

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

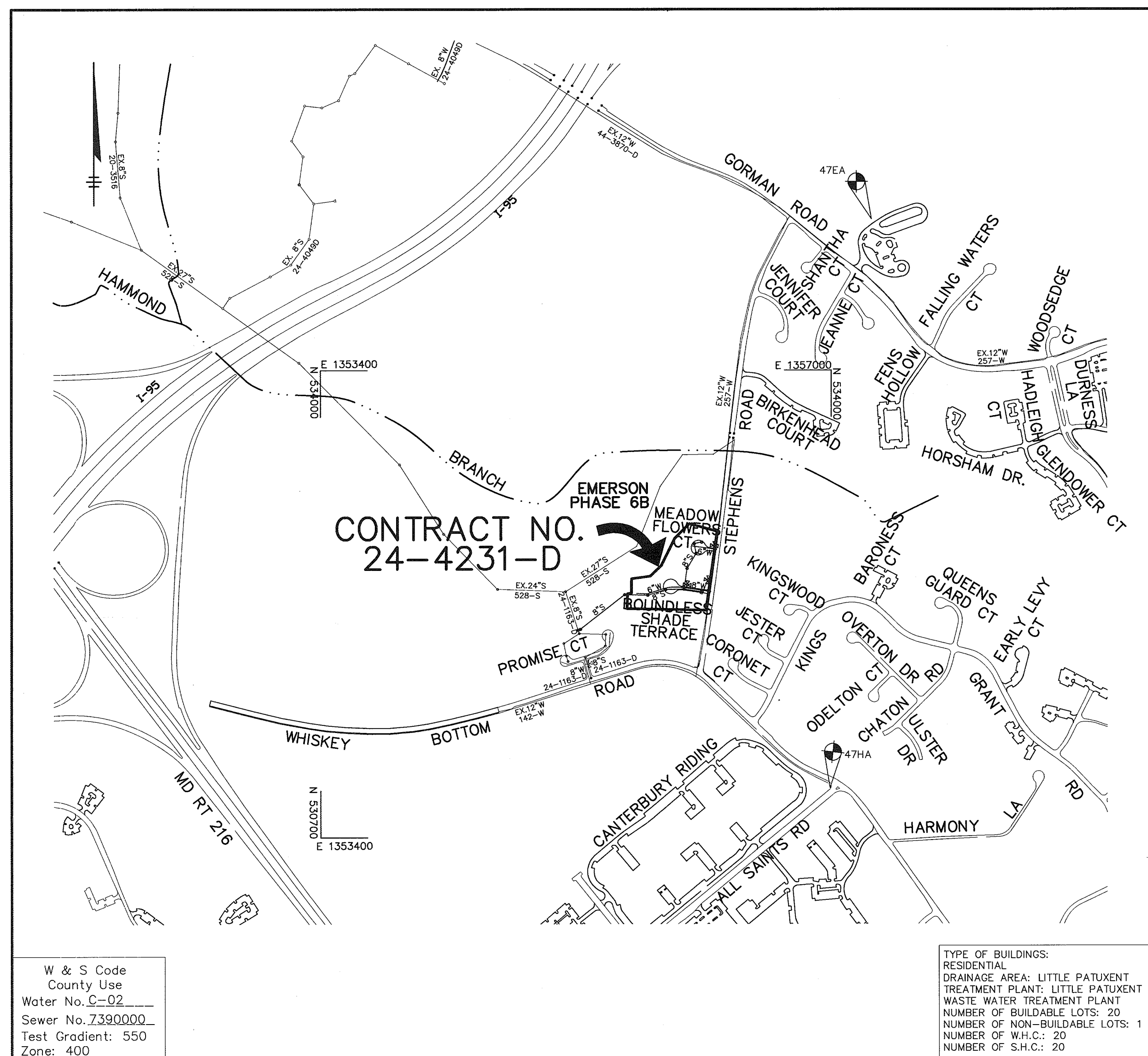
Review for Howard Soil Conservation District and meets technical requirements.

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



W & S Code
County Use
Water No. C-02
Sewer No. 7390000
Test Gradient: 550
Zone: 400

TYPE OF BUILDINGS:
RESIDENTIAL
DRAINAGE AREA: LITTLE PATUXENT
TREATMENT PLANT; LITTLE PATUXENT
WASTE WATER TREATMENT PLANT
NUMBER OF BUILDABLE LOTS: 20
NUMBER OF NON-BUILDABLE LOTS: 1
NUMBER OF W.H.C.: 20
NUMBER OF S.H.C.: 20

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

DOMENICK W. COLANGELO #27200
12/9/05

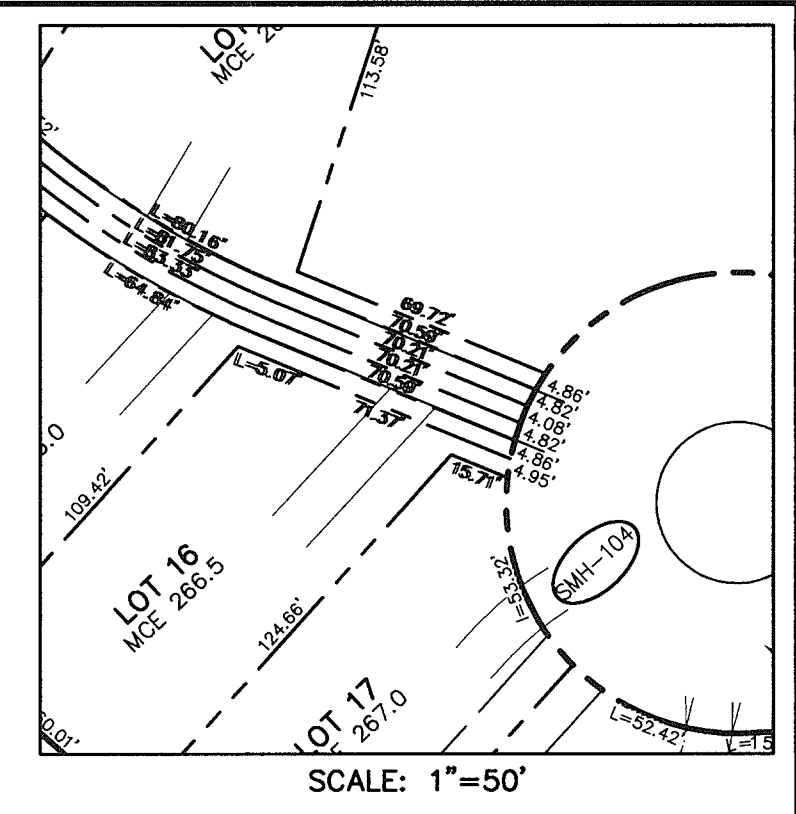
DES:	ACR				
DRN:	DAM				
CHK:	CJR	DWC	2	REV. SEWER QUANTITIES, ADDED SHEET	12/7/05
DATE:	5/9/05	DWC	1	REV. WATER & SEWER QUAN., ADDED NOTES	11/3/05
BY:	NO.			REVISION	DATE

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"

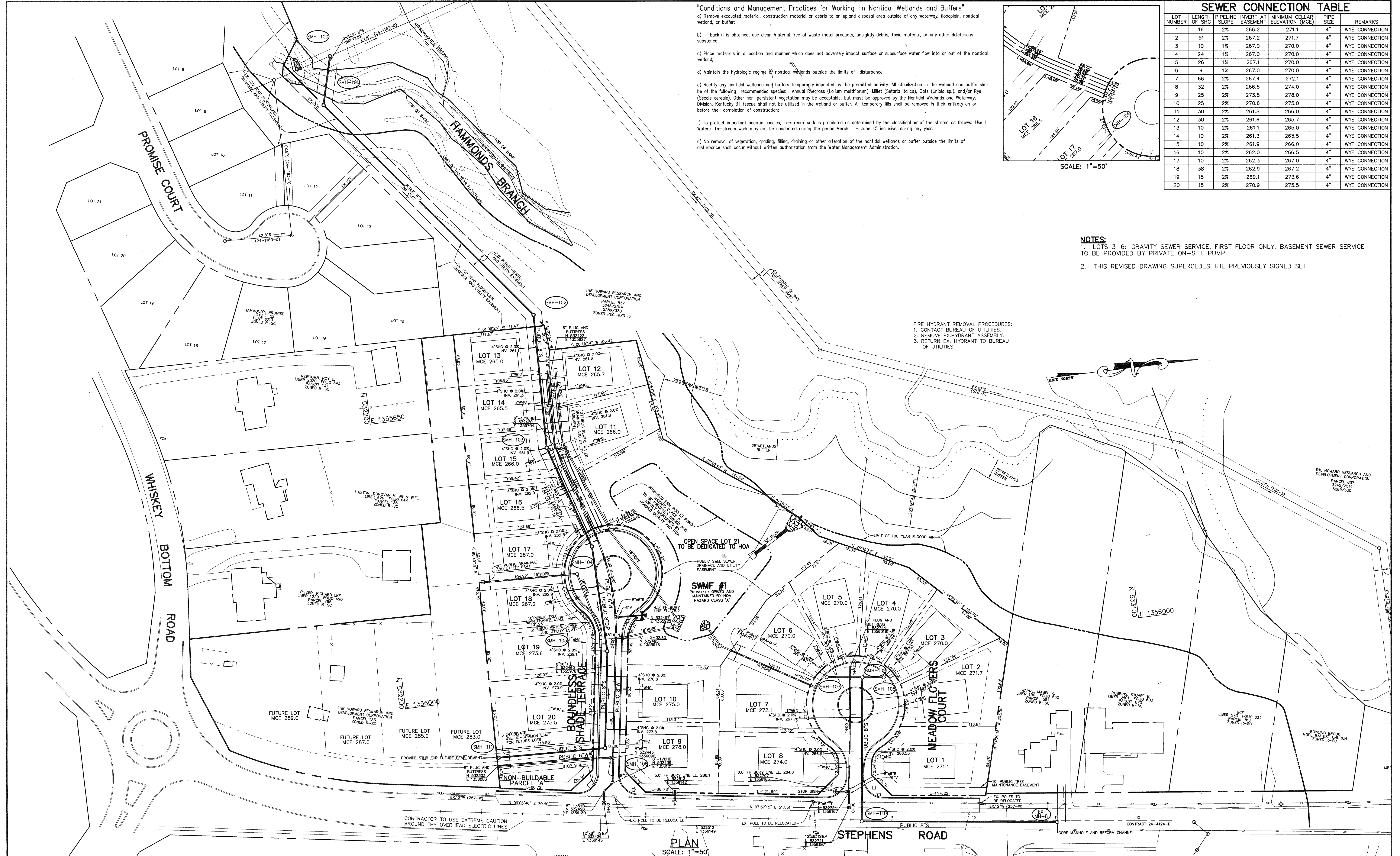
- a) Remove excavated material, construction material or debris to an upland disposal area outside of any waterway, floodplain, nontidal wetland, or buffer;
- b) If backfill is obtained, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- 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 (*Sacchar 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.



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.

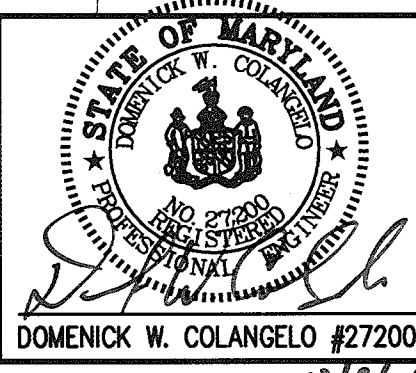
- FIRE HYDRANT REMOVAL PROCEDURES:**
- CONTACT BUREAU OF UTILITIES.
 - REMOVE EX-HYDRANT ASSEMBLY.
 - RETURN EX-HYDRANT TO BUREAU OF UTILITIES.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

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Engineers, Surveyors, Planners, Landscape Architects.
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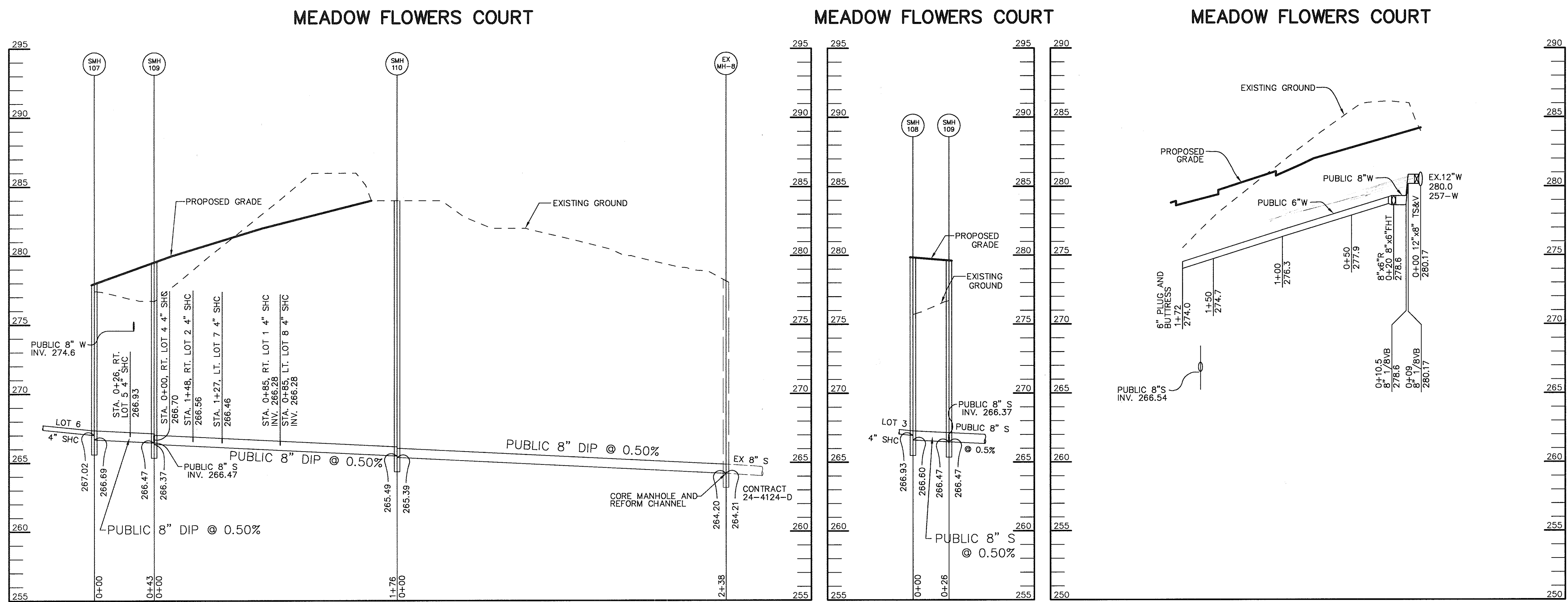
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DRN:	DAM			
CHK:	CJR	DWC	2	REVISED SANITARY SEWER CONNECTION. MISC. REVISIONS 12/7/05
DATE:	5/9/05	DWC	1	NEW SAN. SWR. TO STEPHENS RD.; REV. WTR. LINE; ADD. NOTES 11/3/05
BY:	NO.	REVISION	DATE	

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

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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

SEWER PROFILE

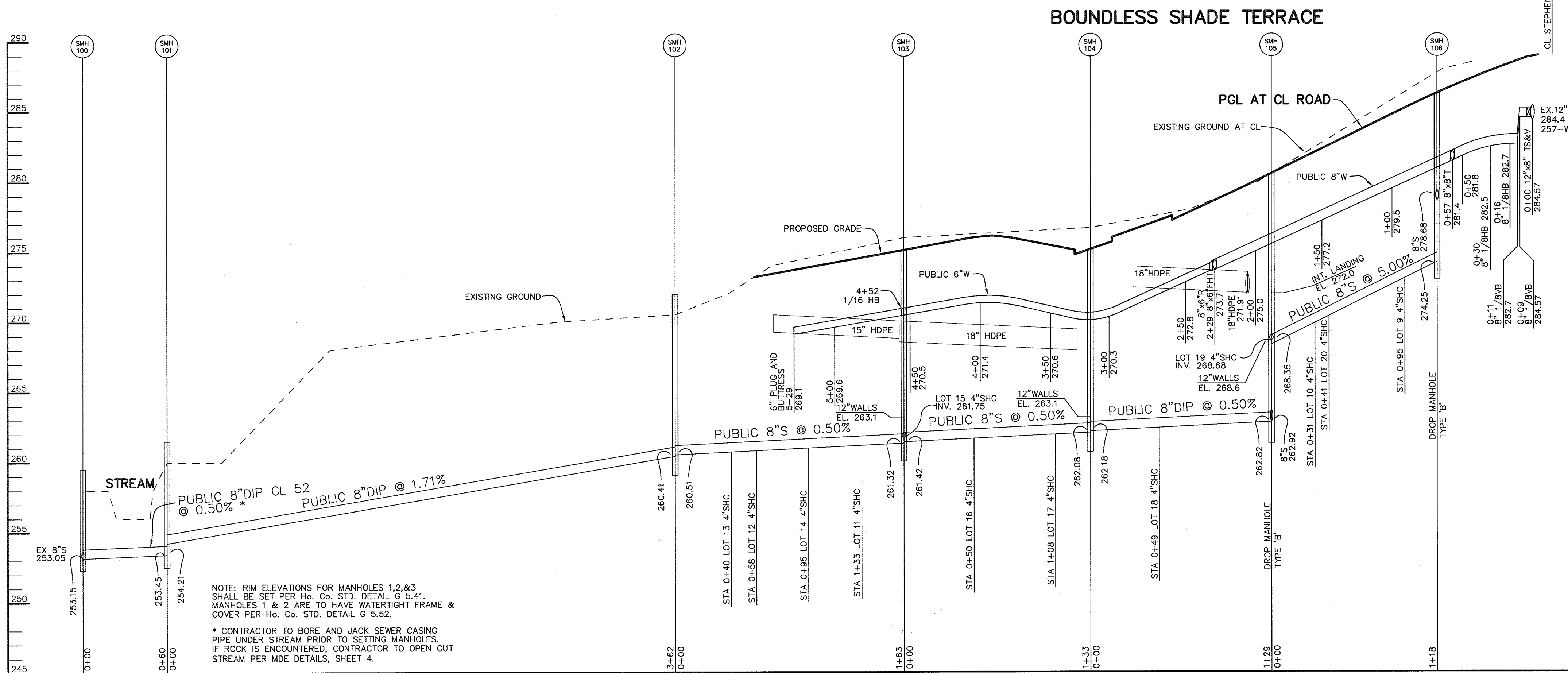
SCALE:
HOR.-1"=50'
VERT.-1"=5'

SEWER PROFILE

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

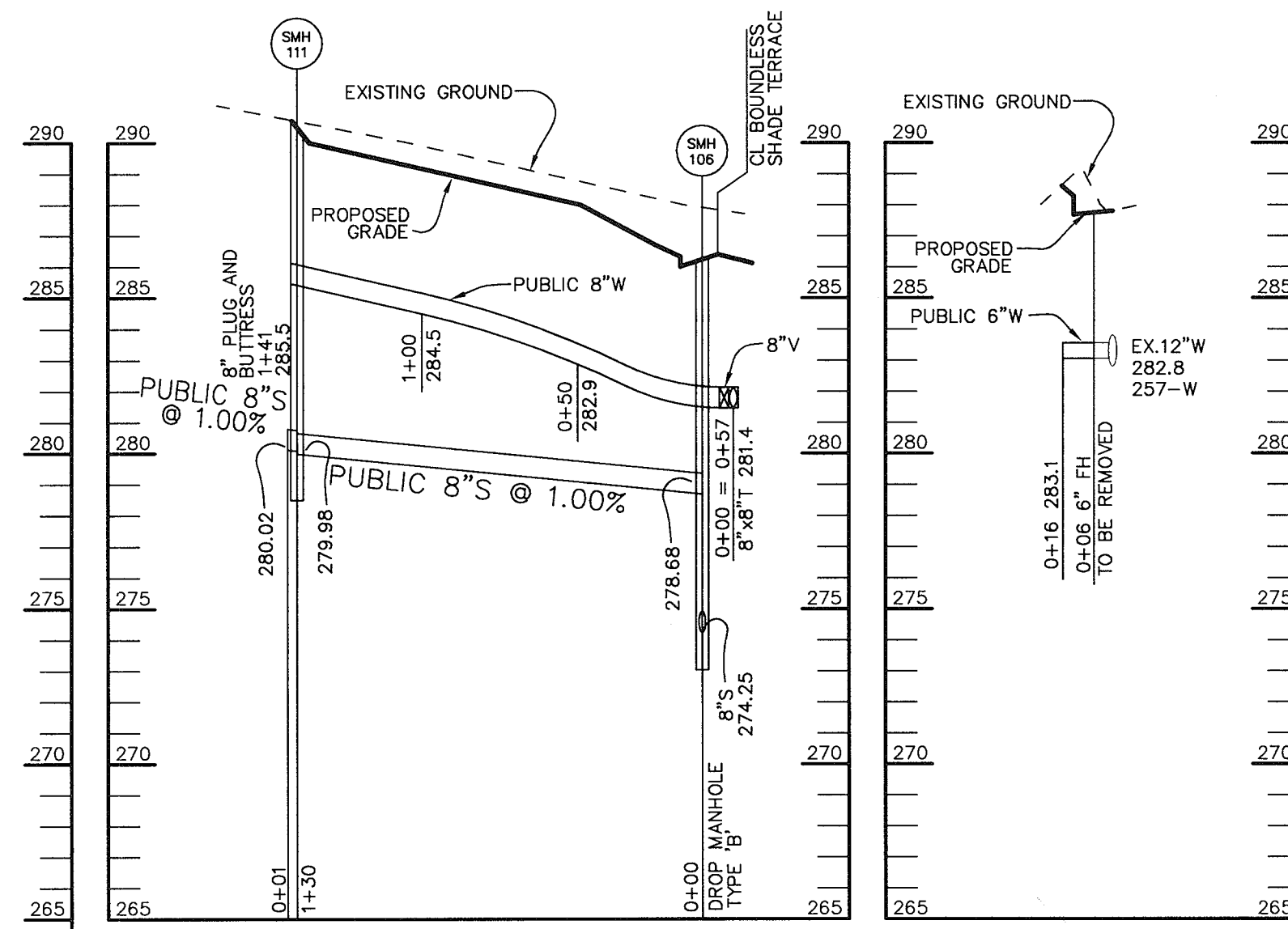
WATER PROFILE

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



PROFILE

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



PROFILE

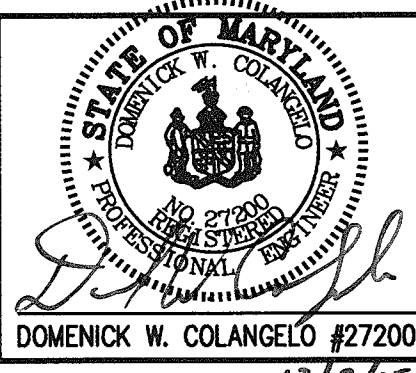
SCALE:
HOR.-1"=50'
VERT.-1"=5'

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. J. ... 1/2/06 CHIEF, DEVELOPMENT ENGINEERING DIVISION	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 410.997.9282	DES: ACR DRN: DAM CHK: CJR DATE: 5/9/05 BY NO. REVISION DATE	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
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12/9/05

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<p>I. Description The work shall consist of the construction of a dewatering basin for the purpose of receiving sediment-laden water pumped from a construction site to allow filtration before the water re-enters the waterway.</p> <p>II. Material Specifications</p> <ol style="list-style-type: none"> Riprap: Riprap shall consist of 4-8 inch washed stone or gravel. Filter Fabric: The filter cloth shall be a woven or non-woven fabric consisting of continuous chain polymeric filaments or yarns of polymer. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, oil, and soil. It shall be resistant to tearing and puncture. Strawbales: Strawbales shall meet the criteria as specified in the Maryland Standards and Specifications for Soil Erosion and Sediment Control. <p>III. Construction Requirements</p> <ol style="list-style-type: none"> The contractor shall install all sediment and erosion control devices on the first order of business. Excavated materials shall be stored such that sediments are prevented from entering the waterway. i.e., sediment perimeter controls may be necessary. Excavated material and topsoil shall be kept separate and replaced in their natural order. Any dewatering of the construction area shall be filtered through a dewatering basin prior to entering the waterway. The dewatering basin shall be excavated to a minimum depth of 3 feet. Once the dewatering basin becomes filled to 1/3 of the excavated depth, accumulated sediment shall be removed and disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA. Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal. All ground contours shall be returned to their original condition unless specifically approved otherwise by the Administration. 	<p>PLAN VIEW</p> <p>SECTION A-A</p> <p>SECTION B-B</p>	<p>I. Description The work shall consist of installing a flow diversion structure in conjunction with a temporary culvert crossing during in-stream construction such as utility crossings.</p> <p>II. Material Specifications</p> <ol style="list-style-type: none"> Sandbags: Sandbags shall consist of materials which are resistant to ultra-violet radiation, tearing and puncture and worn lightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.). Stone: Stone shall be washed and have a minimum diameter of 6 inches. Sheeting: Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing. <p>III. Construction Requirements</p> <ol style="list-style-type: none"> All erosion and sediment control devices shall be installed as the first order of work. The diversion structure shall be installed from upstream to downstream. The height of the diversion structure shall be one half the distance from stream bed to stream bank plus one foot, as indicated on the cross section view. All excavated materials shall be disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA. All dewatering of the construction area shall be pumped to a dewatering basin prior to re-entering the stream. Sheeting shall be overlapped such that the upstream portion covers the downstream portion with at least an 18-inch overlap. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal. 	<p>PLAN VIEW</p> <p>SECTION A-A</p>	<p>I. Description This work shall consist of protecting slopes and channels from erosion with covering of stone in accordance with the plans and specifications shown on this drawing.</p> <p>II. Material Specifications</p> <p>Bedding:</p> <ol style="list-style-type: none"> Bank on gravel shall meet the following requirements: Gravel: Gravel shall meet the following requirements: <p>Construction Requirements:</p> <ol style="list-style-type: none"> The contractor shall install all sediment and erosion control devices as a first order of business. Provision must be made to anchor the riprap of the stream bed so as to prevent migration against under-licensing. If this cannot be accomplished by extending the low bench as indicated in cross section, an alternative method of protection must be provided prior written approval of the Administration. Placement of riprap shall be made in reasonably close conformity with the existing stream slope and bed. A filter bedding is required under all riprap. Bedding material shall consist of clean sand or gravel of a particle size that causes extensive segregation is not allowed. Any excavation walls existing along the edge of the completed slope and channel protection shall be backfilled. All disturbed areas shall be permanently stabilized in accordance with an approved sediment and erosion control plan. 	<p>CROSS SECTION</p> <p>RIPRAP GRADATION</p> <table border="1"> <thead> <tr> <th>CLASS</th> <th>SIZE</th> <th>PERCENT OF TOTAL WEIGHT</th> </tr> </thead> <tbody> <tr> <td>CLASS I</td> <td>1/2" to 3/4" (12.5 to 19 mm)</td> <td>100</td> </tr> <tr> <td>CLASS II</td> <td>3/4" to 1 1/4" (19 to 31.5 mm)</td> <td>100</td> </tr> <tr> <td>CLASS III</td> <td>1 1/4" to 2" (31.5 to 50 mm)</td> <td>100</td> </tr> </tbody> </table>	CLASS	SIZE	PERCENT OF TOTAL WEIGHT	CLASS I	1/2" to 3/4" (12.5 to 19 mm)	100	CLASS II	3/4" to 1 1/4" (19 to 31.5 mm)	100	CLASS III	1 1/4" to 2" (31.5 to 50 mm)	100	<p>I. Description This work shall consist of installing erosion control devices in and adjacent to temporary stream construction such as utility crossings.</p> <p>Construction Requirements</p> <ol style="list-style-type: none"> All erosion and sediment control devices shall be installed as the first order of work. The contractor shall ensure that a continuous perimeter control barrier is in place so as to minimize pollutants entering the water. Excavated material and topsoil shall be kept separate and replaced in their natural order. All construction shall take place during stream low flows. The length of construction time shall be limited to a maximum of 5 days for each crossing. All utility crossings shall be placed at least three feet beneath the stream bed unless an alternative section is specifically approved by the Administration. The contractor may elect to construct the utility crossing in two stages. In this case, a WRA approved flow barrier may be constructed to keep the construction area dry. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal. 	<p>DETAIL 22 - SILT FENCE</p> <p>PLAN VIEW</p> <p>PERSPECTIVE VIEW</p> <p>CROSS SECTION</p>
CLASS	SIZE	PERCENT OF TOTAL WEIGHT																	
CLASS I	1/2" to 3/4" (12.5 to 19 mm)	100																	
CLASS II	3/4" to 1 1/4" (19 to 31.5 mm)	100																	
CLASS III	1 1/4" to 2" (31.5 to 50 mm)	100																	
<p>APPROVED ON 1/24/06 WATER MANAGEMENT ADMINISTRATION</p>	<p>APPROVED ON 1/24/06 WATER MANAGEMENT ADMINISTRATION</p>	<p>APPROVED ON 1/24/06 WATER MANAGEMENT ADMINISTRATION</p>	<p>APPROVED ON 1/24/06 WATER RESOURCES ADMINISTRATION</p>	<p>APPROVED ON 1/24/06 WATER MANAGEMENT ADMINISTRATION</p>	<p>APPROVED ON 1/24/06 WATER RESOURCES ADMINISTRATION</p>	<p>APPROVED ON 1/24/06 WATER MANAGEMENT ADMINISTRATION</p>													

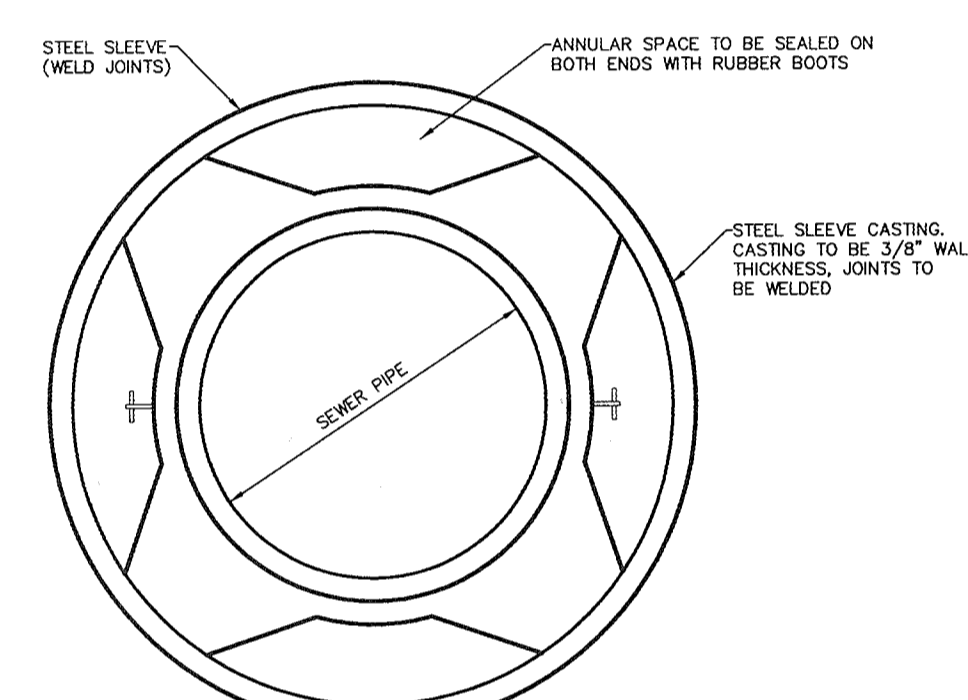
WATER MANAGEMENT ADMINISTRATION DEWATERING BASINS APPROVED ON 1/24/06 WPD WATER MANAGEMENT ADMINISTRATION CULVERT PIPE WITH ACCESS APPROVED ON 1/24/06 WPD WATER MANAGEMENT ADMINISTRATION SANDBAG/STONE DIVERSION APPROVED ON 1/24/06 WPD WATER RESOURCES ADMINISTRATION RIPRAP APPROVED ON 1/24/06 WPD WATER MANAGEMENT ADMINISTRATION UTILITY CROSSING APPROVED ON 1/24/06 WPD WATER RESOURCES ADMINISTRATION FORD CROSSING APPROVED ON 1/24/06 WPD U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 1-18-2 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION

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

- Remove excavated material, construction material or debris to an upland disposal area outside of any waterway, floodplain, nontidal wetland, or buffer;
- If backfill is obtained, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland;
- Maintain the hydrologic regime of nontidal wetlands outside the limits of disturbance.
- 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;
- 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.
- 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.



NOTES
1. STAINLESS STEEL CASING SPACERS WITH PLASTIC INSULATORS AS MANUFACTURED BY AVANCE PRODUCTS AND SYSTEMS, INC., CASCADE WATERWORKS MANUFACTURING CO. OR AN ALTERNATE APPROVED BY HOWARD COUNTY DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES.
2. INSULATORS TO BE EQUALLY SPACED AT 1/3 POINTS ALONG LENGTH OF PIPE AND EACH SIDE OF JOINT.
3. BORE AND JACK CASING PIPE BEFORE SETTING MANHOLES. ADJUST SLOPE OF SEWER PIPE USING ADJUSTABLE CASING SPACERS.

CASING PIPE DETAIL
NO SCALE

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>R. J. ...</i> CHIEF, BUREAU OF UTILITIES 1-3-06 DATE</p>	<p>DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND</p> <p><i>M. ...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/25/06 DATE</p>	<p>Patton Harris Rust & Associates, p.c. Engineers, Surveyors, Planners, Landscape Architects.</p> <p>PHRA</p> <p>8618 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282</p>	<p>DOMENICK W. COLANGELO #27200</p>	<p>DES: ACR DRN: DAM CHK: CJR DATE: 5/9/05</p> <p>DWC 1 ADDED SHEET 12/7/05</p> <p>BY NO. REVISION DATE</p>	<p>600' SCALE MAP NO. 47 BLOCK NO. 8 & 9 PARCEL 462</p>	<p>EMERSON SECTION 2 PHASE 6B LOTS 1 THRU 22 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4231-D</p> <p>SCALE AS SHOWN</p> <p>SHEET 4 OF 4</p>
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