

**GENERAL NOTES**

- Subject property Zoned T.O.D. per Zoning Board case number ZB-1086M dated September 13, 2010.
- Coordinates based on NAD 83 Maryland Coordinate System as projected by Howard County Geodetic Control Station numbers 38DA and 38GA (adjustment: December 2007)  
Station Number 38DA N 556,796.3221 E 1,390,221.4576 Elev. 126.08  
Station Number 38GA N 555,897.3373 E 1,390,132.0933 Elev. 80.78
- This plan is based on a field run monumented boundary survey dated October 9, 2009 by Fisher, Collins & Carter, Inc.
- No cemeteries exist on this site based on a site visit and on an examination of the Howard County Cemetery Inventory Map.
- No historic structures exist on the subject property.
- There are no existing structures or dwellings on this site.
- Previous Department of Planning and Zoning file numbers: S-87-066, F-87-070, F-88-055, SDF-89-215, SDF-90-041, F-89-089, F-90-125, F-91-069, SDF-90-055, F-93-023, ZB-1086M, WP-11-130, ECP-11-046, F-11-057, WP-12-051, WP-11-147, S-11-001, WP-12-109, S-14-001, F-12-026, ZB-1102M, SDF-14-072, SDF-13-068 and F-13-095.
- The forest stand delineation and wetland delineation for Oxford Square was prepared by Eco-Science Professionals, Inc. dated March 17, 2011 and approved under S-11-001 and S-15-001.
- The property is located within the Metropolitan District.
- Existing water is public: Contract Number 44-4801-D
- Existing Sewer is public: Contract Number 44-4802-D
- Soils information taken from ESC Soil Survey dated November 2, 2009.
- Stormwater management will be provided in accordance with the 2010 MDE, chapter 5 regulations (ESD to MEP) and the latest Howard County Design Manual, Vol. 1, chapter 5, adopted on or about May 4, 2010. Recharge volume will be provided through the use of a stone reservoirs. Stormwater management facilities will be privately owned and maintained by the Commercial Association. The street trees will be privately owned and maintained by Oxford Square Commercial Association.
- The Forest Conservation Act requirements for this project were addressed by F-12-026 and F-15-008.
- Required landscaping shall be addressed in accordance with section 16.124 of the Howard County Code and the Landscape Manual. The financial surety for the required 48.5 trees will be posted as part of the grading permit in the amount of \$14,550.00 (43 shades x 300 + 11 evergreens x 150). The Financial Surety for the Green Neighborhood planting requirement shall be posted as part of the Developers Agreement in the amount of \$4,050.00 (12 shade trees x 300 + 3 evergreens x 150). This plan was prepared in accordance with section 16.124 of the Howard County Code and the Howard County Landscape Manual.
- Health department approval of this development plan does not ensure approval of building permit applications associated with this plan. Plans for certain facilities to be constructed within the limits described by this plan will require review and approval by the health department. Such facilities may include, but are not limited to, those that sell prepared or packaged foods or that may have equipment that emits radiation.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- All sign posts used for traffic control signs installed in the County Right-of-Way shall be mounted on a 2" galvanized steel perforated square tube post (14 gauge) inserted into a 2-1/2" galvanized steel perforated square tube sleeve (12 gauge) - 3' long. The anchor shall not extend more than two holes above ground level. A galvanized steel pole cap shall be mounted on top of each post.
- Street light placement and the type of fixtures and poles shall be in accordance with the Howard County Design Manual, Volume III (2006), Section 5.5.A. A minimum of 20' shall be maintained between any street light and any tree.
- ESD practices shall be used to address the site PE and ESDV.
- Relocated fire hydrant, water, and sewer house connections will require an advanced deposit order. The ADO will be issued prior to building permit.
- The use of RC-6 for aggregate base material shall be approved by the geo-technical engineer.
- 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 the Department of Public Works/Bureau of Engineering/Construction Inspection Division at 410-313-1880 at least (5) working days prior to start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7177 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 for Oxford Square Parcels B', C', F', J', P', Q', V', W', X', Y', Z', A-A', B-B', C-C', 4M1' and Open Space Lots 2, 244 & 245 is taken from aerial survey performed by Harford Aerial surveys, Inc. dated January 2008 and supplemented with field run topography prepared by Fisher, Collins & Carter Inc. dated May 2010.
- Existing utilities are based on design drawings F-13-095, SDF-13-068, SDF-14-072, W/344-4802-D, and 44-4801-D.
- There is no floodplain, wetlands, streams or steep slopes on this site.
- The Forest Stand delineation and Wetland delineation for this project (Parcels B', C', F', J', P', Q', V', W', X', Y', Z', A-A', B-B', C-C', 4M1' and Open Space Lots 2, 244 & 245) was prepared by Eco-Science Professionals, Inc. dated March 17, 2011 and approved under S-11-001 & ECP-11-046. A new Forest Stand delineation and Wetland delineation was prepared by Eco-Science Professionals, Inc. dated August 2014 and submitted with S-15-001.
- The initial Traffic Study for this project was prepared by the Traffic group dated March 2011 and approved under S-11-001 and updated June 2013.
- Trash pick up will be privately maintained. See sheet 3 for location of trash/recycle area adjacent to Community Center Building.
- Amenity Requirements: T.O.D. Development shall include an amenity area per Section 12.7.4F.1 of the Zoning Regulations and Route 1 Manual.  
Amenity Area Required: 10.7 AC for the Entire Project (107.513 x 10%)  
Total Amenity Provided: 0.21 AC (SDF-15-074) + 0.04 AC (SDF-16-013) + 1.24 AC (SDF-16-052) + 0.45 AC (SDF-14-072) + 1.72 (SDF-14-071) + 0.77 AC (SDF-14-071) + 1.07 AC (SDF-14-071) + 0.42 AC (SDF-14-004) + 1.57 AC (SDF-13-068) = 6.48 AC (SDF-12-015) = 16.48 AC  
This Plan's amenity area accommodates indoor and outdoor gathering space for civic meetings, concerts, fairs and other similar community events.
- Permission from adjacent property owners for off-site activities is required prior to grading permit.
- MAA approval dated September 28, 2016.

# Revised Site Development Plan

# OXFORD SQUARE

## Parcel 'I' - The Barn - Community Center

### "A Howard County Green Neighborhood"

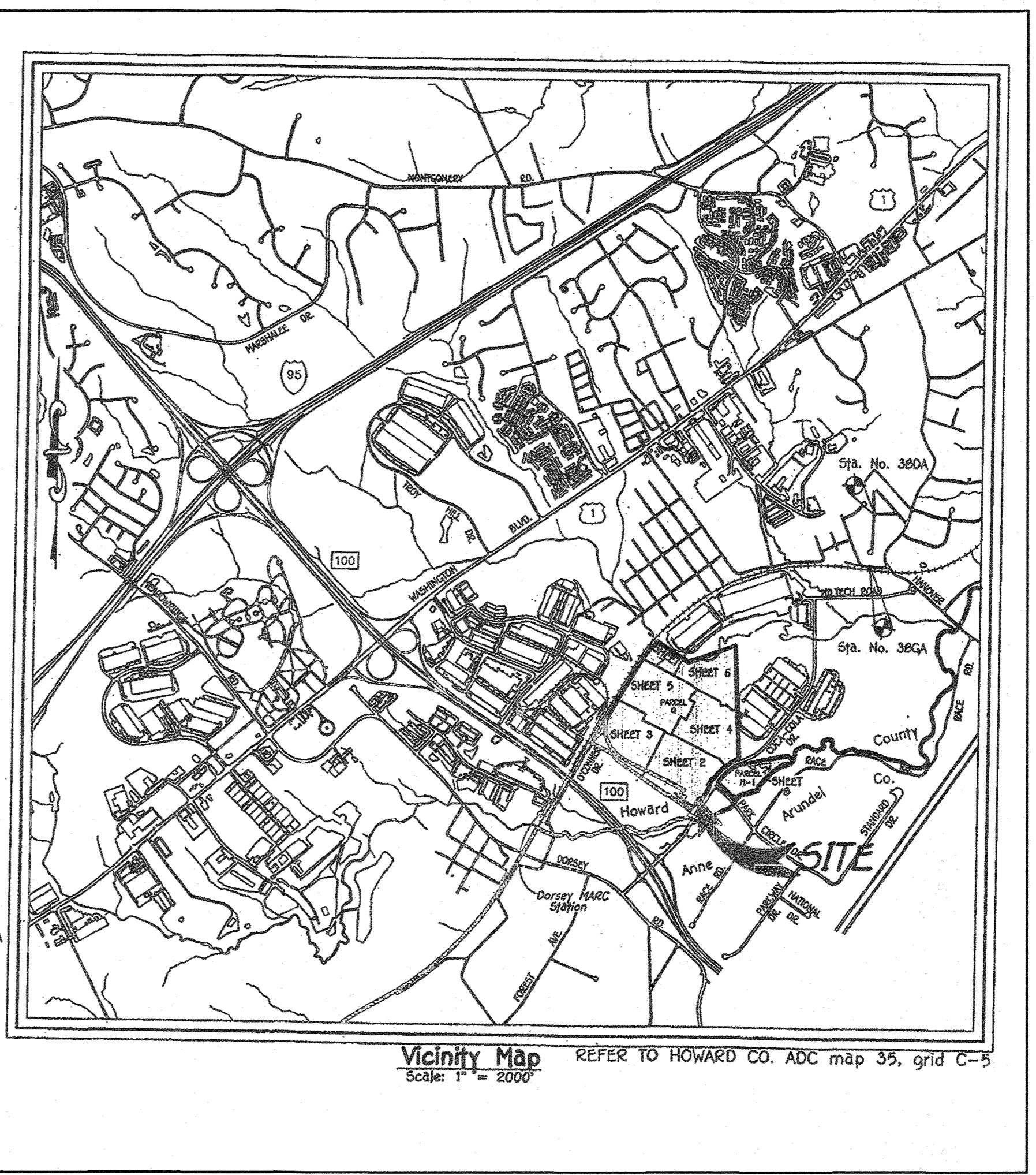
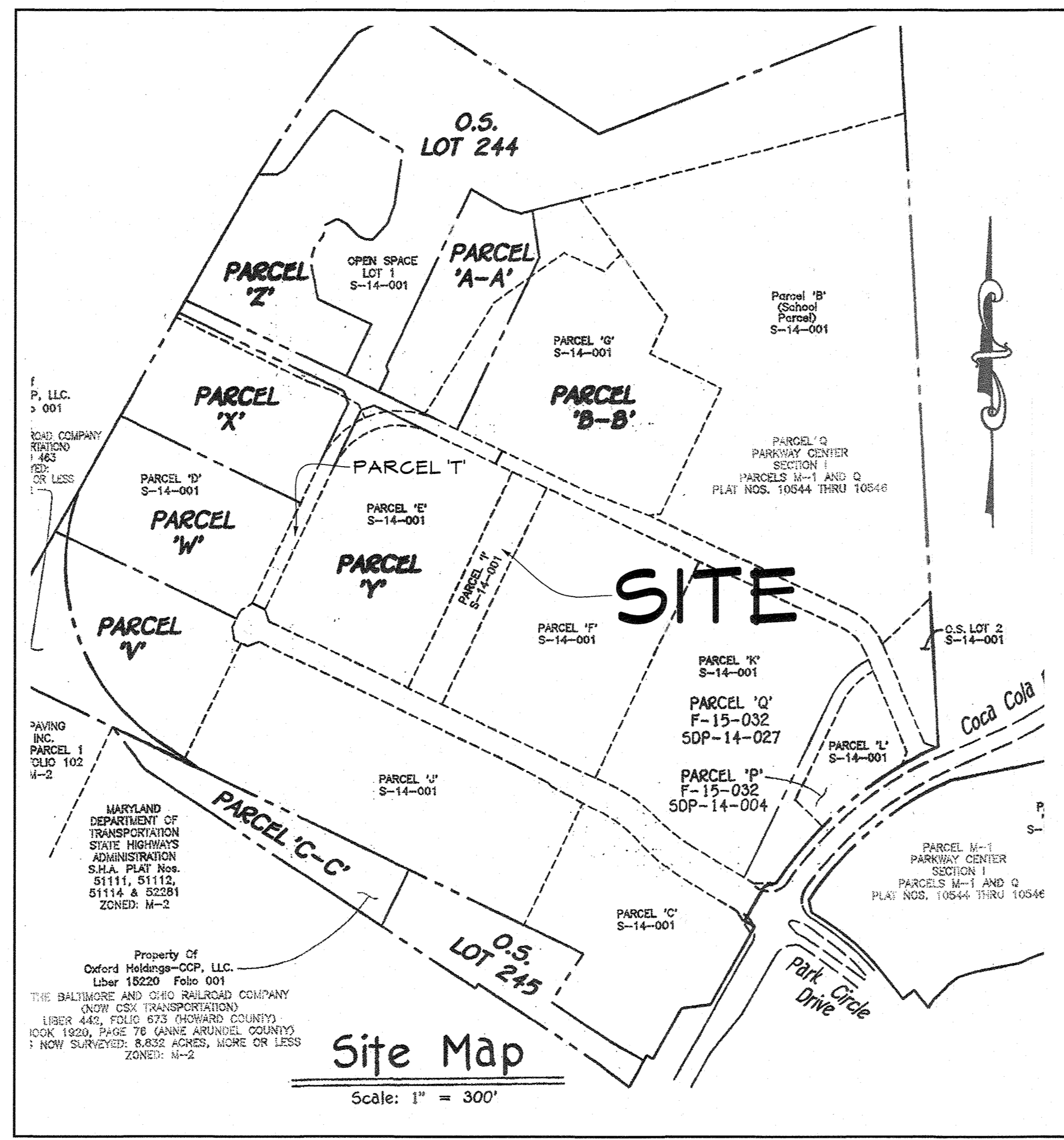
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS IN CONFERENCE WITH THE MASTER PLAN OF WATER AND SEWAGE FOR HOWARD COUNTY, MD.

William M. Moore, Rossman  
County Health Officer  
12/17/2019  
Date

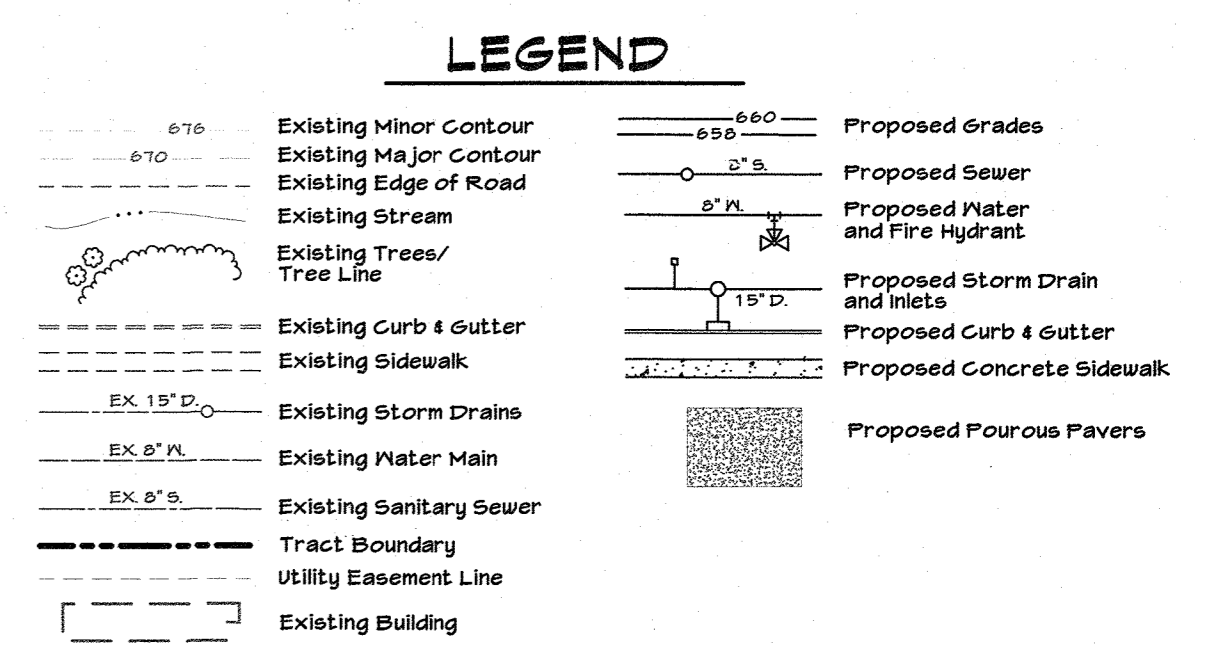
Health Department approval of this Site Development Plan (SDP) does not ensure approval of building permit applications associated with this plan. Permit plans for certain facilities to be constructed within the limits described by this SDP will require review and approval by the Health Department. Such facilities may include, but are not limited to, those that sell prepared or packaged foods or that may have equipment that emits radiation.

**SHEET INDEX**

- COVER SHEET
- EXISTING CONDITIONS PLAN
- SITE DEVELOPMENT PLAN
- GRADING PLAN
- SITE DETAILS
- EROSION and SEDIMENT CONTROL PLAN
- EROSION and SEDIMENT CONTROL DETAILS
- EROSION and SEDIMENT CONTROL SPECIFICATIONS
- STORMWATER MANAGEMENT DRAINAGE AREA MAP
- STORMWATER MANAGEMENT PLAN
- STORMWATER MANAGEMENT DETAILS & PROFILES
- UTILITY PROFILES
- LANDSCAPE PLAN
- LANDSCAPE DETAILS and NOTES
- GREEN NEIGHBORHOOD PLAN
- GREEN NEIGHBORHOOD PLAN
- BUILDING ELEVATION
- SWM DETAILS AND BORING LOGS



Stormwater Management Information						
Lot Number	Facility Name & Number	Practice Type (Quantity)	Public	Private	Maintains	Misc.
Parcel 'I'	ESD #1- Micro-Bioretenation	M-6		x	yes	
	ESD #2- Micro-Bioretenation	M-6		x	yes	
	ESD #3- Micro-Bioretenation	M-6		x	yes	
	ESD #4- Micro-Bioretenation	M-6		x	yes	
	ESD #5- Micro-Bioretenation	M-6		x	yes	
	ESD #6- Micro-Bioretenation	M-6		x	yes	
	ESD #7- Micro-Bioretenation	M-6		x	yes	
	ESD #8- Micro-Bioretenation	M-6		x	yes	
	ESD #9- Micro-Bioretenation	M-6		x	yes	
	ESD #10- Micro-Bioretenation	M-6		x	yes	



**PURPOSE STATEMENT**

The purpose of the redline is to remove the community pool and replace it with a community green space that includes wooden shelters, walking paths and play area. As a result, revisions to the stormwater management, grading, utilities, landscaping and erosion and sediment control have been adjusted.

**OWNER**  
**KELLOGG - CCP, LLC**  
c/o DAVID P. SCHEFFENACKER, JR.  
**MANAGING MEMBER**  
2330 WEST JOPPA ROAD, SUITE 190  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

**SITE ANALYSIS**

- Subdivision Name: Oxford Square
- Tax Map: 38
- Parcel No.: 761
- Zoning: T.O.D.
- Election District: First
- Record Plat: 22390-22395
- Existing Use: Vacant
- Proposed Use: Community Center
- Site Data:
  - a. Site In Acres: 1.61 Ac.
  - b. Wetland Buffers: 0.00 Ac.
  - c. Floodplain and Buffers: 0.00 Ac.
  - d. Forests: 0.00 Ac.
  - e. Steep Slopes 15% or Greater: 0.00 Ac.
  - f. Erodeable Soils in Project Area: 0.00 Ac.
  - g. Limit of Disturbance: 1.61 Ac.
  - h. Green Open Area: 1.19 Ac.
  - i. Proposed Impervious Area: 0.42 Ac.
- Proposed Building Area: Community Center: 5,165 sq ft
- Parking Required: 0
- Parking Provided: 5
  - a. Parallel: 3
  - b. Handicap: 2 (1 van, 1 standard)

ADDRESS CHART	
LOT/PARCEL NO.	STREET ADDRESS
761/P	7061 BANBURY DRIVE

PERMIT INFORMATION CHART				
Subdivision Name	Section/Area	Lot/Parcel No.		
OXFORD SQUARE		761/P		
Plat No. or LIF	Grid No.	Zoning	Tax Map No.	Elect. Distr.
23781-23782	20	TOD	38	15T
				Census Tract
				601204

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2021

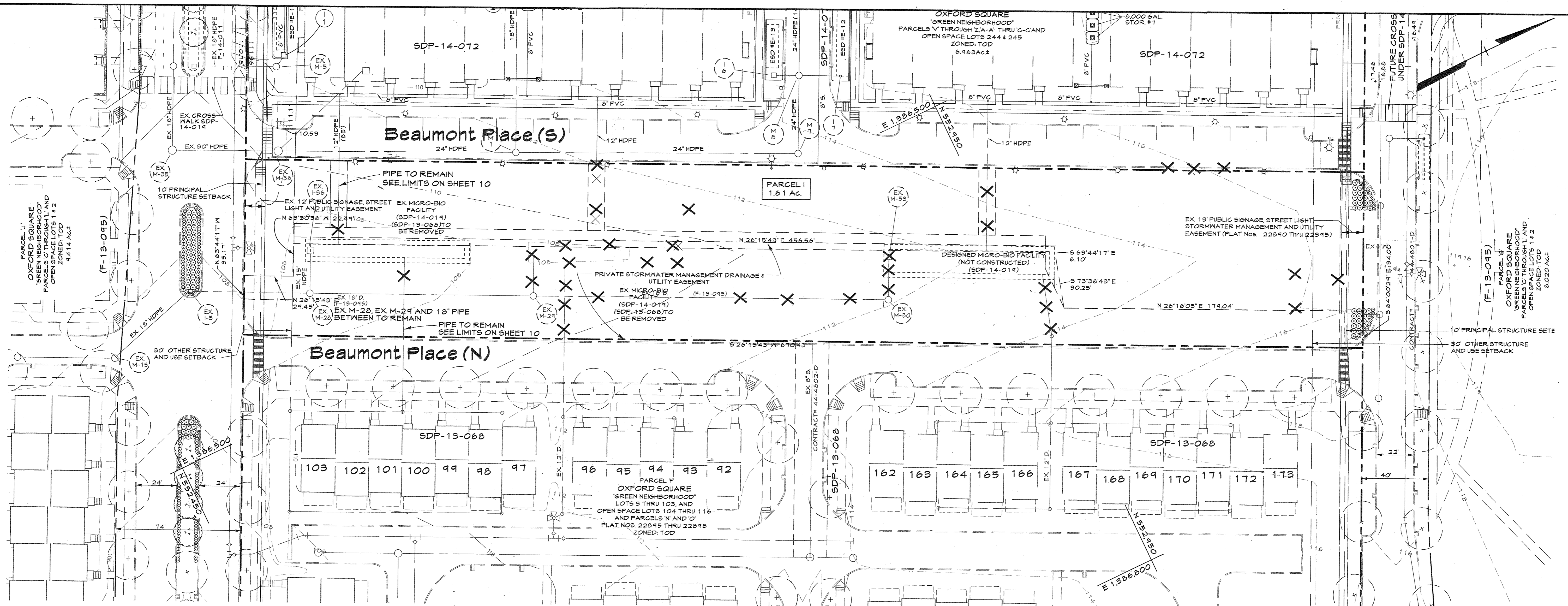
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Department Engineering Division: 12/23/19  
Chief, Division of Land Development: 1/14/20  
Director: 1-17-20

**M CENTURY ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 Gilroy Road, Hunt Valley, MD 21093  
Phone: 443.589.2400 Fax: 443.589.2401

DESIGN BY: M.J.P.  
DRAWN BY: KAD/MSS  
CHECKED BY: CEI 2  
DATE: 11-15-19  
BY NO. REVISION DATE

**DEVELOPER**  
**PRESTON - SCHEFFENACKER PROPERTIES**  
2330 WEST JOPPA ROAD, SUITE 190  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

**Cover Sheet**  
**PARCEL 'I' - The Barn-Community Center**  
**OXFORD SQUARE**  
"A HOWARD COUNTY GREEN NEIGHBORHOOD"  
TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
REVISED SITE DEVELOPMENT PLAN SHEET 1 OF 18  
C.E.I. PROJECT NUMBER: 131176.00  
SCALE: As Shown



**PLAN**  
SCALE: 1"=30'

**LEGEND**

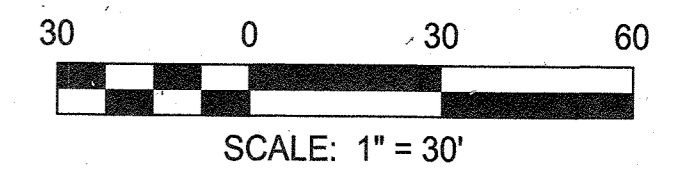
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road
- Existing Stream
- Existing Trees/Tree Line
- Existing Curb & Gutter
- Existing Sidewalk
- Existing Storm Drains
- Existing Water Main
- Existing Sanitary Sewer
- Tract Boundary
- Utility Easement Line
- Existing Building
- Proposed Grades
- Proposed Sewer
- Proposed Water and Fire Hydrant
- Proposed Storm Drain and Inlets
- Proposed Curb & Gutter
- Proposed Sidewalk
- 15% or greater slopes in LOD
- Existing Trees and Shrubs
- To Be Removed

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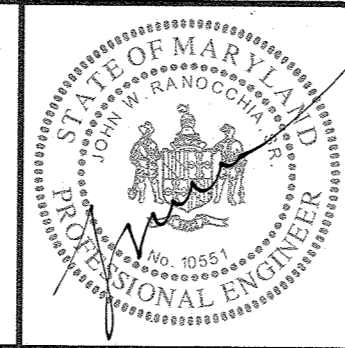
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APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

Date: 12/23/19  
 Date: 1/14/20  
 Date: 1-17-20

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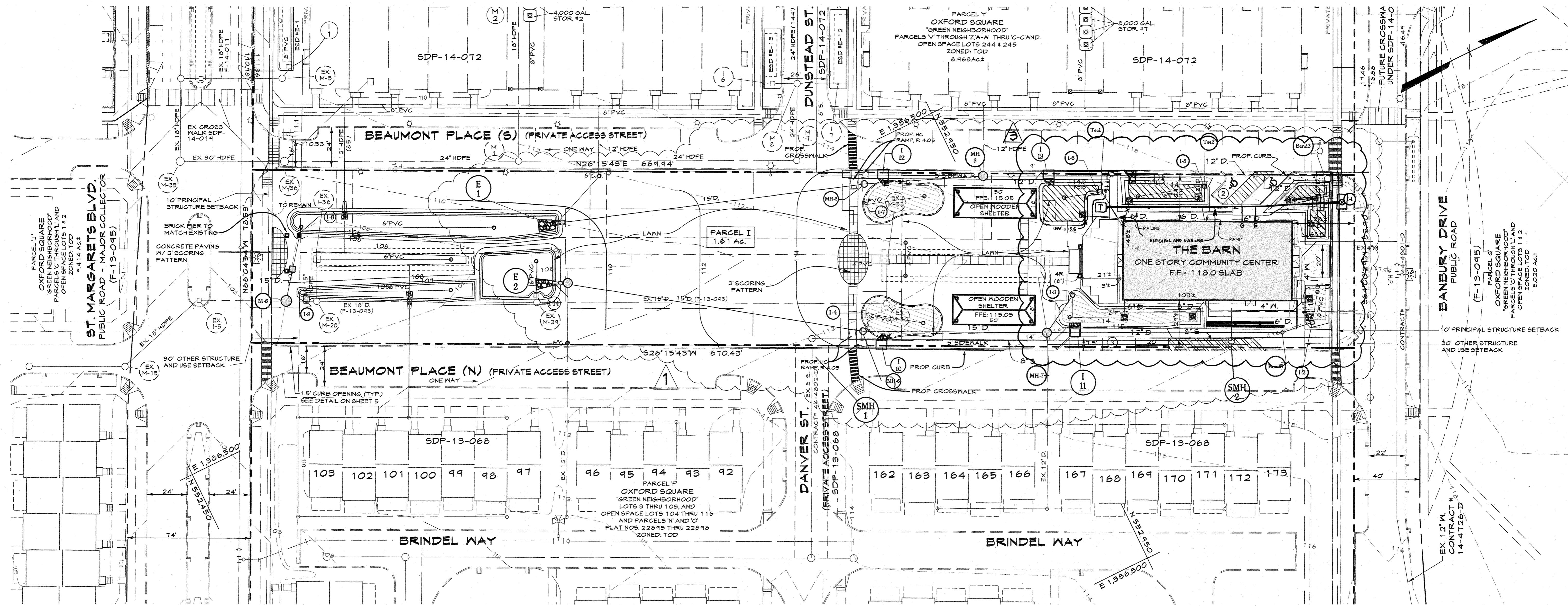
DESIGN BY:	M.J.P.
DRAWN BY:	KAD/MSS
CHECKED BY:	
DATE:	11-15-19
BY NO.	CEI 1
REVISION	Ad justed limits of SD to be removed
DATE	11-15-19

**DEVELOPER**  
**PRESTON - SCHEFFENACKER PROPERTIES**  
 2330 WEST JOPPA ROAD, SUITE 190  
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 410-296-3800

**Existing Conditions and Demolition Plan**  
**PARCEL 'I' - The Barn-Community Center**  
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 TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
 ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
 REVISED SITE DEVELOPMENT PLAN SHEET 2 OF 18

C.E.I. PROJECT NUMBER  
 131176.00  
 SCALE:  
 As Shown

S:\2013\Facilities\13111701 Oxford Square Barn\CADD\Drawings\SDP Barn with Foot\OxSq Barn (SDP-09F) Site Development Plan.dwg Nov 15, 2019 1:00:00am afinesch

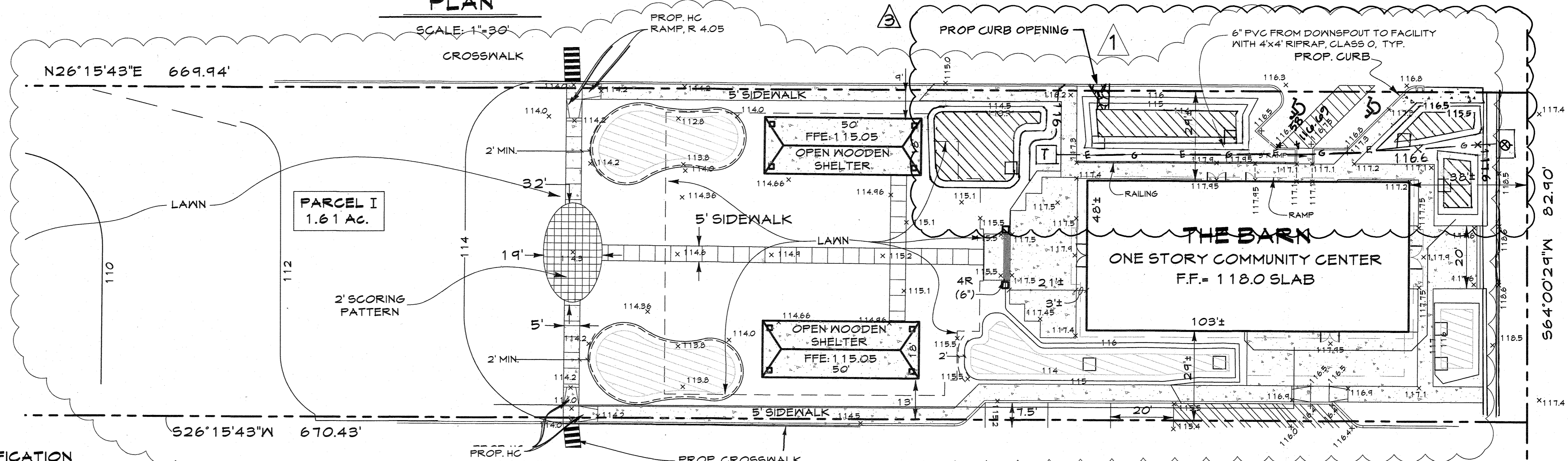


**PLAN**

SCALE: 1"=30'

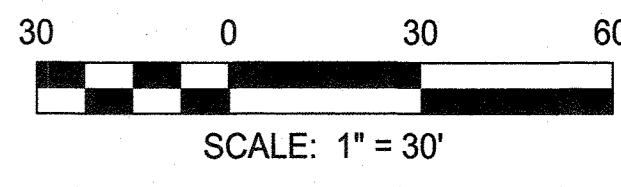
**LEGEND**

	Existing Minor Contour		Proposed Grades
	Existing Major Contour		Proposed Sewer
	Existing Edge of Road		Proposed Water and Fire Hydrant
	Existing Stream		Proposed Storm Drain and Inlets
	Existing Trees/Tree Line		Proposed Curb & Gutter
	Existing Curb & Gutter		Proposed Sidewalk
	Existing Sidewalk		Soil Boring
	Existing Storm Drains		Proposed Stormwater Management Facility
	Existing Water Main		Proposed Pavers/Walkways
	Existing Sanitary Sewer		
	Tract Boundary		
	Utility Easement Line		
	Existing Building		



**LAYOUT/DETAILED GRADING PLAN**

SCALE: 1"=20'



**OWNER**  
**KELLOGG - CCP, LLC**  
 c/o DAVID P. SCHEFFENACKER, JR.  
 MANAGING MEMBER  
 100 WEST ROAD, SUITE 304  
 TOWSON, MARYLAND 21204  
 410-296-3800

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 LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2021

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 Phone: 443.589.2400 Fax: 443.589.2401

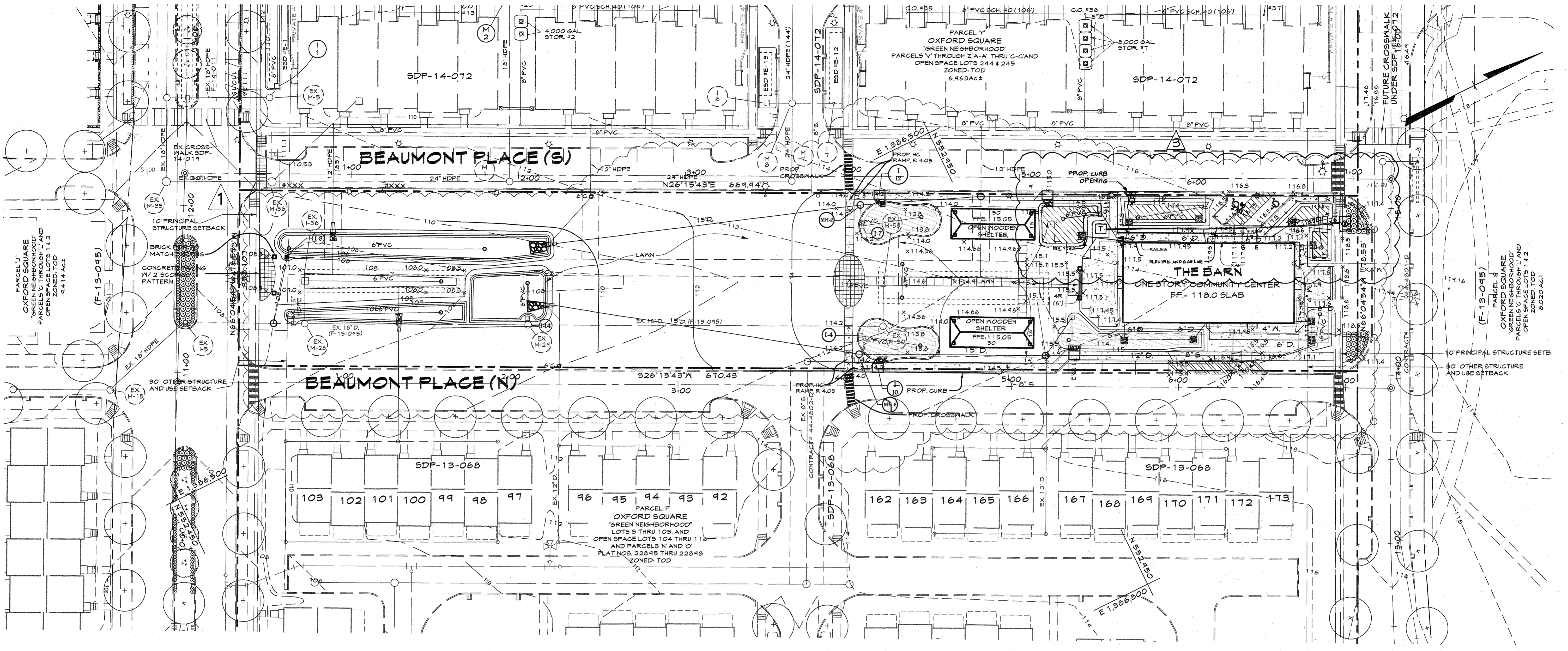


DESIGN BY:	M.J.P.		
DRAWN BY:	KAD/MSS		
CHECKED BY:	CEI	Revision to facilities 1, 5 and 6	5/5/21
DATE:	11-15-19	Revisions to Site Layout, Grading, Utility Connections, SWM Facilities	11-15-19
BY:	NO.	REVISION	DATE

**DEVELOPER**  
**PRESTON - SCHEFFENACKER PROPERTIES**  
 2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

**Revised Site Development Plan**  
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**REVISED SITE DEVELOPMENT PLAN SHEET 3 OF 18**  
 C.E.I. PROJECT NUMBER: 131176.00  
 SCALE: As Shown

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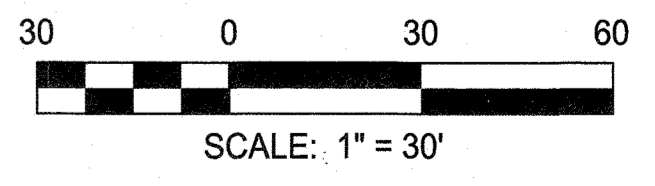
**PLAN**  
SCALE: 1"=30'

**LEGEND**

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- Existing Water Main
- Existing Sanitary Sewer
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- Proposed Stormwater Management Facility
- Proposed Pavers/Walkways

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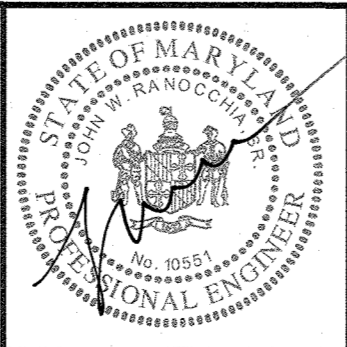
**OWNER**  
KELLOGG - CCP, LLC  
c/o DAVID P. SCHEFFENACKER, JR.  
MANAGING MEMBER  
100 WEST ROAD, SUITE 304  
TOWSON, MARYLAND 21204  
410-296-3800



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Development Engineering Division  
Chief, Division of Land Development  
Director

Date: 12/23/19  
Date: 1/14/20  
Date: 1-17-20

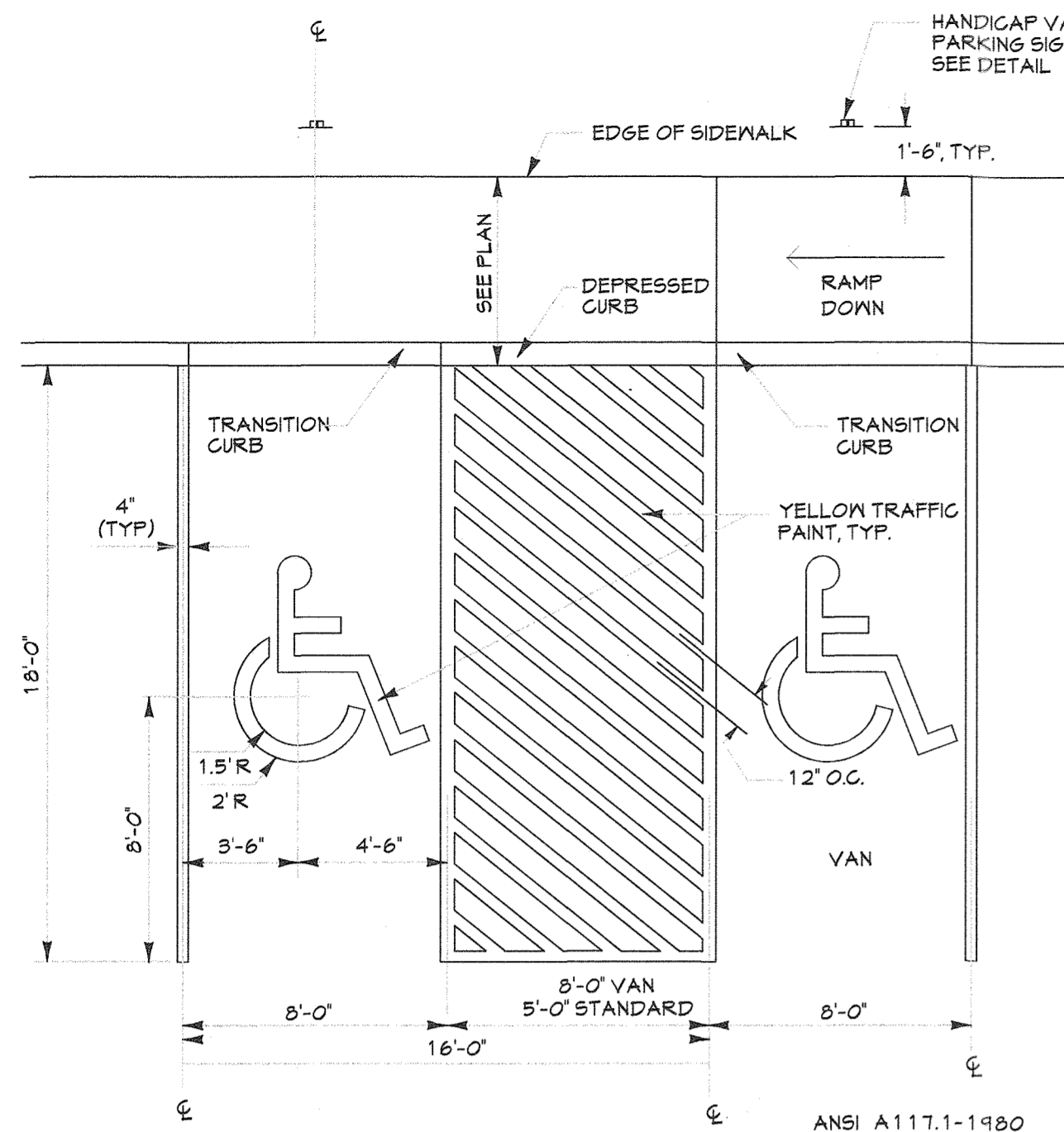
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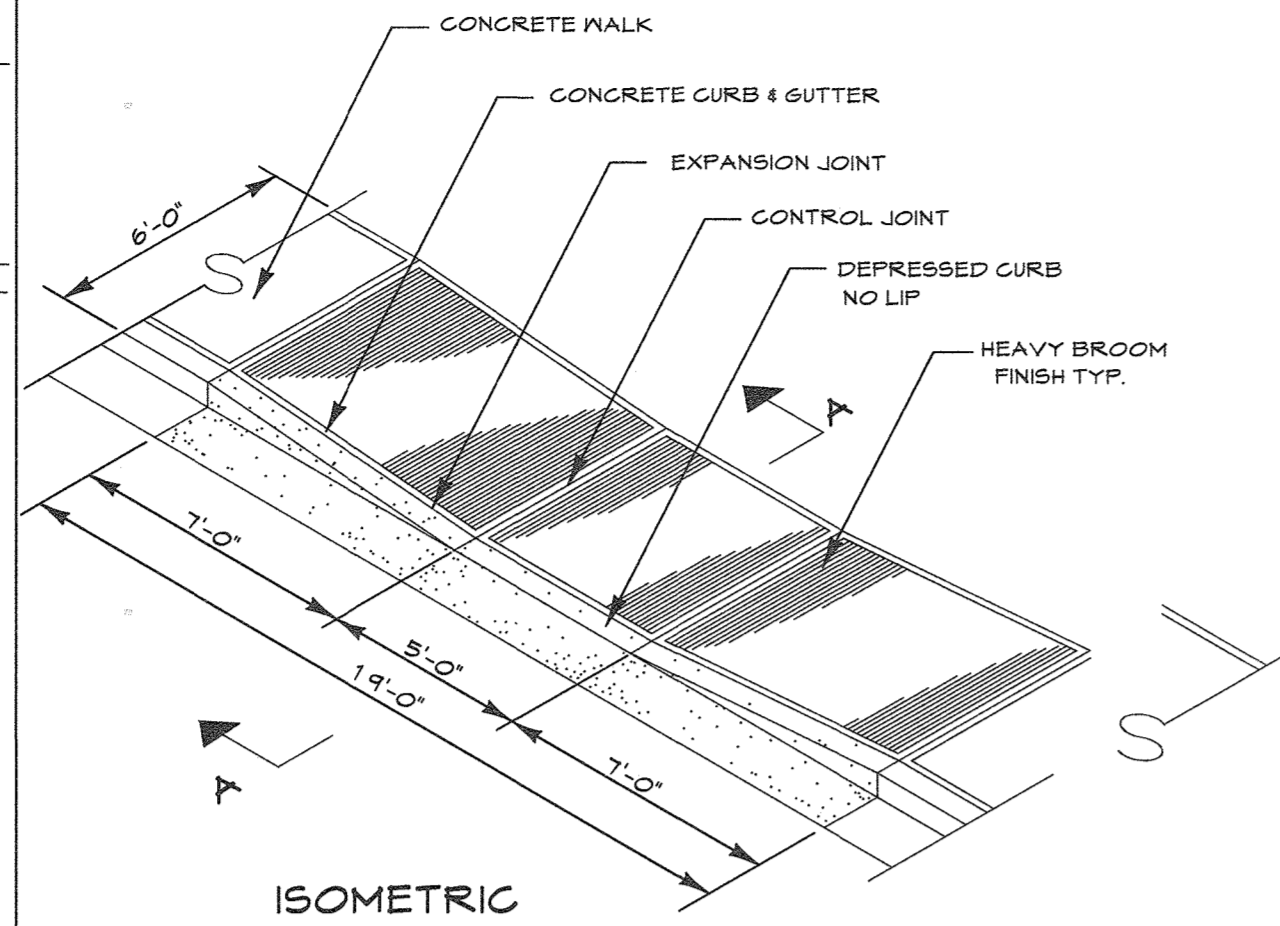
**DEVELOPER**  
PRESTON - SCHEFFENACKER PROPERTIES  
2330 WEST JOPPA ROAD, SUITE 190  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

**Grading Plan**  
PARCEL 'I' - The Barn-Community Center  
OXFORD SQUARE  
"A HOWARD COUNTY GREEN NEIGHBORHOOD"  
TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
REVISED SITE DEVELOPMENT PLAN SHEET 4 OF 18  
C.E.I. PROJECT NUMBER 1311176.00  
SCALE: As Shown



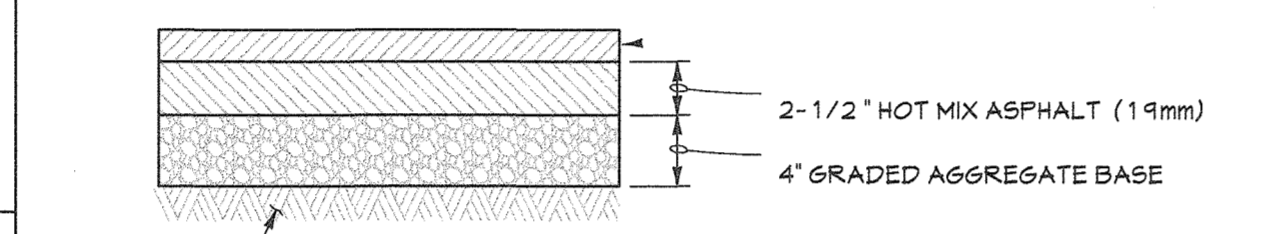
Handicap Parking: Van & Standard

Not to Scale



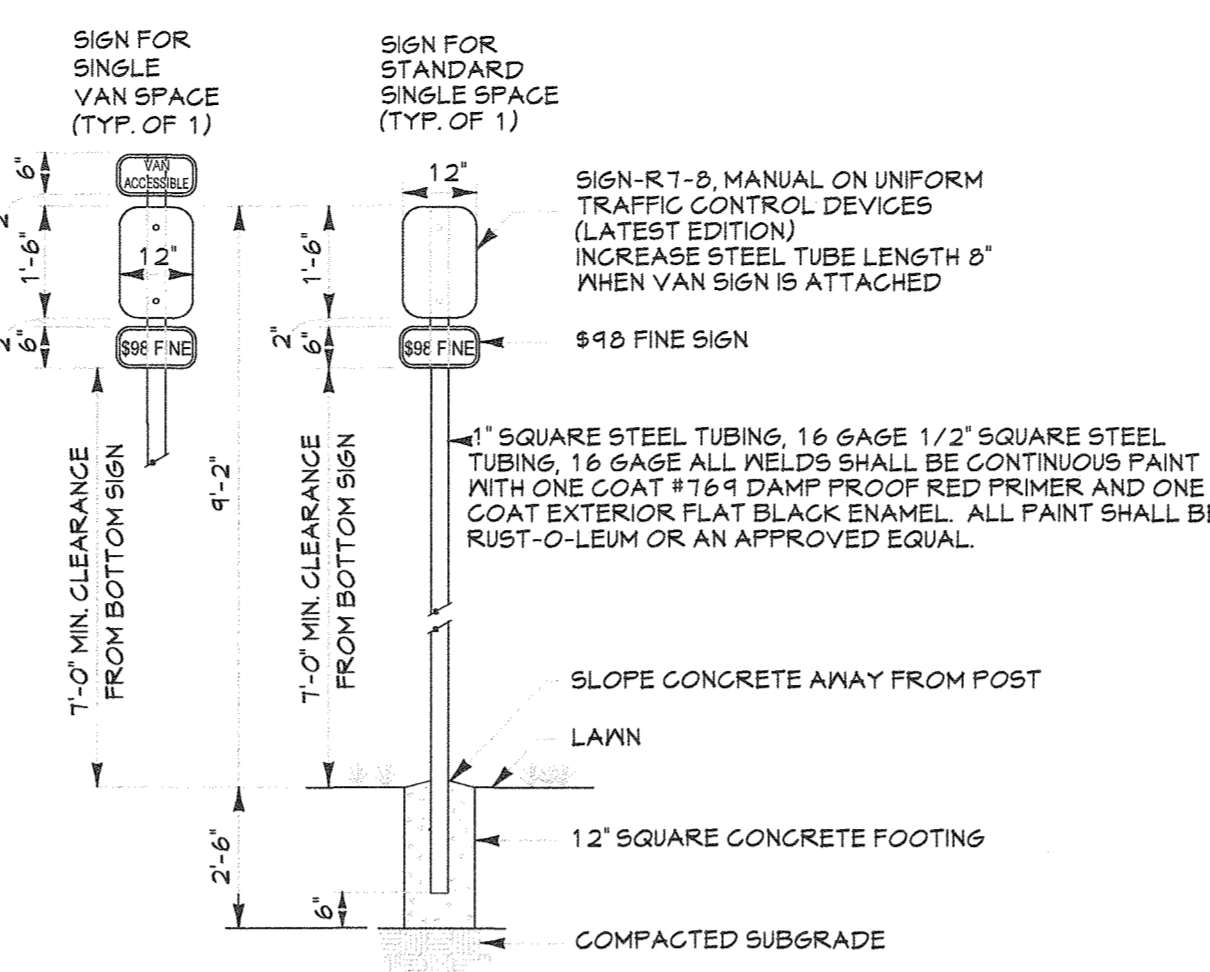
Handicap Ramp

Not to Scale



Light Duty Paving

Not to Scale

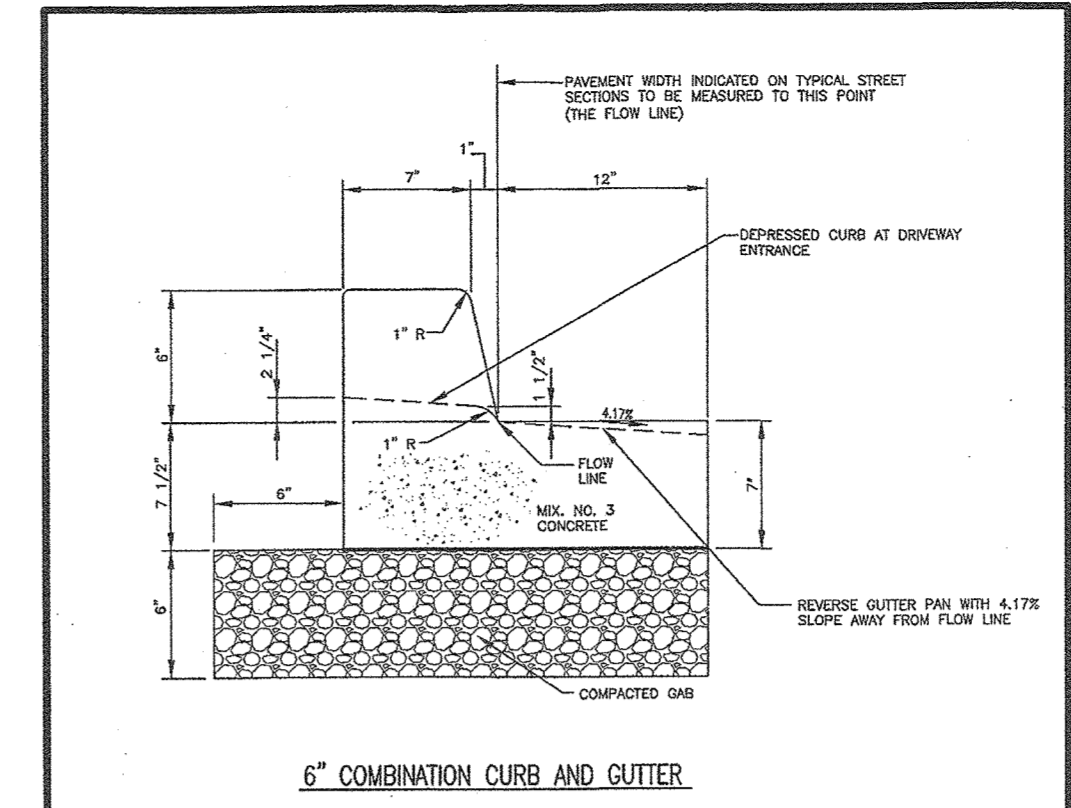


- NOTES:
- DISTANCE FROM GROUND TO BOTTOM OF SIGN SHALL BE 'T'
  - SEE HANDICAPPED PARKING SPACE DETAIL THIS SHEET FOR LOCATION OF HANDICAPPED SIGN.
  - SPACE MARKED 'V' ON SITE PLAN SHALL INCLUDE 'VAN SIGN' AS REQUIRED.
  - SIGNS SHALL CONFORM TO CURRENT ADA CRITERIA.

SIGN COLORS:  
LETTERS AND BORDER - GREEN  
WHITE H.C. SYMBOLS ON BLUE BACKGROUND  
BACKGROUND - WHITE

Handicap Parking Sign

Not to Scale

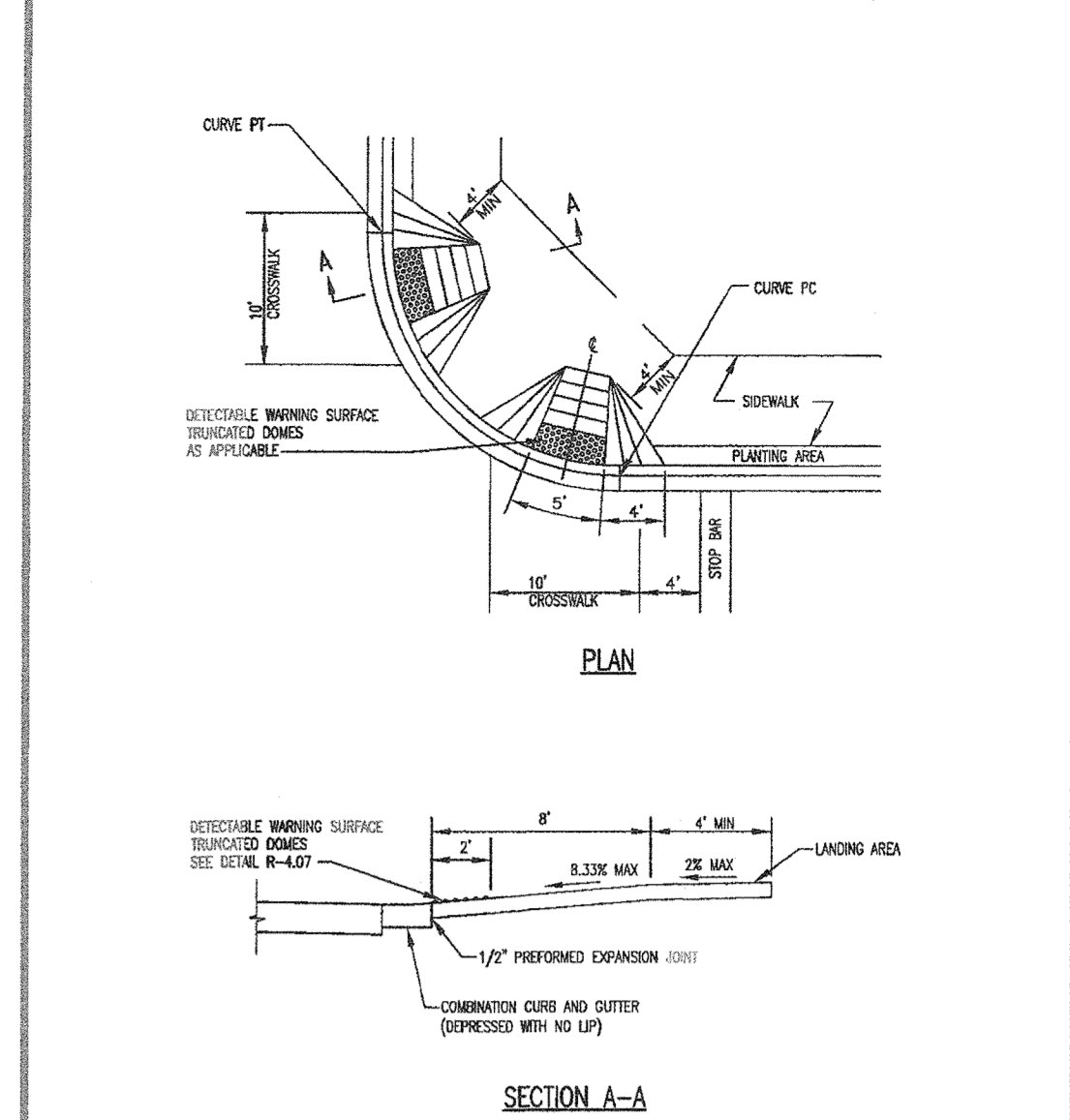


NOTE:  
1. GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.

Project	Howard County, Maryland Department of Public Works	Curb and Gutter	Detail
Sheet	Approved: <i>[Signature]</i> Date: 12/20/19 Title: Chief, Bureau of Engineering	6" Combination Curb and Gutter Private	R-9.01

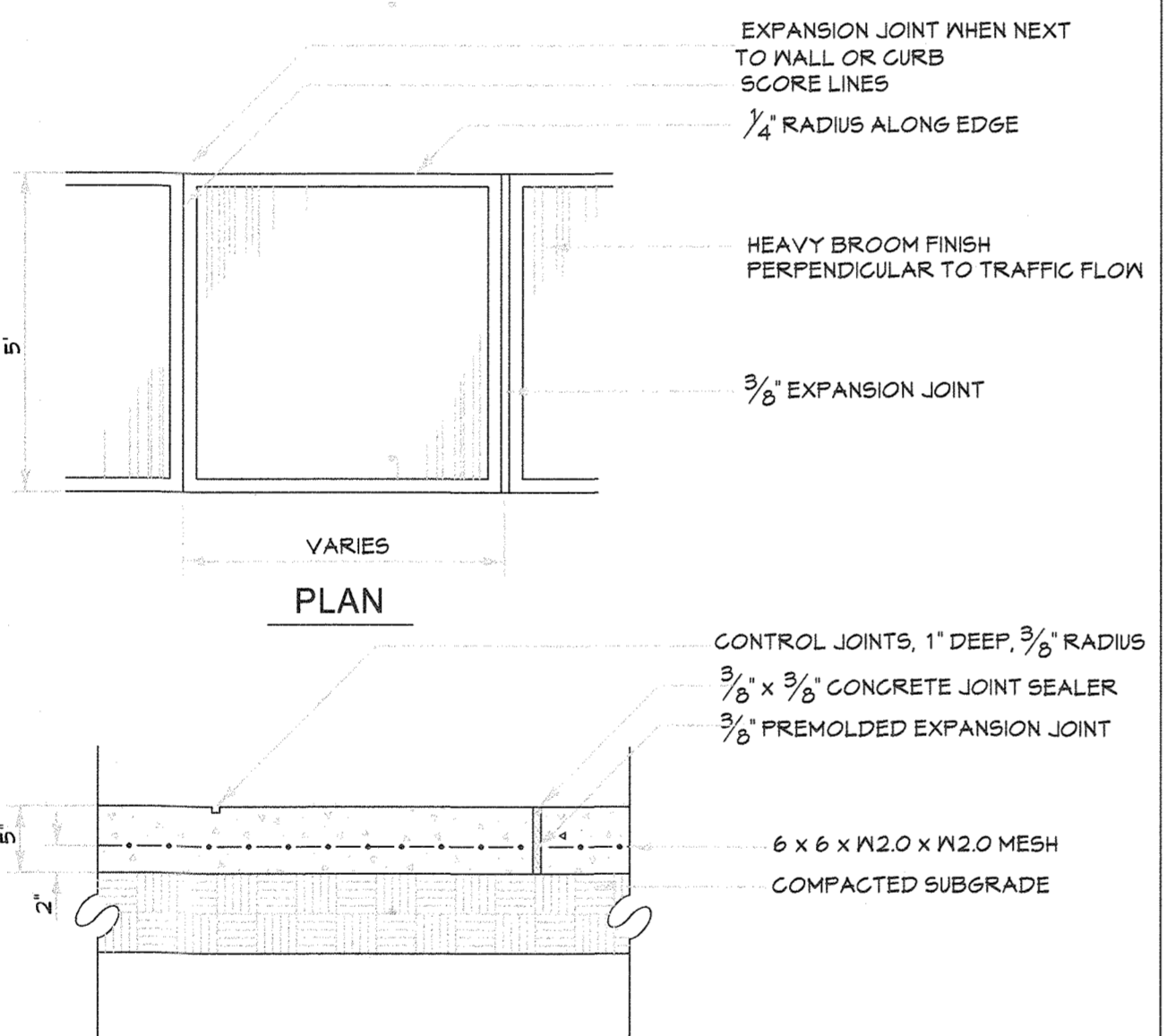
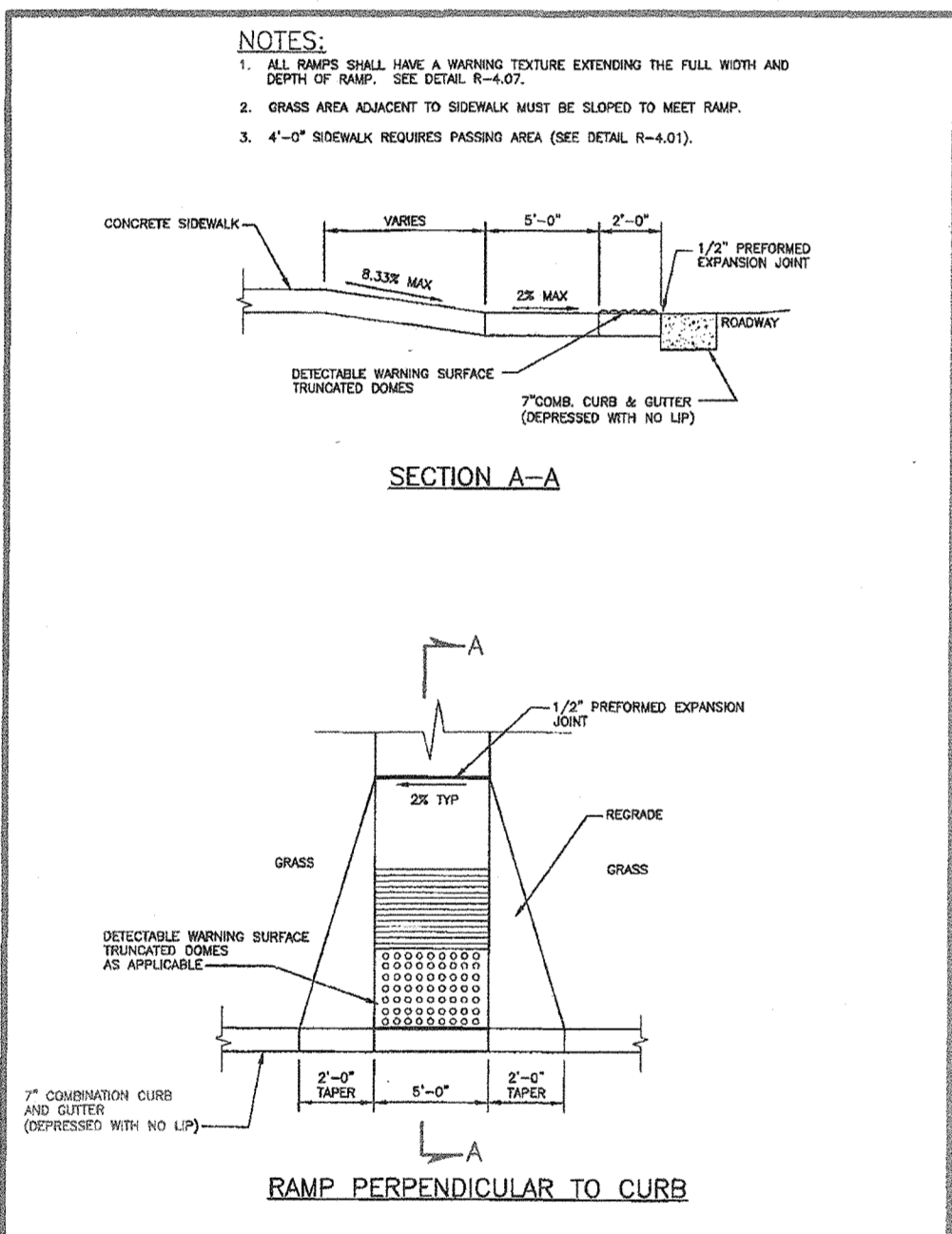
6" Curb and Gutter

Not to Scale



Project	Howard County, Maryland Department of Public Works	Sidewalk Ramp Type B Dual Ramp	Detail
Sheet	Approved: <i>[Signature]</i> Date: 12/20/19 Title: Chief, Bureau of Engineering		R-4.03

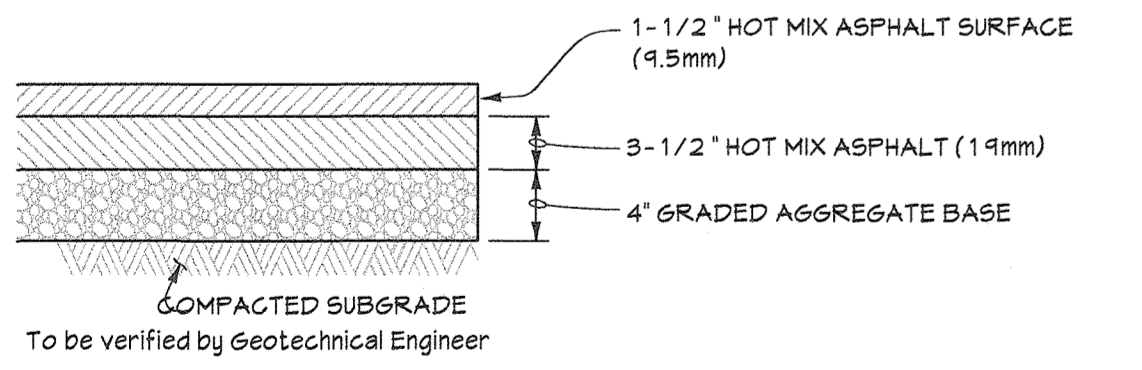
Sidewalk Ramp



Project	Howard County, Maryland Department of Public Works	Sidewalk Ramp Layout & Grading Perpendicular to Curb	Detail
Sheet	Approved: <i>[Signature]</i> Date: 12/20/19 Title: Chief, Bureau of Engineering		R-4.05

Sidewalk Detail

Not to Scale



Heavy Duty Paving

Not to Scale

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2017

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 1/3/19  
 Chief, Development Engineering Division  
*[Signature]* 1/25/19  
 Chief, Division of Land Development  
*[Signature]* 1/28/19  
 Director

**M CENTURY ENGINEERING**  
 CONSULTING ENGINEERS - PLANNERS  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 Fax: 443.589.2401



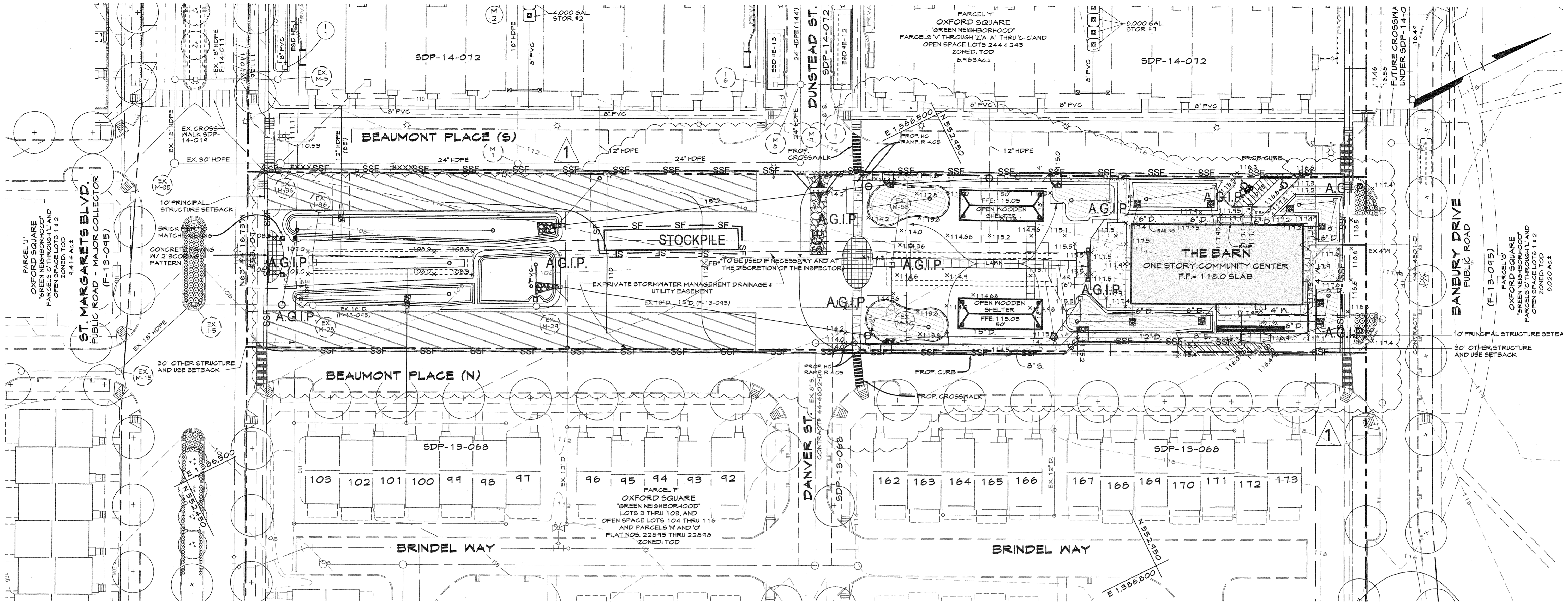
DESIGN BY:	M.J.P.			
DRAWN BY:	KAD/MSS			
CHECKED BY:				
DATE:	3-10-17			
BY	NO.	REVISION	DATE	

OWNER  
 KELLOGG - CCP, LLC  
 c/o DAVID P. SCHEFFENACKER, JR.  
 MANAGING MEMBER  
 100 WEST ROAD, SUITE 304  
 TOWSON, MARYLAND 21204  
 410-296-5800

DEVELOPER  
 PRESTON - SCHEFFENACKER PROPERTIES  
 2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

Site Details  
 PARCEL 'I' - The Barn-Community Center and Pool  
 OXFORD SQUARE  
 "A HOWARD COUNTY GREEN NEIGHBORHOOD"  
 TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
 ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
 SHEET 5 OF 18

C.E.I. PROJECT NUMBER  
 13117600  
 SCALE:  
 As Shown



**PLAN**

SCALE: 1"=30'

**LEGEND**

	Existing Minor Contour		Silt Fence
	Existing Major Contour		Super Silt Fence
	Existing Edge of Road		At Grade Inlet Protection
	Existing Stream		Mountable Berm
	Existing Trees/Tree Line		Stabilized Construction Entrance
	Existing Curb & Gutter		Proposed Stormwater Management Facility
	Existing Sidewalk		Tract Boundary
	Existing Storm Drains		Utility Easement Line
	Existing Water Main		Existing Building
	Existing Sanitary Sewer		Proposed Grades
	Proposed Storm Drain and Inlets		Proposed Sewer
	Proposed Curb & Gutter		Proposed Water and Fire Hydrant
	Proposed Sidewalk		Proposed Pavers/Walkways

**NOTE: THE CONTRACTOR IS RESPONSIBLE FOR PUMPING ALL STANDING WATER THROUGH A FILTERING DEVICE TO A CLEAR WATER WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.**

**SEQUENCE OF CONSTRUCTION \***

- Obtain grading permits (1 days)
- Install erosion and sediment control measure SCE, SSF around site and Inlet Protection for Existing inlets. (2 days)
- With the permission of the sediment control inspector begin site grading between St. Margarets Blvd and Danver St. Start construction of ESD facilities near St. Margarets Blvd including Riser (do not install stone, underdrain, planting soil, etc.) and storm drain utilities from MH-2 and MH-6 towards St. Margarets Blvd. Also install storm drain adjustments near St. Margarets Blvd and all roof drains adjustments from Beaumont Place (N & S). Repair any sediment control devices at the end of each working day as necessary. (15 days)
- Fine grade area between North end of ESD facilities and Danver St and stabilize with sod. Notify SMM as-built Inspector/Engineer. Once area is stabilized install SSF between Dunstead St and Danver St. (10 days)
- With a three day dry weather forecast install ESD facilities (stone, underdrain, planting soil, etc.) Stabilize all disturbed slopes with sod. Notify sediment control inspector and with permission remove sediment controls (SSF) from area between St. Margarets Blvd and Danver St. (below new SSF - installed line 4). Start grading area between Danver St and Banbury Drive. (2 days)
- Start installing building, water, sewer, remaining storm drain and ESD facilities (Riser only). Install Inlet protection at all inlets. (60 days)
- Fine grade site and install paving, sidewalk and stabilize all remaining area with sod. Notify SMM as-built Inspector/Engineer. (10 days)
- With a three day dry weather forecast install ESD facilities (stone, underdrain, planting soil, etc.) Stabilize all disturbed slopes with sod. (10 days)
- With the approval of the sediment control inspector, once all areas are stabilized, remove remaining sediment control measures and stabilize any area disturbed by this process. (10 days)

\* All construction waste must be managed in accordance with the Construction Waste Management Plan.

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2021

**DEVELOPER'S CERTIFICATION**

"I/We certify that all development and construction will be done according to this plan, and that any 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."

*Signature of Developer*  
 Signature of Developer: *Michael J. Kelly*  
 Date: 11-17-19

**ENGINEER'S CERTIFICATION**

"I 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."

*Signature of Engineer*  
 Signature of Engineer: *John R. Muccolin*  
 Date: 11-14-19

For the Howard Soil Conservation District

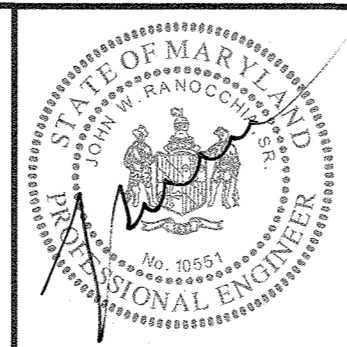
This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

*Signature of District Representative*  
 Howard Soil Conservation District  
 Date: 12/11/19

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *Signature* 12/23/19  
 Chief, Division of Land Development: *Signature* 1/14/20  
 Director: *Signature* 1-17-20

**MM CENTURY ENGINEERING**  
 CONSULTING ENGINEERS - PLANNERS  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 Fax: 443.589.2401

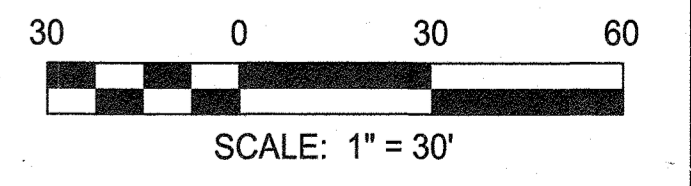


DESIGN BY: M.J.P.	
DRAWN BY: KAD/MSS	
CHECKED BY:	
DATE: 11-15-19	CEI
BY NO.	REVISIONS TO Site Layout, Grading, Utility Connections, SMM Facilities 11-15-19
	REVISION

DEVELOPER  
**PRESTON - SCHEFFENACKER PROPERTIES**  
 2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

**Erosion & Sediment Control Plan**  
 PARCEL 'I' - The Barn-Community Center  
**OXFORD SQUARE**  
 "A HOWARD COUNTY GREEN NEIGHBORHOOD"  
 TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
 ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
 REVISED SITE DEVELOPMENT PLAN SHEET 6 OF 18

C.E.I. PROJECT NUMBER: 131176.00  
 SCALE: As Shown





**B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION**

**DEFINITION**  
Using vegetation as cover to protect exposed soil from erosion.

**PURPOSE**  
To promote the establishment of vegetation on exposed soil.

**CONDITIONS WHERE PRACTICE APPLIES**  
On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization, soil preparation, soil amendments and topsoiling, seeding and mulching, temporary stabilization; and permanent stabilization.

**EFFECTS ON WATER QUALITY AND QUANTITY**  
Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemical carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

**SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.**

**ADEQUATE VEGETATIVE ESTABLISHMENT**

- 1. Adequate vegetative stabilization requires 95 percent groundcover.
- 2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
- 3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
- 4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

**B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION**

**DEFINITION**  
Establishment of vegetative cover on cut and fill slopes.

**PURPOSE**  
To provide timely vegetative cover on cut and fill slopes as work progresses.

**CONDITIONS WHERE PRACTICE APPLIES**  
Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

**CRITERIA**

- A. Incremental Stabilization - Cut Slopes
1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1):
a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
c. Perform Phase 2 excavation, prepare seedbed, and stabilize.
d. Overseed Phase 1 areas as necessary.
e. Perform final phase excavation, prepare seedbed, and stabilize.
f. Overseed previously seeded areas as necessary.

**NOTE: ONCE EXCAVATION HAS BEGUN, THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.**

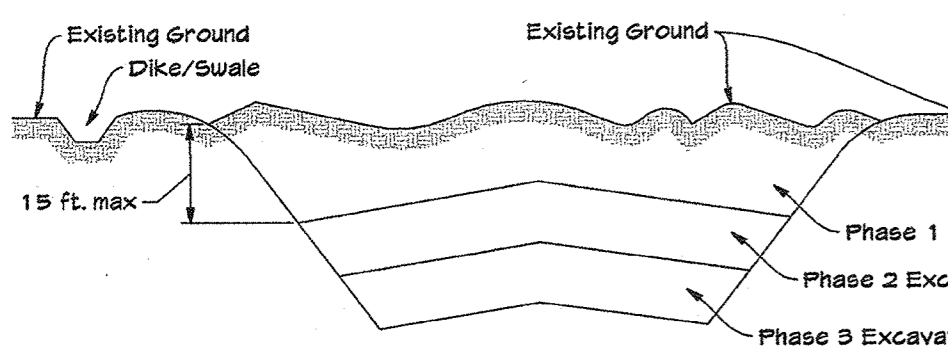


Figure B.1: Incremental Stabilization - Cut

B. Incremental Stabilization - Fill Slopes

- 1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet or when the grading operation ceases as described in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
b. At the end of the day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4.1. Place Phase 1 fill, prepare seedbed, and stabilize.
4.2. Place Phase 2 fill, prepare seedbed, and stabilize.
4.3. Place Phase 3 fill, prepare seedbed, and stabilize.
4.4. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

**NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN, THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.**

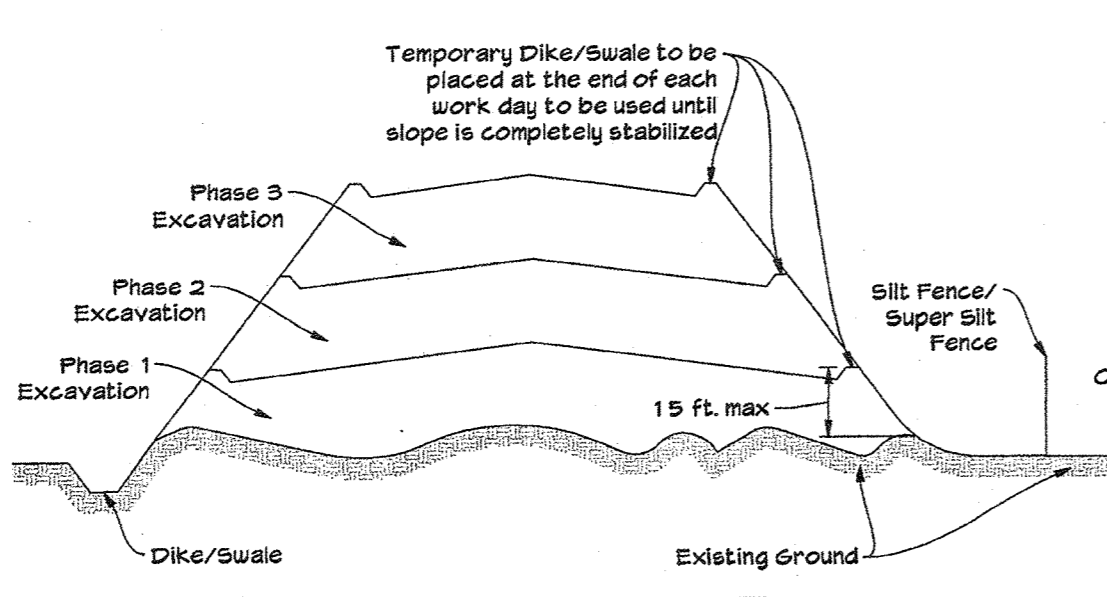


Figure B.2: Incremental Stabilization - Fill

**B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS**

**DEFINITION**  
The process of preparing the soils to sustain adequate vegetative stabilization.

**PURPOSE**  
To provide a suitable soil medium for vegetative growth.

**CONDITIONS WHERE PRACTICE APPLIES**  
Where vegetative stabilization is to be established.

**CRITERIA**

- A. Soil Preparation
1. Temporary Stabilization
1.1. Seed preparation consists of loosening soil to a depth of 3 to 5 inches by means of agricultural or construction equipment, such as disc harrow or chisel plow or rippers mounted on construction equipment. After soil is loosened, it must not be rolled or dragged smooth but left in roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
1.2. Apply fertilizer and lime as prescribed on the plans.
1.3. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by diking or other suitable means.
2. Permanent Stabilization
2.1. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
a. Soil pH between 6.0 to 7.0.
b. Soluble salts less than 500 parts per million (ppm).
c. Soil contains less than 40 percent clay but enough fine grained material (greater than 80 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 50 percent silt plus clay) would be acceptable.
d. Soil contains 1.5 percent minimum organic matter by weight.
e. Soil contains sufficient pore space to permit adequate root penetration.
2.2. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
2.3. 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.
2.4. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
2.5. Mix soil amendments into the top 3 to 5 inches of soil by diking 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-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING**

**DEFINITION**  
The application of seed and mulch to establish vegetative cover.

**PURPOSE**  
To protect disturbed soils from erosion during and at the end of construction.

**CONDITIONS WHERE PRACTICE APPLIES**  
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

**CRITERIA**

- A. Seeding
1. Specifications
1.1. All seed must meet the requirement of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
1.2. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
1.3. Inoculants: The inoculant for treating legume seed in the seed mixture must be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculants as cool as possible until used. Temperatures above 15 to 50 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
1.4. Sod and seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min) to permit dissipation of phytotoxic materials.
2. Application
2.1. Dry seeding: This includes use of conventional drop or broadcast spreaders.
a. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
b. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
2.2. Drill or Cutlapper Seeding: Mechanized seeders that apply and cover seed with soil.
a. Cutlapper seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
b. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
2.3. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
a. If fertilizer is being applied at the time of seeding, the application rates should be as follows: nitrogen, 100 pounds per acre total soluble nitrogen; P2O5 (phosphorus), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
b. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding on site and seed immediately without interruption.
c. When hydroseeding, do not incorporate into the soil.

B. Mulching

- 1. Mulch Materials (In order of preference)
1.1. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
1.2. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
a. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
b. WCFM, including dye, must contain no germination or growth inhibiting factors.
c. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must not contain elements or compounds at concentration levels that will be phytotoxic.
d. WCFM must conform to the following physical requirements: fiber length of approximately 1.0 millimeter, diameter approximately 1 millimeter, pH range of 4.0 to 9.5, ash content of 1.6 percent maximum and water holding capacity of 40 percent minimum.

- 2. Application
2.1. Apply mulch to all seeded areas immediately after seeding.
2.2. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
2.3. Wood cellulose fiber used as mulch must be applied at a net dry weight of 100 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
3.1. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
a. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
b. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 150 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
c. Synthetic binders such as Acrylic DLR (Ago-Tack), DCA-T, Petrosol, Terra Tack II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use 20 pounds of synthetic binders in areas of depressions or water pockets.
d. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

**B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION**

**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 Hardness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with the application rates, seeding dates, and seeding depths. If the 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 along with seed as noted in Section B-4-3 A.1.1b and maintain until the next seeding season.

Temporary Seeding Summary table with columns for No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), and Lime Rate. Includes entries for Annual Ryegrass, Barley, Foxtail Millet, and Pearl Millet.

**B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION**

**DEFINITION**  
To stabilize disturbed soils with permanent vegetation.

**PURPOSE**  
To use long-lived perennial grasses and legumes to establish permanent cover on disturbed soils.

**CONDITIONS WHERE PRACTICE APPLIES**  
Exposed soils where ground cover is needed for 6 months or more.

**CRITERIA**

- 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 Hardness Zone (from Figure B.3) and based on the site condition or purpose listed 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 3-42 - 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 (1.50 pounds per acre) at the time of seeding in addition to the seed 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 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 total mixture per acre.
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 Rye/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

- iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass areas. For establishment in high quality, intensively managed turf areas. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.
v. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Rye/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.
vi. 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 45 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.

**NOTES:** SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #10, "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 for Seeding for Turf Grass Mixtures
Western Maryland: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
Central Maryland: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 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 seedlings 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 seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

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. 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**

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 Summary table with columns for No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), and Lime Rate. Includes entries for Tall Fescue, Kentucky Bluegrass, and Perennial Ryegrass.

**DEVELOPER'S CERTIFICATION**

"I/We certify that all development and construction will be done according to this plan, and that any 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."
Signature: Michael Cheeky, Date: 10-8-16

**B-4-6 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS**

**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**

- A. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
B. The footprint of the stockpile must be sized to accommodate the anticipated volume of material stored on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
C. Runoff from the stockpile area must drain to a suitable sediment control practice.
D. Access the stockpile area from the upgrade side.
E. Clear water runoff into the stockpile area must be minimized by use of a diversion fence such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
F. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.

**OWNER**

KELLOGG - CCP, LLC

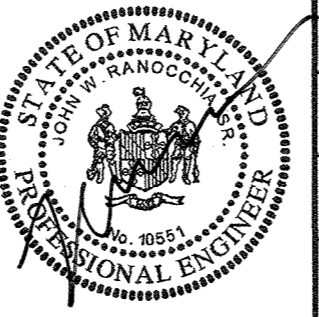
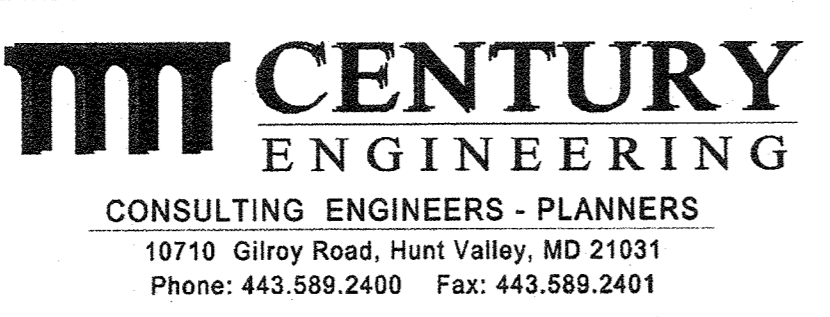
c/o DAVID P. SCHEFFENACKER, JR. MANAGING MEMBER

2330 WEST JOPPA ROAD, SUITE 190 LUTHERVILLE, MARYLAND 21093-4614 410-296-3800

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NUMBER: 10551 EXPIRATION DATE: 8/28/2019



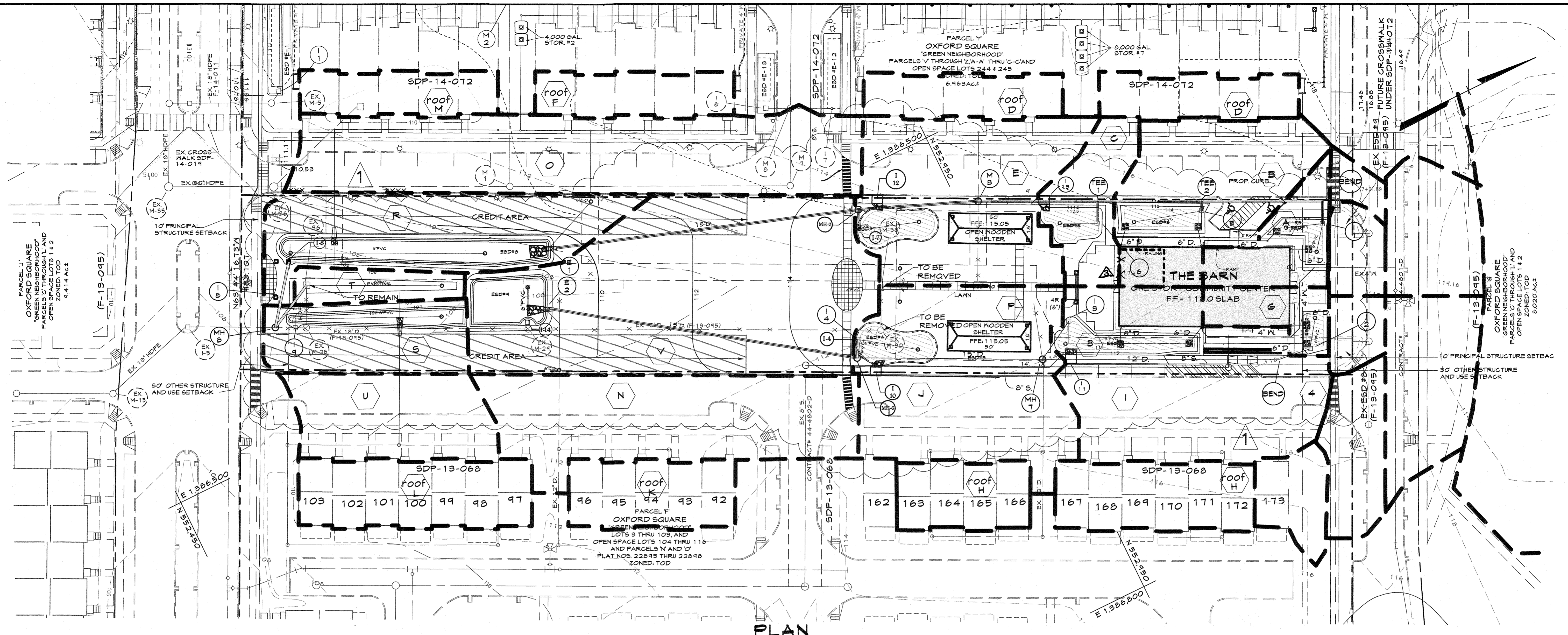
DESIGN BY: M.J.P., DRAWN BY: KAD/MSS, CHECKED BY: DATE: 3-10-17, REVISION table with columns for NO. and DATE.

DEVELOPER PRESTON - SCHEFFENACKER PROPERTIES, 2330 WEST JOPPA ROAD, SUITE 190 LUTHERVILLE, MARYLAND 21093-4614 410-296-3800

Erosion & Sediment Specifications PARCEL 'I' - The Barn-Community Center OXFORD SQUARE, 'A HOWARD COUNTY GREEN NEIGHBORHOOD' TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND SHEET 8 OF 18

C.E.I. PROJECT NUMBER 131176.00, SCALE:





**PLAN**

SCALE: 1"=30'

Drainage Area Data							
Structure #	Drainage Area#	Area Ac.	C	Zoned	% Impervious	MDE NOMENCLATURE	
ESD#1	1-1	A	0.07	7.7	TOD	70	M-6
ESD#2	1-2	G	0.05	0.75	TOD	66	M-6
ESD#3	1-3	I	0.32	0.77	TOD	71	M-6
ESD#4	1-4	P, J	0.28	0.76	TOD	69	M-6
ESD#5	1-5	B	0.19	0.70	TOD	75	M-6
ESD#6	1-6	C	0.09	0.95	TOD	95	M-6
ESD#7	1-7	P, E	0.27	0.76	TOD	70	M-6
ESD#8	1-8	D, F	0.05	0.75	TOD	66	M-6
ESD#9	1-9	K, N, V	1.10	0.8	TOD	66	M-6
ESD#10	9	L, S, U			TOD		M-6

NOTE: SEE SHEET 11 FOR ESD SUMMARY TABLE

**SUMMARY TABLE**

ESDV Required (new development):  
11,608 C.F.  
ESDV Provided: 24,978 C.F. **3**  
Pe: 1.9  
Q10, Q100  
Not Required  
\* 1" min. provided in 4 Micro-bioretenation facilities

It is due to this previously mass graded condition that the normal Howard County Soil Survey maps dated July 1968 do not apply. As a result of this site condition, the Owner/Developer have contracted ECS-Mid Atlantic, LLC of Hanover, Maryland. The Soil Report is dated November 2009 with an Addendum dated February 2010 that summarized the Soils Groups required for this SWM Report. The topography utilized for this plan of subdivision is based on aerial topography prepared by Harford Aerial Surveys dated December 2010 supplemented with field run topography prepared by Fisher Collins and Carter Inc.

LEGEND	
	Existing Minor Contour
	Existing Major Contour
	Existing Edge of Road
	Existing Stream
	Existing Trees/Tree Line
	Existing Curb & Gutter
	Existing Sidewalk
	Existing Storm Drains
	Existing Water Main
	Existing Sanitary Sewer
	Tract Boundary
	Utility Easement Line
	Existing Building
	Proposed Grades
	Proposed Sewer
	Proposed Water and Fire Hydrant
	Proposed Storm Drain and Inlets
	Proposed Curb & Gutter
	Proposed Sidewalk
	Proposed Stormwater Management Facility
	Proposed Pavers/Walkways
	Proposed Drainage Divide

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

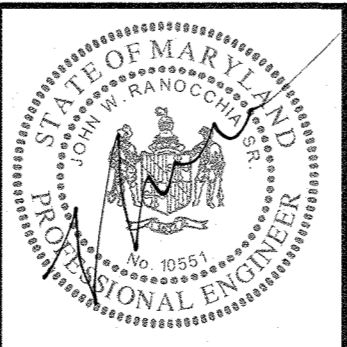
LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2021

SEE SHEET 3 FOR FACILITY ADJUSTMENT

**OWNER**  
KELLOGG - CCP, LLC  
c/o DAVID P. SCHEFFENACKER, JR.  
MANAGING MEMBER  
100 WEST ROAD, SUITE 304  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Development Engineering Division  
Chief, Division of Land Development  
Director

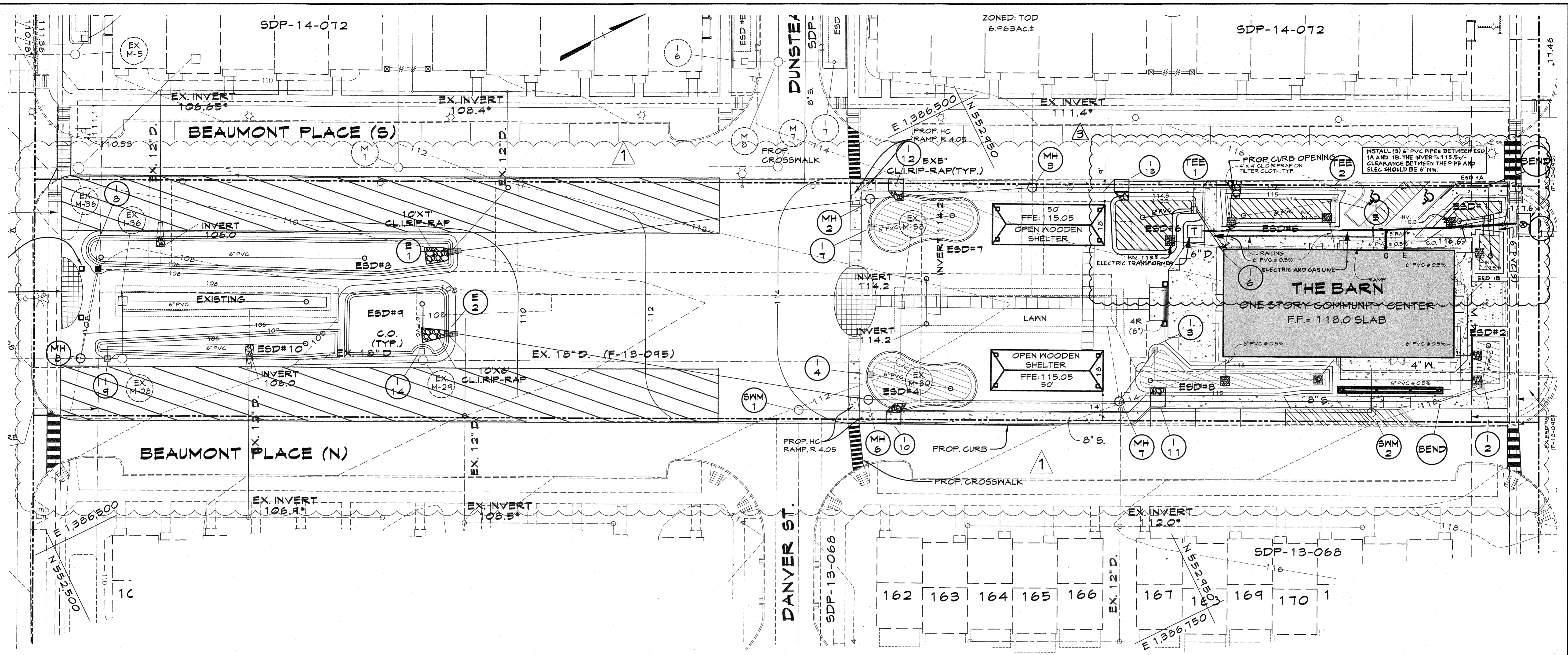
**CENTURY ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 Fax: 443.589.2401



DESIGN BY:	M.J.P.
DRAWN BY:	KAD/MSS
CHECKED BY:	CEI <b>3</b>
DATE:	11-15-19
REVISION	NO.
DATE	DATE

**DEVELOPER**  
PRESTON - SCHEFFENACKER PROPERTIES  
2330 WEST JOPPA ROAD, SUITE 190  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

Stormwater Management/Storm Drain Drainage Area Map  
**PARCEL 'I' - The Barn-Community Center**  
**OXFORD SQUARE**  
"A HOWARD COUNTY GREEN NEIGHBORHOOD"  
TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
REVISED SITE DEVELOPMENT PLAN SHEET 9 OF 18  
C.E.I. PROJECT NUMBER 131176.00  
SCALE: As Shown



**NOTE:**  
 EX. ROOF DRAIN INVERTS  
 TO BE VERIFIED BY THE CONTRACTOR PRIOR  
 TO LAYING ANY PIPE

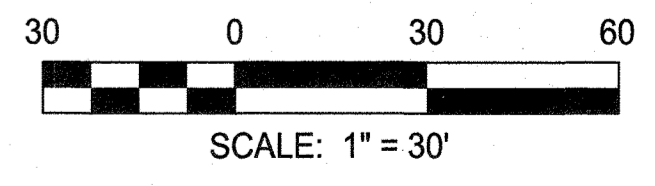
SEE SHEET 11 for ESD SUMMARY TABLE

**NOTE:**  
 ESD'S 1-9 (M-6) ARE  
 MICRO-BIORETENTION FACILITIES TO BE PRIVATELY OWNED AND MAINTAINED.

**PLAN**  
 SCALE: 1"=20'

**LEGEND**

	Existing Minor Contour		Proposed Grades
	Existing Major Contour		Proposed Sewer
	Existing Edge of Road		Proposed Water and Fire Hydrant
	Existing Stream		Proposed Storm Drain and Inlets
	Existing Trees/Tree Line		Proposed Curb & Gutter
	Existing Curb & Gutter		Proposed Sidewalk
	Existing Sidewalk		Proposed Stormwater Management Facility
	Existing Storm Drains		Proposed Pavers/Walkways
	Existing Water Main		
	Existing Sanitary Sewer		
	Tract Boundary		
	Utility Easement Line		
	Existing Building		



**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2021

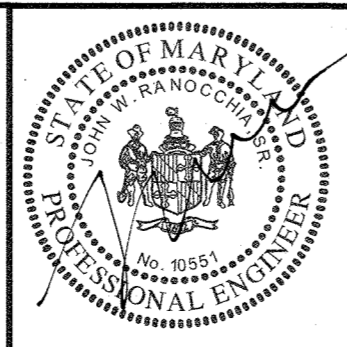
**OWNER**  
 KELLOGG - CCP, LLC  
 c/o DAVID P. SCHEFFENACKER, JR.  
 MANAGING MEMBER  
 100 WEST ROAD, SUITE 304  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

**DEVELOPER**  
 PRESTON - SCHEFFENACKER PROPERTIES  
 2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

**Stormwater Management Plan**  
 PARCEL "I" - The Barn-Community Center  
 OXFORD SQUARE  
 "A HOWARD COUNTY GREEN NEIGHBORHOOD"  
 TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
 ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
 REVISED SITE DEVELOPMENT PLAN SHEET 10 OF 18  
 C.E.I. PROJECT NUMBER 131176.00  
 SCALE:

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director  
 Date: 12/22/19  
 Date: 1/14/20  
 Date: 1-17-20

**CENTURY ENGINEERING**  
 CONSULTING ENGINEERS - PLANNERS  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 Fax: 443.589.2401



DESIGN BY:	M.J.P.	
DRAWN BY:	KAD/MSS	
CHECKED BY:	CEI	
DATE:	11-15-19	
REVISION	DATE	
1	Revision to facilities 1, 5 and 6	5/5/21
2	Updated Drainage Area Data, Site Layout & SWM Facility Revisions	11-15-19

S:\2013\Facilities\131176\01 Oxford Square Barn with Pool\OXSD Drawings\SDP Barn with Pool\OXSD Barn (SDP-14-072) Stormwater Management Plan.dwg Nov 15, 2019 10:15am afinech

**NOTE TO CONTRACTOR:**

THE CONTRACTOR SHALL SUPPLY A LETTER CERTIFICATION TO THE STORMWATER MANAGEMENT AS-BUILT CERTIFYING ENGINEER. THIS LETTER CERTIFICATION SHALL BE PREPARED BY A MARYLAND LICENSED GEOTECHNICAL ENGINEER WHICH CERTIFIES WITH REGARD TO THE MICRO BIORETENTION PLANTING SOIL THE FOLLOWING:

- MEETS THE MARYLAND DEPARTMENT OF THE ENVIRONMENT SPECIFICATION.
- HAS BEEN UNIFORMLY MIXED PRIOR TO PLACEMENT.
- HAS BEEN LAB TESTED TO ACHIEVE A PERMEABILITY OF NO LESS THAN 1/2 FOOT PER DAY AND NO MORE THAN 2 FEET PER DAY.
- THE PERMEABILITY TEST METHOD UTILIZED.
- THE PERMEABILITY TEST RESULTS.
- THE MIX GRADATION (T 88).
- RECOMMENDATIONS FOR COMPACTION DURING PLACEMENT TO ARCHIVE TARGET PERMEABILITY.

THE CONTRACTOR RESPONSIBLE FOR INSTALLING THE MICRO-BIORETENTION FACILITY MUST PROVIDE A LETTER TO THE STORMWATER MANAGEMENT AS-BUILT CERTIFYING ENGINEER WHICH CERTIFIES THAT THE PLANTING SOIL (PS) HAS BEEN KEPT FREE OF CONTAMINATION PRIOR TO ITS PERMANENT PLACEMENT IN THE FACILITY.

STRUCTURE SCHEDULE			
NO.	TYPE	SIZE	DETAIL
I-1	NYLOPLAST	12"	
I-2	NYLOPLAST	12"	
I-3	NYLOPLAST	12"	
I-4	NYLOPLAST	12"	
I-5	NYLOPLAST	12"	
I-6	NYLOPLAST	12"	
I-7	NYLOPLAST	12"	
I-8	TYPE 2"		NO CO STD. DETAIL D.4.10
I-9	TYPE 2"		NO CO STD. DETAIL D.4.10
I-10	PRE-CAST COG	5'-0"	NO 374.68
M-1	STANDARD PRE-CAST MANHOLE	4'-0"	NO CO STD. DETAIL G.9.12
M-2	STANDARD PRE-CAST MANHOLE	4'-0"	NO CO STD. DETAIL G.9.12
M-3	STANDARD PRE-CAST MANHOLE	4'-0"	NO CO STD. DETAIL G.9.12
M-4	STANDARD PRE-CAST MANHOLE	4'-0"	NO CO STD. DETAIL G.9.12
M-5	STANDARD PRE-CAST MANHOLE	4'-0"	NO CO STD. DETAIL G.9.12
M-6	STANDARD PRE-CAST MANHOLE	4'-0"	NO CO STD. DETAIL G.9.12
M-7	STANDARD PRE-CAST MANHOLE	4'-0"	NO CO STD. DETAIL G.9.12
M-8	STANDARD PRE-CAST MANHOLE	4'-0"	NO CO STD. DETAIL G.9.12
I-11	PRE-CAST COG	5'-0"	MD 374.68
I-12	PRE-CAST COG	5'-0"	MD 374.68
I-13	PRE-CAST COG	5'-0"	MD 374.68
I-14	TYPE 2"		NO CO STD. DETAIL D.4.10

PIPE SCHEDULE	
TYPE	LINEAR FEET
6" SAN	25
12" HDPE	120
15" HDPE	300
4" WATER	120
6" SAN	255

Item	Specification	Notes	Plantings are site-specific
Plantings	See Appendix A Table A.4	n/a	Plantings are site-specific
Planting Soil	Loamy Sand (60-65%) & compost (35-40%) or Sandy Loam (30%) coarse sand (30%) & compost (40%)	n/a	USDA Soil types loamy sand and sandy loam; clay content <5%
Organic Content	Min. 10% by dry weight (ASTM D 2974)	n/a	
Mulch	Shredded Hardwood	n/a	Aged 6 months, minimum; no pine or wood chips
Pea Gravel Diaphragm	Pea gravel: ASTM D-449	No. 8 or No. 9 (1/8" to 3/8")	
Curtain Drain	Ornamental stone, washed	stone: 2" to 5"	
Geotextile		n/a	PE Type I nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	No. 57 or No. 6 Aggregate (3/8" to 3/4")	
Underdrain piping	F 158, Type PS 28 or AASHTO M-278	4" or 6" Rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf @ 6" on center; 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth. 1" x 6" slots @ 6" on center, 5 spaced radially around pipe.
Poured in place concrete (if required)	MSHA Mix No. 3, fc=3500 psi @ 28 days, normal weight air-entrained, reinforcing to meet ASTM-615-60	n/a	on-site testing of poured in place concrete required 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved State or local standards requires design or approvals sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 308R-09; vertical loading (H-10 or H-20); allowable horizontal loading (based on soil pressures); and analysis of potential cracking.
Sand	AASHTO M-6 or ASTM C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

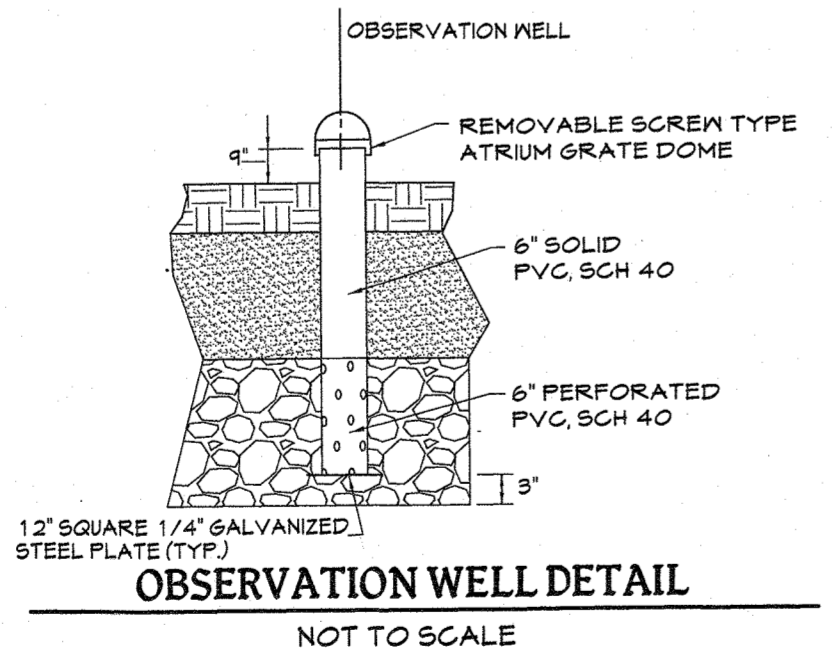
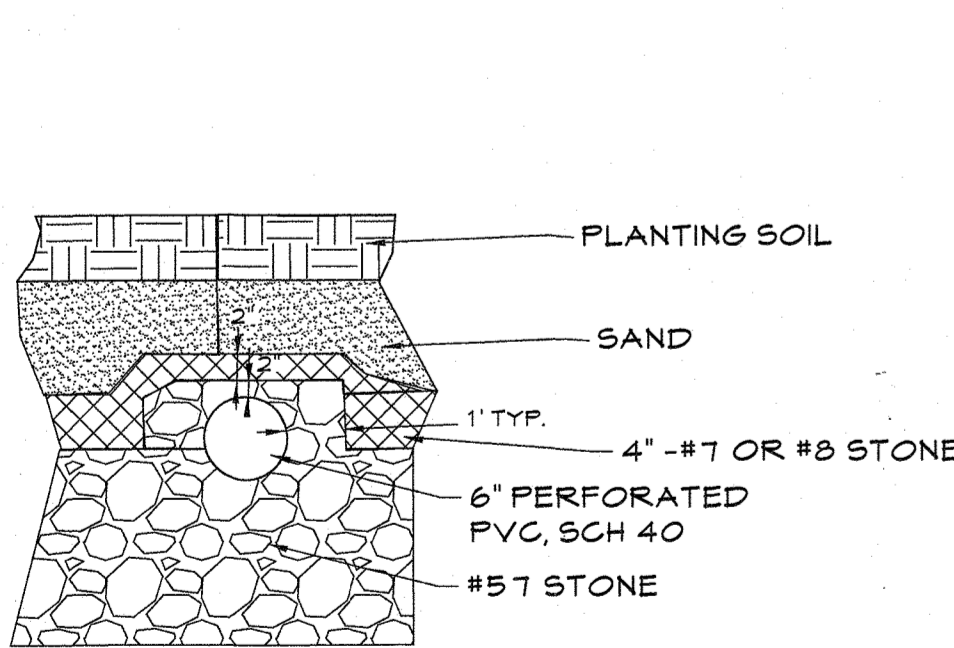
**PLANTING SOIL**

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretentation practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content - Media shall have a clay content of less than 5%.
- pH Range - Should be between 5.5 - 7.0. Amendments (e.g. lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled planting soil. If planting soil is imported, then a texture analysis shall be performed for each location where the planting soil was excavated.



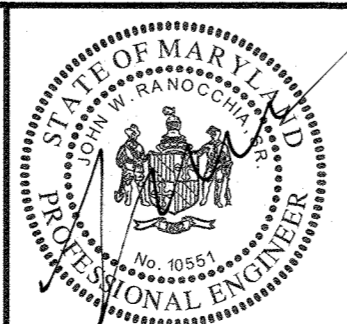
**UNDERDRAIN SECTION**  
NOT TO SCALE

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2021

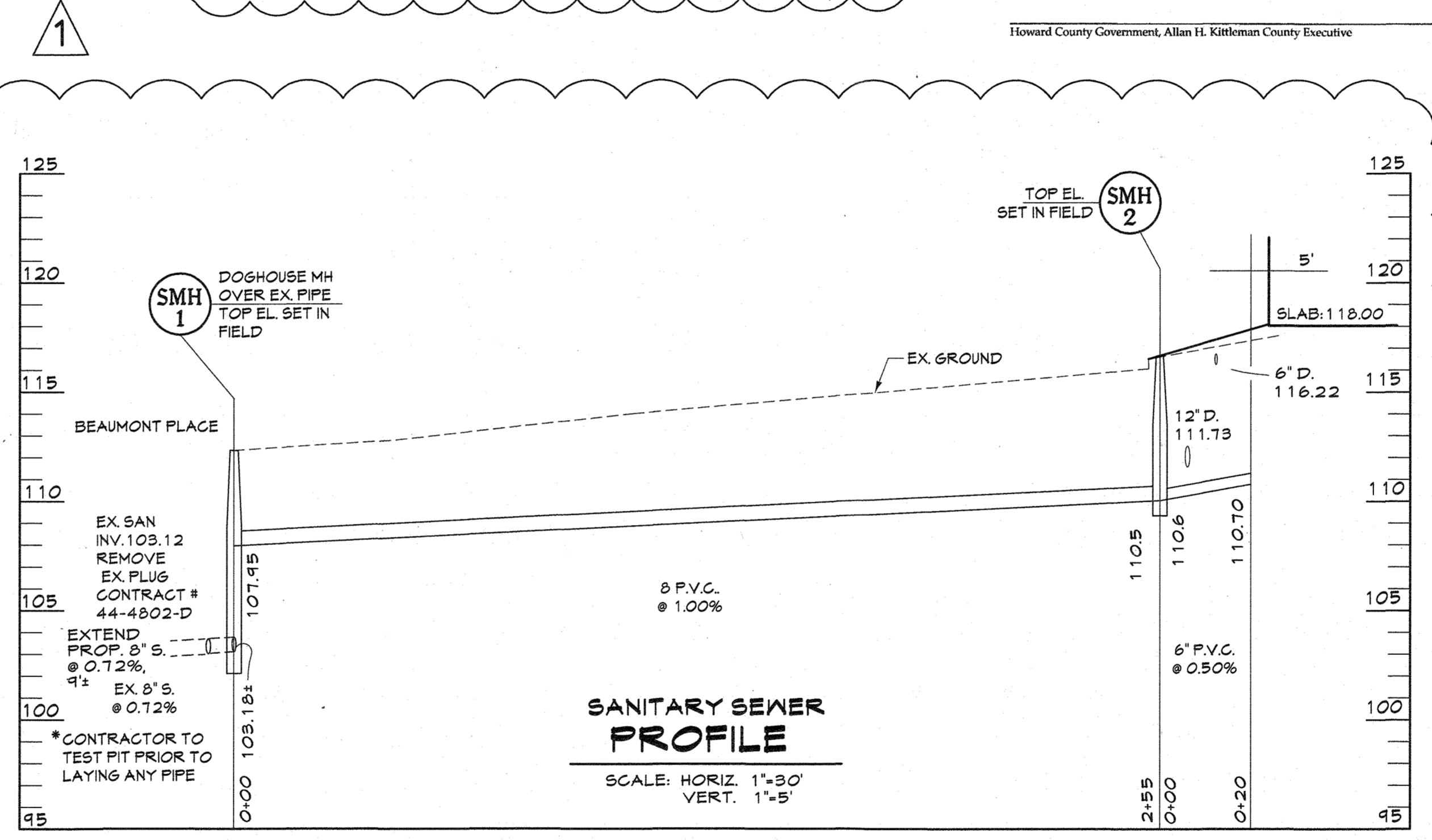
**M CENTURY ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 Fax: 443.589.2401



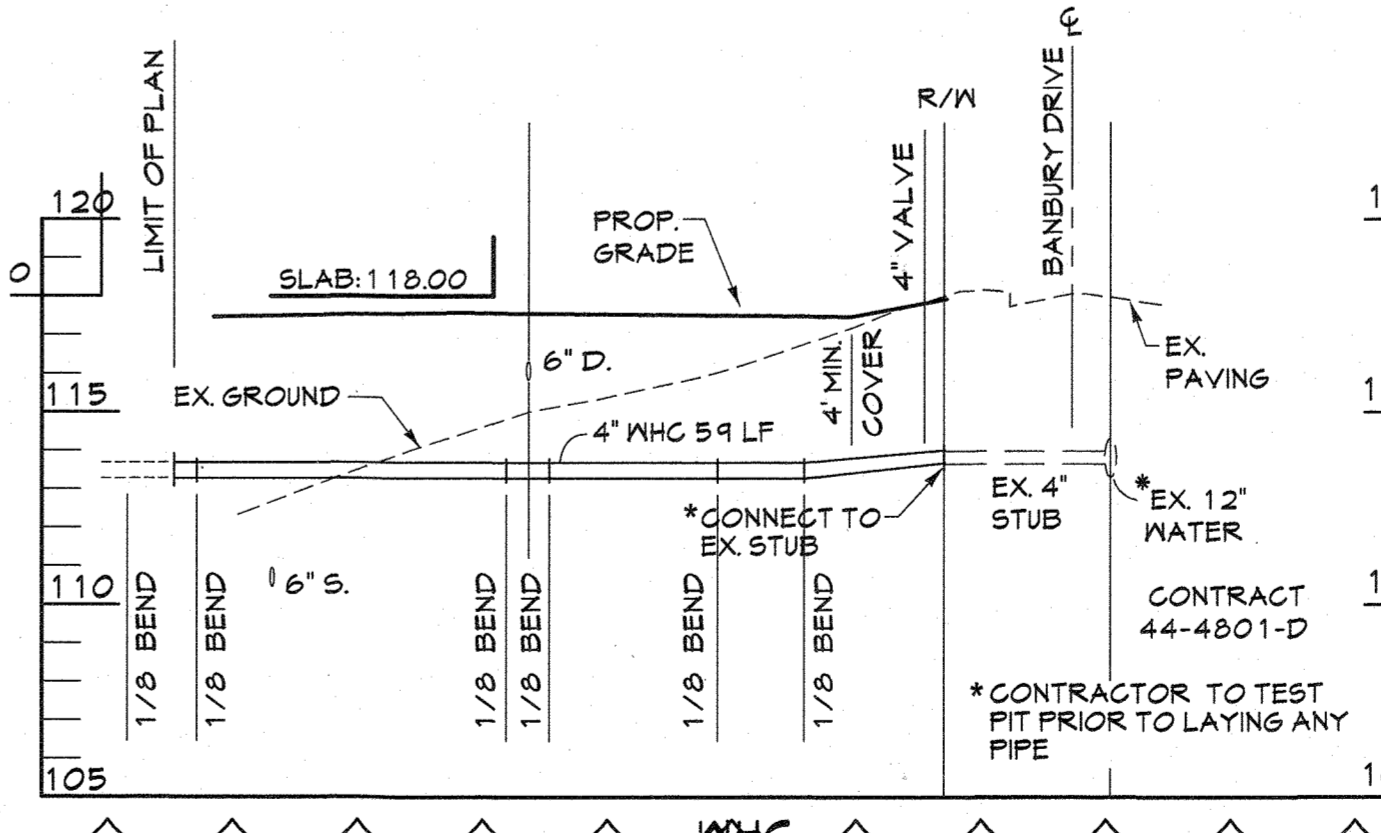
DESIGN BY:	M.J.P.		
DRAWN BY:	KAD/MSS		
CHECKED BY:	CEI	Revision to facilities 1, 5 and 6	5-5-21
DATE:	11-15-19	Adjustments to Structure/Pipe Schedule, ESD # Micro-Bio Summary Table, Sanitary Sewer and WMC Profile	11-15-19
BY:	NO.	REVISION	DATE

Facility #	Drainage Area	Impermeable Area	PE	ESDv (req @ P=1.0)	ESDv Prov. @ Ach. Pt	REV(25MSDv)	
Facility Type	s.f.	Treated s.f.	Achieved	cu.ft.	cu.ft.	cu.ft.	
1	Micro-Bioretentation	3,250	2,270	2.6	184	478	281
2	Micro-Bioretentation	2,217	1,625	2.6	131	254	190
3	Micro-Bioretentation	13,933	9,825	1.38	795	822	613
4	Micro-Bioretentation	12,685	8,781	1.9	711	649	800
5	Micro-Bioretentation	8412	6219	1.3	502	652	374
6	Micro-Bioretentation	4442	4249	2.6	337	877	583
7	Micro-Bioretentation	11,581	8,082	1.9	1229	1001	800
8	Micro-Bioretentation	23,252	23,252	2.6	1841	2080	3,618
9	Micro-Bioretentation	19,411	19,411	1.9	1537	1228	2,215
10	Micro-Bioretentation	11,664	11,664	1.9	923	882	1,323
Existing						831	376
Micro-Bioretentation							
DA #1	110,927 s.f.	95,378 s.f.	1.90	7616	12,172	12,806	
	2.55 Ac.	2.19 Ac.	Achieved	cu.ft.	Provided	Provided	
Total = 24,978 cu.ft.							

Note: Access streets Beaumont Place North and South as shown on Drainage Area Map. These areas are shown on F-13-095, SDP-13-068 and SDP-14-072.



**SANITARY SEWER PROFILE**  
SCALE: HORIZ. 1"=30' VERT. 1"=5'



**WMC PROFILE**  
SCALE: HORIZ. 1"=30' VERT. 1"=5'

**HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING**  
3430 Courthouse Drive • Elkton City, Maryland 21043 • 410-313-2350  
Voice/Relay FAX 410-313-3467

Valdis Lazdins, Director  
May 23, 2016

Mr. Michael Piarunuzzi, RIA  
Century Engineering  
10710 Gilroy Road  
Hunt Valley, Maryland 21031

Re: Oxford Square, Parcel I (The Barn)  
Design Manual, Waiver  
SDP-15-074

Election District - I  
Tax Map - 78  
Parcel - 761

Dear Mr. Piarunuzzi:

I am writing in reference to your letter dated May 17, 2016, requesting a waiver from Design Manual, Volume IV, Standard Detail D.9-094 to allow the connection of a 12" HDPE pipe into an existing 6" and 24" HDPE pipes in lieu of the 36" minimum diameter concrete pipe using 18" x 12" and 24" x 12" watertight fittings.

This Division has decided to **APPROVE** the request subject to providing the detail of the connection on the plans as the pipes in question are privately owned and maintained and there is no adverse impact to existing or proposed County infrastructure.

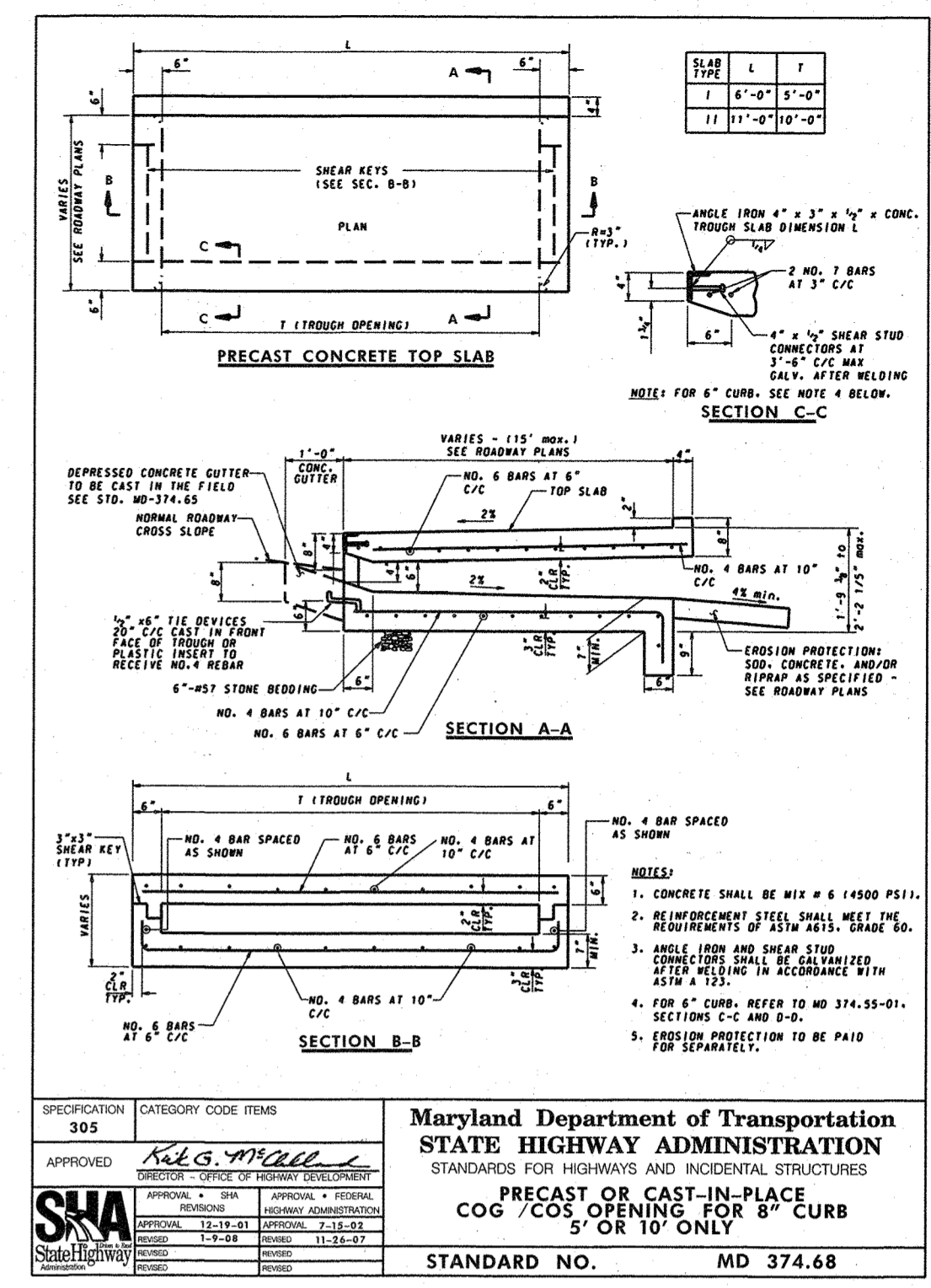
Please contact Mr. Philip M. Thompson or me at 410-313-2420 if you have any questions regarding this matter.

Very truly yours,  
Chad Edmondson, P.E., Chief  
Development Engineering Division

CE/psd  
cc: Thomas E. Butler, Deputy Director, Department of Public Works  
Kent Shestrebok, Department of Planning and Zoning  
Bob Ensor, Howard Soil Conservation District

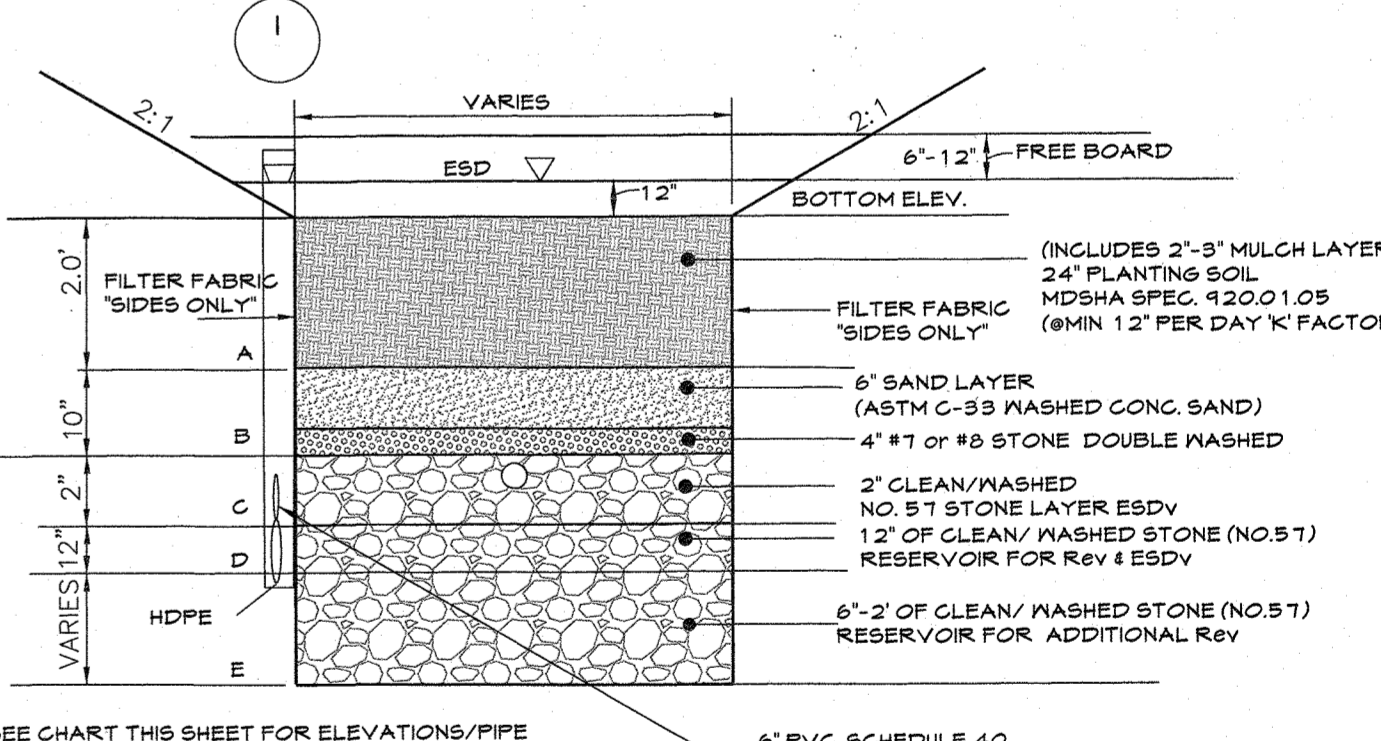
RECEIVED  
MAY 27 2016  
Century Engineering Inc.

Howard County Government, Allan H. Kittiman County Executive      www.howardcountymd.gov



Facility No.	Surface El.	ESDv Stor. EL.	A	B	C	D	E
ESD # 1	115.50	116.50	113.50	112.67	112.50	111.50	110.00
ESD # 2	116.00	117.00	114.00	113.17	113.00	112.00	110.50
ESD # 3	114.00	115.00	112.00	111.17	111.00	110.00	108.50
ESD # 4	112.80	113.80	110.80	109.97	109.80	108.80	107.30
ESD # 5	114.00	115.00	112.00	111.17	111.00	110.00	108.50
ESD # 6	113.50	114.50	112.00	111.17	111.00	110.00	108.50
ESD # 7	112.80	113.80	110.80	109.97	109.80	108.80	107.30
ESD # 8	106.00	107.00	104.00	103.17	103.00	102.00	97.81
ESD # 9	106.00	107.00	104.00	103.17	103.00	102.00	97.92
ESD # 10	106.00	107.00	104.00	103.17	103.00	102.00	97.92

FOR ESD # 10 (I- 14) INVERT OF RISER TO MATCH EX. 15" HDPE 101.8'-1"



**MICRO BIORETENTION (TYPICAL)**  
NOT TO SCALE

OWNER  
**KELLOGG - CCP, LLC**  
c/o DAVID P. SCHEFFENACKER, JR.  
MANAGING MEMBER

100 WEST ROAD, SUITE 304  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division      12/23/19  
Date

Chief, Division of Land Development      1/14/20  
Date

Director      1-17-20  
Date

**Stormwater Details, Sanitary & Water Profile**

PARCEL 'I' - The Barn-Community Center  
**OXFORD SQUARE**

"A HOWARD COUNTY GREEN NEIGHBORHOOD"  
TAX MAP: 38    PARCEL: 761    GRID: 20    ZONED: TOD  
ELECTION DISTRICT 1    HOWARD COUNTY, MARYLAND

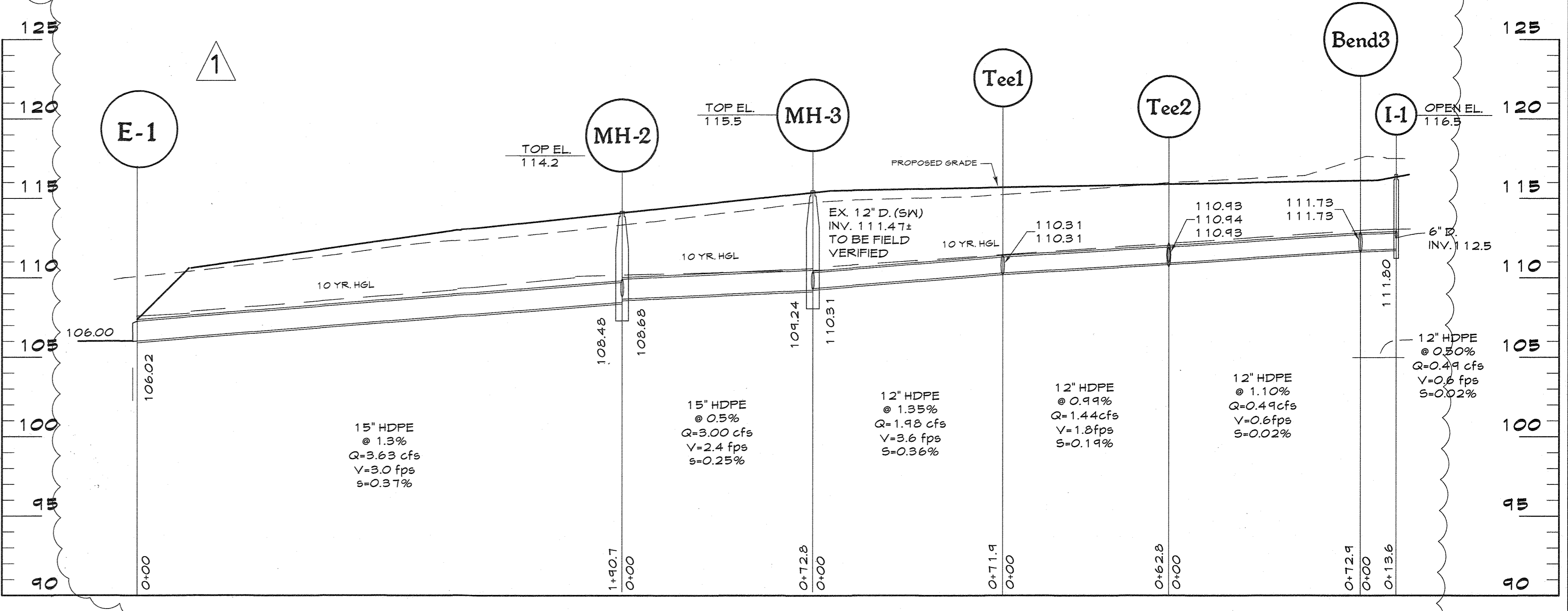
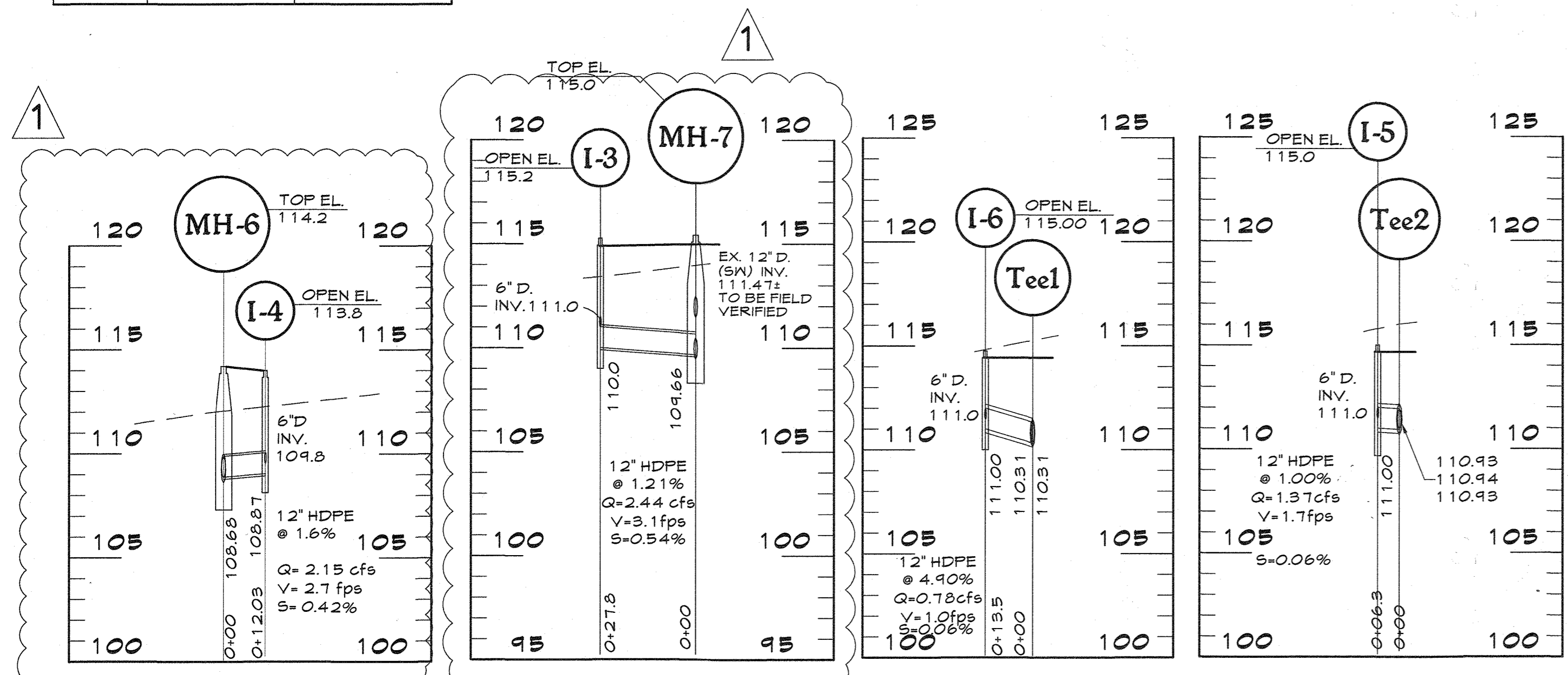
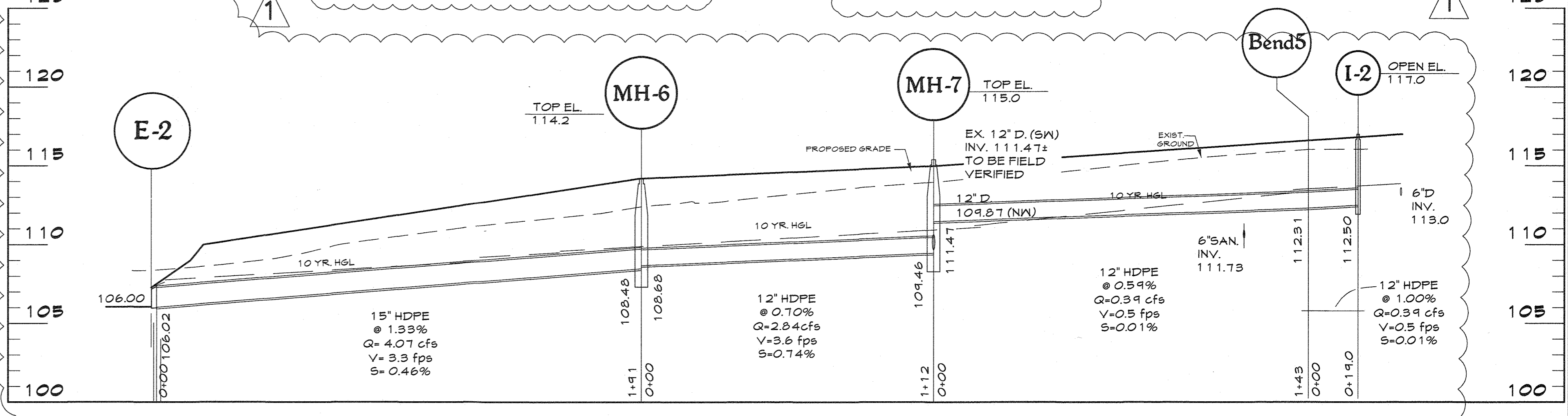
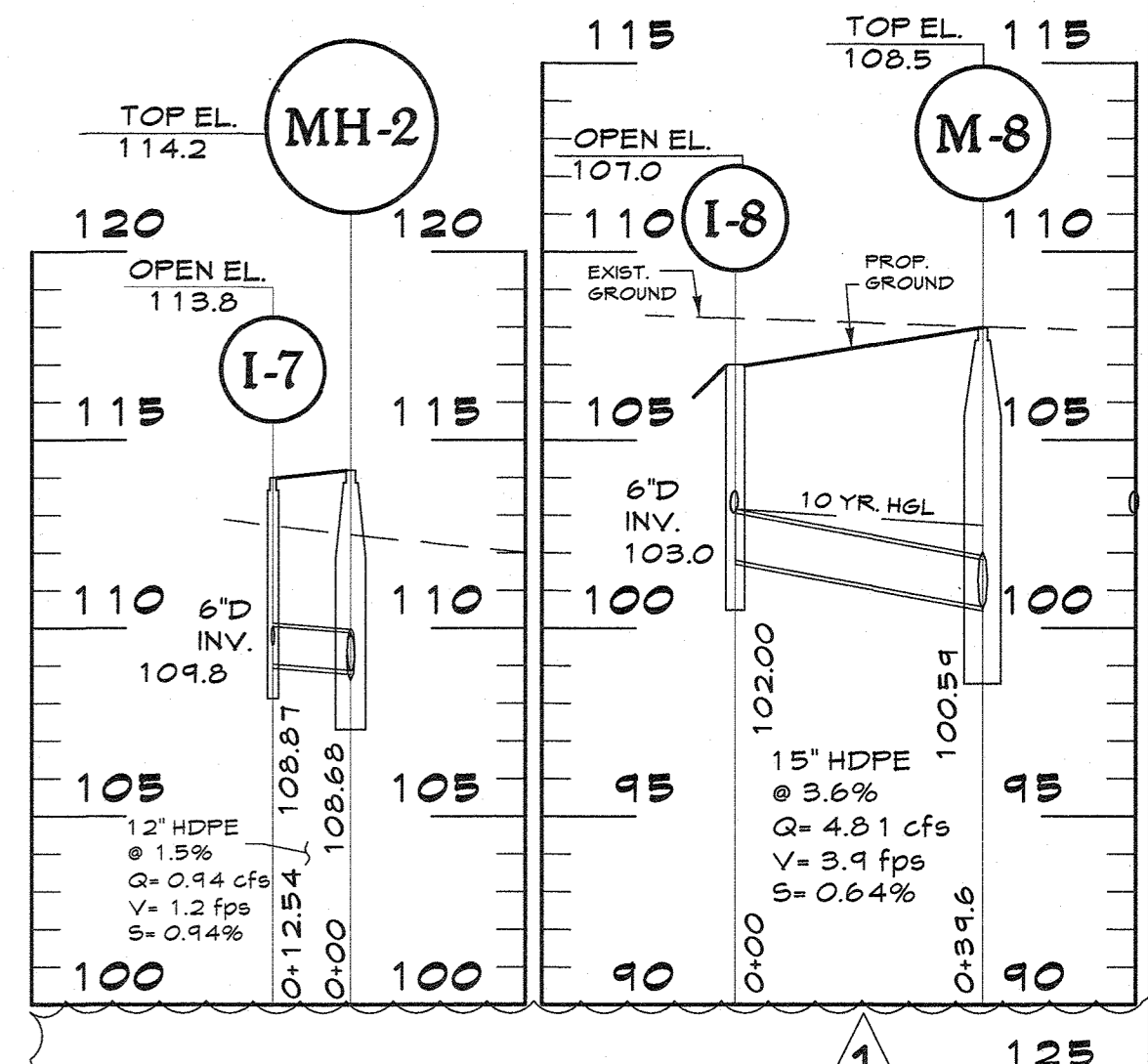
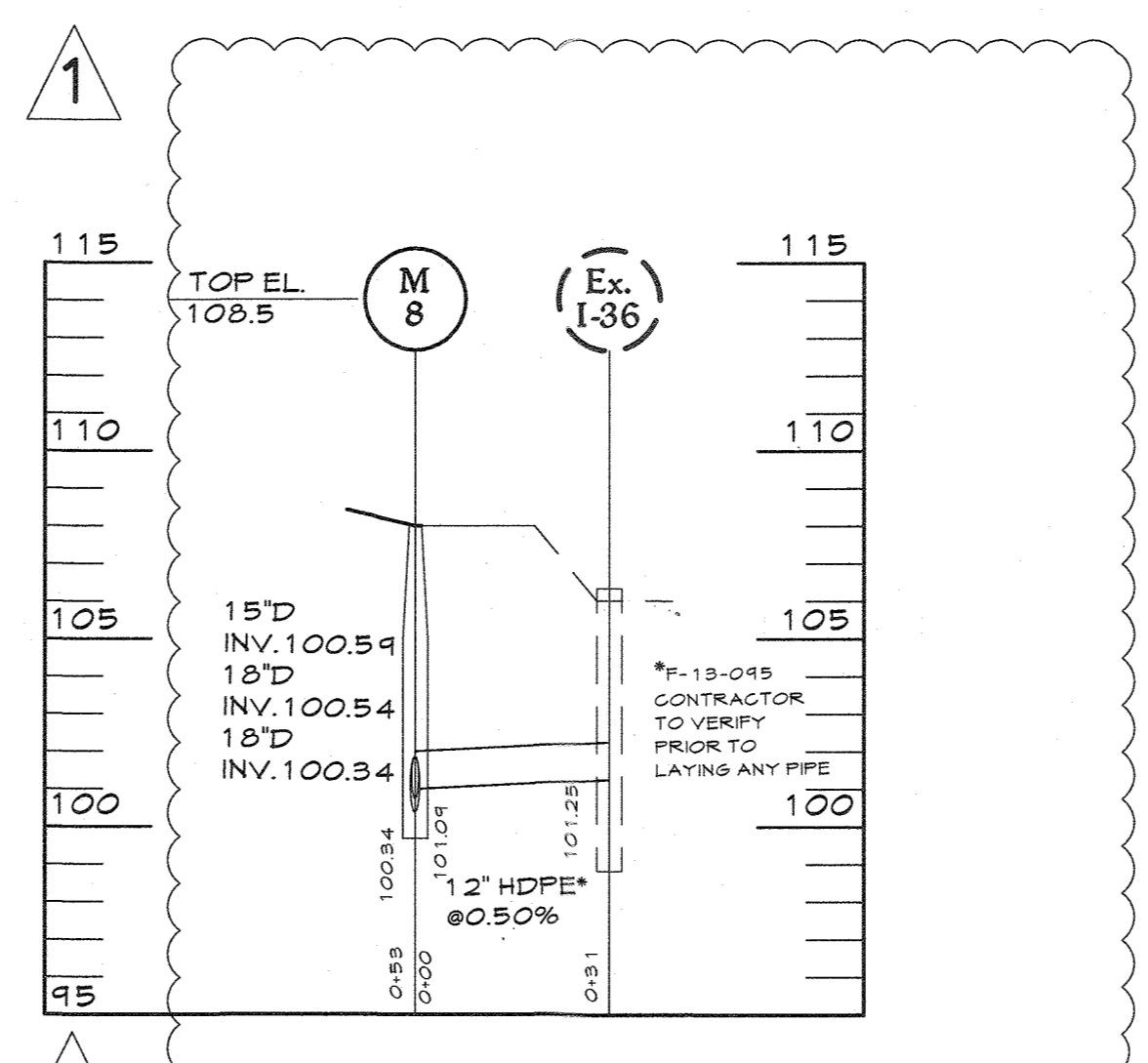
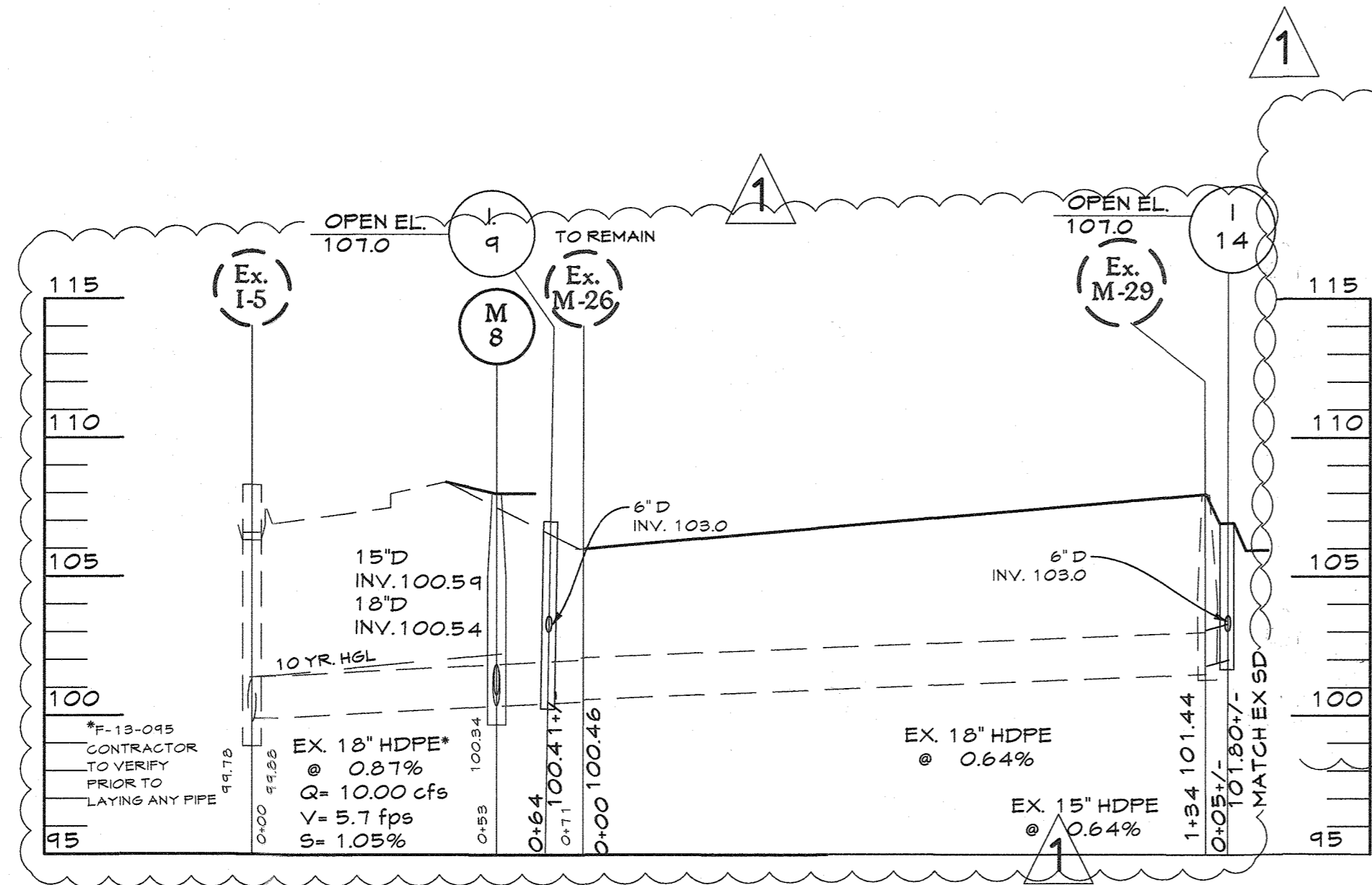
REVISED SITE DEVELOPMENT PLAN      SHEET 11 OF 18

C.E.I. PROJECT NUMBER: 131176.00  
SCALE: As Shown

SDP - 15 - 074A

STRUCTURE SCHEDULE		
NO.	NORTHING	EASTING
MH-8	552547.4495	1386430.2424
MH-2	552894.04	1386520.58
MH-3	552961.5393	1386547.8470
BEND2	552873.9851	1386504.6351
BEND3	553148.1254	1386638.8883
TEE1	553026.2628	1386571.2092
TEE2	553082.6075	1386606.9201
I-8	552570.77	1386398.30
I-9	552559.1554	1386434.5949
I-1	553142.1255	1386651.1400
I-14	552885.41	1386495.13

STRUCTURE SCHEDULE		
NO.	NORTHING	EASTING
MH-6	552854.71	1386601.66
MH-7	552854.71	1386600.66
BEND5	553083.49	1386713.07
I-2	553102.4395	1386715.4301
I-3	552978.9661	1386636.6995
I-4	552860.73	1386590.24
I-5	553079.9736	1386612.6097
I-6	553020.1996	1386591.4729
I-7	552889.23	1386532.35
E-1	552714.99	1386459.36
E-2	552697.53	1386491.14



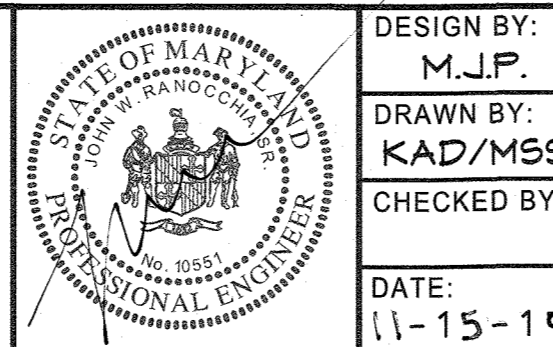
**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2021

**PROFILES**  
 SCALE:  
 1"=30'(HORIZ.)  
 1"=5'(VERT.)

**OWNER**  
 KELLOGG - CCP, LLC  
 c/o DAVID P. SCHEFFENACKER, JR.  
 MANAGING MEMBER  
 100 West Road, Suite 301  
 Towson, MARYLAND 21204  
 410-296-3800

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

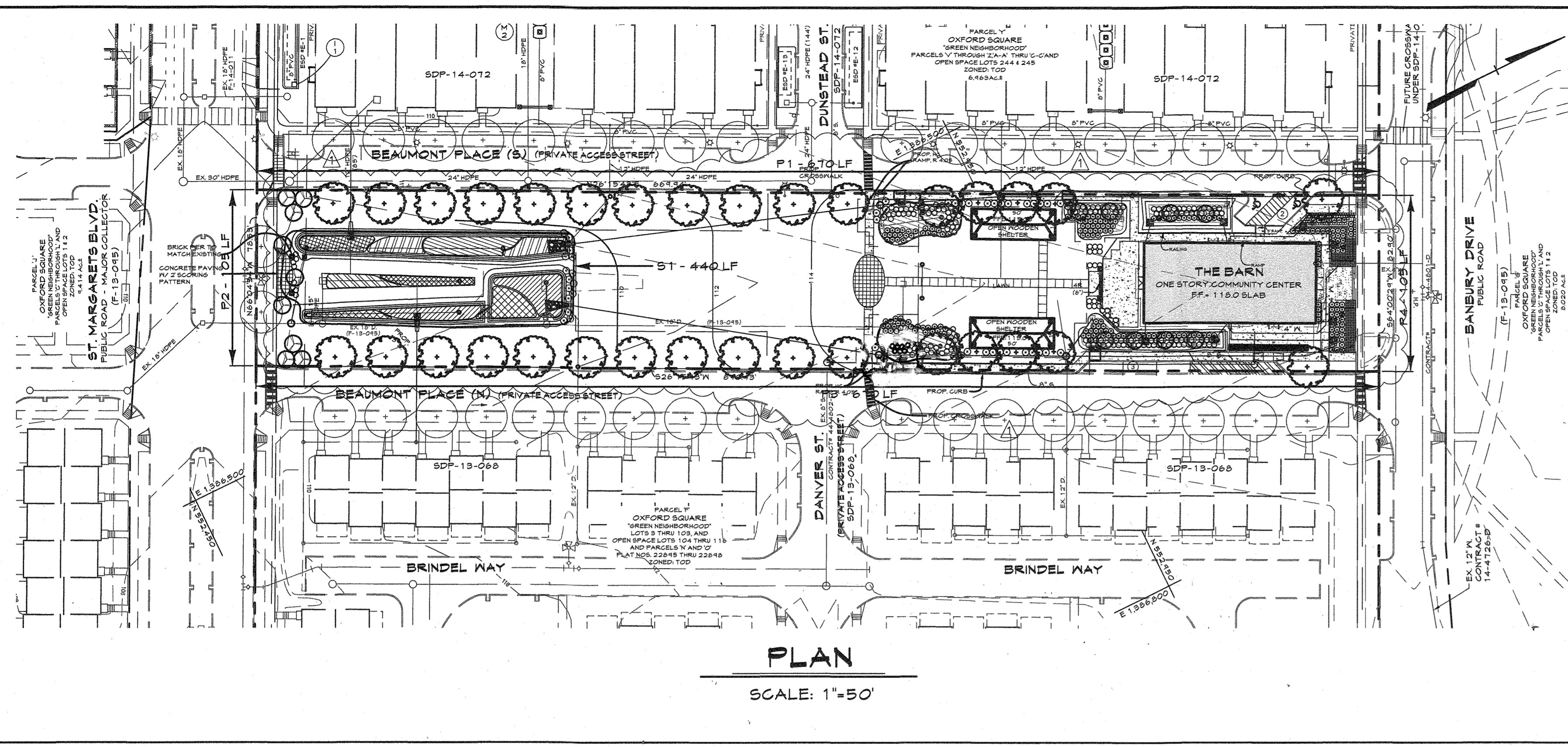
**MM CENTURY ENGINEERING**  
 CONSULTING ENGINEERS - PLANNERS  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 Fax: 443.589.2401



DESIGN BY:	M.J.P.
DRAWN BY:	KAD/MSS
CHECKED BY:	
DATE:	11-15-19
BY:	NO.
REVISION:	DATE

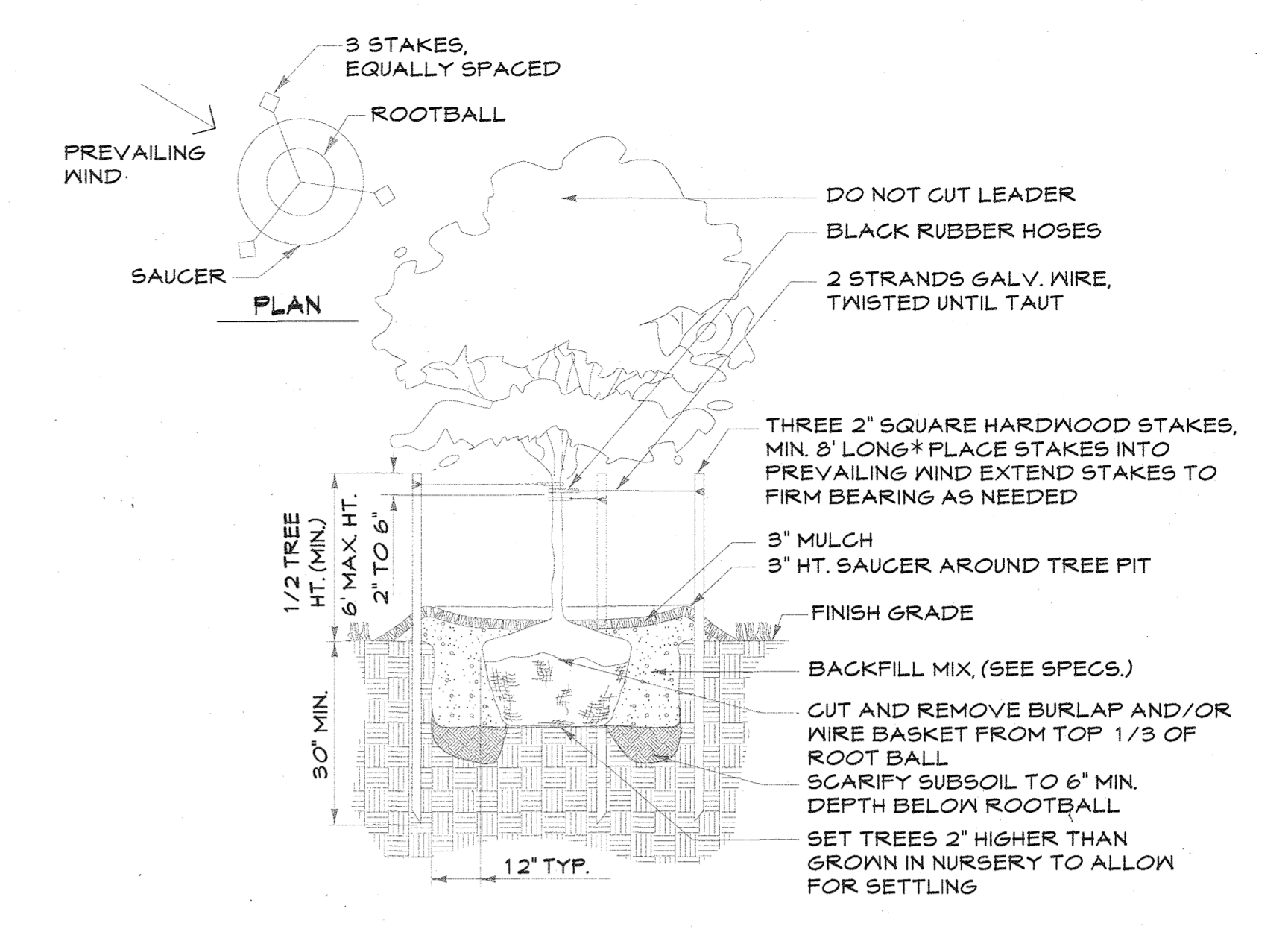
**DEVELOPER**  
 PRESTON - SCHEFFENACKER PROPERTIES  
 2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

**Site Development Plan**  
 PARCEL 'I' - The Barn-Community Center  
**OXFORD SQUARE**  
 "A HOWARD COUNTY GREEN NEIGHBORHOOD"  
 TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
 ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
 REVISED SITE DEVELOPMENT PLAN SHEET 12 OF 18  
 C.E.I. PROJECT NUMBER 131176.00  
 SCALE:



PLAN  
SCALE: 1"=50'

- ### LEGEND
- Existing Minor Contour
  - Existing Major Contour
  - Existing Edge of Road
  - Existing Stream
  - Existing Trees/ Tree Line
  - Existing Curb & Gutter
  - Existing Sidewalk
  - Existing Storm Drains
  - Existing Water Main
  - Existing Sanitary Sewer
  - Tract Boundary
  - Utility Easement Line
  - Existing Building
  - Existing Grades
  - Proposed Sewer
  - Proposed Water and Fire Hydrant
  - Proposed Storm Drain and Inlets
  - Proposed Curb & Gutter
  - Proposed Sidewalk
  - Existing Tree
  - Proposed Shade Tree
  - Proposed Ornamental Tree
  - Proposed Shrubs
  - Proposed Stormwater Management Facility
  - Proposed Pavers / Walkways



DECIDUOUS TREE PLANTING  
GREATER THAN 3" CALIPER  
Not To Scale

SCHEDULE A - PERIMETER LANDSCAPE EDGE				
Category	P1*	P2*	P3*	P4*
Landscape Type	B	C	B	B
Linear Feet of Roadway Frontage/ Perimeter	670	105	670	105
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	NO	NO	NO	NO
Credit for Wall, Fence, or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO	NO	NO
Number of Plants Required				
Shade Trees	0	0	0	0
Evergreen Trees	0	0	0	0
Shrubs	0	0	0	0
Number of Plants Provided				
Shade Trees	0	0	0	0
Evergreen Trees	0	0	0	0
Other Trees (2:1 substitution)	4	0	4	0
Shrubs (10:1 substitution)	187	0	181	71

\* P1, P2, P3, and P4 are internal to the overall Oxford Square property and do not have perimeter planting requirements.

### STREET TREE REQUIREMENTS

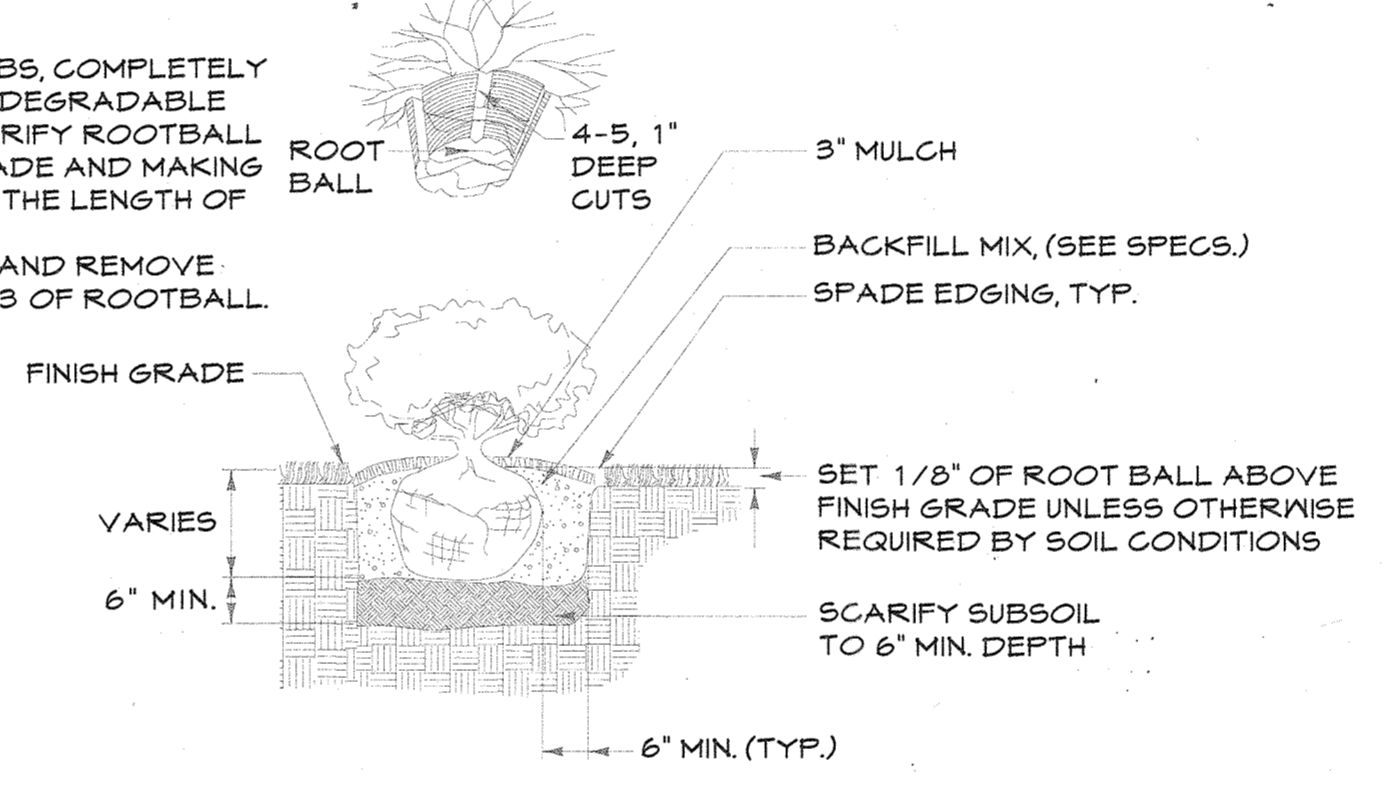
Beaumont Place (N)  
Length: 680 LF  
Number of Trees Required at 40' o.c. Max. Spacing: 17  
Number of Trees Provided: 19 (16 shades + 3 ornamentals)

Beaumont Place (S)  
Length: 680 LF  
Number of Trees Required at 40' o.c. Max. Spacing: 17  
Number of Trees Provided: 19 (16 shades + 3 ornamentals)

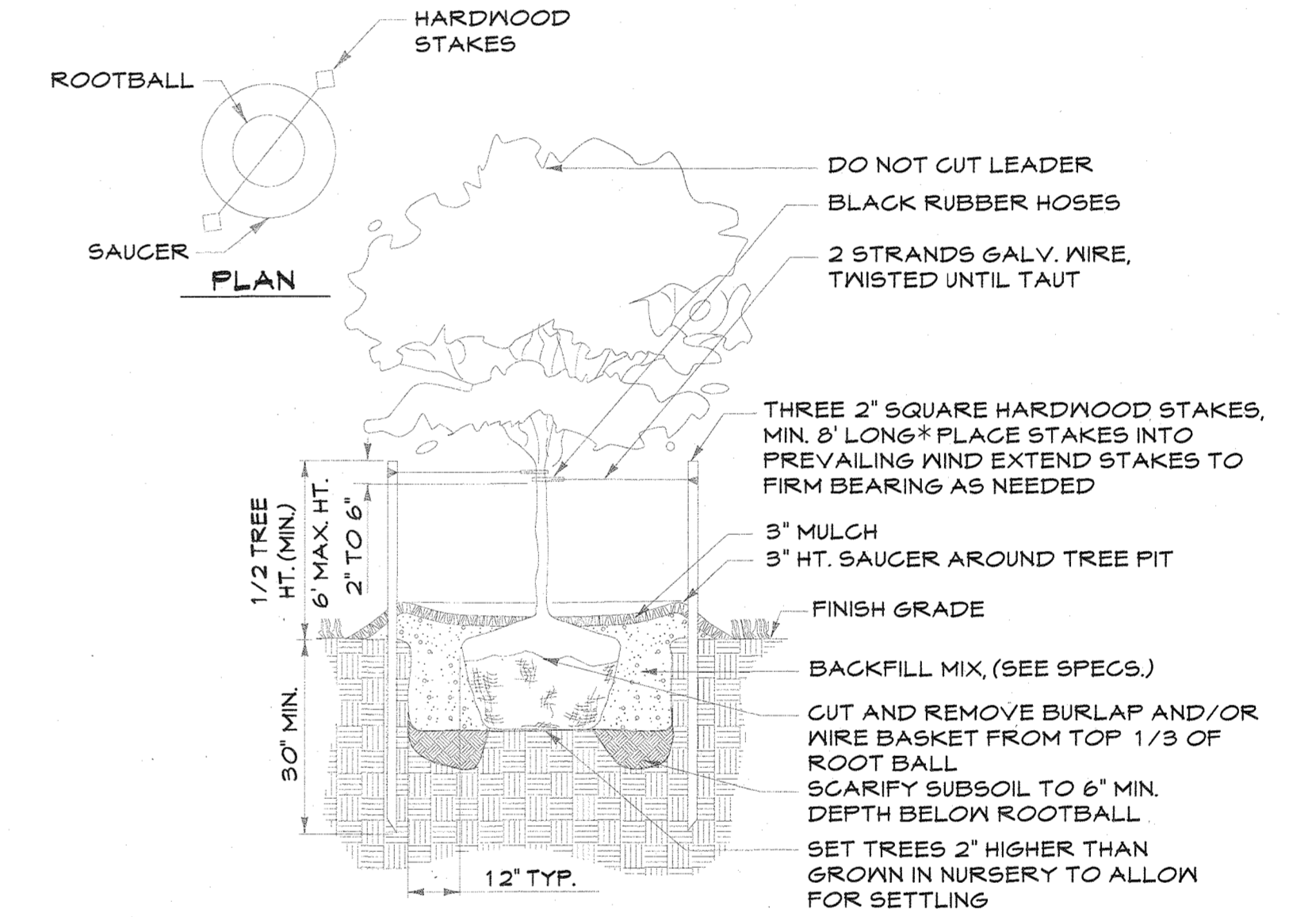
Note: The street trees shown on this plan have been planted at 30' o.c.

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING	
Linear Feet of Perimeter	51
Number of Trees Required	440
Shade Trees	9
Evergreen Trees	11
Credit for Existing Vegetation (No, Yes, and %)	NO
Credit for Other Landscaping (No, Yes, and %)	NO
Number of Trees Provided	
Shade Trees	0
Evergreen Trees	0
Other Trees (2:1 substitution)	3
Shrubs (10:1 substitution, planted within ESD Facilities)	29

- NOTES:
- FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
  - FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOTBALL.



SHRUB PLANTING  
Not To Scale



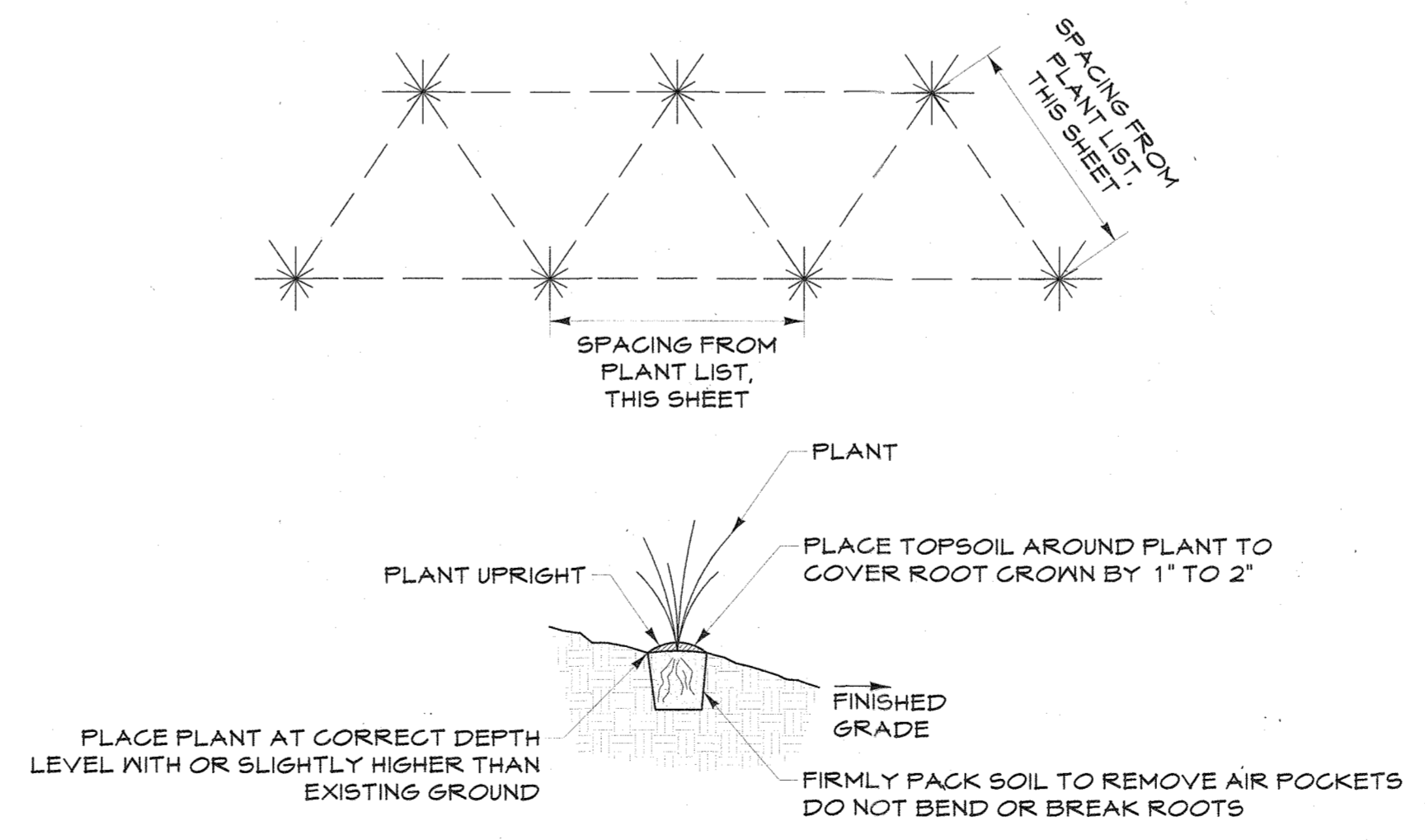
DECIDUOUS TREE PLANTING  
LESS THAN 3" CALIPER  
Not To Scale

### PLANTING NOTES

- Plant material substitutions will not be accepted without approval of the Landscape Architect.
- All shrubs and groundcover areas shall be planted in continuous prepared planting beds.
- All shrub beds shall be mulched with hardwood mulch as detailed and specified except where noted on plans.
- Maintain positive drainage out of planting beds at a minimum of two percent slope.
- Plant quantities are provided for the convenience of the contractor. If discrepancies exist between quantities shown on the plan and those shown on the plant list, the quantities on the plan shall take precedence.
- All areas within contract limits disturbed during or prior to construction not designated to receive plantings and mulch shall be fine graded and seeded in accordance with planting and construction.
- The contractor shall notify Miss Utility (800-257-7777) a minimum of three working days prior to planting and construction.
- All plant material shall be nursery grown and shall conform to American Nurserymen Association Standards.
- All planting procedures shall conform to Landscape Contractors Association Specification Guidelines for Baltimore/Washington Metropolitan Area (latest edition) and Century Engineering, Inc. specifications.
- Contractor shall test pit prior to plant installation.

### MINIMUM LANDSCAPE MAINTENANCE REQUIREMENTS

- Lawn areas shall be mowed to a height of 2 to 3 inches and not allowed to reach a height of 4 inches before mowing.
- All curbs and walks shall be edged as needed.
- All lawn areas adjacent to building faces or structures shall be trimmed.
- A slow release nitrogen balanced fertilizer with a 2-1-1 ratio shall be applied at a rate of 2 pounds of nitrogen per 1000 square feet in September, October, and February.
- Lime shall be applied at the rate determined by a soils report.
- It is recommended that lawn areas be treated in mid-March to early April with pre-emergent herbicide (Betasan) or equal applied at the manufacturer's rate.
- A post-emergent herbicide (Trimec) or equal is recommended to be sprayed on lawn areas in the late spring or early fall. Follow manufacturer's rates and recommendations.
- Insecticides and fungicides are recommended for insect and disease control.
- Reseed bare areas of lawn as necessary. Yearly aeration is recommended.
- All trash, litter, and debris shall be removed from lawn areas, parking lots, and shrub beds as needed.
- Mulch all shrub and groundcover beds yearly with 3 inches of shredded hardwood bark.
- Permit shrubs and trees to grow and enlarge to their design size. Consult project Landscape Architect for details.
- Prune trees in accordance with Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas.



GROUNDCOVER PLANTING  
Not To Scale

LANDSCAPE DEVELOPER'S CERTIFICATE

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code, and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one-year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Name: *[Signature]* Date: *11-15-19*

OWNER  
KELLOGG - CCP, LLC  
c/o DAVID P. SCHEFFENACKER, JR.  
MANAGING MEMBER

2330 WEST JOPPA ROAD, SUITE 190  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

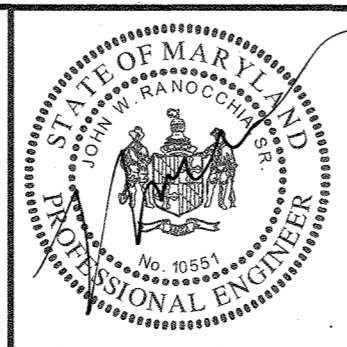
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* Date: 12/20/19

Chief, Division of Land Development: *[Signature]* Date: 1/14/20

Director: *[Signature]* Date: 1-17-20

**M CENTURY ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 Fax: 443.589.2401



DESIGN BY: M.J.P.	
DRAWN BY: KAD/MSS	
CHECKED BY:	
DATE: 11-15-19	CEI
BY NO.	Adjustments to Planting Plan per Site Layout Revisions 11-15-19
REVISION	DATE

DEVELOPER  
PRESTON - SCHEFFENACKER PROPERTIES

2330 WEST JOPPA ROAD, SUITE 190  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

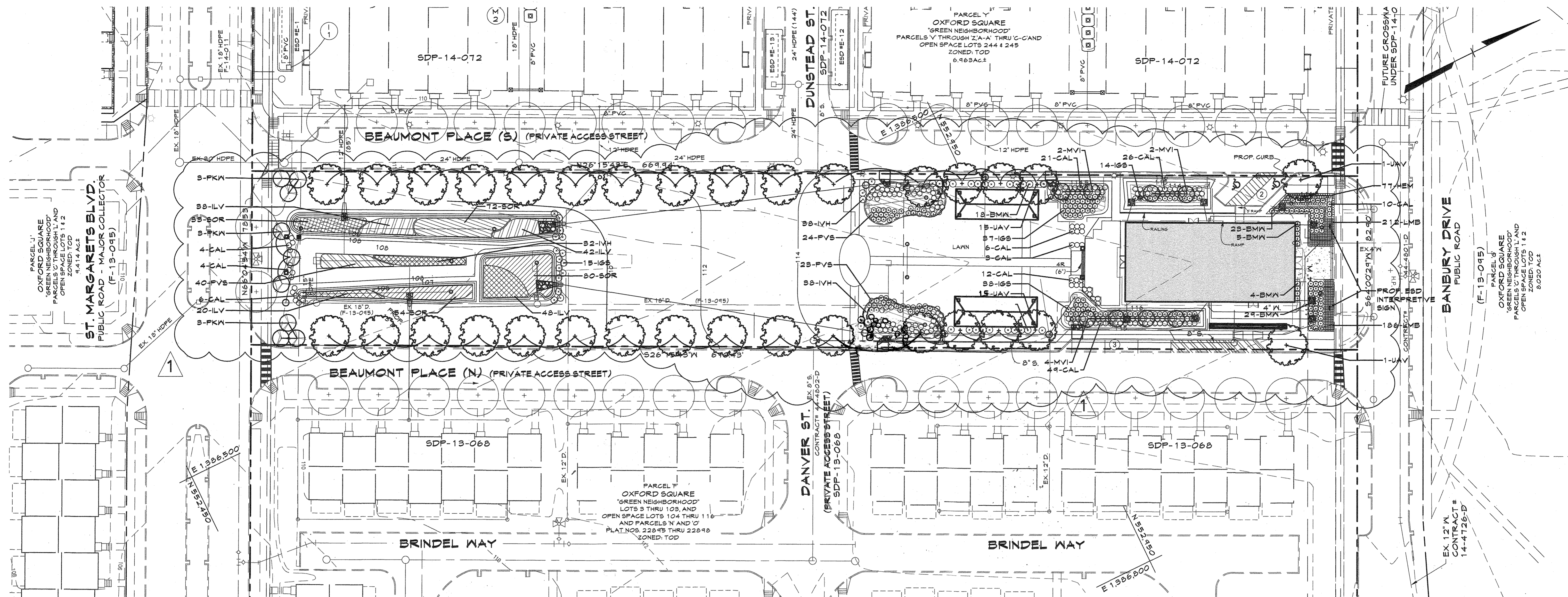
LANDSCAPE PLAN  
PARCEL 'I' - The Barn-Community Center  
OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND

REVISED SITE DEVELOPMENT PLAN SHEET 13 OF 18

C.E.I. PROJECT NUMBER: 131176.00  
SCALE: 1" = 50'



**PLAN**

SCALE: 1"=30'

**LEGEND**

- 676 Existing Minor Contour
- 670 Existing Major Contour
- Existing Edge of Road
- Existing Curb & Gutter
- Existing Sidewalk
- EX 15" D. Existing Storm Drains
- EX 8" W. Existing Water Main
- EX 8" S. Existing Sanitary Sewer
- Tract Boundary
- Utility Easement Line
- Existing Building
- Proposed Grades
- Proposed Sewer
- Proposed Water and Fire Hydrant
- Proposed Storm Drain and Inlets
- Proposed Curb & Gutter
- Proposed Sidewalk
- Existing Tree
- Proposed Shade Tree
- Proposed Ornamental Tree
- Proposed Shrubs
- Proposed Stormwater Management Facility
- Proposed Pavers / Walkways

**PLANT LIST**

KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
SHADE TREES					
UAV	32	Ulmus americana 'Valley Forge'	Valley Forge American Elm	2 1/2" cal.	B & B, specimen, matching set
Total	32				
ORNAMENTAL TREES					
PKM	9	Prunus serrulata 'Kwanzan'	Kwanzan Japanese Cherry	1 1/2" cal.	B&B, specimen
Total	9				
SHRUBS, PERENNIALS, AND GROUNDCOVERS					
BMM	97	Buxus microphylla var. koreana 'Wintergreen'	Wintergreen Korean Boxwood	24"-30" ht.	3 gal. Cont., 36" o.c., heavy/full
LMB	398	Liriope muscari 'Big Blue'	Big Blue Lilyturf	1 gal.	Cont., 15" o.c.
Total	495				

**SWM PLANT LIST**

KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
ORNAMENTAL TREES					
MVI	8	Magnolia virginiana	Sweetbay Magnolia	10'-11' ht.	B & B, 3 stem min.
Total	8				
SHRUBS, PERENNIALS, AND GROUNDCOVERS					
CAL	141	Clethra alnifolia 'Hummingbird'	Hummingbird Summersweet Clethra	24"-30" ht.	3 gal. Cont., 36" o.c., heavy/full (male only)
ILV	148	Ilex verticillata 'Jackson'	Jackson Winterberry	24"-30" ht.	3 gal. Cont., 42" o.c., heavy/full
IGS	104	Ilex glabra 'Shamrock'	Inkberry Holly	18"-24" ht.	3 gal. Cont., 36" o.c., heavy/full
IVH	108	Itea virginica 'Henry's Garnet'	Henry's Garnet Virginia Sweetspire	24"-30" ht.	3 gal. Cont., 36" o.c., heavy/full
HEM	77	Hemerocallis 'Happy Returns'	Happy Returns Daylily	1 gal.	18" o.c.
PVS	87	Panicum virgatum 'Stricta'	Stricta Feather Reed Grass	1 gal.	36" o.c.
SOR	239	Solidago rugosa 'Fireworks'	Goldenrod	1 gal.	30" o.c.
Total	926				

Note: Hemerocallis fulva shall not be planted, as it is considered an invasive plant.

**PLANTING CALCULATIONS**

	REQUIRED	PROVIDED
SCHEDULE A (PERIMETER LANDSCAPE EDGE)	0	47.9
SCHEDULE D (STORMWATER MANAGEMENT AREA LANDSCAPING)	14.5	4.4
STREET TREES	34	35
<b>TOTALS:</b>	<b>48.5</b>	<b>87.3*</b>

\* Results in an excess of 39 plants (80% more than required)

1. The financial surety for the required 48.5 trees will be posted as part of the grading permit in the amount of \$14,550.00 (43 shades x 300 + 11 evergreens x 150).

**Tree Planting Summary**

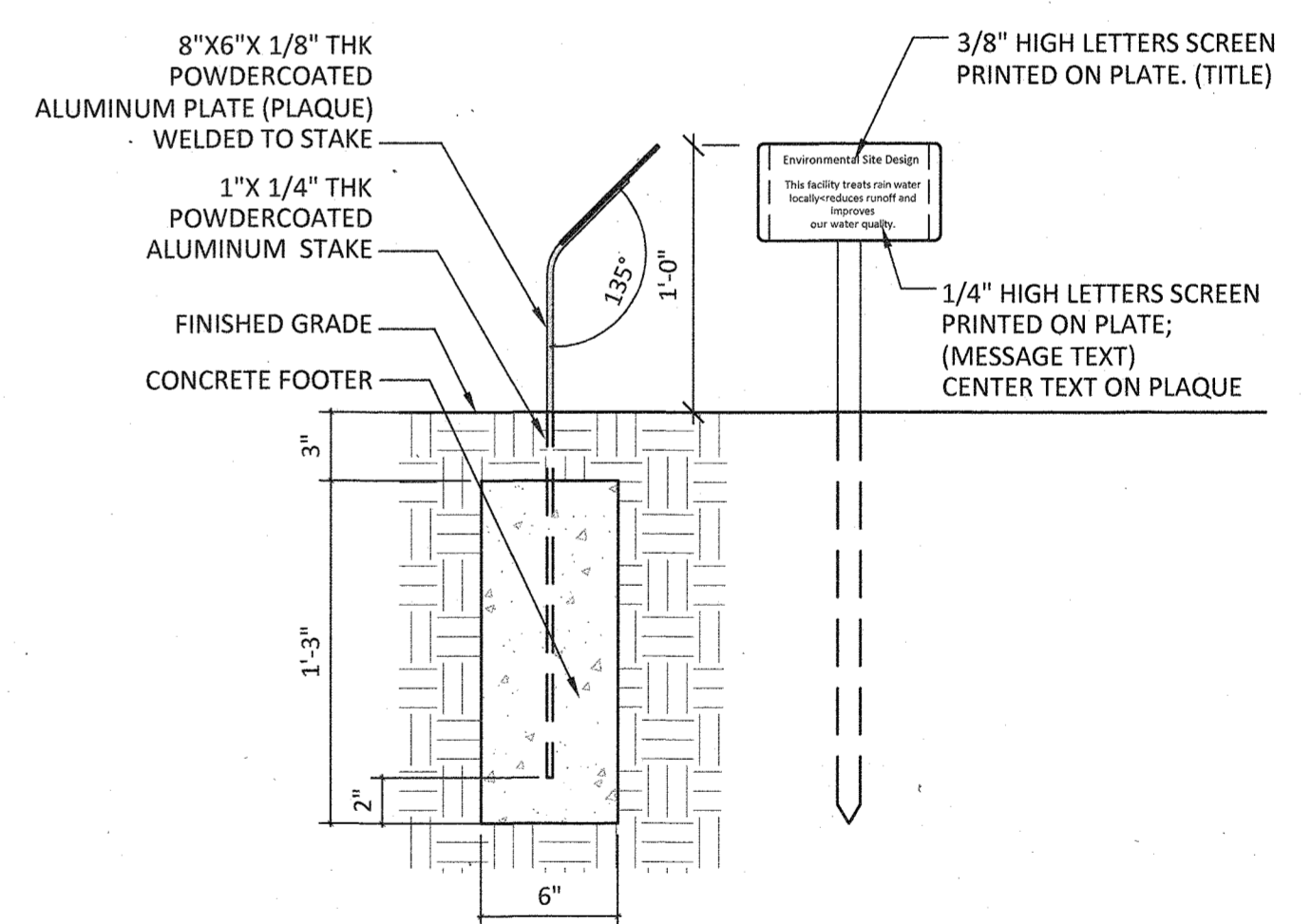
Type	Required	Provided
Shade Trees	43	32
Evergreen Trees	11	0
Ornamental Trees	0	17
Shrubs	0	468
Total	54	517

2. The financial surety for the Green Neighborhood planting requirement shall be posted as part of the developer's agreement in the amount of \$4,050.00 (12 shades x 300 + 3 evergreens x 150).

**LANDSCAPE DEVELOPER'S CERTIFICATE**

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code, and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one-year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Name: *Juan* Date: *11-14-19*

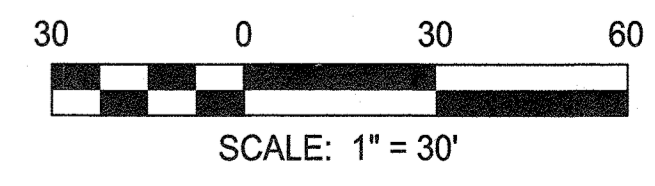


**ESD INTERPRETIVE SIGN DETAIL**

SCALE: 1 1/2"=1'-0"

OWNER  
**KELLOGG - CCP, LLC**  
 c/o DAVID P. SCHEFFENACKER, JR.  
 MANAGING MEMBER

2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800



SCALE: 1"=30'

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
*[Signature]*  
 Chief, Division of Land Development  
*[Signature]*  
 Director  
 Date: *12/20/19*  
 Date: *11/14/20*  
 Date: *1-17-20*

**CENTURY ENGINEERING**  
 CONSULTING ENGINEERS - PLANNERS  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 Fax: 443.589.2401

DESIGN BY: M.J.P.  
 DRAWN BY: KAD/MSS  
 CHECKED BY:  
 DATE: 11-15-19  
 CEI  
 BY NO. Adjustments to Planting Plan per Site Layout Revisions  
 REVISION DATE: 11-15-19

DEVELOPER  
**PRESTON - SCHEFFENACKER PROPERTIES**  
 2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

**Landscape Plan**  
 PARCEL 'I' - The Barn-Community Center  
**OXFORD SQUARE**  
 "A HOWARD COUNTY GREEN NEIGHBORHOOD"  
 TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
 ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
 REVISED SITE DEVELOPMENT PLAN SHEET 14 OF 18

C.E.I. PROJECT NUMBER  
 131176.00  
 SCALE:  
 1"=30'  
 SDP - 15 - 074A

**GREEN NEIGHBORHOOD COMPLIANCE CHECKLIST:**

Credit No.	Credit	Champion (Name, Role)	Requirement	Site Development Plan Strategies	Documentation Location	Max Points	Requested Points
<b>A - Innovative / Integrated Design Process</b>							
A-1	Green Development Plan	HCM/Planners	Show how plans meet criteria, includes checklist, natural resource inventory and energy analysis	Provide documentation	GN Report GN Plan	REQD	4
A-2	Interdisciplinary Project Team	HCM/Planners	Includes U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Accredited professional, ecologist / environmental professional / landscape architect, and engineer	The design team includes a LEED AP professional, an ecologist, a civil engineer, an architect and landscape architect.	GN Plan	REQD	4
A-3	Third Party Certification	HCM/Planners	Certification of credits by independent LEED accredited professional	Alexander Design Studio	GN Plan GN Report	REQD	4
A-4a	Innovative Design A	HCM/Planners	Green Streets	Green Streets	GN Plan GN Report Reference: S-14-001 S-15-001	1	1
A-4b	Innovative Design B	HCM/Planners	Priority Parking for Fuel Efficient Cars	Reserve 5% for Priority Parking for Fuel Efficient Cars	GN Plan GN Report	1	1
A-4c	Innovative Design C	HCM/Planners	Compact Development	Residential Development will exceed 26 DU/AC	GN Plan GN Report	1	1
A-4d	Innovative Design D	HCM/Planners	Walkable Streets	More than 60% building frontage oriented toward public spaces. Less than 20% service and garage openings to public spaces.	GN Report GN Plan SDP-15-074 Sheet 17	1	1
<b>B - Location, Linkages &amp; Community Context</b>							
B-1a	Redevelopment Site	HCM/Planners FOC/Civil	Reuse of previously developed site (minimum 25% existing impervious, with skid scale for roads based on amount or % impervious)	More than 25% area previously developed (former asphalt and gravel operations)	GN Plan Reference: Sketch Plan (S-15-001)	4	2
B-1b	Redevelopment Site (Brownfield)	NA	Brownfield cleanup of redevelopment site	NA	NA	8	0
B-2	Historic Buildings	NA	Preserve, restore or rehabilitate historic properties.	NA	NA	4	0
B-3a	Transit Access & Amenities for Reduced Auto Dependence (Stop)	HCM/Planners	Site is served by transit stop within 1/2 mile (1 point) or 1/4 mile (2 points) walk from property	Private Shuttle Service with 2 stops (94% DU) within 1/4 mile walking distance	GN Plan Reference: Sketch Plan (S-15-001)	2	2
B-3b	Transit Access & Amenities for Reduced Auto Dependence (Shelter)	HCM/Planners	Provide county-specified transit shelter with benches and lighting at transit stop within 1/2 mile of property and provided pedestrian link to stop if none currently exists	Provide HOV2 transit approved shelter for private shuttle service	GN Plan Reference: SCR-15-008	4	4
B-4	Proximity to Community Resources	NA	Credit for 1/2 mile proximity to existing or proposed community resources such as schools, parks, library, post office, etc.	NA	NA	5	0
<b>C - Compact, Complete &amp; Connected Development</b>							
C-1	Diversity of Uses	HCM/Planners	1 point per different use; minimum 100 ft for each non-residential use. Minimum of 143,900 SF each of office, residential and civic use, per 1.459 DU	Provide 3 Uses: Institutional, Civic and Office	GN Plan References: Sketch Plan (S-15-001)	3	3
C-2	Planned Service Area	HCM/Planners	Locate the project within the Planned Service Area	The project is within the Planned Service Area	GN Plan	5	5
C-3a	Bike/Walkway System (Path)	HCM/Planners	Provide on site path/walkway system with 2 connections to internal or external sidewalk, with minimal environmental impacts, long-term maintenance	Provide a shared use path system.	GN Plan Reference: Sketch Plan (S-15-001)	2	2
C-3b	Pedestrian System (Connections)	NA	Provide at off-site path/walkway connection	NA	NA	2	0
C-3c	Pedestrian System (Amenities)	HCM/Planners	Provide at least one different pedestrian experience feature	Provide pedestrian amenities at trailsheads, the lawn, school and residential areas	GN Plan SDP-15-074 Sheet 13, 14 Reference: Sketch Plan (S-15-001)	2	2
C-4	Connected On-site Street Network	HCM/Planners	Provide a gridded street network	More than 75% connected streets	GN Plan Reference: Sketch Plan (S-15-001)	2	2
C-5	Parking does not exceed Required Maximum	HCM/Planners	Surface parking lots do not exceed required parking ratios (1 point); plan takes advantage of shared parking provisions parking structure provided (in deck or beneath building; does not include garages within individual units) (4 points)	Provide common parking structures (4 points)	GN Plan Reference: Sketch Plan (S-15-001)	4	4
C-6	Exceed Minimum Open Space Requirements	HCM/Planners	1 point for every 5% above required minimum open space for the TOD zone; 1 point for every 10% of non-buildable HDA parcels above 50% of the site (up to 3 points)	Provide more than 25% increase in amenity space above the required minimum amenity space (TOD zoning regulations)	GN Plan Reference: Sketch Plan (S-15-001)	5	5
C-7	Green Spaces and Amenity Areas	HCM/Planners	Open space along public/private roads available for public use	Publicly accessible open space will be provided at the community building, ballroom, pool on Parcel 1 and amenity space at the community poolhouse and pool on 0.5. #107	GN Report GN Plan SDP-15-074 Sheet 16 Reference: Sketch Plan (S-15-001) SDP-15-058	2	2

Credit No.	Credit	Champion (Name, Role)	Requirement	Site Development Plan Strategies	Documentation Location	Max Points	Requested Points
<b>D - Environmental Preservation</b>							
D-1	Stream Restoration or Wetland Creation or Restoration	Ecologist	Restoration of degraded or site stream channel; on-site restoration of degraded wetland or creation of additional wetlands (using scale based on % or length of stream restored and % of acres of wetland created or restored)	Provide wetland restoration for Wetland ID (#1-80,810 SF)	GN Report Reference: Sketch Plan (S-15-001) SDP-15-045	18	18
D-2	Habitat Management Plan	Ecologist	Prepare and implement plan that identifies, conserves and enhances natural resources and ecological communities (may include clean up of debris, removal of invasives, etc.)	Provide Habitat Management Plan	GN Report Reference: Sketch Plan (S-15-001) SDP-15-045	4	4
D-3	20% Steep Slope Preservation	NA	Protect all existing steep slopes as defined by County regulations (required: provide 25' minimum buffer at top of 25% slope (2 points))	NA	NA	2	0
D-4	15% Slope Preservation	FOC/Civil HCM/Planners	Protect existing 15%+ slopes (protect minimum 10 acres, with skid scale based on area or % protected)	Preserve between 25-50% of 15%-24.9% slopes	GN Plan Reference: Sketch Plan (S-15-001)	4	2
D-5	Minimize Grading and Site Disturbance	FOC/Civil HCM/Planners	Minimize limit of disturbance; leave at least 20% of site undisturbed (1 point); 30% (2 points); 40% (3 points); balance cut and fill on site (2 points); retaining walls 3-8' (deduct 1 point) retaining walls 9-8' (deduct 2 points); walls 9' and higher (deduct 3 points); no new created steep slopes over 25% (1 point); amended materials in turf and planting areas (1 point)	Balance Cut and Fill on entire site - 2 points Minimize Retaining Walls - 0 points No new > 25% Steep Slopes - 1 point Leave more than 20% of site undisturbed - 1 point	GN Report GN Plan Reference: Sketch Plan (S-15-001)	6	4
D-6	Exceed Minimum Forest Conservation Requirements	Ecologist FOC/Civil HCM/Planners	1 point for every 10% of existing forest retained above break even point; 1 point for every 10% of on-site forest planted in excess of replacement obligation	NA	NA	6	0
D-7	Save Trees above 12" Minimum Caliper	NA	1 point for protecting each 25% of all specimens trees (does not include specimen trees in site forest conservation area or within forests that are being cleared)	NA	NA	4	0
D-8a	Exceed Minimum Stream Buffer Requirements	FOC/Civil HCM/Planners	75' buffer required for perennial and intermittent streams inside PSA; 100' buffer required for perennial and intermittent streams outside PSA	75' buffer required for perennial and intermittent streams inside PSA.	GN Plan Reference: Sketch Plan (S-15-001) F Plan (F-15-008)	REQD	0
D-8b	Exceed Minimum Stream Buffer Requirements	Ecologist FOC/Civil HCM/Planners	2 points for each additional 25' of buffer provided in excess of requirements in D-8a outside wetland buffer or floodplain	Provide 150 FT Stream Buffer (75 FT enhanced buffer) - 8 points	GN Plan Reference: Sketch Plan (S-15-001) F Plan (F-15-008)	8	6
D-9	Exceed Minimum Wetland Buffer Requirements	Ecologist FOC/Civil HCM/Planners	2 points for each additional 25' of wetland buffer outside stream buffer or floodplain	NA	NA	4	0
D-10	Floodplain Buffer	NA	1 point for each 25' of buffer to floodplain outside required or provided wetland or stream buffer	NA	NA	2	0
<b>E - Site Landscape Improvements</b>							
E-1	Landscape Landscaping Exceeds Minimum Requirements and Reduces Heat Island Effect	NA	1 point for each 10% increase in number of plants (must be native plants) provided above total minimum required in Landscape Manual; retain or plant trees on south and west sides of buildings and increase trees with parking areas and along sidewalk and paths	Provide 20% increase in Landscape Requirements	GN Report GN Plan SDP-15-074 Sheets 13, 14	5	2
E-2	Native Plants	NA	1 point for 50%; 2 points for 100%; 3 points for 100% of all plants native to within 200 miles of site	Will not plant invasive plants	GN Plan SDP-15-074 Sheets 13, 14	3	0
E-3	No Invasive Plants	HCM/Planners	No plants that are on DNR USDA or Cooperative Extension Service lists of invasive plants	Will not plant invasive plants	GN Plan SDP-15-074 Sheets 13, 14	REQD	0
E-4	Limit Turf	HCM/Planners	Turf does not exceed 50% of ungrazed site (1 point); no turf on new created steep slopes 25% or in densely shaded areas (1 point); non-turf areas must be planted in native vegetation	Will not plant conventional turf in densely shaded areas and on newly created >25% steep slopes	GN Report GN Plan SDP-15-074 Sheets 13, 14	2	1

Credit No.	Credit	Champion (Name, Role)	Requirement	Site Development Plan Strategies	Documentation Location	Max Points	Requested Points
<b>F - Water Conservation / Efficiency / Management</b>							
F-1	Rainwater Harvesting System	Straughan	Collect and make use of water runoff from minimum 25% of roof area; provide storage system and maintenance / management program	Provide rainwater harvesting for school and recreational fields	GN Plan Reference: Sketch (S-15-001) SDP-15-078	5	5
F-2	Water-Permeable Walkways	NA	Use water permeable materials in 50% or more of parking areas provide maintenance program	NA	NA	4	0
F-3a	Low Impact Development (LID) Stormwater Treatment	FOC/Civil	Meets minimum Design Manual requirements; no dry ponds allow wet	No dry ponds	GN Plan SDP-15-074 Sheets 9-12	REQD	0
F-3b	Low Impact Development (LID) Stormwater Treatment	FOC/Civil	Exceeds Design Manual requirements; maximize use of bioretention (esp. for parking lots), rain gardens, rain barrels, stormwater wetlands, green roof, etc.	Will provide 51% water quality volume stored and infiltrated/re-used On-Site	GN Plan GN Report SDP-15-074 Sheets 9-12	8	6
<b>G - Energy Efficiency</b>							
G-1	Light Pollution Reduction	FOC/Civil HCM/Planners	Shield all site lighting fixtures to reduce light and glare; follow county code requirements; install sensors or timers on all exterior site lighting fixtures	NA	NA	4	0
G-2	Solar Orientation	NA	Orient 50% (1 point) or 75% (2 points) or 100% (3 points) of buildings to make available for solar gain/losses	NA	NA	3	0
G-3	Infrastructure Energy Efficiency	NA	Select high efficiency fixtures for parking lot and other low-voltage lighting	NA	NA	6	0
<b>H - Materials Beneficial to the Environment / Waste Management</b>							
H-1	Environmentally Preferable Site Products	Straughan FOC/Civil HCM/Planners	Select products from list including recycled materials (concrete, asphalt, trees, plastic, etc.), products with recycled content, salvaged or engineered materials;	NA	NA	6	0
H-2	Reduce Heat Island Effect or Paving	NA	Use light-colored or high albedo materials and/or porous paving or in a minimum 50% of parking lot or over for at least 25% of the site	NA	NA	2	0
H-3	Site Construction Waste Management	Straughan	Develop and implement a construction waste management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points)	Direct 75% or more site construction waste	GN Report	4	4
H-4	Regionally Produced Materials	Straughan FOC/Civil HCM/Planners	20% of common and public infrastructure materials from within 200 miles	Use regionally produced materials for 20% of total site materials	GN Report	3	3
<b>I - Operations and Maintenance Education</b>							
I-1	HCA Documents	Straughan	Include information about green site features and maintenance requirements in HCA documents	Provide HCA document	Reference: SDP-15-058 SDP-15-053	REQD	0
I-2	Maintenance Manual for Owner / HCA / Manager	Straughan	Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management (LD) and encourages additional green activities such as recycling, gardening, etc.	Provide manual	Reference: SDP-15-058 SDP-15-053	REQD	0
I-3	Public Awareness of Community	Straughan; HCM	Develop a program to advertise the environmental benefits of the community	Implement public awareness strategy	GN Report SDP-15-074 Sheets 13, 14 Reference: SCR-15-068	REQD	0
<b>TOTAL GREEN NEIGHBORHOOD SITE POINTS</b>						<b>167</b>	<b>90</b>
Number of points required to obtain Green Neighborhood Allocation:						90	
<b>Third Party Certification</b>							
By affixing my signature below, the undersigned does hereby declare and affirm to Howard County that the targeted Green Neighborhood Site credits and point total, as specified in Green Neighborhood Site Compliance Checklist, are reasonable and achievable.							
Signature: <u>Charles Alexander</u>		Title: <u>PRESIDENT</u>		LEED Accreditation Number: _____		Date: <u>12-3-2019</u>	
Name: _____		Organization: <u>ALEXANDER DESIGN STUDIO</u>		Telephone: _____		Email: _____	
Submission (mark "X" where applicable):		Preliminary / Equivalent Sketch Plan _____		Final Plan _____		Site Development Plan _____	

**hord | coplan | macht**  
ARCHITECTURE LANDSCAPE ARCHITECTURE INTERIOR DESIGN PLANNING

**PROFESSIONAL CERTIFICATION**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

750 East Pratt Street, Suite 1100, Baltimore, MD 21202  
Phone: 410.837.7311 Fax: 410.837.6530

LICENSE NUMBER: 1008 EXPIRATION DATE: 9-20-20

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Chief, Development Engineering Division  
Chief, Division of Land Development  
Director

**M CENTURY ENGINEERING**  
CONSULTING ENGINEERS - PLANNERS  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 Fax: 443.589.2401

DESIGN BY:			
DRAWN BY:			
CHECKED BY:			
DATE:	11-15-19	MJF	Redline Revision: Removed pool and inserted shade pavilion and lawn
BY:	NO.		
REVISION:			
DATE:	11-15-19		

**OWNER**  
**KELLOGG - CCP, LLC**  
c/o DAVID P. SCHEFFENACKER, JR.  
MANAGING MEMBER  
2330 WEST JOPPA ROAD, SUITE 190  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

**DEVELOPER**  
**PRESTON - SCHEFFENACKER PROPERTIES**  
2330 WEST JOPPA ROAD, SUITE 190  
LUTHERVILLE, MARYLAND 21093-4614  
410-296-3800

**REVISED SITE DEVELOPMENT PLAN**  
**GREEN NEIGHBORHOOD PLAN**  
PARCEL 'I' - The Barn - Community Center  
OXFORD SQUARE  
"A HOWARD COUNTY GREEN NEIGHBORHOOD"  
TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD-  
ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
SHEET 15 OF 18

C.E.I. PROJECT NUMBER: 131176.00  
SCALE: As Shown

**APPROVED**  
Howard County Department of Planning and Zoning  
Green Neighborhood Plan for Sites  
Pete Benson 12-5-19  
Chief, Resource Conservation Division Date

**LEED ACCREDITED PROFESSIONAL CERTIFICATE**  
Green Neighborhood Plan for Sites  
I hereby certify that this plan represents a practical and workable plan for achieving the targeted credits and point total shown on the Green Neighborhood for Sites Compliance Checklist.  
Nathaniel 10007912 12/2/19  
Signature of (Ink printed name) LEED Accredited No. Date

**GREEN NEIGHBORHOOD NOTES:**

- A-2 THE DESIGN AND DEVELOPMENT TEAM INCLUDES A LEED AP (MATTHEW FITZSIMMONS - HORD COPLAN MACHT), ENVIRONMENTAL PROFESSIONAL (JOHN CANDLES- ECO-SCIENCE PROFESSIONALS, INC.), LANDSCAPE ARCHITECT (JOSH KILRAIN- HORD COPLAN MACHT) AND AN ENGINEER (KAREN DARLEY PE- CENTURY)
- A-3 THE THIRD PARTY CERTIFICATION IS PROVIDED BY CHARLES ALEXANDER, LEED-AP OF ALEXANDER DESIGN STUDIOS.
- B-1a THE 118.5 ACRE DEVELOPMENT CONSISTS OF 30.4 ACRES OF PREVIOUSLY DEVELOPED LAND (25.7% OF THE OXFORD SQUARE DEVELOPMENT).
- B-3a OXFORD SQUARE WILL PROVIDE TWO TRANSIT STOPS FOR THE PROPOSED PRIVATE SHUTTLE SERVICE CONNECTING OXFORD SQUARE TO THE DORSEY MARC COMMUTER RAIL STATION. THE STOPS WILL BE WITHIN 1/4 WALKING DISTANCE TO ALL DWELLING UNITS, EXCEPT FOR THE UNITS FURTHERS NORTH ON PARCEL '2'.
- B-3b OXFORD SQUARE WILL PROVIDE ONE SHELTER AT ONE OF THE PRIVATE SHUTTLE STOPS. THE SHELTER WILL COMPLY WITH COUNTY APPROVED CRITERIA INCLUDING BENCHES AND LIGHTING.
- C-1 OXFORD SQUARE WILL PROVIDE THREE DIVERSE USES OTHER THAN RESIDENTIAL: INSTITUTIONAL (MIDDLE SCHOOL BUILDING AND OUTDOOR CLASSROOM SPACE, ELEMENTARY SCHOOL), CIVIC (SCHOOL'S RECREATIONAL PLAYING FIELDS AND SHARED-USE PATH) AND OFFICE.
- C-2 OXFORD SQUARE IS LOCATED WITHIN THE EXISTING PLANNED WATER AND SEWER SERVICE AREA.
- C-3c OXFORD SQUARE WILL PROVIDE A MINIMUM OF TWO PEDESTRIAN SYSTEM AMENITY EXPERIENCES: 1) SHARED USE PATH AND NATURE TRAIL TRAIL SIGNS AND MARKERS, BENCHES, LITTER RECEPTACLES, INFORMATIONAL SIGNS, BIKE RACKS), 2) THE LAWN (SEATING AREA, EXTERIOR LIGHTING, INFORMATIONAL SIGNS), 3) RESIDENTIAL COURTYARDS AND NEWS (BENCHES), AND 4) SCHOOL SITES (PLAYING FIELDS, BENCHES, BIKE RACKS)
- D-8b OXFORD SQUARE WILL PROVIDE A MINIMUM 75 FT ENHANCED STREAM BUFFER.
- E-3 OXFORD SQUARE WILL NOT PLANT INVASIVE PLANTS.
- E-4 OXFORD SQUARE WILL NOT PLANT TURF IN DENSELY SHADED AREAS.
- F-3b OXFORD SQUARE WILL PROVIDE AT LEAST 51% WATER QUALITY VOLUME STORED AND INFILTRATED/RE-USED ON-SITE.

**GREEN NEIGHBORHOOD CALCULATIONS & TABLES:**

**A-4b Priority Parking for Low-Emitting and Fuel Efficient Vehicles**

	Overall Development	SDP
Total Number of Off-Street Parking Spaces:	1,085 Spaces	0 Spaces
Total Number of Proposed Preferred Parking Spaces:	57 Spaces	0 Spaces
<b>Percent of Preferred Parking Spaces:</b>	<b>5.3%</b>	<b>0.0%</b>

Note: Overall Development calculations summarize all file site development plans.

**A-4c Compact Development**

	Complete Build-Out	SDP
Total Dwelling Units:	1,469 DU	2,500 SF
Residential Land Area:	50.8 AC	101,014 SF
<b>Residential Density:</b>	<b>28.94 DU/AC</b>	

**A-4d Walkable Streets**

	Complete Build-Out	SDP
Length of Buildings Frontage Oriented Towards the Public Space:	11,869 FT	298 FT
Total Length of Building Frontage:	14,186 FT	298 FT
<b>% of Building Frontage Oriented Towards the Public Spaces:</b>	<b>83.7%</b>	<b>100.0%</b>
Length of Building Frontage with Service or Garage Openings:	1,420 FT	0 FT
Length of Building Frontage Oriented Towards Public Spaces (including Service and Garage openings):	13,289 FT	0 FT
<b>% of Building Frontage with Service or Garage Openings:</b>	<b>10.7%</b>	

**B-1a Redevelopment Site**

Gross Site Area:	118.5 Acres
Area of Existing Development (Acres):	30.4 Acres
<b>Percent of Previously Developed:</b>	<b>25.7%</b>

**B-3a Transit Access & Amenities for Reduced Auto Dependence (Stop)**

Residential Buildings within 1/4 Mile (<1,320 FT)	Total Number of Qualifying Units	Percent of all Units
All Buildings except the most distant building on Parcel '2'	1,379 DU	92%

**C-1 Diversity of Uses**

Residential Use:	Number of Units	Percent of Total Units
Apartments and Townhouses	1,469 DU	100%
Nonresidential Uses		
	Area	SF per Dwelling Unit
Office:	166,000 SF	113 SF/DU
Institutional:		
Middle School	95,747 SF	
Middle School Outdoor Classroom Space	2,500 SF	
Elementary School	101,014 SF	
<b>Institutional Subtotal:</b>	<b>199,261 SF</b>	<b>136 SF/DU</b>
Civic:		
Recreational Playing Fields (School Site)	236,139 SF	
Northern Shared-Use Path (8 FT wide)	22,968 SF	
Southern Shared-Use Path (8 FT wide)	8,016 SF	
<b>Civic Subtotal:</b>	<b>267,123 SF</b>	<b>182 SF/DU</b>

**C-3a Pedestrian System (Paths and Trails)**

Northern Shared Use Path:	Width of Path: 8 FT Length: 2,871 FT (0.54 Miles)
Southern Shared Use Path:	Width of Path: 8 FT Length: 1,002 FT (0.19 Miles)
Nature Path:	Width of Path: 8 FT Length: 1,129 FT (0.21 Miles)

**C-4 Street Connections**

Street Name / ID (per S-15-001)	Street Length	Qualifying Street Length
Saint Margarets Boulevard	1,684 FT	1,684 FT
Banbury Drive	2,491 FT	2,491 FT
Southmoor Street	960 FT	960 FT
Dene Court	514 FT	- FT
Crowley Street	1,136 FT	947 FT
Danvers Street	465 FT	465 FT
Beaumont Place	1,450 FT	1,450 FT
Dunstead Street	240 FT	- FT
Headley Street	120 FT	- FT
Pattison Street	120 FT	- FT
Road I	736 FT	736 FT
Road B	554 FT	554 FT
Road C	1,613 FT	928 FT
<b>Summary</b>		
Total Street Length:	12,083 FT	
Total Connected Street Length:		10,215 FT
<b>Percent Connected Streets:</b>	<b>84.5%</b>	

**C-5 Parking Does Not Exceed Required Minimum**

Number of Spaces within a Common Parking Structure:	1,922 spaces
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**C-6 Exceed Minimum Open Space**

Net Acreage:	107.4 AC
Required Amenity Space (TOD: 10% of Net Acreage):	10.7 AC
Provided Amenity Space:	23.4 AC
<b>Percent Increase above the Minimum Required:</b>	<b>118.1%</b>

Note: This SWM does not contribute any open space towards this credit.

**C-7 Green Spaces and Amenity Areas**

Parcel	Open Space 1: Lawn and Barn	Open Space 2: Pool House and Pool
Parcel '1' (SDP-15-074)	Area: 15,307 SF (0.35 AC)	Area: 11,282 SF (0.26 AC)
<p><b>Pool House and Pool</b>            O.S. Lot #107 (SDP-13-068)</p>		
<p><b>Poolhouse, Pool, Fitness Room, and Warming Kitchen</b></p>		

**D-4 15% Slope Preservation**

Total Area of Slopes 15-24.9%:	Area of Undisturbed Slopes 15-24.9%:	Percent of Undisturbed Slopes:
506,841 SF	200,866 SF	39.6 %

Note: 1. The area of undisturbed slopes is the summation of slopes impacted by the greatest extent of LODs accumulated from the entire development.  
 2. Includes area of development per Sketch Plan and future environmental restoration work.

**D-5 Minimize Grading and Site Disturbance**

	Complete Build Out
Gross Area of Site	118.5 AC
Existing Impervious Cover	30.4 AC
Area of Site	88.1 AC
Area of Site to Remain Undisturbed:	24.2 AC
<b>Percent of Site to Remain Undisturbed:</b>	<b>27.5 %</b>
Ratio of Cut to Fill:	1.16 Ratio
Retaining Wall:	<3 FT

Note: 1. Complete Build Out Calculations are based on the aggregate greatest extent of LOD's from entire development.  
 2. No dirt will be imported or exported from Oxford Square.

**D-8b Exceed Minimum Stream Buffer Requirements**

Total Stream Buffer Width:	150 FT
Width of Buffer Exceeding Requirements:	75 FT
Total Length of Stream Buffer:	1,984.2 FT
Length of Stream Buffer Outside Other Buffers:	1,352.3 FT
<b>Percent of Stream Buffer Outside Other Buffers:</b>	<b>68.2 %</b>

**E-1 Landscaping**

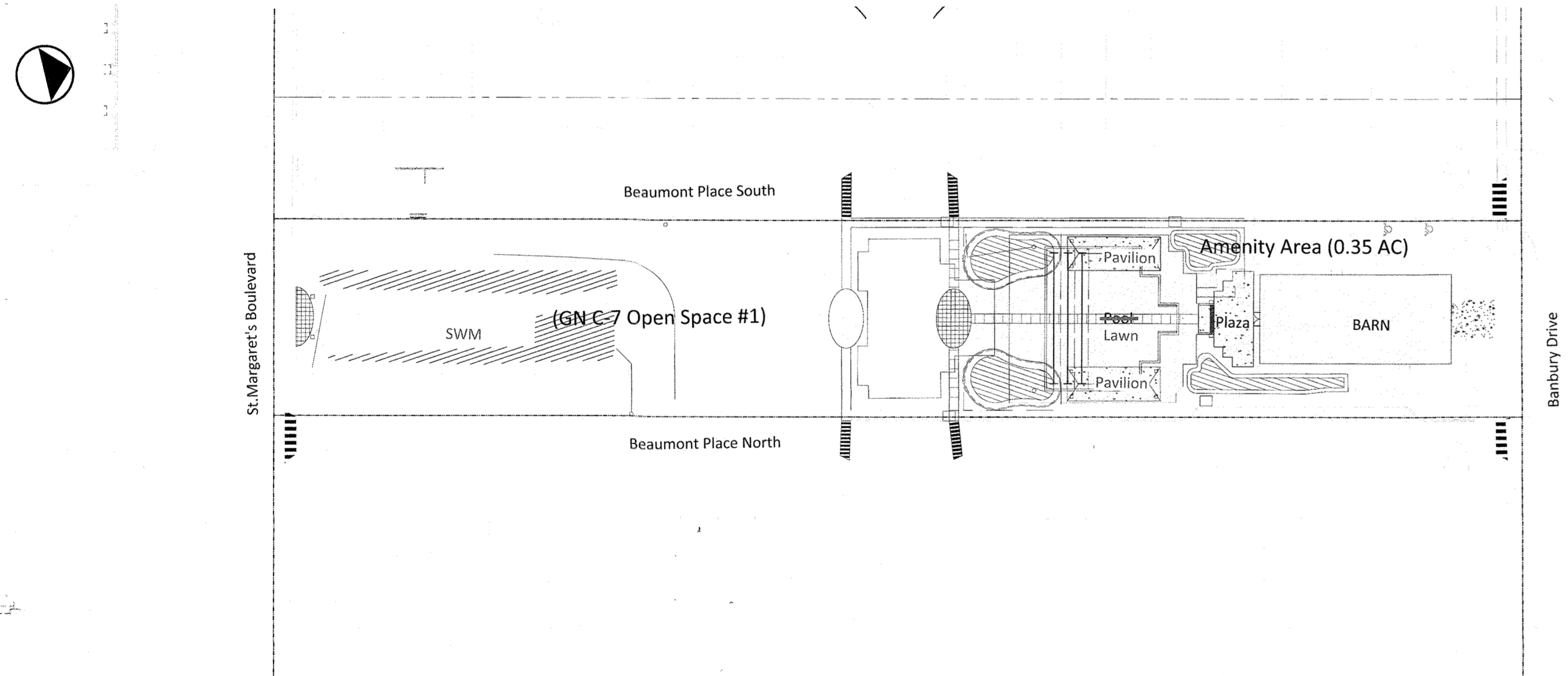
Plants Required	Shade Trees	Evergreen	Shrubs	Total	Percent
Number of Plants Required by Landscape Manual	43	11	0	54	22.2
Number Excess Plants Required for GN Credit	9	0	0	9	
Number of Plants Provided	52	14	0	66	

Plants Provided	Shade Trees	Shade Tree (Substitute)	Evergreen	Evergreen (Substitute)	Other Trees (Substitute)	Shrubs (Substitute)	Shrub (Substitute)	Total
Number of Plants Provided to Meet Landscape Manual	20	23		11			0	54
Number of Plants Provided to Meet GN Credits	12			3	0	0	0	15
Total Number of Plants Provided	32	23	0	14	0	0	0	69

Notes: 1. Required Shade Trees (20 UVA)+20 Shade Trees  
 2. Required Shade Tree Substitutes (9 Ornamentals / 2+185 Shrubs / 10)= 23 Shade Trees  
 3. Required Evergreen Substitutes (55 Shrubs / 5)= 11 Evergreens  
 4. Surplus Evergreen Substitutes (8 NV)= 3 Evergreens  
 5. Surplus Native Shade Tree (12 UVA)=12 Surplus Shade Trees  
 6. This plan provides 3 surplus native trees above the project's 20% goal.

**AMENITY AREA (GN CREDIT C-7) (Scale: 1" = 60')**



**hord | coplan | macht**  
 ARCHITECTURE LANDSCAPE ARCHITECTURE INTERIOR DESIGN PLANNING  
 750 East Pratt Street, Suite 1100, Baltimore, MD 21202  
 Phone: 410.837.7311 Fax: 410.837.6530

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

Signature: *Laura Ducha*  
 LICENSE NUMBER: 100B EXPIRATION DATE: 4-20-20

**OWNER**  
**KELLOGG - CCP, LLC**  
 c/o DAVID P. SCHEFFENACKER, JR.  
 MANAGING MEMBER

2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

**DEVELOPER**  
**PRESTON - SCHEFFENACKER PROPERTIES**  
 2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
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<b>REVISED SITE DEVELOPMENT PLAN</b> <b>GREEN NEIGHBORHOOD PLAN</b> <b>PARCEL '1' - The Barn - Community Center</b> <b>OXFORD SQUARE</b> <b>"A HOWARD COUNTY GREEN NEIGHBORHOOD"</b> TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND <b>SHEET 16 OF 18</b>		C.E.I. PROJECT NUMBER 131176.00  SCALE: As Shown
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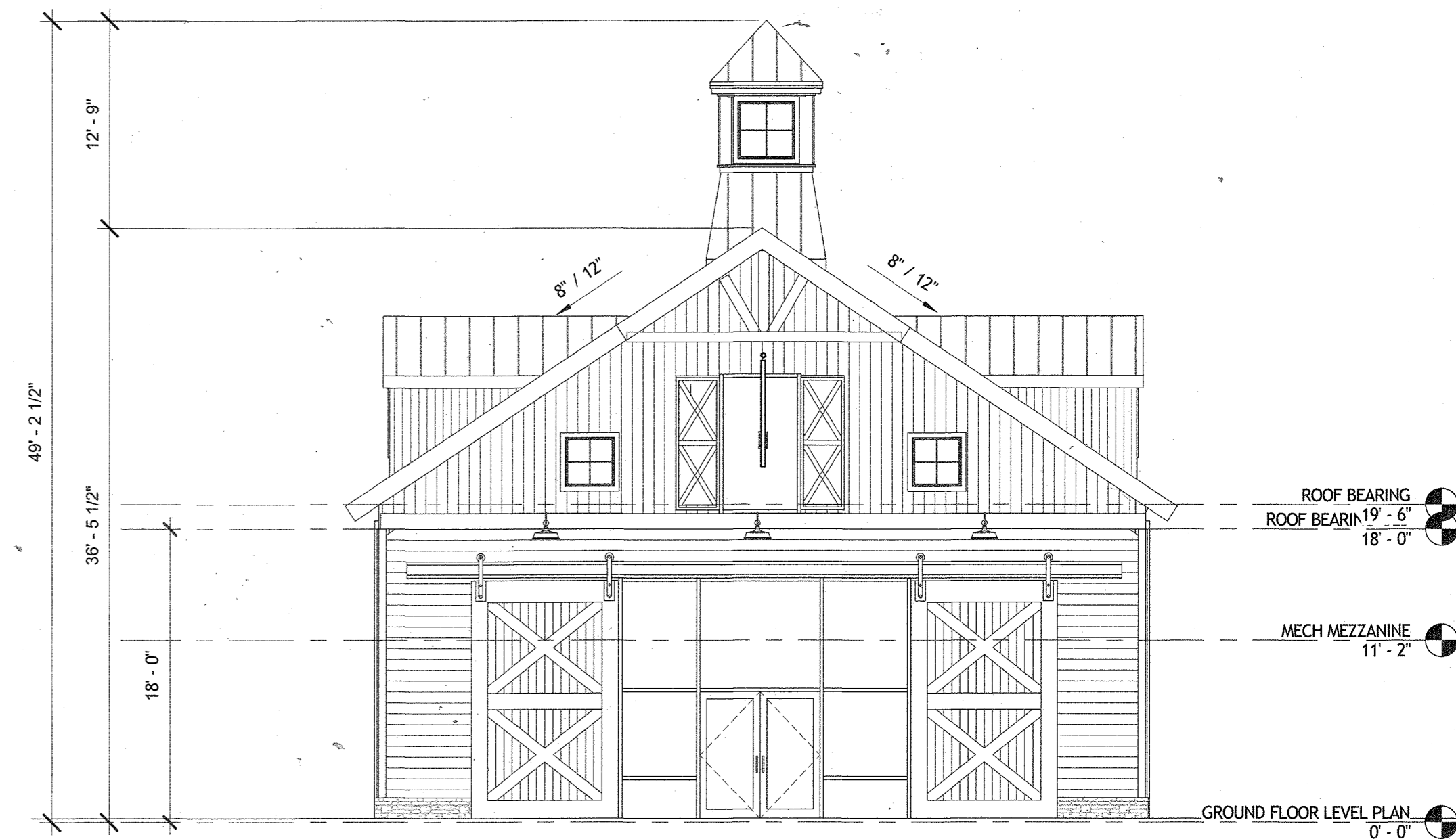
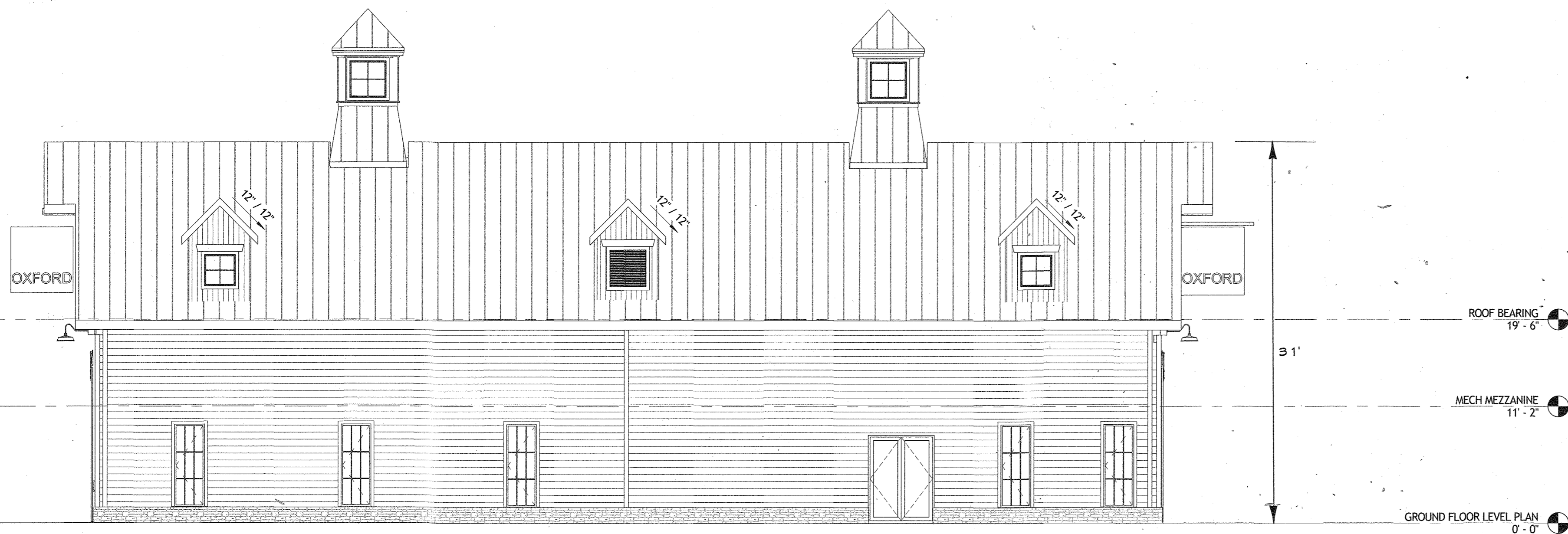
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date: 12/23/19
Chief, Division of Land Development	Date: 1/14/20
Director	Date: 1-17-20

**M CENTURY ENGINEERING**  
 CONSULTING ENGINEERS - PLANNERS  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 Fax: 443.589.2401

DESIGN BY:	DRAWN BY:	CHECKED BY:	DATE:	BY	NO.	REVISION	DATE
			11-15-19	MJF	1	Redline Revision: Removed pool and inserted shade pavilion and lawn	11-15-19



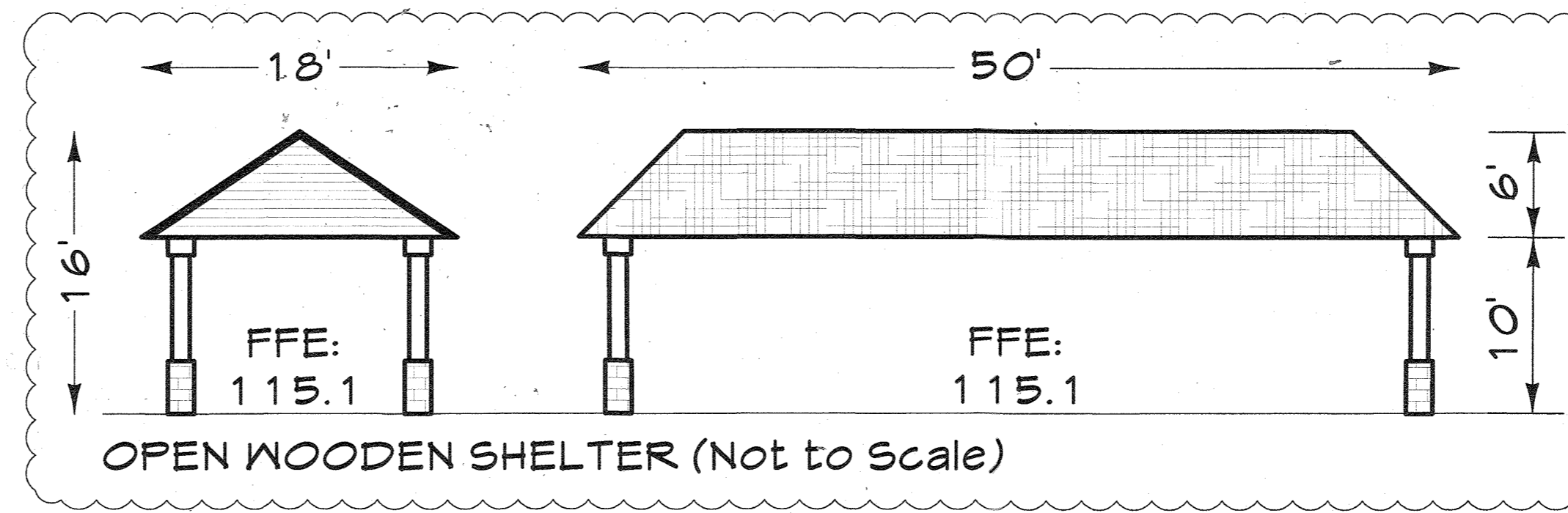


**3 SOUTH ELEVATION**

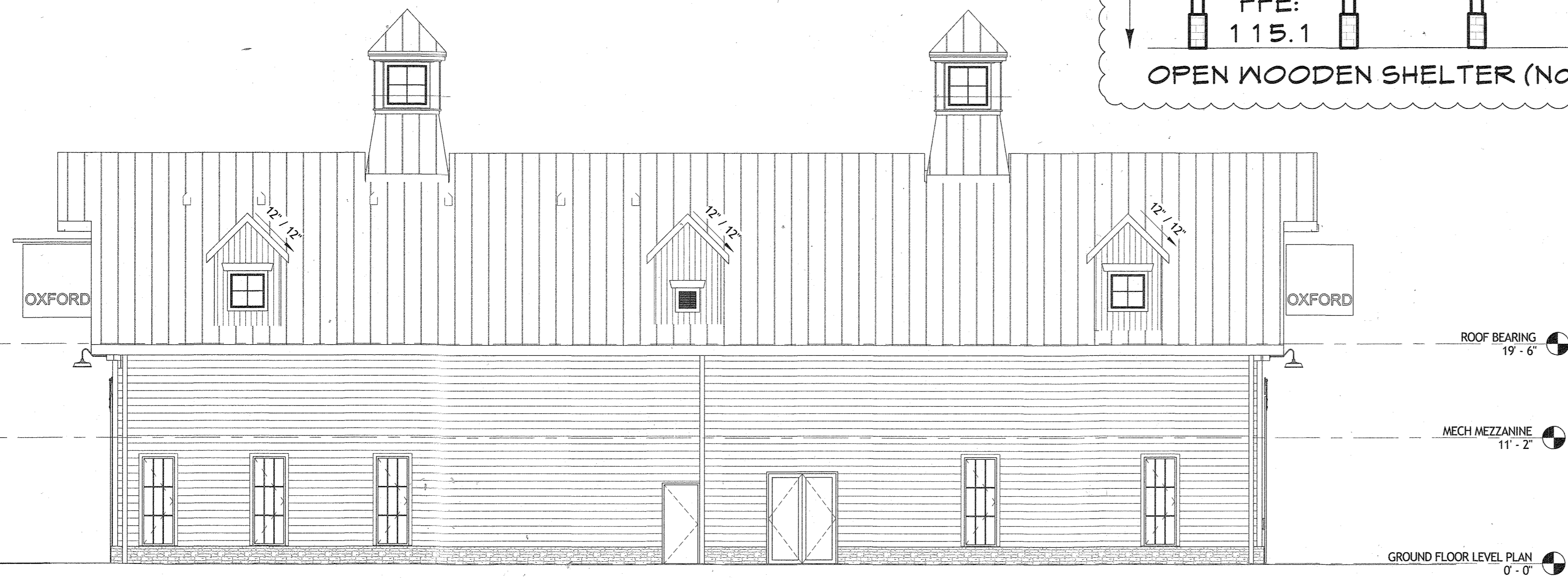
A4.0 1/8" = 1'-0"

**2 EAST ELEVATION (Facing the Street)**

A2.0 A4.0 1/8" = 1'-0"

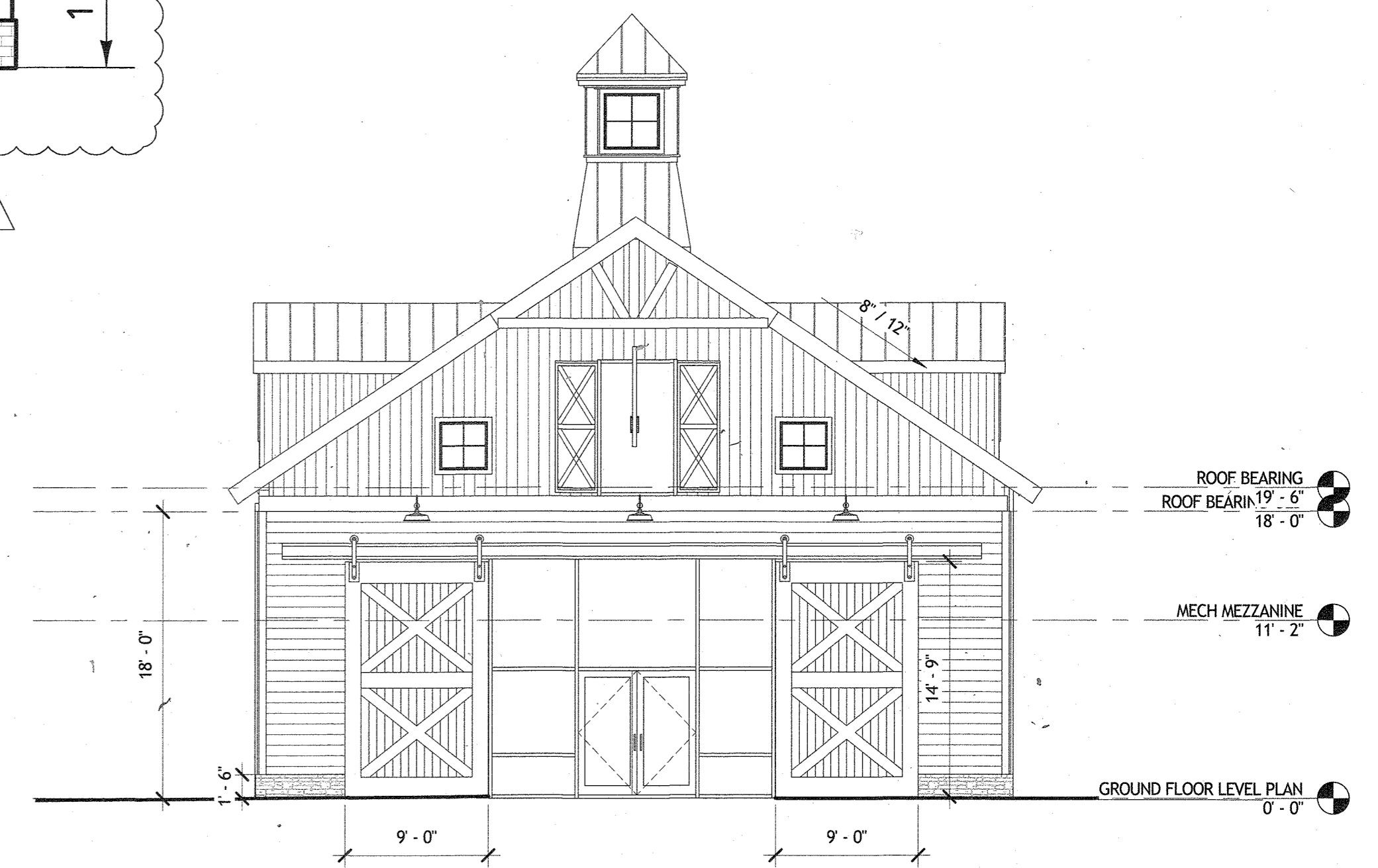


1



**4 NORTH ELEVATION**

A2.0 A4.0 1/8" = 1'-0"



**1 WEST ELEVATION (Facing the Green)**

A4.0 1/8" = 1'-0"

**BUILDING ELEVATIONS**

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NUMBER: 10551 EXPIRATION DATE: 8/28/2021

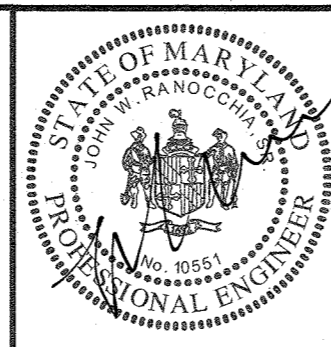
**OWNER**  
**KELLOGG - CCP, LLC**  
 c/o DAVID P. SCHEFFENACKER, JR.  
 MANAGING MEMBER

2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

Date: 12/23/19  
 Date: 1/14/20  
 Date: 1-17-20

**CENTURY ENGINEERS**  
 CONSULTING ENGINEERS - PLANNERS  
 10740 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 Fax: 443.589.2401

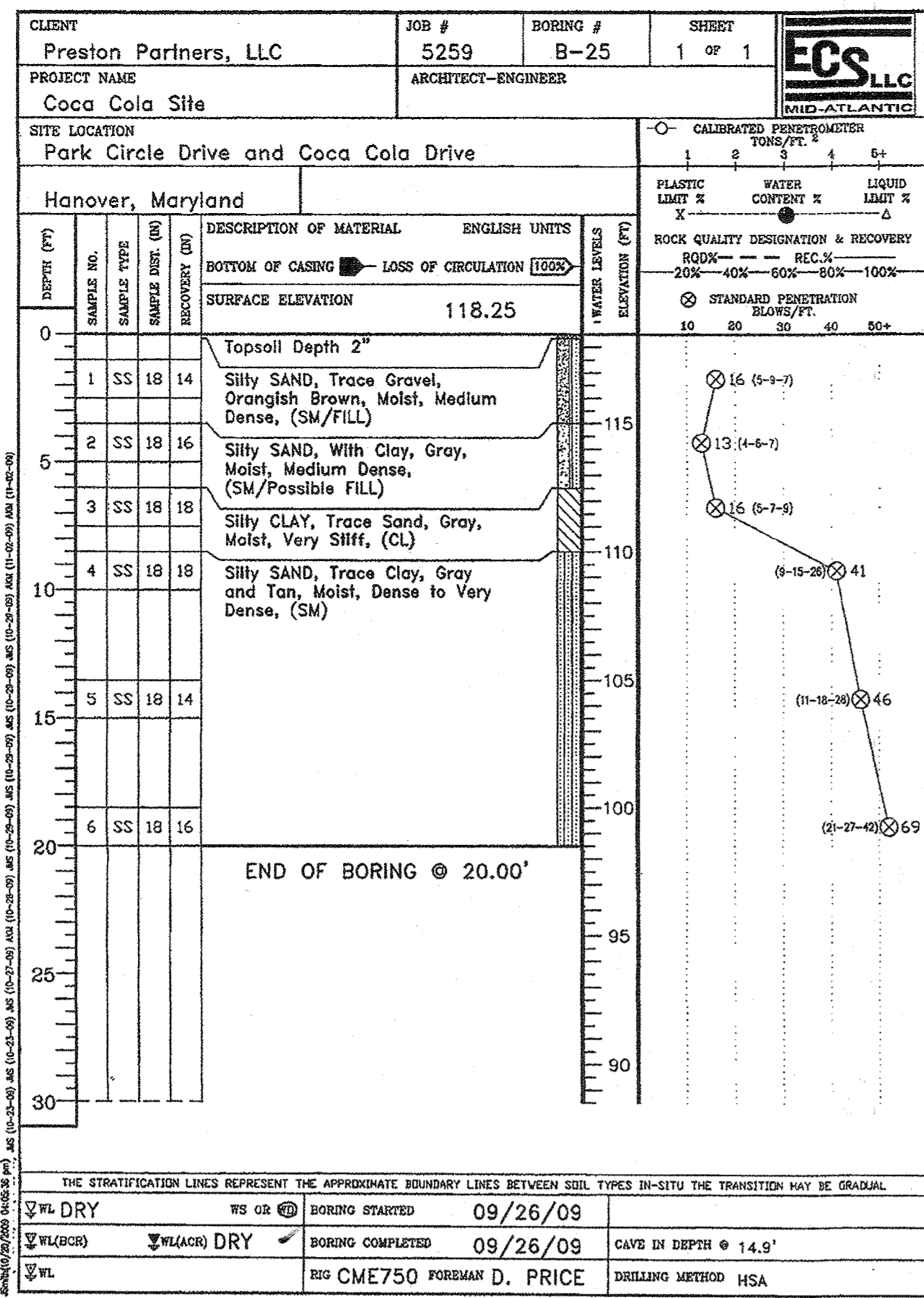
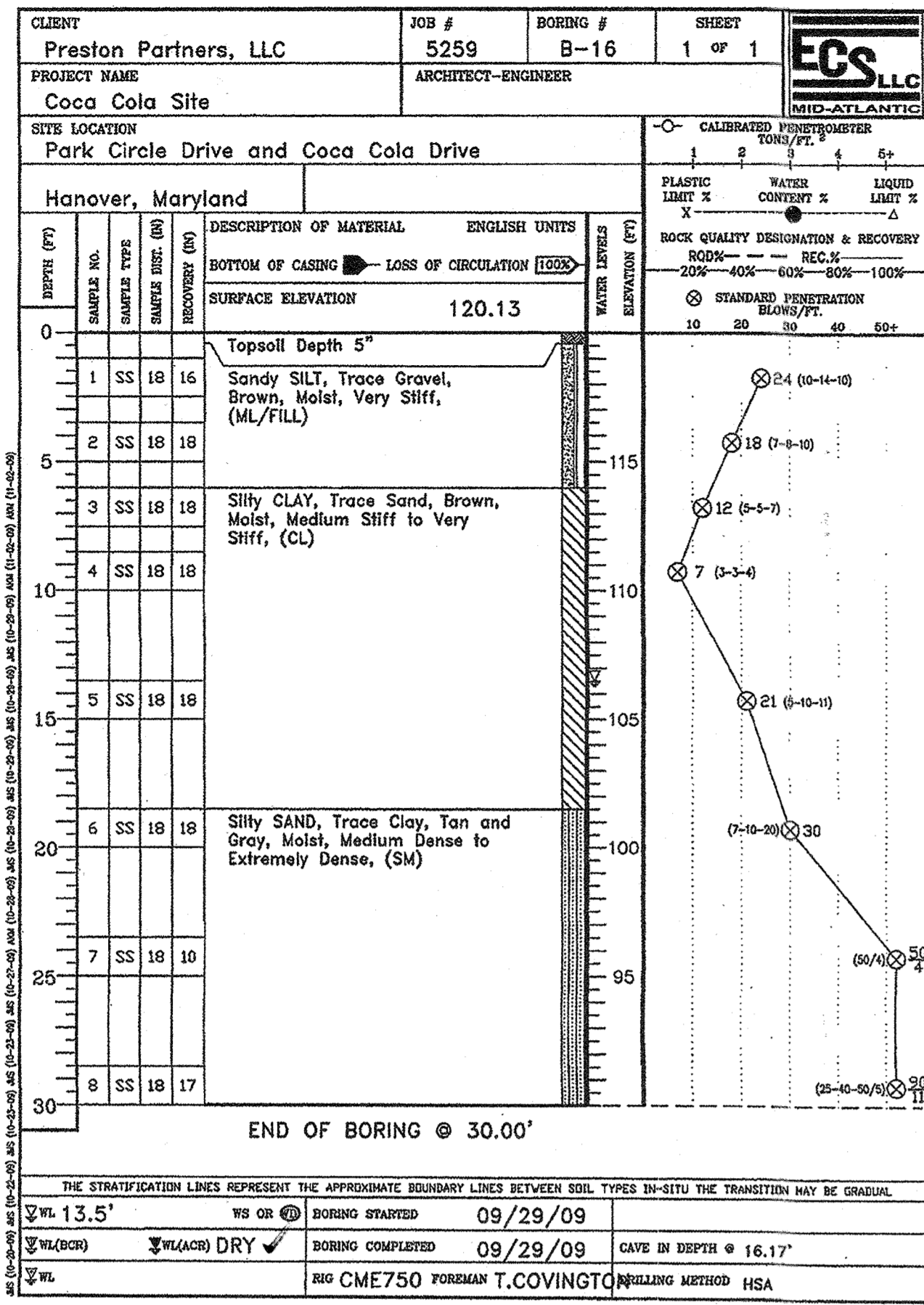


DESIGN BY: M.J.P.			
DRAWN BY: KAD/MSS			
CHECKED BY:			
DATE: 11-15-19	CEI	△	Addition of Open Wooden Shelters (2)
BY	NO.	REVISION	DATE

**DEVELOPER**  
**PRESTON - SCHEFFENACKER PROPERTIES**  
 2330 WEST JOPPA ROAD, SUITE 190  
 LUTHERVILLE, MARYLAND 21093-4614  
 410-296-3800

**Building Elevations**  
 PARCEL 'I' - The Barn-Community Center  
**OXFORD SQUARE**  
 "A HOWARD COUNTY GREEN NEIGHBORHOOD"  
 TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
 ELECTION DISTRICT 1 HOWARD COUNTY, MARYLAND  
 REVISED SITE DEVELOPMENT PLAN SHEET 17 OF 18

C.E.I. PROJECT NUMBER 131176.00  
 SCALE:



**OPERATION AND MAINTENANCE SCHEDULE FOR COMMERCIAL ASSOCIATION OWNED AND MAINTAINED BIO-RETENTION AREAS (M-6)**

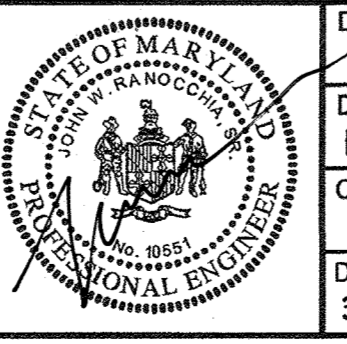
- The Owner shall maintain the plant material, mulch layer and soil layer annually. maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.
- The Owner shall perform a plant in the spring and in the fall each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient stakes and wires.
- The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The Owner shall correct soil erosion on as needed basis with a minimum of once per month and after each heavy storm.
- The Owner shall maintain all observation wells, clean outs and perforated underdrains.
- Filter material must be replaced when water remains on the surface of the filter bed for more than 24 hours following a 10 year storm event.

**PROFESSIONAL CERTIFICATION**  
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 LICENSE NUMBER: 10551      EXPIRATION DATE: 8/28/2019

6:20 13 Facilities 13 11 17 01 Oxford Square Barn CIVIL CADD Drawings SPP Barn with Pool C&S&S Barn (SDP - 18) SWM Details & Boring Logs.dwg Mar. 10.2017 B. J. Oprek Kdamley

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division      Date: 10-31-18  
 Chief, Division of Land Development      Date: 1/25/19  
 Director      Date: 1-28-19

**M CENTURY ENGINEERING**  
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DESIGN BY: M.J.P.			
DRAWN BY: KAD/MSS			
CHECKED BY:			
DATE: 3-10-17	BY:	NO.	REVISION
			DATE

**DEVELOPER**  
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**SWM Details & Boring Logs**  
**PARCEL 'I' - The Barn-Community Center OXFORD SQUARE**  
 "A HOWARD COUNTY GREEN NEIGHBORHOOD"  
 TAX MAP: 38 PARCEL: 761 GRID: 20 ZONED: TOD  
 ELECTION DISTRICT 1      HOWARD COUNTY, MARYLAND  
**SHEET 18 OF 18**

C.E.I. PROJECT NUMBER: 1311176.00  
 SCALE: As Shown

**Appendix B.4. Construction Specifications for Environmental Site Design Practices**

**B.4.B Specifications for Permeable Pavements & Reinforced Turf**  
 These specifications include information on acceptable materials for typical applications and are not exclusive or limiting. The designer is responsible for developing detailed specifications for individual projects and specific conditions.

**1. Pervious Concrete Specifications**  
 Design Thickness - Pervious concrete applications shall be designed so that the thickness of the concrete slab shall support the traffic and vehicle types that will be carried. Applications may be designed using either standard pavement procedures (e.g., AASHTO, ACT 325.5R, ACT 330R) or using structural values derived from flexible pavement design procedures.

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

Aggregate - Pervious concrete contains a limited fine aggregate content. Commonly used gradations include ASTM C 33 No. 67 (¾ in. to No. 4), No. 8 (¾ in. to No. 16) and No. 89 (¾ in. to No. 50) sieves. Single-sized aggregate (up to 1 inch) may also be used.

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

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

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

**2. Permeable Interlocking Concrete Pavements (PICP)**  
 Paver Blocks - Blocks should be either ¾ in. or 4 in. thick, and meet ASTM C 936 or CSA A231.2 requirements. Applications should have 20% or more (40% preferred) of the surface area open. Installation should follow manufacturer's instructions, except that infill and base course materials and dimensions specified in this Appendix shall be followed.

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

B.4.3      Supp. 1

**Appendix B.4. Construction Specifications for Environmental Site Design Practices**

excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to restructure the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

**4. Plant Material**  
 Recommended plant material for micro-bioretention practices can be found in Appendix A, Section A.2.3.

**5. Plant Installation**  
 Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8" of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

B.4.5      Supp. 1

**Appendix B.4. Construction Specifications for Environmental Site Design Practices**

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

**3. Reinforced Turf**  
 Reinforced Grass Pavement (RGP) - Whether used with grass or gravel, the RGP thickness shall be at least 1 1/2" thick with a load capacity capable of supporting the traffic and vehicle types that will be carried.

**B.4.C Specifications for Micro-Bioretention, Rain Gardens, Landscape Infiltration & Infiltration Berms**

**1. Material Specifications**  
 The allowable materials to be used in these practices are detailed in Table B.4.1.

**2. Filtering Media or Planting Soil**  
 The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content - Media shall have a clay content of less than 5%.
- pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

**3. Compaction**  
 It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are

Supp. 1      B.4.4

**Appendix B.4. Construction Specifications for Environmental Site Design Practices**

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

**6. Underdrains**  
 Underdrains should meet the following criteria:

- Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/2" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (¾" to ¾" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

**7. Miscellaneous**  
 These practices may not be constructed until all contributing drainage area has been stabilized

Supp. 1      B.4.6

**OWNER**  
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