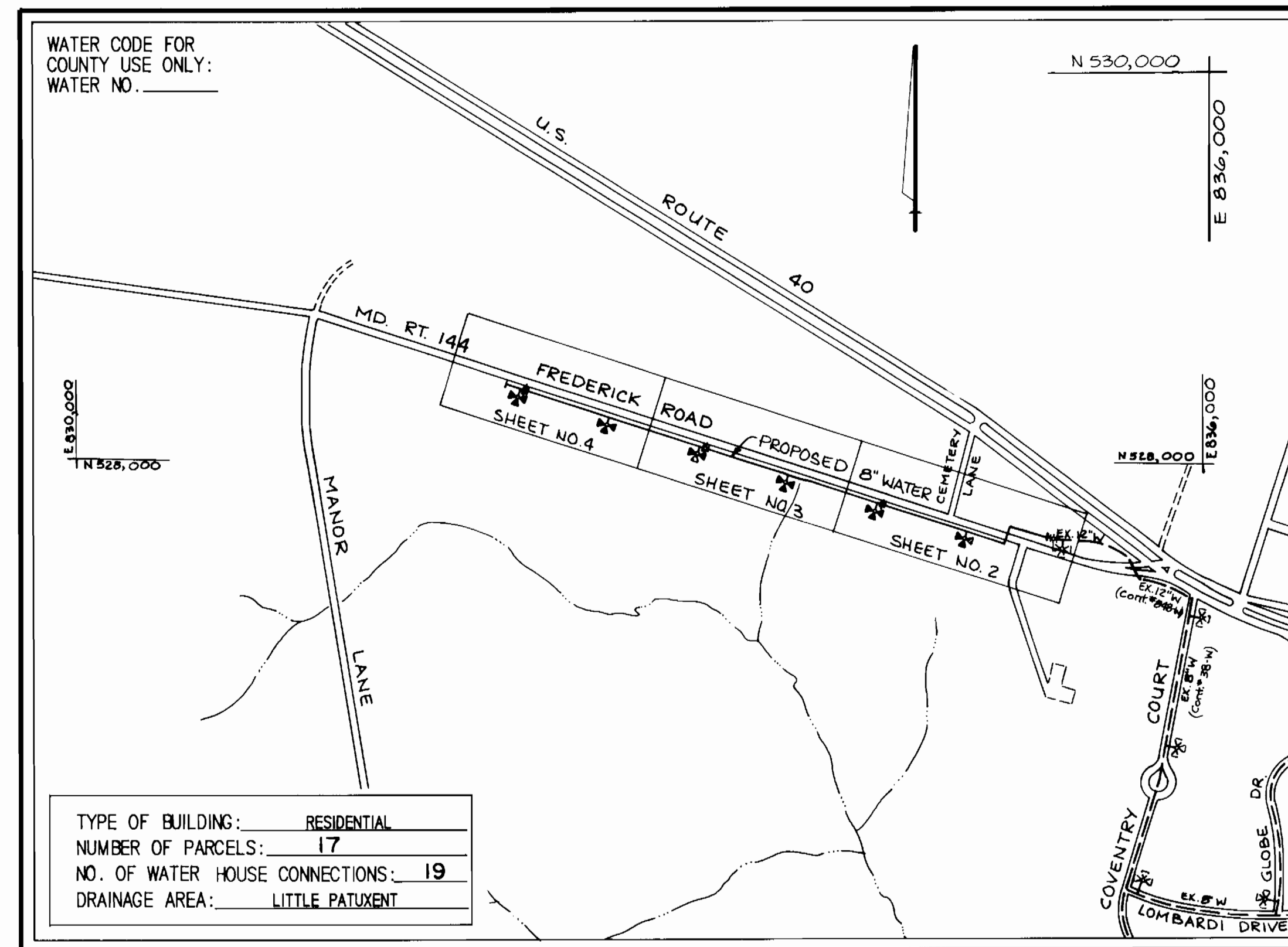


MD. ROUTE 144 WATER MAIN CAPITAL PROJECT NO. W-8144 CONTRACT NO. 44-1311

GENERAL NOTES

1. APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
2. ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
3. ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 6".
6. 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.
7. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - STATE HIGHWAY ADMINISTRATION - 531-5533
 - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES 581-2585
 - 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 DEPARTMENT OF PUBLIC WORKS - 992-2366
9. 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.
10. 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.
11. ALL WATER MAINS TO BE D.I.P. UNLESS OTHERWISE NOTED.
12. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3-1/2' COVER UNLESS OTHERWISE NOTED.
13. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
14. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
15. 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 1003 THE STANDARD SPECIFICATIONS.
16. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
17. ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
18. WATER LINE TRENCH SHALL CLEAR ALL UTILITY POLES BY A MINIMUM OF 4'.
19. CONTRACTOR SHALL EXERCISE CAUTION WHEN IN THE VICINITY OF OVERHEAD ELECTRIC UTILITIES.



LOCATION MAP

SCALE: 1" = 600'

SECOND ELECTION DISTRICT HOWARD COUNTY MARYLAND

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR WILL COMPLY WITH ALL REQUIREMENTS OF SEDIMENT AND EROSION CONTROL SET FORTH IN THE CONTRACT DRAWINGS, THE USDA SOIL CONSERVATION SERVICE MANUAL, "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS", AND VOLUME IV - ARTICLE 15 OF THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV.
2. THE CONTRACTOR SHALL NOT PUMP FROM EXCAVATED AREAS DIRECTLY INTO THE HOWARD COUNTY STORM DRAINAGE SYSTEM OR ANY NATURAL WATER COURSE, WHERE GROUND WATER IS ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE PORTABLE OR EXCAVATED SEDIMENT TRAPS TO PREVENT SILTED TRENCH WATER FROM ENTERING STORM DRAINAGE SYSTEMS OR NATURAL WATERWAYS.
3. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH WHENEVER POSSIBLE, AND CONFINED TO AN AREA WHERE IT WILL NOT OBSTRUCT THE NORMAL FLOW OR DRAINAGE COURSES.
4. ALL SWALES SHALL BE EQUIPPED WITH A SEDIMENT RETENTION DEVICE TO TRAP SEDIMENT AND FILTER WATER LEAVING THE RIGHT-OF-WAY PRIOR TO ENTERING ANY RUNNING STREAMS.
5. THE CONTRACTOR SHALL PROVIDE STRAW BALE DIKES NORMAL TO SURFACE WATER FLOW AND AROUND ALL VEHICLE AND EQUIPMENT STAGING AREAS AS SHOWN IN "DETAIL OF A STRAW BALE DIKE" ENCLOSED IN SPECIFICATIONS.
6. ROADSIDE DITCHES AND DRAINAGE PIPES SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE ORIGINAL CONDITION FOLLOWING COMPLETION OF CONSTRUCTION.
7. THE CONTRACTOR SHALL DISPOSE OF SPOILS IN ACCORDANCE WITH GOOD SOIL CONSERVATION PRACTICE AND IN SUCH A MANNER THAT NONE CAN BE CARRIED INTO ANY DRAINAGE FACILITY OR WATER COURSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ALL SPOIL OR EXCESS EXCAVATED MATERIAL ON A SITE APPROVED BY THE SOIL CONSERVATION DISTRICT. DOCUMENTATION OF APPROVAL AND SITE SHALL BE PROVIDED TO THE ENGINEER PRIOR TO BEGINNING WORK.
8. THE HOWARD COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED IN WRITING BY THE CONTRACTOR AS TO WHERE EXCESS MATERIAL WILL BE DISPOSED OR BORROW MATERIAL WILL BE OBTAINED. PRIOR TO BEGINNING ANY WORK ON THIS PROJECT, COPIES SHALL BE PROVIDED TO THE ENGINEER.
9. CONTINUOUS INSPECTION AND MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROL DEVICES WILL BE REQUIRED.
10. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL AS REQUIRED BY THE SEDIMENT CONTROL INSPECTOR, AS THE WORK PROGRESSES OR REQUIRES.
11. THE CONTRACTOR SHALL NOTIFY IN WRITING, A HOWARD COUNTY SEDIMENT CONTROL DIVISION REPRESENTATIVE AT LEAST THREE (3) DAYS PRIOR TO STARTING WORK. PLEASE CONTACT: HOWARD COUNTY - 992-2436. COPIES SHALL BE PROVIDED TO THE ENGINEER.
12. THE CONTRACTOR SHALL PLACE A STABILIZED CONSTRUCTION ENTRANCE AS SHOWN IN THE HOWARD COUNTY STANDARD DETAILS, G6.11, WHERE SHOWN ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. SEDIMENT REMOVAL - ALL TRAPPED SEDIMENT IS TO BE REMOVED AND DISPOSED OF AT THE AUTHORIZED LANDFILLS PRIOR TO THE REMOVAL OF SEDIMENT CONTROL STRUCTURES.
14. FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - A.) SEVEN (7) CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1
 - B.) FOURTEEN (14) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

ITEM	QUANTITIES		TYPE MATERIAL	SUPPLIERS
	ESTIMATE	AS BUILT		
8" WATER	2974 L.F.	2,975 L.F.	DUCTILE IRON PIPE	U.S. PIPE & FOUNDRY CO.
6" WATER	30 L.F.	17 L.F.	DUCTILE IRON PIPE	U.S. PIPE & FOUNDRY CO.
3/4" WHC	82 L.F.	108 L.F.	TYPE 'K' COPPER	CAMBRIDGE LEE
1" WHC	470 L.F.	497 L.F.	TYPE 'K' COPPER	CAMBRIDGE LEE
BORE OR JACK 8" W IN-CLUDING 20" STEEL SLEEVE	37 L.F.	37 L.F.	DUCTILE IRON PIPE ASTM A53 GRADE B	U.S. PIPE & FOUNDRY CO. VALLEY STEEL PROD.
8" VALVE W/ ROWAY BOX	3 EA.	3 EA.	DUCTILE IRON PIPE	U.S. PIPE & FOUNDRY CO.
FH, TEE & 6" VALVE	6 EA.	6 EA.	DUCTILE IRON PIPE	U.S. PIPE & FOUNDRY CO.

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."

David R. Hall
DATE: 7/3/85
BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

ENGINEER'S CERTIFICATION

I CERTIFY THAT THIS PLAN FOR EROSION & 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.

David R. Hall
DATE: 7/3/85
FREDERICK WARD ASSOC., INC.
5 SOUTH MAIN STREET
BELAIR, MARYLAND 21014

REVIEWED FOR HOWARD COUNTY S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

James M. Belmont
DATE: 7/3/85
U.S. SOIL CONSERVATION SERVICE

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

Stephen L. Fuller
DATE: 7/3/85
APPROVED
HOWARD COUNTY S.C.D.

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

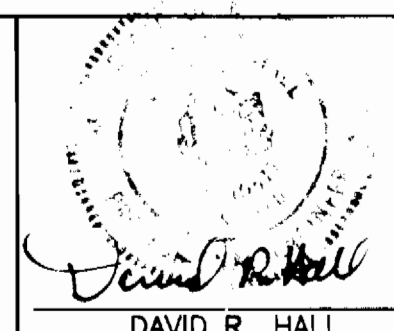
John F. Wilson
DIRECTOR OF PUBLIC WORKS
DATE: 7/3/85

David R. Hall
CHIEF, BUREAU OF ENGINEERING
DATE: 7/3/85

David R. Hall
CHIEF, UTILITY DESIGN DIVISION
DATE: 7/3/85

FREDERICK WARD ASSOC. INC.
ENGINEERS-ARCHITECTS-SURVEYORS.
5 SOUTH MAIN STREET
BEL AIR, MARYLAND 21014
838-7900 879-2090

David R. Hall
DAVID R. HALL



DES: S.R.B.					
DRN: T.E.R.					
CHK: D.W.					
DATE: 7/3/85	BY	NO.	REVISION	DATE	

**TITLE SHEET
WATER LINE**

600' SCALE MAP NO. W-16 & 23 BLOCK NO. _____

**MD. ROUTE 144 WATER MAIN
CAPITAL PROJECT NO. W-8144
CONTRACT NO. 44-1311
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND**

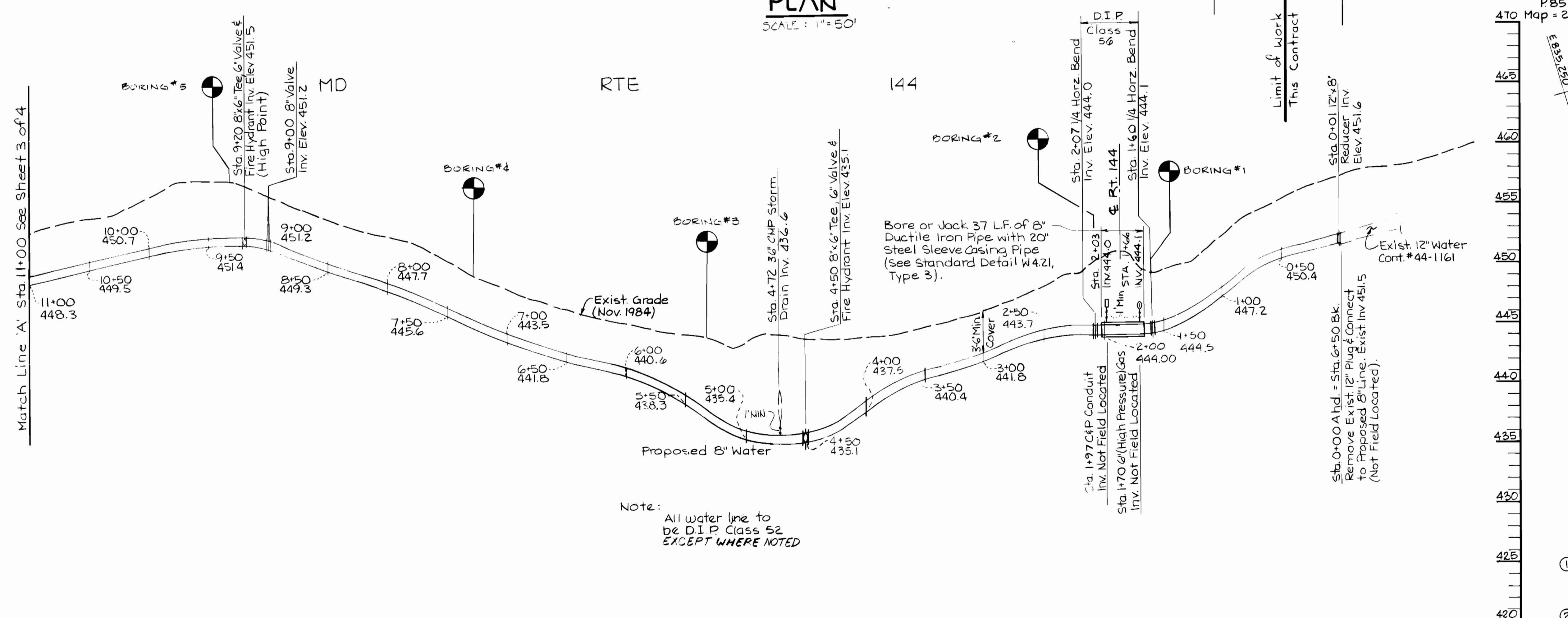
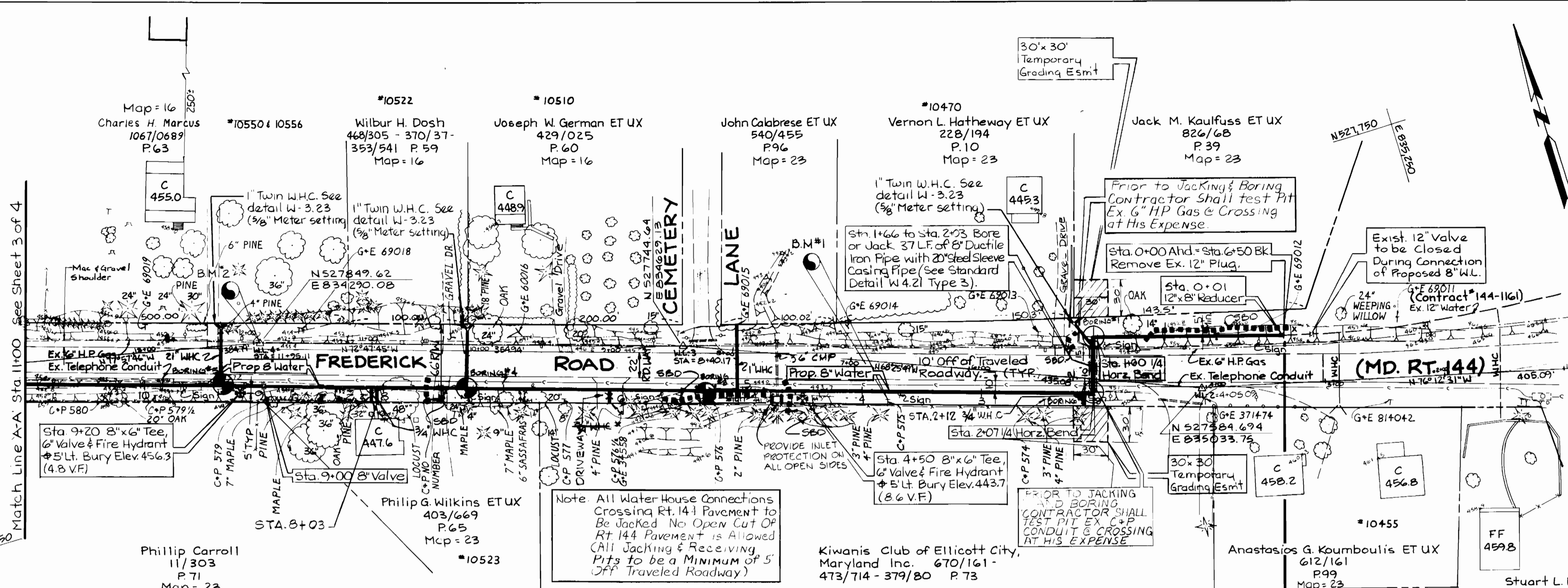
SCALE AS SHOWN

SHEET 1 OF 4

AS-BUILT 7/3/85

Item	Water Line Sta.	Traverse Sta.	Offset From Traverse
12" x 8" Reducer	0+01	3+37	40' RT
1/4 Horiz Bend	1+60	4+98	35' RT
1/4 Horiz Bend	2+07	4+95	12' LT
F.H.	4+50	7+36	35' LT
8" Valve	9+00	11+92	36' LT
F.H.	9+20	12+15	40' LT

Note:
Contractor shall seed & mulch all disturbed area not paved



TRaverse REFERENCES
NOT TO SCALE

BENCH MARKS

- R.R. Spike in C&P Pole # 575 on South Side of MD RT. 144, 150' East of the Intersection of Cemetery Lane & MD RT. 144, Elev. 444.85'
- Traverse Point W.L. #4) R.R. Spike Set on North Side of Shoulder of MD RT. 144, 370' West of the Intersection of Cemetery Lane & MD RT. 144, Elev. 456.71'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works
Date: 7/23/85
Chief, Bureau of Utility

FREDERICK WARD ASSOC. INC.
ENGINEERS-ARCHITECTS-SURVEYORS.
5 SOUTH MAIN STREET
BEL AIR, MARYLAND 21014
838-7900 879-2090

Chief, Utility Division
Date: 7/23/85

DAVID R. HALL
Professional Engineer

DES: S.R.B.	DATE: 7/9/85
DRN: T.E.R.	BY: NO.
CHK: D.W.	REVISION

PLAN AND PROFILE WATER LINE

600' SCALE MAP NO. 16 & 23 BLOCK NO.

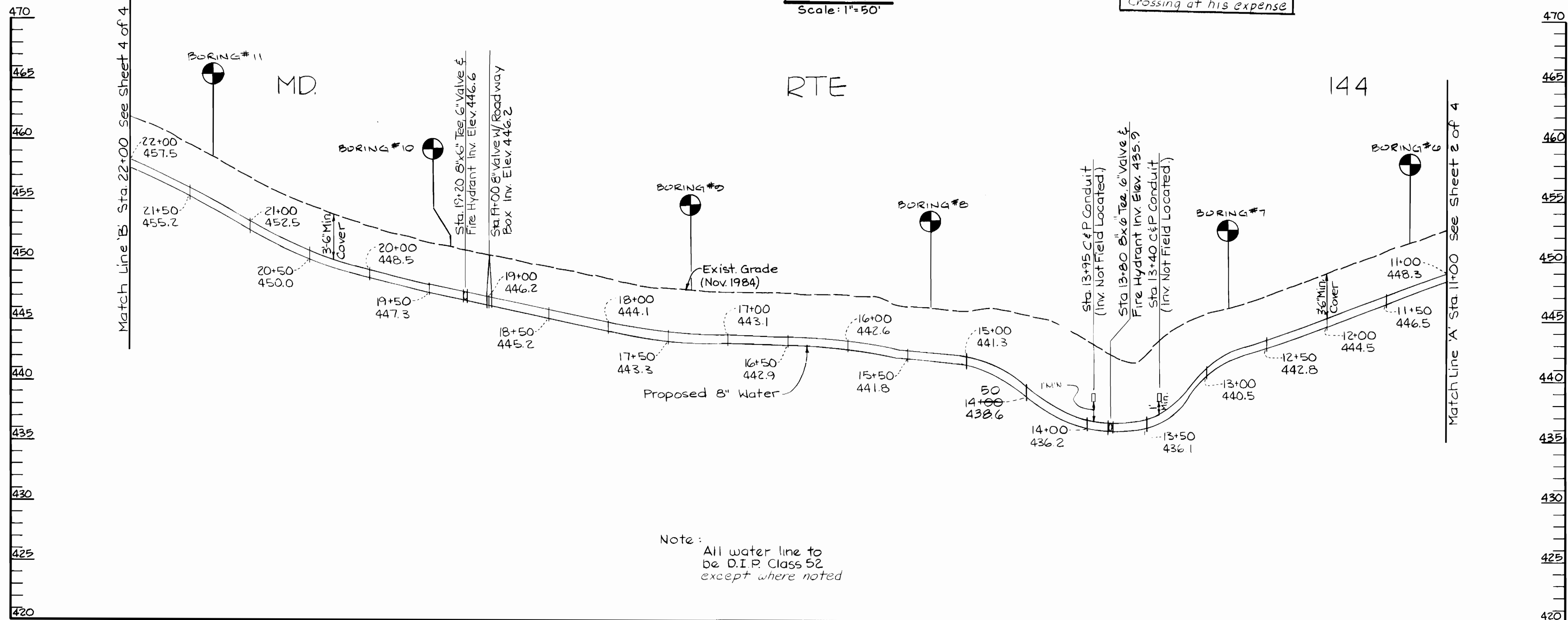
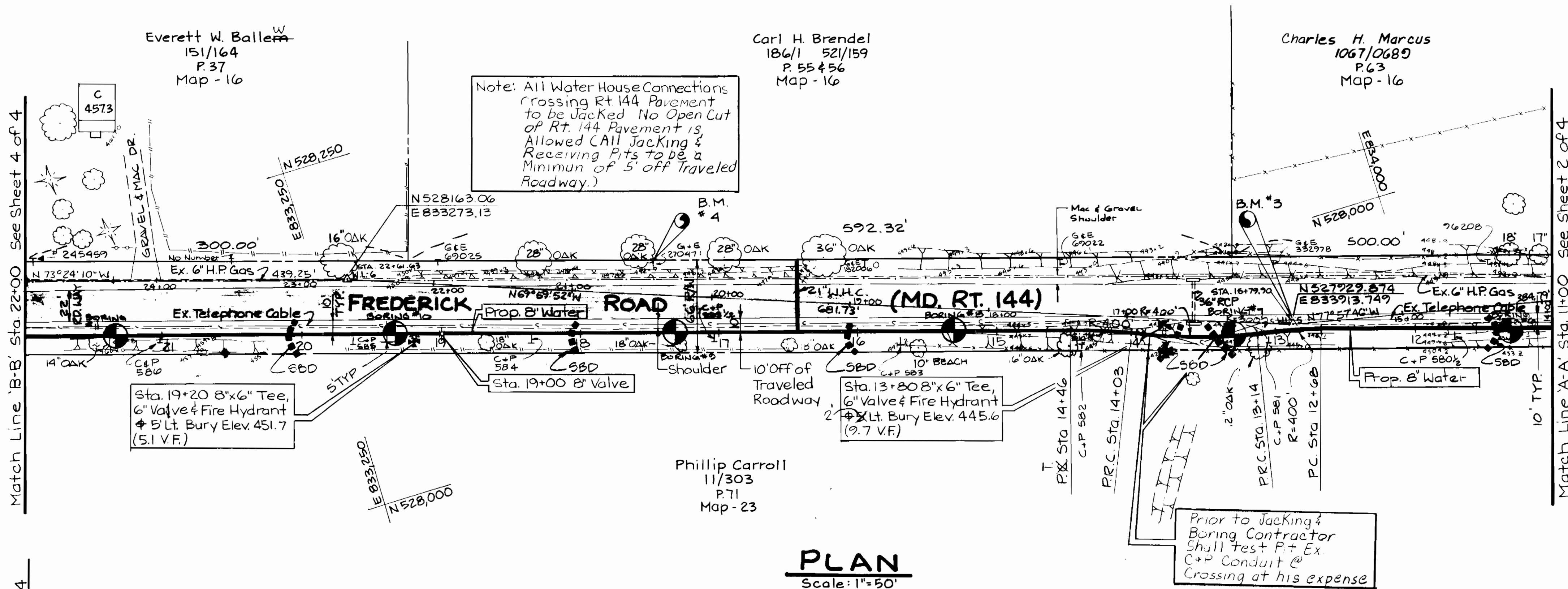
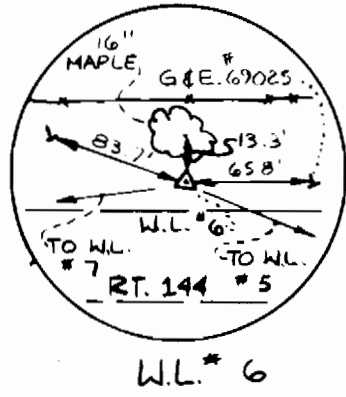
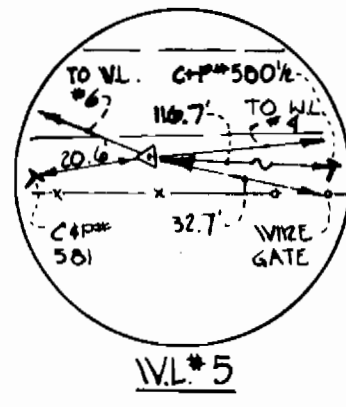
MD. ROUTE 144 WATER MAIN
CAPITAL PROJECT NO. W-8144
CONTRACT NO. 44-1311
SECOND ELECTION DISTRICT
HOWARD COUNTY MARYLAND

SCALE AS SHOWN
SHEET 2 OF 4

AS BUILT 7/3/86

TRAVERSE REFERENCES

NOT TO SCALE



PROFILE - 8" WATER LINE

Scale: 1"=50' Horiz. & 1"=5' Vert.

Item	Water Line	Traverse Sta.	Offset from Traverse
F.H.	13+80	16+73	9' LT
8" Valve	19+00	21+94	35' LT
F.H.	19+20	22+13	42' LT

Note:
Contractor shall seed & mulch all disturbed area not paved

BENCH MARKS

- ③ (Traverse Point W.L. #5) Rebar Set 7" off the Traveled Roadway on the South Side of MD. RT. 144, 750' West of the Intersection of RT. 144 & Cemetery Lane, Elev. 446.20'
- ④ R.R. Spike in G&E Pole # 270471 on North Side of RT. 144, 1220' West of Intersection of RT. 144 & Cemetery Lane, Elev. 446.20'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature]
Date: 7/1/85

Chief, Bureau of Engineering: [Signature]
Date: 7/1/85

Chief, Utility Design Division: [Signature]
Date: 7/1/85

FREDERICK WARD ASSOC. INC.
ENGINEERS-ARCHITECTS-SURVEYORS.
5 SOUTH MAIN STREET
BEL AIR, MARYLAND 21014
838-7900 879-2090

David R. Hall
Date: 7/1/85

DES: S.R.B.
DRN: T.E.R.
CHK: D.W.
DATE: 7/1/85

BY: NO. REVISION DATE

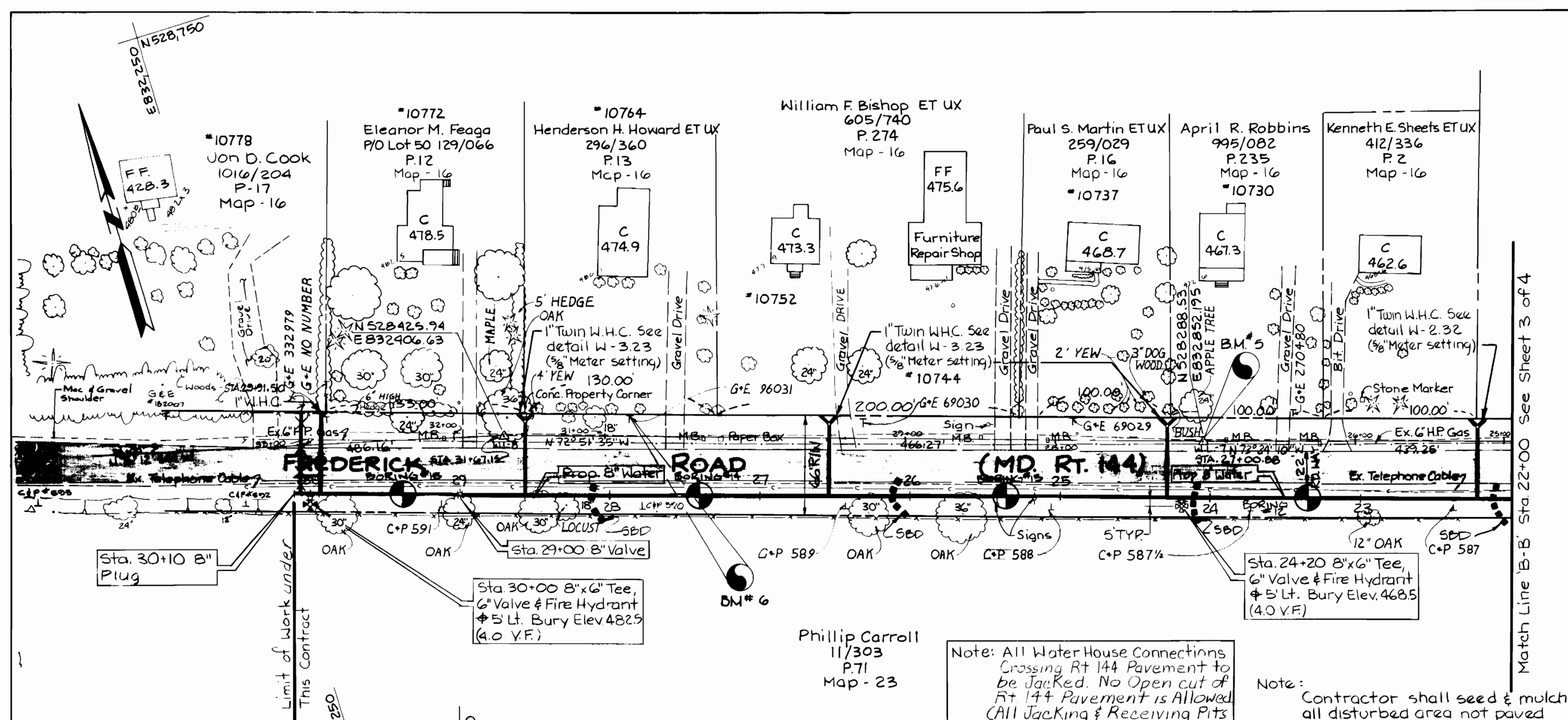
PLAN AND PROFILE
WATER LINE

600' SCALE MAP NO. W-16 & 23. BLOCK NO.

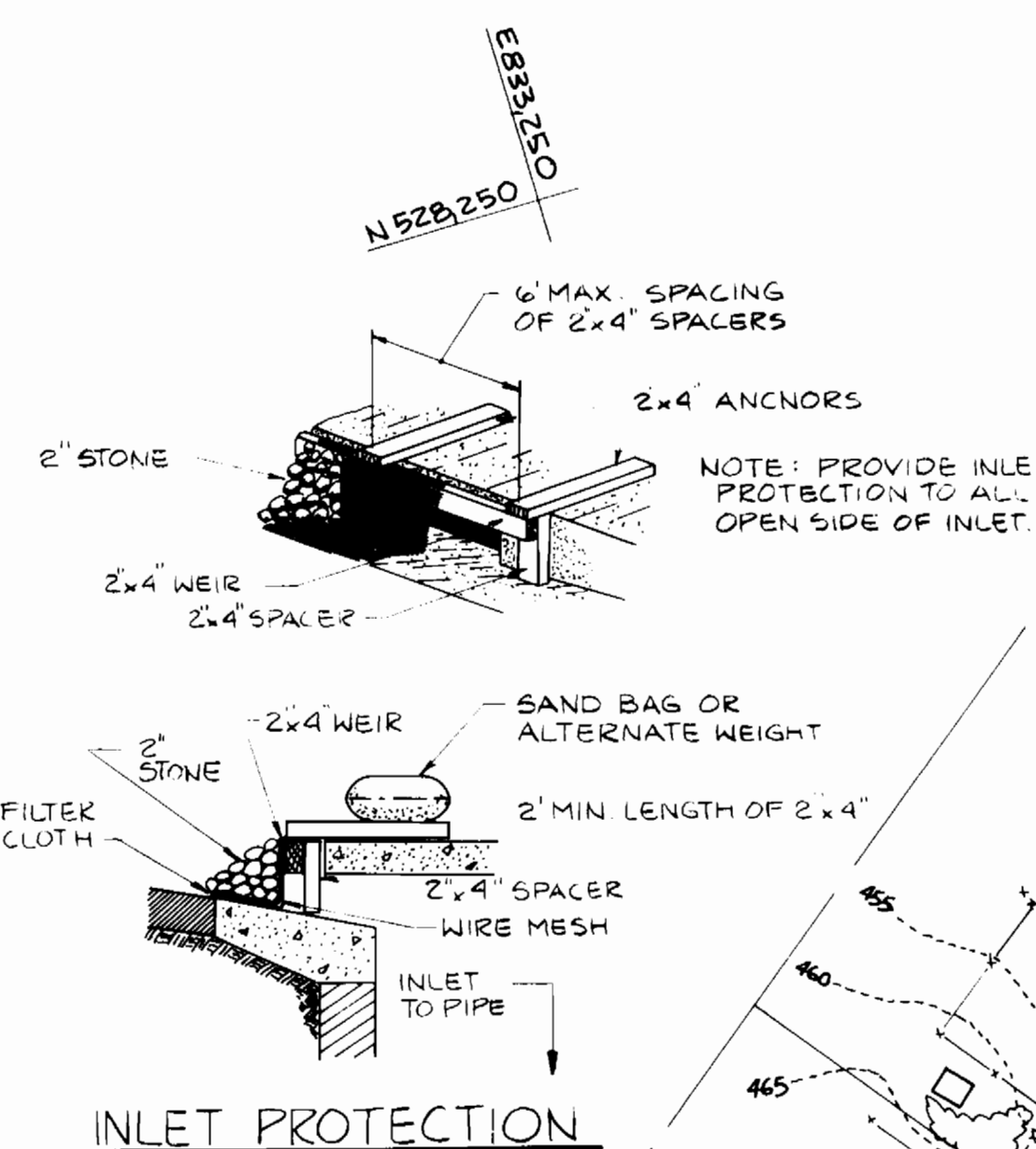
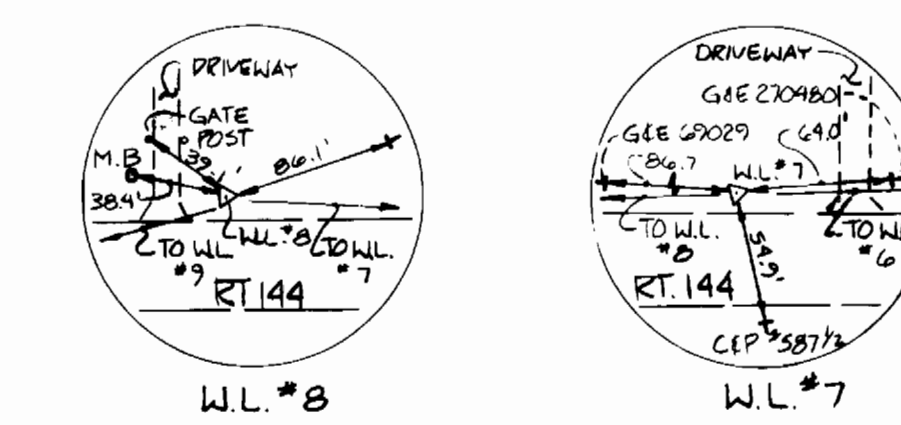
MD. ROUTE 144 WATER MAIN
CAPITAL PROJECT NO. W-8144
CONTRACT NO. 44-1311
SECOND ELECTION DISTRICT
HOWARD COUNTY MARYLAND

SCALE AS SHOWN
SHEET 3 OF 4

AS BUILT 7/3/86



TRAVERSE REFERENCES
NOT TO SCALE



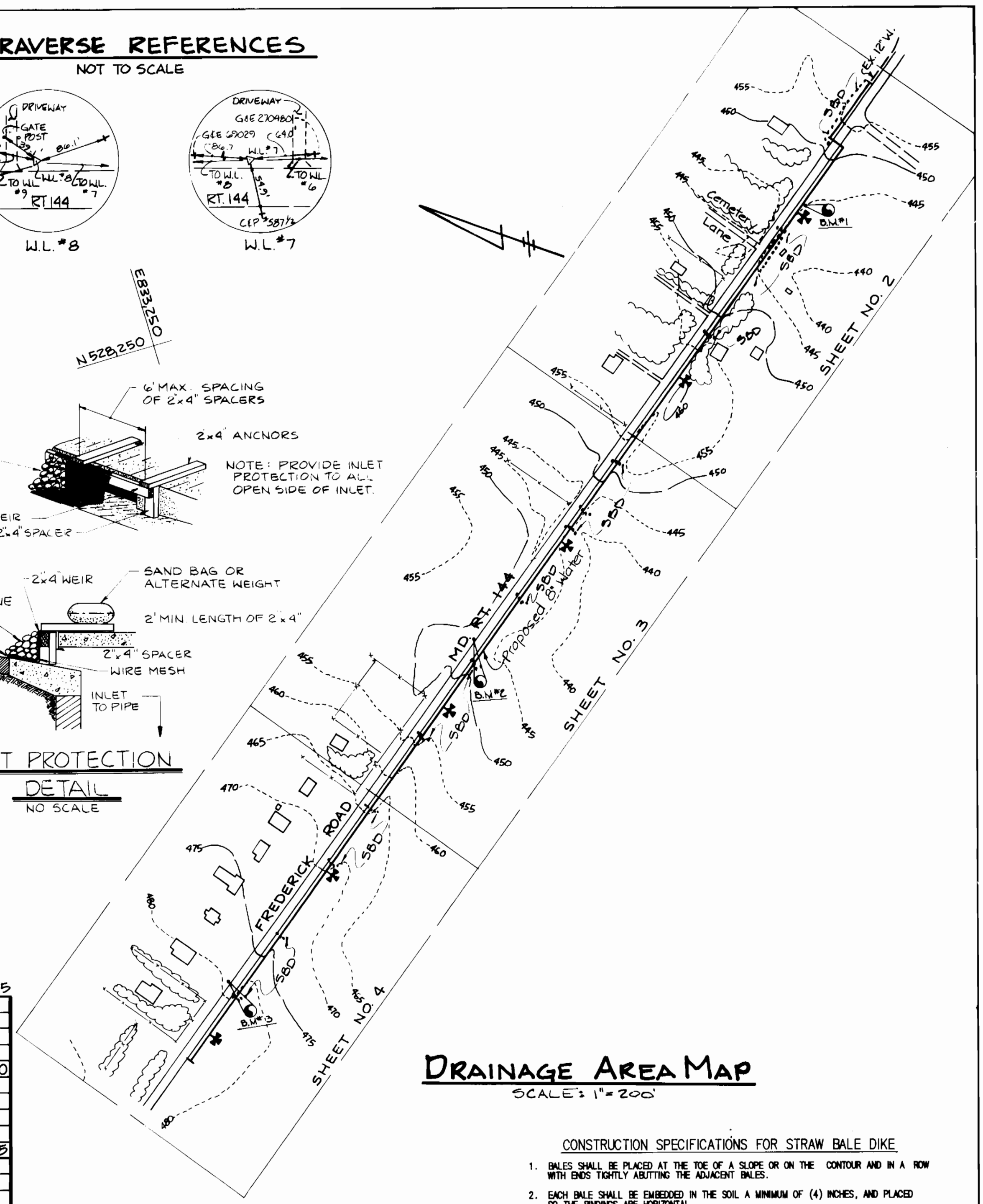
INLET PROTECTION
DETAIL
NO SCALE

PLAN
Scale: 1"=50'

Note: All Water House Connections Crossing Rt 144 Pavement to be Jacked. No Open cut of Rt 144 Pavement is Allowed (All Jacking & Receiving Pits to be a Minimum of 5' off Traveled Roadway.)

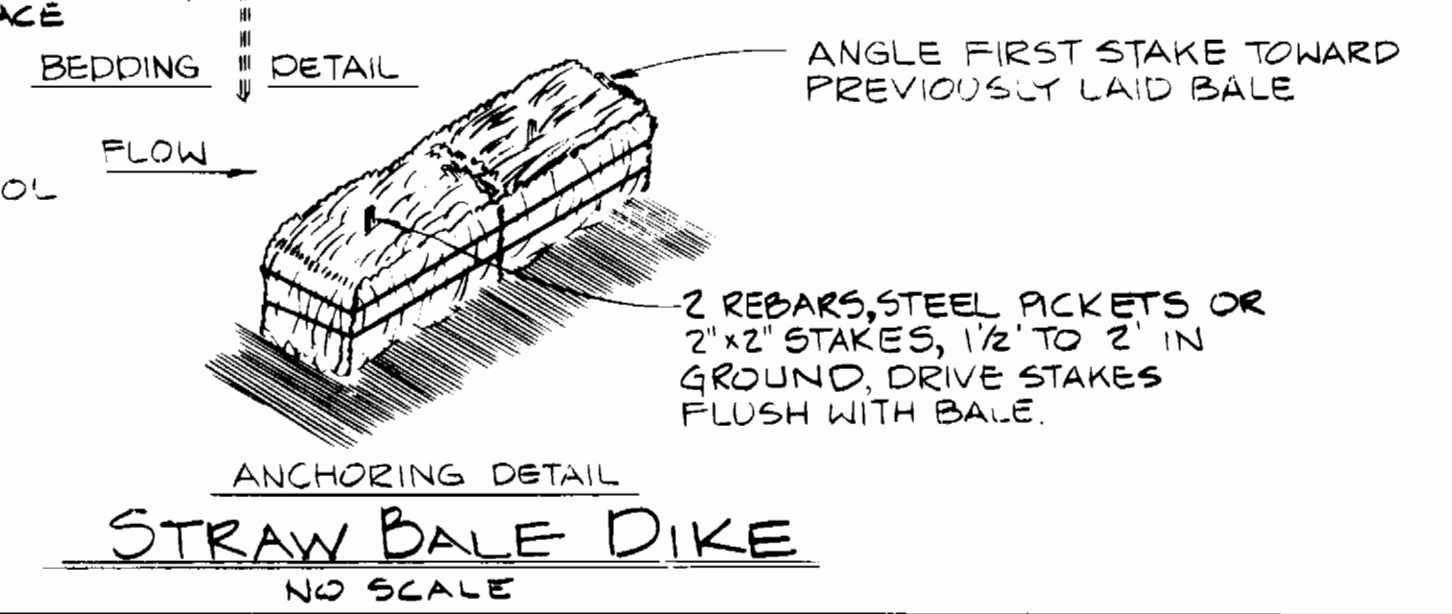
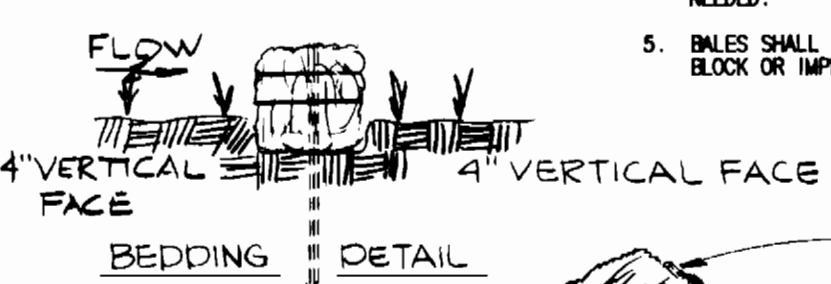
Note: Contractor shall seed & mulch all disturbed area not paved

Item	Water Line Sta.	Traverse Sta.	offset from Traverse
F.H.	24+20	27+14	43 LT
8" Valve	29+00	31+98	38 LT
F.H.	30+00	32+98	37 LT
8" PLUG	30+10	33+09	32 LT



DRAINAGE AREA MAP
Scale: 1"=200'

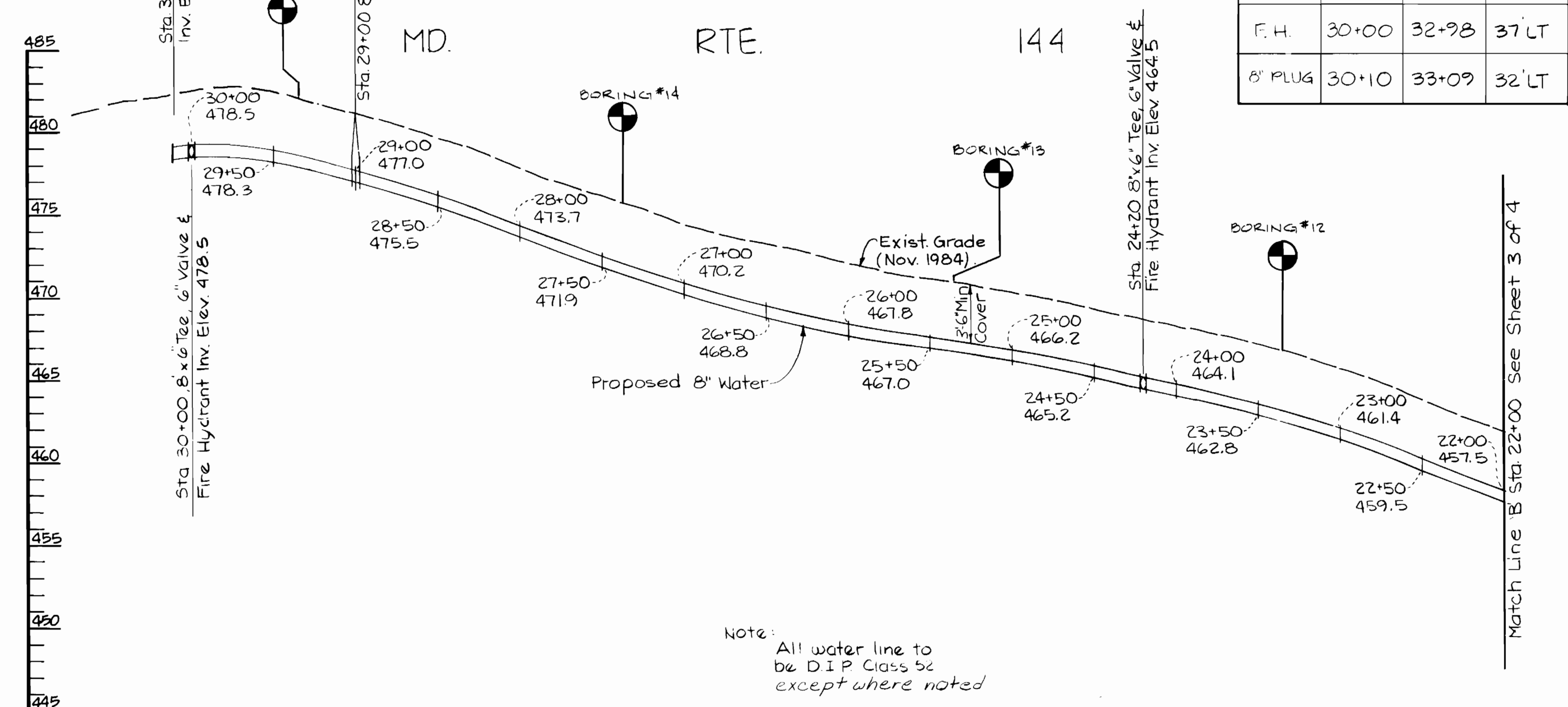
- CONSTRUCTION SPECIFICATIONS FOR STRAW BALE DIKE**
- BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
 - EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE ENDINGS ARE HORIZONTAL.
 - BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
 - INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
 - BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPED STORM FLOW OR DRAINAGE.



STRAW BALE DIKE
NO SCALE

BENCH MARKS

- ⊙ (Traverse Point W.L.#7) Square Iron Peg Set in North Side Shoulder of MD. RT. 144, 1870' West of Intersection of Cemetery Lane & MD. RT. 144, Elev. 470.16
- ⊙ R.R. Spike Set in G&E Pole #69031 On North Side of MD. RT. 144, 2255' West of the Intersection of Cemetery Lane & MD. RT. 144, Elev. 480.77



PROFILE - 8" WATER LINE
Scale: 1"=50' Horiz. & 1"=5' Vert.

Note: All water line to be D.I.P. Class 52 except where noted

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature]
Date: [Blank]

Chief, Bureau of Engineering: [Signature]
Date: [Blank]

Chief, Bureau of Utility: [Signature]
Date: [Blank]

FREDERICK WARD ASSOC. INC.
ENGINEERS-ARCHITECTS-SURVEYORS.
5 SOUTH MAIN STREET
BEL AIR, MARYLAND 21014
838-7900 879-2090

David R. Hall
Date: 7/9/85

DES: S.R.B.	BY: NO.	REVISION	DATE
DRN: T.E.R.			
CHK: D.W.			
DATE: 7/9/85			

PLAN AND PROFILE
WATER LINE

MD. ROUTE 144 WATER MAIN
CAPITAL PROJECT NO. W-8144
CONTRACT NO. 44-131I
SECOND ELECTION DISTRICT
HOWARD COUNTY MARYLAND

SCALE AS SHOWN
SHEET 4 OF 4

AS-BUILT 7/3/86