

SHEET INDEX	
1	TITLE SHEET
2	PLAN VIEW OF WATER AND SEWER MAINS
3	PROFILES OF WATER AND SEWER MAINS
4	DETAILS

WATER AND SEWER EXTENSIONS

EMERSON

SECTION 2 PHASE 6B

6th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

CONTRACT NO. 24-4231-D

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

QUANTITIES

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		MANUFACTURER / SUPPLIER
		QUANTITIES	TYPE	
8" WATER	390 LF			
6" WATER	508 LF			
FIRE HYDRANTS	3 EA			
1" WHC	606 LF			
12"x8" TSV	2 EA			
6" VALVES	2 EA			
8"x6" REDUCERS	2 EA			
8"x6" TEES	2 EA			
8" 1/8 VB	4 EA			
8" 1/8 HB	2 EA			
6" 1/16 HB	1 EA			
8" SEWER	570 LF			
8" DIP CL52	1008 LF			
SEWER MANHOLES	12 EA			
TYPE A DROP CONNECTION	0 EA			
TYPE B DROP CONNECTION	2 EA			
SEWER MANHOLE	159 VF			
4" SHC	433 LF			

NAME OF UTILITY CONTRACTOR :

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on F-05-89

CHECKBOX
AS-BUILT DATE
SURVEY AND DRAFTING DIVISION

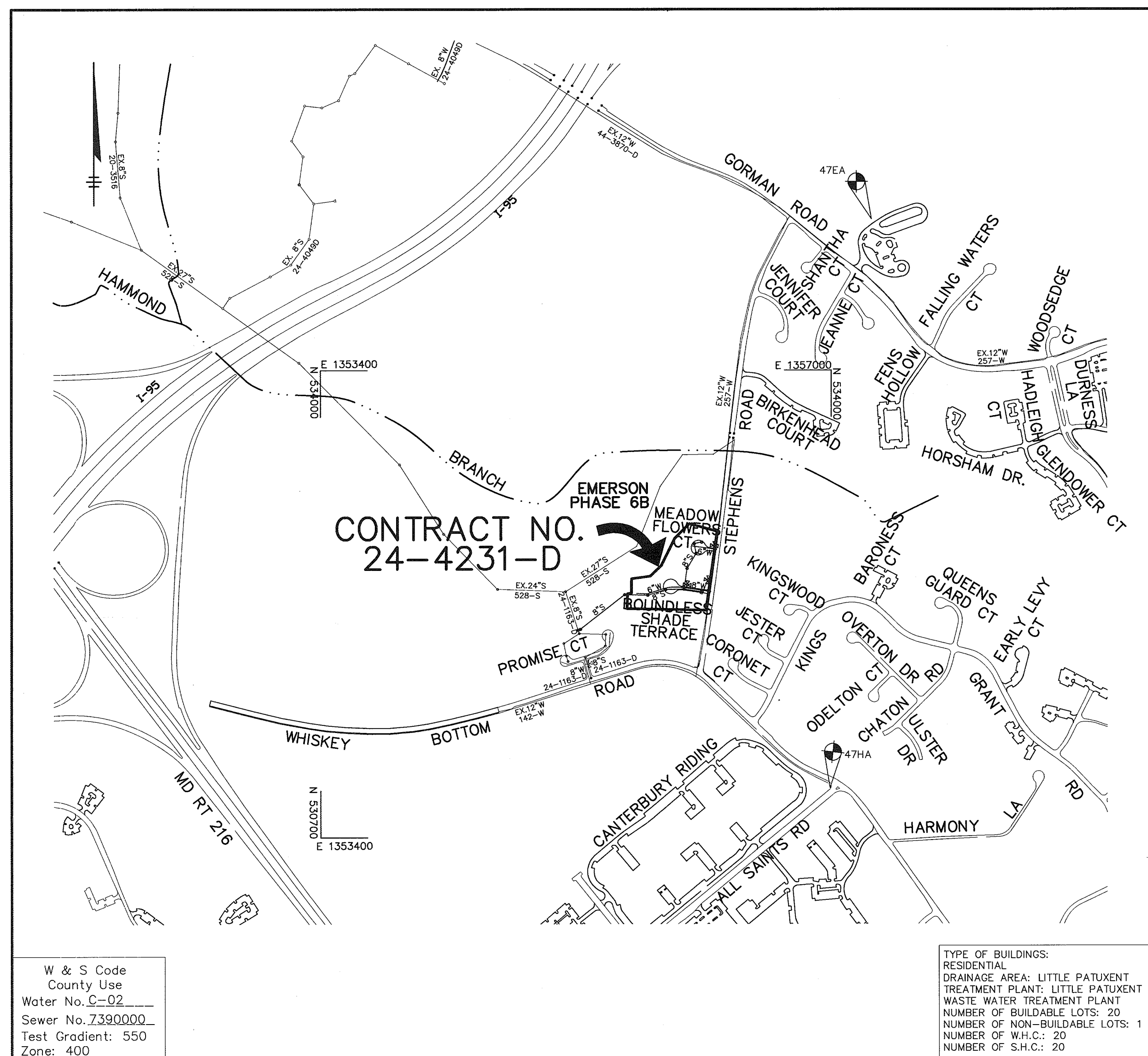
Review for Howard Soil Conservation District and meets technical requirements.

Jim Myers 1/24/06
NATURAL RESOURCES CONSERVATION SERVICE DATE

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

John R. Robertson 1/24/06
HOWARD SOIL CONSERVATION DISTRICT DATE

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



VICINITY MAP
SCALE : 1"=600'

GENERAL NOTES

- Approximate locations of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted service. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractor's expense.
- Topographic aerial surveys were performed on APRIL 1998 by AIR SURVEY CORP and field run survey in 1999 by DMW, INC..
- Horizontal and Vertical Survey Controls:
 - The coordinates shown on the drawings are based on Maryland State Reference System NAD '83/'91 as projected by Howard County Geodetic Control Stations No. 47EA and No. 47HA. All vertical controls on NAVD '88. Vertical Controls on the drawings are elevations 315.266 and 292.292.
- All pipe elevations shown are invert elevations unless otherwise noted on the plans.
- Clear all utilities by a minimum of 12 inches. Clear all poles by 5'-0" minimum or tunnel as required unless otherwise noted. The owner has contacted the utility companies and has made arrangements for bracing of poles as shown on the drawings. In the event the contractor's work requires the bracing of additional poles, any cost incurred by the owner for the bracing of additional poles or damages shall be deducted from monies owed the contractor. The contractor shall coordinate with the utility companies to schedule the bracing of the poles.
- For details not shown on the drawings, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction (Latest Edition). The contractor shall have a copy of Volume IV on the job.
- Where test pits have been made on existing utilities, they are noted by the symbol at the locations of the test pits. A note or notes containing the results of the test pit or pits is included on the drawings. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the contractor two weeks in advance of construction operations at his own expense.
- The contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

AT&T	1-800-252-1133
BGE (Construction Services)	410-850-4620
BGE (Emergency)	410-685-1400
Bureau of Utilities	410-313-4900
Colonial Pipeline Co.	410-795-1390
Miss Utility	1-800-257-7777
State Highway Administration	410-531-5533
Verizon	1-800-743-0033 / 410-224-9210
- Trees and shrubs are to be protected from damage to the maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the contractor.
- The contractor shall remove trees, stumps and roots along the line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
- The contractor shall notify the Bureau of Highways, Howard County, at 410-313-7450 at least five working days before open cutting or boring/jacking of any County road for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.114(a) of the Howard County Code.

WATER NOTES

- All water mains shall be D.I.P. Class 52 unless otherwise noted.
- Tops of all water mains shall have a minimum of 3'-6" of cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless otherwise provided for on the drawings.
- Fire hydrants shall be set to the bury line elevations shown on the drawings. All fire hydrants shall be installed in accordance with Standard Details. The soil around the fire hydrant shall be compacted in accordance with Section 1000 and 1005 of the Standard Specifications.
- The contractor shall not operate any water main valves on the existing water system.

SEWER NOTES

- All sewer mains shall be D.I.P. and P.V.C. unless otherwise noted.
- All manholes shall be 4'-0" inside diameter unless otherwise noted.
- Force mains shall be D.I.P. only.
- Manholes shown with 12" and 16" walls are for brick manholes only.
- Manholes designated W.T. in plan and profile shall have watertight frame and covers, Standard Detail C5.52. Where watertight manhole frames and covers are used, set top of frame 1'-6" above finished grade unless otherwise noted on the drawings.
- House(s) with the symbol "C.N.S." indicates that cellar cannot be served.
- Lots 3-6: gravity sewer service, first floor only. Basement sewer service to be provided by private on-site pump.

NOTE:

- THIS REVISED DRAWING SUPERCEDES THE PREVIOUSLY SIGNED SET.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
R. L. Benjamin 1-3-06
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Alvin D. ... 1/25/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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



DES:	ACR				
DRN:	DAM				
CHK:	CJR	DWC	2	REV. SEWER QUANTITIES, ADDED SHEET	12/7/05
DATE:	5/9/05	DWC	1	REV. WATER & SEWER QUAN., ADDED NOTES	11/3/05
BY:	NO.			REVISION	DATE

TITLE SHEET

600' SCALE MAP NO. 47 BLOCK NO. 8 & 9 PARCEL 462

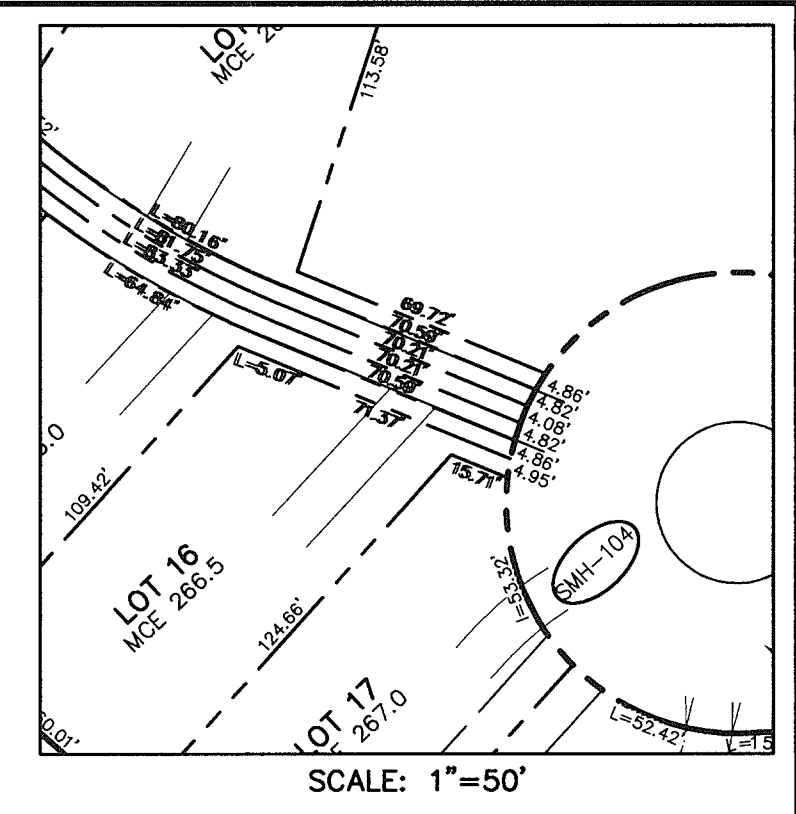
EMERSON
SECTION 2 PHASE 6B
LOTS 1 THRU 22
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT 24-4231-D

SCALE
AS
SHOWN

SHEET
1 OF 4

"Conditions and Management Practices for Working In Nontidal Wetlands and Buffers"

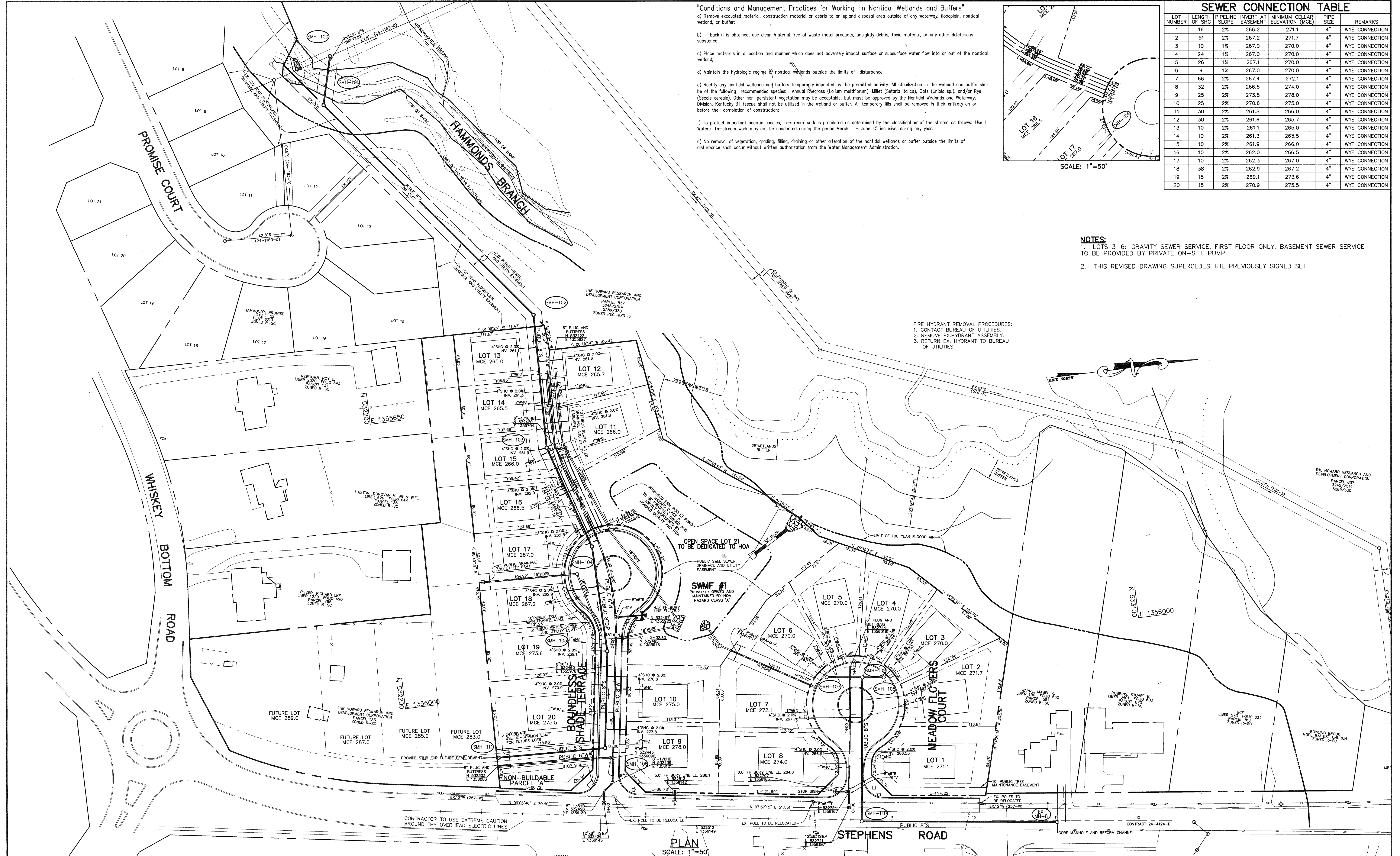
- a) Remove excavated material, construction material or debris to an upland disposal area outside of any waterway, floodplain, nontidal wetland, or buffer;
- b) If backfill is obtained, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- c) Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland;
- d) Maintain the hydrologic regime of nontidal wetlands outside the limits of disturbance.
- e) Rectify any nontidal wetlands and buffers temporarily impacted by the permitted activity. All stabilization in the wetland and buffer shall be of the following recommended species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Oats (*Avena sp.*), and/or Rye (*Secale cereale*). Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fascus shall not be utilized in the wetland or buffer. All temporary fills shall be removed in their entirety on or before the completion of construction;
- f) To protect important aquatic species, in-stream work is prohibited as determined by the classification of the stream as follows: Use I Waters. In-stream work may not be conducted during the period March 1 - June 15 inclusive, during any year.
- g) No removal of vegetation, grading, filling, draining or other alteration of the nontidal wetlands or buffer outside the limits of disturbance shall occur without written authorization from the Water Management Administration.



SEWER CONNECTION TABLE						
LOT NUMBER	LENGTH OF SHC	PIPELINE SLOPE	INVERT AT EASEMENT	MINIMUM CELLAR ELEVATION (MCE)	PIPE SIZE	REMARKS
1	16	2%	266.2	271.1	4"	WYE CONNECTION
2	51	2%	267.2	271.7	4"	WYE CONNECTION
3	10	1%	267.0	270.0	4"	WYE CONNECTION
4	24	1%	267.0	270.0	4"	WYE CONNECTION
5	26	1%	267.1	270.0	4"	WYE CONNECTION
6	9	1%	267.0	270.0	4"	WYE CONNECTION
7	66	2%	267.4	272.1	4"	WYE CONNECTION
8	32	2%	266.5	274.0	4"	WYE CONNECTION
9	25	2%	273.8	278.0	4"	WYE CONNECTION
10	25	2%	270.6	275.0	4"	WYE CONNECTION
11	30	2%	261.8	266.0	4"	WYE CONNECTION
12	30	2%	261.6	265.7	4"	WYE CONNECTION
13	10	2%	261.1	265.0	4"	WYE CONNECTION
14	10	2%	261.3	265.5	4"	WYE CONNECTION
15	10	2%	261.9	266.0	4"	WYE CONNECTION
16	10	2%	262.0	266.5	4"	WYE CONNECTION
17	10	2%	262.3	267.0	4"	WYE CONNECTION
18	38	2%	262.9	267.2	4"	WYE CONNECTION
19	15	2%	269.1	273.6	4"	WYE CONNECTION
20	15	2%	270.9	275.5	4"	WYE CONNECTION

- NOTES:**
- LOTS 3-6: GRAVITY SEWER SERVICE, FIRST FLOOR ONLY. BASEMENT SEWER SERVICE TO BE PROVIDED BY PRIVATE ON-SITE PUMP.
 - THIS REVISED DRAWING SUPERCEDES THE PREVIOUSLY SIGNED SET.

- FIRE HYDRANT REMOVAL PROCEDURES:**
- CONTACT BUREAU OF UTILITIES.
 - REMOVE EX-HYDRANT ASSEMBLY.
 - RETURN EX-HYDRANT TO BUREAU OF UTILITIES.



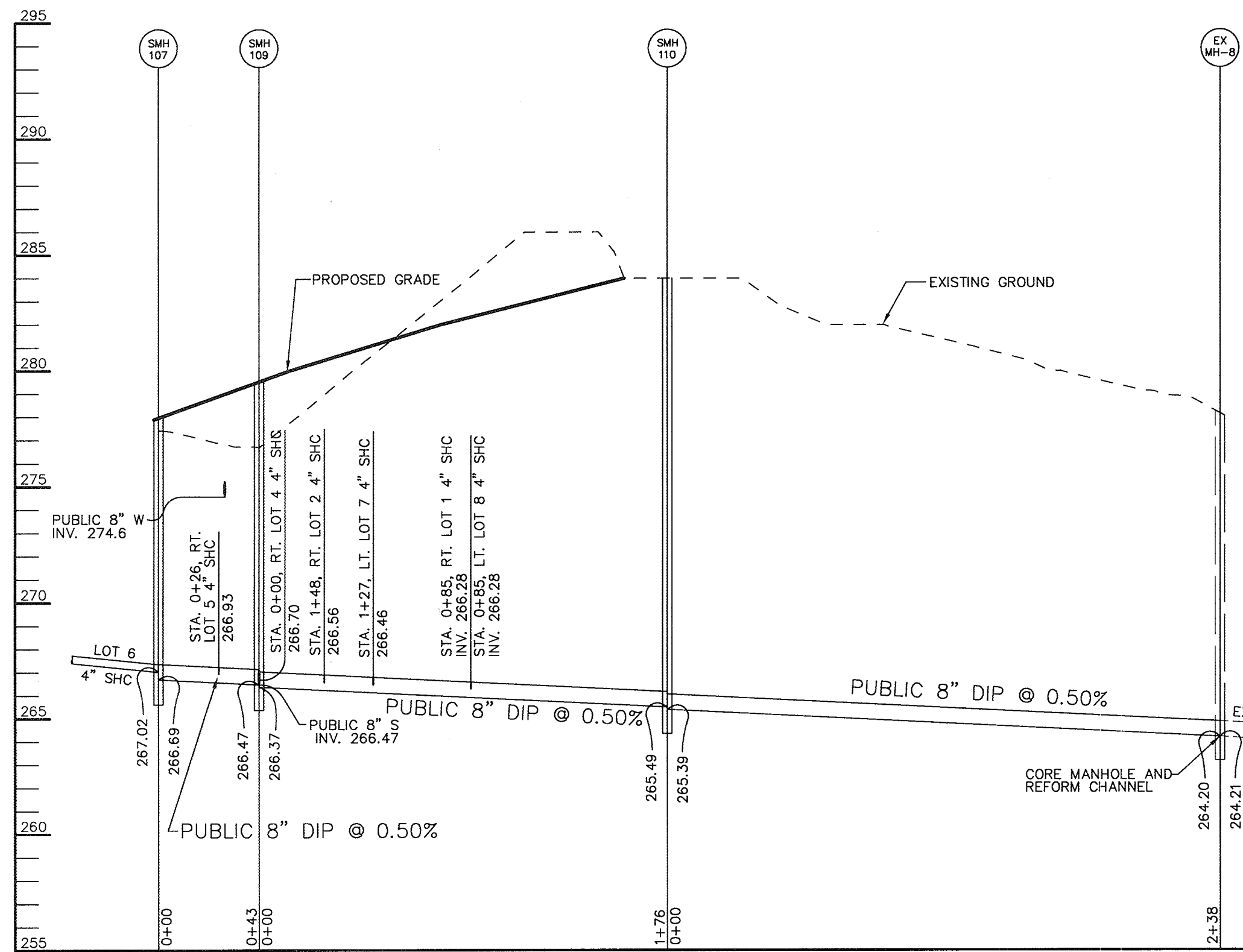
PLAN SCALE: 1"=50'

STEPHENS ROAD

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 1-2-06 DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND 12/16/05 DATE	Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. P.H.R.A. 8818 Centre Park Drive Columbia, MD 21046 T 410.997.8900 F 410.997.8282	STATE OF MARYLAND PROFESSIONAL SURVEYOR DOMENICK W. COLANGELO #27200 12/16/05	DES: ACR DRN: DAM CHK: CJR DATE: 5/9/05 BY NO. REVISION DATE	DWG 2 REVISED SANITARY SEWER CONNECTION. MISC. REVISIONS 12/7/05 DWG 1 NEW SAN. SWR. TO STEPHENS RD.; REV. WTR. LINE; ADD. NOTES 11/3/05	PLAN VIEW OF WATER AND SEWER MAINS 600' SCALE MAP NO. 47 BLOCK NO. 8 & 9 PARCEL 462	EMERSON SECTION 2 PHASE 6B LOTS 1 THRU 22 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4231-D	SCALE AS SHOWN SHEET 2 OF 4
---	--	--	--	--	---	---	---	---

P:\Project\244661-14\Eng\Plans\FINAL\12-16-05\Redlines\12-16-05 Mylar Revisions\W52.dwg, 12/16/05 1:40:38 PM

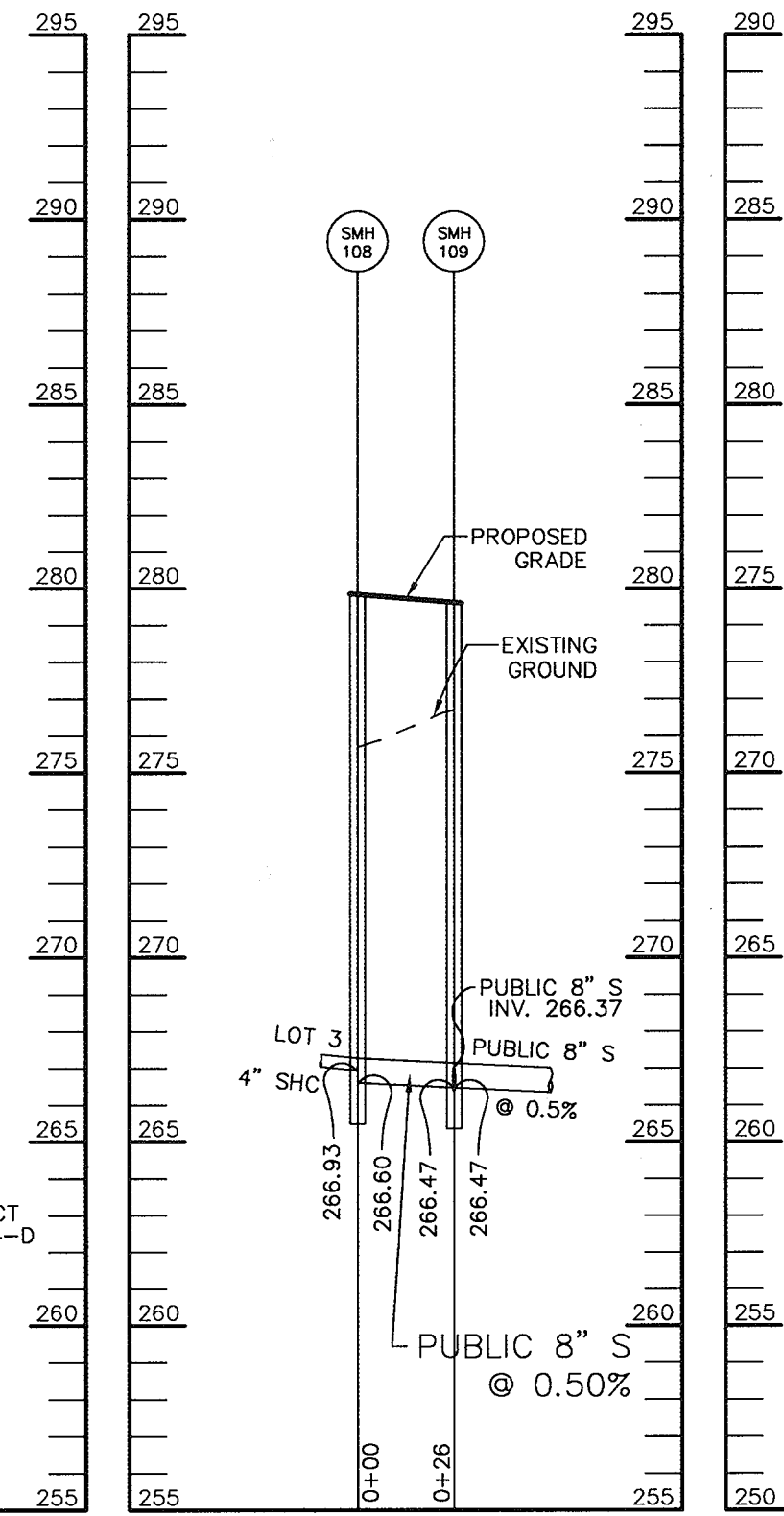
MEADOW FLOWERS COURT



SEWER PROFILE

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

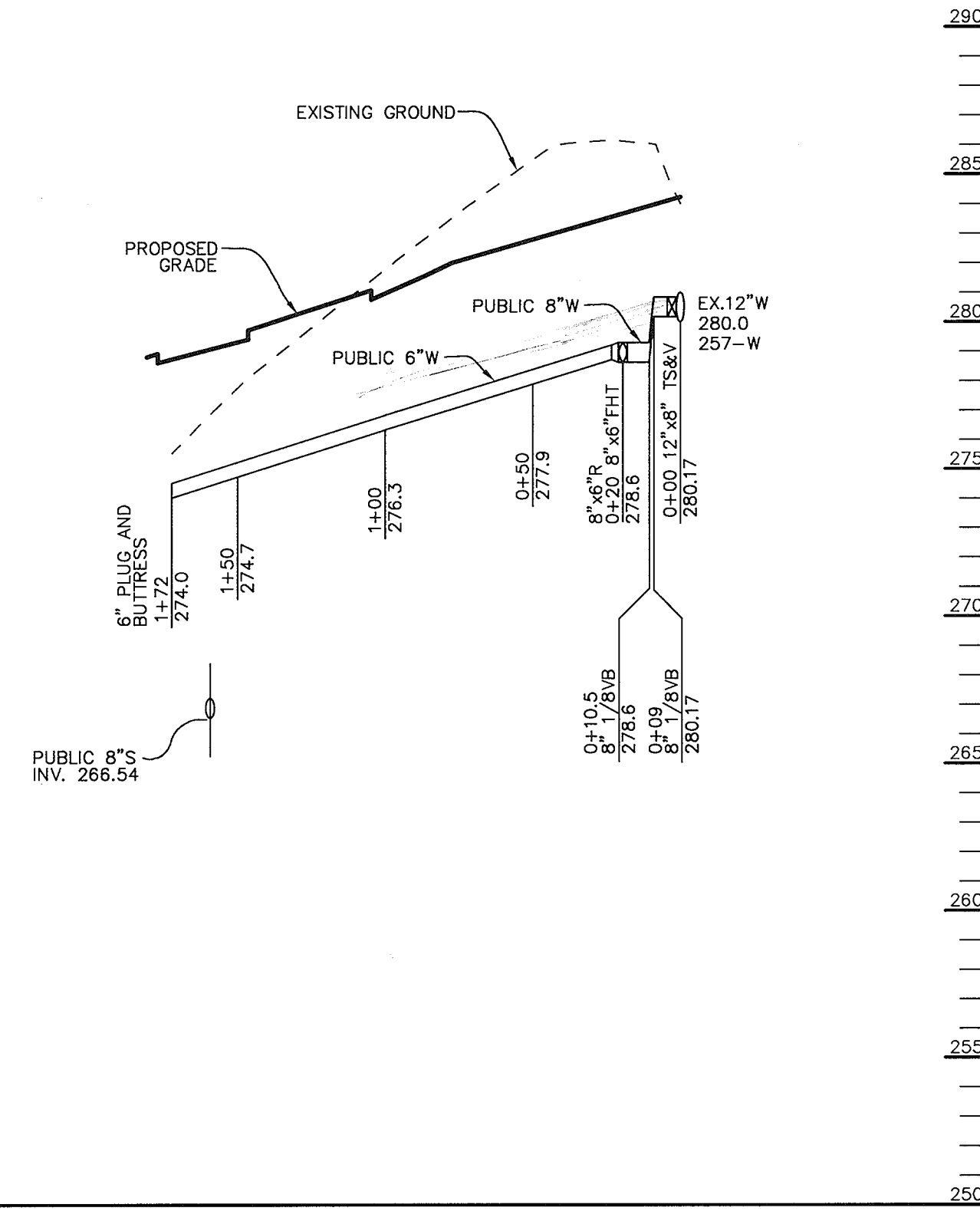
MEADOW FLOWERS COURT



SEWER PROFILE

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

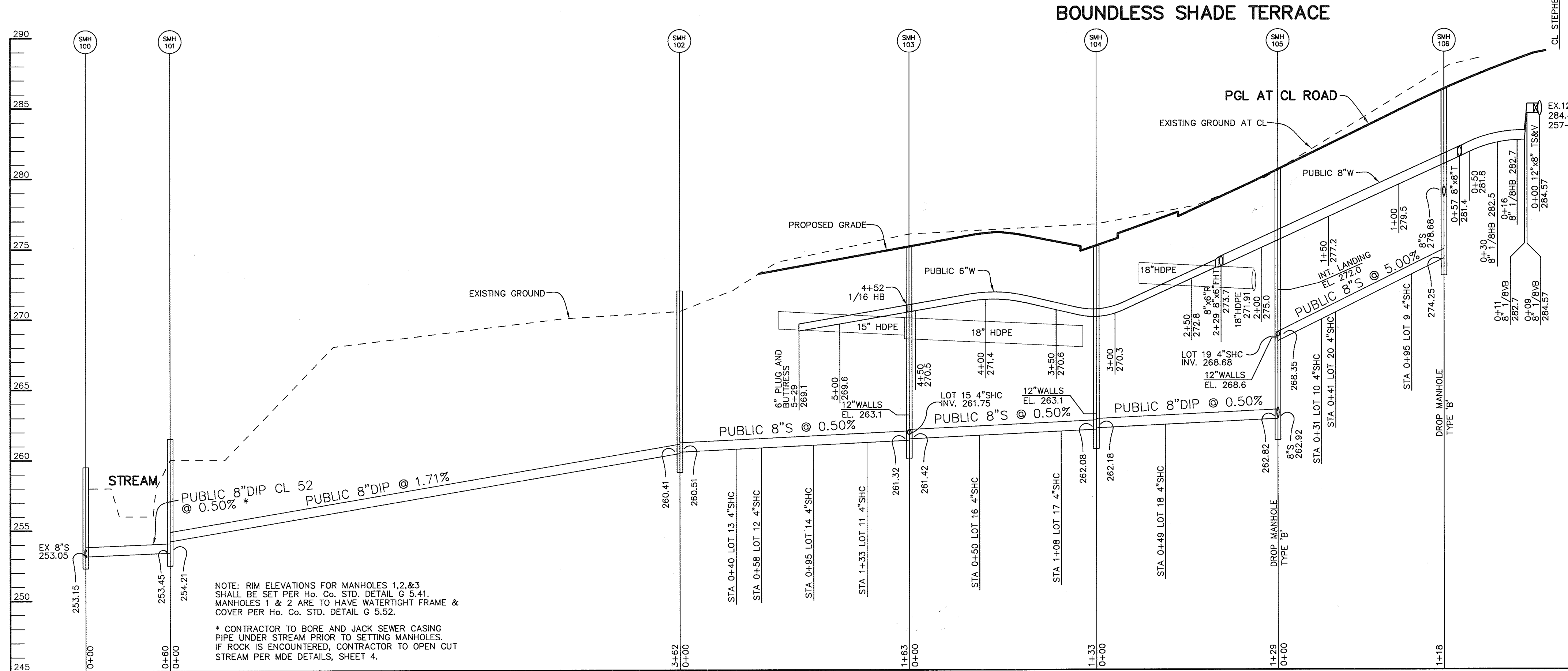
MEADOW FLOWERS COURT



WATER PROFILE

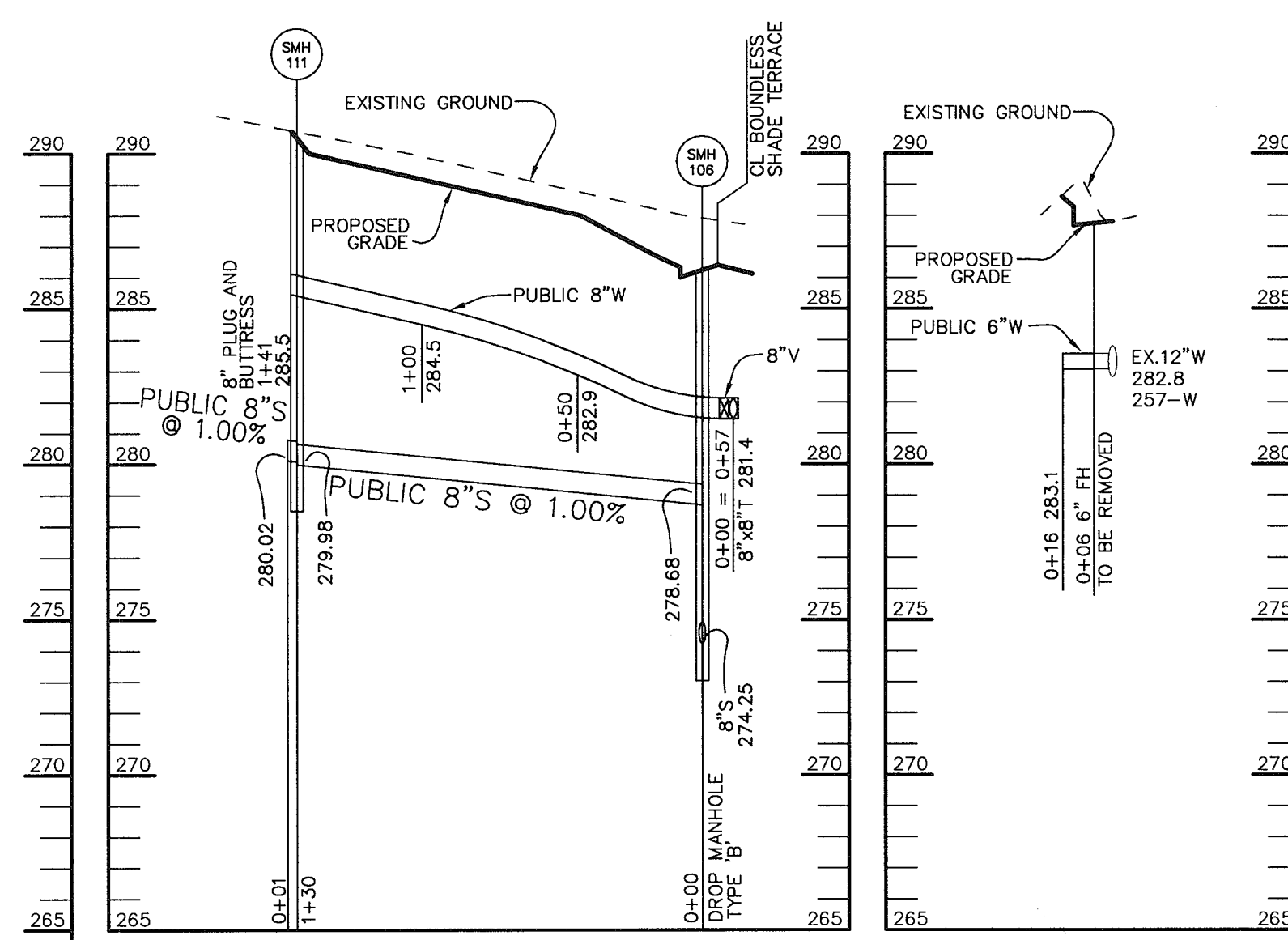
SCALE:
HOR. - 1"=50'
VERT. - 1"=5'

STRUCTURE SCHEDULE				
STRUCTURE	TYPE	LOCATION	TOP	REMARKS
SMH 100	4" DIA MANHOLE	N 532206 E 1355198	18" ABOVE EX. GR.	HOCO. STD. DETAIL G 5.12
SMH 101	4" DIA MANHOLE	N 532191 E 1355256	18" ABOVE EX. GR.	HOCO. STD. DETAIL G 5.12
SMH 102	4" DIA MANHOLE	N 532413 E 1355541	18" ABOVE EX. GR.	HOCO. STD. DETAIL G 5.12
SMH 103	4" DIA MANHOLE	N 532410 E 1355705	276.0	HOCO. STD. DETAIL G 5.12
SMH 104	4" DIA MANHOLE	N 532450 E 1355831	275.3 SLOPE 2%	HOCO. STD. DETAIL G 5.12
SMH 105	4" DIA MANHOLE	N 532453 E 1355961	280.4 SLOPE 3%	HOCO. STD. DETAIL G 5.12 & S 1.32
SMH 106	4" DIA MANHOLE	N 532435 E 1356077	285.5 SLOPE 3%	HOCO. STD. DETAIL G 5.12
SMH 107	4" DIA MANHOLE	N 532714 E 1356025	280.0	HOCO. STD. DETAIL G 5.12
SMH 108	4" DIA MANHOLE	N 532783 E 1356034	279.8	HOCO. STD. DETAIL G 5.12
SMH 109	4" DIA MANHOLE	N 532757 E 1356030	279.5	HOCO. STD. DETAIL G 5.12
SMH 110	4" DIA MANHOLE	N 532735 E 1356025	284.0	HOCO. STD. DETAIL G 5.12
SMH 111	4" DIA MANHOLE	N 532305 E 1356073	290.1	HOCO. STD. DETAIL G 5.12



PROFILE

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



PROFILE

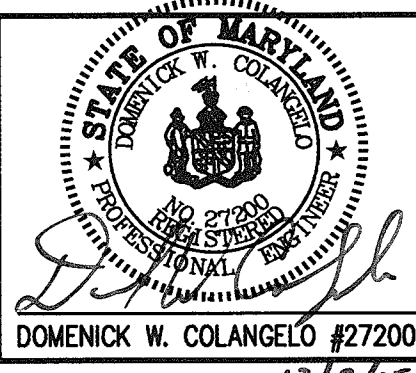
SCALE:
HOR. - 1"=50'
VERT. - 1"=5'

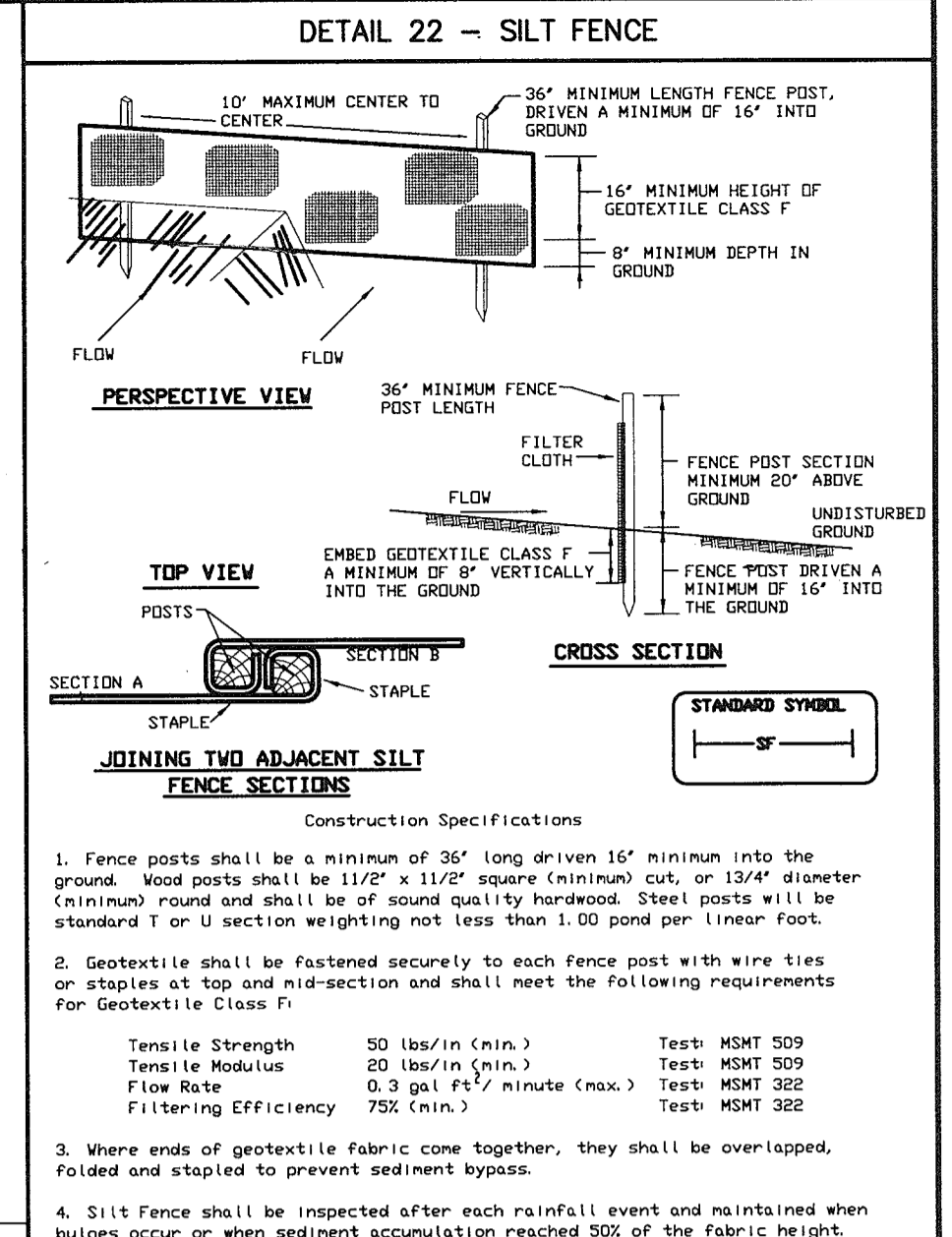
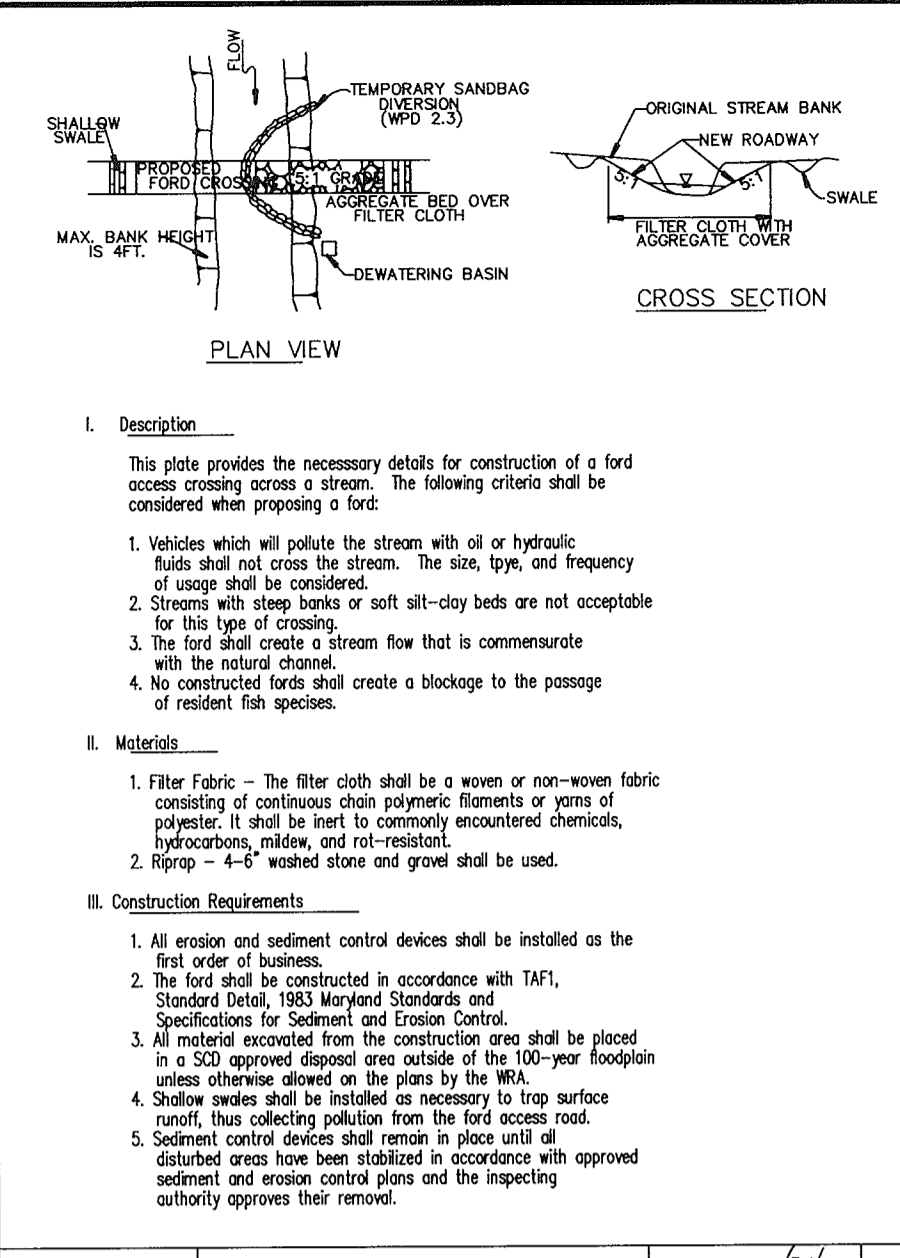
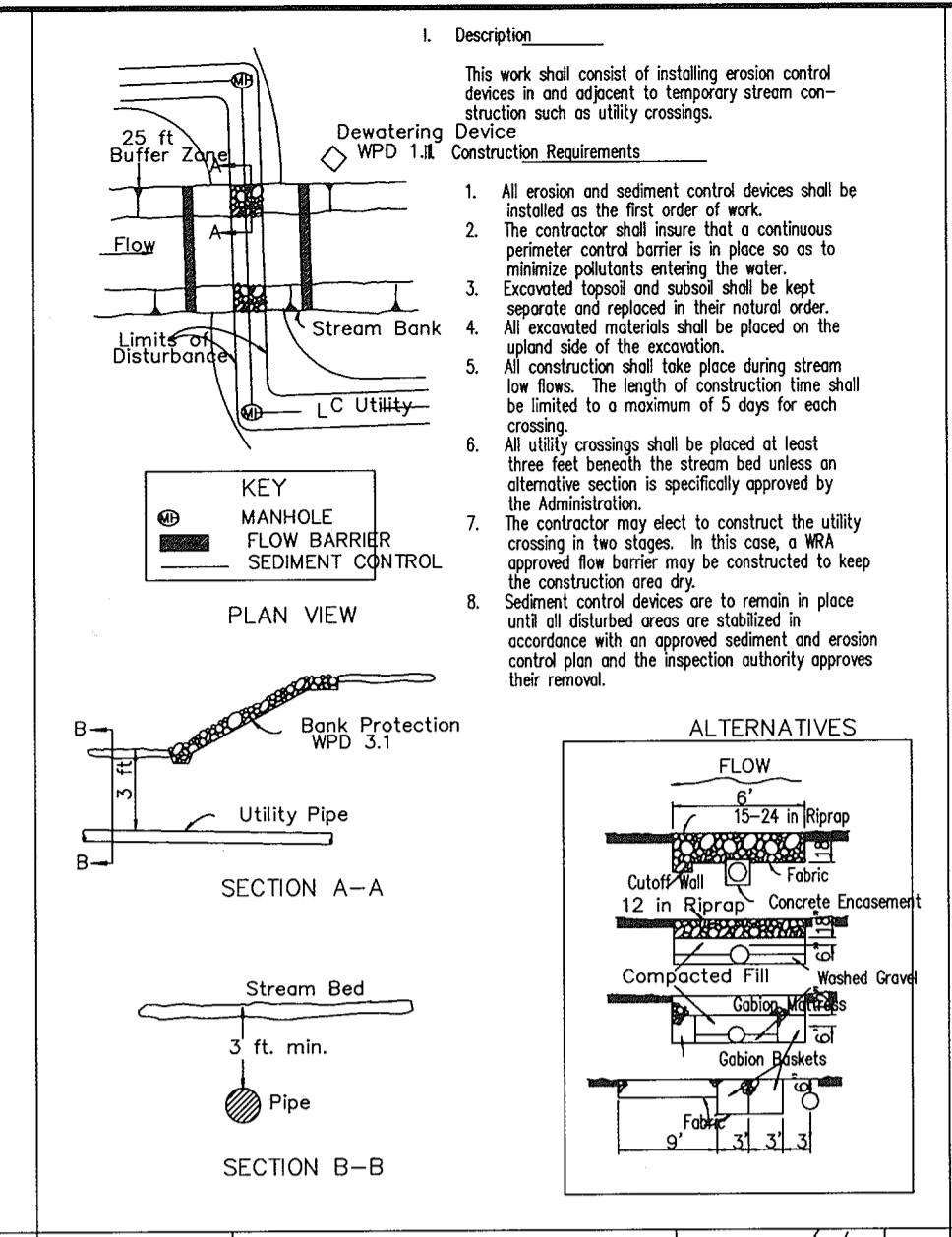
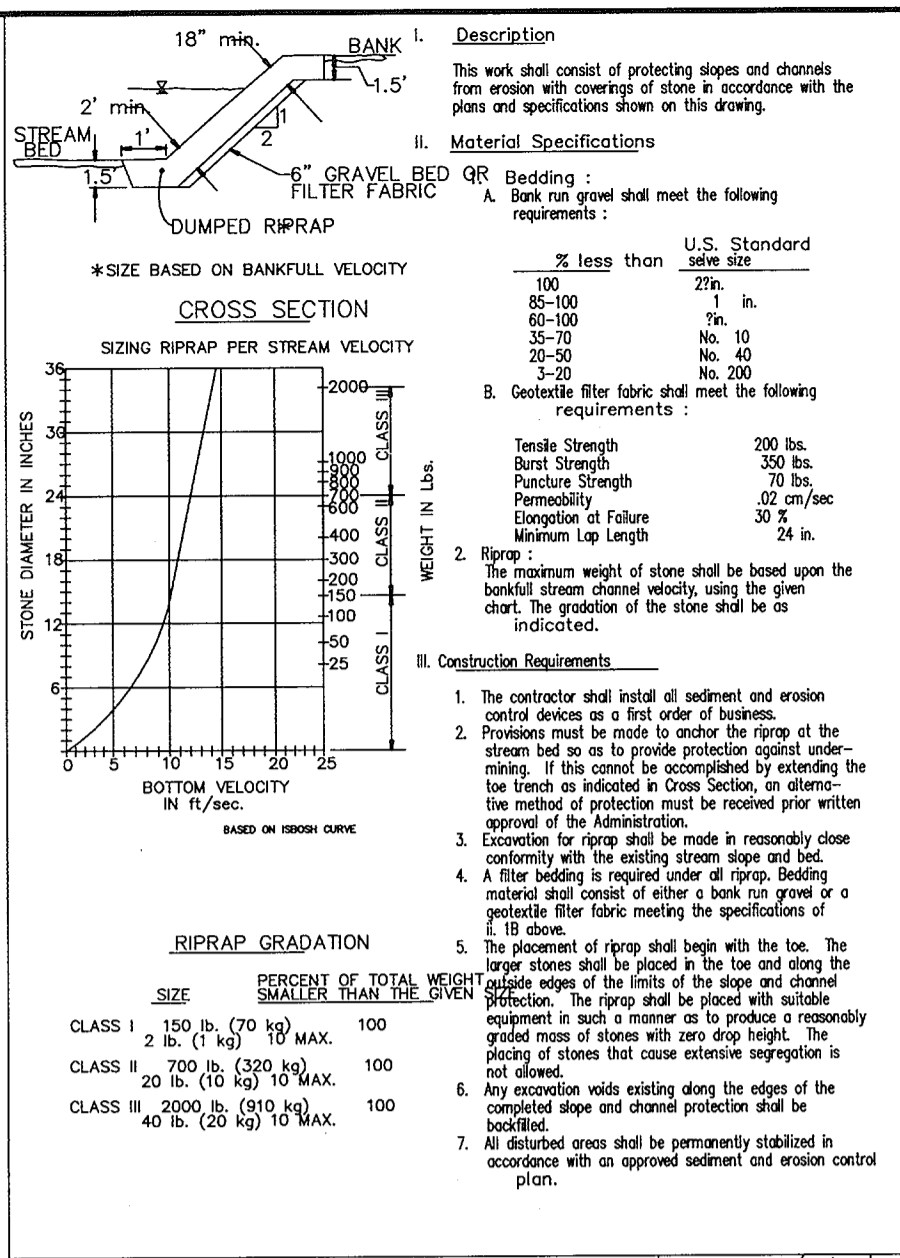
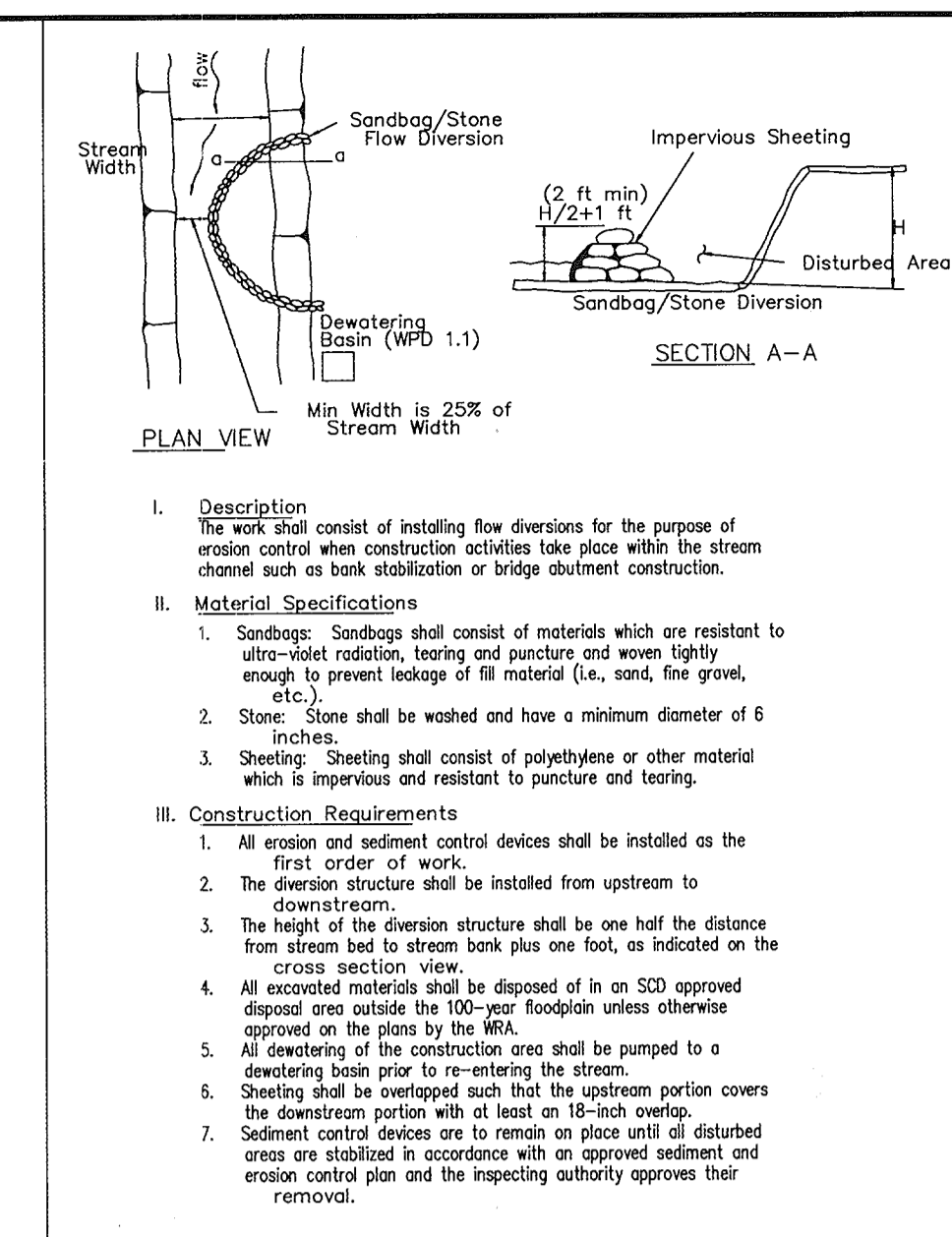
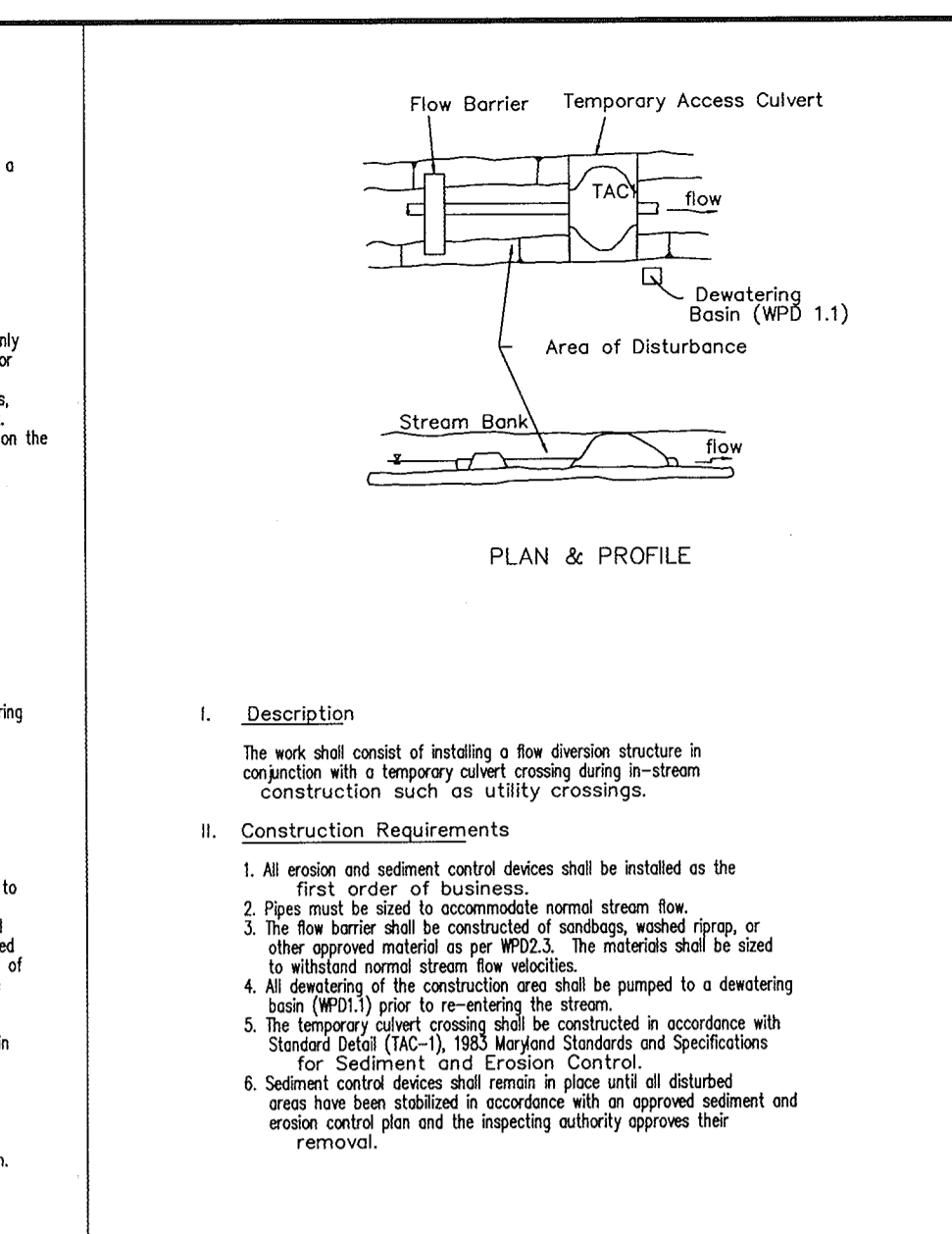
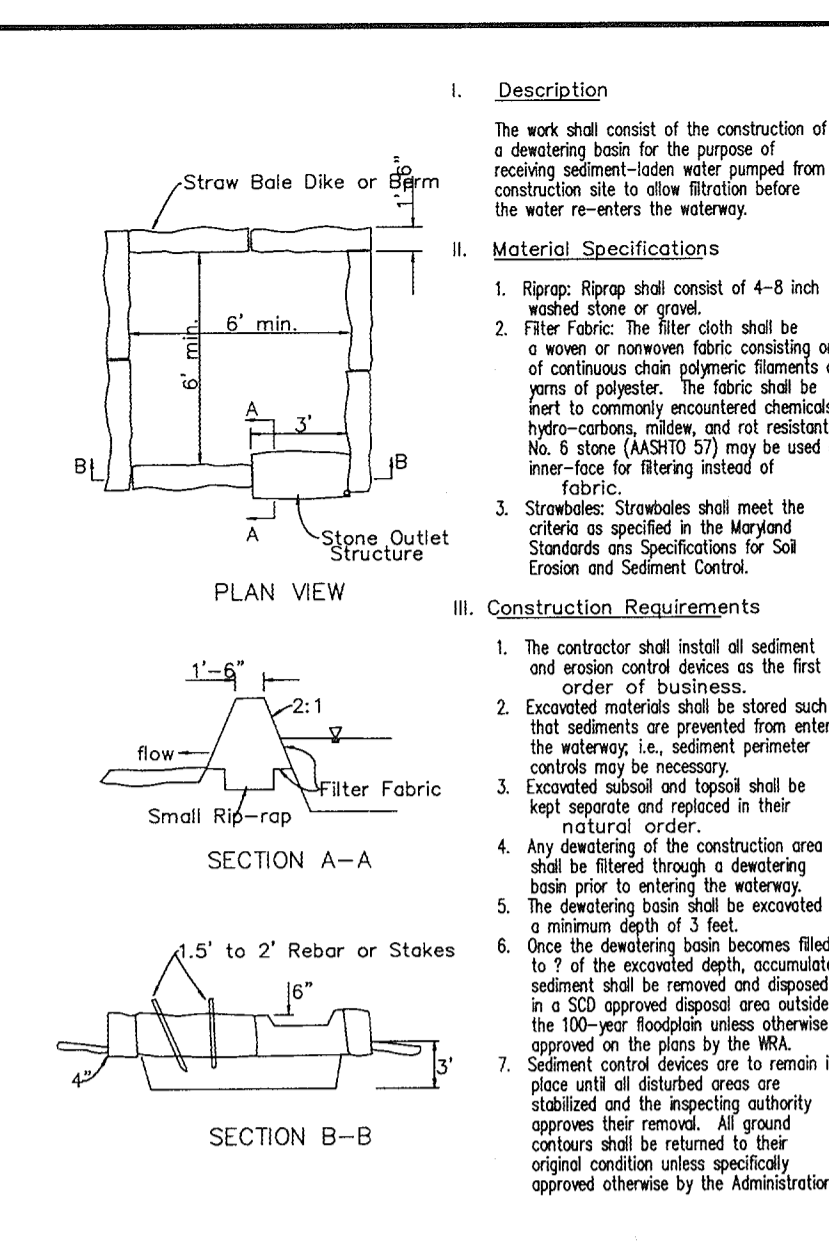
WATER PROFILE

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

- NOTES:
- LOTS 3-6: GRAVITY SEWER SERVICE, FIRST FLOOR ONLY. BASEMENT SEWER SERVICE TO BE PROVIDED BY PRIVATE ON-SITE PUMP.
 - THIS REVISED DRAWING SUPERCEDES THE PREVIOUSLY SIGNED SET.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND R. J. B... 1-3-06 CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND D... 1/2/06 CHIEF, DEVELOPMENT ENGINEERING DIVISION	Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. PHRA 8818 Centre Park Drive Columbia, MD 21046 T 410.997.8900 F 410.997.9282	DES: ACR DRN: DAM CHK: CJR DATE: 5/9/05	DWG 2 REVISED PROFILES AND STRUCTURE SCHEDULE 12/7/05 DWG 1 REP. PROFILES & REV. STRUC. SCH.; ADDED NOTES 11/3/05	PROFILES OF WATER AND SEWER MAINS 600' SCALE MAP NO. 47 BLOCK NO. 8 & 9 PARCEL 462	EMERSON SECTION 2 PHASE 6B LOTS 1 THRU 22 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4231-D SCALE AS SHOWN SHEET 3 OF 4
--	--	--	--	--	--	---





APPROVED ON 1/24/06
WATER MANAGEMENT ADMINISTRATION

APPROVED ON 1/24/06
WATER MANAGEMENT ADMINISTRATION

APPROVED ON 1/24/06
WATER MANAGEMENT ADMINISTRATION

APPROVED ON 1/24/06
WATER RESOURCES ADMINISTRATION

APPROVED ON 1/24/06
WATER MANAGEMENT ADMINISTRATION

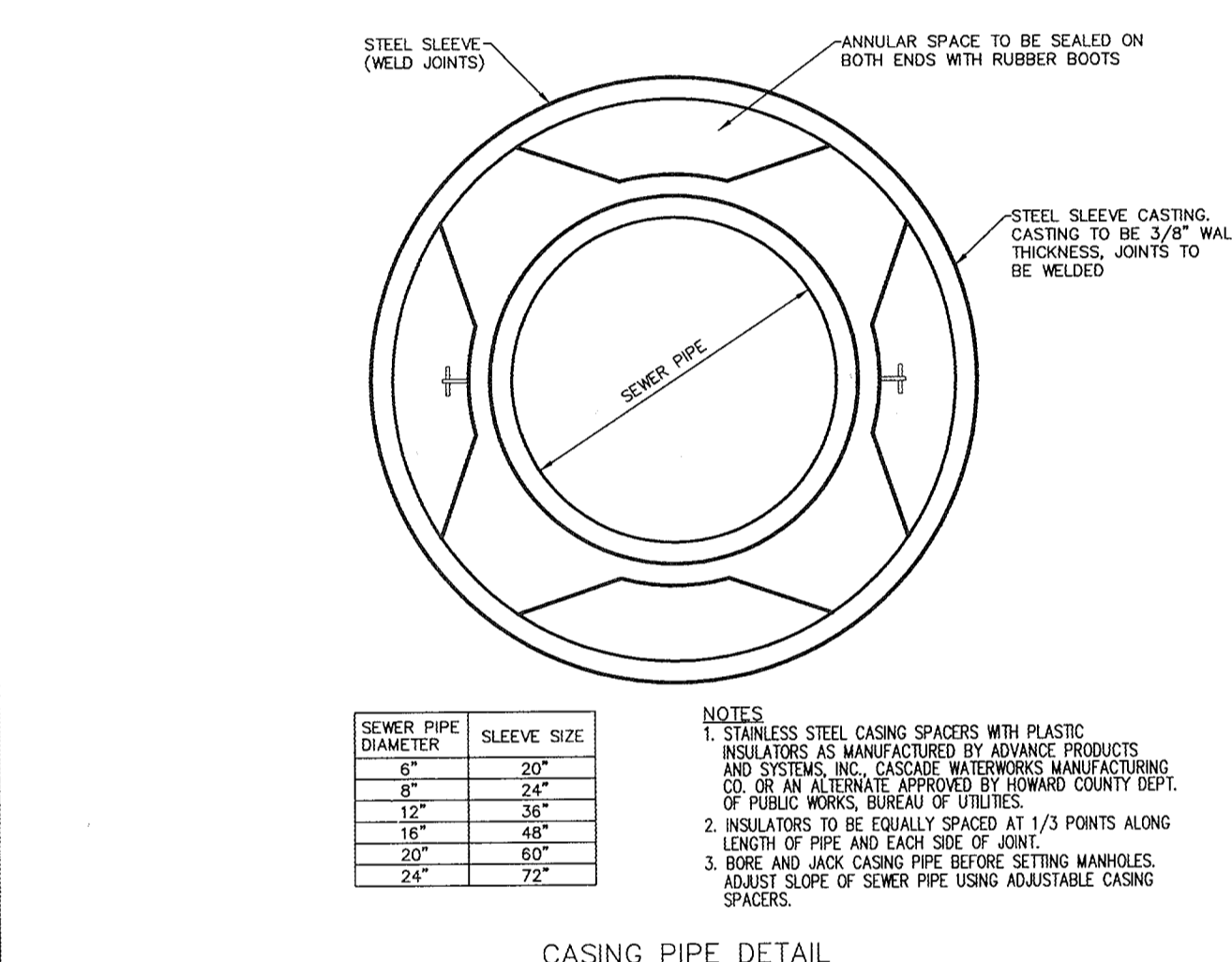
APPROVED ON 1/24/06
WATER RESOURCES ADMINISTRATION

APPROVED ON 1/24/06
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
MARYLAND DEPARTMENT OF ENVIRONMENT & WATER MANAGEMENT ADMINISTRATION

"Conditions and Management Practices for Working in Nontidal Wetlands and Buffers"

- a) Remove excavated material, construction material or debris to an upland disposal area outside of any waterway, floodplain, nontidal wetland, or buffer;
- b) If backfill is obtained, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- c) Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland;
- d) Maintain the hydrologic regime of nontidal wetlands outside the limits of disturbance.
- e) Rectify any nontidal wetlands and buffers temporarily impacted by the permitted activity. All stabilization in the wetland and buffer shall be of the following recommended species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Oats (*Avena sp.*), and/or Rye (*Secale cereale*). Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in the wetland or buffer. All temporary fills shall be removed in their entirety on or before the completion of construction;
- f) To protect important aquatic species, in-stream work is prohibited as determined by the classification of the stream as follows:
Use I Waters. In-stream work may not be conducted during the period March 1 - June 15 inclusive, during any year.
- g) No removal of vegetation, grading, filling, draining or other alteration of the nontidal wetlands or buffer outside the limits of disturbance shall occur without written authorization from the Water Management Administration.

NOTES:
1. THIS REVISED DRAWING SUPERCEDES THE PREVIOUSLY SIGNED SET.



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Chief, Bureau of Utilities 1-3-06 DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND Chief, Development Engineering Division 1/25/06 DATE	Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. P.H.R.A. 8618 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	DES: ACR DRN: DAM CHK: CJR DATE: 5/9/05 BY NO. 1 DATE 12/7/05	DETAILS 600' SCALE MAP NO. 47, BLOCK NO. 8 & 9, PARCEL 462	EMERSON SECTION 2 PHASE 6B LOTS 1 THRU 22 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4231-D SCALE AS SHOWN SHEET 4 OF 4
--	---	--	--	---	---