

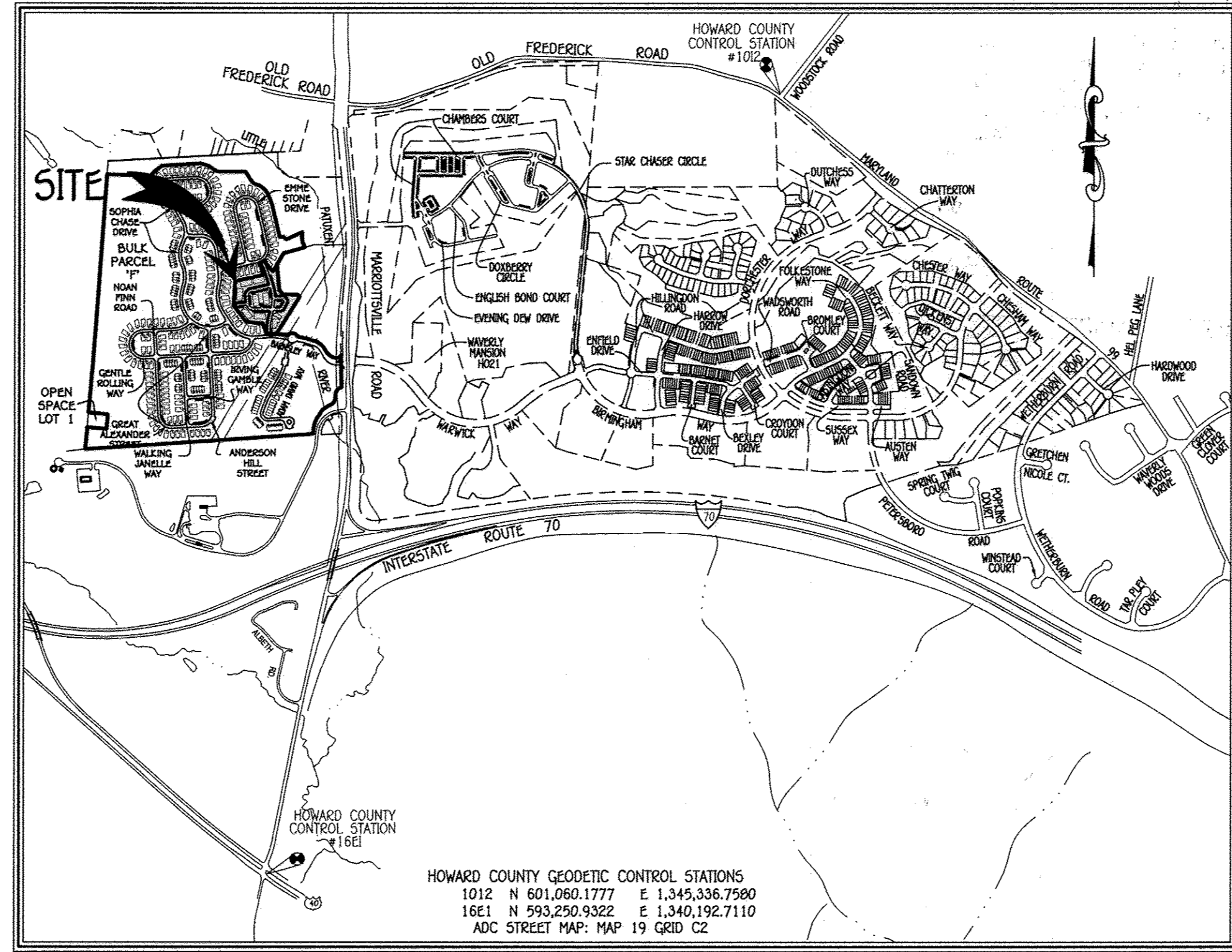
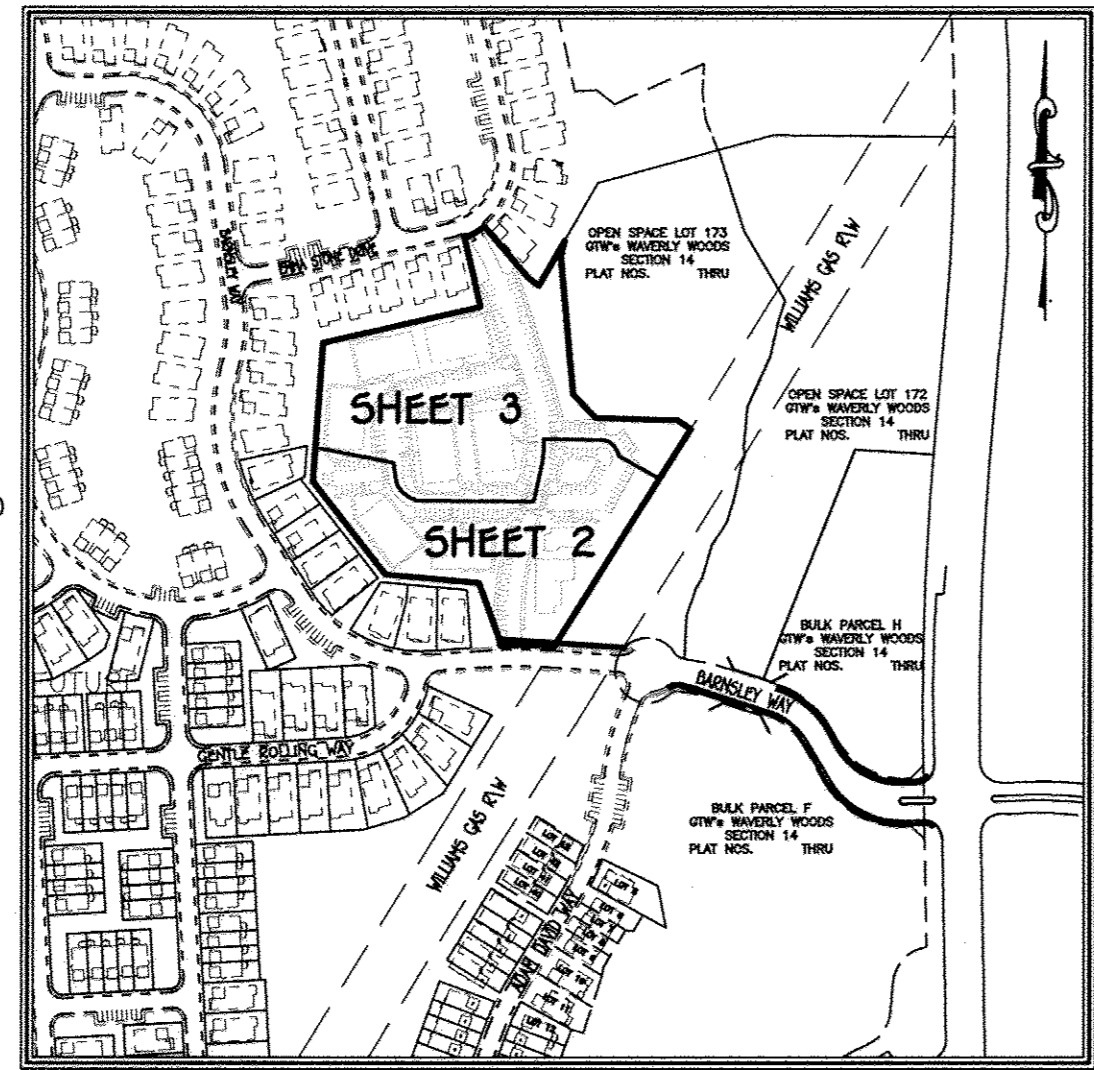
SHEET INDEX table with columns SHEET NO. and DESCRIPTION. Lists sheets 1 through 23-31 including title sheet, site development plan, handicap detail, etc.

ADDRESS CHART table with columns BLDG. NO. and STREET ADDRESS. Lists addresses for buildings 1 through 6 on John Gravel Road and Club House on John Stuart Road.

STREET LIGHT CHART (PRIVATE) table with columns STREET NAME, STATION, OFFSET, and FIXTURE/POLE TYPE. Lists lighting specifications for John Stuart Road and John Gravel Road.

STREET SIGN CHART table with columns STREET NAME, STATION, OFFSET, POSTED SIGN, and SIGN CODE. Lists sign requirements for various streets.

SITE ANALYSIS DATA CHART table with columns A through R, detailing lot area, unit counts, parking spaces, and other site-specific data.



SITE DEVELOPMENT PLAN GTW'S WAVERLY WOODS SECTION 14 PARCEL 'G' 'WAVERLY MEWS' GARDEN-STYLE CONDOMINIUMS AGE RESTRICTED ADULT HOUSING ZONED: PSC (PLANNED SENIOR COMMUNITY) DISTRICT TAX MAP No. 16 GRID No. 4 PARCEL No. P/O 249

GENERAL NOTES

- List of 48 general notes covering contractor obligations, zoning regulations, site plan requirements, and construction standards.

UNIVERSAL DESIGN GUIDELINES FOR AGE-RESTRICTED ADULT HOUSING IN HOWARD COUNTY

Text describing the purpose and scope of the Universal Design Guidelines for age-restricted adult housing in Howard County.

Text detailing design standards for site accessibility and usable common areas, including references to the Americans with Disabilities Act.

Text detailing design standards for individual units, including accessibility requirements for parking, entrances, and elevators.

Text detailing design standards for multi-family apartment or condo developments, including requirements for common areas and elevators.

Text detailing design standards for single family detached and attached developments, including requirements for entrances and parking.

Text detailing design standards for multi-family apartment or condo developments, including requirements for common areas and elevators.

Text detailing design standards for single family detached and attached developments, including requirements for entrances and parking.

Text detailing design standards for multi-family apartment or condo developments, including requirements for common areas and elevators.

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Text detailing design standards for multi-family apartment or condo developments, including requirements for common areas and elevators.

Text detailing design standards for single family detached and attached developments, including requirements for entrances and parking.

PROFESSIONAL CERTIFICATION

Text of professional certification by Frank Manalansan II, dated 8/19/14.

Signed and dated professional certification for Frank Manalansan II.

Professional ID number #21476.



Signed and dated professional certification for Frank Manalansan II.

VICINITY MAP

Scale: 1" = 1200'

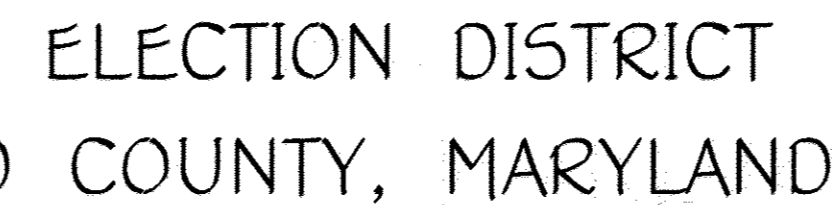
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

AMENDED PRELIMINARY DEVELOPMENT PLAN CRITERIA for GTW'S WAVERLY WOODS WEST, RE-ZONING 17.628 ACRES.

- List of development plan criteria including maximum height, minimum distances between buildings, and accessibility requirements.

APPROVED PLANNING BOARD OF HOWARD COUNTY

Date: 2/20/2014



FISHER, COLLINS & CARTER, INC. logo and address: 10272 BALTIMORE NATIONAL FLD, ELICOTT CITY, MARYLAND 21042.

Revision table with columns NO., REVISION, and DATE. Includes one revision entry.

Approval signatures and dates from Ryan Homes and the Planning Board of Howard County.

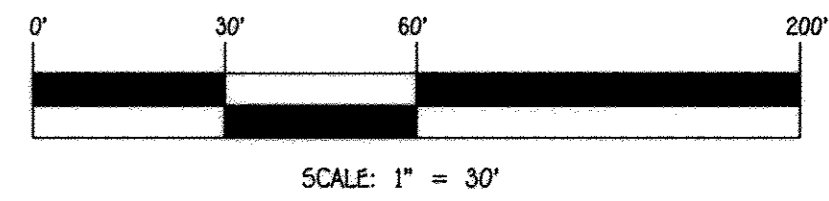
PLEASE NOTE THAT ALL LOTS IN THIS SUBDIVISION ARE SUBJECT TO THE MHU FEE-IN-LIEU OF INSURANCE AND ARE TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTION, LICENSES AND PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT

TITLE SHEET AGE RESTRICTED ADULT HOUSING WAVERLY MEWS SECTION 14 PARCEL 'G' (Plat Nos. Thru ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: AUGUST 9, 2014 SHEET 1 OF 31 SDP-13-031



LEGEND	
SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
	SPOT ELEVATION
	EROSION CONTROL MATTING
	LIMIT OF DISTURBANCE
	STREET LIGHT PER F-09-057
	PROPOSED STORM DRAIN PIPE
	PROPOSED SEWER
	PROPOSED LANDSCAPE TREES
	PERIMETER TREES
	EXISTING STORM DRAIN
	EXISTING SEWER
	EXISTING WATER
	EXISTING WATER & SEWER UTILITY EASIMENT
	PROPOSED FENCE
	PROPOSED CONCRETE SIDEWALK
	SUPER SALT FENCE
	CENTER POINTS OF INGRESS AND EGRESS
	PROPOSED RETAINING WALL EASIMENT
	PROPOSED MAINTENANCE EASIMENT

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014



NOTE: SEE SHEET 2B FOR ROADWAY GEOMETRY AND DIMENSIONS.

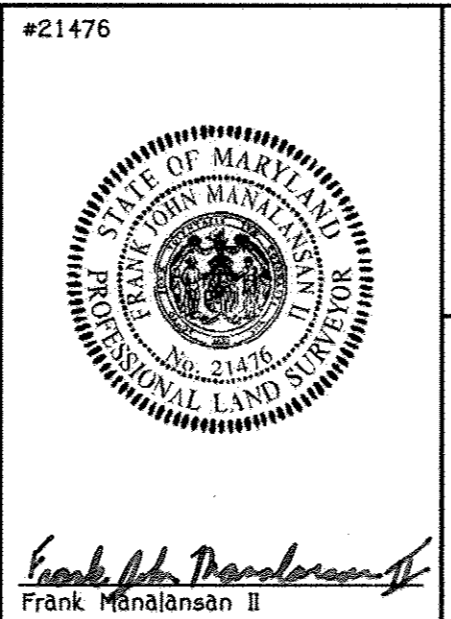
NO.	REVISION	DATE
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/24/13

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2015."

Frank M. Mandalansan II 8/7/14
DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
HOWARD COUNTY HEALTH DEPARTMENT.

Dr. Walter Mousa-Rosman 9/2/2014
COUNTY HEALTH OFFICER DATE



#21476

BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0908

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

K. J. ... 10/26/14
Chief, Division of Land Development DATE

M. ... 9-18-14
Chief, Development Engineering Division DATE

... 1/1/14
Director - Department of Planning and Zoning DATE

PROJECT	SECTION	PARCEL NOS.
GW's WAVERLY WOODS, SECTION 14	14	P/O 249
PARCEL 'G'		

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300

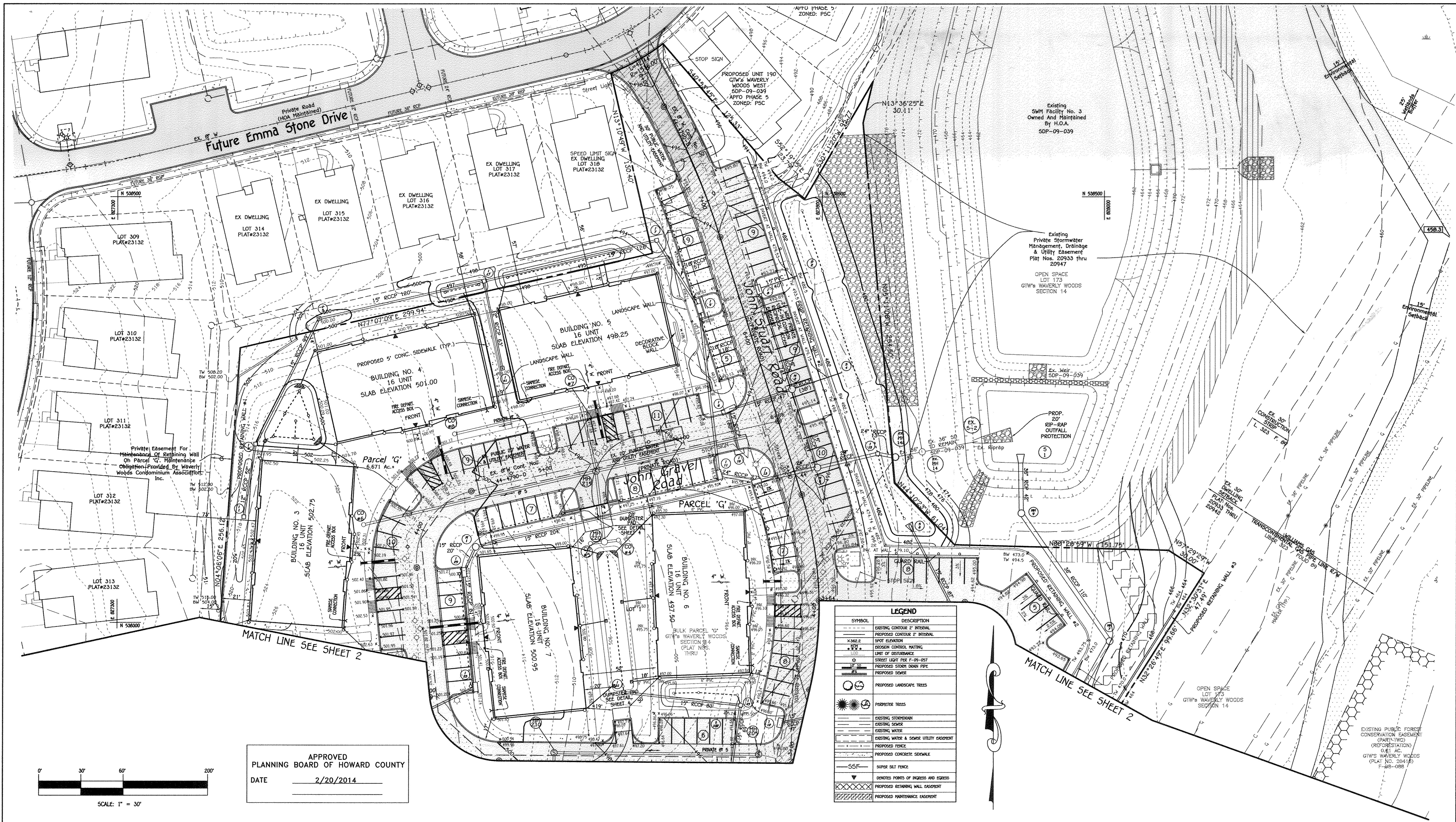
WATER CODE	SEWER CODE
K-02	5992000

SITE DEVELOPMENT PLAN

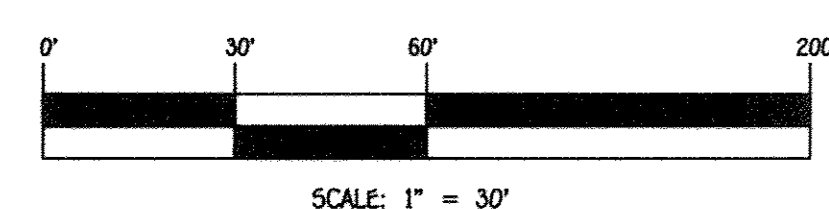
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. 22944 Thru 22953
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 2 OF 31

SDP-13-031

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL FILE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2255



APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

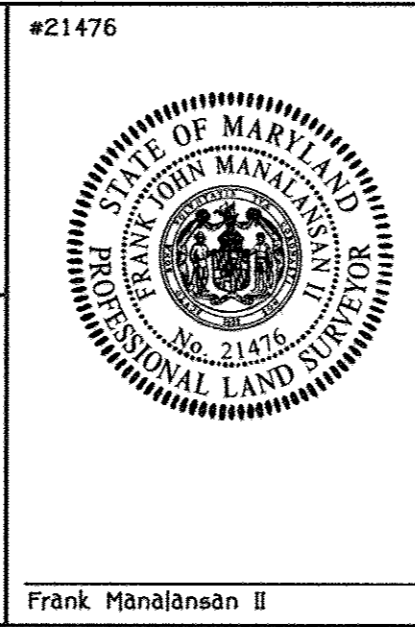


FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2025

NO.	REVISION	DATE
2	REVISE SWM FACILITIES AND ASSOCIATED GRADING	2/20/14
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/4/13
	REVISION	DATE

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland. License No. 21476, Expiration Date: 07/14/2019."
Frank Manalansan II 1-2-18 Date
William M. Manna 1/29/2018 DATE
COUNTY HEALTH OFFICER

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
HOWARD COUNTY HEALTH DEPARTMENT.
William M. Manna 1/29/2018 DATE
COUNTY HEALTH OFFICER



BUILDER
RYAN HOMES
9720 PATENT WOODS DRIVE
COLUMBIA, MARYLAND, 21043
410-796-0908

OWNER/DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development *[Signature]* 2/2/18 Date
Chief, Development Engineering Division *[Signature]* 1/9/18 Date
Director - Department of Planning and Zoning *[Signature]* 2-2-18 Date

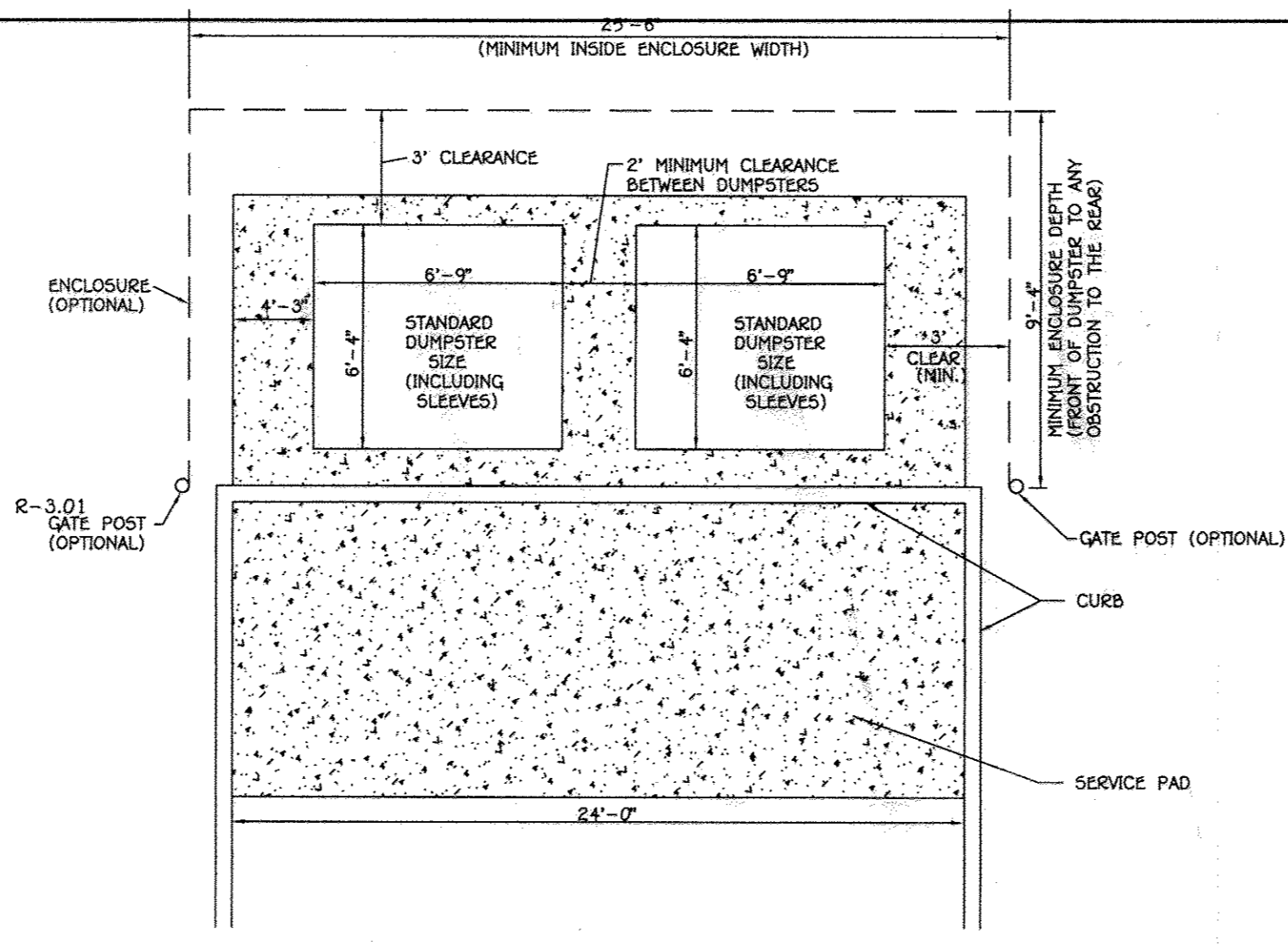
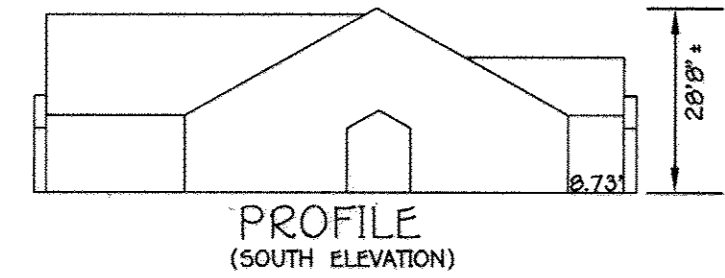
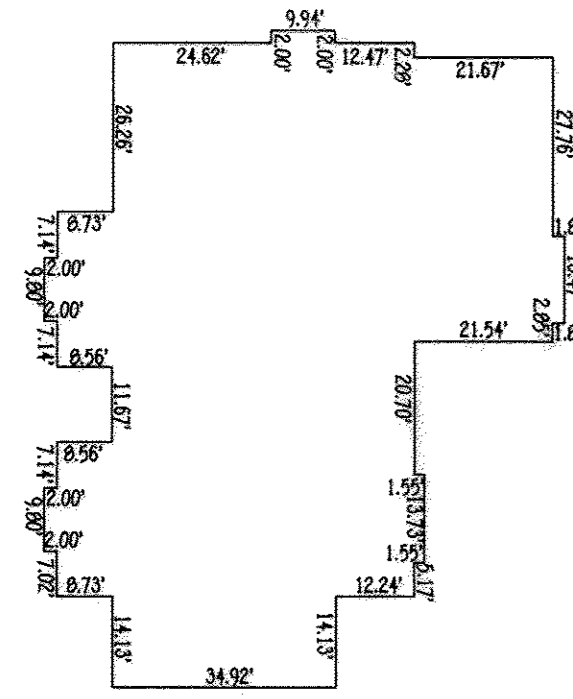
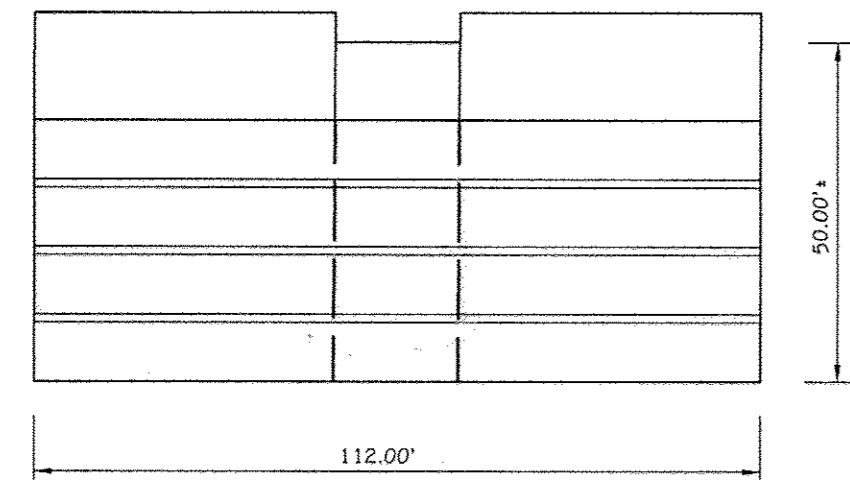
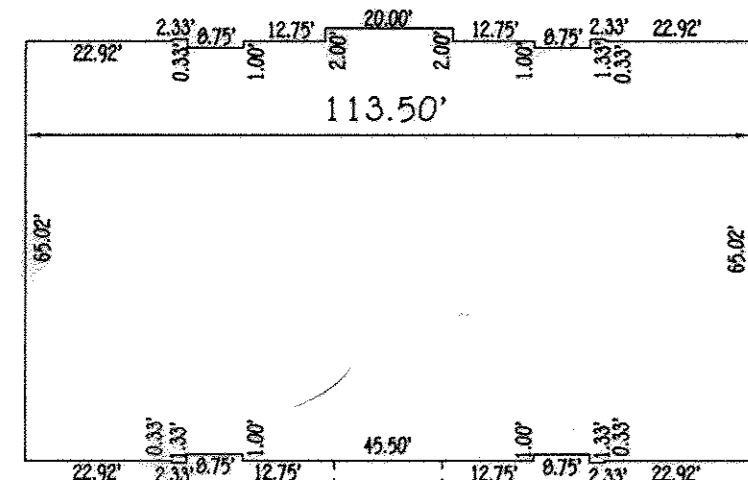
PROJECT	SECTION	PARCEL NOS.
GTW's WAVERLY WOODS, SECTION 14	14	P/O 249

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300

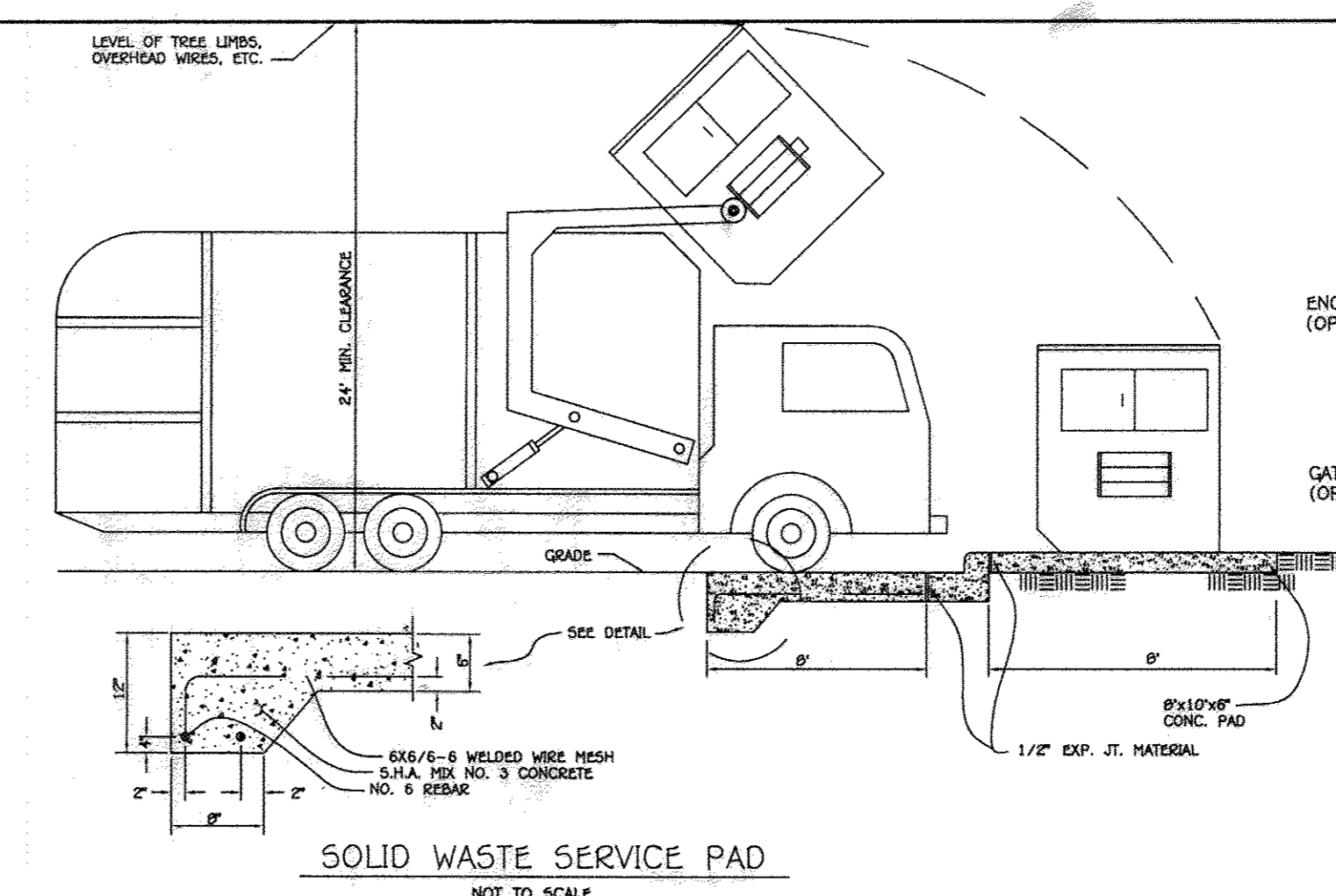
WATER CODE	SEWER CODE
K-02	5992000

REVISED
SITE DEVELOPMENT PLAN
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. 22944 Thru 22953
ZONED: PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER 20, 2017
SHEET 3 OF 31

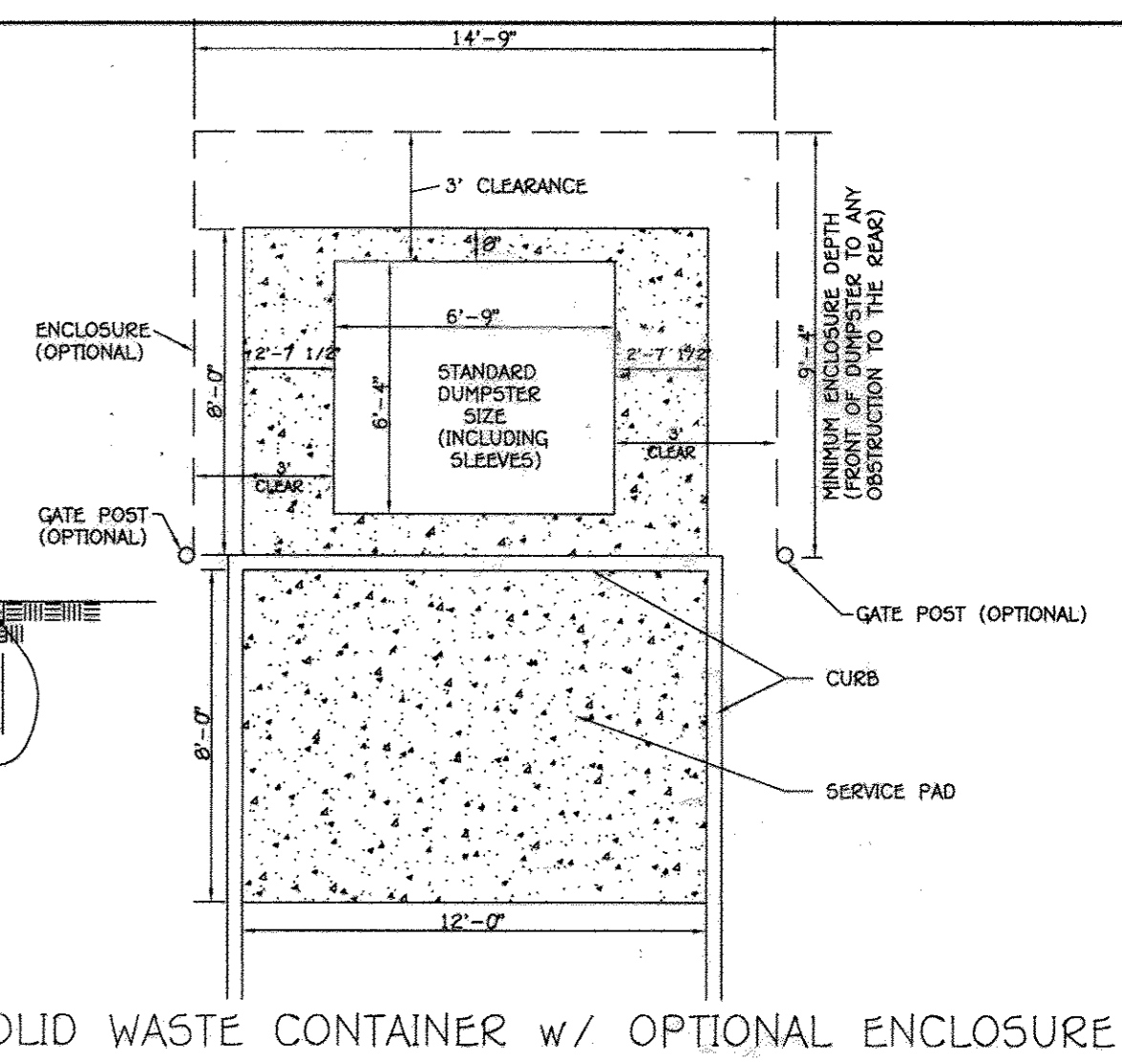
SDP-13-031



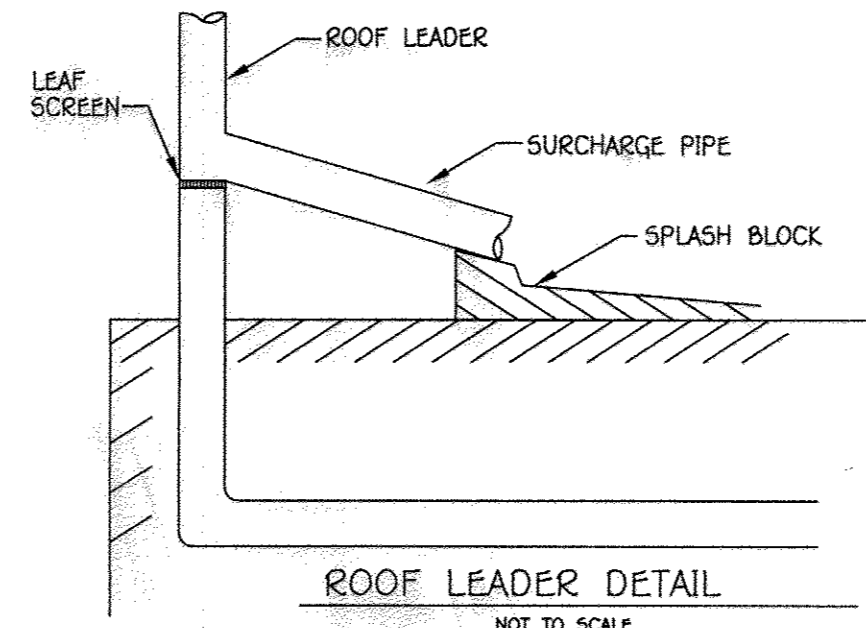
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NOT TO SCALE



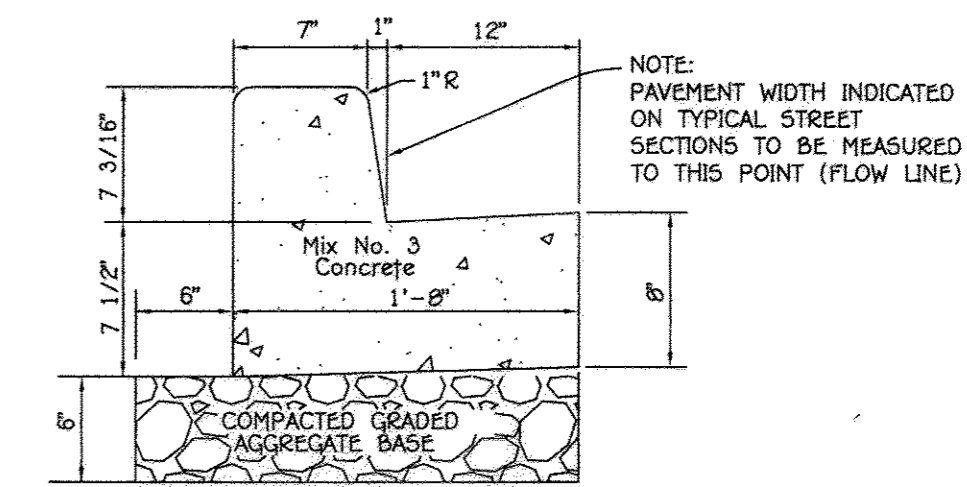
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NOT TO SCALE



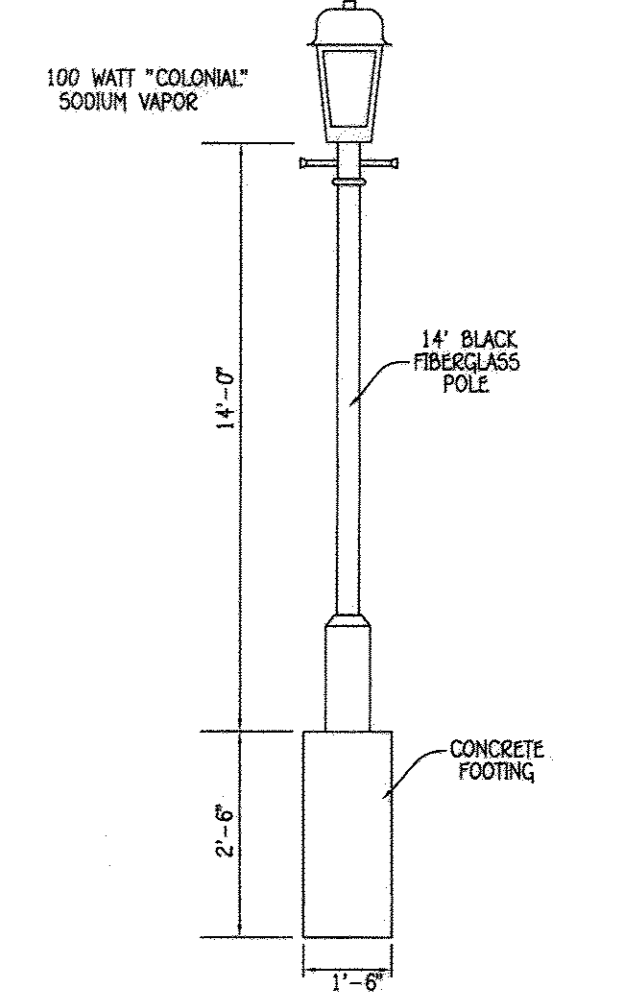
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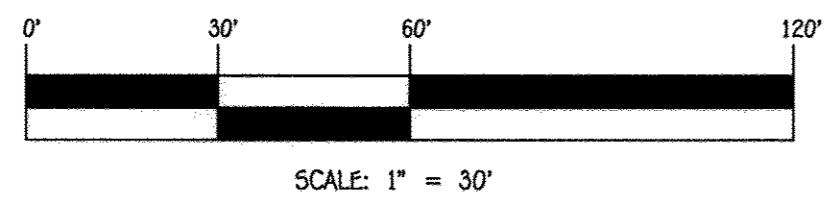
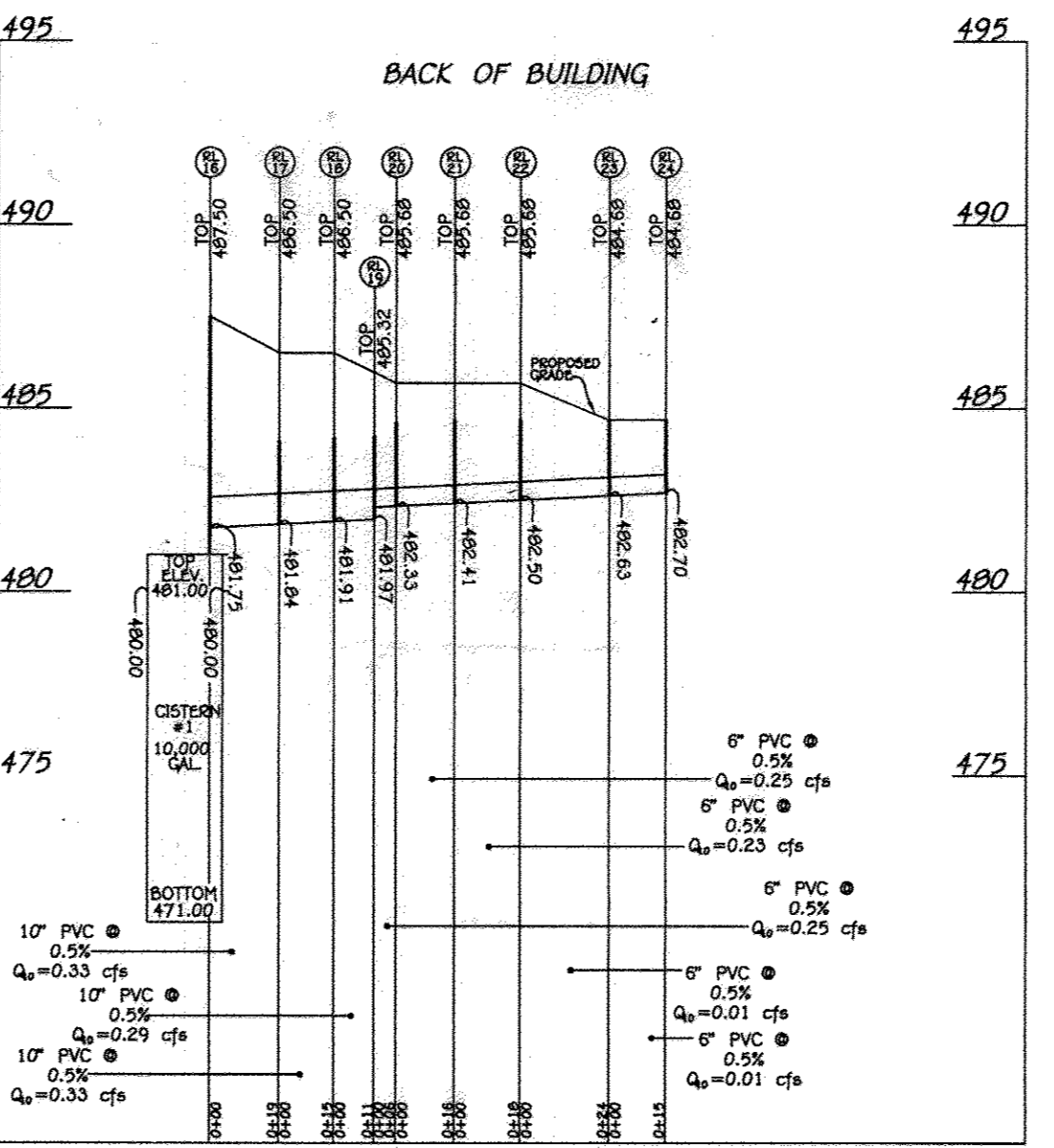
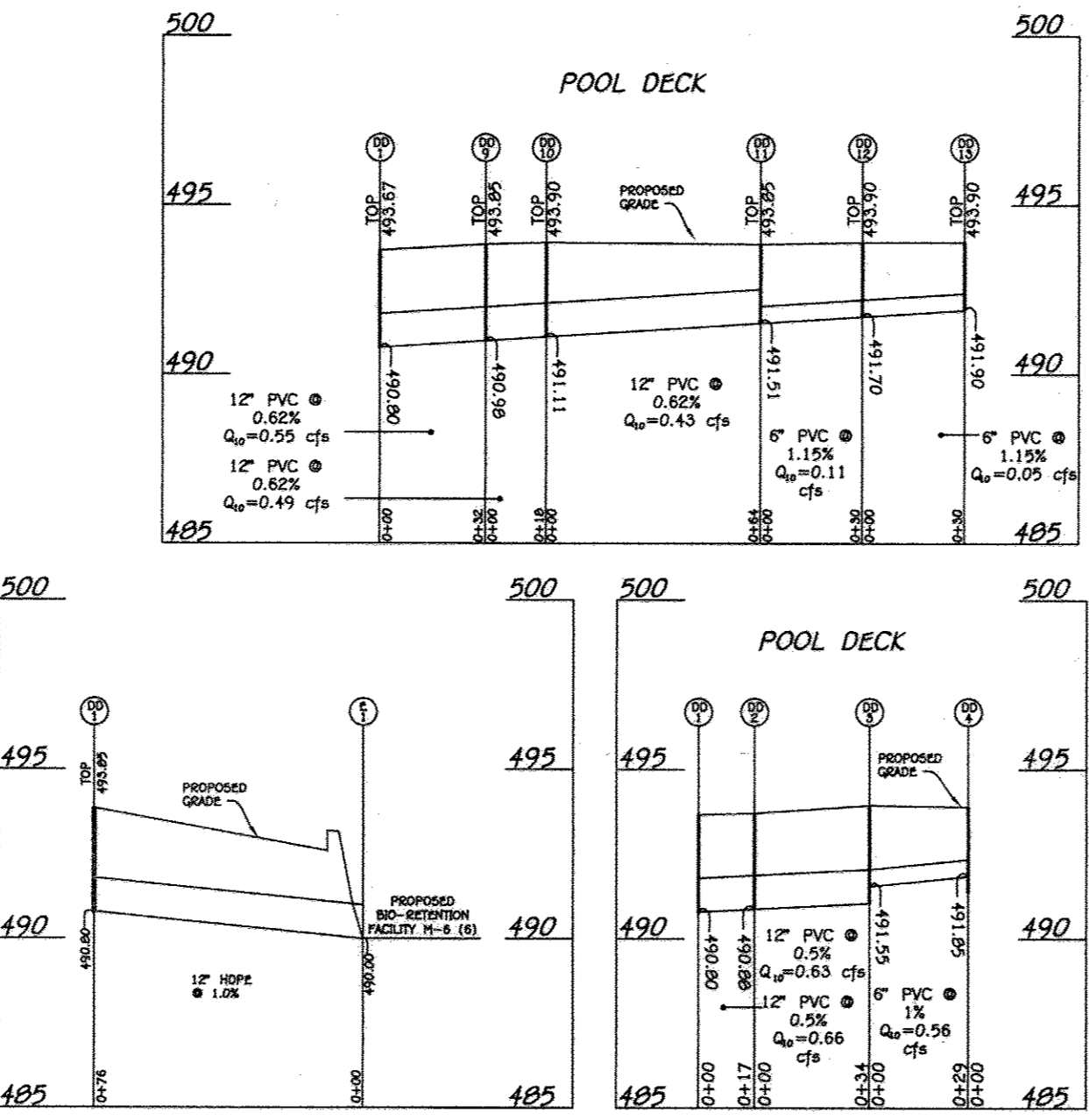
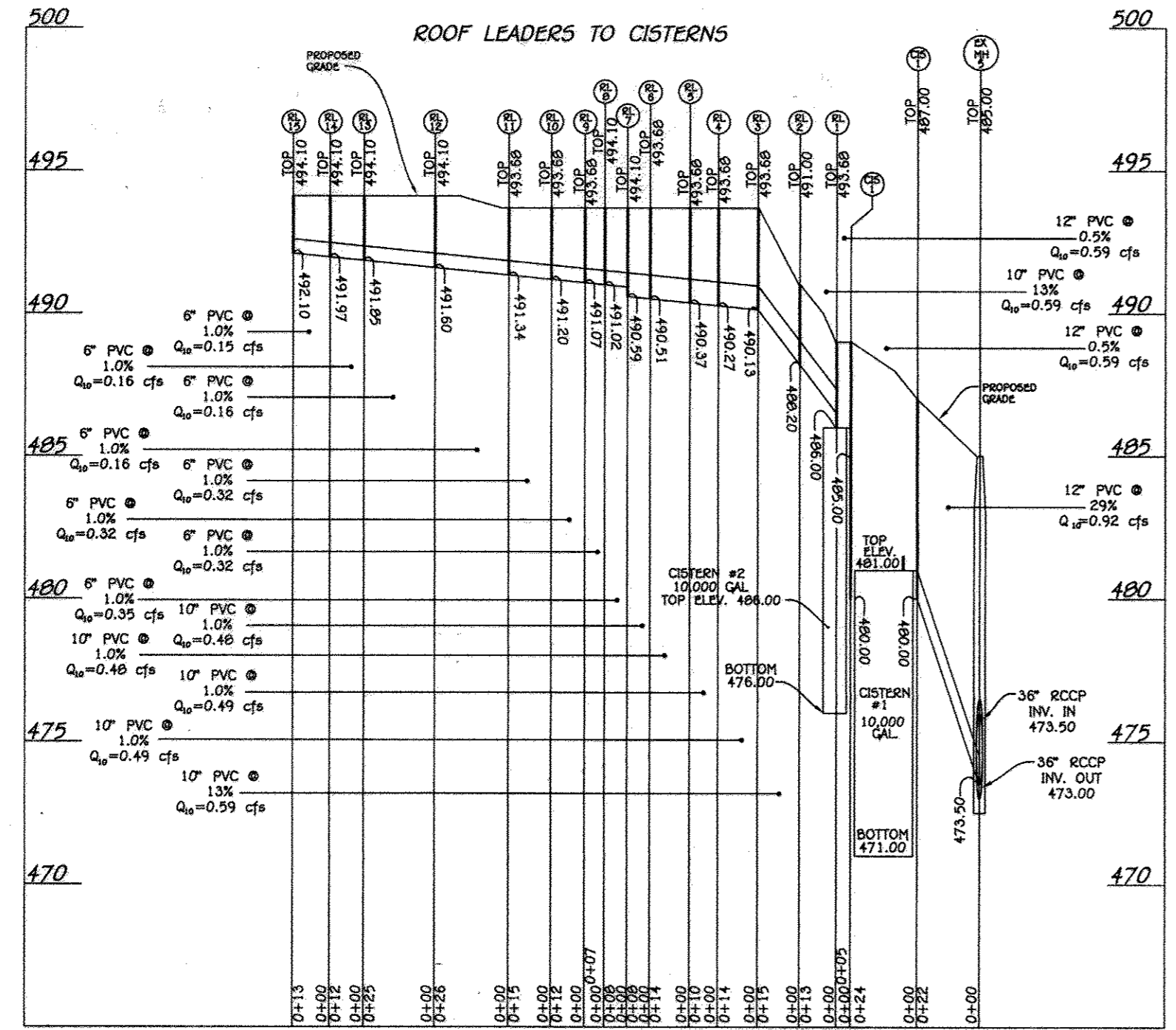
ROOF LEADER DETAIL
NOT TO SCALE



STD. 7" CONC. CURB AND GUTTER
NO SCALE



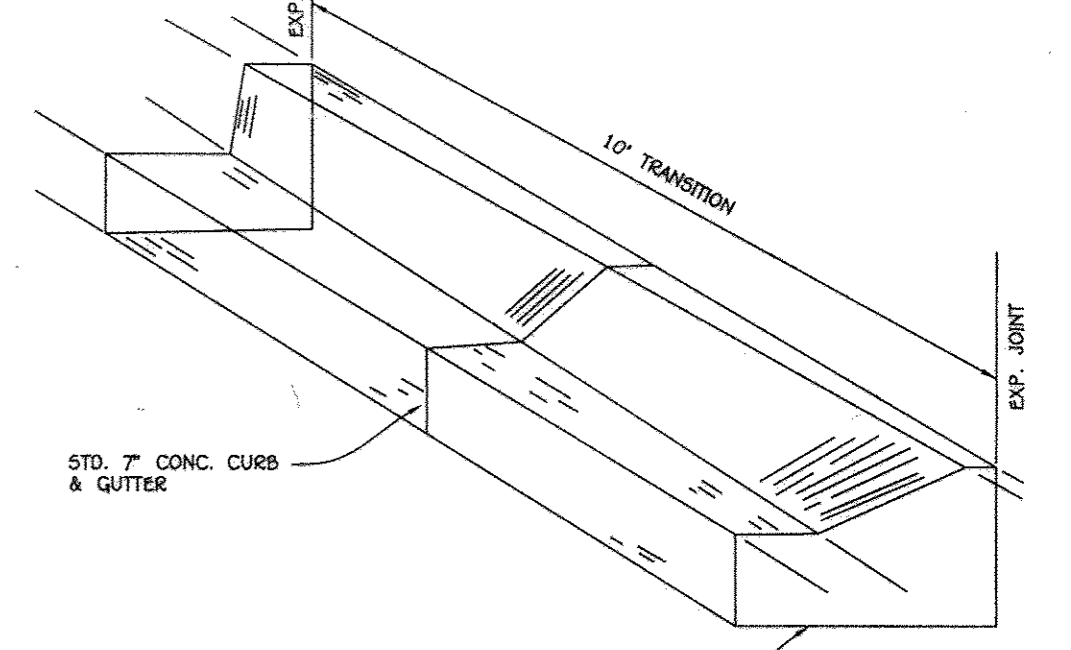
TYPICAL 100-WATT LIGHTING FIXTURE
NO SCALE



SCALE: 1" = 30'

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)					
		3 TO <5	5 TO <7	>7	3 TO <5	5 TO <7	>7
P-2	PARKING DRIVE ASILES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: RESIDENTIAL	PAVEMENT MATERIAL (INCHES)					
		MIN HMA WITH GAB					
		HMA WITH CONSTANT GAB					
		HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5
HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0	
HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0	
GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0	

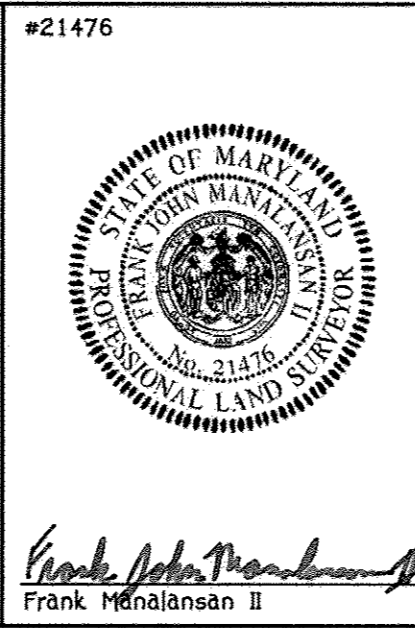


CONCRETE CURB & GUTTER TRANSITION
NO SCALE

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

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland. License No. 21476. Expiration Date: 07/14/2015."
Frank Mihalansan II 8/1/14 DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
COUNTY HEALTH OFFICER: [Signature] 9/2/2014 DATE



OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

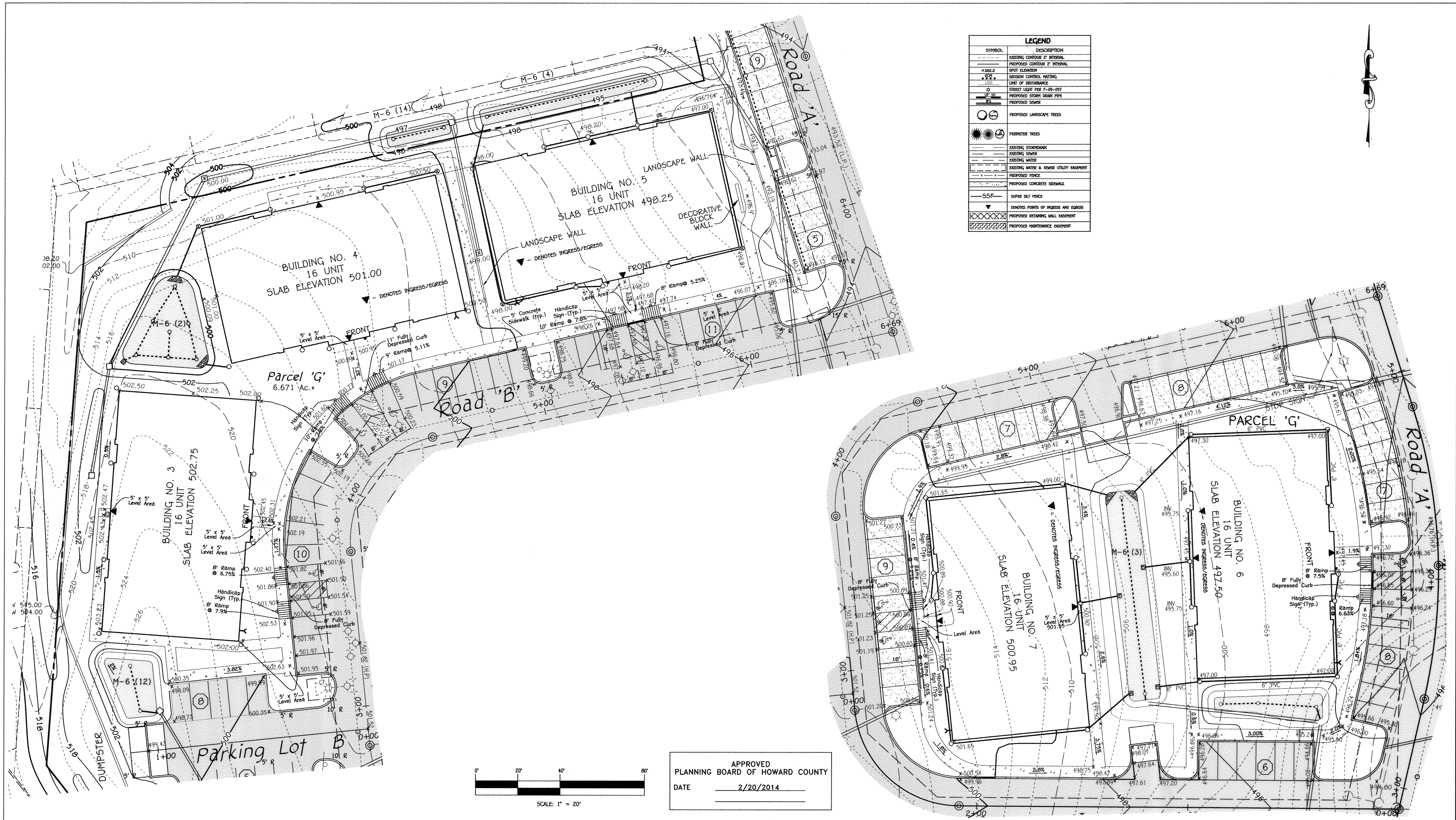
BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0908

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signatures and Dates]

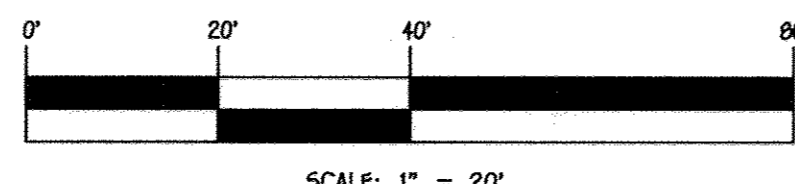
PROJECT	SECTION	PARCEL NOS.
GTW'S WAVERLY WOODS, SECTION 14	14	P/O 249
PLAT 22944-22953	BLOCK NO. 3 & 4	ZONE PSC
TAX/ZONE 16	ELEC. DIST. THIRD	CENSUS TR. 60300
WATER CODE K-02	SEWER CODE 5992000	

DETAIL SHEET
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. 22944 Thru 22953)
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 4 OF 31
SDP-13-031



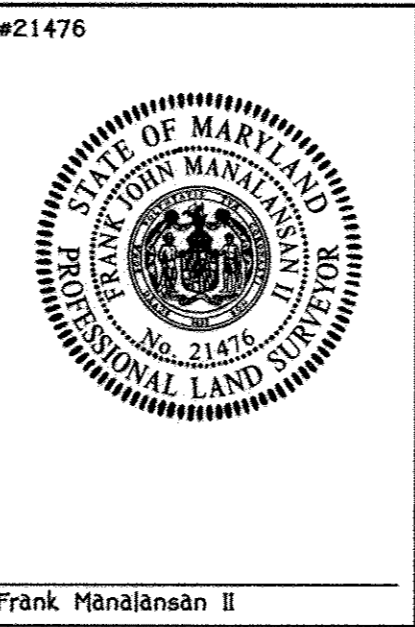
LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
⊙	SPOT ELEVATION
⊙	SECTION CONTROL MARKING
---	LIMIT OF DISTURBANCE
⊙	STREET LIGHT PER F-09-097
---	PROPOSED STORM DRAIN PIPE
---	PROPOSED SEWER
⊙	PROPOSED LANDSCAPE TREES
⊙	PERIMETER TREES
---	EXISTING STORMDRAIN
---	EXISTING SEWER
---	EXISTING WATER
---	EXISTING WATER & SEWER UTILITY EASMENT
---	PROPOSED FENCE
---	PROPOSED CONCRETE SIDEWALK
---	SUPER SILT FENCE
⊙	DENOTES POINTS OF INGRESS AND EGRESS
---	PROPOSED RETAINING WALL EASEMENT
---	PROPOSED MAINTENANCE EASEMENT

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014



NO.	REVISION	DATE
2	REVISE SWM FACILITIES AND ASSOCIATED GRADING	12/28/17
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/14/15

PROFESSIONAL CERTIFICATION
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 Frank Manalansan II 1-2-18
 COUNTY HEALTH OFFICER 1/29/2018
 APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
 COUNTY HEALTH OFFICER



BUILDER
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA, MARYLAND, 21043
 410-796-0908

OWNER/DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development 2/21/18
 Chief, Development Engineering Division 1/19/18
 Director - Department of Planning and Zoning 2-2-18

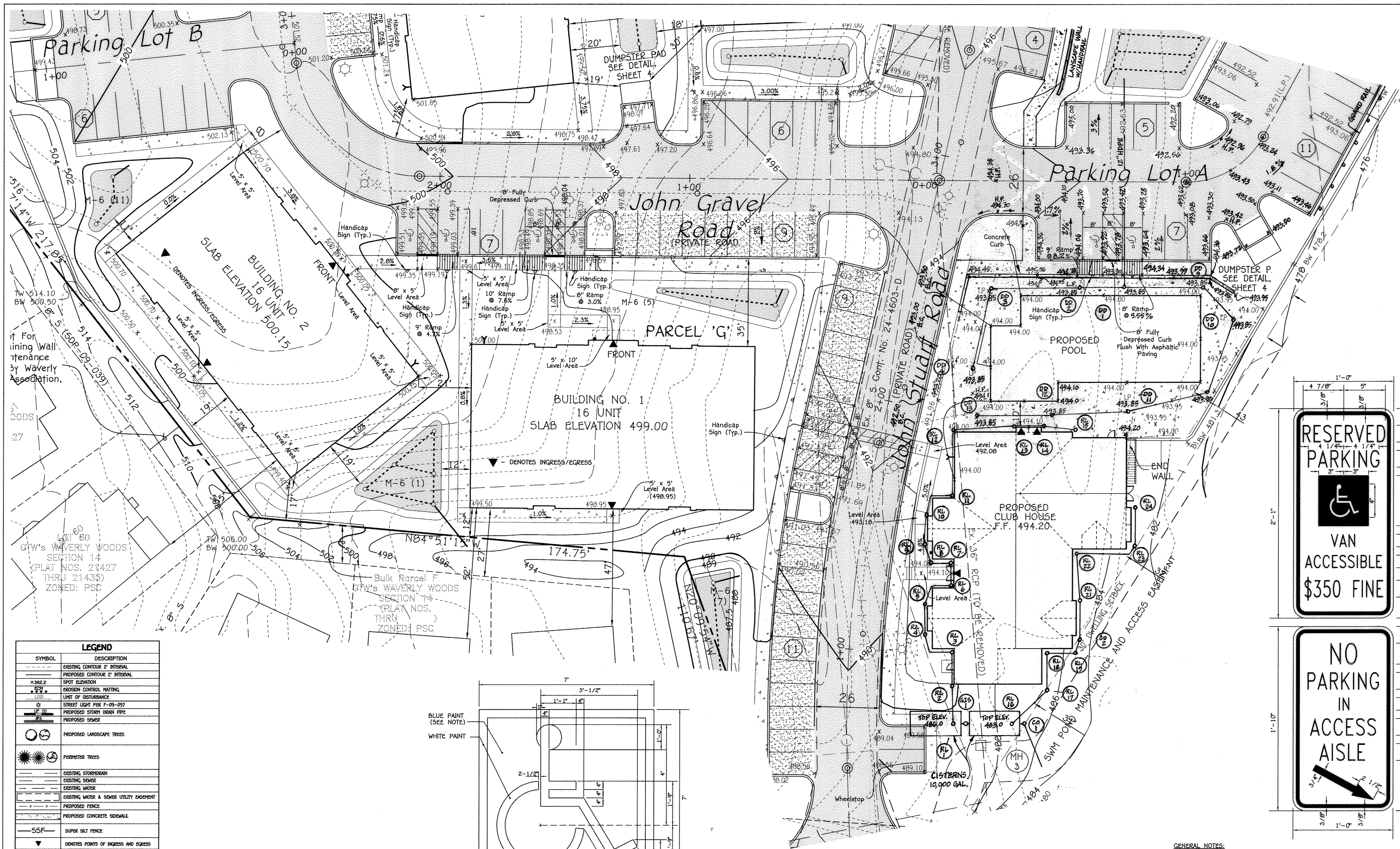
PROJECT	SECTION	PARCEL NOS.
GW's WAVERLY WOODS, SECTION 14	14	P/O 249

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300

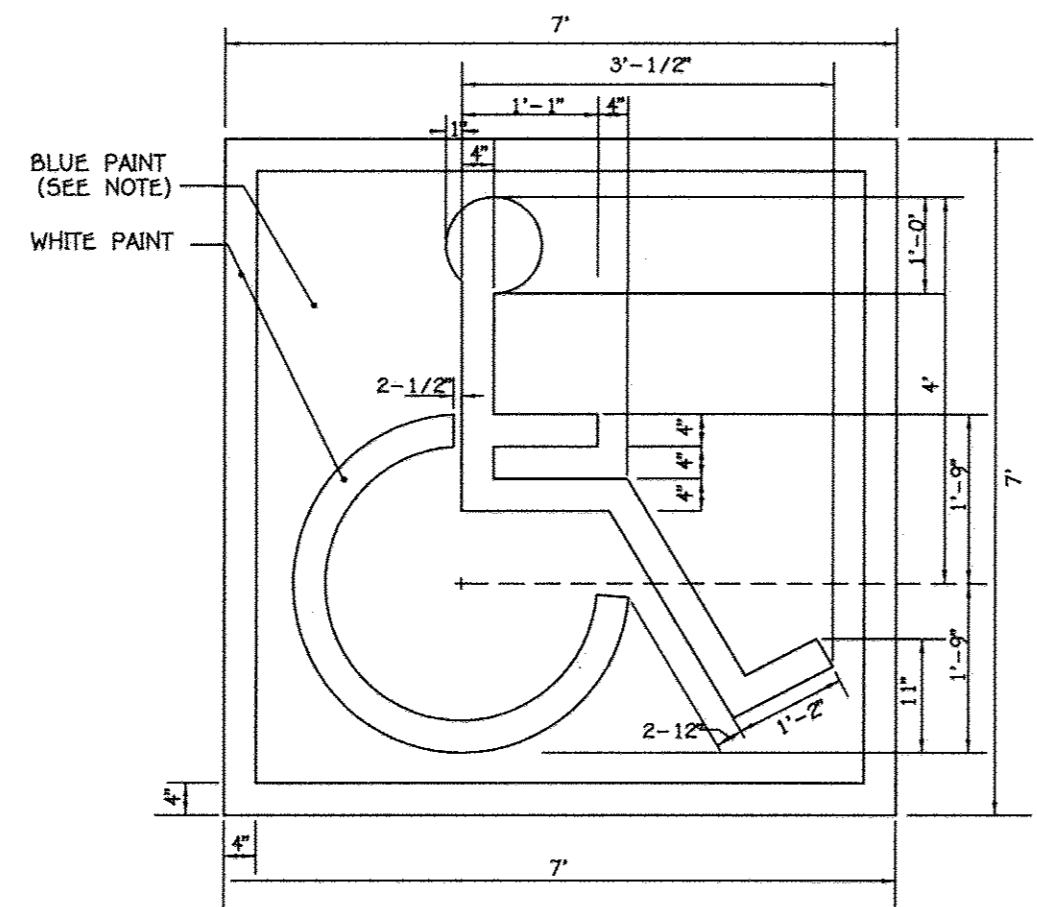
WATER CODE	SEWER CODE
K-02	5992000

REVISED
HANDICAP DETAIL SHEET

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 22944 Thru 22953)
 ZONED: PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: DECEMBER 28, 2017
 SHEET 5 OF 31



LEGEND	
	EXISTING CONTOUR 2' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
	SPOT ELEVATION
	EROSION CONTROL MATTING
	LIMIT OF DISTURBANCE
	STREET LIGHT POLE 1-09-097
	PROPOSED STORM DRAIN PIPE
	PROPOSED SEWER
	PROPOSED LANDSCAPE TREES
	PERIMETER TREES
	EXISTING STORM DRAIN
	EXISTING SEWER
	EXISTING WATER
	EXISTING WATER & SEWER UTILITY EASEMENT
	PROPOSED FENCE
	PROPOSED CONCRETE SIDEWALK
	SUPER SALT FENCE
	DENOTES POINTS OF INGRESS AND EGRESS
	PROPOSED RETAINING WALL EASEMENT
	PROPOSED MAINTENANCE EASEMENT

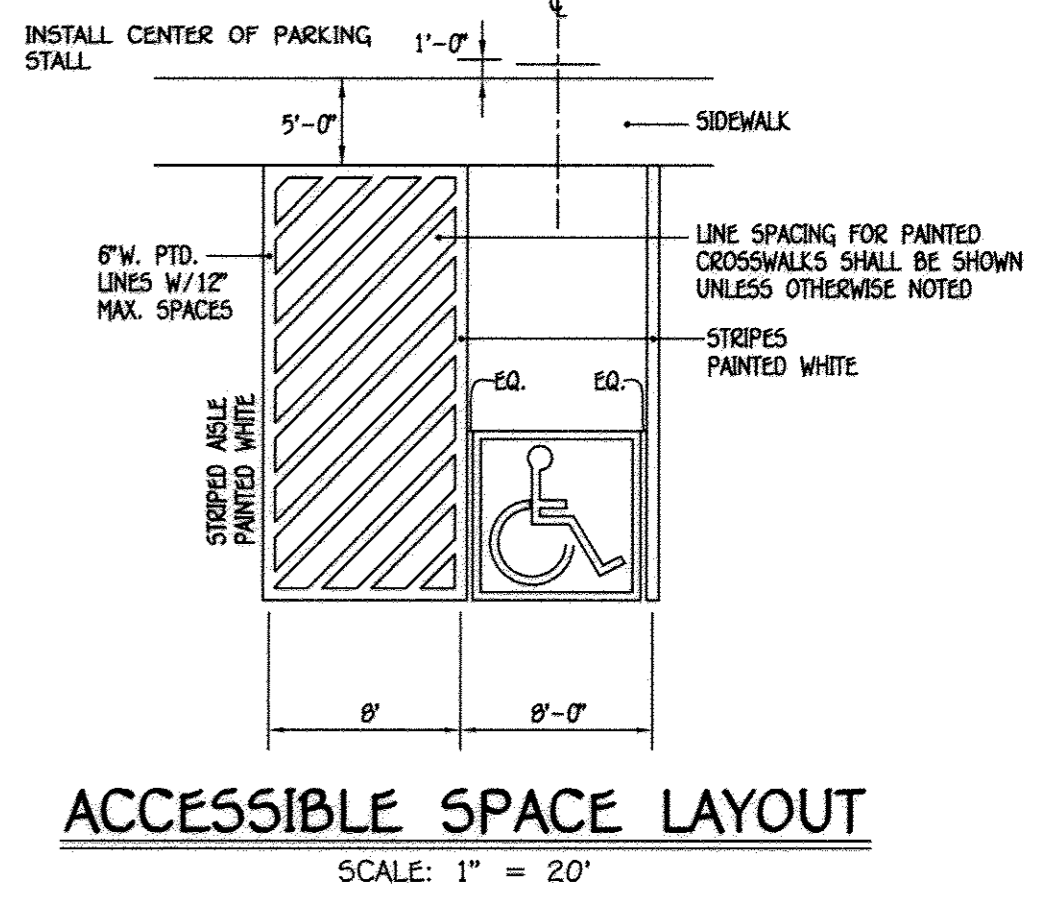


HANDICAP SPACE STENCIL LAYOUT
SCALE: 1" = 20'

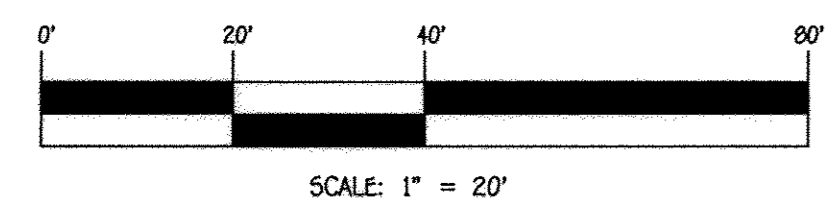


HANDICAP PARKING SIGN DETAIL
NOT TO SCALE

GENERAL NOTES:
 1. SIGNS SHALL MEET DESIGN STANDARDS OF THE FEDERAL HIGHWAY ADMINISTRATION AND CONFORM TO THE STATE OF MARYLAND STANDARD HIGHWAY SIGN BOOKLET DETAIL R7-8.
 2. ONE SIGN IS REQUIRED PER SPACE PLACED AS SHOWN ON SITE IMPROVEMENT PLAN.
 3. SIGNS SHALL BE POLE MOUNTED WITH HOT DIPPED GALVANIZED COUNTY APPROVED PERFORATED CHANNEL POSTS W/TOP OF SIGNS 9'-1" ABOVE FINISHED GRADE OR AS INDICATED ON SITE DRAWINGS.
 4. SIGN SHALL BE ATTACHED TO FLANGED SIDE OF POST. POST SHALL EXTEND INTO GROUND 2'-6" MIN.
 5. COLORS: LEGEND AND BORDER-GREEN
 SYMBOL-WHITE ON BLUE BACKGROUND
 BACKGROUND-WHITE
 6. CONTRACTOR SHALL COORDINATE ARROW DIRECTION WITH LOCATION OF ADJACENT AISLE.
 7. SPACES INDICATED ON SITE DEVELOPMENT PLANS AS "VAN ACCESSIBLE" SHALL BE SIGNED ACCORDINGLY.



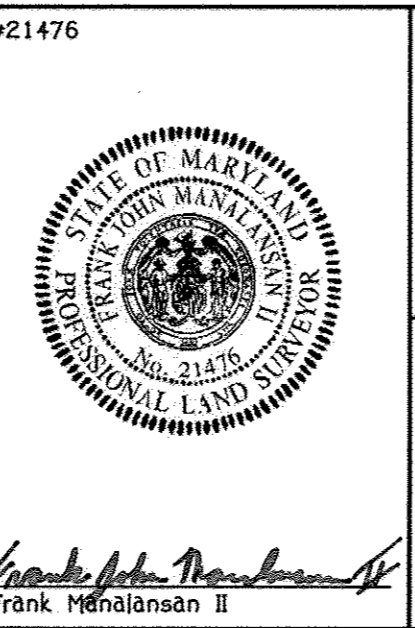
APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: 2/20/2014



NO.	REVISION	DATE
1	REVISE FINAL GRADING & CISTERNS WITH ROOF LEADERS	12/4/13

PROFESSIONAL CERTIFICATION
 "Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2015."
 Frank Mahalansan II
 DATE: 2/9/14

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
 HOWARD COUNTY HEALTH DEPARTMENT.
 COUNTY HEALTH OFFICER: [Signature]
 DATE: 9/2/2014



BUILDER
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA MARYLAND, 21043
 410-796-0908

OWNER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION,
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

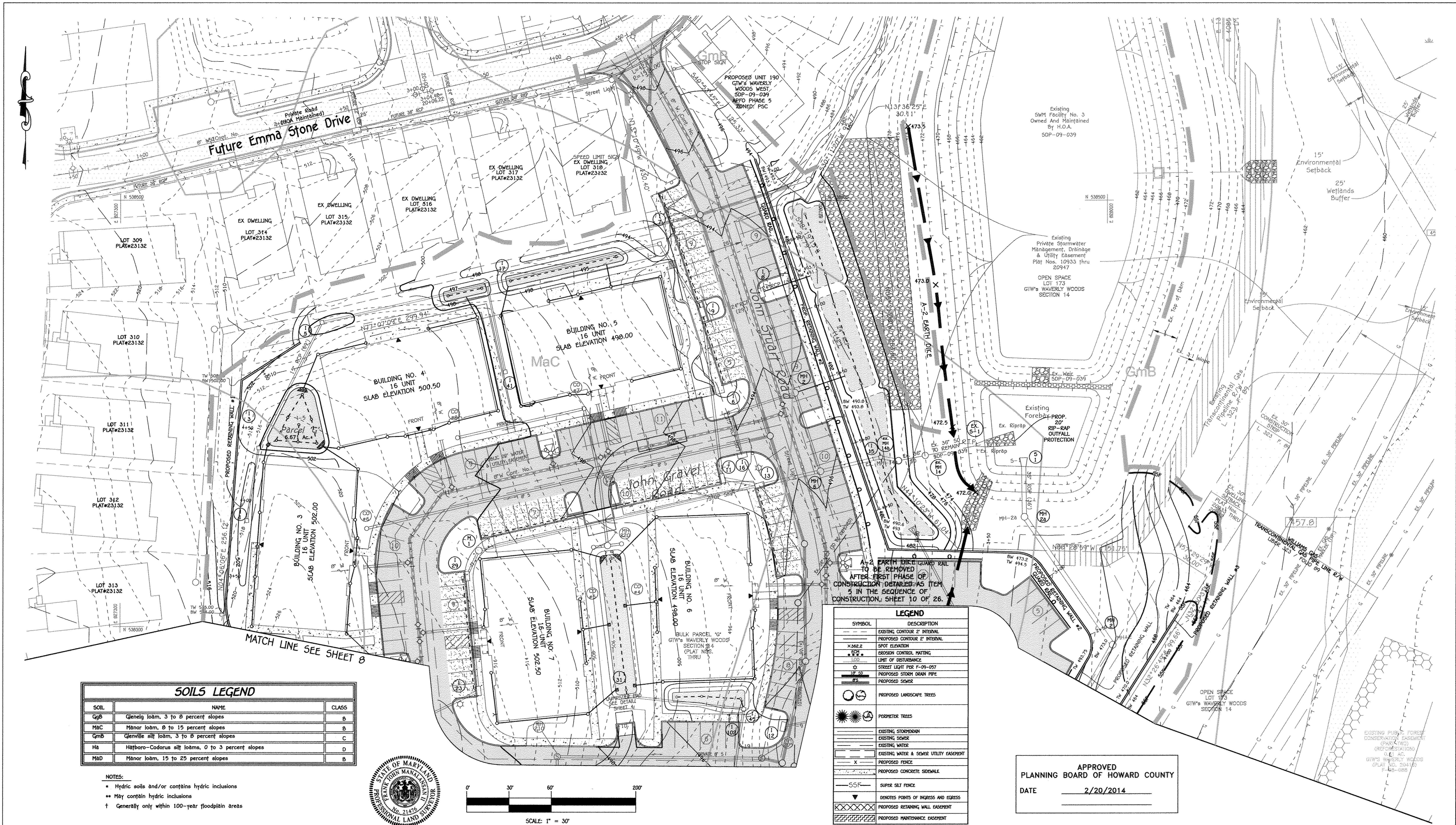
Chief, Division of Land Development	[Signature]	Date: 9/18/14
Chief, Development Engineering Division	[Signature]	Date: 10/16/14
Director - Department of Planning and Zoning	[Signature]	Date: 10/16/14

PROJECT	SECTION	PARCEL NOS.
GTW's WAVERLY WOODS, SECTION 14	14	P/O 249
PLAT	BLOCK NO.	ZONE
2294A-2294B	3 & 4	PSC
WATER CODE	TAX/ZONE	ELEC. DIST.
K-02	16	THIRD
SEWER CODE	CENSUS TR.	
5992000	60300	

HANDICAP DETAIL SHEET

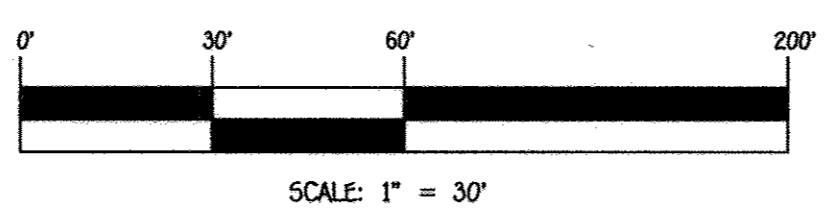
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 2294A Thru 2295B)
 ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 6 OF 31

SDP-13-031



SOILS LEGEND		
SOIL	NAME	CLASS
GgB	Glenns loam, 3 to 8 percent slopes	B
MaC	Manor loam, 8 to 15 percent slopes	B
GmB	Glenville silt loam, 3 to 8 percent slopes	C
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D
MaD	Manor loam, 15 to 25 percent slopes	B

NOTES:
 • Hydric soils and/or contains hydric inclusions
 •• May contain hydric inclusions
 † Generally only within 100-year floodplain areas



LEGEND	
(Symbol)	DESCRIPTION
(Dashed line)	EXISTING CONTOUR 2' INTERVAL
(Dotted line)	PROPOSED CONTOUR 2' INTERVAL
(Number)	SPOT ELEVATION
(Hatched area)	EROSION CONTROL MATTING
(Dashed line)	LIMIT OF DISTURBANCE
(Line with 'S')	STREET LIGHT Poles 7'-09'-09"
(Line with 'D')	PROPOSED STORM DRAIN PIPE
(Line with 'S')	PROPOSED SEWER
(Circle with 'T')	PROPOSED LANDSCAPE TREES
(Starburst)	PERIMETER TREES
(Dashed line)	EXISTING STORMDRAIN
(Dashed line)	EXISTING SEWER
(Dashed line)	EXISTING WATER
(Dashed line)	EXISTING WATER & SEWER UTILITY CASEMENT
(Line with 'X')	PROPOSED FENCE
(Line with 'S')	PROPOSED CONCRETE SIDEWALK
(Line with 'S')	SUPER SALT FENCE
(Triangle)	INDICATES POINTS OF INGRESS AND EGRESS
(Hatched area)	PROPOSED RETAINING WALL EASEMENT
(Hatched area)	PROPOSED MAINTENANCE EASEMENT

APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE: 2/20/2014

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL OFFICE: 10272 BALDORNE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2095

PROFESSIONAL'S CERTIFICATE
 "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 Surveyor: Frank John Manalansan II
 Date: 1-2-18

BUILDER/DEVELOPER'S CERTIFICATE
 "I/we certify that all development and construction will be done according to this plan, for sediment and erosion control 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]
 Date: 1-2-18

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Signature: John L. Roberts
 Date: 1/10/18
 Howard SCD

BUILDER
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA, MARYLAND, 21043
 410-796-0908

OWNER/DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Signature: [Signature]
 Date: 2/2/18
 Chief, Division of Land-Development (S) for DPZ

Signature: [Signature]
 Date: 1-19-18
 Chief, Development Engineering Division

Signature: [Signature]
 Date: 2-2-18
 Director - Department of Planning and Zoning

PROJECT	SECTION	PARCEL NOS.
GTW'S WAVERLY WOODS, SECTION 14	14	P/O 249
PLAT	BLOCK NO.	ZONE
22944-22953	3 & 4	PSC
TAX/ZONE	ELEC. DIST.	CENSUS TR.
16	THIRD	60300
WATER CODE	SEWER CODE	
K-02	5992000	

REVISED
 SEDIMENT & EROSION CONTROL PLAN

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
 SECTION 14

PARCEL 'G' (Plat Nos. 22944 Thru 22953)
 ZONED: PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: DECEMBER 28, 2017
 SHEET 7 OF 31

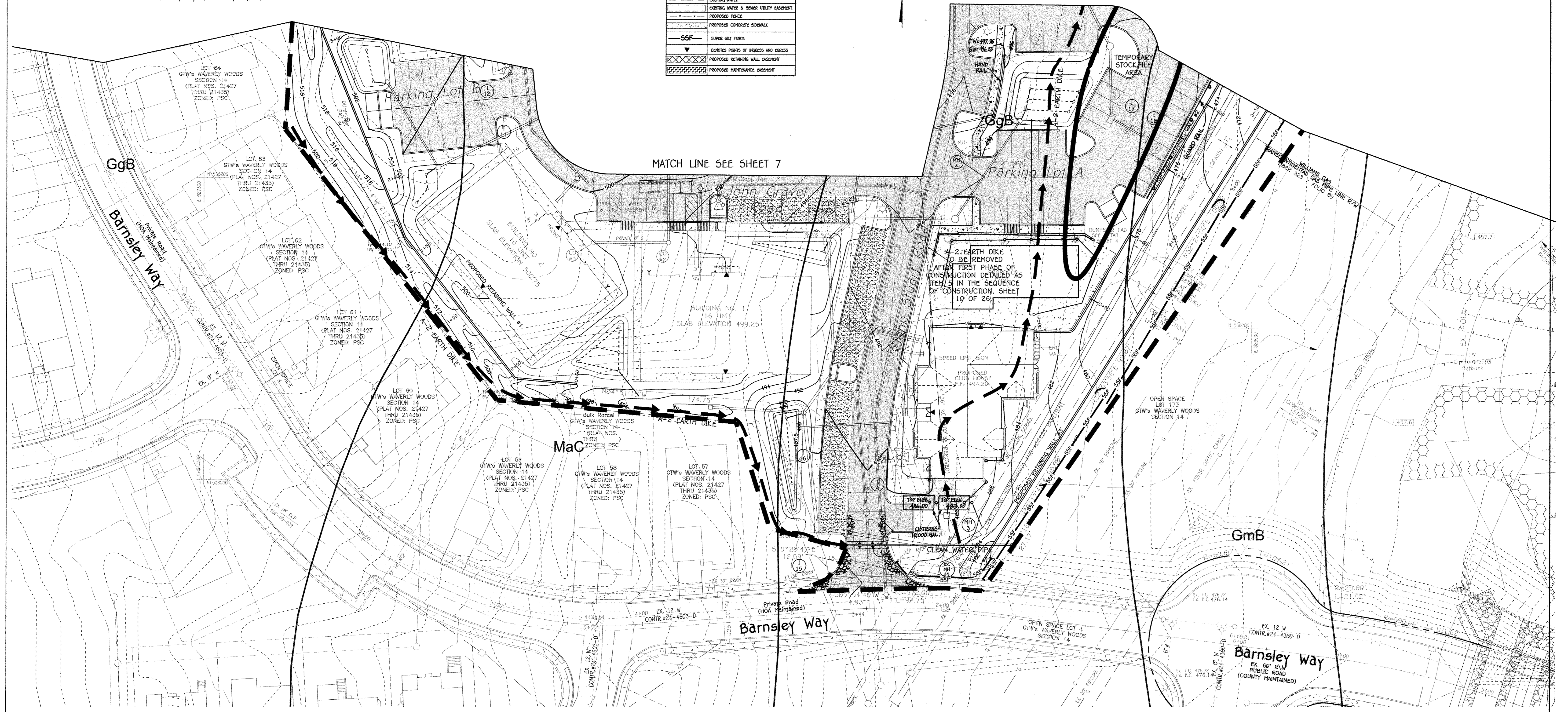
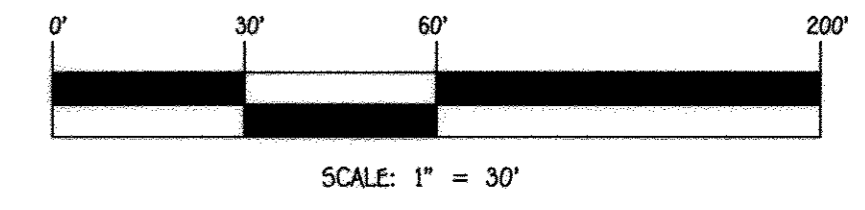
SDP-13-031

SOILS LEGEND		
SOIL	NAME	CLASS
GgB	Glenelg loam, 3 to 8 percent slopes	B
MaC	Manor loam, 8 to 15 percent slopes	B
GmB	Glenville silt loam, 3 to 8 percent slopes	C
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D
MaD	Manor loam, 15 to 25 percent slopes	B

- NOTES:
- Hydric soils and/or contains hydric inclusions
 - May contain hydric inclusions
 - Generally only within 100-year floodplain areas

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - - -	PROPOSED CONTOUR 2' INTERVAL
SPOT ELEVATION	SPOT ELEVATION
EROSION CONTROL MATTING	EROSION CONTROL MATTING
LIMIT OF DISTURBANCE	LIMIT OF DISTURBANCE
STREET LIGHT PER F-09-097	STREET LIGHT PER F-09-097
PROPOSED STORM DRAIN PIPE	PROPOSED STORM DRAIN PIPE
PROPOSED SEWER	PROPOSED SEWER
PROPOSED LANDSCAPE TREES	PROPOSED LANDSCAPE TREES
PERMETER TREES	PERMETER TREES
EXISTING STORMDRAIN	EXISTING STORMDRAIN
EXISTING SEWER	EXISTING SEWER
EXISTING WATER	EXISTING WATER
EXISTING WATER & SEWER UTILITY EASEMENT	EXISTING WATER & SEWER UTILITY EASEMENT
PROPOSED FENCE	PROPOSED FENCE
PROPOSED CONCRETE SIDEWALK	PROPOSED CONCRETE SIDEWALK
SSP	SUPER SILT FENCE
DIAMETER POINTS OF INGRESS AND EGRESS	DIAMETER POINTS OF INGRESS AND EGRESS
PROPOSED RETAINING WALL EASEMENT	PROPOSED RETAINING WALL EASEMENT
PROPOSED MAINTENANCE EASEMENT	PROPOSED MAINTENANCE EASEMENT

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014



NO.	REVISION	DATE
I	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/4/15

PROFESSIONAL'S CERTIFICATE
 I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the conditions and that it was prepared in accordance with the requirements of the Maryland Soil Conservation District.
 Signature of Surveyor: *Frank John...* Date: 3/3/14
BUILDER/DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan, for sediment and erosion control 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: *...* Date: 3-15-14

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *John L. Patton* Date: 3/16/14
 Howard SCD

BUILDER
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA MARYLAND, 21043
 410-796-0908

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION,
 P.O. BOX 30
 GLENELG, MARYLAND
 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *...* Date: 3/18/14
 Chief, Development Engineering Division: *...* Date: 3/18/14
 Director - Department of Planning and Zoning: *...* Date: 3/18/14

PROJECT: GTW's WAVERLY WOODS, SECTION 14
 PARCEL NOS.: 14 P/O 249

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300

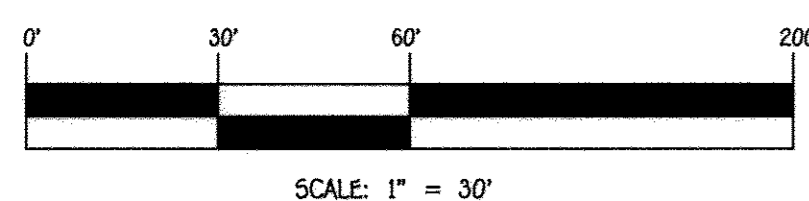
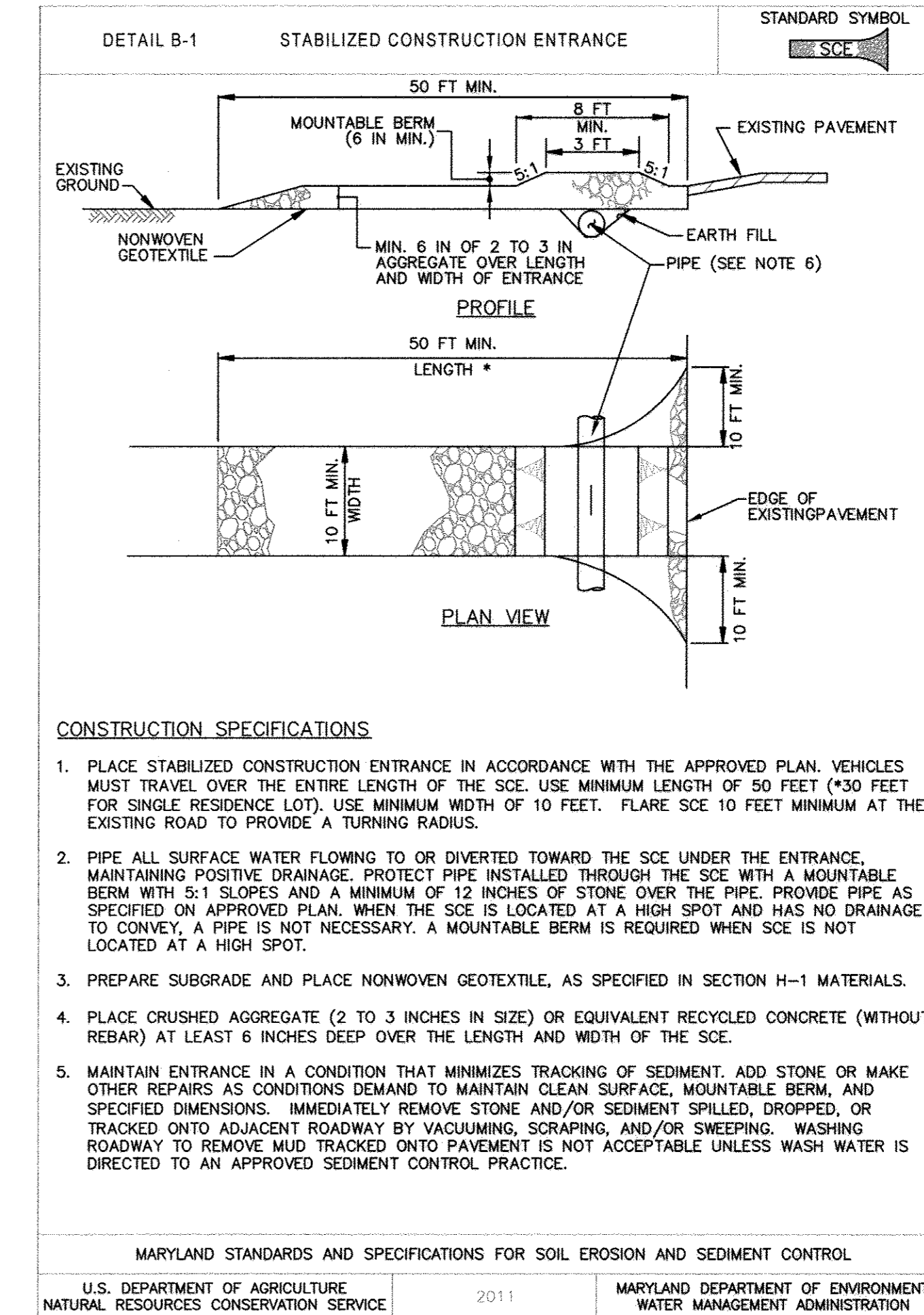
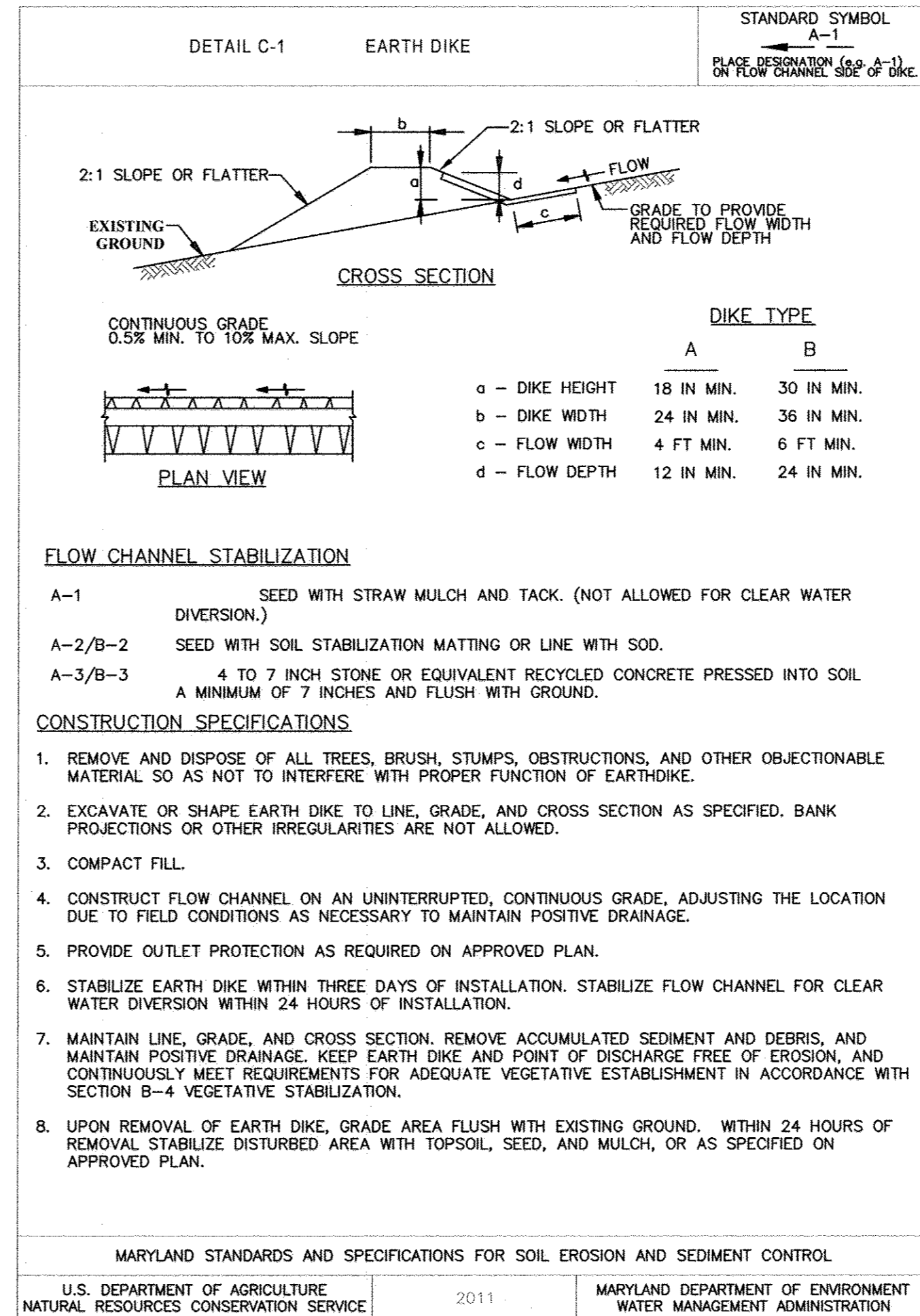
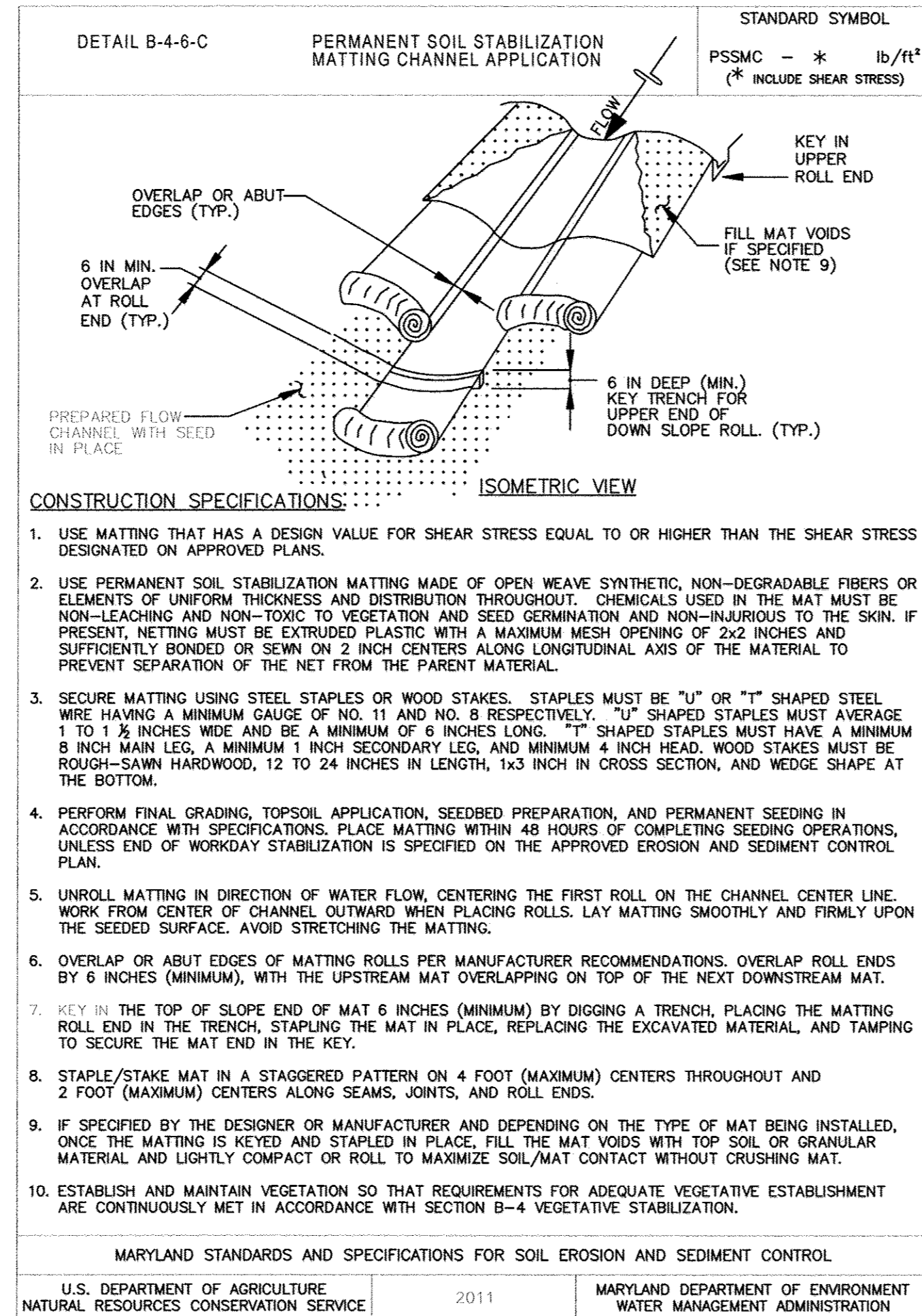
WATER CODE: K-02
 SEWER CODE: 5992000

SEDIMENT & EROSION CONTROL PLAN

AGE RESTRICTED ADULT HOUSING
 WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 22944 Thru 22953)
 ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 8 OF 31

50P-13-031

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2922



APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 481 - 2292

NO.	REVISION	DATE

PROFESSIONAL CERTIFICATE
"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge and conditions and that it was prepared in accordance with the requirements of the Howard County Conservation District."
Signature of Surveyor: *Frank A. ...* 8/2/14 Date
FRANK A. ... MANSAN II

BUILDER/DEVELOPER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan, for sediment and erosion control 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: *...* 8-15-14 Date

This development plan is approved for soil erosion and sediment control by the Howard County Conservation District.
Signature: *John R. ...* 9/16/14 Date
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0908

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development: *...* 9-18-14 Date
Chief, Development Engineering Division: *...* 8/2/14 Date
Director - Department of Planning and Zoning: *...* 8/2/14 Date

PROJECT	SECTION	PARCEL NOS.			
GTW'S WAVERLY WOODS, SECTION 14	14	P/O 249			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	P5C	16	THIRD	60300
WATER CODE	SEWER CODE				
K-02	5992000				

SEDIMENT & EROSION CONTROL PLAN
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. Thru
ZONED P5C TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 9 OF 31
SDP-13-031

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

A. Soil Preparation

- Temporary Stabilization
 - Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - Permanent Stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lowgrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
- b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
- c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
- d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
- e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rate 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 seeded 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. Seeded loosening may be unnecessary on newly disturbed areas.

TEMPORARY SEEDING NOTES (B-4-4)

Definition
To stabilize disturbed soils with vegetation for up to 6 months.

Purpose
To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

- Criteria
- 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 application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
 - For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
 - When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary					Fertilizer Rate (10-20-20)	Lime Rate
Hardness Zone (from Figure B.3):	Seed Mixture (from Table B.1):	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
	BARLEY	96	3/1 - 5/15, 8/15 - 10/15	1"	436 lb/ac (10 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
	OATS	72		1"		
	RYE	112		1"		

PERMANENT SEEDING NOTES (B-4-5)

A. Seed Mixtures

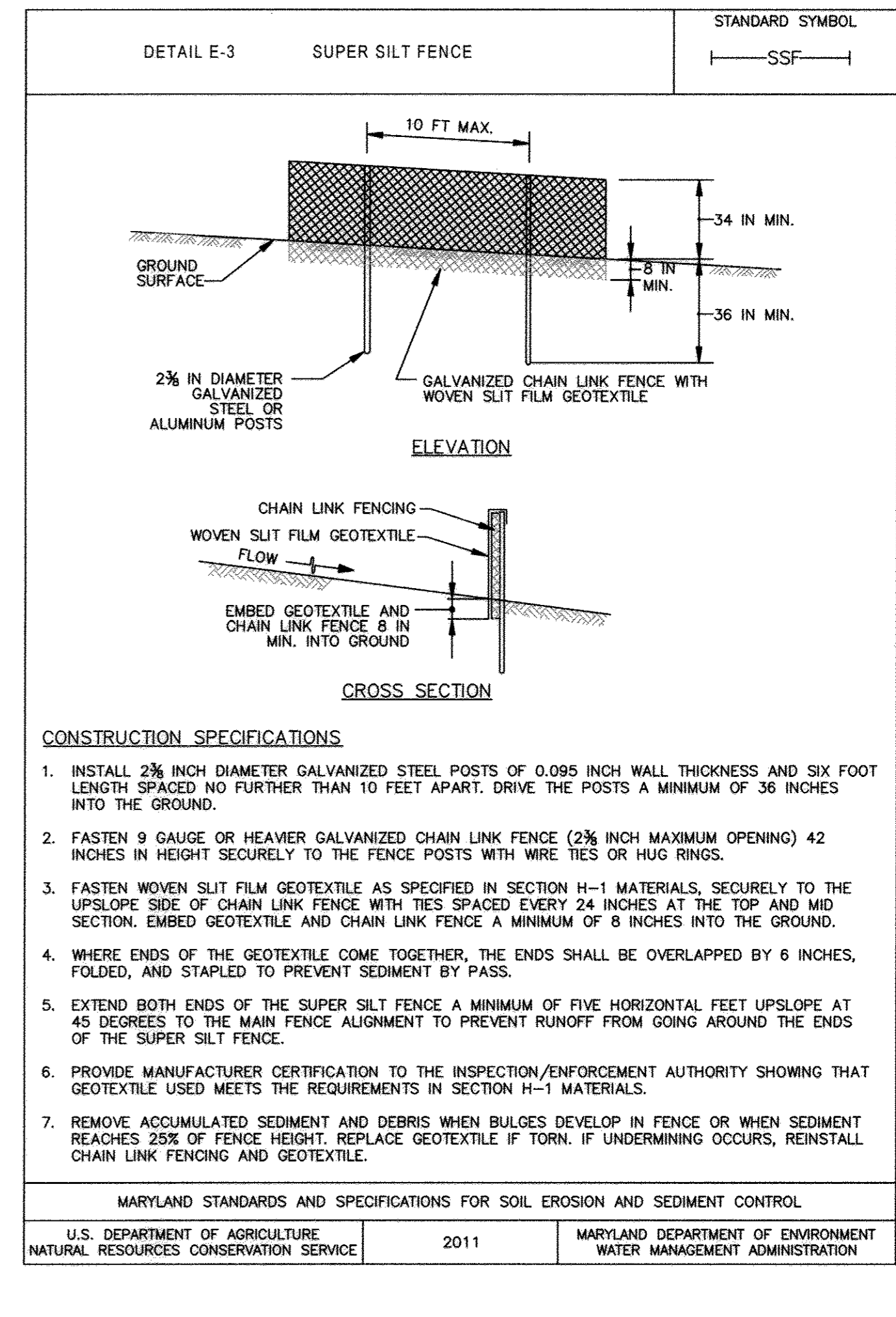
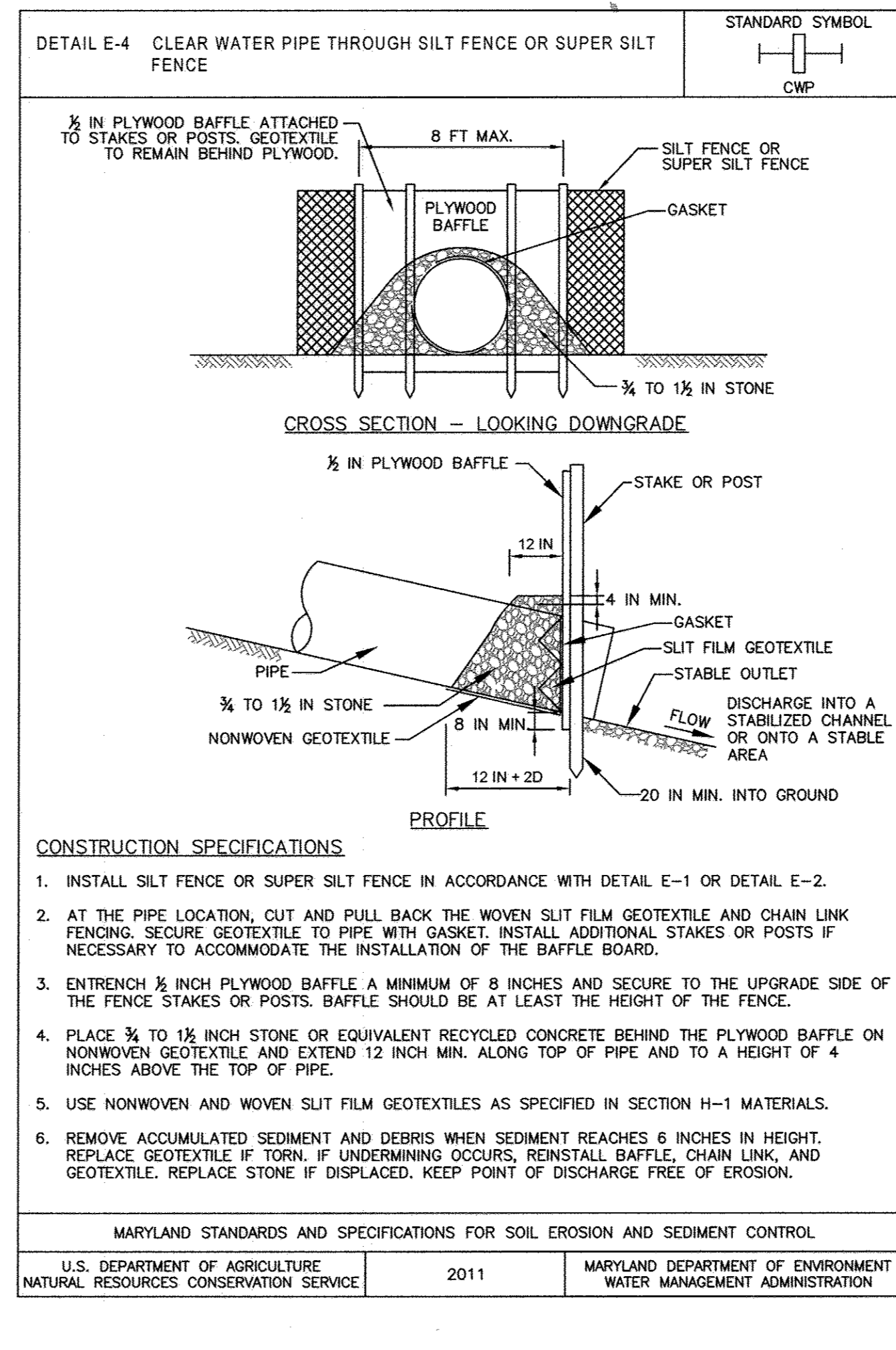
- General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- Turfgrass Mixtures
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management, irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
 - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in bluegrass lawns. For establishment in high quality, intensively managed turf areas. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

Notes:

- Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland".
- Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
- Ideal Times of Seeding for Turf Grass Mixtures: Western MD: March 15 to June 1, August 1 to October 1 (Hardness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardness Zones: 7a, 7b)
- 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.
- 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 seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary							Fertilizer Rate (10-20-20)	Lime Rate
Hardness Zone (from Figure B.3):	Seed Mixture (from Table B.3):	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P ₂ O ₅		
8	TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	45 lbs. (10 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014



SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT. (2 WEEKS)
- NOTIFY "MISC UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE WORKING.
- REQUEST A PRE-CONSTRUCTION MEETING WITH THE APPROPRIATE ENFORCEMENT AUTHORITY.
- CLEAR AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF PERIMETER CONTROLS. (2 DAYS)
- INSTALL THE STABILIZED CONSTRUCTION ENTRANCE. INSTALL ALL SUPER SILT FENCE, EARTH DIKES, AND TEMPORARY CLEAN WATER PIPES INDICATED ON THE PLANS. (1 WEEK) THE CONTRACTOR SHALL VERIFY THAT BASIN NO. 3 AND CONTROLS PER SOP-09-039 HAVE BEEN COMPLETELY INSTALLED BEFORE PROCEEDING.
- REMOVE THE EXISTING BASIN TO ITS ORIGINAL DIMENSIONS AND VOLUMES. (3 DAYS)
- REMAINING CLEARING AND GRUBBING WITHIN INSTALLED PERIMETER CONTROLS.
- BEGIN FIRST PHASE OF CONSTRUCTION CONSISTING OF THE CONSTRUCTION OF RETAINING WALL #2 FROM APPROXIMATELY STATION 4+00 TO STATION 7+10. GRADE SITE LOCATED TO THE WEST OF THE INTERNAL EARTH DIKE TO PROPOSED SUB-GRADE AND INSTALL RETAINING WALL #1, AS WELL AS STORM DRAIN SYSTEMS, WATER AND SEWER LINES WITHIN THE SAME SPECIFIED AREA. STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING. DO NOT BLOCK INLETS AS STORM DRAIN SYSTEM WILL BE USED TO CONVEY SEDIMENT RUNOFF INTO THE BASIN. (9 WEEKS)
- CONSTRUCT CURB & GUTTER AND INSTALL ROAD BASE COURSE FOR ROADS 'A' AND 'B'. (2 WEEKS)
- GRADE AND STABILIZE WITH TEMPORARY SEEDING THE BUILDING PAOS FOR THE 16 UNIT GARDEN-STYLE CONDOMINIUM BUILDINGS. (1 MONTHS)
- WITH PERMISSION OF INSPECTOR, REMOVE INTERNAL EARTH DIKE SPECIFIED ON SHEETS 7 AND 8. (1 WEEK)
- GRADE TO SUB-GRADE, REMAINDER OF SITE AND CONSTRUCT RETAINING WALL #3, REMAINDER OF RETAINING WALL #2 AS WELL AS REMAINING STORM DRAIN SYSTEMS, WATER AND SEWER LINES. STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING. DO NOT BLOCK INLETS AS STORM DRAIN SYSTEM WILL BE USED TO CONVEY SEDIMENT RUNOFF INTO THE BASIN. (9 WEEKS)
- CONSTRUCT CURB & GUTTER AND INSTALL ROAD BASE COURSE FOR PARKING LOT 'A'. (2 WEEKS)
- CONSTRUCT CLUB HOUSE AND POOL. (3 MONTHS)
- CONSTRUCT 16 UNIT GARDEN-STYLE CONDOMINIUM BUILDINGS. (3 MONTHS)
- INSTALL FINISHED SURFACE COURSE, SIDEWALKS AND STREET TREES. (2 WEEKS)
- CONTRACTOR SHALL REMOVE ALL OLD AND NEW JUNK, TRASH, AND DEBRIS FROM FORESTS, FLOODPLAIN, STREAMS, WETLANDS AND THEIR BUFFERS.
- OBTAIN APPROVAL OF APPROPRIATE ENFORCEMENT AUTHORITY PRIOR TO REMOVAL OF SEDIMENT CONTROLS. (3 DAYS)
- REMOVAL OF CONTROLS AND STABILIZATION OF AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROLS.
- CONVERSION OF THE EXISTING BASIN TO A SWM POND WILL BE COMPLETED UNDER THE SOP-09-039 PROJECT.
- NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE AFTER EACH RAINFALL AND ON A DAILY BASIS. REMOVE SEDIMENT FROM THE POND/BASIN ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON.
- EARTH DIKES INTERRUPTED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED, ALL SEDIMENT MUST BE PLACED UPSTREAM OF THE APPROVED TRAPPING DEVICE.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSING AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	6,671	ACRES
AREA DISTURBED	7,454	ACRES
AREA TO BE ROOFED OR PAVED	3,459	ACRES
AREA TO BE VEGETATIVELY STABILIZED	3,995	ACRES
TOTAL CUT	64,323	CU.YDS.
TOTAL FILL	82,203	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION		CU.YDS.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE LIMITED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS AUTHORIZED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

PROFESSIONAL ENGINEER CERTIFICATE

"I certify that this plan for Sediment and Erosion 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 Maryland State Soil Conservation District."

Signature of Surveyor: Frank John... 8/15/14 Date

BUILDER/DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control 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: ... 8-15-14 Date

BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND, 21043
410-796-0908

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
GLENELG, MARYLAND 21737-0030

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND
21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development: ... 9-18-14 Date

Chief, Development Engineering Division: ... 2/10/14 Date

Director - Department of Planning and Zoning

PROJECT: GWV WAWERYLY WOODS, SECTION 14
PARCEL G

SECTION: 14
PARCEL NOS.: P/O 249

PLAT: 2294d, 2295b3	BLOCK NO.:	ZONE:	TAX/ZONE:	ELEC. DIST.:	CENSUS TR.:
	3 & 4	P5C	16	THIRD	60300
WATER CODE: K-02	SEWER CODE: 5992000				

SEDIMENT & EROSION CONTROL PLAN

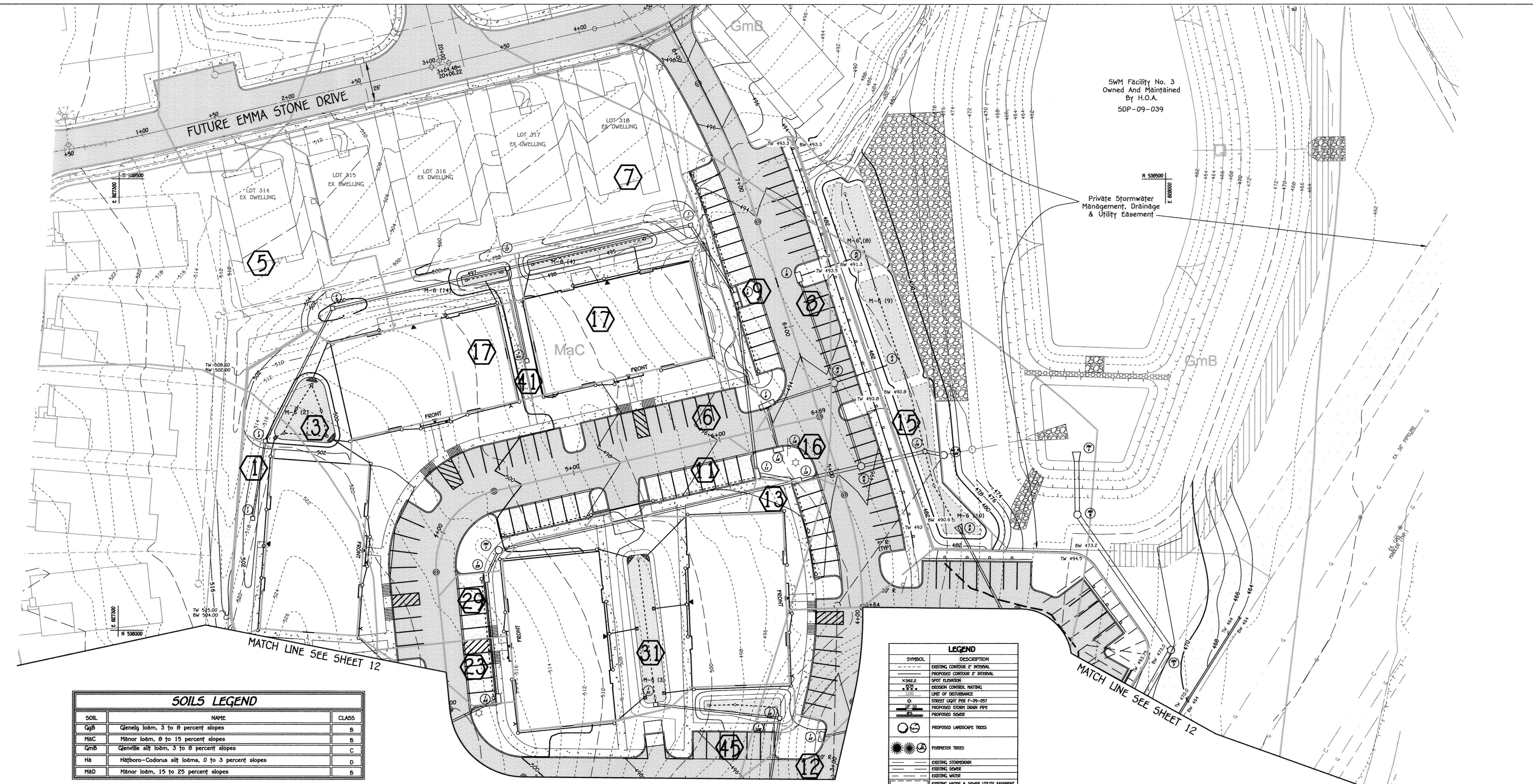
AGE RESTRICTED ADULT HOUSING

WAVERLY MEWS

SECTION 14

PARCEL 'G' (Plat Nos. Thru Zoned P5C TAX MAP NO.: 16 GRID NO.: 3 & 4 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: AUGUST 9, 2014 SHEET 10 OF 31

SOP-13-031



SWM Facility No. 3
Owned And Maintained
By H.O.A.
SDP-09-039

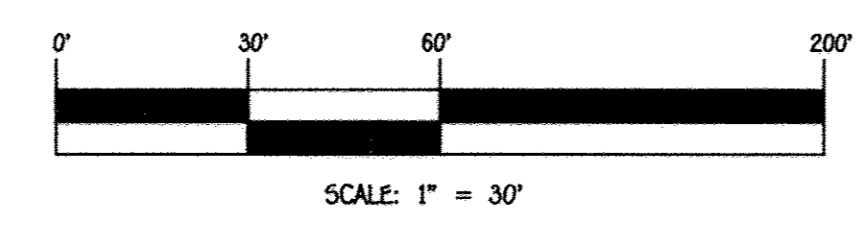
Private Stormwater
Management, Drainage
& Utility Easement

MATCH LINE SEE SHEET 12

MATCH LINE SEE SHEET 12

SOILS LEGEND		
SOIL	NAME	CLASS
GgB	Glennelg loam, 3 to 8 percent slopes	B
MaC	Manor loam, 8 to 15 percent slopes	B
GmB	Glennville silt loam, 3 to 8 percent slopes	C
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D
MaD	Manor loam, 15 to 25 percent slopes	B

- NOTES:
- Hydric soils and/or contains hydric inclusions
 - May contain hydric inclusions
 - † Generally only within 100-year floodplain areas

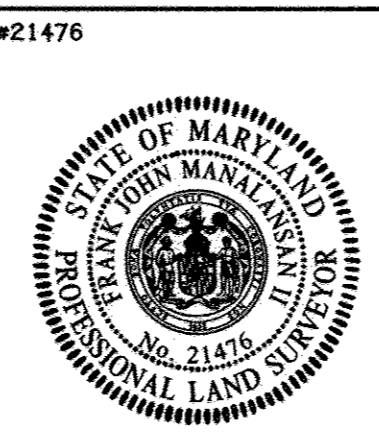


LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
X-MARK	SPOT ELEVATION
---X---	DROGON CONTROL MATING
---	LINE OF DISTURBANCE
---	STREET LIGHT PER F-99-097
---	PROPOSED STORM DRAIN PIPE
---	PROPOSED SEWER
○	PROPOSED LANDSCAPE TREES
☀	PERMETER TREES
---	EXISTING STORMSEWER
---	EXISTING SEWER
---	EXISTING WATER
---	EXISTING WATER & SEWER UTILITY EASEMENT
---	PROPOSED FENCE
---	PROPOSED CONCRETE SIDEWALK
---	SUPER SALT FENCE
---	IDENTIFY POINTS OF INGRESS AND EGRESS
---	PROPOSED RETAINING WALL EASEMENT
---	PROPOSED MAINTENANCE EASEMENT

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: 2/20/2014

NO.	REVISION	DATE
2	REVISE SWM FACILITIES AND ASSOCIATED GRADING	12/28/17
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/4/15

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2019."
Frank Manalansan II
1-2-18
Date



BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0908

OWNER/DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Shirley Anderson for US 2/20/18
Chief, Division of Land Development & Zoning
Valentin Jovan 1-19-18
Chief, Development Engineering Division
Valentin Jovan 2-2-18
Director - Department of Planning and Zoning

PROJECT	SECTION	PARCEL NOS.			
GTW's WAVERLY WOODS, SECTION 14	14	P/O 249			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300
WATER CODE	SEWER CODE				
K-02	5992000				

REVISED
STORM DRAIN DRAINAGE AREA / SOILS MAP
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. 22944 Thru 22953
ZONED: PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER 28, 2017
SHEET 11 OF 31
SDP-13-031

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-3899

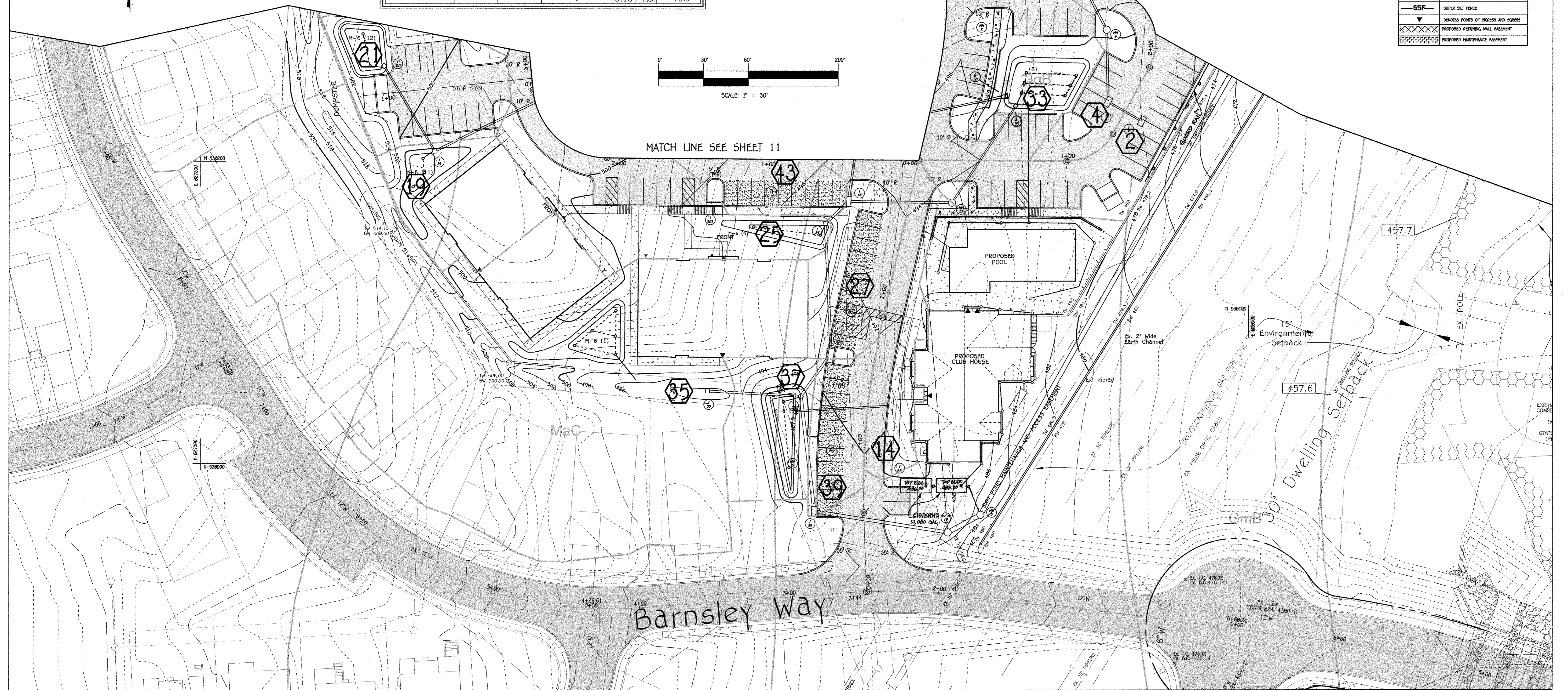
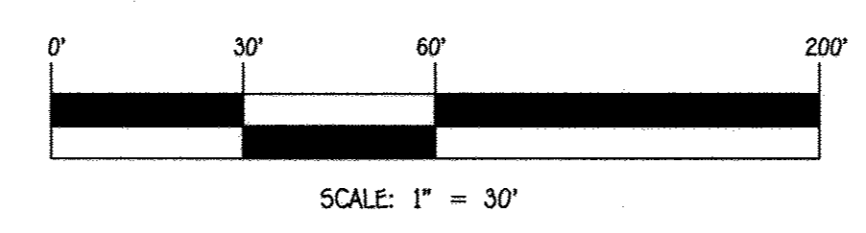
DRAINAGE AREA DATA					
DRAINAGE AREA LETTER	AREA	IMPERV. PERCENT	DRAINAGE AREA LETTER	AREA	IMPERV. PERCENT
A	0.342 AC.	79%	L	0.086 AC.	-
B	0.456 AC.	79%	M	0.094 AC.	-
C	0.531 AC.	66%	N	0.095 AC.	-
D	0.269 AC.	65%	O	0.118 AC.	-
E	0.355 AC.	60%	P	0.082 AC.	-
F	0.586 AC.	45%	Q	0.120 AC.	-
G	0.350 AC.	71%	R	0.070 AC.	-
H	1.383 AC.	67%	S	0.155 AC.	-
I	0.064 AC.	0%	T	0.073 AC.	-
J	0.761 AC.	0%	U	0.150 AC.	64%
			V	0.134 AC.	70%

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

SOILS LEGEND		
SOIL	NAME	CLASS
GgB	Glenn loam, 3 to 8 percent slopes	B
MaC	Manor loam, 8 to 15 percent slopes	B
GmB	Glennville silt loam, 3 to 8 percent slopes	C
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D
MaD	Manor loam, 15 to 25 percent slopes	B

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
x362.2	SPOT ELEVATION
---	EROSION CONTROL MATTING
---	LIMIT OF DISTURBANCE
---	SURVEY LIGHT PER F-09-097
---	PROPOSED STORM DRAIN PIPE
---	PROPOSED SEWER
---	PROPOSED LANDSCAPE TREES
---	PERIMETER TREES
---	EXISTING STORMDRAIN
---	EXISTING SEWER
---	EXISTING WATER
---	EXISTING WATER & SEWER UTILITY EASEMENT
---	PROPOSED FENCE
---	PROPOSED CONCRETE SIDEWALK
---	SUPER SILT FENCE
---	DEMOTES POINTS OF INGRESS AND EGRESS
---	PROPOSED RETAINING WALL EASEMENT
---	PROPOSED MAINTENANCE EASEMENT

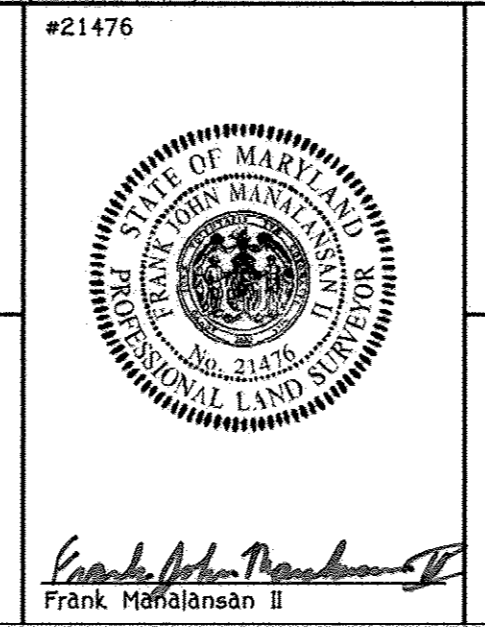
NOTES:
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 •• May contain hydric inclusions
 † Generally only within 100-year floodplain areas



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

NO.	REVISION	DATE
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/4/13

PROFESSIONAL CERTIFICATION
 "Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland. License No. 21476, Expiration Date: 07/14/2015."
 Frank Manalansan II 9/7/14
 DATE

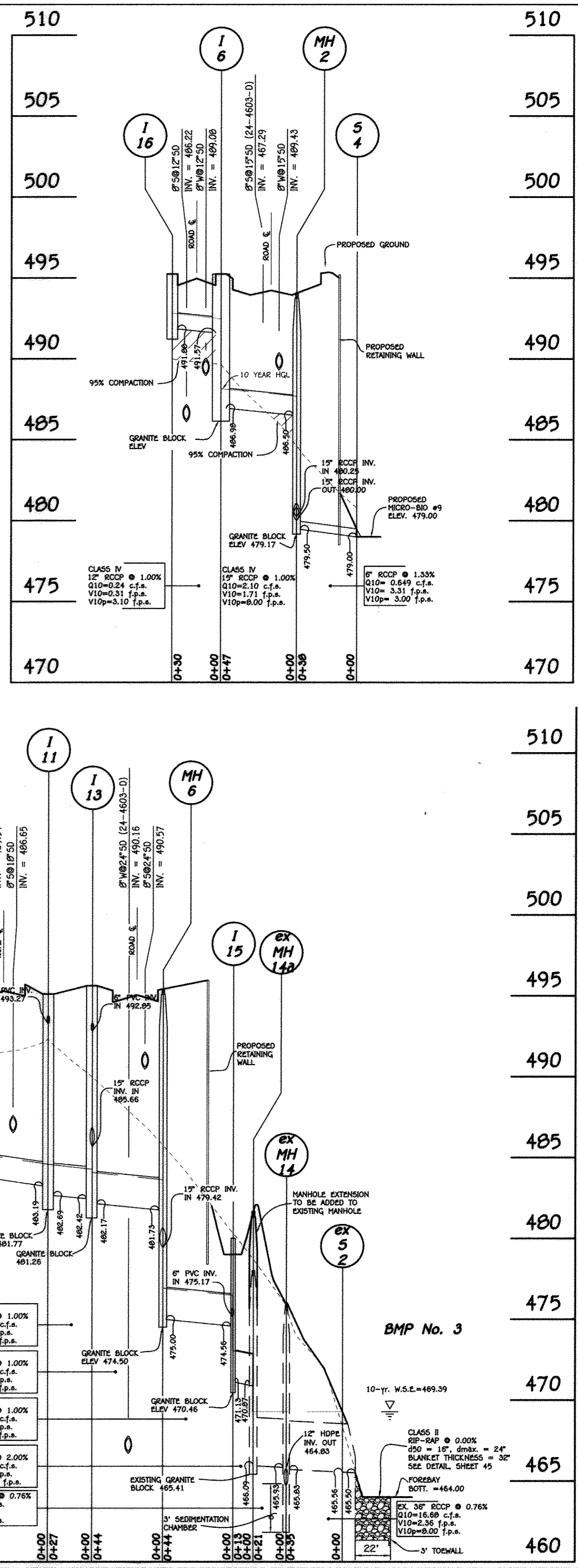
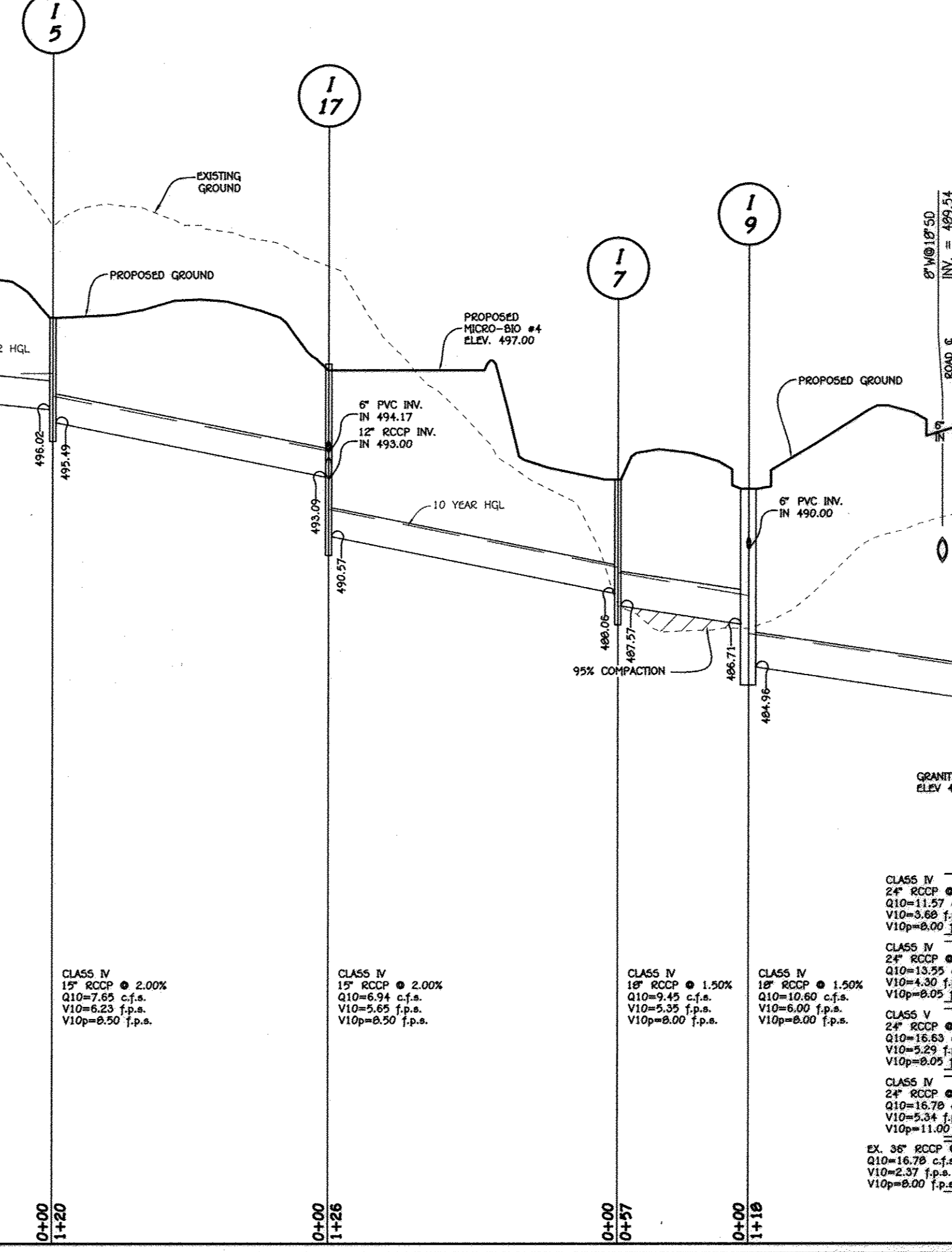
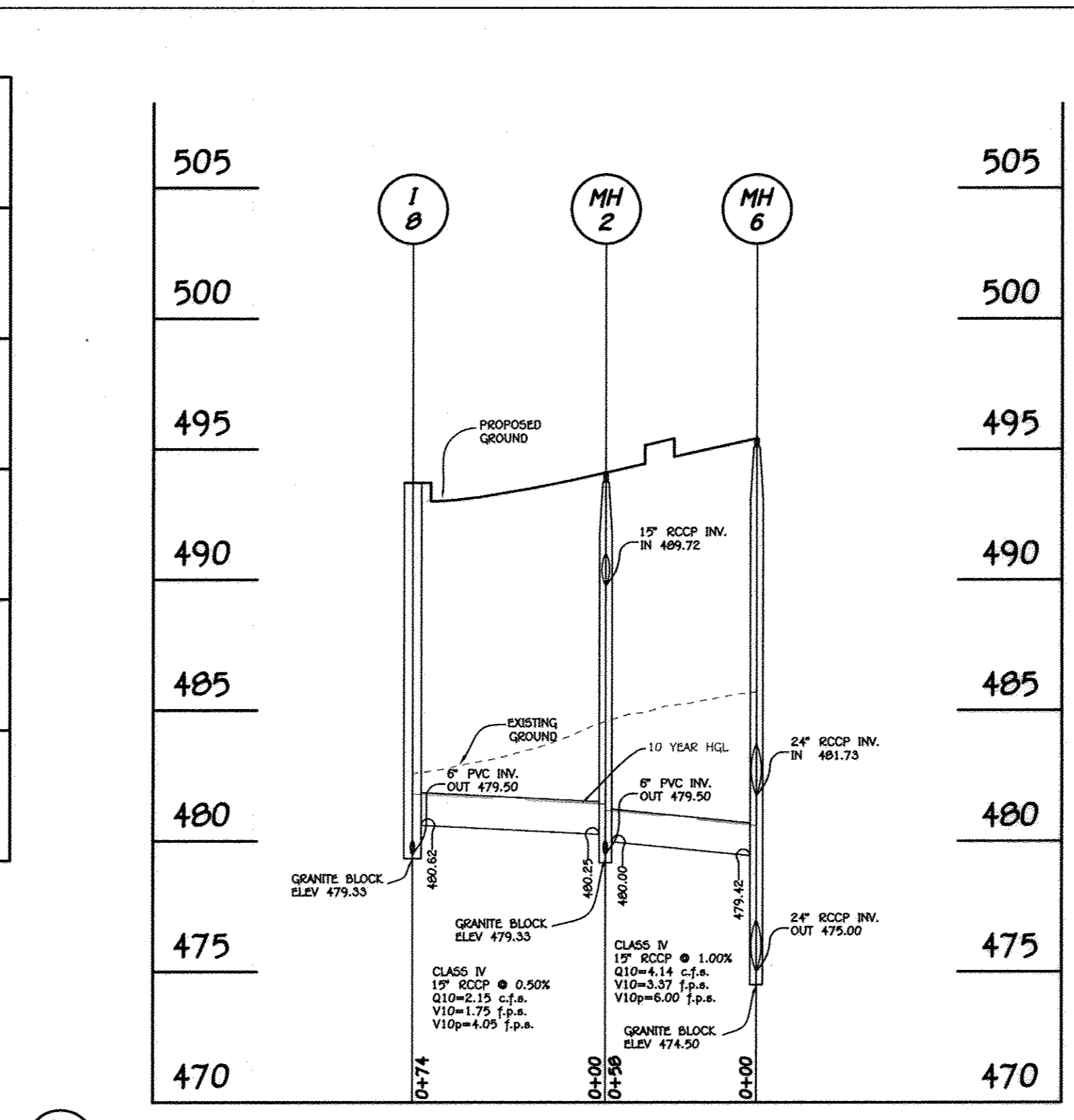
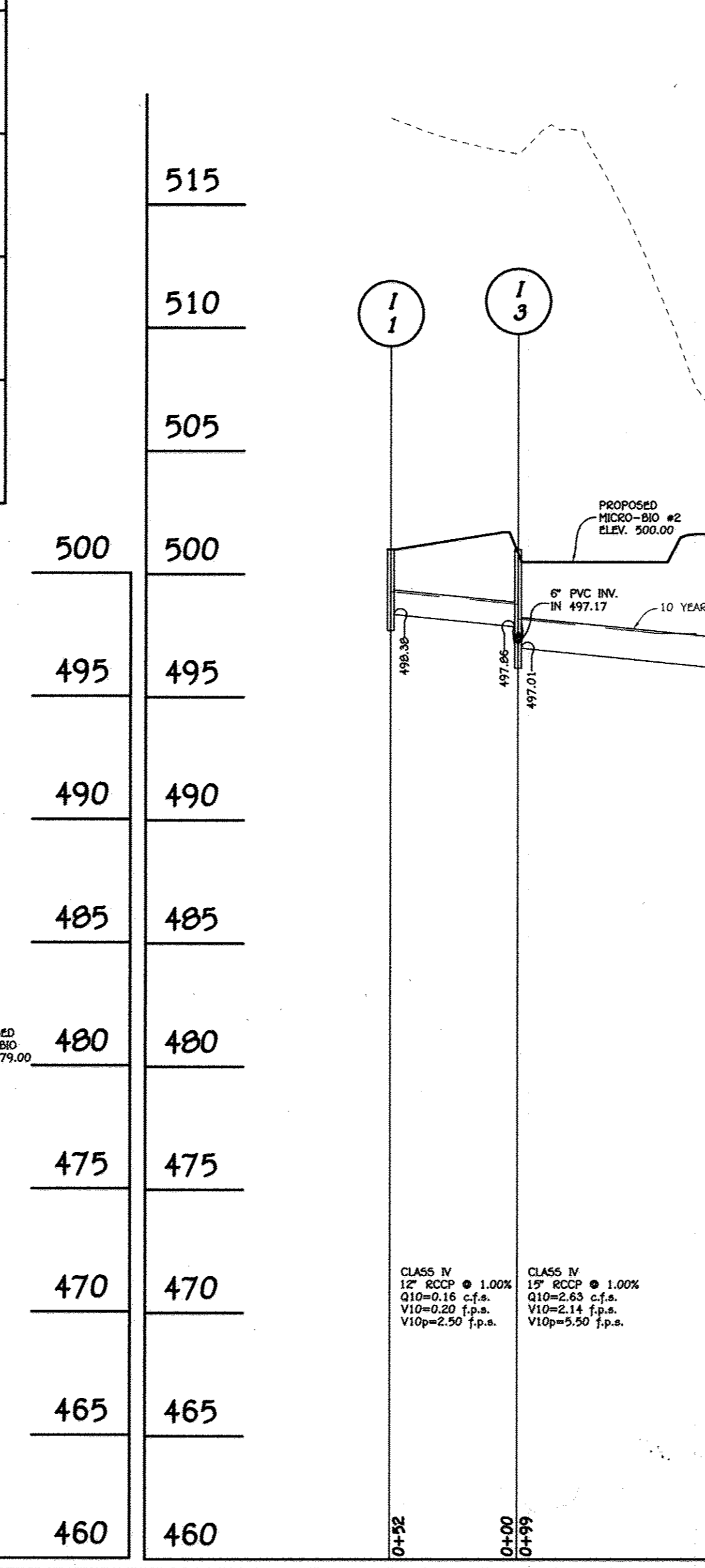
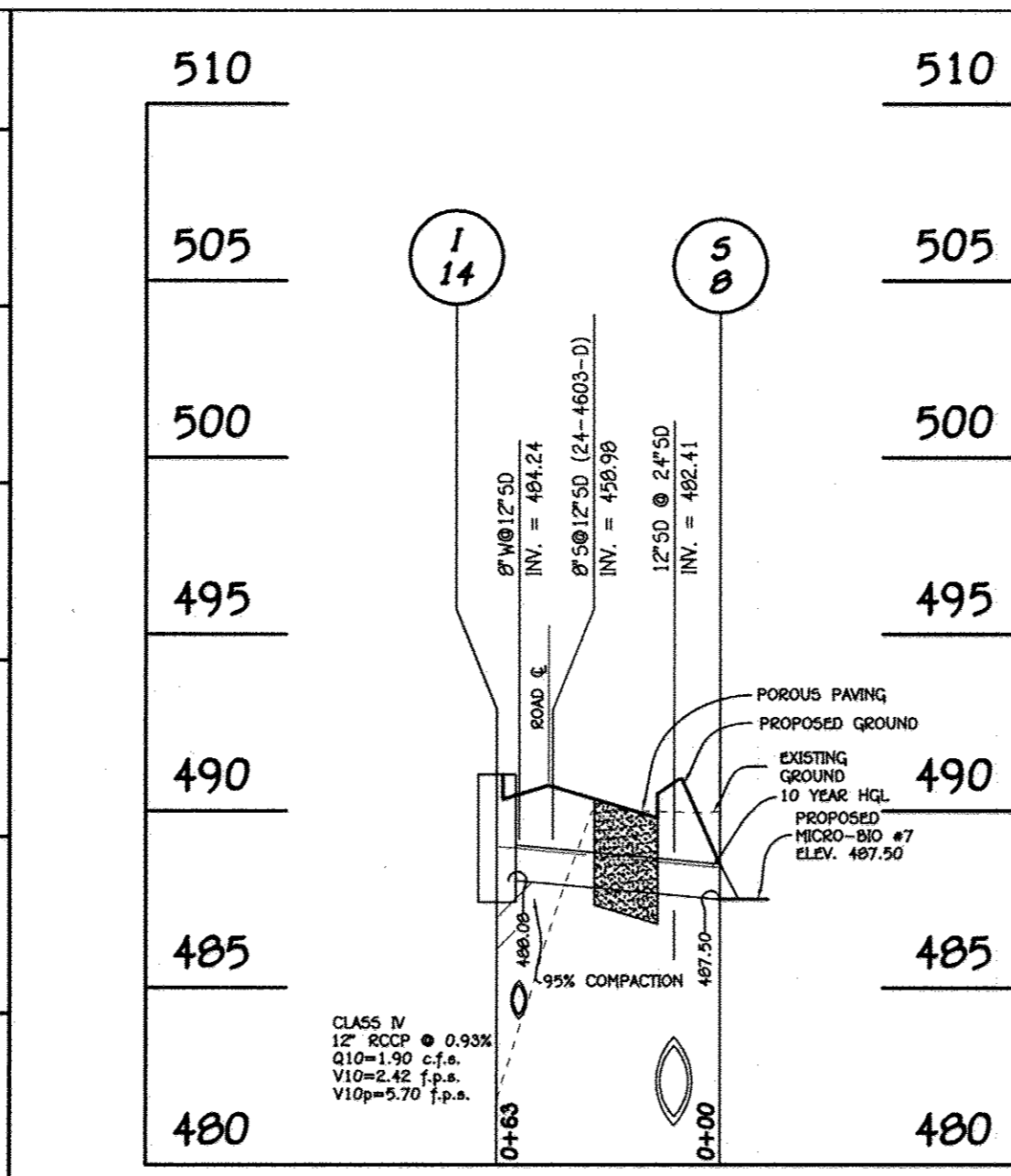
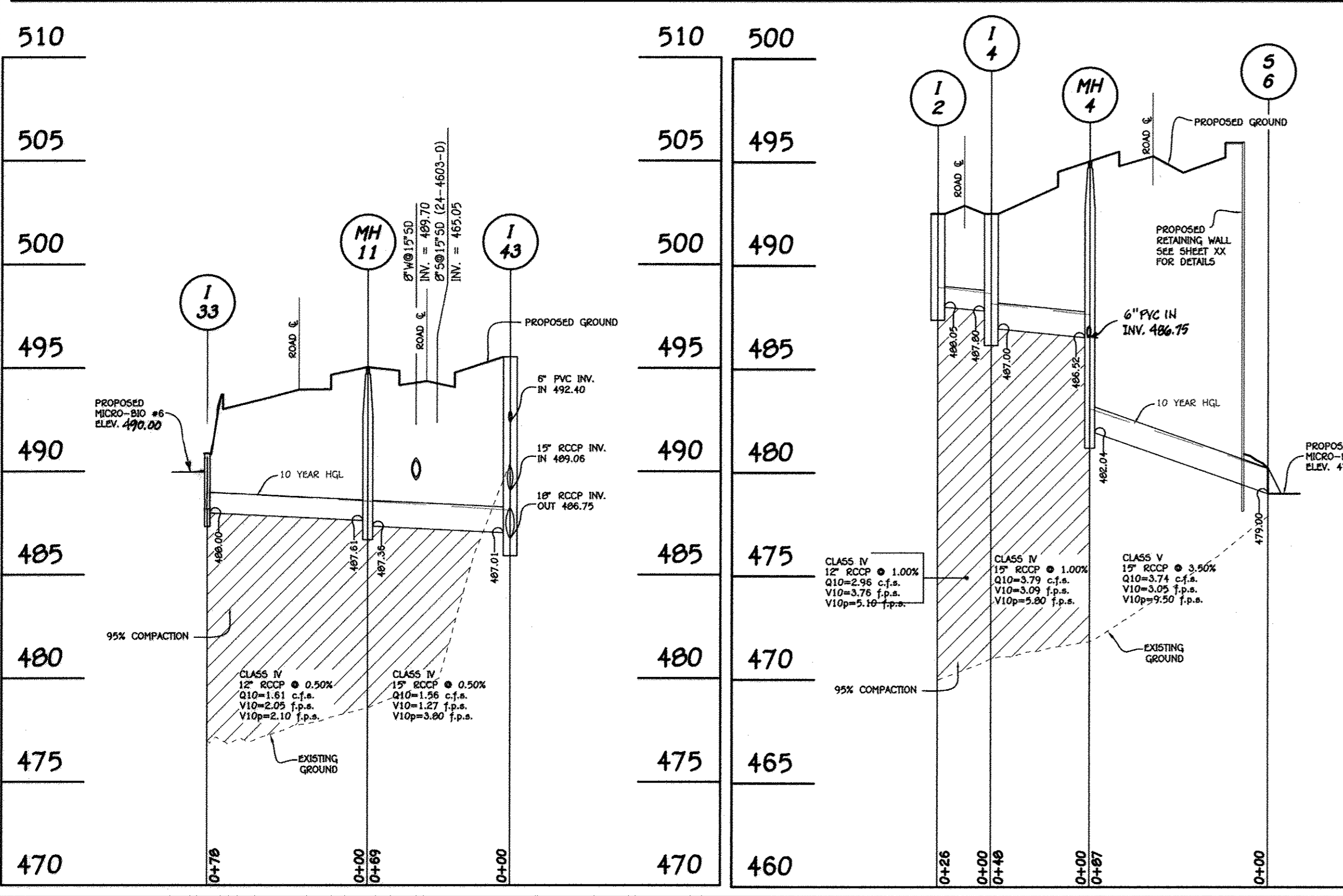
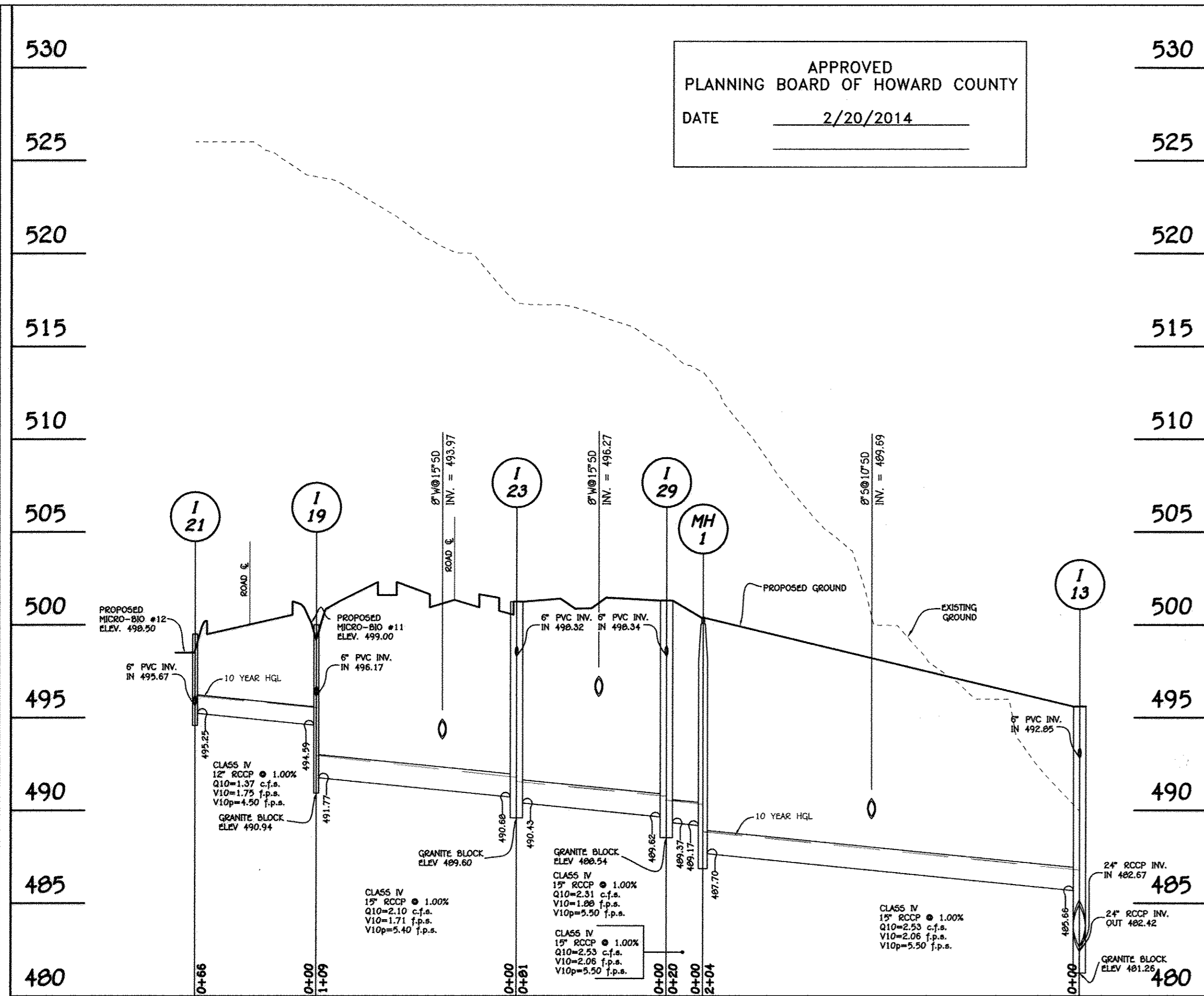


OWNER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 GLENELG, MARYLAND 21737-0030

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION,
 P.O. BOX
 GLENELG, MARYLAND
 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Director - Department of Planning and Zoning

STORM DRAIN DRAINAGE AREA / SOILS MAP
 AGE RESTRICTED ADULT HOUSING
 WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 22944 Thru 22953)
 ZONED P5C TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 12 OF 31
 SDP-13-031

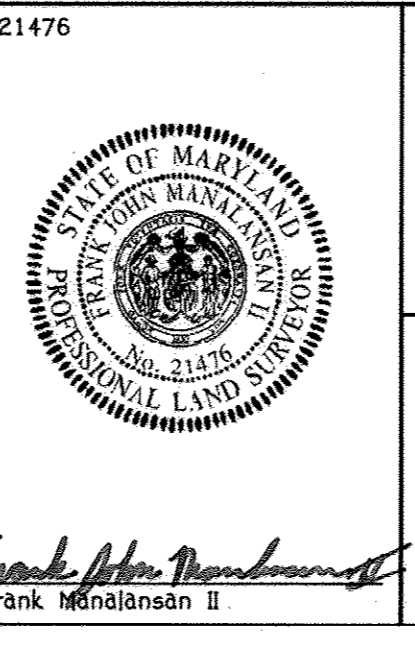


<p>FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELKLOTT CITY, MARYLAND 21142 (410) 461-2299</p>		
NO.	REVISION	DATE
I	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/14/12

PROFESSIONAL CERTIFICATION
 "Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2015."

Frank Mihalansan II 9/2/14
 Frank Mihalansan II DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
 HOWARD COUNTY HEALTH DEPARTMENT.
William for Maurice Rossmann 9/2/2014
 COUNTY HEALTH OFFICER H. O. DATE



OWNER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION,
 P.O. BOX 30
 GLENELG, MARYLAND
 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Ketia L. Lusk 10/26/14
 Chief, Division of Land Development Date

David P. Smith 9/18/14
 Chief, Development Engineering Division Date

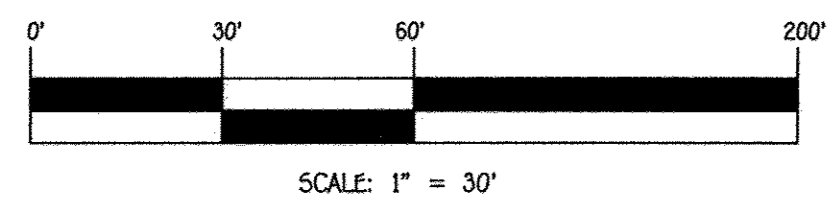
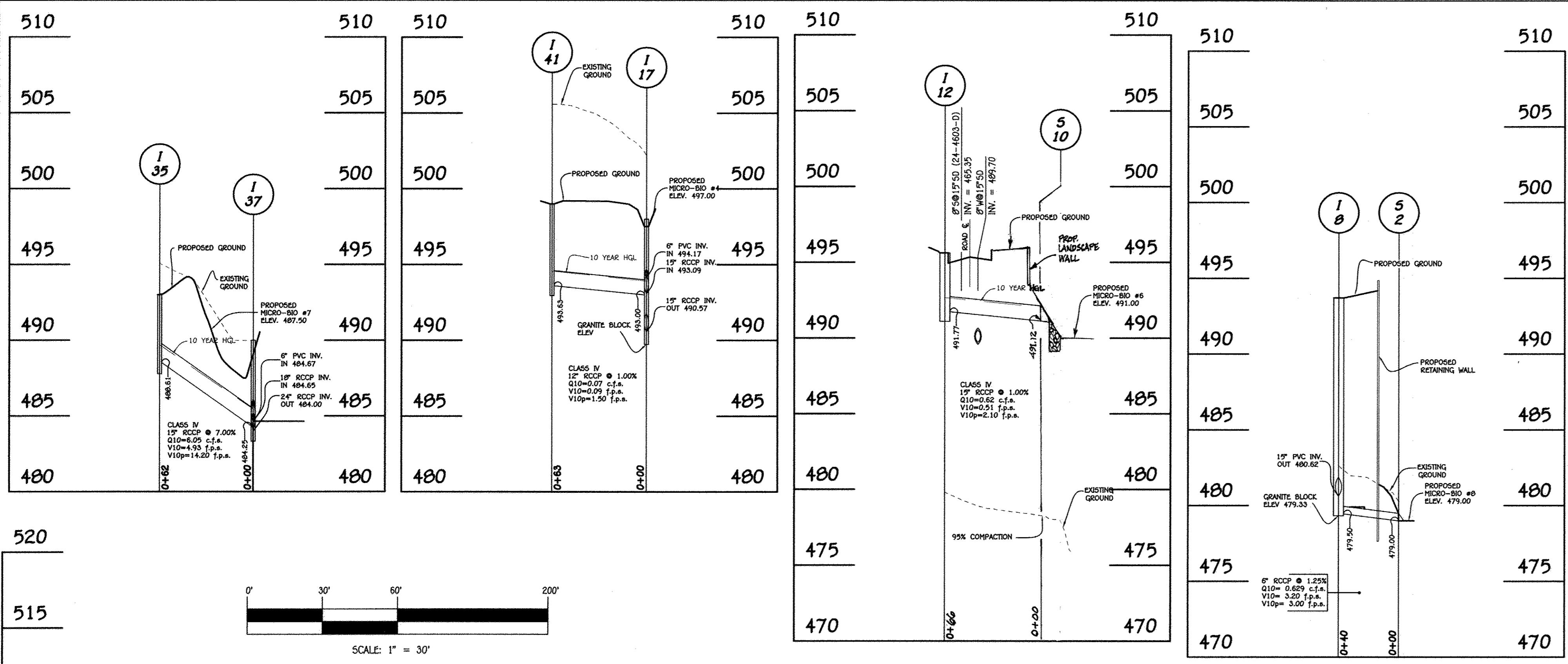
Paul A. Cagle 9/17/14
 Director - Department of Planning and Zoning Date

PROJECT	SECTION	PARCEL NOS.
GW's WAVERLY WOODS, SECTION 14	14	P/O 249
PLAT	BLOCK NO.	ZONE
22944-22953	3 & 4	PSC
TAX/ZONE	ELEC. DIST.	CENSUS TR.
16	THIRD	60300
WATER CODE	SEWER CODE	
K-02	5992000	

STORM DRAIN PROFILES

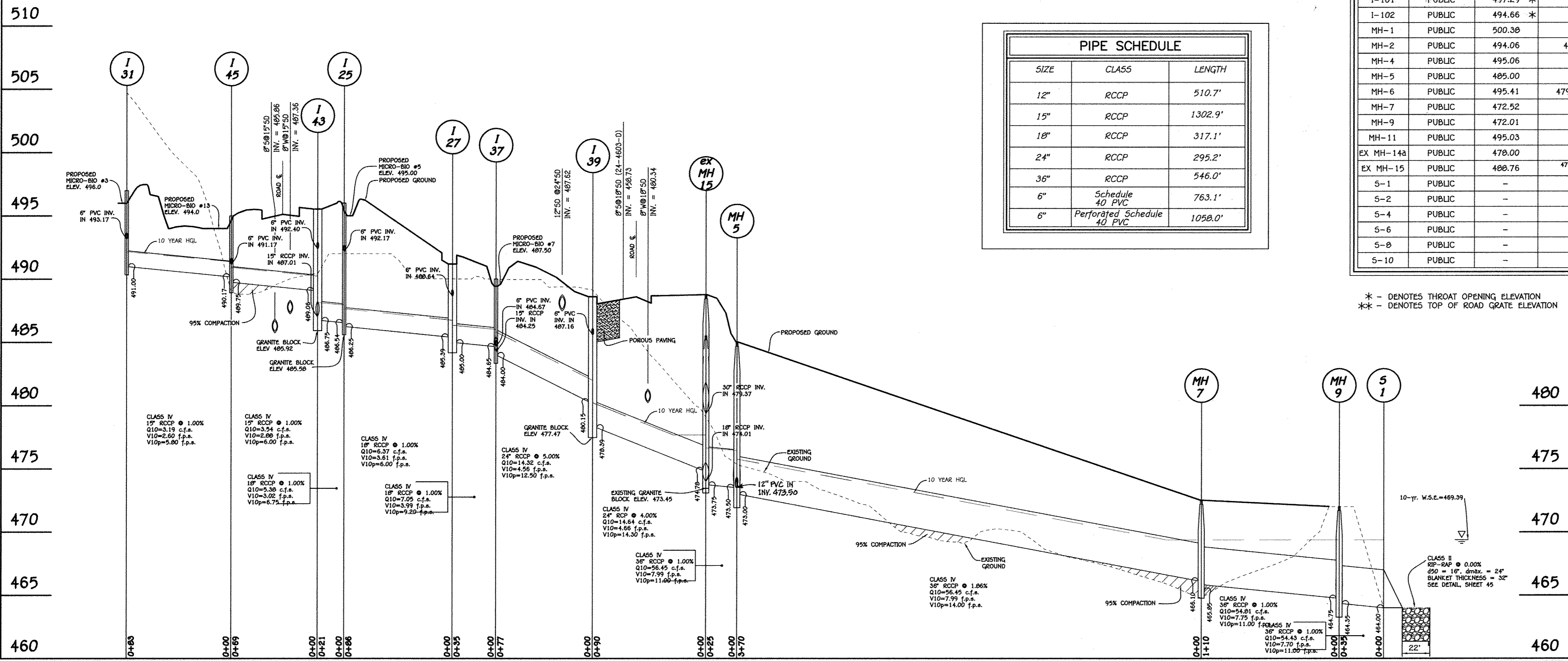
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 22944 Thru 22953
 ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 13 OF 31

SDP-13-031



STRUCTURE SCHEDULE										
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV. IN	INV. OUT	COORDINATES	WIDTH	TYPE	REMARKS		
I-1	PUBLIC	501.00 *	-	498.38	N 538374.40 E 827389.92	-	D INLET	SD 4.10		
I-2	PUBLIC	492.52 **	-	488.05	N 538226.71 E 827928.69	-	S INLET	SD 4.22		
I-3	PUBLIC	501.00 *	497.86	497.01	N 538425.70 E 827398.26	-	D INLET	SD 4.10		
I-4	PUBLIC	492.52 **	487.80	487.00	N 538239.56 E 827906.09	-	S INLET	SD 4.22		
I-5	PUBLIC	500.00 *	496.02	495.49	N 538514.04 E 827443.09	-	D INLET	SD 4.10		
I-6	PUBLIC	495.24 *	491.57	486.98	N 538449.97 E 827733.86	-	A-10 INLET	SD 4.03		
I-7	PUBLIC	493.00 *	488.06	487.57	N 538569.39 E 827682.54	-	D INLET	SD 4.10		
I-8	PUBLIC	493.71 *	-	480.62	N 538534.92 E 827754.92	-	A-5 INLET	SD 4.02		
I-9	PUBLIC	492.60 **	484.96	486.71	N 538521.45 E 827713.00	-	S INLET	SD 4.22		
I-11	PUBLIC	495.10 *	482.94	483.19	N 538404.24 E 827727.14	-	A-5 INLET	SD 4.02		
I-12	PUBLIC	495.61 *	-	491.77	N 538229.45 E 827770.84	-	A-5 INLET	SD 4.22		
I-13	PUBLIC	495.61 *	485.66 (MH-1), 482.42 (I-11)	482.17	N 538399.40 E 827753.80	-	A-5 INLET	SD 4.02		
I-14	PUBLIC	491.04 *	-	488.08	N 537992.04 E 827757.90	-	A-10 INLET	SD 4.03		
I-15	PUBLIC	480.00 *	474.56	471.13	N 538419.12 E 827839.50	-	D INLET	SD 4.10		
I-16	PUBLIC	495.24 *	-	491.86	N 538420.61 E 827541.36	-	A-5 INLET	SD 4.10		
I-17	PUBLIC	498.00 *	493.09 (I-5), 493.00 (I-41)	490.57	N 538540.53 E 827960.06	-	D INLET	SD 4.01		
I-19	PUBLIC	500.00 *	494.59	491.77	N 538207.06 E 827456.47	-	D INLET	SD 4.10		
I-21	PUBLIC	499.50 *	-	495.25	N 538263.59 E 827422.49	-	D INLET	SD 4.10		
I-23	PUBLIC	501.24 *	490.68	490.43	N 538254.42 E 827554.37	-	A-5 INLET	SD 4.02		
I-25	PUBLIC	496.00 *	486.54	486.25	N 538159.03 E 827717.35	-	D INLET	SD 4.10		
I-27	PUBLIC	491.18 **	485.39	485.00	N 538072.86 E 827721.23	-	S INLET	SD 4.22		
I-29	PUBLIC	501.31 *	489.62	489.37	N 538335.34 E 827546.13	-	A-5 INLET	SD 4.02		
I-31	PUBLIC	497.00 *	-	491.00	N 538250.85 E 827659.75	-	D INLET	SD 4.10		
I-33	PUBLIC	491.00 *	-	488.00	N 538237.97 E 827845.18	-	D INLET	SD 4.10		
I-35	PUBLIC	493.00 *	-	488.61	N 538047.96 E 827638.81	-	D INLET	SD 4.10		
I-37	PUBLIC	490.00 *	484.25 (I-35), 484.65 (I-27)	484.00	N 538044.58 E 827701.07	-	D INLET	SD 4.10		
I-39	PUBLIC	488.02 *	480.15	478.39	N 537968.05 E 827710.19	-	A-5 INLET	SD 4.02		
I-41	PUBLIC	499.00 *	-	493.63	N 538479.13 E 827573.20	-	YARD INLET	SD 4.14		
I-43	PUBLIC	495.53 *	487.01 (MH-11), 489.06 (I-45)	486.75	N 538173.70 E 827732.61	-	A-5 INLET	SD 4.10		
I-45	PUBLIC	495.00 *	490.17	489.75	N 538241.83 E 827742.67	-	D INLET	SD 4.01		
I-101	PUBLIC	497.29 *	-	-	N 538167.67 E 827645.50	-	FLOW THRU INLET	-		
I-102	PUBLIC	494.66 *	-	-	N 538235.47 E 827735.62	-	FLOW THRU INLET	-		
MH-1	PUBLIC	500.38	489.17	487.70	N 538353.32 E 827554.59	-	MANHOLE	-		
MH-2	PUBLIC	494.06	480.25 (I-8), 486.50 (I-6)	480.00	N 538464.54 E 827779.69	-	MANHOLE	-		
MH-4	PUBLIC	495.06	486.52	482.04	N 538287.47 E 827905.04	-	MANHOLE	-		
MH-5	PUBLIC	485.00	473.50, 473.50 (12" PVC)	473.00	N 537965.64 E 827821.14	-	MANHOLE	-	Ho. Co. Detail	G 5.13
MH-6	PUBLIC	495.41	479.42 (MH-6), 481.73 (I-13)	475.00	N 538409.31 E 827796.85	-	MANHOLE	-		
MH-7	PUBLIC	472.52	466.10	465.85	N 538286.96 E 828004.29	-	MANHOLE	-	II	G 5.13
MH-9	PUBLIC	472.01	464.75	464.35	N 538377.12 E 827941.55	-	MANHOLE	-	II	G 5.13
MH-11	PUBLIC	495.03	487.61	487.36	N 538172.86 E 827801.94	-	MANHOLE	-		
EX MH-14a	PUBLIC	478.00	470.87	466.09	N 538416.74 E 827852.15	-	MANHOLE	-		
EX MH-15	PUBLIC	488.76	474.78 (I-39), 474.01 (I-71) 18", 473.37 (I-34) 38"	473.75	N 537954.05 E 827799.29	-	MANHOLE	-		
S-1	PUBLIC	-	464.00 36"	-	N 538418.78 E 827940.86	-	CONC. END SECTION	SD 5.51		
S-2	PUBLIC	-	476.00 6"	-	N 538547.93 E 827792.60	-	-	-		
S-4	PUBLIC	-	479.00 6"	-	N 538476.14 E 827814.37	-	-	-		
S-6	PUBLIC	-	479.00 15"	-	N 538364.23 E 827864.68	-	CONC. END SECTION	SD 5.51		
S-8	PUBLIC	-	487.50 12"	-	N 537992.32 E 827694.87	-	CONC. END SECTION	SD 5.51		
S-10	PUBLIC	-	490.00 15"	-	N 538245.32 E 827845.97	-	CONC. END SECTION	SD 5.51		

PIPE SCHEDULE		
SIZE	CLASS	LENGTH
12"	RCCP	510.7'
15"	RCCP	1302.9'
18"	RCCP	317.1'
24"	RCCP	295.2'
36"	RCCP	546.0'
6"	Schedule 40 PVC	763.1'
6"	Perforated Schedule 40 PVC	1058.0'



* - DENOTES THROAT OPENING ELEVATION
 ** - DENOTES TOP OF ROAD GRATE ELEVATION
 'A' INLET COORDINATES ARE AT CENTERLINE OF INLET AT FACE OF CURB.
 'K' INLET COORDINATES ARE AT CENTER OF INLET.

APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE 2/20/2014

NO.	REVISION	DATE
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/4/15

PROFESSIONAL CERTIFICATION
 "Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2015."
 Frank Manalansan II 8/2/14 DATE
 APPROVED FOR PUBLIC WATERS AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
 COUNTY HEALTH OFFICER 9/2/2014 DATE

BUILDER
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA, MARYLAND, 21043
 410-796-0908

OWNER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 GLENELG, MARYLAND 21737-0030

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION,
 P.O. BOX 30
 GLENELG, MARYLAND
 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Director - Department of Planning and Zoning

PROJECT: GTW'S WAVERLY WOODS, SECTION 14
 PARCEL G

SECTION: 14
 PARCEL NOS.: P/O 249

PLAT: 2294A-22953
 BLOCK NO.: 3 & 4
 ZONE: PSC
 TAX/ZONE: 16
 ELEC. DIST.: THIRD
 CENSUS TR.: 60300

WATER CODE: K-02
 SEWER CODE: 5992000

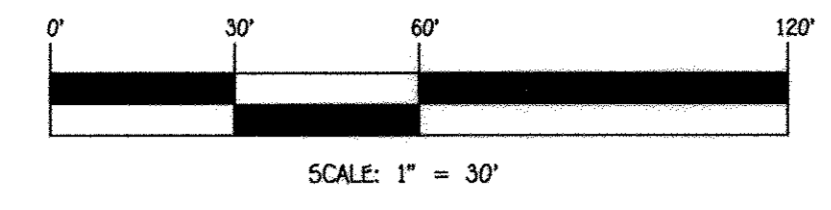
STORM DRAIN PROFILES

AGE RESTRICTED ADULT HOUSING
 WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 2294A Thru 22953)
 ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 14 OF 31

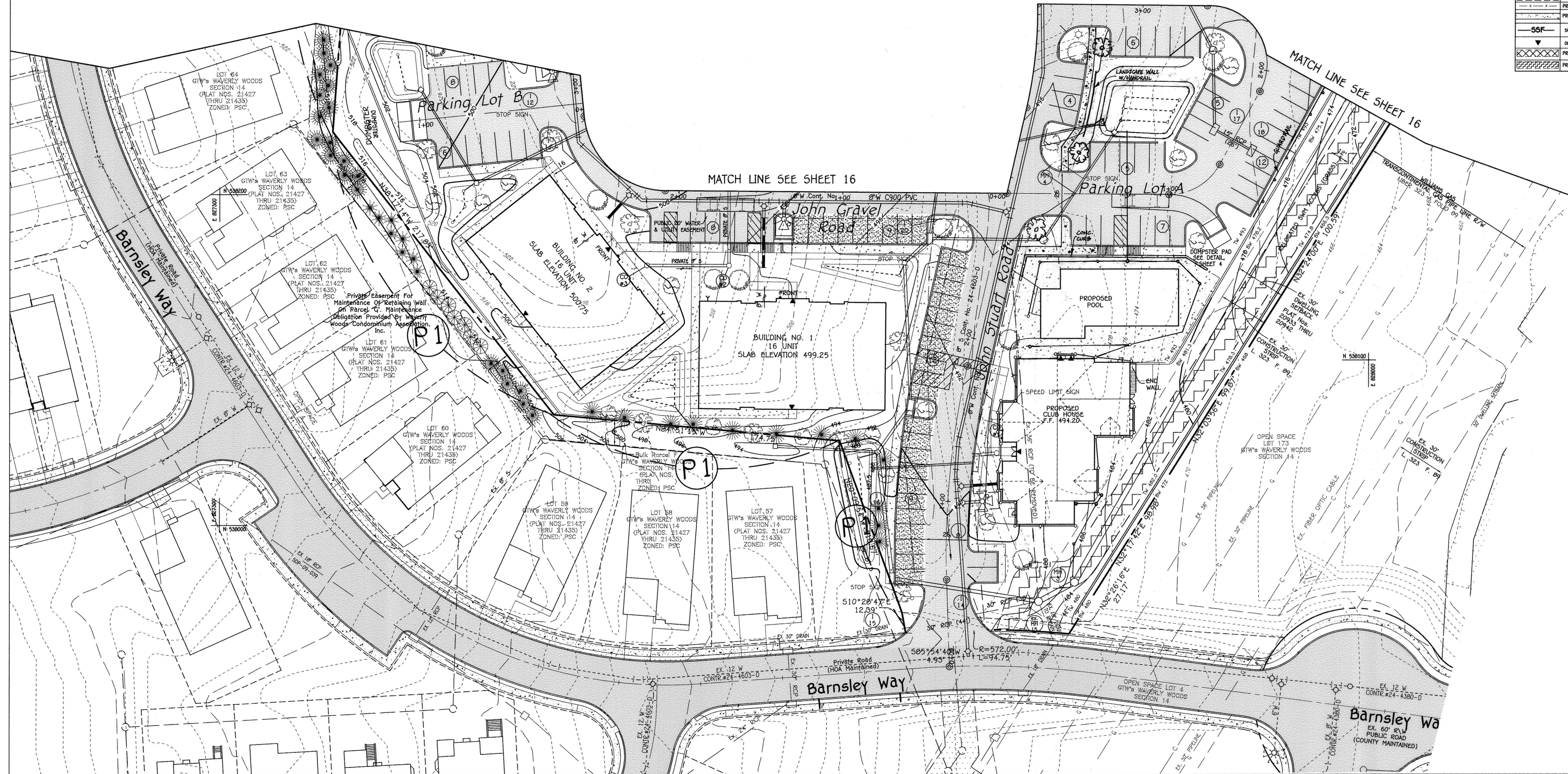
SDP-13-031

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461 - 3292

APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE 2/20/2014



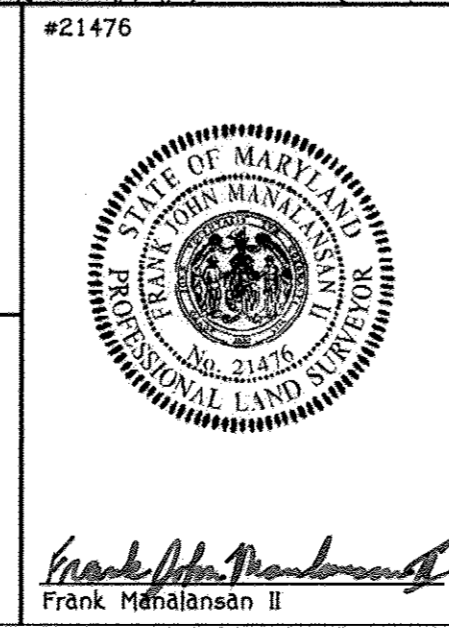
LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
•	SPOT ELEVATION
---	EROSION CONTROL MATING
---	LIMIT OF DISTURBANCE
○	STREET LIGHT PER F-09-057
---	PROPOSED STORM DRAIN PIPE
---	PROPOSED SEWER
○	PROPOSED LANDSCAPE TREES
○	PERMETER TREES
---	EXISTING STORMDRAIN
---	EXISTING SEWER
---	EXISTING WATER
---	EXISTING WATER & SEWER UTILITY EASEMENT
---	PROPOSED FENCE
---	PROPOSED CONCRETE SIDEWALK
---	SUPER SILT FENCE
▼	DENOTES POINTS OF INGRESS AND EGRESS
---	PROPOSED RETAINING WALL EASEMENT
---	PROPOSED MAINTENANCE EASEMENT



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461 - 2292

NO.	REVISION	DATE
1	REVISE FINAL GRADING & OSTERN WITH ROOF LEADERS	12/4/12

PROFESSIONAL CERTIFICATION
 #21476
 "Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland. License No. 21476. Expiration Date: 07/14/2015."
 Frank M. Manalansan II 8/9/14 DATE
 APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
 County Health Officer 9/2/2014 DATE
 Frank M. Manalansan II



BUILDER
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA MARYLAND, 21043
 410-796-0908

OWNER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION,
 P.O. BOX 30
 GLENELG, MARYLAND
 21737-0030

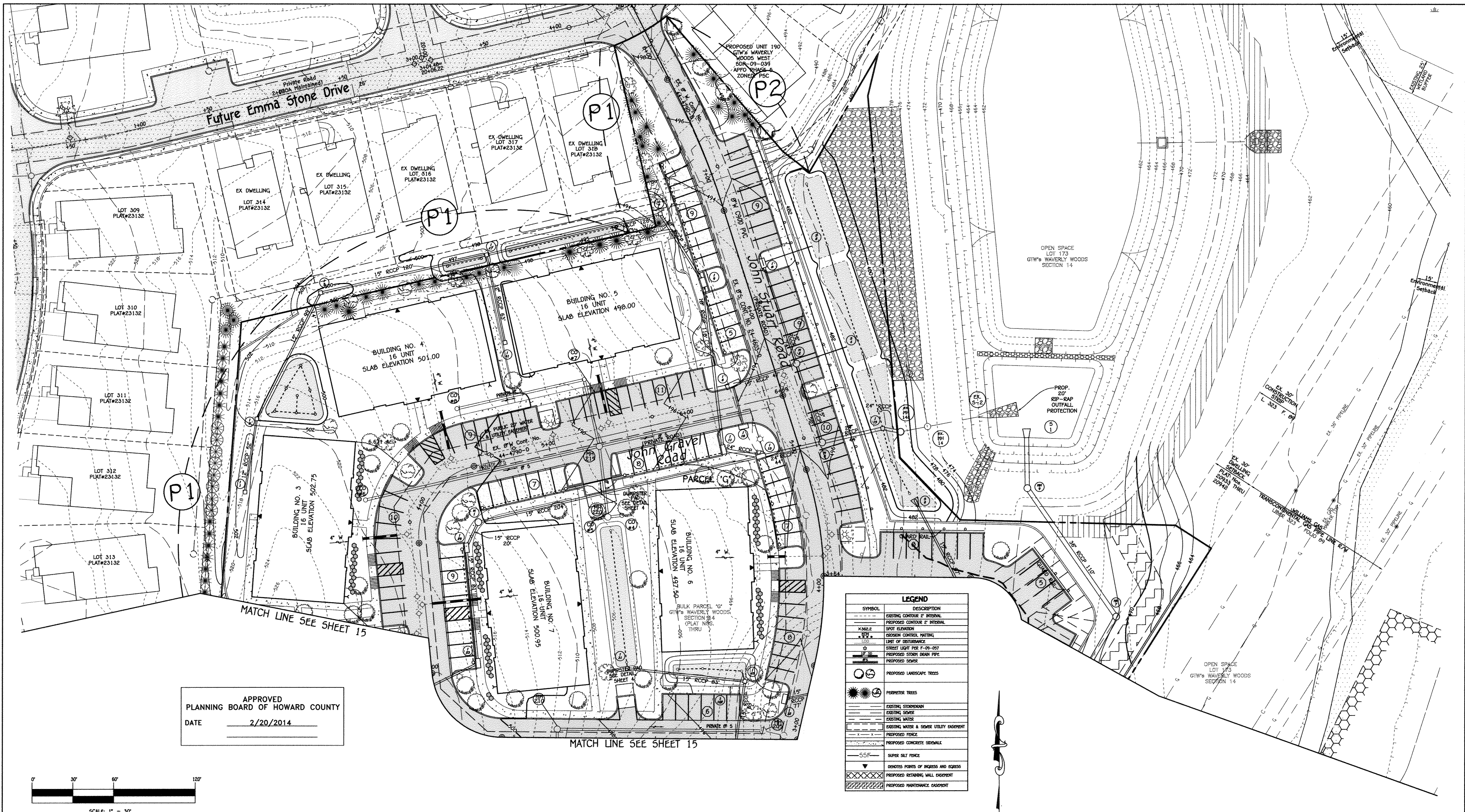
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development 9-18-14 DATE
 Chief, Development Engineering Division J.R. DATE
 Director - Department of Planning and Zoning 2/20/14 DATE

PROJECT	SECTION	PARCEL NOS.
GTW's WAVERLY WOODS, SECTION 14	14	P/O 249

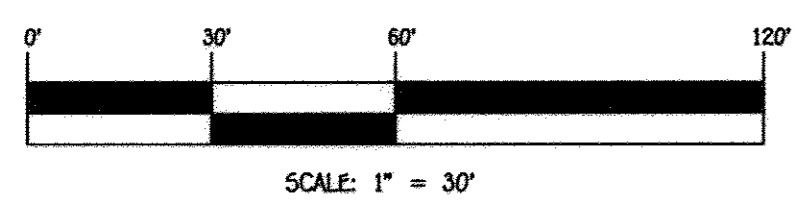
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300

WATER CODE	SEWER CODE
K-02	5992000

LANDSCAPE PLAN
 AGE RESTRICTED ADULT HOUSING
 WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 22944 Thru 22953)
 ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 15 OF 31
 SDP-13-031



APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

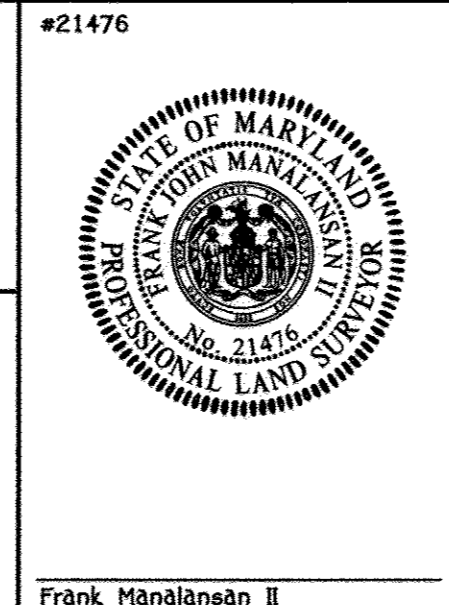


LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
•	SPOT ELEVATION
---	PROPOSED CONTROL MATING
---	LIMIT OF DISTURBANCE
---	STREET LIGHT Poles T-09-097
---	PROPOSED STORM DRAIN PIPE
---	PROPOSED SEWER
○	PROPOSED LANDSCAPE TREES
☼	PERIMETER TREES
---	EXISTING STORMDRAIN
---	EXISTING SPACE
---	EXISTING WATER
---	EXISTING WATER & SEWER UTILITY EASEMENT
---	PROPOSED FENCE
---	PROPOSED CONCRETE SIDEWALK
---	SUPER SILT FENCE
▼	IDENTIFIES POINTS OF INGRESS AND EGRESS
---	PROPOSED RETAINING WALL EASEMENT
---	PROPOSED MAINTENANCE EASEMENT

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PKWY
ELLSWORTH CITY, MARYLAND 21042
(410) 441-2999

NO.	REVISION	DATE
2	REVISE SWM FACILITIES AND ASSOCIATED GRADING	2/28/17
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/4/15
	REVISION	DATE

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2019."
Frank Manalánsan II 1-2-18
Date
APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
Ryan M. Retzner 1/29/2018
COUNTY HEALTH OFFICER
DATE
H.O.



BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0908

OWNER/DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John M. Carson for US 2/3/18
Chief, Division of Land Development K.B. for D.P.
Date
John M. Carson 1-19-18
Chief, Development Engineering Division
Date
John M. Carson 2-2-18
Director - Department of Planning and Zoning

PROJECT	SECTION	PARCEL NOS.			
GTW's WAVERLY WOODS, SECTION 14	14	P/O 249			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300
WATER CODE	SEWER CODE				
K-02	5992000				

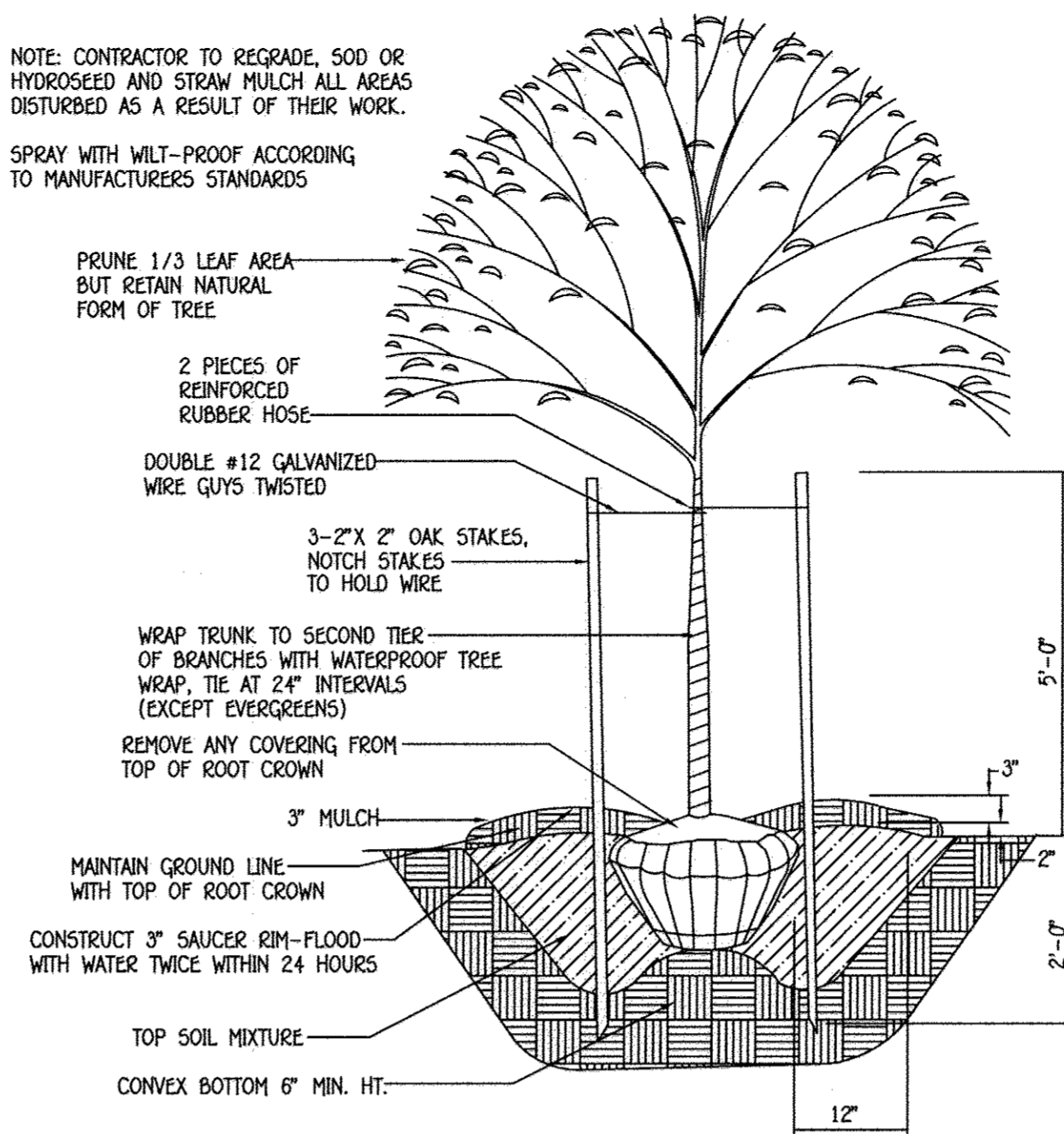
REVISED
LANDSCAPE PLAN
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. 22944 Thru 22953
ZONED: PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: DECEMBER 28, 2017
SHEET 16 OF 31
SDP-13-031

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
APARTMENTS	
NUMBER OF PARKING SPACES	210
NUMBER OF TREES REQUIRED (1:10)	22
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTE)	22

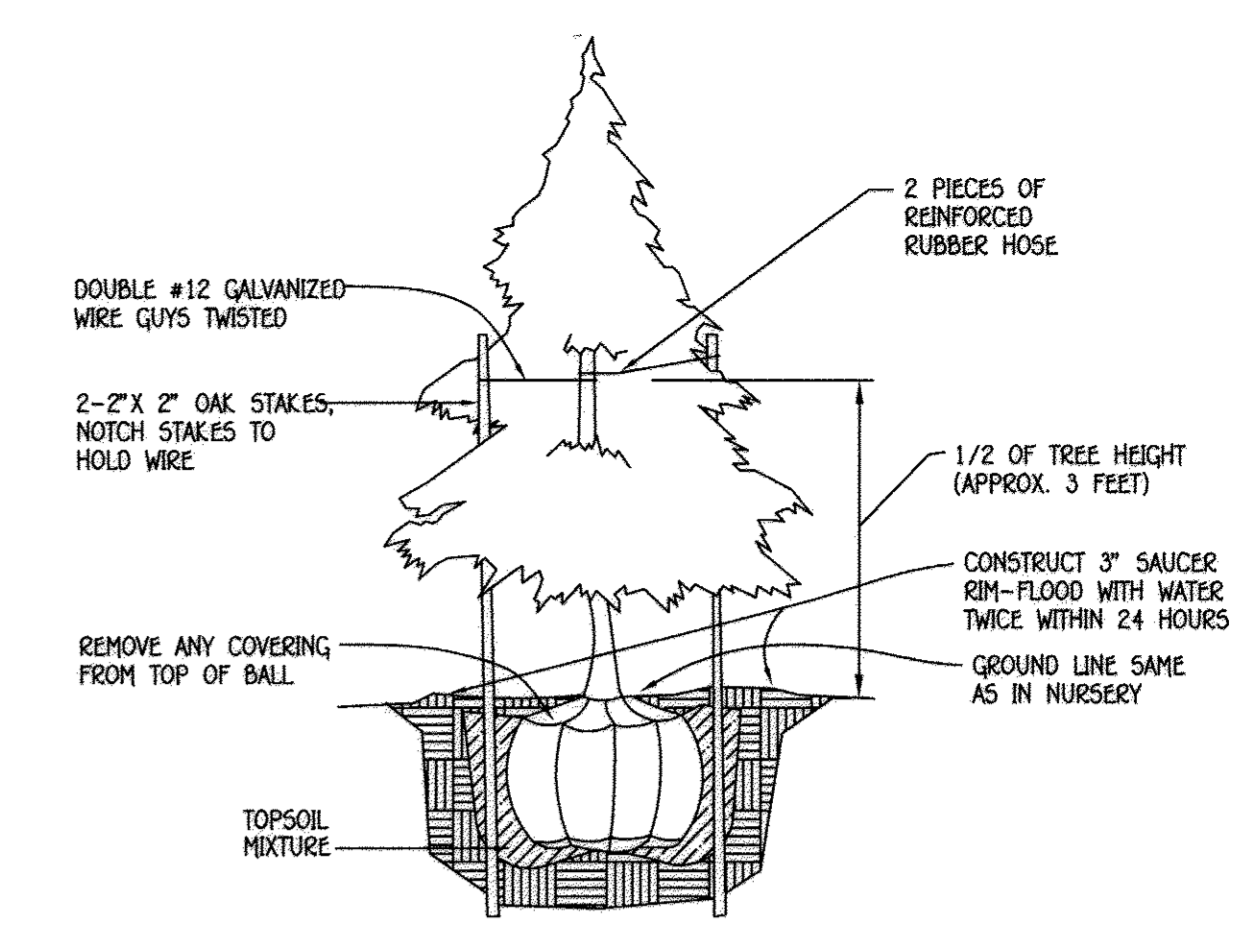
SCHEDULE C RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING	
APARTMENTS	
NUMBER OF DWELLING UNITS	112
NUMBER OF TREES REQUIRED (1:3 DU APTS)	37
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTE)	37

NOTE:
AN ALTERNATIVE TO INTERNAL LANDSCAPING FOR BUILDINGS 3, 6, AND 7 AS REQUIRED BY THE LANDSCAPE MANUAL WAS APPROVED AND ALLOWS FOR: 1) USE OF A TYPE 'E' LANDSCAPE BUFFER RATHER THAN REQUIRED PLANTING RATIOS FOR APARTMENTS AND 2) REDUCTION IN THE LANDSCAPE AREA WIDTH FROM 15' TO 12'. THE REQUIRED PLANTING FOR THE AREAS OF ALTERNATIVE COMPLIANCE FOR BUILDINGS 3, 6 AND 7 HAVE BEEN ADDED TO SCHEDULE 'A' LOCATED ON THIS SHEET.

SCHEDULE A - PERIMETER LANDSCAPING											
PERIMETER	CATEGORY (PROPERTIES/ ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED		
						SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	APTS TO SFD	C	1201.97'	NO	YES 526' LONG WALL	17	34	-	17	34	-
P-2	NON-RES. TO RES.	C	148.72'	NO	NO	4	7	-	4	7	-
BUILDING 3	APT./SFA TO PARKING	E	112'	-	-	3	-	28	3	-	28
BUILDING 6	APT./SFA TO PARKING	E	112'	-	-	3	-	28	3	-	28
BUILDING 7	APT./SFA TO PARKING	E	112'	-	-	3	-	28	3	-	28



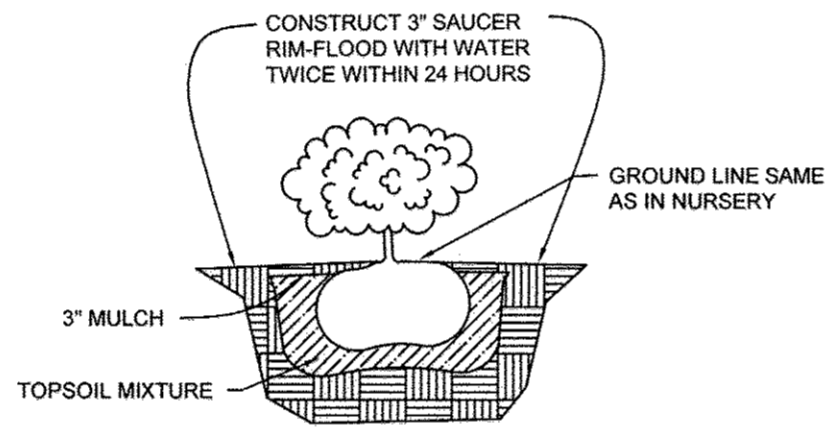
TREE PLANTING DETAIL
NOT TO SCALE



EVERGREEN PLANTING DETAIL
NOT TO SCALE

PLANTING SPECIFICATIONS

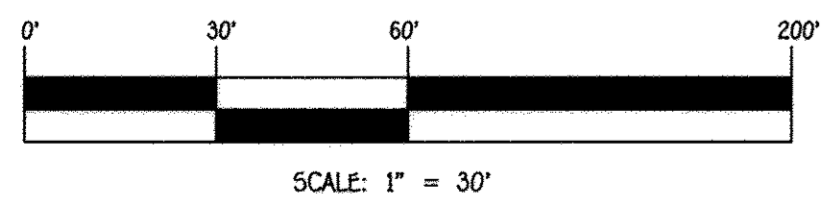
PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.
ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, GROW AND SHAPE SHOWN ON THE PLANS AND THE ASSOCIATION OF NURSERYMEN (A.N.S.) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISCOLORING ROOTS, SUN SCALD BRUISES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PESTS, BORERS, AND ALL FORMS OF INSECT INFESTATIONS OR OBSCURABLE DISEASES. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LANDSCAPING TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEAVES WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FREIGHT ORIGIN, TO INCLUDE IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATIONS SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREA" (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL AMENDMENTS.
CONTRACTOR SHALL BE RESPONSIBLE TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.
CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES, UTILITY CONTRACTORS AND "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED BY THE TEMPORARY INSTALLATION OF A FOOT HIGH SNOW FENCE OR BLAZE ORANGE SAFETY FENCE AT THE DEEP LINE.
CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION.
SFD SHALL BE BASE ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.
PLANT QUANTITIES ARE PROVIDED FOR THE CONFORMANCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE.
ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.
POSTING DRAWINGS SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE.
PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-SIFTED COM OR HOUSE MANURE. ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS - TWO PARTS TOPSOIL, ONE PART HOUSE OR OTHER APPROVED ORGANIC MATERIAL. ADD 3 LBS. OF EVERGREEN (NICKEL) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.
WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COMPS TO BE TREATED.
ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED.
THIS PLAN IS INTENDED FOR LANDSCAPE USE ONLY. SEE OTHER PLAN SHEETS FOR MORE INFORMATION ON GRADING, SEDIMENT CONTROL, LAYOUT, ETC.



SHRUB PLANTING DETAIL

LANDSCAPING PLANT LIST (SCHEDULE A, B & C)				
SYMBOL	QUANTITY	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
☉	39	ACER RUBRUM "ARMSTRONG" RED MAPLE	2 1/2-3" CAL.	
☼	25	PRUNUS SARGENTII SARGENT CHERRY	2 1/2-3" CAL.	
☽	25	QUERCUS COCCINEA SCARLET OAK	5'-6' HT.	
☀	41	CEDRUS ATLANTICA/ ATLAS CEDAR	6'-8' HT.	
☁	24	PICEA ABIES NORWAY SPRUCE	6'-8' HT.	LANDSCAPE BUFFER ALONG RETAINING WALL #1
☂	22	ILEX OPACA AMERICAN HOLLY	5'-6' HT.	LANDSCAPE BUFFER ALONG RETAINING WALL #1
☐	15	THUJA PLICATA GREEN GIANT ARBORVITAE	6'-8' HT.	LANDSCAPE BUFFER ALONG RETAINING WALL #1
○	84	ABELIA X GRANDIFLORA GLOSSY ABELIA	18" - 24" SP.	

NOTE:
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 89 SHADE TREES, 102 EVERGREEN TREES AND 84 SHRUBS HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$44,520.00.



APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING, CONSULTANTS & LAND SURVEYORS
CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PLACE
ELLSWORTH CITY, MARYLAND 21042
(410) 461 - 2992

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2015."
Frank Manalansan II
DATE 2/19/14

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
HOWARD COUNTY HEALTH DEPARTMENT.
Wilson for Maurice Rogman
COUNTY HEALTH OFFICER DATE 9/2/2014

#21476
STATE OF MARYLAND
DEPARTMENT OF PLANNING AND ZONING
PROFESSIONAL LAND SURVEYOR
Frank Manalansan II

BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0908

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND
21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development *John J. ...* DATE 2/19/14

Chief, Development Engineering Division *J.R.* DATE 2/19/14

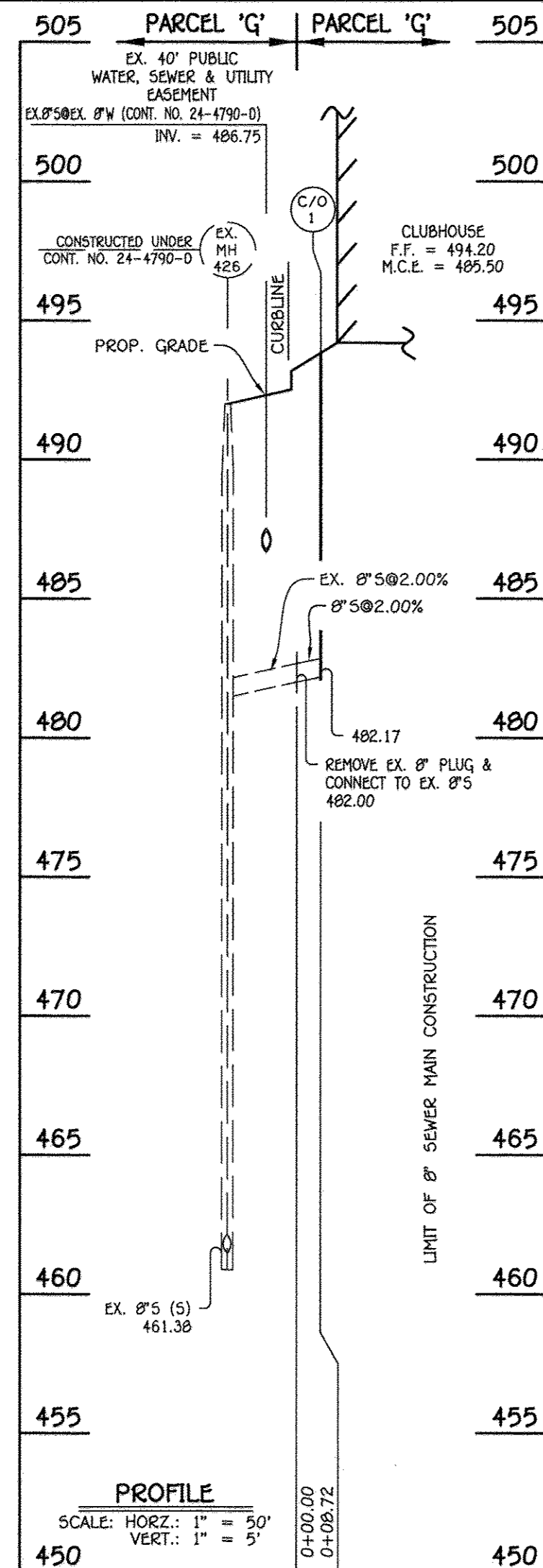
Director - Department of Planning and Zoning *...* DATE 2/19/14

PROJECT Q1W's WAVERLY WOODS, SECTION 14 PARCEL G	SECTION 14	PARCEL NOS. P/O 249
PLAT 2294A - 2295B	BLOCK NO. 3 & 4	ZONE PSC
TAX/ZONE 16	ELEC. DIST. THIRD	CENSUS TR. 60300
WATER CODE K-02	SEWER CODE 5992000	

LANDSCAPE PLAN NOTES & DETAILS

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 17 OF 31

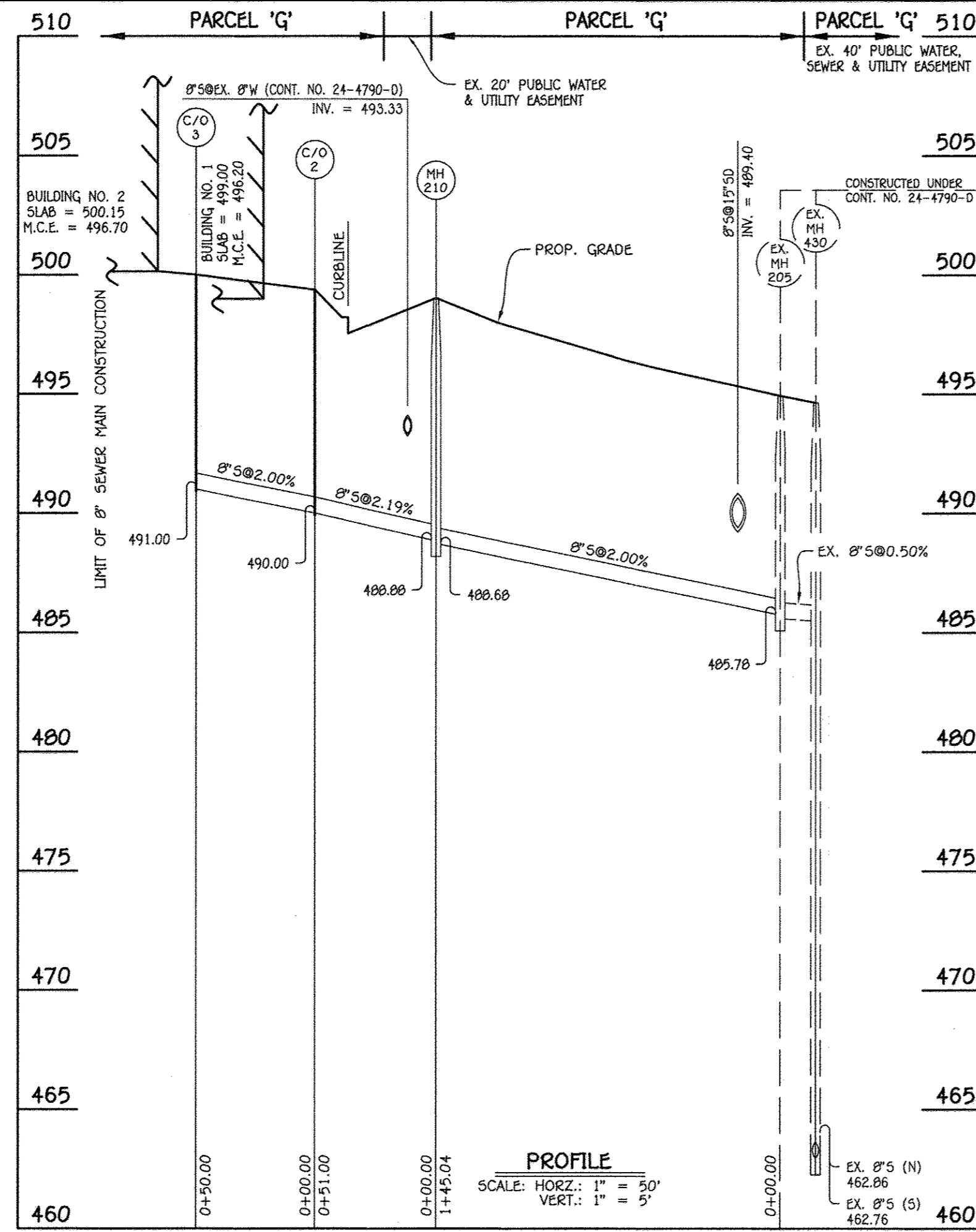
SDP-13-031



8" SEWER MAIN: CLUBHOUSE

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
EX. 8" PLUG	538094.53	827770.57	---
C/O 1	538092.57	827779.07	493.85

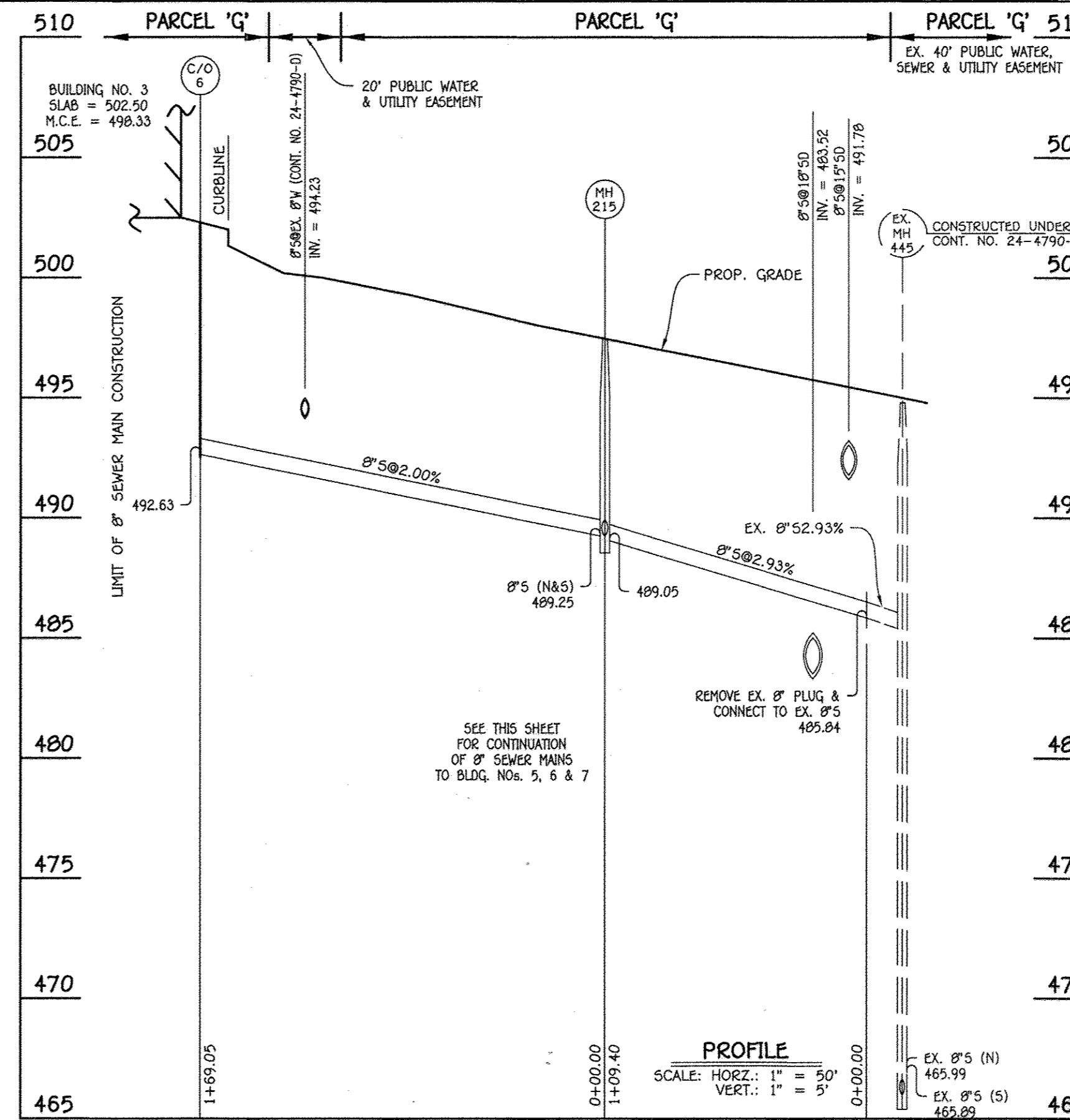
NOTE: SET C/O 1 RIM FLUSH W/PROPOSED GRADE.



8" SEWER MAIN: BUILDING NOS. 1 & 2

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
MH 210	538208.28	827610.43	499.03
C/O 2	538157.28	827610.43	499.37
C/O 3	538157.28	827560.43	500.05

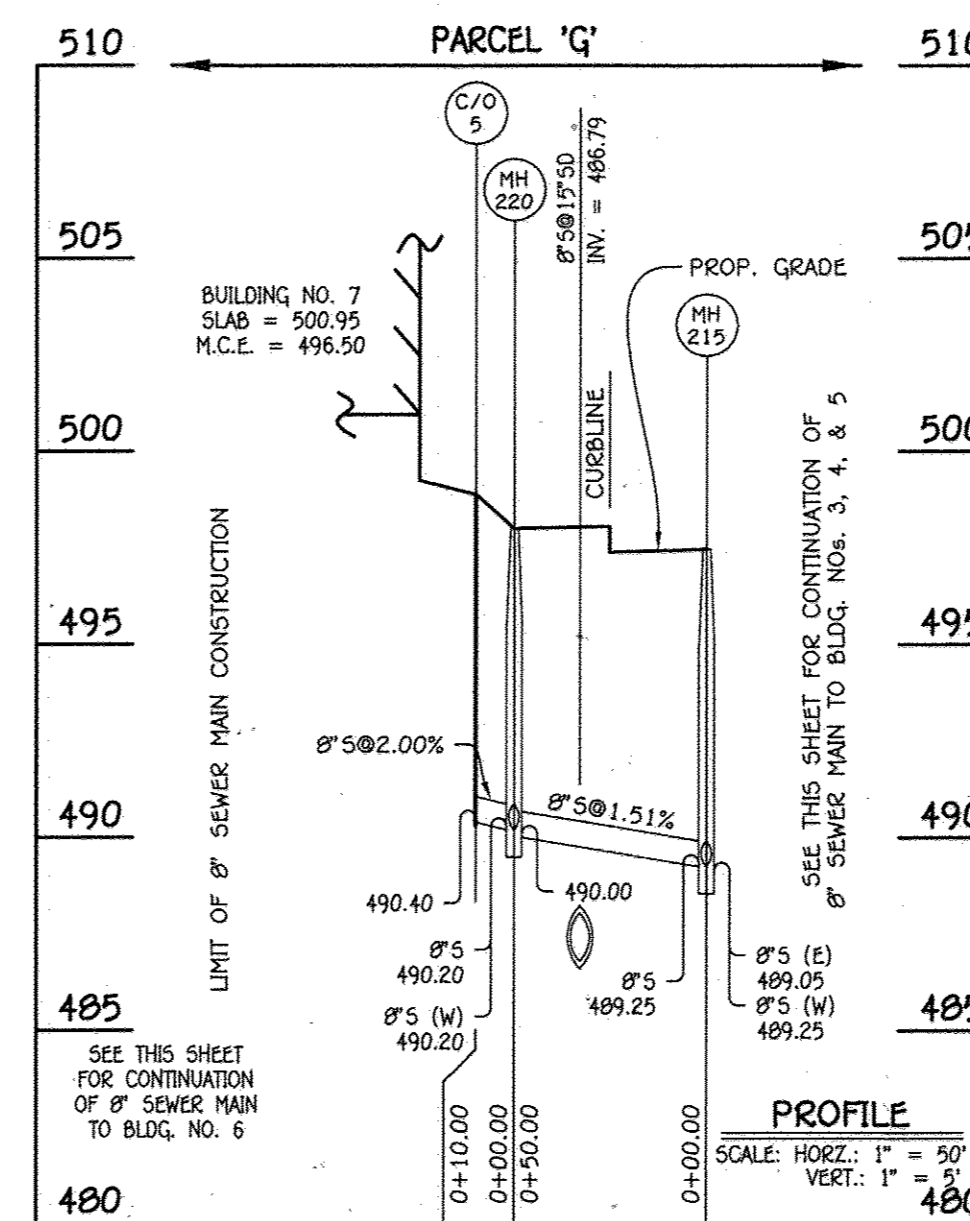
NOTE: SET MH & C/O RIMS FLUSH W/PROPOSED GRADE.



8" SEWER MAIN: BUILDING NO. 3

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
EX. 8" PLUG	538430.88	827746.47	---
MH 215	538406.53	827639.81	497.45
C/O 6	538368.92	827475.00	502.30

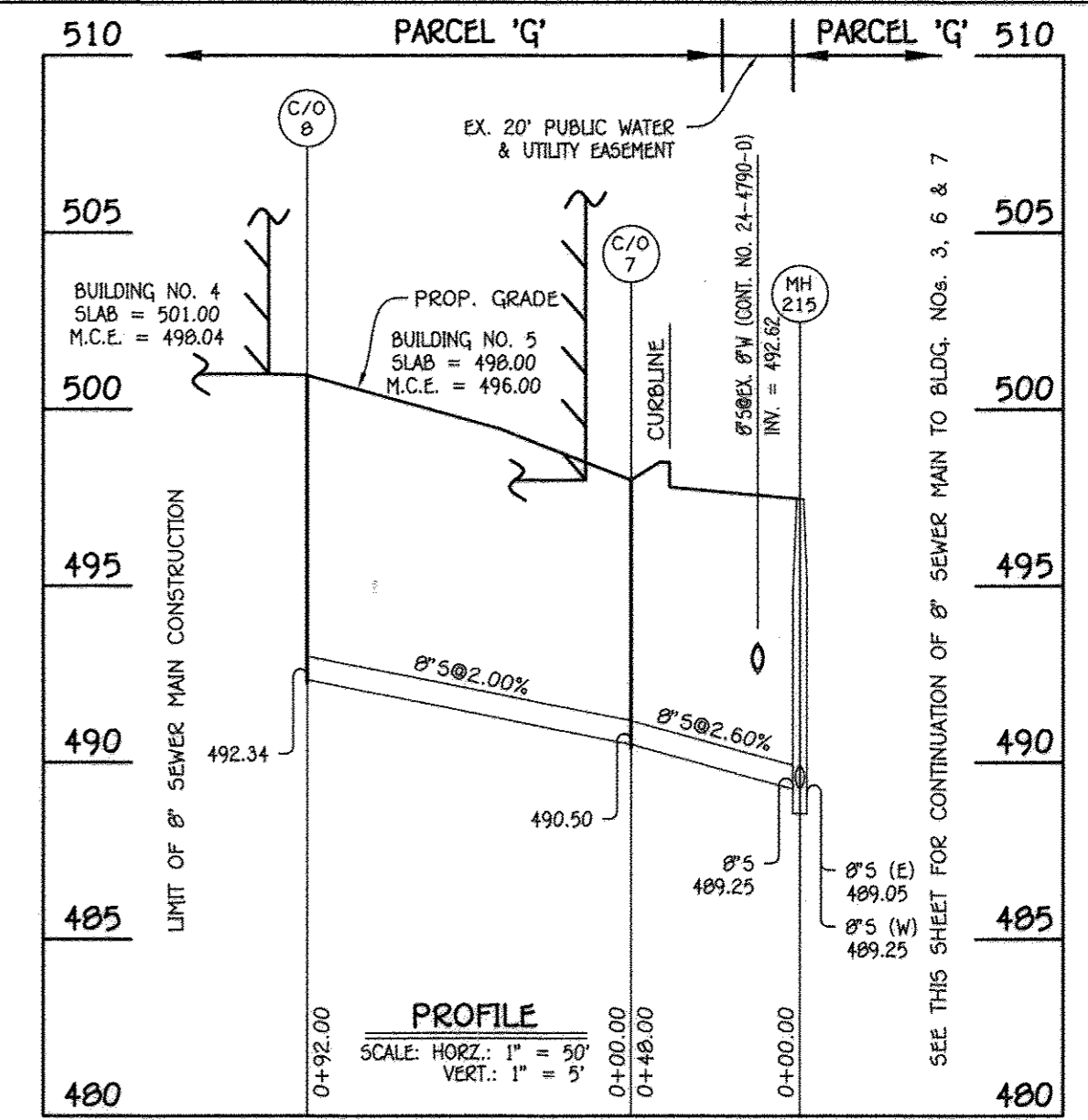
NOTE: SET MH & C/O RIMS FLUSH W/PROPOSED GRADE.



8" SEWER MAIN: BUILDING NO. 7

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
MH 215	538406.53	827639.81	497.45
MH 220	538356.91	827645.92	498.00
C/O 5	538355.68	827635.99	498.88

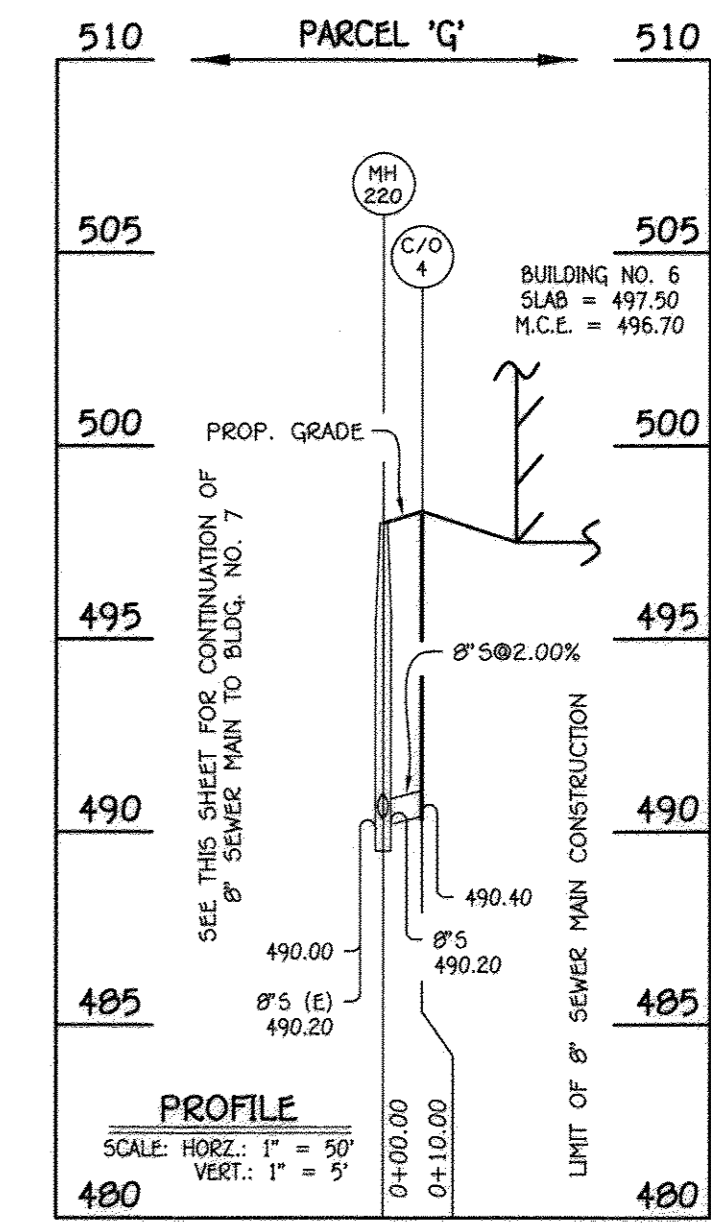
NOTE: SET MH & C/O RIMS FLUSH W/PROPOSED GRADE.



8" SEWER MAIN: BUILDING NOS. 4 & 5

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
MH 215	538406.53	827639.81	497.45
C/O 7	538453.32	827629.11	498.00
C/O 8	538432.85	827539.42	500.96

NOTE: SET MH & C/O RIMS FLUSH W/PROPOSED GRADE.

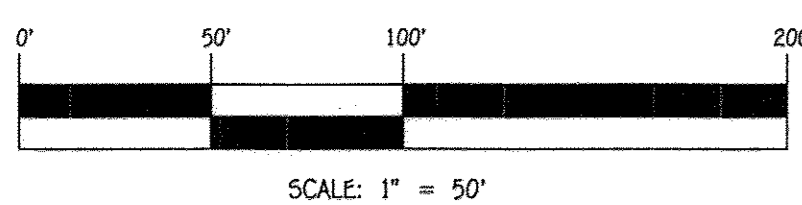


8" SEWER MAIN: BUILDING NO. 6

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
MH 220	538356.91	827645.92	498.00
C/O 4	538358.12	827655.84	498.35

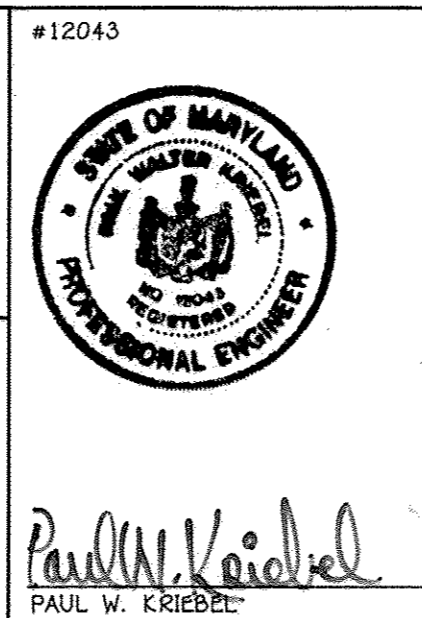
NOTE: SET MH & C/O RIMS FLUSH W/PROPOSED GRADE.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014



NO.	REVISION	DATE

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 12043, Expiration Date: 07/16/2016."
Paul W. Kriebel
PAUL W. KRIEBEL
08/12/14
DATE



OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

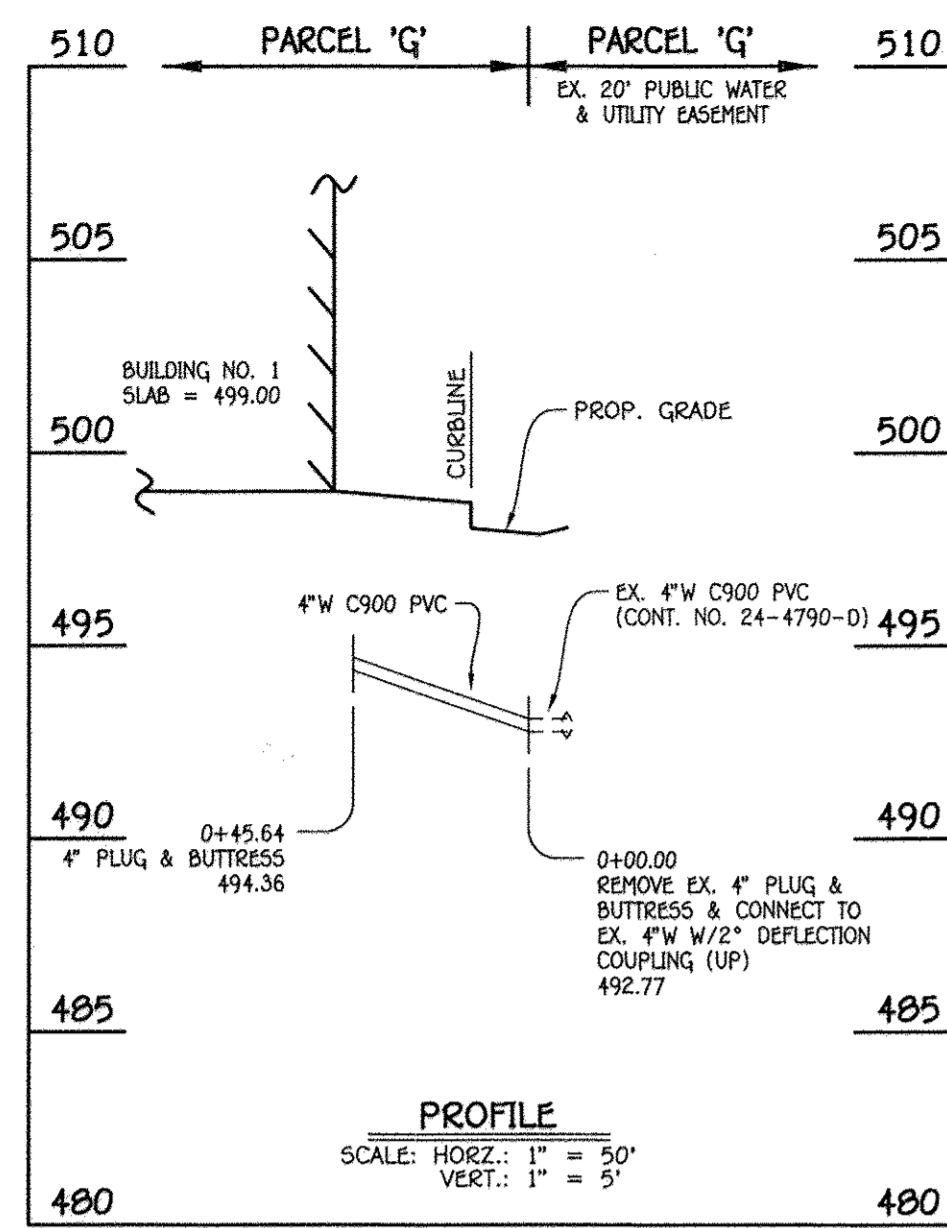
BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0908

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

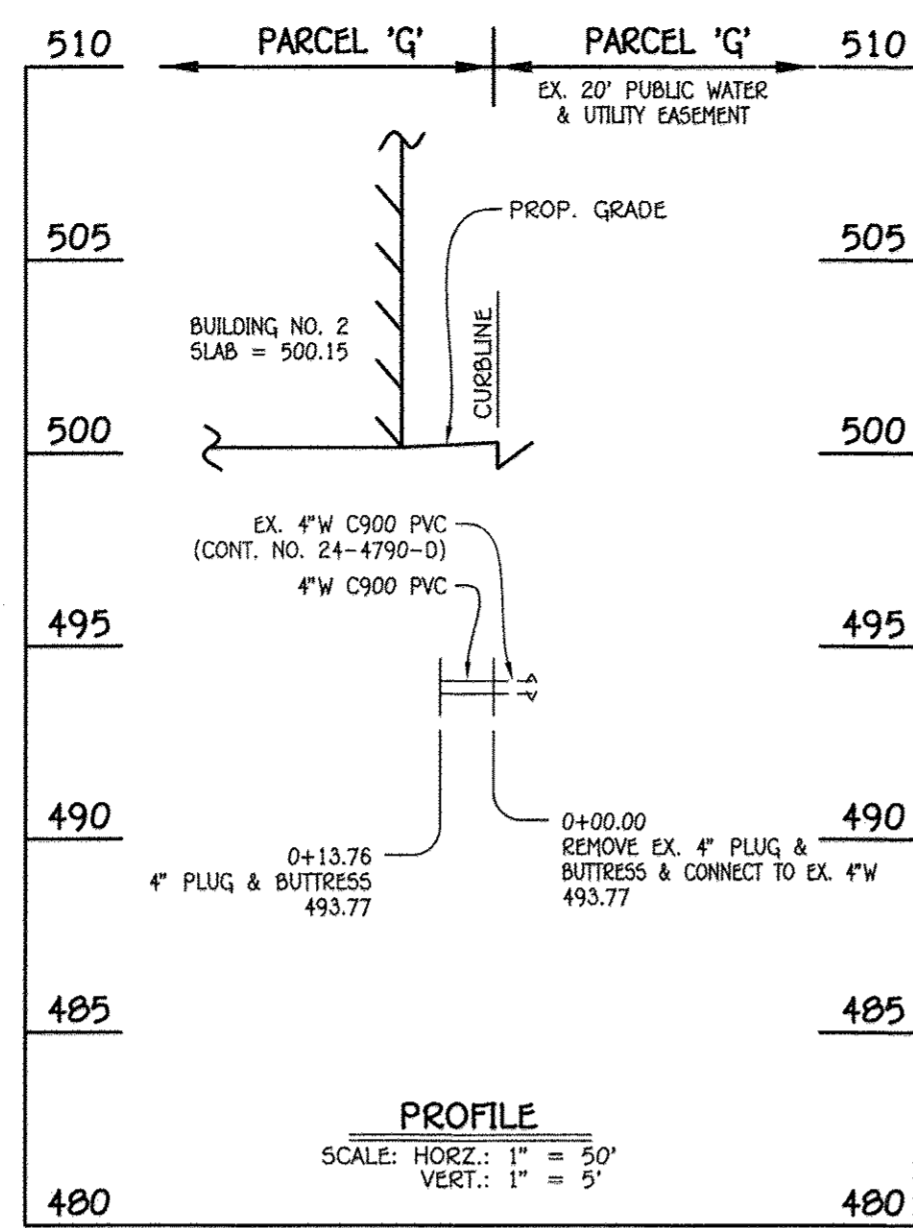
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development
Chief, Development Engineering Division
Director - Department of Planning and Zoning
PROJECT: GTW's WAVERLY WOODS, SECTION 14
PARCEL G
SECTION: 14
PARCEL NOS.: P/O 249
PLAT: 22944-22953
BLOCK NO.: 3 & 4
ZONE: PSC
TAX/ZONE: 16
ELEC. DIST.: THIRD
CENSUS TR.: 60300
WATER CODE: K-02
SEWER CODE: 5992000

PRIVATE SEWER MAINS: PROFILES & CHARTS
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: A5 SHOWN DATE: AUGUST 9, 2014
SHEET 18 OF 31

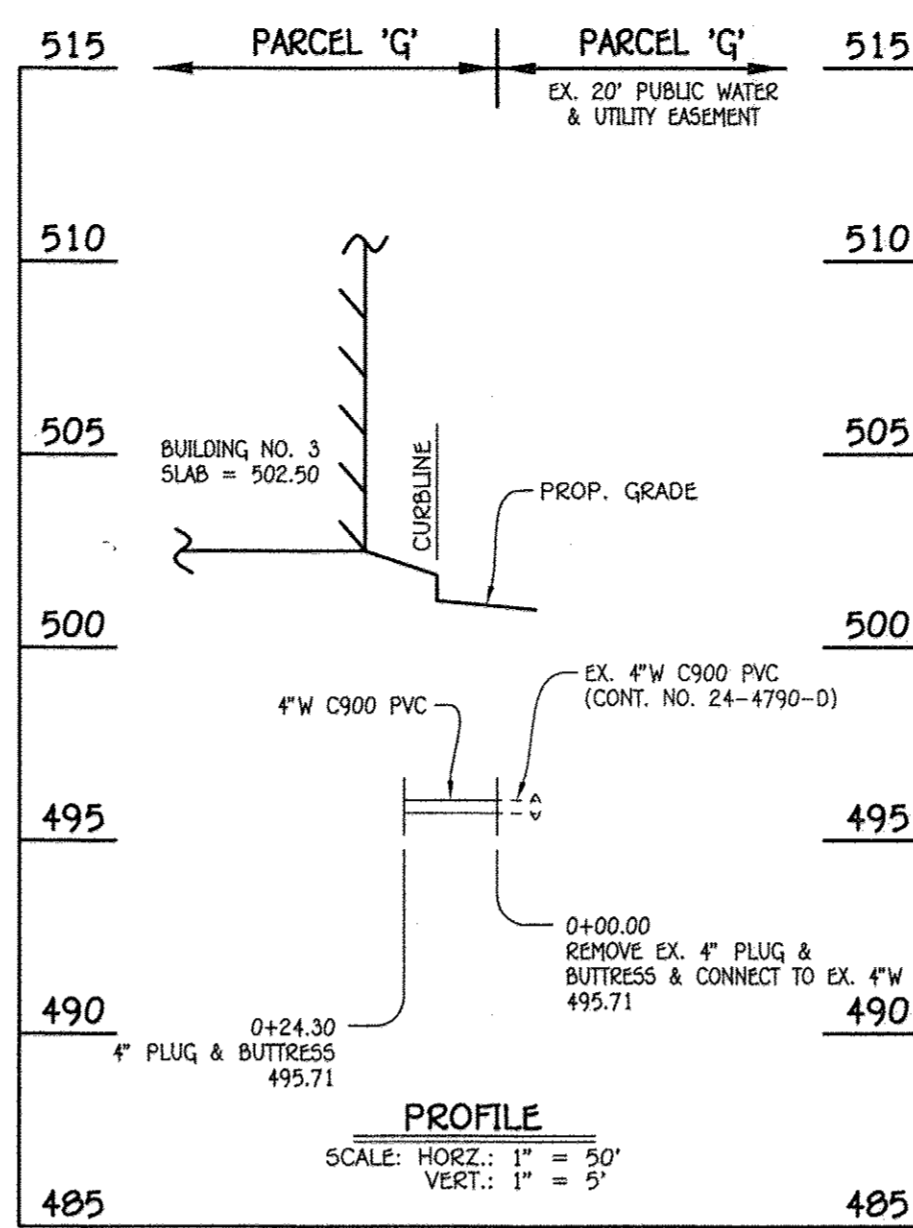
SDP-13-031



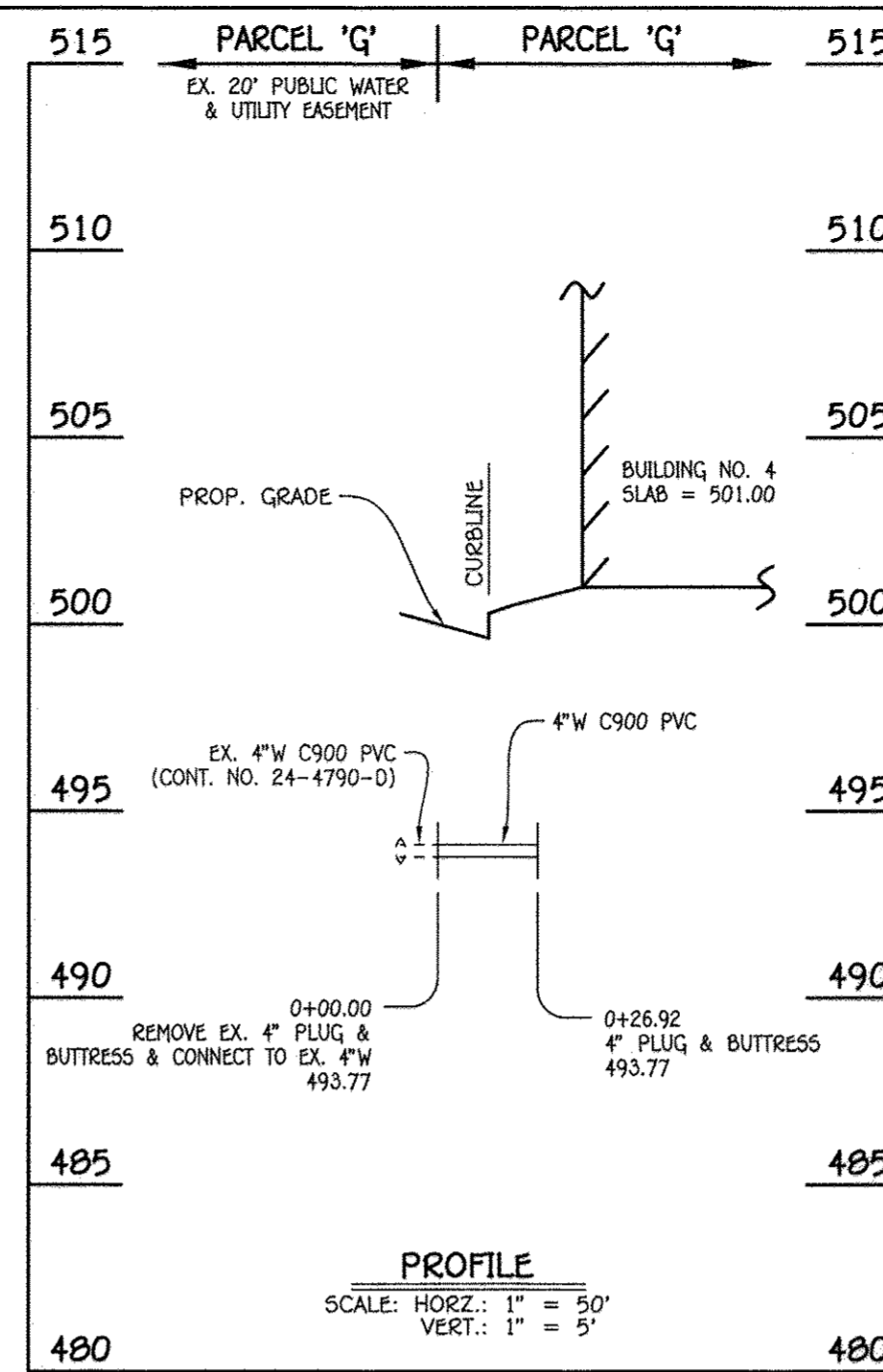
4" WATER MAIN: BUILDING NO. 1



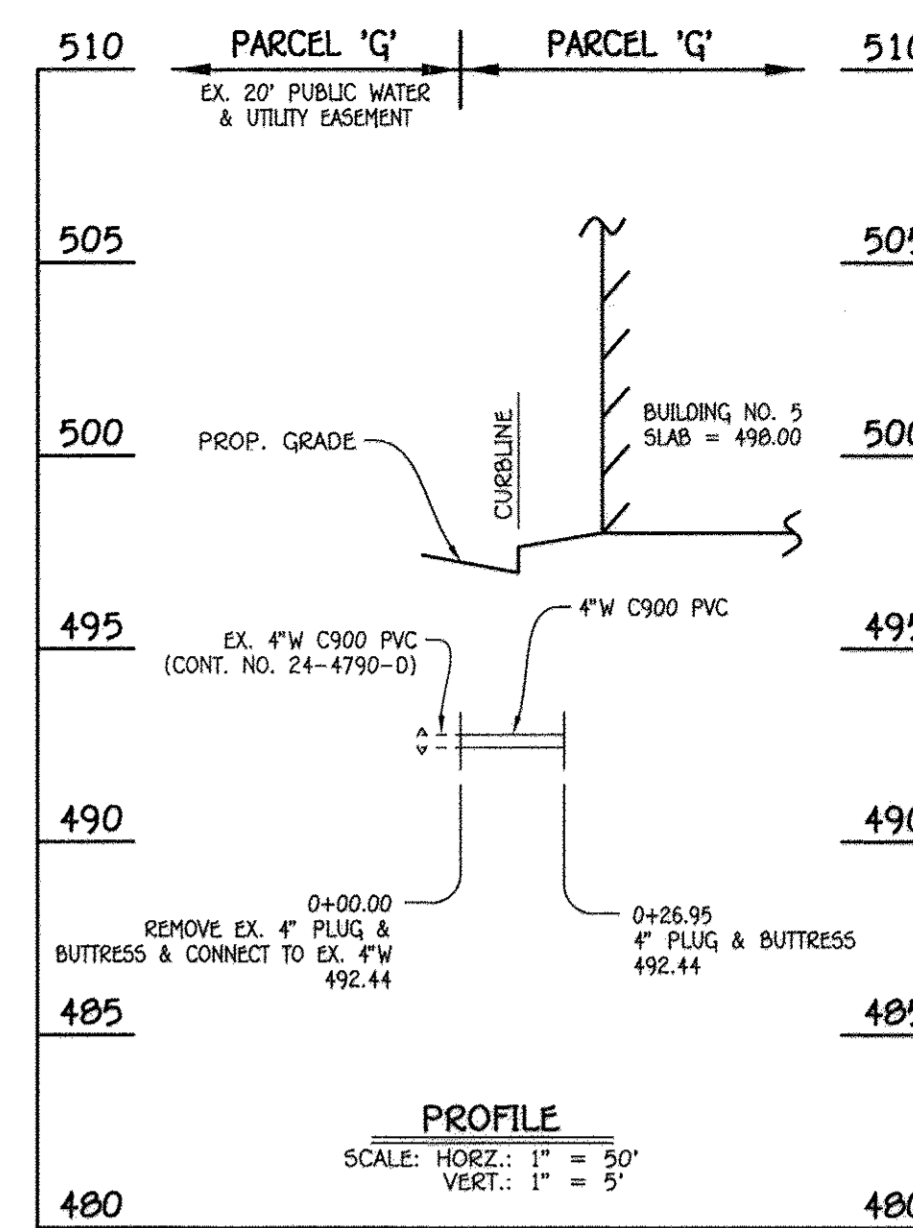
4" WATER MAIN: BUILDING NO. 2



4" WATER MAIN: BUILDING NO. 3



4" WATER MAIN: BUILDING NO. 4



4" WATER MAIN: BUILDING NO. 5

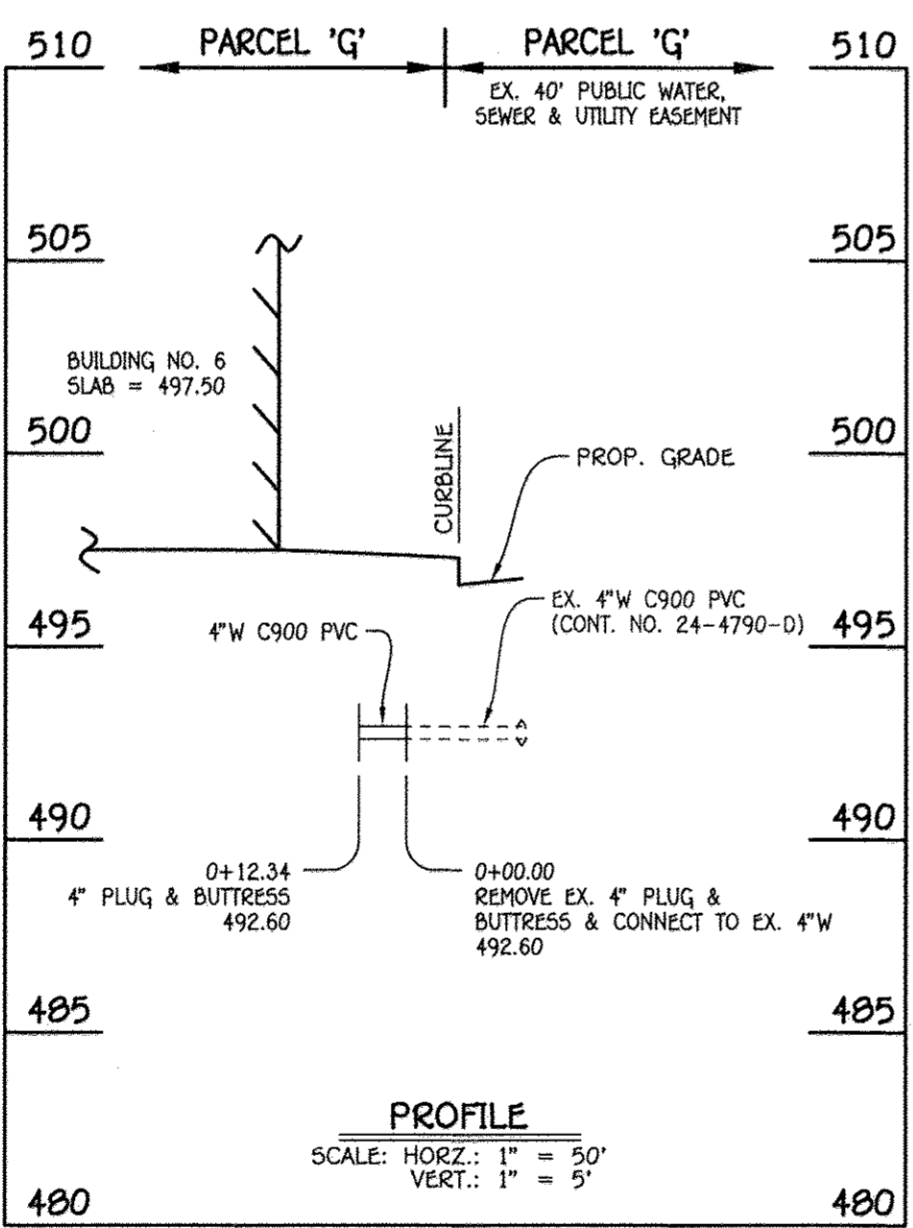
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W.M. STA.	APPURTENANCE	NORTHING	EASTING
4" WATER MAIN: BUILDING NO. 1			
0+00.00	EX. 4" PLUG & BUTTRESS	530186.12	027631.64
0+45.64	4" PLUG & BUTTRESS	530140.40	027631.30

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
4" WATER MAIN: BUILDING NO. 2			
0+00.00	EX. 4" PLUG & BUTTRESS	530194.51	027544.70
0+13.76	4" PLUG & BUTTRESS	530104.33	027535.43

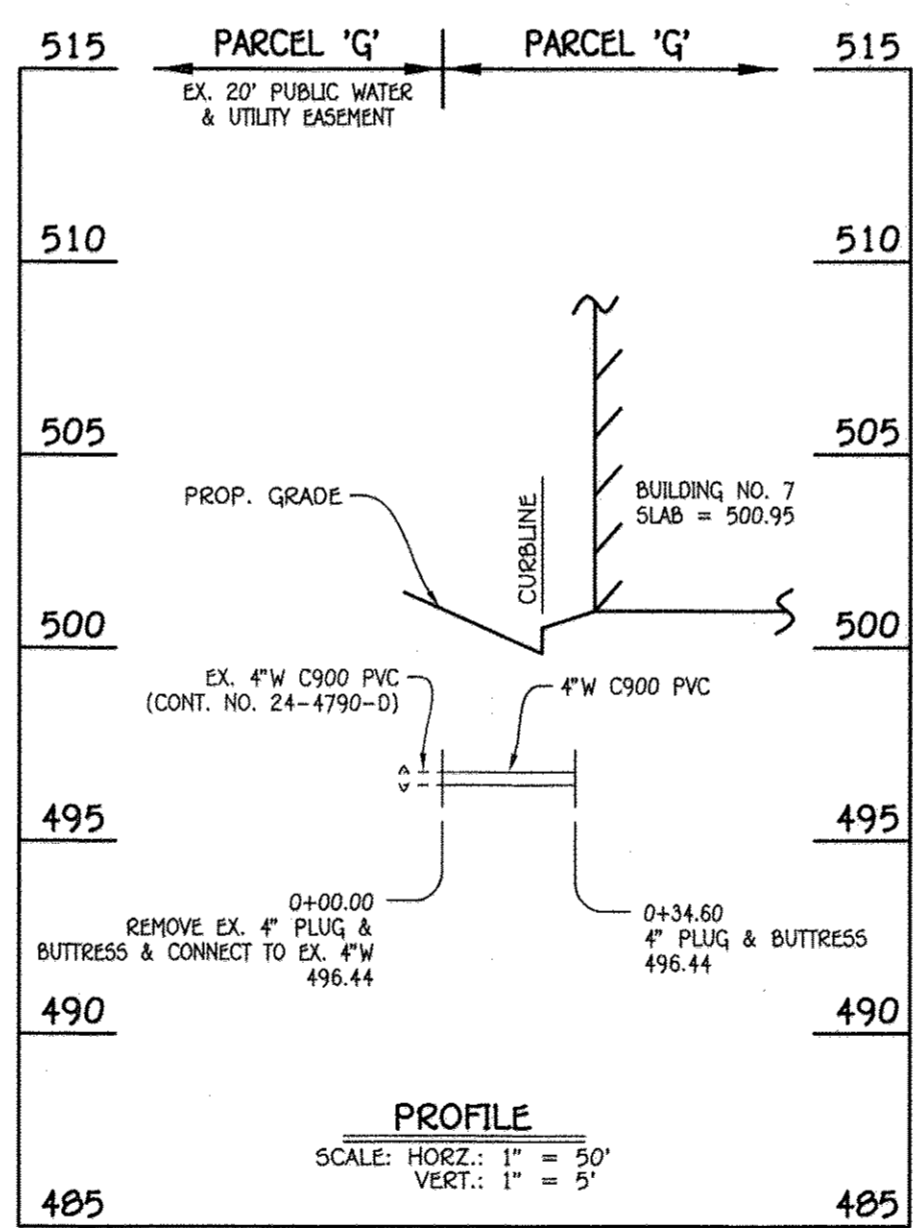
WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
4" WATER MAIN: BUILDING NO. 3			
0+00.00	EX. 4" PLUG & BUTTRESS	530344.20	027497.17
0+24.30	4" PLUG & BUTTRESS	530341.74	027473.00

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
4" WATER MAIN: BUILDING NO. 4			
0+00.00	EX. 4" PLUG & BUTTRESS	530404.90	027533.80
0+26.92	4" PLUG & BUTTRESS	530431.15	027527.01

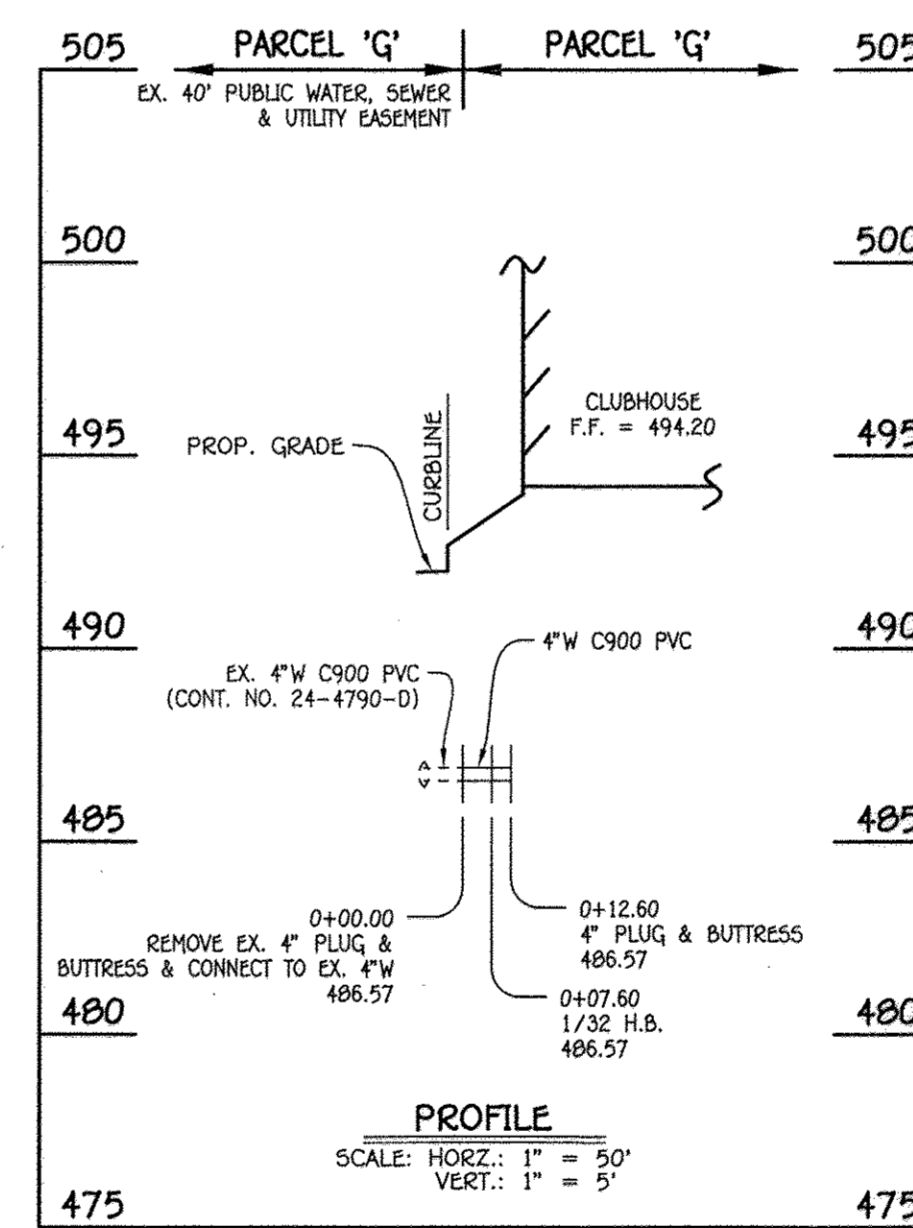
WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
4" WATER MAIN: BUILDING NO. 5			
0+00.00	EX. 4" PLUG & BUTTRESS	530430.20	027644.65
0+26.95	4" PLUG & BUTTRESS	530456.40	027630.65



4" WATER MAIN: BUILDING NO. 6



4" WATER MAIN: BUILDING NO. 7



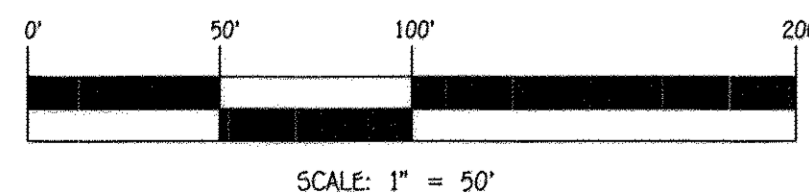
4" WATER MAIN: CLUBHOUSE

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
4" WATER MAIN: BUILDING NO. 6			
0+00.00	EX. 4" PLUG & BUTTRESS	530329.34	027770.92
0+12.34	4" PLUG & BUTTRESS	530329.20	027750.50

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
4" WATER MAIN: BUILDING NO. 7			
0+00.00	EX. 4" PLUG & BUTTRESS	530296.33	027522.13
0+34.60	4" PLUG & BUTTRESS	530299.83	027556.55

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
4" WATER MAIN: CLUBHOUSE			
0+00.00	EX. 4" PLUG & BUTTRESS	530085.44	027760.40
0+07.60	1/32 H.B.	530083.74	027775.09
0+12.60	4" PLUG & BUTTRESS	530083.74	027780.09

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014



NO.	REVISION	DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALDOR NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2099

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 12043, Expiration Date: 07/16/2016."
Paul W. Kriebel
PAUL W. KRIEBEL
08/12/14
DATE



BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0908

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kathleen D. ...
Chief, Division of Land Development
[Signature]
Chief, Development Engineering Division
[Signature]
Director - Department of Planning and Zoning

PROJECT: GTW's WAVERLY WOODS, SECTION 14
PARCEL G

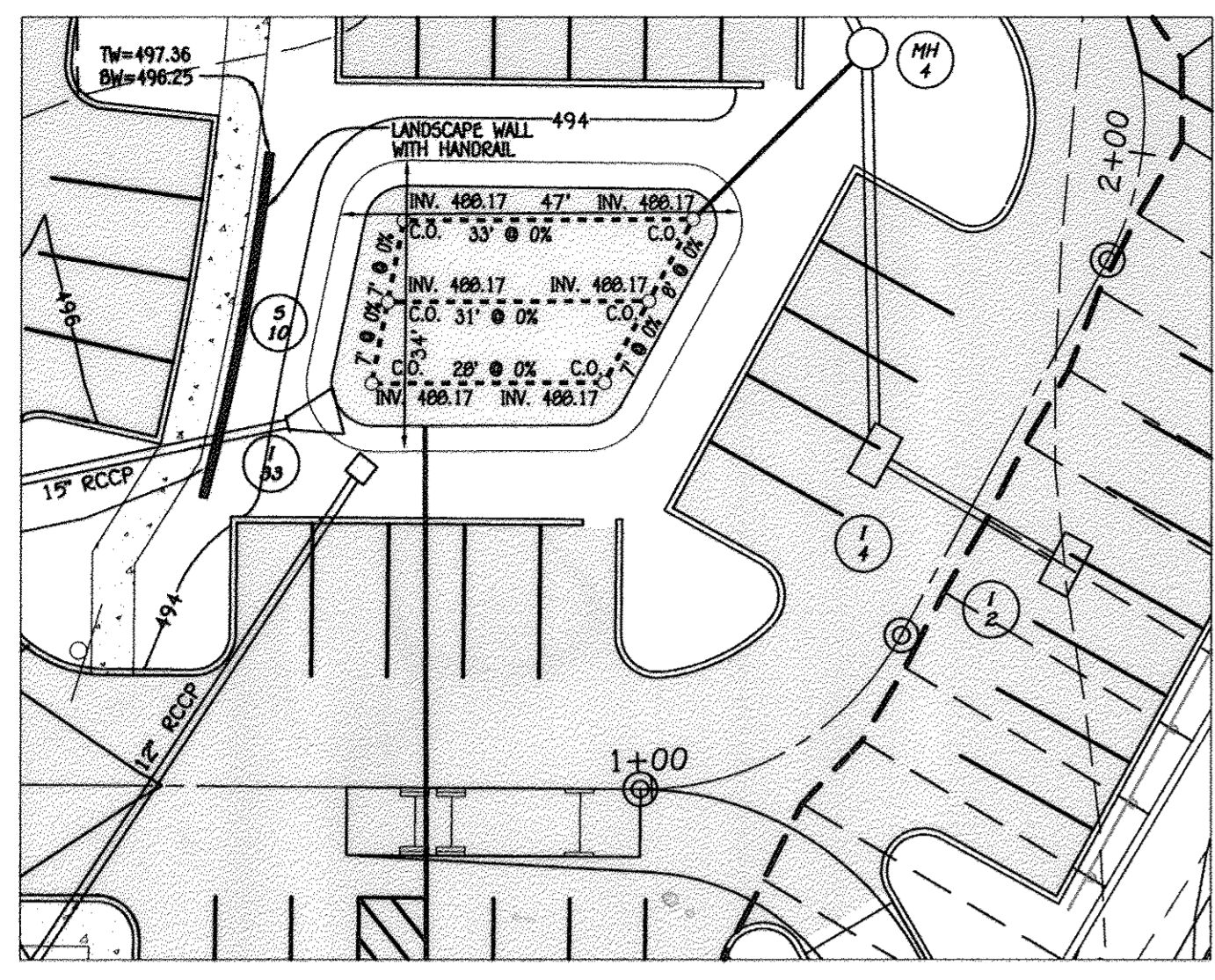
SECTION: 14
PARCEL NOS.: P/O 249

PLAT: 22944-32953
BLOCK NO.: 3 & 4
ZONE: PSC
TAX/ZONE: 16
ELEC. DIST.: THIRD
CENSUS TR.: 60300

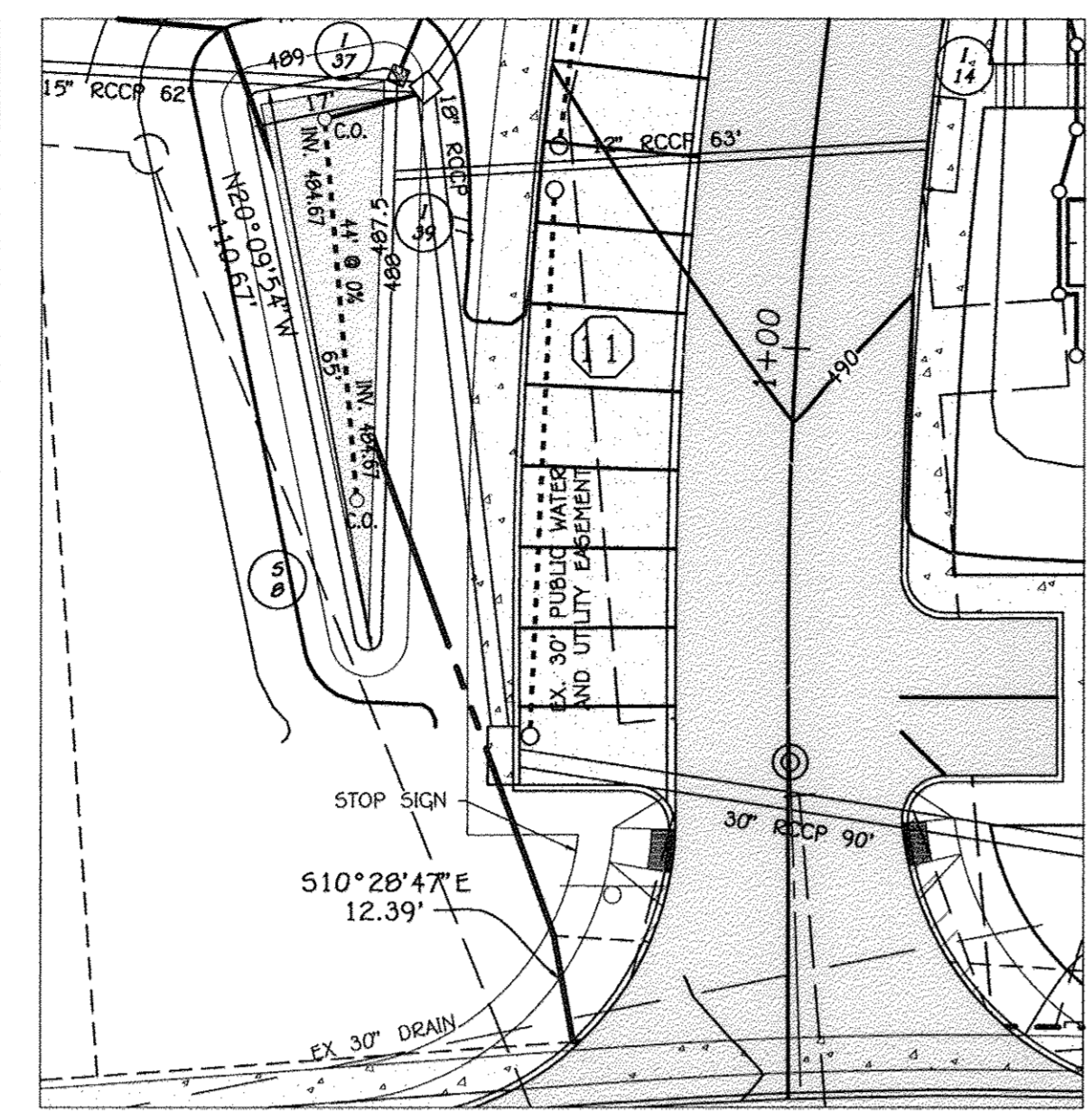
WATER CODE: K-02
SEWER CODE: 5992000

PRIVATE WATER MAINS:
PROFILES & CHARTS

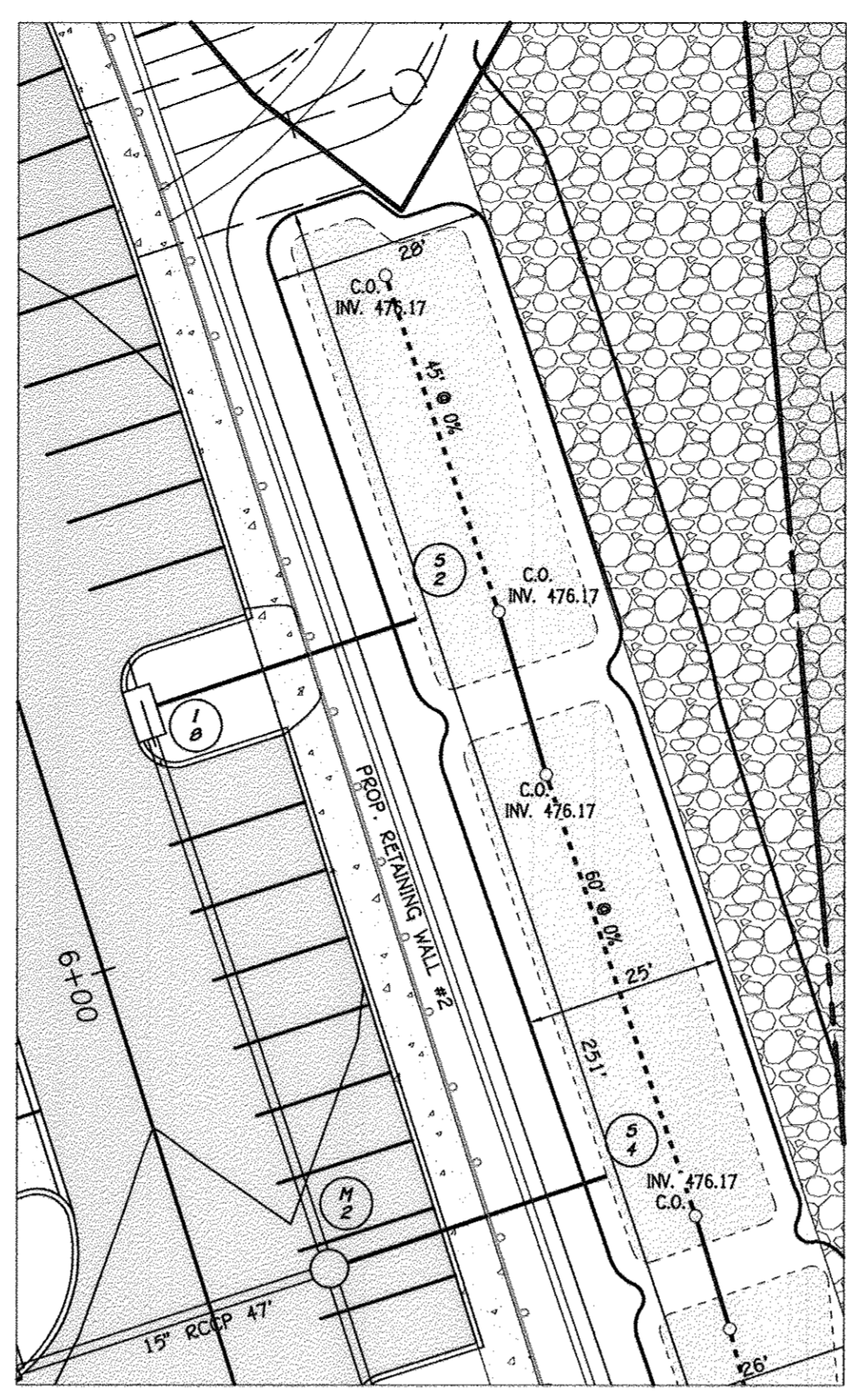
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 19 OF 31



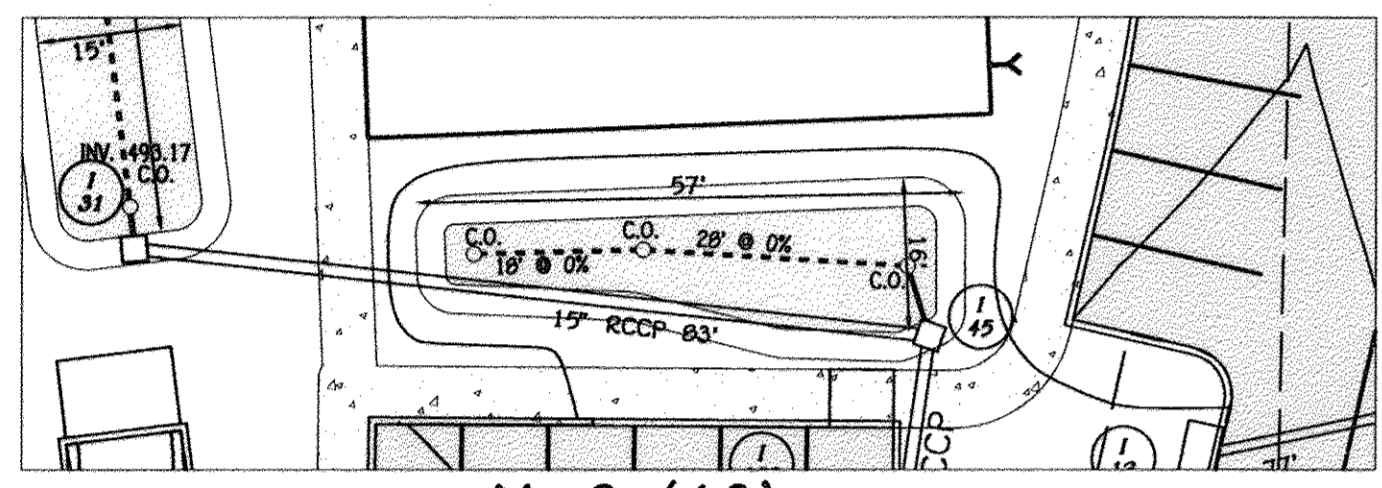
M-6 (6)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 16,021 SqFt.
FILTER AREA: 1046 SqFt.
ELEVATION 491.00
PERIMETER 184'
WEIR ELEVATION 492.00



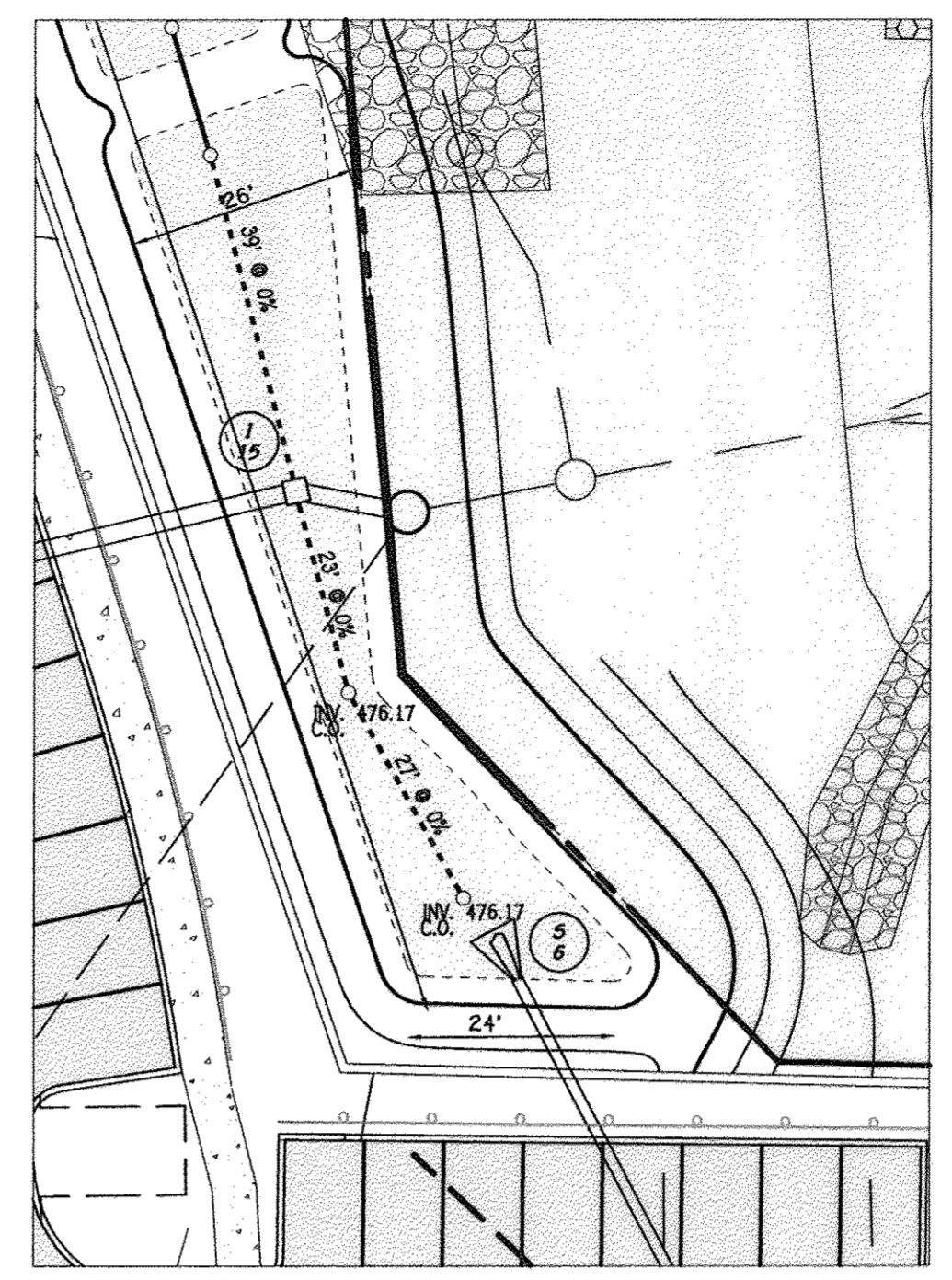
M-6 (7)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 8,789 SqFt.
FILTER AREA: 450 SqFt.
ELEVATION 488.00
PERIMETER 154'
WEIR ELEVATION 489.00



M-6 (8)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 16,343 SqFt.
FILTER AREA: 1260 SqFt.
ELEVATION 479.00
PERIMETER 159'
WEIR ELEVATION 480.00



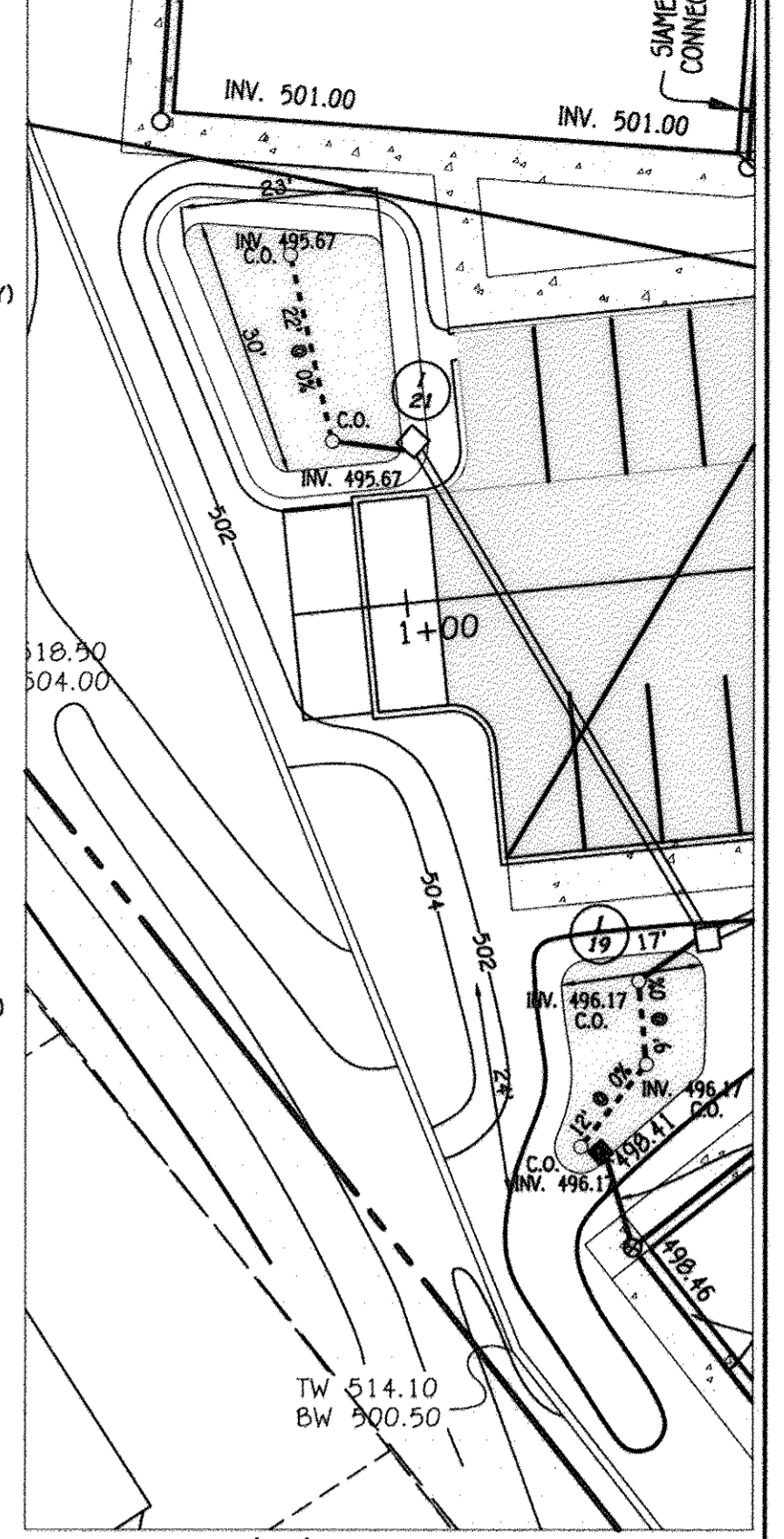
M-6 (9)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 25,008 SqFt.
FILTER AREA: 1360 SqFt.
ELEVATION 479.00
PERIMETER 175'
WEIR ELEVATION 480.00



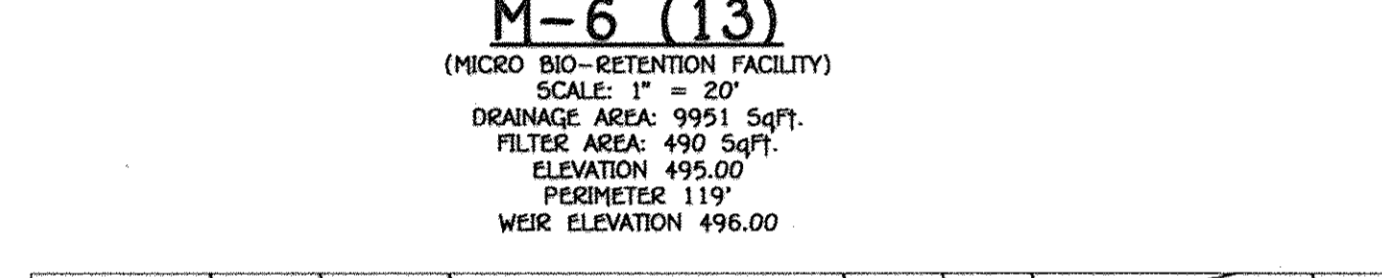
M-6 (10)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 22,530 SqFt.
FILTER AREA: 1,532 SqFt.
ELEVATION 479.00
PERIMETER 257'
WEIR ELEVATION 480.00

M-6 (12)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 8667 SqFt.
FILTER AREA: 513 SqFt.
ELEVATION 498.50
PERIMETER 91'
WEIR ELEVATION 499.50

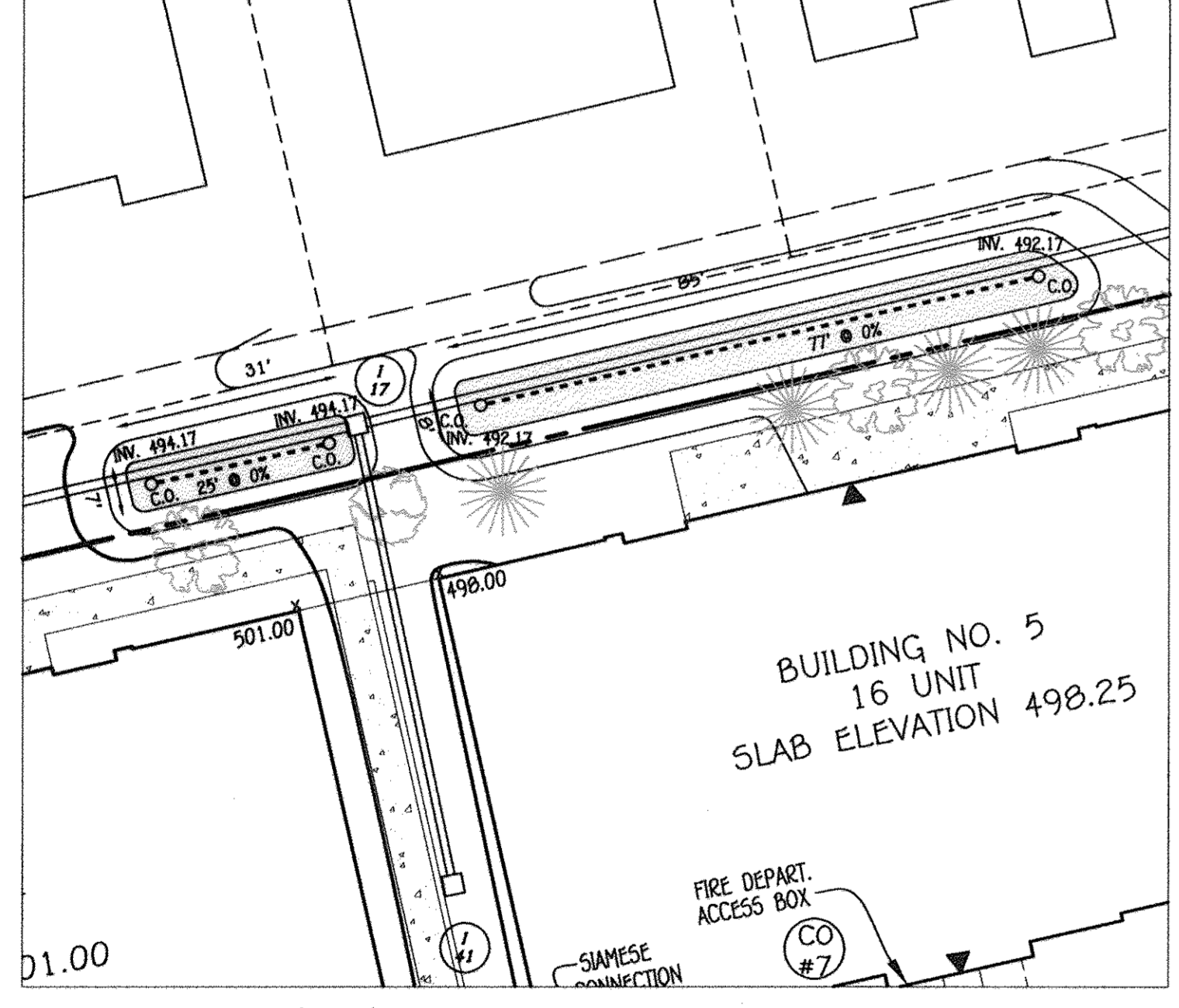
M-6 (11)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 6,661 SqFt.
FILTER AREA: 320 SqFt.
ELEVATION 499.00
PERIMETER 74'
WEIR ELEVATION 500.00



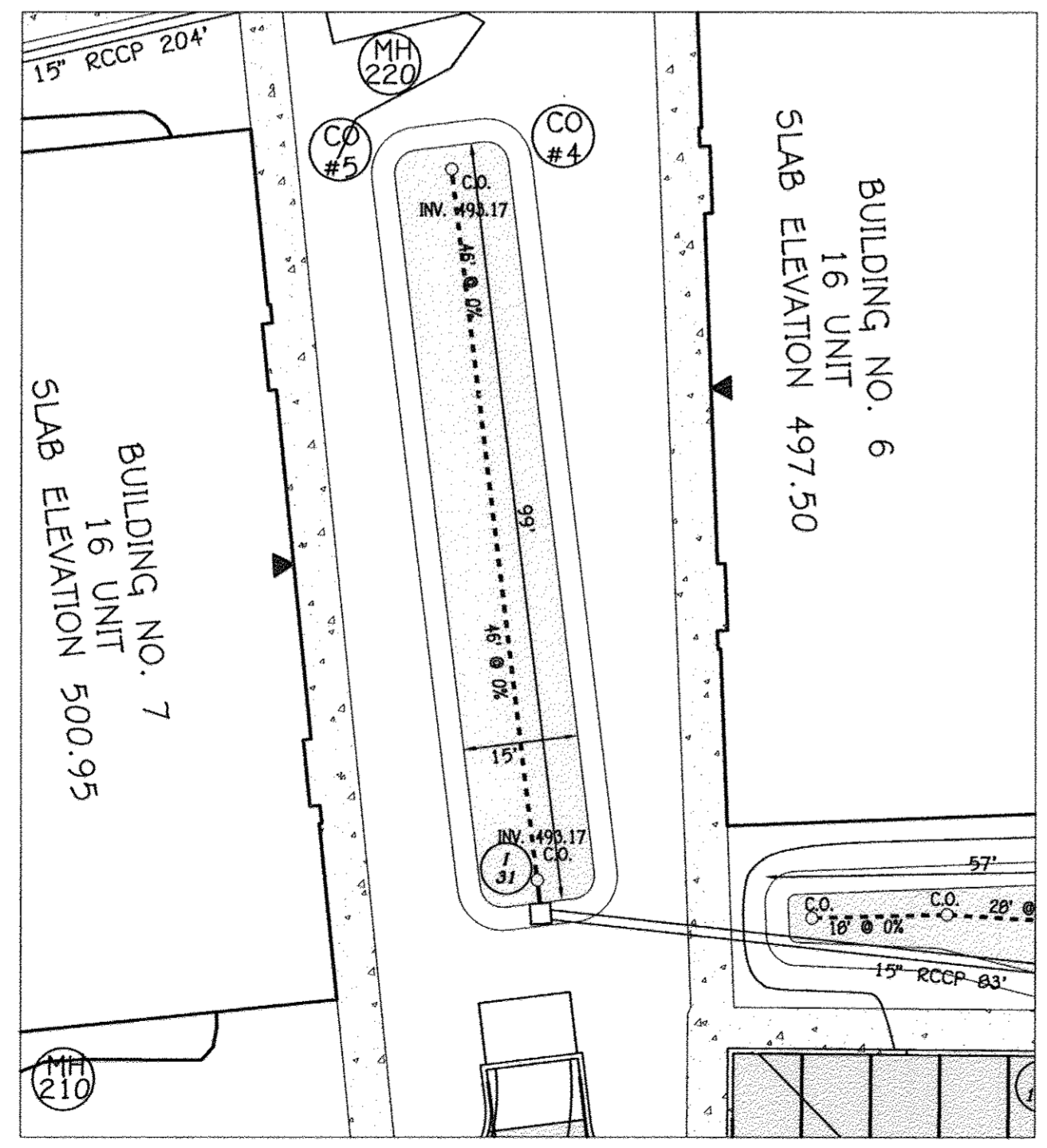
M-6 (5)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 11,491 SqFt.
FILTER AREA: 390 SqFt.
ELEVATION 495.00
PERIMETER 170'
WEIR ELEVATION 496.00



M-6 (13)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 9,951 SqFt.
FILTER AREA: 490 SqFt.
ELEVATION 495.00
PERIMETER 119'
WEIR ELEVATION 496.00

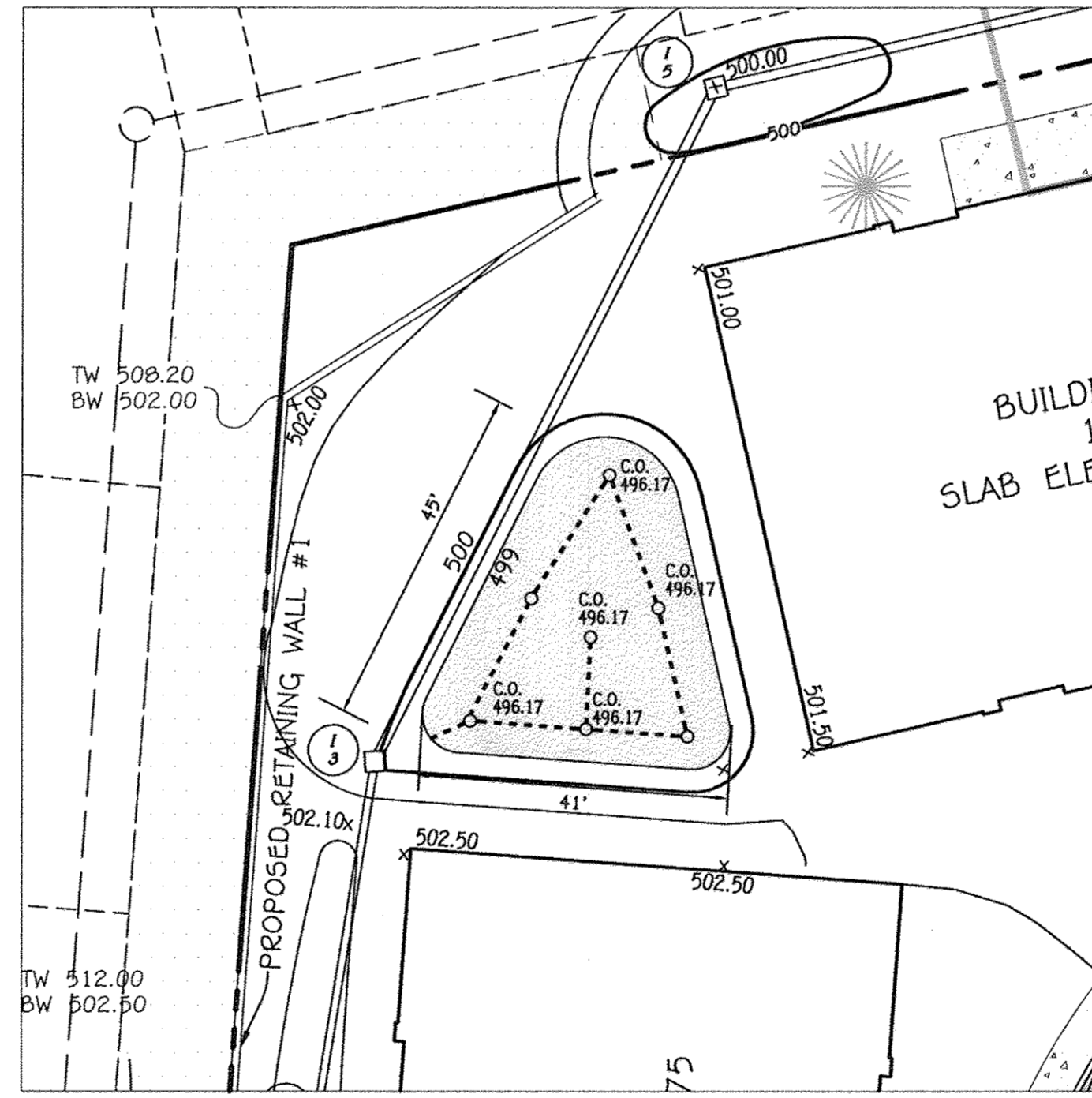


M-6 (14)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 3,671 SqFt.
FILTER AREA: 205 SqFt.
ELEVATION 497.00
PERIMETER 72'
WEIR ELEVATION 498.00

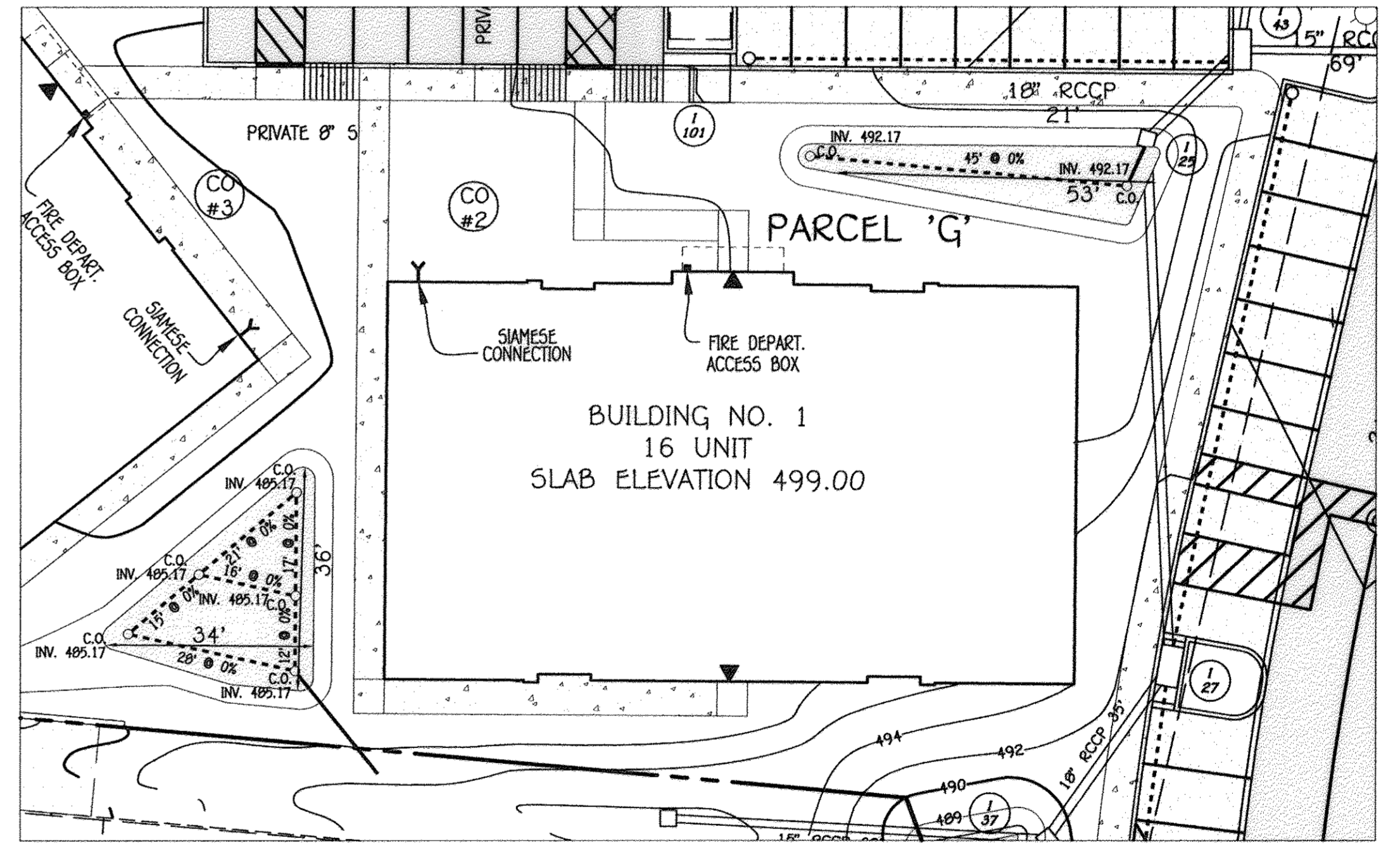


M-6 (4)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 9,299 SqFt.
FILTER AREA: 624 SqFt.
ELEVATION 495.00
PERIMETER 190'
WEIR ELEVATION 496.00

M-6 (3)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 22,738 SqFt.
FILTER AREA: 1476 SqFt.
ELEVATION 496.00
PERIMETER 222'
WEIR ELEVATION 497.00

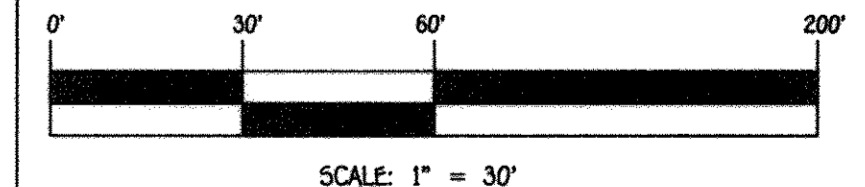


M-6 (2)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 19,876 SqFt.
FILTER AREA: 1,218 SqFt.
ELEVATION 499.00
PERIMETER 137'
WEIR ELEVATION 500.00



M-6 (1)
(MICRO BIO-RETENTION FACILITY)
SCALE: 1" = 20'
DRAINAGE AREA: 16,513 SqFt.
FILTER AREA: 744 SqFt.
ELEVATION 488.00
PERIMETER 116'
WEIR ELEVATION 489.00

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014



FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELKTON CITY, MARYLAND 21842 (410) 461-2995		
NO.	REVISION	DATE
2	REVISE SWM FACILITIES AND ASSOCIATED GRADING	12/28/17
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/14/15

PROFESSIONAL CERTIFICATION
 "Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2019."

Frank Manalansan II 1-2-18
 Frank Manalansan II
 #21476

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
 HOWARD COUNTY HEALTH DEPARTMENT.
 COUNTY HEALTH OFFICER DATE
 1/29/2018
 H. C.

BUILDER
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA, MARYLAND, 21043
 410-796-0908

OWNER/DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING					
Chief, Division of Land Development	for use	2/20/18	Date		
Chief, Development Engineering Division	F	1/19/18	Date		
Director - Department of Planning and Zoning		2-2-18	Date		
PROJECT	SECTION	PARCEL NOS.			
GTW's WAVERLY WOODS, SECTION 14	14	P/O 249			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300
WATER CODE	SEWER CODE				
K-02	5992000				

REVISED
 STORMWATER MANAGEMENT NOTES AND DETAILS

AGE RESTRICTED ADULT HOUSING
 WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 22944 Thru 22953
 ZONED: PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: DECEMBER 28, 2017
 SHEET 20 OF 31

SDP-13-031

Infiltration and Filter System Construction Specifications

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for (WC), and Re V, in some instances where permeability is great, these facilities may be used for (WC) as well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorous and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide aeration for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

- > Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
- > Determine areas that will be saturated with water and water table depth so that appropriate plants may be selected (hydrology will be similar to bioretention facilities, see Figure A.5 and Table A.4 for planting material guidance).
- > Plants known to send down deep taproots should be avoided in systems where filter fabric is used as part of facility design.
- > Test soil conditions to determine if soil amendments are necessary.
- > Plants shall be located so that access is possible for structure maintenance.
- > Stabilize heavy flow areas with erosion control mats or sod.
- > Temporarily divert flows from seeded areas until vegetation is established.
- > See Table A.5 for additional design considerations.

Bio-retention

Soil Bed Characteristics

The characteristics of the soil for the bioretention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover crop. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support biotic communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 25% by volume (Environmental Quality Resources (EQ), 1996; Engineering Technology Inc. and Biohabit, Inc. (ETAB), 1993). Soils should fall within the SM, ML, SC classifications of the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.5"/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutedge, and Canada Thistle or other noxious weeds as specified under 15.00.01.05) should not be present in the soils. Placement of the planting soil should be 12 to 18 lifts that are loosely compacted (tamped lightly with a backhoe bucket or traversed by dozer tracks). The specific characteristics are presented in Table A.3.

Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P2O5)	75 lbs. per acre, minimum
Potassium (potash - K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25 %
Silt	30 to 55 %
Sand	35 to 60%

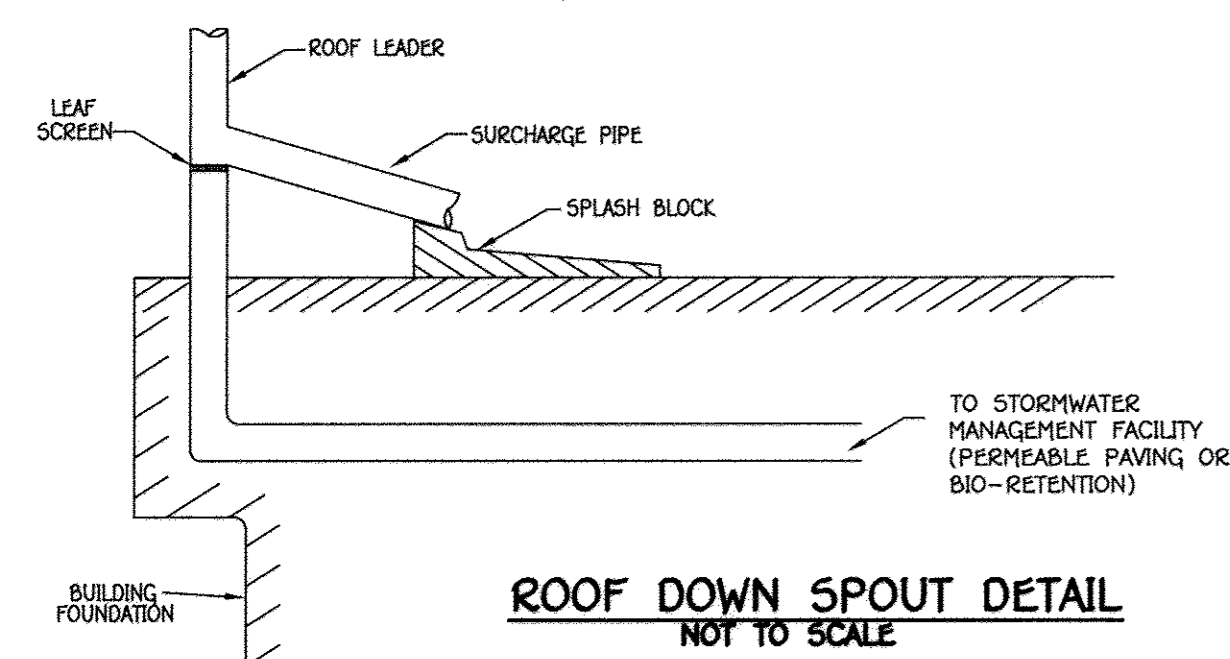
Mulch Layer

The mulch layer plays an important role in the performance of the bioretention system. The mulch layer helps maintain soil moisture and avoids surface sealing, which reduces permeability. Mulch helps prevent erosion, and provides a microenvironment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as a mulch material.

Planting Guidance

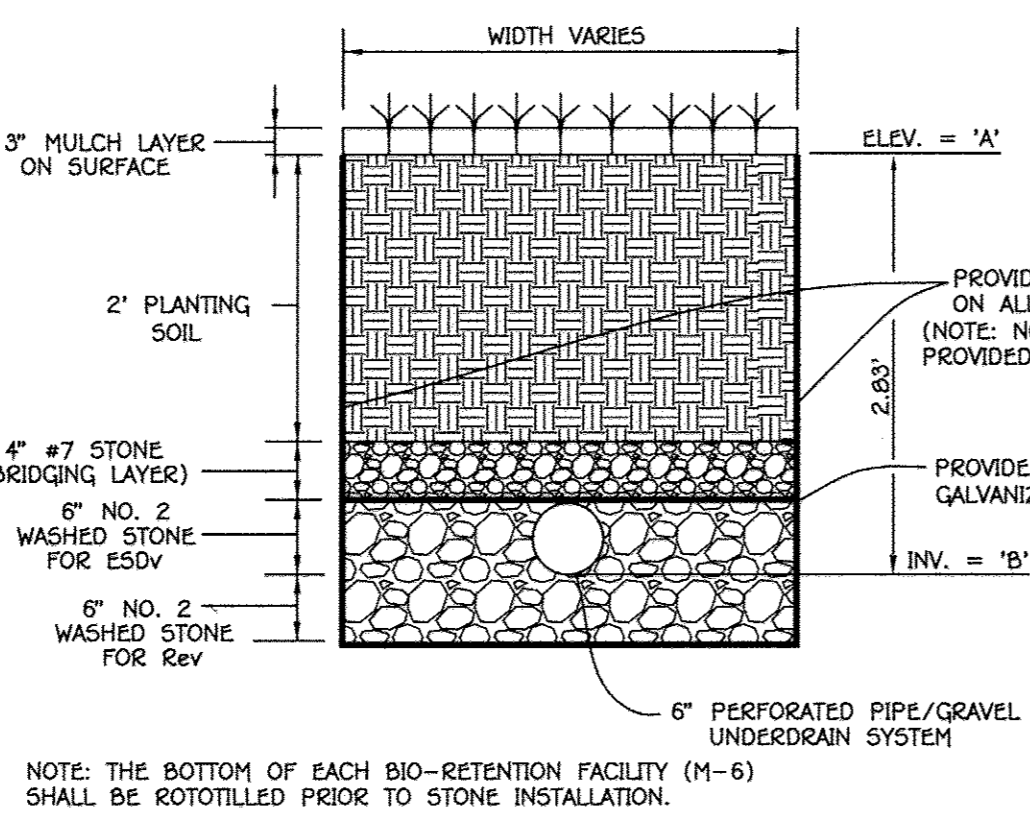
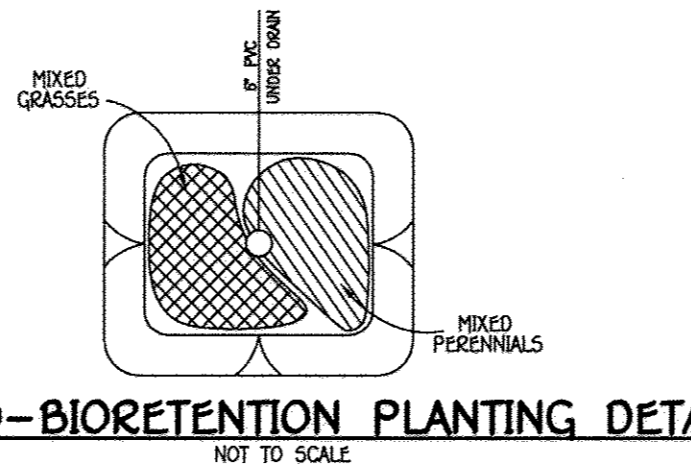
Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bioretention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials. By creating a diverse, dense plant cover, a bioretention facility will be able to treat stormwater runoff and withstand urban stresses from insects, disease, drought, temperature, wind, and exposure. The proper selection and installation of plant materials is key to a successful system. There are essentially three zones within a bioretention facility (Figure A.5). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports plants that like drier soil conditions, but can still tolerate occasional inundation by water. The outer edge is the highest elevation and generally supports plants adapted to drier conditions. A sample of appropriate plant materials for bioretention facilities are included in Table A.4. The layout of plant material should be flexible, but should follow the general principals described in Table A.5. The objective is to have a system, which resembles a random, and natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bioretention plan, consult ETAB, 1993 or Clayton and Schueler, 1997.



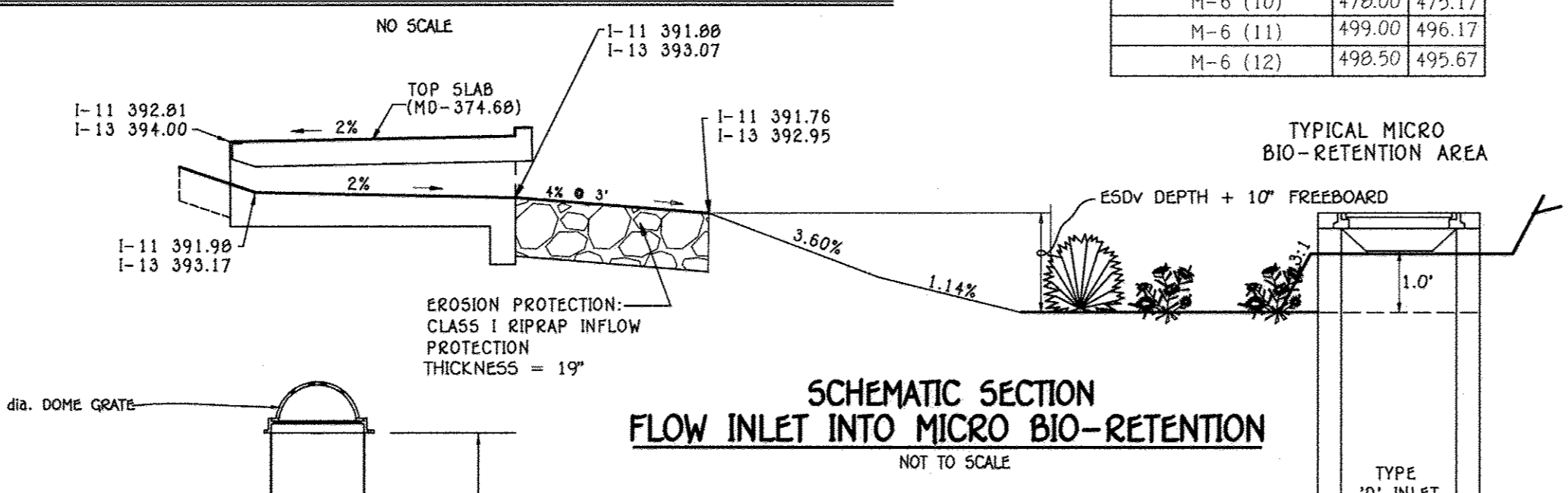
OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6)

- ANNUAL MAINTENANCE OF PLANT MATERIAL MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERS BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER. INSPECT EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

MICRO-BIORETENTION PLANTING DETAIL



TYPICAL SECTION - BIO-RETENTION FACILITY (M-6)



SCHEMATIC SECTION FLOW INLET INTO MICRO BIO-RETENTION

NOT TO SCALE

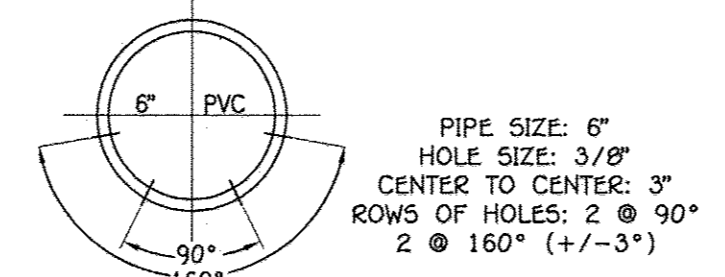
NOTES:
UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 798, TYPE PS 28 OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (E.G., PVC OR HDPE).

PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4 X 4) GALVANIZED HARDWARE CLOTH.

GRAVEL LAYER SHALL BE (NO. 57 STONE PREFERRED) 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 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".



SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE

NO SCALE

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

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

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: 2/20/2014

No.	REVISION	DATE
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/4/12

PROFESSIONAL CERTIFICATION
 "Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476. Expiration Date: 07/14/2015."
 Frank Manalansan II
 DATE: 2/20/14

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
 COUNTY HEALTH OFFICER: [Signature]
 DATE: 9/2/2014

#21476

OWNER: WAVERLY WOODS DEVELOPMENT CORPORATION
 GLENELG, MARYLAND 21737-0030

BUILDER: RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA MARYLAND, 21043
 410-796-0908

DEVELOPER: WAVERLY WOODS DEVELOPMENT CORPORATION
 P.O. BOX 30
 GLENELG, MARYLAND
 21731-0030

Construction Specifications for Environmental Site Design Practices

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

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

1. Pervious Concrete Specifications

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

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

Aggregate -- Pervious concrete contains a limited fine aggregate content. Commonly used gradations include ASTM C 33 No. 67 (3/4 in. to No. 4), No. 8 (3/8 in. to No. 16) and No. 89 (3/8 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.

2. Permeable Interlocking Concrete Pavements (PICP)

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

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

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

Underdrains -- Underdrains must meet the following criteria:

- Pipes -- should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 798, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations -- If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel -- The gravel layer shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter section.
- A 4" layer of sand shall be located between the filter media and underdrain to prevent migration of fines into the underdrain.

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

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

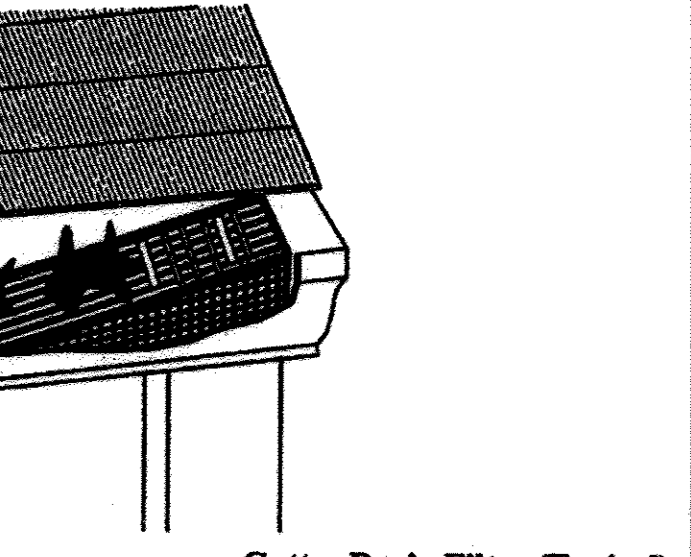
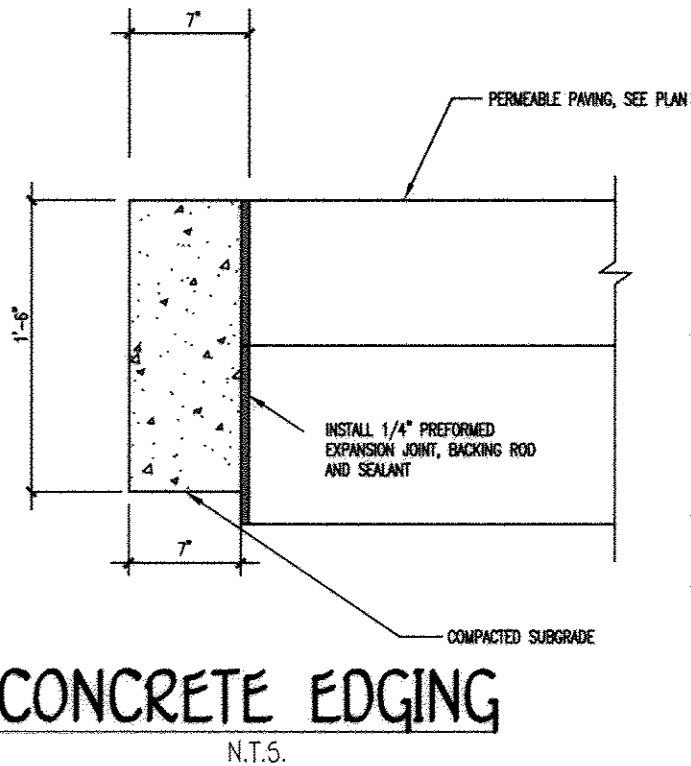
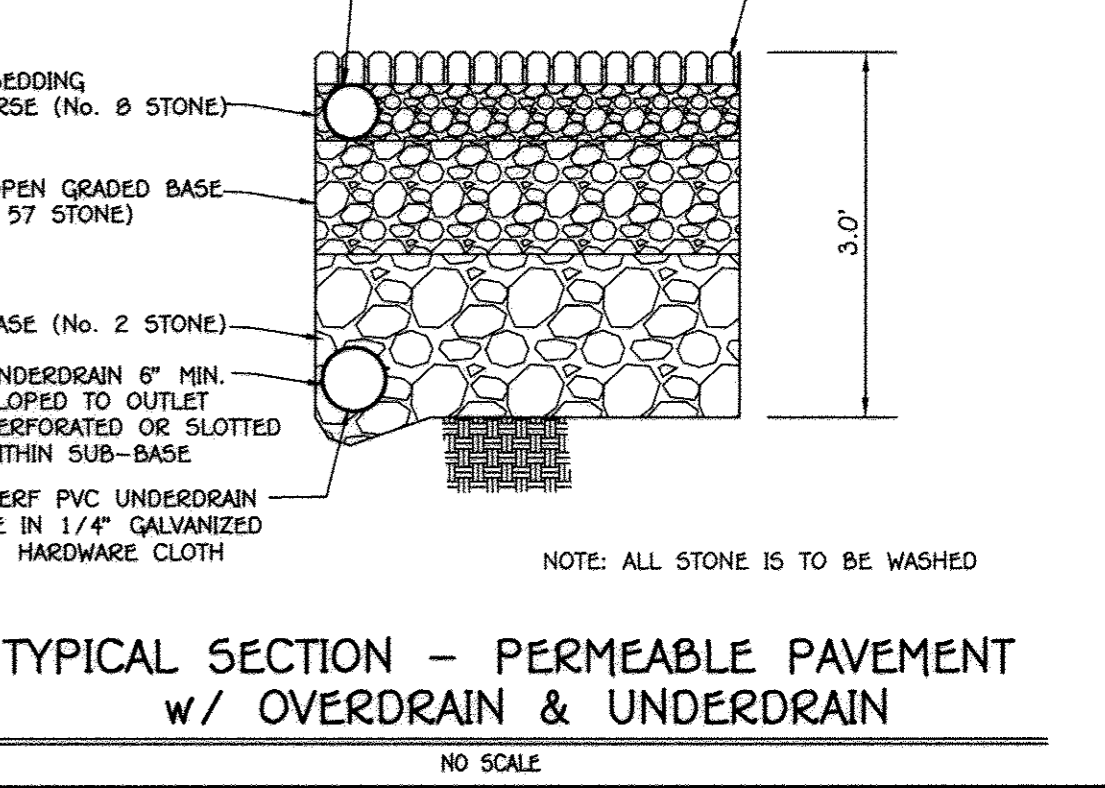
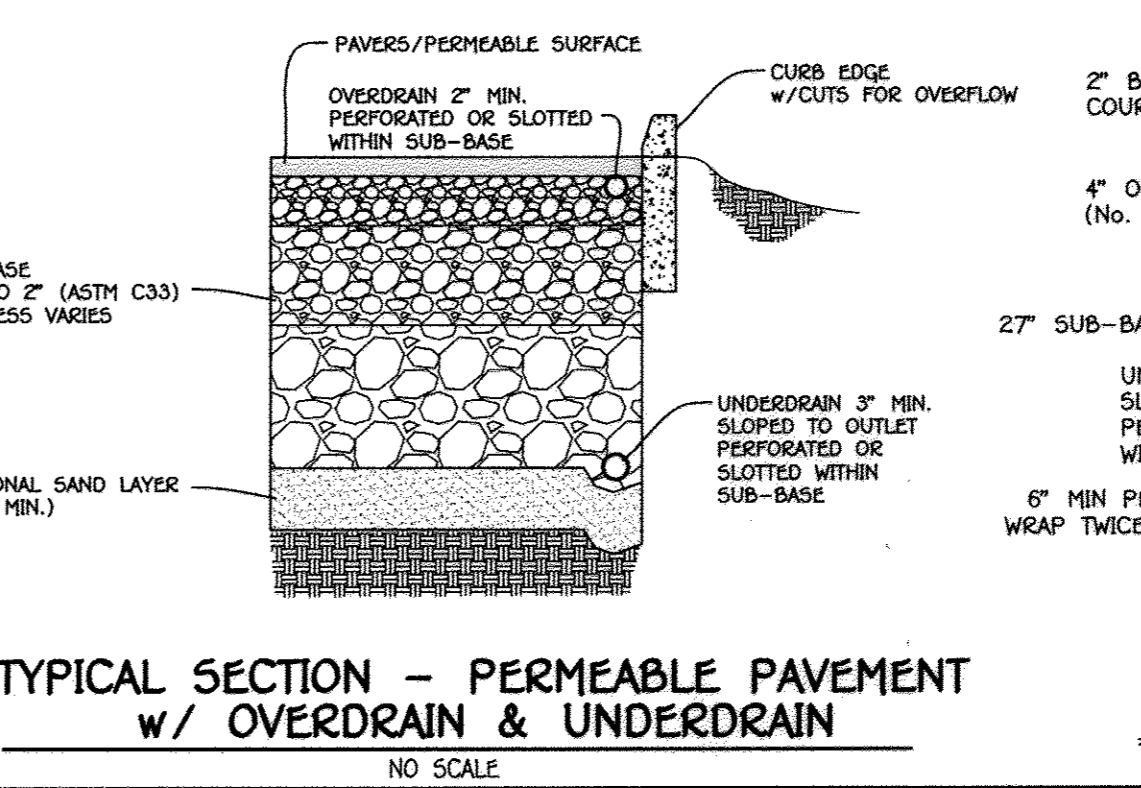
- Remove grass clippings when mowing areas adjacent to the permeable pavement system.
- Use deicers moderation. When used, deicers should be non-toxic and organic and can be applied either as calcium magnesium acetate or as pretreated salt.
- Snow plowing should be done carefully with blades set one-inch higher than normal.
- Plowed snow piles and snowmelt should not be directed to permeable pavement.
- The repair or replacement of components must meet the original design specifications.

Quarterly and after every large storm event:

- Ensure that the permeable pavement surface is free of any obstructions such that may clog or inhibit the system from performing as designed, such as sand, sediment, mulch, leaves, branches and other debris.
- Inspect the permeable pavement system for standing water in order to verify that the system is dewatering between storm events as required.
- Inspect cleanouts, sampling ports, underdrain outlets, and structures. Clear any obstructions encountered.
- Maintain stable ground cover must be maintained in areas draining onto the permeable pavement, inspect lawn and landscape areas contributing drainage to the system. Repair any erosion immediately.

Annually:

- Vacuum sweep permeable pavement surface with a commercial cleaning unit.
- Inspect the permeable pavement surface for deterioration.
- Clean pipes, inlets, underdrains drains, overdrains and other structures within or draining to the permeable pavement system.



CLEANOUT/WATER QUALITY SAMPLING PORT DETAIL

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Director - Department of Planning and Zoning

STORMWATER MANAGEMENT NOTES AND DETAILS

PROJECT	SECTION	PARCEL NOS.
QTV'S WAVERLY WOODS, SECTION 14	14	P/O 249
PLAT: 22944-28953	BLOCK NO: 3 & 4	ZONE: PSC
TAX/ZONE: 16	ELEC. DIST.: THIRD	CENSUS TR.: 60300
WATER CODE: K-02	SEWER CODE: 5992000	

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
 SECTION 14
 PARCEL 'G' (Plat Nos. 22944 Thru 22953)
 ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 21 OF 31

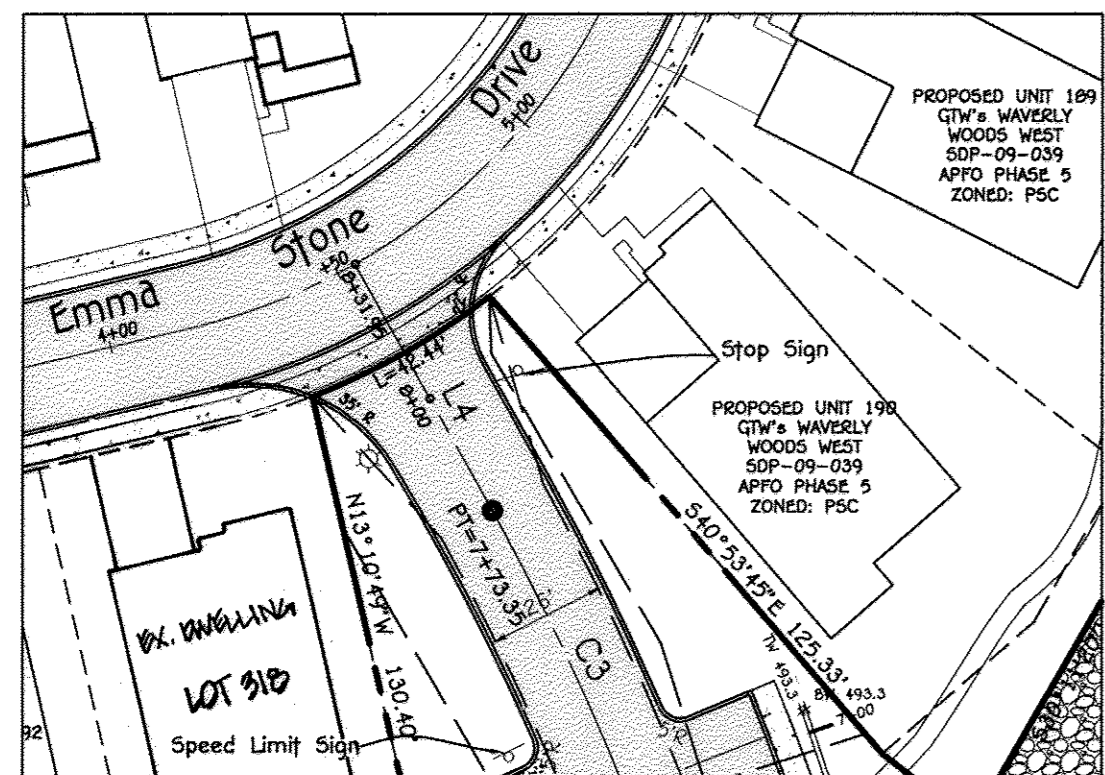
SDP-13-031

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

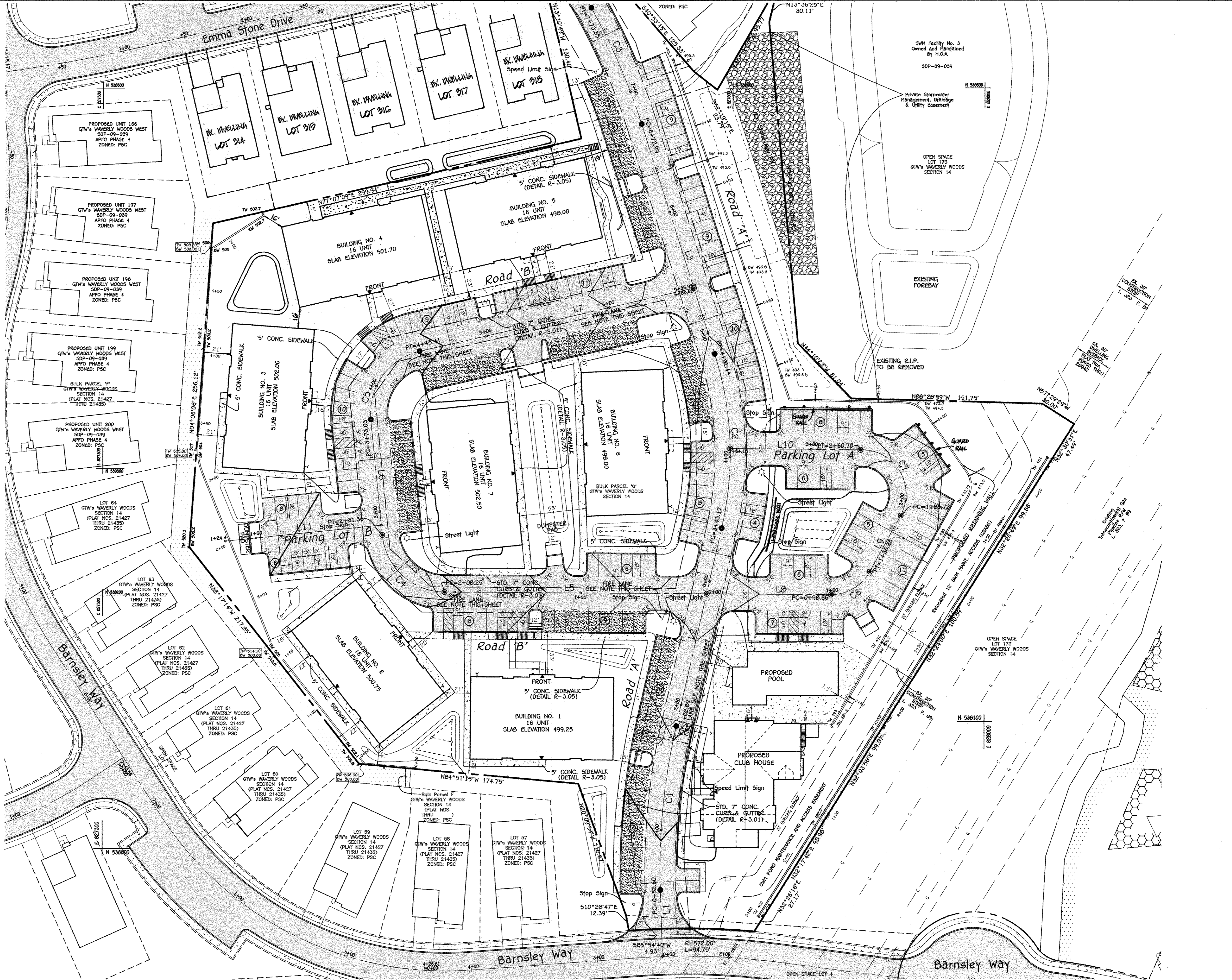
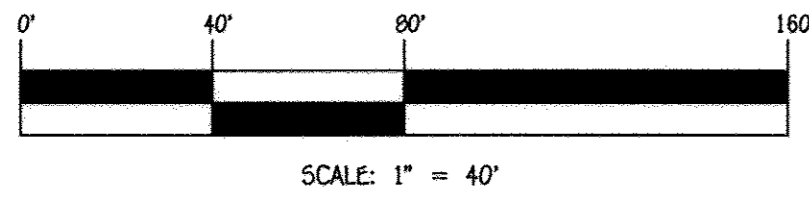
PROPOSED ALIGNMENT CURVE TABLE							
CURVE #	ROAD NAME	STATION	RADIUS	LENGTH	DELTA	TANGENT	CHORD
C1	CL-Road 'A'	STA 0+52.60 TO STA 1+82.89	500.60'	130.30'	14°54'47"	65.52'	N5° 29' 36.41"E 129.93'
C2	CL-Road 'A'	STA 3+43.17 TO STA 4+82.44	259.41'	139.26'	30°45'34"	71.35'	N2° 25' 49.90"W 137.60'
C3	CL-Road 'A'	STA 6+72.99 TO STA 7+73.35	500.00'	100.35'	11°29'59"	50.35'	N23° 33' 36.12"W 100.19'
C4	CL-Road 'B'	STA 2+08.25 TO STA 2+81.36	50.00'	73.11'	83°46'40"	44.84'	N47° 41' 23.34"W 66.77'
C5	CL-Road 'B'	STA 3+73.03 TO STA 4+45.41	50.00'	72.38'	82°56'18"	44.19'	N35° 40' 16.10"E 66.22'
C6	CL-Parking Lot 'A'	STA 0+98.66 TO STA 1+36.26	35.00'	37.60'	61°33'27"	20.85'	N59° 39' 01.66"E 35.82'
C7	CL-Parking Lot 'A'	STA 1+86.72 TO STA 2+60.70	35.00'	73.97'	121°05'45"	61.98'	N31° 40' 34.55"W 60.95'

PROPOSED ALIGNMENT LINE TABLE				
LINE #	ROAD NAME	STATION	DIRECTION	LENGTH
L1	CL-Road 'A'	STA 0+00 TO STA 0+52.60	N 01°58'19" W	52.60'
L2	CL-Road 'A'	STA 1+82.89 TO STA 3+43.17	N 12°56'57" E	160.28'
L3	CL-Road 'A'	STA 4+82.44 TO STA 6+72.99	N 17°48'37" W	190.56'
L4	CL-Road 'A'	STA 7+73.35 TO STA 8+31.95	N 29°18'36" W	58.60'
L5	CL-Road 'B'	STA 0+00 TO STA 2+08.25	N 89°34'34" W	208.25'
L6	CL-Road 'B'	STA 2+81.36 TO STA 3+73.03	N 05°48'03" W	91.67'
L7	CL-Road 'B'	STA 4+45.41 TO STA 6+88.68	N 77°08'34" E	223.27'
L8	CL-Parking Lot 'A'	STA 0+00 TO STA 0+98.66	S 89°34'15" E	98.66'
L9	CL-Parking Lot 'A'	STA 1+36.26 TO STA 1+86.72	N 28°52'18" E	50.46'
L10	CL-Parking Lot 'A'	STA 2+60.70 TO STA 3+64.15	N 89°21'11" W	103.46'
L11	CL-Parking Lot 'B'	STA 0+00.00 TO STA 1+24.40	S 84°11'57" W	124.40'

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014



NOTE:
THE DEVELOPER WILL WORK WITH THE OFFICE OF THE FIRE MARSHAL TO ESTABLISH MARKINGS NECESSARY TO SHOW THE APPROPRIATE LOCATION OF THE REQUIRED FIRE LANE FOR THE ACCESS OF EMERGENCY VEHICLES AS NOTED ON THIS PLAN.



NO.	REVISION	DATE
2	REVISE SWM FACILITIES AND ASSOCIATED GRADING	12/22/17
1	REVISE FINAL GRADING & CISTERN WITH ROOF LEADERS	12/4/16

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, Expiration Date: 07/14/2015."
Frank Manalansan II 2/9/14 DATE
APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
Maureen Rossman 9/2/2014 COUNTY HEALTH OFFICER DATE



BUILDER
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA MARYLAND, 21043
410-796-0900

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND
21737-0030

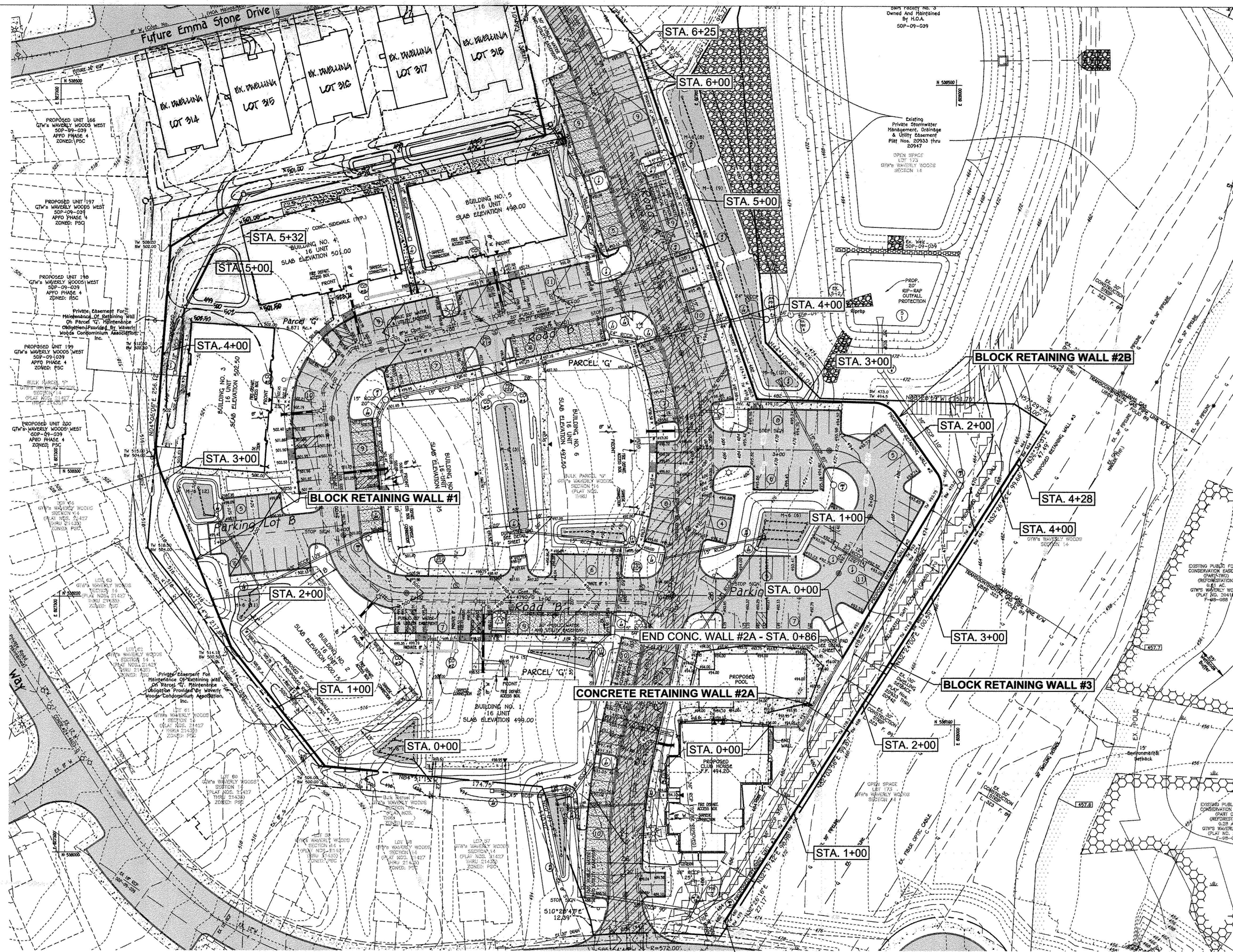
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
W. J. [Signature] 10/26/14 DATE
Chief, Division of Land Development
[Signature] 9/18/14 DATE
Chief, Development Engineering Division
[Signature] 10/16/10 DATE
Director - Department of Planning and Zoning

PROJECT	SECTION	PARCEL NOS.
GTW'S WAVERLY WOODS, SECTION 14	14	P/O 249
PLAT	BLOCK NO.	ZONE
22944-1	3 & 4	PSC
22945-3		
TAX/ZONE	ELEC. DIST.	CENSUS TR.
16	THIRD	60300
WATER CODE	SEWER CODE	
K-02	5992000	

GEOMETRY PLAN

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
PARCEL 'G' (Plat Nos. 22944 Thru 22953)
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 22 OF 31

SDP-13-031



WALL LOCATION PLAN
1" = 40'

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

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

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4088

NO.	REVISION	DATE
1	REVISE SWM FACILITIES AND ASSOCIATED GRADING	12/28/17

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 14434, Expiration Date: 05/31/15."
R.W. Sturtevant 8/14/14
RICHARD W. STURTEVANT DATE



RICHARD W. STURTEVANT

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

BUILDERS
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND, 21043
410-796-0908

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kest Seidman 10/04/14
Chief, Division of Land Development Date
Date 9/18/14
Chief, Development Engineering Division Date
Director - Department of Planning and Zoning Date

PROJECT	SECTION	PARCEL NOS.			
GTW's Waverly Woods, Section 14 PARCELS G	14	P/O 249			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22945	3 & 4	PSC	16	THIRD	60300
WATER CODE	SEWER CODE				
K-02	599200Q				

RETAINING WALL LOCATION PLAN
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
BULK PARCEL G (PLAT Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 23 OF 31
HCEA PROJECT # 12486-A SDP-13-031

SPECIFICATIONS

MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

- 1.01 Description**
- Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
 - Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
 - Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.02 Delivery, Storage and Handling

- Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
- Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Modular Concrete Retaining Wall Units

- Modular concrete units shall conform to the following architectural requirements: face color - color may be specified by the Owner.

face finish - sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without written approval of Owner.

bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.

exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.

- Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.

- Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:

compressive strength = 3000 psi minimum; absorption = 8% maximum (6% in northern states) for standard weight aggregates;

dimensional tolerances = $\pm 1/8"$ from nominal unit dimensions not including rough split face, $\pm 1/16"$

unit height - top and bottom planes; unit size - 8" (H) x 18" (W) x 12" (D) minimum;

unit weight - 75 lbs/unit minimum for standard weight aggregates;

inter-unit shear strength - 1000 pif minimum at 2 psi normal pressure; at 2 psi normal force.

geogrid/unit peak connection strength - 1000 pif minimum

- Modular concrete units shall conform to the following constructability requirements: (if applicable)

vertical setback = $1/8"$ per course (near vertical) or $1"$ per course per the design;

alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;

maximum horizontal gap between erected units shall be - 1/2 inch.

2.02 Shear Connectors (if applicable)

- Shear connectors shall be 1/2 inch diameter thermoset isophthalic polyester resin-protuded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F. B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pad Material

- Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

2.04 Unit Drainage Fill

- Unit drainage fill shall consist of #57 crushed stone

2.05 Reinforced Backfill

- Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-35

- Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

Plasticity Index (PI) <10 and Liquid Limit <35 per ASTM D-4318.

- Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

2.06 Geogrid Soil Reinforcement

- Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

2.07 Drainage Pipe

- The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

- Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

3.02 Base Leveling Pad

- Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.

- Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.03 Modular Unit Installation

- First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.

- Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.

- Install shear/connecting devices per manufacturer's

recommendations.

- Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.

- Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

3.04 Structural Geogrid Installation

- Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.

- Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.

- The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.

- Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement

- Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.

- Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.

- Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.

- Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.

- Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

- Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.

- At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

- Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

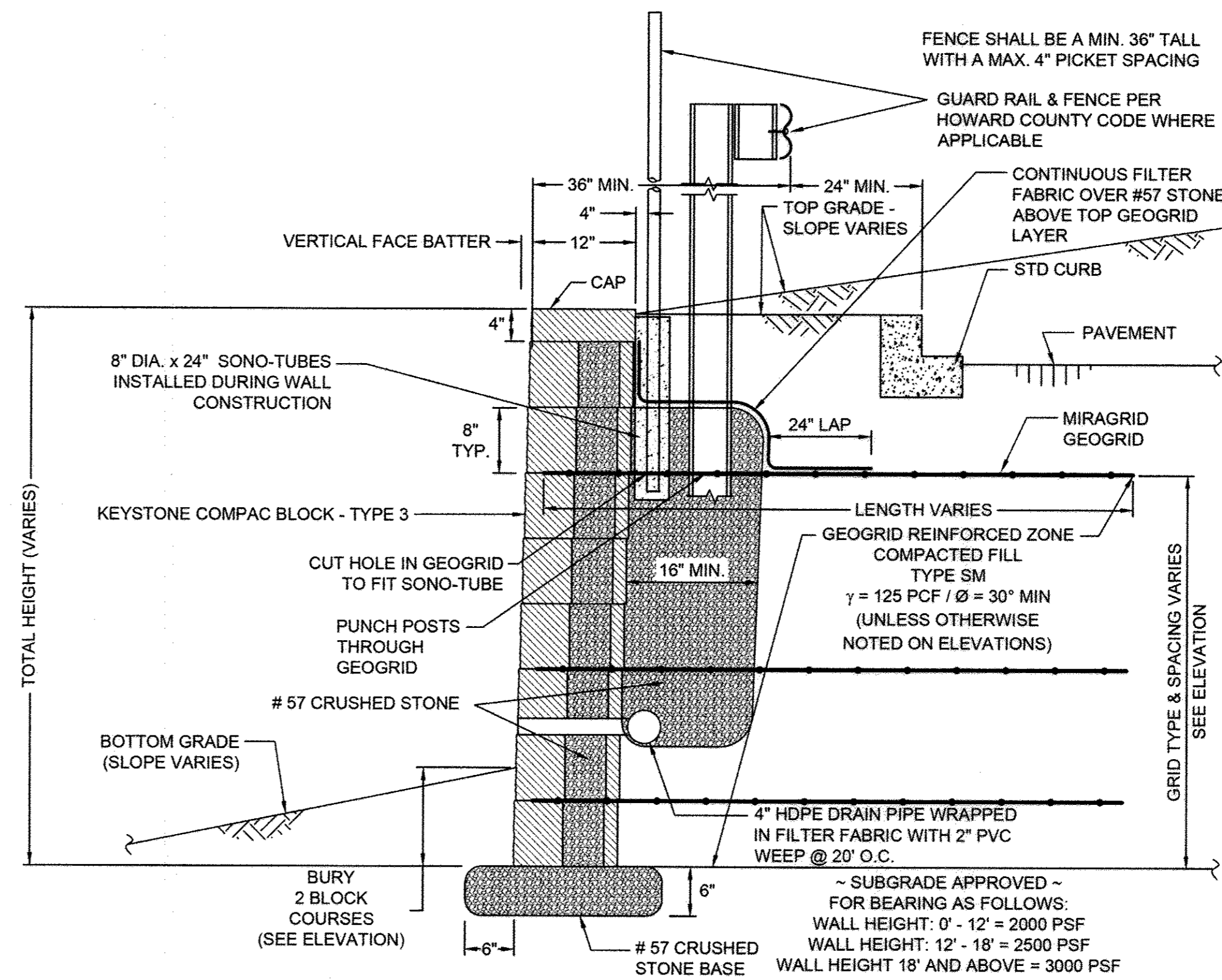
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TYPICAL BLOCK RETAINING WALL SECTION
N.T.S.

NOTES:

- No trees shall be planted within 10 feet of the top of the retaining wall.
- Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
- One soil boring shall be required every one hundred feet along the entire length of the wall. Copies of all boring reports shall be provided to the Howard County Inspector Prior to the start of construction.
- The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
- The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.
- Walls shall not be constructed on uncertified fill materials.
- Walls shall not be constructed within a Howard Co. right-of-way or easement.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461 - 2652

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 14434, Expiration Date: 05/13/15."

Richard W. Sturtevant
RICHARD W. STURTEVANT
8/14/14
DATE



OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

BUILDERS
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND, 21043
410-796-0908

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND
21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development
Date 9/18/14
Chief, Development Engineering Division
Date 10/16/14
Director - Department of Planning and Zoning

PROJECT
GTW's Waverly Woods, Section 14
PARCELS G

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
2894A-22953	3 & 4	PSC	16	THIRD	60300

SECTION 14
PARCEL NOS. P/O 249

WATER CODE K-02
SEWER CODE 5992000

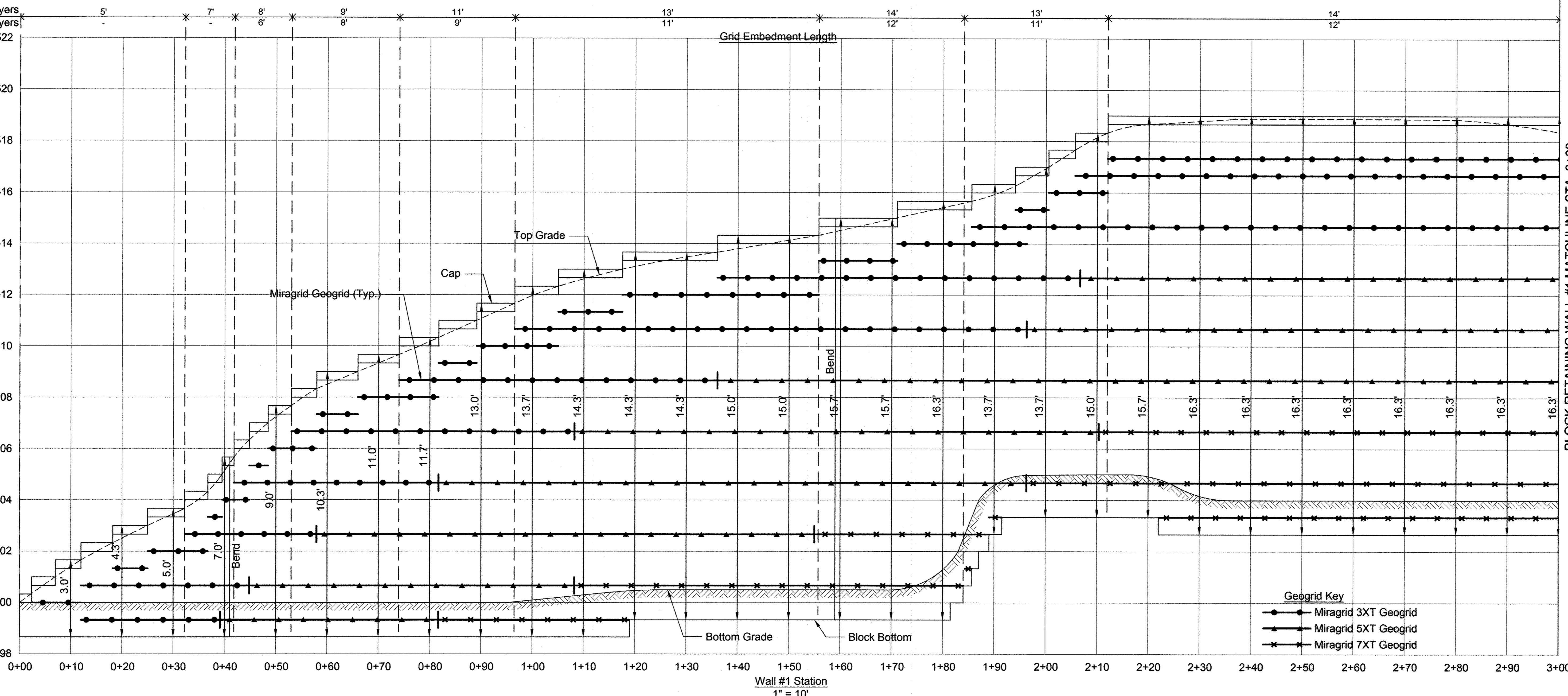
BLOCK RETAINING WALL CONSTRUCTION DETAILS

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
BULK PARCEL G (PLAT Nos. Thru ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: AUGUST 9, 2014 SHEET 24 OF 31

HCEA PROJECT # 12486-A SDP-13-031

Miragrid 3XT Grid Layers
Miragrid 5XT & 7XT Grid Layers

Elevation
1" = 2'



BLOCK RETAINING WALL #1 ELEVATION

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
10975 Gullford Road, Suite A Annapolis Junction, Maryland
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Richard W. Sturtevant
RICHARD W. STURTEVANT
8/14/14
DATE



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WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
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BUILDERS
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9720 PATUXENT WOODS DRIVE
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410-796-0908

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND
21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

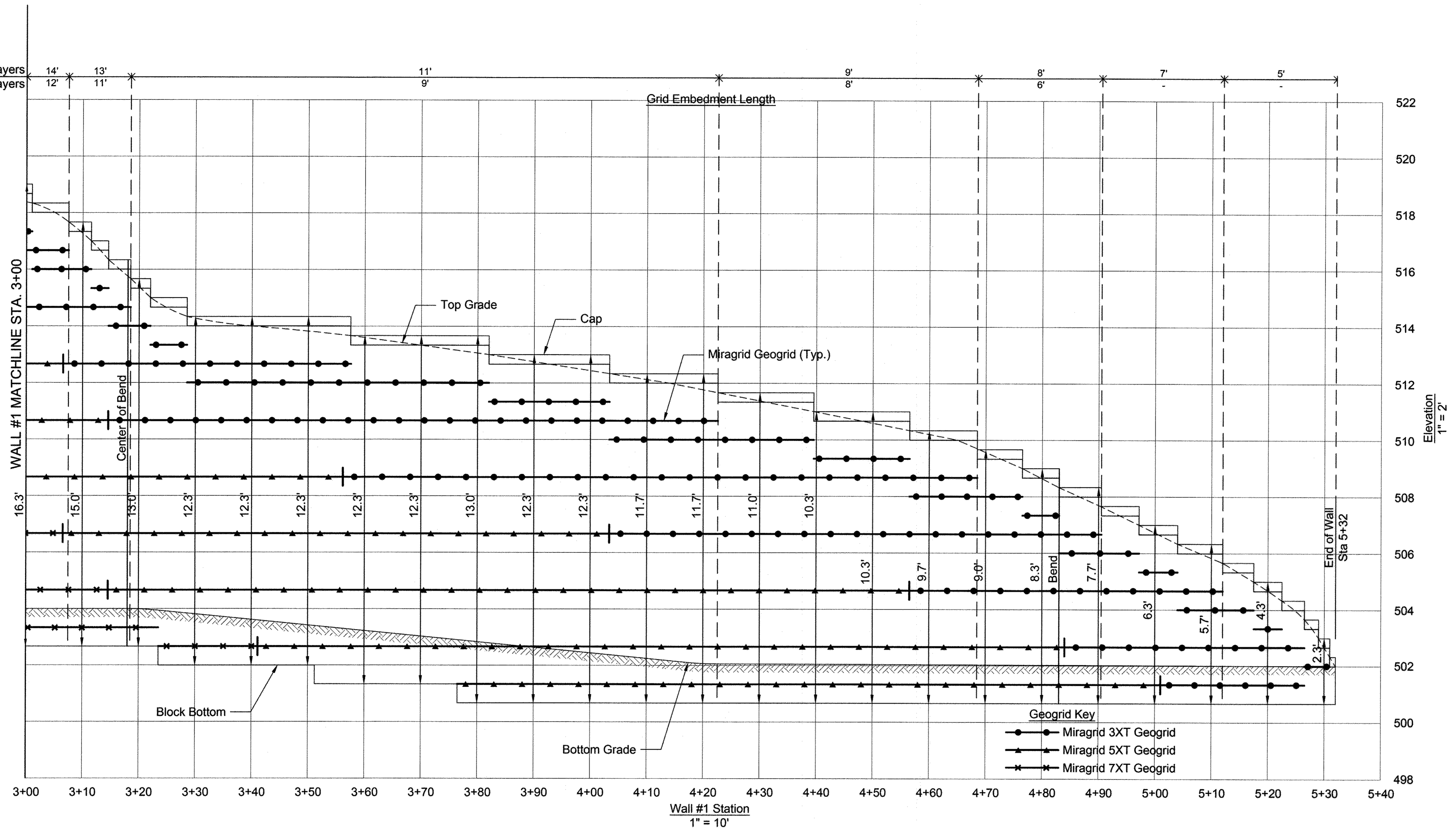
K. S. ... Chief, Division of Land Development Date 9-18-14
J.K. Chief, Development Engineering Division Date 10/14/14
David A. ... Director - Department of Planning and Zoning Date

PROJECT	SECTION	PARCEL NOS.			
GTW's Waverly Woods, Section 14	14	P/O 249			
PARCELS G					
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22944-22953	3 & 4	PSC	16	THIRD	60300
WATER CODE	SEWER CODE				
K-02	5992000				

BLOCK RETAINING WALL #1 ELEVATION
(STA. 0+00 TO STA. 3+00)

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
BULK PARCEL G (PLAT Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 25 OF 31
HCEA PROJECT # 12486-A SDP-13-031

Miragrid 3XT Grid Layers
 Miragrid 5XT & 7XT Grid Layers



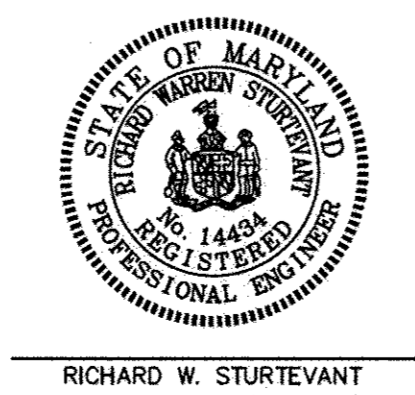
BLOCK RETAINING WALL #1 ELEVATION

APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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Richard W. Sturtevant 8/14/14
 RICHARD W. STURTEVANT DATE



BUILDERS
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA, MARYLAND, 21043
 410-796-0908

OWNER
 WAVERLY WOODS DEVELOPMENT CORPORATION
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 GLENELG, MARYLAND 21737-0030

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION,
 P.O. BOX 30
 GLENELG, MARYLAND
 21737-0030

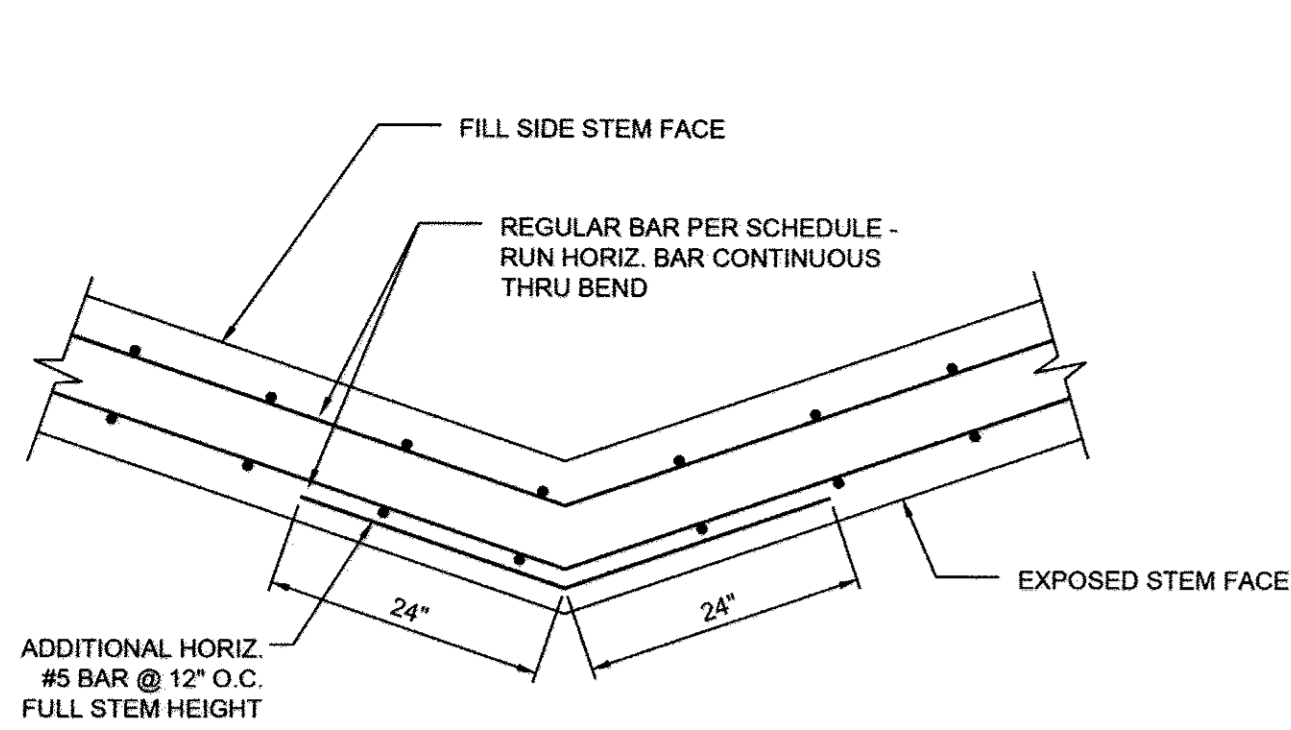
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development *[Signature]* 10/26/14
 Chief, Development Engineering Division *[Signature]* 9/18/14
 Director - Department of Planning and Zoning *[Signature]* 10/21/14

PROJECT: GTW's Waverly Woods, Section 14
 PARCELS G

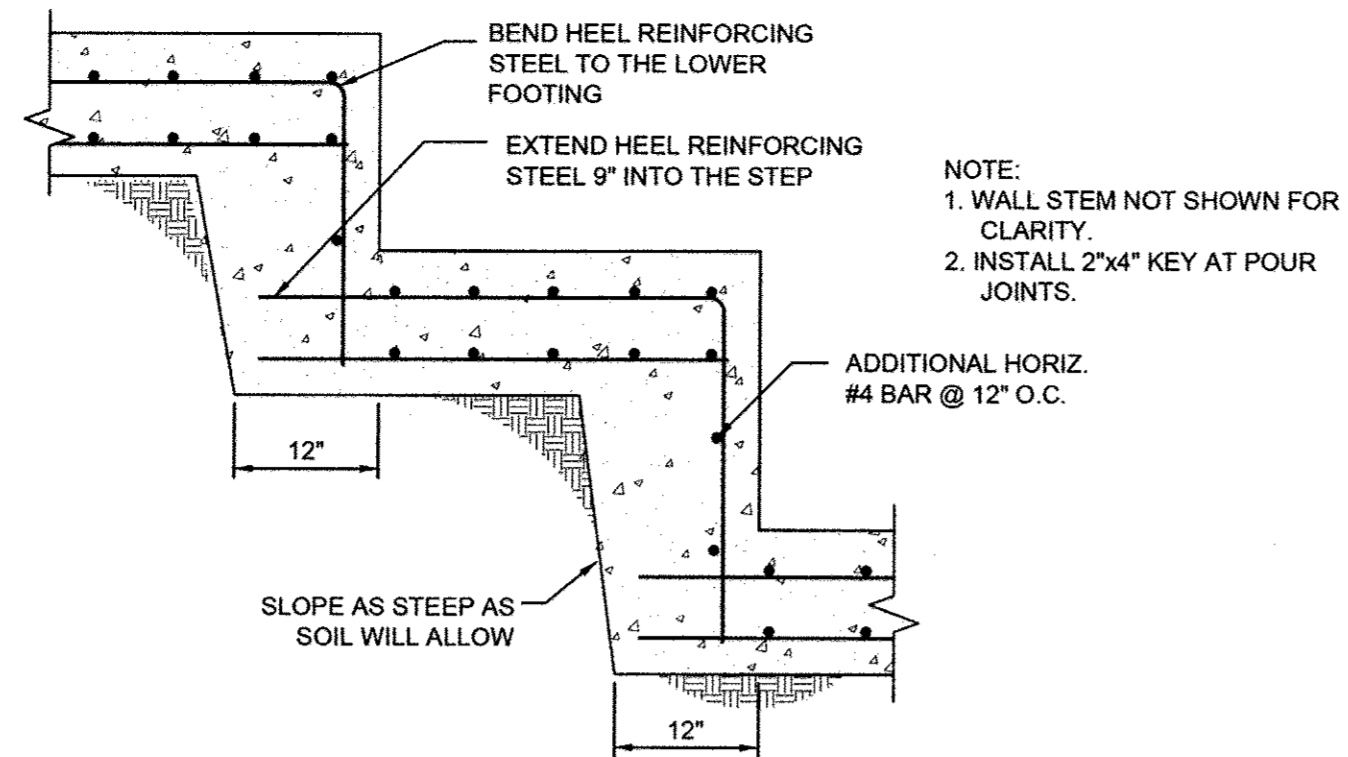
SECTION 14	PARCEL NOS. P/O 249
PLAT 22944-22963	BLOCK NO. 3 & 4
ZONE PSC	TAX/ZONE 16
ELEC. DIST. THRD	CENSUS TR. 60300
WATER CODE K-02	SEWER CODE 5992000

BLOCK RETAINING WALL #1 ELEVATION
 (STA. 3+00 TO STA. 5+32)

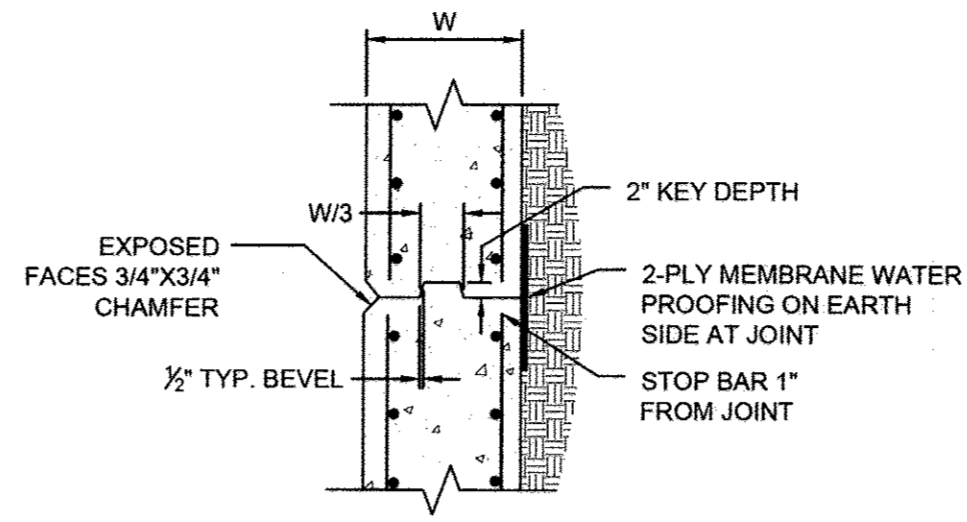
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
 SECTION 14
 BULK PARCEL G (PLAT Nos. Thru
 ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 26 OF 31
 HCEA PROJECT # 12486-A SDP-13-031



WALL BEND REINFORCEMENT DETAIL
NOT TO SCALE

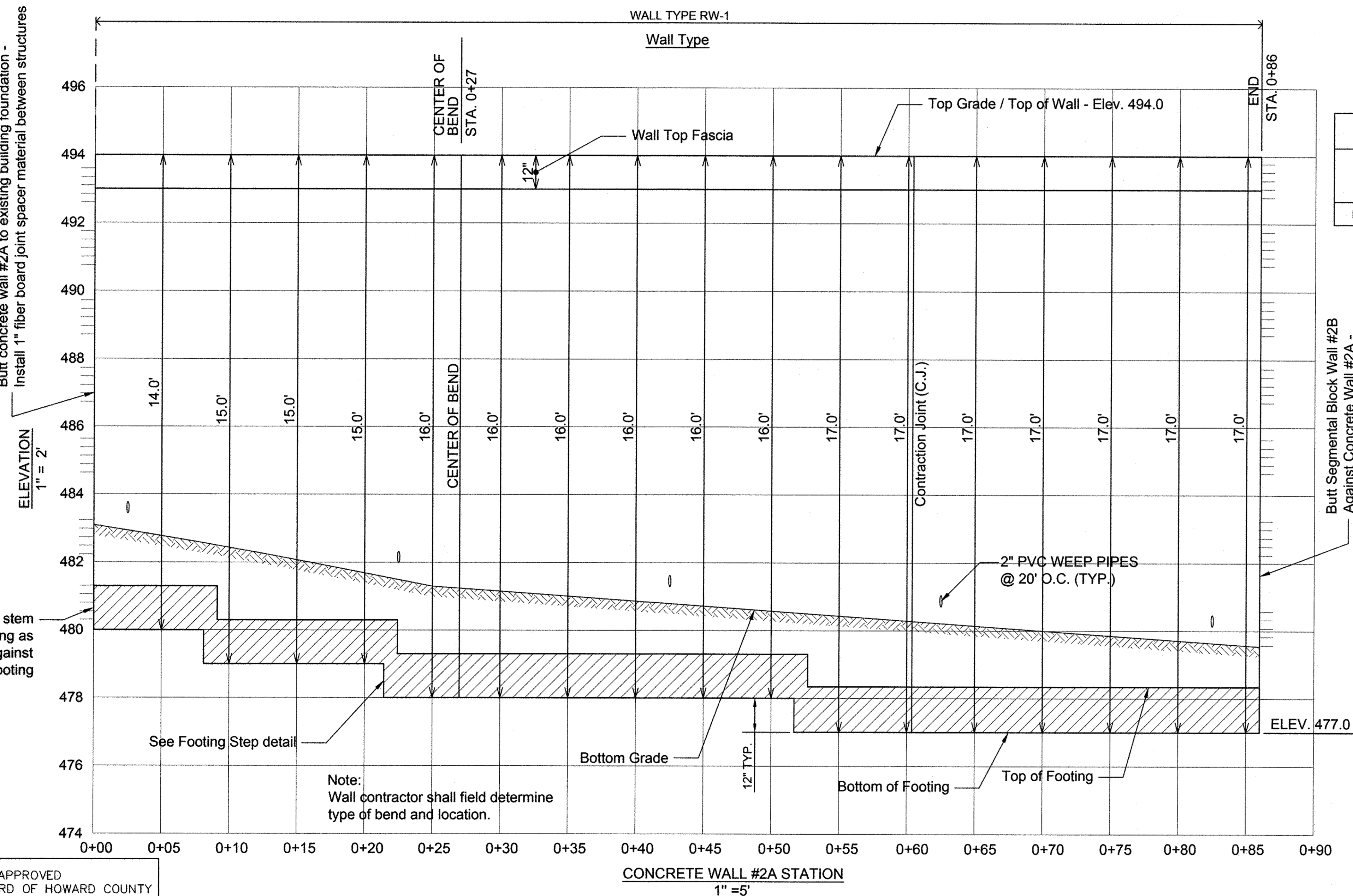


CONCRETE WALL FOOTING STEP DETAIL
NOT TO SCALE

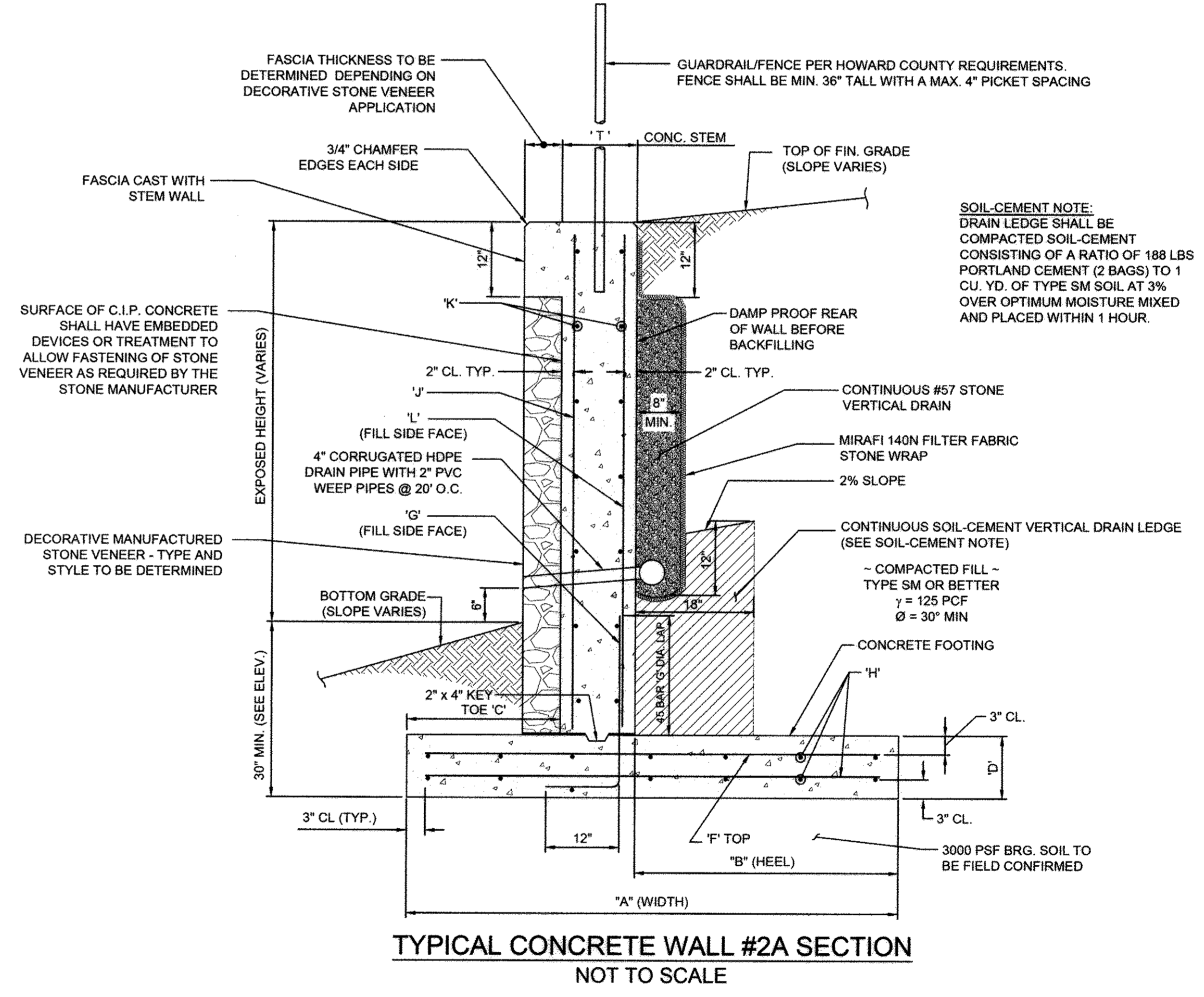


CONCRETE WALL STEM VERTICAL CONTRACTION JOINT C.J. DETAIL (PLAN VIEW)
NOT TO SCALE

- NOTES:**
1. ALL RETAINING WALL CONCRETE SHALL BE 4000 PSI WITH AIR ENTRAINMENT.
 2. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60.
 3. WALL BACKFILL SHALL BE COMPACTED TO 95% OF T-99.
 4. CONCRETE WORK SHALL COMPLY WITH THE LATEST ACI 318 BUILDING CODE FOR CONCRETE STRUCTURES.
 5. ALL REBAR SPLICES NOT SHOWN SHALL BE A MINIMUM OF 40 BAR DIAM.
 6. ALL WALL PERMANENTLY EXPOSED SURFACES SHALL BE MORTAR PATCHED AND SACK-RUBBED FINISHED WITH GROUT AND BURLAP. (RUB FINISH PER OWNER'S SPECIFICATIONS).
 7. DESIGN SOIL BEARING VALUE OF 3000 PSF TO BE FIELD VERIFIED.
 8. ALL WALL DIMENSIONS, ANGLES, BEND LOCATIONS, TW/BW GRADES AND LAYOUT SHALL BE FIELD VERIFIED.
 9. 2-PLY MEMBRANE WATERPROOFING PER SHA. STANDARD DETAIL NO. BR-SB(6.47)-05-362.
 10. SEE SHEET 2 OF 9 FOR STANDARD HOWARD COUNTY NOTES FOR WALL CONSTRUCTION.



CONCRETE WALL SCHEDULE											
Wall Type	Wall Footing Width 'A'	Wall Footing Heel 'B'	Wall Footing Toe 'C'	Footing Depth 'D'	Stem Thickness 'T'	Footing Reinf. 'F'	Stem Reinf. 'G'	Footing Reinf. 'H'	Stem Reinf. 'J'	Stem Reinf. 'K'	Stem Reinf. 'L'
RW-1	9'-10"	5'-8"	2'-10"	1'-4"	1'-4"	#7 @ 12"	#8 @ 12"	#6 @ 12"	#6 @ 12"	#5 @ 12"	#6 @ 12"



TYPICAL CONCRETE WALL #2A SECTION
NOT TO SCALE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
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10975 Guilford Road, Suite A Annapolis Junction, Maryland
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NO.	REVISION	DATE

PROFESSIONAL CERTIFICATION
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 14434, Expiration Date: 05/13/15."
Richard W. Sturtevant
RICHARD W. STURTEVANT
DATE 8/14/14



BUILDERS
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND, 21043
410-796-0908

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

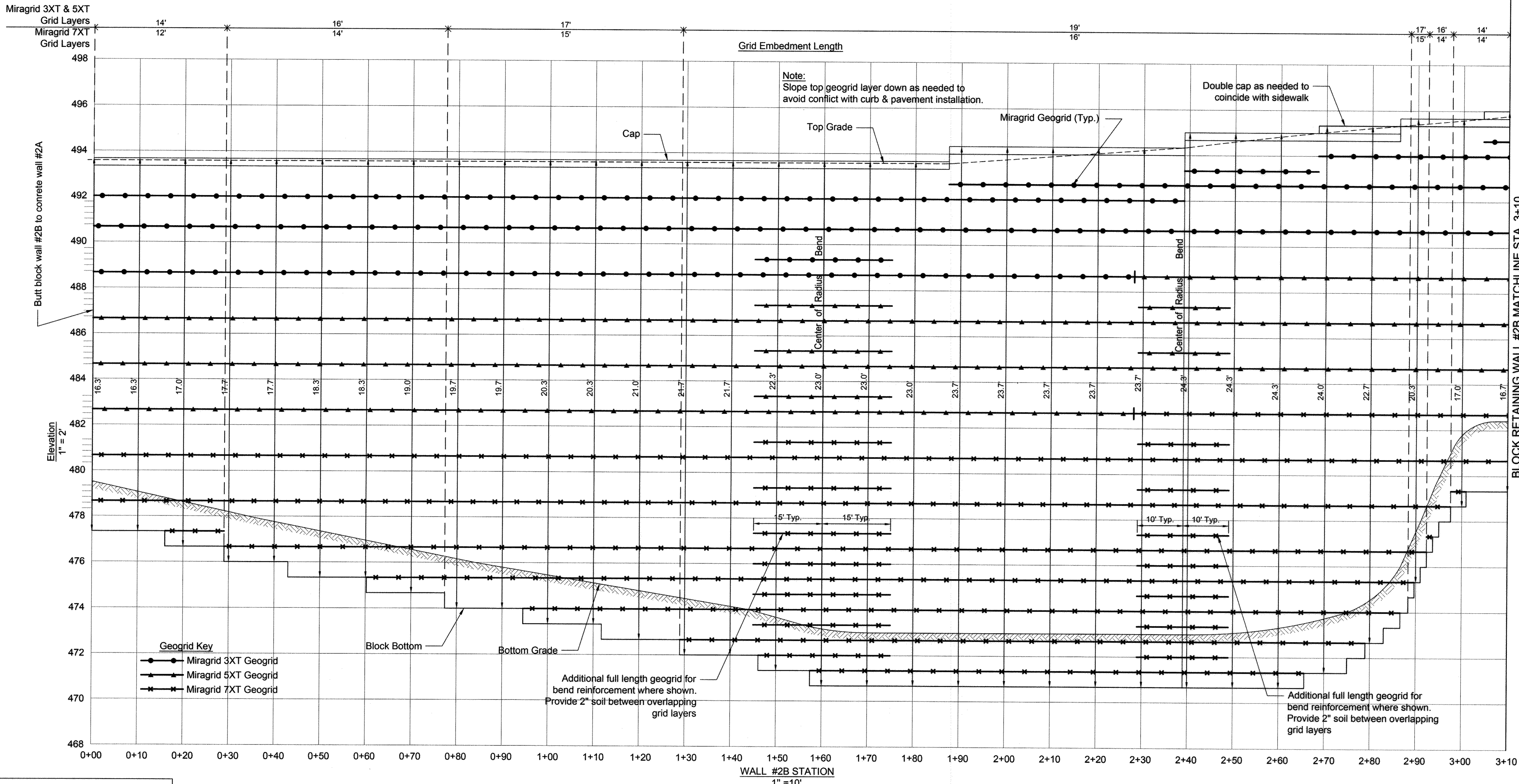
DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND
21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] Date 9/18/14
Chief, Division of Land Development
[Signature] Date 9/18/14
Chief, Development Engineering Division
[Signature] Date 9/18/14
Director - Department of Planning and Zoning

PROJECT GTW's Waverly Woods, Section 14 PARCELS G	SECTION 14	PARCEL NOS. P/O, 249
PLAT 22944- 22953	BLOCK NO. 3 & 4	ZONE PSC
TAX/ZONE 16	ELEC. DIST. THIRD	CENSUS TR. 60300
WATER CODE K-02	SEWER CODE 5992000	

CONCRETE RETAINING WALL #2A CONSTRUCTION DETAILS

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
BULK PARCEL G (PLAT Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 27 OF 31
HCEA PROJECT # 12486-A SDP-13-031



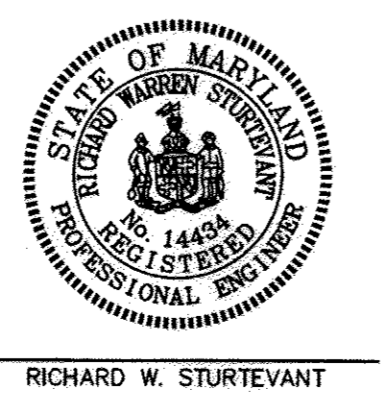
BLOCK RETAINING WALL #2B ELEVATION

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

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R.W. Sturtevant
RICHARD W. STURTEVANT
8/14/14
DATE



BUILDERS
RYAN HOMES
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND, 21043
410-796-0808

OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND
21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Katsia Deane
Chief, Division of Land Development
John G. Hill
Chief, Development Engineering Division
Robert L. Givelle
Director - Department of Planning and Zoning

DATE: 2/18/14
DATE: 9-18-14
DATE: 10/1/14

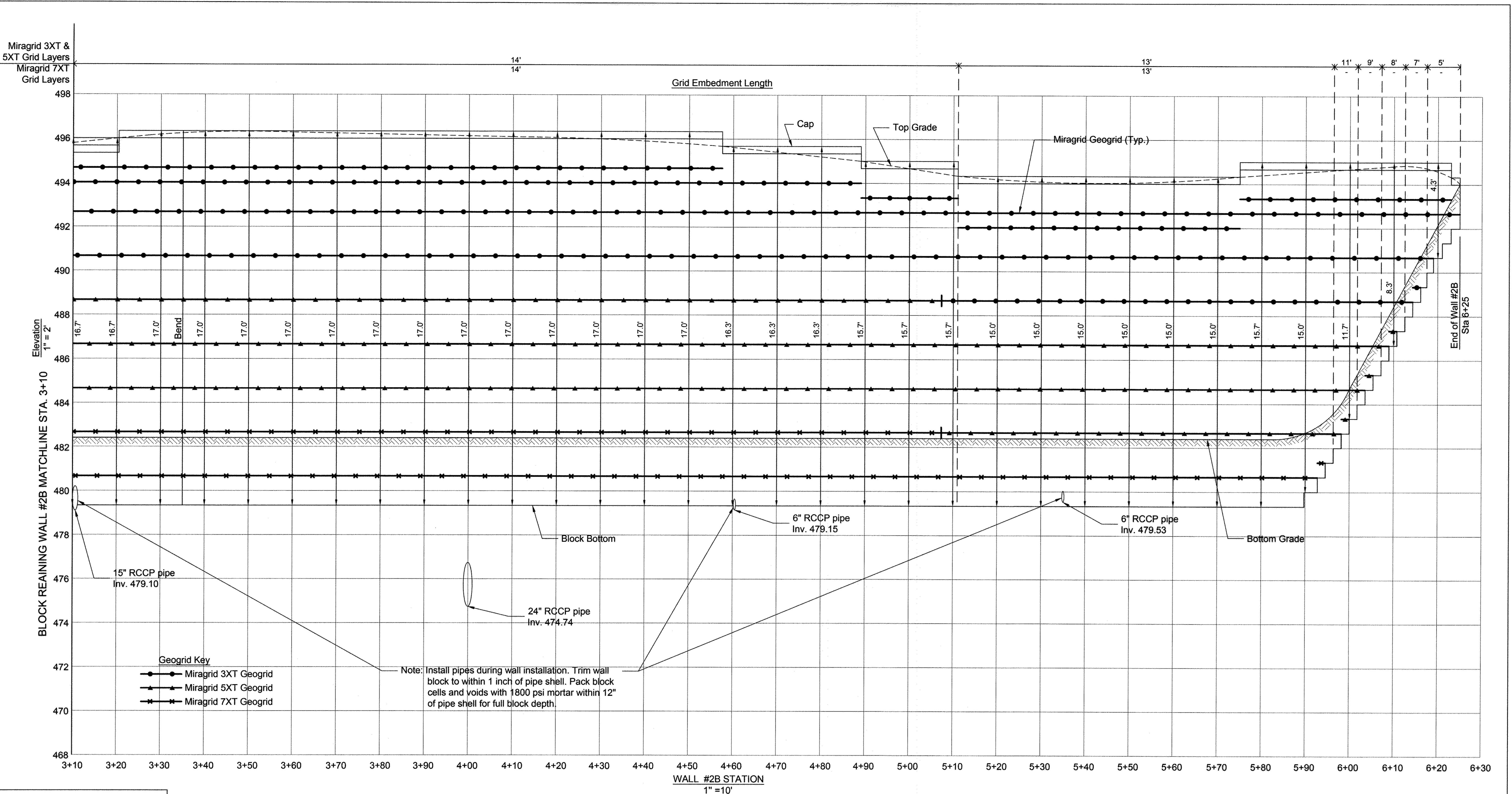
PROJECT: GTW's Waverly Woods, Section 14
PARCELS G

SECTION	14
PARCEL NOS.	P/O 249
PLAT	28944-28953
BLOCK NO.	3 & 4
ZONE	PSC
TAX/ZONE	16
ELEC. DIST.	THIRD
CENSUS TR.	60300
WATER CODE	K-02
SEWER CODE	5992000

BLOCK RETAINING WALL #2B ELEVATION
(STA. 0+00 TO STA. 3+10)

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
BULK PARCEL G (PLAT Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 28 OF 31

HCEA PROJECT # 12486-A SDP-13-031



BLOCK RETAINING WALL #2B ELEVATION

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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ELLCOTT CITY, MARYLAND 21042
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Richard W. Sturtevant
RICHARD W. STURTEVANT
8/11/14
DATE



OWNER
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BUILDERS
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410-796-0908

DEVELOPER
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Krista O'Neil
Chief, Division of Land Development
Debra J. R.
Chief, Development Engineering Division
Denise A. Coyle
Director - Department of Planning and Zoning

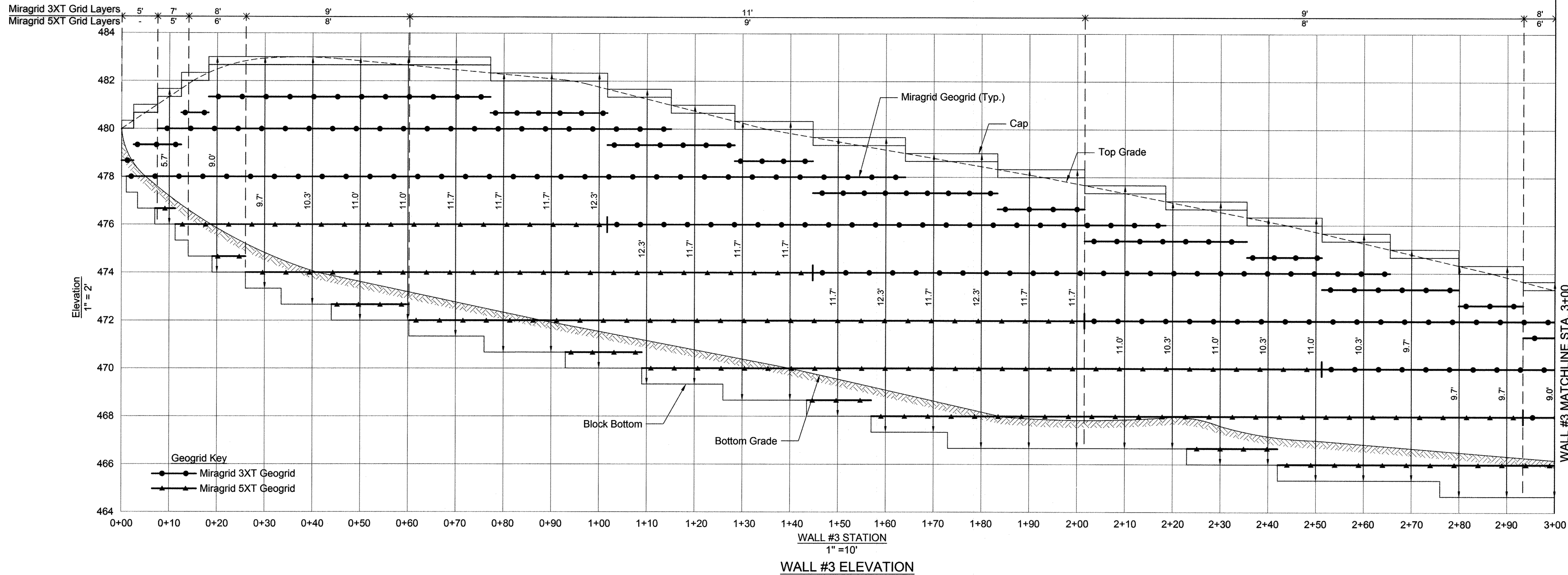
DATE: 9/28/14
DATE: 8/14/14

PROJECT GTW's Waverly Woods, Section 14 PARCELS G	SECTION 14	PARCEL NOS. P/O 249
PLAT 2894A- 2296B	BLOCK NO. 3 & 4	ZONE PSC
TAX/ZONE 16	ELEC. DIST. THIRD	CENSUS TR. 60300
WATER CODE K-02	SEWER CODE 5992000	

BLOCK RETAINING WALL #2B ELEVATION
(STA. 3+10 TO STA. 6+25)

AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
BULK PARCEL G (PLAT Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 29 OF 31

HCEA PROJECT # 12486-A SDP-13-031



APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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ENGINEERING ASSOCIATES
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(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

NO.	REVISION	DATE

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Richard W. Sturtevant 8/14/14
RICHARD W. STURTEVANT DATE



OWNER
WAVERLY WOODS DEVELOPMENT CORPORATION
P.O. BOX 30
GLENELG, MARYLAND 21737-0030

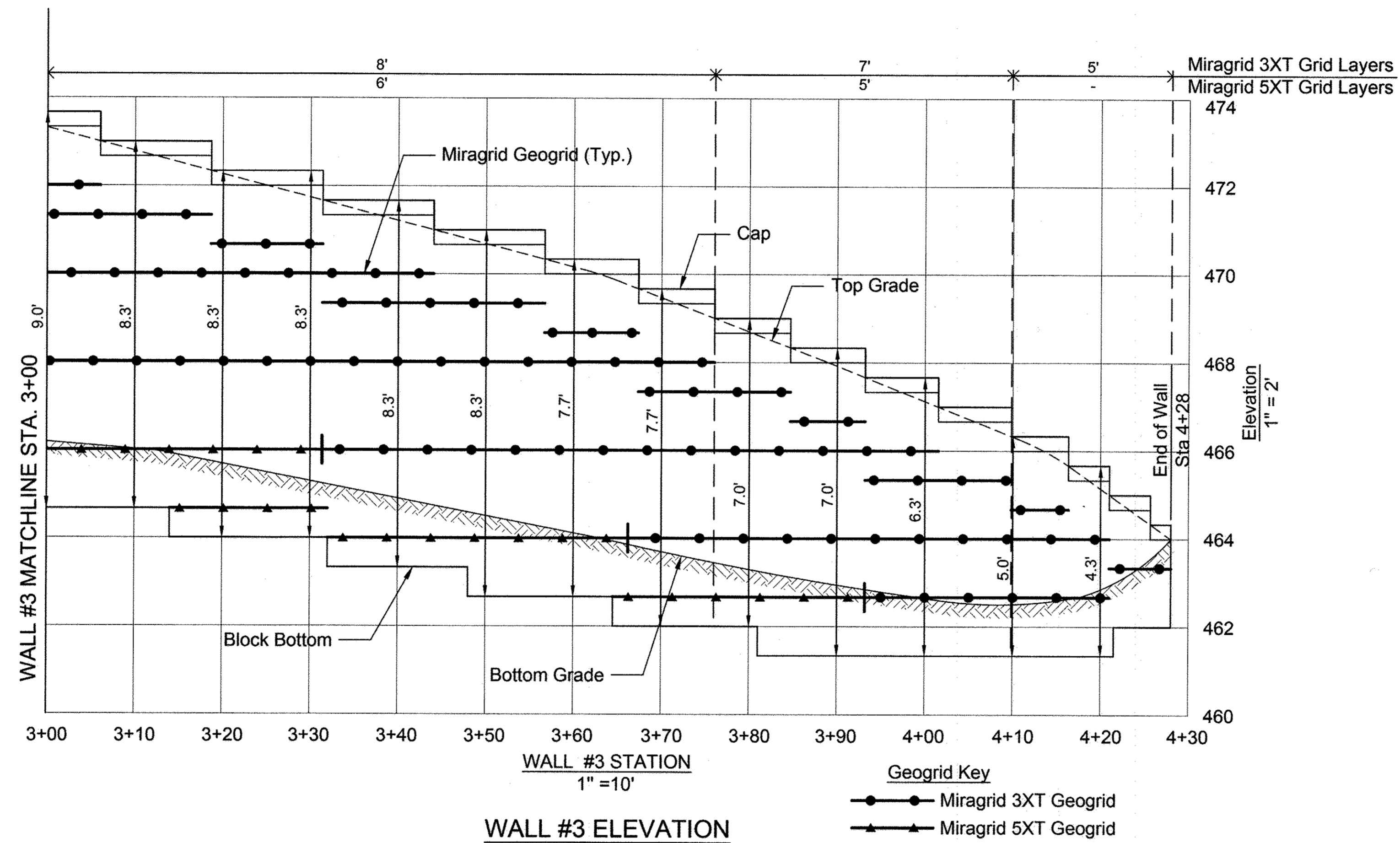
BUILDERS
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9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND, 21043
410-796-0908

DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION,
P.O. BOX 30
GLENELG, MARYLAND
21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Karl LaDuke 10/26/14
Chief, Division of Land Development Date
David S. Sells 9/18/14
Chief, Development Engineering Division Date
David S. Sells 10/2/14
Director - Department of Planning and Zoning Date

PROJECT GTW's Waverly Woods, Section 14 PARCELS G	SECTION 14	PARCEL NOS. P/O 249
PLAT 22944- 22953	BLOCK NO. 3 & 4	ZONE PSC
TAX/ZONE 16	ELEC. DIST. THIRD	CENSUS TR. 60300
WATER CODE K-02	SEWER CODE 5992000	

WALL #3 ELEVATION
(STA. 0+00 TO STA. 3+00)
AGE RESTRICTED ADULT HOUSING
WAVERLY MEWS
SECTION 14
BULK PARCEL G (PLAT Nos. Thru
ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: AUGUST 9, 2014
SHEET 30 OF 31
HCEA PROJECT # 12486-A SDP-13-031



APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE 2/20/2014

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 481-2855

HILLIS-CARNES
 ENGINEERING ASSOCIATES
 10875 Guilford Road, Suite A Annapolis Junction, Maryland
 (410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

PROFESSIONAL CERTIFICATION
 "Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 14434, Expiration Date: 05/13/15."
Richard W. Sturtevant
 RICHARD W. STURTEVANT
 8/14/14
 DATE



OWNER
 WAVERLY WOODS DEVELOPMENT CORPORATION
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

BUILDERS
 RYAN HOMES
 9720 PATUXENT WOODS DRIVE
 COLUMBIA, MARYLAND, 21043
 410-796-0908

DEVELOPER
 WAVERLY WOODS DEVELOPMENT CORPORATION,
 P.O. BOX 30
 GLENELG, MARYLAND 21737-0030

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Richard W. Sturtevant
 Chief, Division of Land Development
 Date: 8/14/14

Mark S. Wynn
 Chief, Development Engineering Division
 Date: 9-18-14

Mark S. Wynn
 Director - Department of Planning and Zoning
 Date: 10/1/14

PROJECT GTW's Waverly Woods, Section 14 PARCELS G	SECTION 14	PARCEL NOS. P/O 249
PLAT 2294A- 2295B	BLOCK NO. 3 & 4	ZONE PSC
TAX/ZONE 16	ELEC. DIST. THIRD	CENSUS TR. 60300
WATER CODE K-02	SEWER CODE 5992000	

WALL #3 ELEVATION
 (STA. 3+00 TO STA. 4+28)

AGE RESTRICTED ADULT HOUSING
 WAVERLY MEWS
 SECTION 14
 BULK PARCEL G (PLAT Nos. Thru
 ZONED PSC TAX MAP NO.: 16 GRID NO.: 3 & 4
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: AUGUST 9, 2014
 SHEET 31 OF 31

HCEA PROJECT # 12486-A SDP-13-031