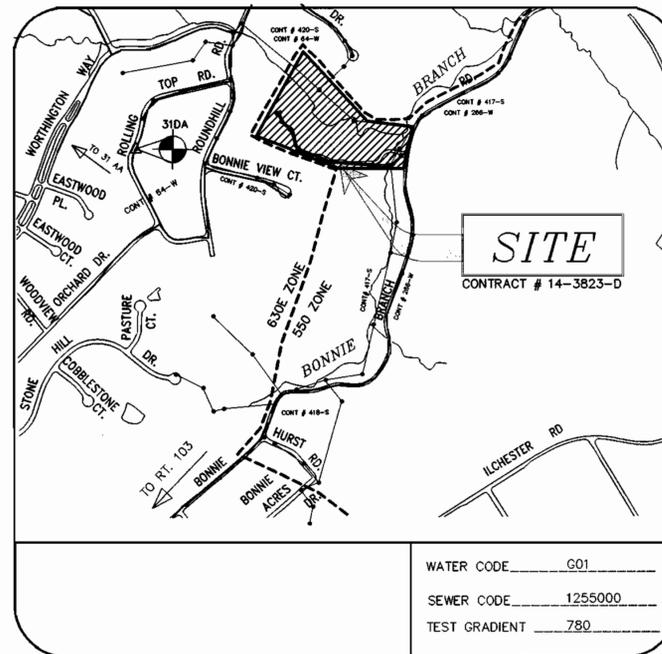


QUANTITY TABLE

| ITEMS | QUANTITIES ESTIMATED | QUANTITIES | | |
|--|----------------------|------------|-----------------------|--|
| | | TYPE | MANUFACTURER/SUPPLIER | |
| STANDARD PRECAST MH (HO. CO. STD. G-5.11) | 5 | | | |
| DROP MH, TYPE "B" (HO. CO. STD. S-1.32) | 2 | | | |
| TERMINAL MH (HO. CO. STD. S-1.31) | 1 | | | |
| 8" SEWER MAIN | 922 L.F. | | | |
| 4" SEWER HOUSE CONNECTION | 212 L.F. | | | |
| # SEWER HOUSE CONNECTION | 7 | | | |
| # MSH CONNECTIONS | 3 | | | |
| 8" WATER MAIN | 1,203 L.F. | | | |
| 6" WATER MAIN | 295 L.F. | | | |
| 1" WATER HOUSE CONNECTION | 206 L.F. | | | |
| # 1" WHC | 10 | | | |
| F.H. | 2 | | | |
| 8" x 6" T | 2 | | | |
| 6" V | 2 | | | |
| 6" CAP & BUTTRESS | 1 | | | |
| 1/16 H.B. (8") | 1 | | | |
| 1/8 H.B. (8") | 2 | | | |
| 1/16 H.B. (6") | 2 | | | |
| 1/8 H.B. (6") | 1 | | | |
| 12" X 8" TAPPING SLEEVE, & VALVE | 1 | | | |
| 8" X 6" R | 1 | | | |
| 8" D.I.P. SEWER MAIN | 217 L.F. | | | |
| NAME OF UTILITY CONTRACTOR: | | | | |
| SURVEY AND DRAFTING DIVISION AS-BUILT DATE | | | | |



NOTE: SEE ATTACHED SHEET FOR GENERAL NOTES.

VICINITY MAP

SCALE: 1"=600'

| | |
|--------------------------------|--|
| TYPE OF BUILDING | SFD |
| No. OF UNITS | 10 |
| No. OF WATER HOUSE CONNECTION | 10 |
| No. OF SEWER HOUSE CONNECTIONS | 10 |
| DRAINAGE AREA | BONNIE BRANCH, PATAPSCO |
| TREATMENT PLANT | PATAPSCO WASTEWATER TREATMENT PLANT, BALTIMORE |

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". 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 THE 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 DETAIL 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.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

| | |
|--|----------------|
| STATE HIGHWAY ADMINISTRATION | (410) 531-5533 |
| BG & E CO. CONTRACTOR SERVICES | (410) 850-4620 |
| BG & E CO. UNDERGROUND DAMAGE CONTROL | (410) 787-9068 |
| MISS UTILITY | 1-800-257-7777 |
| COLONIAL PIPELINE CO. | (410) 795-1390 |
| HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS | (410) 313-4900 |
| BUREAU OF UTILITIES | (410) 313-4900 |
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED OUTSIDE THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG 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)313-2450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROASS 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 HOWARD COUNTY CODE.
- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3-1/2' 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 STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. 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.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING UNLESS OTHERWISE NOTED ON PLANS OR IN SPECIFICATIONS.
- ALL SEWER MAINS SHALL BE P.V.C. OR D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAME AND COVER IS 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.
- STATIONING SHOWN IS WATER MAIN AND CENTER LINE STATIONING.
- CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
- SEDIMENT CONTROL TO BE PROVIDED UNDER F-00-95
- ALL SEWER HOUSE CONNECTIONS TO BE 4" IN SIZE.
- ALL WATER HOUSE CONNECTIONS TO BE 1" IN SIZE UNLESS OTHERWISE NOTED.
- ALL CELLARS WILL HAVE SERVICE TO LOWEST FLOOR UNLESS OTHERWISE NOTED.
- STORM DRAIN SYSTEM INDICATED FOR INFORMATIONAL PURPOSES ONLY, SEE ROAD PLANS FOR CONSTRUCTION DATA.
- COMPACTED IN FILL AREAS TO BE 95% PER AASHTO T-180.
- ALL SEWER HOUSE CONNECTIONS SHALL BE SET AT 2% SLOPE, UNLESS OTHERWISE NOTED.

EROSION AND SEDIMENT CONTROL FOR THIS CONTRACT IS PROVIDED UNDER F-00-95

CONTRACT NO.: 14-3823-D
BONNIE BRANCH OVERLOOK, LOTS 1 THRU 13
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

INDEX OF DRAWINGS

| NO. | DESCRIPTION |
|-----|----------------------|
| 1 | TITLE SHEET |
| 2 | WATER AND SEWER PLAN |
| 3 | SEWER PROFILES |
| 4 | WATER PROFILES |

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Ronald B. Wildman 3/15/00
 DEVELOPER'S SIGNATURE DATE
 DEVELOPER'S NAME

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Cheryl Simmons 3-31-00
 ENGINEER'S SIGNATURE DATE
 ENGINEER'S NAME

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

John R. Roberts 3-31-00
 HOWARD SCD

USDA-NATURAL RESOURCES CONSERVATION SERVICE

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

PLAN REFERENCE NUMBERS

| | |
|----------|---------|
| F-00-95 | P-99-03 |
| S-97-20 | |
| WP-98-75 | |

96090/DWG/FINAL/MS/1/96090-WS-FLX

| | | | | | | |
|---|--|---|---|-------------|---|-------------------------|
| DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Richard A. Reimer</i> April 27, 2000 CHIEF, BUREAU OF UTILITIES DATE | DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>John R. Roberts</i> 5/18/00 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE | MILDENBERG, BOENDER & ASSOC., INC. Engineers Planners Surveyors 5072 Dersoy Hall Drive, Suite 202, Ellicott City, Maryland 21042 (410) 997-0296 Fax (301) 621-5521 Wash. (410) 997-0298 Fax | engineering SAA illustration SAA approval RJH project 96090 date FEB. 2000 BY NO. REVISION DATE | TITLE SHEET | BONNIE BRANCH LOTS 1-13 14-3823-D SECOND. ELECTION DISTRICT HOWARD COUNTY | scale AS SHWN 1 OF 4 |
|---|--|---|---|-------------|---|-------------------------|

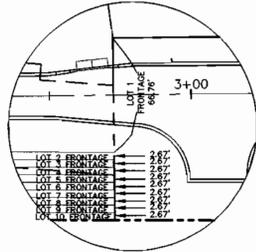
**WATER MAIN
TABULATION CHART**

| TWIN STREAM DRIVE | | | |
|-------------------|------------|---------------------------|------------|
| ROAD | STATION | APPURTENANCE | O/S FROM C |
| N | 671853.40 | 8X12 TAP SLEEVE AND VALVE | |
| E | 1373962.56 | | |
| | 0+26.1 | 1/8 HOR. BEND | RT. 2.4' |
| N | 671853.61 | 1/8 HOR. BEND | |
| E | 1373957.73 | | |
| | 2+72 | 8" X 6" T | LY. 23.1' |
| | 2+72 | 6" VALVE | LY. 10' |
| | 2+72 | F.H. | LY. 13' |
| | 5+81.4 | 1/16 HOR. BEND | LY. 13.7' |
| | 7+58.5 | 8" X 6" T | LY. 4' |
| | 7+68.5 | 6" V | RT. 7' |
| | 7+68.5 | F.H. | RT. 10' |
| | 7+70 | 8" X 6" R | LT. 4' |
| | 8+41.2 | 1/8 HOR. BEND | LY. 6.6' |
| | 9+83.5 | 1/16 HOR. BEND | LY. 10.3' |
| | 10+77 | 1/16 HOR. BEND | LY. 4.8' |
| | 11+47 | 6" C & B | LY. 5' |

MANHOLE LOCATION CHART

| MH # | ROAD NAME OR NORTHING & EASTING | CL. STATION | OFFSET |
|------|---------------------------------|-------------|-----------|
| 1 | TWIN STREAM DRIVE | 0+66.1 | 17.4' RT. |
| 2 | TWIN STREAM DRIVE | 0+47.2 | 23' LT. |
| 3 | TWIN STREAM DRIVE | 2+86.3 | 10.1' LT. |
| 4 | TWIN STREAM DRIVE | 5+82.6 | 3.9' LT. |
| 5 | TWIN STREAM DRIVE | 8+40.3 | 4.3' LT. |
| 6 | TWIN STREAM DRIVE | 9+91.6 | 0.0' LT. |
| 7 | TWIN STREAM DRIVE | 10+78.4 | 4.2' LT. |
| 8 | TWIN STREAM DRIVE | 11+30.3 | 5.0' LT. |

☒ DENOTES EXISTING SEWER EASEMENT TO BE ABANDONED

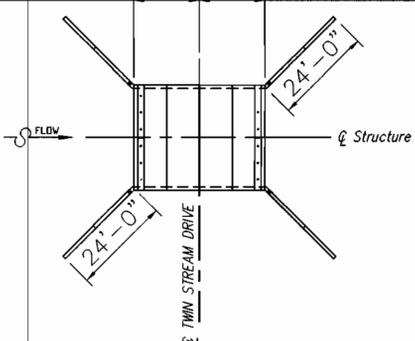


FRONTAGE DETAIL

SUGGESTED SEQUENCE OF CONSTRUCTION FOR SEWER CONSTRUCTION (CONNECTION OF OLD AND NEW SEWER LINES)

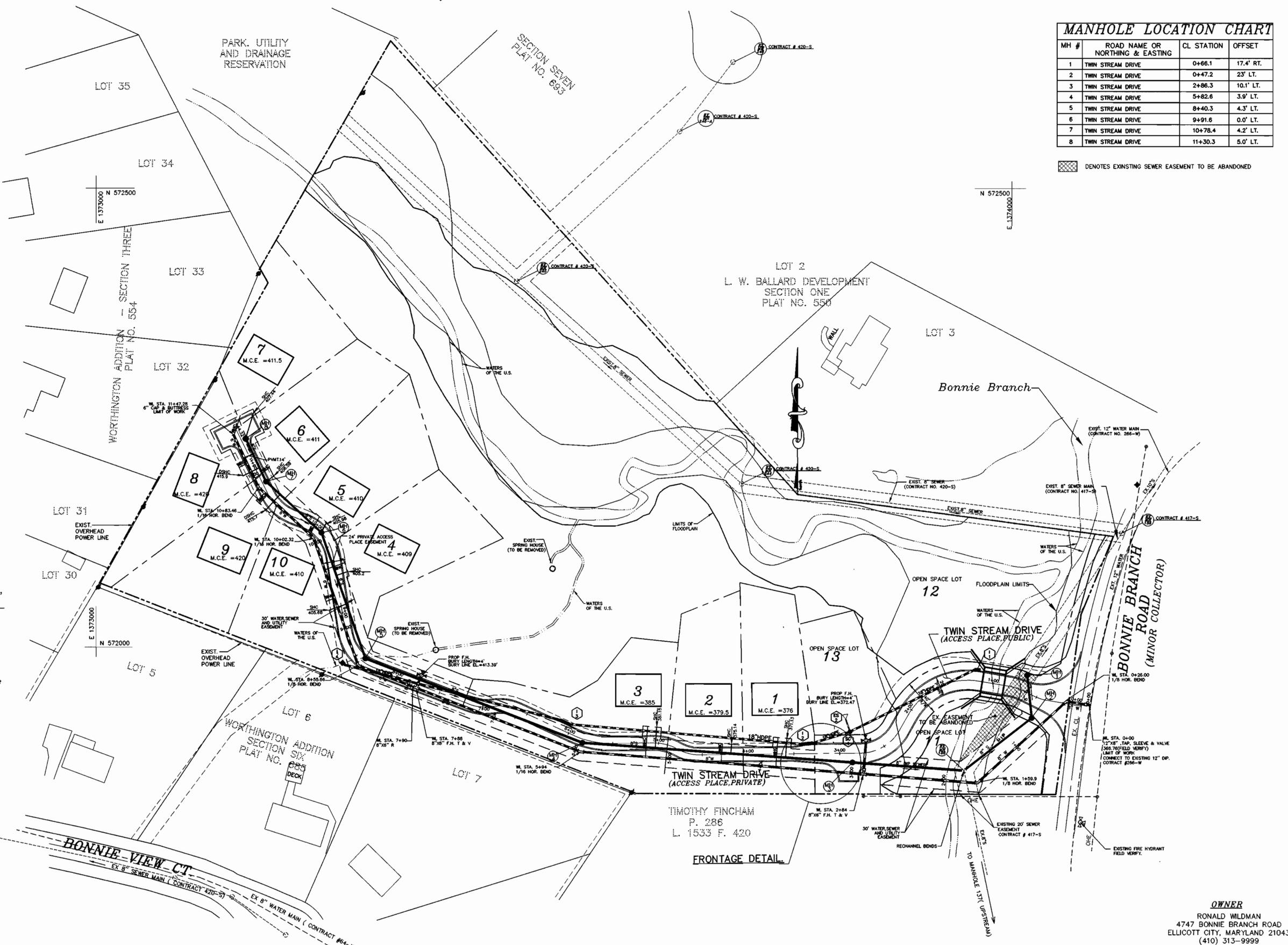
1. CONSTRUCT DOWNSTREAM MANHOLE NUMBER 1 OVER EXISTING SEWER LINE. SEWER LINE IS TO REMAIN IN SERVICE.
2. BLOCK FLOW UPSTREAM OF MANHOLE NUMBER 137 AND PUMP FLOW TO NEW DOWNSTREAM MANHOLE NUMBER 1.
3. RECONSTRUCT EXISTING MANHOLE NUMBER 136 WITH THE NEW CHANNELS AND STUB SEWER PIPE TO WEST SIDE OF BONNIE BRANCH.
4. CONSTRUCT NEW MANHOLE NUMBER 2 AND CONNECTING SEWER PIPES.
5. RETURN UPSTREAM MANHOLE TO SERVICE AND ALLOW FLOW TO PROCEED THROUGH NEW PIPE SYSTEM.
6. PLEASE NOTE THAT THIS A SUGGESTED SEQUENCE OF CONSTRUCTION ONLY. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN SERVICE IN THE EXISTING 8" SEWER AT ALL TIMES.

32'-1 1/2"
16'-0 3/4" 16'-0 3/4"



BRIDGE DETAIL

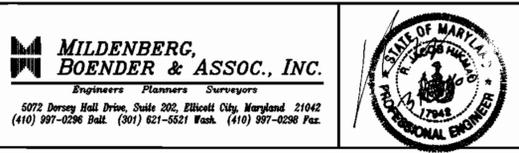
FOR STRUCTURAL DETAILS PLEASE REFER TO F-00-95 (SHEETS CS-1-CS-5)



OWNER
RONALD WILDMAN
4747 BONNIE BRANCH ROAD
ELLCOTT CITY, MARYLAND 21043
(410) 313-9999

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
R. J. H. R. J. H. R. J. H.
CHIEF, BUREAU OF UTILITIES
DATE: APRIL 27, 2000

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Ball. (301) 621-5521 Wash. (410) 997-0296 Fax.
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 5/6/00

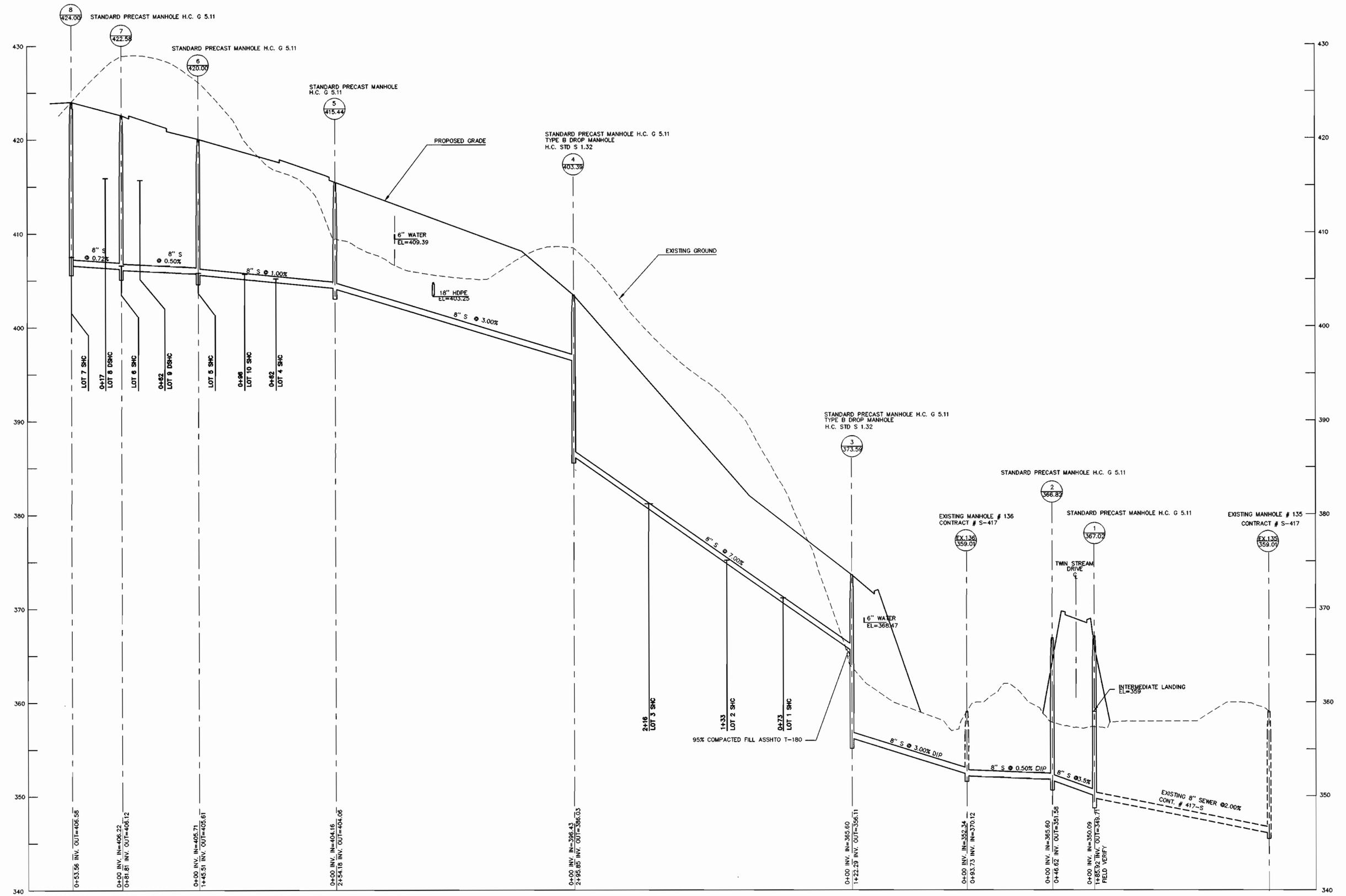


| | | | | | |
|--------------|-----------|----|-----|----------|------|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | 96090 | | | | |
| date | FEB. 2000 | BY | NO. | REVISION | DATE |

**WATER & SEWER
PLAN**
600' SCALE MAP NO. 31 BLOCK NO. 9

**BONNIE BRANCH
LOTS 1-13
14-3823-D
SECOND ELECTION DISTRICT
HOWARD COUNTY**
scale 1"=50'
2 of 4

STANDARD PRECAST MANHOLE H.C. G 5.11
 TERMINAL MANHOLE H.C. S1.31



8" SEWER PROFILES (TWIN STREAM DRIVE)

SCALE: H. 1"=50'
 V. 1"=5'

96090/DWG/FINAL/MS\196090-MS-PLAN

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Chief, Bureau of Utilities
 Date: April 27, 2000

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 Chief, Development Engineering Division
 Date: 5/6/00

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0286 Fax (301) 821-8521 Wash (410) 997-0288 Fax

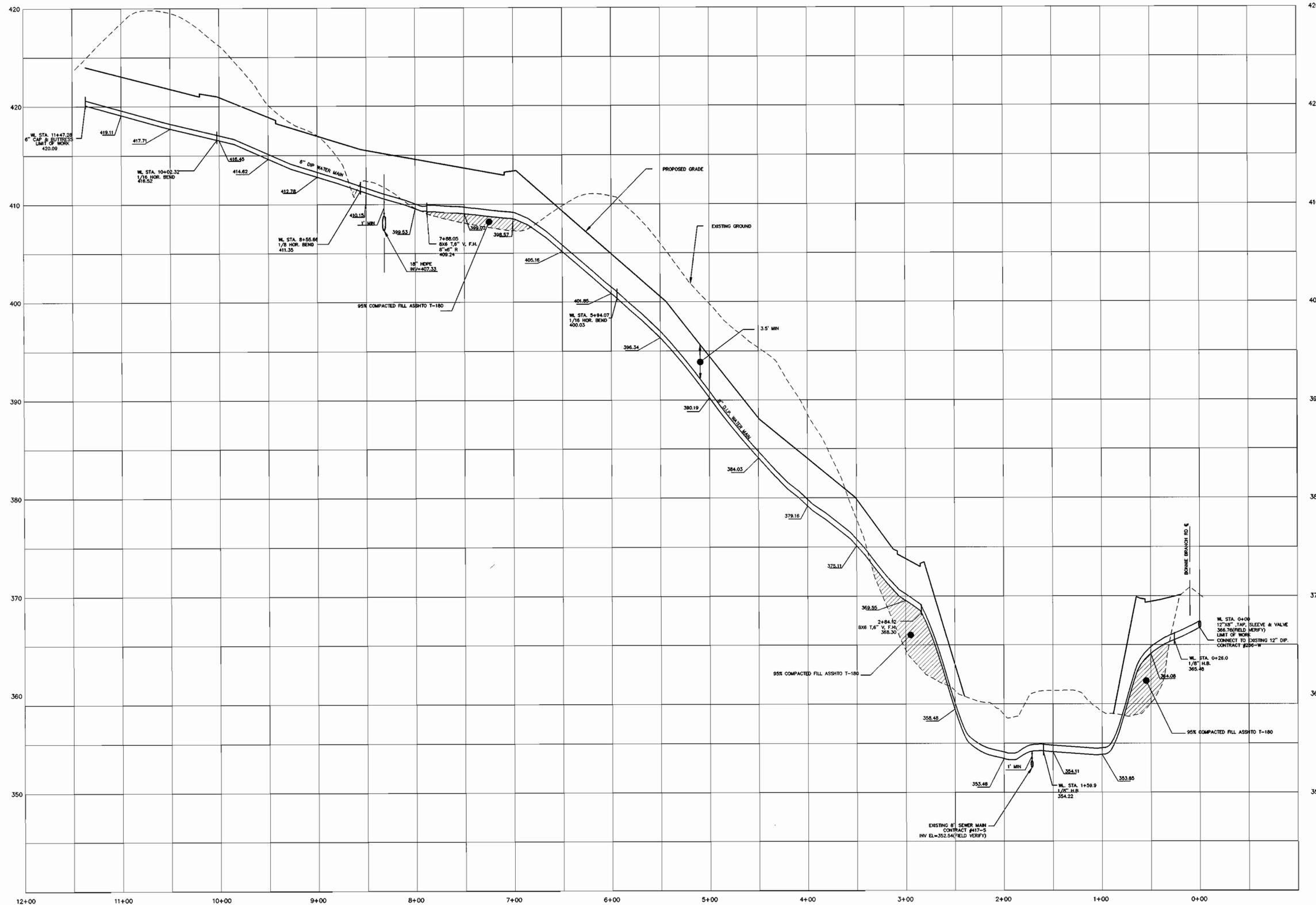


| | | | | | |
|--------------|-----------|----|-----|----------|------|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | 96090 | | | | |
| date | FEB. 2000 | BY | NO. | REVISION | DATE |

SEWER PROFILES
 600' SCALE MAP NO. 31 BLOCK NO. 9

BONNIE BRANCH
 LOTS 1-13
 14-3823-D
 SECOND ELECTION DISTRICT
 HOWARD COUNTY

scale AS SHWN
3 OF 4



WATER PROFILE (TWIN STREAM DRIVE)

SCALE: H. 1"=50'
V. 1"=5'

96090.DWG/FINAL/MS/96090-MS-PLN

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

**MILDENBERG,
BOENDER & ASSOC., INC.**
Engineers Planners Surveyors

5072 Dorsey Hall Drive, Suite 202, Elkwood City, Maryland 21042
(410) 987-0296 Fax (301) 621-5521 Wash. (410) 987-0296 Fax



| | | | | | |
|--------------|-----------|----|-----|----------|------|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | 96090 | | | | |
| date | FEB. 2000 | BY | NO. | REVISION | DATE |

WATER PROFILES

600' SCALE MAP NO. 31 BLOCK NO. 9

BONNIE BRANCH
LOTS 1-13
14-3823-D
SECOND ELECTION DISTRICT
HOWARD COUNTY

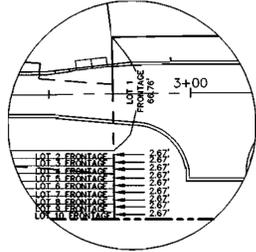
scale
AS SHWN

4 OF 4

Chief, BUREAU OF UTILITIES
DATE: April 27, 2000

Chief, DEVELOPMENT ENGINEERING DIVISION
DATE: 5/6/00

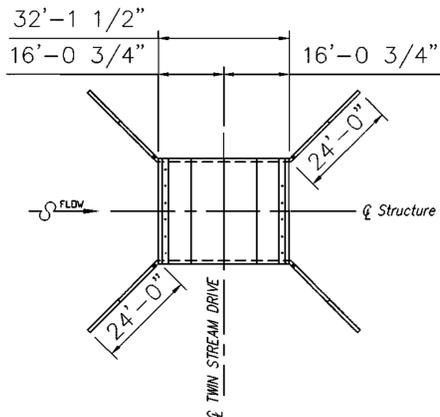
| WATER MAIN TABULATION CHART | | |
|---------------------------------------|----------------------------|------------|
| TWIN STREAM DRIVE | | |
| ROAD & STATION | APPURTENANCE | O/S FROM C |
| N 571853.40 E 1373962.56 0+26.1 | 8X12 TAP, SLEEVE AND VALVE | RT. 2.4' |
| N 571884.2216 E 1373996.0827 | 1/16 HOR. BEND | RT. 2.4' |
| N 571857.3558 E 1373908.0144 | 1/16 HOR. BEND | |
| 2+72 | 8" X8" T | LT. 23.1' |
| 2+72 | 6" VALVE | LT. 10' |
| 2+72 | F.H. | LT. 13' |
| 5+81.4 | 1/16 HOR. BEND | LT. 13.7' |
| 7+68.5 | 8" X8" T | LT. 4' |
| 7+68.5 | 6" V | RT. 7' |
| 7+68.5 | F.H. | RT. 10' |
| 7+70 | 8" X8" R | LT. 4' |
| 8+41.2 | 1/8 HOR. BEND | LT. 6.5' |
| 9+33.5 | 1/16 HOR. BEND | LT. 10.3' |
| 10+77 | 1/16 HOR. BEND | LT. 4.8' |
| 11+47 | 6" C & B | LT. 5' |



FRONTAGE DETAIL

SUGGESTED SEQUENCE OF CONSTRUCTION FOR SEWER CONSTRUCTION (CONNECTION OF OLD AND NEW SEWER LINES)

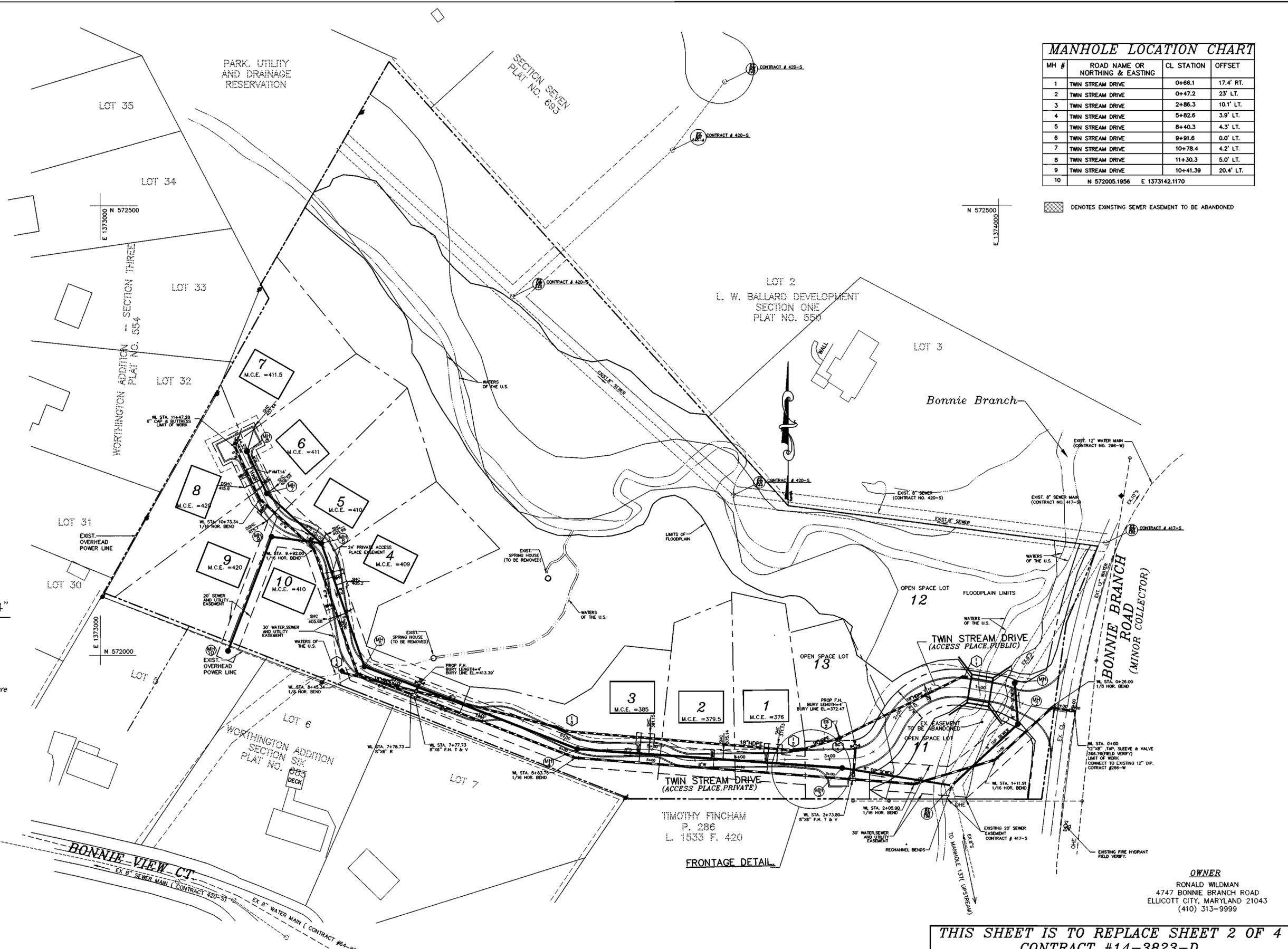
1. CONSTRUCT DOWNSTREAM MANHOLE NUMBER 1 OVER EXISTING SEWER LINE. SEWER LINE IS TO REMAIN IN SERVICE.
2. BLOCK FLOW UPSTREAM OF MANHOLE NUMBER 137 AND PUMP FLOW TO NEW DOWNSTREAM MANHOLE NUMBER 1.
3. RECONSTRUCT EXISTING MANHOLE NUMBER 136 WITH THE NEW CHANNELS AND STUB SEWER PIPE TO WEST SIDE OF BONNIE BRANCH.
4. CONSTRUCT NEW MANHOLE NUMBER 2 AND CONNECTING SEWER PIPES.
5. RETURN UPSTREAM MANHOLE TO SERVICE AND ALLOW FLOW TO PROCEED THROUGH NEW PIPE SYSTEM.
6. PLEASE NOTE THAT THIS A SUGGESTED SEQUENCE OF CONSTRUCTION ONLY. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN SERVICE IN THE EXISTING 8" SEWER AT ALL TIMES.



BRIDGE DETAIL
FOR STRUCTURAL DETAILS PLEASE REFER TO T-00-93, SHEETS C3(1)-C3(5)

| MANHOLE LOCATION CHART | | | |
|------------------------|---------------------------------|------------|-----------|
| MH # | ROAD NAME OR NORTHING & EASTING | CL STATION | OFFSET |
| 1 | TWIN STREAM DRIVE | 0+66.1 | 17.4' RT. |
| 2 | TWIN STREAM DRIVE | 0+47.2 | 23' LT. |
| 3 | TWIN STREAM DRIVE | 2+86.3 | 10.1' LT. |
| 4 | TWIN STREAM DRIVE | 5+82.6 | 3.9' LT. |
| 5 | TWIN STREAM DRIVE | 8+40.3 | 4.3' LT. |
| 6 | TWIN STREAM DRIVE | 9+91.6 | 0.0' LT. |
| 7 | TWIN STREAM DRIVE | 10+78.4 | 4.2' LT. |
| 8 | TWIN STREAM DRIVE | 11+30.3 | 5.0' LT. |
| 9 | TWIN STREAM DRIVE | 10+41.39 | 20.4' LT. |
| 10 | N 572005.1956 E 1373142.1170 | | |

☒ DENOTES EXISTING SEWER EASEMENT TO BE ABANDONED



OWNER
RONALD WILDMAN
4747 BONNIE BRANCH ROAD
ELLCOTT CITY, MARYLAND 21043
(410) 313-9999

THIS SHEET IS TO REPLACE SHEET 2 OF 4 CONTRACT #14-3823-D.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
2-27-02
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
2/15/02
DATE

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5972 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042
(410) 987-0250 Cell: (301) 621-5521 Wash: (410) 987-0250 Fax

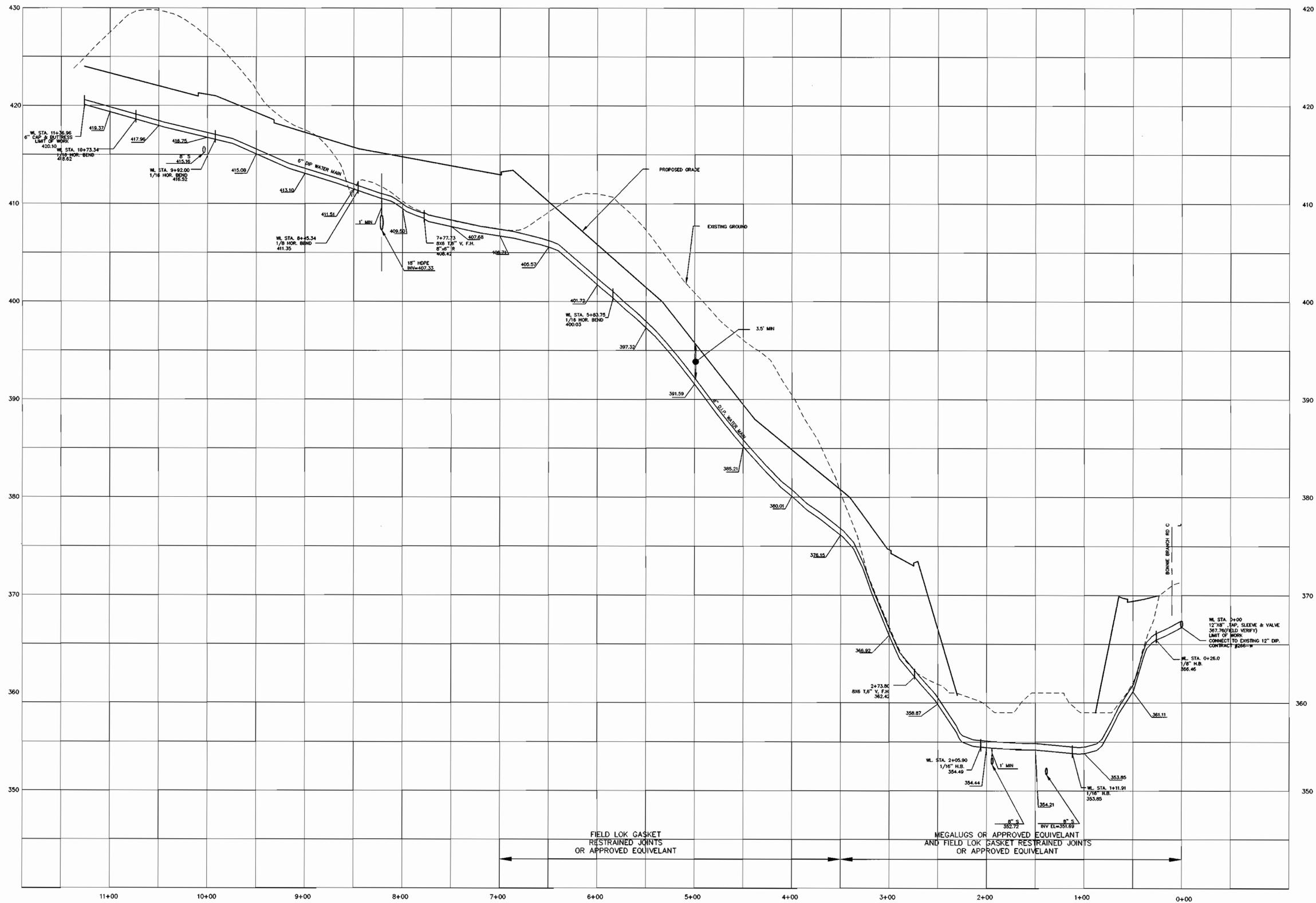


| | | | | | |
|--------------|-----------|-----|-----|--|---------|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | 96090 | MBA | 1 | ADD MH-9 & MH-10, REVISE THE LOCATION OF EX. MH-136. | 1.14.02 |
| date | FEB. 2000 | BY | NO. | REVISION | DATE |

WATER & SEWER PLAN
600' SCALE MAP NO. 31 BLOCK NO. 9

BONNIE BRANCH OVERLOOK
LOTS 1-13
14-3823-D
SECOND ELECTION DISTRICT
HOWARD COUNTY
scale 1"=50'
2 of 4

96090.DWG/PNAL/MS/1/96090-WS-P/L



WATER PROFILE (TWIN STREAM DRIVE)

SCALE: H. 1"=50'
V. 1"=5'

**THIS SHEET IS TO REPLACE SHEET 4 OF 4
CONTRACT #14-3823-D.**

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert Benner
CHIEF, BUREAU OF UTILITIES
DATE: 2-27-02

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Michael Dammann
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 3/15/02

**MILDENBERG,
BOENDER & ASSOC., INC.**
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Dalt. (301) 621-5521 Wash. (410) 997-0298 Fax.



| | | | | | |
|--------------|-----------|-----|-----|---|---------|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | 98090 | MBA | 1 | REVISE WATER PROFILE TO REFLECT CHANGES OF SEWER LINE | 1.14.02 |
| date | FEB. 2000 | BY | NO. | REVISION | DATE |

WATER PROFILES

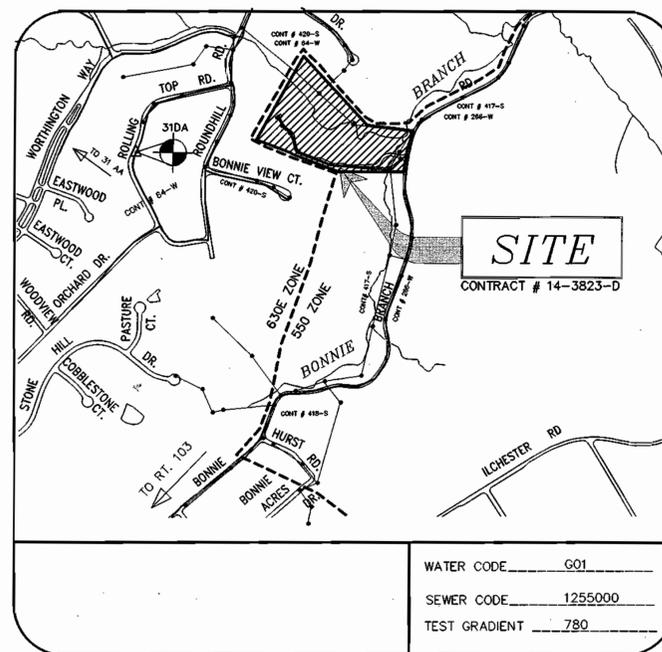
BONNIE BRANCH OVERLOOK
LOTS 1-13
14-3823-D
SECONDED ELECTION DISTRICT
HOWARD COUNTY

scale
AS SHOWN
4 OF 4

600' SCALE MAP NO. 31 BLOCK NO. 9

QUANTITY TABLE

| ITEMS | QUANTITIES | | TYPE | MANUFACTURER/SUPPLIER |
|--|------------|------------|---------|----------------------------|
| | ESTIMATED | QUANTITIES | | |
| STANDARD PRECAST MH (HO. CO. STD. G-5.11) | 6 | 6 | PRECAST | ATLANTIC PRECAST |
| DROP MH, TYPE "B" (HO. CO. STD. S-1.32) | 3 | 3 | " | " |
| TERMINAL MH (HO. CO. STD. S-1.31) | 1 | 1 | " | " |
| 8" SEWER MAIN | 1,137 L.F. | 1,002 | P.V.C. | J.M. BELAIR RD SUPPLY |
| 4" SEWER HOUSE CONNECTION | 212 L.F. | 185 | P.V.C. | J.M. " " " " |
| # SEWER HOUSE CONNECTION | 7 | 7 | P.V.C. | J.M. " " " " |
| # MSH CONNECTIONS | 3 | 3 | P.V.C. | J.M. " " " " |
| 8" WATER MAIN | 1,203 L.F. | 776 | DIP | U.S. PIPE " " " " |
| 6" WATER MAIN | 295 L.F. | 416 | DIP | U.S. PIPE " " " " |
| 1" WATER HOUSE CONNECTION | 206 L.F. | 229 | KOPPER | READING " " " " |
| # 1" WHC | 10 | 10 Ea. | " | " |
| F.H. | 2 | 2 Ea | SNFH | MUELLER " " " " |
| 8" x 6" T | 2 | 2 Ea | DIP | U.S. PIPE " " " " |
| 6" V | 2 | 2 Ea | RSOR | MUELLER " " " " |
| 6" CAP & BUTTRESS | 1 | 1 Ea | DIP | U.S. PIPE " " " " |
| 1/16 H.B. (8") | 3 | 3 Ea | DIP | U.S. PIPE " " " " |
| 1/8 H.B. (8") | 1 | 1 Ea | DIP | U.S. PIPE " " " " |
| 1/16 H.B. (6") | 2 | 2 Ea | DIP | U.S. PIPE " " " " |
| 1/8 H.B. (6") | 1 | 1 Ea | DIP | U.S. PIPE " " " " |
| 12" x 8" TAPPING SLEEVE, & VALVE | 1 | 1 Ea | S.S. | DRESSOR " " " " |
| 8"x6" R | 1 | 1 Ea | DIP | U.S. PIPE " " " " |
| 8" D.I.P. SEWER MAIN | 272 L.F. | 250 | DIP | U.S. PIPE BELAIR RD SUPPLY |
| NAME OF UTILITY CONTRACTOR: ANGELOZZI | | | | |
| SURVEY AND DRAFTING DIVISION AS-BUILT DATE | | | | |



NOTE: SEE ATTACHED SHEET FOR GENERAL NOTES.

WATER CODE _____ G01
SEWER CODE _____ 1255000
TEST GRADIENT _____ 780

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATA.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6" 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 THE 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 DETAIL 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. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
STATE HIGHWAY ADMINISTRATION (410) 531-5533
BG & E CO. CONTRACTOR SERVICES (410) 850-4620
BG & E CO. UNDERGROUND DAMAGE CONTROL (410) 787-9068
MISS UTILITY (410) 800-257-7777
COLONIAL PIPELINE CO. (410) 795-1390
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS (410) 313-4900
BUREAU OF UTILITIES (410) 313-4900
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED OUTSIDE THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG 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)313-2450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING 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 18.114(c) OF HOWARD COUNTY CODE.
- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3-1/2' 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 STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. 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.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING UNLESS OTHERWISE NOTED ON PLANS OR IN SPECIFICATIONS.
- ALL SEWER MAINS SHALL BE P.V.C. OR D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAME AND COVER IS 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.
- STATIONING SHOWN IS WATER MAIN AND CENTER LINE STATIONING.
- CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
- SEDIMENT CONTROL TO BE PROVIDED UNDER F-00-95
- ALL SEWER HOUSE CONNECTIONS TO BE 4" IN SIZE.
- ALL WATER HOUSE CONNECTIONS TO BE 1" IN SIZE UNLESS OTHERWISE NOTED.
- ALL CELLARS WILL HAVE SERVICE TO LOWEST FLOOR UNLESS OTHERWISE NOTED.
- STORM DRAIN SYSTEM INDICATED FOR INFORMATIONAL PURPOSES ONLY, SEE ROAD PLANS FOR CONSTRUCTION DATA.
- COMPACTED IN FILL AREAS TO BE 95% PER AASHTO T-180.
- ALL SEWER HOUSE CONNECTIONS SHALL BE SET AT 2% SLOPE, UNLESS OTHERWISE NOTED.

THESE SHEETS ARE TO REPLACE SHEETS 1 THRU 4. CONTRACT# 14-3823-D WHICH WERE SIGNED BY THE CHIEF OF DEVELOPMENT ENGINEERING DIVISION ON 5/8/2000.

VICINITY MAP

SCALE: 1"=600'

| | |
|--------------------------------|----------------------------|
| TYPE OF BUILDING | SFD |
| No. OF UNITS | 10 |
| No. OF WATER HOUSE CONNECTION | 10 |
| No. OF SEWER HOUSE CONNECTIONS | 10 |
| DRAINAGE AREA | BONNIE BRANCH, PATAPSCO |
| TREATMENT PLANT | TREATMENT PLANT, BALTIMORE |

EROSION AND SEDIMENT CONTROL FOR THIS CONTRACT IS PROVIDED UNDER F-00-95

CONTRACT NO.: 14-3823-D
BONNIE BRANCH OVERLOOK, LOTS 1 THRU 13
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

INDEX OF DRAWINGS

| NO. | DESCRIPTION |
|-----|----------------------|
| 1 | TITLE SHEET |
| 2 | WATER AND SEWER PLAN |
| 3 | SEWER PROFILES |
| 4 | WATER PROFILES |

THIS SHEET IS TO REPLACE SHEET 1 OF 4 CONTRACT #14-3823-D.

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Ronald B. Klidman Feb 15, 07 DATE
DEVELOPER'S SIGNATURE
DEVELOPER'S NAME

[Signature] 2/15/02 DATE
ENGINEER'S SIGNATURE
ENGINEER'S NAME

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

Jim Meyer 3/12/02 DATE
USDA NATURAL RESOURCE CONSERVATION SERVICE

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

J.R. Blanton 3/12/02 DATE
HOWARD SCD

PLAN REFERENCE NUMBERS

| | |
|----------|---------|
| F-00-95 | P-99-03 |
| S-97-20 | |
| WP-98-75 | |

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 2-27-02 DATE
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[Signature] 3/15/02 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Elkton City, Maryland 21042
(410) 997-0286 Cell (301) 621-5521 Wash. (410) 997-0286 Fax



| | | | | | |
|--------------|-----------|----|--|----------|------|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | KCI | 2 | AS-BUILT DATA | 10/15/02 | |
| | MBA | 1 | UPDATE THE QUANTITY TABLE TO REFLECT CHANGES ON THE PLANS. | 1/14/02 | |
| date | FEB. 2000 | BY | NO. | REVISION | DATE |

TITLE SHEET

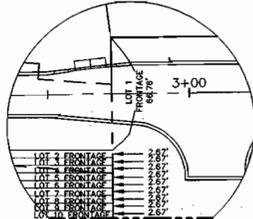
600' SCALE MAP NO. 31 BLOCK NO. 9

BONNIE BRANCH OVERLOOK
LOTS 1-13
14-3823-D
SECOND ELECTION DISTRICT
HOWARD COUNTY

scale AS SHWN
1 OF 4

**WATER MAIN
TABULATION CHART**

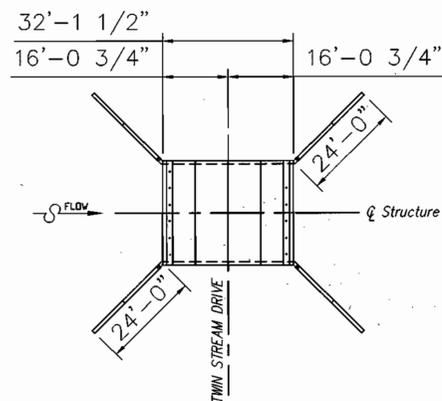
| TWIN STREAM DRIVE | | |
|-------------------|---------|---------------------------|
| ROAD C | STATION | APPURTENANCE O/S FROM C |
| N 571853.40 | | 8X12 TAP SLEEVE AND VALVE |
| E 1373962.56 | | 1/8 HOR. BEND RT. 2.4' |
| 0+28.1 | | |
| N 571884.2216 | | 1/16 HOR. BEND |
| E 1373996.0827 | | 1/16 HOR. BEND |
| N 571857.3558 | | 1/16 HOR. BEND |
| E 1373906.0144 | | |
| 2+72 | | 8"X6" T LT. 23.1' |
| 2+72 | | 6" VALVE LT. 10' |
| 2+72 | | F.H. LT. 13' |
| 5+81.4 | | 1/16 HOR. BEND LT. 13.7' |
| 7+88.5 | | 8"X6" T LT. 4' |
| 7+88.5 | | 6" V RT. 10' |
| 7+88.5 | | F.H. LT. 4' |
| 8+41.2 | | 1/8 HOR. BEND LT. 6.5' |
| 9+93.5 | | 1/16 HOR. BEND LT. 10.3' |
| 10+77 | | 1/16 HOR. BEND LT. 4.8' |
| 11+47 | | 6" C & S LT. 5' |



FRONTAGE DETAIL

**SUGGESTED SEQUENCE OF CONSTRUCTION FOR
SEWER CONSTRUCTION
(CONNECTION OF OLD AND NEW SEWER LINES)**

1. CONSTRUCT DOWNSTREAM MANHOLE NUMBER 1 OVER EXISTING SEWER LINE. SEWER LINE IS TO REMAIN IN SERVICE.
2. BLOCK FLOW UPSTREAM OF MANHOLE NUMBER 137 AND PUMP FLOW TO NEW DOWNSTREAM MANHOLE NUMBER 1.
3. RECONSTRUCT EXISTING MANHOLE NUMBER 136 WITH THE NEW CHANNELS AND STUB SEWER PIPE TO WEST SIDE OF BONNIE BRANCH.
4. CONSTRUCT NEW MANHOLE NUMBER 2 AND CONNECTING SEWER PIPES.
5. RETURN UPSTREAM MANHOLE TO SERVICE AND ALLOW FLOW TO PROCEED THROUGH NEW PIPE SYSTEM.
6. PLEASE NOTE THAT THIS A SUGGESTED SEQUENCE OF CONSTRUCTION ONLY. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN SERVICE IN THE EXISTING 8" SEWER AT ALL TIMES.

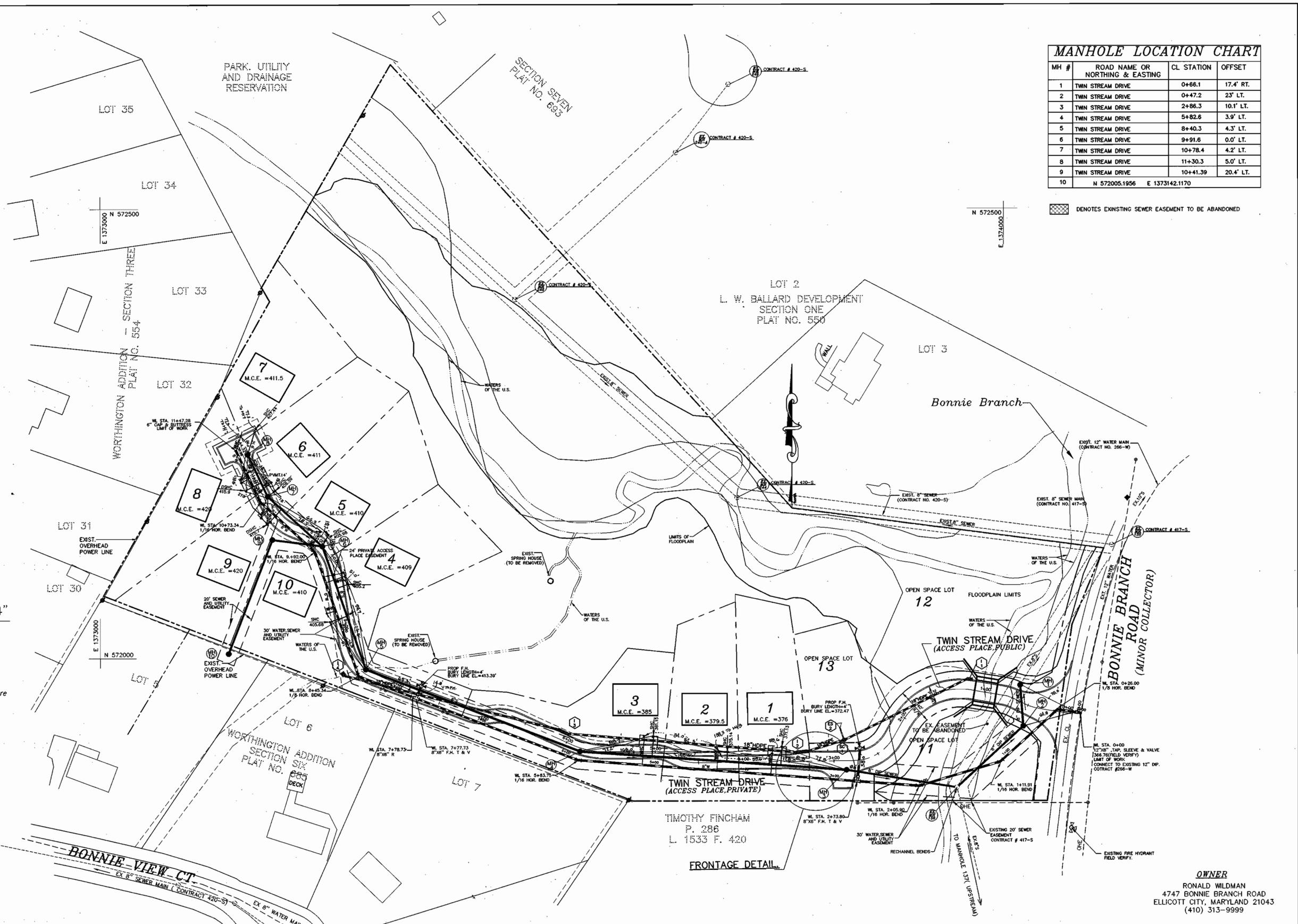


BRIDGE DETAIL
FOR STRUCTURAL DETAILS PLEASE REFER TO F-00-95 (SHEETS CS/1-CS/5)

MANHOLE LOCATION CHART

| MH # | ROAD NAME OR NORTHING & EASTING | CL STATION | OFFSET |
|------|---------------------------------|------------|-----------|
| 1 | TWIN STREAM DRIVE | 0+66.1 | 17.4' RT. |
| 2 | TWIN STREAM DRIVE | 0+47.2 | 23' LT. |
| 3 | TWIN STREAM DRIVE | 2+86.3 | 10.1' LT. |
| 4 | TWIN STREAM DRIVE | 5+82.6 | 3.9' LT. |
| 5 | TWIN STREAM DRIVE | 8+40.3 | 4.3' LT. |
| 6 | TWIN STREAM DRIVE | 9+91.6 | 0.0' LT. |
| 7 | TWIN STREAM DRIVE | 10+78.4 | 4.2' LT. |
| 8 | TWIN STREAM DRIVE | 11+30.3 | 5.0' LT. |
| 9 | TWIN STREAM DRIVE | 10+41.39 | 20.4' LT. |
| 10 | N 572005.1956 E 1373142.1170 | | |

☒ DENOTES EXISTING SEWER EASEMENT TO BE ABANDONED



OWNER
RONALD WILDMAN
4747 BONNIE BRANCH ROAD
ELICOTT CITY, MARYLAND 21043
(410) 313-9999

**THIS SHEET IS TO REPLACE SHEET 2 OF 4
CONTRACT #14-3823-D.**

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
2-27-02
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
3/15/02
DATE

MILDENBERG & BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Fax (301) 621-5521 Wash. (410) 997-0298 Fax



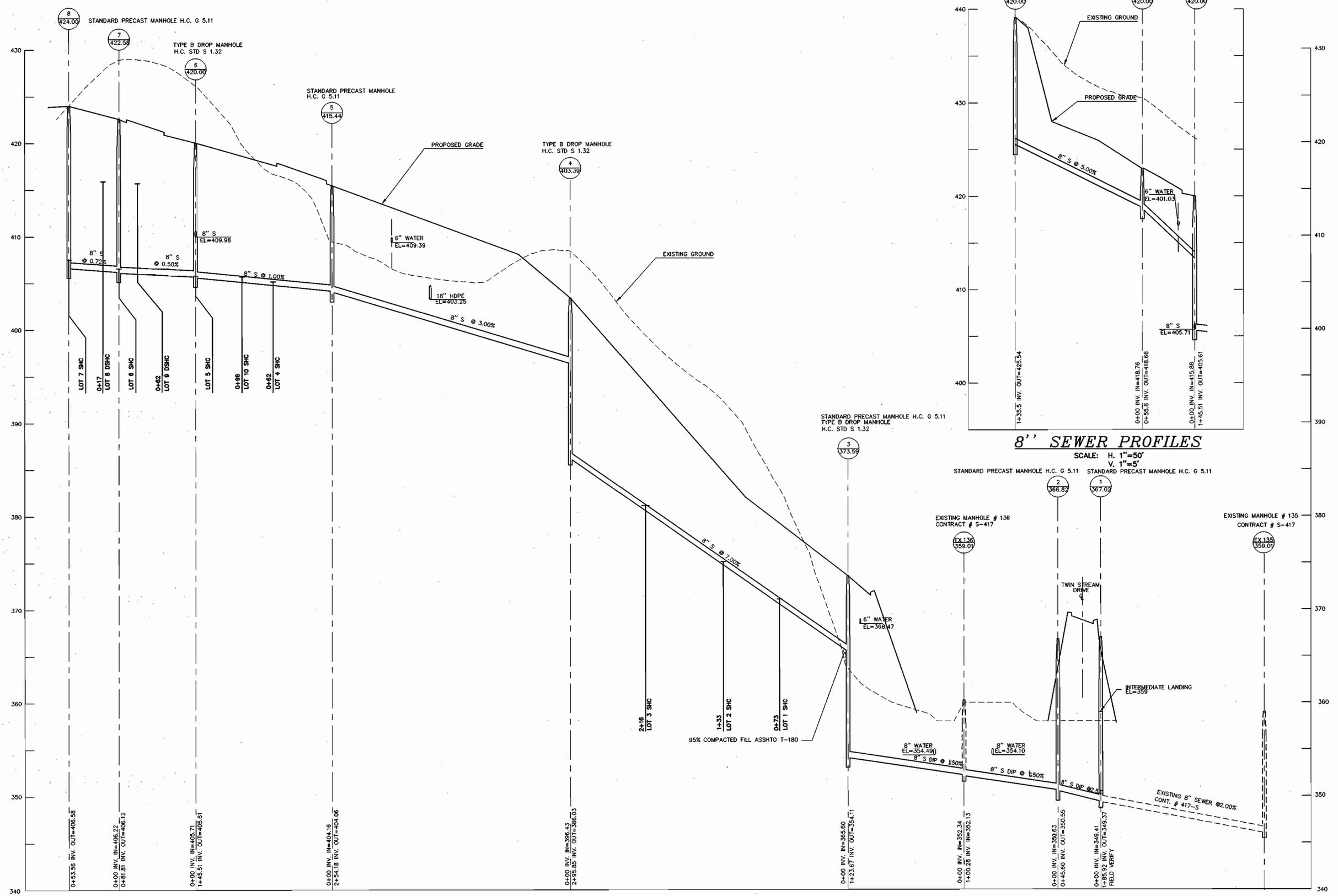
| | | | | | |
|--------------|-----------|----|--|----------|------|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | KC1 | 2 | ASBUILT DATA | 1/16/02 | |
| project | MBA | 1 | ADD MH-9 & MH-10, REVISE THE LOCATION OF EX. MH-136. | 1.14.02 | |
| date | FEB. 2000 | BY | NO. | REVISION | DATE |

**WATER & SEWER
PLAN**
600' SCALE MAP NO. 31 BLOCK NO. 9

BONNIE BRANCH OVERLOOK
LOTS 1-13
14-3823-D
SECOND ELECTION DISTRICT
HOWARD COUNTY
scale 1"=50'
2 OF 4

STANDARD PRECAST MANHOLE H.C. G 5.11
 TERMINAL MANHOLE H.C. S1.31

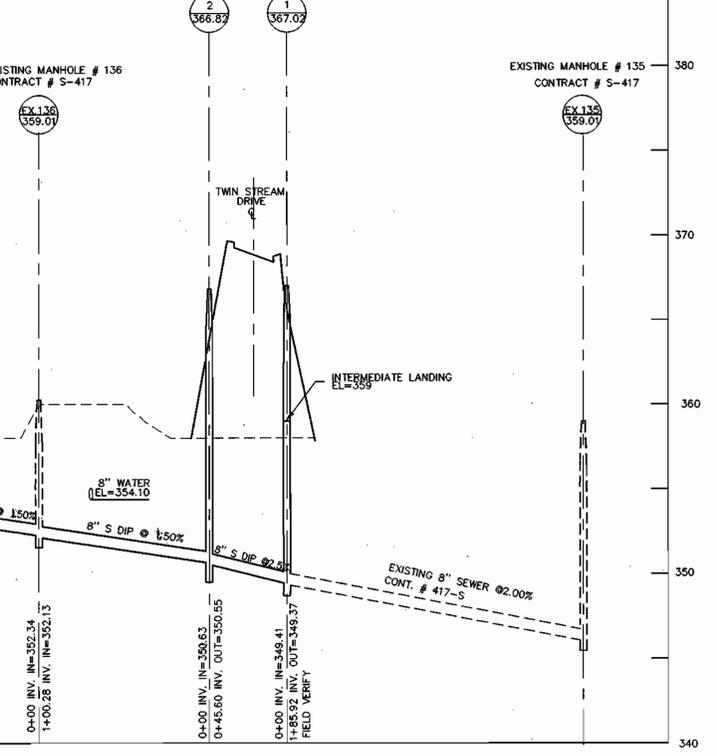
STANDARD PRECAST MANHOLE H.C. G 5.11
 STANDARD PRECAST MANHOLE H.C. G 5.11
 TYPE B DROP MANHOLE H.C. STD S 1.32



8" SEWER PROFILES

SCALE: H. 1"=50'
 V. 1"=5'

STANDARD PRECAST MANHOLE H.C. G 5.11
 STANDARD PRECAST MANHOLE H.C. G 5.11



8" SEWER PROFILES (TWIN STREAM DRIVE)

SCALE: H. 1"=50'
 V. 1"=5'

**THIS SHEET IS TO REPLACE SHEET 3 OF 4
 CONTRACT #14-3823-D.**

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

**MILDENBERG,
 BOENDER & ASSOC., INC.**
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax (301) 621-5521 Wash. (410) 997-0298 Fax



| | | | | | |
|--------------|-----------|-----|-----|--|---------|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | 96090 | MBA | 1 | ADD MH-9 & MH-10, REVISE THE LOCATION OF EX. MH-136. | 1.14.02 |
| date | FEB. 2000 | BY | NO. | REVISION | DATE |

SEWER PROFILES

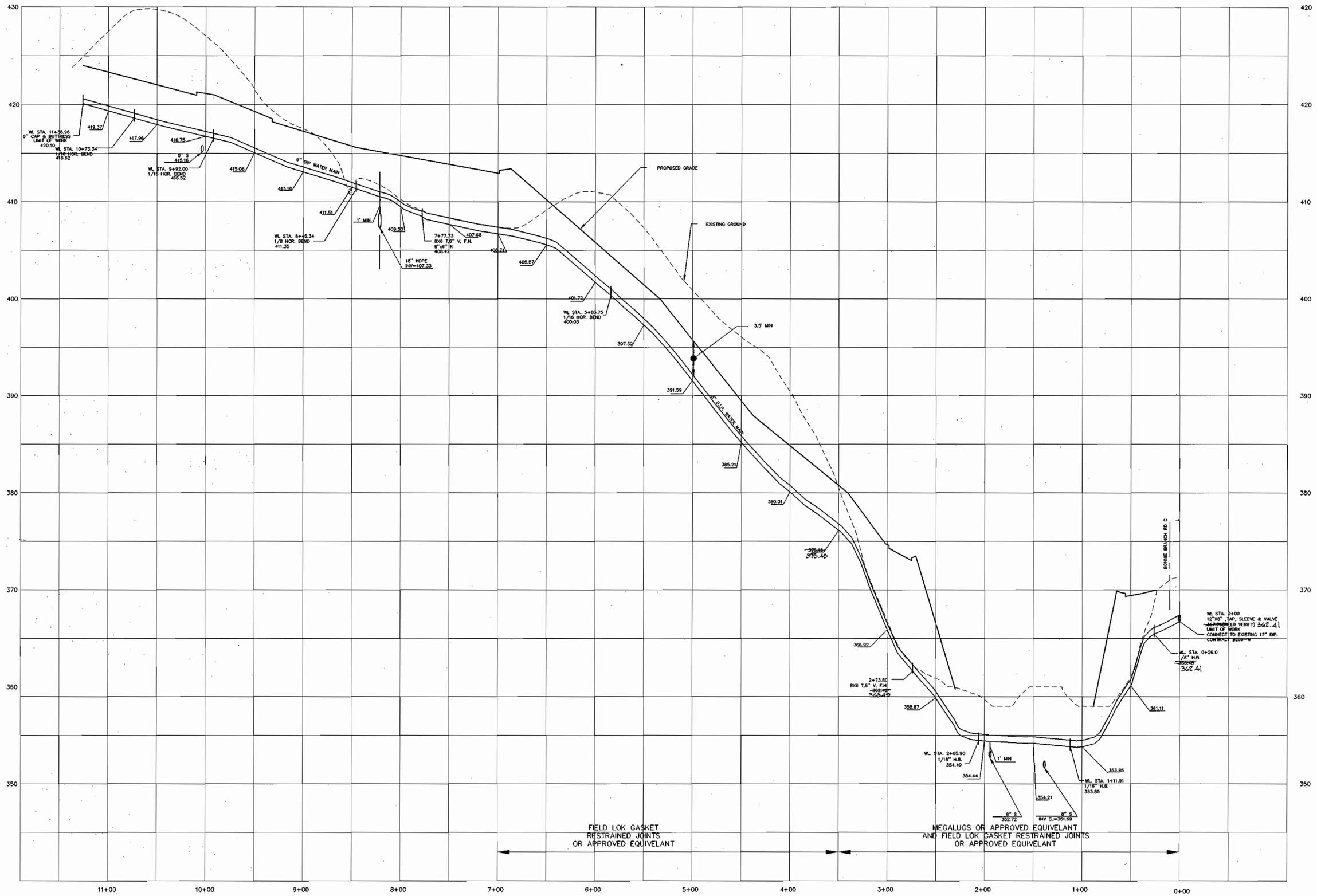
BONNIE BRANCH OVERLOOK
 LOTS 1-13
 14-3823-D
 SECONDED ELECTION DISTRICT
 HOWARD COUNTY

scale
 AS SHWN
3 OF 4

Ruth Berman 2-27-02
 CHIEF, BUREAU OF UTILITIES DATE

[Signature] 2/15/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

600' SCALE MAP NO. 31 BLOCK NO. 9



WATER PROFILE (TWIN STREAM DRIVE)

SCALE: H. 1"=50'
V. 1"=5'

**THIS SHEET IS TO REPLACE SHEET 4 OF 4
CONTRACT #14-3823-D.**

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

**MILDENBERG,
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(410) 997-0286 Cell. (301) 621-5521 Wash. (410) 997-0280 Fax



| | | | | | |
|--------------|-----------|---|----------|----------|--|
| engineering | SAA | | | | |
| illustration | SAA | | | | |
| approval | RJH | | | | |
| project | K.C.I. 2 | ASBUILT DATA | | 10/15/02 | |
| date | MBA 1 | REVISE WATER PROFILE TO REFLECT CHANGES OF SEWER LINE | | 1.14.02 | |
| | FEB. 2000 | BY NO. | REVISION | DATE | |

WATER PROFILES

BONNIE BRANCH OVERLOOK
LOTS 1-13
14-3823-D
SECONDED ELECTION DISTRICT
HOWARD COUNTY

scale
AS SHOWN
4 OF 4

600' SCALE MAP NO. 31 BLOCK NO. 9

S:\6090\DWG\FINAL\MS\196090-MS-PL1

Robert J. Hines
CHIEF, BUREAU OF UTILITIES
DATE 2-27-02

Michael J. Boender
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE 3/15/02