

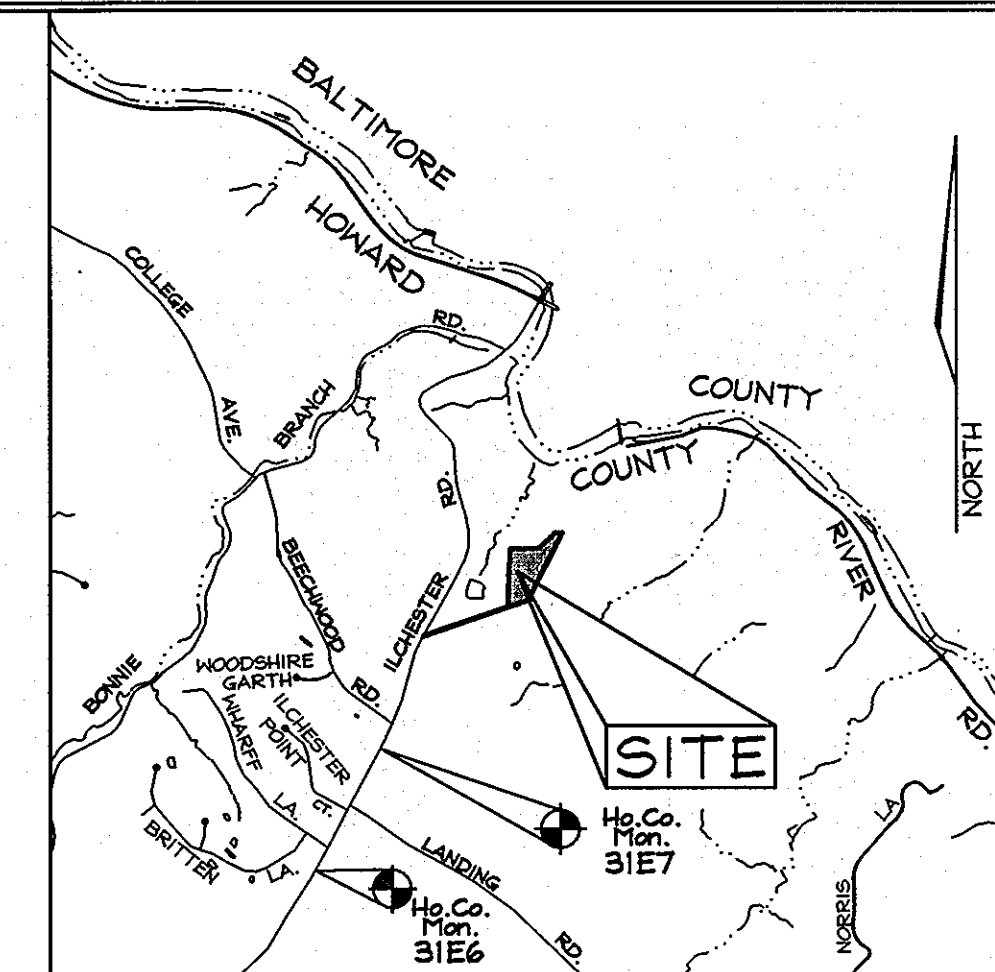
FINAL PUBLIC WATER AND SEWER PLANS

ILCHESTER HEIGHTS

LOTS 1 THRU 9, OPEN SPACE LOTS 10 THRU 12, AND PARCELS 'A' AND 'B'

HOWARD COUNTY, MARYLAND

CONTRACT NO. 14-4515-D



VICINITY MAP
SCALE: 1"=2000'
ADC MAP 17A1

BENCHMARKS

Coordinates based on NAD '83, Maryland Coordinate System as projected by Howard County Geodetic Control Stations No. 31E6 and No. 31E7. Denotes approximate location (see vicinity map).

Sta. 31E6	(Feet) N 1,376,852.953	E 1,376,700.524	Elev.: 482.760
Sta. 31E7	(Feet) N 572,335.322	E 1,377,503.920	Elev.: 478.648

GENERAL NOTES

PART I - GENERAL

- 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.
- Topography is based on a field run survey prepared by C.B. Miller & Associates in December 2002.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based on the Maryland State Plane coordinate system. Howard Co. Monument Nos. 31E6 and 31E7 were used for this project. The contractor shall have a copy of Volume IV on the job.
- All vertical controls are based on NAVD'83. Vertical controls provided on the drawings are Geodetic Control Stations Nos. 31E6 & 31E7.
- All pipe elevations shown are invert elevations unless otherwise noted on the Plans.
- Clear all utilities by a minimum of 12". Clear all poles by 2'-0" minimum or tunnel as required. The owner has contacted the utility companies and has made arrangements for bracing of poles as shown on drawings. In the event the Contractor's work requires the bracing of additional poles, any cost incurred by the Owner for bracing of additional poles or damages shall be deducted from money 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 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.
- The Contractor shall notify the following utility companies or agencies at least five(5) working days before starting work shown on these plans:

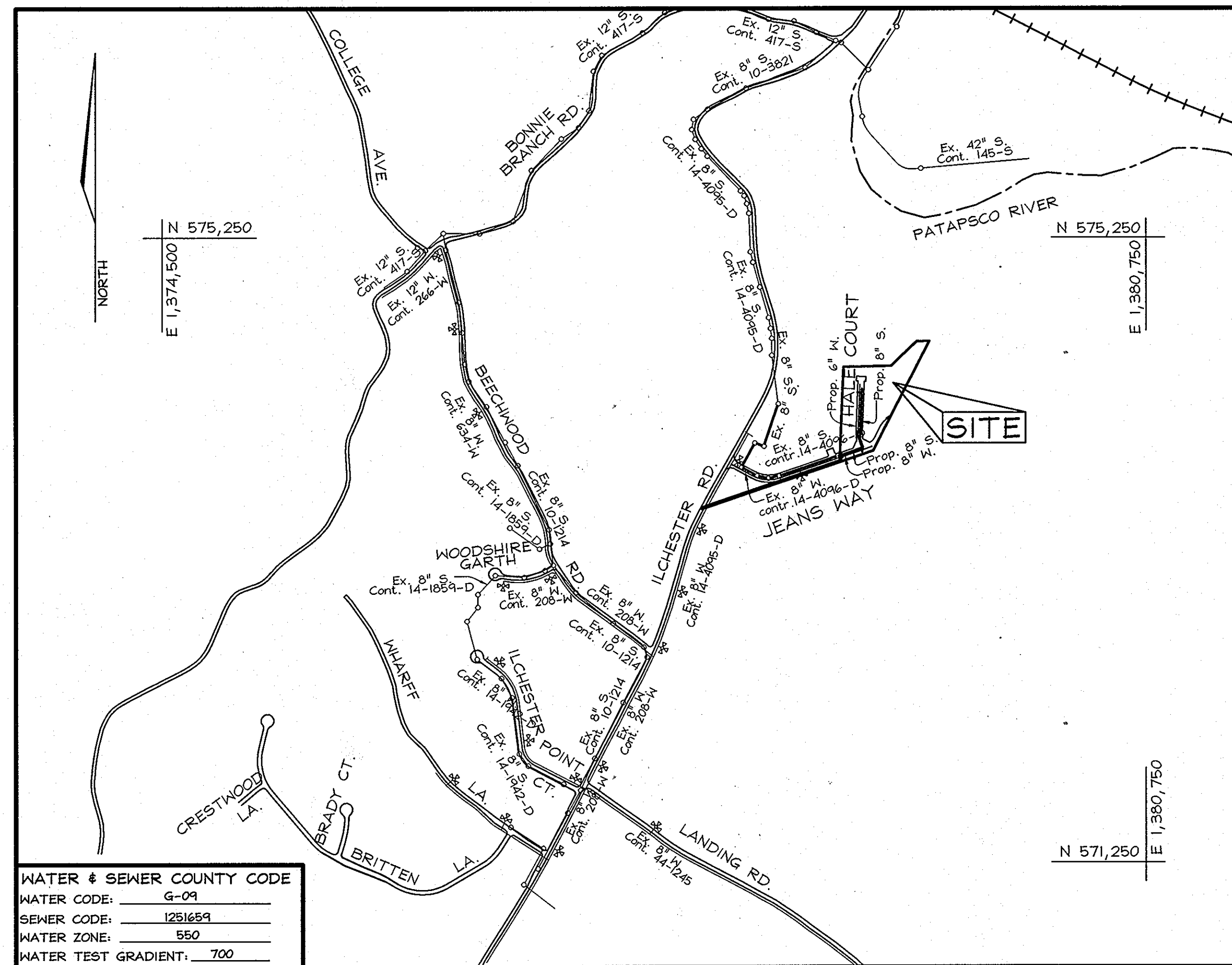
AT&T	1-800-252-1133
State Highway Administration	410-531-5533
BGE(Construction Services)	410-850-4620
BGE(Emergency)	410-685-1400
Niles Utility	1-800-257-7777
Colonial Pipeline Company	410-795-1390
Howard County, Dept. of Public Works, Bureau of Utilities	410-313-4900
Verizon	1-800-743-0033/410-224-9210
- 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 line of excavation. Payment for such removal shall be included in the unit price bid for the construction of the main.
- The Contractor shall notify the Bureau of Highways, Howard County, at 410.313.7450 at least five working days before any open cut of any county road or boring/lacking operation in county roads for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.14(a) of the Howard County Code.
- Property zoned "R-ED" per 9/18/92 comprehensive zoning plan.
- The property was incorporated within the Metropolitan district on December 29, 2003. Gross area of site: 4.98 ac.±
- There are no floodplains, historic structures or cemeteries on-site.
- Public water and public sewer are proposed to tie into existing Contract No. 14-4046-D

PART II - WATER

- All water mains to be D.I.P. Class 54 unless otherwise noted.
- Tops of all water mains to 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 restrained and buttressed with concrete in accordance with Standard Details. Soil around 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.
- All water house connections shall be for inside meter settings unless otherwise noted on the Plans or in the Specifications.

PART III - SEWER

- All sewer mains shall be D.I.P. or P.V.C. unless otherwise noted.
- The Contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole wall.
- All manholes shall be 4'-0" inside diameter unless otherwise noted.
- Manholes shown with 12" and 16" walls are for brick manholes only.
- Manholes designated W.T. in plan and profile shall have watertight frame & covers. Standard Detail G-5.52. Where watertight manhole frame and cover is used, set top of frame 1" to 6" above finished grade unless otherwise noted on the drawings.
- House(s) with the symbol "C.N.S." indicates that cellar cannot be served.



WATER & SEWER COUNTY CODE
WATER CODE: G-09
SEWER CODE: 1251659
WATER ZONE: 550
WATER TEST GRADIENT: .700

TYPE OF BUILDING: 9 Single Family Detached
NO. OF LOTS/PARCELS: 14
NO. OF WATER HOUSE CONNECTIONS: 9
NO. OF SEWER HOUSE CONNECTIONS: 9
SEWER SHED: Patapsco
TREATMENT PLANT: Patapsco Wastewater Treatment Plant, Baltimore

LOCATION PLAN
SCALE: 1"=600'

SHEET INDEX	
DESCRIPTION	SHEET NO.
TITLE SHEET	1 of 3
FINAL WATER & SEWER PLAN	2 of 3
FINAL WATER & SEWER PROFILES	3 of 3

QUANTITIES				
NAME OF UTILITY CONTRACTOR : CONSOLIDATED CONSTRUCTION SERVICES (CCS)				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
MANHOLE	1	1	Type 'B' Drop	ATLANTIC CONCRETE PRODUCTS
	1	1	Standard	ATLANTIC CONCRETE PRODUCTS
	1	1	Terminal	ATLANTIC CONCRETE PRODUCTS
8" SEWER	541 L.F.	570 LF	DIP 52 /SDR35	GRIFFIN PIPE PRODUCTS
4" SHC	192 L.F.	192 LF	DIP CL 52	GRIFFIN PIPE PRODUCTS
8" WATER	208 L.F.	208 LF	DIP CL 54	GRIFFIN PIPE PRODUCTS
6" WATER	432 L.F.	432 LF	DIP CL 54	GRIFFIN PIPE PRODUCTS
1" WHC	173 L.F.	190 LF	K-COPPER	CAMBRIDGE LEE /BELAIR ROAD SUPPLY
8" VALVE	2	2 EA	GATE VALVE	MUELLER CO. /BELAIR ROAD SUPPLY
6" VALVE	1	1 EA	GATE VALVE	MUELLER CO. /BELAIR ROAD SUPPLY
8"x6" TEE	1	1 EA	DIP M.J.	SIGMA CORP. /BELAIR ROAD SUPPLY
FIRE HYDRANT ASSEMB.	2	2 EA	MUELLER	MUELLER CO. /BELAIR ROAD SUPPLY
8" CAP & BUTRESS	1	1 EA	DIP M.J.	SIGMA CORP. /BELAIR ROAD SUPPLY
6" CAP & BUTRESS	1	1 EA	DIP M.J.	SIGMA CORP. /BELAIR ROAD SUPPLY

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATIONS AND WITH ROAD CONSTRUCTION PLANS F-08-071

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

John K. Roberts 9/16/08
SOIL CONSERVATION DISTRICT DATE

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #22418, Expiration Date: 7/29/09.

OWNER/DEVELOPER

Mr. Robert A. Hale
& L. Kim Hale
4635 Ilchester Road
Ellicott City, MD 21043-6819
Tel.: 410-788-9810

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Shane C. Goss 9/25/08
CHIEF, BUREAU OF UTILITIES DATE

John J. ... 9/25/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Ellicott City, MD 21075
Tel: 410-567-5200 Fax: 410-796-1562
E-mail: info@fsher.com

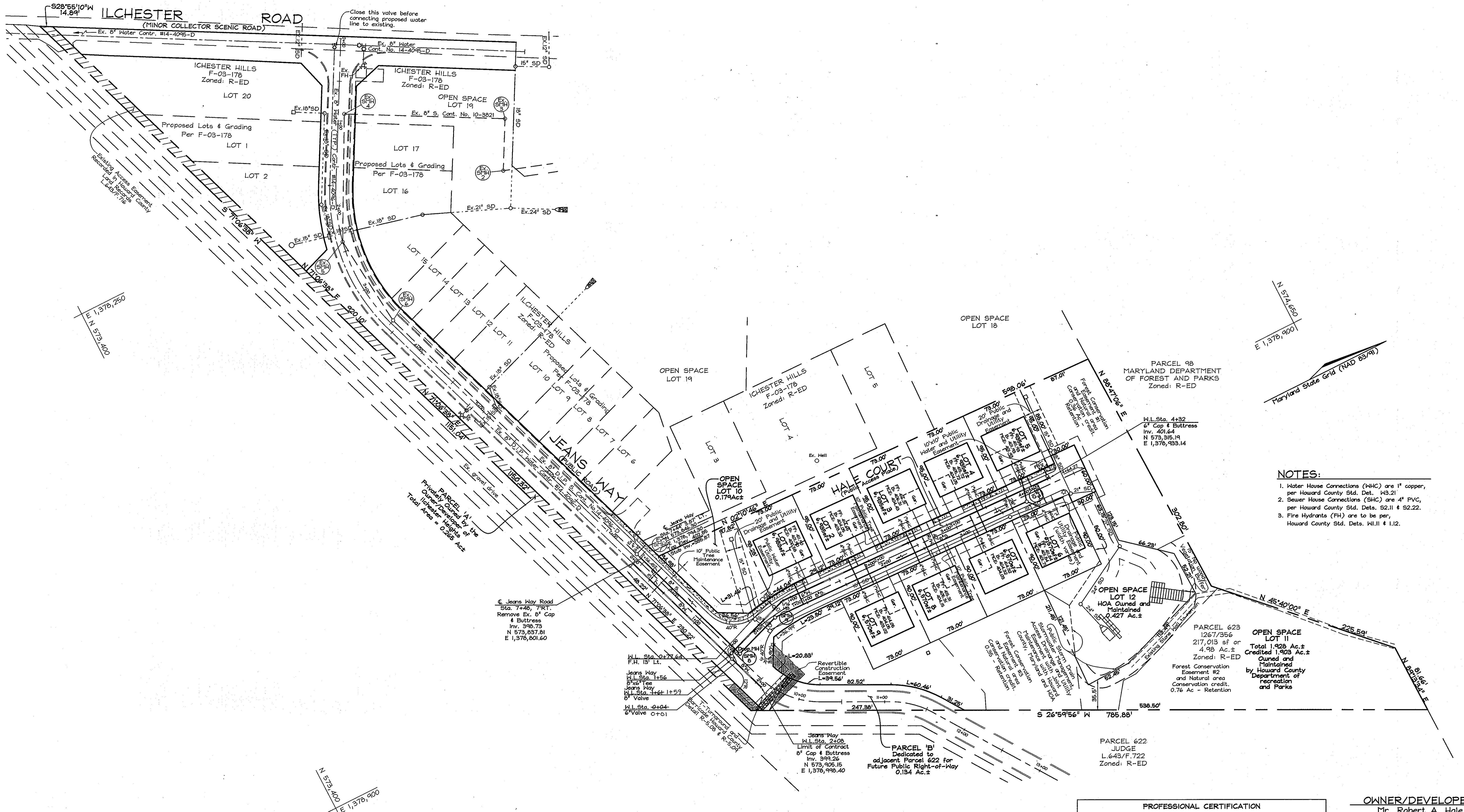
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DRAWN BY: PS
CHECKED BY: ZYF
DATE: Aug. 14, 2008

BY	NO.	REVISION	DATE
KCI	1	AS BUILT REVISIONS	9-8-10

TITLE SHEET
600' SCALE MAP NO.: 31 BLOCK NO.: 5

FINAL PUBLIC WATER AND SEWER PLANS
ILCHESTER HEIGHTS
LOTS 1 THRU 9, OPEN SPACE LOTS 10 THRU 12,
AND PARCELS 'A' AND 'B'
ZONED R-ED 4635 ILCHESTER ROAD
CONTRACT NO. 14-4515-D
TAX MAP #31 PARCEL 623
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET NO. 1 OF 3



- NOTES:**
1. Water House Connections (WHC) are 1" copper, per Howard County Std. Det. W3.21
 2. Sewer House Connections (SHC) are 4" PVC, per Howard County Std. Dets. S2.11 & S2.22.
 3. Fire Hydrants (FH) are to be per, Howard County Std. Dets. W1.11 & 1.12.

PLAN
SCALE: 1"=50'

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

John C. Lewis
CHIEF, BUREAU OF UTILITIES

John D. Dunham
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 9/2/08

FSH Associates
Engineers Planners Surveyors
8338 Howard Lane, Ellicott City, MD 21075
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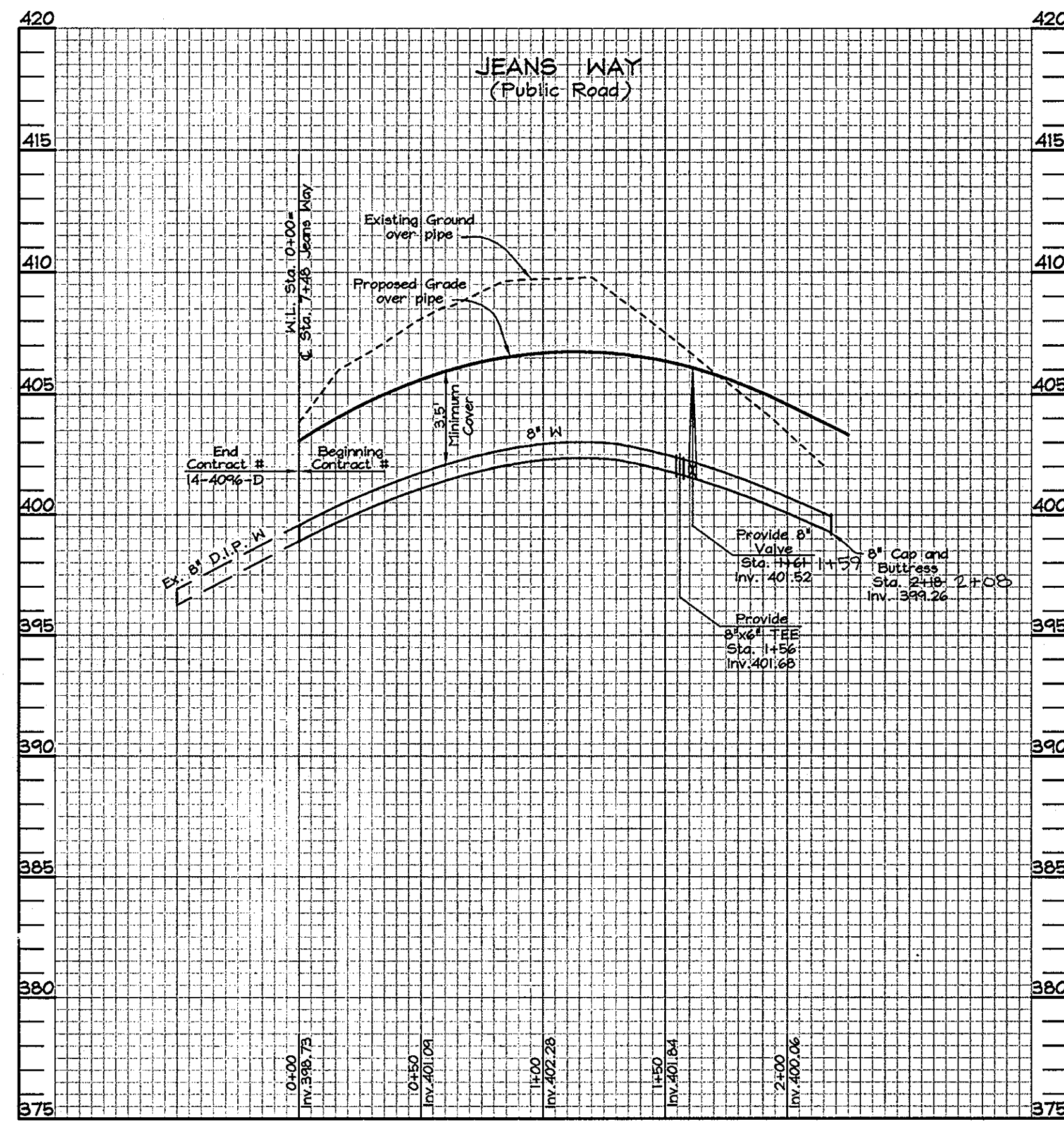
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FINAL WATER AND SEWER PLAN	
600' SCALE MAP NO.: 31	BLOCK NO.: 5

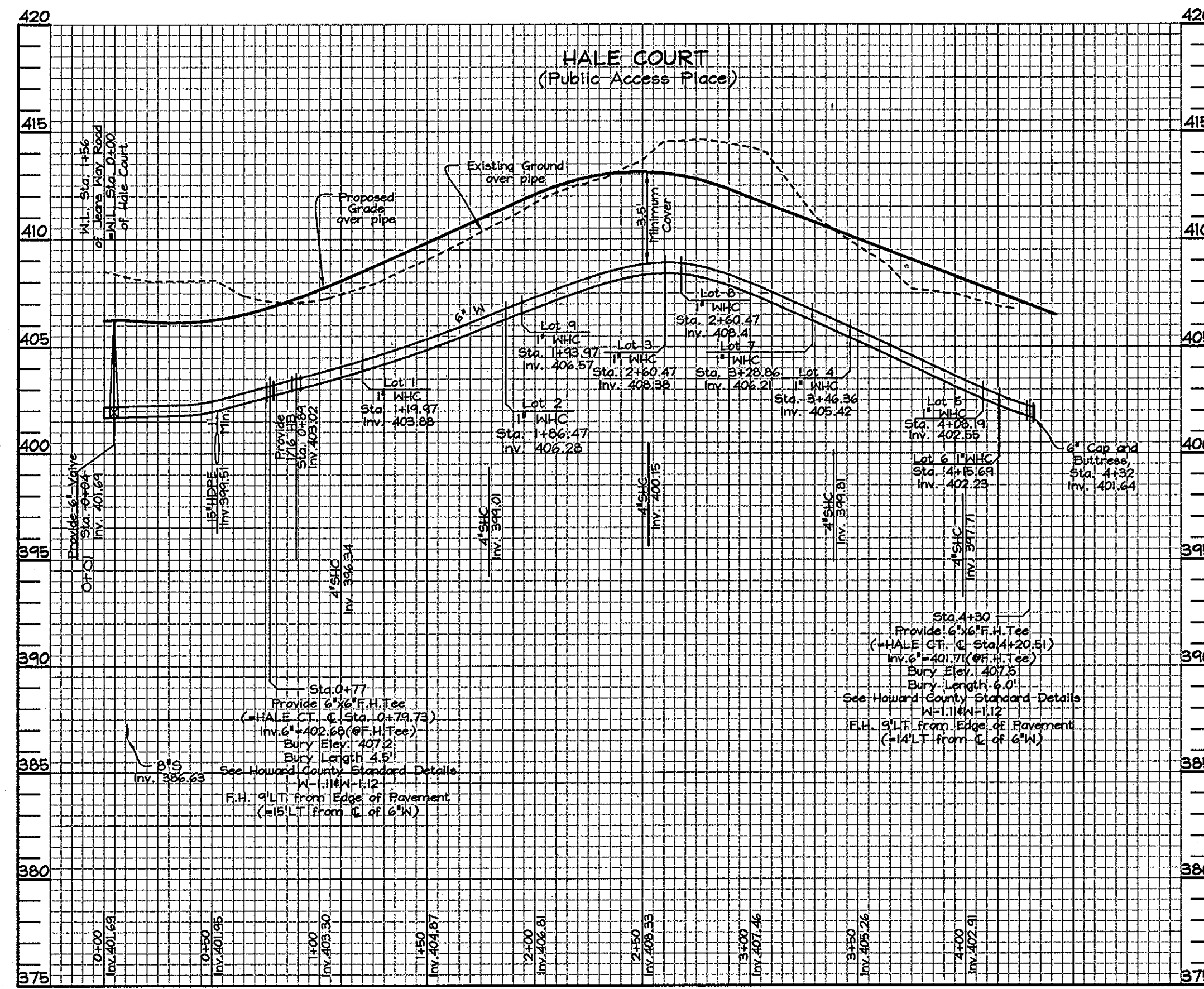
FINAL PUBLIC WATER AND SEWER PLANS
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AND PARCELS 1A1 AND 1B1
ZONED R-ED 4635 ILCHESTER ROAD
CONTRACT NO. 14-4515-D
TAX MAP #31 PARCEL 623
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE
1"=50'

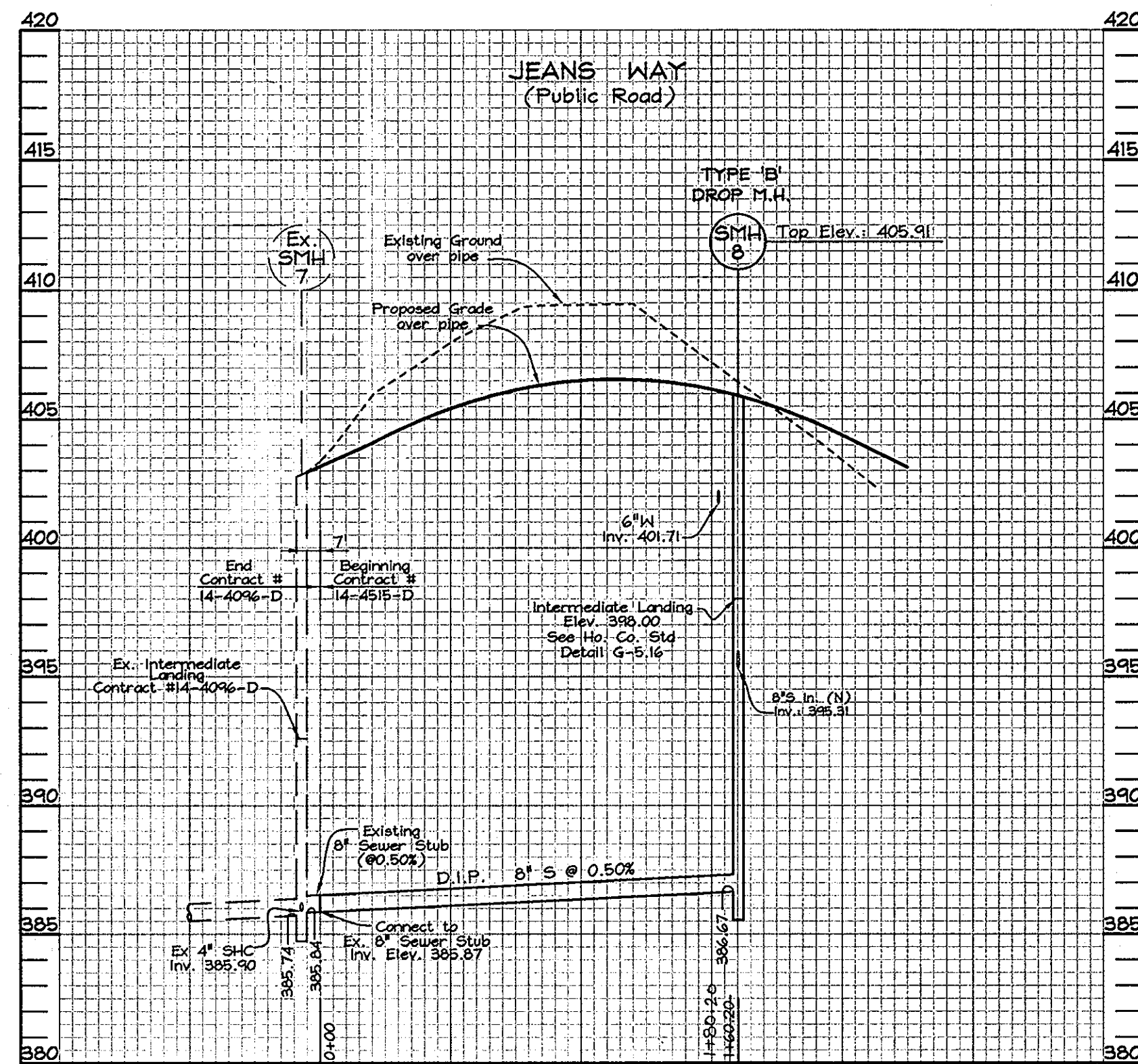
SHEET NO.
2 OF 3



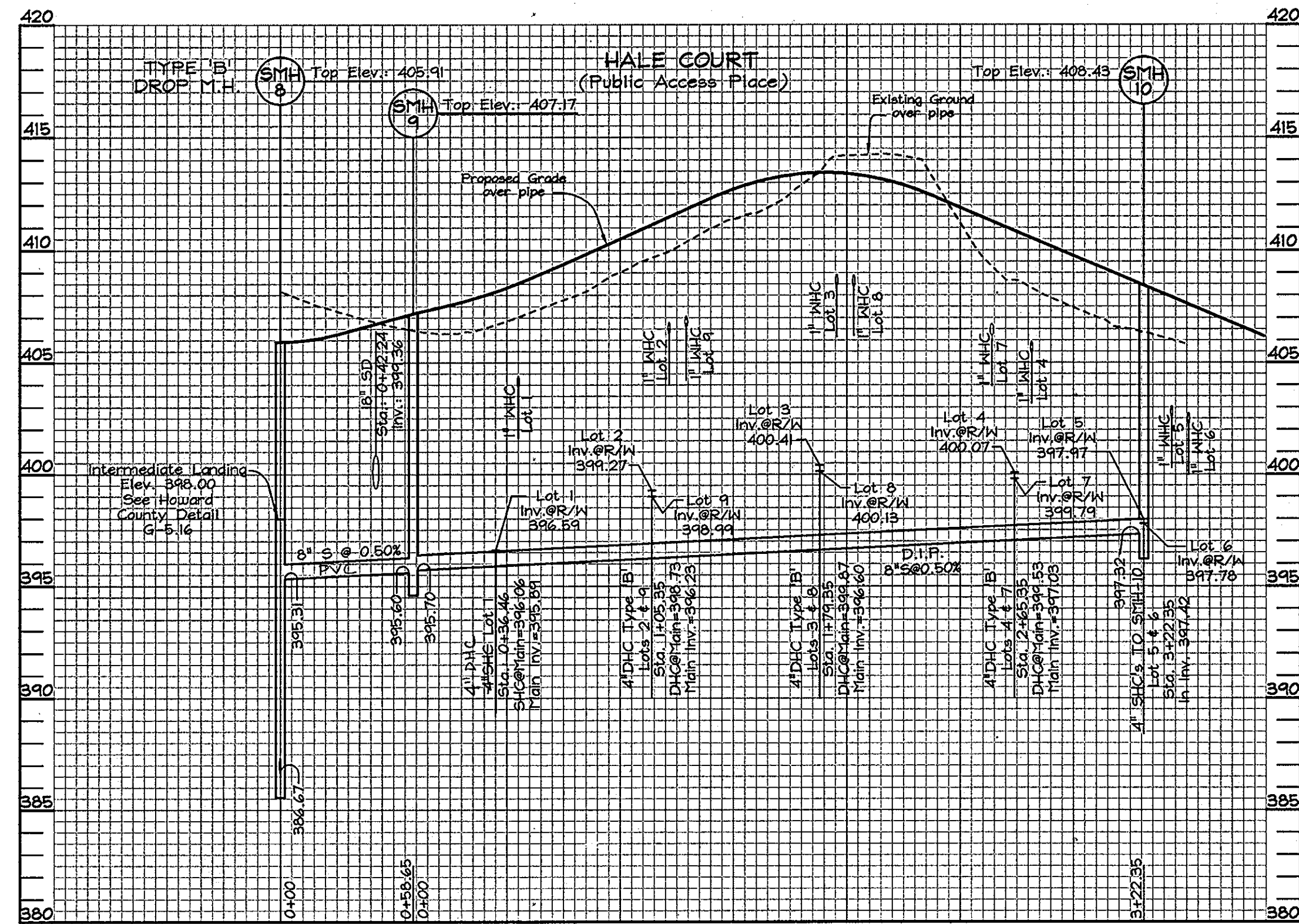
WATER PROFILE for JEANS WAY
Scale: Horizontal- 1"=50'
Vertical- 1"=5'



WATER PROFILE for Hale Ct.
Scale: Horizontal- 1"=50'
Vertical- 1"=5'



SEWER PROFILE for JEANS WAY
Scale: Horizontal- 1"=50'
Vertical- 1"=5'



SEWER PROFILE for Hale Ct.
Scale: Horizontal- 1"=50'
Vertical- 1"=5'

ALL SEWERHOUSE CONNECTION DROPS DELETED EXCEPT SHC DROP TO LOT 8.

SEWER HOUSE CONNECTION CHART					
Lot No.	Sewer Line Station	4" SHC Inv. @ 8" Sewer Main	SHC Inv. @ Right of Way Line #	MINIMUM CELLAR ELEVATION	DESIGNED BASEMENT ELEVATION
FROM SMH-9 TO SMH-10					
Lot 1	0+36.46 LT	4" SHC INV.: 396.06	396.59	400.58	401.90
Lot 2	1+05.35 LT	4" DHC INV.: 398.73 **	399.27	403.30	404.05
Lot 3	1+74.35 LT	4" DHC INV.: 399.87 **	400.41	404.43	406.31
Lot 4	2+65.35 LT	4" DHC INV.: 399.53 **	400.07	404.05	405.72
Lot 5	3+22.35 LT	4" INV.: 397.42 @ SMH-10	397.97	401.93	401.93
Lot 6	3+22.35 RT	4" INV.: 397.42 @ SMH-10	397.78	401.71	401.84
Lot 7	2+65.35 RT	4" DHC INV.: 399.53 **	399.79	404.03	404.32
Lot 8	1+74.35 RT	4" DHC INV.: 399.87 **	400.13	404.15	405.31
Lot 9	1+05.35 RT	4" DHC INV.: 398.73 **	398.99	403.02	404.05

* Note: All S.H.C.'s are on a 2.0% slope, from sewer main to Right of Way line. All S.H.C.'s are on a 2.0% slope from Right of Way line to rear B.R.L., unless specified otherwise.
** Invert elevation @ Type 'B' Drop House Connection. This is above the main and right before the 1/8 (45') bend to the double 'Y' branch. See Howard County Detail S-2.12.

SEWER MANHOLE TABLE				
MH #	COORDINATES	TOP MH ELEVATION	REMARKS	M.H. TYPE # Ho.Co. STD. DET.
8	N 573,900.93 E 1,378,952.49	406.10±	JEANS WAY	TYPE 'B' DROP, S-1.32
9	N 573,956.43 E 1,378,933.50	406.74±	HALE COURT	STD., G-5.11
10	N 574,278.54 E 1,378,945.76	408.53±	HALE COURT	TERMINAL, S-1.31

SEWER AS-BUILT DATA

FROM	TO	DIST (FT)
LOT 1 SHC	SMH 9	46'
"	FH 0+77	38'
"	LOT 9 SHC	81'
LOT 2 SHC	LOT 9 SHC	41'
"	LOT 9 WHC	42.5'
"	LOT 2 WHC	10'
LOT 3 SHC	LOT 3 WHC	7'
"	LOT 9 WHC	74'
"	LOT 8 SHC	41'
LOT 4 SHC	LOT 4 WHC	6'
"	LOT 7 SHC	43'
"	SDMH M-4	48'
LOT 5 SHC	SMH 10	29'
"	SDMH M-4	45'
"	LOT 5 WHC	8'
LOT 6 SHC	SMH 10	19'
"	LOT 6 WHC	5'
"	SDMH M-4	38'
LOT 7 SHC	LOT 4 SHC	43'
"	LOT 7 WHC	12'
"	SDMH M-4	32'
LOT 8 SHC	LOT 8 WHC	11'
"	LOT 9 WHC	61'
"	LOT 3 SHC	41'
LOT 9 SHC	LOT 9 WHC	14'
"	LOT 2 SHC	40'
"	LOT 1 WHC	72'

WATER AS-BUILT DATA

FROM	TO	DIST (FT)
LOT 1 WHC	SMH 9	54'
"	LOT 2 SHC	58'
"	LOT 9 SHC	72.5'
LOT 2 WHC	LOT 3 SHC	65'
"	LOT 8 SHC	78'
"	LOT 9 WHC	41'
LOT 3 WHC	LOT 3 SHC	7'
"	LOT 8 WHC	41'
"	LOT 7 WHC	78.5'
LOT 4 WHC	SMH 10	57'
"	LOT 4 SHC	6'
"	SDMH M-4	43'
LOT 5 WHC	SMH 10	32.5'
"	FH 4+30	20.5'
"	LOT 5 SHC	8'
LOT 6 WHC	SMH 10	23'
"	SDMH M-3	43'
"	LOT 6 SHC	5'
LOT 7 WHC	LOT 7 SHC	12'
"	LOT 8 WHC	62'
"	LOT 3 WHC	78.5'
LOT 8 WHC	LOT 4 SHC	85'
"	LOT 7 WHC	62'
"	LOT 3 WHC	41'
LOT 9 WHC	LOT 9 SHC	14'
"	LOT 2 SHC	74'
"	LOT 8 SHC	61'

VALVE AS-BUILT DATA

VALVES	FROM	TO	DISTANCE	REMARKS
JEANSWAY	SMH 8	8" V	11'	PLANS CALL VAI
8" V 1+59	SMH 9	8" V	71.5'	1+61
6" V 0+01	SMH 9	8" V	3'	
HALE CT.	SMH 8	6" V	11'	PLANS CALL VAI
6" V 0+01	SMH 9	6" V	70'	0+04
6" FN 0+77	LOT 1 SHC	6" V	38'	
FH 0+77	6" V	13'		
SMH 9	6" V	12'		
6" FH 4+30	SMH 10	6" V	39'	
FH 4+30	6" V	14'		
LOT 6 SHC	6" V	38'		

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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND CHIEF, DEVELOPMENT ENGINEERING DIVISION I DATE	FSH Associates Engineers Planners Surveyors 6339 Howard Lane, Elkridge, MD 21075 Tel: 410-587-5200 Fax: 410-796-1562 E-mail: info@fsher.com		DESIGN BY: AG DRAWN BY: PS CHECKED BY: ZYF DATE: Aug. 14, 2008	KCI 1 AS-BUILT REVISIONS 9-8-10 BY NO. REVISION DATE	FINAL WATER AND SEWER PROFILES 600' SCALE MAP NO.: 31 BLOCK NO.: 5	FINAL PUBLIC WATER AND SEWER PLANS ILCHESTER HEIGHTS LOTS 1 THRU 9, OPEN SPACE LOTS 10 THRU 12, AND PARCELS 'A' AND 'B' ZONED R-ED 4635 ILCHESTER ROAD CONTRACT NO. 14-4515-D TAX MAP #31 PARCEL 623 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET NO. 3 OF 3
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