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3	DORCHESTER WAY PLAN AND PROFILE
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5	PETERSBORO ROAD PLAN AND PROFILE
6	BIRMINGHAM WAY PLAN/ DORCHESTER WAY PLAN AND PROFILE
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# FINAL ROAD CONSTRUCTION, GRADING AND STORM WATER MANAGEMENT PLANS FOR GTW'S WAVERLY WOODS SECTION 4, AREA 1 LOT 1 THRU 19, AND PARCELS A THRU E THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

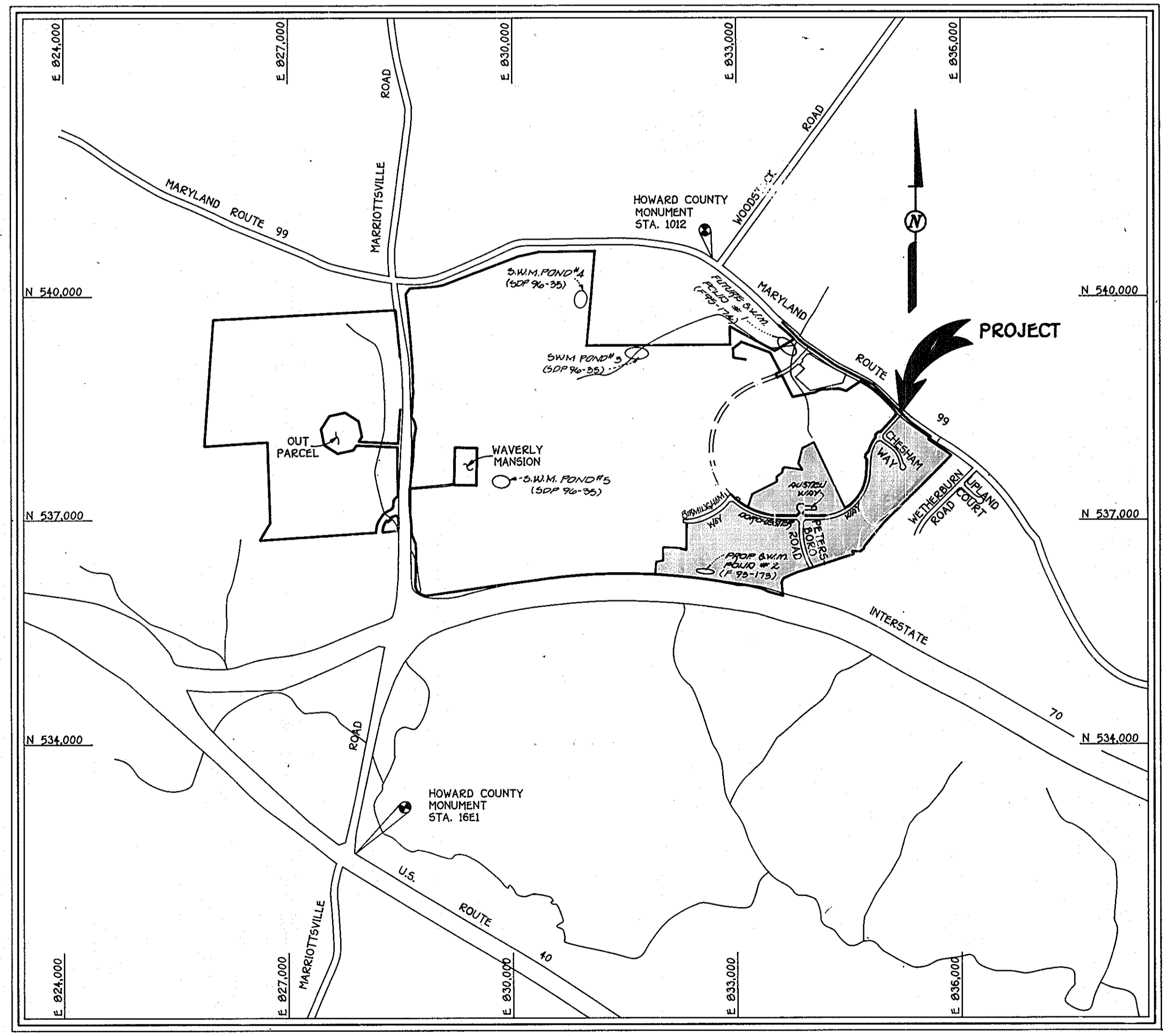
APPROVED  
DEPARTMENT OF PLANNING AND ZONING  
*Chim Durrant* 2/5/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RECREATION  
*W. Durrant* 2/1/96  
CHIEF, DEVELOPMENT REGULATIONS DIVISION  
APPROVED  
DEPARTMENT OF PUBLIC WORKS  
*Charles J. Grovo, Sr.* 1/30/96  
CHIEF, BUREAU OF HIGHWAYS

**POND 2**  
OPERATION AND MAINTENANCE SCHEDULE  
OF PRIVATELY OWNED AND MAINTAINED  
STORMWATER MANAGEMENT FACILITY  
EXTENDED DETENTION POND

- ROUTINE MAINTENANCE**
- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED REGARDING WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
  - TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, THE BOTTOM OF THE POND, AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
  - DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
  - VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE**
- STRUCTURAL COMPONENTS OF THE POND, SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
  - SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

TRAFFIC CONTROL SIGNS			
STREET NAME	STATION	POSTED SIGN	SIGN CODE
DORCHESTER WAY	0+70	STOP	R1-1
DORCHESTER WAY	2+00	SPEED LIMIT 30	R2-1
DORCHESTER WAY	2+00	STOP AHEAD	W3-1a
PETERSBORO ROAD	22+69	STOP	R1-1
PETERSBORO ROAD	23+47	STOP	R1-1
AUSTEN WAY	0+35	STOP	R1-1
AUSTEN WAY	-0+38	STOP	R1-1
BIRMINGHAM WAY	0+41	STOP	R1-1
DORCHESTER WAY	20+30	SPEED LIMIT 30	R2-1
PETERSBORO ROAD	21+14	SPEED LIMIT 25	R2-1
BIRMINGHAM WAY	2+00	SPEED LIMIT 25	R2-1

STREET LIGHT CHART			
STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
OLD FREDERICK RD (MD RT. 99)	0+45	42R	250-WATT HIGH PRESSURE SODIUM VAPOR FIXTURE (GRAY) WITH CUTOFF OPTICS MOUNTED AT 30' ON A GALVANIZED STEEL POLE AND ALUMINUM BREAKAWAY TRANSFORMER BASE USING A 15' ARM
DORCHESTER WAY	4+56	21R	150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 25-FOOT GALVANIZED STEEL POLE
DORCHESTER WAY	7+60	22R	150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 25-FOOT GALVANIZED STEEL POLE
DORCHESTER WAY	11+25	21L	150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 25-FOOT GALVANIZED STEEL POLE
DORCHESTER WAY	15+45	21L	150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 25-FOOT GALVANIZED STEEL POLE
DORCHESTER WAY	22+15	22L	150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 25-FOOT GALVANIZED STEEL POLE
DORCHESTER WAY	26+90	21R	150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 25-FOOT GALVANIZED STEEL POLE
DORCHESTER WAY	31+65	22L	150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 25-FOOT GALVANIZED STEEL POLE
PETERSBORO ROAD	19+24	10'L	100-WATT "TRADITIONAIRE" HPS VAPOR POST TOP FIXTURE ON 14-FOOT BLACK FIBERGLASS POLE
PETERSBORO ROAD	21+30	10'L	100-WATT "TRADITIONAIRE" HPS VAPOR POST TOP FIXTURE ON 14-FOOT BLACK FIBERGLASS POLE
AUSTEN WAY	0+29	7'6" L	100-WATT "TRADITIONAIRE" HPS VAPOR POST TOP FIXTURE ON 14-FOOT BLACK FIBERGLASS POLE
BIRMINGHAM WAY	3+58	26'L	150-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 25-FOOT GALVANIZED STEEL POLE



**GENERAL NOTES**

- UNLESS OTHERWISE NOTED, ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE FOLLOWING:
  - HOWARD COUNTY STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION VOLUME IV.
  - MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, AS AMENDED.
  - SOIL CONSERVATION SERVICE 1983 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
  - SOIL CONSERVATION SERVICE 1993 MARYLAND STANDARDS AND SPECIFICATION FOR POND CONSTRUCTION (CODE 378).
  - EXISTING UTILITIES ARE BASED ON FIELD RUN TOPOGRAPHY.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, DIVISION OF CONSTRUCTION INSPECTION AT 410-313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
- TOPOGRAPHY SHOWN HEREON IS FROM AERIAL MAPS FLOWN ON 2/12/89 BY PHOTO SCIENCE ON A 2' CONTOUR INTERVAL.
- STORMWATER MANAGEMENT FOR THIS DEVELOPMENT WILL BE BY THE RETENTION METHOD FOR PONDS 1 & 2. POND 3 SHALL BE PRIMARILY MAINTAINED BY HOWARD COUNTY. THE S.W.M. REPORT IS PROVIDED BY HILDENBURG ASSOCIATES, INC.
- THIS HORIZONTAL AND VERTICAL DATUM SHOWN ARE BASED ON THE FOLLOWING NAD83 HOWARD COUNTY CONTROL STATIONS:
 

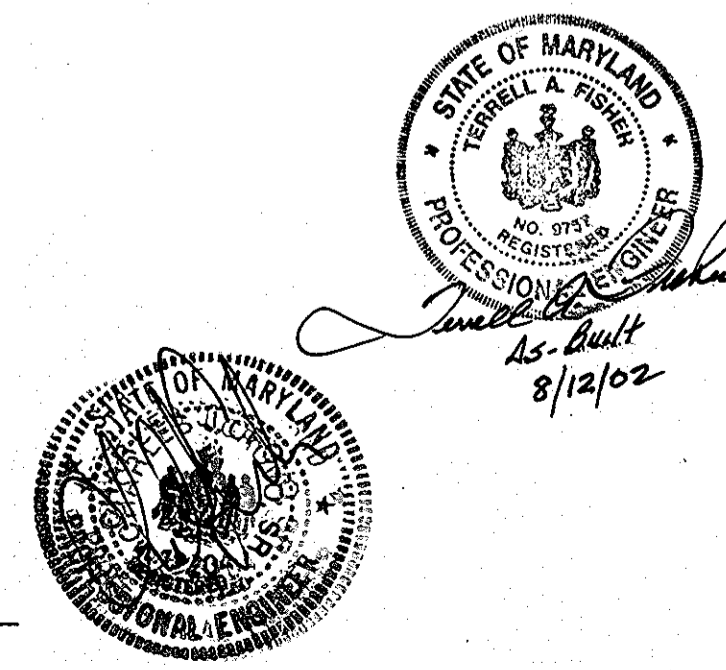
HOWARD COUNTY MONUMENT 1012	N 601060.177	ELEV. = 445.577
	E 134536.7580	
HOWARD COUNTY MONUMENT 1661	N 593250.9322	ELEV. = 509.924
	E 1340192.710	
- NOISE STUDY WAS PROVIDED BY Wildman Environmental Services, Inc. AND APPROVED ON NOVEMBER 1, 1994.
- FOREST DELINEATION AND WAS PROVIDED BY ENVIRONMENTAL SYSTEMS ANALYSIS, INC. AND APPROVED ON 11-30-93.
- THE 100 YR. FLOODPLAIN AS SHOWN ON THESE PLANS ARE BASED ON THE ENCLOSED FLOODPLAIN STUDY THAT WAS PROVIDED BY Hildenburg Associates, Inc.
- THE WETLANDS STUDY WAS PROVIDED BY Exploration Research, Inc. AND WAS COMPILED ON 9/5/91.
- THE TRAFFIC STUDY WAS PROVIDED BY THE Traffic Group AND APPROVED ON JULY 14, 1994.
- THE SOILS INVESTIGATION REPORT WAS PREPARED BY LITTE, INC. ON JUNE 28, 1994.
- THIS PLAN IS SUBJECT TO WAIVER PETITION # WP-95-23 FROM SECTION 16.16A.1 & SECTION 16.16A.2 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS WHICH RESTRICTS GRADING AND REMOVAL OF VEGETATIVE COVER FROM WETLANDS AND STREAM BUFFER AND FROM SECTION 16.16B, WHICH RESTRICTS GRADING OF STEEP SLOPES OF 25% OR GREATER AND SECTION 16.15A, WHICH RESTRICTS DEVELOPMENT WITHIN THE 100 YEAR FLOODPLAIN.
- THE SKETCH PLAN S 94-07 WAS APPROVED ON 11/30/93. THE PRELIMINARY PLAN P 95-07 WAS APPROVED ON 3/3/95. THE WAIVER PETITION WAS APPROVED ON 1/23/95 FOR WP-95-23. (SEE SHEET 14 FOR ROAD CROSSING AT WETLANDS).
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS" (JUNE, 1993).
- A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- PUBLIC WATER AND PUBLIC SEWER WILL BE USED WITHIN THIS DEVELOPMENT. CONTRACT NO. 24-34-0-D DRAINAGE AREA IS THE LITTLE PATUXENT.
- EXISTING UTILITIES ARE BASED ON CONTRACT NO. 24-702-D AND HOWARD COUNTY AS-BUILTS FOR THE REFERENCED CONTRACT.

**VICINITY MAP**  
SCALE: 1" = 1200'

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
979 BALTIMORE NATIONAL PKWY. SUITE 100  
ELKOTT CITY, MARYLAND 21042  
410 461-2295

**OWNER AND DEVELOPER**  
GTW JOINT VENTURE  
c/o LAND DESIGN AND DEVELOPMENT  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

*Charles J. Grovo, Sr.*  
CHARLES J. GROVO, SR.  
DATE



**GTW'S WAVERLY WOODS**  
SECTION 4, AREA 1  
LOTS 1 THRU 19 AND PARCELS A THRU E  
ZONING R-20 AND RSC, R-6A-B AND R-A-15  
TAX MAP No. 18, PART OF PARCEL No. 21  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: MAY 28, 1995  
SHEET 1 OF 38

1253

REVISION		DATE
No.	DESCRIPTION	
1	ADD MH 1-A, 1-B & ENTRANCE FEATURE	1-2-97

DATE	BY	DESCRIPTION
		SURVEYED
		GRADE CHECKED
		ALIGNMENT CHECKED
		RT. OF WAY CHECKED

DATE	BY	DESCRIPTION
		PLAN
		NOTE BOOK
		NO.

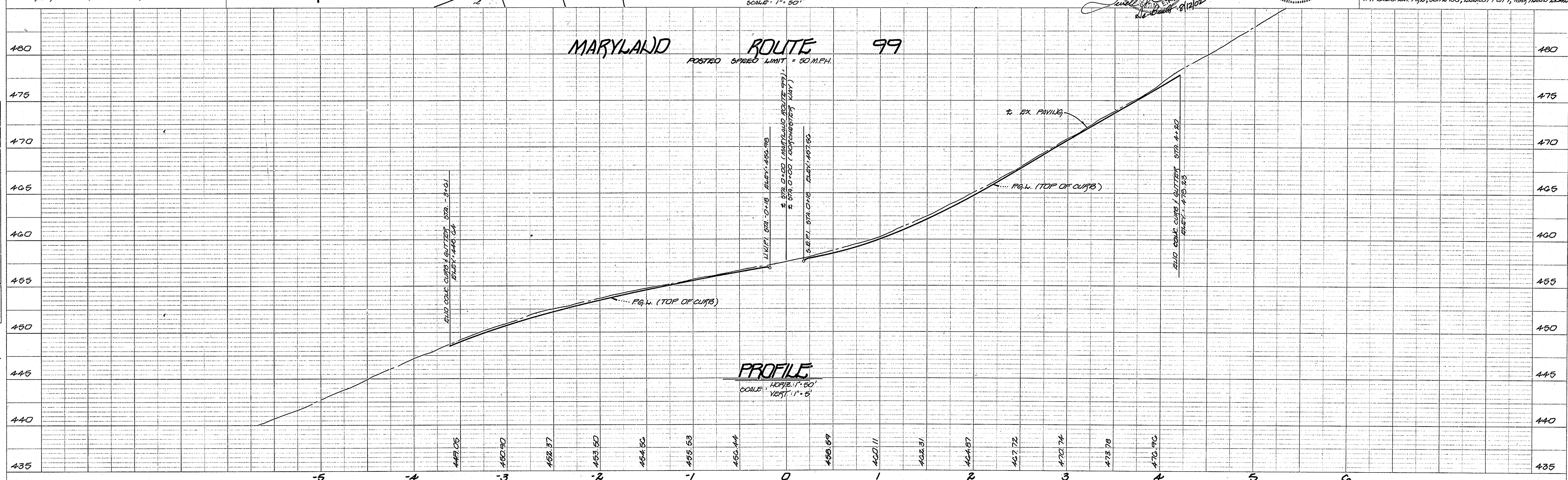
APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Jim Symonakis* 2/5/96  
 CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

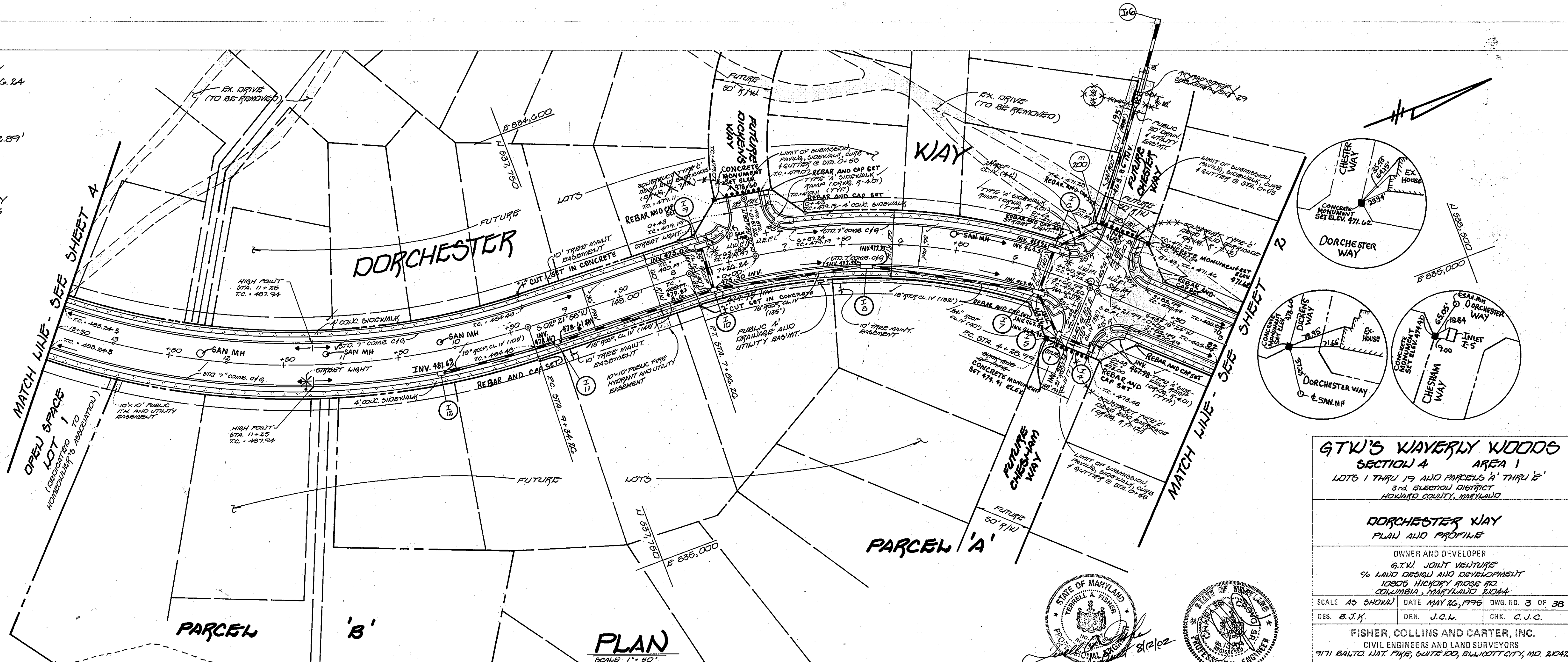
*Chris Dorman* 2/1/96  
 CHIEF, DEVELOPMENT REGULATIONS DIVISION DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

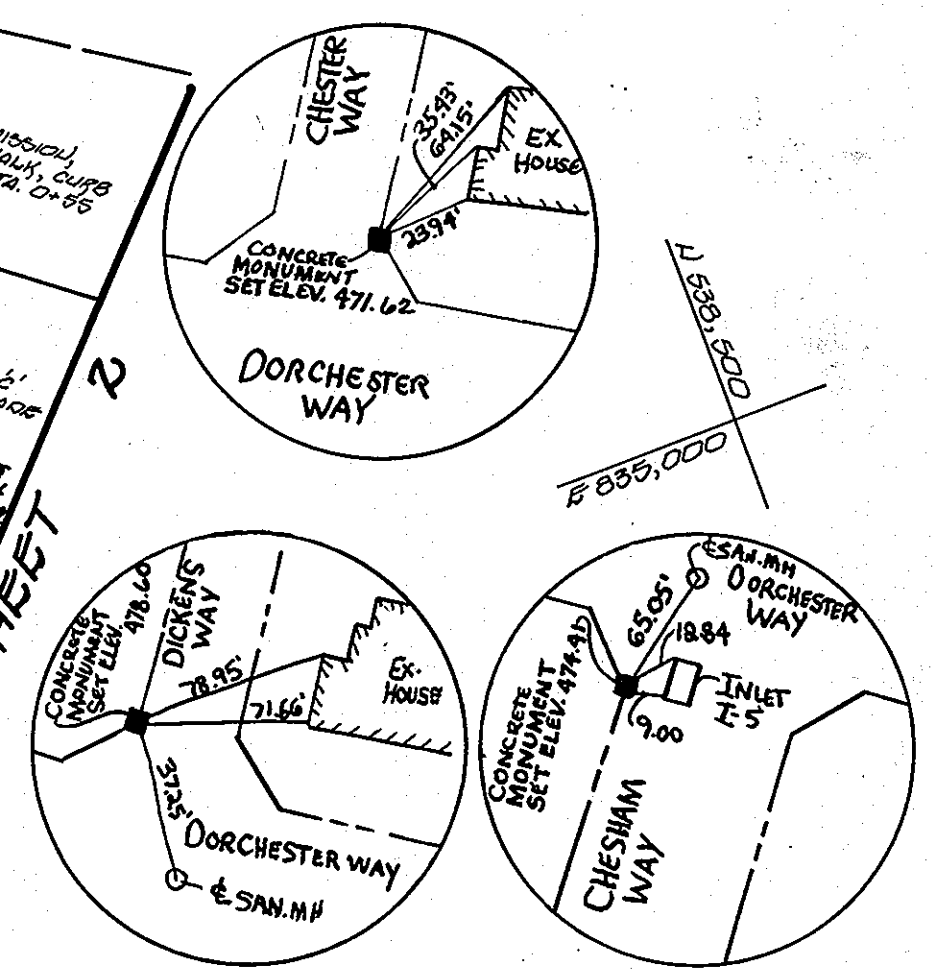
*Andrew M. Dando* 1-30-96  
 CHIEF, BUREAU OF HIGHWAYS H/S DATE



1253



% CURVE DATA DORCHESTER WAY		% CURVE DATA DORCHESTER WAY	
STA. 4+28.99 TO STA. 7+80.20	$R = 500.00'$ $L = 357.27'$ $\Delta = 40^\circ 56' 20''$ $T = 180.65'$ CHQ. = $5^\circ 22' 50''$ W, 349.72'	STA. 4+28.99 TO STA. 7+80.24	$R = 500.00'$ $L = 297.25'$ $\Delta = 34^\circ 03' 44''$ $T = 153.16'$ CHQ. = $5^\circ 26' 16.32''$ E, 292.89'
% CURVE DATA DORCHESTER WAY		% CURVE DATA FUTURE RICHMOND WAY	
STA. 7+34.20 TO STA. 17+29.73	$R = 650.00'$ $L = 976.47'$ $\Delta = 87^\circ 44' 52''$ $T = 624.94'$ CHQ. = $5^\circ 46' 14' 24''$ W, 900.99'	STA. 0+51.22 TO STA. 0+55	$R = 310.00'$ $L = 3.78'$ $\Delta = 00^\circ 41' 07''$ $T = 1.69'$ CHQ. = $11^\circ 20' 24' 47''$ W, 3.78'
% CURVE DATA FUTURE CHESTER WAY			
STA. 0+46.00 TO STA. 0+55	$R = 750.00'$ $L = 8.40'$ $\Delta = 00^\circ 38' 30''$ $T = 4.20'$ CHQ. = $11^\circ 47' 00' 51''$ W, 8.40'		



APPROVED:  
DEPARTMENT OF PLANNING AND ZONING

*Anna Sturimann*  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING  
DATE: 2/5/96

*John D. ...*  
CHIEF, DEVELOPMENT SUBDIVISION  
DATE: 2/1/96

APPROVED:  
DEPARTMENT OF PUBLIC WORKS

*Andrew M. ...*  
CHIEF, BUREAU OF HIGHWAYS  
DATE: 1-30-96

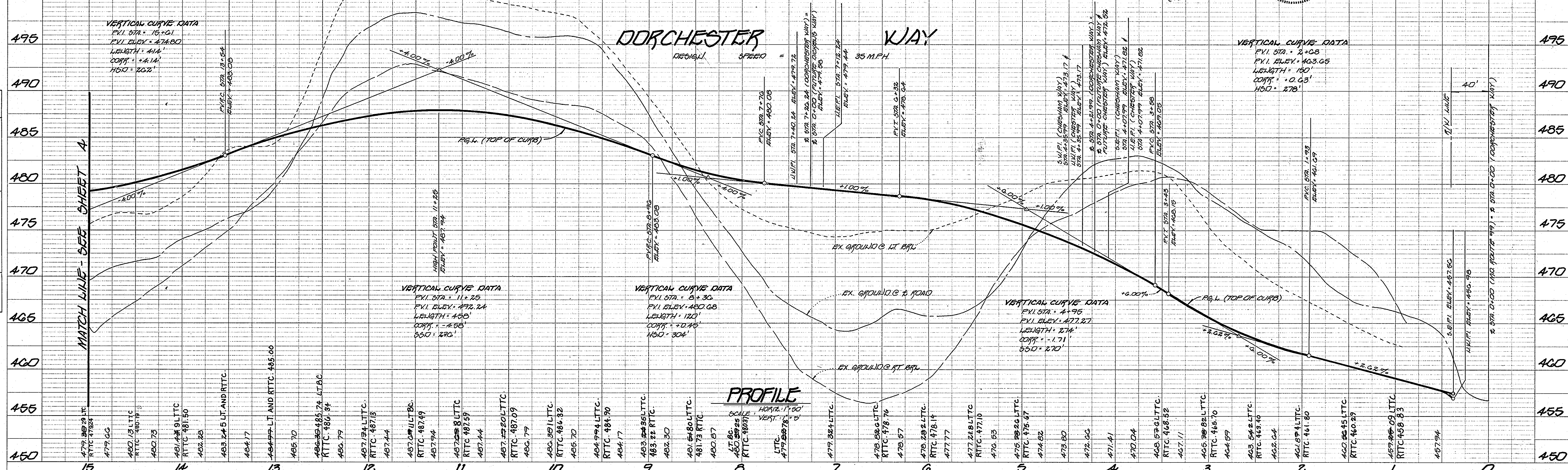
**GTW'S KLAVERLY WOODS**  
SECTION 4 AREA 1  
LOTS 1 THRU 19 AND PARCELS 'A' THRU 'E'  
3RD QUADRA, DISTRICT  
HOWARD COUNTY, MARYLAND

**DORCHESTER WAY**  
PLAN AND PROFILE

OWNER AND DEVELOPER  
GTW JOINT VENTURE  
% LAJO DESIGN AND DEVELOPMENT  
10805 WICKORY STONE RD  
COLUMBIA, MARYLAND 21044

SCALE: AS SHOWN DATE: MAY 16, 1995 DWG. NO. 3 OF 38  
DES. B.J.K. DRN. J.C.W. CHK. C.J.C.

FISHER, COLLINS AND CARTER, INC.  
CIVIL ENGINEERS AND LAND SURVEYORS  
9171 BALTO. NAT. PIKE, SUITE 100, ELLICOTT CITY, MD. 21042



DATE	BY

DATE	BY

1253

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 ALIGNMENT CHECKED: \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 RT. OF WAY CHECKED: \_\_\_\_\_

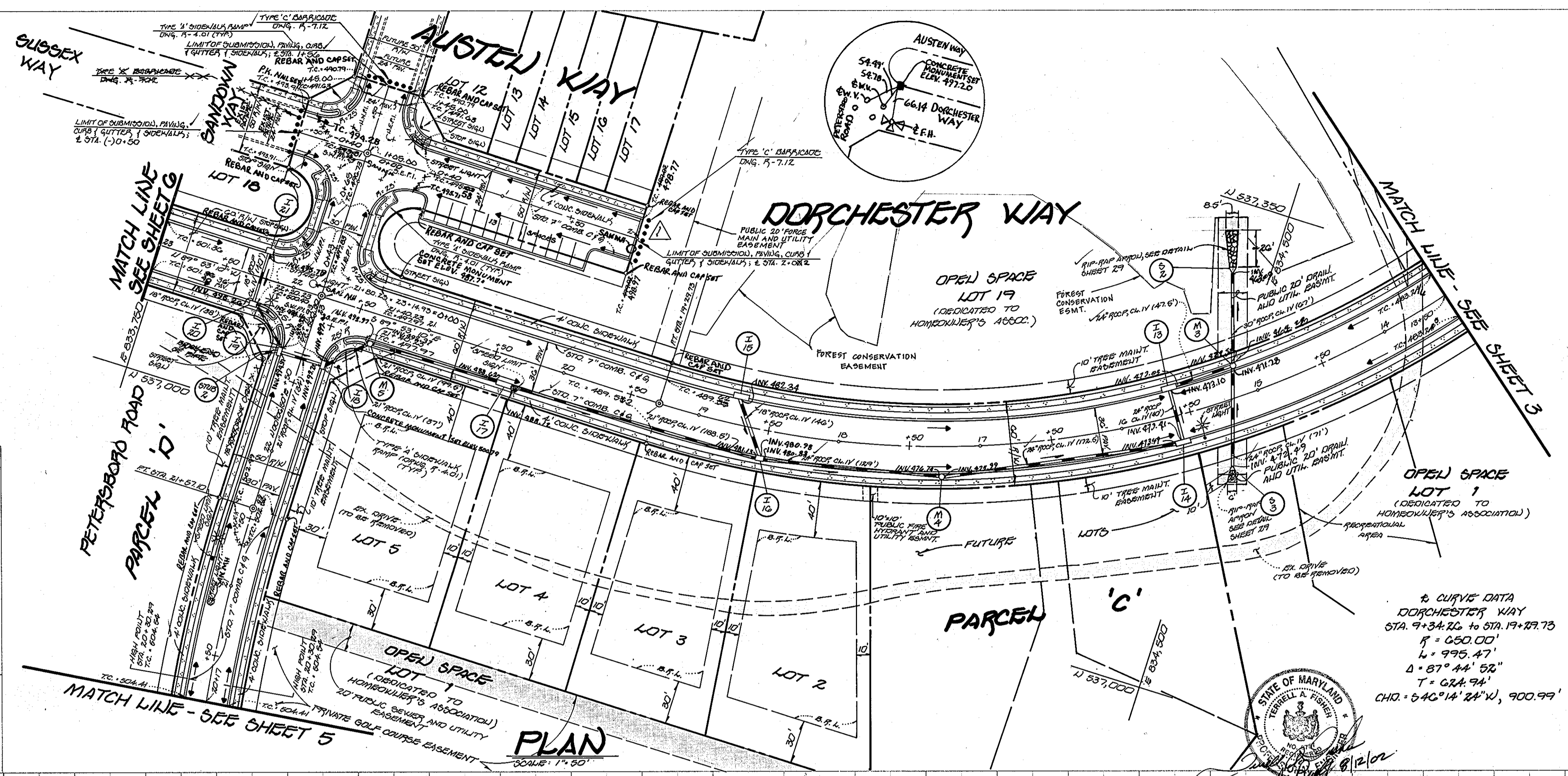
**\* CURVE DATA**  
 PETERSBORO ROAD  
 STA. 16+28.60 TO STA. 21+57.10  
 $R = 1000.00'$   
 $L = 528.00'$   
 $\Delta = 30^\circ 17' 12''$   
 $T = 270.63'$   
 $CHD = N 16^\circ 01' 47'' W, 522.47'$

APPROVED: \_\_\_\_\_  
 DEPARTMENT OF PLANNING AND ZONING

*Gina Surinam* 2/5/96  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH  
*M. D. Danner* 2/1/96  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: \_\_\_\_\_  
 DEPARTMENT OF PUBLIC WORKS

*Richard M. Donohue* 1-20-96  
 CHIEF, BUREAU OF HIGHWAYS



No.	Date	Revisions
1	8-15-98	Added approx. 22' of curb @ Sta. 21+00 Austen Way.

**GTW'S WAVERLY WOODS**  
 SECTION 4 AREA 1  
 LOTS 1 THRU 19 AND PARCELS 'A' THRU 'E'  
 3rd ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

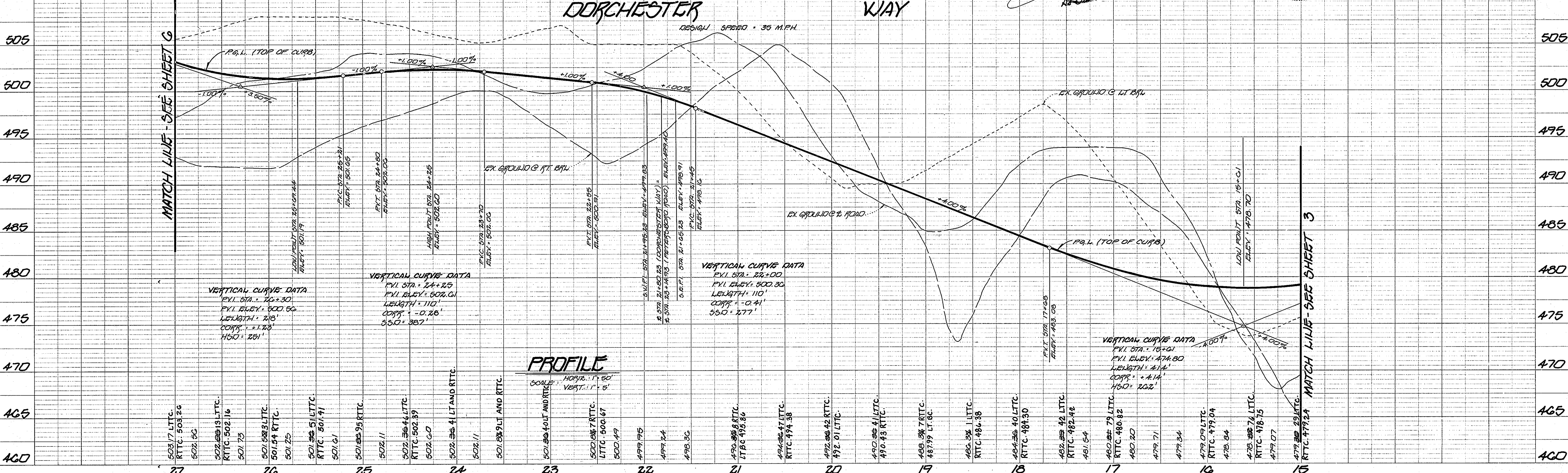
**DORCHESTER WAY**  
 FULL AND PROFILE  
 PETERSBORO ROAD

OWNER AND DEVELOPER  
 GTW JOINT VENTURE  
 % LAND DESIGN AND DEVELOPMENT  
 10806 HIGHWAY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

SCALE AS SHOWN DATE MAY 20, 1996 DWG. NO. 4 OF 38  
 DES. B.J.K. DRN. J.C.L. CHK. C.J.C.

FISHER, COLLINS AND CARTER, INC.  
 CIVIL ENGINEERS AND LAND SURVEYORS  
 9171 BALTO. WAT. PIKE, SUITE 100, BELLWORTH CITY, MARYLAND 20846

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 GRADES CHECKED: \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 STRUCTURE NOTATIONS CHKD: \_\_\_\_\_



125B

DATE	
BY	
SURVEYED	
ALIGNED	
NOTE BOOK	
NO.	

APPROVED:  
DEPARTMENT OF PLANNING AND ZONING

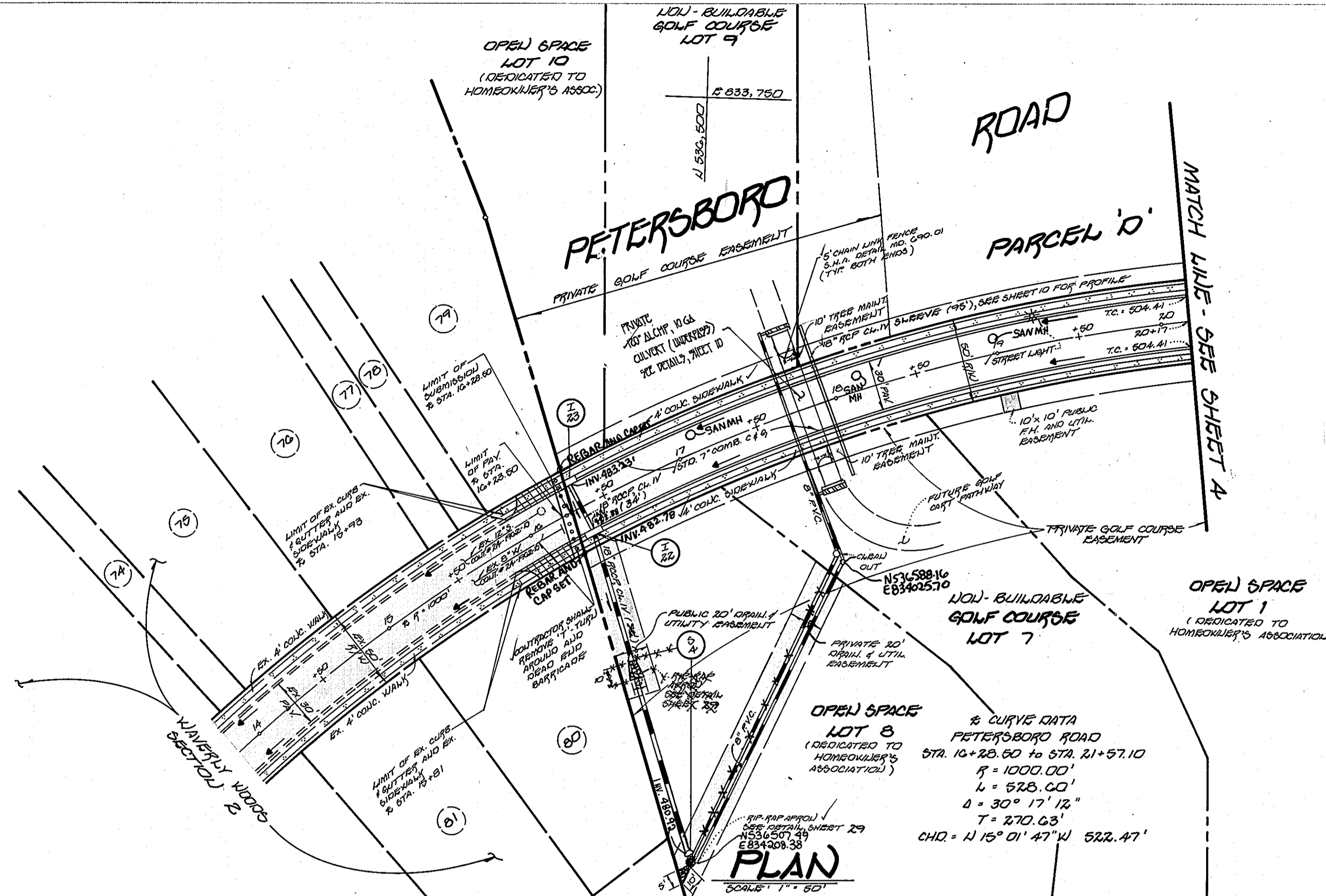
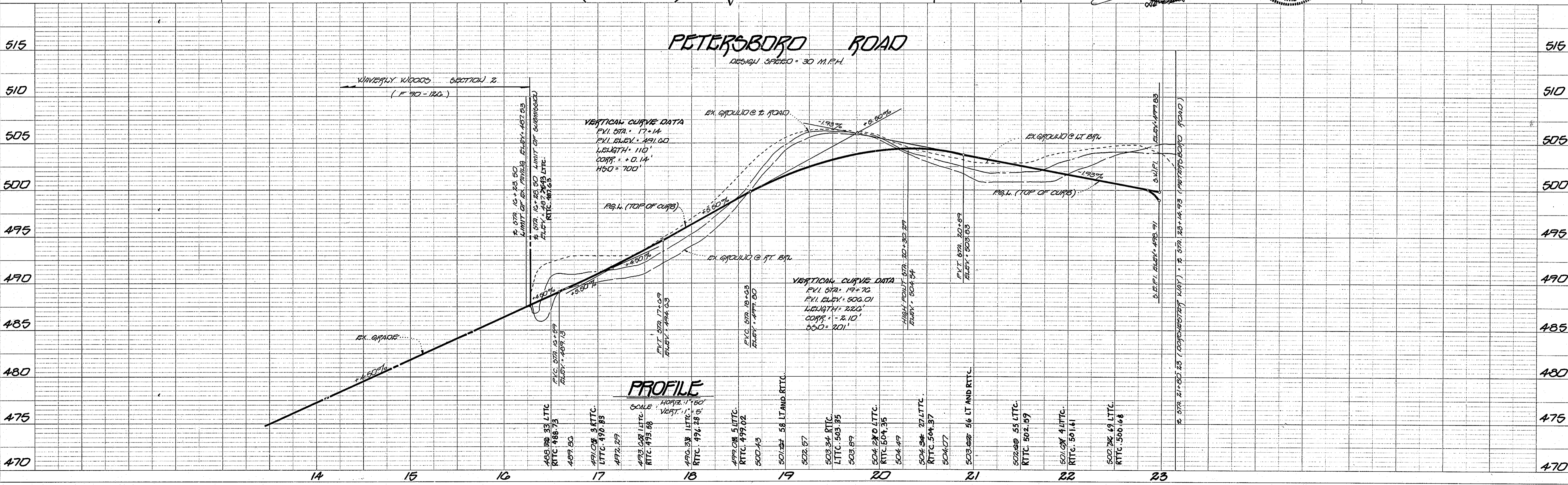
*Gina Strimmar* 2/15/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND REVISION

*Mr. Damm* 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:  
DEPARTMENT OF PUBLIC WORKS

*Andrew M. Daneker* 1-30-96  
CHIEF, BUREAU OF HIGHWAYS

DATE	
BY	
SURVEYED	
ALIGNED	
NOTE BOOK	
NO.	



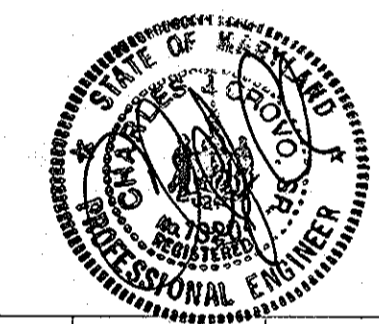
**GTW'S WAVERLY WOODS**  
SECTION 4 AREA 1  
LOTS 1 THRU 19 AND PARCELS A THRU E  
3rd ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**PETERSBORO ROAD**  
PLAN AND PROFILE

OWNER AND DEVELOPER  
GTW JOINT VENTURE  
% LAND DEVELOPMENT AND DEVELOPMENT  
10806 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN DATE MAY 20, 1996 DWG. NO. 8 OF 38  
DES. B.J.K. DRN. J.C.L. CHK. C.V.C.

FISHER, COLLINS AND CARTER, INC.  
CIVIL ENGINEERS AND LAND SURVEYORS  
9171 BALTO. LANE PIKE, SUITE 100, BALWOTT CITY, MARYLAND 21042



1253

DATE	
BY	
SURVEYED	
ALIGNED CHECKED	
NOTE BOOK NO.	
RT. OF WAY CHECKED	

APPROVED:  
DEPARTMENT OF PLANNING AND ZONING

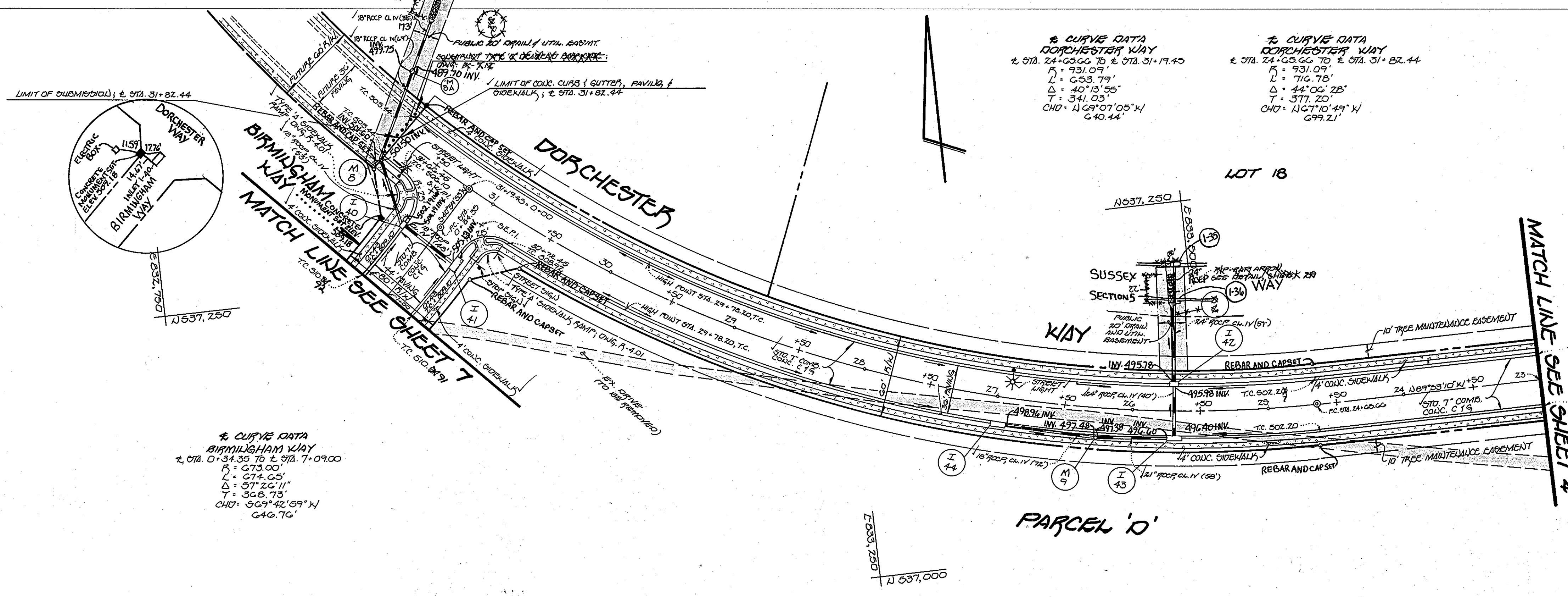
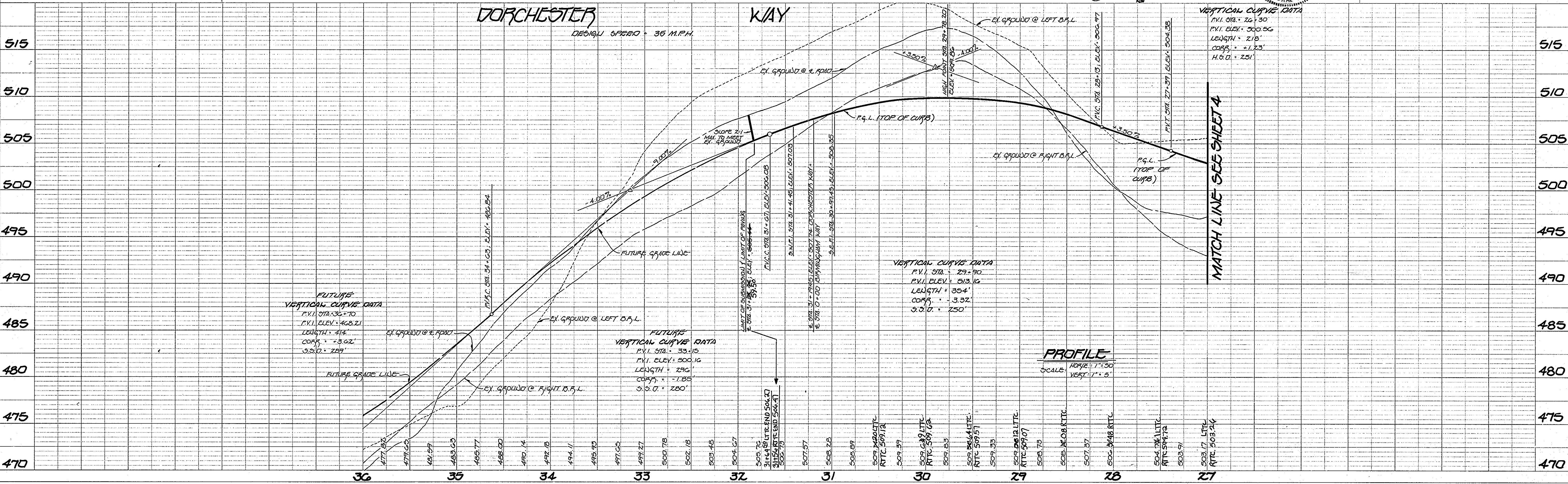
*Uma Simonian* 2/15/96  
CHIEF DIVISION OF LAND DEVELOPMENT AND PRESERVATION

*Chris DeMunn* 2/1/96  
CHIEF DEVELOPMENT REGULATIONS DIVISION

APPROVED:  
DEPARTMENT OF PUBLIC WORKS

*William M. Donohue* 1/30/96  
CHIEF, BUREAU OF HIGHWAYS

DATE	
BY	
SURVEYED	
GRADES CHECKED	
NOTE BOOK NO.	
STRUCTURE NOTATION CHECKED	



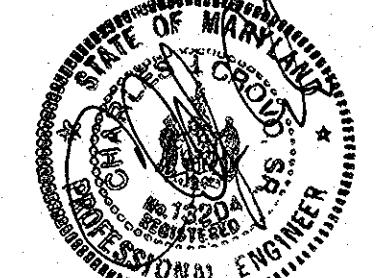
**GTW'S WAVERLY WOODS**  
SECTION 4 AREA 1  
LOTS 1 THRU 19 AND PARCELS 'A' THRU 'E'  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

BIRMINGHAM WAY PLAN  
DORCHESTER WAY PLAN & PROFILE

OWNER AND DEVELOPER  
GTW JOINT VENTURE  
% LAND DEVELOPMENT  
10505 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN DATE MAY 26, 1995 DWG. NO. G OF 38  
DES. B.J.F. DRN. J.M.M. CHK. C.J.C.

FISHER, COLLINS AND CARTER, INC.  
CIVIL ENGINEERS AND LAND SURVEYORS  
9711 BALTO. NAT'L PIKE, STE. 100 ELLICOTT CITY, MARYLAND 21042



1253

DATE	
BY	
SURVEYED	
ALIGNED	
NOTE BOOK	
NO.	

APPROVED  
DEPARTMENT OF PLANNING AND ZONING

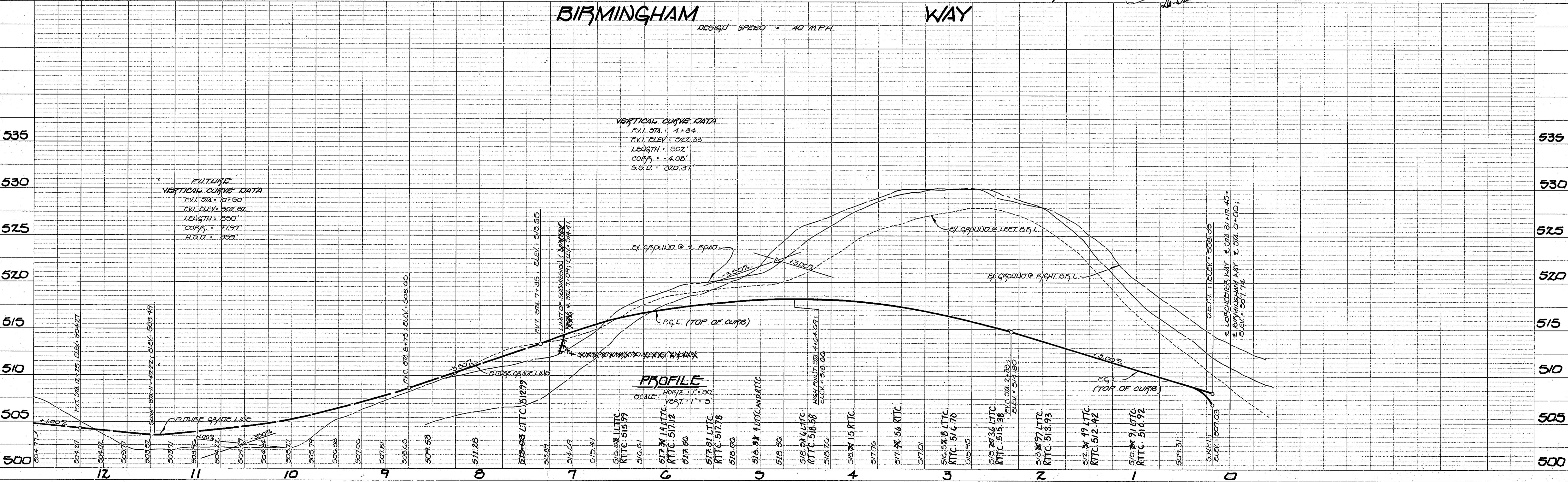
*Anna Szymanski* 2/5/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

*John P. ...* 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED  
DEPARTMENT OF PUBLIC WORKS

*Richard M. ...* 1-30-96  
CHIEF, BUREAU OF HIGHWAYS

DATE	
BY	
SURVEYED	
GRADES CHECKED	
NOTE BOOK	
NO.	



**2 CURVE DATA**  
BIRMINGHAM WAY  
STATION 3+34.35 TO STATION 7+09.00  
P = 670.00  
L = 674.00  
Δ = 97°26'11"  
T = 360.75  
CHD = 0.0742' @ 1" H  
G = 0.70

**GTK'S WAVERLY WOODS**  
SECTION 4 AREA 1  
LOTS 1 THRU 19 AND PARCELS 'A' THRU 'E'  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**BIRMINGHAM WAY**  
PLAN & PROFILE

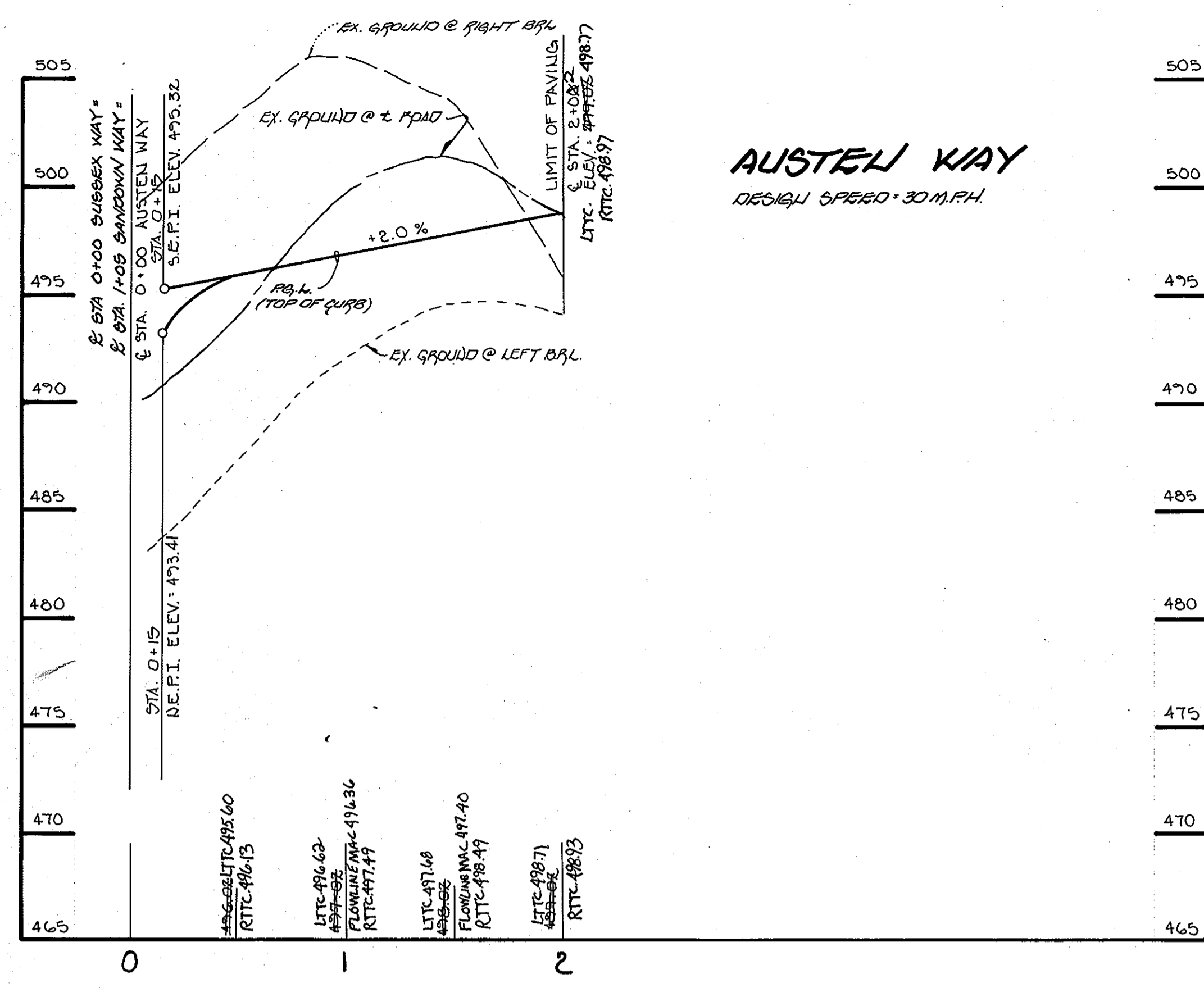
OWNER AND DEVELOPER  
GTK JOINT VENTURE  
% LAND DESIGN AND DEVELOPMENT  
10805 HIGHWAY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN DATE MAY 26, 1995 DWG. NO. 71 OF 38  
DES. B.J.K. DRN. J.M.M. CHK. C.J.C.

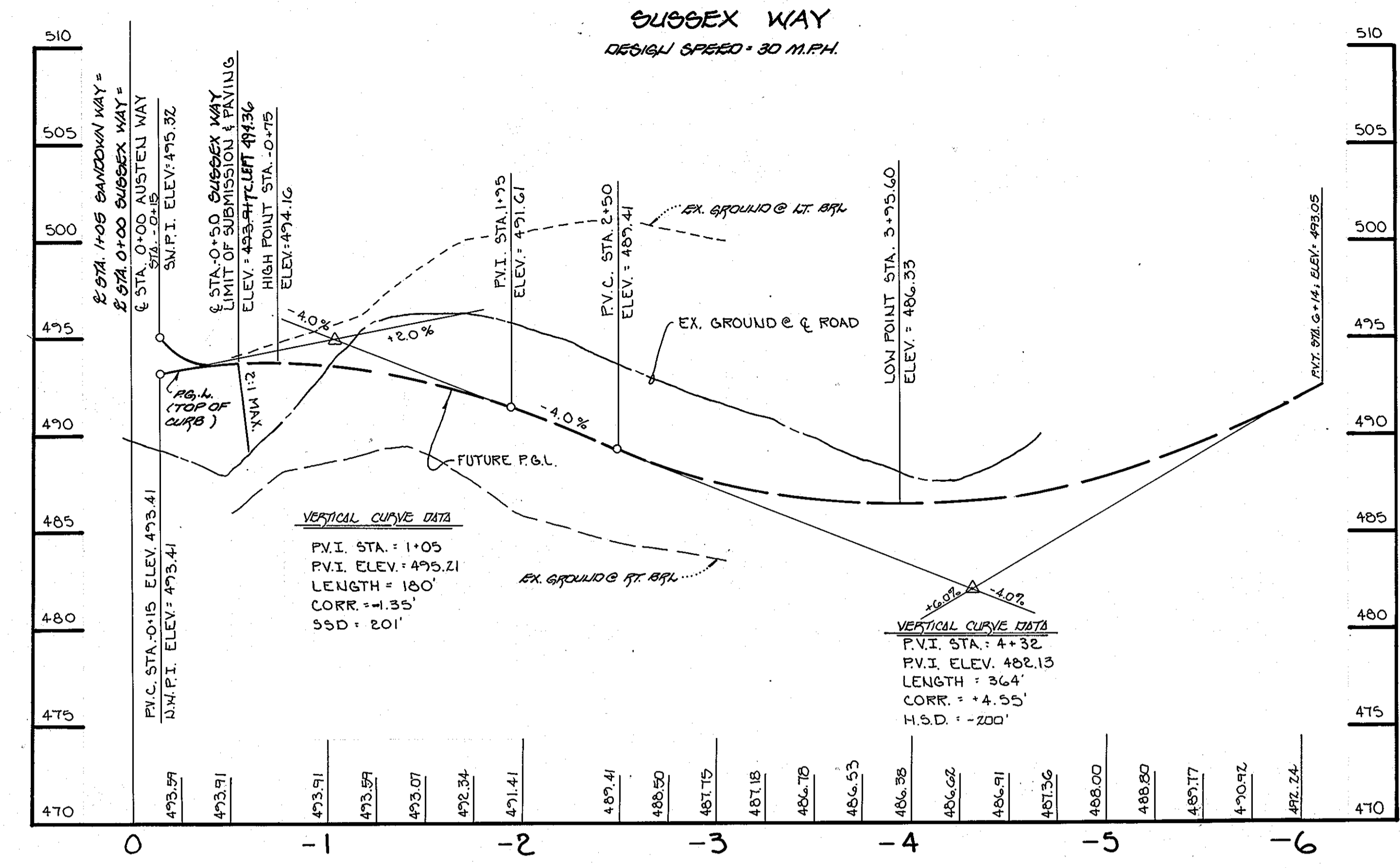
FISHER, COLLINS AND CARTER, INC.  
CIVIL ENGINEERS AND LAND SURVEYORS  
9711 ELLICOTT LANE, SUITE 100 ELLICOTT CITY, MARYLAND 21042



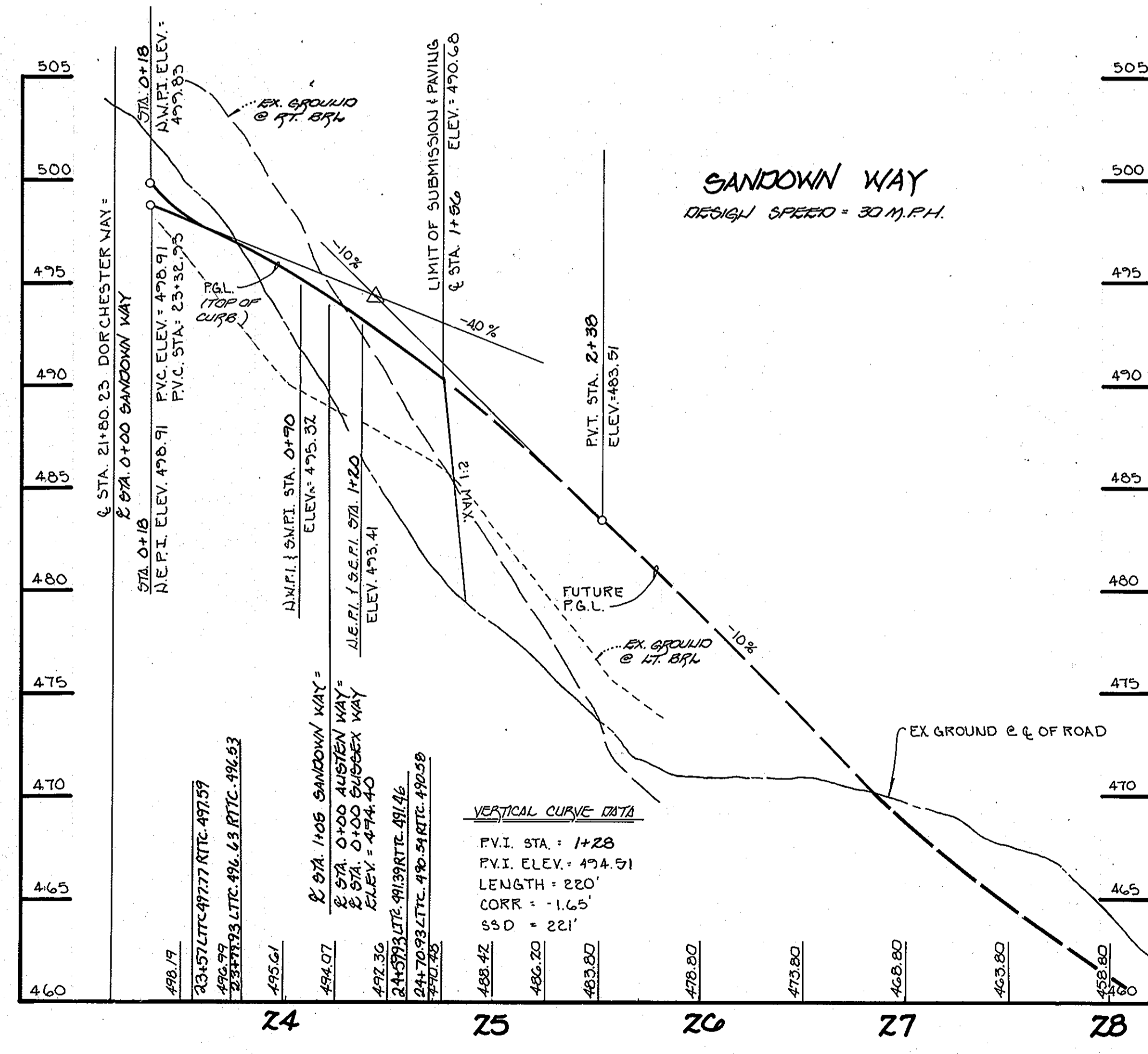
1253



**PROFILE**  
HORIZ. 1" = 50'  
SCALE VERT. 1" = 5'



**PROFILE**  
HORIZ. 1" = 50'  
SCALE VERT. 1" = 5'



**PROFILE**  
HORIZ. 1" = 50'  
SCALE VERT. 1" = 5'

APPROVED:  
DEPARTMENT OF PLANNING AND ZONING

*Carol J. ...* 2/2/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND PROGRESS DATE

*...* 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED:  
DEPARTMENT OF PUBLIC WORKS

*...* 1-30-96  
CHIEF, BUREAU OF HIGHWAYS MS DATE

12521

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SOURCE OFFICE, P.O. BOX 1022, BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21044  
(410) 461-2885

OWNER AND DEVELOPER  
GTW JOINT VENTURE  
c/o LAND DESIGN AND DEVELOPMENT, INC.  
10805 HICKORY RIDGE ROAD, SUITE #215  
COLUMBIA, MARYLAND 21044



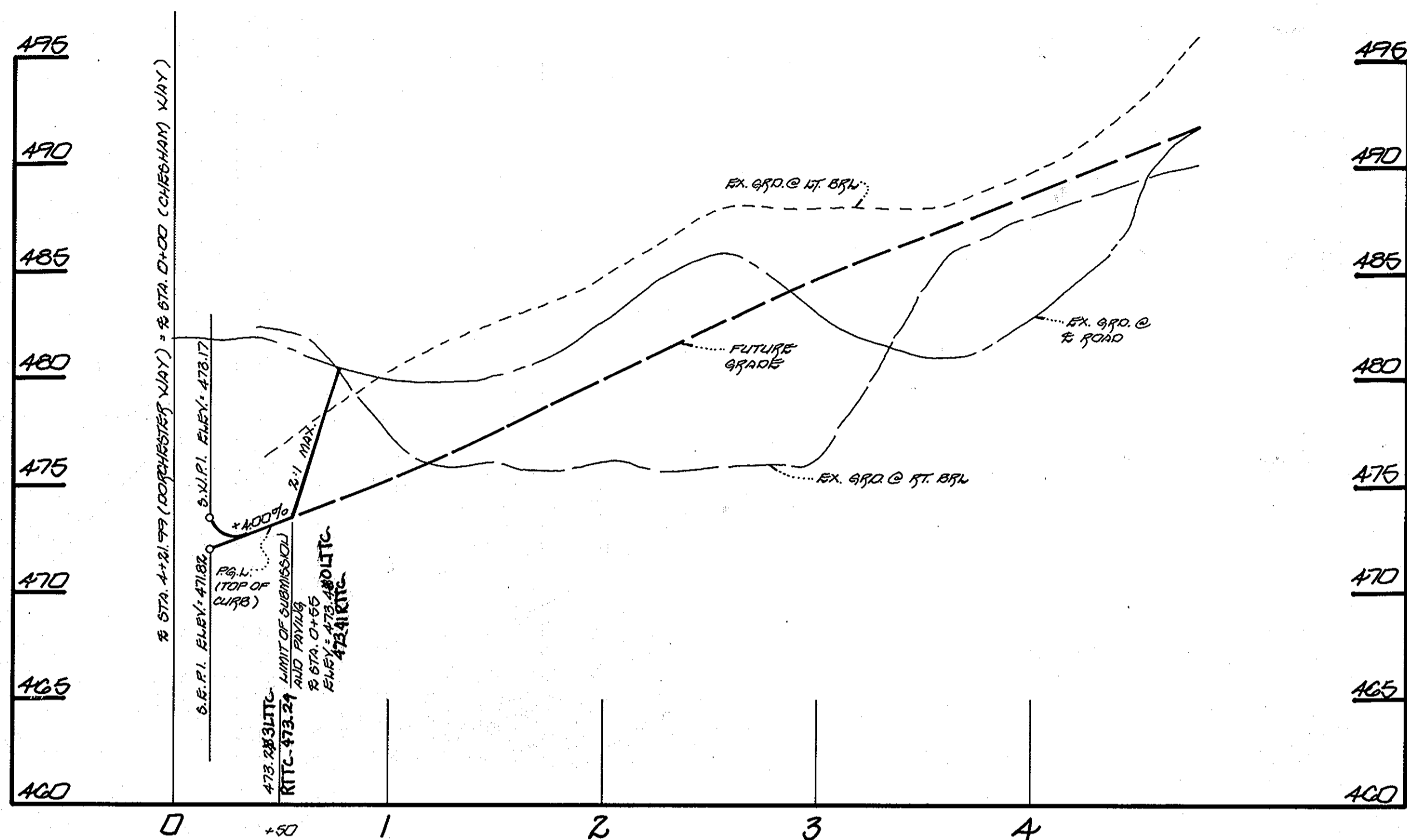
STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
*...*  
So. Built 8/12/02

AUSTEN WAY & PETERSBORO ROAD  
PROFILES  
GTW'S WAVERLY WOODS  
SECTION 4, AREA 1  
LOTS 20 thru 45  
(A RESUBDIVISION OF PARCEL 1A,  
GTW'S WAVERLY WOODS, SECTION 4, AREA 1  
PART OF TAX PARCEL 2L, TAX MAP 16)  
ZONING: R-20 AND RS-A-9  
TAX MAP No. 16 PARCEL No. 21  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: MAY 25, 1995  
SHEET 8 OF 38



# FUTURE CHESHAM WAY

DESIGN SPEED - 30 M.P.H.

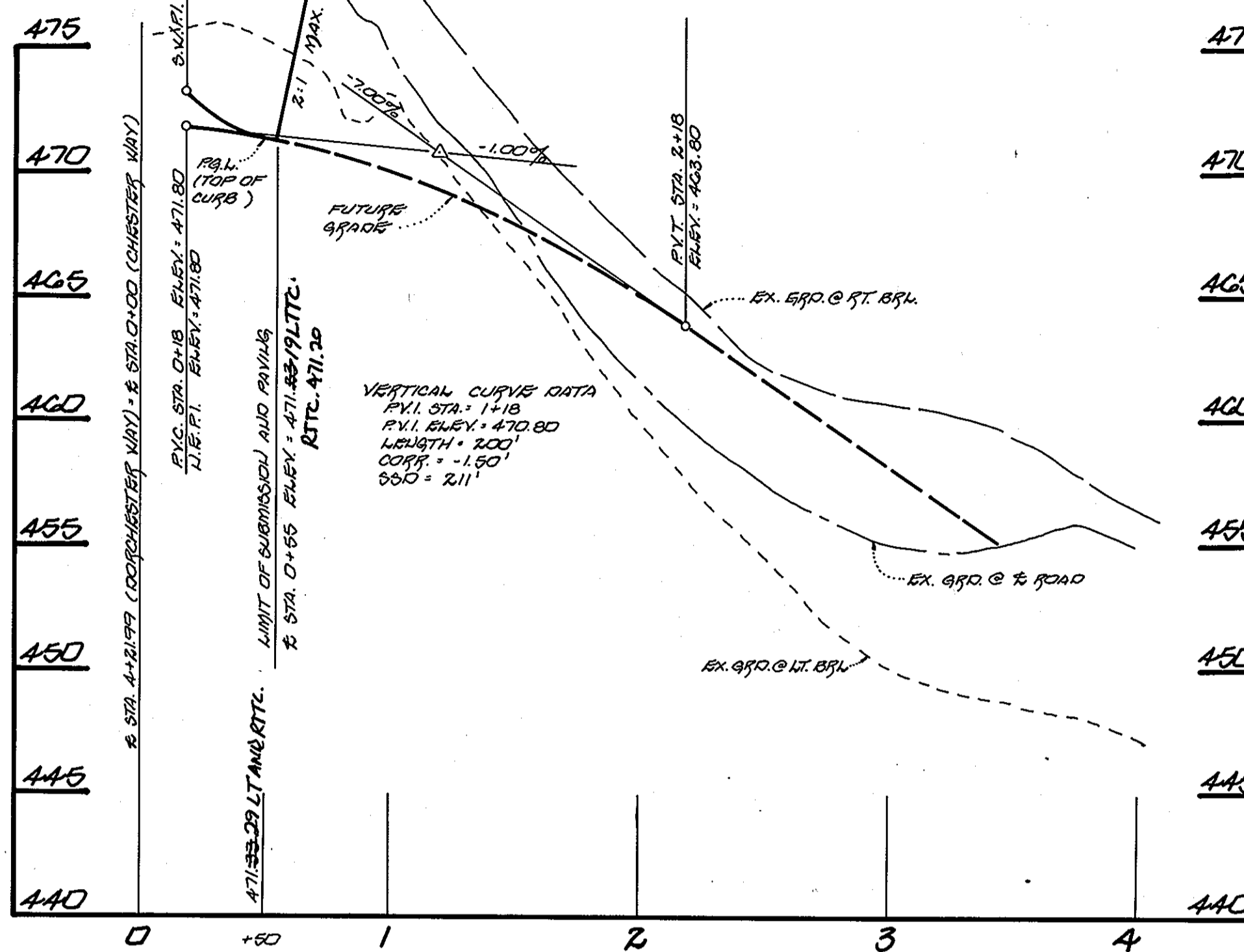


PROFILE

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

# FUTURE CHESTER WAY

DESIGN SPEED - 30 M.P.H.

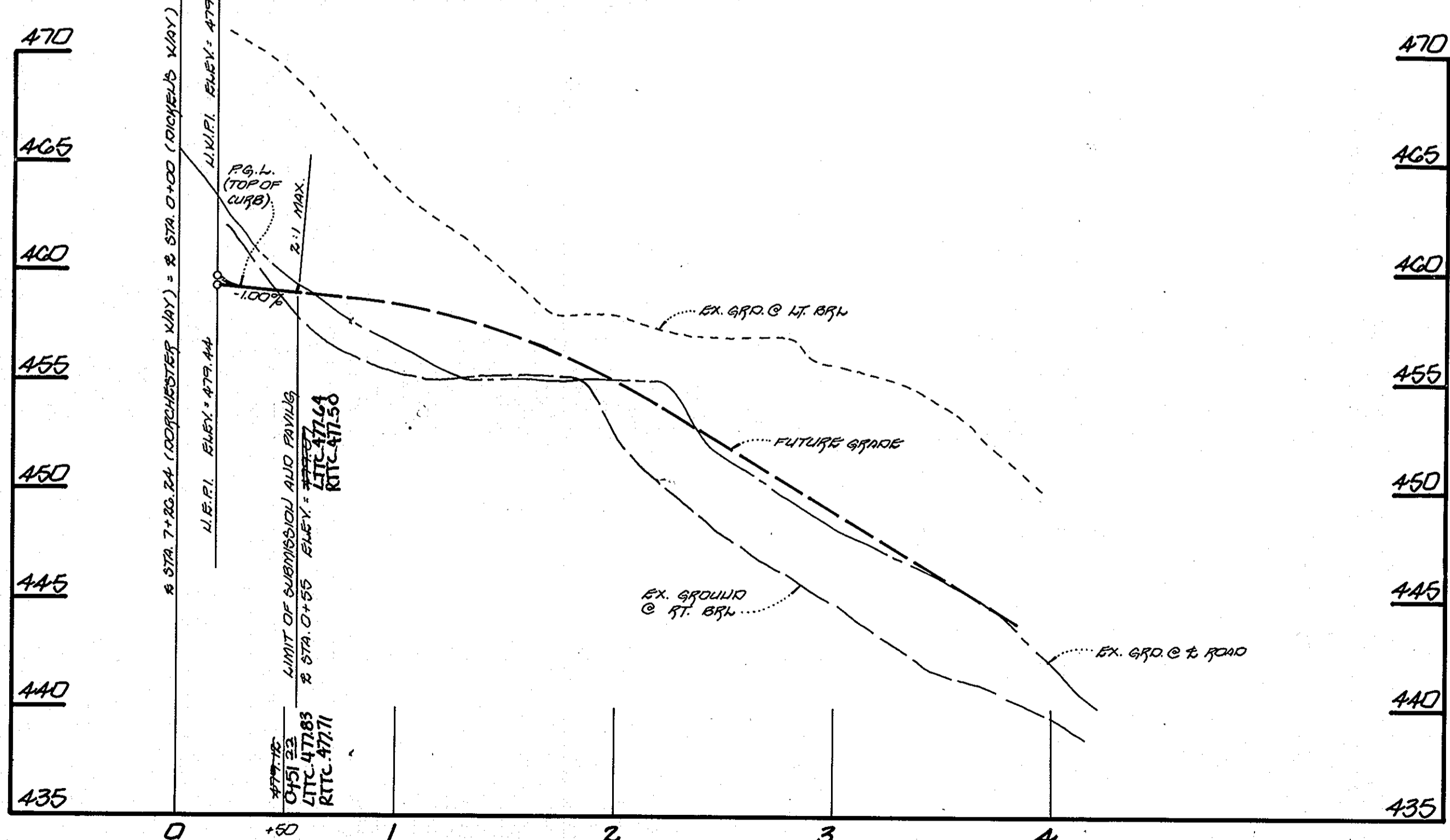


PROFILE

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

# FUTURE DICKENS WAY

DESIGN SPEED - 30 M.P.H.



PROFILE

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

APPROVED:  
DEPARTMENT OF PLANNING AND ZONING

*Oliver J. ...* 2/2/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

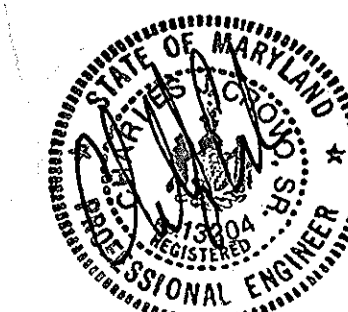
*...* 2/1/96  
CHIEF, DEVELOPMENT PLANNING DIVISION

APPROVED:  
DEPARTMENT OF PUBLIC WORKS

*Andrew M. ...* 1-30-96  
CHIEF, BUREAU OF HIGHWAYS

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SERVICE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21114  
410-461-2025

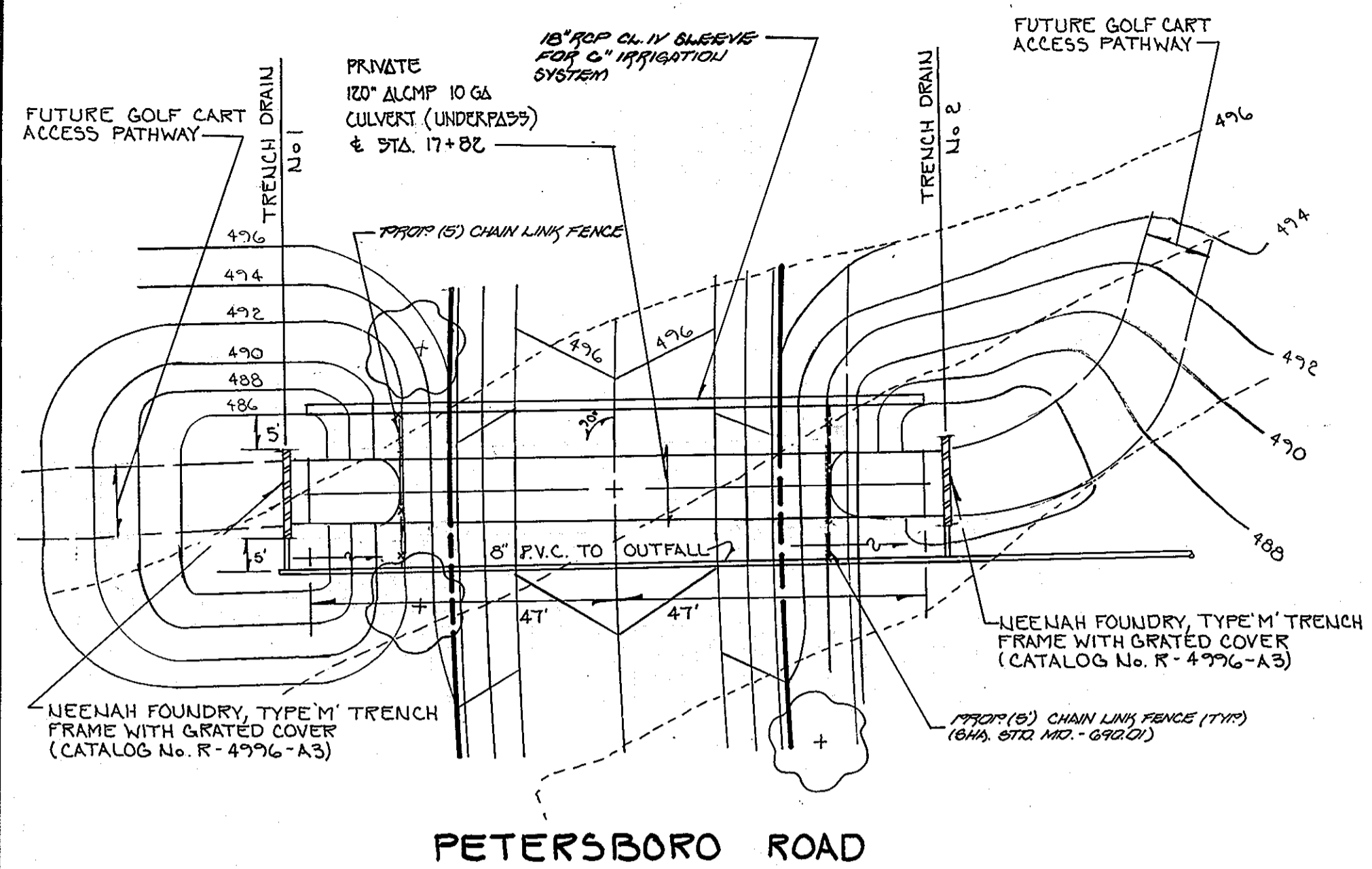
OWNER AND DEVELOPER  
GTW JOINT VENTURE  
270 LAND DESIGN AND DEVELOPMENT, INC.  
10805 HICKORY RIDGE ROAD, SUITE #215  
COLUMBIA, MARYLAND 21044



*...* 8/12/02

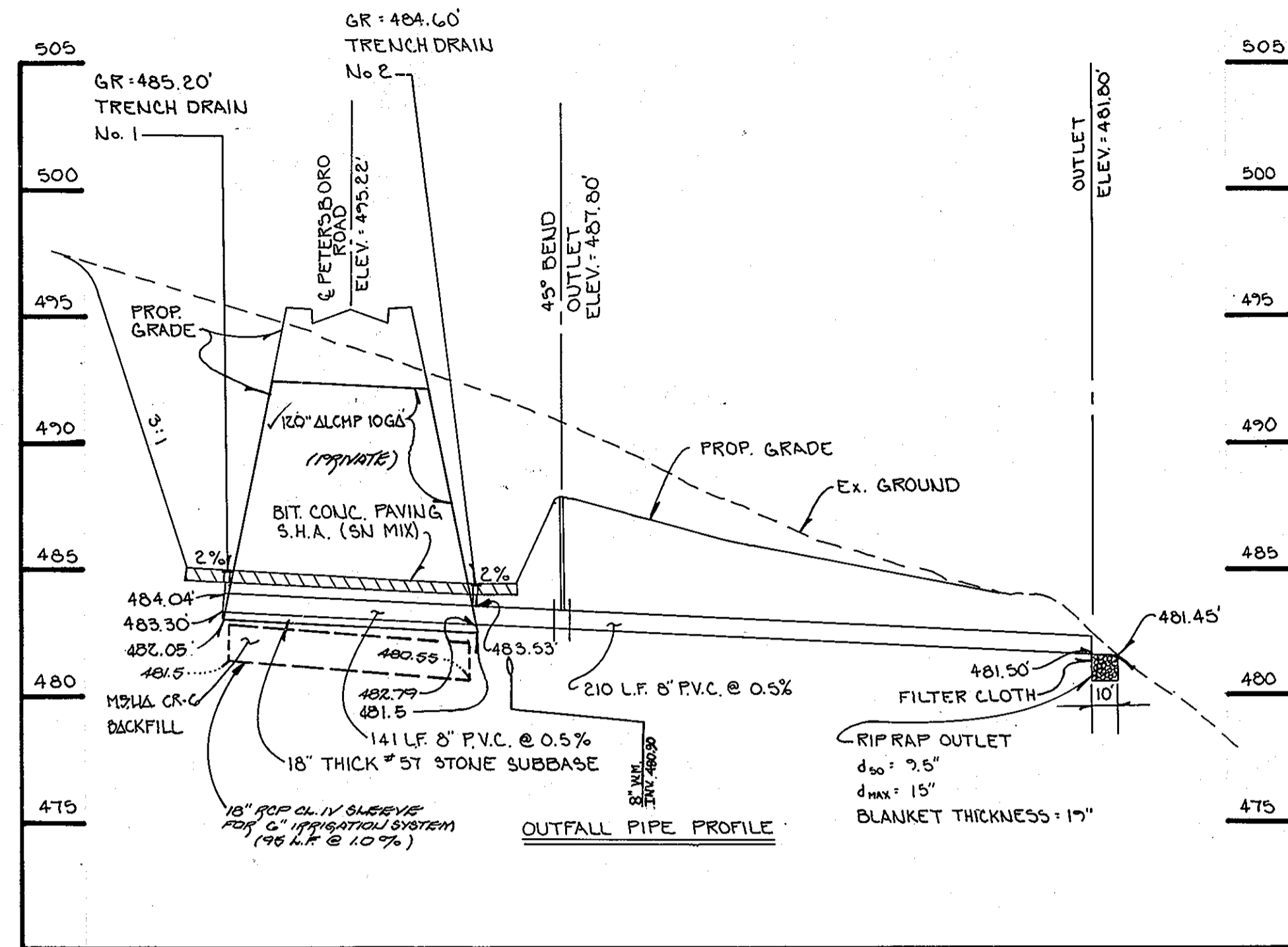
FUTURE CHESHAM WAY, FUTURE CHESTER WAY AND FUTURE DICKENS WAY PROFILES  
GTW'S WAVERLY WOODS  
SECTION 4, AREA 1  
LOTS 20 thru 45  
(A RESUBDIVISION OF PARCEL 'A', GTW'S WAVERLY WOODS, SECTION 4, AREA 1 PART OF TAX PARCEL 21, TAX MAP 16) ZONING R-20 AND RS-A-9  
TAX MAP No. 16 PARCEL No. 21  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: MAY 26, 1995  
SHEET 9 OF 39

1253



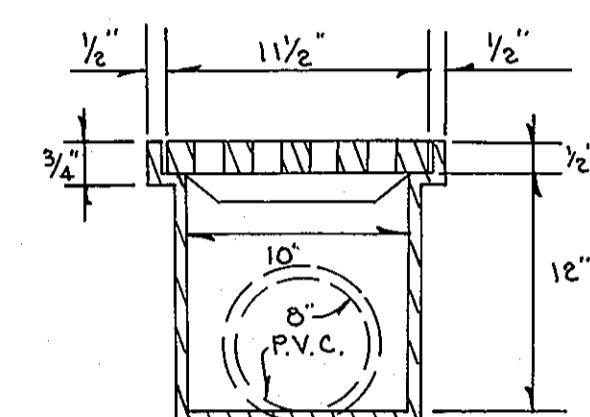
PETERSBORO ROAD

PLAN  
SCALE: 1" = 20'



PROFILE

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



TYPE M' TRENCH (GRADED)  
NOT TO SCALE

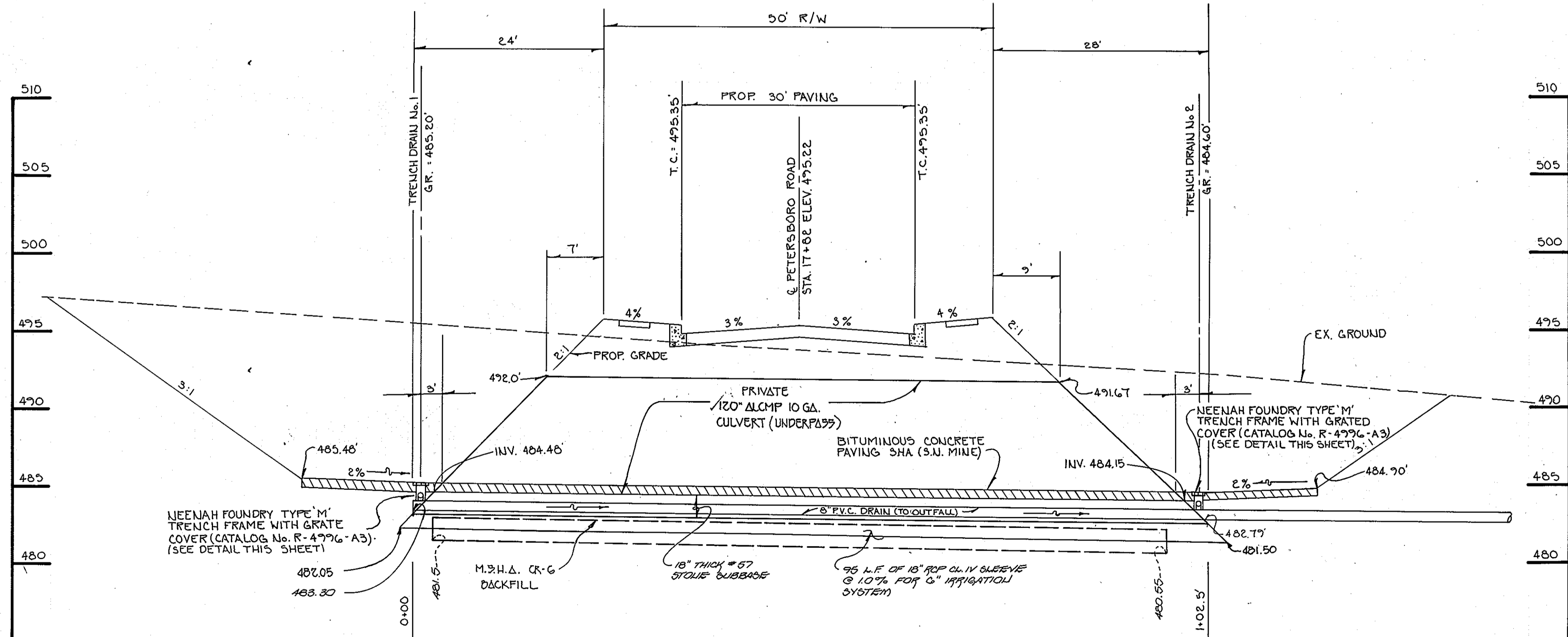
APPROVED  
DEPARTMENT OF PLANNING AND ZONING

*[Signature]*  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING  
2/5/96  
DATE

*[Signature]*  
CHIEF, DEVELOPMENT SUBORDINATE DIVISION  
2/11/96  
DATE

APPROVED  
DEPARTMENT OF PUBLIC WORKS

*[Signature]*  
CHIEF, BUREAU OF HIGHWAYS  
1-30-96  
DATE

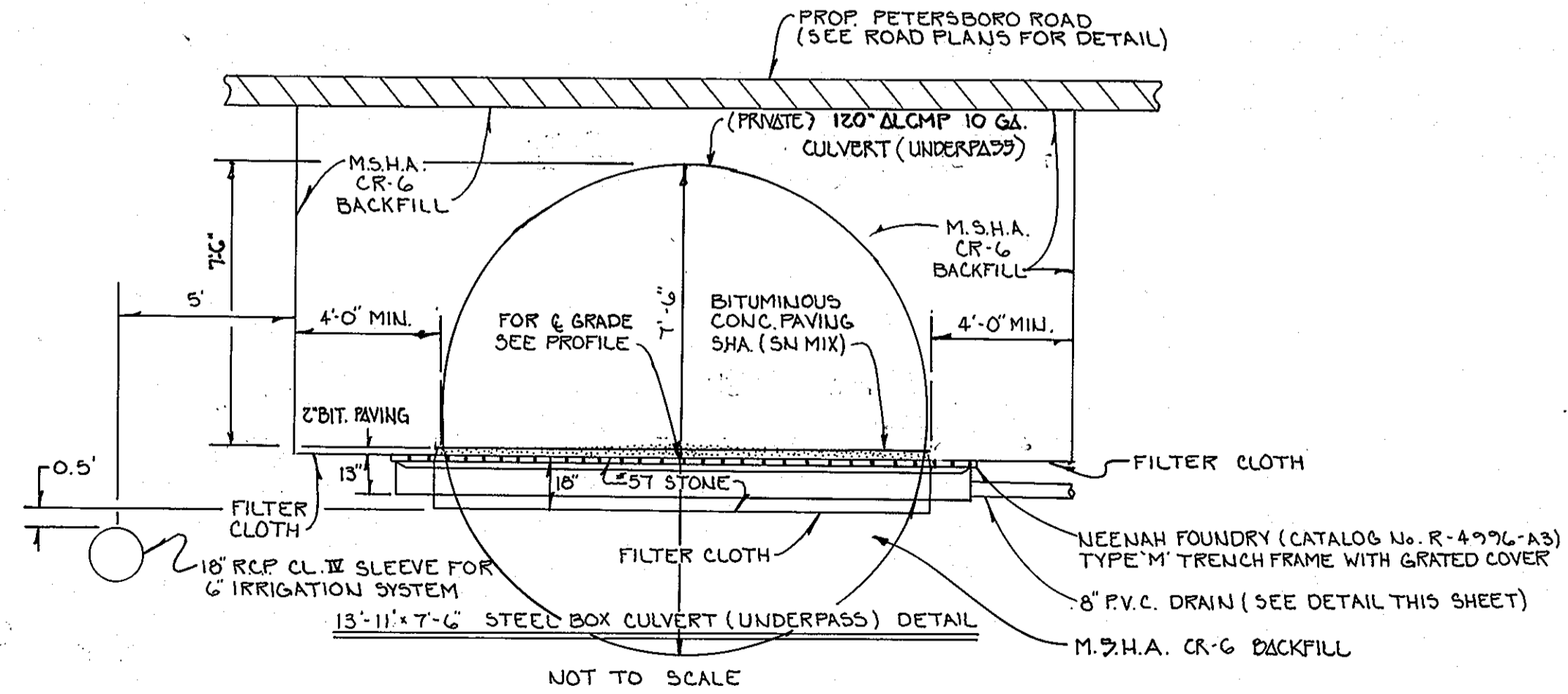


PROFILE

SCALE: HORIZ. 1" = 10'  
VERT. 1" = 5'

NOTE: MAINTENANCE OF PROPOSED GOLF CART TUNNEL IS TO BE PRIVATELY MAINTAINED BY THE HOMEOWNERS ASSOCIATION.

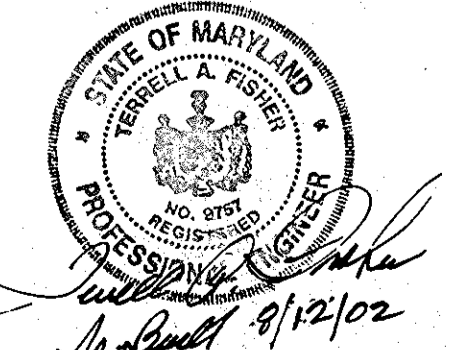
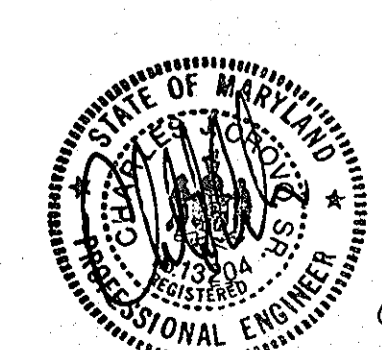
NOTE: THERE SHALL BE 95% COMPACTION AROUND THE GOLF CROPPING PER ASPHTO T-180 INSPECTIONS.



NOT TO SCALE

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE, SUITE 2000 - 1672 BALTIMORE NATIONAL FIRE  
ELLSWORTH CITY, MARYLAND 21116  
410 461-2255

OWNER AND DEVELOPER  
GTW JOINT VENTURE  
C/O LAND DESIGN AND DEVELOPMENT, INC.  
10805 HICKORY RIDGE ROAD, SUITE #215  
COLUMBIA, MARYLAND 21044



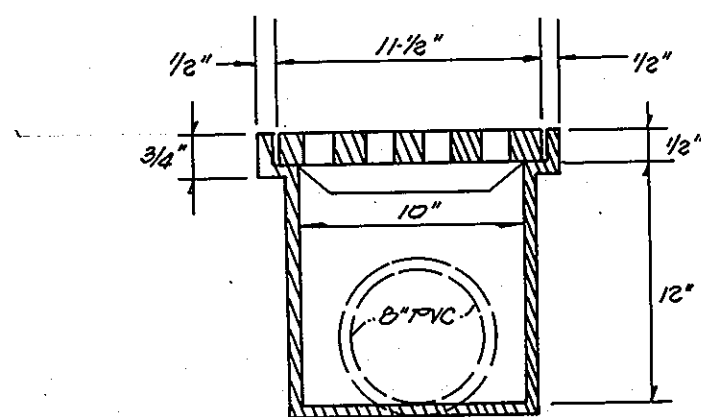
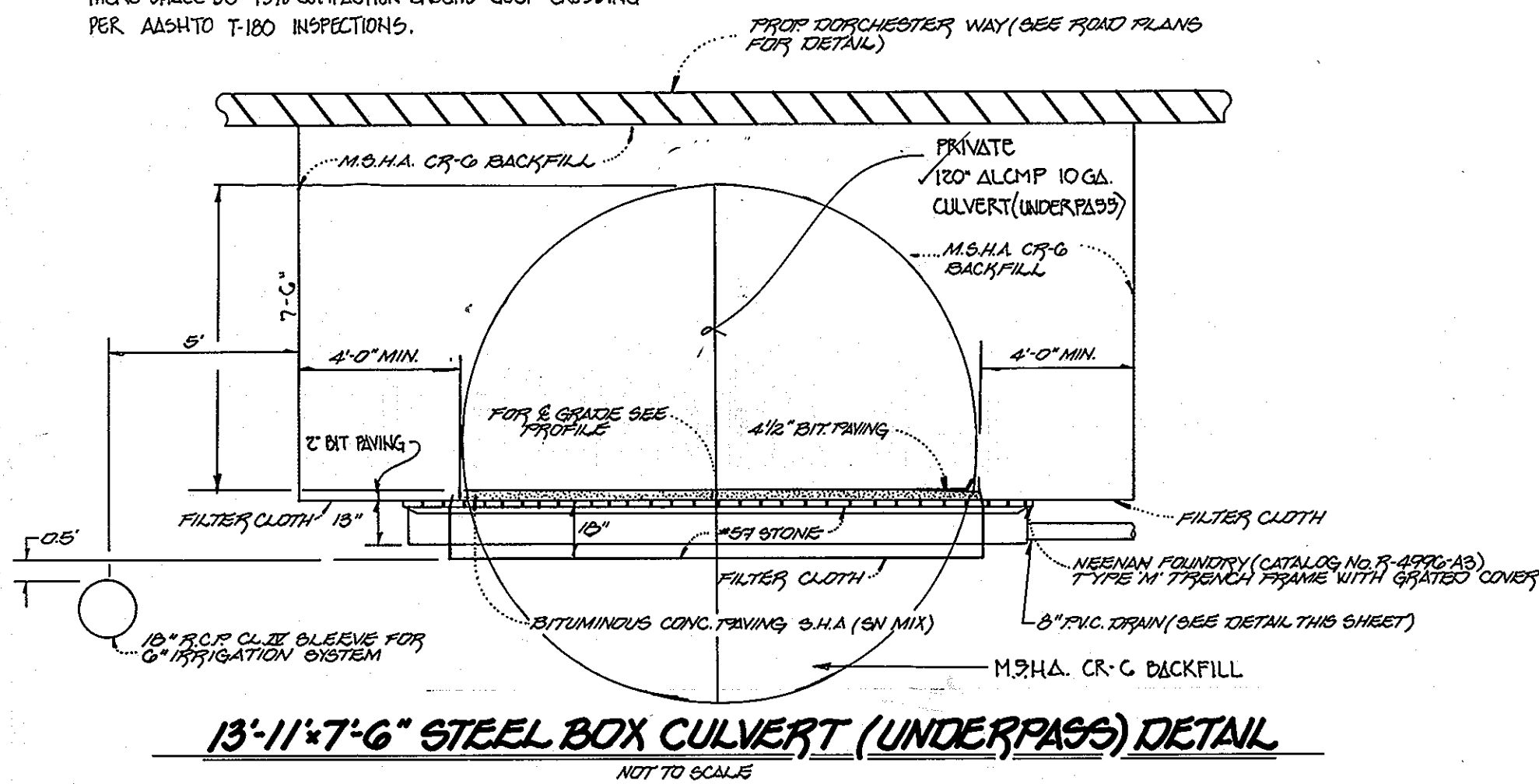
GOLF CART AND PEDESTRIAN UNDERPASS AT PETERSBORO ROAD  
GTW'S WAVERLY WOODS  
SECTION 4, AREA 1  
LOTS 20 thru 45  
(A RESUBDIVISION OF PARCEL 'A1'  
GTW'S WAVERLY WOODS, SECTION 4, AREA 1  
PART OF TAX PARCEL 21, TAX MAP 16)  
ZONING R-20 AND R5-A-B  
TAX MAP No: 16 PARCEL No: 21  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: MAY 26, 1995  
SHEET 10 OF 30

APPROVED - DEPARTMENT OF PUBLIC WORKS  
*Richard M. Davel* 1-30-96  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE

APPROVED - DEPARTMENT OF PLANNING AND ZONING  
*Jim J. Williams* 2/5/96  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH  
 DATE

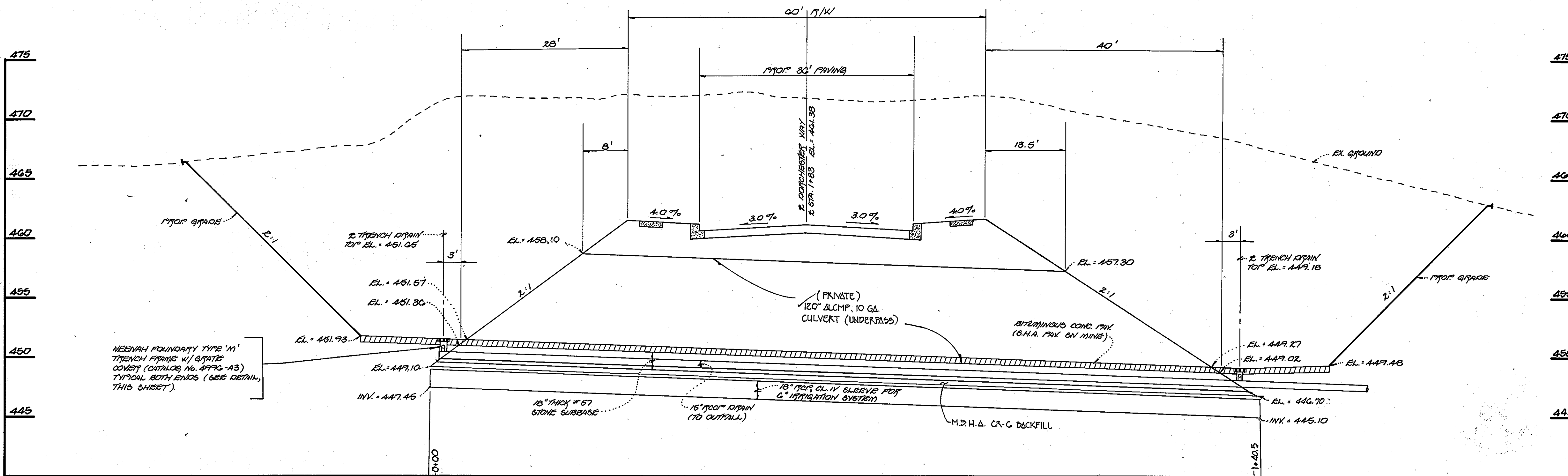
*Bob Danner* 2/1/96  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE

NOTE: MAINTENANCE OF PROPOSED GOLF CART TUNNEL IS TO BE PRIVATELY MAINTAINED BY THE HOMEOWNERS ASSOCIATION. THERE SHALL BE 95% COMPACTION AROUND GOLF CROSSING PER ASHTO T-180 INSPECTIONS.



**TYPE 'M' TRENCH (GRADED)**  
 NOT TO SCALE

NOTE: MAINTENANCE OF PROPOSED GOLF CART TUNNEL IS TO BE PRIVATELY MAINTAINED BY THE HOMEOWNERS ASSOC.



**PROFILE**  
 SCALE: HORIZ. 1" = 10'  
 VERT. 1" = 5'

GOLF CART AND PEDESTRIAN UNDERPASS  
 AT DORCHESTER WAY

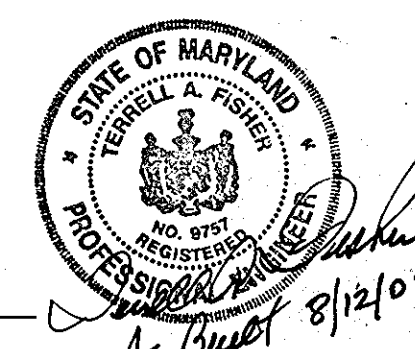
**GTW'S WAVERLY WOODS**

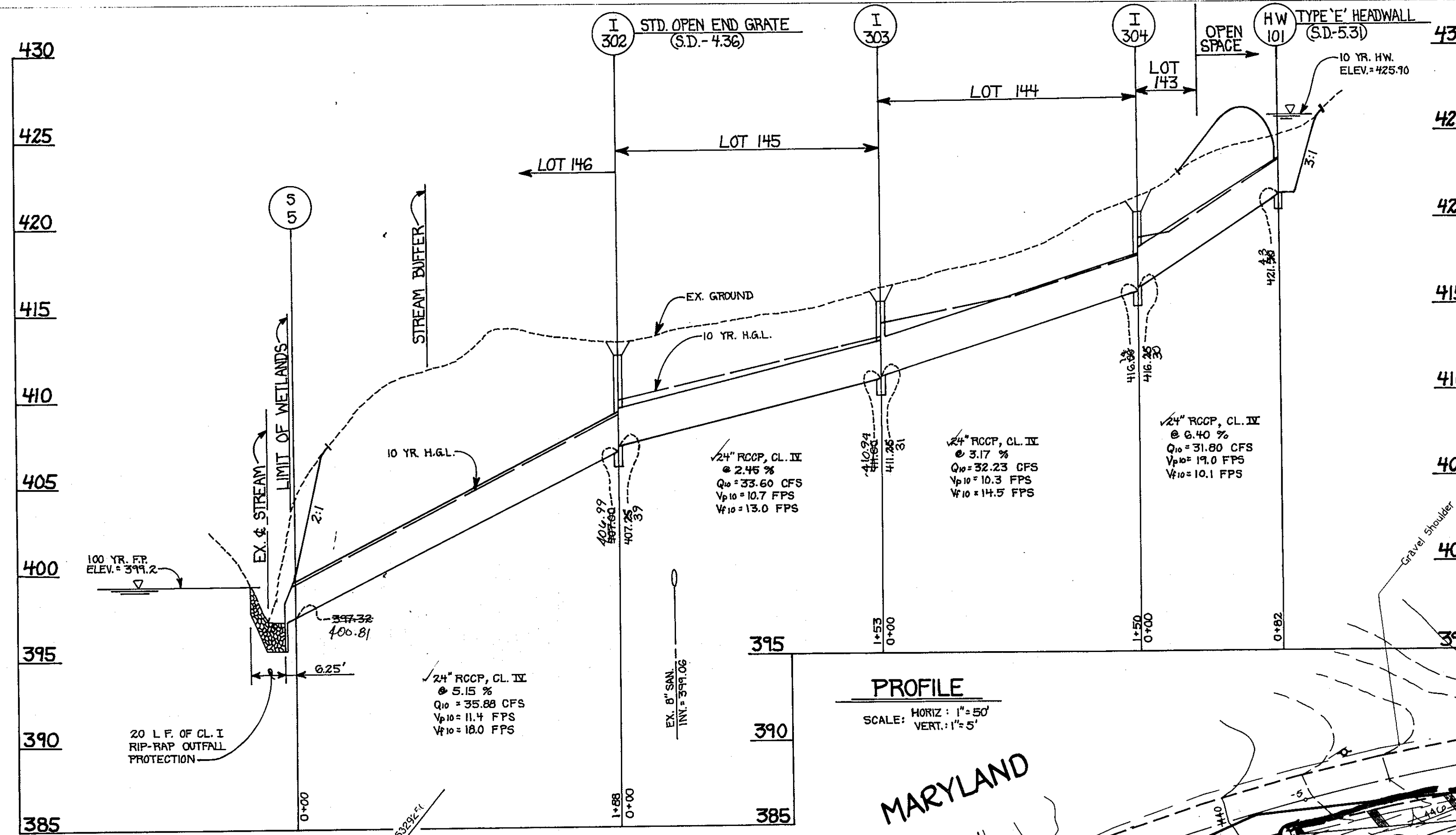
SECTION 4, AREA 1  
 LOTS 1 THRU 17 PARCELS A THRU E  
 ZONING: P-20, P-30, P-35, P-40, P-45  
 TAX MAP NO. 10 PART OF PARCEL 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: AUGUST 2, 1995  
 SCALE: AS SHOWN  
 SHEET 11 OF 33

12521

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS AND LAND SURVEYORS  
 10275 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 20814  
 (410) 431-8055

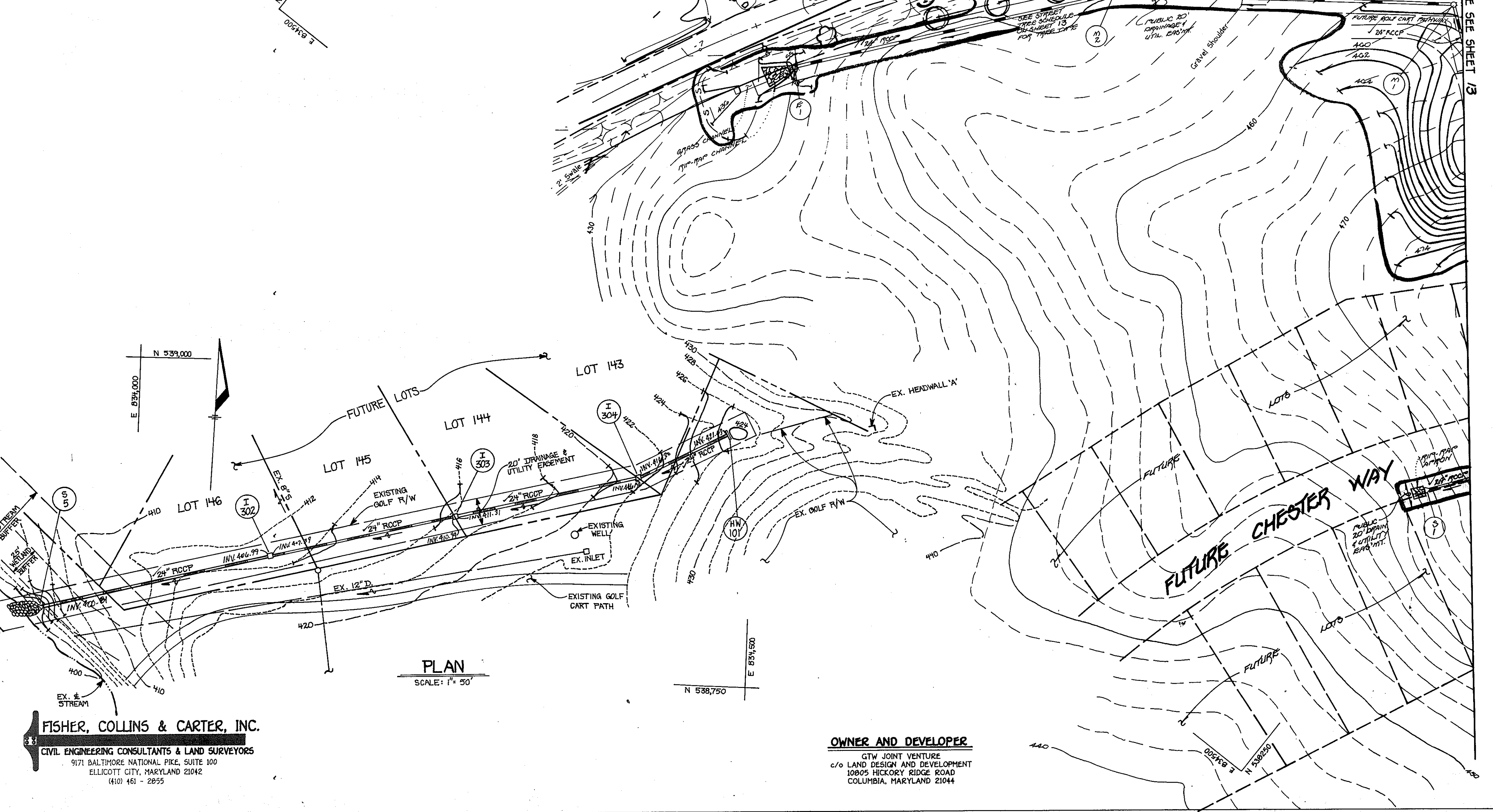
**OWNER/DEVELOPER**  
 GTW JOINT VENTURE  
 90 LAND DESIGN AND DEVELOPMENT INC.  
 10805 HICKORY RIDGE ROAD, SUITE 205  
 COLUMBIA, MARYLAND, 21044





**STRUCTURE SCHEDULE**

STRUCTURE No.	TOP ELEV.	INV. IN	INV. OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-302	412.50 39	407.35 39	407.00 40.99				YARD INLET	S.D. 4.36
I-303	415.50 13	411.25 31	411.00 40.94				YARD INLET	S.D. 4.36
I-304	420.50 30	416.25 30	416.00 14				YARD INLET	S.D. 4.36
HW-101	424.25 50		421.50 43				TYPE 'E' HEADWALL	S.D. 5.31
S-5	394.32 402.8	397.32 400.47	397.00 40.47				CONC. END SECTION	S.D. 5.51



**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL 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.

Signature: *Paul R. [unclear]* Date: 11/21/95  
SIGNATURE OF DEVELOPER DATE

**ENGINEER'S CERTIFICATE**  
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 SOIL CONSERVATION DISTRICT.

Signature: *[unclear]* Date: 11/16/95  
SIGNATURE OF ENGINEER DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS  
Signature: *P. Engler* Date: 1/25/96  
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
Signature: *Robert Zichew* Date: 1/25/96  
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Signature: *Richard M. [unclear]* Date: 1-30-96  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Signature: *[unclear]* Date: 2/5/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

Signature: *[unclear]* Date: 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**LEGEND**

- DENOTES LIMIT OF SHA PAVING SECTION
- DENOTES STABILIZED CONSTRUCTION ENTRANCE
- DENOTES SILT FENCE
- DENOTES LIMIT OF DISTURBANCE
- DENOTES EARTH RIPE (TYPE)

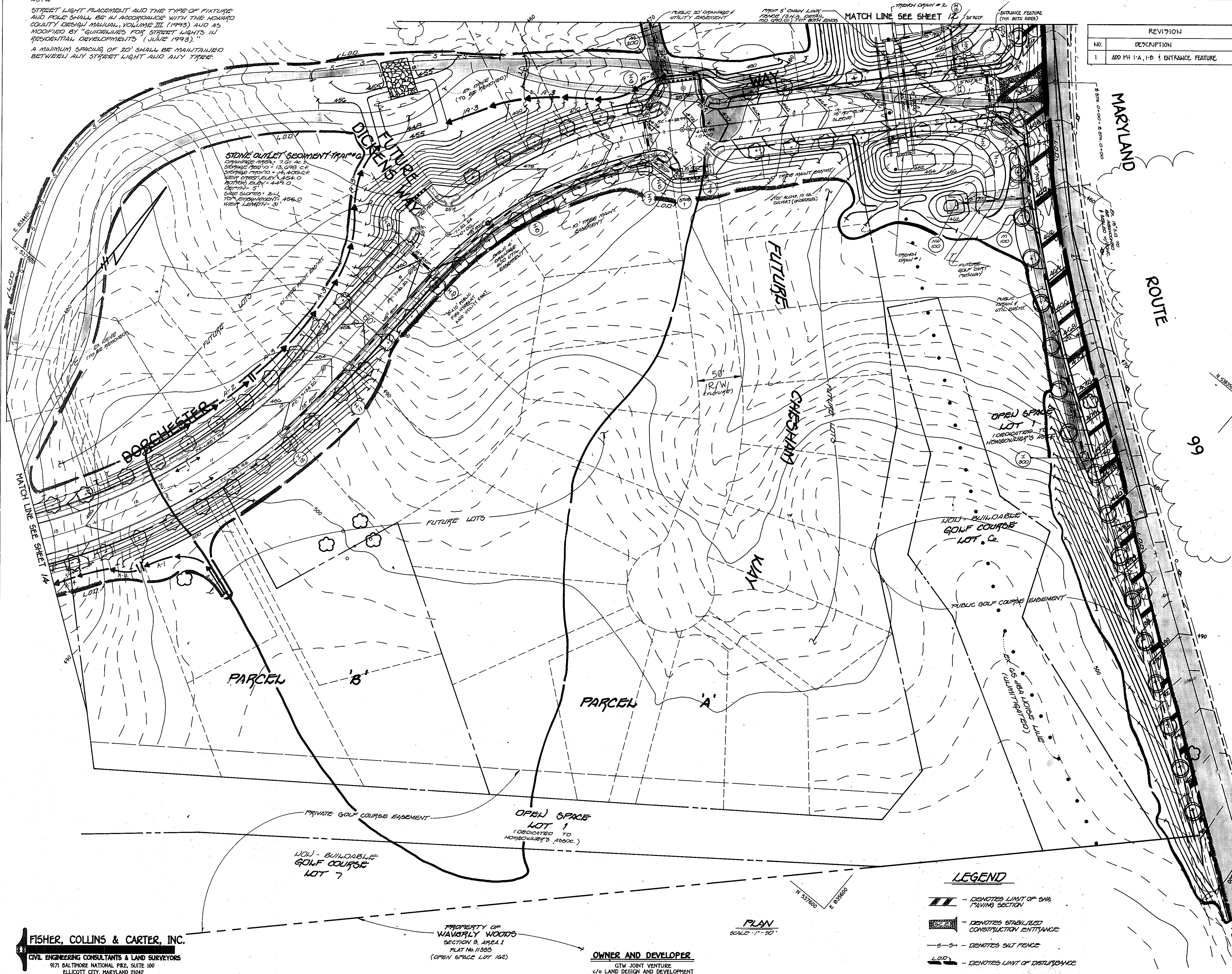
Professional Engineer Seal: STATE OF MARYLAND, PROFESSIONAL ENGINEER, No. 894, REGISTERED PROFESSIONAL ENGINEER, No. 214101, AS-BUILT 4/14/01

STREET TREE, GRADING, LANDSCAPING AND SEDIMENT CONTROL PLAN  
**GTW'S WAVERLY WOODS**  
SECTION 4, AREA 1  
LOTS 1 THRU 19 AND PARCELS A THRU E  
ZONING R-20, RSC, R-5A-B AND R-A-15  
TAX MAP No: 16 PART OF PARCEL No: 21  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: MAY 26, 1995  
SHEET 12.01' 38

**OWNER AND DEVELOPER**  
GTW JOINT VENTURE  
c/o LAND DESIGN AND DEVELOPMENT  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
9171 BALTIMORE NATIONAL PIKE, SUITE 100  
ELLICOTT CITY, MARYLAND 21042  
(410) 461-2855

NOTE:  
STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS" (JULY 1993).  
A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.



REVISION		
NO.	DESCRIPTION	DATE
1	ADD MH 1-A, 1-B & ENTRANCE FEATURE	1-2-97

**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL 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.

Signature of Developer: *[Signature]* DATE: 11-21-95

**ENGINEER'S CERTIFICATE**  
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 SOIL CONSERVATION DISTRICT.

Signature of Engineer: *[Signature]* DATE: 11/21/95

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS  
P. Engler / z DATE: 1/25/96  
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* DATE: 1/25/96  
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* DATE: 1-20-96  
CHIEF, BUREAU OF HIGHWAYS

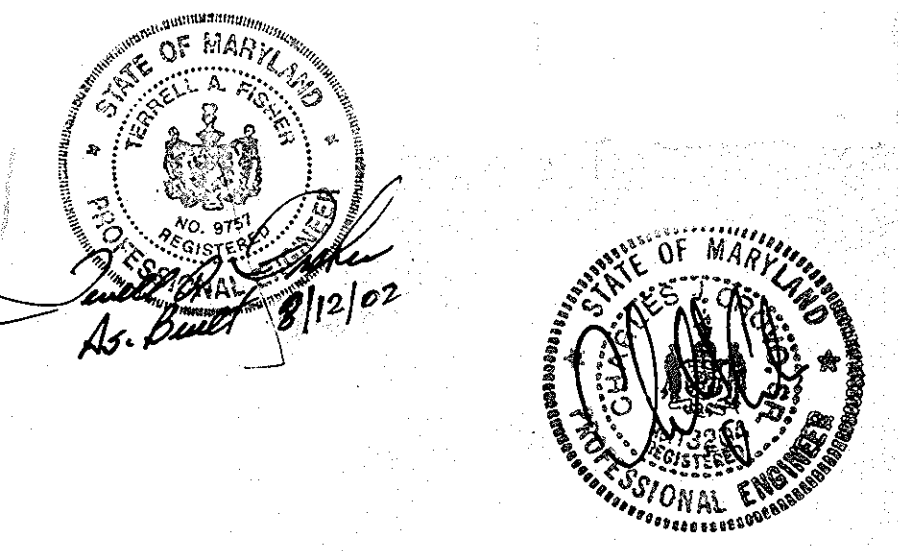
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* DATE: 2/5/96  
CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH

*[Signature]* DATE: 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**STREET TREE SCHEDULE**

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(*)	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2" - 3" CAL.	40' APERT ON PUBLIC RIGHT-OF-WAY
(+)	ACER RUBRUM 'AUTUMN PLUME'	2 1/2" - 3" CAL.	50' APERT ON PUBLIC RIGHT-OF-WAY

NOTE: STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A COUNTY ACCEPTABLE EQUIVALENT.  
TOTAL NUMBER OF STREET TREES:  
 (\*) - 53 STREET TREES (THIS SHEET)  
 (+) - 17 STREET TREES (THIS SHEET)  
 (+) - 9 STREET TREES (SHEET 12)



- LEGEND**
- DENOTES LIMIT OF SHA PAVING SECTION
  - DENOTES STABILIZED CONSTRUCTION ENTRANCE
  - S-S- DENOTES SALT FENCE
  - L.O.D. DENOTES LIMIT OF DISTURBANCE
  - A-2 DENOTES EARTH DIKE TYPE

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
9171 BALTIMORE NATIONAL PIKE, SUITE 100  
ELLICOTT CITY, MARYLAND 21042  
(410) 461-2855

PROPERTY OF WAVERLY WOODS SECTION B, AREA I PLAT No. 11383 (OPEN SPACE LOT 102)

**OWNER AND DEVELOPER**  
GTW JOINT VENTURE  
c/o LAND DESIGN AND DEVELOPMENT  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

**STREET TREE, GRADING, LANDSCAPING AND SEDIMENT CONTROL PLAN**

**GTW'S WAVERLY WOODS**  
SECTION 4, AREA 1  
LOTS 1 THRU 17 AND PARCELS A THRU E  
ZONING R-20, RSC, R-SA-B AND R-A-15  
TAX MAP No: 16 PART OF PARCEL No: 21  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: MAY 26, 1995  
SHEET 13 OF 35

1253

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL 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.

Signature: *Dennis R. B.* Date: 11-21-95  
 SIGNATURE OF DEVELOPER DATE

**ENGINEER'S CERTIFICATE**  
 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 SOIL CONSERVATION DISTRICT.

Signature: *P. S. S.* Date: 11/25/96  
 SIGNATURE OF ENGINEER DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS  
 Signature: *P. S. S.* Date: 11/25/96  
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Signature: *Robert W. Zishman* Date: 1/25/96  
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Signature: *Richard M. D.* Date: 1-30-96  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Signature: *Anna J.* Date: 2/5/96  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

Signature: *...* Date: 2/1/96  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

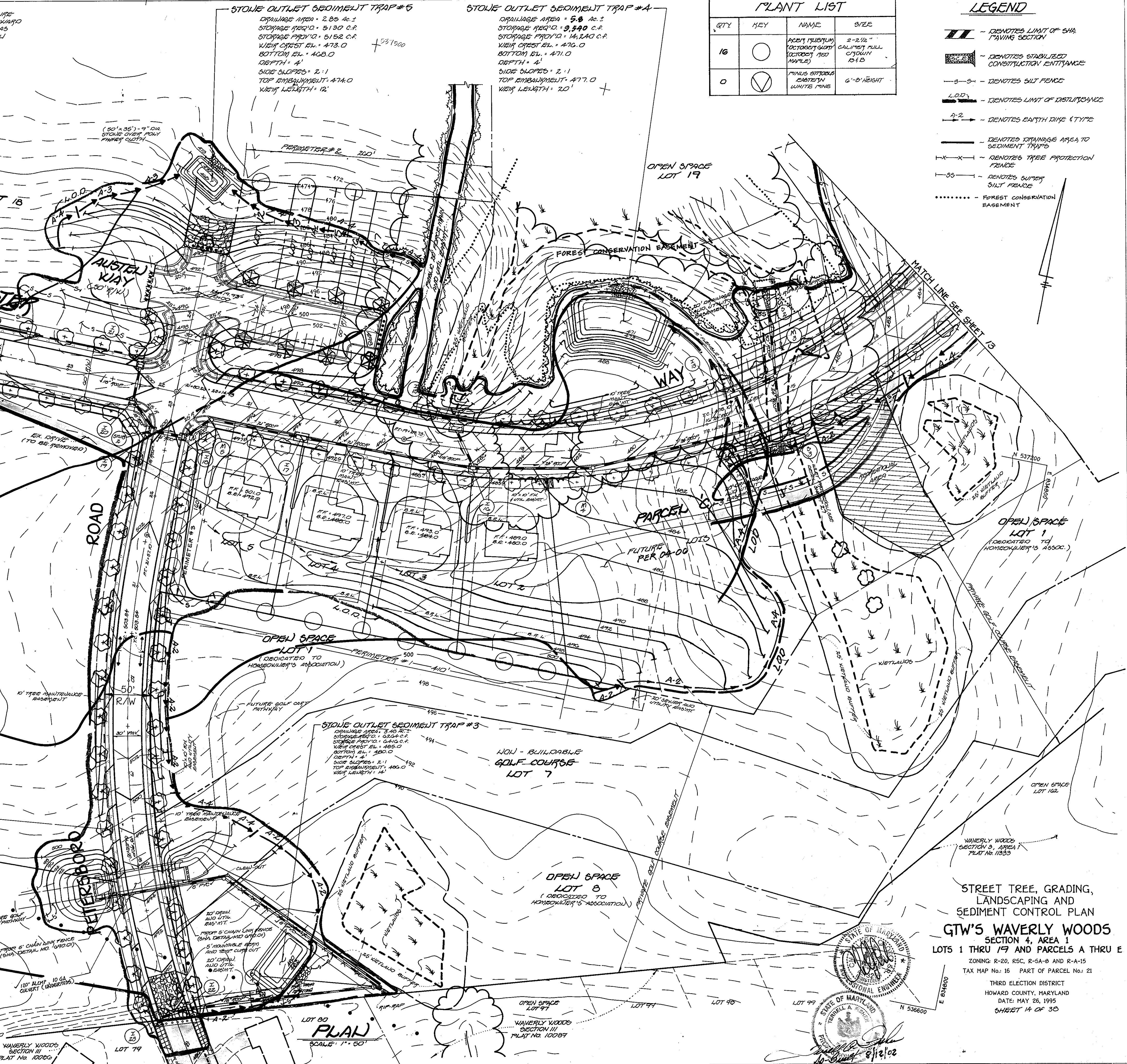
No.	Date	Revisions
1	0-15-05	Added approx 24' of curb @ sta. 2+00 Austen Way.
2	12-4-09	Revised D.A. & Storage Req'd data for S.O.S. Trap #4. Revised L.O.D. @ S.O.S. devices to accommodate future lots & balance site.

**NOTE:**  
 STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) ALSO AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS" (JULY 1993).  
 A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

**STREET TREE SCHEDULE**

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(Symbol)	ACER RUBRUM OCTOBER GLORY™ 750' MAX H.	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
(Symbol)	PLATANUS OCCIDENTALIS LONDON PLANETREE	2 1/2" - 3" CALIPER	40' APART ON PUBLIC R/W
(Symbol)	QUERCUS COCAINEA SCAMLET DM	MIN 2 1/2" CALIPER	40' APART ON PUBLIC R/W

**NOTE:**  
 STREET TREE ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A CITY ACCEPTABLE EQUIVARIANT.  
 TOTAL NUMBER OF STREET TREES:  
 - 54 STREET TREES (THIS SHEET)  
 - 34 STREET TREES  
 - 9 STREET TREES



**PLANT LIST**

QTY	KEY	NAME	SIZE
16	(Symbol)	ACER RUBRUM OCTOBER GLORY™ (OCTOBER RED MAPLE)	2-2 1/2" CALIPER FULL CROWN 750' H.
0	(Symbol)	PLATANUS OCCIDENTALIS LONDON PLANETREE	6"-8" HEIGHT

**LEGEND**

- (Symbol) - DENOTES LIMIT OF SHA PAVING SECTION
- (Symbol) - DENOTES STABILIZED CONSTRUCTION ENTRANCE
- (Symbol) - DENOTES SILT FENCE
- (Symbol) - DENOTES LIMIT OF DISTURBANCE
- (Symbol) - DENOTES EARTH DIKE STRIKE
- (Symbol) - DENOTES DRAINAGE AREA TO SEDIMENT TRAP
- (Symbol) - DENOTES TREE PROTECTION FENCE
- (Symbol) - DENOTES SURVEY SILT FENCE
- (Symbol) - FOREST CONSERVATION EASEMENT

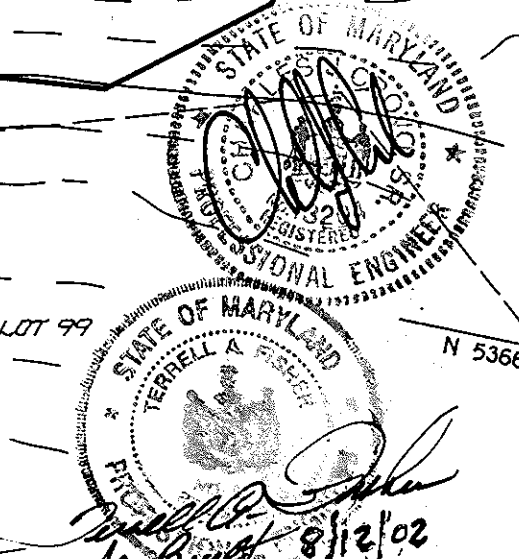
**SCHEDULE A - PERIMETER LANDSCAPE EDGE**

PERIMETER CATEGORY	1 ADJACENT TO PERIMETER PROPERTIES	2 ADJACENT TO PERIMETER PROPERTIES	3 ADJACENT TO ROADWAY
LANDSCAPE TYPE	A	A	A
LINEAR FEET OF ROADWAY FRONTAGE / PERIMETER CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR)	410'	200'	160'
DESCRIBE BELOW IF NEEDED	NO	YES	NO
CREDIT FOR WALL, FENCE OR BEAM (YES, NO, LINEAR)	NO	NO	NO
DESCRIBE IF NEEDED			
NUMBER OF PLANTS REQUIRED			
SHADE TREES	0	4	3
EVERGREEN TREES			
SHRUBS			
NUMBER OF PLANTS PROVIDED			
SHADE TREES	9	4	3
EVERGREEN TREES			
OTHER TREES (2:1 SUBSTITUTION)			
SHRUBS (10:1 SUBSTITUTION)			
DESCRIBE PLANT SUBSTITUTION CREDIT BELOW IF NEEDED			

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 9171 BALTIMORE NATIONAL PIKE, SUITE 100  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2895

**OWNER AND DEVELOPER**  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

**STREET TREE, GRADING, LANDSCAPING AND SEDIMENT CONTROL PLAN**  
**GTW'S WAVERLY WOODS SECTION 4, AREA 1**  
 LOTS 1 THRU 19 AND PARCELS A THRU E  
 ZONING R-20, R5C, R-5A-B AND R-A-15  
 TAX MAP No: 16 PART OF PARCEL No: 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995  
 SHEET 14 OF 30



AS-Built-8-12-02 F95-173

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL 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.

2/2/96  
 SIGNATURE OF DEVELOPER  
 11-21-95  
 DATE

**ENGINEER'S CERTIFICATE**  
 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 SOIL CONSERVATION DISTRICT.

P. Engle  
 SIGNATURE OF ENGINEER  
 11/16/95  
 DATE

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS  
 P. Engle  
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE  
 1/25/96  
 DATE

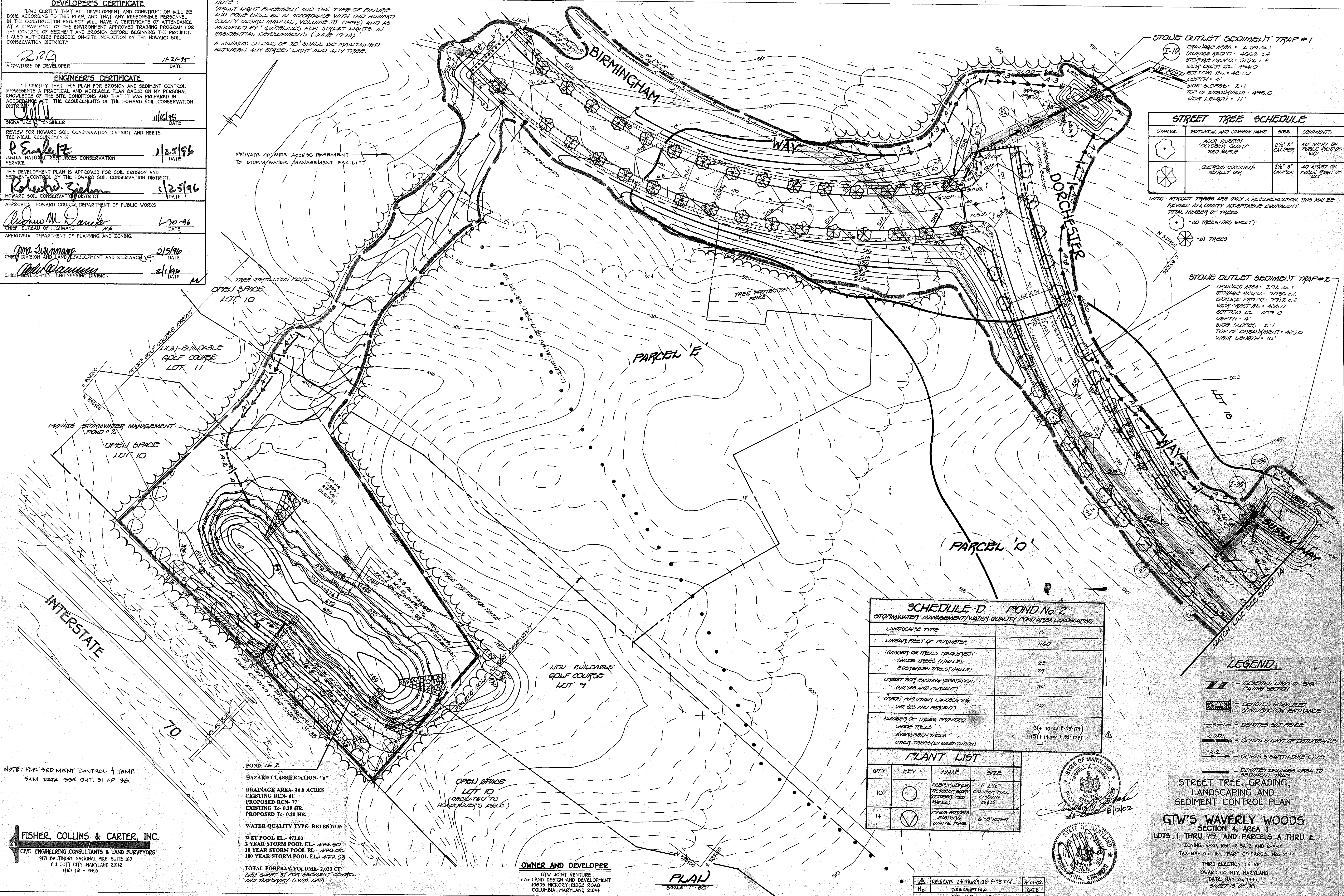
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Robert Zelman  
 HOWARD SOIL CONSERVATION DISTRICT  
 1/25/96  
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Andrew M. Dauck  
 CHIEF BUREAU OF HIGHWAYS  
 1-30-96  
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Jim Swannick  
 CHIEF DIVISION OF LAND DEVELOPMENT AND RESEARCH  
 2/5/96  
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Jim Swannick  
 CHIEF DEVELOPMENT ENGINEERING DIVISION  
 2/1/96  
 DATE

**NOTE:**  
 STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JULY 1993)".  
 A MINIMUM SPACING OF 30' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.



**STONE OUTLET SEDIMENT TRAP #1**  
 I-19  
 CAPTURE AREA = 2.59 AC.  
 STORAGE REQUIRED = 4002 C.F.  
 STORAGE PROVIDED = 5152 C.F.  
 VEGETATION EL. = 494.0  
 BOTTOM EL. = 489.0  
 DEPTH = 5'  
 SIDE SLOPES = 2:1  
 TOP OF EMBANKMENT = 495.0  
 VEGETATION HEIGHT = 11'

**STREET TREE SCHEDULE**

SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(Symbol)	ACER RUBRUM "RED BIRCH" RED MAPLE	2 1/2" 3" CALIBER	40' APART ON PUBLIC RIGHT OF WAY
(Symbol)	QUERCUS COCCINEA SCARLET OAK	2 1/2" 3" CALIBER	40' APART ON PUBLIC RIGHT OF WAY

**NOTE:** STREET TREES ARE ONLY A RECOMMENDATION. THIS MAY BE REVISED TO A QUANTITY ACCEPTABLE EQUIVALENT.  
 TOTAL NUMBER OF TREES:  
 - 30 TREES (THIS SHEET)  
 - 31 TREES

**STONE OUTLET SEDIMENT TRAP #2**  
 CAPTURE AREA = 3.92 AC.  
 STORAGE REQUIRED = 7050 C.F.  
 STORAGE PROVIDED = 7912 C.F.  
 VEGETATION EL. = 484.0  
 BOTTOM EL. = 479.0  
 DEPTH = 5'  
 SIDE SLOPES = 2:1  
 TOP OF EMBANKMENT = 485.0  
 VEGETATION HEIGHT = 10'

**SCHEDULE D POND No. 2**  
 STORMWATER MANAGEMENT/WATER QUALITY POND AFTER LANDSCAPING

LANDSCAPE TYPE	B
LENGTH FEET OF PERIMETER	1160
NUMBER OF TREES REQUIRED:	
SHADE TREES (1/100 FT)	23
EVENING TREES (1/100 FT)	29
CREDIT FOR EXISTING VEGETATION (NO. TREES AND PERCENT)	NO
CREDIT FOR OTHER LANDSCAPING (NO. TREES AND PERCENT)	NO
NUMBER OF TREES PROVIDED:	
SHADE TREES	13 (+ 10 on F-95-174)
EVENING TREES	(5 + 14 on F-95-174)
OTHER TREES (2:1 SUBSTITUTION)	

**PLANT LIST**

QTY	KEY	NAME	SIZE
10	(Symbol)	ACER RUBRUM "RED BIRCH" RED MAPLE	2-2 1/2" CALIBER FULL CROWN 10-15
14	(Symbol)	QUERCUS COCCINEA SCARLET OAK	6'-8" HEIGHT

**LEGEND**

- (Symbol) - DENOTES LIMIT OF SHA PAVING SECTION
- (Symbol) - DENOTES STABILIZED CONSTRUCTION ENTRANCE
- (Symbol) - DENOTES SALT FENCE
- (Symbol) - DENOTES LIMIT OF DISTURBANCE
- (Symbol) - DENOTES EARTH DIKE (TYPE)
- (Symbol) - DENOTES CAPTURE AREA TO SEDIMENT TRAP

**STREET TREE, GRADING, LANDSCAPING AND SEDIMENT CONTROL PLAN**

**GTW'S WAVERLY WOODS SECTION 4, AREA 1**  
 LOTS 1 THRU 17 AND PARCELS A THRU E  
 ZONING R-20, R-5C, R-5A-B AND R-A-15  
 TAX MAP No. 16 PART OF PARCEL No. 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 28, 1995  
 SHEET 15 OF 30

**POND 16.2**  
 HAZARD CLASSIFICATION: "A"  
 DRAINAGE AREA - 16.8 ACRES  
 EXISTING RCN - 61  
 PROPOSED RCN - 77  
 EXISTING Tc - 0.29 HR.  
 PROPOSED Tc - 0.20 HR.  
 WATER QUALITY TYPE - RETENTION  
 WET POOL EL. - 473.00  
 2 YEAR STORM POOL EL. - 474.50  
 10 YEAR STORM POOL EL. - 476.00  
 100 YEAR STORM POOL EL. - 477.50  
 TOTAL FOREBAY VOLUME - 2,020 CF  
 SEE SHEET 31 FOR SEDIMENT CONTROL AND TEMPORARY EROSION CONTROL

**OWNER AND DEVELOPER**  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

**PLAN**  
 SCALE: 1" = 50'

**REVISIONS**

No.	DESCRIPTION	DATE
1	RELATE 24 TREES TO F-95-174	4-21-92

**NOTE:** FOR SEDIMENT CONTROL & TEMP. SWM DATA SEE SHT. 31 OF 30.

**FISHER, COLLINS & CARTER, INC.**  
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 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2855



APPROVED  
DEPARTMENT OF PLANNING AND ZONING

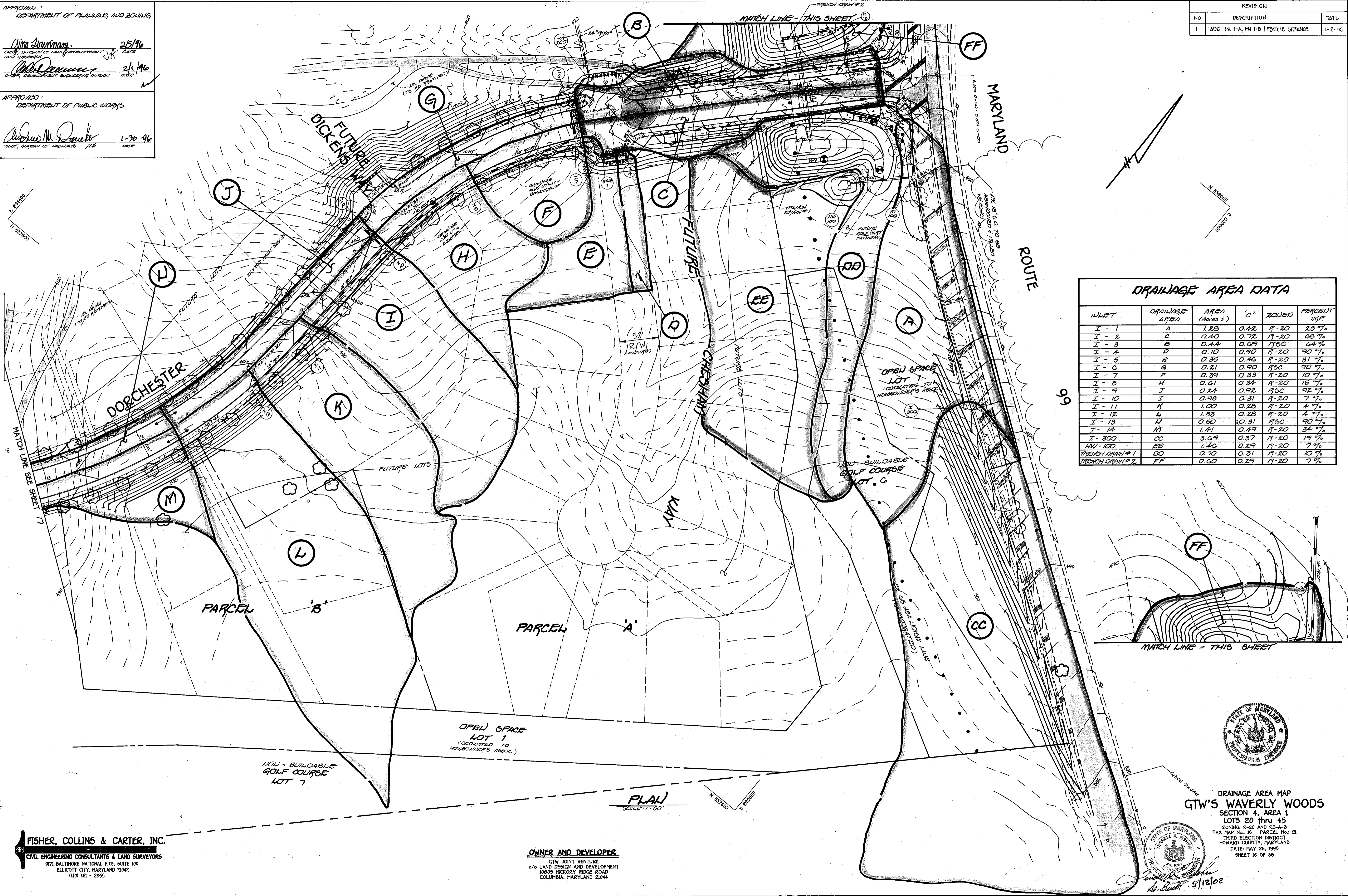
*Alma Shattman* 2/5/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND REDEVELOPMENT DATE

*John P. ...* 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED  
DEPARTMENT OF PUBLIC WORKS

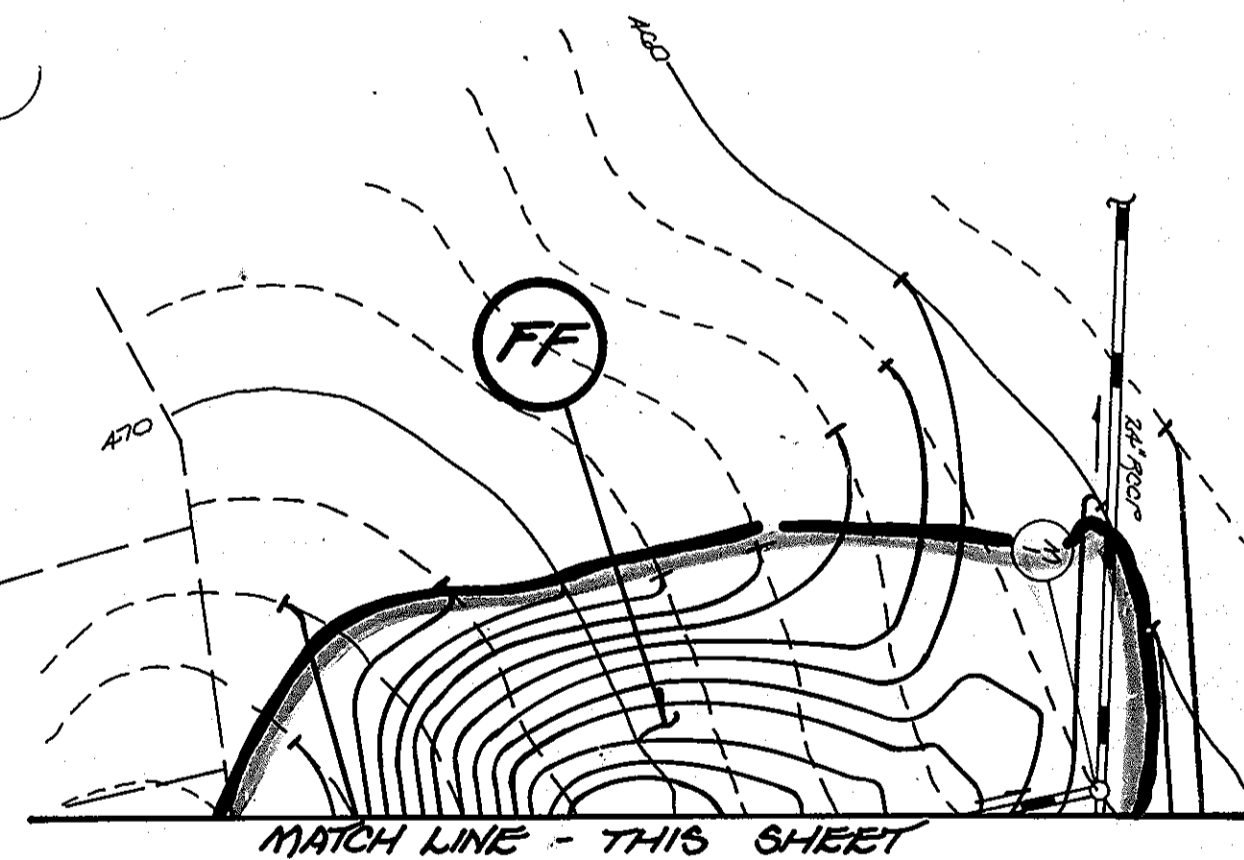
*Andrew M. ...* 1-30-96  
CHIEF, DIVISION OF HIGHWAYS DATE

REVISION		
NO	DESCRIPTION	DATE
1	ADD MH 1-A, MH 1-B & FEATURE ENTRANCE	1-2-96



### DRAINAGE AREA DATA

INLET	DRAINAGE AREA	AREA (Acres ±)	'0'	ZONING	PERCENT INF.
I-1	A	1.28	0.42	R-20	25%
I-2	C	0.40	0.72	R-20	68%
I-3	B	0.44	0.69	R5C	64%
I-4	D	0.10	0.90	R-20	90%
I-5	E	0.35	0.42	R-20	31%
I-6	G	0.21	0.90	R5C	90%
I-7	F	0.39	0.33	R-20	10%
I-8	H	0.61	0.34	R-20	16%
I-9	J	0.24	0.92	R5C	92%
I-10	I	0.98	0.31	R-20	7%
I-11	K	1.00	0.28	R-20	4%
I-12	L	1.83	0.28	R-20	4%
I-13	M	0.60	10.31	R5C	90%
I-14	N	1.41	0.49	R-20	34%
I-300	CC	3.69	0.37	R-20	19%
MH-100	EE	1.46	0.29	R-20	7%
TRENCH DRAIN #1	DD	0.70	0.31	R-20	10%
TRENCH DRAIN #2	FF	0.60	0.29	R-20	7%



1253

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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
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(410) 461-2955

**OWNER AND DEVELOPER**  
GTW JOINT VENTURE  
c/o LAND DESIGN AND DEVELOPMENT  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044



**DRAINAGE AREA MAP**  
**GTW'S WAVERLY WOODS**  
SECTION 4, AREA 1  
LOTS 20 thru 45  
ZONING R-20 AND R5-A-B  
TAX MAP No. 16 PARCEL No. 21  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: MAY 26, 1995  
SHEET 16 OF 38

AS-BUILT-8-12-02

F95-173



APPROVED:  
DEPARTMENT OF PLANNING AND ZONING

*Chira Zimmerman* 2/15/96  
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

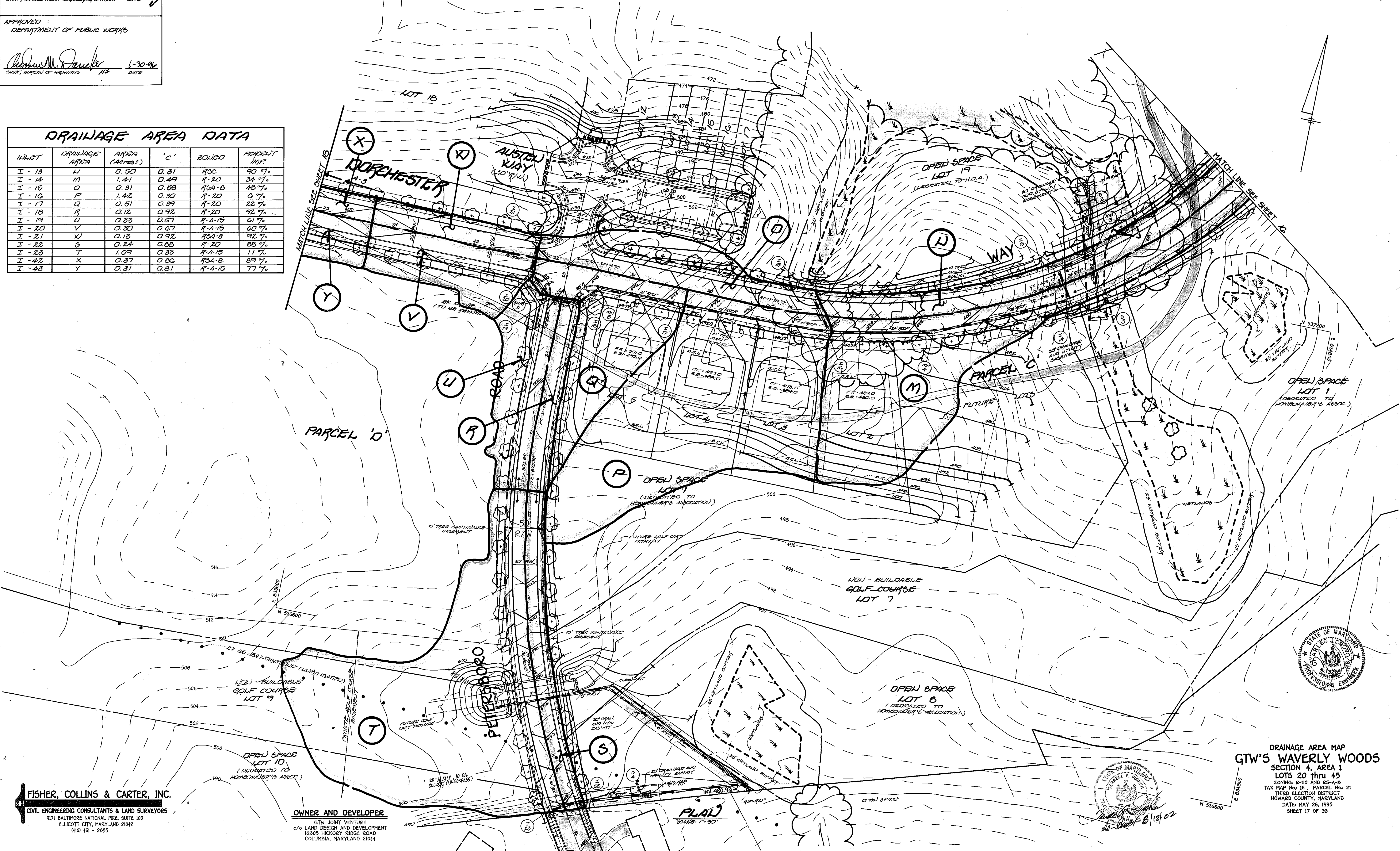
*John P. ...* 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED:  
DEPARTMENT OF PUBLIC WORKS

*Thomas M. ...* 6-30-96  
CHIEF, BUREAU OF HIGHWAYS DATE

No.	Date	Revisions
1	8-15-03	Added approx. 24' of curb @ 2+00 Austen Way.

INLET	DRAINAGE AREA	AREA (Acres)	'C'	ZONED	PERCENT IMP.
I-13	L	0.50	0.31	R-20	90%
I-14	M	1.41	0.49	R-20	34%
I-15	O	0.31	0.58	RSA-B	48%
I-16	P	1.42	0.30	R-20	6%
I-17	Q	0.51	0.39	R-20	22%
I-18	R	0.12	0.92	R-20	92%
I-19	U	0.33	0.67	R-A-15	61%
I-20	V	0.30	0.67	R-A-15	60%
I-21	W	0.13	0.92	RSA-B	92%
I-22	S	0.24	0.68	R-20	88%
I-23	T	1.59	0.33	R-A-15	11%
I-42	X	0.37	0.86	RSA-B	89%
I-43	Y	0.31	0.81	R-A-15	77%



12571

**FISHER, COLLINS & CARTER, INC.**  
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**OWNER AND DEVELOPER**  
GTW JOINT VENTURE  
c/o LAND DESIGN AND DEVELOPMENT  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
8/12/02

**DRAINAGE AREA MAP**  
**GTW'S WAVERLY WOODS**  
SECTION 4, AREA 1  
LOTS 20 thru 45  
ZONING R-20 AND RS-A-B  
TAX MAP No. 16 - PARCEL No. 21  
THIRD ELECTYION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: MAY 26, 1995  
SHEET 17 OF 38

APPROVED:  
DEPARTMENT OF PLANNING AND ZONING

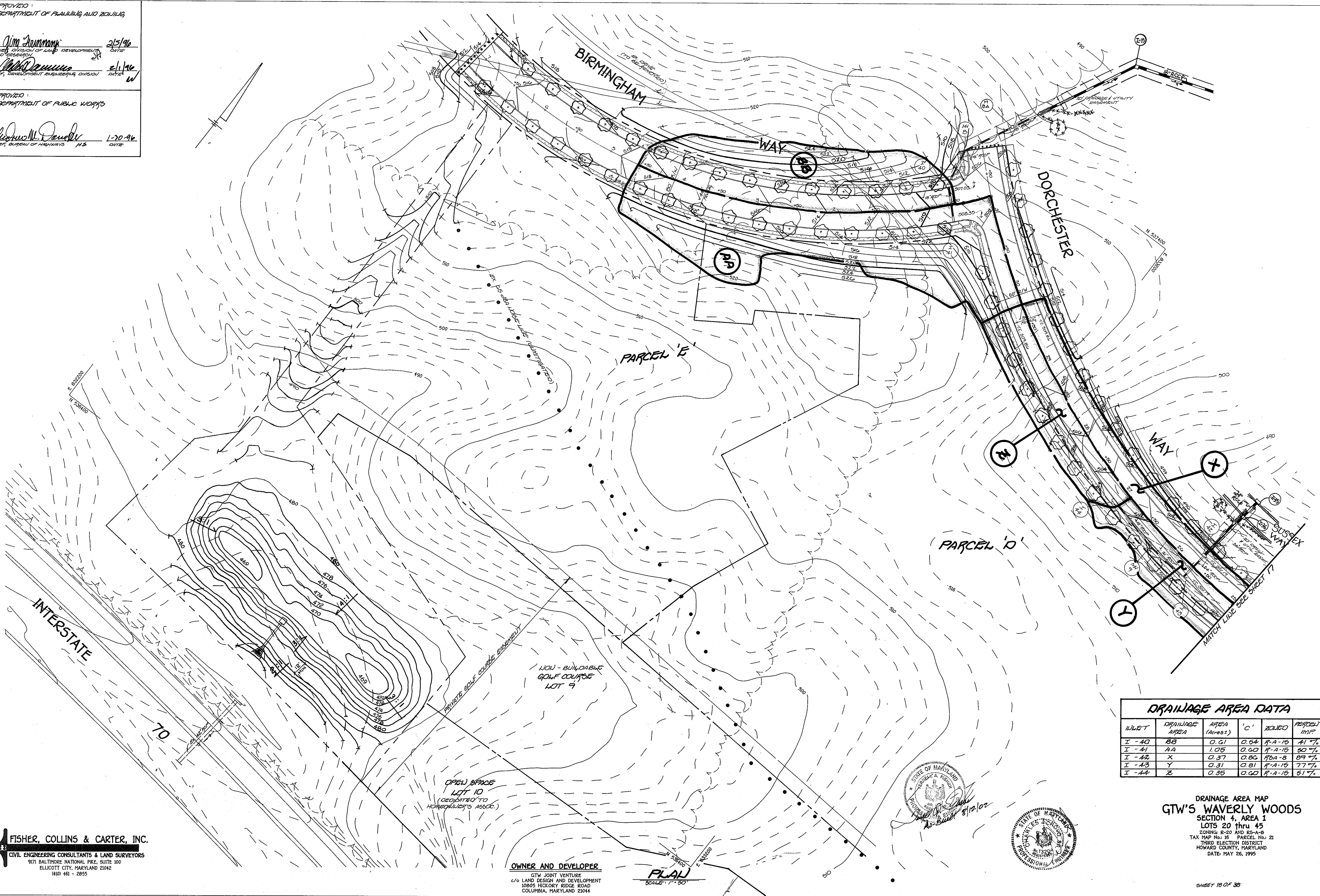
*Jim Annum* 2/3/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

*John Deanna* 2/1/96  
CHIEF, DEVELOPMENT REGULATIONS DIVISION DATE

---

APPROVED:  
DEPARTMENT OF PUBLIC WORKS

*Richard M. Dandridge* 1-20-96  
CHIEF, BUREAU OF HIGHWAYS H.S. DATE



**DRAINAGE AREA DATA**

W/LET	DRAINAGE AREA	AREA (Acres)	'C'	ZONE	PERCENT IMP
I - 40	BB	0.61	0.64	R-A-15	41%
I - 41	AA	1.06	0.60	R-A-15	80%
I - 42	X	0.37	0.80	R2A-8	89%
I - 43	Y	0.31	0.81	R-A-15	77%
I - 44	Z	0.36	0.60	R-A-15	61%

DRAINAGE AREA MAP  
GTW'S WAVERLY WOODS  
SECTION 4, AREA 1  
LOTS 20 thru 45  
ZONING: R-20 AND R5-A-8  
TAX MAP No. 16 PARCEL No. 21  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: MAY 26, 1995

**FISHER, COLLINS & CARTER, INC.**  
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c/o LAND DESIGN AND DEVELOPMENT  
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COLUMBIA, MARYLAND 21044

STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
No. 812/02

STATE OF MARYLAND  
PROFESSIONAL ENGINEER

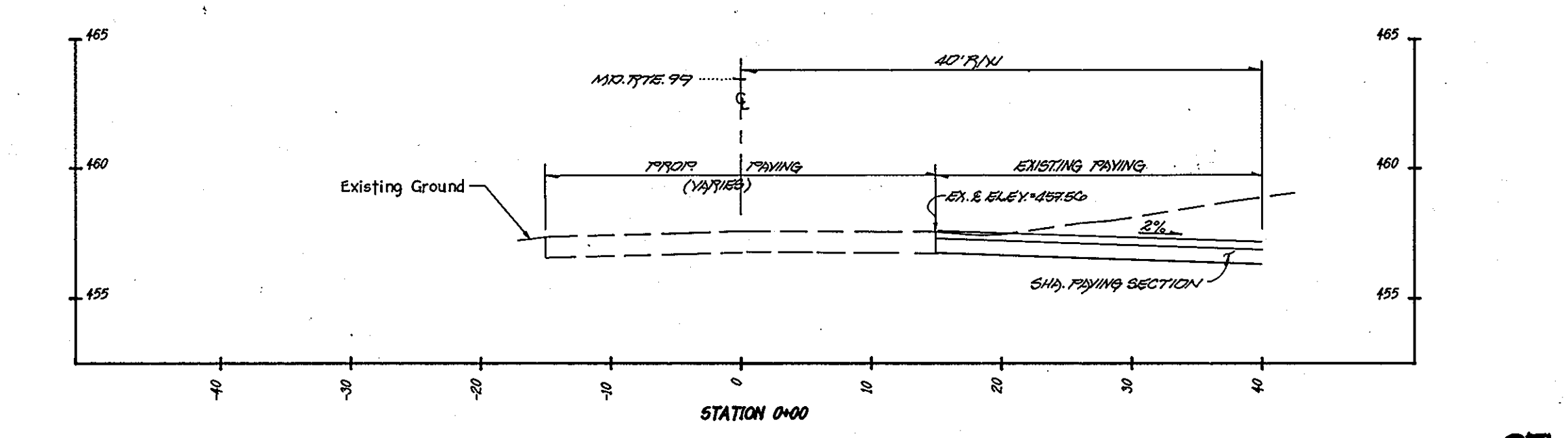
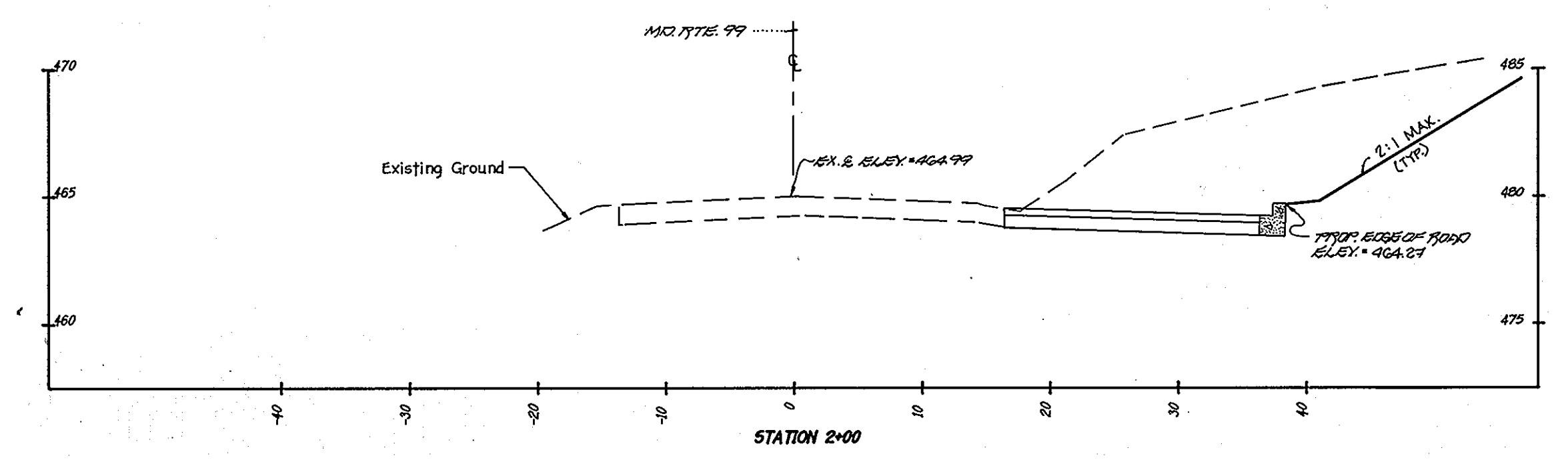
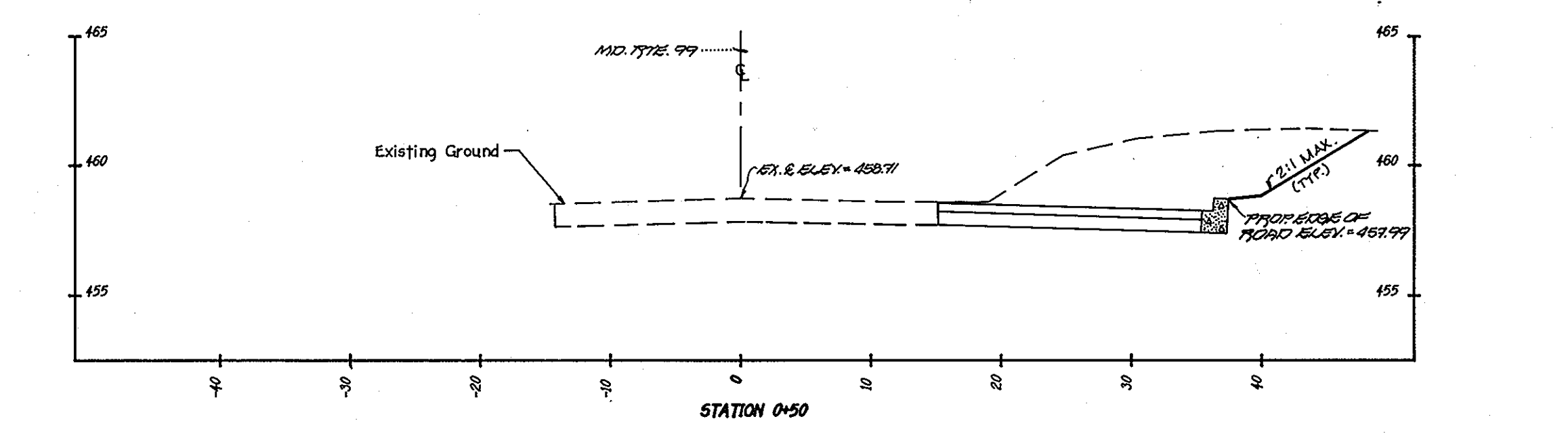
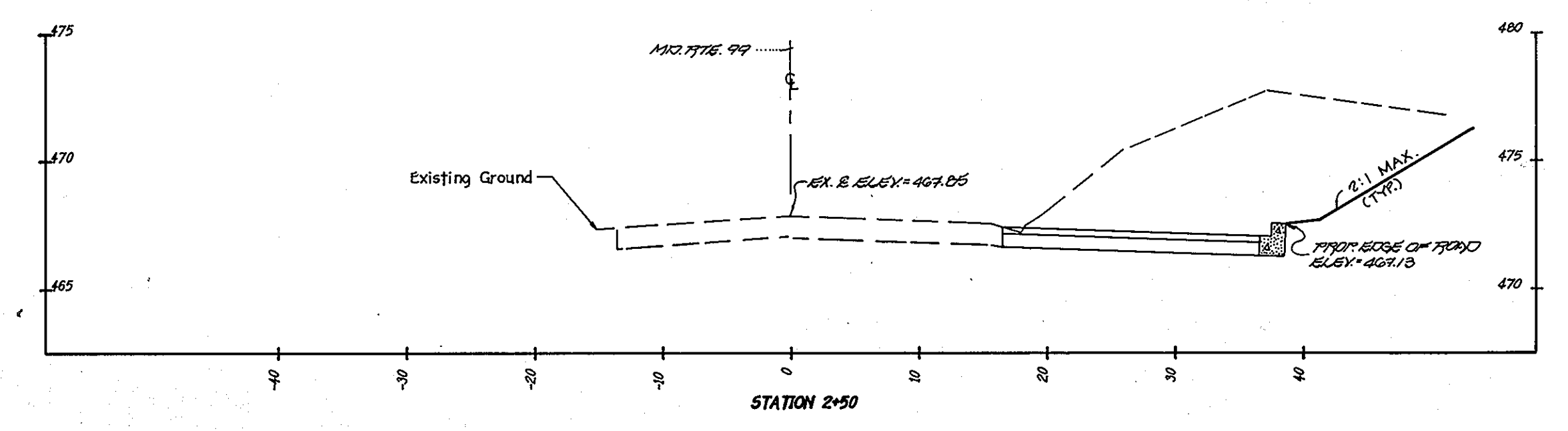
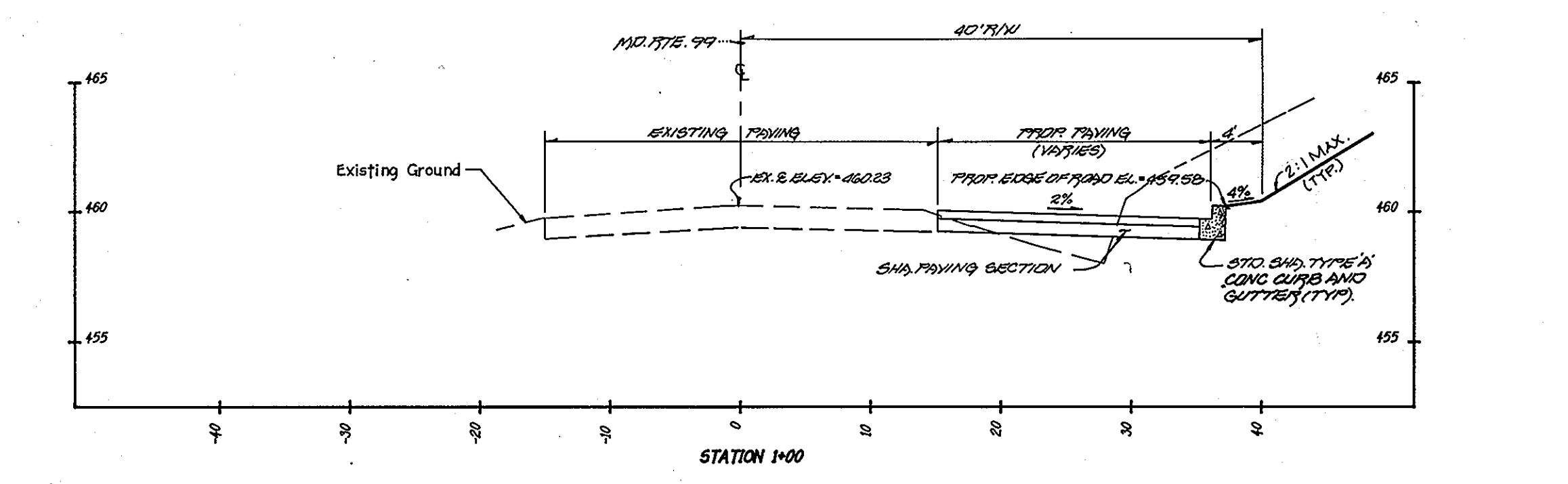
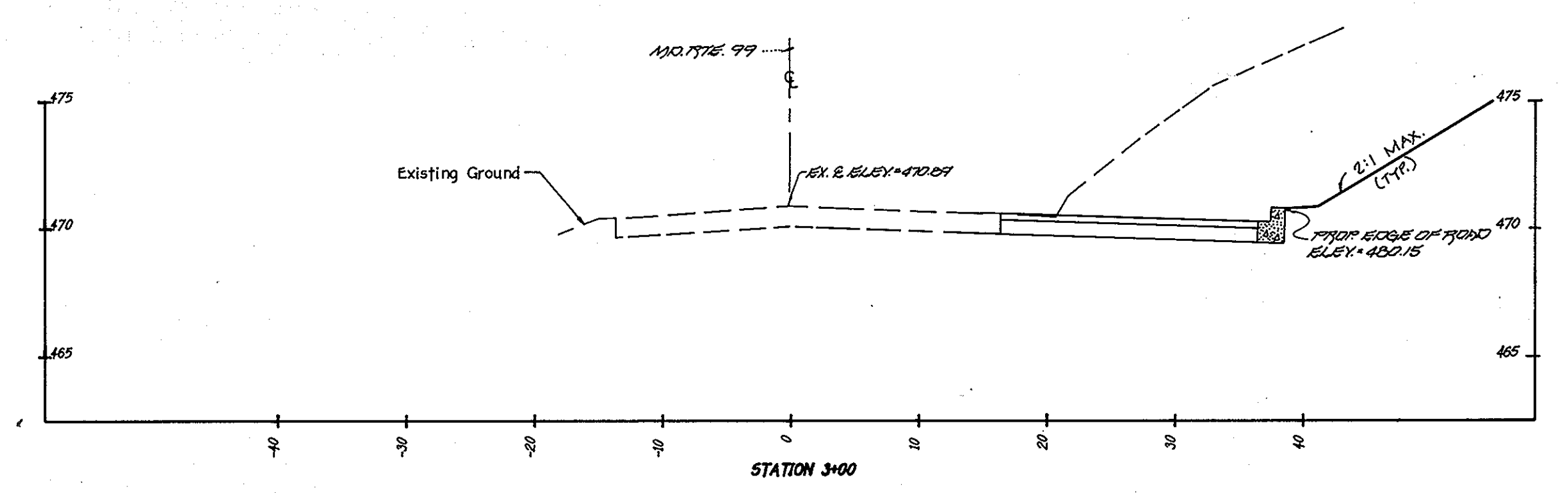
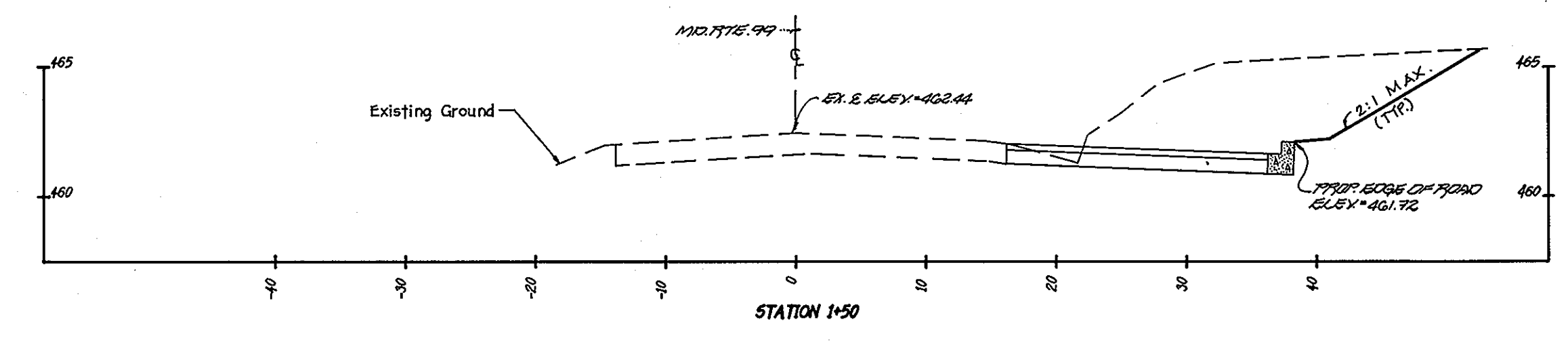
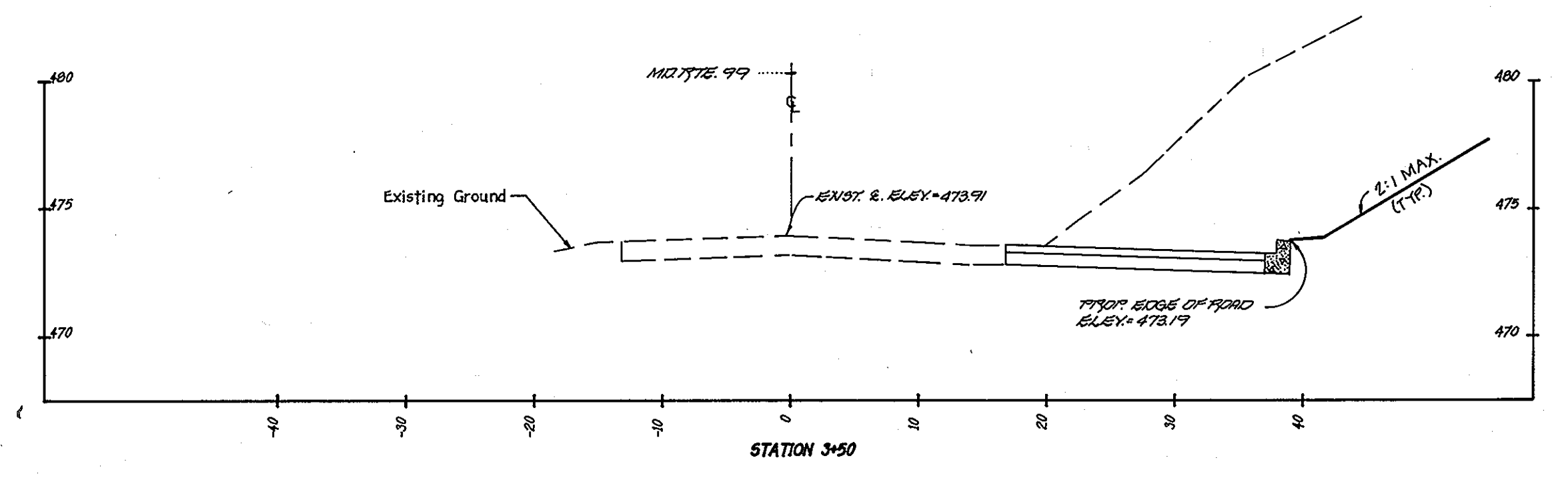
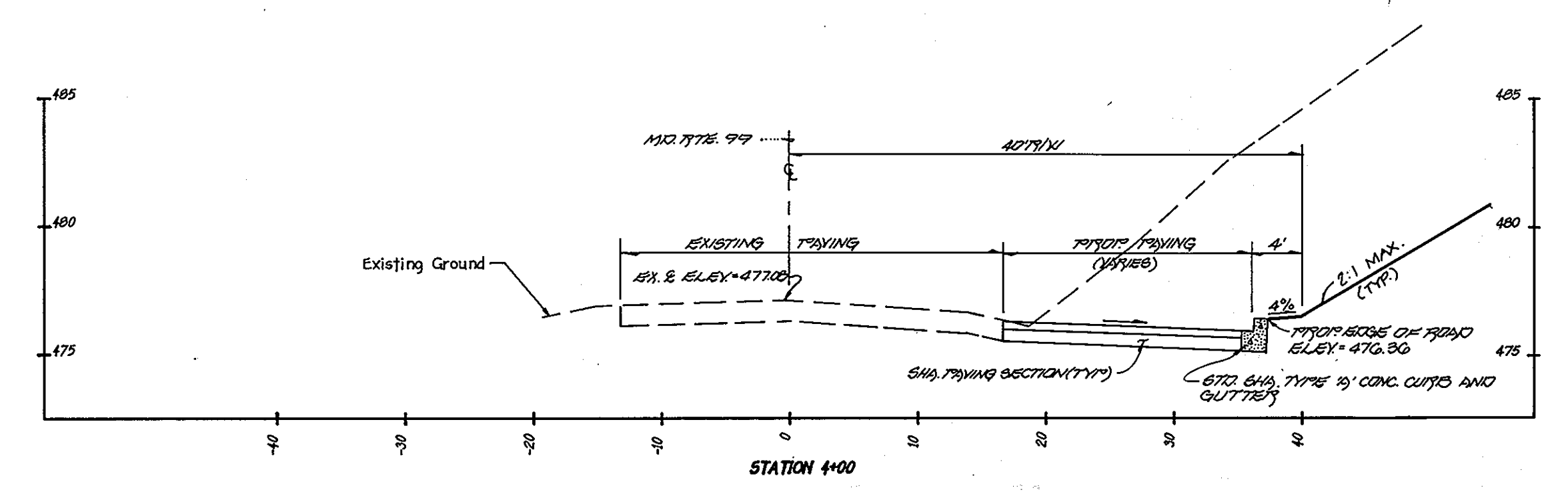
PLAN  
SCALE: 1" = 50'

1253

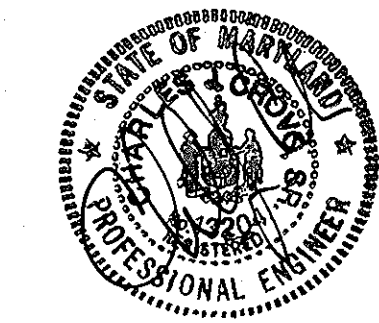
APPROVED DEPARTMENT OF PLANNING AND ZONING  
*Jim Swanson*  
 Chief, Division of Land Development and Research  
 Date: 2/5/96

*Bob Dammann*  
 Chief, Development Engineering Division  
 Date: 2/1/96

APPROVED DEPARTMENT OF PUBLIC WORKS  
*Richard M. G. Smith*  
 Chief, Bureau of Highways  
 Date: 1-30-96



BEGIN STATIONS: 0+0 TO 10+50



CROSS SECTIONS  
 MARYLAND ROUTE 99  
 STATIONS: 0+00 to 4+00  
**GTW'S WAVERLY WOODS**  
 SECTION 4, AREA 1  
 LOTS 20 thru 45  
 ZONING: R-20 AND RS-A-20  
 TAX MAP No: 16 PARCEL No: 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995

**OWNER AND DEVELOPER**  
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 COLUMBIA, MARYLAND 21044

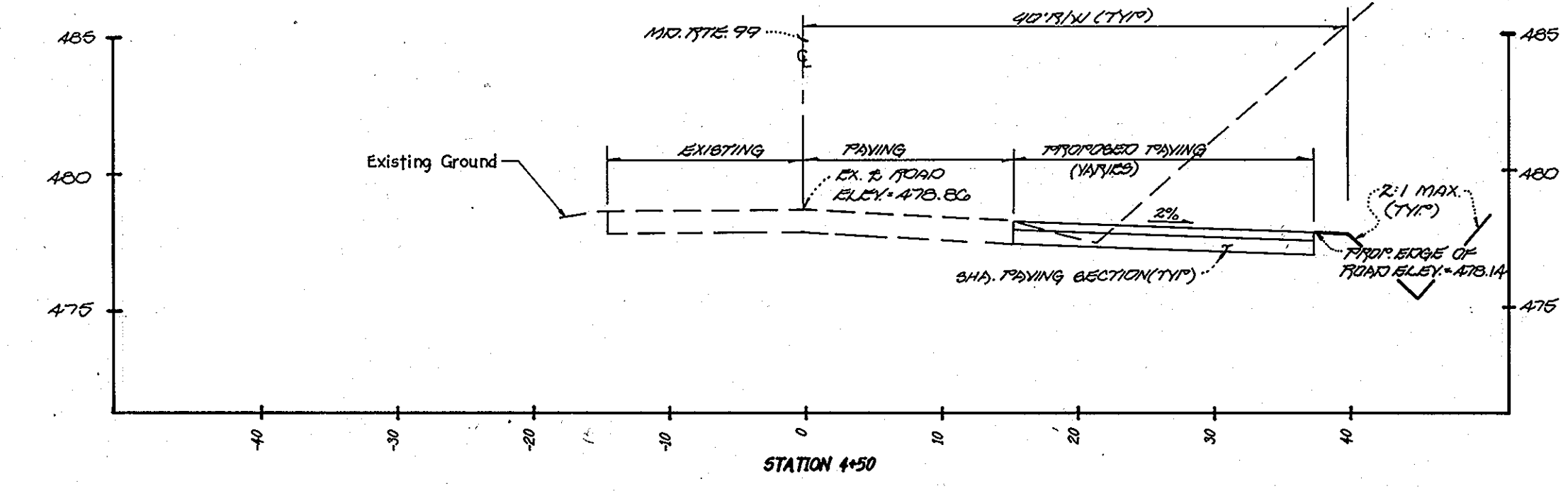
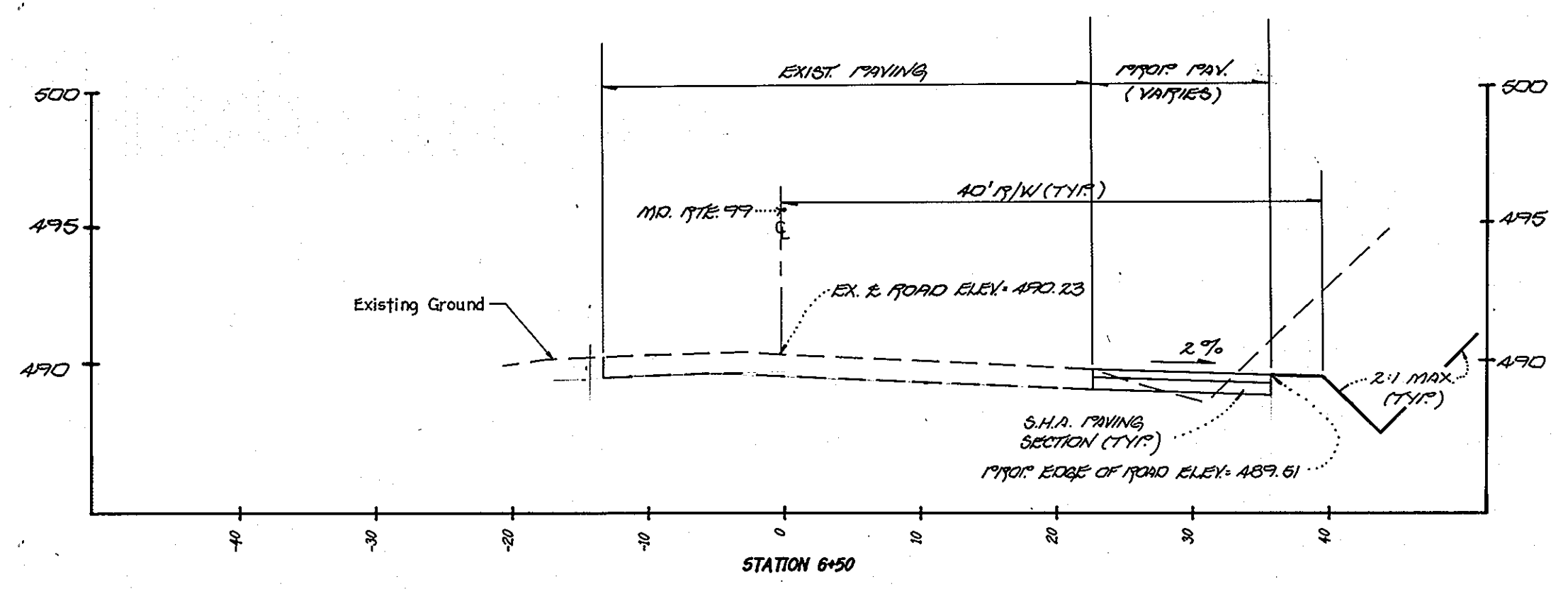
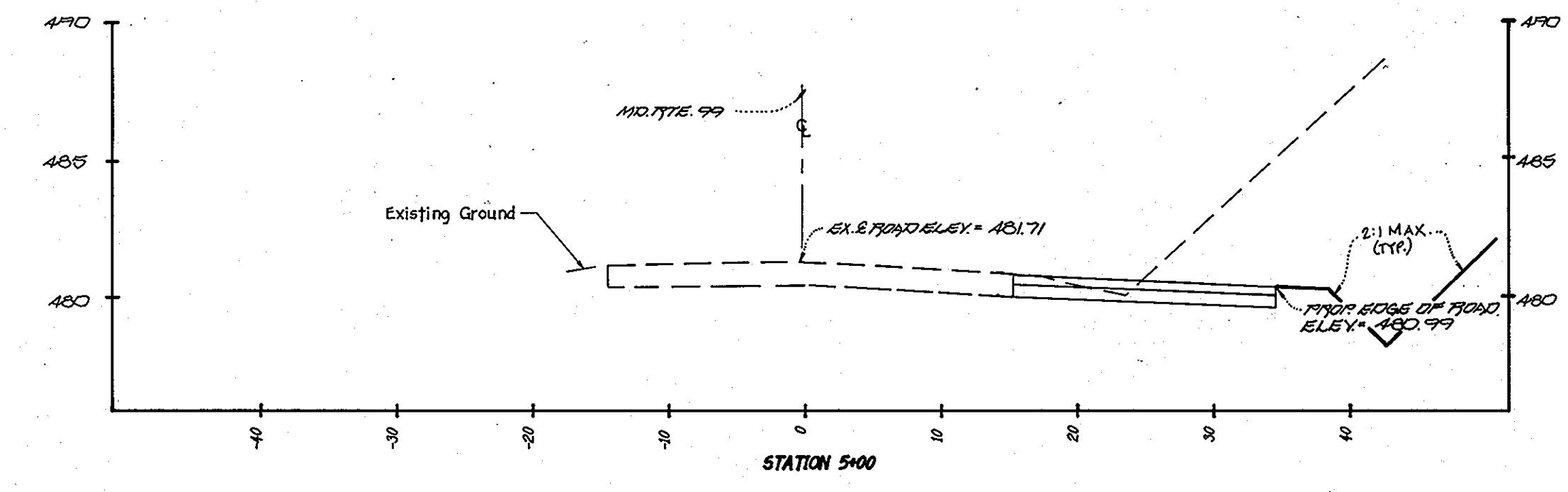
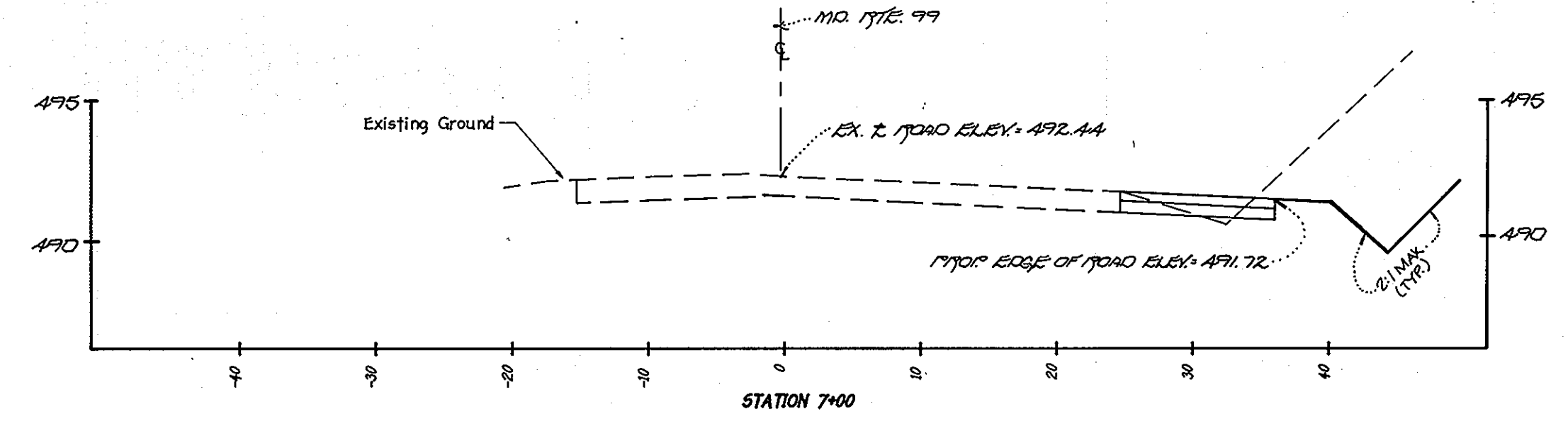
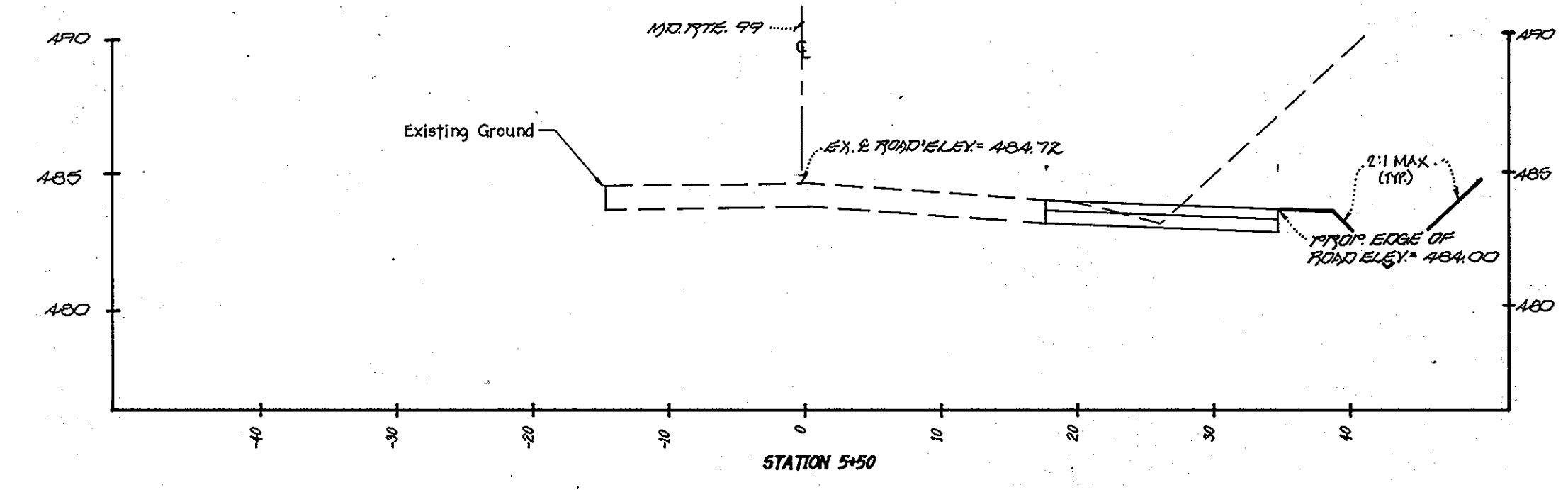
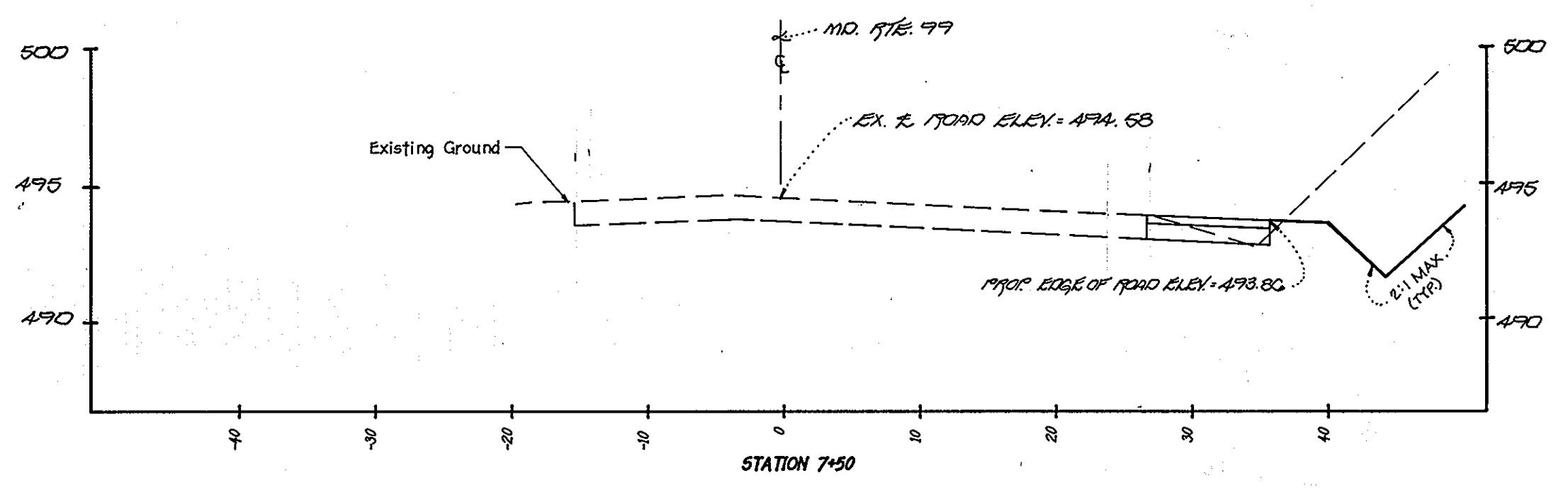
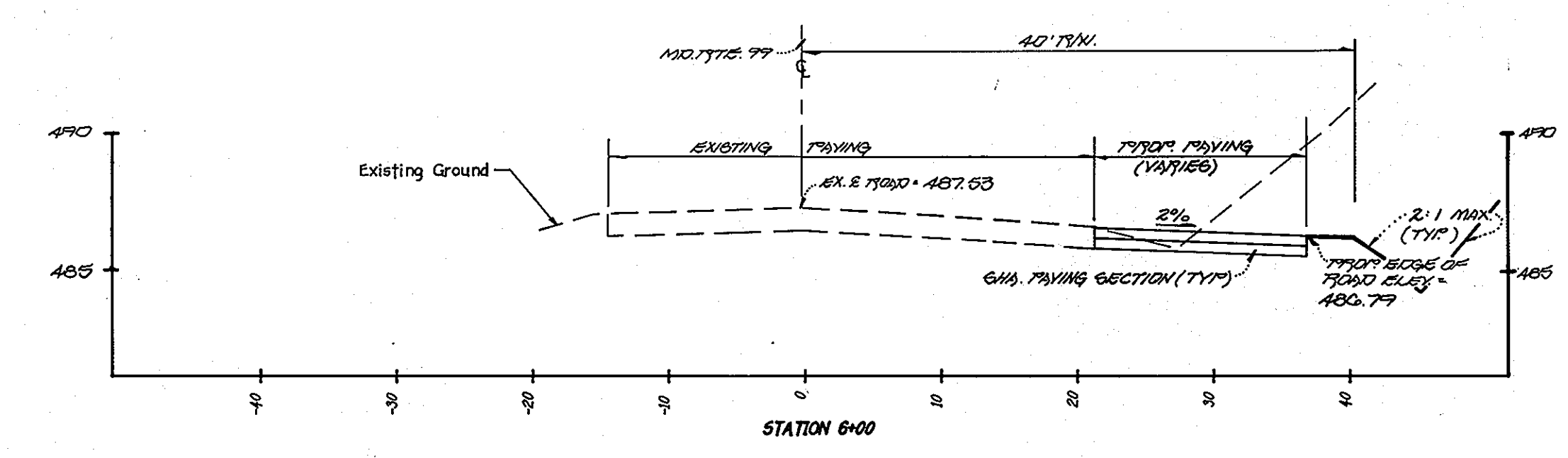
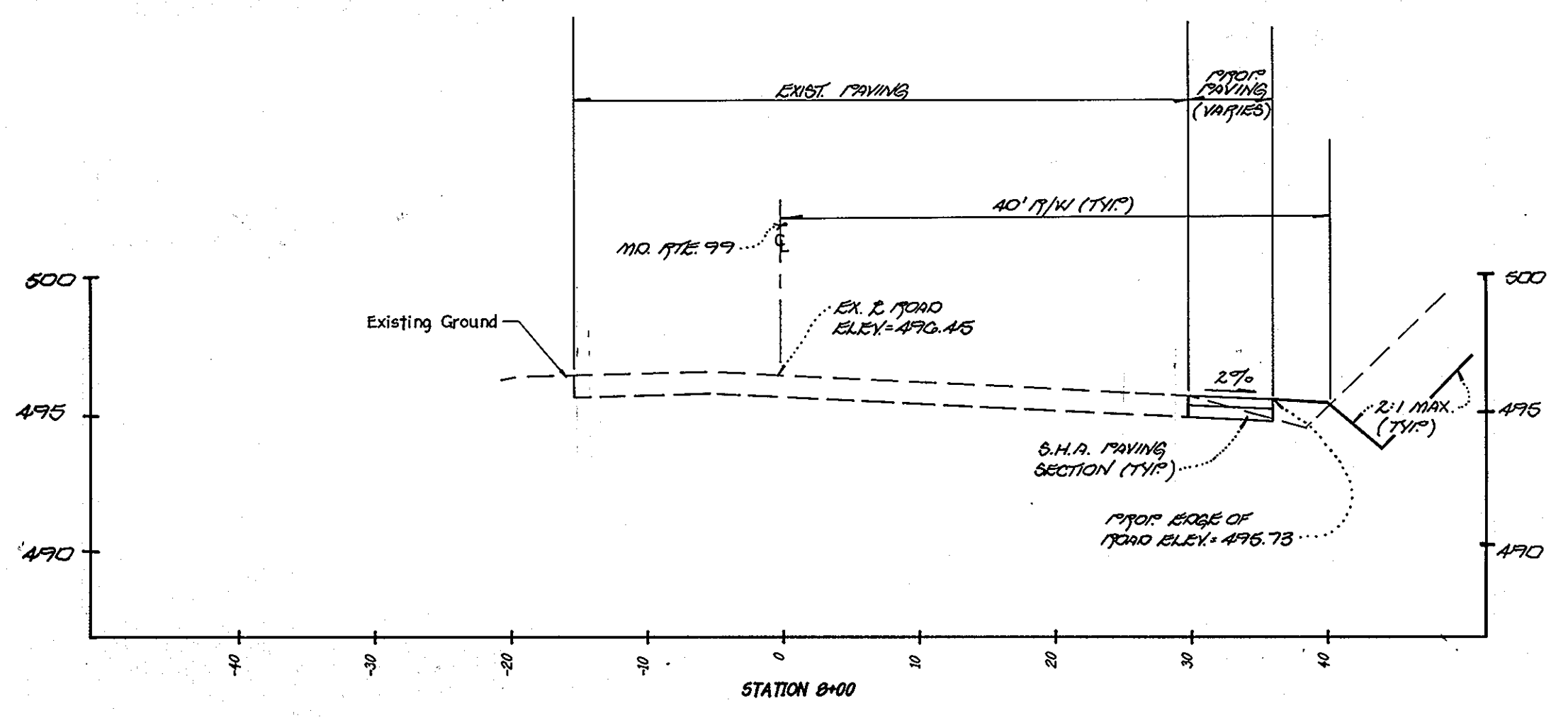
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 9171 BALTIMORE NATIONAL PIKE, SUITE 100  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2855

12521

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Ann Swinney*  
 Chief, Division of Land Development and Research Date 2/5/96

*Robert D. ...*  
 Chief, Development Engineering Division Date 2/1/96

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Robert M. ...*  
 Chief, Bureau of Highways Date 1-30-96



NOTE: SEE SHEET 21 FOR DITCH LINING DETAIL AND CHART FOR WIDENING ALONG MD. ROUTE 99.

CROSS SECTIONS  
 MARYLAND ROUTE 99  
 STATIONS: 4+50 TO 8+00  
**GTW'S WAVERLY WOODS**  
 SECTION 4 AREA 1  
 LOTS 1 THRU 19, AND PARCELS A THRU E  
 ZONING R-20, R-5C, R-5A-B AND R-A-15  
 TAX MAP No. 16 PART OF PARCEL No. 21  
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 DATE: MAY 26, 1995  
 Scale: HORIZONTAL: 1" = 10'  
 VERTICAL: 1" = 5'



**OWNER AND DEVELOPER**  
 GTW JOINT VENTURE  
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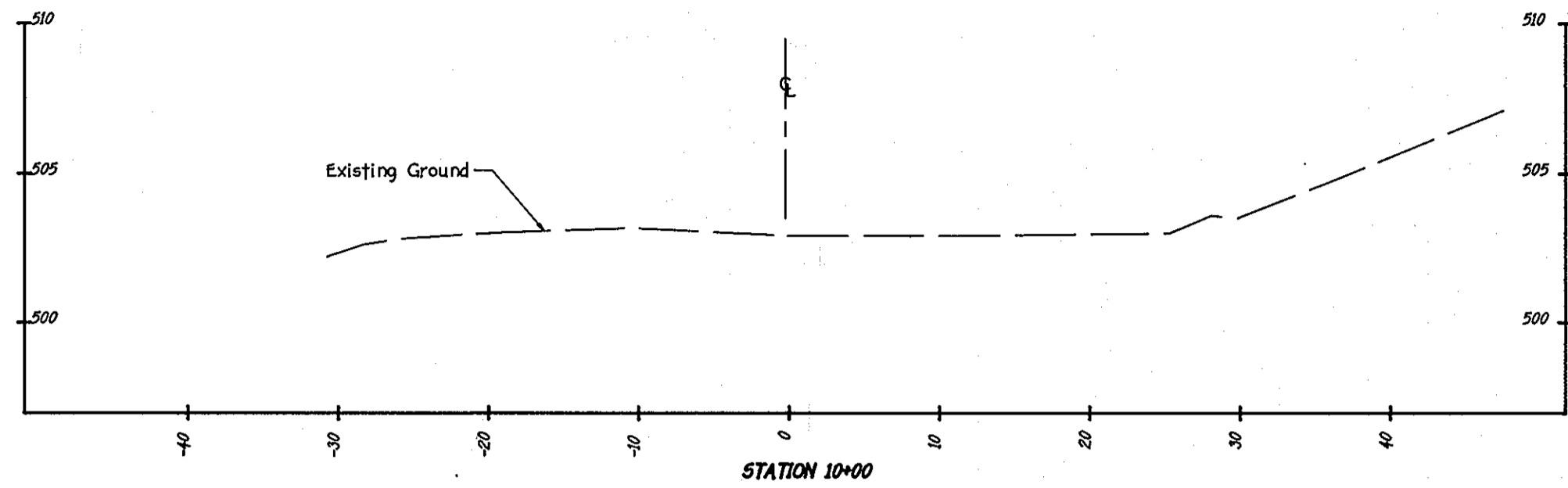
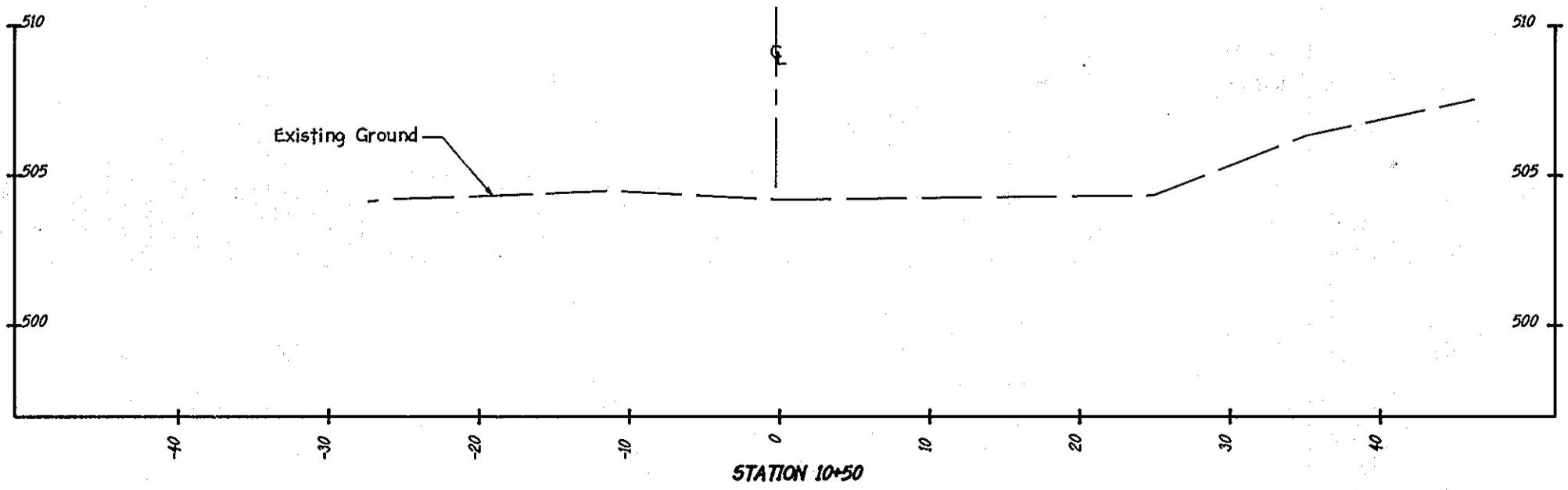
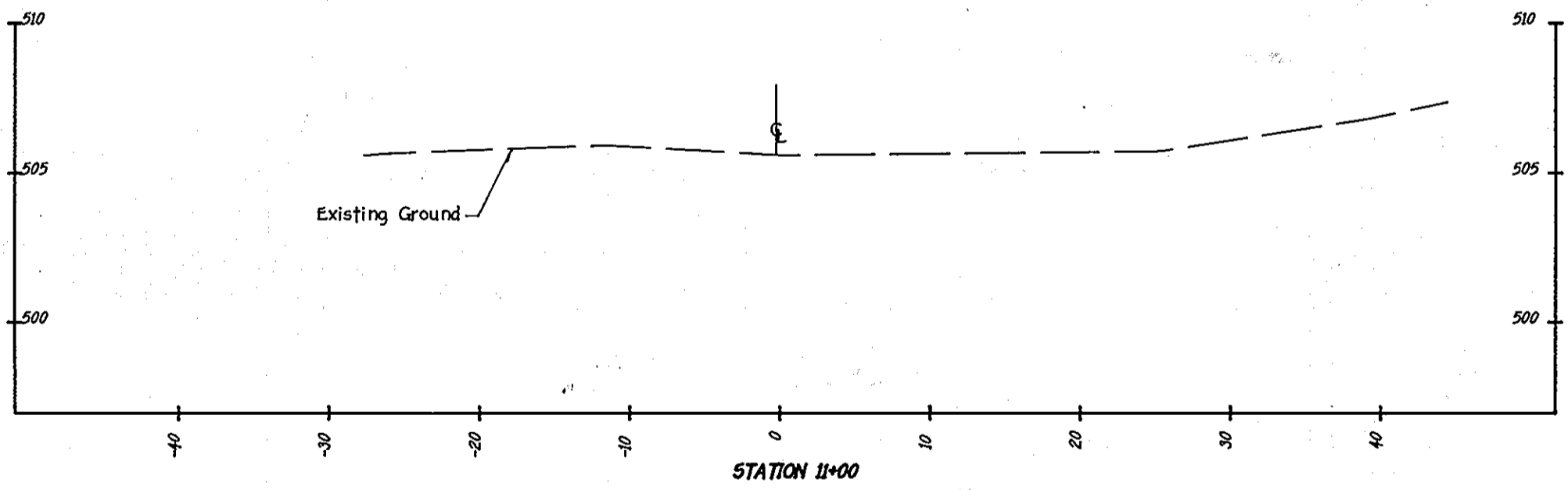
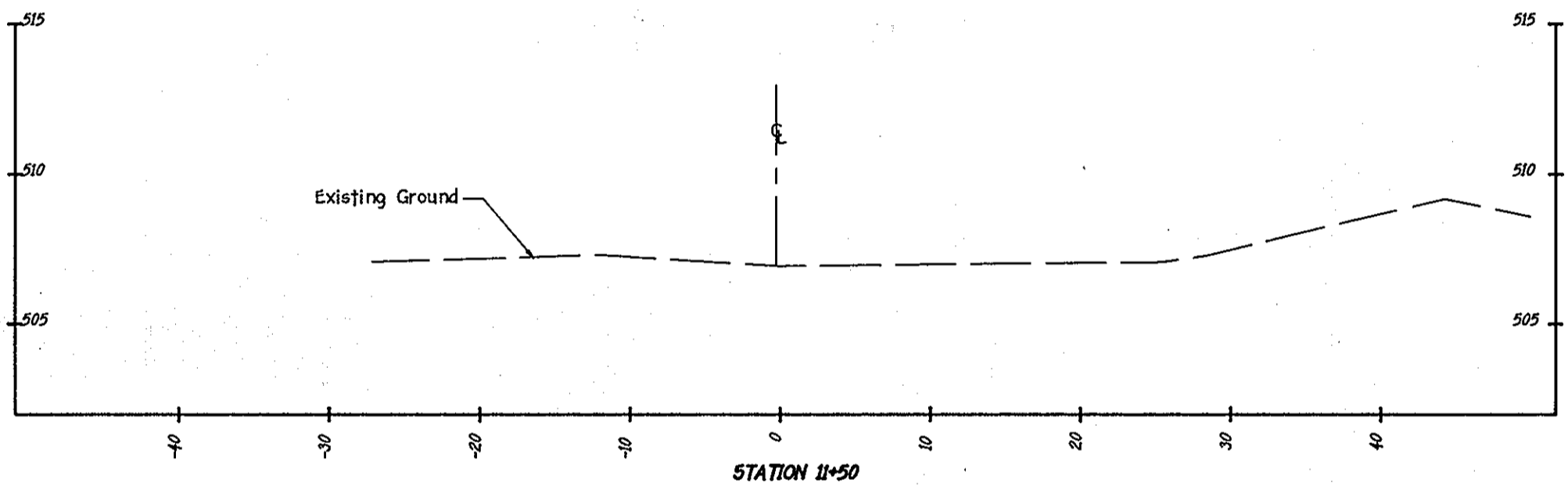
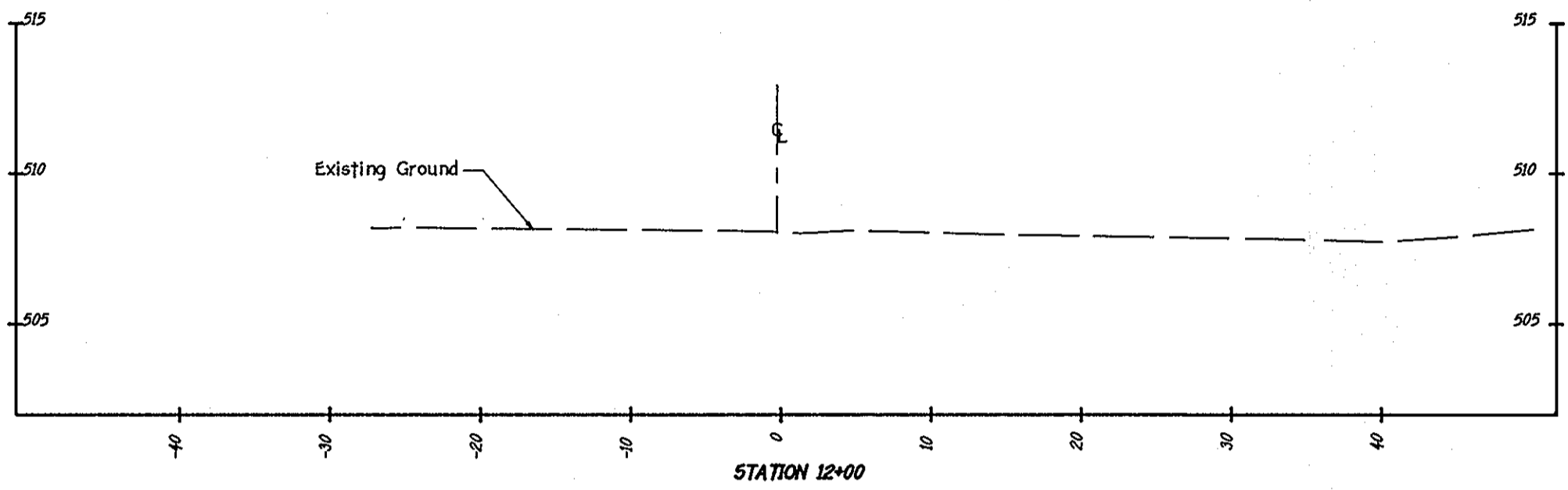
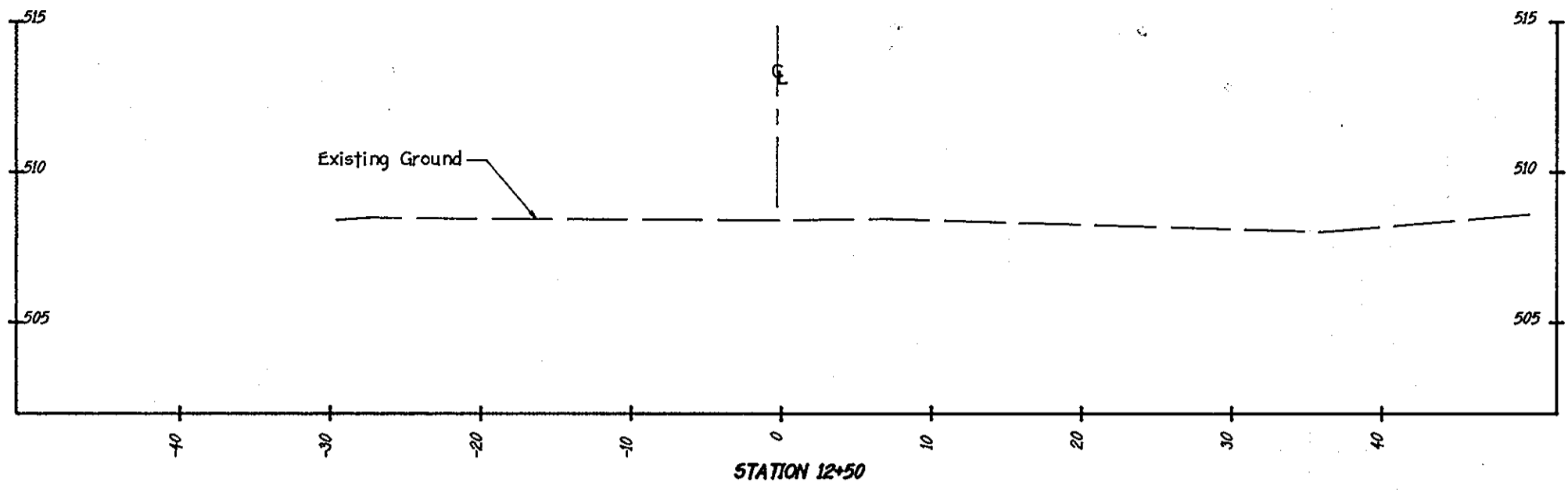
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APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Jim Johnson* 2/5/96  
 Chief, Division of Land Development and Research Date

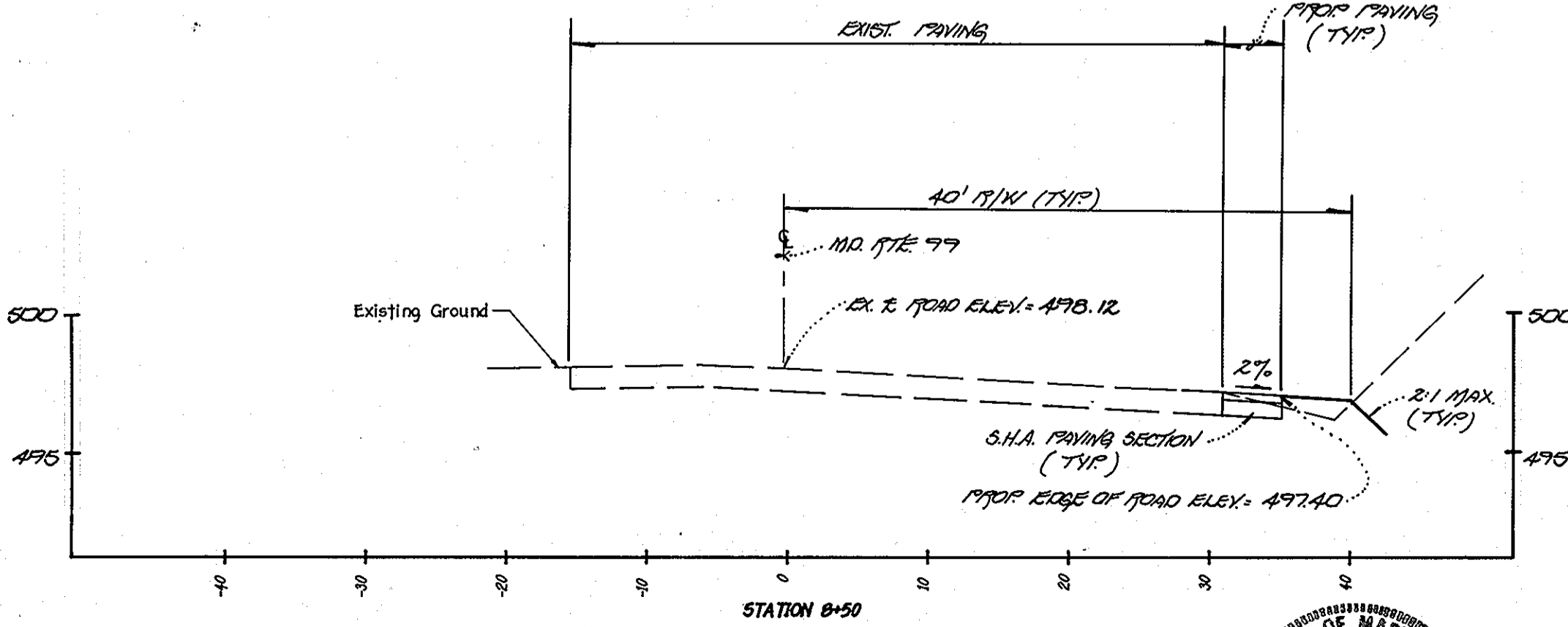
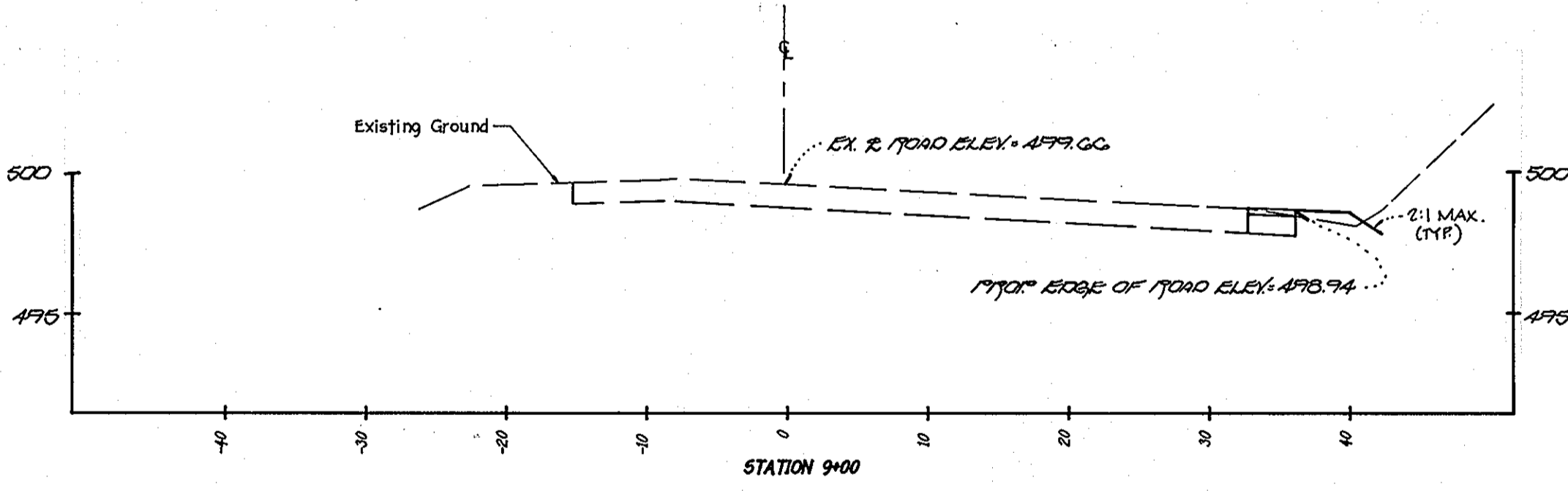
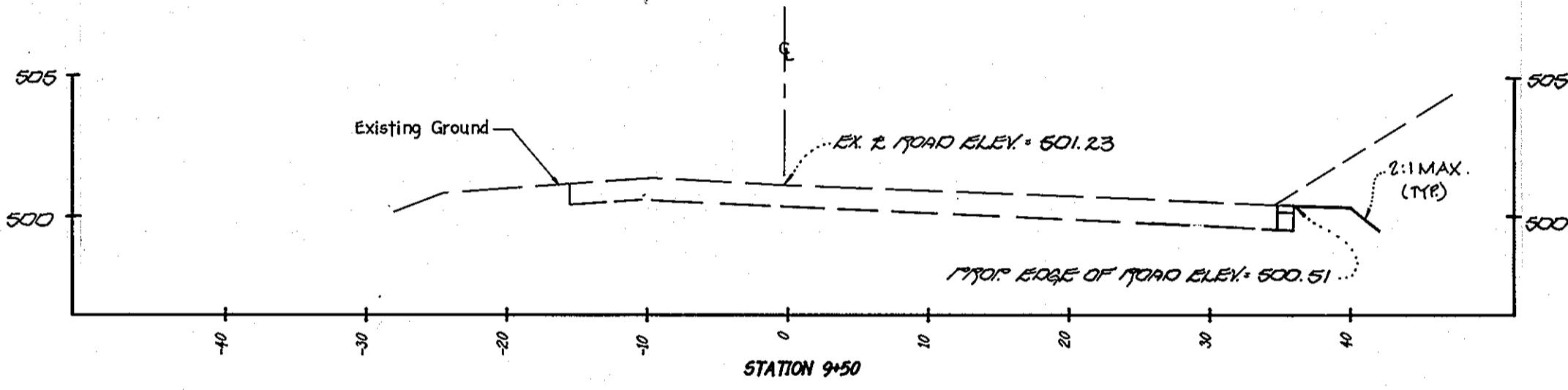
*Bob Deane* 2/1/96  
 Chief, Development Engineering Division Date

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APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Damer* 1-20-96  
 Chief, Bureau of Highways Date



LIMIT OF PROPOSED S.H.A. PAVING SECTION, & STA. 9+72



CROSS SECTIONS  
 MARYLAND ROUTE 99  
 STATIONS: 8+50 TO 12+50  
**GTW'S WAVERLY WOODS**  
 SECTION 4 AREA 1  
 LOTS 1 THRU 17 AND PARCELS A THRU E  
 ZONING: R-20, RSC, R-5A-B AND R-A-15  
 TAX MAP No. 16 PART OF PARCEL No. 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995  
 Scale: HORIZONTAL: 1" = 10'  
 VERTICAL: 1" = 5'



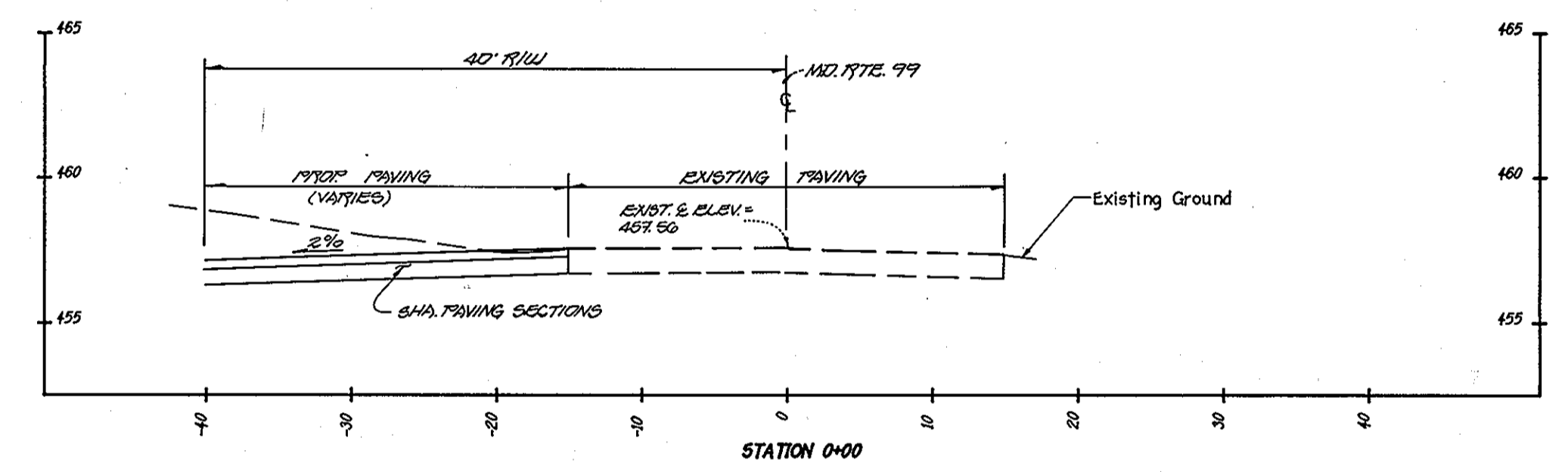
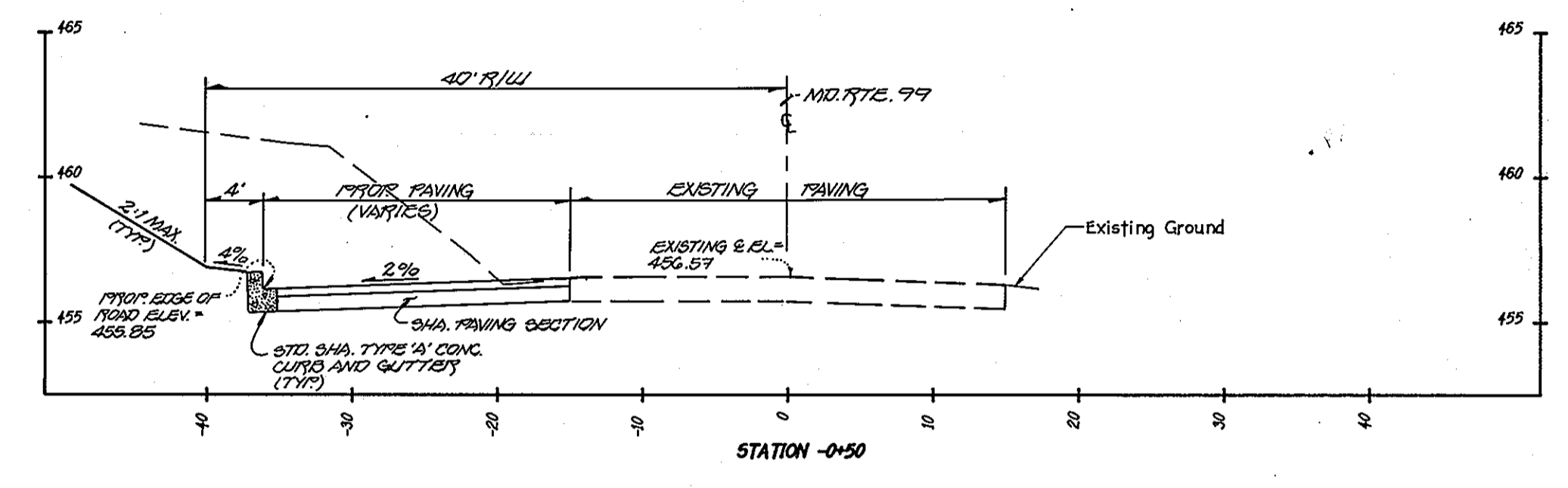
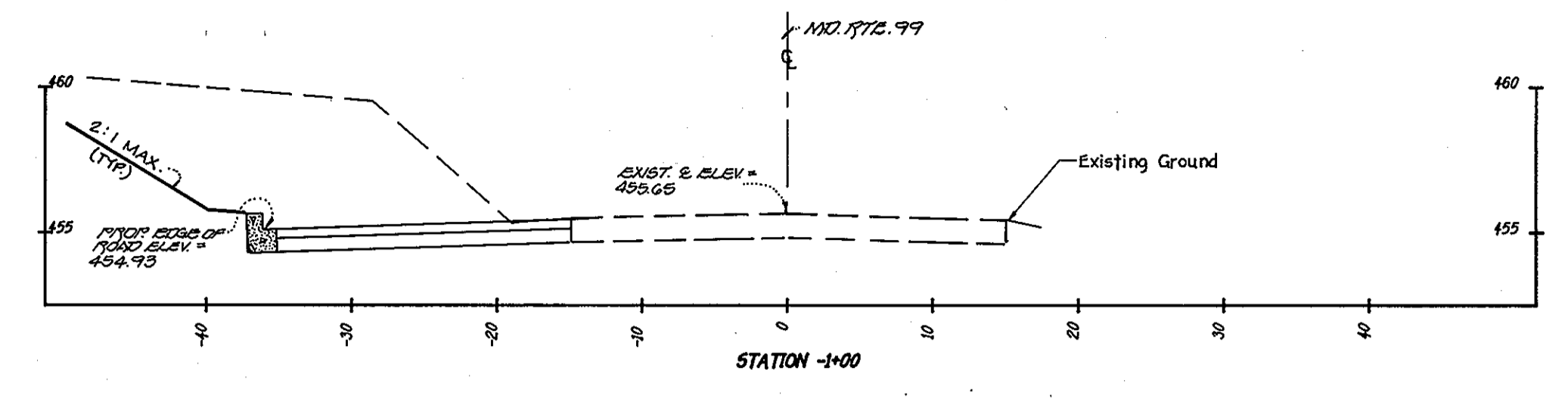
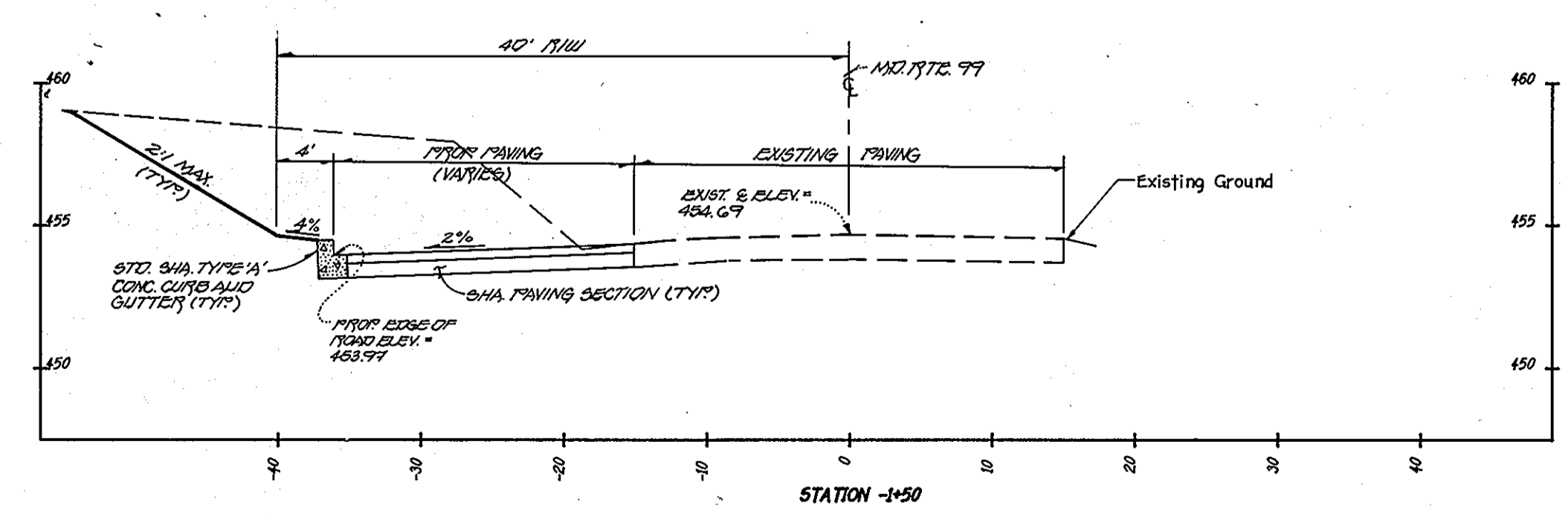
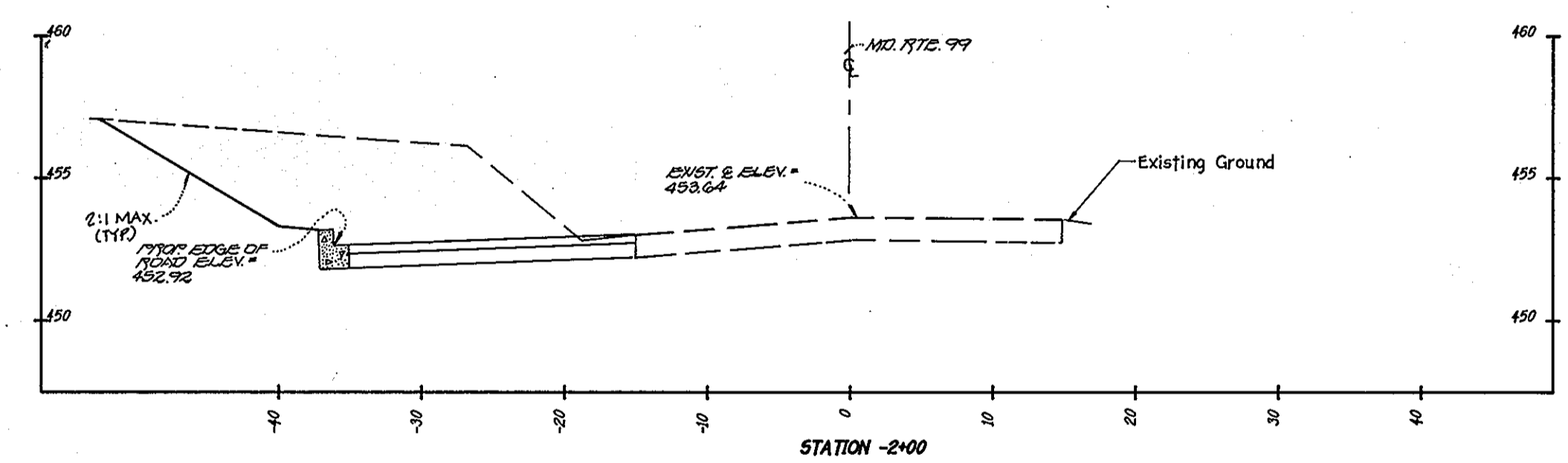
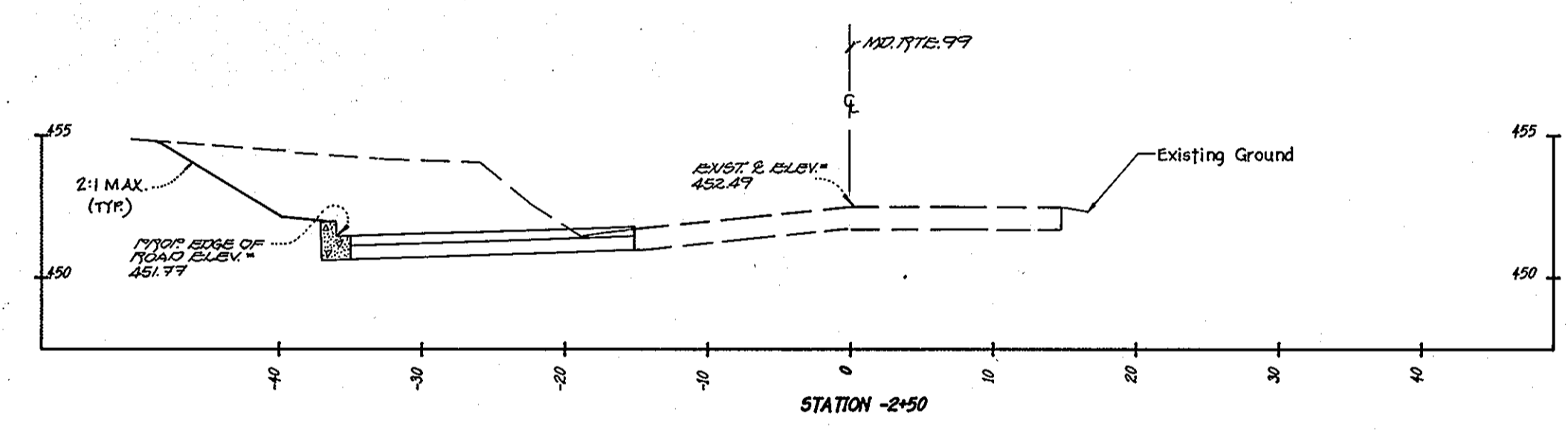
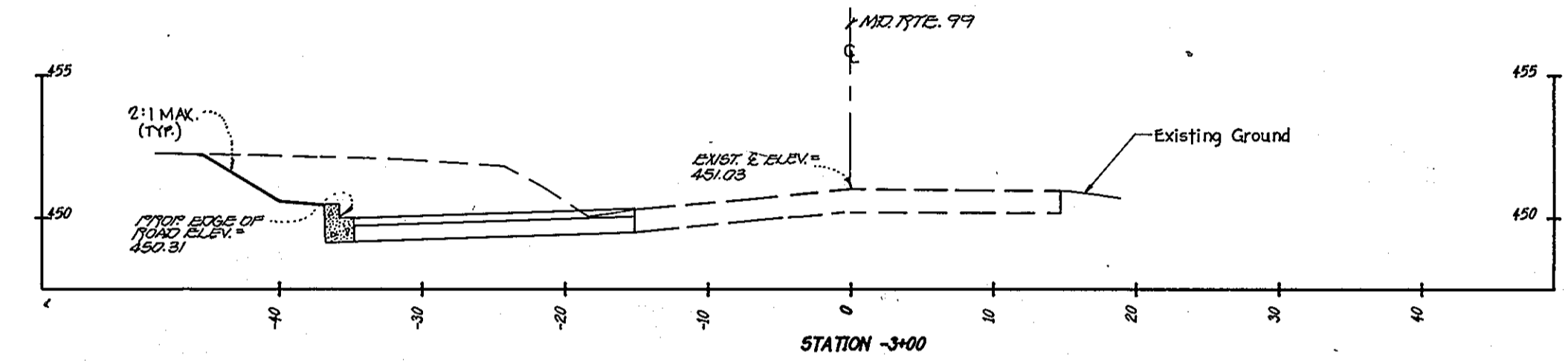
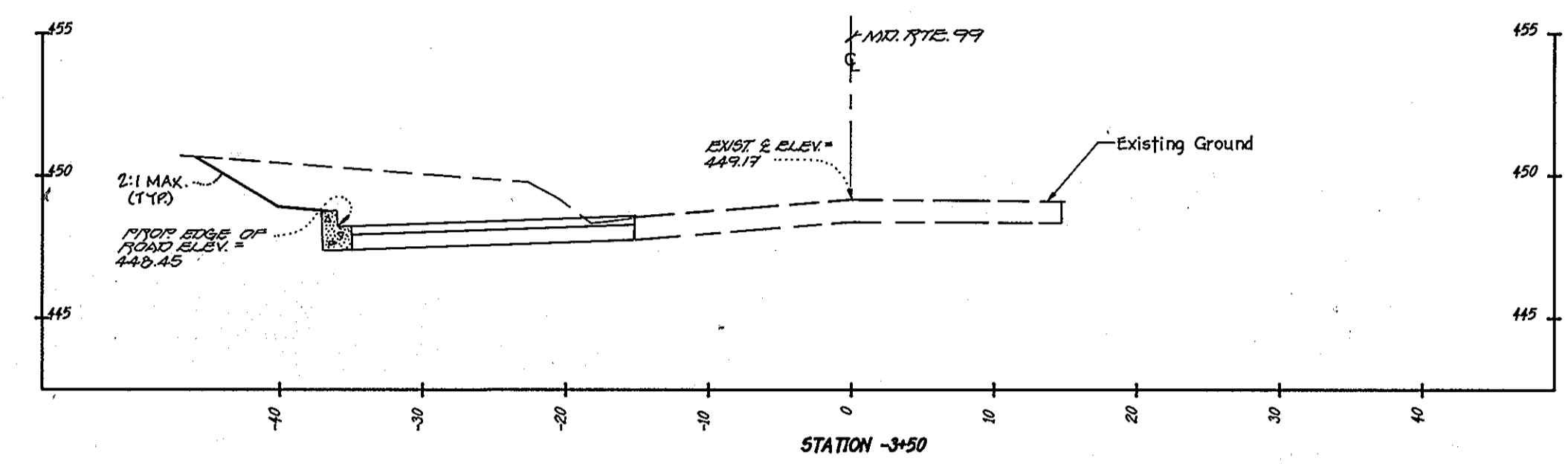
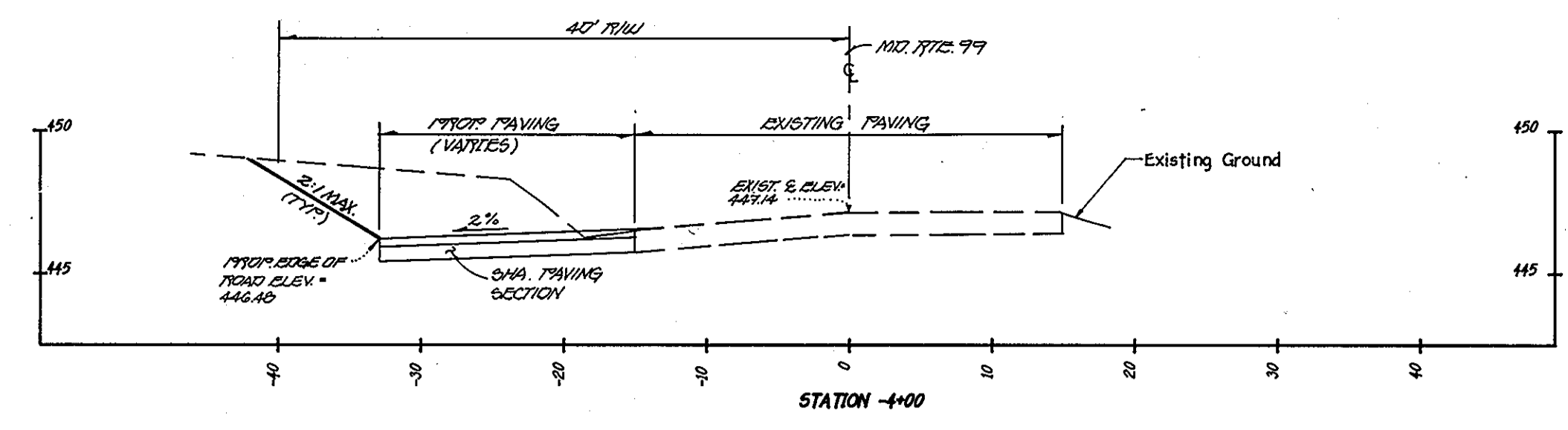
**OWNER AND DEVELOPER**  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10905 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 9171 BALTIMORE NATIONAL PIKE, SUITE 100  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2855

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*John Summons*  
 Chief, Division of Land Development and Research  
 Date: 2/5/96

*John Summons*  
 Chief, DEVELOPMENT REGULATIONS DIVISION  
 Date: 2/1/96

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Edward M. Kavelo*  
 Chief, Bureau of Highways  
 Date: 1-30-96



CROSS SECTIONS  
 MARYLAND ROUTE 99  
 STATIONS: (-) 4+00 TO 0+00  
**GTW'S WAVERLY WOODS**  
 SECTION 4, AREA 1  
 LOTS 20 thru 45  
 ZONING R-20 AND R5-A-B  
 TAX MAP No. 16 PARCEL No. 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995

SHEET 22 OF 35

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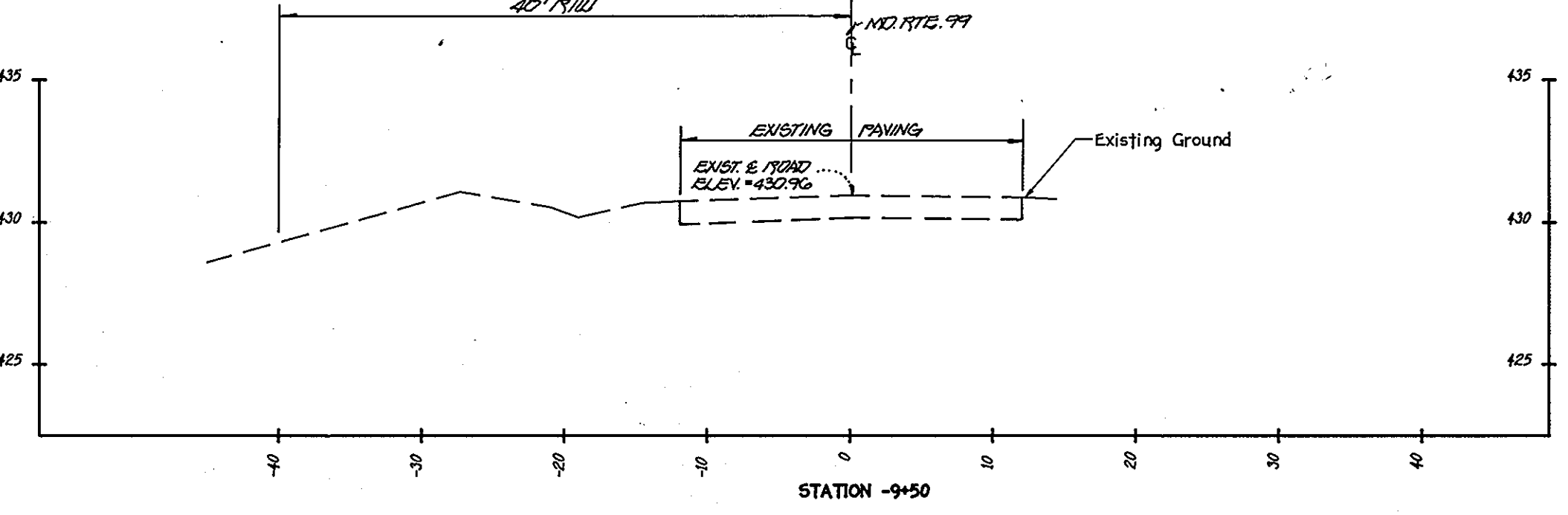
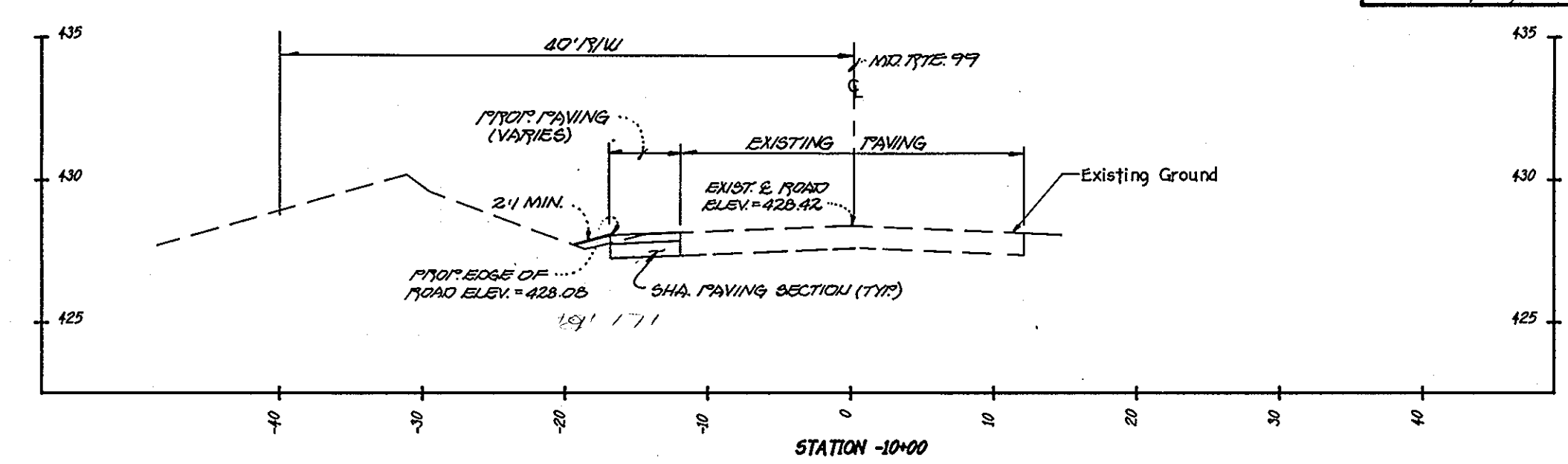
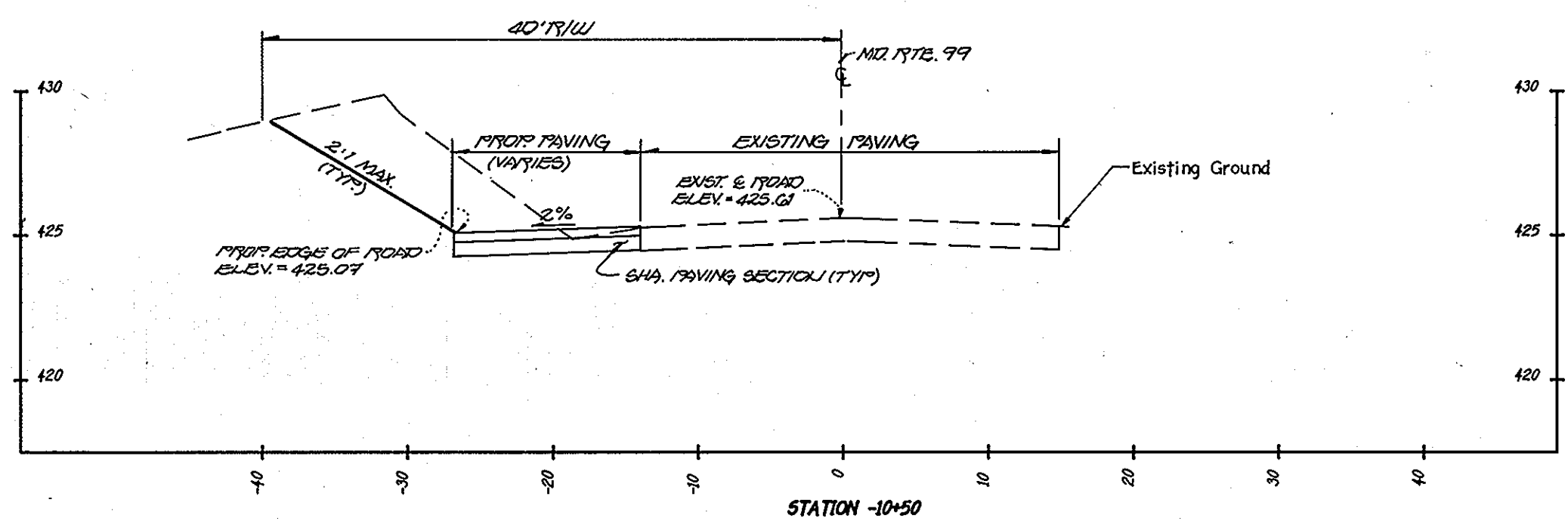
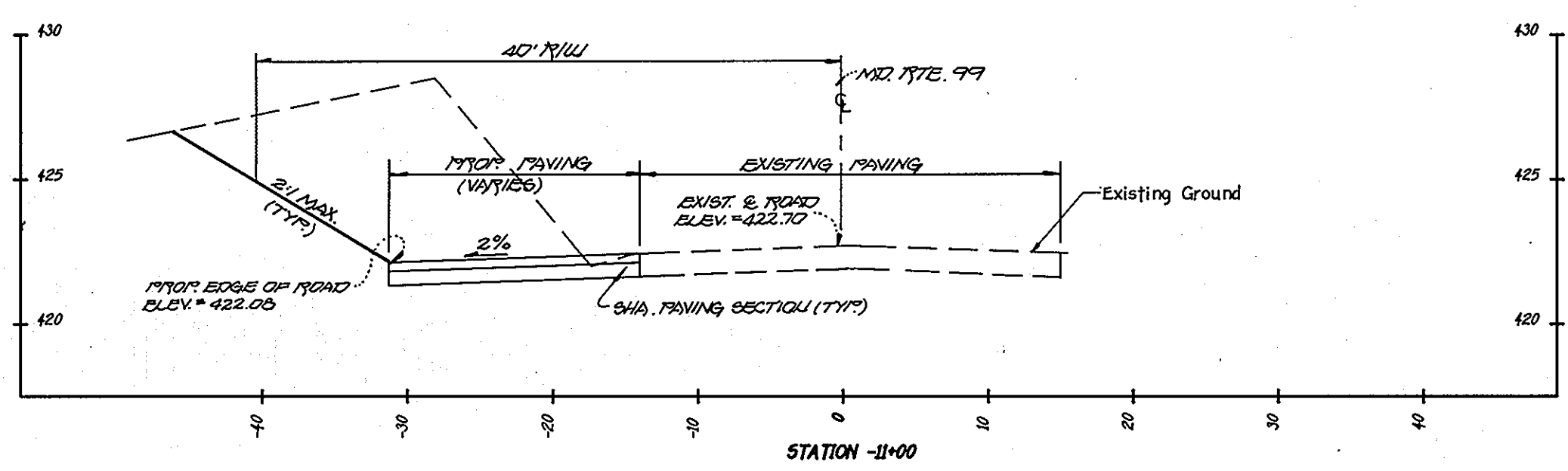
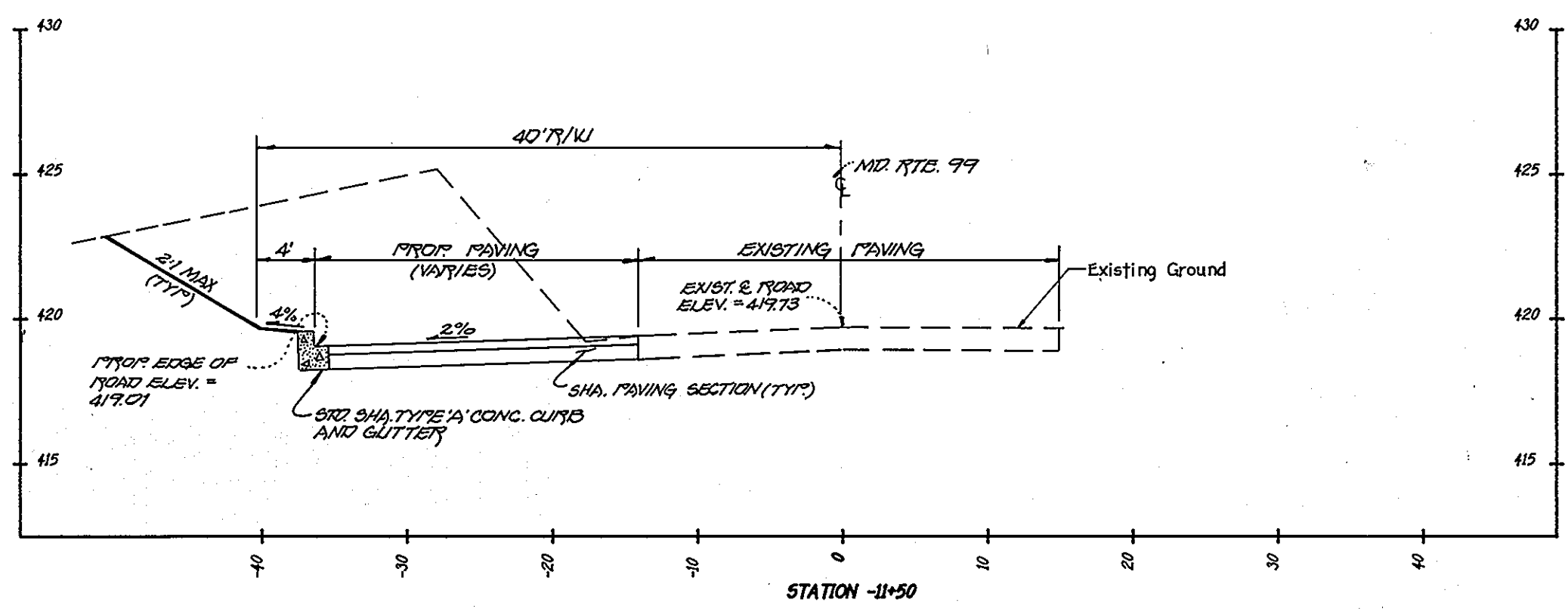
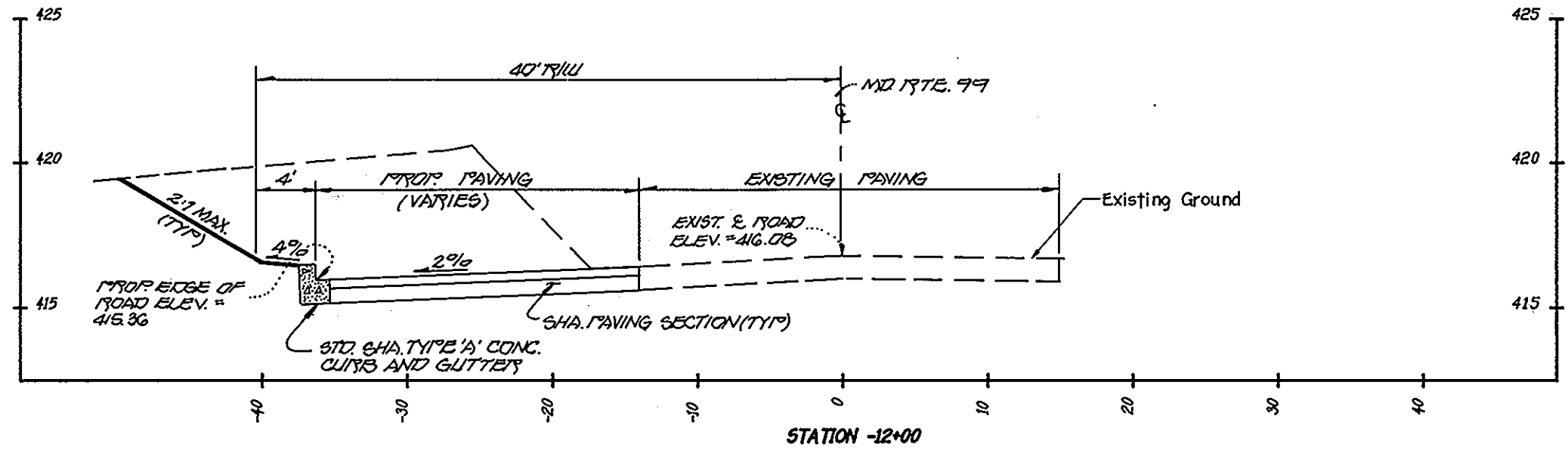
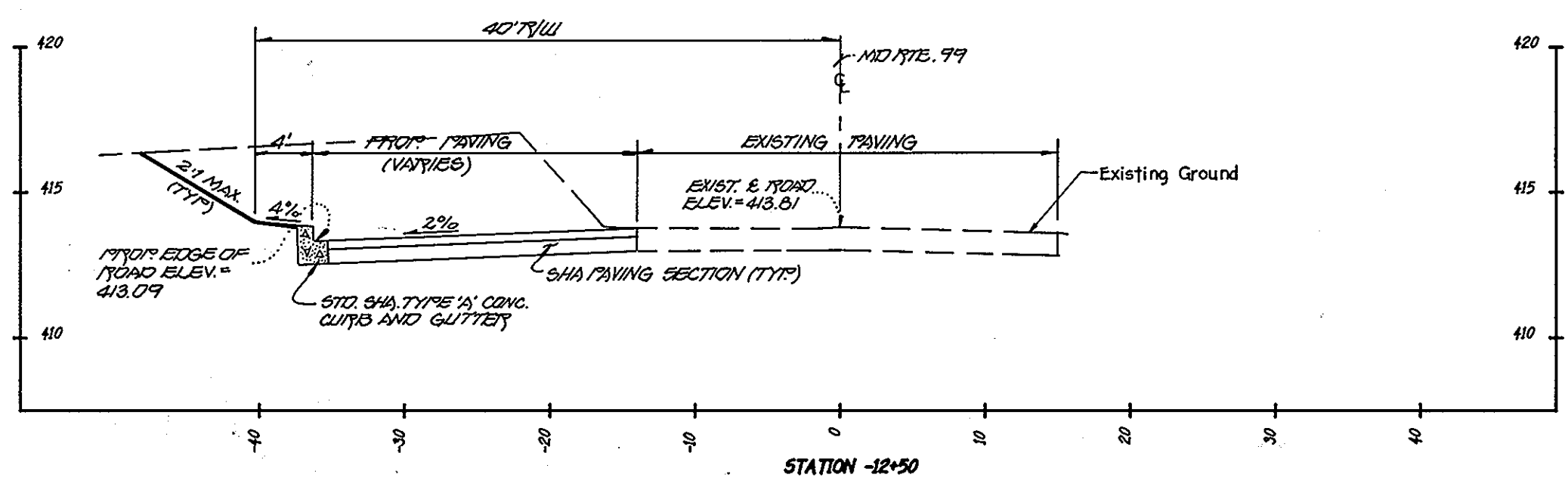
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 9171 BALTIMORE NATIONAL PIKE, SUITE 100  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461 - 2855

**OWNER AND DEVELOPER**  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Chia Wu*  
 Chief, Division of Land Development and Research  
 Date: 2/5/96

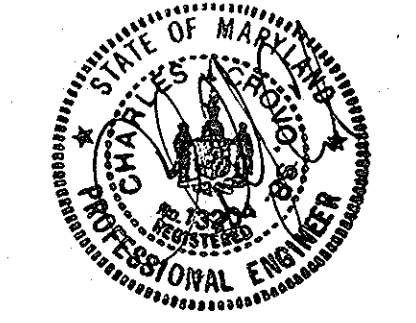
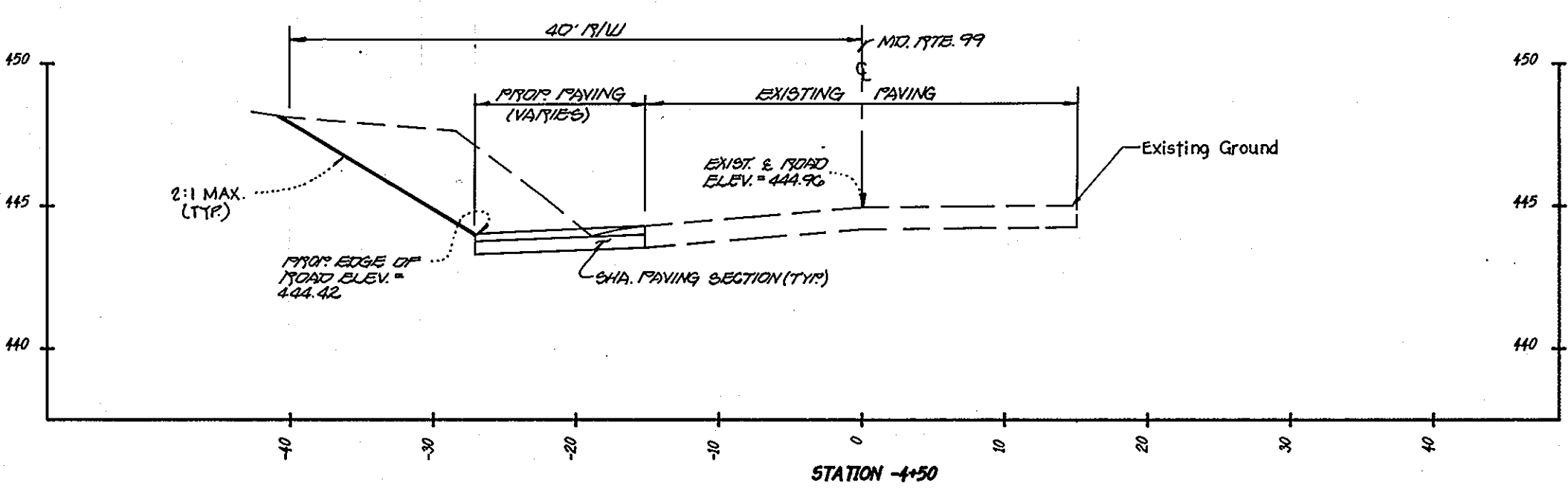
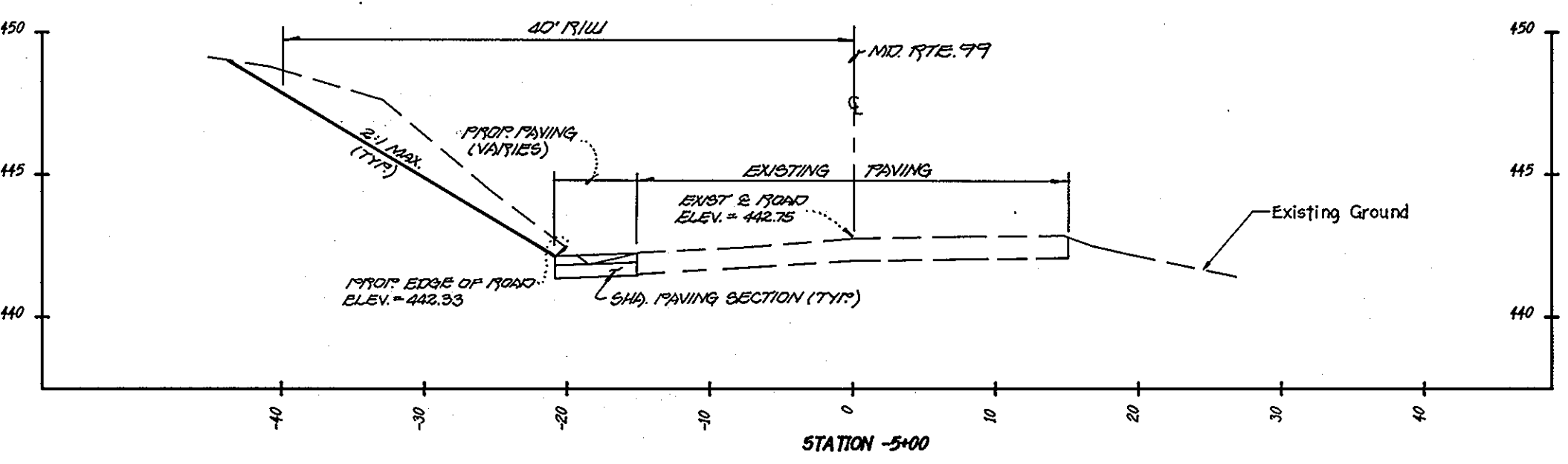
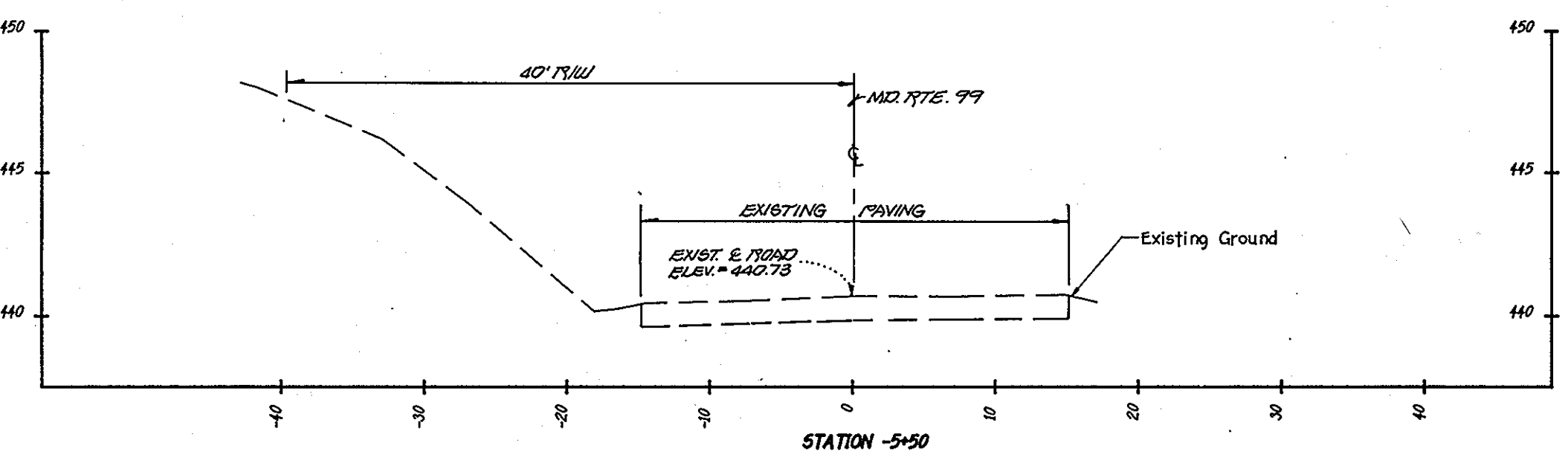
*M. J. ...*  
 Chief, DEVELOPMENT REGULATIONS DIVISION  
 Date: 2/1/96

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Richard M. ...*  
 Chief, BUREAU OF HIGHWAYS  
 Date: 1-30-96



BEGIN STATIONS: -9+50 TO -17+50

NOTE: SECTION -9+50 TO -21+00 REFER TO SECTION 4 AREA 2 ROAD DESIGN OF MARYLAND ROUTE 99. (F-95-174)



CROSS SECTIONS  
 MARYLAND ROUTE 99  
 STATIONS: (-)12+50 TO (-)4+50  
 GTW'S WAVERLY WOODS  
 SECTION 4, AREA 2 | AREA 1  
 LOTS 20 thru 45  
 ZONING: R-20 AND RS-A-8  
 TAX MAP No: 16 PARCEL No: 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995

SHEET 23 OF 33

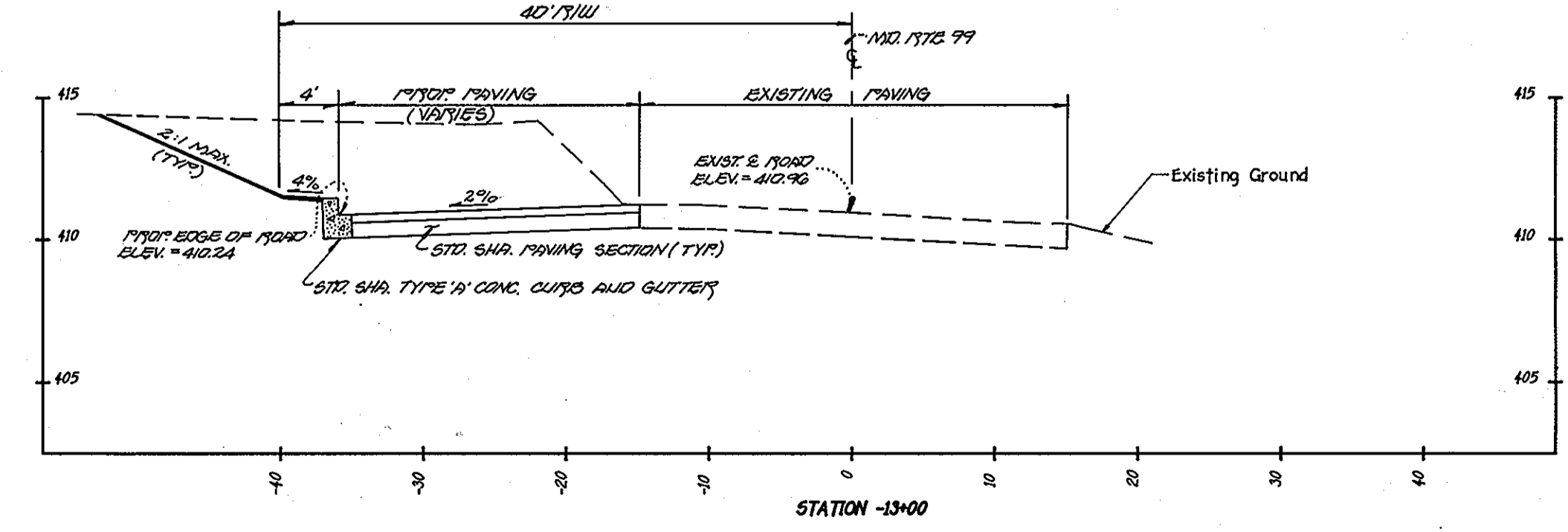
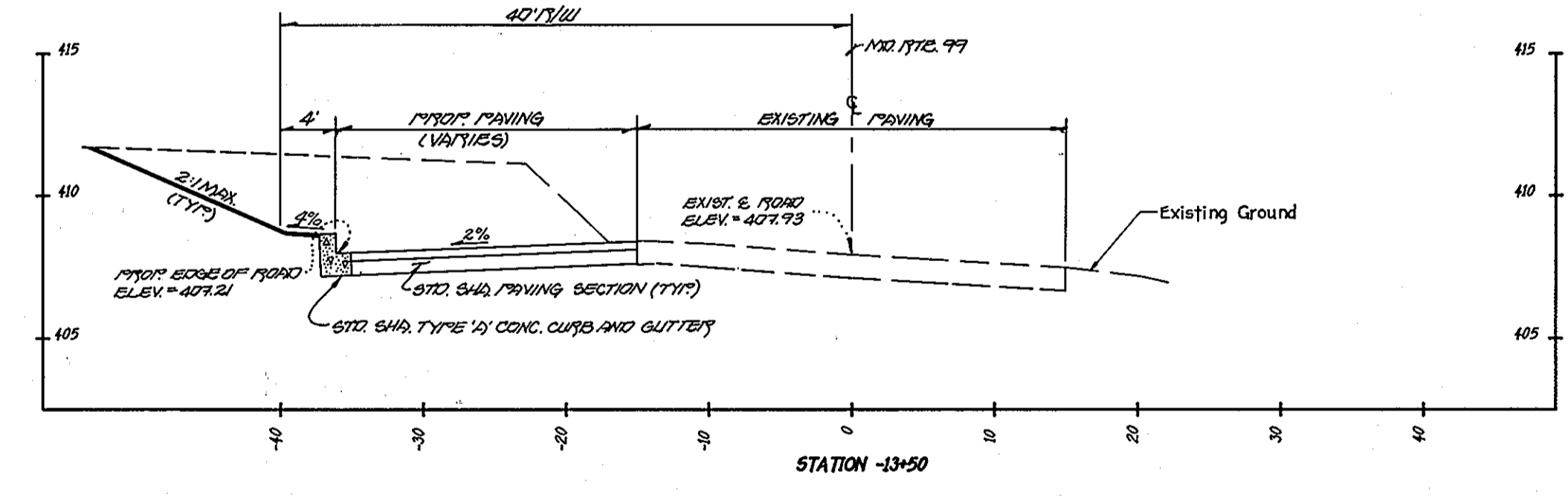
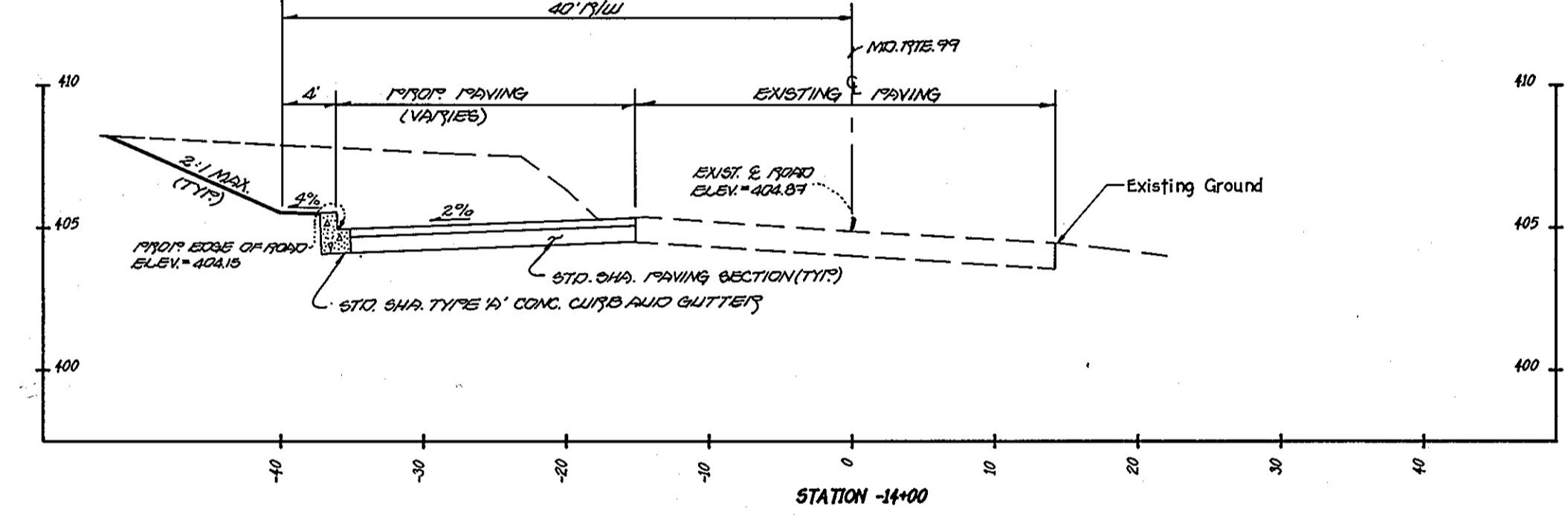
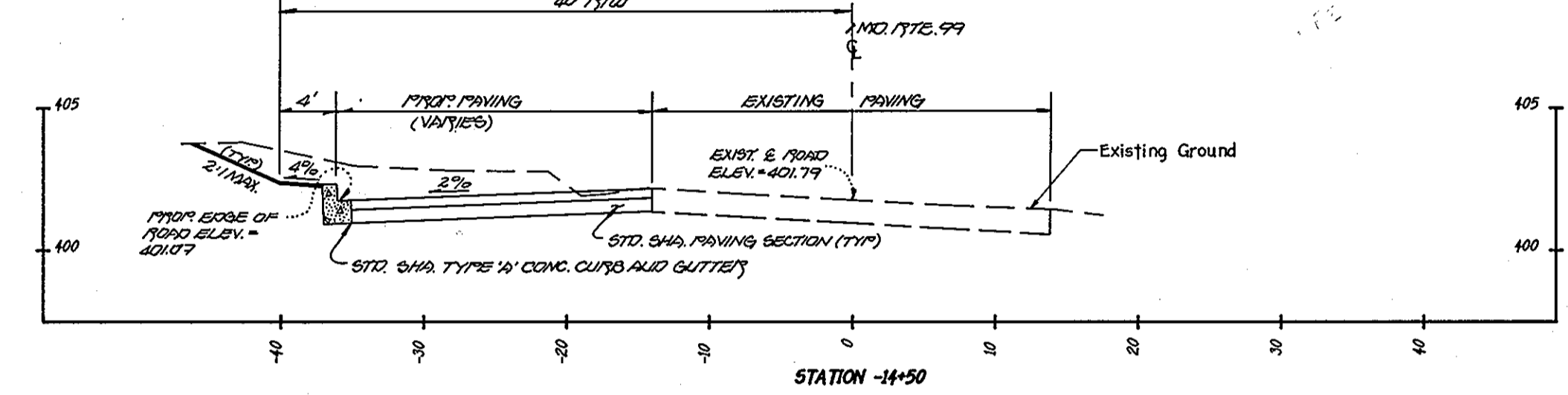
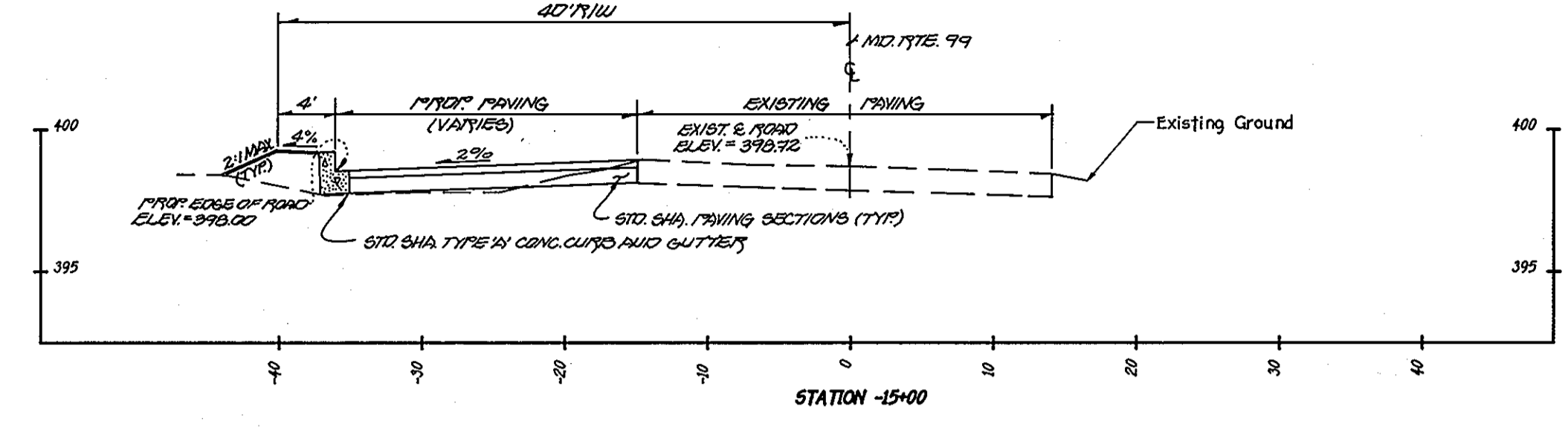
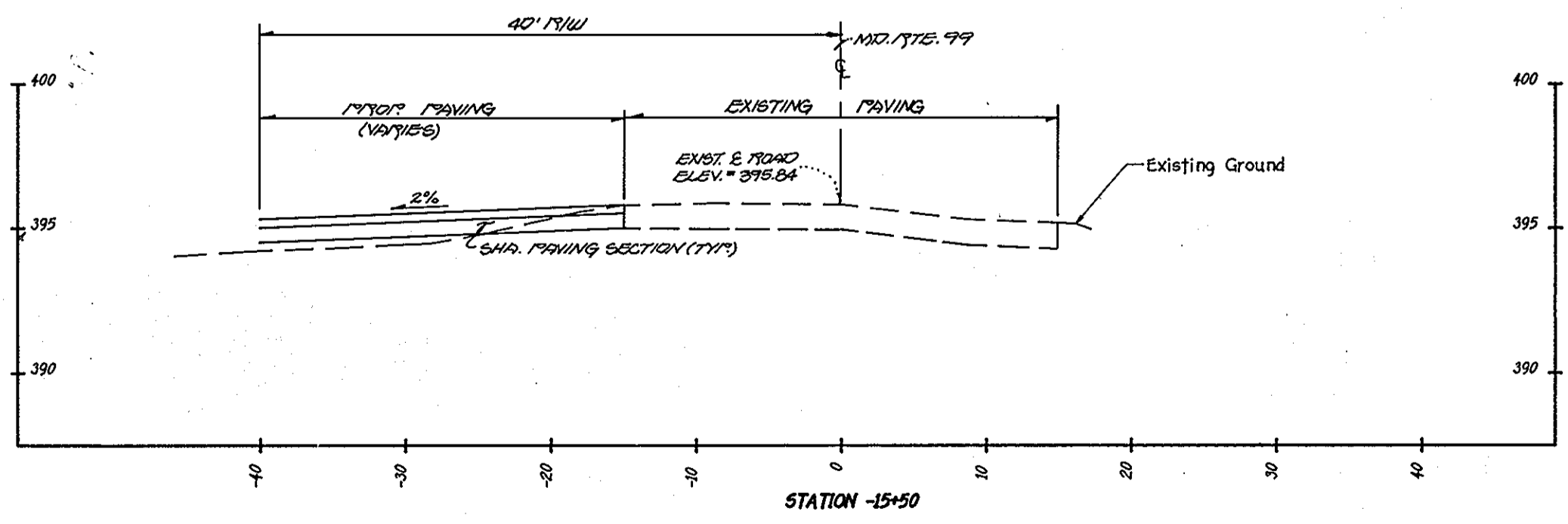
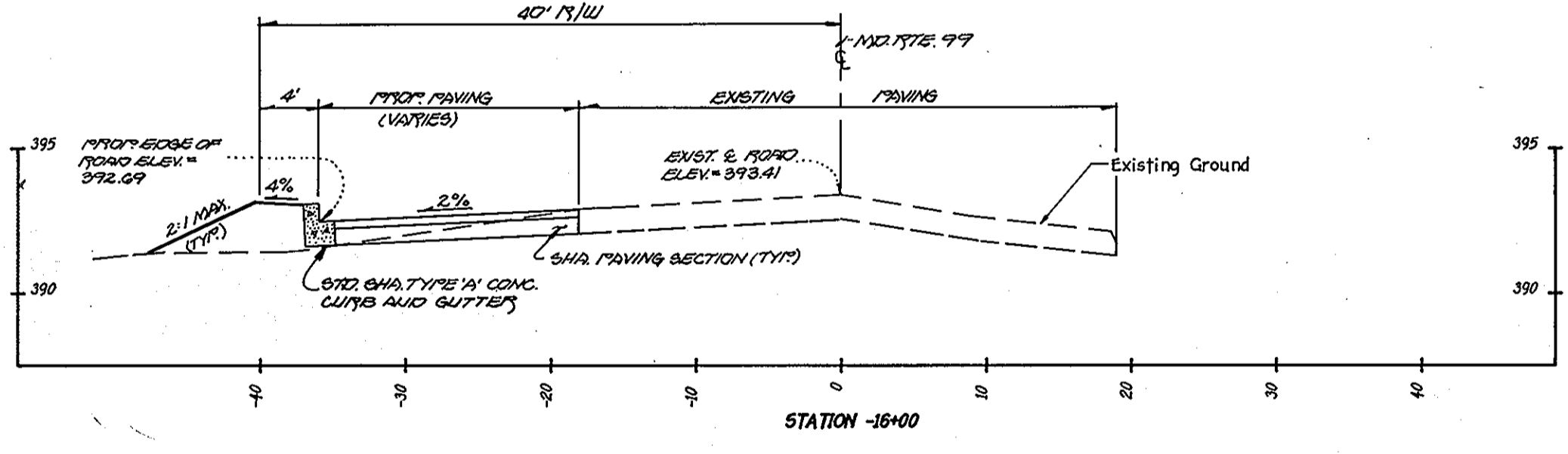
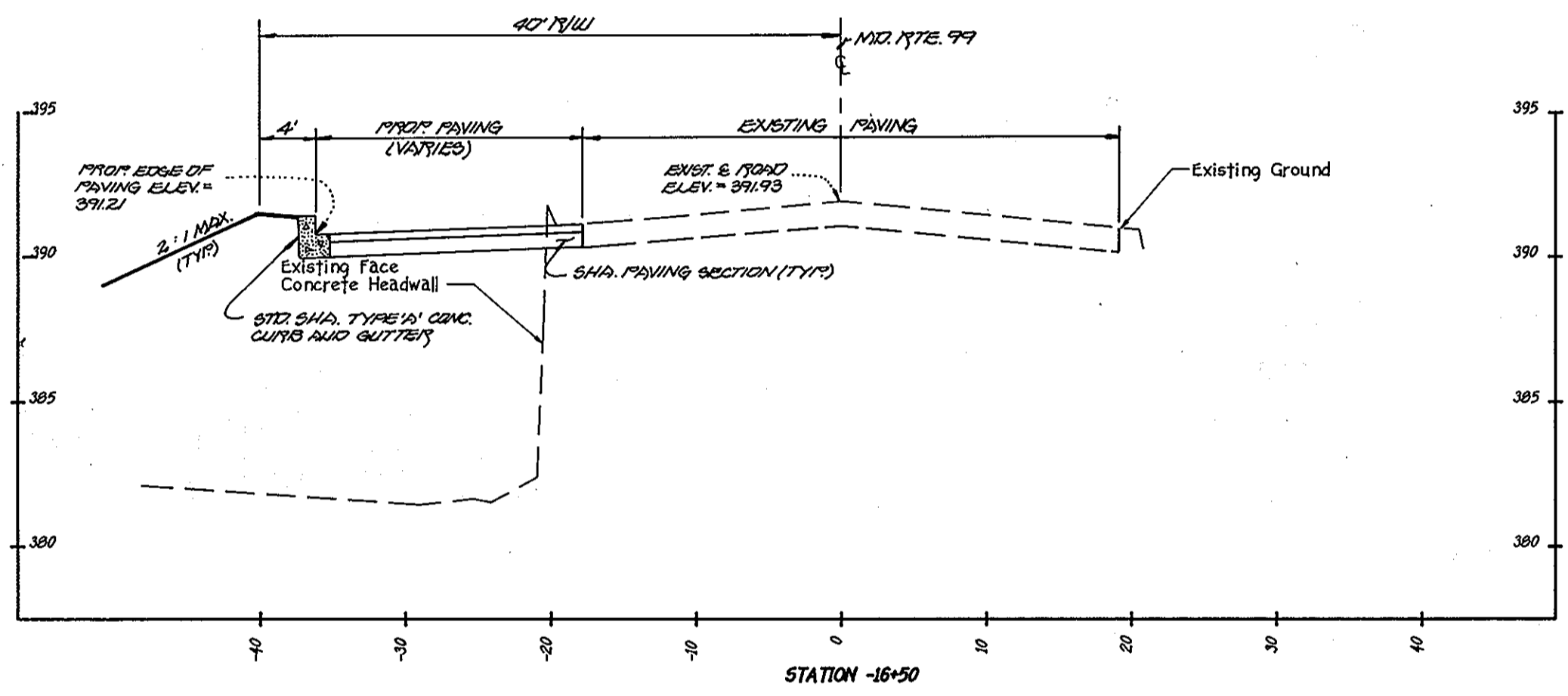
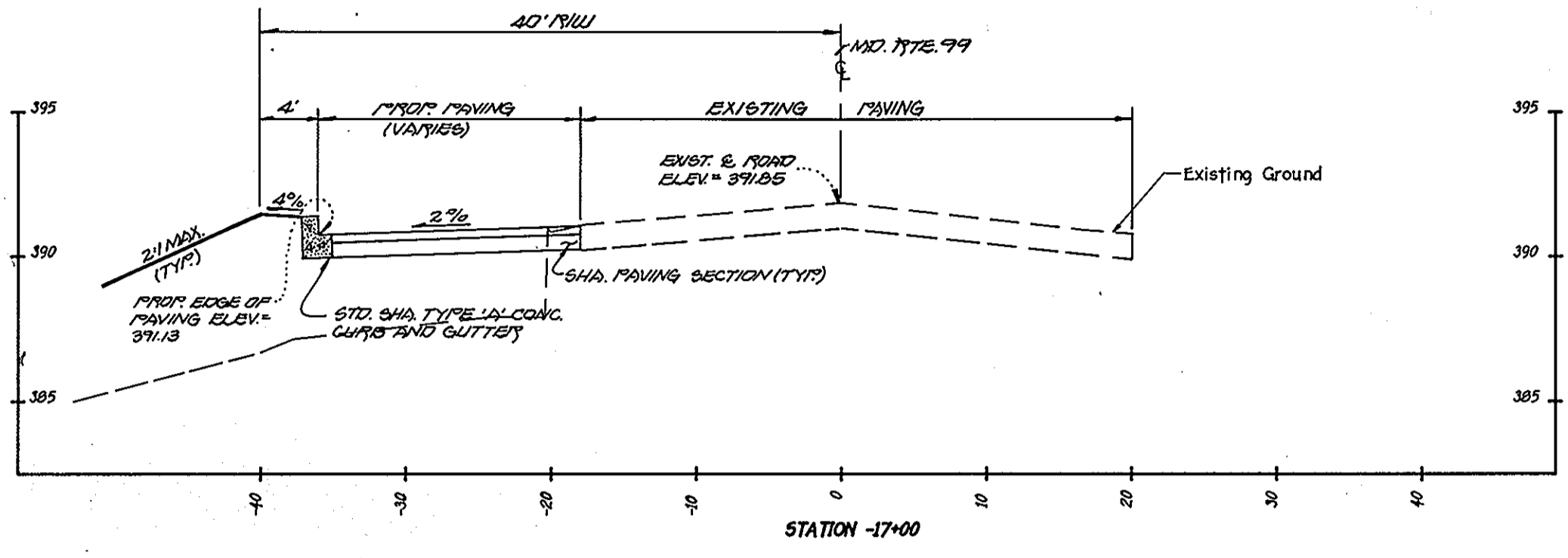
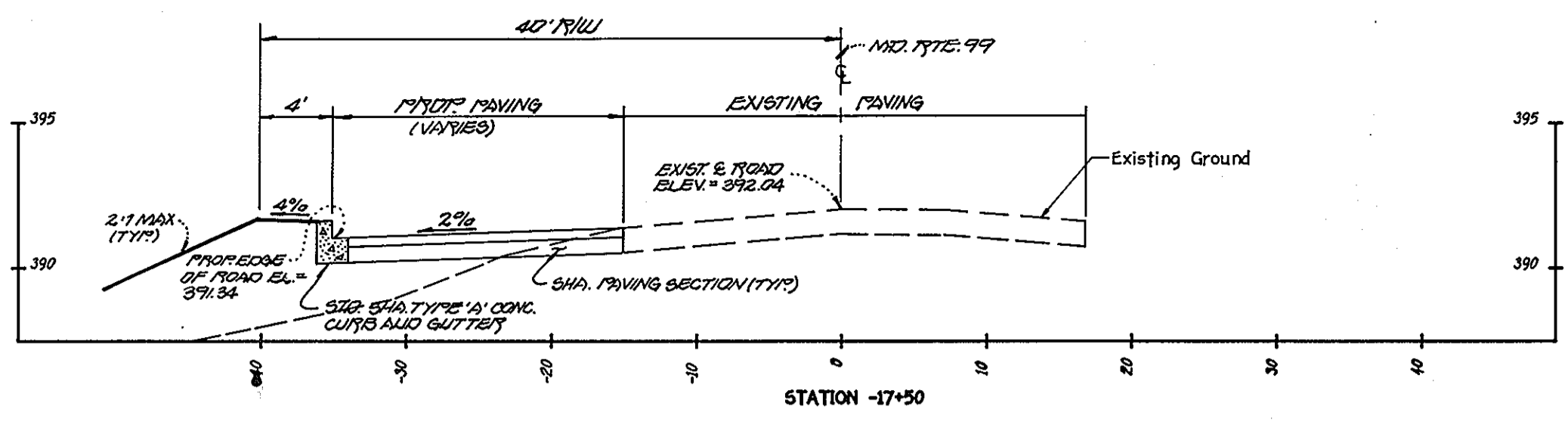
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FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 9171 BALTIMORE NATIONAL PIKE, SUITE 100  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2855

OWNER AND DEVELOPER  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10905 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*John J. Sullivan*  
 Chief, Division of Land Development and Research JA Date 2/5/96  
*John J. Sullivan*  
 Chief, Development Engineering Division Date 2/1/96

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Richard M. J. Smith*  
 Chief, Bureau of Highways HJS Date 1-30-96



NOTE: SECTIONS -1+50 TO -21+00 REFER TO SECTION 4 AREA 2 ROAD DESIGN OF MARYLAND ROUTE 99. (P-98-174)



CROSS SECTIONS  
 MARYLAND ROUTE 99  
 STATIONS: (-)17+50 TO (-)13+00

GTW'S WAVERLY WOODS  
 SECTION 4, AREA 2  
 LOTS 20 thru 45  
 ZONING R-20 AND RS-A-8  
 TAX MAP No. 16 PARCEL No. 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995  
 SHEET 24 OF 35

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 971 BALTIMORE NATIONAL PIKE, SUITE 100  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2855

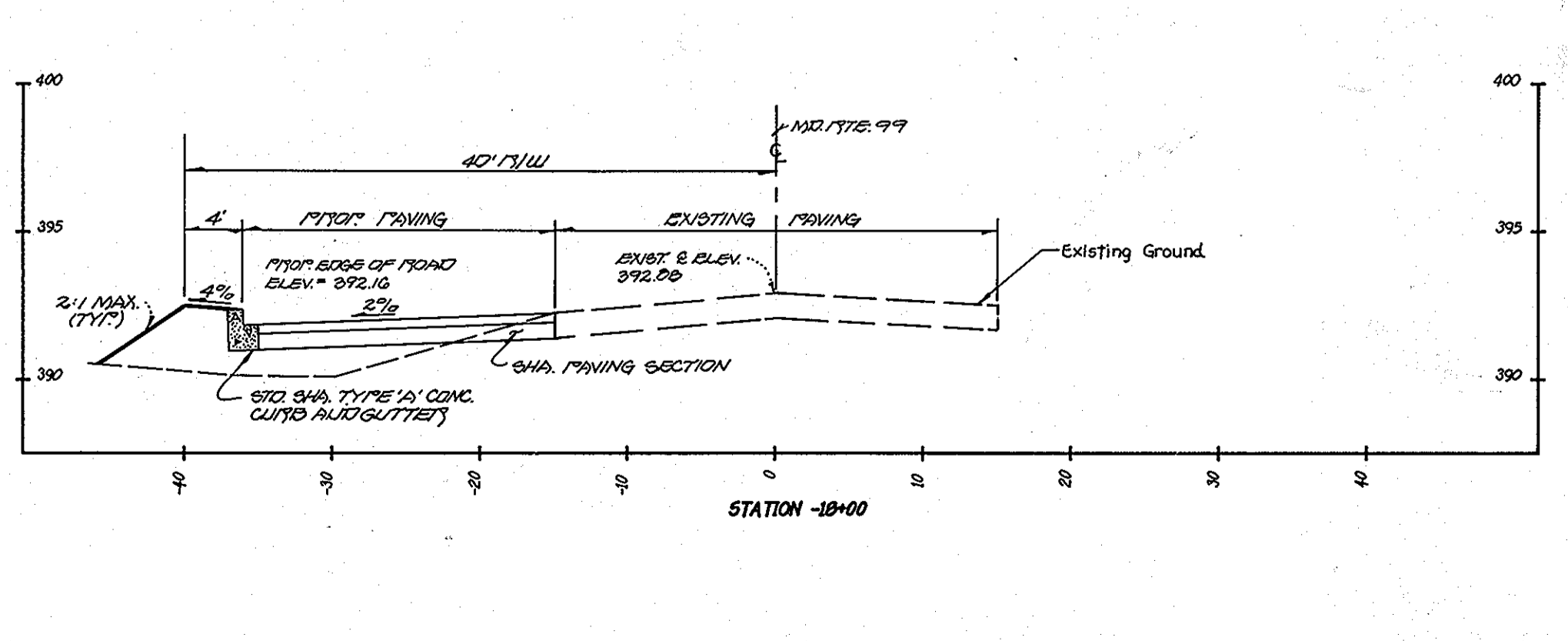
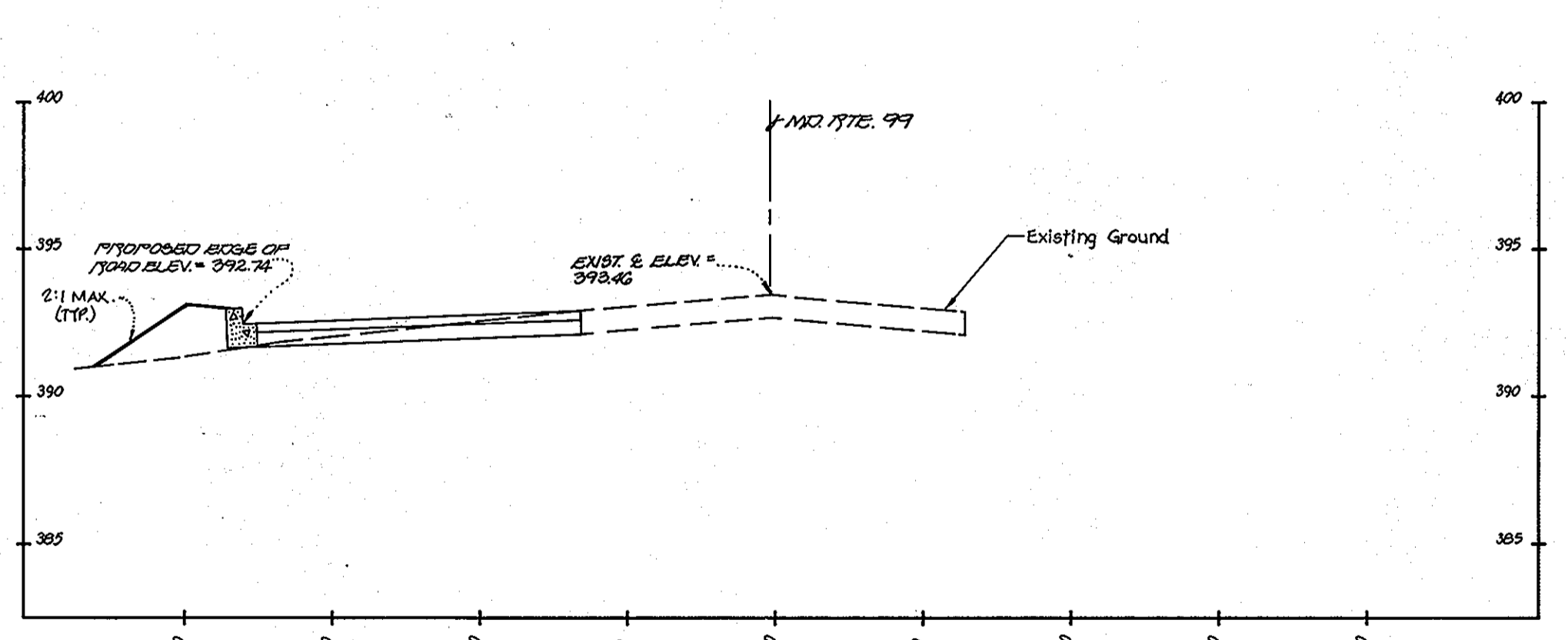
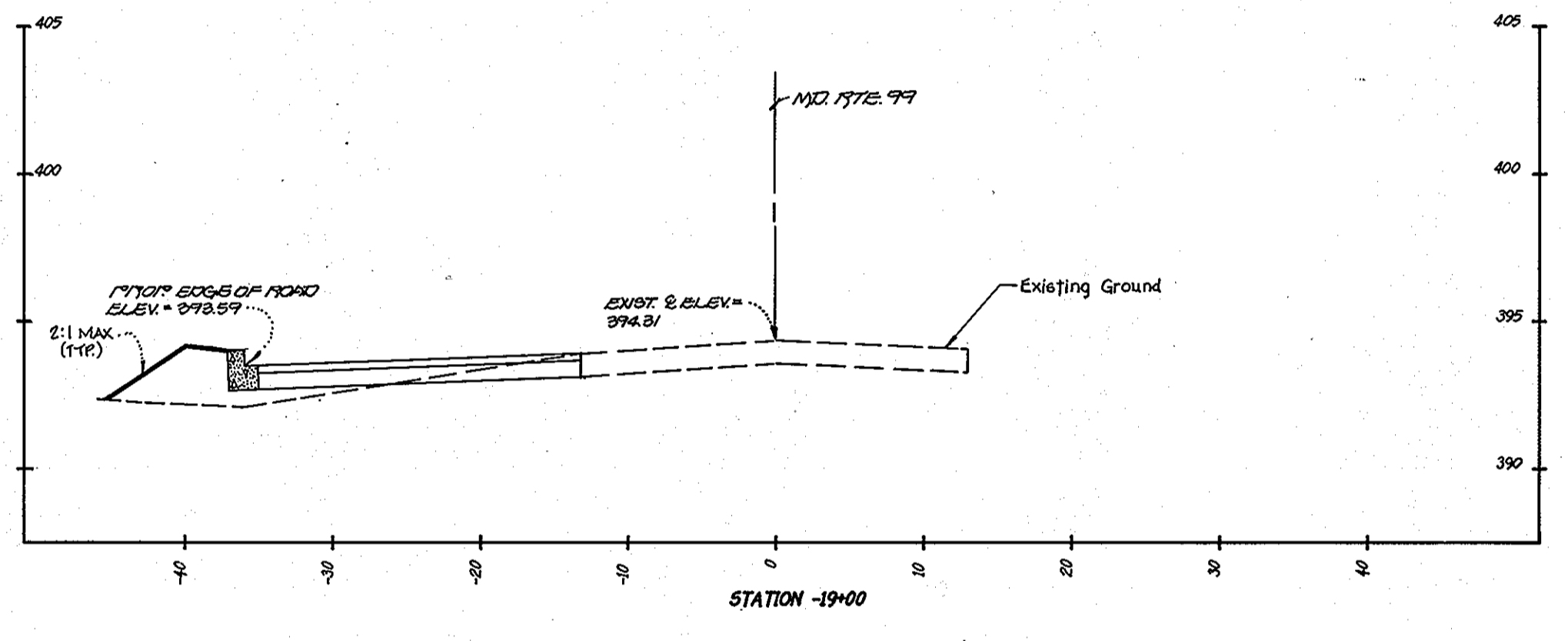
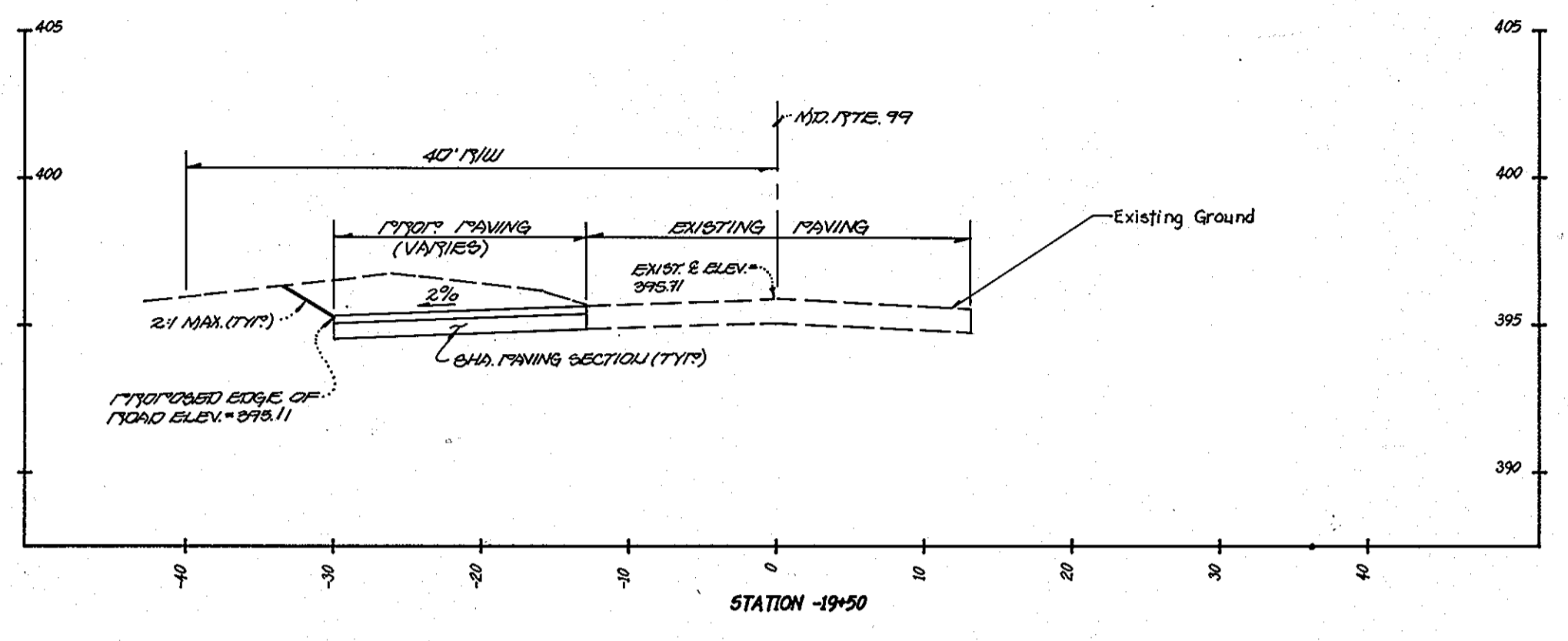
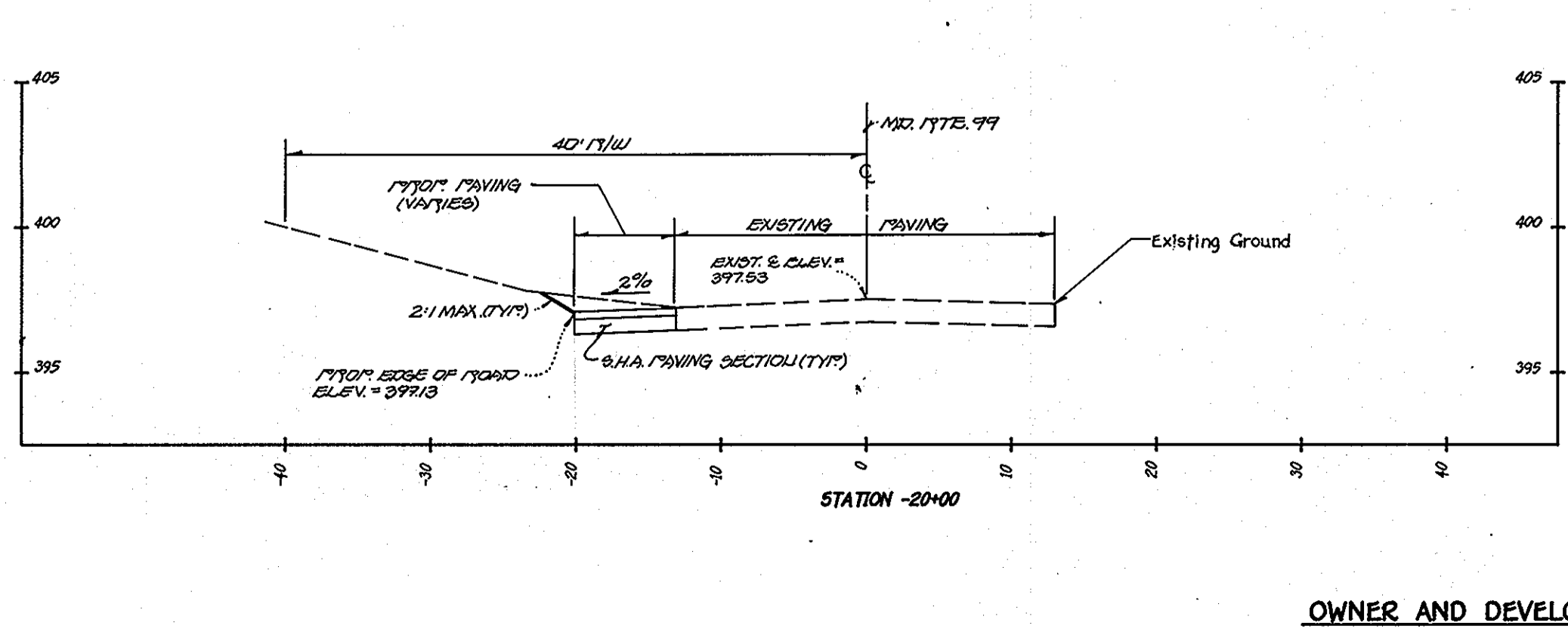
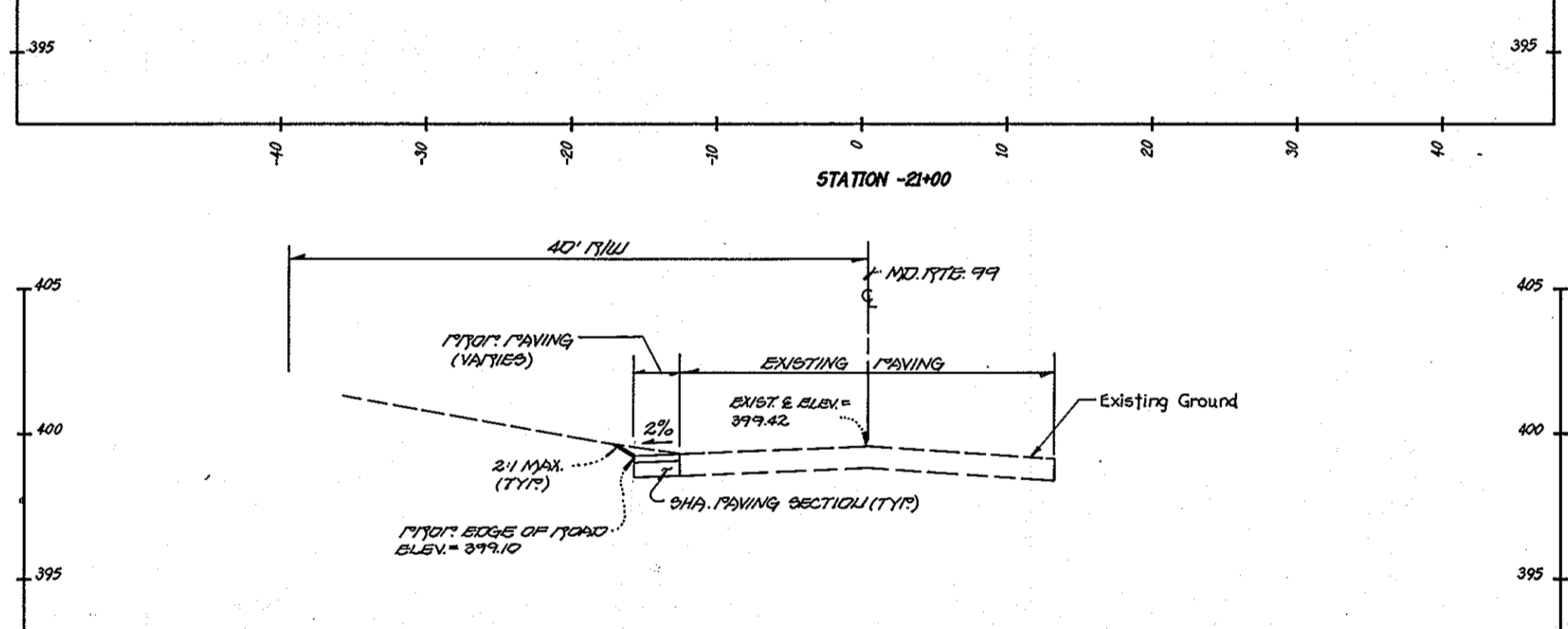
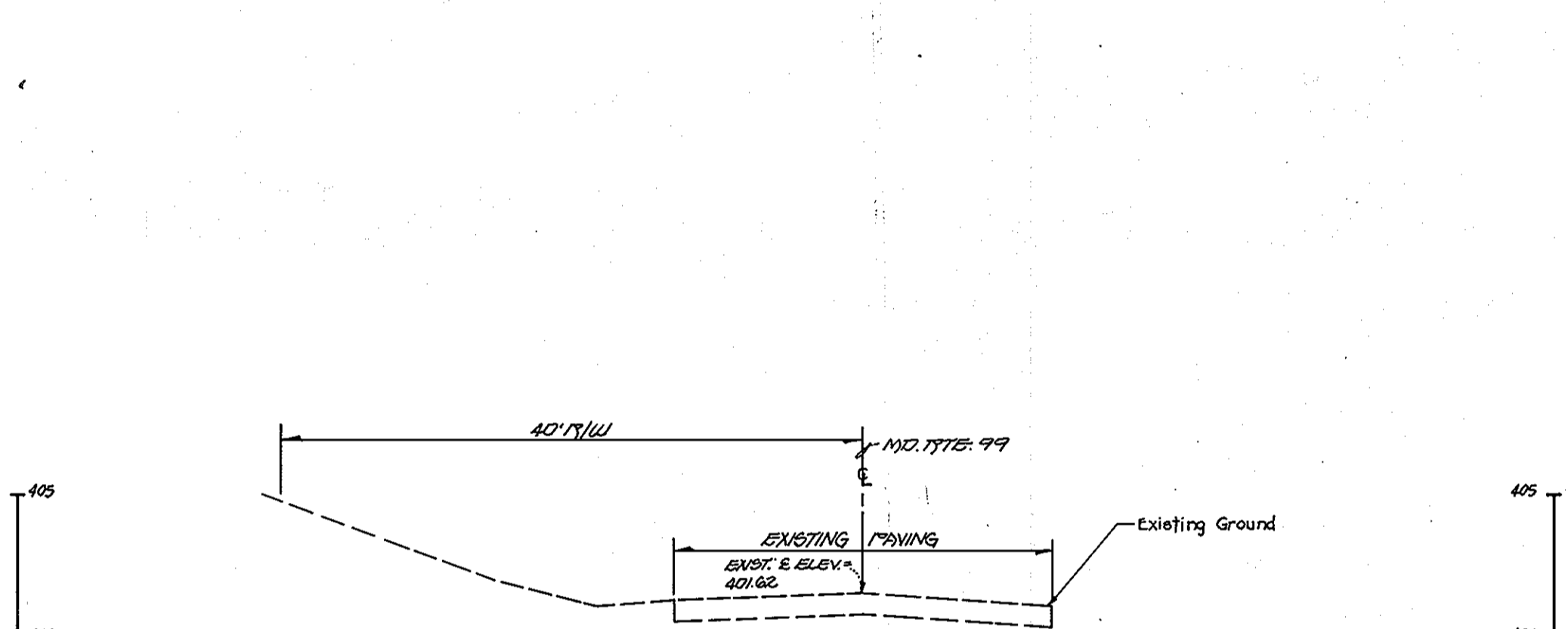
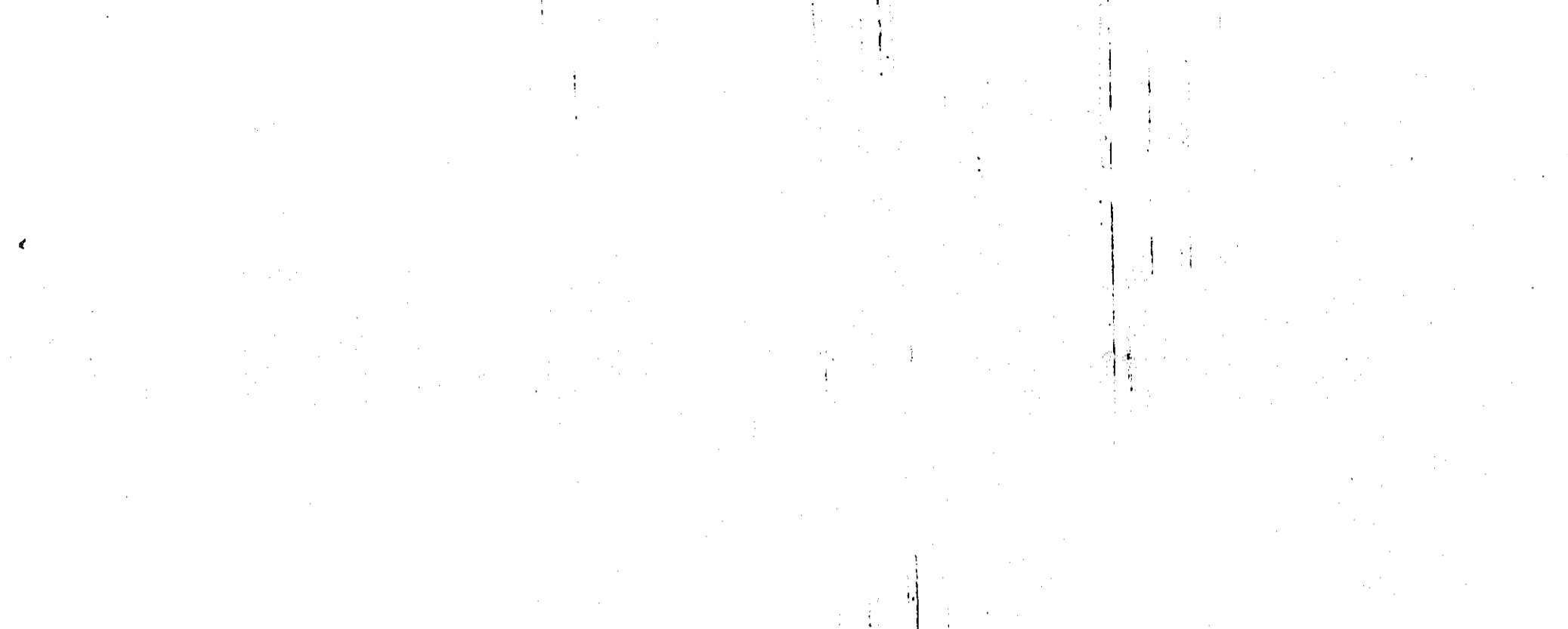
OWNER AND DEVELOPER  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

1253



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Ann Summers* 2/5/96  
 Chief, Division of Land Development and Research JPA Date  
*John P. Summers* 2/1/96  
 Chief, DEVELOPMENT SUBDIVISION DIVISION Date

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Alfredo M. Daniels* 1-30-96  
 Chief, BUREAU OF HIGHWAYS MS Date



NOTE: SECTIONS -19+50 TO -21+00 REFER TO SECTION 4 AREA 2 ROAD DESIGN OF MARYLAND ROUTE 99. (F-95-174)



CROSS SECTIONS  
 MARYLAND ROUTE 99  
 STATIONS: (-)21+00 TO (-)18+00  
**GTW'S WAVERLY WOODS**  
 SECTION 4, AREA 2  
 LOTS 20 thru 45  
 ZONING R-20 AND RS-A-8  
 TAX MAP No: 16 PARCEL No: 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995

SHEET 25 OF 38

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 971 BALTIMORE NATIONAL PIKE, SUITE 100  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2855

**OWNER AND DEVELOPER**  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10905 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

1253

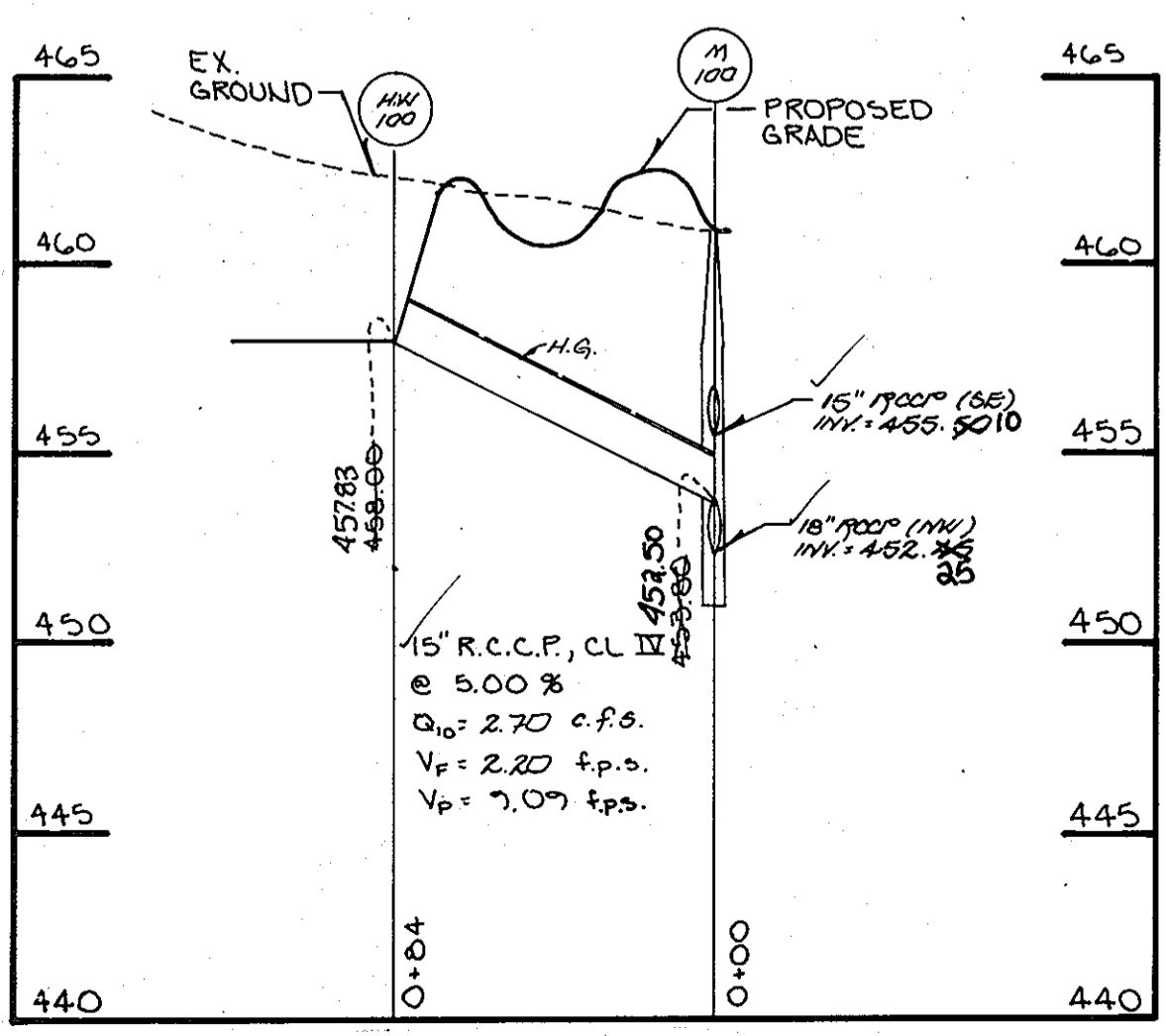
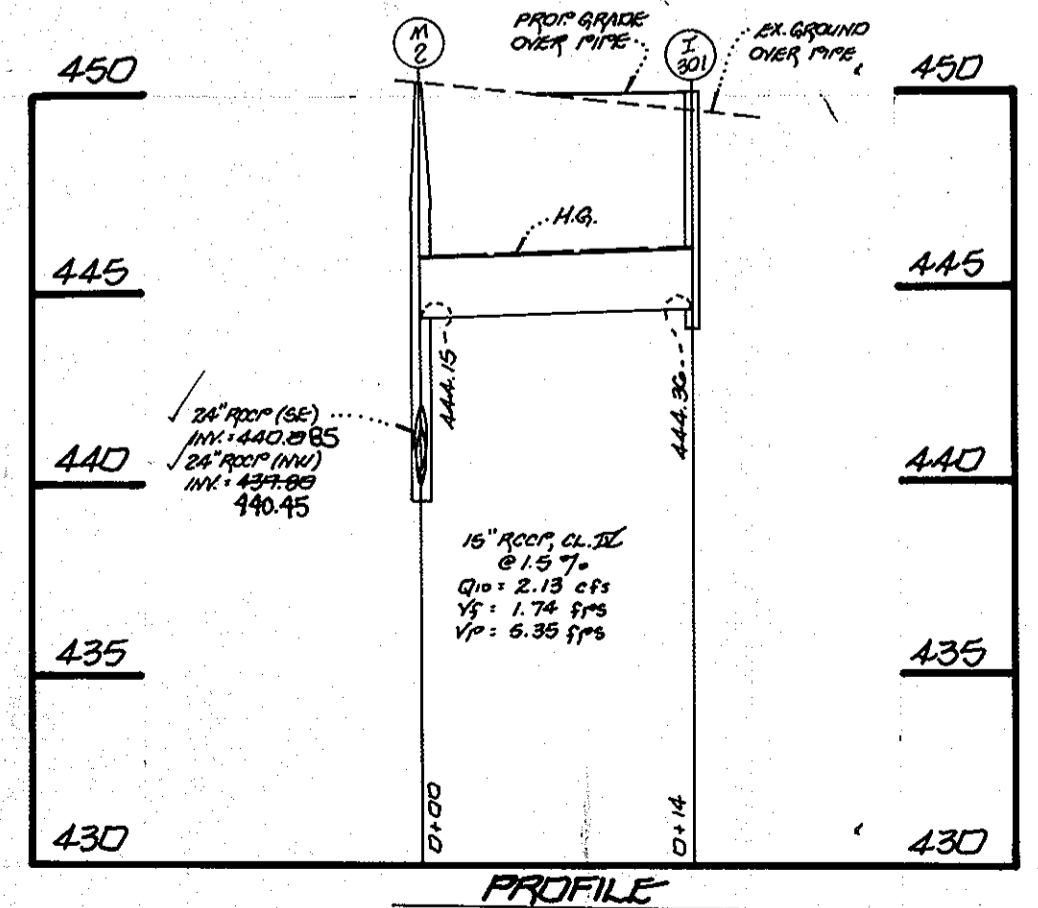
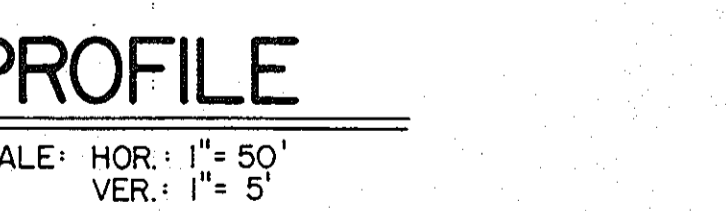
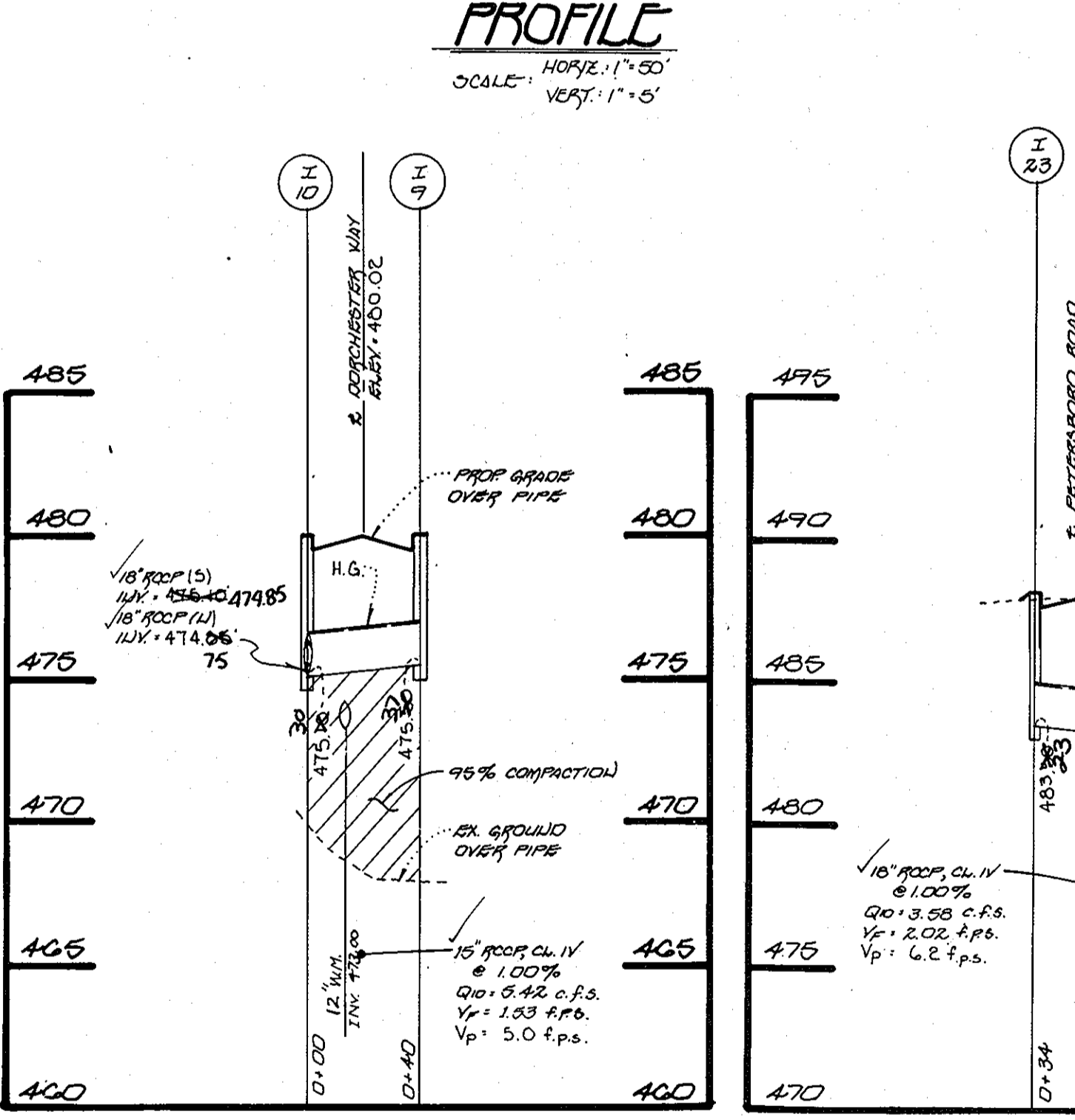
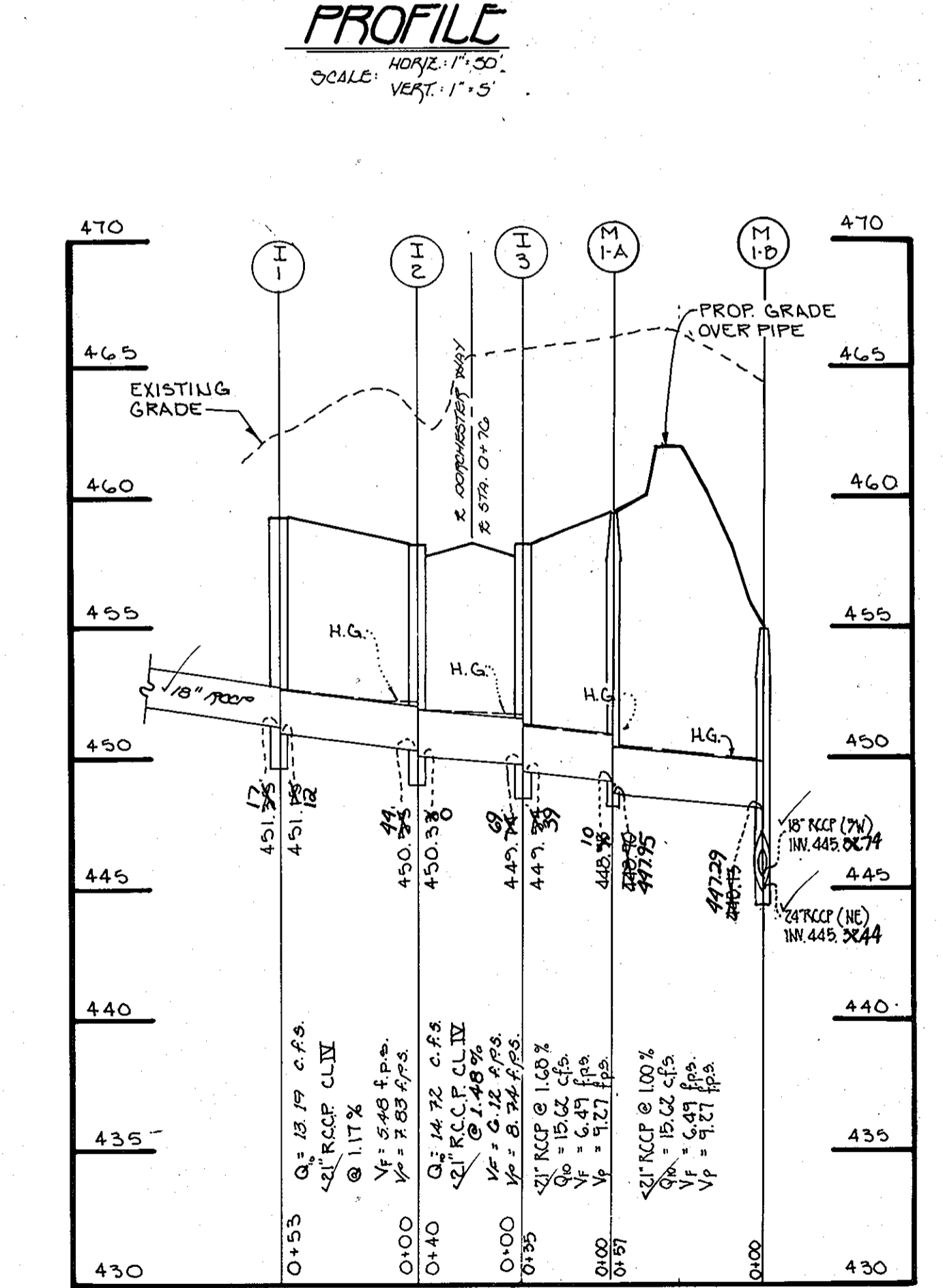
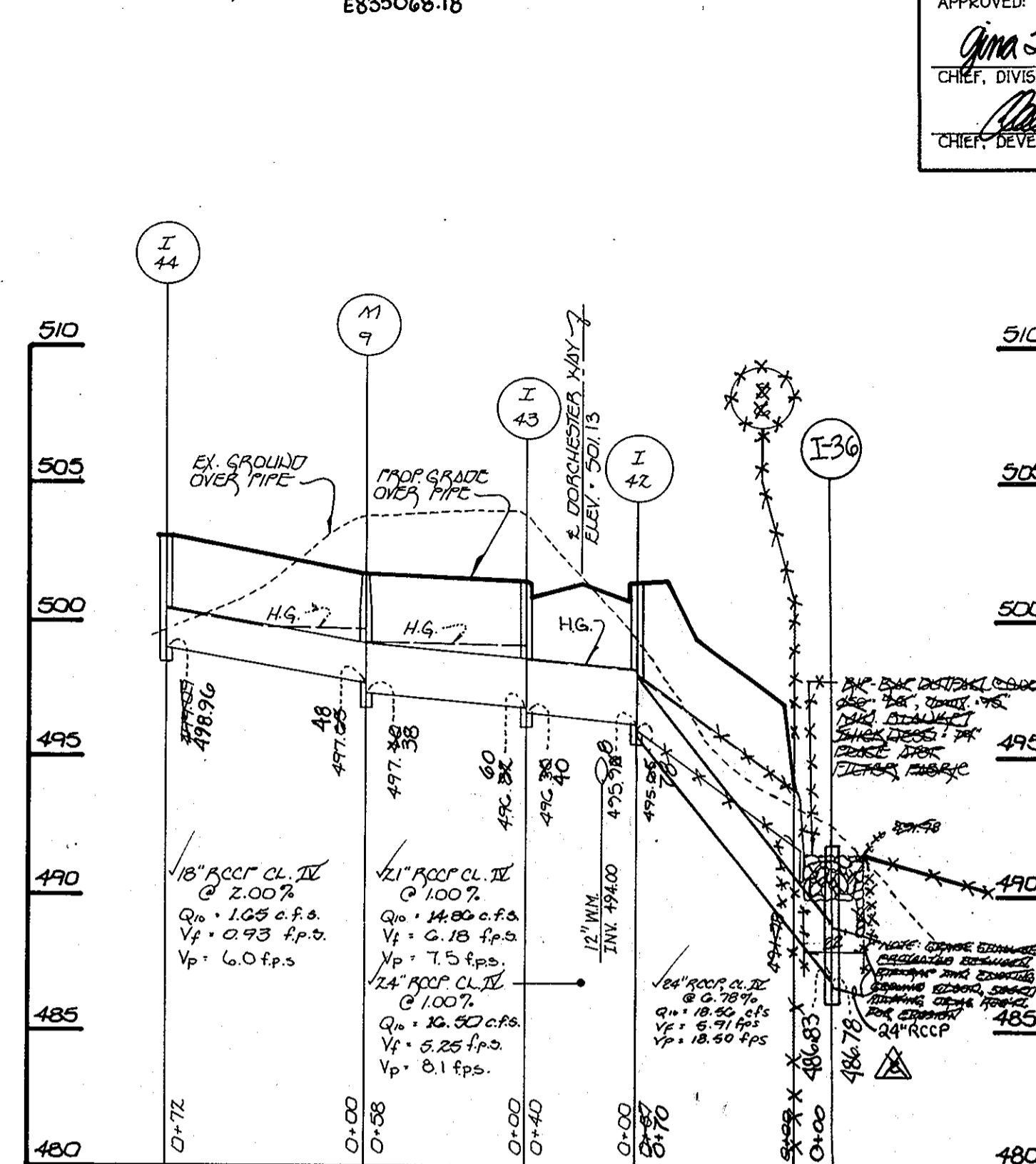
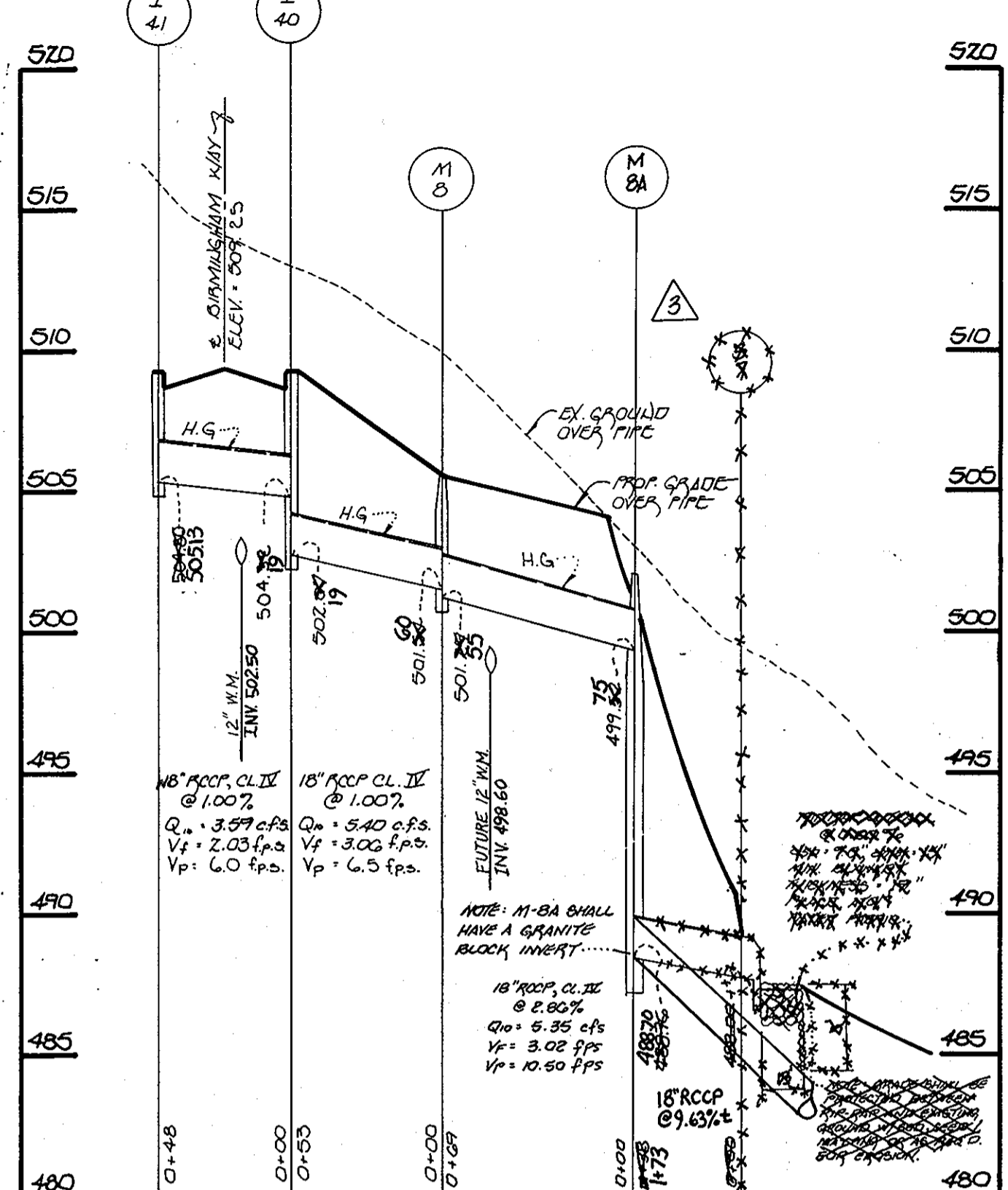
STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	459.47	451.38	451.28	MARYLAND ROUTE 99	0+80	36' RT.	10' C.O.G.	SHA 374.31
I-3	458.46	449.74	449.39	DORCHESTER WAY	0+787	18' RT.	A-5	S.D. 4.40
I-2	458.80	450.38	450.30	DORCHESTER WAY	0+787	18' LT.	A-5	S.D. 4.40
I-4	473.30	467.89	467.89	CHESHAM WAY	0+487	14' LT.	A-5	S.D. 4.40
I-5	473.30	468.56	468.68	CHESHAM WAY	0+487	14' RT.	A-5	S.D. 4.40
I-6	474.30	467.51	467.62	DORCHESTER WAY	4+69	18' RT.	A-10	S.D. 4.41
I-7	474.30	467.41	467.41	DORCHESTER WAY	4+69	18' LT.	A-10	S.D. 4.41
I-8	478.50	473.88	473.88	DORCHESTER WAY	6+28	18' LT.	A-10	S.D. 4.41
I-9	478.50	473.88	473.88	DORCHESTER WAY	7+75	18' RT.	A-10	S.D. 4.41
I-10	480.00	474.85	475.73	DORCHESTER WAY	7+75	18' LT.	A-5	S.D. 4.40
I-11	483.80	478.90	478.56	DORCHESTER WAY	9+18	18' LT.	A-5	S.D. 4.40
I-12	486.84	481.31	481.69	DORCHESTER WAY	10+17	18' LT.	A-5	S.D. 4.40
I-13	478.70	473.38	473.08	DORCHESTER WAY	15+61	18' RT.	A-10	S.D. 4.41
I-14	478.70	473.38	473.08	DORCHESTER WAY	15+61	18' LT.	A-10	S.D. 4.41
I-15	487.32	482.80	482.80	DORCHESTER WAY	18+74	18' RT.	A-10	S.D. 4.41
I-16	486.83	481.80	481.80	DORCHESTER WAY	18+52	18' LT.	15' C.O.G.	SHA 374.31
I-17	493.87	488.42	488.42	DORCHESTER WAY	20+37	18' LT.	A-10	S.D. 4.41
I-18	500.38	494.93	494.93	PETERSBORO ROAD	22+68	15' RT.	A-5	S.D. 4.40
I-19	500.38	494.93	494.93	PETERSBORO ROAD	22+68	15' LT.	A-10	S.D. 4.41
I-20	500.38	495.20	495.20	DORCHESTER WAY	22+24	18' LT.	A-10	S.D. 4.41
I-21	500.40	495.20	495.20	DORCHESTER WAY	22+24	18' RT.	A-5	S.D. 4.40
I-22	497.93	492.88	492.88	PETERSBORO ROAD	16+34	15' RT.	A-10	S.D. 4.41
I-23	481.60	476.68	476.68	PETERSBORO ROAD	16+34	15' LT.	15' C.O.G.	SHA 374.31
I-24	481.60	476.68	476.68	CHESHAM WAY	2+35	14' LT.	A-10	S.D. 4.41
I-25	481.60	476.68	476.68	CHESHAM WAY	2+35	14' RT.	A-5	S.D. 4.41
I-26	490.45	485.68	485.68	CHESHAM WAY	4+43	14' RT.	A-10	S.D. 4.40
I-27	490.45	485.68	485.68	CHESHAM WAY	4+43	14' LT.	A-10	S.D. 4.41
I-34	397.61	392.88	392.88	DORCHESTER WAY	58+30	18' LT.	15' C.O.G.	SHA 374.31
I-35	397.61	392.88	392.88	DORCHESTER WAY	58+30	18' RT.	A-10	S.D. 4.41
I-36	400.44	397.09	397.09	MD. RTE. 99	-14+74	36' LT.	15' C.O.G.	S.H.A. 374.31/ SECT 4 AREA 2
I-37	400.79	395.25	395.25	CHATTERTON WAY	0+46	12' LT.	A-10	S.D. 4.41
I-38	400.79	395.25	395.25	CHATTERTON WAY	0+46	12' RT.	A-10	S.D. 4.41
I-39	400.20	398.16	398.16	DORCHESTER WAY	56+55	18' RT.	A-10	S.D. 4.41
I-40	400.20	398.16	398.16	DORCHESTER WAY	56+55	18' LT.	A-10	S.D. 4.41
I-41	509.34	502.47	502.47	BIRMINGHAM WAY	0+90	22' RT.	A-10	S.D. 4.41
I-42	501.79	495.98	495.98	DORCHESTER WAY	25+69	18' RT.	A-10	S.D. 4.41
I-43	501.79	495.98	495.98	DORCHESTER WAY	25+69	18' LT.	A-10	S.D. 4.41
I-44	503.90	496.98	496.98	DORCHESTER WAY	26+97	18' LT.	A-10	S.D. 4.41
I-49	391.52	383.20	383.20	MD. ROUTE 99	-16+84	36' LT.	10' C.O.G.	S.H.A. 374.31/ SECT 4 AREA 2
I-300	470.60	467.40	467.40	MD. ROUTE 99	-16+84	36' RT.	10' C.O.G.	S.H.A. 374.31/ SECT 4 AREA 2
HW-100	468.00	457.83	457.83	MD. ROUTE 99	-16+84	36' RT.	10' C.O.G.	S.H.A. 374.31/ SECT 4 AREA 2
M-1	444.89	443.88	443.88	MD. ROUTE 99	-16+84	36' RT.	10' C.O.G.	S.H.A. 374.31/ SECT 4 AREA 2
M-2	444.89	443.88	443.88	MD. ROUTE 99	-16+84	36' LT.	10' C.O.G.	S.H.A. 374.31/ SECT 4 AREA 2
M-3	476.30	471.30	471.30	DORCHESTER WAY	15+44	21.5' RT.	STD. MANHOLE	G-5.13
M-4	481.76	476.87	476.87	DORCHESTER WAY	17+27	21.5' LT.	SHALLOW MANHOLE	G-5.05
M-5	497.98	492.97	492.97	DORCHESTER WAY	21+37	18.5' LT.	SHALLOW MANHOLE	G-5.05
M-6	486.29	481.10	481.10	CHESHAM WAY	3+35	18.5' RT.	SHALLOW MANHOLE	G-5.05
M-7	399.05	394.68	394.68	DORCHESTER WAY	57+40	21.5' RT.	SHALLOW MANHOLE	G-5.05
M-8	505.58	501.54	501.54	DORCHESTER WAY	31+82	21.5' LT.	SHALLOW MANHOLE	G-5.05
M-9	501.87	497.85	497.85	DORCHESTER WAY	26+25	22.5' LT.	SHALLOW MANHOLE	G-5.05
M-100	468.00	457.83	457.83	MD. ROUTE 99	-16+84	36' RT.	10' C.O.G.	S.H.A. 374.31/ SECT 4 AREA 2
M-200	471.50	465.30	465.30	CHESHAM WAY	4+43	14' LT.	A-10	S.D. 4.41
E-1	458.80	450.38	450.38	DORCHESTER WAY	0+787	18' LT.	A-5	S.D. 4.40
S-1	468.80	463.80	463.80	DORCHESTER WAY	6+28	18' LT.	A-10	S.D. 4.41
S-2	465.80	463.09	462.87	DORCHESTER WAY	7+75	18' RT.	A-10	S.D. 4.41
S-3	474.30	472.38	472.38	DORCHESTER WAY	15+61	18' RT.	A-10	S.D. 4.41
S-4	486.83	481.80	481.80	PETERSBORO ROAD	22+68	15' RT.	A-5	S.D. 4.40
S-5	377.75	376.00	376.00	DORCHESTER WAY	57+69	125' LT.	CONC. END SECT.	S.D. 5.51
S-6	377.75	376.00	376.00	DORCHESTER WAY	57+69	125' RT.	CONC. END SECT.	S.D. 5.51
S-7	382.60	376.60	376.60	DORCHESTER WAY	57+42	108' LT.	CONC. END SECT.	S.D. 5.51
S-8	382.60	376.60	376.60	DORCHESTER WAY	57+42	108' RT.	CONC. END SECT.	S.D. 5.51
S-9	394.75	388.75	388.75	DORCHESTER WAY	55+47	62' RT.	CONC. END SECT.	S.D. 5.51
S-10	394.75	388.75	388.75	DORCHESTER WAY	55+47	62' LT.	CONC. END SECT.	S.D. 5.51
S-11	377.50	376.00	376.00	MD ROUTE 99	-16+84	36' LT.	CONC. END SECT.	S.D. 5.51
S-12	377.50	376.00	376.00	MD ROUTE 99	-16+84	36' RT.	CONC. END SECT.	S.D. 5.51
I-301	448.80	444.30	444.30	MD ROUTE 99	-3+55	38' LT.	20' C.O.G.	S.H.A. 374.31
M-84	508.70	499.87	499.87	MD ROUTE 99	-3+55	38' RT.	20' C.O.G.	S.H.A. 374.31

STRUCTURE NO.	TOP ELEV.	INV. IN	INV. OUT	ROAD NAME	ROAD STA.	OFF SET	TYPE	REMARKS
M-1A	459.47	448.79	448.79	DORCHESTER WAY	1+11	21.5' R	STANDARD MANHOLE	G 5.13
M-1D	459.47	448.79	448.79	DORCHESTER WAY	1+11	21.5' L	STANDARD MANHOLE	G 5.13

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 1-30-96  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION AND LAND DEVELOPMENT AND RESEARCH  
 DATE: 2/5/96  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 2/1/96

REVISION		
No.	DESCRIPTION	DATE
2	PIPE SLOPE FROM I-42 TO I-4	5-6-96
3	ADD MH 8A	6-20-96
4	ADD MH 1-A & 1-D	12-27-96



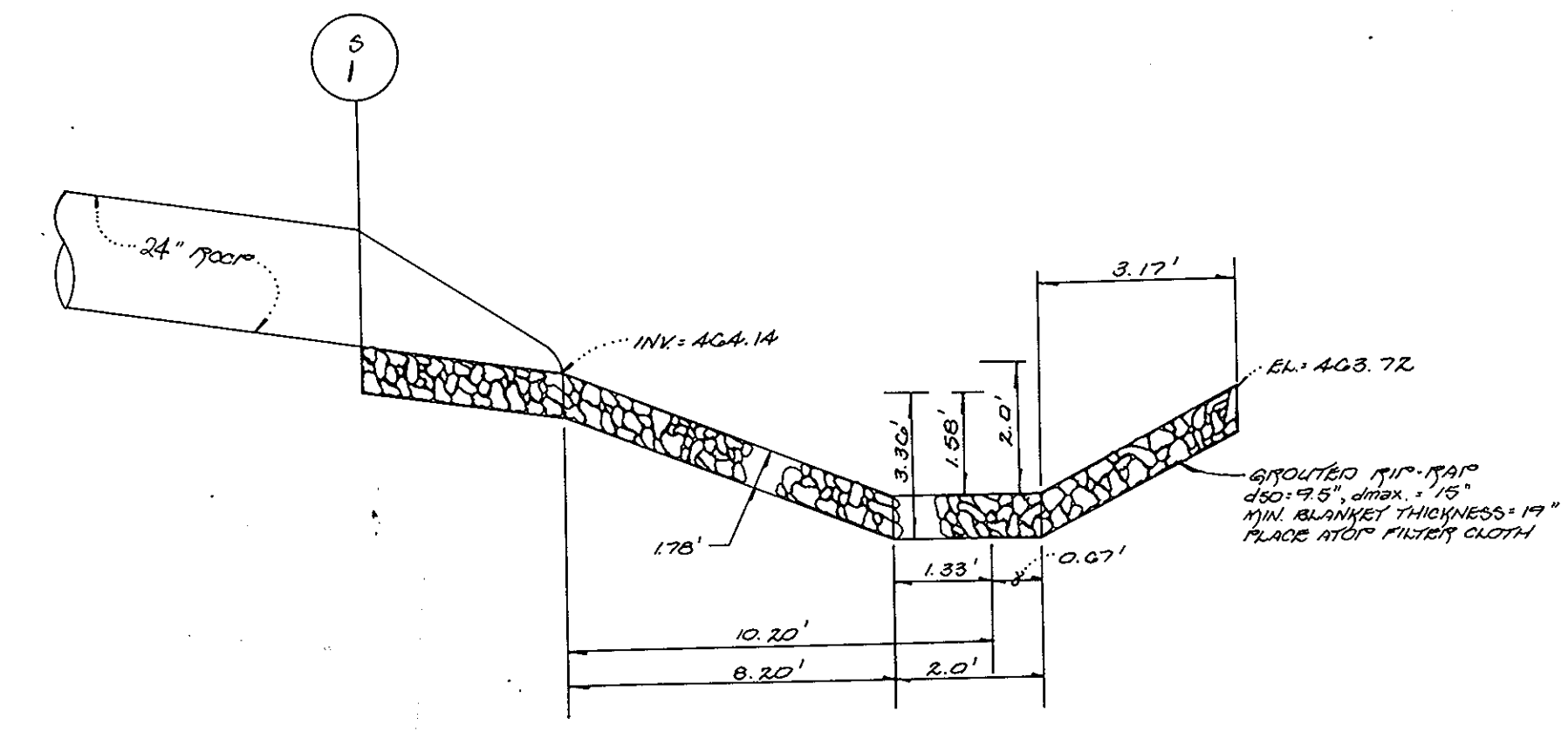
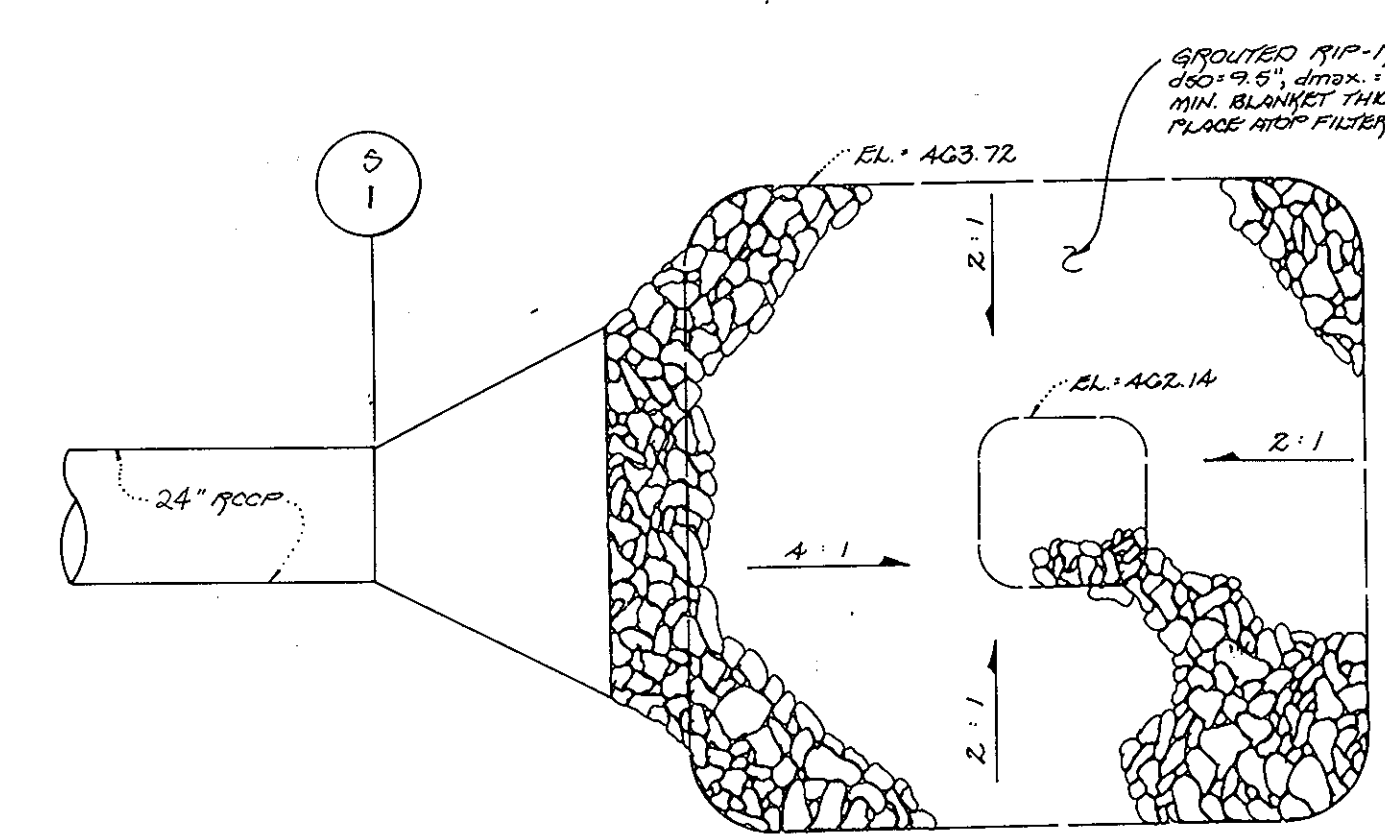
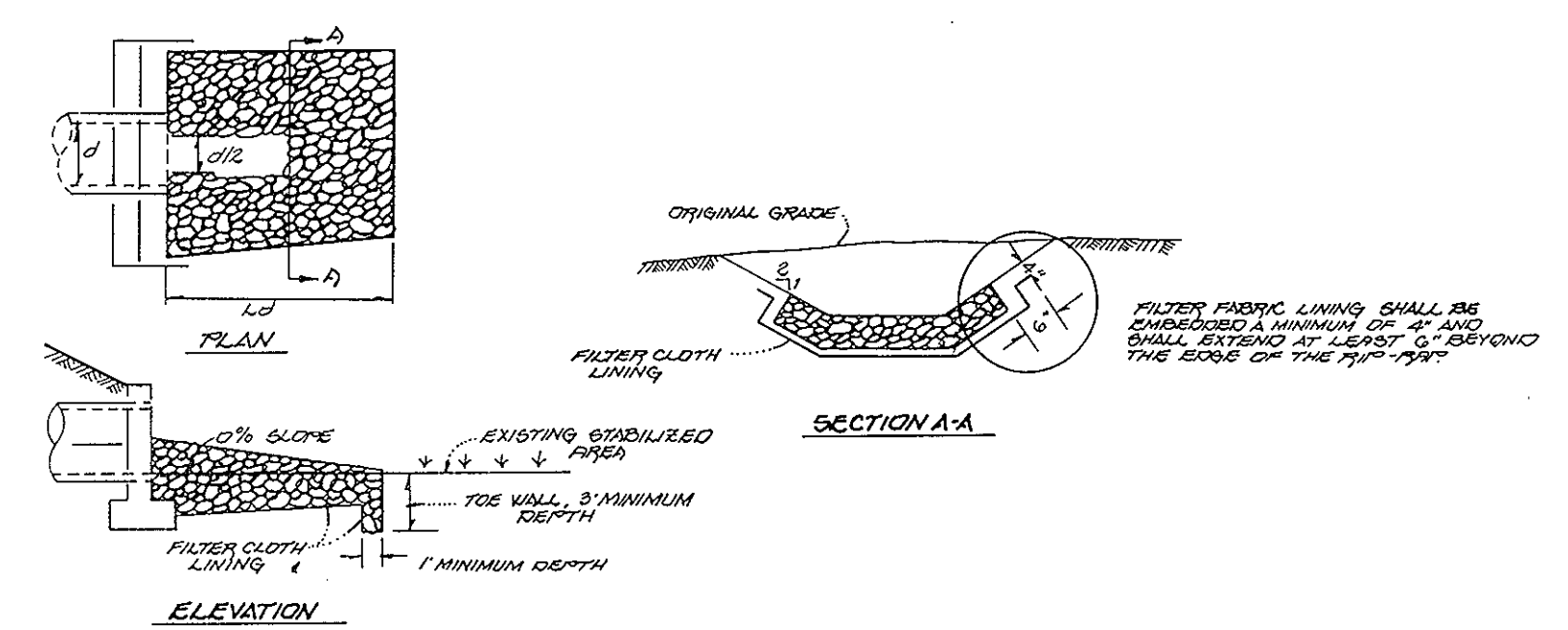
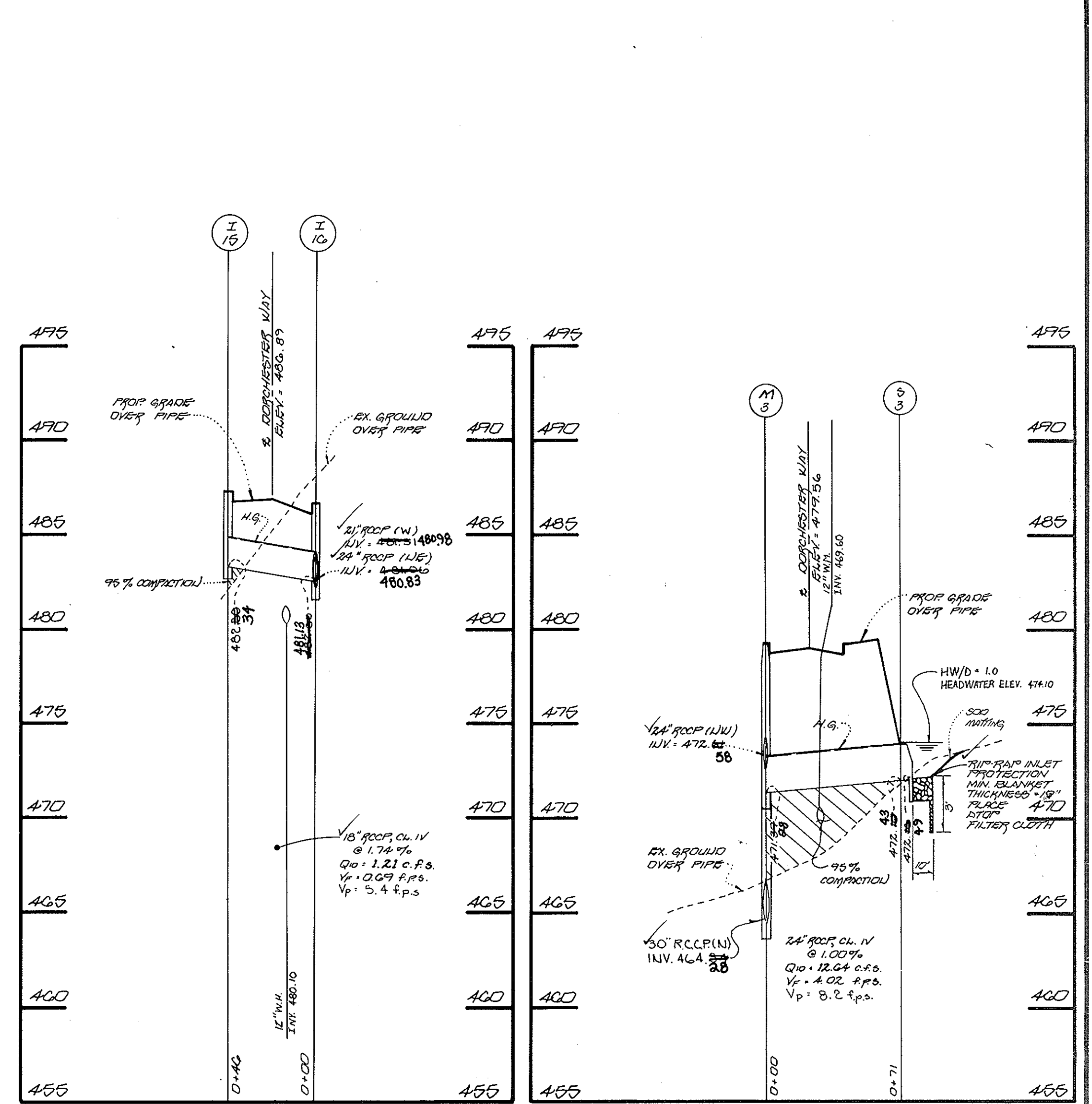
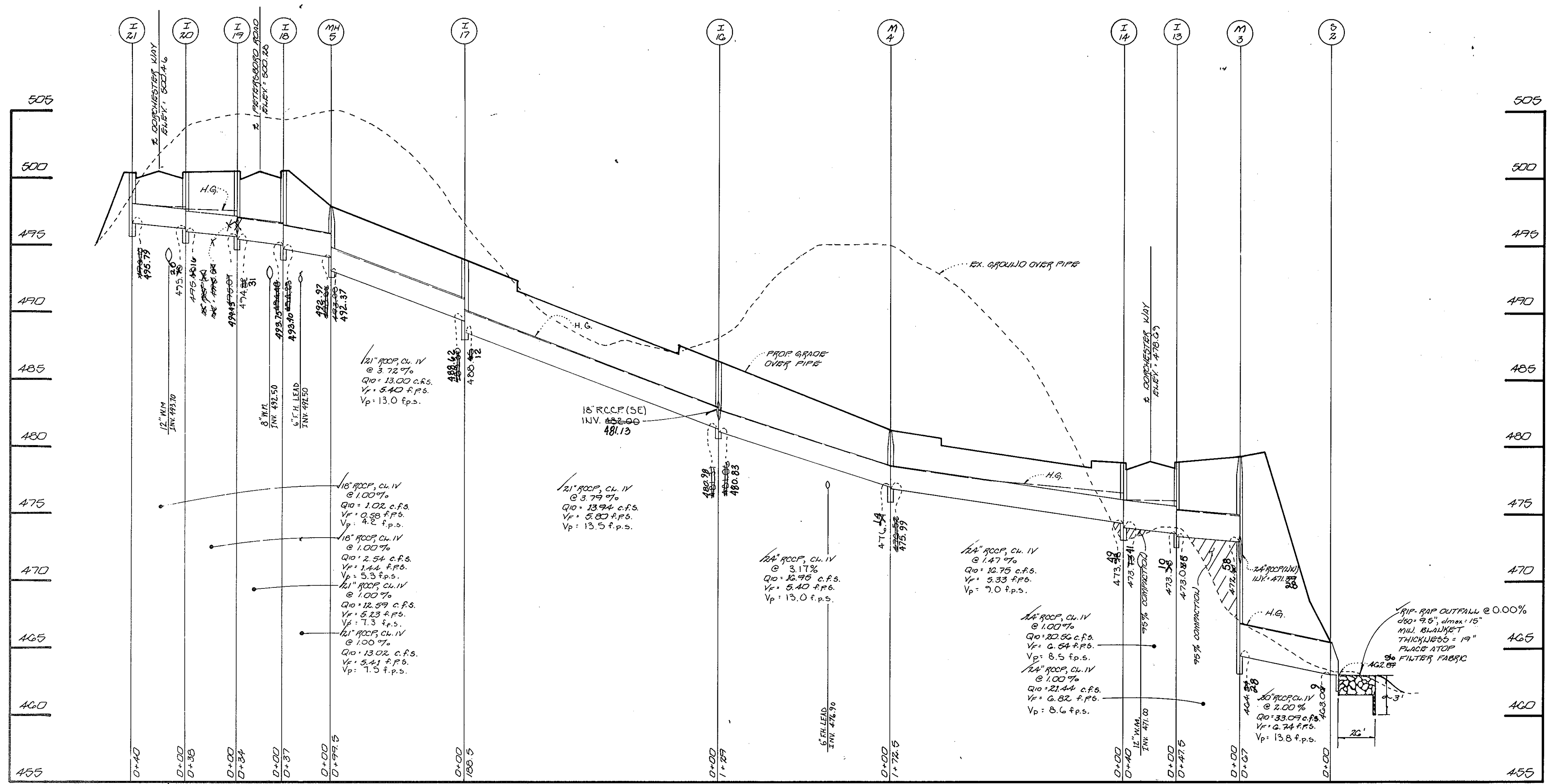
LEGEND

Vp = DENOTES PARTIAL FLOW VELOCITY  
 V = DENOTES FULL FLOW VELOCITY  
 H.G. = DENOTES HYDRAULIC GRADIENT FOR 10 YEAR STORM

OWNER AND DEVELOPER  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10805 NICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044



STORM DRAIN PROFILES  
 GTW'S WAVERLY WOODS  
 SECTION 4, AREA 1  
 LOTS 1 THRU 17 AND PARCELS A THRU E  
 ZONING R-20, R5C, R-5A-B AND R-A-15  
 TAX MAP No: 16 PART OF PARCEL No: 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995  
 Scale: AS SHOWN

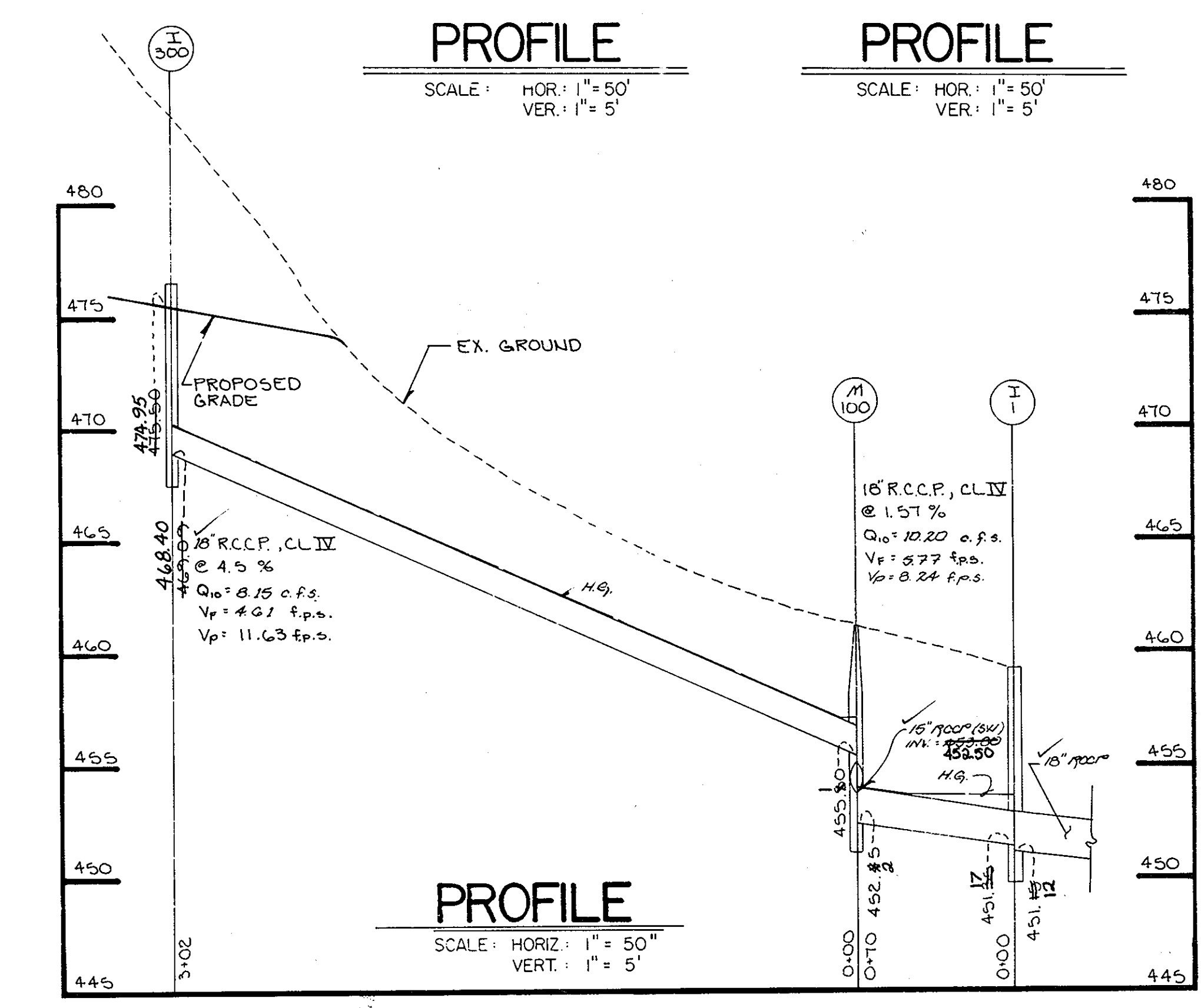
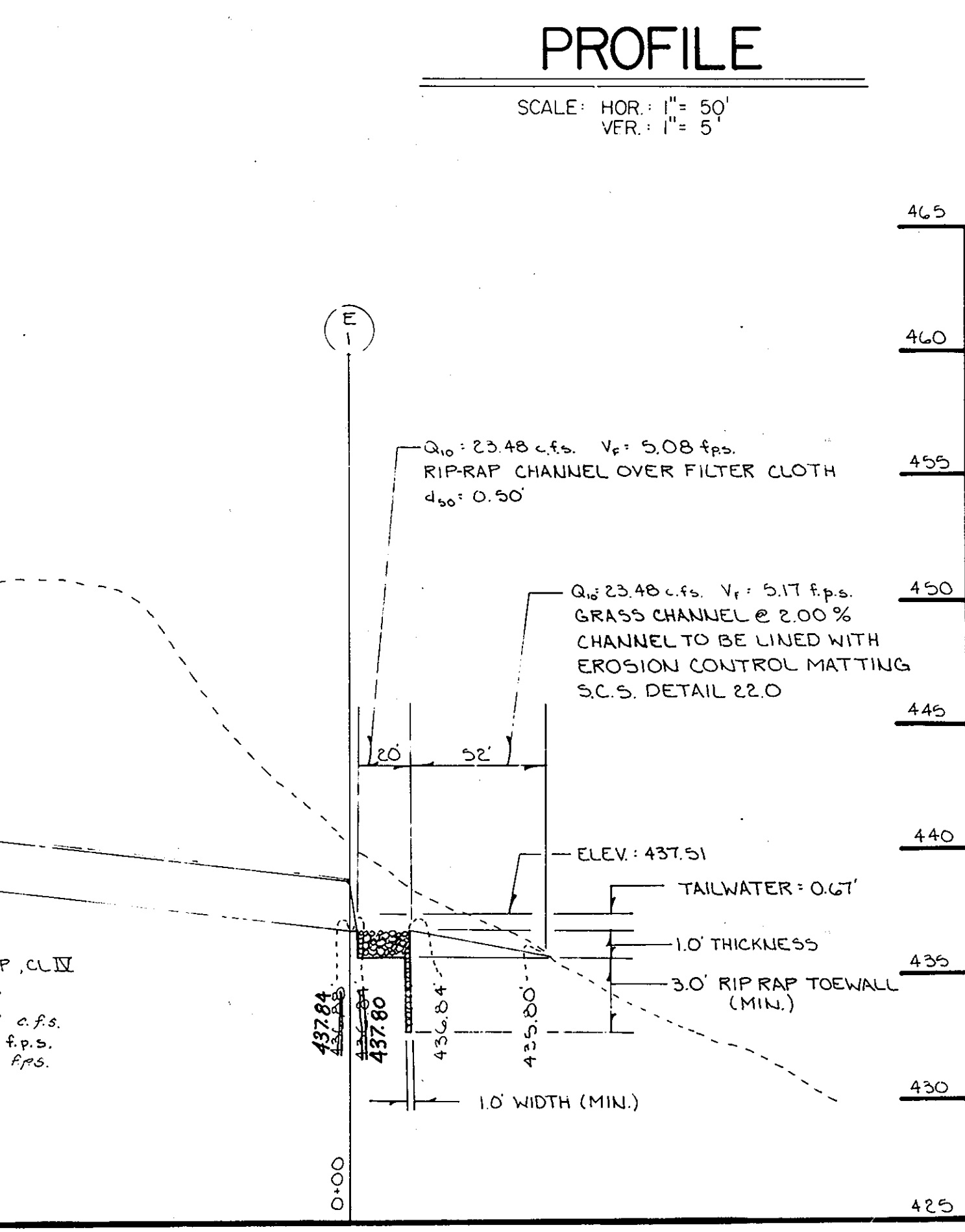
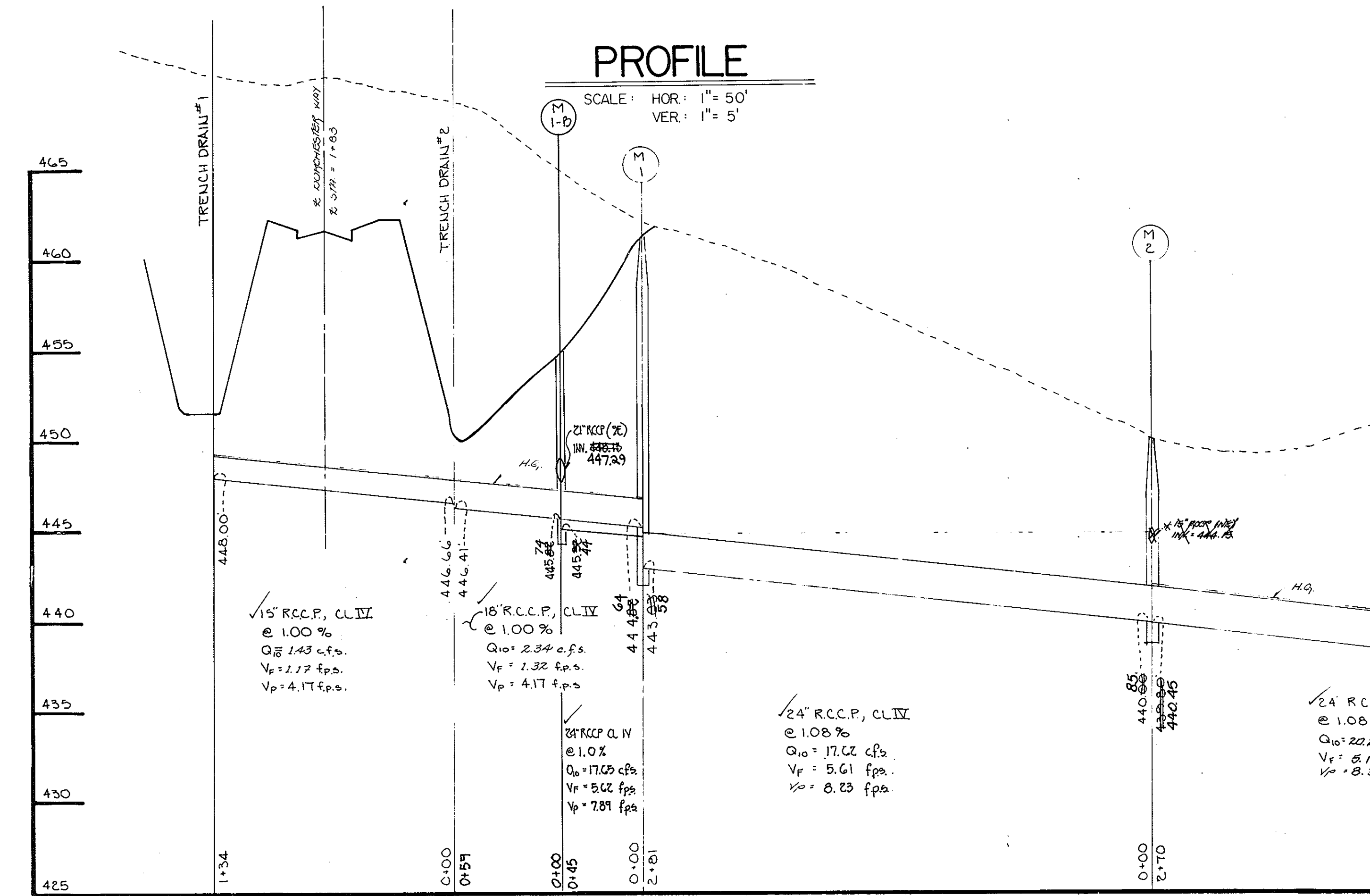
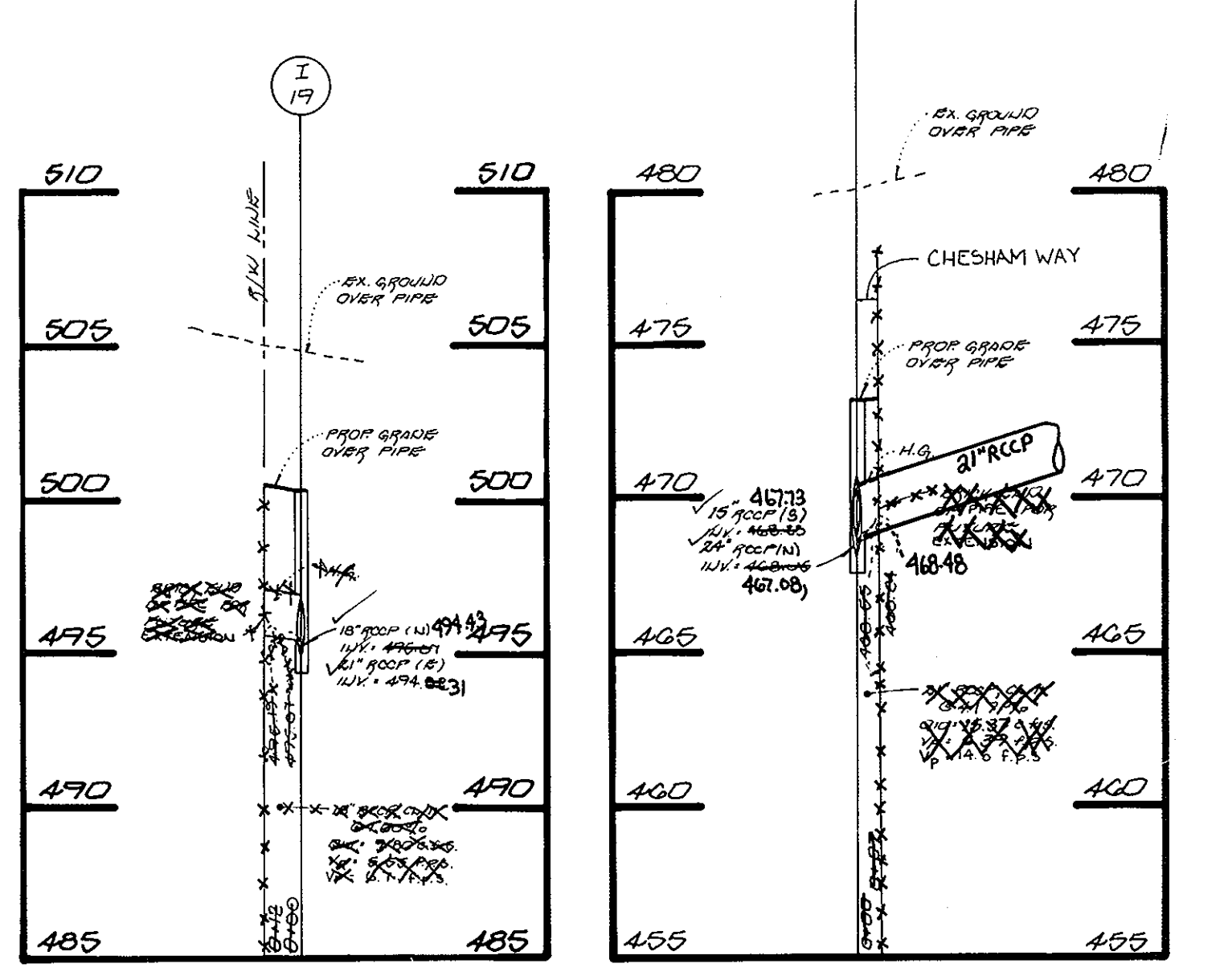
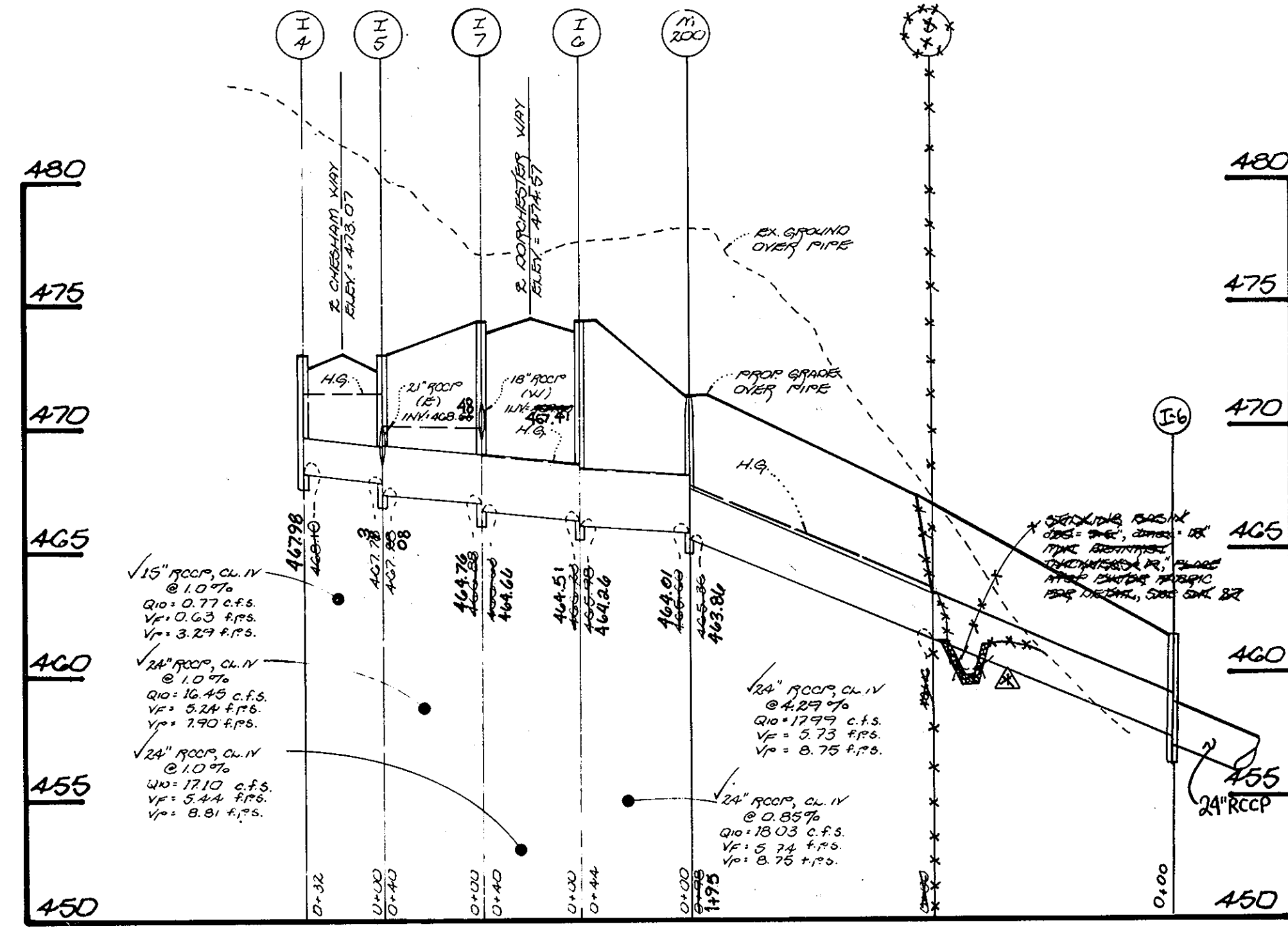
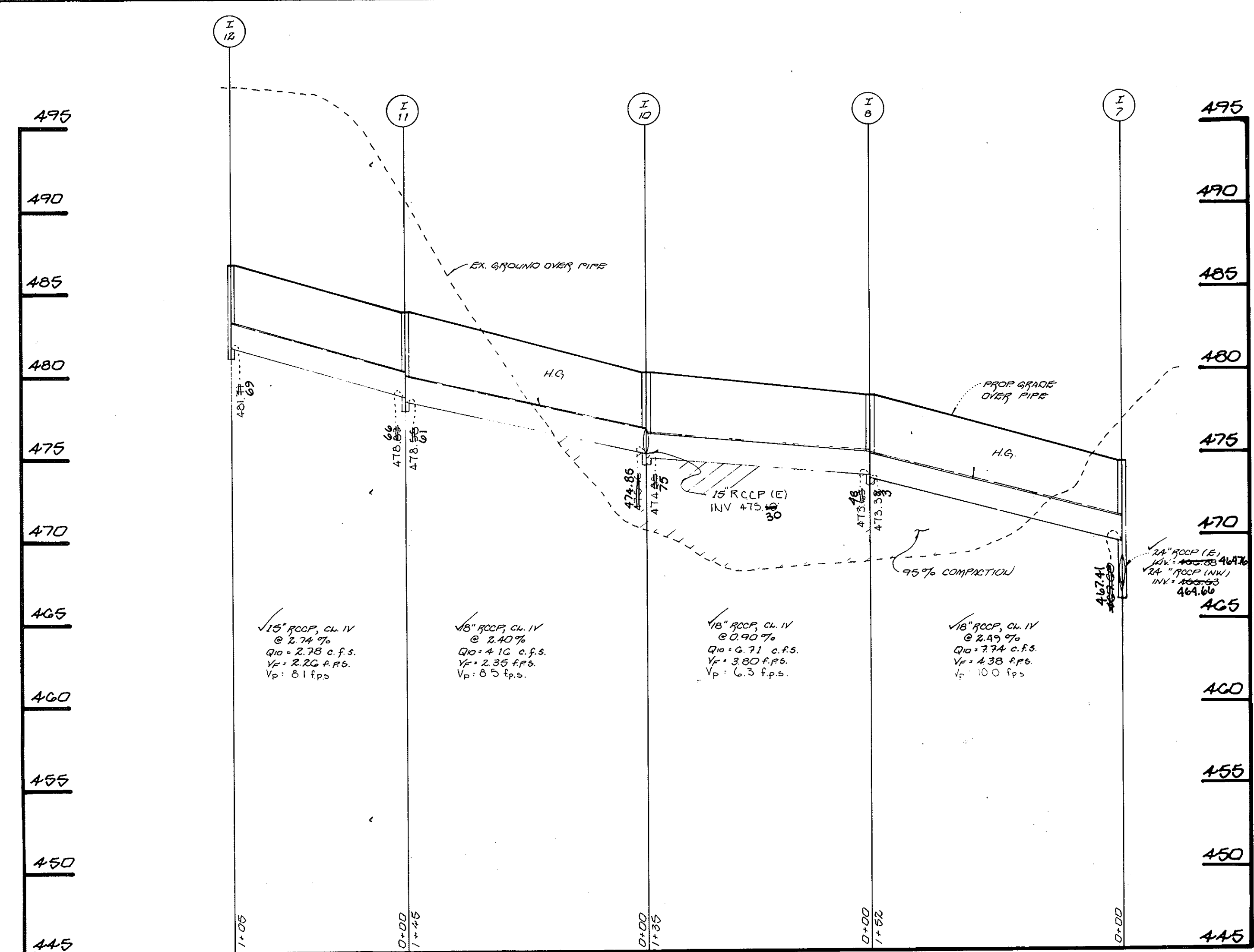


5571

No.	REVISIONS DESCRIPTION	DATE
1	PIPE SLOPE FROM M-200 TO 5-1	5-0-90
2	ADD H-1-D	1-2-91

**LEGEND**  
 Vp ~ DENOTES PARTIAL FLOW VELOCITY  
 Vp ~ DENOTES FULL FLOW VELOCITY  
 H.G. ~ DENOTES HYDRAULIC GRADIENT FOR 10 YEAR STORM

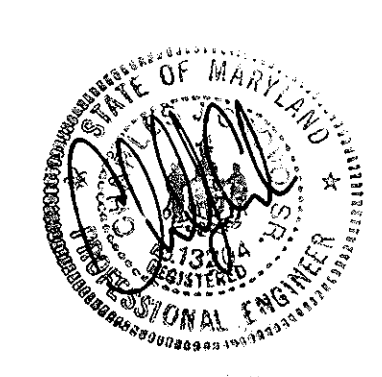
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Chief, Bureau of Highways: *Stephen M. Daulton* 1-20-96  
 Chief, Department of Planning and Zoning: *Anna Struminsky* 2/5/96  
 Chief, Division of Land Development and Research: *Bob Danvers* 2/1/96



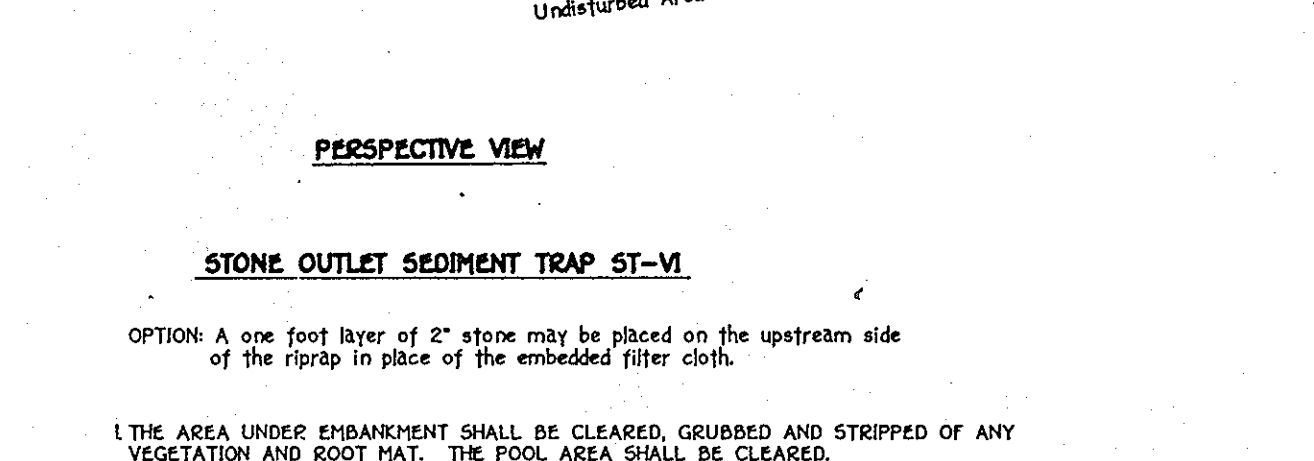
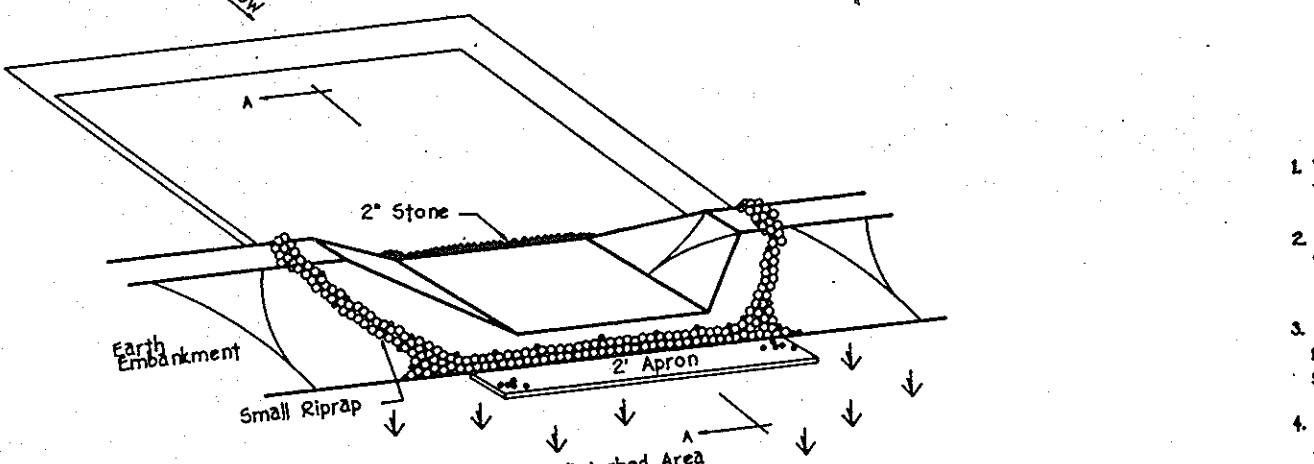
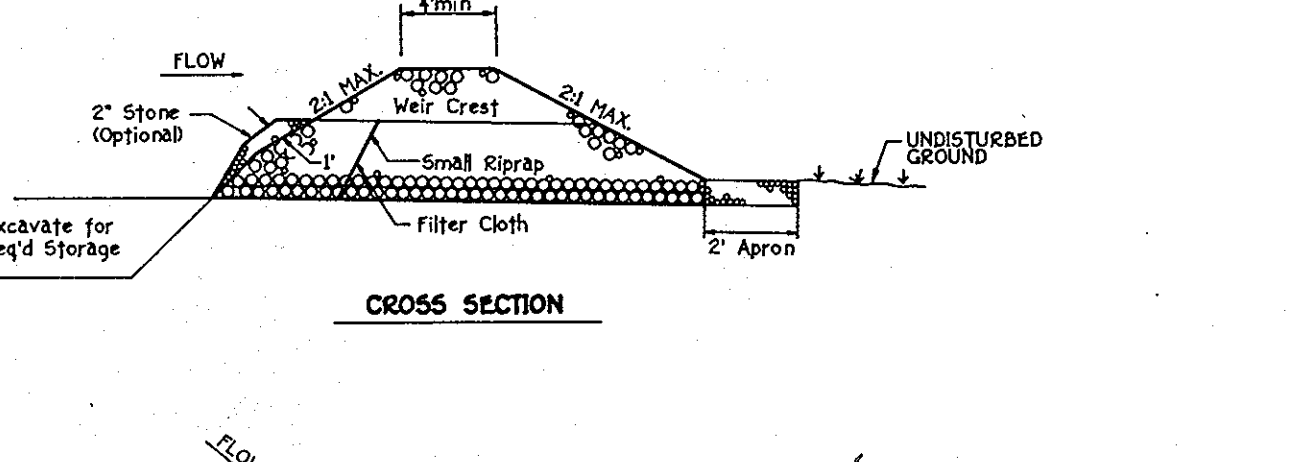
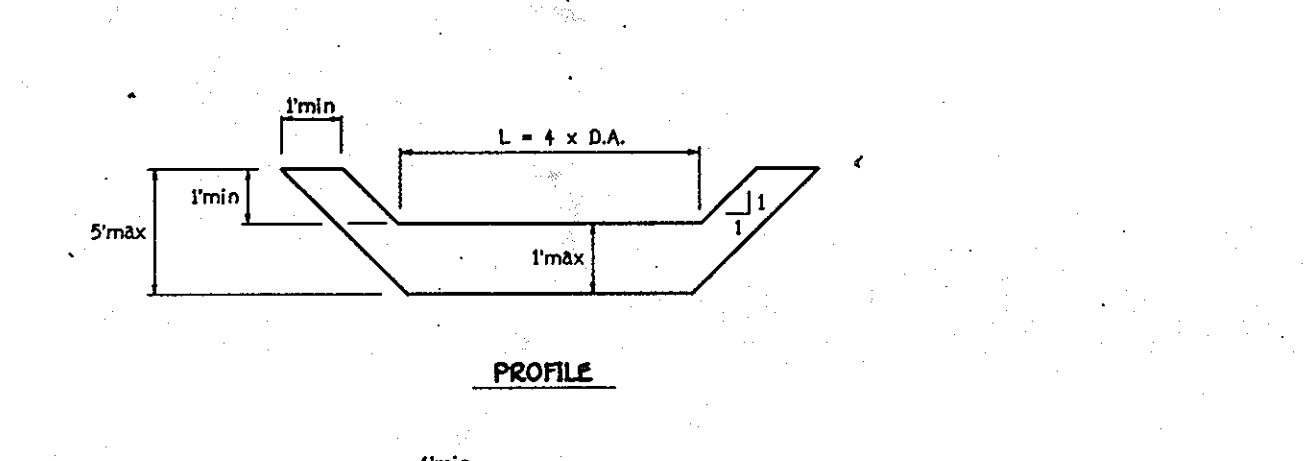
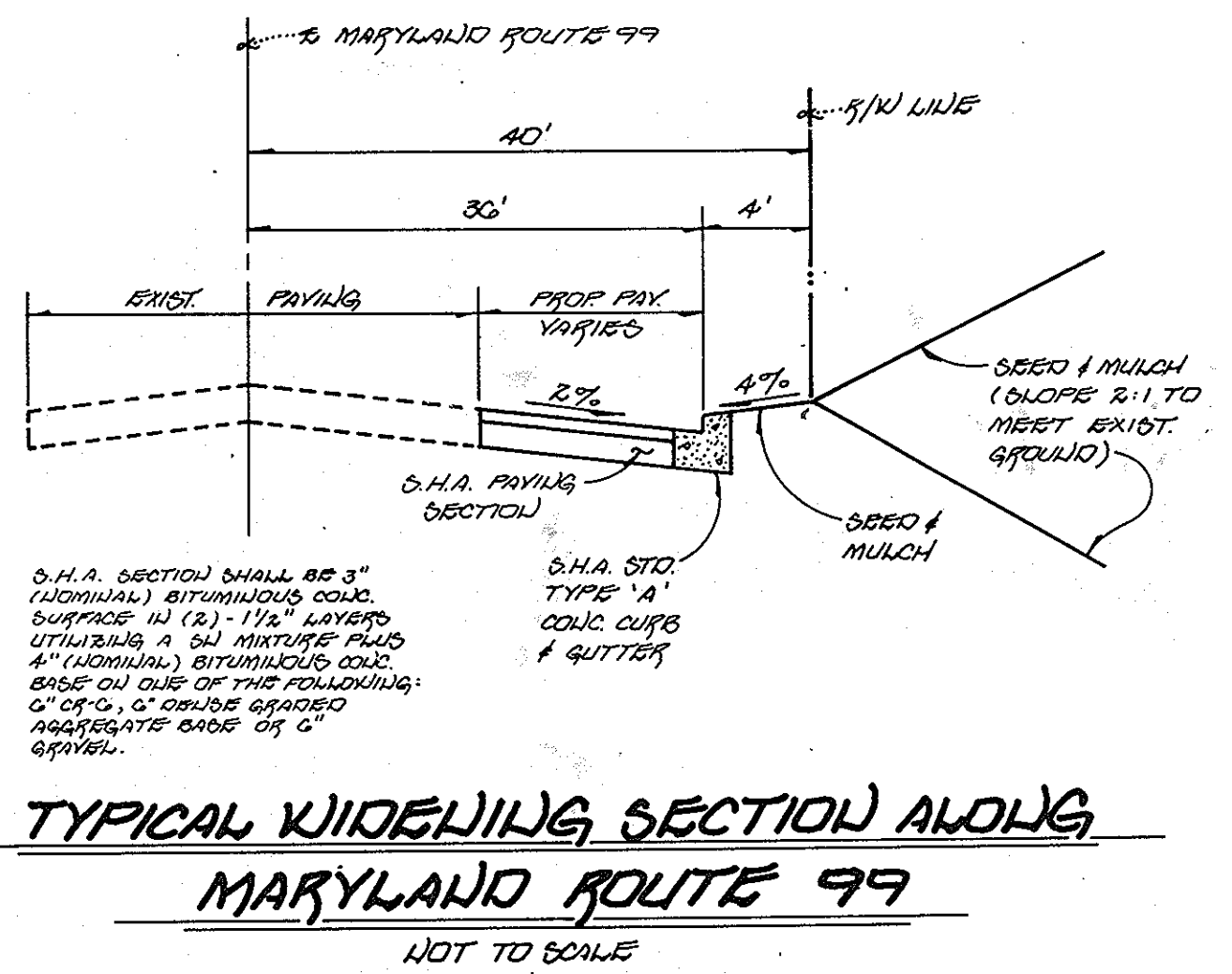
FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 5711 BALTIMORE NATIONAL PIKE, SUITE 100  
 ELLICOTT CITY, MARYLAND 21114  
 (301) 461-2855

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

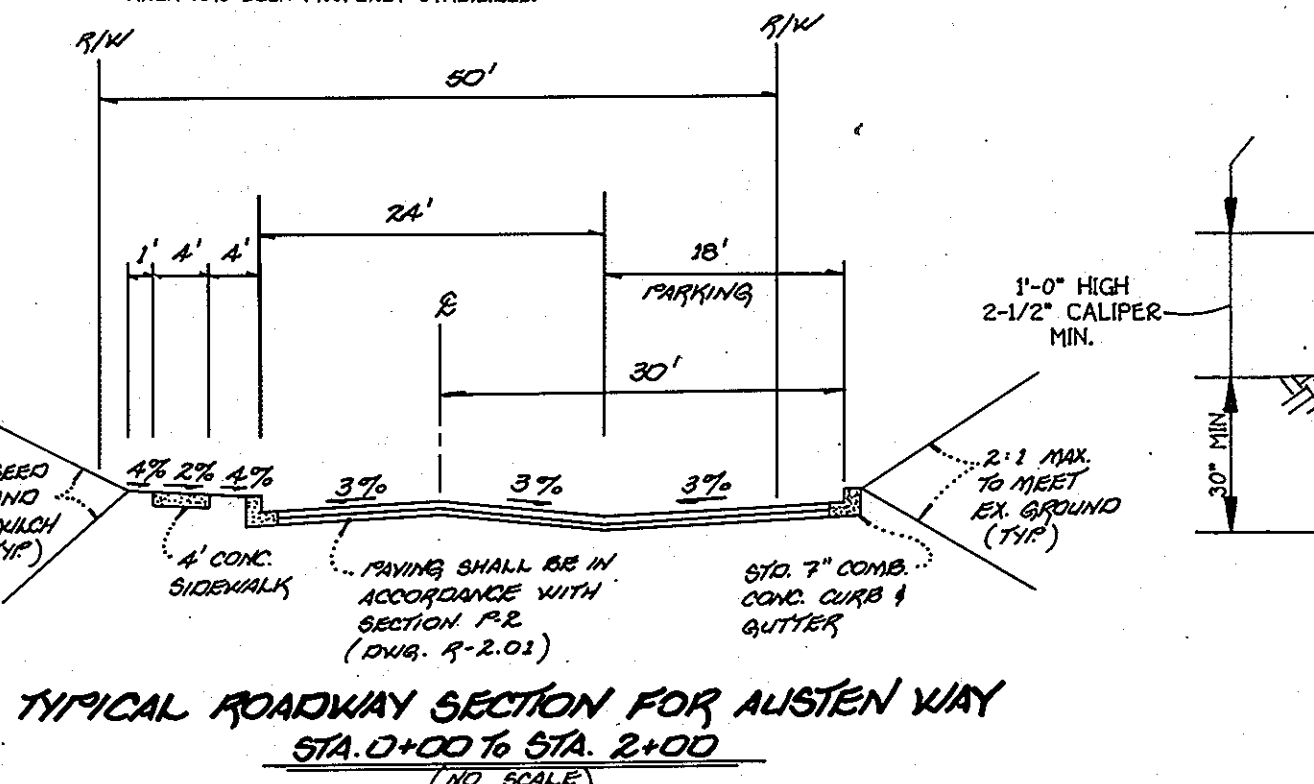
OWNER / DEVELOPER  
 STW JOINT VENTURE  
 1/3 LAND DESIGN AND DEVELOPMENT  
 10805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044  
 Date: 8/21/02



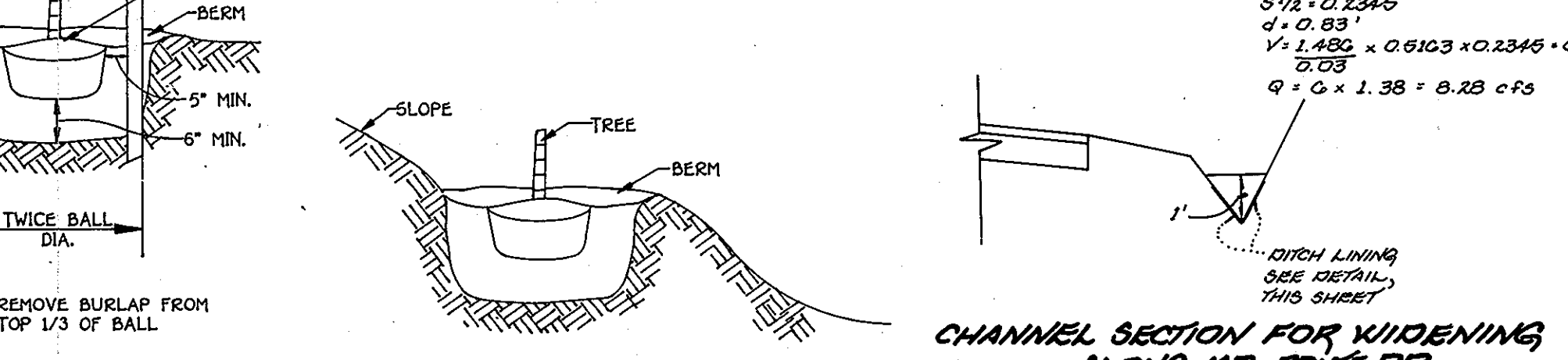
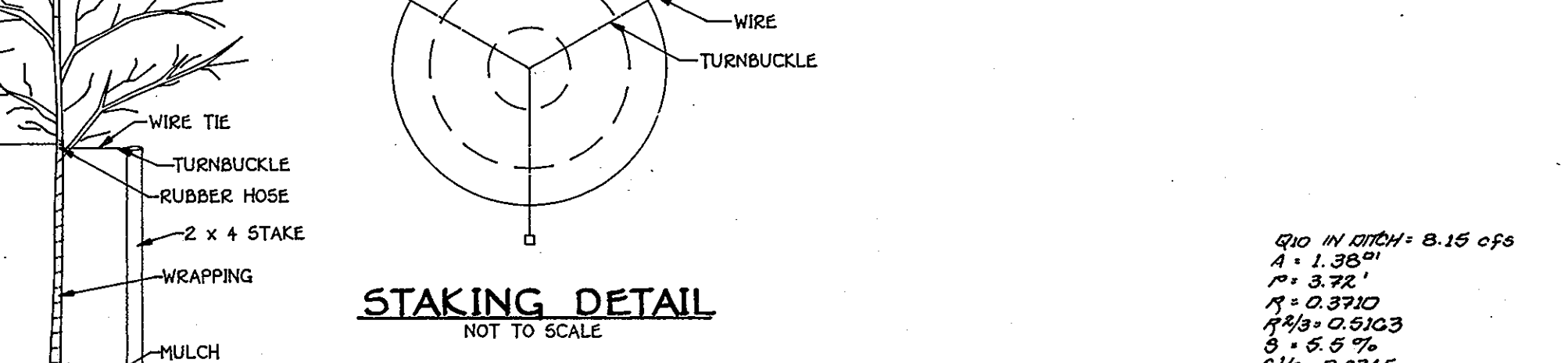
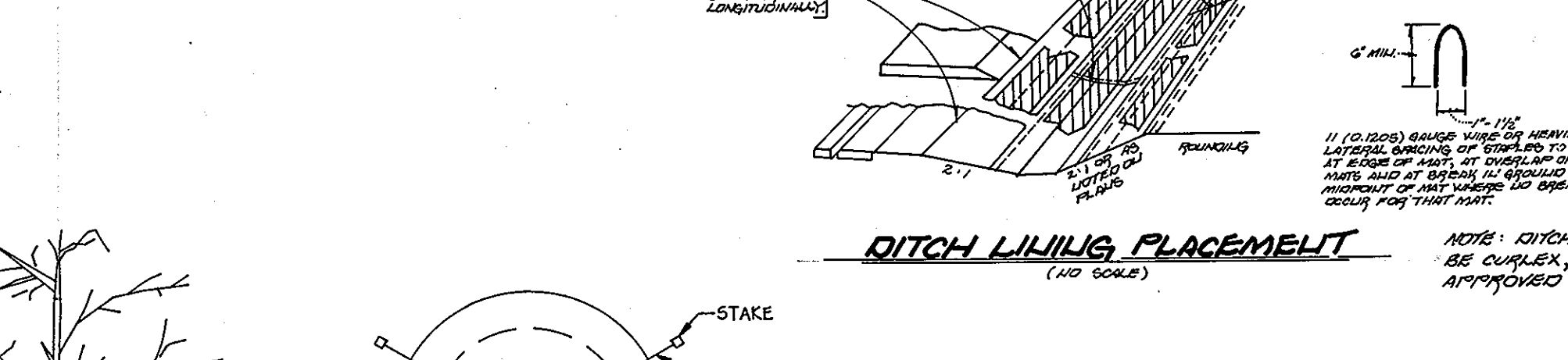
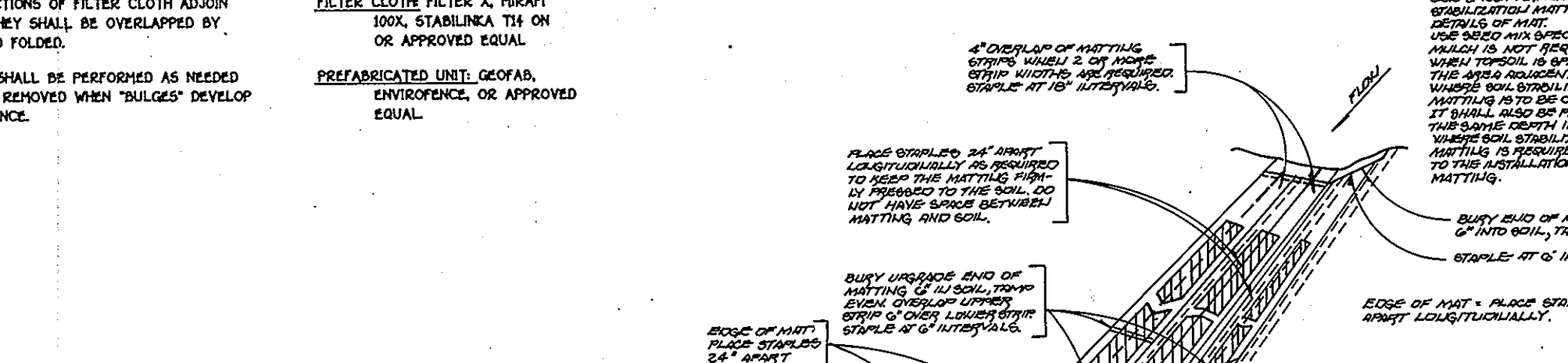
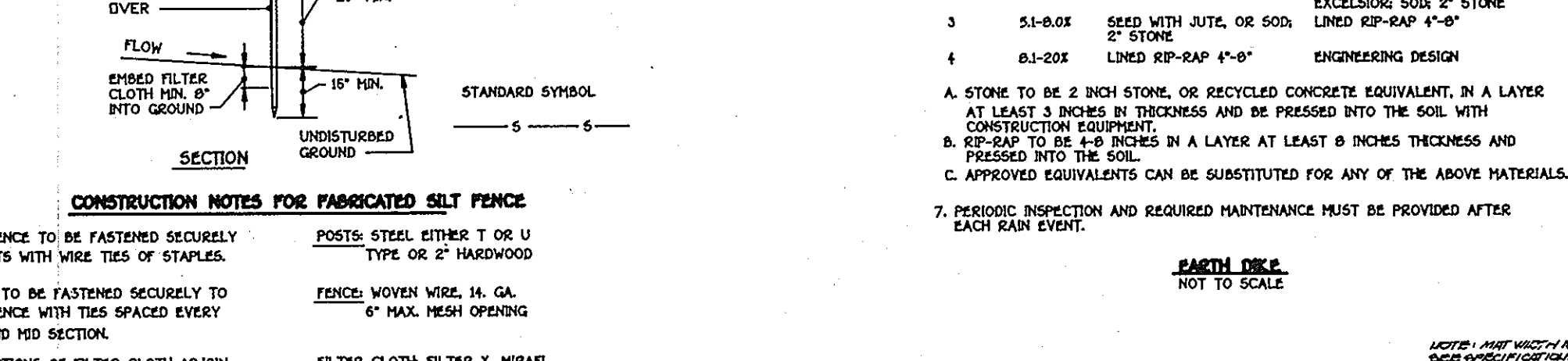
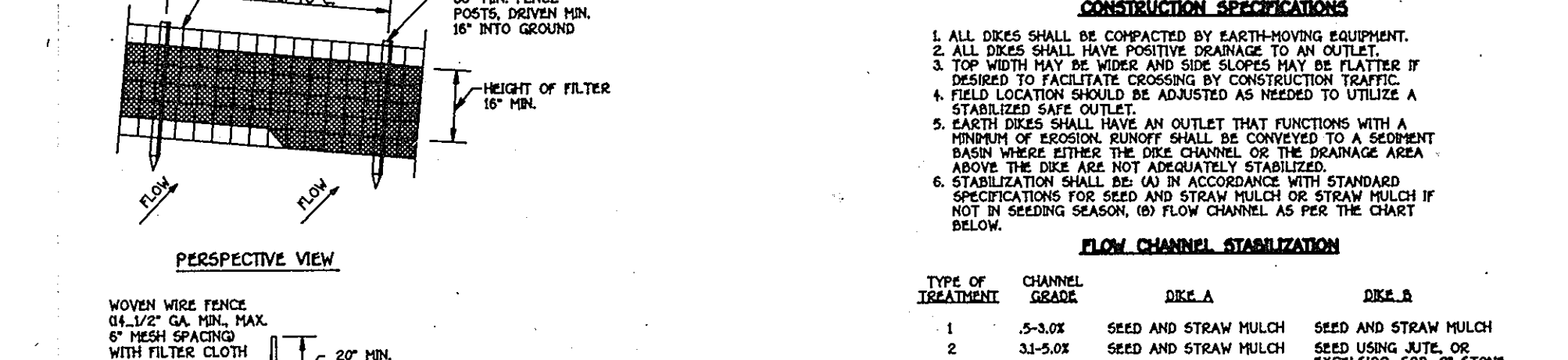
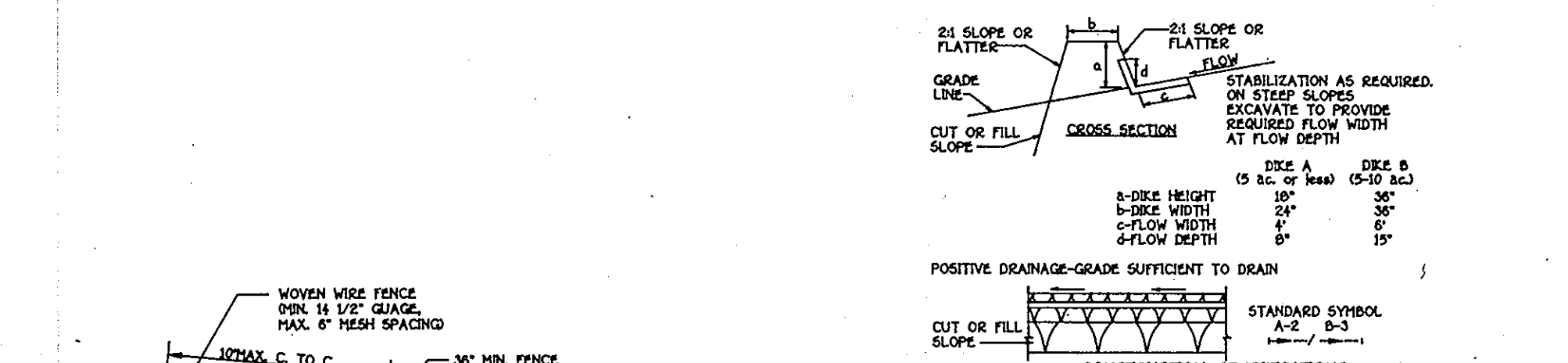
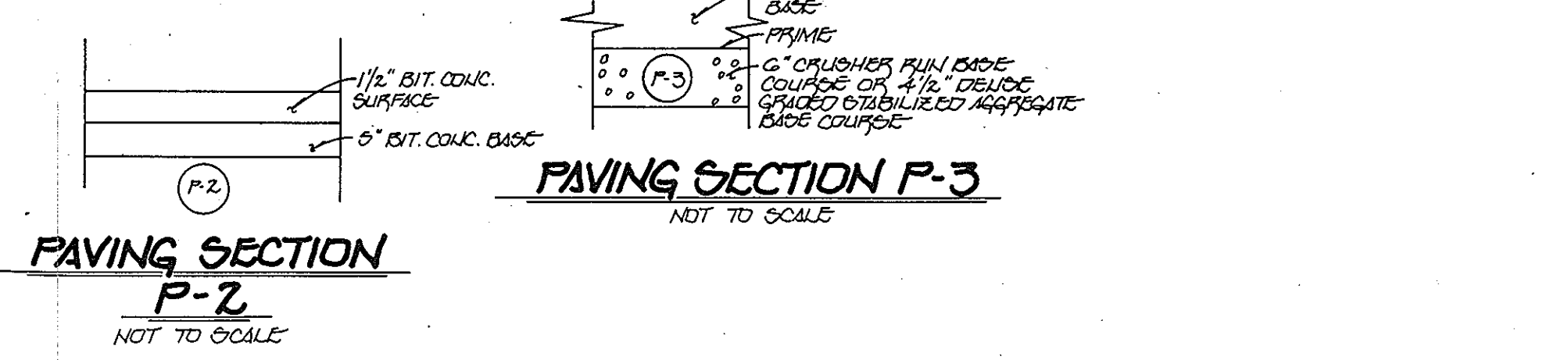
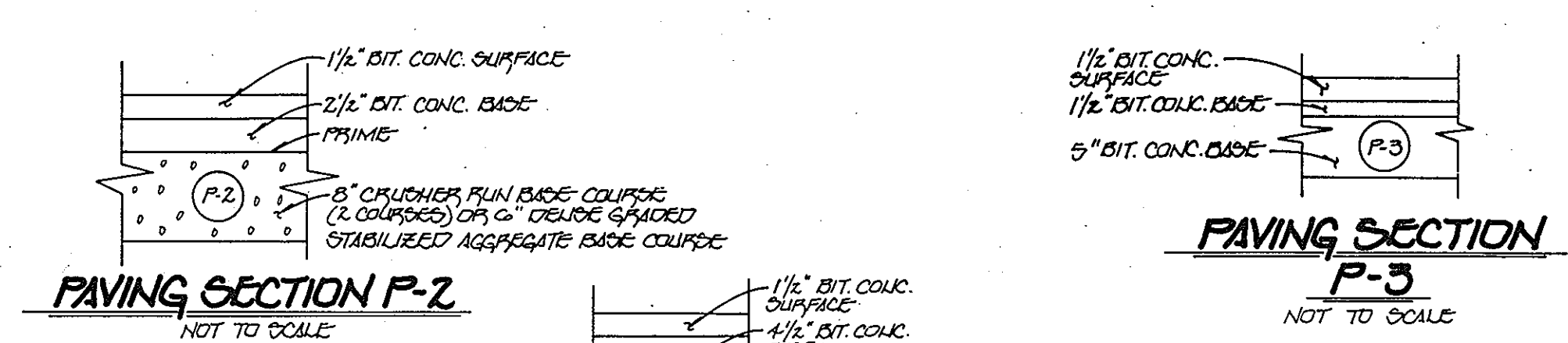
STORM DRAIN PROFILES  
 GTW'S WAVERLY WOODS  
 SECTION 4, AREA 1  
 LOTS 1 THRU 17 AND PARCELS A THRU E  
 ZONING: R-20, RSC, R-5A-B AND R-A-15  
 TAX MAP No: 16 PART OF PARCEL No: 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995



1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GROUND AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING.
3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
4. THE STONE USED IN THE OUTLET SHALL BE SMALL RIPRAP 4"-8" ALONG WITH A 1" THICKNESS OF 2" AGGREGATE PLACED ON THE UP-GRADE SIDE OF THE SMALL RIPRAP OR EMBEDDED FILTER CLOTH IN THE RIPRAP.
5. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP.
6. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
7. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
8. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



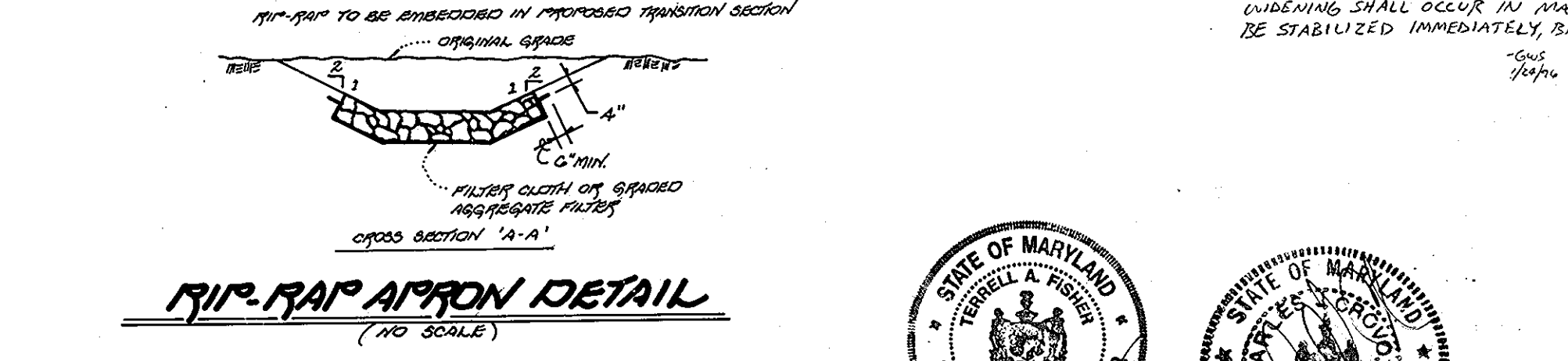
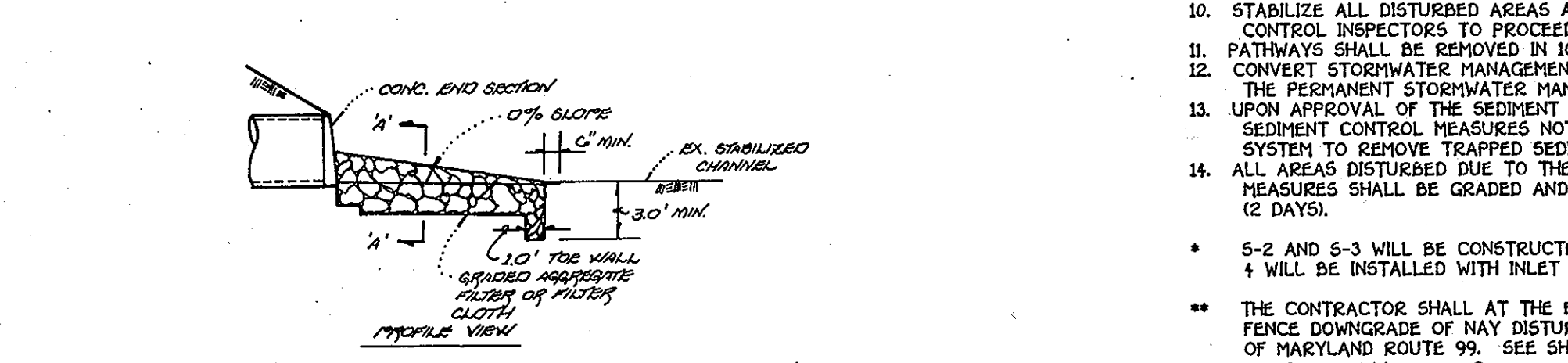
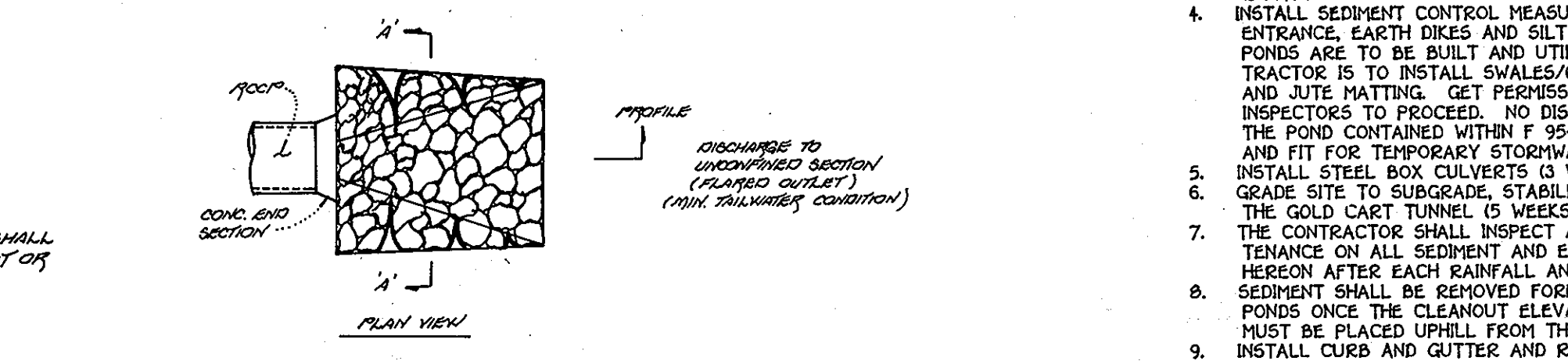
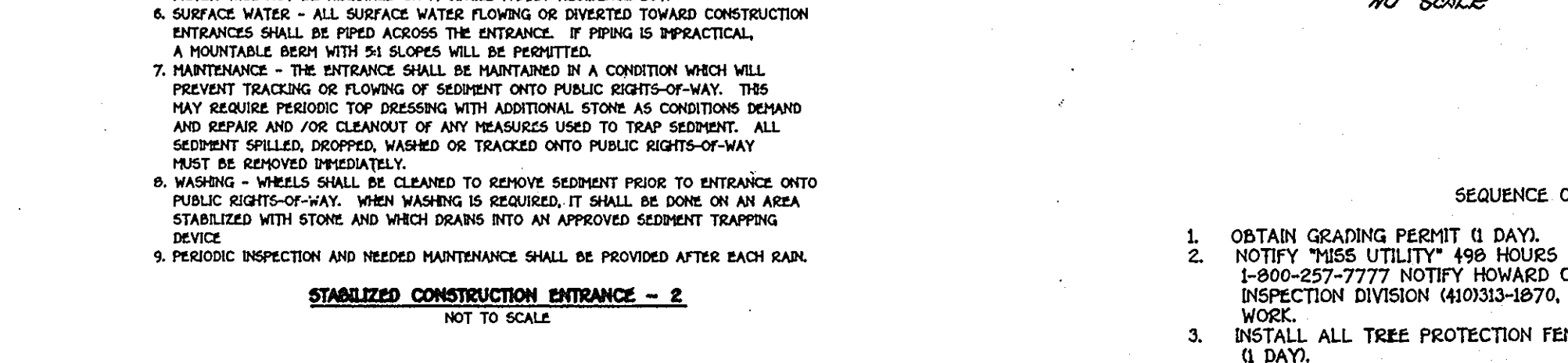
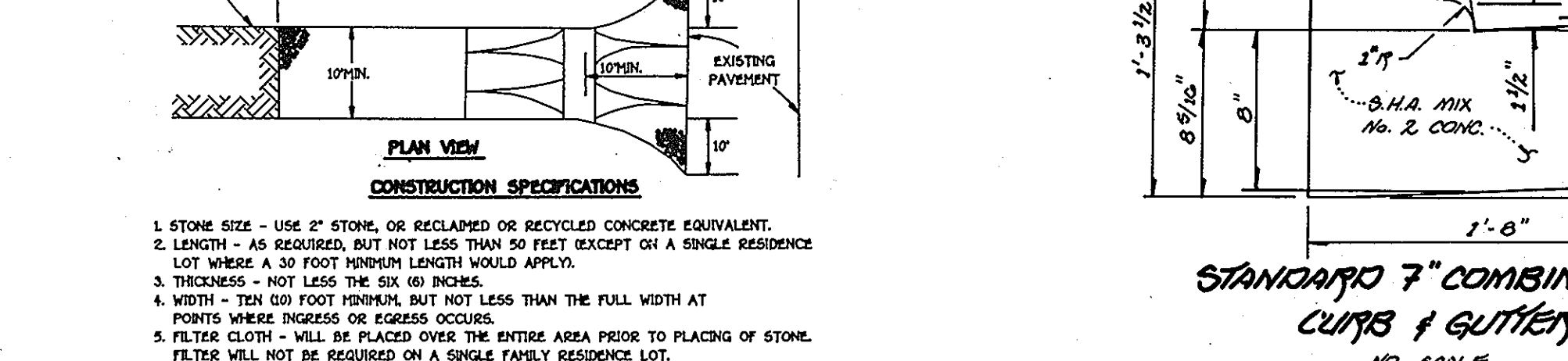
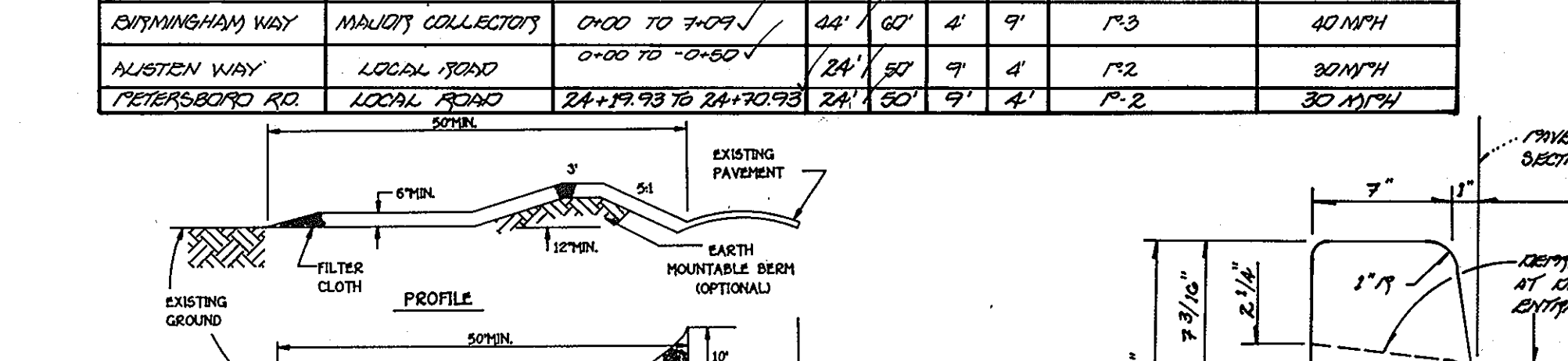
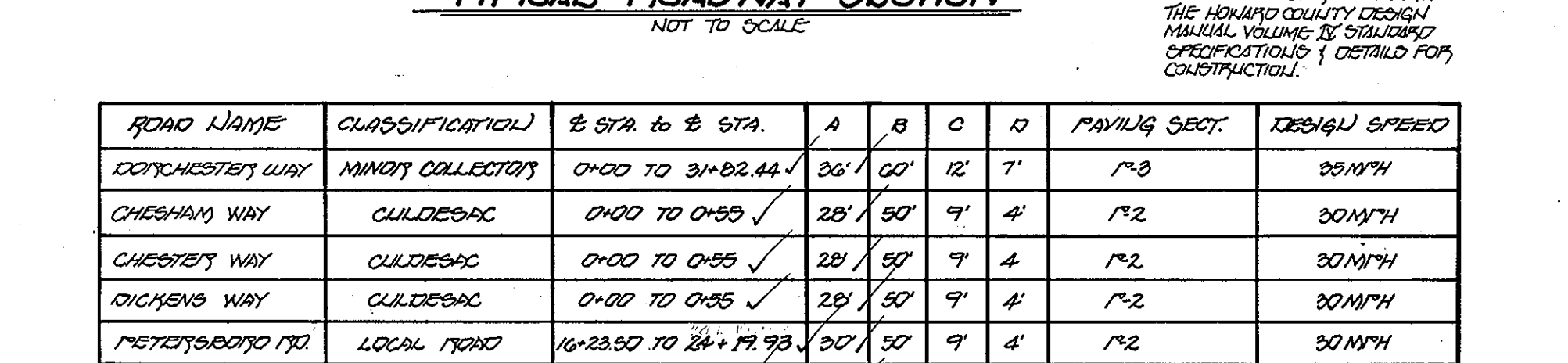
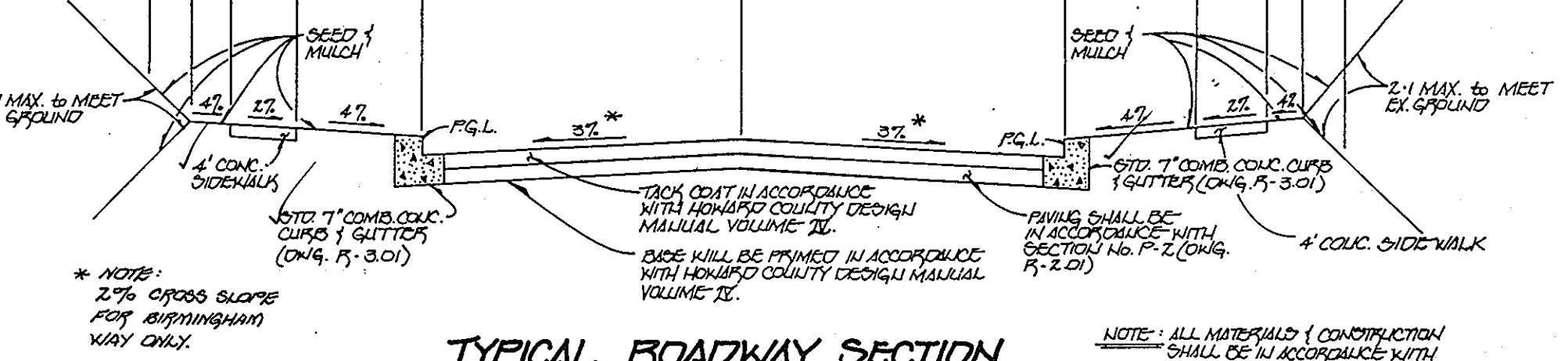
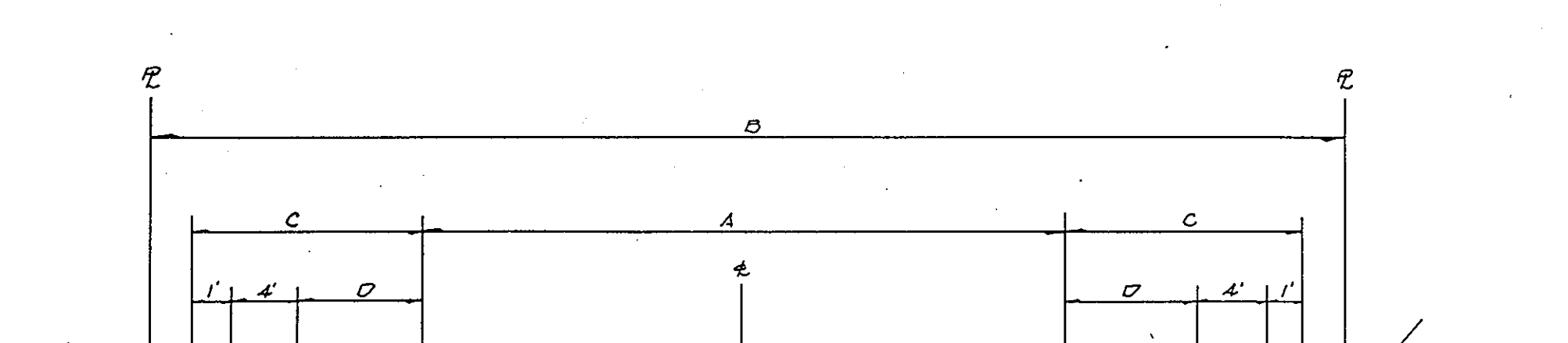
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 971 BALTIMORE NATIONAL PkE, SUITE 100  
 ELICOTT CITY, MARYLAND 21042  
 (301) 481-2255



**CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OF STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "MULDS" DEVELOP IN THE SILT FENCE.

**POSTS:** STEEL EITHER T OR U TYPE OR 2" HARDWOOD  
**FENCE:** WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING  
**FILTER CLOTH:** FILTER X, HRS/AFI 100X, STABILINA, 14 ON OR APPROVED EQUAL  
**PREFABRICATED UNIT:** GEOFOAM, ENVIRONMENTAL, OR APPROVED EQUAL



**CONSTRUCTION SPECIFICATIONS**

1. ALL DICES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DICES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DICES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. SURF SHALL BE CONVEYED TO A SECRET BURN WHERE EITHER THE DICE CHANNEL OR THE DRAINAGE AREA ABOVE THE DICE ARE NOT ADJACENTLY STABILIZED.
6. STABILIZATION SHALL BE AS IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

**FLOW CHANNEL STABILIZATION**

TYPE OF TREATMENT	CHANNEL GRADE	DICE A	DICE B
1	5-3:01	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3:1-5:01	SEED AND STRAW MULCH	SEED USING JUTE OR EXCESS/ROCK 2" STONE
3	5:1-8:01	SEED WITH JUTE OR SOIL	LINED RIP-RAP 4"-8" 2" STONE
4	8:1-20:1	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

**CONSTRUCTION NOTES:**

- A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE COMPACTED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
- B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 3 INCHES THICKNESS AND COMPACTED INTO THE SOIL.
- C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

**ENGINEER'S CERTIFICATE**

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 CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

\_\_\_\_\_  
 SIGNATURE OF ENGINEER  
 6/25/95  
 DATE

**DEVELOPER'S CERTIFICATE**

I HAVE CERTIFIED THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL 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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

\_\_\_\_\_  
 SIGNATURE OF DEVELOPER  
 11-21-95  
 DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

\_\_\_\_\_  
 SIGNATURE OF REVIEWER  
 1/25/96  
 DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

\_\_\_\_\_  
 SIGNATURE OF APPROVED  
 1/25/96  
 DATE

DISTRICT HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

\_\_\_\_\_  
 SIGNATURE OF APPROVED  
 2/5/96  
 DATE

CHIEF DIVISION OF LAND DEVELOPMENT AND RESEARCH

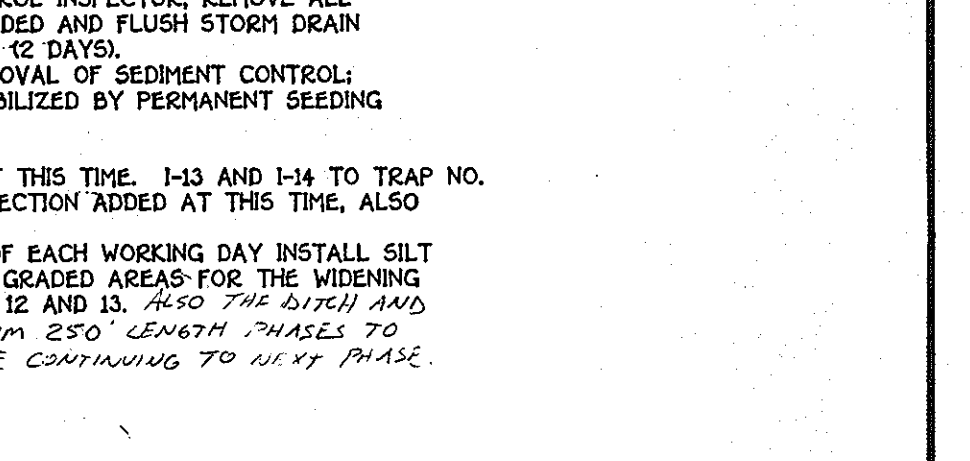
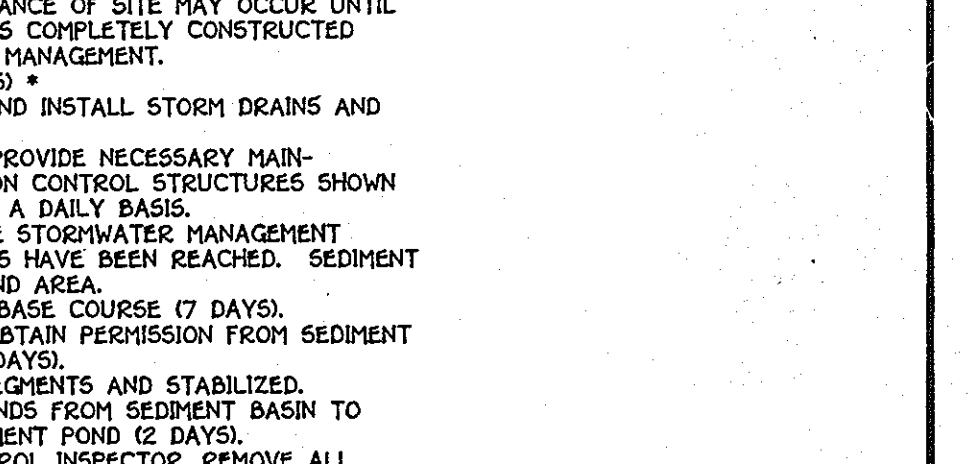
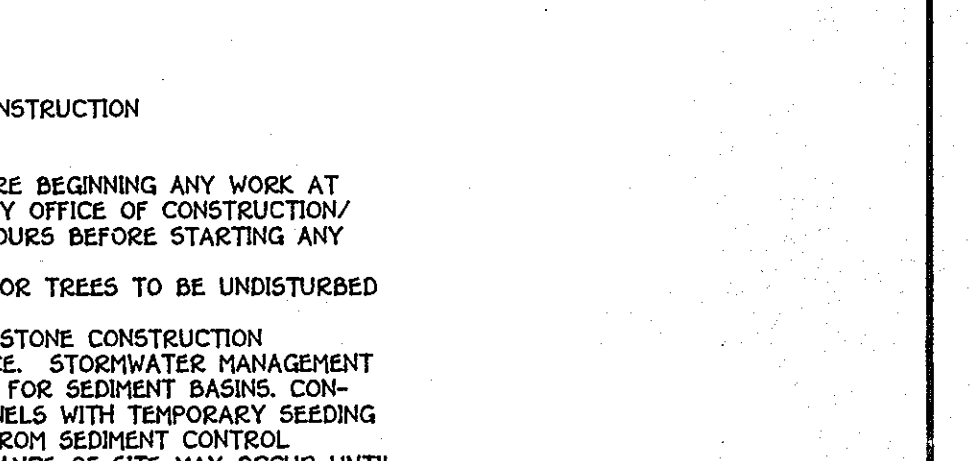
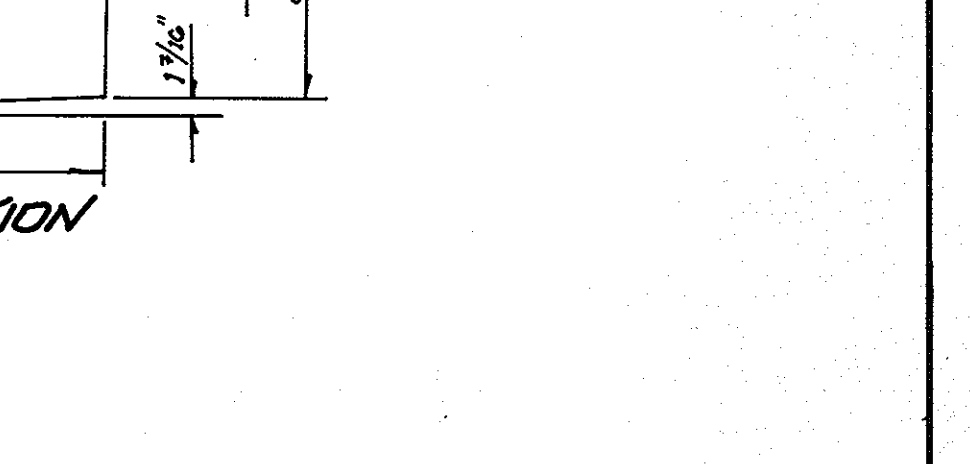
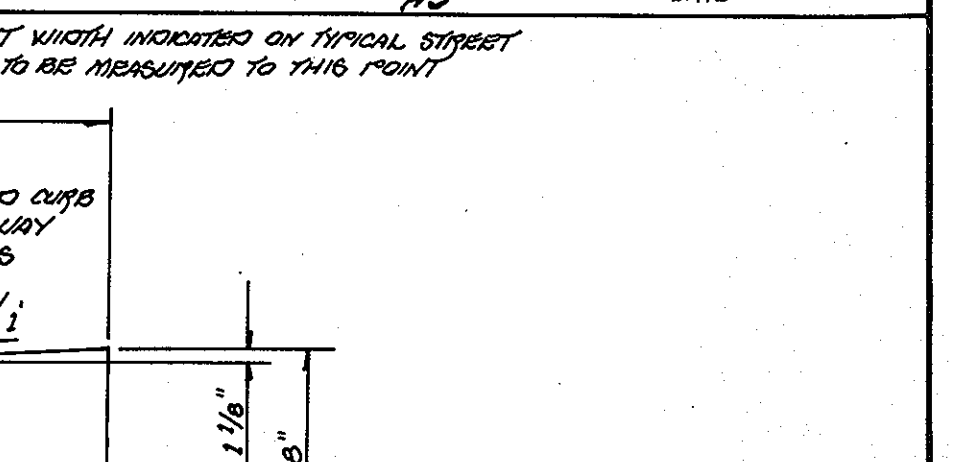
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 SIGNATURE OF APPROVED  
 2/1/96  
 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

\_\_\_\_\_  
 SIGNATURE OF APPROVED  
 1-30-96  
 DATE

CHIEF, BUREAU OF HIGHWAYS



**SEQUENCE OF CONSTRUCTION**

1. OBTAIN GRADING PERMIT (1 DAY).
2. NOTIFY "MISS UTILITY" 498 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777 NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION DIVISION (410)333-1870, 24 HOURS BEFORE STARTING ANY WORK.
3. INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED (1 DAY).
4. INSTALL SEDIMENT CONTROL MEASURES, STONE CONSTRUCTION ENTRANCE, EARTH DIKES AND SILT FENCE. STORMWATER MANAGEMENT PONDS ARE TO BE BUILT AND UTILIZED FOR SEDIMENT BASINS. CONTRACTOR IS TO INSTALL SWALES/CHANNELS WITH TEMPORARY SEEDING AND JUTE MATTING. GET PERMISSION FROM SEDIMENT CONTROL INSPECTORS TO PROCEED. NO DISTURBANCE OF SITE MAY OCCUR UNTIL THE POND CONTAINED WITHIN F-05-174 IS COMPLETELY CONSTRUCTED AND FIT FOR TEMPORARY STORMWATER MANAGEMENT.
5. INSTALL STEEL BOX CULVERTS (3 WEEKS) \*
6. GRADE SITE TO SUBGRADE, STABILIZE AND INSTALL STORM DRAINS AND THE GOLF CART TUNNEL (5 WEEKS) \*
7. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS.
8. SEDIMENT SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT PONDS ONCE THE CLEANOUT ELEVATIONS HAVE BEEN REACHED. SEDIMENT MUST BE PLACED UPHILL FROM THE POND AREA.
9. INSTALL CURB AND GUTTER AND ROAD BASE COURSE (7 DAYS).
10. STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM SEDIMENT CONTROL INSPECTORS TO PROCEED (2 DAYS).
11. PATHWAYS SHALL BE REMOVED IN 100' SEGMENTS AND STABILIZED.
12. CONVERT STORMWATER MANAGEMENT PONDS FROM SEDIMENT BASIN TO THE PERMANENT STORMWATER MANAGEMENT POND (2 DAYS).
13. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES NOT NEEDED AND FLUSH STORM DRAIN SYSTEM TO REMOVE TRAPPED SEDIMENT (2 DAYS).
14. ALL AREAS DISTURBED DUE TO THE REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING (2 DAYS).

\* 5-2 AND 5-3 WILL BE CONSTRUCTED AT THIS TIME. 1-13 AND 1-14 TO TRAP NO. 4 WILL BE INSTALLED WITH INLET PROTECTION ADDED AT THIS TIME, ALSO.

\*\* THE CONTRACTOR SHALL AT THE END OF EACH WORKING DAY INSTALL SILT FENCE DOWNGRADE OF ANY DISTURBED GRADED AREAS FOR THE WIDENING OF MARYLAND ROUTE 99. SEE SHEETS 12 AND 13. ALSO THE DICES AND DRAINAGE SHALL OCCUR IN MAXIMUM 250' LENGTH PHASES TO BE STABILIZED IMMEDIATELY BEFORE CONTINUING TO NEXT PHASE.

**TYPICAL ROADWAY SECTIONS SEDIMENT CONTROL NOTES & DETAILS**

**GTW'S WAVERLY WOODS**

SECTION 4, AREA 1  
 LOTS 20 thru 45  
 ZONING R-20 AND R5-A-8  
 TAX MAP NO. 18 PARCEL NO. 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995

Using vegetation as cover for barren soil to protect it from erosion...

Vegetative stabilization specifications are used to promote the establishment...

This practice shall be used on denuded areas as specified on the plans...

Planting vegetation in disturbed areas will have an effect on the water budget...

Soil Amendments Fertilizer and Lime Specifications...

Soil Amendments Fertilizer and Lime Specifications (continued)...

Soil Amendments Fertilizer and Lime Specifications (continued)...

Soil Amendments Fertilizer and Lime Specifications (continued)...

Soil Amendments Fertilizer and Lime Specifications (continued)...

Soil Amendments Fertilizer and Lime Specifications (continued)...

Soil Amendments Fertilizer and Lime Specifications (continued)...

Soil Amendments Fertilizer and Lime Specifications (continued)...

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Soil Amendments Fertilizer and Lime Specifications (continued)...

Soil Amendments Fertilizer and Lime Specifications (continued)...

Soil Amendments Fertilizer and Lime Specifications (continued)...

Incremental Stabilization - Cut Slopes...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

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Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Incremental Stabilization - Cut Slopes (continued)...

Table B-1 SOIL BORING DATA with columns for ELEV., SOIL DESCRIPTION, STAKE, DEPTH, etc.

Table B-2 SOIL BORING DATA with columns for ELEV., SOIL DESCRIPTION, STAKE, DEPTH, etc.

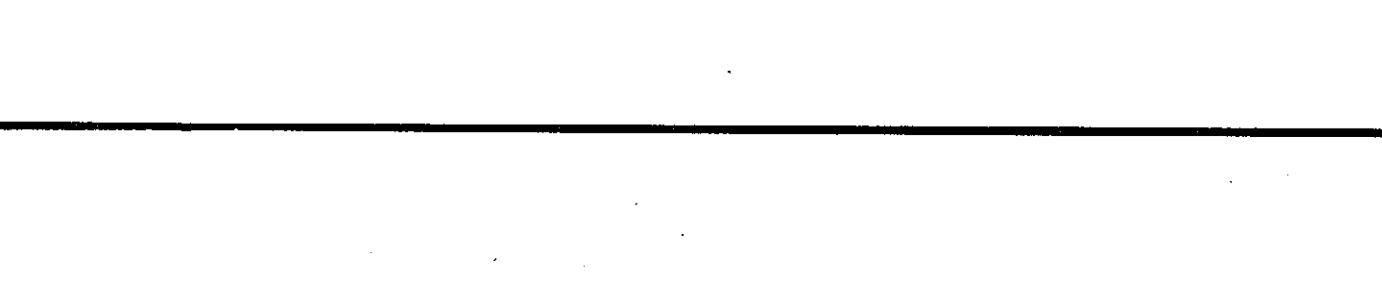
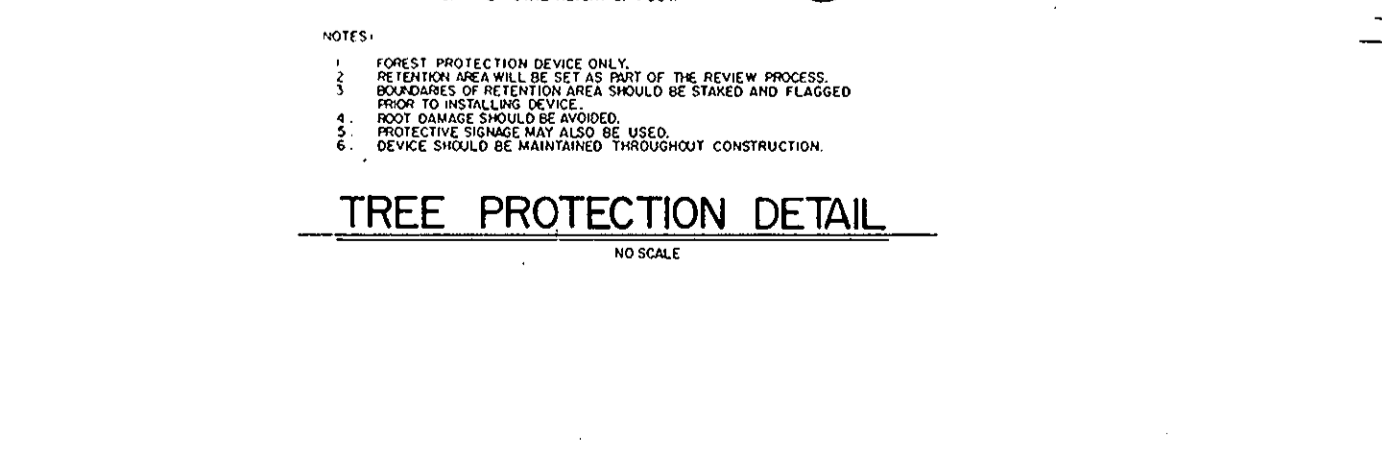
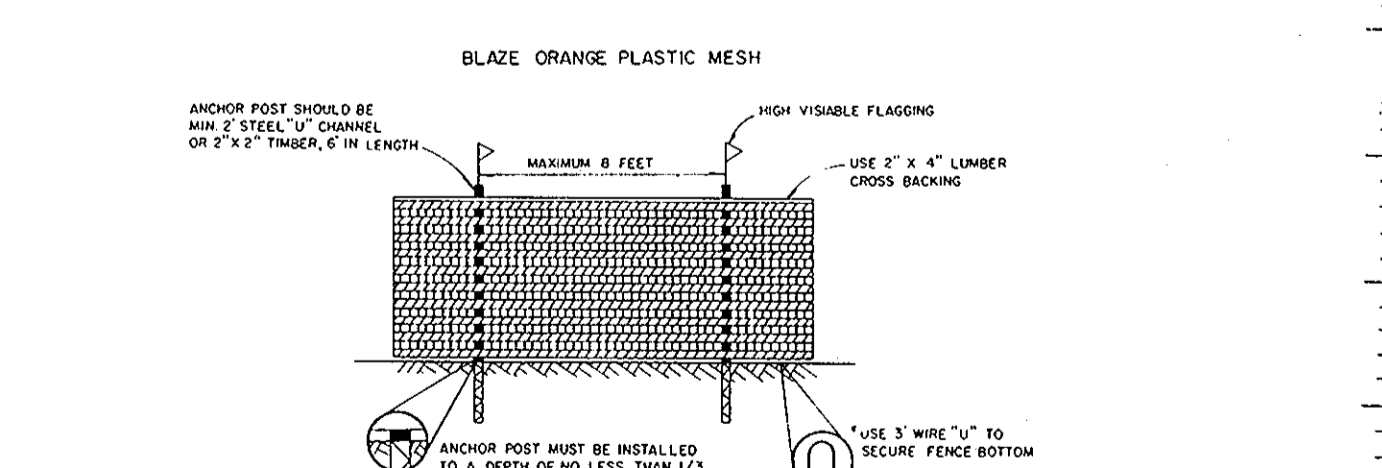
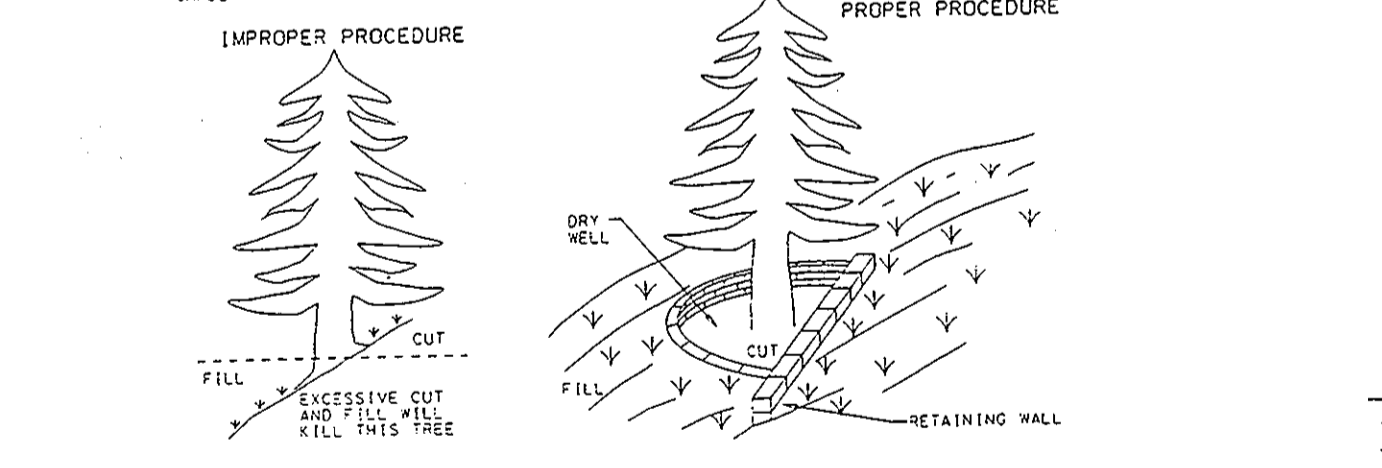
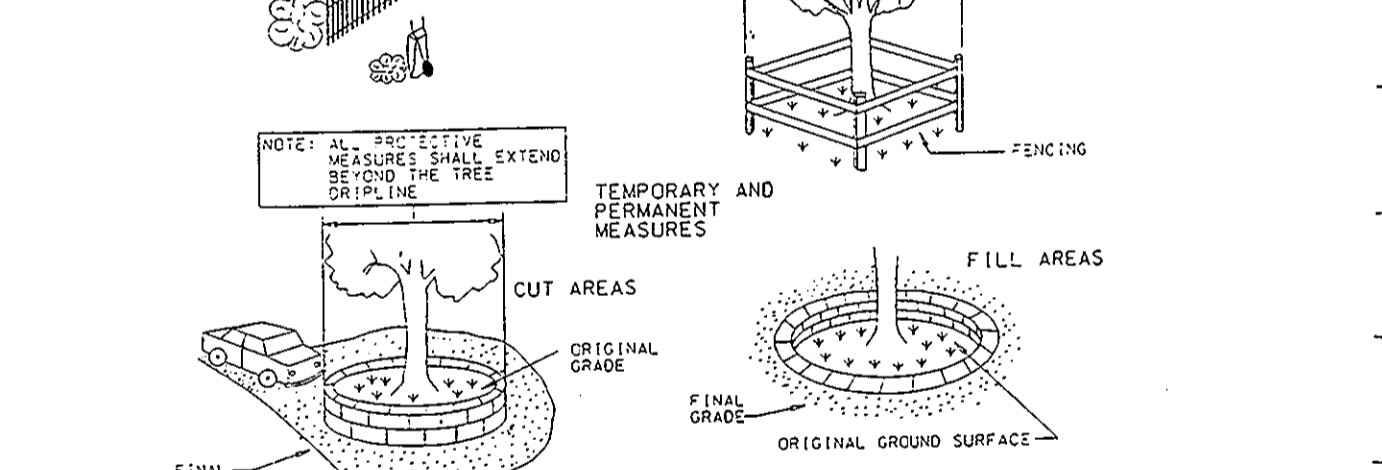
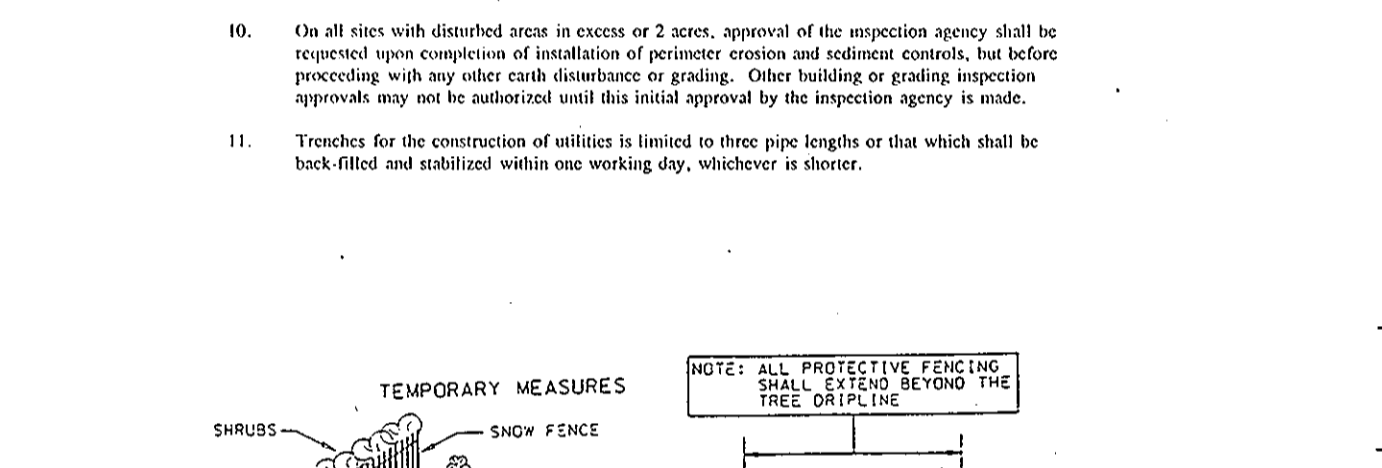
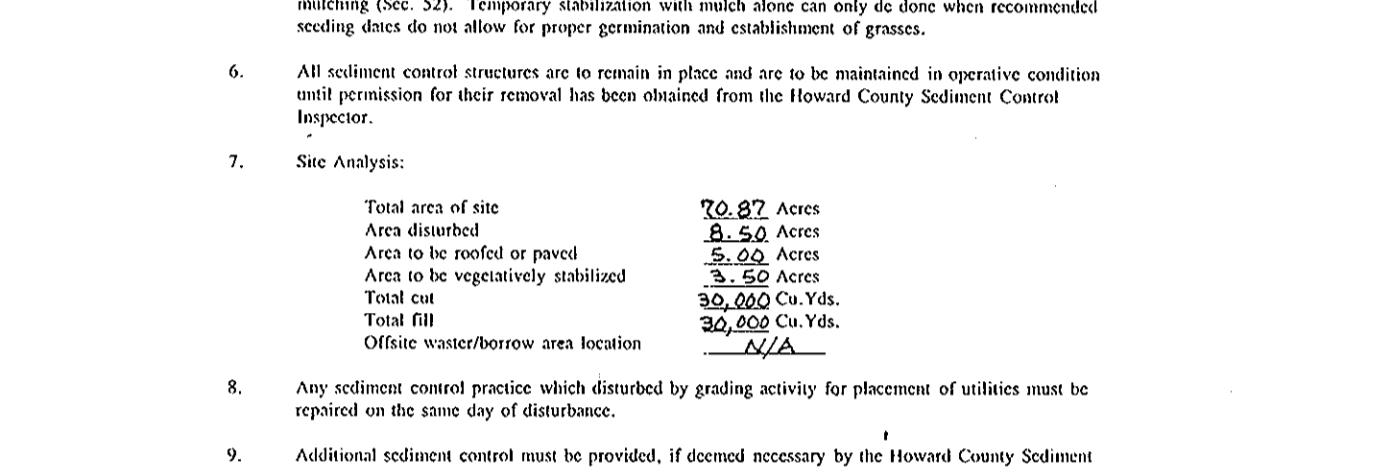
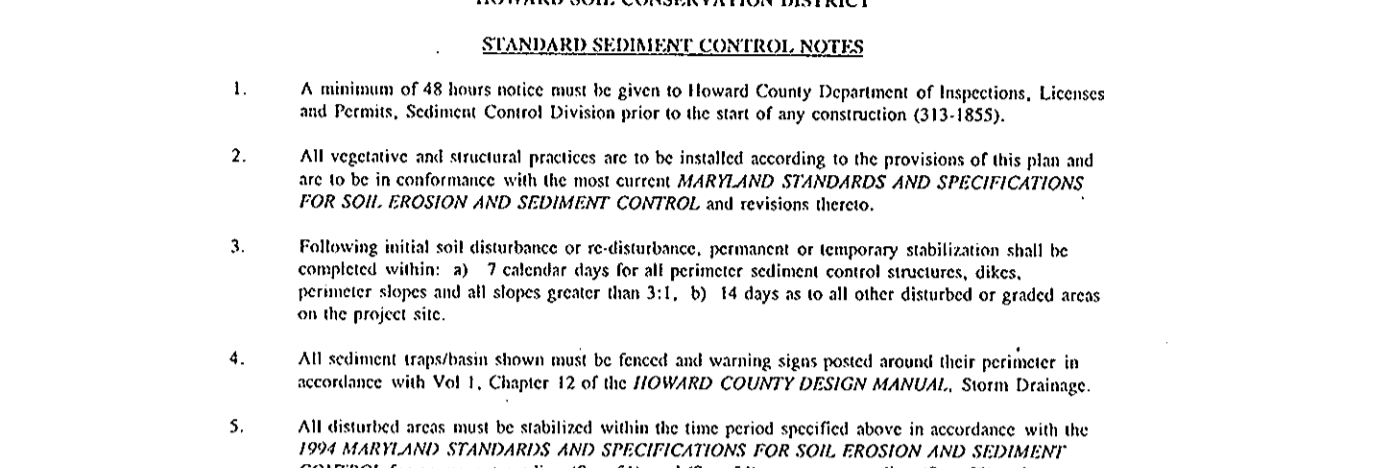
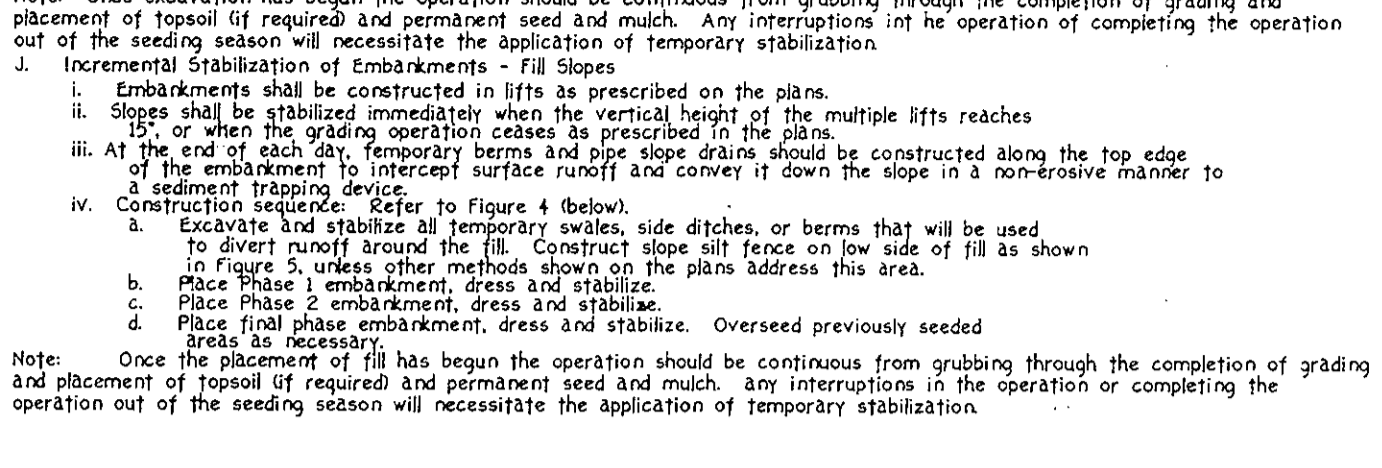
Table B-3 SOIL BORING DATA with columns for ELEV., SOIL DESCRIPTION, STAKE, DEPTH, etc.

Table B-7 SOIL BORING DATA with columns for ELEV., SOIL DESCRIPTION, STAKE, DEPTH, etc.

Table B-8 SOIL BORING DATA with columns for ELEV., SOIL DESCRIPTION, STAKE, DEPTH, etc.

Table B-9 SOIL BORING DATA with columns for ELEV., SOIL DESCRIPTION, STAKE, DEPTH, etc.

Table B-7 SOIL BORING DATA (repeated) with columns for ELEV., SOIL DESCRIPTION, STAKE, DEPTH, etc.



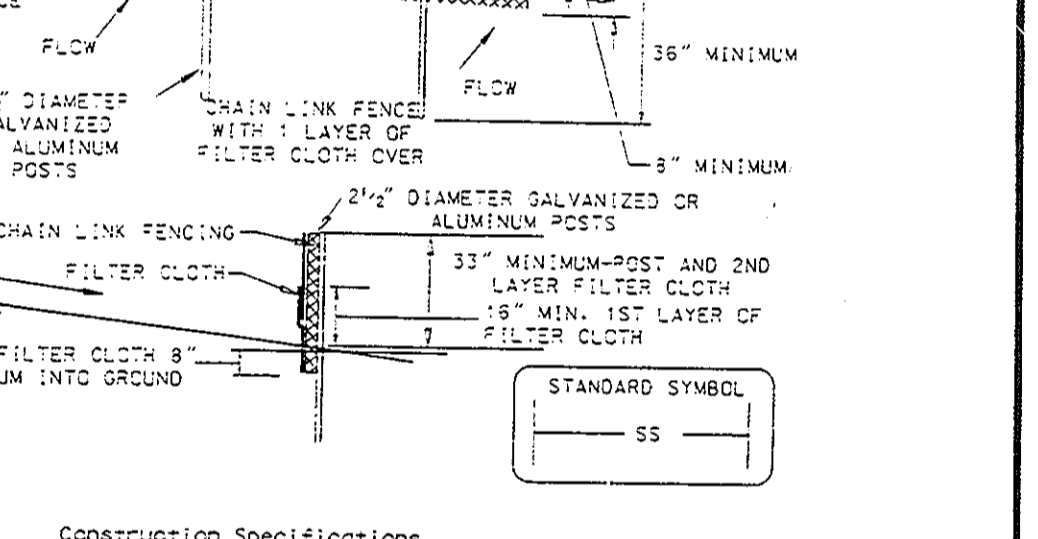
DEVELOPER'S CERTIFICATE - I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN...

ENGINEER'S CERTIFICATE - I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN...

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS...

APPROVED - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS...

APPROVED - DEPARTMENT OF PLANNING AND ZONING...



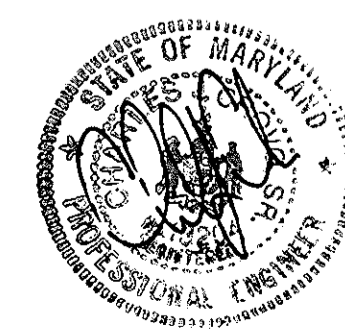
Construction Specifications - Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details...

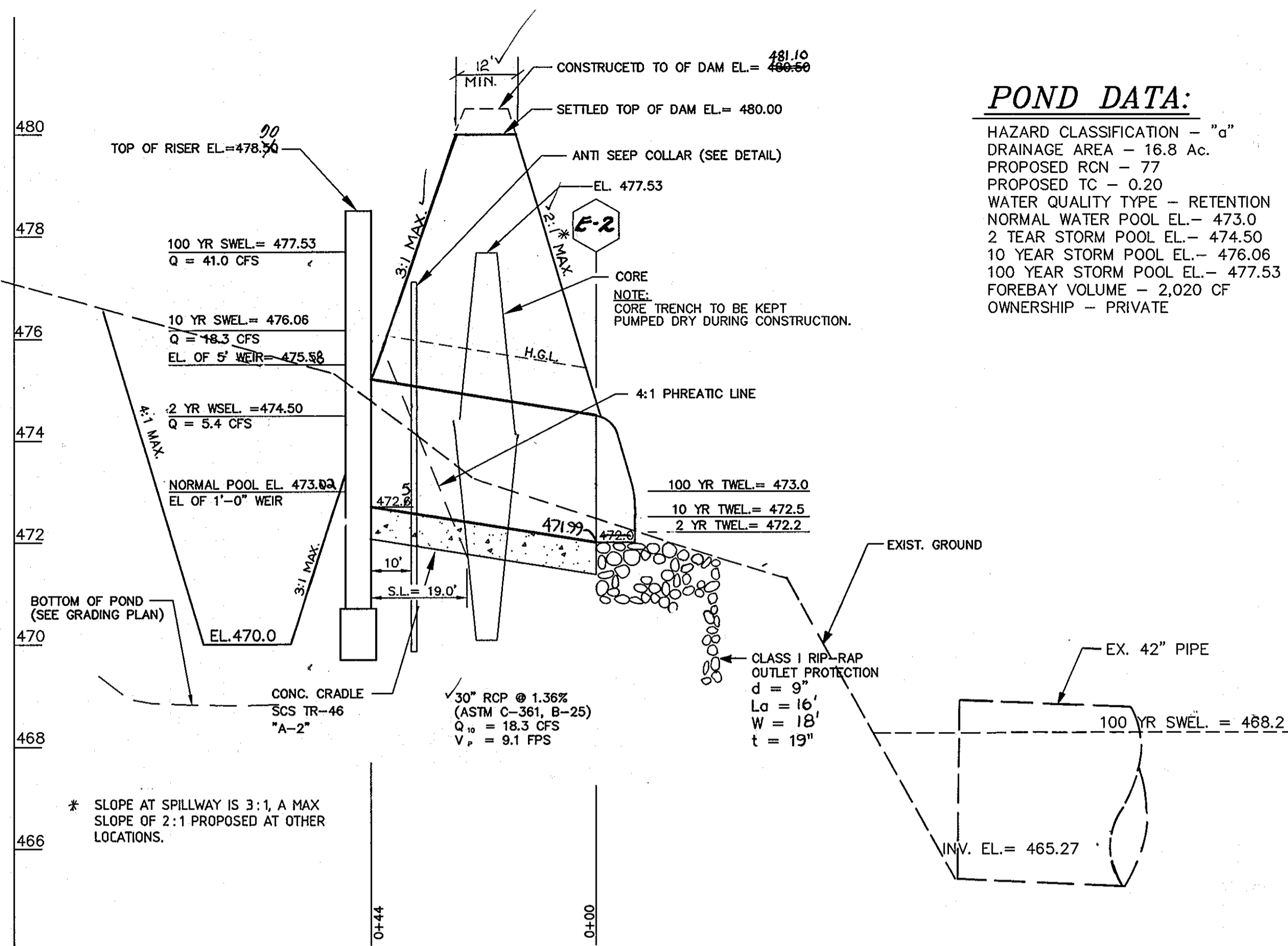
1. The poles do not need to set in concrete. 2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples...

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section. 4. Filter cloth shall be embedded a minimum of 8" into the ground...

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded. 6. Maintenance shall be performed as needed and silt buildups removed when "bumps" develop in the silt fence...

SEDIMENT CONTROL NOTES & DETAILS GTW'S WAVERLY WOODS SECTION 4, AREA 1 LOTS 1 THRU 19 AND PARCELS A THRU E...

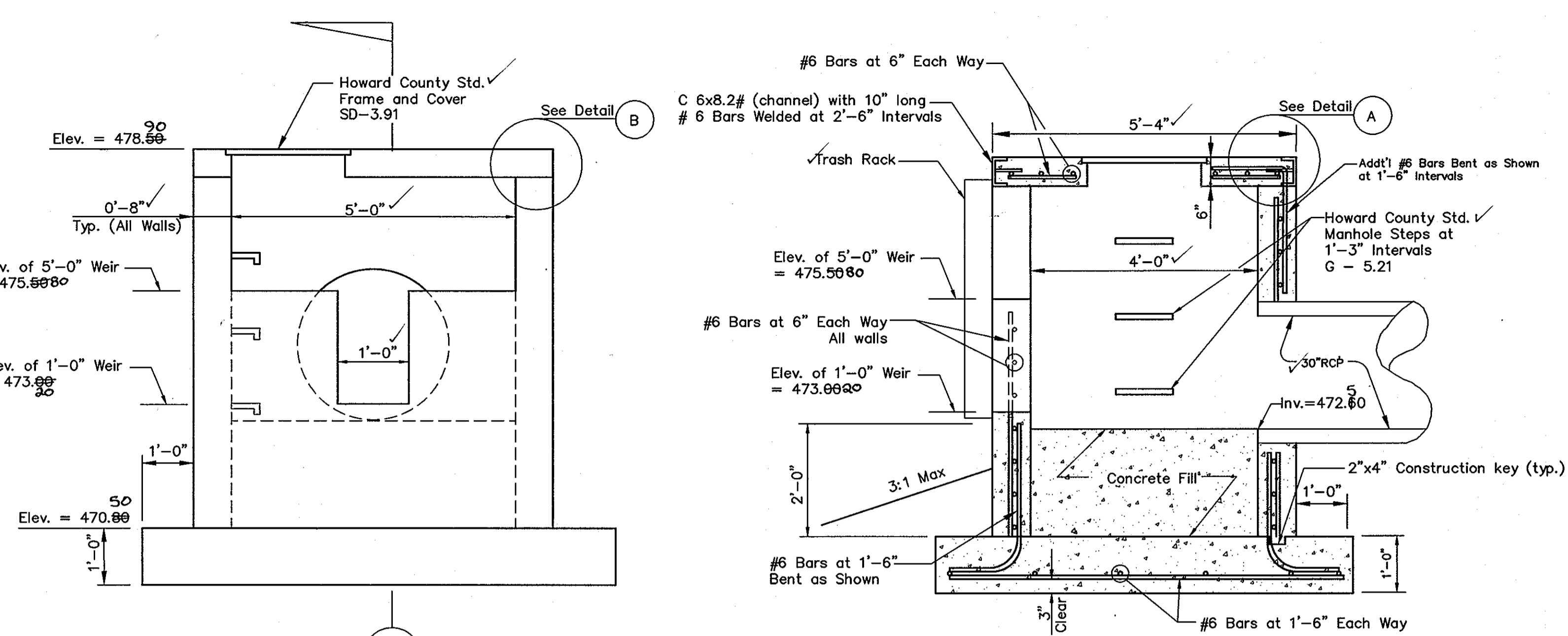




**SWM PRINCIPAL SPILLWAY PROFILE**

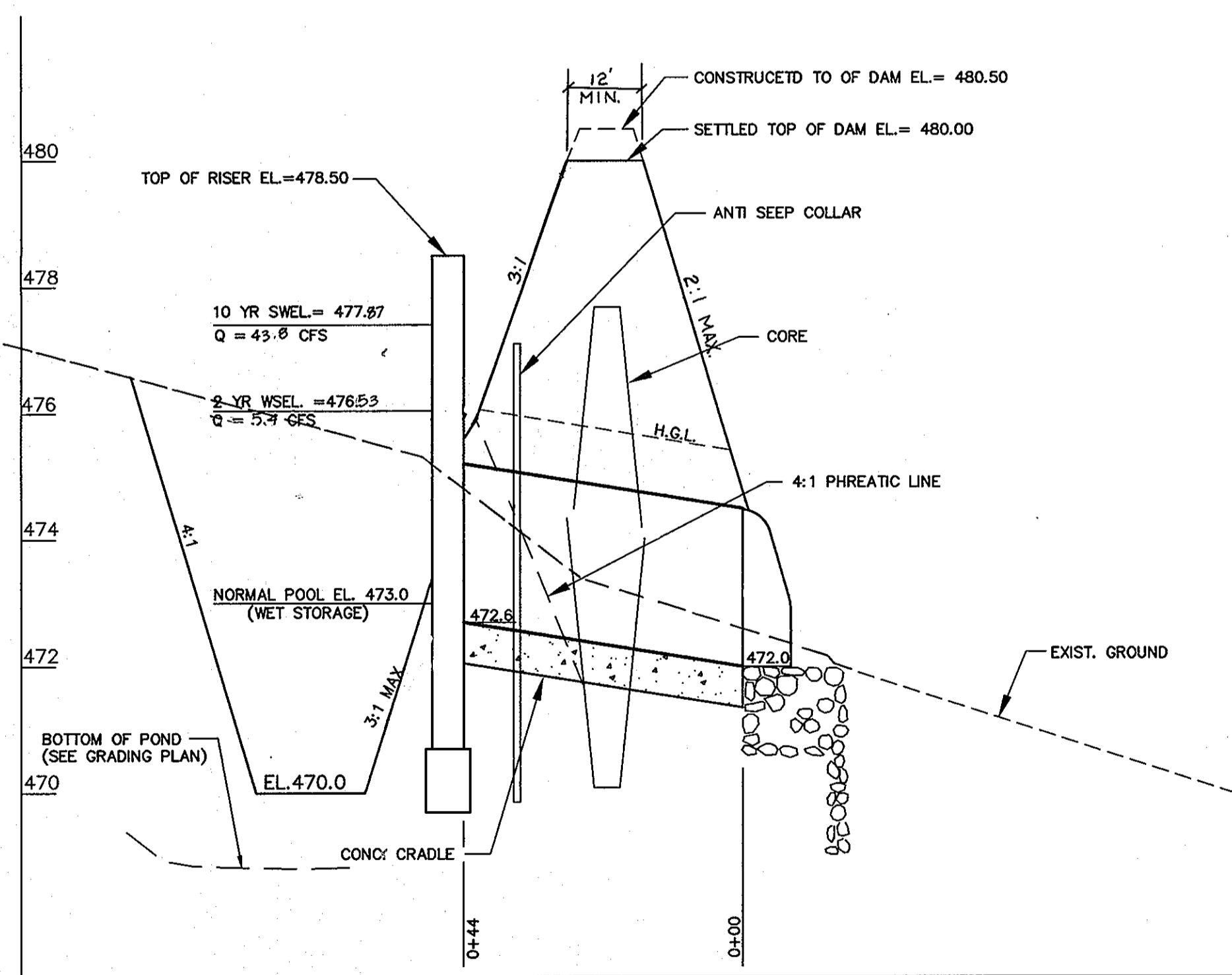
SCALE: HOR: 1"=20'  
VER: 1"=2'

**POND DATA:**  
HAZARD CLASSIFICATION - "a"  
DRAINAGE AREA - 16.8 Ac.  
PROPOSED RCN - 77  
PROPOSED TC - 0.20  
WATER QUALITY TYPE - RETENTION  
NORMAL WATER POOL EL. - 473.0  
2 YEAR STORM POOL EL. - 474.50  
10 YEAR STORM POOL EL. - 476.06  
100 YEAR STORM POOL EL. - 477.53  
FOREBAY VOLUME - 2,020 CF  
OWNERSHIP - PRIVATE



**RISER ELEVATION**

N.T.S.

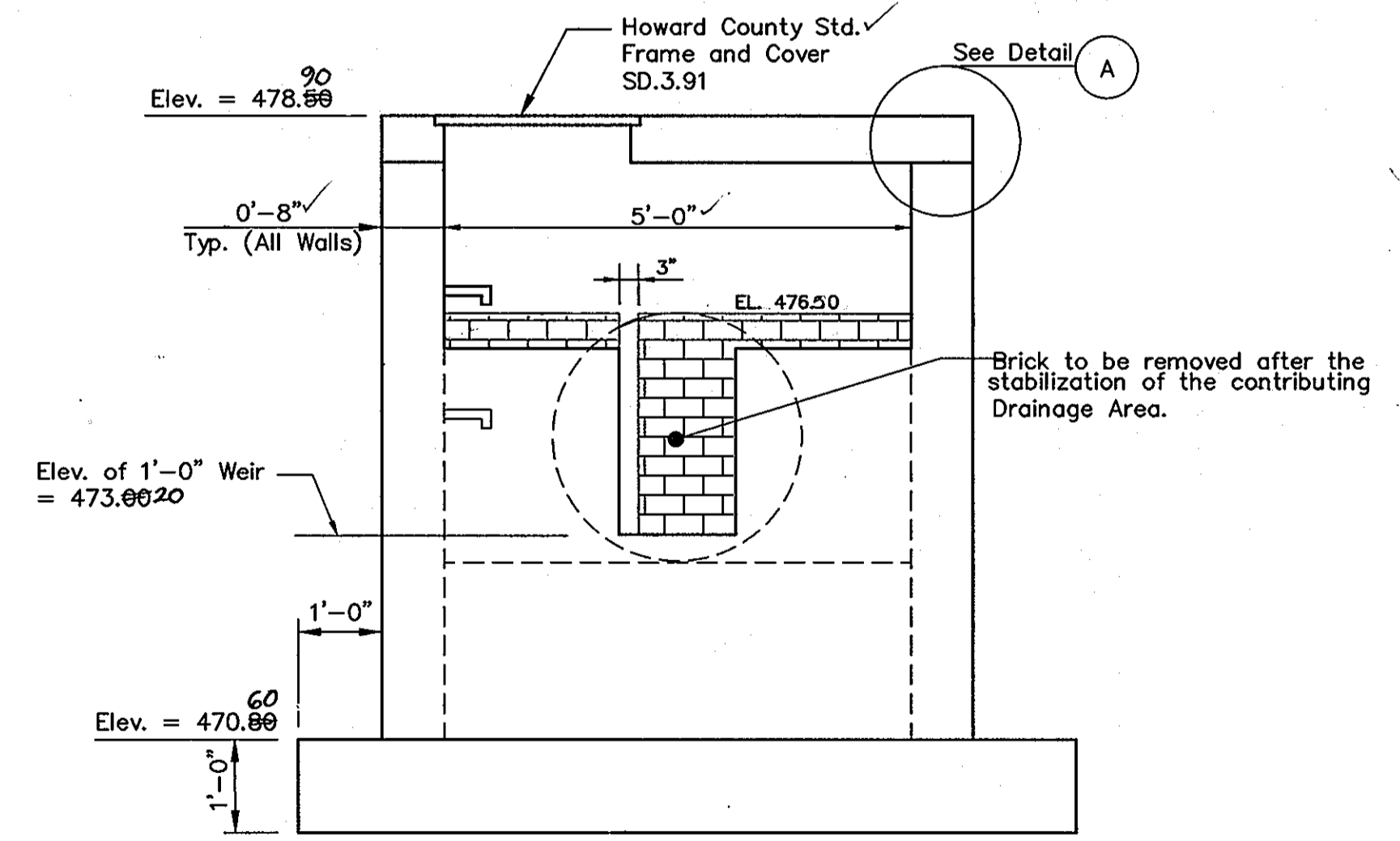


**SWM PRINCIPAL SPILLWAY PROFILE TEMPORARY SWM**

SCALE: HOR: 1"=20'  
VER: 1"=2'

**SEDIMENT CONTROL & TEMP SWM DATA**

POND No. 2  
DRAINAGE AREA - 16.8 Ac.  
PROPOSED RCN - 88  
PROPOSED TC = 0.10  
2 YEAR STORM POOL EL. = 476.08  
10 YEAR STORM POOL EL. = 477.45  
WET STORAGE REQUIRED (SED. CONTROL) = 30,240 C.F.  
WET STORAGE PROVIDED (SED. CONTROL) = 36,250 C.F.  
TYPE - SEDIMENT BASIN  
TOTAL STORAGE REQUIRED = 1.4 Ac. F.F.  
TOTAL STORAGE PROVIDED = 3.4 Ac. F.F.



**RISER ELEVATION - TEMPORARY SWM**

N.T.S.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: \_\_\_\_\_ P.E. NO.: \_\_\_\_\_  
DATE: \_\_\_\_\_

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER: \_\_\_\_\_ DATE: 11-21-95

PRINTED NAME OF DEVELOPER: \_\_\_\_\_

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER: \_\_\_\_\_ DATE: 9-29-95  
R. JACOB HIKMAT  
PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

P. Engler / 2 DATE: 1/25/96  
USDA - NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert J. Ziehm DATE: 1/25/96  
HOWARD SOIL CONSERVATION DISTRICT

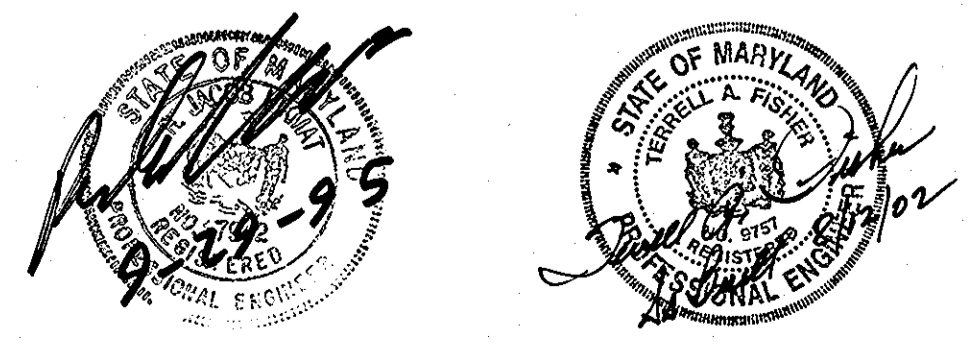
APPROVED: DEPARTMENT OF PUBLIC WORKS

Andrew M. Decker DATE: 1-20-96  
CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Quina J. J. J. DATE: 2/5/96  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

DATE: 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

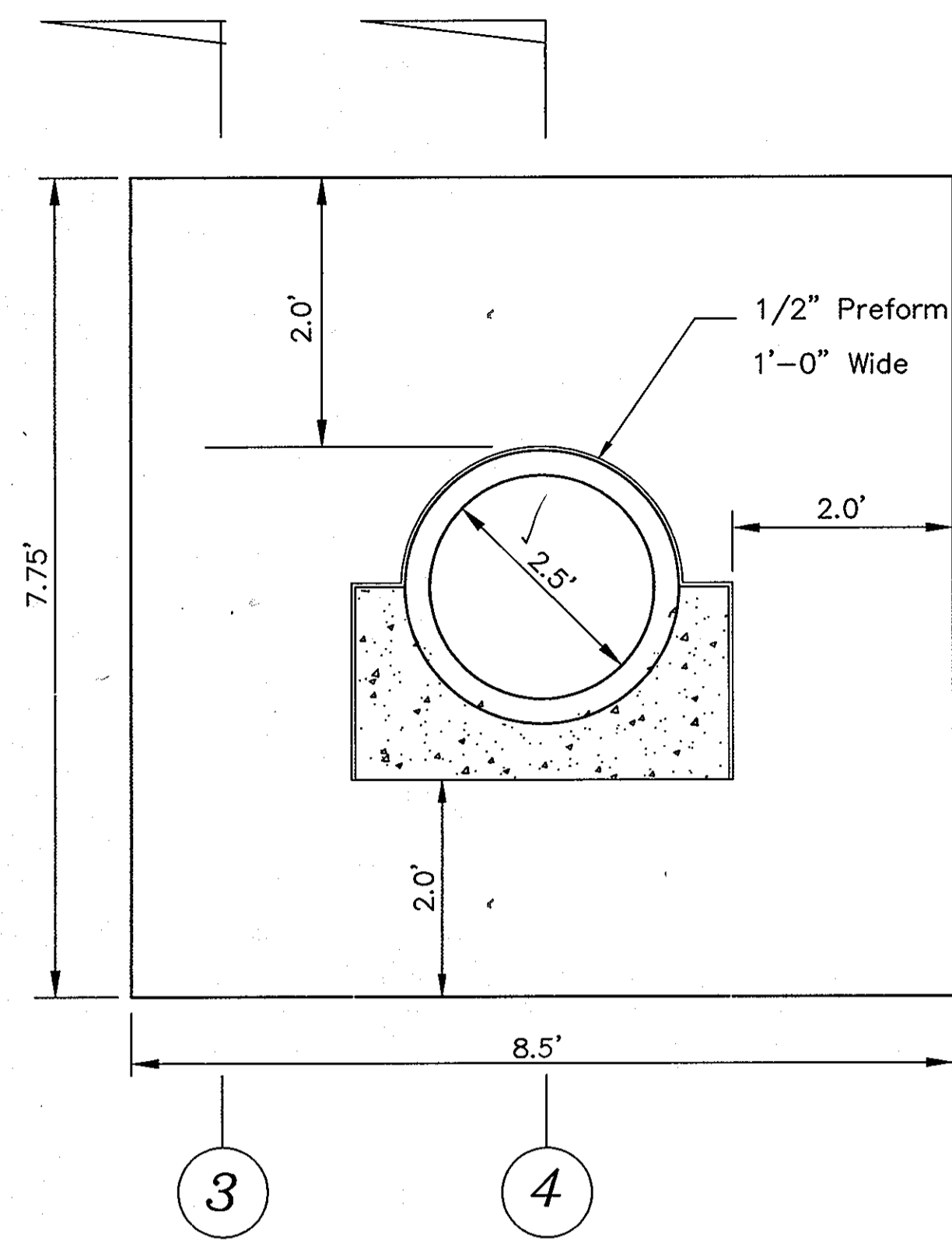


Project	date	approval
94005	MAY 1995	J.H.
illustration	scale	AS SHOWN

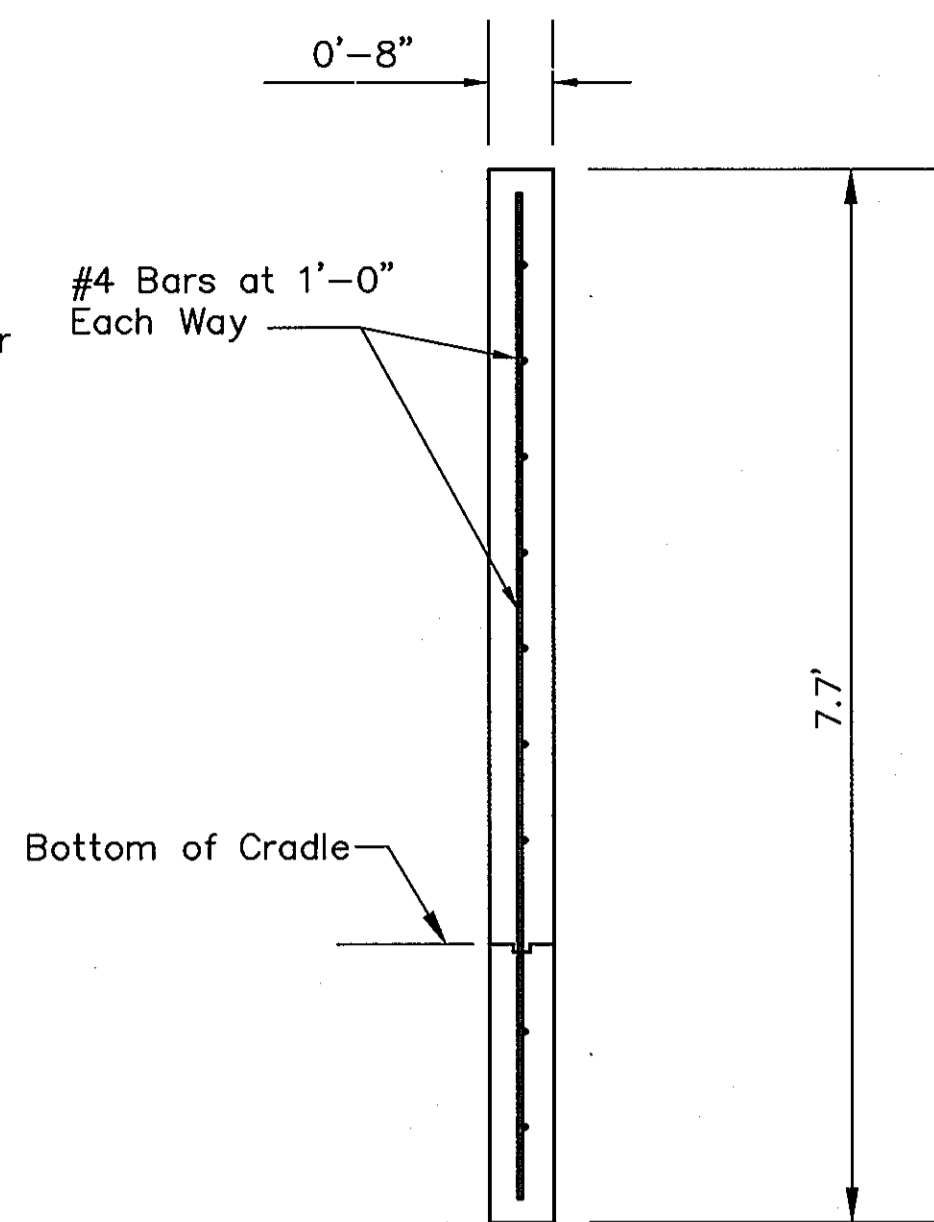
1. RELOCATION OF POND AND ASSOCIATED CHANGES	date	revisions
	10/21/96	

GTW'S WAVERLY WOODS  
SECTION 4, AREA 1  
LOTS 1 THRU 28 & PARCELS A THRU E  
HOWARD COUNTY  
THIRD ELECTION DISTRICT  
SWM POND - 2

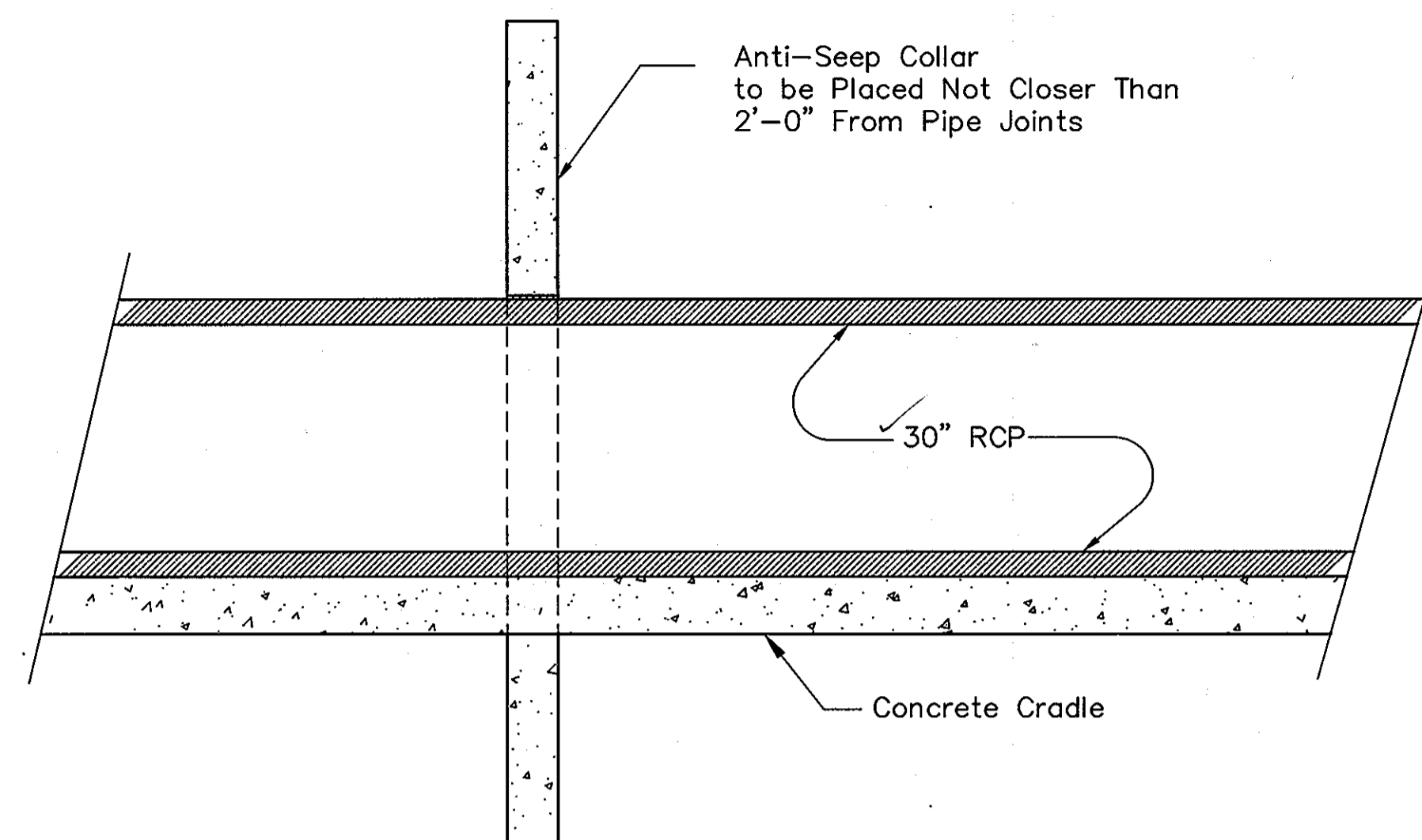
MILDENBERG, BOENDER & ASSOC., INC.  
Engineers Planners Surveyors  
5072 Dorsey Hall Drive, Suite 202, Beltsville, Maryland, 21042  
(410) 987-0296 Fax: (301) 621-5321 Wash. (410) 987-0298 Fax



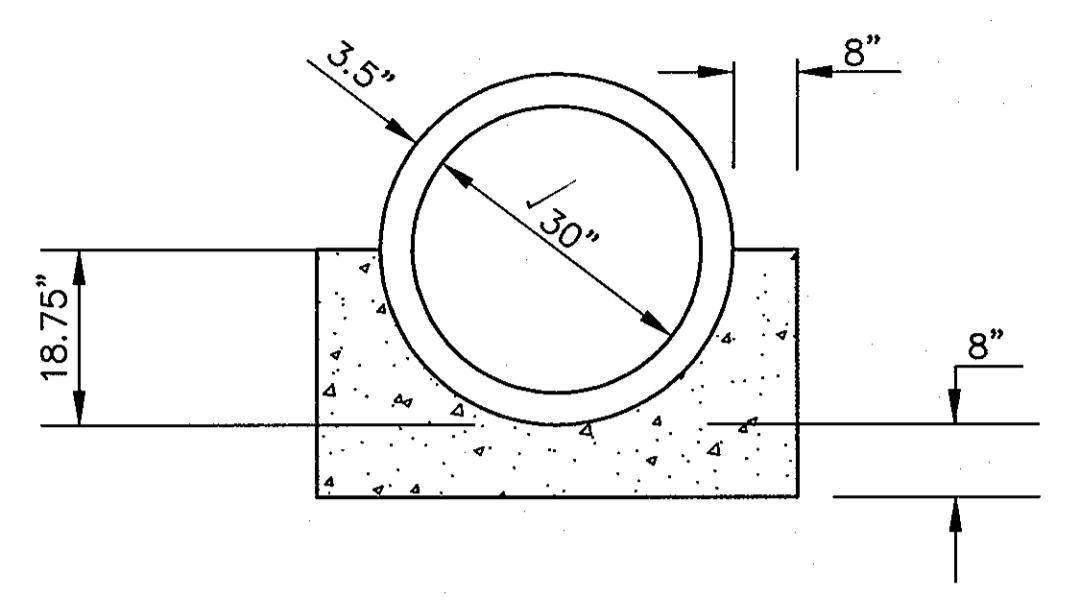
**ANTI-SEEP COLLAR DETAIL**  
N.T.S.



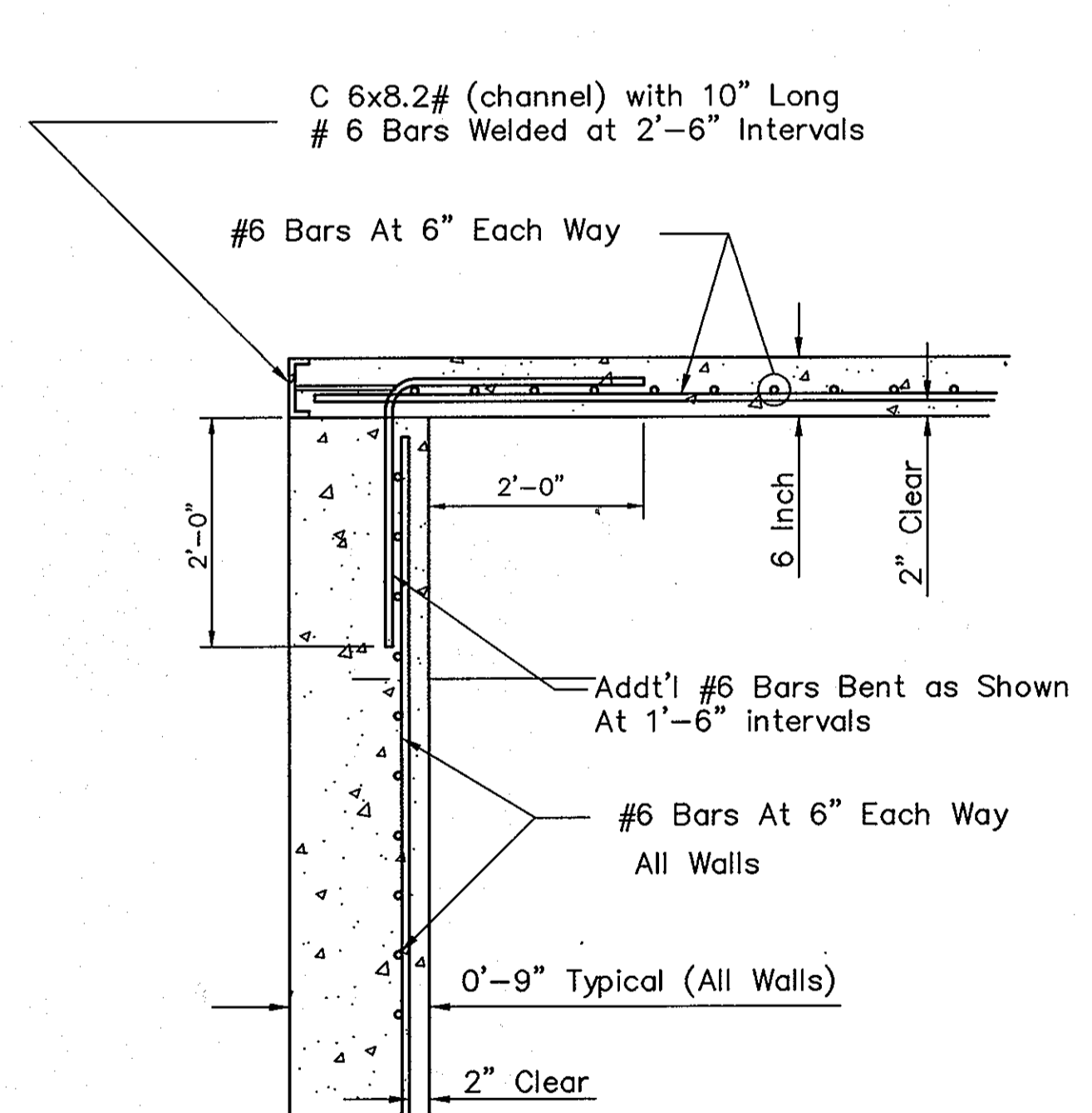
**SECTION 3**  
N.T.S.



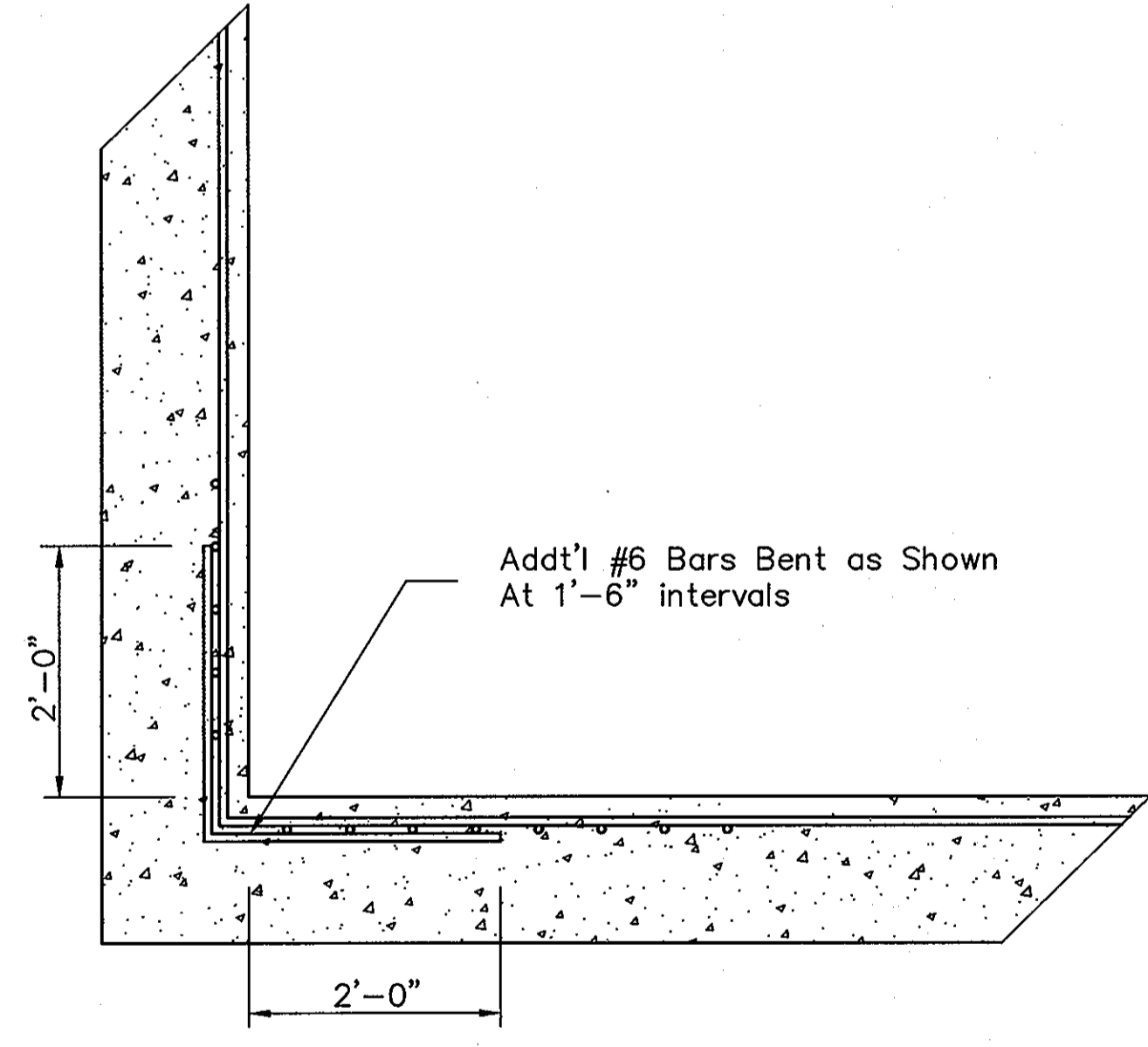
**SECTION 4**  
N.T.S.



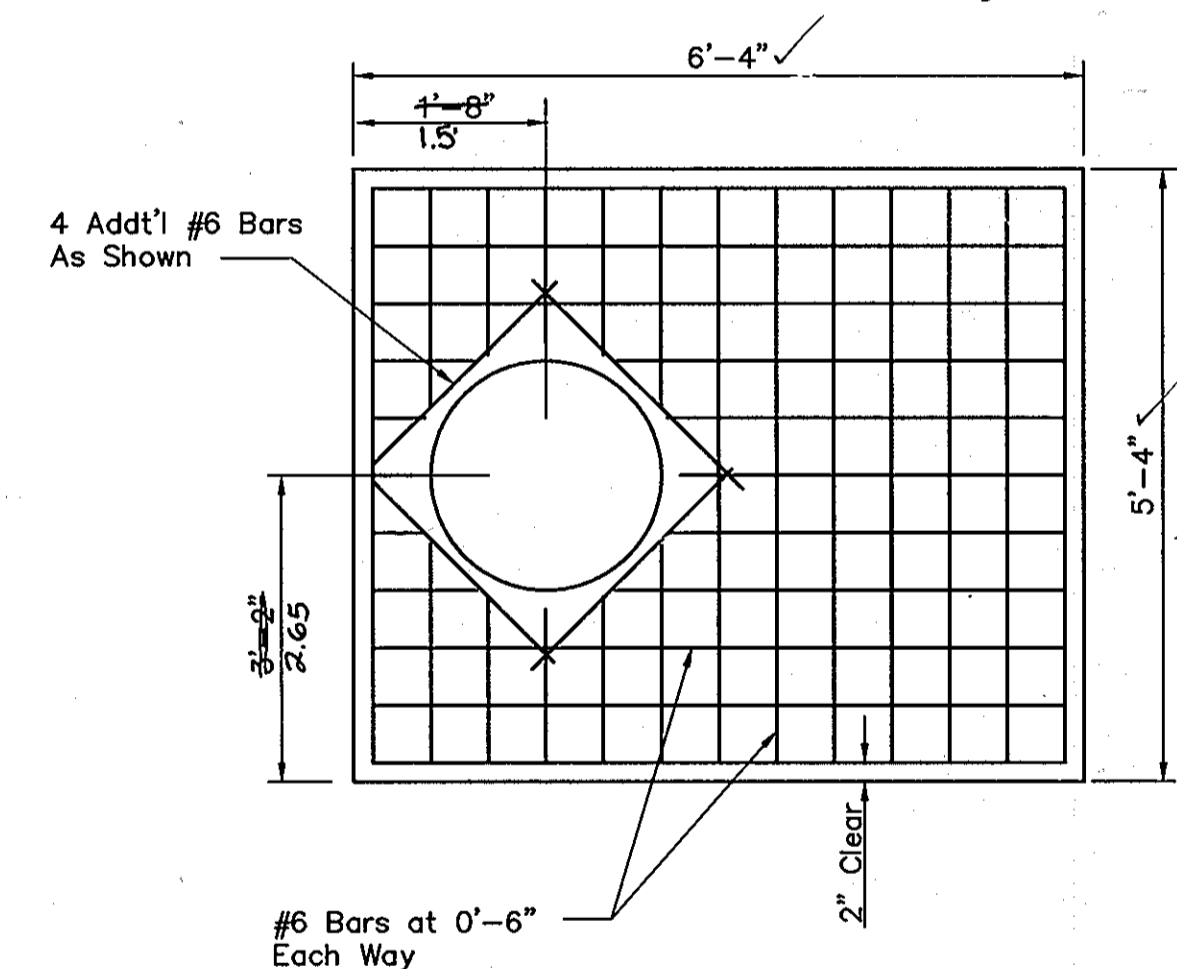
**DETAIL OF CONCRETE CRADLE**  
N.T.S.



**DETAIL A**  
N.T.S.



**CORNER TREATMENT DETAIL**  
N.T.S.



**TOP SLAB DETAIL**  
N.T.S.

**AS-BUILT CERTIFICATION**  
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

\_\_\_\_\_  
SIGNATURE  
P.E. NO.: \_\_\_\_\_  
DATE: \_\_\_\_\_

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

**BY THE DEVELOPER:**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

\_\_\_\_\_  
SIGNATURE OF DEVELOPER  
DATE: 11-21-95  
PRINTED NAME OF DEVELOPER

**BY THE ENGINEER:**  
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

\_\_\_\_\_  
SIGNATURE OF ENGINEER  
DATE: 9-29-95  
PRINTED NAME OF ENGINEER: R. JACOB HIKMAT

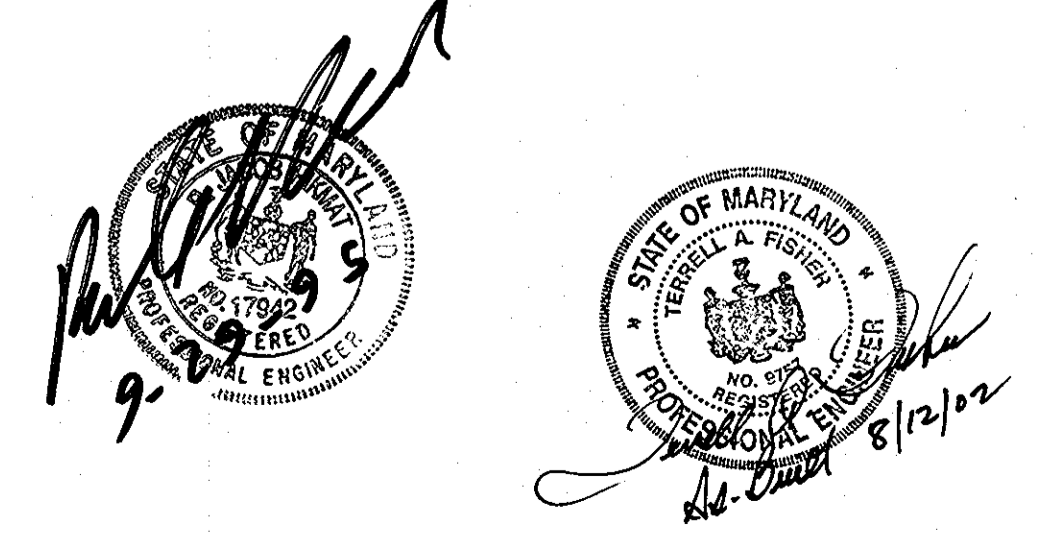
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
P. Engler/3  
USDA - NATURAL RESOURCES CONSERVATION SERVICE  
DATE: 1/25/96

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
R. J. Zickler  
HOWARD SOIL CONSERVATION DISTRICT  
DATE: 1/25/96

APPROVED: DEPARTMENT OF PUBLIC WORKS  
\_\_\_\_\_  
CHIEF BUREAU OF HIGHWAYS  
DATE: 1-30-96

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
\_\_\_\_\_  
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH  
DATE: 2/15/96

\_\_\_\_\_  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 2/19/96



AS-BUILT-8-12-02

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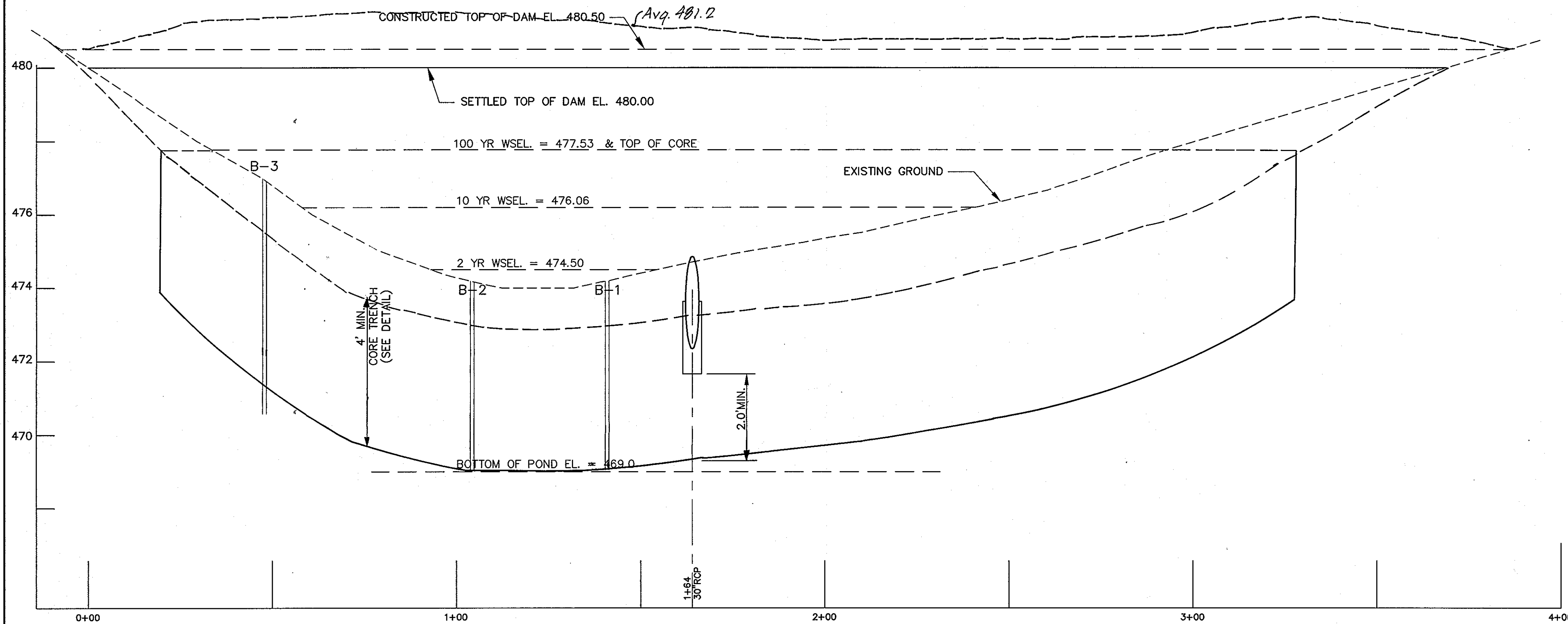
Project	94005	date	AUG. 95
Illustration	M.P.	engineering	J.H.
scale		approval	AS SHOWN J.H.

no.		description		date	
		revisions			

GTW'S WAVERLY WOODS  
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LOTS 1 THRU 28 & PARCELS A THRU E  
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SWM POND - 2

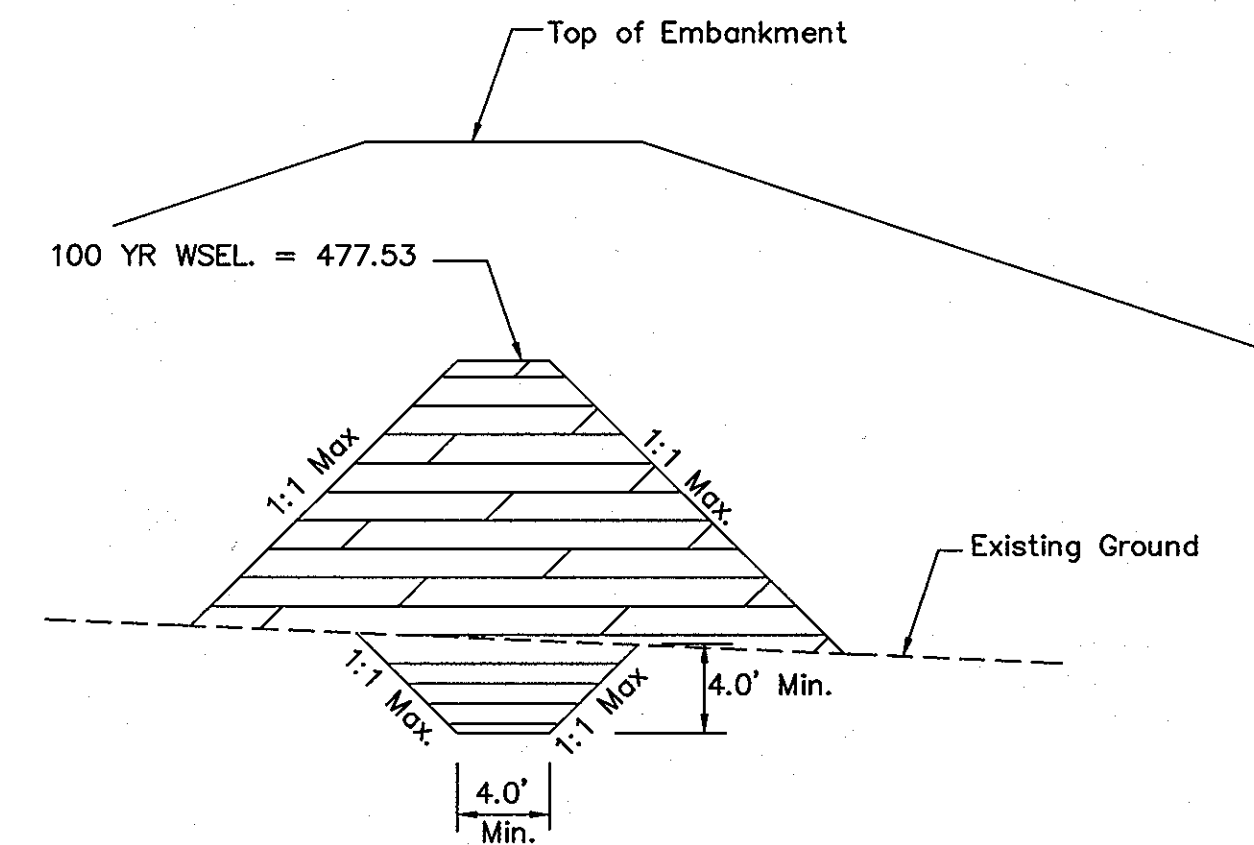
MILDENBERG, BOENDER & ASSOC., INC.  
Engineers Planners Surveyors  
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 997-0296 Fax. (301) 821-5521 Wash. (410) 997-0298 Fax.





**E TOP OF DAM PROFILE**

SCALE: HOR: 1"=20'  
VER: 1"=2'

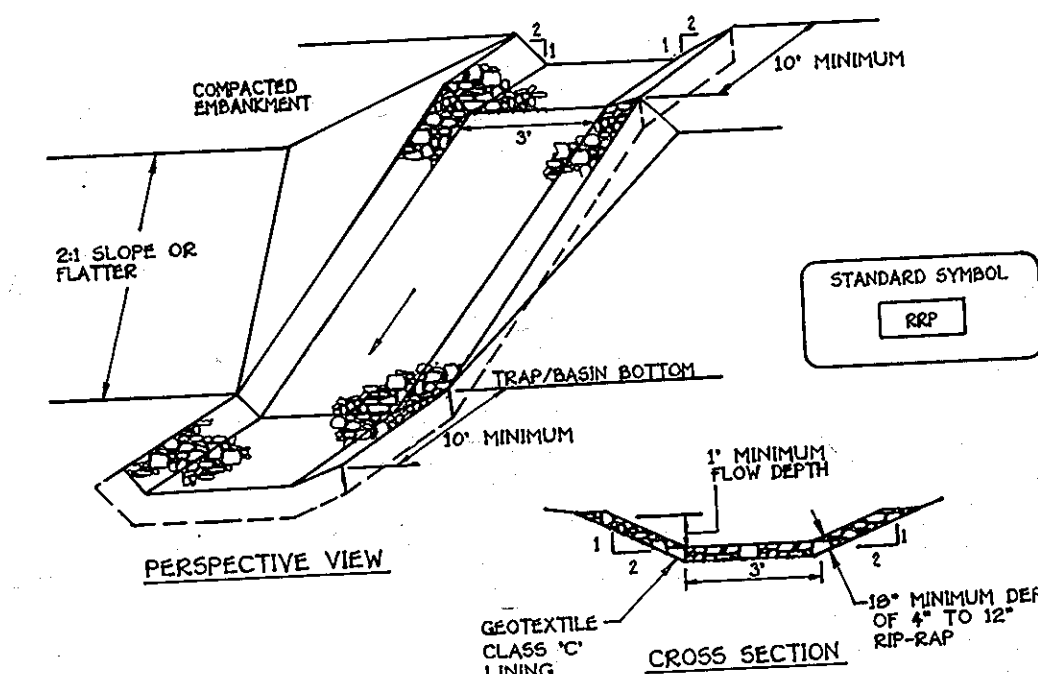


**CORE TRENCH DETAIL**

N.T.S.

**NOTES:**

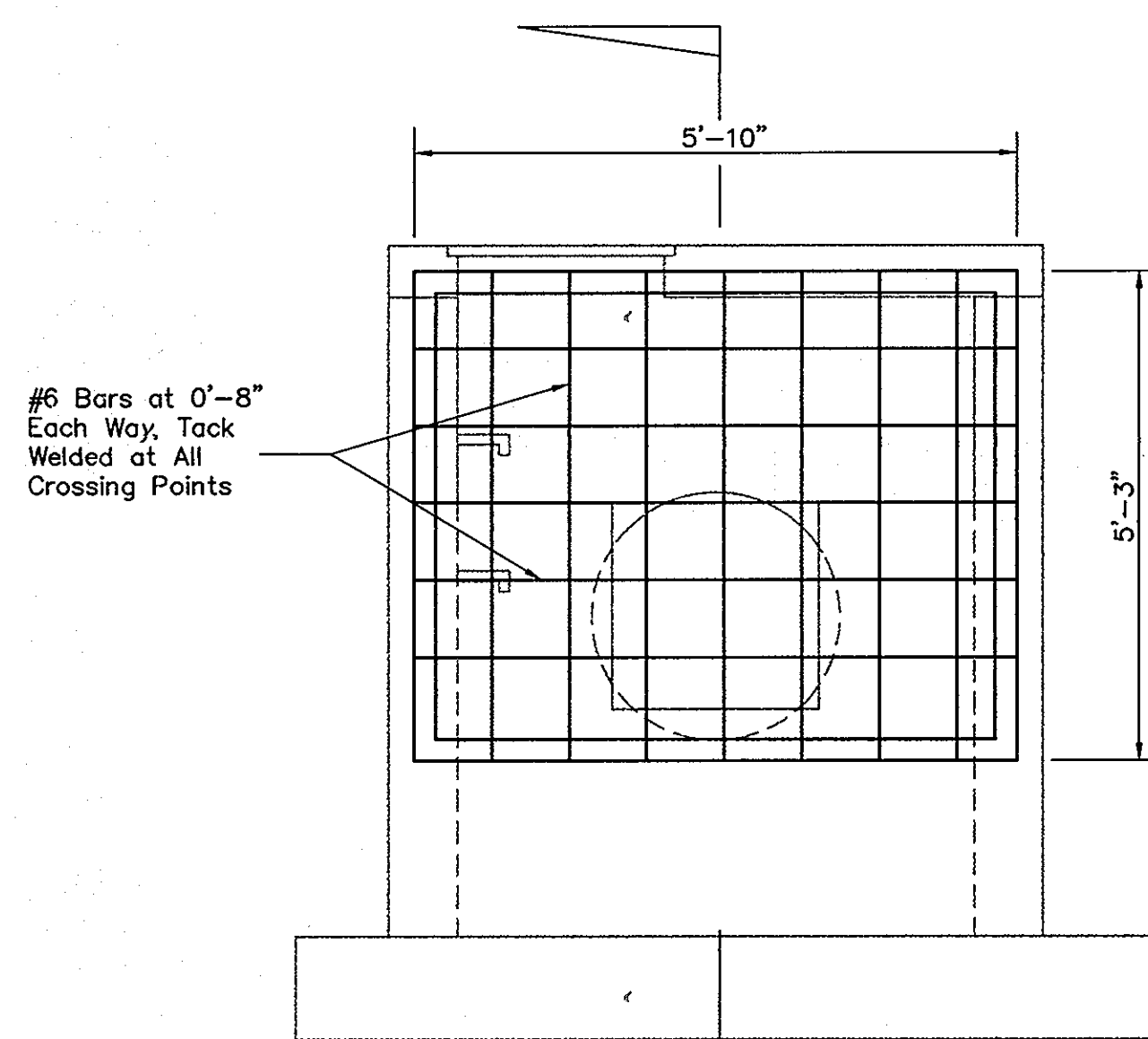
- CENTER CUTOFF TRENCH ON CENTERLINE OF DAM UNLESS OTHERWISE SHOWN.
- IMPERVIOUS FILL SHALL MEET U.S. CLASSIFICATION "CL" OR "CS"
- COMPACT TO 95% OF AASHTO T-99 DENSITY.
- SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER.
- TRENCH SHALL EXTEND ALONG CENTERLINE OF FILL TO MINIMUM DEPTH OF 4 FEET BELOW EXISTING GRADE.
- CUTOFF TRENCH TO EXTEND 2'-2" FEET BELOW ALL PIPES, STRUCTURES, ETC.



**Construction Specifications**

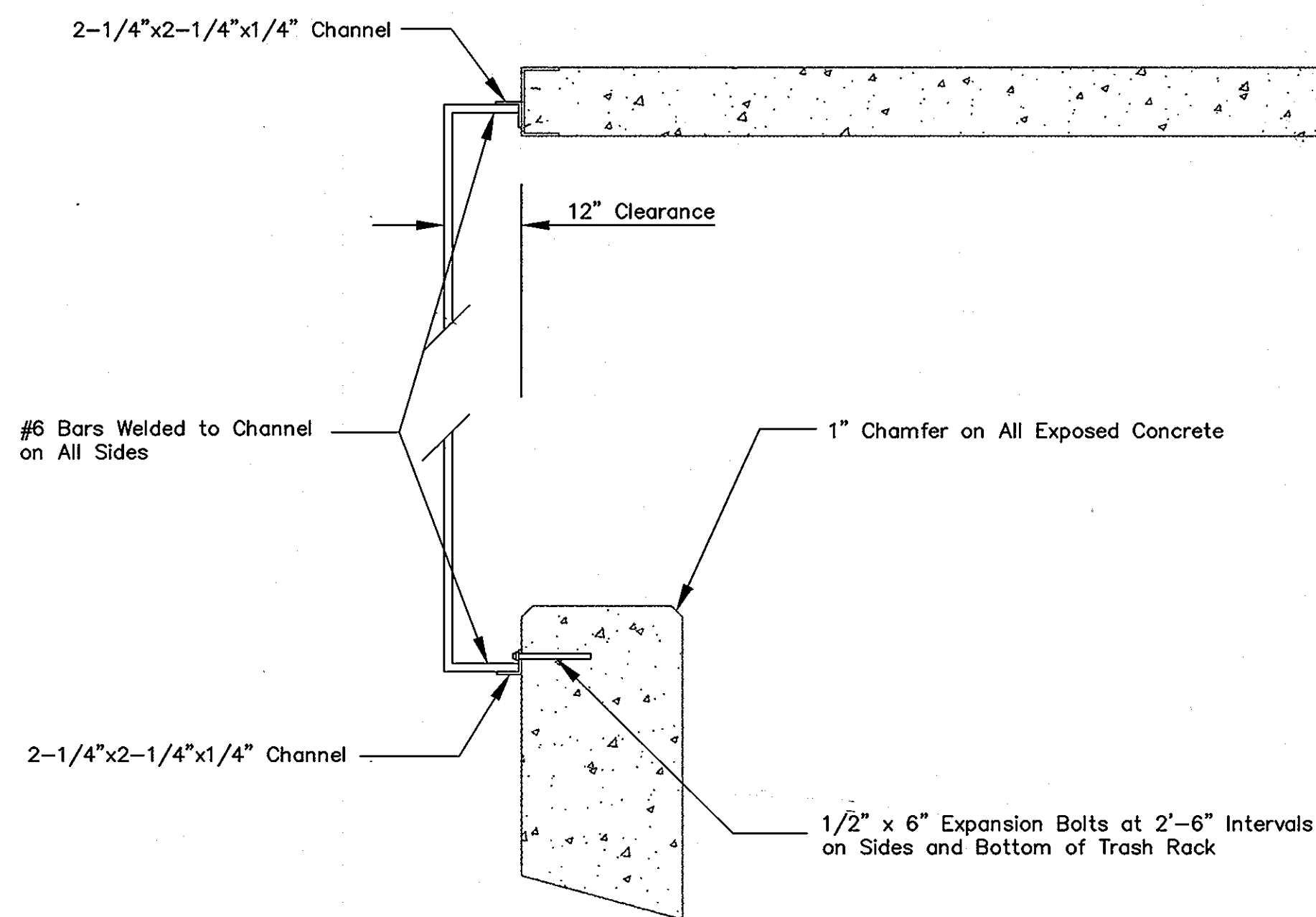
- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 10".
- Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
- Entrance and exit sections shall be installed as shown on the detail section.
- Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
- Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
- Rip-rap should blend into existing ground.
- Rip-rap inflow protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale Lining criteria.

**RIP-RAP INFLOW PROTECTION DETAIL**  
N.T.S.



**TRASH RACK ELEVATION**

N.T.S.



**SECTION 2**

N.T.S.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

P.E. NO.: \_\_\_\_\_  
DATE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER: \_\_\_\_\_ DATE: 11-21-95

PRINTED NAME OF DEVELOPER: \_\_\_\_\_

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER: \_\_\_\_\_ DATE: 9-29-95

PRINTED NAME OF ENGINEER: R. JACOB HIKMAT

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

P. Engler 1/2 DATE: 1/25/96

USDA - NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Polatw. Zichm DATE: 1/25/96

HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS

\_\_\_\_\_ DATE: 1-30-96

CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Gina Surmann DATE: 2/5/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

\_\_\_\_\_ DATE: 2/1/96

CHIEF, DEVELOPMENT ENGINEERING DIVISION

Project	94005	date	AUG. 95
Illustration	M.P.	engineering	J.H.
scale	AS SHOWN	approval	J.H.

1	RELOCATION OF POND AND ASSOCIATED CHANGES	10/31/96
no.	description	date
	revisions	

GTW'S WAVERLY WOODS  
SECTION 4, AREA 1  
LOTS 1 THRU 28 & PARCELS A THRU E  
HOWARD COUNTY  
THIRD ELECTION DISTRICT  
SWM POND - 2

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 987-0286 Fax (301) 621-5521 Wash. (410) 997-0288 Fax

# POND CONSTRUCTION & SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

## SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED TO THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUALITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

## EARTH FILL

MATERIAL—THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

PLACEMENT—AREAS ON WHICH FILL IS TO BE SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION—THE MOVEMENT OF AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVELED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY FOUR COMPLETE PASSES OF STAMPS OR SHEEPSFOOT, RUBBER TIRRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHERE A MINIMUM REQUIRED DENSITY IS SPECIFIED, IT SHALL NOT BE LESS 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ± 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99.

CUT OFF TRENCH—THE CUFF OFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

## STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED EQUIPMENT THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

## PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE—ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE: 1. MATERIALS—(STEEL PIPE)—THIS PIPE AND ITS APPURTENANCES SHALL BE GALVANIZED AND FULLY BITUMINOUS COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A WITH WATER TIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS OR AN APPROVED EQUAL MAY BE USED: NEXON, PLASTI-COTE, BLAC-KLAD, AND BETH-CU-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-246.

MATERIALS—(ALUMINUM COATED STEEL PIPE)—THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.

MATERIALS—(ALUMINUM PIPE)—THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS—ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE RISER AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE ROLLED AND ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPE LESS THAN 24" IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE, A 12" WIDE STANDARD LAP TYPE BAND WITH 12" WIDE BY 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12" WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING MINIMUM DIAMETER OF 1/2" GREATER THAN THE CORRUGATION DEPTH. PIPES 24" IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24" LONG ANNUAL CORRUGATED BAND USING RODS AND LUGS. A 12" WIDE BY 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED ON THE END OF EACH PIPE FOR A TOTAL OF 24".

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING—THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE—ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS—REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.

2. BEDDING—ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE DRAWINGS.

3. LAYING PIPE—BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

POLYVINYL CHLORIDE (PVC) PIPE—ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR POLYVINYL CHLORIDE (PVC) PIPE:

1. MATERIALS—PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING—THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

## CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 905.

THE RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE REPLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 919.12.2.

## CARE OF WATER DURING CONSTRUCTION

SOIL ON THE PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE AND MAINTAIN ALL NECESSARY PERMANENT WORKS. THE REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF THE REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL AND CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO PUMPS FROM WHICH THE WATER SHALL BE PUMPED.

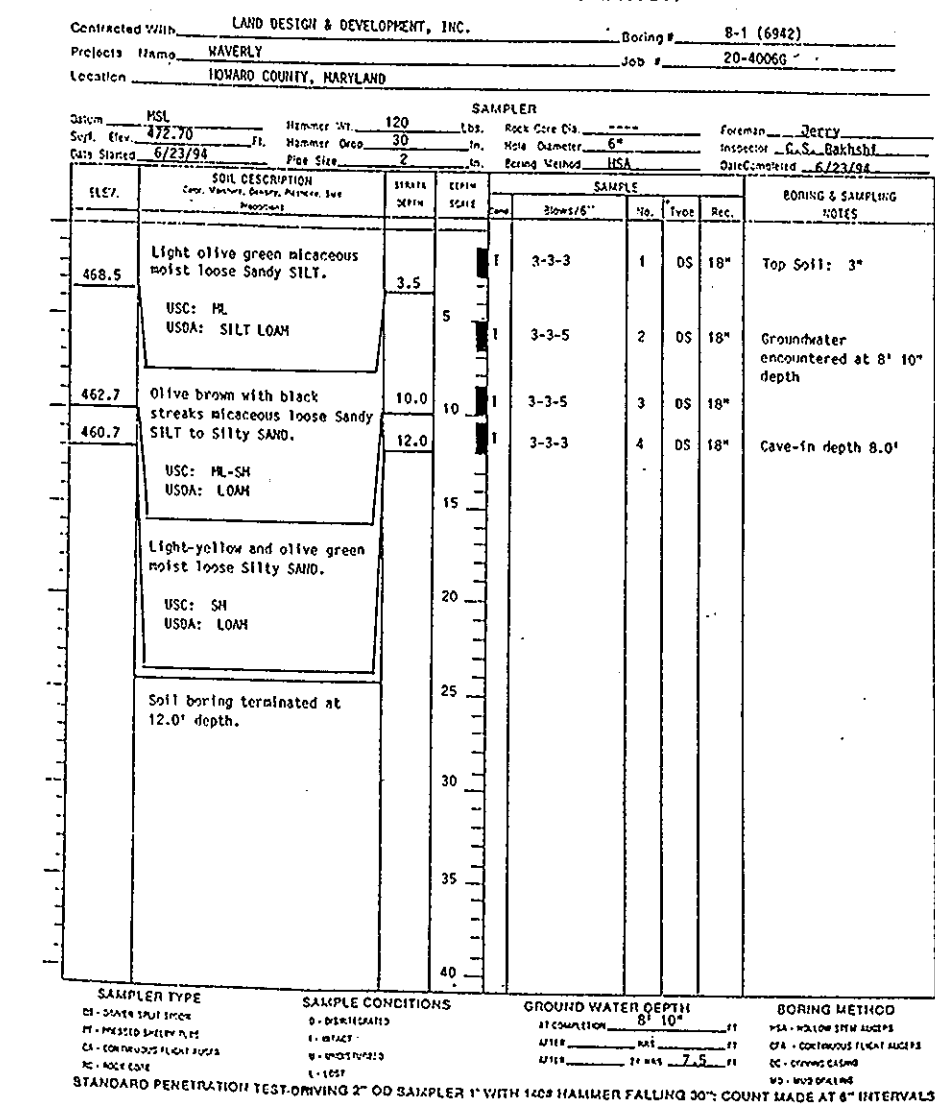
## STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL, AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE MARYLAND SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

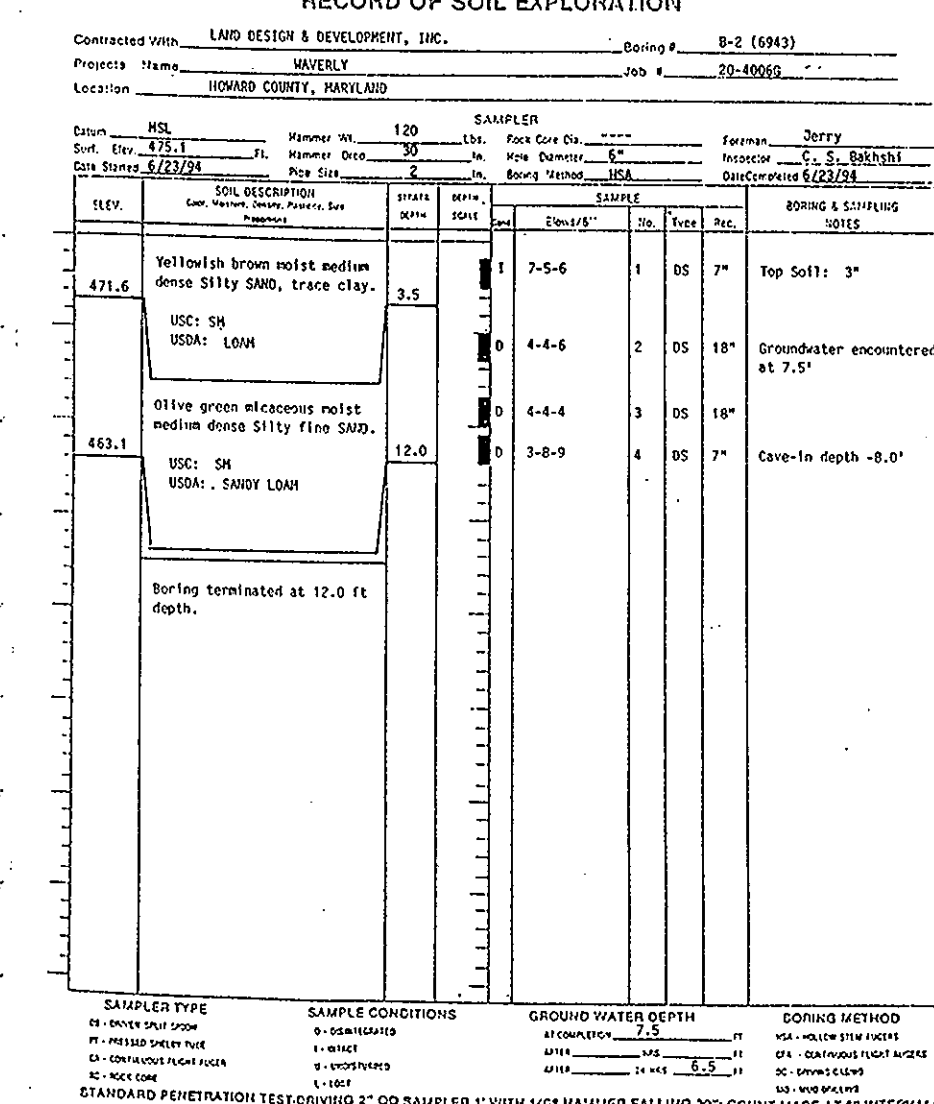
## EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

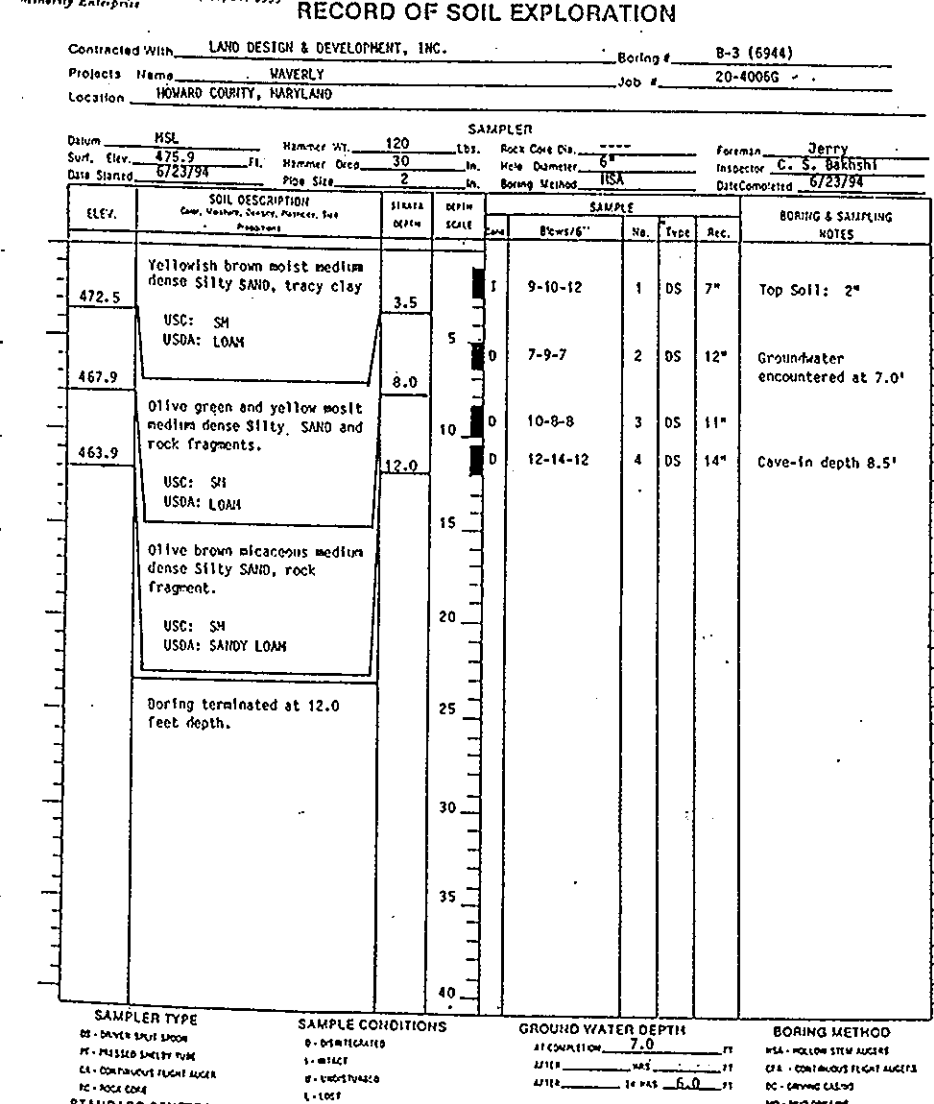
## RECORD OF SOIL EXPLORATION



## RECORD OF SOIL EXPLORATION



## RECORD OF SOIL EXPLORATION



## OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378). THE POND OWNER(S) AND THE HEIRS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

BY THE DEVELOPER: *[Signature]* P.E. NO. DATE

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER: *[Signature]* DATE

BY THE ENGINEER: I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

BY THE ENGINEER: *[Signature]* DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA - NATURAL RESOURCES CONSERVATION SERVICE *[Signature]* DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. *[Signature]* DATE

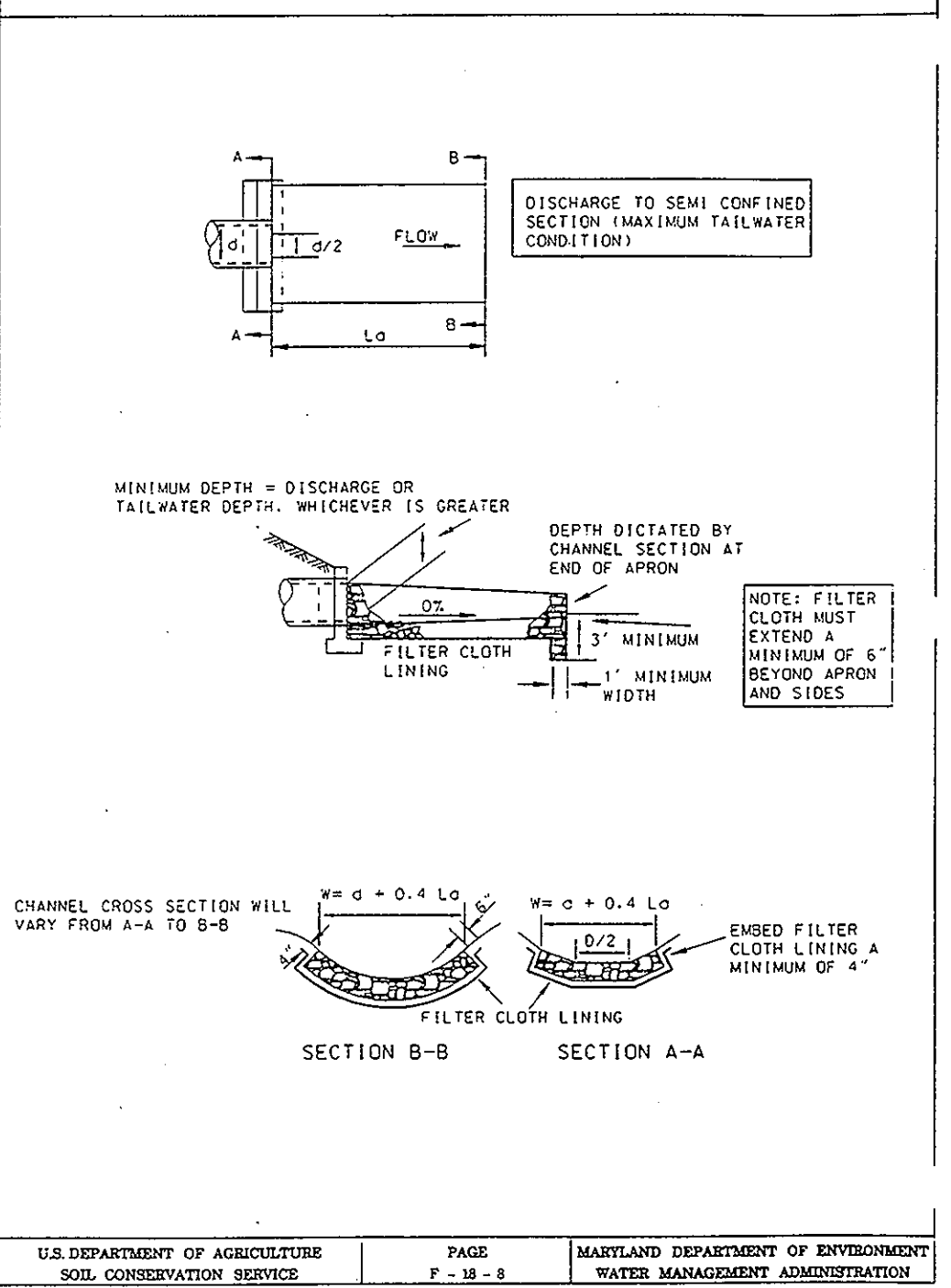
APPROVED: DEPARTMENT OF PUBLIC WORKS *[Signature]* DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING *[Signature]* DATE

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH *[Signature]* DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* DATE

DETAIL 25 - ROCK OUTLET PROTECTION I



PROJECT: 94005  
DATE: AUG 1995  
ILLUSTRATION: Engineering  
SCALE: M.P.  
APPROVAL: J.H.  
DESIGNED BY: AS SHOWN I.M.

DATE: [ ]  
DESCRIPTION REVISIONS: [ ]

HOWARD COUNTY  
THIRD ELECTION DISTRICT

GTWS WAVERLY WOODS  
SECTION 4, AREA 1  
LOTS 1 THRU 4 & PARCELS A THRU E  
THIRD ELECTION DISTRICT

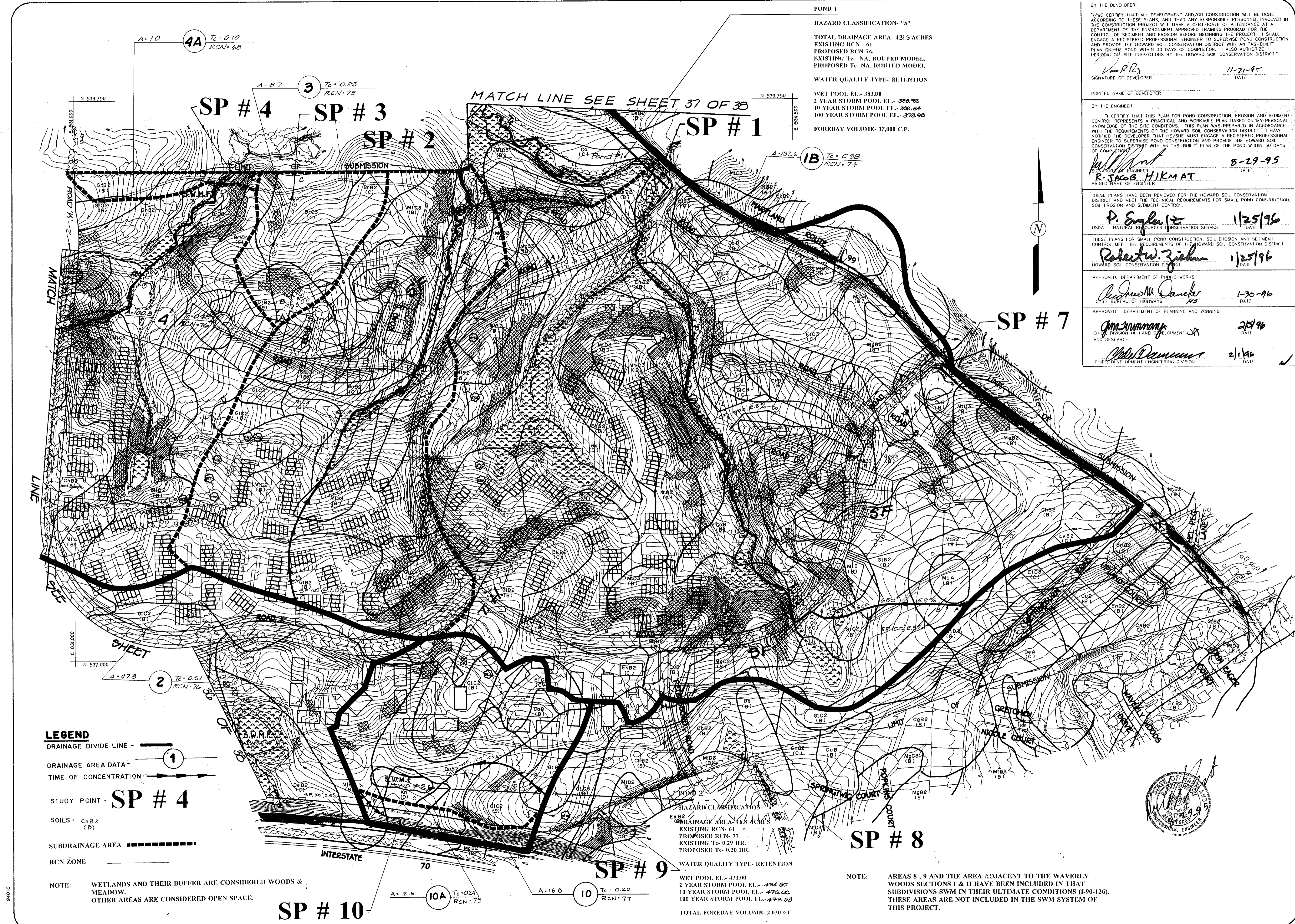
SWM POND - 2

MILDENBERG, BOENDER & ASSOC., INC.  
Engineers Planners Surveyors  
5072 Dorsey Hall Drive, Suite 202, Elkton City, Maryland 21042  
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 987-0980 Fax.

1253

F 95-173

1253



**POND 1**  
 HAZARD CLASSIFICATION - "a"  
 TOTAL DRAINAGE AREA - 431.9 ACRES  
 EXISTING RCN - 61  
 PROPOSED RCN - 74  
 EXISTING Tc - NA, ROUTED MODEL  
 PROPOSED Tc - NA, ROUTED MODEL  
 WATER QUALITY TYPE - RETENTION  
 WET POOL EL. - 383.08  
 2 YEAR STORM POOL EL. - 395.72  
 10 YEAR STORM POOL EL. - 396.84  
 100 YEAR STORM POOL EL. - 393.98  
 FOREBAY VOLUME - 37,000 C.F.

**POND 2**  
 HAZARD CLASSIFICATION - "a"  
 TOTAL DRAINAGE AREA - 16.8 ACRES  
 EXISTING RCN - 61  
 PROPOSED RCN - 77  
 EXISTING Tc - 0.29 HR.  
 PROPOSED Tc - 0.20 HR.  
 WATER QUALITY TYPE - RETENTION  
 WET POOL EL. - 473.00  
 2 YEAR STORM POOL EL. - 474.80  
 10 YEAR STORM POOL EL. - 472.00  
 100 YEAR STORM POOL EL. - 477.53  
 TOTAL FOREBAY VOLUME - 2,020 CF

- LEGEND**
- DRAINAGE DIVIDE LINE —
  - ① DRAINAGE AREA DATA
  - TIME OF CONCENTRATION →
  - SP # 4 STUDY POINT
  - SOILS - ChB2 (B)
  - SUBDRAINAGE AREA -----
  - RCN ZONE

NOTE: WETLANDS AND THEIR BUFFER ARE CONSIDERED WOODS & MEADOW. OTHER AREAS ARE CONSIDERED OPEN SPACE.

BY THE DEVELOPER:  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *[Signature]* DATE: 11-21-95  
 PRINTED NAME OF DEVELOPER: \_\_\_\_\_

BY THE ENGINEER:  
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Signature: *[Signature]* DATE: 8-29-95  
 PRINTED NAME OF ENGINEER: R. TACB HIKMAT

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

P. Engler, ES DATE: 1/25/96  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE

Robert W. Ziehm DATE: 1/25/96  
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 Signature: *[Signature]* DATE: 1-30-96  
 CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Signature: *[Signature]* DATE: 2/5/96  
 CHIEF DIVISION OF LAND DEVELOPMENT AND RESEARCH

Signature: *[Signature]* DATE: 2/1/96  
 CHIEF OF ENVIRONMENTAL ENGINEERING DIVISION

project	date	approval
94005	OCT 1994	engineering
illustration		RJH
SAS		scale
1"=200'		approval

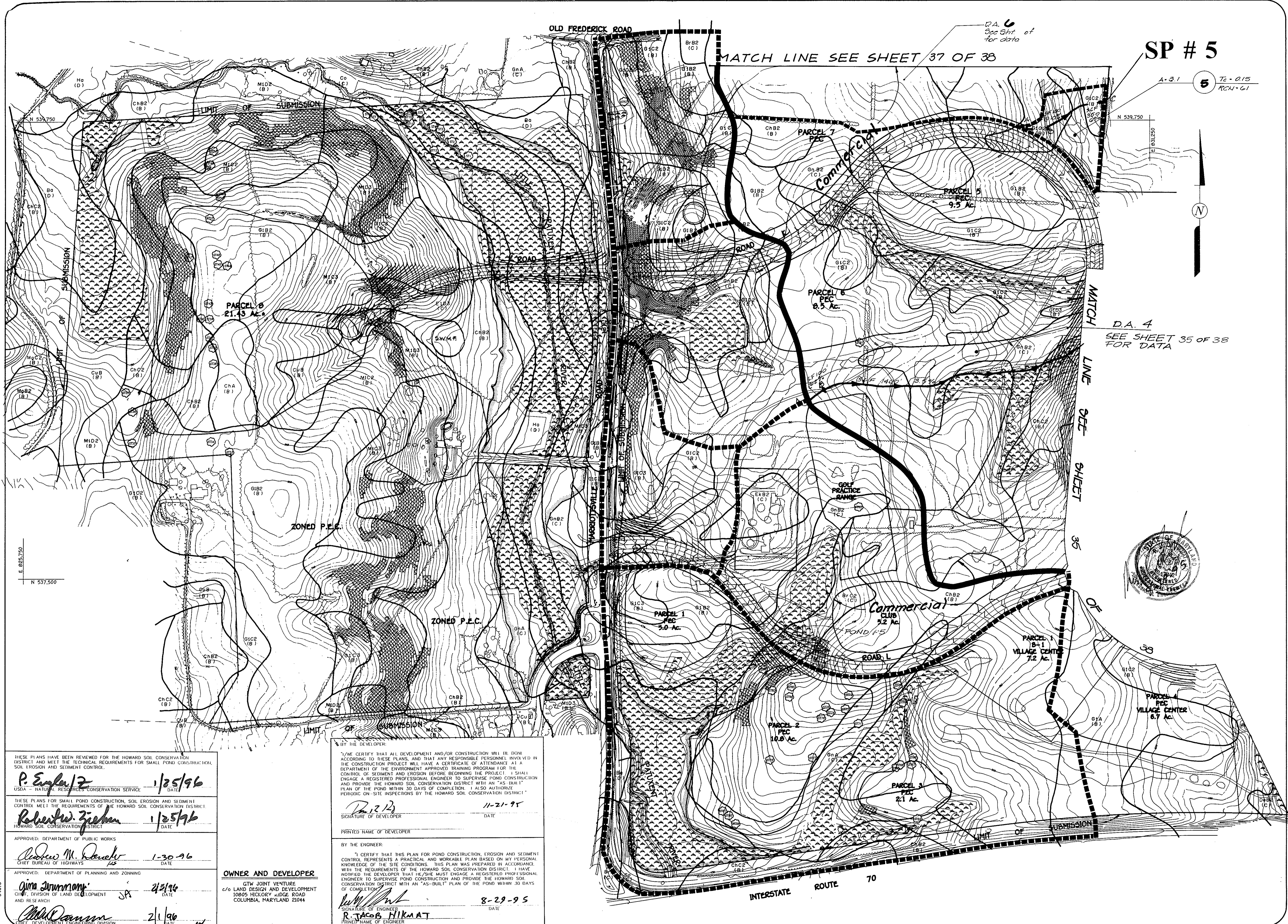
no.	description	date
0	SUBMITTED	
	revisions	

**GTW'S WAVERLY WOODS**  
 HOWARD COUNTY, MARYLAND  
 3RD ELECTION DISTRICT, CENSUS TRACT 6030  
 TAX MAP 16, PARCELS 20, 21, 234, AND 406

**PROPOSED CONDITION DRAINAGE AREA MAP**

**MILDENBERG ASSOCIATES, INC.**  
 Engineers Planners Surveyors  
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042  
 (410) 997-0296 Fax: (301) 821-5521 Wash. (410) 997-0298 Fax.

1253



THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

**P. Engler** / 2 1/25/96  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

**Robert W. Ziehm** / 1/25/96  
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
**Andrew M. Ruchel** / 1-30-96  
 CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
**Gina Jaramony** / 2/3/96  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

**Alan Damon** / 2/1/96  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

**R. J. K. / 2** 11-21-95  
 SIGNATURE OF DEVELOPER DATE

PRINTED NAME OF DEVELOPER

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE ADVISED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

**R. J. K. / 2** 8-29-95  
 SIGNATURE OF ENGINEER DATE

**R. JACOB NIKMAT**  
 PRINTED NAME OF ENGINEER

OWNER AND DEVELOPER  
 GTW JOINT VENTURE  
 c/o LAND DESIGN AND DEVELOPMENT  
 10805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

Project	date	illustration	scale	approval
94005	OCT.1994	engineering	1"=200'	RH
SAS				

no.	description	date
0	SUBMITTED	

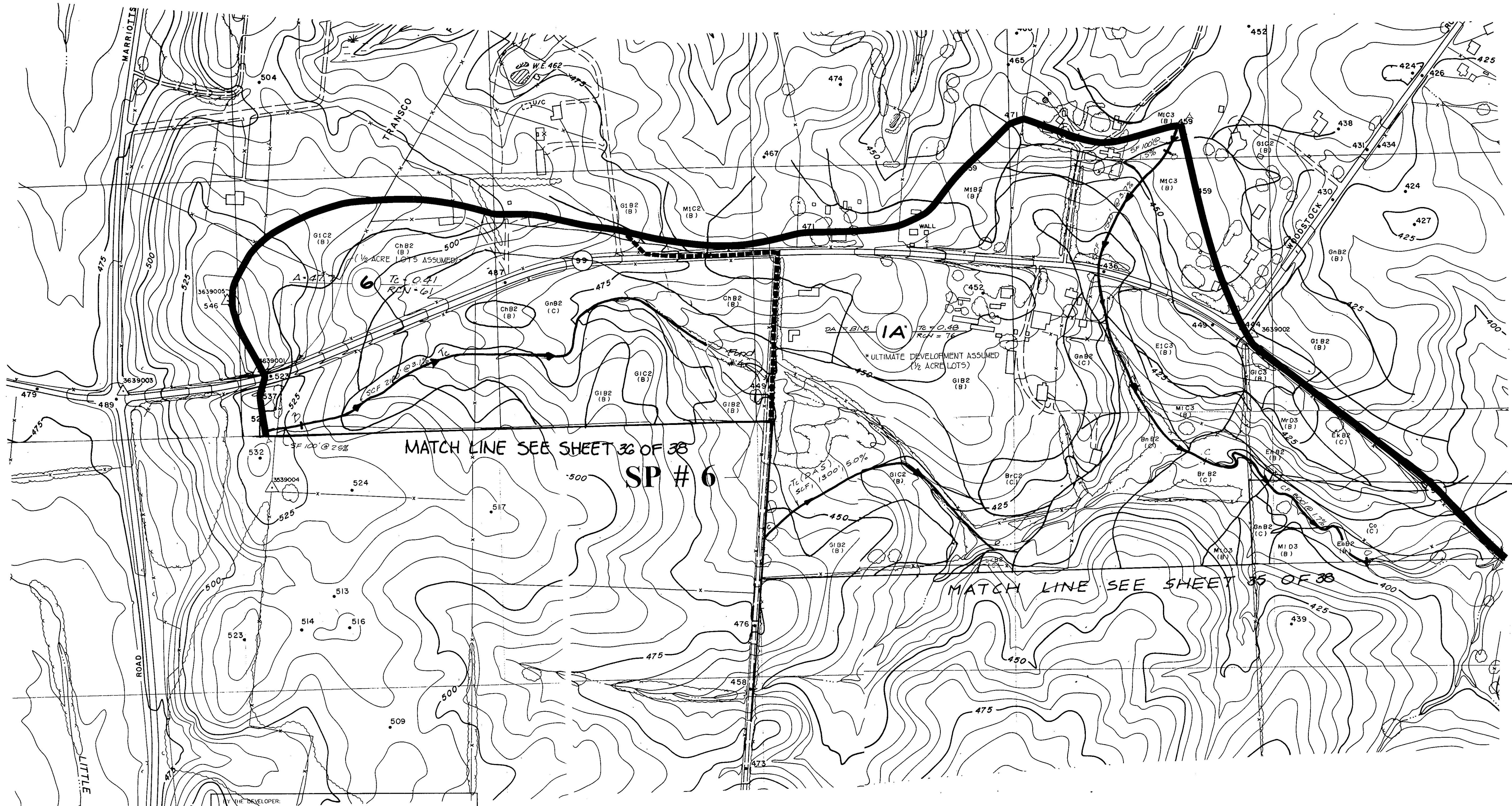
**MILDENBERG ASSOCIATES, INC.**  
 Engineers Planners Surveyors  
 5075 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042  
 (410) 997-0226 Fax: (301) 624-6521 Wash. (410) 997-0288 Fax.

**GTW'S KAVERLY WOODS**  
 HOWARD COUNTY, MARYLAND  
 3RD ELECTION DISTRICT, CENSUS TRACT 6030  
 TAX MAP 16, PARCELS 20, 21, 23A, AND 406

**PROPOSED CONDITION DRAINAGE AREA MAP**

F-95-173

36 OF 38



THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

**P. Ewiler, Jr.** 1/25/96  
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

**Robert W. Ziehm** 1/25/96  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
**Robert M. Dando** 1-30-96  
CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
**Uma Sturmans** 2/5/96  
CHIEF, DIVISION OF LAND DEVELOPMENT, PLANNING AND RESEARCH DATE

**John J. Daneman** 2/1/96  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE HIRING ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

**Don R. Ziehm** 11-21-95  
SIGNATURE OF DEVELOPER DATE

PRINTED NAME OF DEVELOPER

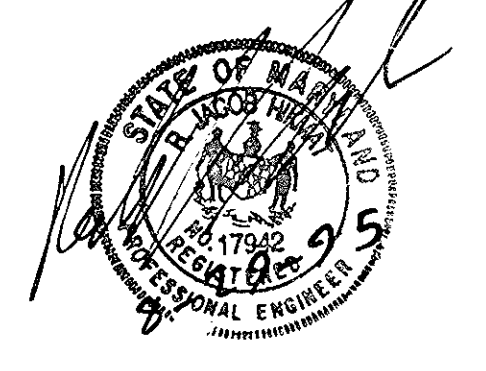
BY THE ENGINEER:

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**R. J. Jacob Hikmat** 8-29-95  
SIGNATURE OF ENGINEER DATE

PRINTED NAME OF ENGINEER

**PLAN**  
SCALE 1" = 200'



1253

project	date
94005	
illustration	engineering
jbm	jbm
scale	approval
1" = 200'	JBM

no.	description	date
	revisions	

**GTW'S KATHERLY WOODS**  
HOWARD COUNTY, MARYLAND  
3RD ELECTION DISTRICT, CENSUS TRACT 6030  
TAX MAP 16, PARCELS 20, 21, 234, AND 406  
PROPOSED CONDITION DRAINAGE AREA MAP

**MILDENBERG ASSOCIATES, INC.**  
Engineers Planners Surveyors  
5072 Dorsey Hill Drive, Suite 202, Ellicott City, Maryland, 21042  
(410) 997-0296 Ext. (301) 821-5521 Wash. (410) 997-0298 Fax

F-95-173

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 APPROVED: BUREAU OF HIGHWAYS  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Robert M. Douch* 1-30-96  
 CHIEF, BUREAU OF HIGHWAYS DATE

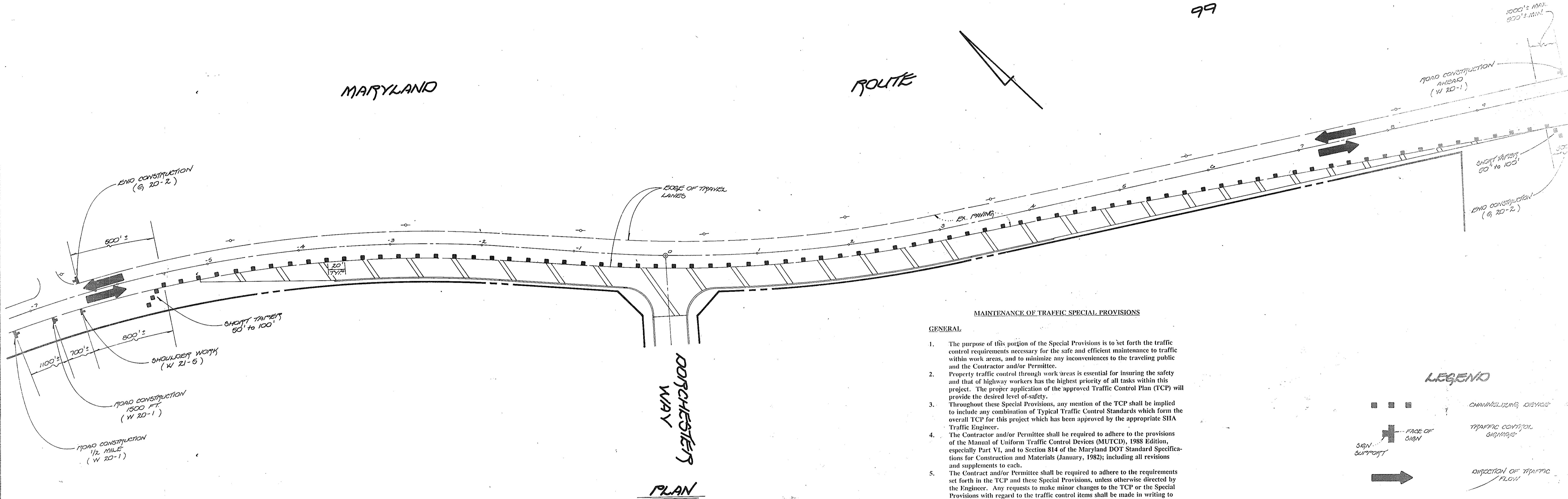
*Gina Jaraminy* 2/5/96  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

*Chris D. ...* 2/1/96  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MARYLAND

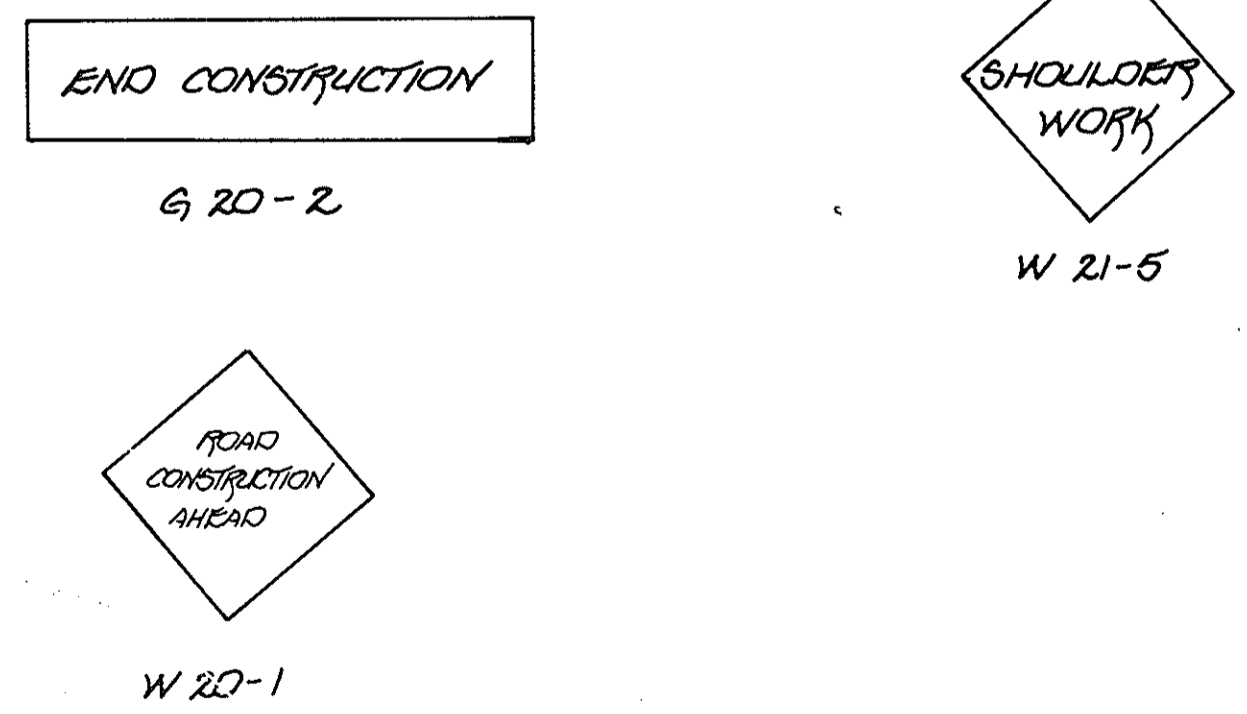
ROUTE

99



DORCHESTER WAY

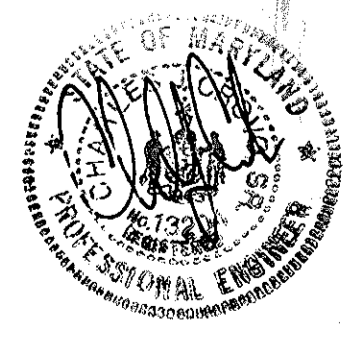
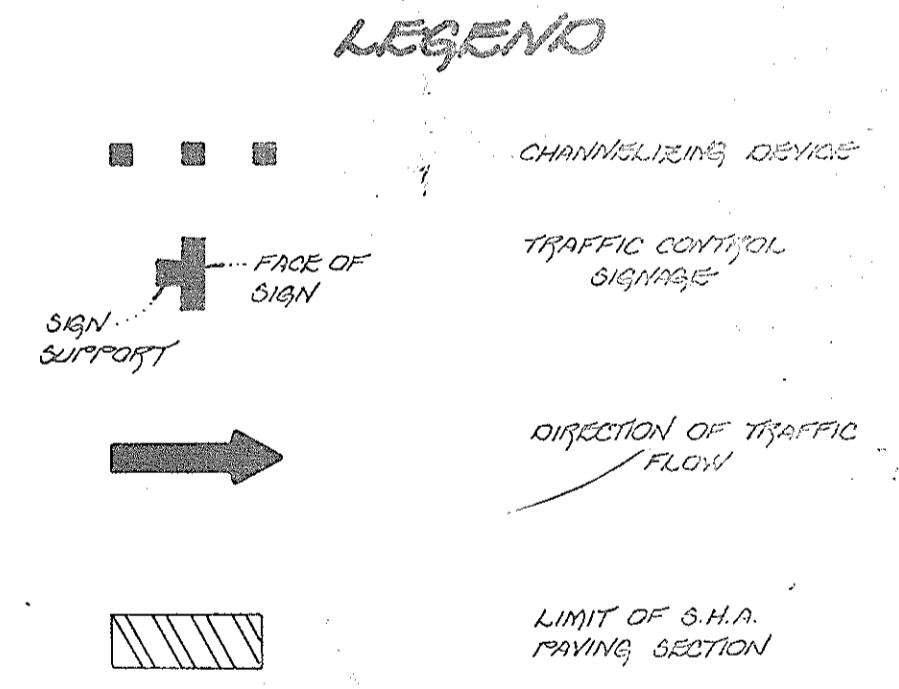
PLAN  
 SCALE: 1" = 50'



TRAFFIC CONTROL SIGNAGE  
 N.T.S.

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

- GENERAL
- The purpose of this portion of the Special Provisions is to set forth the traffic control requirements necessary for the safe and efficient maintenance to traffic within work areas, and to minimize any inconveniences to the traveling public and the Contractor and/or Permittee.
  - Proper traffic control through work areas is essential for insuring the safety and that of highway workers has the highest priority of all tasks within this project. The proper application of the approved Traffic Control Plan (TCP) will provide the desired level of safety.
  - Throughout these Special Provisions, any mention of the TCP shall be implied to include any combination of Typical Traffic Control Standards which form the overall TCP for this project which has been approved by the appropriate SHA Traffic Engineer.
  - The Contractor and/or Permittee shall be required to adhere to the provisions of the Manual of Uniform Traffic Control Devices (MUTCD), 1988 Edition, especially Part VI, and to Section 814 of the Maryland DOT Standard Specifications for Construction and Materials (January, 1982); including all revisions and supplements to each.
  - The Contractor and/or Permittee shall be required to adhere to the requirements set forth in the TCP and these Special Provisions, unless otherwise directed by the Engineer. Any requests to make minor changes to the TCP or the Special Provisions with regard to the traffic control items shall be made in writing to the Engineer a minimum of three (3) working days prior to the proposed scheduling change. The Contractor and/or Permittee shall have written approval of the Engineer prior to the implementation of any change.
  - No work shall begin on any work activity or work phase until all required traffic control patterns and devices indicated on the TCP for that activity or phase are completely and correctly in place and have been checked for approved usage.
  - General and specific warning signs shall only be in place when specific work tasks and activities are actually underway or conditions exist that pose a potential hazards to the public, and any additional signing has been approved by the appropriate SHA Traffic Engineer. NOTE: The practice of placing signing and other traffic control devices in addition to those indicated on the approved TCP is not permitted.
  - The Contractor and/or Permittee shall provide, maintain in new condition, and move when necessary, or as directed by the Engineer, all traffic control devices used for the guidance and protection of motorists, pedestrians, and workers.
  - All traffic control devices required by the TCP shall be kept in good condition, fully performing as set forth in the TCP, the MUTCD, and/or Section 814 of the Specifications. For reflective devices, a particular device is assumed to have failed to meet minimum operational standards when the device no longer has retro-reflectance capability of at least 60% of the specified minimum value over at least 90% of the visible reflective surface.
  - All traffic control devices not required for the safe conduct of traffic shall be promptly removed, completely covered, turned away from traffic, or otherwise taken out of service. It is intended that no traffic control device is to be in service when there is no clear cut reason for the device.
  - Throughout the period(s) of work activities, traffic shall be maintained by implementing the approved TCP. In lieu of the TCP prepared for this project, and/or individual Typical Traffic Control Standards, the Contractor and/or Permittee has the option of preparing and submitting a TCP, wholly or in part, of his own design, following guidelines set forth in the MUTCD and prescribed by the Administration. A TCP developed by the Contractor and/or Permittee shall not be implemented until advance written approval is obtained from the Engineer. TCP's may be implemented within a single project or jointly between two or more projects. In situations where TCP's are jointly implemented, care shall be exercised to present correct and non-conflicting guidance to the traveling public.
  - Throughout these Special Provisions, where speed of traffic is noted, this means the posted speed or prevailing travel speed, whichever is higher, unless otherwise noted.
  - Traffic shall be maintained at all times throughout the entire length of the project, unless otherwise noted. No travel lane(s) other than those designated for possible closure in the TCP shall be closed without obtaining prior approval from the Engineer. All ingress and egress to the work area by the Contractor and/or Permittee shall be performed with the flow of traffic.



TRAFFIC CONTROL PLAN  
 GTW'S WAVERLY WOODS  
 SECTION 4, AREA 1  
 LOTS 1 THRU 17 AND PARCELS A THRU E  
 ZONING: R-20, RSC, R-5A-0 AND R-A-15  
 TAX MAP No: 16 PART OF PARCEL No: 21  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: MAY 26, 1995  
 SHEET 30 OF 33

OWNER / DEVELOPER  
 GTW JOINT VENTURE  
 50% LAND DESIGN AND DEVELOPMENT  
 10605 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21114  
 410 661-2256

12521

F95-173