

# FINAL PLAN

# SHIPLEY'S GRANT

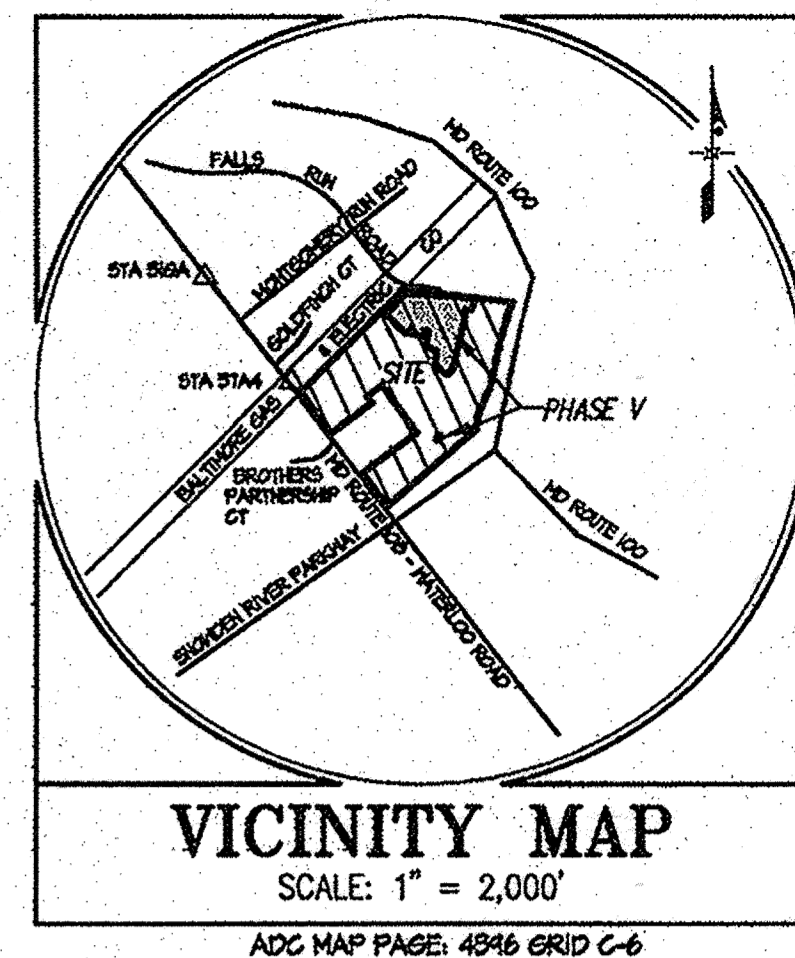
## PHASE V

### LOTS C-308, D-5 THRU D-62, OPEN SPACE LOTS D-63 THRU D-68, COMMON OPEN SPACE LOTS D-69 THRU D-72 AND NON-BUILDABLE PARCELS "D-73" THRU "D-80"

## AND

## PHASE I

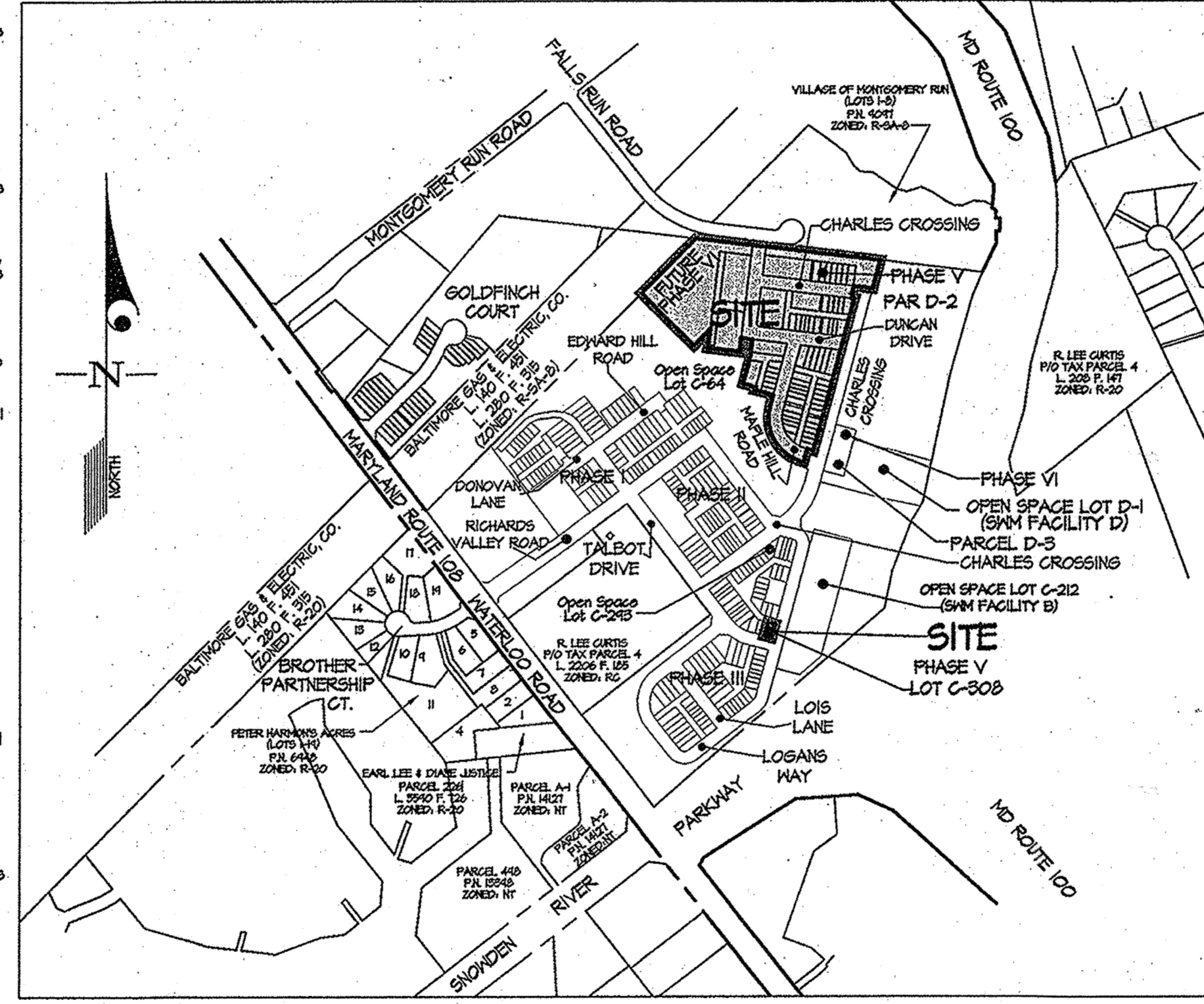
### OPEN SPACE LOT C-64 ASBULTS



Howard County Control Stations  
 316A ELEV. = 511.65  
 STANDARD DISC ON CONCRETE MONUMENT  
 N 564,925.75, E 1,361,061.65  
 314A ELEV. = 431.28  
 STANDARD DISC ON CONCRETE MONUMENT  
 N 563,835.91, E 1,361,911.65

#### LEGEND

- EXIST. CURB & GUTTER/PAVEMENT
- STANDARD CURB & GUTTER
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- PROPOSED SEWER MAIN
- PROPOSED WATER MAIN
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- PROPOSED SIDEWALK
- NUMBER OF PARKING SPACES
- PROP. BARRICADE
- PROP. LIMIT OF DISTURBANCE
- STRUCTURE NUMBER
- EXISTING CONTOUR
- PROP. CONTOUR
- EXISTING TREELINE
- 25' WETLAND BUFFER
- STREAM BANK BUFFER
- 100 YEAR FLOODPLAIN EASEMENT
- CENTERLINE OF STREAM
- STREAM BANK
- WETLAND
- LIMIT OF SUBMISSION
- PROPOSED / EXISTING EASEMENT
- PROPOSED PAVEMENT
- MHU OFF-STREET PARKING SPACE (LOT SPECIFIC)
- STREET TREE
- ON-SITE AFFORESTATION AREA PER F-06-01H
- FLOODPLAIN FOREST RETENTION PER F-06-01H (NO CREDIT FOR RETENTION)
- NET TRACT FOREST RETENTION PER F-06-01H
- AFFORESTATION AREA IN THE FLOODPLAIN PER F-06-01H
- NATURAL FOREST REGENERATION AREA AND FOREST REMOVAL AREA IN THE FLOODPLAIN PER F-06-01H
- STREET LIGHT LOCATION



FOREST CONSERVATION EASEMENT (FCE) AREA	1	2(B-E)	3	4(A-D)	5	TOTAL
LOT WHERE FCE IS LOCATED	C-211	C-64	C-212	C-212	D-2 & D-68	
CREDITED FOREST RETENTION AREA ON NET TRACT (IN AC.)	N/A	1.40	0.08	N/A	N/A	1.48
NON-CREDITED FOREST RETENTION AREA IN FLOODPLAIN (IN AC.)	N/A	1.21	0.28	0.05	N/A	1.54
FOREST PLANTING AREA OUTSIDE THE FLOODPLAIN (IN AC.)	0.21	2.24	0.34	0.41	2.13	5.45
FOREST PLANTING AREA WITHIN THE FLOODPLAIN (IN AC.)	N/A	0.14	0.06	0.03	N/A	0.23
TOTAL ACREAGE OF AFFORESTATION PROVIDED (IN AC.)	0.21	2.38	0.40	0.50	2.13	5.68
NATURAL REGENERATION AREA (IN AC.)	N/A	N/A	N/A	N/A	N/A	N/A
MINIMUM TOTAL AREA IN CONSERVATION EASEMENT (IN AC.)	0.21	4.91	0.16	0.55	2.13	8.10

#### SHEET INDEX

- 1. COVER SHEET
- 2. MAPLE HILL ROAD PLAN AND PROFILE
- 3. CHARLES CROSSING AND DUNCAN DRIVE PLAN AND PROFILE
- 4. SIGNING, LIGHTING, STREET TREE, CURB DELINEATION PLAN & DETAILS
- 5. SEDIMENT CONTROL PLAN
- 6. SEDIMENT CONTROL NOTES AND DETAILS
- 7. GRADING PLAN
- 8. STORM DRAIN DRAINAGE AREA MAP
- 9. STORM DRAIN PROFILES
- 10. STORM DRAIN PROFILES
- 11. LANDSCAPE PLAN
- 12. CURB RETURN PROFILES

#### SFA PARKING ANALYSIS

Total Parking Required: 54 units x 2 spaces/unit = 118 Spaces  
 Garages: 102 Spaces (2 Car Garages)  
 Garages: 16 Spaces (1 Car Garage + Tandem Space)  
 Total: 118 Spaces  
 Overflow/Guest Parking Requirements (per Design Manual Volume III, 2.9.1)  
 Parking Required: 54 units x 0.3 spaces per unit = 18 Spaces  
 Overflow/Guest Parking Available: 34 Spaces (On-Street Parking)

ASBULTS CERTIFICATION  
 I hereby certify that these documents were prepared or approved by me and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12475, Expiration Date: May 26, 2024.

8/10/22  
 Carl G. Gutschick  
 Professional Engineer  
 Maryland Reg. No. 12475

#### DEVELOPMENT TRACKING CHART AND SITE ANALYSIS

PHASE No.	CO. FILE No.	GROSS	100 YR. FLOOD PLAIN	NET	SFA LOTS	MIN. RESID. O/S	MIN. RESID. O/S	CREDITED O/S FROM	NON-CREDITED O/S PROVIDED	TOTAL O/S PROVIDED	MIN. RESID. O/S	TND O/S PROVIDED	APT. PARCELS	FUELED ROADS	PRIVATE ROADS	GROSS ACREAGE	GROSS ACREAGE	
PHASE I	F-06-04	15,838 AC.	136 AC.	12,271 AC.	215 AC.	3.4 AC.	0.2 AC.	0.2 AC.	0.4 AC.	6.6 AC.	24,800 SF.	56,477 SF.	01 AC, 29,612 SF.	01 AC, 29,612 SF.	0 AC.	2.0 AC.	01 AC.	4.2 AC.
PHASE II	F-06-04	9,281 AC.	0 AC.	5,281 AC.	235 AC.	15 AC.	0.6 AC.	0.6 AC.	0.1 AC.	0.7 AC.	24,800 SF.	28,245 SF.	03 AC, 13,268 SF.	01 AC, 14,044 SF.	0 AC.	21 AC.	07 AC.	0.00 AC.
PHASE III	F-06-04	12,944 AC.	0 AC.	12,944 AC.	92 AC.	3.4 AC.	0.4 AC.	0.4 AC.	0.4 AC.	6.6 AC.	28,200 SF.	27,610 SF.	01 AC, 80,943 SF.	0 AC, 10,000 SF.	0 AC.	2.4 AC.	0.8 AC.	0.00 AC.
PHASE IV	F-06-04	5,711 AC.	0 AC.	5,711 AC.	14 AC.	1.4 AC.	0.1 AC.	0.1 AC.	0.1 AC.	2.0 AC.	28,200 SF.	15,852 SF.	03 AC, 12,961 SF.	02 AC, 16,982 SF.	18 AC.	1.4 AC.	0 AC.	0.00 AC.
PHASE V	F-06-04	9,300 AC.	0 AC.	9,300 AC.	14 AC.	0.9 AC.	0.1 AC.	0.1 AC.	0.1 AC.	0.6 AC.	28,200 SF.	0 SF.	03 AC, 12,961 SF.	0 AC, 10,000 SF.	0 AC.	1.4 AC.	0.4 AC.	0.00 AC.
CUMULATIVE TOTAL		49,664 AC.	136 AC.	41,791 AC.	487 AC.	10.4 AC.	1.1 AC.	1.1 AC.	1.1 AC.	18.5 AC.	128,200 SF.	128,463 SF.	32 AC, 44,461 SF.	20 AC, 61,217 SF.	18 AC.	10.8 AC.	8.8 AC.	4.2 AC.

- NOTES:
- MINIMUM REQUIRED OPEN SPACE (O/S) IS CALCULATED AS 25% OF THE GROSS AREA.
  - PERCENT OPEN SPACE PROVIDED IS OF THE GROSS AREA.
  - MINIMUM REQUIRED RECREATION OPEN SPACE (ROS) IS CALCULATED AS 400 SF. PER UNIT.
  - MINIMUM REQUIRED TRADITIONAL NEIGHBORHOOD O/S IS CALCULATED AS 20% OF THE REQUIRED OPEN SPACE.
  - MINIMUM REQUIRED MHU'S ARE CALCULATED AS 10% OF THE TOTAL NUMBER OF UNITS.

- General Notes:
- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
  - The contractor shall notify the Department of Public Works/ Bureau of Engineering/ Construction Inspection Division at (410) 315-1880 at least five (5) working days prior to the start of work.
  - The contractor shall notify "Miss Utility" at 1-800-291-7777 at least 48 hours prior to any excavation work being done.
  - Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
  - Street light placement and the type of fixtures and poles shall be in accordance with the Howard County Design Manual, Volume III (2006), Section 3.5.A. A minimum of 20' shall be maintained between any street light and any tree.
  - All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2" galvanized steel, perforated, square tube sleeve (2 gauges) - 8' long. A galvanized steel pole cap shall be mounted on top of each post.
  - 45% compaction in filled areas shall meet AASHTO T-190 requirements.
  - Zoning: Site is being developed under the Amended 5th Edition of the Subdivision and Land Development Regulations for RA-15 (including the Supplementary Regulations for Traditional Residential Neighborhoods). This plan is subject to the Amended Zoning Regulations per ZRA-65.
  - Applicable DPZ File Reference: S 04-04, HP 04-05, P-06-001, F-06-014, HP 06-045, ZRA-65, P-06-004, F-07-001, F-07-014, F-07-017, F-08-001, F-08-006, F-08-022, F-08-028, F-10-060 & HP-10-107.
  - This project is in conformance with the latest Howard County standards unless waivers have been approved (HP 04-05, HP-06-045 & HP-10-107 see Notes 31 & 35 below).
  - Traffic Study and Traffic Signal Warrant Analysis by The Traffic Group, dated Jan. 26, 2004.
  - Boundary information is from boundary surveys by Gutschick, Little, and Weber, P.A., dated May, 2003.
  - Horizontal and vertical datum is based on Howard County Control Stations: 316A, 314A.
  - Aerial topography by McKenzie Snyder, Inc. on 5/23/03. Topography N1 of Md Route 10B provided by Ho. Co.
  - Metland and stream delineation by Exploration Research, Inc. submitted and approved under Sketch Plan S 04-01 dated 2/15/03. Jurisdictional determination and verification of delineation of waters of the U.S. by U.S. Army Corps of Engineers on 3/28/03. No clearing, grading or construction is permitted within wetlands, streams or their required buffers, unless approved by DPZ as necessary disturbances or waivers have been approved. The Department of Planning and Zoning has determined that the proposed road crossing located within the environmental features and buffers are considered necessary road disturbances in accordance with Section 16.116(a) of the Howard County Subdivision and Land Development Regulations.
  - Vehicle ingress & egress to MD Route 10B is prohibited except as indicated on F-07-043. Vehicle ingress and egress to Snowden River Parkway and MD Route 100 is prohibited.
  - The Cemetery Inventory Maps do not show any cemeteries within the project limits. However, a cemetery does exist on the northern corner of the adjacent Curtis Property.
  - The Scenic Roads Map does not indicate any scenic roads within or adjacent to the project limits.
  - Existing utilities are based on available Howard County records and previous Shipley's Grant plans.
  - This property is within the Metropolitan District.
  - Water and Sewer are Public per Contract No. 14-4604-D and are within the Little Patuxent Sewerage Area.
  - 100-Year Flood plain prepared by Gutschick, Little, and Weber, P.A. was submitted and approved as a part of F 06-014 dated September, 2005.
  - All public streets within this development shall have sidewalks on both sides of the roadway. SFA lots may not be numbered with sidewalks and/or sidewalk easements.
  - Notes study by Myle Laboratories, dated May 12, 2005 and updated July 12, 2005.
  - A Forest Stand Delineation Plan was submitted and approved for the area covered by this plan under S 04-01 February 15, 2005. A Forest Conservation Plan was submitted and approved for the area covered by this plan under F 06-014.
  - To fulfill the forest conservation requirements of this site, at least 1.49 acres of retention and 1.04 acres of afforestation are required. This requirement was addressed by providing 1.49 acres of on-site forest retention, 5.14 acres of on-site afforestation, and 130 acres of off-site afforestation or 2.60 acres of off-site retention to be provided with the Phase 6 plans. Forest conservation easements have been established under F-06-14, F-04-88, F-08-117, and F-10-60.
  - The 5.14 acres of on-site afforestation is hereby reduced to 5.68 acres as a result of a revision to reduce the area of Forest Conservation Easement No. 2A (currently Easement 2E), reduce the area of Forest Conservation Easement No. 3 (currently Easement 4A, 4B, 4C, and 4D) and correct the afforestation area within Forest Conservation Easement No. 3. An abandonment fee was required for the 0.06 acre of abandoned afforestation in the existing forest conservation easement. No abandonment fee was required for the 0.01 acre of non-created retention removed from Easement No. 4. The abandonment fee of \$328,200 was paid to the Howard County Forest Conservation Fund with the F-10-60 final major submission.
  - The 130 acres of off-site afforestation shall be met by providing 130 acres of afforestation or 2.60 acres of retention before the Phase 6 of this project can be approved by DPZ.
  - 2.15 acres of the total 5.14 acres of afforestation is in Forest Conservation Area Easement No. 5 shown on the approved F-06-14 Forest Conservation Plan. The easement for the 2.15 acres of afforestation in Forest Conservation Area Easement No. 5 was recorded on Plat No. 21071. (F-04-88)
  - Where referred to herein, "Lot(s)" includes lot(s) as defined in Subdivision Sections 108(b)(30) and 108(b)(60).
  - The minimum width of Common Open Space Lots that contain alleys shall be 24 feet. The minimum width of alley drive lanes shall be 16 feet.
  - All Open Space Lots are to be conveyed to the Shipley's Grant Homeowner's Association.
  - During the 2006 legislative session, the County Council of Howard County introduced Bill ZRA-65 to amend the Howard County Zoning Regulations pertaining to Traditional Residential Neighborhoods by expanding the applicability of the regulations to B-1 and FOR zoning districts, changing setback requirements, and changing maximum lot coverage, under certain circumstances. The effective date of the amended Zoning Regulations is April 10, 2006.
  - On July 14, 2004, HP 04-05, a waiver of Section 16.120.2(4) was granted which requires single family attached lots to have at least 15' of frontage onto a public road right-of-way Section 16.114(a)(5), which requires truncation of public road right-of-way boundaries where public roads intersect (at corner lots), and Section 16.116.2(1) which prohibits disturbance to streams and stream buffers, to allow construction of two pedestrian bridges to cross the streams. Subject to the following 2 conditions in the approval letter:
    - The disturbance to the stream and stream buffer related to the pedestrian bridges shall be minimized. The Preliminary Plan shall show the limit of disturbance and proposed grading associated with the bridges, and shall be subject to review and approval by the Subdivision Review Committee.
    - If it is determined by the DEP that sight distance is inadequate at the intersections for which truncation as waived, then the appropriate easements must be added to the plan/plot.
  - On March 23, 2006, HP-06-45, approved the waivers for the following: Section 16.116(a)(1) request to be permitted to grade within 25 feet of a wetland; Section 16.116(a)(2)(i) request to be permitted to grade within 15 feet of a perennial stream; Section 16.114(f)(1) request to be permitted to obtain vehicular access from minor arterial road instead of a lesser classification road for a proposed subdivision that fronts on minor and principle arterial roads and local road; Section 16.120.2(1) request to be permitted to create commercial and apartment units on parcels without a minimum of 60 feet of frontage on an approved public road, and Section 16.114(f) request to be permitted to not submit and obtain approval of the required preliminary plan for a major subdivision before submitting the required final plan/plot. Subject to the following 4 conditions in the approval letter:
    - Compliance with the DEP comments of 2/14/06.
    - The stream and wetland buffers shall be afforested in accordance with the forest conservation plan for final plan/plot, F-06-14.
    - The applicant must obtain all required State/COE permits.
    - The stream and wetland buffer disturbances shall not exceed the one shown on the HP-06-45 exhibit of 2/2/06.
  - Landscape survey in the amount of \$240,000 shall be posted as a part of the Developer's Agreement.
  - On July 6, 2006, a re-phasing of Shipley's Grant in accordance with the provisions of Section 16.110(a)(1) was granted. The re-phasing was granted as follows:
 

Phase	Allocation Year	No. of Units
V	2011	54
VI	2012	85

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 5-14-10  
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 [Signature] 5/20/10  
 Chief, Division of Land Development

APPROVED: [Signature] 5/20/10  
 Chief, Development Engineering Division

GLWGUTSCHICK LITTLE & WEBER, P.A.  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE, SUITE 220 - BERTHLETT OFFICE PARK  
 BERTHLETT, MARYLAND 20838  
 TEL: 301-381-4024 BALT: 410-880-1820 DC/VA: 301-889-2524 FAX: 301-421-4188

DATE	REVISION	BY	APPR.

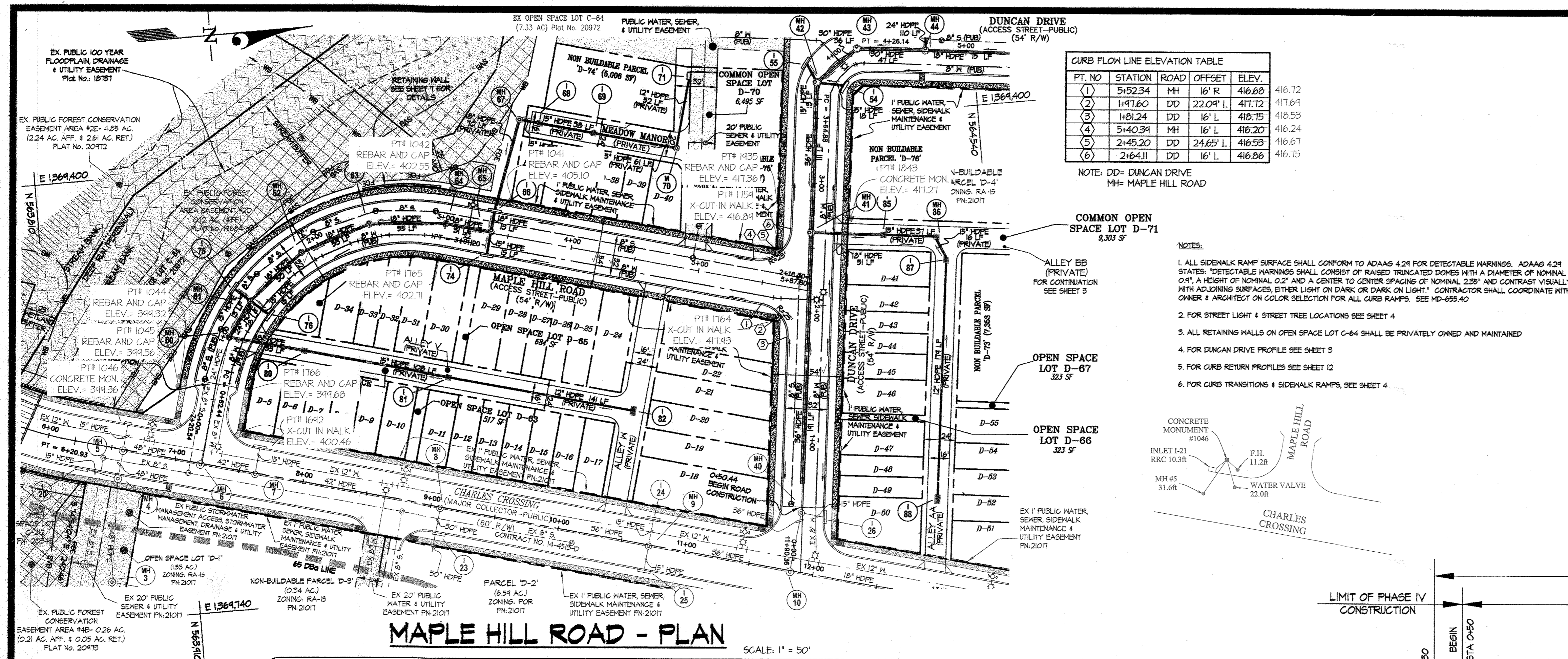
OWNER  
 BA WATERLOO, LLC.  
 c/o BOZZUTO HOMES, INC.  
 7850 WALKER DRIVE, SUITE 400  
 GREENBELT, MARYLAND 20770  
 ATTN: DUNCAN SLIDELL  
 301-623-1525

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14883, EXPIRATION DATE: MAY 21, 2012



COVER SHEET  
**SHIPLEY'S GRANT**  
 PHASE V  
 Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
 Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
 AND PHASE I  
 Open Space Lot C-64  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
AUGUST 2022 MAY, 2010	37-1&2	1 OF 12



**MAPLE HILL ROAD - PLAN**

SCALE: 1" = 50'

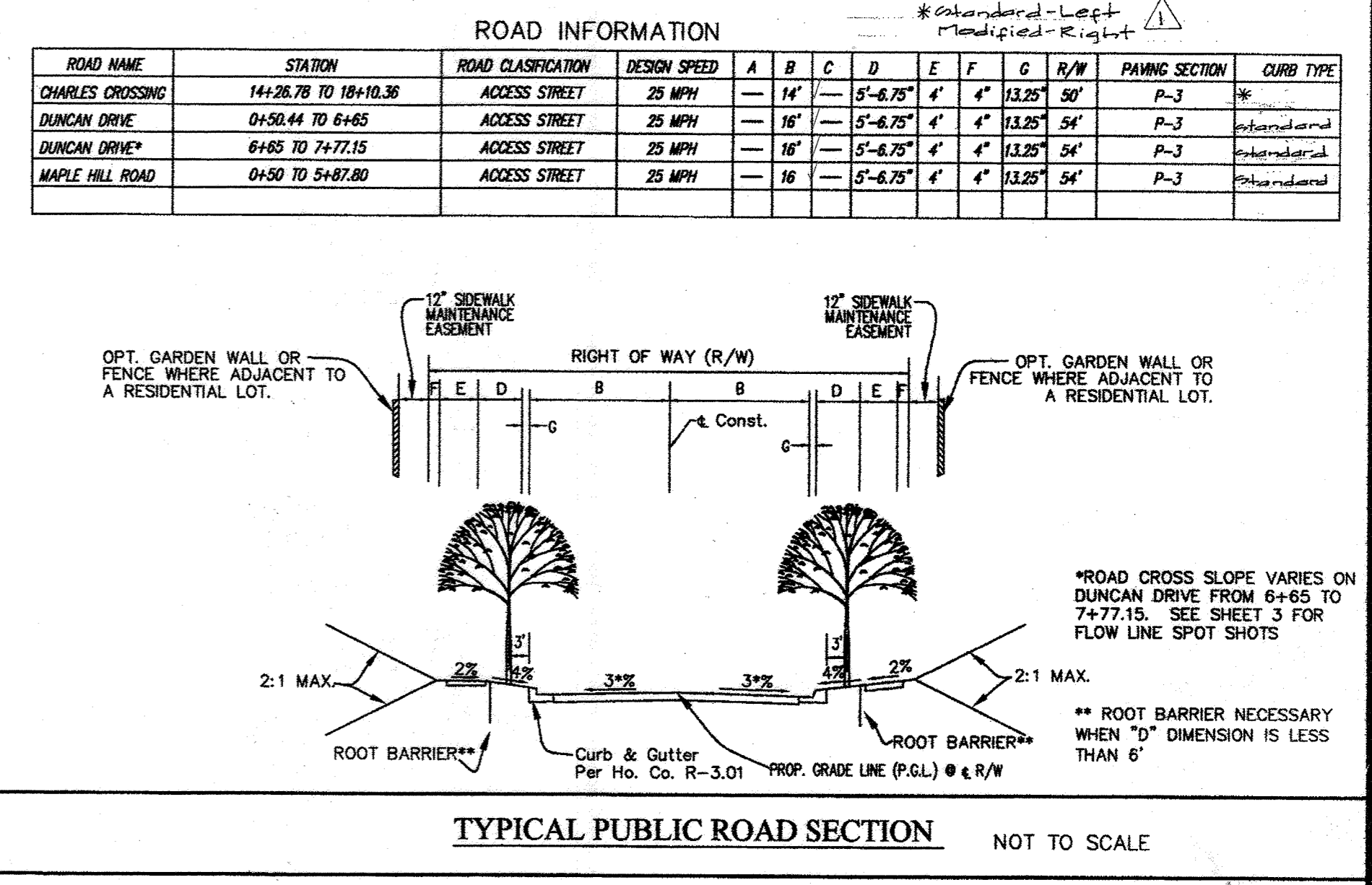
CENTERLINE CURVE DATA							
STREET NAME	P.C. STA.	P.C.G. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD
MAPLE HILL ROAD	0+62.44	—	3+01.20	152.00'	238.76'	152.00'	214.96'
							B. 24° 54' 04" E.
							90° 00' 00"

CURB FLOW LINE ELEVATION TABLE				
PT. NO.	STATION	ROAD	OFFSET	ELEV.
1	5+52.34	MH	16' R	416.69
2	1+97.60	DD	22.04' L	417.72
3	1+81.24	DD	16' L	416.75
4	5+40.34	MH	16' L	416.20
5	2+45.20	DD	24.65' L	416.53
6	2+64.11	DD	16' L	416.75

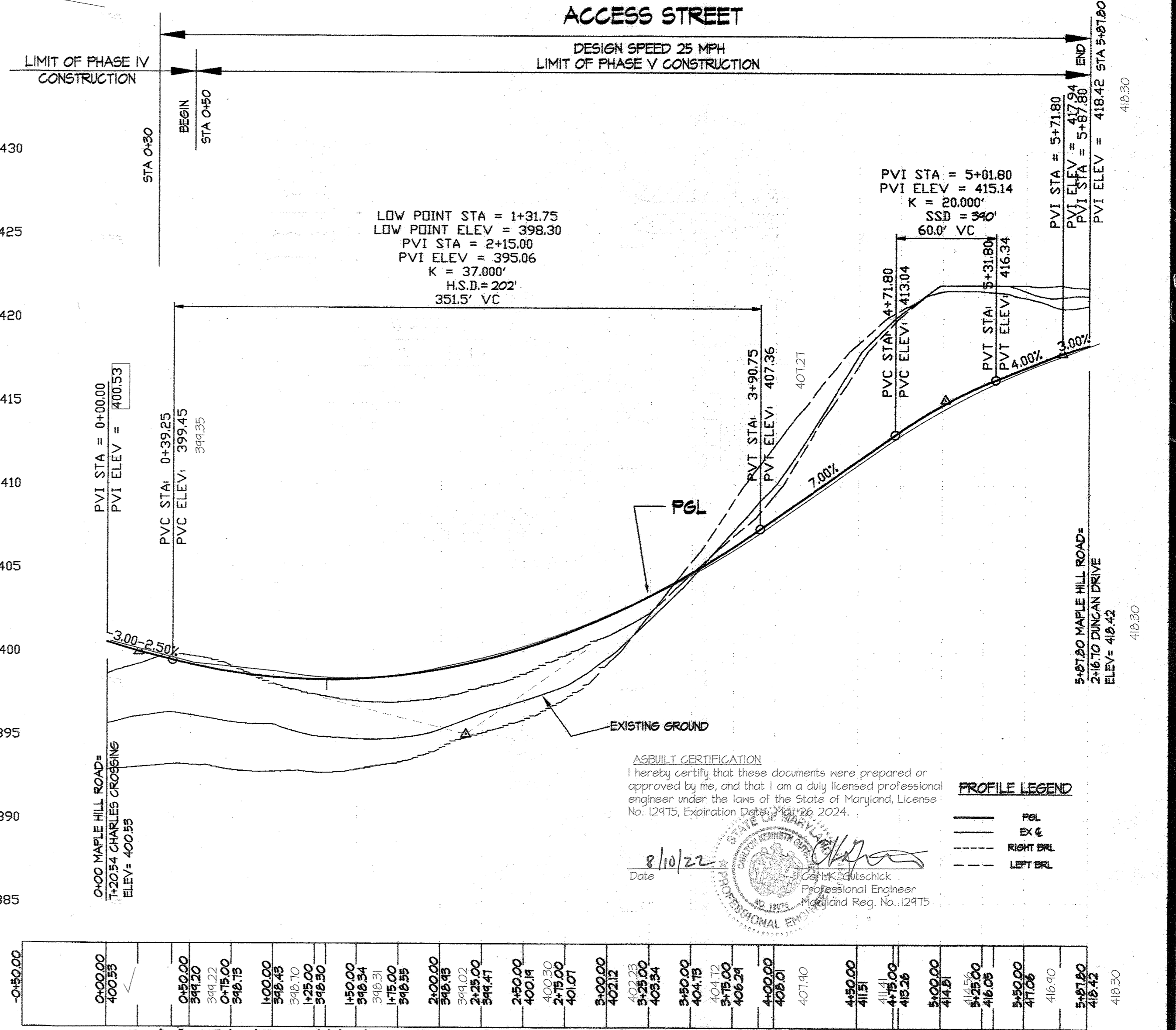
NOTE: DD= DUNCAN DRIVE  
MH= MAPLE HILL ROAD

**NOTES:**

1. ALL SIDEWALK RAMP SURFACE SHALL CONFORM TO ADAAG 4.21 FOR DETECTABLE MARKINGS. ADAAG 4.21 STATES: "DETECTABLE MARKINGS SHALL CONSIST OF RAISED RECTANGULAR DOMES WITH A DIAMETER OF NOMINAL 0.4', A HEIGHT OF NOMINAL 0.2' AND A CENTER TO CENTER SPACING OF NOMINAL 2.0' AND CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT ON DARK OR DARK ON LIGHT." CONTRACTOR SHALL COORDINATE WITH OWNER & ARCHITECT ON COLOR SELECTION FOR ALL CURB RAMPS. SEE MD-655.40
2. FOR STREET LIGHT & STREET TREE LOCATIONS SEE SHEET 4
3. ALL RETAINING WALLS ON OPEN SPACE LOT C-64 SHALL BE PRIVATELY OWNED AND MAINTAINED
4. FOR DUNCAN DRIVE PROFILE SEE SHEET 3
5. FOR CURB RETURN PROFILES SEE SHEET 12
6. FOR CURB TRANSITIONS & SIDEWALK RAMPS, SEE SHEET 4

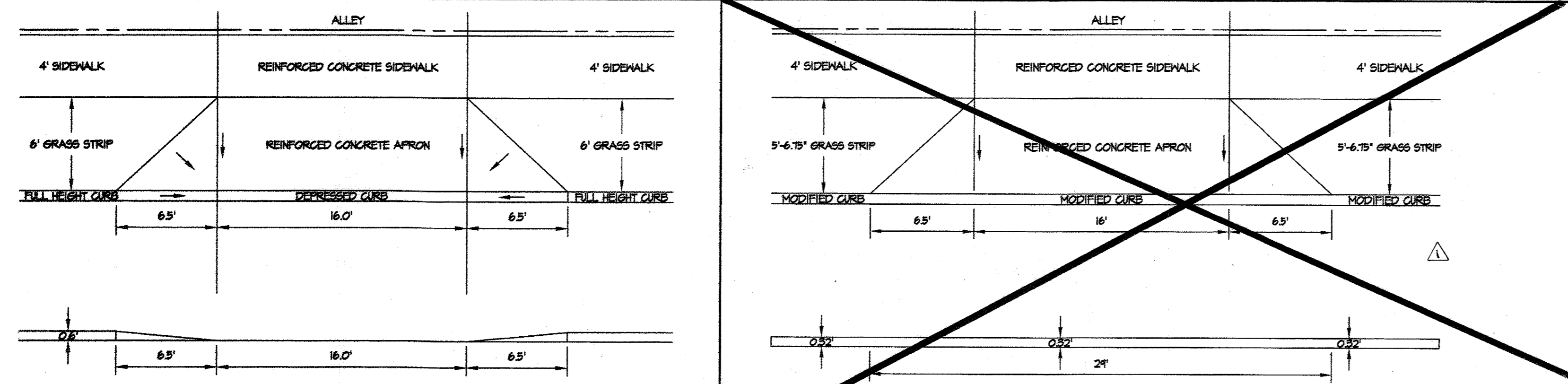


**TYPICAL PUBLIC ROAD SECTION**  
NOT TO SCALE



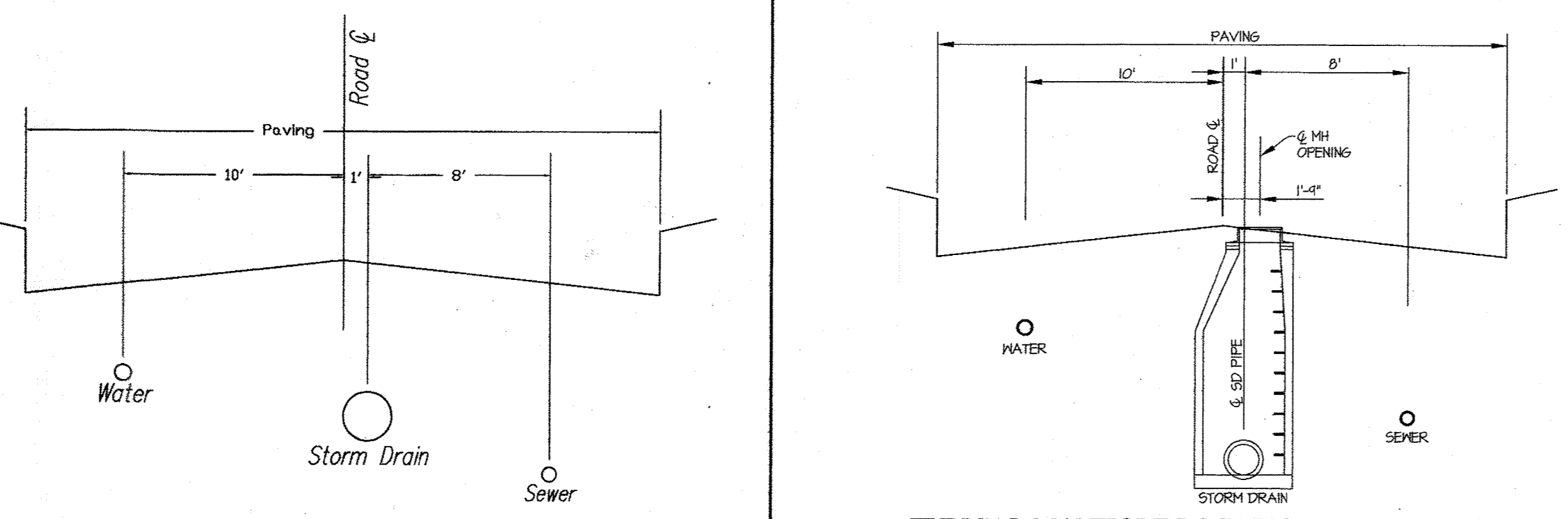
**MAPLE HILL ROAD PROFILE**

SCALE: (H) 1" = 50'  
(V) 1" = 5'



**DRIVEWAY ENTRANCE DETAIL 1**  
ALLEYS ADJACENT TO ACCESS STREETS W/ COMBINATION CURB AND GUTTER

**DRIVEWAY ENTRANCE DETAIL 2**  
ALLEYS ADJACENT TO ACCESS STREETS W/ MODIFIED CURB AND GUTTER



**TYPICAL UTILITY LOCATIONS**  
NOT TO SCALE

**TYPICAL MANHOLE LOCATION IN ROADWAY**  
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Walter M. M...* 5-14-10  
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Kat S...* 5/26/10  
Chief, Division of Land Development

*...* 5/26/10  
Chief, Development Engineering Division

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK  
BURTNSVILLE, MARYLAND 20866  
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-988-2324 FAX: 301-421-4186

**OWNER**  
BA WATERLOO, LLC.  
c/o BOZZUTO HOMES, INC.  
7850 WALKER DRIVE, SUITE 400  
GREENBELT, MARYLAND 20770  
ATTN: DUNCAN SLIDELL  
301-623-1525

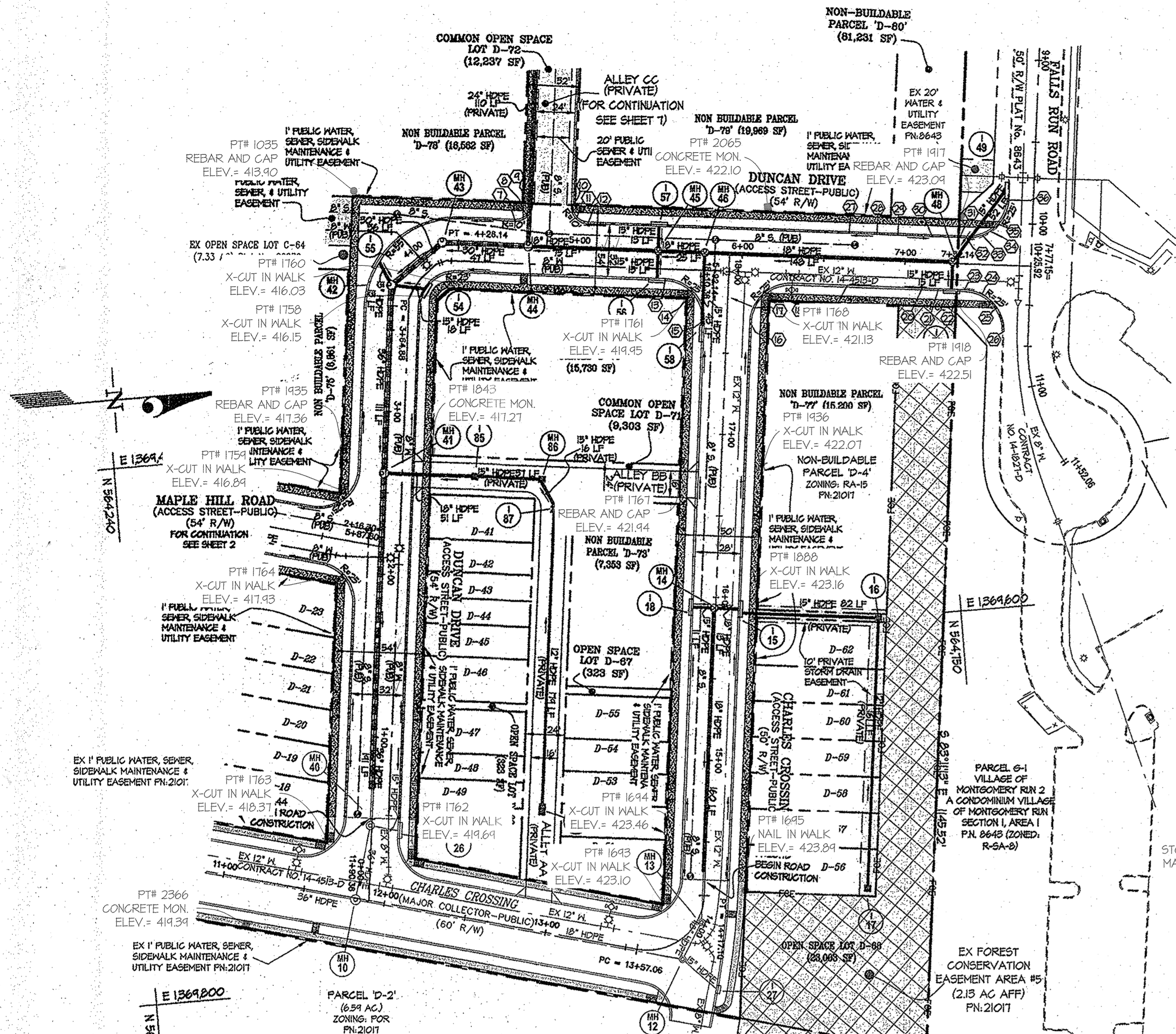
**PROFESSIONAL CERTIFICATION**  
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 14831  
EXPIRATION DATE: MAY 25, 2017

**MAPLE HILL ROAD PLAN AND PROFILE**

**SHIPLEY'S GRANT**  
PHASE V  
Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
AND PHASE I  
Open Space Lot C-64

ELECTION DISTRICT No. 1

SCALE AS SHOWN  
ZONING R-A-15  
G. L. W. FILE NO. 08002  
DATE AUGUST 1, 2022  
TAX MAP - GRID 37-1&2  
SHEET 2 OF 12



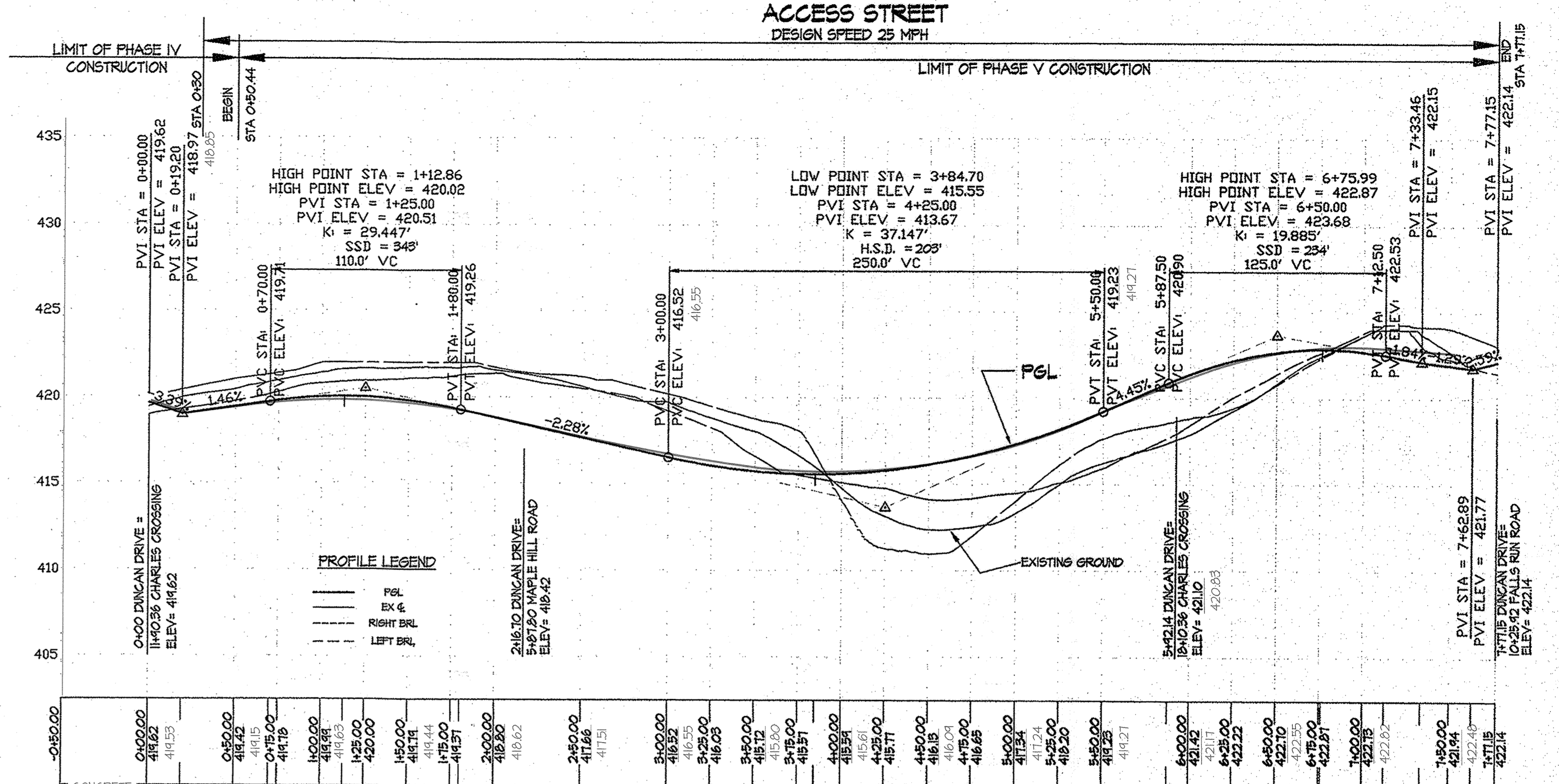
**CHARLES CROSSING & DUNCAN DRIVE - PLAN** SCALE: 1" = 50'

CURB FLOW LINE ELEVATION TABLE				CURB FLOW LINE ELEVATION TABLE				CURB FLOW LINE ELEVATION TABLE						
PT. NO	STATION	ROAD	OFFSET	ELEV.	PT. NO	STATION	ROAD	OFFSET	ELEV.	PT. NO	STATION	ROAD	OFFSET	ELEV.
(7)	4+60.14	DD	16' L	415.84	(19)	6+65	DD	16' R	422.36	(31)	7+83	DD	16' L	422.36
(8)	4+67.21	DD	10.43' L	416.22	(20)	7+11	DD	16' R	422.08	(32)	7+87.02	DD	16' L	422.25
(9)	4+70.14	DD	26' L	416.20	(21)	7+21	DD	16' R	421.40	(33)	7+47.67	DD	17.44' L	422.11
(10)	4+84.14	DD	26' L	416.42	(22)	7+33	DD	16' R	421.86	(34)	7+51.34	DD	20.51' L	422.02
(11)	4+91.07	DD	10.43' L	416.46	(23)	7+37.10	DD	16' R	421.78	(35)	7+56.31	DD	25.04' L	422.14
(12)	5+04.14	DD	16' L	416.94	(24)	7+47.72	DD	18.37' R	421.56	(36)	7+62.02	DD	40.60' L	match ex
(13)	5+53.14	DD	16' R	418.24	(25)	7+57.36	DD	26.33' R	421.43					
(14)	5+70.82	DD	23.52' R	414.66	(26)	7+62.10	DD	40.66' R	match ex					
(15)	7+64.36	CC	14' L	420.47	(27)	6+65	DD	16' L	422.36					
(16)	7+64.36	CC	14' R	420.41	(28)	6+82	DD	16' L	422.54					
(17)	6+07.83	DD	31.47' R	420.37	(29)	6+45	DD	16' L	422.50					
(18)	6+31.14	DD	16' R	421.88	(30)	7+16	DD	16' L	422.47					

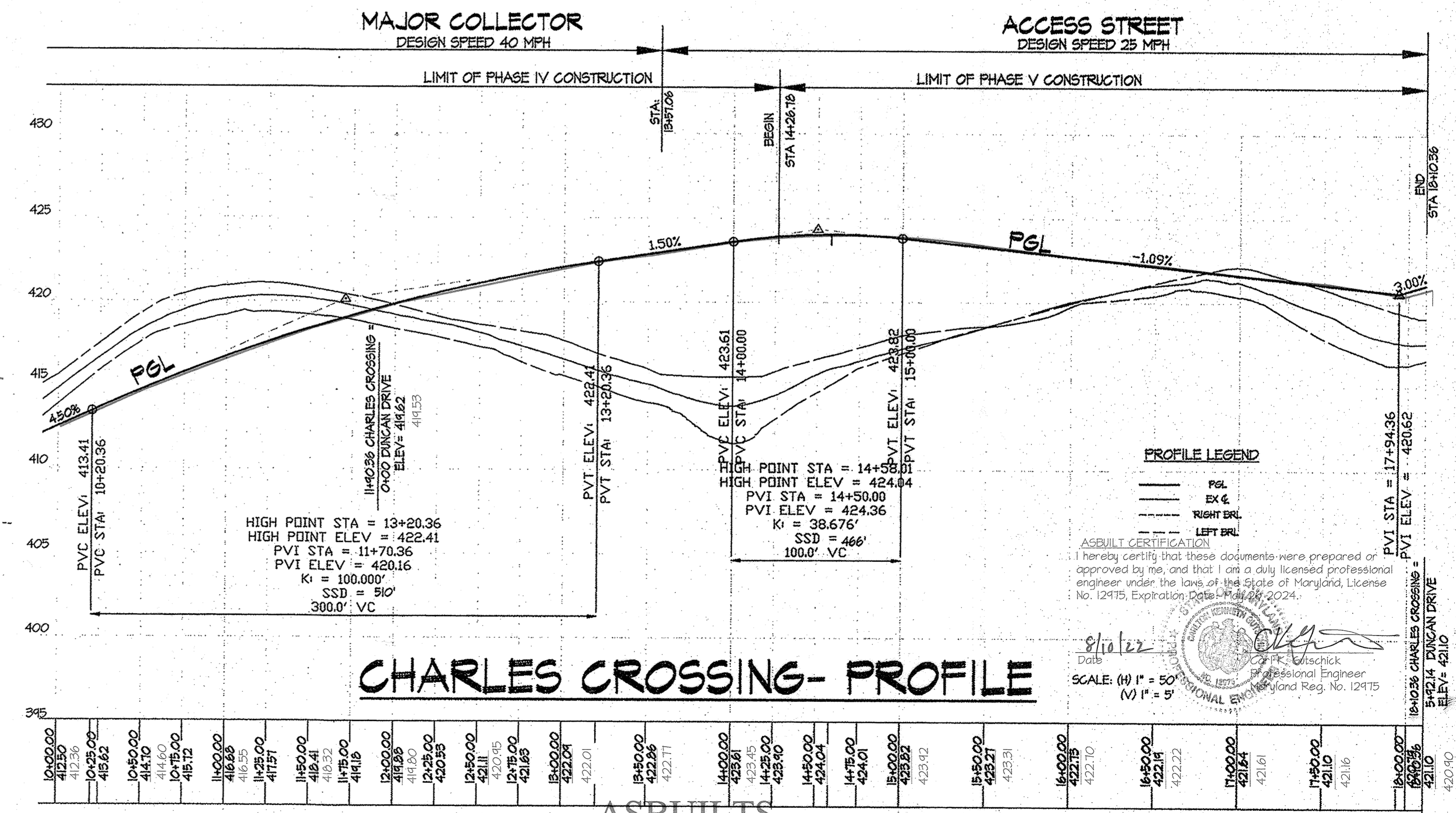
NOTE: CC = CHARLES CROSSING  
DD = DUNCAN DRIVE

CENTERLINE CURVE DATA								
STREET NAME	P.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
DUNCAN DRIVE	3+64.28	4+28.14	34.00'	61.26'	34.00'	55.15'	N 88° 11' 18" W	90° 00' 00"

- NOTES:
- ALL SIDEWALK RAMP SURFACE SHALL CONFORM TO ADAAG 4.24 FOR DETECTABLE WARNINGS. ADAAG 4.24 STATES: "DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED CONES WITH A DIAMETER OF NOMINAL 0.4", A HEIGHT OF NOMINAL 0.2" AND A CENTER TO CENTER SPACING OF NOMINAL 2.5" AND CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT OR DARK OR DARK ON LIGHT." CONTRACTOR SHALL COORDINATE WITH OWNER & ARCHITECT ON COLOR SELECTION FOR ALL CURB RAMPS. SEE MD-655.40
  - FOR MAPLE HILL ROAD PROFILE SEE SHEET 2
  - FOR STREET LIGHT & STREET TREE LOCATIONS SEE SHEET 4
  - FOR CURB RETURN PROFILES SEE SHEET 12
  - FOR CURB TRANSITIONS & SIDEWALK RAMPS, SEE SHEET 4



**DUNCAN DRIVE - PROFILE** SCALE: (H) 1" = 50' (V) 1" = 5'



**CHARLES CROSSING - PROFILE** SCALE: (H) 1" = 50' (V) 1" = 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Walter A. Maltz* 5-14-10  
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Kate S. Lander* 4/26/10  
 Chief, Division of Land Development

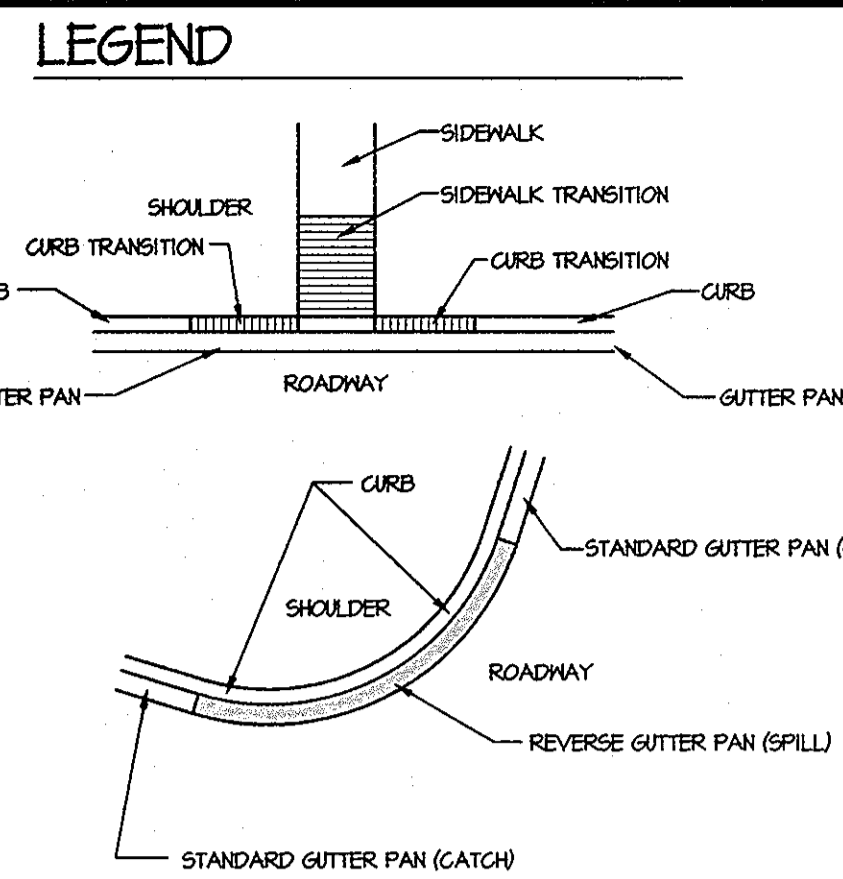
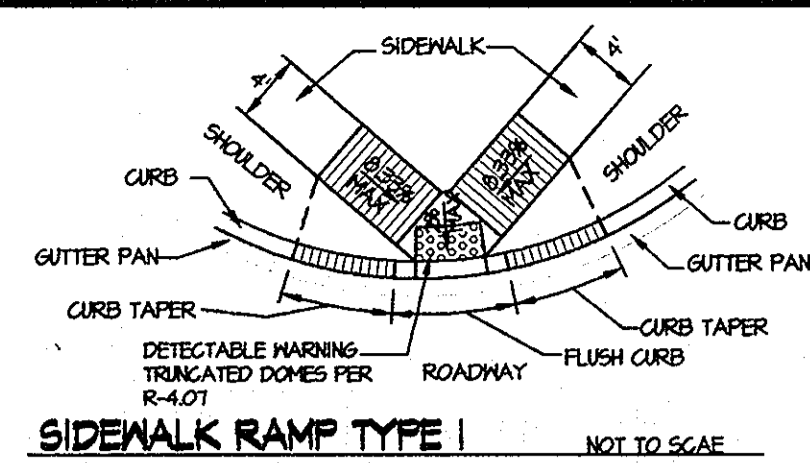
**GLWGutschick Little & Weber, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 220 - BARTONVILLE OFFICE PARK  
 BARTONVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-988-2524 FAX: 301-421-4186

OWNER  
 BA WATERLOO, LLC.  
 c/o BOZZUTO HOMES, INC.  
 7850 WALKER DRIVE, SUITE 400  
 GREENBELT, MARYLAND 20770  
 ATTN: DUNCAN SLIDELL  
 301-623-1525

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14931  
 EXPIRATION DATE: MAY 21, 2012

**ASBUILTS**  
**CHARLES CROSSING & DUNCAN DRIVE PLAN AND PROFILE**  
**SHIPLEY'S GRANT**  
 PHASE V  
 Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
 Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
 AND PHASE I  
 Open Space Lot C-64  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
MAY, 2010	37-1&2	3 OF 12



**CURB TRANSITION NOTES**

- TRANSITION FROM 1" COMBINATION CURB AND GUTTER TO MODIFIED COMBINATION CURB AND GUTTER (10' MIN.) PER R-3.02
- TRANSITION FROM 1" COMBINATION CURB AND GUTTER TO FLUSH CURB AND GUTTER (5' MIN.) PER R-3.02
- FLUSH CURB AND GUTTER.\* PER R-3.07
- TRANSITION FROM FLUSH CURB AND GUTTER TO MODIFIED COMBINATION CURB AND GUTTER (5' MIN.) PER R-3.02
- TRANSITION FROM FLUSH CURB AND GUTTER TO 6" COMBINATION CURB AND GUTTER (5' MIN.) PER R-3.02
- TRANSITION FROM MODIFIED CURB AND GUTTER TO 1" COMBINATION CURB AND GUTTER FOR INLETS PER R-3.06 (15' MIN.)
- NOSE DOWN CURB (5' MIN) PER R-3.02

\*NOTE: ALL SIDEWALK RAMPS SHALL HAVE A DETECTABLE WARNING SURFACE. SEE HOWARD COUNTY DETAIL R-4.07.

**STREET TREE SCHEDULE**

LINEAR FEET OF CURBLINE	2870 LF.
NUMBER OF STREET TREES REQUIRED, STREET TREES (1:40)	12
NUMBER OF STREET TREES PROVIDED, STREET TREES (2:1 SUBSTITUTION)	12
OTHER TREES (2:1 SUBSTITUTION)	0



- GENERAL NOTES:**
- A 20' MINIMUM DISTANCE SHALL BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND ANY STREET LIGHT.
  - A 5' MINIMUM DISTANCE SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND A FIRE HYDRANT.
  - SEE SHEET II FOR TREE PLANTING DETAIL.

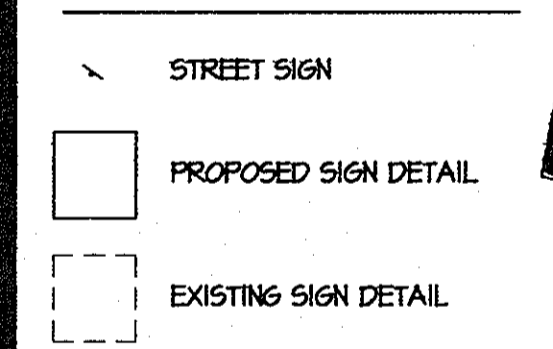
**STREET LIGHT LOCATIONS**

STREET	STATION	OFFSET
CHARLES CROSSING	15+40	11' LEFT
CHARLES CROSSING	16+83	11' LEFT
CHARLES CROSSING	17+70	11' LEFT
MAPLE HILL ROAD	1+25	11' RIGHT
MAPLE HILL ROAD	1+42	11' LEFT
MAPLE HILL ROAD	3+26	11' LEFT
MAPLE HILL ROAD	4+05	11' RIGHT
MAPLE HILL ROAD	5+41	20' LEFT
DUNCAN DRIVE	1+20	11' RIGHT
DUNCAN DRIVE	2+77	11' RIGHT
DUNCAN DRIVE	3+42	11' LEFT
DUNCAN DRIVE	4+61	11' LEFT
DUNCAN DRIVE	6+50	11' RIGHT
DUNCAN DRIVE	7+54	30' LEFT

**CONSTRUCTION DETAILS**

- INSTALL GROUND MOUNTED SIGN
- INSTALL LIGHT POLE MOUNTED SIGN

**SIGN LEGEND**



- SIGNING NOTES:**
- SIGN ERRECTED AT THE SIDE OF THE ROAD SHALL BE MOUNTED AT A HEIGHT OF AT LEAST 1 FEET MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVING.
  - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
  - SIGNS SHALL BE 12" TO 18" FROM EDGE OF SIGN TO CURBLINE. STOP SIGNS SHALL BE LOCATED 15' BACK FROM INTERSECTING STREET CURB LINE OR AS DIRECTED BY HOWARD COUNTY TRAFFIC DIVISION.
  - ALL SIGN LOCATIONS WITHIN THE PUBLIC RIGHT OF WAY SHALL BE APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION PRIOR TO ANY INSTALLATIONS.
  - ALL "NO PARKING" SIGNS SHOWN ON THE PLANS ARE ONLY A REPRESENTATION OF WHAT ACTUALLY MIGHT BE INSTALLED IN THE DEVELOPMENT. THE TRAFFIC DIVISION WILL DETERMINE THE LOCATION AND TYPE OF ALL "NO PARKING" SIGNS AT TIME OF INSTALLATION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*W. R. W.* 5-14-10  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*K. S.* 5/21/10  
 Chief, Division of Land Development Date

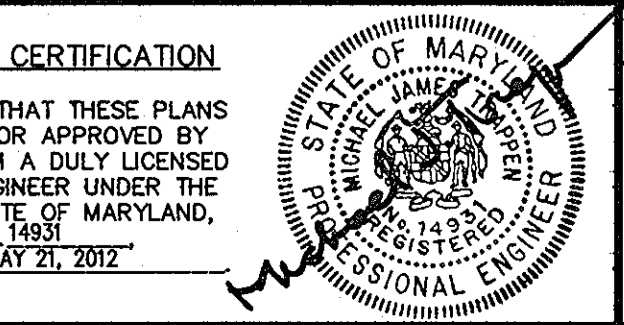
*M. J.* 5/21/10  
 Chief, Development Engineering Division Date

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK  
 BURTNSVILLE, MARYLAND 20868  
 TEL: 301-421-4024 FAX: 410-880-1820 DC/VA: 301-589-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

**OWNER**  
 BA WATERLOO, LLC.  
 c/o BOZZUTO HOMES, INC.  
 7850 WALKER DRIVE, SUITE 400  
 GREENBELT, MARYLAND 20770  
 ATTN: DUNCAN SLIDELL  
 301-623-1525

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19931  
 EXPIRATION DATE: MAY 21, 2012



**SIGNING, LIGHTING, STREET TREE, CURB DELINEATION PLAN & DETAILS**

**SHIPLEY'S GRANT**  
 PHASE V  
 Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-80  
 Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
 AND PHASE I  
 Open Space Lot C-64

ELECTION DISTRICT No. 1

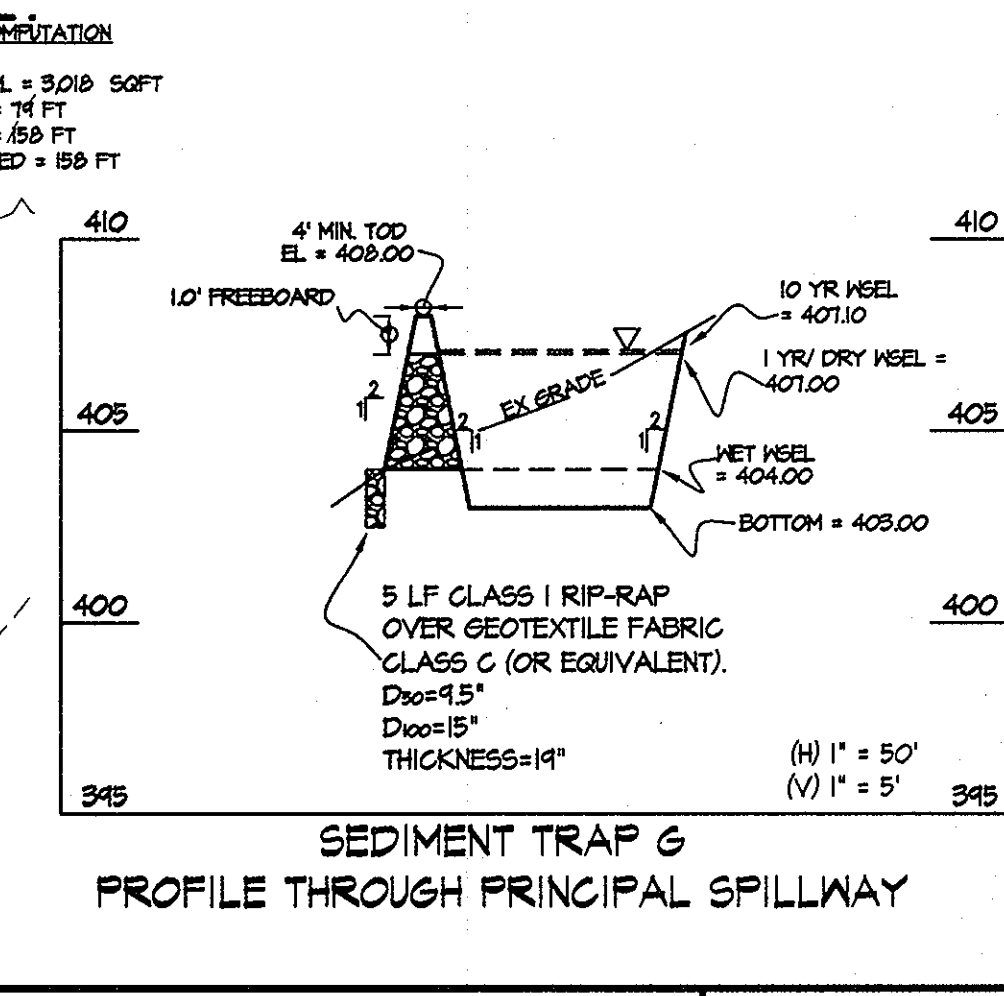
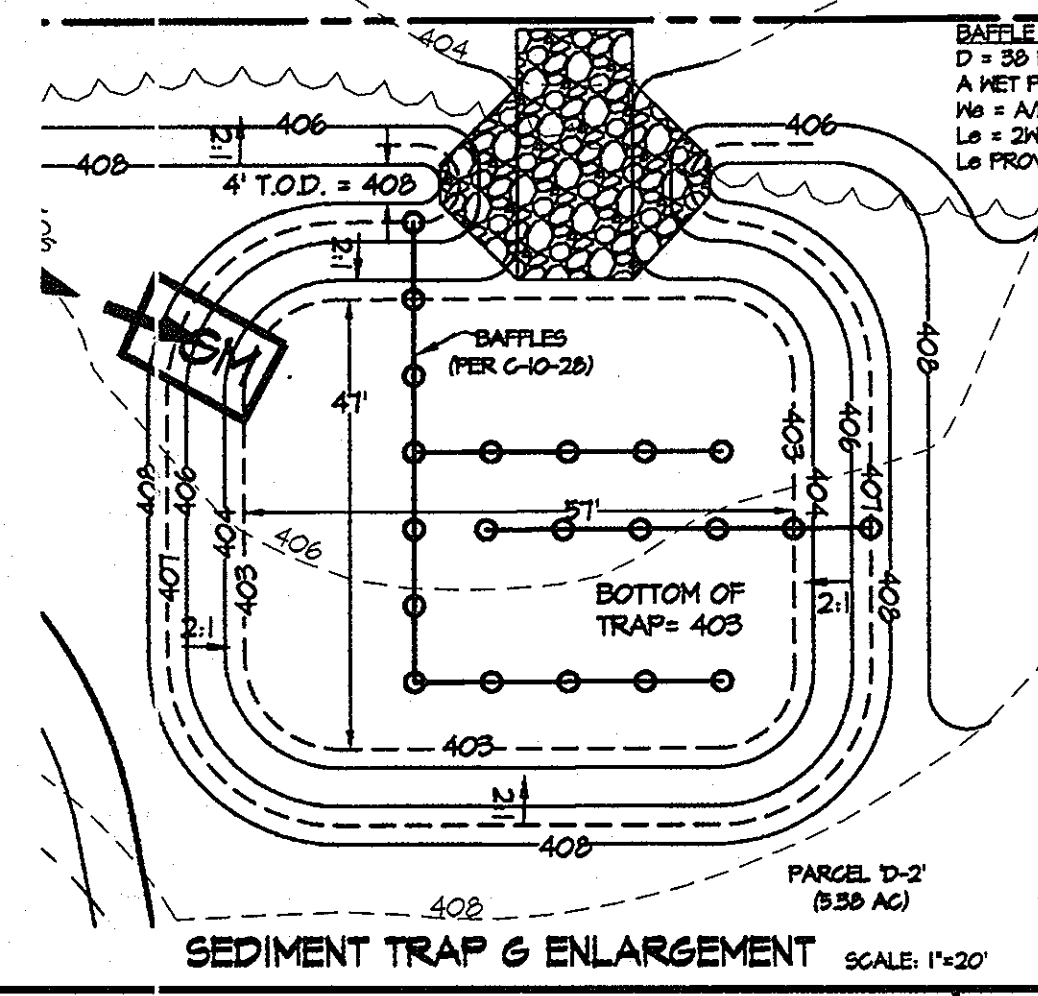
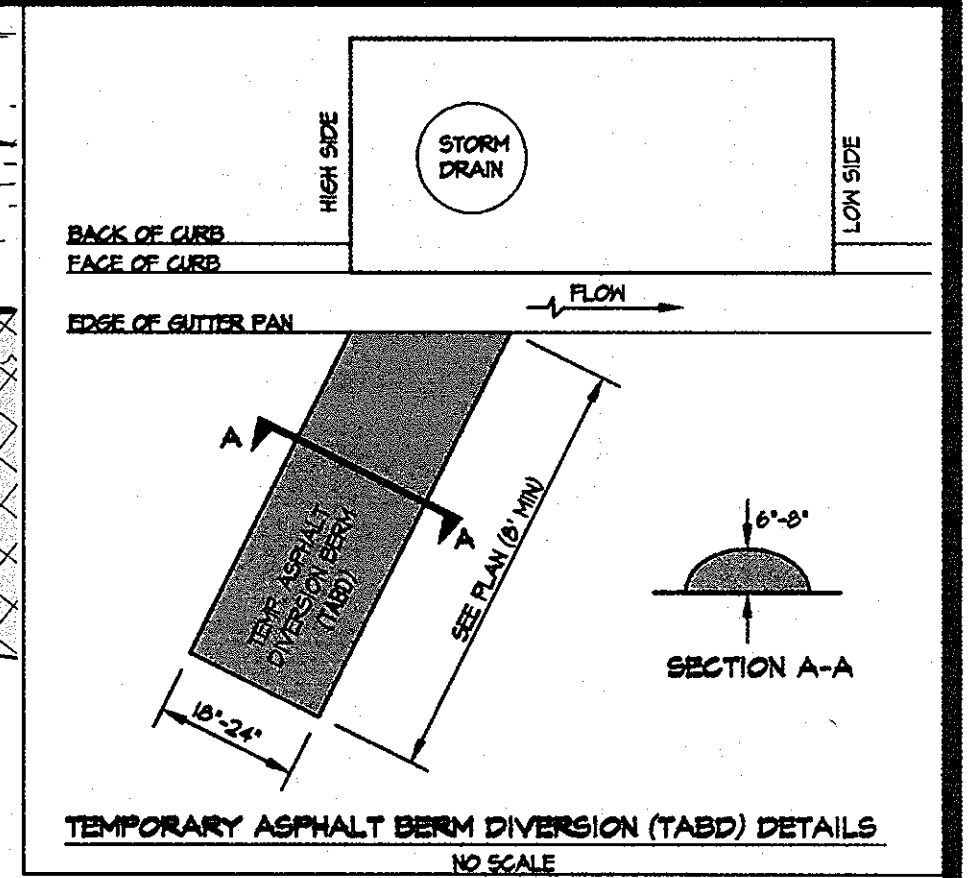
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=30'	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
MAY, 2010	37-1&2	4 OF 12

**LEGEND**

- 60- EXISTING CONTOUR
- 80- PROPOSED CONTOUR
- 100 YEAR FLOODPLAIN EASEMENT
- FF- 100 YEAR FLOODPLAIN
- SSF- PROPOSED SUPER SILT FENCE
- SF- PROPOSED SILT FENCE
- LIMIT OF DISTURBANCE
- TEMPORARY SWALE
- EARTH DIKE
- TEMPORARY DRAINAGE DIVIDE
- SCE- STABILIZED CONSTRUCTION ENTRANCE
- TABD- PROPOSED TEMPORARY STOCKPILE AREA
- TABD- TEMPORARY ASPHALT BERM DIVERSION
- TIME OF CONCENTRATION PATH
- EROSION CONTROL MATING PER 6-22-2

- SEDIMENT AND EROSION CONTROL SEQUENCE OF CONSTRUCTION**
- OBTAIN GRADING PERMIT AND ARRANGE PRE-CONSTRUCTION MEETING WITH SEDIMENT CONTROL INSPECTOR (1 DAY).
  - EXAMINE THE EXISTING SEDIMENT CONTROL DEVICES (i.e. SCE AT ENTRANCE OFF FALLS RUN ROAD, BASIN D, & TEMPORARY SWALE B) FROM PHASE 4 (P-04-086) AND REPAIR AS NECESSARY. (2 DAYS).
  - INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE), CHD A, AND SILT FENCES ALONG EXISTING PORTION OF CHARLES CROSSING (2 DAYS).
  - INSTALL TRAPS G & H (20 DAYS).
  - INSTALL EARTH DIKES C & D AND SUPER SILT FENCE ALONG STREAM BUFFER (2 DAYS).
  - ONCE PERMSSION HAS BEEN GRANTED FROM THE SEDIMENT CONTROL INSPECTOR, MASS GRADE SITE. PROVIDE DUST CONTROL PER SPECIFICATIONS ON SHEET 6. ANY AREA DISTURBED WITH IN STREAM BUFFER MUST BE STABILIZED WITH EROSION CONTROL MATING (10 DAYS).
  - STABILIZE ALL DISTURBED AREA WITH SEED AND MULCH (5 DAYS).
  - INSTALL 51/8" DRAIN FROM MH-42 TO MH-40. LEAVE TOP OF MH-42 OFF TO ENABLE RUNOFF TO FLOW INTO STORM DRAIN (2 DAYS).
  - WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE TEMPORARY SWALE B. BRING AREA WITHIN THE SWALE REMOVAL GRADING AREA UP TO FINAL GRADE AS SHOWN ON GRADING PLAN (SHEET 7). INSTALL STORM DRAIN FROM MH-40 TO MH-61. LEAVE TOP OF MH-40 OFF TO ENABLE RUNOFF TO RANOFF TO FLOW INTO STORM DRAIN. STABILIZE THE SWALE REMOVAL GRADING AREA WITH SEED AND MULCH ONCE GRADING IS COMPLETE. (21 DAYS).
  - INSTALL ALL REMAINING UTILITIES, CURB & GUTTER, AND PAVEMENT. (41 DAYS).
  - THE REMAINING PERMETER CONTROLS MAY BE REMOVED WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, ONCE ALL AREAS DRAINING TO THEM HAVE BEEN STABILIZED.
  - WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REPAIR/REPLACE, STABILIZE AND CONVERT BASIN D TO THE PERMANENT SWH CONFIGURATION PER P-04-086 (21 DAYS).



**SEDIMENT TRAP G DATA TABLE**

STONE OUTLET SEDIMENT TRAP

EXISTING DRAINAGE AREA: 1.12 AC  
WORST CASE INTERIM DRAINAGE AREA: 1.25 AC

NET STORAGE VOL. REQUIRED: 0.06 AC-FT  
NET STORAGE VOL. PROVIDED: 0.06 AC-FT  
NET STORAGE ELEV.: 404.00  
DRY STORAGE REQUIRED: 0.06 AC-FT  
DRY STORAGE PROVIDED: 0.25 AC-FT  
DRY STORAGE ELEV.: 407.00  
EXISTING G-TFR: 0.23 cfs  
INTERIM G-TFR: 0.48 cfs  
SAFE PASS OF 1-YR STORM PROVIDED  
Q<sub>10</sub> = 3.24 cfs  
10-YR NEEL = 407.10 ft  
BOTTOM ELEVATION: 403.00  
TOP OF EMBANKMENT: 408.00  
NEEL LENGTH: 12'

EMERGENCY SPILLWAY ELEV.: NONE  
CLEANOUT ELEVATION: 403.50  
EMBANKMENT TOP WIDTH: 4.0'  
SIDE SLOPES: 2:1 INTERIOR - 3:1 EXTERIOR

**SEDIMENT BASIN D DATA TABLE**

PRECAST RISER OUTLET SEDIMENT BASIN

EXISTING DRAINAGE AREA TO STUDY POINT: 1.25 AC (EX-D)  
WORST CASE DRAINAGE AREA TO BASIN: 1.25 AC  
INTERIM DRAINAGE AREA: 1.25 AC (INT-D)

NET STORAGE VOL. REQUIRED: 0.41 AC-FT  
NET STORAGE VOL. PROVIDED: 1.16 AC-FT  
NET STORAGE ELEV.: 392.50  
DRY STORAGE REQUIRED: 0.41 AC-FT  
DRY STORAGE PROVIDED: 3.14 AC-FT  
DRY STORAGE ELEV.: 398.75  
EXISTING G-TFR: 1.11 cfs (EX-D)  
INTERIM G-TFR = 1.50 cfs (INT-D)  
SAFE PASS OF 10-YR STORM PROVIDED  
Q<sub>10</sub> = 2.24 cfs  
10-YR NEEL = 386.42 ft  
BOTTOM ELEVATION: 378.50  
TOP OF EMBANKMENT: 392.00  
OUTFALL 62 1/2" DIA RCP @ 2.00%  
RISER NEEL CREST ELEVATION: 388.75  
RISER NEEL LENGTH: 26.0'  
RISER TRASH RACK/ANTIVORTEX: N/A

DEMATERING DEVICE = 8" PERFORATED PVC  
WITH 8" PVC BARREL AT 0.0%  
DEMATERING INVERT AT 8" RISER = 378.50  
INVERT FIRST PERFORATION: 393.50  
INVERT LAST PERFORATION = 388.50  
DEMATERING PERFORATION CONFIGURATION:  
WITH 1" HOLES @ 2" C-C  
12 HOLES PER CIRCUMFERENTIAL ROW  
91 HOLES RAINING VERTICALLY  
444 HOLES TOTAL

EMERGENCY SPILLWAY ELEV.: NONE  
CLEANOUT ELEVATION: 390.10  
EMBANKMENT TOP WIDTH: 12'  
SIDE SLOPES: 3:1 INTERIOR - 3:1 EXTERIOR

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 5/14/10  
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 5/14/10  
Chief, Division of Land Development Date

DEVELOPER'S/BUILDER'S CERTIFICATE  
"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND 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 HCD."  
*[Signature]* 5/14/10  
SIGNATURE OF DEVELOPER/BUILDER DATE

ENGINEER'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]* 5/14/10  
ENGINEER'S SIGNATURE DATE

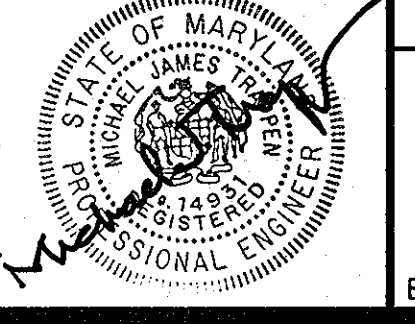
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* 5/14/10  
HOWARD SOIL CONSERVATION DISTRICT DATE

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK  
BURTNSVILLE, MARYLAND 20866  
TEL: 301-421-4024 FAX: 410-880-1820 DC/WA: 301-889-2324 FAX: 301-421-4188

DATE	REVISION	BY	APPR.

OWNER  
BA WATERLOO, LLC.  
c/o BOZZUTO HOMES, INC.  
7850 WALKER DRIVE, SUITE 400  
GREENBELT, MARYLAND 20770  
ATTN: DUNCAN SUIDELL  
301-623-1525

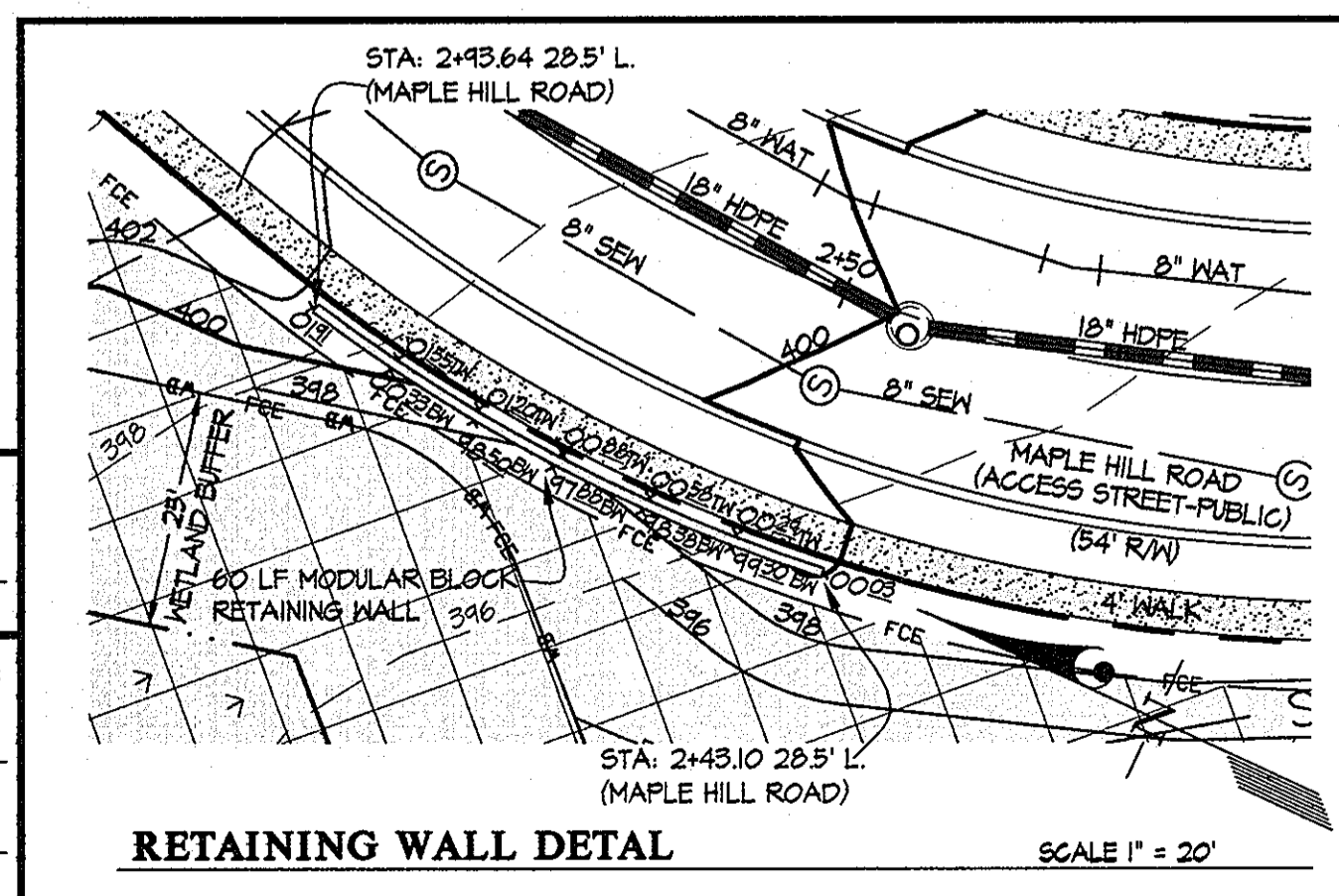
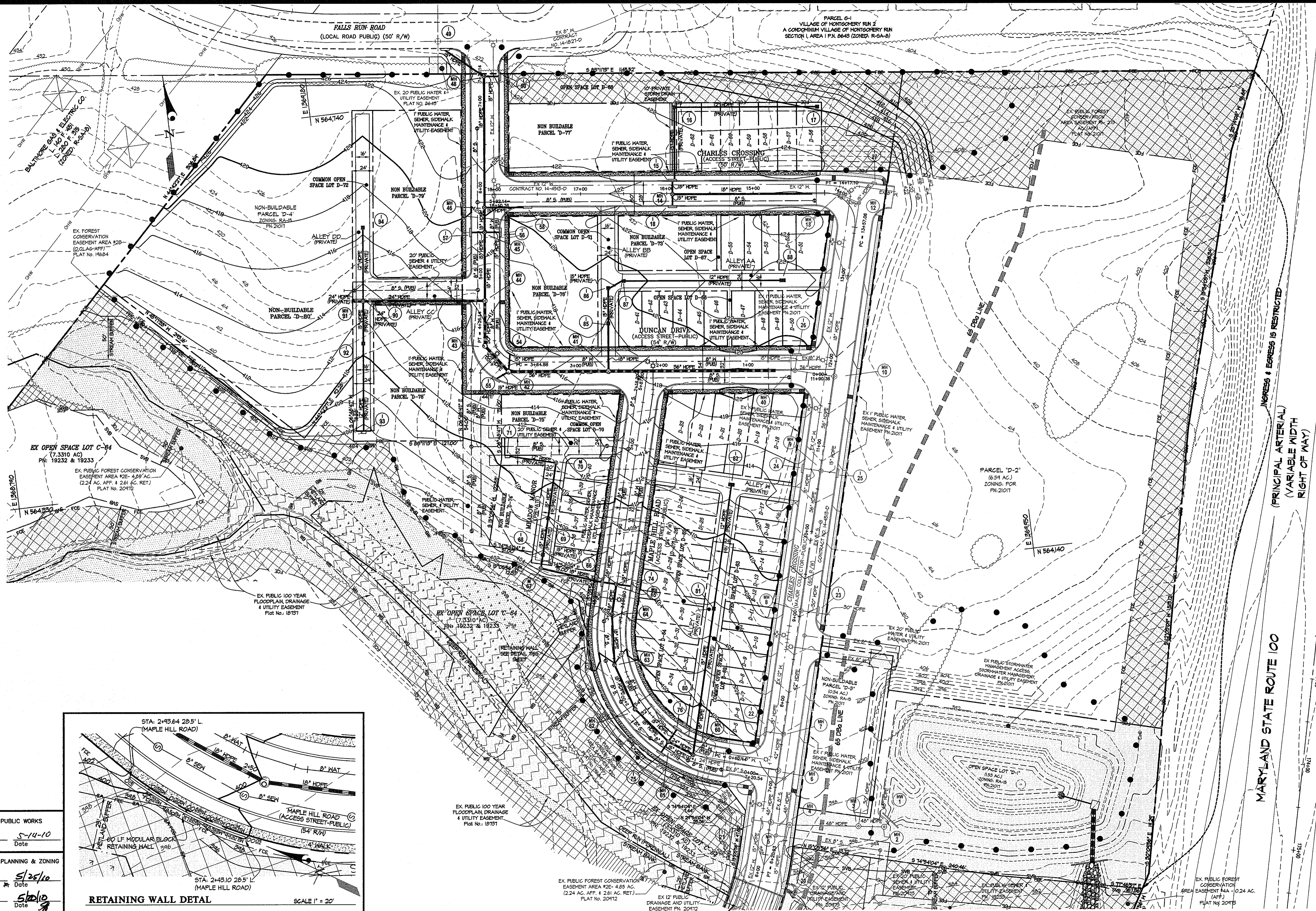
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EXPIRATION DATE: MAY 21, 2012



**SEDIMENT AND EROSION CONTROL PLAN**  
**SHIPLEY'S GRANT**  
PHASE V  
Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
Common Open Space Lots D-69 thru D-72 and Non-Buildable Parcels D-73 thru D-80  
AND PHASE I  
Open Space Lot C-64  
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=50'	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
MAY, 2010	37-1&2	5 OF 12





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 5-14-10

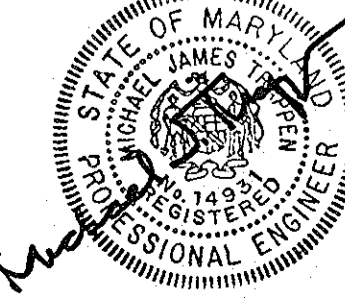
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Chief, Development Engineering Division  
 Date: 5/25/10  
 Date: 5/20/10

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK  
 BURTNSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/WA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

**OWNER**  
 BA WATERLOO, LLC.  
 c/o BOZZUTO HOMES, INC.  
 7850 WALKER DRIVE, SUITE 400  
 GREENBELT, MARYLAND 20770  
 ATTN: DUNCAN SIDELL  
 301-623-1525

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 1683  
 EXPIRATION DATE: MAY 21, 2017

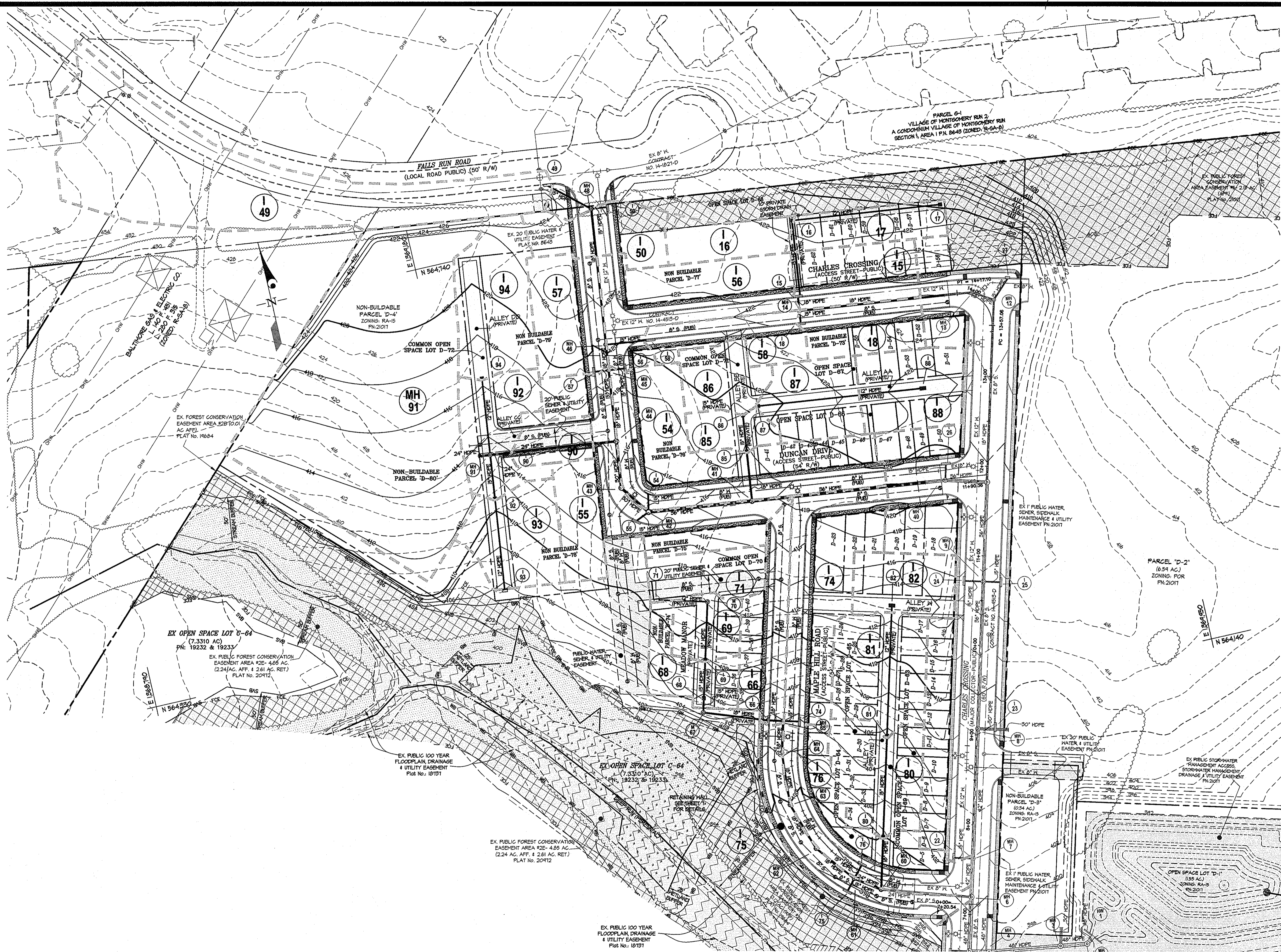


**GRADING PLAN**  
**SHIPLEY'S GRANT**  
 PHASE V  
 Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
 Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
 AND PHASE I  
 Open Space Lot C-64  
 ELECTION DISTRICT No. 1  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=50'	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
MAY, 2010	37-1&2	7 OF 12

DRAINAGE AREA SUMMARY TABLE

AREA	D.A. (ACRES)	% IMP.	C
I-15	0.21	41	0.25
I-16	0.14	41	0.25
I-17	0.16	41	0.25
I-18	0.19	41	0.25
I-19	0.22	40	0.25
I-20	0.22	41	0.25
I-21	0.21	41	0.25
I-22	0.22	41	0.25
I-23	0.22	41	0.25
I-24	0.24	41	0.25
I-25	0.17	41	0.25
I-26	0.22	41	0.25
I-27	0.15	41	0.25
I-28	0.12	41	0.25
I-29	0.15	41	0.25
I-30	0.43	41	0.25
I-31	0.22	41	0.25
I-32	0.25	41	0.25
I-33	0.26	41	0.25
I-34	0.24	41	0.25
I-35	0.24	41	0.25
I-36	0.24	41	0.25
I-37	0.24	41	0.25
I-38	0.24	41	0.25
I-39	0.24	41	0.25
I-40	0.24	41	0.25
I-41	0.24	41	0.25
I-42	0.24	41	0.25
I-43	0.24	41	0.25
I-44	0.24	41	0.25



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Walter Z. ...* 5-11-10  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Kit ...* 5/20/10  
 Chief, Division of Land Development Date  
*...* 5/20/10  
 Chief, Development Engineering Division Date

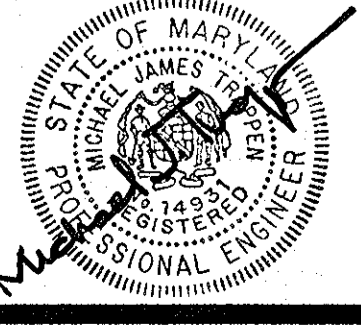
**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
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DATE	REVISION	BY	APPR.

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**OWNER**  
 BA WATERLOO, LLC.  
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 ATTN: DUNCAN SLIDELL  
 301-623-1525

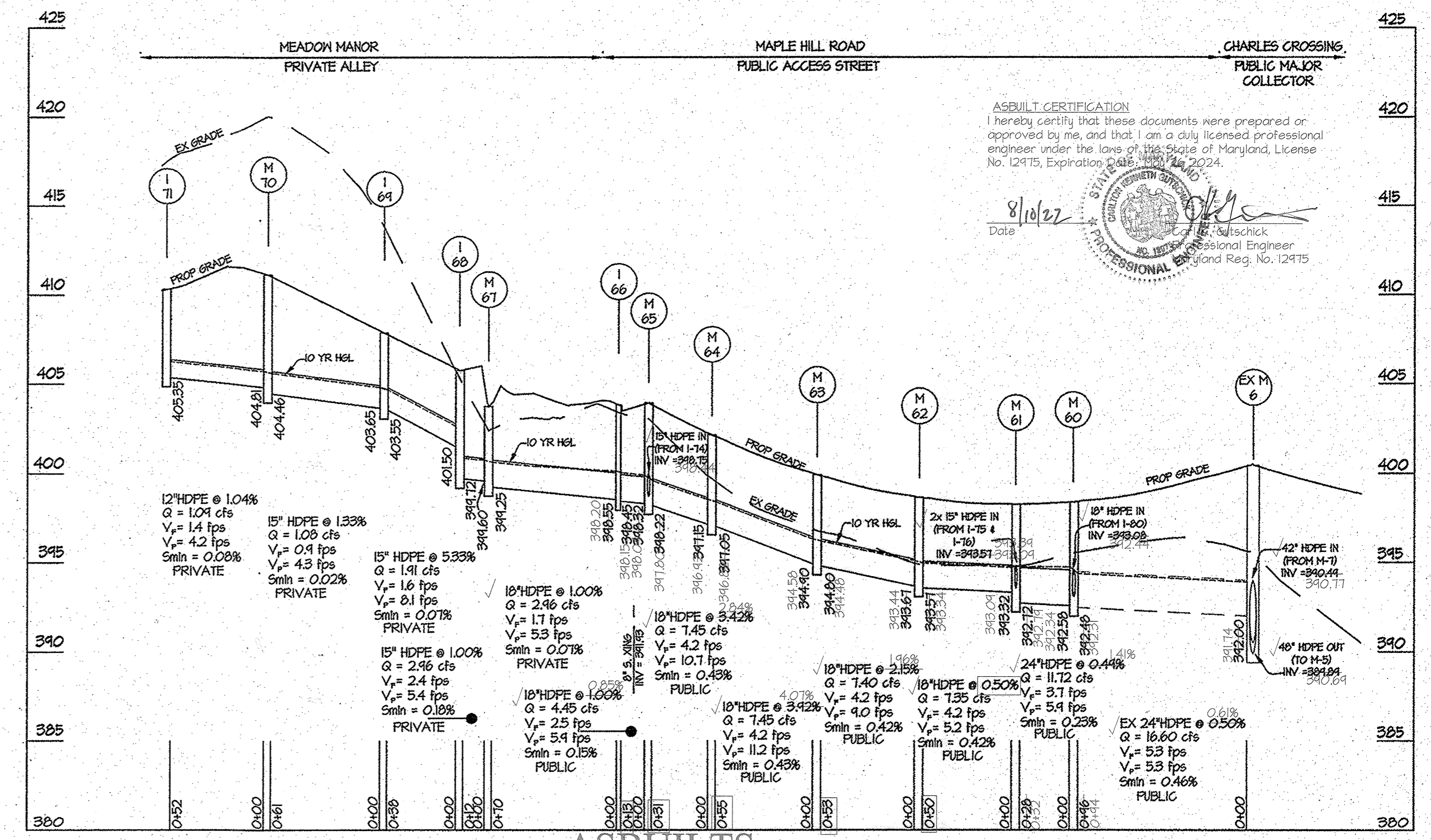
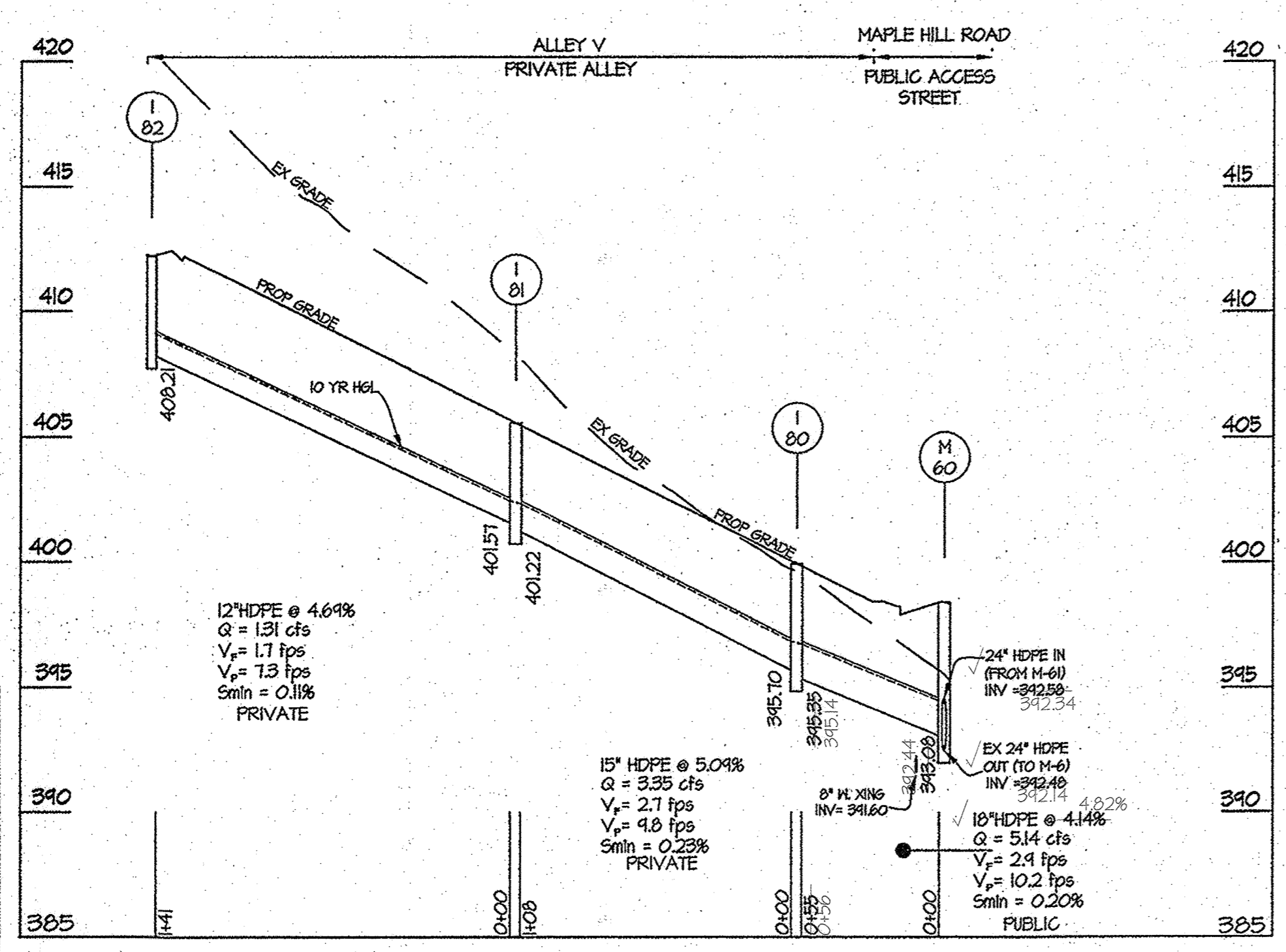
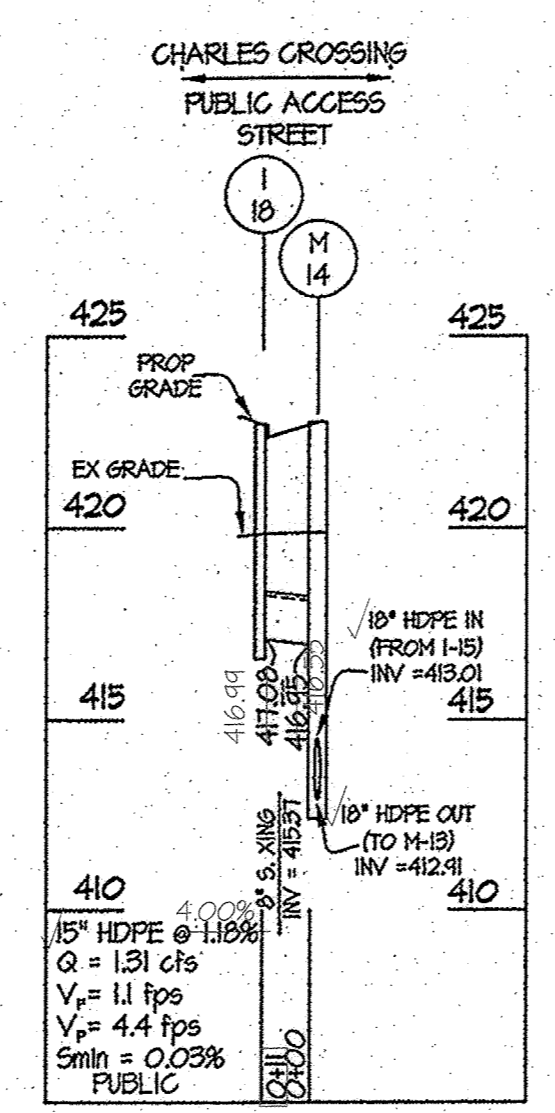
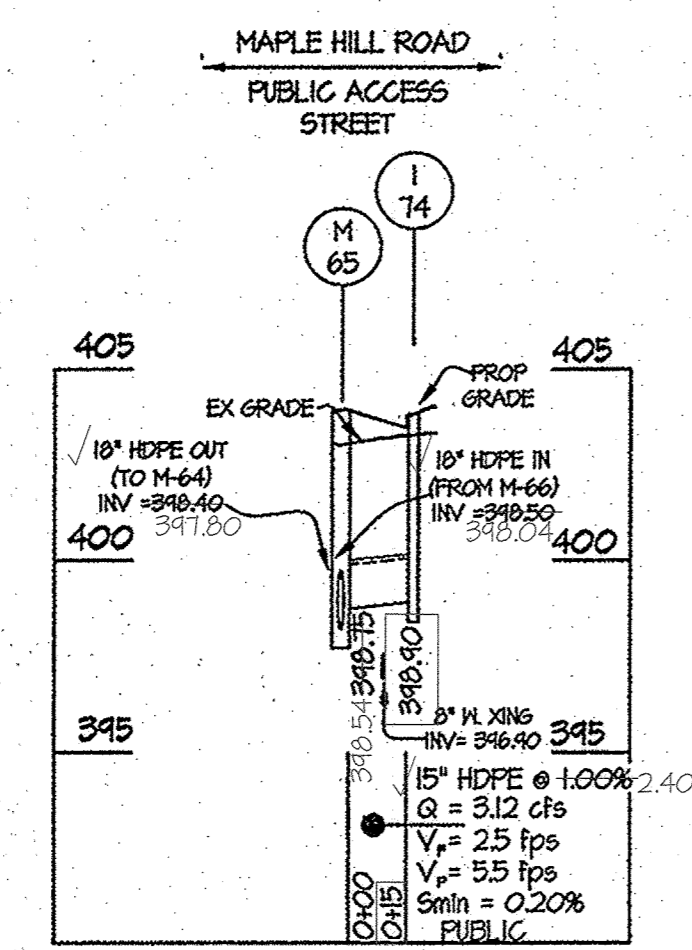
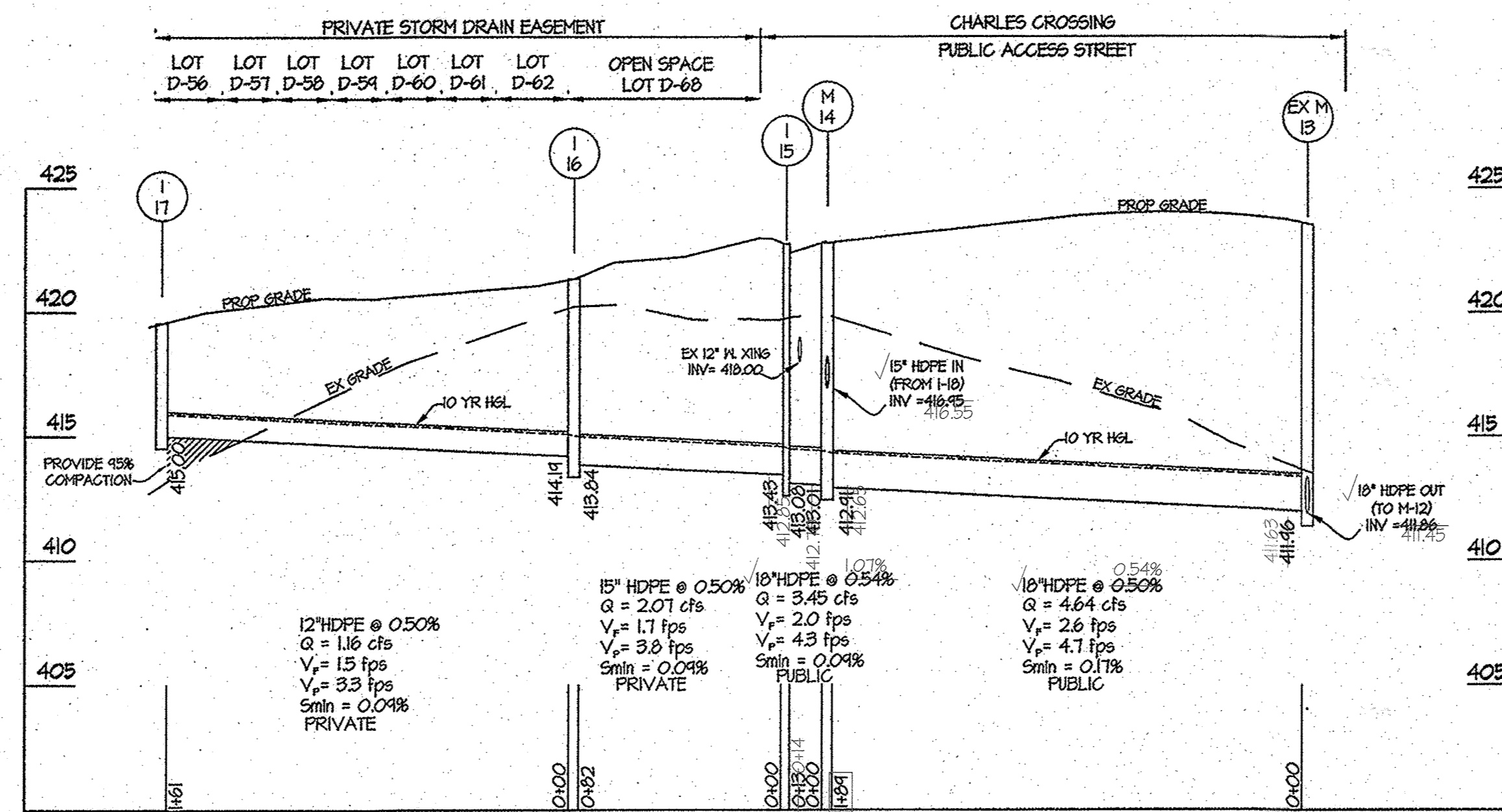
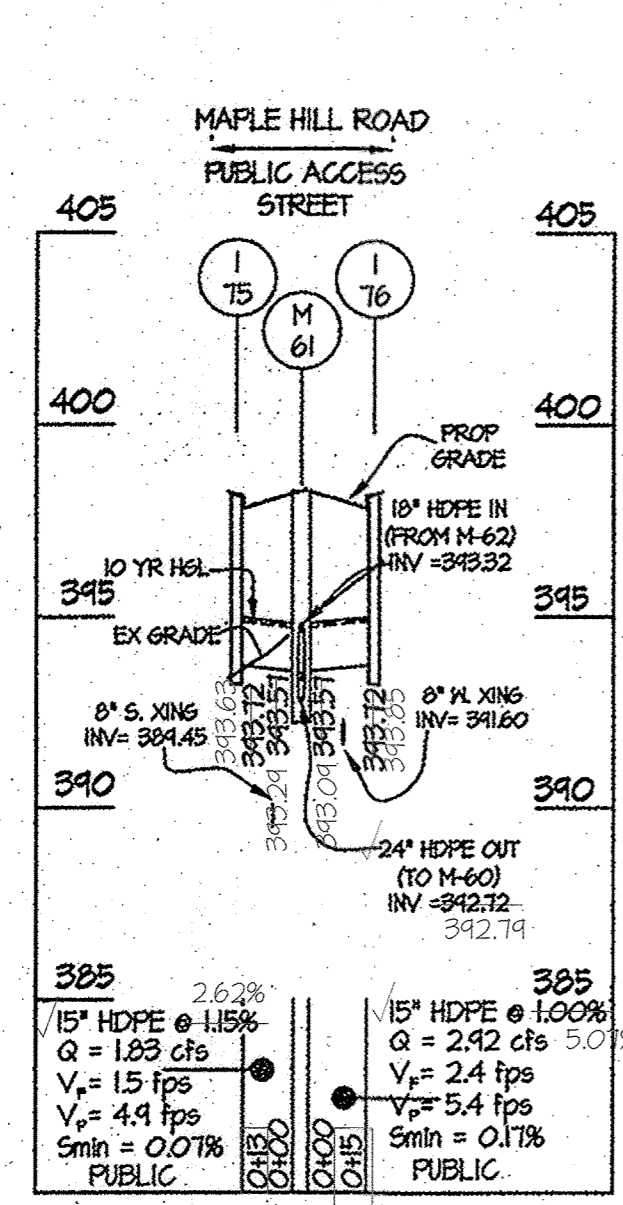
**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14357  
 EXPIRATION DATE: MAY 21, 2012



**STORM DRAINAGE AREA MAP**  
**SHIPLEY'S GRANT**  
 PHASE V  
 Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
 Common Open Space Lots D-69 thru D-72 and Non-Buildable Parcels D-73 thru D-80  
 AND PHASE I  
 Open Space Lot C-64  
 ELECTION DISTRICT No. 1  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
MAY, 2010	37-1&2	8 OF 12





### S.D. STRUCTURE SCHEDULE

NO.	TYPE	WIDTH	TOP ELEVATION		INVERT ELEVATION		STANDARD DETAIL	NOTES	LOCATION	OWNERSHIP
			UPPER	LOWER	UPPER	LOWER				
M-14	MANHOLE	4'-0"	422.71	422.71	416.55	412.91	HO. CO. G. 5.12	①	1549336 14' Left C.C.	PUBLIC
I-15	A-10	2'-6"	423.02	422.91	418.43	413.04	HO. CO. D. 4.03		1549336 14' Right C.C.	PUBLIC
I-16	A-10	2'-15"	421.00	422.91	414.11	413.04	HO. CO. D. 4.22		N 564794 E 1364100 N 564878 E 1364785	PRIVATE
I-17	A-10	2'-15"	419.00	422.91	415.00	412.91	terminal		1549336 14' Left C.C.	PUBLIC
M-60	MANHOLE	4'-0"	423.02	422.91	418.06	412.40	HO. CO. G. 5.12	①	049951 1' Left MHR.	PUBLIC
M-61	MANHOLE	4'-0"	398.21	398.21	393.51	392.72	HO. CO. G. 5.12	①	181.75 1' Left MHR.	PUBLIC
M-62	MANHOLE	4'-0"	398.66	398.66	393.51	392.72	HO. CO. G. 5.12	①	185.81 1' Left MHR.	PUBLIC
M-63	MANHOLE	4'-0"	399.49	399.49	394.40	393.40	HO. CO. G. 5.12	①	242.42 1' Left MHR.	PUBLIC
M-64	MANHOLE	4'-0"	402.15	402.15	397.00	396.00	HO. CO. G. 5.12	①	340.20 1' Left MHR.	PUBLIC
M-65	MANHOLE	4'-0"	403.98	403.98	398.75	397.72	HO. CO. G. 5.12	①	346.41 1' Left MHR.	PUBLIC
I-66	A-10	2'-6"	404.54	404.54	399.55	398.45	HO. CO. D. 4.03		346.41 16' Left MHR.	PUBLIC
M-67	MANHOLE	4'-0"	405.00	405.00	399.60	398.25	HO. CO. G. 5.12		N 564871 E 1364100 N 564959 E 1364285	PRIVATE
I-68	A-10	2'-15"	403.75	403.75	401.50	399.72	HO. CO. D. 4.22		N 564959 E 1364285	PRIVATE
I-69	A-10	2'-15"	407.80	407.80	403.65	403.55	HO. CO. D. 4.22		N 564959 E 1364285	PRIVATE
M-70	MANHOLE	4'-0"	411.8	411.8	404.81	404.46	HO. CO. G. 5.12		N 564959 E 1364285	PRIVATE
I-71	A-5	3'-0"	410.61	410.51	403.35	terminal	HO. CO. D. 4.01			
I-74	A-10	2'-6"	404.34	403.74	398.90	terminal	HO. CO. D. 4.03		346.41 16' Right MHR.	PUBLIC
I-75	A-10	2'-6"	398.40	398.32	393.32	terminal	HO. CO. D. 4.03		181.75 16' Left MHR.	PUBLIC
I-76	A-10	2'-6"	398.40	398.40	393.32	terminal	HO. CO. D. 4.03		181.75 16' Right MHR.	PUBLIC
I-80	A-10	2'-15"	399.95	399.95	395.70	395.35	HO. CO. D. 4.22		N 564959 E 1364285	PRIVATE
I-81	A-10	2'-15"	403.51	403.51	401.51	401.22	HO. CO. D. 4.22		N 564959 E 1364285	PRIVATE
I-82	DOUBLE A-10	2'-15"	412.21	412.21	408.21	terminal	HO. CO. D. 4.23		N 564959 E 1364285	PRIVATE

① USE OFFSET CONE SECTION. OFFSET MANHOLE COVER AS FAR FROM CROWN OF ROAD AS POSSIBLE SEE TYPICAL MANHOLE LOCATION IN ROADWAY DETAIL SHEET 2

D.D. = DUNCAN DRIVE  
C.C. = CHARLES CROSSING  
MHR. = MAPLE HILL ROAD

### S.D. Pipe Summary Table PRIVATELY OWNED AND MAINTAINED

Size (in.)	Type	Quantity (L.F.)	Remarks
12	HDPE	354	ADS N12 or equiv.
15	HDPE	301	ADS N12 or equiv.
18	HDPE	70	ADS N12 or equiv.

### S.D. Pipe Summary Table PUBLICLY OWNED AND MAINTAINED

Size (in.)	Type	Quantity (L.F.)	Remarks
15	HDPE	54	ADS N12 or equiv.
18	HDPE	459	ADS N12 or equiv.
24	HDPE	28	ADS N12 or equiv.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*W. R. ...* 5/14/10  
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*V. ...* 5/25/10  
 Chief, Division of Land Development

*M. ...* 5/20/10  
 Chief, Development Engineering Division

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONTVILLE OFFICE PARK  
 BURTONTVILLE, MARYLAND 20882  
 TEL: 301-421-4024 FAX: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

DATE	REVISION	BY	APP'R.

OWNER  
 BA WATERLOO, LLC.  
 c/o BOZZUTO HOMES, INC.  
 7850 WALKER DRIVE, SUITE 400  
 GREENBELT, MARYLAND 20770  
 ATTN: DUNCAN SLIDELL  
 301-623-1525

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14937, EXPIRATION DATE: MAY 21, 2012

*[Signature]*  
 PROFESSIONAL ENGINEER

**ASBUITS**  
**STORM DRAIN PROFILES**  
**SHIPLEY'S GRANT**  
 PHASE V  
 Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
 Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
 AND PHASE I  
 Open Space Lot C-64  
 ELECTION DISTRICT No. 1

SCALE	ZONING	G. L. W. FILE NO.
1" = 50' (H) 1" = 5' (V)	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
AUGUST 2022 MAY, 2010	37-1&2	9 OF 12

S.D. STRUCTURE SCHEDULE

NO.	TYPE	WIDTH (INSIDE)	TOP ELEVATION		INVERT ELEVATION		STANDARD DETAIL	NOTES	LOCATION	OWNERSHIP & MAINTENANCE
			UPPER	LOWER	UPPER	LOWER				
M-41	MANHOLE	5'-0"	417.34	----	417.34	396.55	HO. CO. 6. 513	(1)	2+61.28 1' Left D.D.	PUBLIC
M-42	MANHOLE	5'-0"	415.47	----	409.64	391.21	HO. CO. 6. 513	(1)	3+16.93 3' Left D.D.	PUBLIC
M-43	MANHOLE	5'-0"	415.45	----	398.64	391.49	HO. CO. 6. 513	(1)	4+16.64 22' Left D.D.	PUBLIC
M-44	MANHOLE	5'-0"	416.41	----	410.76	398.59	HO. CO. 6. 513	(1)	4+69.56 1' Left D.D.	PUBLIC
M-45	MANHOLE	4'-0"	419.12	----	414.05	411.52	HO. CO. 6. 512	(1)	5+48.14 1' Left D.D.	PUBLIC
M-46	MANHOLE	4'-0"	420.40	----	415.21	415.02	HO. CO. 6. 512	(1)	5+76.84 1' Left D.D.	PUBLIC
M-48	MANHOLE	4'-0"	422.24	----	417.54	415.45	HO. CO. 6. 512	(1)	7+21.10 1' Left D.D.	PUBLIC
I-41	A-10	2'-6"	423.07	422.94	416.41	terminal	HO. CO. D. 4.03		E 1264243	PUBLIC
I-50	A-10	2'-6"	422.55	422.42	416.45	terminal	HO. CO. D. 4.03		E 1264243	PUBLIC
I-54	A-10	2'-6"	415.69	415.24	404.25	terminal	HO. CO. D. 4.03		E 1264243	PUBLIC
I-55	A-10	2'-6"	415.66	415.12	404.82	terminal	HO. CO. D. 4.03		E 1264243	PUBLIC
I-56	A-10	2'-6"	414.41	414.64	412.02	terminal	HO. CO. D. 4.03		E 1264243	PUBLIC
I-57	A-10	2'-6"	414.41	414.04	414.20	terminal	HO. CO. D. 4.03		E 1264243	PUBLIC
I-58	A-10	3'-0"	421.81	421.69	414.23	terminal	HO. CO. D. 4.03		E 1264243	PUBLIC
I-85	5'	2'-15"	411.88	----	415.63	415.28	HO. CO. D. 4.22		E 1264243	PRIVATE
I-86	5'	2'-15"	410.44	----	414.24	414.4	HO. CO. D. 4.22		E 1264243	PRIVATE
I-87	5'	2'-15"	411.20	----	415.04	414.64	HO. CO. D. 4.22		E 1264243	PRIVATE
I-88	DOUBLE 5'	2'-15"	420.23	----	416.23	terminal	HO. CO. D. 4.23		E 1264243	PRIVATE
I-90	A-5	3'-6"	414.71	414.50	399.58	399.48	HO. CO. D. 4.01		E 1264243	PRIVATE
M-41	MANHOLE	4'-0"	413.14	----	408.14	399.69	HO. CO. 6. 512		E 1264243	PRIVATE
I-42	5'	2'-15"	410.70	----	401.12	400.71	HO. CO. D. 4.22		E 1264243	PRIVATE
I-43	A-5	2'-6"	406.20	----	401.62	terminal	HO. CO. D. 4.01		E 1264243	PRIVATE
I-44	5'	2'-15"	416.21	----	412.24	terminal	HO. CO. D. 4.22		E 1264243	PRIVATE

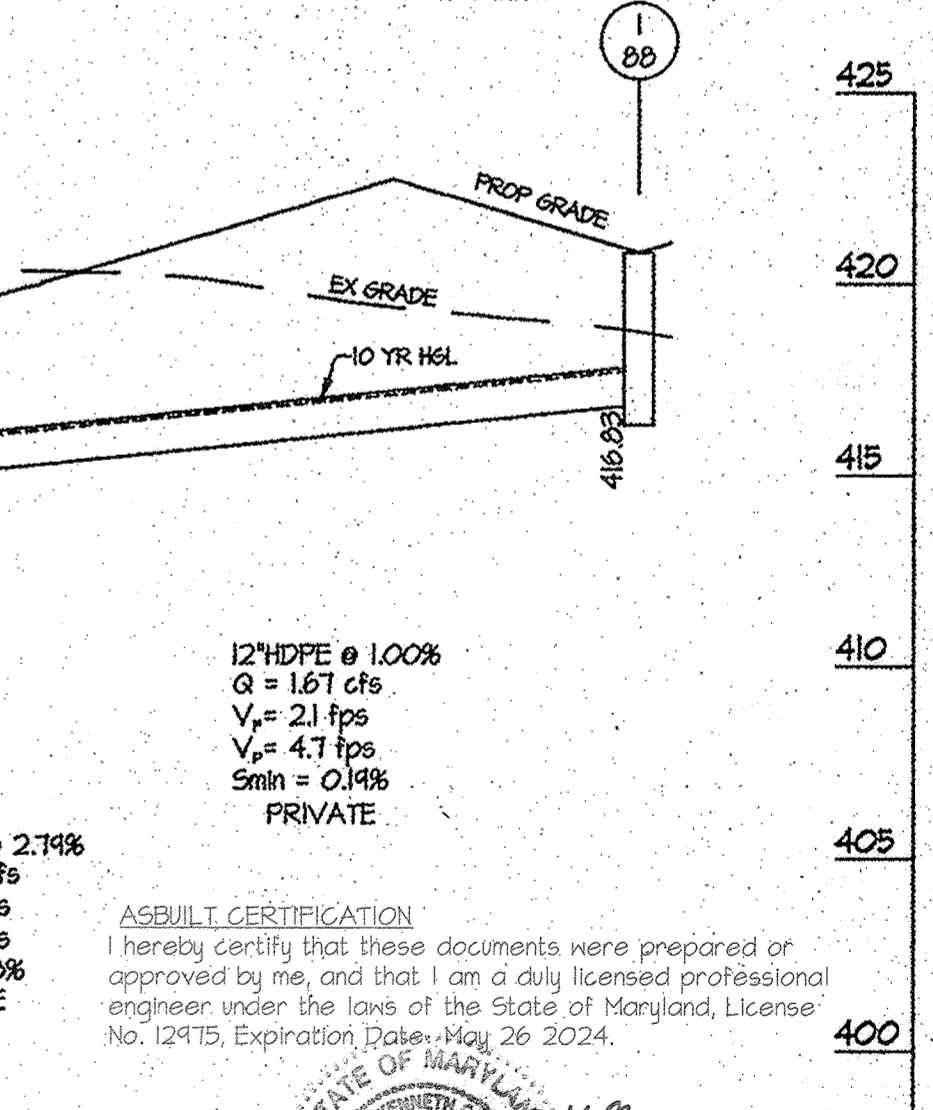
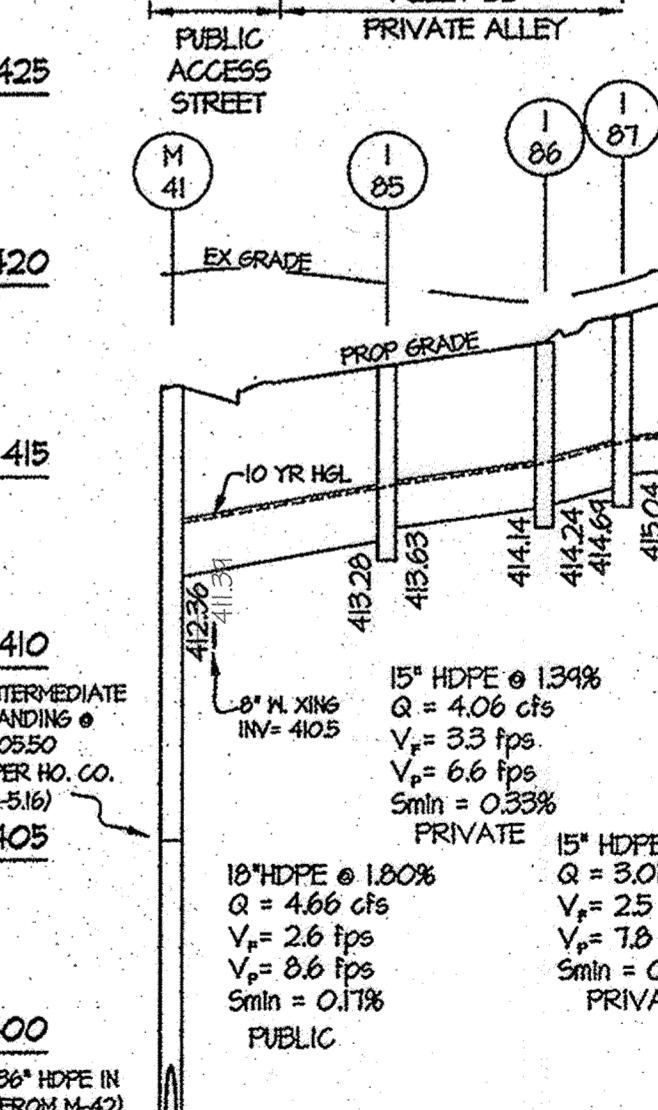
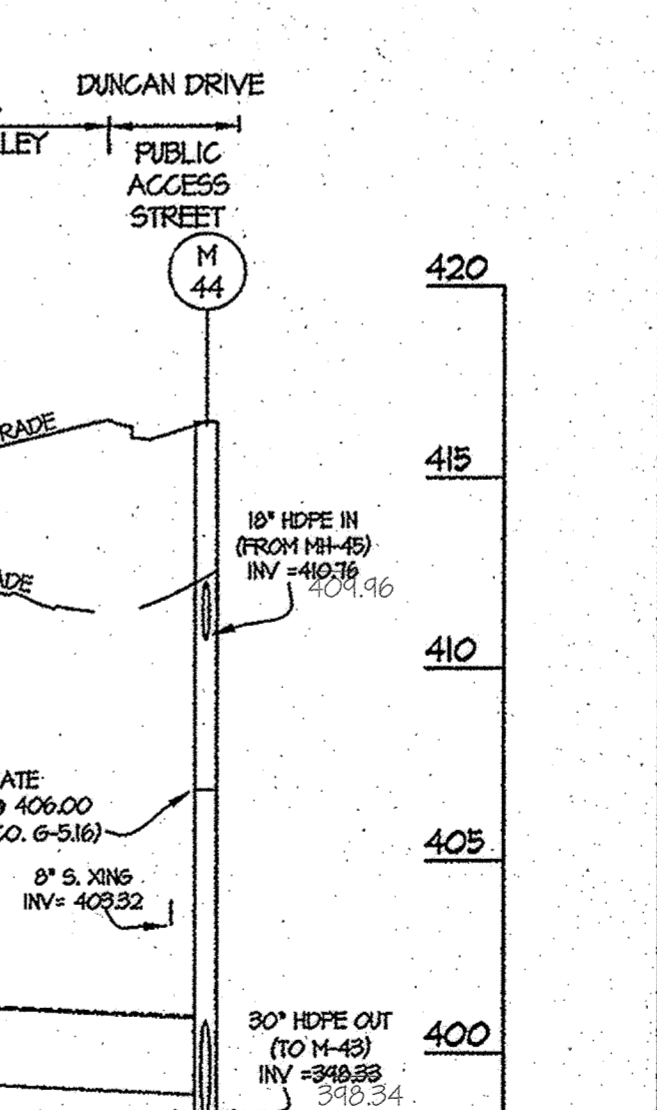
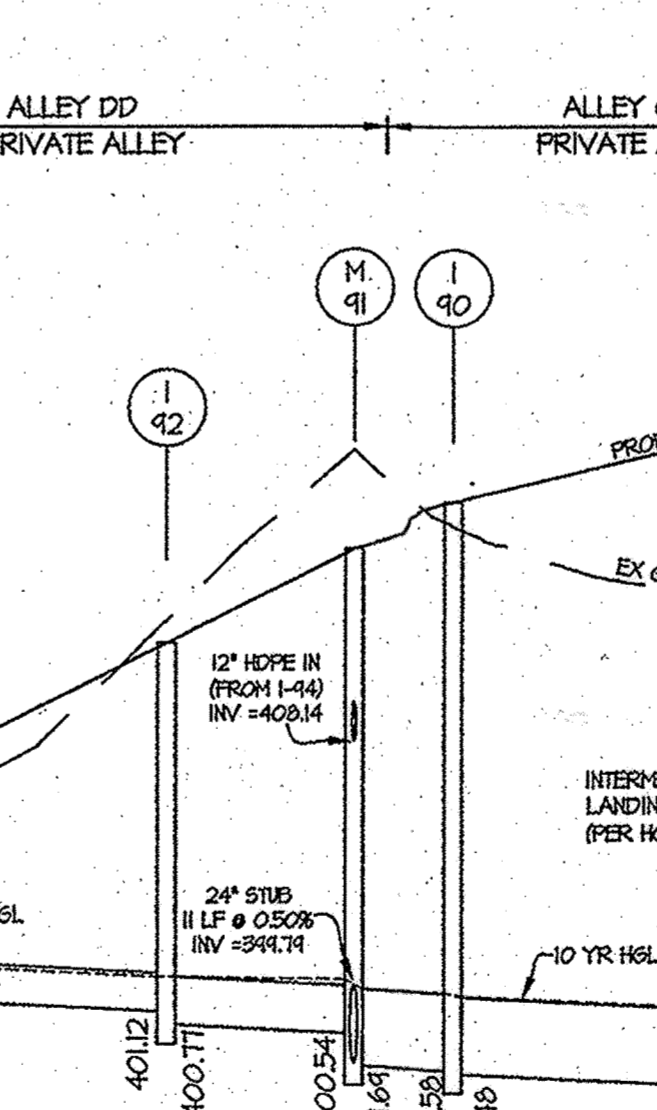
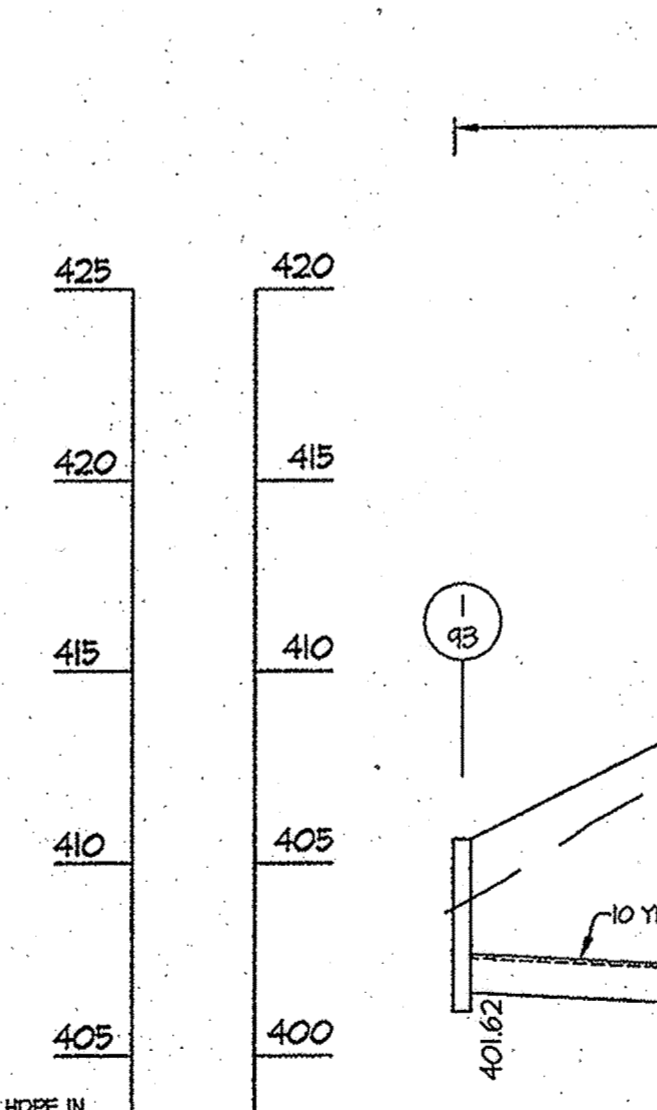
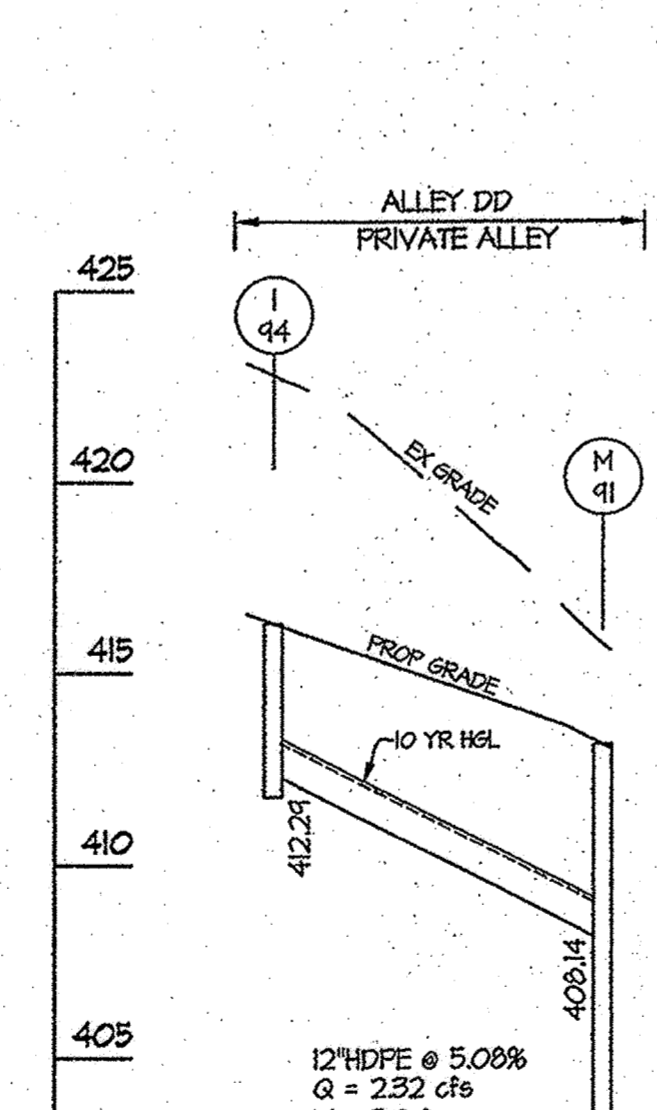
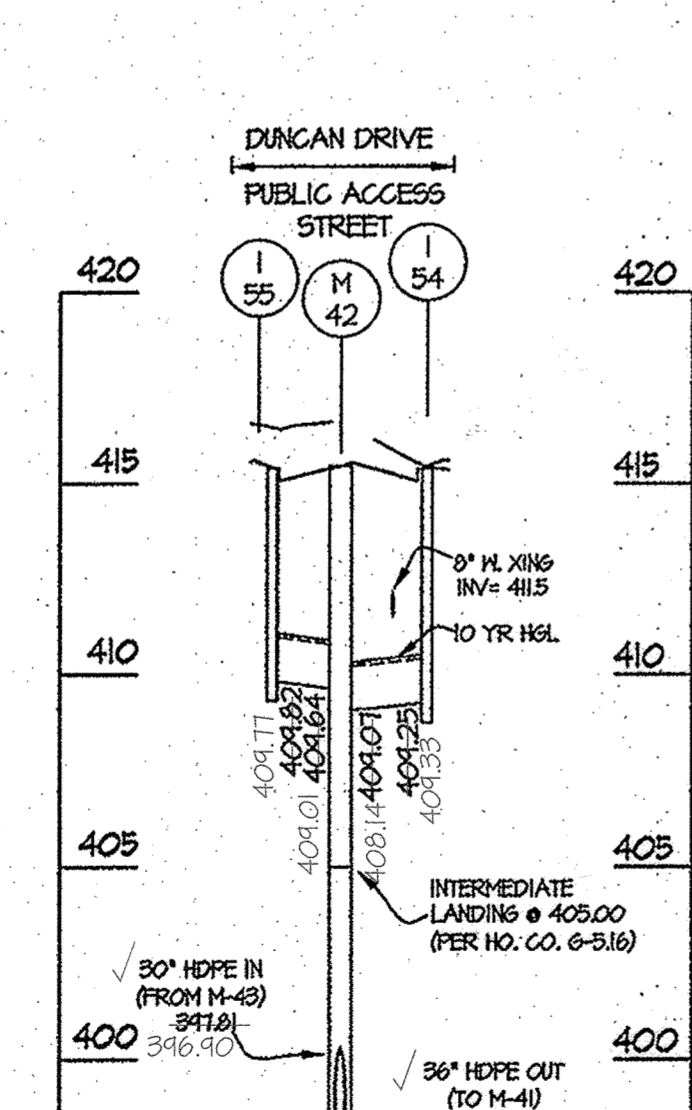
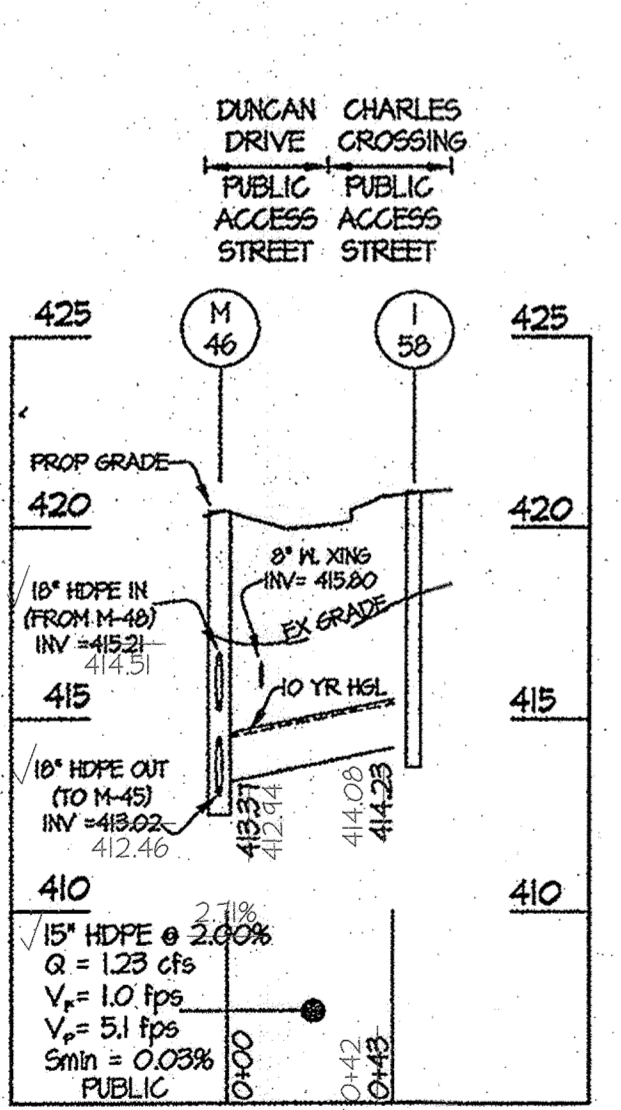
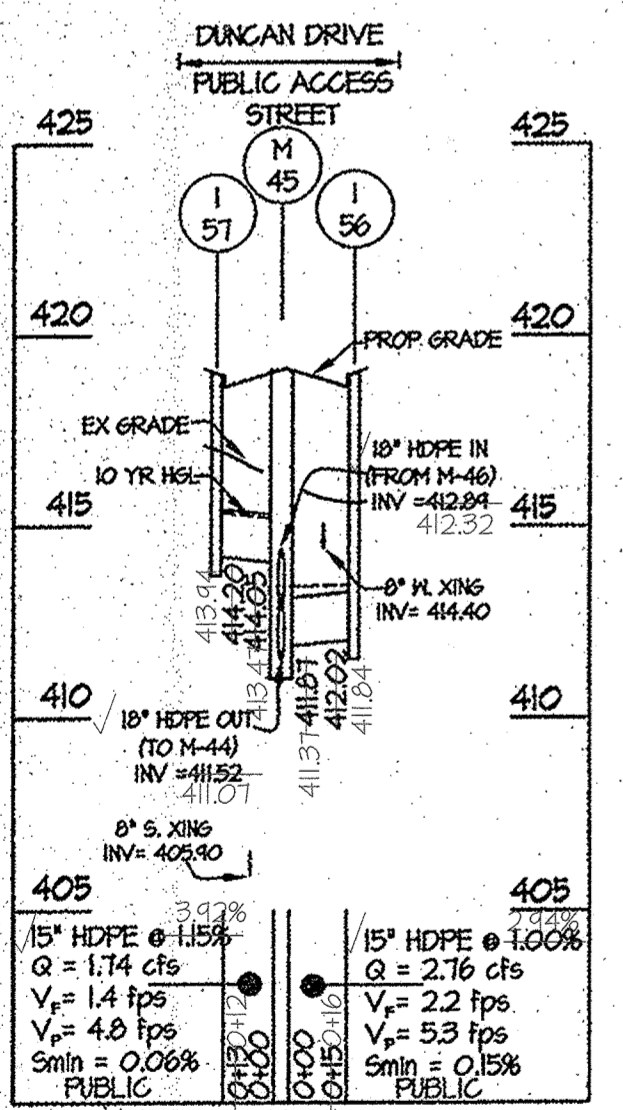
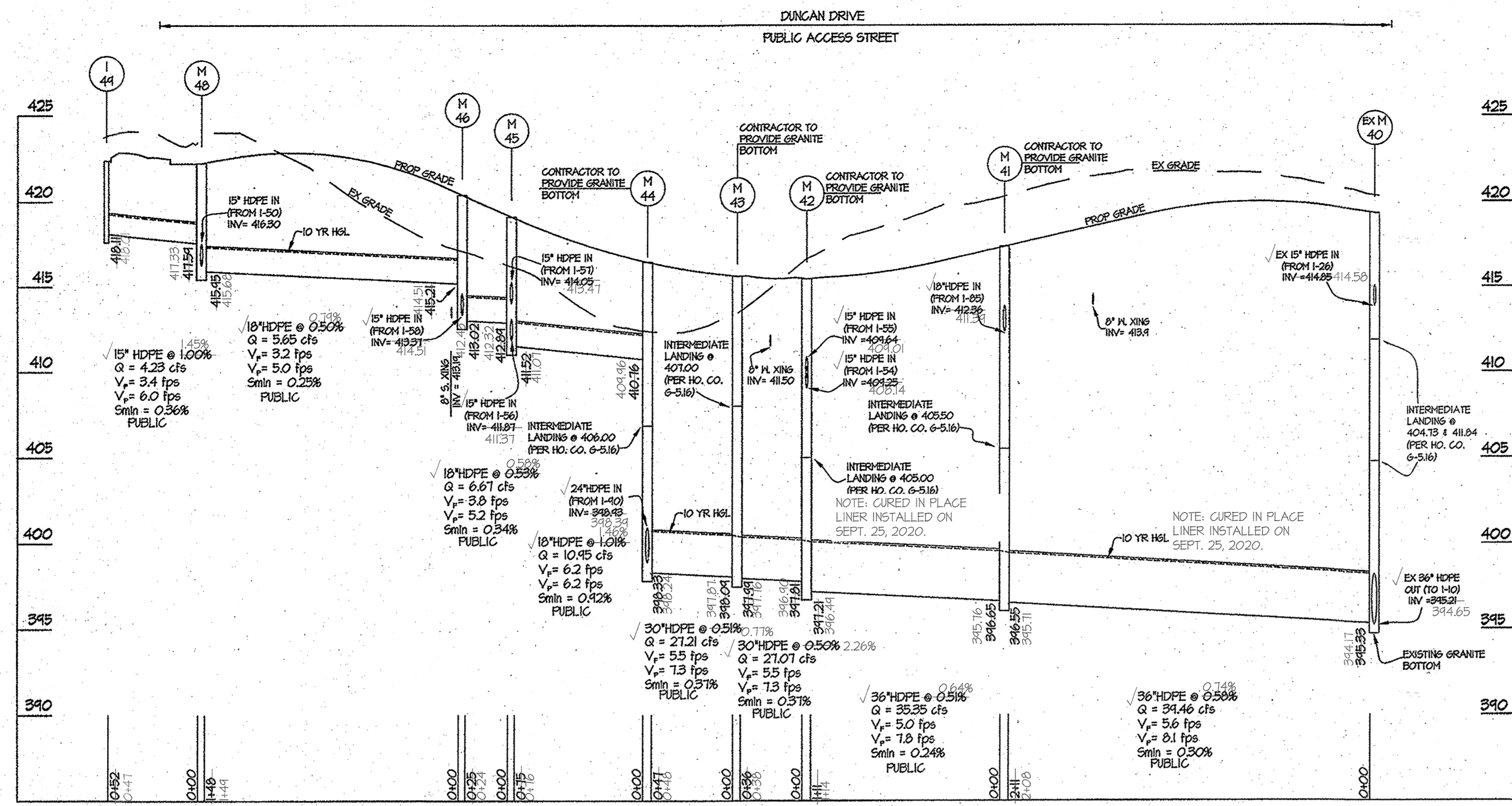
(1) USE OFFSET CONE SECTION. OFFSET MANHOLE COVER AS FAR FROM CROWN OF ROAD AS POSSIBLE. SEE "TYPICAL MANHOLE LOCATION IN ROADWAY" DETAIL SHEET 2.  
 D.D. = DUNCAN DRIVE  
 C.C. = CHARLES CROSSING  
 M.H.R. = MAPLE HILL ROAD

S.D. Pipe Summary Table PRIVATELY OWNED AND MAINTAINED

Size (in.)	Type	Quantity (L.F.)	Remarks
12	HDPE	361	ADS N12 or equiv.
15	HDPE	98	ADS N12 or equiv.
24	HDPE	131	ADS N12 or equiv.

S.D. Pipe Summary Table PUBLICLY OWNED AND MAINTAINED

Size (in.)	Type	Quantity (L.F.)	Remarks
15	HDPE	164	ADS N12 or equiv.
18	HDPE	244	ADS N12 or equiv.
30	HDPE	83	ADS N12 or equiv.
36	HDPE	322	ADS N12 or equiv.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Chief, Development Engineering Division

GLWGUTSCHICK LITTLE & WEBER, P.A.  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20868  
 TEL: 301-421-4024 FAX: 301-989-2024

DATE	REVISION	BY	APPR.

OWNER  
 BA WATERLOO, LLC.  
 c/o BOZZUTO HOMES, INC.  
 7850 WALKER DRIVE, SUITE 400  
 GREENBELT, MARYLAND 20770  
 ATTN: DUNCAN SLIDELL  
 301-623-1325

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 LICENSE NO. 14631  
 EXPIRATION DATE: MAY 21, 2027



ASBUILTS  
 STORM DRAIN PROFILES  
 SHIPLEY'S GRANT  
 PHASE V  
 Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
 Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
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 Open Space Lot C-64  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=50' (H) 1"=5' (V)	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
AUGUST 2022 MAY, 2010	37-1&2	10 OF 12

**PLANT MATERIALS AND PLANTING METHODS**

**A. PLANT MATERIALS**  
 THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR DIG, BALL, BURLAP AND TRANSPORT ALL OF THE PLANT MATERIALS CALLED FOR ON DRAWINGS AND/OR LISTED IN THE PLANT SCHEDULE.

**1. PLANT NAMES**  
 PLANT NAMES USED IN THE PLANT SCHEDULE SHALL CONFORM WITH "STANDARDIZED PLANT NAMES," LATEST EDITION.

**2. PLANT STANDARDS**  
 ALL PLANT MATERIAL SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR NURSERY STOCK" LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (HEREAFTER REFERRED TO AS AN STANDARD). ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, SHALL HAVE A NORMAL HABIT OF GROWTH AND SHALL BE FIRST QUALITY, SOUND, VIGOROUS, WELL-BRANCHED AND WITH HEALTHY, WELL-FURNISHED ROOT SYSTEMS. THEY SHALL BE FREE OF DISEASE, INSECT PESTS AND MECHANICAL INJURIES.

ALL PLANTS SHALL BE NURSERY GROWN AND SHALL HAVE BEEN GROWN UNDER THE SAME CLIMATE CONDITIONS AS THE LOCATIONS AS THIS PROJECT FOR AT LEAST TWO YEARS BEFORE PLANTING. NEITHER HELED-IN PLANTS NOR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

**3. PLANT MEASUREMENTS**  
 ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED IN THE PLANT SCHEDULE AS APPROVED BY THE ARC.

**A. CALIPER MEASUREMENTS SHALL BE TAKEN SIX INCHES (6") ABOVE GRADE FOR TREES UNDER FOUR INCH (4") CALIPER AND TWELVE (12") ABOVE GRADE FOR TREES FOUR INCHES (4") CALIPER AND OVER.**

**B. MINIMUM BRANCHING HEIGHT FOR ALL TREES SHALL BE SIX FEET (6'), MAXIMUM EIGHT FEET (8').**

**C. MINIMUM SIZE FOR PLANTING SHADE TREES SHALL BE 3-5" CALIPER, 14-16" IN HEIGHT.**

**D. MINIMUM SIZE FOR PLANTING MINOR OR INTERMEDIATE FOLIAGE TREES (PINES, CRABAPPLES, ETC.) SHALL BE 3-5" CALIPER, 10-12" IN HEIGHT.**

**E. MINIMUM SIZE FOR PLANTING SHRUBS SHALL BE 10" - 24" SPREAD UNLESS NOTED OTHERWISE.**

**F. CALIPER, HEIGHT, SPREAD AND SIZE OF BALL SHALL BE GENERALLY AS FOLLOWS:**

CALIPER	HEIGHT	SPREAD	SIZE OF BALL
3" - 5"	14-16'	6'-8"	32" DIAMETER
5.5" - 7"	16-18'	8'-10"	36" DIAMETER
7" - 8.5"	18-20'	10'-12"	40" DIAMETER
9" - 10.5"	20-22'	12'-14"	44" DIAMETER
11" - 12.5"	22-24'	14'-16"	48" DIAMETER
13" - 14.5"	24-26'	16'-18"	52" DIAMETER

ALL PLANT MATERIAL SHALL GENERALLY AVERAGE THE MEDIAN FOR THE SIZE RANGES INDICATED ABOVE AS INDICATED IN THE "AAS STANDARDS."

**4. PLANT IDENTIFICATION**  
 LEGIBLE LABELS SHALL BE ATTACHED TO ALL SHADE TREES, MINOR TREES, SPECIMEN SHRUBS AND BUNDLES OR BOXES OF OTHER PLANT MATERIAL, GIVING THE BOTANICAL/SPECIES AND COMMON NAMES, SIZE AND QUANTITY OF EACH. EACH SHIPMENT OF PLANTS SHALL BEAR CERTIFICATES OF INSPECTION AS REQUIRED BY FEDERAL, STATE AND COUNTY AUTHORITIES.

**5. PLANT INSPECTION**  
 THE ARC MAY, UPON REQUEST BY THE BUILDER OR DEVELOPER, AT LEAST TEN (10) DAYS PRIOR TO THE INSTALLATION OF ANY PROPOSED PLANT MATERIAL, INSPECT ALL PROPOSED PLANT MATERIAL AT THE SOURCE OF ORIGIN.

**B. PLANTING METHODS**  
 ALL PROPOSED PLANT MATERIALS THAT MEET THE SPECIFICATIONS IN SECTION A ARE TO BE PLANTED IN ACCORDANCE WITH THE FOLLOWING METHODS DURING THE PROPER PLANTING SEASONS AS DESCRIBED IN THE FOLLOWING:

**1. PLANTING SEASONS**  
 THE PLANTING OF DECIDUOUS TREES, SHRUBS AND VINES SHALL BE FROM MARCH 1ST TO JUNE 15TH AND FROM SEPTEMBER 15TH TO DECEMBER 15TH. PLANTING OF DECIDUOUS MATERIAL MAY BE CONTINUED DURING THE WINTER MONTHS PROVIDED THERE IS NO FROST AND NO FROST-FREE TOPSOIL PLANTING MIXTURES ARE USED.

THE PLANTING OF EVERGREEN MATERIAL SHALL BE FROM MARCH 15TH TO JUNE 15TH AND FROM AUGUST 15TH TO DECEMBER 15TH. NO PLANTING SHALL BE DONE WHEN GROUND IS FROZEN OR EXCESSIVELY MOIST. NO FROZEN OR WET TOPSOIL SHALL BE USED AT ANY TIME.

**2. DIGGING**  
 ALL PLANT MATERIAL SHALL BE DIG, BALLED AND BURLAPPED (BAB) IN ACCORDANCE WITH THE "AAS STANDARDS."

**3. EXCAVATION OF PLANT PITS**  
 THE LANDSCAPING CONTRACTOR SHALL EXCAVATE ALL PLANT PITS, VINE PITS, HEDGE TRENCHES AND SHRUB BEDS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

**A. LOCATIONS OF ALL PROPOSED PLANT MATERIAL SHALL BE STAKED AND APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT BEFORE ANY OF THE PROPOSED PLANT MATERIAL IS INSTALLED BY THE LANDSCAPE CONTRACTOR.**

**B. ALL PITS SHALL BE GENERALLY CIRCULAR IN OUTLINE, VERTICAL SURFACE DEPTH SHALL NOT BE LESS THAN 6" DEEPER THAN THE ROOT BALL. DIAMETER SHALL NOT BE LESS THAN TWO TIMES THE DIAMETER OF THE ROOT BALL AS SET FORTH IN THE FOLLOWING SCHEDULE.**

**C. IF AREAS ARE DESIGNATED AS SHRUB BEDS OR HEDGE TRENCHES, THEY SHALL BE EXCAVATED TO AT LEAST 18" DEPTH MINIMUM. AREAS DESIGNATED FOR GROUND COVERS AND VINES SHALL BE EXCAVATED TO AT LEAST 12" IN DEPTH MINIMUM.**

**D. DIAMETER AND DEPTH OF TREE PITS SHALL GENERALLY BE AS FOLLOWS:**

PLANT SIZE	ROOT BALL	FIT	DEPTH
3" - 5.5" CAL.	32"	64"	28"
5.5" - 7" CAL.	36"	72"	32"
7" - 8.5" CAL.	40"	80"	36"
9" - 10.5" CAL.	44"	88"	40"
11" - 12.5" CAL.	48"	96"	44"
13" - 14.5" CAL.	52"	104"	48"

**A 20% COMPACTION FIGURE OF THE SOIL TO BE REMOVED IS ASSIGNED AND WILL BE ALLOWED IN CALCULATION OF EXTRA TOPSOIL. THE TABULATED FIT SIZES ARE FOR PURPOSES OF UNIFORM CALCULATION AND SHALL NOT OVERRIDE THE SPECIFIED DEPTHS BELOW THE BOTTOMS OF THE ROOT BALLS.**

**4. STAKING, GUYING AND WRAPPING**  
 ALL PLANT MATERIAL SHALL BE STAKED OR GUYED, AND WRAPPED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

**A. STAKES:** SHALL BE SOUND HOOK 2" X 2" ROUGH SAWN OAK OR SIMILAR DURABLE WOODS, OR LENGTHS, MINIMUM 1'-0" FOR MAJOR TREES AND 5'-0" MINIMUM FOR MINOR TREES.

**B. WIRE AND CABLE:** WIRE SHALL BE #10 GA. GALVANIZED OR BETHANIZED ANNEALED STEEL WIRE. FOR TREES OVER 3" CALIPER, PROVIDE 5/16" TURN BUCKLES, EYE AND EYE WITH 4" TAKE-UP. FOR TREES OVER 5" CALIPER, PROVIDE 3/16" 1 STRAND CABLE CADWYN PLATED STEEL, WITH GALVANIZED "EYE" THIMBLES OF WIRE AND HOSE ON TREES UP TO 3" IN CALIPER.

**C. HOSE:** SHALL BE NEM 2 PLY REINFORCED RUBBER HOSE, MINIMUM 1/2" ID. PLASTIC HOSE TIED TO TRUNKS OR TREES BRACES MAY BE USED IN PLACE OF WIRE AND HOSE ON TREES UP TO 3" IN CALIPER.

**D. ALL TREES UNDER 3" IN CALIPER ARE TO BE PLANTED AND STAKED IN ACCORDANCE WITH THE ATTACHED "TYPICAL TREE STAKING DETAIL". TREES OVER 3" IN CALIPER ARE TO BE PLANTED AND GUYED IN ACCORDANCE WITH THE ATTACHED "TYPICAL TREE GUYING DETAIL".**

**5. PLANT PRUNING, EDGING AND MULCHING**  
 A. EACH TREE SHRUB OR VINE SHALL BE PRUNED IN AN APPROPRIATE MANNER TO ITS PARTICULAR REQUIREMENTS, IN ACCORDANCE WITH ACCEPTED STANDARD PRACTICE. BROKEN OR BRUISED BRANCHES SHALL BE REMOVED WITH CLEAN CUTS FLUSH WITH THE ADJACENT TRUNK OR BRANCHES. ALL CUTS OVER 1" IN DIAMETER SHALL BE PAINTED WITH AN APPROVED ANTISEPTIC TREE WOUND DRESSING.

B. ALL TRENCHES AND SHRUB BEDS SHALL BE EDGED AND GUYED TO THE LINES SHOWN ON THE DRAWINGS. THE AREAS AROUND ISOLATED PLANTS SHALL BE EDGED AND GUYED TO THE FULL DIAMETER OF THE PIT. SOIL WHICH HAS BEEN REMOVED AND STACKED SHALL BE USED TO TRIM THE EDGES OF ALL EXCAVATED AREAS TO THE NEAT LINES OF THE PLANT PIT SAUCERS, THE EDGES OF SHRUB AREAS, HEDGE TRENCHES AND VINE POCKETS.

C. AFTER CULTIVATION ALL PLANT MATERIALS SHALL BE MULCHED WITH A 2" LAYER OF FINE, SAREZED FINE BARK, PEAT MOSS, OR ANOTHER APPROVED MATERIAL OVER THE ENTIRE AREA OF THE BED OR SAUCER.

**6. PLANT INSPECTION AND ACCEPTANCE**  
 THE ARC SHALL BE RESPONSIBLE FOR INSPECTING ALL PLANTING PROJECTS ON A PERIODIC BASIS TO ASSURE THAT ALL WORK IS PROCEEDING IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.

**7. PLANT GUARANTEE**  
 ALL PLANT MATERIAL SHALL BE GUARANTEED FOR THE DURATION OF ONE FULL GROWING SEASON AFTER FINAL INSPECTION AND ACCEPTANCE OF THE WORK IN THE PLANTING PROJECT. PLANTS SHALL BE ALIVE AND IN SATISFACTORY GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD.

**A. FOR THIS PURPOSE, THE "GROWING SEASON" SHALL BE THAT PERIOD BETWEEN THE END OF THE "SPRING" PLANTING SEASON AND THE COMMENCEMENT OF THE "FALL" PLANTING SEASON.**

**B. GUARANTEE FOR PLANTING PERFORMED AFTER THE SPECIFIED END OF THE "SPRING" PLANTING SEASON, SHALL BE EXTENDED THROUGH THE END OF THE NEXT FOLLOWING "SPRING" PLANTING SEASON.**

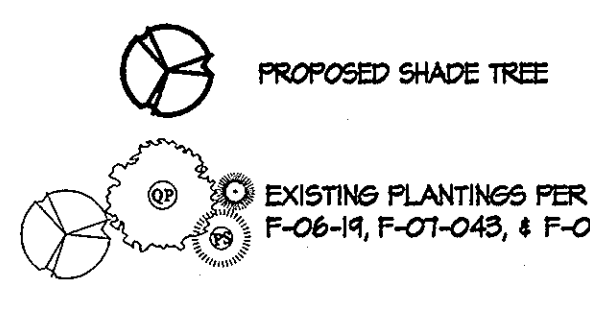
**SODDING**  
 ALL SODDING SHALL BE IN ACCORDANCE TO THE LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS' LATEST EDITION, APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.

ALL SOD SHALL BE STRONGLY ROOTED SOD, NOT LESS THAN TWO YEARS OLD AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. PROVIDE ONLY SOD CAPABLE OF GROWTH DEVELOPMENT WHEN PLANTED AND IN STRIPS NOT MORE THAN 18" WIDE X 4' LONG. PROVIDE SOD COMPOSED PRINCIPALLY OF IMPROVED STRAIN KENTUCKY BLUEGRASS, SUCH AS, COLUMBIA, VICTA, OR ESCORT.

**LANDSCAPING NOTES:**

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.24 OF THE HOWARD COUNTY CODE OF THE HOWARD COUNTY LANDSCAPE MANUAL.
- CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST (5) FIVE DAYS BEFORE STARTING WORK. ALL GENERAL NOTES, ESPECIALLY THOSE REGARDING UTILITIES ON SHEET 1 SHALL APPLY.
- FIELD VERIFY UNDERGROUND UTILITY LOCATIONS AND EXISTING CONDITIONS BEFORE STARTING PLANTING WORK. CONTACT ENGINEER / LANDSCAPE ARCHITECT IF ANY RELOCATIONS ARE REQUIRED.
- PLANT QUANTITIES SHOWN ON PLANT LIST ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL TAKE PRECEDENCE.
- ALL PLANT MATERIAL SHALL BE FULL, HEAVY, WELL FORMED, AND SYMMETRICAL AND CONFORM TO THE A.A.S. SPECIFICATIONS, AND BE INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- NO SUBSTITUTION SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR HIS REPRESENTATIVE.
- ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED, OR MULCHED SHALL BE SEEDED OR SOCCED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF HE/SHE ENCOUNTERS SOIL DRAINAGE CONDITIONS WHICH MAY BE DETRIMENTAL TO THE GROWTH OF THE PLANTS.
- ALL EXPOSED EARTH WITHIN LIMITS OF PLANTING BEDS SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH PER PLANTING DETAILS.
- THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND, WHEN NECESSARY, REPAIRED AND REPLACED.
- "SCHEDULE A - PERIMETER LANDSCAPING" IS PROVIDED FOR LANDSCAPE SURETY CALCULATION PURPOSES ONLY. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED WITH THE DPM DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$2,400.00.
- NO LANDSCAPING WILL BE ALLOWED WITHIN WATER AND SEWER EASEMENTS.
- PERIMETER 4 STORM-WATER MANAGEMENT AREA LANDSCAPING FOR OPEN SPACE LOTS D-1, D-2, & D-3 IS PROVIDED UNDER F-04-08 (PHASE 4).
- SEE SHEET 4 FOR STREET TREE LOCATIONS.
- LANDSCAPING REQUIRED BY TABLE 2 AND SCHEDULES B & C OF THE LANDSCAPE MANUAL FOR FUTURE STRUCTURES AND PARKING SHALL BE PROVIDED ON THE SITE DEVELOPMENT PLANS FOR THEIR DEVELOPMENT.

**LEGEND**



**PLANT LIST**

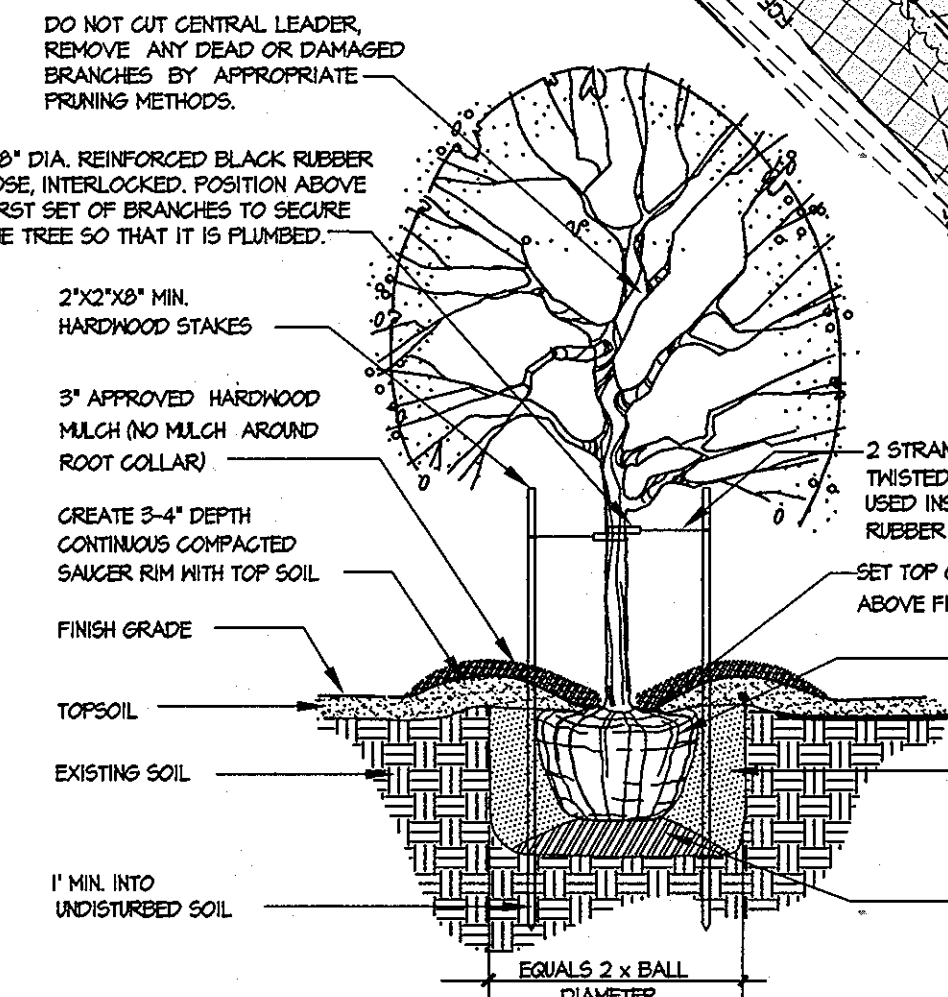
SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	NOTES
<b>SHADE TREES</b>				
	8	QUERCUS PALUSTRIS/PIN OAK	2 1/2" - 3" Cal. B4B (21" - 14" height) 6" min. branching ht.	

**SCHEDULE A: PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO PERIMETER PROPERTIES	
	A-3	A-4
BUFFER	A-3	A-4
LANDSCAPE BUFFER TYPE	TYPE A	TYPE A
LINEAR FEET OF ROADWAY/ PERIMETER FRONTAGE/BLDG.	45'	554'
CREDIT FOR EX. VEGETATION (YES, NO; LINEAR FEET; DESCRIBE BELOW IF NEEDED)	NONE	NONE
CREDIT FOR WALL, FENCE OR BERM (YES, NO; LINEAR FEET; DESCRIBE BELOW IF NEEDED)	NONE	NONE
NUMBER OF PLANTS REQUIRED	8 (1:60)	9 (1:60)
SHADE TREES	0	0
EVERGREEN TREES	0	0
ORNAMENTALS	0	0
SHRUBS	0	0
NUMBER OF PLANTS PROVIDED	8	WILL BE PROVIDED WITH SOD FOR PARCEL D-80
SHADE TREES	0	
EVERGREEN TREES	0	
ORNAMENTALS	0	
SHRUBS	0	
SUBSTITUTIONS MADE	0	

SCHEDULE A REQUIRED SURETY: 8 SHADE TREES @ \$300/TREE = \$2,400.00  
 TOTAL = \$2,400.00

THE LANDSCAPE SURETY WILL BE INCLUDED IN THE DEVELOPER'S AGREEMENT



NOTE: ALL SUPPORTING DEVICES (STAKES, WIRES, ETC) SHALL BE REMOVED AFTER 2 GROWING SEASONS.

**DECIDUOUS TREE PLANTING DETAIL**

FOR PLANTING MATERIAL UP TO 3 1/2" CALIPER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 5-14-10  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 [Signature] 5/10  
 Chief, Division of Land Development Date

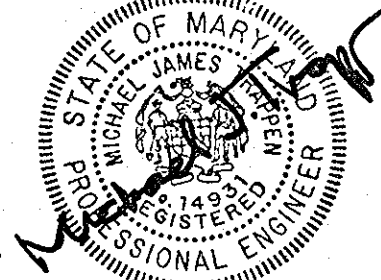
[Signature] 5/10  
 Chief, Development Engineering Division Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK  
 BURTNSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 410-880-1820 DC/WA: 301-989-2324 FAX: 301-421-4186

L:\CADD\DRAWINGS\03006\Phase V\Finals\05-LS.dwg DES. dds DRN. dds CHK. dds DATE REVISION BY APPR.

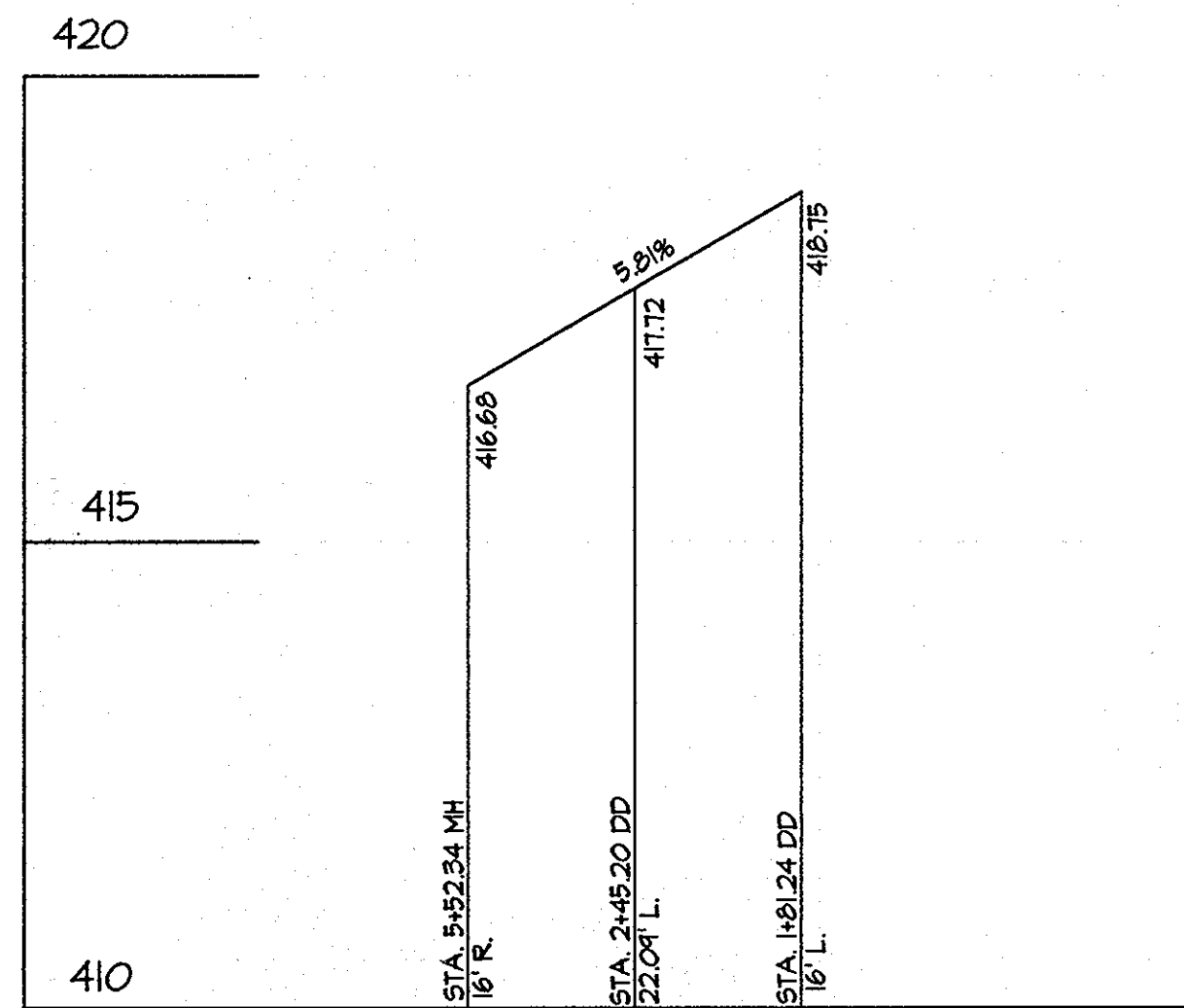
**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14888 EXPIRATION DATE: MAY 21, 2017

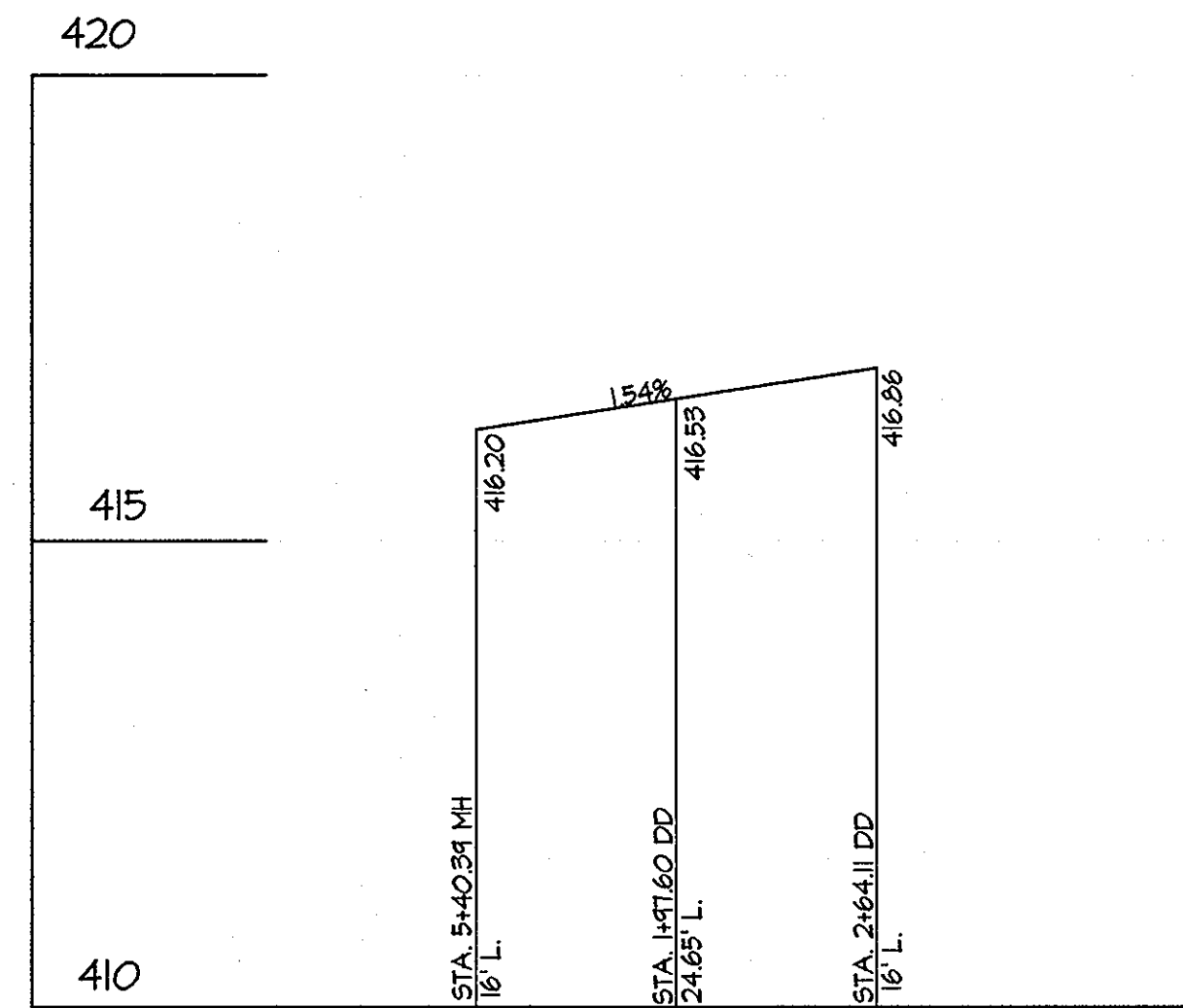


**LANDSCAPE PLAN**  
**SHIPLEY'S GRANT**  
 PHASE V  
 Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
 Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
 AND PHASE I  
 Open Space Lot C-64

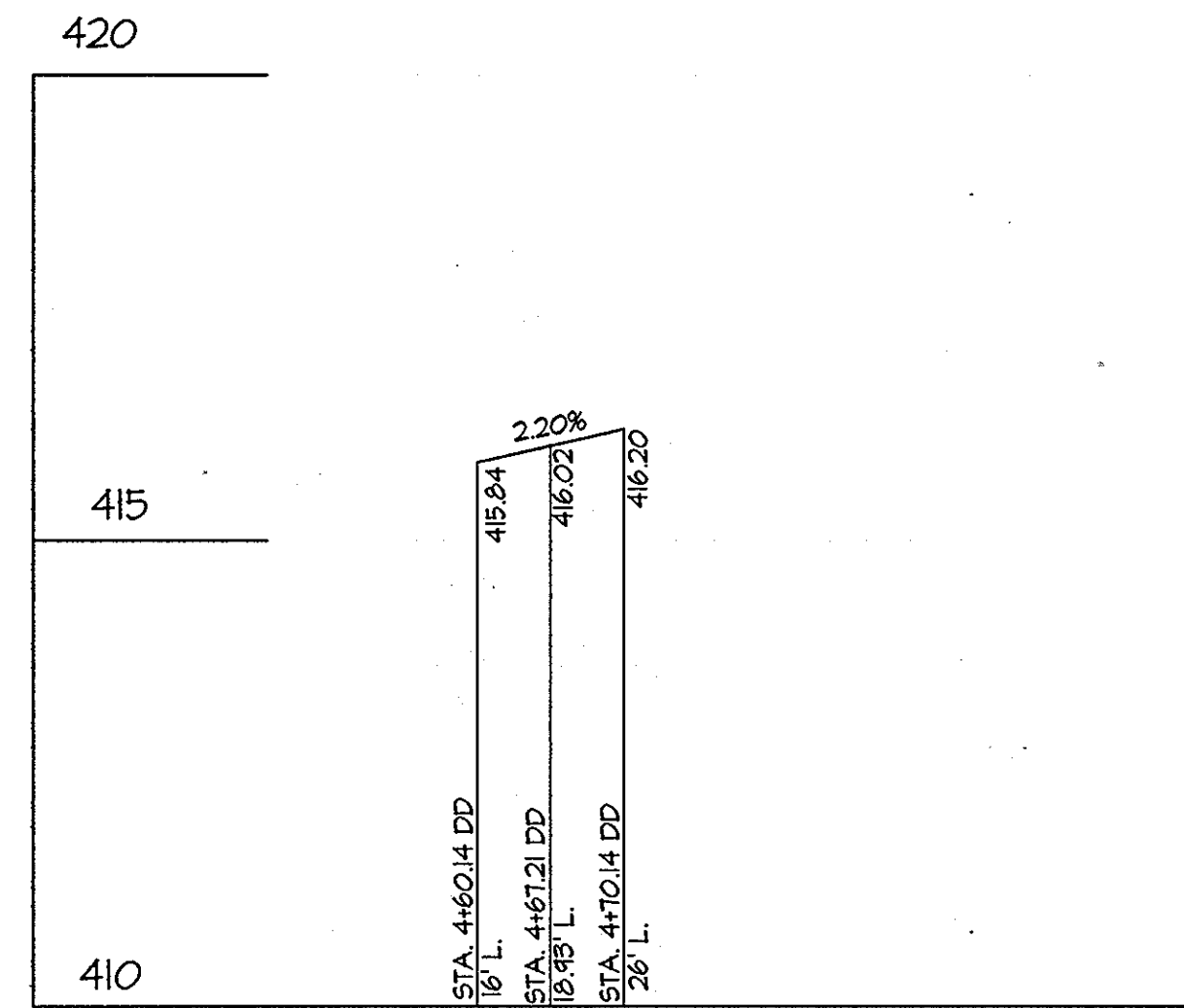
SCALE	ZONING	G. L. W. FILE NO.
1"=50'	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
MAY, 2010	37-1&2	11 OF 12



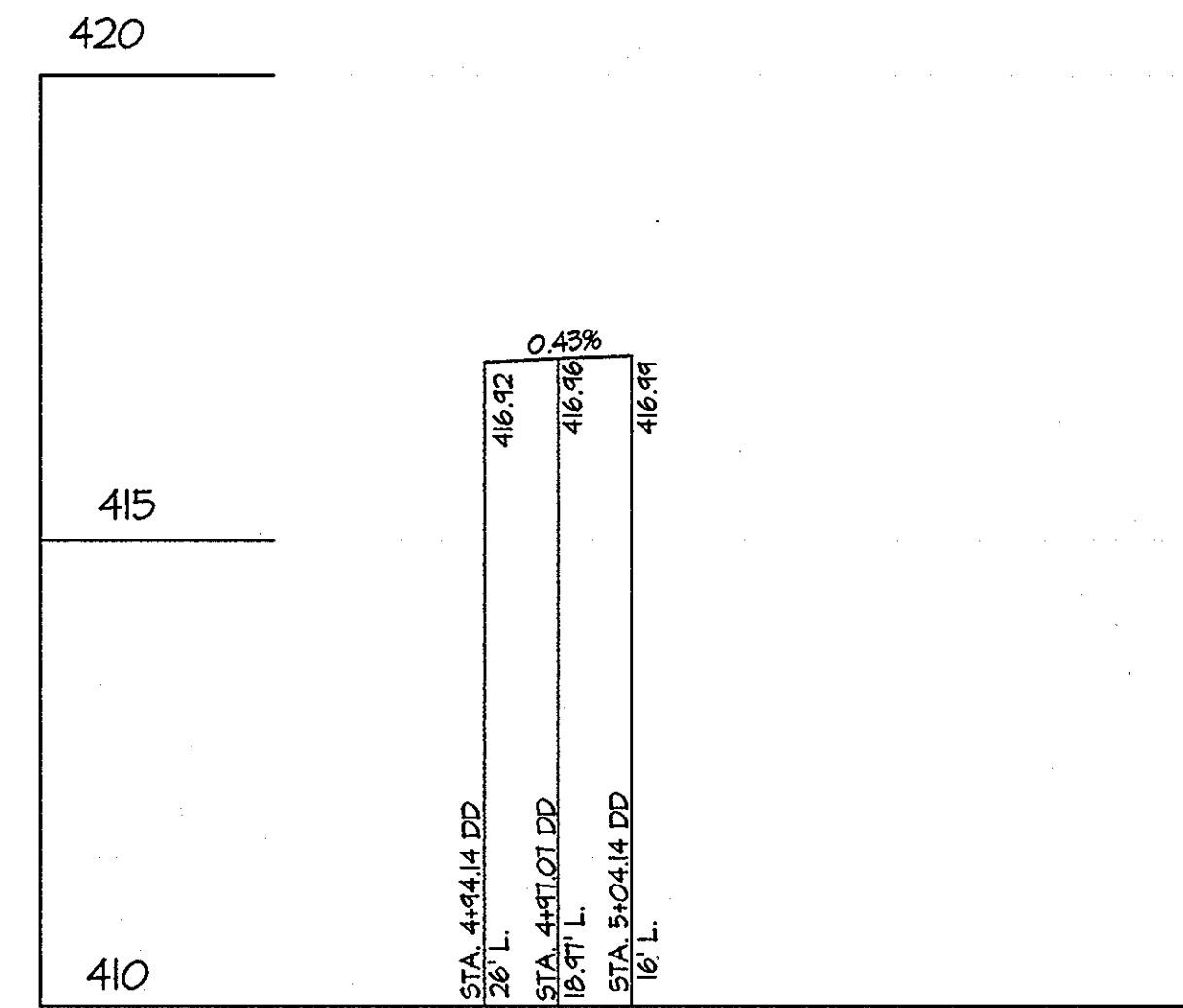
E.O.P. RETURN PROFILE FOR MAPLE HILL ROAD AND DUNCAN DRIVE



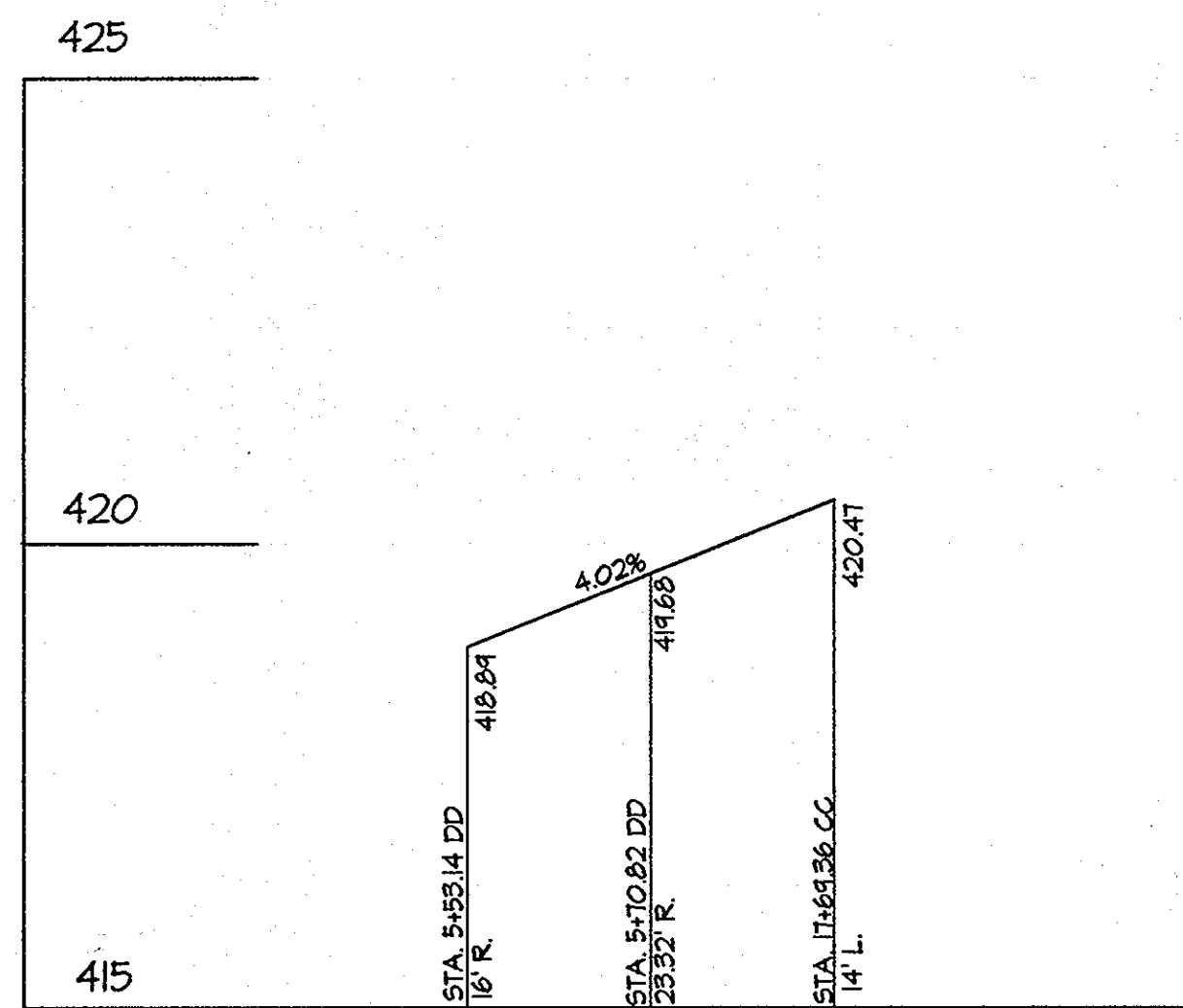
E.O.P. RETURN PROFILE FOR MAPLE HILL ROAD AND DUNCAN DRIVE



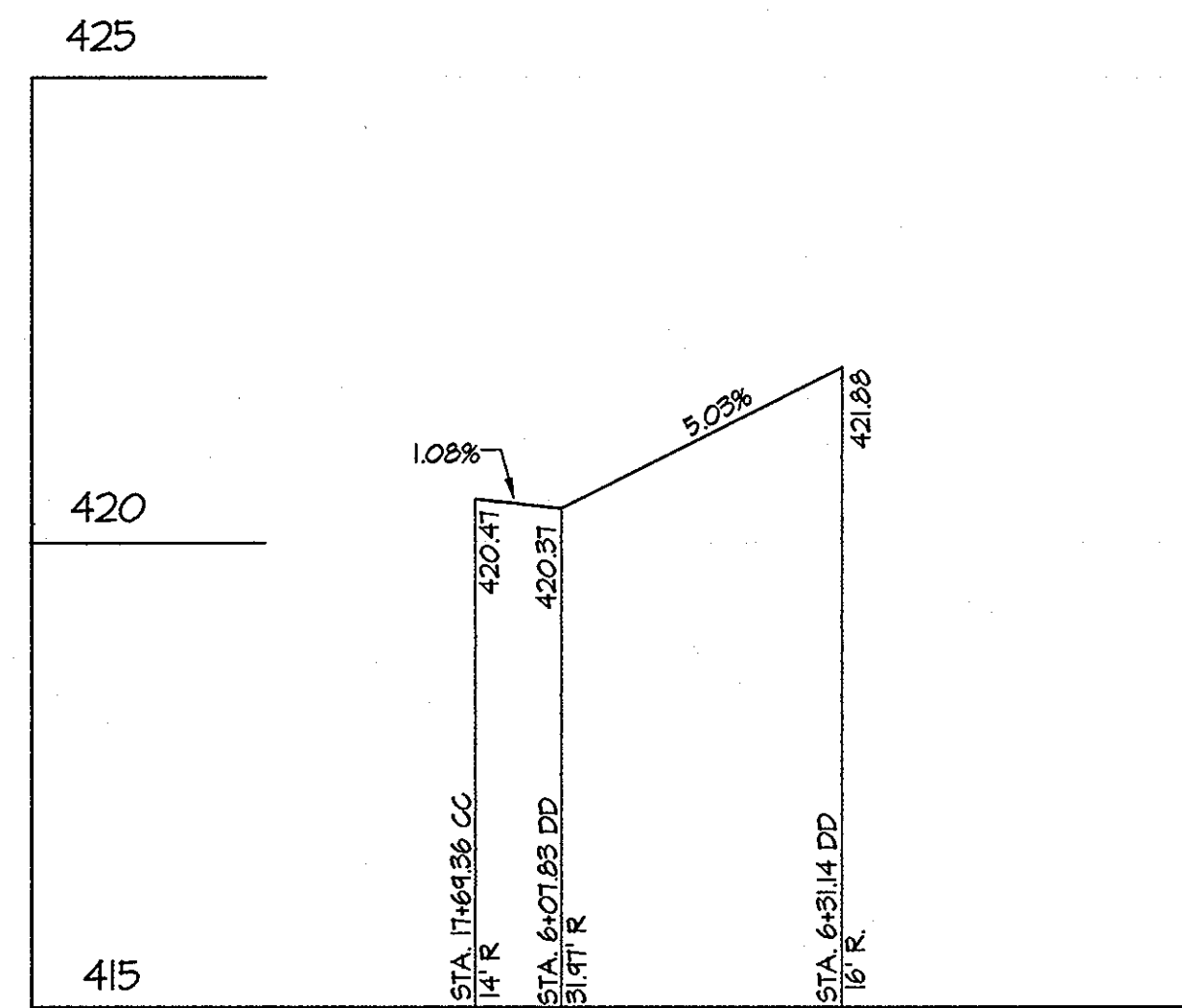
E.O.P. RETURN PROFILE FOR DUNCAN DRIVE AND ALLEY CC



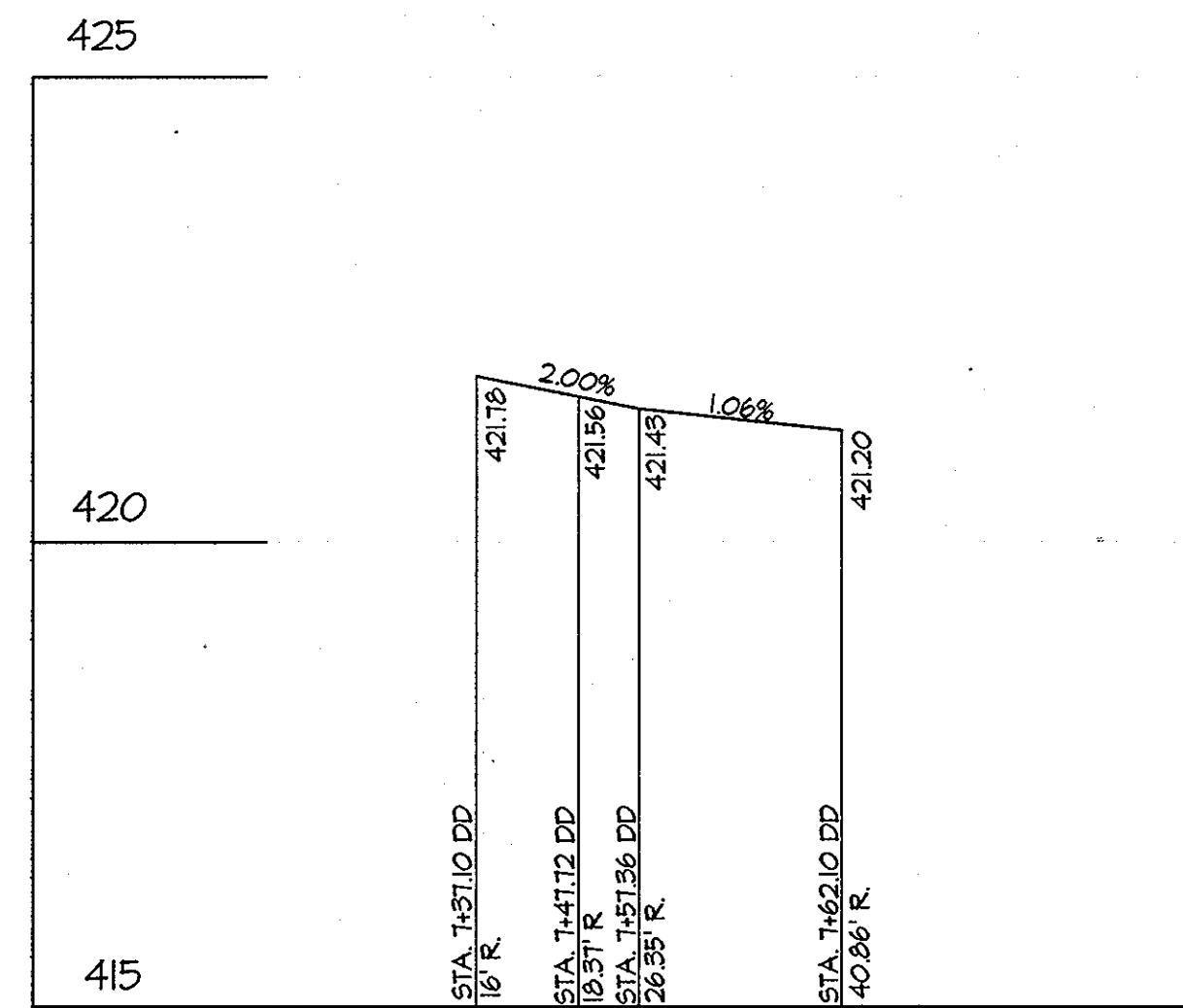
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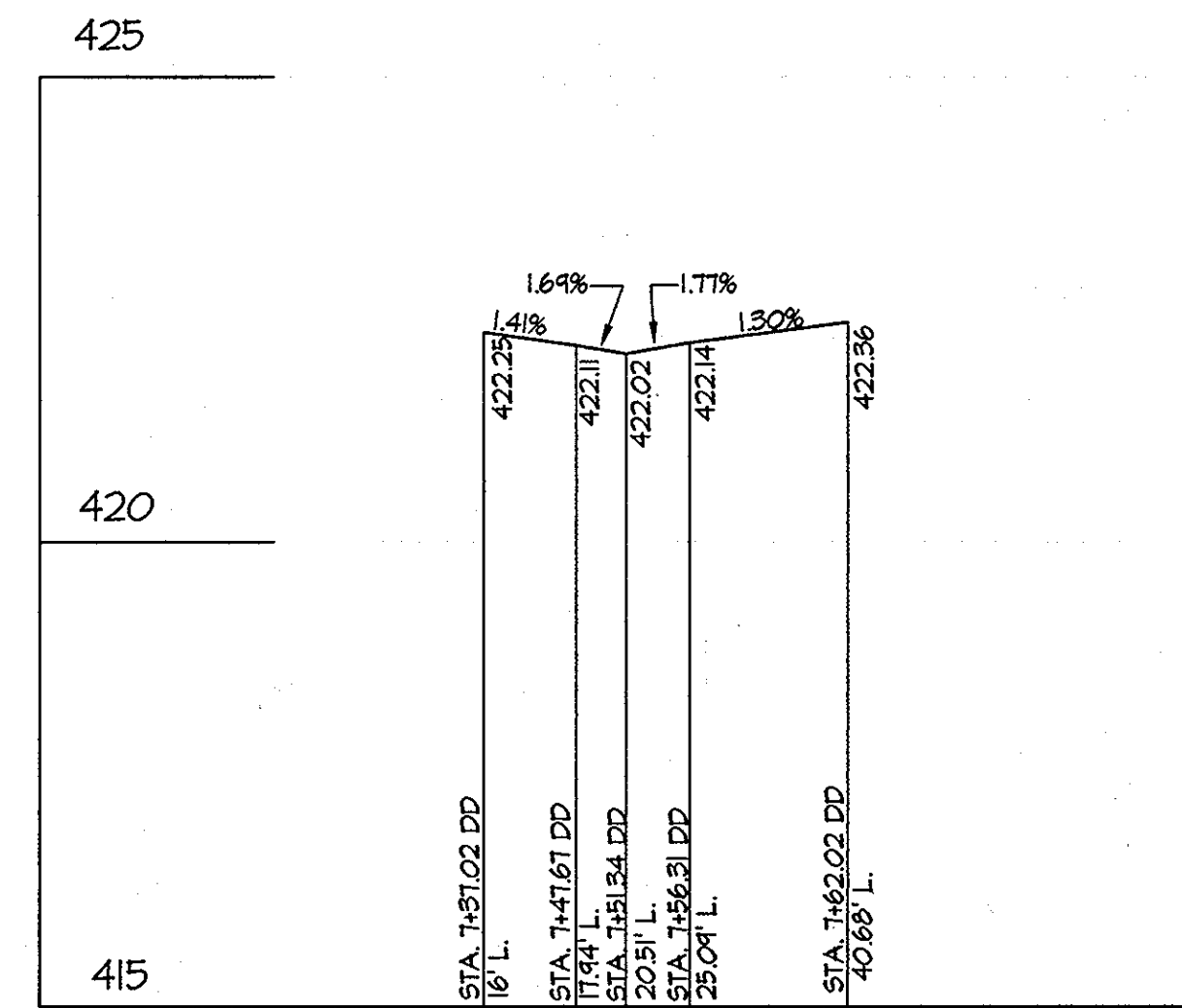
E.O.P. RETURN PROFILE FOR DUNCAN DRIVE AND CHARLES CROSSING



E.O.P. RETURN PROFILE FOR DUNCAN DRIVE AND CHARLES CROSSING



E.O.P. RETURN PROFILE FOR DUNCAN DRIVE AND FALLS RUN ROAD



E.O.P. RETURN PROFILE FOR DUNCAN DRIVE AND FALLS RUN ROAD

**CURB RETURN PROFILES**

SCALE: (H) 1" = 20'  
(V) 1" = 2'

CC= CHARLES CROSSING  
MH= MAPLE HILL ROAD  
DD= DUNCAN DRIVE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*W. A. M. M.* 5-14-10  
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*K. S. S.* 5/25/10  
Chief, Division of Land Development Date

*M. J. J.* 5/20/10  
Chief, Development Engineering Division Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
BURTONSVILLE, MARYLAND 20886  
TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

OWNER  
BA WATERLOO, LLC.  
c/o BOZZUTO HOMES, INC.  
7850 WALKER DRIVE, SUITE 400  
GREENBELT, MARYLAND 20770  
ATTN: DUNCAN SLIDELL  
301-623-1525

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14931  
EXPIRATION DATE: MAY 21, 2012

**CURB RETURN PROFILES**  
**SHIPLEY'S GRANT**  
PHASE V  
Lots C-308, D-5 thru D-62 and Open Space Lots D-63 thru D-68  
Common Open Space Lots D-69 thru D-72 and Non-buildable Parcels D-73 thru D-80  
AND PHASE I  
Open Space Lot C-64  
ELECTION DISTRICT No. 1  
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-A-15	08002
DATE	TAX MAP - GRID	SHEET
MAY, 2010	37-1&2	12 OF 12