

SHEET INDEX	
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1	COVER SHEET
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3	EXISTING CONDITIONS & FOREST STAND DELINEATION PLAN
4	FOREST STAND DELINEATION NOTES & TABULATIONS
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**DESIGN NARRATIVE**

**NATURAL RESOURCE PROTECTION AND ENHANCEMENT**  
 EXISTING NATURAL RESOURCE FEATURES ON THIS PROPERTY CONSIST OF WETLANDS, STREAMS, THEIR ASSOCIATED BUFFERS, FLOODPLAINS, FORESTED AREAS, SPECIMEN TREES, AND STEEP SLOPES. WITH THE PROPOSED DESIGN, EXISTING NATURAL FEATURES AND FLOW PATTERNS HAVE BEEN MAINTAINED AND RECHARGE OF GROUNDWATER WILL BE PROVIDED, ENHANCING THE WATER QUALITY FOR DOWNSTREAM FEATURES. DISTURBANCE TO FORESTED AREAS HAS BEEN LIMITED TO THE MINIMUM NECESSARY TO PROVIDE THE SITE IMPROVEMENTS, STORMWATER MANAGEMENT, AND SEDIMENT CONTROLS ASSOCIATED WITH THE DEVELOPMENT. NO PERMANENT IMPACTS TO STREAMS, STREAM BUFFERS, WETLANDS, WETLAND BUFFERS, COUNTY REGULATED STEEP SLOPES, OR FLOODPLAINS ARE PROPOSED WITH THIS PLAN. TEMPORARY IMPACTS WILL BE REQUIRED FOR THE EXTENSION AND INSTALLATION OF SEWER SERVICE FOR THE DEVELOPMENT.

**MAINTENANCE OF NATURAL FLOW PATTERNS**  
 NATURAL FLOW PATTERNS ON THIS SITE GENERALLY MOVE TO THE EAST. THE SITE CONSISTS OF FOUR NON-BUILDABLE BULK PARCELS, TWO OF WHICH ARE THE SUBJECT OF THIS APPLICATION. THESE TWO PARCELS ARE LOCATED NORTH AND EAST OF THE EXISTING STREAM VALLEY AND DRAIN INTO THIS STREAM VALLEY. THESE FLOW PATTERNS WOULD BE MAINTAINED WITH THIS DEVELOPMENT.

**REDUCTION OF IMPERVIOUS AREAS**  
 IMPERVIOUS AREAS WILL BE REDUCED ON THIS SITE THROUGH THE IMPLEMENTATION OF ALTERNATIVE SURFACES. PERMEABLE PAVEMENT WILL BE PROVIDED IN PORTIONS OF THE PARKING LOTS.

**INTEGRATION OF SEDIMENT CONTROL FEATURES**  
 SEDIMENT CONTROL FOR THIS SITE WILL BE PROVIDED BY STABILIZED CONSTRUCTION ENTRANCES, SEDIMENT TRAPS LOCATED AT THE DOWNHILL SIDE OF THE PROJECT SITES, EARTH DIKES, SILT FENCE, AND SUPER SILT FENCE. A STOCKPILE AREA WILL BE PROVIDED ON THE SITE. SEDIMENT CONTROL DESIGN WILL INCLUDE A DETAILED SEQUENCE OF CONSTRUCTION TO MINIMIZE OFFSITE IMPACTS AND TO REQUIRE THE INSTALLATION OF THE STORMWATER FEATURES IN SUCH A MANNER THAT THEY WILL FUNCTION FULLY UPON COMPLETION OF CONSTRUCTION.

**IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES**  
 ESDV FOR THIS PROJECT IS PROVIDED THROUGH THE USE OF ALTERNATIVE SURFACES, SUBMERGED GRAVEL WETLANDS, AND MICRO-BIORETENTION FACILITIES. PERMEABLE PAVEMENT (MDE DESIGNATION A-2) WILL BE USED IN PORTIONS OF THE PARKING LOTS, WHERE THESE ARE IN A CUT SITUATION TO UTILIZE THE NATIVE SOILS. SUBMERGED GRAVEL WETLANDS (MDE DESIGNATION M-2) WILL BE UTILIZED IN THE LOWER AREAS OF THE SITE, NEAR THE EXISTING WETLANDS. THE PRESENCE OF THE WETLANDS INDICATES THE LIKELY PRESENCE OF HIGH GROUND WATER, MAKING THESE AREAS IDEAL FOR THIS TYPE OF FACILITY. ESDV STORAGE IS PROVIDED ABOVE THE MEDIA LAYERS FOR SUBMERGED GRAVEL WETLANDS. MICRO-BIORETENTION FACILITIES (MDE DESIGNATION M-6) WILL BE PROVIDED THROUGHOUT THE PROJECT SITE TO TREAT ROOF AND PAVEMENT AREAS.

**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS PROVIDED BY AN AERIAL SURVEY BY MAPPING RESOURCE GROUP, INC., DATED FEBRUARY 2016, AND HAS BEEN SUPPLEMENTED BY COUNTY GIS INFORMATION.
- THE BOUNDARY SURVEY IS PROVIDED BY AN ALTA TITLE SURVEY BY PENNONI ASSOCIATES, INC., DATED FEBRUARY 2016, AND HAS BEEN SUPPLEMENTED BY COUNTY GIS INFORMATION.
- THE COORDINATES SHOWN HEREON ARE IN MARYLAND COORDINATE SYSTEM NAD 83/91 BASED ON THE HOWARD COUNTY GEODETIC CONTROL. HOWARD COUNTY MONUMENT NOS. 43CE AND 43FC WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC, CONTRACT 14-4679.
- SEWER IS PUBLIC, CONTRACT 580-S-A.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- A 100-YEAR FLOODPLAIN STUDY FOR THIS PROJECT IS NOT REQUIRED. THE FLOODPLAIN SHOWN IS FROM A FLOODPLAIN STUDY PERFORMED FOR CAPITAL PROJECT J. 4148.
- WETLANDS SHOWN ARE FROM URS MEMORANDUM DATED JULY 27, 2015 TO HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- SUBJECT PROPERTY ZONED M-2 PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED NAVD88.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- ALL LIGHTING IS TO BE DIRECTED/REFLECTED AWAY FROM ADJACENT PUBLIC ROADS AND RESIDENTIALLY ZONED PROPERTIES, AND BE IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
- THERE IS AN EXISTING TEMPORARY TRAILER ONSITE THAT WILL BE REMOVED. THERE ARE NO OTHER STRUCTURES ONSITE.
- BASED ON AVAILABLE COUNTY MAPS AND RECORDS, THERE ARE NO HISTORIC STRUCTURES OR KNOWN CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
- FIFTEEN (15) SPECIMEN TREES EXIST ON SITE. SEE SPECIMEN TREE CHART WITHIN THIS PLAN SET.

**GENERAL NOTES CONT.**

- APPLICABLE DPZ FILE REFERENCES: F-16-105
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT AND ASSOCIATED SUBDIVISION PLANS, SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. REVIEW OF THIS PLAN FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR DURING THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR RED-LINE REVISION REVIEW PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

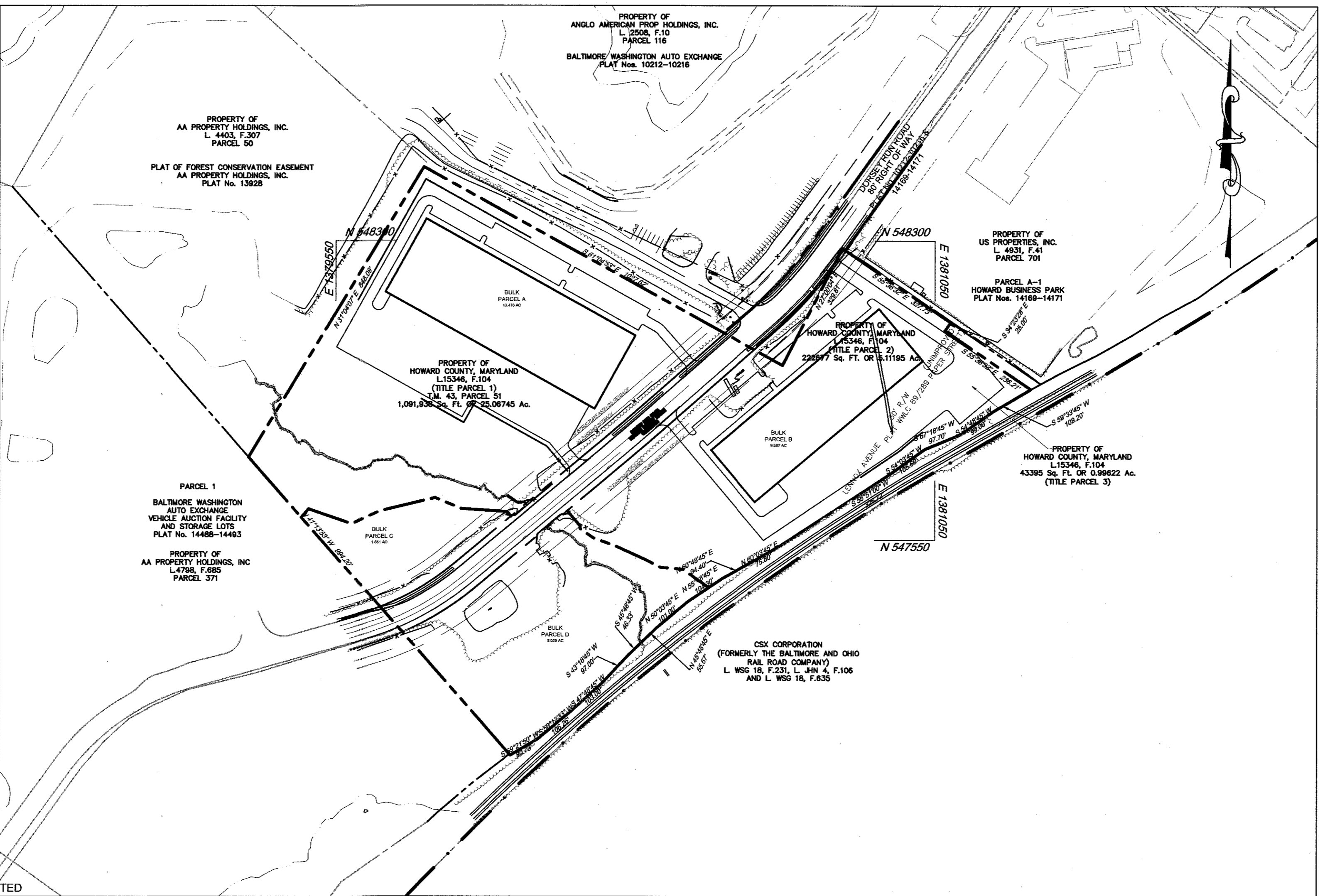
# ENVIRONMENTAL CONCEPT PLAN

# MEARS PROPERTY

## DORSEY RUN ROAD

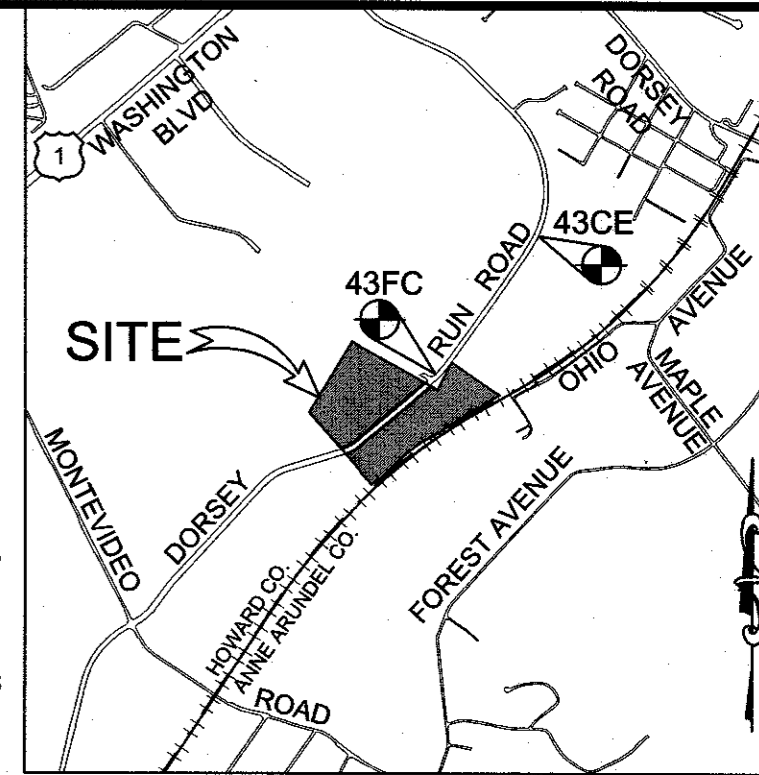
## 1ST ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND



**SITE ANALYSIS DATA**

<b>AREA OF SITE:</b>	29.755 ACRES (1,296,128 SF)
BULK PARCEL A:	13.478 ACRES
BULK PARCEL B:	9.587 ACRES
BULK PARCEL C:	1.661 ACRES
BULK PARCEL D:	5.029 ACRES
<b>LIMIT OF DISTURBANCE:</b>	18.16 ACRES (791,056 SF)
<b>PRESENT ZONING:</b>	M-2 (MANUFACTURING: HEAVY)
<b>EXISTING USES:</b>	VACANT WOODED LOT
<b>PROPOSED USES:</b>	INDUSTRIAL WAREHOUSE
<b>BUILDING COVERAGE:</b>	219,500 SF / 1,004,711 SF = 21.84% (BULK PARCELS A & B ONLY)
<b>PARKING REQUIRED:</b>	0.75 SPACES PER 1,000 SF 0.75 x 219,500/1,000 = 165 SPACES REQUIRED 226 SPACES PROVIDED
<b>AREA OF WETLANDS:</b>	3.14 ACRES (136,942 SF)
<b>AREA OF WETLAND BUFFERS:</b>	1.31 ACRES (57,046 SF)
<b>AREA OF FLOODPLAIN:</b>	3.30 ACRES (143,656 SF)
<b>FOREST AREA:</b>	27.81 ACRES (1,211,404 SF)
<b>AREA OF STEEP SLOPES:</b>	15%-25%: 1.25 ACRES ± (54,496 SF ±) 25%+: 1.02 ACRES ± (44,433 SF ±)
<b>AREA OF ERODIBLE SOILS:</b>	13.03 ACRES ± (567,526 SF ±)
<b>IMPERVIOUS AREA WITHIN DEVELOPMENT AREA (BULK PARCELS A &amp; B):</b>	EXISTING: 517 SF (0.01 ACRES) PROPOSED: 494,983 SF ± (11.36 ACRES) (INCLUDES AREAS PROPOSED FOR PAVEMENT SURFACES)
<b>GREEN AREA WITHIN DEVELOPMENT AREA (BULK PARCELS A &amp; B):</b>	EXISTING: 1,004,140 SF ± PROPOSED: 509,157 SF ±
<b>ZONE M-2 SETBACKS:</b>	FROM EXTERNAL PUBLIC STREET RIGHT-OF-WAY: 50 FEET PARKING USES FROM EXTERNAL PUBLIC STREET RIGHT-OF-WAY: 30 FEET FROM INTERNAL PUBLIC STREET RIGHT-OF-WAY: 50 FEET PARKING USES FROM INTERNAL PUBLIC STREET RIGHT-OF-WAY: 10 FEET FROM ANY RESIDENTIAL DISTRICT: 150 FEET FROM RESIDENTIAL USES IN A CAC OR TOD DISTRICT: 100 FEET
<b>ZONE M-2 BUILDING HEIGHT:</b>	STRUCTURE WITH MINIMUM SETBACK: 50 FEET STRUCTURE WITH AN ADDITIONAL 1 FOOT IN HEIGHT FOR EVERY 2 FEET OF SETBACK ABOVE THE MINIMUM: 100 FEET



**BENCHMARKS**  
 HOWARD COUNTY SURVEY CONTROL: 43CE  
 ELEVATION 196.143  
 N 549,595.935 E 1,381,719.608  
 LOCATION IS 3' FROM FACE OF CURB ALONG DORSEY RUN ROAD.  
 HOWARD COUNTY SURVEY CONTROL: 43FC  
 ELEVATION 157.933  
 N 548,199.445 E 1,380,681.244  
 LOCATION IS 3.1' FROM FACE OF CURB ALONG DORSEY RUN ROAD.

DATE	NO.	REVISION	BY

DEVELOPER  
 DCT INDUSTRIAL  
 12011 GUILFORD ROAD  
 UNIT 102  
 ANNAPOLIS JUNCTION, MD 20701  
 ATTN: TOM MEEHAN  
 PHONE: 410.645.5020

OWNER  
 HOWARD COUNTY, MARYLAND  
 DEPARTMENT OF PUBLIC WORKS  
 5430 COURTHOUSE DRIVE  
 ELLICOTT CITY, MARYLAND 21043  
 ATTN: JAMES IRVIN  
 PHONE: 410.313.2330

PROJECT  
**MEARS PROPERTY**

AREA  
 TAX MAP 43, PARCEL 51 GRID 11  
 ZONED M-2 1ST ELECTION DISTRICT  
 L 15346 F. 00104  
 HOWARD COUNTY, MARYLAND

TITLE  
**COVER SHEET**

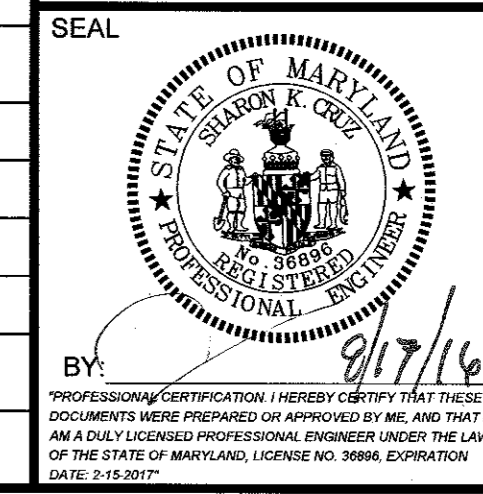
Pennonni Associates Inc.  
 Engineers • Surveyors • Planners  
 Landscape Architects  
 8818 Centre Park Drive, Suite 200 Columbia, MD 21045  
 T 410.997.8900 F 410.997.9282

DESIGNED BY: PJS/ALC
DRAWN BY: JSN
PROJECT NO: DCT1501
DATE: AUGUST 17, 2016
SCALE: 1" = 200'
DRAWING NO. 1 OF 7

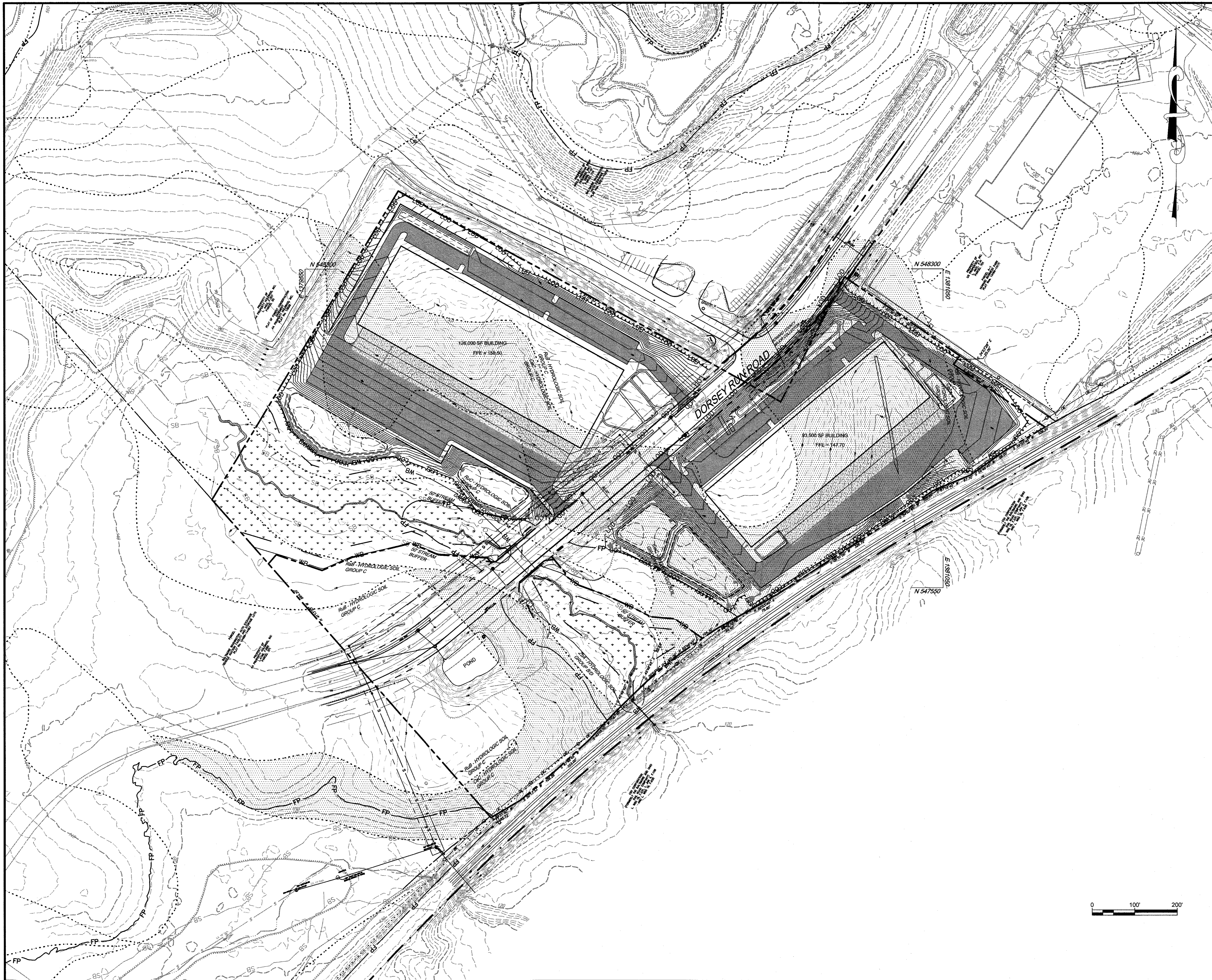
**ADDRESS CHART**

PARCEL NUMBER	STREET ADDRESS
51	DORSEY RUN ROAD

SUBDIVISION NAME	SECT./AREA	PARCEL
MEARS PROPERTY		51
PLAT NO. 23793	GRID # 11	ZONING M-2
TAX MAP NO. 43	ELECT. DIST. 1	CENSUS TRACT 601203







**LEGEND**

EXISTING CONTOURS	
EX. PROPERTY LINE AND RIGHT OF WAY	
PROP. PROPERTY LINE	
PROP. RIGHT OF WAY	
EX. TREELINE	
FLOODPLAIN	
STREAM BUFFER	
SOILS	
PROPOSED LIMIT OF DISTURBANCE	
PROPOSED TREELINE	
ERODIBLE SOILS	
WETLANDS	
WETLAND BUFFER	
PROPOSED ASPHALT PAVING	
PROPOSED CONCRETE PAVING	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chad Plunk*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *JP* 9-2-16 DATE  
*Kristen D. Smith*  
 CHIEF, DIVISION OF LAND DEVELOPMENT *JS* 8/29/16 DATE

DATE	NO.	REVISION	BY

**DEVELOPER**  
 DCT INDUSTRIAL  
 12011 GUILFORD ROAD  
 UNIT 102  
 ANNAPOLIS JUNCTION, MD 20701  
 ATTN: TOM MEEHAN  
 PHONE: 410.645.5020

**OWNER**  
 HOWARD COUNTY, MARYLAND  
 DEPARTMENT OF PUBLIC WORKS  
 3430 COURTHOUSE DRIVE  
 ELLICOTT CITY, MARYLAND 21043  
 ATTN: JAMES IRVIN  
 PHONE: 410.313.2330

**PROJECT**  
 MEARS PROPERTY

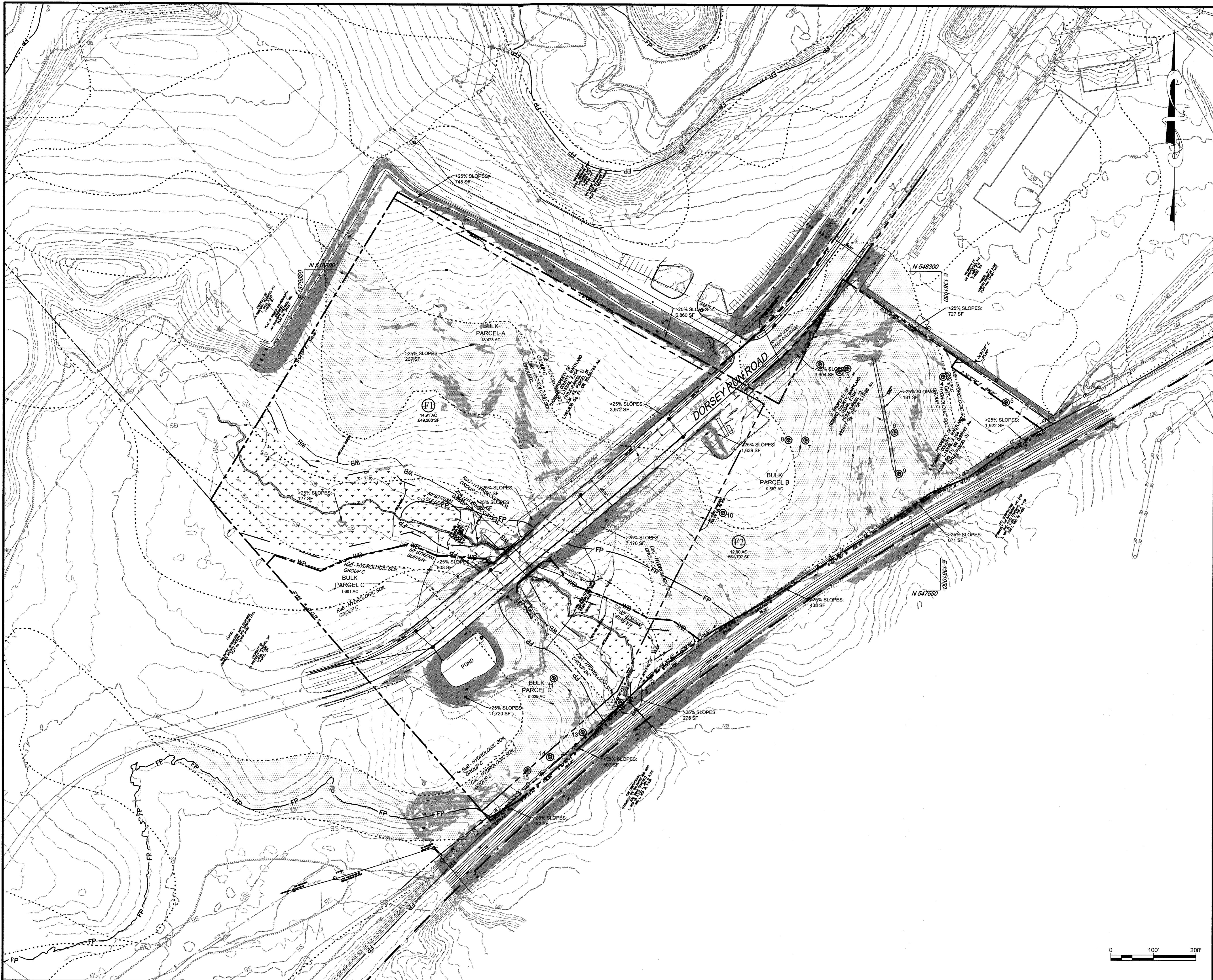
**AREA**  
 TAX MAP 43, PARCEL 51 GRID 11  
 ZONED M-2 1ST ELECTION DISTRICT  
 L 15346 F. 00104  
 HOWARD COUNTY, MARYLAND

**TITLE**  
 OVERALL PLAN

**Pennon** Pennoni Associates Inc.  
 Engineers • Surveyors • Planners  
 Landscape Architects  
 8818 Centre Park Drive, Suite 200 Columbia, MD 21045  
 T 410.997.8900 F 410.997.9282

SEAL  BY: <i>Sharon K. O'Connell</i> 8/7/16 <small>PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 2008, EXPIRATION DATE 8/31/2017.</small>	DESIGNED BY: PJS/ALC
	DRAWN BY: JSN
	PROJECT NO: DCT1501
	DATE: AUGUST 17, 2016
	SCALE: 1" = 100'
BY: <i>Sharon K. O'Connell</i> 8/7/16	DRAWING NO. 2 OF 7





**LEGEND**

EXISTING CONTOURS	
EX. PROPERTY LINE AND RIGHT OF WAY	
PROP. PROPERTY LINE	
PROP. RIGHT OF WAY	
EX. TREELINE	
FLOODPLAIN	
STREAM BUFFER	
SOILS	
15-25% SLOPES	
>25% SLOPES	
WETLANDS	
WETLAND BUFFER	
SPECIMEN TREE	
PLANT COMMUNITY	
ERODIBLE SOILS	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 9.2.16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION JF DATE

*[Signature]* 8/29/16  
 CHIEF, DIVISION OF LAND DEVELOPMENT CP DATE

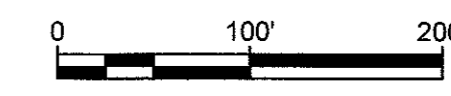
DATE	NO.	REVISION	BY
DEVELOPER			
DCT INDUSTRIAL 12011 GUILFORD ROAD UNIT 102 ANNAPOLIS JUNCTION, MD 20701 ATTN: TOM MEEHAN PHONE: 410.645.5020			
OWNER			
HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS 3430 COURTHOUSE DRIVE ELLCOTT CITY, MARYLAND 21043 ATTN: JAMES IRVIN PHONE: 410.313.2330			
PROJECT			
MEARS PROPERTY			
AREA			
TAX MAP 43, PARCEL 51 GRID 11 ZONED M-2 1ST ELECTION DISTRICT L 18348 F 03104 HOWARD COUNTY, MARYLAND			

**TITLE**  
 EXISTING CONDITIONS AND  
 FOREST STAND DELINEATION PLAN

**Pennoni** Pennoni Associates Inc.  
 Engineers • Surveyors • Planners  
 Landscape Architects

8818 Centre Park Drive, Suite 200 Columbia, MD 21045  
 T 410.997.8900 F 410.997.9282

	DESIGNED BY: PJS/JLC
	DRAWN BY: JSN
	PROJECT NO: DCT1501
	DATE: AUGUST 17, 2016
	SCALE: 1" = 100'
DRAWING NO. 3 OF 7	





PLANT COMMUNITY SUMMARY			
SYMBOL	COMMUNITY	AREA	PRIORITY RETENTION
F1	FOREST	14.91 Ac.±	HIGH
F2	FOREST	12.90 Ac.±	HIGH

### AREA CHART

AREA	ACRES
TOTAL TRACT AREA	30.38
EXISTING FOREST WITHIN TRACT AREA	27.81
STREAM BUFFERS WITHIN TRACT AREA	3.72
FLOODPLAIN WITHIN TRACT AREA	3.30
WETLANDS & WETLAND BUFFERS WITHIN TRACT AREA	4.45
FORESTED STREAM BUFFERS WITHIN TRACT AREA	2.77
FORESTED FLOODPLAIN WITHIN TRACT AREA	2.85
FORESTED WETLANDS & WETLAND BUFFERS WITHIN TRACT AREA	5.44

### SPECIMEN TREE CHART

KEY	SPECIES	SIZE	CONDITION
1	TULIP POPLAR (Liriodendron tulipifera)	31"	GOOD
2	TULIP POPLAR (Liriodendron tulipifera)	35"	GOOD
3	TULIP POPLAR (Liriodendron tulipifera)	35"	GOOD
4	NORTHERN RED OAK (Quercus rubra)	36"	GOOD
5	LOBLOLLY PINE (Pinus taeda)	33"	GOOD
6	TULIP POPLAR (Liriodendron tulipifera)	46"	GOOD
7	LOBLOLLY PINE (Pinus taeda)	31"	GOOD
8	LOBLOLLY PINE (Pinus taeda)	35"	GOOD
9	TULIP POPLAR (Liriodendron tulipifera)	32"	GOOD
10	NORTHERN RED OAK (Quercus rubra)	36"	DEAD
11	NORTHERN RED OAK (Quercus rubra)	30"	GOOD
12	TULIP POPLAR (Liriodendron tulipifera)	33"	GOOD
13	TULIP POPLAR (Liriodendron tulipifera)	30"	GOOD
14	NORTHERN RED OAK (Quercus rubra)	32"	GOOD
15	NORTHERN RED OAK (Quercus rubra)	32"	GOOD

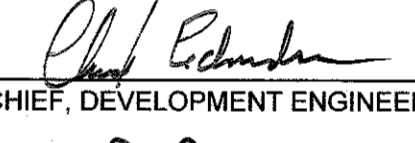
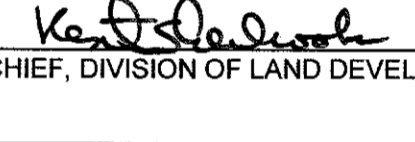


### SOILS CHART

MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS DWELLINGS W/ BASEMENTS	EROSION HAZARD	HYDRIC (Y/N)	SLOPE (%)	SOIL GROUP	Kw FACTOR
CeC	CHILLUM LOAM	VERY LIMITED	SLIGHT	N	5-10	C	0.43
Rsb	RUSSET FINE SANDY LOAM	VERY LIMITED	SLIGHT	N	2-5	C	0.28
RtB	RUSSET-ALLOWAY-HAMBROOK COMPLEX	SOMEWHAT LIMITED	SLIGHT	Y	0-5	C	0.28
RuB	RUSSET AND BELTSVILLE SOILS	NOT LIMITED	SLIGHT	N	2-5	C	0.28
RuC	RUSSET AND BELTSVILLE SOILS	VERY LIMITED	SLIGHT	Y	5-10	C	0.28
ZbA	ZEKIAH AND ISSUE SOILS	NOT RATED	SLIGHT	N	0-2, FREQUENTLY FLOODED	B/D	0.32

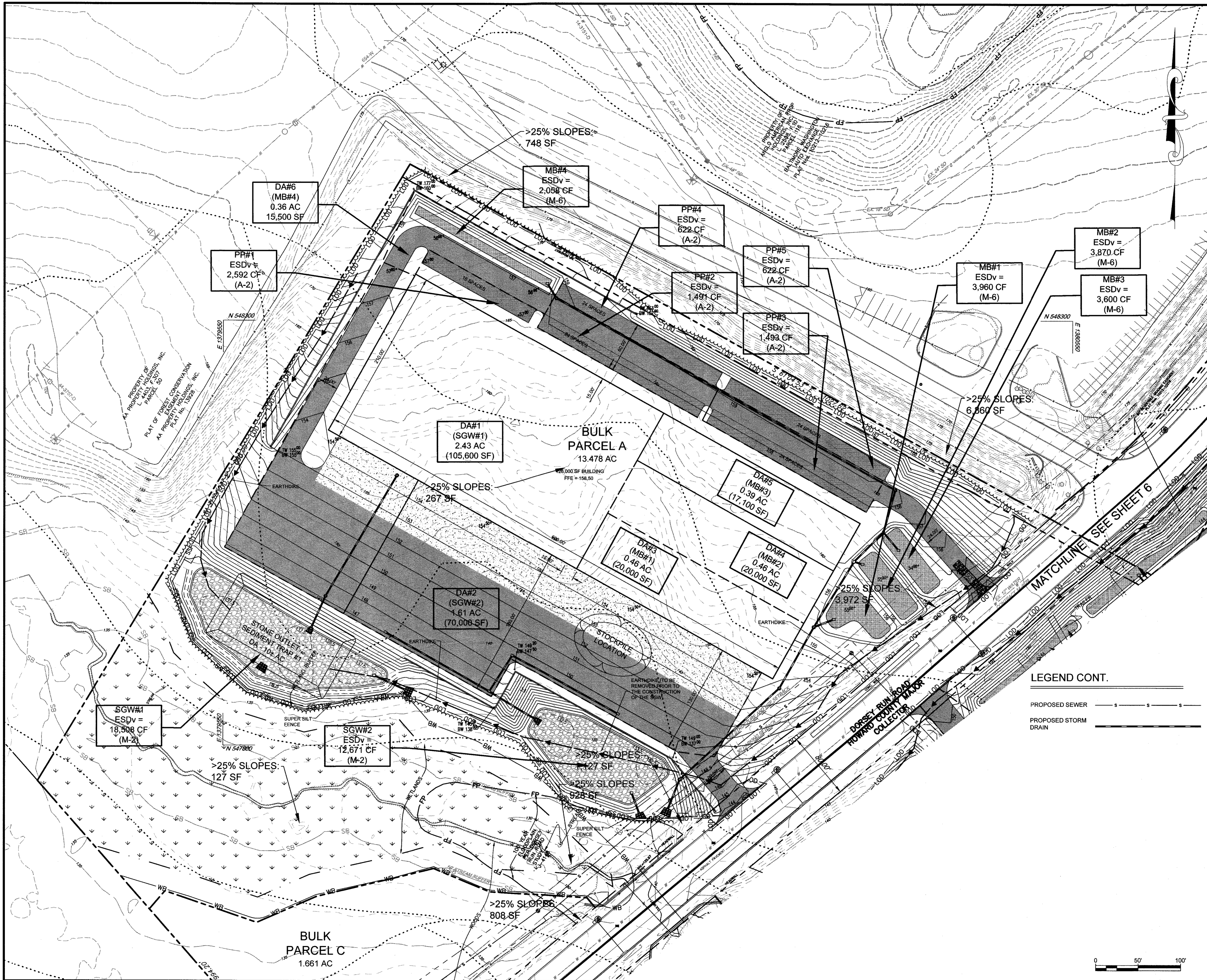
SOURCE: NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY AND HOWARD SOIL CONSERVATION DISTRICT SOIL MAP NUMBER 25

### GENERAL NOTES:

1. THE SITE IS LOCATED ALONG DORSEY RUN ROAD IN ELKRIDGE, MD 21075 (TAX MAP 43, PARCEL 51). THIS PROPERTY WAS RECENTLY SPLIT IN TWO BY THE DORSEY RUN ROAD EXTENSION PROJECT. THE SITE CONSISTS OF 30.38 ACRES.
2. BOUNDARY INFORMATION PROVIDED BY PENNONI ASSOCIATES, DATED FEBRUARY 5, 2016. TOPOGRAPHIC INFORMATION PROVIDED BY RESOURCE MAPPING GROUP, DATED FEBRUARY 2016.
3. THE SOILS ON SITE ARE CHILLUM LOAM (5-10% SLOPES) - CeC, RUSSET FINE SANDY LOAM (2-5% SLOPES) - Rsb, RUSSET-ALLOWAY-HAMBROOK COMPLEX (0-5% SLOPES) - RtB, RUSSET AND BELTSVILLE SOILS (2-5% SLOPES) - RuB, RUSSET AND BELTSVILLE SOILS (5-10% SLOPES) - RuC, AND ZEKIAH AND ISSUE SOILS (0-2% SLOPES) - ZbA ACCORDING TO THE NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY.
4. SUBJECT PROPERTY IS ZONED M-2 PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN. CURRENTLY, THE SITE IS VACANT AND CONTAINS FORESTS AND OTHER ENVIRONMENTAL SYSTEMS.
5. THIS SITE IS LOCATED IN THE PATAPSCO RIVER LOWER NORTH BRANCH WATERSHED.
6. STREAMS, STREAM BUFFERS, WETLANDS, WETLAND BUFFERS, AND FLOODPLAINS ARE LOCATED ON THIS SITE.
7. THERE ARE TWO EXISTING FOREST STANDS LOCATED ON SITE, AS SHOWN ON THE PLAN. THEY ARE HIGH PRIORITY FOREST STANDS DUE TO PROXIMITY TO PROTECTED ENVIRONMENTAL SYSTEMS, SUCH AS STREAMS AND WETLANDS.
8. THERE ARE 15 SPECIMEN TREES LOCATED ON SITE, AS SHOWN ON THE PLAN. NO STATE CHAMPION TREES OR TREES 75% THE SIZE OF CHAMPION TREES ARE FOUND ON THE SITE.
9. FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON MARCH 29, 2016 BY JONATHAN NORMAN, PLANNER OF PENNONI ASSOCIATES, INC. UNDER THE SUPERVISION OF PETER J. STONE, RLA OF PENNONI ASSOCIATES.
10. THE SITE HAS A FOREST CONSERVATION THRESHOLD OF 15% AND AN AFFORESTATION THRESHOLD OF 15%.
11. NO EXISTING STRUCTURES OR CEMETERIES ARE PRESENT ON THE SITE.
12. NO RARE, THREATENED, OR ENDANGERED PLANTS OR ANIMALS OR CRITICAL HABITATS WERE OBSERVED IN THE FIELD.
13. THIS FOREST STAND DELINEATION (FSD) HAS BEEN PREPARED IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING			
			9-2-16 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION <i>JP</i>			
			8/29/16 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT <i>JP</i>			
DATE	NO.	REVISION	BY
DEVELOPER			
DCT INDUSTRIAL 12011 GUILFORD ROAD UNIT 102 ANNAPOLIS JUNCTION, MD 20701 ATTN: TOM MEEHAN PHONE: 410.645.5020			
OWNER			
HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS 3430 COURTHOUSE DRIVE ELLCOTT CITY, MARYLAND 21043 ATTN: JAMES IRVIN PHONE: 410.313.2330			
PROJECT			
MEARS PROPERTY			
AREA			
TAX MAP 43, PARCEL 51 GRID 11 ZONED M-2 1ST ELECTION DISTRICT L 15346 F. 00104 HOWARD COUNTY, MARYLAND			
TITLE			
FOREST STAND DELINEATION NOTES AND TABULATIONS			
 Pennoni Associates Inc. Engineers • Surveyors • Planners Landscape Architects 8818 Centre Park Drive, Suite 200 Columbia, MD 21045 T 410.997.8900 F 410.997.9282			
 PETER J. STONE #3068			DESIGNED BY: PJS/ALC DRAWN BY: JSN PROJECT NO: DCT11501 DATE: AUGUST 17, 2016 SCALE: AS SHOWN DRAWING NO. 4 OF 7





### LEGEND

- EXISTING CONTOURS
- EX. PROPERTY LINE AND RIGHT OF WAY
- PROP. PROPERTY LINE
- PROP. RIGHT OF WAY
- EX. TREELINE
- FLOODPLAIN
- STREAM BUFFER
- SOILS
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED TREELINE
- PROPOSED GRADING
- PROPOSED PERMEABLE PAVERS
- PROPOSED MICRO BIORETENTION
- PROPOSED SUBMERGED GRAVEL WETLAND
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- STABILIZED CONSTRUCTION ENTRANCE
- SEDIMENT TRAP
- SUPER SILT FENCE
- EARTH DIKE
- STOCKPILE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chief Development Engineering Division* 9-2-16  
 DATE

*Chief, Division of Land Development* 9/17/16  
 DATE

DATE	NO.	REVISION	BY

DEVELOPER  
 DCT INDUSTRIAL  
 12011 GUILFORD ROAD  
 UNIT 102  
 ANNAPOLIS JUNCTION, MD 20701  
 ATTN: TOM MEEHAN  
 PHONE: 410.645.5020

OWNER  
 HOWARD COUNTY, MARYLAND  
 DEPARTMENT OF PUBLIC WORKS  
 9430 COURTHOUSE DRIVE  
 ELLICOTT CITY, MARYLAND 21043  
 ATTN: JAMES IRVIN  
 PHONE: 410.313.2330

PROJECT  
**MEARS PROPERTY**

AREA  
 TAX MAP 43, PARCEL 51 GRID 11  
 ZONED M-2 1ST ELECTION DISTRICT  
 L 15346 F. 00104  
 HOWARD COUNTY, MARYLAND

TITLE  
**ENVIRONMENTAL CONCEPT PLAN**

Pennoni Associates Inc.  
 Engineers • Surveyors • Planners  
 Landscape Architects

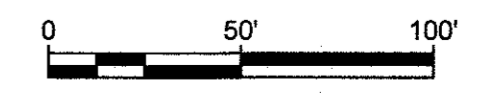
8818 Centre Park Drive, Suite 200 Columbia, MD 21045  
 T 410.997.8900 F 410.997.9282

SEAL

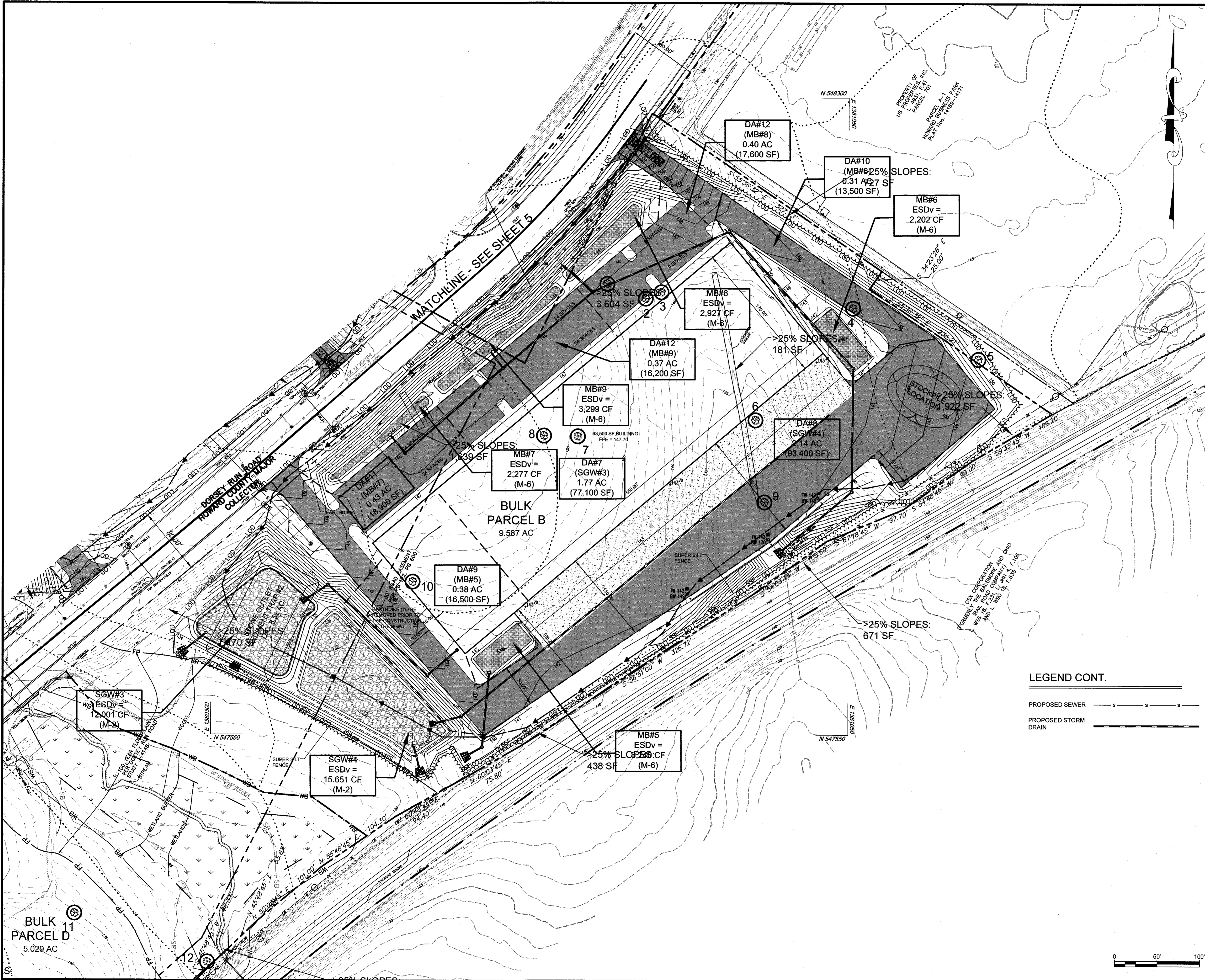
DESIGNED BY: PJS/ALC  
 DRAWN BY: JSN  
 PROJECT NO: DCT11501  
 DATE: AUGUST 17, 2016  
 SCALE: 1" = 50'  
 DRAWING NO. 5 OF 7

### LEGEND CONT.

- PROPOSED SEWER
- PROPOSED STORM DRAIN







**LEGEND**

- EXISTING CONTOURS
- EX. PROPERTY LINE AND RIGHT OF WAY
- PROP. PROPERTY LINE
- PROP. RIGHT OF WAY
- EX. TREELINE
- FLOODPLAIN
- STREAM BUFFER
- SOILS
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED TREELINE
- PROPOSED GRADING
- PROPOSED PERMEABLE PAVERS
- PROPOSED MICRO BIORETENTION
- PROPOSED SUBMERGED GRAVEL WETLAND
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- STABILIZED CONSTRUCTION ENTRANCE
- SEDIMENT TRAP
- SUPER SILT FENCE
- EARTH DIKE
- STOCKPILE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 9/2/16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* DATE

*[Signature]* 8/29/16  
 CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* DATE

DATE	NO.	REVISION	BY

**DEVELOPER**  
 DCT INDUSTRIAL  
 12011 GUILFORD ROAD  
 UNIT 102  
 ANNAPOLIS JUNCTION, MD 20701  
 ATTN: TOM MEEHAN  
 PHONE: 410.645.5020

**OWNER**  
 HOWARD COUNTY, MARYLAND  
 DEPARTMENT OF PUBLIC WORKS  
 3430 COURTHOUSE DRIVE  
 ELLICOTT CITY, MARYLAND 21043  
 ATTN: JAMES IRVIN  
 PHONE: 410.313.2330

**PROJECT**  
**MEARS PROPERTY**

**AREA**  
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 L 15346 F. 00104  
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**TITLE**  
**ENVIRONMENTAL CONCEPT PLAN**

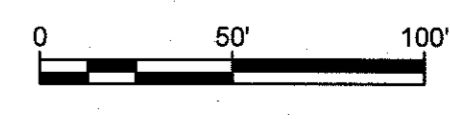
**Pennoni Associates Inc.**  
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SEAL

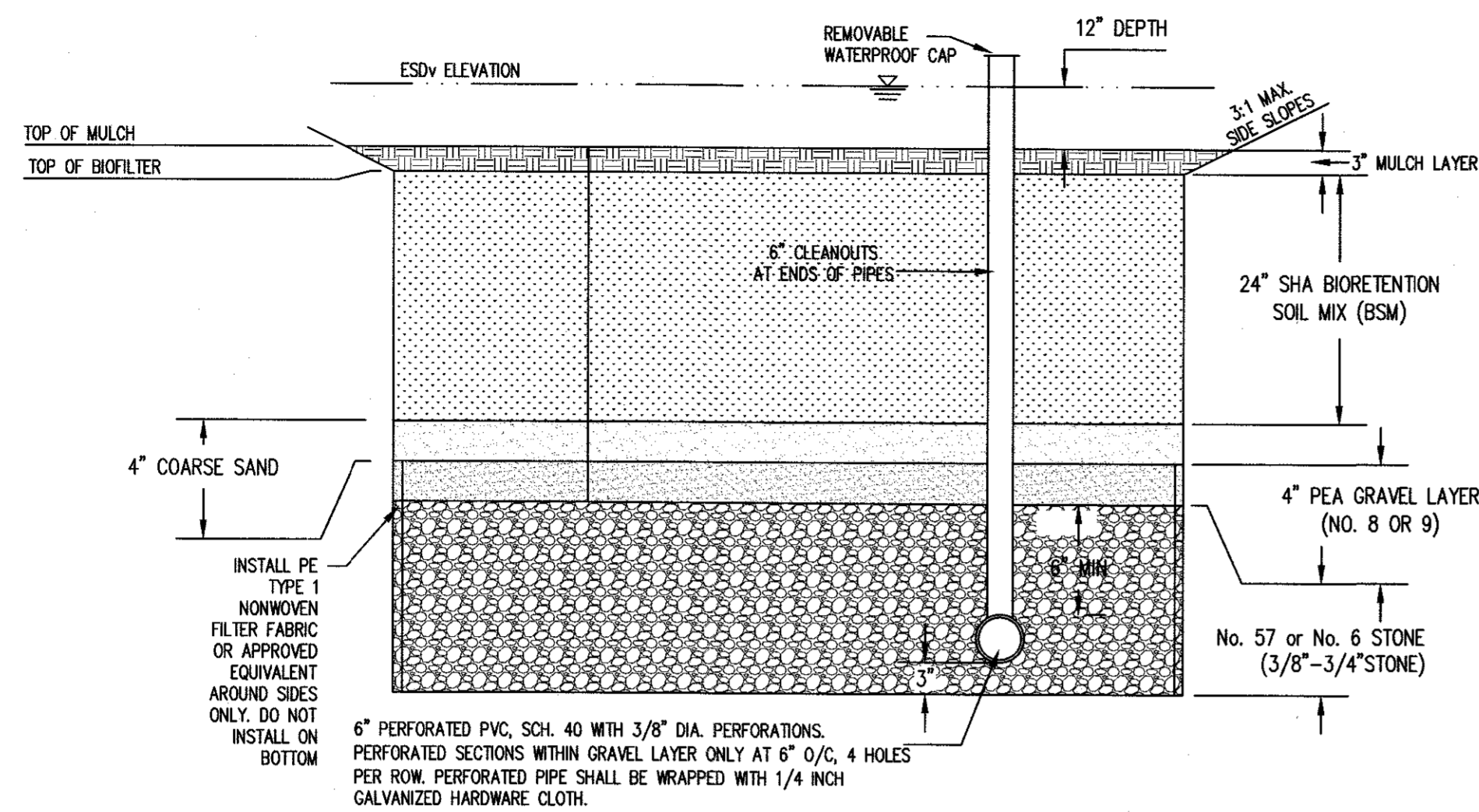
DESIGNED BY: PJS/ALC  
 DRAWN BY: JSN  
 PROJECT NO: DCT11501  
 DATE: AUGUST 17, 2016  
 SCALE: 1" = 50'  
 DRAWING NO. 6 OF 7

**LEGEND CONT.**

- PROPOSED SEWER
- PROPOSED STORM DRAIN

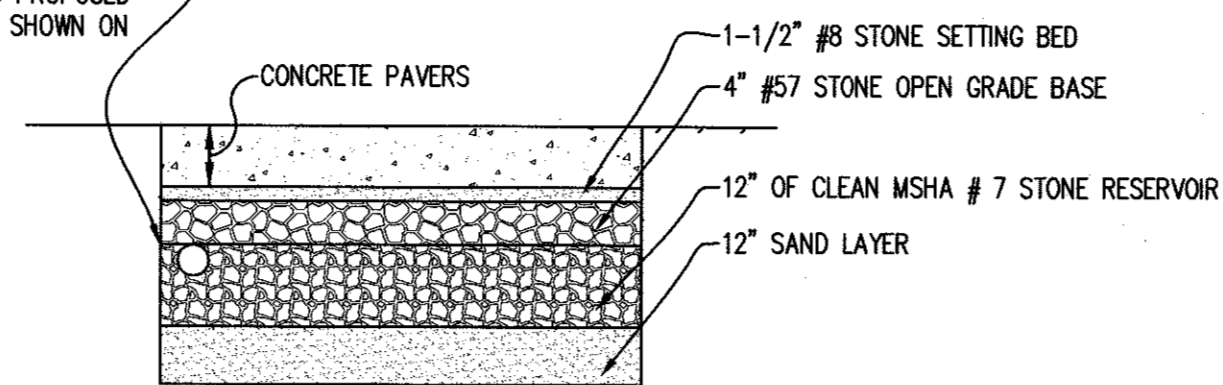






**MICRO BIORETENTION TYPICAL SECTION**  
NOT TO SCALE

4" OVERDRAIN SET IMMEDIATELY BELOW #57 STONE. PROVIDE OVERDRAINS AND CONNECT TO PROPOSED STORM DRAIN AS SHOWN ON PLAN.



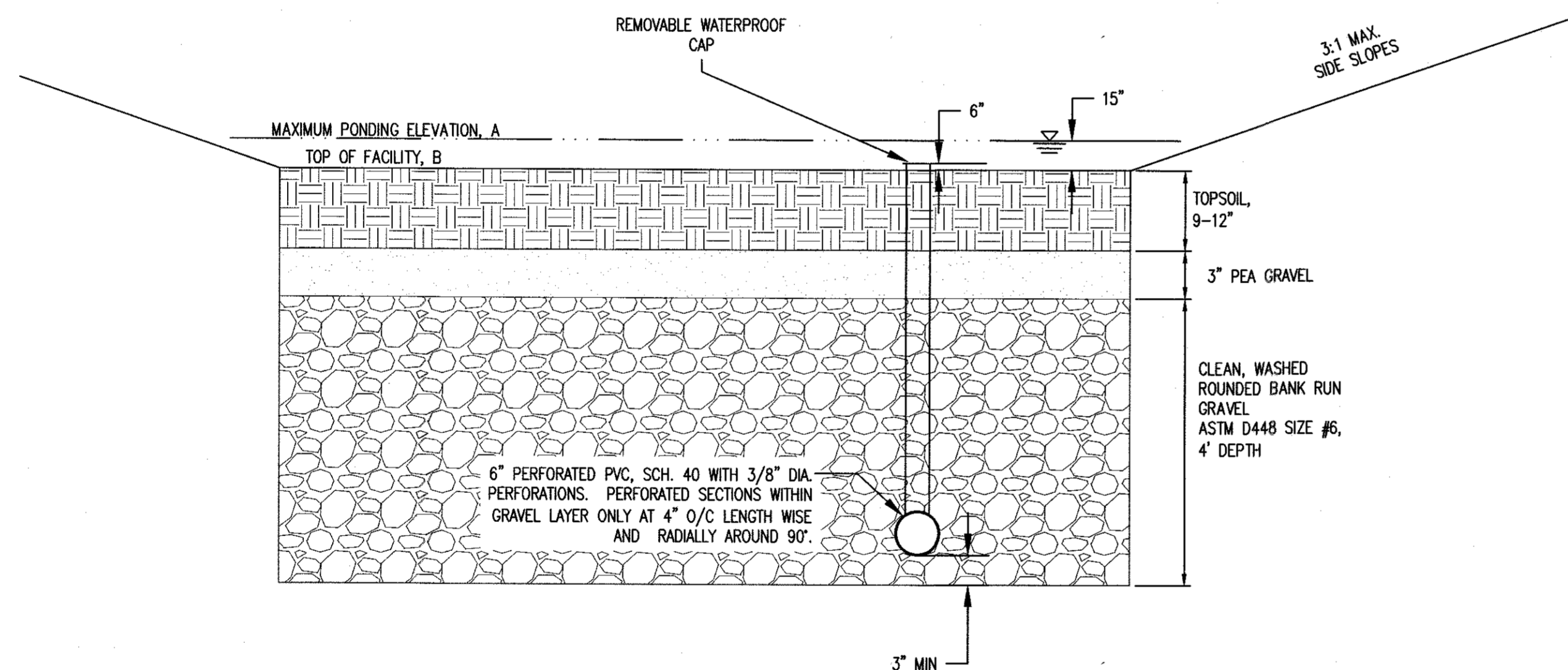
**NOTES:**

1. ALL PERMEABLE PAVEMENT SHALL BE INSTALLED BY A CERTIFIED INSTALLER.
2. PERMEABLE PAVEMENT SHALL HAVE A PERMEABILITY RATE OF 8 INCHES PER HOUR OR GREATER. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO PLACEMENT OF ANY PERMEABLE PAVEMENT.
3. THE BOTTOM OF THE SUB-BASE SHALL BE LEVEL WITH ADJUSTMENTS ACCOMPLISHED BY STEPPING SUBGRADE LEVELS AT 1-FOOT CONTOUR INTERVALS PER THE GEOTECHNICAL REPORT AND ENGINEER'S DIRECTIVE.
4. ALL ADJUSTMENT TO EXISTING GRADE SHALL BE ACCOMPLISHED USING SUB-BASE MATERIAL.
5. SOILS SHALL NOT BE COMPACTED. CONSTRUCTION SHOULD BE PERFORMED WITH LIGHTWEIGHT, WIDE TRACKED EQUIPMENT TO MINIMIZE COMPACTION. EXCAVATED MATERIALS SHALL BE PLACED IN A CONTAINED AREA. LOADED DUMP TRUCKS DELIVERING THE INITIAL SAND MATERIAL SHALL ENTER EACH STEPPED AREA FROM BOTH ENDS AND SHALL LIMIT TRAVEL TO THE MINIMUM WIDTH POSSIBLE TO LIMIT SOIL COMPACTION TO THE MINIMUM AREA POSSIBLE.
6. SUB-BASE SHALL BE CLEAR AND FREE OF FINES. THE SUB-BASE SHALL BE PLACED IN LIFTS AND LIGHTLY ROLLED.

**PERMEABLE PAVEMENT**  
NOT TO SCALE

ESDv SUMMARY TABLE - NORTH	
SITE AREA (LOD)	10.06 AC
IMPERVIOUS AREA	6.50 AC (64.6%)
Rv	0.63
CALCULATED Pe	2.00
ESDv REQUIRED	46,122 CF
TREATMENT	ESDv PROVIDED
PERMEABLE PAVEMENTS (A-2)	4,642 CF
MICRO-BIORETENTION (M-6)	13,488 CF
SUBMERGED GRAVEL WETLAND (M-2)	31,179 CF
TOTAL ESDv PROVIDED	49,309 CF

ESDv SUMMARY TABLE - SOUTH	
SITE AREA (LOD)	8.58 AC
IMPERVIOUS AREA	5.51 AC (64.3%)
Rv	0.63
CALCULATED Pe	2.00
ESDv REQUIRED	39,121 CF
TREATMENT	ESDv PROVIDED
MICRO-BIORETENTION (M-6)	13,945 CF
SUBMERGED GRAVEL WETLAND (M-2)	27,653 CF
TOTAL ESDv PROVIDED	41,597 CF



**SUBMERGED GRAVEL WETLAND TYPICAL SECTION**  
NOT TO SCALE

**SUBMERGED GRAVEL WETLAND SPECIFICATIONS**

1. THE UNDERDRAIN PIPE MUST BE 6-INCH DIAMETER SCHEDULE 40 OR STRONGER PERFORATED PVC PIPE AT 0.00% SLOPE. THREE INCHES OF GRAVEL MUST BE PLACED UNDER THE PIPE. PERFORATIONS MUST BE 3/8 INCH IN DIAMETER AND MUST BE LOCATED 4 INCHES ON CENTER, EVERY 90 DEGREES AROUND THE PIPE. PERFORATED PIPE MUST BEGIN AT LEAST 5 FT. INSIDE THE FILTER MEDIA. FILTER FABRIC MUST NOT BE WRAPPED AROUND THE UNDERDRAIN PIPE.
2. 4" INCH CLEAN-OUTS SHOULD BE USED. CLEANOUTS FOR EACH PIPE SHOULD EXTEND 6 INCHES ABOVE THE TOP OF THE PLANTING MEDIA AND HAVE A REMOVABLE CAP.
3. THE GRAVEL LAYER SURROUNDING THE UNDERDRAIN PIPES MUST BE CLEAN, WASHED ROUNDED BANK RUN GRAVEL ASTM D448 SIZE #6, AND A MINIMUM OF 3 INCHES UNDER THE PIPE. NO GEOTEXTILE OR FILTER FABRIC IS ALLOWED ANYWHERE WITHIN THE FILTER MEDIA.
4. THE UNDERDRAIN SHALL BE TURNED UP INSIDE THE OUTFALL STRUCTURE AS SHOWN ON THE OUTFALL STRUCTURE DETAILS AT THE ELEVATION SHOWN. THE UNDERDRAIN WITHIN THE OUTFALL STRUCTURE SHALL BE SOLID PVC.
5. THE PLANTING MEDIA SHALL CONFORM TO MDE SPECIFICATIONS AS SHOWN IN APPENDIX B3 OF THE MARYLAND STORMWATER DESIGN MANUAL, VOL. 1 & II. THE SOIL SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2 INCHES. THE FIRST LAYER OF THE PLANTING MEDIA SHALL BE LIGHTLY TILLED TO MIX IT INTO THE SAND LAYER, SO NOT TO CREATE A DEFINITIVE BOUNDARY. THE PLANTING MATERIAL SHALL BE FLOODED AFTER PLACEMENT. ANY SETTLEMENT THAT OCCURS SHALL BE FILLED BACK TO THE DESIGN ELEVATION.

**MICROBIORETENTION SPECIFICATIONS**

1. THE UNDERDRAIN PIPE MUST BE 4-INCH DIAMETER SCHEDULE 40 OR STRONGER PERFORATED PVC PIPE AT 0.00% SLOPE. THREE INCHES OF GRAVEL MUST BE PLACED UNDER THE PIPE, WITH A MINIMUM OF 6 INCHES OF GRAVEL OVER THE PIPE. PERFORATIONS MUST BE 3/8 INCH IN DIAMETER AND MUST BE LOCATED 4 INCHES ON CENTER, EVERY 90 DEGREES AROUND THE PIPE. PERFORATED PIPE MUST BEGIN AT LEAST 5 FT. INSIDE THE FILTER MEDIA. FILTER FABRIC MUST NOT BE WRAPPED AROUND THE UNDERDRAIN PIPE.
2. 4" INCH CLEAN-OUTS SHOULD BE USED. CLEANOUTS FOR EACH PIPE SHOULD EXTEND 6 INCHES ABOVE THE TOP OF THE PLANTING MEDIA AND HAVE A REMOVABLE CAP.
3. THE GRAVEL LAYER SURROUNDING THE UNDERDRAIN PIPES MUST MEET MSHA SIZE #7 (TABLE 901A), AND MUST PROVIDE A MINIMUM OF 6 INCHES COVER OVER THE PIPE, AND MINIMUM 3 INCHES UNDER THE PIPE. NO GEOTEXTILE OR FILTER FABRIC IS ALLOWED ANYWHERE WITHIN THE FILTER MEDIA (STONE OR SAND).
4. A MINIMUM 6-INCH FINE AGGREGATE SAND LAYER SHALL BE PROVIDED BELOW THE SOIL FILTER/PLANTING MEDIA. THE SAND MUST BE ASTM C33 FINE AGGREGATE CONCRETE SAND, MANUFACTURED SAND OR STONE DUST IS NOT ACCEPTABLE.

5. THE PLANTING MEDIA MIX SHALL MEET SHA BIORETENTION SOIL MIX STANDARDS. THE SOIL SHALL MEET THE FOLLOWING MINIMUM CRITERIA: A HOMOGENEOUS MIXTURE COMPOSED OF 5 PARTS COARSE SAND, 3 PARTS BASE SOIL, AND 2 PARTS FINE BARK. THE SOIL SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2 INCHES. THE PLANTING MATERIAL SHALL BE FLOODED AFTER PLACEMENT. ANY SETTLEMENT THAT OCCURS SHALL BE FILLED BACK TO THE DESIGN ELEVATION.
6. THE SURFACE MULCH LAYER WILL CONSIST OF STANDARD FINE SHREDDED AGED HARDWOOD MULCH. THE MULCH SHOULD BE UNIFORMLY TO A DEPTH OF 2 TO 3 INCHES. YEARLY REPLENISHING MAY BE NECESSARY. PINE BARK IS NOT ACCEPTABLE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John P. ...* 8-2-16  
CHIEF, DEVELOPMENT ENGINEERING DIVISION JP DATE

*Kevin ...* 8/29/16  
CHIEF, DIVISION OF LAND DEVELOPMENT JP DATE

DATE	NO.	REVISION	BY

DEVELOPER: DCT INDUSTRIAL, 12011 GUILFORD ROAD, UNIT 102, ANNAPOLIS JUNCTION, MD 20701, ATTN: TOM MEEHAN, PHONE: 410.645.5020

OWNER: HOWARD COUNTY, MARYLAND, DEPARTMENT OF PUBLIC WORKS, 3430 COURTHOUSE DRIVE, ELLICOTT CITY, MARYLAND 21043, ATTN: JAMES IRVIN, PHONE: 410.313.2330

PROJECT: MEARS PROPERTY

AREA: TAX MAP 43, PARCEL 51 GRID 11, ZONED M-2, 1ST ELECTION DISTRICT, L 15348 F, 00104, HOWARD COUNTY, MARYLAND

TITLE: ENVIRONMENTAL CONCEPT PLAN DETAILS

Pennon Associates Inc.  
Engineers • Surveyors • Planners  
Landscape Architects

8818 Centre Park Drive, Suite 200 Columbia, MD 21045  
T 410.997.8900 F 410.997.9282

SEAL: PROFESSIONAL ENGINEER, STATE OF MARYLAND, LICENSE NO. 28896, EXPIRATION DATE 3/31/2017

DESIGNED BY: PJS/ALC  
DRAWN BY: JSN  
PROJECT NO.: DCT11501  
DATE: AUGUST 17, 2016  
SCALE: AS SHOWN  
DRAWING NO. 7 OF 7