

CRYSTAL CLEAR

THIRD ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

APPROVED DEPARTMENT OF PUBLIC WORKS
Donald C. Johnson 9/2/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE

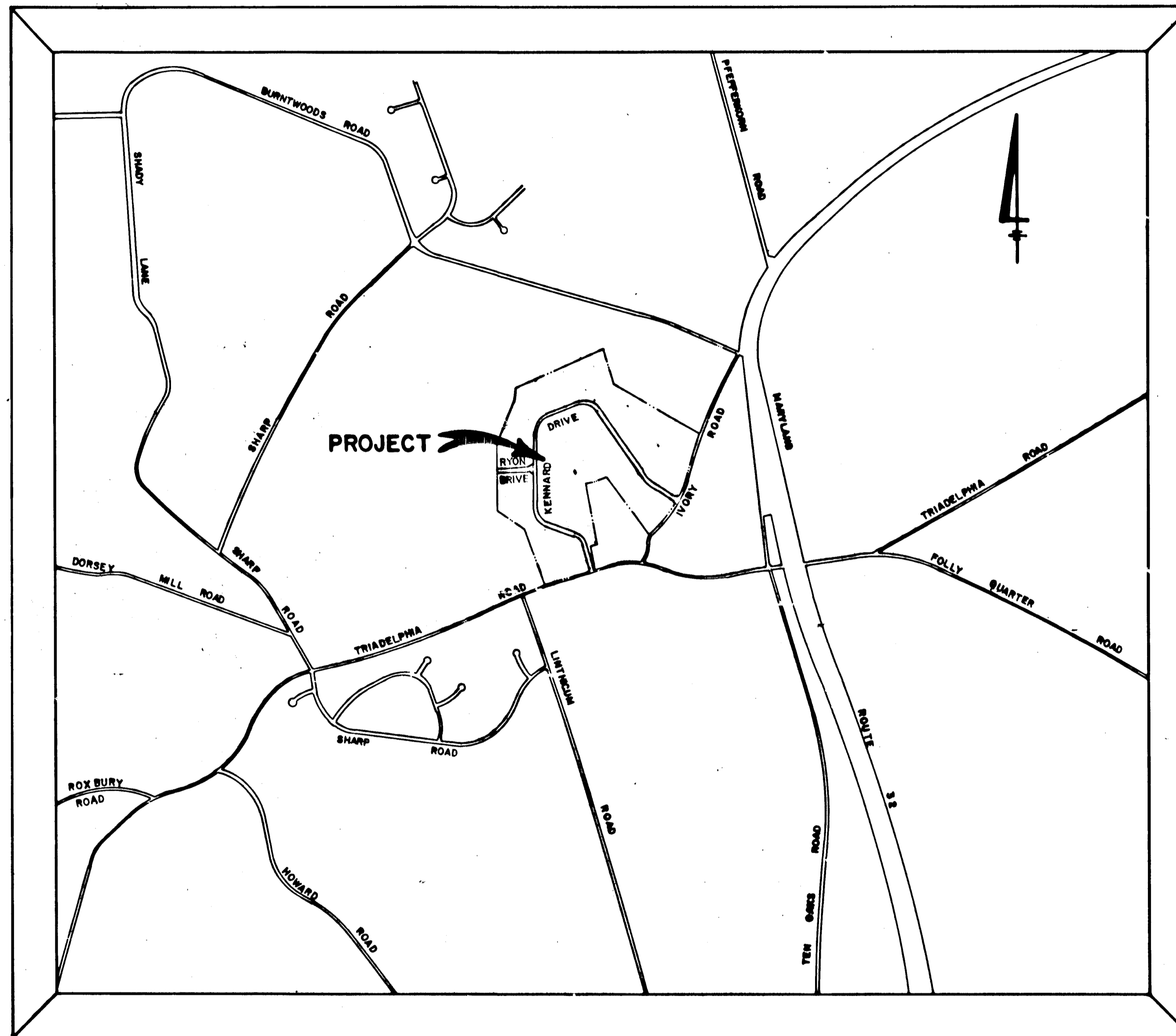
APPROVED DEPARTMENT OF PUBLIC WORKS
Granville W. Wheland 9/7/88
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
Robert B. Reed 9-19-88
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED OFFICE OF PLANNING AND ZONING
Frank J. P. Gault 9-21-88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. ALL UTILITY COMPANIES MUST BE NOTIFIED 24 HRS IN ADVANCE OF ANY CONSTRUCTION.
3. STORM DRAINAGE TRENCHES WITHIN ROAD RIGHT-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
4. ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR TO NOTIFY THE HOWARD COUNTY INSPECTION AND SURVEY DIVISION AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TELEPHONE 792-7272.
6. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION, CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE.
7. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES CURRENT REVISED EDITION.



VICINITY MAP

SCALE 1"=1200

SHEET INDEX

- 1.) TITLE SHEET
- 2.) KENNARD DRIVE - PLAN AND PROFILE
- 3.) KENNARD DRIVE - PLAN AND PROFILE
- 4.) KENNARD DRIVE - PLAN AND PROFILE
- 5.) KENNARD DRIVE - PLAN AND PROFILE, RYON DRIVE - PLAN AND PROFILE
- 6.) KENNARD DRIVE - PLAN AND PROFILE
- 7.) KENNARD DRIVE - PLAN AND PROFILE, STORM DRAIN PROFILES, PARABOLIC CHANNEL PROFILE
- 8.) TRIADELPHIA ROAD - PLAN, STORM DRAIN PROFILES
- 9.) GRADING AND SEDIMENT CONTROL PLAN
- 10.) GRADING AND SEDIMENT CONTROL PLAN, STORM DRAIN PROFILES AND DETAILS
- 11.) GRADING AND SEDIMENT CONTROL PLAN AND DETAILS
- 12.) GRADING AND SEDIMENT CONTROL PLAN
- 13.) DRAINAGE AREA MAP
- 14.) DRAINAGE AREA MAP

FISHER, COLLINS AND CARTER, INC.
 CONSULTING ENGINEERS AND LAND SURVEYORS
 934 COURT AVENUE
 ELLICOTT CITY, MARYLAND 21043
 TELEPHONE: (301) 461-2855

Chief Clerk 9/21/88

OWNER AND DEVELOPER
 WARFIELD BROTHERS
 14663 TRIADELPHIA ROAD
 GLENELG, MARYLAND 21737

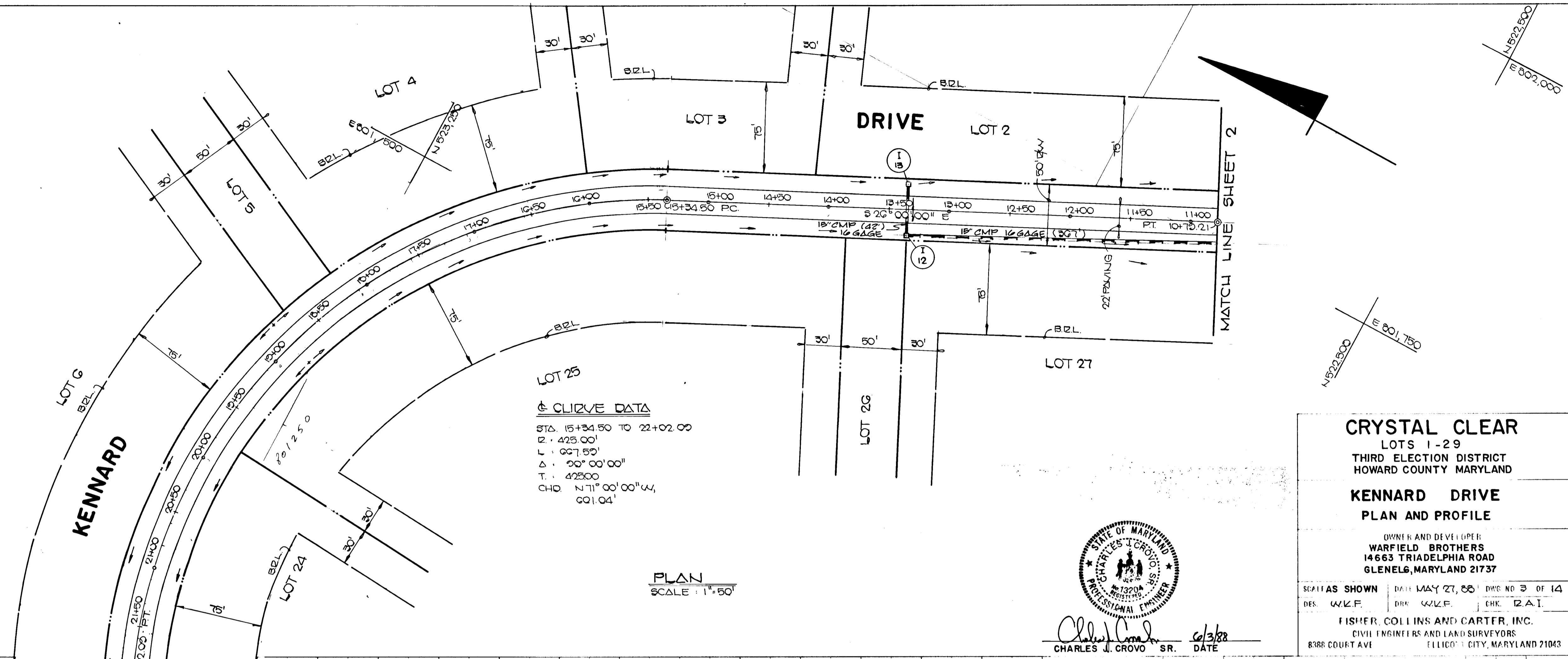
SHEET 1 OF 14
 8 88-19 P 88-46

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SURVEYED
 PLOTTED
 CHECKED
 BY
 DATE

PROFILE
 CURVES
 GRADES
 CHECKED
 PLOTTED
 STRUCTURE
 NOTATIONS
 DATE

8-6-88	revised per county comments dated 4-27-88
Date	Description
Revisions	
APPROVED	DEPARTMENT OF PUBLIC WORKS
<i>Small</i>	2/2/88
CHIEF, LAND DEVELOPMENT DIVISION	DATE
DEPARTMENT OF PUBLIC WORKS	
<i>Franklin W. Weiland</i>	9/7/88
CHIEF, BUREAU OF HIGHWAYS	DATE
DEPARTMENT OF PUBLIC WORKS	
<i>William B. Reid</i>	9-19-88
CHIEF, BUREAU OF ENGINEERING	DATE
OFFICE OF PLANNING AND ZONING	
<i>Frank J. Campbell</i>	9-22-88
COMMUNITY PLANNING	DATE
AND LAND DEVELOPMENT	



CRYSTAL CLEAR
 LOTS 1-29
 THIRD ELECTION DISTRICT
 HOWARD COUNTY MARYLAND

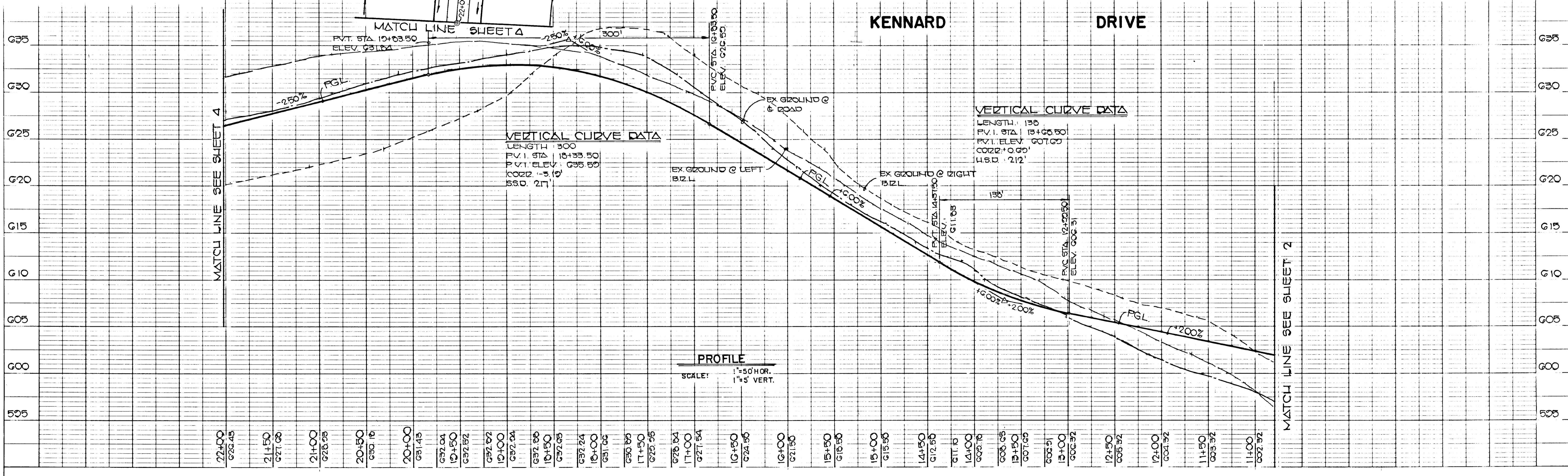
KENNARD DRIVE
 PLAN AND PROFILE

OWNER AND DEVELOPER:
WARFIELD BROTHERS
 14663 TRIADELPHIA ROAD
 GLENELG, MARYLAND 21737

SCALE AS SHOWN DATE MAY 27, 88 DWG NO 3 OF 14
 DES. WLF. DRN. WLF. CHK. W.A.I.

FISHER, COLLINS AND CARTER, INC.
 CIVIL ENGINEERS AND LAND SURVEYORS
 8388 COURT AVE ELLICOTT CITY, MARYLAND 21043

Charles J. Crovo SR. 6/3/88
 CHARLES J. CROVO SR. DATE

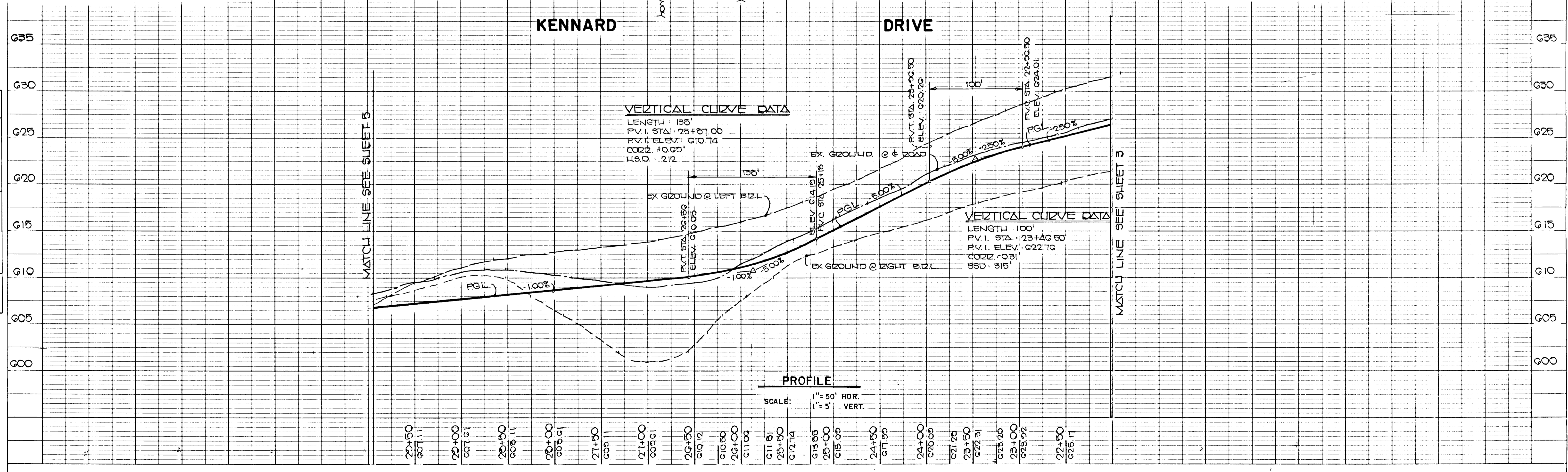


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PLAN
 SURVEYED
 ALIGNMENT CHECKED
 RT. OF WAY CHECKED

0.0.00	revised per county comments dated 7-27-88
Date	Description
Revision	
APPROVED DEPARTMENT OF PUBLIC WORKS	
<i>Paul W. Johnson</i> 9/1/88	DATE
APPROVED DEPARTMENT OF PUBLIC WORKS	
<i>Francis W. Weisand</i> 9/1/88	DATE
APPROVED DEPARTMENT OF PUBLIC WORKS	
<i>William E. Kelly</i> 9-19-88	DATE
APPROVED OFFICE OF PLANNING AND ZONING	
<i>Frank J. ...</i> 9-21-88	DATE

PROFILE
 SURVEYED
 GRADES CHECKED
 B.M. NOTED
 STRUCTURE NOTATIONS CHECKED



1378

CRYSTAL CLEAR
 LOTS 1-29
 THIRD ELECTION DISTRICT
 HOWARD COUNTY MARYLAND

KENNARD DRIVE
 PLAN AND PROFILE

(OWNER AND DEVELOPER)
 WARFIELD BROTHERS
 14663 TRIADELPHIA ROAD
 GLENELG, MARYLAND 21737

SCALE AS SHOWN DATE MAY 21, 88 DWG NO. 4 OF 14
 DES: WLF DRN: WLF CHK: ZAT

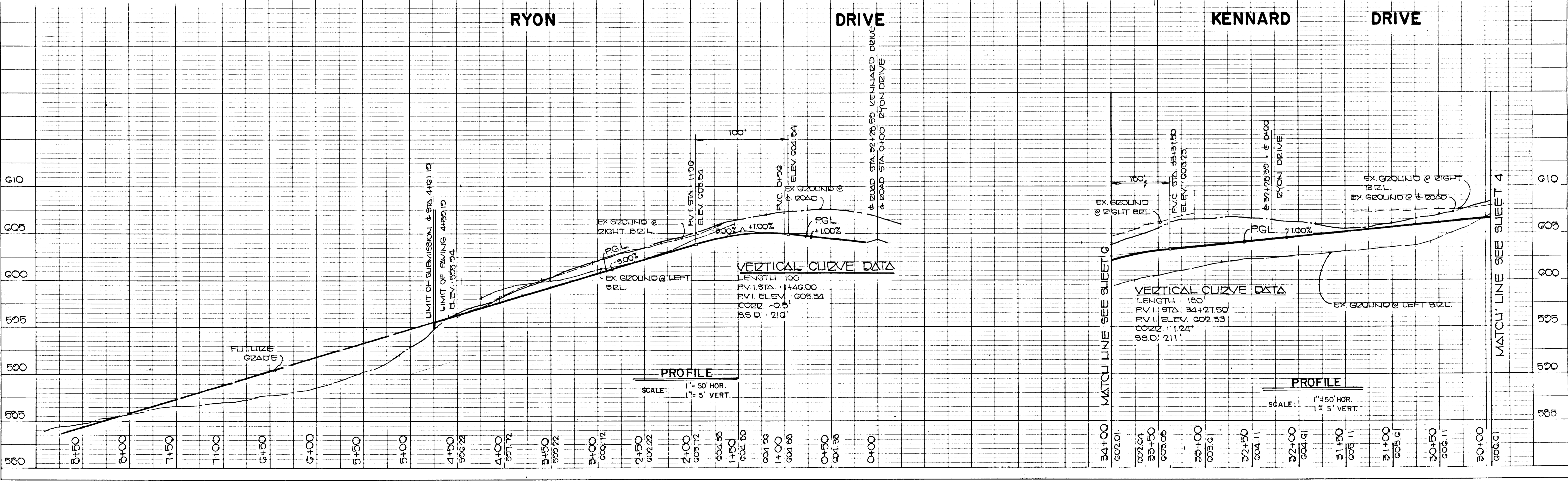
FISHER, COLLINS AND CARTER, INC.
 CIVIL ENGINEERS AND LAND SURVEYORS
 8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

Charles J. Crovo Sr. 6/3/88
 CHARLES J. CROVO SR. DATE

DATE: _____
 BY: _____
 SURVEYED, PLOTTED, CHECKED, ALIGNED, BY: _____
 NOTE BOOK NO. _____

05-88	revised per county comments dated 7-27-88
Date	Description
Revision	
APPROVED DEPARTMENT OF PUBLIC WORKS	
<i>Charles J. Crovo</i>	9/2/88
CHIEF, LAND DEVELOPMENT DIVISION	DATE
DEPARTMENT OF PUBLIC WORKS	
<i>Bramble W. Wilson</i>	9/7/88
CHIEF, BUREAU OF HIGHWAYS	DATE
DEPARTMENT OF PUBLIC WORKS	
<i>William B. Ray</i>	9-19-88
CHIEF, BUREAU OF ENGINEERING	DATE
OFFICE OF PLANNING AND ZONING	
<i>Jackie J. Campbell</i>	7-21-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE

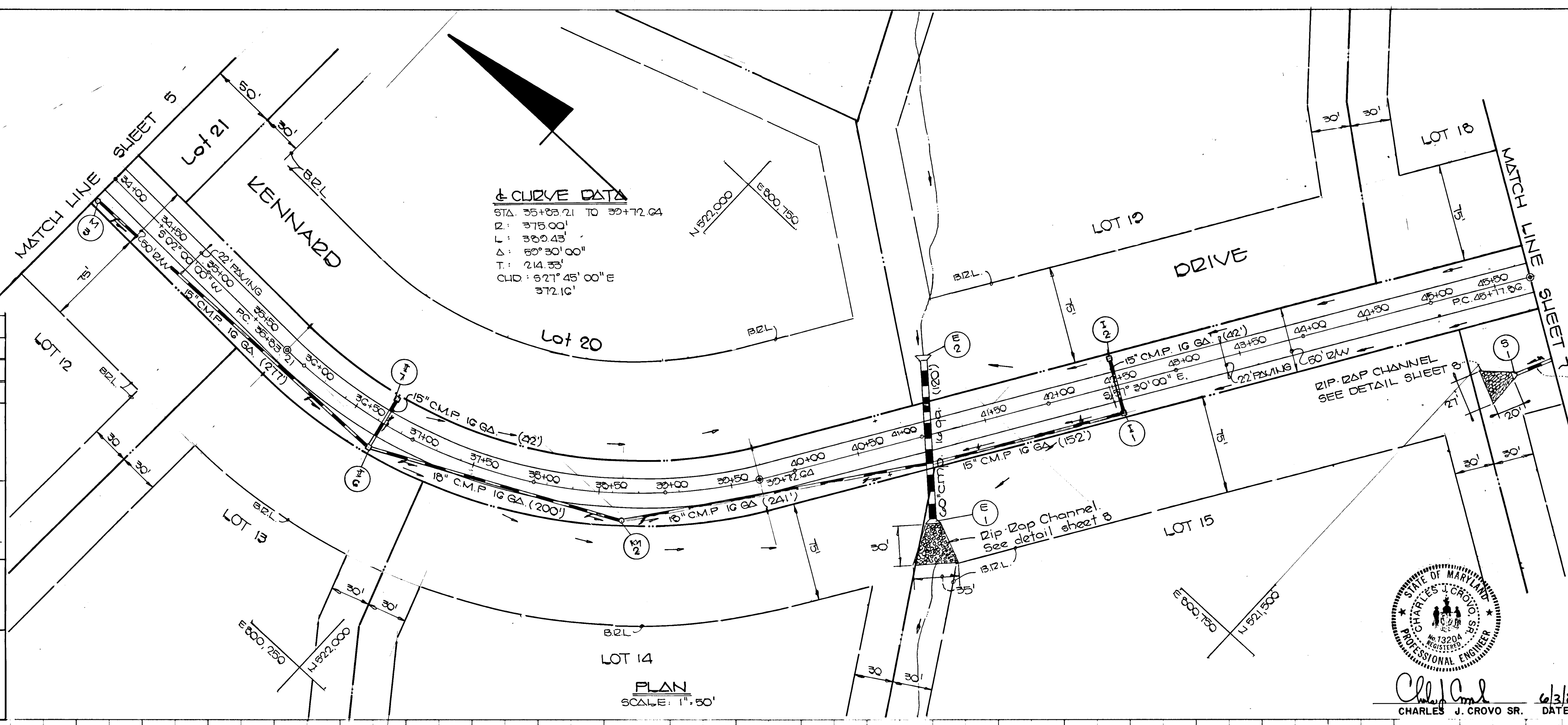
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 BY: _____
 SURVEYED, PLOTTED, CHECKED, STRUCTURE NOTATIONS OK'D, BY: _____
 NOTE BOOK NO. _____



1378

DATE: _____
 BY: _____
 REVIEWED: _____
 PLANNED: _____
 NOTE BOOK NO. _____
 CHECKED: _____
 AT: _____
 DATE: _____

0-0-88	revised per county comments dated 7-27-88
Date	Description
Revision	
APPROVED DEPARTMENT OF PUBLIC WORKS	
<i>Paul J. Jensen</i>	7/2/88 DATE
APPROVED DEPARTMENT OF PUBLIC WORKS	
<i>Garrison W. Wiersma</i>	9/7/88 DATE
DEPARTMENT OF PUBLIC WORKS	
<i>William E. Ray</i>	9-17-88 DATE
OFFICE OF PLANNING AND ZONING	
<i>Mark S. Lang</i>	9-21-88 DATE



CRYSTAL CLEAR
 LOTS 1-29
 THIRD ELECTION DISTRICT
 HOWARD COUNTY MARYLAND
KENNARD DRIVE
 PLAN & PROFILE

OWNER AND DEVELOPER:
 WARFIELD BROTHERS
 14663 TRIADELPHIA ROAD
 GLENELG, MARYLAND 21037

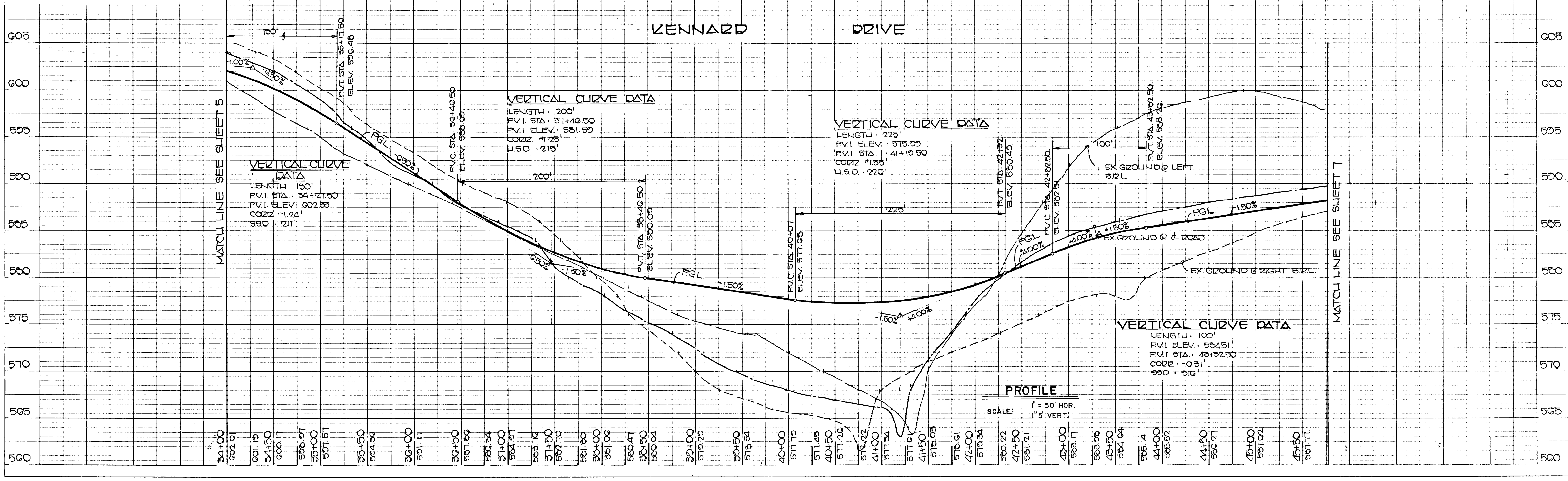
SCALE AS SHOWN DATE MAY 27, 88 DWG NO. C OF 14
 DES. W.K.F. DRG. W.K.F. CHK. R.A.I.

FISHER, COLLINS AND CARTER, INC.
 CIVIL ENGINEERS AND SURVEYORS
 8368 GOURT AVE. FLEET CITY, MARYLAND 21033

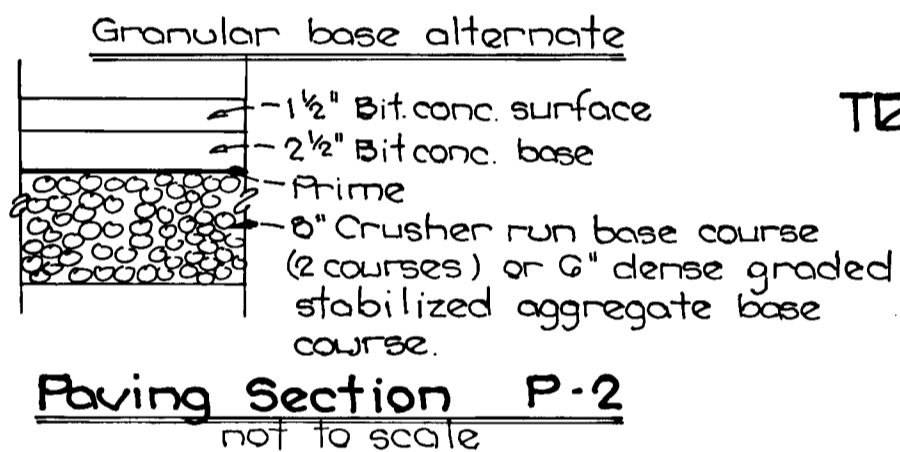
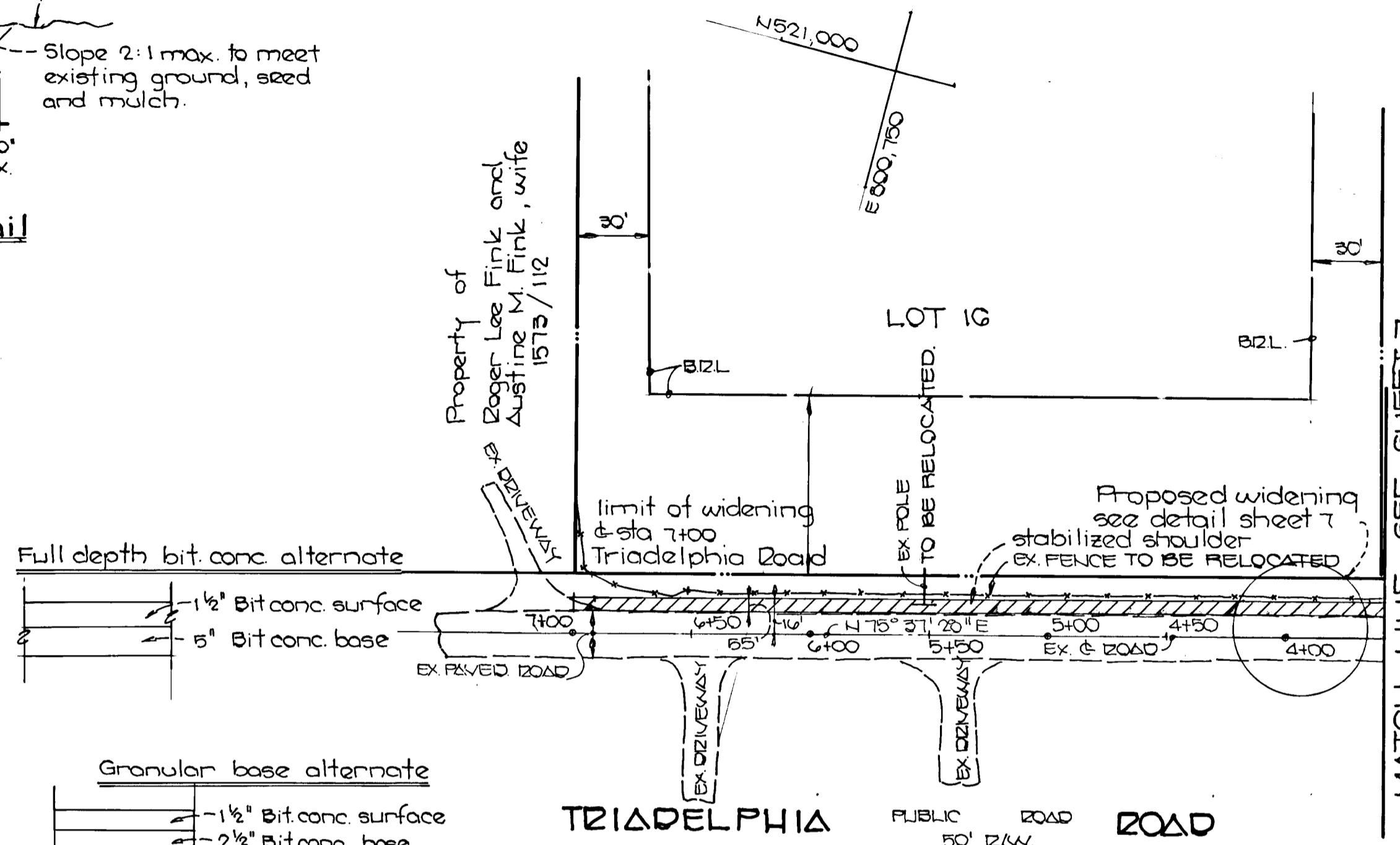
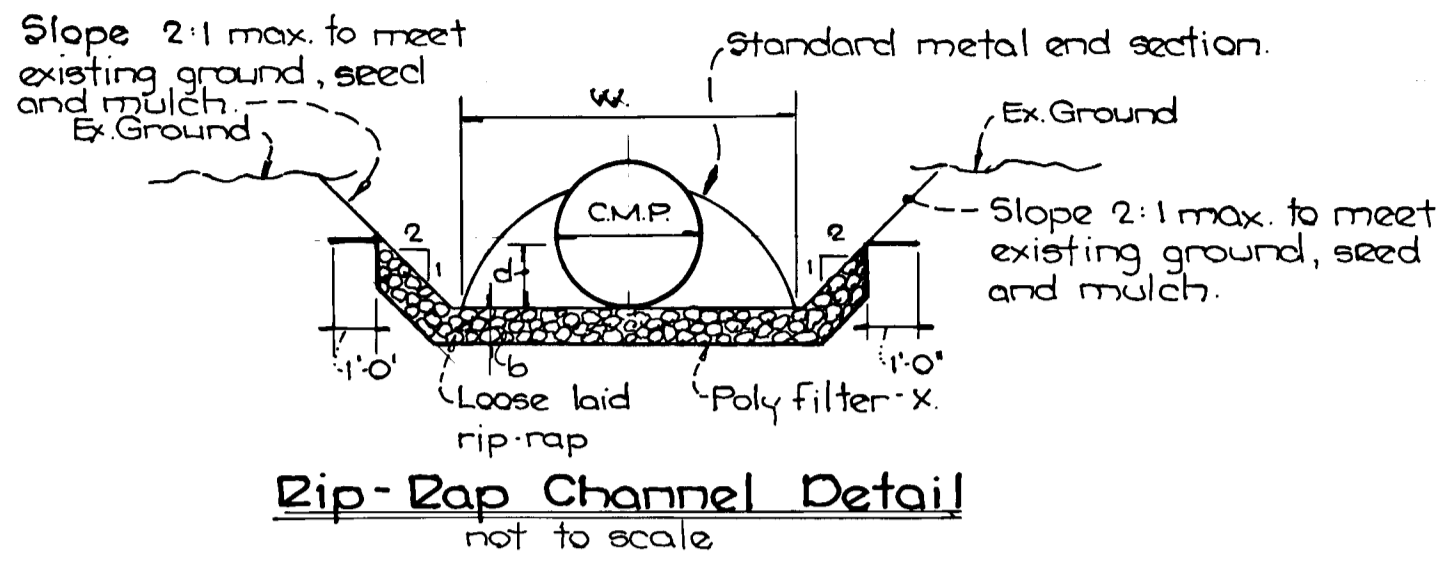
STATE OF MARYLAND
 CHARLES J. CROVO SR.
 PROFESSIONAL ENGINEER
 6/3/88 DATE

1378

DATE: _____
 BY: _____
 REVIEWED: _____
 GRADES CHECKED: _____
 STRUCTURE NOTATIONS CHECKED: _____
 NOTE BOOK NO. _____
 CHECKED: _____
 AT: _____
 DATE: _____



Zip-Rap Channel Design Data														
Structure	Area #	P	R	2%	S	S 1/2	n	Q cfs	V fps	d	W	Zip-Rap Size	b	
E-1	5.74	14.42	0.938	0.938	0.01	0.10	0.04	102.8	3.34	0.43	12.5	12"	18"	27"
E-2	12.50	15.91	0.710	0.850	0.01	0.85	0.04	61.7	11.13	0.92	11.5	12"	18"	27"
S-1	0.58	10.44	0.03	0.73	0.01	0.10	0.04	17.2	2.30	0.77	7.0	6"	9"	14"
S-2	0.73	4.47	0.16	0.23	0.01	0.10	0.04	5.23	1.06	0.16	3.7	4"	6"	9"



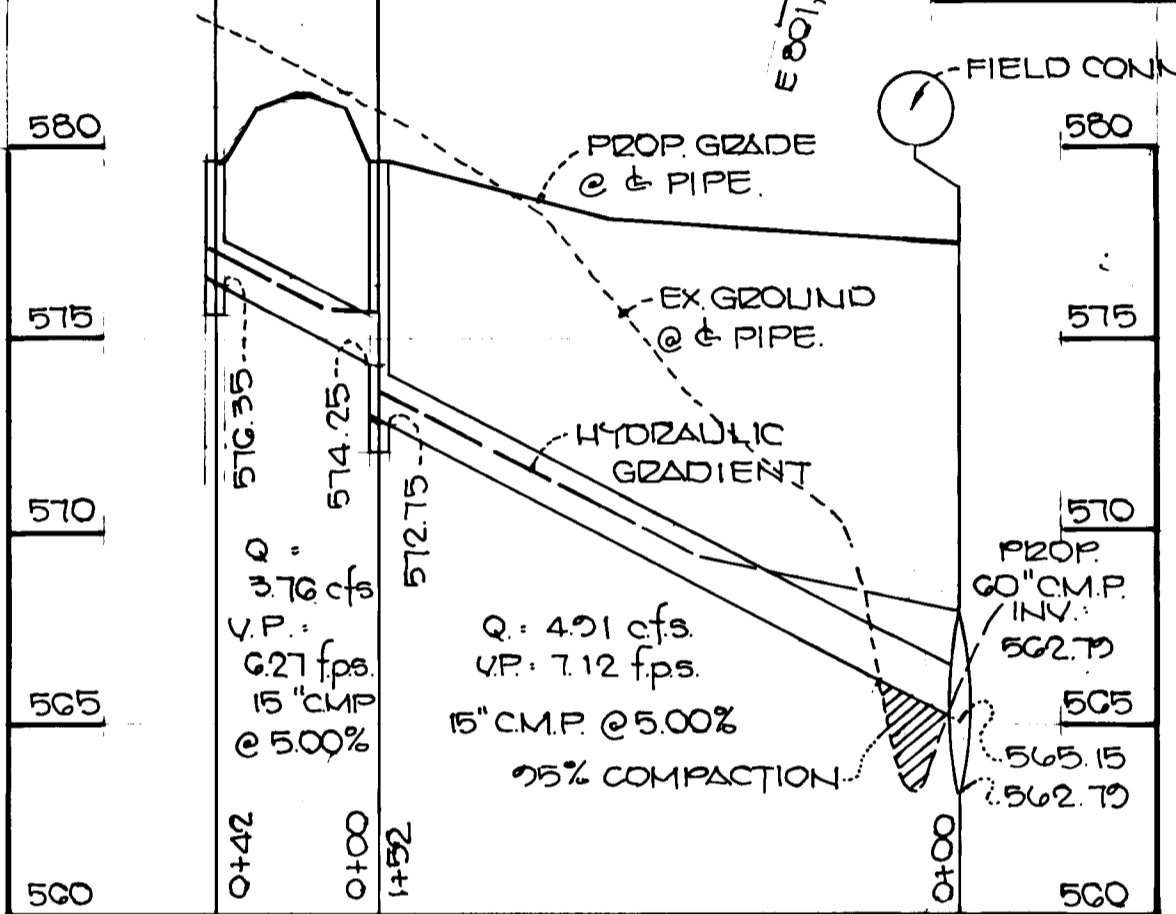
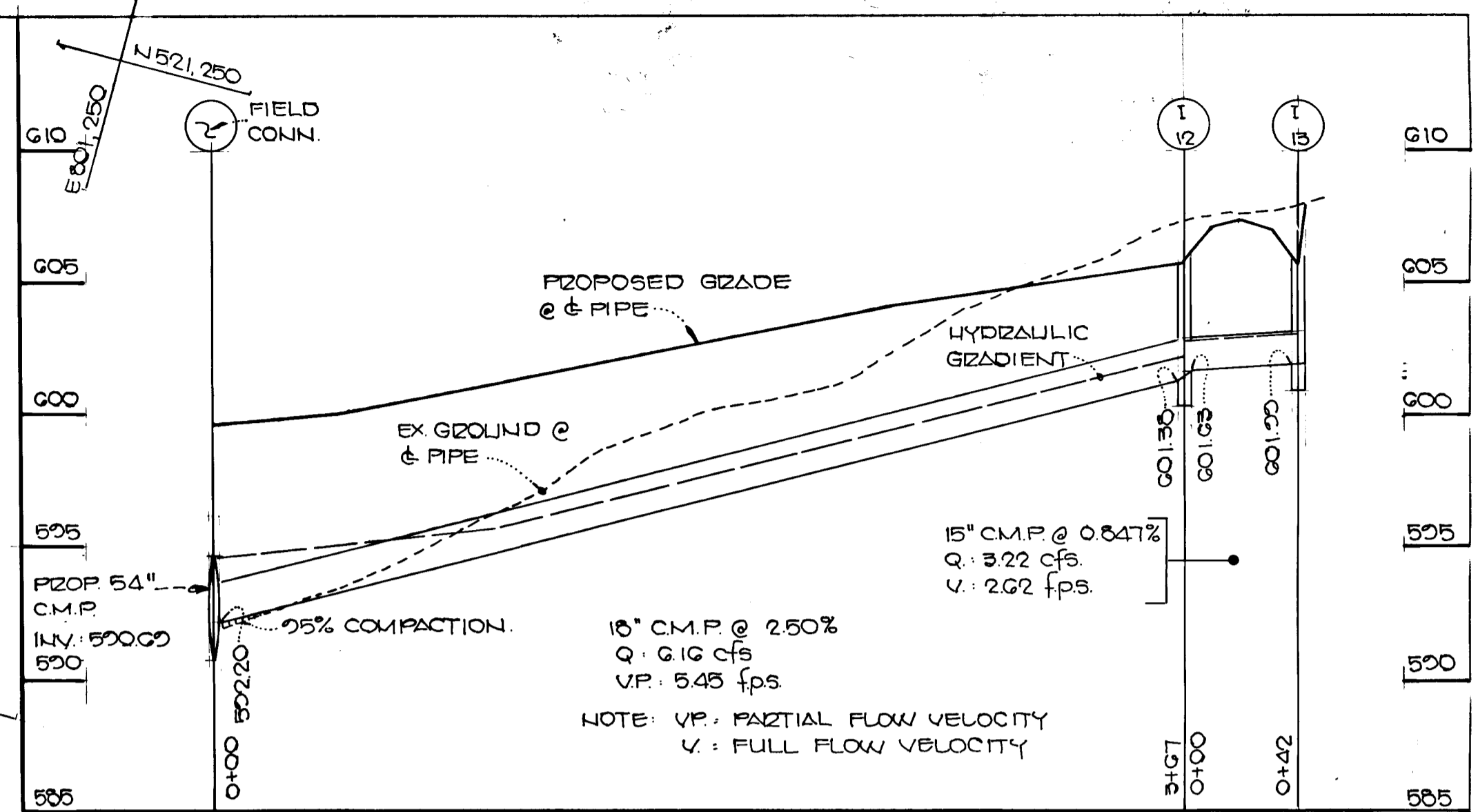
Date	Description
8-8-88	revised per county comments dated 7-27-88

APPROVED	DEPARTMENT OF PUBLIC WORKS	DATE
<i>Paul H. Johnson</i>	CHIEF, LAND DEVELOPMENT DIVISION	9/2/88

APPROVED	DEPARTMENT OF PUBLIC WORKS	DATE
<i>Francisco W. Wehner</i>	CHIEF, BUREAU OF HIGHWAYS	9/1/88

APPROVED	DEPARTMENT OF PUBLIC WORKS	DATE
<i>Madison B. Ray</i>	CHIEF, BUREAU OF ENGINEERING	9-9-88

APPROVED	OFFICE OF PLANNING AND ZONING	DATE
<i>Frank J. D'Amico</i>	CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	9-2-88



STORM DRAIN PROFILES
SCALE: HORZ. 1"=50'
VERT. 1"=5'

CRYSTAL CLEAR
LOTS 1-29
THIRD ELECTION DISTRICT
HOWARD COUNTY MARYLAND

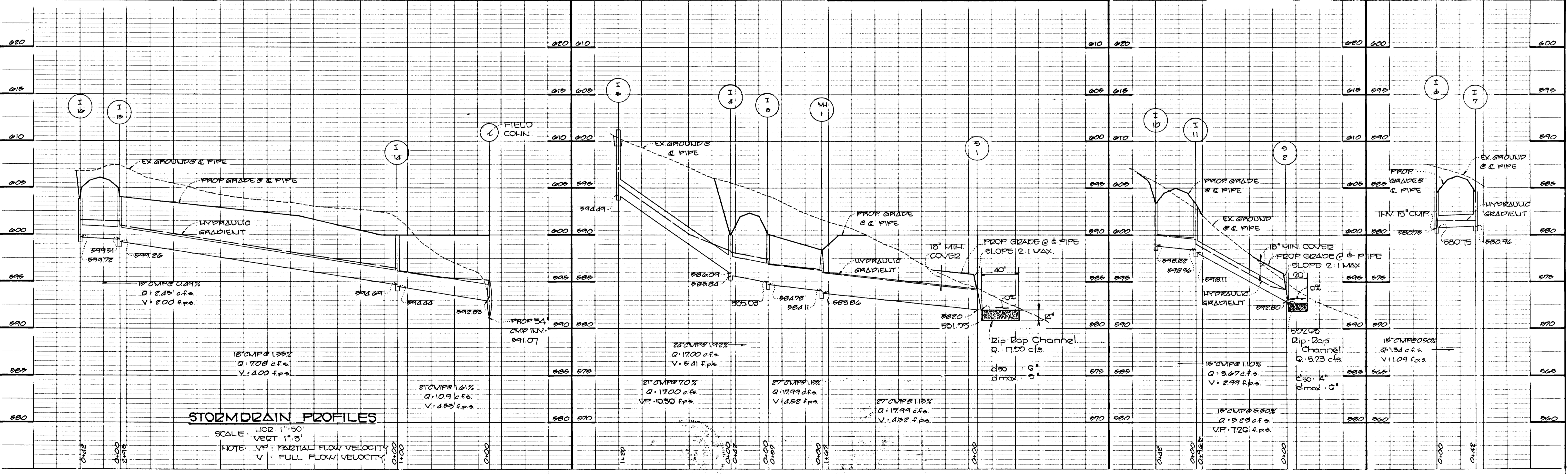
TRIADELPHIA ROAD
PLAN STORM DRAIN PROFILES

OWNER AND DEVELOPER
WARFIELD BROTHERS
14663 TRIADELPHIA ROAD
GLENELG, MARYLAND 21737

SCALE AS SHOWN DATE MAY 27 88 DWG NO. 8-OF-14
DES. WJF DRG. WJF CHK. J.A.I.

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE
ELLCOTT CITY, MARYLAND 21043

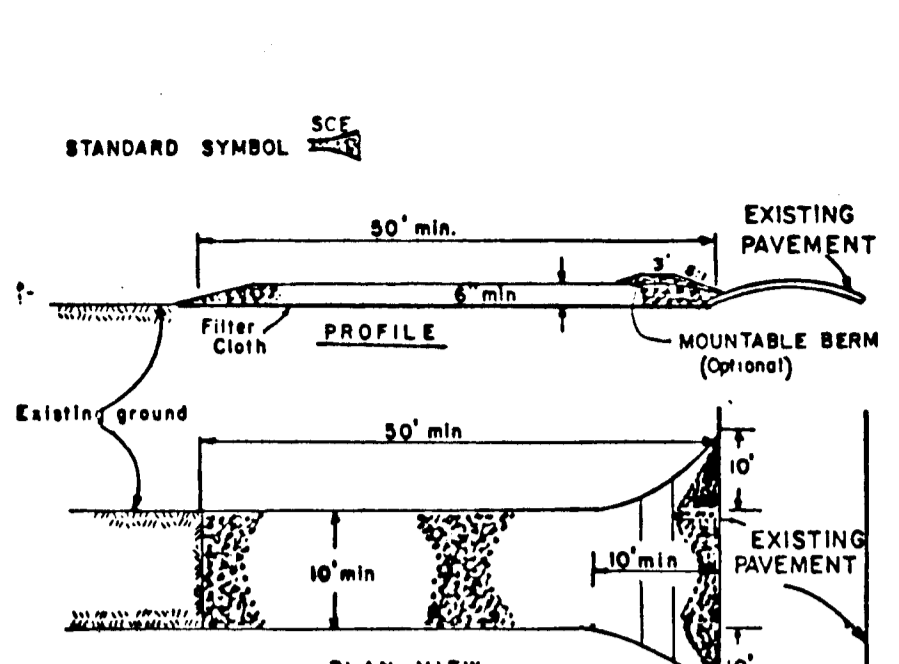
Charles J. Crovo Sr. 6/3/88
CHARLES J. CROVO SR. DATE



STORM DRAIN PROFILES
SCALE: HORZ. 1"=50'
VERT. 1"=5'
NOTE: VP: PARTIAL FLOW VELOCITY
V: FULL FLOW VELOCITY

1378

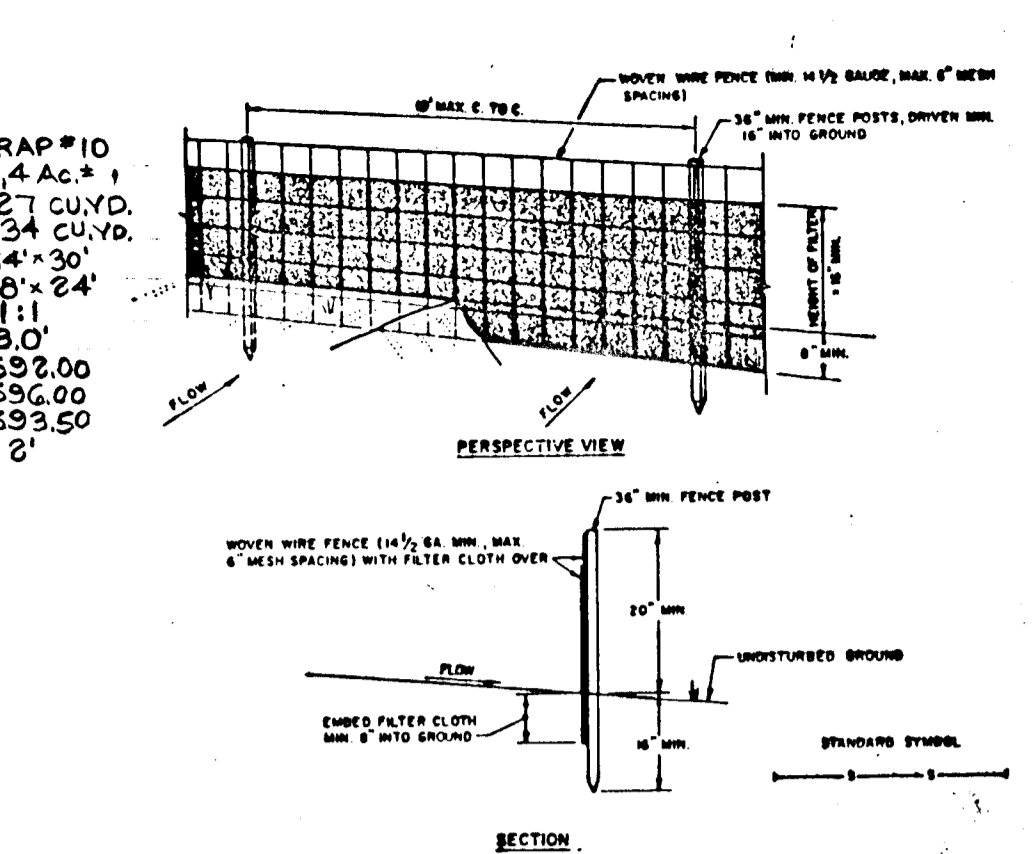
PERMANENT SEEDING NOTES:
 APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
 DISPOSE OF EXCESS SOIL LOOSER UPPER THREE-INCHES OF SOIL BY BAKING, DISCING OR ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSERED.
 SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING:
 1) PRESEED - APPLY 2 TONS PER ACRE MOLYBDENUM LIME (2 LBS/1000 SQ. FT.) AND 400 LBS PER ACRE 18-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING.
 2) ACCEPTABLE MEANS: HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE UREAFORM FERTILIZER (4 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 18-10-10 FERTILIZER (2 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL.
 SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 2 1/2 TONS PER ACRE OF ANNUAL RYE (2 1/2 LBS/1000 SQ. FT.) FOR PERIOD MAY 1 THRU JULY 31, SEED WITH 40 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (4 LBS/1000 SQ. FT.) OF KEEPING LOVERGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROJECT SITE 871: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING OR SOON AFTER.
 MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNWROTTEN WHEAT STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 2 1/2 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT OR FLAT AREAS, ON SLOPES, 6 FT. OR HIGHER, USE 340 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING. OR DISKING. INSPECT ALL SEED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.
TEMPORARY SEEDING NOTES:
 APPLY TO GRADED OR CLEARED AREAS OF THE PROJECT AS DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
 SOIL PREPARATION: LOOSER UPPER THREE-INCHES OF SOIL BY BAKING, DISCING OR ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSERED.
 SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 18-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING.
 SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 TONS PER ACRE OF ANNUAL RYE (2 1/2 LBS/1000 SQ. FT.) FOR PERIOD MAY 1 THRU AUGUST 14, SEED WITH 40 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (4 LBS/1000 SQ. FT.) OF KEEPING LOVERGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROJECT SITE 871: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING OR SOON AFTER.
 MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNWROTTEN WHEAT STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 2 1/2 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT OR FLAT AREAS, ON SLOPES, 6 FT. OR HIGHER, USE 340 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.
 REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.



Sediment Trap Data

TRAP #1	TRAP #2	TRAP #3	TRAP #4	TRAP #5	TRAP #6	TRAP #7	TRAP #8	TRAP #9
6.00 AC. ±	1.70 AC. ±	3.40 AC. ±	3.51 AC. ±	3.00 AC. ±	2.77 AC. ±	1.90 AC. ±	4.76 AC. ±	3.33 AC. ±
400 CU YD	113 CU YD	227 CU YD	234 CU YD	200 CU YD	181 CU YD	67 CU YD	317 CU YD	222 CU YD
411 CU YD	140 CU YD	232 CU YD	239 CU YD	202 CU YD	202 CU YD	67 CU YD	317 CU YD	224 CU YD
40290	25200	30280	35270	30270	30270	25230	40280	33270
33283	29254	34274	29264	24264	24264	19224	34274	27264
1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1
3.5'	3.0'	3.0'	3.0'	3.0'	3.0'	3.0'	3.0'	3.0'
592.75	590.00	588.50	593.50	594.50	581.00	587.00	587.00	585.00
597.25	594.00	592.50	597.50	598.50	565.00	571.00	571.00	569.50
594.50	591.50	590.00	595.00	596.00	562.50	568.50	568.50	567.00
14.0	6.8	13.6	14.0	12.0	11.0	4.0	20.0	13.0

NOTE: TRAP #1 IS A RIP-RAP OUTLET SEDIMENT TRAP
 ALL OTHER TRAPS ARE STONE OUTLET SEDIMENT TRAPS



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE:

1. Move wire fence to be fastened securely to fence posts with wire ties or staples.
2. Filter cloth to be fastened securely to move wire fence with ties and every 2' at top and mid section.
3. When two sections of filter cloth align each other they shall be overlapped by six inches and folded.
4. Maintenance shall be performed as needed and material removed when it develops in the silt fence.

POSTS: STEEL EITHER T OR U TYPE OR 2\"/>

FENCE: MOVE WIRE, 1/4\"/>

FILTER CLOTH: FILTER X, 1\"/>

PREFABRICATED UNITS: GEOPOLYMER, POLYPROPYLENE, OR APPROVED EQUAL.

Silt Fence

not to scale

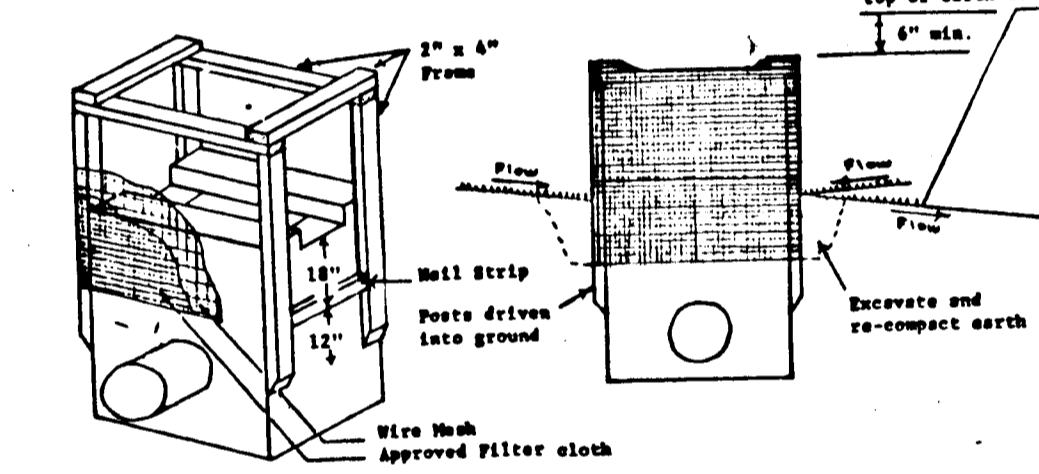
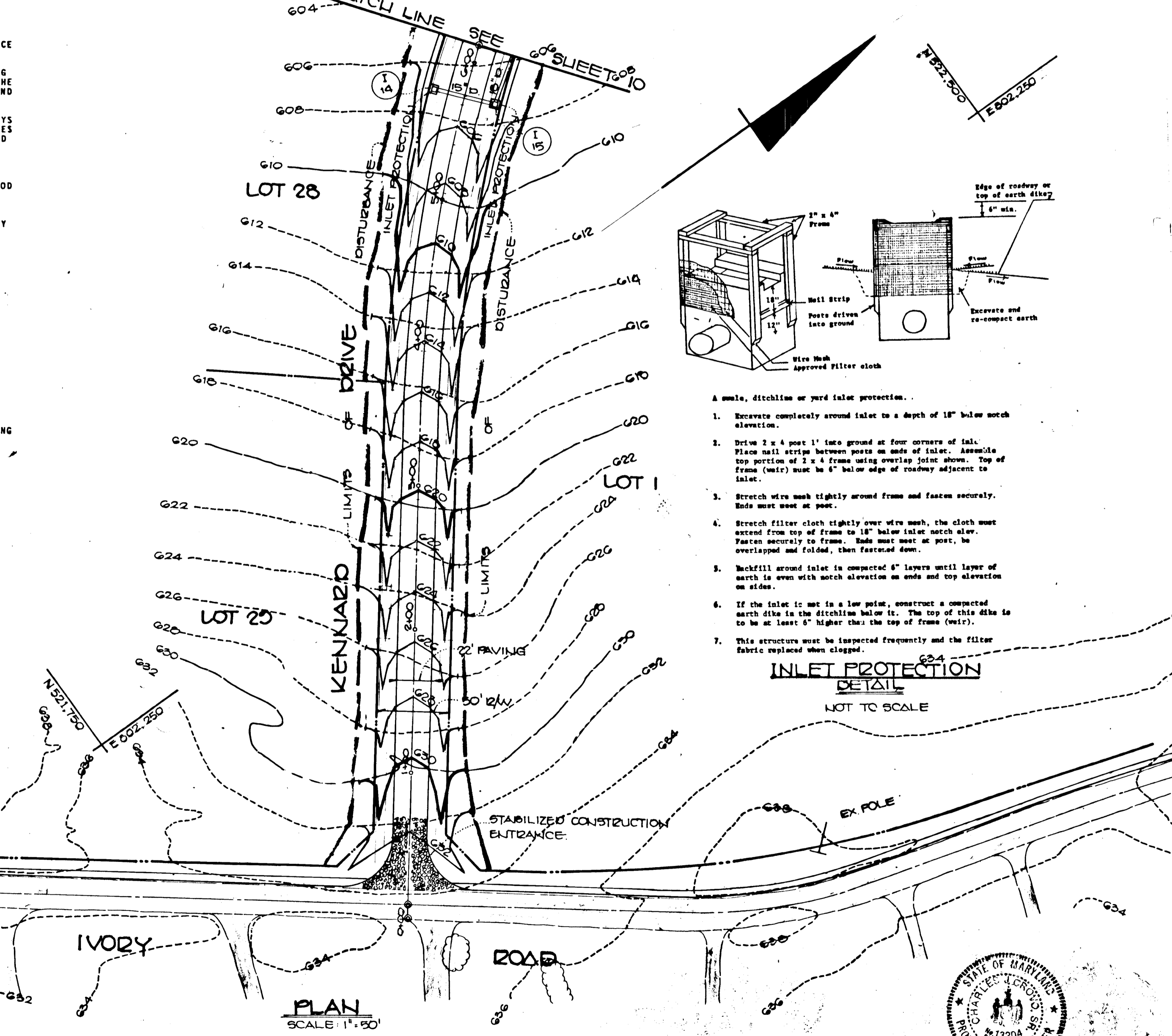
- CONSTRUCTION SPECIFICATIONS:**
1. Stone Size - Use 3" stone, or reclaimed or recycled concrete equivalent.
 2. Length - As required, but not less than 30 feet (except on a single residence lot where a 30 foot minimum length would apply).
 3. Thickness - Not less than six (6) inches.
 4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
 5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
 6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable beam with 5:1 slope will be permitted.
 7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measure used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
 8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
 9. Periodic inspection and needed maintenance shall be provided after each rain.

Stabilized Construction Entrance

not to scale

- SEDIMENT CONTROL NOTES:**
1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (992-2437).
 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
 4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
 5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOO (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDINGS DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
 6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 7. SITE ANALYSIS:

TOTAL AREA OF SITE	192.22	ACRES
AREA DISTURBED	11.72	ACRES
AREA TO BE ROOFED OR PAVED	1.82	ACRES
AREA TO BE VEGETATIVELY STABILIZED	8.93	ACRES
TOTAL CU. YDS.	10,000	CU. YDS.
TOTAL FILL	10,000	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION		
 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
 9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPM SEDIMENT CONTROL INSPECTOR.
 10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, NECESSARY OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.



- INLET PROTECTION DETAIL**
1. Excavate completely around inlet to a depth of 18" below notch elevation.
 2. Drive 2 x 4 post 1' into ground at four corners of inlet. Assemble top portion of 2 x 4 frame using overlap joint shown. Top of frame (wire) must be 6" below edge of roadway adjacent to inlet.
 3. Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.
 4. Stretch filter cloth tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet notch elevation. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.
 5. Backfill around inlet in compacted 6" layers until layer of earth is even with notch elevation on ends and top elevation on sides.
 6. If the inlet is set in a low point, construct a compacted arch dike in the ditchline below the inlet. The top of this dike is to be at least 6" higher than the top of frame (wire).
 7. This structure must be inspected frequently and the filter fabric replaced when clogged.
- NOT TO SCALE

STRUCTURE	TYPE	INV. IN	INV. OUT	TOP OF STRUCTURE	ROAD STATION	REMARKS
1-1	K INLET				KENNARD DRIVE	
1-2	W/GRATE	574.25	579.50	579.50	STA 42+53 21' RT.	SD 4.13
1-3	K INLET				KENNARD DRIVE	
1-4	W/GRATE	585.03	584.78	590.00	STA 42+53 21' RT.	SD 4.13
1-5	W/GRATE	586.00	585.84	590.00	STA 47+78 50 21' LT.	SD 4.13
1-6	K INLET				KENNARD DRIVE	
1-7	W/GRATE	580.75	580.50	585.40	STA 47+94 139 LT.	SD 4.13
1-8	K INLET				KENNARD DRIVE	
1-9	W/GRATE	580.96	580.75	585.40	STA 36+74 21' LT.	SD 4.13
1-10	K INLET				KENNARD DRIVE	
1-11	W/GRATE	598.78	598.52	603.00	STA 31+92 50 21' RT.	SD 4.13
1-12	K INLET				KENNARD DRIVE	
1-13	W/GRATE	580.96	580.75	585.40	STA 26+83 21' RT.	SD 4.13
1-14	K INLET				KENNARD DRIVE	
1-15	W/GRATE	594.69	594.94	600.00	STA 13+34 50 21' LT.	SD 4.13
1-16	K INLET				KENNARD DRIVE	
MH-1	MANHOLE	584.11	583.86	588.40	STA 47+15 21' RT.	G 5.11
MH-2	MANHOLE	574.60	574.25	579.50	STA 38+67 50 21' RT.	G 5.11
MH-3	MANHOLE				STA 34+02 21' RT.	G 5.11
S-1	STD METAL END SECTION			582.00	KENNARD DRIVE	SD 5.61
S-2	STD METAL END SECTION			582.80	STA 45+39.86 58' RT.	SD 5.61
					STA 26 94 117 RT.	SD 5.61

- CONSTRUCTION SEQUENCE:**
1. OBTAIN GRADING PERMIT.
 2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AND SEDIMENT TRAPS AS SHOWN ON PLAN. STABILIZE THE TRAPS WITH TEMPORARY SEEDING. INSTALL STRAW BALE OR SILT FENCE AS SHOWN ON THE PLAN. CONSTRUCT EARTH DIKES AND STABILIZE WITH TEMPORARY SEEDING.
 3. CONSTRUCT PIPE CULVERTS FROM E-1 TO E-2 AND E-3 TO E-4.
 4. CONSTRUCT REMAINING STORM DRAINS AND INLETS.
 5. INSTALL INLET PROTECTION DEVICES AS SHOWN ON PLAN.
 6. GRADE ROADS TO SUBGRADE.
 7. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON, AFTER EACH RAINFALL AND ON A DAILY BASIS. SEDIMENT SHALL BE REMOVED FROM THE TRAPS WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED.
 8. THE SEDIMENT TRAPS SHALL BE Dewatered BY PUMPING. REMOVE SEDIMENT FROM ROADWAYS AND DRESS STONE CONSTRUCTION ENTRANCE AS REQUIRED.
 9. REMOVE INLET PROTECTION DEVICES AND FLUSH STORM DRAIN SYSTEM TO REMOVE ANY TRAPPED SEDIMENT.
 10. REMOVE STONE CONSTRUCTION ENTRANCE AND STRAW BALE DIKE/SILT FENCE. CLEAN BASE COURSE. APPLY TACK COAT TO BASE COURSE AND LAY SURFACE COURSE.
 11. ALL DISTURBED AREAS DUE TO REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE.
 12. PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL TRAPS, DIKES, SLOPES, DITCH PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; b) 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
 13. COMPLETE STABILIZATION OF ALL DISTURBED AREAS SHALL BE DONE PRIOR TO REMOVAL OF ALL SEDIMENT CONTROLS.
 14. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION AT COMPLETION OF PROJECT.

ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PROFESSIONAL ENGINEERING PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT I WAS PREPARED IN ACCORDANCE WITH THE MARYLAND PROFESSIONAL ENGINEERING ACT AND REGULATIONS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE OF ENGINEER: *Charles J. Crovo* DATE: 5-17-88

DEVELOPER'S CERTIFICATE
 I HEREBY CERTIFY 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 DEEMED NECESSARY.
 SIGNATURE OF DEVELOPER: *Charles J. Crovo* DATE: 5-17-88

U.S. SOIL CONSERVATION DISTRICT
 DATE: 5/15/88
 APPROVED: *James W. Nelson*
 U.S. SOIL CONSERVATION DISTRICT

HOWARD COUNTY SOIL CONSERVATION DISTRICT
 DATE: 5/15/88
 APPROVED: *Stephen R. Brown*
 HOWARD COUNTY SOIL CONSERVATION DISTRICT

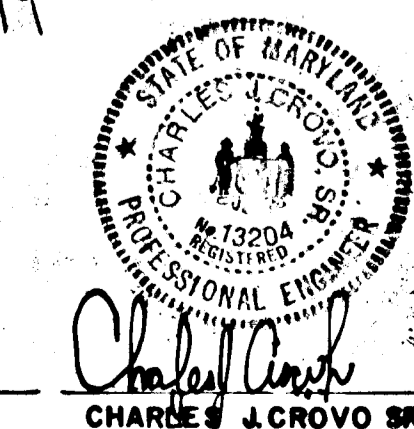
OFFICE OF PLANNING AND ZONING
 DATE: 5-17-88
 APPROVED: *Charles J. Crovo*
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

DEPARTMENT OF PUBLIC WORKS
 DATE: 5-17-88
 APPROVED: *Charles J. Crovo*
 CHIEF, BUREAU OF ENGINEERING

DEPARTMENT OF PUBLIC WORKS
 DATE: 5/15/88
 APPROVED: *Priscilla W. Walters*
 CHIEF, BUREAU OF HIGHWAYS

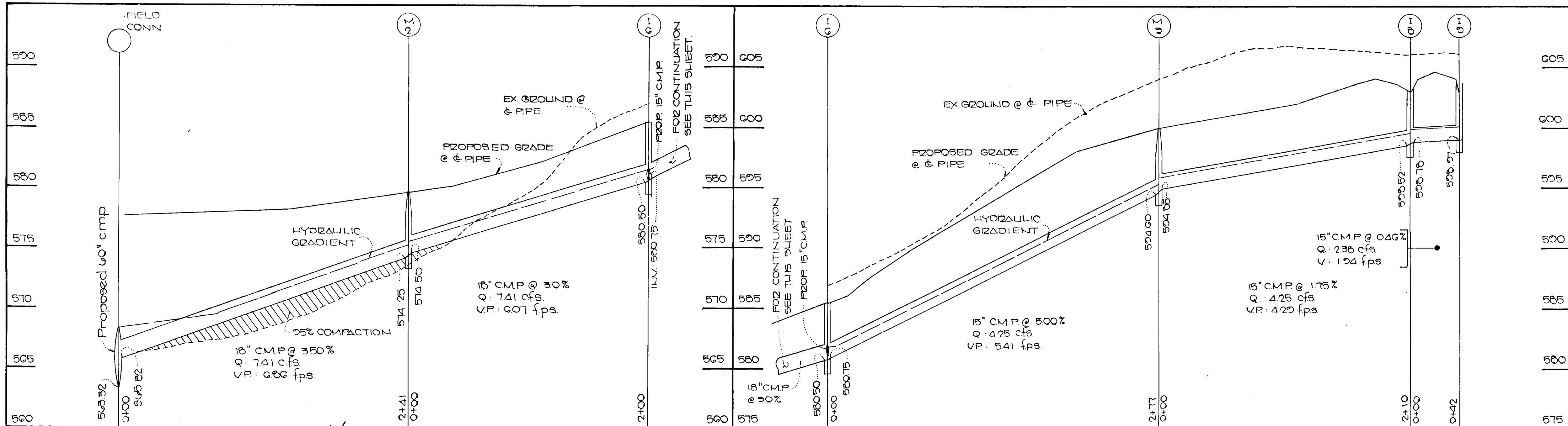
DEPARTMENT OF PUBLIC WORKS
 DATE: 5/15/88
 APPROVED: *Charles J. Crovo*
 CHIEF, LAND DEVELOPMENT DIVISION

CRYSTAL CLEAR
 LOTS 1-20
 4 TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 MAY 21, 1988
 SCALE: AS SHOWN SHEET 2 OF 14



OWNER AND DEVELOPER
 WARFIELD BROTHERS
 14663 TRIADELPHIA RD
 GLENELG, MARYLAND 21737

378



DEVELOPER'S CERTIFICATE

"I/WE CERTIFY 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 DISTRICT ENGINEER'S OFFICE OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY."

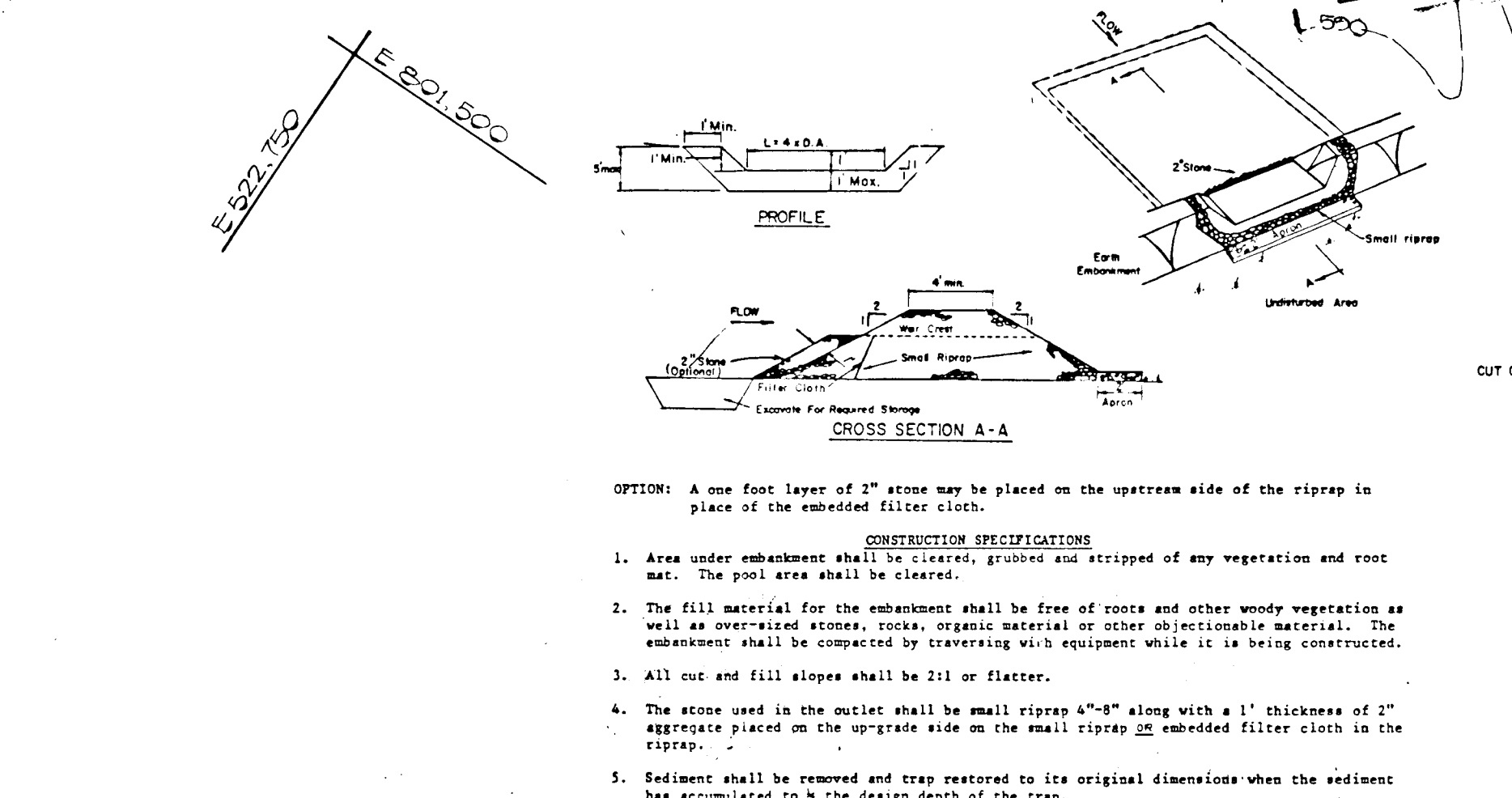
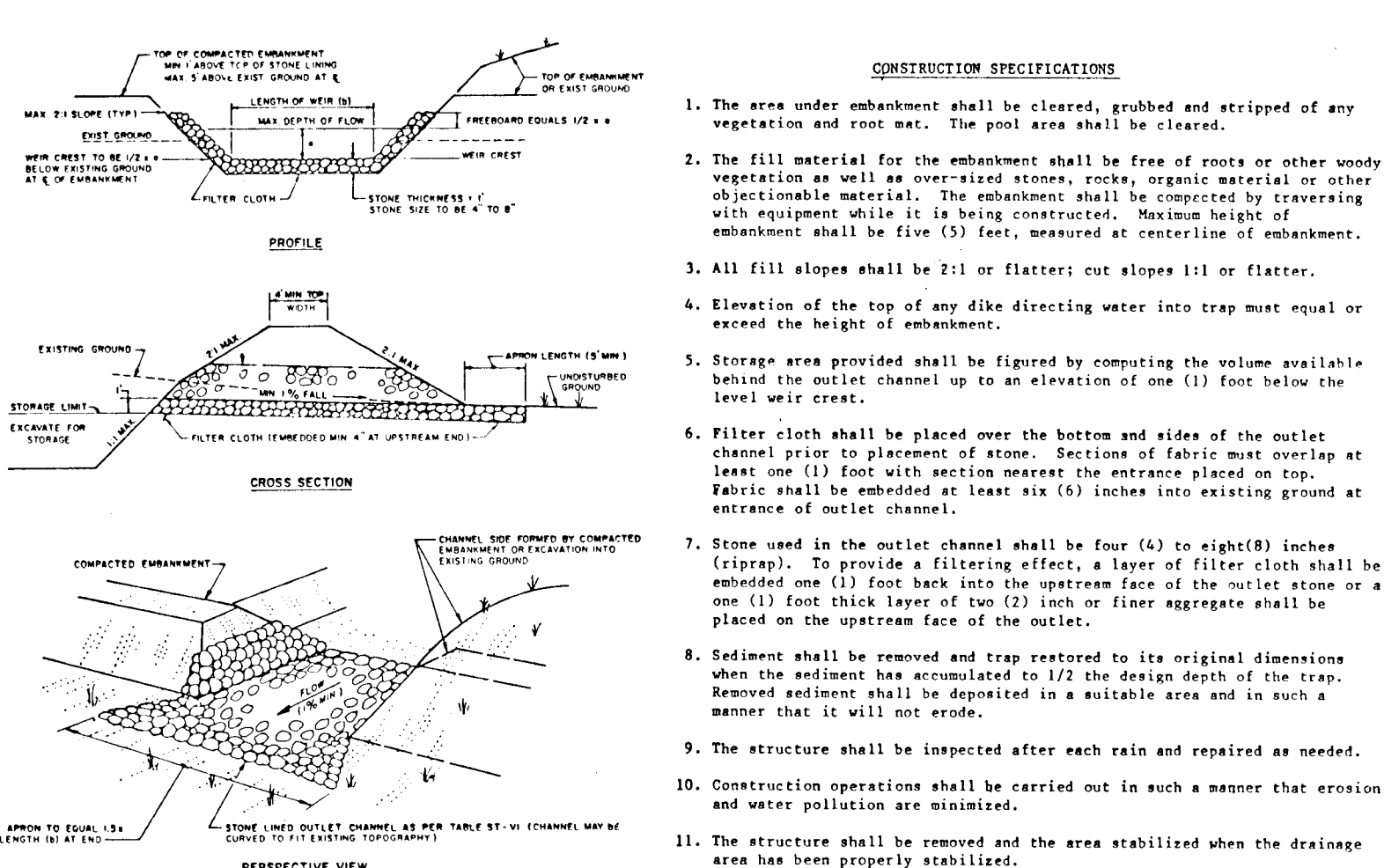
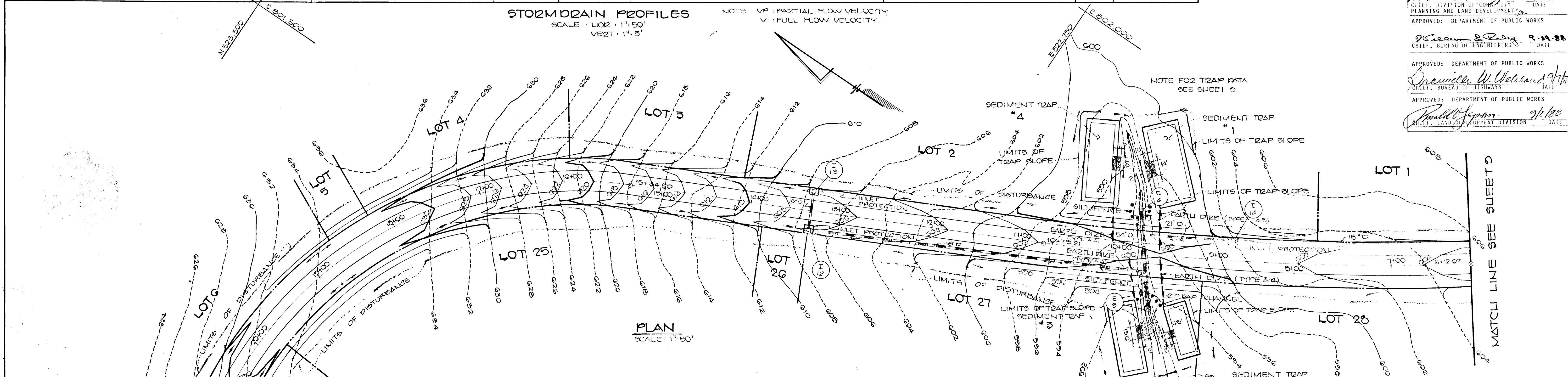
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
DATE: 8/25/88
JAMES M. NEHR
DISTRICT ENGINEER

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
DATE: 9/1/88
APPROVED: OFFICE OF PLANNING AND ZONING

DATE: 8/10/88
APPROVED: DEPARTMENT OF PUBLIC WORKS
PLANNING AND LAND DEVELOPMENT DIVISION
DATE: 8/10/88
APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING

DATE: 8/10/88
APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS

DATE: 9/1/88
APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS



1378

FISHER, COLLINS AND CARTER, INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
8388 COURT AVENUE
ELLCOTT CITY, MARYLAND 21043
TELEPHONE: (301) 461-2855

RIP-RAP OUTLET SEDIMENT TRAP
NOT TO SCALE

Revision	Description
0-0-00	revised per county comments dated 1-27-88
Date	Description

STONE OUTLET SEDIMENT TRAP
NOT TO SCALE

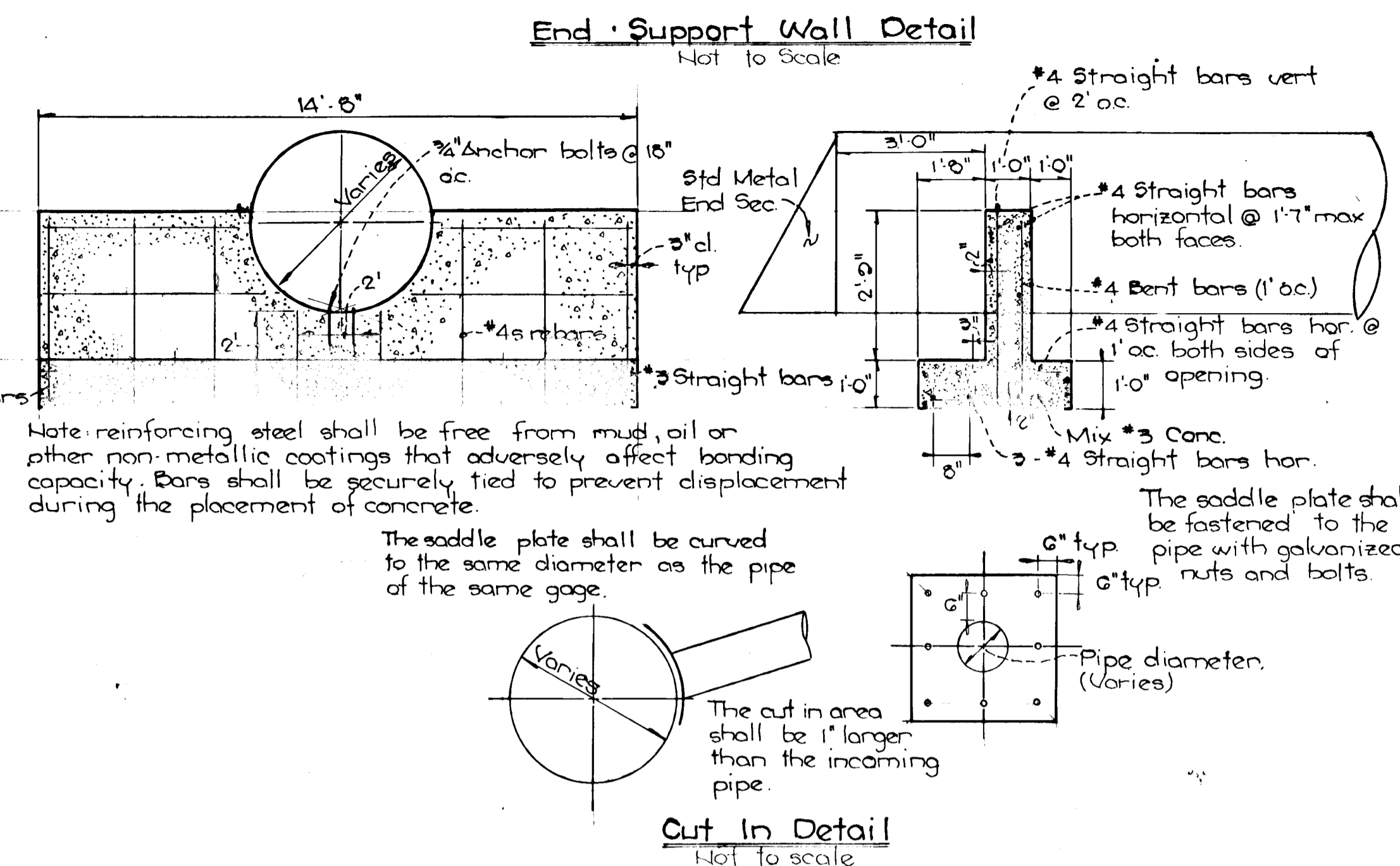
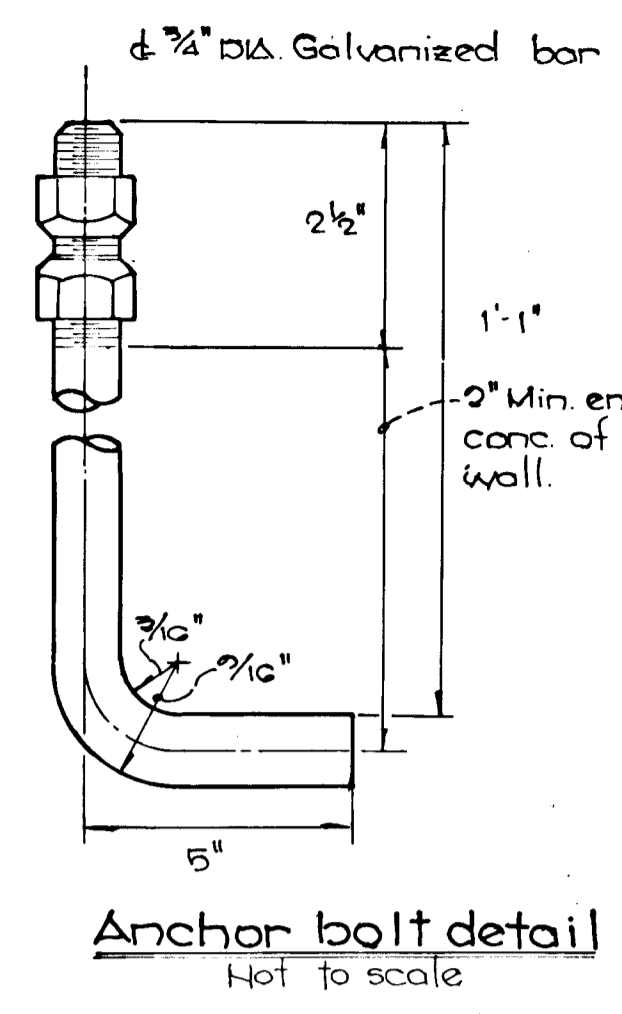
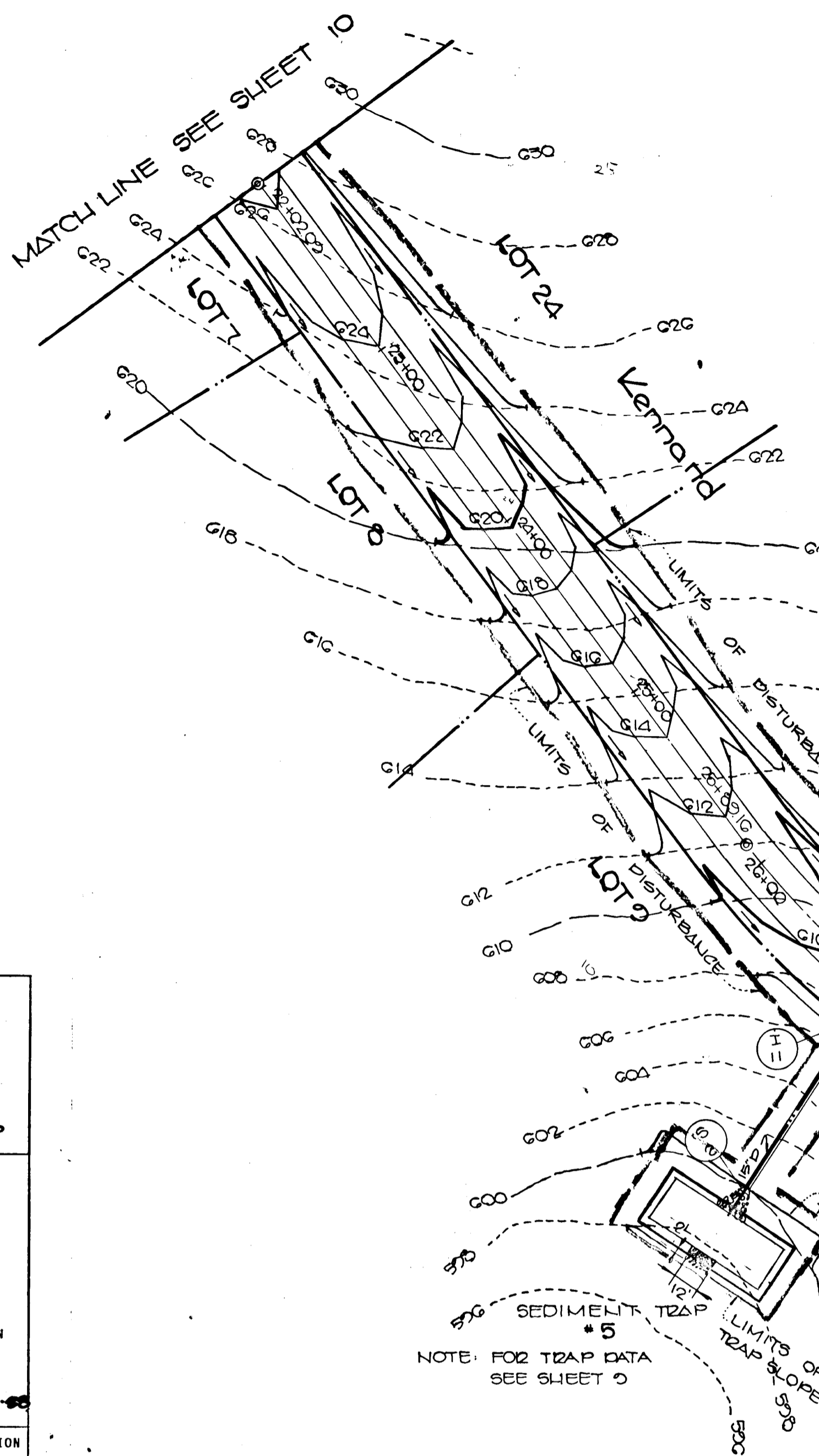
OWNER AND DEVELOPER
WARFIELD BROTHERS
14663 TRIADELPHIA ROAD
GLENELG, MARYLAND 21737

DATE: 8-17-88
CHARLES J. CROVO SR.

SEDIMENT CONTROL AND GRADING PLAN
CRYSTAL CLFAR
LOTS 1-29

4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 10 OF 14
MAY 27, 1988



I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 5-17-88
 DEVELOPER'S CERTIFICATE
 "I/WE CERTIFY 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 TO DETERMINE WHETHER ACTIONS AS ARE DEEMED NECESSARY TO MAINTAIN ADEQUATE EROSION CONTROL MEASURES."
 5-17-88
 REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 8/25/88
 APPROVED:
 DISTRICT HOWARD SOIL CONSERVATION DISTRICT
 APPROVED: OFFICE OF PLANNING AND ZONING
 9-21-88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 9-19-88
 CHIEF, BUREAU OF ENGINEERING
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 9/1/88
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 9/1/88
 CHIEF, LAND MANAGEMENT DIVISION

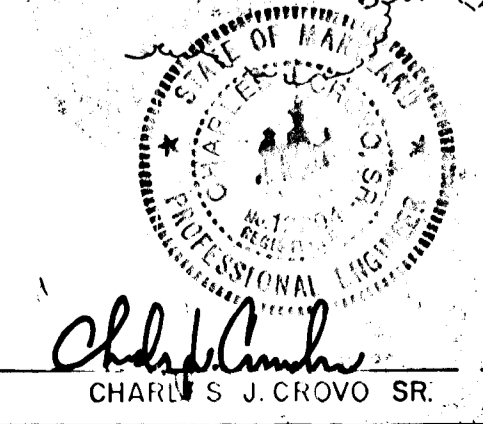
PLAN SCALE: 1" = 50'

Date	Description	Revision
8-8-88	revised per county comments dated 7-27-88	

GRADING AND SEDIMENT CONTROL PLAN
CRYSTAL CLEAR
 LOTS 1-25
 4 TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN SHEET 11 OF 14

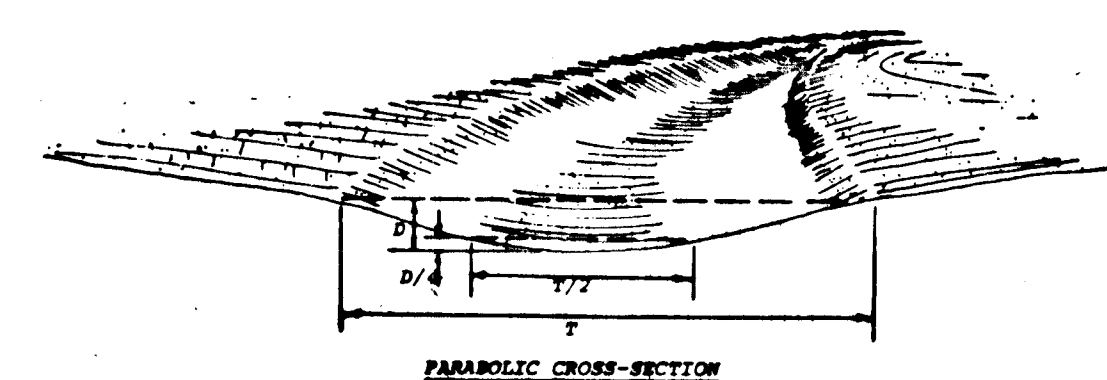
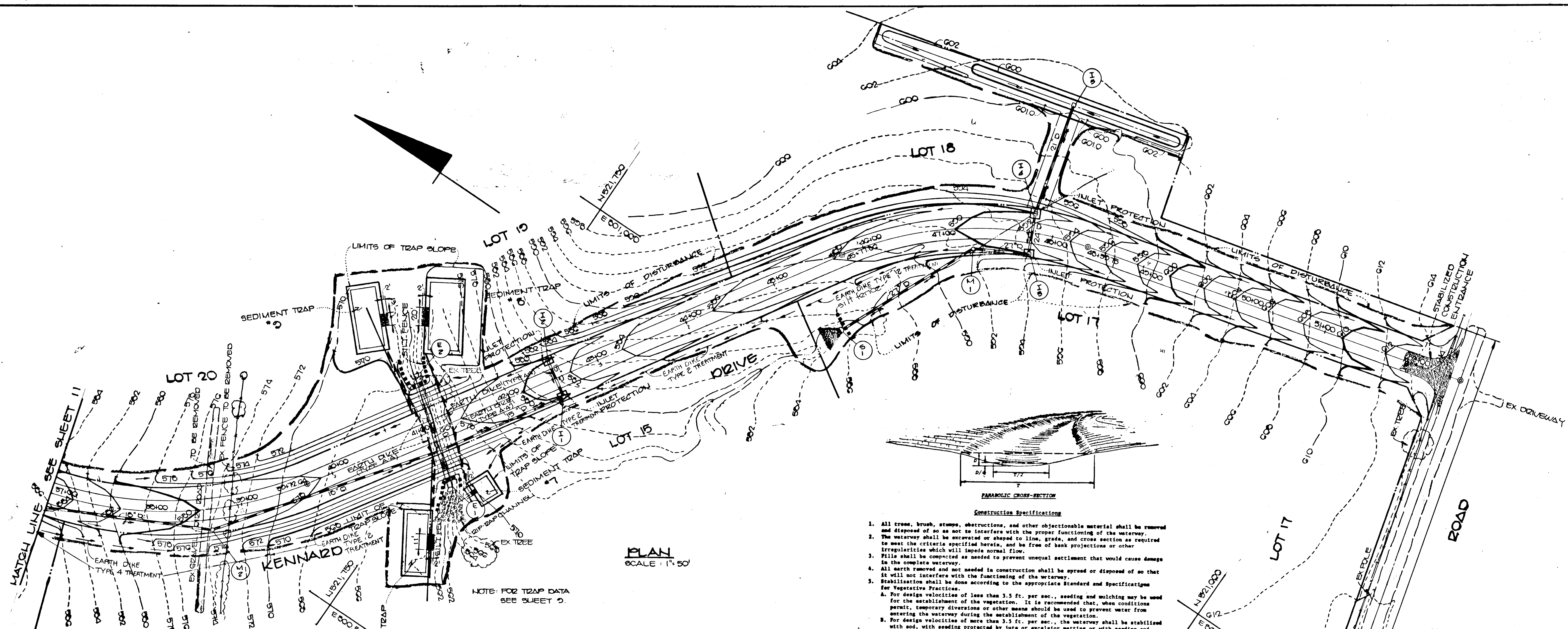
FISHER, COLLINS AND CARTER, INC.
 CONSULTING ENGINEERS AND LAND SURVEYORS
 8388 COURT AVENUE
 ELLICOTT CITY, MARYLAND 21043
 TELEPHONE: (301) 461-2855

OWNER AND DEVELOPER
 WARFIELD BROTHERS
 14663 TRIADELPHIA ROAD
 GLENELG, MARYLAND 21737



5-17-88
 CHARLES J. CROVO SR. DATE

1378



- Construction Specifications**
- All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the waterway.
 - The waterway shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified herein, and be free of bank projections or other irregularities which will impede normal flow.
 - Fills shall be compacted as needed to prevent unequal settlement that would cause damage in the complete waterway.
 - All earth removed and not needed in construction shall be spread or disposed of so that it will not interfere with the functioning of the waterway.
 - Stabilization shall be done according to the appropriate Standard and Specifications for Vegetative Practices.
 - For design velocities of less than 3.5 ft. per sec., seeding and mulching may be used for the establishment of the vegetation. It is recommended that, when conditions permit, temporary diversions or other means should be used to prevent water from entering the waterway during the establishment of the vegetation.
 - For design velocities of more than 3.5 ft. per sec., the waterway shall be stabilized with sod, with seeding protected by jute or excelsior matting or with seeding and mulching including temporary diversion of the water until the vegetation is established.
 - Structural - Vegetative Protection
 - Subsurface drain for base flow shall be constructed as shown on the Standard Drawing and as specified in the Standard and Specifications for Subsurface Drains.

Parabolic Channel Detail
not to scale

PLAN
SCALE: 1" = 50'

NOTE: FOR TRAP DATA SEE SHEET 0.

<p>ENGINEER'S CERTIFICATE</p> <p>I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>Charles J. Crovo</i> 6/3/88 SIGNATURE OF ENGINEER DATE</p>	<p>THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p>APPROVED: <i>Stephen L. Hahn</i> 5/25/88 DATE DISTRICT HOWARD SOIL CONSERVATION DISTRICT</p> <p>APPROVED: OFFICE OF PLANNING AND ZONING <i>Joseph C. DeLoach</i> 7-11-88 DATE CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT</p> <p>APPROVED: DEPARTMENT OF PUBLIC WORKS <i>James R. Riden</i> 9-19-88 DATE CHIEF, BUREAU OF ENGINEERING</p> <p>APPROVED: DEPARTMENT OF PUBLIC WORKS <i>Francis W. Winesand</i> 9/1/88 DATE CHIEF, BUREAU OF HIGHWAYS</p> <p>APPROVED: DEPARTMENT OF PUBLIC WORKS <i>Donald C. Johnson</i> 7/2/88 DATE CHIEF, LAND DEVELOPMENT DIVISION</p> <p>REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS. <i>Robert L. Orr</i> 8/25/88 DATE U.S. SOIL CONSERVATION DISTRICT</p>
<p>DEVELOPER'S CERTIFICATE</p> <p>I HEREBY CERTIFY 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.</p> <p><i>Warfield Brothers</i> 6/27/88 SIGNATURE OF DEVELOPER DATE</p>	

Date	Description
6-20-88	revised per county comments dated 7-21-88
	Revision.



Charles J. Crovo 6/3/88
CHARLES J. CROVO SR. DATE

OWNER AND DEVELOPER
WARFIELD BROTHERS
14663 TRIADDELPHIA ROAD
GLENELG, MARYLAND 21737

GRADING AND SEDIMENT CONTROL PLAN
CRYSTAL CLEAR
LOTS 1-20
4 TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN SHEET 12 OF 14
MAY 27, 1988

1378

FISHER, COLLINS AND CARTER, INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
8388 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043

APPROVED
OFFICE OF PLANNING AND ZONING
Frank S. DeCamp 9-11-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
Paul H. Jensen 9/12/88
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
Drayville W. Thomas 9/17/88
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
W. S. ... 9-19-88
CHIEF, BUREAU OF ENGINEERING DATE



8181

FISHER, COLLINS AND CARTER, INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
8388 COURT AVENUE
ELLCOTT CITY, MARYLAND 21043
TELEPHONE: (301) 461-2855

STATE OF MARYLAND
DEPARTMENT OF PUBLIC WORKS
Charles J. Crovo Sr. 9/13/88
CHARLES J. CROVO SR. DATE

OWNER AND DEVELOPER
WARFIELD BROTHERS
14663 TRIADDELPHIA ROAD
GLENELG, MARYLAND 21737

DRAINAGE AREA MAP
CRYSTAL CLEAR

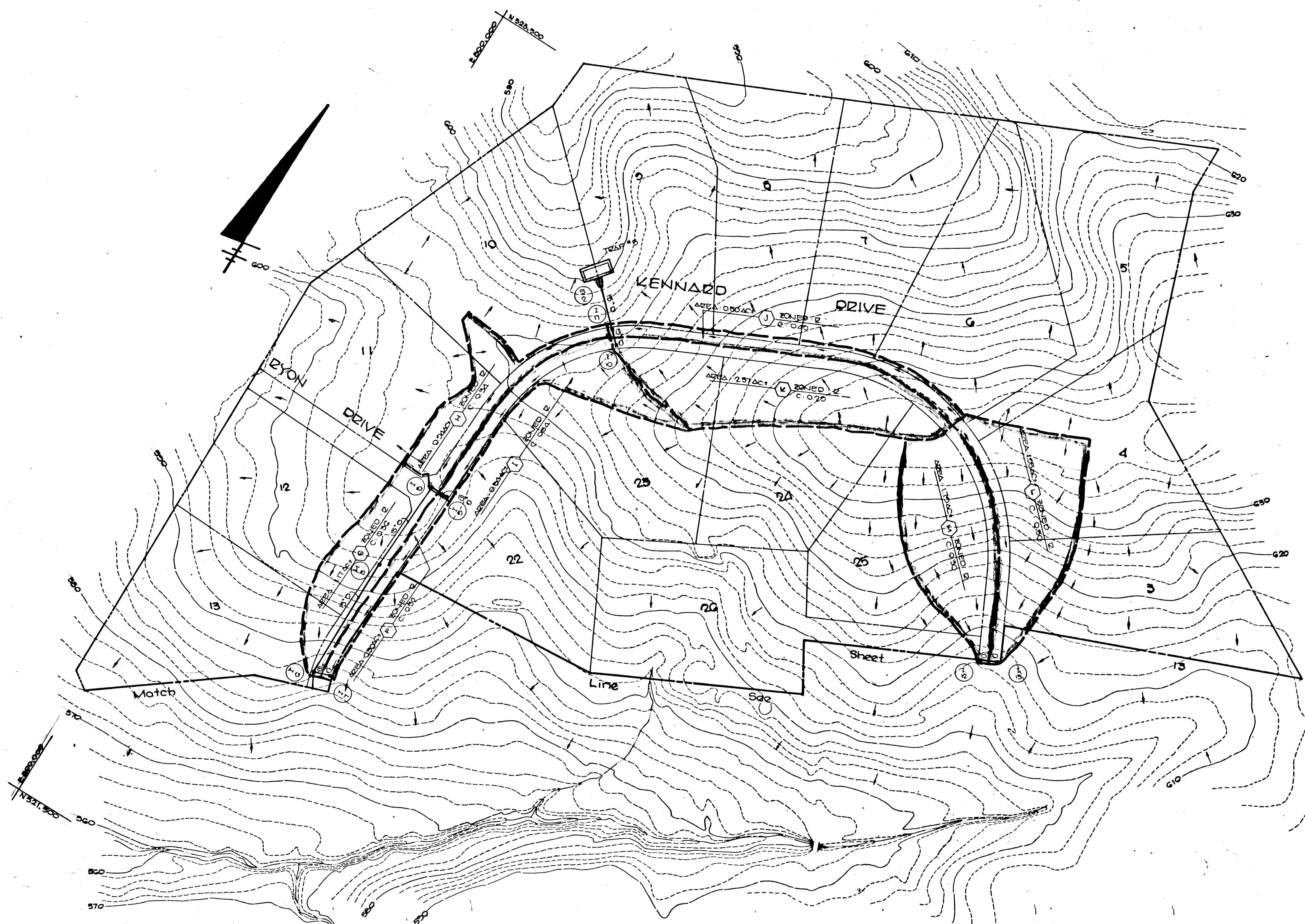
LOTS 1 TO 29
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SHEET 13 OF 14 MAY 27, 1988
SCALE: 1"=100'

APPROVED DEPARTMENT OF PUBLIC WORKS
Paul J. ... 9/1/58
 CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
Francis W. ... 9/1/58
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
W. ... 9-19-58
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED OFFICE OF PLANNING AND ZONING
Frank J. ... 9-21-58
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



1378

FISHER, COLLINS AND CARTER, INC.
 CONSULTING ENGINEERS AND LAND SURVEYORS
 8385 COURT AVENUE
 ELLICOTT CITY, MARYLAND 21043
 TELEPHONE (301) 461-2855

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
Charles J. Crovo
 CHARLES J. CROVO SR. DATE 9-17-58

OWNER AND DEVELOPER
 WARFIELD BROTHERS
 1463 TRIADELPHIA ROAD
 GLENELG, MARYLAND 21737

DRAINAGE AREA MAP
CRYSTAL CLEAR
 LOTS 1 TO 29
 4 TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SHEET 14 OF 14 MAY 27, 1958
 SCALE 1"=100'
 F66-276