

Reviewed for Howard County S.C.D. and meets technical requirements.

James M. Hahn Date: 10-1-84
U.S. SOIL CONSERVATION SERVICE

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

Approved: *Stephen L. Hahn* Date: 10-1-84
HOWARD COUNTY S.C.D.

ENGINEER'S CERTIFICATION

I 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 was prepared in accordance with the requirements of the Howard County Soil Conservation District.

John E. Harms, Jr. Date: 12/7/84
JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5 PASADENA, MD. 21122

DEVELOPER'S CERTIFICATION

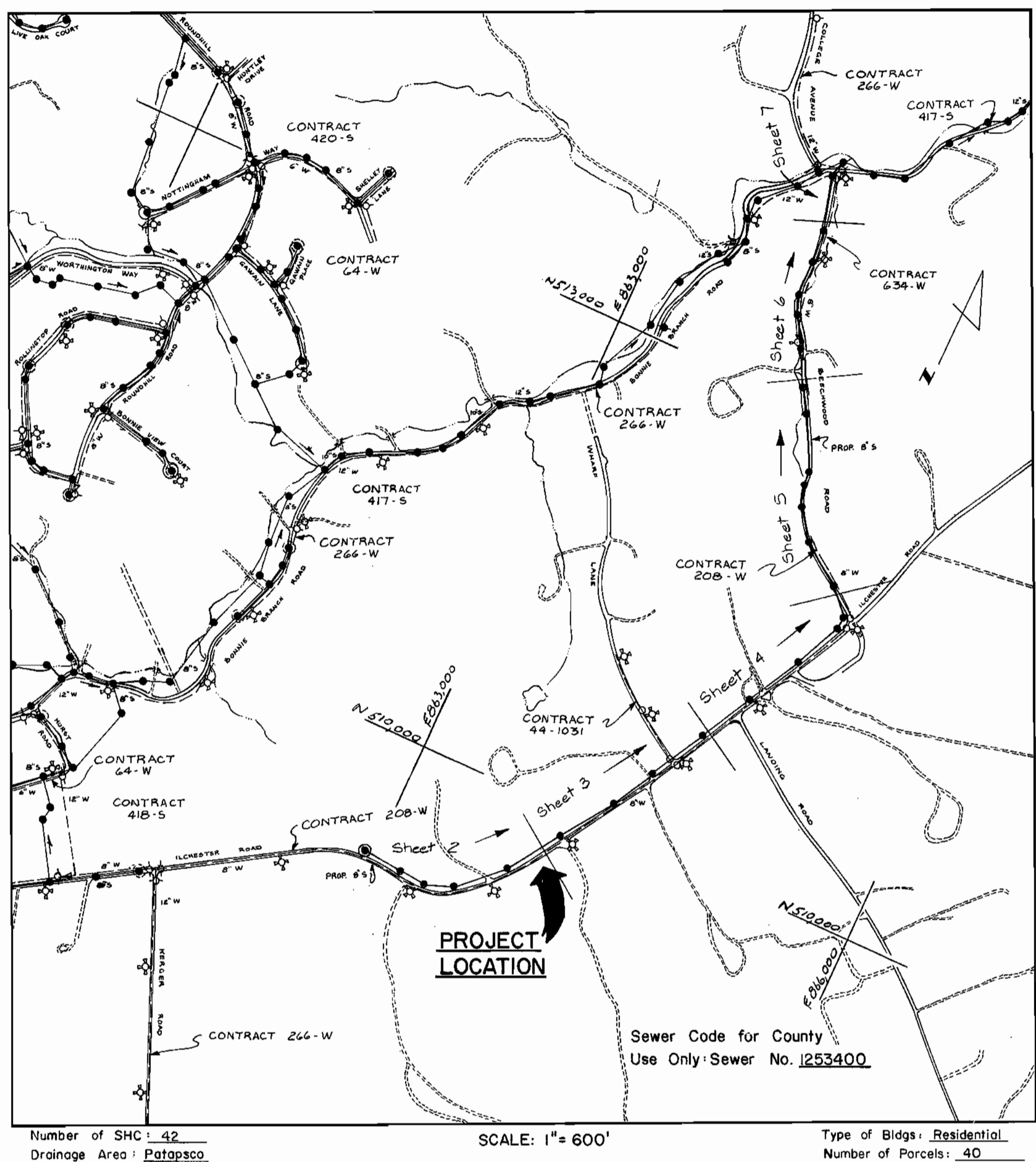
"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."

William S. Ryan 12-10-84
BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

| QUANTITIES | | | |
|--------------------|-----------|----------|-------------------|
| ITEM | ESTIMATE | AS-BUILT | MATERIAL/SUPPLIER |
| 6" Sewers | 552 | | |
| 8" Sewers | 6763 L.F. | | |
| Manholes | 26 Ea. | | |
| Type B Drop. Conn. | 4 | | |

LIST OF DRAWINGS

| SHEET | TITLE |
|-------|---|
| 1 | Location Map |
| 2 | Piping Profile - Sta. 53 + 55 to Sta. 67 + 63 |
| 3 | Piping Profile - Sta. 42 + 37 to Sta. 55 + 55 |
| 4 | Piping Profile - Sta. 28 + 26 to Sta. 42 + 37 |
| 5 | Piping Profile - Sta. 16 + 37 to Sta. 28 + 26 |
| 6 | Piping Profile - Sta. 4 + 40 to Sta. 16 + 37 |
| 7 | Piping Profile - Sta. 0 + 00 to Sta. 4 + 40 |



- 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 Contractors 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 utilities 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 damage 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. 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 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. Under Ground 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 Dept. 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 sewer main shall be C.S.P.X., 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.
 - Sediment control shall be implemented in accordance with Article 15 of the Howard County Design Manual and the 1983 STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.

CAPITAL PROJECT S-6089

CONTRACT NO. 10-1214

ILCHESTER ROAD COLLECTION SYSTEM

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CONTRACT NO. 10-1214
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY CAPITAL PROJECT S-6089

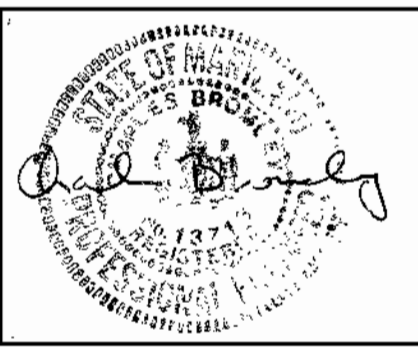
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

W. F. Nunn 12-11-84
DIRECTOR OF PUBLIC WORKS

William S. Ryan 12-10-84
CHIEF, BUREAU OF ENGINEERING

James L. Hahn 12-17-84
CHIEF, BUREAU OF UTILITIES

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND



| | | | |
|----------------|-----|------|-----------|
| DES: C.B. | | | |
| DRN: C.M. | | | |
| CHK: C.B. | | | |
| DATE: 11/30/84 | BY: | NO.: | REVISION: |

LOCATION MAP
ILCHESTER ROAD COLLECTION SYSTEM
ELECTION DISTRICT NO. 1

600' SCALE MAP NO. 31 BLOCK NO. 4, 10, 15, 16

AS BUILT 5-6-86

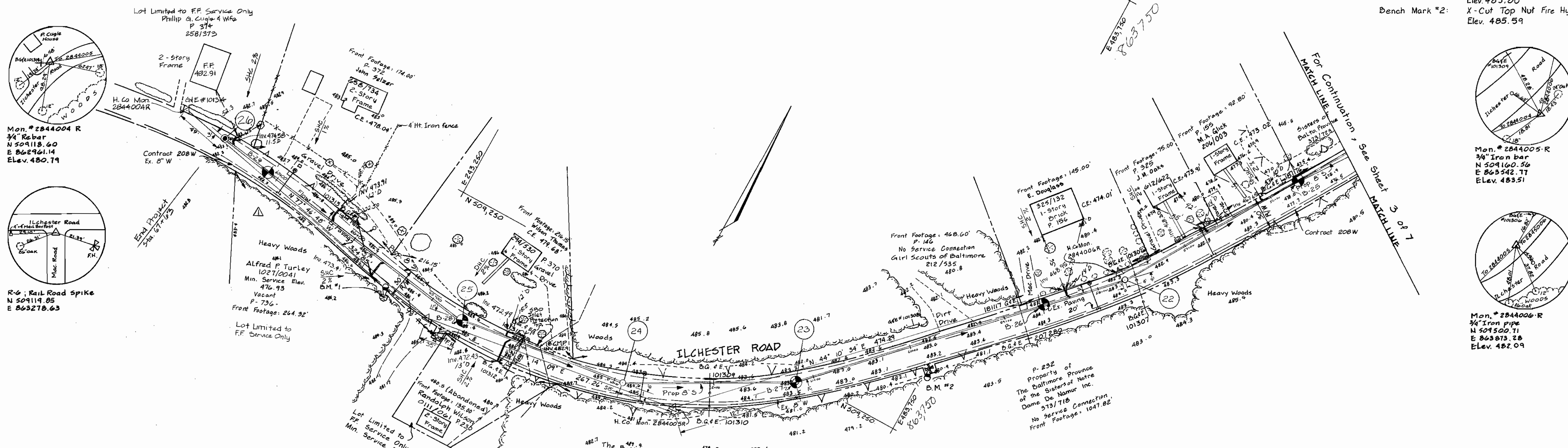
ILCHESTER ROAD COLLECTION SYSTEM

HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1214

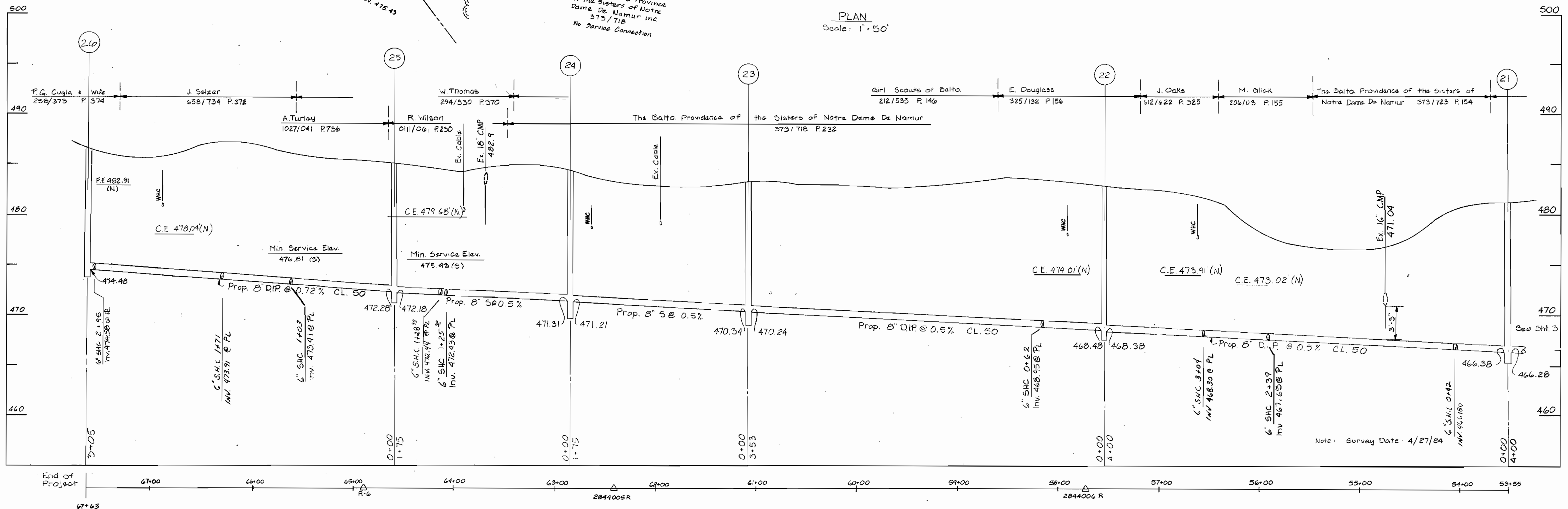
SCALE AS SHOWN

SHEET 1 OF 7

Bench Mark #1: Cut Nail in 12" Oak
Elev. 485.80
Bench Mark #2: X-Cut Top Nut Fire Hydrant
Elev. 485.59



PLAN
Scale: 1" = 50'

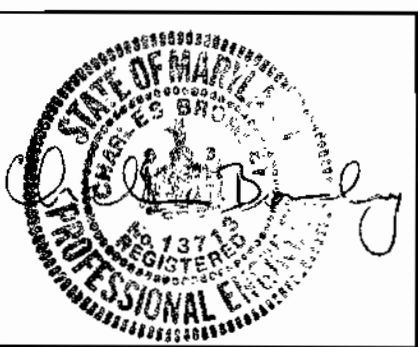


PROFILE
Scale Hor. 1" = 50'
Vert. 1" = 5'

CONTRACT NO. 10-1214
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
12-17-84
12-13-84

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CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

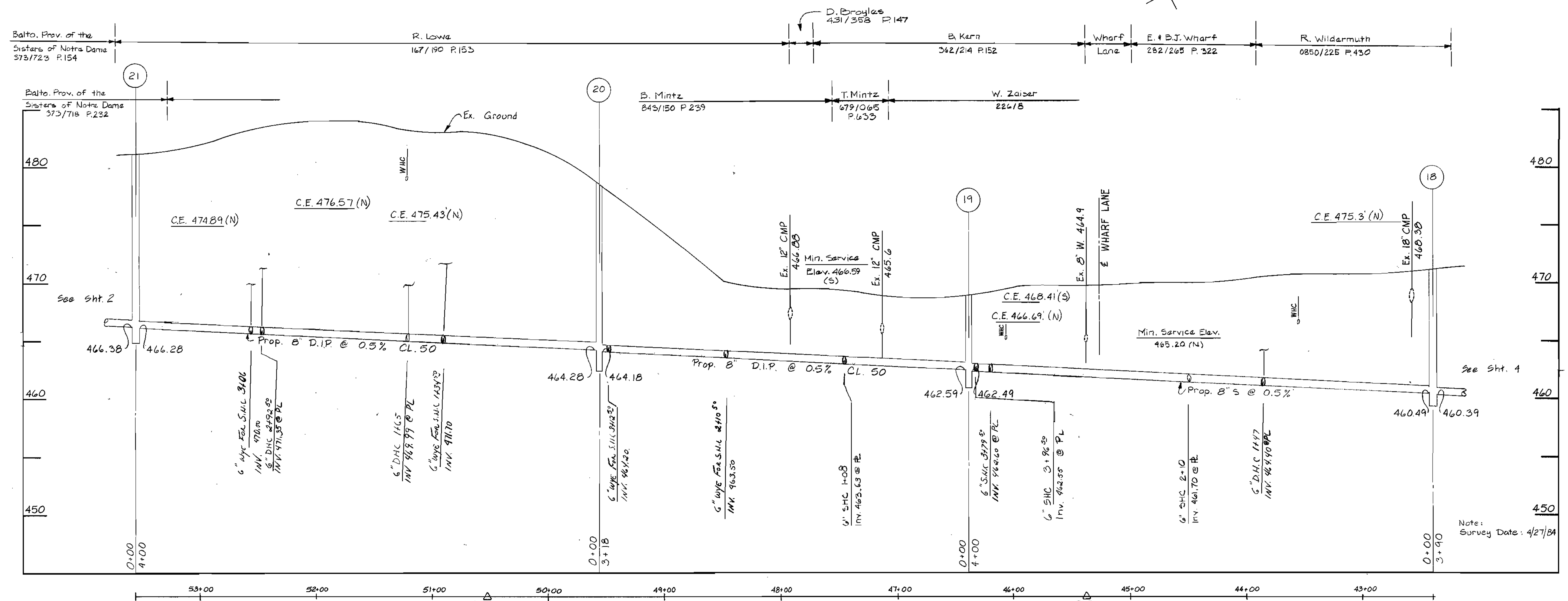
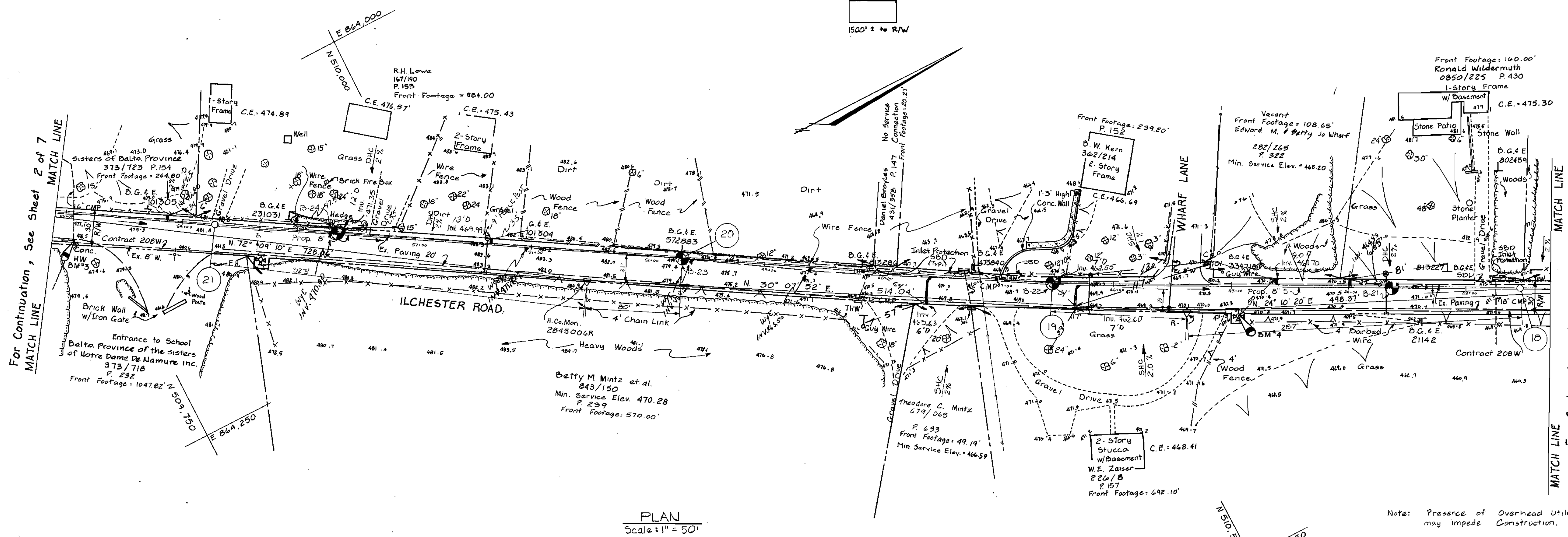


| | | | |
|----------------|--------|--|--------|
| DES: C.B. | LAF | Revision of Sewer Between MH 25 & MH 26, Additional Topography. | 2-8-85 |
| DRN: C.M. | | | |
| CHK: C.B. | | | |
| DATE: 11/30/84 | BY NO. | REVISION | DATE |

PIPING PROFILE
ILCHESTER ROAD COLLECTION SYSTEM
STA. 53+55 TO STA. 67+08
600' SCALE MAP NO. 31 BLOCK NO. 15, 16

AS BUILT 5-6-86
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1214
SCALE AS SHOWN
SHEET 2 OF 7

Bench Mark #3: D-Cut E End Conc. H.W.
Elev. 475.75
Bench Mark #4: Top Nut Fire Hydrant
Elev. 472.94



CONTRACT NO. 10-1214
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY CAPITAL PROJECT S-6089

AS BUILTS 5-6-84

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HOWARD COUNTY, MARYLAND

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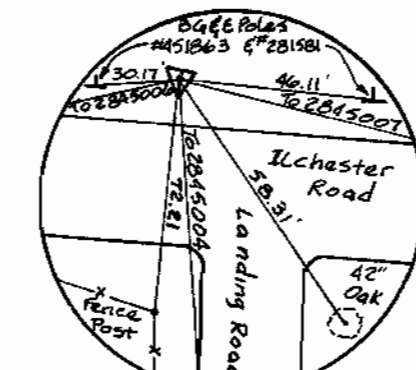
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| DES: C.B. | |
| DRN: C.M. | |
| CHK: C.B. | |
| DATE: 11/30/84 | |
| BY: NO. | |
| REVISION | |
| DATE | |

PIPING PROFILE
ILCHESTER ROAD COLLECTION SYSTEM
STA. 42+37 TO STA. 53+55
600' SCALE MAP NO. 31 BLOCK NO. 10.15

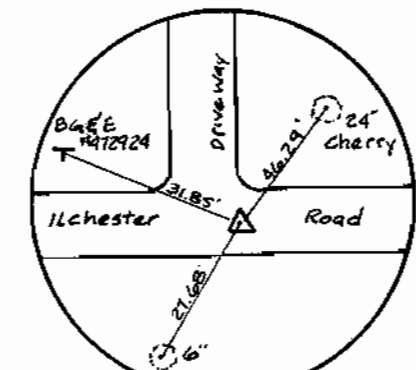
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1214

SCALE AS SHOWN
SHEET 3 OF 7

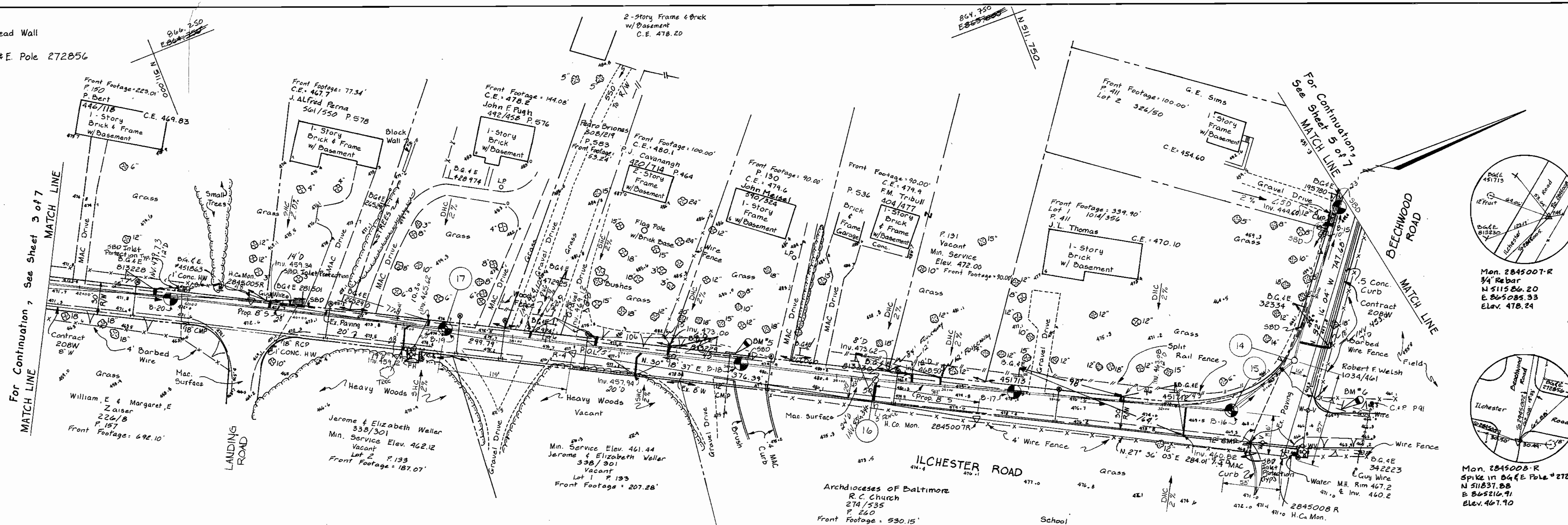
Bench Mark *5 : □-Cut in Conc. Head Wall
Elev. 479.21
Bench Mark *6 : RR Spike in G.&E. Pole 272856
Elev. 466.22



Mon. 2845005-R
3/4" Iron Pipe
N 511002.47
E 864744.09
Elev. 471.46

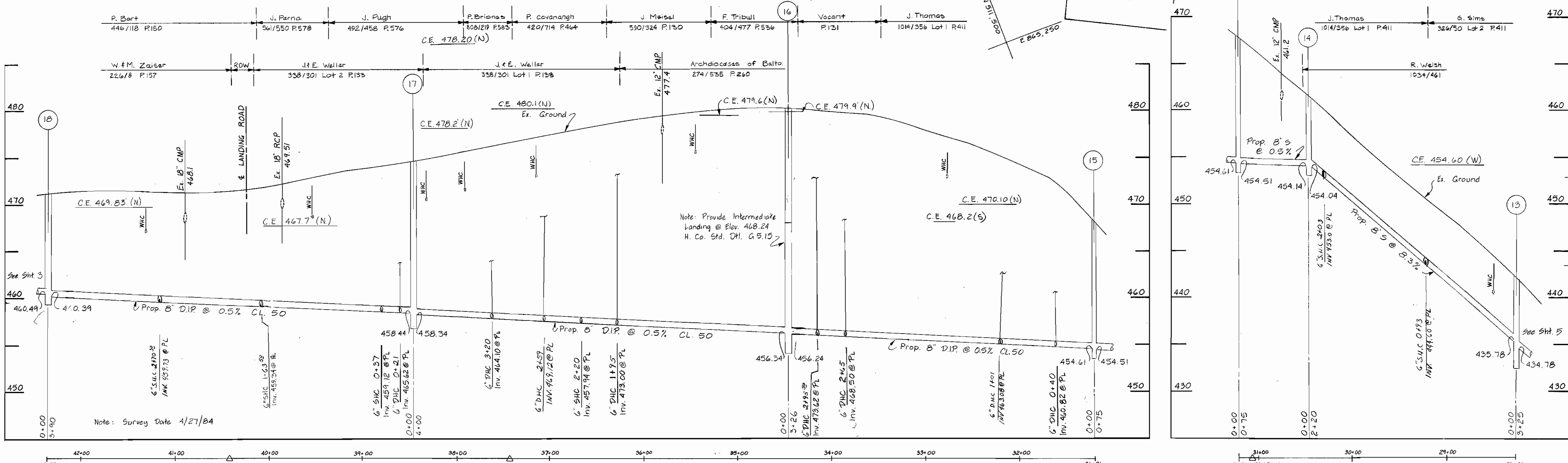


R-4; Pol.
N 511001.28
E 864895.38



PLAN
Scale: 1" = 50'

Note: Presence of Overhead Utility Lines may impede Construction.



PROFILE
Scale: Hor. 1" = 50'
Vert. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works
Date: 12-17-84

Chief, Bureau of Engineering
Date: 12/17/84

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND



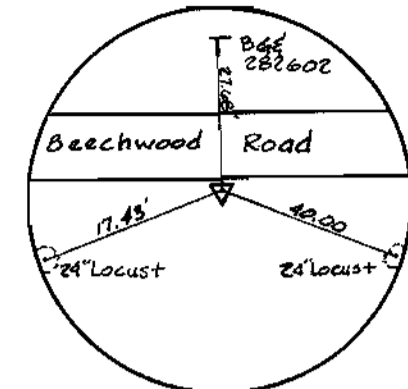
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| DES: C.B. | |
| DRN: C.M. | |
| CHK: C.B. | |
| DATE: 11/30/84 | BY: NO. REVISION DATE |

PIPING PROFILE
ILCHESTER ROAD COLLECTION SYSTEM
STA. 28+26 TO STA. 42+37
600' SCALE MAP NO. 31 BLOCK NO. 10

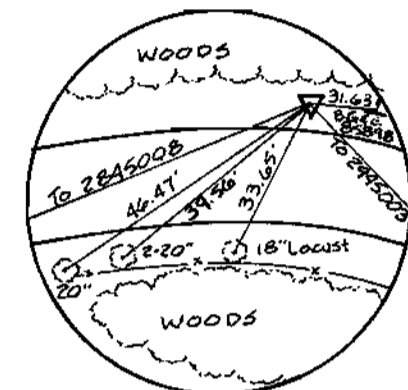
CONTRACT NO. 10-1214
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1214

SCALE AS SHOWN
SHEET 4 OF 7

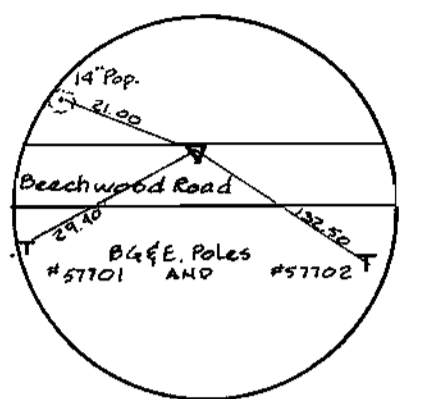
- Bench Mark #7: Cut Nail in G. & E. Pole 282602 Elev. 436.30
- Bench Mark #8: O-Cut Cor. Catch Basin Elev. 415.64
- Bench Mark #9: Cut Nail in G. & E. Pole 85898 Elev. 396.56
- Bench Mark #10: Cut Nail in G. & E. Pole 57701 Elev. 375.12
- Bench Mark #11: Cut Nail in 22" Sycamore Elev. 362.75



R-3; 3/4" Pipe P.O.L.
N 512089.49
E 864891.75

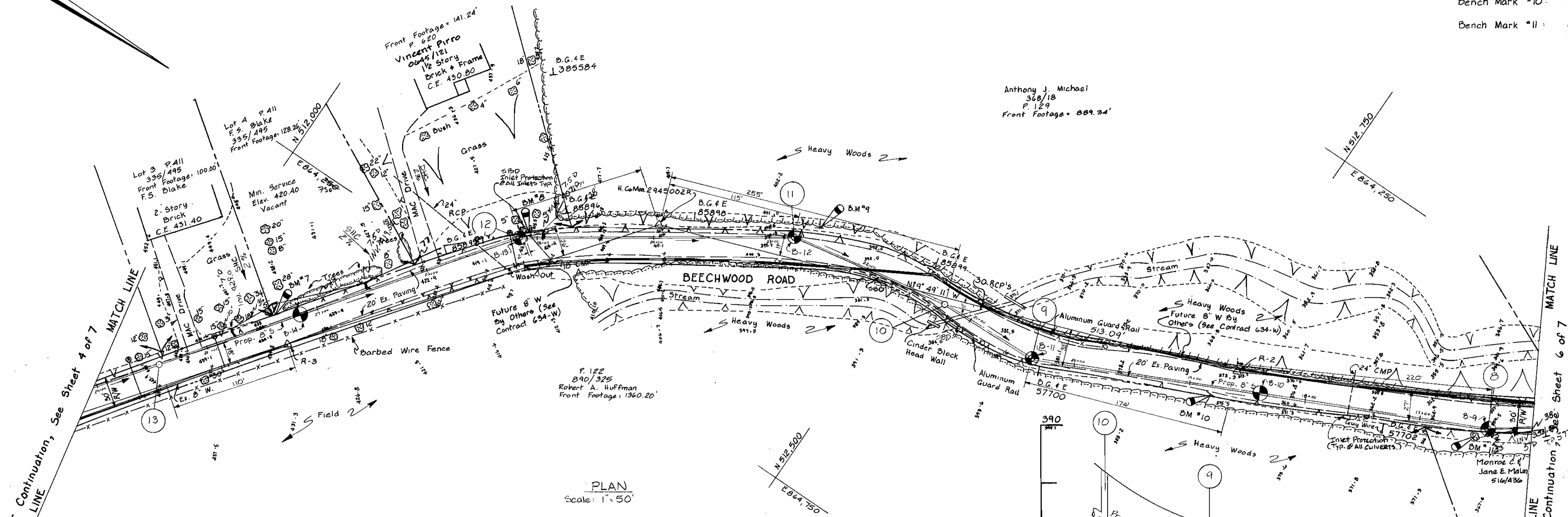


Mon. 2945002 R
3/4" Iron Rebar
N 512295.40
E 864895.64
Elev. 426.62

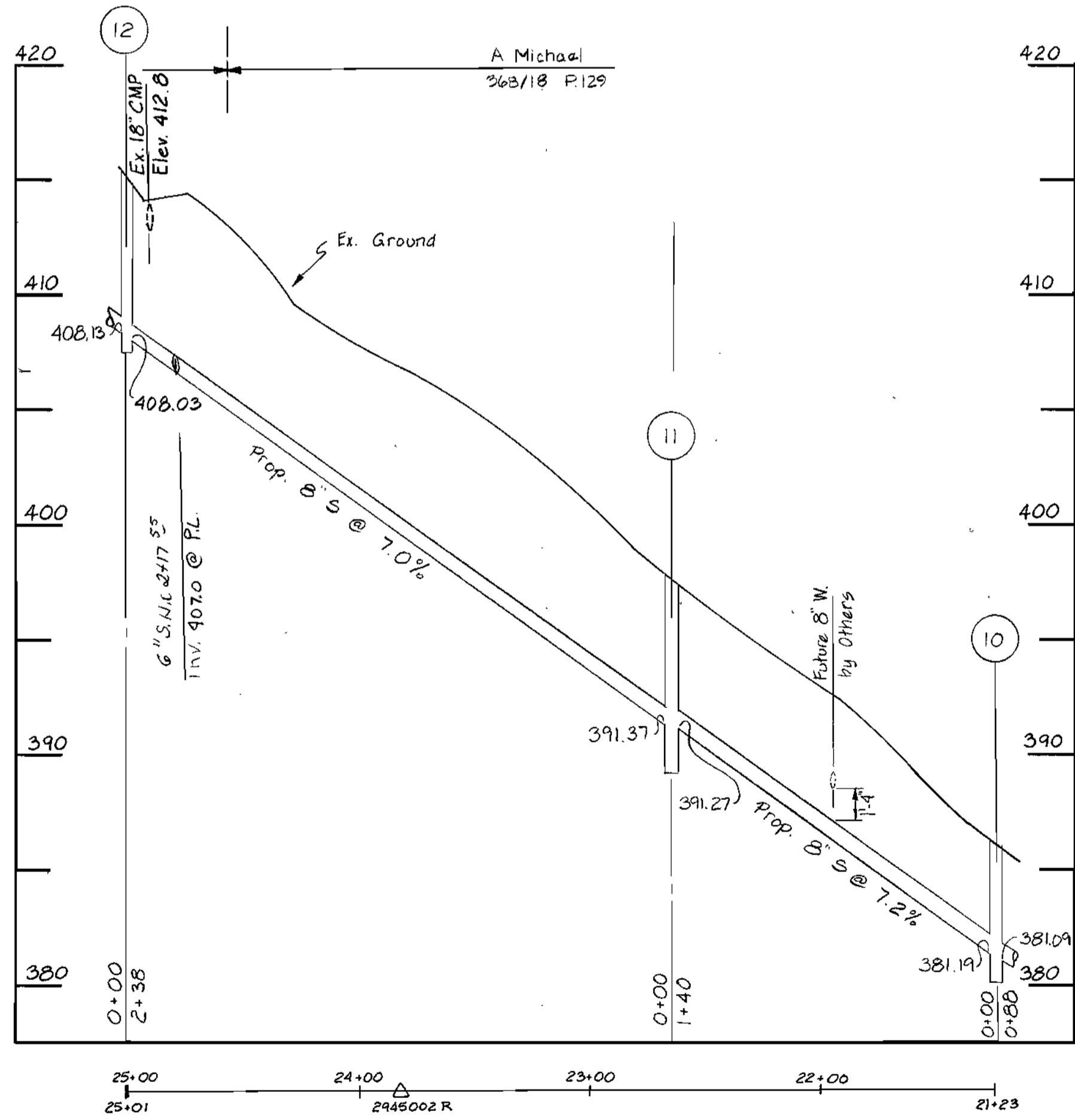
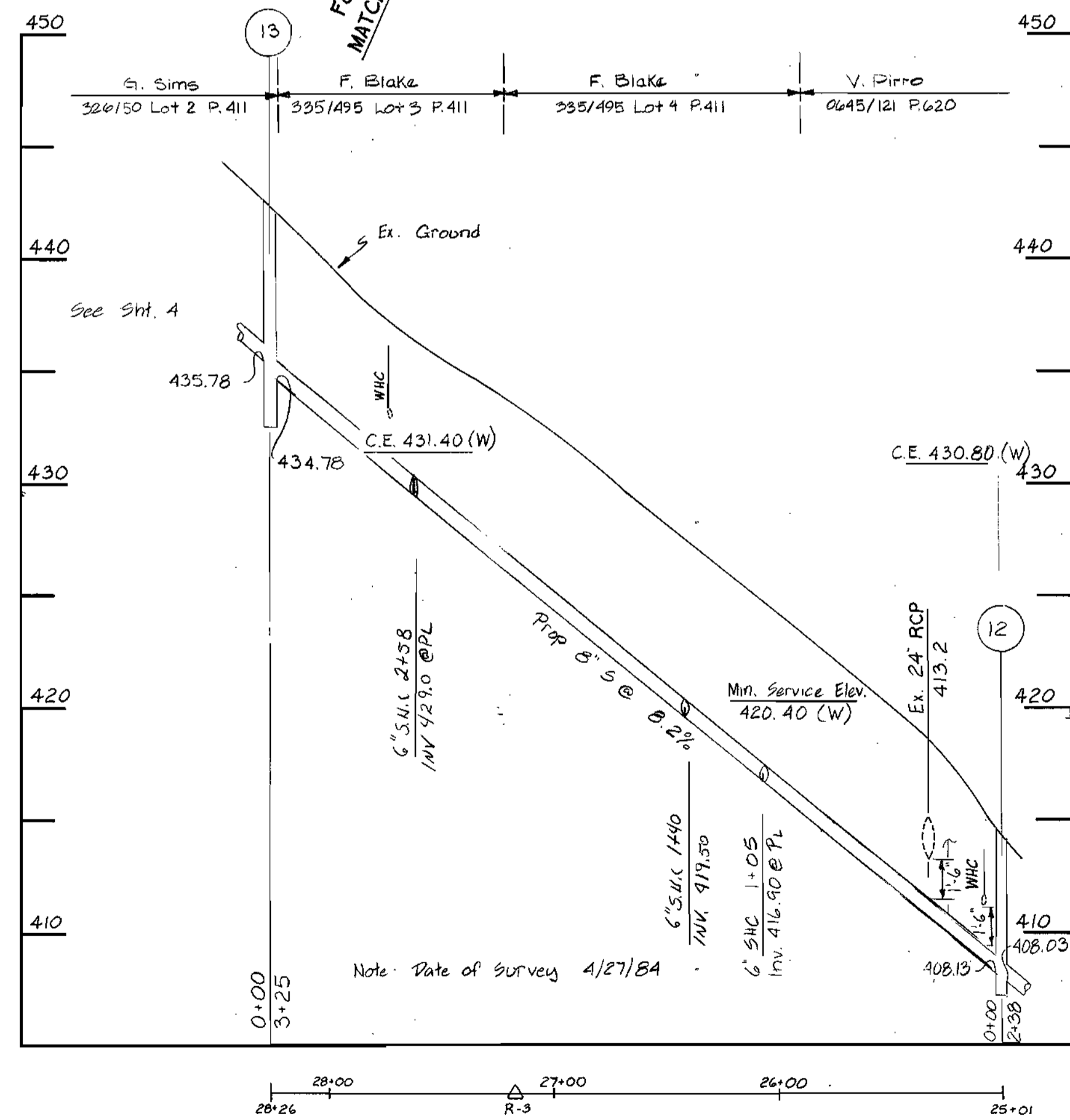


R-2; PK Nail
N 512718.10
E 864951.67

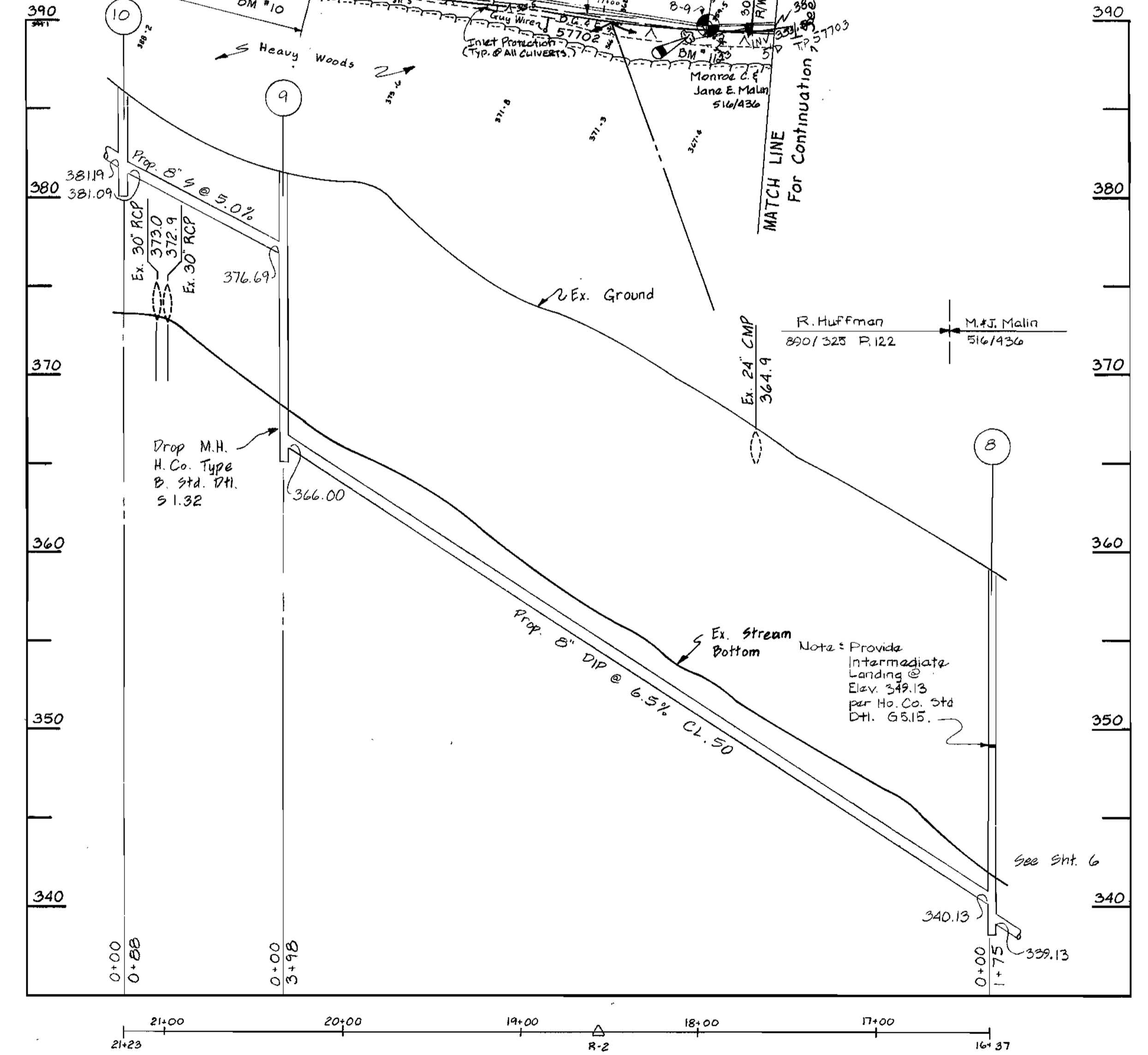
Note: Presence of Overhead Utility Lines may impede Construction



PLAN
Scale: 1" = 50'



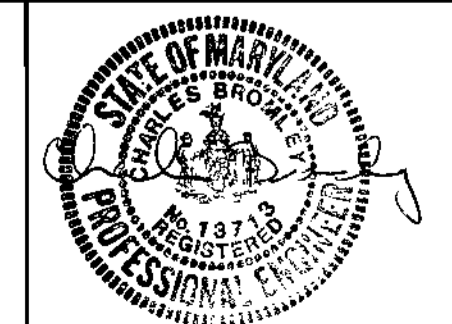
PROFILE
Scale: Hor. 1" = 50'
Vert. 1" = 5'



CONTRACT NO. 10-1214
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: Robert M. Benjamin
Chief, Bureau of Engineering: [Signature]
Date: 12-13-84

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND



| | |
|----------------|----------|
| DES: C.B. | |
| DRN: C.M. | |
| CHK: | |
| DATE: 11/30/84 | |
| BY: NO. | REVISION |
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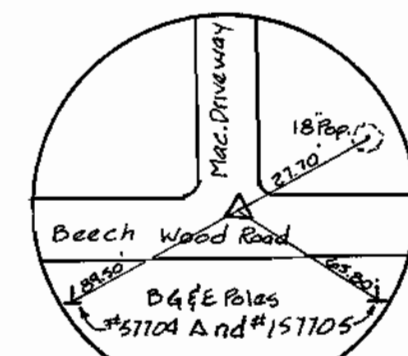
PIPING PROFILE
ILCHESTER ROAD COLLECTION SYSTEM
STA. 16+37 TO STA. 28+26
600' SCALE MAP NO. 31 BLOCK NO. 10

AS BUILT 5-6-86
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1214

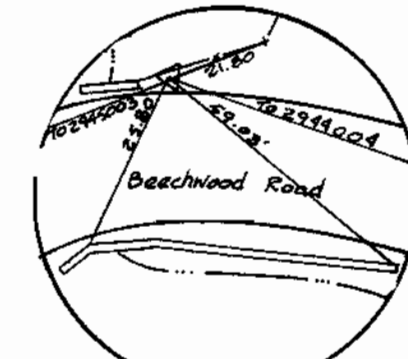
SCALE AS SHOWN
SHEET 5 OF 7

Bench Mark #12: Cut Nail in 15" Pop.
Elev. 343.18
Bench Mark #13: Cut Nail in G&E Pole 57707
Elev. 323.63
Bench Mark #14: Spike in B&E Pole #97226
Elev. 312.27

Note: Existing 20' Access
& Utility Easement provided
for A.S. Donoff & M.A. Donnelly
Property 1166/615. See Plat #5750,
Ho. Co. Land Records.



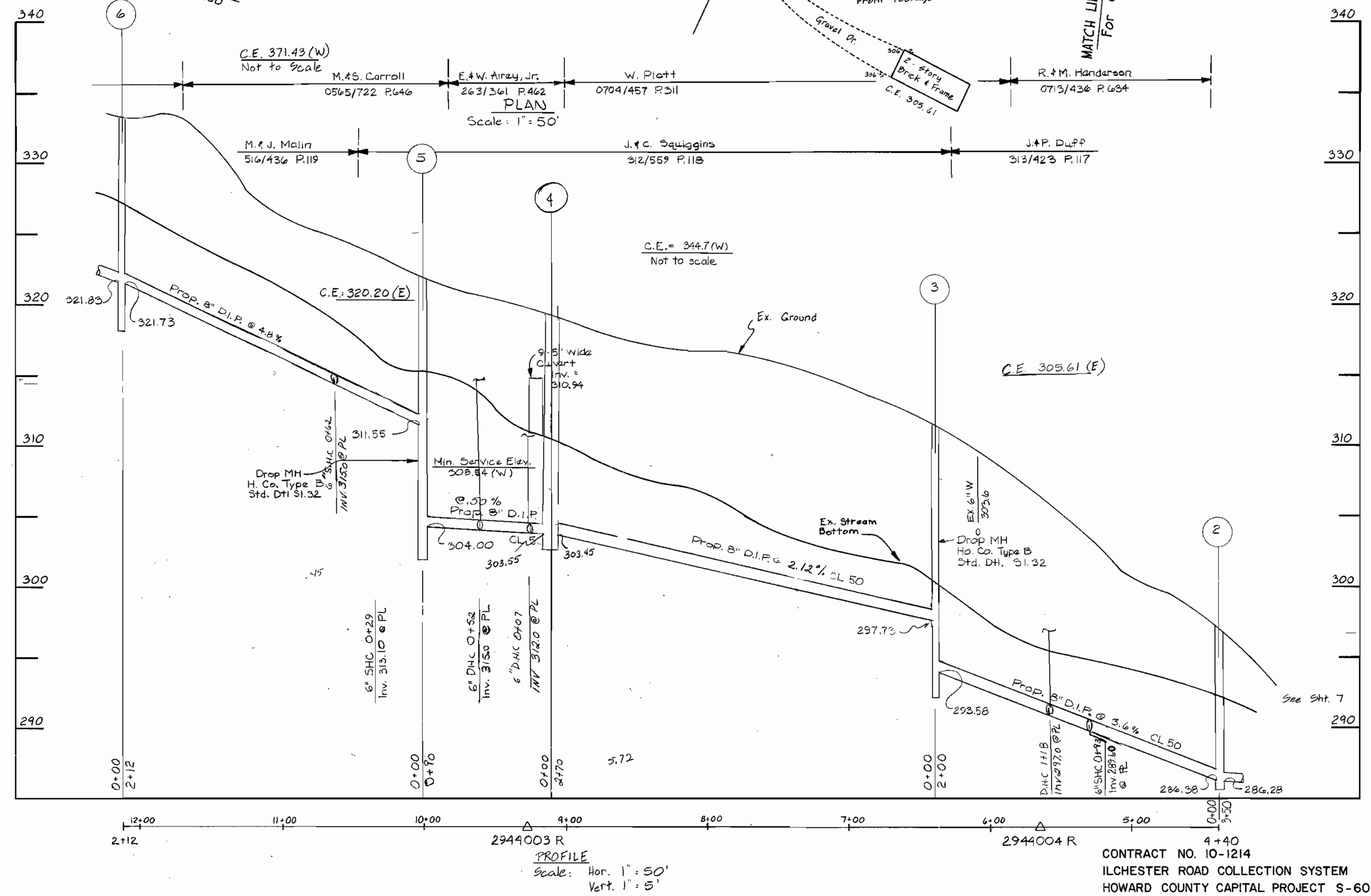
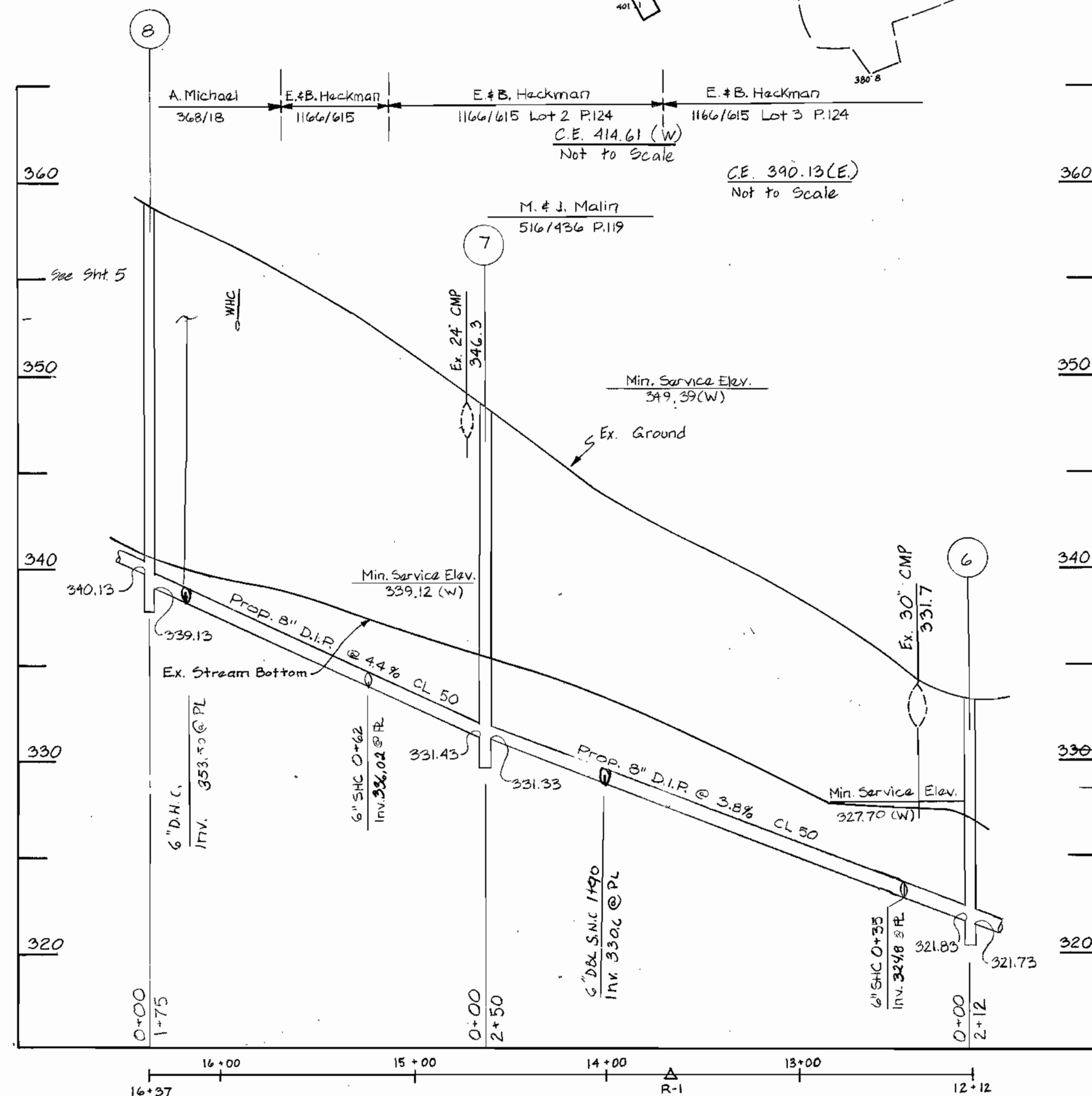
R-1; PK Nail
N 513202.16
E 864217.28



Mon. 2944003-R
3/4" Iron Rebar
N 513595.20
E 864004.76
Elev. 318.74

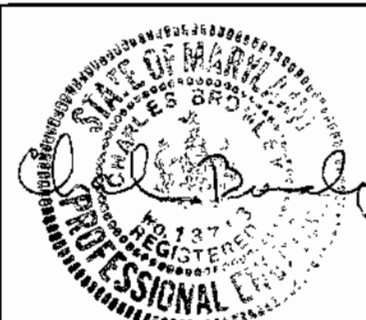
For Continuation, See Sheet 5 of 7
MATCH LINE

MATCH LINE
For Continuation, See Sheet 7 of 7



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND



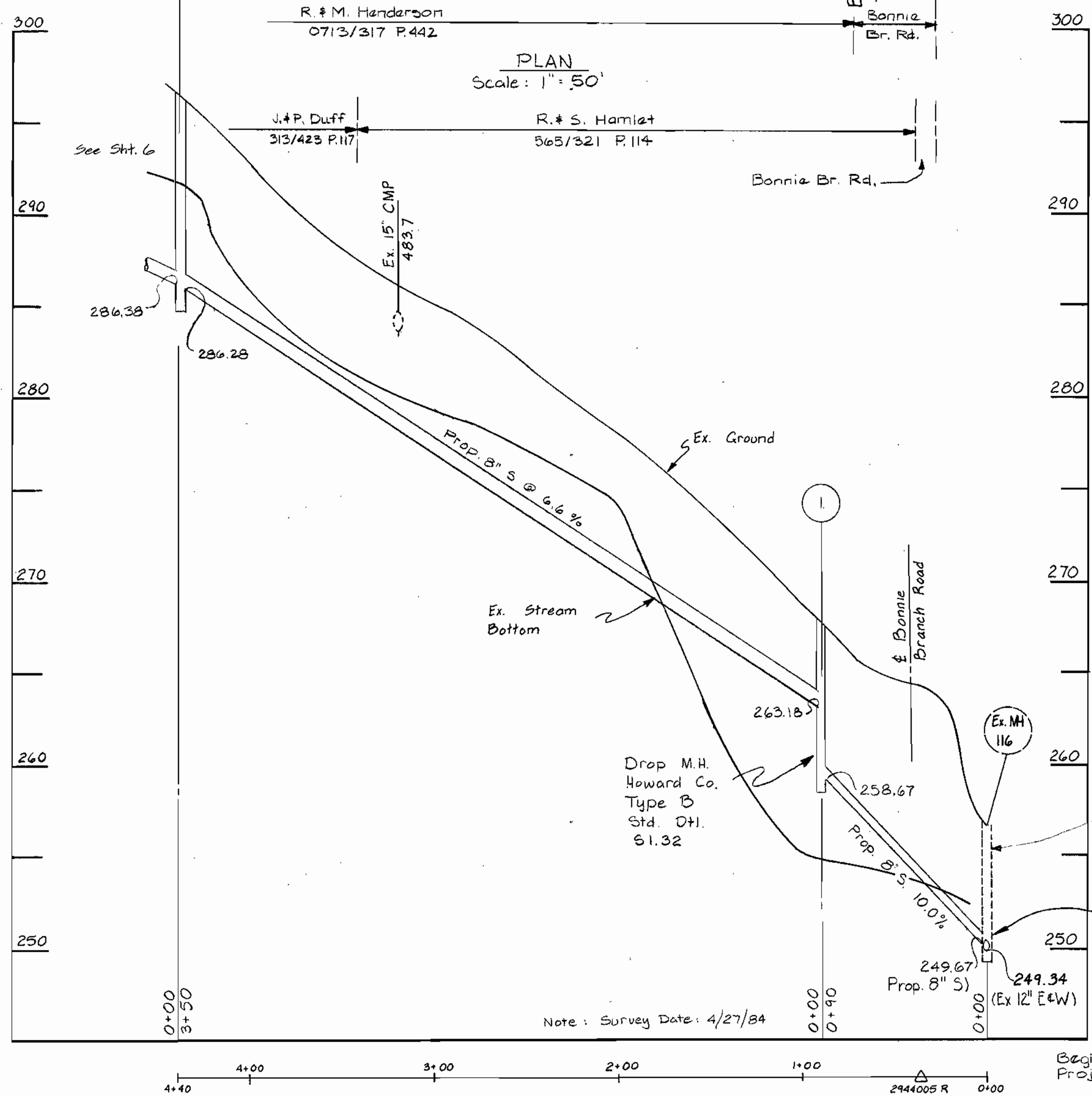
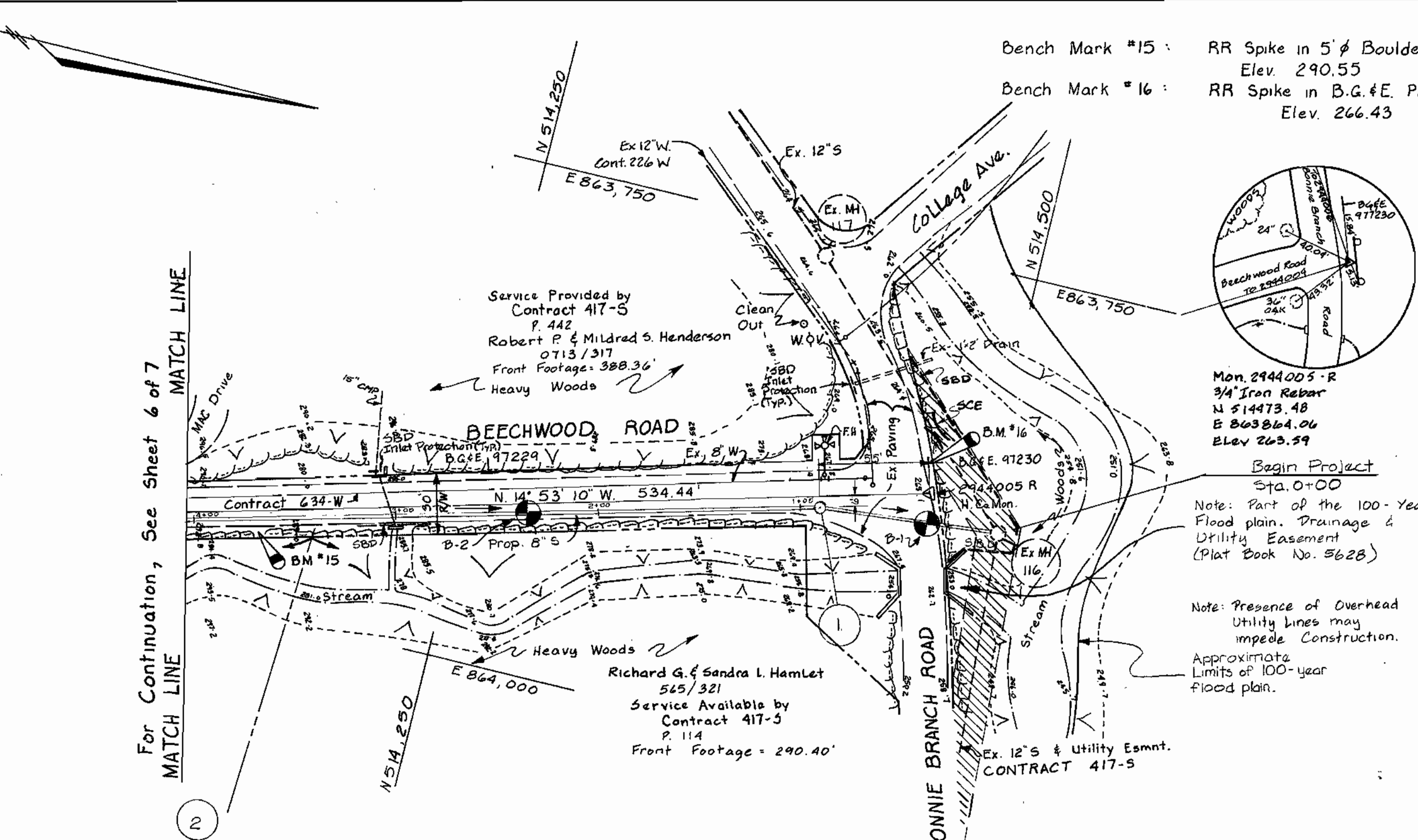
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| DES: C.B. | |
| DRN: C.M. | |
| CHK: C.B. | |
| DATE: 11/30/84 | BY: NO. REVISION |

PIPING PROFILE
ILCHESTER ROAD COLLECTION SYSTEM
STA. 4+40 TO STA. 16+37

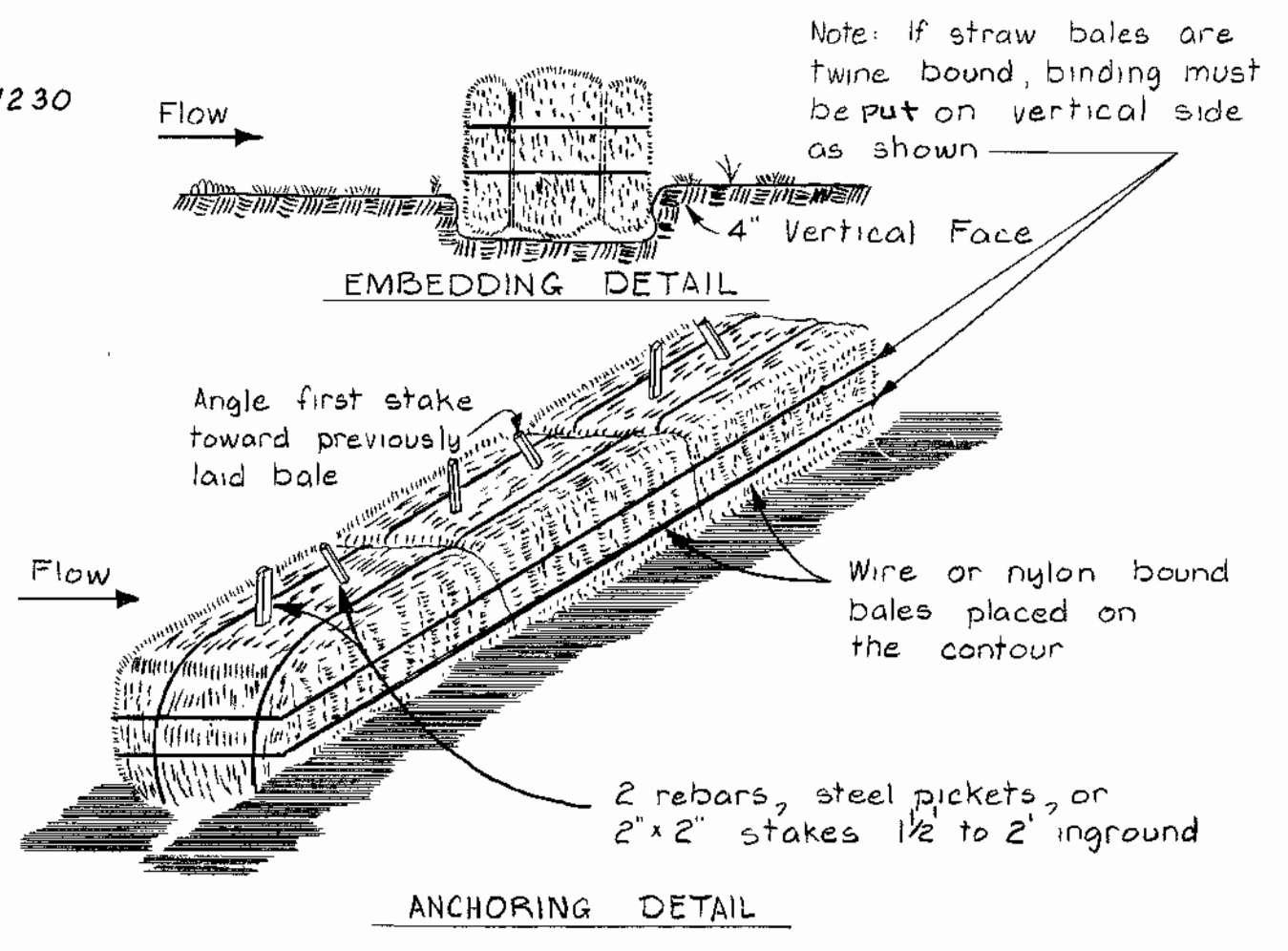
AS BUILT 5-6-86
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1214

SCALE AS SHOWN
SHEET 6 OF 7

Bench Mark #15: RR Spike in 5' x 6' Boulder
Elev. 290.55
Bench Mark #16: RR Spike in B.G. Pole 97230
Elev. 266.43

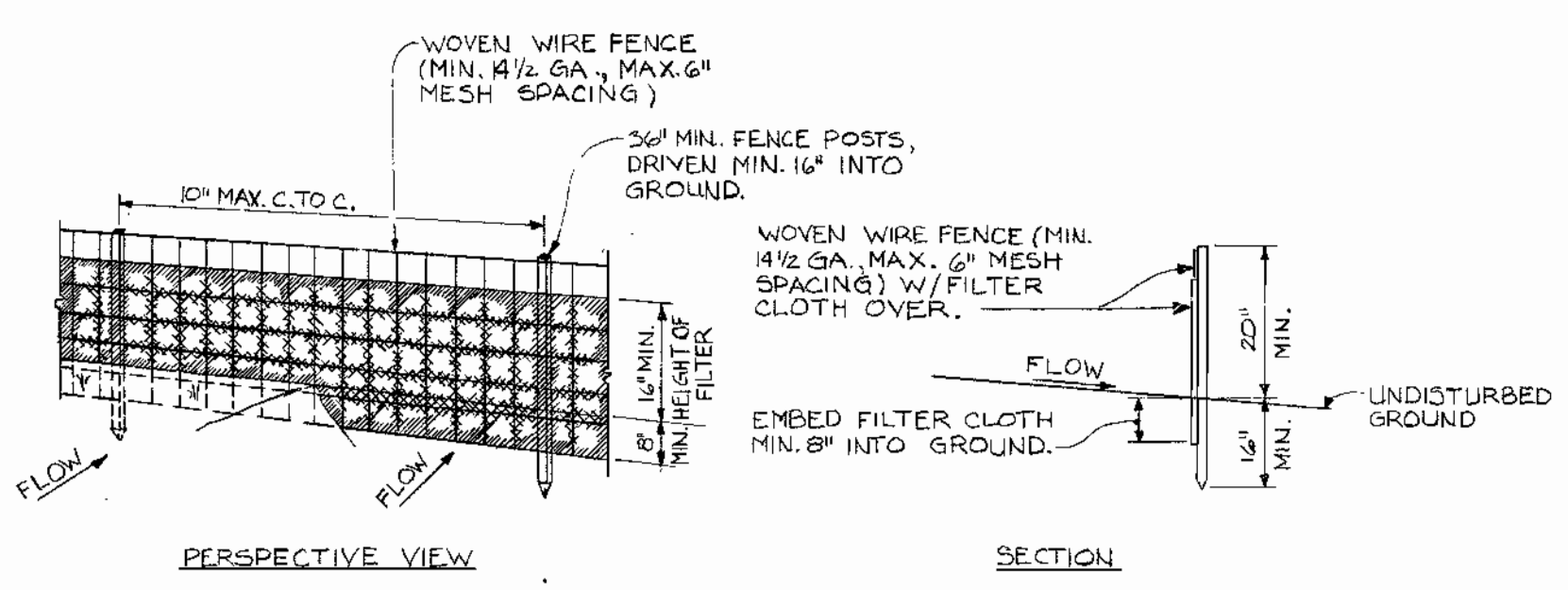


PROFILE
Scale: Hor. 1" = 50'
Vert. 1" = 5'



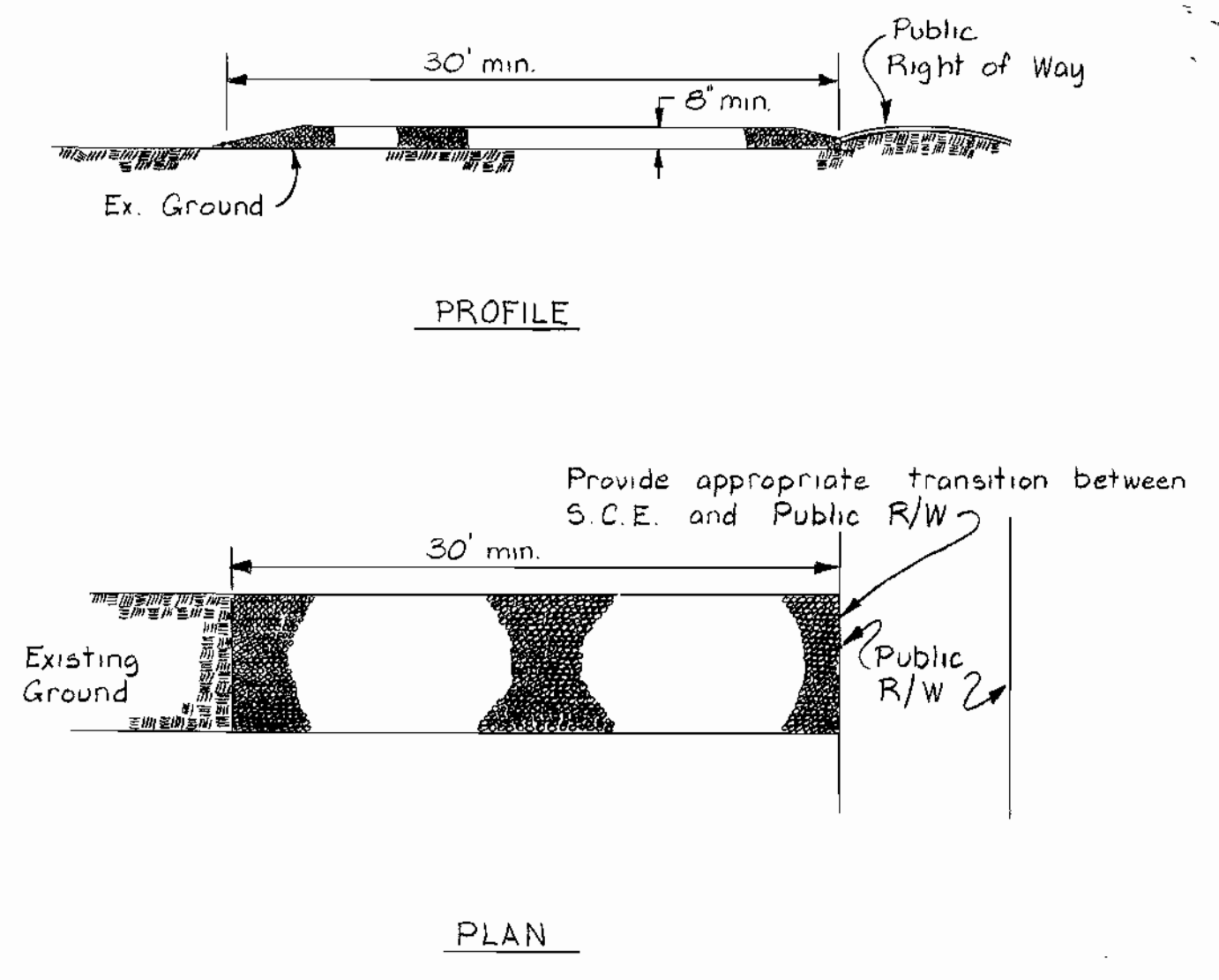
- Construction Specifications
- Bales shall be placed in a row with ends tightly abutting the adjacent bales.
 - Each bale shall be embedded in the soil a minimum of 4".
 - Bales shall be securely anchored in place by stakes or re-bars driven through the bales. The first stake in each bale shall be angled toward previously laid bale to force bales together.
 - Inspection shall be frequent and repair or replacement shall be made promptly as needed.
 - Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

STRAW BALE DIKE DETAIL
Not to Scale



- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE
- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
 - FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
FENCE: WOVEN WIRE, 1/2 GA., 6" MAX. MESH OPENING
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T10N OR APPROVED EQUAL
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

SILT FENCE DETAIL
NOT TO SCALE



- Construction Specifications
- Stone size - Use MSHA size No. 2 (2-1/2" to 1") or AASHTO designation M43, size No. 2 (2-1/2" to 1 1/2"). Use crushed stone.
 - Length - As effective, but not less than 30 feet.
 - Thickness - Not less than eight (8) inches.
 - Width - Not less than full width of all points of ingress or egress.
 - Washing - When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public R/W. When washing is req'd, it shall be done on an area stabilized w/crushed stone which drains into an approved trap or basin. All sediment shall be prevented from entering storm drains, etc. through use of sand bags, gravel, boards, or other approved methods.
 - Maintenance - The entrance shall be maintained in a condition which will prevent movement of sediment onto Public R/W. All sediment must be removed immediately.

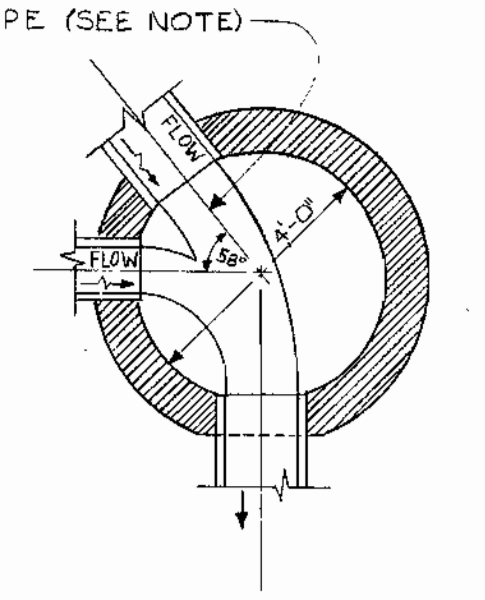
STABILIZED CONSTRUCTION ENTRANCE
Not to Scale

SEQUENCE OF CONSTRUCTION

- Install sediment control measures down grade of construction.
- Excavate Trench and place material on upstream side of Trench.
- Immediately following pipe installation the Trench shall be backfilled, compacted and immediately stabilized (seeded and mulched or mechanical stabilization at the end of each work day).
- Temporary straw bale dikes shall be placed immediately down stream of any disturbed area intended to remain disturbed longer than one (1) working day.
- The Contractor shall disturb and open Trench the minimum practical area required to accomplish the work designated for each day.
- All sediment and erosion control practices and vegetative stabilization will be implemented in accordance with Article 15 of the Howard County Design Manual and the 1988 standards and specifications for Erosion and Sediment Control in Developing Areas.

CHANNEL LINING NOTES

- CHANNEL LININGS SHALL BE FORMED USING SEWER BRICK (ASTM DESIGNATION C-32, GRADE SS, SIZE NO. 1.)
 - CHANNEL SHALL PROVIDE SMOOTH HYDRAULIC TRANSITION BETWEEN PIPES.
 - MINIMUM CENTERLINE CHANNEL RADIUS SHALL BE 2.5 x OUTLET PIPE DIAMETER.
- NOTE: THE E OF ALL PIPES ENTERING A MH SHALL INTERSECT (2") THE LONGITUDINAL AXIS OF THE MH BARREL (CENTER).



EX. MH 116
RECHANNEL DETAIL
NOT TO SCALE

CONTRACT NO. 10-1214
ILCHESTER ROAD COLLECTION SYSTEM
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director: *W. F. Wemyer* 12-13-84
Chief, Bureau of Engineering: *W. R. ...* 12/13/84
Chief, Utility Division: *...* 12/13/84

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND



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| DES: C.B. | | | |
| DRN: C.M. | | | |
| CHK: C.B. | | | |
| DATE: 11/30/84 | BY: NO. | REVISION | DATE |

| | |
|----------------------------------|-------------|
| PIPING PROFILE | |
| ILCHESTER ROAD COLLECTION SYSTEM | |
| STA. 0+00 TO STA. 4+40 | |
| 600' SCALE MAP NO. 31 | BLOCK NO. 4 |

AS BUILTS 5-6-86

ILCHESTER ROAD COLLECTION SYSTEM

HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1214

SCALE AS SHOWN
SHEET 7 OF 7