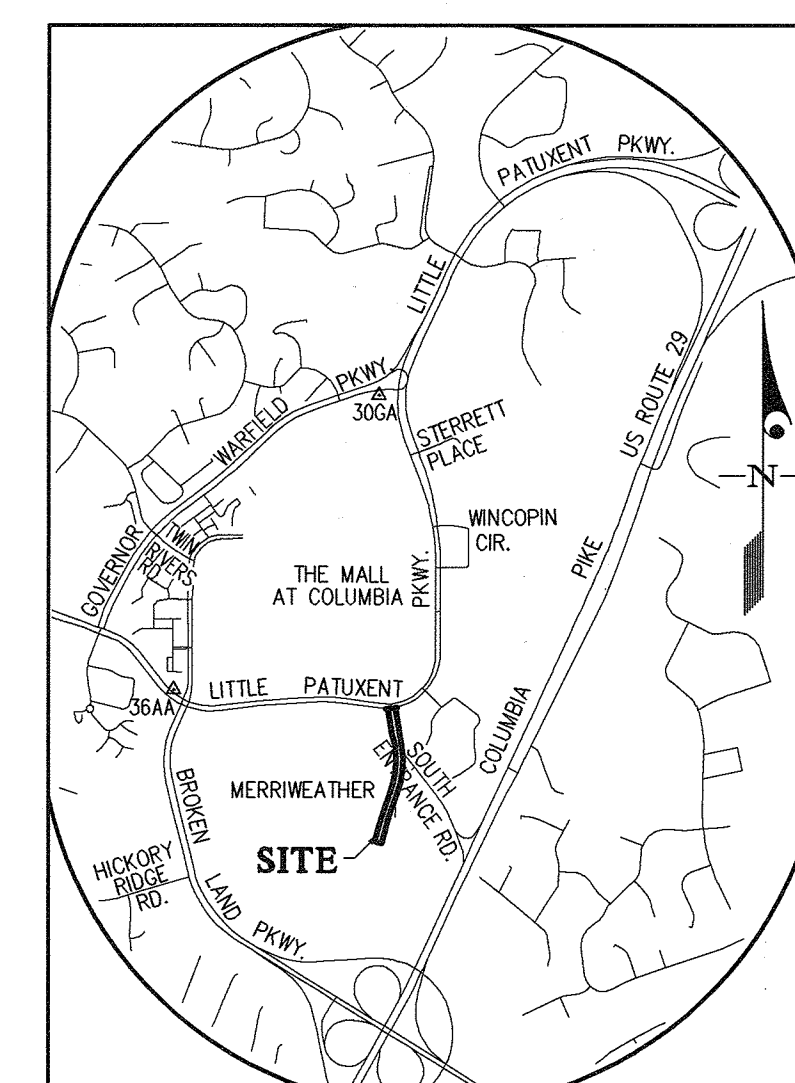


**GENERAL NOTES:**

- THE PROPERTY IS ZONED NT PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN. THE PROJECT AREA IS SUBJECT TO THE DOWNTOWN COLUMBIA PLAN - A GENERAL PLAN AMENDMENT EFFECTIVE FEBRUARY 1, 2010.
- APPLICABLE DPZ FILE REFERENCES: FDP-DC-CRESCENT-1, FDP-DC-CRESCENT-1A, ECF 15-074, ECF 15-083, F 15-076, ECF 16-041, F 15-106, SDP 15-068, FDP 4-A-V, F 16-101, AND SDP-11-043.
- THE FOLLOWING PERMITS AND TRACKING NUMBERS HAVE BEEN ASSIGNED TO THIS PROJECT BY STATE AND FEDERAL AGENCIES FOR THIS PLAN:  
MARYLAND DEPARTMENT OF THE ENVIRONMENT: 14 NT-3184 / 2014-61063  
ARMY CORPS OF ENGINEERS: CENAS-PP-RM-2014-61063-136  
FOR SDP 11-043  
MARYLAND DEPARTMENT OF THE ENVIRONMENT: 201661434 / 16-NT-3234
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-251-7111 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE. LIGHTING IS TO BE COORDINATED WITH LIGHTING THROUGHOUT THE MAJOR ROADS IN THE CRESCENT NEIGHBORHOOD.
- TRAFFIC CONTROL DEVICES: A) THE R-1 (STOP) SIGNS AND THE STREET NAME SIGNS (SNS) ASSEMBLIES FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED. B) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY TRAFFIC CONTROL DEVICES. C) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD). D) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (4 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (26GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO ("2") "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- 95% COMPACTION IN FILL AREAS SHALL MEET AASHTO T-180 REQUIREMENTS.
- THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED. TRAFFIC IMPACT STUDY AND TRAFFIC SIGNAL WARRANT ANALYSIS SUBMITTED AND APPROVED AS A PART OF THE FINAL DEVELOPMENT PLAN (FDP-DC-CRESCENT-1) BY WELLS AND ASSOCIATES.
- BOUNDARY INFORMATION IS FROM BOUNDARY SURVEYS BY GUTSCHICK, LITTLE, AND WEBER, P.A., DATED NOVEMBER, 2011.
- HORIZONTAL AND VERTICAL DATUM IS BASED ON HOWARD COUNTY CONTROL STATIONS: 306A, 36AA.
- AERIAL TOPOGRAPHY BY MCKENZIE SNYDER, INC. ON MARCH, 2007 AND SUPPLEMENTED WITH FIELD RUN TOPOGRAPHY BY GUTSCHICK, LITTLE AND WEBER ON AUGUST, 2011.
- ON MAY 9, 2016 A DETERMINATION WAS MADE BY THE DEPARTMENT OF PLANNING AND ZONING THAT THE IMPACTS TO ENVIRONMENTAL FEATURES (INCLUDING STEEP SLOPES, STREAMS, WETLANDS, STREAM BUFFERS AND WETLAND BUFFERS) FOR THE CONSTRUCTION OF PUBLIC AND PRIVATE ROADS, UTILITIES, OR STORMWATER MANAGEMENT AS SHOWN ON THIS PLAN TO BE ESSENTIAL AND NECESSARY FOR THE REASONABLE DEVELOPMENT OF THIS PROPERTY AND THE FULFILLMENT OF THE DOWNTOWN COLUMBIA PLAN.
- VEHICULAR INGRESS & EGRESS TO SYMPHONY WOODS ROAD IS RESTRICTED EXCEPT AS APPROVED BY HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
- THE CEMETERY INVENTORY MAPS DO NOT SHOW ANY CEMETERIES WITHIN THE PROJECT LIMITS.
- 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.
- THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
- WATER AND SEWER ARE PUBLIC PER CONTRACT NO. 24-500B-D AND ARE WITHIN THE LITTLE PATUXENT SEWERAGE AREA.
- THE 100-YEAR FLOOD PLAIN LIMITS SHOWN ON THESE PLANS WERE DETERMINED IN A FLOODPLAIN STUDY SUBMITTED AS PART OF THESE PLANS. THE STUDY WAS APPROVED ON AUGUST 6, 2015.
- THIS SUBDIVISION IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1202(B)(1)(V) OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE SUBJECT PROPERTY IS PART OF A PLANNED UNIT DEVELOPMENT WHICH HAS PRELIMINARY DEVELOPMENT PLAN APPROVAL AND 50% OR MORE OF THE LAND IS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECEMBER 31, 1992.
- THIS SITE IS SUBJECT TO THE FINAL DEVELOPMENT PLAN RECORDED AS PLAT NO. 24102 THRU 24110, THE NEIGHBORHOOD CONCEPT PLAN (NCP) RECORDED AS PLAT NO. 22012 THRU 22105, THE NEIGHBORHOOD SPECIFIC DESIGN GUIDELINES (NSDG) RECORDED AS LIBER 14166 FOLIO 1 THRU 250 AND THE NEIGHBORHOOD SPECIFIC IMPLEMENTATION PLAN (NSIP) RECORDED AS LIBER 14166 FOLIO 251 THRU 287.
- THERE ARE NO KNOWN EXISTING DEDICATED BICYCLE LANES OR SHARED BICYCLE AND VEHICULAR TRAVEL LANES.
- FOR INFORMATION ON THE POTENTIAL TRANSIT ROUTE CIRCULATION, SEE THE NEIGHBORHOOD SPECIFIC IMPLEMENTATION PLAN PAGE 10.
- FOR INFORMATION ON THE LOCATIONS OF PRIMARY AND SECONDARY PEDESTRIAN ROUTES AND THE BICYCLE CIRCULATION, SEE CHAPTER 3 OF THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES FOR INFORMATION ON THE STREET FRAMEWORK CHANGES, SEE CHAPTER 3 OF THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES.
- STREET TREE AND LANDSCAPE PLANS HAVE BEEN PREPARED BY A REGISTERED LANDSCAPE ARCHITECT AND ARE CERTIFIED TO CONFORM WITH THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES RECORDED IN THE LAND RECORDS OF HOWARD COUNTY IN LIBER 16305, FOLIO 415 THRU 511.
- LANDSCAPE SURETY IN THE AMOUNT OF \$16,800.00 FOR STREET TREES WILL BE PROVIDED WITH THE DEVELOPER'S AGREEMENT.
- STORMWATER MANAGEMENT FOR THIS SITE IS PROVIDED IN ACCORDANCE WITH CHAPTER 5 OF THE MDE STORMWATER MANAGEMENT DESIGN MANUAL, VOLUMES 1 AND 2, THROUGHOUT THE SITE. FILTERRAS HAVE BEEN UTILIZED. A PE VALUE OF 2.57 WAS CALCULATED PER ECF FOR THE EXTENTS OF THE F-16-101 AND F-16-114 ROAD CONSTRUCTION PLANS. ALL OF THE DEVICES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE COMMERCIAL OWNER'S ASSOCIATION. THE FILTERRAS WILL TREAT WATER QUALITY AND THE REMAINDER WILL BE TREATED IN BIOS LOCATED ON F-16-101.
- WATER AND SEWER SERVICE TO THESE PARCELS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122(B) OF THE HOWARD COUNTY CODE.
- PUBLIC WATER AND SEWER ALLOCATIONS WILL BE GRANTED AT THE TIME OF ISSUANCE OF BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- HOWARD COUNTY'S MAINTENANCE RESPONSIBILITY IS LIMITED TO THE IMPROVEMENTS SHOWN FROM THE BACK OF CURB TO THE OTHER BACK OF CURB, UNLESS AN AGREEMENT HAS BEEN PROVIDED. THIS WILL LEAVE AN AREA BETWEEN THE BACK OF CURB AND THE RIGHT OF WAY LINE THAT WILL BE THE RESPONSIBILITY OF AN OWNER'S ASSOCIATION OR SIMILAR ENTITY, TO BE DETERMINED WITH THE DEVELOPER'S AGREEMENT.
- THE CONTRACTOR SHALL TEST PIT ALL EXISTING UTILITIES AT LEAST FIVE (5) DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE DRAWINGS AND NOTIFY THE ENGINEER IMMEDIATELY IF THE LOCATION OR INVERT IS DIFFERENT THAN SHOWN.
- THE OUTFALL AT E9-1 HAS BEEN DESIGNED FOR THE 50 YEAR STORM, WHICH IS THE DESIGN STORM FOR A MAJOR COLLECTOR. THE STREAM RESTORATION WORK IMMEDIATELY BELOW THE OUTFALL WAS DESIGNED AND CONSTRUCTED UNDER SDP 13-026 FOR THE 100 YEAR STORM EVENT.
- AS PART OF THE PREPARATION OF SDP 11-043, AN ALTERNATIVE COMPLIANCE WAS REQUESTED TO SECTIONS 16.115(C)(2) AND 16.116 (a)(2)(V) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, ALLOWING CONSTRUCTION WITHIN THE FLOODPLAIN AND STREAM. ON AUGUST 11, 2011, HP-11-043 WAS APPROVED BY THE HOWARD COUNTY DEPT. OF PLANNING AND ZONING.

# PHASE 2B - FINAL PLAN DOWNTOWN COLUMBIA CRESCENT NEIGHBORHOOD SYMPHONY WOODS ROAD



**VICINITY MAP**  
SCALE: 1" = 2,000'  
ADC MAP 32 GRID A-1

**HOWARD COUNTY CONTROL STATIONS**

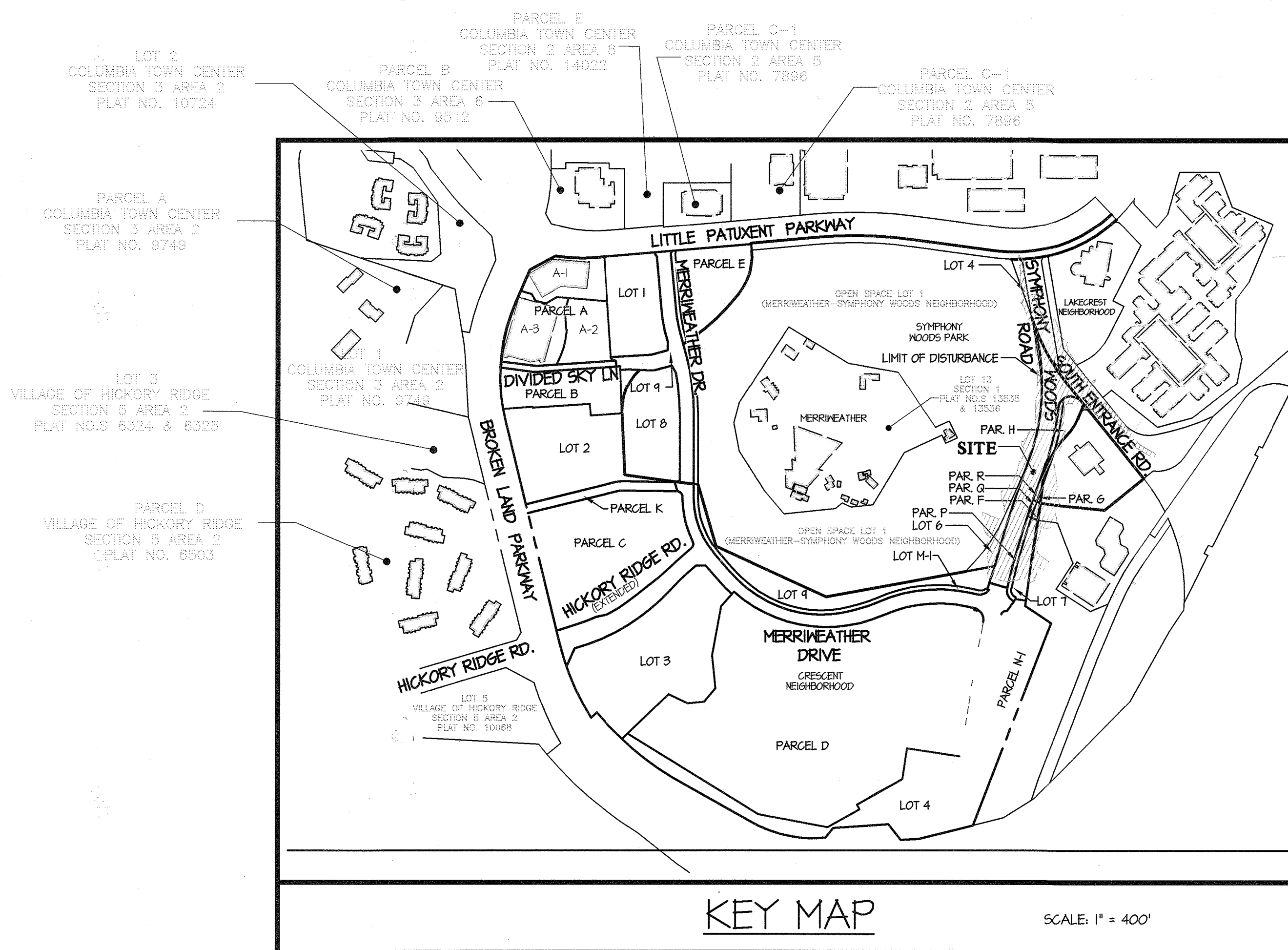
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EASTING: 1352,171.5307	EASTING: 1344,906.1101
ELEVATION: 334.8718	ELEVATION: 354.151
(LATEST ADJ. NOV. 2008)	(LATEST ADJ. NOV. 2008)

**SITE ANALYSIS**

TOTAL AREA OF CRESCENT NEIGHBORHOOD	99.94 ACRES
AREA OF THIS SUBMISSION (LIMIT OF DISTURBANCE)	5.5 ACRES
NUMBER OF PARCELS UNDER THIS SUBMISSION	0
AREA OF PARCELS	0.00 ACRES
NUMBER OF NON-BUILDABLE PARCELS UNDER THIS SUBMISSION	0
AREA OF NON-BUILDABLE PARCELS	0.00 ACRES
NUMBER OF OPEN SPACE LOTS UNDER THIS SUBMISSION	0
AREA OF OPEN SPACE LOTS	0.00 ACRES
AREA OF PUBLIC ROADWAYS	1.81 ACRES

**SHEET INDEX**

- 1 - COVER SHEET
- ROAD CONSTRUCTION
  - 2 - EASEMENT PLAN
  - 3 - STEEP SLOPE PLAN
  - 4 - EXISTING CONDITIONS AND DEMOLITION PLAN
  - 5 - SYMPHONY WOODS ROAD - PLAN AND PROFILE
  - 6 - SOUTH ENTRANCE ROAD & DRIVENWAY ENTRANCE - PLAN AND PROFILE
  - 7 - TYPICAL ROAD SECTION & CURB DETAILS
  - 8 - GRADING PLAN
  - 9 - GRADING PLAN & ADA RAMP DETAILS
  - 10 - STORM DRAIN DRAINAGE AREA MAP
  - 11 - STORM DRAIN PROFILES
  - 12 - STORM DRAIN PROFILES
- STORMWATER MANAGEMENT
  - 13 - ESD DRAINAGE AREA MAP AND DETAILS
- SEDIMENT CONTROL
  - 14 - SEDIMENT & EROSION CONTROL PLAN - STAGE 1
  - 15 - SEDIMENT & EROSION CONTROL PLAN - STAGE 2
  - 16 - SEDIMENT & EROSION CONTROL PLAN - STAGE 3
  - 17 - SEDIMENT CONTROL NOTES AND DETAILS
  - 18 - SEDIMENT CONTROL NOTES AND DETAILS
  - 19 - SEDIMENT CONTROL NOTES AND DETAILS
  - 20 - SEDIMENT CONTROL DEVICE DRAINAGE AREA MAP
- STREET TREE AND LIGHTING
  - 21 - STREET TREE AND LIGHTING PLAN
- BRIDGES
  - 22 - GENERAL PLAN AND ELEVATION
  - 23 - ABUTMENT 'A' PLAN AND ELEVATION
  - 24 - ABUTMENT 'B' PLAN AND ELEVATION
  - 25 - ABUTMENT TYPICAL SECTIONS
  - 26 - TYPICAL MICROPROFILE DETAILS
  - 27 - WING WALL ELEVATIONS 1
  - 28 - WING WALL TYPICAL SECTIONS
  - 29 - SUPERSTRUCTURE TYPICAL SECTION
  - 30 - FRAMING PLAN
  - 31 - BORING LOCATION PLAN
  - 32 - BORINGS AND DRIVE TESTS
  - 33 - BORINGS AND DRIVE TESTS
  - 34 - MISCELLANEOUS DETAILS
- TRAFFIC SIGNING AND STRIPING
  - 35 - SIGNING AND STRIPING PLAN
- MAINTENANCE OF TRAFFIC
  - 36 - MAINTENANCE OF TRAFFIC - GENERAL NOTES
  - 37 - MAINTENANCE OF TRAFFIC - STAGE 1
  - 38 - MAINTENANCE OF TRAFFIC - STAGE 2
  - 39 - MAINTENANCE OF TRAFFIC - STAGE 3



**LEGEND**

---366---	EXISTING CONTOUR	○	EXISTING POST	---	DRAINAGE DIVIDE	---	LIMIT OF WETLAND
---	PROPOSED CONTOUR	●	EXISTING POLE	---	SOIL TYPE BOUNDARY	---	WETLAND AREA
---	EXISTING TREELINE (DOES NOT MEET CRITERIA FOR A FOREST)	○	EXISTING FLAG	---	SOIL TYPE / SOIL GROUP	WB	WETLAND BUFFER
---	LIMIT OF EXISTING FOREST	○	EXISTING MANHOLE	---	STABILIZED CONSTRUCTION ENTRANCE	FP	100 YEAR FLOODPLAIN
---	LIMIT OF ULTIMATE FOREST	○	EXISTING FIRE HYDRANT	---	EARTH DIKE	---	STREAM BANK CENTERLINE OF STREAM
---	EXISTING SANITARY SEWER	○	EXISTING SIGN TO BE RELOCATED	---	CLEAN WATER DIVERSION	---	STREAM / BANK BUFFER
---	PROPOSED SANITARY SEWER	○	PAVEMENT TO BE REMOVED	---	SILT FENCE / SUPER SILT FENCE	---	FLOODPLAIN CROSS SECTION
---	EXISTING WATERLINE	○	EXISTING CURB AND GUTTER	---	PROPOSED INLET PROTECTION	---	EXISTING TREE
---	PROPOSED WATERLINE	○	EXISTING EDGE OF PAVEMENT	---	PROPOSED INLET BLOCKING	---	PROPOSED STREET TREE
---	PROPOSED FIRE HYDRANT	○	PROPOSED CURB AND GUTTER	---	TEMP. GABION OUTLET STRUCTURE	---	PROPOSED STREET TREE (FOR BONDING PURPOSES ONLY)
---	EXISTING STORM DRAIN	○	PROPOSED REVERSE	---	LIMIT OF DISTURBANCE	---	SOIL BORING LOCATION
---	PROPOSED STORM DRAIN	○	CONCRETE SIDEWALK	---	PUMP AROUND WITH A FILTER BAG	---	
---		○	PROPOSED MULTI-PURPOSE PATH	---		---	

**STORMWATER MANAGEMENT FACILITY OWNERSHIP AND MAINTENANCE RESPONSIBILITY TABLE**

FACILITY	OWNERSHIP	MAINTENANCE
FILTERRA 1	PRIVATE	PRIVATE
FILTERRA 2	PRIVATE	PRIVATE
FILTERRA 3	PRIVATE	PRIVATE
FILTERRA 4	PRIVATE	PRIVATE
FILTERRA 5	PRIVATE	PRIVATE
FILTERRA 6	PRIVATE	PRIVATE
FILTERRA 7	PRIVATE	PRIVATE
FILTERRA 8	PRIVATE	PRIVATE
FILTERRA 9	PRIVATE	PRIVATE
FILTERRA 10	PRIVATE	PRIVATE
FILTERRA 11	PRIVATE	PRIVATE
FILTERRA 12	PRIVATE	PRIVATE
FILTERRA 13	PRIVATE	PRIVATE
FILTERRA 14	PRIVATE	PRIVATE
FILTERRA 15	PRIVATE	PRIVATE
FILTERRA 16	PRIVATE	PRIVATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/17/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 3/7/18

APPROVED: DEVELOPMENT ENGINEERING DIVISION  
 Chief, Development Engineering Division  
 Date: 2-27-18

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-863-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

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. 12975  
 EXPIRATION DATE: MAY 26, 2018  
 1/25/18

**COVER SHEET**  
**DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD**

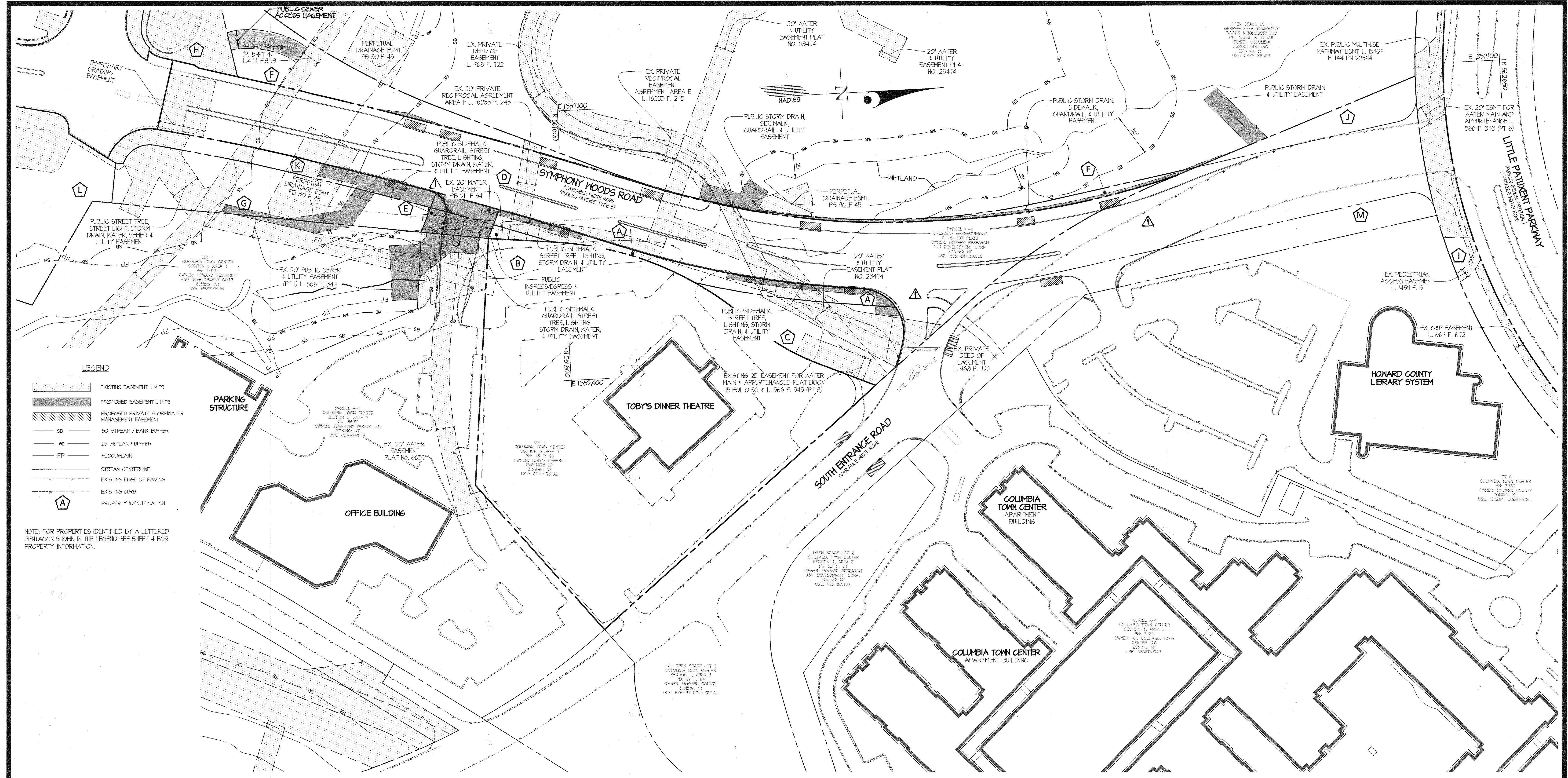
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 ZONING: NT  
 G. L. W. FILE NO.: 11071

DATE: JAN, 2018  
 TAX MAP - GRID: 36 - 01  
 SHEET: 1 OF 39

HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT No. 5

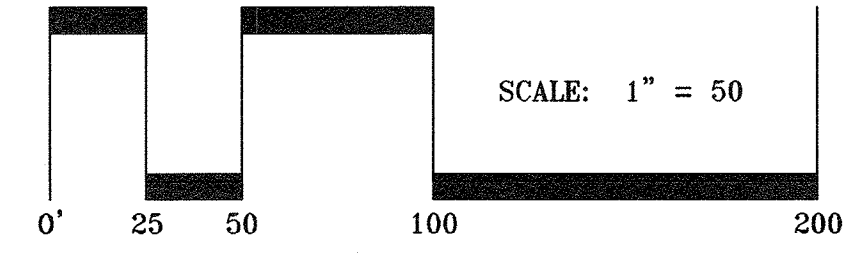
DATE	REVISION	BY	APPR.





- LEGEND**
- EXISTING EASEMENT LIMITS
  - PROPOSED EASEMENT LIMITS
  - PROPOSED PRIVATE STORM-WATER MANAGEMENT EASEMENT
  - 50' STREAM / BANK BUFFER
  - 25' WETLAND BUFFER
  - FLOODPLAIN
  - STREAM CENTERLINE
  - EXISTING EDGE OF PAVING
  - EXISTING CURB
  - PROPERTY IDENTIFICATION

NOTE: FOR PROPERTIES IDENTIFIED BY A LETTERED PENTAGON SHOWN IN THE LEGEND SEE SHEET 4 FOR PROPERTY INFORMATION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Mearns* 2/17/2018  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*William* 3/7/18  
 Chief, Division of Land Development Date

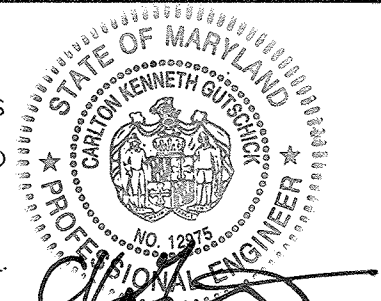
*Ed* 2-27-18  
 Chief, Development Engineering Division Date

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VK: 301-989-2524 FAX: 301-421-4186

NO.	DATE	REVISION	BY	APP'R.
1	11-6-18	REVISED CURB AND SMM EASEMENT AREAS FOR TERRAZAS	34	DEV

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

**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. 12973  
 EXPIRATION DATE: MAY 26, 2018  
 1/25/18

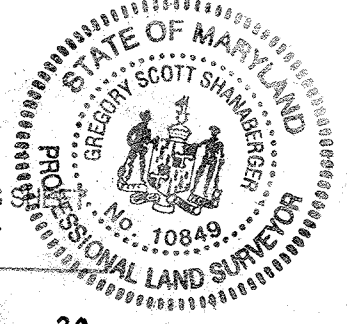


**EASEMENT PLAN**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1" = 50'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	2 OF 39

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS PLAN.  
 G. SCOTT SHAMBERGER  
 SHAMBERGER & LANE  
 PROFESSIONAL LAND SURVEYORS  
 1311 L. & #10490 Exp. Date: 4/2/2019  
 AS-BUILT DATE: 12/11/2019



L:\CAD\DRAWINGS\11071\PLANS BY GLW\Phase 2\Phase 2B\11071 - F-16-114 - 02 - Easements Planning - 1/25/18 12:28:22 AM User: SARGES/2272208 228 AM, PLOTTED BY: Doug Wanda, NY





**LEGEND**

- SLOPES GREATER THAN 25% AND VERTICAL DISTANCE EXCEEDS 10'
- 10-25% SLOPES
- +25% SLOPES
- SB 50' STREAM / BANK BUFFER
- WB 25' WETLAND BUFFER
- FP FLOODPLAIN
- STREAM CENTERLINE
- PROPERTY IDENTIFICATION

NOTE: FOR PROPERTIES IDENTIFIED BY A LETTERED PENTAGON SHOWN IN THE LEGEND SEE SHEET 4 FOR PROPERTY INFORMATION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/2018  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 3/7/18  
 Chief, Division of Land Development Date  
*[Signature]* 2-27-18  
 Chief, Development Engineering Division Date

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

PROFESSIONAL CERTIFICATION  
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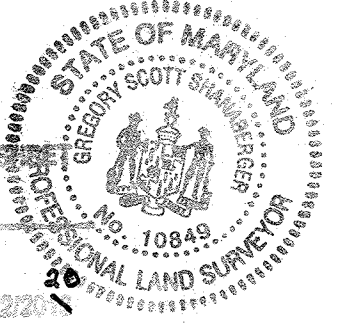


**STEEP SLOPE PLAN**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**

ELECTION DISTRICT No. 5  
 HOWARD COUNTY, MARYLAND

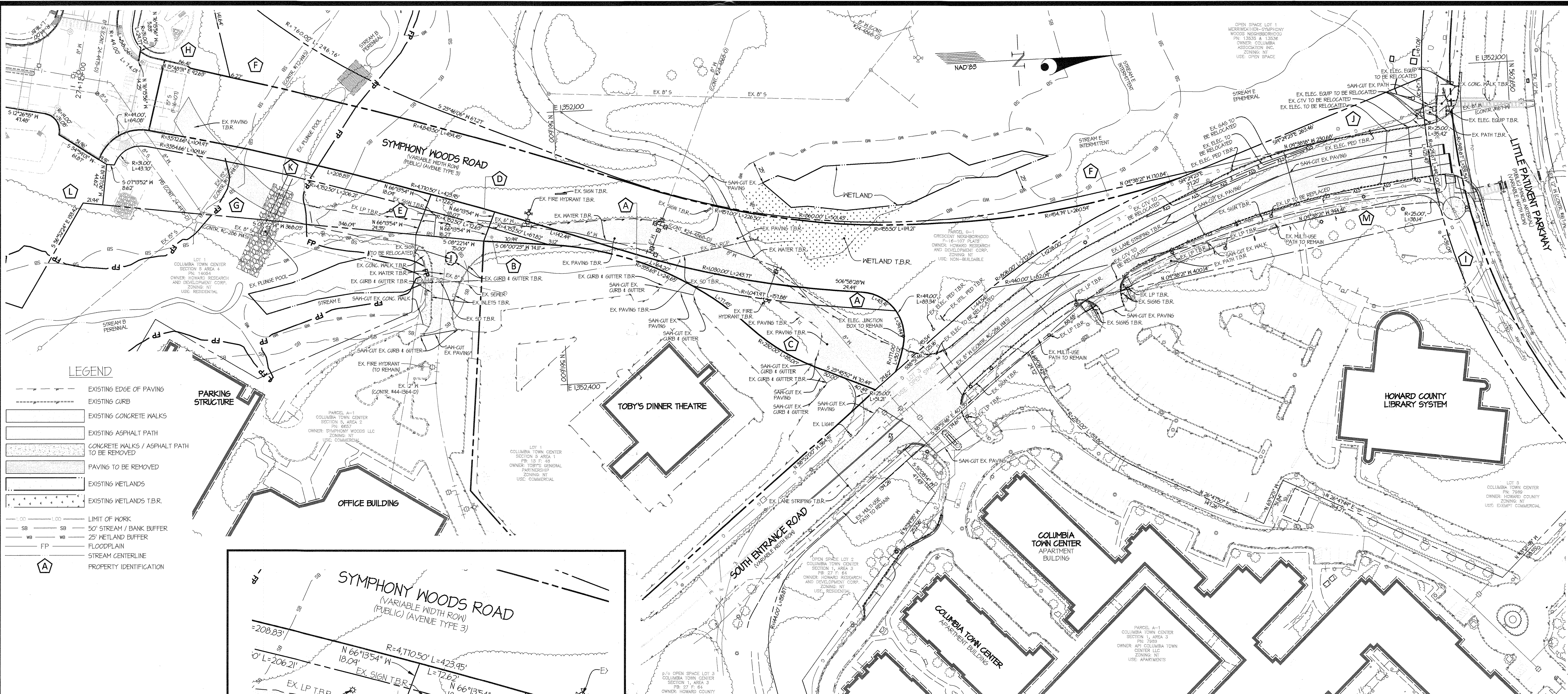
SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	3 OF 39

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.  
 G. SCOTT SHANBERGER  
 SHANBERGER & LAPE  
 PROFESSIONAL L.S. #10849 Exp. Date 4/27/20  
 AS-BUILT DATE: 12/14/2019



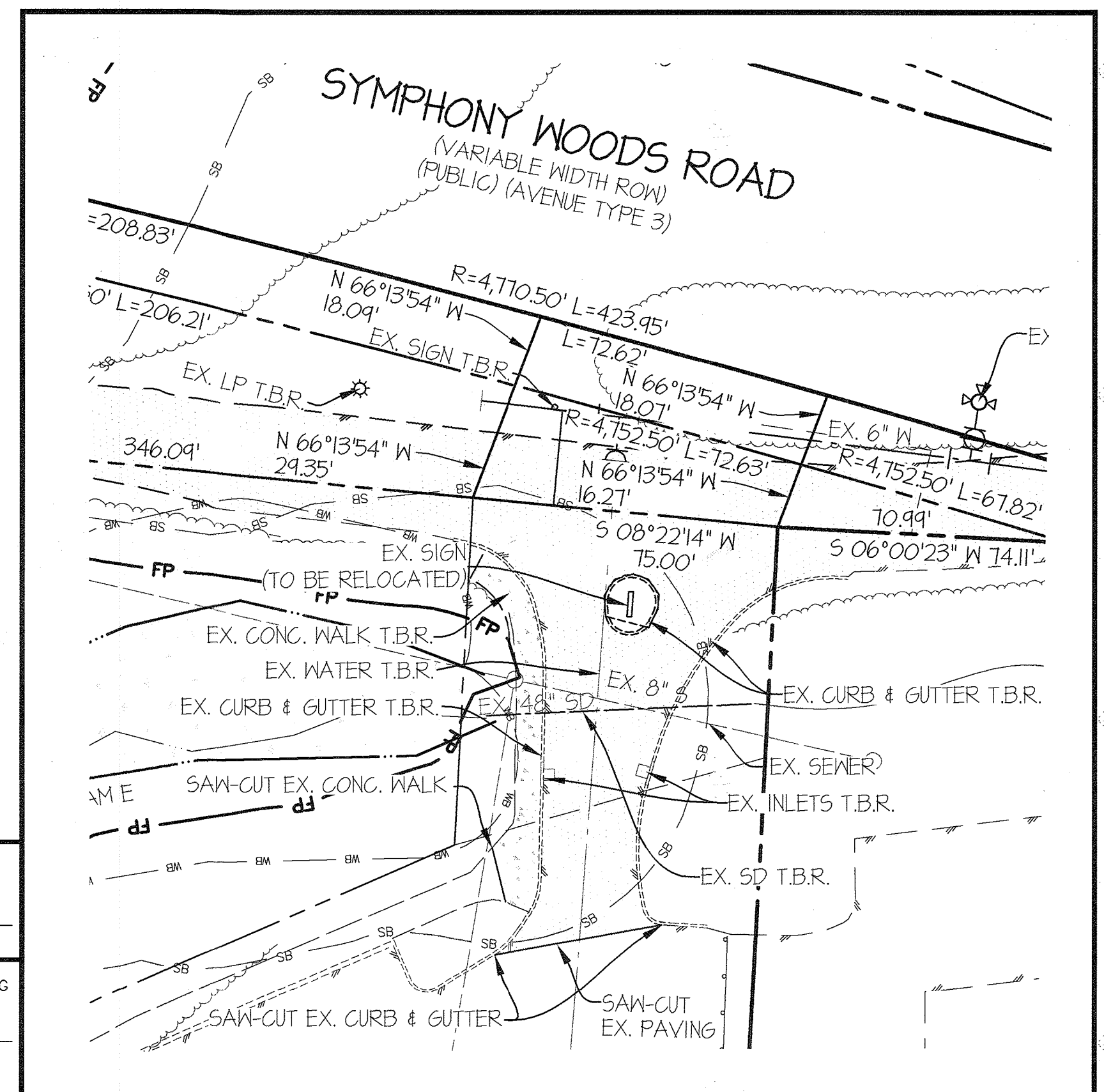
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**LEGEND**

- - - - - EXISTING EDGE OF PAVING
- - - - - EXISTING CURB
- ▭ EXISTING CONCRETE WALKS
- ▭ EXISTING ASPHALT PATH
- ▭ CONCRETE WALKS / ASPHALT PATH TO BE REMOVED
- ▭ PAVING TO BE REMOVED
- ▭ EXISTING WETLANDS
- ▭ EXISTING WETLANDS T.B.R.
- 1.00' — LIMIT OF WORK
- SB 50' STREAM / BANK BUFFER
- WB 25' WETLAND BUFFER
- FP FLOODPLAIN
- — — — — STREAM CENTERLINE
- ⬢ PROPERTY IDENTIFICATION



PROPERTY IDENTIFICATION	PARCEL/LOT	NEIGHBORHOOD	OWNER	ZONING	LAND USE	PLAT NUMBER
A	PARCEL R	CRESCENT	HOWARD RESEARCH AND DEVELOPMENT CORPORATION	NT	NON-BUILDABLE	24003
B	PARCEL G	CRESCENT	HOWARD RESEARCH AND DEVELOPMENT CORPORATION	NT	NON-BUILDABLE	24003
C	PARCEL H	CRESCENT	HOWARD RESEARCH AND DEVELOPMENT CORPORATION	NT	NON-BUILDABLE	24003
D	PARCEL Q	CRESCENT	HOWARD RESEARCH AND DEVELOPMENT CORPORATION	NT	NON-BUILDABLE	24000
E	PARCEL F	CRESCENT	HOWARD RESEARCH AND DEVELOPMENT CORPORATION	NT	NON-BUILDABLE	24000
F	LOT 6	CRESCENT	COLUMBIA ASSOCIATION INC	NT	OPEN SPACE	24000
G	LOT 7	CRESCENT	COLUMBIA ASSOCIATION INC	NT	OPEN SPACE	24000
H	LOT 5	CRESCENT	COLUMBIA ASSOCIATION INC	NT	OPEN SPACE	24000
I	LOT 9B	COLUMBIA TOWN CENTER	COLUMBIA ASSOCIATION INC	NT	OPEN SPACE	PL: 15 F, 32
J	LOT 4	MERRIMEATHER-SYMPHONY WOODS	HOWARD COUNTY MARYLAND	NT	OPEN SPACE	12740
K	PARCEL P	CRESCENT	HOWARD RESEARCH AND DEVELOPMENT CORPORATION	NT	NON-BUILDABLE	24000
L	PARCEL N-1	CRESCENT	HOWARD RESEARCH AND DEVELOPMENT CORPORATION	NT	NON-BUILDABLE	F-16-107 PLATS
M	PORTION OF LOT 3	COLUMBIA TOWN CENTER	HOWARD COUNTY MARYLAND	NT	EXEMPT COMMERCIAL	12740

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 LICENSE NO. 10849  
 EXPIRES 12/31/2018  
 G. SCOTT SHANBERGER  
 SHANBERGER & LANE  
 PROFESSIONAL LAND SURVEYORS  
 AS-BUILT DATE: 12/14/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/17/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 2/17/18

Chief, Development Engineering Division  
 Date: 2-27-18

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

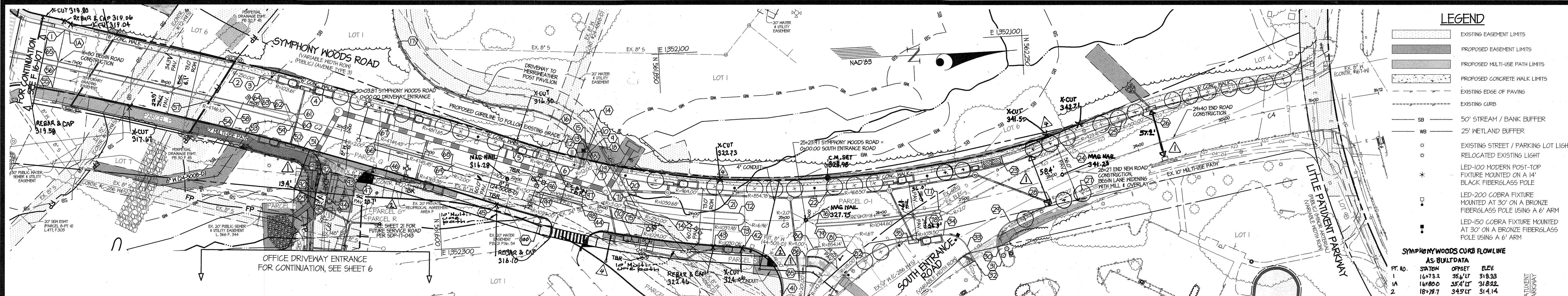
PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12975 EXPIRATION DATE: MAY 26, 2018  
 1/25/18

**EXISTING CONDITIONS AND DEMOLITION PLAN**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**  
 ELECTION DISTRICT No. 5  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1" = 50'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	4 OF 39

L:\CADD\DRAWINGS\11071\PLANS BY GUY\PLANS\PHASE 2\PHASE 2B\11071.PLT F-16-114 - 03-04 - Existing Conditions Plan.dwg  
 L:\CADD\DRAWINGS\11071\PHASE 2\PHASE 2B\11071.PLT F-16-114 - 03-04 - Existing Conditions Plan.dwg  
 L:\CADD\DRAWINGS\11071\PHASE 2\PHASE 2B\11071.PLT F-16-114 - 03-04 - Existing Conditions Plan.dwg





### LEGEND

- EXISTING EASEMENT LIMITS
- PROPOSED EASEMENT LIMITS
- PROPOSED MULTI-USE PATH LIMITS
- PROPOSED CONCRETE WALK LIMITS
- EXISTING GRADE OF PAVING
- EXISTING CURB
- 50' STREAM / BANK BUFFER
- 25' WETLAND BUFFER
- EXISTING STREET / PARKING LOT LIGHT
- RELOCATED EXISTING LIGHT
- LED-100 MODERN POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
- LED-200 COBRA FIXTURE MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 6' ARM
- LED-150 COBRA FIXTURE MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 6' ARM

### SYMPHONY WOODS CURB FLOWLINE AS-BUILT DATA

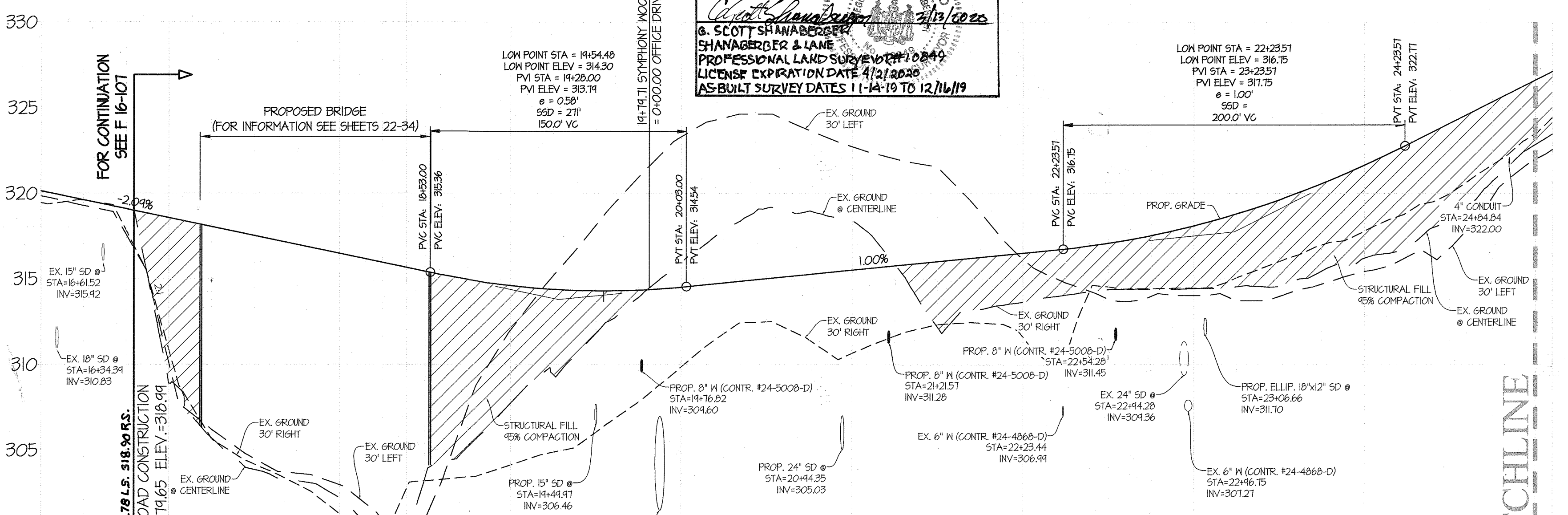
PT. NO.	STA	OFFSET	ELEV.
1	16773.2	35.6'L	318.23
2	16880.0	35.4'L	318.22
3	16927.7	34.5'L	314.14
4	16946.4	33.9'L	313.28
5	19181.0	32.9'L	313.61
6	21491.7	31.0'L	315.53
7	22458.6	31.0'L	316.31
8	22711.0	43.8'L	316.46
9	22706.6	47.8'L	316.48
10	22864.7	55.5'L	316.42
11	22954.3	64.5'L	317.83
12	22885.5	77.2'L	321.04

TBR - INDICATES AN ITEM TO BE REMOVED. FOR CLARITY, ALL ITEMS TO BE REMOVED HAVE NOT BEEN SHOWN. SEE SHEET 3 OF THIS PLAN SET AS WELL AS SHEET 3 OF CONT. 1A-5000-D FOR ALL OF THE EXISTING FEATURES THAT ARE TO BE REMOVED.

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY BY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS.  
 Scott Shumanberger  
 0. SCOTT SHUMANBERGER  
 SHANBERGER & LANE  
 PROFESSIONAL LAND SURVEYORS & ENGINEERS  
 LICENSE EXPIRATION DATE: 1/1/2020  
 AS-BUILT SURVEY DATES: 11-14-19 TO 12/16/19

### SYMPHONY WOODS ROAD - PLAN

SCALE: 1" = 50'

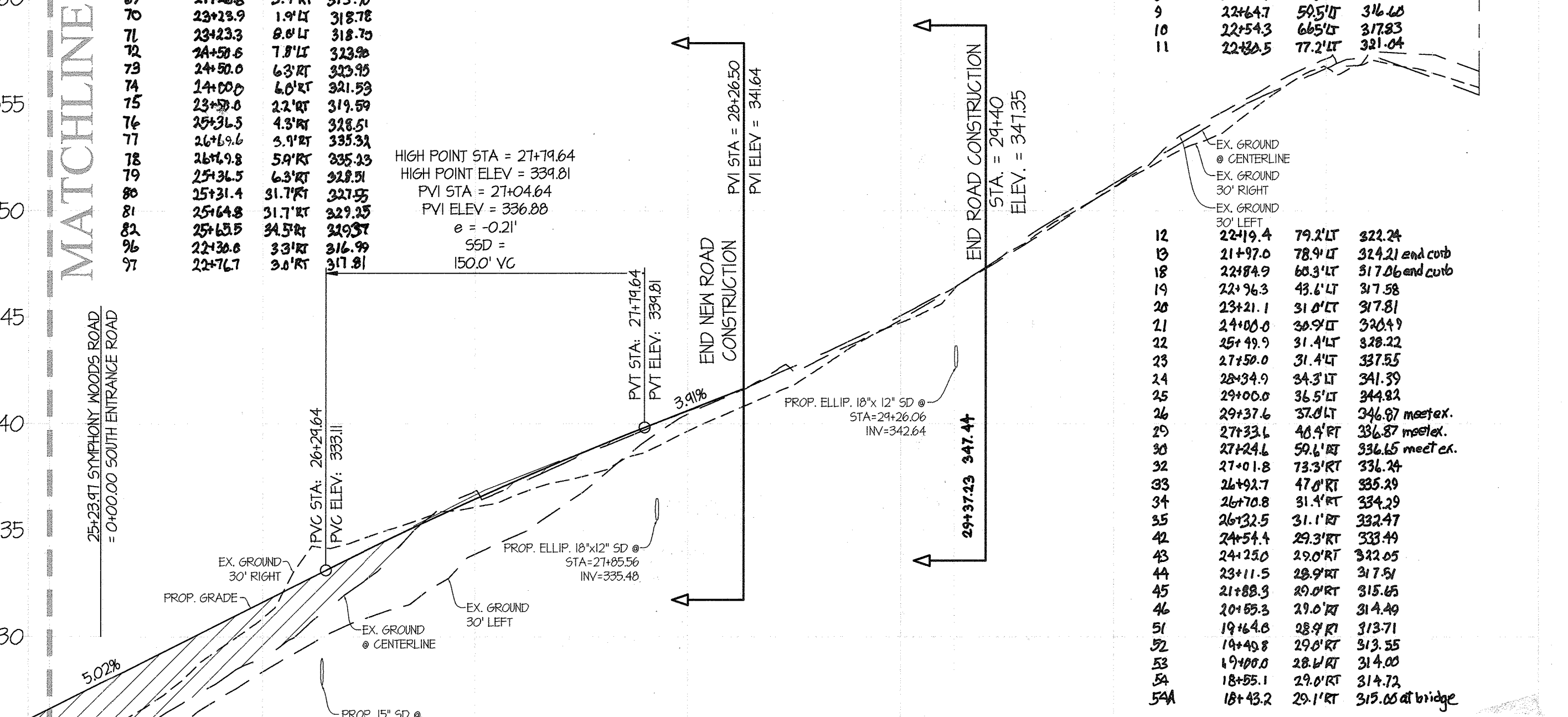


### SYMPHONY WOODS ROAD - PROFILE

(AVENUE TYPE 3) (DESIGN SPEED: 35 MPH)  
 SCALE: (H) 1" = 50'  
 SCALE: (V) 1" = 5'

### PROFILE LEGEND

- PROPOSED CL
- EXISTING CL
- EX. GROUND 30' RT.
- EX. GROUND 30' LT.



### SYMPHONY WOODS ROAD - PROFILE

(AVENUE TYPE 3) (DESIGN SPEED: 35 MPH)  
 SCALE: (H) 1" = 50'  
 SCALE: (V) 1" = 5'

### PROFILE LEGEND

- PROPOSED CL
- EXISTING CL
- EX. GROUND 30' RT.
- EX. GROUND 30' LT.

### NOTES:

1. SEE SHEET 1 FOR TYPICAL ROAD SECTIONS
2. SEE SHEET 1 FOR CURB DETAILS
3. SEE SHEETS 0-4 FOR FLOODPLAIN CROSS SECTION AND WEEL
4. SEE SHEET 4 FOR EXISTING ITEMS TO BE REMOVED AND BEARINGS AND DISTANCES.
5. SEE SHEET 10 FOR STORM DRAIN INFORMATION
6. ALL SIDEWALK RAMPS ARE TYPE B HOWARD COUNTY DETAIL R-4.03 UNLESS OTHERWISE NOTED. SEE SHEET 9 FOR ADA RAMP DETAILS.
7. SEE SHEET 21 FOR STREET TREES AND STREET LIGHTS
8. FOR LIMITS OF WORK, SEE SHEETS 0-4.
9. TYPICAL SECTIONS FOR THE ASPHALT MULTI-USE PATH HAVE BEEN PROVIDED ON SHEET 1.
10. THE APPROACH ENDS OF GUARDRAIL SEGMENTS SHALL HAVE TYPE C END TREATMENT PER DETAIL MD 605.03. THE TRAILING ENDS OF GUARDRAIL SEGMENTS SHALL HAVE TYPE K (OPTION I) END TREATMENTS PER DETAIL MD 605.10. SEE THIS SHEET FOR THE LIMITS OF THE GUARDRAIL.

### CURVE DATA CHART

CURVE	STREET NAME	PC STA.	PT STA.	RADIUS	TANGENT	ARC	CHORD	BEARING	DELTA
G2	SYMPHONY WOODS ROAD	11+85.00	21+88.33	4800.50'	503.50'	1003.33'	1001.50'	N4°32'50"E	11°58'30"
G3	SYMPHONY WOODS ROAD	21+88.33	28+14.43	1000.00'	323.10'	626.11'	615.43'	N2°35'53"E	35°52'24"
G4	SYMPHONY WOODS ROAD	29+64.06	30+40.24	762.00'	63.56'	126.24'	126.64'	N10°34'13"W	4°32'13"

### SYMPHONY WOODS ROAD CURB FLOW LINE ELEVATION TABLE

PT. NO.	STATION	OFFSET	ELEV.	PT. NO.	STATION	OFFSET	ELEV.	PT. NO.	STATION	OFFSET	ELEV.	PT. NO.	STATION	OFFSET	ELEV.
1	16714.5	35.6'L	318.23	15	22+68.1	54.2'L	316.44	29	24+14.4	36.7'L	316.35	43	21+88.3	24.0'L	315.70
2	16744.1	34.8'L	317.83	16	22+64.5	56.2'L	316.66	30	24+12.2	22.0'L	316.36	44	20+56.3	24.0'L	314.38
3	16783.3	34.1'L	313.43	17	22+65.4	61.1'L	317.00	31	24+11.4	25.7'L	316.60	45	16+52.2	24.0'L	313.53
4	16794.4	33.8'L	313.58	18	22+28.2	77.1'L	317.00	32	24+43.0	33.0'L	317.48	46	14+44.0	24.0'L	313.42
5	16710.0	31.0'L	313.44	19	20+34.5	110.1'L	317.00	33	24+23.5	60.8'L	316.35	47	14+41.0	28.1'L	313.76
6	2188.3	31.0'L	315.46	20	22+81.3	60.9'L	316.96	34	24+25.1	72.7'L	316.35	48	16+17.1	28.8'L	314.21
7	2258.7	31.0'L	316.28	21	22+48.3	40.4'L	317.56	35	24+01.4	75.4'L	316.35	49	16+18.4	28.1'L	314.28
8	2271.2	43.2'L	316.76	22	24+14.8	31.0'L	318.13	36	24+48.2	48.5'L	316.41	50	16+19.1	5.4'L	314.28
9	2271.2	44.7'L	316.68	23	24+24.5	31.0'L	322.34	37	24+10.1	31.5'L	316.35	51	18+50.5	6.1'L	315.23
10	2271.1	51.1'L	316.66	24	25+50.0	31.5'L	324.17	38	24+32.7	31.5'L	316.35	52	18+50.5	6.1'L	315.23
11	22+61.9	51.4'L	316.21	25	27+51.9	31.5'L	331.75	39	24+51.3	24.8'L	316.41	53	14+47.6	6.0'L	314.28
12	22+61.0	54.3'L	316.21	26	28+21.9	33.8'L	340.44	40	24+25.0	24.0'L	316.35	54	14+47.6	6.0'L	314.28
				27	28+42.7	36.3'L	344.31	41	23+48.9	24.0'L	317.35	55	19+46.0	3.1'L	314.47
								42	23+47.1	6.2'L	314.40	56	19+43.2	4.0'L	314.52

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/12/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 3/7/18

APPROVED: HOWARD COUNTY DEPARTMENT OF ENGINEERING  
 Chief, Development Engineering Division  
 Date: 2-27-18

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3509 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BALTO: 410-880-1820 DC/VA: 301-988-2524 FAX: 301-421-4186

NO.	DATE	REVISION	BY	APPR.
10-11-19		REMOVED GUARDRAIL ALONG WESTERN SYMPHONY WOODS ROAD @ R.O.C.D. TEMP PIPE	HKJ	DEV
12-07-18		PROVIDED INTERIM ENTRANCE TO TONY'S PROPERTY - INCLUDED MULTI-USE PATH	ST	DEV
11-26-18		REVISED CURB, GUARDRAIL, TREES, STORM DRAIN AND FILTERRAES	ST	DEV

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

**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. 12975  
 EXPIRATION DATE: MAY 28, 2018  
 1/25/18

**SYMPHONY WOODS ROAD PLAN AND PROFILE**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	5 OF 39



CURVE	STREET NAME	PC STA.	PT STA.	RADIUS	TANGENT	ARC	CHORD	BEARING	DELTA
C5	SOUTH ENTRANCE ROAD	0+54.76	2+20.25	212.2'	84.30'	160.44'	156.64'	S62°45'28"E	43°14'52"

CURVE	STREET NAME	PC STA.	PT STA.	RADIUS	TANGENT	ARC	CHORD	BEARING	DELTA
C6	OFFICE ENTRANCE	0+43.07	1+12.45	100.00'	4.72'	14.37'	14.34'	S80°09'21"E	11°06'03"

PT. NO.	STATION	OFFSET	ELEV.	PT. NO.	STATION	OFFSET	ELEV.
36	1+06.1	26.6' L	328.31	37	0+85.4	6.4' L	328.87
37	1+37.4	52.0' L	329.05	38	1+46.7	81.4' L	330.58 med. ex.
38	1+48.0	82.9' L	MEET EX.	39	2+42.1	14.2' R	325.21
39	2+61.7	14.0' R	MEET EX.	40	0+78.9	20.5' R	327.14
40	2+241	14.1' R	MEET EX.	41	0+85.5	6.4' R	328.76
41	0+85.9	14.1' R	327.58	42	0+85.5	3.4' L	328.74
				43	0+40.4	2.7' L	327.83
				44	0+40.6	2.1' L	327.38

PT. NO.	STATION	OFFSET	ELEV.
45	1+05.3	26.7' L	328.31
46	1+37.4	52.0' L	329.05
47	1+46.7	81.4' L	330.58 med. ex.
48	2+42.1	14.2' R	325.21
49	0+78.9	20.5' R	327.14
50	0+85.5	6.4' R	328.76
51	0+85.5	3.4' L	328.74
52	0+40.4	2.7' L	327.83
53	0+40.6	2.1' L	327.38

PT. NO.	STATION	OFFSET	ELEV.	PT. NO.	STATION	OFFSET	ELEV.
47	0+56.9	24.0' L	313.05	48	1+62.5	12.2' L	312.63
48	1+65.5	12.2' L	MEET EX.	49	1+71.4	16.9' L	312.18
49	1+71.4	16.9' L	MEET EX.	50	1+73.5	20.7' R	312.88
50	1+73.5	20.7' R	MEET EX.	51	1+66.9	15.9' R	311.89
51	1+66.9	15.9' R	MEET EX.	52	1+53.4	12.0' R	311.64
52	1+53.4	12.0' R	311.59				

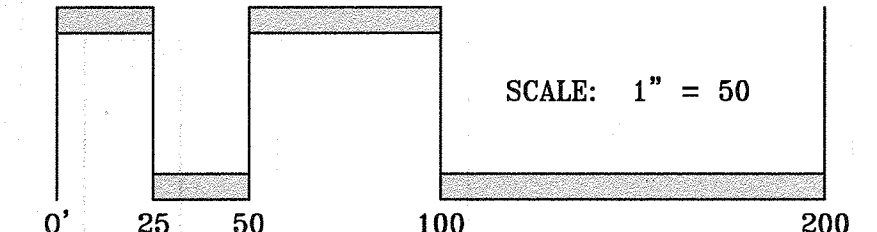
PT. NO.	STATION	OFFSET	ELEV.
47	0+55.2	24.5' L	313.40
48	1+62.5	12.2' L	311.39
49	1+71.4	16.9' L	311.87 med. ex.
50	1+73.5	20.7' R	312.18
51	0+83.7	16.1' R	311.40
52	0+71.1	17.5' R	311.89
53	0+49.4	17.1' R	312.91
54	0+53.1	4.5' R	312.86
55	0+52.3	3.4' L	312.93
56	0+77.2	4.0' L	312.02
57	0+77.2	3.9' R	311.79

**NOTES:**

- SEE SHEET 1 FOR TYPICAL ROAD SECTIONS
- SEE SHEET 1 FOR CURB DETAILS
- SEE SHEETS 8-4 FOR FLOODPLAIN CROSS SECTION AND WEEL
- SEE SHEETS 8-4 FOR EXISTING ITEMS TO BE REMOVED AND BEARINGS AND DISTANCES.
- SEE SHEET 10 FOR STORM DRAIN INFORMATION
- ALL SIDEWALK RAMP ARE TYPE B HOWARD COUNTY DETAIL R-4.03 UNLESS OTHERWISE NOTED. SEE SHEET 4 FOR ADA RAMP DETAILS.
- SEE SHEET 21 FOR STREET TREES AND STREET LIGHTS
- FOR LIMITS OF WORK, SEE SHEETS 8-4.
- TYPICAL SECTIONS FOR THE ASPHALT MULTI-USE PATH HAVE BEEN PROVIDED ON SHEET 1.
- THE APPROACH ENDS OF GUARDRAIL SEGMENTS SHALL HAVE TYPE C END TREATMENT PER DETAIL MD 605.03. THE TRAILING ENDS OF GUARDRAIL SEGMENTS SHALL HAVE TYPE K (OPTION I) END TREATMENTS PER DETAIL MD 605.10. SEE THIS SHEET FOR THE LIMITS OF THE GUARDRAIL.
- ALL CURB RADII IS 25' UNLESS OTHERWISE NOTED.
- A MULTI-USE PATH WILL BE CONSTRUCTED WITHIN PARCEL 'R' PER SDP-11-043
- SEE SHEET 4 FOR ADDITIONAL PROPERTY INFORMATION
- SEE SHEET 21 FOR FUTURE DEVELOPMENT PER SDP-11-043.
- THE ENVIRONMENTAL DISTURBANCES WERE DEEMED ESSENTIAL BY HOWARD COUNTY ON MAY 9, 2016. THE ASSOCIATED PERMITS ARE MDE PERMIT NO. 14-NT-3184/2014-61063, MDE PERMIT NO. 20166643416-NT-3234, AND ARMY CORPS OF ENGINEERS PERMIT NO. CENAB-PP-RN-2016-61063-M36
- As part of the work being done under SDP 11-043, a portion of the existing curb, guardrail, trees, storm drain, filter road, and grade will be removed and replaced with upgraded hardware.

WEST OF ROAD				EAST OF ROAD			
START	OFFSET	END	OFFSET	START	OFFSET	END	OFFSET
18+87	42.6'	19+18	46.5'	18+39	43.5'	19+10	50.7'
22+85	54.6'	24+74	48.2'				

NOTE: GUARDRAIL CONTINUES AFTER END STATION EAST OF ROAD FOR 110' ALONG SOUTH SIDE OF OFFICE BUILDING DRIVE.

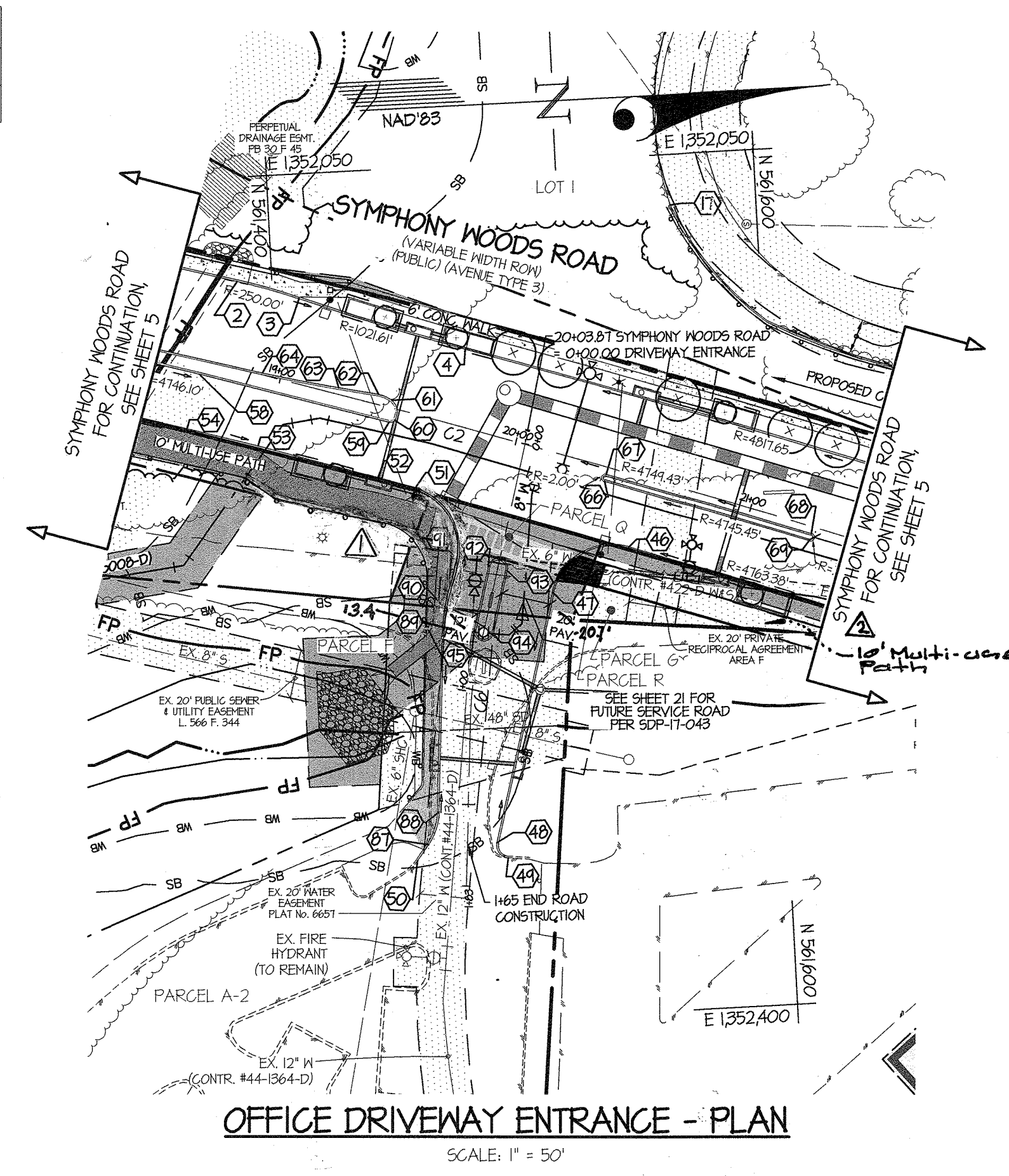


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/17/18

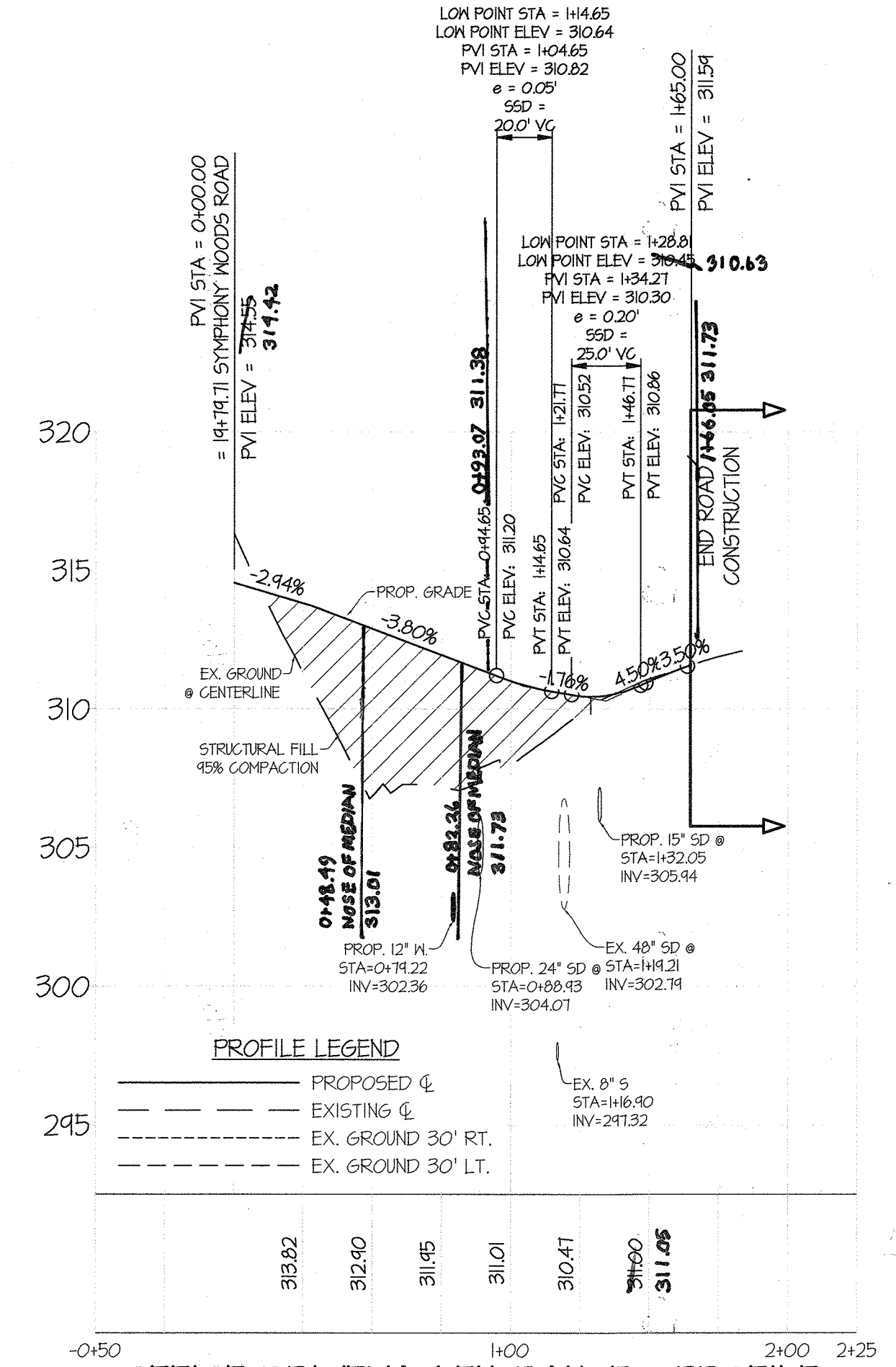
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 2/21/18

Chief, Development Engineering Division  
 Date: 2/21/18

**GLWGUTSCHICK 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 FAX: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186



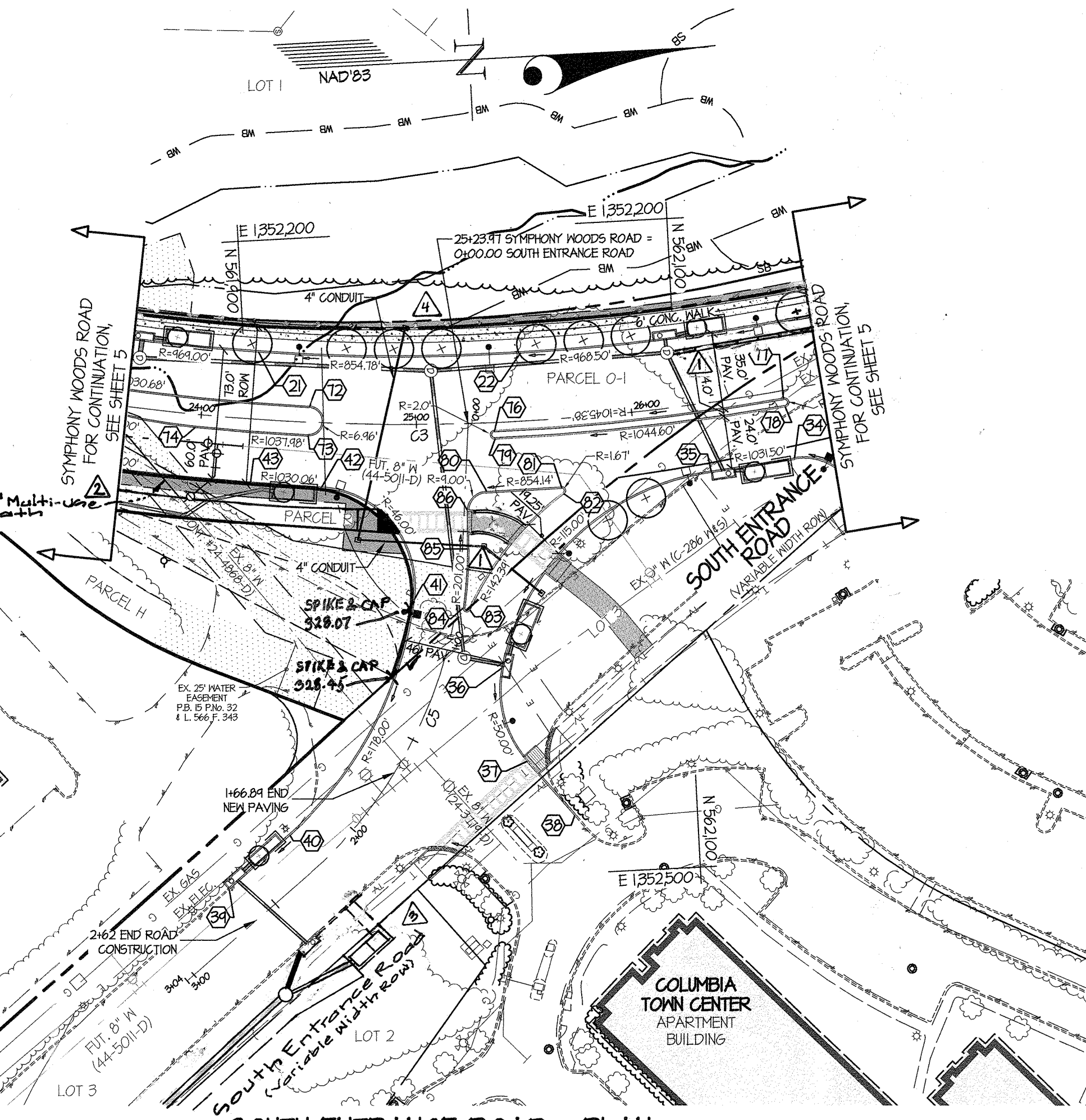
OFFICE DRIVEWAY ENTRANCE - PLAN  
 SCALE: 1" = 50'



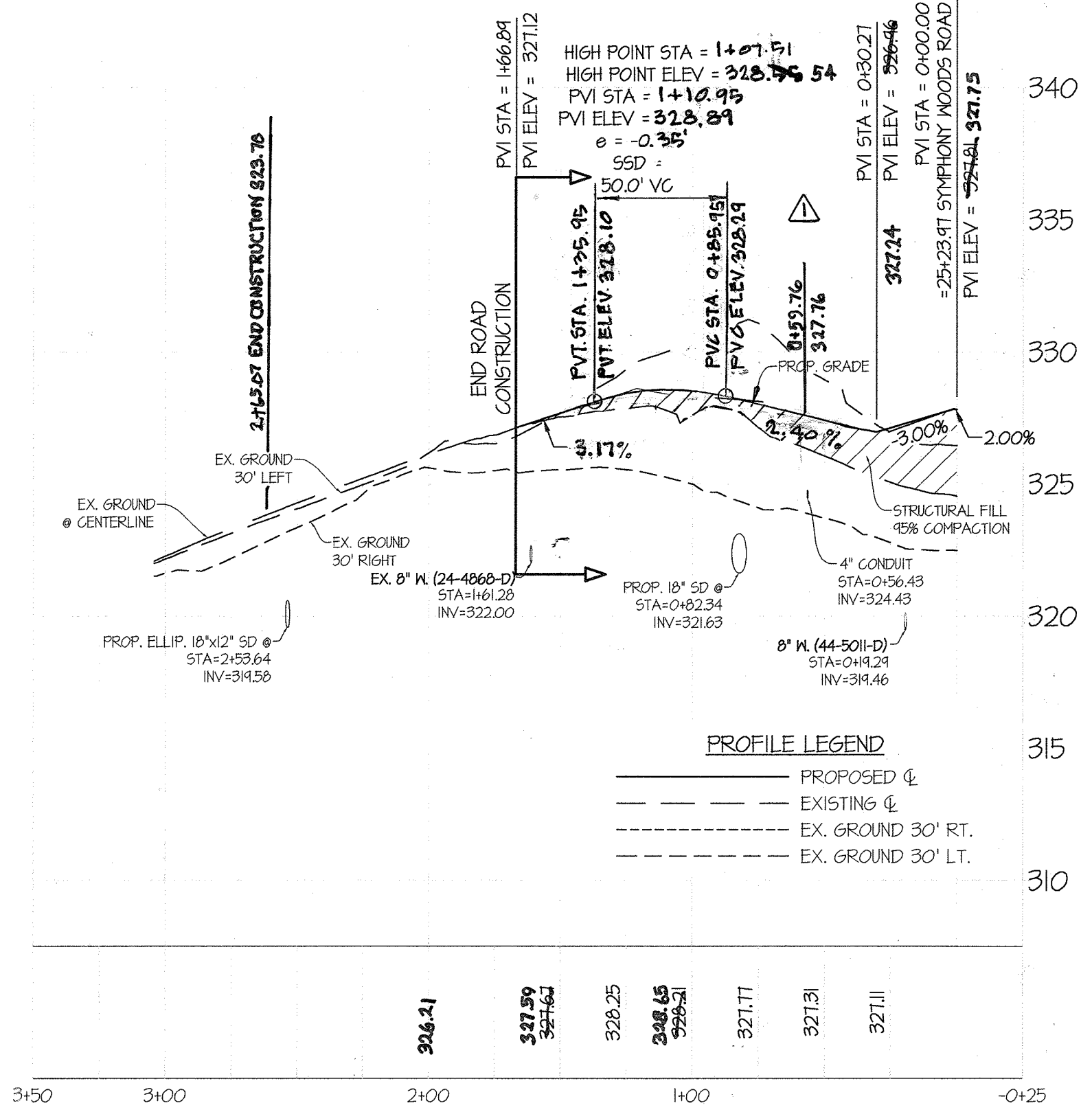
OFFICE DRIVEWAY ENTRANCE - PROFILE  
 (PRIVATE DRIVEWAY)  
 SCALE: (H) 1" = 50'  
 SCALE: (V) 1" = 5'

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN UNDER THE CONTROL AND SUPERVISION OF THE PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 G. SCOTT SHANABERGER  
 SHANABERGER LANE  
 PROFESSIONAL LAND SURVEYOR  
 LICENSE NO. 12975  
 LICENSE EXPIRATION DATE: 11/14/2018  
 AS-BUILT SURVEY DATES: 11-14-18 TO 12/11/18

**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. 12975  
 EXPIRATION DATE: MAY 26, 2018



SOUTH ENTRANCE ROAD - PLAN  
 SCALE: 1" = 50'



SOUTH ENTRANCE ROAD - PROFILE  
 (AVENUE TYPE 3) (POSTED SPEED: 35 MPH)  
 SCALE: (H) 1" = 50'  
 SCALE: (V) 1" = 5'

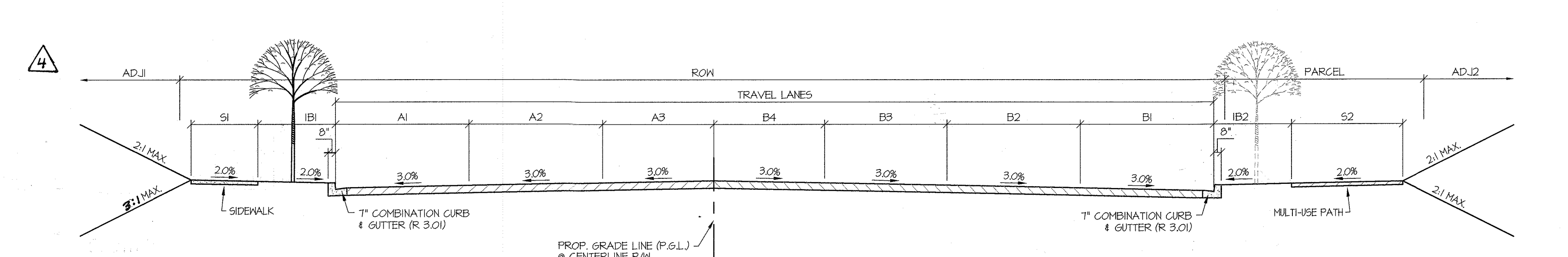
**LEGEND**

- EXISTING EASEMENT LIMITS
- PROPOSED EASEMENT LIMITS
- PROPOSED MULTI-USE PATH LIMITS
- PROPOSED CONCRETE WALK LIMITS
- EXISTING CURB OF PAVING
- EXISTING EDGE
- SB 50' STREAM / BANK BUFFER
- WB 25' WETLAND BUFFER
- EXISTING STREET / PARKING LOT LIGHT
- RELOCATED EXISTING LIGHT
- LED-100 MODERN POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
- LED-200 COBRA FIXTURE MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 6' ARM
- LED-150 COBRA FIXTURE MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 6' ARM

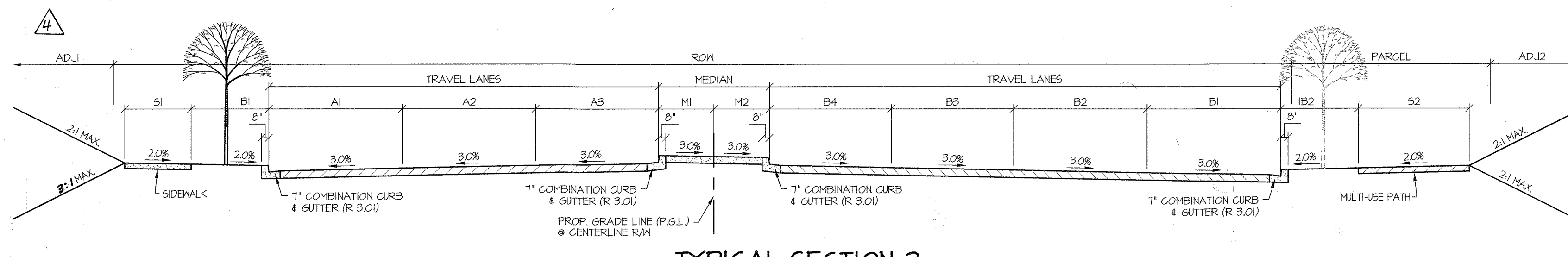
SOUTH ENTRANCE ROAD & DRIVEWAY ENTRANCE PLAN AND PROFILE		
SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	6 OF 39

L:\CADD\DRAWINGS\11071\PLANS BY G\W\PHASE 2\PHASE 2\11071 - F 16-114 - 05-06 - Road Plan and Profile.dwg  
 PLOTTED: 2/21/18 4:40 PM, LAST SAVED: 2/21/18 4:40 PM, PLOTTED BY: Jennifer R. Dick  
 © GLW 2017





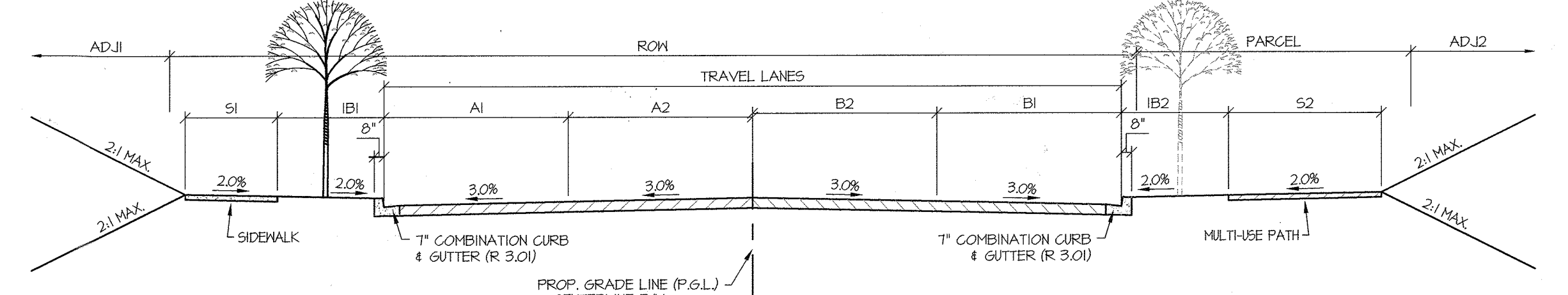
**TYPICAL SECTION 1**  
SYMPHONY WOODS ROAD SECTION  
SCALE: NONE



**TYPICAL SECTION 2**  
SYMPHONY WOODS ROAD SECTION WITH MEDIAN  
SCALE: NONE

ROAD INFORMATION																								
ROAD NAME	STATION	CLASSIFICATION	DESIGN SPEED	A1	A2	A3	B1	B2	B3	B4	M1	M2	IB1	IB2	S1	S2	ROW	PARCEL	ADJ1	ADJ2	PAVING SECTION	DETAIL	NOTES	
SYMPHONY WOODS ROAD	16+75.3 TO 17+18	AVENUE TYPE 3	35 MPH	11'-0"	12'	12'	12'	12'	-	-	-	-	-	-	VARIES	VARIES	# 10	VARIES	P	DOWNTOWN PARKLAND	PARKLAND	P-5	SECTION 2	# 2 MEDIAN
SYMPHONY WOODS ROAD	17+18 TO 18+54	BRIDGE	35 MPH	11'-0"	12'	12'	12'	12'	-	-	-	-	-	-	VARIES	VARIES	# 12-4"	7"	P	DOWNTOWN PARKLAND	PARKLAND	-	-	SEE DETAILS SHEETS 27 THRU 34
SYMPHONY WOODS ROAD	18+54 TO 19+50	AVENUE TYPE 3	35 MPH	TAPERS FROM 12' TO 2'	12'	12'	12'	12'	-	-	-	-	-	VARIES	VARIES	# 10	7"	P	DOWNTOWN PARKLAND	PARKLAND	P-5	SECTION 2	TRANSITION FROM 2% TO 3% CROSS SLOPE	
SYMPHONY WOODS ROAD	19+50 TO 20+18	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	7"	Q	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 1	
SYMPHONY WOODS ROAD	20+18 TO 21+29	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	7"	R	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 2	
SYMPHONY WOODS ROAD	21+29 TO 21+75	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	7"	R	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 1	
SYMPHONY WOODS ROAD	21+75 TO 21+78	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	7"	R	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 2	
SYMPHONY WOODS ROAD	21+78 TO 21+21	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	7"	R	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 1	
SYMPHONY WOODS ROAD	21+21 TO 24+57	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	VARIES	-	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 2	
SYMPHONY WOODS ROAD	24+57 TO 25+34	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	VARIES	-	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 1	
SYMPHONY WOODS ROAD	25+34 TO 26+73	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	VARIES	-	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 2	
SYMPHONY WOODS ROAD	26+73 TO 27+74	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	VARIES	-	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 1	
SYMPHONY WOODS ROAD	27+74 TO 28+26	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	VARIES	-	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 1	
SYMPHONY WOODS ROAD	28+26 TO 26+40	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	7'	7'	# 10	VARIES	-	DOWNTOWN PARKLAND	PARKLAND	DEVELOPED	P-5	SECTION 1	
SOUTH ENTRANCE ROAD	0+99 TO 1+18	AVENUE TYPE 3	35 MPH	12'	12'	12'	12'	12'	-	-	-	-	-	VARIES	-	-	-	VARIES	H	DEVELOPED	DEVELOPED	P-5	SECTION 3	INTERSECTION WITH ARCHSTONE COMMUNITY APARTMENT COMPLEX
SOUTH ENTRANCE ROAD	1+18 TO 1+47	AVENUE TYPE 3	35 MPH	TAPERS FROM 12' TO 19'	TAPERS FROM 12' TO 11'	-	-	-	-	-	-	-	-	VARIES	-	-	-	VARIES	H	DEVELOPED	DEVELOPED	P-5	SECTION 3	VARIES FROM 22.6' TO 20.8'

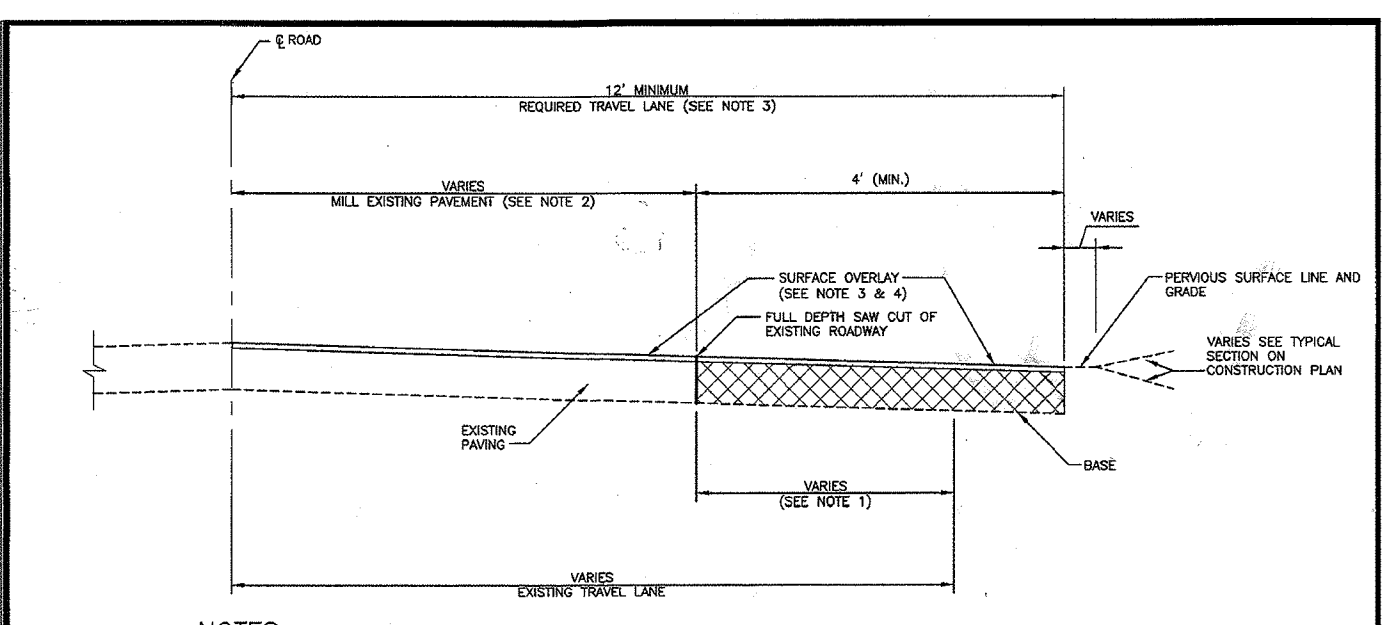
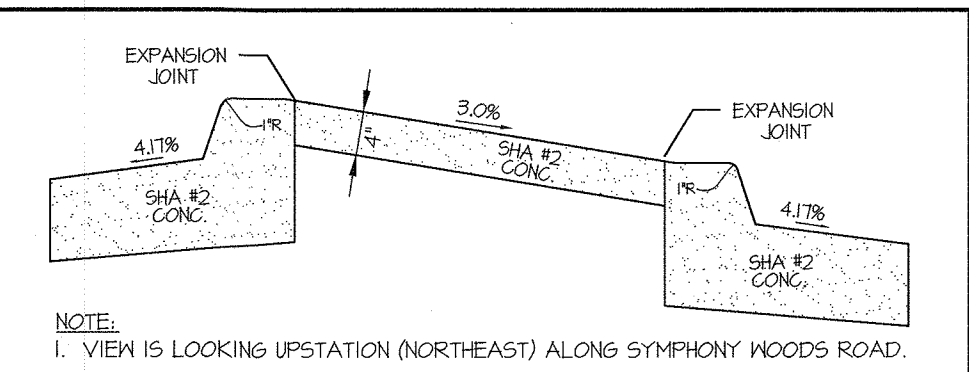
NOTES:  
1. STREETSCAPE AT SYMPHONY WOODS ROAD 20+23 TO 24+25 RIGHT AND SOUTH ENTRANCE ROAD 0+99 TO 2+56 RIGHT WILL BE PER SDP-17-043



**TYPICAL SECTION 3**  
SOUTH ENTRANCE ROAD SECTION  
SCALE: NONE

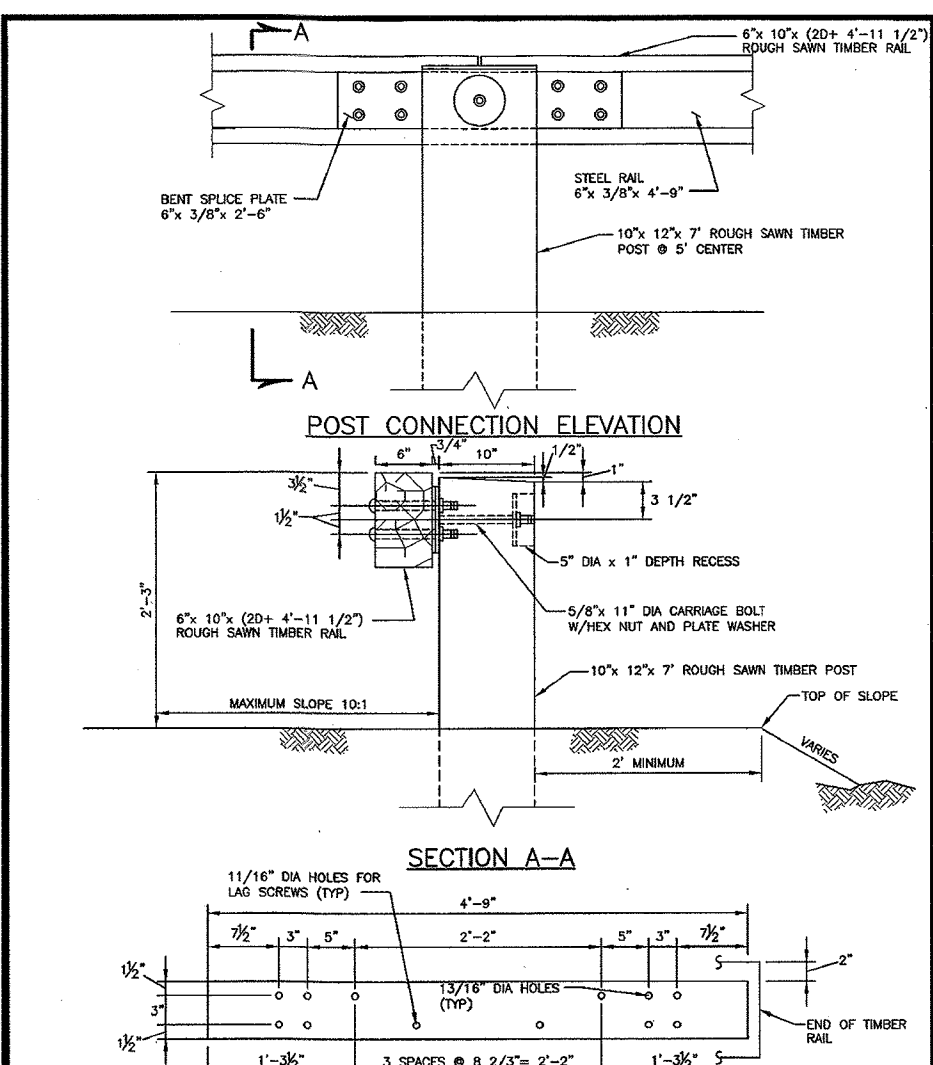
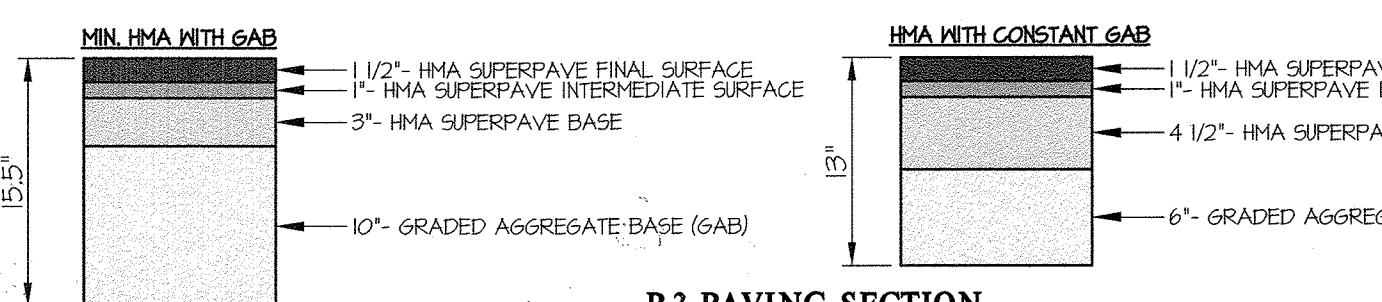
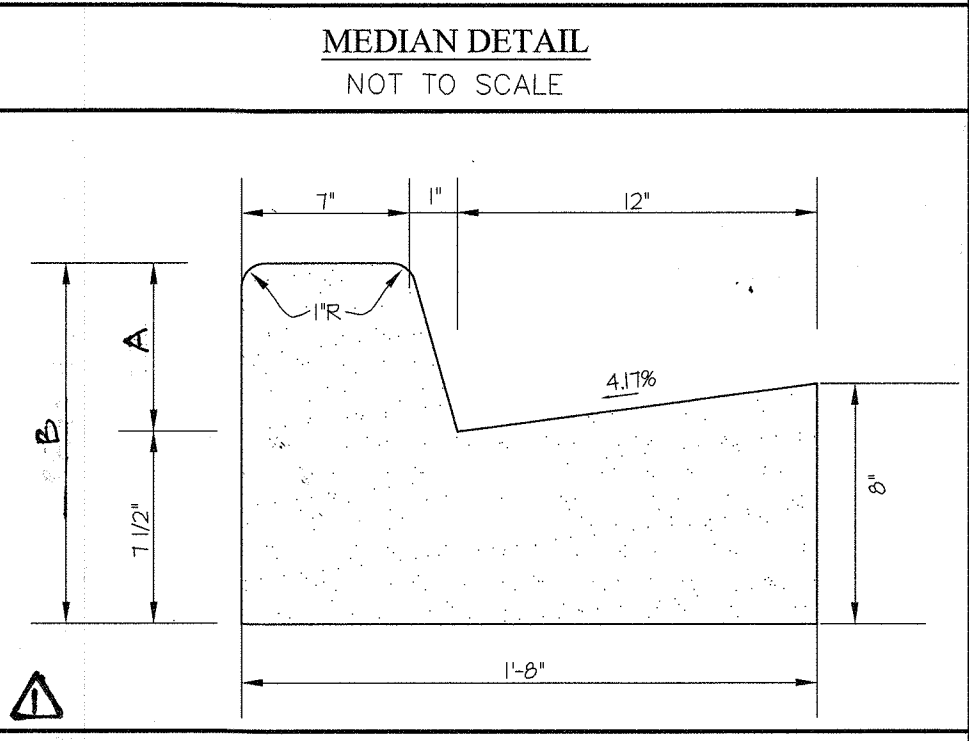
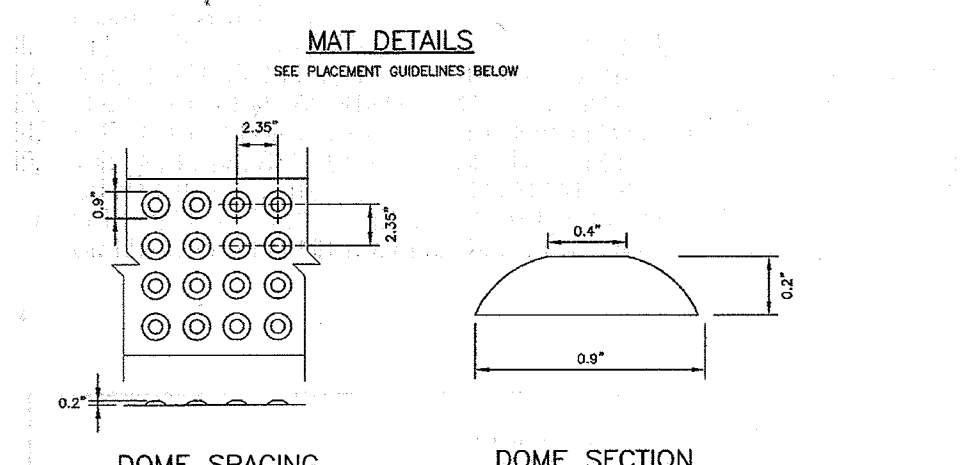
- NOTES:**
- ALL TYPICAL SECTIONS ARE DRAWN LOOKING UP STATION.
  - HOWARD COUNTY'S MAINTENANCE RESPONSIBILITY IS FROM BACK OF CURB TO BACK OF CURB.
  - SEE SHEET 24 FOR TYPICAL SECTION THROUGH THE BRIDGE.

Curb Type	A	B
6"	6"	1'-2 3/16"
7"	7 3/16"	1'-3 1/2"



**NOTES:**

- WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE A MINIMUM OF 1" FULL DEPTH OF THE EXISTING ROADWAY, 2' CURB AND GUTTER IS REQUIRED. PROVIDE A MINIMUM OF 4" OF WIDTHEN FROM FACE OF GUTTER PAV.
- THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MAILED AT DEPTH OF 1 1/2" (MINIMUM).
- THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
- RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.



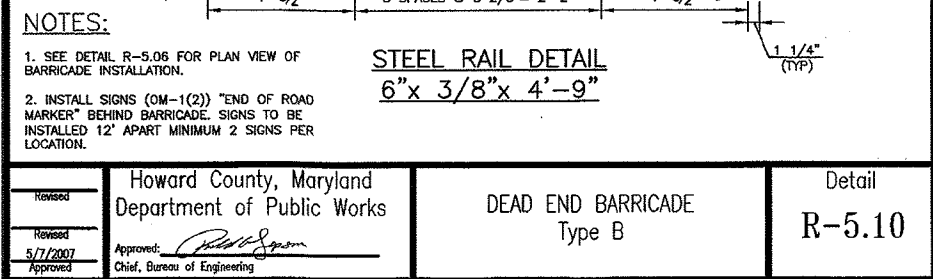
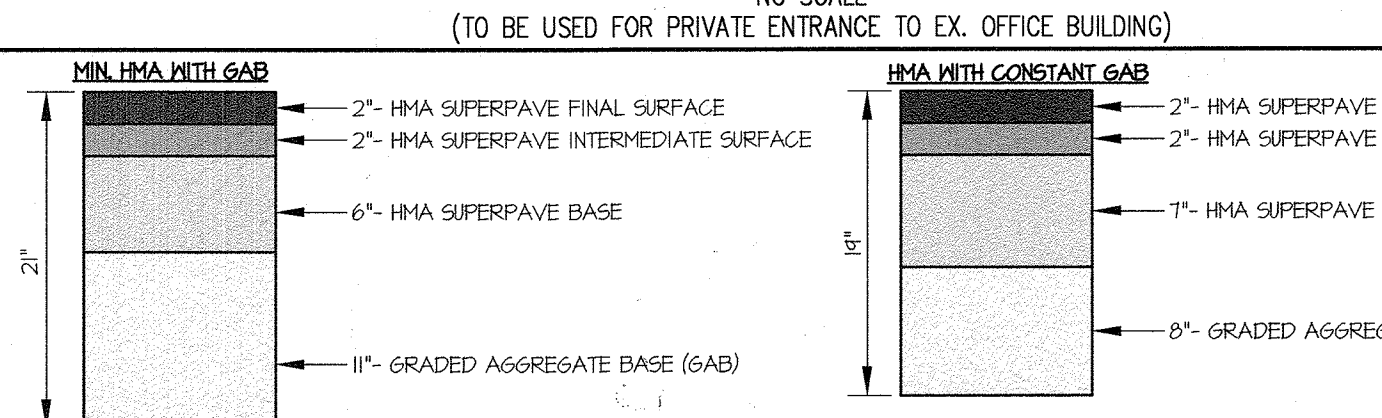
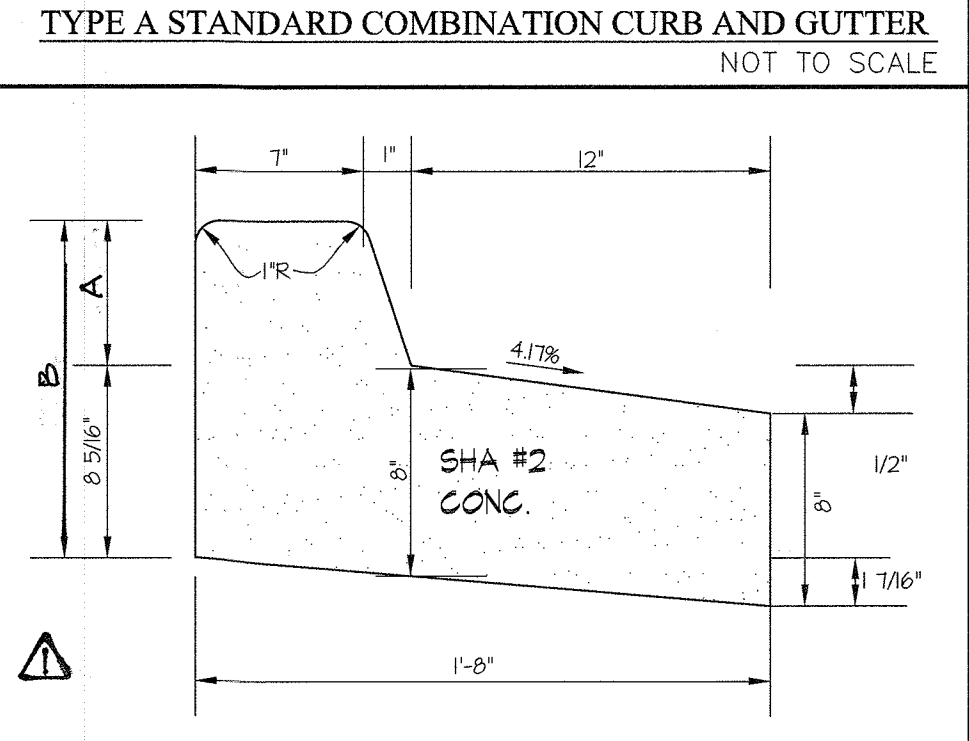
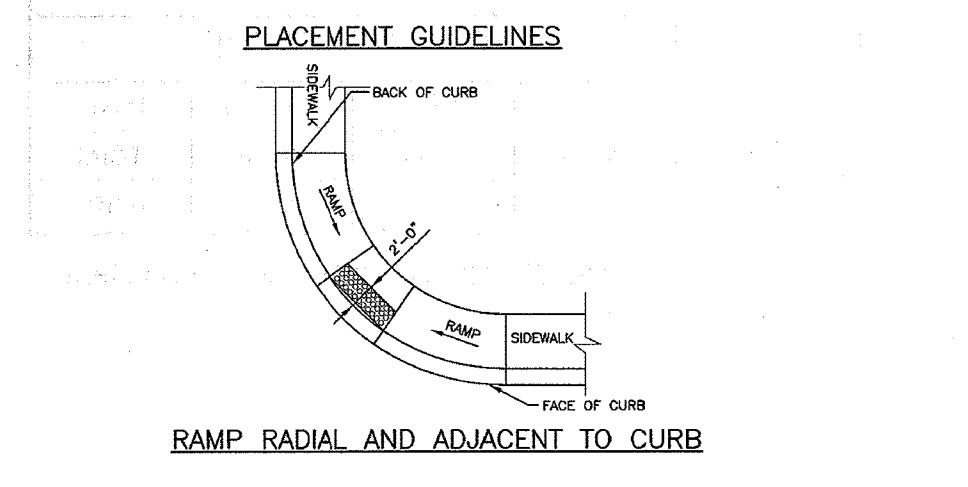
**NOTES:**

- SEE DETAIL R-5-06 FOR PLAN VIEW OF BARRIAGE INSTALLATION.
- MINIMUM 1/2" DIA. CARTRIDGE BOLT WITH NUT AND FLAT WASHER.
- 3 SPACES @ 2'-2 1/2" TO 2'-2"

**AS-BUILT CERTIFICATION**  
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN PER THE CURRENT APPROVED PLANS AND SPECIFICATIONS.

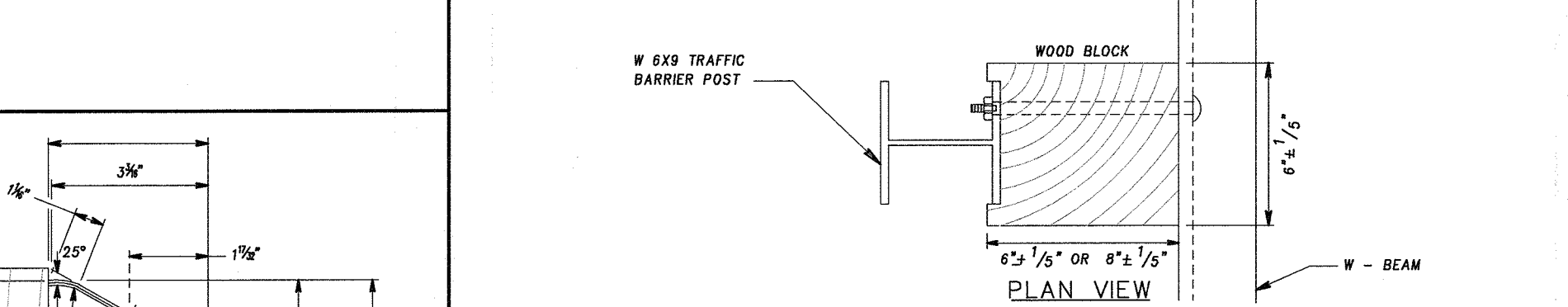
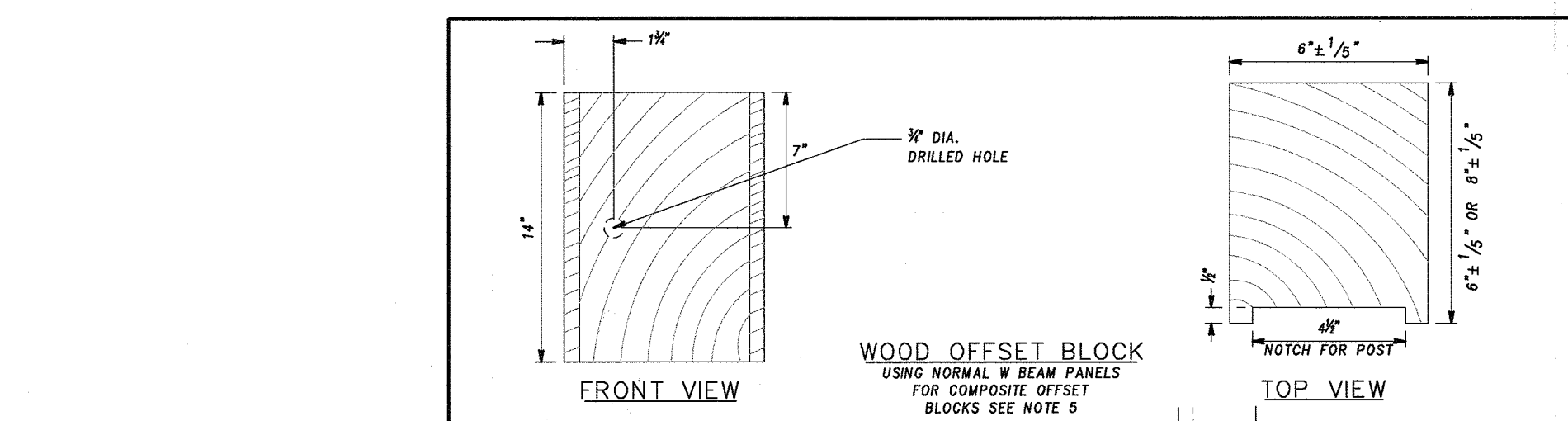
*G. Scott Shanaberger*  
G. SCOTT SHANABERGER  
SHANABERGER & LANE  
PROFESSIONAL LAND SURVEYOR (MD)  
LICENSE EXPIRATION DATE 4/12/2020  
AS-BUILT SURVEY DATES 11-14-19 TO 12/16/19

- TRAFFIC BARRIER TO BE POWDER COATED BRONZE. COLOR TO BE SPECIFIED BY GRAPHIC DESIGNER PRIOR TO FABRICATION.**
- TRAFFIC BARRIER DETAIL FOR ALL BARRIERS INCLUDING THOSE OVER CULVERTS UNLESS OTHERWISE SPECIFIED.**



**NOTES:**

- SEE DETAIL R-5-06 FOR PLAN VIEW OF BARRIAGE INSTALLATION.
- MINIMUM 1/2" DIA. CARTRIDGE BOLT WITH NUT AND FLAT WASHER.
- 3 SPACES @ 2'-2 1/2" TO 2'-2"



**NOTES:**

- WOOD OFFSET BLOCKS 8x8x14 INCHES TO BE USED ON ALL NEW CONSTRUCTION AND WHEN THE EXISTING TRAFFIC BARRIER WITH METAL OFFSET BLOCKS IS TO BE REMOVED AND RESET.
- THE CONTRACTOR HAS THE OPTION TO USE SHORTER BOLTS WITH A MINIMUM OF 3" PROTRUSION BEYOND NUT.
- WOOD BLOCKS FOR THREE BEAM PANELS SHALL BE 8x8x28 INCHES AND NOTCHED AS SHOWN IN THE TOP VIEW. TWO BOLTS ARE REQUIRED FOR ATTACHMENT TO THE POSTS.
- THE 8x8x14 INCH WOOD OFFSET BLOCKS ARE TO BE USED FOR REPAIR WORK ONLY.
- WHEN DIRECTED BY THE ENGINEER OR WHEN SPECIFIED IN THE CONTRACT DOCUMENTS, COMPOSITE OFFSET BLOCKS THAT ARE APPROVED BY THE ADMINISTRATION CAN BE USED IN LIEU OF THE WOOD BLOCKS. FOR THE APPROVED SUBSTITUTES LIST SEE TABLE 1 OF 1 APPROVED SUBSTITUTES FOR WOOD OFFSET BLOCKS.

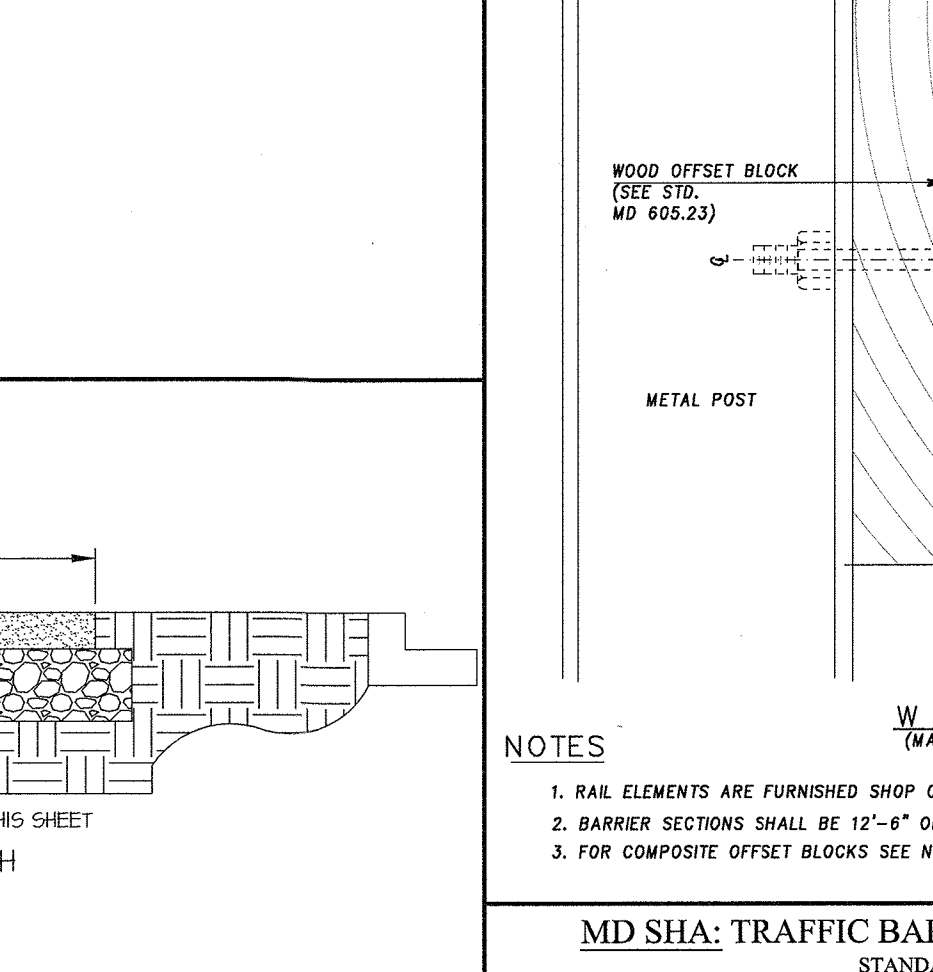
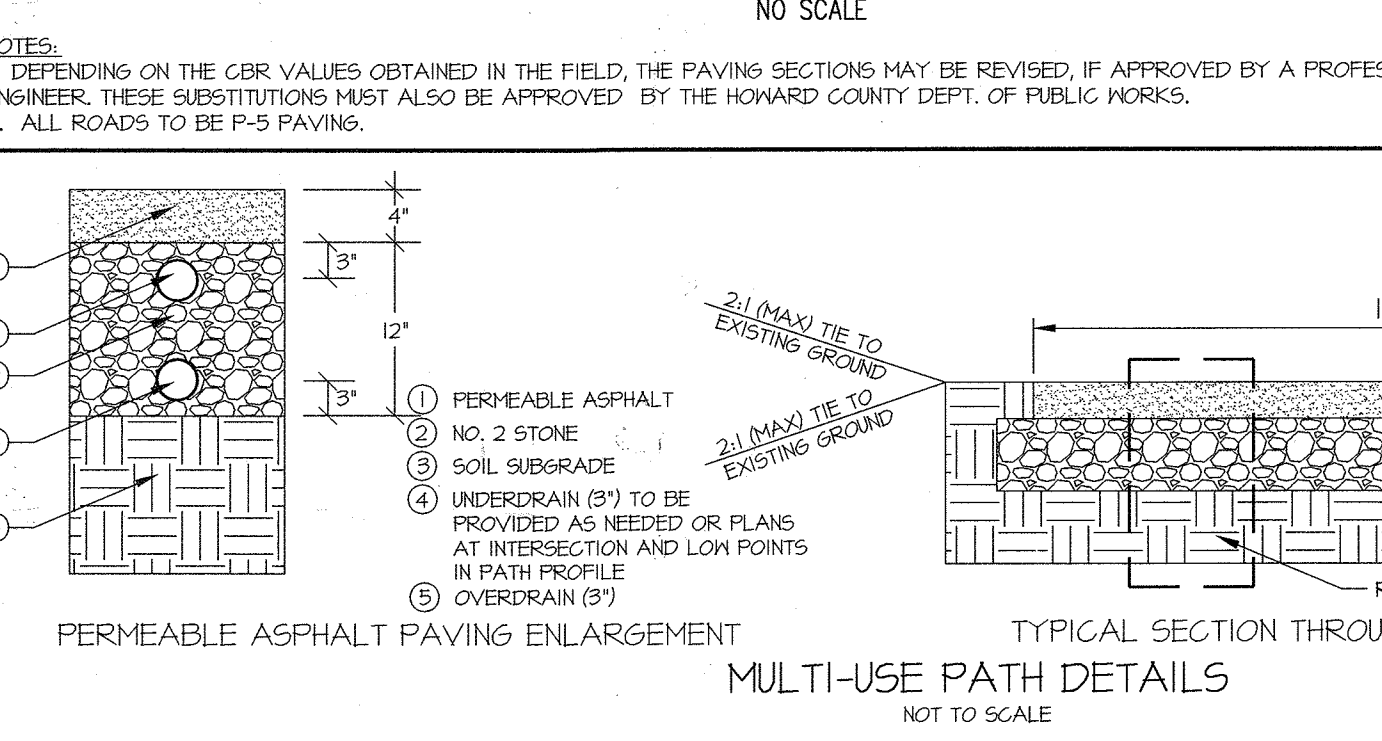
**APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS**  
*M. Williams* 2/17/2018  
Chief, Bureau of Highways

**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING**  
*D. Williams* 3/17/18  
Chief, Division of Land Development

*Chad Combs* 2-27-18  
Chief, Development Engineering Division

**NOTES:**

- 50' MAX. BETWEEN EXPANSION JOINTS & 10' MAX. BETWEEN CONTROL JOINTS.
- ALL ON-SITE CURB & GUTTER SHALL BE 7 3/16" HIGH.
- STANDARD CURB & GUTTER SHALL BE USED WHERE THE DRIVEWAY SLOPES TOWARDS THE CURB & GUTTER. REVERSE CURB & GUTTER SHALL BE USED WHERE THE DRIVEWAY SLOPES AWAY FROM THE CURB & GUTTER.
- PROVIDE A 5' TRANSITION TO OPEN SECTION.



**NOTES:**

- RAIL ELEMENTS ARE FURNISHED SHOP CURVED, CONCAVE OR CONVEX TO RADI BETWEEN 20 FT. & 150 FT.
- BARRIER SECTIONS SHALL BE 12'-0" OR 25'-0" LENGTHS.
- FOR COMPOSITE OFFSET BLOCKS SEE NOTE 5 ON MD 605.21

**MD SHA: TRAFFIC BARRIER W BEAM SINGLE FACE**  
STANDARD NO. MD 605.22

**MD SHA: TRAFFIC BARRIER W BEAM W WOOD OFFSET BLOCK**  
STANDARD NO. MD 605.21

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
BURTONSVILLE, MARYLAND 20866  
TEL: 301-421-4024 FAX: 301-421-4186

NO.	DATE	REVISION	BY	APPR.
0-11-19		REMOVED GUARDRAIL DETAIL AND REVISED THE OFF SLOPE IN TYPICAL SECTIONS	HKJ	DEV
11-2-18		REMOVED CURB & GUTTER DETAILS	34	DEV

PREPARED FOR:  
THE HOWARD HUGHES CORPORATION  
10480 LITTLE PATUXENT PARKWAY  
SUITE 400  
COLUMBIA, MARYLAND 21044  
ATTN: BILL ROWE  
410-964-4987

**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. 12975  
EXPIRATION DATE: MAY 26, 2018

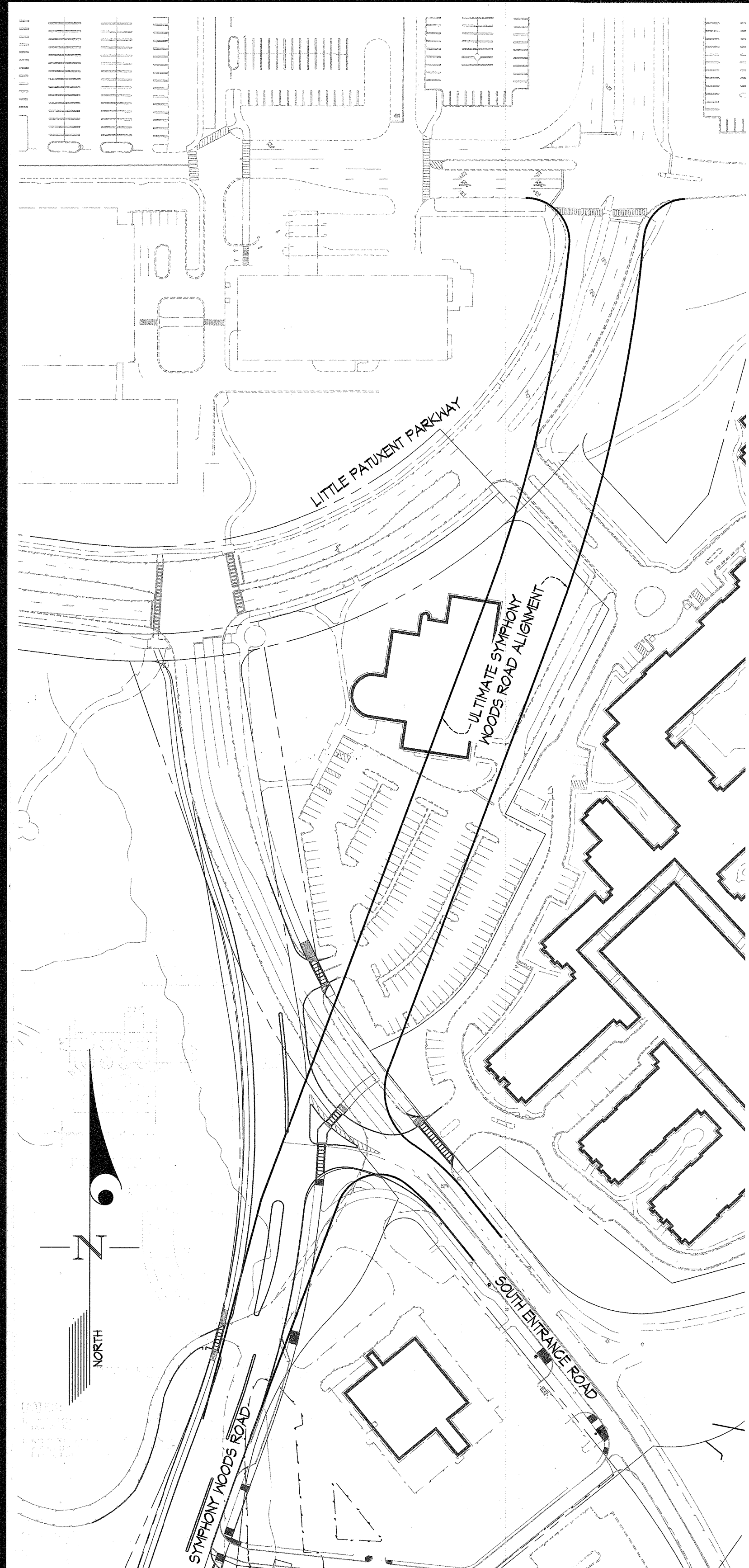
TYPICAL ROAD SECTION & CURB DETAILS			SCALE	ZONING	G. L. W. FILE NO.
DOWNTOWN COLUMBIA CRESCENT NEIGHBORHOOD SYMPHONY WOODS ROAD			AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET			
JAN., 2018	36 - 01	7 OF 39			



RIVER STATION	WSEL	RIVER STATION	WSEL
9+40.87	309.08	309+61.06	324.78
8+96.06	308.93	309+27.05	324.30
8+45.27	308.97	308+85.83	323.50
8+01.60	308.46	308+31.55	321.92
7+71.53	305.77	307+96.13	320.33
7+00.06	305.31	307+41.74	319.45
6+38.50	305.23	307+10.62	318.23
5+91.44	304.44	306+78.42	316.76
5+21.03	302.44		
3+98.60	300.07		
3+24.76	298.63	306+34.00	314.70
313+44.69	339.21		
312+93.76	336.92		
312+52.97	335.57		
312+09.59	333.27		
311+62.41	330.97		
311+34.39	330.10	301+88.58	305.61
310+98.97	328.79	301+58.70	305.61
310+76.60	328.73	301+30.17	305.61
310+57.40	327.81	300+98.70	305.61
310+19.13	326.27	300+65.57	305.61
309+86.70	325.49	300+36.84	305.61

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.

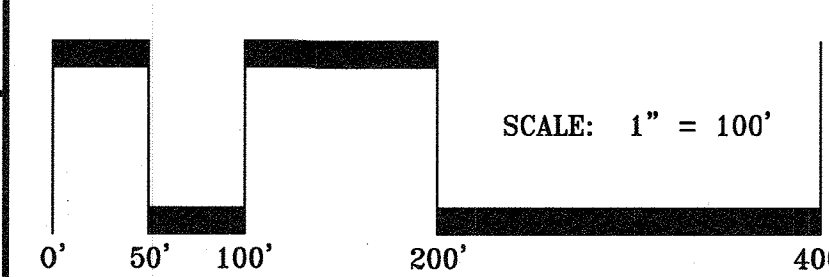
STATE OF MARYLAND  
 PROFESSIONAL LAND SURVEYOR  
 SCOTT SHANBERGER  
 SHANBERGER & LANE  
 PROFESSIONAL LAND SURVEYORS  
 AS-BUILT DATE: 12/14/2019



ULTIMATE SYMPHONY WOODS ROAD ALIGNMENT SCALE: 1" = 100'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/17/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 2/27/18



**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DCVA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.
9-11-19	4 REMOVED GUARDRAIL AND REVISED GRADES WEST OF SYMPHONY WOODS ROAD	HKJ	DEV
7-22-19	REVISED DRAIN TO RESOLVE UTILITY CONFLICT	WESJ	DEV
12-07-18	SHOWED MULTI-USE PATH TO BE CONSTRUCTED WITH THESE PLANS RATHER THAN SPP 17-043 AND REVISED GRADING DUE TO INTERIM DRAIN GRADING - FILTE RA	JK	DEV
11-05-18	REVISED CURB, GUARDRAIL, TREES, STORM DRAIN GRADING - FILTE RA	JK	DEV

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

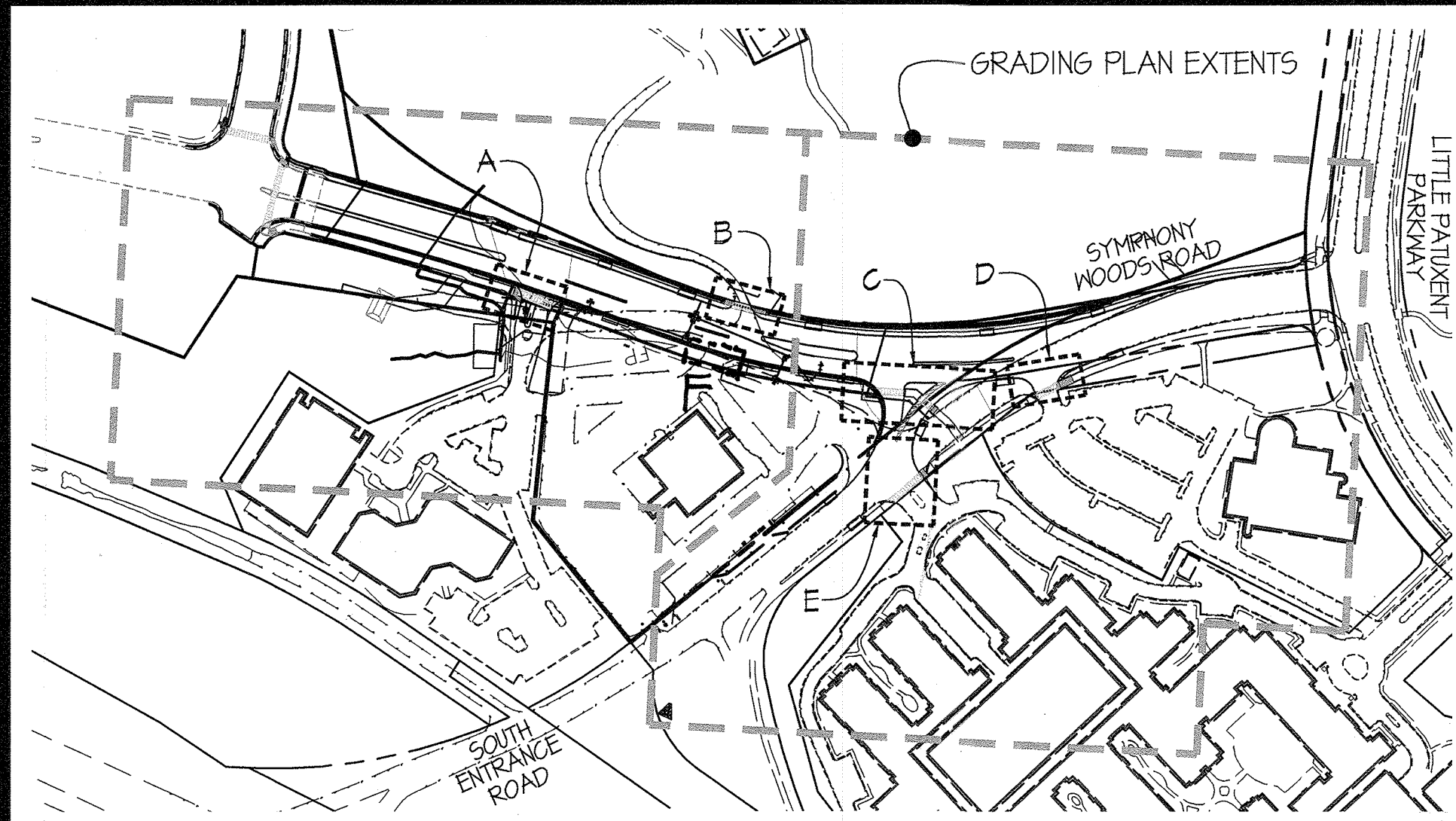
PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975  
 EXPIRATION DATE: MAY 28, 2018  
 1/25/18

**GRADING PLAN and ADA RAMP DETAILS**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**

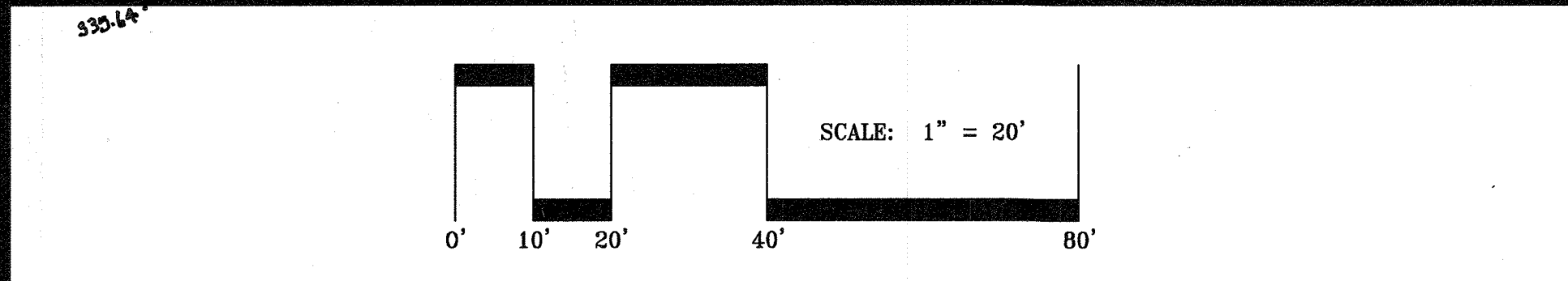
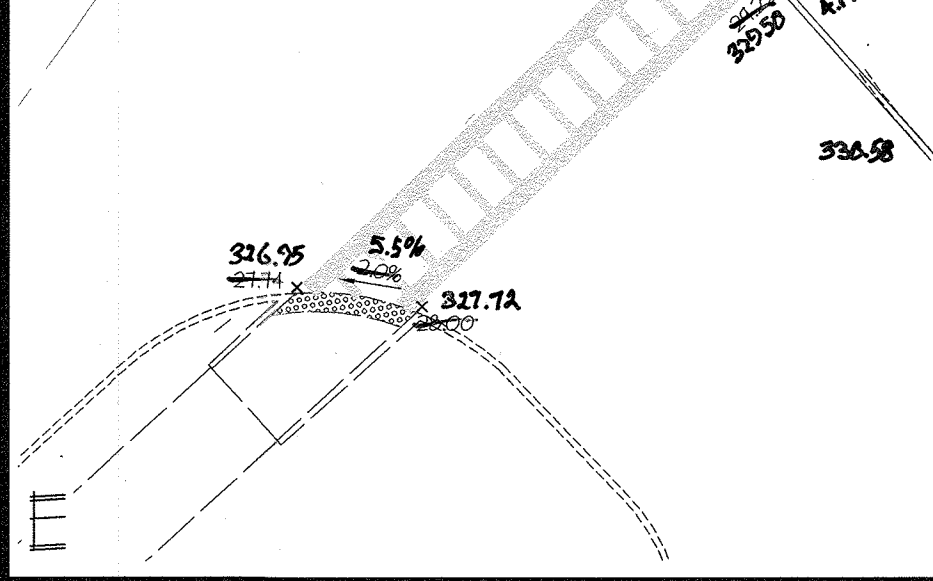
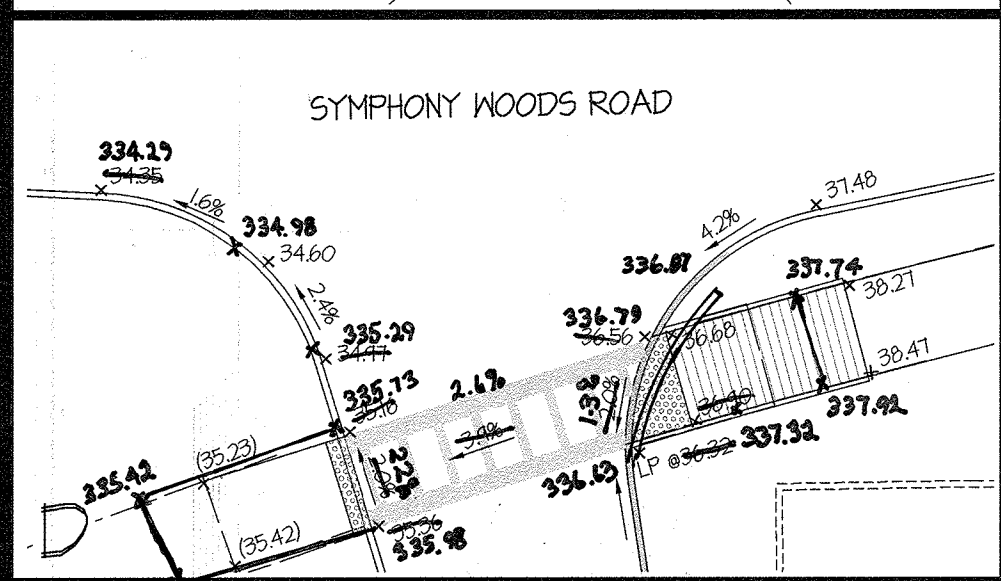
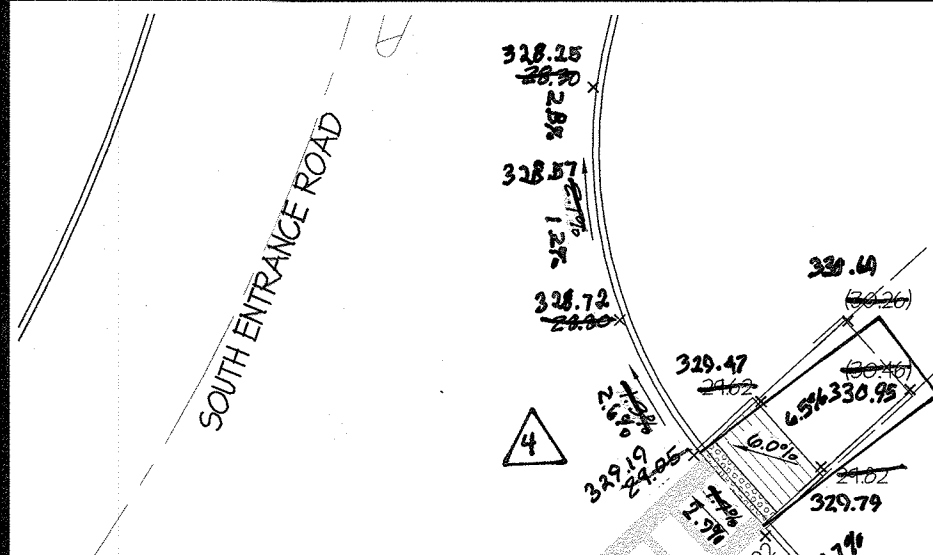
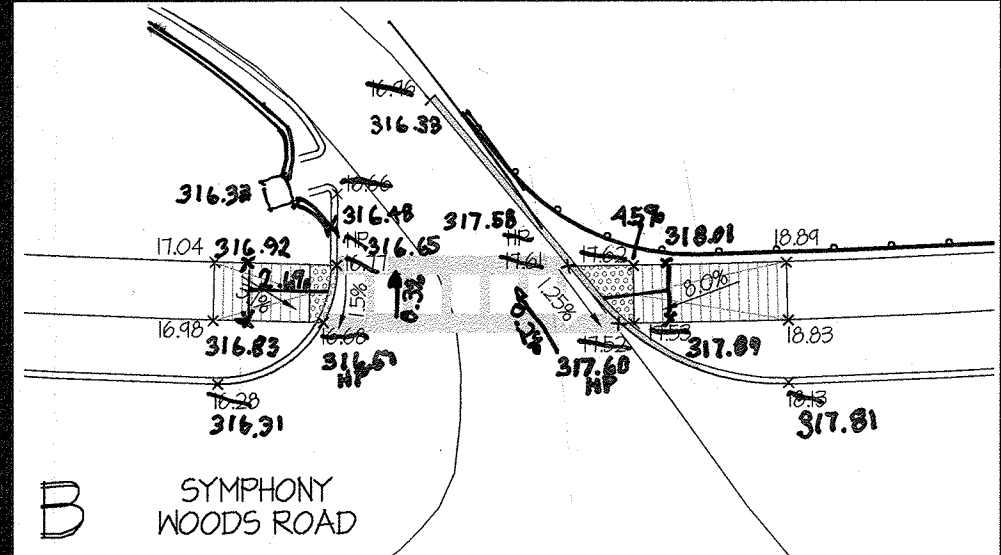
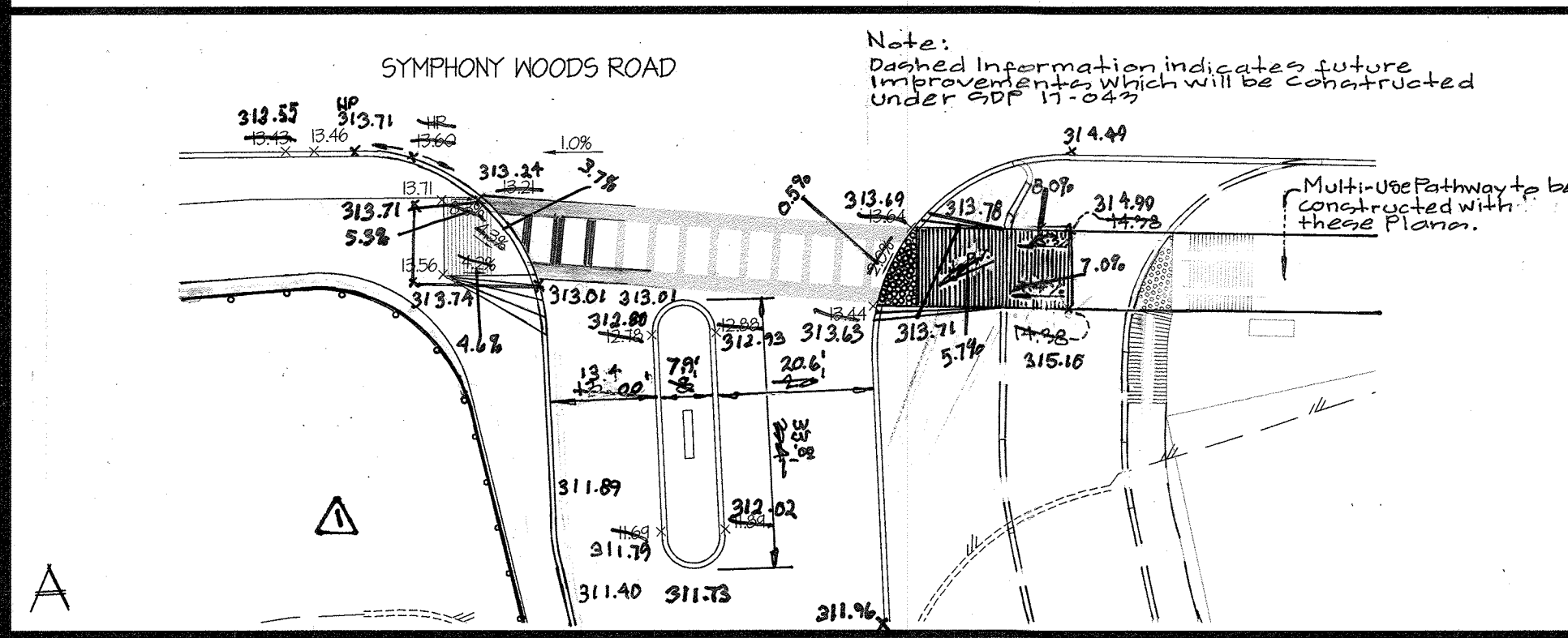
HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT No. 5

SCALE	ZONING	G. L. W. FILE No.
1" = 40'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN, 2018	36 - 01	8 OF 39





CROSSWALK KEY MAP SCALE: 1" = 200'

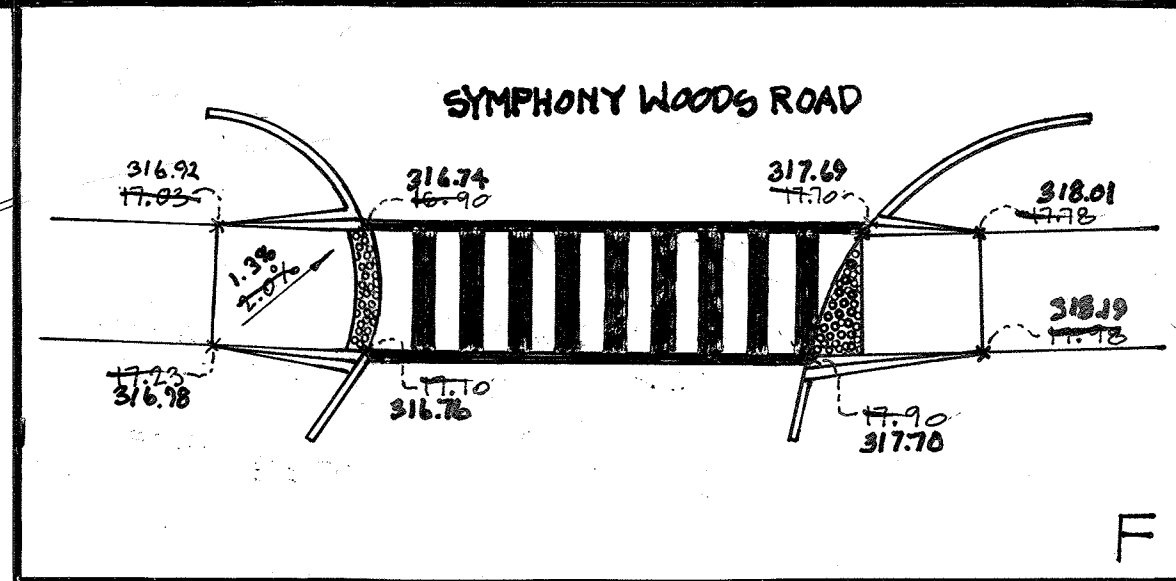
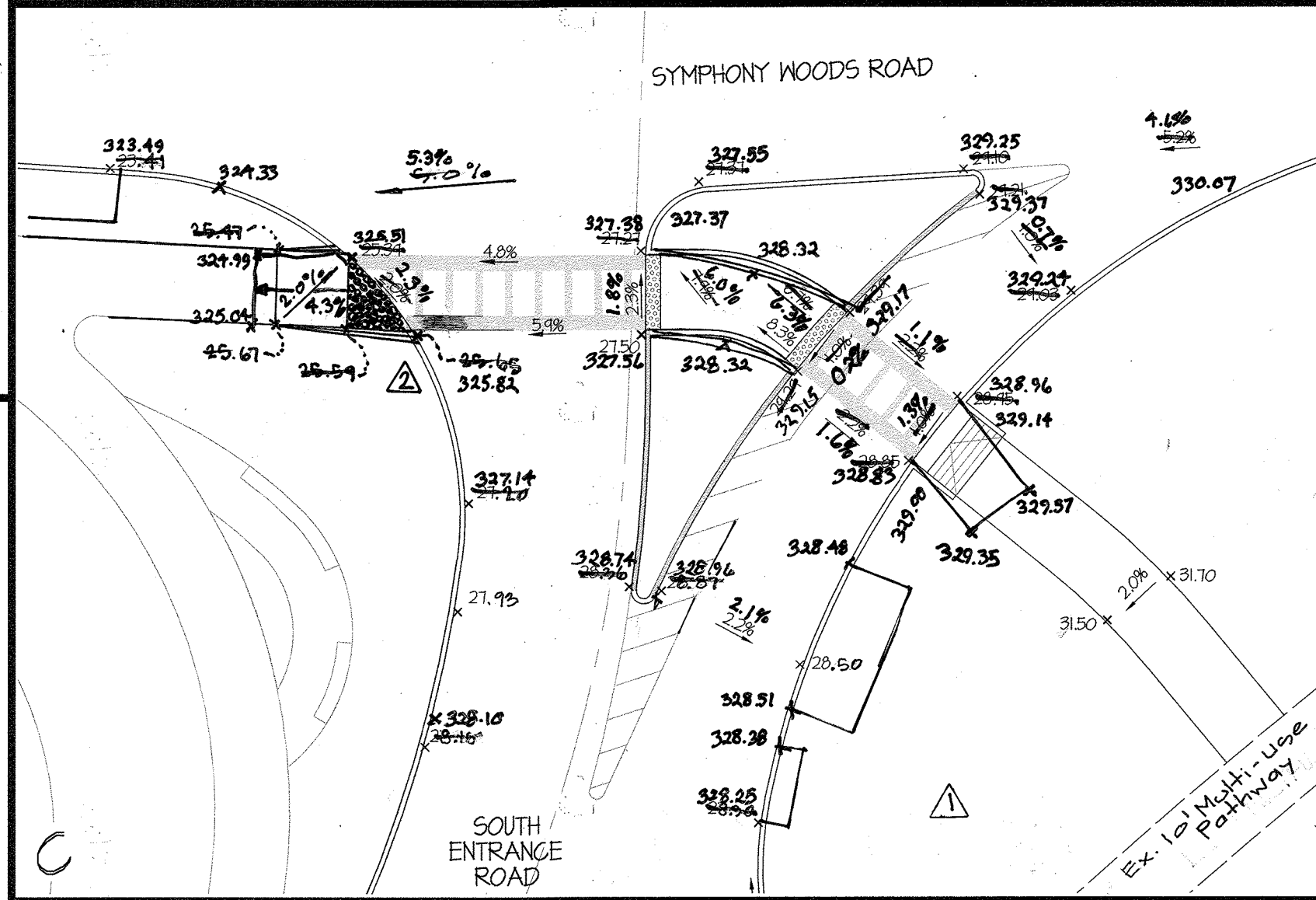
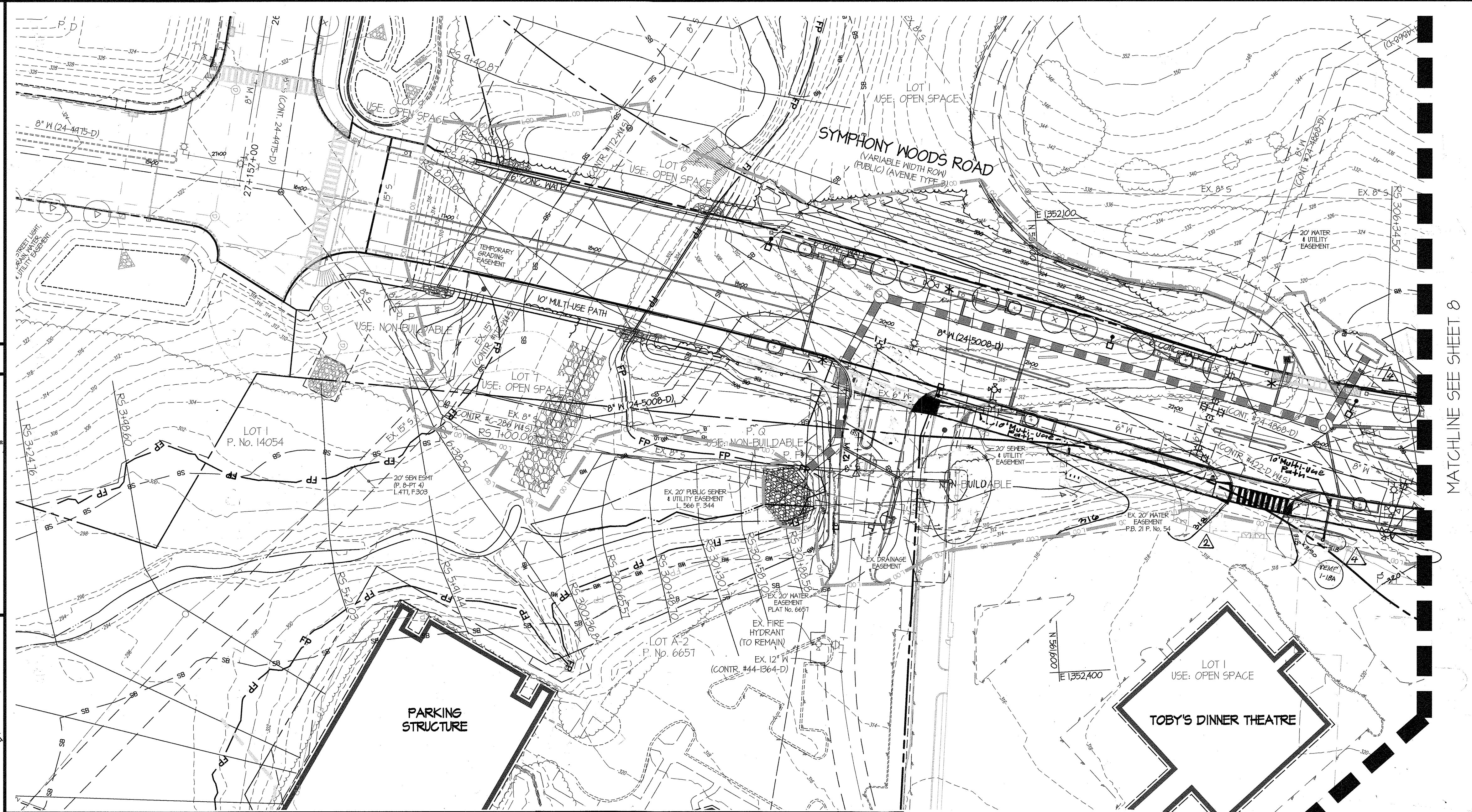


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/12/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 2/17/18

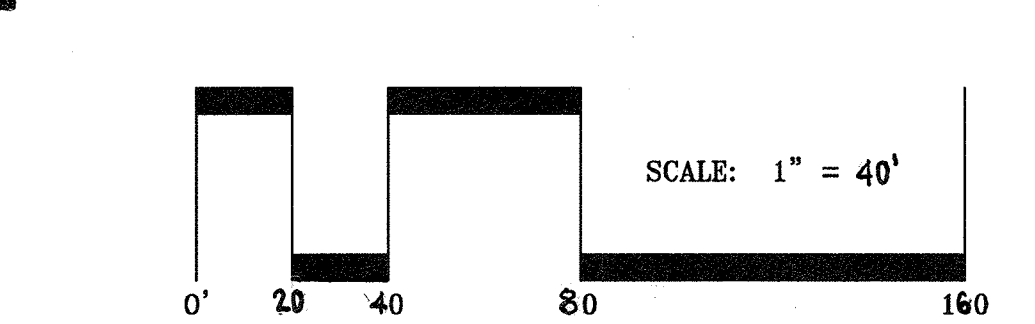
Chief, Development Engineering Division  
 Date: 2-27-18

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 FAX: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186



**LEGEND**

- L.O.D. — LIMIT OF DISTURBANCE
- FP — FLOODPLAIN
- SB — STREAM BUFFER
- — — STREAM CENTERLINE
- — — EXISTING EDGE OF PAVING
- — — EXISTING CURB



**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN AND TO THE BEST OF MY KNOWLEDGE AND BELIEF THEY COMPLY WITH THE APPROVED PLANS AND SPECIFICATIONS.

G. SCOTT SHANBERGER  
 PROFESSIONAL ENGINEER  
 LICENSE NO. 12975  
 EXPIRATION DATE: MAY 28, 2018

RIVER STATION	WSEL	RIVER STATION	WSEL
9+40.87	309.08	309+61.06	324.78
8+96.06	308.93	309+27.05	324.30
8+45.27	308.97	308+85.83	323.50
8+01.60	308.46	308+31.55	321.92
7+71.53	305.77	307+96.13	320.33
7+00.06	305.31	307+41.74	319.45
6+38.50	305.23	307+10.62	318.23
5+91.44	304.44	306+78.42	316.76
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310+76.60	328.73	301+30.17	305.61
310+57.40	327.81	300+98.70	305.61
310+19.13	326.27	300+65.57	305.61
309+86.70	325.49	300+36.84	305.61

THE ENVIRONMENTAL DISTURBANCES ARE ESSENTIAL AND PERMITTED PER MDE PERMIT NO. 14-NF-3184/2014-61063, MDE PERMIT NO. 2016643816-NT-3239, AND ARMY CORPS OF ENGINEERS NO. CENAB-PP-RNN-2014-61063-M36.

DATE	REVISION	BY	APP'R.
0-11-10	REMOVED GUARDRAIL AND CORRECTED SPOT ELEVATIONS, ADDED TEMP 1-18A REV. GRADING	H.K.J.	DEV.
12-11-18	ADDED MULTI-USE PATH TO BE CONSTRUCTED WITH THESE PLANS RATHER THAN SDP 17-042 AND REVISED GRADING DUE TO INTERIN ENTRANCE TO TOBY'S	H.K.J.	DEV.
11-05-18	Revised curb, Guardrail	H.K.J.	DEV.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

**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. 12975  
 EXPIRATION DATE: MAY 28, 2018

1/25/18

**GRADING PLAN and ADA RAMP DETAILS**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**

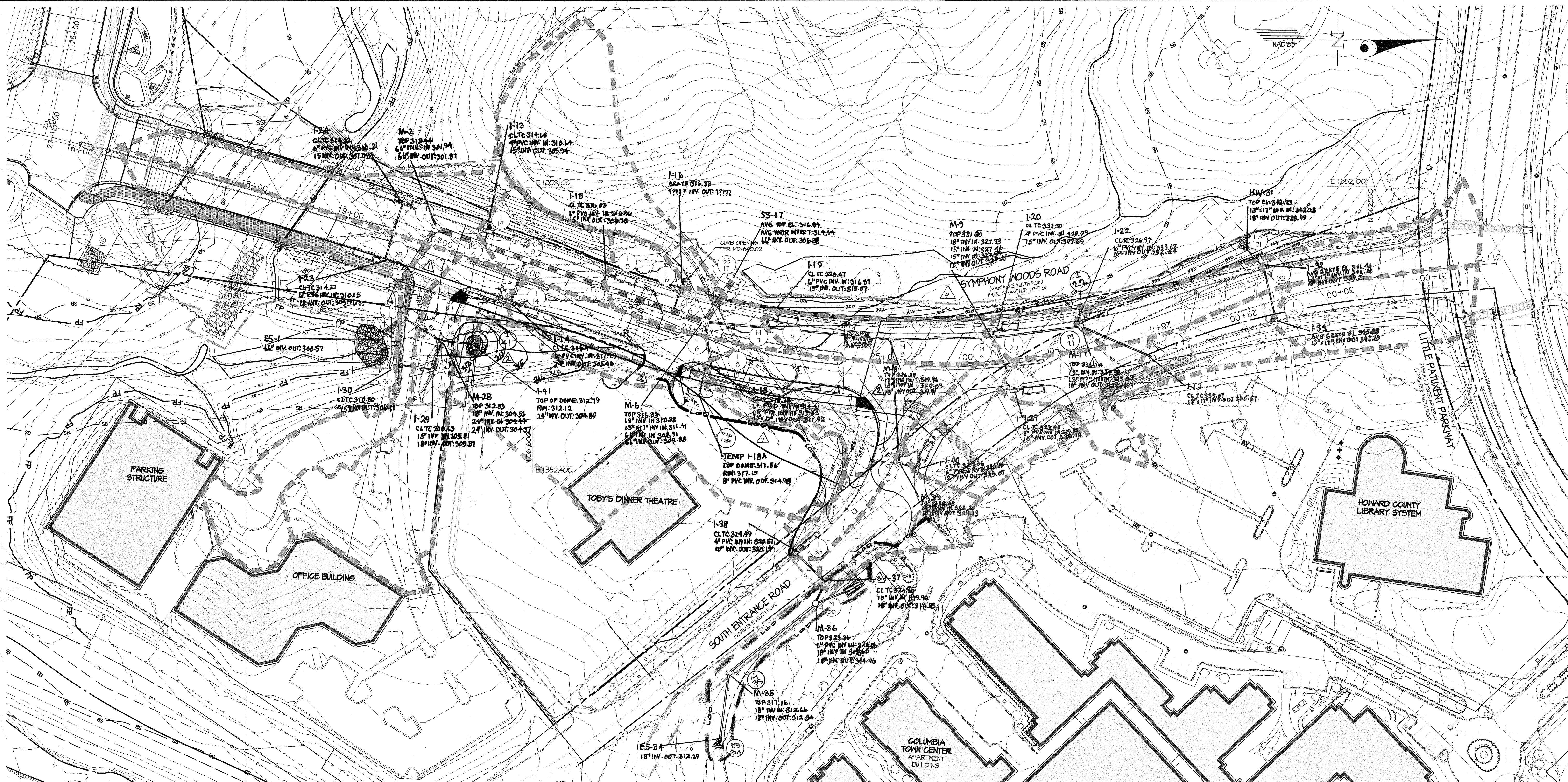
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1" = 40'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN, 2018	36 - 01	9 OF 39

MATCHLINE SEE SHEET 8

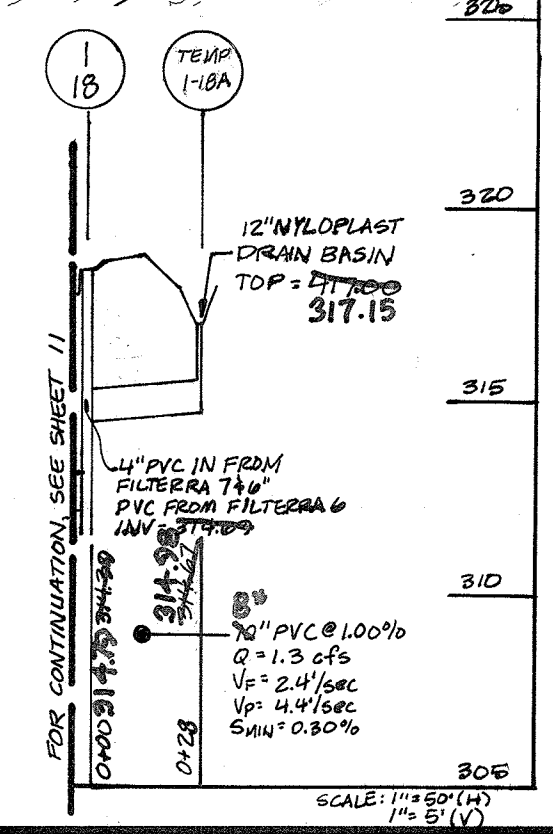
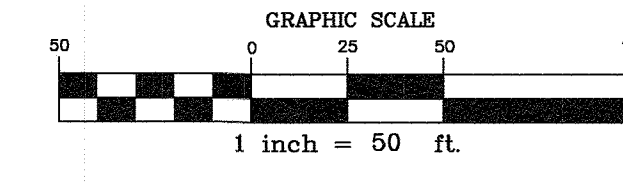
L:\CAD\DRAWINGS\11071\PLANS BY G.L.W.\PHASE 2\PHASE 2B\11071 - F 16-14 - 08-09 - Grading Plans.dwg, PLOTTED: 1/25/2018 3:31 PM, LAST SAVED: 1/25/2018 2:41 PM, PLOTTED BY: Jennifer R. Dicks





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/7/18

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 2-27-18



**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE CURRENT APPROVED PLANS AND SPECIFICATIONS.

G. SCOTT SHANNBERGER  
 SHANNBERGER & LANE  
 PROFESSIONAL LAND SURVEYOR  
 LICENSE EXPIRATION DATE 1/1/2020  
 AS-BUILT SURVEY DATES 11-14-19 TO 12/16/19

- NOTES:
- DRAINAGE AREAS COORDINATE WITH THE FUTURE DEVELOPMENT OF SDP-17-043. THE DRAINAGE AREA TO THE STUB CONSIDERS DRAINAGE FROM TOBY'S SITE BOTH BEFORE AND AFTER THE DEVELOPMENT SHOWN IN SDP-17-043.
  - FOR RIP RAP OUTLET PROTECTION INFORMATION, SEE SHEETS 11-2.

C FACTOR COMPUTATIONS			
STRUCTURE	AREA (AC.)	C	IMPERVIOUS
I-12	0.21	0.85	94%
I-13	0.25	0.85	94%
I-14	0.32	0.85	94%
I-15	0.26	0.85	94%
I-16	0.63	0.33	15%
I-18	0.48	0.10	75%
I-19	0.25	0.85	94%
I-20	0.11	0.85	94%
I-21	0.26	0.85	94%
I-22	0.21	0.85	94%
I-23	0.23	0.85	94%
I-24	0.46	0.85	94%
I-28	0.10	0.10	75%
I-30	0.42	0.71	85%
I-32	0.26	0.80	90%
I-33	0.36	0.64	85%
I-31	0.26	0.80	90%
I-38	0.11	0.85	94%
I-40	0.35	0.58	85%

FROM NO.	TO NO.	DIA. (IN) & TYPE OF PIPE	L (FT)	FROM NO.	TO NO.	DIA. (IN) & TYPE OF PIPE	L (FT)
I-38	I-31	12" RCP	44	I-18	M-6	15" TELEUP	44
I-31	M-36	18" HOPE	272	M-6	FC-6	66" RCP	33
M-36	M-35	18" HOPE	112	M-6	FC-5	66" RCP	80
M-35	E-34	18" HOPE	68	M-6	FC-5	66" RCP	11
I-32	I-32	15" TELEUP CMP	55	M-6	FC-5	66" RCP	81
I-32	E-31	18" HOPE	25	M-6	FC-4	66" RCP	44
I-12	M-11	15" TELEUP CMP	81	M-6	FC-4	66" RCP	44
I-22	M-11	18" HOPE	5	M-6	FC-4	66" RCP	44
M-11	M-8	18" HOPE	7	M-6	FC-4	66" RCP	12
M-11	M-4	18" HOPE	91	M-6	M-2	66" RCP	51
I-21	M-4	18" HOPE	58	M-2	FC-2	66" RCP	46
I-20	M-4	18" HOPE	5	I-24	M-2	66" RCP	66
M-4	M-8	18" HOPE	105	I-28	FC-2	66" RCP	26
I-40	M-8	18" HOPE	17	FC-2	M-1	66" RCP	54
M-8	M-8	18" HOPE	124	I-30	I-24	18" HOPE	33
M-8	M-7	18" HOPE	131	I-24	M-28	18" HOPE	30
M-7	M-7	18" HOPE	6	STUB	M-28	24" HOPE	30
M-7	M-6	66" RCP	61	M-28	FC-1	24" HOPE	44
SS-17	M-6	66" RCP	50	FC-1	E-1	66" RCP	32

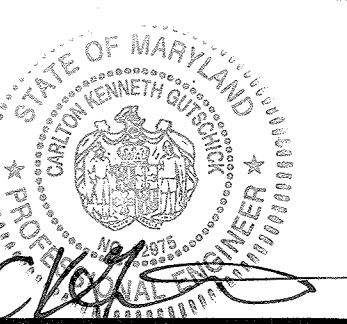
NOTE: All CMP must be Aluminized and 1/4 Gauge.

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.
9-11-19	REMOVED OVERSIGHT & REVISED GRADING ALONG WESTERN SYMPHONY WOODS ROAD. ADD TEMP I-18A & PROFILE	HCT	DEV
7-22-19	REVISED STORM DRAIN TO RESOLVE UTILITY CONFLICT	WLS	DEV
12-11-18	ADDED NYLOPLAST INLET TO THE STUB DRAINING TO MH 28, INCLUDED MULTI-USE PATH IN THESE PLANS, AND REVISED GRADING.	ST	DEV
11-06-18	REVISED CURB, STORM DRAIN, FILTERRAS, GRADING, & DRAINAGE AREAS	ST	DEV

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

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. 12975  
 EXPIRATION DATE: MAY 26, 2018  
 1/25/18



**STORM DRAIN DRAINAGE AREA MAP**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**

ELECTION DISTRICT No. 5  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1" = 50'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	10 OF 39







NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION				INVERT				STD. DETAIL	LOCATIONS	PRIVATE/PUBLIC	
			PROPOSED	AS-BUILT	PROPOSED	AS-BUILT	UPPER	LOWER	UPPER	LOWER				
I-40	A-10 INLET	2'-6"	328.74	328.90	329.04	329.07	329.05	325.18	323.47	HO. CO. D-4.03	N 562.018° E 1352.402'	PUBLIC		
I-38	A-10 INLET	2'-6"	324.05	323.60	324.16	324.51	320.56	319.92	320.14	HO. CO. D-4.03	N 561.805° E 1352.416'	PUBLIC		
I-37	A-10 INLET	2'-6"	324.12	323.70	324.50	324.05	319.60	314.87	314.89	HO. CO. D-4.03	N 561.915° E 1352.525'	PUBLIC		
I-33	DOUBLE WR-INLET	2'-9"	EXISTING CURB ELEV. 346.84	EXISTING CURB ELEV. 345.71	---	342.82	---	343.10	---	HO. CO. D-4.05	N 562.402° E 1352.245'	PUBLIC		
I-32	A-10 INLET	2'-6"	346.81	346.26	---	338.76	---	344.18	339.41	HO. CO. D-4.03	N 562.384° E 1352.084'	PUBLIC		
I-30	A-10 INLET	2'-6"	310.76	310.70	---	306.07	---	306.11	---	HO. CO. D-4.03	N 561.454° E 1352.242'	PRIVATE		
I-24	A-10 INLET	2'-6"	310.64	310.46	310.17	310.59	305.74	305.44	315.81	305.57	HO. CO. D-4.03	N 561.454° E 1352.245'	PRIVATE	
I-24	A-10 INLET	2'-6"	314.4	314.08	314.35	314.18	310.02	308.78	310.28	307.83	HO. CO. D-4.03	N 561.454° E 1352.245'	PUBLIC	
I-23	A-10 INLET	2'-6"	314.02	314.02	314.34	314.24	310.08	305.81	310.15	305.96	HO. CO. D-4.03	N 561.454° E 1352.245'	PUBLIC	
I-22	A-10 INLET	2'-6"	337.17	336.66	337.21	336.72	332.42	329.42	333.47	332.24	HO. CO. D-4.03	N 562.141° E 1352.244'	PUBLIC	
I-21	A-10 INLET	2'-6"	333.64	333.11	333.71	333.18	329.86	328.07	328.93	328.12	HO. CO. D-4.03	N 562.141° E 1352.244'	PUBLIC	
I-20	A-10 INLET	2'-6"	332.55	331.88	332.59	332.21	328.86	327.54	328.99	327.69	HO. CO. D-4.03	N 562.096° E 1352.256'	PUBLIC	
I-18	A-10 INLET	2'-6"	320.68	320.23	320.72	320.21	316.44	315.30	316.37	315.87	HO. CO. D-4.03	N 561.823° E 1352.244'	PUBLIC	
I-18	A-15 INLET	2'-6"	318.54	318.12	318.58	318.13	314.64	312.02	314.79	311.93	P.6. CO. SD 10.1	N 561.783° E 1352.245'	PUBLIC	
I-16	S-INLET	2'-15"	316.21	316.21	316.35	316.31	---	308.85	---	HO. CO. D-4.22	N 561.783° E 1352.201'	PUBLIC		
I-15	A-10 INLET	2'-6"	316.05	315.44	315.98	315.46	312.15	306.42	312.36	306.70	HO. CO. D-4.03	N 561.673° E 1352.245'	PUBLIC	
I-14	A-10 INLET	2'-6"	315.42	315.30	315.48	315.36	311.54	305.25	311.79	305.46	HO. CO. D-4.03	N 561.515° E 1352.222'	PUBLIC	
I-13	A-10 INLET	2'-6"	314.70	314.54	314.71	314.47	310.61	305.87	310.84	305.95	HO. CO. D-4.03	N 561.454° E 1352.245'	PUBLIC	
I-12	DOUBLE WR-INLET	2'-9"	340.05	339.77	339.17	338.91	---	335.69	---	335.64	---	---	---	
I-41	NYLON PLAST DRAIN	2'-0"	312.00	---	312.14	---	---	304.72	304.87	304.91	304.91	PRIVATE		
M-34	STANDARD MANHOLE	4'-0"	328.52	---	328.68	---	322.24	321.94	322.38	321.3	HO. CO. 6-5.12	N 561.454° E 1352.245'	PUBLIC	
M-36	STANDARD MANHOLE	4'-0"	322.14	---	323.26	---	319.20	314.55	320.06	314.46	HO. CO. 6-5.12	N 561.905° E 1352.554'	PUBLIC	
M-35	STANDARD MANHOLE	4'-0"	316.60	---	317.10	---	312.78	312.68	312.16	312.54	HO. CO. 6-5.12	N 561.812° E 1352.614'	PUBLIC	
M-28	STANDARD MANHOLE	4'-0"	312.15	---	312.59	---	304.97	304.41	304.53	304.57	HO. CO. 6-5.12	N 561.502° E 1352.245'	PRIVATE	
M-11	STANDARD MANHOLE	4'-0"	336.44	---	336.74	---	332.52	331.47	329.97	329.11	HO. CO. 6-5.12	N 562.141° E 1352.244'	PUBLIC	
M-13	STANDARD MANHOLE	4'-0"	330.60	---	330.60	---	326.60	326.60	326.60	326.60	HO. CO. 6-5.12	N 562.141° E 1352.244'	PUBLIC	
M-4	STANDARD MANHOLE	4'-0"	331.18	---	331.80	---	327.44	327.14	327.54	327.21	HO. CO. 6-5.12	N 562.096° E 1352.256'	PUBLIC	
M-6	STANDARD MANHOLE	4'-0"	326.24	---	326.10	---	320.05	319.45	320.83	319.91	HO. CO. 6-5.12	N 561.454° E 1352.244'	PUBLIC	
M-7	STANDARD MANHOLE	4'-0"	314.77	---	314.88	---	314.48	313.13	314.84	312.79	HO. CO. 6-5.12	N 561.852° E 1352.252'	PUBLIC	
M-6	STANDARD MANHOLE	10'-0"	317.81	---	318.00	---	311.56	309.11	311.41	312.88	MD. SHA. 304.11	N 561.783° E 1352.244'	PUBLIC	
M-2	STANDARD MANHOLE	10'-0"	313.81	---	313.94	---	301.61	301.57	301.94	301.87	MD. SHA. 304.11	N 561.454° E 1352.244'	PUBLIC	
SS-17	A-15 INLET	5'-6"	316.67	---	316.84	AVG.	---	306.85	---	306.88	---	P.6. CO. SD 10.1	N 561.454° E 1352.244'	PUBLIC
HW-31	HEADWALL	1'-6"	341.51	---	341.33	---	---	338.51	---	338.99	---	HO. CO. D-5.11	N 562.371° E 1352.260'	PUBLIC
ES-34	END SECTION	1'-6"	319.50	---	313.79	---	---	312.00	---	312.29	---	HO. CO. D-5.51	N 561.803° E 1352.614'	PUBLIC
ES-1	END SECTION	5'-6"	306.40	---	306.19	---	---	300.40	---	302.69	---	HO. CO. D-5.51	N 561.454° E 1352.260'	PUBLIC

COORDINATE POINT GIVEN IS TO THE CENTER OF MANHOLE, RISERS AND CHIMNEYS TO THE CENTERLINE OF A, C, G, AND G, AND INLETS AT FACE OF CURB, AND AT CENTERLINE OF OUTLET OF END SECTIONS.  
 FLARED HDPE END SECTION BY ADS.  
 SEE SHEET 10 FOR TYPICAL RIP RAP DETAILS.  
 PART NUMBER FOR 14" DOME GRATE IS 7019060  
 THIS PIPE SCHEDULE IS FOR THE STORM DRAIN ON SHEETS 11-12 ONLY. FOR THE PIPE SCHEDULE FOR THE DRAINS FROM FILTERTERRAS, SEE SHEET 13.

SIZE	TYPE	QUANTITY (L)	REMARKS
13" x 17" Ellip.	AL-CMP	180	PUBLIC
15"	HDPE	207	PUBLIC
15"	HDPE	33	PRIVATE
18"	HDPE	82	PUBLIC
18"	HDPE	30	PRIVATE
24"	HDPE	44	PUBLIC
24"	HDPE	74	PRIVATE
66"	RCP CL. III	482	PUBLIC
15"	RCP CL. V	44	PUBLIC

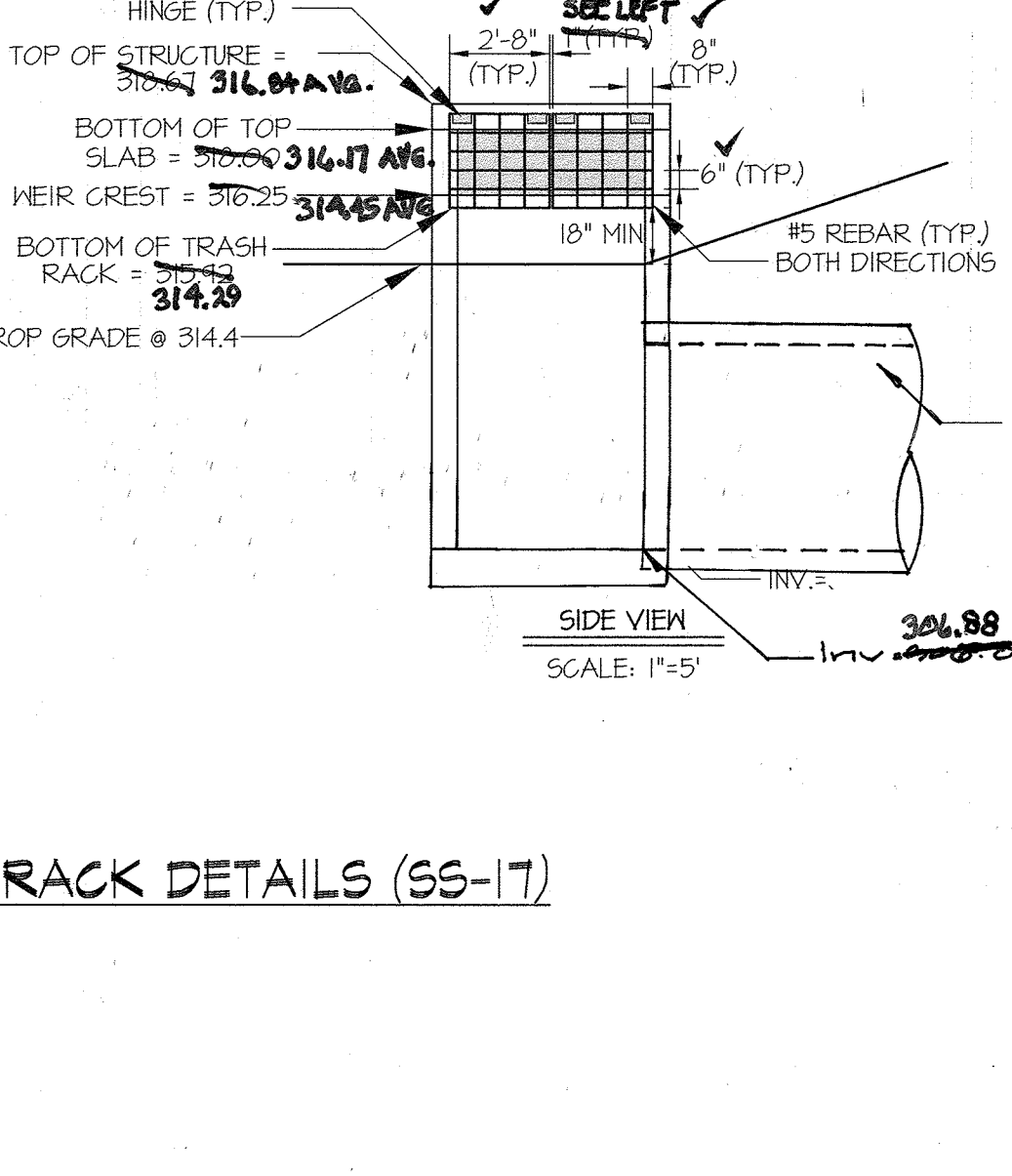
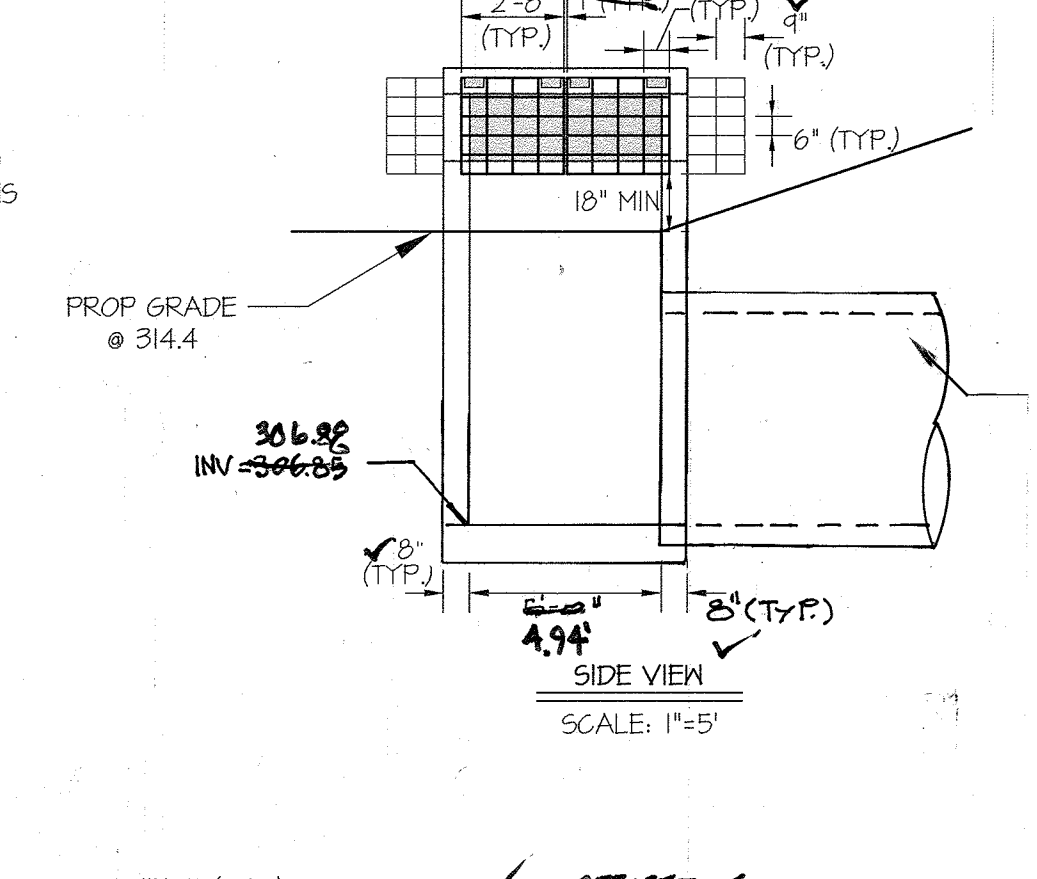
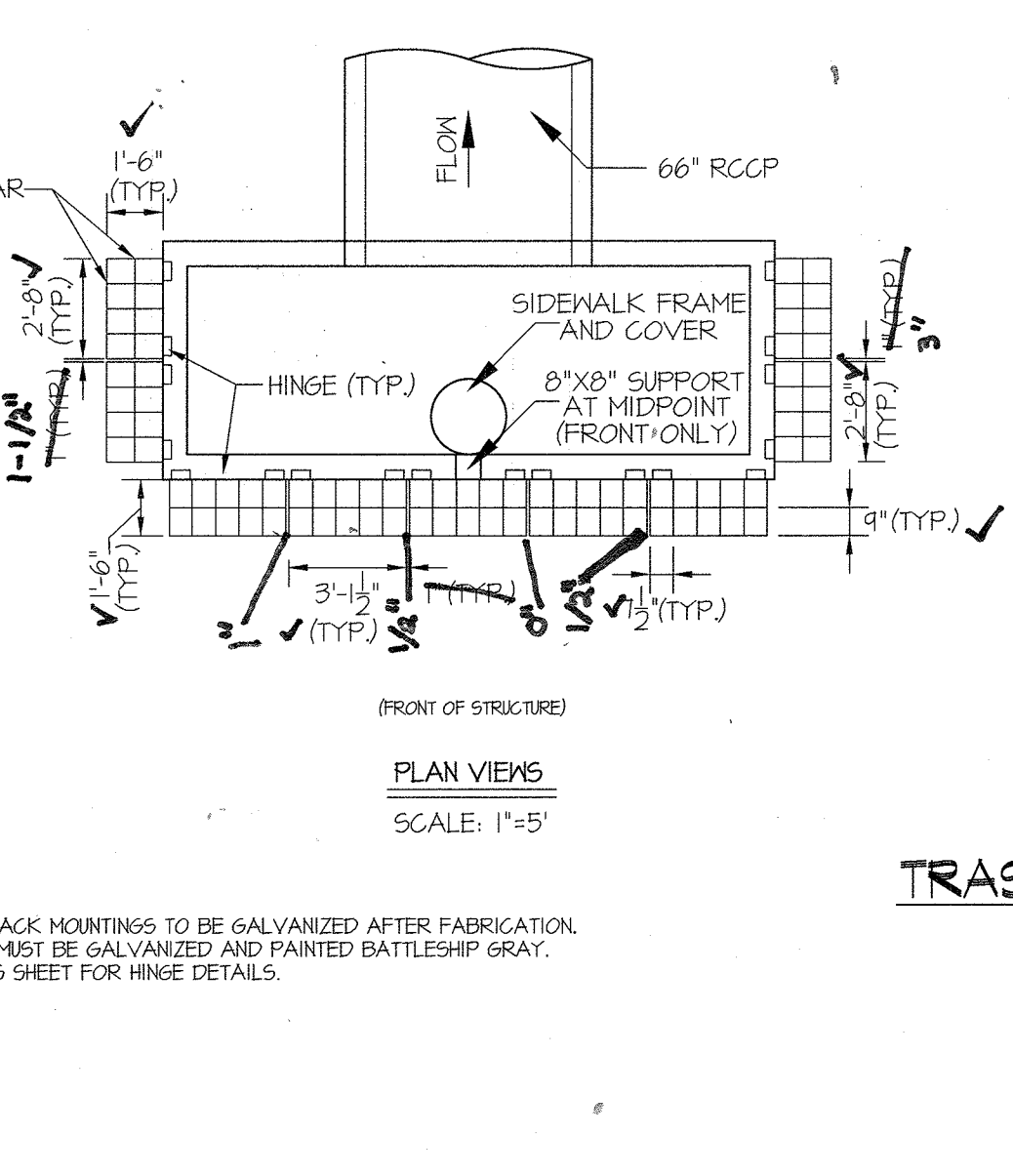
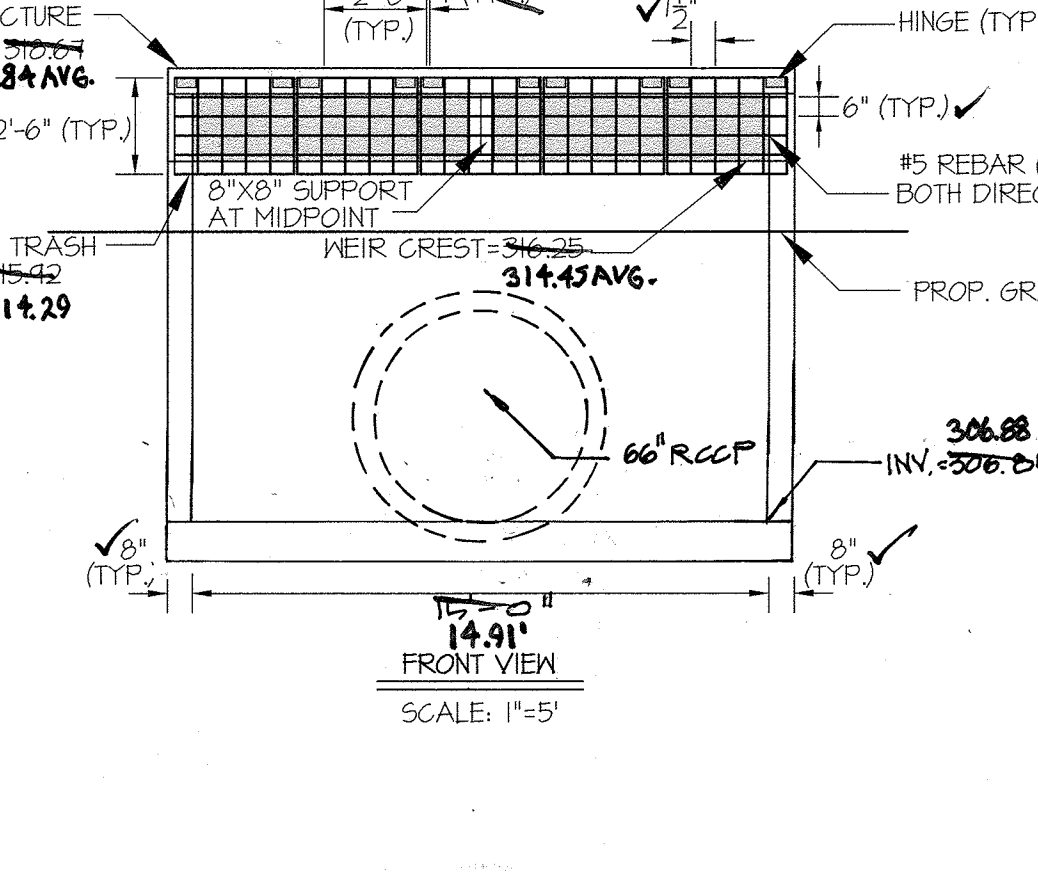
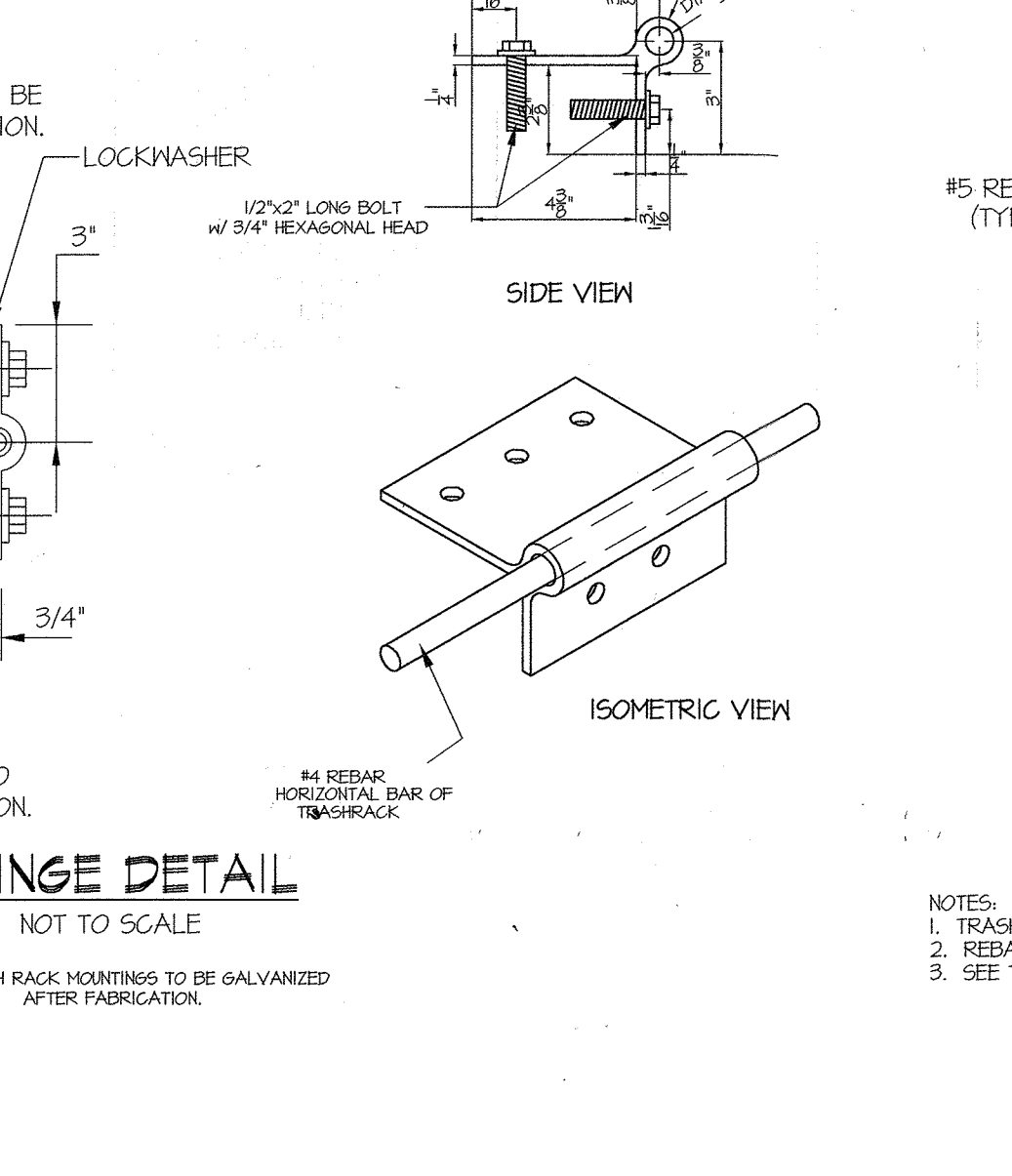
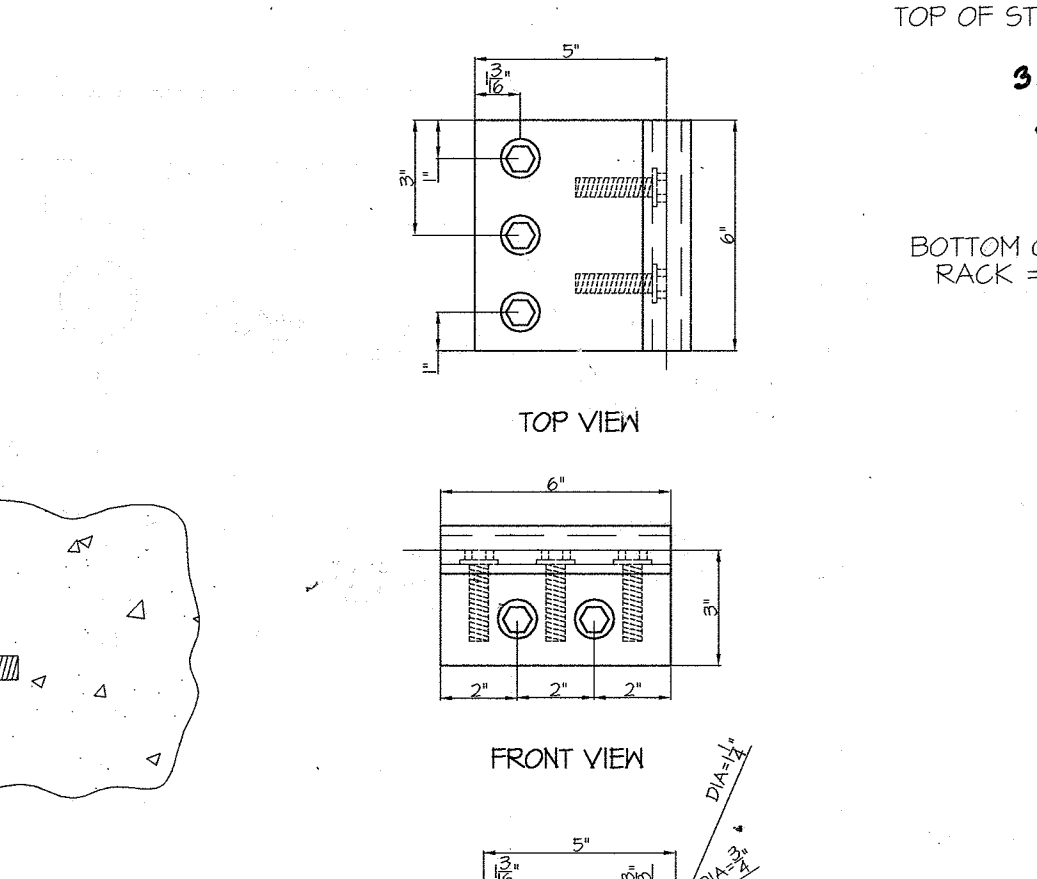
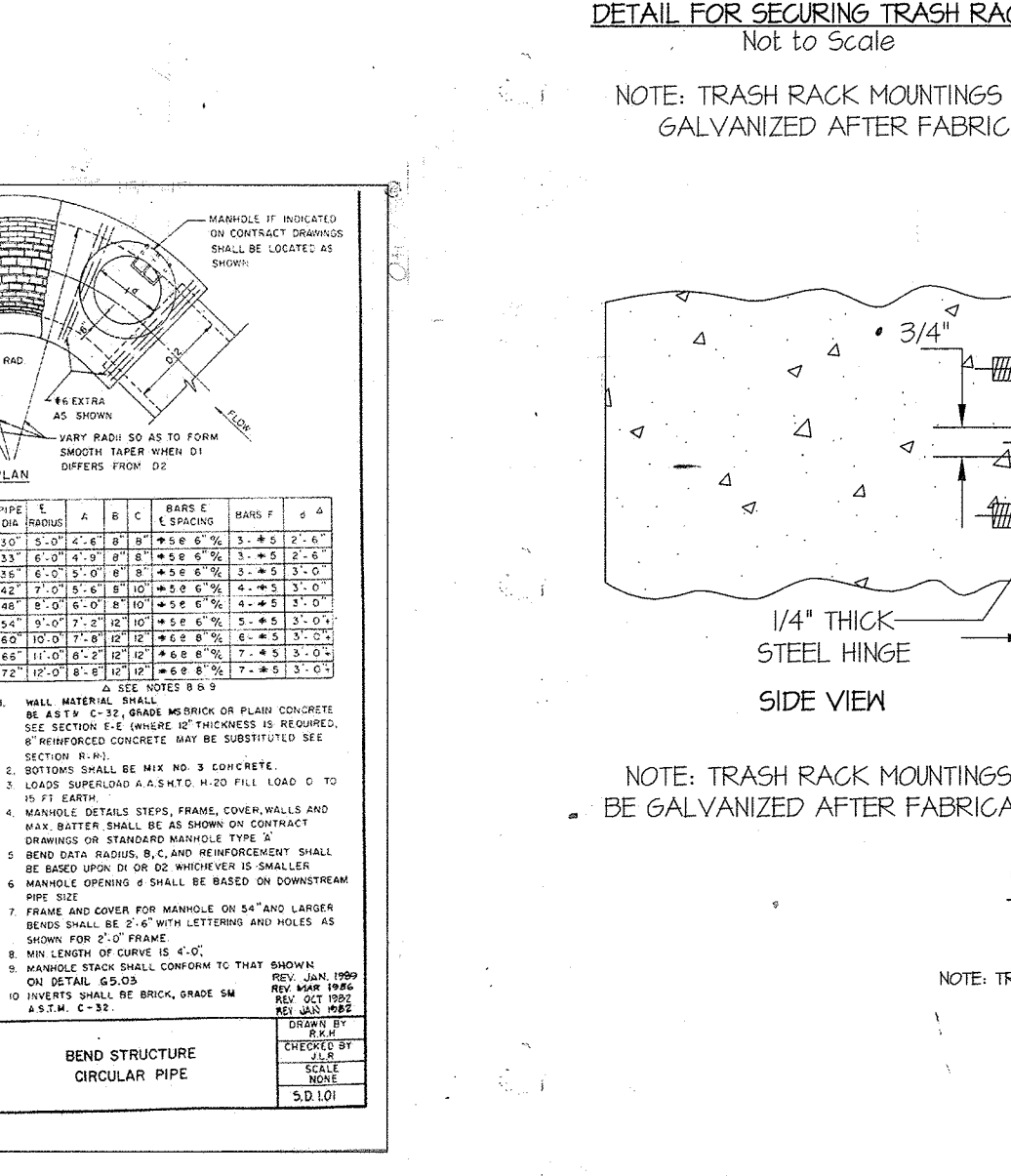
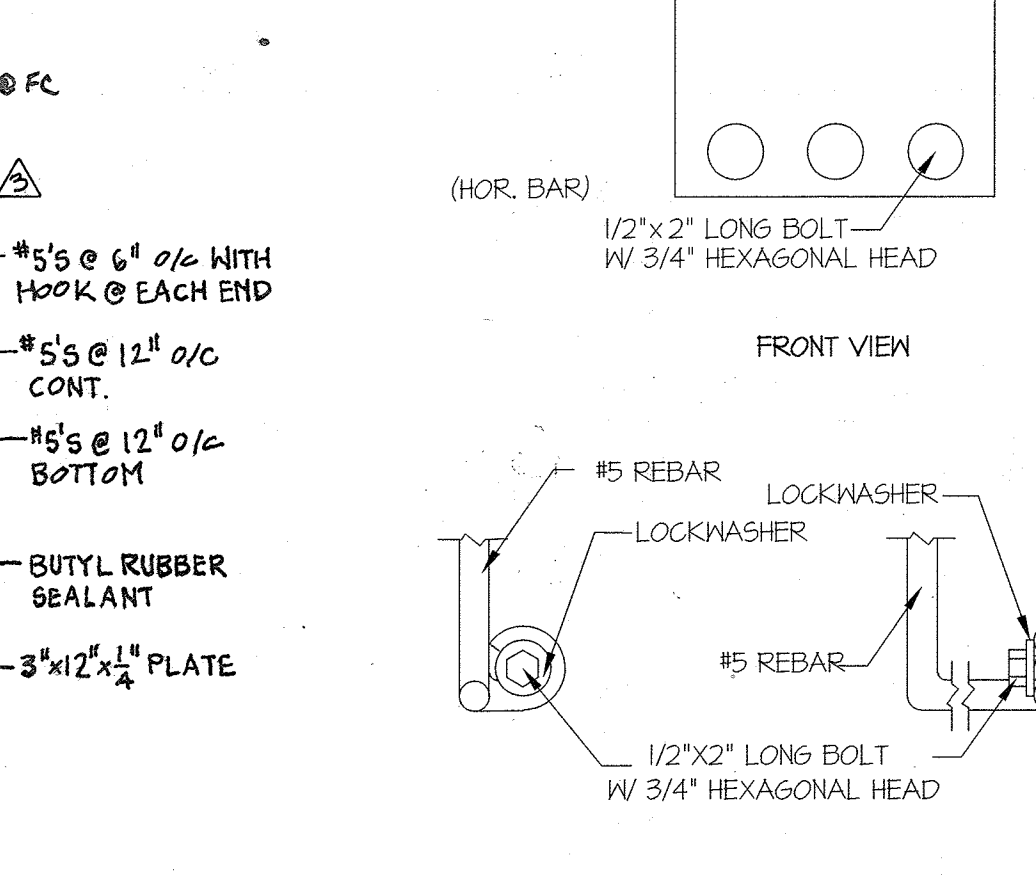
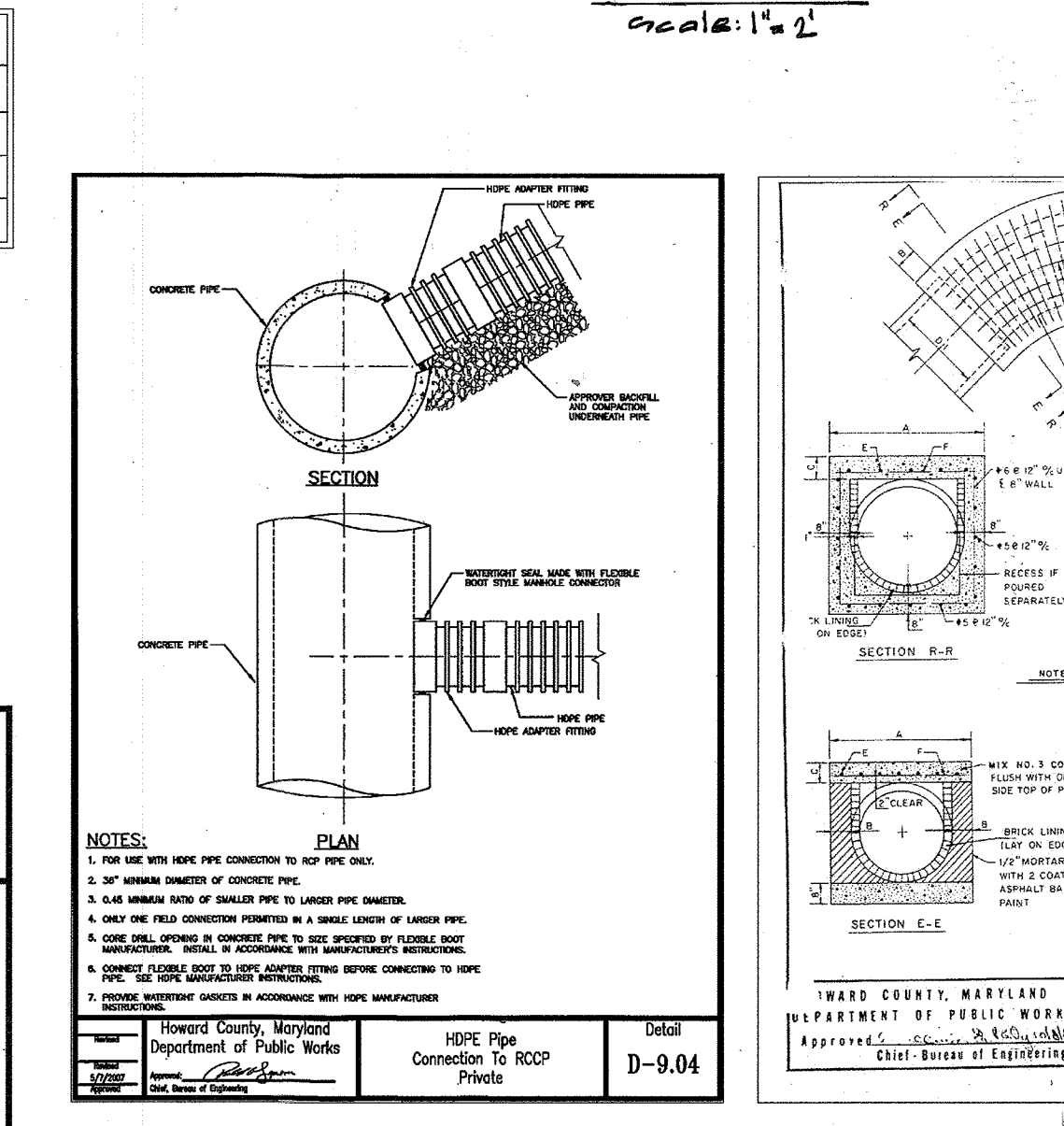
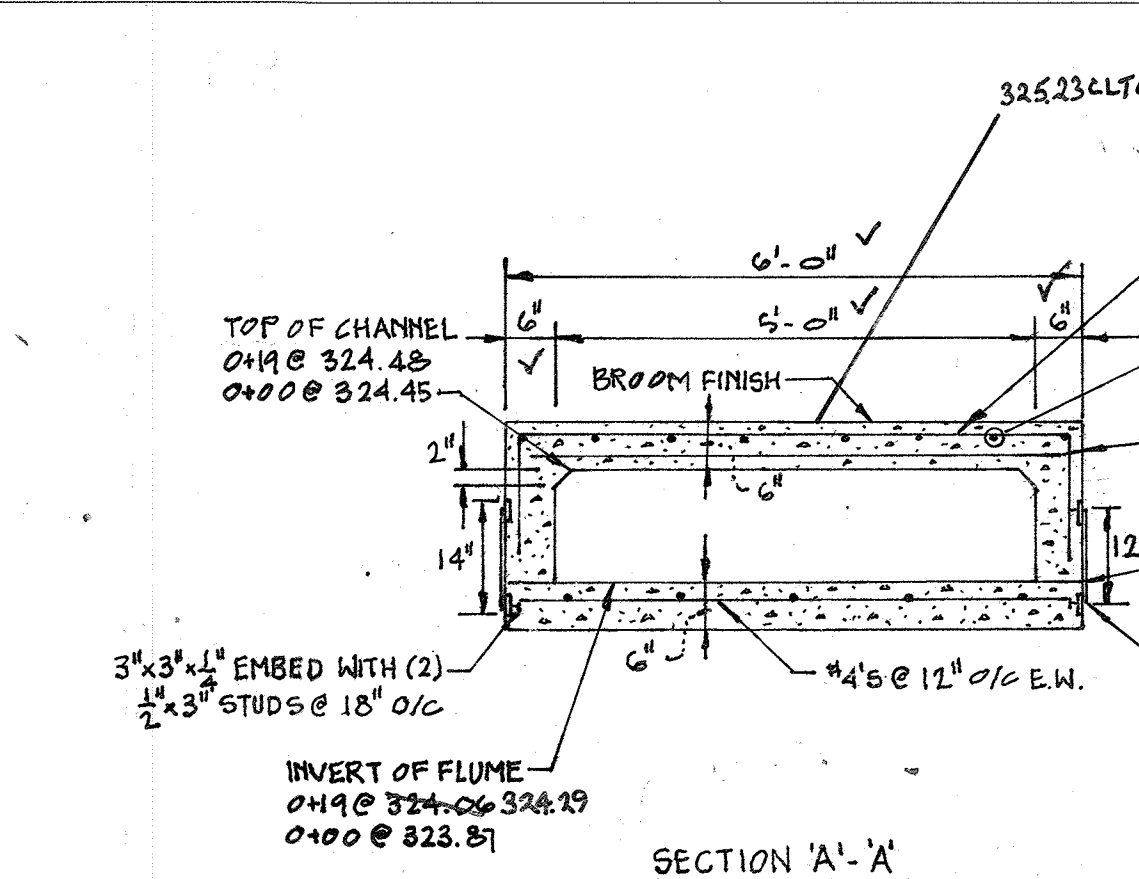
STRUCTURE	CLASS	LENGTH	D <sub>30</sub>	D <sub>50</sub>	THICKNESS
ES-34	CLASS I	14'	45"	15"	14"
HW-31	CLASS I	4'	45"	15"	14"
ES-1	CLASS III	30'	29"	34"	46"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/2018  
 Chief, Bureau of Highways

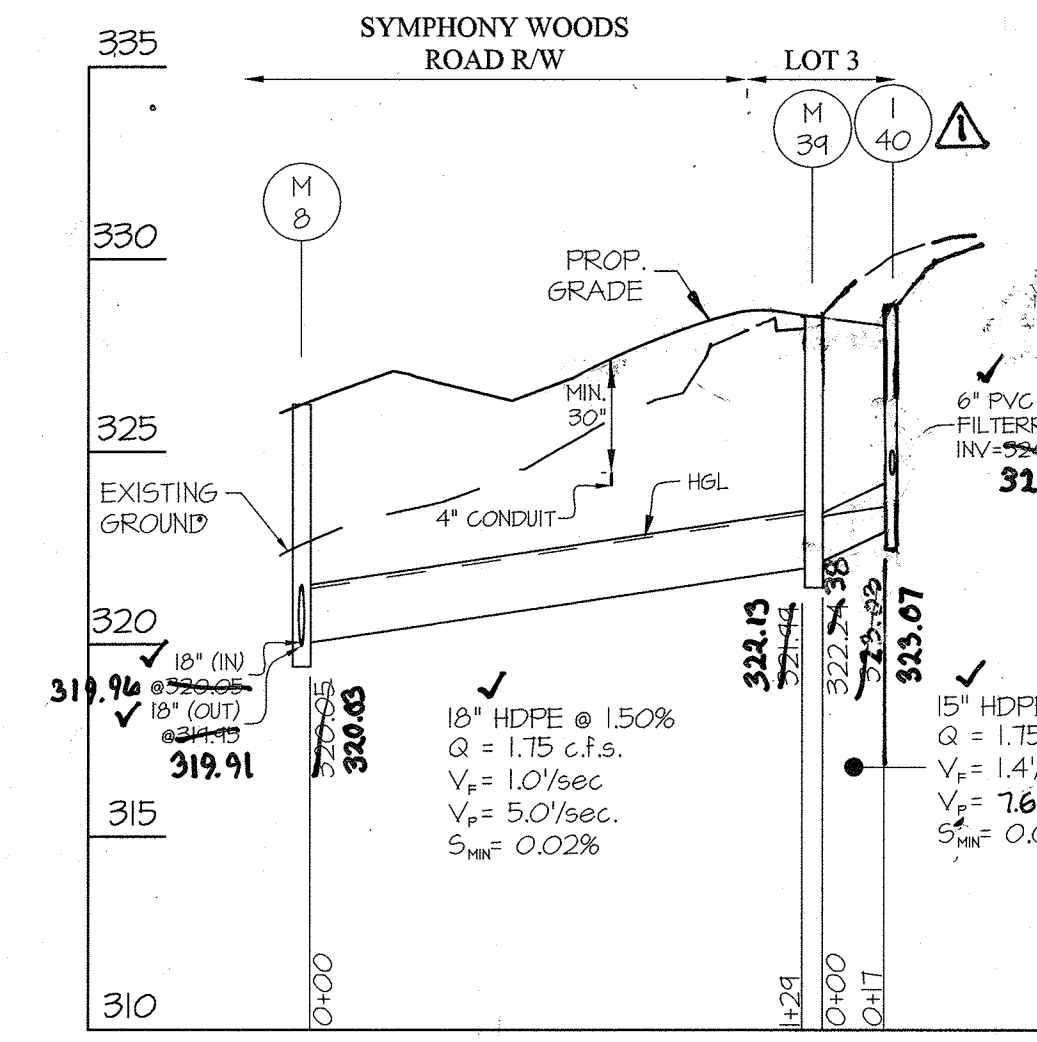
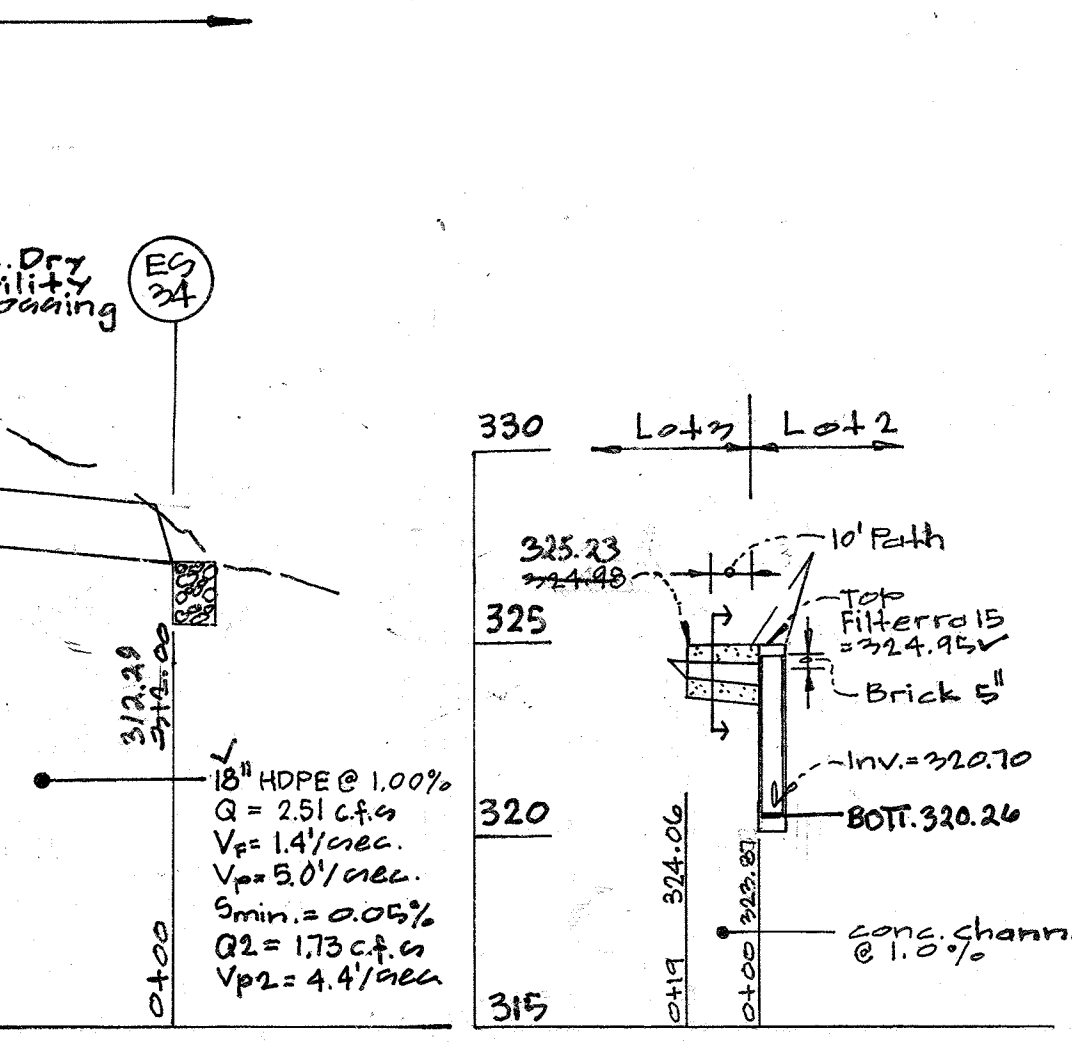
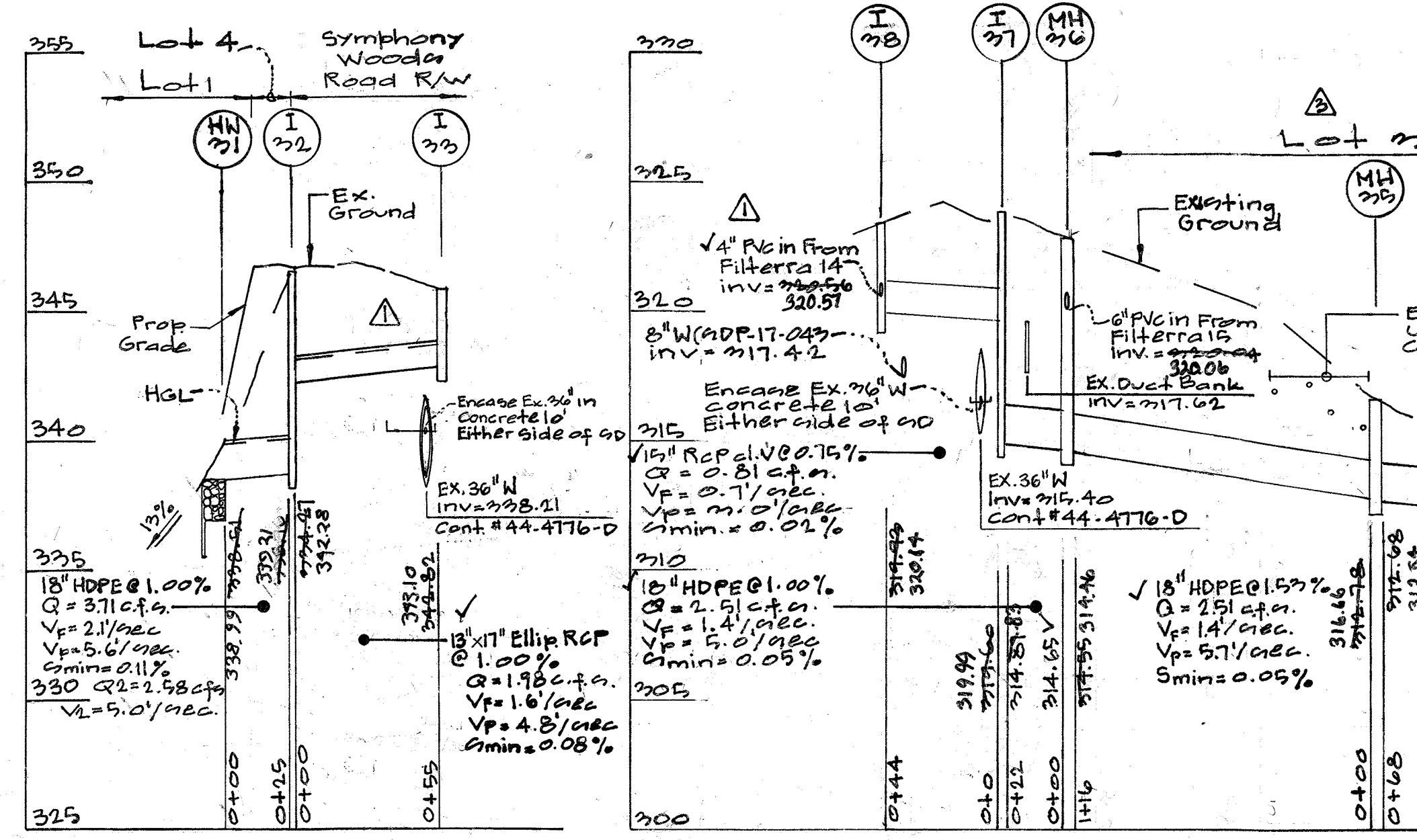
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 2/17/18  
 Chief, Division of Land Development

*[Signature]* 2.27.18  
 Chief, Development Engineering Division

GLWGUTSCHICK LITTLE & WEBER, P.A.  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3509 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 FAX: 410-860-1820 DC/VA: 301-989-2524 FAX: 301-421-4186



AS-BUILT CERTIFICATION  
 I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN AND THE PROFILES, APPROVED PLANS AND SPECIFICATIONS.  
 G. SCOTT SHANBERGER  
 5 SPANBERGER LANE  
 PROFESSIONAL LAND SURVEYOR  
 LICENSE NUMBER 114-14-17014/17  
 LICENSE EXPIRATION DATE 4/30/2018  
 ASBUILT SURVEY DATES 11-14-17 TO 12/14/17



NO.	REVISION	DATE	BY	APPR.
1-2-19	REVISE STORM DRAIN TO RESOLVE UTILITY CONFLICT		94	DEV
12-11-18	ADDED PRIVATE STORM DRAIN INLET TO CAPTURE RUNOFF FROM TOBY'S PARKING LOT		94	DEV
11-2-18	REVISED STORM DRAIN PROFILES & PIPE/STRUCTURE SCHEDULES		94	DEV

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

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.  
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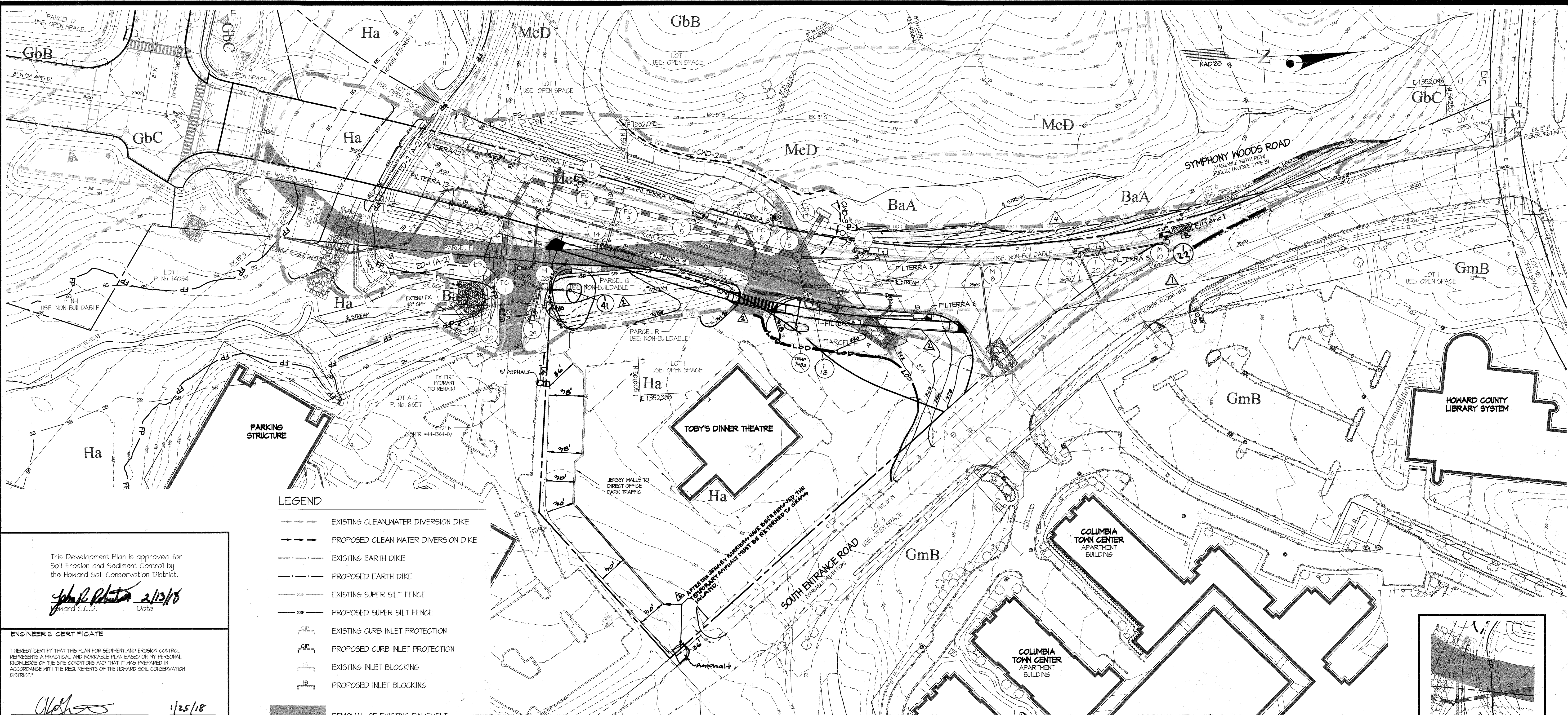
STORM DRAIN PROFILES  
 DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD

SCALE	ZONING	G. L. W. FILE NO.
1"=50' (H) 1"=5' (V)	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	12 OF 39









- LEGEND**
- EXISTING CLEAN WATER DIVERSION DIKE
  - - - PROPOSED CLEAN WATER DIVERSION DIKE
  - EXISTING EARTH DIKE
  - - - PROPOSED EARTH DIKE
  - EXISTING SUPER SILT FENCE
  - - - PROPOSED SUPER SILT FENCE
  - EXISTING CURB INLET PROTECTION
  - - - PROPOSED CURB INLET PROTECTION
  - EXISTING INLET BLOCKING
  - - - PROPOSED INLET BLOCKING
  - REMOVAL OF EXISTING PAVEMENT
  - ▨ PAVEMENT TO BE MILLED/OVERLAID
  - PROPOSED PAVING
  - ▨ EXISTING STABILIZED CONSTRUCTION ENTRANCE
  - ▨ PROPOSED STABILIZED CONSTRUCTION ENTRANCE

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

*John P. Roberts* 2/13/18  
 Howard S.C.D. Date

**ENGINEER'S CERTIFICATE**

I HEREBY 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 HOWARD SOIL CONSERVATION DISTRICT.

*John P. Roberts* 1/25/18  
 ENGINEER'S SIGNATURE DATE

**DEVELOPER'S/BUILDER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT 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 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.

*John P. Roberts* 1/25/18  
 SIGNATURE OF DEVELOPER/BUILDER DATE

**APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS**

*Michael...* 2/13/18  
 Chief, Bureau of Highways Date

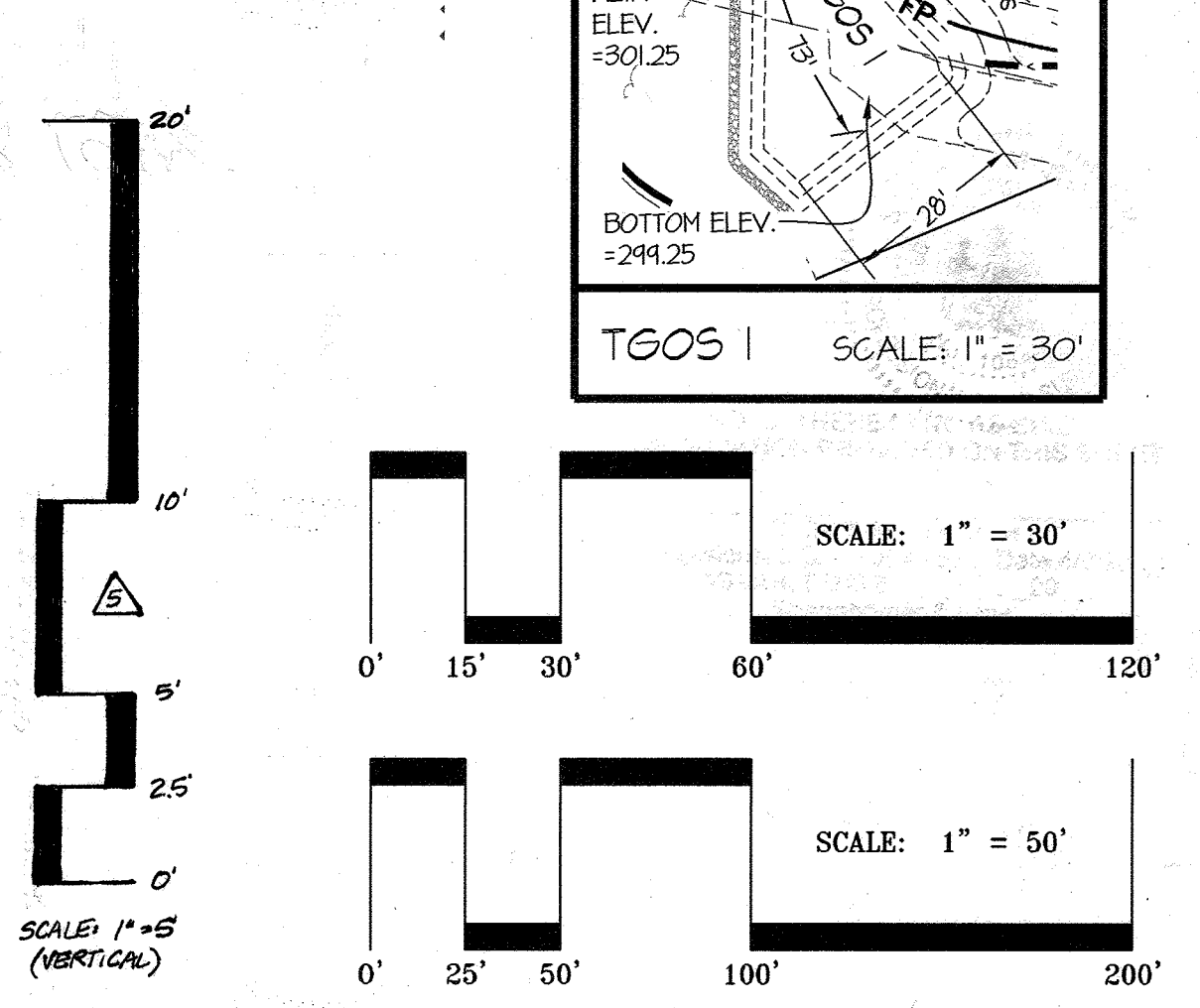
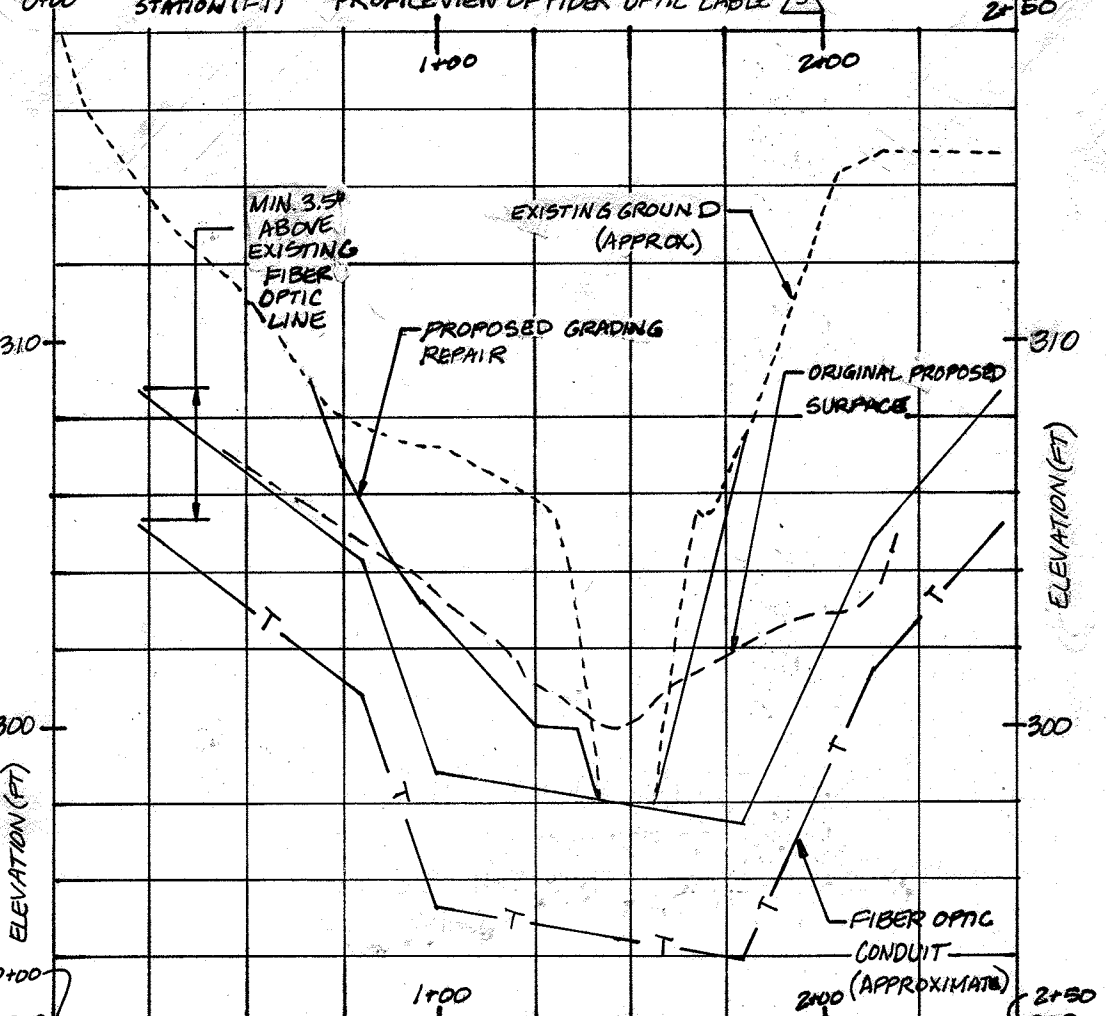
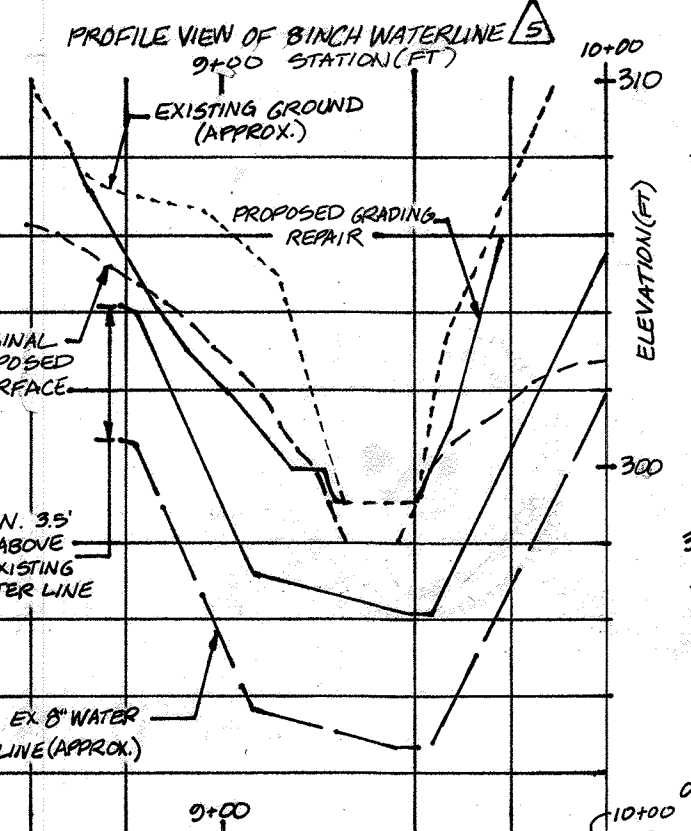
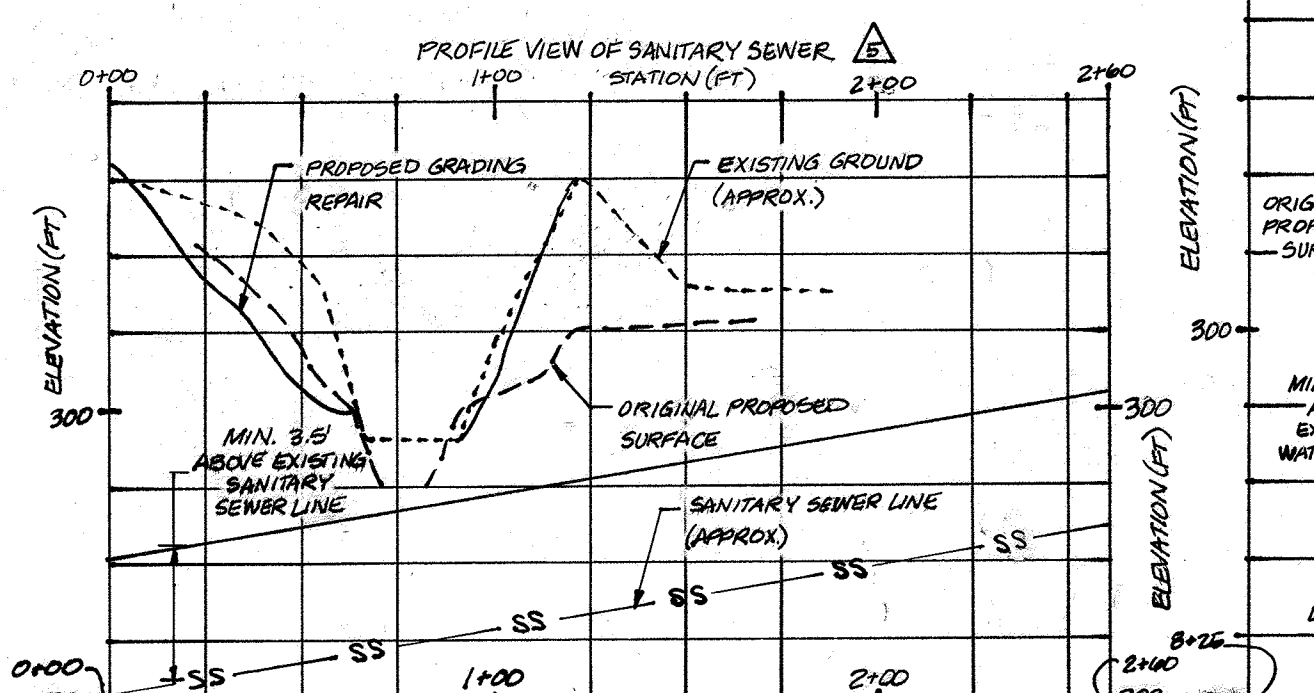
**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING**

*John...* 2/27/18  
 Chief, Division of Land Development Date

**GLWGUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	DESCRIPTION	BY	APPR.
08-16-2011	CROSS SECTIONS ALONG EXISTING UTILITIES IN THE AREA OF THE STREAM REPAIR	HKJ	DEV
09-11-10	REVISED GRADING WEST OF SYMPHONY WOODS ROAD, ADDED TEMP 1-15A	HKJ	DEV
12-11-10	PROVIDED INTERIM ENTRANCE TO TOBY'S PROPERTY, INCLUDED MULTI-USE PATH, REVISED	SL	DEV
11-05-10	REVISED STREAM DRAIN & FILTERRA	SL	DEV

See sheet 17 for proposed stream repair grading and sediment control downstream of Symphony Woods bridge.

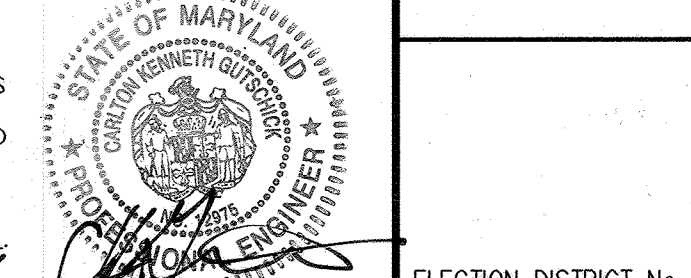


PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

**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. 12975  
 EXPIRATION DATE: MAY 26, 2018

*John P. Roberts* 1/25/18  
 PROFESSIONAL ENGINEER



**SEDIMENT AND EROSION CONTROL PLAN - STAGE I**

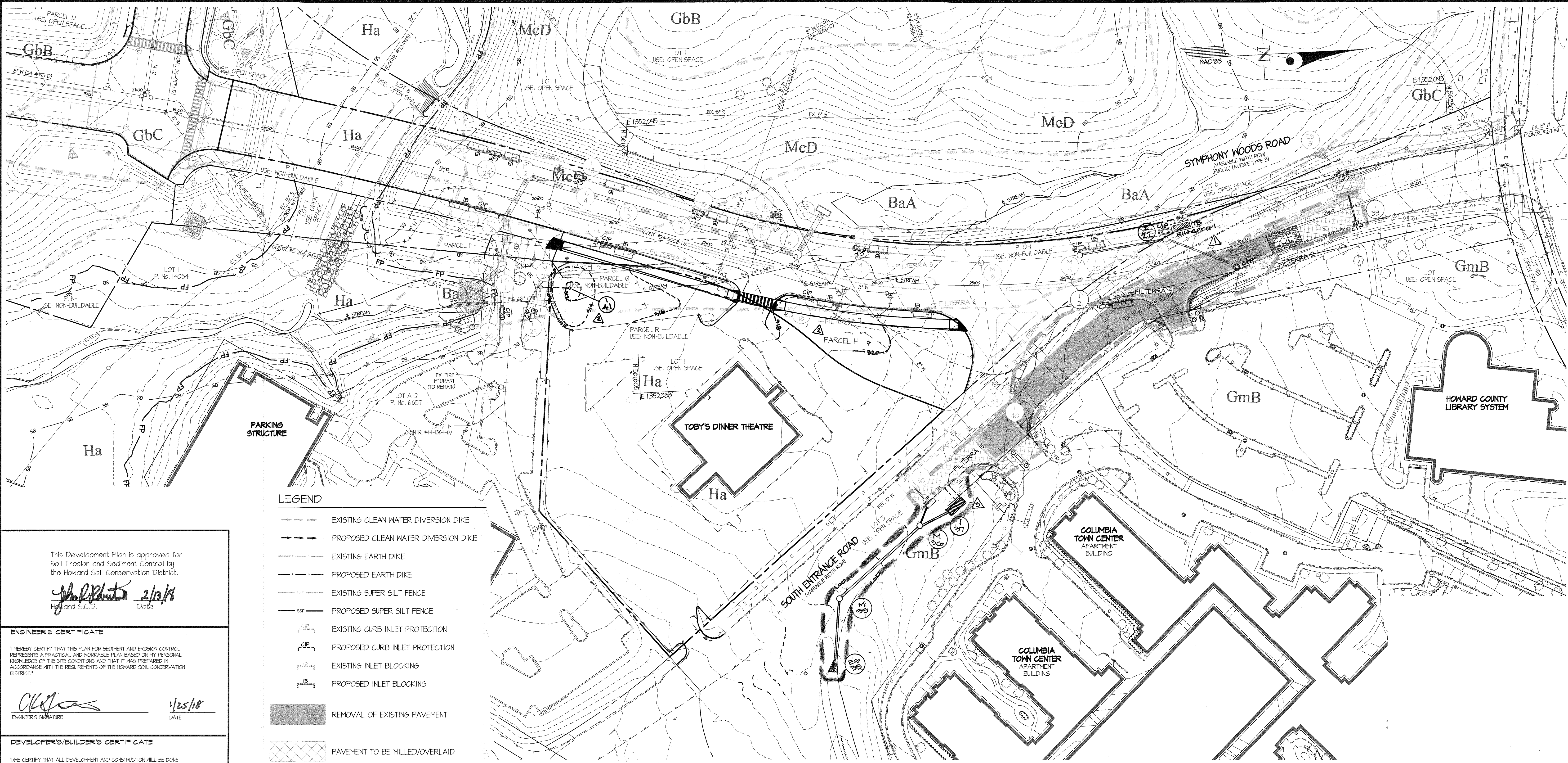
**DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD**

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	14 OF 39









- LEGEND**
- EXISTING CLEAN WATER DIVERSION DIKE
  - PROPOSED CLEAN WATER DIVERSION DIKE
  - EXISTING EARTH DIKE
  - PROPOSED EARTH DIKE
  - EXISTING SUPER SILT FENCE
  - PROPOSED SUPER SILT FENCE
  - EXISTING CURB INLET PROTECTION
  - PROPOSED CURB INLET PROTECTION
  - EXISTING INLET BLOCKING
  - PROPOSED INLET BLOCKING
  - REMOVAL OF EXISTING PAVEMENT
  - PAVEMENT TO BE MILLED/OVERLAID
  - PROPOSED PAVING
  - EXISTING STABILIZED CONSTRUCTION ENTRANCE
  - PROPOSED STABILIZED CONSTRUCTION ENTRANCE

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

*[Signature]* 2/13/18  
 Date

**ENGINEER'S CERTIFICATE**

I HEREBY 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 HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 1/25/18  
 DATE

**DEVELOPER'S/BUILDER'S CERTIFICATE**

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT 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 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]* 1/25/18  
 DATE

**APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS**

*[Signature]* 2/17/2018  
 Date

**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING**

*[Signature]* 2/17/18  
 Date

*[Signature]* 2/27/18  
 Date

<b>GLWGUTSCHICK LITTLE &amp; WEBER, P.A.</b>				
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS				
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK				
BURTONSVILLE, MARYLAND 20866				
TEL: 301-421-4024 BALT: 410-880-1020 DC/VK: 301-989-2524 FAX: 301-421-4186				
DES. MJT	DRN. Wsj	CHK. MJT		
DATE	REVISION	BY	APPR.	
1-22-19	Revise storm drain to resolve utility conflicts	Wsj	DEV	
1-12-18	PROVIDED INTERIM ENTRANCE TO TOBY'S PROPERTY, INCLUDED MULTI-USE PATH, REVISED GRADING AND PROVIDED SEDIMENT CONTROL AT I-41	Wsj	DEV	
11-9-2018	Revised storm drain, Filterra	Wsj	DEV	

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

**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. 12975  
 EXPIRATION DATE: MAY 26, 2018

1/25/18 *[Signature]*



NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.

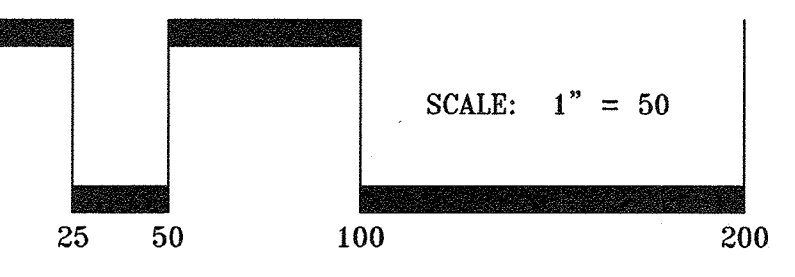
*[Signature]*  
 & SCOTT SHANABERGER  
 SHANABERGER & LANE  
 PROFESSIONAL L.S. #10849 Exp. Date 4/2/2018  
 AS-BUILT DATE: 12/16/2019

**SEDIMENT AND EROSION CONTROL PLAN - STAGE 3**

**DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD**

ELECTION DISTRICT No. 5

HOWARD COUNTY, MARYLAND



NOTE: STOCKPILING IS NOT PERMITTED

NOTE: SEE MAINTENANCE OF TRAFFIC SHEETS 31 THRU 34 FOR LIMITS OF WORK AND PAVING

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	16 OF 39

L:\CAD\DRAWINGS\11071\PLANS BY G.L.W.\Phase 2\Phase 2\11071 - F-16-114 - 14-16 - Sediment Control Plan.dwg, 1/25/2018 10:53 AM, User: G.L.W., Plot Date: 1/22/2018 9:54 AM, PLOTTED BY: G.L.W., Plot Size: 36" x 48"



**SEDIMENT CONTROL NOTES**

- 1. CONSTRUCTION PERMITS MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS...
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE '2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL'...
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SHALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL...
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE '2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL'...
5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIONAL CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID...
6. SITE ANALYSIS: Total Area of Site = 5.5 Acres, Acres Area Disturbed = 5.5 Acres, Area to be reseeded or paved = 1.9 Acres, Areas to be vegetatively stabilized = 3.1 Acres, Total Fill = 5,265 Cu. Yds. NOTE: STOCKPILING IS NOT PERMITTED

**STANDARD AND SPECIFICATIONS FOR TOPSOIL DEFINITION (CONSTRUCTION AND MATERIAL SPECIFICATIONS)**

- I. Topsoil must be free of plant parts such as Bermuda grass, quackgrass, Johnsongrass, reseedgrass, poison ivy, thistles, or others as specified...
III. For sites having disturbed areas under 5 acres:
a. Place topsoil (if required) and apply soil amendments as specified in 2.0.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
IV. For sites having disturbed areas over 5 acres:
1. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
2. Organic content of topsoil shall be not less than 15 percent by weight.
3. Topsoil having soluble salt greater than 500 parts per million shall not be used.
4. No soil or seed shall be placed on soil which has been with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min) to permit dissipation of phytotoxic materials.
NOTE: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
b. Place topsoil (if required) and apply soil amendments as specified in 2.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
V. Topsoil Application
a. When topsoiling, maintain needed erosion and sediment control practices such as diversion, grade stabilization structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Baffles.
b. Grades on the areas to be topsoiled shall have been previously established, shall be maintained, albeit 4" or higher in elevation.
c. Topsoil shall be uniformly distributed in a 4" - 6" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water.
d. Topsoil shall not be placed while the topsoil or subsoil is frozen or muggy condition when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below.
a. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
1. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
2. Composted sludge shall contain at least 1 percent nitrogen, 15 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate prior to use.
3. Composted sludge shall be applied at a rate of 1 ton/1000 square feet. In Composted sludge shall be amended with a potassium fertilizer applied at a rate of 4lb/1000 square feet, and 1/3 the normal lime application rate.
References: Odette Specifications, Soil Preparation and Sodding, MD-VA-PL #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.
**STANDARD AND SPECIFICATIONS FOR TOPSOIL DEFINITION**
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
**PURPOSE**
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH materials toxic to plants, and/or unacceptable soil gradation.
**CONDITIONS Where Practice Applies**
I. This practice is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.
e. Areas having slopes steeper than 2:1 require special consideration and design.
f. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
1. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/4 inches in diameter.
2. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, net sedge, poison ivy, thistle, or others as specified.
3. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
4. Topsoil application - soil to be used as topsoil must meet the following:
a. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter/materials.
**CONSTRUCTION AND MATERIAL SPECIFICATIONS**
I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the respective soil profile section in the Soil Survey published by USDA-NRCS in cooperation with Maryland Agricultural Experiment Station.
II. Topsoil specifications - soil to be used as topsoil must meet the following:
a. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter/materials.
**DUST CONTROL**
Controlling dust blowing and movement on construction sites and roads.
**Purpose**
To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.
**Conditions Where Practice Applies**
This practice is applicable to areas subject to dust blowing and movements where on and off-site damage is likely without treatment.
**Specifications**
I. Mixture - See standards for vegetative stabilization with mixtures only. Mixture should be crimped or tacked to prevent blowing.
2. Vegetative Cover - See standards for temporary vegetative cover.
3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12' apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
5. Barriers - Solid board fences, silt fences, turpik fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
6. Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.
**Permanent Methods**
1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
3. Stone - Cover surface with crushed stone or coarse gravel.

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

- Definition**
The process of preparing the soils to sustain adequate vegetative stabilization.
**Purpose**
To provide a suitable soil medium for vegetative growth.
**Conditions Where Practice Applies**
Where vegetative stabilization is to be established.
**Criteria**
A. Soil Preparation
1. Temporary Stabilization
a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter area to be tracked with ridges running parallel to the contour of the slope.
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
I. Soil pH between 6.0 and 7.0.
II. Soluble salts less than 500 parts per million (ppm).
III. Soil contains less than 40 percent clay but provide the capacity to hold a moderate amount (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: If lower slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope, leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.
b. Topsoiling
1. Topsoil placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH materials toxic to plants, and/or unacceptable soil gradation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.
e. Areas having slopes steeper than 2:1 require special consideration and design.
f. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
1. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/4 inches in diameter.
2. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, net sedge, poison ivy, thistle, or others as specified.
3. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
4. Topsoil application - soil to be used as topsoil must meet the following:
a. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter/materials.
**CONSTRUCTION AND MATERIAL SPECIFICATIONS**
I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS in cooperation with Maryland Agricultural Experiment Station.
II. Topsoil specifications - soil to be used as topsoil must meet the following:
a. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter/materials.
**DUST CONTROL**
Controlling dust blowing and movement on construction sites and roads.
**Purpose**
To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.
**Conditions Where Practice Applies**
This practice is applicable to areas subject to dust blowing and movements where on and off-site damage is likely without treatment.
**Specifications**
I. Mixture - See standards for vegetative stabilization with mixtures only. Mixture should be crimped or tacked to prevent blowing.
2. Vegetative Cover - See standards for temporary vegetative cover.
3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12' apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
5. Barriers - Solid board fences, silt fences, turpik fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
6. Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.
**Permanent Methods**
1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
3. Stone - Cover surface with crushed stone or coarse gravel.

**B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING**

- Definition**
The application of seed and mulch to establish vegetative cover.
**Purpose**
To protect disturbed soils from erosion during and at the end of construction.
**Conditions Where Practice Applies**
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.
**Criteria**
A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B-4 regarding the quality of seed. Seed logs must be available upon request to the inspector to verify type of seed and seeding rate.
b. Mulch alone may be applied between the fall and spring seeding season only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Fresh inoculants as directed on the package, use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculants cool as possible until use. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min) to permit dissipation of phytotoxic materials.
2. Application
a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B-1. Permanent Seeding Table B-3, or site-specific seeding mixtures.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
iv. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
v. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
vi. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B-1. Permanent Seeding Table B-3, or site-specific seeding mixtures.
vii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
viii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
ix. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
x. Apply seed amendments as specified on the approved plan or as indicated by the results of a soil test.
b. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Take lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. If the ground is frozen, incremental stabilization (Sec. B-4-4) specifications shall be enforced in areas with 5% of cut and/or fill. STOCKPILES (Sec. B-4-4) IN EXCESS OF 20 FT. MUST BE BLENDED WITH STABLE OUTLET. ALL CONCENTRATED FLOW STEEP SLOPES, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (Sec. B-4-6).
c. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B-1. Permanent Seeding Table B-3, or site-specific seeding mixtures.
ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
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**BEST MANAGEMENT PRACTICES**  
FOR WORKING IN NON-TIDAL WETLAND, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NON-TIDAL WETLANDS, NON-TIDAL WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NON-TIDAL WETLANDS, NON-TIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NON-TIDAL WETLANDS, NON-TIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NON-TIDAL WETLANDS, NON-TIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- RECTIFY ANY NON-TIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.

ALL STABILIZATION IN THE NON-TIDAL WETLAND AND NON-TIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES:  
ANNUAL RYE GRASS (LOLIUM MULTIFLORUM)  
MILLET (SETARIA ITALICA)  
BARLEY (HORDEUM SPECIES)  
OATS (SP.)  
RYE (SECALE CEREALE)

THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NON-TIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM.  
USE 1 WATERBARS IN STREAM WORK SHALL BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.  
*John P. Robertson* 2/13/18  
Howard S.C.D. Date

**ENGINEER'S CERTIFICATE**  
I HEREBY 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 HOWARD SOIL CONSERVATION DISTRICT.

*John P. Robertson* 1/25/18  
ENGINEER'S SIGNATURE DATE

**DEVELOPER'S/BUILDER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT 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 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.

*John P. Robertson* 1/25/18  
SIGNATURE OF DEVELOPER/BUILDER DATE

**APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS**  
*John P. Robertson* 2/13/18  
Chief, Bureau of Highways Date

**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING**  
*John P. Robertson* 2/13/18  
Chief, Division of Land Development Date

**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 FAX: 410-880-1820 DC/MK 301-993-2524 FAX 301-421-4186

**MGWC 1.2: PUMP-AROUND PRACTICE**

**DESCRIPTION**  
The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream construction sites.

**IMPLEMENTATION SEQUENCE**  
Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following order (per Detail 1.2):

- Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should notify the damage at his/her own expense to the county's or utility company's authority.
- The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
- The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should state out all limits of disturbance prior to the pre-construction meeting so they may begin downstream if appropriate. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
- Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
- Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviation from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump-around removed from the channel. Work should not be conducted in the channel during rain events.
- Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.

**MGWC 1.2: PUMP-AROUND PRACTICE**

- Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved device. The measure should be located such that the water drains back into the channel before the downstream sandbag dike.
- Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. See Section 4.2 for Stream Crossings, Maryland Guidelines to Waterway Construction.
- All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross-sections. All grading must be stabilized at the end of each day with seed and mulch or soil and mulch as specified on the plans.
- After an area is completed and stabilized, the clean water dikes should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
- A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.
- If a tributary is to be removed, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
- The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
- After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

**Maryland's Guidelines To Waterway Construction**  
**DETAIL 1.2: PUMP-AROUND PRACTICE**

**PLAN VIEW**  
Approved dewatering device, discharge hoses, dewatering pump, intake hose, stream diversion pumps, intake hose, flow, stake hose, flow, sediment dike, clean water dike, sump-hole or pool (12" to 18" deep 2' dia.), work area length not to exceed that which can be completed in one day, pumps should discharge onto a stable velocity dissipater made of rip rap or sandbags.

**SECTION A-A**  
Impervious sheeting, work area, base flow + 1 foot (2 foot minimum), cross section of sandbag dike.

**MGWC 4.2: UTILITY CROSSING**

**DESCRIPTION**  
The work should consist of installing erosion control devices in and adjacent to the construction of utility crossings.

**INSTALLATION GUIDELINES**  
All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. (See the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control.) The proposed construction sequence is as follows (per Detail 4.2):

- The contractor should ensure that a continuous perimeter control barrier is in place to minimize the amount of pollutants entering the flow. A diversion pipe as shown in MGWC 1.4: Diversion Pipe or other measure should be installed and sandbag or stone barriers as shown in MGWC 1.5: Sandbag/Stone Diversion should be constructed according to specifications to divert the streamflow.
- Excavated spoil and subsoil should be kept separate, placed on the upland side of the excavation, and replaced in their natural order.
- All construction should take place during stream low flows. The length of construction time should be limited to a maximum of 5 consecutive days for each crossing.
- All utility crossings should be placed a minimum of 3 feet (1 meter) beneath the stream bed unless an alternative site is specifically approved by the WMA. For instances where a 3-foot cover is not viable, two alternate stabilization options are given in the Detail 4.2. A low flow channel shall be constructed through all riprap placements across the stream bed.
- The stream should be diverted by an approved temporary stream diversion, the construction area should be dewatered, and any disturbed banks should be stabilized. The contractor may elect to construct the utility crossing in two stages. In this case, a WMA approved flow barrier may be constructed to keep the construction area dry.
- Once the crossing is completed, the diversion should be removed from upstream to downstream. Sediment control devices, including perimeter erosion control devices, are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspection authority approves their removal.

**Maryland's Guidelines To Waterway Construction**  
**DETAIL 4.2(a): UTILITY CROSSING**

**PLAN VIEW**  
Utility pipe access, dewatering basin, flow, stream bank, utility pipe access, utility pipe access, limits of disturbance, utility pipe access, utility pipe access.

**SECTION A-A**  
Minimum opening (MGWC 3.1, 3.2, 3.3, 3.11), 3-4' (1 m) minimum, utility pipe, stream bed.

**SECTION B-B**  
3-4' (1 m) minimum, utility pipe.

**Maryland's Guidelines To Waterway Construction**  
**DETAIL 4.2(b): UTILITY CROSSING**

**SECTION VIEW: ALTERNATE OPTION 1**  
Flow, low flow channel, 6 ft (2 m), 15 to 24-in (38 to 61-cm) riprap, cutoff wall, concrete encasement, fabric.

**SECTION VIEW: ALTERNATE OPTION 2**  
Flow, low flow channel, 12-in (30-cm) riprap, 18 in (46 cm), 6 in (15 cm), washed gravel.

**MGWC 1.5 Sandbag/Stone Channel Diversion**  
Temporary measure for dewatering in channel construction sites.

**Description**  
The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

**Effective Uses & Limitations**  
Diversions are used to isolate work areas from flow during construction of in-stream projects. Diversions which have insufficient flow capacity can fail & severely erode disturbed channel under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

**Material Specifications**  
Materials for sandbag & stone stream diversions should meet following requirements:  
• Riprap: Riprap should be washed & have a min diameter of 6 inches (0.15 meters)  
• Sandbags: Sandbags should consist of materials which are resistant to ultraviolet, tearing & puncture and should be woven tightly enough to prevent leakage of fill material (ie. sand, fine gravel, etc.)  
• Sheeting: Sheeting should consist of polyethylene or other materials which are impervious & resistant to puncture and tearing.

**Installation Guidelines**  
All erosion & sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around perimeter of work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

- The diversion structure should be installed from upstream to downstream.
- The height of sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with duration less than 2 weeks, the height of diversion should be one half the streambank height, measured from channel bed plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water-tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
- All excavated material should be deposited and stabilized in an approved area outside the 100-yr floodplain unless otherwise authorized by the WMA.
- Sediment-laden water from construction area should be pumped to a dewatering basin.
- Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 12-inch (0.45 meters) overlap.
- Sandbag or stone diversions should not obstruct more than 45% of stream width. Additionally, bank stabilization measures should be placed in constricted section if accelerated erosion & bank scour are observed during construction time or if project time is expected to last more than 2 weeks.
- Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-yr floodplain unless authorized by the WMA.
- Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment & erosion control plan and the inspecting authority approves their removal.

**Detail 1.5: Sandbag/Stone Diversion**

**transverse section view**  
Sandbag/stone diversion, existing grade, disturbed area, H/2 + 1 ft (0.3m) for projects of duration < 2 weeks; 2-yr flood elevation for projects of longer duration.

**Plan View**  
Flow, minimum opening of 45% of stream width, disturbed area, sandbag/stone diversion, dewatering basin.

**Proposed 2011 Stream Repair**  
Scale: 1" = 50'

Map showing site layout with annotations: Ex. 10' Public Sewer Easmt. (Parcel 3-PT 4) L 477 M 903; Open Space P.N. 14404; Open Space P.N. 14400; Non-Buildable Bulk Parcel P.N. 14400; Gite Access; Symphony Woods Rd.; Place top of bank at 81.1400; Public Sidewalk quadrilateral system with stationing; Non-Buildable Bulk Parcel P.N. 14400; Ex. 10' Perpetual Drainage Easmt. P.B. 90 P. 40; Ex. 10' Sewer Easmt. L 500 P. 949 (Part 1); Columbia Town Ctr. Sect 5 Area 4 P.N. 14024; Lot 100; Lot 101; Lot 102; Lot 103; Lot 104; Lot 105; Lot 106; Lot 107; Lot 108; Lot 109; Lot 110; Lot 111; Lot 112; Lot 113; Lot 114; Lot 115; Lot 116; Lot 117; Lot 118; Lot 119; Lot 120; Lot 121; Lot 122; Lot 123; Lot 124; Lot 125; Lot 126; Lot 127; Lot 128; Lot 129; Lot 130; Lot 131; Lot 132; Lot 133; Lot 134; Lot 135; Lot 136; Lot 137; Lot 138; Lot 139; Lot 140; Lot 141; Lot 142; Lot 143; Lot 144; Lot 145; Lot 146; Lot 147; Lot 148; Lot 149; Lot 150; Lot 151; Lot 152; Lot 153; Lot 154; Lot 155; Lot 156; Lot 157; Lot 158; Lot 159; Lot 160; Lot 161; Lot 162; Lot 163; Lot 164; Lot 165; Lot 166; Lot 167; Lot 168; Lot 169; Lot 170; Lot 171; Lot 172; Lot 173; Lot 174; Lot 175; Lot 176; Lot 177; Lot 178; Lot 179; Lot 180; Lot 181; Lot 182; Lot 183; Lot 184; Lot 185; Lot 186; Lot 187; Lot 188; Lot 189; Lot 190; Lot 191; Lot 192; Lot 193; Lot 194; Lot 195; Lot 196; Lot 197; Lot 198; Lot 199; Lot 200.

**Streetworks**

WOODBRIDGE LED

WOODBRIDGE LED

**Full Specification Fixture**  
**PHILIPS LUMINEE**

PHILIPS LUMINEE

**Full Specification Fixture**  
**PHILIPS LUMINEE**

PHILIPS LUMINEE

- A Sequence of Construction (per 2011 Stream Repair)**
- Obtain grading permit and arrange for on-site pre-construction meeting. (1 day)
  - Install the stone construction entrance, erosion mulch, super silt fence, sandbag/stone diversion, and pump-around structure as shown on these plans. The exact location of the pump-around will be coordinated with the sediment control inspector. (1 week)
  - With the permission of the sediment control inspector, begin grading. The contractor shall strip and stockpile all topsoil from disturbed areas prior to commencing grading. It will be used later in the site area restoration. No adjustments to the existing grades within the active channel are being proposed. (2 weeks)
  - Stabilize the disturbed areas with riprap along the stream banks and soils stabilization matting and/or Eromx-181 seed mix or equivalent along floodplain and slopes. The limits of each stabilization method will be determined in the field. (2 weeks)
  - With the permission of the sediment control inspector, remove the sediment control devices. The contractor is to stabilize any disturbed area immediately. (1 week)

**Seed Mix For Permanent Stabilization**

100%	Corynephorus Nutans, PA ecotype	Indian grass, PA ecotype
100%	Lolium multiflorum	Annual ryegrass
11.0%	Andropogon gerardii, 'Niagra'	Big bluestem, 'Niagra'
10.0%	Elymus riparius, PA ecotype	Riverbank wildrye, PA ecotype
7.0%	Tridens flavus, Southeastern VA ecotype	Purpletop, Southeastern VA ecotype
7.0%	Elymus Canadensis	Canada wildrye
4.1%	Amblydichyum scoparium, Fort Indiantown, Gap, PA ecotype	Little bluestem, Fort Indiantown, Gap, PA ecotype
3.0%	Echinacea Purpurea	Purple Cone flower
3.0%	Panicum Virgatum, 'Shawnee'	Switchgrass, Shawnee
2.0%	Chamaecrista fasciculata, PA ecotype	Partridge pea, PA ecotype
1.0%	Careopsis lanceolata	Lanceleaf Careopsis
1.0%	Rudbeckia hirta, Coastal plain, NC ecotype	Blackeye susan, Coastal plain, NC ecotype
0.7%	Lespedeza virginica, VA ecotype	Slender Lespedeza, VA ecotype
0.6%	Aster Lateriflorus	Slender aster
0.3%	Liatris spicata	Marsh (dense) blazing star (spiked gayfeather)

**General Product Information:**  
The native grass and forb species tolerate poor soils typically found on steep slopes in the eastern United States. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formulation may change, the guiding philosophy and function of the mix will not.  
Item Number: ERMIX-181  
Mixing Ratio: 2:1:1 (Erosion control and revegetation)  
Seeding Rate: 60 lb. per acre or 1 lb. per 1,000 square feet

**Legend**

- Existing Curb
- Existing Contour
- Existing Fiber Optics Line
- Existing Sanitary Sewer Main
- Existing Water Main
- Existing Storm Drain
- Limit of Disturbance
- Super Silt Fence
- Erosion Mulch
- Stone Construction Entrance
- Sandbag/Stone Diversion
- Possible Stock Pile Area

**SEDIMENT CONTROL NOTES AND DETAILS**

**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**

SCALE: AS SHOWN  
ZONING: NT  
G. L. W. FILE No.: 11071  
DATE: JAN., 2018  
TAX MAP - GRID: 36 - 01  
SHEET: 19 OF 39

**PREPARED FOR:**  
THE HOWARD HUGHES CORPORATION  
10480 LITTLE PATUXENT PARKWAY  
SUITE 400  
COLUMBIA, MARYLAND 21044  
ATTN: BILL ROWE  
410-964-4987

**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. 12975  
EXPIRATION DATE: MAY 28, 2018  
1/25/18

**REVISION**  
101-02 show stream improvements, details & S.O.C.  
BY: klp  
APPR:



**LEGEND**

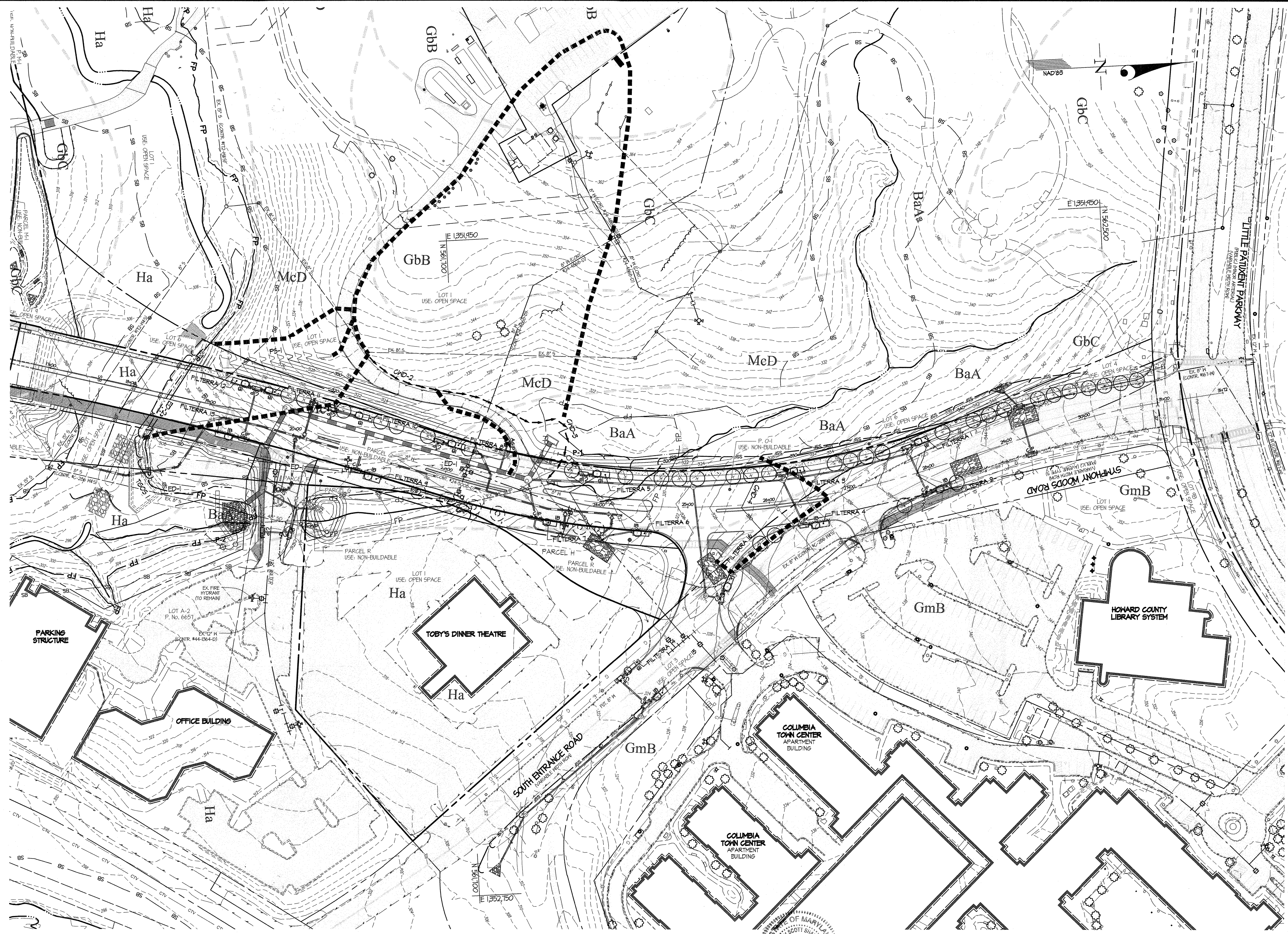
- MAXIMUM DRAINAGE DIVIDE
- PROPOSED CLEAN WATER DIVERSION DIKE
- PROPOSED EARTH DIKE
- PROPOSED SUPER SILT FENCE
- PROPOSED CURB INLET PROTECTION
- PROPOSED INLET BLOCKING
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE

TEMPORARY GABION OUTLET STRUCTURES							
T605 #	MAX. DRAINAGE AREA	REQUIRED STORAGE VOL.	PROVIDED STORAGE VOL.	TOP OF TRANSITION EARTH DIKE	TOP OF GABIONS	WEIR ELEV.	WEIR LENGTH
1	1.43 AC.	2514 CF	2542 CF	302.00	302.00	301.25	6'

CLEAN WATER DIVERSION DIKES					
No.	DRAINAGE AREA	AVG. SLOPE	TREATMENT	DISCHARGE AT OUTLET	SHEAR STRESS AT OUTLET
PS #1	0.18 AC.	16.6%	A-2	0.22 CFS	0.41 LB/FT <sup>2</sup>
CHD #2	2.14 AC.	8.0%	A-3	6.11 CFS	1.15 LB/FT <sup>2</sup>
CHD #3	22.94 AC.	4.0%	A-3	24.74 CFS	1.32 LB/FT <sup>2</sup>

EARTH DIKES					
No.	DRAINAGE AREA	AVG. SLOPE	TREATMENT	DISCHARGE AT OUTLET	SHEAR STRESS AT OUTLET
ED #1	1.15 AC.	9.2%	A-2	0.42 CFS	0.42 LB/FT <sup>2</sup>
ED #2	0.41 AC.	1.8%	A-2	0.33 CFS	0.33 LB/FT <sup>2</sup>

\*CONTRACTOR IS TO CONSTRUCT PS #1 ACCORDING TO THE TEMPORARY SHALE DETAIL SHOWN ON SHEET 19.  
 \*\*THE MAXIMUM DRAINAGE AREA OF 1.15 ACRES OCCURS WHEN THE GRADING IN PHASE 2 TAKES PLACE AND THE RUNOFF TO ED #2 GETS RE-DIRECTED TO ED #1.



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

*John R. Rhoads* 2/13/18  
 Howard S.C.D. Date

**ENGINEER'S CERTIFICATE**

"I HEREBY 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 HOWARD SOIL CONSERVATION DISTRICT."

*Ch. Williams* 1/25/18  
 ENGINEER'S SIGNATURE DATE

**DEVELOPER'S/BUILDER'S CERTIFICATE**

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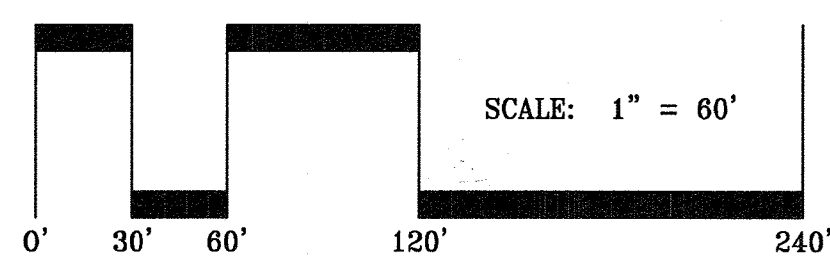
*Ch. Williams* 1/25/18  
 SIGNATURE OF DEVELOPER/BUILDER DATE

**APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS**

*M. Meemi* 2/17/18  
 Chief, Bureau of Highways Date

**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING**

*William S. US* 3/7/18  
 Chief, Division of Land Development Date  
*Ch. Williams* 2-27-18  
 Chief, Development Engineering Division Date



NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS PLAN.  
*Ch. Williams*  
 CH. SCOTT SHAMBERGER  
 SHAMBERGER & LANE  
 PROFESSIONAL L.S. #19848 Exp. Date 12/31/20  
 AS-BUILT DATE: 12/16/2018

**GLWGUTSCHICK 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 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

**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. 12875  
 EXPIRATION DATE: MAY 26, 2018  
 1/25/18

**SEDIMENT AND EROSION CONTROL DEVICE DRAINAGE AREA MAP**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**  
 ELECTION DISTRICT No. 5  
 HOWARD COUNTY, MARYLAND

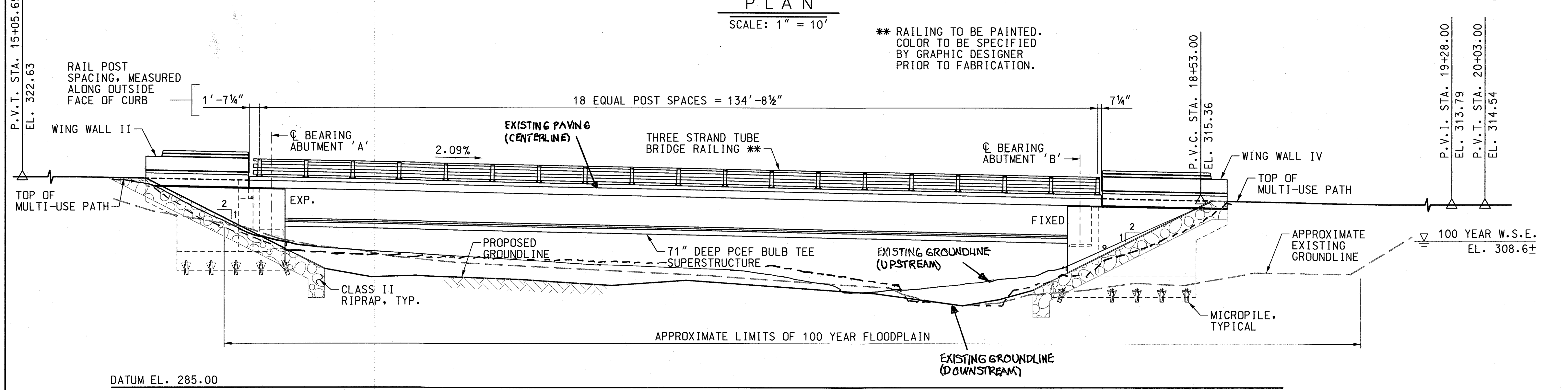
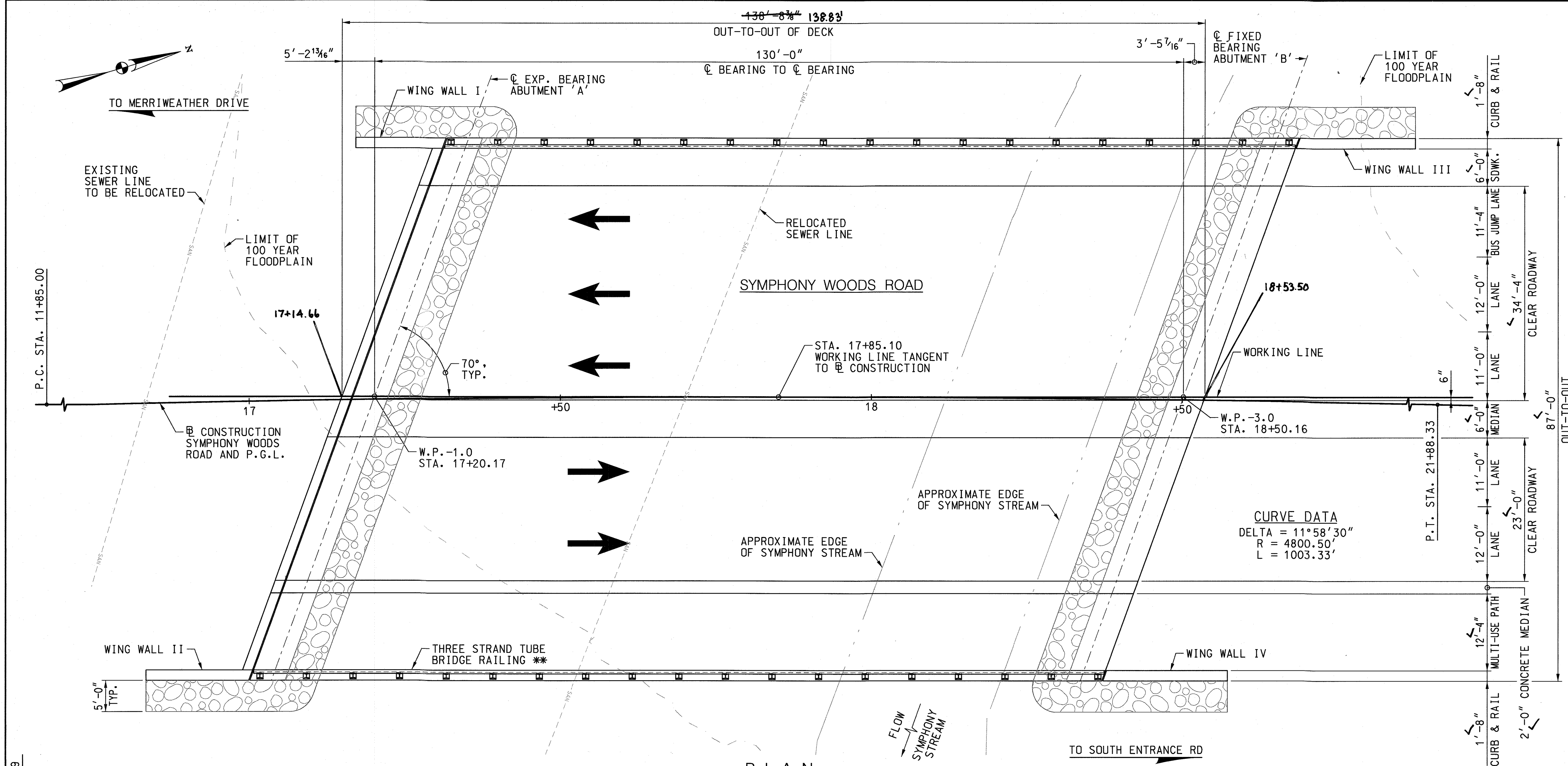
SCALE	ZONING	G. L. W. FILE No.
1" = 60'	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN., 2018	36 - 01	20 OF 39

L:\CADD\DRAWINGS\11071\PLANS\9\GLW\Phase 2\Phase 2\11071\_114\_20 - Sediment Control Dwg.dwg  
 PLOT DATE: 2/22/2018 10:53 AM PLOT BY: JLR/11071\_114\_20 - Sediment Control Dwg.dwg









**GENERAL NOTES**

- SPECIFICATIONS:**
- HOWARD COUNTY DESIGN MANUAL: VOLUME IV - STANDARD SPECIFICATIONS & DETAILS FOR CONSTRUCTION, DATED OCTOBER, 1990.
  - SHA SPECIFICATIONS DATED JULY, 2008
  - REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION.
- DESIGN:**
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2014 AND ALL INTERIMS.
- CONCRETE:**
- LOAD AND RESISTANCE FACTOR DESIGN METHOD. THE DESIGN COMPRESSIVE STRENGTH SHALL BE  $f'_c = 3000$  PSI FOR ELEMENTS USING MIX NO. 3 CONCRETE AND  $f'_c = 4000$  PSI FOR ELEMENTS USING MIX NO. 6 CONCRETE.
- PRESTRESSED CONCRETE:**
- LOAD AND RESISTANCE FACTOR DESIGN METHOD. THE DESIGN COMPRESSIVE STRENGTH SHALL BE  $f'_c = 7000$  PSI. THE MINIMUM COMPRESSIVE STRENGTH AT TRANSFER OF PRESTRESS SHALL BE  $f'_{ci} = 5950$  PSI FOR DESIGN.
- REINFORCING STEEL:**
- $f_y = 60000$  PSI.
- LOADING:**
- HL-93 WITH PROVISIONS FOR FUTURE 2" WEARING SURFACE AND 15 lbs/sq.ft. FOR USE OF STEEL BRIDGE DECK FORMS WHICH REMAIN IN PLACE.
- CONCRETE:**
- ALL CONCRETE FOR ABUTMENT BACKWALLS, EXPANSION JOINT CROSS BEAM(S), TOP PORTION OF EXPANSION JOINT CROSS BEAM SUPPORT COLUMN(S), PARAPETS AT WING WALLS & ENTIRE SUPERSTRUCTURE(S) SHALL BE MIX. NO. 6 (4500 PSI). ALL OTHER STRUCTURE CONCRETE EXCEPT PRESTRESSED GIRDERS SHALL BE MIX NO. 3 (3500 PSI).
- PRESTRESSED CONCRETE:**
- ALL CONCRETE FOR PRESTRESSED CONCRETE GIRDERS SHALL BE SELF CONSOLIDATING CONCRETE WITH A 28 DAY COMPRESSIVE STRENGTH OF  $f'_c = 8000$  PSI.
- REINFORCING STEEL:**
- REINFORCING STEEL SHALL CONFORM TO A615, GRADE 60.
  - ONLY GRADE 60 CAN BE USED ON THIS PROJECT.**
  - ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE TOP OF PIERS AND BARS AT THE BOTTOM AND SIDES OF ALL FOOTINGS WHICH SHALL HAVE 3" MINIMUM COVER.
  - MINIMUM COVER FOR ANY BAR IN THE BOTTOM OF THE BOTTOM FLANGE IN PRESTRESSED CONCRETE GIRDERS SHALL BE 2 1/2" UNLESS OTHERWISE NOTED.
  - FOR TIES AND STIRRUPS: STANDARD ACI BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL ACI BENDING TOLERANCES.
  - REINFORCING STEEL IN THE FOLLOWING AREAS SHALL BE EPOXY COATED:
    - ENTIRE SUPERSTRUCTURE, INCLUDING PARAPETS
    - ABUTMENT BACKWALLS
    - ALL BEARING SEAT PADS
    - ABUTMENT BRIDGE SEAT AREAS
    - EXPANSION JOINT CROSS BEAM
    - PORTIONS OF EXPANSION JOINT CROSS BEAM SUPPORT COLUMNS
    - PARAPET PORTION OF WING WALLS
    - EXPOSED FACE OF ABUTMENT STEMS THAT IS LESS THAN 10 FEET FROM THE EDGE OF PAVED SURFACES, INCLUDING SHOULDERS
    - PRESTRESSED CONCRETE GIRDERS WITH THE EXCEPTION OF THE PRETENSIONING STEEL
- PRETENSIONING STEEL:**
- PRETENSIONING STEEL SHALL CONSIST OF 1/2" DIAMETER 7-WIRE BRIGHT LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF M203, GRADE 270. EACH 1/2" STRAND SHALL BE PRETENSIONED TO 31000 LB. (0.75 fpu), HAVE AN ULTIMATE STRENGTH OF 41300 LB. (fpu) AND A YIELD STRENGTH OF 37200 LB. (0.90 fpu).
- KEYS:**
- ALL CONCRETE CONSTRUCTION KEYS ARE NOMINAL SIZE.
- HYDROLOGIC & HYDRAULIC DATA:**
- FOR HYDROLOGICAL AND HYDRAULIC DATA, SEE SHEET TITLED "HYDROLOGIC AND HYDRAULIC DATA SHEET".
- RESTRICTIONS FOR PLACING AND USING STRUCTURE(S) OR STORING MATERIALS ON/AGAINST STRUCTURES:**
- THERE ARE RESTRICTIONS ON PLACING EQUIPMENT ON EXISTING AND NEW STRUCTURE(S) AND STORING MATERIALS ON/AGAINST EXISTING AND NEW STRUCTURE(S) ELEMENTS. THE LIMITATIONS BASICALLY RELATE TO LOADS THAT ARE BEYOND MARYLAND'S LEGAL VEHICLES AND/OR POSTED LOAD LIMITS (WHERE APPLICABLE) AND MATERIALS STOCKPILED ON/AGAINST STRUCTURE(S) OR STRUCTURES' ELEMENTS. FOR DETAILS OF SUCH RESTRICTIONS SEE TC6.14 TITLED "RESTRICTIONS FOR PLACING AND USING EQUIPMENT ON STRUCTURES, OR STORING MATERIALS ON/AGAINST STRUCTURES" IN THE CONTRACT DOCUMENTS. IN ORDER TO COMPLY WITH THIS ARTICLE, THE CONTRACTOR SHALL READ TC6.14 PRIOR TO COMMENCING ANY WORK ON STRUCTURE(S) IN THIS CONTRACT.

**AS-BUILT CERTIFICATION**  
I HEREBY CERTIFY BY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN AND IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

*Scott Shawade*  
G. SCOTT SHAWADE  
SHAUNBERGER & JENKINS  
PROFESSIONAL LAND SURVEYORS  
LICENSE NO. 24748  
LICENSE EXPIRATION DATE 11-14-2019  
AS-BUILT SURVEY DATES 11-14-19 TO 12/16/19

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/2018  
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 3/7/18  
Chief, Division of Land Development

*[Signature]* 2-27-18  
Chief, Development Engineering Division

**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WALLACE MONTGOMERY**  
ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS  
10150 York Road, Suite 200  
Hunt Valley, Maryland 21030  
410.494.9099 Tel. 410.667.0925 Fax  
www.WallaceMontgomery.com A Limited Liability Partnership

DES. GJG DRN. CGA CHK.

PREPARED FOR:  
THE HOWARD HUGHES CORPORATION  
LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
410-964-5443

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. 24748  
EXPIRATION DATE: 1-14-20

*[Seal]*

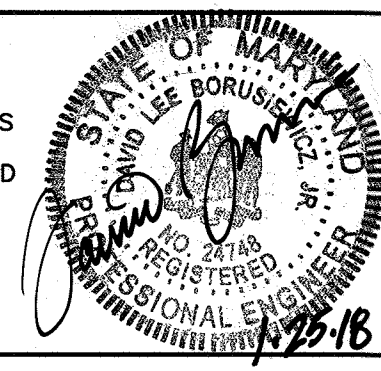
GENERAL PLAN AND ELEVATION  
**DOWNTOWN COLUMBIA  
CRESCENT NEIGHBORHOOD  
SYMPHONY WOODS ROAD**

SCALE: AS SHOWN  
ZONING: NT  
G. L. W. FILE NO.: 11071

DATE: JANUARY 2018  
TAX MAP - GRID: 36 - 01  
SHEET: 22 OF 39

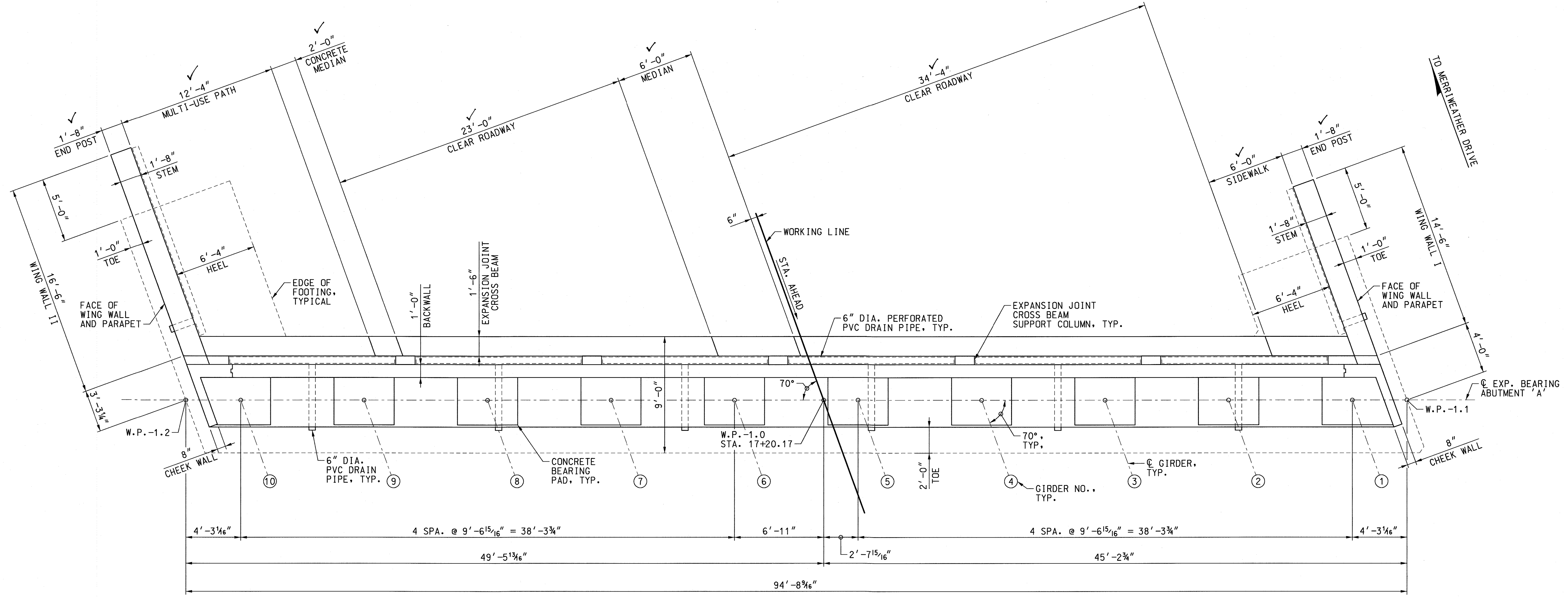
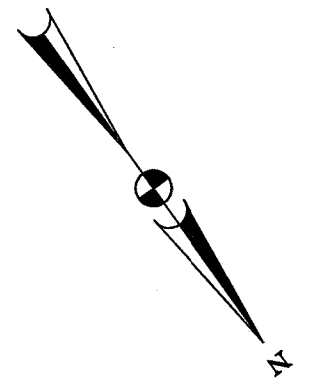
HOWARD COUNTY, MARYLAND

DATE	REVISION	BY	APPR.

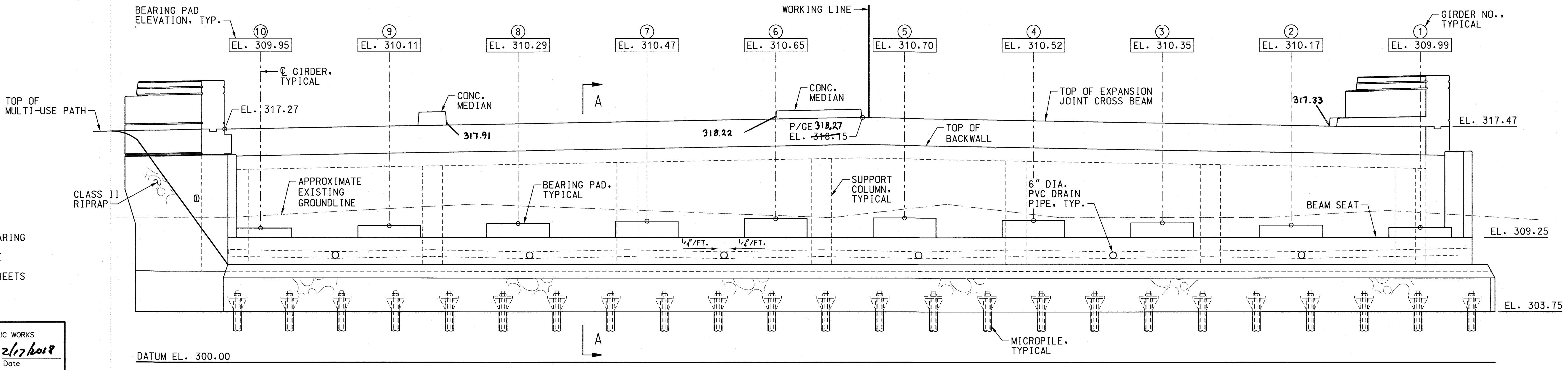


ELECTION DISTRICT No. 5





**PLAN**  
SCALE: 1/4" = 1'-0"



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

**AS-BUILT CERTIFICATION**  
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN AND CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.  
*G. Scott Shanaberg*  
G. SCOTT SHANBERG  
SHANBERG & LINE  
PROFESSIONAL LAND SURVEYOR AND  
LICENSE EXPIRES DATE 9/21/2020  
AS BUILT SURVEY DATES 11-14-13 TO 12/11/19

- NOTES:**
1. FOR SECTION A-A & TYPICAL BEARING DETAIL, SEE SHEET 25.
  2. FOR WING WALL ELEVATIONS, SEE SHEETS 26 & 27.
  3. FOR WING WALL DETAILS, SEE SHEETS 28 AND 34.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard County*  
Chief, Bureau of Highways  
Date: 2/17/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*David G. ...*  
Chief, Division of Land Development  
Date: 2/17/18  
*Elmer ...*  
Chief, Development Engineering Division  
Date: 2/27/18

**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WALLACE MONTGOMERY**  
ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS  
10150 York Road, Suite 200  
Hunt Valley, Maryland 21044  
410.434.9095 Tel | 410.667.0925 Fax  
www.wallacemontgomery.com A Limited Liability Partnership

DATE	REVISION	BY	APPR.

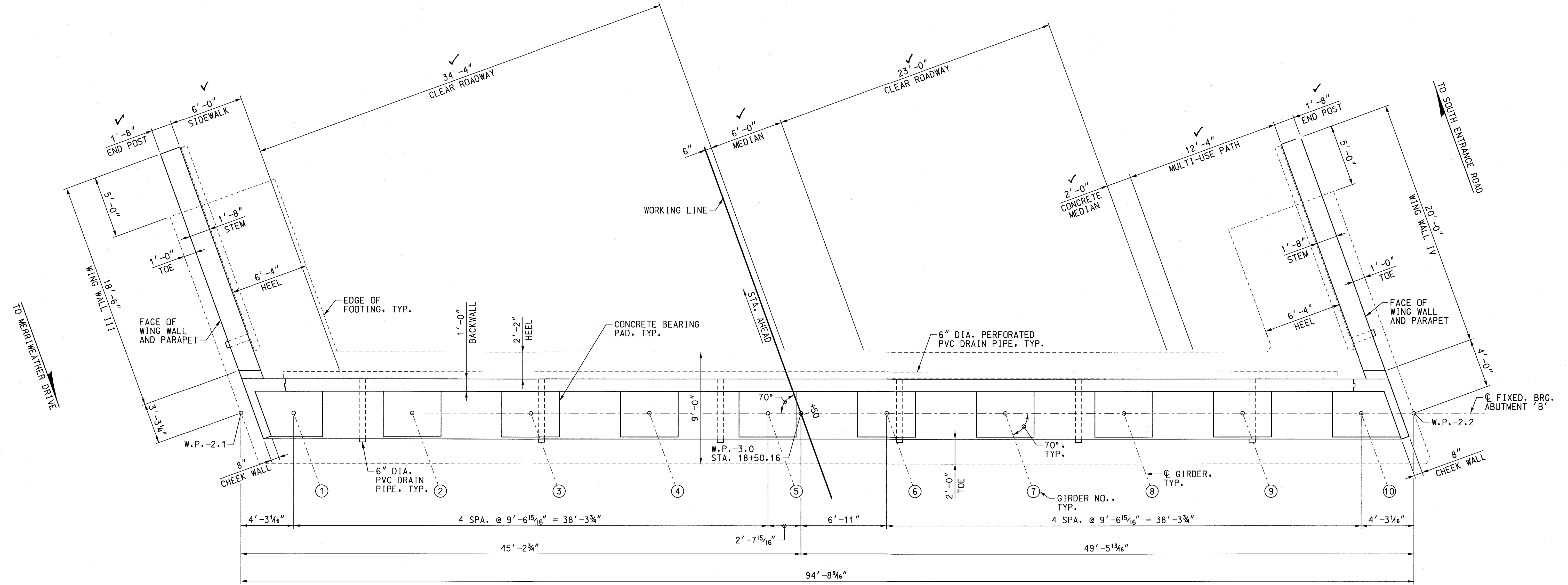
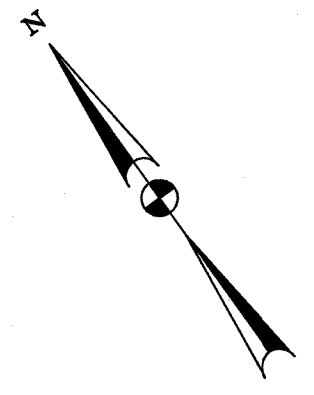
PREPARED FOR:  
THE HOWARD HUGHES CORPORATION  
LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
410-964-5443

**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. 24748, EXPIRATION DATE: 1-14-20  
*G. Scott Shanaberg*  
PROFESSIONAL ENGINEER  
1-25-18

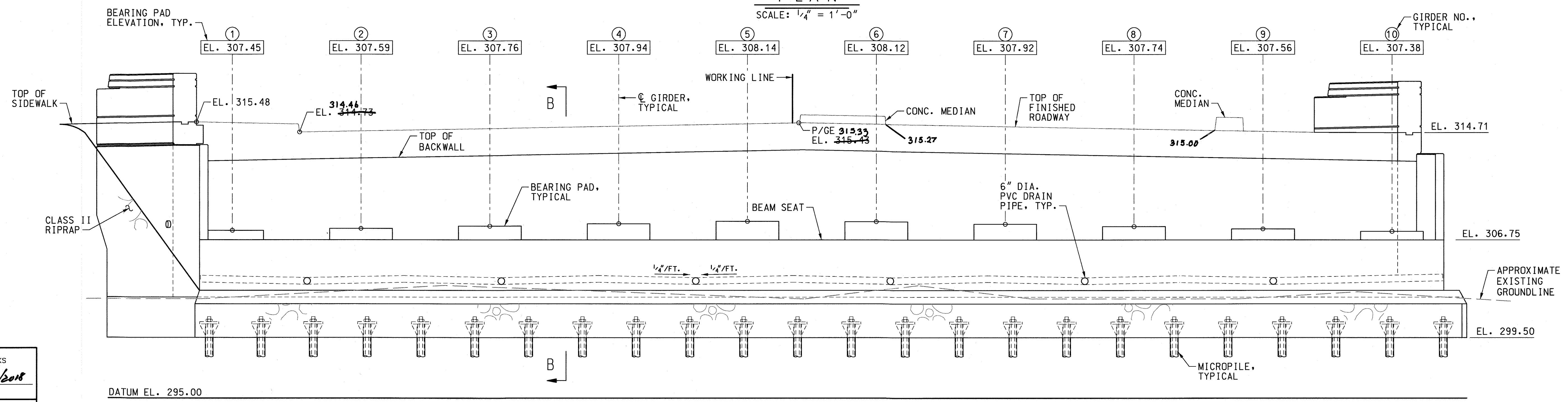
ABUTMENT 'A' PLAN AND ELEVATION  
**DOWNTOWN COLUMBIA**  
CRESCENT NEIGHBORHOOD  
SYMPHONY WOODS ROAD  
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	23 OF 39





PLAN  
SCALE: 1/4" = 1'-0"



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

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEETING ALL THE REQUIREMENTS OF THE APPLICABLE CODES AND SPECIFICATIONS.  
 G. SCOTT SHANBERGER  
 SHANBERGER & LANE  
 PROFESSIONAL LAND SURVEYORS  
 LICENSE EXPIRES 04/19/2026  
 AS-BUILT SURVEY DATES: 11-14-19 TO 12/16/19

- NOTES:**
1. FOR SECTION B-B & TYPICAL BEARING DETAIL, SEE SHEET 25.
  2. FOR WING WALL ELEVATIONS, SEE SHEETS 26 & 27.
  3. FOR WING WALL DETAILS, SEE SHEETS 28 AND 34.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/17/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 3/7/18

Chief, Development Engineering Division  
 Date: 2-27-18

**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WALLACE MONTGOMERY**  
 ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS  
 10150 York Road, Suite 200  
 Hunt Valley, Maryland 21030  
 410.494.9093 Tel. / 410.697.0925 Fax  
 www.WallaceMontgomery.com  
 A Limited Liability Partnership

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 410-964-5443

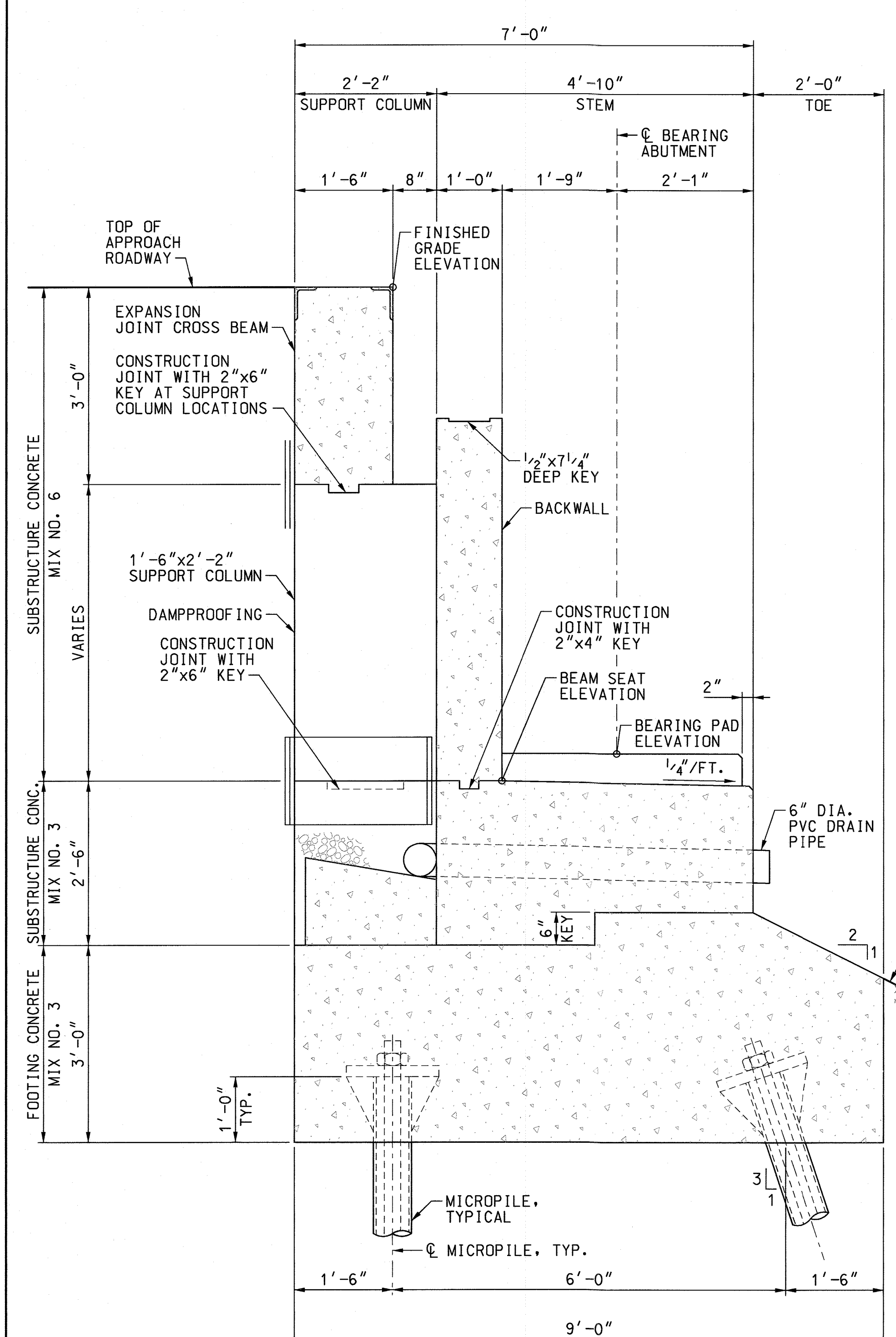
PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 24748 EXPIRATION DATE: 1-14-20

ABUTMENT 'B' PLAN AND ELEVATION  
 DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD  
 ELECTION DISTRICT No. 5  
 HOWARD COUNTY, MARYLAND

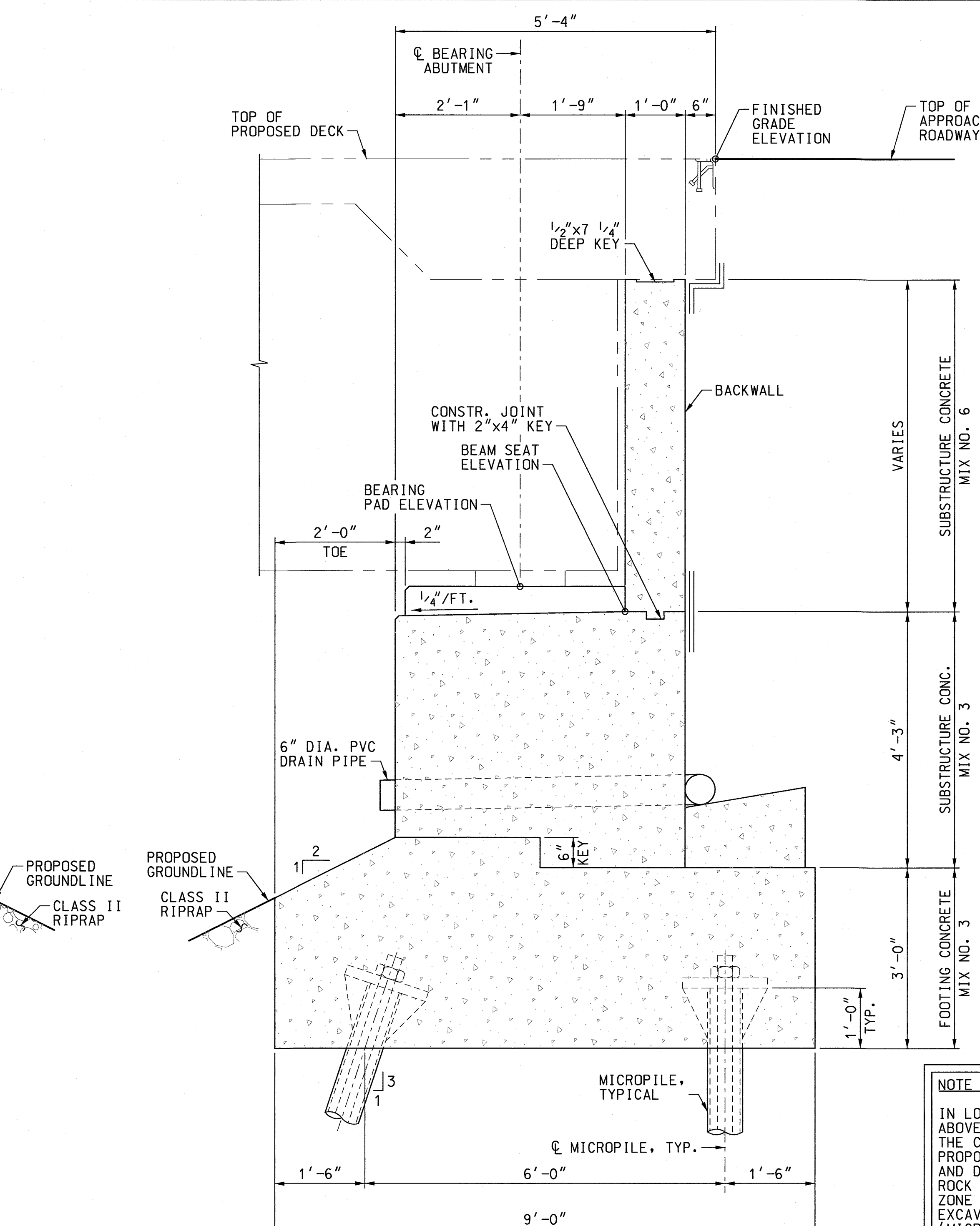
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	24 OF 39

DATE	REVISION	BY	APPR.

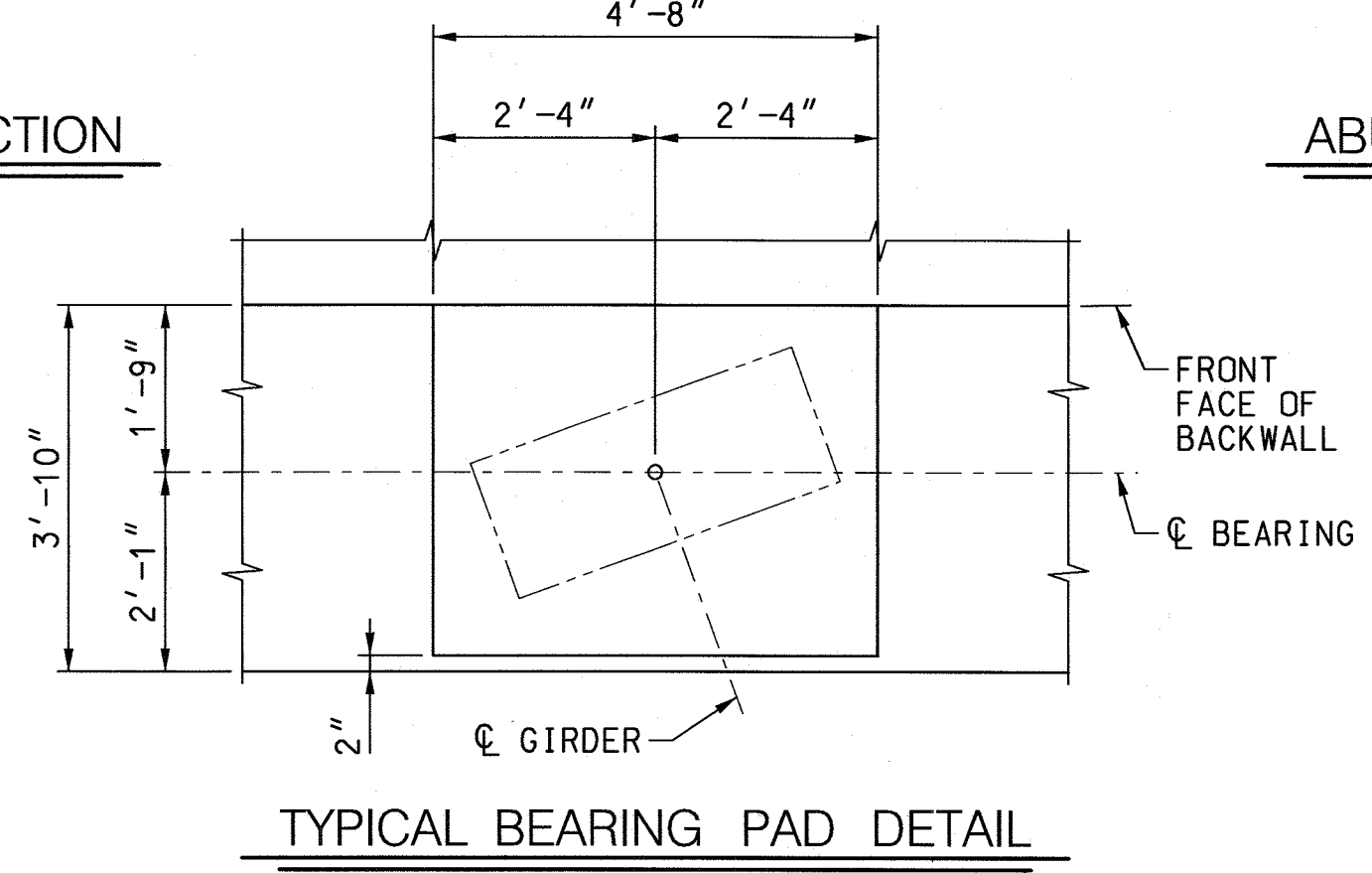




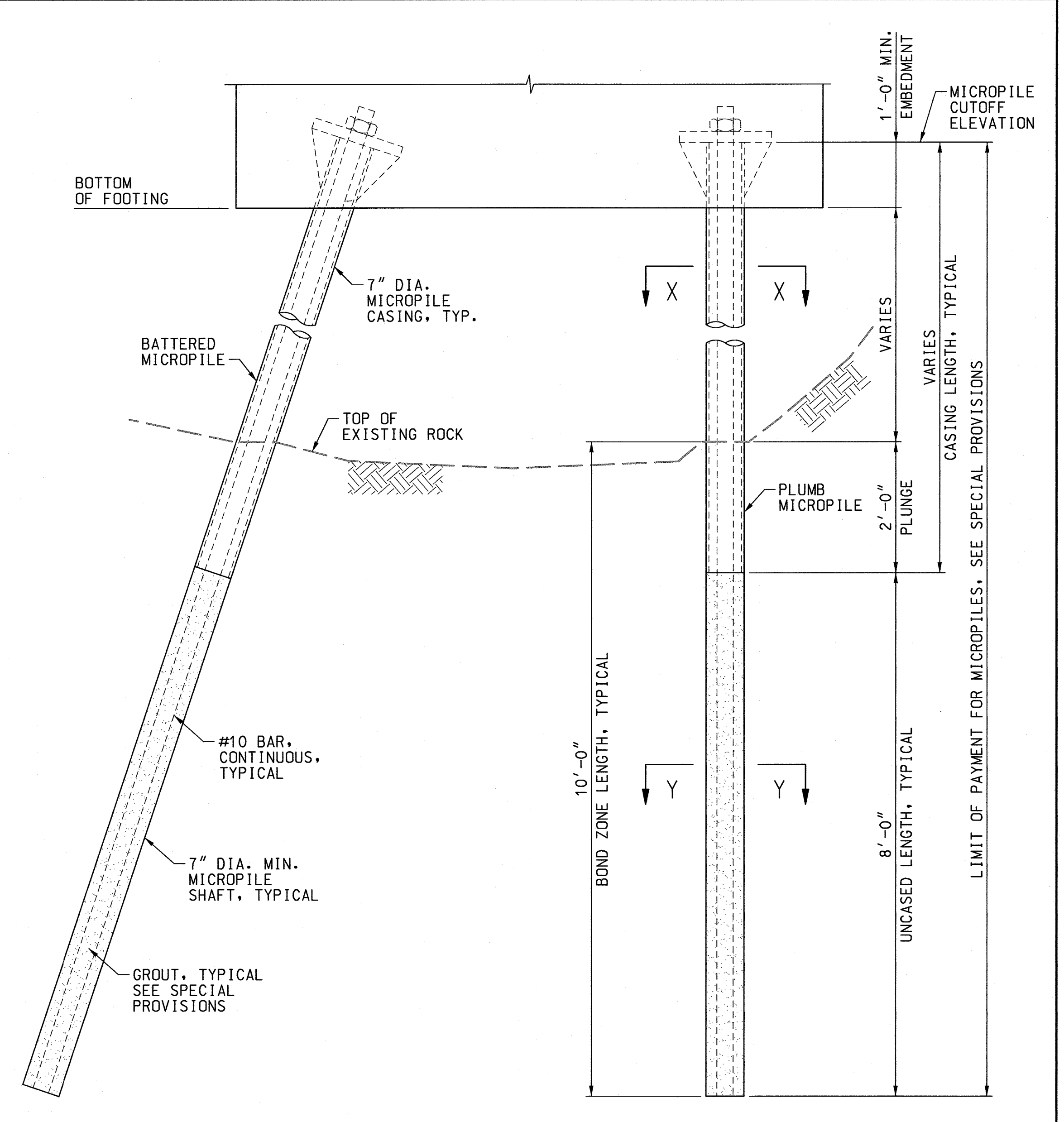
SECTION A-A  
 ABUTMENT 'A' TYPICAL SECTION  
 SCALE: 3/4" = 1'-0"



SECTION B-B  
 ABUTMENT 'B' TYPICAL SECTIONS  
 SCALE: 3/4" = 1'-0"

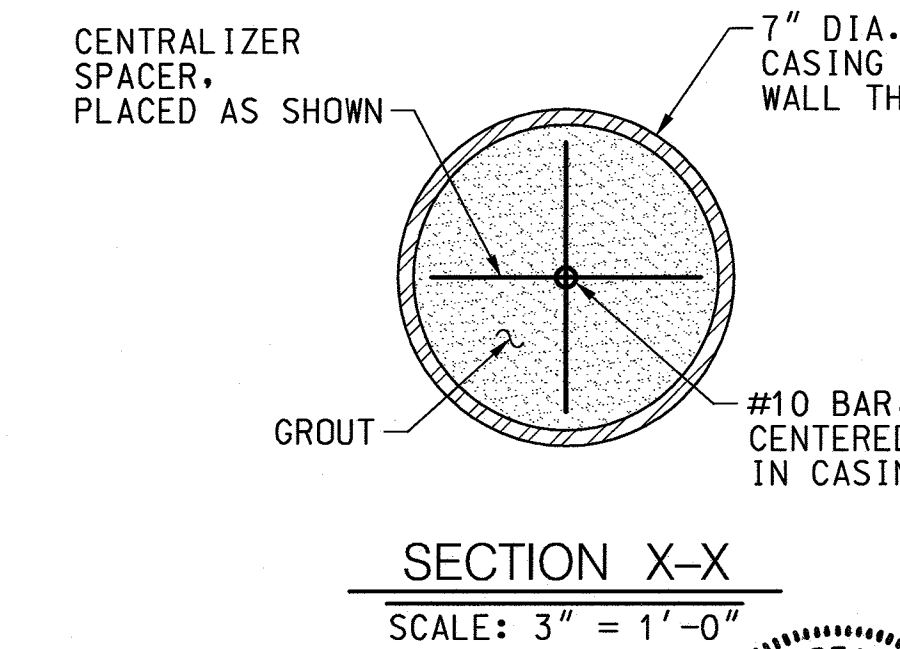


TYPICAL BEARING PAD DETAIL  
 SCALE: 1/2" = 1'-0"

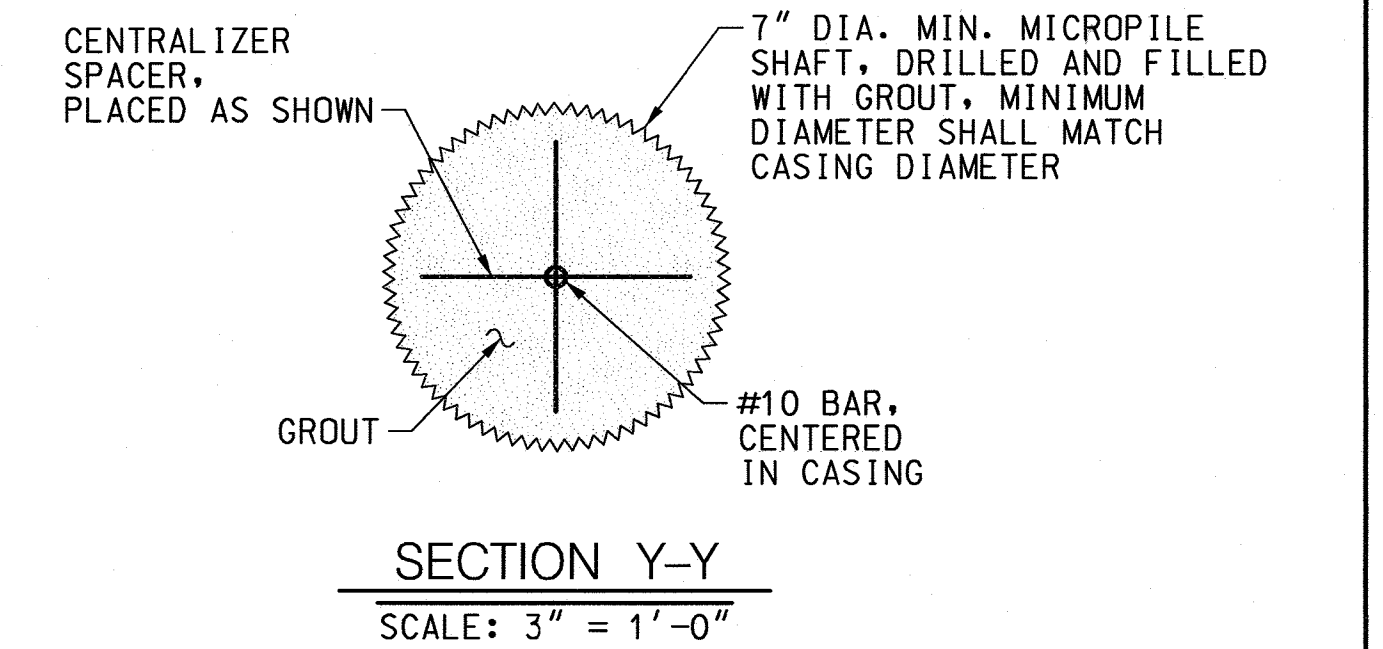


TYPICAL MICROPILE DETAIL  
 SCALE: 3/4" = 1'-0"

**NOTE TO CONTRACTOR:**  
 IN LOCATIONS WHERE ROCK IS ENCOUNTERED ABOVE THE PROPOSED BOTTOM OF FOOTING, THE CONTRACTOR SHALL EXCAVATE TO THE PROPOSED BOTTOM OF FOOTING ELEVATION AND DRILL 10'-0" MIN. INTO EXISTING ROCK TO ESTABLISH THE REQUIRED BOND ZONE LENGTH. COST TO PERFORM ROCK EXCAVATION SHALL BE INCLUDED IN THE 'MICROPILE' PAY ITEM.



SECTION X-X  
 SCALE: 3" = 1'-0"



SECTION Y-Y  
 SCALE: 3" = 1'-0"

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.  
 G. SCOTT SHANABERGER  
 SHANABERGER & LANE  
 PROFESSIONAL L.S. #10849 Exp. Date 4/2/2016  
 AS-BUILT DATE: 12/16/2019

- NOTES:**
- FOR LOCATION OF SECTION A-A, SEE SHEET 23.
  - FOR LOCATION OF SECTION B-B, SEE SHEET 24.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/17/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 2/17/18

Chief, Development Engineering Division  
 Date: 2-27-18

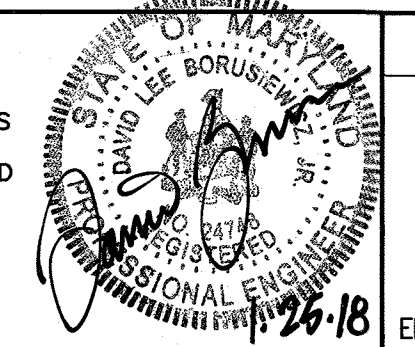
**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WALLACE MONTGOMERY**  
 ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS  
 10150 York Road, Suite 200  
 Hunt Valley, Maryland 21030  
 410.434.9093 Toll # 410.667.0925 Fax  
 www.WallaceMontgomery.com A Limited Liability Partnership

DATE	REVISION	BY	APPR.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 410-964-5443

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. 24748, EXPIRATION DATE: 1-14-20

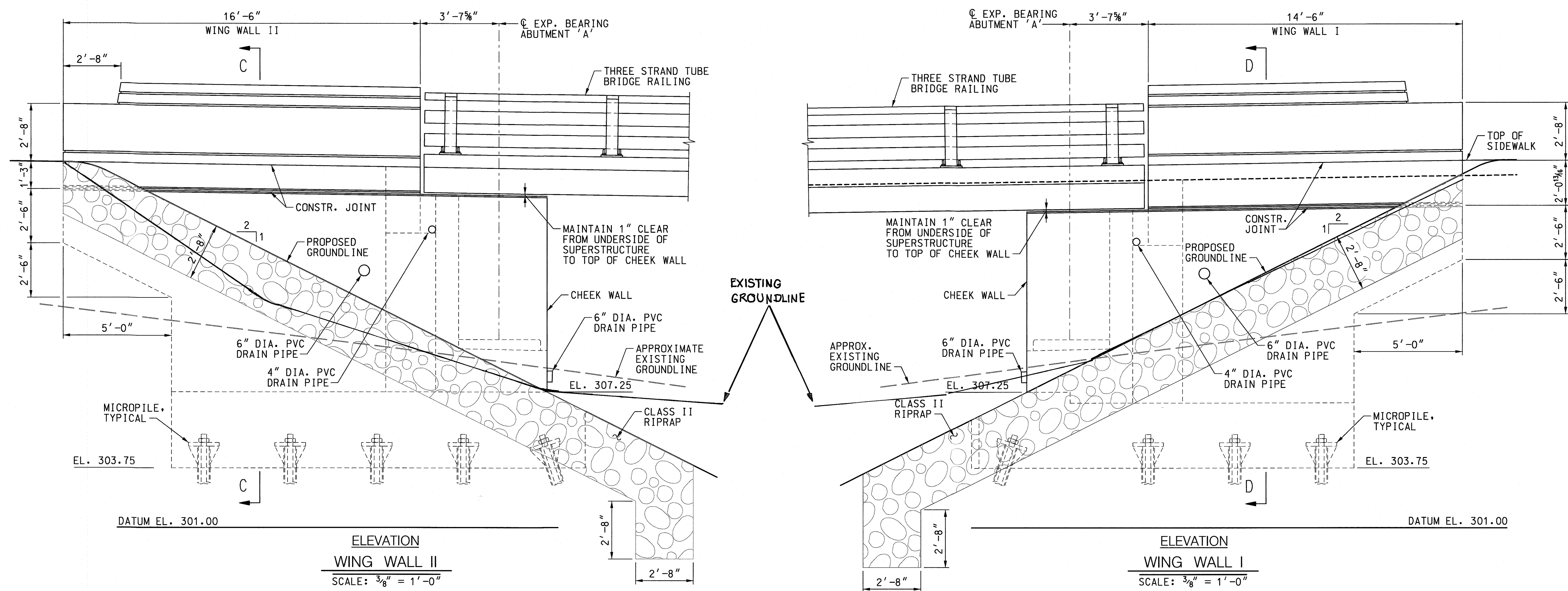


ABUTMENT TYPICAL SECTIONS  
 DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	25 OF 39

HOWARD COUNTY, MARYLAND





**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEET THE REQUIREMENTS OF APPROVED PLANS AND SPECIFICATIONS.

*G. Scott Shanabarger*  
**G. SCOTT SHANABARGER**  
 SHANABARGER & LANE  
 PROFESSIONAL LAND SURVEYORS  
 LICENSE EXPIRATION DATE 4/21/2026  
 AS BUILT SURVEY DATES 11-14-19 TO 12/16/19

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/2018  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 3/7/19  
 Chief, Division of Land Development Date

*[Signature]* 2.27.18  
 Chief, Development Engineering Division Date

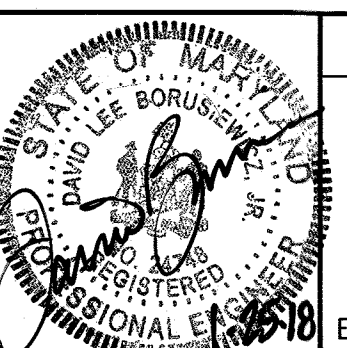
**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WALLACE MONTGOMERY**  
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 10150 York Road, Suite 200  
 Hunt Valley, Maryland 21030  
 410.484.5000 Fax 410.667.0925  
 www.WallaceMontgomery.com

DATE	REVISION	BY	APPR.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 410-964-5443

PROFESSIONAL CERTIFICATION  
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 LICENSE NO. 24748  
 EXPIRATION DATE: 1-14-20



WING WALL ELEVATIONS I  
 DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD

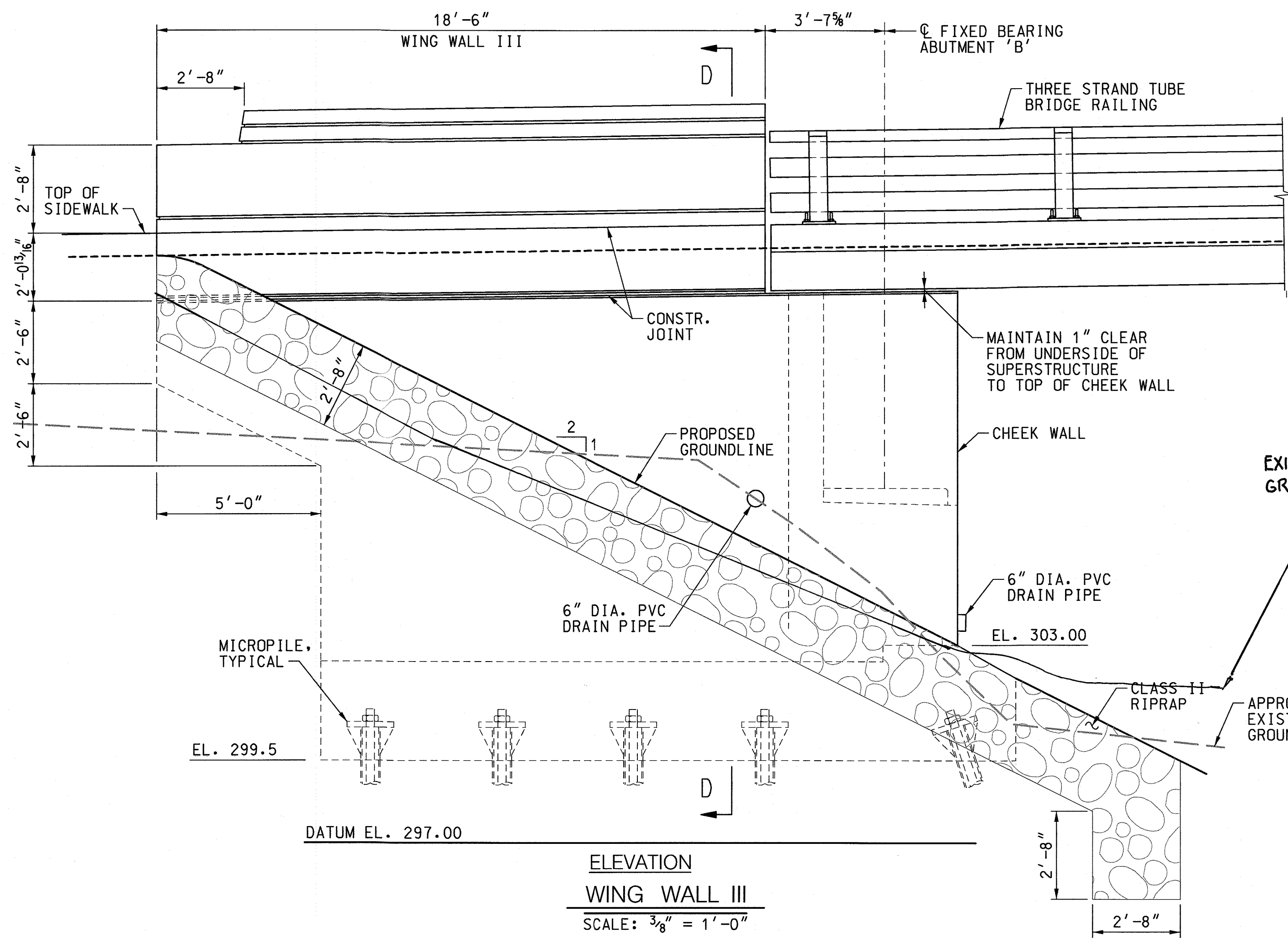
ELECTION DISTRICT No. 5

HOWARD COUNTY, MARYLAND

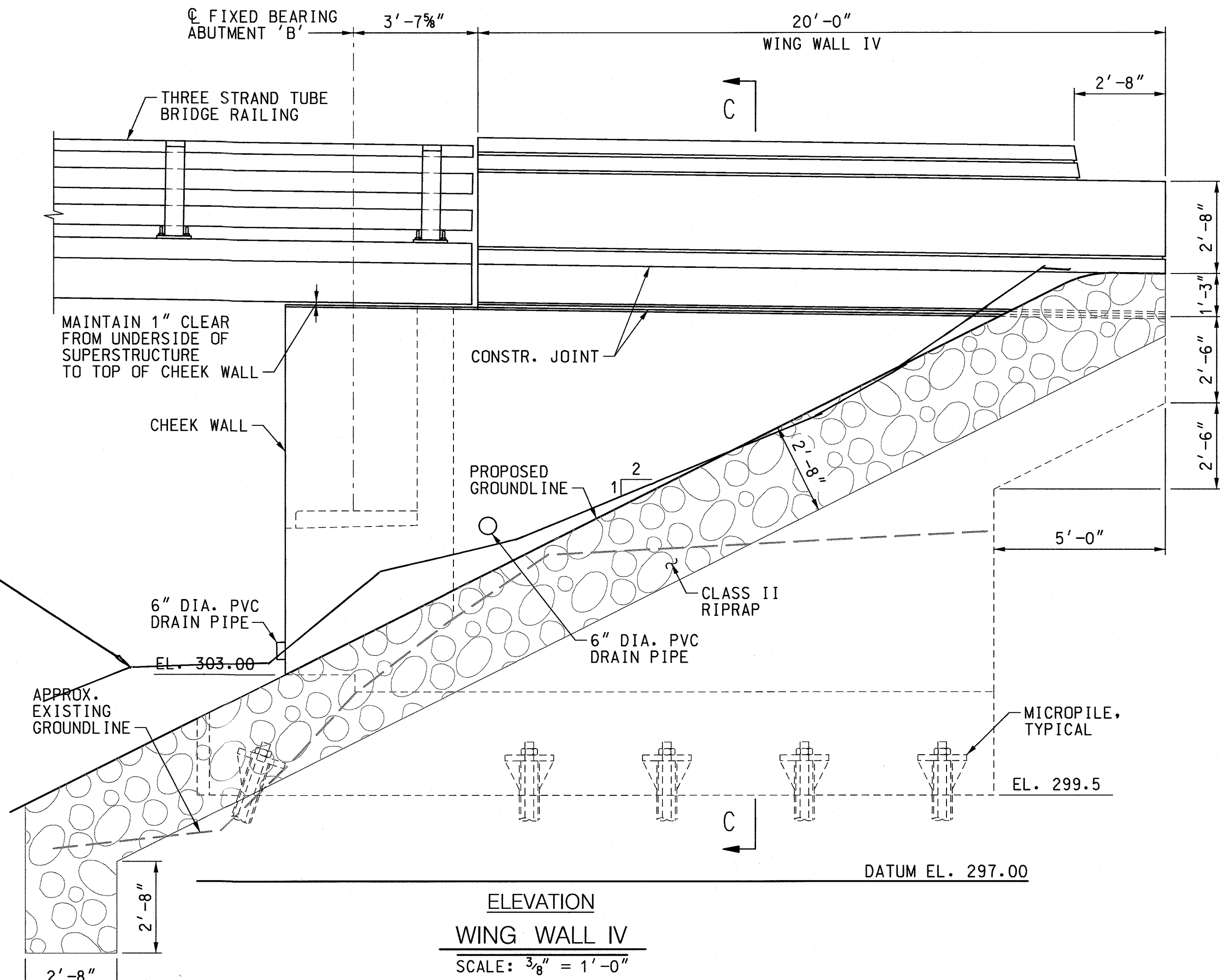
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	26 OF 39

NOTE:  
 FOR SECTIONS C-C & D-D, SEE SHEET 28.





ELEVATION  
WING WALL III  
SCALE: 3/8" = 1'-0"



ELEVATION  
WING WALL IV  
SCALE: 3/8" = 1'-0"

**AS-BUILT CERTIFICATION**  
I HEREBY CERTIFY, BY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS PLAN MEETING THE APPROVED PLANS AND SPECIFICATIONS.  
*Scott Shanabarger*  
G SCOTT SHANABARGER  
SHANABARGER & LANE  
PROFESSIONAL LAND SURVEYOR  
LICENSE EXPIRATION DATE 4/2/2020  
AS-BUILT SURVEY DATES 11-14-19 TO 12/16/19

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/2018  
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 2/17/18  
Chief, Division of Land Development Date

*[Signature]* 2-27-18  
Chief, Development Engineering Division Date

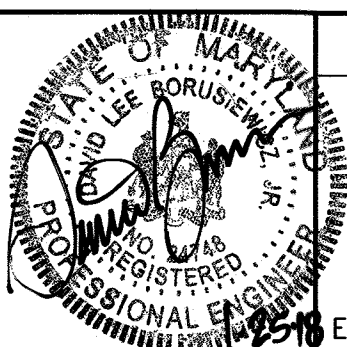
**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WALLACE MONTGOMERY**  
ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS  
10150 York Road, Suite 200  
Hurt Valley, Maryland 21030  
410.434.9025 Tel / 410.667.0925 Fax  
www.WallaceMontgomery.com  
A Limited Liability Partnership

DATE	REVISION	BY	APPR.

PREPARED FOR:  
THE HOWARD HUGHES CORPORATION  
LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
410-964-5443

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. 24748  
EXPIRATION DATE: 1-14-20

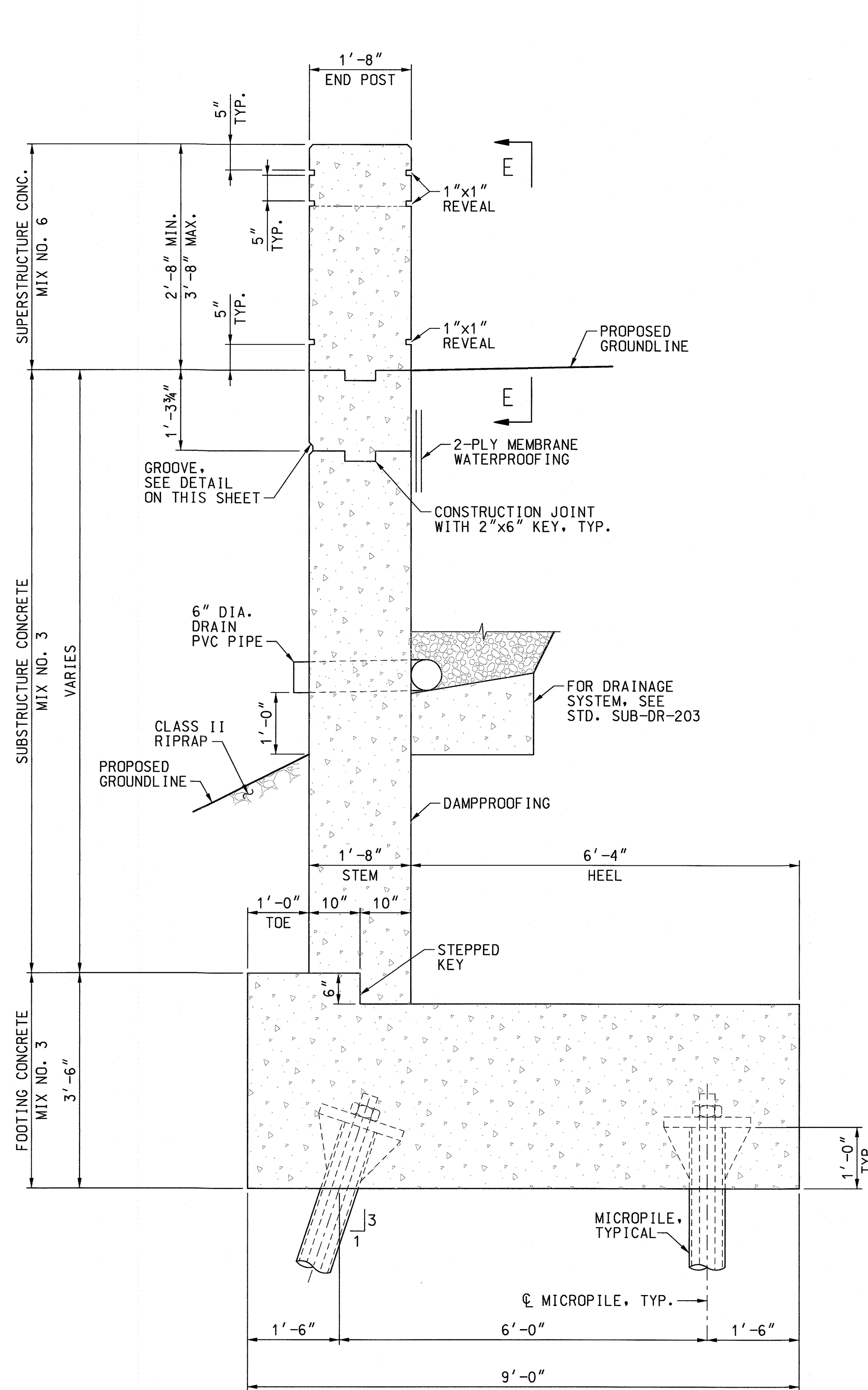


WING WALL ELEVATIONS I  
DOWNTOWN COLUMBIA  
CRESCENT NEIGHBORHOOD  
SYMPHONY WOODS ROAD

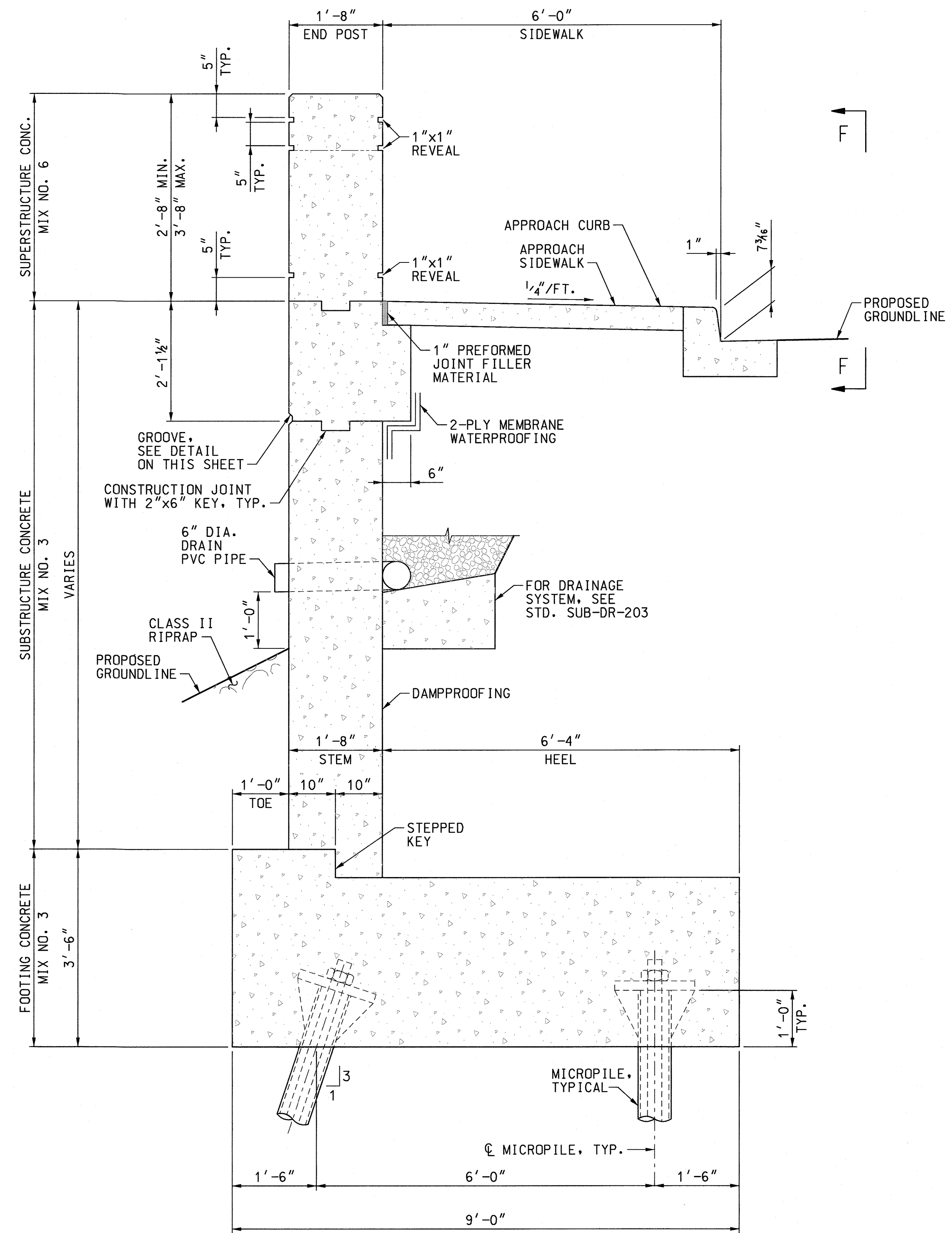
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	27 OF 39

NOTE:  
FOR SECTIONS C-C & D-D, SEE SHEET 28.

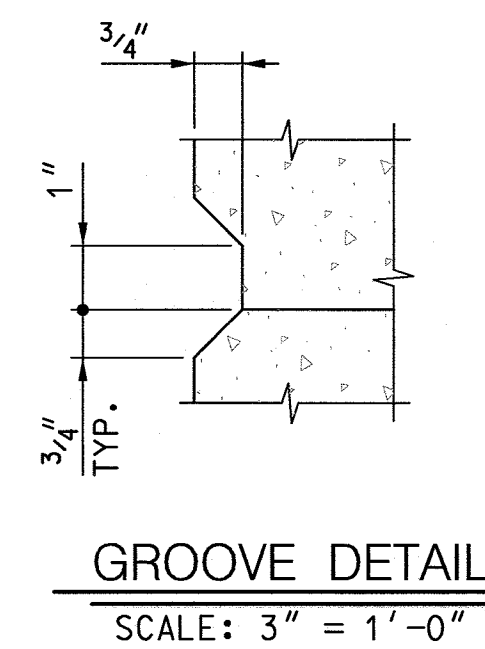




SECTION C-C  
SCALE: 3/4" = 1'-0"



SECTION D-D  
SCALE: 3/4" = 1'-0"



GROOVE DETAIL  
SCALE: 3" = 1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/2018  
 Chief, Bureau of Highways  
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 3/7/18  
 Chief, Division of Land Development  
 Date

*[Signature]* 2/27/18  
 Chief, Development Engineering Division  
 Date

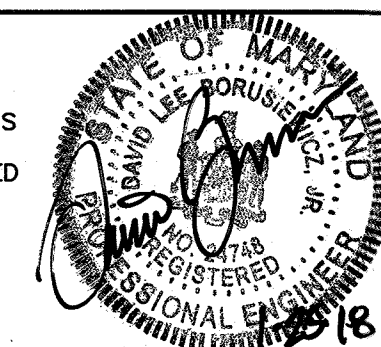
**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WALLACE MONTGOMERY**  
 ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS  
 10150 York Road, Suite 200  
 Hunt Valley, Maryland 21030  
 410.484.5095 Tel / 410.667.0925 Fax  
 www.WallaceMontgomery.com A Limited Liability Partnership

DATE	REVISION	BY	APP'R.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 410-964-5443

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. 24748  
 EXPIRATION DATE: 1-14-20



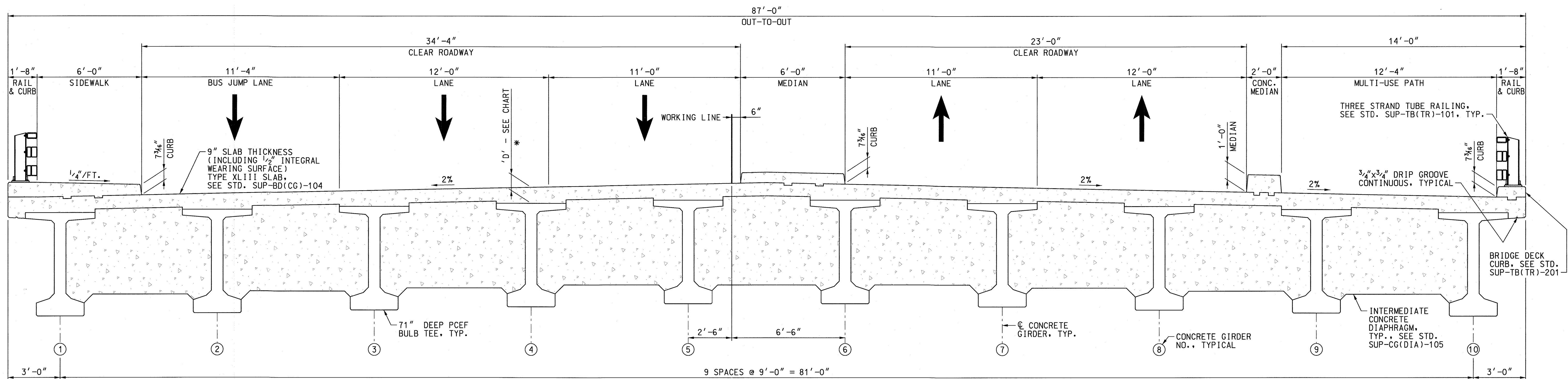
WING WALL TYPICAL SECTIONS  
 DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.  
 G. SCOTT SHANABERGER  
 SHANABERGER & LANE  
 PROFESSIONAL L.S. #10849 Exp. Date 4/2/2018  
 AS-BUILT DATE: 12/14/2018

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	28 OF 39

NOTES:  
 1. FOR LOCATION OF SECTION C-C AND SECTION D-D, SEE SHEETS 26 AND 27.  
 2. FOR VIEWS E-E AND F-F, SEE SHEET 34.



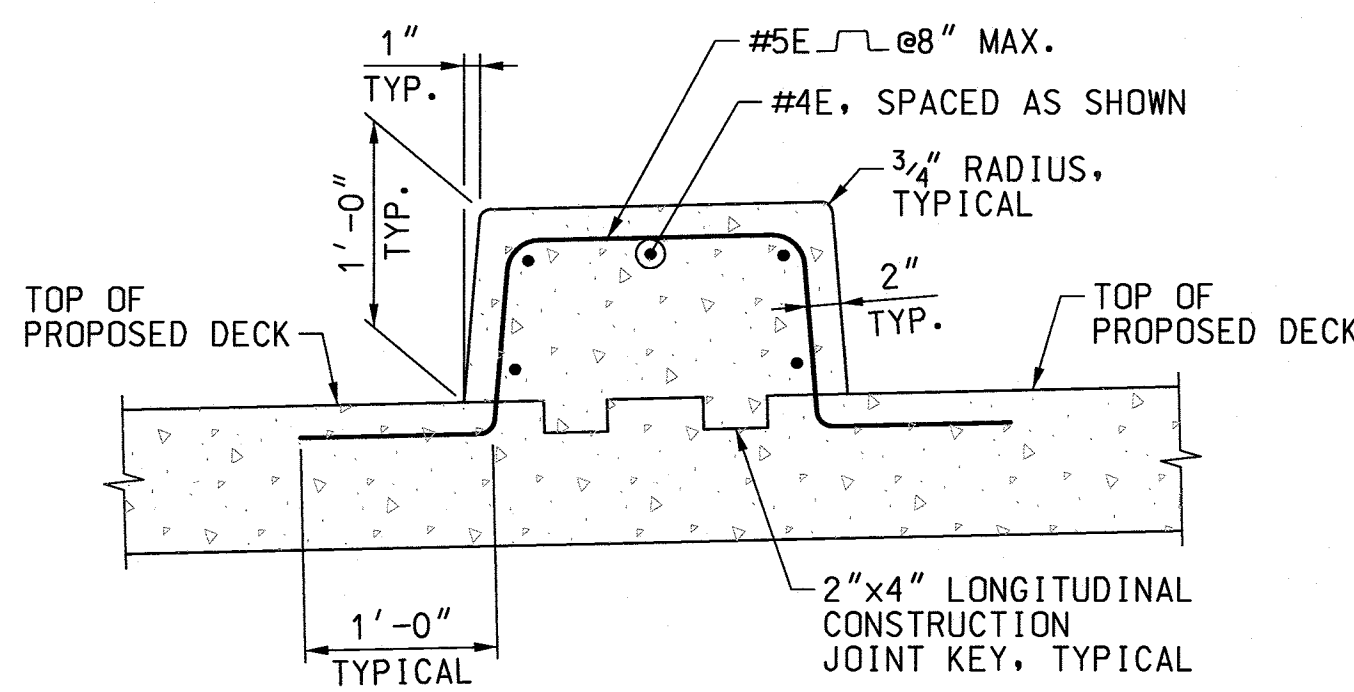


\* 'D' IS MEASURED FROM TOP OF FINISHED DECK SLAB TO TOP OF BULB TEE FLANGE.

**SUPERSTRUCTURE TYPICAL SECTION**

SCALE: 3/8" = 1'-0"

GIRDER NO.	DIMENSION 'D'	
	ABUTMENT 'A'	ABUTMENT 'B'
1	11"	11 5/16"
2	11"	11 3/16"
3	11"	11 1/16"
4	11"	11"
5	11"	11"
6	11"	11"
7	11"	11"
8	11"	11"
9	11"	11"
10	11"	11"



**RAISED MEDIAN DETAIL**

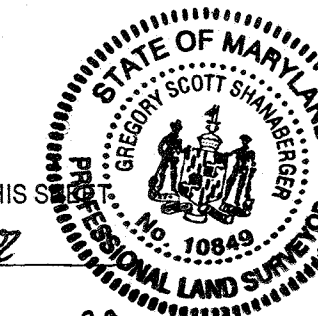
SCALE: 1" = 1'-0"

**NOTE:**

JOINT ANGLES AT ABUTMENT 'B' SHALL BE CONTINUOUS BELOW THE RAISED CONCRETE MEDIAN. CUT HORIZONTAL LEG WITHIN LIMITS OF RAISED CONCRETE MEDIAN.

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.

G. SCOTT SHANABERGER  
SHANABERGER & LANE  
Professional L.S. #10849 Exp. Date 4/2/2018  
AS-BUILT DATE: 12/16/2018



**NOTE:**

FOR FRAMING PLAN, SEE SHEET 30.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Chief, Bureau of Highways  
Date: 2/17/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
Chief, Division of Land Development  
Date: 3/17/18

Chief, Development Engineering Division  
Date: 2-27-18

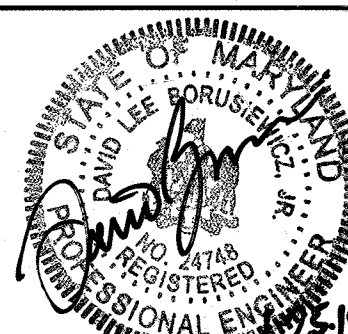
**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

DATE	REVISION	BY	APPR.

PREPARED FOR:  
THE HOWARD HUGHES CORPORATION  
LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
410-964-5443

**PROFESSIONAL CERTIFICATION**

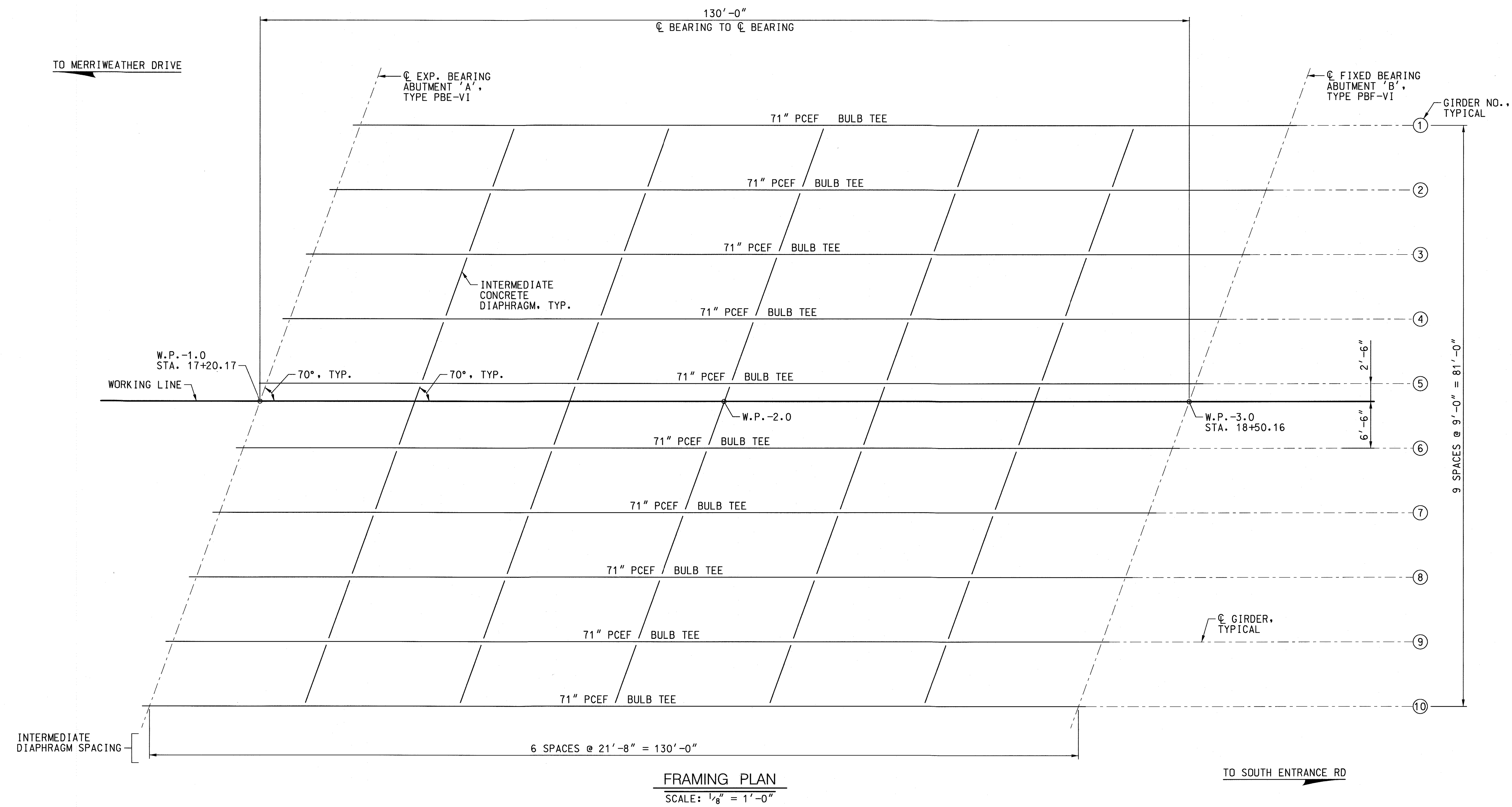
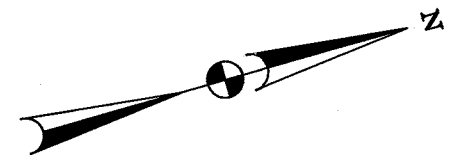
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 24748  
EXPIRATION DATE: 1-14-20



**SUPERSTRUCTURE TYPICAL SECTION**  
DOWNTOWN COLUMBIA  
CRESCENT NEIGHBORHOOD  
SYMPHONY WOODS ROAD

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE JANUARY 2018	TAX MAP - GRID 36 - 01	SHEET 29 OF 39





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/18  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 3/17/18  
 Chief, Division of Land Development Date

*[Signature]* 2.27.18  
 Chief, Development Engineering Division Date

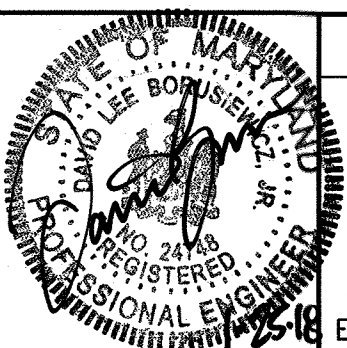
**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WMC WALLACE MONTGOMERY**  
 ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS  
 10150 York Road, Suite 200  
 Hunt Valley, Maryland 21030  
 410.494.5055 Tel / 410.667.0925 Fax  
 www.WallaceMontgomery.com A Limited Liability Partnership

DATE	REVISION	BY	APPR.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 410-964-5443

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 LICENSE NO. 24748  
 EXPIRATION DATE: 1-14-20



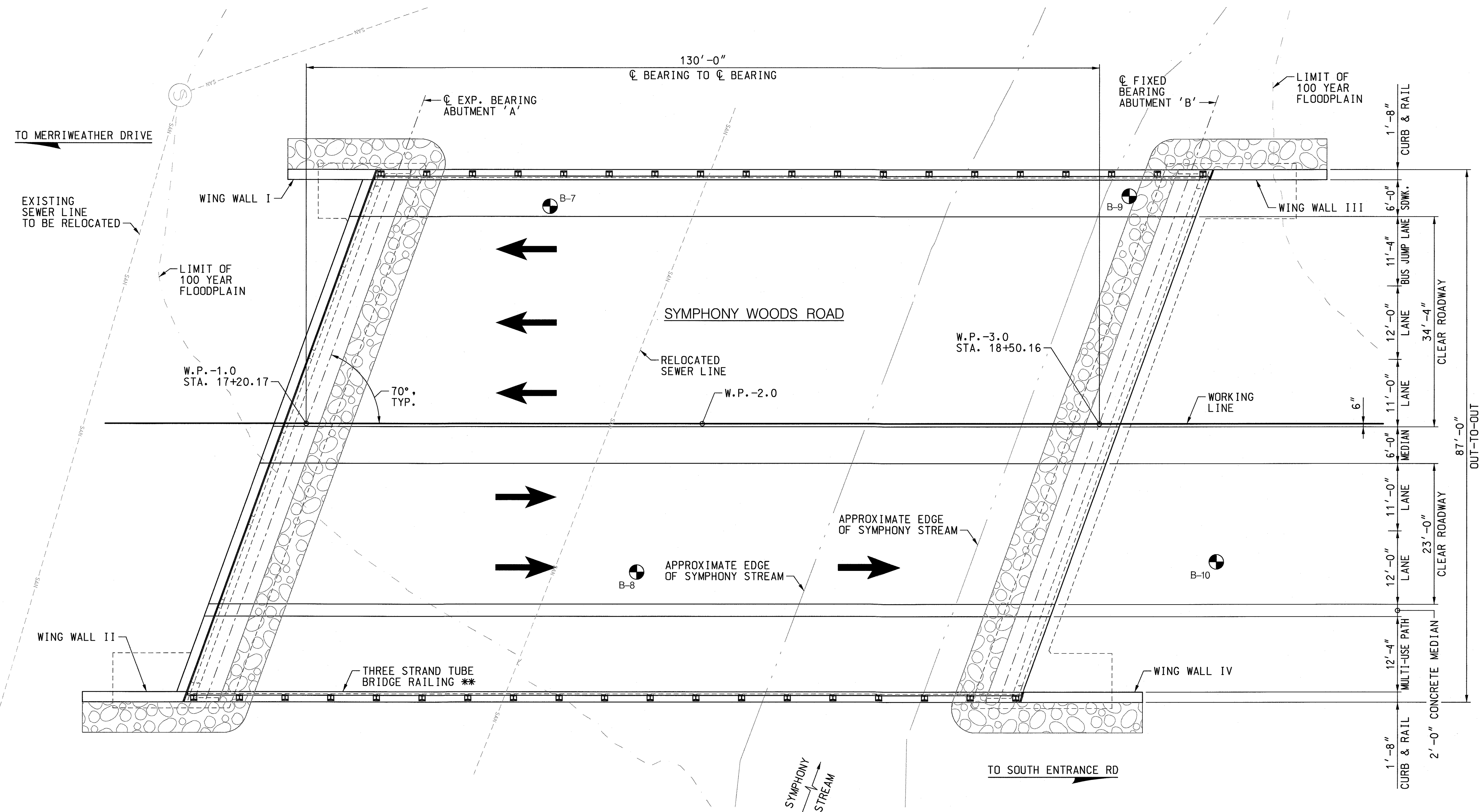
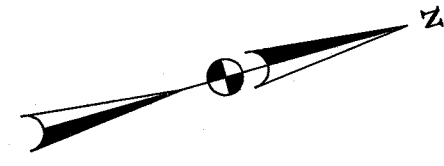
FRAMING PLAN  
 DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD  
 HOWARD COUNTY, MARYLAND

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.  
*[Signature]*  
 G. SCOTT SHANABERGER  
 SHANABERGER & LANE  
 Professional L.S. #10849 Exp. Date 4/2/2018  
 AS-BUILT DATE: 12/16/2018

- NOTES:
1. FOR SUPERSTRUCTURE TYPICAL SECTION, SEE SHEET 29.
  2. FOR INTERMEDIATE CONCRETE DIAPHRAGM, SEE STD. SUP-CG(DIA)-105 IN COMPLETE BRIDGE CONSTRUCTION PLANS.

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	30 OF 39





**BORING LOCATION PLAN**

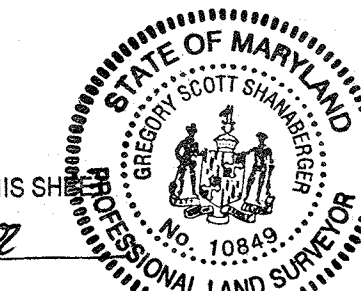
SCALE: 1" = 10'

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	NORTHING	EASTING
B-7	17+60.30	35.57' LT.	561,276.9658	1,352,060.3223
B-8	17+74.29	24.24' RT.	561,274.4757	1,352,121.6984
B-9	18+54.52	37.71' LT.	561,368.8214	1,352,084.4131
B-10	18+69.72	21.81' RT.	561,366.3690	1,352,145.7991

**NOTES:**

- BORINGS AND DRIVE TESTS TAKEN BY THE ROBERT B. BALTER COMPANY AS FOLLOWS:  
 B-7: 1/23/15  
 B-8: 1/23/15  
 B-9: 1/27/15  
 B-10: 1/27/15
- SPT = BLOWS ON SAMPLING SPOON BY 140 POUND WEIGHT FALLING 30" INDICATING SUCCESSIVE 6" INCREMENTS OF PENETRATION. PENETRATION LESS THAN 6" IS INDICATED BY ACTUAL LENGTH IN INCHES (INDICATED % = PERCENT ROCK CORE RECOVERY WITHIN RANGE INDICATED).
- ▽ INDICATES WATER TABLE LEVEL.
- ⊙ INDICATES BORING LOCATION.
- FOR BORINGS B-7 & B-8, SEE SHEET 32.
- FOR BORINGS B-9 & B-10, SEE SHEET 33.

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.  
 G. SCOTT SHANABERGER  
 SHANABERGER & LANE  
 PROFESSIONAL L.S. #10849 Exp. Date 4/2/2018  
 AS-BUILT DATE: 12/16/2012



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways  
 Date: 2/17/2018

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Chief, Division of Land Development  
 Date: 2/17/18

Chief, Development Engineering Division  
 Date: 2-27-18

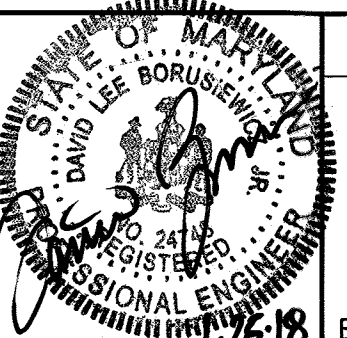
**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

**WALLACE MONTGOMERY**  
 ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS  
 10150 York Road, Suite 200  
 Hunt Valley, Maryland 21030  
 410.484.9093 Tel / 410.667.0925 Fax  
 www.WallaceMontgomery.com

DATE	REVISION	BY	APP'R.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: BOB JENKINS  
 410-964-5443

PROFESSIONAL CERTIFICATION  
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 LICENSE NO. 24748  
 EXPIRATION DATE: 1-14-20

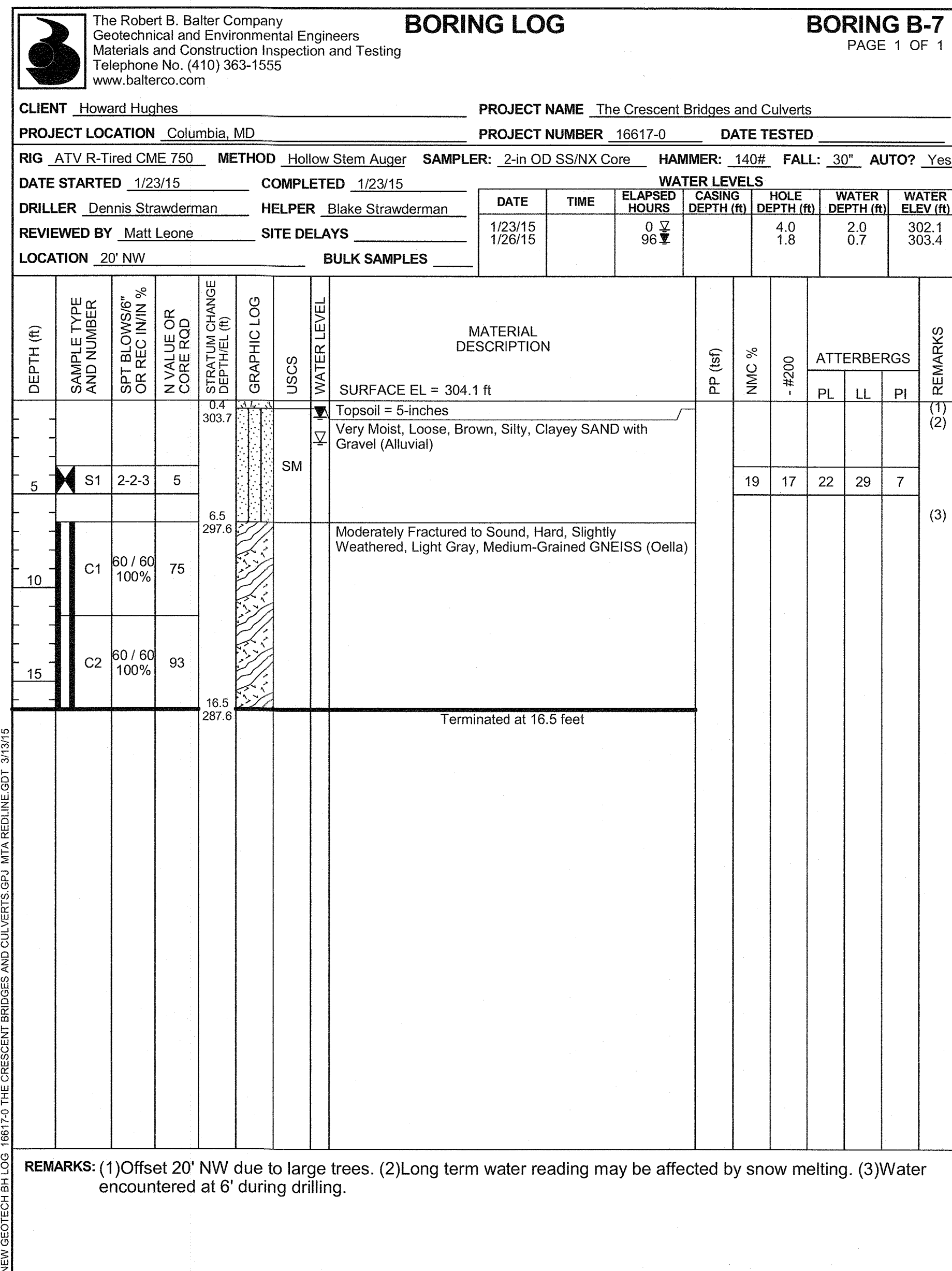


**BORING LOCATION PLAN**  
**DOWNTOWN COLUMBIA**  
**CRESCENT NEIGHBORHOOD**  
**SYMPHONY WOODS ROAD**

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	31 OF 39





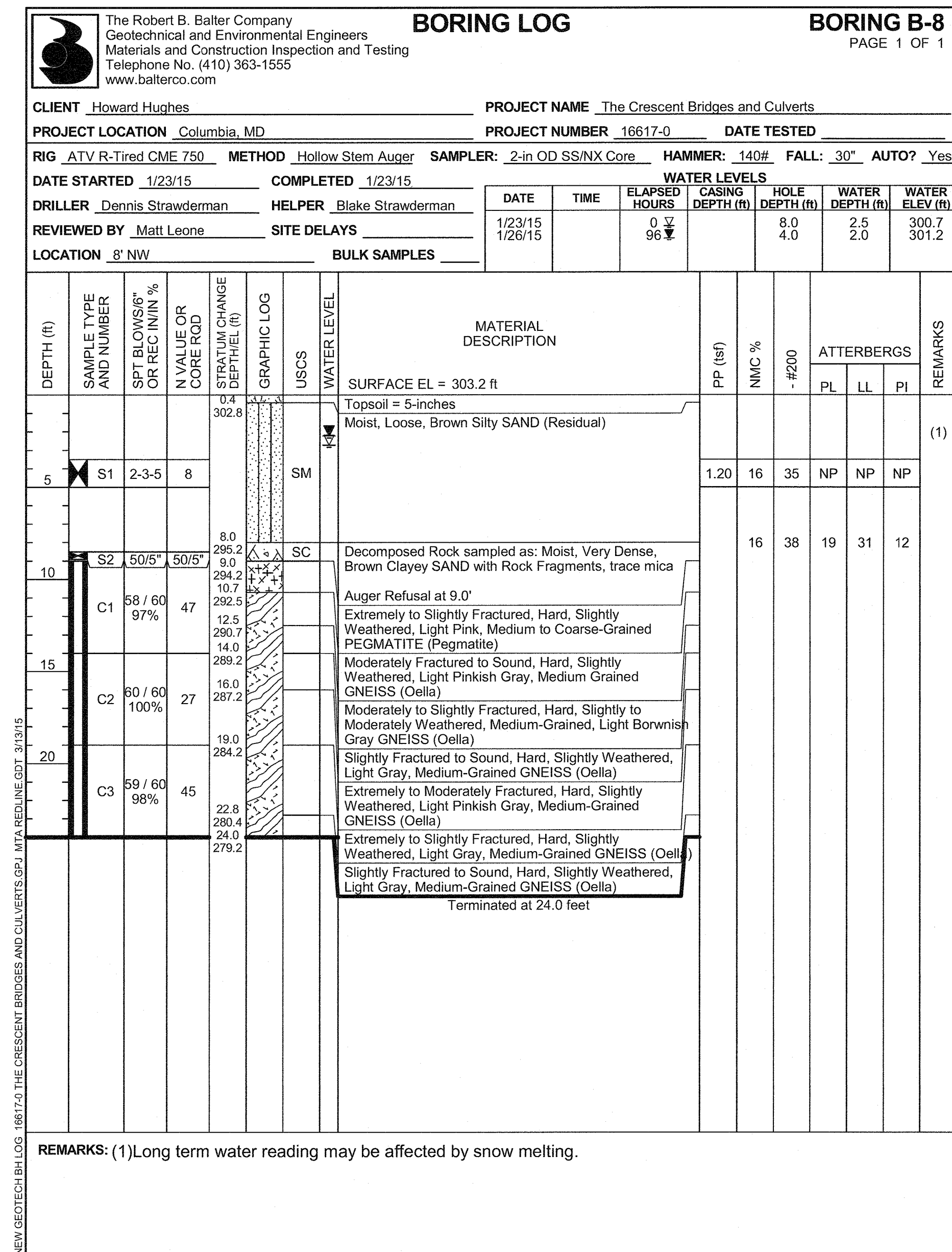
EL. 303.75  
ABUTMENT 'A'  
BOTTOM OF  
FOOTING

EL. 284.00  
ESTIMATED PILE  
TIP ELEVATION

NEW GEOTECH B/L LOG 10817.0 THE CRESCENT BRIDGES AND CULVERTS.GPJ MTA REDLINE.GDT 3/13/15

REMARKS: (1) Offset 20' NW due to large trees. (2) Long term water reading may be affected by snow melting. (3) Water encountered at 6' during drilling.

BORING B-7



EL. 303.75  
ABUTMENT 'A'  
BOTTOM OF  
FOOTING

EL. 284.00  
ESTIMATED PILE  
TIP ELEVATION

NEW GEOTECH B/L LOG 10817.0 THE CRESCENT BRIDGES AND CULVERTS.GPJ MTA REDLINE.GDT 3/13/15

REMARKS: (1) Long term water reading may be affected by snow melting.

BORING B-8

DATUM EL. 250.00

DATUM EL. 250.00

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/2018  
Chief, Bureau of Highways Date

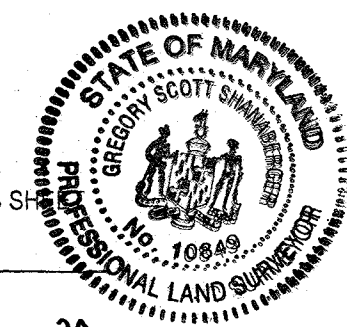
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 2/7/18  
Chief, Division of Land Development Date

*[Signature]* 2-27-18  
Chief, Development Engineering Division Date

**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION  
PLANS UNDER SEPARATE SUBMITTAL.**

NOTE: THERE IS NO AS-BUILT  
INFORMATION PROVIDED ON THIS SHEET.

*[Signature]*  
G. SCOTT SHANABERGER  
SHANABERGER & LANE  
Professional L.S. #10849 Exp. Date 4/2/2018  
AS-BUILT DATE: 12/16/2019

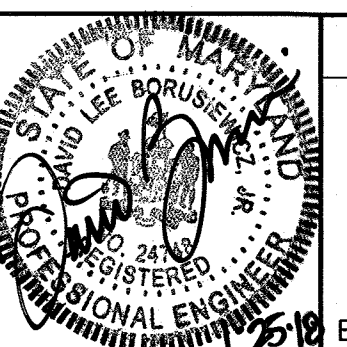


**WALLACE MONTGOMERY**  
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10150 York Road, Suite 200  
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www.WallaceMontgomery.com A Limited Liability Partnership

DATE	REVISION	BY	APP'R.

PREPARED FOR:  
THE HOWARD HUGHES CORPORATION  
LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
410-964-5443

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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. 24748  
EXPIRATION DATE: 1-14-20



BORINGS AND DRIVE TESTS  
DOWNTOWN COLUMBIA  
CRESCENT NEIGHBORHOOD  
SYMPHONY WOODS ROAD

ELECTION DISTRICT No. 5  
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	32 OF 39



**BORING LOG BORING B-9**  
PAGE 1 OF 1

The Robert B. Baller Company  
Geotechnical and Environmental Engineers  
Materials and Construction Inspection and Testing  
Telephone No. (410) 363-1555  
www.balterco.com

CLIENT Howard Hughes PROJECT NAME The Crescent Bridges and Culverts  
PROJECT LOCATION Columbia, MD PROJECT NUMBER 16617-0 DATE TESTED \_\_\_\_\_

RIG ATV R-Tired CME 750 METHOD Hollow Stem Auger SAMPLER: 2-in OD SS/NX Core HAMMER: 140# FALL: 30" AUTO? Yes  
DATE STARTED 1/27/15 COMPLETED 1/27/15 WATER LEVELS \_\_\_\_\_  
DRILLER Dennis Strawderman HELPER Blake Strawderman DATE \_\_\_\_\_ TIME \_\_\_\_\_ ELAPSED HOURS \_\_\_\_\_ CASING DEPTH (ft) \_\_\_\_\_ HOLE DEPTH (ft) 9.0 WATER DEPTH (ft) 2.4 WATER ELEV (ft) 302.0  
REVIEWED BY Matt Leone SITE DELAYS \_\_\_\_\_  
LOCATION 12' BULK SAMPLES \_\_\_\_\_

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWSES* OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (pcf)	NMC %	#200	PL	LL	PI	REMARKS
0.4				304.0				SURFACE EL = 304.4 ft							(1)
5	S1	3-4-5	9			SW-SM		Topsoil = 5-inches Moist, Loose, Dark Brown Well-Graded SAND with Silt and Gravel (Alluvial)							(2)
8.0				296.4				Highly Weathered Rock sampled as: Moist, Very Dense, Gray Silty SAND trace mica							
8.5				285.9				Auger Refusal at 8.5'							
10.4	C1	57.5 / 60 / 96%	55	294.0				Moderately Fractured to Sound, Hard, Slightly Weathered, Light Gray, Medium to Coarse-Grained GNEISS (Oella)							
13.5				290.9				9.4' to 9.6' Broken to Cobble							
15.0	C2	58.5 / 60 / 98%	83	288.4				Extremely to Slightly Fractured, Hard, Slightly to Moderately Weathered, Light Brownish Gray, Medium-Grained GNEISS (Oella)							
18.5				285.9				Moderately Fractured to Sound, Hard, Slightly Weathered, Light Gray, Medium-Grained GNEISS (Oella)							Terminated at 18.5 feet

REMARKS: (1) Offset 12' due to access conditions. (2) Barrel dropped rapidly at 3.2 feet. Possible void.

**BORING LOG BORING B-10**  
PAGE 1 OF 1

The Robert B. Baller Company  
Geotechnical and Environmental Engineers  
Materials and Construction Inspection and Testing  
Telephone No. (410) 363-1555  
www.balterco.com

CLIENT Howard Hughes PROJECT NAME The Crescent Bridges and Culverts  
PROJECT LOCATION Columbia, MD PROJECT NUMBER 16617-0 DATE TESTED \_\_\_\_\_

RIG ATV R-Tired CME 750 METHOD Hollow Stem Auger SAMPLER: 2-in OD SS/NX Core HAMMER: 140# FALL: 30" AUTO? Yes  
DATE STARTED 1/27/15 COMPLETED 1/27/15 WATER LEVELS \_\_\_\_\_  
DRILLER Dennis Strawderman HELPER Blake Strawderman DATE \_\_\_\_\_ TIME \_\_\_\_\_ ELAPSED HOURS \_\_\_\_\_ CASING DEPTH (ft) \_\_\_\_\_ HOLE DEPTH (ft) 4.8 WATER DEPTH (ft) 3.0 WATER ELEV (ft) 300.4  
REVIEWED BY Matt Leone SITE DELAYS \_\_\_\_\_  
LOCATION As Slaked BULK SAMPLES \_\_\_\_\_

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWSES* OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (pcf)	NMC %	#200	PL	LL	PI	REMARKS
0.4				303.4				SURFACE EL = 303.4 ft							(1)
5	S1	20-23-18	41			SP-SM		Moist, Dense, Brown Poorly-Graded SAND with Silt, Gravel and Feldspar Fragments (Residual)							
8.0				295.4				Highly Weathered Rock sampled as: Moist, Very Dense, Pinkish Gray Silty SAND							
8.5				294.9				Auger Refusal at 8.5'							
10.4	C1	60 / 60 / 100%	48	294.9				Moderately Fractured to Sound, Hard, Slightly Weathered, Light Pinkish Gray, Medium-Grained GNEISS (Oella)							
13.5				289.9				Extremely to Slightly Fractured, Hard, Slightly Weathered, Light Pink and Gray, Medium to Coarse-Grained PEGMATITE (Pegmatite)							
15.0	C2	57 / 60 / 95%	65	288.4				Slightly Fractured to Sound, Hard, Slightly Weathered, Light Gray, Medium-Grained GNEISS (Oella)							
18.5				284.9				Terminated at 18.5 feet							

REMARKS: (1) Water encountered during drilling at 3'.

EL. 299.5  
ABUTMENT 'B'  
BOTTOM OF  
FOOTING

EL. 285.0  
ESTIMATED PILE  
TIP ELEVATION

EL. 299.5  
ABUTMENT 'B'  
BOTTOM OF  
FOOTING

EL. 285.0  
ESTIMATED PILE  
TIP ELEVATION

BORING B-9

BORING B-10

DATUM EL. 250.00

DATUM EL. 250.00

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/17/2018  
Chief, Bureau of Highways Date

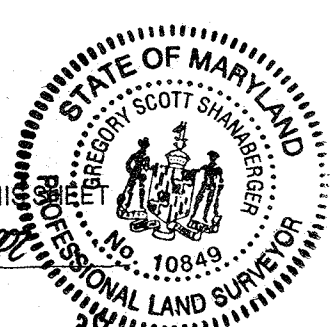
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 3/7/18  
Chief, Division of Land Development Date

*[Signature]* 2-27-18  
Chief, Development Engineering Division Date

**FOR PERMITTING - COMPLETE BRIDGE CONSTRUCTION PLANS UNDER SEPARATE SUBMITTAL.**

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.

*[Signature]*  
G. SCOTT SHANBERGER  
SHANBERGER & LANE  
Professional L.S. #10849 Exp. Date 4/2/2018  
AS-BUILT DATE: 12/16/2019

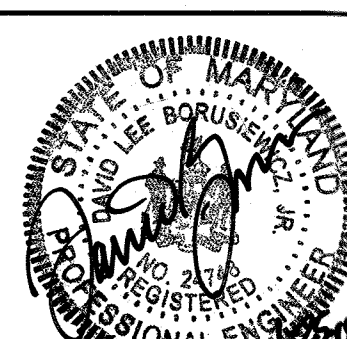


**WALLACE MONTGOMERY**  
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10150 York Road, Suite 200  
Hunt Valley, Maryland 21030  
410.484.5095 Tel / 410.667.0925 Fax  
www.WallaceMontgomery.com A Limited Liability Partnership

DATE	REVISION	BY	APP'R.

PREPARED FOR:  
THE HOWARD HUGHES CORPORATION  
LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: BOB JENKINS  
410-964-5443

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. 24748  
EXPIRATION DATE: 1-14-20

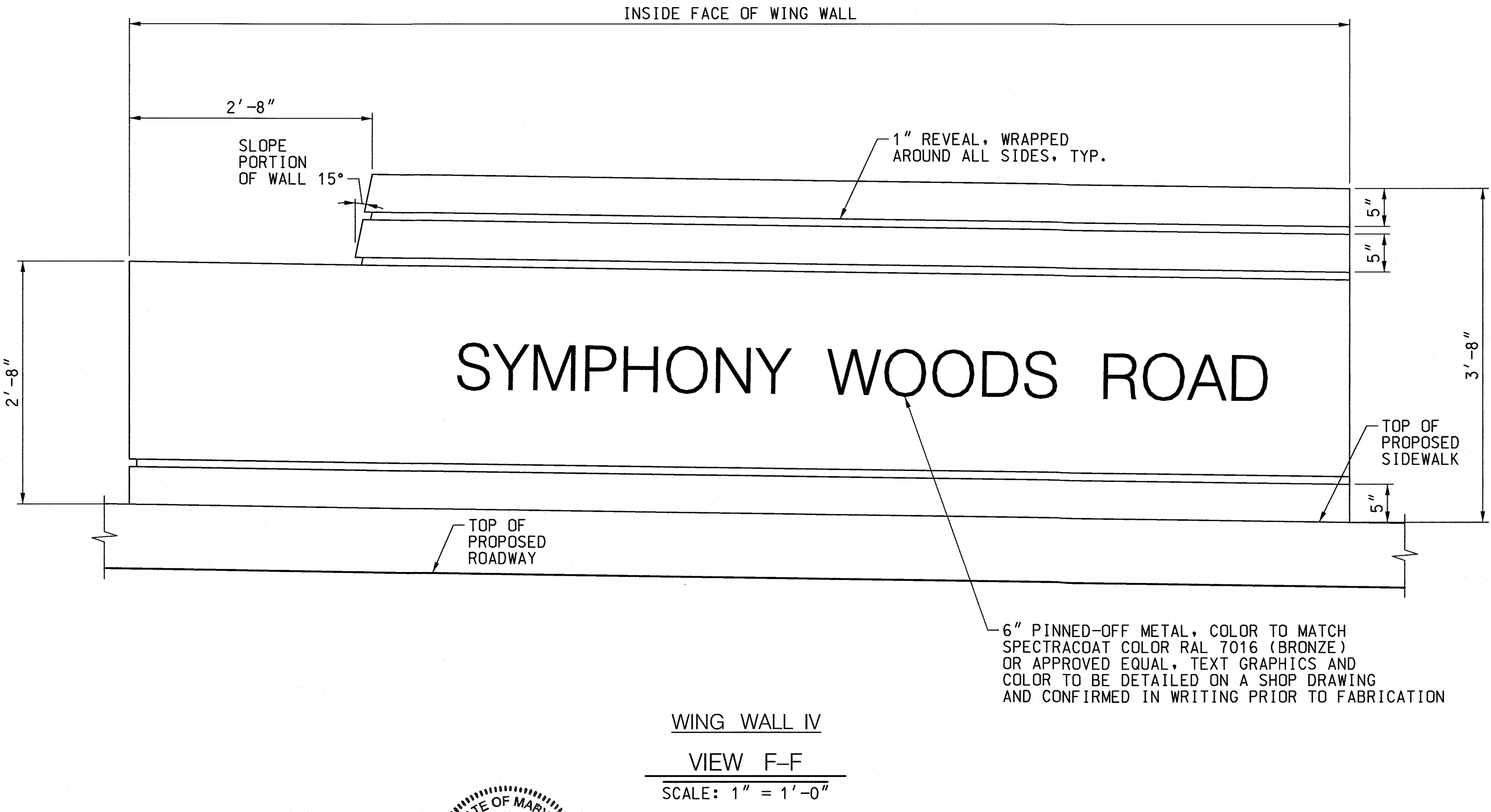
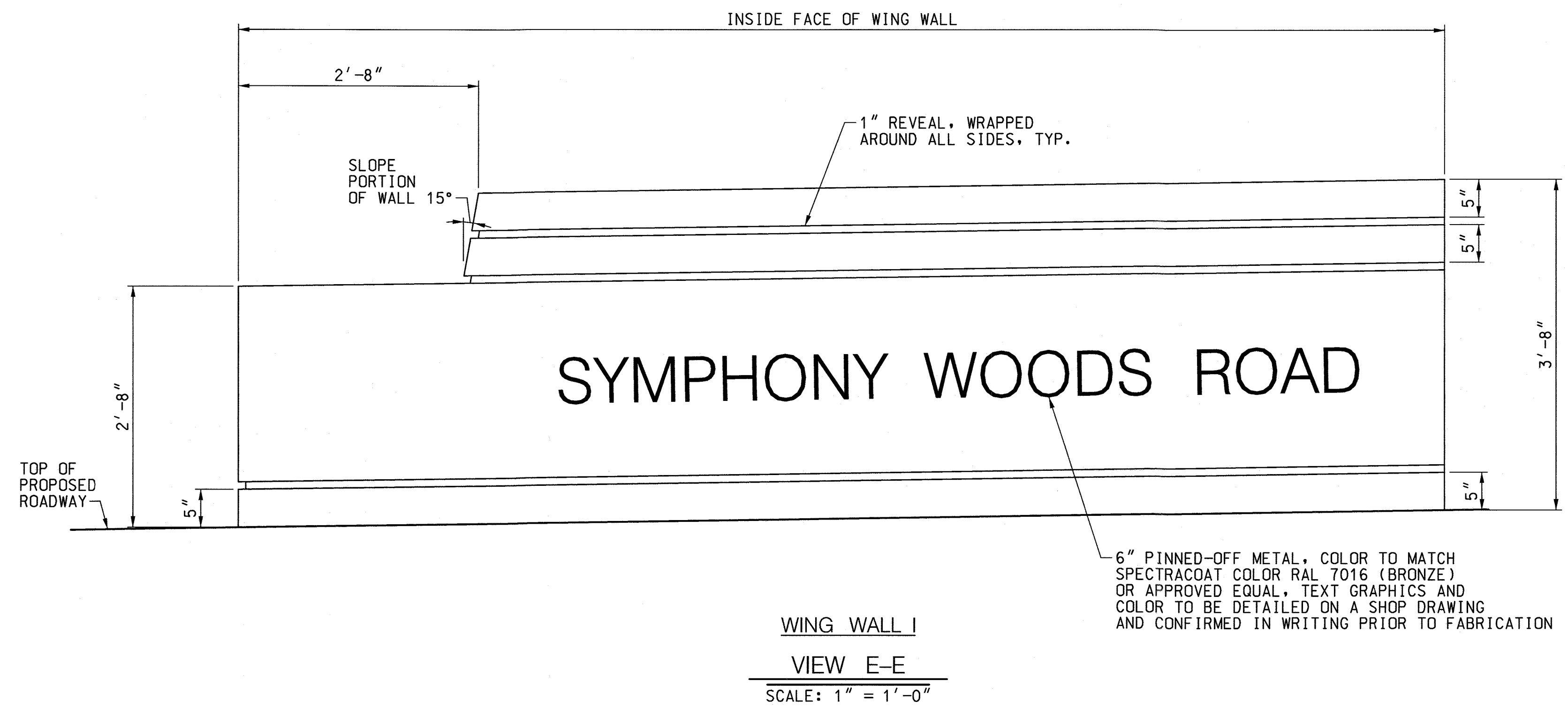


BORINGS AND DRIVE TESTS  
DOWNTOWN COLUMBIA  
CRESCENT NEIGHBORHOOD  
SYMPHONY WOODS ROAD

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	33 OF 39

HOWARD COUNTY, MARYLAND





NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.

G. SCOTT SHANABERGER  
SHANABERGER & LANE  
Professional L.S. #10849 Exp. Date 4/2/2018  
AS-BUILT DATE: 12/16/2019



NOTE:  
FOR LOCATIONS OF VIEWS  
E-E AND F-F, SEE SHEET 28.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 2/6/2018  
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 3/7/18  
Chief, Division of Land Development Date

*[Signature]* 2.27.18  
Chief, Development Engineering Division Date

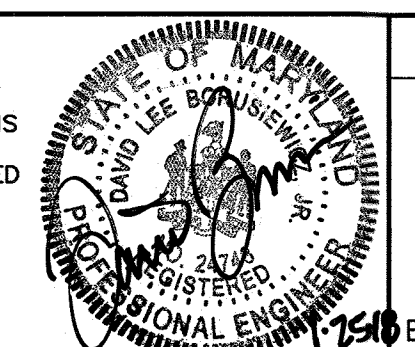
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DATE	REVISION	BY	APP'R.

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LICENSE NO. 24748  
EXPIRATION DATE: 1-14-20



MISCELLANEOUS DETAILS  
DOWNTOWN COLUMBIA  
CRESCENT NEIGHBORHOOD  
SYMPHONY WOODS ROAD

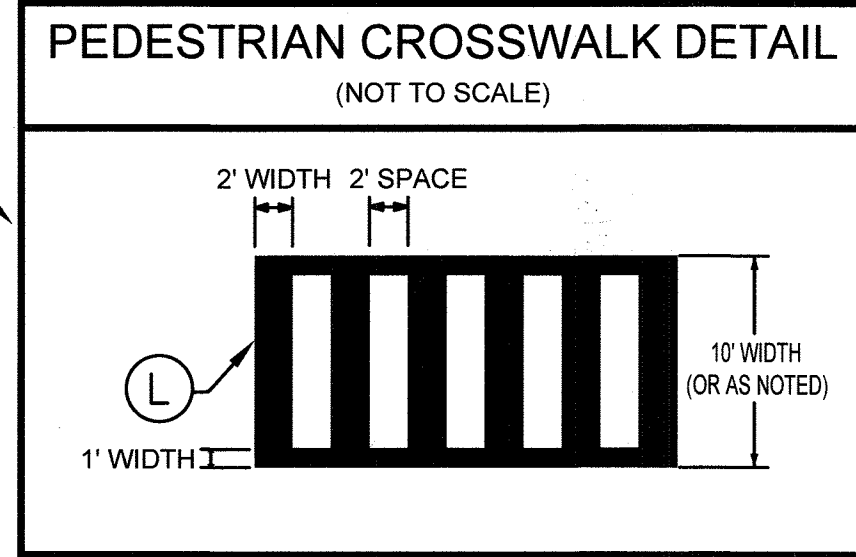
ELECTION DISTRICT No. 5  
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	11071
DATE	TAX MAP - GRID	SHEET
JANUARY 2018	36 - 01	34 OF 39





SYMPHONY WOODS ROAD IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

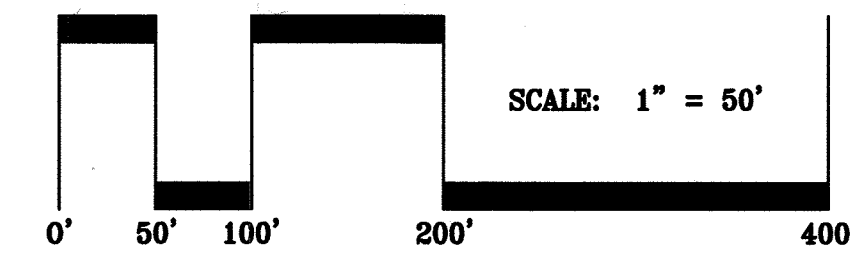


PAVEMENT MARKING INSTALLATION NOTES

- (A) INSTALL 5" WHITE PAVEMENT MARKING.
(B) INSTALL 5" YELLOW PAVEMENT MARKING.
(C) INSTALL 5" WHITE PAVEMENT MARKING. (10' SKIP, 30' SPACING).
(D) INSTALL 5" DOUBLE YELLOW PAVEMENT MARKING.
(E) INSTALL 24" WHITE PAVEMENT MARKING.
(F) INSTALL WHITE PAVEMENT LEGEND AS SHOWN.
(G) INSTALL 10' WIDE PEDESTRIAN CROSSING PAVEMENT MARKING.
(H) INSTALL 12" YELLOW PAVEMENT MARKING (45°, 20' SPACING).
(J) INSTALL 5" WHITE PAVEMENT MARKING. (3' SKIP, 9' SPACING).
(K) TIE INTO EXISTING PAVEMENT MARKINGS.
(L) INSTALL 12" WHITE PAVEMENT MARKING (45°, 20' SPACING).
(M) INSTALL 12" x 18" WHITE YIELD WARNING PAVEMENT MARKINGS (12" SPACING).
(N) ERADICATE EXISTING PAVEMENT MARKING AS SHOWN.

PAVEMENT MARKINGS NOTES

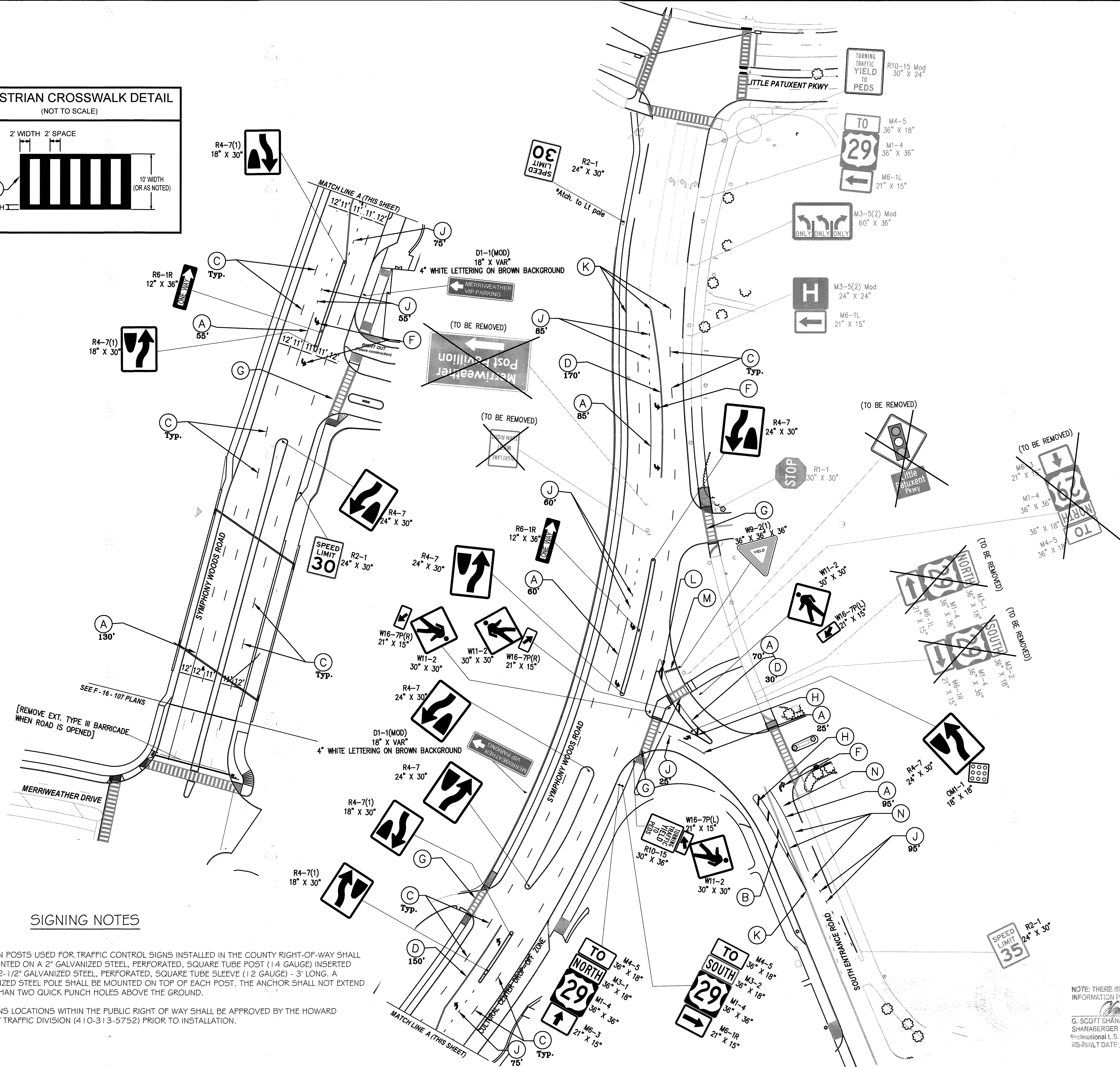
- 1. ALL LONG LINES MARKINGS TO BE APPLIED USING THERMOPLASTIC MATERIAL.
2. THE CROSSWALK AND ARROWS TO BE INSTALLED USING PREFORMED HEAT APPLIED TAPE OR THERMOPLASTIC.
3. ALL PAVEMENT MARKINGS ARE TO BE LOCATED OR APPROVED BY THE TRAFFIC DIVISION PRIOR TO THE PLACEMENT OF ANY MARKINGS.
4. ALL EXISTING PAVEMENT MARKING IN CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS ARE TO BE REMOVED BY GRINDING ONLY. HOWARD COUNTY TRAFFIC (410-313-5752) WILL DETERMINE WHICH EXISTING MARKINGS SHALL BE REMOVED.



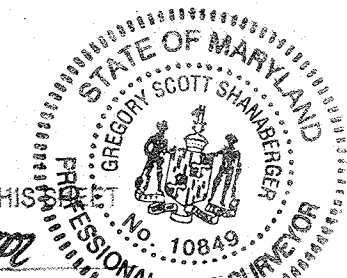
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development
Chief, Development Engineering Division

SIGNING NOTES

- 1. 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 (1.4 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE SHALL BE MOUNTED ON TOP OF EACH POST. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO QUICK PUNCH HOLES ABOVE THE GROUND.
2. ALL SIGNS LOCATIONS WITHIN THE PUBLIC RIGHT OF WAY SHALL BE APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO INSTALLATION.



NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.
G. SCOTT SHANBERGER
SHANBERGER & LANE
Professional L.S. #10849 Exp. Date 4/2/2019
AS-BUILT DATE: 12/14/2019



WELLS + ASSOCIATES, INC.
TRANSPORTATION, TRAFFIC AND PARKING CONSULTANTS
1420 Spring Hill Road, Suite 610, Tysons, Virginia 22102
Phone: 703/917-6620 Facsimile: 703/917-0739

Table with columns: DES. MJT, DRN. Wsl, CHK. MJT, DATE, REVISION, BY, APPR.

PREPARED FOR: THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MARYLAND 21044
ATTN: BILL ROWE
410-964-4987

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. 37882, EXPIRATION DATE: OCTOBER 15, 2019.

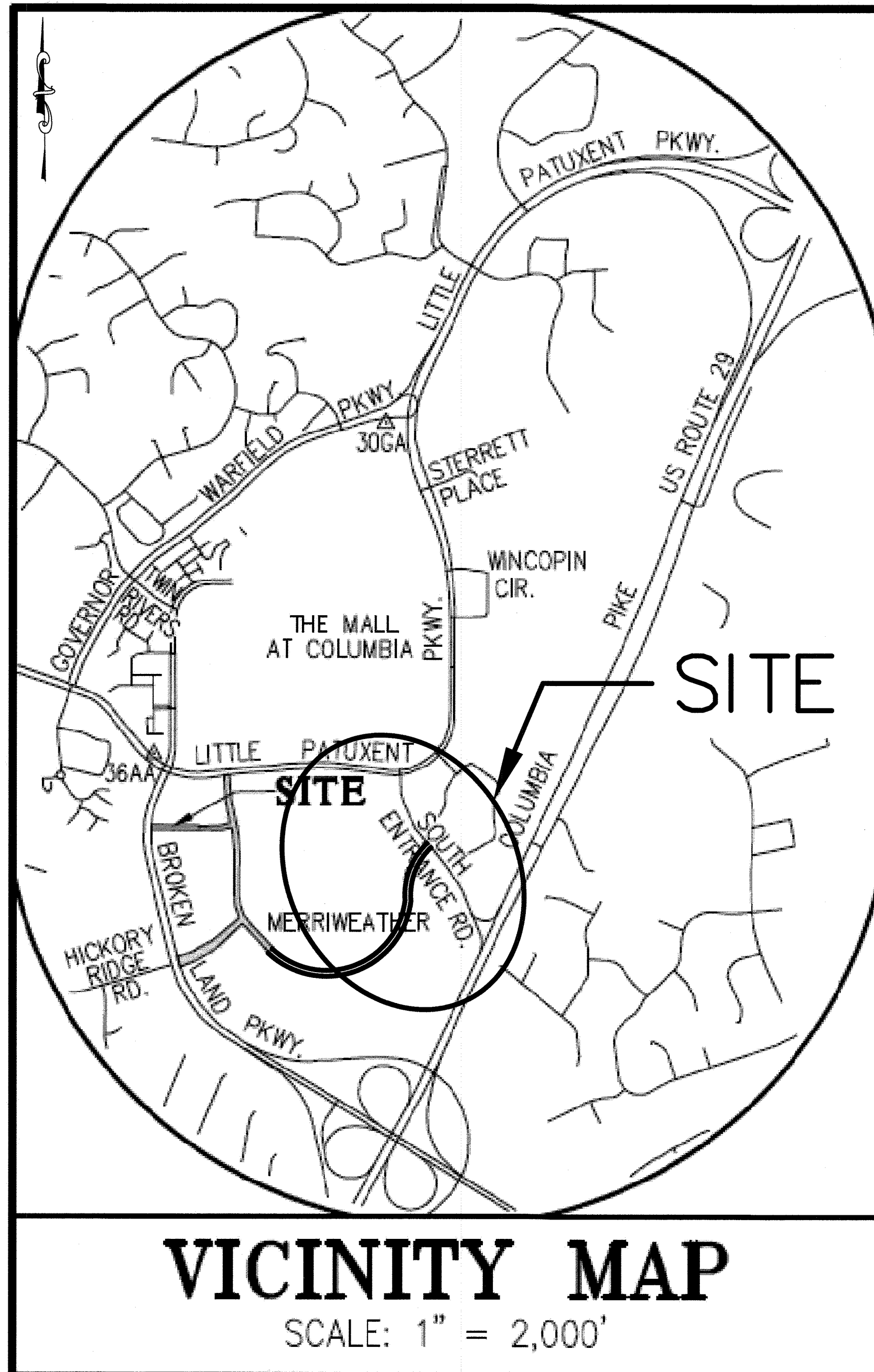
SIGNING AND STRIPING PLAN
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
SYMPHONY WOODS ROAD
ELECTION DISTRICT No. 5
HOWARD COUNTY, MARYLAND

Table with columns: SCALE (1" = 50'), ZONING (NT), G. L. W. FILE No. (11071), DATE (JAN. 2018), TAX MAP - GRID (36 - 01), SHEET (35 OF 39).



## TRAFFIC CONTROL NOTES

## FLAGGING OPERATION



1. ALL TEMPORARY TRAFFIC SIGNS, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES USED FOR MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND THE MARYLAND STATE HIGHWAY ADMINISTRATION (MDSHA) BOOK OF STANDARDS AND SPECIFICATIONS.
2. ALL TEMPORARY TRAFFIC SIGNS SHALL BE INSTALLED IN ACCORDANCE TO MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION ON MATERIALS, SECTION 104.08
3. WARNING SIGNS SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES.
4. ANY CORRECTIONS, MODIFICATIONS, OR ADDITIONS TO THE PLAN SHALL BE APPROVED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, TRAFFIC DIVISION.
5. MISS UTILITY SHALL BE NOTIFIED PRIOR TO PLACEMENT OF SIGNING, IF MOUNTING ON POSTS.
6. HOWARD COUNTY BUREAU OF ENGINEERING/TRANSPORTATION PROJECTS DIVISION (410-313-2014) SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY WORK.
7. THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS TRAFFIC DIVISION RESERVES THE RIGHT TO MODIFY OR ADJUST THE PLAN TO FIT SITE CONDITIONS AT ANY TIME.
8. SIGN INSTALLATION SHALL NOT LAST ANY LONGER THAN 15 MINUTES PER LOCATION. IF LONGER THAN 15 MINUTES APPROPRIATE TRAFFIC CONTROL AND PERMITS SHALL BE USED.
9. ALL SIGNS SHALL CONFORM TO CURRENT MDSHA MATERIAL AND REFLECTIVITY REQUIREMENTS.
10. ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS UNLESS PERMISSION FOR CLOSURE IS GRANTED BY THE PROPERTY OWNER/MANAGER. HOWEVER, ACCESSIBILITY FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.
11. ALL FLAGGERS SHALL BE CERTIFIED BY THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM VIEW TO ONCOMING TRAFFIC WHEN NOT IN USE.
13. NO HAZARDOUS MATERIALS SHALL BE STORED WITHIN THE PUBLIC RIGHT-OF-WAY.
14. ANY TEMPORARY TRAFFIC SIGNING AND MARKINGS THAT MAY CONFLICT WITH NORMAL TRAFFIC FLOW SHALL BE REMOVED OR COVERED AT THE END OF EACH DAY DURING CONSTRUCTION ON THIS PROJECT.
15. ALL EXISTING TRAFFIC CONTROL DEVICES THAT MUST BE REMOVED SHALL BE REPLACED IN THEIR PROPER LOCATION PRIOR TO THE COMPLETION OF THE PROJECT. COST FOR THE REPLACEMENT AND/OR REPAIR OF DEVICES DAMAGED AS A RESULT OF THE PROJECT SHALL BE ASSESSED TO THE CONTRACTOR.
16. AT THE COMPLETION OF THE PERMITTED WORK ACTIVITY, CONDITIONS WITHIN THE PUBLIC SPACE SHALL BE FULLY RESTORED TO THOSE WHICH EXISTED PRIOR TO THE WORK ACTIVITY.
17. WHEN PAVEMENT MARKINGS HAVE BEEN OBLITERATED BY THE WORK ACTIVITY, THE CONTRACTOR SHALL INSTALL ANY CRITICAL INTERIM PAVEMENT MARKING PRIOR TO THE END OF THE WORK DAY.
18. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES. AT ANYTIME THE CONTRACTOR DOES NOT MAKE NECESSARY REPAIRS WITHIN 24 HOURS OF NOTIFICATION, APPROXIMATE WORK TIME REDUCTION AND/OR FINES MAY APPLY.
19. ALL WORK WITHIN PUBLIC RIGHT OF WAY AND/OR LANE CLOSURE MUST ONLY BE PERFORMED DURING THE HOURS OF 9AM TO 3PM, OR AS DIRECTED BY HOWARD COUNTY TRAFFIC DIVISION.
20. NO LANE CLOSURES PERMITTED DURING SPECIAL MERRIWEATHER EVENTS AND CONCERTS AND MAJOR HOLIDAYS.
21. THE CONTRACTOR AND/OR THE DEVELOPER MUST COORDINATE WITH MERRIWEATHER POST PAVILION DURING SPECIAL EVENTS AND CONCERTS. WORK MUST BE RESTRICTED TO AVOID CONFLICTS DURING THESE TIMES, AS DETERMINED BY HOWARD COUNTY TRAFFIC DIVISION.
22. THE TERMINAL ENDS OF THE CONCRETE JERSEY BARRIER SHALL BE PROTECTED BY A HOWARD COUNTY APPROVED IMPACT ATTENUATOR.

1. FLAGGING OPERATIONS SHALL BE UTILIZED TO CONTROL ACCESS TO DRIVEWAYS LOCATED IN THE WORK ZONES.
2. FLAGGING OPERATIONS SHALL BE UTILIZED IN ACCORDANCE WITH MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS AND MATERIALS, SECTION 104.31-01 AND SECTION 9.0 ON MARYLAND STANDARD MD 104.00-11 AND MD 104.00-12.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Melania* 2/17/2018  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Jim Van San* 3/7/18  
 Chief, Division of Land Development Date

*Chad* 2-27-18  
 Chief, Development Engineering Division Date

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.

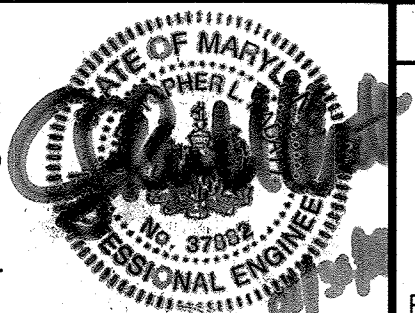
*G. Scott Shanaberger*  
 G. SCOTT SHANABERGER  
 SHANABERGER & LANE  
 PROFESSIONAL L.S. #10848 Exp. Date: 4/27/2019  
 AS-BUILT DATE: 12/14/2018

**WA** WELLS + ASSOCIATES, INC.  
 TRANSPORTATION, TRAFFIC AND PARKING CONSULTANTS  
 1420 Spring Hill Road, Suite 610, Tysons, Virginia 22102  
 Phone: 703/917-6820 Facsimile: 703/917-0739

DES. MUT	DRN. WSD	CHK. MUT	DATE	REVISION	BY	APPR.

PREPARED FOR:  
 THE HOWARD HUGHES CORPORATION  
 10480 LITTLE PATUXENT PARKWAY  
 SUITE 400  
 COLUMBIA, MARYLAND 21044  
 ATTN: BILL ROWE  
 410-964-4987

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. 37882  
 EXPIRATION DATE: OCTOBER 16, 2019



MAINTENANCE OF TRAFFIC - GENERAL NOTES

DOWNTOWN COLUMBIA  
 CRESCENT NEIGHBORHOOD  
 SYMPHONY WOODS ROAD

ELECTION DISTRICT No. 5  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
NTS	NT	11071
DATE	TAX MAP - GRID	SHEET
JAN. 2018	36 - 01	36 OF 39











