## QUANTITIES

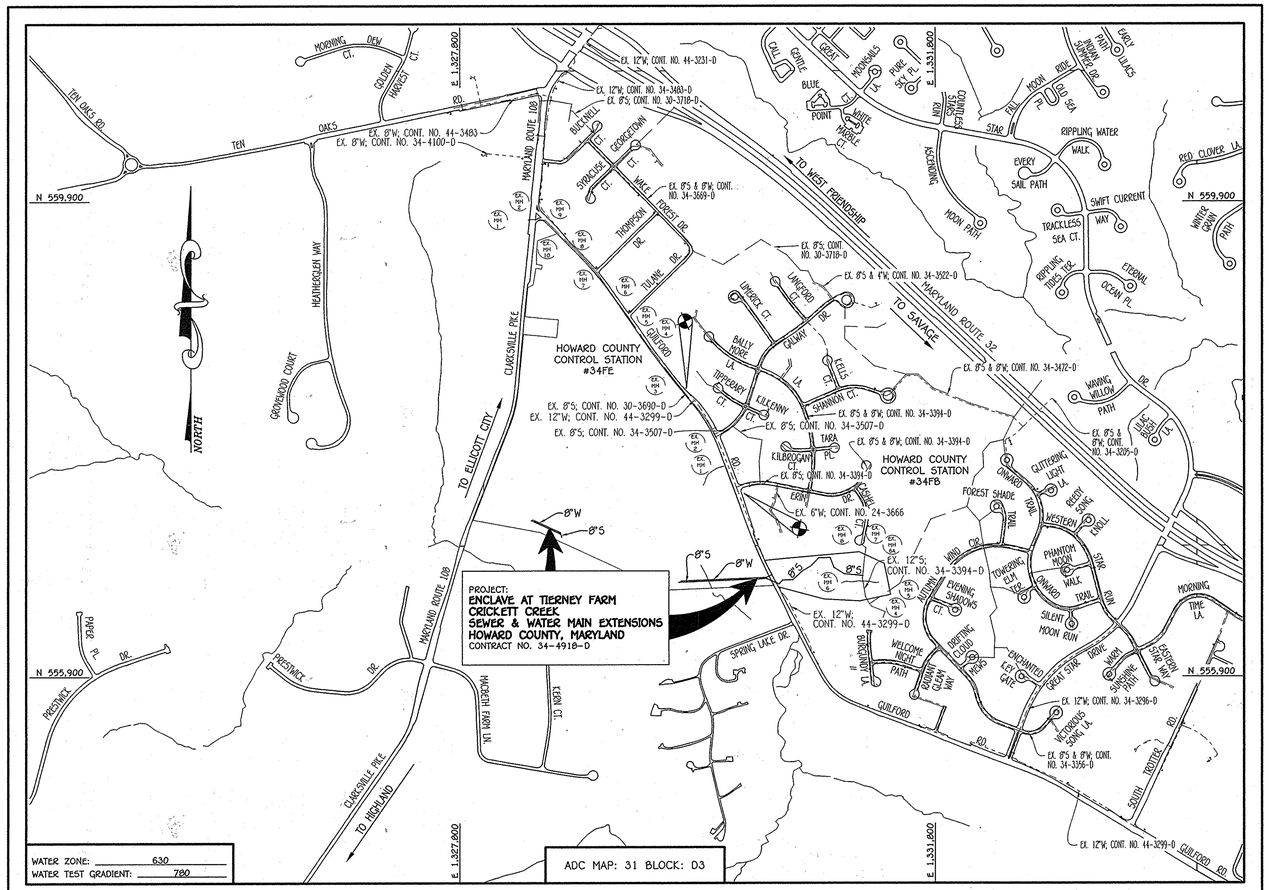
| ITEM | ESTIMATED | AS-BUILT QUANTITIES | AS-BUILT TYPE | AS-BUILT SUPPLIER |
|---|---|---|---|---|
| 8"S; PVC; SDR-35 | 814 L.F. | | | |
| 8"S; CL. 52 D.I.P. | 910 L.F. | | | |
| 8"S; C900 PVC; DR-18 BORE & JACK | 286 L.F. | | | |
| MANHOLE | 16 EACH | | | |
| 8"W; C900 PVC; DR-18 | 837 L.F. | | | |
| 8"W; HDPE SDR-11 HORZ. DIRECTIONAL DRILL | 195 L.F. | | | |
| 12"X8" TAPPING SLEEVE | 1 EACH | | | |
| 8" TAPPING VALVE | 1 EACH | | | |
| 1/16 H.B. | 1 EACH | | | |
| 8" VALVE | 1 EACH | | | |
| 8" PLUG & BUTTRESS | 3 EACH | | | |
| AIR RELEASE VALVE & MH | 1 EACH | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| NAME OF UTILITY CONTRACTOR: | | | | |
| SURVEY & DRAFTING DIVISION AS-BUILT DATE: | | | | |

**INFORMATIONAL NOTE:** THE FUTURE RESIDENTIAL SUBDIVISION, ENCLAVE AT TIERNEY FARM, IS PROPOSED ON PARCELS 00 & 97; TAX MAP 34. IN ACCORDANCE WITH THE ADMINISTRATIVE DECISIONS (NOs. 2-2015 & 3-2015) BY THE DIRECTOR OF PUBLIC WORKS, PARCELS 00 & 97 WERE INCORPORATED INTO THE HOWARD COUNTY METROPOLITAN DISTRICT ON FEBRUARY 17, 2015. IN ACCORDANCE WITH COUNCIL RESOLUTION NO. 36-2016; APPROVED BY THE HOWARD COUNTY COUNCIL ON MAY 02, 2016 , AMENDMENTS PERTAINING TO PARCELS 00 & 97 WERE ADOPTED INTO THE MASTER PLAN FOR WATER & SEWERAGE.

## BENCHMARK INFORMATION

B.M.#34FB – HOWARD COUNTY CONTROL STATION #34FB – HORIZONTAL – NAD '83)
LOCATED EAST OF ERIN DRIVE, ALONG GUILFORD ROAD, APPROX. 21' BEHIND EDGE OF PAVING
N 557,439.911
E 1,330,191.324
ELEVATION = 406.147 – VERTICAL – (NAVD '88)

B.M.#34FE – HOWARD COUNTY CONTROL STATION #34FE – HORIZONTAL – (NAD '83)
LOCATED WEST OF GALWAY DRIVE, ALONG GUILFORD ROAD EAST OF DRIVEWAY #221. SET BEHIND THE EXISTING FIRE HYDRANT
N 558,339.599
E 1,329,709.033
ELEVATION = 431.115 – VERTICAL – (NAVD '88)

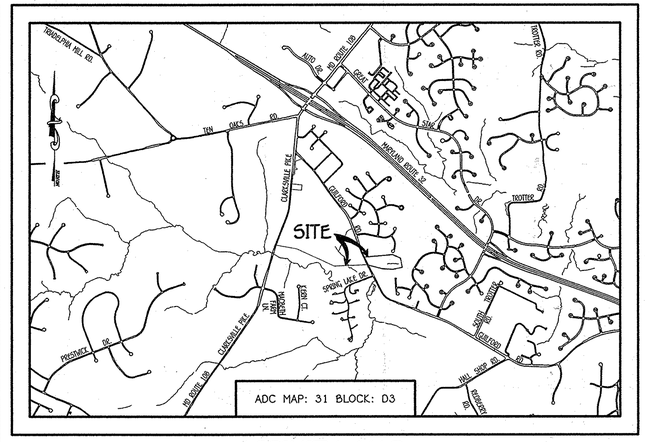



WATER ZONE: 630
WATER TEST GRADIENT: 780

TYPE OF BUILDING: N/A
NUMBER OF PARCELS: 1
NO. OF WATER HOUSE CONNECTIONS: N/A
NO. OF SEWER HOUSE CONNECTIONS: N/A
SEWER SHED: MIDDLE PATUXENT
TREATMENT PLANT: LITTLE PATUXENT WASTEWATER RECLAMATION PLANT SAVAGE, MARYLAND

## LOCATION MAP
SCALE: 1"= 600'

PLAN REFERENCE NUMBERS:
F-15-110 (FUTURE PUBLIC ROADS & RECORD PLAT)




## VICINITY MAP
SCALE: 1"= 2000'

## GENERAL NOTES

PART A
1. APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON OR ABOUT FEBRUARY, 2014 BY FISHER, COLLINS & CARTER, INC.
3. HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91' AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 34FB & NO. 34FE.
ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF THE ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
6. FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
7. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL (T) AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

| | |
|---|---|
| AT&T | 1-800-252-1133 |
| BGE (CONTRACTOR SERVICES) | 410-637-8713 |
| BGE (EMERGENCY) | 410-685-0123 |
| BUREAU OF UTILITIES | 410-313-4900 |
| COLONIAL PIPELINE CO | 410-799-1390 |
| MISS UTILITY | 1-800-257-7777 |
| STATE HIGHWAY ADMINISTRATION | 410-531-5533 |
| VERIZON | 1-800-743-0033 / 410-224-9210 |

9. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
10. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONSTRUCTION OF THE MAIN.
11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)-313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.

PART B: WATER MAIN GENERAL NOTES
1. ALL WATER MAINS SHALL BE AWWA C900 PVC; DR-18.
2. TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
4. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
5. FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
7. TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL D.I.P. AND PVC WATER MAINS IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL.
8. FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
9. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POUND SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSES. ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
10. PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF PVC PIPE.
11. ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION(HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ONE FULL PIPE LENGTH (20 FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.

PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL OF 3-DEGREES (1 $\frac{1}{2}$-DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C950, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.

FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR-18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE BRUTE DR-18 OR EQUAL.

12. WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C900 PVC PIPELINES, THE CONTRACTOR SHALL INSERT DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLINGS AND 5-DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.
13. TO ACCOMMODATE A SPRINKLER SYSTEM, ALL RESIDENTIAL DWELLING UNITS SHALL HAVE A 1-1/2" WATER HOUSE CONNECTION WITH A 1" OUTSIDE METER SETTING. STD. DET. W-3.28.

PART C: SEWER MAIN GENERAL NOTES
1. ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
2. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
3. FORCE MAINS SHALL BE D.I.P. ONLY.
4. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
5. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-0" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
6. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

## DEVELOPER'S CERTIFICATION

" I/WE HEREBY 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 THE DEPARTMENT OF THE ENVIRONMENT 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."

Paul W. Keidel; FOR:
LAND DESIGN & DEVELOPMENT, INC. 04-14-16
SIGNATURE OF DEVELOPER DATE

## ENGINEER'S CERTIFICATION

" 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 CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Paul W. Keidel 04/14/16
SIGNATURE OF ENGINEER DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 309 OF THE HOWARD COUNTY DESIGN MANUAL – VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND AS SHOWN ON THESE PLANS.

Paul W. Keidel; FOR:
LAND DESIGN & DEVELOPMENT, INC. 04-14-16
SIGNATURE OF DEVELOPER DATE

GP-16-019

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY HOWARD SOIL CONSERVATION DISTRICT.

APPROVED:
HOWARD SOIL CONSERVATION DISTRICT 6/8/16 DATE

## LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| | EX. WATER MAIN |
| | EX. SEWER MAIN |
| | EX. SEWER MANHOLE |
| | EX. SEWER, WATER & UTILITY EASEMENT |
| | EX. FIRE HYDRANT |
| | EX. VALVE |
| | PROP. WATER MAIN |
| | PROP. SEWER MAIN |
| | PROP. SEWER MANHOLE |
| | PROP. SEWER, WATER & UTILITY EASEMENT |
| | PROP. WHC |
| | PROP. SHC |
| | PROP. FIRE HYDRANT |
| | PROP. VALVE |

MDE TRACKING NO. 15-NT-3284/201561579

# CONTRACT NO. 34-4918-D
# ENCLAVE AT TIERNEY FARM
## CRICKETT CREEK
### SEWER & WATER MAIN EXTENSIONS
### HOWARD COUNTY, MARYLAND

**DEVELOPER**
LAND DESIGN & DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE
SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443)-367-0422

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 34-4918-D
ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
5/23/16
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
6-23-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE IS 7/16/16.

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

#12043
STATE OF MARYLAND
PAUL WALTER KEIDEL
Paul W. Keidel
PAUL W. KEIDEL

| | | | | |
|---|---|---|---|---|
| DESIGNED BY : B.C.R. | | | | |
| DRAWN BY : B.C.R. | | | | |
| CHECKED BY : P.W.K. | | | | |
| DATE : APRIL, 2016 | BY | NO. | REVISION | DATE |

SEWER & WATER MAIN EXTENSIONS
TITLE SHEET

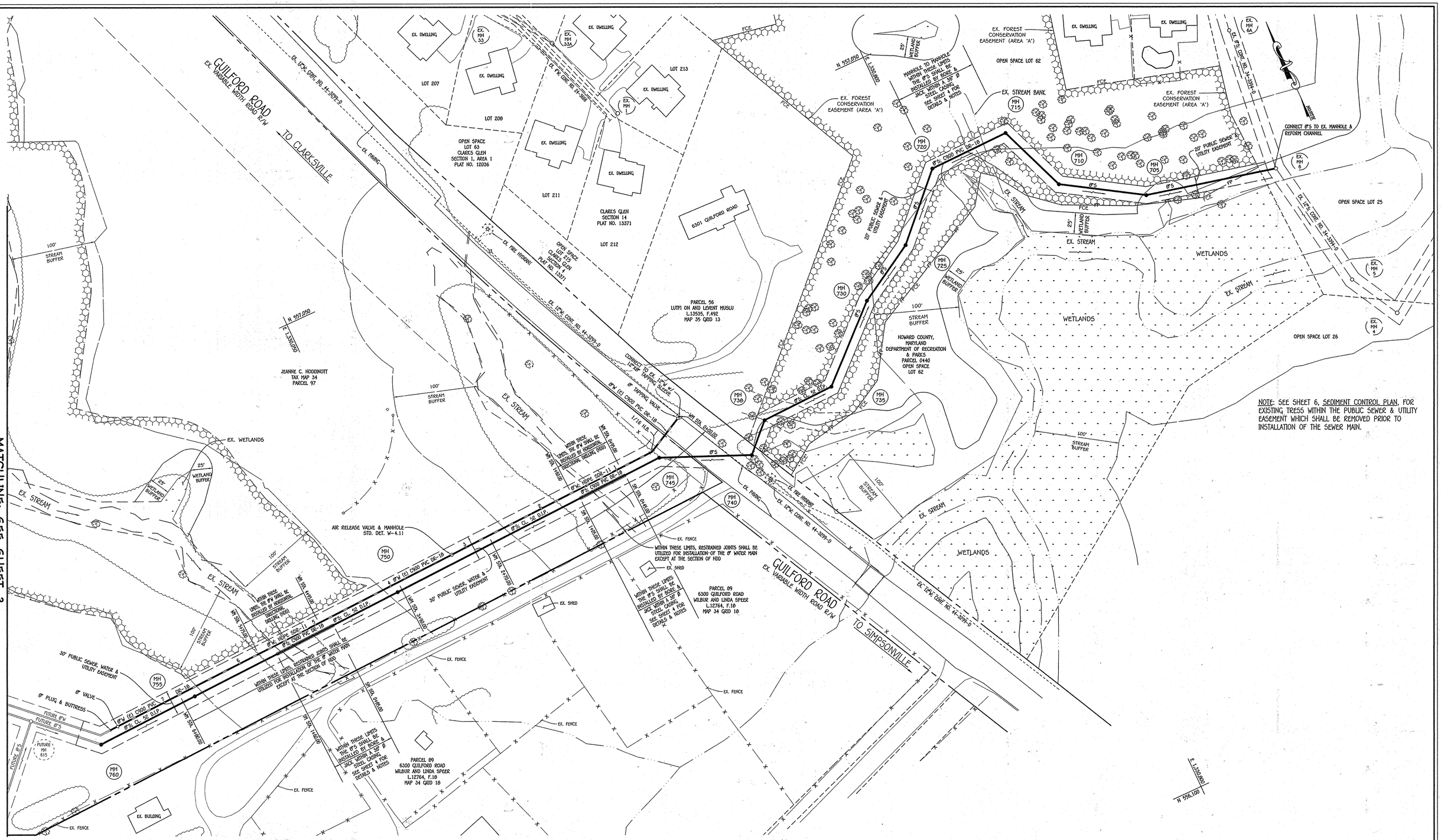
600' SCALE MAP NO. 34 BLOCK NO. 18
F.C.C. WORK ORDER NO. 13008-3001
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 34-4918-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 1 OF 8

I:\2013\13008\dwg\Water & Sewer Contracts\Water & Sewer Contract No. 34-4918-D (Off-Site Sewer)\Finals\13008-3001 Water & Sewer Contract Plansdwg, 4/14/2016 9:32:02 AM, Upstairs 1500 (temporary).pc3




NOTE: SEE SHEET 6, SEDIMENT CONTROL PLAN, FOR EXISTING TREES WITHIN THE PUBLIC SEWER & UTILITY EASEMENT WHICH SHALL BE REMOVED PRIOR TO INSTALLATION OF THE SEWER MAIN.

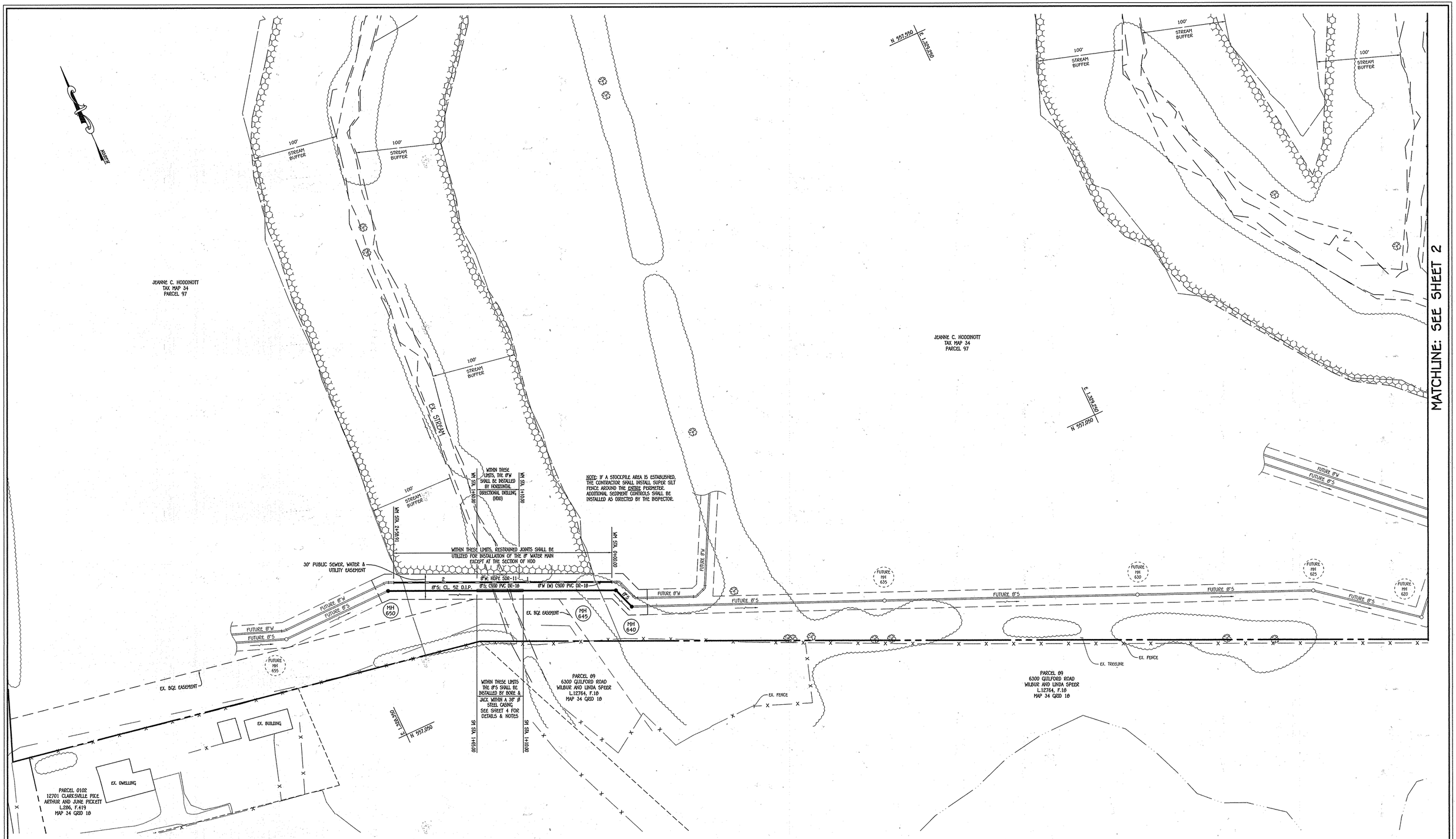
## PLAN

SCALE: 1" = 50'

CONTRACT NO. 34-4918-D
ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND | DEPARTMENT OF PLANNING AND ZONING<br>HOWARD COUNTY, MARYLAND | I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE 5 7/15/16. | #12043 STATE OF MARYLAND PAUL WALTER KNEBEL PROFESSIONAL ENGINEER | DESIGNED BY : B.C.R.<br>DRAWN BY : B.C.R.<br>CHECKED BY : P.W.K.<br>DATE : APRIL, 2016 | BY | NO. | REVISION | DATE | SEWER & WATER MAIN EXTENSIONS PLAN | ENCLAVE AT TIERNEY FARM<br>CRICKETT CREEK<br>SEWER & WATER MAIN EXTENSIONS<br>CONTRACT NO. 34-4918-D<br>FIFTH ELECTION DISTRICT<br>HOWARD COUNTY, MARYLAND | SCALE AS SHOWN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CHIEF, BUREAU OF UTILITIES — DATE 5/25/16 | CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-23-16 | FISHER, COLLINS & CARTER, INC.<br>CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS<br>CENTENNIAL SQUARE OFFICE PARK – 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 – 2855 | PAUL W. KNEBEL | | | | | | 600' SCALE MAP NO. 34 BLOCK NO. 10<br>F.C.C. WORK ORDER NO. 13008-3001<br>FILE NAME : SEWER & WATER MAIN EXTENSION PLAN | | SHEET 2 OF 8 |

I:\2013\13008\dwg\Water & Sewer Contracts\Water & Sewer Contract No. 34-4918-D (Off-Site Sewer)\Final\13008-3001 Water & Sewer Contract Plan.dwg, 4/14/2016 9:54:59 AM, Upstairs 1500 (temporary).pc3




## PLAN

SCALE: 1" = 50'

CONTRACT NO. 34-4918-D
ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND<br>CHIEF, BUREAU OF UTILITIES — DATE 5/25/16 | DEPARTMENT OF PLANNING AND ZONING<br>HOWARD COUNTY, MARYLAND<br>CHIEF, DEVELOPMENT ENGINEERING DIVISION M.G. — DATE 6-23-16 | I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE IS 7/16/16.<br>FISHER, COLLINS & CARTER, INC.<br>CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS<br>CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE<br>ELLICOTT CITY, MARYLAND 21042<br>(410) 461 - 2855 | #12043 STATE OF MARYLAND PAUL WALTER NIEBEL REGISTERED PROFESSIONAL ENGINEER<br>Paul W. Niebel<br>PAUL W. NIEBEL | DESIGNED BY : B.C.R.<br>DRAWN BY : B.C.R.<br>CHECKED BY : P.W.K.<br>DATE : APRIL, 2016 | BY | NO. | REVISION | DATE |

SEWER & WATER MAIN EXTENSIONS PLAN

600' SCALE MAP NO. 34 BLOCK NO. 18

F.C.C. WORK ORDER NO. 13008-3001

FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 34-4918-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3 OF 8

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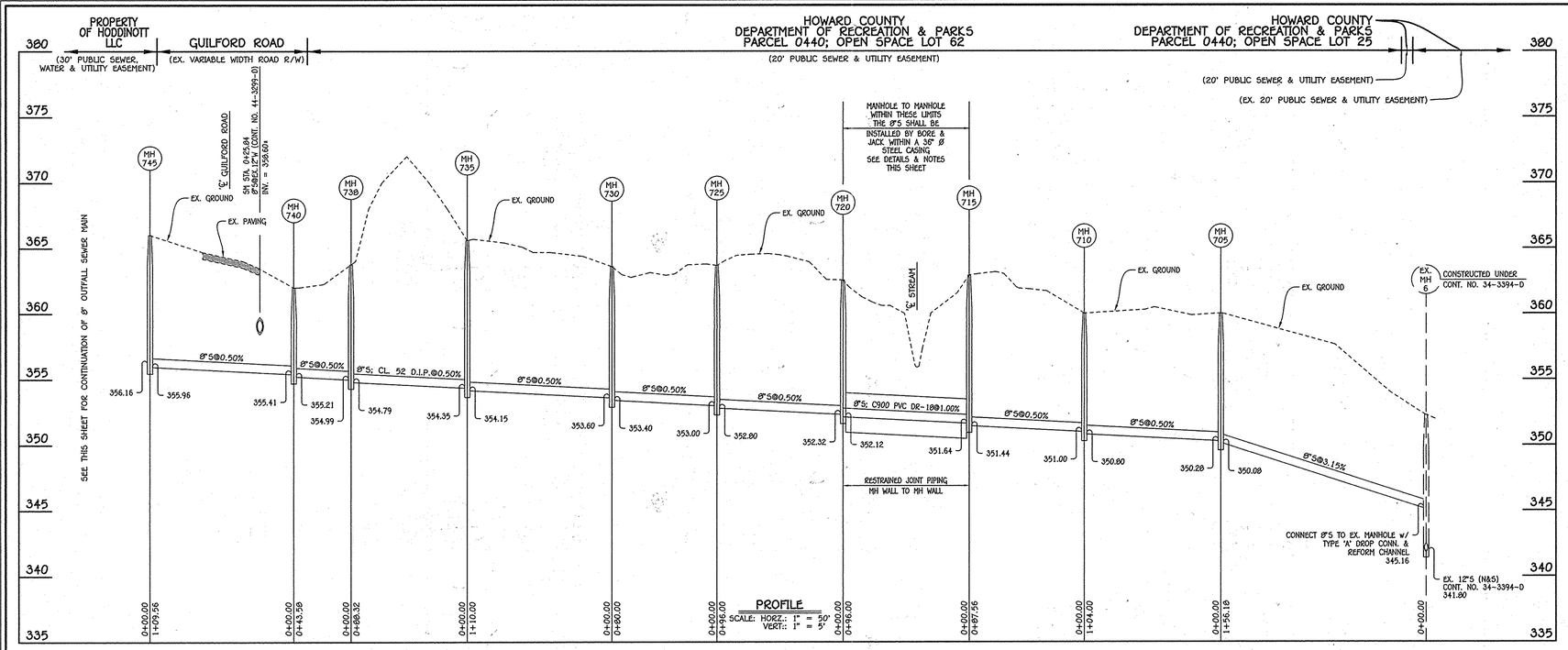
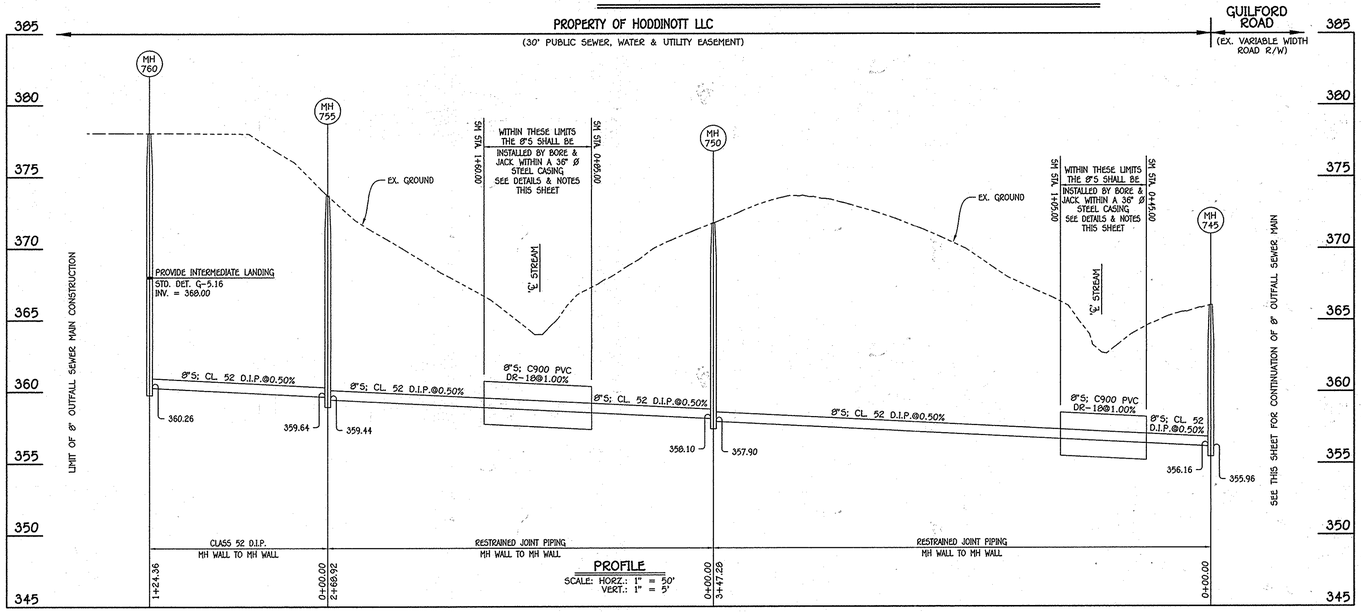


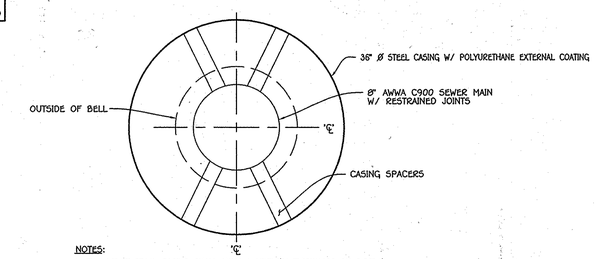

## 8" OUTFALL SEWER MAIN: EX. MH 6 TO MH 745

| MANHOLE TABULATION CHART | | | |
|---|---|---|---|
| NO. | NORTHING | EASTING | RIM ELEVATION |
| 705 | 556761.78 | 1331034.99 | 360.00 |
| 710 | 556816.76 | 1330946.72 | 360.00 |
| 715 | 556898.39 | 1330915.03 | 362.90 |
| 720 | 556896.53 | 1330819.05 | 362.55 |
| 725 | 556827.54 | 1330752.28 | 363.68 |
| 730 | 556787.15 | 1330683.23 | 363.60 |
| 735 | 556712.46 | 1330602.48 | 365.61 |
| 738 | 556709.58 | 1330514.20 | 363.76 |
| 740 | 556678.77 | 1330483.37 | 362.00 |
| 745 | 556722.00 | 1330382.70 | 366.00 |
| 750 | 556707.87 | 1330035.70 | 371.78 |
| 755 | 556697.01 | 1329767.00 | 373.71 |
| 760 | 556691.97 | 1329642.74 | 378.04 |

NOTE: SET MH RIMS FLUSH W/EXISTING GROUND.




## 8" OUTFALL SEWER MAIN: MH 745 TO MH 760

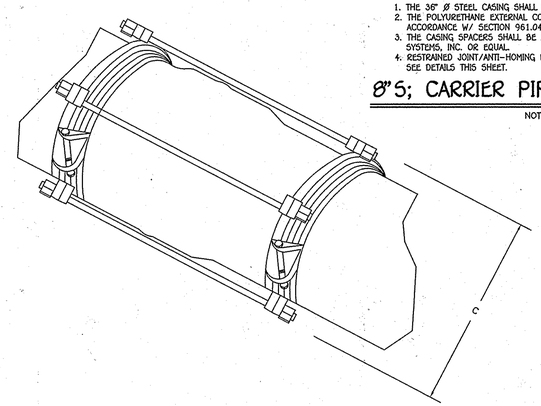


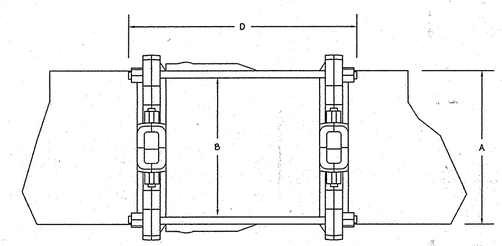

NOTES:

1. THE 36" Ø STEEL CASING SHALL HAVE A MINIMUM THICKNESS OF 0.50"
2. THE POLYURETHANE EXTERNAL COATING FOR THE 36" Ø CASING SHALL BE IN ACCORDANCE W/ SECTION 961.04 OF THE CORROSION CONTROL SPECIFICATIONS.
3. THE CASING SPACERS SHALL BE AS MANUFACTURED BY ADVANCE PRODUCTS & SYSTEMS, INC. OR EQUAL.
4. RESTRAINED JOINT/ANTI-HOMING DEVICE SHALL BE EBBA-IRON, SERIES 1500, SEE DETAILS THIS SHEET.

## 8"S; CARRIER PIPE / CASING DETAIL

NOT TO SCALE




| EBAA IRON INC. | | | | | | |
|---|---|---|---|---|---|---|
| ACTUAL PIPE SIZE | SERIES NUMBER | A | B | C | D | THRUST BOLT |
| 8 | 1508 | 9.05 | 12.25 | 14.75 | 18 | 2 - 3/4 X 18 |
| (INCHES) | | (PIPE O.D.) | (MAX. BELL O.D. CLEARED) | (CASING CLEARANCE) | (OVERALL LENGTH) | (QTY. - SIZE) |

## RESTRAINED JOINT / ANTI-HOMING DEVICE DETAILS

NOT TO SCALE

0' 50' 100' 200'

SCALE: 1" = 50'

CONTRACT NO. 34-4918-D
ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE 5/25/16

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-23-16

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12043 EXPIRATION DATE 15 7/16/16.

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

#12043 STATE OF MARYLAND PAUL WALTER KREBEL PROFESSIONAL ENGINEER
PAUL W. KREBEL

| DESIGNED BY : B.C.R. | | | | |
|---|---|---|---|---|
| DRAWN BY : B.C.R. | | | | |
| CHECKED BY : P.W.K. | | | | |
| DATE : APRIL, 2016 | BY | NO. | REVISION | DATE |

SEWER MAIN EXTENSIONS
PROFILES & CHART

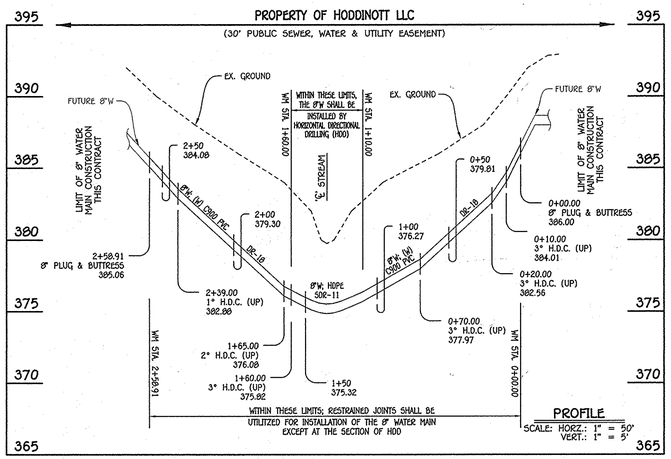
600' SCALE MAP NO. 34 BLOCK NO. 18
F.C.C. WORK ORDER NO. 13008-3001
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 34-4918-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

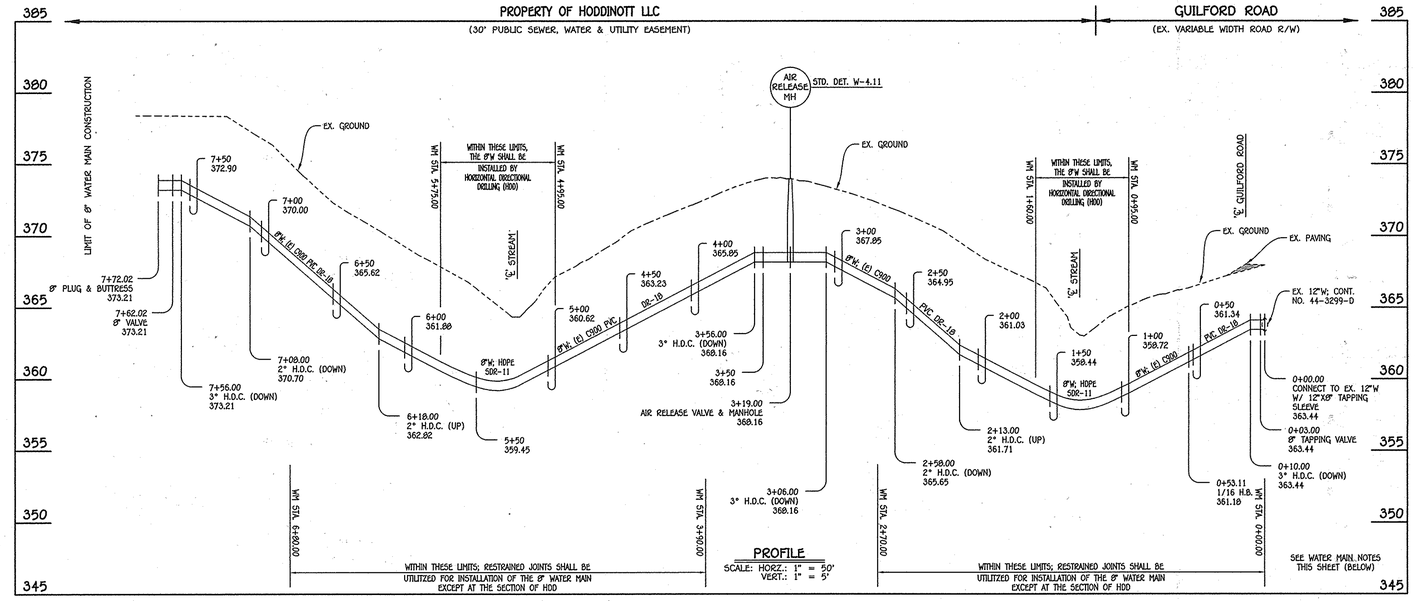
SHEET 4 OF 8

I:\2013\13008\dwg\Water & Sewer Contracts\Water & Sewer Contract No. 34-4918-D (Off-Site Sewer)\Finals\13008-3001 Water & Sewer Contract Plan.dwg, 4/14/2016 9:57:04 AM, lopatsirs 1500 (temporary).pc3




## 8" WATER MAIN (W): TO ENCLAVE AT TIERNEY FARM

| WATER MAIN TABULATION CHART | | | |
|---|---|---|---|
| W.M. STA. | APPURTENANCE | NORTHING | EASTING |
| 8" WATER MAIN (W): TO ENCLAVE AT TIERNEY FARM | | | |
| 0+00.00 | 8" PLUG & BUTTRESS | 557111.54 | 1328647.10 |
| 2+58.91 | 8" PLUG & BUTTRESS | 557220.19 | 1328412.09 |

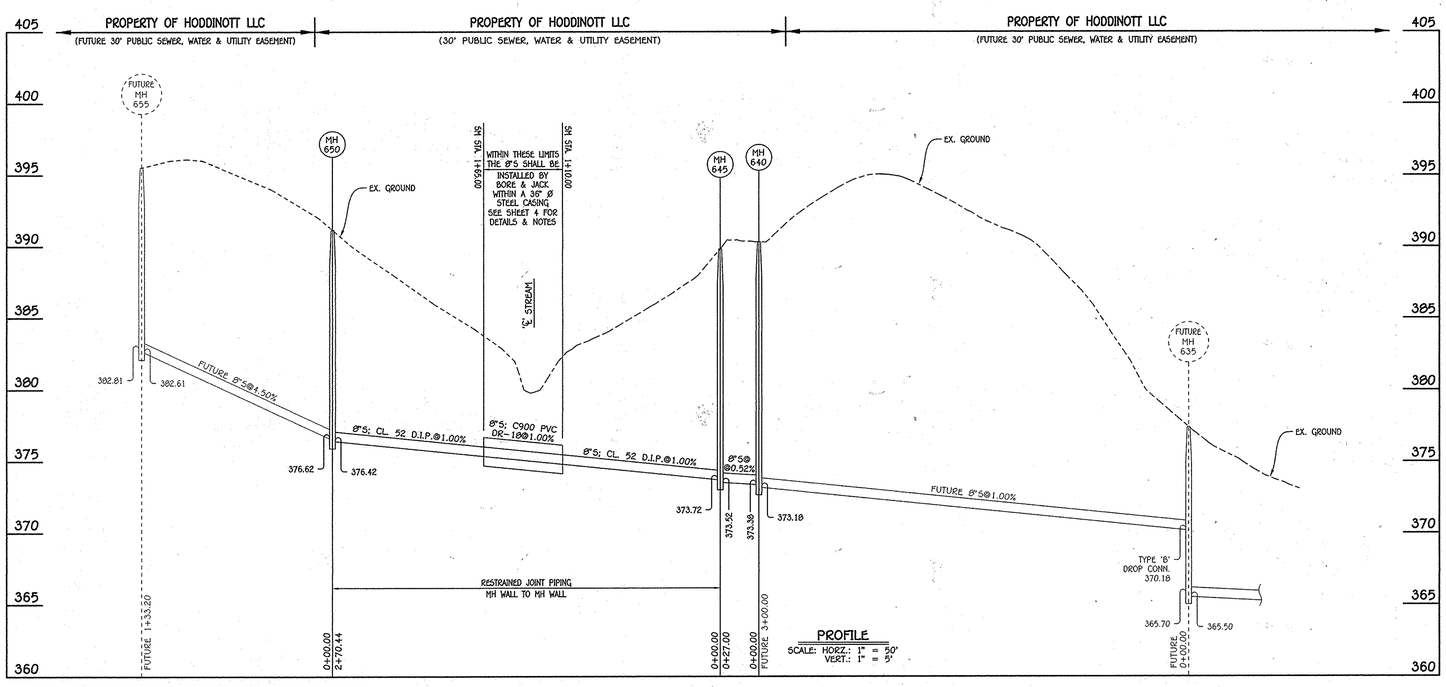



## 8" WATER MAIN (E): TO ENCLAVE AT TIERNEY FARM

| WATER MAIN TABULATION CHART | | | |
|---|---|---|---|
| W.M. STA. | APPURTENANCE | NORTHING | EASTING |
| 8" WATER MAIN (E): TO ENCLAVE AT TIERNEY FARM | | | |
| 0+00.00 | 12"X8" TAPPING SLEEVE | 556756.20 | 1330425.00 |
| 0+03.00 | 8" TAPPING VALVE | 556754.82 | 1330422.34 |
| 0+53.11 | 1/16 H.B. | 556731.81 | 1330377.82 |
| 3+19.00 | AIR RELEASE VALVE & MANHOLE | 556721.03 | 1330112.15 |
| 7+62.02 | 8" VALVE | 556703.06 | 1329669.50 |
| 7+72.02 | 8" PLUG & BUTTRESS | 556702.66 | 1329659.51 |

WATER MAIN NOTES:

1. ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE; DR-18.
2. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.
3. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC HIGH DEFLECTION COUPLINGS.
4. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING A SADDLE.




## 8" SEWER MAIN: MH 640 TO MH 650

| MANHOLE TABULATION CHART | | | |
|---|---|---|---|
| NO. | NORTHING | EASTING | RIM ELEVATION |
| 640 | 557074.98 | 1328656.16 | 390.32 |
| 645 | 557100.47 | 1328647.23 | 389.83 |
| 650 | 557213.96 | 1328401.76 | 391.17 |

NOTE: SET MH RIMS FLUSH W/EXISTING GROUND.

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 34-4918-D
ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE 6/23/16

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-23-16

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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

#12043 STATE OF MARYLAND PAUL WALTER ESSEEL REGISTERED PROFESSIONAL ENGINEER
PAUL W. ESSEEL

| | | | |
|---|---|---|---|
| DESIGNED BY : B.C.R. | BY | NO. | REVISION | DATE |
| DRAWN BY : B.C.R. | | | | |
| CHECKED BY : P.W.K. | | | | |
| DATE : APRIL, 2016 | | | | |

SEWER & WATER MAIN EXTENSIONS
PROFILES, CHARTS & NOTES

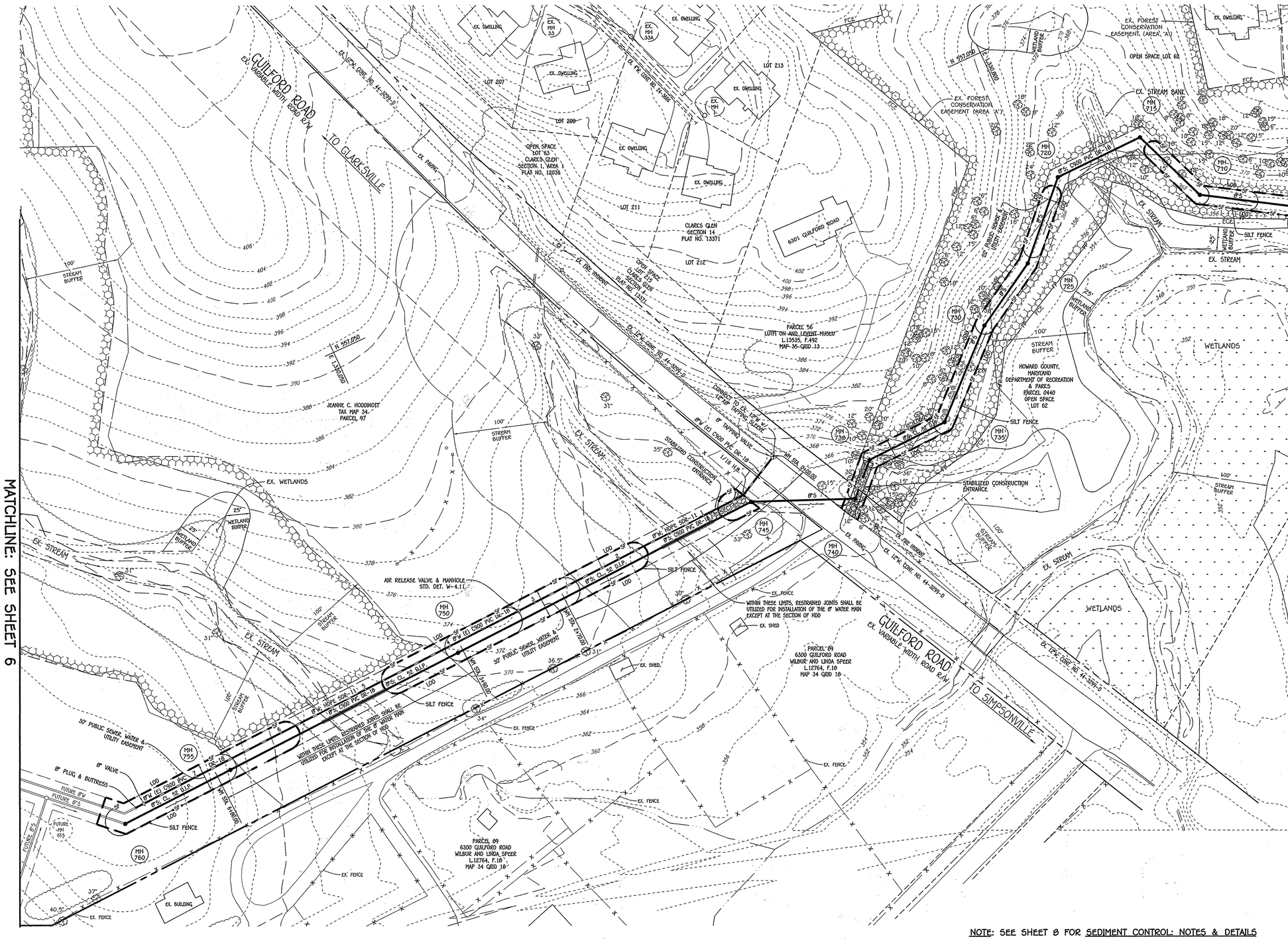
600' SCALE MAP NO. 34 BLOCK NO. 18
F.C.C. WORK ORDER NO. 13008-3001
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 34-4918-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 5 OF 8

I:\2013\13008\dwg\Water & Sewer Contracts\Water & Sewer Contract No. 34-4918-D (Off-Site Sewer)\Final\13008-3001 Water & Sewer Contract Plan.dwg, 4/14/2016 10:29:20 AM, Upstairs 1500 (temporary)\pc3




## BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS,WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM sp.), OATS (UNIOLA sp.), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM: USE I WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR. USE III WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR. USE IV WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.
12. A DEWATERING PUMP WILL BE UTILIZED IN CONJUNCTION WITH AN APPROVED DEWATERING DEVICE TO REMOVE STANDING WATER IN THE PROJECT AREA DURING CONSTRUCTION. THE APPROVED DEWATERING DEVICE SHALL BE PLACED ON A VEGETATED AREA A SUFFICENT DISTANCE FROM SUBJECT REACH SO THAT ANY SEDIMENT LEAVING THE APPROVED DEWATERING DEVICE HAS TIME/DISTANCE TO SETTLE OUT BEFORE REACHING THE WATERWAY.

NOTE: SEE SHEET 8 FOR SEDIMENT CONTROL: NOTES & DETAILS

PLAN

SCALE: 1" = 50'

0' 50' 100' 200'

SCALE: 1" = 50'

CONTRACT NO. 34-4918-D
ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES — DATE 5/23/16

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-23-16

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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

#12043 STATE OF MARYLAND PAUL WALTER KEUBEL REGISTERED PROFESSIONAL ENGINEER
PAUL W. KEUBEL

| | |
|---|---|
| DESIGNED BY : | B.C.R. |
| DRAWN BY : | B.C.R. |
| CHECKED BY : | P.W.K. |
| DATE : | APRIL, 2016 |

| BY | NO. | REVISION | DATE |
|---|---|---|---|

SEWER & WATER MAIN EXTENSIONS
SEDIMENT CONTROL PLAN

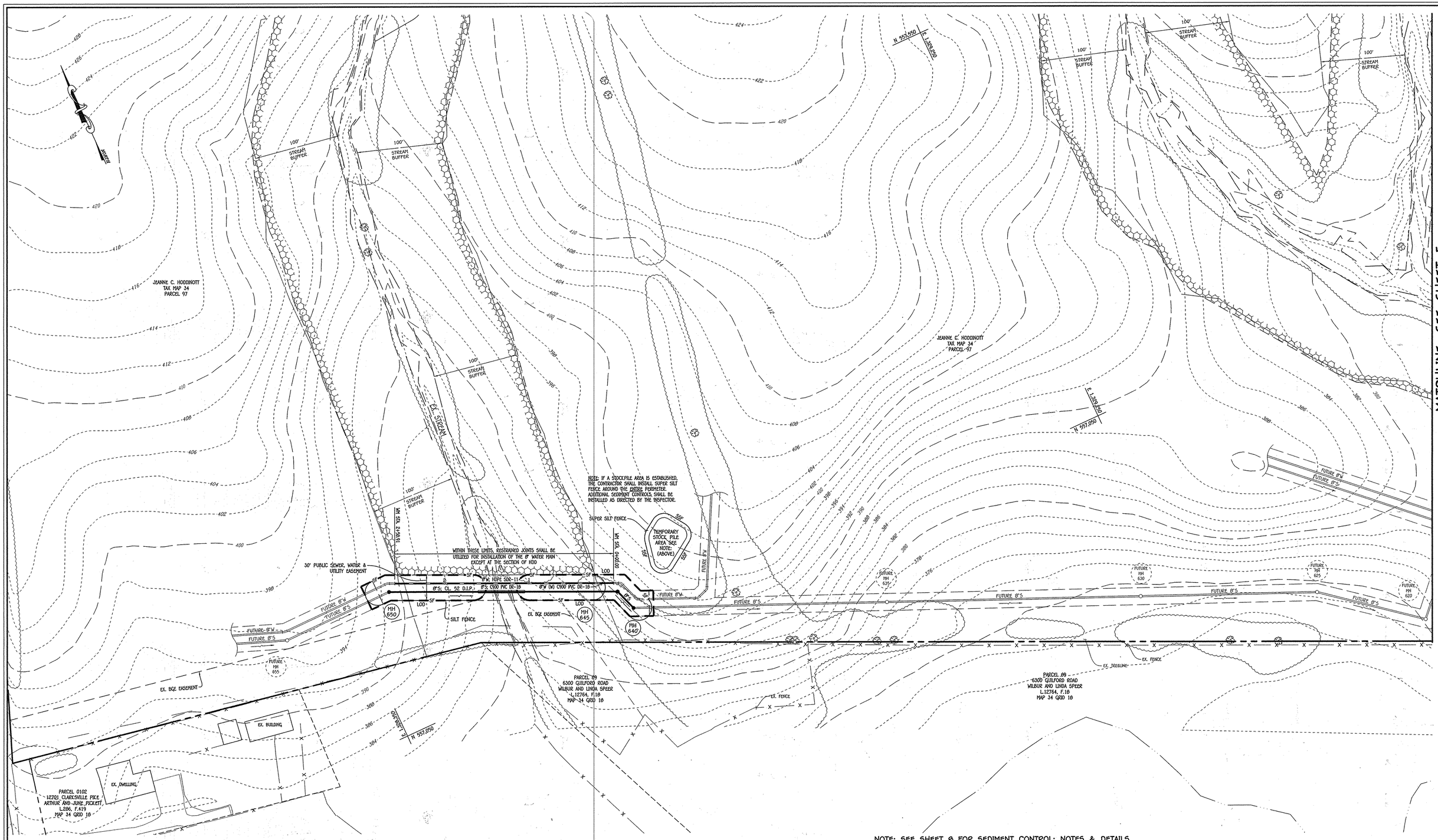
600' SCALE MAP NO. 34 BLOCK NO. 10
F.C.C. WORK ORDER NO. 13008-3001
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 34-4918-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 6 OF 8

I:\2013\13008\dwg\Water & Sewer Contracts\Water & Sewer Contract No. 34-4918-D (Off-Site Sewer)\Final\13008-3001 Water & Sewer Contract Plan.dwg, 4/14/2016 9:59:09 AM, Upstairs 1500 (temporary).pc3




NOTE: SEE SHEET 8 FOR SEDIMENT CONTROL: NOTES & DETAILS

PLAN

SCALE: 1" = 50'

0' 50' 100' 200'

SCALE: 1" = 50'

CONTRACT NO. 34-4918-D
ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND | DEPARTMENT OF PLANNING AND ZONING<br>HOWARD COUNTY, MARYLAND | I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE IS 7/16/16. | #12043 STATE OF MARYLAND PAUL W. KRIEBEL PROFESSIONAL ENGINEER | DESIGNED BY : B.C.R.<br>DRAWN BY : B.C.R.<br>CHECKED BY : P.W.K.<br>DATE : APRIL, 2016 | BY | NO. | REVISION | DATE | SEWER & WATER MAIN EXTENSIONS<br>SEDIMENT CONTROL PLAN<br>600' SCALE MAP NO. 34 BLOCK NO. 18<br>F.C.C. WORK ORDER NO. 13008-3001<br>FILE NAME : SEWER & WATER MAIN EXTENSION PLAN | ENCLAVE AT TIERNEY FARM<br>CRICKETT CREEK<br>SEWER & WATER MAIN EXTENSIONS<br>CONTRACT NO. 34-4918-D<br>FIFTH ELECTION DISTRICT<br>HOWARD COUNTY, MARYLAND | SCALE AS SHOWN<br>SHEET 7 OF 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CHIEF, BUREAU OF UTILITIES 5/25/16 DATE | CHIEF, DEVELOPMENT ENGINEERING DIVISION MG 6-23-16 DATE | FISHER, COLLINS & CARTER, INC.<br>CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS<br>CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE<br>ELLICOTT CITY, MARYLAND 21042<br>(410) 461 - 2855 | PAUL W. KRIEBEL | | | | | | | | |

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

### A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

I. SOIL PH BETWEEN 6.0 AND 7.0.
II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

### B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE: A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH. D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.

B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

6. TOPSOIL APPLICATION

A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.

B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

### C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

## STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

## PERMANENT SEEDING NOTES (B-4-5)

### A. SEED MIXTURES

1. GENERAL USE

A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.

C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE:
FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE:
FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

III. TALL FESCUE/KENTUCKY BLUEGRASS:
FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

IV. KENTUCKY BLUEGRASS/FINE FESCUE:
SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND"

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH ( 1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

Permanent Seeding Summary

| Hardiness Zone (from Figure B.3): 6b<br>Seed Mixture (from Table B.3): 8 | | | | | Fertilizer Rate (10-20-20) | | | Lime Rate |
|---|---|---|---|---|---|---|---|---|
| No. | Species | Application Rate (lb/ac) | Seeding Dates | Seeding Depths | N | $P_2O_5$ | $K_2O$ | |
| 8 | TALL FESCUE | 100 | Mar. 1-May 15<br>Aug. 15-Oct. 15 | 1/4-1/2 in. | 45 lbs. per acre (1.0 lb/ 1000 sf) | 90 lb/ac (2 lb/ 1000 sf) | 90 lb/ac (2 lb/ 1000 sf) | 2 tons/ac (90 lb/ 1000 sf) |
| | | | | | | | | |
| | | | | | | | | |

## B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

### DEFINITION

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

### PURPOSE

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.
CONDITIONS WHERE PRACTICE APPLIES: STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

### 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. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
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.

### MAINTENANCE

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

## 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.

**CONDITIONS WHERE PRACTICE APPLIES**

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

**CRITERIA**

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

Temporary Seeding Summary

| Hardiness Zone (from Figure B.3): 6b<br>Seed Mixture (from Table B.1): | | | | Fertilizer Rate (10-20-20) | Lime Rate |
|---|---|---|---|---|---|
| Species | Application Rate (lb/ac) | Seeding Dates | Seeding Depths | | |
| BARLEY | 96 | 3/1 - 5/15,<br>8/15 - 10/15 | 1" | 436 lb/ac (10 lb/ 1000 sf) | 2 tons/ac (90 lb/ 1000 sf) |
| OATS | 72 | | 1" | | |
| RYE | 112 | | 1" | | |

## 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), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:

A. PRIOR TO THE START OF EARTH DISTURBANCE,
B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
C. 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.
OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

2. 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 THERETO.
3. 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, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 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.
4. 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). 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-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
5. 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.
6. SITE ANALYSIS:

| | |
|---|---|
| TOTAL AREA OF SITE: | 33.080 ACRES |
| AREA DISTURBED: | 1.0812 ACRES |
| AREA TO BE ROOFED OR PAVED: | 0.0000 ACRES |
| AREA TO BE VEGETATIVELY STABILIZED: | 1.0812 ACRES |
| TOTAL CUT: | 0 CU. YDS. |
| TOTAL FILL: | 0 CU. YDS. |
| OFFSITE WASTE/BORROW AREA LOCATION: | N/A |

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. 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'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
- EVIDENCE OF SEDIMENT DISCHARGES
- IDENTIFICATION OF PLAN DEFICIENCIES
- IDENTIFICATION OF SEDIMENT CONTROLS 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).

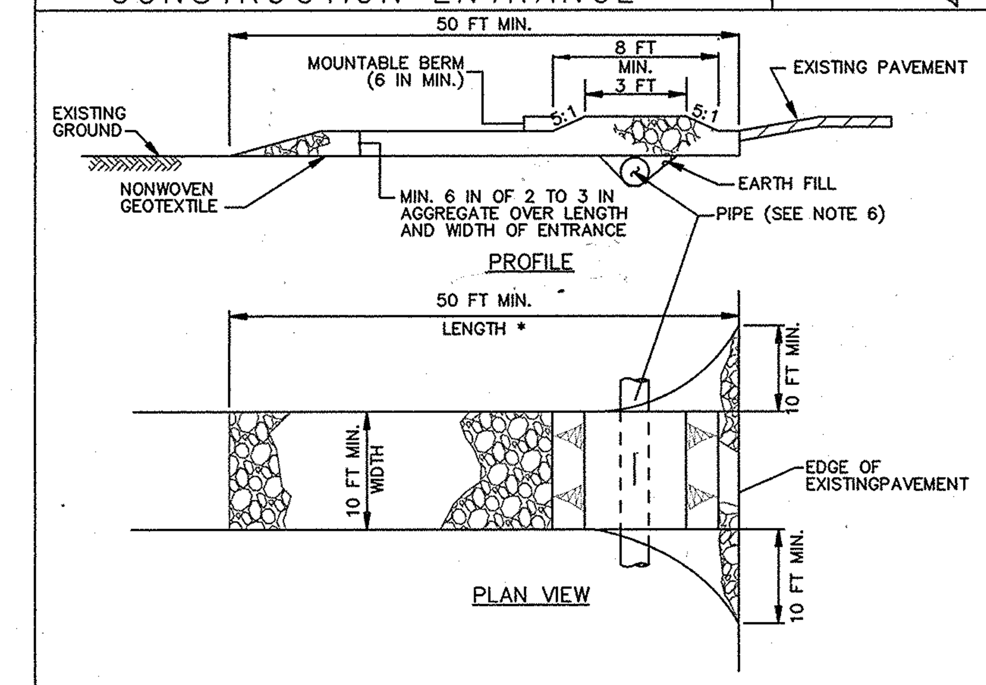
9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY BE ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
11. 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 CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):

- USE I: AND IP: MARCH 1 - JUNE 15
- USE III: AND IIIP: OCTOBER 1 - APRIL 30
- USE IV: MARCH 1 - MAY 31

16. 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.

## DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE




CONSTRUCTION SPECIFICATIONS

1. 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 (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

2. 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.

3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.

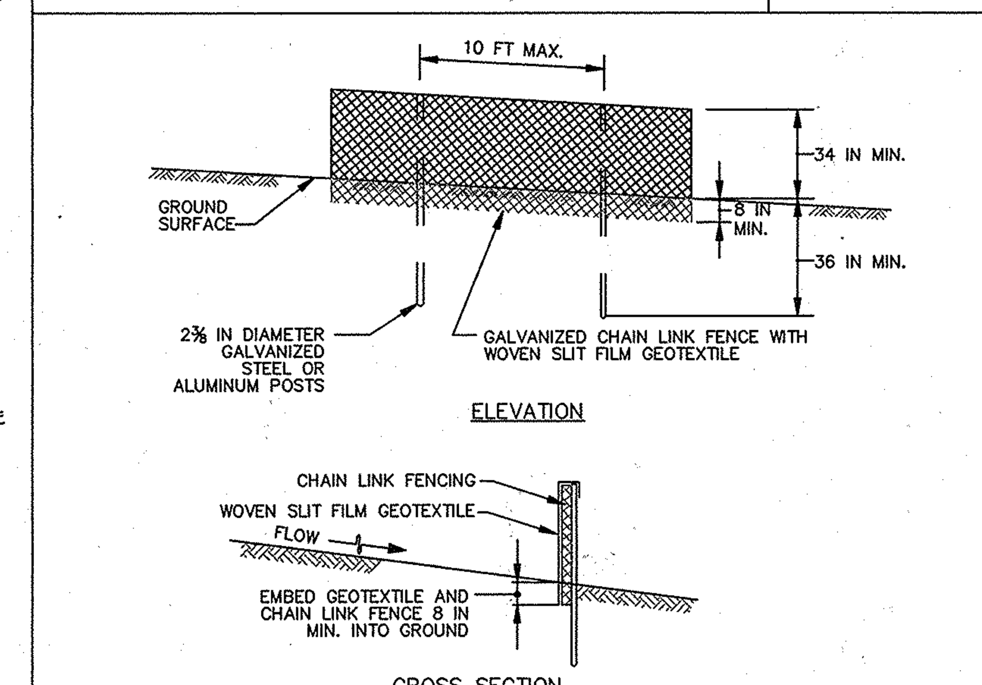
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.

5. 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 |

## DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF




CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ 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.

2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.

3. 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.

4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.

5. 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.

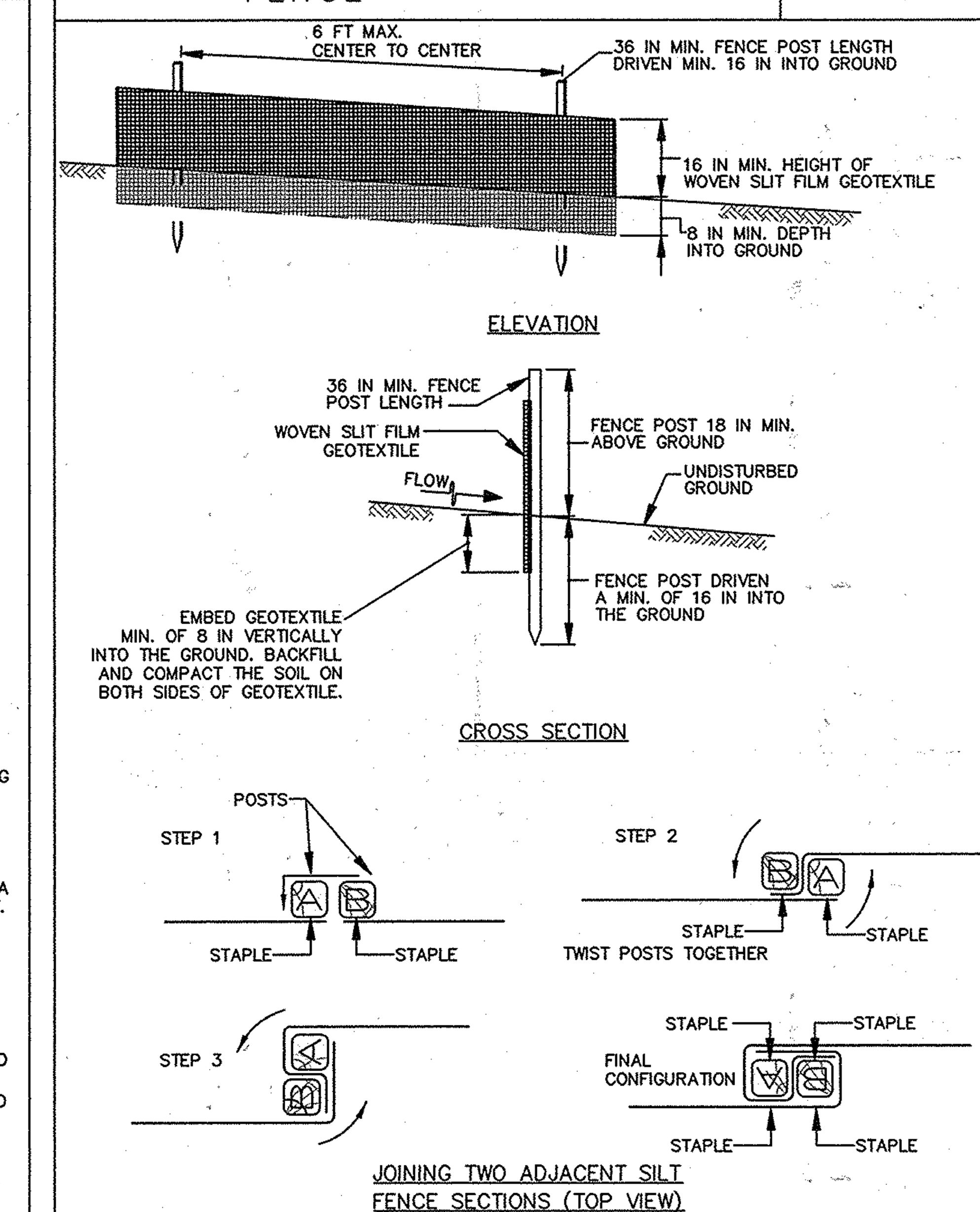
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.

7. 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.

| 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 |

## DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF




CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ 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.

2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.

3. 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.

4. 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.

5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.

6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.

7. 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.

8. 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 FENCE.

| 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 |

## ENGINEER'S CERTIFICATION

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 CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Paul W. Kriebel — 04/14/16
SIGNATURE OF ENGINEER — DATE

## DEVELOPER'S CERTIFICATION

I/WE HEREBY 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 THE ENVIRONMENT 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.

Paul W. Kriebel FOR:
LAND DESIGN & DEVELOPMENT, INC. — 04-14-16
SIGNATURE OF DEVELOPER — DATE

## SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (7 DAYS)
2. NOTIFY 'MISS UTILITY' AT 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 48 HOURS BEFORE STARTING WORK.
3. REQUEST FOR A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY. (1 DAY)
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SEDIMENT & EROSION CONTROLS AS SHOWN ON SHEETS 6 & 7 OF 8. THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON ALL SEDIMENT CONTROL DEVICES/PRACTICES ON A DAILY BASIS AND IMMEDIATELY AFTER A RAINFALL. (3 DAYS)
5. CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF WATER & SEWER MAINS. (3 DAY)
6. PROVIDE TEMPORARY SEEDING AS REQUIRED. (1 DAY)
7. CONSTRUCT WATER & SEWER UTILITIES. (3 WEEKS)
8. APPROVAL OF THE APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO REMOVAL OF SEDIMENT CONTROLS. (1 DAY)
9. REMOVAL OF CONTROLS AND STABILIZATION OF AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROLS. (5 DAYS)

0' 50' 100' 200'
SCALE: 1" = 50'

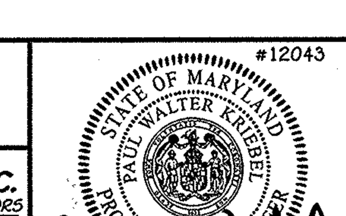
CONTRACT NO. 34-4918-D
ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
[signature] 5/25/16
CHIEF, BUREAU OF UTILITIES — DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
[signature] 6-23-16
CHIEF, DEVELOPMENT ENGINEERING DIVISION M.G. — DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE IS 7/16/16.

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



PAUL W. KRIEBEL

| DESIGNED BY : B.C.R. | | | |
|---|---|---|---|
| DRAWN BY : B.C.R. | | | |
| CHECKED BY : P.W.K. | | | |
| DATE : APRIL, 2016 | BY | NO. | REVISION | 

DATE

SEWER & WATER MAIN EXTENSIONS
SEDIMENT CONTROL
NOTES & DETAILS

600' SCALE MAP NO. 34 BLOCK NO. 18
F.C.C. WORK ORDER NO. 13008-3001
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

ENCLAVE AT TIERNEY FARM
CRICKETT CREEK
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 34-4918-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 8 OF 8

I:\2013\13008\dwg\Water & Sewer Contracts\Water & Sewer Contract No. 34-4918-D (Off-Site Sewer)\Finals\13008-3001 Water & Sewer Contract Plan.dwg, 4/14/2016 10:02:41 AM, Upstairs 1500 (temporary).pc3