

SHEET INDEX	
NO	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE OF STEPHENS ROAD
3	ROAD PLAN AND PROFILES
4	GRADING, SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
5	PROFILES AND DETAIL SHEET
6	SWM DETAILS AND PROFILES
7	SEDIMENT CONTROL DETAILS
8	NOTES
9	LANDSCAPE PLAN
10	LANDSCAPE PLAN AND TABULATIONS
11	LANDSCAPE DETAILS
12	FOREST CONSERVATION PLAN
13	FOREST CONSERVATION PLAN

EMERSON

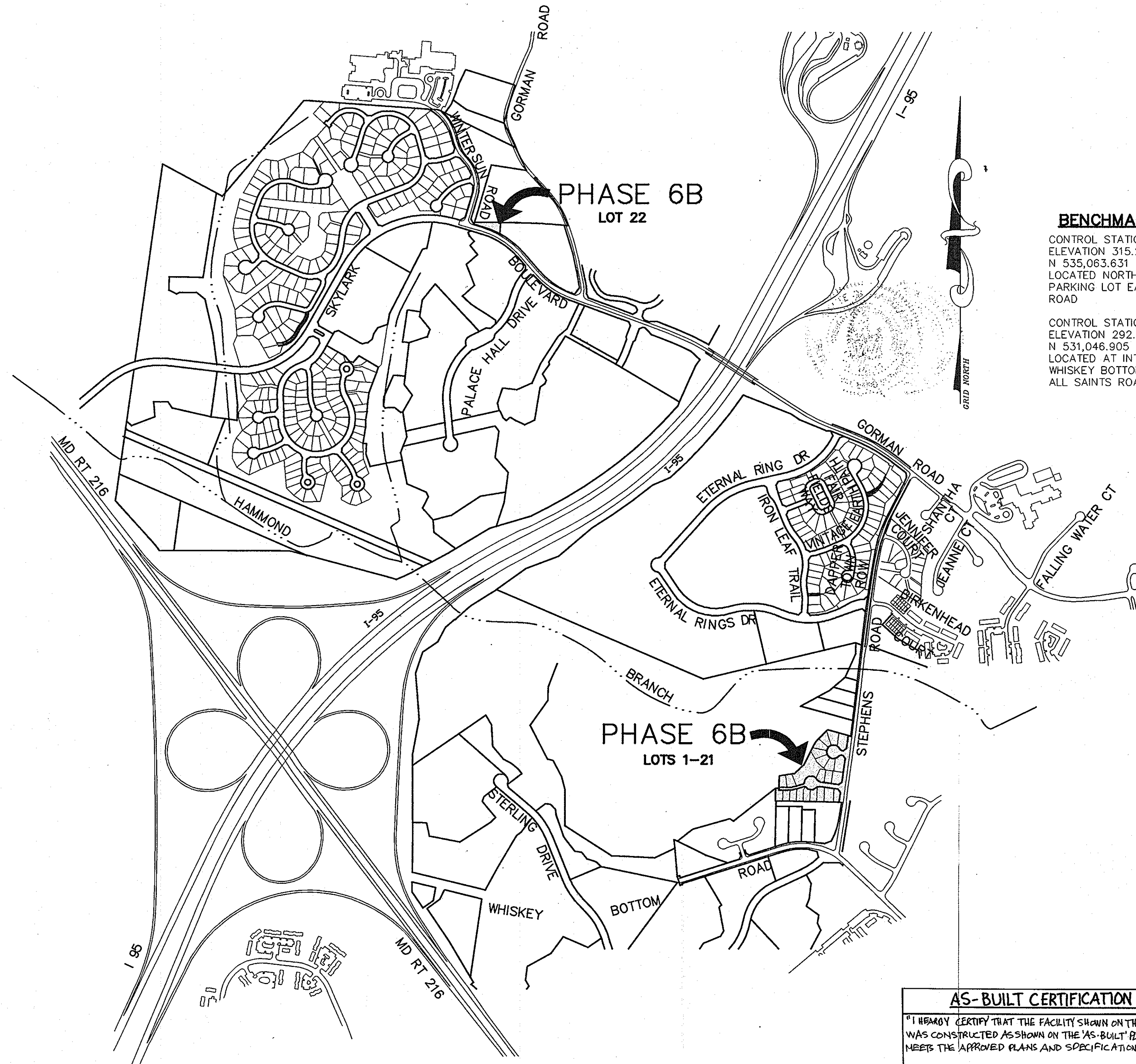
SECTION 2 PHASE 6B LOTS 1 THRU 22

6th ELECTION DISTRICT

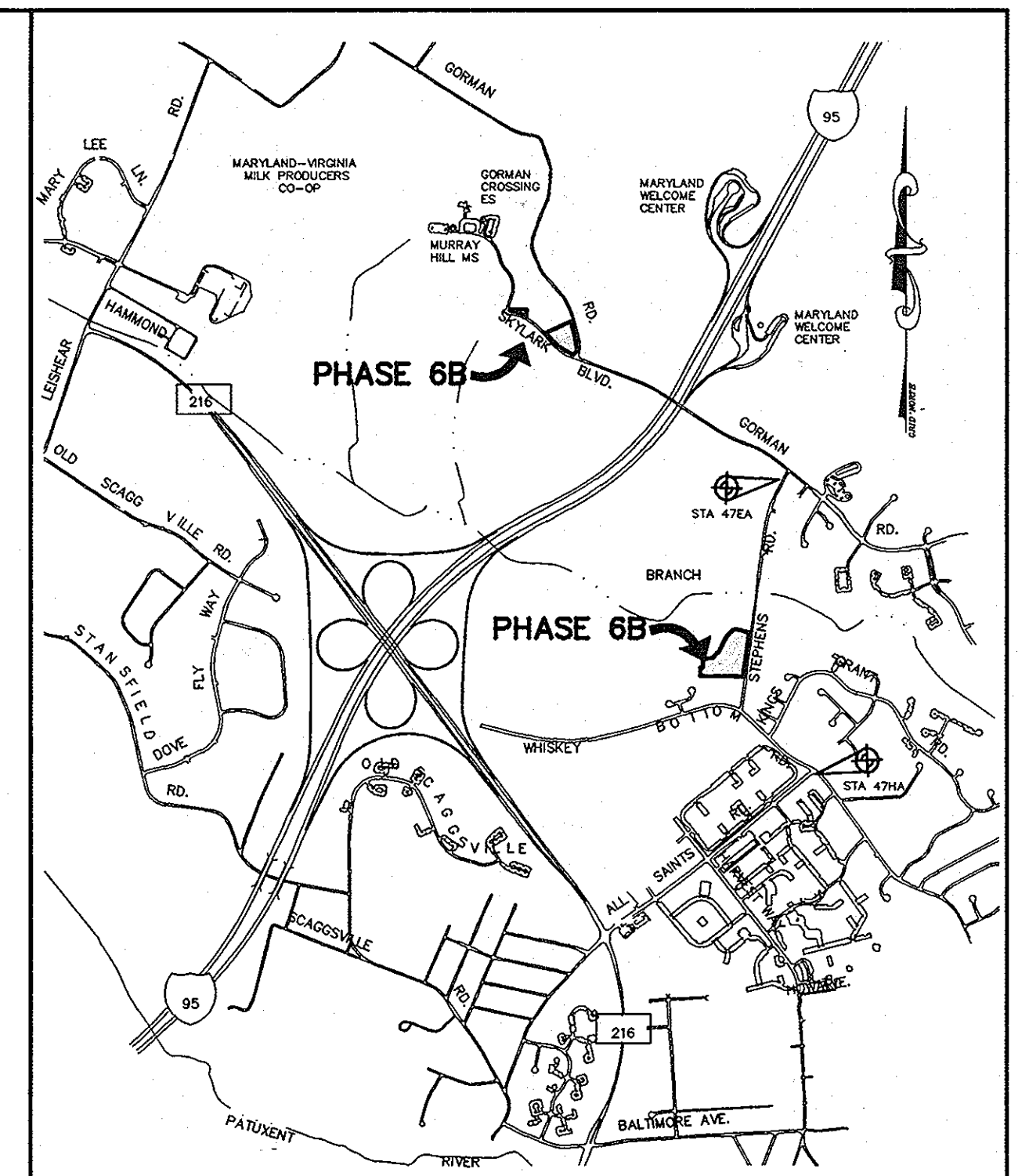
HOWARD COUNTY, MARYLAND

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" 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 TO ANY EXCAVATION WORK BEING DONE.
- 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.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS, (JANUARY 1998)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY MAPS WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY AIR SURVEY CORP. FLOWN IN APRIL 1998.
- 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. 47 E4 ALONG WITH 2 TRAVERSE POINTS WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC.
- SEWER IS PUBLIC.
- THE STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED BY A PROPOSED SWM POND, POCKET POOL, HAZARD CLASS "A" TO BE PUBLICLY OWNED AND JOINTLY MAINTAINED BY THE HOA AND HOWARD COUNTY.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL 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.
- THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY DAFT McCUNE & WALKER, INC.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY WELLS & ASSOCIATES DATED FEBRUARY 2000.
- THE NOISE STUDY FOR THIS PROJECT WAS PREPARED BY CENTURY ENGINEERING DATED MARCH 1999.
- THIS PROJECTS FALLS UNDER THE APPROVED AFPO STUDY OF S-99-12.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY DAFT, McCUNE & WALKER, INC. JULY 2000.
- SUBJECT PROPERTY ZONED PEC-MXD-3 PER ZONING BOARD CASE ZB-979-M.
- 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: S-99-12, PB-339, ZB-979-M, P-02-22, PB-359, P-04-014.
- 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 RIGHT 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 AMENDMENTED STEEL REINFORCEMENTS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOL. III. ALL 60' RIGHT OF WAYS 30 M.P.H.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T160.
- ALL STREET CURB RETURNS SHALL HAVE 35' RADII UNLESS OTHERWISE NOTED.
- ALL STREET LIGHTS SHALL BE LOCATED BETWEEN 2'-0" AND 4'-0" BEHIND FACE OF CURB.
- STREET TREES LOCATION, TYPE AND NUMBER OF TREES SHOWN ON THIS PLAN ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS INCLUDING 20' CLEARANCE OF ANY STREET LIGHT AND SHALL BE IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. BOND RELEASE IS CONTINGENT UPON SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.
- STREAM BUFFERS ARE DETERMINED BY LAND USE ADJOINING THE OPEN SPACE. EMPLOYMENT USE = 50' BUFFER FROM ANY STREAM. RESIDENTIAL USES= 50' BUFFER FOR INTERMITTENT STREAMS AND 75' BUFFER FOR PERENNIAL STREAMS.
- THERE ARE NO KNOWN CEMETARIES OR GRAVE SITES ON THIS PROPERTY.
- SOIL MAP #33.
- THE LIMITS OF ALL STREAMS AND WETLANDS SHOWN HEREON HAVE BEEN APPROVED BY THE US ARMY CORPS OF ENGINEERS WITH JURISDICTIONAL DETERMINATION # CENAB-OP-RMS00-61707-11, DATED APRIL 13, 2001.
- THE WATER MANAGEMENT ADMINISTRATION INTENDS TO ISSUE A MODIFICATION OF AUTHORIZATION FOR THE PROPOSED WORK WITHIN THE FLOODPLAIN AND STREAM AREA. NON-TIDAL WETLANDS AND WATERWAYS PERMIT NO. 01-NI-0222/200164-079.
- THERE IS NO 100 YEAR FLOODPLAIN ON THIS SITE.
- DEVELOPMENT OF EMERSON 2, SECTION 6B UNDER THE CURRENT FOREST CONSERVATION ACT PROPOSES APPROXIMATELY 5.60 ACRES OF FOREST CLEARING, NO FOREST RETENTION, AND 0.23 ACRES OF REFORESTATION. WHEN EVALUATED CUMULATIVELY WITH PREVIOUS PHASES OF THE PROJECT, 67.33 ACRES OF CLEARING, 53.93 ACRES OF RETENTION, AND 13.52 ACRES OF REFORESTATION IS PROPOSED. THE CUMULATIVE REFORESTATION OBLIGATION IS 10.15 ACRES.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.



OVERALL MAP
SCALE: 1"=600'



VICINITY MAP
SCALE: 1"=2000'

BENCHMARKS

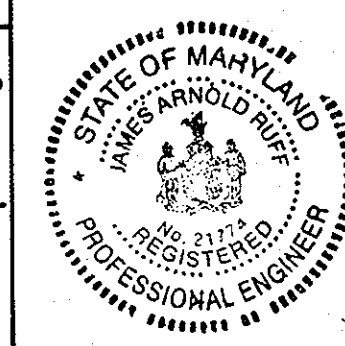
- CONTROL STATION 47EA
ELEVATION 315.266
N 535,063.631 E 1,357,283.989
LOCATED NORTH OF SCHOOL
PARKING LOT EAST OF GORMAN
ROAD
- CONTROL STATION 47HA
ELEVATION 292.292
N 531,046.905 E 1,356,987.631
LOCATED AT INTERSECTION OF
WHISKEY BOTTOM ROAD AND
ALL SAINTS ROAD

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Walter J. ...</i>	7-20-05 DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Judy Hamilton</i>	8/1/05 DATE
<i>William ...</i>	7/21/05 DATE
DATE	NO. REVISION
OWNER/DEVELOPER	
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT	
EMERSON SECTION 2 PHASE 6B, LOTS 1 THRU 22	
AREA	
TAX MAP 47 BLOCK 8 & 9 ZONED: PEC-MXD-3 PARCEL: 462 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	
TITLE SHEET AS-BUILT	

AS-BUILT CERTIFICATION

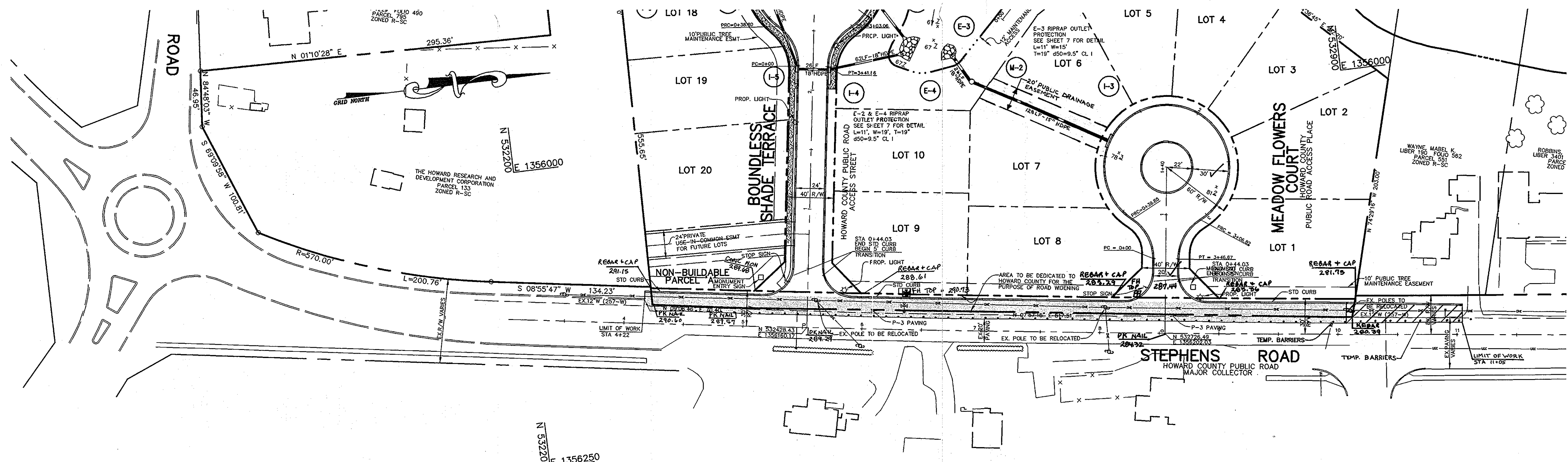
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JAMES A. RUFF #21914
DATE 3/23/11



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21174. EXPIRATION DATE: 11-10-11

 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
4-8-05 DATE	DESIGNED BY : A.C.R.
	DRAWN BY : DAM
	CHECKED BY : C.J.R.
	PROJECT NO: 22456/1-4 "FINAL" C-RDCOV
	DATE : APRIL 8, 2005
	SCALE : AS SHOWN
CHRISTOPHER J. REID #19949	DRAWING NO. 1 OF 13



PLAN
SCALE: 1"=50'

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

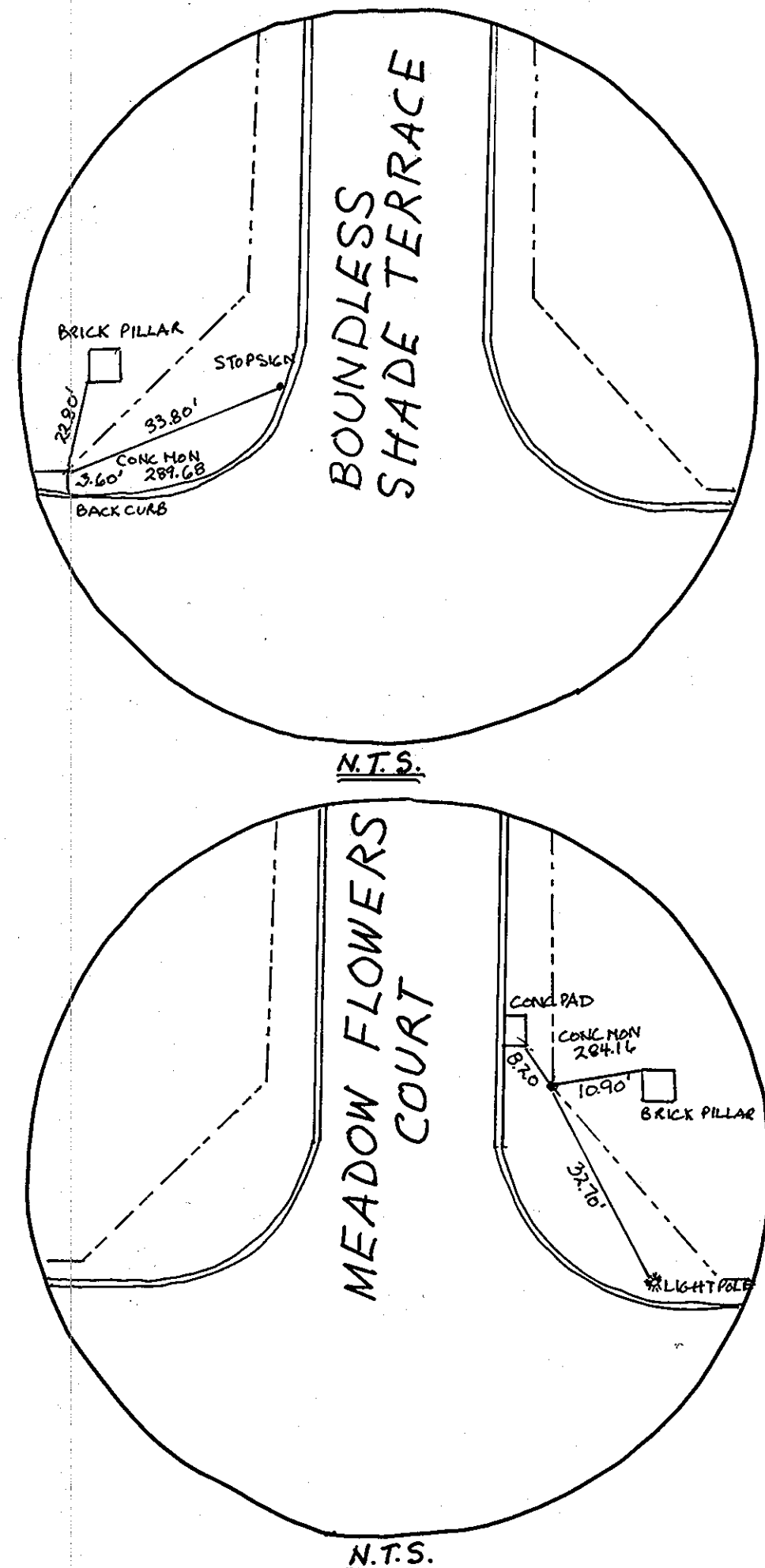
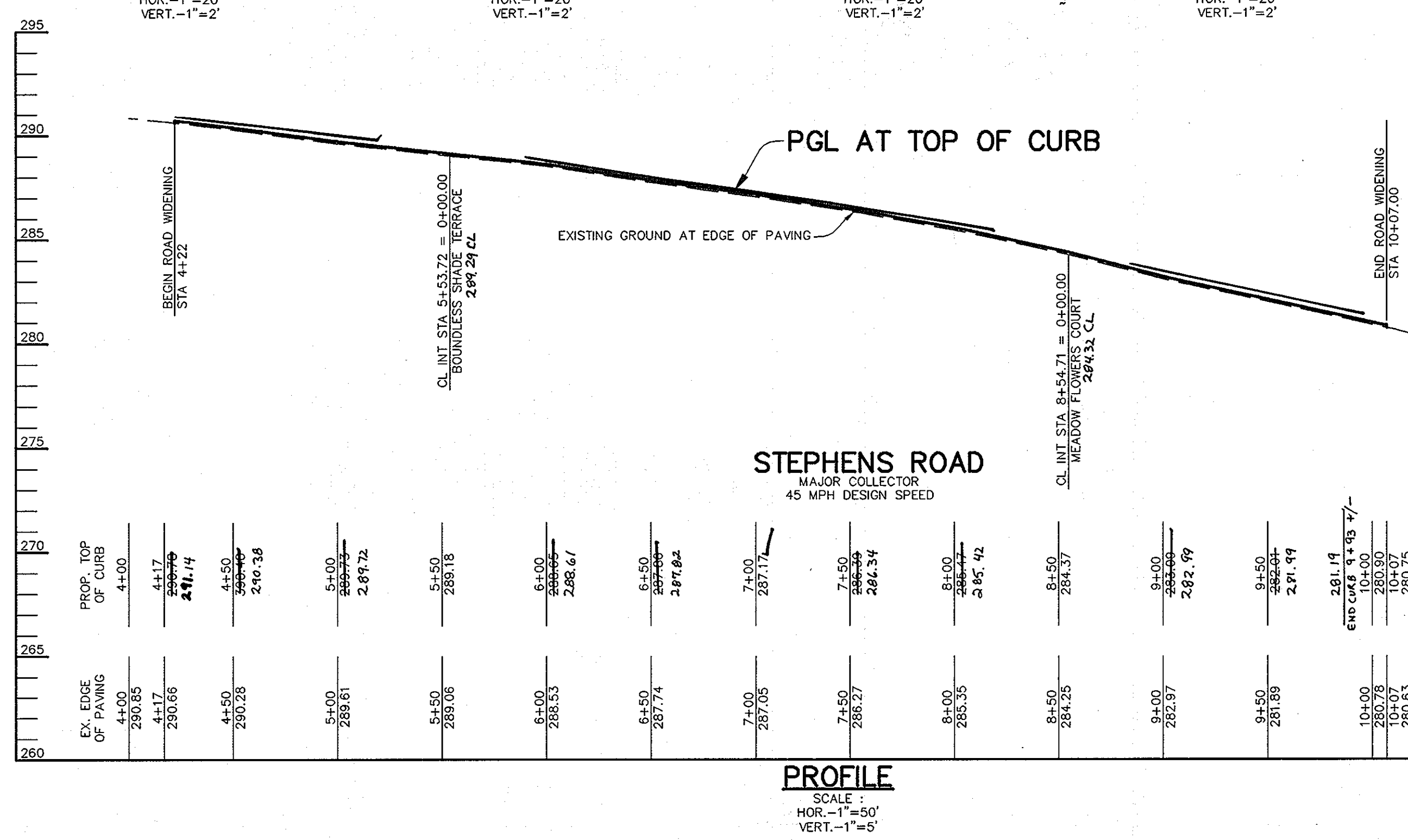
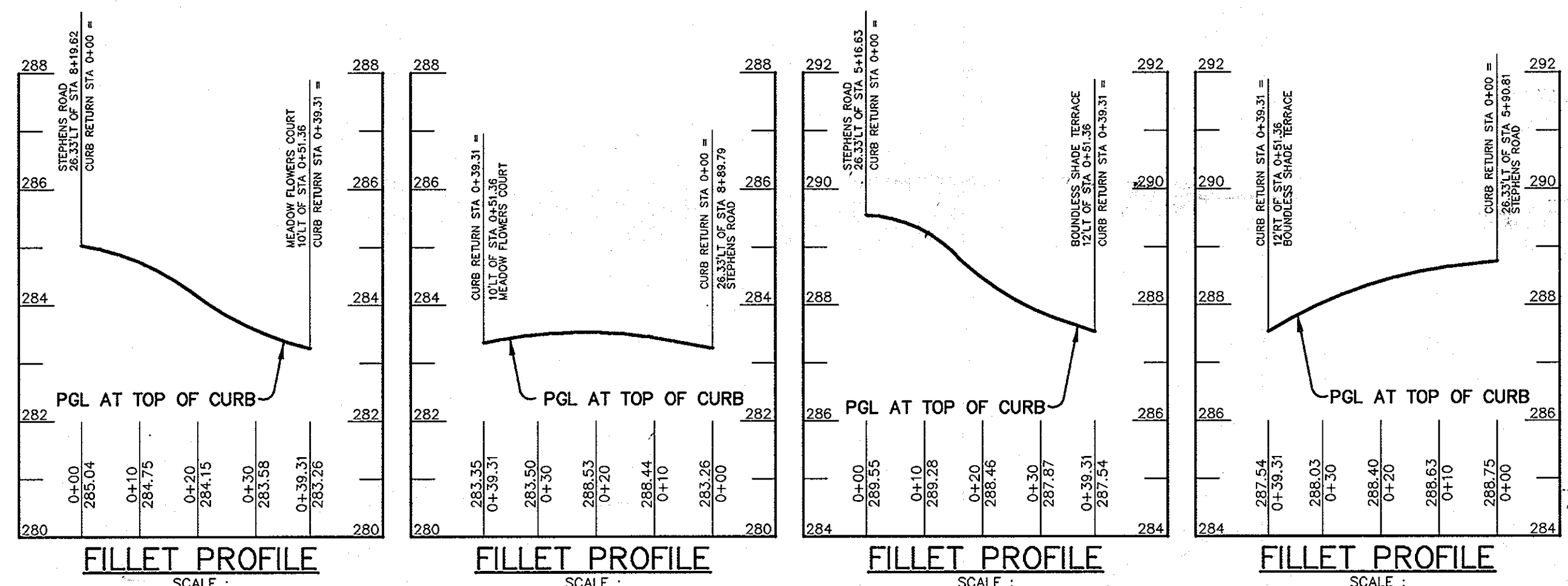
IMPORTANT: THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES AT THE BEGINNING OF SHEETS NO. 40-10A-10.

NOTE: FLAGGER SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLASHER SIGN.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- FLAGGER

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
FLAGGING OPERATION/2-LANE 2-WAY
EOL/LESS THAN 40 MPH/15 MIN-12 HRS. OR DAYTIME ONLY
STANDARD NO. MD D43-02



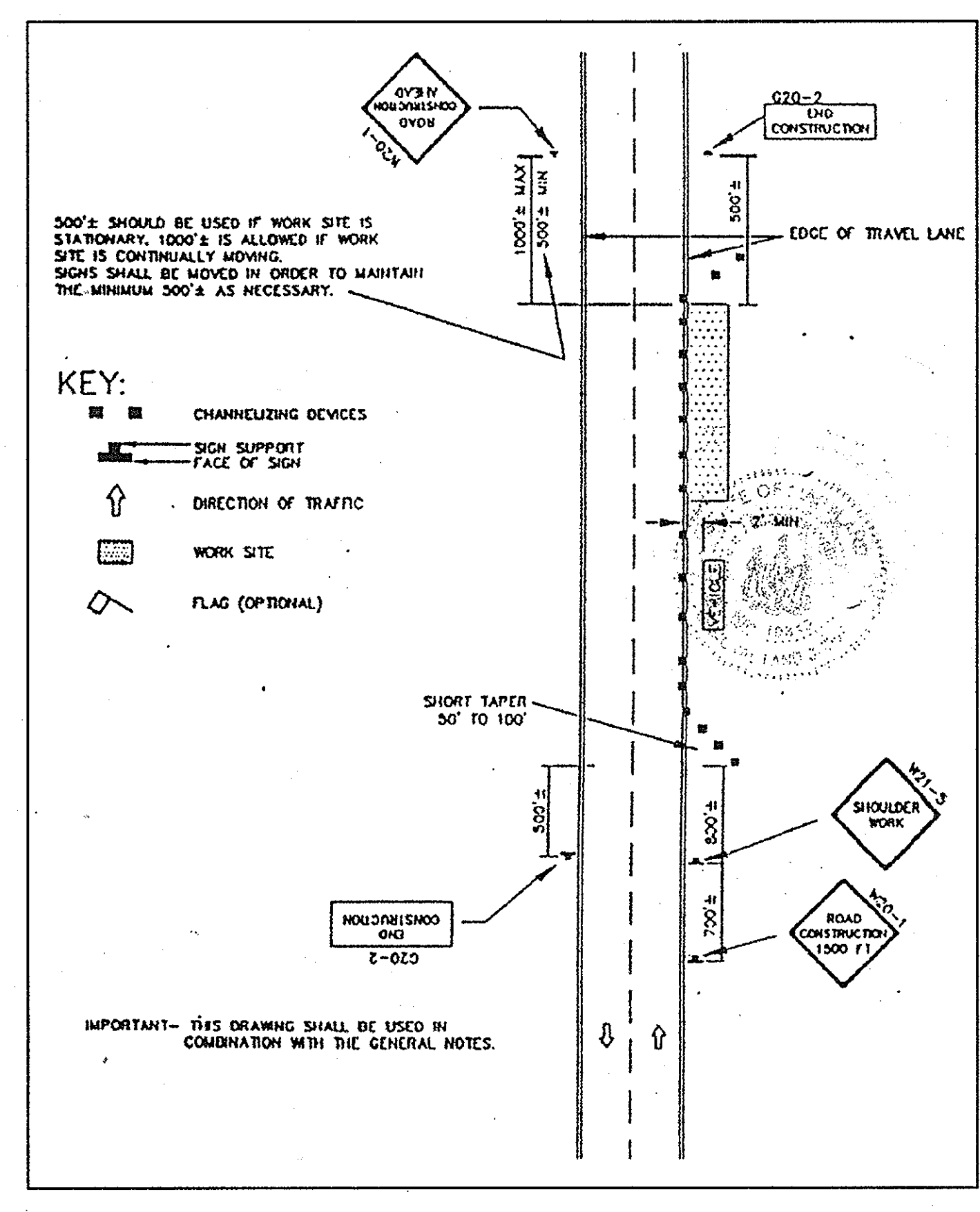
AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JAMES A. RUFF #21774
MD DE. No. 3-23-11
DATE

STATE OF MARYLAND
JAMES A. RUFF
PROFESSIONAL ENGINEER

AS-BUILT
SHANABERGER + LANE
8726 TOWN + COUNTRY BLVD.
SUITE 201
BLLICOTT CITY, MD 21043



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

APPROVED: HOWARD COUNTY DEPARTMENT OF ENGINEERING DIVISION.

REVISION: 10/17/05 - REMOVED SEWER EASEMENT BETWEEN LOTS 6 & 7, REVISED PROPERTY LINE OF LOTS 6 & 7, EXTENDED SEWER LINE TO EXISTING MANHOLE IN STEPHENS ROAD.

OWNER/DEVELOPER: THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION, THE ROUSE BUILDING, 10275 LITTLE PATUXENT PARKWAY, COLUMBIA, MARYLAND 21044, 410-992-6000.

PROJECT: EMERSON SECTION 2 PHASE 6B, LOTS 1 THRU 22.

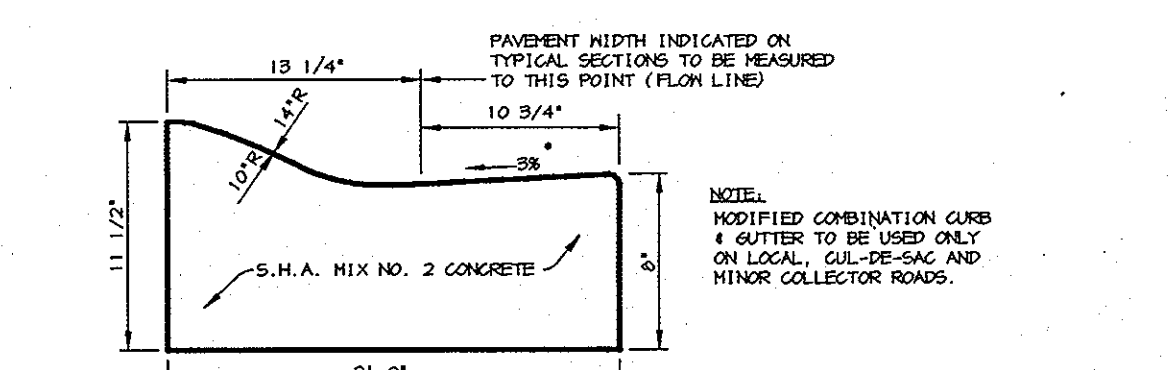
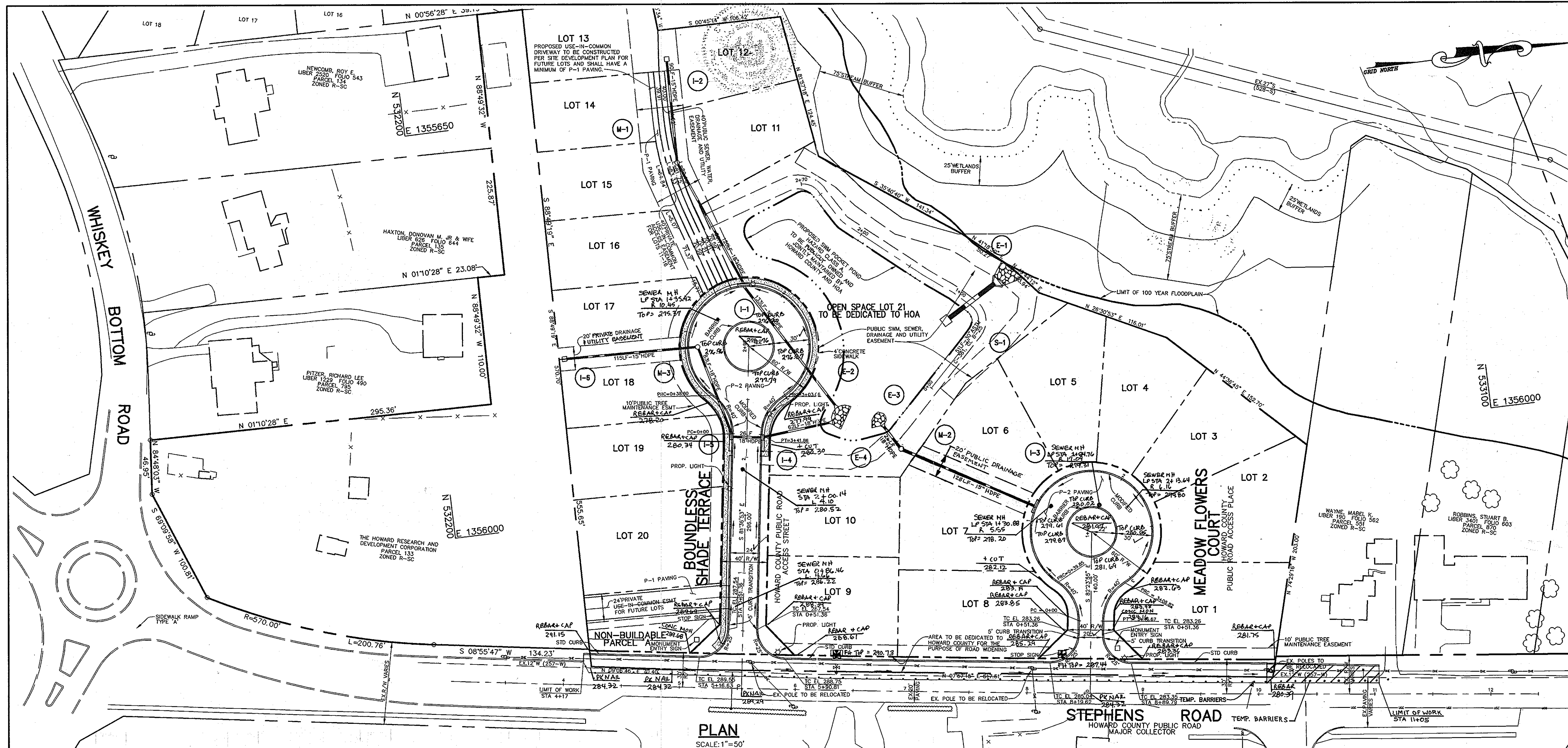
AREA: TAX MAP 47 BLOCK 8 & 9, ZONED: PEC-MXD-3, PARCEL: 462, 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

TITLE: PLAN AND PROFILE OF STEPHENS ROAD AS-BUILT.

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

DATE: 4.8.05
DESIGNED BY: A.C.R.
DRAWN BY: DAM
CHECKED BY: C.J.R.
PROJECT NO: 22456/1-4
DATE: APRIL 8, 2005
SCALE: AS SHOWN
DRAWING NO. 2 OF 13



MODIFIED COMBINATION CURB AND GUTTER

GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JAMES A. RUFF *[Signature]* 2/27/14
DATE 3-23-11

STATE OF MARYLAND
JAMES A. RUFF
REGISTERED PROFESSIONAL ENGINEER
EXPIRES 12/31/11

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

STREET LIGHT DATA

- 30' RIGHT OF CL STA 0+31 BOUNDLESS SHADE TERRACE
POLE HEIGHT = 30' LIGHT FIXTURE = 250W HPS
POLE TYPE = BRONZE ALUMINUM
- 19' RIGHT OF CL STA 2+38 BOUNDLESS SHADE TERRACE
POLE HEIGHT = 30' LIGHT FIXTURE = 250W HPS
POLE TYPE = BRONZE ALUMINUM
- 3' FROM BACK OF CURB AT LP STA 2+80 BOUNDLESS SHADE TERRACE
POLE HEIGHT = 30' LIGHT FIXTURE = 250W HPS
POLE TYPE = BRONZE ALUMINUM
- 30' RIGHT OF CL STA 0+31 MEADOW FLOWERS COURT
POLE HEIGHT = 30' LIGHT FIXTURE = 250W HPS
POLE TYPE = BRONZE ALUMINUM

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William Z. Wahn 7-20-05
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cinda Hamada 8/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT

Mike Demme 7/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION

10/17/05 | REMOVED SEWER EASEMENT BETWEEN LOTS 6+7, REVISED PROPERTY LINE OF LOTS 6+7, EXTENDED SEWER LINE TO EXISTING MANHOLE IN STEPHENS ROAD.

DATE NO. REVISION

OWNER/DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION 2 PHASE 6B, LOTS 1 THRU 22

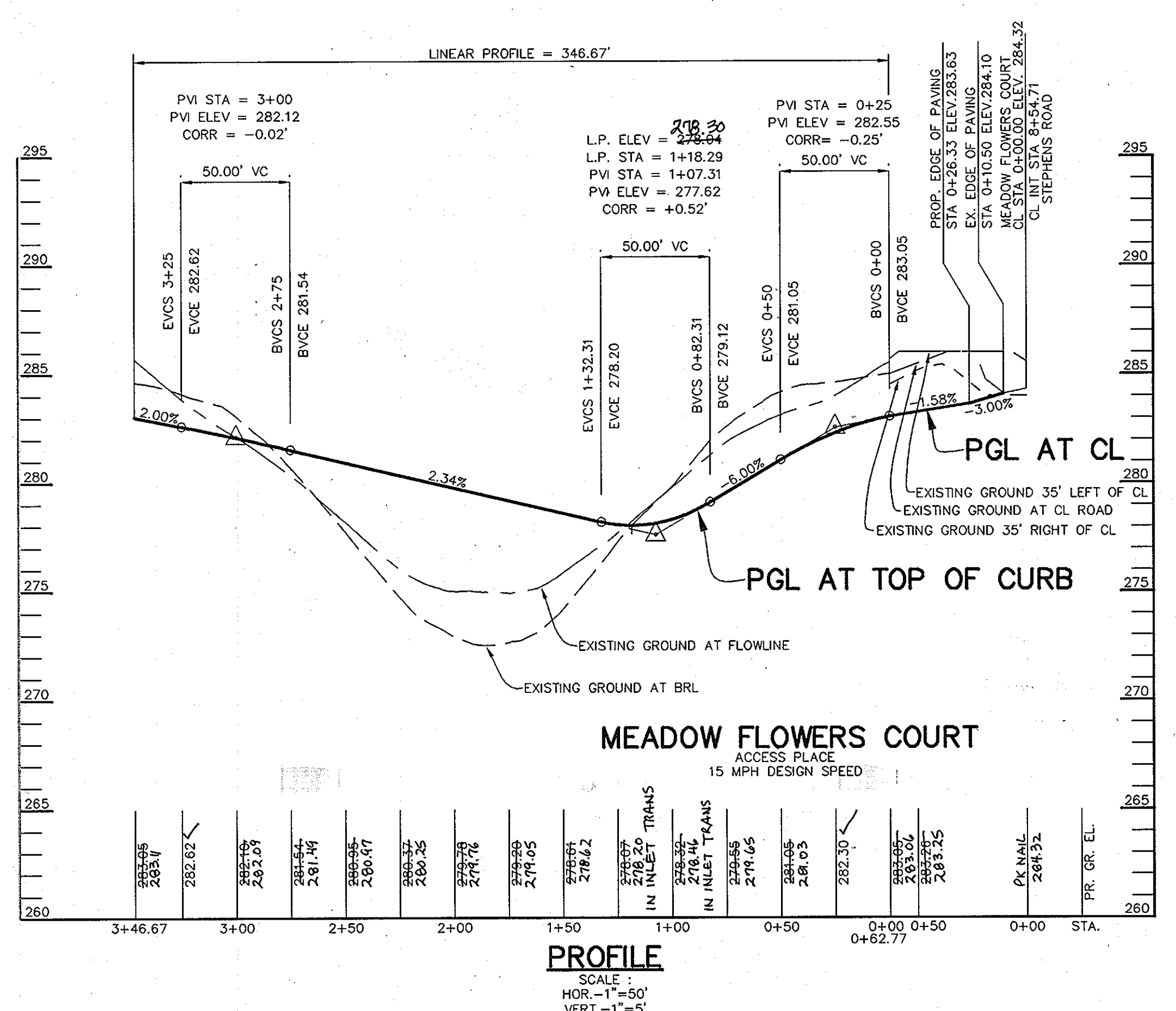
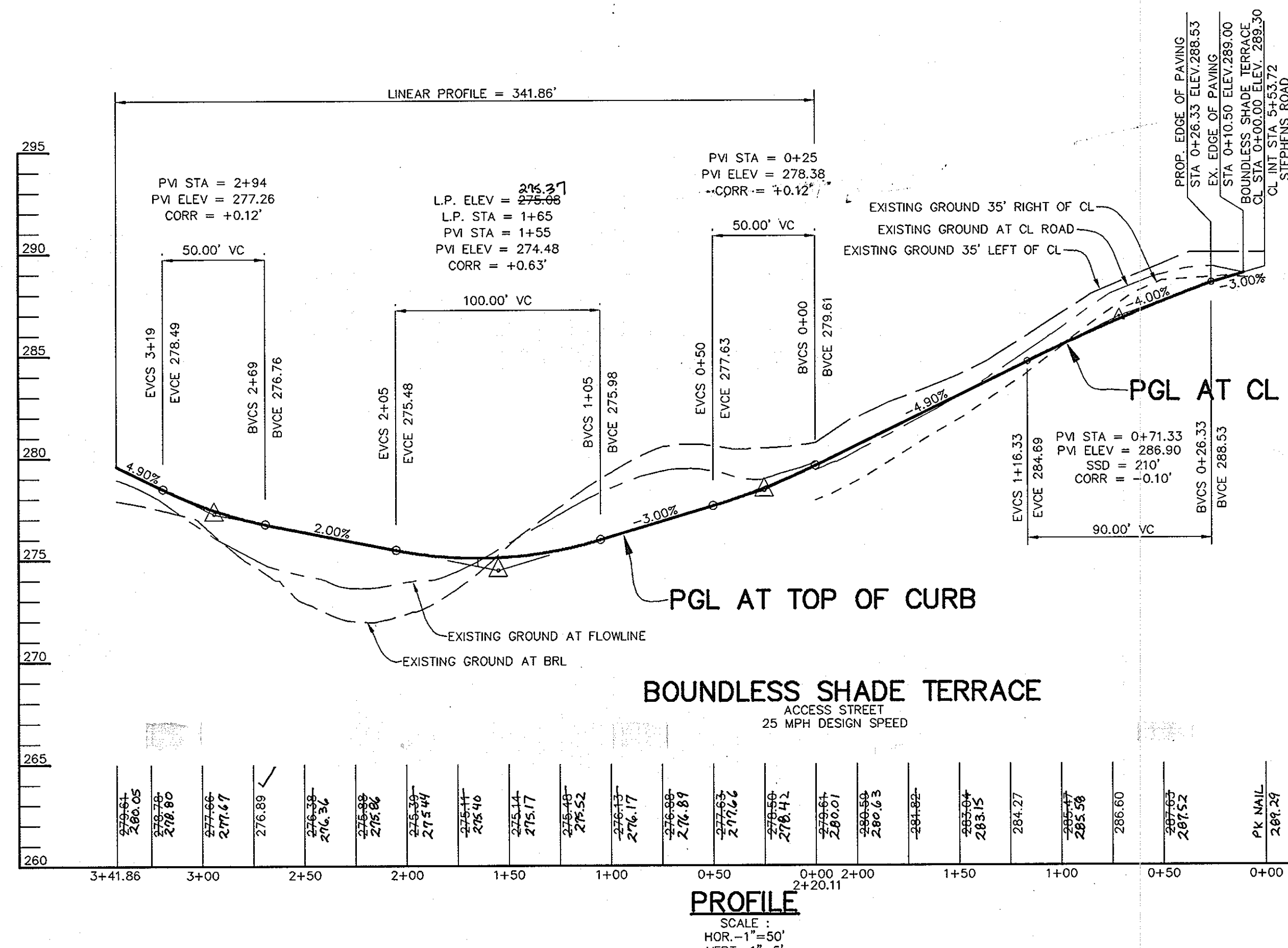
AREA TAX MAP 47 BLOCK 8 & 9
ZONED: PEC-MXD-3 PARCEL: 462
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
ROAD PLAN AND PROFILES
AS-BUILT

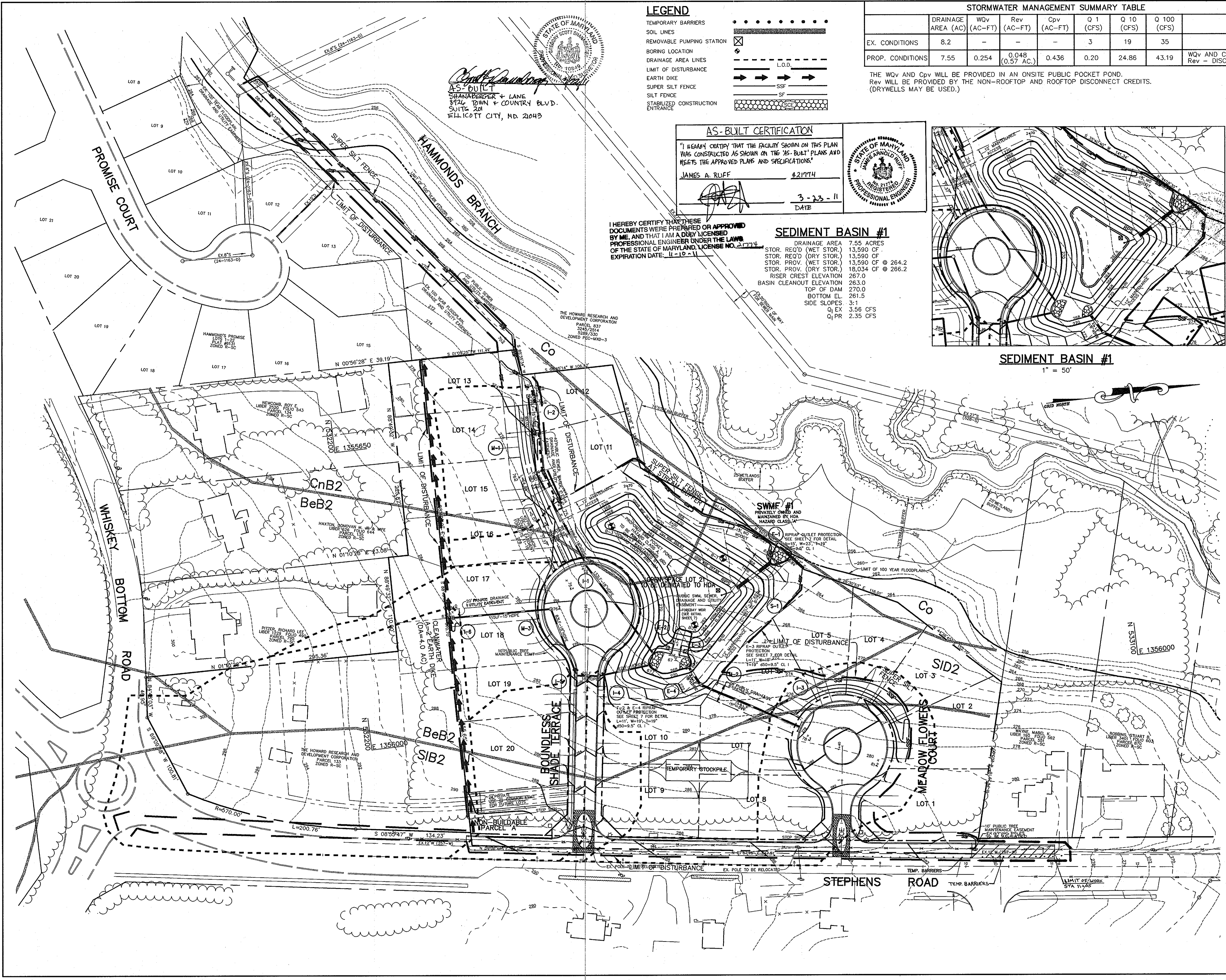
Patton Harris Rust & Associates, PC
Engineers, Surveyors, Planners, Landscape Architects.
PHRA
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

4.8.05 DATE
DESIGNED BY: A.C.R.
DRAWN BY: DAM
CHECKED BY: C.J.R.
PROJECT NO: 22456/1-4
DATE: APRIL 8, 2005
SCALE: AS SHOWN
DRAWING NO. 3 OF 13

STATE OF MARYLAND
PROFESSIONAL LAND SURVEYOR
CHRISTOPHER J. REID #19949



STATE OF MARYLAND
PROFESSIONAL LAND SURVEYOR
Christopher J. Reid
SHANA BERGER + LANE
8126 TOWN + COUNTRY BLVD
SUITE 201
ELLICOTT CITY, MD 21043



LEGEND

- TEMPORARY BARRIERS: - - - - -
- SOIL LINES: [Symbol]
- REMOVABLE PUMPING STATION: [Symbol]
- BORING LOCATION: [Symbol]
- DRAINAGE AREA LINES: [Symbol]
- LIMIT OF DISTURBANCE: [Symbol]
- EARTH DIKE: [Symbol]
- SUPER SILT FENCE: [Symbol]
- SILT FENCE: [Symbol]
- STABILIZED CONSTRUCTION ENTRANCE: [Symbol]

STORMWATER MANAGEMENT SUMMARY TABLE

	DRAINAGE AREA (AC)	WQv (AC-FT)	Rev (AC-FT)	Cpv (AC-FT)	Q 1 (CFS)	Q 10 (CFS)	Q 100 (CFS)	COMMENTS
EX. CONDITIONS	8.2	-	-	-	3	19	35	
PROP. CONDITIONS	7.55	0.254	0.048 (0.57 AC.)	0.436	0.20	24.86	43.19	WQv AND Cpv - POCKET POND. Rev WILL BE PROVIDED BY THE NON-ROOFTOP AND ROOFTOP DISCONNECT CREDITS. (DRYWELLS MAY BE USED.)

DRAINAGE AREA CHART

INLET NO.	AREA (AC.)	C	% IMP
I-1	0.8	0.31	38
I-2	0.5	0.31	38
I-3	1.0	0.31	38
I-4	0.3	0.31	38
I-5	0.6	0.31	38
I-6	2.2	0.31	38

AS-BUILT CERTIFICATION

"I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS."

JAMES A. RUFF #21974
 DATE 3-23-11

STATE OF MARYLAND
 JAMES ARNOLD
 REGISTERED PROFESSIONAL ENGINEER

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: 11-19-11

SEDIMENT BASIN #1

DRAINAGE AREA: 7.55 ACRES

STOR. REQ'D (WET STOR.): 13,590 CF

STOR. REQ'D (DRY STOR.): 13,590 CF

STOR. PROV. (WET STOR.): 13,590 CF @ 264.2

STOR. PROV. (DRY STOR.): 18,034 CF @ 266.2

RISER CREST ELEVATION: 267.0

BASIN CLEANOUT ELEVATION: 263.0

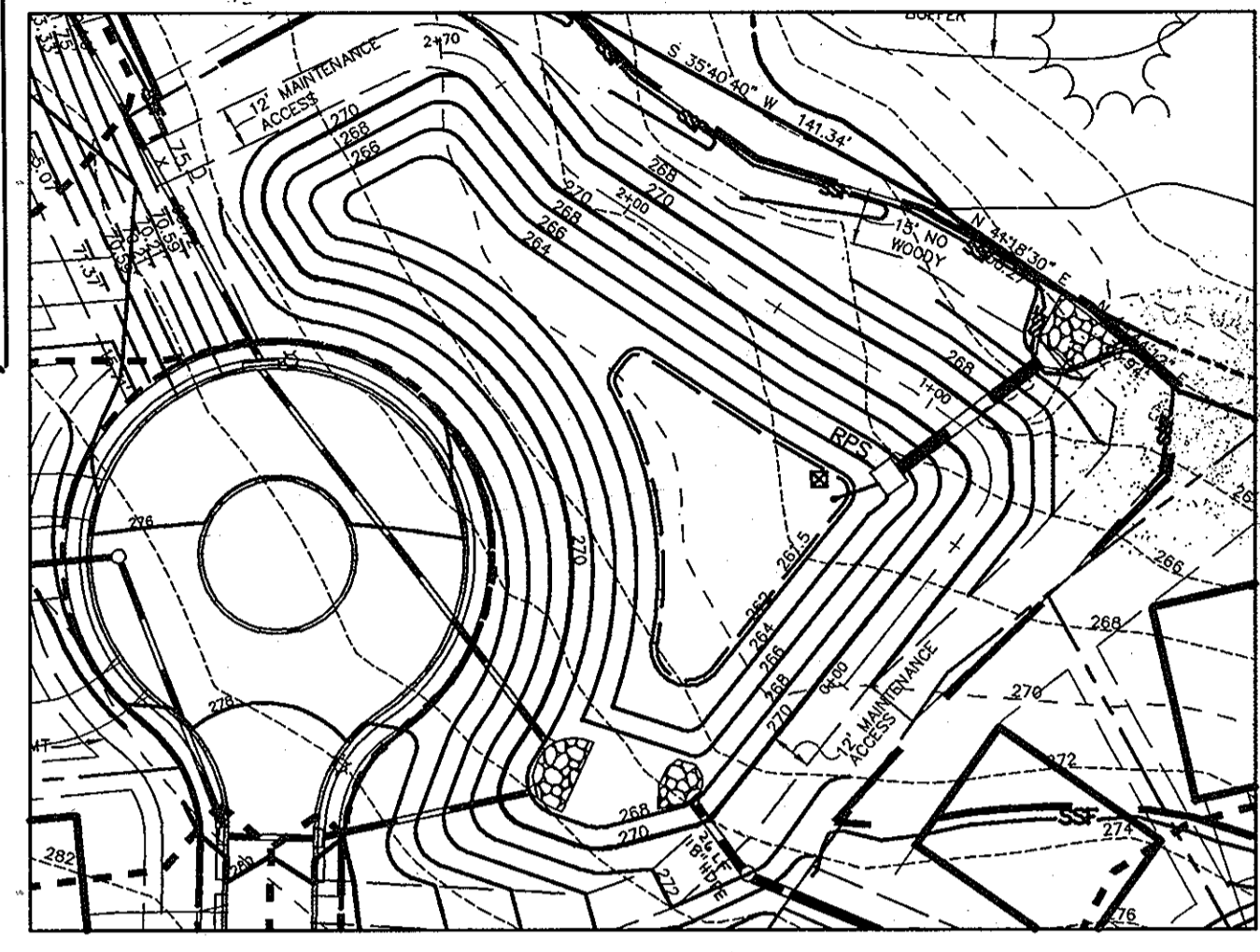
TOP OF DAM: 270.0

BOTTOM EL.: 261.5

SIDE SLOPES: 3:1

Q EX: 3.56 CFS

Q PR: 2.35 CFS



SEDIMENT BASIN #1
1" = 50'

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN 'AS-BUILT' PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

PAUL CAVANAUGH 4.8.05
 DEVELOPER DATE

BY THE ENGINEER:

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

CHRISTOPHER J. REID 4.8.05
 ENGINEER DATE

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

1/16/05
 NATURAL RESOURCES CONSERVATION SERVICE DATE

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

4/19/05
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

WILLIAM F. WALKER 7-20-05
 CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CINDY HANCOCK 7/1/05
 CHIEF, DIVISION OF LAND USE DEVELOPMENT DATE

MICHAEL J. DUNN 7/28/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

10/17/05
 REMOVED SEWER EASEMENT BETWEEN LOTS 6+7. REVISED PROPERTY LINE OF LOTS 6+7, EXTENDED SEWER LINE TO EXISTING MANHOLE IN STEPHENS RD., RELOC. STORM SEWER. REVISION

OWNER/DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT

EMERSON
 SECTION 2 PHASE 6B, LOTS 1 THRU 22

AREA TAX MAP 47 BLOCK 8 & 9
 ZONED: PEC-MXD-3 PARCEL: 462
 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE

GRADING, SEDIMENT CONTROL PLAN AND DRAINAGE AREA PLAN

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

4.8.05
 DATE

DESIGNED BY: A.C.R.

DRAWN BY: DAM

CHECKED BY: C.J.R.

PROJECT NO: 22456/1-4
 FINALS ROGRAD1

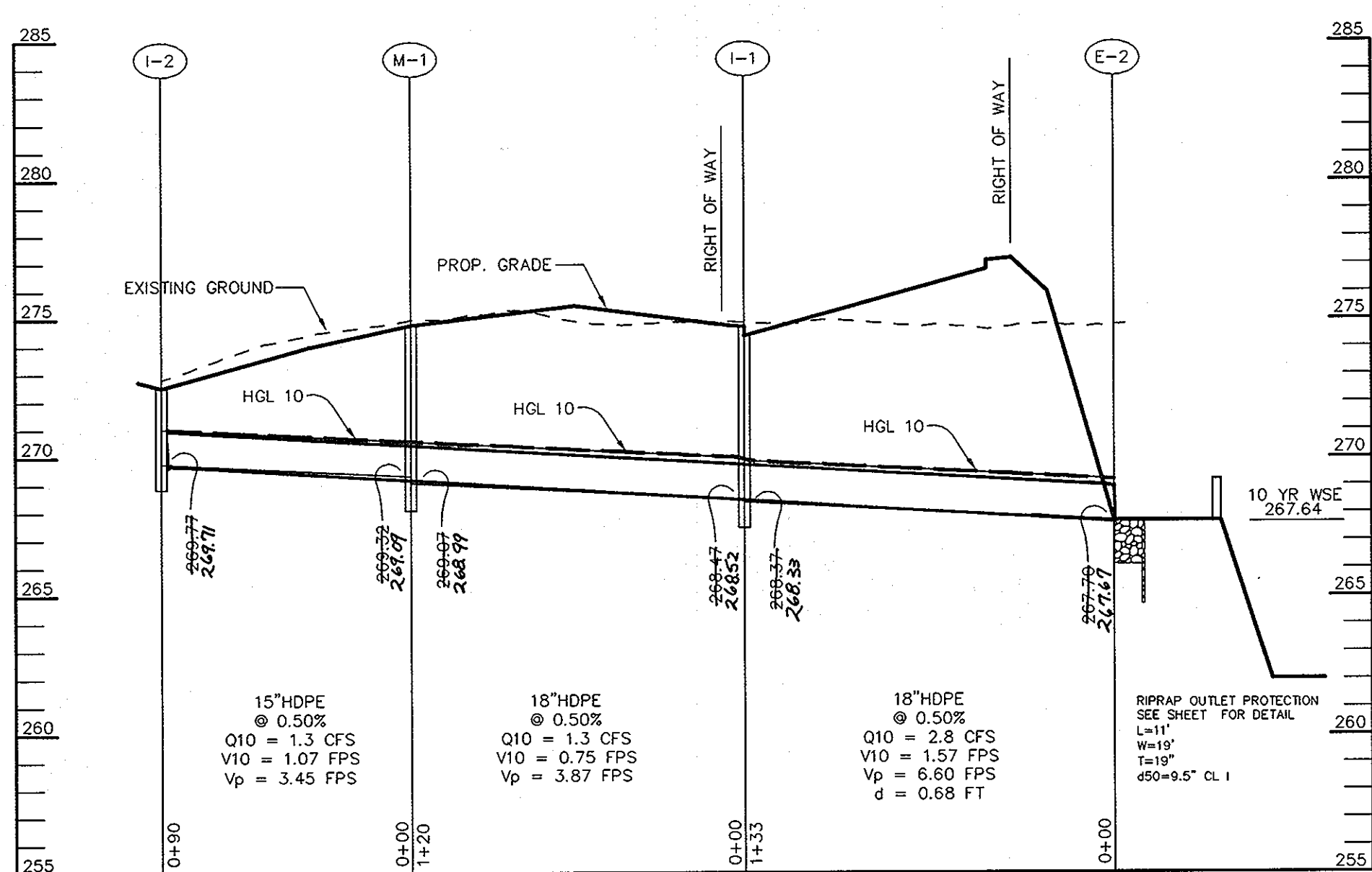
DATE: APRIL 8, 2005

SCALE: 1" = 50'

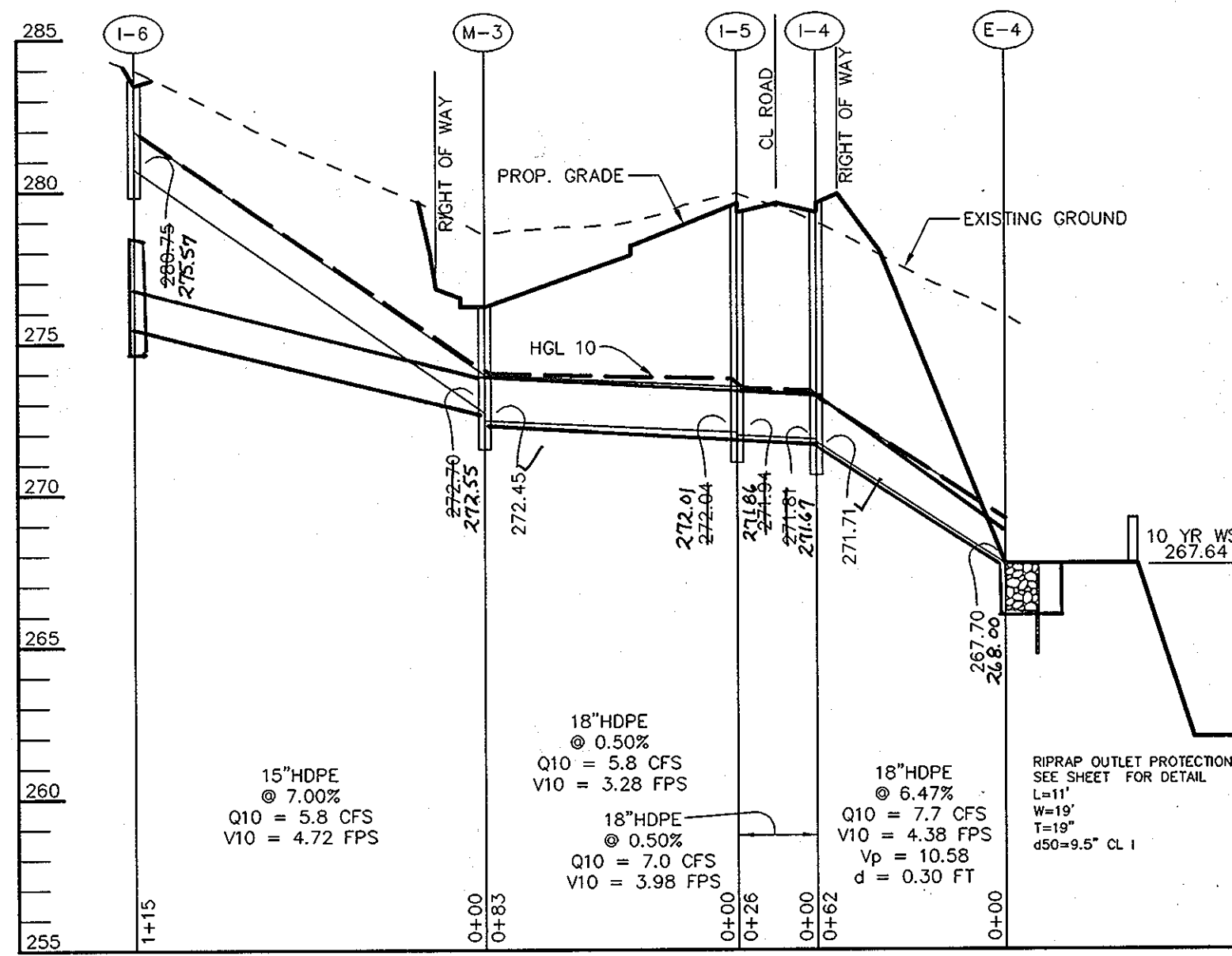
DRAWING NO. 4 OF 13

CHRISTOPHER J. REID #19949

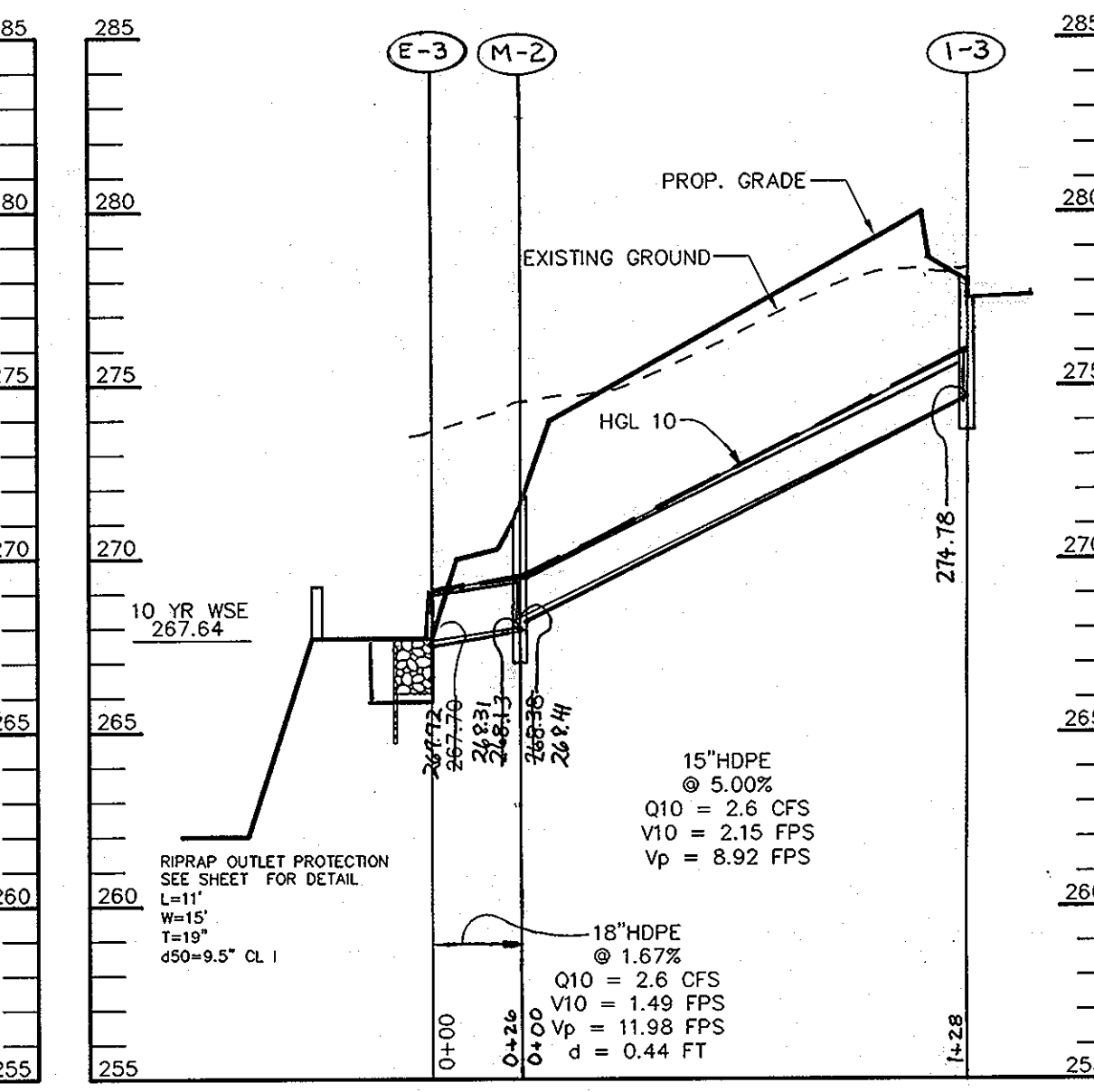




STORM DRAIN PROFILE
SCALE:
HOR.-1"=50'
VERT.-1"=5'

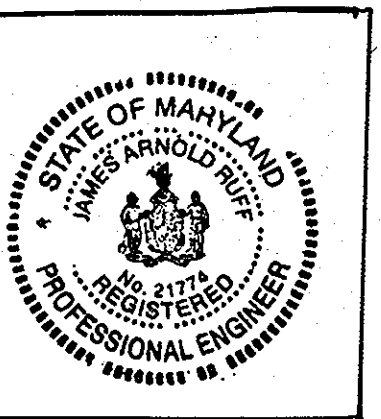


STORM DRAIN PROFILE
SCALE:
HOR.-1"=50'
VERT.-1"=5'

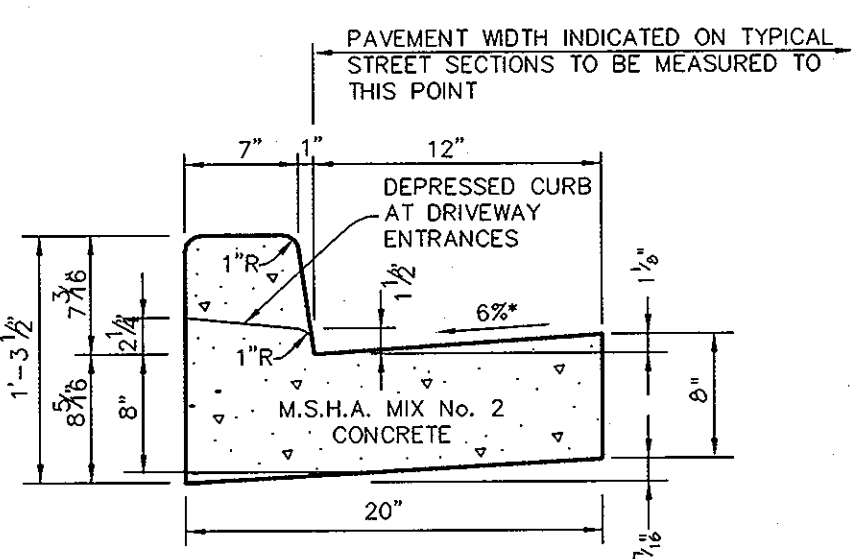


STORM DRAIN PROFILE
SCALE:
HOR.-1"=50'
VERT.-1"=5'

AS-BUILT CERTIFICATION
"I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS."
JAMES A. RUFF #27774
DATE: 3-22-11



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. 27774, EXPIRATION DATE: 11-10-11.
Christopher J. Reid #19949
AS-BUILT
SHANABARGER + LANE
8726 TOWN + COUNTRY
SUITE 201
ELLCOTT CITY, MD 21043

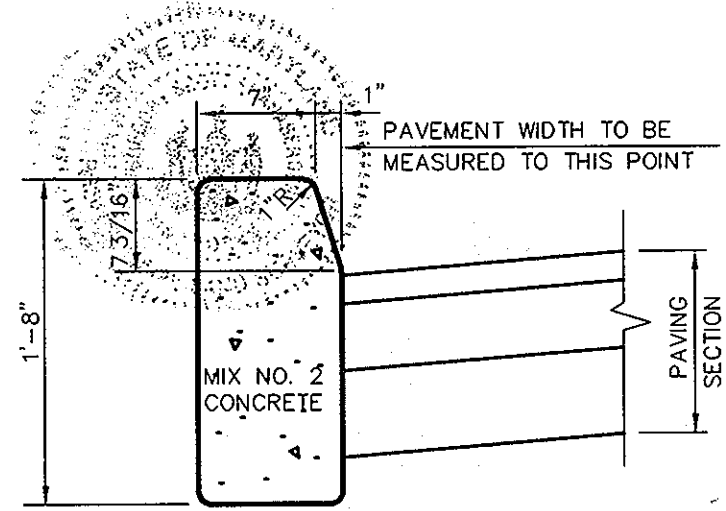


HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01).
* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

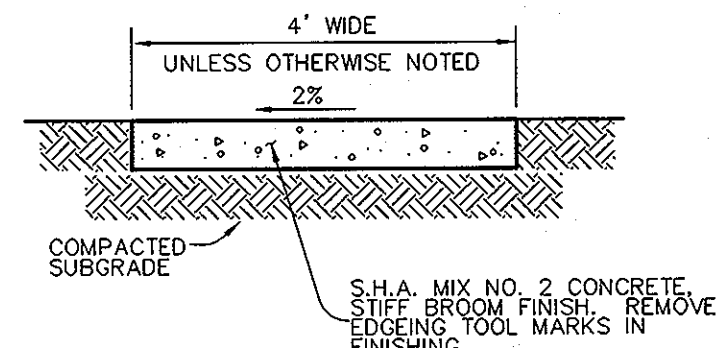
STANDARD 7" COMBINATION CURB AND GUTTER
NO SCALE

PIPE SCHEDULE

PIPE LENGTH	SIZE	TYPE
331	15"	HDPE
448	18"	HDPE
51	30"	ASTM C-361

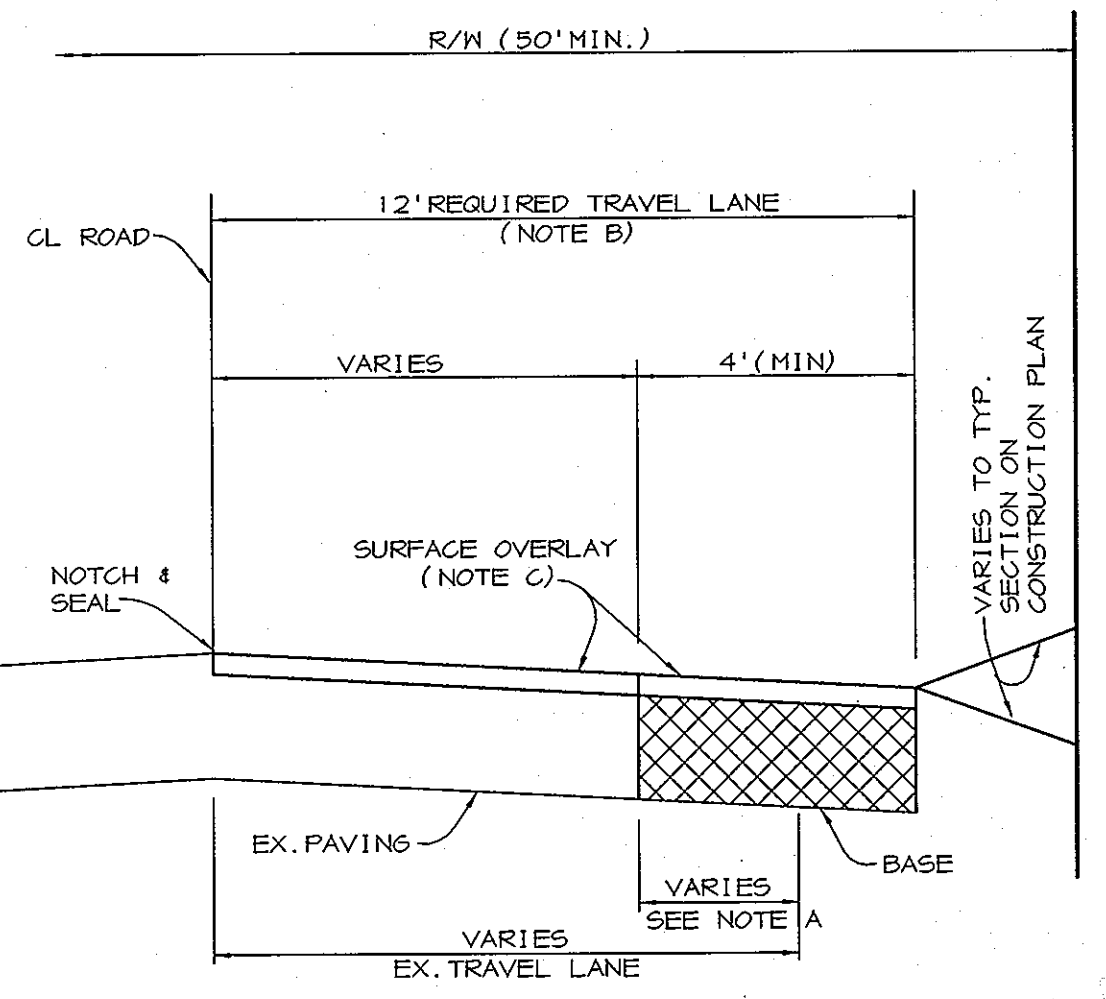


STANDARD BARRIER CURB
NO SCALE



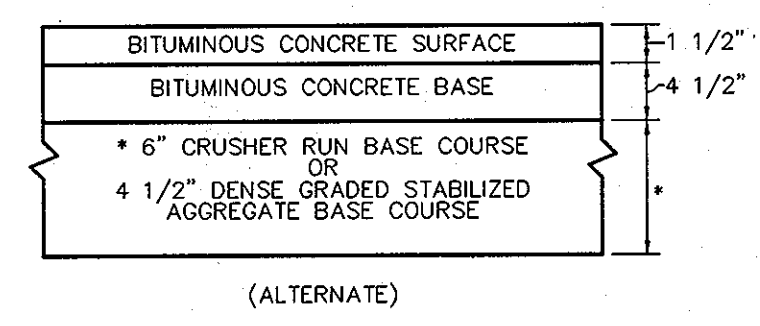
NOTES:
PROVIDE LATITUDINAL EXPANSION JOINTS AT 15' O.C. (MAX.) PROVIDE CONTRACTION (DUMMY) JOINT AT 5' O.C. INTERVALS BETWEEN EXPANSION JOINTS. SIDEWALK TO BE SCRIBED IN 5' MAX. SQUARES.

SIDEWALK DETAIL
NO SCALE

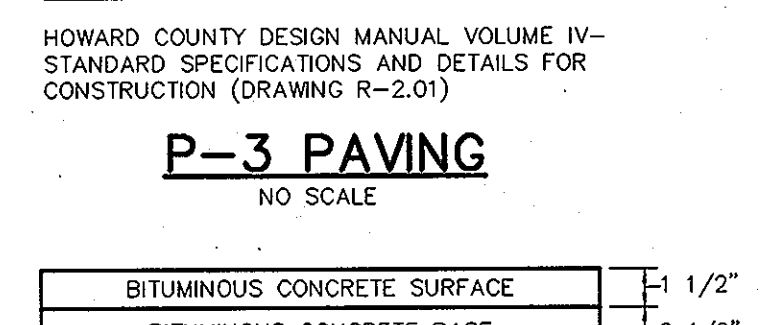


NOTE A - WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE ENOUGH OF THE EXISTING ROAD BED TO PROVIDE A MINIMUM BASE WIDENING OF 4'.
NOTE B - THE SURFACE OVERLAY SHALL BE CARRIED TO THE CL OF THE ROAD AND NOTCHED AND SEALED.
NOTE C - SURFACE OVERLAY COURSE TO BE EQUAL TO SURFACE COURSE OF TYPICAL PAVING SECTION OF SUBDIVISION.
NOTE D - CL OF ROAD TO BE MILLED AT DEPTH OF 1 1/2" x 1' WIDE USING A MILLING MACHINE.

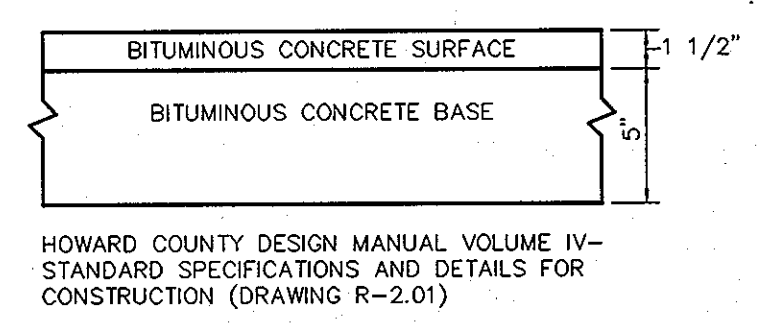
WIDENING STRIPS ALONG EXISTING ROADWAYS
NO SCALE



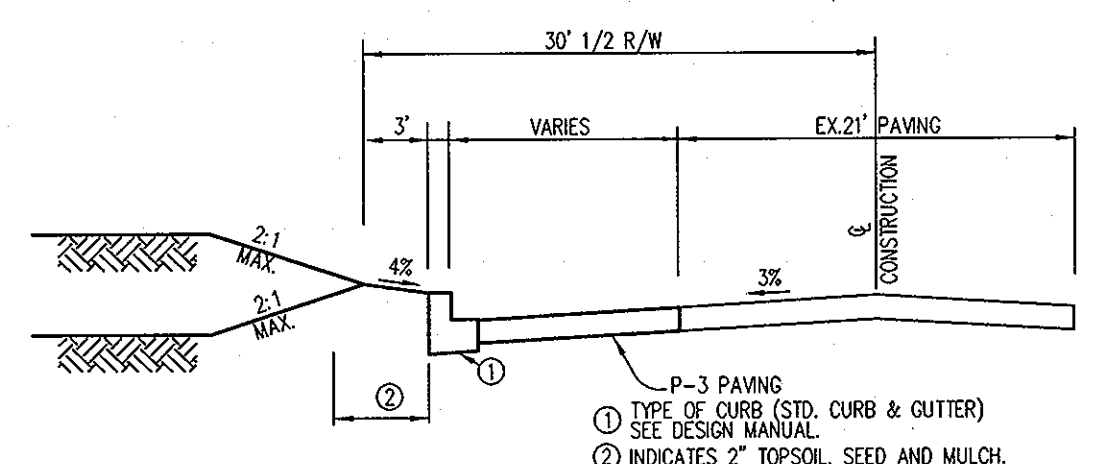
P-3 PAVING
NO SCALE



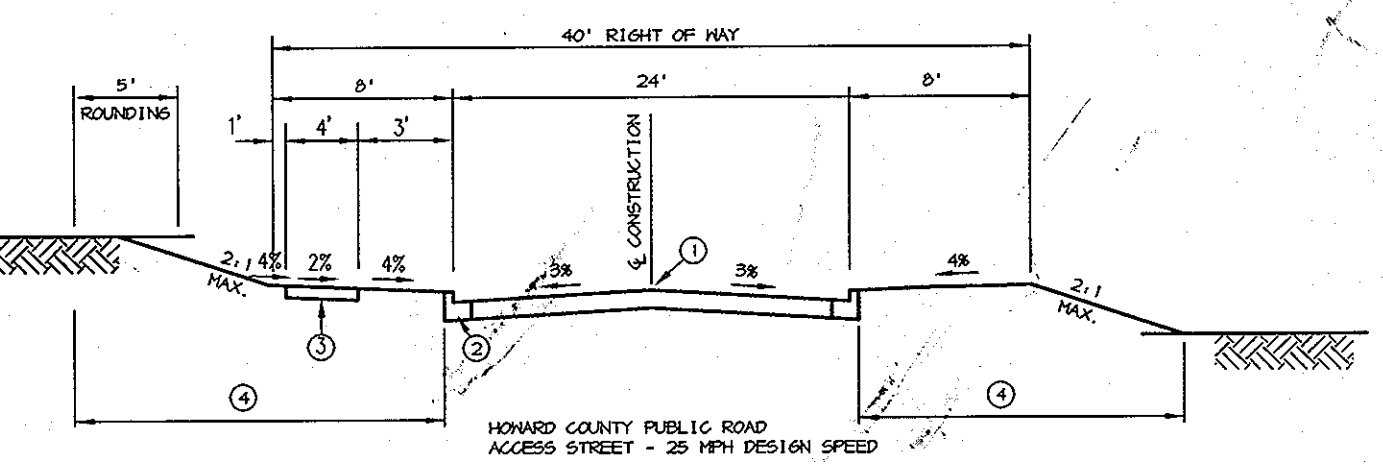
P-2 PAVING
NO SCALE



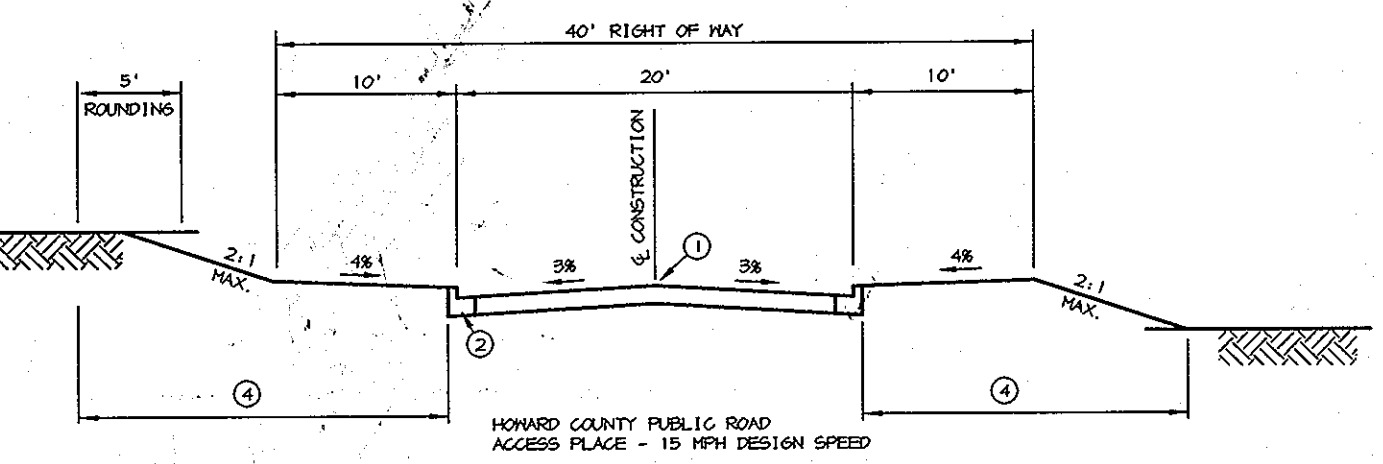
P-1 PAVING
NO SCALE



TYPICAL SECTION STEPHENS ROAD
NO SCALE



TYPICAL SECTION BOUNDLESS SHADE TERRACE
NO SCALE



TYPICAL SECTION MEADOW FLOWERS COURT
NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William F. Mahan 7-20-05
CHIEF, BUREAU OF HIGHWAYS #10 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cinda Hamstra 8/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT #16 DATE

Christopher J. Reid 7/28/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION #100 DATE

10/11/05 REVISED STRUCTURE SCHEDULE AND STORM DRAIN PROFILE
DATE NO. REVISION

OWNER/DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION 2 PHASE 6B, LOTS 1 THRU 22

AREA TAX MAP 47 BLOCK 8 & 9
ZONED: PEC-MXD-3 PARCEL: 462
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
PROFILES AND DETAIL SHEET
As-Built

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

DESIGNED BY: A.C.R.
DRAWN BY: DAM
CHECKED BY: C.J.R.
PROJECT NO: 22456/1-4
DATE: APRIL 8, 2005
SCALE: AS SHOWN
DRAWING NO. 5 OF 13

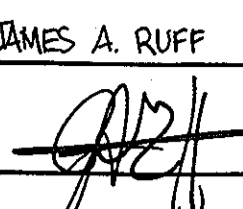
STRUCTURE SCHEDULE

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
E-1	TYPE 'A' HEADWALL	N 532641.01 E 1355836.44 N 532680.71 E 1355844.0	-	260.40 260.00	-	HOCO STD. DETAIL SD-5.11
E-2	HDPE END SECTION	N 532538.74 E 1355912.52 N 532690.71 E 1355836.44	-	261.07 267.70 (+6')	-	HOCO STD. DETAIL SD-5.61
E-3	HDPE END SECTION	N 532580.55 E 1355950.76 N 532520.9 E 1355844.0	-	261.42 267.70 (+6')	-	HOCO STD. DETAIL SD-5.61
E-4	HDPE END SECTION	N 532531.90 E 1355941.01 N 532635.6 E 1355941.01	-	260.00 267.70 (+6')	-	HOCO STD. DETAIL SD-5.61
S-1	MODIFIED STRUCTURE	N 532475.35 E 1355885.21 N 532643.3 E 1355886.6	261.04 262.00 (+8')	261.40 261.50 (+6')	264.80 270.00	SEE SHEET 6
I-1	A-10V INLET	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	268.52 268.47 (+6')	268.33 268.67 (+6')	-	HOCO STD. DETAIL SD-4.41
I-2	S INLET	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	-	264.11 264.01 (+6')	266.01	HOCO STD. DETAIL SD-4.22
I-3	A-10V INLET	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	-	264.11 264.01 (+6')	268.00	HOCO STD. DETAIL SD-4.41
I-4	A-5V INLET	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	261.07 261.07 (+6')	271.11 271.07 (+6')	285.12	HOCO STD. DETAIL SD-4.40
I-5	A-5V INLET	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	262.01 262.01 (+6')	271.07 271.07 (+6')	280.03	HOCO STD. DETAIL SD-4.40
I-6	S INLET	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	-	264.11 264.01 (+6')	268.01	HOCO STD. DETAIL SD-4.22
M-1	4" DIA MANHOLE	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	264.01 260.32 (-15')	268.01 268.07 (+6')	274.8	HOCO STD. DETAIL G-5.11
M-2	4" DIA MANHOLE	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	268.41 268.38 (+6')	268.31 268.38 (+6')	272.0	HOCO STD. DETAIL G-5.11
M-3	4" DIA MANHOLE	N 532491.24 E 1355814.84 N 532474.74 E 1355815.95	272.45 272.40 (-6')	272.45 272.45 (+6')	284.32	HOCO STD. DETAIL G-5.11

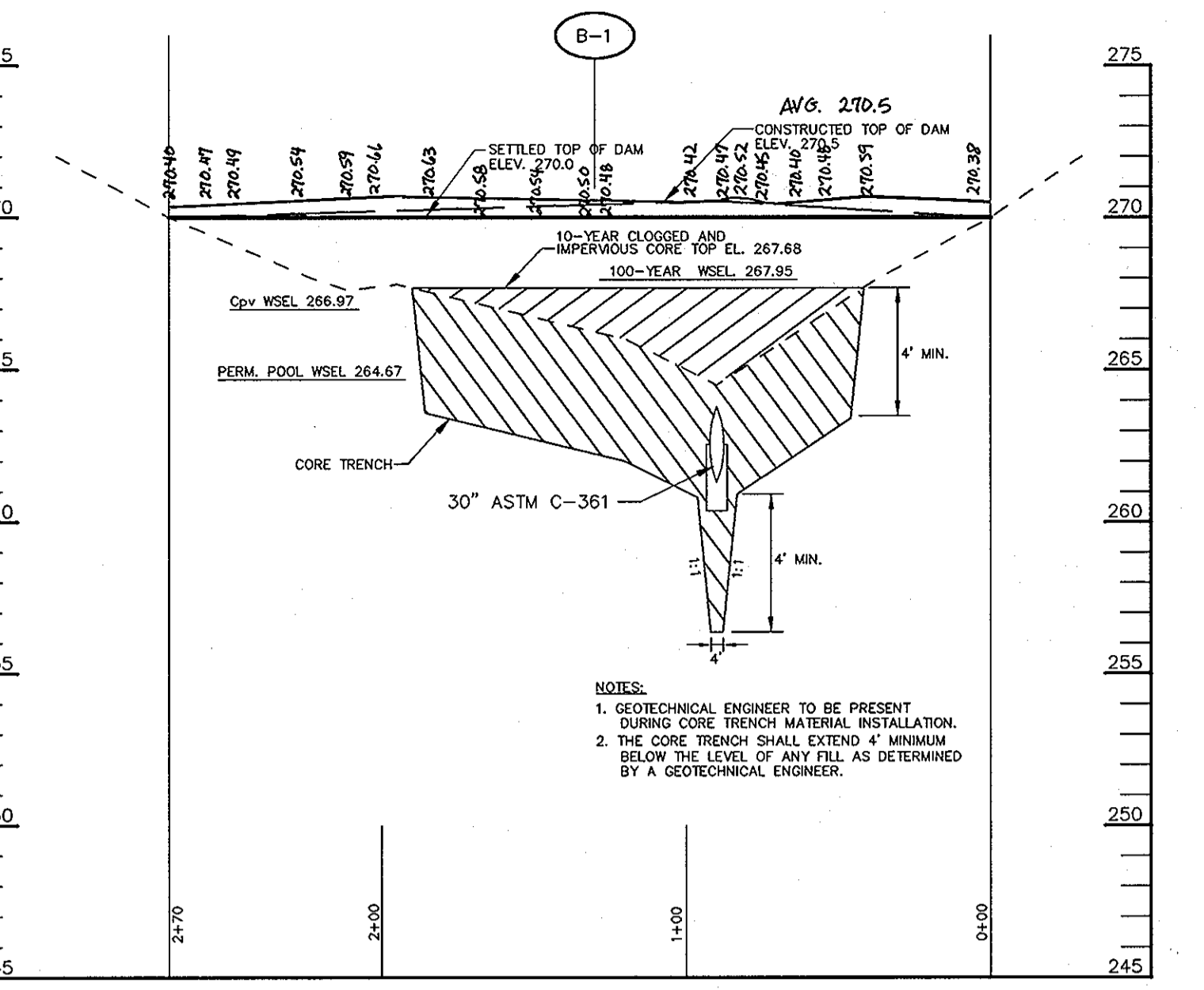
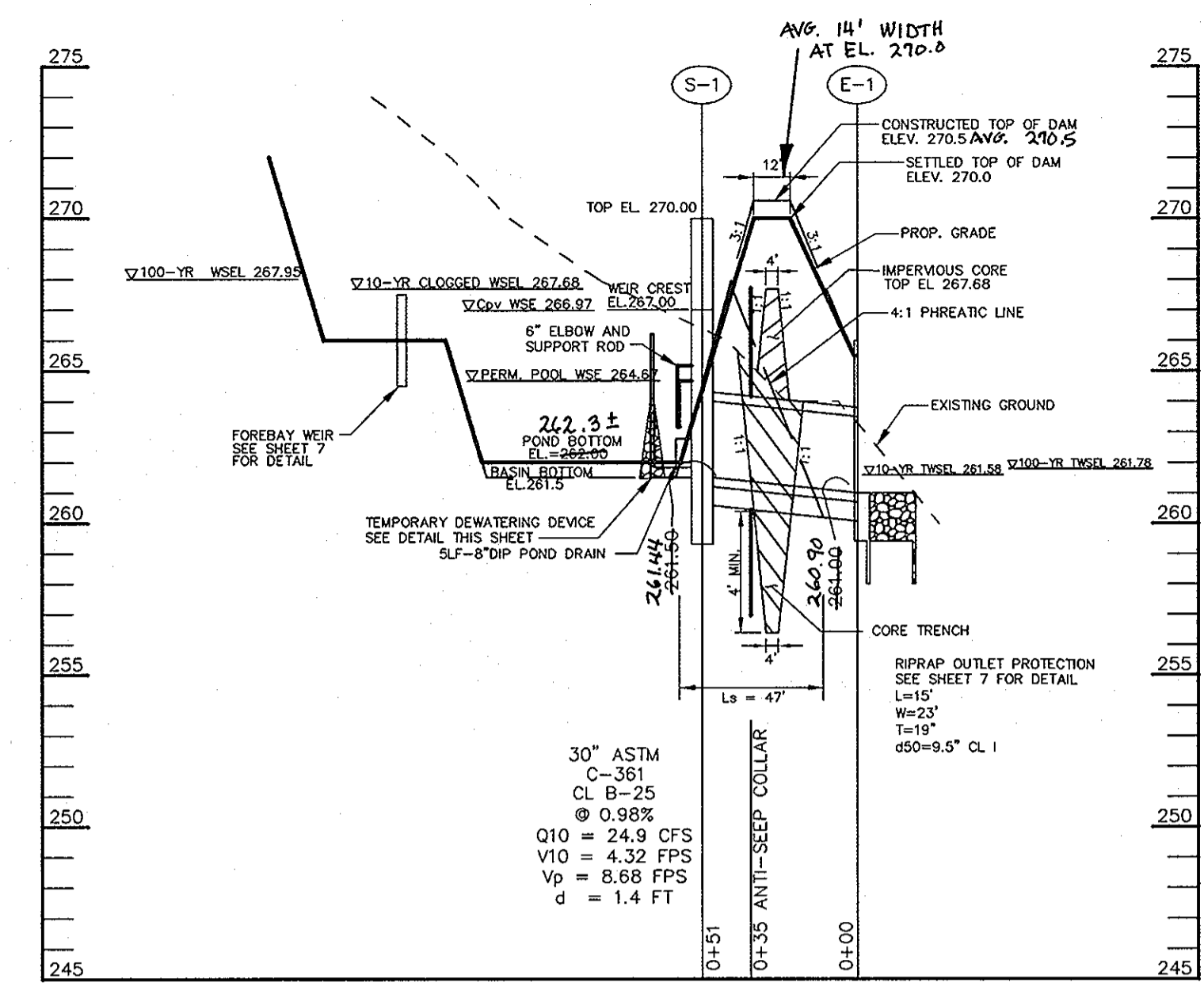
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 81774, EXPIRATION DATE: 1-10-11

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JAMES A. RUFF

 DATE: 3-25-11

STATE OF MARYLAND
 PROFESSIONAL ENGINEER



GEOTECH EMBANKMENT CONSTRUCTION RECOMMENDATIONS

GENERAL EARTHWORK REQUIREMENTS

CONTROLLED COMPACTED FILL WILL BE REQUIRED FOR THE EMBANKMENT AROUND THE SWM POND. THE FILL FOR THESE AREAS WAS ASSUMED TO BE OBTAINED FROM THE SWM POND AREA AS WELL AS OTHER NEARBY REGIONS. ON-SITE SOILS AS DESCRIBED IN SECTION 4.0 OF THE GEOTECHNICAL REPORT ARE SUITABLE FOR USE AS IMPERMEABLE CORE TRENCH MATERIALS BASED ON THEIR SOIL CLASSIFICATION AND SOME CLAY MATERIALS WERE ENCOUNTERED IN OTHER NEARBY SECTIONS OF THE EMBANKMENT DEVELOPMENT.

THE MAXIMUM DRY DENSITY (ASHTO T-99) FOR THE RESIDUAL SOIL SAMPLES RANGED FROM 109.8 TO 114.4 PCF WITH OPTIMUM MOISTURE CONTENTS RANGING FROM 15% TO 17%. THE NATURAL MOISTURE CONTENT OF THE MATERIALS ON-SITE WAS GENERALLY ABOVE THE OPTIMUM MOISTURE CONTENT, EXCEPT AT B-3, BASED ON THESE CONDITIONS, SIGNIFICANT DRYING OF THE SOIL BY DISING AND AERATION OR OTHER MEANS OF MANIPULATION CAN BE ANTICIPATED DURING THE EARTHWORK PROCESS. FURTHERMORE, THE MICACEOUS COMPONENT OF THE ON-SITE SOILS MAKES IT SUSCEPTIBLE TO LOSS OF STRENGTH UPON EXPOSURE TO FREE WATER. THEREFORE, IT WOULD BE PRUDENT TO SCHEDULE CLEARING AND GRUBBING, STRIPPING, AND EARTHWORK OPERATIONS FOR THE WARMER, DRIER PERIODS OF THE YEAR (IF POSSIBLE) SO THAT CONSTRUCTION SCHEDULES WILL NOT BE DELAYED DUE TO INCLEMENT WEATHER.

ALL FILLED PLACES FOR THE EMBANKMENT, UTILITY BACKFILL, OR ANY OTHER LOCATION REQUIRING STABLE SUPPORT OR MINIMAL SETTLEMENT SHALL BE CONSTRUCTED AS CONTROLLED COMPACTED FILL. CONTROLLED COMPACTED FILL AND FOUNDATIONS EXCAVATIONS SHALL MEET THE FOLLOWING REQUIREMENTS:

A) WITHIN THE DESCRIBED CONSTRUCTION AREAS, STRIP THE VEGETATION, TOPSOIL, AND ANY ORGANIC, CONTAMINATED, OR OTHERWISE UNSUITABLE MATERIALS TO EXPOSE CLEAN SOILS. THE SUBJECT AREA SHALL ENCOMPASS THE SWM POND AND EXTEND OUTWARD FROM THE EDGES A MINIMUM OF 5 FEET PLUS 1 ADDITIONAL FOOT HORIZONTALLY FOR EVERY FOOT OF NEW FILL TO BE PLACED OR CUT TO BE EXCAVATED.

B) PROOFROLL THE STRIPPED SOIL SURFACE WITH A FULLY LOADED, TANDEM-AXLE DUMP TRUCK, OR OTHER APPROVED EQUIPMENT UNDER THE OBSERVATION OF A GEOTECHNICAL ENGINEER OR HIGHLY QUALIFIED SENIOR LEVEL SOILS TECHNICIAN TO VERIFY AND ESTABLISH A UNIFORM, DENSE, AND STABLE CONDITION. ANY SOFT, YIELDING, ORGANIC, CONTAMINATED, OR OTHERWISE UNACCEPTABLE SPOTS DETECTED SHALL BE OVEREXCAVATED AND REPLACED WITH CONTROLLED COMPACTED FILL.

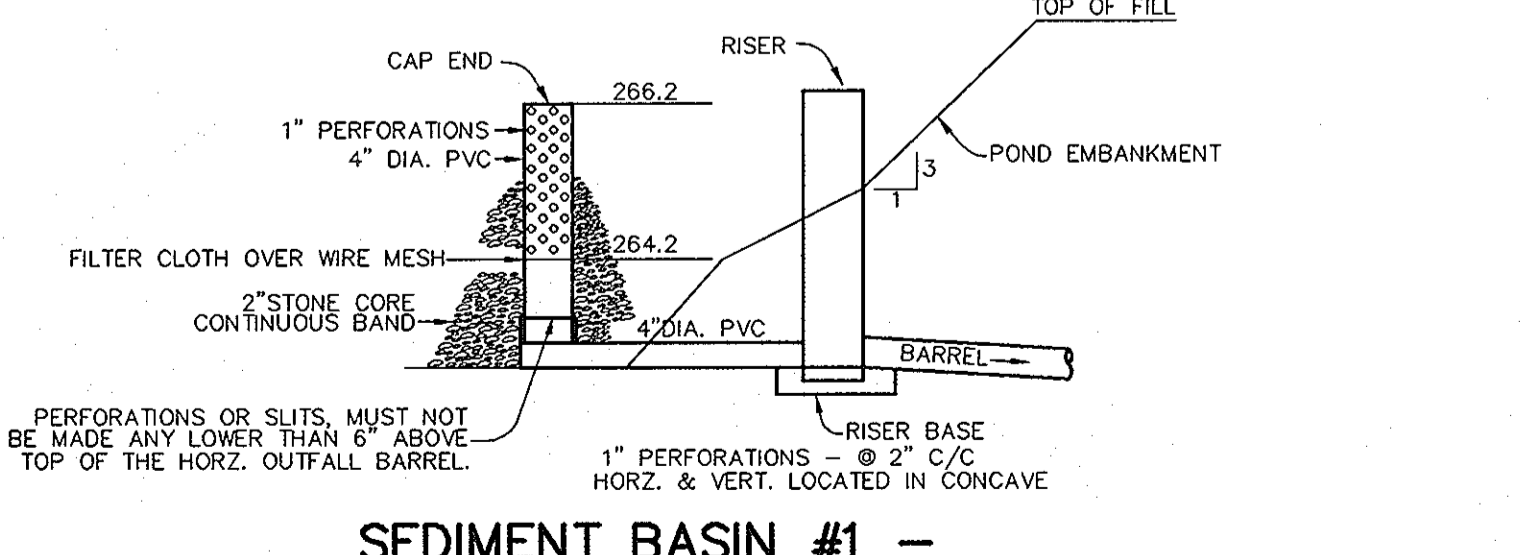
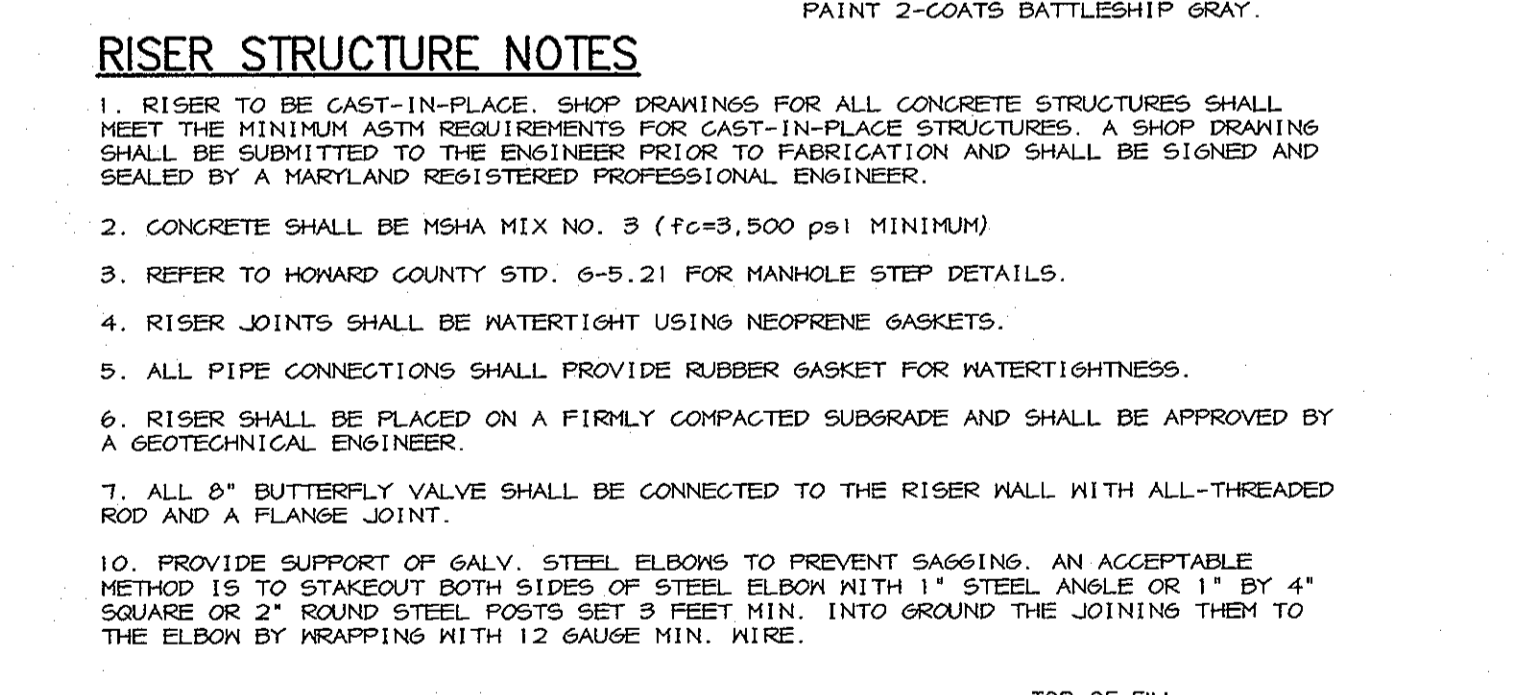
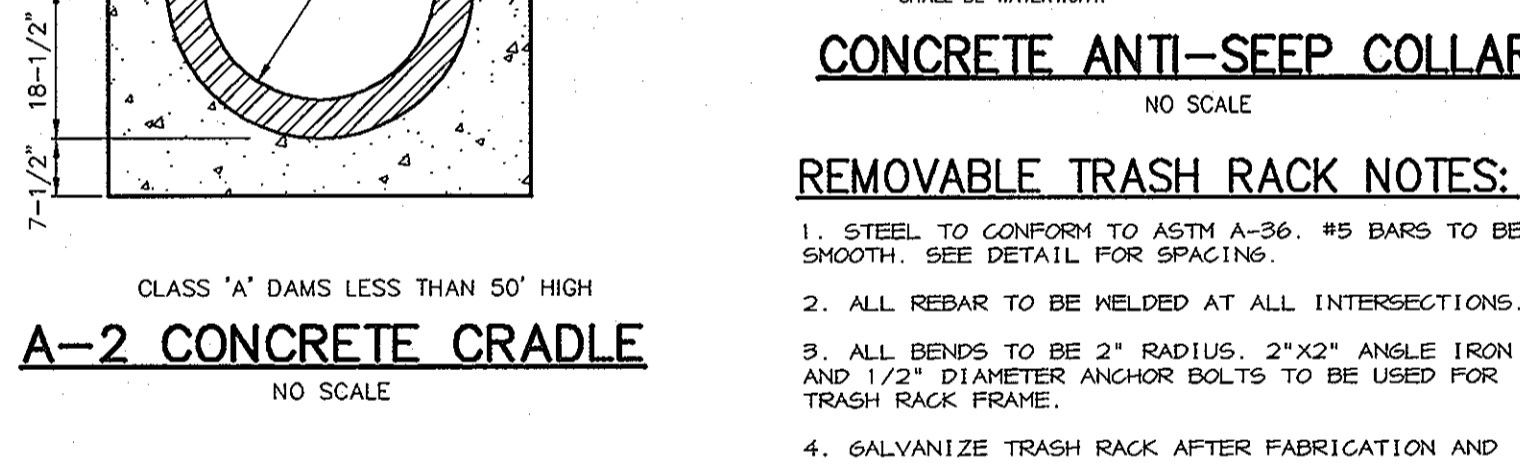
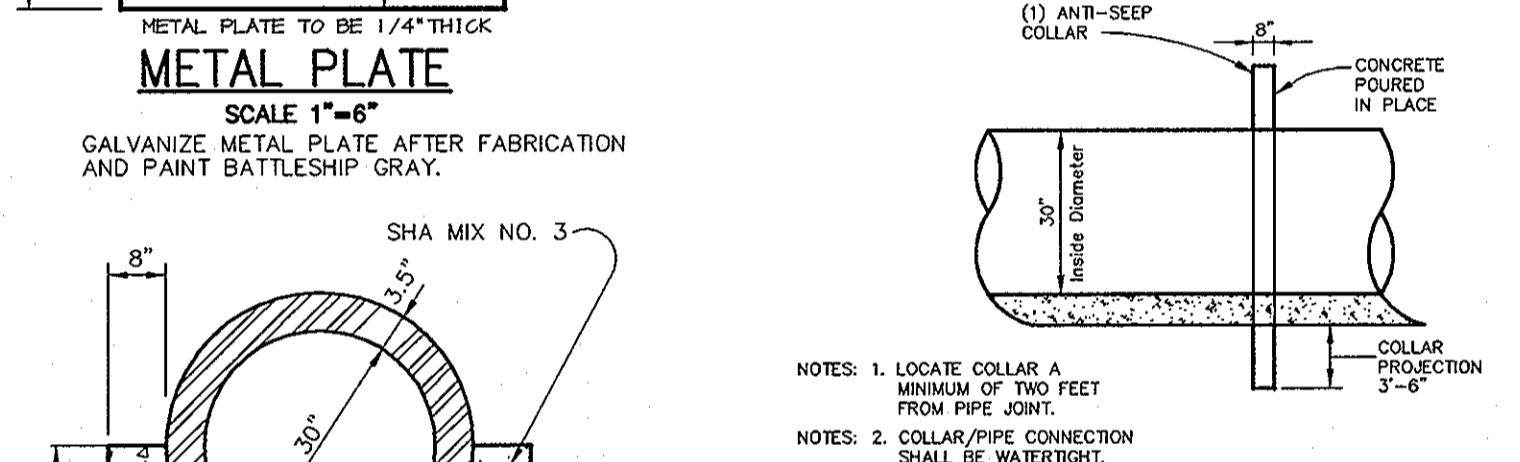
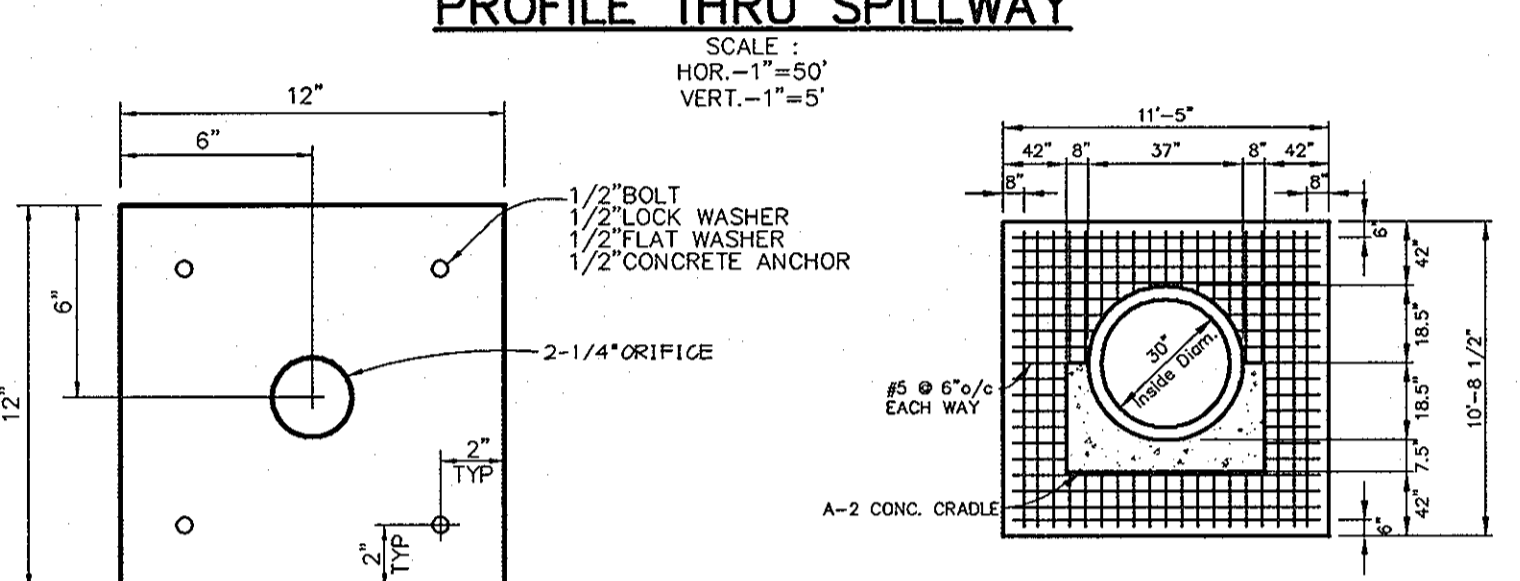
C) ANY MATERIAL USED FOR CONTROLLED FILL SHALL BE INSPECTED AND APPROVED FOR USE BY A GEOTECHNICAL ENGINEER OR QUALIFIED SOILS TECHNICIAN PRIOR TO USE ON THE SITE. ALL FILL SHALL BE FREE FROM TOPSOIL, BOULDERS, COBBLES, ROOTS, ORGANIC MATTER, AND DEBRIS. PRELIMINARY APPROVAL OF THE BORROW MATERIAL SHALL NOT CONSTITUTE GENERAL ACCEPTANCE OF ALL MATERIALS IN THE DEPOSIT OR SOURCE OF SUPPLY AND THE ACCEPTANCE SHALL BE SUBJECT TO FIELD TESTS TAKEN AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER OR QUALIFIED SOILS TECHNICIAN.

D) COMPACTED FILL SHOULD BE PLACED IN HORIZONTAL, SUCCESSIVE, UNIFORM LAYERS HAVING A MAXIMUM UNCOMPACTED LIFT THICKNESS OF 8 INCHES. EACH LIFT SHOULD BE COMPACTED UNIFORMLY TO A MINIMUM OF 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASHTO T-99 (ASTM D-698). THE MOISTURE CONTENT OF THE MATERIALS SHALL BE MAINTAINED WITHIN ±3% OF THE OPTIMUM MOISTURE CONTENT IN ORDER TO ATTAIN THE REQUIRED DEGREE OF COMPACTION. EACH LIFT SHOULD BE UNIFORMLY AND EVENLY BLADE MIXED DURING SPREADING TO ENSURE UNIFORMITY OF THE MATERIAL IN EACH LAYER. IF THE WORK DETERIORATES PRIOR TO PLACEMENT OF THE NEXT LIFT, THE LAYER SHALL BE RECOMPACTED AND RESHAPED ACCORDINGLY.

E) SUCCESSIVE LIFTS OF COMPACTED FILL SHALL NOT BE PLACED UNTIL THE LAYER UNDER CONSTRUCTION HAS BEEN COMPACTED TO THE REQUIRED DENSITY AS MEASURED BY A GEOTECHNICAL ENGINEER OR QUALIFIED SOILS TECHNICIAN. SUCCESSIVE RUNS OF EQUIPMENT SHALL BE STAGGERED OVER THE WIDTH OF EACH LAYER.

F) WHERE FILLS ARE TO BE PLACED ON SLOPES, THE ORIGINAL GROUND SHOULD BE DEEPLY SCARIFIED OR WHERE SLOPES ARE STEEPER THAN 5 HORIZONTAL TO 1 VERTICAL THE SLOPE SHOULD BE STEPPED OR BENCHED, WHEN CONSIDERED NECESSARY BY THE ENGINEER IN ORDER THAT THE PLACEMENT OF FILL MAY BE ACCOMPLISHED IN HORIZONTAL LIFTS.

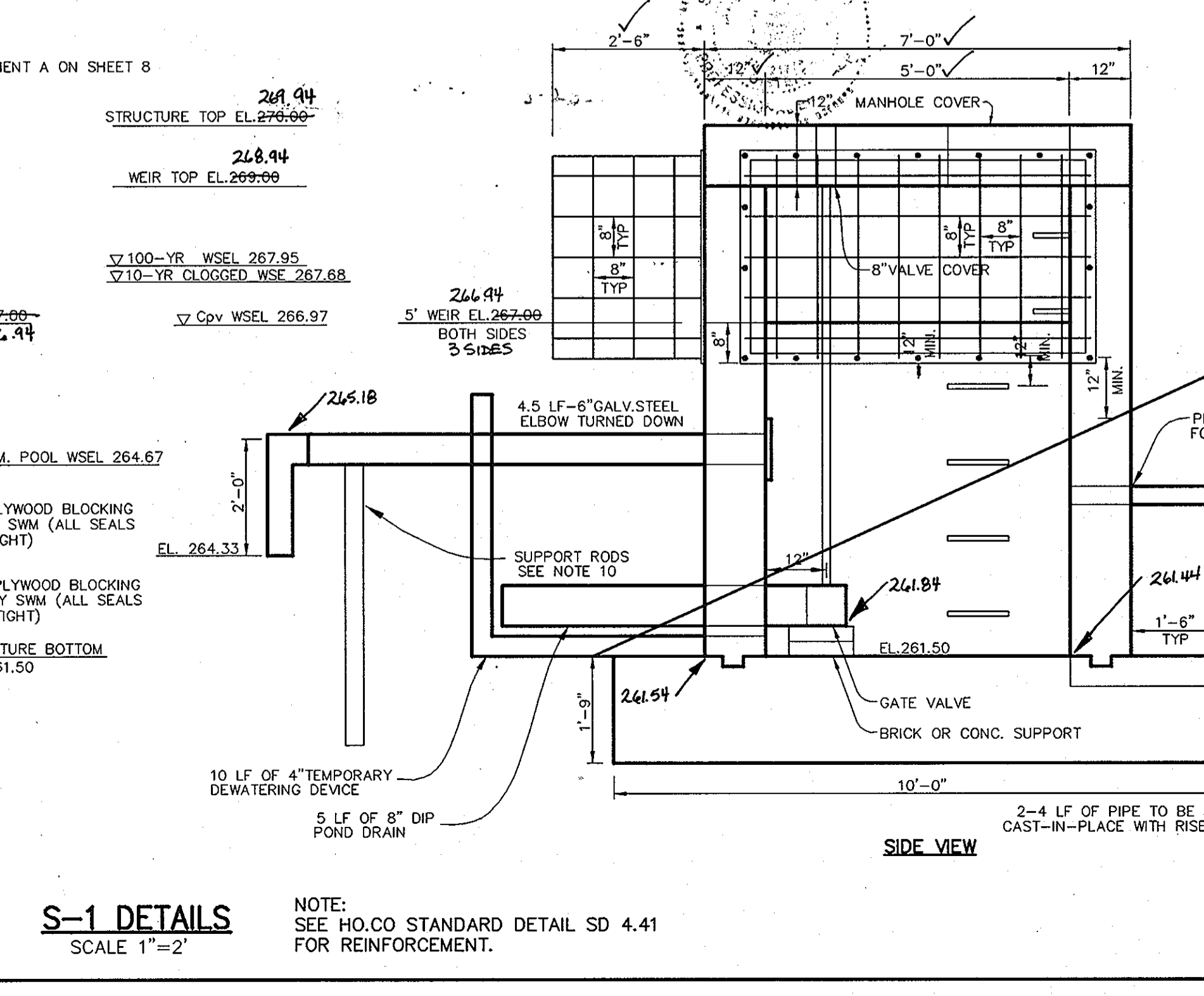
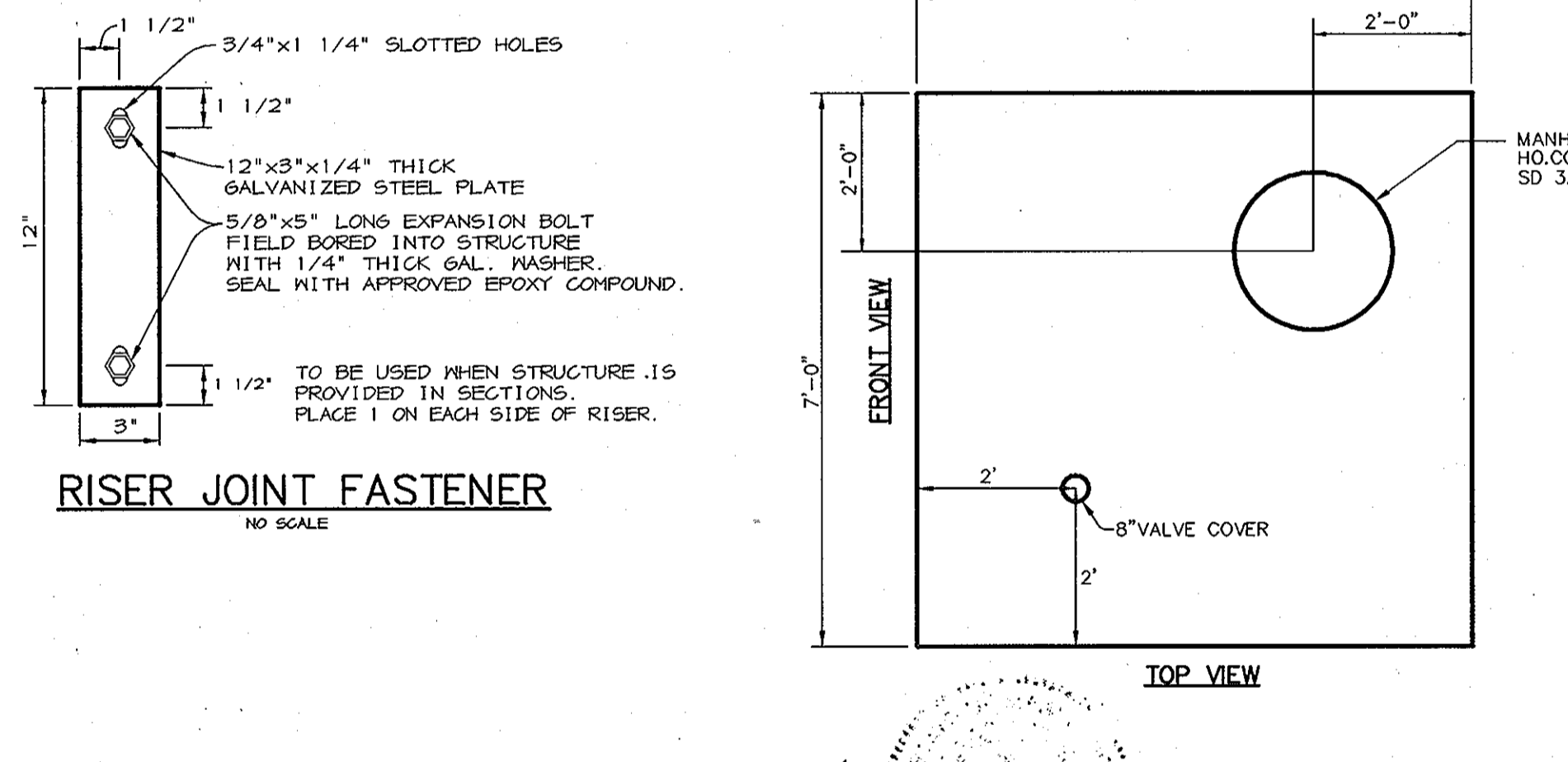
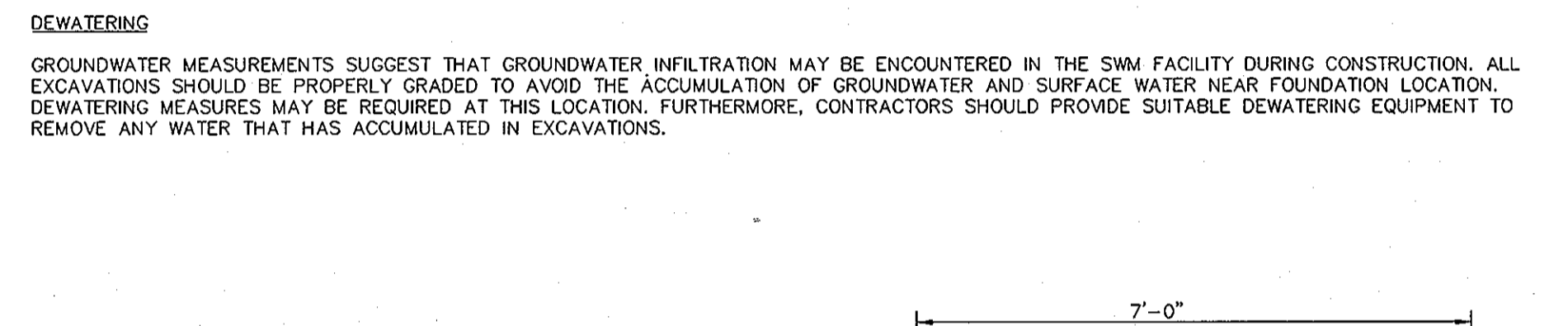
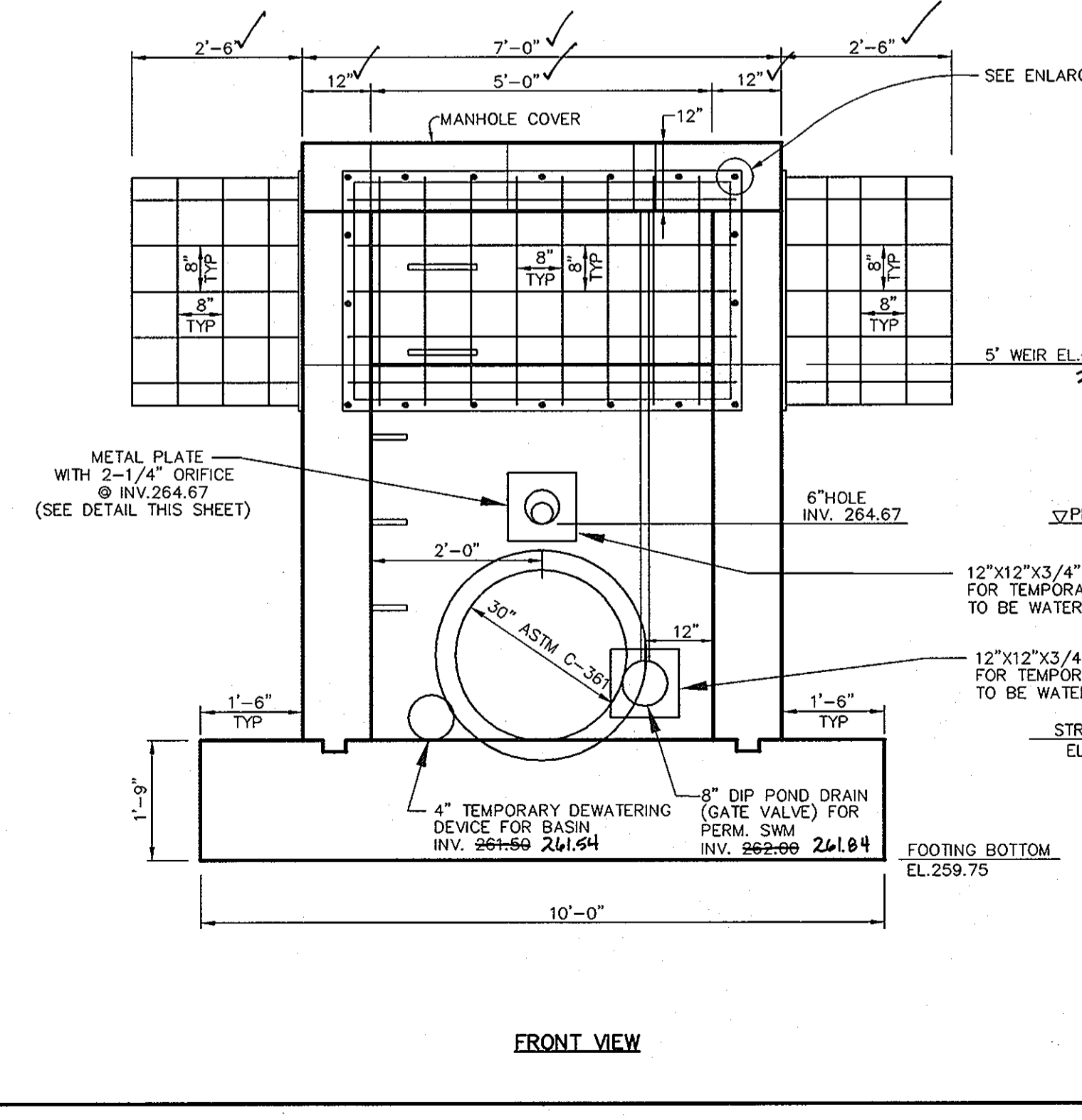
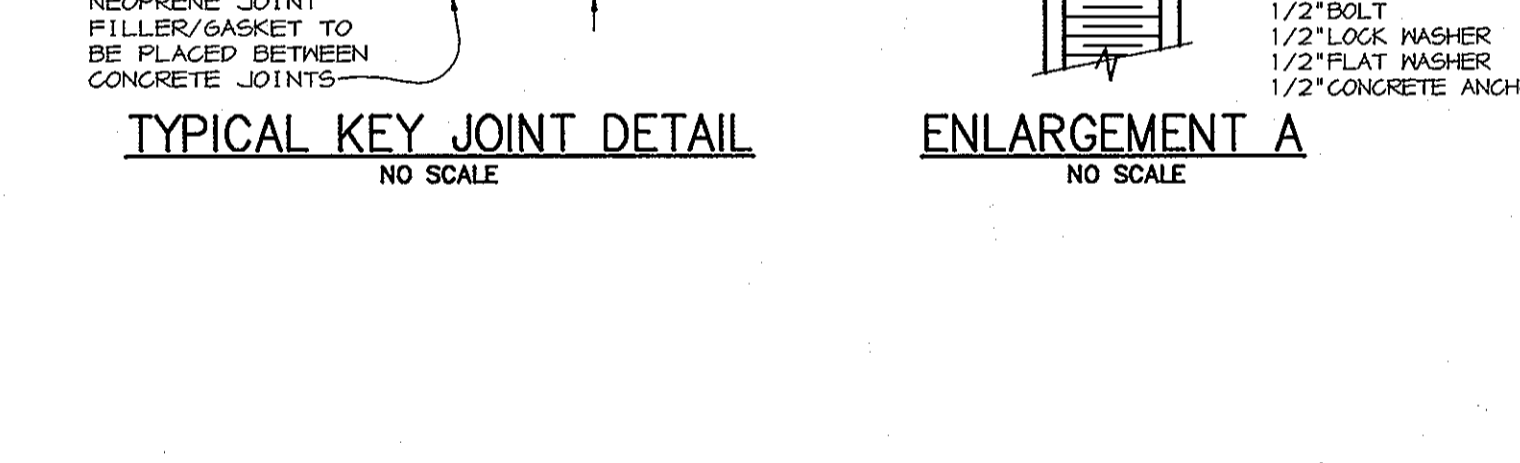
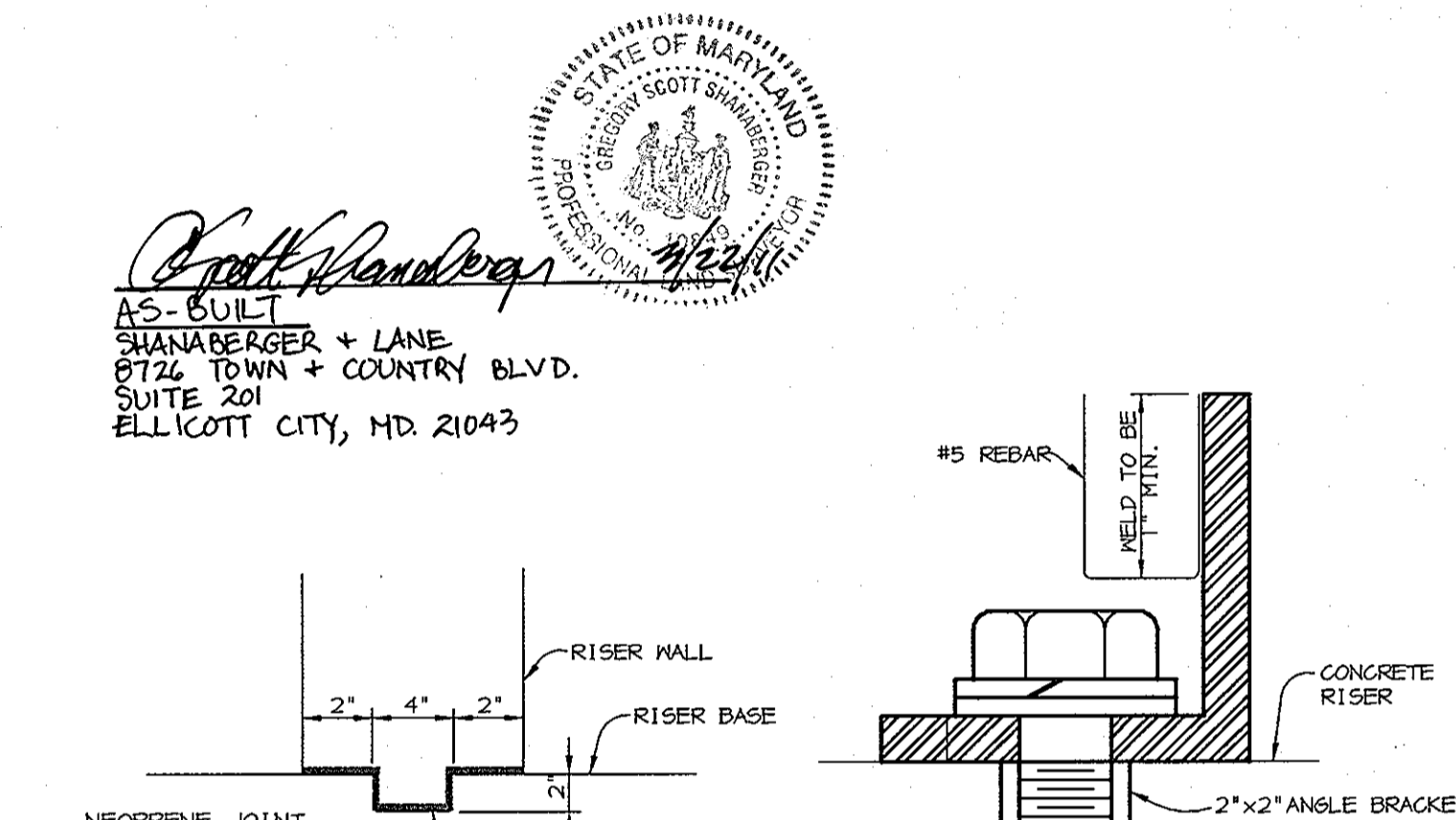
IT IS NOTED THAT THIS METHODOLOGY IS RECOMMENDED BOTH AS PREPARATION FOR AREAS TO RECEIVE NEW FILL, AS WELL AS LOCATIONS WHERE CUT IS REQUIRED TO ESTABLISH THE PROPOSED GRADES. IN CUT AREAS, THE PROOFROLLING AND SELECTIVE UNDERCUTTING SHALL BE ACCOMPLISHED AFTER EXCAVATION DOWN TO THE PROPOSED GRADES.



SEDIMENT BASIN #1 - 4" TEMPORARY DEWATERING DEVICE
 NO SCALE

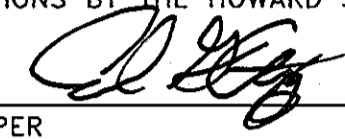
- PERFORATIONS ON THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
- THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
- THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE EQUIPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
- PROVIDE SUPPORT OF DEWATERING DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DEWATERING DEVICE WITH 1" STEEL ANGLE, OR 1 1/4" SQUARE OR 2" ROUND WOODEN POSTS SET 3" MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 1/2 GAUGE MINIMUM WIRE.

TYPICAL KEY JOINT DETAIL



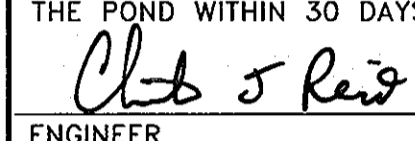
BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBILITY INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER:  DATE: 4-8-05

BY THE ENGINEER:

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

ENGINEER:  DATE: 4-8-05

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

NATURAL RESOURCES CONSERVATION SERVICE DATE: 4/19/05

HOWARD SOIL CONSERVATION DISTRICT DATE: 4/19/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DATE NO. REVISION

OWNER/DEVELOPER: THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION, THE ROUSE BUILDING, 10275 LITTLE PATUXENT PARKWAY, COLUMBIA, MARYLAND 21044, 410-992-6000

PROJECT: EMERSON SECTION 2 PHASE 6B, LOTS 1 THRU 22

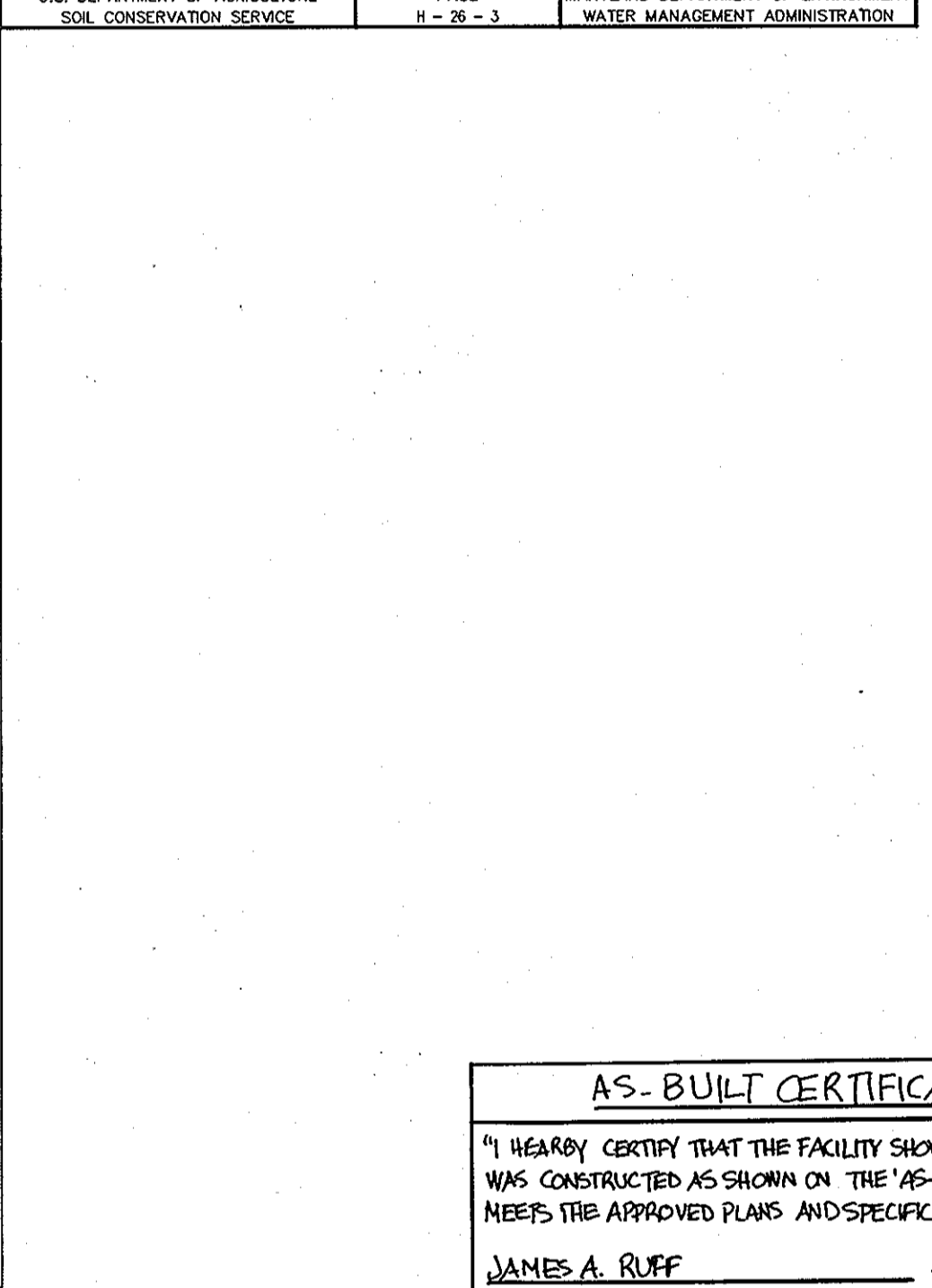
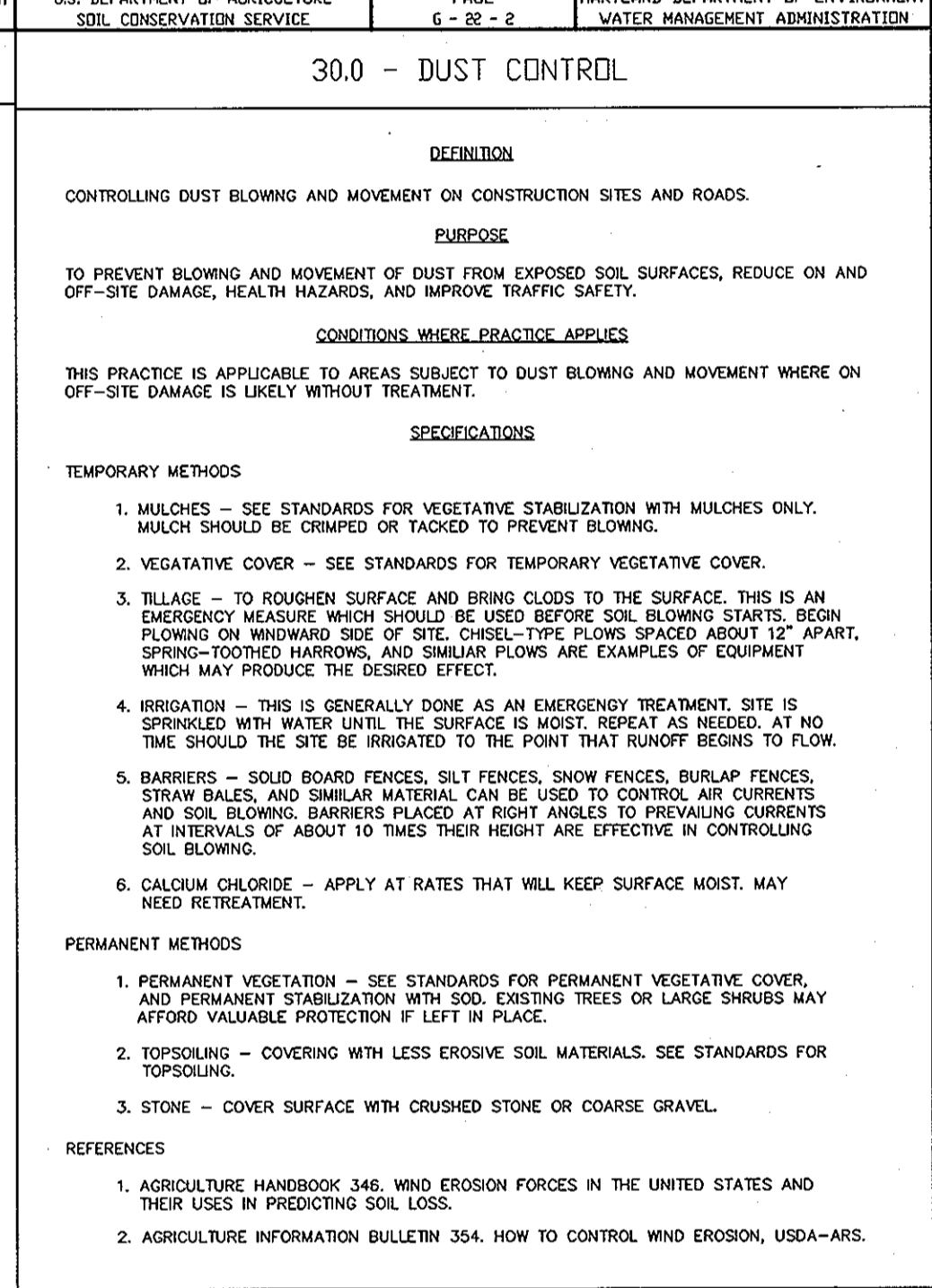
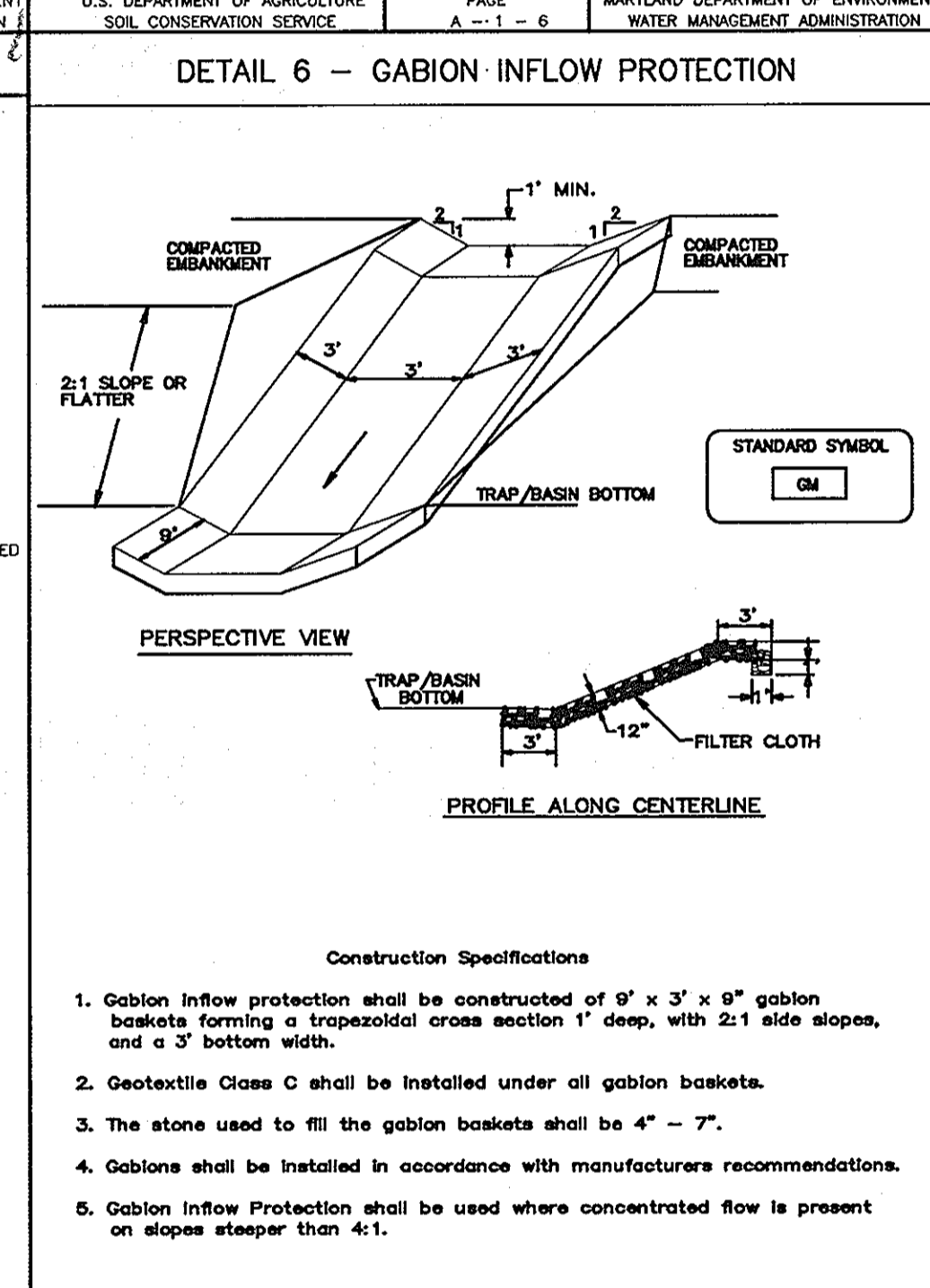
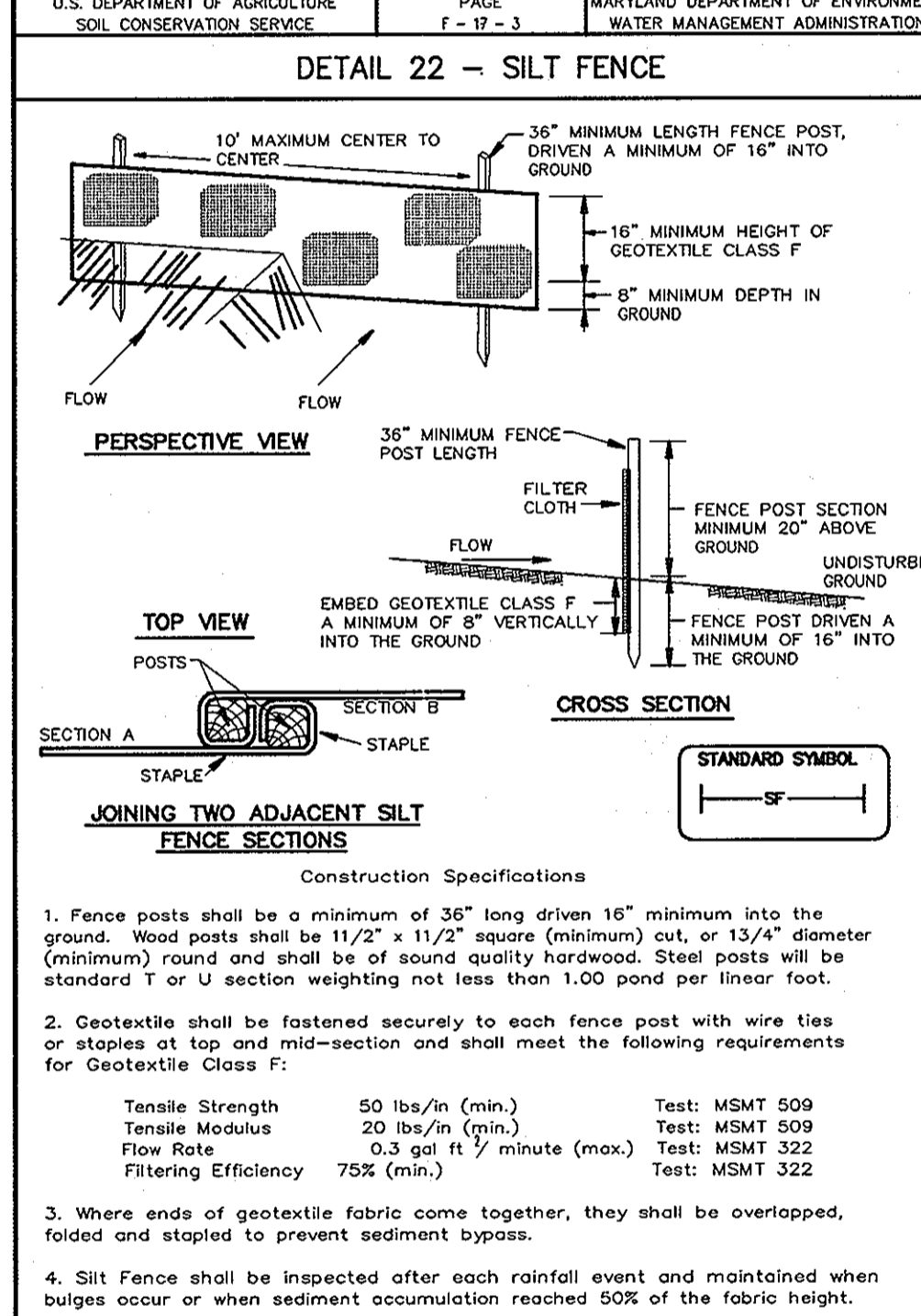
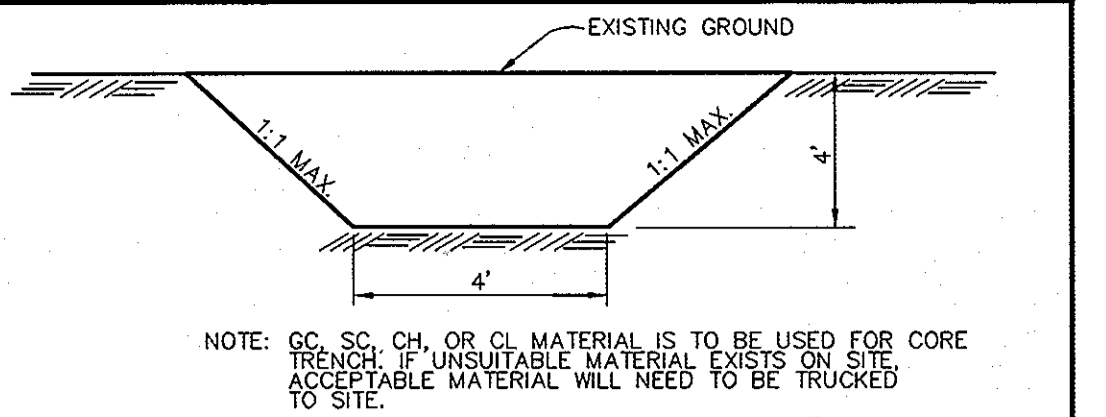
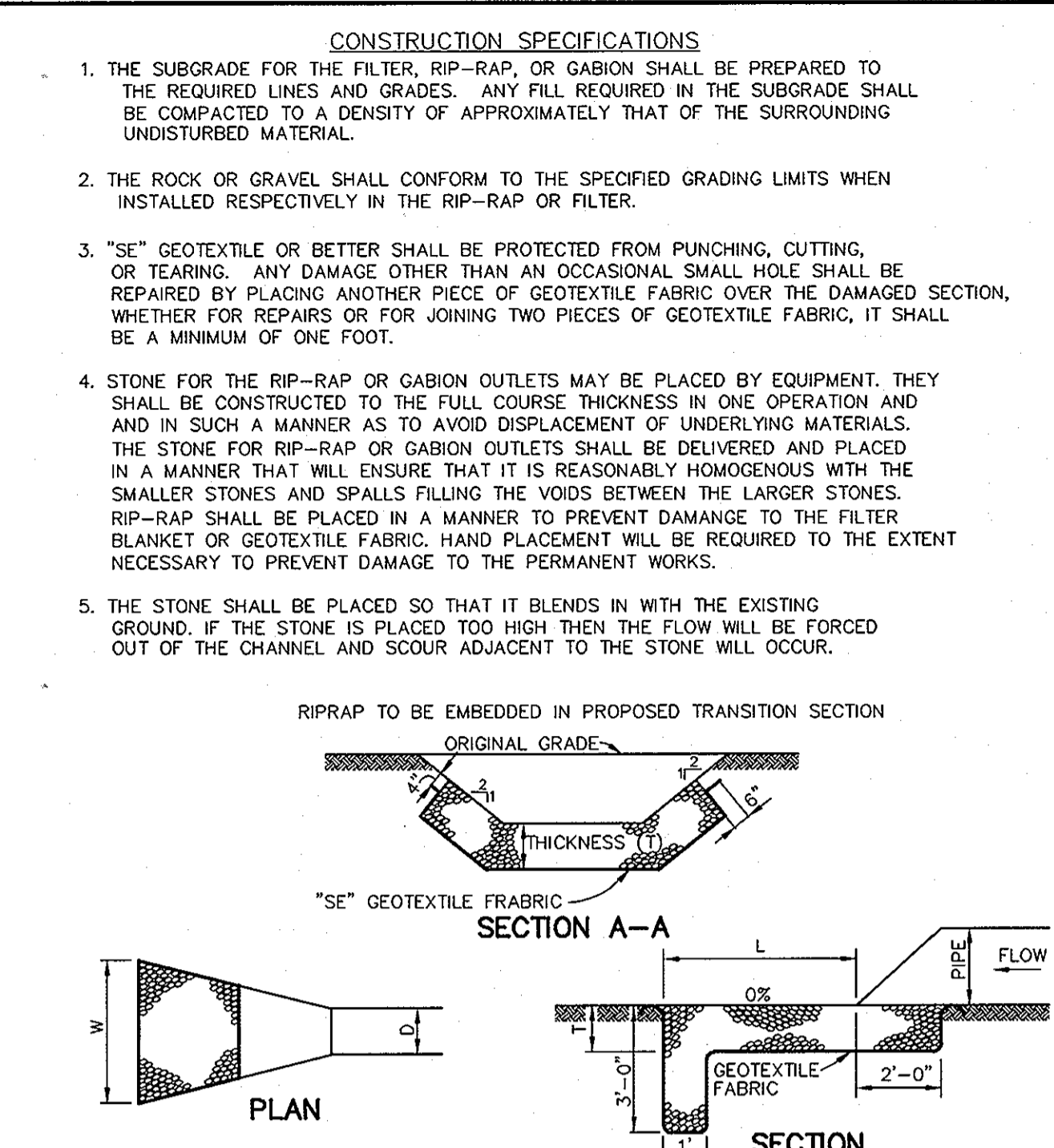
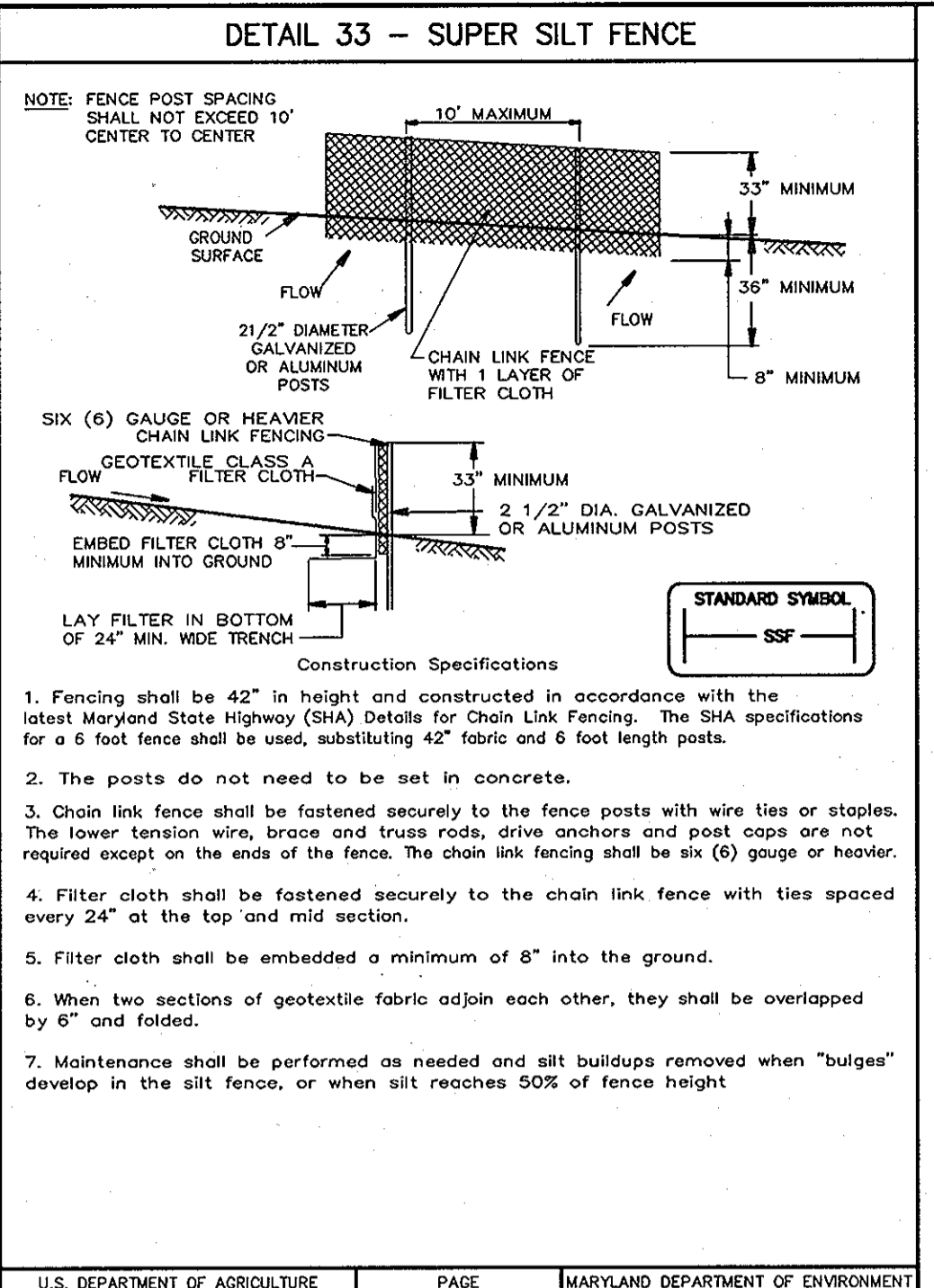
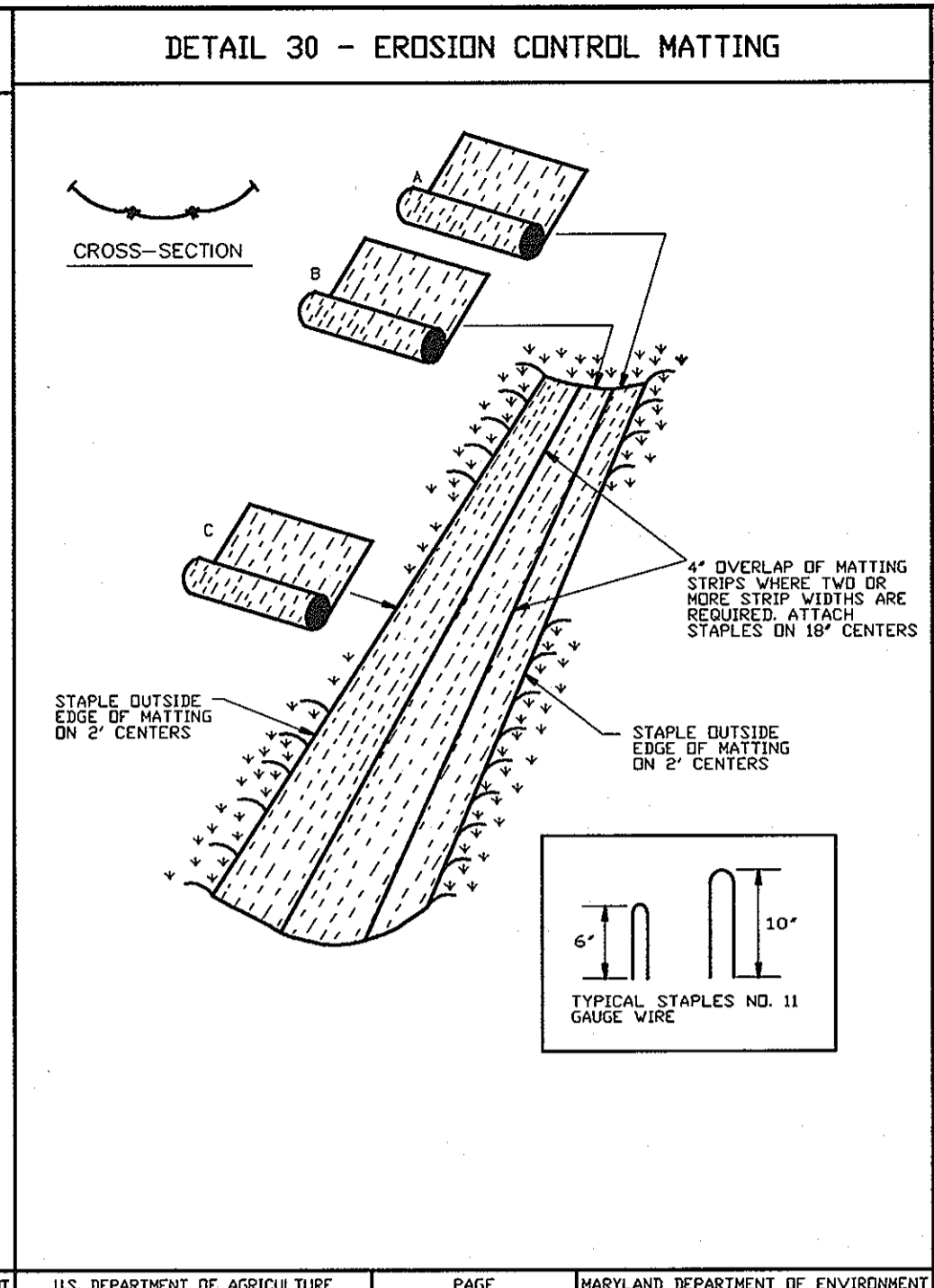
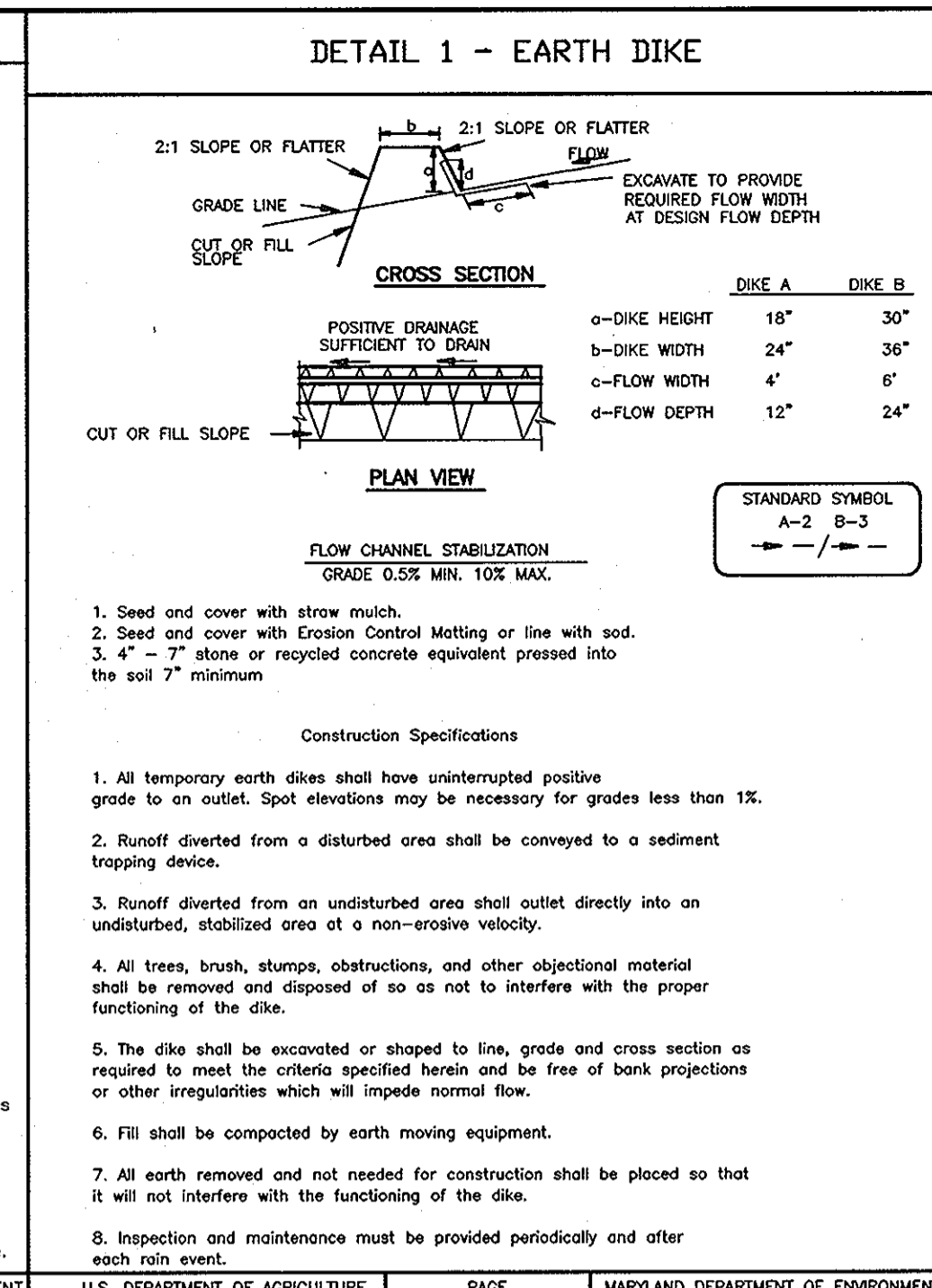
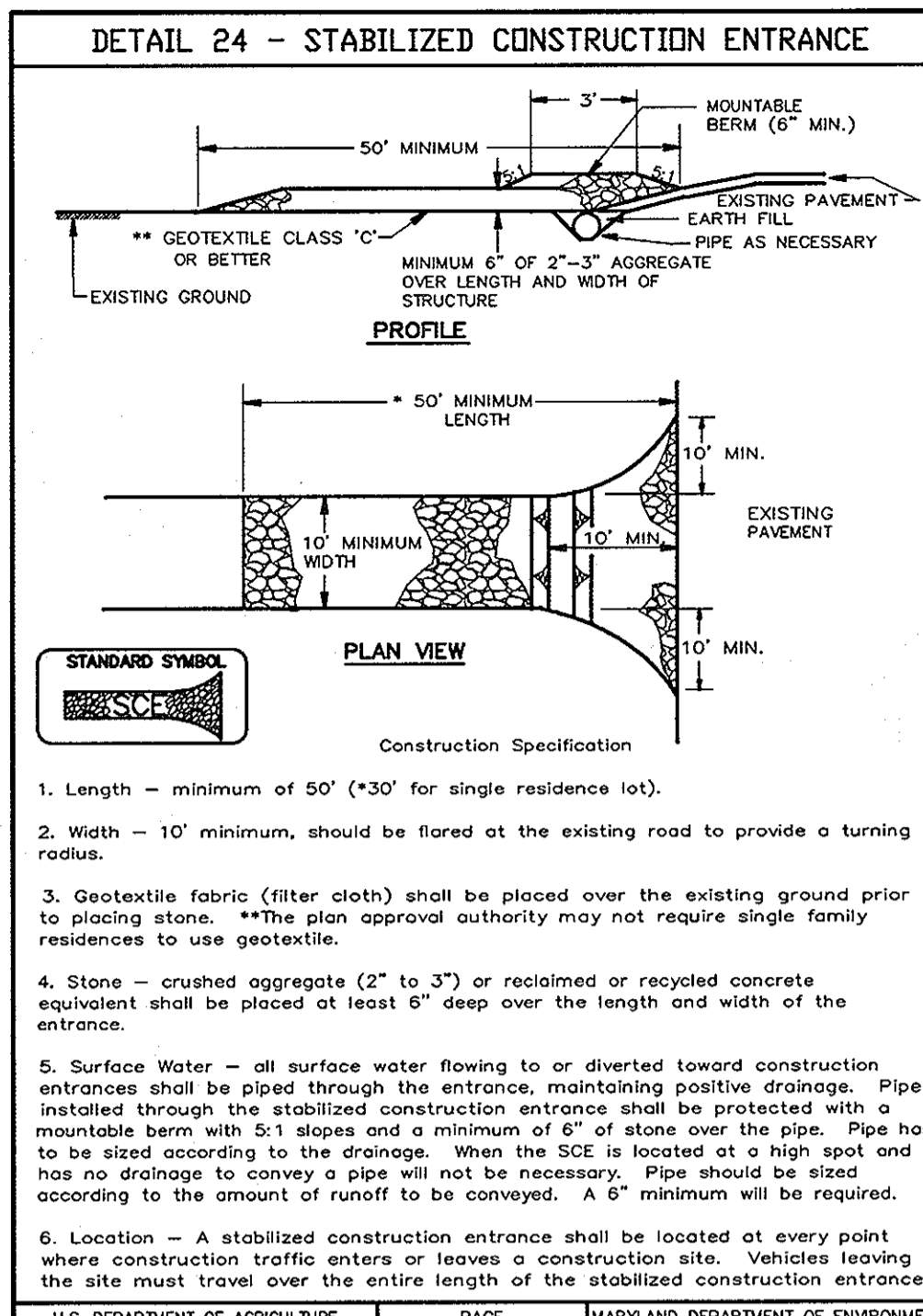
AREA: TAX MAP 47 - BLOCK 8 & 9, ZONED: PEC-MXD-3, PARCEL: 462, 6th ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

TITLE: SWM DETAILS AND PROFILES AS-BUILT

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

DESIGNED BY: A.C.R.
 DRAWN BY: DAM
 CHECKED BY: C.J.R.
 PROJECT NO: 22456/1-4, FINALS DETAIL.3
 DATE: APRIL 8, 2005
 SCALE: AS SHOWN
 DRAWING NO. 6 OF 13

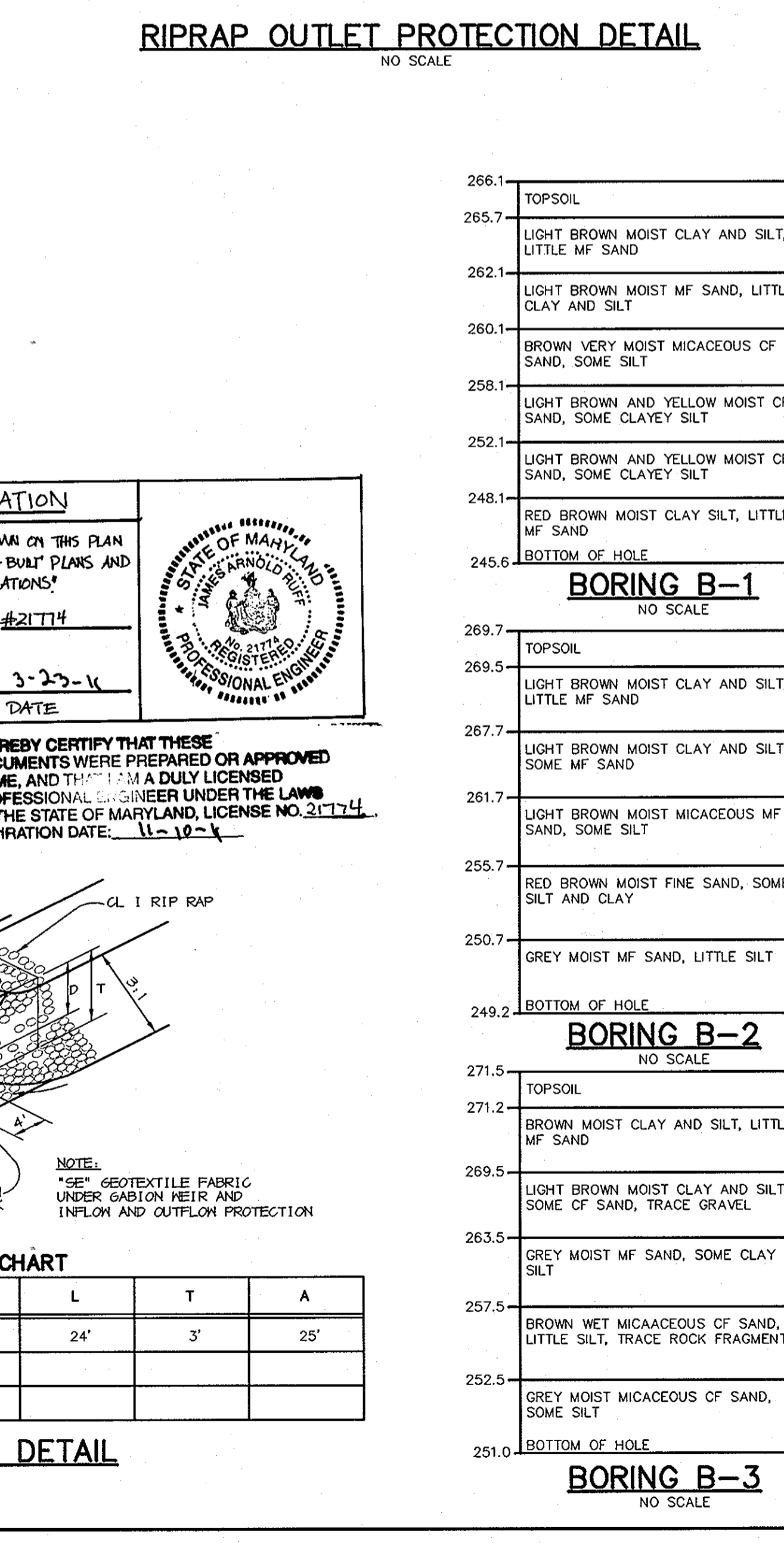
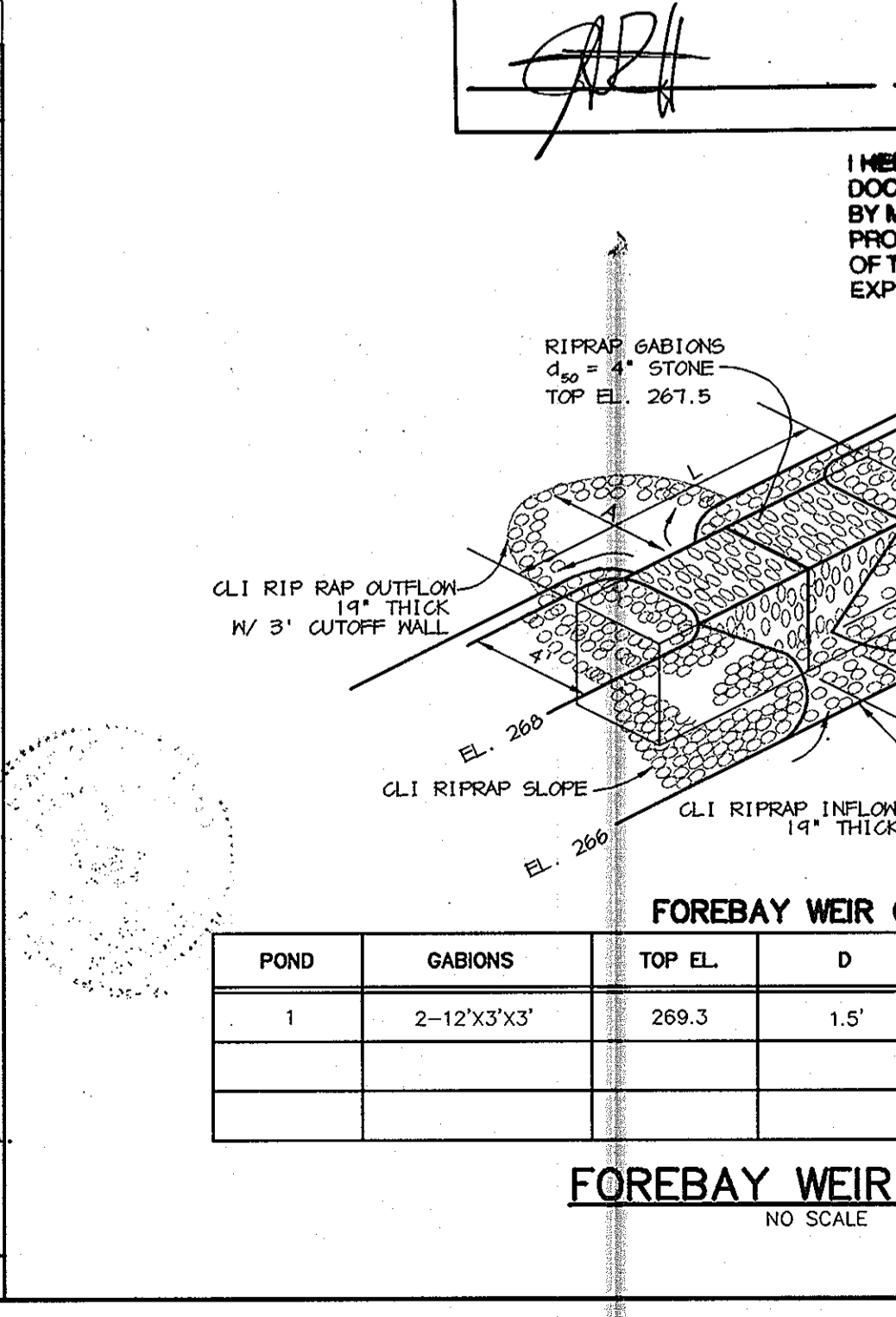
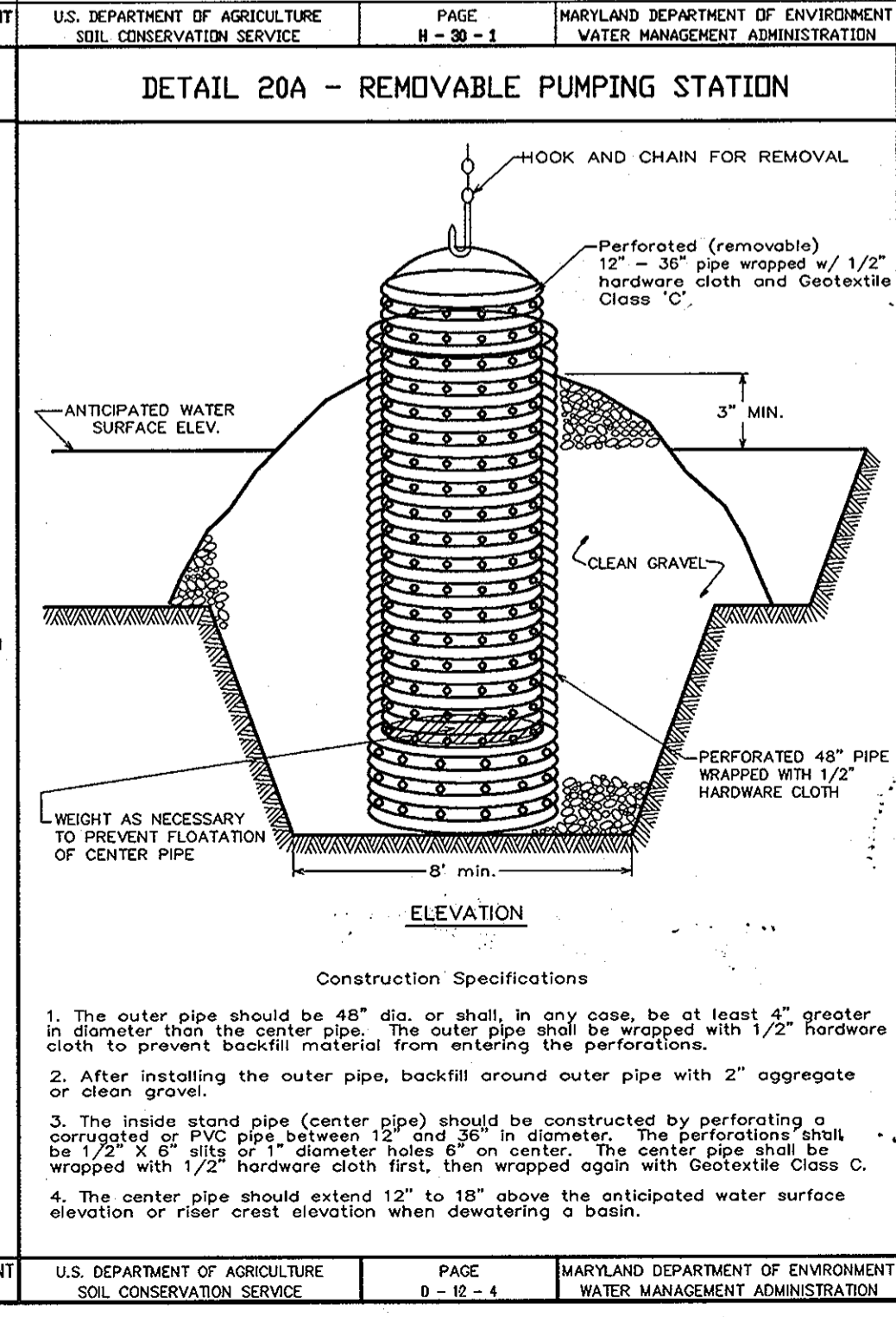
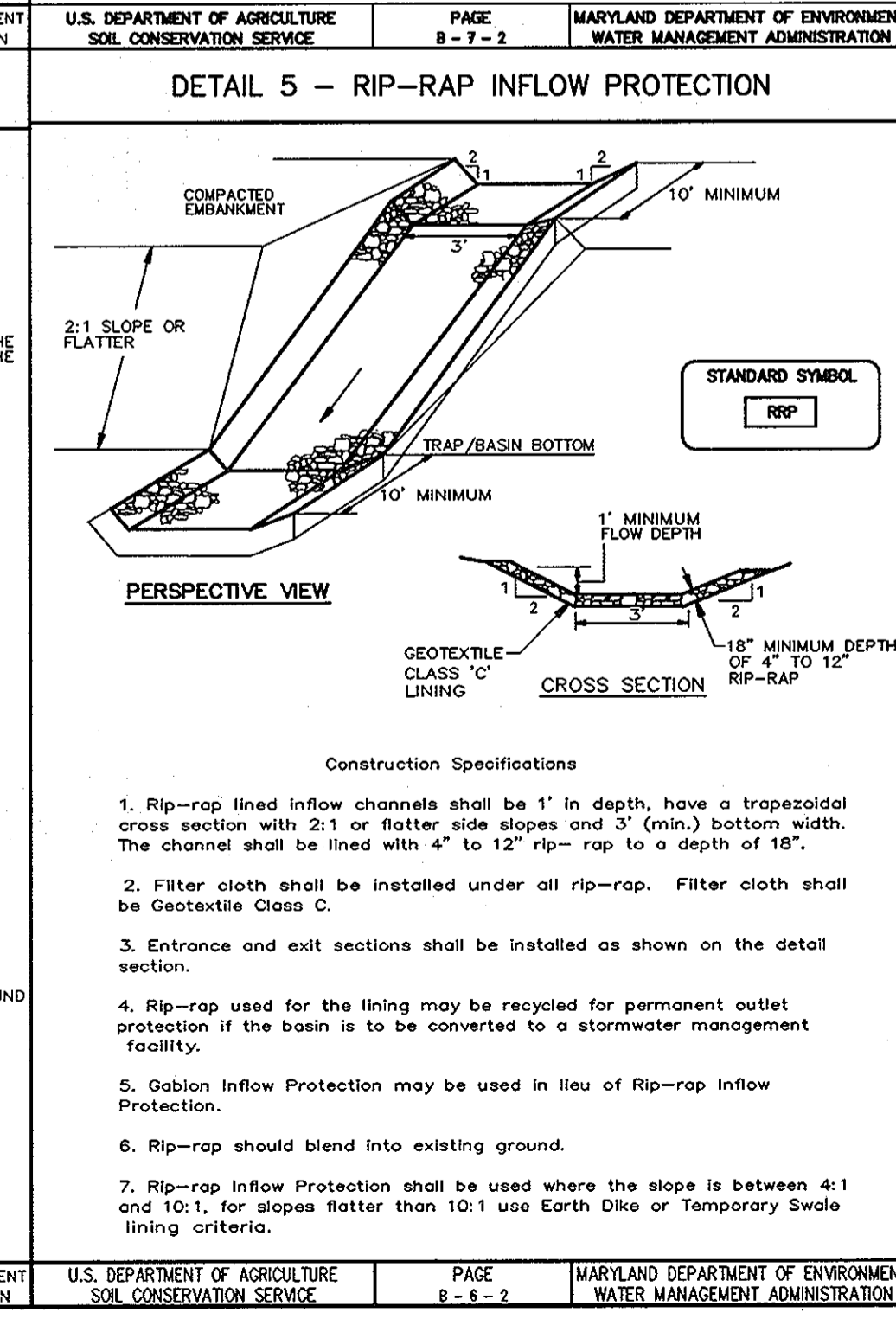
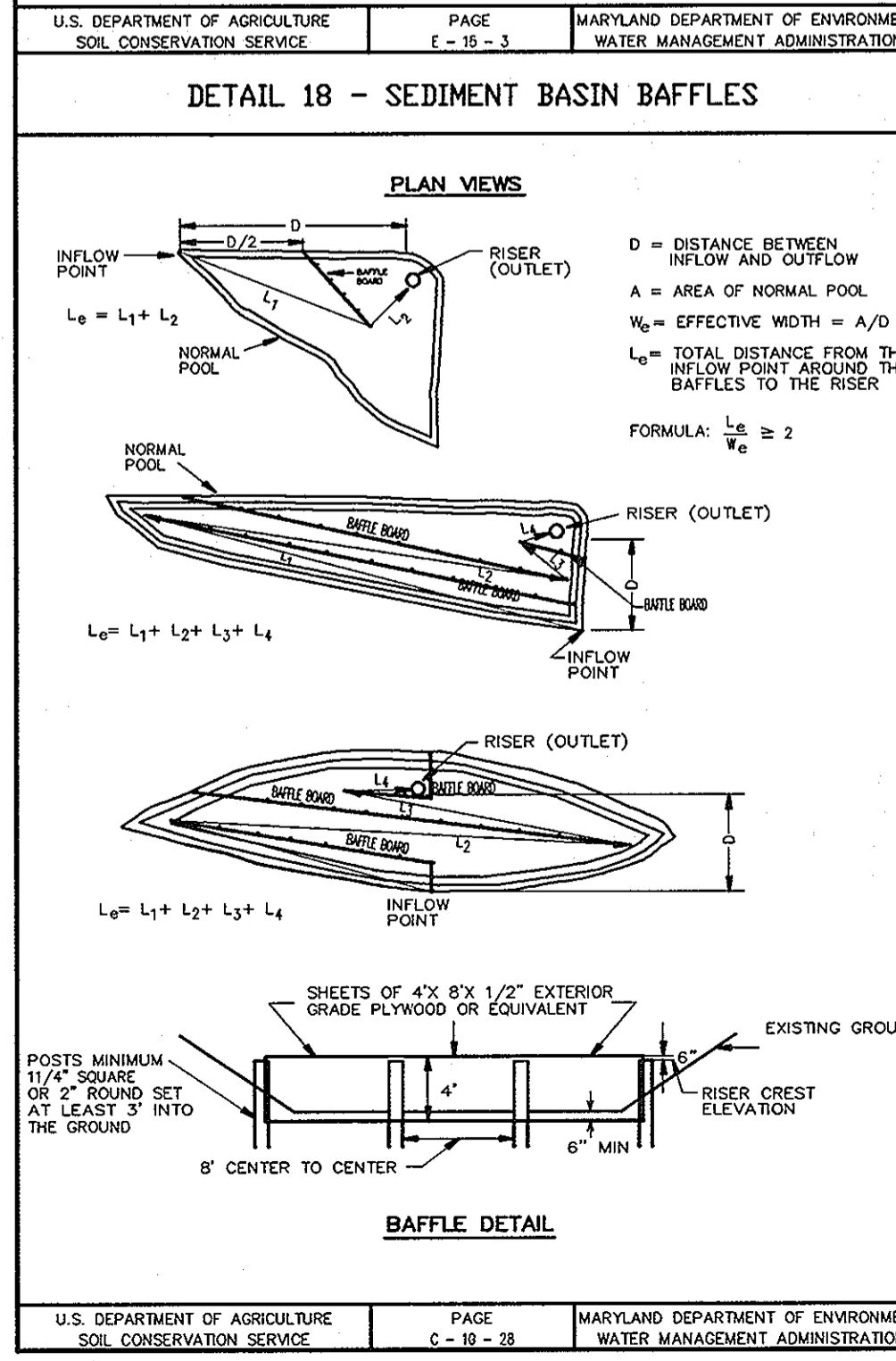
CHRISTOPHER J. REID #19949



RIPRAP OUTLET PROTECTION DETAIL

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

STRUCTURE	MEDIAN STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)	Q ₁₀	V _p	DEPTH
E-1	9.5" CL 1	15'	23'	19"	-	-	-
E-2&E-4	9.5" CL 1	11'	19'	19"	-	-	-
E-3	9.5" CL 1	11'	15'	19"	-	-	-



BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

PAUL CAVANUGH 4.8.05
DEVELOPER DATE

BY THE ENGINEER :

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

Chris Reid 4.8.05
ENGINEER DATE

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

John Murphy 4/19/05
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

William J. White 7-28-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Cindy Hamilton 8/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Chris Reid 7-28-05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER/DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT

EMERSON
SECTION 2 PHASE 6B, LOTS 1 THRU 22

AREA TAX MAP 47 BLOCK 8 & 9
ZONED: PEC-MXD-3 PARCEL: 462
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE

SEDIMENT CONTROL DETAILS
As-Built

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

4.8.05 DATE
DESIGNED BY : A.C.R.
DRAWN BY : DAM
CHECKED BY : C.J.R.
PROJECT NO. 22456/1-4
FINALS DETAIL 2
DATE : APRIL 8, 2005
SCALE : AS SHOWN
DRAWING NO. 7 OF 13
CHRISTOPHER J. REID #19949

MD-378 STANDARDS AND SPECIFICATIONS

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

SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed.

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.

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.

EMBANKMENT

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.

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 layers before compaction layers which are to be compacted over the entire length of the fill.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or composition shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire or vibratory roller.

Cut-off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans.

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 four feet.

STRUCTURE BACKFILL - Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material.

PIPE CONDUITS - All pipes shall be circular in cross section. Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

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.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-274 with watertight coupling bands or flanges.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-196 or M-211 with watertight coupling bands or flanges.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-196 or M-211 with watertight coupling bands or flanges.

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Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-196 or M-211 with watertight coupling bands or flanges.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ONCE ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATION FOR PONDS" (HD-78). THE POND OWNER AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

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: This practice is limited to areas having 2:1 or flatter slopes where: a. The texture of the exposed subsoil material is not adequate to produce vegetative growth.

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.

CASE OF WATER PUMPING CONSTRUCTION: All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works.

Construction and Material Specifications: Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications.

Topsoil shall be loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand, or other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority.

Topsoil shall be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.

Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

For sites having disturbed areas under 5 acres: I. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

For sites having disturbed areas over 5 acres: I. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local law enforcement shall be notified of any construction activity that may require draining the water to pumps from which the water shall be pumped.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

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

Seeding Preparation - Loosen upper three inches of soil by raking, harrowing or other acceptable means before seeding, if not previously loosened.

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

Seeding - For sections March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 tons per acre of annual ryegrass (8.2 lbs. per 1000 sq. ft.).

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of unwashed small grain straw immediately after seeding.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

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, harrowing 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 (42 lbs. per 1000 sq. ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding - For the period March 1 thru April 30 and from August 1 thru October 15, seed with 80 lbs. per acre (1.4 lbs. per 1000 sq. ft.) of Kentucky 31 Tall Fescue, for the period May 1 thru July 31, seed with 80 lbs. per acre (1.4 lbs. per 1000 sq. ft.) of Kentucky 31 Tall Fescue, for the period August 1 thru October 15, seed with 80 lbs. per acre (1.4 lbs. per 1000 sq. ft.) of Kentucky 31 Tall Fescue.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of unwashed small grain straw immediately after seeding.

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Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of unwashed small grain straw immediately after seeding.

STANDARD SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSING 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, OR ALL SLOPES STEEPER THAN 5:1, 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, SOIL, TEMPORARY SEEDING, AND MULCHING (SEC. 6.) TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:
TOTAL AREA OF SITE 8.52 ACRES
AREA DISTURBED OR PAVED 2.5 ACRES
AREA TO BE VEGETATIVELY STABILIZED 0.4 ACRES
TOTAL CUT 4.3 ACRES
TOTAL FILL 20000 CY
OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT.
QUANTITIES ARE FOR COUNTY FEE PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ACTUAL QUANTITIES.
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 GRADINGS 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.

BY THE DEVELOPER: I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Paul Cavanagh 4.8.05 DEVELOPER DATE

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

Chris Reed 4.8.05 ENGINEER DATE

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

John Maguire 4/19/05 NATURAL RESOURCES/CONSERVATION SERVICE DATE

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

Matthew Sullivan 4/19/05 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Z. Winkler 7-20-05 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cindy Hamilton 5/1/05 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

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INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ONCE ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATION FOR PONDS" (HD-78). THE POND OWNER AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF.

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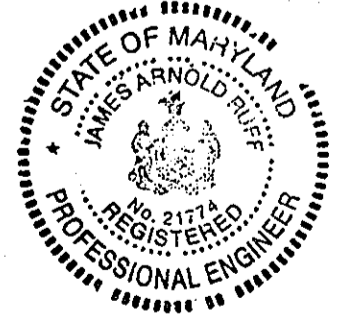
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AS-BUILT CERTIFICATION: I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. JAMES A. RUFF #21774 DATE 3-20-11



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: 10-11

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, AND CLEANWATER DIKE AND STABILIZE.
3. CONSTRUCT SEDIMENT BASIN. (3 WEEKS)
4. UPON ACCEPTANCE BY THE COUNTY INSPECTOR, CONTRACTOR TO PROCEED WITH ROUGH GRADING OF SITE. (3 WEEKS) CONTRACTOR TO PROVIDE DUST CONTROL AS NECESSARY AND AS DIRECTED BY THE INSPECTOR.
5. INSTALL WATER, SEWER AND STORM DRAINS. (3 WEEKS)
6. INSTALL CURB AND GUTTER AND PAVE. (1 WEEK)
7. PERFORM FINE GRADING, SIDEWALK, LIGHTING AND LANDSCAPING. (1 WEEK)
8. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 WEEKS)
9. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND CONVERT SEDIMENT BASIN TO PERMANENT STORM WATER MANAGEMENT FACILITY. CONVEY FACILITY IN THE FOLLOWING STEPS:
A. PUMP OUT STORM DRAINS.
B. FLOOD OUT STANDING WATER IN BASIN USING PUMPING STATION. (2 DAYS)
C. REMOVE ACCUMULATED SEDIMENT. (2 DAYS)
D. REMOVE TEMPORARY DRAIN DOWN METAL AND PLYWOOD. (1 DAY)
E. INSTALL POND DRAIN AND ORIFICE METAL PLATE. (3 DAYS)
F. INSTALL FOREBAY. (2 DAYS)
G. STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 DAYS)

BY THE DEVELOPER: I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Paul Cavanagh 4.8.05 DEVELOPER DATE

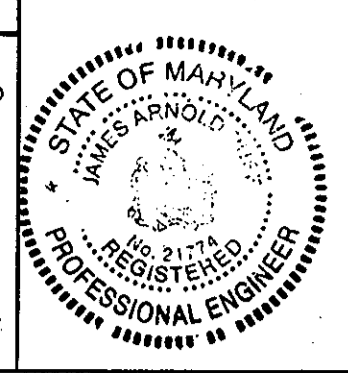
BY THE ENGINEER: I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED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

Chris Reed 4.8.05 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 JAMES A. RUFF #21714
 DATE 3-23-11



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. 21714. EXPIRATION DATE: 11-10-11

STREET TREE PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
TREES					
AS	24	ACER SACCHARUM 'GREEN MOUNTAIN'	2 1/2"-3" CAL.	B & B	
PERIMETER PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
TREES					
AR	3	ACER RUBRUM 'OCTOBER GLORY'	2 1/2"-3" CAL.	B & B	
BN	1	BETULA NIGRA 'HERITAGE'	10'-12' HT.	B & B	
PAB	14	PLATANUS 'ASCENDENS'	2 1/2"-3" CAL.	B & B	
OC	2	QUERCUS COCCINEA 'SCARLET OAK'	2 1/2"-3" CAL.	B & B	
FLOWERING TREES					
PY	2	PRUNUS X YEDGENSIS 'YOSHINO CHERRY'	6'-8 HT.	B & B	
EVERGREEN TREES					
PA	8	PICEA ABIES 'NORWAY SPRUCE'	6'-8 HT.	B & B	
PS	18	PINUS STROBUS 'WHITE PINE'	6'-8 HT.	B & B	

STORMWATER MANAGEMENT AREA PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
TREES					
AR	1	ACER RUBRUM 'OCTOBER GLORY'	2 1/2"-3" CAL.	B & B	
BN	1	BETULA NIGRA 'HERITAGE'	10'-12' HT.	B & B	
OC	6	QUERCUS COCCINEA 'SCARLET OAK'	2 1/2"-3" CAL.	B & B	
FLOWERING TREES					
OK	4	CORNUS KOUSA 'KOUSA DOGWOOD'	8'-10' HT.	B & B	
PY	2	PRUNUS X YEDGENSIS 'YOSHINO CHERRY'	6'-8 HT.	B & B	
EVERGREEN TREES					
PA	13	PICEA ABIES 'NORWAY SPRUCE'	6'-8 HT.	B & B	
PS	11	PINUS STROBUS 'WHITE PINE'	6'-8 HT.	B & B	

- 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 GRADING PERMIT IN THE AMOUNT OF \$10,000.
 20 SHADE TREES @ \$300 = \$6,000
 0 ORNAMENTAL TREES @ \$150 = \$0
 32 EVERGREEN TREES @ \$150 = \$4,800
 - 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.
 - AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS SHALL BE OF THE PROPER HEIGHT AND/OR SPREAD REQUIREMENTS IN ACCORDANCE WITH THIS PLAN AND THE HOWARD COUNTY LANDSCAPE MANUAL.
 - 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.

LEGEND

EX. TREELINE	
PROP. TREELINE	
PROPERTY LINE	
CONTOUR LINES	
EX. BUILDING	
PROP. SHADE TREE	
PROP. EVERGREEN TREE	
PROP. ORNAMENTAL TREE	
PROP. SHRUBS	
PERIMETER LANDSCAPE REQUIREMENT	
STORMWATER MANAGEMENT AREA LANDSCAPE REQUIREMENT	
STREET TREE LANDSCAPE REQUIREMENT	
PERIMETER LANDSCAPE	
EDGE LIMITS	

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: *Paul Cavanaugh* DATE: 4-8-05
 PAUL CAVANAUGH

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William J. O'Connell 7-20-05
 CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cindy Kimball 8/1/05
 CHIEF, DIVISION OF LAND USE & DEVELOPMENT DATE

Michael J. ... 7/28/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

10/17/05 | REMOVED SEWER EASEMENT BETWEEN 4+7, REVISED PROPERTY LINE OF LOTS 1, 7, EXTENDED SEWER LINE TO EXISTING MANHOLE IN STEPHENS ROAD.

DATE NO. REVISION
 OWNER/DEVELOPER
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

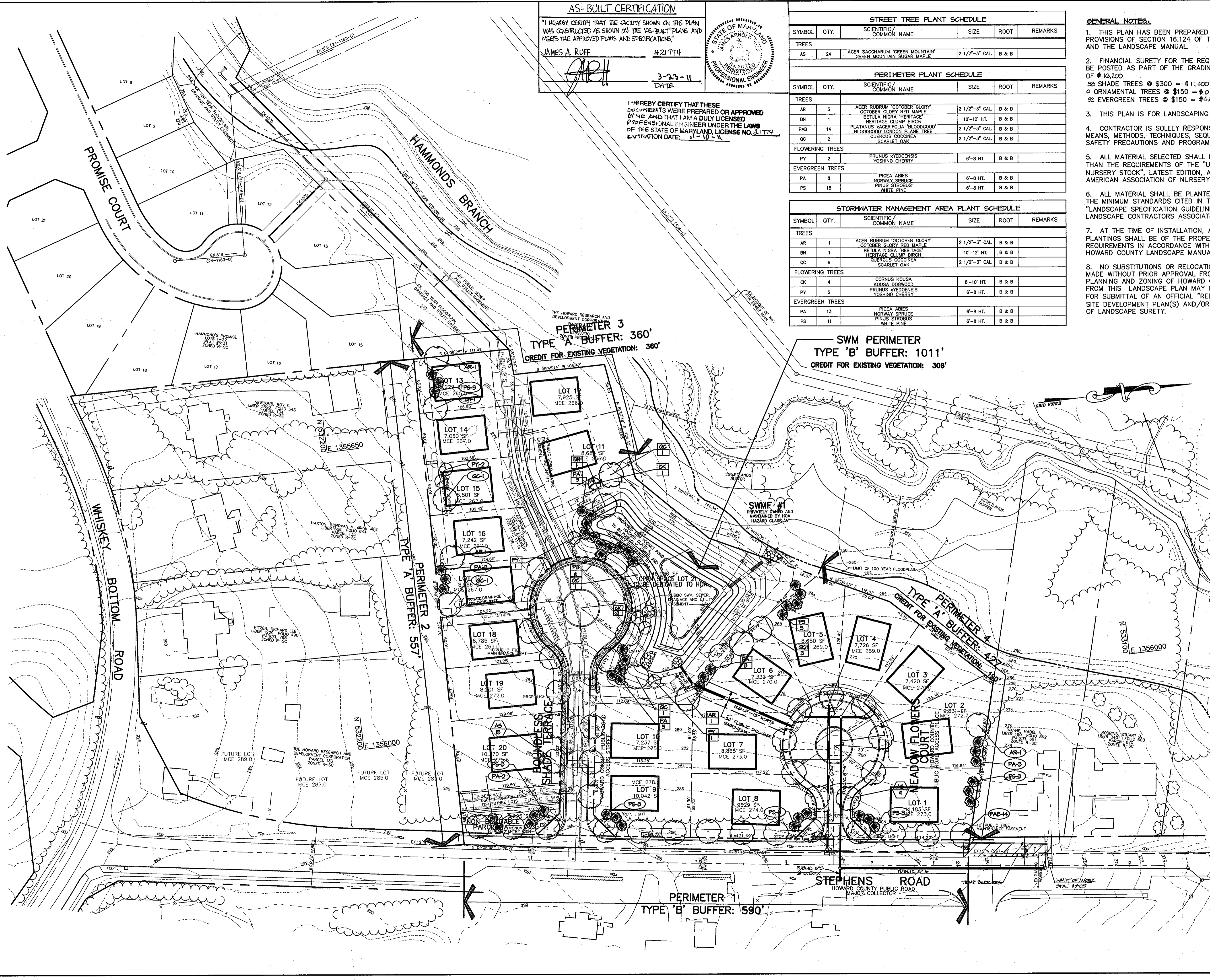
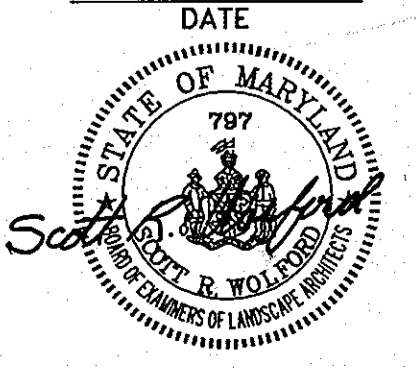
PROJECT
 EMERSON
 SECTION 2 PHASE 6B, LOTS 1 THRU 22

AREA
 TAX MAP 47 BLOCK 8 & 9
 ZONED: PEC-MXD-3 PARCEL: 462
 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
 LANDSCAPE PLAN
 AS-BUILT

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 PHRA
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.9900
 F 410.997.9282

DESIGNED BY: A.C.R.
 DRAWN BY: DAM
 CHECKED BY: C.J.R.
 PROJECT NO. 22456/1-4
 FINALS L200LND
 DATE: APRIL 8, 2005
 SCALE: 1" = 50'
 DRAWING NO. 9 OF 13



WINTER SUN ROAD
HOWARD COUNTY PUBLIC ROAD
LOCAL ROAD

STREET TREE CALCULATIONS *		
BOUNDLESS SHADE TERRACE	638' / 40	15 LARGE TREES
MEADOW FLOWERS COURT	385' / 40	9 LARGE TREES
STEPHENS ROAD	546' / 40	14*
TOTAL TREES REQUIRED		24 LARGE TREES

*STREET TREE PLANTING FOR STEPHENS ROAD ADRESSED BY LANDSCAPE PERIMETER 1.

PERIMETER	ADJACENT TO PERIMETER PROPERTIES			
	1	2	3	4
LANDSCAPE TYPE	B	A	A	A
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	±590'	±557'	±360'	±427'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	YES ±360'	YES ±190'
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO/LINEAR FEET)	YES 44'	NO	NO	NO
LINEAR FEET REMAINING	±546'	±557'	0'	±237'
NUMBER OF PLANTS REQUIRED:				
SHADE TREES	11	4	0	4
EVERGREEN TREES	14	0	0	0
FLOWERING TREES	0	0	0	0
SHRUBS	0	0	0	0
NUMBER OF PLANTS PROVIDED:				
SHADE TREES	14	5	0	1
EVERGREEN TREES	14	2	0	0
FLOWERING TREES	0	0	0	0
SHRUBS	0	0	0	0

SUBSTITUTION NOTES:

- PERIMETER 2: 6 EVERGREEN TREES WERE SUBSTITUTED FOR 3 SHADE TREES; 2 FLOWERING TREES WERE SUBSTITUTED FOR 1 SHADE TREE.
- PERIMETER 4: 6 EVERGREEN TREES WERE SUBSTITUTED FOR 3 SHADE TREES.

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING	
S.W.M. POND PERIMETER	1
LANDSCAPE TYPE	B
LINEAR FEET OF TOTAL PERIMETER	±1,011'
CREDIT FOR EX. VEGETATION (NO OR YES & %)	YES 30%
CREDIT FOR OTHER PROP. LANDSCAPING (NO OR YES & %)	NO
LINEAR FEET OF REMAINING PERIMETER	705'
NUMBER OF TREES REQUIRED:	
SHADE TREES	14
EVERGREEN TREES	10
FLOWERING TREES	0
NUMBER OF TREES PROVIDED:	
SHADE TREES	8
EVERGREEN TREES	24
FLOWERING TREES	6

SUBSTITUTION NOTES:

- 6 EVERGREEN TREES WERE SUBSTITUTED FOR 3 SHADE TREES;
- 6 FLOWERING TREES WERE SUBSTITUTED FOR 3 SHADE TREES.

LEGEND

- EX. TREELINE
- PROP. TREELINE
- PROPERTY LINE
- CONTOUR LINES
- EX. BUILDING
- PROP. SHADE TREE
- PROP. EVERGREEN TREE
- PROP. ORNAMENTAL TREE
- PROP. SHRUBS
- PERIMETER LANDSCAPE REQUIREMENT (AR-3)
- STORMWATER MANAGEMENT LANDSCAPE REQUIREMENT (IP 1)
- STREET TREE LANDSCAPE REQUIREMENT (S/T)
- PERIMETER LANDSCAPE EDGE LIMITS

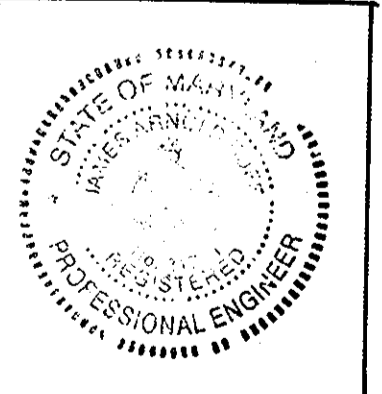
SKYLARK BOULEVARD
HOWARD COUNTY PUBLIC ROAD
MAJOR COLLECTOR

CORMAN ROAD
HOWARD COUNTY PUBLIC ROAD
MAJOR COLLECTOR

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JAMES A. RUFF #2114
DATE 3-23-11



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. 20114, EXPIRATION DATE: 11-10-11.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter F. White 7-20-05
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cindy Hamilton 8/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

Mark 7/28/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

OWNER/DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT EMERSON
SECTION 2 PHASE 6B, LOTS 1 THRU 22

AREA TAX MAP 47 BLOCK 8 & 9
ZONED: PEC-MXD-3 PARCEL: 462
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE LANDSCAPE PLAN AND TABULATIONS
AS-BUILT

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

PHRA
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
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4-8-05
DATE

DESIGNED BY: A.C.R.
DRAWN BY: DAM
CHECKED BY: C.J.R.
PROJECT NO: 22456/1-4
FINALS L201LND
DATE: APRIL 8, 2005
SCALE: 1" = 50'
DRAWING NO. 10 OF 13

SCOTT R. WOLFORD #797
F-05-89

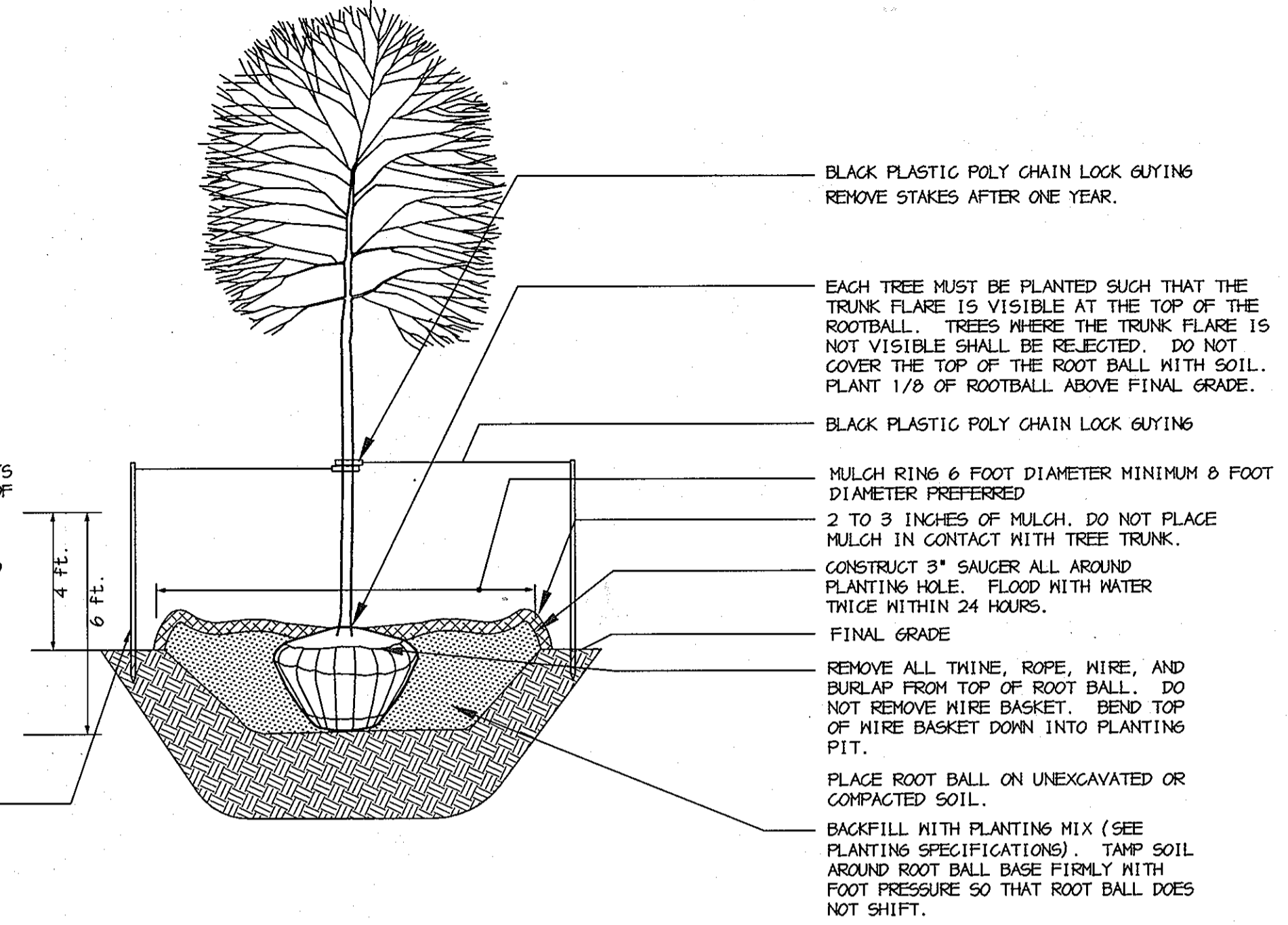
PLANTING SPECIFICATIONS

- 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 heeled-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 *Xcupressocyparis leylandii* between November 15 and March 15. Landscape plants are not to be installed before site is 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 yews): 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.
- Weed & 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:

- DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
- STAKE TREES AS SHOWN.
- DIG PLANTING PIT THREE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
- TIGHTEN GUY ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. GUY SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES.
- TUCK ANY LOOSE ENDS OF THE GUY SO THAT NO LOOSE ENDS ARE EXPOSED.

INSTALL TWO STAKES ON OPPOSITE SIDES OF TREE, PARALLEL TO THE DIRECTION OF THE PREVAILING WINTER WINDS, UNLESS OTHERWISE DIRECTED BY LANDSCAPE ARCHITECT. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL INTO PREFERABLY UNEXCAVATED SOIL.



DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)
NOT TO SCALE

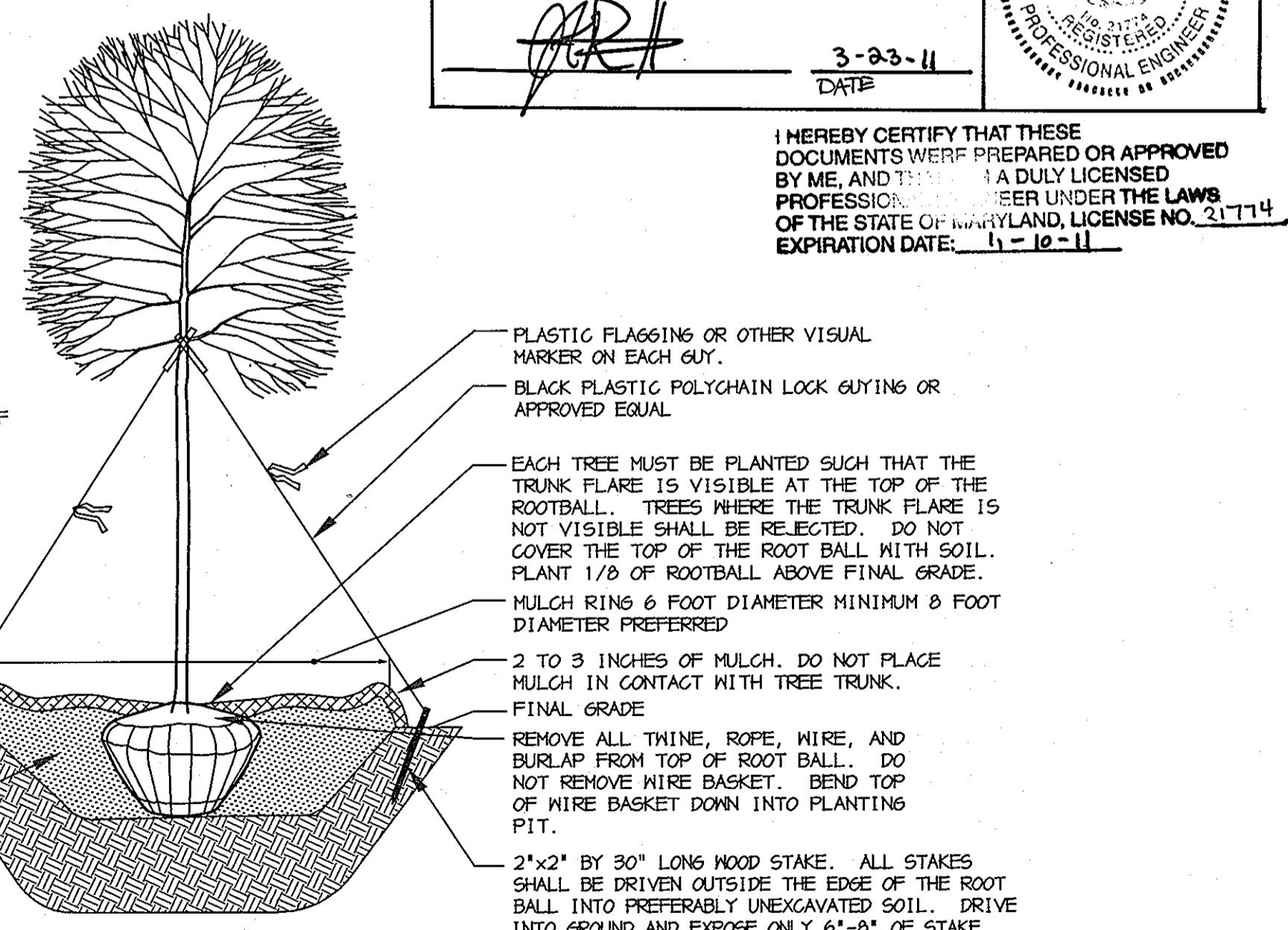
NOTES:

- SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERWISE SPECIFIED ON PLAN. PLANTS WITH CO-DOMINANT LEADERS, MISSING, OR DAMAGED LEADERS SHALL BE REJECTED.
- STAKE TREES AS SHOWN.
- DIG PLANTING PIT THREE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
- PLASTIC FLAGGING OR OTHER VISUAL MARKER ON EACH TREE CHAIN.
- BLACK PLASTIC POLY CHAIN GUY LOCKING OR APPROVED EQUAL.
- EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOTBALL. TREES WHERE THE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. PLANT 1/8 OF ROOTBALL ABOVE FINAL GRADE.
- MULCH RING 6 FOOT DIAMETER MINIMUM 8 FOOT DIAMETER PREFERRED.
- 2 TO 3 INCHES OF MULCH. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK.
- CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER TWICE WITHIN 24 HOURS.
- FINAL GRADE
- REMOVE ALL TWINE, ROPE, WIRE, AND BURLAP FROM TOP OF ROOT BALL. DO NOT REMOVE WIRE BASKET. BEND TOP OF WIRE BASKET DOWN INTO PLANTING PIT.
- PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.
- 2"x2" BY 30" LONG WOOD STAKE. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL INTO PREFERABLY UNEXCAVATED SOIL. DRIVE INTO GROUND AND EXPOSE ONLY 6"-8" OF STAKE.
- 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

NOTES:

- DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
- STAKE TREES AS SHOWN.
- DIG PLANTING PIT THREE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
- PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.
- TIGHTEN GUY ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. GUY SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES FROM THE MIRE.
- TUCK ANY LOOSE ENDS OF THE GUY INTO THE MIRE WRAP SO THAT NO LOOSE ENDS ARE EXPOSED.
- INSTALL THREE GUYS PER TREE, SPACED EVENLY AROUND THE TRUNK.
- ASSURE THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TREE TRUNK IS A MINIMUM OF 0.5 IN. REMOVE STAKES AFTER ONE YEAR.
- 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 (TREES 3" CAL. OR LARGER)
NOT TO SCALE

AS-BUILT CERTIFICATION	
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.	
JAMES A. RUFF	#21714
<i>JAR</i>	3-23-11
	DATE

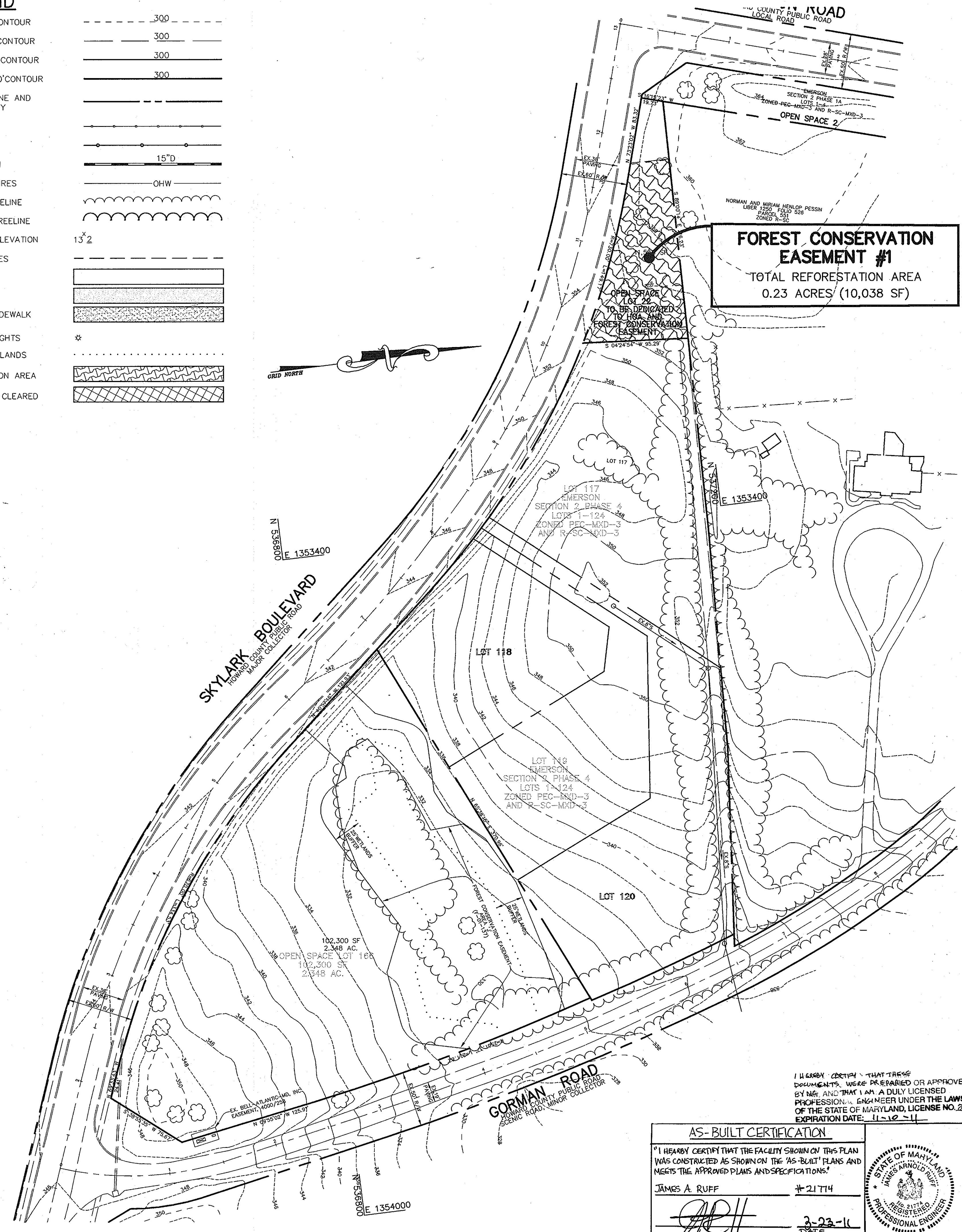
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21114, EXPIRATION DATE: 11-18-11

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>William F. ...</i>	7-20-05
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Cindy ...</i>	5/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Mike ...</i>	7/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
DATE NO.	REVISION
OWNER/DEVELOPER	
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT	
EMERSON SECTION 2 PHASE 6B, LOTS 1 THRU 22	
AREA	
TAX MAP 47 BLOCK 8 & 9 ZONED: PEC-MXD-3 PARCEL: 462 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	
LANDSCAPE DETAILS AS-BUILT	
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	
4-8-05	DESIGNED BY: A.C.R.
DATE	
<i>Scott R. Wolford</i>	DRAWN BY: DAM
SEAL	CHECKED BY: C.J.R.
	PROJECT NO. 22456/1-4 FINALS L202LND
	DATE: APRIL 8, 2005
	SCALE: AS SHOWN
	DRAWING NO. 11 OF 13
SCOTT R. WOLFORD #797	

P:\project\22456\1-4\fig\Plans\FINALS\L202LND.dwg, Layout1, 04/07/2005 01:28:09 PM, HP750C036).pc3, 1:1

LEGEND

EXISTING 2' CONTOUR	---	300
EXISTING 10' CONTOUR	---	300
PROPOSED 2' CONTOUR	---	300
PROPOSED 10' CONTOUR	---	300
PROPERTY LINE AND RIGHT OF WAY	---	
FENCE	---	
GUARDRAIL	---	
STORM DRAIN	---	15" D
OVERHEAD WIRES	---	OHW
EXISTING TREELINE	---	
PROPOSED TREELINE	---	
PROP. SPOT ELEVATION	*	13' 2
SETBACK LINES	---	
P-2 PAVING	---	
P-3 PAVING	---	
CONCRETE SIDEWALK	---	
PROPOSED LIGHTS	*	
LIMIT OF WETLANDS	---	
REFORESTATION AREA	---	
AREA TO BE CLEARED	---	



FOREST CONSERVATION EASEMENT #1
 TOTAL REFORESTATION AREA
 0.23 ACRES (10,038 SF)

FOREST CONSERVATION TRACKING CHART

Section/ Phase Number	Gross Area	Floodplain	Net Tract Area	Ex. Forest Area	Forest * Cleared	Forest Retained	Reforest./Affor. Required	Reforest./Affor. Provided	Excess Reforest./Affor.	Future Forest Clearing	Future Refor./Affor.	Comments
2 1A/1B	106.20	3.50	102.70	24.70	7.93	16.77	0.61	5.03	4.42	4.48	3.41	
2/2	118.90	3.50	115.40	24.80	8.03	16.77	2.95	5.03	2.08	3.28	3.41	See Note A
2/3	137.35	4.00	133.35	34.40	12.53	21.87	1.27	5.03	3.76	2.18	3.91	See Note B
3/1	206.85	21.19	185.66	85.30	39.47	45.83	0.00	5.03	5.03	2.18	3.91	
3/2	220.27	21.27	199.00	87.50	41.67	45.83	0.00	5.03	5.03	2.18	3.91	See Note C
2 /4	264.81	26.57	238.24	98.18	47.15	51.03	0.00	5.03	5.03	2.49	5.24	
2/5/C	267.84	27.40	240.44	98.62	47.59	51.03	0.00	5.77	5.77	2.49	5.24	
2/6/A	277.75	27.40	250.35	98.62	47.59	51.03	0.00	5.77	5.77	2.49	5.24	See Note D
2 /4	277.75	27.40	250.35	98.62	47.59	51.03	0.00	8.55	8.55	2.49	3.91	See Note E
2/5/A	306.93	27.51	279.42	98.66	47.63	51.03	2.79	8.74	5.95	2.49	3.91	
2/5/B	332.63	32.43	300.20	115.66	63.31	52.35	8.51	11.51	3.00	2.49	3.91	See Note F
2/1/B	332.63	32.43	300.20	115.66	61.73	53.93	6.53	13.29	6.76	0.49	1.84	See Note G
F-05-93	341.19	32.43	308.76	115.66	61.73	53.93	7.81	13.29	5.48	0.49	1.84	
2/6/B	347.46	32.43	315.03	121.26	67.33	53.93	10.15	13.52	3.44	0.49	1.84	

- A. 1.20+/- ACRES OF FUTURE FOREST CLEARING SHOWN ON F-01-137 WAS CLEARED FOR SWM ON OPEN SPACE LOT 174.
- B. 1.10+/- ACRES OF FUTURE FOREST CLEARING SHOWN ON F-01-137 WAS CLEARED FOR SWM ON OPEN SPACE LOT 176.
- C. GROSS AREA INCLUDES 1.07+/- ACRES FOR SANITARY SEWER EXTENSION AND CONTAINS 0.08+/- ACRES OF FLOODPLAIN.
- D. GROSS AREA EXCLUDES 0.38 ACRES FOR THE SANITARY SEWER SHOWN ON F-02-178. GROSS AREA ALSO EXCLUDES 0.07 ACRES FOR AREA PREVIOUSLY ACCOUNTED FOR UNDER P-03-16.
- E. THIS LINE ITEM ACCOUNTS FOR REFORESTATION PROVIDED RETROSPECTIVELY ON A PHASE THAT PREVIOUSLY ADDRESSED FOREST CONSERVATION ACT COMPLIANCE.
- F. GROSS AREA EXCLUDES 0.52 +/- ACRES FOR SANITARY SEWER SHOWN ON F-02-178, AND 0.2 ACRES FOR PALACE HALL DRIVE RIGHT-OF-WAY SHOWN ON F-01-145. GROSS AREA INCLUDES 2.37 ACRES FOR THE WETLAND MITIGATION ON-SITE. FLOODPLAIN INCLUDES 1.2 ACRES FOR THE MITIGATION AREA FLOODPLAIN.
- G. APPROXIMATELY 0.42 ACRES OF FUTURE CLEARING/FUTURE REFORESTATION IS BEING CLEARED AND IS NOT BEING REFORESTED. APPROXIMATELY 1.58 ACRES OF FUTURE CLEARING/FUTURE REFORESTATION IS BEING RETAINED. APPROXIMATELY 0.13 ACRES OF FUTURE REFORESTATION IS BEING REFORESTED.

FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES (1/100)
GROSS SITE AREA	347.46
AREA WITHIN 100 YEAR FLOODPLAIN	32.43
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	N/A
NET TRACT AREA	315.03
LAND USE CATEGORY	CAI
INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	315.03
B. REFORESTATION THRESHOLD (15% x A)	47.25
C. AFFORESTATION MINIMUM (15% x A)	47.25
D. EXISTING FOREST ON NET TRACT AREA	121.26
E. FOREST AREAS TO BE CLEARED	67.33
F. FOREST AREAS TO BE RETAINED	53.93
REFORESTATION CALCULATIONS	
A. NET TRACT AREA	315.03
B. REFORESTATION THRESHOLD (15% x A)	47.25
C. EXISTING FOREST ON NET TRACT AREA	121.26
D. FOREST AREAS TO BE CLEARED	67.33
E. FOREST AREAS TO BE RETAINED	53.93
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	67.33
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.00
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	6.68
CLEARING ABOVE THE THRESHOLD	
IF FOREST AREAS TO BE RETAINED ARE LESS THAN THE REFORESTATION THRESHOLD (IF F IS GREATER THAN B), THE FOLLOWING CALCULATIONS APPLY:	
REFORESTATION FOR CLEARING ABOVE THRESHOLD Fx1/4	16.83
REFORESTATION FOR CLEARING BELOW THRESHOLD Gx2	0.00
TOTAL REFORESTATION REQUIRED (Fx1/4) + (Gx2)	16.83
CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	6.68
REFORESTATION REQUIRED	10.15 ACRES
REFORESTATION PROVIDED	13.52 ACRES

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. 21114, EXPIRATION DATE: 11-10-11

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JAMES A. RUFF #21114

DATE: 2-23-11

DMW
 Daft McCune Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4705

A Team of Land Planners,
 Landscape Architects,
 Golf Course Architects,
 Engineers, Surveyors &
 Environmental Professionals

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

W. F. Walsh 7-20-05
 CHIEF, BUREAU OF HIGHWAYS NO. DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cindy Hamilton 8/1/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

M. J. ... 7/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION
------	-----	----------

OWNER/DEVELOPER
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
EMERSON
 SECTION 2 PHASE 6B, LOTS 1 THRU 22

AREA TAX MAP 47 BLOCK 8 & 9
 ZONED: PEC-MXD-3 PARCEL: 462
 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
FOREST CONSERVATION PLAN
 AS BUILT

PHRA
 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

4.8.05
 DATE

DESIGNED BY: A.C.R.

DRAWN BY: DAM

CHECKED BY: C.J.R.

PROJECT NO: 22456/1-4
 FINALS C-FOR2

DATE: APRIL 8, 2005

SCALE: 1" = 50'

DRAWING NO. 13 OF 13

SCOTT R. WOLFORD #797