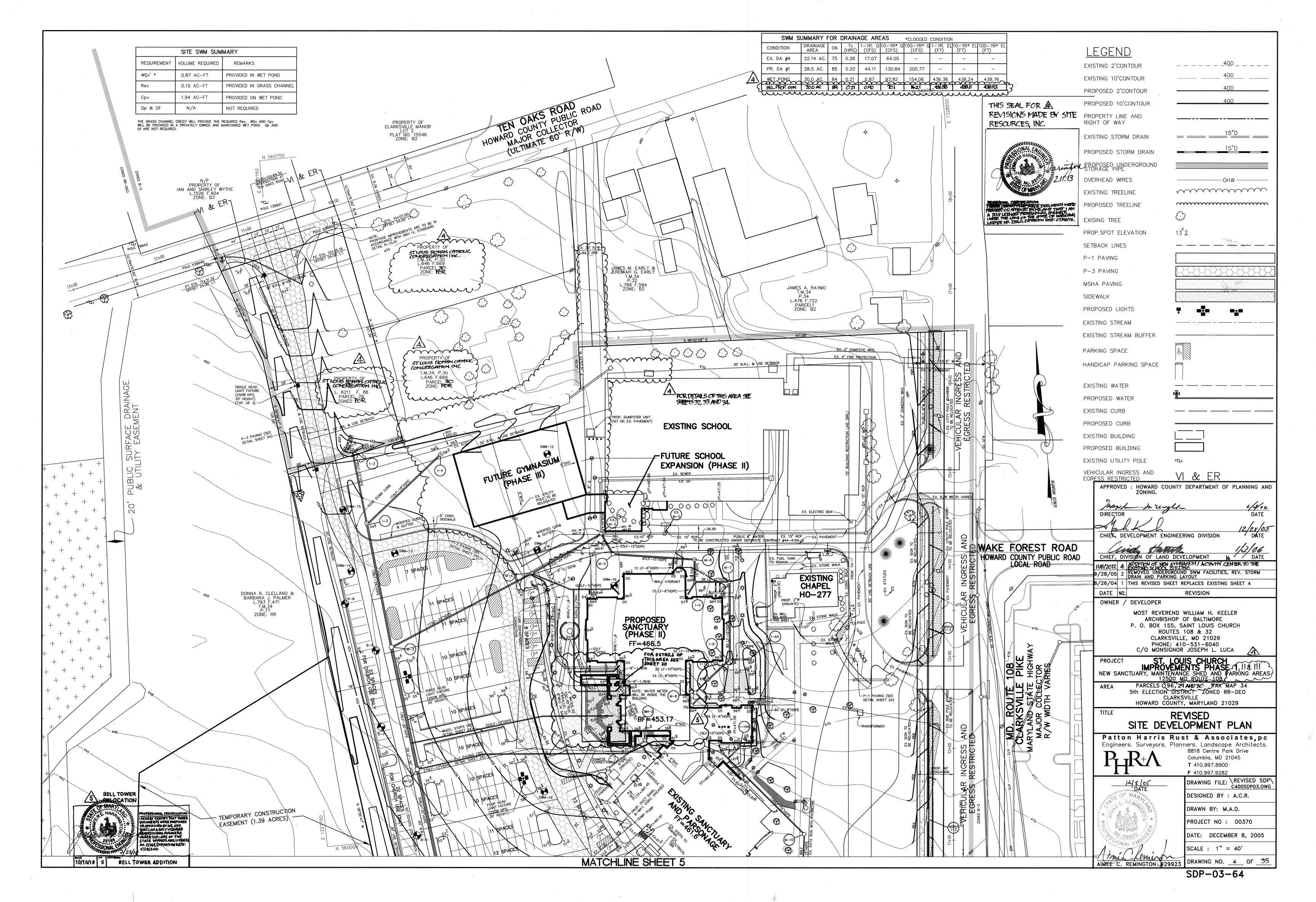
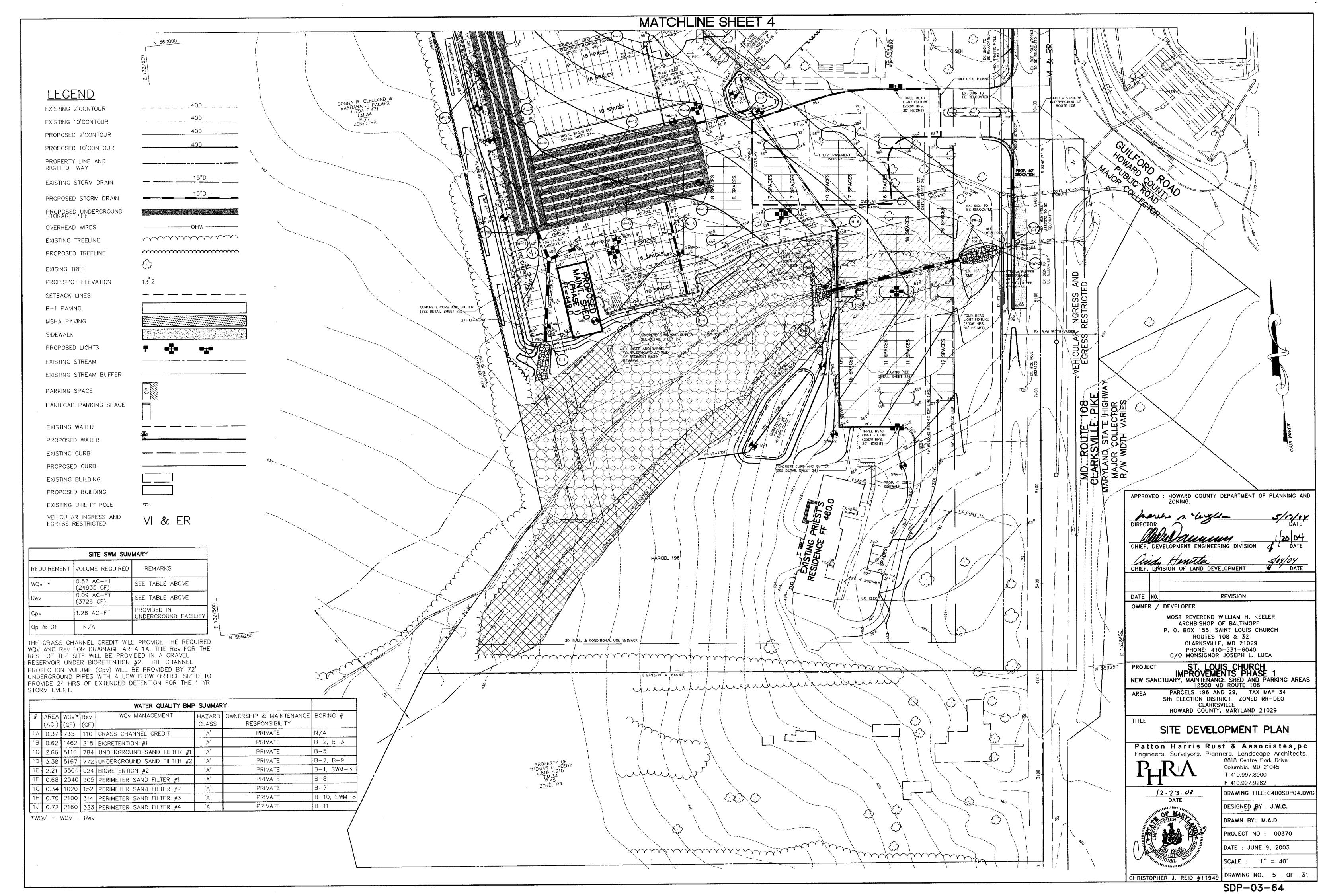


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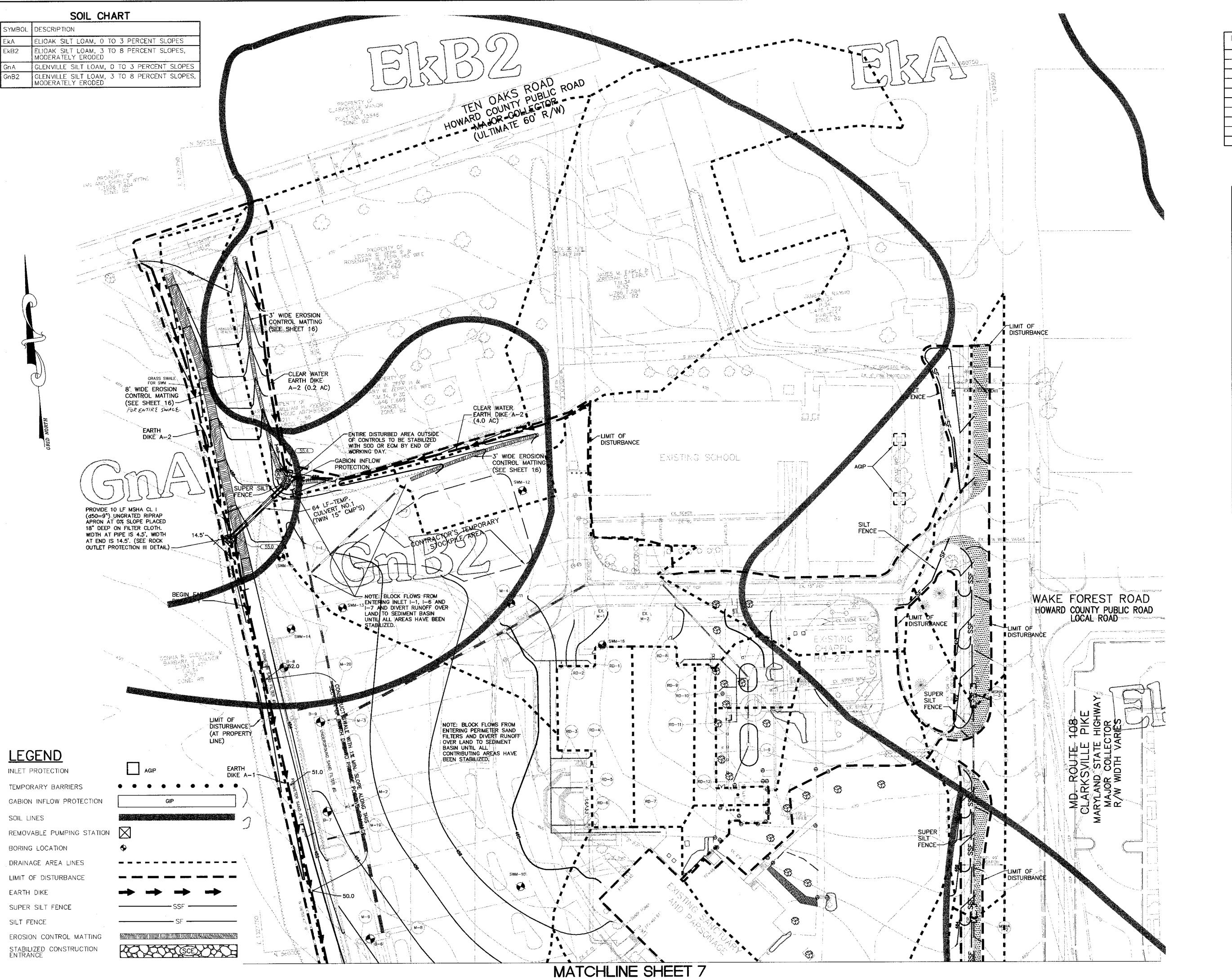
CHRISTOPHER J. REID #11949 DRAWING NO. 2 OF 31







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DRAINAGE DATA

INLET NOS.	AREA IN ACRES	'C' FACTOR	PERCENT IMPERVIOUS
1	1.57	0.46	41
2	0.89	0.55	54
3	2.21	0.52	50
4	2.66	0.60	62
5	3.22	0.73	81
6	1.91	0.27	12
7	1.43	0.70	77
8	0.10	0.32	20
9	0.11	0.37	27
	<u> </u>		

BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

12/23/03

BY THE ENGINEER :

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.

12.23.03

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION

HOWARD SOIL CONSERVATION DISTRICT

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION OWNER / DEVELOPER

MOST REVEREND WILLIAM H. KEELER

ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32

CLARKSVILLE, MD 21029 PHONE: 410-531-6040 C/O MONSIGNOR JOSEPH L. LUCA

PROJECT ST. LOUIS CHURCH
IMPROVEMENTS PHASE 1
NEW SANCTUARY, MAINTENANCE SHED AND PARKING AREAS
12500 MD ROUTE 108 PARCELS 196 AND 29, TAX MAP 34

5th ELECTION DISTRICT ZONED RR-DEO CLARKSVILLE HOWARD COUNTY, MARYLAND 21029

GRADING AND SEDIMENT CONTROL PLAN

Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects.



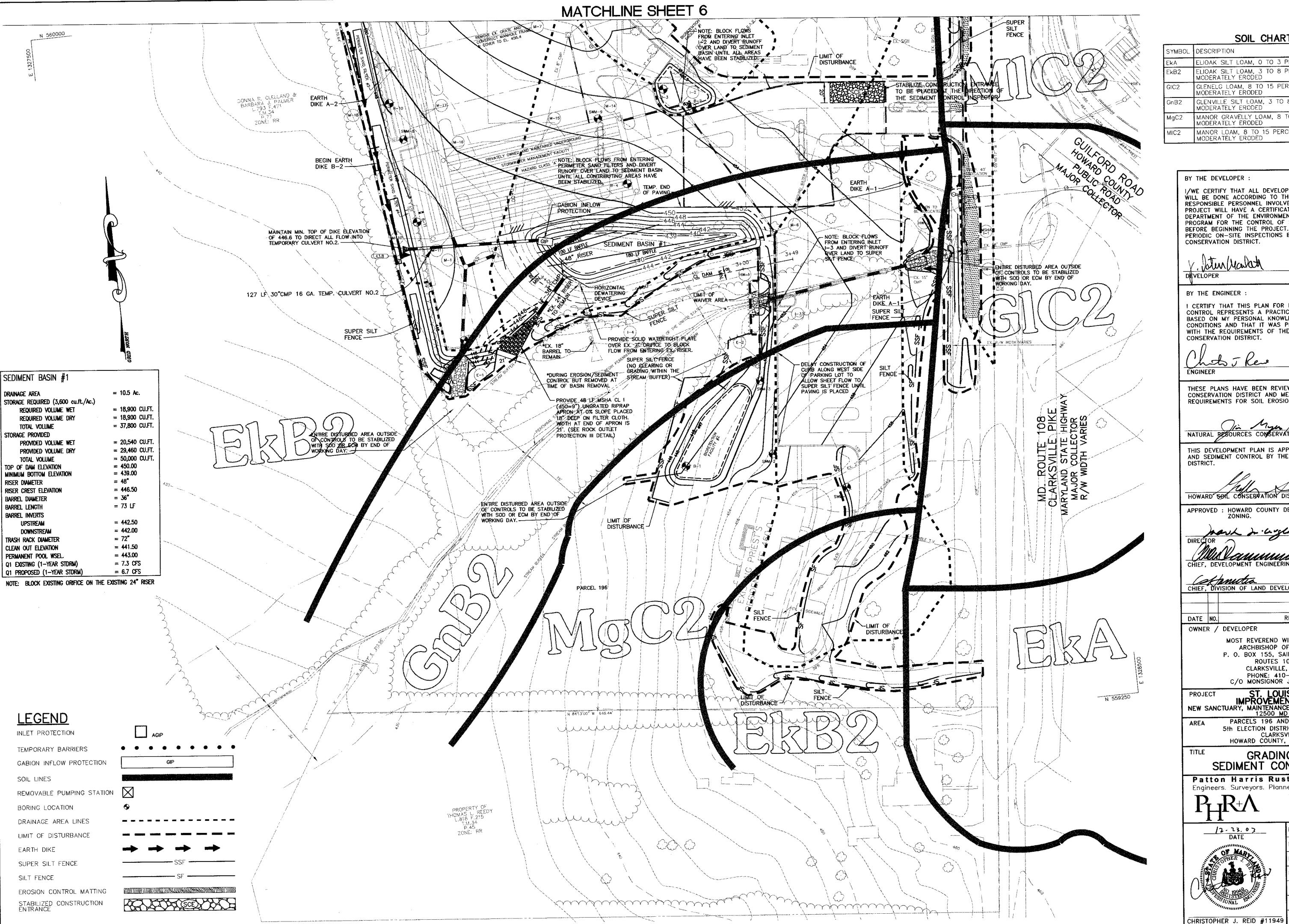
8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900 **F** 410.997.9282

12.23.03 DATE

DRAWING FILE: C400SDP05.DWG DESIGNED BY : A.C.R. DRAWN BY: M.A.D.

PROJECT NO : 00370 DATE : JUNE 9, 2003 SCALE : 1" = 40'

CHRISTOPHER J. REID #11949 DRAWING NO. 6 OF 31 SDP-03-64



SOIL CHART

SYMBOL	DESCRIPTION
EkA	ELIOAK SILT LOAM, O TO 3 PERCENT SLOPES
EkB2	ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
GIC2	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
GnB2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED
MgC2	MANOR GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED
міС2	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED

BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

1223/03 DATE DEVELOPER

BY THE ENGINEER

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12.23.03 DATE

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NATURAL BESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER / DEVELOPER

MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32 CLARKSVILLE, MD 21029

PHONE: 410-531-6040 C/O MONSIGNOR JOSEPH L. LUCA

REVISION

PROJECT ST. LOUIS CHURCH IMPROVEMENTS PHASE 1
NEW SANCTUARY, MAINTENANCE SHED AND PARKING AREAS 12500 MD ROUTE 108 PARCELS 196 AND 29, TAX MAP 34

5th ELECTION DISTRICT ZONED RR-DEO CLARKSVILLE HOWARD COUNTY, MARYLAND 21029

GRADING AND SEDIMENT CONTROL PLAN

Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive

Columbia, MD 21045 **T** 410.997.8900 **F** 410.997.9282

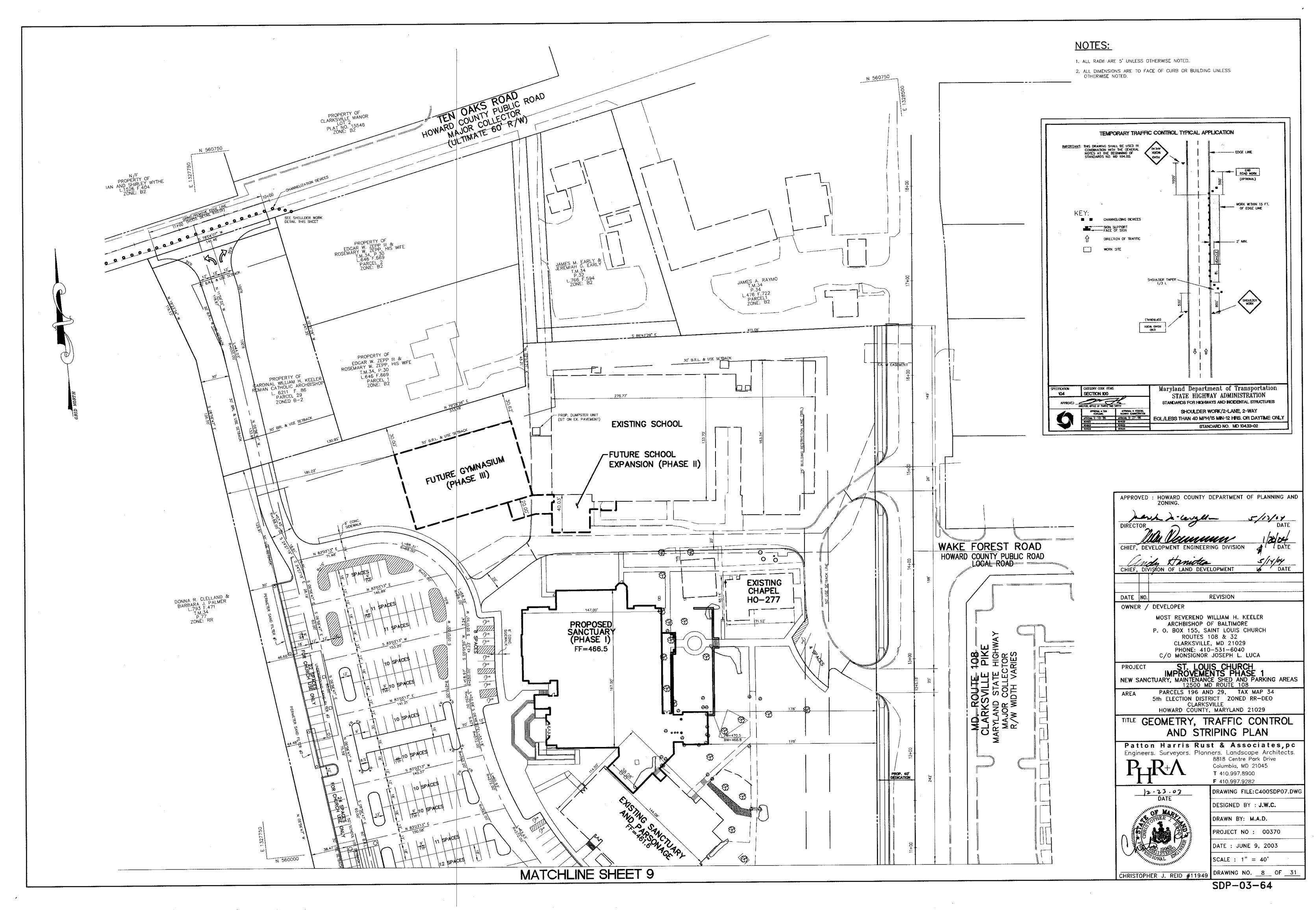
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DRAWING FILE: C400SDP06.DWG DESIGNED BY : A.C.R.

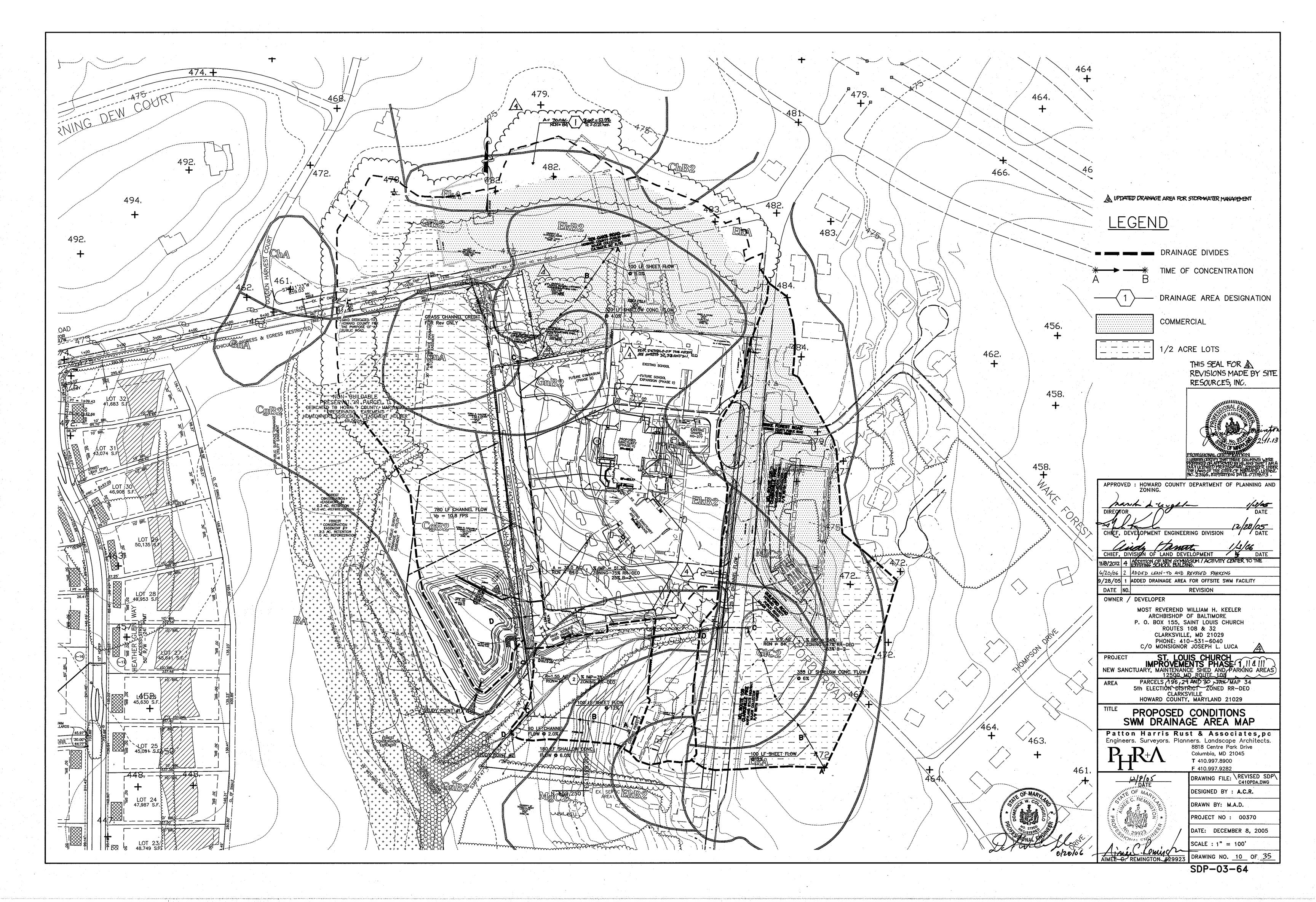
DRAWN BY: M.A.D. PROJECT NO: 00370

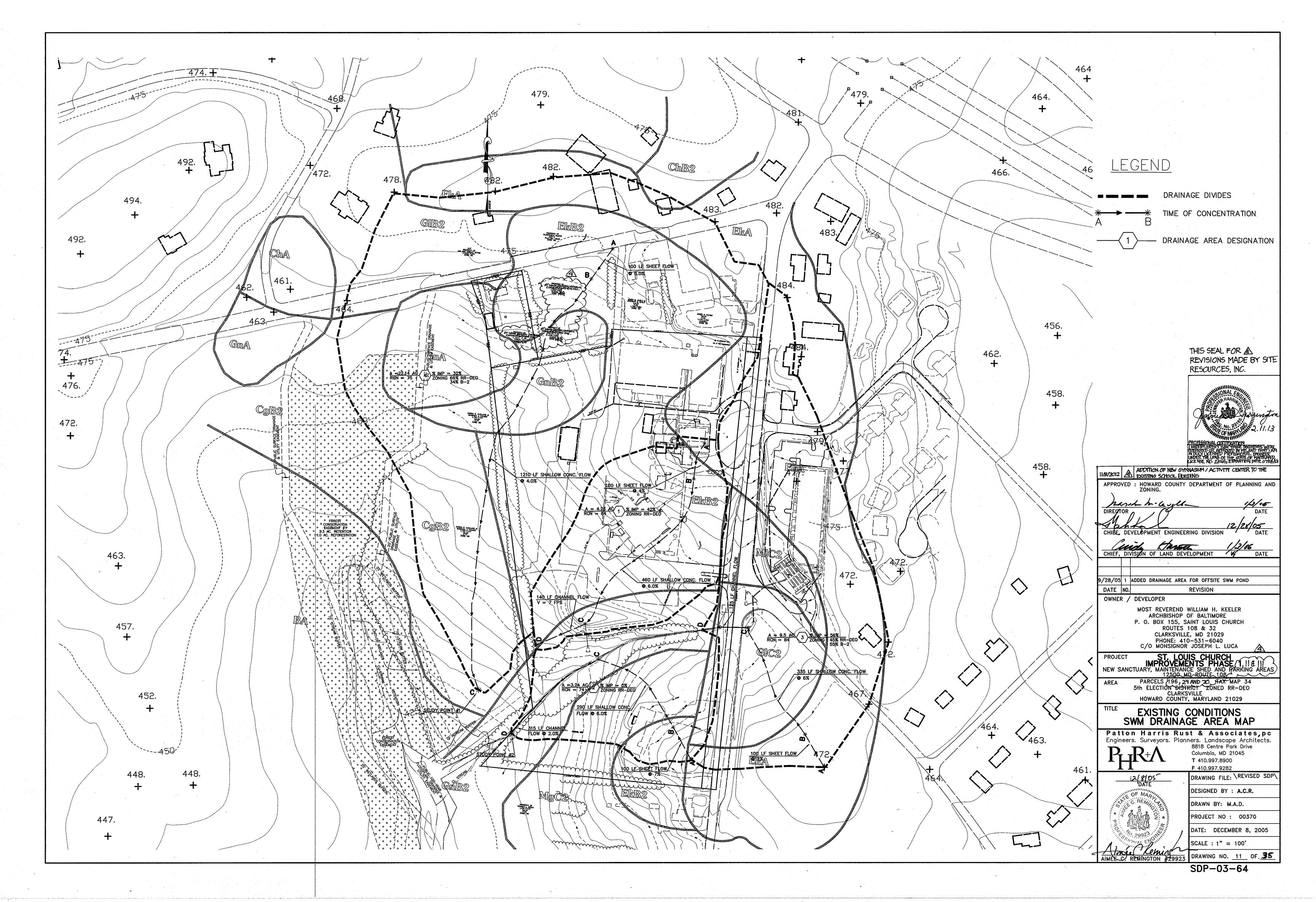
DRAWING NO. 7 OF 31

DATE : JUNE 9, 2003 SCALE : 1" = 40'



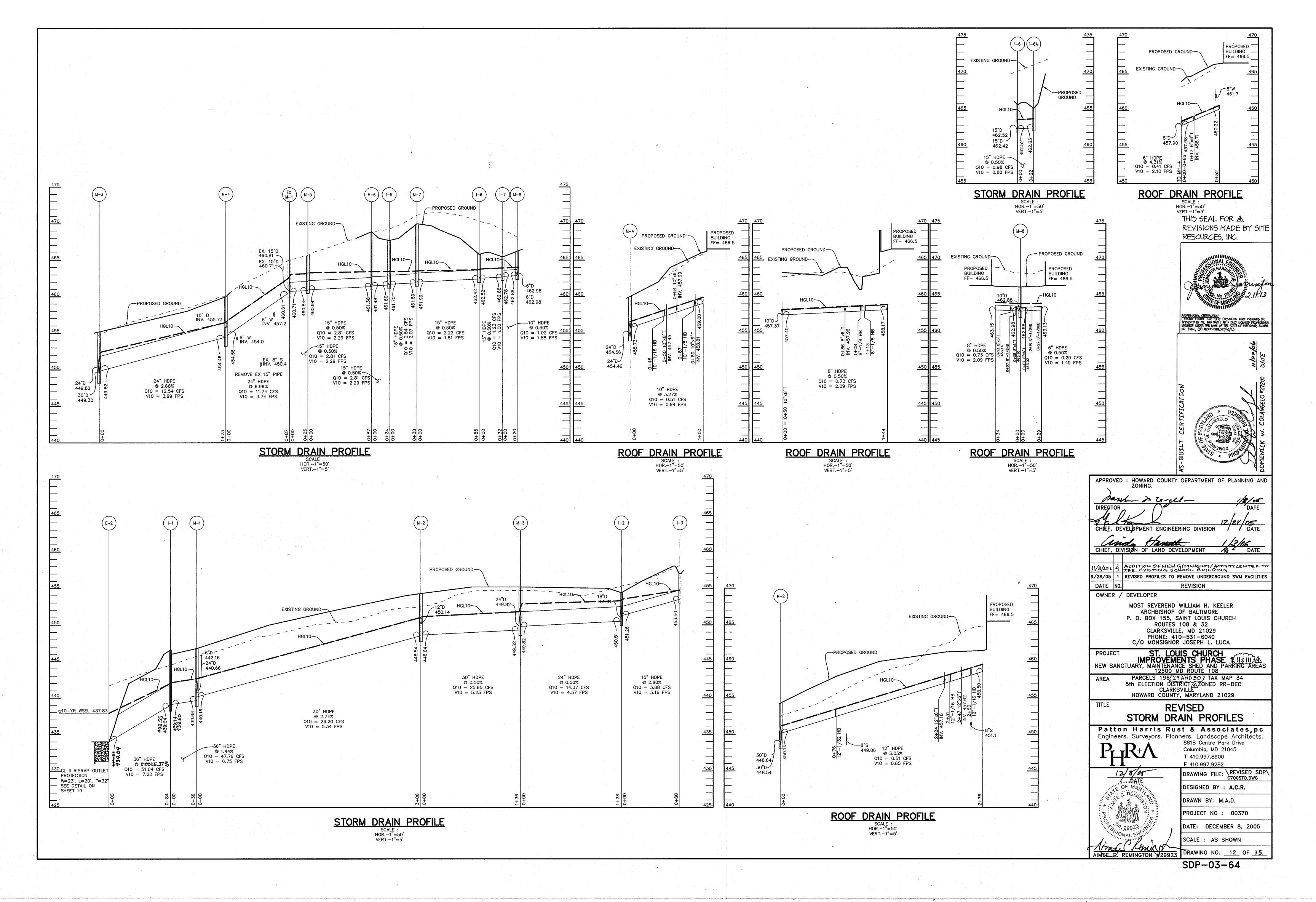
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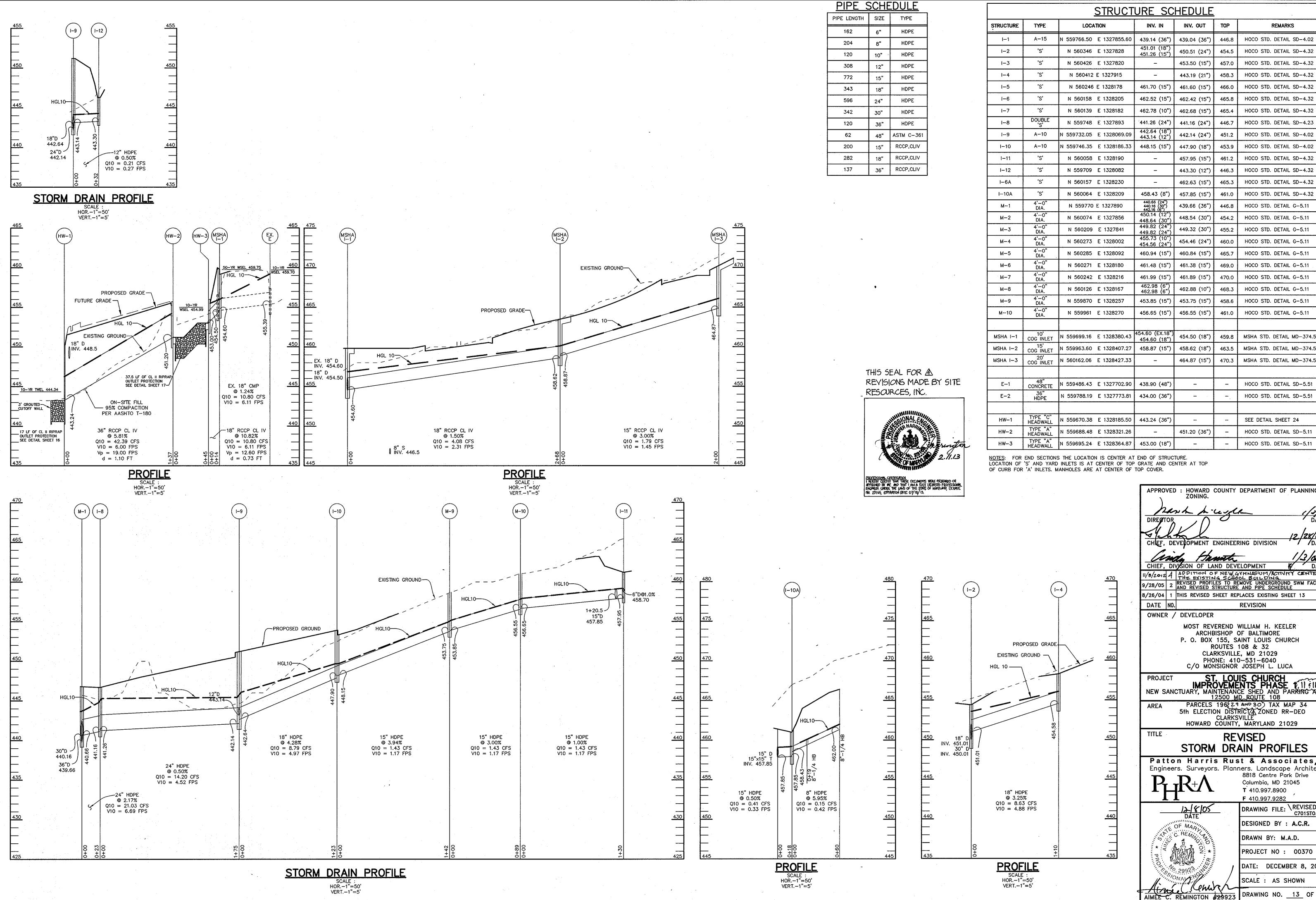




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CHRISTOPHER J. REID #11949 DRAWING NO. 11 OF 31
SDP-03-64





454.50 (18") 459.8 MSHA STD. DETAIL MD-374.51 458.62 (18") 463.5 MSHA STD. DETAIL MD-374.51 464.87 (15") 470.3 MSHA STD. DETAIL MD-374.51 HOCO STD. DETAIL SD-5.51 HOCO STD. DETAIL SD-5.51 SEE DETAIL SHEET 24 451.20 (36") HOCO STD. DETAIL SD-5.11 HOCO STD. DETAIL SD-5.11 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. 12/28/05 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE CHIEF, DIVISION OF LAND DEVELOPMENT 11/8/2012 4 ADDITION OF NEW GYMNASIUM ACTIVITY CENTER TO THE EXISTING SCHOOL BUILDING.

9/28/05 2 REVISED PROFILES TO REMOVE UNDERGROUND SWM FACILITIES AND REVISED STRUCTURE AND PIPE SCHEDULE 8/26/04 1 THIS REVISED SHEET REPLACES EXISTING SHEET 13 REVISION OWNER / DEVELOPER MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32 CLARKSVILLE, MD 21029 PHONE: 410-531-6040 C/O MONSIGNOR JOSEPH L. LUCA PARCELS 196/29 AND 30) TAX MAP 34 5th ELECTION DISTRICTA ZONED RR-DEO CLARKSVILLE HOWARD COUNTY, MARYLAND 21029 REVISED STORM DRAIN PROFILES Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900 F 410.997.9282 DRAWING FILE: \REVISED SDP\ `C701STO.DWG DESIGNED BY : A.C.R. DRAWN BY: M.A.D. PROJECT NO: 00370 DATE: DECEMBER 8, 2005 SCALE : AS SHOWN AIMEE C. REMINGTON #29923 DRAWING NO. <u>13</u> OF <u>35</u> SDP-03-64

REMARKS

HOCO STD. DETAIL SD-4.32

HOCO STD. DETAIL SD-4.32

HOCO STD. DETAIL SD-4.23

HOCO STD. DETAIL SD-4.32

HOCO STD. DETAIL SD-4.32

HOCO STD. DETAIL G-5.11

HOCO STD. DETAIL G-5.11

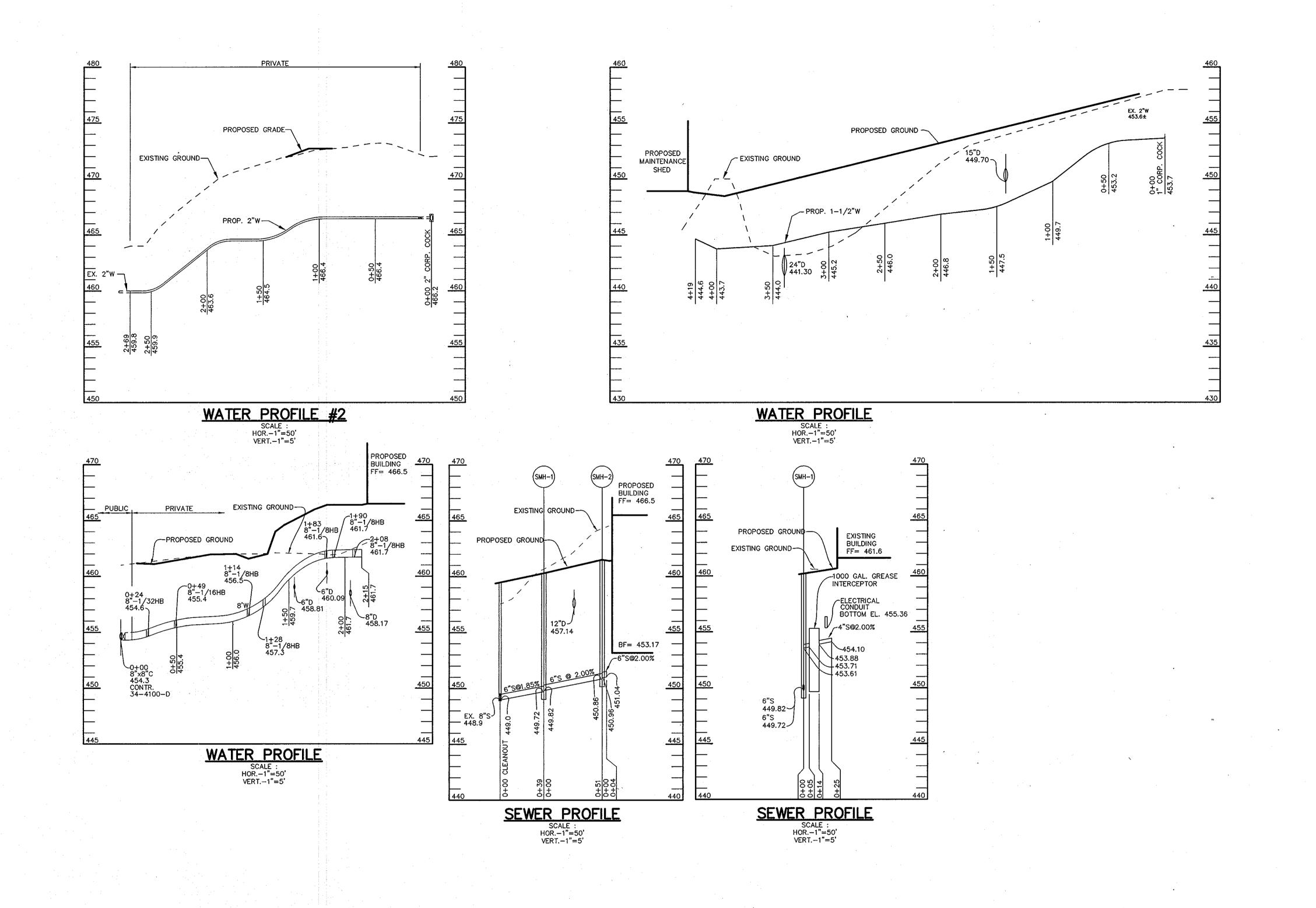
461.0 HOCO STD. DETAIL G-5.11

454.2 HOCO STD. DETAIL G-5.11

465.4

446.3

468.3



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. REVISIONS MADE BY SITE 9/28/05 2 REVISED WATER PROFILE & REMOVED STORM DRAIN PROFILES 3/26/04 1 THIS SHEET REPLACES EXISTING SHEET 14 DATE NO. REVISION OWNER / DEVELOPER MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32
CLARKSVILLE, MD 21029
PHONE: 410-531-6040
C/O MONSIGNOR JOSEPH L. LUCA PARCELS 196,29 AND 30 TAX MAP 34
5th ELECTION DISTRICT AZONED RR-DEO
CLARKSVILLE
HOWARD COUNTY, MARYLAND 21029 AREA TITLE REVISED PROFILES Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282 DRAWING FILE: \REVISED SDP\
c702STO.DWG

THIS SEAL FOR A

RESOURCES, INC.

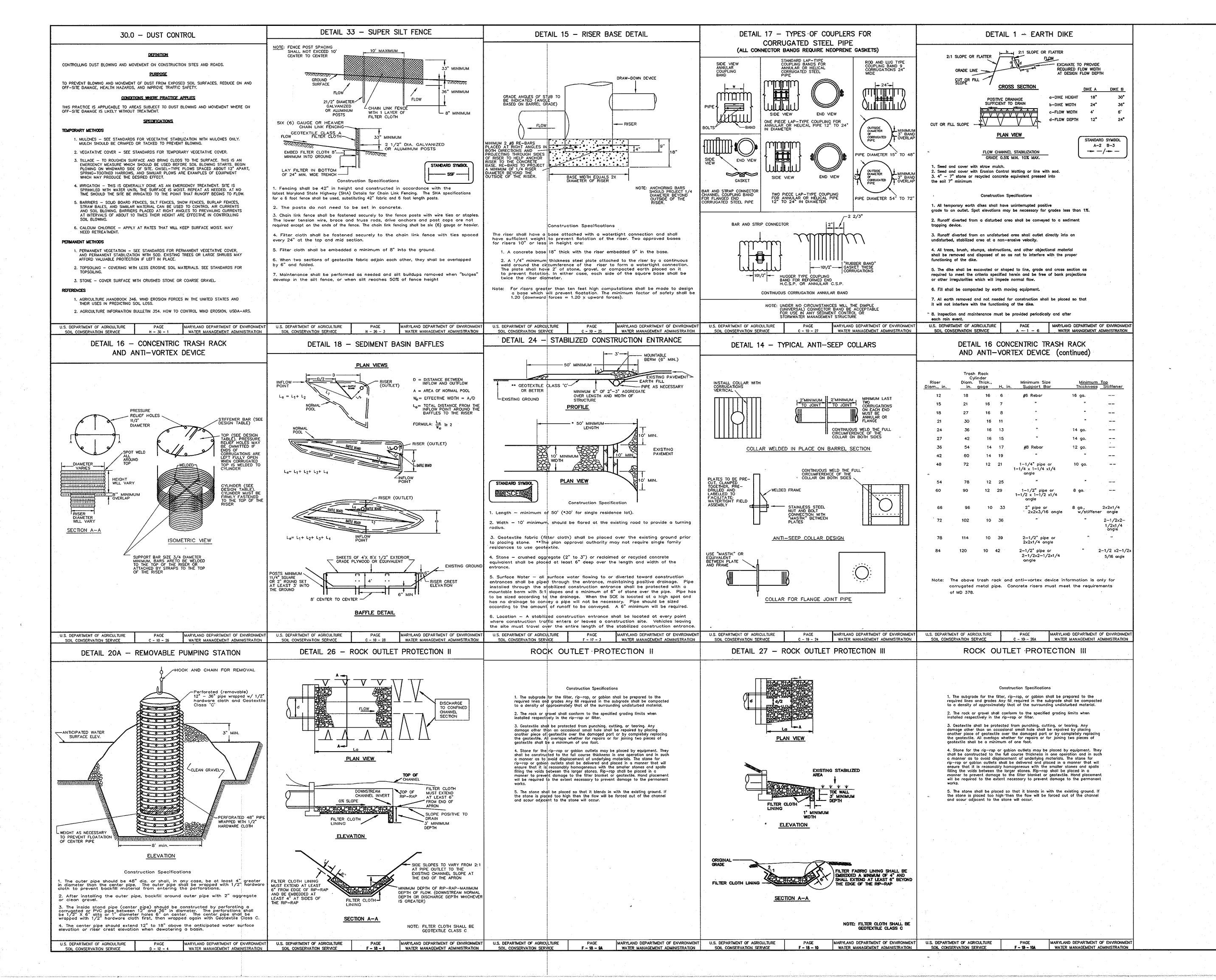
DESIGNED BY : A.C.R.

PROJECT NO: 00370

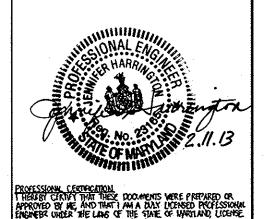
SCALE : AS SHOWN

DATE: DECEMBER 8, 2005

DRAWN BY: M.A.D.



THIS SEAL FOR A REVISIONS MADE BY SITE RESOURCES, INC.



BY THE DEVELOPER:

/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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER

12/23/03 DATE

BY THE ENGINEER :

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.

ENGINEER

12.23.43

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND

ENGINEERING DIVISION DATE CHIEF, DIVISION OF LAND DEVELOPMENT

11/8/2012 4 ADDITION OF NEWGYMNASIUM/ACTIVITY CENTER TO THE EXISTING SCHOOL BUILDING DATE NO. REVISION

OWNER / DEVELOPER

MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32 CLARKSVILLE, MD 21029 PHONE: 410-531-6040 C/O MONSIGNOR JOSEPH L. LUCA

PROJECT ST. LOUIS CHURCH
IMPROVEMENTS PHASE 1.11 \$ 1134
NEW SANCTUARY, MAINTENANCE SHED AND PARKING AREAS
12500 MD ROUTE 108 PARCELS 196(29 AND 30) TAX MAP 34 5th ELECTION DISTRICT ZONED RR-DEO

CLARKSVILLE HOWARD COUNTY, MARYLAND 21029

SEDIMENT CONTROL DETAILS Patton Harris Rust & Associates, pc



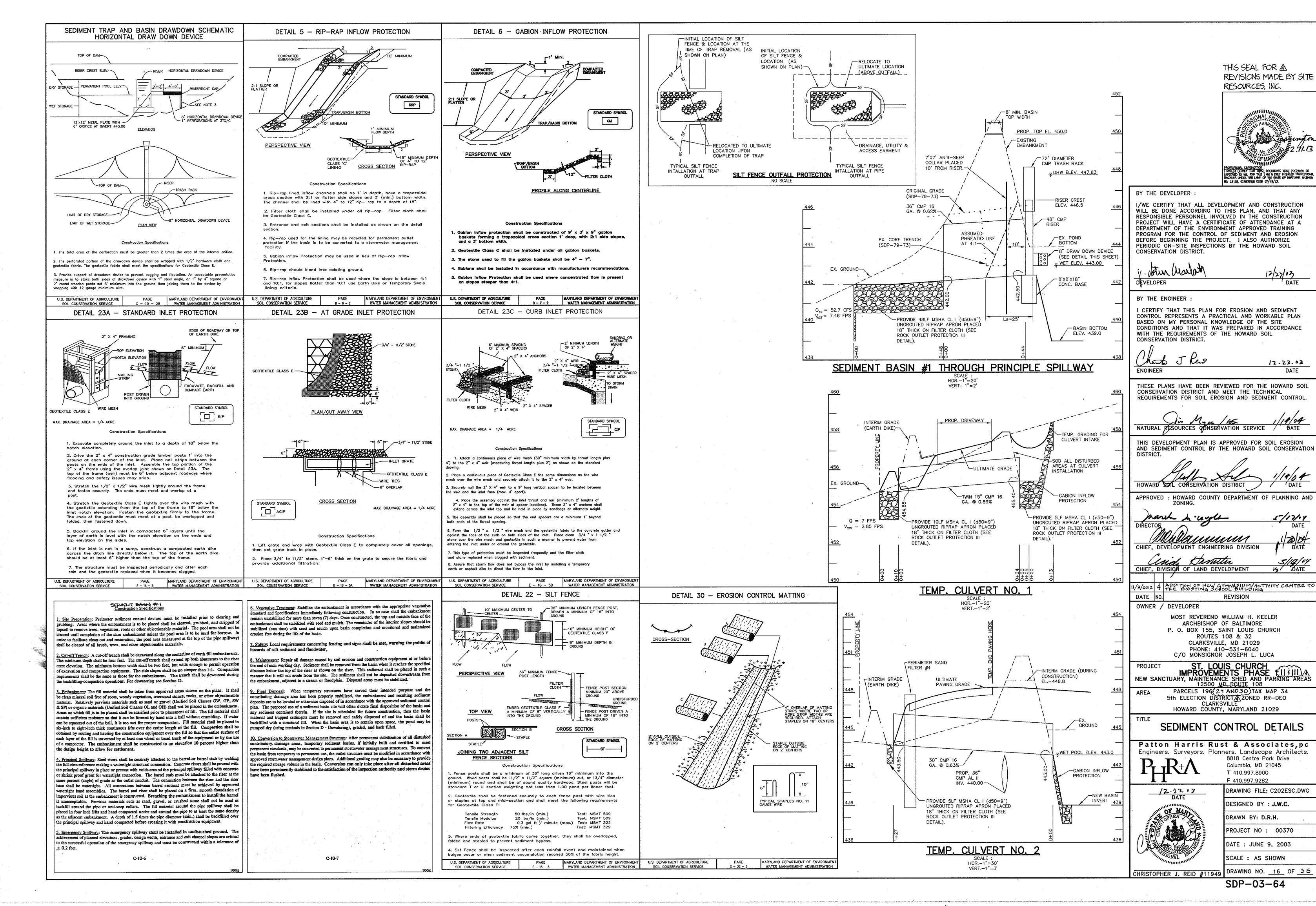
Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 **F** 410.997.9282

12.23.03

DRAWING FILE: C200ESC.DWG DESIGNED BY : J.W.C.

CHRISTOPHER J. REID #11949

DRAWN BY: D.R.H. ROJECT NO: 00370 DATE : JUNE 9, 2003 SCALE : AS SHOWN DRAWING NO. 15 OF 35



DATE

MD-378 STANDARDS AND SPECIFICATIONS

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.

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.

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 THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRE OR MRRATORY 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 MIMIMUM REQUIRED DENSITY SHALL NOT BE ESS 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).

CUTOFF 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 COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MAXIMUM

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.

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 TIM 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

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 2000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO 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 GS FTC.) TO PREVENT FLOATING THE PIPE, WHEN USING FLOWARIE FILL, ALL META SHALL BE BITUMINOUS COATED, ANY ADJOINIG SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHED 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 FOLIPMENT 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.

STRUCTURE BACKFILL

CORRUGATED METAL PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED

. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10MIL) 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 SPECIFICATIONS M-274 WITH WATERTIGHT COUPLING RANDS OR FLANCES, ALLIMINUM 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

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS 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 THE NEED 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 MAT BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COTED AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT 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

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 BAND WIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24" IN DIAMETER; FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PREPUNCHED 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 ENDS. A 24 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCH 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.

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

REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

I. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.

2. BEDDING - ALL 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 SIDE 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 STANARD. GRAVEL BEDDING

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

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

4. BACKFILLING SHALL CONFORM TO STRUCTURE "BACKFILL".

CARE OF WATER DURING CONSTRUCTION

AND MATERIALS, SECTION 311.

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR 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" SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3 SEDDING - 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. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE

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

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.

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 THE 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 OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED FXCAVATIONS. 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 TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

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

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.

REFER TO THE 2000 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSL'

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1000 SQ.FT.).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS. PER 1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.07 LBS. PER 1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER 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 PER ACRE (70 TO 90 LBS. PER 1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL. PER 1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 347 GAL. PER ACRE (8 GAL. PER 1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

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. DISCING 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 PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS. PER 1000 SQ.FT.).

2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING : FOR THE PERIOD MARCH 1 THRU APRIL 30 AND FROM AUGUST 1
THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS. PER 1000 SQ.FT. OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.05 LBS. PER 1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY ONE OF THE FOLLOWING

1) 2 TONS PER ACRE OF WELL-ANCHORED MULCH STRAW AND SEED AS SOON AS POSSIBLE IN THE SPRING.

3) SEED WITH 60 LBS. PER ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL. PER 1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 347 GAL. PER ACRE (8 GAL. PER 1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE : INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS. REPLACEMENTS AND RESEEDINGS.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE: A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE. II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1

SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS. CONSTRUCTION AND MATERIAL SPECIFICATIONS I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH

FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTATION STATION.

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 NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11" IN DIAMETER.

IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE

II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

III. WHERE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

II. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES: I. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - BSECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

I. 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 THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER. 3. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.

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 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES TO AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY MAY BE USED IN LIEU OF NATURAL TOPSOIL.

II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - BSECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.

II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" - 8" HIGHER IN ELEVATION.

III. TOPSOIL SHALL BE UNIFORMLY 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.

IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

VI. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:

I. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITE HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: A. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE

PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06. B. COMPOSTED SLUDGE SHALL CONTAIN AT 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.

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 EXTENSION

SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

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 (313-1855).

C. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.

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 1994 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 STEEPER 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 THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL,

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED 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 FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

7. SITE ANALYSIS:

TOTAL AREA OF SITE 16.73 ACRES AREA DISTURBED 16.1 ACRES AREA TO BE ROOFED OR PAVED 9.2 ACRES AREA TO BE VEGETATIVELY STABILIZED 6.9 ACRES TOTAL CUT 42000 CU. YARDS 22000 CU. YARDS TOTAL FILL OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT AND MUST BE APPROVED BY THE

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 CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE 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 WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.

13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN

ON THE PLANS. 14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERTAION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE

CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

SEQUENCE OF CONSTRUCTION

WITH CONSTRUCTION. (1 WEEK)

(NOTE: NO SEDIMENT CONTROL DEVICE TO BE REMOVED WITHOUT SEDIMENT CONTROL INSPECTOR'S OK)

1. OBTAIN THE REQUIRED GRADING PERMIT AND SCHEDULE MISS UTILITY TO MARK ALL EXISTING UTILITIES WITHIN THE WORK AREA. SUPPLEMENT MISS UTILITY MARKINGS WITH THOSE OF A PRIVATE UTILITY LOCATING SERVICE TO INSURE THAT ALL EXISTING UTILITIES ARE CLEARLY MARKED. SCHEDULE THE PRE-CONSTRUCTION MEETING WITH THE REQUIRED INSPECTOR AND ENGINEER. (4 WEEKS)

2. FOR BASIN #1, INSTALL THE NEW 48-INCH RISER AND 36-INCH BARREL WITH ALL THE REQUIRED ACCESSORIES (ANTI-SEEP COLLAR, DEWATERING DEVICE, ETC.) WHILE ALLOWING ALL FLOWS TO BE HANDLED BY THE EXISTING RISER AND BARREL. BACKFILL AFTER INSTALLING THE NEW RISER AND BARREL TO MATCH

EXISTING GRADES. STABILIZE ALL AREAS WITH TEMPORARY SEEDING. (1 WEEK) 3. ONCE NEW RISER IS IN PLACE, INSTALL BLOCKING PLATE ON THE EXISTING 7-INCH ORIFICE ON THE

(1 DAY) 4. BEGIN EXCAVATION OF THE BOTTOM OF BASIN #1 TO THE DESIGN BOTTOM ELEVATION. STABILIZE ALL DISTURBED AREAS IMMEDIATELY WITH SEED AND MULCH. (1 WEEK)

EXISTING RISER, MAKE THE CONNECTION WATERTIGHT TO AVOID FLOW FROM ENTERING THE EXISTING ORIFICE.

5. INSTALL TEMPORARY CULVERT NO. 1 TO ALLOW OFF SITE, CLEAN WATER TO BYPASS THE CONSTRUCTION AREA. IMMEDIATELY STABILIZE ALL AREAS AT THE CULVERT INFLOW WITH SOD AND CONSTRUCT THE RIPRAP AT THE OUTFALL PRIOR TO ALLOWING ANY FLOW INTO THE PIPE. (2 DAYS)

6. ONCE CULVERT NO. 1 IS COMPLETED INSTALL THE EARTH DIKES ALONG THE ZEPP PROPERTY LINE (ON THE CHURCH PROPERTY) TO DIVERT THE OFF SITE CLEAN WATER FLOWS INTO THE BYPASS CULVERT (CULVERT NO. 1). (1 DAY)

7. INSTALL TEMPORARY CULVERT NO. 2 AT THIS TIME ALONG WITH THE RIPRAP PROTECTION AT THE DISCHARGE POINT INTO BASIN #1. (2 DAYS)

8. INSTALL THE EARTH DIKES ALONG THE WESTERN PROPERTY LINE TO DIVERT FLOW INTO TEMPORARY CULVERT NO. 2. CONSTRUCT THE DIKE OVER CULVERT NO. 1 SO THAT ALL SITE FLOWS WILL BE DIRECTED TO THE SEDIMENT BASIN #1. (3 DAYS) 9. INSTALL ALL SILT FENCES AND SUPER SILT FENCES ALONG THE WESTERN SIDE OF THE NEW PARKING

SHORT OF THE CHANNEL. INSTALL ALL REMAINING SEDIMENT CONTROL DEVICES AS SHOWN ON THE APPROVED PLANS. (2 DAYS) 10. OBTAIN INSPECTOR APPROVAL OF ALL SEDIMENT CONTROL DEVICE INSTALLATION PRIOR TO PROCEEDING

LOT CLOSEST TO ROUTE 108. DO NOT INSTALL SILT FENCE ACROSS THE STREAM CHANNEL, BUT STOP

11. DELAY CONSTRUCTION OF THE 36 RCCP (HW-1 TO HW-2) UNTIL A 5 DAY CLEAR WEATHER FORECAST FROM THE NATIONAL WEATHER SERVICE. ONCE THE FORECAST IS MADE, BEGIN CONSTRUCTION OF THE CULVERT INCLUDING ALL RIPRAP AT INFLOW AND OUTLET POINTS. STABILIZE ALL AREAS AROUND ENDS OF CULVERT WITH RIPRAP AND SOD. (5 DAYS)

12. BEGIN GRADING FOR THE PARKING LOT ADJACENT TO ROUTE 108 AFTER THE CULVERT (HW-1 TO HW-2) IS COMPLETED AND STABILIZED. (2 WEEKS)

13. ONCE THE ROUGH GRADING IS COMPLETED FOR THE NEW PARKING LOT ADJACENT TO ROUTE 108, DELAY THE CONSTRUCTION OF THE CURB AND GUTTER ALONG THE WEST SIDE OF THE LOT AND BASE PAVE THE AREA. APPLY PAVING TO PROVIDE AN ADDITIONAL 12 INCHES ALONG THE WESTERN SIDE OF THE LOT AS THE PAVING WILL BE TRIMMED AT THE TIME THE CURB IS CONSTRUCTED. (2 WEEKS)

14. ONCE THE PARKING LOT IS BASE PAVED, STRIP THE LOT FOR PARKING OVER THE BASE PAVING IN ORDER TO ALLOW THE LOT TO BE USED AS A PARKING FACILITY DURING CONSTRUCTION OF THE REMAINDER OF THE SITE. MAINTAIN HANDICAP PARKING SPACES WITHIN THE EXISTING PARKING LOT AT ALL TIMES DURING CONSTRUCTION. (2 DAYS)

15. ONCE FIRST PARKING LOT IS FUNCTIONAL, BEGIN DEMOLITION OF THE EXISTING PARKING LOT TO THE LIMITS SHOWN ON THE DEMOLITION PLAN. MAINTAIN SAFE PEDESTRIAN ACCESS TO ALL EXISTING ENTRY DOORS ON THE SANCTUARY AT ALL TIMES DURING CONSTRUCTION. (1 WEEK)

16. ONCE DEMOLITION IS COMPLETED IN AN AREA, BEGIN ROUGH GRADING AS NECESSARY TO MEET DESIGN GRADES. (1 MONTH)

17. BEGIN CONSTRUCTION OF THE NEW SANCTUARY. (4 MONTHS) 18. CHECK ALL SEDIMENT CONTROL DEVICES DAILY AND AFTER EACH RAIN EVENT TO INSURE THAT ALL DEVICES ARE FUNCTIONING PROPERLY. MAKE ALL NECESSARY REPAIRS TO CORRECT ANY DEFICIENCIES. (2

19. ONCE ROUGH GRADING IS COMPLETE BEGIN INSTALLATION OF UTILITIES. DELAY CONSTRUCTION OF STORM DRAIN FROM M-1 TO I-10 AND TEMPORARILY BLOCK 36" OUTLET PIPE OPENING AT M-1 WITH PLYWOOD AND USE MASTIC GROUT TO MAKE WATERTIGHT. INSTALL TEMPORARY FLEX PIPES TO DIRECT FLOWS TO

20. UPON COMPLETION OF UTILITIES, CONSTRUCT CURB AND GUTTER AND BASE PAVE THE AREA INDICATED ON THE SEDIMENT CONTROL PLANS. (2 WEEKS)

21. INSTALL SEDIMENT CONTROLS FOR STORMWATER MANAGEMENT POND/BASIN #2 AND BEGIN POND CONSTRUCTION. INSTALL TEMPORARY DEWATERING DEVICE ONCE STRUCTURE S-1 IS INSTALLED.

22. ONCE THE PERMANENT STORMWATER MANAGEMENT POND IS CONSTRUCTED. THE SITE IS STABILIZED. AND WITH APPROVAL-FROM THE SEDIMENT CONTROL INSPECTOR, FLUSH OUT STORM DRAIN PIPES, REMOVE BLOCKING AT M-1 AND REMOVE ALL TEMPORARY PIPES. WITH A 5-DAY CLEAR WEATHER FORECAST GRADE SWALE TO POND AND STABILIZE WITH EROSION CONTROL MATTING AT THE END OF EACH DAY AND INSTALL GABION INFLOW PROTECTION, (2 WEEKS)

23. ONCE ALL FLOWS ARE ENTERING THE STORMWATER POND/BASIN #2, AND UPON APPROVAL OF THE INSPECTOR, REMOVE TEMPORARY CULVERT NO. 2, PUMP BASIN #1 AND BEGIN REMOVAL OF BASIN #1. (1

24. UPON COMPLETE REMOVAL OF THE BASIN, EX. 24" RISER AND 18" BARREL, FINE GRADE THE AREA AND INSTALL REMAINING UTILITIES.

25. INSTALL THE CURB & GUTTER, THE BASE PAVING, AND CONSTRUCT STORAGE SHED. (2 WEEKS)

26. INSTALL ALL LANDSCAPING AND REMAINING STABILIZATION (1 WEEK) 27. APPLY ALL PARKING STRIPING LINES, STABILIZE ALL REMAINING AREAS AND OBTAIN ALL FINAL INSPECTIONS. (1 WEEK)

28. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES, REMOVE TEMPORARY TEMPORARY DEWATERING DEVICE FROM POND/BASIN #2 AND INSTALL PERMANENT TRASH RACK DEVICE AND POND DRAIN.

V_P DEPTH

19" 67.8 10.13 2.03

32" 42.39 18.98 1.1

32" 42.39 8.34 1.6

51.04 20.43 1.17

32"

THICKNESS FILTER CLOTH OR GRADED AGGREGATE FILTER-SECTION A-A PLAN

RIPRAP TO BE EMBEDDED IN PROPOSED TRANSITION SECTION

RIPRAP OUTLET PROTECTION DETAIL

NOTE: Q10, V & DEPTH CALCULATED AT END OF RIPRAP OUTLET CHANNEL.

E-1 9.5" CL I

E-2 9.5" CL II 20' 23'

HW-1 16" CL II 17' 20'

HW-2 16" CL II 37.5' 15'

CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

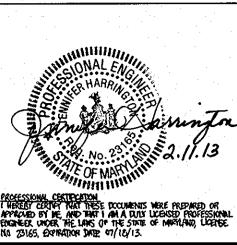
2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.

3. GEOTEXTILE CLASS C OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.

4. STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMANGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC.HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.

5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND.IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

THIS SEAL FOR A REVISIONS MADE BY SITE RESOURCES, INC



DATE

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER

BY THE ENGINEER

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THI SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

CONSERVATION DISTRICT AND MEET THE TECHNICAL

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND

DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 18/2012 4 ADDITION OF NEW GYMNASIUM /ACTIVITY CENTER 3/28/05 2 REVISED SOC AND RIPRAP CHART

8/31/04 1 REVISED SOC DATE NO. OWNER / DEVELOPER

> MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155. SAINT LOUIS CHURCH ROUTES 108 & 32 CLARKSVILLE, MD 21029 PHONE: 410-531-6040 C/O MONSIGNOR JOSEPH L. LUCA

REVISION

PROJECT ST. LOUIS CHURCH IMPROVEMENTS PHASE 1/11 / 1113 AND NEW SANCTUARY, MAINTENANCE SHED AND PARKING AREAS 12500 MD ROUTE 108 PARCELS 19629 AND 303 TAX MAP 34 5th ELECTION DISTRICTA ZONED RR-DEO

HOWARD COUNTY, MARYLAND 21029 REVISED SEDIMENT CONTROL DETAILS & NOTES

Patton Harris Rust & Associates, pc

Engineers. Surveyors. Planners. Landscape Architects.

CLARKSVILLE

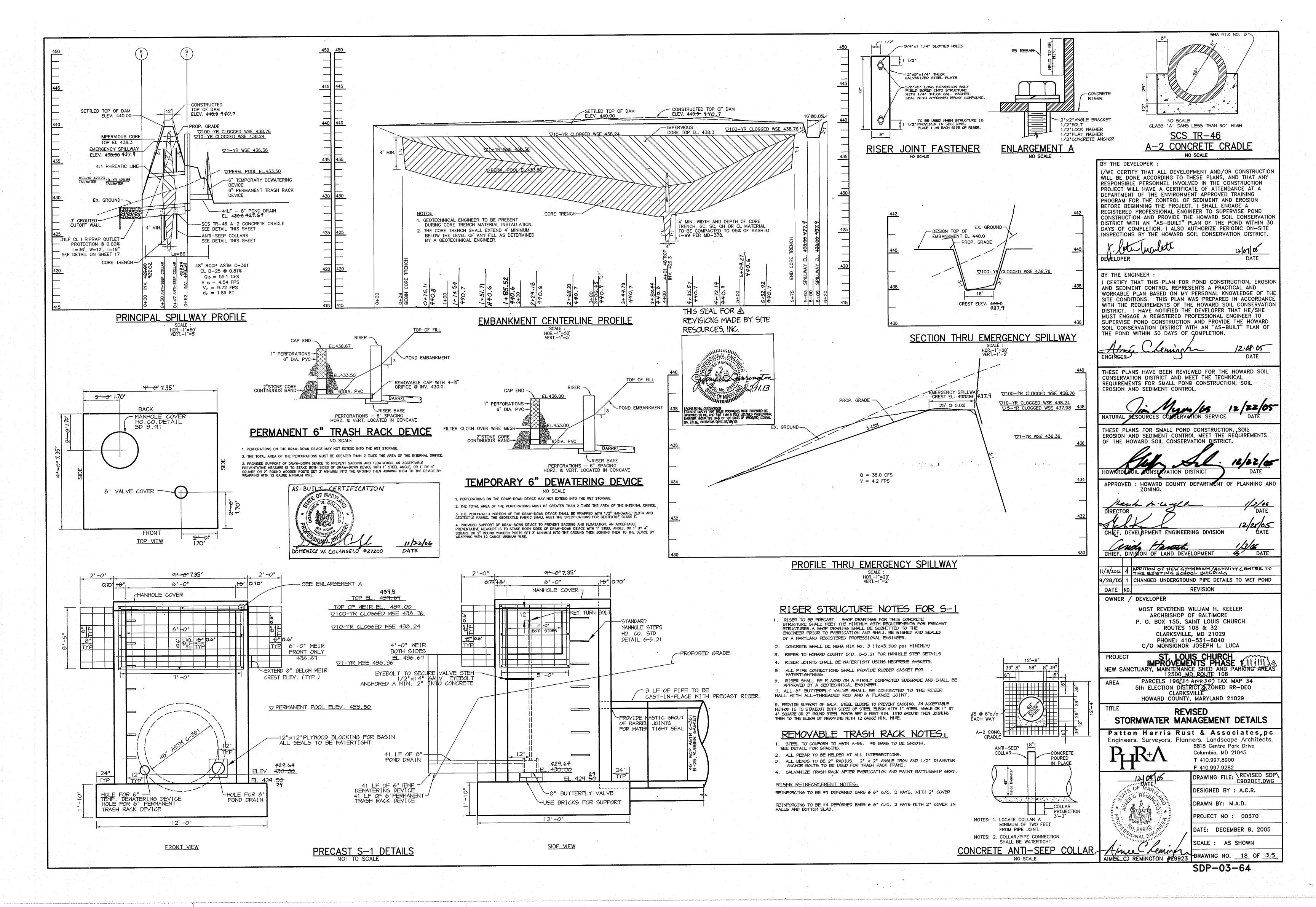
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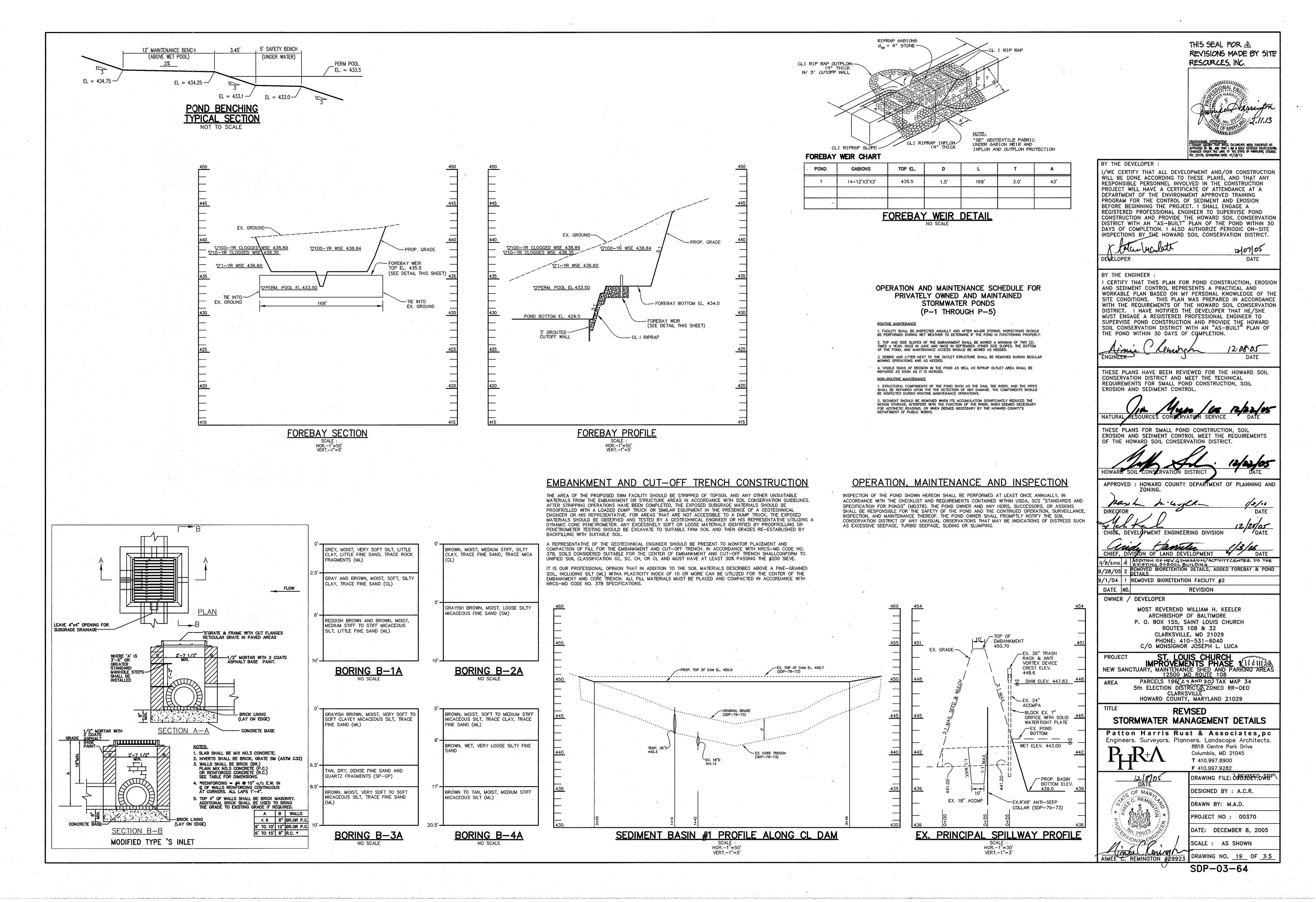
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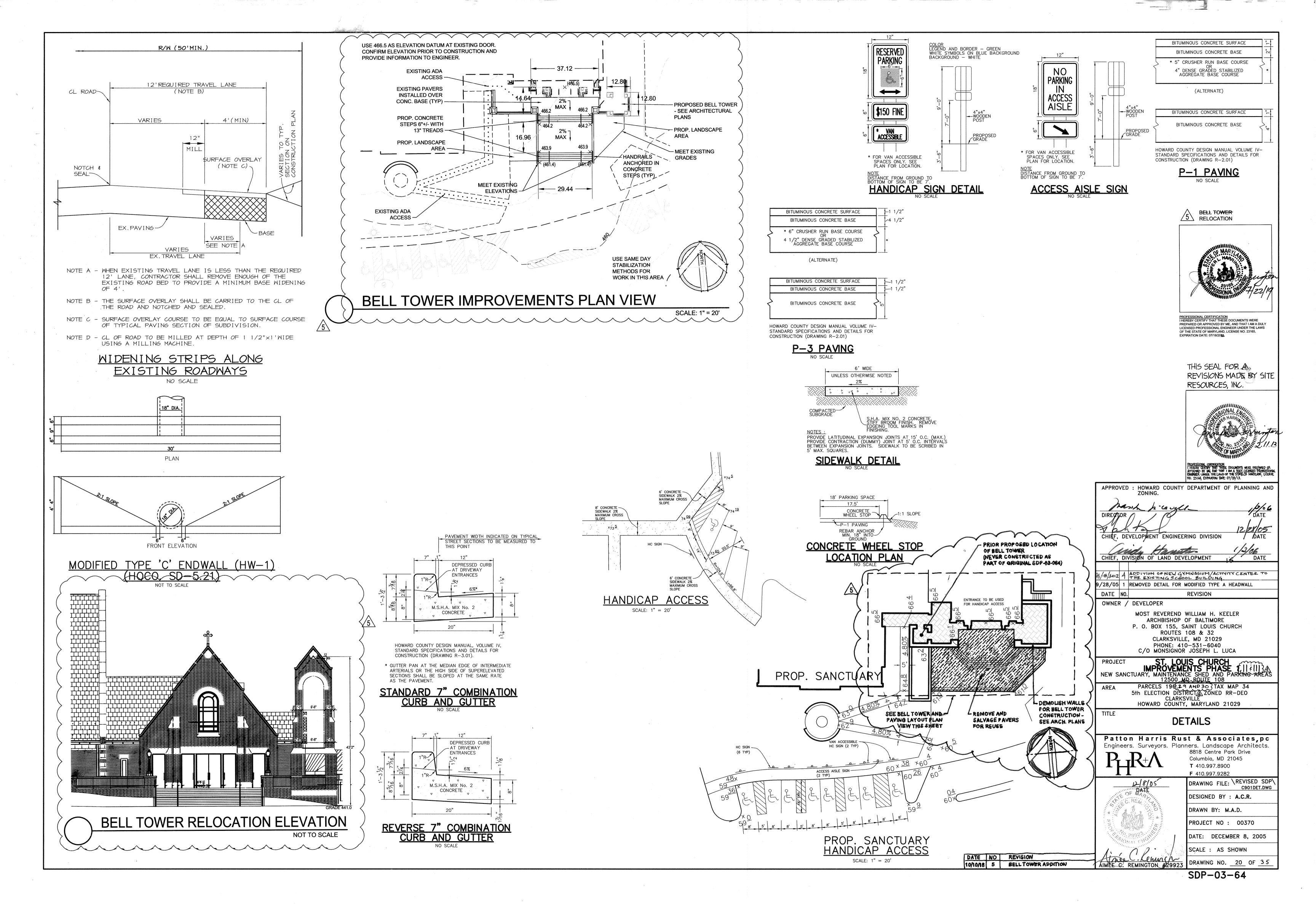
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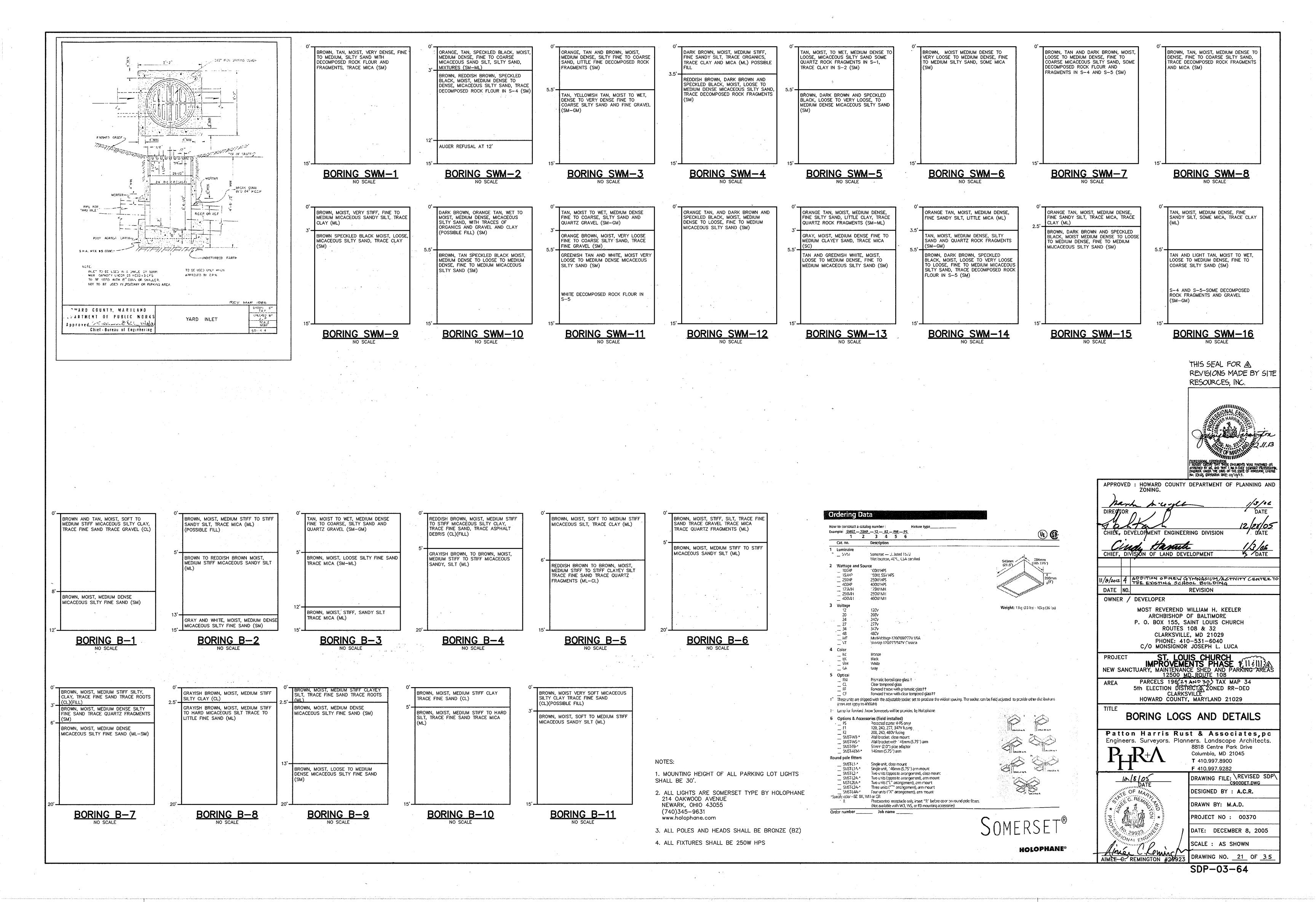
DRAWN BY: M.A.D. PROJECT NO: 00370 DATE: DECEMBER 8, 2005 SCALE : AS SHOWN

DRAWING NO. 17 OF 35









To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

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

Effects on Water Quality and Quantity

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

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

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

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment
Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

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

STANDARD STABILIZATION NOTE

Following initial soil disturbance or re-disturbance, permanent or temporary stabilization must be completed within:

- a.) Three (3) calendar days as to the surface of all perimeter dikes, smales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and
- b.) Seven (7) calendar days as to all other disturbed ar graded areas on the project site not under active grading.

SEDIMENT AND EROSION CONTROL NOTES

- 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).
- 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.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 7 days
- as to all other disturbed or graded areas on the project site. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Yol.I. Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings, sod, temporary seeding and mulching. Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper aermination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative conditions until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- SITE ANALYSIS: Total Area of Site:

Area Disturbed: Area to be roofed or paved: Area to be vegetatively stabilized: Total Cut: Total Fill:

20.88 Acres 1.97 Acres 0.74 Acres 120 Acres 2,000 Cu. Yds. 1000 Cu. Yds.

- Offsite Waste/Borrow Area Location:_ Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disburbance.
- Additional sediment control must be provided, it deemed necessary by the Howard County Sediment Control Inspector.
- 10. On all eltes 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.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.

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

- a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plaws or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
- b. Apply fertilizer and lime as prescribed on the plans. c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other
- suitable means.
- 2. Permanent Stabilization a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
- 1. Soil pH between 6.0 and 7.0.
- ii. Soluble salts less than 500 parts per million (ppm). III. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clau) to provide the capacity to hold a moderate amount of moisture. An exception: If lovegrass will be planted, then a sandy soil (less than 30
- percent silt plus clay) would be acceptable. Iv. Soil contains 1.5 percent minimum organic matter by weight.
- v. Soil contains sufficient pore space to permit adequate root penetration. b. Application of amendments or topsoil is required if on-site soils do not meet the
- c. Graded areas must be maintained in a true and even grade as specified on the
- approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches. d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
- e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top I to 3 inches of soil loose and friable. Seedbed loosening may be innecessary on newly disturbed areas.

- Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- 2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey sublished by USDA-NRCS.
- 3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
- a. The texture of the exposed subsoil/parent material is not adequate to produce
- vegetative growth.
 b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

 c. The original soil to be vegetated contains material toxic to plant growth.

 d. The soil is so acidic that treatment with limestone is not feasible.
- 4. Areas having slopes steeper than 2:1 require special consideration and design.
- 5. Topsoll Specifications: Soil to be used as topsoil must meet the following criteria: a. Topsoil specifications: Soil to be used as topsoil hist thest the following criteria:

 a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand.

 Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
- b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistile, or others as specified.
- Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
- 6. Topsoli Application
- a. Erosion and sediment control practices must be maintained when applying topsoil. b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Are irrequiarities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
- c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively met or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

- 1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
- 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
- 3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sleve.
- 4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- 5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

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

A. Seeding 1. Specifications

- a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding
- b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frazen. The appropriate seeding mixture must be applied when the ground
- c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 15 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
- d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
- a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding
- Table B.I., Permanent Seeding Table B.3, or site-specific seeding summaries. II. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide
- good seed to soil contact. b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil. 1. Cultipacking seeders are required to bury the seed in such a fashion as to provide
- at least 1/4 inch of soil covering. Seedbed must be firm after planting. II. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
- c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and
- 1. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P205 (phosphorous), 200 pounds per acre; K20 (potassium), 200 pounds per acre.
- 11. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding ill. Mix seed and fertilizer on site and seed immediately and without interruption.
- iv. When hydroseeding do not incorporate seed into the soil.

1. Mulch Materials (in order of preference)

- a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: tise only sterile straw mulch in areas where one species of grass is desired.
- b. Wood Gellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state. i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
- II. WCFM, including dye, must contain no germination or growth-inhibiting factors.III. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass
- ly. WCFM material must not contain elements or compounds at concentration levels
- v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90

percent minimum. 2. Application

- a. Apply mulch to all seeded areas immediately after seeding. b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch
- anchoring tool, increase the application rate to 2.5 tons per acre. c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by
- preference), depending upon the size of the area and erosion hazard: . A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safelu. If used on sloping land, this practice should follow the contour.
- ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
- iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

TEMPORARY SEEDING SUMMARY

		HARDINES	5 ZONE <u>6</u>	<u>b</u>	
Species	Application Rate (lbs/ac.)	Seeding Dates	Seeding Depth	Fertilizer Rate (10-20-20)	Lime Rate
Amval Ryegrass	50 lbs/ac.	3/1 - 4/30 8/15 - 11/15	1/4" -1/2"	436 lb/ac.	2 tons/ac.
Millet	50 lbs/ac.	5/1 - 8/14	42"	te 0001/dl 01)	(1.e 0001.dl 0P)

PERMANENT SEEDING SUMMARY

مطعين فأعاد والمريطية المساولة ومعا	HARDINESS ZONE <u>6b</u>					Sage in a second			
de opposition of the first section of project the entropy of	No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P 2 0 5	K 20	Lime Rate
en e		Tall Fescue	60 lb/ac 1.38 lb/1000 st	3/1-5/15 8/15-10/15	"-2"	The second secon	fyr sol y roll (roll) e fyng ym ei gymrefe'r y panaerr arlleinae'r y	Company Specific Company of the Comp	
ي فاراق و المدينة بيقائم و معادلة فالمواهد	9	" Perennial Ryegrass	20 lb/ac .46 lb/ l000sf	3/1-5/15 8/15-10/15	"-2"	45 lb/ac (1.0 lb/ 1000sf)	0 lb/ (2 lb/	(2 16/	2 tons/ac (901b/ 1000 sf)
. History and	Annaharra Aria	Kentucky Bluegrass	40 lb/ac .92 lb/ 1000sf	3/1-5/15 8/15-10/15	l"-2"		and the second report with a second response surface of	The state of the s	

- Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in
- such condition that future mawing of grasses will pose no difficulty. 2. If soil moisture is deficient, supply new seedings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

SOD SPECIFICATIONS, INSTALLATION & MAINTENANCE

- a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the lob foreman and inspector.
- b. Sod must be machine cut at a uniform soil thickness of % inch, plus or minus % inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable
- c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
- d. Sod must not be harvested or transplanted when moisture content (excessively dry or met) may adversely affect its survival.
- e. Sod must be harvested, delivered, and installed mithin a period of 36 hours. Sod not transplanted within this period must be approved by an agranomist or soil scientist prior to

2. Sod Installation

- a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
- b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
- d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
- 3. Sod Maintenance a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the
- heat of the day to prevent wilting. b. After the first week, sod watering is required as necessary to maintain adequate moisture
- c. Do not more until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 Inches unless otherwise specified.

STOCKPILE MAINTENANCE

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section 13-3 Land Gradina.

SEQUENCE OF CONSTRUCTION

- . Assure that Grading Permit and all other necessary permits are obtained from owner. 2. Notify Howard County Department of Public Works at least 48 hours before start of work. Contact Miss Utility at 1-800-257-7777 at least three days in advance of starting work shown
- 3. With the approval of the sediment control inspector, clear and grub for and install sediment controls including silt fence, super silt fence, inlet protection, and tree protection fencing. Construct stabilized construction entrance (SCE).
- 4. Notify Howard County sediment control inspector upon completion of the installation and receive approval to begin construction.
- 5. Remove existing sidewalks, existing roadway, and existing storm drain inlets and drain pipe as shown on the demolition plan. 6. Do not disturb any utilities to remain.
- 7. Install storm drain structures and connecting pipes. Install inlet protection on new inlets.

 8. Begin foundation construction for and construct proposed building addition. Construct new walkways, curbs and driveways.

disturbed by this process.

- 9. Fine grade all remaining areas. 10. Provide buffer landscaping installation.
- II. Permanently stabilize all remaining areas within the LOD according to the stabilization notes and the specifications. 12. Upon stabilization of the site with established vegetation and with the permission of the sediment control inspector, remove sediment control measures and stabilize those areas

THIS SEAL FOR A REVISIONS MADE BY SITE RESOURCES, INC.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND

DEVELOPMENT ENGINEERING DIVISION Stanate

CHIEF. DIVISION OF LAND DEVELOPMENT 11/8/2012 4 ADDITION OF NEW GYMNASIUM/ACTIVITY CENTER TO THE EXISTING SCHOOL BUILDING 12:08:05 | VOID THIS SHEET DATE NO. REVISION

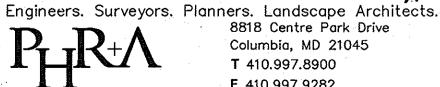
OWNER / DEVELOPER

MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32 CLARKSVILLE, MD 21029 PHONE: 410-531-6040 C/O MONSIGNOR JOSEPH L. LUCA

PARCELS 196, 29 ANO 30 3 TAX MAP 34

5th ELECTION DISTRICT ZONED RR-DEO CLARKSVILLE HOWARD COUNTY, MARYLAND 21029 TITLE

(REVISED SEDIMENT CONTROL NOTES) Patton Harris Rust & Associates,pc



12.23.03

DATE: JUNE 9, 2003 SCALE : AS SHOWN DRAWING NO. <u>22</u> OF <u>35</u> CHRISTOPHER J. REID #11949

SDP-03-64

8818 Centre Park Drive

DESIGNED BY : A.C.R.

PROJECT NO: 00370

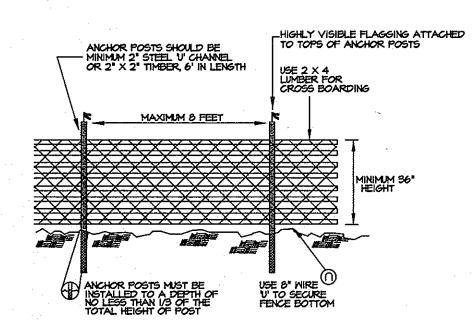
DRAWN BY: D.R.H.

DRAWING FILE: C905DET.DWG

Columbia, MD 21045

T 410.997.8900

F 410.997.9282



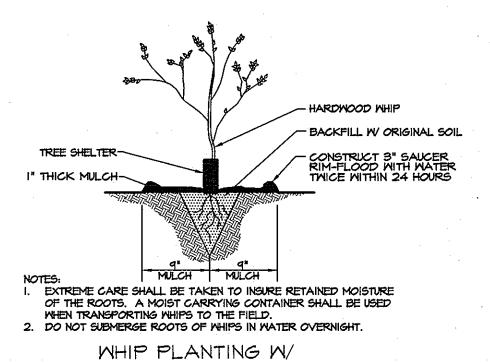
BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.

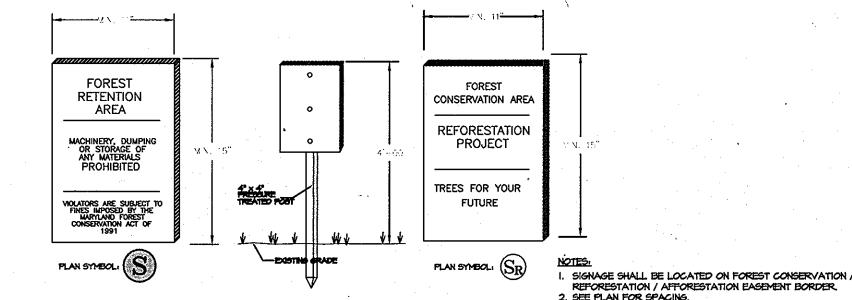
SUPER SILT FENCE MAY BE SUBSTITUTED FOR TREE PROTECTION FENCING.

BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST

- BONDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
- AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
- 5. PROTECTION SIGNS ARE REQUIRED, SEE SIGN DETAIL.

 1. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION
 - TREE PROTECTION FENCING





REFORESTATION / FOREST RETENTION SIGN DETAIL NOT TO SCALE

FOREST CONSERVATION SEQUENCE OF OPERATIONS

1. Prior to beginning any grading operations on this site or on a respective lot, there shall be a preconstruction meeting held at the site which is to include the Contractor and representatives from Patton Harris Rust & Associates, pc. The Howard County Department of Planning and Zoning (DPZ) and the owner will be notified by the Contractor as to the time and place of the field meeting, should they wish to send a representative. The purpose of this meeting will be to review the approved FCP and to field verify the correct Limits of Disturbance (LOD).

2. The Limits of Disturbance (LOD) pertinent to the preservation of wooded areas shall be staked in the field with final adjustments being made as necessary to insure adequate protection of the Critical Root Zone of trees designated for retention. Stakes to be used shall be those specified for the "TREE PROTECTION DEVICE" to which approved protective material will be attached. Alternate means of defining the LOD may be used if approved by the DPZ.

3. All forest retention areas shall be protected by highly visible, well anchored temporary protection devices (see detail), which shall be securely in place prior to any clearing or grading operations.

4. Install tree protection signage.

5. Grading operations or other construction operations which could dislodge or otherwise damage the protective devices shall be avoided along the edges of the LOD lines if possible. Any protective devices which are damaged during site construction operations shall be properly repaired immediately by the Contractor.

6. After site grading and parking lot construction have been completed, all trees adjacent to the LOD line shall be inspected for indications of crown die-back (summer indicator), damage within respective critical root zones or any dead wood or other conditions which might be hazardous to pedestrians, buildings, utility lines vehicular access ways or parked vehicles.

7. Should there be evidence of any damage to tree trunks, branches or the critical root zone of trees within the protected areas, or to isolated specimen trees to be preserved, the damage shall be examined within a period of two (2) days from the date of observance by a licensed tree care professional. Exposed roots should be covered immediately to a depth of 6-8 inches with soil, preferably mixed with 50% peat moss or leaf mold.

safety hazard to buildings, utility lines, vehicles, or access and egress drives or pedestrian areas. Trees designated for pruning or removal shall be pruned or removed using equipment and methods which will not damage or destroy adjacent large trees or understory trees or shrubs designated for

8. Remove damaged, dead or dying trees or limbs only if the trees or limbs pose an immediate

9. All temporary forest protection devices will be carefully removed after all general construction, necessary tree surgery, removal of debris, etc. regrading and reseeding of sediment and erosion control disturbance have been completed and acceptance and approval of the work and site conditions have been given by the DPZ.

10. After forest retention area has been stabilized, reforestation planting may begin.

11. Once reforestation planting is complete, a 24 month monitoring / inspection period may

PLANTING SPECIFICATIONS

AFFORESTATION OR REFORESTATION MAINTENANCE AND REPLACEMENT REQUIREMENTS

A two year (24) month maintenance and replacement warranty period is required for all newly planted materials. The maintenance and replacement warranty period shall commence upon the date of the written acceptance by the Owner of the planted areas. A written warranty will be delivered to the Owner upon acceptance of the planted areas. Maintenance and replacement shall be provided by the Contractor responsible for the initial planting operations and related work. All landscape plant material included as forest conservation credits shall be covered under this maintenance and replacement warranty period.

I. MAINTENANCE: The Contractor shall field check the newly planted area(s) and shall provide the following maintenance items in accordance with the following schedule which shall begin after the completion and acceptance of the initial Afforestation or Reforestation planting.

II. MAINTENANCE ITEMS:

1. Watering: Watering of all newly planted materials once per week as weather permits during the entire initial growing season. Following the initial growing season, watering shall be done on an "as needed" basis depending on the frequency of natural rainfall. During the months of July and August and periods of severe drought, all newly planted materials shall be watered thoroughly once every week. Watering shall be done deeply and slowly using an open end hose or watering probe, at low pressure, allowing the water to be absorbed into the soil until thoroughly saturated. The watered area shall include the whole root zone as the tree becomes more established.

2. Fertilizing: Fertilizing shall be applied only after the soil has been tested to determine its needs. Organic fertilizer should be applied in accordance with the amounts recommended in the soil analysis report. No fertilizing of newly planted trees shall be done within the first growing season after initial planting. Following the first growing season, apply fertilizer as recommended either in late fall or early spring.

3. Supplemental Mulch: To control undesirable vegetation adjacent to the newly planted materials and to prevent tree roots from drying out, additional mulch shall be placed over the existing mulch field where required. Carefully remove any invasive plants (including the root system) within the mulch fields. Do not damage trees in any way during removal of invasive plants or remulching operations.

4. Pruning: Remove dead, diseased, dying and broken branches from all plant materials. Pruning shall be done cleanly leaving no ragged ends.

III. REPLACEMENT OF DEAD OR DYING MATERIALS:

1. Replacement: Any plant materials which are 25% dead or more shall be replaced during the appropriate spring or fall planting seasons in accordance with the methods indicated in the Planting Specifications. A tree shall be considered dead when the main leader has died back.

2. All replacements shall be plants of the same genus, species and size as specified on the plant list.

Howard County Forest Conservation Worksheet

PROJECT NAME:	St. Louis Church	COUNTY FILE#:	
DATE:	9/20/2005	PHR+A PROJECT #:	00370
Site Dete			
Site Data	PARCELS 196, 29, Al		21,6
	irea (includes 2.52 acre fo	of offsite porta)	7 - 0.00
	00 year floodplain	ntion navaola	0.00
, '	griculture use and present a disturbed under SDP 7		3.10
			,
	ea disturbed under SDP 9	0-200	0.75
C. Net Tract A			
	er on net tract area	he cleared nor plan	0.90
	Net Tract Area Forest to	-	0.16
and the second s	on requirement percent b	• • • • • • • • • • • • • • • • • • • •	20%
J. Alforestatio	on requirement percent by	riand use category	15%
Break Eve	n Point		\
A. Area of fore	est above conservation th	reshold	0.00
B. Amount of	forest to retain w/o mitiga	ation	0.90
C. Forest clea	aring permitted w/o mitiga	tion	0.00
			\
	ion Calculations		(
A. Net Tract A		•	77.8
	within Net Tract Area		0.90
	rea forests to be cleared	by development plan	0.16
D. Forest area	-		(0.74
	on threshold in acres		3.5
F. Reforestati			
	threshold		0.00
	threshold		0.32
G. Reforestati		· ·	0.00
H. REFORES	STATION OBLIGATION	-	0.32
Afforestati	on Calculations		4
A. Net Tract A			17.80
	within Net Tract Area		0.90
	on threshold in acres		2.6
•	TATION OBLIGATION (C-B).	7 - 1.7:
ONLO		- - / ;	
TOTAL RE	FORESTATION + AFF	DRESTATION OBLIGA	ATION 2.0
			7
			~ \ \ .

NOTE: TOTAL SITE AREA, NET TRACT AREA, AND FOREST OBLIGATION INCLUDE 2.52

KEY

TREES

ACRES OF OFFSITE DISTURBANCE FROM ADJACENT PROPERTY

II' ON CENTER

5PACING

		•		FORESTICC	INSERVA	TION CHART					
LAND USE	Institutional	SUBWATERSHED NUMBER	2131106	ON-SITE M D GRID N	500,000	ON SITE MD GRID E	816,000	NET TRACT AREA	17.80	TOTAL SITE DISTURBANCE (AC)	14.74
PRIORITY DISTURBANCE WITHIN TOTAL DISTURBED AREA AC) (2)	0.39 AC.	% PRIORITY DISTURBANCE (3)	4%	EXISTING FOREST	0.9 AC.	ON-SITE RETENTION	0.74	OFF-SITE RETENTION (AC)	0	CLEARED FOREST	0.16
ON-SITE REFORESTATION (AC)	0	OFF-SITE REFORESTATION (AC)	0	ON-SITE AFFORESTATION (AC)	.67 AC	OFF-SITE AFFORESTATION	0	OFF-SITE M D GRID N (1)		OFF-SITE GRID E (1)	
TOTAL ACRES IN EASEMENT	1.41AC.	TOTAL ACRES OF PRIORITY AREA WITHIN TOTAL EASEMENT	1.31 AC	% OF PRIORITY AREA WITHIN TOTAL EASEMENT	93%	AMOUNT OF SURETY POSTED		AMOUNT OF FEE-IN- LIEU REQUESTED	1.42 \$32887.60	OFF-SITE SUBWATERSHED NUMBER	

(1) THESE 6 DIGIT COORDINATES CAN BE TAKEN FROM ADC'S STREET MAP OF HOWARD COUNTY

(2) PROVIDE THE ACREAGE OF THE TOTAL SITE DISTURBANCE WHICH OCCURS IN PRIORITY AREAS (WETLANDS, WETLAND BUFFERS, STREAM BUFFERS, STEEP SLOPES, FLOODPLAIN)

(3) PROVIDE THE PERCENTAGE OF THE TOTAL SITE DISTURBANCE WHICH OCCURS WITHIN THE PRIORITY AREAS

(4) THESE FIGURES APPLY TO THE ACREAGE OF EXISTING FOREST IN THE NET TRACT AREA AND TO THE ACREAGE OF THAT FOREST WHICH WILL BE CLEARED

(5) FOREST CONSERVATION OBLIGATION FOR PHASE III (BA-12-006C) GYMNASIUM ADDITION IS 0.18 ACRES OF AFFORESTATION, REQUESTED TO BE PAID BY FEE-IN-LIEU IN THE AMOUNT OF \$5,880.60.

THIS SEAL FOR A REVISIONS MADE BY SITE RESOURCES, INC.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND DATE CHIET, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 11/8/2012 4 ADDITION OF NEW GYMNASHIM / ACTIVITY CENTER TO THE EXISTING SCHOOL BUILDING.

9/28/05 1 REVISED FOREST CONSERVATION FOR OFF-SITE POND DATE NO. REVISION

OWNER / DEVELOPER

MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32 CLARKSVILLE, MD 21029 PHONE: 410-531-6040

PARCELS 196, 29 AND 30 TAX)-MAP 34 5th ELECTION DISTRICT ZONED RR-DEO CLARKSVILLE

C/O MONSIGNOR JOSEPH L. LUCA

FOREST CONSERVATION NOTES AND DETAILS

Patton Harris Rust & Associates,pc

HOWARD COUNTY, MARYLAND 21029

Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 **T** 410.997.8900

DESIGNED BY : PJS

DRAWN BY: M.A.D.

PROJECT NO: 00370

DATE: DECEMBER 8, 2005

DRAWING NO. 23 OF 35

DRAWING FILE: \REVISED SDP\

F 410.997.9282

I. RANDOMLY LOCATE GROUPS OF PLANT SPECIES, TAKING CARE NOT TO PLANT IN SUCCESSION MORE THAN 4 OF THE SAME SPECIES.

OF A PROPOSED LAYOUT FOR NINE DIFFERENT TREE SPECIES (A-F). IT IS NOT MEANT TO BE FOLLOWED EXACTLY.

3. SEE PLANT LIST FOR ON-CENTER SPACING REQUIREMENTS

ree species 'g'

REFORESTATION PLANT LISTS

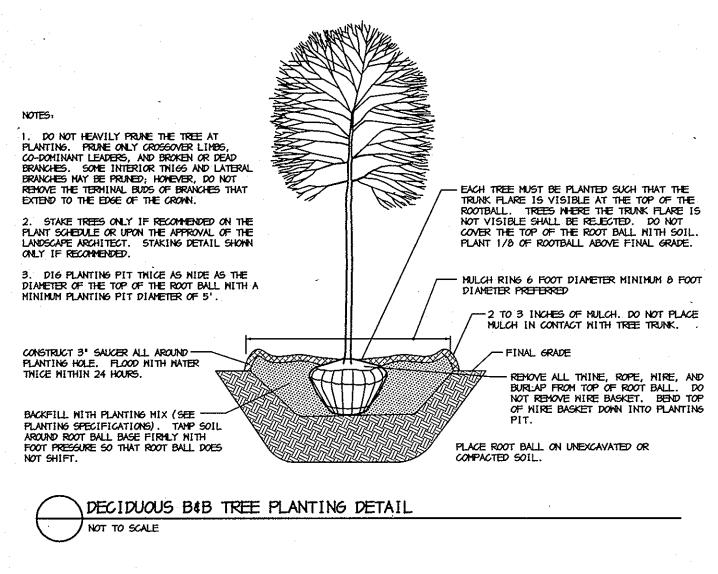
	UPLAND P	LANT LIST		
QUANTITIES	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
27 "	LIRIODENDRON TULIPIFERA / TULIP TREE			
26	LIQUIDAMBAR STYRACIFLUA AMERICAN SWEETGUM			FULL CROWN
26	ACER RÜBRUM / RED MAPLE	WHIPS WITH	CONT.	PLANT 11' O.C.
26	QUERCUS ALBA / WHITE OAK	TUBES		RANDOM PATIERN
26	ACER PSEUDOPLATANUS SYCAMORE	,		
26	QUERCUS COCCINEA SCARLET OAK			
26	QUERCUS ALBA WHITE OAK			
26	QUERCUS PRINUS CHESTNUT OAK			
26	NYSSA SYLVATICA BLACK GUM			

2. THIS DETAIL PROVIDES A HYPOTHETICAL, GRAPHIC DEPICTION THE PURPOSE IS TO ACHIEVE THE APPEARANCE OF RANDOM. SPACING. SEE PLANT LIST FOR ACTUAL NUMBER OF PLANT SPECIES.

4. MINIMUM PLANT DENSITY REQUIREMENT IS 350 PLANTS PER ACRE.

SDP-03-64

SCALE : AS SHOWN



SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERNISE SPECIFIED ON PLAN. PLANTS HITH CO-DOMINANT, HISSING, OR DANAGED - EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOTBALL. TREES WHERE THE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. LEADERS SHALL BE REJECTED. 2. STAKE TREES ONLY IF RECOMMENDED ON THE PLANT SCHEDULE OR UPON THE APPROVAL OF THE ANDSCAPE ARCHITECT. STAKING DETAIL SHOWN PLANT 1/8 OF ROOTBALL ABOVE FINAL GRADE. 3. DIG PLANTING PIT TNICE AS NIDE AS THE MULCH RING 6 FOOT DIAMETER MINIMUM 8 FOOT DIAMETER OF THE TOP OF THE ROOT BALL HITH A DIAMETER PREFERRED HINIMUM PLANTING PIT DIAMETER OF 5'. 2 TO 3 INCHES OF MULCH. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK. CONSTRUCT 3° SALCER ALL
AROUND PLANTING HOLE. FLOOD
NITH WATER THICE WITHIN 24 - FINAL GRADE REMOVE ALL THINE, ROPE, WIRE, AND BURLAP FROM TOP OF ROOT BALL. DO NOT REMOVE WIRE BASKET. BEND TOP OF HIRE BASKET DOWN INTO PLANTING BACKFILL NITH PLANTING MIX (SEE -PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL. YEVERGREEN B&B TREE PLANTING DETAIL NOT TO SCALE

GENERAL NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$62,910.00, \$57,840.00 WAS PREVIOUSLY PAID ON DECEMBER 29, 2003 UNDER THE ORIGINAL DEVELOPER'S AGREEMENT LEAVING AN OUTSTANDING LANDSCAPE SURETY AMOUNT OF \$5,070.00.

124 SHADE TREES **e** \$300 = \$37,200.00 O ORNAMENTAL TREES @ \$150 = \$0 167 EVERGREEN TREES @ \$150 = \$25,050.00 22 SHRUBS @ \$30 = \$660.00

3. THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.

4. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.

5. ALL MATERIAL SELECTED SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR NURSERY STOCK", LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

6. ALL MATERIAL SHALL BE PLANTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CITED IN THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES" PUBLISHED BY THE LANDSCAPE CONTRACTORS ASSOCIATION.

7. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS SHALL BE OF THE PROPER HEIGHT AND/OR SPREAD REQUIREMENTS IN ACCORDANCE WITH THIS PLAN AND THE HOWARD COUNTY LANDSCAPE MANUAL.

8. NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY. ANY DEVIATION FROM THIS LANDSCAPE PLAN MAY RESULT IN A REQUIREMENT FOR SUBMITTAL OF AN OFFICIAL "REDLINE REVISION" TO THE SITE DEVELOPMENT PLAN(S) AND/OR DENIAL IN THE RELEASE OF LANDSCAPE SURETY.

9. PER MP-01-64 STREAM BANK RESTORATION PLANTINGS HAVE BEEN PROVIDED FOR 30' OF STREAM. 14 SPICEBUSH (Libe) AND 7 SERVICEBERRY (Amcan) ARE PROPOSED ALONG THE STREAM.

- DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. PLANT 1/8 OF ROOTBALL ABOVE FINAL GRADE.

TAMP SOIL AROUND BALL BASE FIRMLY
NITH FOOT PRESSURE SO THE ROOT BALL
DOES NOT SHIFT.

PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.

----FINAL GRADE

— 2 TO 3 INCHES OF MULCH. DO NOT PLACE
MULCH IN CONTACT HITH SHRUB TRUNK OR BRANCHES

	PB	ADJACENT TO PERIMETER PROPERTIES			Ь		ADJACENT TO ROADWAYS		~~	
PERIMETER	1	2	6	7		3	4	5	8	
ANDSCAPE TYPE	C	C	^ >	В	Γ	В	· E ,	В	В	
INEAR FEET OF ROADWAY RONTAGE/ PERIMETER	±1,384'	±6061	±371	±198	{	±473'	±140'	±640'	± 402'	
REDIT FOR EXISTING VEGETATION YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED)	YES 180'	YES *	No	YES *	2	YES 100'*	YES *	YES •	NO -	
REDIT WALL, FENCE, BERM, HEDGE OR DRIVE AISLE (YES/NO/LF)	NO -	NO -	±105	Y#5	<	NO	YES ±52'	NO \$	YES ±36'	
INEAR FEET REMAINING	±1,2041	±606'	±266	±168'	1	±373'	±88'	±640'	±366¹	
IUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	30 60 -	15 30 -	5	4 8	}	790	2 - 22	13 16	9 1 <u>5</u>	
UMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SMALE FLOWERING TREES SHRUBS	24 65 7	*12 26 -	5	2*	3	5,400	* - 12 19	•3 •1 q 50	5* 68	
SUBSTITUTION NOTES: PERIMETER J 5 EVERGREEN TREES AND 7 ORNAMENTAL	. TREES WERE	SUBSTITUTE	D FOR 6 RE	SUIRED SHAD	-	4\ REE5.			~~	

CREDIT TAKEN FOR 2 EXISTING SHADE TREES + 2 ORNAMENTAL TREES FOR 3 REQUIRED SHADE TREES. CREDIT TAKEN FOR 4 EXISTING evergreen trees for 4 regulred evergreen trees.

PERIMETER 3
CREDIT TAKEN FOR 2 EXISTING SHADE TREES

CREDIT TAKEN FOR 2 EXISTING SHADE TREES FOR 2 REQUIRED SHADE TREES. 12 ORNAMENTAL TREES AND 57 SHRUBS ARE SUPPLEMENTAL TO REQUIREMENTS.

PERIMETER 5
CREDIT TAKEN FOR 4 EXISTING SHADE TREES AND 3 EXISTING ORNAMENTAL TREES FOR 5.5 REQUIRED SHADE TREES. 1 EVERGREEN TREE, 3 ORNAMENTAL TREES AND 50 SHRUBS NERE SUBSTITUTED FOR 4.5 SHADE TREES. 6 ORNAMENTAL TREES NERE SUBSTITUTED FOR 6 REQUIRED EVERGREENS. CREDIT TAKEN FOR 10 EXISTING EVERGREEN TREES FOR 10 REQUIRED EVERGREEN TREES.

CREDIT TAKEN FOR 8 EXISTING EVERGREEN TREES FOR 8 - WERE- SUBSTITUTED FOR 2-REQUIRED SHADE TREES. REQUIRED EVERGREEN TREES. ORNAMENTAL TREES WERE

SUBSTITUTED FOR REQUIRED SHADE TREES. ORNAMENTAL TREES WERE SUBSTITUTED FOR 2 REQUIRED SHADE TREES. 4 ORNAMENTAL TREES WERE SUBSTITUTED FOR 4 REQUIRED EVERGREEN TREES.

SCHEDULE B - PARKING LOT INTERNAL LANDSCA	APING
	<u> </u>
NUMBER OF PARKING SPACES	356
NUMBER OF SHADE TREES REQUIRED (1/20 SPACES)	18
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	20
NUMBER OF ISLANDS REQUIRED (1/20 SPACES)	20
NUMBER OF ISLANDS PROVIDED (200 SF/ISLAND)	20

DATE NO.

PLANT SCHEDULE

Planting requirements for gymnasium addition: 7 shade trees. 3 evergreen trees, 8 flowering trees

SHADE TREES>-

Code Narge	Quantity)	Scientific Name	Common Name	Planting Size	Spacing
Acru0 /	21	Acer rubrum 'October Glory'	October Glory red maple	2.5"-3" Cal.	as show
AcsaG 🦙	8	Acer saccharum 'Green Mountain'	Green Mountain sugar maple	2.5"-3" Cal.	as show
List (13	Liquidambar styracifiua	American sweetgum	2.5"-3" Cal.	as shown
Prsa /	7	Arunus sargentii	Flowering Cherry	2.5"-3" Cal.	as showr
Quac \	2 .	Quercus acutissima	Sawtooth oak	2.5"-3" Cal.	as show
Quco /	3	Quercus coccinea	Scarlet oak	2.5"3" Cal.	as showr
Qupa (7	quercus palustris	Pin oak	2.5"-3"cal.	as show
ZeseV	31	Zelkova serrata 'Village Green'	Village Green Japanese zelkova	2.5"-3" Cal.	as shown
EVERGREEN	TREES	<u></u>			•
Code Name	Quantity	Scientific Name	Common Name	Planting Size	Spacing
Cede	3	Cedrus deodara	Deodar cedar	6'-8' ht.	as show
llop C	33	lex opaca	American holly	5'-6' ht.	as show
Plab (19	Picea ables	Norway spruce	6'-8' ht.	as showr
Pist ,	27	Pirus strobus	Eastern white pine	6'-8' ht.	as showr
Pith (26	Pinus thunbergiana	Japanese black pine	6'-8' ht.	as shown
IINS 7	14)lex x Nellie R. Stevens	Nellie Stevens holly	6'-8' ht.	as show
ORNAMENTAL	TREES	(
Code Name	Quantity	Scientific Name	Common Name	Planting Size	Spacing
Amcan (12	Amelanchier canadensis	Shadblow serviceberry	8° - 10° ht.	as show
Prye	34	Prunus yedoensis	Yoshino Cherry	8' - 10'	as show
SHRUBS	س. ۱				
Code Name	Quantity	Scientific Name	Common Name	Planting Size	Spacing
CosaR	113	Cotoneaster salicifolius 'Repens'	Willowleaf cotoneaster	18"-24" sp	3' o.c.
EualC	64	Euonymus alatus 'Compactus'	Dwarf burning bush	24"-30"	5' o.c.
Libe	14	Lindera benzoin	Spicebush	3-Gal	5' o.c.

PLANTING SPECIFICATIONS

SHRUB BED PLANTING DETAIL - B&B AND CONTAINER SHRUBS

1. SEE PLANTING SPECIFICATIONS FOR PREPARATION OF PLANTING BED.

5. ALL CONTAINERS SHALL BE REMOVED BEFORE INSTALLATION.

of 4 foot high snow fence at the drip line, see detail.

7. Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction. Do not plant Pinus strobus or Xcupressacyparis legiandii between November 15 and. Harch 15. Landscape plants are not to be installed before site is graded to final grade.

8. Contractor to regrade, fine grade, sod, hydroseed and straw mulch all areas disturbed by their

4. Bid shall be based on actual site conditions. No extra payment shall be made for mork arising from actual site conditions differing from those indicated on drawings and specifications.

10. Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence. Mhere discrepancies on the plan exist between the symbols and the callout leader, the number of sumbols take precedence.

11. All shrubs and groundcover areas shall be planted in continuous planting beds, prepared as specified, unless otherwise indicated on plans. (See Specification 13). Beds to be mulched with minimum 2° and maximum 3° of composted, double-shredded hardwood mulch throughout.

12. Positive drainage shall be maintained on planting beds (minimum 2 percent slope)

13. Bed preparation shall be as follows: Till into a minimum depth of 6° 1 yard of Compro or Leafgro per 200 SF of planting bed, and 1 yard of topsoil per 100 SF of bed. Add 3 lbs of standard 5-10-5 fertilizer per cubic yard of planting mix and till. Ericaceous plants (Azaleas, Rhododendrons, etc.): top dress after planting with iron sulfate or comparable product according to package directions. Taxus baccata 'Repandens' (English meeping years): Top dress after planting with 1/4 to 1/2 cup lime each.

14. Planting mixi For trees not in a prepared bed, mix 50% Compro or Leafgro with 50% soil from tree hole to use as backfill, see tree planting detail.

15. Need 4 Insect control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. For tree planting, apply a pre-emergent on top of soil and root ball before mulching. Caution: For areas to be planted with a ground cover, be sure to carefully check the chemical used to assure its adaptability to the specific groundcover to be treated. Maintain the mulch need-free for the extent of the marranty period. Under no circumstances is a pesticide containing chlorpyrifos to be used as a means of pest control.

16. Nater: All plant material planted shall be watered thoroughly the day of planting. All plant material not yet planted shall be properly protected from drying out until planted. At a minimum, water unplanted plant material daily and as necessary to avoid descication.

17. Pruning: Do not heavily prune trees and shrubs at planting. Prune only broken, dead, or

18. All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded, grass seed planted, and covered with straw mulch.

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDS	SCAPING
S.W.M. POND	1
LANDSCAPE TYPE	В
LINEAR FEET OF TOTAL PERIMETER	±1,372
CREDIT FOR EX. VEGETATION (NO OR YES & %)	NO
CREDIT FOR OTHER PROP. LANDSCAPING (NO OR YES & %)	YES, 367'
LINEAR FEET OF REMAINING PERIMETER	1,0051
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	20 25
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION, 50% MAX.)	20 25 0

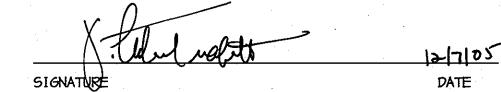
Code Name	Quantity	Scientific Name	Common Name	Planting Size	Spacing
List	6	Liquidambar styracifiua	American sweetgum	2.5"-3" Cal.	as shown
Prsa	3	Prunus sargentii	Flowering Cherry	2.5"-3" Cal.	as shown
Quco	4	Quercus coccinea	Scarlet oak	2.5"-3" Cal.	as shown
Qupa	7	Quercus palustris	Pin oak	2.5*-3*cal.	as shown

EVERGREEN TO		Scientific Name	Common Name	Planting Size	Spacing
Code Name	Quantity	Scientific Name	Common Name	rianning Size	Spacing
Plab	6	Picea abies	Norway spruce	6'-8' ht.	as shown
Pist	8	Pinus strobus	Eastern white pine	6'-8' ht.	as shown
Pith	11	Pinus thunbergiana	Japanese black pine	6'-8' ht.	as shown
				:	

STORMWATER	MANAGEMEN	IT PLANTS			
Code Name	Quantity	Scientific Name	Common Name	Planting Size	Spacing
Alof	396	Althea officinalis	Common marsh-mallow	1 gal. cont	24" O.C.
irve	416	Iris versicolor 'Blue Flag'	Blue flag iris	1 gal. cont	24" O.C.
Nytu	241	Nymphaea tuberosa	White water Illy	1 gal. cont	24" O.C.

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 LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE OF LANDSCAPE INSTALLATION. ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.



	EE THOUSE
THIS SEAL FOR A REVISIONS MADE BY SITE RESOURCES, INC.	APE ARCHINA

RESOL : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION CHIEF, DIVISION OF LAND DEVELOPMENT DATE 11/8/2012 4 ADDITION OF NEW GYMNASIUM / ACTIVITY CENTER TO THE EXISTING SCHOOL BUILDING. 9/28/05 1 ADDED LANDSCAPE SCHEDULE FOR SWM POND

OWNER / DEVELOPER MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32 CLARKSVILLE, MD 21029 PHONE: 410-531-6040

REVISION

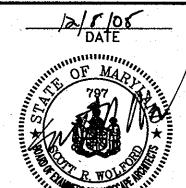
PARCELS 198 , 29 AND 30 TAX MAP 34

C/O MONSIGNOR JOSEPH L. LUCA

5th ELECTION DISTRICT ZONED RR-DEO CLARKSVILLE HOWARD COUNTY, MARYLAND 21029

REVISED LANDSCAPE DETAILS AND SCHEDULES

Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045



SCOTT R. WOLFORD #797

F 410.997.9282 DRAWING FILE: LEELING BWEDF DESIGNED BY : DRAWN BY:

T 410.997.8900

PROJECT NO: 00370 DATE: DECEMBER 8, 2005 SCALE: 1" = 40

DRAWING NO. 24 OF 35

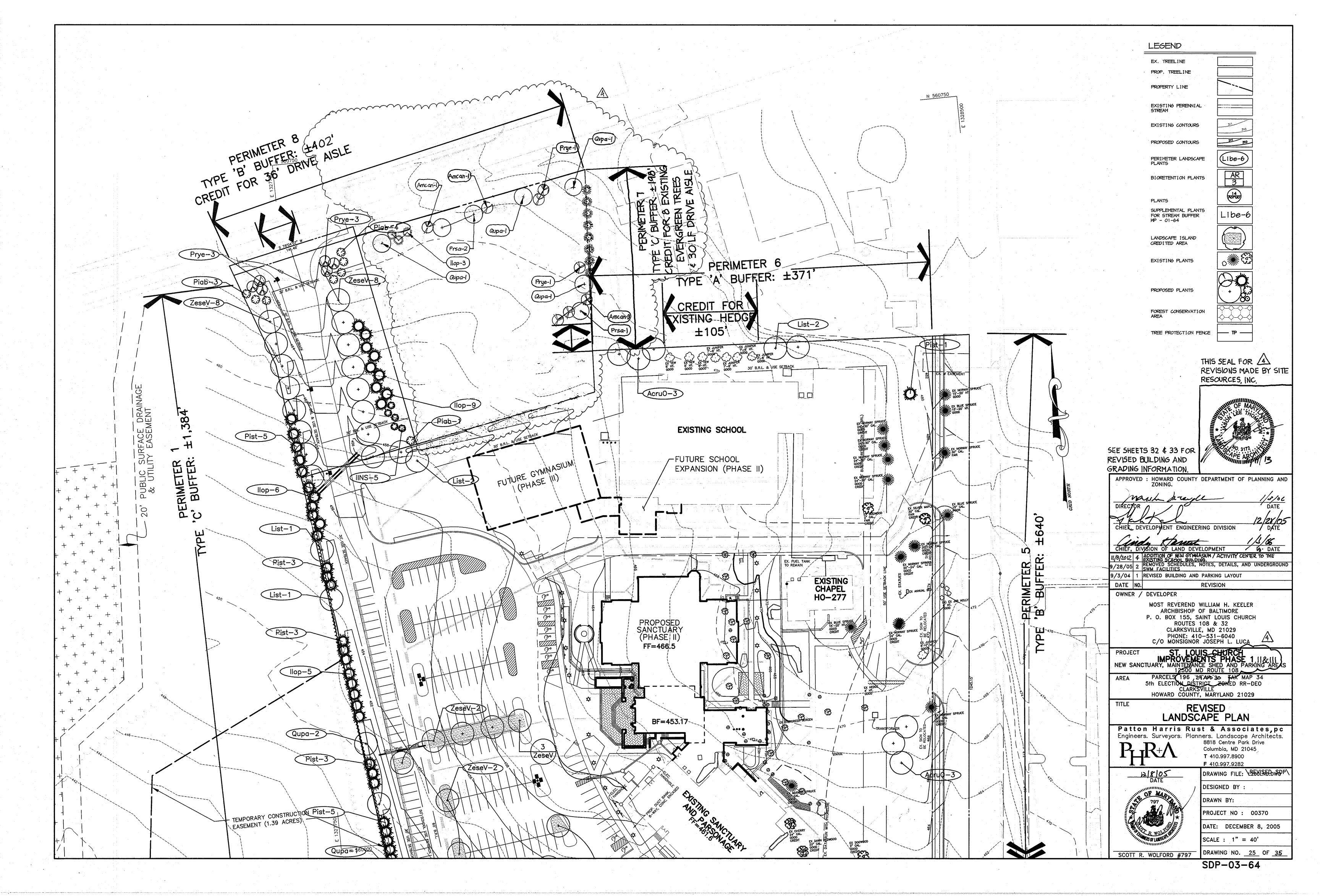
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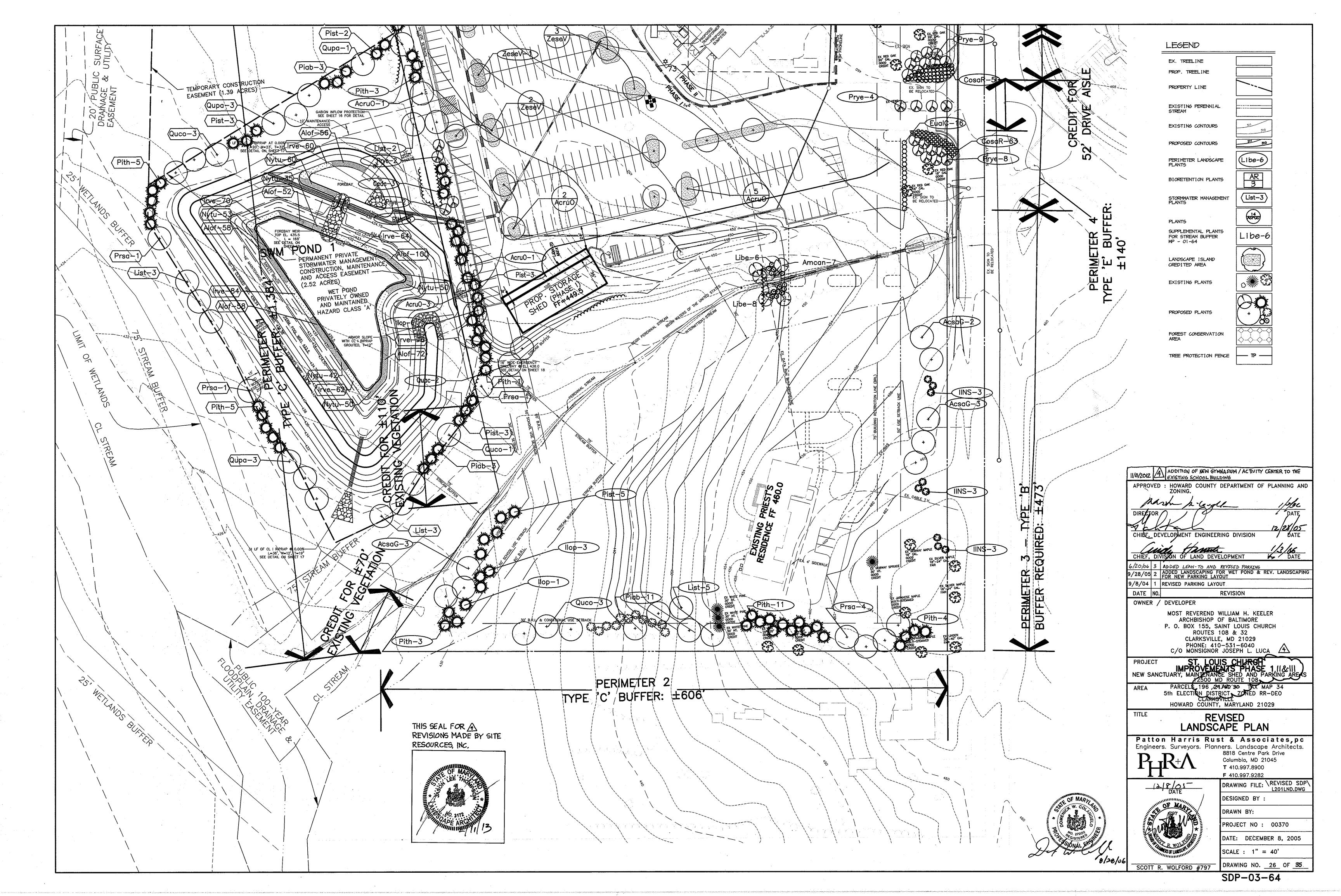
1. Plants, related material, and operations shall meet the detailed description, as given on the plans and as described herein. Where discrepancies exist between Standards & Guidelines referenced mithin these specifications and the Howard County Landscape Manual, the latter takes precedence. 2. All plant material, unless otherwise specified, that is not nursery grown, uniformly branched, does not have a vigorous root system, and does not conform to the most recent edition of the American Association of Nurserymen (AAN) Standards will be rejected. Plant material that is not healthy, vigorous, free from defects, decay, disfiguring roots, sunscald injuries, abrasions of the bank, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements will be rejected. Plant material that is neak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will be rejected. All B & B plants shall be freshly dug; no healed-in plants or plants from cold storage will be 3. Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to the most recent edition of the "Landscape Specification Edidelines by the Landscape Contractors Association of MD, DC, 4 VA", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Mashington and the Potomac Chapter of the American Society of Landscape Architects. 4. Contractor shall guarantee all plant material for a period of one year after date of acceptance In accordance with the appropriate section on the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material. 5. Contractor shall be responsible for notifying all relevant and appropriate utility companies, utility contractors, and "Miss Utility" a minimum of 40 hours prior to the beginning of any work.

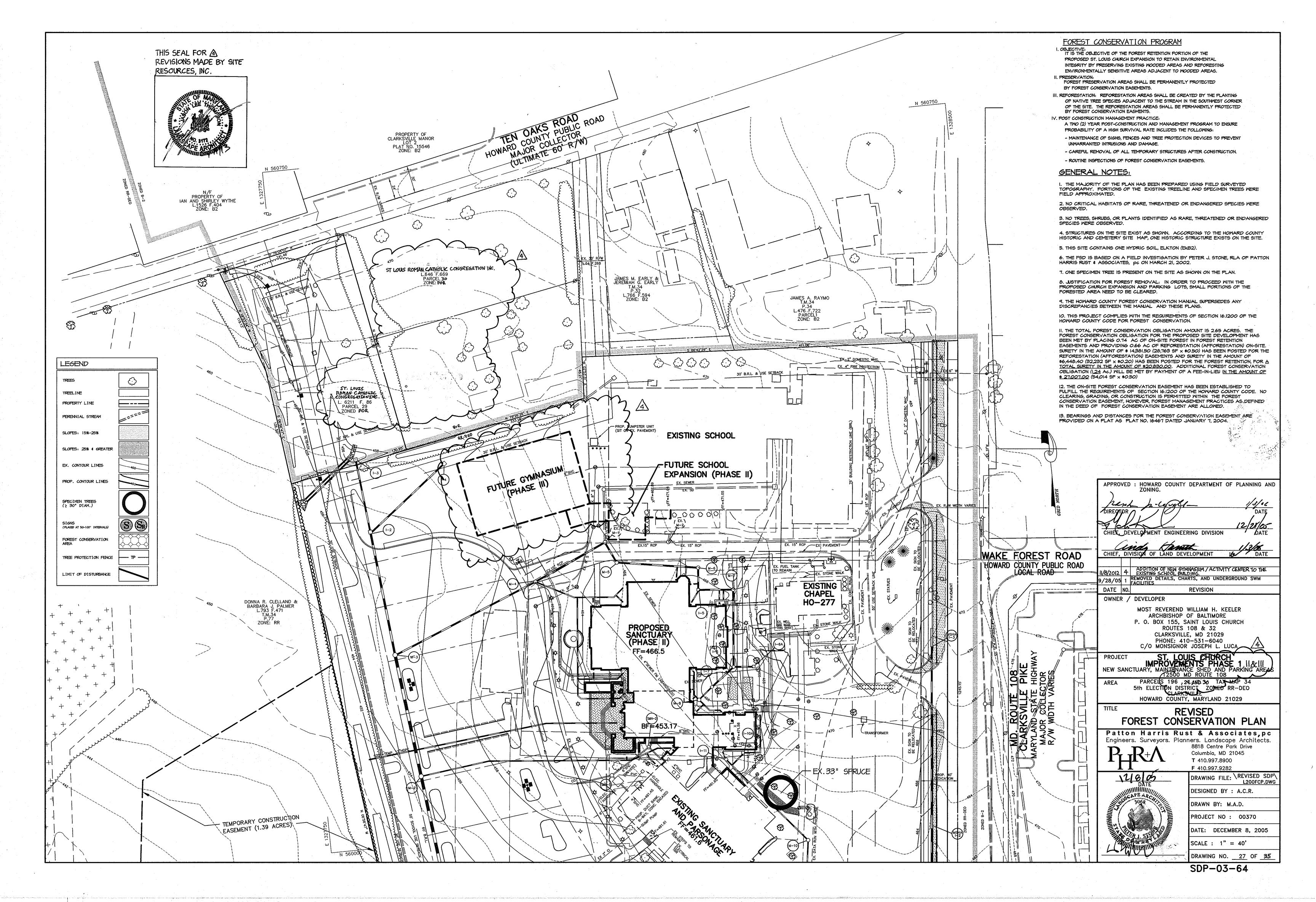
Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts CHARE TREES with utilities. Major changes will require the approval of the landscape architect. Damage to existing structure and utilities shall be repaired at the expense of the Contractor. 6. Protection of existing vegetation to remain shall be accomplished via the temporary installation

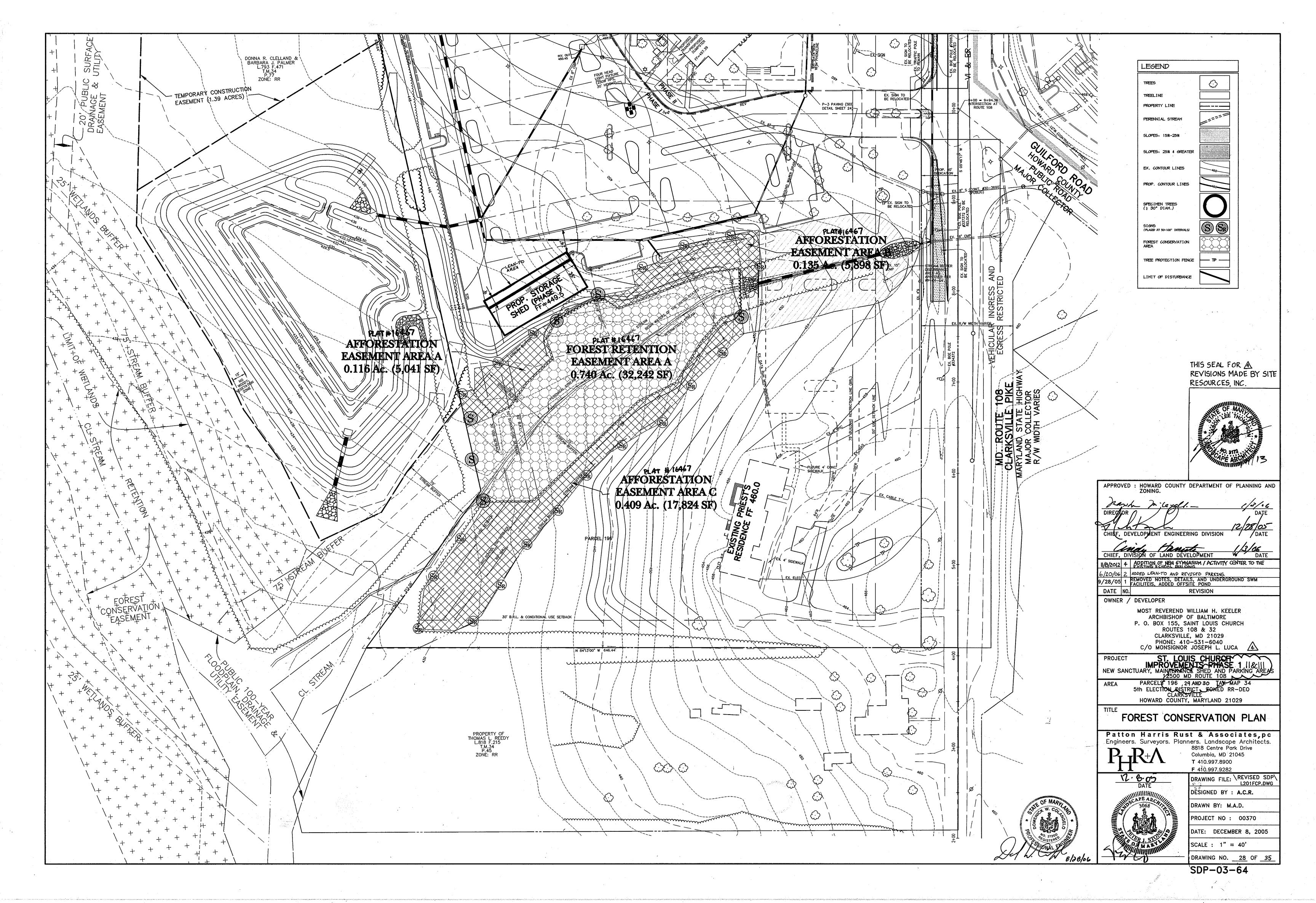
STORMWATER MANAGEMENT PLANT SCHEDULE

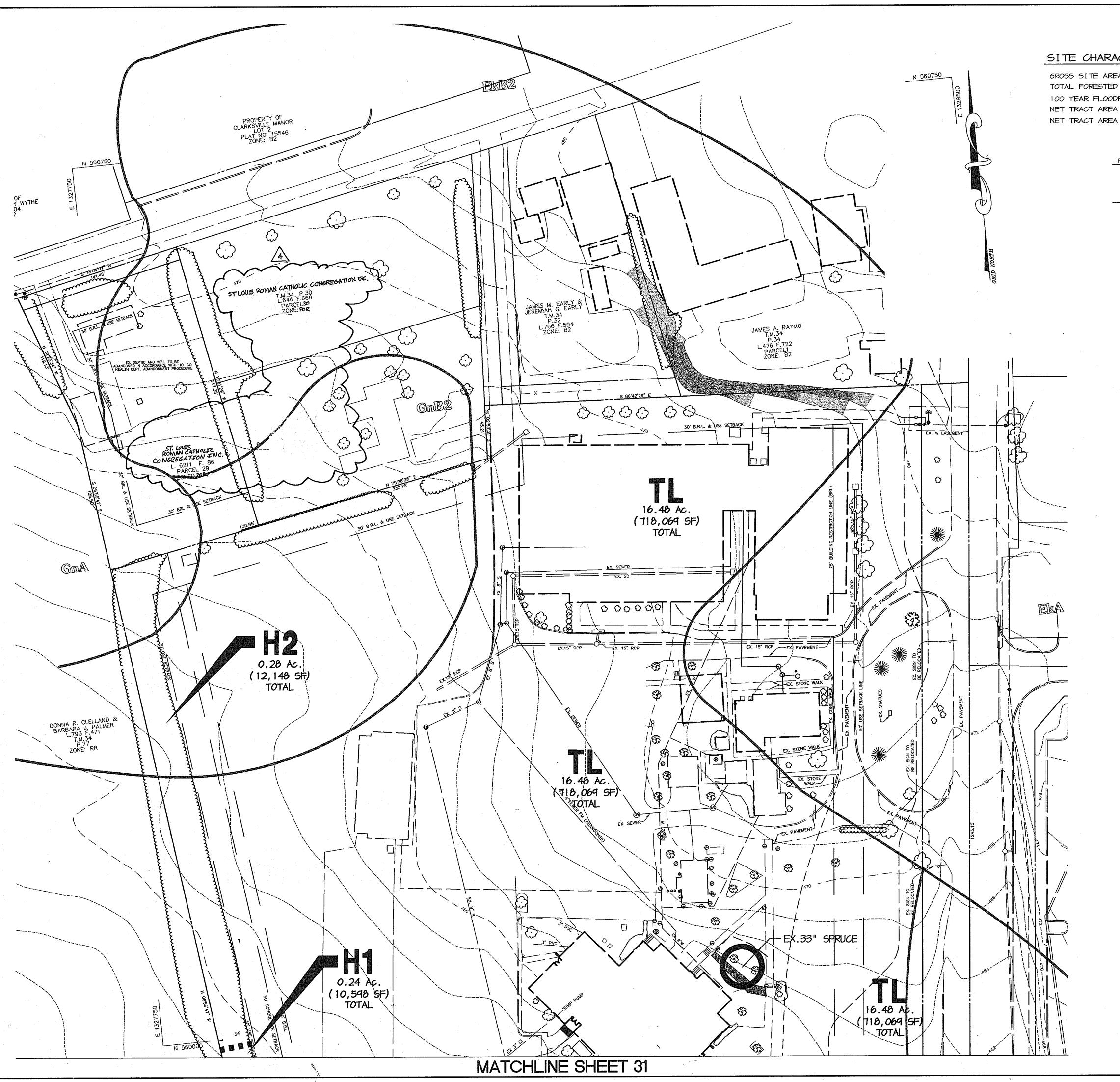
Plab 6	· ·			Spacing
riab 6	Picea abies	Norway spruce	6'-8' ht.	as shown
Pist 8	Pinus strobus	Eastern white pine	6'-8' ht.	as shown
Pith 11	Pinus thunberglana	Japanese black pine	6'-8' ht.	as shown











SITE CHARACTERISTICS:

GROSS SITE AREA	17.91 ACRES
TOTAL FORESTED AREA	0.90 ACRES
100 YEAR FLOODPLAIN AREA	0.00 ACRES
NET TRACT AREA	17.91 ACRES
NET TRACT AREA FOREST	0.90 ACRES

LEGEND

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TREES

TREELINE

SOIL TYPE

PROPERTY LINE

PERENNIAL STREAM

SOIL DIVISION LINE

SLOPES: 15%-25%

CONTOUR LINES

DIVISION LINE

PLANT COMMUNITY

SPECIMEN TREES

(≥ 30" DIAM.)

PLANT COMMUNITY

SLOPES: 25% & GREATER

PLANT COMMUNITY	ACREAGE
F1	0.90 Ac.
H1	0.24 Ac.
H2	0.28 Ac.
TOTAL	1 42 Ac.

GENERAL NOTES:

- 1. THIS FOREST STAND DELINEATION (FSD) HAS BEEN PREPARED IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS.
- 2. THIS FSD IS BASED ON A FIELD INVESTIGATION BY PETER J. STONE, RLA OF PATTON HARRIS RUST & ASSOCIATES, pc ON MARCH
- 3. TREELINES SHOWN ARE BASED ON AERIAL SURVEY AND FIELD APPROXIMATION.
- 4. THIS SITE CONTAINS ONE HYDRIC SOIL, ELKTON (EKB2).
- 5. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- 6. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- 7. STRUCTURES ON THE SITE EXIST AS SHOWN. ACCORDING TO THE HOWARD COUNTY HISTORIC AND CEMETERY SITE MAP, ONE HISTORIC CHURCH EXISTS ON THE SITE.
- 8. THIS SITE CONTAINS NO WETLANDS OR 100-YEAR FLOODPLAIN. STREAMS LOCATIONS ARE AS SHOWN ON THIS PLAN.
- 9. A SPECIMEN TREE IS PRESENT ON THE SITE AS SHOWN ON THE

THIS SEAL FOR A REVISIONS MADE BY SITE RESOURCES, INC.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND

S/14/04 DATE CHIEF, DIVISION OF LAND DEVELOPMENT

11/8/2012 4 ADDITION OF NEW GYMNASUM / ACTIVITY CENTER TO THE EXISTING SCHOOL BUILDING. DATE NO. REVISION

OWNER / DEVELOPER

MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE

P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32

CLARKSVILLE, MD 21029
PHONE: 410-531-6040
C/O MONSIGNOR JOSEPH L. LUCA

PARCELS 196 , 29 AND 30 TAX MAP 34 5th ELECTION DISTRICT ZONED RR-DEO

HOWARD COUNTY, MARYLAND 21029.

FOREST STAND DELINEATION

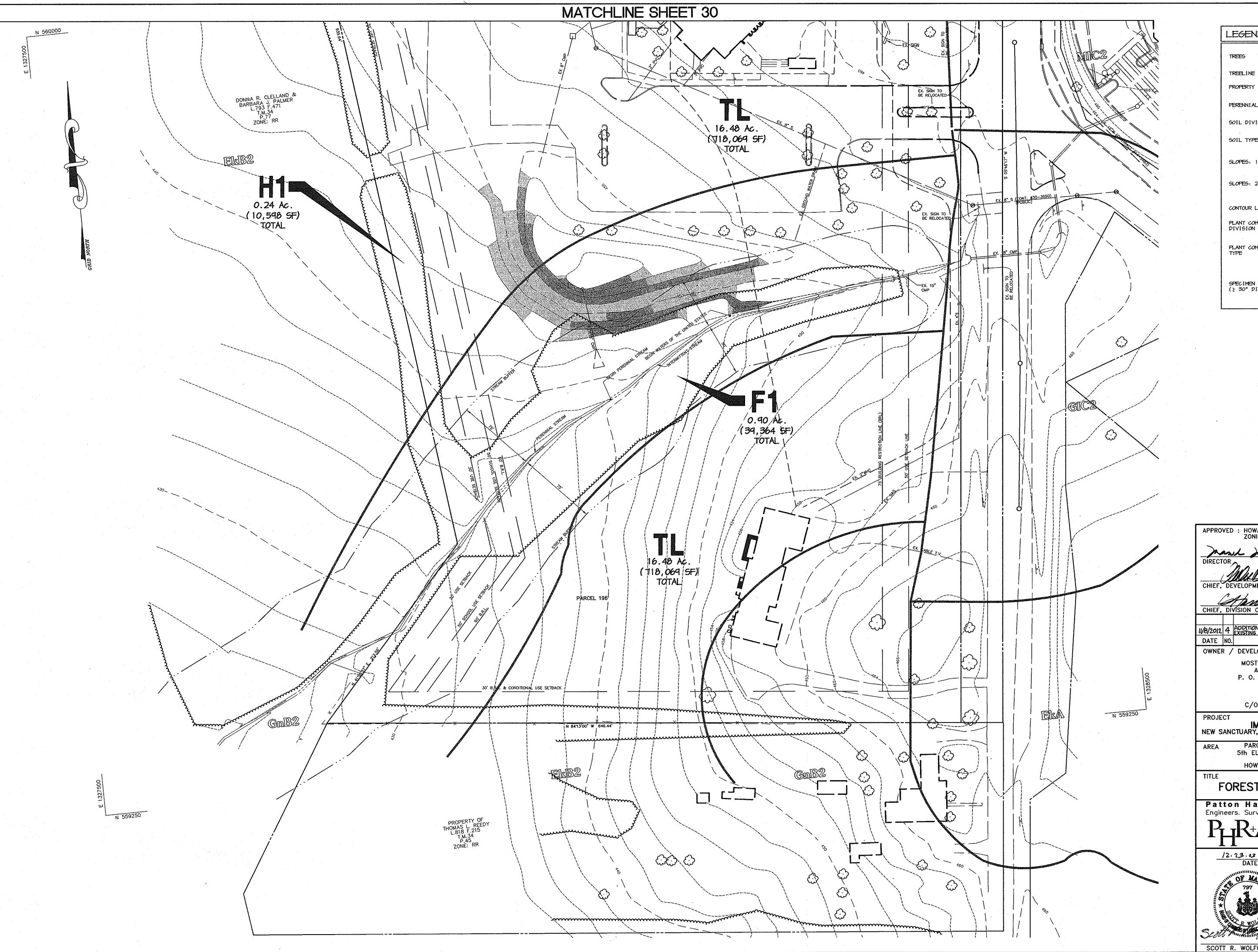
Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045

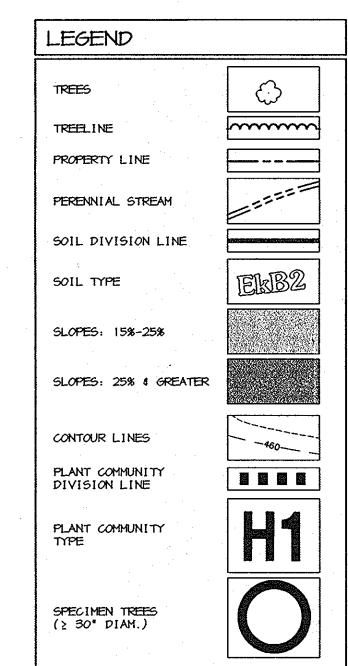
12.23.03

T 410.997.8900 **F** 410.997.9282 DRAWING FILE: L200FSD.DWG DESIGNED BY : PJS

SCOTT R. WOLFORD #797

DRAWN BY: GTH PROJECT NO: 00370 DATE : JUNE 9, 2003 SCALE : 1" = 40"DRAWING NO. 29 OF 35





THIS SEAL FOR A REVISIONS MADE BY SITE RESOURCES, INC.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND CHIEF, DIVISION OF LAND DEVELOPMENT S/CY/OY DATE

11/8/2012 4 ADDITION OF NEW GYMNASIUM / ACTIVITY CENTER TO THE EXISTING SCHOOL BUILDING. REVISION

OWNER / DEVELOPER

MOST REVEREND WILLIAM H. KEELER ARCHBISHOP OF BALTIMORE P. O. BOX 155, SAINT LOUIS CHURCH ROUTES 108 & 32 CLARKSVILLE, MD 21029
PHONE: 410-531-6040
C/O MONSIGNOR JOSEPH L. LUCA

PARCELS 196, 29 AND 30 TAX MAP 34
5th ELECTION DISTRICT ZONED RR-DEO
CLARKSVILLE
HOWARD COUNTY, MARYLAND 21029

FOREST STAND DELINEATION

Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive



Columbia, MD 21045 **T** 410.997.8900 **F** 410.997.9282 DRAWING FILE: L201FSD.DWG

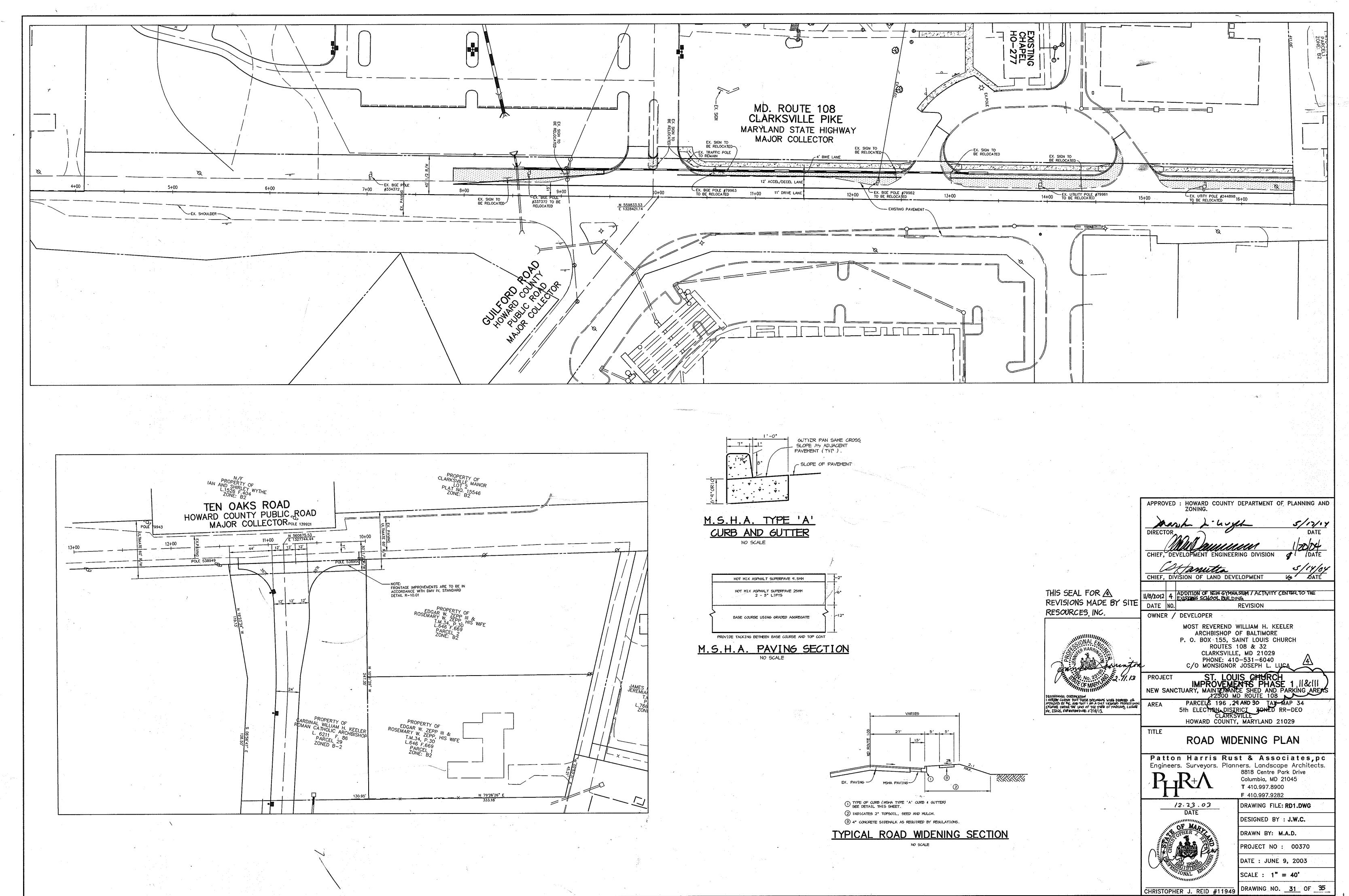


DESIGNED BY : PJS DRAWN BY: PROJECT NO: 00370 DATE : JUNE 9, 2003

DRAWING NO. 30 OF 35 SCOTT R. WOLFORD #797

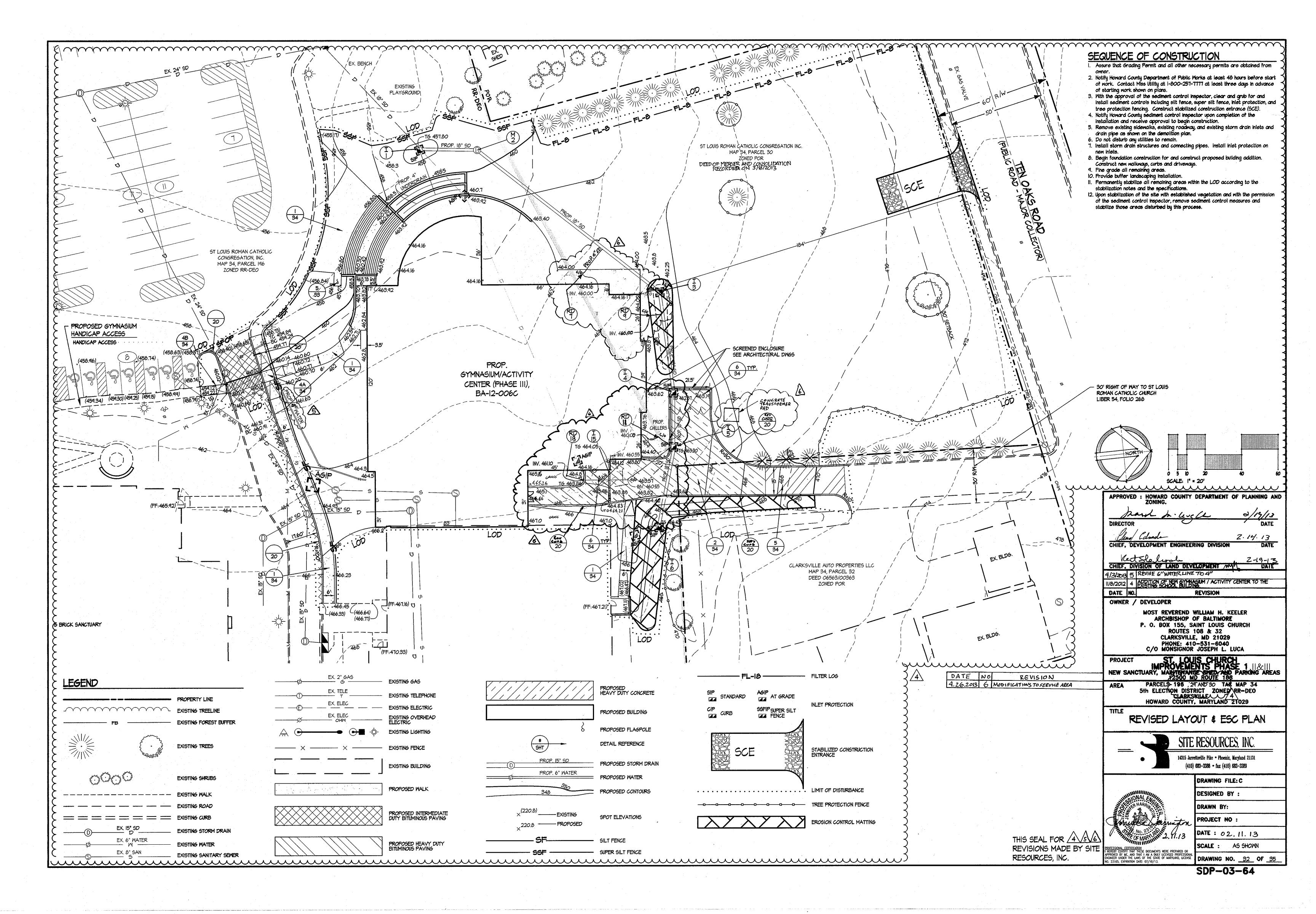
SDP-03-64

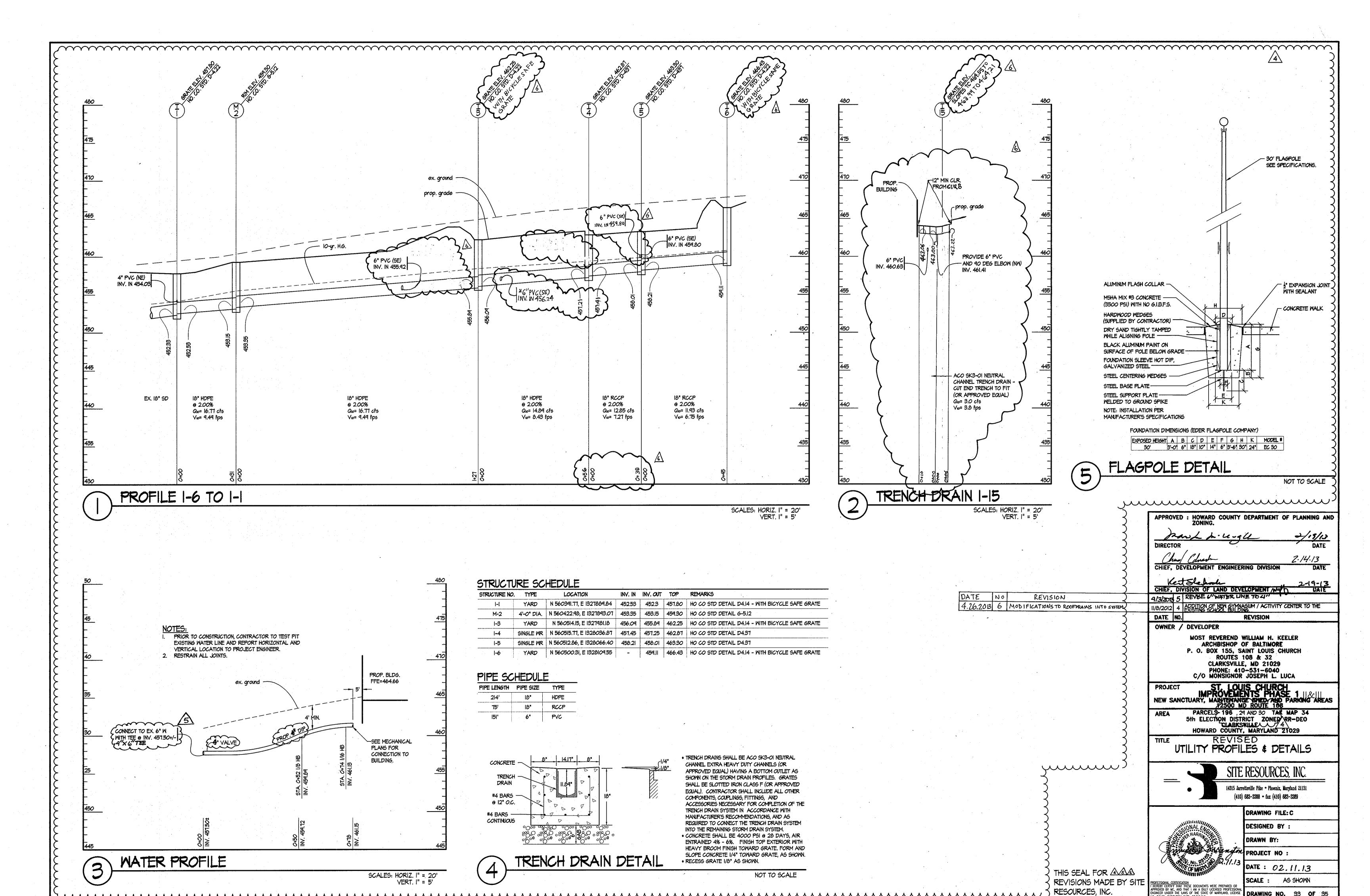
SCALE : 1" = 40'



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REVISED SDP-03-64





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DRAWING NO. 33 OF 35 SDP-03-64

