WATER AND SEWER EXTENSIONS
BENSON EAST
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 24-4209-D

SHEET INDEX	
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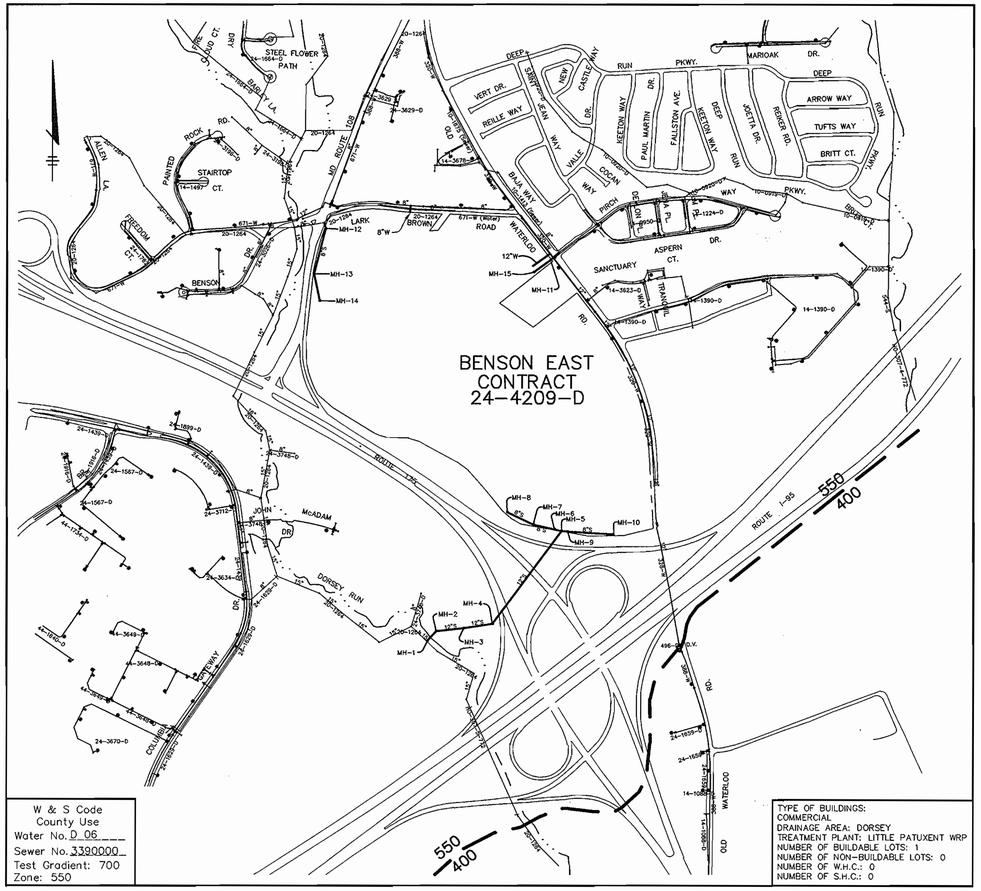
BENCHMARKS

GEODETIC SURVEY CONTROL 37GD
N 553,237.204
E 1,372,353.605
ELEV. 290.931
LOCATED 30' EAST OF FIRE HYDRANT ACROSS FROM DEEP RUN ELEMENTARY SCHOOL

GEODETIC SURVEY CONTROL 37GC
N 555,250.791
E 1,370,946.348
ELEV. 331.855
LOCATED ON THE SOUTH SIDE OF OLD WATERLOO ROAD ACROSS FROM DEEP RUN PARKWAY



W & S Code	
County Use	
Water No.	D 06 ___
Sewer No.	3390000
Test Gradient:	700
Zone:	550

TYPE OF BUILDINGS:
COMMERCIAL
DRAINAGE AREA: DORSEY
TREATMENT PLANT: LITTLE PATUXENT WRP
NUMBER OF BUILDABLE LOTS: 1
NUMBER OF NON-BUILDABLE LOTS: 0
NUMBER OF W.H.C.: 0
NUMBER OF S.H.C.: 0

VICINITY MAP
SCALE : 1"=600'

QUANTITIES

ITEMS	QUANTITIES ESTIMATED	AS-BUILT QUANTITIES	AS-BUILT TYPE	AS-BUILT MANUFACTURER / SUPPLIER
8" WATER	32 LF	32	CL-52 DIP	GRIFFIN INC.
8" x 8" TSV	1 EA	1	S.S. TAPSLEEVE	J.M.
12" x 12" TSV	1 EA			
12" WATER	225 LF			
8" SEWER	1205 LF	1205	SDR-35	J.M. MFG.
8" DIP CL52	780 LF	780	CL-52 DIP	GRIFFIN PIPE
SEWER MANHOLES	15 EA.	15	PRECAST	ATLANTIC CONCRETE
	⚠			
12" DIP CL52	⚠ 586 LF			
NAME OF UTILITY CONTRACTOR : C.C.S. INC.				

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on SDP-04-163

CHECKBOX	
AS-BUILT DATE	10/06
SURVEY AND DRAFTING DIVISION	

Review for Howard Soil Conservation District and meets technical requirements.

NATURAL RESOURCES CONSERVATION SERVICE — DATE 1/10/05

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 1/10/05

GENERAL NOTES

1. Approximate location 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.

2. All horizontal controls are based on Maryland State Coordinates, NAD 83/91.

3. All vertical controls are based on NAVD 88.

4. All pipe elevations shown are invert elevations unless otherwise noted on the plans.

5. 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.

6. For details not shown on the drawings, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specifications and Detail for Construction (Latest Edition). The contractor shall have a copy of Volume IV on the job.

7. Where test pits have been made on existing utilities, they are noted by the symbol ⊕ at the location of the test pit. 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.

8. 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 (Contractor Services)	410-850-4620
BGE (Underground Damage Control)	410-787-9068
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

9. 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.

10. 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.

11. 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

1. All water mains shall be D.I.P. Class 52 unless otherwise noted.

2. Tops of all water mains shall have a minimum of 3'-6" of cover unless otherwise noted.

3. Valves adjacent to tees shall be strapped to tees.

4. All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless otherwise provided for on the drawings.

5. 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.

6. The contractor shall not operate any water main valves on the existing water system.

SEWER NOTES

1. All sewer mains shall be D.I.P. and P.V.C. unless otherwise noted.

2. All manholes shall be 4'-0" inside diameter unless otherwise noted.

3. Force mains shall be D.I.P. only.

4. Manholes shown with 12" and 16" walls are for brick manholes only.

5. Manholes designated W.T. in plan and profile shall have watertight frame and covers, Standard Detail G5.52. Where watertight manhole frames and covers is used, set top of frame 1"-6" above finished grade unless otherwise noted on the drawings.

6. House(s) with the symbol "C.N.S." indicates that cellar cannot be served.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE 1-13-05

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/21/05

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

STATE OF MARYLAND — CHRISTOPHER J. REID — No. 19949 — PROFESSIONAL ENGINEER
CHRISTOPHER J. REID #19949

DES: C.J.R.
DRN: DAM
CHK: C.J.R.
DATE: 12/22/04

BY	NO.	REVISION	DATE
KCI	2	AS-BUILT DATA ADDED	5/16/08
WJD	1	MODIFIED QUANTITIES	4-6-08

TITLE SHEET

600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2

BENSON EAST
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT 24-4209-D

SCALE AS SHOWN

SHEET 1 OF 9

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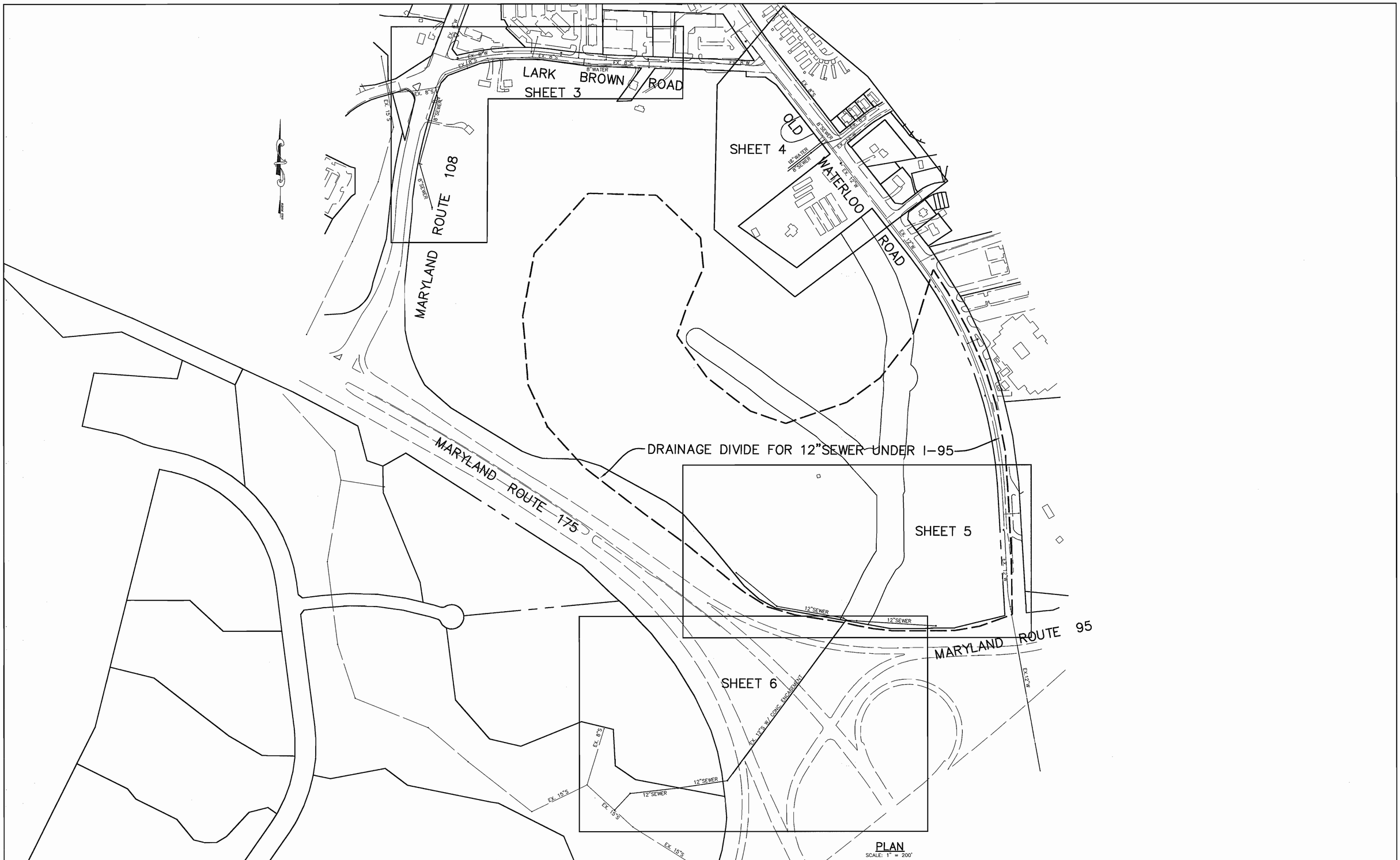
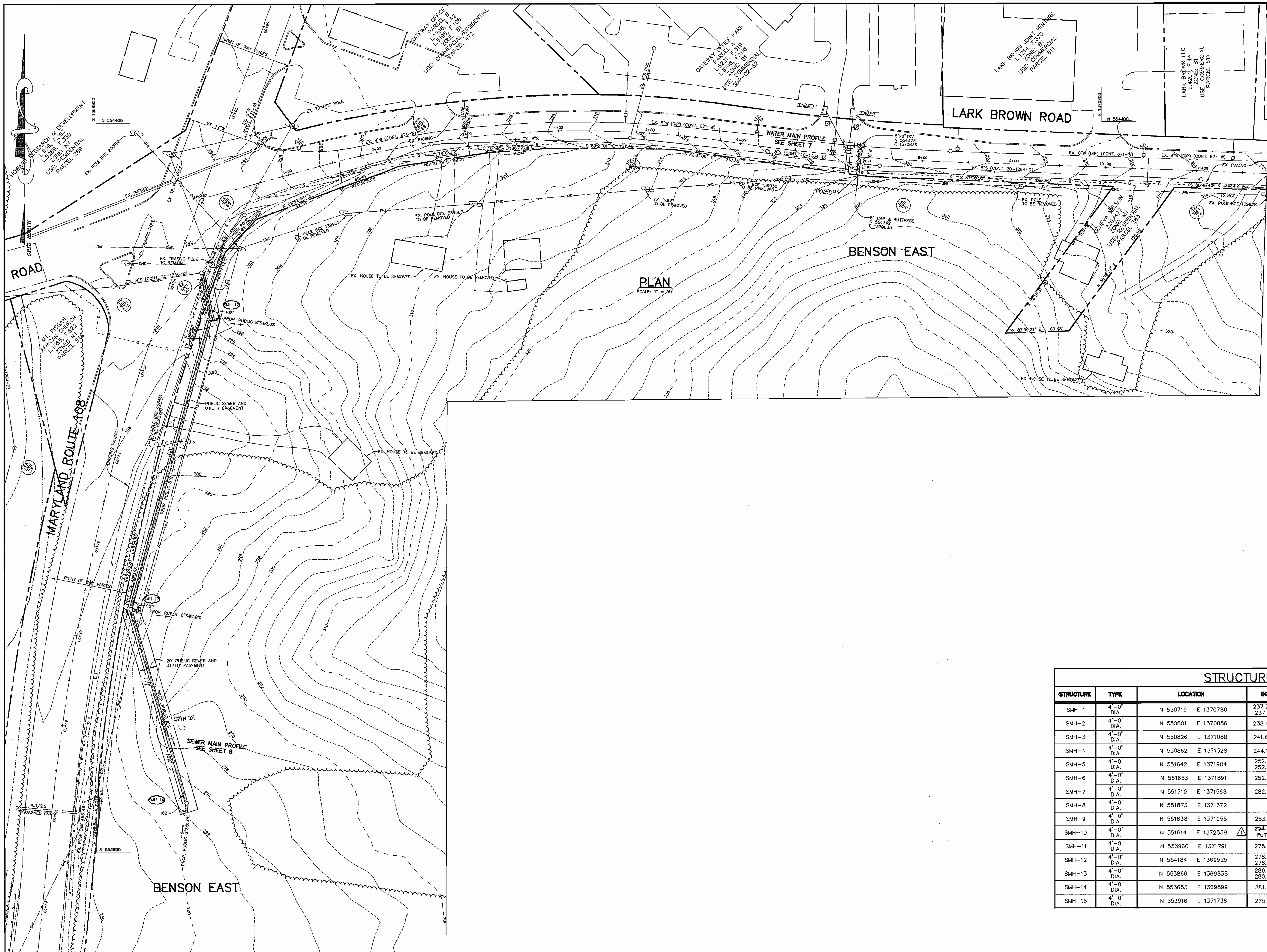


PLAN
SCALE: 1" = 200'

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Robert V. Bennion 1-13-05 CHIEF, BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND 1/21/05 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	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	STATE OF MARYLAND CHRISTOPHER J. REID NO. 19949 REGISTERED PROFESSIONAL ENGINEER 12-22-04 CHRISTOPHER J. REID #19949	DES: C.J.R. DRN: DAM CHK: C.J.R. DATE: 12/22/04	BY	NO.	REVISION	DATE	OVERALL PLAN 600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2	BENSON EAST 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4209-D	SCALE AS SHOWN SHEET 2 OF 9



STRUCTURE SCHEDULE						
STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
SMH-1	4'-0" DIA.	N 550719 E 1370780	237.78 (12") 237.2 (15")	237.2 (15")	18" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-2	4'-0" DIA.	N 550801 E 1370856	238.44 (12")	238.34 (12")	18" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-3	4'-0" DIA.	N 550826 E 1371088	241.65 (12")	241.55 (12")	18" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-4	4'-0" DIA.	N 550862 E 1371328	244.17 (12")	244.07 (12")	18" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-5	4'-0" DIA.	N 551642 E 1371904	252.74 (8") 252.74 (8")	252.41 (12")	18" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-6	4'-0" DIA.	N 551653 E 1371891	252.92 (8")	252.82 (8")	18" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-7	4'-0" DIA.	N 551710 E 1371568	282.54 (8")	282.44 (8")	6" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-8	4'-0" DIA.	N 551873 E 1371372	–	293.52 (8")	320.8	HOCO STD. DETAIL G-5.11
SMH-9	4'-0" DIA.	N 551638 E 1371955	253.10 (8")	253.00 (8")	18" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-10	4'-0" DIA.	N 551614 E 1372339 ⚠1	264.07 (8") FUTURE	263.97 (8")	18" ABOVE EX. GR.	HOCO STD. DETAIL G-5.11
SMH-11	4'-0" DIA.	N 553960 E 1371791	275.05 (8")	274.95 (8")	289.0	HOCO STD. DETAIL G-5.11
SMH-12	4'-0" DIA.	N 554184 E 1369925	278.26 (8") 278.26 (8")	278.16 (8")	296.0	HOCO STD. DETAIL G-5.11
SMH-13	4'-0" DIA.	N 553866 E 1369838	280.02 (8") 280.02 (8")	279.92 (8")	287.0	HOCO STD. DETAIL G-5.11
SMH-14	4'-0" DIA.	N 553653 E 1369899	281.23 (8")	281.13 (8")	294.0	HOCO STD. DETAIL G-5.11
SMH-15	4'-0" DIA.	N 553916 E 1371736	275.51 (8")	275.41 (8")	291.0	HOCO STD. DETAIL G-5.11

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert W. Berrier 1-13-05
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[signature] 1/21/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Patton Harris Rust & Associates, pc
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F 410.997.9282

STATE OF MARYLAND — CHRISTOPHER J. REID — NO. 19949 — REGISTERED PROFESSIONAL ENGINEER — 12.22.04
CHRISTOPHER J. REID #19949

DES: C.J.R.
DRN: DAM
CHK: C.J.R.
DATE: 12/22/04

BY	NO.	REVISION	DATE
KCI	2	AS-BUILT DATA ADDED	3-15-08
WAD	1	MODIFIED STRUCTURE SCHEDULE	4-6-05

PLAN VIEW OF
WATER AND SEWER MAINS

600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2

BENSON EAST
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT 24-4209-D

SCALE AS SHOWN

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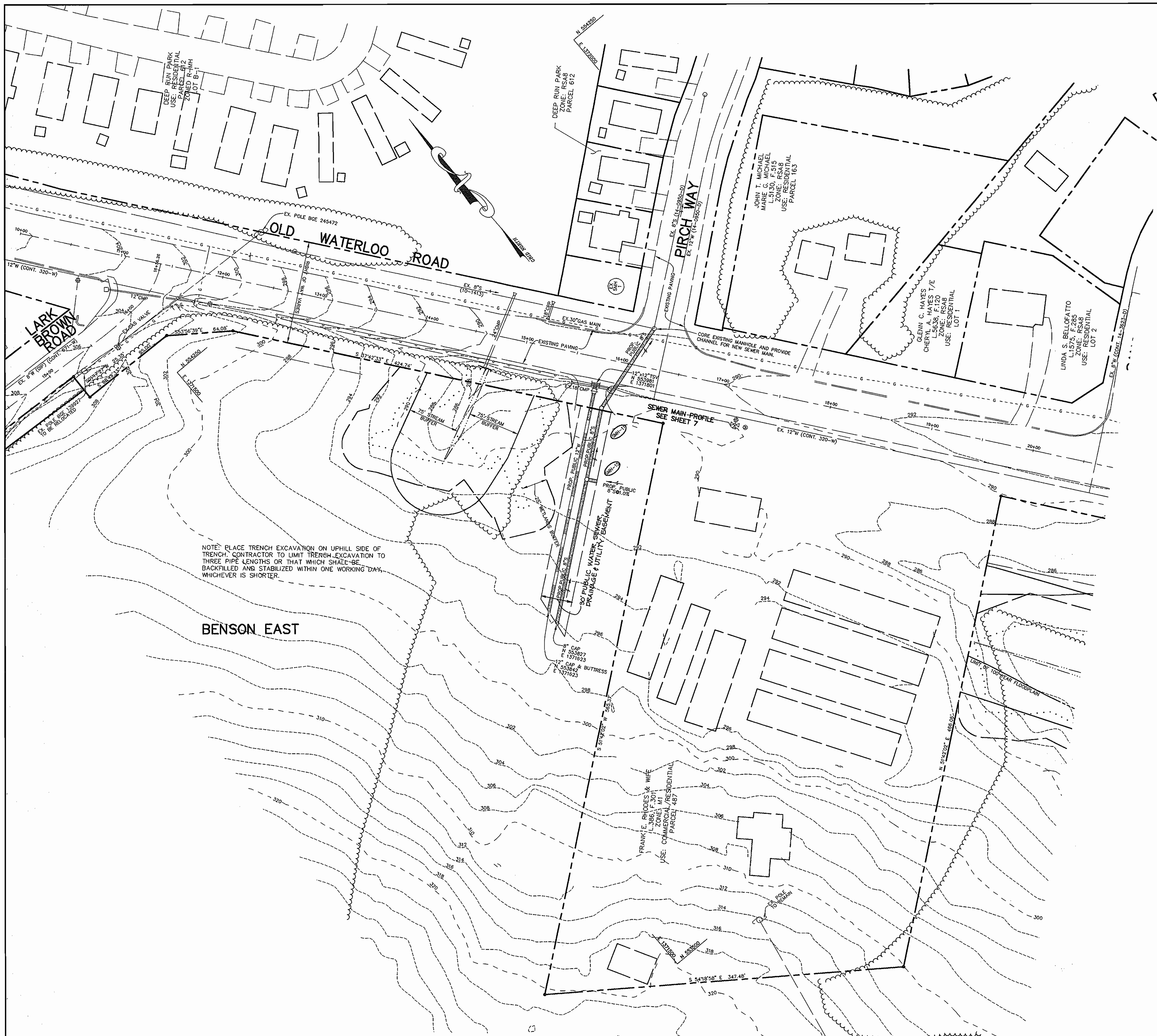

PLAN
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND	Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. PHR+A 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	STATE OF MARYLAND CHRISTOPHER J. REID NO. 19949 REGISTERED PROFESSIONAL ENGINEER 12-22-04 CHRISTOPHER J. REID #19949	DES: C.J.R. DRN: DAM CHK: C.J.R. DATE: 12/22/04	BY / NO. / REVISION / DATE	PLAN VIEW OF WATER AND SEWER MAINS 600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2	BENSON EAST 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4209-D	SCALE AS SHOWN SHEET 4 OF 9
1-13-05 CHIEF, BUREAU OF UTILITIES DATE	1/21/05 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE							

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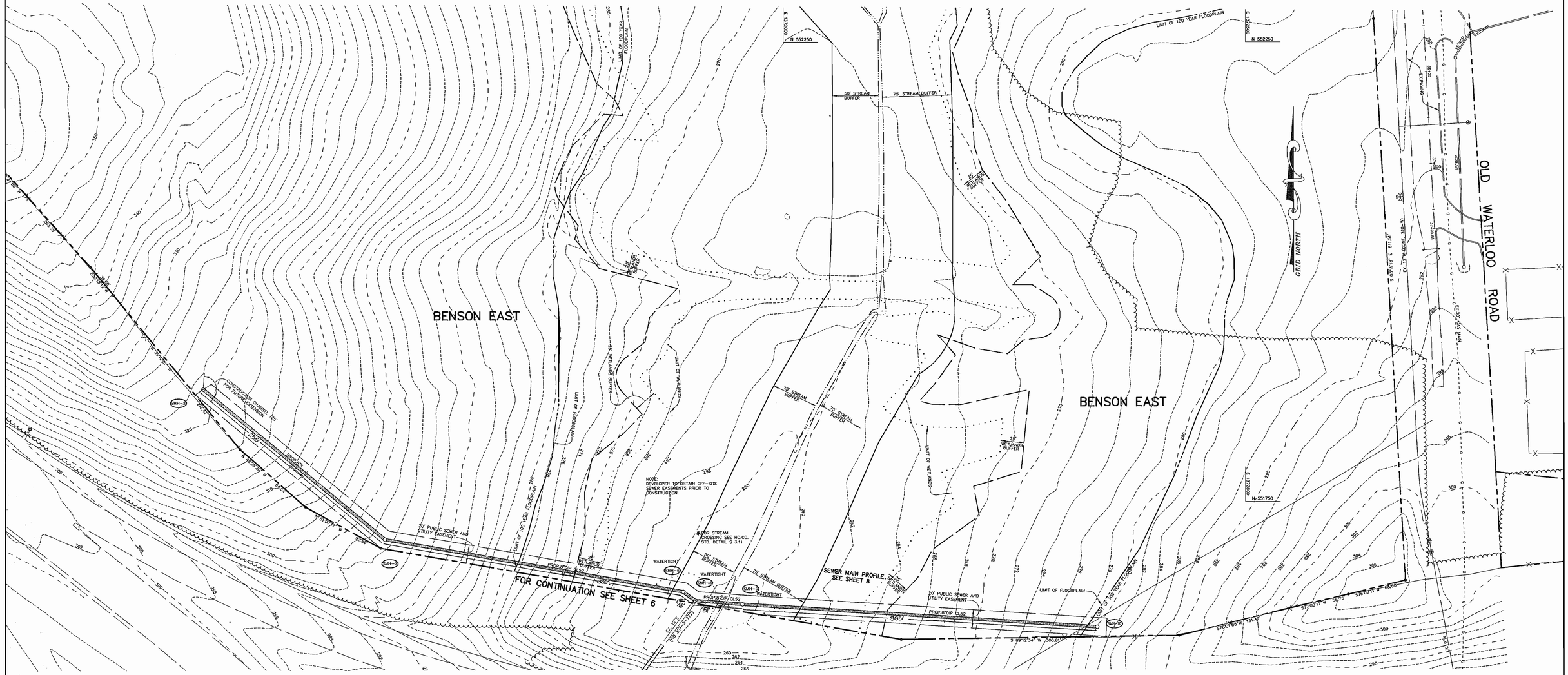

PLAN
SCALE: 1" = 50'

NOTE: PLACE TRENCH EXCAVATION ON UPHILL SIDE OF TRENCH. CONTRACTOR TO LIMIT TRENCH EXCAVATION TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

⚠1 * CONTRACTOR TO BORE AND JACK SEWER CASING PIPE UNDER STREAM PRIOR TO SETTING MANHOLES. IF ROCK IS ENCOUNTERED, CONTRACTOR TO OPEN CUT STREAM PER MDE DETAILS, SHEET 9.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE 1-13-05

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/21/05

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STATE OF MARYLAND — CHRISTOPHER J. REID — No. 19949 — REGISTERED PROFESSIONAL ENGINEER — 12.22.04
CHRISTOPHER J. REID #19949

DES: C.J.R.
DRN: DAM
CHK: C.J.R.
DATE: 12/22/04

BY	NO.	REVISION	DATE
KCI	2	AS BUILT DATA ADDED	5-16-08
WAD	1	ADDED BORING & JACKING NOTE	4-9-05

PLAN VIEW OF
WATER AND SEWER MAINS

600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2

BENSON EAST
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT 24-4209-D

SCALE AS SHOWN

SHEET 5 OF 9

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FOR CONTINUATION SEE SHEET 5
RAMP 'D'
COLUMBIA ASSOCIATION INC.
LOT T-7
L.3324, F.191
ZONE: M-1
USE: COMMERCIAL
PARCEL 671
GRID NORTH
MARYLAND ROUTE 175
EXISTING PAVING
EX. PAVING
N 551300
RAMP 'A'
NOTE: EX. 12"S TO BE LINED USING AN INSITUFORM CURED-IN-PLACE LINING.
NOTE:
DEVELOPER TO OBTAIN OFF-SITE SEWER EASEMENTS PRIOR TO CONSTRUCTION.
SEWER MAIN PROFILE
SEE SHEET 7
CONTRACTOR TO TEST PIT FOR EXACT LOCATION OF END OF PIPE AND DEPTH, IF DIFFERENT FROM PLAN CONTACT ENGINEER AS SOON AS POSSIBLE.
20' PUBLIC SEWER AND UTILITY EASEMENT
PROP. PUBLIC 12"S DIP CL 52
PROP. PUBLIC 12"DIP CL52
244'
233'
SF
SILT FENCE
SMH-4
SMH-3
WATERTIGHT
SMH-2
SMH-1
SEE BLOW-UP DETAIL THIS SHEET
EX. FLOODPLAIN PER FEMA MAP
25' WETLANDS BUFFER
LIMITS OF WETLANDS
DORSEY RUN
N 550700
⚠* CONTRACTOR TO BORE & JACK SEWER CASING PIPE UNDER STREAM PRIOR TO SETTING MANHOLES. IF ROCK ENCOUNTERED, CONTRACTOR TO OPEN CUT STREAM PER DETAILS, SHEET 9.
PLAN
SCALE: 1" = 50'
WATERTIGHT
SMH-2
SANDBAG DIVERSION
RIPRAP STREAM BANK PROTECTION
*PROP. PUBLIC 12"DIP CL52
SF
*FOR STREAM CROSSING SEE HO.CO. STD. DETAIL S 3.11
WATERTIGHT
SMH-1
EX. 15"S (CONT. 20-1264)
FORD CROSSING
SILT FENCE
DEWATERING BASINS
SILT FENCE
BLOW-UP
SCALE: 1" = 20'

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND	Patton Harris Rust & Associates,pc Engineers. Surveyors. Planners. Landscape Architects. PHR+A 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	STATE OF MARYLAND CHRISTOPHER J. REID NO. 19949 REGISTERED PROFESSIONAL ENGINEER 12-22-04 CHRISTOPHER J. REID #19949
1-13-05 CHIEF, BUREAU OF UTILITIES — DATE	1/21/05 CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE		

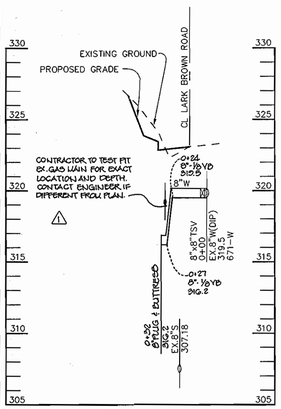
DES: C.J.R.	BY	NO.	REVISION	DATE
DRN: DAM				
CHK: C.J.R.	KCI	2	AS BUILT DATA ADDED	5/16/08
DATE: 12/22/04	WAD	1	ADDED STREAM CROSSING NOTE	4-6-05

PLAN VIEW OF
WATER AND SEWER MAINS

600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2

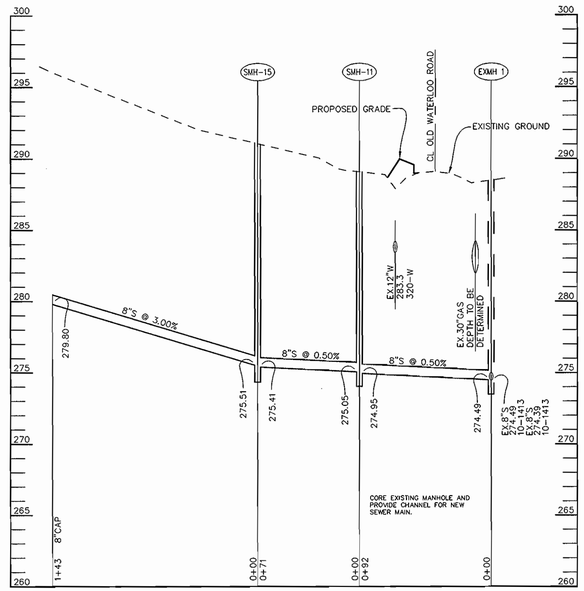
BENSON EAST
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT 24-4209-D

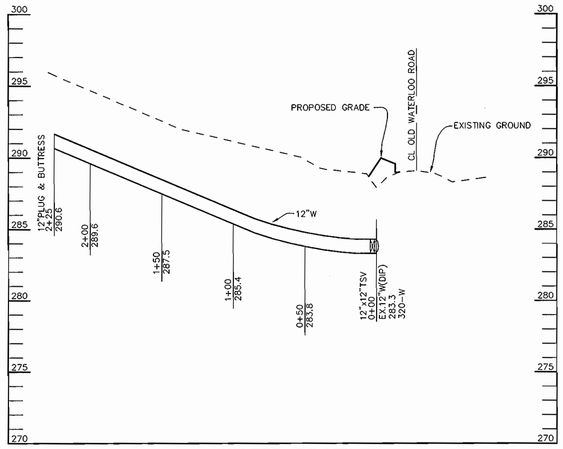
SCALE AS SHOWN



WATER PROFILE

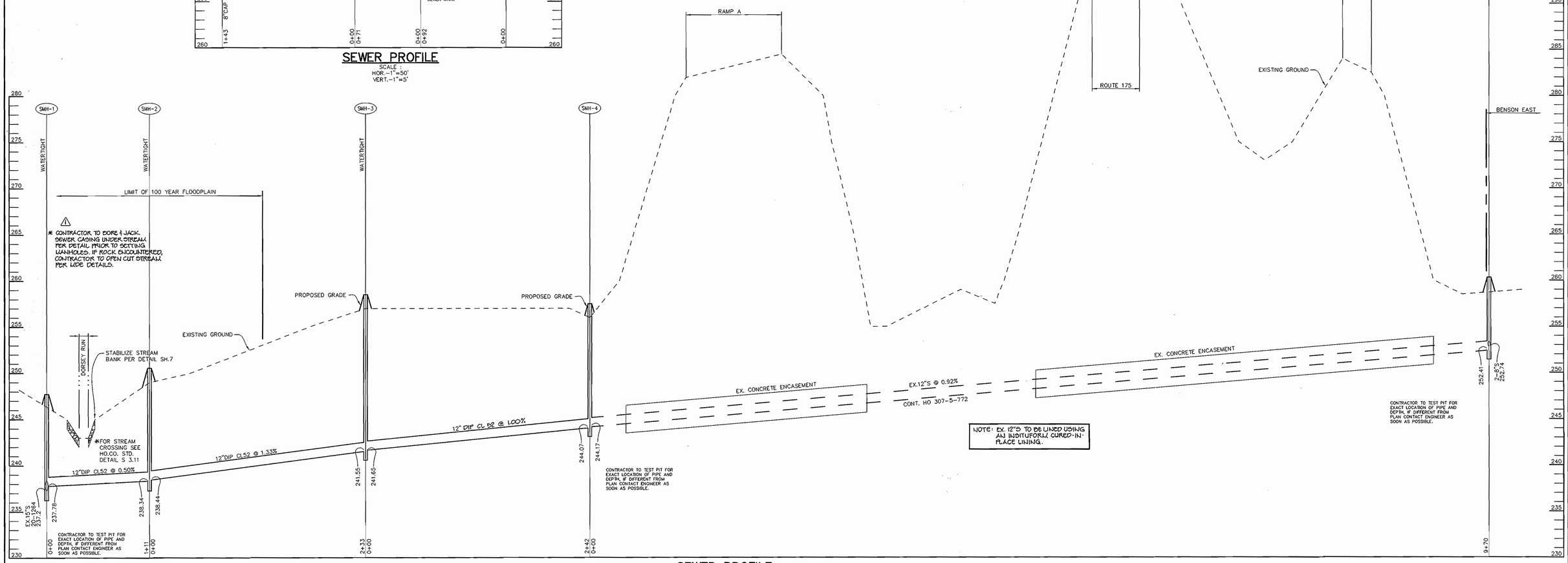
SCALE :
HOR.-1"=50'
VERT.-1"=5'





WATER PROFILE

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



SEWER PROFILE

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert J. Benson 1-13-05
CHIEF, BUREAU OF UTILITIES — DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/6/05

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STATE OF MARYLAND — CHRISTOPHER J. REID — No. 19949 — PROFESSIONAL ENGINEER

CHRISTOPHER J. REID #19949

DES:	C.J.R.
DRN:	DAM
CHK:	C.J.R.
DATE:	12/22/04

BY	NO.	REVISION	DATE
LMD	1	MODIFIED WATER PROFILE, BORING & JACKING NOTE	4-6-05

PROFILE OF A SEWER MAIN

600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2

BENSON EAST
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT 24-4209-D

SCALE AS SHOWN

SHEET 7 OF 9

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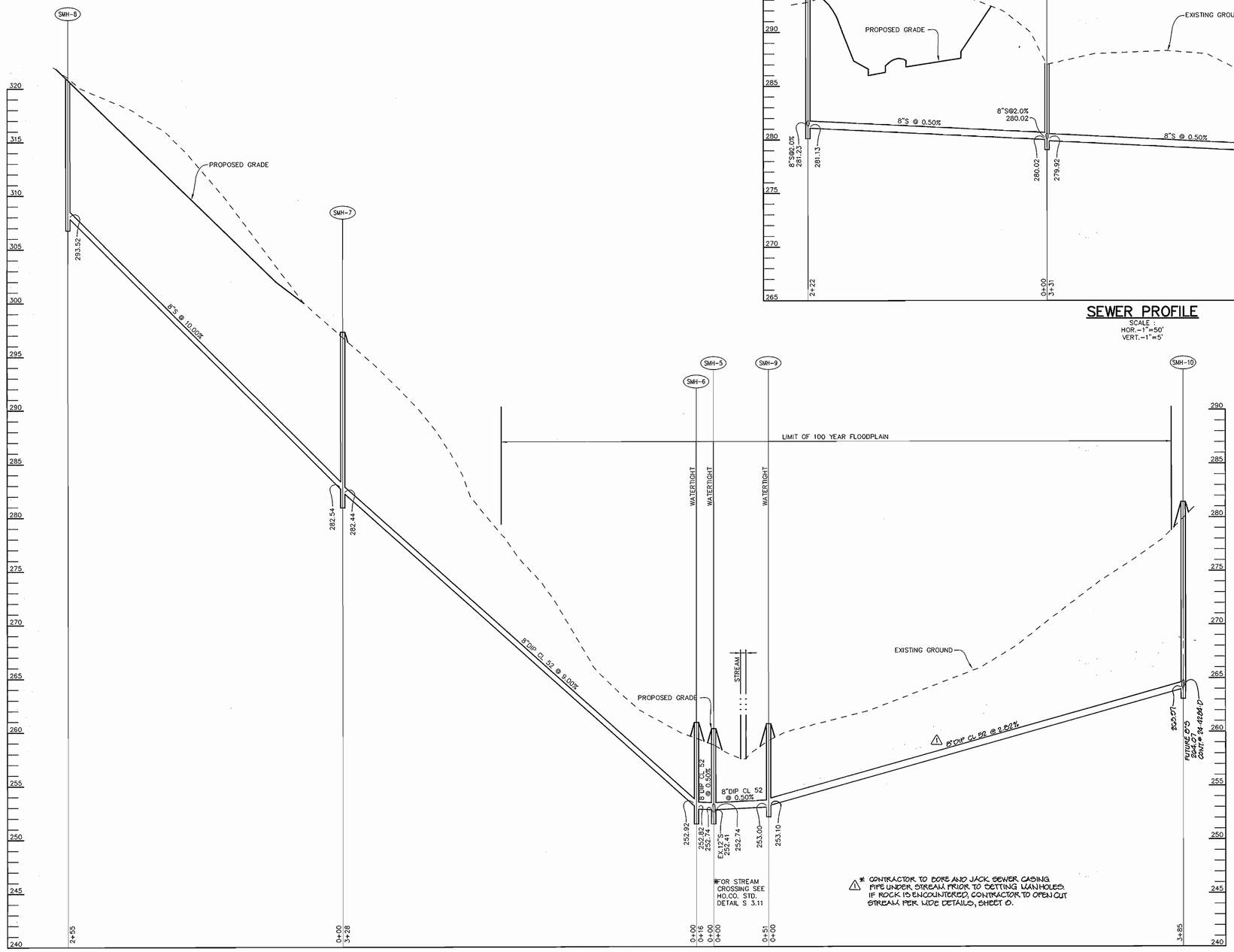
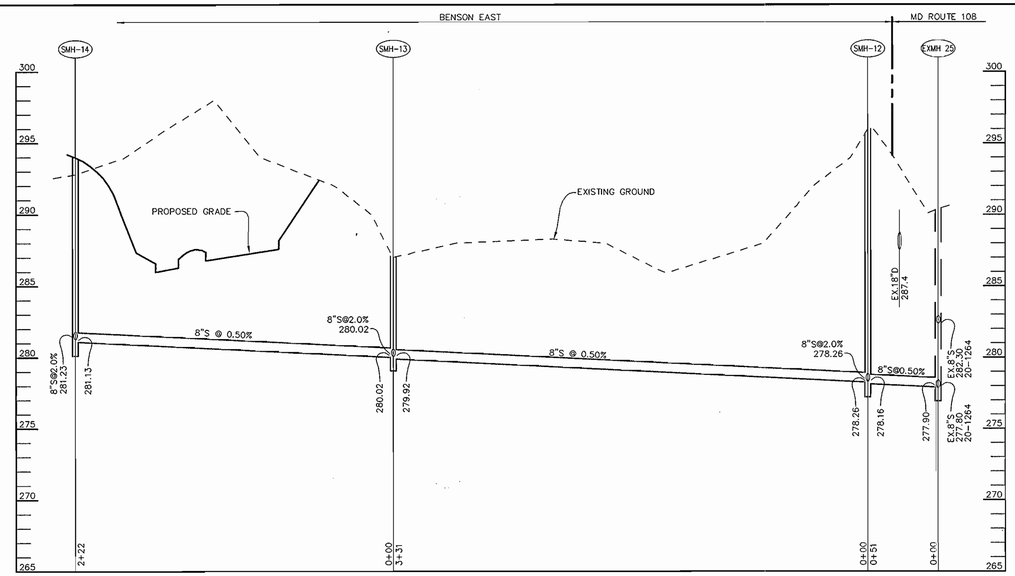


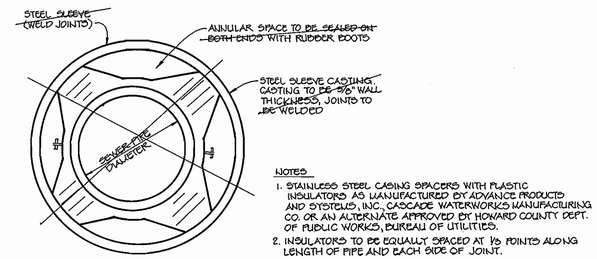
SEWER PROFILE

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



SEWER PROFILE

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



NOTES

1. STAINLESS STEEL CASING SPACERS WITH PLASTIC INSULATORS AS MANUFACTURED BY ADVANCE 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 ⅓ 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.

SEWER PIPE DIAMETER	SLEEVE SIZE
6"	20"
8"	24"
12"	30"
16"	40"
20"	60"
24"	72"

⚠ CASING PIPE DETAIL

NO SCALE

⚠ * CONTRACTOR TO BORE AND JACK SEWER CASING PIPE UNDER STREAM PRIOR TO SETTING MANHOLES. IF ROCK IS ENCOUNTERED, CONTRACTOR TO OPEN CUT STREAM PER WDE DETAILS, SHEET 0.

*FOR STREAM CROSSING SEE HO.CO. STD. DETAIL S 3.11

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES — DATE 1-13-05

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/21/05

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
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STATE OF MARYLAND — CHRISTOPHER J. REID — No. 19949 — PROFESSIONAL ENGINEER — 12.22.04

CHRISTOPHER J. REID #19949

DES: C.J.R.
DRN: DAM
CHK: C.J.R.
DATE: 12/22/04

BY	NO.	REVISION	DATE
WAD	⚠	ADDED CASING PIPE DETAIL AND REV. SEWER PROFILE SMH 9 TO SMH 10	4-6-05

PROFILES OF
WATER AND SEWER MAINS

600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2

BENSON EAST
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT 24-4209-D

SCALE AS SHOWN

SHEET 8 OF 9

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"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 (Uniola 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.

⚠ NOTE: THE SEWER STREAM CROSSING WILL BE PERFORMED USING BORING AND JACKING OF A STEEL CASING PIPE. ONLY IF ROCK IS ENCOUNTERED WILL THE MDE DETAILS ABOVE BE REQUIRED.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND	Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. PHR+A 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	STATE OF MARYLAND CHRISTOPHER J. REID NO. 19949 REGISTERED PROFESSIONAL ENGINEER 12.22.04	DES: C.J.R. DRN: DAM CHK: C.J.R.	DETAILS	BENSON EAST 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT 24-4209-D	SCALE AS SHOWN
1-13-05 CHIEF, BUREAU OF UTILITIES DATE	1/21/05 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE		CHRISTOPHER J. REID #19949	DATE: 12/22/04	600' SCALE MAP NO. 37 & 43 BLOCK NO. 20 & 2		SHEET 9 OF 9

BY	NO.	REVISION	DATE
MAD	⚠	ADDED BORING AND JACKING NOTE	4-6-05

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