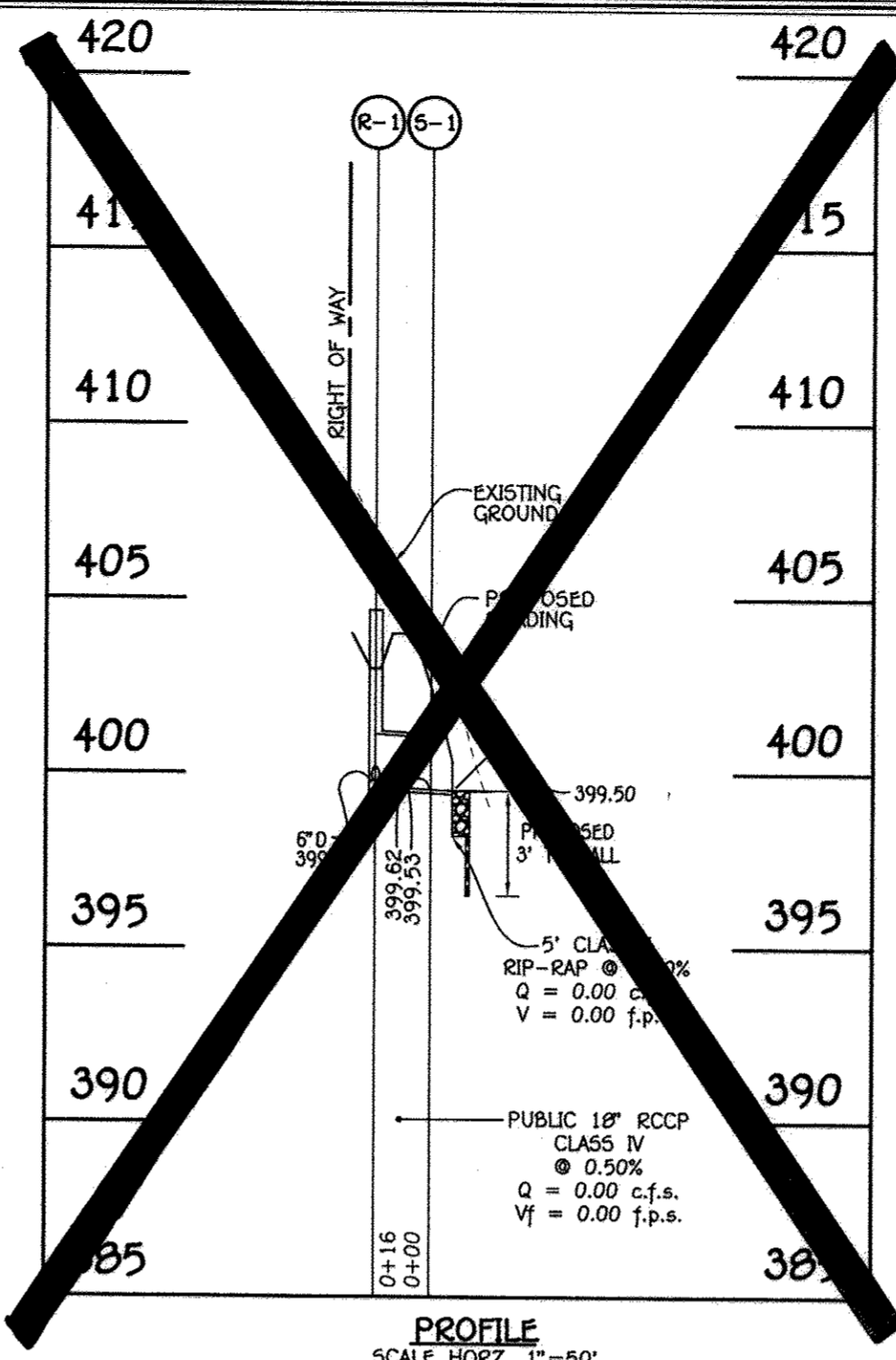
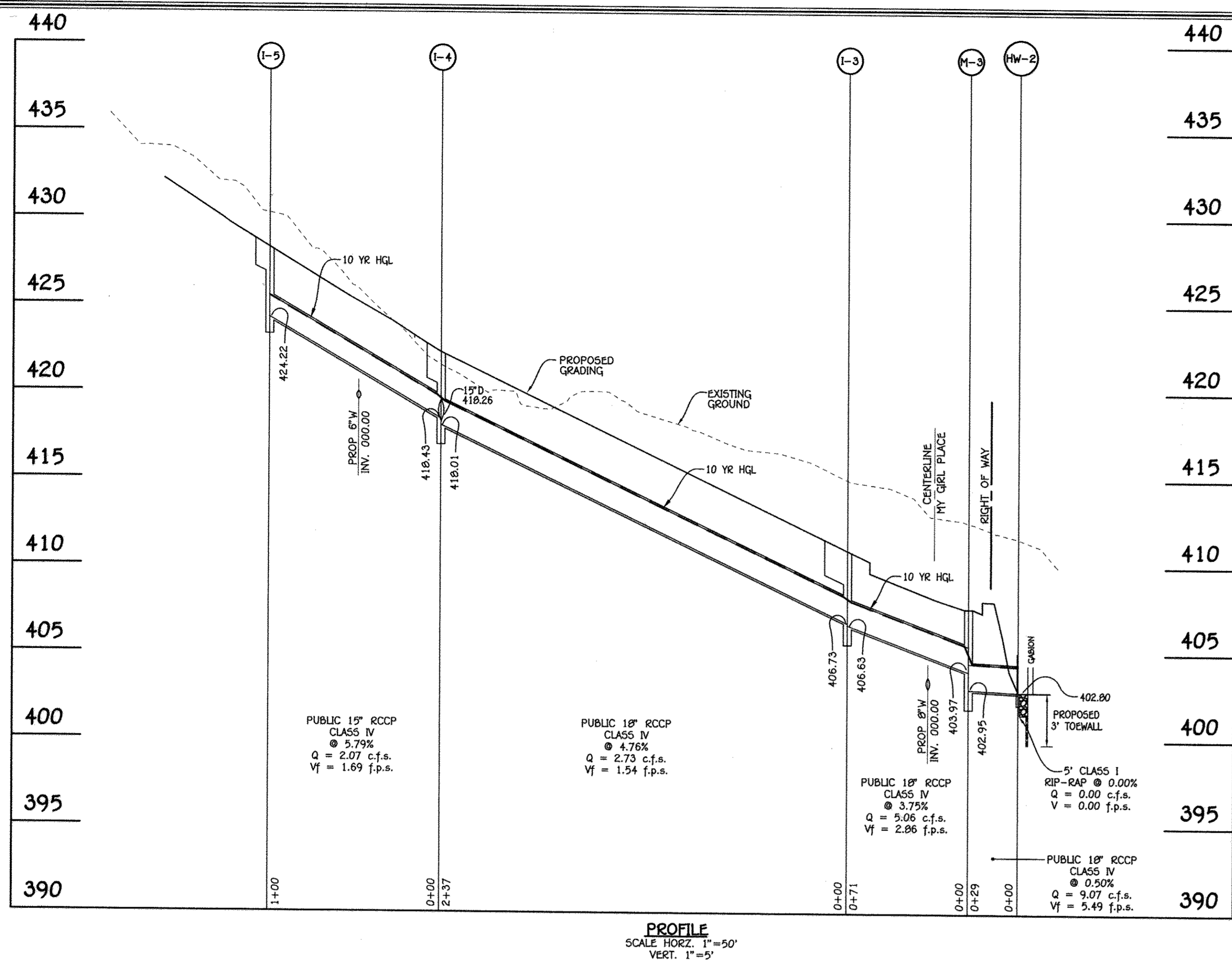
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
Chief, Division of Land Development
DATE: 6-28-17

[Signature]
Chief, Development Engineering Division
DATE: 5-31-17



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SHA LANDSCAPE NOTES AND DETAILS
WAVERLY GROVE
LOTS 1 THRU 30 AND
OPEN SPACE LOTS 31 THRU 35
10501 ROUTE 99
ZONED: R-5A-8
PREVIOUS HOWARD COUNTY FILES:
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TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: APRIL 4, 2017
SHEET 38 OF 39



STRUCTURE SCHEDULE								
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV IN	INV OUT	COORDINATES	WIDTH	TYPE	REMARKS
HW-2	SHA	405.05	402.80 (M-3) 18"	-----	N 600527.31 E 1345835.56	---	TYPE 'C' ENDWALL	STD MD 354.01
1-3	SHA	410.24 (THROAT) 410.91 (TOP)	402.40 (1-4) 18"	402.15 18"	N 600603.01 E 1345781.02	3'	15' C.O.G.	STD MD 374.51
1-4	SHA	421.57 (THROAT) 422.24 (TOP)	410.18 (1-5) 15" 410.18 (1-6) 15"	417.93 18"	N 600751.87 E 1345596.99	3'	10' C.O.G.	STD MD 374.51
1-5	SHA	427.56 (THROAT) 428.23 (TOP)	-----	424.22 15"	N 600876.55 E 1345459.88	3'	10' C.O.G.	STD MD 374.51
1-6	PRIVATE	421.25	-----	410.38 15"	N 600738.57 E 1345584.42	2'	YARD	STD MD 381.02
1-16	SHA	402.77 (THROAT) 403.29 (TOP)	-----	398.99	N 600494.91 E 1345912.22	65' x 45'	COMBINATION INLET	STD MD 374.71
1-17	SHA	398.22 (THROAT) 398.89 (TOP)	-----	397.66	N 600424.61 E 1345991.09	6' x 11.83'	C.O.G./C.O.S. OPENING	STD MD 374.68
1-18	SHA	395.10 (THROAT) 395.77 (TOP)	-----	394.53	N 600371.67 E 1346052.08	6' x 12.33'	C.O.G./C.O.S. OPENING	STD MD 374.68
1-19	SHA	392.94 (THROAT) 393.61 (TOP)	-----	392.35	N 600325.31 E 1346105.51	6' x 13.33'	C.O.G./C.O.S. OPENING	STD MD 374.68
M-3	SHA	407.42	403.97 (1-3) 18"	402.95	N 600556.11 E 1345833.53	---	STANDARD MANHOLE	STD MD 383.01

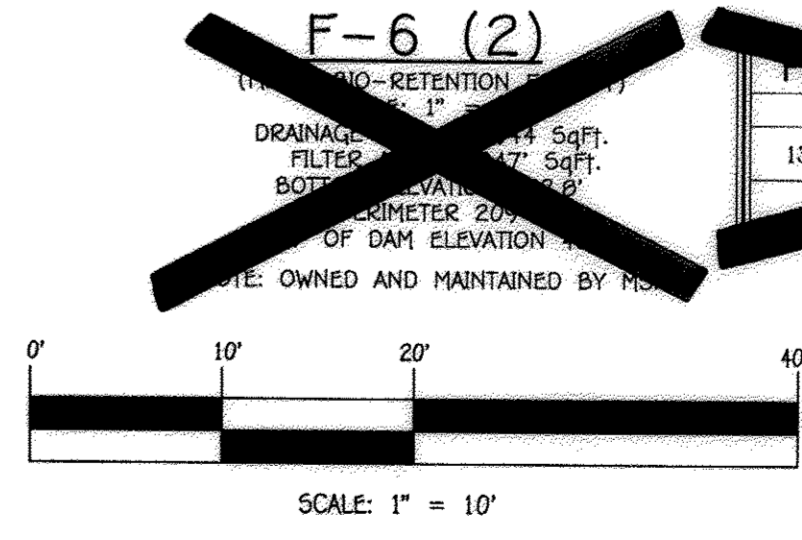
PIPE SCHEDULE (MSHA)		
SIZE	CLASS	LENGTH
15"	RCCP, CL. IV	118 LF.
18"	RCCP, CL. IV	336 LF.

NOTE: RCCP, CL. IV MAY BE SUBSTITUTED WITH HDPE PIPE MATERIAL.

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 05/22/2017
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 6-23-17
 Chief, Division of Land Development

[Signature] 5-31-17
 Chief, Development Engineering Division



SHEETS 28-39 WILL BE SUBMITTED AS A MSHA ACCESS PERMIT FOR MARYLAND STATE HIGHWAY ADMINISTRATION'S REVIEW AND APPROVAL.

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
[Signature] 4/12/17
 FRANK J. MANALANSAN II

STORMDRAIN PROFILES & STRUCTURE SCHEDULE
WAVERLY GROVE
 LOTS 1 THRU 30 AND
 OPEN SPACE LOTS 31 THRU 35
 10501 ROUTE 99
 ZONED: R-SA-8
 PREVIOUS HOWARD COUNTY FILES:
 SDP-06-08, 5-94-07, P-95-07, F-95-174,
 ECP-14-072, 5P-16-001, & WP-16-069
 TAX MAP NO.: 16 GRID NO.: 6 PARCEL NO.: 25
 THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: APRIL 4, 2017
 SHEET 39 OF 39

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
 ELIZABETH CITY, MARYLAND 21042
 (410) 461-2895

OWNER/DEVELOPER
 WARFIELD WOODS LLC
 C/O KENNARD WARFIELD JR
 14451 TORALPHIA ROAD
 PO BOX 30
 GLENELG, MARYLAND 21737
 410-442-2337

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE PROFILE R-10-1, F-6(2) BIO-RETENTION P.C. & SHEET	1/8/18