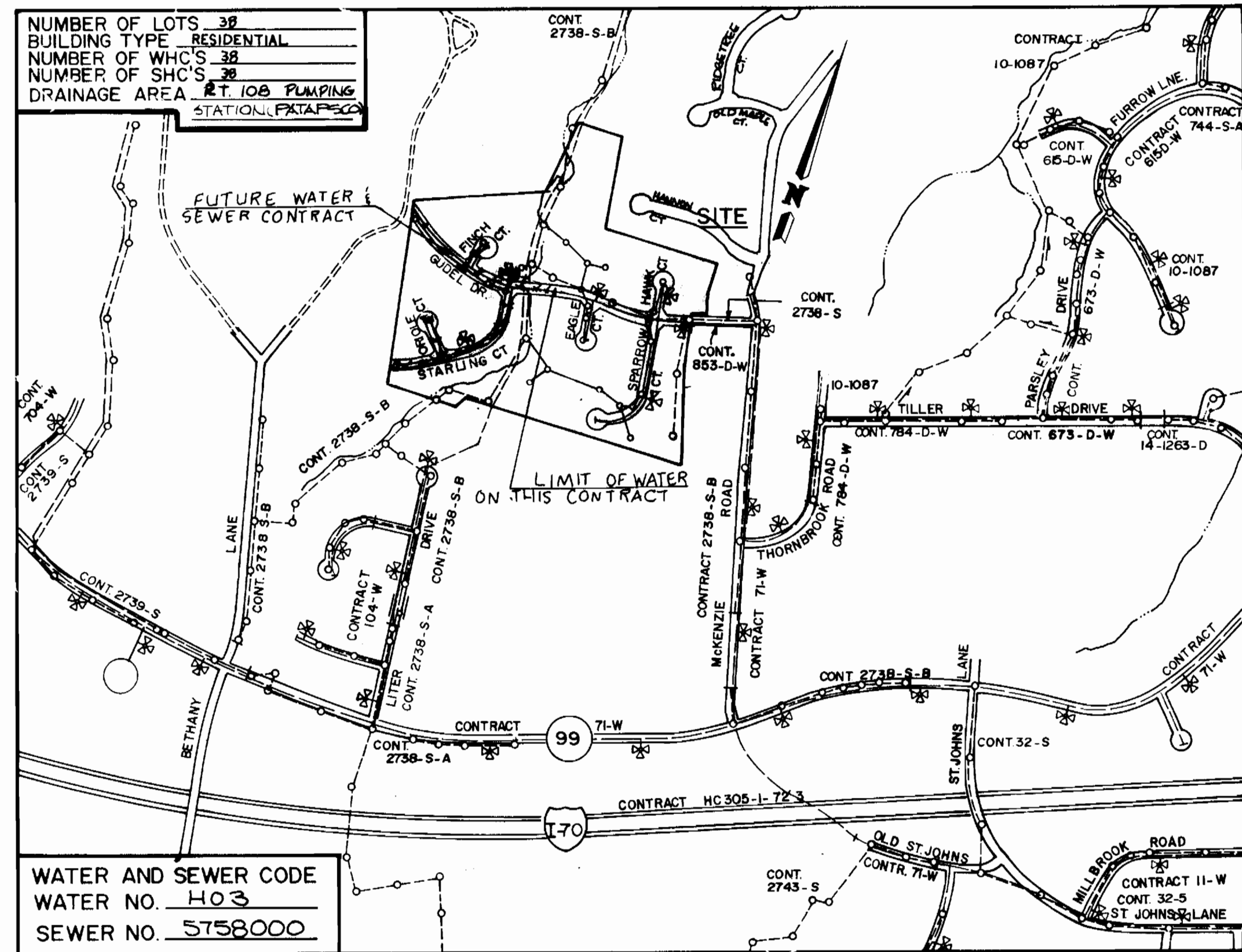


RED LINE REVISIONS TO  
**CONTRACT NO. 24-1655-D**  
**McKENZIE MEADOWS**  
**SECTION TWO** - LOTS 29 THRU 66  
 PHASE I  
**HOWARD COUNTY, MARYLAND**  
**WATER AND SEWER MAIN EXTENSIONS**  
**DEPARTMENT OF PUBLIC WORKS**

THIS SET OF PLANS REPRESENT CONSTRUCTION  
 PHASING TO THE EXISTING WATER AND SEWER  
 EXTENSION CONTRACT NO. 24-1655-D.  
 FOR PHASE TWO REFERENCE CONTRACT 24-1874-D



**VICINITY MAP**  
 SCALE: 1" = 600'

- 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 THE 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 DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. 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 (P) 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 UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
    - STATE HIGHWAY ADMINISTRATION - 531-5533
    - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES 561-2585
    - BALTIMORE GAS & ELECTRIC CO. UNDERGROUND DAMAGE CONTROL - 234-5621
    - BALTIMORE GAS & ELECTRIC CO. TROUBLE SHOOTING - 298-9013
    - MISS UTILITY - 1-559-0100
    - COLONIAL PIPELINE CO. - 795-1390
    - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 992-2366
  - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN 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.
  - ALL WATER MAINS TO BE D.I.P. 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 SECTIONS 1003 AND 1008 OF THE STANDARD SPECIFICATIONS.
  - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
  - ALL SEWER MAINS SHALL BE C.S.P.C., R.C.S.P., V.C.P.X., A.C.P. CLASS 2400 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 BRICK MANHOLES ONLY.
  - MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G. 5.52 WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
  - HOUSES WITH THE SYMBOL "CMS" INDICATES THAT CELLAR CANNOT BE SERVED.
  - ALL WATER CONNECTIONS SHALL BE SET FOR INSIDE METER SETTING.
  - ALL FIRE HYDRANTS ARE TO BE SET 3'-0" BEHIND THE FACE OF CURB PER DETAIL W-11.
  - ALL WATERTIGHT MANHOLES ARE TO BE CONSTRUCTED PER HOWARD COUNTY STANDARD DETAIL G. 5.52.

**NOTES:**  
 SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND WITH ROAD CONSTRUCTION PLANS; SHEETS 7, 8, & 9 SEDIMENT AND EROSION, AND FINAL PLAN F-88-36

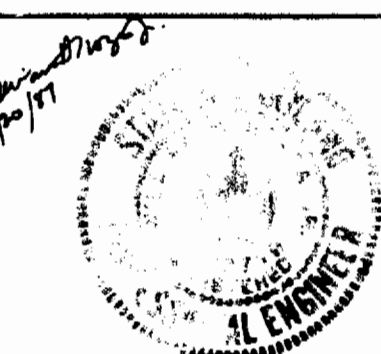
REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS  
*James M. Kitchin* 11-25-87  
 SOIL CONSERVATION SERVICE DATE  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT  
*John K. Robertson* 4/24/81  
 HOWARD S.C.D. DATE

| ITEM              |          | QUANTITY                | QUANTITIES |          |          |
|-------------------|----------|-------------------------|------------|----------|----------|
| ITEM              | QUANTITY | ITEM                    | QUANTITY   | AS BUILT | SUPPLIER |
| 6" 1/2 BEND       | 3 Ea.    | 8" x 6" SADDLE SH.C.    | 3 Ea.      |          |          |
| 6" SHC (D.I.P.)   | 80 LF    | 8" x 6" TEE             | 5 Ea.      |          |          |
| 6" CAP & BUTTRESS | 3 Ea.    | 6" DHC                  | 4 Ea.      |          |          |
| 6" BLOWOFF        | 3 Ea.    | 8" x 8" CROSS           | 1 Ea.      |          |          |
| 3/4" METER SET    | 5 Ea.    | 8" WATER                | 1224 LF.   | 1224 LF  |          |
| 8" CAP & BUTTRESS | 1 Ea.    | 6" WATER                | 795 LF.    | 795 LF   |          |
|                   |          | 8" VALVES               | 6 Ea.      |          |          |
|                   |          | 6" VALVES (EXCL. FRV'S) | 1 Ea.      |          |          |
|                   |          | 1" W.H.C.               | 204 LF.    |          |          |
|                   |          | 3/4" W.H.C.             | 592 LF.    |          |          |
|                   |          | FIRE HYDRANTS           | 4 Ea.      |          |          |
|                   |          | MANHOLES                | 18 Ea.     |          |          |
|                   |          | 8" SEWER                | 1833 LF.   |          |          |
|                   |          | 6" S.H.C.               | 713 LF.    |          |          |
|                   |          | 8" x 6" REDUCERS        | 2 Ea.      |          |          |
|                   |          | 8" SEWER (D.I.P.)       | 350 LF.    |          |          |
|                   |          | 12" SEWER (D.I.P.)      | 80 LF.     |          |          |

CONTRACT NO. 24-1655-D

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*James M. Kitchin* 11/20/87  
 DIRECTOR OF PUBLIC WORKS DATE  
*John K. Robertson* 11-20-87  
 CHIEF, BUREAU OF UTILITIES DATE

JOHN E. HARMS JR.  
 AND ASSOCIATES INC.  
 CONSULTING ENGINEERS - ARCHITECTS - SURVEYORS  
 9030 REG BRANCH ROAD SUITE 100  
 COLUMBIA, MARYLAND 21045  
 TELEPHONE (301) 740-5200



|       |      |   |  |          |
|-------|------|---|--|----------|
| DES:  |      |   |  |          |
| DRN:  |      |   |  |          |
| CHK:  | WJCO | 3 | REVISION PER REDLINE MARK UPS                        | 4/17/88  |
|       | CAG  | 2 | DELETE WEST SIDE OF SITE FROM CONTRACT NO. 24-1655-D | 8/1/88   |
| DATE: | JJT  | 1 | REV. PER. REDLINE MARKUPS                            | 11/29/88 |
| BY:   | NO.  |   | REVISION   | DATE     |

**PROFILE OF**  
**WATER AND SEWER MAINS**

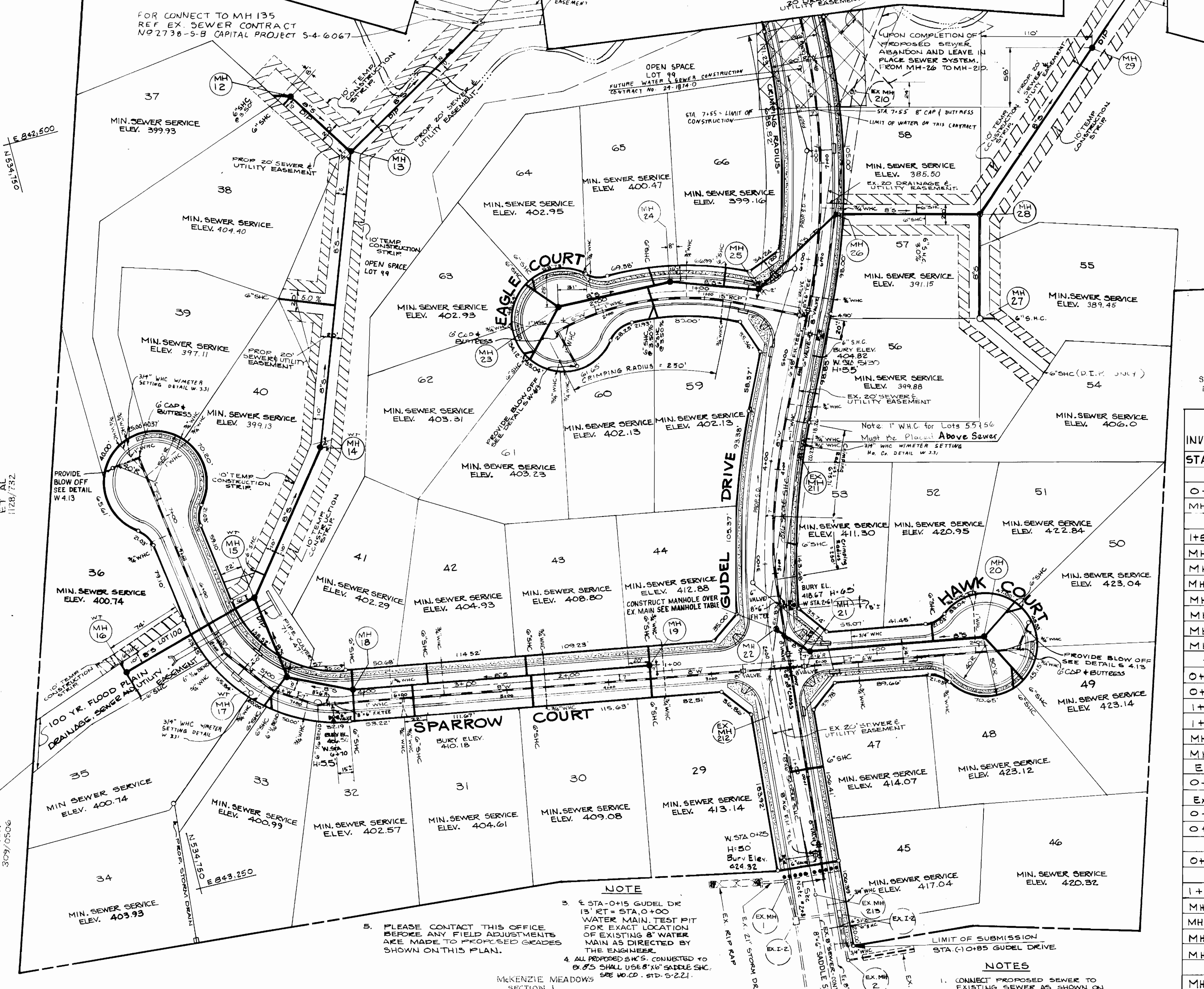
**McKENZIE MEADOWS**  
**SECTION TWO**  
**PHASE I**  
 TAX MAP NO. 17 PARCELS 36  
 2nd ELECTION DISTRICT HOWARD CO., MARYLAND

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

SHEET  
 1 OF 5A

MCKENZIE MEADOWS SECTION TWO PHASE TWO

- SEQUENCE OF CONSTRUCTION FOR ABANDONING EXISTING SEWER
1. CONSTRUCT PROPOSED 8" SEWER AS PER CONSTRUCTION SEQUENCE FOR FINAL ROADS. SEE SHEET 1B OF 20.
  2. BUILT PROPOSED MANHOLE #26 AROUND THE EXISTING 8" SEWER.
  3. TEMPORARILY PLUG THE EXISTING 8" SEWER PIPE FROM EX MH 211 IN ORDER TO INSTALL A DROP MANHOLE CONNECTION.
  4. INSPECT THE MANHOLE FOR COMPLIANCE WITH STANDARD SPECIFICATIONS.
  5. REMOVE THE 8" SEWER PIPE CONTAINED WITHIN MANHOLE #26 AND REMOVE THE TEMPORARY PLUG.
  6. PERMANENTLY PLUG THE EX. 8" SEWER TOWARD EX. MANHOLE #210.



SEWER HOUSE CONNECTION INVERT @ PROPERTY LINE

| STATION                    | LOT | ELEV.  |
|----------------------------|-----|--------|
| MH #13 TO MH #12           |     |        |
| 0+84                       | 38  | 400.00 |
| MH #22                     | 37  | 396.40 |
| MH #13 TO MH #14           |     |        |
| 1+53                       | 39  | 393.79 |
| MH #14                     | 40  | 395.73 |
| MH #16                     | 36  | 397.76 |
| MH #16                     | 35  | 398.12 |
| MH #17                     | 34  | 399.99 |
| MH #17                     | 33  | 399.99 |
| MH #18                     | 32  | 398.57 |
| MH #18                     | 41  | 398.37 |
| * MH #18 TO MH #19         |     |        |
| 0+57                       | 31  | 400.61 |
| 0+74                       | 42  | 400.95 |
| 1+70                       | 43  | 407.73 |
| 1+72                       | 30  | 405.08 |
| MH #19                     | 29  | 411.34 |
| MH #19                     | 44  | 409.02 |
| Ex. MH #212 TO Ex. MH #213 |     |        |
| 0+87                       | 47  | 410.83 |
| Ex. MH #213 TO Ex. MH #214 |     |        |
| 0+35                       | 46  | 413.24 |
| 0+35                       | 45  | 413.24 |
| MH #211 TO Ex. MH #22      |     |        |
| 0+81                       | 53  | 407.84 |
| MH #21 TO MH #20           |     |        |
| 1+20                       | 52  | 415.92 |
| MH #20                     | 51  | 419.06 |
| MH #20                     | 50  | 417.70 |
| MH #20                     | 48  | 419.42 |
| MH #20                     | 49  | 419.26 |
| MH #24 TO MH #23           |     |        |
| MH #23                     | 61  | 399.23 |
| MH #23                     | 62  | 399.28 |
| MH #23                     | 63  | 398.87 |
| MH #23                     | 64  | 398.91 |

MANHOLE TABLE

| NO. | RD. STA. | DIST. OFF. | RIM ELEV. | SLOPE | CROSS SLOPE | TYPE                 | MANHOLE                              |
|-----|----------|------------|-----------|-------|-------------|----------------------|--------------------------------------|
| *12 | N/A      | N/A        | 403.5     | 0.0%  | N/A         | Drop MH              | Type B Std. 51-32                    |
| *13 | N/A      | N/A        | 393.0     | 0.0%  | N/A         | Drop Manhole         | Type B Std. 51-32                    |
| *14 | N/A      | N/A        | 392.0     | 0.0%  | N/A         | "                    | "                                    |
| *15 | N/A      | N/A        | 402.0     | 0.0%  | N/A         | "                    | "                                    |
| *16 | N/A      | N/A        | 403.2     | 0.0%  | N/A         | Terminal MH          | Std. 51-31                           |
| 17  | 4+84     | 10.0'      | 405.13    | 1.64% | 3.0%        | "                    | Std. Precast MH. Std. 51-32          |
| 18  | sparrow  | 7.0'       | 406.79    | 3.04% | 3.0%        | "                    | "                                    |
| 19  | +20      | 7.0'       | 418.27    | 1.32% | 3.0%        | "                    | "                                    |
| 20  | sparrow  | 7.0'       | 430.11    | 7.0%  | 0.41%       | Terminal MH          | Std. 51-31                           |
| 21  | 0+87     | 7.0'       | 420.29    | 4.29% | 3.0%        | Std. Precast MH      | Std. 51-32                           |
| 22  | 4+10     | 7.0'       | 418.76    | 3.48% | 3.0%        | Std. Precast Manhole | Std. 51-32 to be built over Ex. Main |
| 23  | 0+84     | 19.0'      | 406.58    | 2.0%  | 1.32%       | Terminal MH          | Std. 51-31                           |
| 24  | Eagle    | 10.0'      | 404.59    | 2.0%  | 3.0%        | Std. Precast MH      | Std. 51-32                           |
| 25  | Eagle    | 10.0'      | 402.90    | 2.0%  | 3.0%        | "                    | "                                    |
| 26  | 0+44     | 23.0'      | 398.27    | 4.40% | 2.0%        | Drop Manhole         | Type A Std. 51-32                    |
| 27  | N/A      | N/A        | 388.0     | 0.0%  | N/A         | Std. Precast MH      | Std. 51-32                           |
| 28  | N/A      | N/A        | 377.0     | 0.0%  | N/A         | Std. Precast MH      | Std. 51-32                           |
| 29  | N/A      | N/A        | 362.0     | 0.0%  | N/A         | "                    | "                                    |
| 30  | 0+93     | 6.5'       | 420.09    | 2.64% | 3.0%        | 4'-0" Brick Manhole  | Std. 51-31                           |
| 31  | 4+01     | 26'        | 411.19    | 5.41% | 2.0%        | "                    | "                                    |

\* See Plan For Location  
 \*\* Adjust tops to achieve proposed rim elevations and slopes.  
 + Construct MH over and connect to existing 8" sewer.  
 ++ Watertight manhole (wt) see detail Std. G.5.52.  
 00FFSET MANHOLE

SEWER HOUSE CONNECTION INVERT @ PROPERTY LINE

| STATION            | LOT | ELEV.  |
|--------------------|-----|--------|
| MH #24 TO MH #23   |     |        |
| 0+22               | 59  | 396.97 |
| 0+22               | 60  | 396.97 |
| 0+15               | 65  | 396.47 |
| MH #25 TO MH #24   |     |        |
| 0+34               | 66  | 395.14 |
| * MH #28 TO MH #26 |     |        |
| 0+54               | 57  | 381.19 |
| 0+62               | 58  | 381.38 |
| MH #27             | 55  | 385.85 |
| MH #27             | 54  | 402.02 |
| MH #27             | 56  | 387.40 |

NOTE  
 3. STA. 0+15 GUEDEL DR. 13' RT. = STA. 0+00 WATER MAIN. TEST PIT FOR EXACT LOCATION OF EXISTING 8" WATER MAIN AS DIRECTED BY THE ENGINEER.  
 4. ALL PROPOSED S.H.C.'S. CONNECTED TO EX. 8" SHALL USE 8" X 6" SADDLE S.H.C. SEE NO. CD. - STD. 5-2.21.

NOTES  
 1. CONNECT PROPOSED SEWER TO EXISTING SEWER AS SHOWN ON THE PLANS. SEE CONTRACT NO. 2738-5-B CAPITAL PROJECT NO. S-4-6067  
 2. CONNECT PROPOSED 8" WATER MAIN TO EXISTING 8" WATER MAIN. CONTRACT NO. 855-D.W.

PLAN  
 1" = 50'

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

Director of Public Works: Robert L. Harbin  
 Chief, Bureau of Engineering: John E. Harms Jr.  
 Chief, Land Development Division: [Signature]

JOHN E. HARMS JR. AND ASSOCIATES INC.  
 CONSULTING ENGINEERS - ARCHITECTS - SURVEYORS  
 9030 RED BRANCH ROAD, SUITE 100  
 COLUMBIA, MARYLAND 21045  
 TELEPHONE (301) 740-5200

DES: K.B.C.  
 DRN: R.W.R.  
 CHK: W.H.N.  
 DATE: 8/87

REVISIONS:  
 CAG 2 DELETE WEST SIDE OF SITE FROM CONTRACT NO. 24-1655-0  
 JJT 1 REV. PER. REDLINE MARKUPS  
 MM 4 W. Line and Blow-off relocated 10' (back)  
 MM 5 Add Note referring to 1" W.H.C. for lots 58 & 56 to be placed above sewer line

PLAN OF WATER AND SEWER MAINS

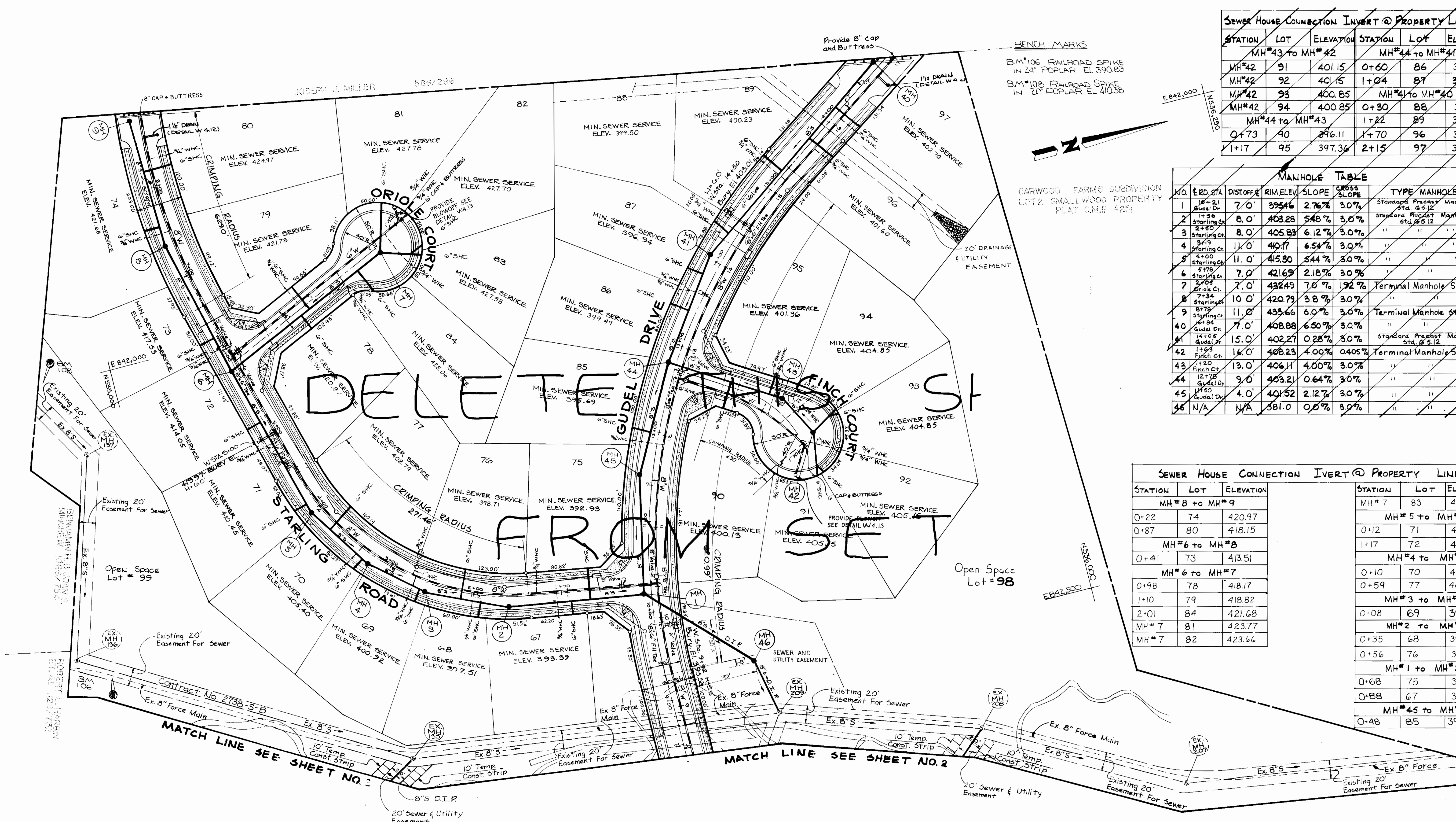
600' SCALE MAP NO. 17 BLOCK NO.

MCKENZIE MEADOWS SECTION TWO - LOTS 29 THRU 66 PHASE I

TAX MAP NO. 17 ELECTION DISTRICT  
 PARCELS 30 HOWARD COUNTY, MARYLAND.

SCALE: H: 1" = 50' V: 1" = 5'  
 SHEET 2 OF 5

CONTRACT NO. 24-1655-D



| SEWER HOUSE CONNECTION INVERT @ PROPERTY LINE |     |           |                |     |           |
|---|-----|-----------|----------------|-----|-----------|
| STATION                                       | LOT | ELEVATION | STATION        | LOT | ELEVATION |
| MH#43 to MH#42                                |     |           | MH#44 to MH#41 |     |           |
| MH#42   | 91  | 401.15    | 0+60           | 86  | 397.89    |
| MH#42   | 92  | 401.15    | 1+04           | 87  | 392.94    |
| MH#42   | 93  | 400.85    | MH#41 to MH#40 |     |           |
| MH#42   | 94  | 400.85    | 0+30           | 88  | 393.92    |
| MH#44 to MH#43                                |     |           | 1+22           | 89  | 396.25    |
| 0+73  | 40  | 396.11    | 1+70           | 96  | 397.58    |
| 1+17  | 95  | 397.36    | 2+15           | 97  | 396.70    |

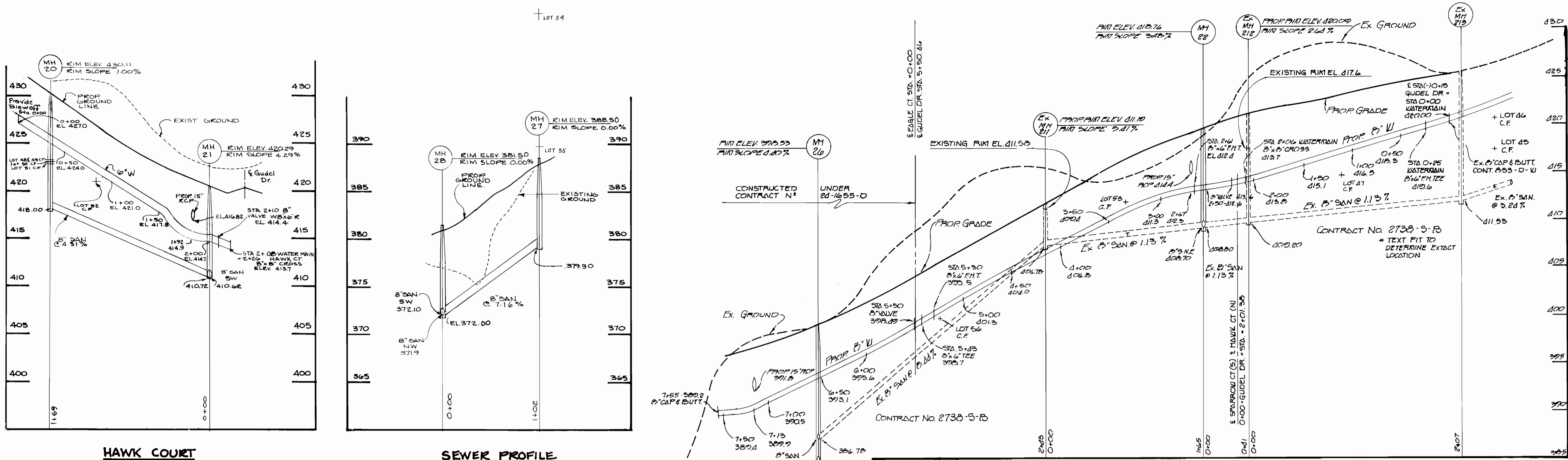
| MANHOLE TABLE |                  |          |          |       |             |                                      |
|---------------|------------------|----------|----------|-------|-------------|--------------------------------------|
| NO            | LRD STA          | DIST OFF | RIM ELEV | SLOPE | CROSS SLOPE | TYPE MANHOLE                         |
| 1             | 10+21 Guadel Dr  | 7.0'     | 395.46   | 2.76% | 3.0%        | Standard Precast Manhole Std. 6'x12' |
| 2             | 1+56 Starling Ct | 8.0'     | 403.28   | 5.48% | 3.0%        | Standard Precast Manhole Std. 6'x12' |
| 3             | 2+50 Starling Ct | 8.0'     | 405.83   | 6.12% | 3.0%        | " " " "                              |
| 4             | 3+19 Starling Ct | 11.0'    | 410.17   | 6.54% | 3.0%        | " " " "                              |
| 5             | 4+00 Starling Ct | 11.0'    | 415.30   | 5.44% | 3.0%        | " " " "                              |
| 6             | 5+78 Starling Ct | 7.0'     | 421.69   | 2.18% | 3.0%        | " " " "                              |
| 7             | 7+05 Starling Ct | 7.0'     | 432.49   | 7.0%  | 1.92%       | Terminal Manhole Std. 51-31          |
| 8             | 7+34 Starling Ct | 10.0'    | 420.79   | 3.8%  | 3.0%        | " " " "                              |
| 9             | 8+78 Starling Ct | 11.0'    | 433.66   | 6.0%  | 3.0%        | Terminal Manhole Std. 51-31          |
| 40            | 6+94 Guadel Dr   | 7.0'     | 408.88   | 6.50% | 3.0%        | " " " "                              |
| 41            | 14+05 Guadel Dr  | 15.0'    | 402.27   | 0.28% | 3.0%        | Standard Precast Manhole Std. 6'x12' |
| 42            | 1+05 Finch Ct    | 16.0'    | 408.23   | 4.00% | 0.405%      | Terminal Manhole Std. 51-31          |
| 43            | 1+20 Finch Ct    | 13.0'    | 406.11   | 4.00% | 3.0%        | " " " "                              |
| 44            | 12+78 Guadel Dr  | 9.0'     | 403.21   | 0.64% | 3.0%        | " " " "                              |
| 45            | 14+50 Guadel Dr  | 4.0'     | 401.52   | 2.12% | 3.0%        | " " " "                              |
| 46            | N/A              | N/A      | 381.0    | 0.0%  | 3.0%        | " " " "                              |

| SEWER HOUSE CONNECTION INVERT @ PROPERTY LINE |     |           |                |        |           |
|---|-----|-----------|----------------|--------|-----------|
| STATION                                       | LOT | ELEVATION | STATION        | LOT    | ELEVATION |
| MH#8 to MH#9                                  |     |           | MH#7           |        |           |
| 0+22  | 74  | 420.97    | 83             | 423.60 |           |
| MH#5 to MH#6                                  |     |           | MH#5 to MH#6   |        |           |
| 0+87  | 80  | 418.15    | 0+12           | 71     | 406.45    |
| MH#6 to MH#8                                  |     |           | MH#4 to MH#5   |        |           |
| 0+41  | 73  | 413.51    | 1+17           | 72     | 410.05    |
| MH#6 to MH#7                                  |     |           | MH#4 to MH#5   |        |           |
| 0+98  | 78  | 418.17    | 0+10           | 70     | 401.38    |
| 1+10  | 79  | 418.82    | 0+59           | 77     | 404.73    |
| MH#3 to MH#4                                  |     |           | MH#3 to MH#4   |        |           |
| 2+01  | 84  | 421.68    | 0+08           | 69     | 396.92    |
| MH#7  | 81  | 423.77    | MH#2 to MH#3   |        |           |
| MH#7  | 82  | 423.66    | 0+35           | 68     | 393.45    |
| MH#1 to MH#2                                  |     |           | MH#1 to MH#2   |        |           |
|   |     |           | 0+56           | 76     | 394.77    |
|   |     |           | MH#45 to MH#44 |        |           |
|   |     |           | 0+68           | 75     | 388.89    |
|   |     |           | 0+88           | 67     | 389.37    |
|   |     |           | MH#45 to MH#44 |        |           |
|   |     |           | 0+48           | 85     | 391.69    |

PLAN  
1"=50'

DELETE THIS SHEET FROM SET

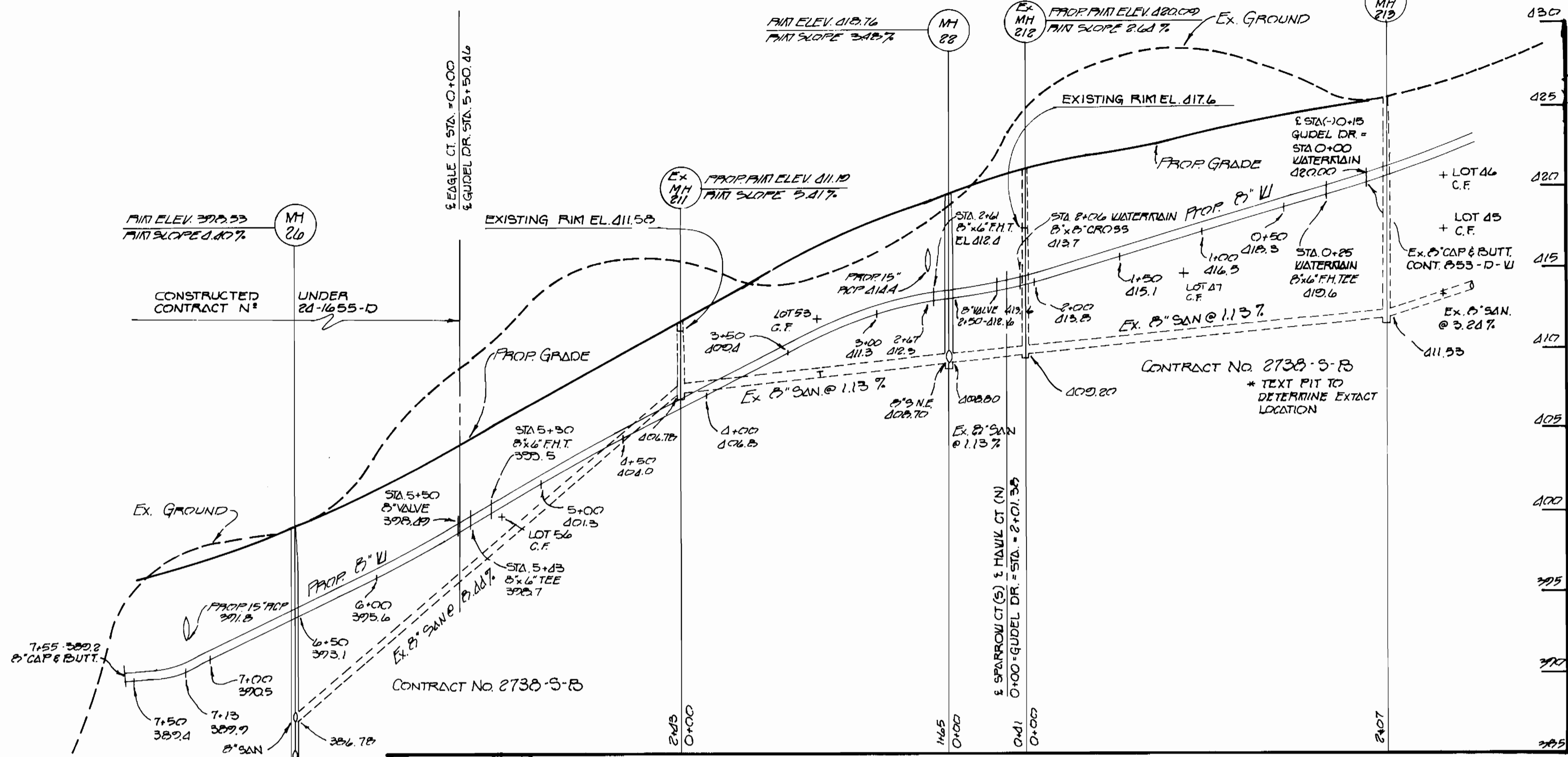
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| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND<br>Director of Public Works: <i>Robert Bauman</i> DATE: 11-20-87<br>Chief, Bureau of Engineering: <i>Wesley R. Ray</i> DATE: 11-20-87<br>Chief, Land Development Division: <i>Wesley R. Ray</i> DATE: 11-20-87 |  | JOHN E. HARMS JR. AND ASSOCIATES INC.<br>CONSULTING ENGINEERS - ARCHITECTS - SURVEYORS<br>9030 RED BRANCH ROAD SUITE 100<br>COLUMBIA, MARYLAND 21045<br>TELEPHONE (301) 740-5200 |  | DES: K.B.C.<br>DRN: R.W.R.<br>CHK: W.H.N.<br>DATE: 8/87 |  | REV. PER. REDLINE MARKUPS<br>Revised the end of the low line in Finch Court 1/29/88<br>8'5" between M41 and M44 moved east 12" (Starling Road) 1/18/88 |  | PLAN OF WATER AND SEWER MAINS<br>600' SCALE MAP NO. 17 BLOCK NO. |  | CONTRACT NO. 24-1655-D<br>MCKENZIE MEADOWS SECTION TWO<br>TAX MAP NO. 17 2ND ELECTION DISTRICT<br>PARCEL 36 HOWARD CO, MARYLAND |  | SCALE<br>H: 1"=50'<br>V: 1"=5'<br>SHEET 1 OF 2 |
|--|--|--|--|---|--|--|--|--|--|---|--|--|



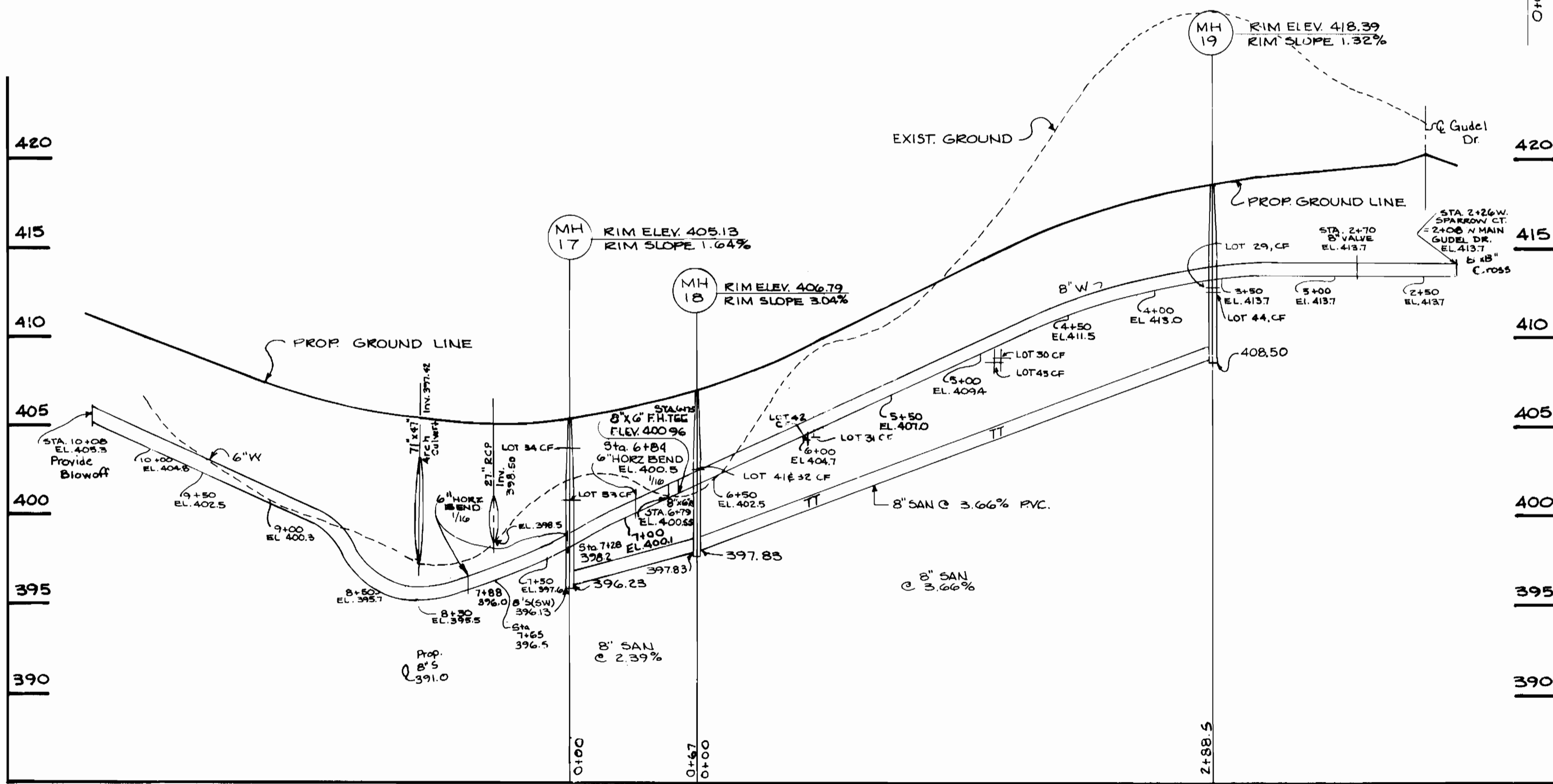
**HAWK COURT**

SCALE: 1" = 5' VERT  
1" = 50' HORIZ

**SEWER PROFILE**

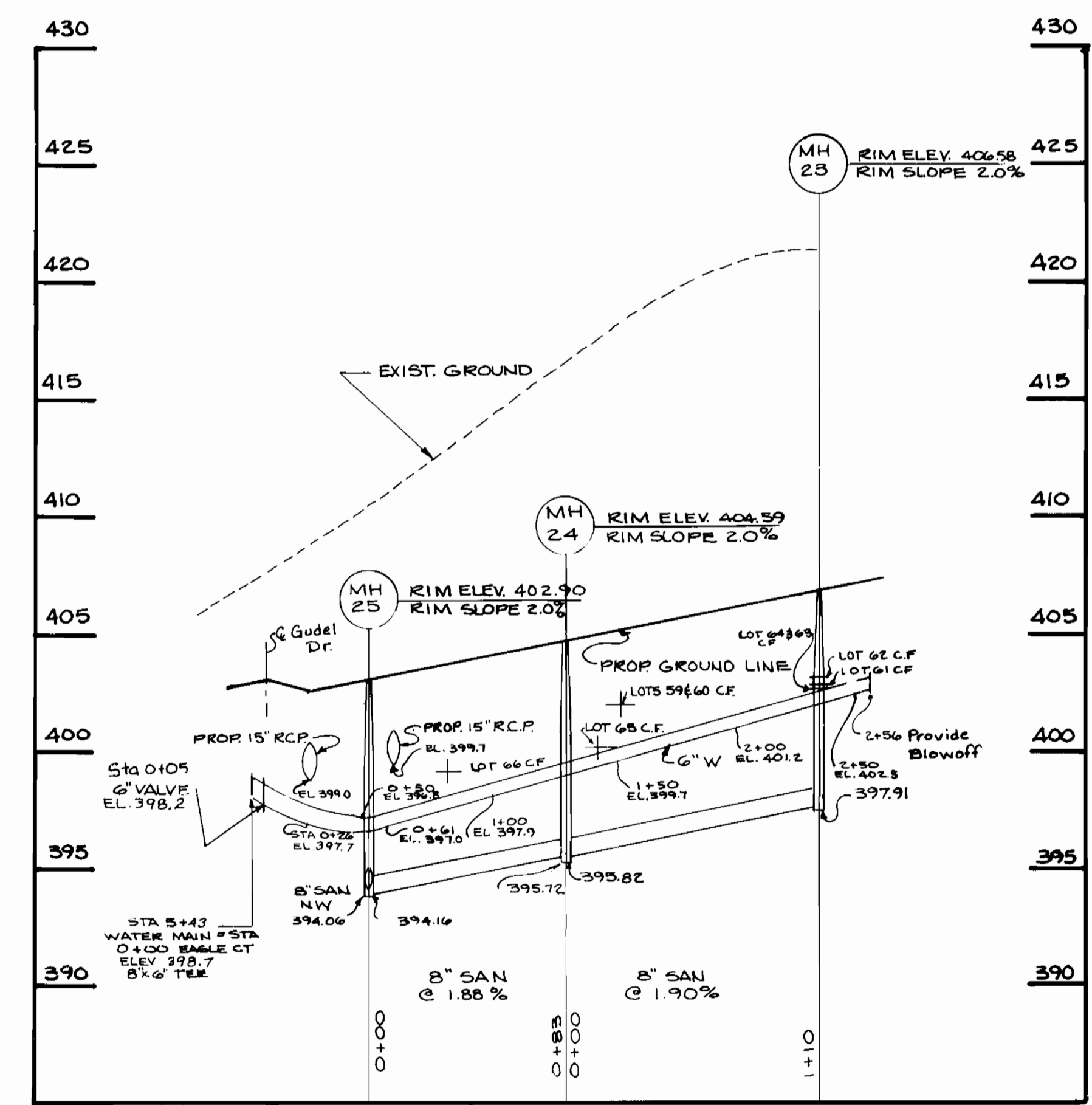


**GUADEL DRIVE**



**SPARROW COURT**

SCALE: 1" = 5' VERT  
1" = 50' HORIZ



**EAGLE COURT**

SCALE: 1" = 5' VERT  
1" = 50' HORIZ

CONTRACT NO. 24-1655-D

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John E. Harms Jr.*  
DATE: 11-20-87  
CHIEF, BUREAU OF UTILITIES

*Michael J. P.*  
DATE: 11-20-87  
CHIEF, PLANNING & DEVELOPMENT DIVISION

JOHN E. HARMS JR.  
AND ASSOCIATES INC.  
CONSULTING ENGINEERS - ARCHITECTS - SURVEYORS  
9030 RED BRANCH ROAD SUITE 100  
COLUMBIA, MARYLAND 21045  
TELEPHONE (301) 740-5200

*Handwritten notes and signatures*

|             |          |  |         |
|-------------|----------|--|---------|
| DES: K.B.C. | WED      | REV. 03 PER PRELIMINE MARKUPS  | 4/17/88 |
| DRN: R.W.R. | CAG 2    | DELETE WEST SIDE OF SITE FROM CONTRACT NO. 24-1655-D                       | 8/8/88  |
| CHK: V.L.N  | J.J.T. 1 | REV PER REDLINE MARKUPS  | 1/29/88 |
| DATE: 8/87  | MM       | NOTE: 04 removed entire STA. 0+88 P.H. to ELEV.                            | 1/18/88 |
|             | MM       | Hawk Court Sewer Profile changed the 8" San percentage from 7.16% to 7.16% | 1/18/88 |
|             | MM       | Eagle Court - Changed elev. of Sta. 5+50 Elev. 398.22 to 398.70            | 1/18/88 |
|             | BY NO    | REVISION   | DATE    |

**PROFILE OF WATER AND SEWER MAINS**

600' SCALE MAP NO. 17 BLOCK NO.

**McKENZIE MEADOWS SECTION TWO LOTS 29 THRU 66 PHASE I**

TAX MAP NO. 17 PARCELS 36  
2nd ELECTION DISTRICT HOWARD CO., MARYLAND

SCALE: H 1" = 50' V 1" = 5'  
SHEET 4 OF 5



| SEWER  |                          |        | AS-BUILT |                 |       | WATER  |                               |        | AS-BUILT |                          |       |
|--------|--------------------------|--------|----------|-----------------|-------|--------|-------------------------------|--------|----------|--------------------------|-------|
| lot 29 | Manhole #19              | 30'    | lot 63   | Manhole #23     | 37.6' | lot 29 | Manhole #22                   | 132.1' | lot 57   | FIRE HYDRANT GUGEL DRIVE | 39.9' |
| lot 30 | "                        | 118.3' | "        | 6" S.H.C lot 62 | 77.9' | "      | 3/4" W.H.C lot 44             | 54.5'  | lot 58   | STORM DRAIN MANHOLE      | 79.8' |
| "      | 3/4" W.H.C lot 43        | 50'    | lot 64   | Manhole #23     | 36.6' | lot 30 | 3/4" W.H.C lot 43             | 51.3'  | "        | Manhole #26              | 13.5' |
| lot 31 | Manhole #18              | 68.5'  | "        | 6" S.H.C lot 63 | 6'    | lot 31 | FIRE HYDRANT SPARROW COUNT    | 73.5'  | lot 59   | Manhole #24              | 59.8' |
| lot 32 | "                        | 32.8'  | lot 65   | Manhole #24     | 25.5' | "      | Manhole #18                   | 60'    | "        | Manhole #25              | 58.5' |
| "      | Manhole #17              | 83'    | "        | 6" S.H.C lot 66 | 79.9' | lot 32 | "                             | 56'    | lot 60   | Manhole #23              | 68.9' |
| lot 33 | "                        | 37'    | lot 66   | Manhole #24     | 61.8' | "      | FIRE HYDRANT SPARROW COUNT    | 69'    | lot 61   | "                        | 68.2' |
| "      | Manhole #18              | 83.5'  | "        | Manhole #25     | 38.8' | lot 33 | "                             | 29'    | "        | 3/4" W.H.C lot 60        | 41.8' |
| lot 34 | "                        | 89.8'  | "        | "               | "     | "      | Manhole #17                   | 44'    | lot 62   | Manhole #23              | 52.3' |
| "      | Manhole #17              | 37'    | "        | "               | "     | "      | Manhole #18                   | 55'    | lot 63   | "                        | 51.8' |
| lot 35 | 6" S.H.C lot #36         | 37.8'  | "        | "               | "     | lot 34 | FIRE HYDRANT SPARROW COUNT    | 77.5'  | "        | 3/4" W.H.C lot 62        | 5.2'  |
| lot 36 | Manhole #15              | 145.5' | "        | "               | "     | "      | Manhole #17                   | 38'    | lot 64   | Manhole #23              | 43.3' |
| lot 37 | Manhole #12              | 238'   | "        | "               | "     | lot 35 | "                             | 37.5'  | lot 65   | "                        | 44.7' |
| "      | Manhole #13              | 92.8'  | "        | "               | "     | "      | FIRE HYDRANT SPARROW COUNT    | 117'   | "        | 3/4" W.H.C lot 64        | 4.5'  |
| lot 38 | "                        | 79.6'  | "        | "               | "     | "      | STORM DRAIN INLET (LEFT)      | 43'    | lot 66   | Manhole #24              | 25.7' |
| "      | Manhole #12              | 11.7'  | "        | "               | "     | "      | " (RIGHT)                     | 18'    | "        | Manhole #25              | 77.9' |
| lot 39 | Manhole #13              | 160.5' | "        | "               | "     | lot 36 | Blow-off SPARROW COUNT        | 84.5'  | "        | "                        | "     |
| "      | Manhole #14              | 149.8' | "        | "               | "     | "      | 3/4" W.H.C lot 38             | 101.5' | "        | "                        | "     |
| lot 40 | "                        | 135.7' | "        | "               | "     | lot 37 | Blow-off SPARROW COUNT        | 22.9'  | "        | "                        | "     |
| lot 40 | Manhole #15              | 24.8'  | "        | "               | "     | "      | 3/4" W.H.C lot 38             | 10'    | "        | "                        | "     |
| lot 41 | Manhole #17              | 65'    | "        | "               | "     | lot 38 | Blow-off SPARROW COUNT        | 29'    | "        | "                        | "     |
| "      | Manhole #18              | 23'    | "        | "               | "     | "      | 3/4" W.H.C lot 39             | 52.5'  | "        | "                        | "     |
| lot 42 | "                        | 80'    | "        | "               | "     | lot 39 | Blow-off SPARROW COUNT        | 73'    | "        | "                        | "     |
| "      | Manhole #17              | 139.5' | "        | "               | "     | "      | 3/4" W.H.C lot 36             | 102.8' | "        | "                        | "     |
| lot 43 | Manhole #19              | 119'   | "        | "               | "     | lot 40 | Blow-off SPARROW COUNT        | 75.8'  | "        | "                        | "     |
| lot 43 | 6" S.H.C lot 44          | 116.8' | "        | "               | "     | "      | 3/4" W.H.C lot 36             | 100.6' | "        | "                        | "     |
| lot 44 | 3/4" W.H.C lot 43        | 87.8'  | "        | "               | "     | lot 41 | Manhole #17                   | 97'    | "        | "                        | "     |
| "      | Manhole #19              | 18'    | "        | "               | "     | "      | FIRE HYDRANT SPARROW COUNT    | 70'    | "        | "                        | "     |
| lot 45 | STORM DRAIN INLET        | 14.2'  | "        | "               | "     | "      | Manhole #18                   | 39'    | "        | "                        | "     |
| "      | 6" S.H.C lot 46          | 5.9'   | "        | "               | "     | lot 42 | "                             | 87'    | "        | "                        | "     |
| lot 46 | STORM DRAIN INLET        | 17.4'  | "        | "               | "     | "      | 3/4" W.H.C lot 41             | 50.3'  | "        | "                        | "     |
| "      | EXISTING MANHOLE #2      | 21.6'  | "        | "               | "     | lot 43 | Manhole #19                   | 106'   | "        | "                        | "     |
| lot 47 | FIRE HYDRANT GUGEL DRIVE | 109.8' | "        | "               | "     | "      | 3/4" W.H.C lot 42             | 101'   | "        | "                        | "     |
| "      | Manhole #21              | 99.8'  | "        | "               | "     | lot 44 | Manhole #22                   | 121.5' | "        | "                        | "     |
| lot 48 | Manhole #20              | 58.6'  | "        | "               | "     | lot 45 | STORM DRAIN INLET GUGEL DRIVE | 7.6'   | "        | "                        | "     |
| "      | 6" S.H.C lot 49          | 5.8'   | "        | "               | "     | "      | 3/4" W.H.C lot 46             | 37.9'  | "        | "                        | "     |
| lot 49 | Manhole #20              | 58.1'  | "        | "               | "     | lot 46 | STORM DRAIN INLET GUGEL DRIVE | 25.6'  | "        | "                        | "     |
| "      | 6" S.H.C lot 50          | 80.6'  | "        | "               | "     | "      | EXISTING MANHOLE #2           | 9.9'   | "        | "                        | "     |
| lot 50 | Manhole #20              | 47.5'  | "        | "               | "     | lot 47 | FIRE HYDRANT GUGEL DRIVE      | 96.6'  | "        | "                        | "     |
| "      | 6" S.H.C lot 51          | 6.5'   | "        | "               | "     | "      | Manhole #21                   | 58.1'  | "        | "                        | "     |
| lot 51 | Manhole #20              | 47.7'  | "        | "               | "     | lot 48 | Manhole #20                   | 58.3'  | "        | "                        | "     |
| "      | 6" S.H.C lot 52          | 85.4'  | "        | "               | "     | "      | 3/4" W.H.C lot 47             | 83.3'  | "        | "                        | "     |
| lot 52 | Manhole #20              | 54.1'  | "        | "               | "     | lot 49 | Manhole #20                   | 58.9'  | "        | "                        | "     |
| lot 53 | Manhole #22              | 86.5'  | "        | "               | "     | "      | 3/4" W.H.C lot 50             | 22.2'  | "        | "                        | "     |
| "      | FIRE HYDRANT GUGEL DRIVE | 69.9'  | "        | "               | "     | lot 50 | Manhole #20                   | 52.8'  | "        | "                        | "     |
| lot 54 | Manhole #27              | 82.4'  | "        | "               | "     | "      | 3/4" W.H.C lot 51             | 75.9'  | "        | "                        | "     |
| "      | 6" S.H.C lot 55          | 71.4'  | "        | "               | "     | lot 51 | Manhole #20                   | 43.1'  | "        | "                        | "     |
| lot 55 | Manhole #27              | 15.9'  | "        | "               | "     | "      | 3/4" W.H.C lot 52             | 75.9'  | "        | "                        | "     |
| "      | Manhole #28              | 106.6' | "        | "               | "     | lot 52 | Manhole #20                   | 45.1'  | "        | "                        | "     |
| lot 56 | FIRE HYDRANT GUGEL DRIVE | 25.3'  | "        | "               | "     | "      | 3/4" W.H.C lot 51             | 48'    | "        | "                        | "     |
| "      | Manhole #25              | 95.7'  | "        | "               | "     | lot 53 | Manhole #21                   | 47.1'  | "        | "                        | "     |
| lot 57 | Manhole #26              | 90.9'  | "        | "               | "     | "      | FIRE HYDRANT GUGEL DRIVE      | 61.1'  | "        | "                        | "     |
| "      | Manhole #28              | 54.1'  | "        | "               | "     | "      | STORM DRAIN HAWK COUNT (LEFT) | 27.7'  | "        | "                        | "     |
| lot 58 | "                        | 66.7'  | "        | "               | "     | lot 54 | EXISTING MANHOLE #211         | 17.7'  | "        | "                        | "     |
| "      | Manhole #26              | 78.2'  | "        | "               | "     | "      | 3/4" W.H.C lot 55             | 5.9'   | "        | "                        | "     |
| lot 59 | Manhole #24              | 39.1'  | "        | "               | "     | lot 55 | EXISTING MANHOLE #211         | 2.4'   | "        | "                        | "     |
| "      | 6" S.H.C lot #60         | 5.5'   | "        | "               | "     | "      | FIRE HYDRANT GUGEL DRIVE      | 98.9'  | "        | "                        | "     |
| lot 60 | Manhole #24              | 43.2'  | "        | "               | "     | "      | 3/4" W.H.C lot 56             | 30.9'  | "        | "                        | "     |
| lot 61 | Manhole #23              | 59.9'  | "        | "               | "     | lot 56 | EXISTING MANHOLE #211         | 54.7'  | "        | "                        | "     |
| "      | 6" S.H.C lot 63          | 81.2'  | "        | "               | "     | "      | FIRE HYDRANT GUGEL DRIVE      | 67.5'  | "        | "                        | "     |
| lot 62 | Manhole #23              | 60.3'  | "        | "               | "     | lot 57 | Manhole #25                   | 74.7'  | "        | "                        | "     |
| "      | 6" S.H.C lot 61          | 7.1'   | "        | "               | "     | "      | Manhole #26                   | 85.2'  | "        | "                        | "     |

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DATE \_\_\_\_\_ CHIEF, BUREAU OF ENGINEERING DATE \_\_\_\_\_

|       |    |     |          |
|-------|----|-----|----------|
| DES:  |    |     |          |
| DRN:  |    |     |          |
| CHK:  |    |     |          |
| DATE: | BY | NO. | REVISION |

AS BUILT  
SEWER & WATER

MCKENZIE MEADOWS  
SECTION TWO - PHASE - I  
CONTRACT NO. 24-1655-D

KATHY WILSON

02-01-88

SCALE  
AS  
SHOWN

SHEET  
2 OF 11