# SITE DEVELOPMENT PLAN

## CENTENNIAL PLACE

## PARCEL A

## 2ND ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND

### GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" FOR WORK IN THE COUNTY RIGHT-OF-WAY. MSHA STANDARDS AND SPECIFICATIONS, SHALL BE USED FOR ALL CONSTRUCTION IN THE STATE RIGHT-O-WAY.

2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK. THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF HIGHWAYS AT (410) 313-2450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER AND SEWER MAINS.

3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE STATE HIGHWAY ADMINSTRATION (SHA). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.

5. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE PER HOWARD COUNTY RECORDS.

6. PUBLIC WATER AND SEWER IN CENTENNIAL LN PROVIDED BY CONTRACT # 24-1726(WATER) PROPOSED WATER AND SEWER TO THE LOTS WILL BE PROVIDED ACCORDANCE WITH SECTION 18,122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.

7. THIS SITE IS LOCATED IN THE LITTLE PATUXENT RIVER WATERSHED.

8. ALL FILL AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED AND VERIFIED IN ACCORDANCE WITH AASHTO T-180--STANDARD.

9. CONTRACTOR SHALL MAINTAIN ALL SEDIMENT CONTROL DEVICES WITHIN THE LIMITS OF THE SITE DURING CONSTRUCTION OF THE SITE IMPROVEMENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES AS MAY BE NECESSARY DURING CONSTRUCTION AND/OR BY GOVERNING AGENCIES.

10. PER FEMA MAP# 240044033B DATED DECEMBER 04, 1986, THIS SITE IS NOT LOCATED WITHIN THE 100 YR FLOODPLAIN.

11. THERE ARE NO EXISTING WETLANDS ON SITE.

12. THERE ARE STEEP SLOPES, BUT NO HIGHLY ERODIBLE SOILS ON THIS SITE.

13. THERE ARE NO KNOWN CEMETERIES OR BURIAL GROUNDS ON THIS SITE. HOWEVER, UPON DISCOVERY OF ANY EVIDENCE OF BURIAL OR GRAVES, THE DEVELOPER WILL BE SUBJECT TO SECTION 16.1305 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

14. ALL ADJACENT PROPERTIES ARE NON RESIDENTIAL USES.

15. THE SUBJECT PROPERTY IS ZONED B-2 PER THE COMPREHENSIVE ZONING PLAN (02/02/2004.)

16. THE TOPOGRAPHY AND SITE BOUNDARY WERE PREPARED BY christopher consultants, ON APPROXIMATELY JULY 19, 2005

17. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. MONUMENT NUMBERS 24AB AND 0066 WERE USED FOR THIS PROJECT (NAD 83/91.)

18. ALL EXISTING UNDERGROUND TO BE FIELD VERIFIED. UTILITIES CONTRACTOR SHALL VERIFY THE SIZE AND LOCATIONS OF ALL UNDERGROUND UTILITIES AND TEST PIT ALL UTILITIES, INCLUDING PROPOSED TIE IN LOCATIONS, AT LEAST 5 DAYS PRIOR TO STARTING ANY WORK ON THESE DRAWINGS. DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IN ADVANCE OF CONSTRUCTION START.

19. THE CONTRACTOR SHALL INSURE THAT CURRENT AS BUILT RECORDS ARE MAINTAINED DURING CONSTRUCTION. UPON COMPLETION OF CONSTRUCTION, CERTIFIED (i.e. P.E. STAMPED) AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE OWNER.

20. THE SITE IS SUBJECT TO REDEVELOPMENT CRITERIA FOR STORMWATER MANAGEMENT. THE REDEVELOPMENT INCLUDES WATER QUALITY MANAGEMENT FOR 0.44 AC OF IMPERVIOUS AREA, WHICH WILL BE PROVIDED IN A BIORETENTION FACILITY. RECHARGE IS MET BY THE PLACEMENT OF STONE BENEATH THE BIORETENTION AREA. THE BIORETENTION FACILITY HAS BEEN DESIGN IN ACCORDANCE WITH THE CRITERIA LISTED ON P 3.31 TO 3.41 OF THE 2000 MDE DESIGN REQUIREMENTS AND CONFORMS TO DETAIL F-6.

21. FOREST CONSERVATION OBLIGATION OF 0.18 ACRES OF AFFORESTATION FOR THIS PLAN HAS BEEN MET BY FEE-IN-LIEU PAYMENT OF $3,920.40 MADE TO THE HO. CO. FOREST CONSERVATION FUND.

22. THE LANDSCAPE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE, AND THE LANDSCAPE MANUAL.

23. LANDSCAPE SURETY IN THE AMOUNT OF $13,110.00 HAS BEEN POSTED AS A PART OF THE DEVELOPER'S AGREEMENT.

24. FRONTAGE IMPROVEMENTS ALONG US ROUTE 40 EXTEND TO THE PROPERTY LINE PER SHA REQUEST.IMPROVEMENTS AND FREDERICK RD. ON EXTEND 200 FT BEYOND PROPERTY LINE ON THE WEST SIDE, AND TO THE PROPERTY LINE ON THE EAST SIDE.

25. ON 08/25/06 THE HOWARD COUNTY PLANNING DIRECTOR APPROVED WP-06-052 WHICH WAIVED SECTION 16.119(f) PARTS 1 & 2 TO PERMIT ONE (1) COMMERCIAL DRIVEWAY ACCESS POINT ONTO A MINOR ARTERIAL PUBLIC ROAD, FREDERICK ROAD AND ANOTHER COMMERCIAL DRIVEWAY ACCESS POINT ONTO AN INTERMEDIATE ARTERIAL PUBLIC ROAD US ROUTE 40.

26. ASSOCIATED PLANS: LISTED UNDER GARRICK PROPERTY OR CENTENNIAL PLACE.
   FINAL PLAT: F-08-52
   WAIVER PETITION: WP-06-052
   RESUBDIVISION PLAT: F-07-122 PLAT#18981

27. THE EXISTING DWELLING ON SITE WILL BE DEMOLISHED.

28. UNLESS OTHERWISE NOTED, DIMENSIONS FROM CURB ARE MEASURED AT FACE OF CURB.

29. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.

30. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ON THESE PLANS:

-MISS UTILITY 1-800-257-7777
-HOWARD COUNTY DPWT, BUREAU OF UTILITIES (410) 313-4900
-BALTIMORE GAS AND ELECTRIC COMPANY CONTRACTOR SERVICES (410)850-4620
-BALTIMORE GAS AND ELECTRIC COMPANY UNDERGROUND DAMAGE CONTROL (410)787-9068
-VERIZON 1-800-446-5266

31. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS AS NECESSARY TO GRADE THE SITE AND COMPLETE ANY REQUIRED EXCAVATIONS.

32. christopher consultants, ltd. SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR PROCEDURES, UTILIZED BY THE CONTRACTOR , NOR FOR THE SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES, OR FOR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND STANDARD CONSTRUCTION PRACTICES.

33. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN FREE FROM DAMAGE AND MAINTAIN UNINTERRUPTED SERVICE TO ALL USERS. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OR SUBCONTRACTOR'S ACTIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.

34. SCALING OF THESE PLANS IS DISCOURAGED UNLESS DIRECTED BY THE ENGINEER. IN THE EVENT OF A DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS, THE FIGURED DIMENSIONS SHALL BE HELD.

35. T.B.R. = TO BE REMOVED

36. PROVIDE SIGNAGE ON THE BUILDING AND AT THE STREET IDENTIFYING THE BUILDING ADDRESS; IDENTIFY EACH SEPARATE SUITE BY LETTER.

37. THE UPPER LEVEL OF THE PARKING DECK WILL BE RESTRICTED TO VEHICLES UNDER 12'-0" TALL A HEIGHT RESTRICTION BAR WILL BE INSTALLED OVERHEAD.

38. ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 134.

39. FOUNDATION FOOTER FOR BLDG. B IS NOT PERMITTED TO EXTEND BEYOND THE PARCEL LINE.

40. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

41. STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993). THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.

42. PER HOWARD COUNTY BUILDING CODE SECTION 904.1.1 ALL BUILDINGS IN EXCESS OF 5,000 SF IN SIZE WILL HAVE A COMPLETE AUTOMATIC DESIGNED IN ACCORDANCE WITH NFPA #13.

43. A KNOX BOX FOR FIRE DEPARTMENT ACCESS IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE APPROXIMATELY 4-5' IN HEIGHT AND NO MORE THAN 6' LATERALLY FROM THE DOOR. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED.

44. ALL EXISTING UNDERGROUND UTILITIES TO BE FIELD VERIFIED.

45. TREES WITH MATURE HEIGHTS GREATER THAN 25' SHALL NOT BE PLANTED WITHIN 20' OF EITHER SIDE OF THE OF THE UTILITY POLE LINES. TREES WITH MATURE HEIGHTS GREATER THAN 40' SHALL NOT BE PLACED WITHIN 45' OF THE UTILITY POLE LINES. TREES PLANTED OR RETAINED TO COMPLY WITH THE FOREST CONSERVATION PLAN OR OTHER PERPETUAL EASEMENT REQUIREMENTS SHALL MET THE ABOVE CONDITIONS. BGE SHALL HAVE THE PERPETUAL RIGHT TO TRIM OR REMOVE ANY PROTECTED TREES IF IN THE SOLE OPINION OF BGE, THE TREE OR TREES ARE ENDANGERING THE OVERHEAD ELECTRIC FACILITIES.

### SITE ANALYSIS DATA CHART

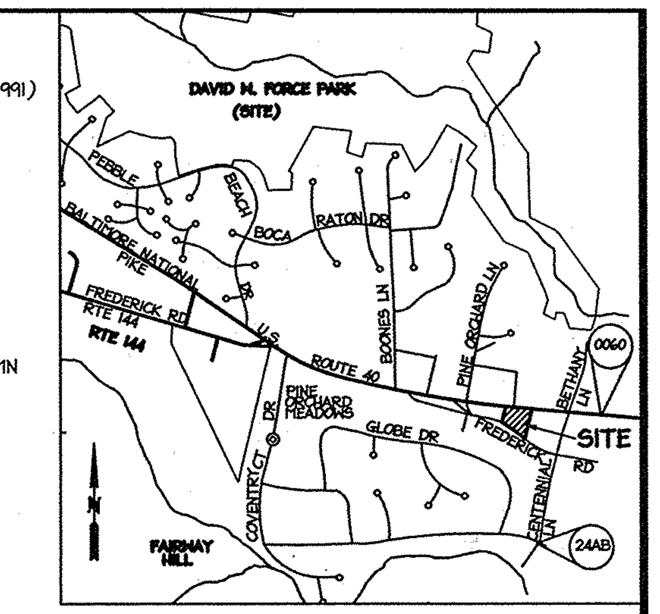
1. GENERAL SITE DATA
   a. PRESENT ZONING: B-2 PER THE 02/02/2004 COMP. ZONING PLAN
   b. SITE AREA: ±1.20 ACRES
   c. ACREAGE OF "PARCEL A": 1.1902 AC
   d. PROPOSED USE OF SITE OR STRUCTURE(S): RETAIL OFFICE SPACE AND BANK
   e. PROPOSED WATER AND SEWER SYSTEMS: PUBLIC WATER & SEWER
   f. PROPOSED NUMBER OF BUILDINGS: TWO (2)
   g. PROPOSED BUILDING TABULATION:
      BLDG. A:
      BANK: 3190 SF
      BLDG. B:
      OFFICE: 2ND FLOOR, 5273.0SF RESTAURANT: 1ST FLOOR, 1,500.0 SF
      RETAIL: 1ST FLOOR, 7,170 .0SF
      TOTAL: BLDG B: 13,943.0SF
      TOTAL: 17,133SF
2. AREA TABULATION
   a. TOTAL PROJECT AREA: 1.1902 AC.±
   b. AREA OF THIS PLAN SUBMISSION: 1.1902 AC±
   c. LIMIT OF DISTURBED AREA: 1.46 AC.±
4. PARKING SPACE DATA
   a. NUMBER OF PARKING SPACES REQUIRED BY ZONING REGULATIONS AND CRITERIA: 86 SPACES
      BANK3.3 SP/ 1000 SF — 3190 SF = 11 SPACES — RESTAURANT 14 SP/1,000 SF = 21 SPACES
      RETAIL 5 SP/ 1000 SF — 7170 SF = 36 SPACES
      OFFICE 3.3 SP/1000 SF — 5273 SF = 18 SPACES
      86. TOTAL SPACES (SEE 4.e.)
   b. TOTAL NUMBER OF PARKING SPACES PROVIDED ON-SITE: 78 (4.55+/- SP/1000 S.F.) (SEE 4e.)
   c. NUMBER OF HANDICAPPED PARKING SPACES PROVIDED: 5. SPACES (INCLUDED IN PARKING SPACES PROVIDED)
   d. NO CHANGE IN USE(S) OR THE SQUARE FOOT OF USE(S) IS PERMITTED WITHOUT COMPLIANCE WITH THE PARKING REQUIREMENTS OF ZONING SECTION 133 AND APPROVAL BY THE DPZ.
   3 e. PER SECTION 133.0.F.1. OF THE HOWARD COUNTY ZONING REGULATIONS, SHARED PARKING ADJUSTMENT, THE MAXIMUM REQUIRED PARKING USE IS 70 SPACES. SEE CHART, SHEET TWO.

### BENCHMARK

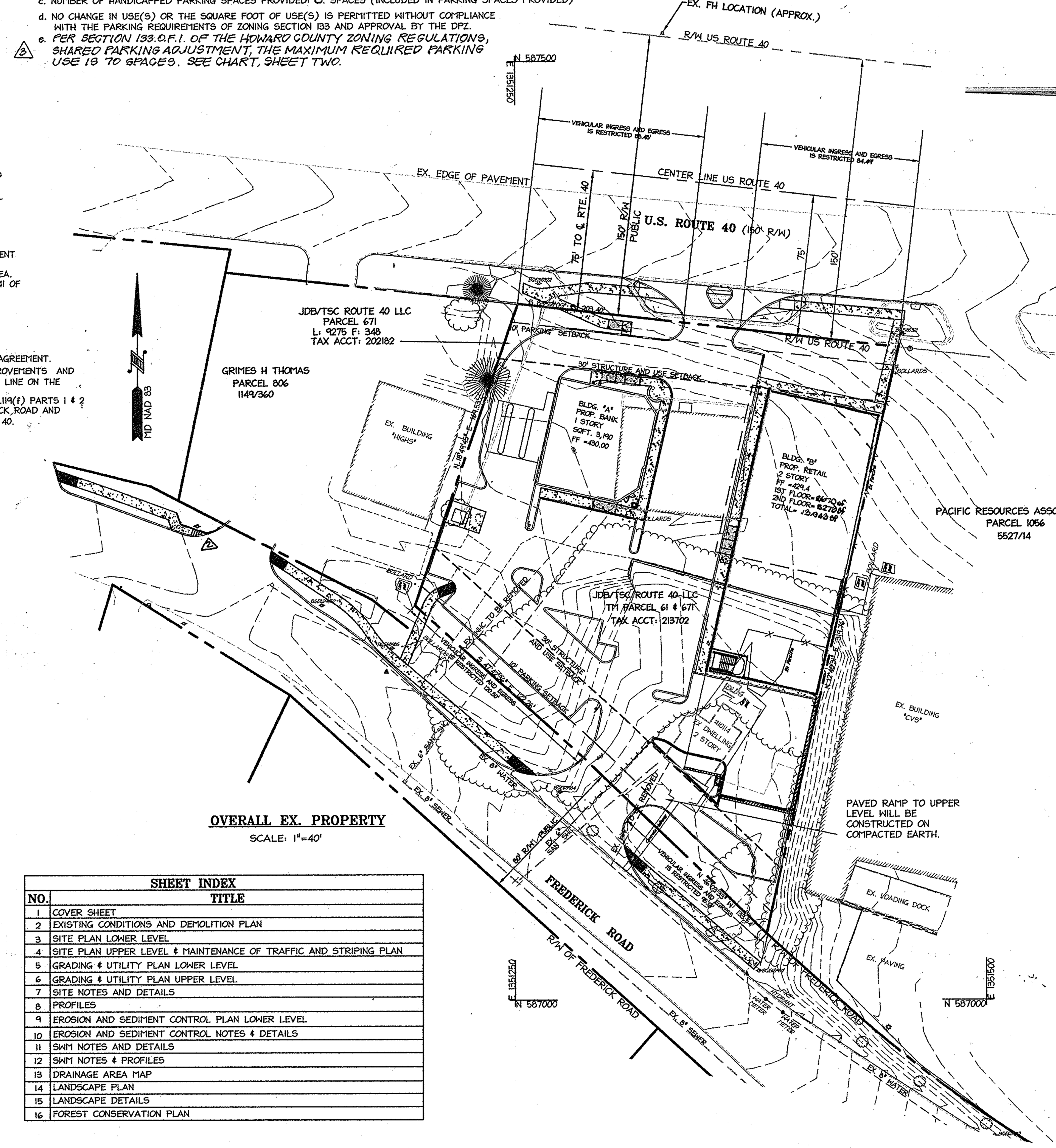
HORIZONTAL: MARYLAND NAD83 (ADJ 1991)
VERTICAL: NAVD88
GEODETIC SURVEY CONTROL: 24AB
NORTHING: 585836.919
EASTING: 1351345.55
ELEVATION: 383.214

GEODETIC SURVEY CONTROL: 0066
NORTHING: 587380.453
EASTING: 1352603.46
ELEVATION: 386.589

DESCRIPTIONS:
STAMPED DISC SET ON 3' DEEP COLUMN OF CONCRETE




**VICINITY MAP**
SCALE 1"=2000'



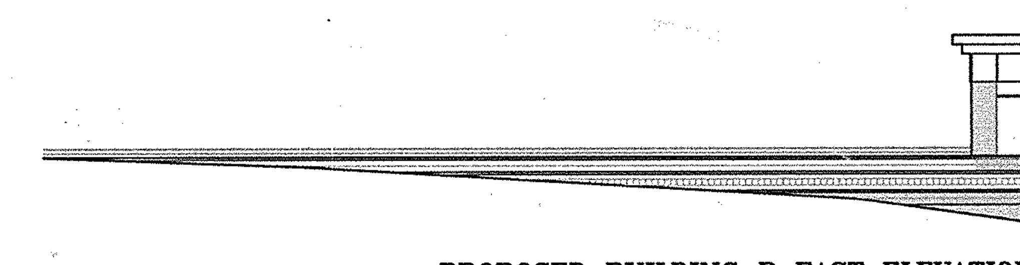

**OVERALL EX. PROPERTY**
SCALE: 1"=40'

### SHEET INDEX

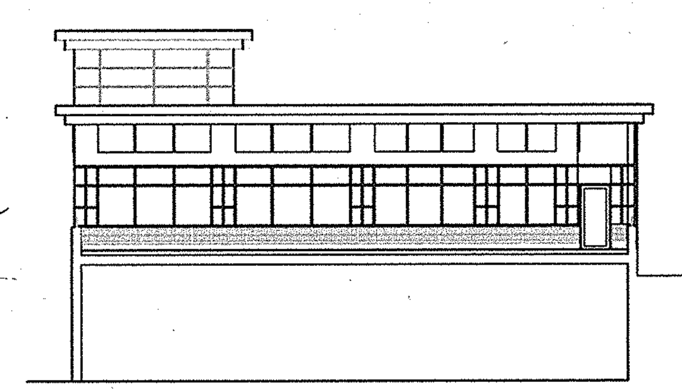


| NO. | TITLE |
|---|---|
| 1 | COVER SHEET |
| 2 | EXISTING CONDITIONS AND DEMOLITION PLAN |
| 3 | SITE PLAN LOWER LEVEL |
| 4 | SITE PLAN UPPER LEVEL & MAINTENANCE OF TRAFFIC AND STRIPING PLAN |
| 5 | GRADING & UTILITY PLAN LOWER LEVEL |
| 6 | GRADING & UTILITY PLAN UPPER LEVEL |
| 7 | SITE NOTES AND DETAILS |
| 8 | PROFILES |
| 9 | EROSION AND SEDIMENT CONTROL PLAN LOWER LEVEL |
| 10 | EROSION AND SEDIMENT CONTROL NOTES & DETAILS |
| 11 | SWM NOTES AND DETAILS |
| 12 | SWM NOTES & PROFILES |
| 13 | DRAINAGE AREA MAP |
| 14 | LANDSCAPE PLAN |
| 15 | LANDSCAPE DETAILS |
| 16 | FOREST CONSERVATION PLAN |

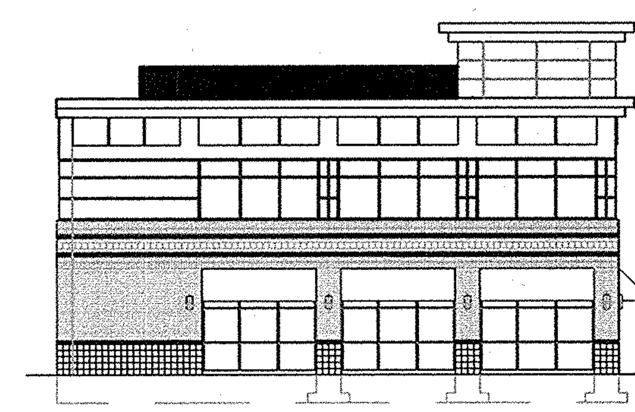




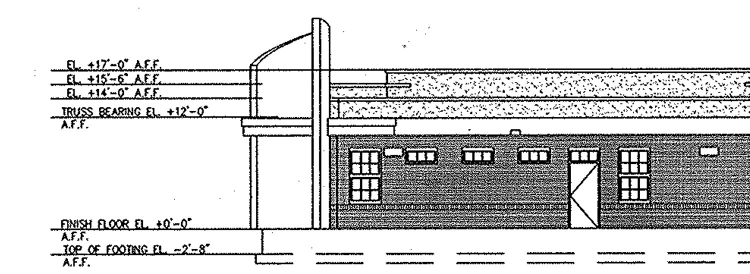

**PROPOSED BUILDING B EAST ELEVATION**
SCALE: 1"=16'



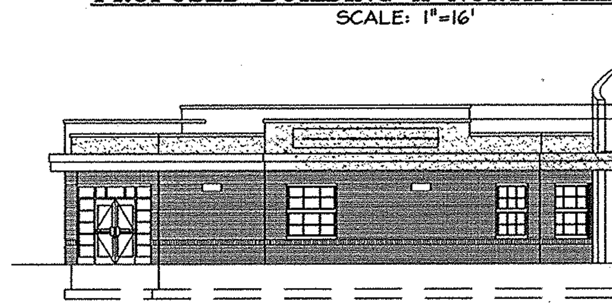

**PROPOSED BUILDING B SOUTH ELEVATION**
SCALE: 1"=16'



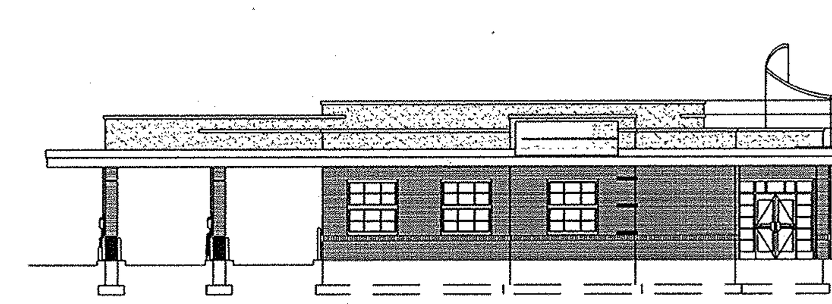

**PROPOSED BUILDING B NORTH ELEVATION**
SCALE: 1"=16'



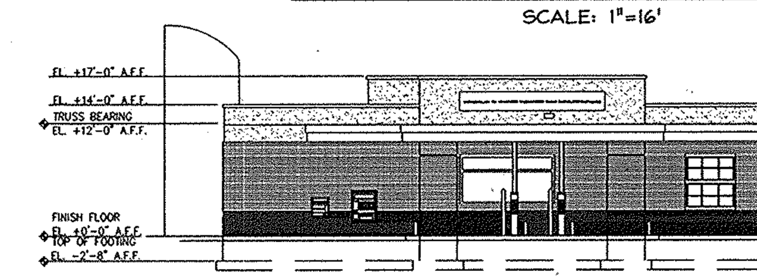

**PROPOSED BUILDING A NORTH ELEVATION**
SCALE: 1"=16'



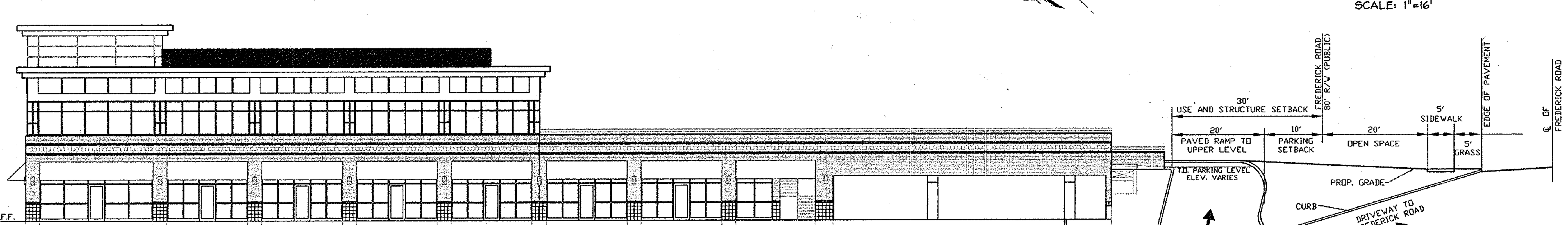

**PROPOSED BUILDING A EAST ELEVATION**
SCALE: 1"=16'




**PROPOSED BUILDING A SOUTH ELEVATION**
SCALE: 1"=16'




**PROPOSED BUILDING A WEST ELEVATION**
SCALE: 1"=16'




**PROPOSED BUILDING B WEST ELEVATION**
SCALE: 1"=16'

STATE OF MARYLAND JOHN M. HOUSEHOLDER PROFESSIONAL ENGINEER No. 29907
6.9.09
FOR REVISION #2

| DATE | No. | REVISION DESCRIPTION |
|---|---|---|
| 3/2/15 | 3 | ADJUST PARKING DATA |
| 6.08.09 | 2 | FREDERICK ROAD SIDEWALK REVISIONS |
| 8/8/07 | 1 | Building B Revised |

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

Chief, Development Engineering Division — Date 4/9/07

Chief, Division of Land Development — Date 4-26-07

Director — Date 4/26/07

STATE OF MARYLAND PAUL M. SILL PROFESSIONAL ENGINEER No. 32025
FOR REVISION #3 ONLY

**CENTENNIAL PLACE**


**OWNER / DEVELOPER**
JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
COLUMBIA, MD 21045
TEL. (443) 535 9200 / FAX (443) 535-9204

**christopher consultants**
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693


**ADDRESS CHART**

| LOT/PARCEL | STREET ADDRESS | |
|---|---|---|
| A | BLDG. A | 10161 BALTIMORE NATIONAL PIKE |
| | BLDG. B | 10155 BALTIMORE NATIONAL PIKE |

**PERMIT INFORMATION CHART**

| PROJECT NAME | | LOT/PARCEL NO. | | CENSUS TRACT |
|---|---|---|---|---|
| CENTENNIAL PLACE | | A | | 6023.03 |
| PLAT NO. 18981 | GRID NO. 0001 | ZONE B-2 | TAX MAP 24 | ELECTION DISTRICT 2ND |
| WATER CODE IE 28 PUBLIC | | | SEWER CODE 5325500 PUBLIC | |

2-28-07
DATE

STATE OF MARYLAND JOHN M. HOUSEHOLDER PROFESSIONAL ENGINEER No. 29907

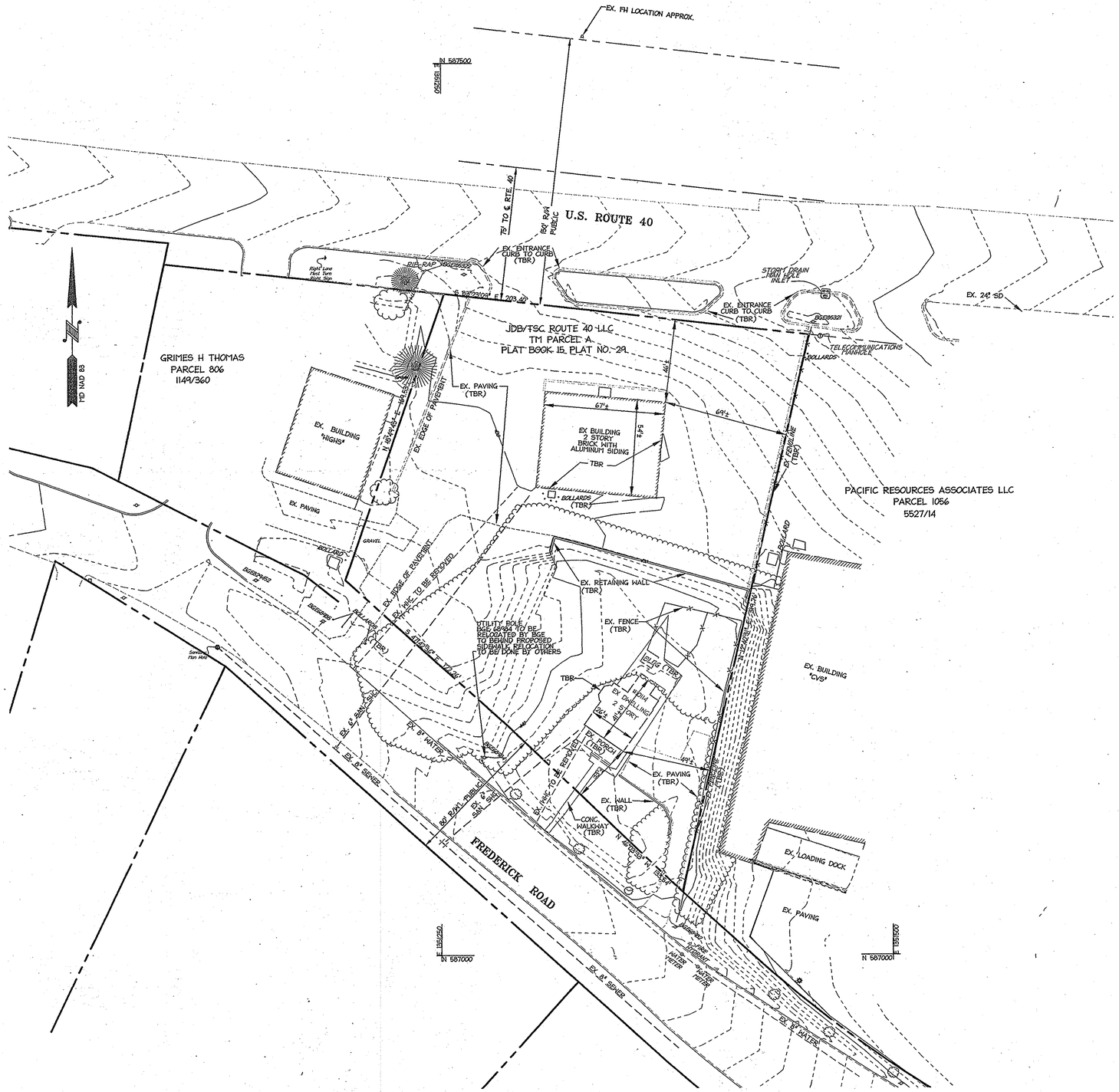
TITLE:

**COVER SHEET**

| DESIGN: KLZ,AH | SCALE: AS SHOWN | PROJECT: 05B801.01 |
|---|---|---|
| DRAWN: ADL / DAM | DATE: 11-15-06 | |
| CHECKED: JMH | APPROVED: | 1 OF 16 |

SDP-06-068

MDC-326(SDP)




## LEGEND

| | |
|---|---|
| EXISTING CONTOURS | 416 |
| EXISTING STORM DRAIN | EX. 12" RCP |
| EXISTING SANITARY SEWER | EX. 8" SAN |
| EXISTING WATER | EX. 6" WATER |
| EXISTING TRANSFORMER | |
| EXISTING TRANSFORMER | |
| EXISTING MAILBOX | |
| EXISTING FENCE POST | |
| EXISTING FENCE | X |
| PROPERTY LINE | |
| TO BE REMOVED | TBR |
| TREELINE | |

### ⚠ SHARED PARKING ADJUSTMENT CHART

| | REG. SPACES | ADJUSTED SPACES | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | WEEKDAY | | | | WEEKEND | | NIGHT |
| | | MORNING 6AM-8AM | MID-DAY 8AM-3PM | AFTERNOON 3PM-5PM | EVENING 5PM-MID | DAYTIME 6AM-6PM | EVENING 6PM-MID. | MID-6AM |
| RESIDENTIAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OFFICE OR INDUSTRIAL | 18 | 14.4 | 18 | 18 | 1.8 | 1.8 | 0.9 | 0.9 |
| RETAIL | 47 | 9.4 | 28.2 | 28.4 | 42.3 | 47 | 32.9 | 2.4 |
| HOTEL OR MOTEL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RESTAURANT (NOT FAST FOOD) | 21 | 10.5 | 10.5 | 10.5 | 21 | 21 | 21 | 2.1 |
| THEATER, COMMERCIAL, RECREATION, NIGHTCLUB, OR RESTAURANT WITH ENTERTAINMENT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 86 | 24.3 | 56.7 | 56.9 | 65.1 | 69.8 | 54.8 | 5.4 |

PARKING CALCULATIONS:
- BANK (3.3 SPACES PER 1,000 SF) 3,100 SF = 11 SPACES
- RETAIL (5 SPACES PER 1,000 SF) 7,170 SF = 36 SPACES
- OFFICE (3.3 SPACES PER 1,000 SF) 5,473 SF = 18 SPACES
- RESTAURANT, STANDARD (14 SPACES PER 1,000 SF) 1,500 SF = 21

TOTAL PARKING REQUIRED = 86 SPACES
TOTAL PARKING REQUIRED WITH SHARED PARKING ADJUSTMENT* = 70 SPACES
TOTAL PARKING PROVIDED = 78 SPACES

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 4/26/07 |

| Date | No. | Revision Description |
|---|---|---|
| 3/23/16 | 1 | ADD SHARED PARKING ADJUSTMENT CHART |

**OWNER / DEVELOPER**
JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
COLUMBIA, MD 21045
TEL. (443) 535-9200
FAX (443) 535-9204

STATE OF MARYLAND PAUL H. SILL No. 32025 PROFESSIONAL ENGINEER

FOR REVISION #1 ONLY

2-28-07
DATE

STATE OF MARYLAND JOHN M. HOUSEHOLDER No. 28907 PROFESSIONAL ENGINEER

**christopher** consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.5690 · metro 301.831.0148 · fax 410.872.5693

# CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
## EXISTING CONDITIONS & DEMOLITION PLAN

| | | |
|---|---|---|
| DESIGN: KLZ / AH | SCALE: 1"=30' | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 11-15-06 | 2 OF 16 |
| CHECKED: JMH | APPROVED: | |

MDC-326(SDP)

SDP-06-068

P:\Projects\05B801.01\~MDC-XXXXX~MDC-326-SDP\02-EXISTING CONDITIONS-DEMO.dwg, 02-EX CONDITONS, 2/28/2007 9:33:51 AM

## LUMINAIRE SCHEDULE

| Symbol | Label | Qty | Catalog Number | Description | Lamp | Lumens | LLF |
|---|---|---|---|---|---|---|---|
| | SINGL | 5 | AU1 400 MH (VOLT) III LG PM AS4 (COLOR) | PAPPI LIGHTING AURAFORM POLE MOUNTED LUMINAIRE WITH SEGMENTED REFLECTOR AND FLAT TEMP. GLASS LENS | ONE 400W ED28 CLEAR METAL HELIDE LAMP. | 32000 | 0.75 |
| | TWIN | 2 | 2 X AU1 400 MH (VOLT) III LG PM AS4 (COLOR) | PAPPI LIGHTING AURAFORM TWIN POLE MOUNTED LUMINAIRE WITH SEGMENTED REFLECTOR AND FLAT TEMP. GLASS LENS | ONE 400W ED28 CLEAR METAL HELIDE LAMP. | 32000 | 0.75 |

1. ALL LIGHT FIXTURES TO BE SINGLE LUMINARE 400 WATT MERCURY TYPE WITH METAL POLES AND DIRECTED DOWN-WARD
2. LOCATIONS OF LIGHT FIXTURES ARE ON THE PLAN AND ARE SHOWN THUS:
3. LIGHTS TO BE MODULE II TYPE AS MANUFACTURED BY MOLDCAST OR APPROVED EQUAL
4. POLE AND FIXTURE TO HAVE BLACK POLYESTER ENAMEL FINISH.
5. POLE TO BE LOCATED 3' BACK FROM BACK OF CURB.



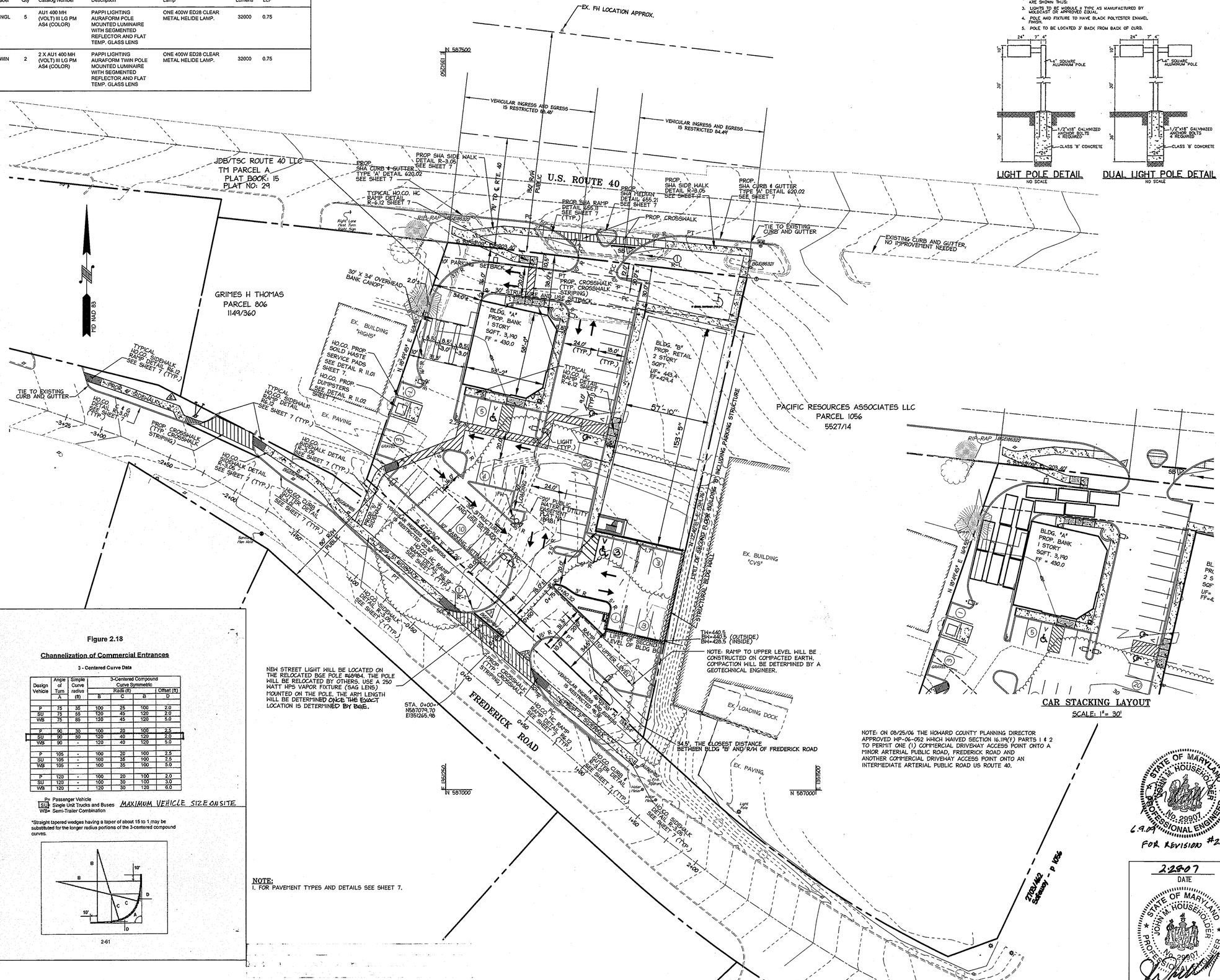

LIGHT POLE DETAIL
NO SCALE




DUAL LIGHT POLE DETAIL
NO SCALE

## LEGEND

| | |
|---|---|
| EXISTING CONTOURS | 416 |
| EXISTING STORM DRAIN | EX. 12" RCP |
| EXISTING SANITARY SEWER | EX. 8" SAN |
| EXISTING WATER | EX. 6" WATER |
| EXISTING TRANSFORMER | |
| EXISTING TRANSFORMER | |
| EXISTING MAILBOX | |
| EXISTING FENCE POST | |
| EXISTING FENCE | X |
| PROPERTY LINE | |
| TO BE REMOVED | TBR |
| TREELINE | |
| PROPOSED CONTOUR | 418 |
| PROPOSED SETBACK LINES | |
| HANDICAP SPACE (VAN ACCESSIBLE) | V V |
| HANDICAP SPACE | |
| STORM DRAIN MANHOLE | |
| STORM DRAIN INLET | |
| ADDITIONAL BLDG LEVEL | |
| PARKING COUNT (THIS LEVEL) | 5 |
| PARKING COUNT (UPPER LEVEL) | UP 9 |
| FILLET PROFILE NUMBER (SEE SHEET 8 FOR PROFILES) | 4 |
| LIGHT | |
| STRUCTURAL BLDG WALL | |
| RETAINING WALL | |
| CROSS WALK FOR HANDICAP ACCESS | |
| DIRECTIONAL TRAFFIC FLOW ARROWS | |
| PROPOSED SIDEWALK HATCH | |
| STOP BAR (24" WIDE) | (SB) |
| | 1 |
| | R1-1 STOP (30" X 30") |




CAR STACKING LAYOUT
SCALE: 1"= 30'

**Figure 2.18**

**Channelization of Commercial Entrances**

3 - Centered Curve Data

| Design Vehicle | Angle of Turn | Simple Curve radius | 3-Centered Compound Curve Symmetric Radii (ft) | | | Offset (ft) |
|---|---|---|---|---|---|---|
| | A | (ft) | B | C | B | D |
| P | 75 | 35 | 100 | 25 | 100 | 2.0 |
| SU | 75 | 55 | 120 | 45 | 120 | 2.0 |
| WB | 75 | 85 | 120 | 45 | 120 | 5.0 |
| P | 90 | 30 | 100 | 20 | 100 | 2.5 |
| SU | 90 | 50 | 120 | 40 | 120 | 2.0 |
| WB | 90 | - | 120 | 40 | 120 | 5.0 |
| P | 105 | - | 100 | 20 | 100 | 2.5 |
| SU | 105 | - | 100 | 35 | 100 | 2.5 |
| WB | 105 | - | 100 | 35 | 100 | 5.0 |
| P | 120 | - | 100 | 20 | 100 | 2.0 |
| SU | 120 | - | 100 | 30 | 100 | 3.0 |
| WB | 120 | - | 120 | 30 | 120 | 6.0 |

P= Passenger Vehicle
SU= Single Unit Trucks and Buses
WB= Semi-Trailer Combination

MAXIMUM VEHICLE SIZE ON SITE

*Straight tapered wedges having a taper of about 15 to 1 may be substituted for the longer radius portions of the 3-centered compound curves.




2-61

NOTE:
1. FOR PAVEMENT TYPES AND DETAILS SEE SHEET 7.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 5/22/07 |

| Date | No. | Revision Description |
|---|---|---|
| 6.08.09 | 2 | FREDERICK ROAD SIDEWALK REVISIONS |
| 8-8-07 | 1 | REVISED BLDG'S AND PARKING LAYOUT |

OWNER / DEVELOPER
JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
COLUMBIA, MD 21045
TEL: (443) 535-9200
FAX (443) 535-9204

STATE OF MARYLAND JOHN M. HOUSEHOLDER No. 29907 PROFESSIONAL ENGINEER
6.9.09
FOR REVISION #2


christopher consultants
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7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693


2-28-07
DATE

STATE OF MARYLAND JOHN M. HOUSEHOLDER No. 29907 PROFESSIONAL ENGINEER

# CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

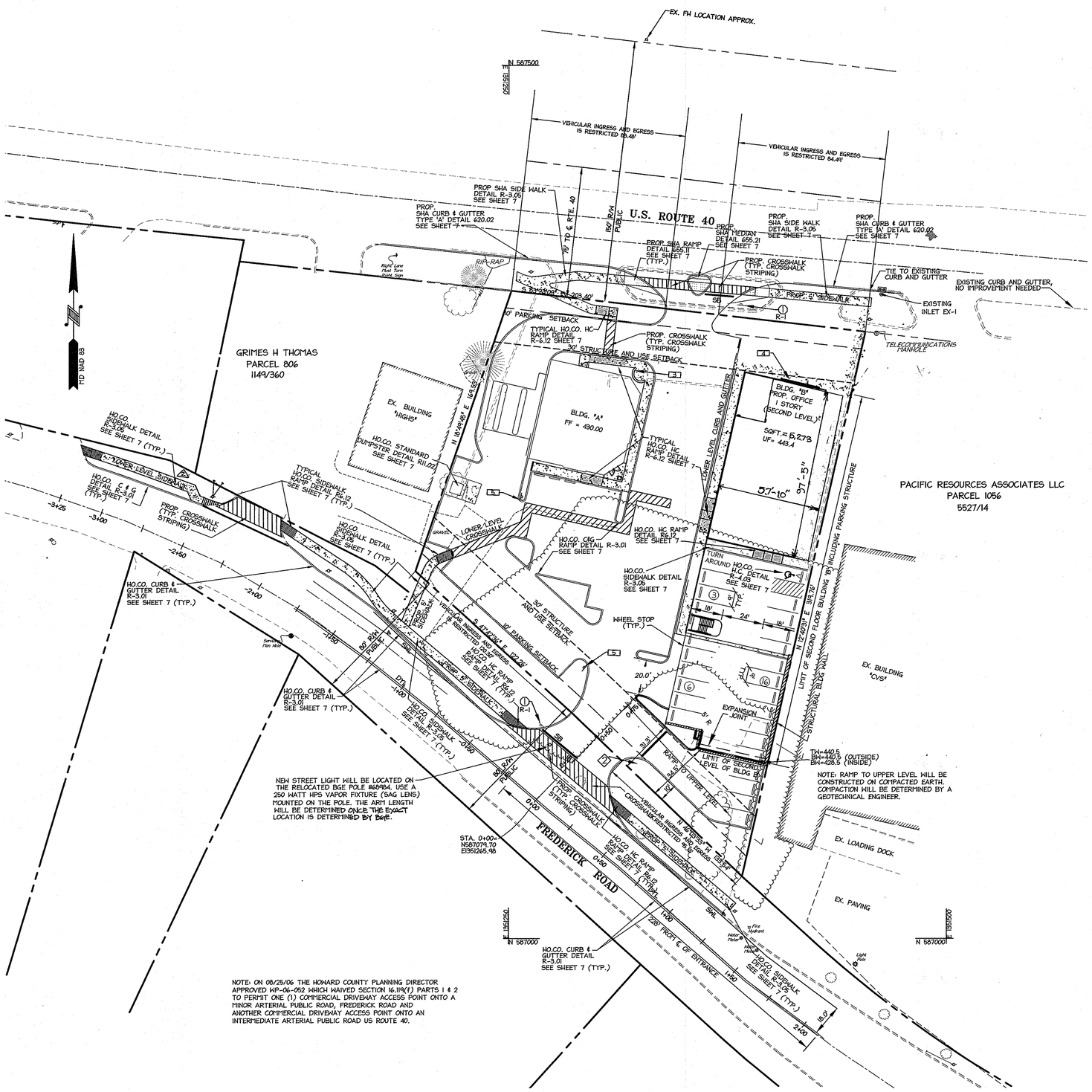
TITLE:
## SITE PLAN – LOWER LEVEL

| | | |
|---|---|---|
| DESIGN: KLZ / AH | SCALE: 1"=30' | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 11-15-06 | 3 OF 16 |
| CHECKED: JMH | APPROVED: | |

SDP-06-068

MDC-326(SDP)

P:\Projects\05B801.01\~MDC-XXXX\~MDC-326-SDP\03-SITE LAYOUT LL.dwg, 03-SITE LAYOUT LL, 2/28/2007 3:19:41 PM




NOTE: ON 08/25/06 THE HOWARD COUNTY PLANNING DIRECTOR APPROVED HP-06-052 WHICH WAIVED SECTION 16.119(f) PARTS 1 & 2 TO PERMIT ONE (1) COMMERCIAL DRIVEWAY ACCESS POINT ONTO A MINOR ARTERIAL PUBLIC ROAD, FREDERICK ROAD AND ANOTHER COMMERCIAL DRIVEWAY ACCESS POINT ONTO AN INTERMEDIATE ARTERIAL PUBLIC ROAD US ROUTE 40.

## GENERAL NOTES

1. PLACE NEW PAVEMENT MARKINGS AS NECESSARY WHERE PAVEMENT HAS BEEN REPLACED OR MILLED AND OVERLAY IN ACCORDANCE WITH SHA STANDARDS AND SPECIFICATIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE. ALL MARKINGS SHALL BE REPLACED IN KIND.

2. ALL PAVEMENTS MARKING SHALL BE 5" WIDE FOR DOUBLE YELLOW LINE AND SINGLE WHITE LINE, AND 24" FOR STOP BAR WITH GLASS BEADS. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.

3. COORDINATE THE PLACEMENT OF PAVEMENT MARKINGS WITH TRAFFIC ENGINEER AND THE INSPECTOR PRIOR TO IMPLEMENTATION.

4. COORDINATE THE REMOVAL OF ANY EXISTING PAVEMENT MARKINGS AND PLACEMENT OF THE PAVEMENT MARKINGS WITH INSPECTOR.

5. EXISTING PAVEMENT MARKINGS NO LONGER NEEDED SHALL BE OBLITERATED BY GRINDING.

6. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED SQUARE TUBE POST (14 GAUGE) -3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

7. TOTAL HEIGHT OF BUILDING B NEAR BUILDING SETBACK FROM US ROUTE 40 IS 37.5'

8. TOTAL HEIGHOF BUILDING B ADJACENT TO ATTACHED PARKING STRUCTURE IS 29.5'

9. TOTAL HEIGHT OF BUILDING BPARKING STRUCTUREADJACENT TO SECOND LEVEL IS 12.86FT.

10. TOTAL HEIGHT OF BUILDING B PARKING STRUCTURE, WEST SIDE ADJACENT TO BUILDING SETBACK FROM FREDERICK RD IS 10.08 FT.

11. TOTAL HEIGHT OF BUILDING B PARKING STRUCTURE, EAST SIDE ADJACENT TO BUILDING SETBACK FROM FREDERICK RD IS 2.4 FT.

## FREDERICK ROAD ROADWAY WORK:

- PROPOSED INSTALLATION OF CURB AND GUTTER, MILL AND OVERLAY PER HO. CO DETAIL R10.01 ON SHEET 7.

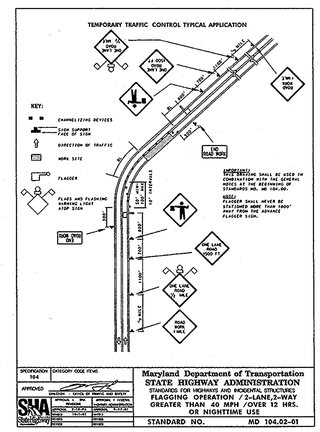
- USE STANDARD DETAIL MD 104.02-10 SHOWN THIS SHEET

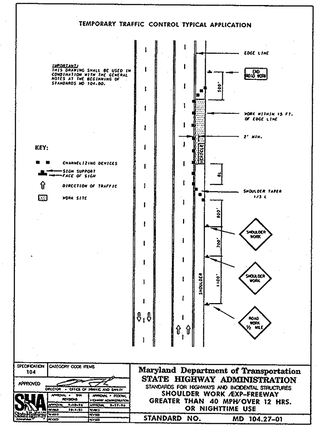
## US ROUTE 40 ROADWAY WORK:

- CONTRACTOR SHALL REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION ACCESS PERMIT FOR ALL GUIDELINES, SPECIFICATIONS AND REQUIREMENTS FOR ALL WORK TO BE CONSTRUCTED IN THE US ROUTE 40 RIGHT-OF-WAY.

- PROPOSED SIDEWALK, HANDICAP RAMPS, CURB AND GUTTER ARE TO BE CONSTRUCTED IN ACCORDANCE WITH SHA STANDARD DETAILS. REFER TO SHEET 7 FOR SIDEWALK, RAMP, PAVING, CURB AND GUTTER DETAILS.

- REFER TO MSHA STD 104.27.01 FOR TRAFFIC CONTROL ON US ROUTE 40.




## LEGEND

| | |
|---|---|
| EXISTING CONTOURS | 416 |
| EXISTING STORM DRAIN | EX. 12" RCP |
| EXISTING SANITARY SEWER | EX. 8" SAN |
| EXISTING WATER | EX. 6" WATER |
| EXISTING EDGE OF PAVEMENT | |
| EXISTING TRANSFORMER | T |
| EXISTING TRANSFORMER | T |
| EXISTING MAILBOX | |
| EXISTING FENCE POST | |
| EXISTING FENCE | X |
| PROPERTY LINE | |
| PROPOSED SETBACK LINES | |
| PROPOSED EDGE OF PAVEMENT | |
| STRUCTURAL BLDG WALL | |
| RETAINING WALL | |
| HANDICAP SPACE (VAN ACCESSIBLE) | V |
| STOP BAR (24" WIDE) | (SB) |
| SOLID WHITE LINE (5" WIDE) | (SWL) |
| DOUBLE YELLOW LINE | (DYL) |
| 1 | R1-1 STOP (30" X 30") |
| 2 | (30" X 30") SIGN MOUNTED ON OVERHEAD APARATUS 12'-0" TALL |
| 3 | HOWARD BANK — SEE ARCHITECTURE PLANS FOR SIGN LAYOUT AND TEXT |
| 4 | CENTENNIAL PLACE — SEE ARCHITECTURE PLANS FOR SIGN LAYOUT AND TEXT |
| 5 | R5-1 DO NOT ENTER (30" X 30") |

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 4/26/07 |

| Date | No. | Revision Description |
|---|---|---|
| 6.08.07 | 2 | FREDERICK ROAD SIDEWALK REVISIONS |
| 8.8.07 | 1 | REVISED BLDG B AND PARKING LOT LAYOUT |

**OWNER / DEVELOPER**

JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
COLUMBIA, MD 21045
TEL. (443) 535 9200
FAX (443) 535-9204

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — PROFESSIONAL ENGINEER

6.9.09
FOR REVISION #2

2.28.07
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — PROFESSIONAL ENGINEER


christopher consultants
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# CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:

## SITE PLAN– UPPER LEVEL & MAINTENANCE OF TRAFFIC AND STRIPING

| | | |
|---|---|---|
| DESIGN: KLZ / AH | SCALE: 1"=30' | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 11-15-06 | 4 OF 16 |
| CHECKED: JMH | APPROVED: | |

MDC-326(SDP)

SDP-06-068

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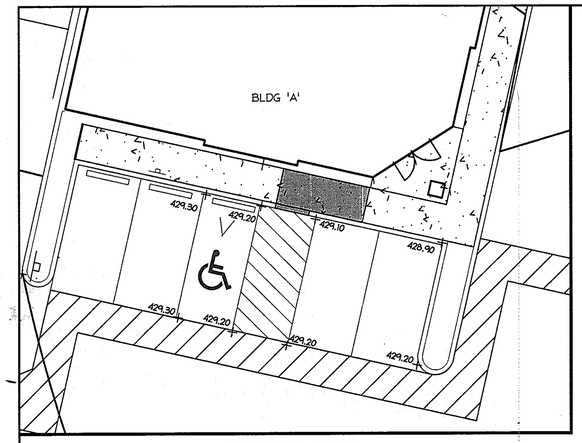
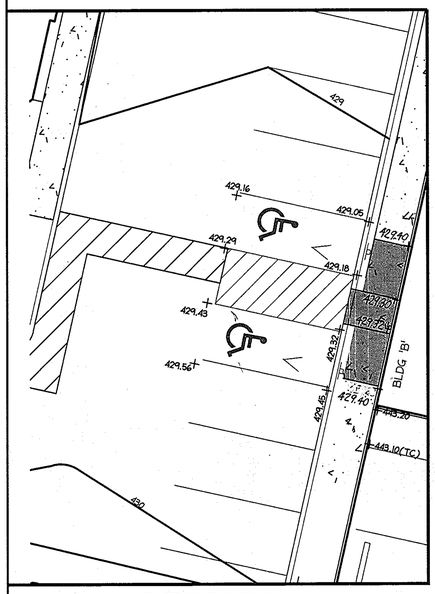
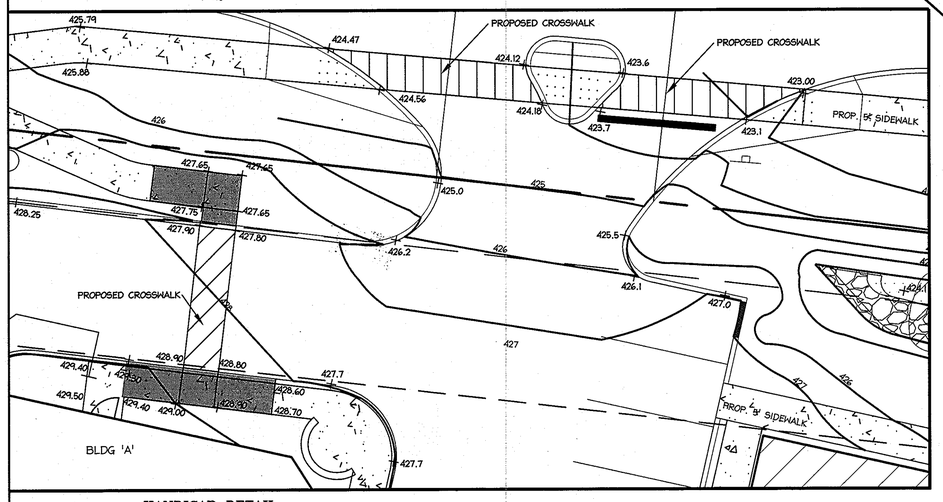


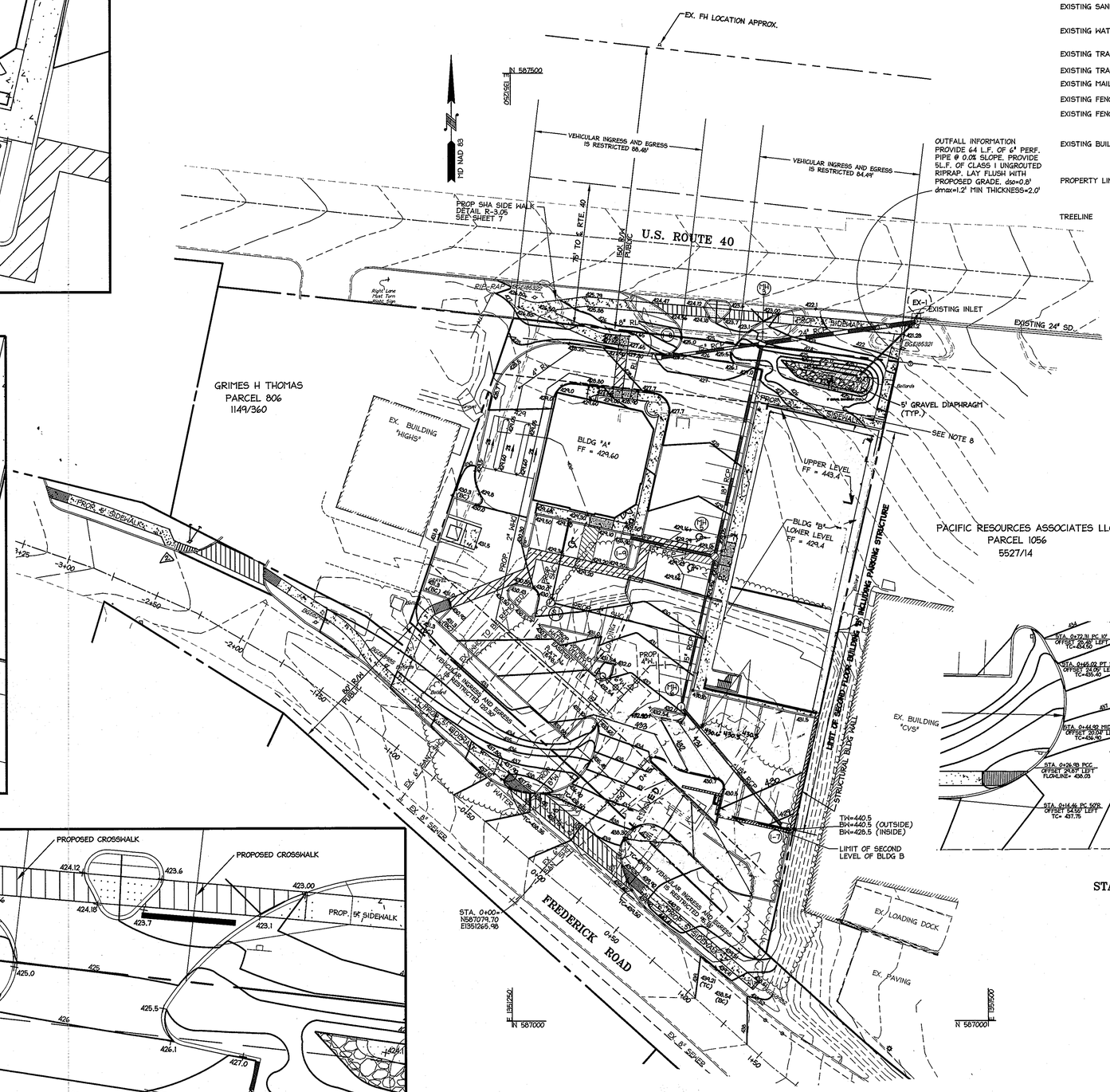

HANDICAP DETAIL
1"=10'



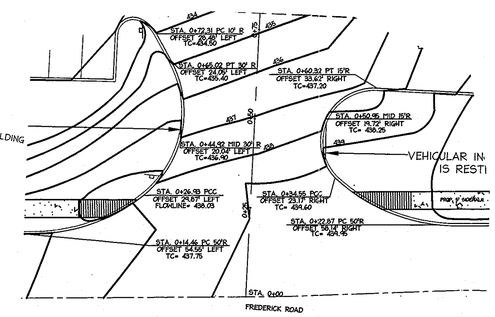

HANDICAP DETAIL
1"=10'




HANDICAP DETAIL
1"=10'




PLAN VIEW
1"=30'




STATIONING VIEW
1"=20'

## LEGEND

| | | | |
|---|---|---|---|
| EXISTING CONTOURS | 416 | PROPOSED CONTOUR | 418 |
| EXISTING STORM DRAIN | EX. 12" RCP | PROPOSED SETBACK LINES | |
| EXISTING SANITARY SEWER | EX. 8" SAN | PROPOSED BUILDING | |
| EXISTING WATER | EX. 6" WATER | PROPOSED STORM DRAIN | |
| EXISTING TRANSFORMER | | HANDICAPPED SPACES | |
| EXISTING TRANSFORMER | | SIAMESE CONNECTION | |
| EXISTING MAILBOX | | PROPOSED FIRE HYDRANT | |
| EXISTING FENCE POST | | SOIL BORING LOCATION | B-1 |
| EXISTING FENCE | X | STRUCTURAL BLDG WALL | |
| EXISTING BUILDING | | RETAINING WALL | |
| PROPERTY LINE | | | |
| TREELINE | | | |

## NOTES:

1. CURB AND GUTTER AND FRONTAGE IMPROVEMENTS REQUIRED FOR 200 FT. BEYOND THE PROPERTY BOUNDARY AS RIGHT-OF-WAY PERMITS ON FREDERICK RD.

2. ALL WATER METERS TO BE LOCATED INSIDE BUILDINGS.

3. FRONTAGE IMPROVEMENTS SHALL CONFORM TO HOWARD COUNTY STANDARDS DHV IV STANDARDS R-10.01 WHICH CAN BE FOUND ON SHEET 7 OF THIS SET.

4. THE KNOX BOX SHALL BE LOCATED AS SHOWN ON THESE PLANS. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER WHEN IT IS ACCESSED AND IT SHALL BE FULLY INTERATED WITH THE FIRE ALARM SYSTEM.

5. SEE SHEET 6 OF 16 FOR SPOT ELEVATIONS

6. SEE SHEET 6 OF 16 FOR HANDICAP PARKING DETAIL FOR "UPPER LEVEL." HANDICAP CROSS WALK ON FREDERICK RD AND HANDICAP RAMP ACCESS ONTO SITE.

7. ALL ONSITE STORM DRAIN PIPES TO BE AL-CMP. STORM DRAIN PIPE INSIDE SHA RIGHT OF WAY TO BE CASP.

8. CONTRACTOR TO TIE UPPER PARKING DECK DRAIN INTO ROOF LEADERS FOR UPPER LEVEL OF BLDG "B." ROOF LEADER TO BE DIRECTED TO DISCHARGED INTO BIO-RETENTION FACILITY. SEE ARCHITECTURAL PLANS FOR ROOF LEADER DETAILS.

9. THE PROPOSED RETAINING WALL IS PART OF THE BUILDING FOUNDATION. SEE THE ARCHITECTURAL PLANS FOR SECTION AND DETAILS FOR CONSTRUCTION.

NOTE: ON 08/25/06 THE HOWARD COUNTY PLANNING DIRECTOR APPROVED WP-06-052 WHICH WAIVED SECTION 16.116(f) PARTS 1 & 2 TO PERMIT ONE (1) COMMERCIAL DRIVEWAY ACCESS POINT ONTO A MINOR ARTERIAL PUBLIC ROAD, FREDERICK ROAD AND ANOTHER COMMERCIAL DRIVEWAY ACCESS POINT ONTO AN INTERMEDIATE ARTERIAL PUBLIC ROAD US ROUTE 40.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 4/26/07 |

| Date | No. | Revision Description |
|---|---|---|
| 6.08.09 | 2. | FREDERICK ROAD SIDEWALK REVISIONS |
| 8.8.07 | 1. | REVISED BLDG B AND PARKING LOT LAYOUT |


OWNER / DEVELOPER
JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
COLUMBIA, MD 21045
TEL. (443) 535-9200
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STATE OF MARYLAND · JOHN M. HOUSEHOLDER · No. 29907 · PROFESSIONAL ENGINEER

6.9.09
FOR REVISION # 2.

2.28.07
DATE

STATE OF MARYLAND · JOHN M. HOUSEHOLDER · No. 29907 · PROFESSIONAL ENGINEER

# CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
GRADING & UTILITY PLAN
LOWER LEVEL

| | | |
|---|---|---|
| DESIGN: KLZ / AH | SCALE: 1"=30' | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 11-15-06 | 5 OF 16 |
| CHECKED: JMH | APPROVED: | |

SDP-06-068

MDC-326(SDP)

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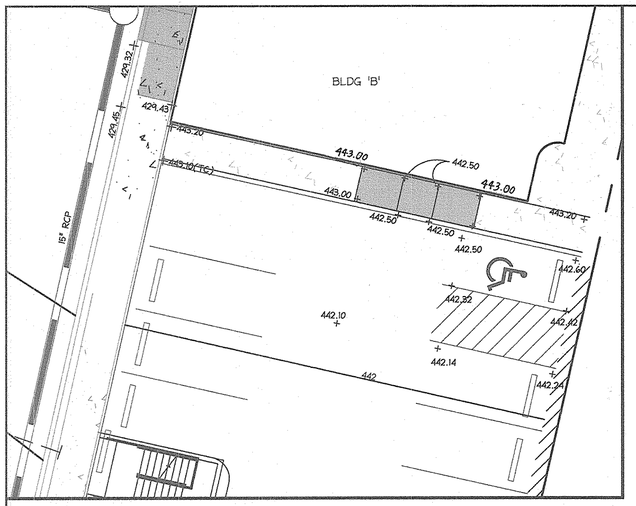
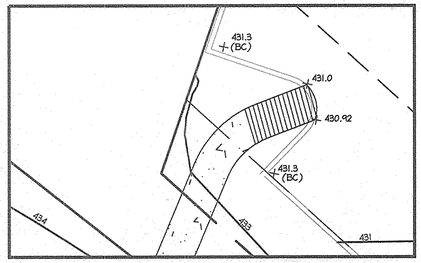
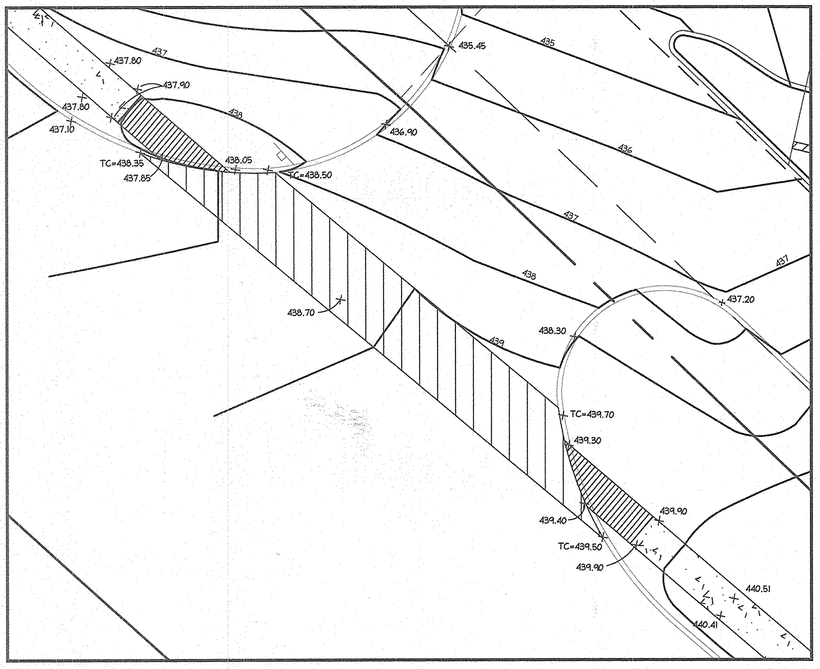


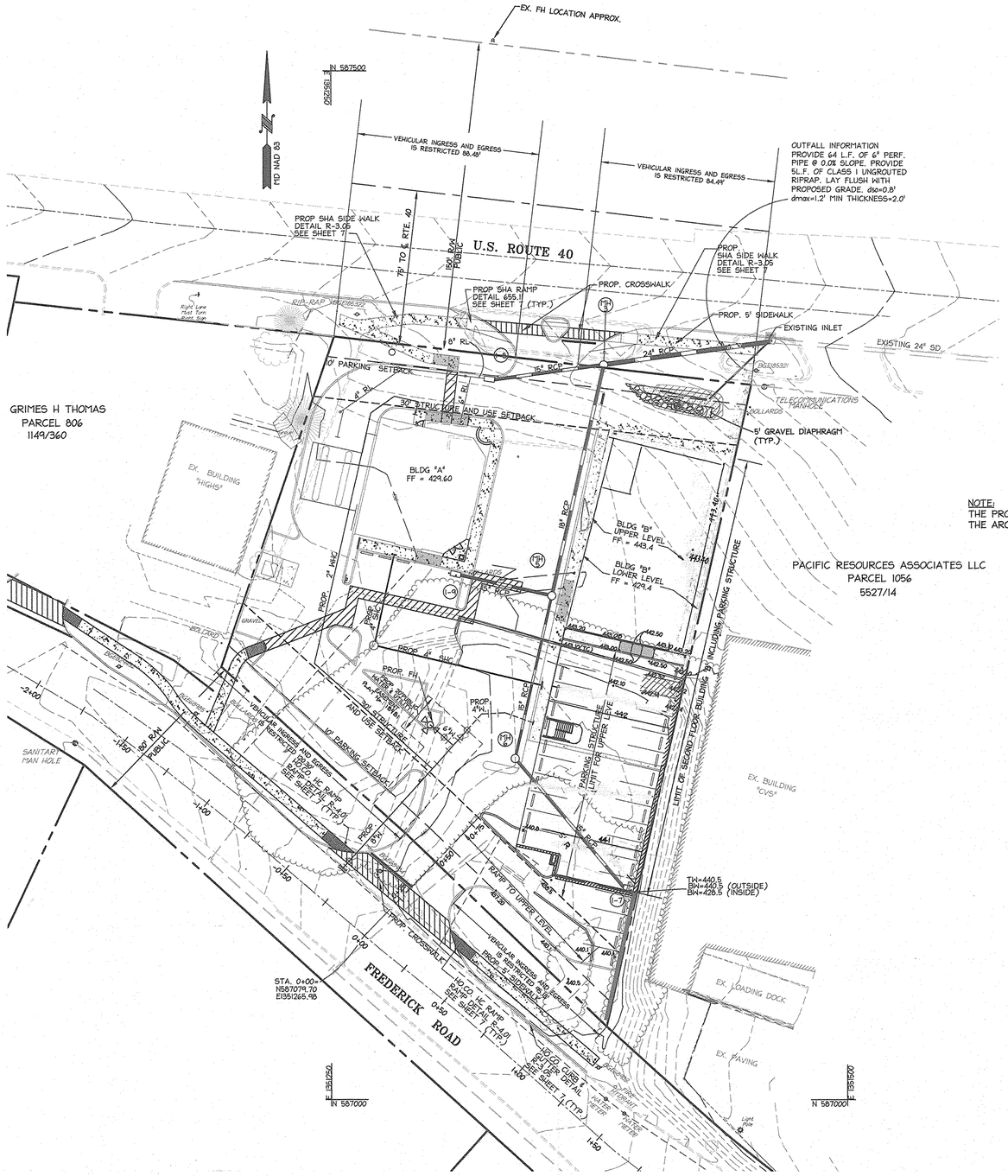

HANDICAP DETAIL
1"=10'




HANDICAP DETAIL
1"=10'




HANDICAP DETAIL
1"=10'




## LEGEND

| | |
|---|---|
| EXISTING CONTOURS | 416 |
| EXISTING STORM DRAIN | EX. 12" RCP |
| EXISTING SANITARY SEWER | EX. 8" SAN |
| EXISTING WATER | EX. 6" WATER |
| EXISTING TRANSFORMER | |
| EXISTING TRANSFORMER | |
| EXISTING MAILBOX | |
| EXISTING FENCE POST | |
| EXISTING FENCE | X |
| PROPERTY LINE | |
| TO BE REMOVED | TBR |
| TREELINE | |
| PROPOSED CONTOUR | 418 |
| PROPOSED SETBACK LINES | |
| HANDICAPPED SPACES | |
| STRUCTURAL BLDG WALL | |
| RETAINING WALL | |

NOTE:
THE PROPOSED RETAINING WALL IS PART OF THE BUILDING FOUNDATION SEE THE ARCHITECTURAL PLANS FOR SECTION AND DETAILS FOR CONSTRUCTION.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 5/24/07 |

| Date | No. | Revision Description |
|---|---|---|
| 8-8-07 | 1 | REVISED BLDG & PARKING LOT LAYOUT |

OWNER / DEVELOPER
JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
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2-28-07
DATE

STATE OF MARYLAND · JOHN M. HOUSEHOLDER · No. 22901 · PROFESSIONAL ENGINEER

CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
GRADING & UTILITY PLAN
UPPER LEVEL

| | | |
|---|---|---|
| DESIGN: KLZ / AH | SCALE: 1"=30' | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 11-15-06 | 6 OF 16 |
| CHECKED: JMH | APPROVED: | |

SDP-06-068

MDC-326(SDP)

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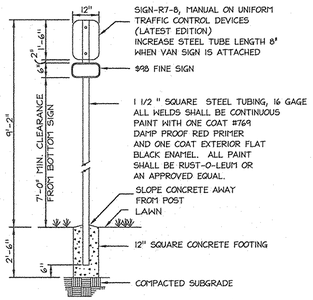
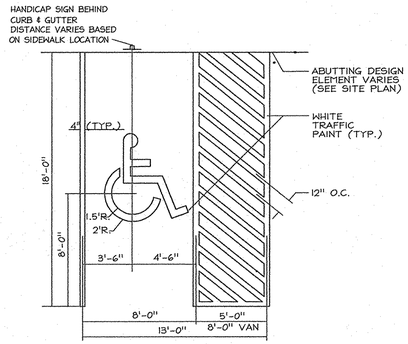


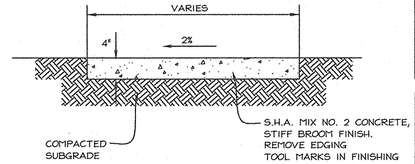

NOTES:
1. DISTANCE FROM GROUND TO BOTTOM OF SIGN SHALL BE 7'.
2. SEE HANDICAPPED PARKING SPACE DETAIL THIS SHEET FOR LOCATION OF HANDICAP SIGN.
3. SIGNS SHALL CONFORM TO CURRENT ADA CRITERIA.

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

N.T.S.




## HANDICAP PARKING SPACE DETAIL
N.T.S.




NOTES:
1. PROVIDE LATITUDINAL EXPANSION JOINTS AT 15' O.C. (MAX.)
2. PROVIDE CONTRATION (DUMMY) JOINT AT 5' O.C.
3. INTERVALS BETWEEN EXPANSION JOINTS.
4. SIDEWALK TO BE SCRIBED IN 5' MAX. SQUARES.
5. SEE HOWARD COUNTY STANDARD DETAIL R-3.05 FOR MORE INFORMATION.

## SIDEWALK DETAIL

**Table 405.2—Allowable Ramp Dimensions for Construction in Existing Sites, Buildings, and Facilities**

| Slope[1] | Maximum Rise |
|---|---|
| Steeper than 1:10 but not steeper than 1:8 | 3 inches (75 mm) |
| Steeper than 1:12 but not steeper than 1:10 | 6 inches (150 mm) |

[1]A slope steeper than 1:8 shall not be permitted.

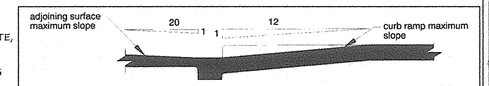



Fig. 406.2
Counter Slope of Surfaces Adjacent to Curb Ramps

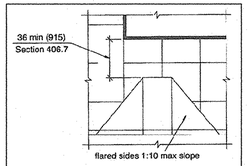
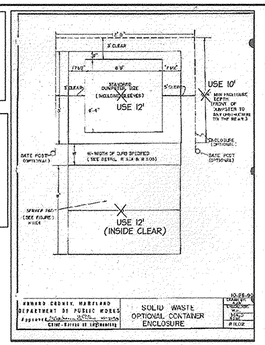
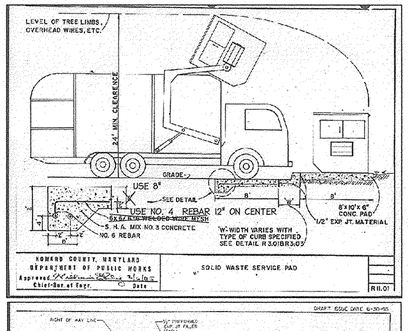


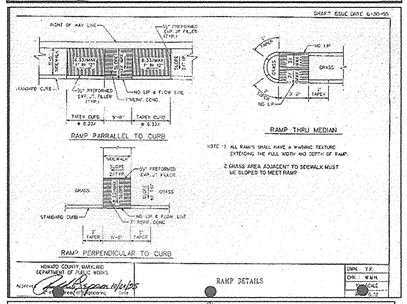

Fig. 406.3
Sides of Curb Ramps

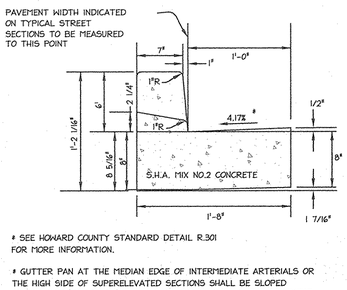
NOTE:
ANSI STANDARD DETAILS PROVIDED TO SUPPLEMENT HO.CO. AND SHA DETAILS AND ENSURE THAT ADA REGULATIONS ARE MET. WHERE CONFLICTS ARISE ANSI STANDARDS DICTATE.




ENCLOSURE SHALL HAVE 8" BLOCK WALLS WITH A 4" BRICK FACADE

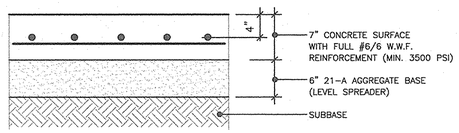


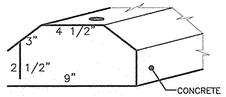

# SEE HOWARD COUNTY STANDARD DETAIL R.301 FOR MORE INFORMATION.

# GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTIONS AS THE PAVEMENT.



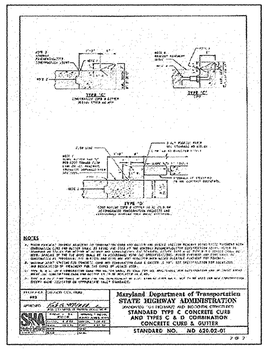

NOTE: SUBBASE SHALL BE COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT PER ASTM D-698.

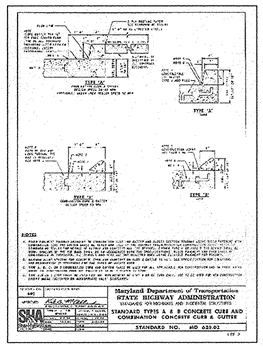
## TYPICAL SECTION CONCRETE PAD
N.T.S.

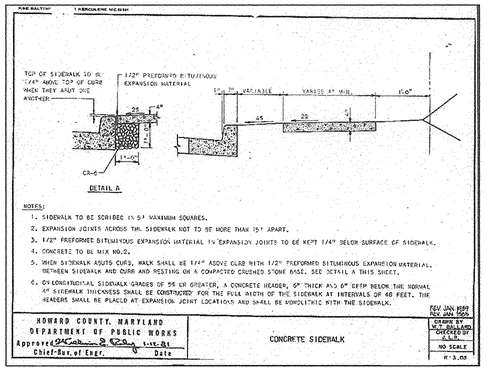



6 FT. – CONCRETE
9" WIDE
5" HIGH
2 STEEL BARS – REINFORCED
2 PRE-FORMED HOLES
APPROXIMATE WEIGHT – 210 LBS.

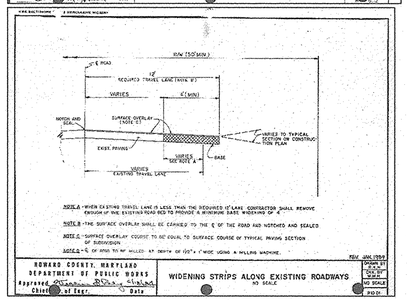
## WHEELSTOP DETAIL
N.T.S.



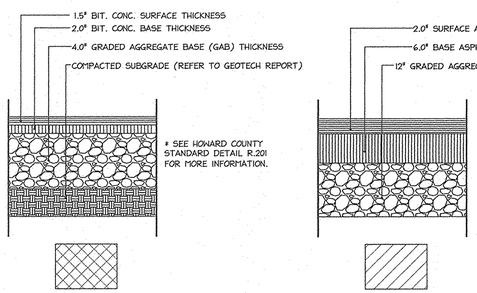



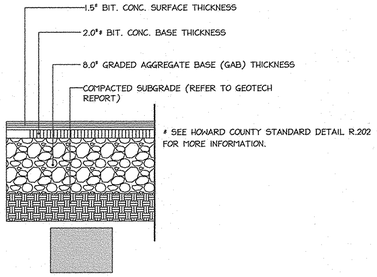

NOTES:
1. SIDEWALK TO BE SCRIBED IN 5' MAXIMUM SQUARES.
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 15' APART.
3. 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX NO.2.
5. WHEN SIDEWALK ABUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB AND RESTING ON A COMPACTED CRUSHED STONE BASE. SEE DETAIL IN THIS SHEET.
6. ON CONTINUOUS SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 48 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.




## STANDARD 6" COMBINATION CURB AND GUTTER
N.T.S.



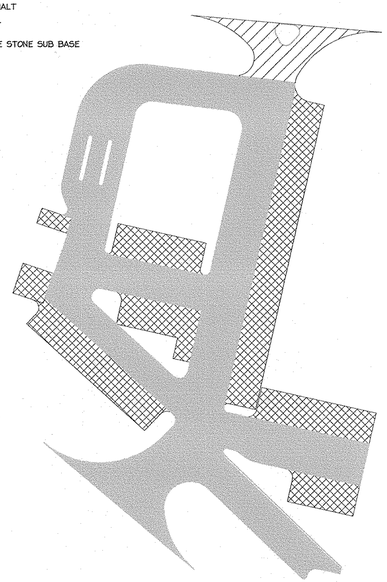

LIGHT DUTY PAVING — SHA PAVING DETAIL



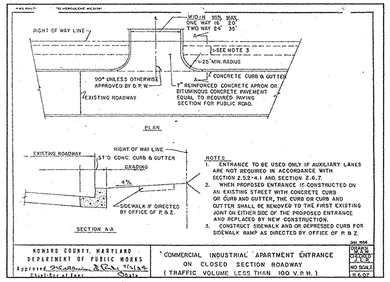

HEAVY DUTY PAVING

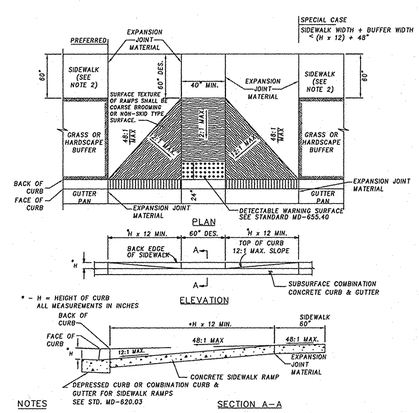
# BITUMINOUS CONCRETE TO BE PLACED AND COMPACTED IN 5 INCH MAXIUM LOOSE THICKNESS LAYERS.

NOTE: THE ABOVE PAVING SECTIONS REFERENCE THE FEB 7, 2006 GEOTECHNICAL REPORT PROVIDED BY HILL'S CARNES, INC. THE PAVING SECTIONS SHOWN ARE PER THE SUGGESTED SECTIONS THEREIN.



## PAVING PLAN LOWER LEVEL
1"=40'

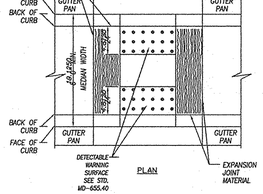


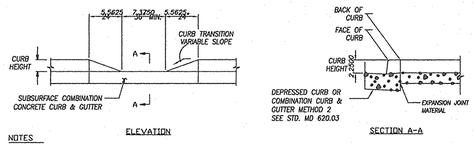




NOTES
1. TO BE USED ON WIDE SIDEWALKS OR SIDEWALKS WITH SIGNIFICANT SEPARATION FROM THE ROADWAY WHERE THE GEOMETRY SPECIFIED IN THE DETAILS ABOVE CAN BE SATISFIED. THAT BE MODIFIED TO SUIT A PARTICULAR LOCATION.
2. WHERE 60" SIDEWALK CAN NOT BE PROVIDED, A DESIGN WAIVER MUST BE REQUESTED
3. NO TRAVERSABLE SLOPE ON THE RAMP OR SIDEWALK SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL, OR 48:1 PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.
4. EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STD. MD-655.01.
5. SIDEWALK RAMP SHALL BE INCLUDED IN PRICE BID FOR CONCRETE SIDEWALK. DEPRESSED CURB AND CURB TRANSITION SHALL BE INCLUDED IN PRICE BID FOR CURB OR CURB & GUTTER ADJACENT TO SIDEWALK RAMP. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
6. SIDEWALK RAMPS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE RAMP ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASES.

603 & 611 — 2-10-04 — 3-31-04

SIDEWALK RAMPS PERPENDICULAR
STANDARD NO. MD 655.11




NOTES
1. TO BE USED WHERE A STREET-LEVEL PEDESTRIAN CROSSING IS REQUIRED THROUGH RAISED MEDIANS OR RAISED ISLANDS AND THERE IS INSUFFICIENT WIDTH TO PROVIDE A RAMPED MEDIAN OR ISLAND OPENING (STD. MD-655.22).
2. WHERE PHYSICAL CONSTRAINTS PRECLUDE USE OF 6 FT. MEDIAN, A 4 FT. MEDIAN WIDTH IS ACCEPTABLE.
3. EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD MD-655.01.
4. CUT-THROUGH MEDIAN AND ISLAND OPENINGS SHALL BE INCLUDED IN PRICE BID FOR MONOLITHIC CONCRETE MEDIAN. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
5. CUT-THROUGH MEDIAN AND ISLAND OPENINGS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE OPENING ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED OPENING VARIES FROM STANDARD METHODS.

603 & 611 — 2-10-04 — 3-31-04

CUT-THROUGH MEDIAN AND ISLAND OPENINGS

STANDARD NO. MD 655.21

2-28-07
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 28901 — PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 4/26/07 |

| Date | No. | Revision Description |
|---|---|---|
| | | |
| | | |
| | | |

**OWNER / DEVELOPER**
JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
COLUMBIA, MD 21045
TEL. (443) 535-9200
FAX (443) 535-9204

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md. 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693

CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
SITE NOTES AND DETAILS

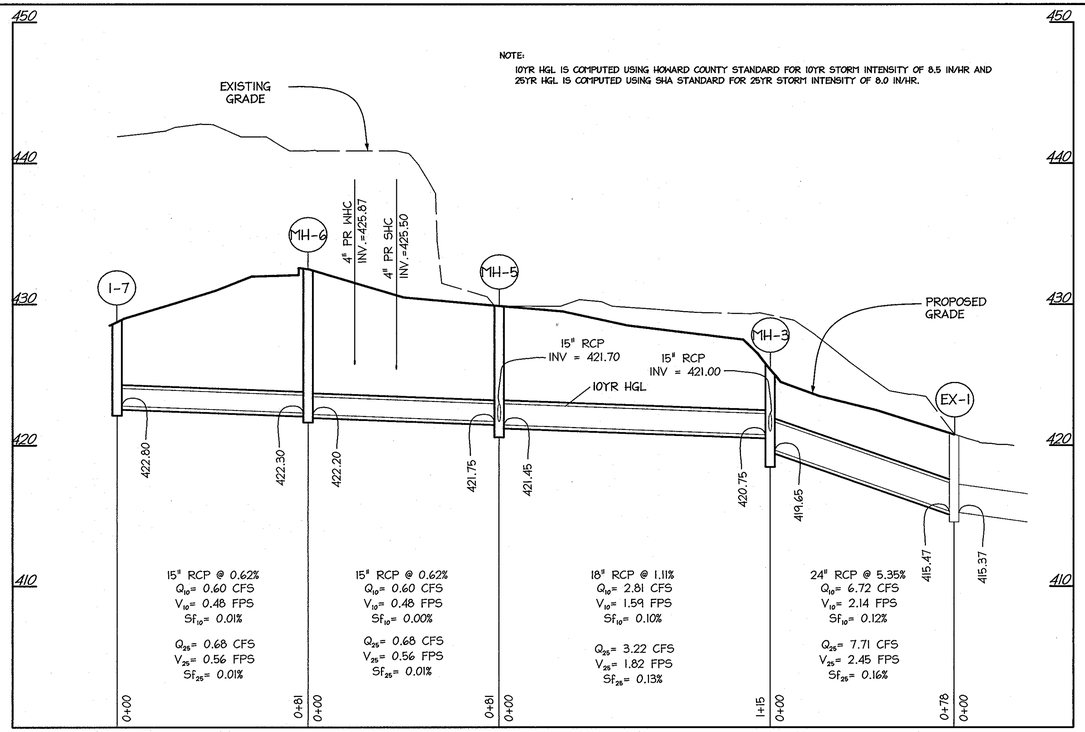
| | | |
|---|---|---|
| DESIGN: AH | SCALE: AS SHOWN | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 11-15-06 | 7 OF 16 |
| CHECKED: JMH | APPROVED: | |

MDC-326(SDP)

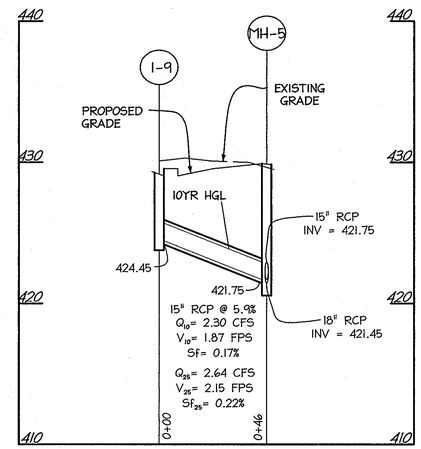
SDP-06-068

P:\Projects\05B801.01\~MDC-XXXX\~MDC-326-SDP\07-SITE NOTES & DETAILS.dwg, 07-SITE NOTES & DETAILS, 2/28/2007 11:24:49 AM

NOTE:
10YR HGL IS COMPUTED USING HOWARD COUNTY STANDARD FOR 10YR STORM INTENSITY OF 8.5 IN/HR AND 25YR HGL IS COMPUTED USING SHA STANDARD FOR 25YR STORM INTENSITY OF 8.0 IN/HR.




**SD PROFILE**
HORZ.= 1"=30'
VERT. = 1"=5'




**SD PROFILE**
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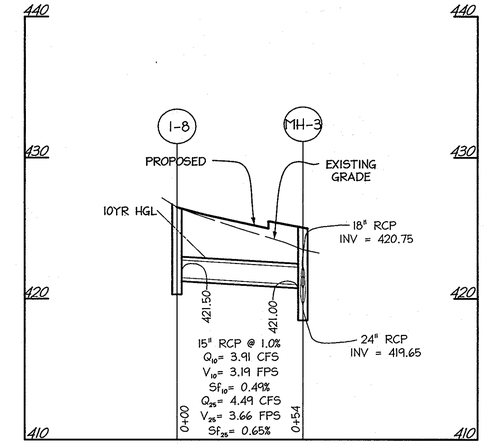
VERT. = 1"=5'




**SD PROFILE**
HORZ.= 1"=30'
VERT. = 1"=5'

**PIPE SCHEDULE**

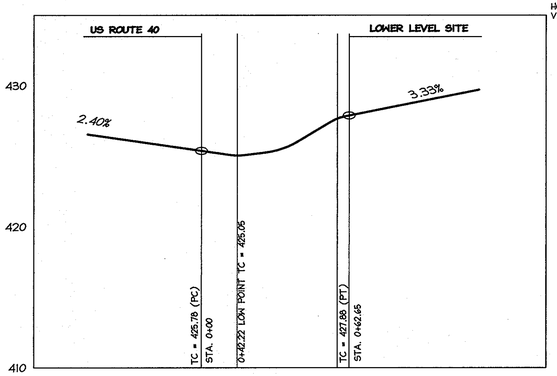
| SIZE (IN) | TYPE | LENGTH (FT) |
|---|---|---|
| 15 | RCP | 262 |
| 18 | RCP | 115 |
| 24 | RCP | 78 |

**STORM DRAIN STRUCTURE SCHEDULE**

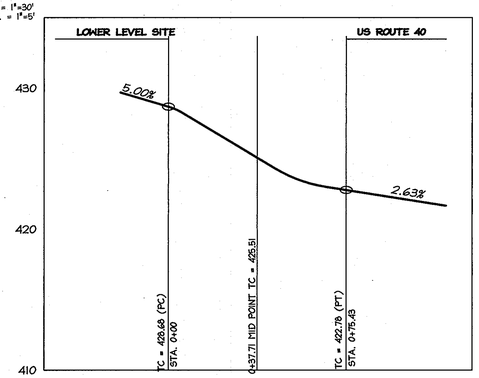
| STR. NO. | TOP ELEV. | INV. IN | INV. OUT | STR. DIM. (Lx4) | TYPE | NORTHING | EASTING |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| MH-3 | 424.40 | 420.75 (18") | 419.65 (24") | 4' DIAMETER | STD. PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.12 | 587357.21 | 1351382.09 |
| MH-5 | 429.20 | 421.75 (15") | 421.45 (18") | 4' DIAMETER | STD. PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.12 | 587244.90 | 1351356.86 |
| MH-6 | 431.90 | 422.30 (15") | 422.20 (15") | 4' DIAMETER | STD. PRECAST MANHOLE HOWARD CO. STD. DETAIL G-5.12 | 587165.87 | 1351339.07 |
| I-7 | 428.50 | | 421.60 (18") | 4'-6" x 3'-10" | TYPE "A-5" INLET HOWARD CO. DETAIL SD-4.01 | 587102.92 | 1351343.45 |
| I-8 | 426.70 | | 421.50 (15") | 4'-6" x 3'-10" | TYPE "A-5" INLET HOWARD CO. DETAIL SD-4.01 | 587350.28 | 1351326.54 |
| I-9 | 428.90 | | 424.45 (15") | 4'-6" x 3'-10" | TYPE "A-5" INLET HOWARD CO. DETAIL SD-4.01 | 587255.42 | 1351310.24 |
| | | | | | | | |
| * EX-1 | 421.20 | 415.47 (18") | 415.37 (18") | | | 587333.34 | 1351425.16 |
| | | | | | | | |

NOTE:
LOCATION OF INLETS IS AT THE CENTER OF TOP COVER;
FOR "A" INLETS LOCATION GIVEN FOR CENTER OF OPENING AT FACE OF CURB.

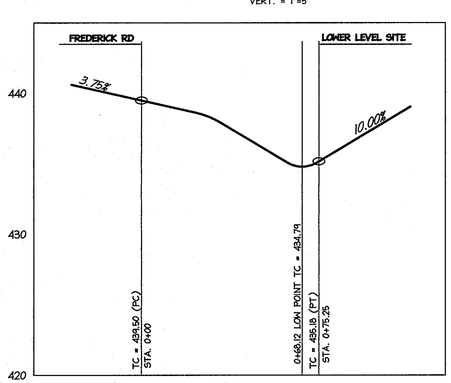
* EXISTING STRUCTURE INCLUDED IN THIS STRUCTURE SCHEDULE FOR INFORMATIONAL PURPOSE




1 LEFT FILLET PROFILE
HORZ.= 1"=30'
VERT. = 1"=5'




2 RIGHT FILLET PROFILE
HORZ.= 1"=30'
VERT. = 1"=5'




3 RIGHT FILLET PROFILE
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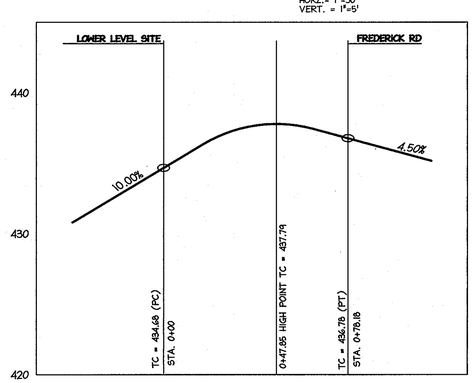
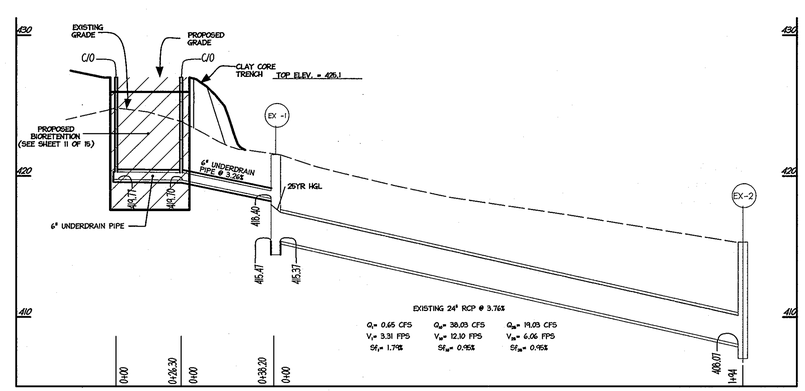
VERT. = 1"=5'




4 LEFT FILLET PROFILE
HORZ.= 1"=30'
VERT. = 1"=5'




**SD PROFILE**
HORZ.= 1"=30'
VERT. = 1"=5'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 4/9/07

Chief, Division of Land Development — Date 4-26-07

Director — Date 4/26/07

| Date | No. | Revision Description |
|---|---|---|
| | | |
| | | |
| | | |

**OWNER / DEVELOPER**
JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
COLUMBIA, MD 21045
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410.872.8090 · metro 301.581.0149 · fax 410.872.8693


2.28.07
DATE

STATE OF MARYLAND · JOHN M. HOUSEHOLDER · No. 22907 · PROFESSIONAL ENGINEER

CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
PROFILES

| | | |
|---|---|---|
| DESIGN: AH | SCALE: AS SHOWN | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 11-15-06 | 8 OF 16 |
| CHECKED: JMH | APPROVED: | |

MDC-326(SDP)

SDP-06-068

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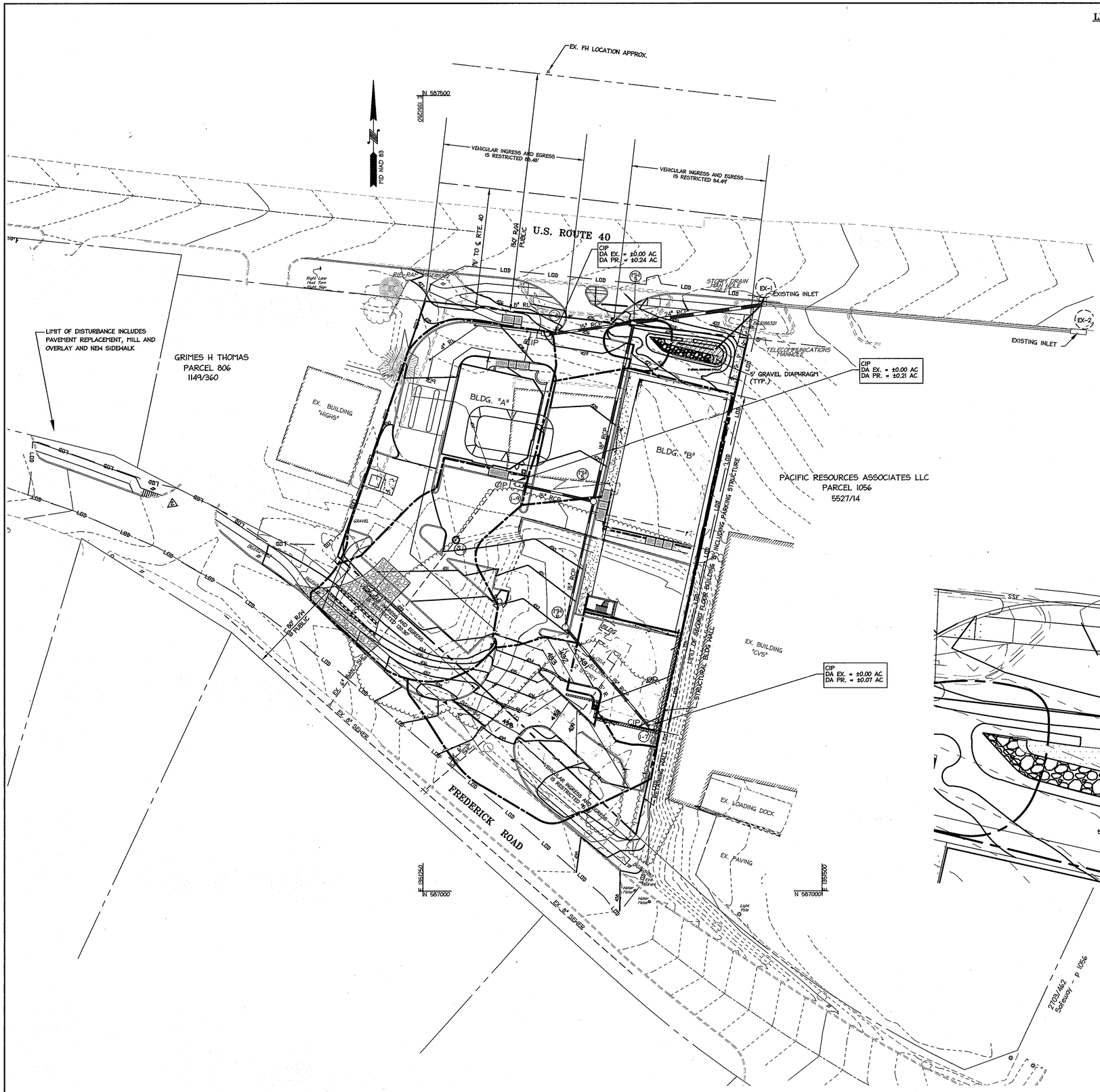



## LEGEND

| | |
|---|---|
| EXISTING CONTOURS | 416 |
| EXISTING STORM DRAIN | EX. 12" RCP |
| EXISTING SANITARY SEWER | EX. 8" SAN |
| EXISTING WATER | EX. 6" WATER |
| EXISTING TRANSFORMER | |
| EXISTING TRANSFORMER | |
| EXISTING MAILBOX | |
| EXISTING FENCE POST | |
| EXISTING FENCE | X |
| PROPERTY LINE | |
| TO BE REMOVED | TBR |
| TREELINE | |
| CURB INLET PROTECTION | CIP |
| PROPOSED CONTOUR | 416 |
| PROPOSED SETBACK LINES | |
| SUPER SILT FENCE | SSF |
| LIMIT OF DISTURBANCE | LOD LOD |
| STABILIZE CONSTRUCTION ENTRANCE | |
| SEDIMENT CONTROL DRAINAGE DIVIDE | |
| STRUCTURAL BLDG WALL | |
| RETAINING WALL | |
| TEMPORARY STOCKPILE BOTTOM AREA MAX= 35' X 55' (1925 SF) MAX HEIGHT = 7' MAX SIDE SLOPE = 3:1 | |

### DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer — Date: 2/28/07

JAMES M. JOST

Print name below signature

### ENGINEER'S CERTIFICATE

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer — Date: 2-28-07

JOHN HOUSEHOLDER, P.E.

Print name below signature

### REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

USDA-Natural Resources Conservation Service — Date: 4/4/07

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date: 4/4/07

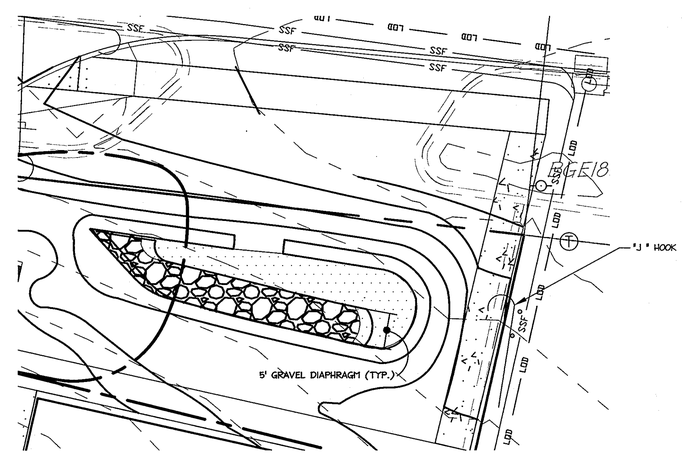
## NOTES:

1. SUPER SILT FENCE AND LIMIT OF DISTURBANCE ARE SHOWN OUTSIDE THE PROPERTY LINE FOR DISPLAY PURPOSE ONLY. ALL WORK WITH THE EXCEPTION OF RIGHT-OF-WAY IMPROVEMENTS IS TO BE DONE ON SITE. CONTRACTOR TO INSTALL SUPER SILT FENCE 1' INSIDE PROPERTY LINE.

2. SILT FENCE IS TO BE INSTALLED ALONG THE WESTERN L.O.D. AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR.

3. ALL FENCING SHALL BE INSTALLED WITH A "J" CONFIGURATION AT APPROXIMATELY 35-FOOT INTERVALS. SEE INSET FOR MORE DETAIL.

4. LIMIT OF DISTURBANCE SHALL INCLUDE ALL RIGHT OF WAY IMPROVEMENTS ON U.S. ROUTE 40 AND FREDERICK RD.




**PROPOSED BIORETENTION POND**
1"=10'

### APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date: 4/5/07

Chief, Division of Land Development — Date: 4-26-07

Director — Date: 5/24/07

| Date | No. | Revision Description |
|---|---|---|
| 6.08.09 | 2 | FREDERICK ROAD SIDEWALK REVISIONS |
| 3-8-07 | 1 | BUILDING B REVISED |

**OWNER / DEVELOPER**

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2-28-07
DATE

STATE OF MARYLAND — JOHN M. HOUSEHOLDER — No. 29907 — PROFESSIONAL ENGINEER

6.9.09
FOR REVISION #2

# CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
## EROSION & SEDIMENT CONTROL PLAN LOWER LEVEL

| | | |
|---|---|---|
| DESIGN: AH | SCALE: 1"=30' | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 05-04-06 | 9 OF 16 |
| CHECKED: JMH | APPROVED: | |

MDC-326 (SDP)

SDP-06-068

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19.0 Standards and Specifications
For Land Grading

Definitions

Reshaping of the existing land surface in accordance with a plan as determined by engineering survey and layout.

Purpose

The purpose of a land grading specification is to provide for erosion control and vegetative establishment on those areas where the existing land surface is to be reshaped by grading according to plan.

Design Criteria

The grading plan should be based upon the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surrounding to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, effect on adjacent properties and drainage patterns, measured for drainage and water removal and vegetative treatment, etc.

Many countries have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they should be followed. The plan must show existing and proposed contours of the area(s) to be graded. The plan shall also include practices for erosion control, slope stabilization, safe disposal of runoff water and drainage, such as waterways, lined ditches, reverse slope benches (including grade and cross-section), grade stabilization structures, retaining walls, and surface and subsurface drains. The plan shall also include phasing of these practices. The following shall be incorporated into the plan:

1. Provisions shall be made to safety conduct surface runoff to storm drains, protected outlets or to stable water courses to insure that surface runoff will not damage slopes or other graded areas.

2. Cut and fill slopes that are to be stabilized with grasses shall not be steeper then 2:1. (Where the slope id to be mowed the slope should be no steeper then 3:1; 4:1 is preferred because of safety factors related to mowing steep slopes.

3. Reverse benches shall be provided whenever the vertical interval (height) of any 2:1slopes exceeds 20 feet; for 3:1 slopes it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slopes face as equally as possible and shall convey the water to a stable outlet. Soils, seeps, rock outcrops, etc., shall also be taken into consideration when designing benches.

a. Benches shall be a minimum of six-feet wide to provide ease of maintenance.

b. Benches shall be designed with a reverse slope of 6:1 of flatter to the toe of the upper slope and with a minimum of one foot in depth. Bench gradient to the outlet shall be between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

c. The flow length within a bench shall not exceed 800' unless accompanied by appropriate design and computations. For flow channel stabilization see temporary swales.

4. Surface water shall be diverted from the face of all cut and/or fill slopes by the use of earth dikes, ditches and swales or conveyed downslope by the use of a designated structure, except where:

a. The face of the slope is or shall be stabilized and the face of all graded slopes shall be protected for surface runoff until they are stabilized.

b. The face of the slope shall not be subjected to any concentrated slows of surface water such as from natural drainways, graded swales, downspouts, etc.

c. The face of the slope will be protected by special erosion control materials, to include, but not limited to: approved vegetative stabilization practices (see section G), rip-rap or other approved stabilization methods.

5. Cut slopes occurring in ripable rock shall be serrated as shown on the following diagram. These serrations shall be made with conventional equipment as the excavation is made. Each step or serration shall be constructed on the contour and will have steps cut as nominal two-foot intervals with nominal three-foot horizontal shelves. These steps will vary depending on the slope ratio or the cut slope. The nominal slope line is 1:1. These steps will weather and act to hold moisture, lime, fertilizer and seed thus producing a much quicker and longer lived vegetative cover and better slope stabilization. Over land flow shall be diverted from the top of all serrated cut slopes and carried to a suitable outlet.

6. Surface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

7. Slopes shall not be created to close to property lines as the endanger adjoining properties without adequately protecting such properties against sediment, erosion, slippage, settlement, subsidence or other related damages.

8. Fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris, and other objectionable material. It should be free of stones over two (2) inches in diameter where compacted by hand or mechanical tempers over eight (8) inches in diameter where compacted by rollers or other equipment. Frozen material shall not be placed in the fill nor shall the fill material be placed on a frozen foundation.

9. Stockpiles, borrow areas and spoil shall be shown on the plans and shall be subjected to the provisions of the Standard and Specifications.

All disturbed areas shall be stabilized structurally or vegetatively in compliance with 20.0 Standards and Specifications for Vegetative Stabilization.

21.0 Standard and Specifications
For Topsoil

Definitions

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soild of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material in 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 materials toxic to plant growth

d. The soil is so acidic that treatment with limestone is not feasible.

For the purpose of these Standards and Specification, areas having slopes steeper that 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper that 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

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-SCS in cooperation with Maryland Agricultural Experimental Station.

Topsoil Specifications - Soil to be used as topsoil must meet the following:

i. 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 bot be a mixture of contrastinf textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials large than 1 ? " in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or other as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread to the rate of 4-8 tons/acre (200-400 pounds per 1,000square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked in to the soil in conjunction with tillage operations as described in the following procedures.

For sites having disturbed areas under 5 acres:

Place topsoil (if required) and apply soil amendments as specified in 20.0 vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

For sites having disturbed areas over 5 acres:

On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following.

a. pH for topsoil shall be between 6.0 and 7.5. If tested soil demonstrates a pH of less the 6.0, sufficient lime shall be prescribed to raise pH to 6.5 or higher.

b. Organic content of topsoil shall be not less then 1.5 percent by weight.

c. Topsoil having soluble salt content grater then 500 parts per million shall not be used.

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 day min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments as recommended be a qualified agronomist or soil scientist approved by the appropriate approval authority, may be used in lieu of natural topsoil.

Place topsoil (if required) and apply soil amendments as specified on 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

Topsoil Application

When topsoiling, maintain needed erosion and sediment control practiced such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fences and Sediment Traps and Basins.

Grades in the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

Topsoil shall be uniformy distributed in a 4" - 8" 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 pockets.

Topsoil shall not be place while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil id excessively wet in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Alternative for Permanent Seeding - Instead of applying the full amounts of like and commercial fertilizer, composted sludge and amendments mat be applied as specified below:

Composted Sludge Materials 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:

a. Composted sludge shall be supplied by, or originated 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.

b. Composted sludge shall contain as least 1 percent nitrogen, 1.5 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 constituents must be added to meet the requirements prior to use.

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub #1, Cooperative Extention Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

30.0 Dust Control

Definition

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 movement wher in and off-site damage is likely without treatment.

Specifications

Temporary Methods

1. Mulches - See standards for vegetative stabilization with mulches only. Mulch 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 whicj 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 - Soild board fences, silt fences, snow fences, burlap fences, staw bales, and similar materials 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. Topsoil - Covering with less erosive materials. See Standards for topsoilding.

3. Stone - Cover surface with crushed stone or coarse gravel.

References

1. Agriculture Handbook 346. Wind Erosion Forces in the United State and Their Use in Predicting Soil Loss.

2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA - ARS.

## PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
1. Preferred--Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10
fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.
At time of seeding apply 400 lbs/acre 30-0-0 urea form fertilizer (9 lbs/1000 sq. ft.)
2. Acceptable--Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10
fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 -- February 28, protect site by:
Option 1 - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.
Option 2 - Use sod. Option 3 -- Seer: with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with
2 tons/acre well anchored straw.

Mulching -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft. ) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance -- Inspect all seeding areas and make needed repairs, replacements and reseedings.

## TEMPORARY SEEDING NOTES.

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 -- February 28 protect the site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. per acre (8 gal/1000 sq. ft.)for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

**DEVELOPER'S CERTIFICATE**

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer _____ Date 2/28/07

JAMES M. JOST
Print name below signature

**ENGNEER'S CERTIFICATE**

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer _____ Date 2.28.07

JOHN HOUSEHOLDER, P.E.
Print name below signature

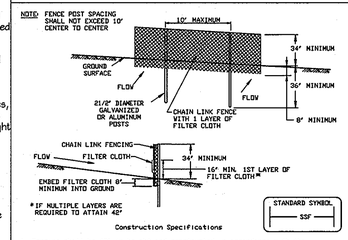
**REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.**

_____ 4/4/07
USDA-Natural Resources Conservation Service Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

_____ 4/4/07
Howard SCD Date

DETAIL 33 - SUPER SILT FENCE




Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

| | | |
|---|---|---|
| Tensile Strength | 50 lbs/in (min.) | Test: MSMT 509 |
| Tensile Modulus | 20 lbs/in (min.) | Test: MSMT 509 |
| Flow Rate | 0.3 gal/ft²/minute (max.) | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.) | Test: MSMT 322 |

| U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE H - 26 - 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
|---|---|---|

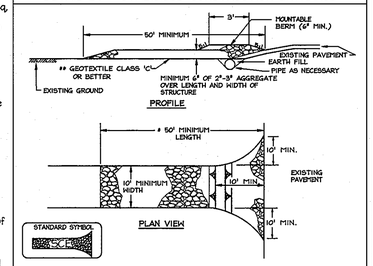
SUPER SILT FENCE

Design Criteria

| Slope | Slope Steepness | Slope Length (maximum) | Silt Fence Length (maximum) |
|---|---|---|---|
| 0 - 10% | 0 - 10:1 | Unlimited | Unlimited |
| 10 - 20% | 10:1 - 5:1 | 200 feet | 1,500 feet |
| 20 - 33% | 5:1 - 3:1 | 100 feet | 1,000 feet |
| 33 - 50% | 3:1 - 2:1 | 100 feet | 500 feet |
| 50% + | 2:1 + | 50 feet | 250 feet |

| U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE H - 26 - 3A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
|---|---|---|

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE




1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

| U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE F - 17 - 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
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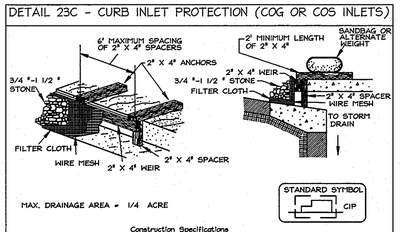
DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)




Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 4" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4" x 1 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

| U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E - 16 - 5B | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION |
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## HOWARD COUNTY
## SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (410-313-1855).

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 most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol 1, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specific above in accordance with the 1995 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Section 52). Temporary stabilization with mulch along can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained by the Howard County Sediment Control Inspector.

7. Site Analysis:
Total Area of Site 1.20 Acres
Area Disturbed 1.83 Acres (includes Frederick Road)
Area to be roofed or paved 1.68 Acres (includes Frederick Road)
Area to be vegetatively stabilized 0.15 Acres
Total Cut 5645 Cu. Yds.
Total Fill 563 Cu. Yds.
Offsite waste/borrow area location: N/A

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10. On all site with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized any construction as shown on these plans by the end of each work day, whichever is shorter.

2.28.07
DATE

STATE OF MARYLAND
JOHN M. HOUSEHOLDER
No. 29907
PROFESSIONAL ENGINEER

## SEQUENCE OF CONSTRUCTION

1. The contractor is responsible for obtaining all required permits prior to commencing any land disturbance activities. (1 days)

2. An on-site preconstruction meeting shall be conducted with the contractor and the Howard County Inspector at least 48 hours prior to the start of construction. Contact the Howard County Department of Inspections, Licenses and Permits at (410) 313-1880 to schedule. (1 day)

3. Clear and grub for and install the perimeter sediment control devices including super silt fence and the stabilized construction entrance (2 days)

4. Remove existing retaining wall, all existing buildings, concrete pads and other site features. (30 days)

5. Begin rough grading the site (1 week).

6. Begin installation of storm drain pipes and other underground utility lines. (15 days).

7. Install all inlet protections as soon as inlets are constructed. (1 day)

8. Complete all base grading, begin construction of bioretention area and install super silt fence to protect bioretention area. (1 week).

9. Construct buildings. Remove silt fence as needed to install. (180 days).

10. Construct parking structures. (60 days).

11. Begin curb, gutter and driveway construction and entrance from the main roads. (5 days)

12. Base paving and install the remainder of the driveway entrance (5 days).

13. Install all light poles & traffic signs. Complete all other onsite improvements. (1 week)

14. Stabilize all disturbed area and complete bioretention area once base paving is complete. (2 days)

15. Surface pave all roadways and parking areas (2 days).

16. Stabilize all remaining disturbed areas (1 day).

17. With the permission of the sediment control inspector remove any remaining sediment control devices.

Total Construction Time: 320 Days

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/4/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 4/26/07 |

| Date | No. | Revision Description |
|---|---|---|
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| | | |
| | | |


OWNER / DEVELOPER
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CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
EROSION AND SEDIMENT CONTROL NOTES & DETAILS

| | | |
|---|---|---|
| DESIGN: AH | SCALE: AS SHOWN | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 05-04-06 | 10 OF 16 |
| CHECKED: JMH | APPROVED: | |

SDP-06-068

MDC-326(SDP)

## PLANTING SPECIFICATIONS FOR BIORETENTION

I. GENERAL NOTES

A. SCOPE: THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES OF PLANT MATERIAL SHOWN ON THE PLAN IN THE PLANT LIST, AND SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT TO COMPLETE ALL LANDSCAPE WORK AS SHOWN ON THE PLANS AND SPECIFICATIONS.

B. UTILITIES: THE LANDSCAPE CONTRACTOR SHALL NOTIFY MISS UTILITY (1-800-257-7777) TO VERIFY THE LOCATION OF ALL MAIN UTILITIES AND SHALL ASK THE GENERAL CONTRACTOR TO LOCATE LIGHTING AND OTHER ON-SITE UTILITIES IN THE FIELD BEFORE PROCEEDING WITH THE INSTALLATION OF ANY PLANTING. IF CONDITIONS ARISE IN THE FIELD WHICH NECESSITATE THE SHIFTING OF A PLANT LOCATION MORE THAN 15', THE LANDSCAPE ARCHITECT IS TO BE CONSULTED.

C. SUBSTITUTIONS: ANY CHANGE IN THE TYPE, SIZE AND QUANTITY OF PLANT MATERIAL BY THE LANDSCAPE CONTRACTOR MUST BE APPROVED BY THE ENVIRONMENTAL CONSULTANT PRIOR TO INSTALLATION.

D. PLANT STANDARDS: PLANTS SUPPLIED SHALL CONFORM IN ALL RESPECTS TO THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1). THEY SHALL BE FIRST CLASS REPRESENTATIVES OF THEIR SPECIES AND VARIETIES, NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE AND GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. PLANT NAMES SHALL BE THOSE GIVEN IN THE LATEST EDITION OF STANDARD PLANT NAMES, AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE.

PLANTS SHALL BE SOUND, VIGOROUS AND HEALTHY, WELL BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE AND INSECT PESTS AND SHALL HAVE HEALTHY, WELL DEVELOPED ROOT SUBSTANCE. TRUNKS AND BRANCHES SHALL BE FREE OF CUTS AND ABRASIONS OVER ONE INCH (1") IN AND DIMENSION. PLANTS IN LEAF SHALL BE SPRAYED WITH ANTI-DESICCANT IMMEDIATELY BEFORE DIGGING TO FILM THE LEAVES, BRANCHES, AND TWIGS.

SHADE TREES WITH BROKEN, DAMAGED OR MULTIPLE LEADERS WILL BE REJECTED.

BALLED AND BURLAPPED PLANTS SHALL BE DUG WITH A FIRM NATURAL ROOT BALL. PLANTS WITH SOFT, BROKEN OR DAMAGED LIMBS WILL BE REJECTED.

PLANTS SHALL BE TAGGED WITH LABELS IDENTIFYING THE BOTANICAL AND COMMON NAMES OF THE PLANTS. NO CHANGE IN THE KIND, QUANTITY, QUALITY, OR SIZE OF PLANTS SPECIFIED SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE APPROVING AGENCY.

ALL PLANTS SHALL BE CERTIFIED PEST-FREE BY THE DEPARTMENT OF AGRICULTURE OF THEIR STATE OF ORIGIN.

MAJOR SHADE TREES SHALL BE 2-1/2" CALIPER OR LARGER (EXCEPT WHEN WITHIN 2 YEAR WSEL, THEN 1-1/4" - 1-1/2" CAL. WILL BE PERMITTED); ORNAMENTAL TREES SHALL HAVE A MINIMUM CALIPER OF 1-1/4"; EVERGREEN TREES SHALL HAVE A MINIMUM HEIGHT OF 6' AND SHALL BE FULL TO THE GROUND AND HEAVILY BRANCHED. SHRUBS SHALL HAVE A SPREAD OF AT LEAST 18". NO BARE ROOT TREES OR SHRUBS WILL BE ACCEPTED WITHOUT WRITTEN APPROVAL OF THE APPROVING AGENCY.

E. PLANTING MATERIALS: TOPSOIL SHALL BE FERTILE, FRIABLE AND TYPICAL OF THE PROJECT SITE BEFORE DISTURBANCE. IT SHALL HAVE A MINIMUM ORGANIC CONTENT OF 2.5% BY VOLUME AND SHALL BE FREE OF STONES, LUMPS, ROOTS, STICKS, AND DEBRIS LARGER THAN 2" IN ANY DIMENSION. IT SHALL NOT BE LOADED, DELIVERED, SPREAD OR OTHERWISE HANDLED IN A MUDDY OR FROZEN CONDITION. (SEE BIORETENTION SPECS.)

PLANTING (BACKFILL) MIX SHALL BE COMPOSED OF THREE PARTS OF THE SOIL IMMEDIATELY ADJACENT TO THE PLANT PIT OR BED TO ONE PART APPROVED ORGANIC MATTER.

TREE STAKING MATERIALS SHALL BE ROUGH-SAWN HARDWOOD 2" BY 2" STOCK OF A LENGTH TO CONFORM TO THE REQUIREMENTS OF THE TREE PLANTING DETAIL SHOWN ON THE PLANTING PLAN.

STAKING TIES SHALL BE DOUBLE STRANDS OF 12 OR 14 GAUGE GALVANIZED STEEL WIRE, TWISTED, FURNISHED WITH PROTECTIVE SECTIONS OF CORDED 3/4" DIAMETER RUBBER HOSE OR NYLON WEBBING AT LEAST 1-1/2" WIDE OR POLYPROPYLENE CHAINLOCK STRAPPING MANUFACTURED FOR THE PURPOSE OR OTHER MATERIALS APPROVED BY THE APPROVING AGENCY.

ALL DIG PLANT MATERIAL SHALL HAVE BEEN DUG BEFORE BUD BREAK OR AFTER LEAF MATURATION. ANY PLANT MATERIAL EXHIBITING DROOPING NEW GROWTH WITHIN TWO (2) WEEKS OF BEING PLANTED WILL BE REJECTED AND MUST BE REMOVED FROM THE JOB.

F. POOR DRAINAGE: NO PLANT SHALL BE PLANTED IN SITUATIONS THAT SHOW OBVIOUS POOR DRAINAGE. SUCH SITUATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENVIRONMENTAL CONSULTANT AND OWNER, AND IF THEY DEEM NECESSARY, THE PLANTS SHALL BE RELOCATED OR THE CONTRACTOR SHALL BE ADJUSTED TO ALLOW FOR DRAINAGE CORRECTION AT A NEGOTIATED COST.

G. SITE PREPARATION: IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO PRESENT "CLEAN" SOIL CONDITIONS TO THE LANDSCAPE CONTRACTOR PRIOR TO ANY LANDSCAPE INSTALLATION. "CLEAN" SOIL MAY INCLUDE ON-SITE SOIL MUST BE FREE OF PAVEMENT MATERIALS, MUCK, ROOT SYSTEMS, PETROLEUM OR OTHER CHEMICAL SUBSTANCES, BLUE STONE, CONSTRUCTION DEBRIS AND OTHER MATERIALS LARGER THAN 2" IN DIAMETER. THE "CLEAN" SOIL SHALL EXTEND TO THE FOLLOWING MINIMUM DEPTHS: 18" WHERE TREES ARE PROPOSED, 12" WHERE SHRUBS ARE PROPOSED AND 4" WHERE LAWN IS PROPOSED. IF THE LANDSCAPE CONTRACTOR ENCOUNTERS ANY AREA TO BE DEFICIENT REGARDING THESE "CLEAN" SOIL SPECIFICATIONS, HE SHALL REPORT THIS CONDITION TO THE ENVIRONMENTAL CONSULTANT AND OWNER PRIOR TO PLANTING IN THOSE AREAS.

H. WORKMANSHIP: DURING PLANTING, ALL AREAS SHALL BE KEPT NEAT AND CLEAN, AND ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO AVOID DAMAGE TO EXISTING PLANTS, TURF AND STRUCTURES. UPON COMPLETION, ALL DEBRIS AND WASTE MATERIAL RESULTING FROM PLANTING OPERATIONS SHALL BE REMOVED FROM THE PROJECT AND THE AREA CLEANED UP. ANY DAMAGED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.

I. WATER: IF AVAILABLE ON-SITE, THE OWNER SHALL SUPPLY WATER AT NO EXTRA COST. IT WILL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO SUPPLY WATER IF THERE IS NONE ON THE SITE.

II. PLANTING METHODS:

A. PLANTING BEDS: STAKE-OUT OUTLINES OF PLANTING BEDS AND CENTERS OF INDIVIDUAL PLANTING PITS. THESE LOCATIONS ARE TO BE APPROVED IN THE FIELD BY THE APPROVING AGENCY BEFORE PLANTING OPERATIONS BEGIN.

EXCAVATE STAKE OUT AREAS AND PREPARE PLANTING MIX (SEC. E1 & 2). ONLY PLANTING MIX SHALL BE USED TO BACKFILL THE PLANTING PITS AND BEDS.

B. TREE/SHRUB PIT: SET PLANTS SO THAT THE ROOTBALL REST ON FIRM GROUND AND THE ROOT CROWN IS 3"-4" HIGHER THEN THE SURROUNDING GRADE. BACKFILL WITH PLANTING MIX AND TAMP LIGHTLY IN EIGHT INCH (8") INCREMENTS. WATER THOROUGHLY TO ELIMINATE AIR POCKETS IN THE BACKFILL. REMOVE ALL MATERIALS OTHER THAN UNTREATED BURLAP, JUTE TWINE AND WIRE BASKET FROM THE TOP 1/3 OF THE BALL. COMPLETE BACKFILLING WITH PLANTING MIX TO BRING SOIL LEVEL TO SURROUNDING GRADE.

PROTECT PLANTS AT ALL TIMES FROM SUN AND DRYING WINDS. PLANTS THAT CANNOT BE PLANTED IMMEDIATELY SHALL BE KEPT IN THE SHADE, WELL PROTECTED WITH TOPSOIL, PEAT MOSS OR OTHER ACCEPTABLE MATERIAL AND SHALL BE KEPT WELL WATERED. PLANTS SHALL NOT REMAIN UNPLANTED FOR MORE THEN THREE (3) CALENDAR DAYS.

PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANYTIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES AND TWIGS. PLANTS SHALL BE LIFTED FROM THE BOTTOM OF THE BALL ONLY.

MULCH ALL BEDS AND PLANTING PITS WITH A THREE INCH (3") LAYER OF MULCH IMMEDIATELY AFTER PLANTING.

ALL PLANTS ARE TO BE WATERED THOROUGHLY ON THE DAY OF PLANTING, EVEN IF IT IS RAINING.

C. TREE BRACING: STAKE PLANTS IMMEDIATELY AFTER PLANTING, TAKING CARE THAT THEY STAND PLUMB AFTER STAKING. STAKED AND STAKING MATERIALS SHALL BE REMOVED AT THE END OF THE GUARANTEE PERIOD AND DISPOSED OF OFF-SITE BY THE CONTRACTOR.

D. TREE WRAP: WRAP DECIDUOUS TREE TRUNKS STARTING AT THE BASE OF THE TREE UP TO THE SECOND BRANCH. REMOVE WRAPPING AT THE END OF THE GUARANTEE PERIOD.

E. PRUNING: PRUNE PLANT AT THE TIME OF PLANTING AS DIRECTED BY THE APPROVING AGENCY, TAKING CARE TO RETAIN THE NATURAL FORM AND CHARACTER OF THE PLANT.

F. MISC.: ANY ITEMS NOT ADDRESSED IN THIS SECTION SHALL BE IN CONFORMANCE WITH THE APPLICABLE REQUIREMENTS OF THE LANDSCAPE SPECIFICATION GUIDELINES OF THE LANDSCAPE CONTRACTORS ASSOCIATION, MD-DC-VA.

G. WETLAND PLANTING NOTES: CONTRACTOR SHALL PROVIDE A MINIMUM SOIL DEPTH OF 4" AT THE COMPLETION OF FINAL GRADING. ANY LARGE STONES, DEBRIS OR CONSTRUCTION MATERIALS SHALL BE REMOVED AT THIS TIME. COMPACTED SOILS SHALL BE DISKED TO A DEPTH NO LESS THAN 6" PRIOR TO BASIN PLANTING AND FLOODING.

A SPRING OR EARLY SUMMER PLANTING SHALL BE REQUIRED. PLANTING MATERIALS SHALL NOT BE STORED ON-SITE LONGER THAN 48 HOURS. PLANT ROOTS SHALL BE KEPT MOIST AT ALL TIMES. PLANTS SHALL BE STORED OUT OF DIRECT SUNLIGHT.

FOR PLANTING POTTED PLANTS, MAKE A HOLE IN THE SUBSTRATE WIDE ENOUGH TO TAKE THE POTTED PLANT, AND DEEP ENOUGH THAT THE WETLAND SUBSTRATE IS AT THE SAME DEPTH (OR A LITTLE DEEPER) THAT THE SOIL LEVEL IN THE POT. THE POT SHALL BE REMOVED RIGHT BEFORE PLANTING TO FACILITATE THE ROOT SPREADING. THE OVERALL DEPTH SHOULD BE APPROXIMATELY 4"-6". PRESS THE SUBSTRATE FIRMLY AROUND THE PEAT POT.

EACH PLANT IS TO BE SIDE DRESSED AT THE TIME OF PLANTING WITH 30 GRAMS OSMOCOTE 18-6-12 SLOW RELEASE FERTILIZER OR AN EQUIVALENT.

SOURCE OF AQUATIC PLANTS: RUPPERT ENVIRONMENTAL, ASHTON, MARYLAND (301)774-0400 AND ENVIRONMENTAL CONCERN, INC., ST. MICHAELS, MARYLAND (410)745-9620.

III. SEEDING AND SODDING

ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVEMENTS AND PLANTING BEDS ARE TO BE ESTABLISHED IN A LAWN OF KENTUCKY-31 TALL FESCUE EITHER BY SEEDING OR SOD, OR COMBINATION, DEPENDING ON THE TIME OF YEAR, AVAILABILITY OF MATERIALS AND OWNER'S PREFERENCE. THE STABILIZATION SHALL BE IN CONFORMANCE TO STANDARDS AND SPECIFICATIONS FOR SOIL AND SEDIMENT CONTROL, PUBLISHED BY THE STATE OF MARYLAND.

IV. GUARANTEE

ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN HEALTHY AND VIGOROUS CONDITION AT THE BEGINNING OF THE SECOND GROWING SEASON FOLLOWING ACCEPTANCE BY THE APPROVING AGENCY. PLANTS WITH GREATER THAN 33% DIEBACK, OR HAVE NOT GROWN SO AS TO EMERGE FROM THE WATER SURFACE, SHALL BE REPLACED AT THE NEXT PLANTING SEASON.

V. MAINTENANCE

REMOVE LITTER AND DEBRIS AS REQUIRED DURING THE FIRST GROWING SEASON AND AT THE BEGINNING OF THE SECOND GROWING SEASON.

REPLACE UNSUCCESSFUL TRANSPLANTS MONTHLY FOR 6 MONTHS AND AT THE BEGINNING OF THE SECOND GROWING SEASON.

## BIORETENTION SOIL & MATERIAL REQUIREMENTS

1. SOIL TEXTURE AND STRUCTURE:

TOPSOIL FOR BIORETENTION SHALL HAVE A SANDY LOAM, LOAMY TEXTURE PER USDA TEXTURAL TRIANGLE. MAXIMUM CLAY CONTENT IS 5%; SOIL MIXTURE SHALL BE 50-60% SAND; 20-30% LEAF MULCH; 20-30% TOPSOIL. THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, TEARTHUB, OR OTHER NOXIOUS WEEDS.

2. SOIL TESTING:

PLANTING SOIL FOR BIORETENTION AREAS MUST BE TESTED PRIOR TO INSTALLATION FOR PH AND ORGANIC MATTER. THE SOIL SHOULD MEET THE FOLLOWING CRITERIA (LANDSCAPE CONTRACTORS ASSOCIATION, 1986).

PH RANGE: 5.5-6.5
ORGANIC MATTER 1.5-3.0%

IT IS REQUIRED THAT A SEIVE ANALYSIS, PH, AND ORGANIC MATTER TEST BE PREFORMED PER EACH BIORETENTION AREA.

3. SOIL PLACEMENT:

PLACEMENT OF THE PLANTING SOIL IN THE BIORETENTION AREA SHOULD BE IN LIFTS OF 12 TO 18 INCHES AND LIGHTLY COMPACTED. MINIMAL COMPACTION EFFORT CAN BE APPLIED TO THE SOIL BY TAMPING WITH A BUCKET FROM A DOZER OR BACKHOE. REFER ALSO TO "COMPACTION".

4. MULCH SPECIFICATIONS:

INDIVIDUAL PLANTING SHALL BE MULCHED (REFER TO LANDSCAPING DETAILS). ACCEPTABLE MULCH SHALL BE SHREDDED HARDWOOD ONLY. MULCH MUST BE WELL AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL. WELL AGED MULCH IS DEFINED AS MULCH THAT HAS BEEN STOCKPILED OR STORED FOR AT LEAST TWELVE (12) MONTHS.

5. SAND SPECIFICATIONS:

PROVIDE CLEAN SAND, FREE OF DELETERIOUS MATERIALS. SAND SHALL MEET AASHTO M-6 OR ASTM C-33 WITH GRAIN SIZE OF 0.02"-0.04".

6. GEOTEXTILE SPECIFICATIONS:

GEOTEXTILE FABRIC SHALL MEET ASTM D-751 (PUNCTURE STRENGTH - 125 LB)
ASTM D-1117 (MULLEN BURST STRENGTH - 400 PSI)
ASTM D-1682 (TENSILE STRENGTH - 300 LB)
FABRIC SHALL HAVE 0.08" THICK E.O.S. OF #80 SLEVE, AND MAINTAIN 125 GPM PER SQ. FT. FLOW RATE.

7. GRAVEL FILTER SPECIFICATIONS:

UNDERDRAIN GRAVEL BLANKET SHALL BE DOUBLE WASHED, #57 STONE, 1-1/2" IN SIZE. PEA GRAVEL SHALL BE WASHED, RIVER-RUN, ROUND DIAMETER 1/4" -1/2" IN SIZE.

8. INSPECTION REQUIREMENTS:

( ) THE CONTRACTOR SHALL ARRANGE A "PRECONSTRUCTION MEETING" WITH THE OWNER AND LANDSCAPE ARCHITECT/ENGINEER PRIOR TO BEGINNING WORK IN THE BIORETENTION FACILITY.

( ) AT THE COMPLETION OF EXCAVATION TO INSPECT SUB GRADE PREPARATION.

( ) DURING UNDERDRAIN AND FILTER INSTALLATION

( ) BACK FILL OF SOIL INTO THE BIORETENTION AREAS. SOIL CERTIFICATIONS FOR BACK FILL ARE REQUIRED.

( ) THE FINAL TOPSOIL LAYERS SHOULD BE THOROUGHLY WETTED TO ACHIEVE SETTLEMENT OF THE SOIL/SAND BACKFILL MIX.

( ) THE WORK SHALL BE INSPECTED BY THE OWNER/LANDSCAPE ARCHITECT PRIOR TO FINAL STABILIZATION AND PLANTING.

( ) SEDIMENT AND EROSION CONTROL PRACTICES MAY BE REMOVED UPON APPROVAL BY THE COUNTY INSPECTOR.

## CONSTRUCTION SPECIFICATIONS FOR BIORETENTION

I. BIORETENTION AREA PLANT SPECIFICATIONS

GENERAL PLANTING SPECIFICATIONS

ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT FROM THE SOURCE TO THE JOB SITE AND UNTIL PLANTED.

WALLS OF PLANTING PITS SHALL BE DUG SO THAT THEY ARE VERTICAL.

THE DIAMETER OF THE PLANTING PIT MUST BE A MINIMUM OF SIX INCHES (6") LARGER THEN THE DIAMETER OF THE BALL OF THE TREE.

THE PLANTING PITS SHALL BE DEEP ENOUGH TO ALLOW 1/4" OF THE BALL TO BE ABOVE THE EXISTING GRADE. LOOSE SOIL AT THE BOTTOM OF THE PIT SHALL BE TAMPED BY HAND.

THE APPROPRIATE AMOUNT OF FERTILIZER IS TO BE PLACED IN THE PLANTING PIT BY LIFTING AND CARRYING THE PLANT BY ITS' BALL (NEVER LIFT BY BRANCHES OR TRUNK).

SET THE PLANT STRAIGHT AND IN THE CENTER OF THE PIT SO THAT THE TOP OF THE BALL IS APPROXIMATELY 1/4" ABOVE THE FINAL GRADE.

BACKFILL PLANTING PIT WITH EXISTING SOIL.

MAKE SURE PLANT REMAINS STRAIGHT DURING BACKFILLING PROCEDURE.

NEVER COVER THE TOP OF THE BALL WITH SOIL.MOUND SOIL AROUND THE EXPOSED BALL (1/4").

TREES SHALL BE BRACED BY USING 2" BY 2" WHITE OAK STAKES. STAKES SHALL BE PLACED PARALLEL TO WALKWAYS AND BUILDINGS. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL, UTILIZING HOSE AND WIRE SO THE TREE IS BRACED TO THE STAKES.

PLANTING GRASS GROUND COVER

GRASSES AND LEGUME SEED SHALL BE TILLED INTO THE SOIL TO A DEPTH OF AT LEAST 2 INCHES BY WITHER HARROWING OR DISCING. FERTILIZER SHALL BE APPLIED AT THE SAME RATE AND UTILIZING THE SAME PROCESS FOR NON-GRASS GROUND COVER.

GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING TECHNIQUES.

FERTILIZER

ALL GROUND COVERS SHALL BE FERTILIZED WITH A 10-6-4 ANALYSIS FERTILIZER AS A WET APPLICATION AT THE RATE OF 3 LBS. PER 100 SQUARE FEET OF THE BIORETENTION AREA PRIOR TO PLANTING NON-GRASS GROUND COVER AS PART OF THE GRASS SEED GROUND COVER.

FERTILIZATION

TREE AND SHRUB FERTILIZER SHALL BE 21 GM. TIGHTLY COMPRESSED, LONG LASTING, SLOW RELEASE (2 YEAR) FERTILIZER TABLET WITH A MINIMUM GUARANTEED ANALYSIS OF 20-10-5:

TOTAL NITROGEN (N) 20%
WATER SOLUBLE ORGANIC NITROGEN 7%
WATER INSOLUBLE ORGANIC NITROGEN 15%
AVAILABLE PHOSPHORIC ACID (P2O3) 10%
SOLUBLE POTASH (K2O) 5%

FOR CONTAINERIZED TREES AND SHRUBS, PLACE THE SPECIFIC FERTILIZER TABLET(S) IN THE BOTTOM OF THE PLANTING PIT ACCORDING TO THE FOLLOWING RATES:

1 GAL. CONTAINER 1 EA. 21 GM. TABLETS
3 GAL. CONTAINER 2 EA. 21 GM. TABLETS
5 GAL. CONTAINER 3 EA. 21 GM. TABLETS
7 GAL. CONTAINER 5 EA. 21 GM. TABLETS

PLANTING NON-GRASS GROUND COVER

THE GROUND COVER PLANTING HOLES SHALL BE DUG THROUGH THE MULCH WITH ONE OF THE FOLLOWING: HAND TROWEL, SHOVEL, BULB PLANTER, OR HOE (THIS DOES NOT APPLY TO GRASSES OR LEGUMES). SPACING SHALL BE 2' ON CENTER.

BEFORE PLANTING, BIODEGRADABLE POTS SHALL BE SPLIT, AND NON-BIODEGRADABLE POTS SHALL BE REMOVED. ROOT SYSTEMS OF ALL POTTED PLANTS SHALL BE SPLIT OR CRUMBLED.

THE GROUND COVER SHALL BE PLANTED SO THAT THE ROOTS ARE SURROUNDED BY THE SOIL BELOW THE MULCH, POTTED PLANTS SHALL BE SET SO THAT THE TOP OF THE POT IS EVEN WITH THE EXISTING GRADE. THE ROOT OF BARE ROOT PLANTS SHALL BE COVERED TO THE CROWN.

SPRAY THE MULCHED AND PLANTED GROUND COVER BED WITH A PRE-EMERGENT HERBICIDE.

THE ENTIRE GROUND COVER BED SHALL BE THOROUGHLY WATERED.

## OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORM WATER FACILITIES

### ROUTINE MAINTENAMCE:

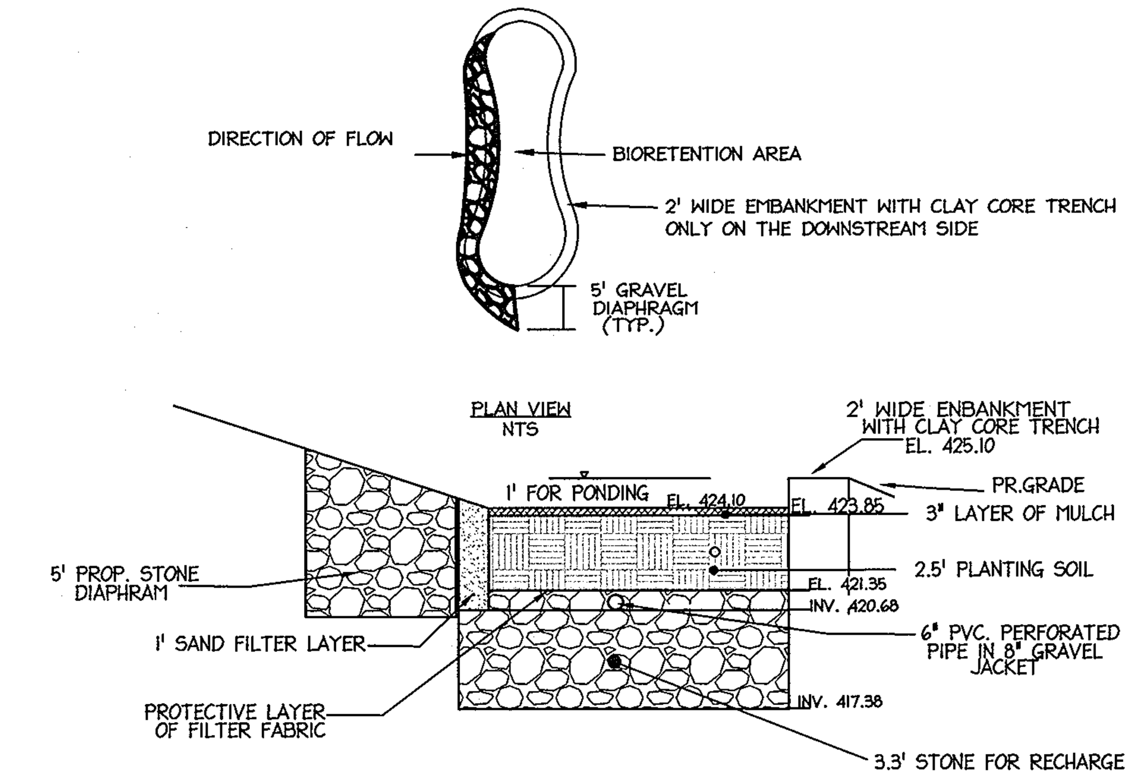
1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFECTION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREE AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.
5. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
6. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND SHALL BE MOWED AS NEEDED.
7. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AS NEEDED.
8. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

### NON-ROUTINE MAINTENAMCE:

1. STRUCTURAL COMPONENTS OF THE FACILITY SUCH AS THE EMBANKMENT, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

### OPERATION, MAINTENANCE AND INSPECTION

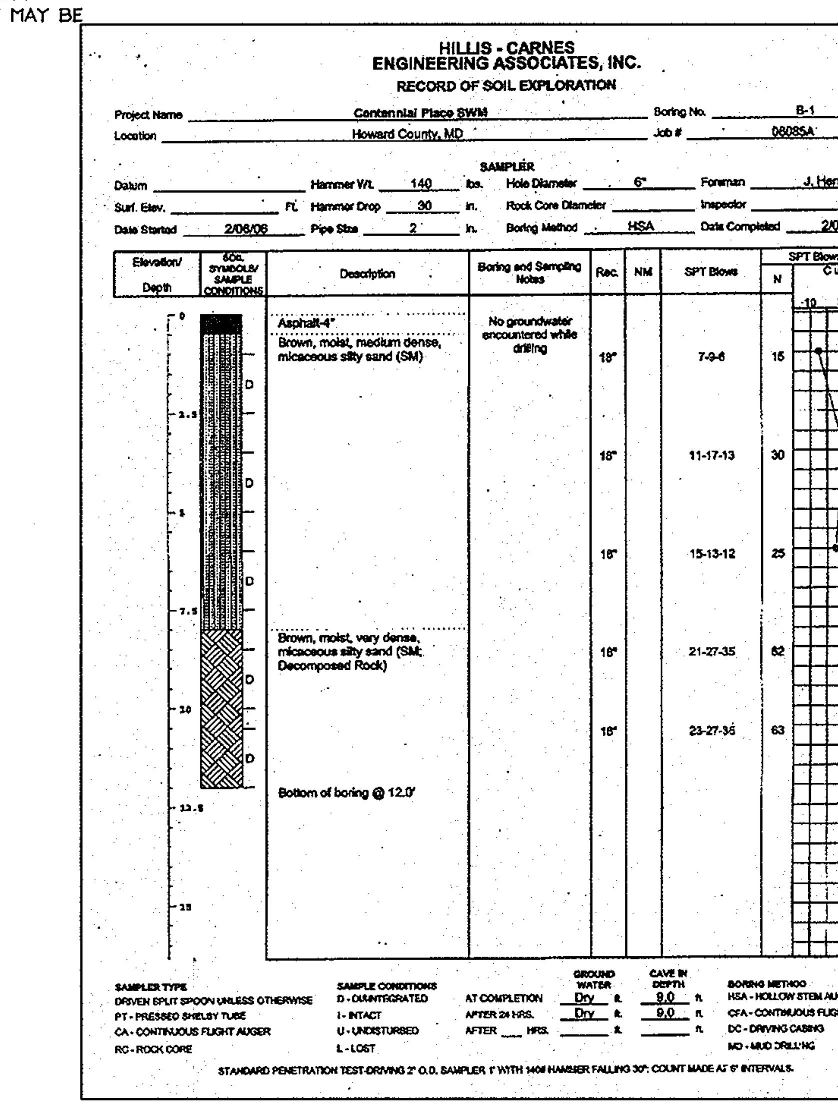
INSPECTION OF THE FACILITY SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY. THE FACILITY OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE FACILITY AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE FACILITY OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.




### BIORETENTION#1

SCALE
1":5' VERTICAL
AS LABELED HORZ.

NOTE:
WRAP PERFORATED PIPE IN 1/4" MESH (4X4) OR SMALLER GALVANIZED HARDWARE CLOTH. IF MESH IS UNAVAILABLE, USE SLOTTED PIPE.




APPROVED: DEPARTMENT OF PLANNING AND ZONING

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|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 4/26/07 |

| Date | No. | Revision Description |
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| | | |

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2·28·07
DATE

STATE OF MARYLAND · JOHN M. HOUSEHOLDER · No. 29907 · PROFESSIONAL ENGINEER

CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
SWM
NOTES AND DETAILS

| | | |
|---|---|---|
| DESIGN: AH | SCALE: AS SHOWN | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 11-15-06 | 11 OF 16 |
| CHECKED: JMH | APPROVED: | |

SDP-06-068

MDC-326(SDP)

## CONSTRUCTION SPECIFICATIONS

***Pond MD-378***

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

**Site Preparation**

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

**Earth Fill**

***Material*** - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

***Placement*** - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

***Compaction*** - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

***Cut Off Trench*** - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

***Embankment Core*** - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

**Structure Backfill**

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

**Pipe Conduits**

All pipes shall be circular in cross section.

***Corrugated Metal Pipe*** - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

   Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

   Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

   Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

   Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

   Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "**Structure Backfill**".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

***Reinforced Concrete Pipe*** - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "**Structure Backfill**".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

***Plastic Pipe*** - The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" – 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding -The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "**Structure Backfill**".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

***Drainage Diaphragms*** - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

**Concrete**

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

**Rock Riprap**

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

**Care of Water during Construction**

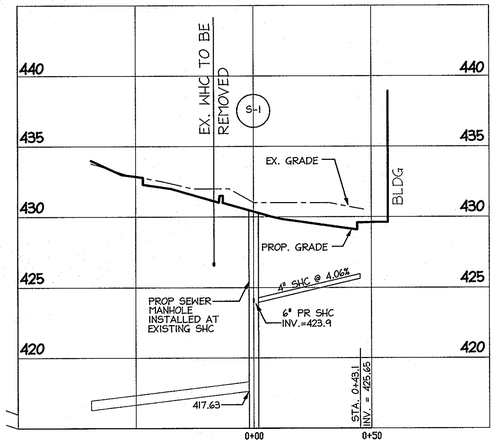
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

**Stabilization**

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

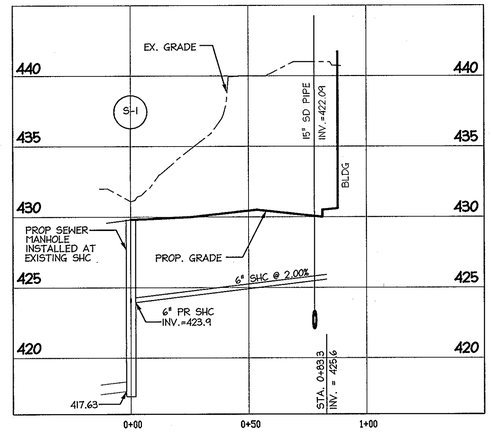
**Erosion and Sediment Control**

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.



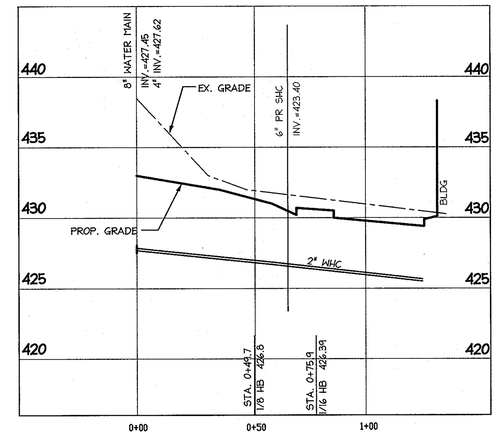

SHC TO BLDG A

SCALE: 1:30 H
1:5 V




SHC TO BLDG B

SCALE: 1:30 H
1:5 V




WHC TO BLDG A

SCALE: 1:30 H
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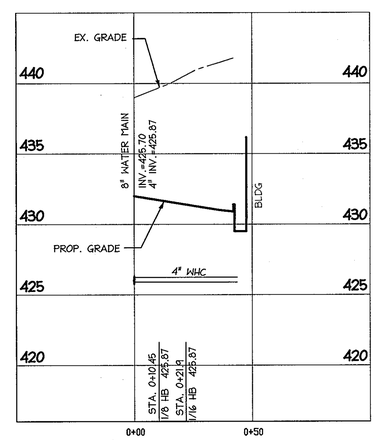


PROPOSED 4" WATER TO BLDG B

SCALE: 1:30 H
1:5 V

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 7/24/07 |

| Date | No. | Revision Description |
|---|---|---|
| | | |
| | | |
| | | |

**OWNER / DEVELOPER**

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410.872.8690 · metro 301.881.0148 · fax 410.872.5693

2-28-07
DATE

STATE OF MARYLAND
JOHN M. HOUSEHOLDER
No. 28907
PROFESSIONAL ENGINEER

# CENTENNIAL PLACE

TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:

## SWM NOTES & PROFILES

| | | | |
|---|---|---|---|
| DESIGN: KLZ | SCALE: 1"=30' | PROJECT: 05B801.01 | |
| DRAWN: ADL / DAH | DATE: 05-04-06 | | |
| CHECKED: JMH | APPROVED: | 12 OF 16 | |

MDC-326(SDP)

SDP-06-068

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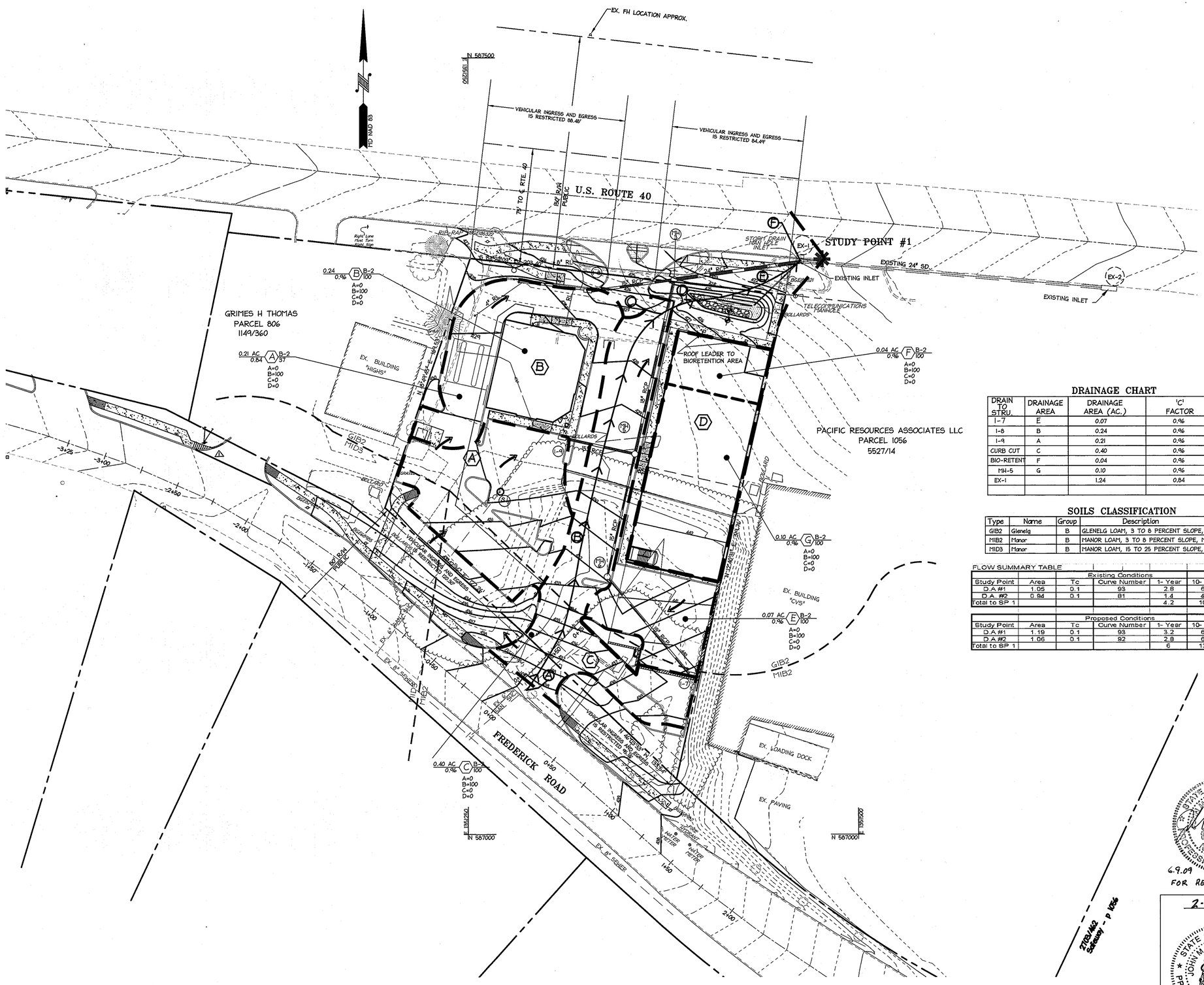


## LEGEND

| | |
|---|---|
| EXISTING CONTOURS | 416 |
| EXISTING STORM DRAIN | EX. 12" RCP |
| EXISTING SANITARY SEWER | EX. 8" SAN |
| EXISTING WATER | EX. 6" WATER |
| EXISTING TRANSFORMER | |
| EXISTING TRANSFORMER | |
| EXISTING MAILBOX | |
| PROPOSED CONTOUR | 418 |
| EXISTING FENCE POST | |
| EXISTING FENCE | X |
| PROPERTY LINE | |
| TREELINE | |
| PROPOSED SETBACK LINES | |
| DRAINAGE AREA LABEL | AREA 'C' J ZONE & IMP. SOILS |
| DRAINAGE AREA DIVIDE | |
| SUB-DRAINAGE AREA DIVIDE | |
| SOIL LINE | |
| FLOW DIRECTION | |
| Tc PATH | A B C |
| STUDY POINT | |

## DRAINAGE CHART

| DRAIN TO STRU. | DRAINAGE AREA | DRAINAGE AREA (AC.) | 'C' FACTOR | PERCENT IMPERVIOUS (%) | NOTES |
|---|---|---|---|---|---|
| I-7 | E | 0.07 | 0.9% | 100 | PICK-UPS LOWER LEVEL OF THE GARGAE |
| I-8 | B | 0.24 | 0.9% | 100 | |
| I-9 | A | 0.21 | 0.9% | 100 | |
| CURB CUT | C | 0.40 | 0.9% | 100 | DRAINS TO BIORETENTION AREA |
| BIO-RETENT | F | 0.04 | 0.9% | 100 | ROOF LEADER DIRECT FLOW TO BIORETENTION AREA. |
| MH-5 | G | 0.10 | 0.9% | 100 | |
| EX-1 | | 1.24 | 0.84 | 37 | OFFSITE DRAINS TO EX-1 (FOR HGL ONLY0 |
| | | | | | |

## SOILS CLASSIFICATION

| Type | Name | Group | Description |
|---|---|---|---|
| GIB2 | Glenelg | B | GLENELG LOAM, 3 TO 8 PERCENT SLOPE, MODERATELY ERODED |
| MIB2 | Manor | B | MANOR LOAM, 3 TO 8 PERCENT SLOPE, MODERATELY ERODED |
| MID3 | Manor | B | MANOR LOAM, 15 TO 25 PERCENT SLOPE, MODERATELY ERODED |

FLOW SUMMARY TABLE

| Study Point | Area | Tc | Curve Number | 1- Year | 10- Year | 25- Year |
|---|---|---|---|---|---|---|
| Existing Conditions | | | | | | |
| D.A #1 | 1.05 | 0.1 | 93 | 2.8 | 6.1 | 6.8 |
| D.A. #2 | 0.94 | 0.1 | 81 | 1.4 | 4.3 | 4.9 |
| Total to SP 1 | | | | 4.2 | 10.4 | 11.7 |
| Proposed Conditions | | | | | | |
| D.A #1 | 1.19 | 0.1 | 93 | 3.2 | 6.9 | 7.7 |
| D.A #2 | 1.06 | 0.1 | 92 | 2.8 | 6.2 | 6.8 |
| Total to SP 1 | | | | 6 | 13.1 | 14.5 |

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 4/9/07

Chief, Division of Land Development — Date 4-26-07

Director — Date 4/26/07

| Date | No. | Revision Description |
|---|---|---|
| 6.08.09 | 1 | FREDERICK ROAD SIDEWALK REVISIONS |

**OWNER / DEVELOPER**

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STATE OF MARYLAND JOHN M. HOUSEHOLDER No. 29907 PROFESSIONAL ENGINEER

6.9.09
FOR REVISION #1

2-28-07
DATE

STATE OF MARYLAND JOHN M. HOUSEHOLDER No. 29907 PROFESSIONAL ENGINEER


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# CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:

## DRAINAGE AREA MAP

| | | |
|---|---|---|
| DESIGN: AH | SCALE: 1"=30' | PROJECT: 05B801.01 |
| DRAWN: ADL / DAM | DATE: 05-04-06 | 13 OF 16 |
| CHECKED: JMH | APPROVED: | |

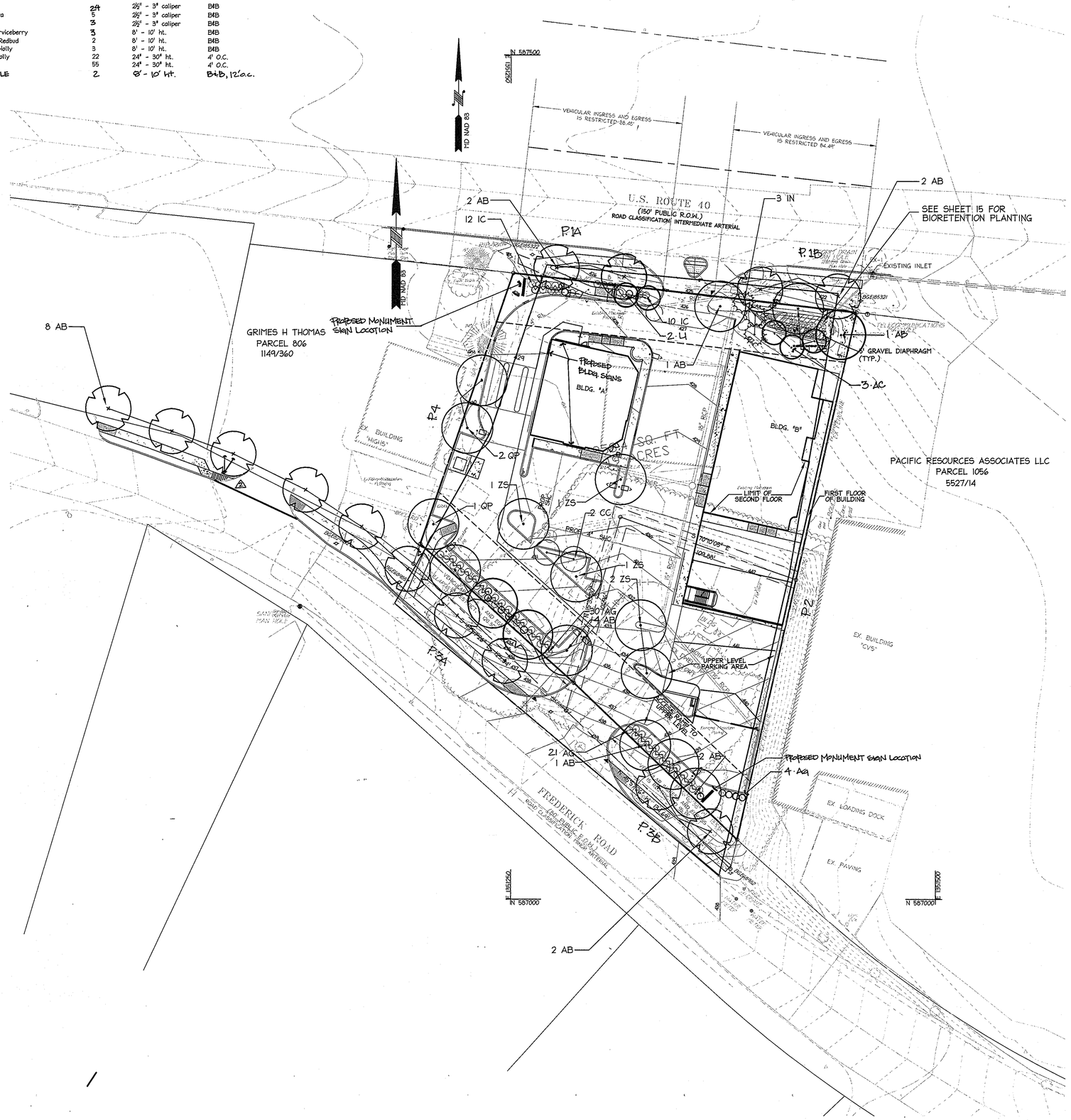
SDP-06-068

MDC-326(SDP)

P:\Projects\05B801.01\~MDC-XXXX\~MDC-326-SDP\13-DRAINAGE AREA MAP.dwg, 12-DRAINAGE AREA, 2/28/2007 11:41:49 AM

**PLANT LIST:**

| SYMBOL | LATIN NAME | COMMON NAME | QUANTITY | SIZE | REMARKS |
|---|---|---|---|---|---|
| AB | Acer Buergeranum | Trident Maple | 24 | 2½" - 3" caliper | B&B |
| ZS | Zelkova Serrata | Japanese Zelkova | 5 | 2½" - 3" caliper | B&B |
| QP | Quercus Phellos | Willow Oak | 3 | 2½" - 3" caliper | B&B |
| AC | Amelanchier Canadensis | Shadowblow Serviceberry | 3 | 8' - 10' ht. | B&B |
| CC | Cercis Canadensis | 'Forest Pansy' Redbud | 2 | 8' - 10' ht. | B&B |
| IN | Ilex x 'Nellie Stevens' | Nellie Stevens Holly | 3 | 8' - 10' ht. | B&B |
| IC | Ilex crenata 'Green Lustre' | Green Luster Holly | 22 | 24" - 30" ht. | 4' O.C. |
| AG | Abelia x Grandiflora | Glossy Abelia | 55 | 24" - 30" ht. | 4' O.C. |
| LI | LAGERSTROEMIA INDICA | CRAPE MYRTLE | 2 | 8' - 10' ht. | B&B, 12' o.c. |




**LEGEND**

- EXISTING CONTOURS — 416
- EXISTING STORM DRAIN — EX. 12" RCP
- EXISTING SANITARY SEWER — EX. 8" SAN
- EXISTING WATER — EX. 6" WATER
- EXISTING FENCE — X
- PROPERTY LINE
- EX. TREELINE
- PROPOSED CONTOUR — 416
- PROPOSED SETBACK LINES
- PROPOSED STREET TREE
- PROPOSED SHADE TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUB

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division | Date 4/9/07 |
| Chief, Division of Land Development | Date 4-26-07 |
| Director | Date 4/26/07 |

| Date | No. | Revision Description |
|---|---|---|
| 6.08.09 | 2 | FREDERICK RD. SIDEWALK REVISIONS |
| 12/2008 | 1 | REVISIONS TO PER. PLANTINGS DUE TO SIGNAGE (SITE) |

FOR REVISIONS #1 & 2 ONLY

6.8.2009

2.28.07
DATE

STATE OF MARYLAND
NO. 3171
REGISTERED LANDSCAPE ARCHITECT

**OWNER / DEVELOPER**

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CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
LANDSCAPE PLAN

| | | | | | |
|---|---|---|---|---|---|
| DESIGN: | LNG | SCALE: | 1"=30' | PROJECT: | 05B801.01 |
| DRAWN: | ADL | DATE: | 02-27-07 | | |
| CHECKED: | BKC | APPROVED: | | | |



MDC-326(SDP)

SDP-06-068

## SCHEDULE A
## PERIMETER LANDSCAPE EDGE

| CATEGORY | ADJACENT TO PERIMETER PROPERTIES | | ADJACENT TO ROADWAYS | | | |
|---|---|---|---|---|---|---|
| PERIMETER | P 2 | P 4 | P 1A | P 1B | P 3A | P 3B |
| LANDSCAPE TYPE "A" L.F. OF PER. | 319 LF. | 169 LF. | | | | |
| LANDSCAPE TYPE "B" L.F. OF PER. | | | | 85 LF. | | |
| LANDSCAPE TYPE "E" L.F. OF PER. | | | 88 LF. | N/A | 121 LF. | 97 LF. |
| CREDIT FOR EX. VEG.<br>BELOW IF NEEDED | N/A | N/A | N/A | N/A | N/A | N/A |
| PERM. L.F. OF PERIMETER<br>(PERIMETER- CREDIT) | N/A | N/A | N/A | N/A | N/A | N/A |
| NO. OF PLANTS REQ.<br>SHADE TREES<br>EVG. TREES<br>SHRUBS | <br>5<br>0<br>0 | <br>3<br>0<br>0 | <br>2<br>0<br>22 | <br>2<br>2<br>0 | <br>3<br>0<br>30 | <br>3<br>0<br>25 |
| NO. OF PLANTS PROV. ⚠<br>SHADE TREES<br>EVG. TREES<br>OTHER TREES<br>SHURBS TREES | <br>5*<br>0<br>0<br>0 | <br>2+++<br>0<br>0<br>0 | <br>0+<br>0<br>2+<br>22 | <br>2++<br>3<br>3++<br>0 | <br>4++<br>0<br>0<br>30 | <br>3<br>0<br>0<br>25 |

* PIB: ONE (1) ORNAMENTAL TREE AND ONE (1) EVERGREEN TREE HAS BEEN SUBSTITUTED FOR ONE SHADE TREE.
* P2: DUE TO SPACE CONSTRAINTS, THE PLANTINGS FOR PERIMETER 2 WILL BE PROVIDED AT OTHER LOCATIONS ON SITE. ONE (1) LONDON PLANETREE (PA) HAS BEEN LOCATED NORTH OF BUILDING 'B', TWO (2) WILLOW OAK (QP) HAVE BEEN LOCATED NEAR THE WESTERN PROPERTY LINE, AND ONE (1) ZELKOVA HAS BEEN LOCATED IN A PLANTING ISLAND IN FRONT OF BUILDING 'B.'

+ FOUR (4) ORNAMENTAL TREES SUB. FOR TWO (2) SHADE TREES. ⚠
++ ONE (1) AB AND TWO (2) AC RELOCATED FROM PER. 1A.
+++ ONE (1) QP SUB. FOR ONE (1) AB AND RELOCATED TO PER. 3A.

## GENERAL PLANTING NOTES

1. ALL PLANT MATERIAL TO MEET A.A.N. STANDARDS.
2. LANDSCAPING CONTRACTOR TO FOLLOW LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE WASHINGTON METRO AREA APPROVED BY LCAMW.
3. NO SUBSTITUTIONS TO BE MADE WITHOUT CONSENT OF LANDSCAPE ARCHITECT OR OWNER.
4. IN THE EVENT OF VARIATION BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND THE PLANS, THE PLANS SHALL CONTROL. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES PRIOR TO THE COMMENCEMENT OF WORK. SOD QUANTITY TAKE-OFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING. THE CONTRACTOR SHALL FURNISH PLANT MATERIAL IN SIZES AS SPECIFIED IN THE PLANT LIST.
5. ALL BEDS TO BE TOPPED WITH THREE INCHES OF HARDWOOD MULCH.
6. LANDSCAPE CONTRACTOR TO VERIFY LOCATION OF UTILITIES WITH OWNERS BEFORE PLANTING.
7. LANDSCAPE ARCHITECT/OWNER SHALL SELECT, VERIFY AND/OR APPROVE ALL PLANT MATERIAL. AT OWNER'S DISCRETION, SPECIMEN AND OTHER PLANT MATERIAL WILL BE SELECTED.
8. LANDSCAPE CONTRACTOR SHALL COORDINATE PLANT BED FILLING OPERATIONS AND PLANT MATERIAL INSTALLATION WITH WITH GENERAL CONTRACTOR AND UTILITIES CONTRACTOR. AT THE TIME OF FINAL INSPECTION WITH ACCEPTANCE, ALL ELECTRIC, WATER, DRAINAGE, AND FOUNTAIN UTILITIES, AS WELL AS ALL PLANT MATERIALS, SHALL REMAIN UNDAMAGED. LIKEWISE, LANDSCAPE CONTRACTOR AND UTILITIES CONTRACTOR SHALL COORDINATE EFFORTS TO ENSURE THAT SURFACE UTILITIES ARE AT THE PROPER ELEVATION RELATIVE TO FINAL GRADES.
9. CONTRACTOR SHALL NOTIFY MISS UTILITY 72 HOURS PRIOR TO CONSTRUCTION.
10. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENTANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
11. TOPSOIL MIX
    A. PLANTING MIX SHALL BE PREPARED AT APPROVED ON-SITE STAGING AREA USING APPROVED ON-SITE EXISTING SOIL. MIX MINIMUM QUANTITIES OF 20 CUBIC YARDS OR SUFFICIENT MIX FOR ENTIRE JOB IF LESS THAN 20 CUBIC YARDS IS REQUIRED.
    B. THOROUGHLY MIXED IN THE FOLLOWING PROPORTIONS FOR TREE AND SHRUB PLANTING MIX:
    .5 CY EXISTING SOIL
    .2 CY SHARP SAND
    .3 CY WOOD RESIDUALS
    4.5 LBS TREBLE SUPERPHOSPHATE
    5 LBS DOLMONITE LIMESTONE (ELIMINATE FOR ACID LOVING PLANTS)
    C. FOR BED PLANTING, SHRUBS AND GROUNDCOVER SPACES 24 INCHES OR CLOSER, INCORPORATE THE FOLLOWING INGREDIENTS PER 20 SF AND INCORPORATE INTO TOP 8 INCHES OF EXISTING SOILS BY ROTOTILLING OR SIMILAR METHOD OF INCORPORATION.
    .2 CY SHARP SAND
    .3 CY ORGANIC MATERIAL
    4.5 LBS TREBLE SUPERPHOSPHATE
    5 LBS DOLMONITE LIMESTONE (ELIMINATE FOR ACID LOVING PLANTS)
12. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HO. CO. CODE. LANDSCAPE SURETY IN THE AMOUNT OF $13,110.00 HAS BEEN POSTED AS A PART OF THE DEVELOPER'S AGREEMENT.
13. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

### DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPING MANUAL. I/WE FURTHER CERTIFY THAT UPON TREES COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

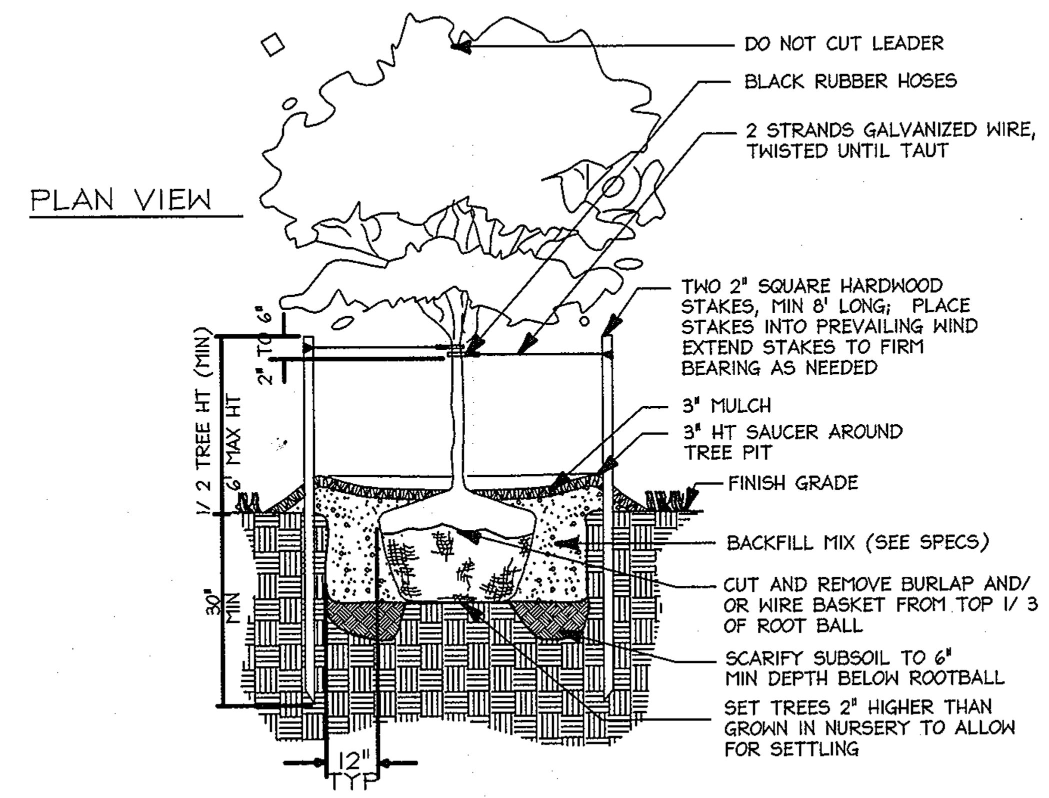
James M. Jat (signature) — 2/28/07
NAME — DATE

## SCHEDULE B
## PARKING LOT INTERNAL LANDSCAPING

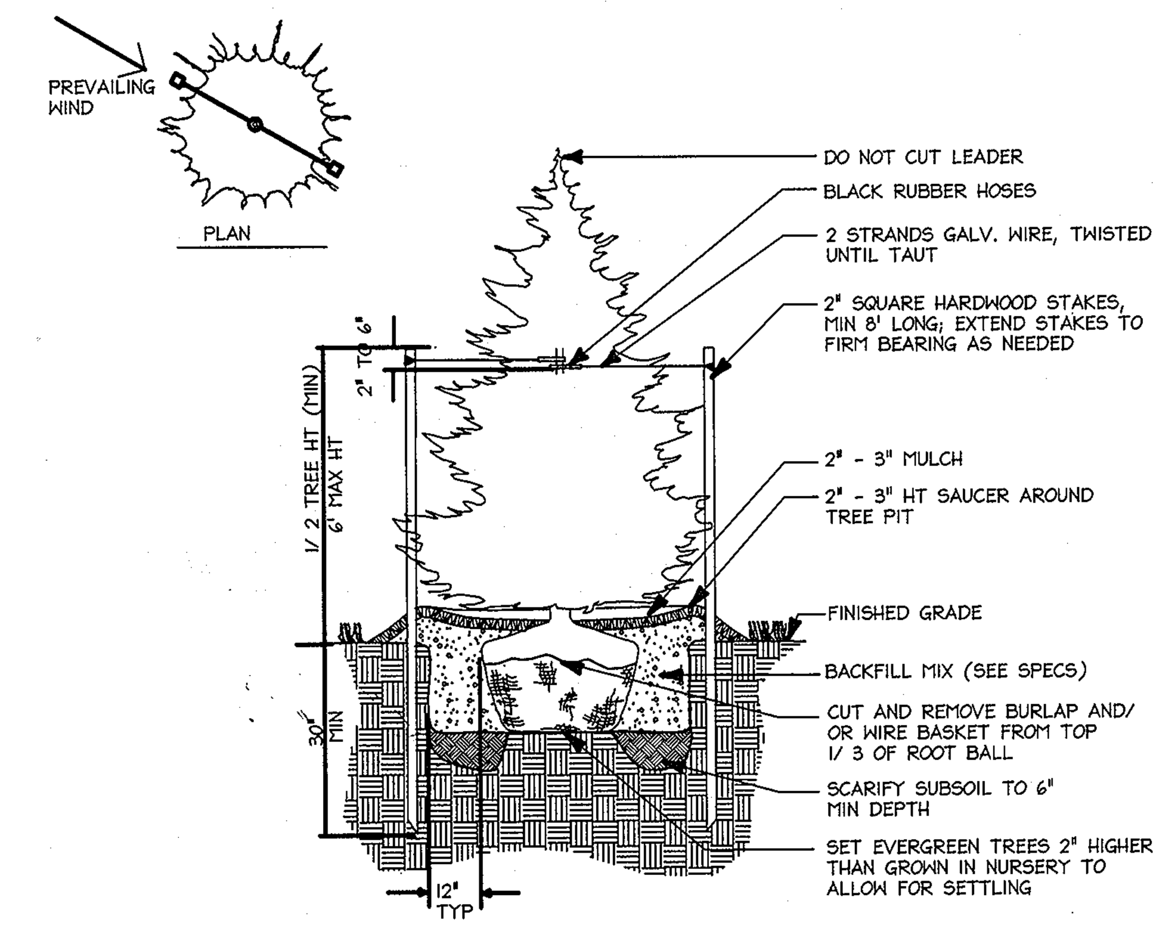
| | |
|---|---|
| NUMBER OF PARKING SPACES | 78 |
| INTERNAL ISLANDS REQUIRED (1 ISLAND/ 20 PARKING SPACES) | 4 |
| INTERNAL ISLANDS PROVIDED (200 SQ. FT./ISLAND) | 4 |
| NUMBER OF TREES REQUIRED (1 SHADE TREE/ 20 PARKING SPACES) | 4 |
| NUMBER OF TREES PROVIDED<br>SHADE TREES<br>OTHER TREES (2:1 SUBSTITUTION) | 4 |

## STREET TREE CHART

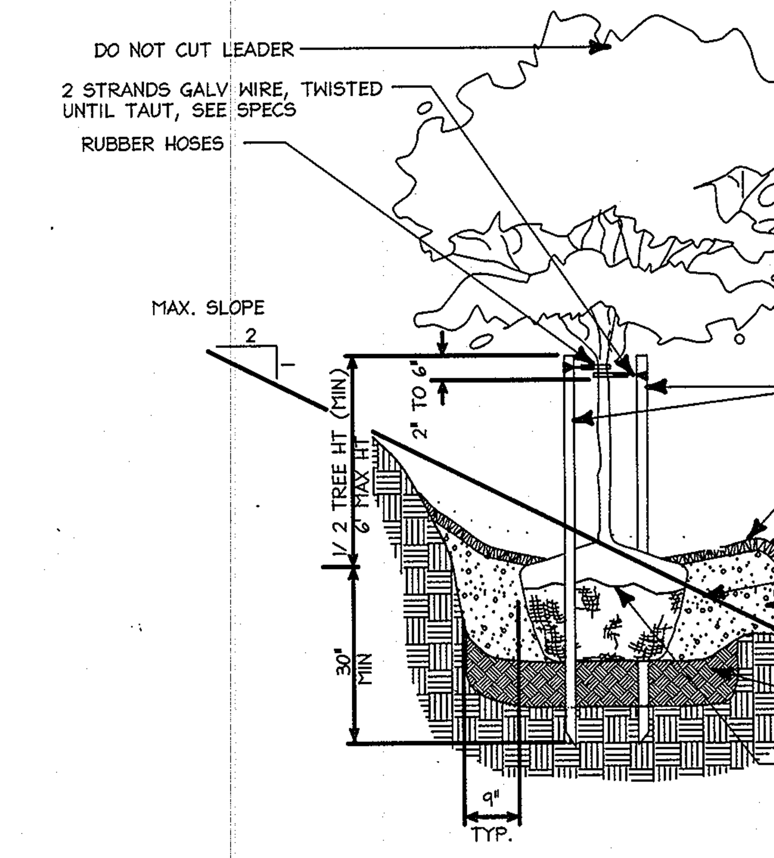
| ROAD NAME | LENGTH OF ROAD (ONE SIDE) | REQ. NO. OF TREES (1 TREE/40 L.F.) | NO. OF TREES PROVIDED |
|---|---|---|---|
| FREDERICK ROAD | 365 L.F. | 9 | 10 |
| U.S. ROUTE 40 | 173 L.F. | 4 | 4 |




(A) Tree Planting Detail
Not To Scale



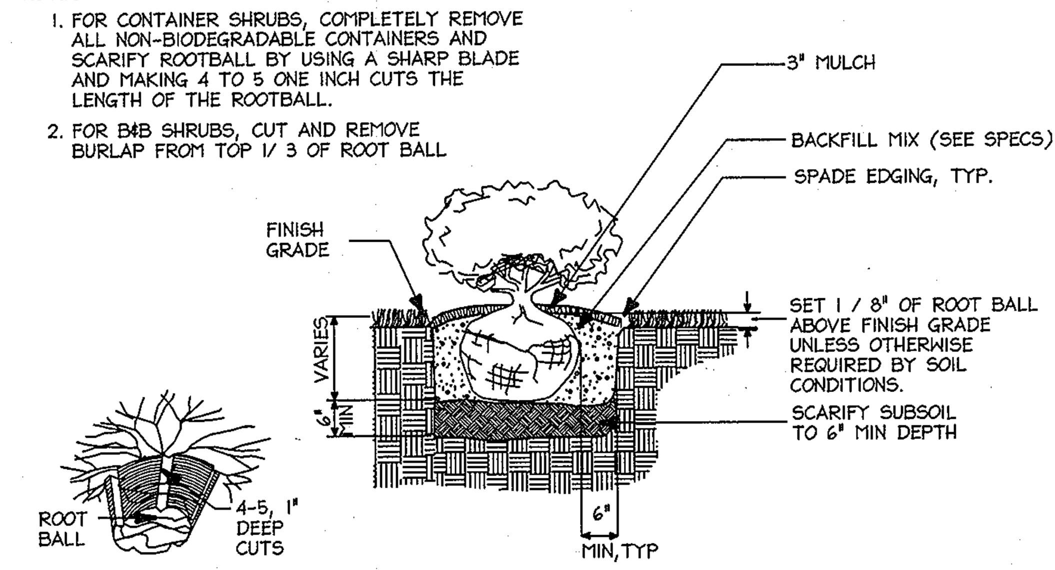

(B) Evergreen Tree Planting Detail
Not To Scale



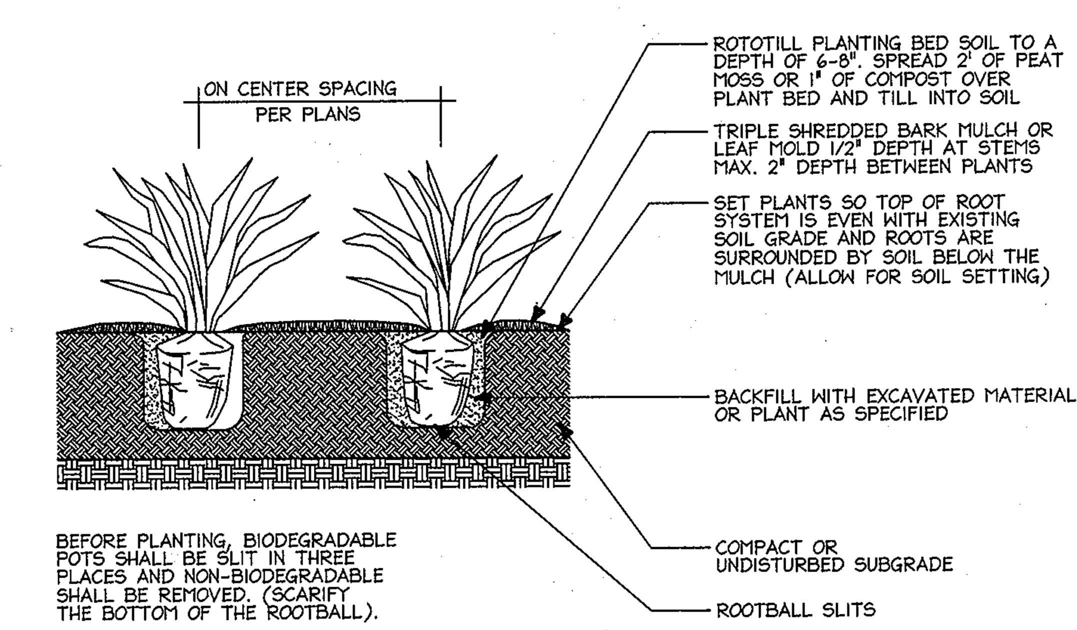

NOTES:
1. THE SIZE OF THE PLANTING PIT SHALL BE AS SHOWN PERPENDICULAR TO THE SLOPE BUT SHALL BE INCREASED TO 24" MIN. ON EACH SIDE PARALLEL TO THE SLOPE.
2. STAKE TREES UP TO 3" CAL WITH TWO 2" SQ. HARDWOOD STAKES PER TREE.
3. GUY TREES 3" TO 6" CAL WITH THREE GUYING STAKES PER TREE
4. GUY TREES OVER 6" CAL WITH THREE GROUND ANCHORS OR DEADMEN PER TREE.

(C) Tree Planting on Slope
Not To Scale

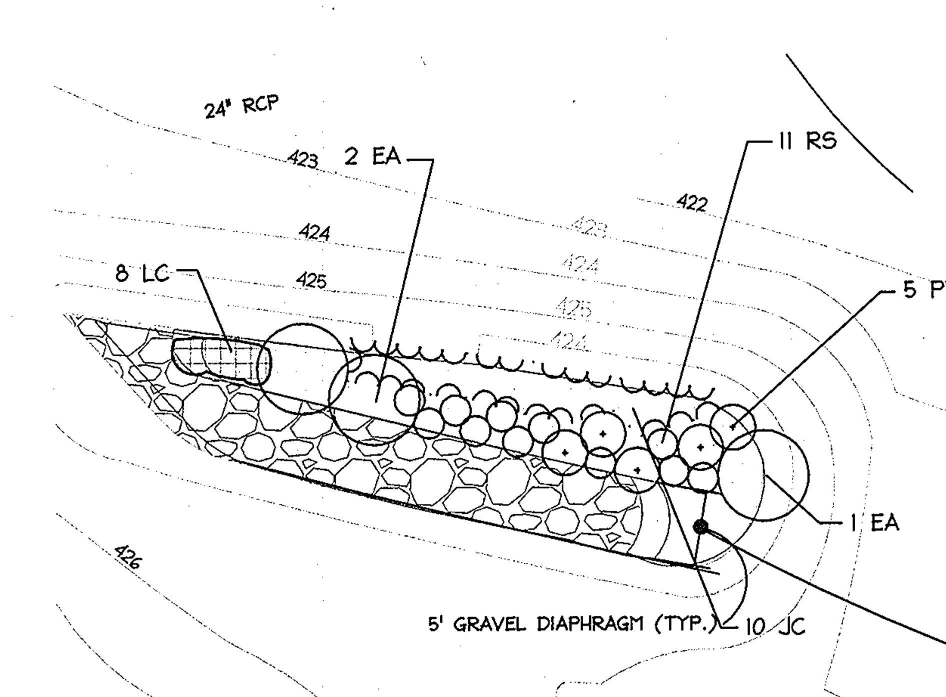
NOTES:
1. FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
2. FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/ 3 OF ROOT BALL




(D) Shrub Bed Planting
Not To Scale




(E) Perennial Planting
Not To Scale




(F) BIORETENTION PLANTING DETAIL
SCALE: 1"=10'

**BIORETENTION PLANT LIST:**

| SYMBOL | LATIN NAME | COMMON NAME | QUANTITY | SIZE | REMARKS |
|---|---|---|---|---|---|
| EA | Euonymus alata 'compacta' | Dwarf Burning Bush | 3 | 3 Gal. | 4' O.C. |
| PV | Panicum Virgatum | Switch Grass | 5 | 3 Gal. | 3' O.C. |
| JC | Juniperus Chinensis 'Sargent' | Sargents Juniper | 10 | 2 Gal. | 3' O.C. |
| LC | Lobelia Cardinalis | Cardinal Flower | 8 | 1 Gal. | 18" O.C. |
| RS | Rudbeckia Sp. | Black-Eyed Susan | 11 | 1 Gal. | 2' O.C. |

FOR REVISION #1 ONLY
LANDSCAPE ARCHITECT LICENSE No. LESHANDA N. GIBBS STATE OF MARYLAND (stamp)
12.29.08

2.28.07
DATE
STATE OF MARYLAND BRIAN KEITH COLLINS REGISTERED LANDSCAPE ARCHITECT NO. 3171 (seal)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | |
|---|---|
| Chief, Development Engineering Division (signature) | Date 4/9/07 |
| Chief, Division of Land Development (signature) | Date 4-26-07 |
| Director (signature) | Date 4/26/07 |

| Date | No. | Revision Description |
|---|---|---|
| | | |
| 12/2008 | 1 | UPDATE SCHEDULE 'A' PER. LANDSCAPE PLAN REVISIONS |

**OWNER / DEVELOPER**
JDB/TSC ROUTE 40, LLC
7120 MINISTREL WAY, SUITE 208
COLUMBIA, MD 21045
TEL. (443) 535 9200
FAX (443) 535-9204

**christopher consultants**
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christopher consultants, ltd.
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410.872.8690 · metro 301.881.0148 · fax 410.872.8693

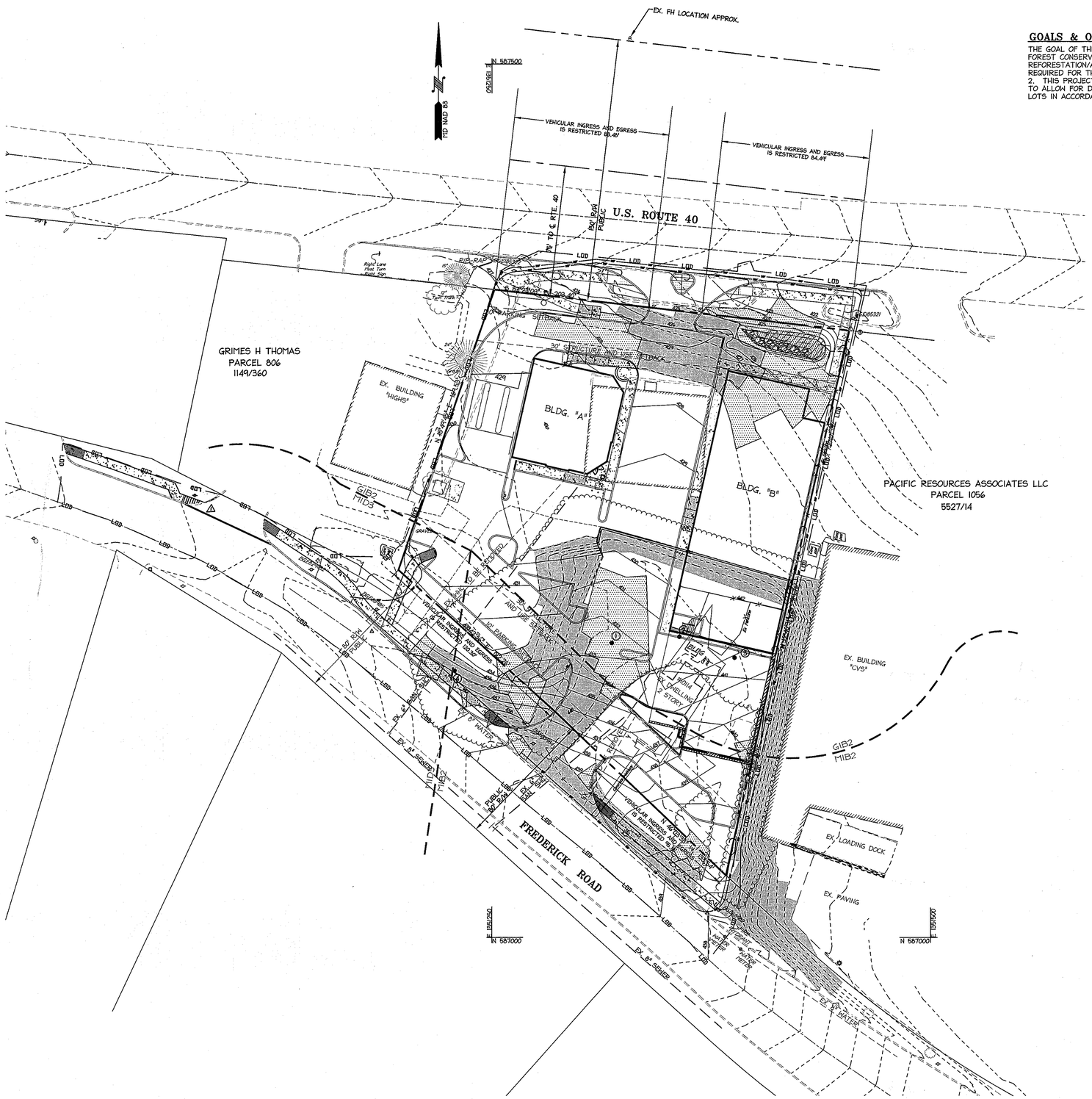
CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
LANDSCAPE DETAILS

| | | | |
|---|---|---|---|
| DESIGN: LNG | SCALE: 1"=30' | PROJECT: 05B801.01 | |
| DRAWN: ADL | DATE: 02-27-07 | 15 OF 16 | |
| CHECKED: BKC | APPROVED: | | |

SDP-06-068

MDC-326(SDP)




## GOALS & OBJECTIVES

THE GOAL OF THIS PLAN IS TO ADDRESS THE FOREST CONSERVATION ACT AND ANY REFORESTATION/AFFORESTATION THAT MAY BE REQUIRED FOR THE DEVELOPMENT OF LOTS 1 & 2. THIS PROJECT PROPOSES SITE CLEARING TO ALLOW FOR DEVELOPMENT OF THE EXISTING LOTS IN ACCORDANCE WITH THE ZONING CODE.

## FOREST CONSERVATION NOTES

1. TOTAL FORESTED AREA ON SITE = 0.0 AC
2. FOREST CLEARING PROPOSED = 0.0 AC
3. ON-SITE RETENTION = NOT POSSIBLE
4. ON-SITE AFFORESTATION = NOT FEASIBLE BASED ON THE COMMERCIAL SITE DESIGN SHOWN ON THESE PLANS, AND THE LACK OF ON-SITE PRIORITY PLANTING AREAS.
5. TOTAL REFORESTATION REQUIRED = 0.0 AC
6. TOTAL AFFORESTATION REQUIRED = 0.18 AC
7. TOTAL FOREST CONSERVATION REQUIRED = 0.18 AC
8. THE FOREST CONSERVATION OBLIGATION OF 0.18AC./7,840.80 SQ. FT. OF AFFORESTATION FOR THIS PLAN HAS BEEN MET BY THE FEE-IN-LIEU PAYMENT OF $3,920.40 ($0.50 PER SQ. FT.) TO THE HOWARD COUNTY FOREST CONSERVATION FUND.

## FOREST CONSERVATION CALCULATIONS

| BASIC SITE DATA | ACRES |
|---|---|
| GROSS SITE AREA | 1.20 |
| AREA WITHIN 100 YEAR FLOODPLAIN | 0.00 |
| NET TRACT AREA | 1.20 |
| LAND USE CATEGORY | C-1-A |
| **INFORMATION FOR CALCULATIONS** | |
| A. NET TRACT AREA | 1.20 |
| B. REFORESTATION THRESHOLD (15% X A) | 0.18 |
| C. AFFORESTATION MINIMUM (15% X A) | 0.18 |
| D. EXISTING FOREST ON NET TRACT AREA | 0.00 |
| E. FOREST AREAS TO BE CLEARED | 0.00 |
| F. FOREST AREAS TO BE RETAINED | 0.00 |
| **AFFORESTATION CALCULATIONS** | |
| A. NET TRACT AREA | 1.20 |
| B. AFFORESTATION THRESHOLD (15% X A) | 0.18 |
| C. EXISTING FOREST ON NET TRACT AREA | 0.00 |
| D. FOREST AREAS TO BE CLEARED | 0.00 |
| E. FOREST AREAS TO BE RETAINED | 0.00 |
| **FOREST CONSERVATION REQUIREMENTS** | |
| TOTAL REFORESTATION REQUIRED (F x ½)+(Gx2) | 0.00 |
| TOTAL AFFORESTATION REQUIRED (15% X A) | 0.18 |
| TOTAL FOREST CONSERVATION REQUIRED | 0.18 |
| FEE-IN-LIEU @ $.50 PER SQ. FT. = $3,920.50 | 0.18 |

NOTE:

LIMIT OF DISTURBANCE SHOWN GRAPHICALLY FOR CLARITY. ACTUAL LIMIT OF DISTURBANCE SHALL BE JUST OUTSIDE OF SEDIMENT CONTROLS AND SHALL BE LOCATED ON THE PROPERTY IN QUESTION.

## SPECIMEN TREE TABLE

| NUMBER | SIZE | TYPE | CONDITION | DISPOSITION |
|---|---|---|---|---|
| 1 | 36" | NORWAY SPRUCE | GOOD | TO BE REMOVED |
| 2 | 35.5" | SILVER MAPLE | GOOD | TO BE REMOVED |
| 3 | 36" | SILVER MAPLE | GOOD | TO BE REMOVED |
| 4 | 32.5" | RED OAK | FAIR | TO BE REMOVED |

## LEGEND

EXISTING CONTOURS — 416
EXISTING STORM DRAIN — EX. 12" RCP
EXISTING SANITARY SEWER — EX. 8" SAN
EXISTING WATER — EX. 6" WATER
EXISTING TRANSFORMER
EXISTING TRANSFORMER
EXISTING MAILBOX
PROPOSED CONTOUR — 418
EXISTING FENCE POST
EXISTING FENCE — X
PROPERTY LINE
TREELINE
PROPOSED SETBACK LINES
SUPER SILT FENCE — SSF
LIMIT OF DISTURBANCE — LOD
SPECIMEN TREE — 3
SOILS LINE
SLOPES 15-25%
SLOPES 25% +

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 4/9/07

Chief, Division of Land Development — Date 4-26-07

Director — Date 4/26/07

| Date | No. | Revision Description |
|---|---|---|
| 6.08.09 | 1 | FREDERICK ROAD SIDEWALK REVISIONS. |


OWNER / DEVELOPER

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410.872.8690 · metro 301.881.0148 · fax 410.872.8693


FOR REVISION #1 ONLY
6/10/09
DATE
TIMOTHY R. HESS
COMAR QUALIFIED FOREST PROFESSIONAL

2/28/07
DATE
KEVIN E. HEDGE
COMAR QUALIFIED FOREST PROFESSIONAL

# CENTENNIAL PLACE
TAX MAP 24, GRID 0001, PARCEL A
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
## FOREST CONSERVATION PLAN

| | | |
|---|---|---|
| DESIGN: KEH | SCALE: 1"=30' | PROJECT: 05B801.01 |
| DRAWN: ADL | DATE: 07-27-06 | 16 OF 16 |
| CHECKED: KEH | APPROVED: | |

SDP-06-068

MDC-326(SDP)

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