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**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY PHR&A JULY, 2002.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 0040 AND 0019 WERE USED FOR THIS PROJECT.
- WATER IS PRIVATE
- SEWER IS PRIVATE
- STORMWATER MANAGEMENT FOR THIS SITE IS PROVIDED BY A PRIVATELY OWNED & MAINTAINED POCKET POND FOR WQV AND CPV AND THE DISCONNECTION OF NON-ROOFTOP RUNOFF CREDIT FOR REV.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL AVAILABLE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- THIS PROJECT IMPACTS NO 100-YEAR FLOODPLAIN.
- THIS PROJECT IMPACTS NO WETLANDS.
- THIS PROJECT ONLY INVOLVES PARKING EXPANSION SO APPO TRAFFIC ANALYSIS IS NOT INVOLVED.
- NO NOISE STUDY IS REQUIRED.
- THE GEOTECHNICAL STUDY FOR STORMWATER MANAGEMENT WAS PREPARED BY HILLIS-CARNES DATED NOV 2002.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY PHR&A. DATED OCTOBER, 2003.
- SUBJECT PROPERTY ZONED RC-DEO PER 2-2-04 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S. SDP-88-138
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
- THERE ARE NO CEMETARIES ON THE SUBJECT PROPERTY.
- ALL LIGHTING TO BE DIRECTED/REFLECTED AWAY FROM ADJACENT PUBLIC ROADS AND RESIDENTIALLY ZONED PROPERTIES, AND BE IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY RETAINING 48.35 AC OF EXISTING FOREST. SURETY IN THE AMOUNT OF \$421,225.20 (2,106,126 SF X \$0.20/SF) WILL BE REQUIRED. THE FOREST CONSERVATION PLAN OF EASEMENT HAS BEEN RECORDED IN THE LAND RECORDS OF HOWARD COUNTY AS PLAT # 16823, on 7/27/04.

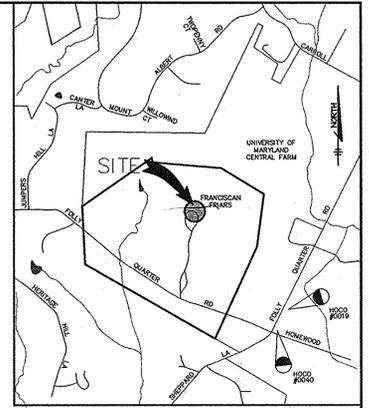
# SITE DEVELOPMENT PLAN

# FRANCISCAN FRIARS

# PARKING ADDITION

## 3rd ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND



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

COPYRIGHT AND THE MAP PEOPLE  
PERMITTED USE NO. 20894285

**AREA TABULATION CHART**

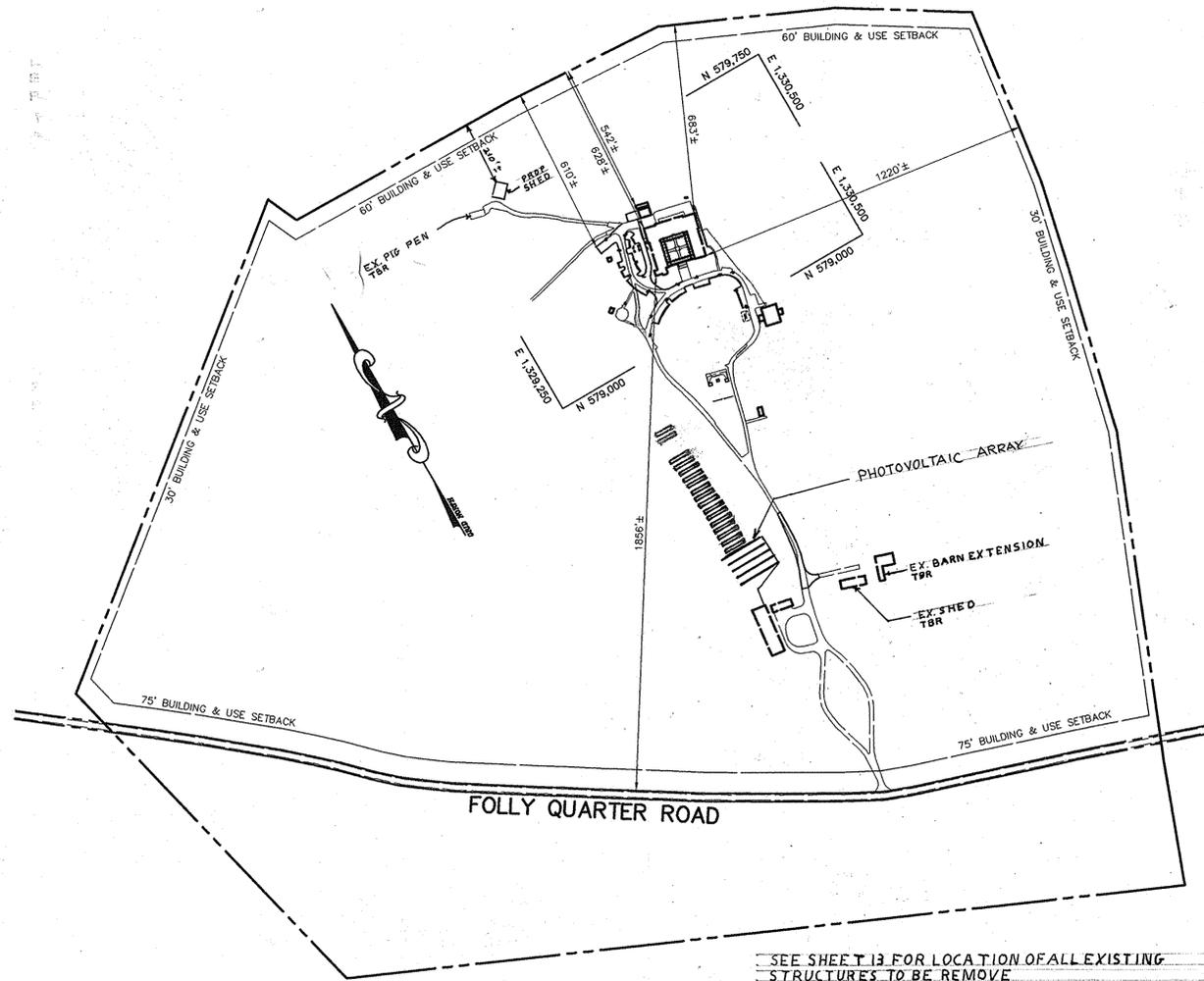
AREA OF SITE	196.26 ACRES
LIMIT OF DISTURBED AREA	2.52 ACRES
PRESENT ZONING	RC-DEO
EXISTING USE	RELIGIOUS FACILITY
PROPOSED USE	RELIGIOUS FACILITY
PROPOSED PARKING	56 SPACES (INCL. 6 HC) 2 BUS SPACES

NOTE: THE PURPOSE OF THIS PROJECT IS TO PROVIDE PARKING FOR THE CURRENT USERS AND VISITORS TO THE FACILITY. THE FRANCISCAN FRIARS FEEL THAT 56 SPACES ARE SUFFICIENT FOR THEIR NEEDS.

**AS-BUILT CONTROL BENCH MARK**

✓ HOWARD COUNTY CONTROL STATION 0040  
N 577,270.615 (NAD83)  
E 1,332,002.601 (NAD 83)  
ELEV. 365.326

✓ HOWARD COUNTY CONTROL STATION 0019  
N 580,468.133 (NAD 83)  
E 1,333,675.522 (NAD 83)  
ELEV. 365.870



**PLAN**  
SCALE: 1"=300'

SEE SHEET 13 FOR LOCATION OF ALL EXISTING STRUCTURES TO BE REMOVE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
*[Signature]* 7/23/04  
COUNTY HEALTH OFFICER  
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 7/28/04  
DIRECTOR (Acting)

*[Signature]* 7/14/04  
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK

*[Signature]* 7/29/04  
CHIEF, DIVISION OF LAND DEVELOPMENT

1-17-13 A ADDED PHOTOVOLTAIC INSTALLATION PLAN  
6-10-09 A NOTED STRUCTURE REMOVAL AND NEW SHED  
DATE NO. REVISION

OWNER / DEVELOPER  
NOVIATIE OF FRANCISCAN FATHERS  
MINOR CONVENTUALS OF MARYLAND, INC.  
12290 FOLLY QUARTER ROAD  
ELLCOTT CITY, MARYLAND 21042

PROJECT **FRANCISCAN FRIARS PARKING ADDITION**

AREA TAX MAP 22 PARCEL 46 ZONED RC-DEO  
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

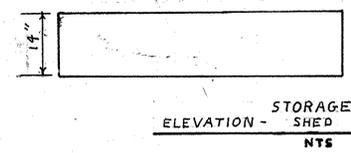
TITLE **TITLE SHEET**

**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

6-29-04 DATE  
DESIGNED BY: C.J.R.  
DRAWN BY: MAD  
PROJECT NO. 11439/2-0/ENR PLANS/00000V  
DATE: JUNE 29, 2004  
SCALE: AS SHOWN  
DRAWING NO. 1 OF 20

CHRISTOPHER J. REID #19949  
AS-BUILT 6-3-05 SDP-04-64

3 10-17-14 ADDED PHOTOVOLTAIC INSTALLATION PLAN - PHASE II



**AS-BUILT CERTIFICATION**  
STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
*[Signature]* 6-22-05 DATE  
ALICE C. RELINGTON # 25020

PARCEL NUMBER	STREET ADDRESS
46	12290 FOLLY QUARTER ROAD

PROJECT NAME	SECT./AREA	PARCEL
FRANCISCAN FRIARS		46
PLAT NO.	BLOCK # ZONING	TAX MAP NO.
	24 RC-DEO	22
		ELECT. DIST. CENSUS TRACT
		3 6023.02
WATER CODE	SEWER CODE	





# MD-378 STANDARDS AND SPECIFICATIONS

## 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 DESIGNATED SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

## EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER.

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 LENGTH 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 VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD 1-99 (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 COVERED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FIVE FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MAXIMUM PERMEABILITY.

EMBANKMENT CORE - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

## STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 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 BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

## PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

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

- 1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (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 WATER TIGHT 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 WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-196 OR M-211 WITH WATER TIGHT 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 MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

- 2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATED 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.

- 3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATER TIGHT. 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 WATER TIGHT. DUMPLE BANDS ARE NOT CONSIDERED TO BE WATER TIGHT.

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 CORRELATIONS 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, PREFUNCHED 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 LOOK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

- 4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

- 5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

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

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

- 2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADE 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 CRADE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

- 3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LENGTH, THE BEDDING SHALL BE PLACED SO THAT GRADES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

- 4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

## PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR 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 WATER TIGHT.

- 3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

- 4. BACKFILLING SHALL CONFORM TO STRUCTURE "BACKFILL".

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

## CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

## ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

## CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TRENCHES, 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 LEVELLED 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 COMPACTION OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO PUMPS FROM WHICH THE WATER SHALL BE PUMPED.

## STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

## EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

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 SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14LBS. 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 SOO.

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.

SEEDING 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 800 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 (14LBS. PER 1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE FOR THE PERIOD MAY 1 THRU AUGUST 31, SEED WITH 60 LBS. PER ACRE (14LBS. PER 1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2LBS. 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 OPTIONS:

- 1) 2 TONS PER ACRE OF WELL-ANCHORED MULCH STRAW AND SEED AS SOON AS POSSIBLE IN THE SPRING.
- 2) USE SOO.
- 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 SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

# 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).

- 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 THEREOF.

- 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, STORM DRAINAGE.

- 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, SOO, TEMPORARY SEEDING, AND MULCHING (SEE 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.

## SITE ANALYSIS:

TOTAL AREA OF SITE	235.97 ACRES
AREA DISTURBED	2.52 ACRES
AREA TO BE ROOFED OR PAVED	0.73 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.79 ACRES
TOTAL CUT	2448 CU. YARDS
TOTAL FILL	2492 CU. YARDS
OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT	

- 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 CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

# 21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

## DEFINITION

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

## PURPOSE

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

## CONDITIONS WHERE PRACTICE APPLIES

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

- 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 IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR USE AS TOPSOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTATION STATION.

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

- I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF GROUND, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1" IN DIAMETER.

- II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEG, 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 1000 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 RATES TO COMPLY WITH 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 OR LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER. B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT. C. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED. D. NO SOO 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.

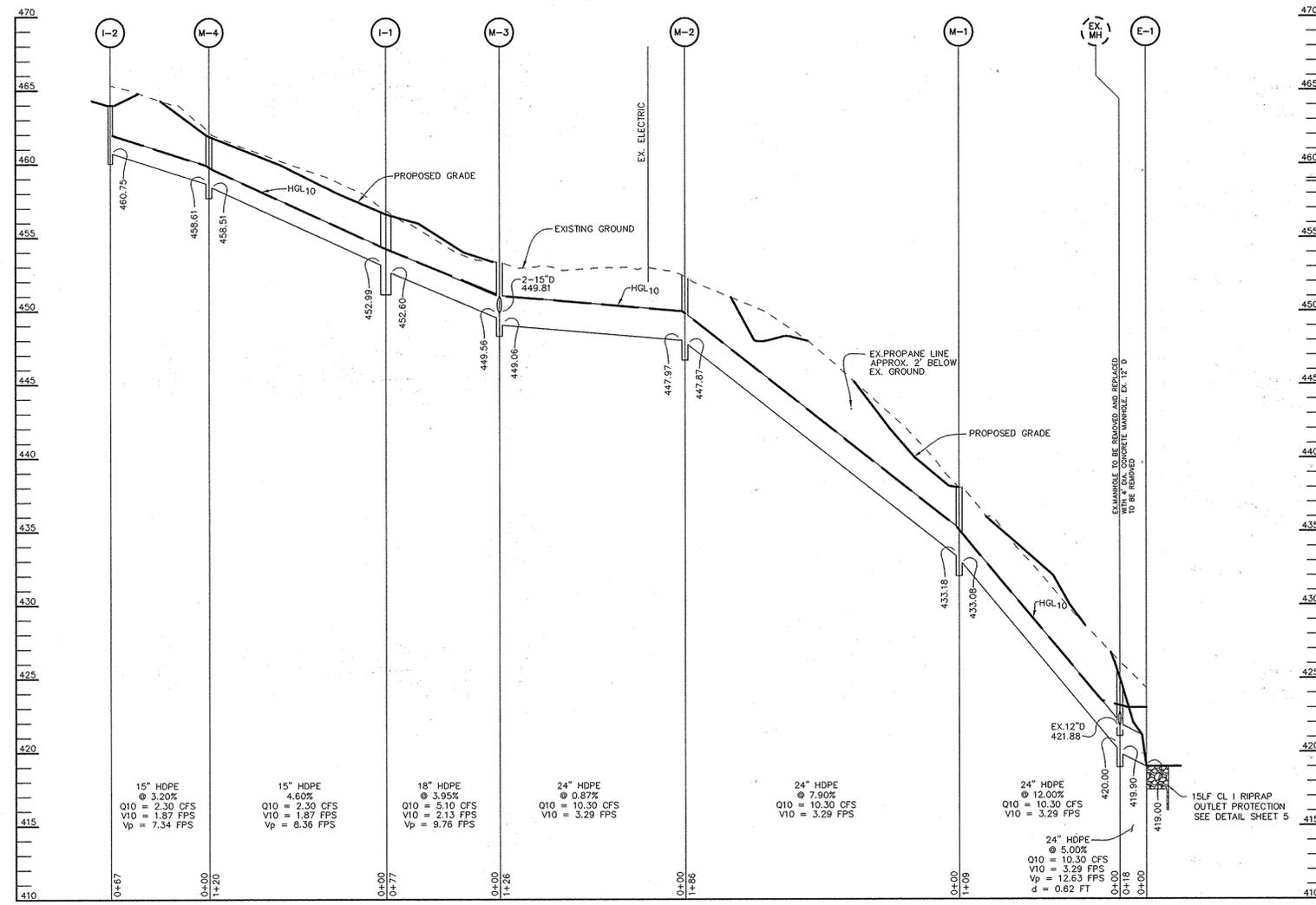
- II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - BSECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

## V. TOPSOIL APPLICATION

- 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.

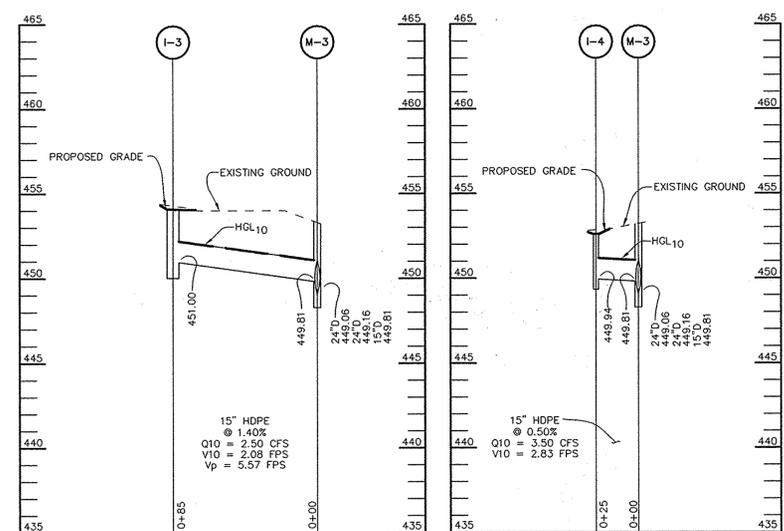
- II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8"





**STORM DRAIN PROFILE**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'



**STORM DRAIN PROFILE**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'

**STORM DRAIN PROFILE**

SCALE:  
HOR.-1"=50'  
VERT.-1"=5'

**STRUCTURE SCHEDULE**

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	DBL 'S'	N 579373 E 1329775	452.99 (15")	452.60 (18")	456.6	HOCO STD. DETAIL SD-4.23
I-2	YARD	N 579209 E 1329795	-	460.75 (15")	464.0	HOCO STD. DETAIL SD-4.14
I-3	DBL 'S'	N 579456 E 1329708	-	451.00 (15")	454.1	HOCO STD. DETAIL SD-4.23
I-4	YARD	N 579472 E 1329785	-	449.94 (15")	452.6	HOCO STD. DETAIL SD-4.14
S-1	MODIFIED STRUCTURE	N 579358 E 1330256	-	-	-	SEE DETAIL SHEET
M-1	4' DIA	N 579481 E 1330094	433.18 (24")	433.08 (24")	438.0	HOCO STD. DETAIL G-5.12
M-2	4' DIA	N 579426 E 1329916	447.97 (24")	447.87 (24")	452.1	HOCO STD. DETAIL G-5.12
M-3	5' DIA	N 579448 E 1329793	449.56 (18") 2-449.81 (15")	449.06 (24")	453.0	HOCO STD. DETAIL G-5.13
M-4	4' DIA	N 579472 E 1329785	458.61 (15")	458.51 (15")	461.9	HOCO STD. DETAIL G-5.12
EX MH	4' DIA	N 579406 E 1330172	421.88 (12") 420.00 (24")	419.90 (24")	425.0	HOCO STD. DETAIL G-5.12
E-1	24" HDPE END SECTION	N 579396 E 1330187	419.00 (24")	-	-	HOCO STD. DETAIL SD-5.51
E-2	24" ASTM END SECTION	N 579341 E 1330300	418.00 (24")	-	-	HOCO STD. DETAIL SD-5.51

**PIPE SCHEDULE**

PIPE LENGTH	SIZE	TYPE
297	15"	HDPE
77	18"	HDPE
439	24"	HDPE

NOTES:  
FOR END SECTIONS THE LOCATION IS BOTTOM CENTER OF STRUCTURE.  
LOCATION OF 'A' INLETS IS GIVEN FOR CENTER OF THROAT OPENING AT FACE OF CURB.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
 Director: *Stephan G. Kelly* 7/28/04 DATE  
 Chief, Development Engineering Division: *John DeWitt* 7/14/04 DATE  
 Chief, Division of Land Development: *Condy K. Kromer* 7/28/04 DATE

DATE	NO.	REVISION

OWNER / DEVELOPER  
 NOVITIATE OF FRANCISCAN FATHERS  
 MINOR CONVENTUALS OF MARYLAND, INC.  
 12290 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MARYLAND 21042

PROJECT: **FRANCISCAN FRIARS PARKING ADDITION**  
 AREA: TAX MAP 22 PARCEL 46 ZONED RC-DEO  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE: **STORM DRAIN PROFILES**

Patton Harris Rust & Associates, pc  
 Engineers, Surveyors, Planners, Landscape Architects.  
**PHRA**  
 8818 Centre Park Drive  
 Columbia, MD 21045  
 T 410.997.8900  
 F 410.997.9282

6-29-04 DATE  
 DESIGNED BY: C.J.R.  
 DRAWN BY: MAD  
 PROJECT NO. 11439/2-0/ENR PLANS/C700PRO  
 DATE: JUNE 29, 2004  
 SCALE: AS SHOWN  
 DRAWING NO. 6 OF 20

AS-BUILT CERTIFICATION  
 ANNE E. REMINGTON # 20020  
 6-22-05 DATE





**LEGEND**

- Cpv DRAINAGE AREA DIVIDE
- DRAINAGE AREA DESIGNATION
- TIME OF CONCENTRATION PATH
- EXISTING IMPERVIOUS AREA

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Scott Lafferty* 7/28/04  
 DIRECTOR (ACTIVE) DATE  
*Chris DeWitt* 7/14/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Andy Kimball* 7/28/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER / DEVELOPER  
 NOVITIATE OF FRANCISCAN FATHERS  
 MINOR CONVENTUALS OF MARYLAND, INC.  
 12290 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MARYLAND 21042

PROJECT **FRANCISCAN FRIARS  
 PARKING ADDITION**

AREA TAX MAP 22 PARCEL 46 ZONED RC-DEO  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

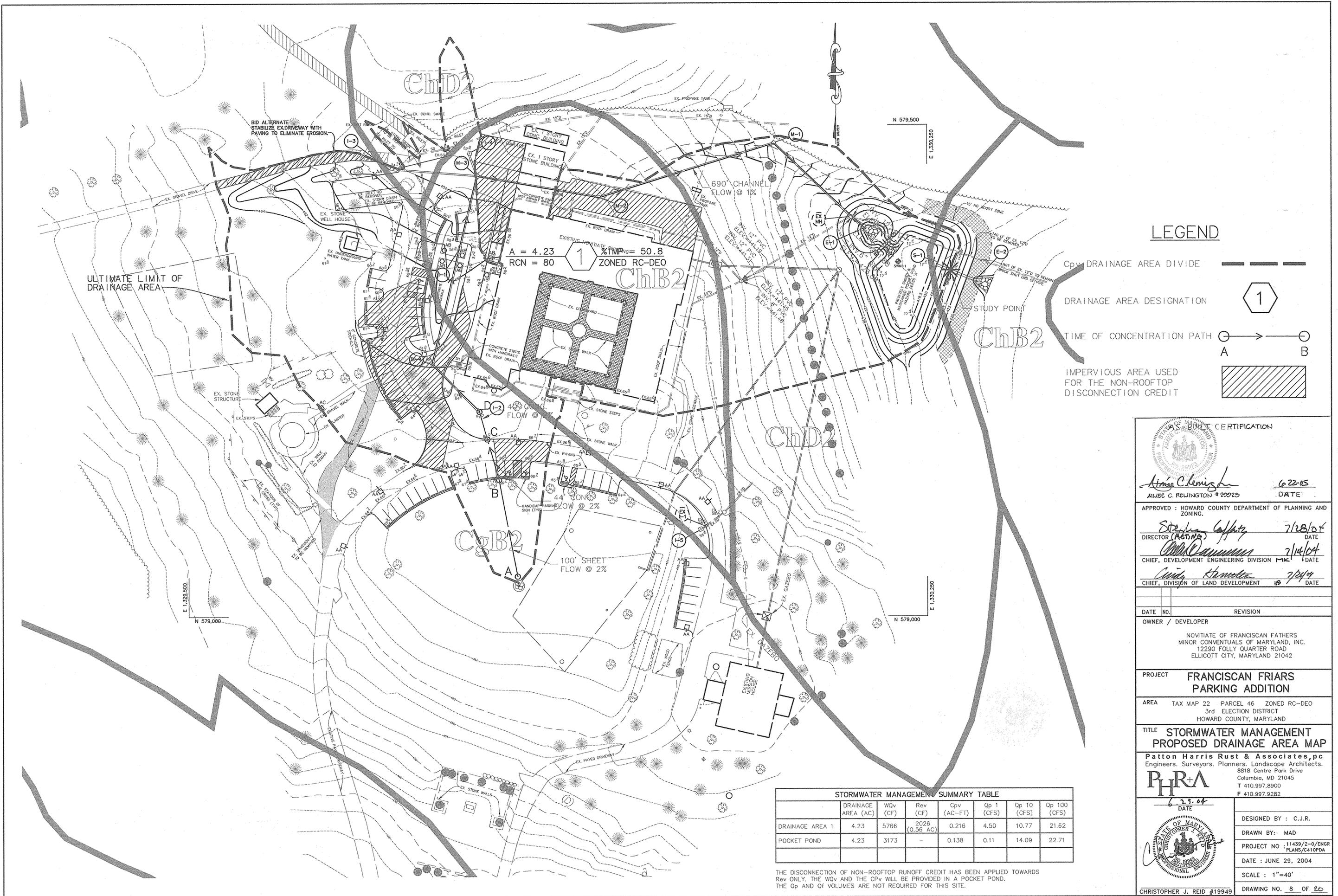
TITLE **STORMWATER MANAGEMENT  
 EXISTING DRAINAGE AREA MAP**

**Patton Harris Rust & Associates, pc**  
 Engineers, Surveyors, Planners, Landscape Architects.  
 8815 Centre Park Drive  
 Columbia, MD 21045  
 T 410.997.8900  
 F 410.997.9282

6-29-04  
 DATE

DESIGNED BY : C.J.R.  
 DRAWN BY: MAD  
 PROJECT NO : 11439/2-0/ENGR  
 PLANS/C410XA  
 DATE : JUNE 29, 2004  
 SCALE : 1"=40'  
 DRAWING NO. 7 OF 20

AS-BUILT CERTIFICATION  
  
*Anne C. Lexington* 6-22-05  
 ANNE C. LEXINGTON # 20023 DATE  
 CHRISTOPHER J. REID #19949



### LEGEND

- CPV DRAINAGE AREA DIVIDE
- DRAINAGE AREA DESIGNATION 1
- TIME OF CONCENTRATION PATH A → B
- IMPERVIOUS AREA USED FOR THE NON-ROOFTOP DISCONNECTION CREDIT

AS-BUILT CERTIFICATION

*Aimee C. Reelington* 6-22-05  
 AIMEE C. REELINGTON #22223 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Stephen Caffery* 7/28/04  
 DIRECTOR (P&Z) DATE

*Chris Williams* 7/14/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chris Hamilton* 7/24/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVELOPER  
 NOVITIATE OF FRANCISCAN FATHERS  
 MINOR CONVENTUALS OF MARYLAND, INC.  
 12290 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MARYLAND 21042

PROJECT **FRANCISCAN FRIARS PARKING ADDITION**

AREA TAX MAP 22 PARCEL 46 ZONED RC-DEO  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE **STORMWATER MANAGEMENT PROPOSED DRAINAGE AREA MAP**

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

*C. J. Reid* 6-29-04  
 DATE

DESIGNED BY: C.J.R.  
 DRAWN BY: MAD  
 PROJECT NO. 11439/2-0/ENGR  
 PLANS/C41OPDA  
 DATE: JUNE 29, 2004  
 SCALE: 1"=40'  
 DRAWING NO. 8 OF 25

CHRISTOPHER J. REID #19949

STORMWATER MANAGEMENT SUMMARY TABLE						
DRAINAGE AREA	WQv (CF)	Rev (CF)	Cpv (AC-FT)	Qp 1 (CFS)	Qp 10 (CFS)	Qp 100 (CFS)
DRAINAGE AREA 1	4.23	5766	2026 (0.56 AC)	0.216	4.50	10.77
POCKET POND	4.23	3173	-	0.138	0.11	14.09

THE DISCONNECTION OF NON-ROOFTOP RUNOFF CREDIT HAS BEEN APPLIED TOWARDS Rev ONLY. THE WQv AND THE Cpv WILL BE PROVIDED IN A POCKET POND. THE Qp AND OF VOLUMES ARE NOT REQUIRED FOR THIS SITE.

**OPERATION AND MAINTENANCE SCHEDULE OF PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY**

- ROUTINE MAINTENANCE POCKET POND**
- Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
  - Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
  - Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
  - Visible signs of erosion in the pond as well as riprap outlet area shall be repaired as soon as it is noticed.
- NON-ROUTINE MAINTENANCE**
- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components should be inspected during routine maintenance operations.
  - Sediment should be removed when its accumulation significantly reduces the design storage, interfere with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

**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.

*Developer Signature*  
 DEVELOPER 6-29-04  
 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 Signature*  
 ENGINEER 6-29-04  
 DATE

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

*Soil Conservation District Reviewer Signature*  
 NATURAL RESOURCES CONSERVATION SERVICE 7/12/04  
 DATE

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

*Soil Conservation District Approval Signature*  
 HOWARD SOIL CONSERVATION DISTRICT 7/12/04  
 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Director Signature* 7/28/04  
 DIRECTOR (PLANNING) DATE  
*Chief Signature* 7/14/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Chief Signature* 7/26/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER / DEVELOPER  
 NOVITIATE OF FRANCISCAN FATHERS  
 MINOR CONVENTUALS OF MARYLAND, INC.  
 12290 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MARYLAND 21042

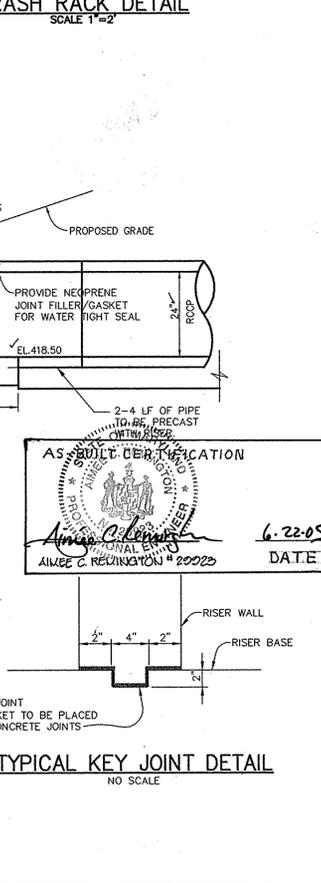
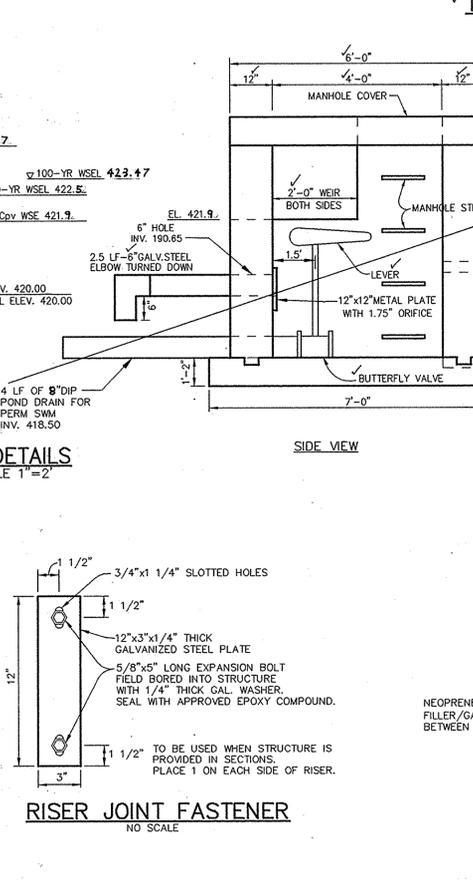
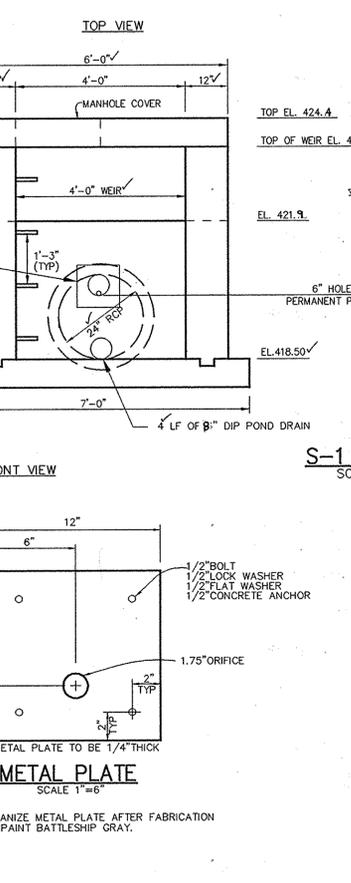
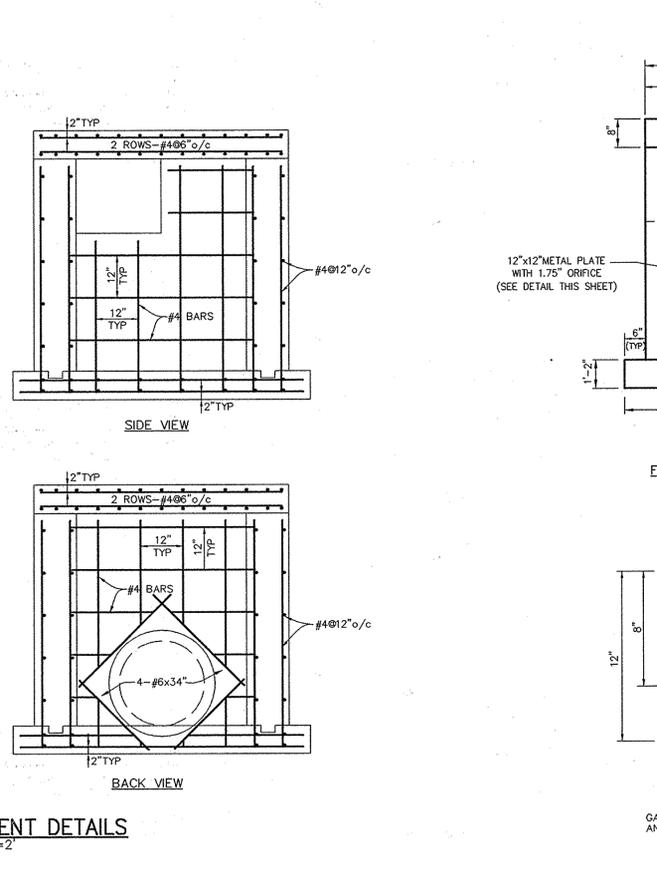
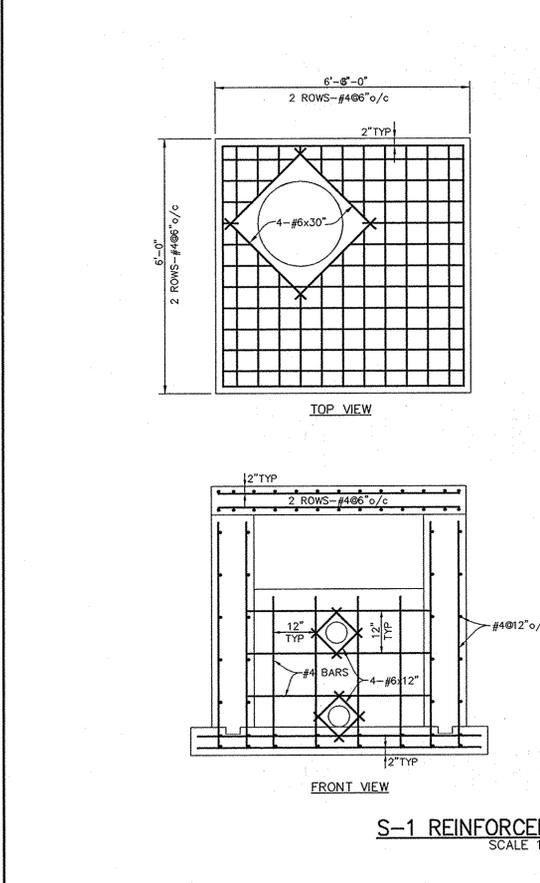
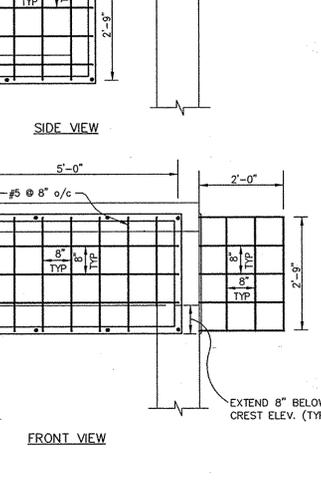
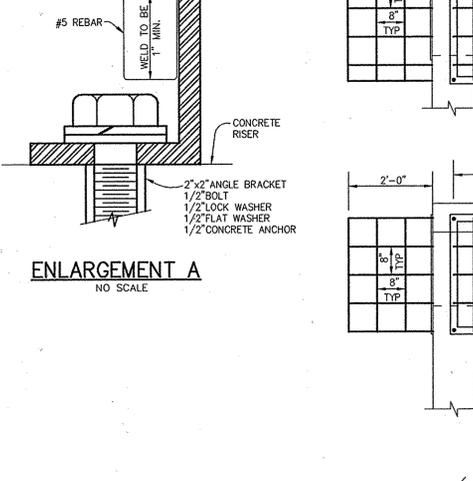
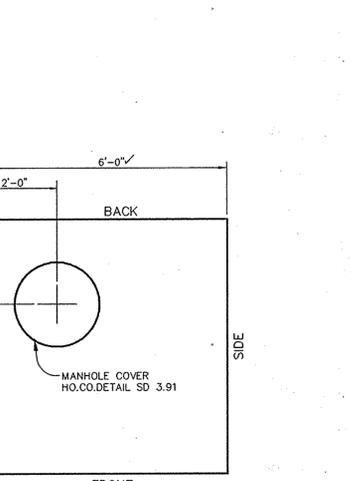
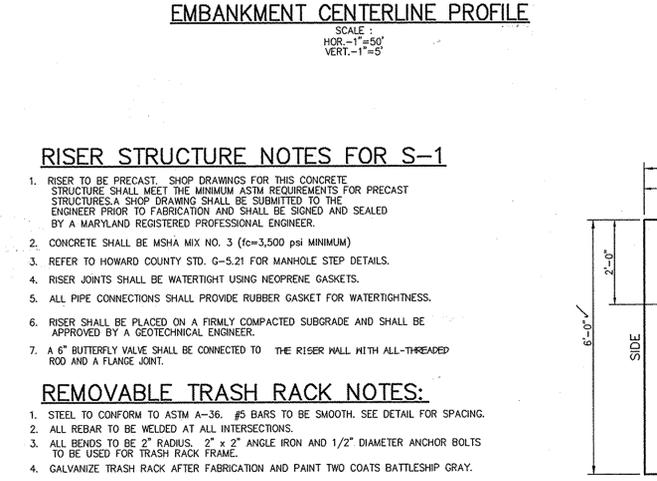
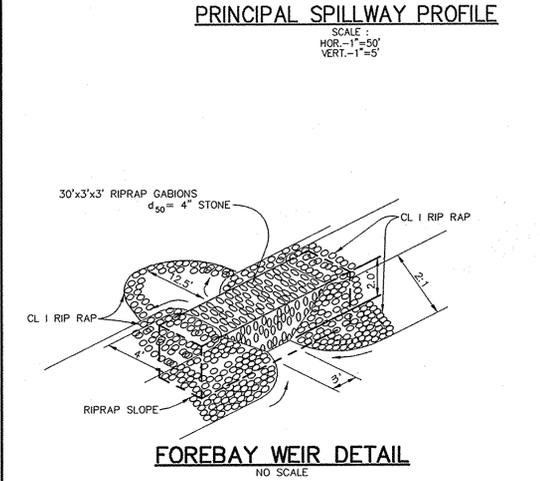
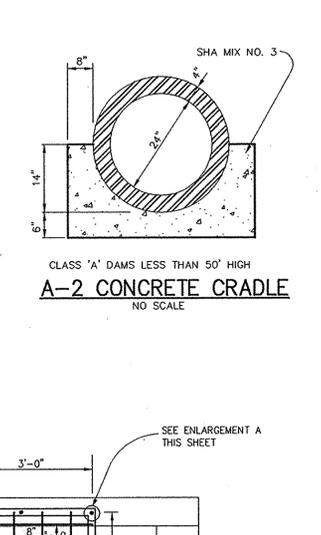
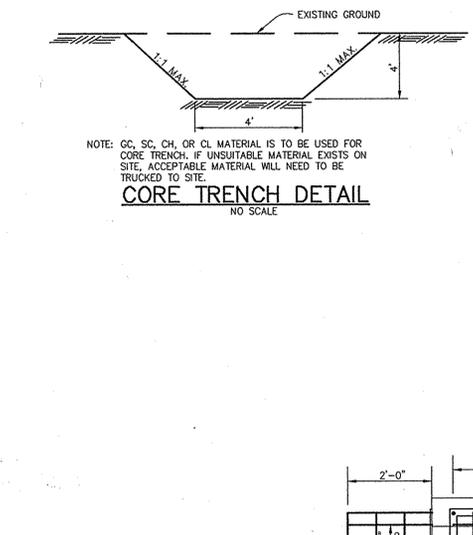
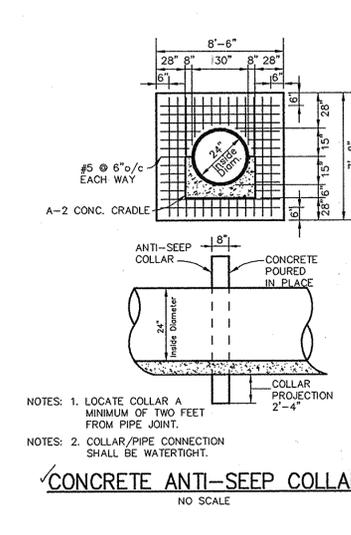
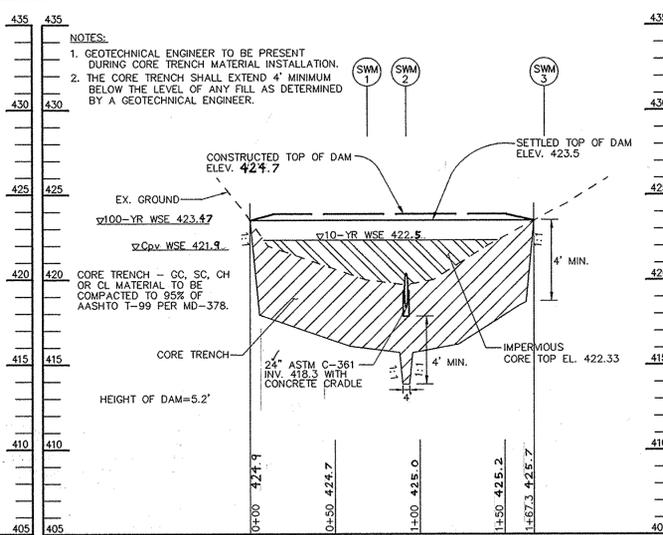
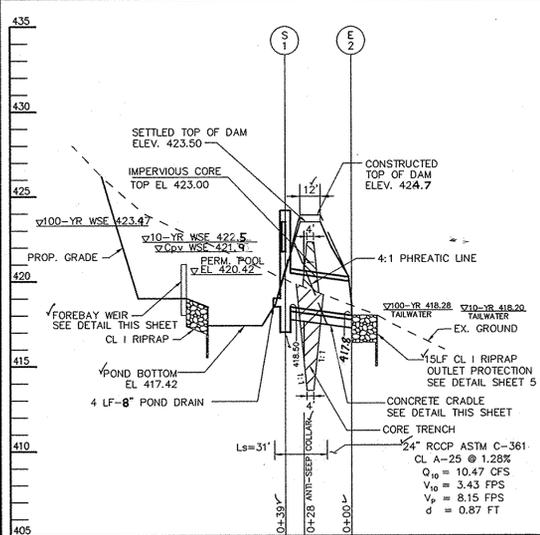
PROJECT **FRANCISCAN FRIARS PARKING ADDITION**

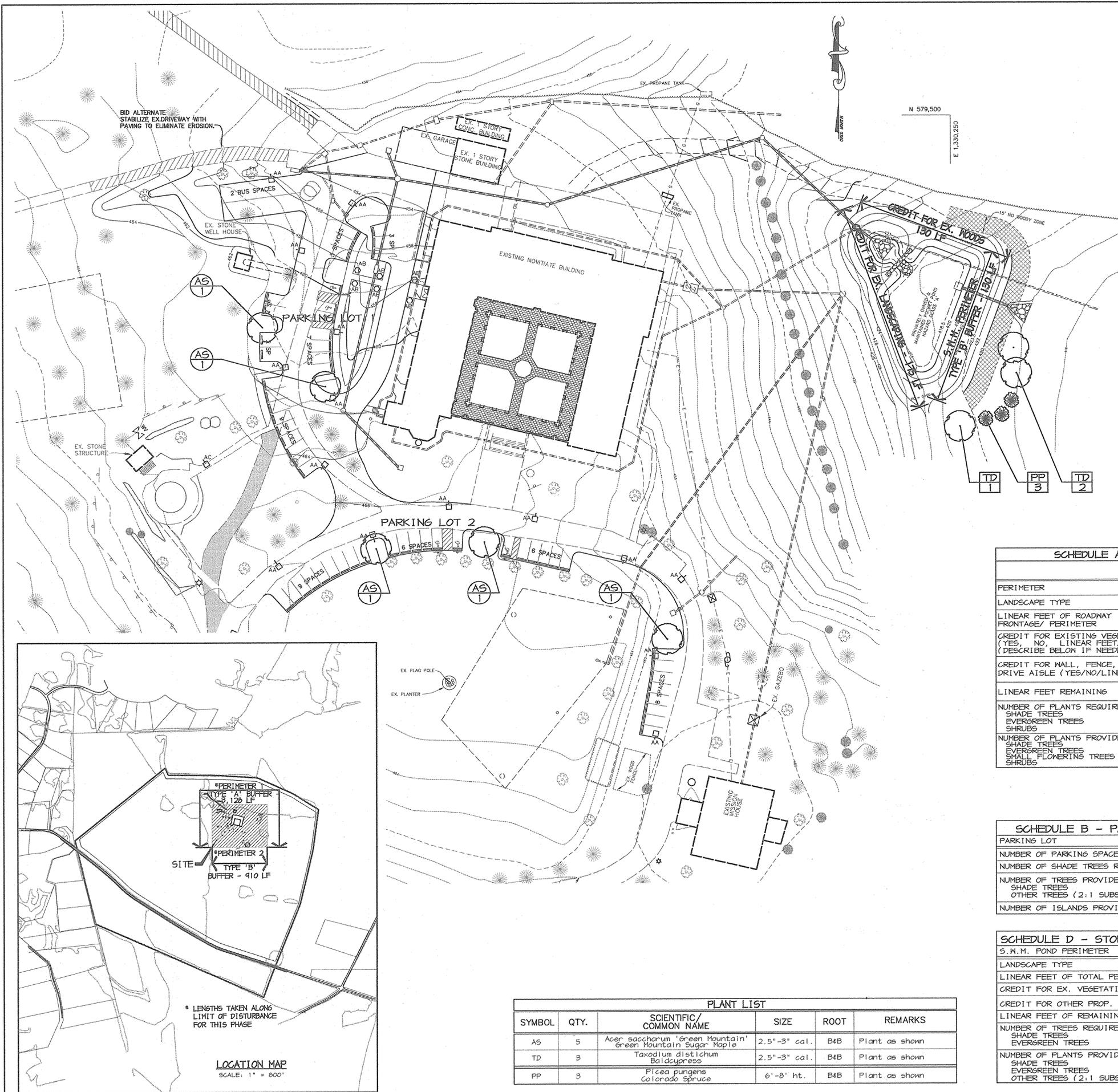
AREA TAX MAP 22 PARCEL 46 ZONED RC-DEO  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE **SWM PROFILES & 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

6-29-04  
 DATE  
 DESIGNED BY : C.J.R.  
 DRAWN BY: MAD  
 PROJECT NO : 11439/2-0/ENGR  
 PLANS/C901DET  
 DATE : JUNE 29, 2004  
 SCALE : AS SHOWN  
 DRAWING NO. 9 OF 20





- ⊗⊗ PARKING LOT LANDSCAPE REQUIREMENT
- ⊗⊗ S.M.M. LANDSCAPE REQUIREMENT

PLANTING LEGEND	
PROP. SHADE TREE	
PROP. EVERGREEN TREE	
EX. SHADE TREE	
EX. EVERGREEN TREE	
EX. TREELINE	

- GENERAL NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
  - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$2,850.  
 2 SHADE TREES @ \$300 = \$2,400  
 3 EVERGREEN TREES @ \$150 = \$450
  - THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.
  - CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
  - 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.
  - 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.
  - 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.

AS-BUILT CERTIFICATION

ALLAN C. WELLINGTON 220023 DATE 6.22.05

**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 CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Signature: *Donald G. ...* DATE: 6.28.05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR: *Stephen Lafferty* DATE: 7/23/04

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *Mark ...* DATE: 7/14/04

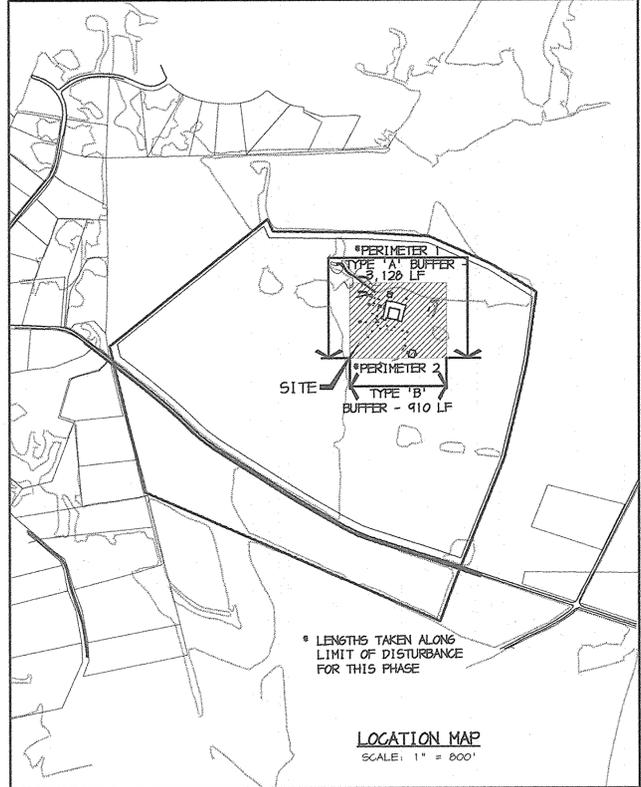
CHIEF, DIVISION OF LAND DEVELOPMENT: *Christy ...* DATE: 7/28/04

SCHEDULE A - PERIMETER LANDSCAPE EDGE*	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO ROADWAYS
	1	2
LANDSCAPE TYPE	A	B
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	3,126' ±	910' ±
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 3,126' ±	YES 910' ±
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO	NO
LINEAR FEET REMAINING	0'	0'
NUMBER OF PLANTS REQUIRED		
SHADE TREES	..	..
EVERGREEN TREES	..	..
SHRUBS	..	..
NUMBER OF PLANTS PROVIDED		
SHADE TREES	..	..
EVERGREEN TREES	..	..
SMALL FLOWERING TREES	..	..
SHRUBS	..	..

SCHEDULE B - PARKING LOT INTERNAL LANDSCAPING		
PARKING LOT	1	2
NUMBER OF PARKING SPACES	27	29
NUMBER OF SHADE TREES REQUIRED (1/20 SPACES)	2	2
NUMBER OF TREES PROVIDED		
SHADE TREES	2	3
OTHER TREES (2:1 SUBSTITUTION)	-	-
NUMBER OF ISLANDS PROVIDED	2	2

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING	
S.M.M. POND PERIMETER	1
LANDSCAPE TYPE	B
LINEAR FEET OF TOTAL PERIMETER	±435'
CREDIT FOR EX. VEGETATION (NO OR YES & %)	YES, 130'
CREDIT FOR OTHER PROP. LANDSCAPING (NO OR YES & %)	YES, 175'
LINEAR FEET OF REMAINING PERIMETER	130'
NUMBER OF TREES REQUIRED:	
SHADE TREES	3
EVERGREEN TREES	3
NUMBER OF PLANTS PROVIDED	
SHADE TREES	3
EVERGREEN TREES	3
OTHER TREES (2:1 SUBSTITUTION, 50% MAX.)	1

PLANT LIST					
SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
AS	5	Acer saccharum 'Green Mountain' Green Mountain Sugar Maple	2.5"-3" cal.	B4B	Plant as shown
TD	3	Taxodium distichum Baldcypress	2.5"-3" cal.	B4B	Plant as shown
PP	3	Picea pungens Colorado Spruce	6'-8' ht.	B4B	Plant as shown



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**PLANTING SPECIFICATIONS**

- 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 within these specifications and the Howard County Landscape Manual, the latter takes precedence.
- 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 bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements will be rejected. Plant material that is weak 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 accepted.
- Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to the most recent edition of the "Landscape Specification Guidelines by the Landscape Contractors Association of MD, DC, & VA", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects.
- 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.
- Contractor shall be responsible for notifying all relevant and appropriate utility companies, utility contractors, and "Miss Utility" a minimum of 48 hours prior to the beginning of any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts 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.
- Protection of existing vegetation to remain shall be accomplished via the temporary installation of 4 foot high snow fence at the drip line, see detail.
- 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 *Xpressocyparis leylandii* between November 15 and March 15. Landscape plants are not to be installed before site graded to final grade.
- Contractor to regrade, fine grade, sod, hydroseed and straw mulch all areas disturbed by their work.
- Bid shall be based on actual site conditions. No extra payment shall be made for work arising from actual site conditions differing from those indicated on drawings and specifications.
- 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. Where discrepancies on the plan exist between the symbols and the callout leader, the number of symbols take precedence.
- 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.
- Positive drainage shall be maintained on planting beds (minimum 2 percent slope).
- 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 weeping yew): Top dress after planting with 1/4 to 1/2 cup lime each.
- Planting mix: 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.
- Need & 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 weed-free for the extent of the warranty period. Under no circumstances is a pesticide containing *chlorpyrifos* to be used as a means of pest control.
- Water: 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 desiccation.
- Pruning: Do not heavily prune trees and shrubs at planting. Prune only broken, dead, or diseased branches.
- 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.

**NOTES:**

1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR THIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

2. STAKE TREES ONLY IF RECOMMENDED ON THE PLANT SCHEDULE OR UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT. STAKING DETAIL SHOWN ONLY IF RECOMMENDED.

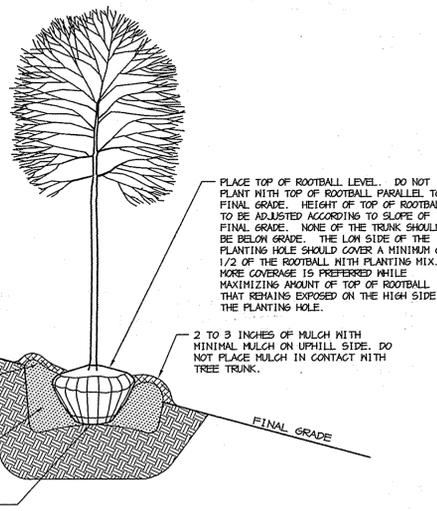
**B&B TREES:** D16 PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.

**CONTAINERIZED TREES:** D16 PLANTING PIT TWO AND A HALF TIMES AS WIDE AS THE DIAMETER OF THE CONTAINER WITH A MINIMUM PLANTING PIT DIAMETER OF 30". REMOVE CONTAINER JUST BEFORE PLANTING. INSPECT HEALTH OF ROOTS. REJECT MATERIAL WITH UNHEALTHY OR INSUFFICIENT ROOTS. REMOVE ALL THINE, ROPE, NIRE, AND BURLAP FROM TOP OF ROOT BALL. DO NOT REMOVE NIRE BASKET. BEND TOP OF NIRE BASKET DOWN INTO PLANTING PIT.

CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER TWICE WITHIN 24 HOURS.

BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.

PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.



DECIDUOUS B&B AND CONTAINERIZED TREE PLANTING DETAIL FOR STEEP SLOPES  
NOT TO SCALE

**NOTES:**

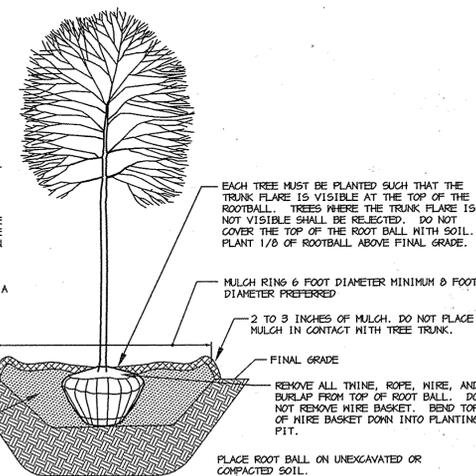
1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR THIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

2. STAKE TREES ONLY IF RECOMMENDED ON THE PLANT SCHEDULE OR UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT. STAKING DETAIL SHOWN ONLY IF RECOMMENDED.

3. D16 PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.

CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER TWICE WITHIN 24 HOURS.

BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.



DECIDUOUS B&B TREE PLANTING DETAIL  
NOT TO SCALE

**NOTES:**

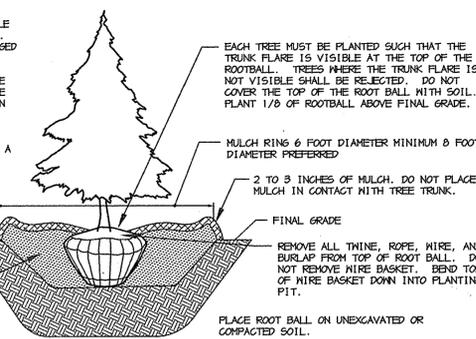
1. SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERWISE SPECIFIED ON PLAN. PLANTS WITH CO-DOMINANT, MISSING, OR DAMAGED LEADERS SHALL BE REJECTED.

2. STAKE TREES ONLY IF RECOMMENDED ON THE PLANT SCHEDULE OR UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT. STAKING DETAIL SHOWN ONLY IF RECOMMENDED.

3. D16 PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.

CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER TWICE WITHIN 24 HOURS.

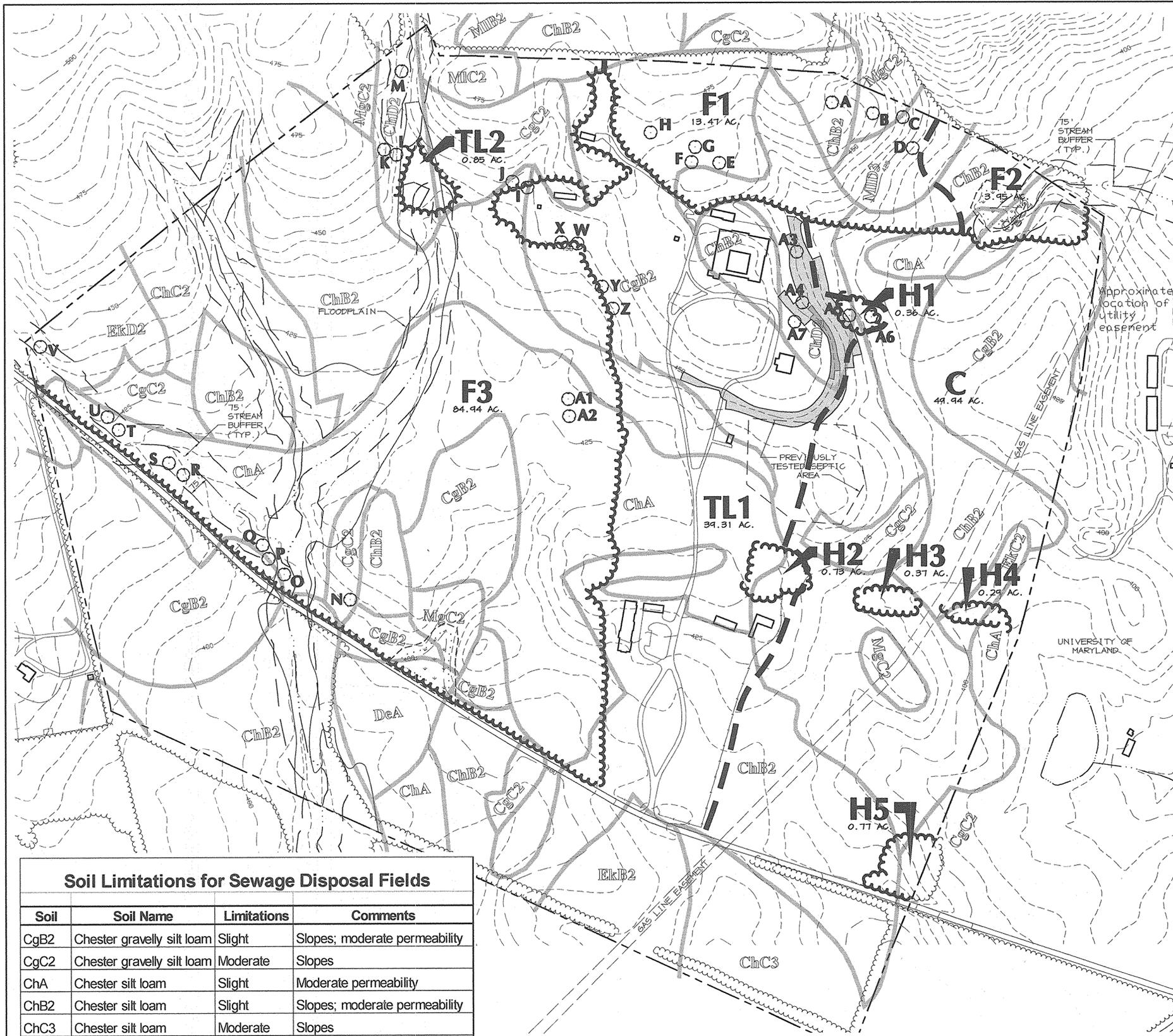
BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.



EVERGREEN B&B TREE PLANTING DETAIL  
NOT TO SCALE

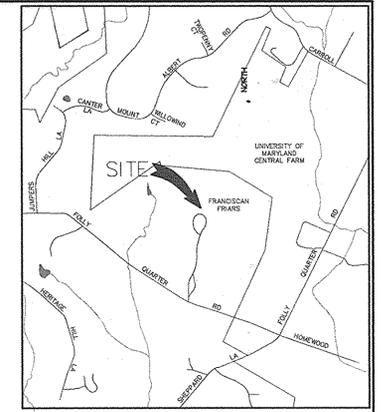
Annee C. Remington ANNEE C. REMINGTON #00023	6-22-05 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
[Signature] DIRECTOR (A&Z)	7/28/04 DATE
[Signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	7/14/04 DATE
[Signature] CHIEF, DIVISION OF LAND DEVELOPMENT	7/12/04 DATE
DATE NO.	REVISION
OWNER / DEVELOPER	
NOWTIAE OF FRANCISCAN FATHERS MINOR CONVENTUALS OF MARYLAND, INC. 12290 FOLLY QUARTER ROAD ELLICOTT CITY, MARYLAND 21042	
PROJECT <b>FRANCISCAN FRIARS PARKING ADDITION</b>	
AREA	TAX MAP 22 PARCEL 46 ZONED RC-DEO 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE <b>LANDSCAPE NOTES AND DETAILS</b>	
<b>Patton Harris Rust &amp; Associates, pc</b> Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
6-29-04 DATE	DESIGNED BY: G.T.H. DRAWN BY: G.T.H. PROJECT NO.: 11439/2-0/ENGR PLANS/L201LND DATE: JUNE 29, 2004 SCALE: AS SHOWN DRAWING NO. 11 OF 20
Scott R. Wolford SCOTT R. WOLFORD, R.L.A. #797	

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SPECIMEN TREE CHART		
KEY	SPECIES	SIZE
A	TULIP TREE	32"
B	TULIP TREE (db)	45"
C	TULIP TREE	31"
D	TULIP TREE	33"
E	RED OAK	34"
F	TULIP TREE	32"
G	TULIP TREE	33"
H	TULIP TREE	34"
I	TULIP TREE	33"
J	WHITE OAK	30"
K	RED OAK	38"
L	TULIP TREE	36"
M	RED OAK	30"
N	RED OAK	30"
O	TULIP TREE	31"
P	TULIP TREE	36"
Q	TULIP TREE	30"
R	TULIP TREE	31"
S	TULIP TREE	30"
T	RED MAPLE	34"
U	TULIP TREE	35"
V	TULIP TREE	40"
W	RED OAK	30"
X	RED OAK	30"
Y	RED OAK	32"
Z	RED OAK	36"
A1	TULIP TREE	30"
A2	TULIP TREE	31"
A3	TULIP TREE	60"
A4	SYCAMORE	45"
A5	SUGAR MAPLE	41"
A6	SUGAR MAPLE	36"
A7	GREEN ASH	38"

LEGEND	
EX. TREELINE	
PROPERTY LINE	
WETLANDS AND 25' BUFFER	
PERENNIAL STREAM AND 50' BUFFER	
100-YEAR FLOODPLAIN	
SOILS	
STEEP SLOPES 15%-25%	
STEEP SLOPES >25%	
CONTOUR LINES	
EX. BUILDING	
EX. SPECIMEN TREE (>30")	
STAND #	
STAND DIVISION LINE	



VICINITY MAP  
SCALE: 1" = 2000'

GENERAL NOTES:

- THIS FOREST STAND DELINEATION (FSD) HAS BEEN PREPARED IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS.
- THIS FSD IS BASED ON A FIELD INVESTIGATION BY GRAHAM HUBBARD, ENVIRONMENTAL TECHNICIAN OF PATTON HARRIS RUST & ASSOCIATES, PC ON SEPTEMBER 22 AND SEPTEMBER 24, 2003.
- TREELINES SHOWN ARE BASED ON AERIAL SURVEY AND FIELD APPROXIMATION.
- THIS SITE CONTAINS ONE SOIL WITH POSSIBLE HYDRIC INCLUSIONS, DELANCO SILT LOAM (DeA).
- NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- THERE ARE NO KNOWN CEMETERY OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY HISTORIC & CEMETERY SITE MAP.
- THIS SITE CONTAINS WETLANDS AND STREAMS, AS SHOWN ON THIS PLAN.
- ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S "FLOOD INSURANCE RATE MAP" FOR HOWARD COUNTY, MARYLAND (2400440021B, DECEMBER 4, 1986), APPROXIMATELY 10.20 ACRES OF 100-YEAR FLOODPLAIN ARE LOCATED ON THE SITE.
- TWO STRUCTURES ON THE SITE ARE REGISTERED ON THE COUNTY HISTORIC STRUCTURES REGISTRY. THEY ARE THE NOVITIATE #152 AND THE RUINS OF FOLLY QUARTER MANOR/McTAVISH #16.
- SPECIMEN TREES ARE PRESENT ON THE SITE AS SHOWN ON THE PLAN.

Soil Limitations for Sewage Disposal Fields

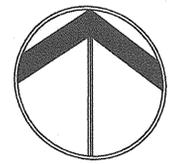
Soil	Soil Name	Limitations	Comments
CgB2	Chester gravelly silt loam	Slight	Slopes; moderate permeability
CgC2	Chester gravelly silt loam	Moderate	Slopes
ChA	Chester silt loam	Slight	Moderate permeability
ChB2	Chester silt loam	Slight	Slopes; moderate permeability
ChC3	Chester silt loam	Moderate	Slopes
ChD2	Chester silt loam	Severe	Slopes
DeA	Delanco silt loam	Severe	Moderately slow permeability
EkB2	Elioak silt loam	Severe	Moderately slow permeability
EkC2	Elioak silt loam	Severe	Slopes; moderate permeability
MgC2	Manor gravelly loam	Moderate	Slopes
MIB2	Manor loam	Slight	Slopes; moderate permeability
MIC2	Manor loam	Moderate	Slopes
MID3	Manor loam	Severe	Slopes

SITE CHARACTERISTICS:

GROSS SITE AREA	146.26 ACRES
TOTAL FORESTED AREA	102.36 ACRES
100 YEAR FLOODPLAIN AREA	10.20 ACRES
FORESTED 100 YEAR FLOODPLAIN	4.50 ACRES
NET TRACT AREA	186.06 ACRES
NET TRACT AREA FOREST	92.86 ACRES

PLANT COMMUNITY TABLE:

KEY	DESCRIPTION	ACREAGE
F1	FOREST	13.47 Ac.
F2	FOREST	3.95 Ac.
F3	FOREST	84.94 Ac.
H1	HEDGERON	0.36 Ac.
H2	HEDGERON	0.73 Ac.
H3	HEDGERON	0.37 Ac.
H4	HEDGERON	0.29 Ac.
H5	HEDGERON	0.77 Ac.
C	CROPS	49.94 Ac.
TL1	TREES / LAWN	39.31 Ac.
TL2	TREES / LAWN	0.85 Ac.
IMP	IMPERVIOUS LAND	1.20 Ac.
TOTAL		146.26 Ac.



ASS-BUILT CERTIFICATION

*Amie C. Remington* 6-22-05 DATE  
AMIE C. REMINGTON # 29223

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Stephen J. Laffer* 7/28/04 DATE  
DIRECTOR (ACTING)

*Chris Dammann* 7/14/04 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK

*Chris Harada* 7/28/04 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE NO. REVISION

OWNER / DEVELOPER  
NOVITIATE OF FRANCISCAN FATHERS  
MINOR CONVENTUALS OF MARYLAND, INC.  
12290 FOLLY QUARTER ROAD  
ELLCOTT CITY, MARYLAND 21042

PROJECT FRANCISCAN FRIARS PARKING ADDITION

AREA TAX MAP 22 PARCEL 46 ZONED RC-DEO  
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE 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

6-29-04 DATE

DESIGNED BY: GTH

DRAWN BY: GTH

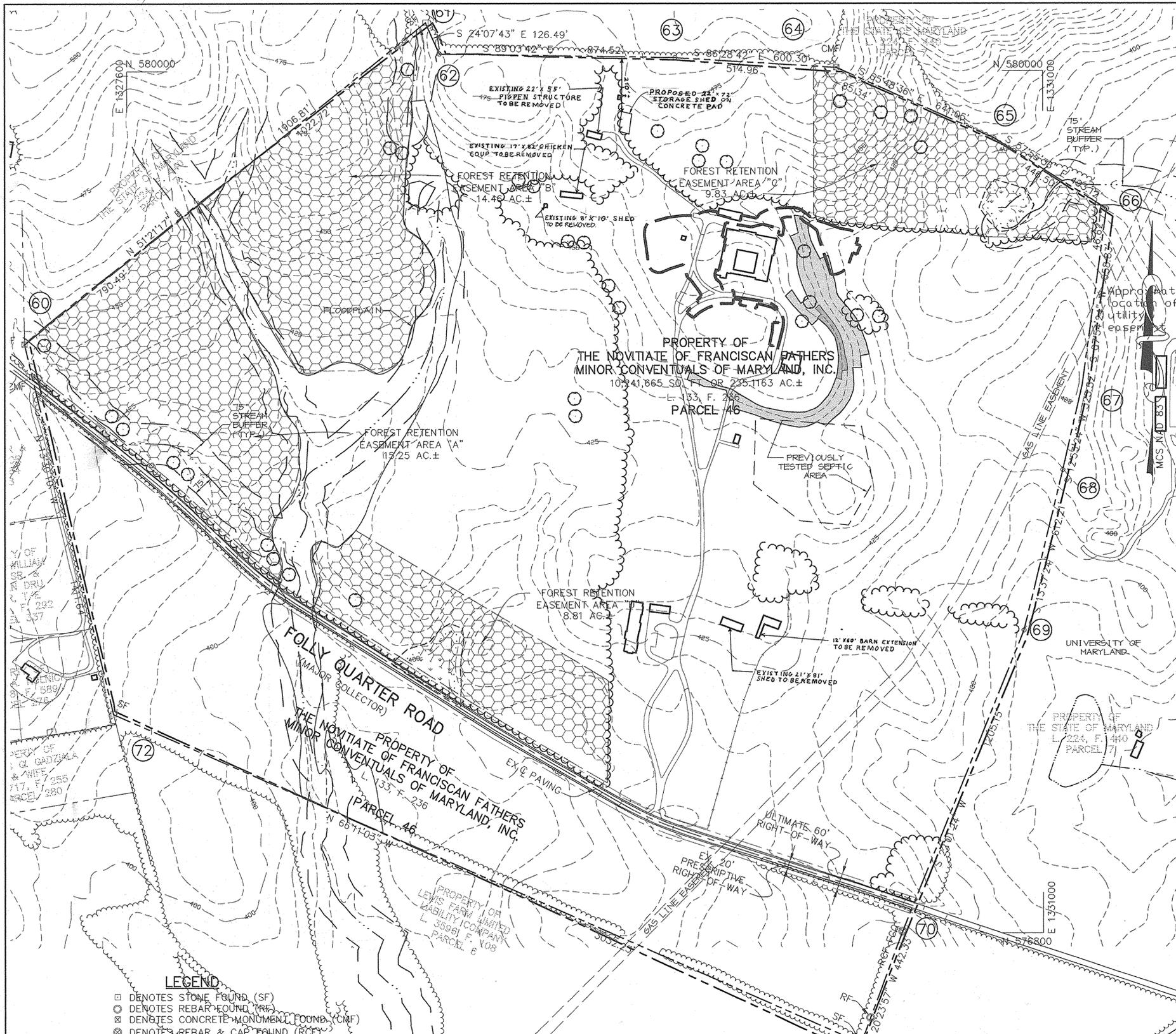
PROJECT NO: 11439-1-0  
1200FSD.DWG

DATE: JUNE 29, 2004

SCALE: 1" = 200'

DRAWING NO. 12 OF 26

STATE OF MARYLAND  
SCOTT R. WOLFORD, R.L.A. #797



**LEGEND**

- EX. TREELINE
- PROPERTY LINE
- NETLANDS AND 25' BUFFER
- PERENNIAL STREAM AND 50' BUFFER
- 100-YEAR FLOODPLAIN
- SOILS
- STEEP SLOPES 15%-25%
- STEEP SLOPES >25%
- CONTOUR LINES
- EX. BUILDING
- EX. SPECIMEN TREE (>30')
- LIMIT OF DISTURBANCE

**Howard County Forest Conservation Worksheet**

Project Name: Franciscan Friars  
 Date: October 8, 2003

Net Tract Area	Acres
A. Total Tract Area	185.26
B. Other Disturbances	132.25
C. Net Tract Area - Net Tract Area = (A-B-C)	166.06
D. Land Use Category: Institutional	
E. Afforestation Threshold (Net Tract Area X .15%)	27.91
F. Conservation Threshold (Net Tract Area X .20%)	37.21
G. Existing Forest Cover	
H. Existing Forest Cover within the Net Tract Area	92.86
I. Area of Forest Above Conservation Threshold	55.65
J. If the Existing Forest Cover (F) is greater than Conservation Threshold (G), then G = Existing Forest Cover (F) - Conservation Threshold (G); otherwise G = 0	
K. Break Even Point	
L. Break Even (Amount of forest that must be retained so that no mitigation is required)	48.34
M. (1) If the area of forest above the Conservation Threshold (G) is greater than zero, then H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation Threshold (E)	
N. (2) If the area of forest above the Conservation Threshold (G) is equal to zero, then H = Existing Forest Cover (F)	
O. Forest Clearing Permitted Without Mitigation	44.52
P. = Existing Forest Cover (F) - Break Even Point (H)	
Q. Proposed Forest Clearing	
R. Total Area of Forest to be Cleared	44.51
S. Total Area of Forest to be Retained	48.35
T. K = Existing Forest Cover (F) - forest to be cleared (L)	
U. Planting Requirements	
V. If the Total Area of Forest to be Cleared (R) is at or above the Break Even Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=0, P=0).	
W. If not, calculate the planting requirement below:	
X. Retention for Clearing Above the Conservation Threshold	
Y. (1) If the total area of forest to be retained (K) is greater than the Conservation Threshold (E), then L = the area of forest to be cleared (R) X 0.25 + (2) If the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then L = area of forest above Conservation Threshold (G) X 0.25	
Z. Retention for Clearing Below the Conservation Threshold	
AA. (1) If Existing Forest Cover (F) is greater than Conservation Threshold (E) and the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 X (the Conservation Threshold (E)) - the forest to be retained (K)	
AB. (2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 X Forest to be cleared (L)	
AC. Credit for Retention Above the Conservation Threshold	
AD. If the area of forest to be retained (K) is greater than the Conservation Threshold (E), then N = K - E	
AE. Total Retention Required P = L + M - N	0.00
AF. Total Afforestation Required	0.00
AG. (1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then Q = the Afforestation Threshold (D) - Existing Forest Cover (F)	
AH. Total Planting Requirement R = P + Q	0.00

Fee-in-lieu @ \$0.50/ square foot (Howard County) 0.00

- LEGEND**
- DENOTES STONE FOUND (SF)
  - DENOTES REBAR FOUND (RF)
  - ⊗ DENOTES CONCRETE MONUMENT FOUND (CMF)
  - ⊗ DENOTES REBAR & CAP FOUND (RCF)

**GENERAL NOTES:**

- TREELINES SHOWN ARE BASED ON AERIAL SURVEY AND FIELD APPROXIMATION.
- NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- THERE ARE NO KNOWN CEMETERY OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY HISTORIC & CEMETERY SITE MAP.
- THIS SITE CONTAINS NETLANDS AND STREAMS, AS SHOWN ON THIS PLAN.
- ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S "FLOOD INSURANCE RATE MAP" FOR HOWARD COUNTY, MARYLAND (2400440021B, DECEMBER 4, 1986), APPROXIMATELY 10.20 ACRES OF 100-YEAR FLOODPLAIN ARE LOCATED ON THE SITE.
- TWO STRUCTURES ON THE SITE ARE REGISTERED ON THE COUNTY HISTORIC STRUCTURES REGISTRY. THEY ARE THE NOVITIATE #132 AND THE RUINS OF FOLLY QUARTER MANOR/McTAVISH #16.
- SPECIMEN TREES ARE PRESENT ON THE SITE. SEE FSD PLAN.
- THE FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THIS PLAN.
- SEE SEDIMENT CONTROL PLAN FOR LOCATION OF TREE PROTECTION FENCE AND TREE PROTECTION FENCE DETAILS.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY RETAINING 48.35 AC OF EXISTING FOREST. SURETY IN THE AMOUNT OF \$421,225.20 (2,106,126 SF X \$0.20/SF) WILL BE REQUIRED.

**AS-BUILT CERTIFICATION**

*Alice C. Remington* 6-22-05  
 ALICE C. REMINGTON #20923 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Stephen J. Lafferty* 7/25/04  
 DIRECTOR DATE

*Mike* 7/14/04  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chris* 7/26/04  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	NOTED STRUCTURES TO BE REMOVED, ADDED SHED	REVISION
6-29-04	1		

OWNER / DEVELOPER  
 NOVITIATE OF FRANCISCAN FATHERS  
 MINOR CONVENTUALS OF MARYLAND, INC.  
 12290 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MARYLAND 21042

PROJECT  
**FRANCISCAN FRIARS PARKING ADDITION**

AREA TAX MAP 22 PARCEL 46 ZONED RC-DEO  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

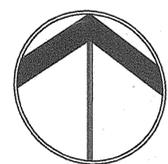
TITLE  
**FOREST CONSERVATION PLAN**

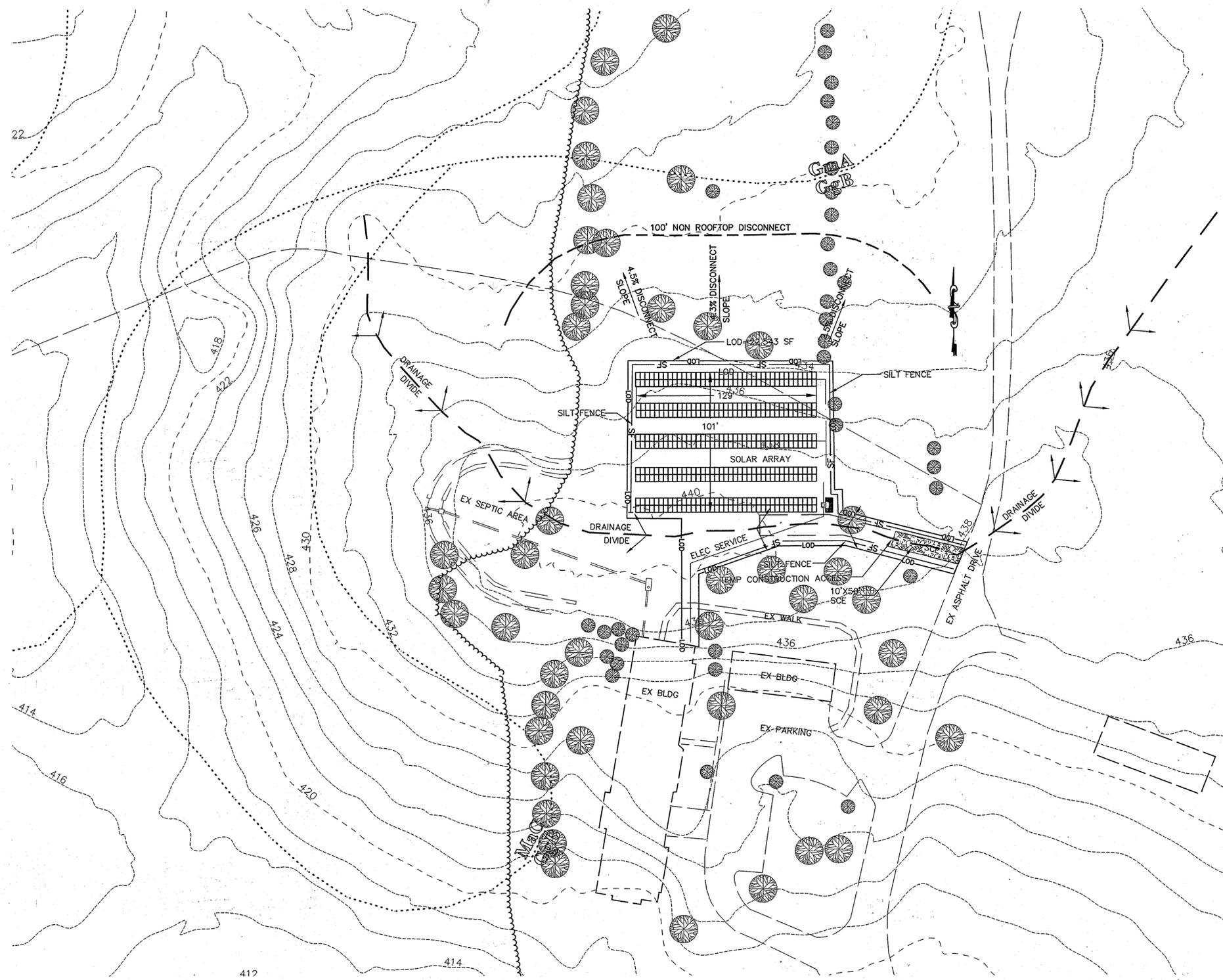
**Patton Harris Rust & Associates, pc**  
 Engineers, Surveyors, Planners, Landscape Architects.  
 8818 Centre Park Drive  
 Columbia, MD 21045  
 T 410.997.8900  
 F 410.997.9282

6-29-04  
 DATE

DESIGNED BY: GTH  
 DRAWN BY: GTH  
 PROJECT NO.: 11439-1-0  
 L200FCO.DWG  
 DATE: JUNE 29, 2004  
 SCALE: 1" = 200'  
 DRAWING NO. 13 OF 20

SCOTT R. WOLFORD, R.L.A. #797





PLAN LEGEND	
LIMIT OF DISTURBANCE	LOD
DRAINAGE DIVIDE	(Symbol)
SILT FENCE	SF
2' CONTOUR	(Symbol)
EX TREE	(Symbol)

PRIOR TO VEHICLES LEAVING THE SITE, WHEELS SHALL BE CLEANED OR WASHED TO REMOVE SEDIMENT. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ONTO ROAD MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING OR SWEEPING. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE THAT DRAINS TO AN APPROVED SEDIMENT CONTROL DEVICE.

**SITE STABILIZATION AND SEEDING:**

- TOPSOIL, SEED, FERTILIZE, LIME AND STABILIZE WITH STRAW ALL DISTURBED AREAS FLATTER THAN 3:1 SLOPE. SEED, FERTILIZE, LIME AND STABILIZE WITH SLOPE PROTECTION MATTING ALL DISTURBED AREAS THAT ARE STEEPER THAN A 3:1 SLOPE.
- TOPSOIL, SEED MIXTURE AND APPLICATION SHALL BE IN CONFORMANCE WITH PERMANENT SEEDING SUMMARY.

**SEQUENCE OF CONSTRUCTION**

- OBTAIN ALL REQUIRED PERMITS. SCHEDULE AND ATTEND THE PRECONSTRUCTION MEETING. (1 DAY)
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AT EDGE OF EXISTING PAVEMENT OF PRIVATE DRIVE. (1 DAY)
- INSTALL PERIMETER SILT FENCE. (1 WEEK)
- WITH INSPECTORS APPROVAL BEGIN INSTALLATION OF SOLAR ARRAY.
- AS ARRAY IS INSTALLED STABILIZE WITH PERMANENT SEEDING.
- WITH PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.

APPROVED : DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i>	1/15/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	1/16/13
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	1/16/13
DIRECTOR	DATE
12/7/12	1 ADDED PHOTOVOLTAIC INSTALLATION PLAN
DATE	NO. REVISION
OWNER NOVIATIE OF FRANCISCAN FATHERS MINOR COVENTUALS OF MARYLAND, INC. 12290 FOLLY QUARTER ROAD ELLCOTT CITY, MARYLAND 21042	
DEVELOPER	
PROJECT FRANCISCAN FRIARS PARKING ADDITION	
AREA	TAX MAP 22 PARCEL 46 ZONING: RC-DEO 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE REVISED SITE DEVELOPMENT PLAN GRADING, SEDIMENT CONTROL/SWM PHOTOVOLTAIC PLAN	
<b>Patton Harris Rust &amp; Associates</b> Engineers, Surveyors, Planners, Landscape Architects <small>8818 Centre Park Drive, Suite 200, Columbia, MD, 21045          Tel: 410-997-8900 Fax: 410-997-9282</small>	
SEAL	DESIGNED BY : JAR
	DRAWN BY: JN
	PROJECT NO : SOLR1205
	DATE : 12/6/12
	SCALE : 1"=40'
BY:	DRAWING NO. 14 OF 20

AREA #10 E&SC AND SWM PLAN  
SCALE: 1" = 40'

**SOILS SUMMARY**

- GgB - Glenelg Loam - B soils Type

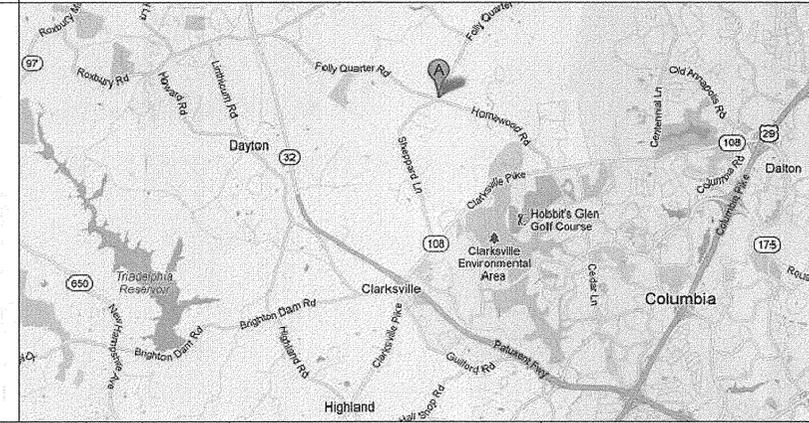
# 91.65 kW DC SOLAR PV SYSTEM FOR Order of Friars Minor Conventual, St Anthony of Padua Province

APN: 03285332

AERIAL MAP



VICINITY MAP



3055 Clearview Way, San Mateo, CA 94402  
T: (650) 838-1028 | F: (650) 838-1029  
(888)-SOL-CITY (765-2488) | www.solarcity.com

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ORD. OF FRIARS MINOR CONVENTUAL, ST ANTH. OF PADUA PROV.  
91.65kW GROUND MOUNT PV SYSTEM  
ORD. OF FRIARS MINOR CONVENTUAL, ST ANTH. OF PADUA PROV.  
12300 FOLLY QUARTER ROAD  
ELLICOTT CITY, MD 21042  
4105311400102

ABBREVIATIONS

- A AMPERE
- AC ALTERNATING CURRENT
- BLDG BUILDING
- CONC CONCRETE
- C COMBINER BOX
- D DISTRIBUTION PANEL
- DC DIRECT CURRENT
- EGG EQUIPMENT GROUNDING CONDUCTOR
- (E) EXISTING
- EMT ELECTRICAL METALLIC TUBING
- G SOLAR GUARD METER
- GALV GALVANIZED
- SEC GROUNDING ELECTRODE CONDUCTOR
- GND GROUND
- HDG HOT DIPPED GALVANIZED
- I CURRENT
- Imp CURRENT AT MAX POWER
- INVS INVERTERS
- Iscc SHORT CIRCUIT CURRENT
- kVA KILOWATT AMPERE
- kW KILOWATT
- LBW LOAD BEARING WALL
- MIN MINIMUM
- (N) NEW
- NEC NATIONAL ELECTRIC CODE
- NIC NOT IN CONTRACT
- NTS NOT TO SCALE
- OC ON CENTER
- OCF OVERCURRENT PROTECTION
- P PANEL BOARD
- PL PROPERTY LINES
- PV PHOTOVOLTAIC
- PVC POLYVINYL CHLORIDE
- S SUBPANEL
- SCH SCHEDULE
- SS STAINLESS STEEL
- SSD SEE STRUCTURAL DRAWINGS
- STC STANDARD TESTING CONDITIONS
- SWH SOLAR WATER HEATER
- TYP TYPICAL
- UN UNLESS OTHERWISE NOTED
- UPS UNINTERRUPTIBLE POWER SUPPLY
- V VOLT
- Vmp VOLTAGE AT MAX POWER
- Voc VOLTAGE AT OPEN CIRCUIT
- W WATT
- 3R NEMA 3R, RAIN TIGHT

SYSTEM SUMMARY

MODULE: (390) TRINA #TSM-235PA05  
INVERTER: Solectria PVI 82kW - 208Vac  
RACK TYPE: Schletter Ground Mount

**DESIGN CRITERIA**

ARRAY HEIGHT: 7.9'  
GROSS ARRAY AREA: 13151 ft<sup>2</sup>  
WIND SPEED: 90  
EXPOSURE: B  
SNOW LOAD: 30PSF

CODE SUMMARY

**BUILDING CODE**  
ALL WORK TO BE DONE TO THE 2012 INTERNATIONAL BUILDING CODE.

**ELECTRICAL CODE**  
ALL ELECTRICAL WORK TO BE DONE TO THE 2011 NATIONAL ELECTRIC CODE.

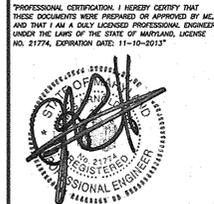
INDEX

- PV1 COVER SHEET
- PV2 PV SITE PLAN AND RACKING DETAILS
- PV3 EQUIPMENT DETAILS
- PV4 LINE DIAGRAM - AC
- PV5 LINE DIAGRAM - DC
- PV6 MONITORING DETAILS
- PV7 ELECTRICAL CALCULATIONS
- PV8 WARNING LABELS
- PV9 CUTSHEETS

PROJECT TEAM

**DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE:**  
NATE TRACHIMOWICZ  
SOLARITY, INC.  
24 ST. MARTIN DR. BUILDING 2  
MARLBOROUGH, MA 01752  
TEL: (888) SOL-CITY x2355  
FAX: (508) 460-0318  
EMAIL: ntrachimowicz@solarcity.com

**ELECTRICAL ENGINEER:**  
CLINT RAPIER, P.E.  
HAWKINS DESIGN GROUP  
2152 S. VINEYARD AVE # 107  
MESA, AZ 85210  
TEL: (480) 813-9000

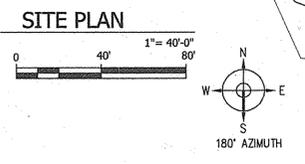
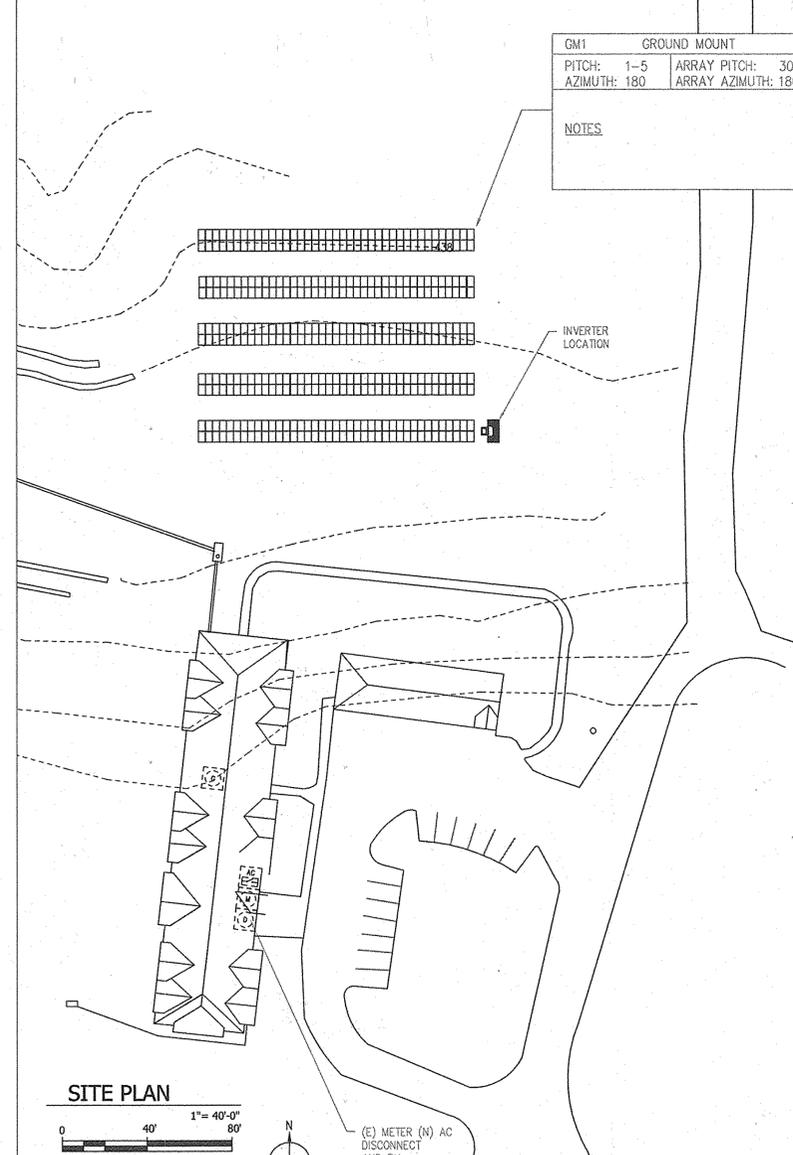
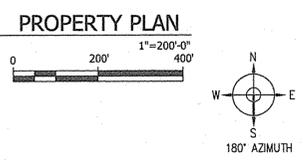
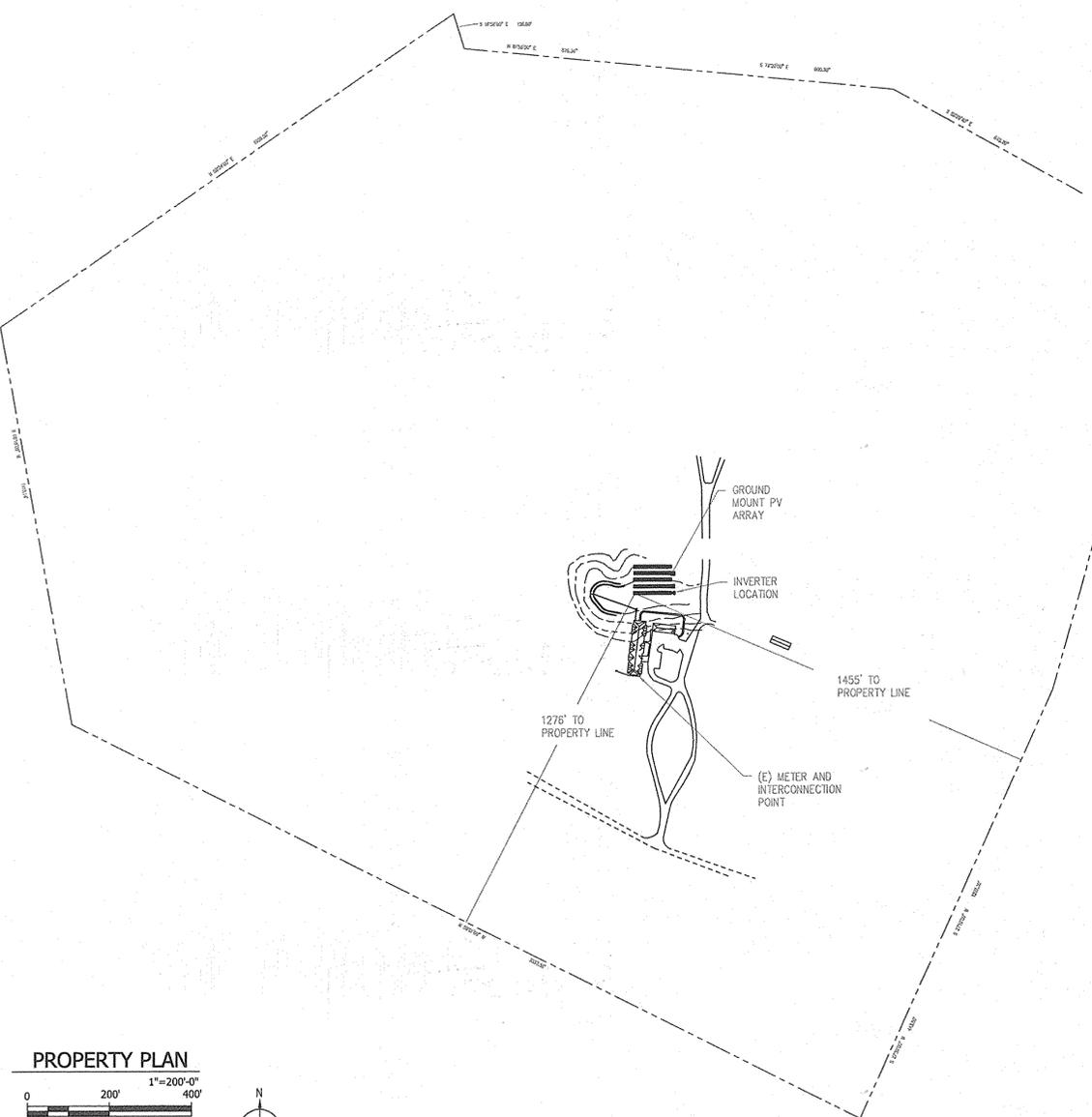


REVISIONS			
REV	BY	DATE	COMMENTS
REV A	NET	1/5/13	INSTALLATION OF SOLAR ARRAY

JOB DETAILS	
APR	Howard County
PROJECTS	(390) TRINA SOLAR # TSM-235PA05
MOORING SYSTEM	GROUND MOUNT
INVERTER	(1) SOLECTRIA # PVI 82KW-208VAC
MARKET	RESIDE #
COMPL	DATE
CHECKED BY	DATE
DATE	7/5/2012
PAGE NAME	REVISED SITE DEV. PLAN
PAGE NO.	MGTT
JOB NUMBER	JB-210241-00
PAGE	PV 1
REV	15 of 20

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/15/13  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 1/16/13  
 DIRECTOR DATE 1/16/13



GMI GROUND MOUNT	
PITCH: 1-5	ARRAY PITCH: 30
AZIMUTH: 180	ARRAY AZIMUTH: 180

NOTES

- f -

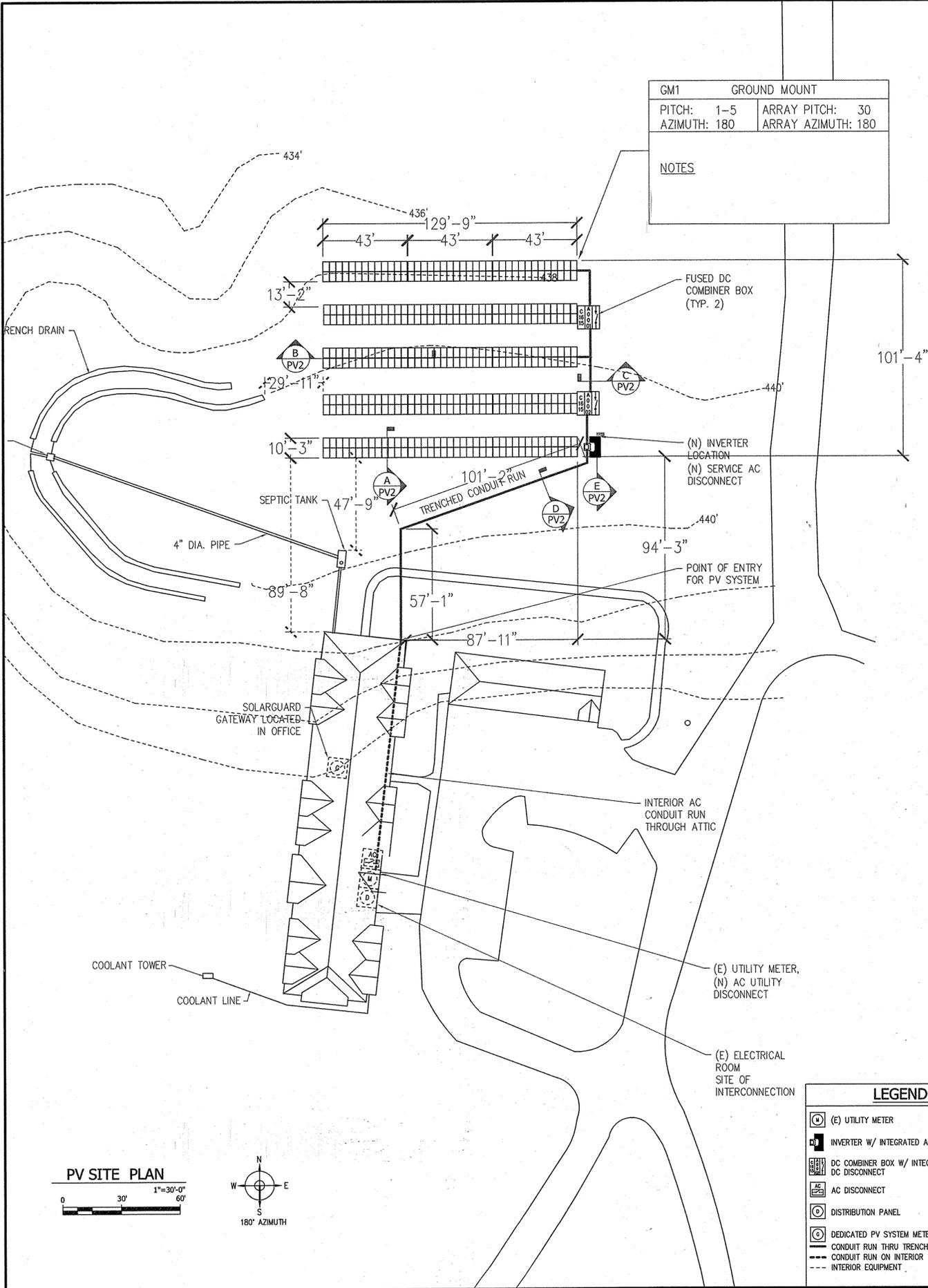
- e -

- d -

- c -

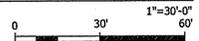
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- a -



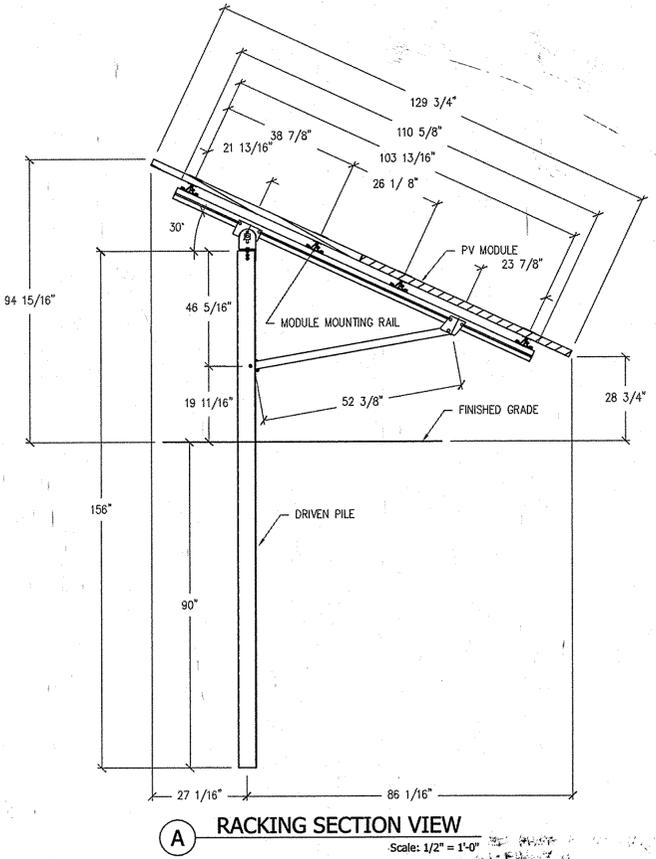
GM1 GROUND MOUNT	
PITCH: 1-5	ARRAY PITCH: 30
AZIMUTH: 180	ARRAY AZIMUTH: 180
NOTES	

PV SITE PLAN

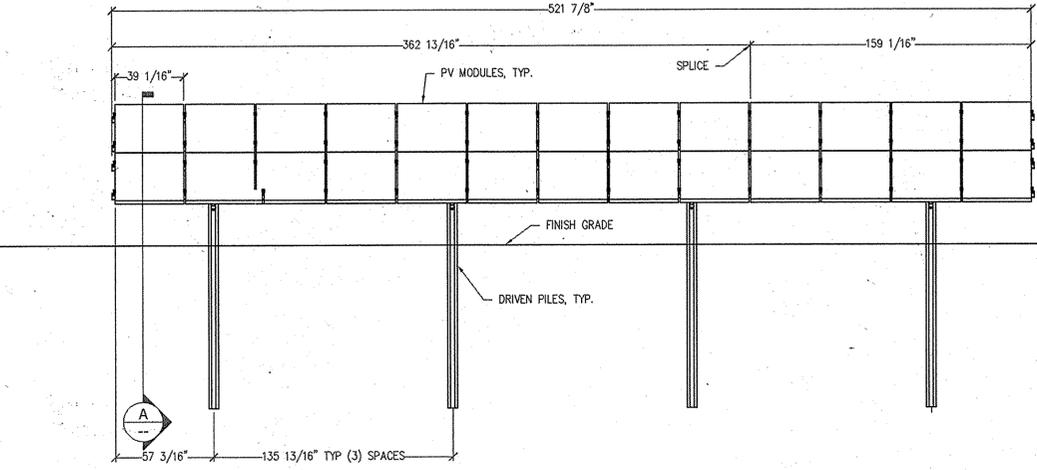


**LEGEND**

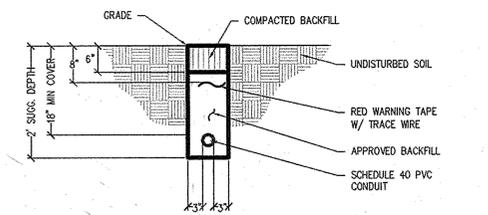
- (E) UTILITY METER
- INVERTER W/ INTEGRATED AC/DC DISCO
- DC COMBINER BOX W/ INTEGRATED DC DISCONNECT
- AC DISCONNECT
- DISTRIBUTION PANEL
- DEDICATED PV SYSTEM METER
- CONDUIT RUN THRU TRENCH
- CONDUIT RUN ON INTERIOR
- INTERIOR EQUIPMENT



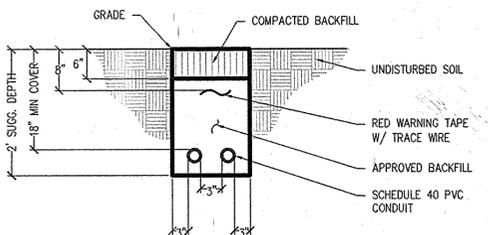
(A) RACKING SECTION VIEW  
Scale: 1/2" = 1'-0"



(B) FRONT VIEW OF 13-MODULE WIDE ARRAY (TYP. 3 PER ROW)  
Scale: 1/4" = 1'-0"



(D) TRENCH DETAIL  
Scale: 3/4" = 1'-0"



(C) TRENCH DETAIL  
Scale: 3/4" = 1'-0"

**SolarCity**  
 3055 Clearview Way, San Mateo, CA 94402  
 T: (650) 638-1025 | F: (650) 638-1029  
 (800) SOLAR-CITY (752-2480) | www.solarcity.com

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ORD. OF FRIARS MINOR CONVENTUAL, ST. ANTH. OF PADUA PROV.  
 91.65kW GROUND MOUNT PV SYSTEM  
 ORD. OF FRIARS MINOR CONVENTUAL, ST. ANTH. OF PADUA PROV.  
 12300 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MD 21042  
 4105311400102

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21774, EXPIRATION DATE: 11-10-2017

**REVISIONS**

REV	BY	DATE	COMMENTS
REV A	NPT	1/3/13	INSTALLATION OF SOLAR ARRAY

**JOB DETAILS**

ALL: Howard County  
 (390) TRINA SOLAR # TSM-235PA05

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 1/15/13

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 1/16/13

DIRECTOR: *[Signature]* DATE: 1/16/13

DATE	NO.	REVISION

**JOB DETAILS**

ALL: Howard County  
 (390) TRINA SOLAR # TSM-235PA05

INSTALLATION SYSTEM: GROUND MOUNT

INVERTER: (1) SOLECTRIA # PVI 82KW-208VAC

DATE: 7/6/2012

REVISOR: MGLTT

PROJECT MANAGER: MGLTT

JOB NUMBER: JB-210241-00

PAGE: 2 OF 20

REV: PV 2 16 of 20

- f -

- e -

- d -

- c -

- b -

- a -



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 T (650) 636-1000 | F (650) 636-1000  
 (888) SOL-CITY (766-2489) | www.solarcity.com

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ORDER OF FRIARS MINOR CONVENTUAL  
 244 KW GROUND MOUNT PV SYSTEM  
 ORDER OF FRIARS MINOR CONVENTUAL,  
 ST ANTHONY OF PADUA PROVINCE  
 12300 FOLLY QUARTER ROAD, ELLICOTT CITY, MD 21042  
 (410) 531-1400



REVISIONS

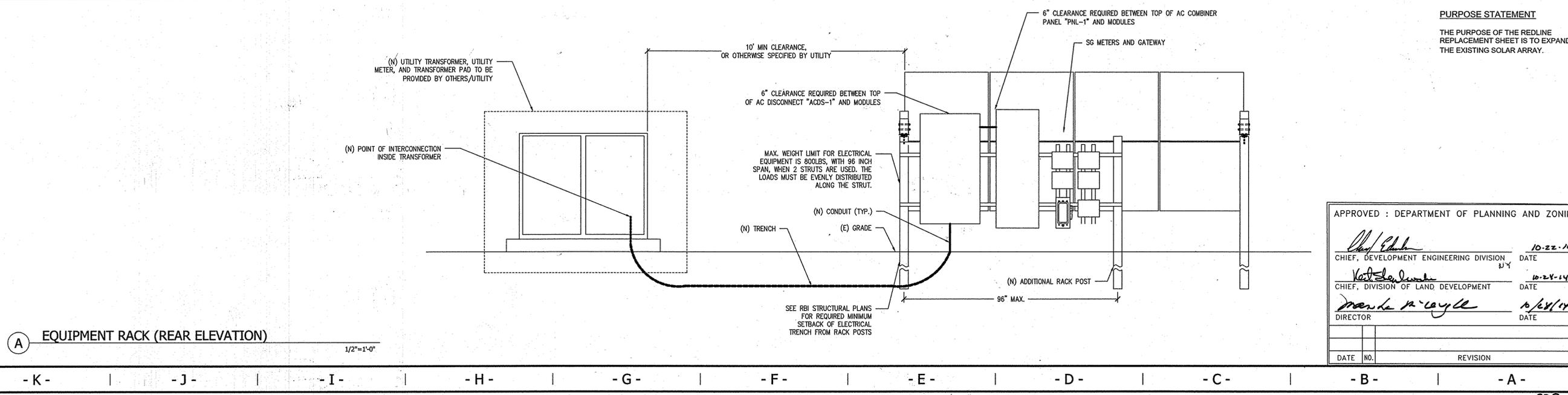
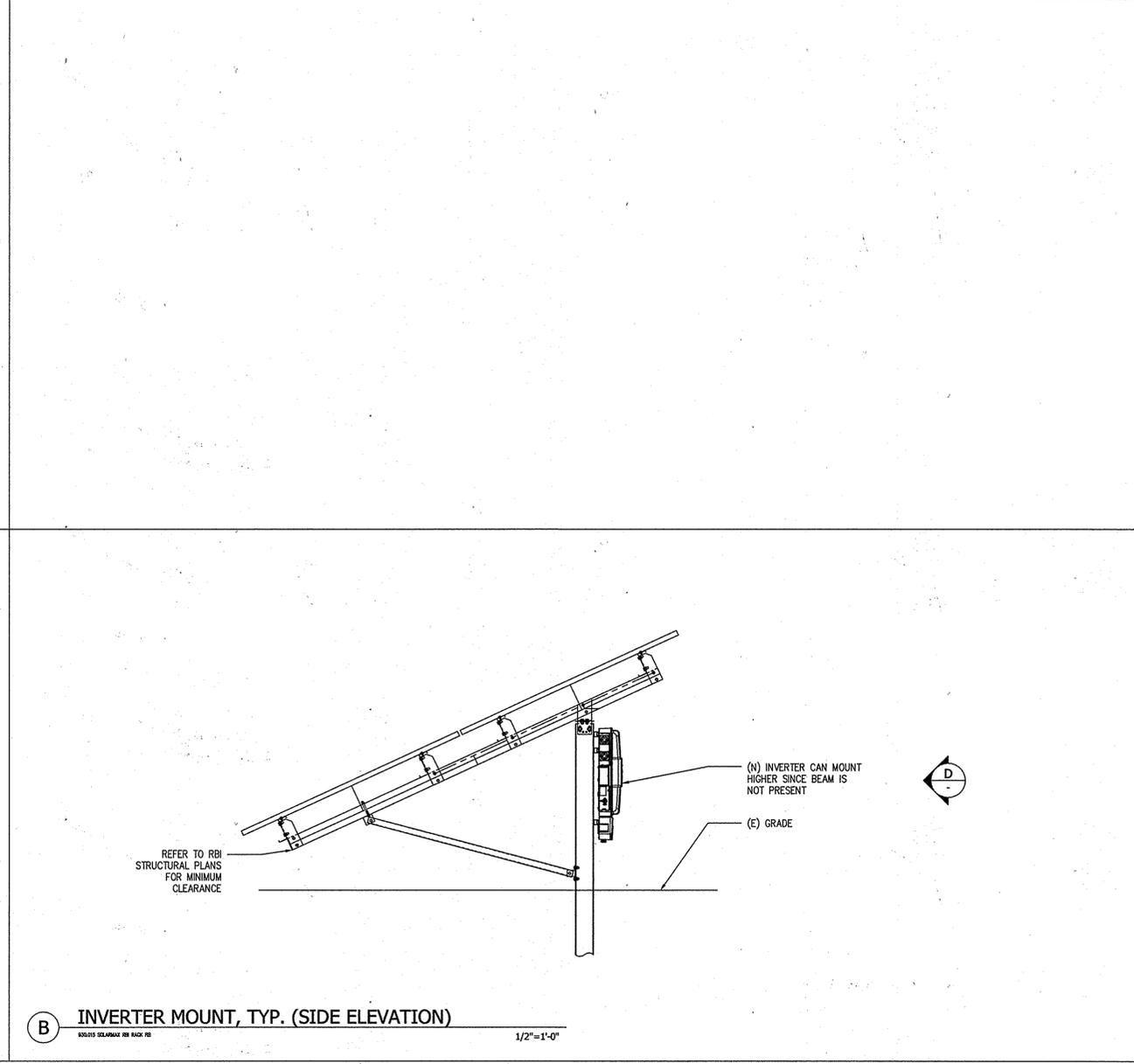
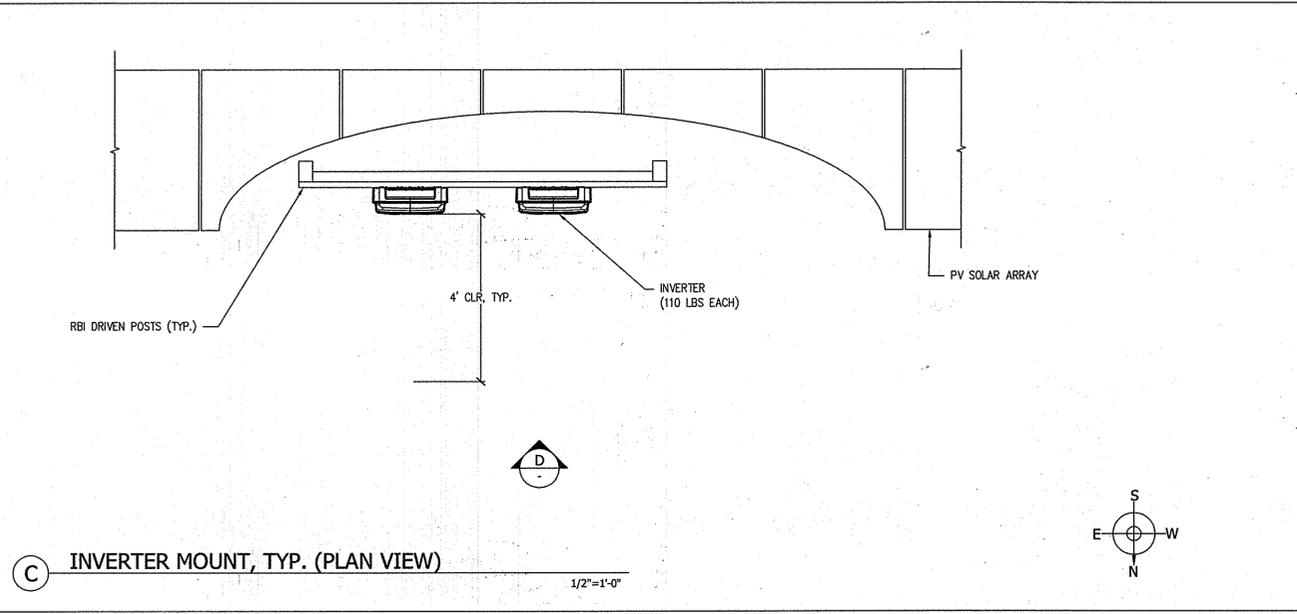
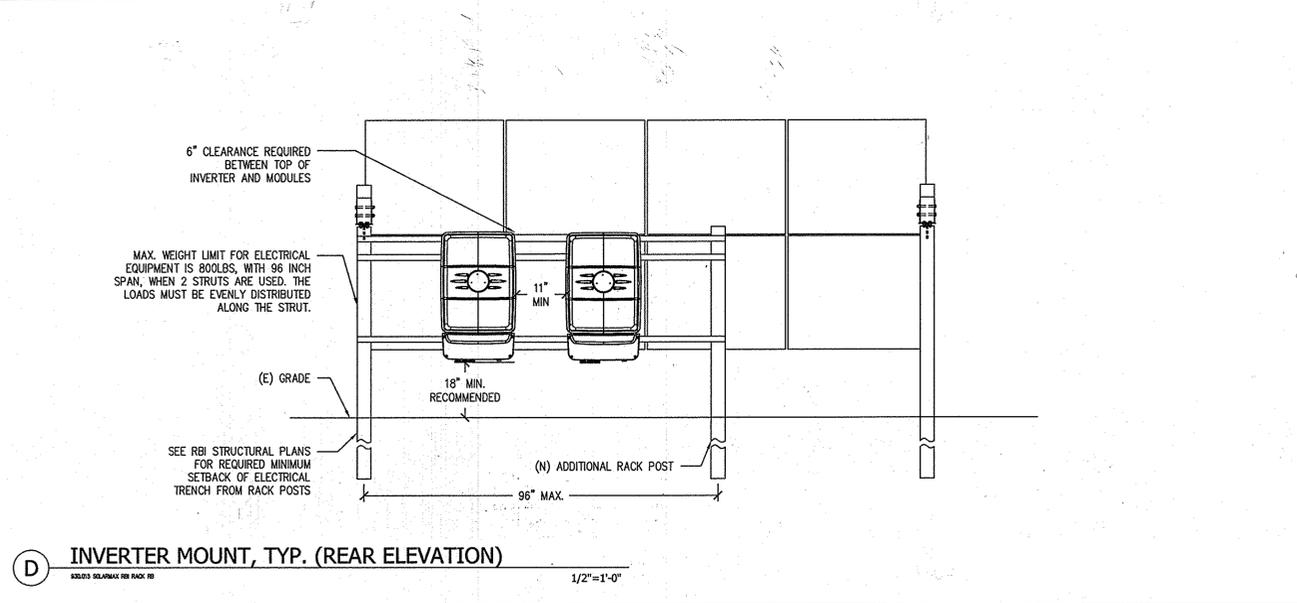
REV	BY	DATE	COMMENTS
REV A	AC	8/28/14	POWER UPDATED TO #10

JOB DETAILS  
 HOWARD COUNTY  
 (800) CANADIAN-SOLAR CS6X-305-P

APPROVED : DEPARTMENT OF PLANNING AND ZONING	DATE	10-22-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	10-28-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	10-28-14
DIRECTOR	DATE	10/28/14

SHEET: 20 OF 20  
 PV 6 A

- K - | - J - | - I - | - H - | - G - | - F - | - E - | - D - | - C - | - B - | - A -



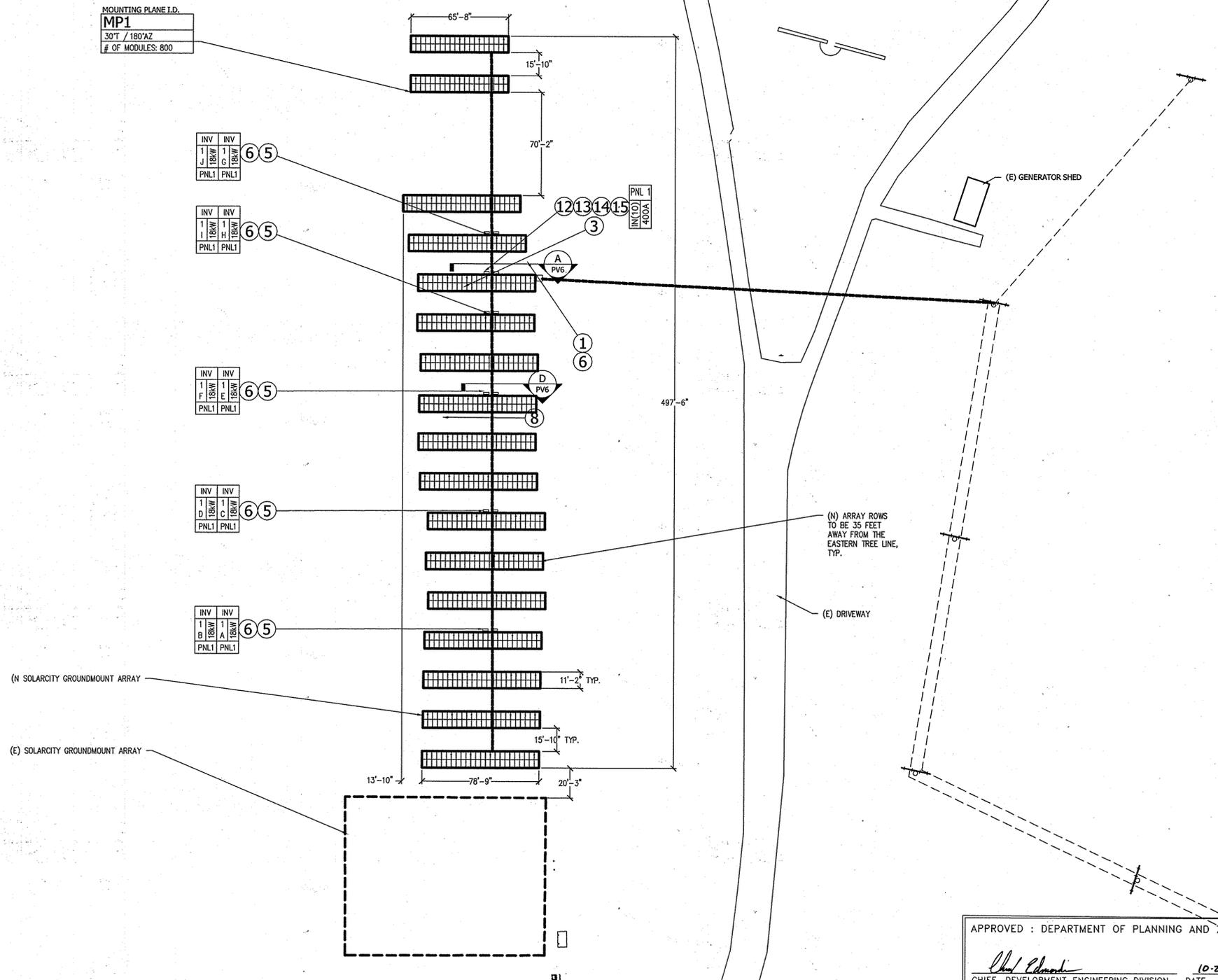
PURPOSE STATEMENT  
 THE PURPOSE OF THE REDLINE REPLACEMENT SHEET IS TO EXPAND THE EXISTING SOLAR ARRAY.

- K - | - J - | - I - | - H - | - G - | - F - | - E - | - D - | - C - | - B - | - A -

- K - | - J - | - I - | - H - | - G - | - F - | - E - | - D - | - C - | - B - | - A -

8  
7  
6  
5  
4  
3  
2  
1

MOUNTING PLANE I.D.  
MP1  
30°T / 180°AZ  
# OF MODULES: 800



- LEGEND**
- (N) GROUND-MOUNTED SOLAR PV MODULES (ELECTRICALLY CONNECTED)
  - DOWN SLOPE
  - (E) GROUND-MOUNTED SOLAR PV ARRAY
  - (E) UTILITY POLE

- KEYED NOTES**
1. (N) UTILITY TRANSFORMER PROVIDED BY OTHERS/UTILITY. POINT OF (N) INTERCONNECTION. WARNING LABEL DETAIL 1/PV12.
  2. (N) UTILITY METER, PROVIDED BY OTHERS/UTILITY.
  3. (N) PV SYSTEM UTILITY AC DISCONNECT, ACDS-1. WARNING LABEL DETAIL 2/PV12. NOT USED.
  4. (N) PV INVERTER. WARNING LABEL DETAIL 8/PV12.
  5. (N) DC DISCONNECT SWITCH(ES) LOCATED AT INVERTER. WARNING LABEL DETAIL 3/PV12. NOT USED.
  6. (N) BORE FOR UNDERGROUND CONDUIT, TYP. NOT USED.
  7. (N) MONITORING EQUIPMENT, SOLARGUARD GATEWAY. NOT USED.
  8. (N) MONITORING EQUIPMENT, SOLARGUARD PV PRODUCTION KWH METER. NOT USED.
  9. (N) MONITORING EQUIPMENT, POWERGUIDE LOAD KWH METER. NOT USED.
  10. (N) AC COMBINER PANEL WARNING LABEL DETAILS 6-7/PV12. NOT USED.
  11. NOT USED.
  12. NOT USED.
  13. NOT USED.
  14. NOT USED.
  15. NOT USED.
  16. NOT USED.
  17. NOT USED.

**SolarCity**  
3055 Clearview Way, San Mateo, CA 94402  
Tel: 650-438-1222 | Fax: 650-438-1223  
(888)-SOL-CITY (765-2489) | www.solarcity.com

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ORDER OF FRIARS MINOR CONVENTUAL  
244 KW GROUND MOUNT PV SYSTEM  
ORDER OF FRIARS MINOR CONVENTUAL,  
ST ANTHONY OF PADUA PROVINCE  
12300 FOLLY QUARTER ROAD, ELLICOTT CITY, MD 21042  
(410) 531-1400

**James A. Ruff**  
Professional Engineer  
No. 11214

REVISIONS

REV	BY	DATE	COMMENTS
REV A	AC	8/28/14	POWER UPDATED TO #10

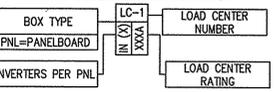
JOB DETAILS

ALL: Howard County  
WORKS: (800) CANADIAN SOLAR CS6X-305-P

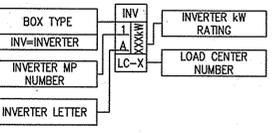
INSTALLATION SYSTEM: GROUND MOUNT  
PROJECT: (10) SolarMax # MTA 18  
DESIGN: ALLEN CHANG

ORDERED BY: [ ]  
MARKET: COMM PROJECT MANAGER: MATT GITT  
DATE: 7/21/2014 PERMIT TYPE: PPA  
SHEET NAME: ARRAY PLAN  
JOB NUMBER: JB-210889-00  
SHEET 19 OF 20 REV: PV 3 A

**INVERTER PANEL BOARD NUMBERING SYSTEM**



**INVERTER NUMBERING SYSTEM**



**PURPOSE STATEMENT**  
THE PURPOSE OF THE REDLINE REPLACEMENT SHEET IS TO EXPAND THE EXISTING SOLAR ARRAY.

APPROVED : DEPARTMENT OF PLANNING AND ZONING

*Chad Almond* 10-22-14  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

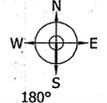
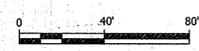
*Kevin Deane* 10-24-14  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Thomas M. Long* 10/24/14  
DIRECTOR DATE

DATE	NO.	REVISION

ARRAY PLAN

1" = 40'-0"



- K - | - J - | - I - | - H - | - G - | - F - | - E - | - D - | - C - | - B - | - A -

# 244 KW SOLAR PV SYSTEM FOR ORDER OF FRIARS MINOR CONVENTUAL, ST. ANTHONY OF PADUA PROVINCE

## APN: 1403285332

### PROJECT TEAM

DESIGN PROFESSIONAL  
IN RESPONSIBLE CHARGE:

ALLEN CHANG  
SOLARCITY, INC.  
3055 CLEARVIEW WAY  
SAN MATEO, CA 94402  
TEL: (888) 765-2489 x55783  
FAX: (650) 362-2136  
ACHANG@SOLARCITY.COM

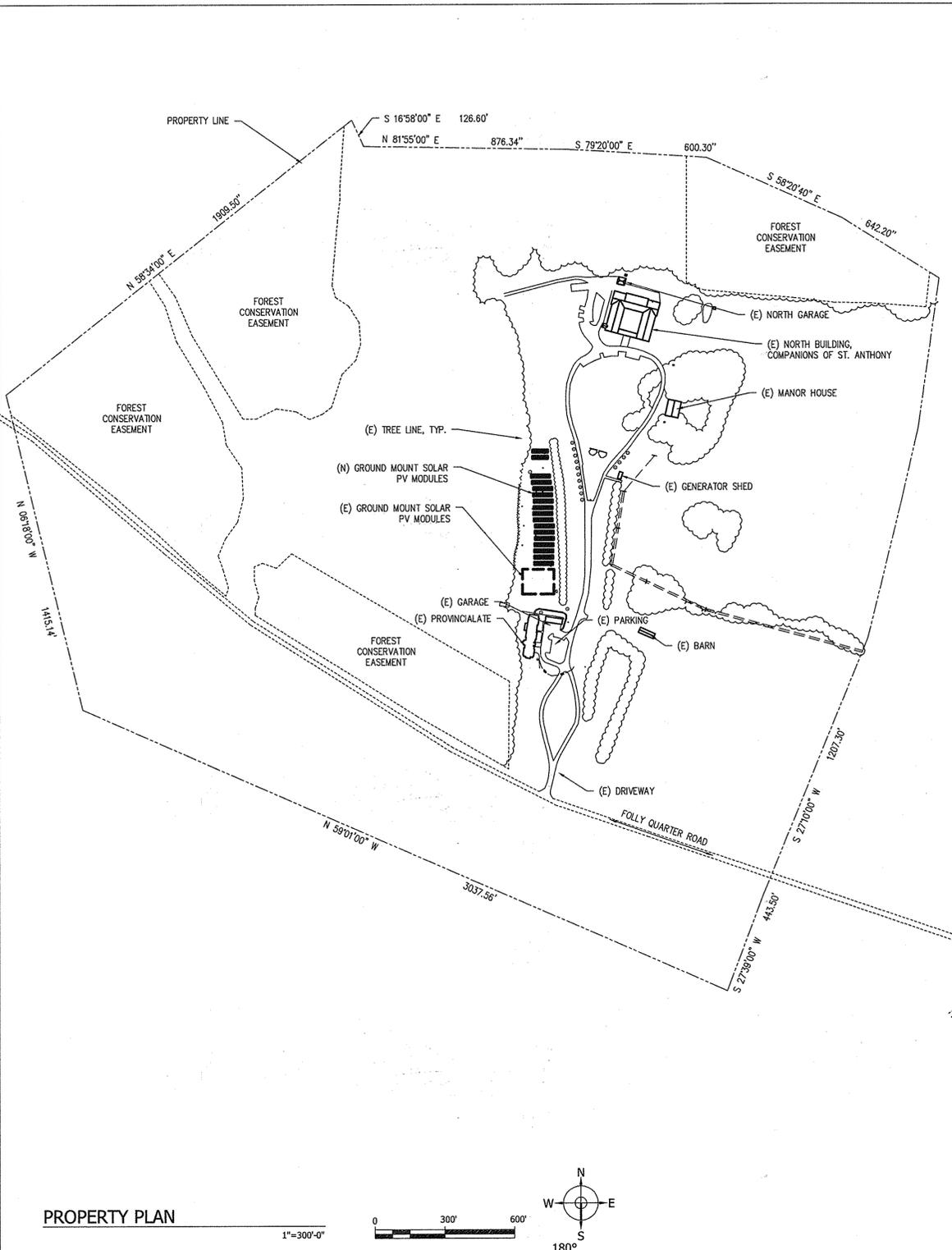
ELECTRICAL ENGINEER:

MATTHEW BAILEY  
SOLARCITY, INC.  
3055 CLEARVIEW WAY  
SAN MATEO, CA 94402  
TEL: (720) 292-1521  
FAX: (650) 362-2136  
MBAILEY@SOLARCITY.COM

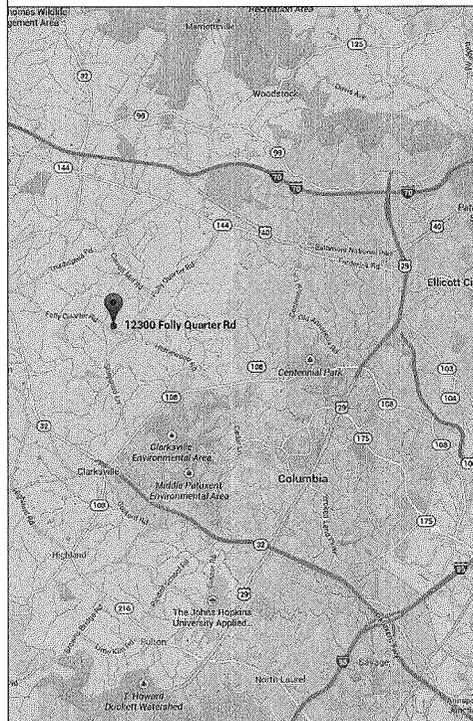


3055 Clearview Way, San Mateo, CA 94402  
Tel: (888) 765-2489 | Fax: (650) 362-2136  
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RESPECTIVE SOLARCITY EQUIPMENT,  
WITHOUT THE WRITTEN PERMISSION OF  
SOLARCITY INC.



### VICINITY MAP



### AERIAL MAP



### GENERAL NOTES

ALL WORK SHALL COMPLY WITH ALL STATE AND LOCAL CODES AND ANY OTHER REGULATING AUTHORITIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK.

DRAWINGS HAVE BEEN DETAILED IN COMPLIANCE WITH UL LISTING REQUIREMENTS, OSFM SOLAR PHOTOVOLTAIC INSTALLATION REQUIREMENTS, AND BUILDING CODES FOR THE MATERIALS SPECIFIED.

PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND NOTIFY THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FROM SOLARCITY OF ANY DISCREPANCIES. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED AT THE SUBCONTRACTORS SOLE EXPENSE.

SUBCONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO SOLARCITY FOR APPROVAL BEFORE MAKING ANY CHANGES. DEVIATION FROM PLANS BEFORE WRITTEN APPROVAL FROM SOLARCITY PLACES LIABILITY ON THE SUBCONTRACTOR.

ALL EQUIPMENT SHALL BE MOUNTED AS SHOWN. WHERE DETAILS ARE NOT PROVIDED, CONTRACTOR SHALL USE STANDARD CONSTRUCTION PRACTICES.

ALL SURFACES SHALL BE PATCHED AND PAINTED AROUND NEW DEVICES AND EQUIPMENT TO MATCH EXISTING FINISHES.

ANY METAL SHAVINGS FROM SITE WORK SHALL BE CLEANED FROM ALL SURFACES WHERE OXIDIZED OR CONDUCTIVE METAL SHAVINGS MY CAUSE RUST, ELECTRICAL SHORT CIRCUITS, OR OTHER DAMAGE.

BEAMS OR PURLINS SHALL NOT BE DRILLED UNLESS AUTHORIZED BY SOLARCITY OR SHOWN IN THE DRAWINGS.

APPROVALS FROM BUILDING INSPECTORS SHALL NOT CONSTITUTE AUTHORITY TO DEVIATE FROM THE DRAWINGS.

### ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BLDG	BUILDING
CLR	CLEAR
CONC	CONCRETE
DC	DIRECT CURRENT
DIA	DIAMETER
DIST	DISTANCE
EQ	EQUAL
EGG	EQUIPMENT GROUNDING CONDUCTOR
(E)	EXISTING
EA	EACH
EMT	ELECTRICAL METALLIC TUBING
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
HDG	HOT DIPPED GALVANIZED
I	CURRENT
Imp	CURRENT AT MAX POWER
INVS	INVERTERS
Isc	SHORT CIRCUIT CURRENT
kVA	KILOVOLT AMPERE
kWh	KILOWATT-HOUR
LBW	LOAD BEARING WALL
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OC	OVERCURRENT PROTECTION
PL	PROPERTY LINES
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
SCH	SCHEDULE
SQ. IN.	SQUARE INCHES
SS	STAINLESS STEEL
SSD	SEE STRUCTURAL DRAWINGS
STC	STANDARD TESTING CONDITIONS
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
VIF	VERIFY IN FIELD
V	VOLT
Vmp	VOLTAGE AT MAX POWER
Voc	VOLTAGE AT OPEN CIRCUIT
W	WATT
3R	NEMA 3R, RAIN/TIGHT

### SYSTEM SUMMARY

MODULE: (800) CANADIAN SOLAR CS6X-305-P  
INVERTER: (10) SOLARMAX MTA 18KW  
RACK TYPE: RBI  
ARRAY TILT: 180  
AZIMUTH: 30  
**DESIGN CRITERIA**  
GROSS ARRAY AREA: 30,360 SQFT  
WIND SPEED: 90 MPH  
EXPOSURE: CATEGORY B  
SNOW LOAD: 30 PSF

### CODE SUMMARY

**BUILDING CODE**  
ALL WORK SHALL COMPLY WITH THE 2012 INTERNATIONAL BUILDING CODE.

**ELECTRICAL CODE**  
ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2011 NATIONAL ELECTRIC CODE.

### INDEX

PV1	COVER SHEET
PV2	ELECTRICAL SITE PLAN
PV3	ARRAY PLAN
PV4	ACCESS PLAN
PV5	DEMOLITION PLAN
PV6	EQUIPMENT MOUNTING DETAILS
PV7	EQUIPMENT DETAILS
PV8	ELECTRICAL SYMBOLS & NOTES
PV9	LINE DIAGRAM
PV10	LINE DIAGRAM
PV11	MONITORING LINE DIAGRAM
PV12	WARNING LABELS

RBI GROUND MOUNT RACKING  
DRAWINGS AND CALCULATIONS BY  
OTHERS

### PURPOSE STATEMENT

THE PURPOSE OF THE REDLINE REPLACEMENT SHEET IS TO EXPAND THE EXISTING SOLAR ARRAY.

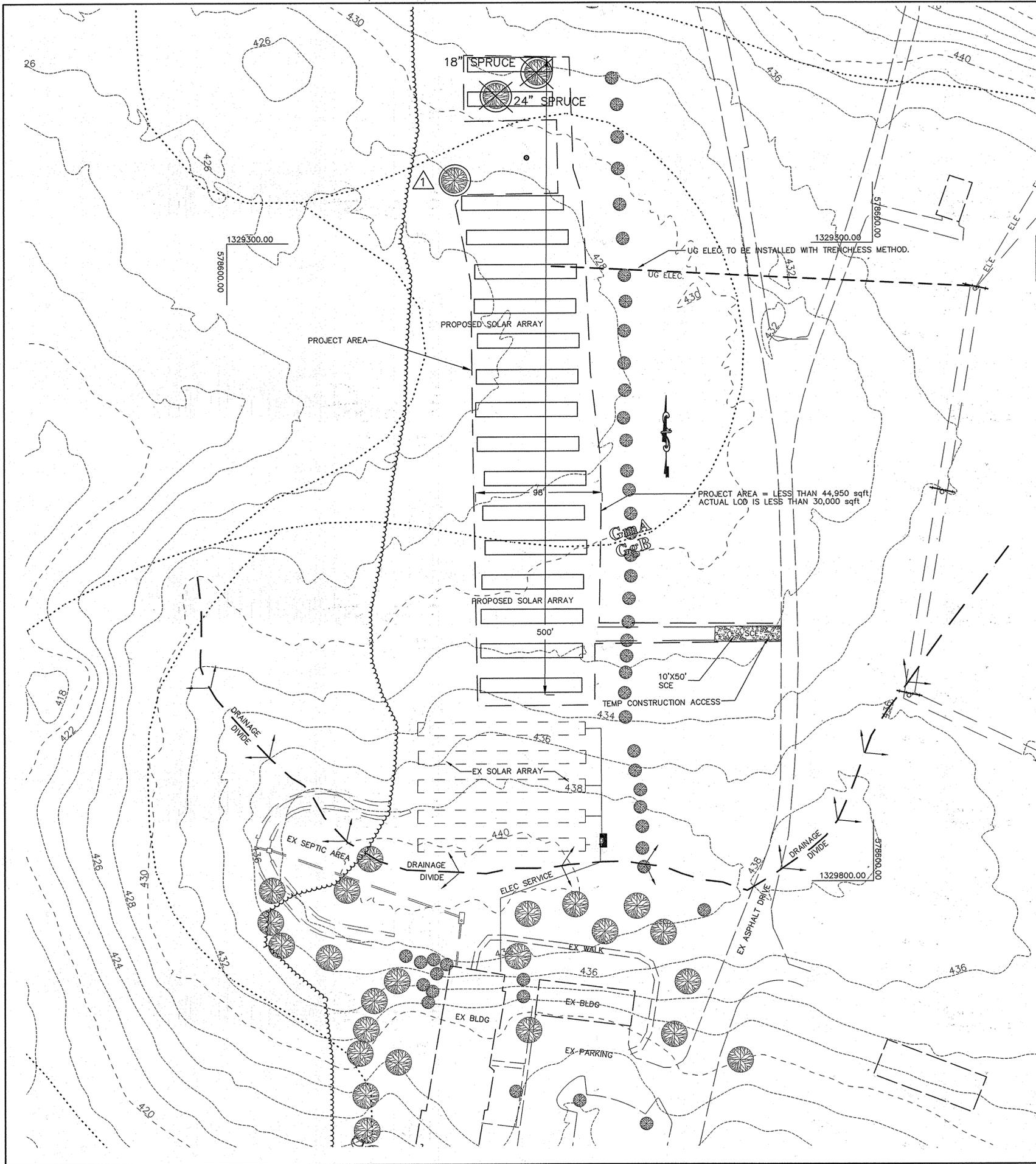
APPROVED : DEPARTMENT OF PLANNING AND ZONING

	DATE	10-22-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	10-22-14
	DATE	10-24-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	10-24-14
	DATE	10/24/14
DIRECTOR	DATE	10/24/14
DATE	NO.	REVISION

ORDER OF FRIARS MINOR CONVENTUAL  
244 KW GROUND MOUNT PV SYSTEM  
ORDER OF FRIARS MINOR CONVENTUAL,  
ST ANTHONY OF PADUA PROVINCE  
12300 FOLLY QUARTER ROAD, ELICOTT CITY, MD 21042  
(410) 531-1400



REVISIONS		
REV	BY	DATE
REV A	AC	8/28/14
		COMMENTS
		PWMRE UPDSED TO #10
JOB DETAILS		
JOB NO.		
COUNTY		
ADDRESS		
(800) CANADIAN SOLAR CS6X-305-P		
MOUNTING SYSTEM		
GROUND MOUNT		
INVERTER		
(10) SolarMax # MTA 18		
ESDR ALLEN CHANG		
CHECKED BY		
MARKET		
COMM		
PROJECT MANAGER		
MATT GITT		
DATE		
7/21/2014		
PAYMENT TYPE		
PPA		
SHEET NAME		
COVER SHEET		
JOB NUMBER		
JB-210889-00		
SHEET		
18 OF 20		
PV 1		
A		



PRIOR TO VEHICLES LEAVING THE SITE, WHEELS SHALL BE CLEANED OR WASHED TO REMOVE SEDIMENT. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ONTO ROAD MUST BE REMOVED IMMEDIATELY BY VACUUMING, SCRAPING OR SWEEPING. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE THAT DRAINS TO AN APPROVED SEDIMENT CONTROL DEVICE.

- SITE STABILIZATION AND SEEDING:**
- TOPSOIL, SEED, FERTILIZE, LIME AND STABILIZE WITH STRAW ALL DISTURBED AREAS FLATTER THAN 3:1 SLOPE. SEED, FERTILIZE, LIME AND STABILIZE WITH SLOPE PROTECTION MATTING ALL DISTURBED AREAS THAT ARE STEEPER THAN 3:1 SLOPE.
  - TOPSOIL, SEED MIXTURE AND APPLICATION SHALL BE IN CONFORMANCE WITH PERMANENT SEEDING SUMMARY

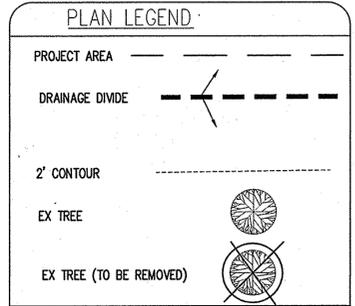
**SEQUENCE OF CONSTRUCTION**

1. OBTAIN ALL REQUIRED PERMITS, SCHEDULE AND ATTEND THE PRECONSTRUCTION MEETING. (1 DAY)
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE AT EDGE OF EXISTING PAVEMENT OFF PRIVATE DRIVE. (1 DAY)
3. WITH INSPECTORS APPROVAL BEGIN INSTALLATION OF SOLAR ARRAY.
4. AS ARRAY IS INSTALLED STABILIZE WITH PERMANENT SEEDING.
5. WITH PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.

**PURPOSE STATEMENT**

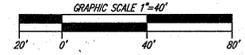
THE PURPOSE OF THE REDLINE REPLACEMENT SHEET IS TO EXPAND THE EXISTING SOLAR ARRAY.

- SOILS SUMMARY**
- GgB - Glenelg Loam - B soils Type
  - GmA - Glenville Silt Loam - A soils Type



**BENCH MARK**  
 HOWARD COUNTY CONTROL  
 STATION 0040  
 N 577,270.615  
 E 1,332,002.601  
 ELEV. 365.329

HOWARD COUNTY CONTROL  
 STATION 0019  
 N 580,468.1331  
 E 1,333,675.522  
 ELEV. 395.870



**PHASE II PHOTOVOLTAIC PLAN**  
 SCALE: 1" = 40'

APPROVED : DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	10-22-14 DATE
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	10-24-14 DATE
<i>[Signature]</i> DIRECTOR	10/24/14 DATE

DATE	NO.	REVISION
OWNER NOVIATIE OF FRANCISCAN FATHERS MINOR COVENTUALS OF MARYLAND, INC. 12290 FOLLY QUARTER ROAD ELLCOTT CITY, MARYLAND 21042		

DEVELOPER		
-----------	--	--

PROJECT	FRANCISCAN FRIARS PARKING ADDITION
---------	---------------------------------------

AREA	TAX MAP 22 GRID 24 PARCEL 46 ZONING: RC-DEO 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
------	-------------------------------------------------------------------------------------------------

TITLE	REVISED SITE DEVELOPMENT PLAN GRADING, SEDIMENT CONTROL/SWM PHOTOVOLTAIC PLAN - PHASE II
-------	------------------------------------------------------------------------------------------------

**P.H.R.A.** Patton Harris Rust & Associates  
 Engineers, Surveyors, Planners, Landscape Architects  
 A Pennoni Company 8818 Centre Park Drive, Suite 200, Columbia, MD, 21045  
 Tel: 410-997-8900 Fax: 410-997-9282

SEAL	DESIGNED BY : JAR
	DRAWN BY: JN
	PROJECT NO : SOLR1205
	DATE : 10/17/14
	SCALE : 1"=40'
BY: <i>[Signature]</i> James A. Ruff PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 21774, EXPIRATION DATE: 11-10-2015	DRAWING NO. 17 OF 20