

# CATTAIL CREEK COUNTRY CLUB

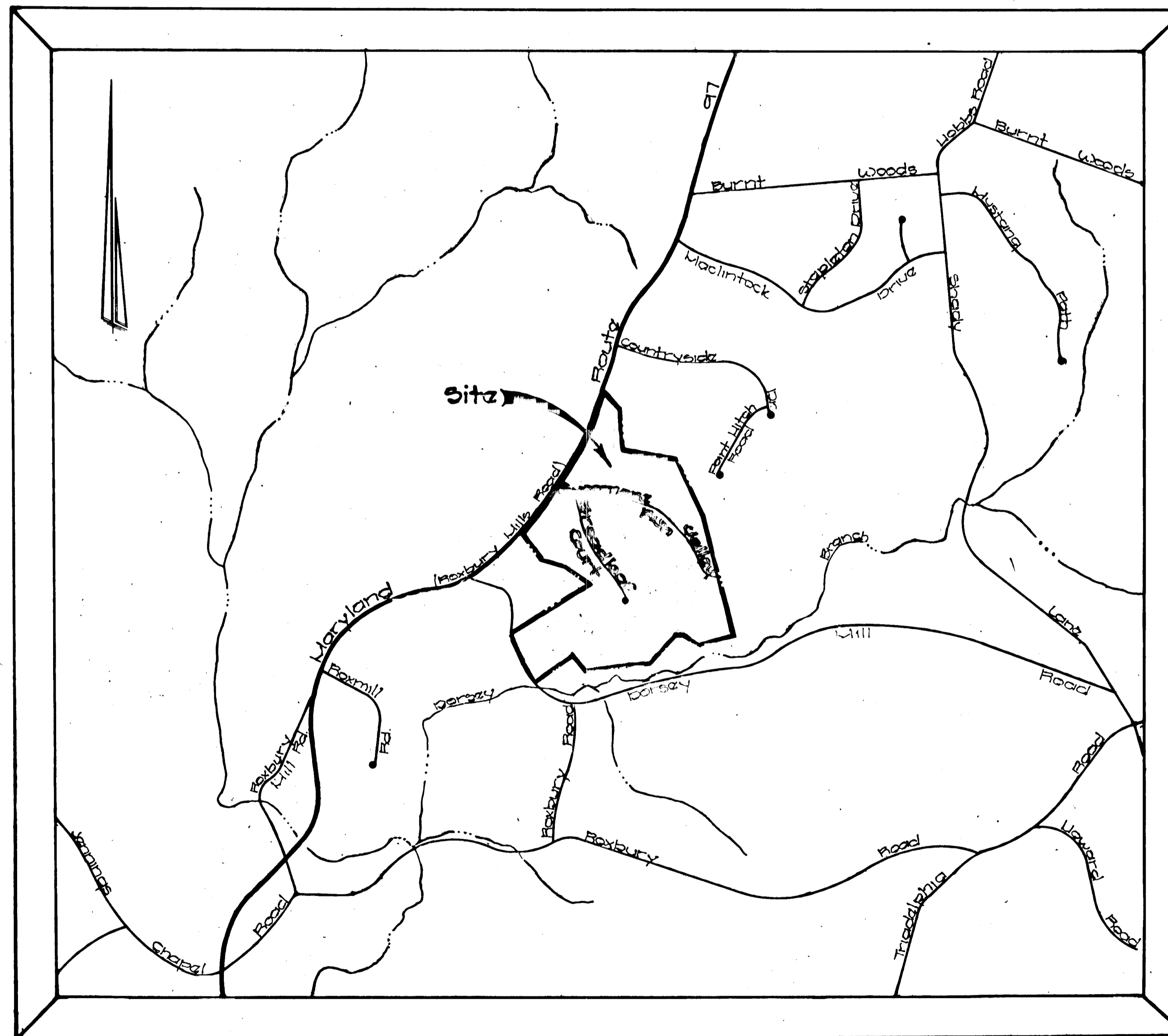
## FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

APPROVED  
DEPARTMENT OF PUBLIC WORKS  
*Alan M. Ferguson* 7/20/91  
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED  
DEPARTMENT OF PUBLIC WORKS  
*Ed W. Wehland, Jr. P.E.* 7/14/91  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED  
DEPARTMENT OF PUBLIC WORKS  
*William S. Ray* 7-25-91  
CHIEF, BUREAU OF ENGINEERING DATE

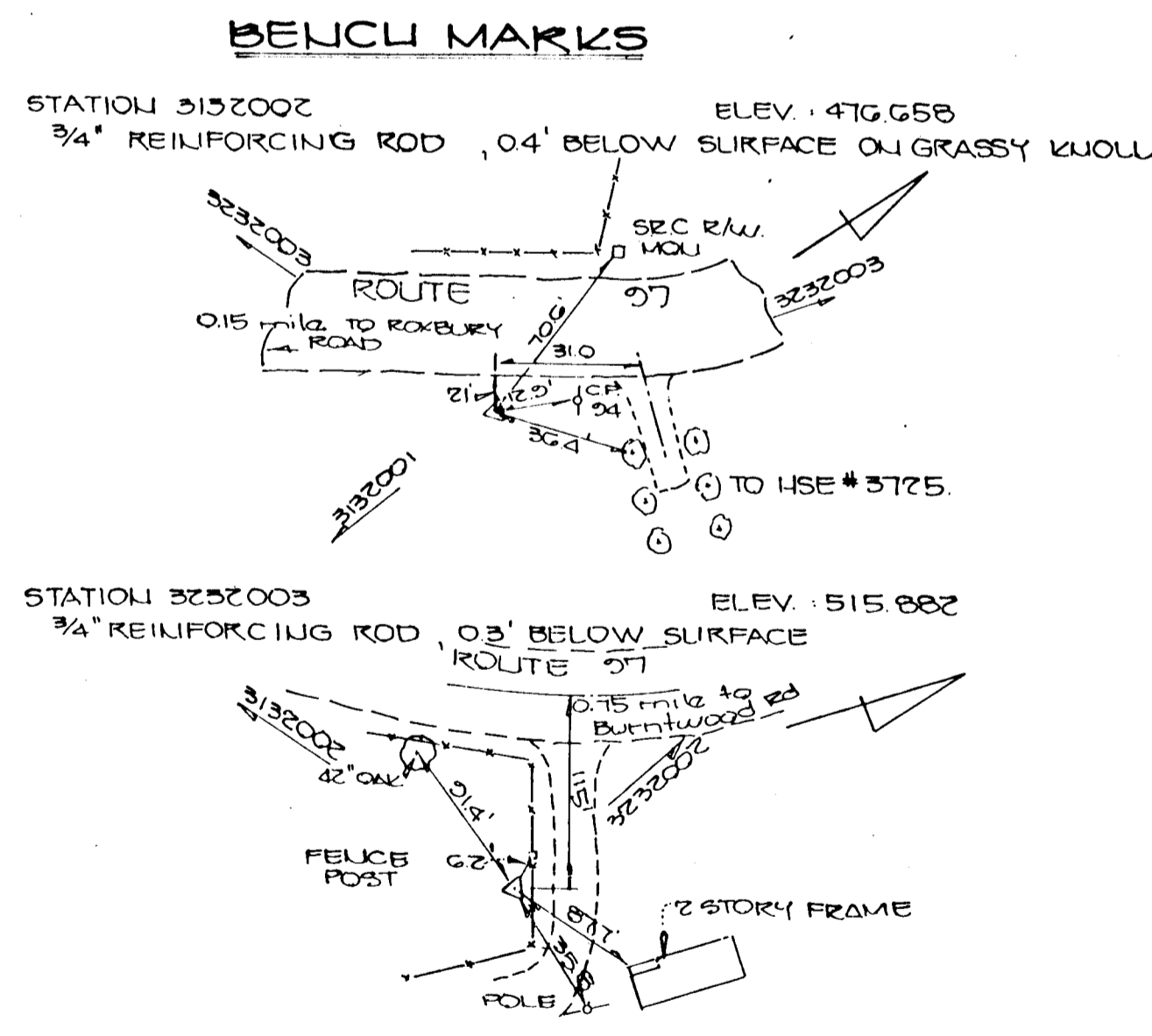
APPROVED  
DEPT. OF PLANNING AND ZONING  
*Richard A. Taylor* 7/21/91  
CHIEF, DIVISION OF COMMUNITY PLANNING DATE  
AND LAND DEVELOPMENT 87



Vicinity Map  
Scale: 1" = 1000'

THE HORIZONTAL AND VERTICAL CONTROL SHOWN HEREON ARE BASED ON THE MARYLAND STATE GRID SYSTEM AND DERIVED FROM THE FOLLOWING HOWARD COUNTY CONTROL STATIONS:

STA. 3132002	N 52280.087
	E 788447.553
STA. 3252003	N 522810.707
	E 787655.087



### 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 RIGHTS-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODES.
4. ANY DAMAGE TO PUBLIC RIGHTS-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE COMPLETED 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.
8. THIS PLAN IS SUBJECT TO THE CONDITIONS OF WP 07-171.

### SHEET INDEX

1. TITLE SHEET
2. PLAN AND PROFILE
3. PLAN AND PROFILE
4. DETAILS
5. STORMDRAIN PROFILES
6. STORMDRAIN PLAN AND PROFILES
7. GRADING AND SEDIMENT CONTROL PLAN
8. SEDIMENT CONTROL DETAILS
7. MITIGATION PLANTING PLAN
10. TREE PLANTING PLAN
11. SOIL PROFILES
12. POND MITIGATION SECTIONS
13. POND MITIGATION SECTIONS

**OWNER / DEVELOPER**  
SYCAMORE VALLEY PARTNERSHIP  
96 LAND DESIGN & DEVELOPMENT, INC.  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

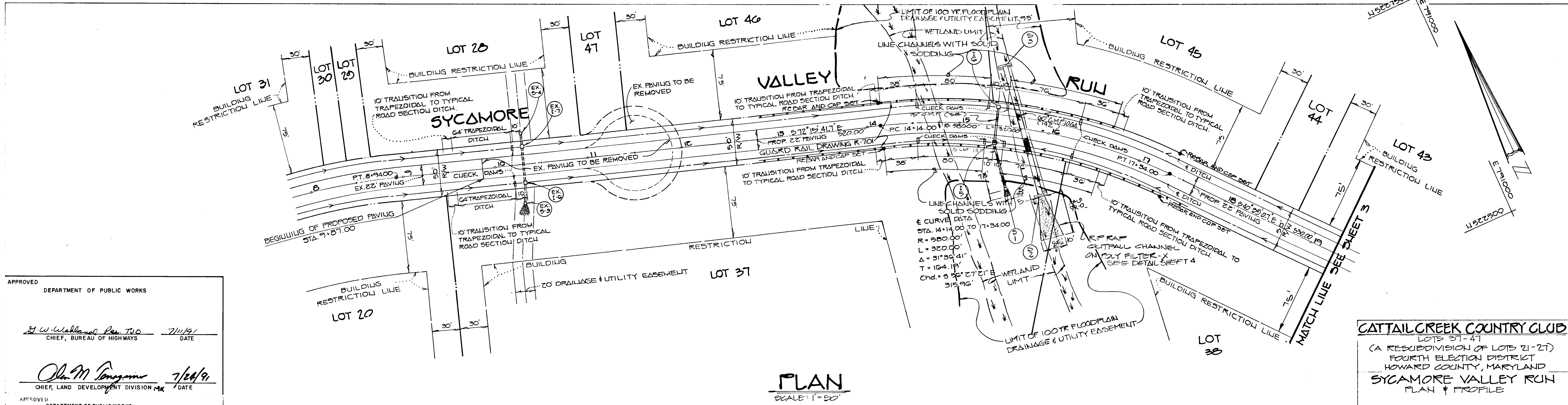


*Charles J. Krovo* 10/1/90  
CHARLES J. KROVO, P.E.  
DATE

AS-BUILT  
3-27-92

1630

**FISHER, COLLINS & CARTER, INC.**  
CONSULTING ENGINEERS AND LAND SURVEYORS  
SUITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21043  
TELEPHONE: (301)461-2855



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

APPROVED  
DEPARTMENT OF PUBLIC WORKS

*J. W. Williams, P.E., T.D.* 7/11/91  
CHIEF, BUREAU OF HIGHWAYS DATE

*Alan M. Bergman* 7/24/91  
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED  
DEPARTMENT OF PUBLIC WORKS

*Deborah S. Kelly* 7-25-91  
DATE

APPROVED  
DEPT. OF PLANNING AND ZONING

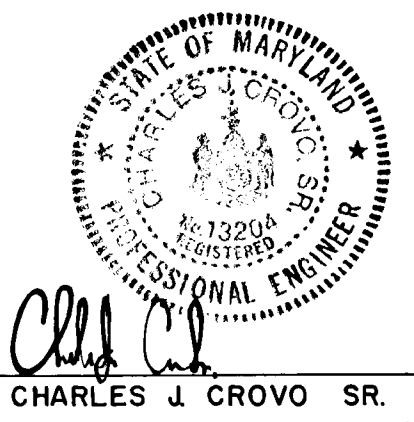
*Martha J. Taylor* 7/6/91  
COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

**CATTAIL CREEK COUNTRY CLUB**  
LOTS 31-41  
(A RESUBDIVISION OF LOTS 21-27)  
FOURTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
**SYCAMORE VALLEY RUN**  
PLAN & PROFILE

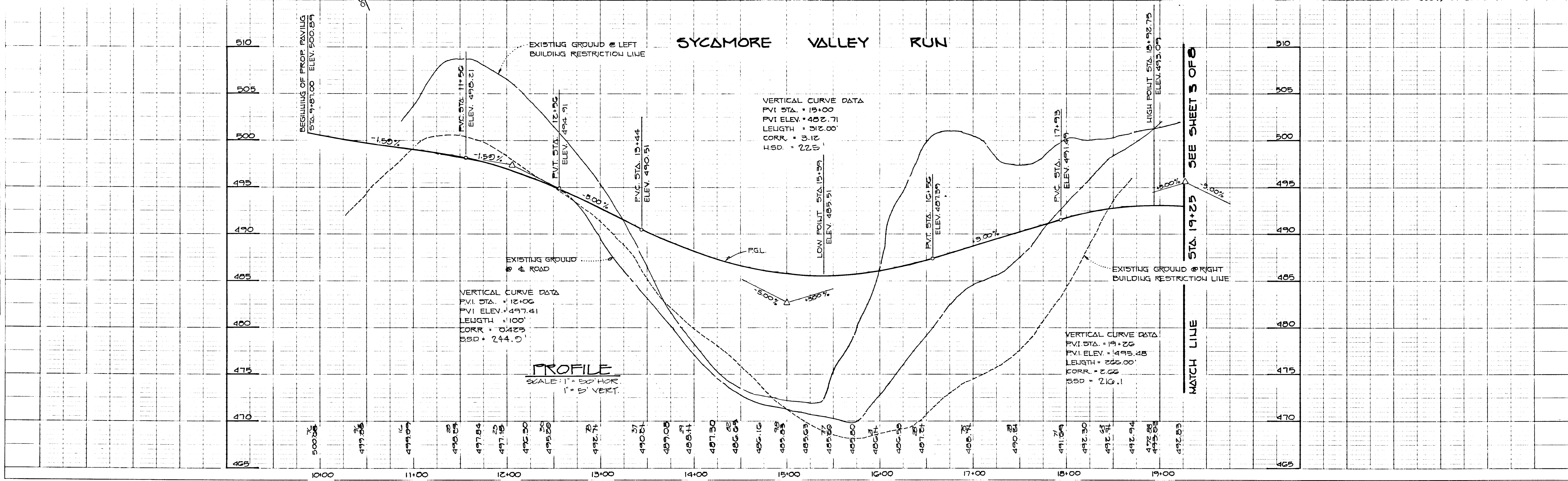
OWNER AND DEVELOPER  
SYCAMORE VALLEY PARTNERSHIP  
7% LAND DESIGN AND DEVELOPMENT, INC.  
10005 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

SCALE: AS SHOWN DATE: 7-14-90 DWG. NO. 2 OF 13  
DES: M. TAYLOR DRN: L.M.A. CHK: C. GROVO

**FISHER, COLLINS AND CARTER, INC.**  
CIVIL ENGINEERS AND LAND SURVEYORS  
8368 COURT AVE. ELLETTTOWN CITY, MARYLAND 21604  
TELE: (301) 401-2855 FAX: 750-3784

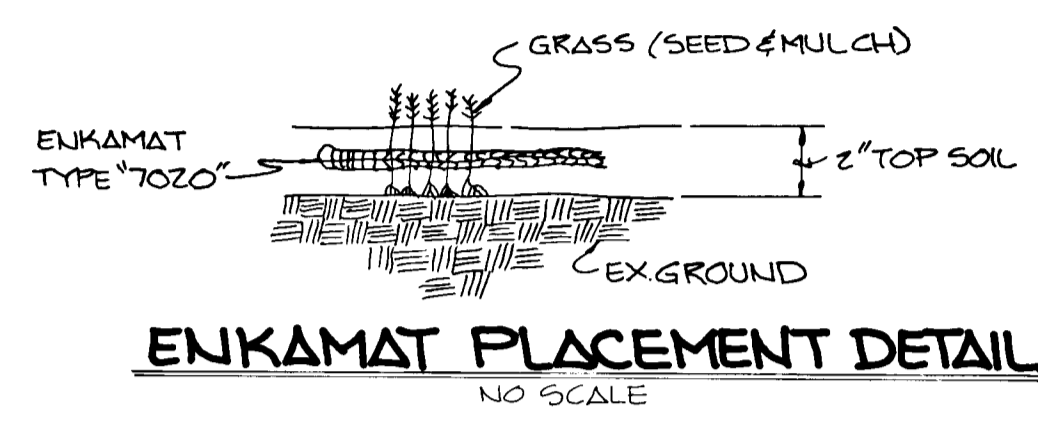
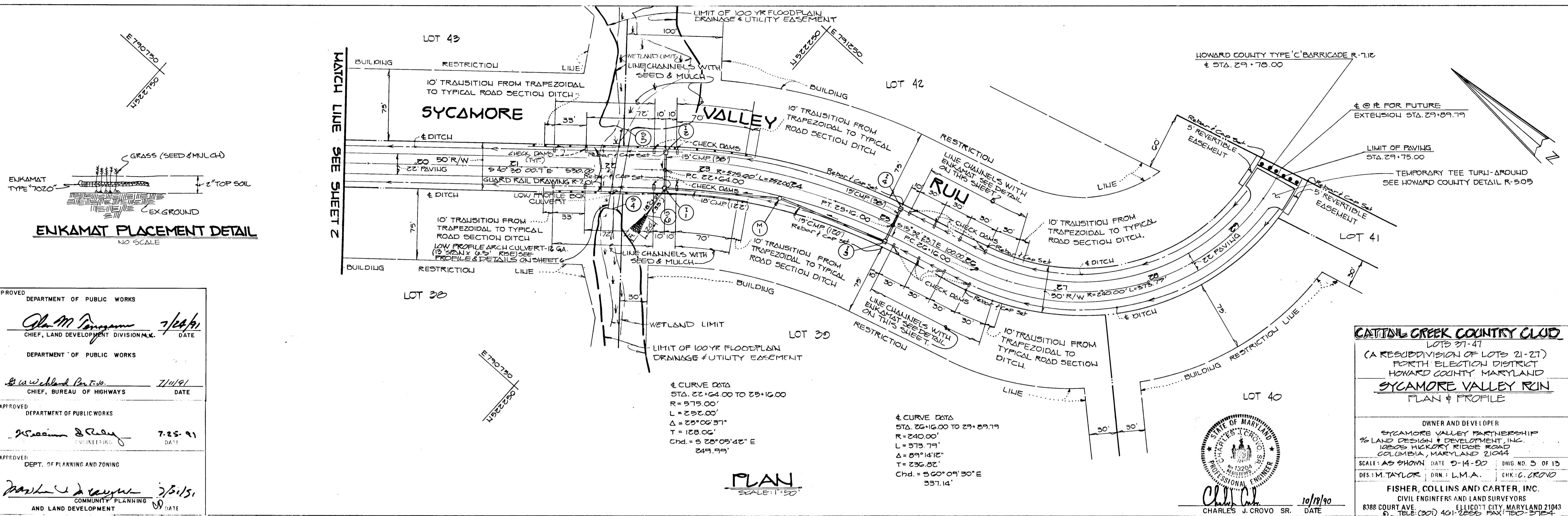


*Charles J. Grovo Sr.*  
CHARLES J. GROVO SR. 10/15/90  
DATE



**PROFILE**  
SCALE: 1" = 50' HOR.  
1" = 5' VERT.

1630



APPROVED DEPARTMENT OF PUBLIC WORKS  
**Alan M. Longman** 7/22/91  
 CHIEF, LAND DEVELOPMENT DIVISION M.C. DATE

DEPARTMENT OF PUBLIC WORKS  
**Elisabeth W. Pennington** 7/11/91  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED DEPARTMENT OF PUBLIC WORKS  
**William S. Riley** 7-25-91  
 ENGINEER DATE

APPROVED DEPT. OF PLANNING AND ZONING  
**Mark A. ...** 7/21/91  
 COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

**CATTAIL CREEK COUNTRY CLUB**  
 LOTS 21-47  
 (A RESUBDIVISION OF LOTS 21-27)  
 FORTH ELECTION DISTRICT  
 HOWARD COUNTY MARYLAND  
**SYCAMORE VALLEY RUN**  
 PLAN & PROFILE

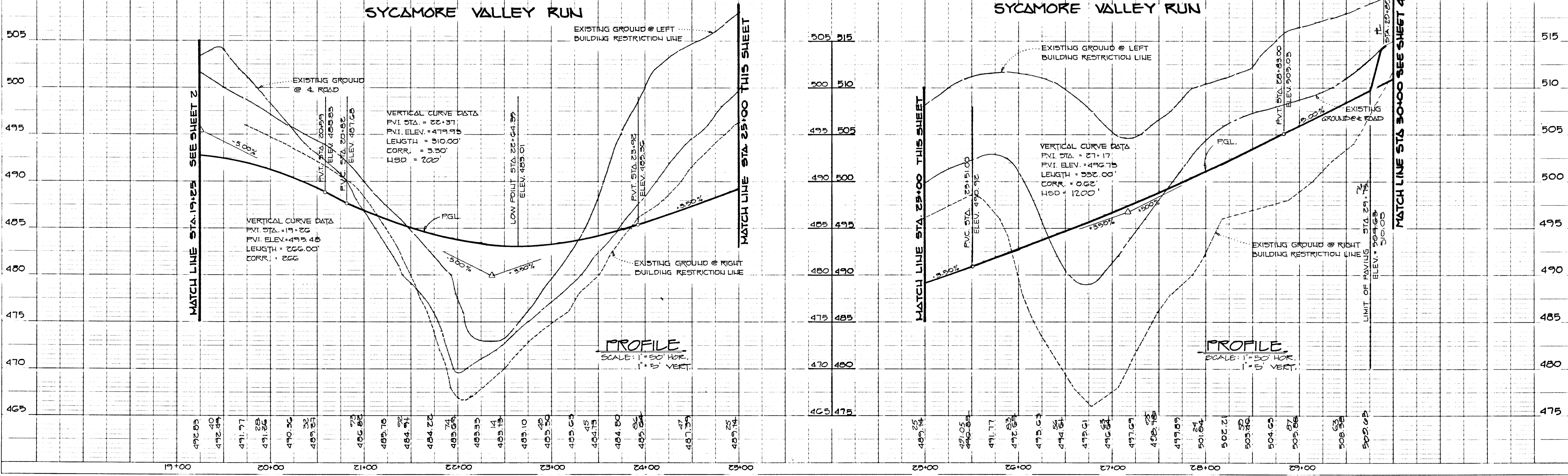
OWNER AND DEVELOPER  
**SYCAMORE VALLEY PARTNERSHIP**  
 % LAND DESIGN & DEVELOPMENT, INC.  
 12805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

SCALE: AS SHOWN DATE 9-14-90 DWG NO. 3 OF 13  
 DES: M. TAYLOR DRN: L.M.A. CHK: C. CROVO

**FISHER, COLLINS AND CARTER, INC.**  
 CIVIL ENGINEERS AND LAND SURVEYORS  
 8388 COURT AVE. ELICOTT CITY, MARYLAND 21043  
 TEL: (301) 401-2855 FAX: (301) 571-1044

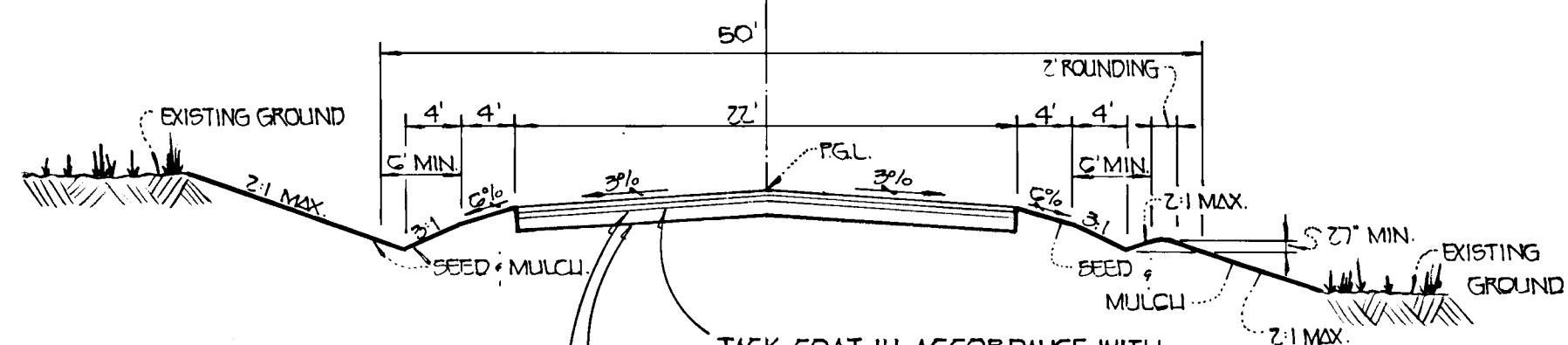
DATE 10/18/90  
 CHARLES J. CROVO SR.

1630



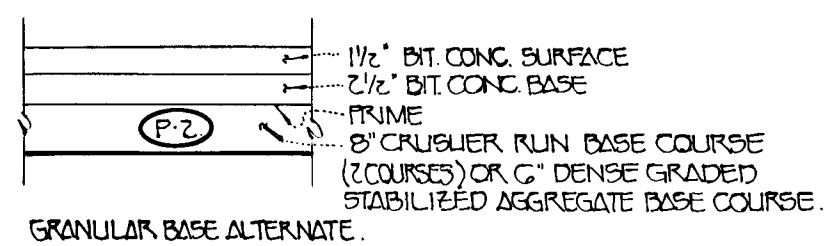
ROAD NAME	ROAD CLASSIFICATION	DESIGN SPEED	STATIONS	ZONING
SYCAMORE VALLEY RUN	LOCAL ROAD	30 MPH.	9+87 - 29+75	"R"

TRAPEZOIDAL CHANNEL STATIONING	
BEGIN TRANSITION	ENDING STATION
14+06	15+39.00
16+72	17+37.00
21+35	22+64.35
23+56	22+64.35
26+91	25+16.00
26+60	25+16.00

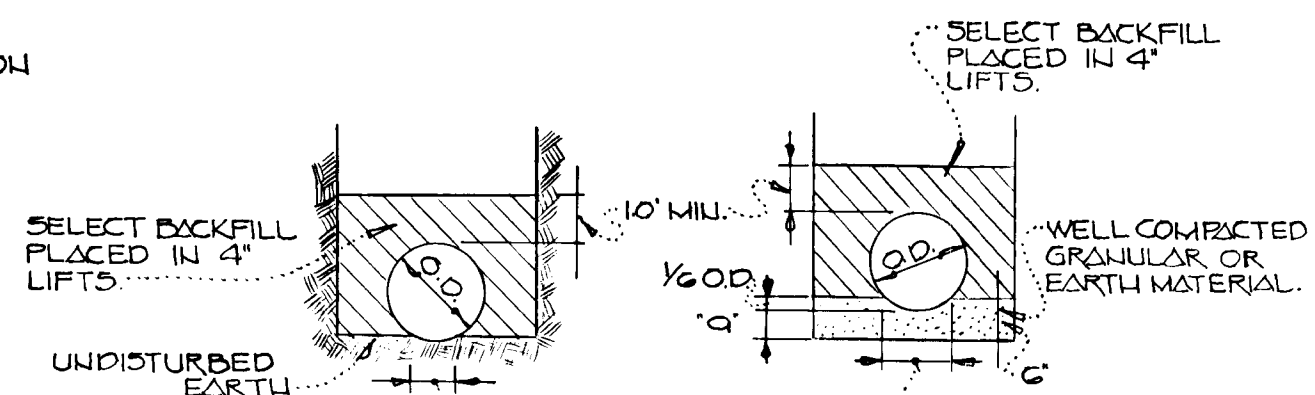


TACK COAT IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV.  
 BASE WILL BE PRIMED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV.  
 PAVING SECTION SHALL BE IN ACCORDANCE WITH SECTION NUMBER P-2  
 NOTE: ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

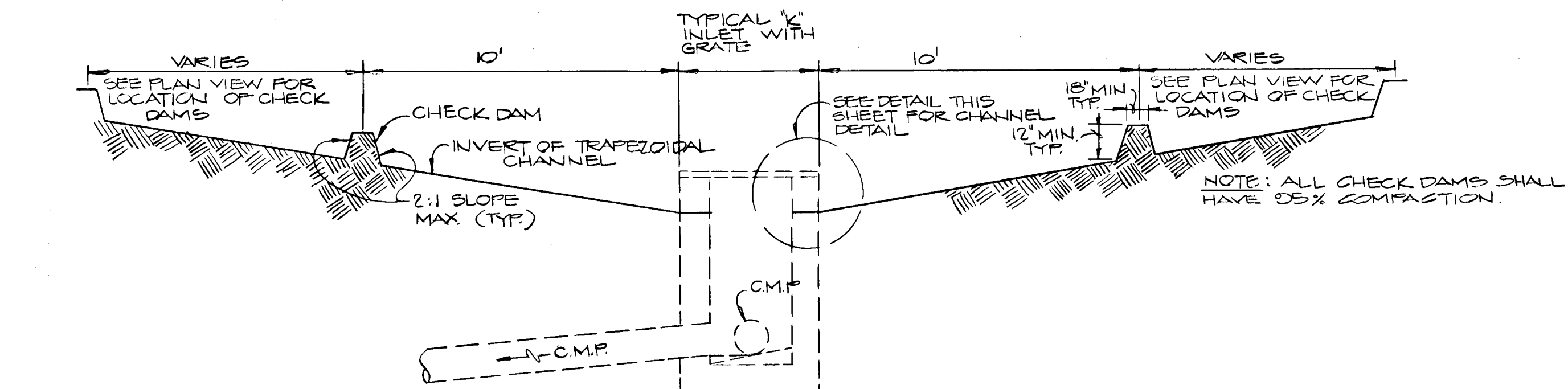
TYPICAL ROADWAY SECTION  
 NOT TO SCALE.



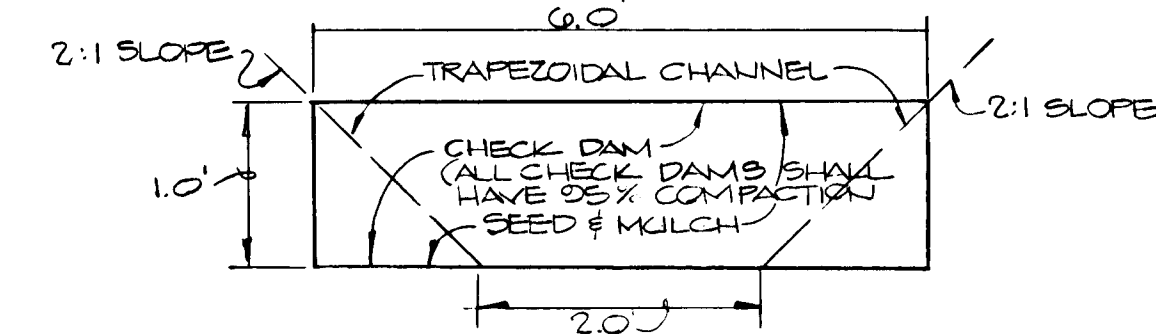
PAVING SECTION P-2  
 NOT TO SCALE.



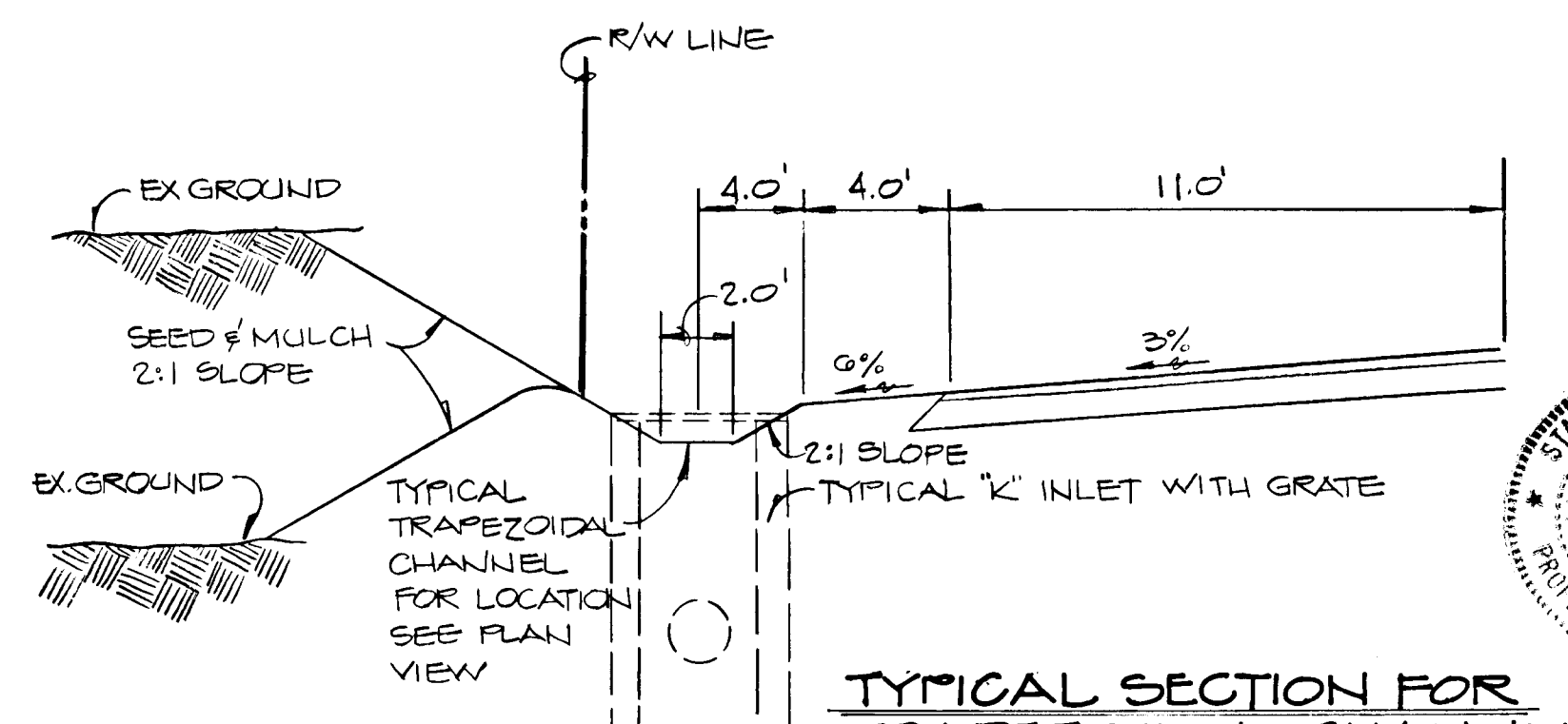
PIPE BEDDING DETAIL  
 NOT TO SCALE.



PROFILE ALONG TRAPEZOIDAL CHANNEL THRU CHECK DAMS  
 (TYPICAL) NOT TO SCALE.



CROSS SECTION THRU CHECK DAM 'A-A'  
 NOT TO SCALE.



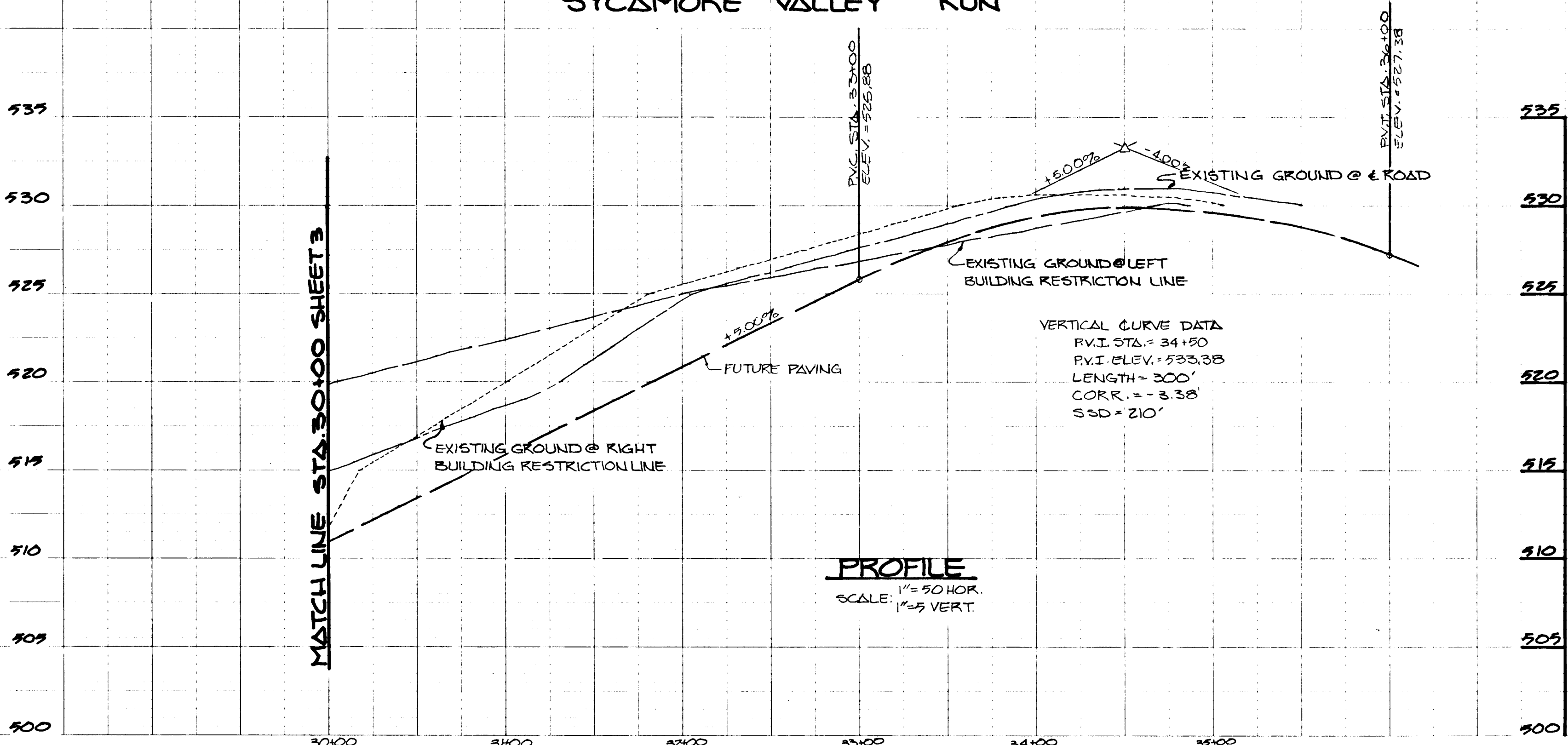
TYPICAL SECTION FOR TRAPEZOIDAL CHANNEL  
 NOT TO SCALE.

**CATTAIL CREEK COUNTRY CLUB**  
 LOTS 27-47  
 (A RESUBDIVISION OF LOTS 21-27)  
 FORTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
**SYCAMORE VALLEY RUN**  
 DETAILS

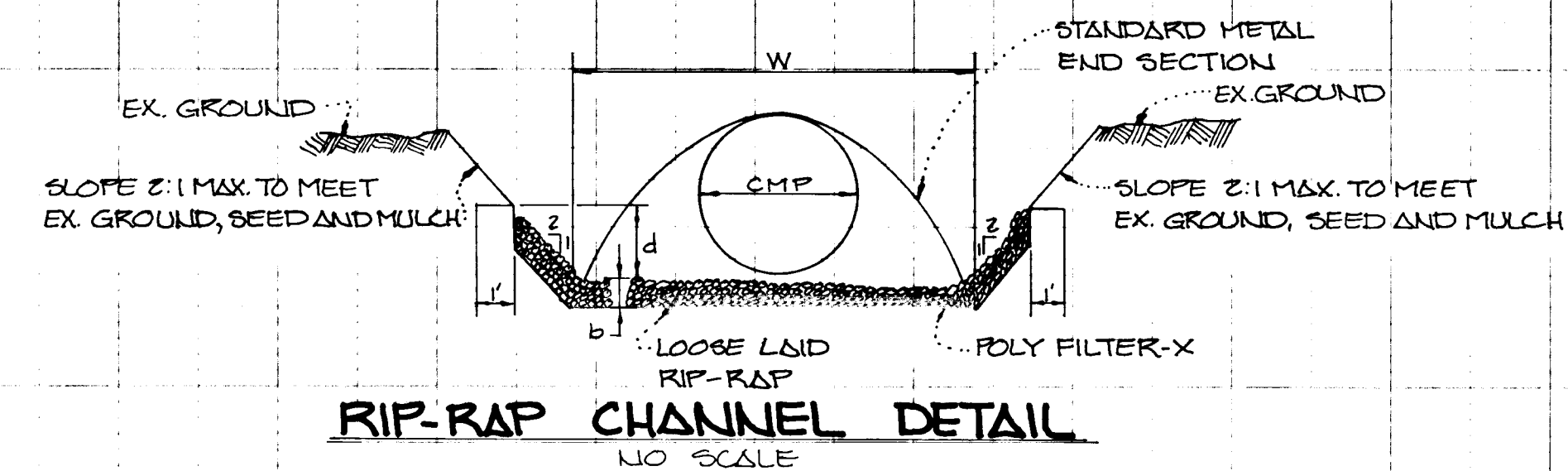
SYCAMORE VALLEY PARTNERSHIP  
 56 LAND DESIGN & DEVELOPMENT, INC.  
 10805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044  
 AS SHOWN 7-14-90  
 M. TAYLOR L.M.A. C. GROV

APPROVED  
 DEPARTMENT OF PUBLIC WORKS  
*Alan M. Ferguson* 7/26/91  
 LAND DEVELOPMENT  
 APPROVED  
 DEPARTMENT OF PUBLIC WORKS  
*William B. Kelly* 7-25-91  
 APPROVED  
 DEPT. OF PLANNING AND ZONING  
*Mark V. Kelly* 7/20/91  
 AND LAND DEVELOPMENT

SYCAMORE VALLEY RUN



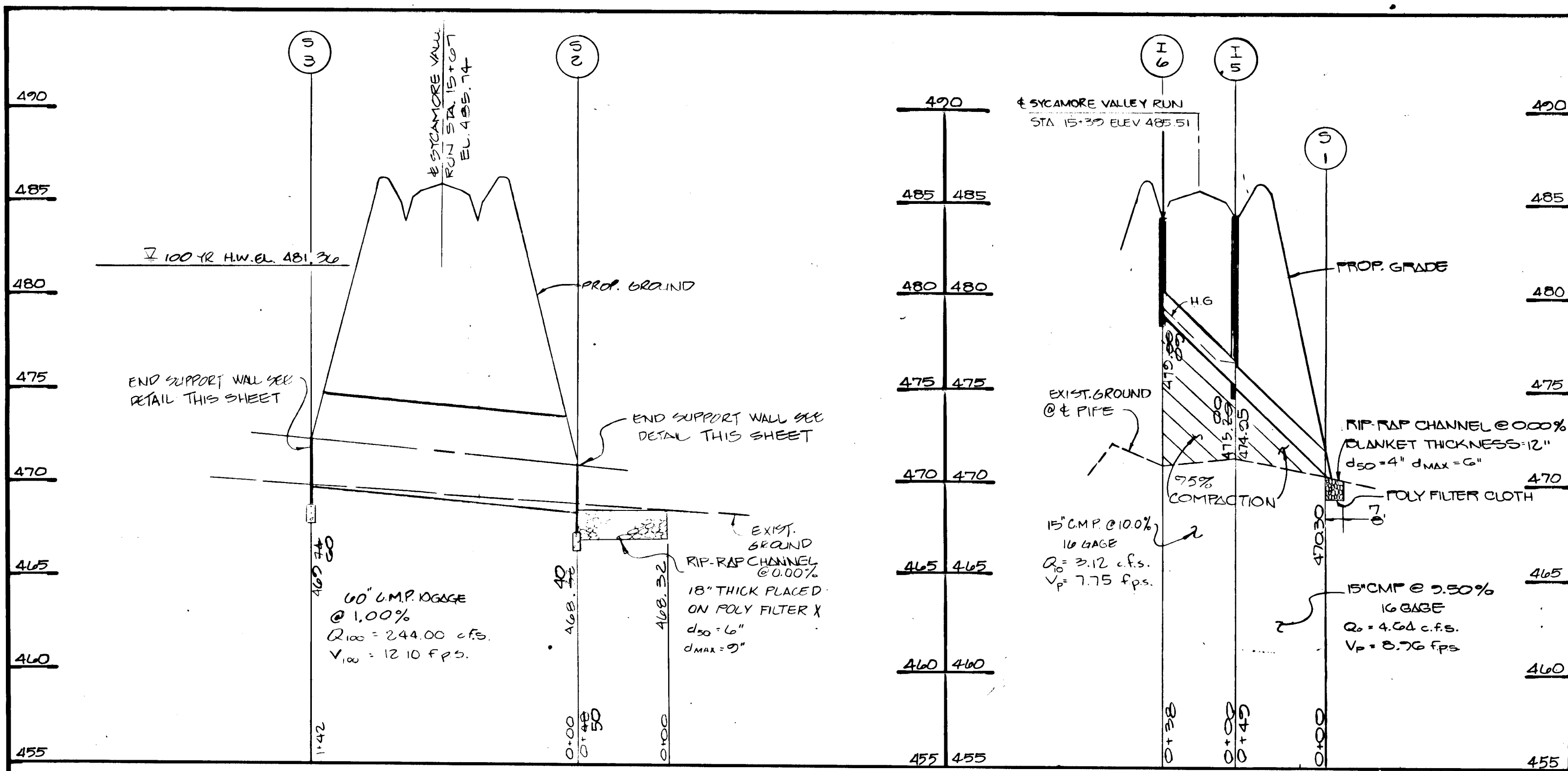
PROFILE  
 SCALE: 1" = 50' HOR.  
 1" = 5' VERT.



RIP-RAP CHANNEL DETAIL  
 NO SCALE.

RIP-RAP CHANNEL DESIGN													
STRUCT.	AREA	P'	R	R2/3	S	S 1/2	n	Q	V	d	w	RIP-RAP SIZE d50 dMAX	BLANKET THICKNESS
S-1	3.55	4.80'	0.52	0.640	.005	.0707	.04	4.64 cfs.	1.70 f.p.s.	0.70'	2.60'	4" 6"	9"
S-2	44.38	35.06'	1.875	1.533	.005	.0707	.04	244 cfs.	4.03 f.p.s.	2.25'	25'	6" 9"	18"
S-3	4.74	7.71'	0.60	0.711	.005	.0707	.04	8.73 cfs.	1.87 f.p.s.	0.80'	4.33'	4" 6"	7"

1630



STRUCTURE SCHEDULE

STRUCT.	TYPE	*TOP STRUCTURE	INV. IN.	INV. OUT.	ROAD STATION	OFFSET	REMARKS
I-1	'K' INLET & GRATE	487.04	477.04	476.76	SYCAMORE VALLEY RUN 22+64.35	19' RT	SD. 4.13
I-2	'K' INLET & GRATE	481.11	477.39	477.45	SYCAMORE VALLEY RUN 22+64.35	19' LT	SD. 4.13
I-3	'K' INLET & GRATE	487.04	483.16	482.91	SYCAMORE VALLEY RUN 25+16.00	19' RT	SD. 4.13
I-4	'K' INLET & GRATE	487.04	484.00	484.00	SYCAMORE VALLEY RUN 25+16.00	19' LT	SD. 4.13
I-5	'K' INLET & GRATE	483.41	475.78	474.95	SYCAMORE VALLEY RUN 15+39.00	19' RT	SD. 4.13
I-6	'K' INLET & GRATE	483.41	479.06	479.06	SYCAMORE VALLEY RUN 15+39.00	19' LT	SD. 4.13
M-1	STD. M. H. PRECAST	484.95	479.37	479.06	SYCAMORE VALLEY RUN 23+93.00	13' RT	G 5.12
S-1	METAL END SECTION	---	---	470.30	SYCAMORE VALLEY RUN 15+60.00	63' LT	SD. 5.61
S-2	END SUPPORT WALL	---	---	468.32	SYCAMORE VALLEY RUN 16+05.00	65' RT	SEE DETAIL THIS SHEET
S-3	END SUPPORT WALL	---	---	469.74	SYCAMORE VALLEY RUN 16+05.00	64' LT	SEE DETAIL THIS SHEET
S-4	CONCRETE FOOTINGS	---	---	465.90	SYCAMORE VALLEY RUN 22+08.00	43' RT	SEE DETAIL SHEET 6
S-5	CONCRETE FOOTINGS	---	---	474.00	SYCAMORE VALLEY RUN 22+21.00	42' LT	SEE DETAIL SHEET 6
S-6	METAL END SECTION	---	---	470.10	SYCAMORE VALLEY RUN 22+44.00	48' RT	SD. 5.61

APPROVED  
DEPARTMENT OF PUBLIC WORKS

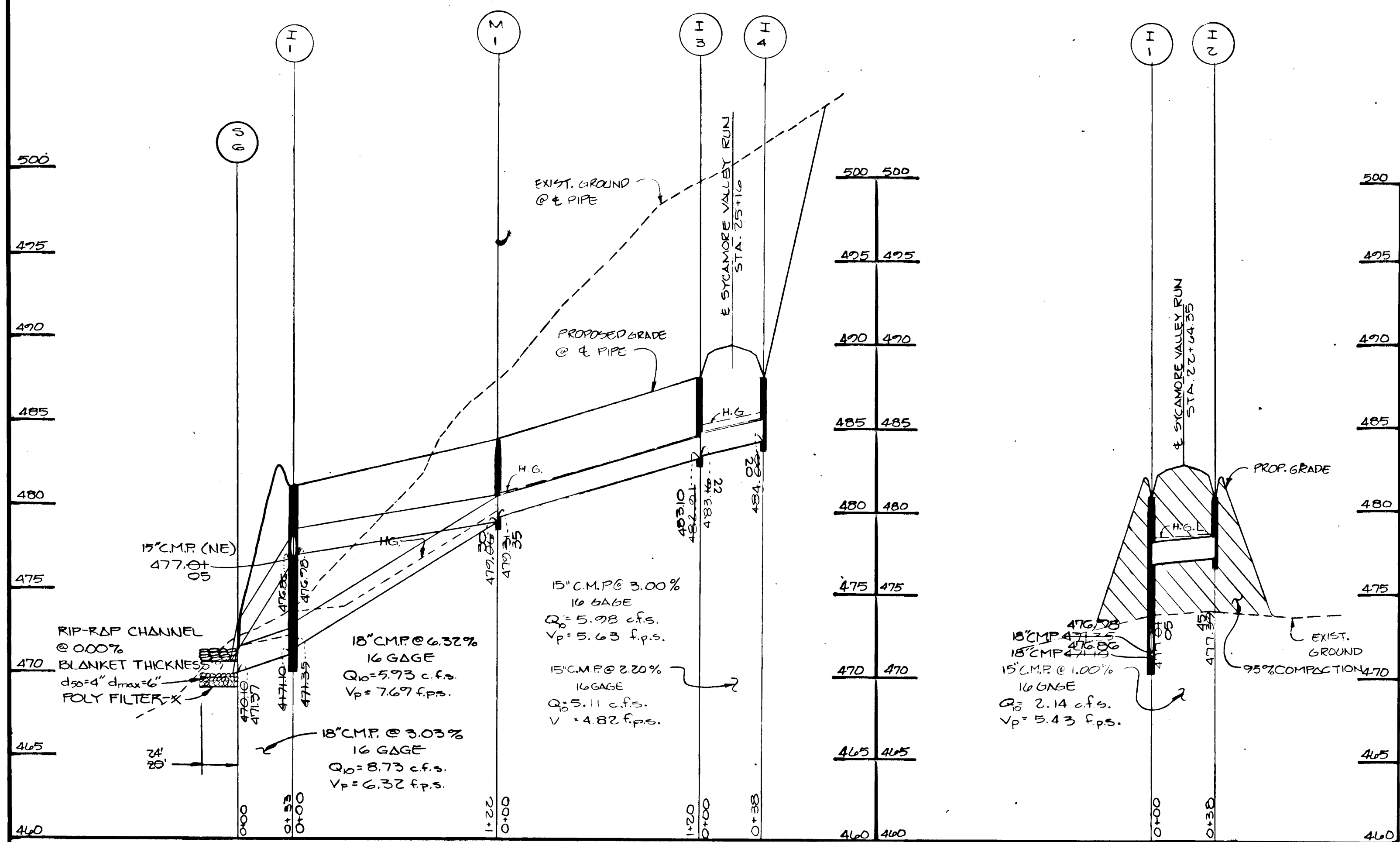
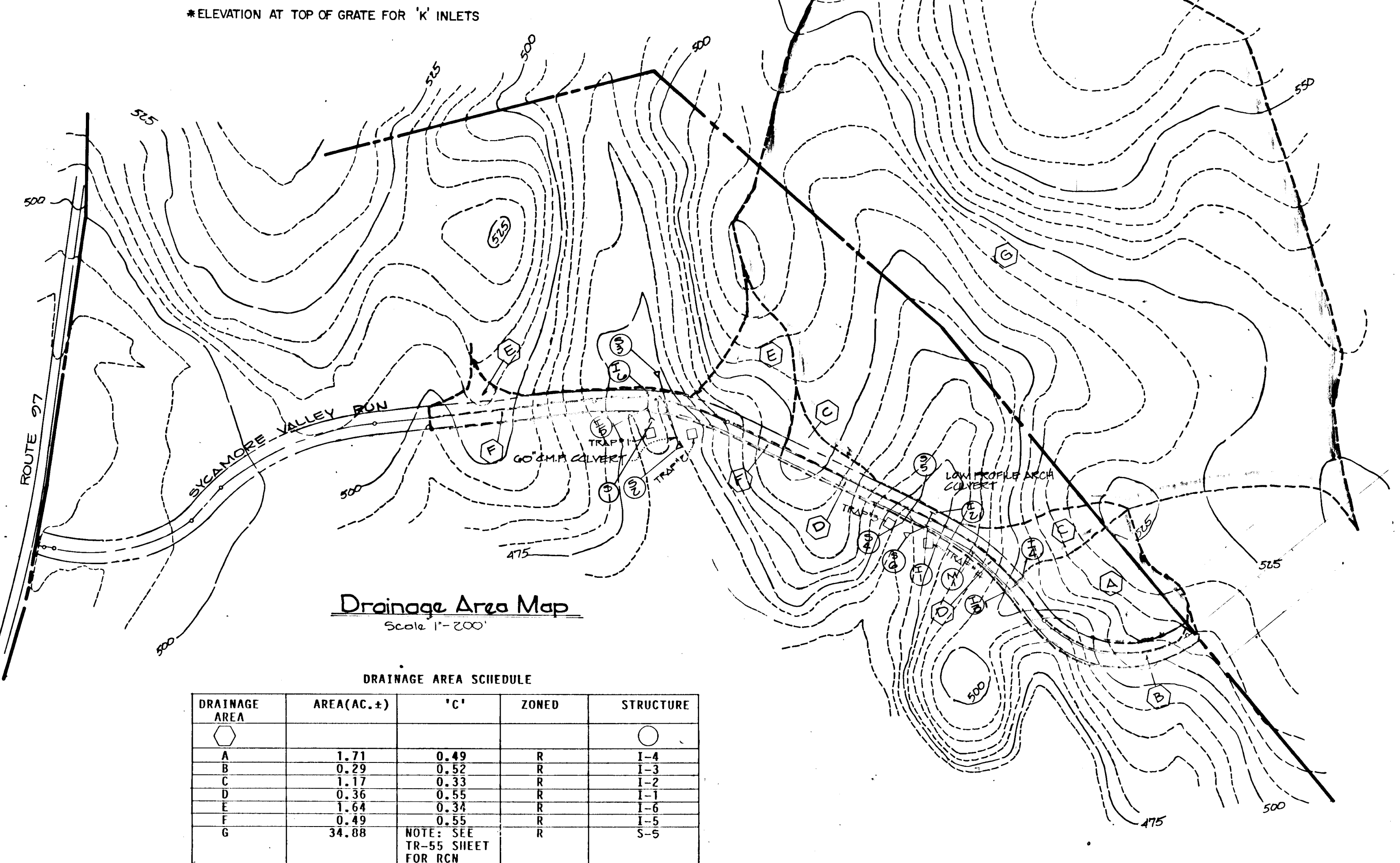
*Oliver M. Ferguson*  
CHIEF, LAND DEVELOPMENT DIVISION M.R.  
DATE 7/26/91

*Richard W. Patis*  
CHIEF, BUREAU OF HIGHWAYS  
DATE 7/11/91

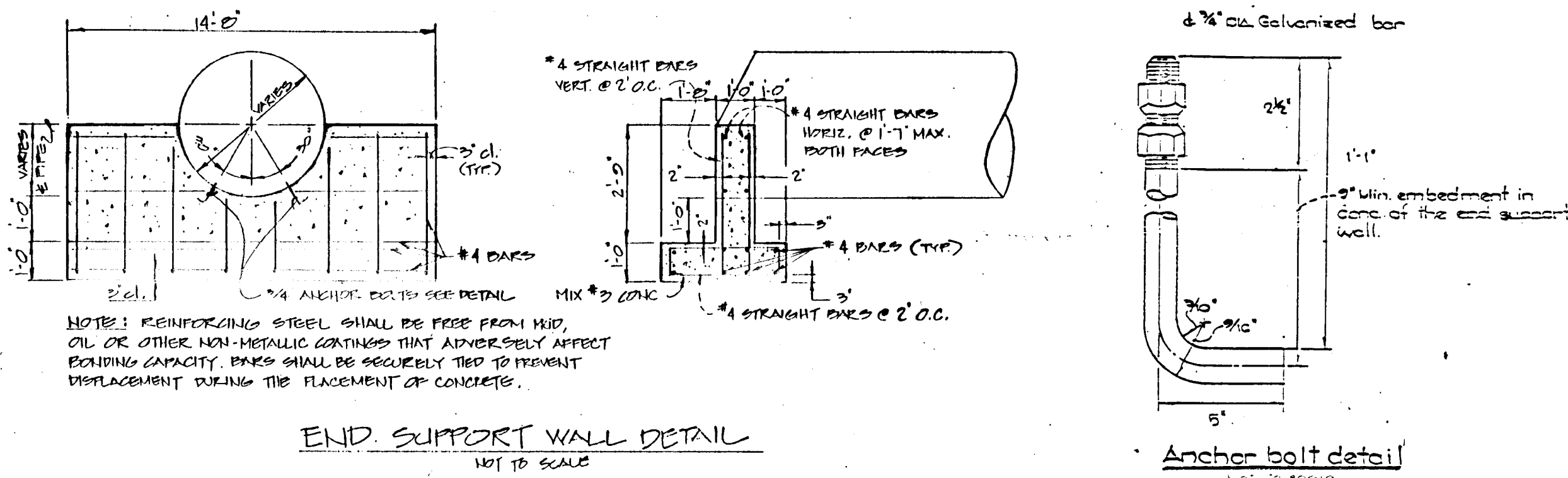
*William B. Reed*  
CHIEF, BUREAU OF ENGINEERING  
DATE 7-25-91

APPROVED  
DEPT. OF PLANNING AND ZONING

*Frank J. ...*  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT  
DATE 7/26/91



Profiles  
Scale: 1" = 50' Horizontal  
1" = 5' Vertical



FISHER, COLLINS & CARTER, INC.

LAND SURVEYORS  
SUITE 100, 9731 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21043  
(301) 481-2855

OWNER / DEVELOPER  
SYCAMORE VALLEY PARTNERSHIP  
50 LAND DESIGN & DEVELOPMENT, INC.  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044



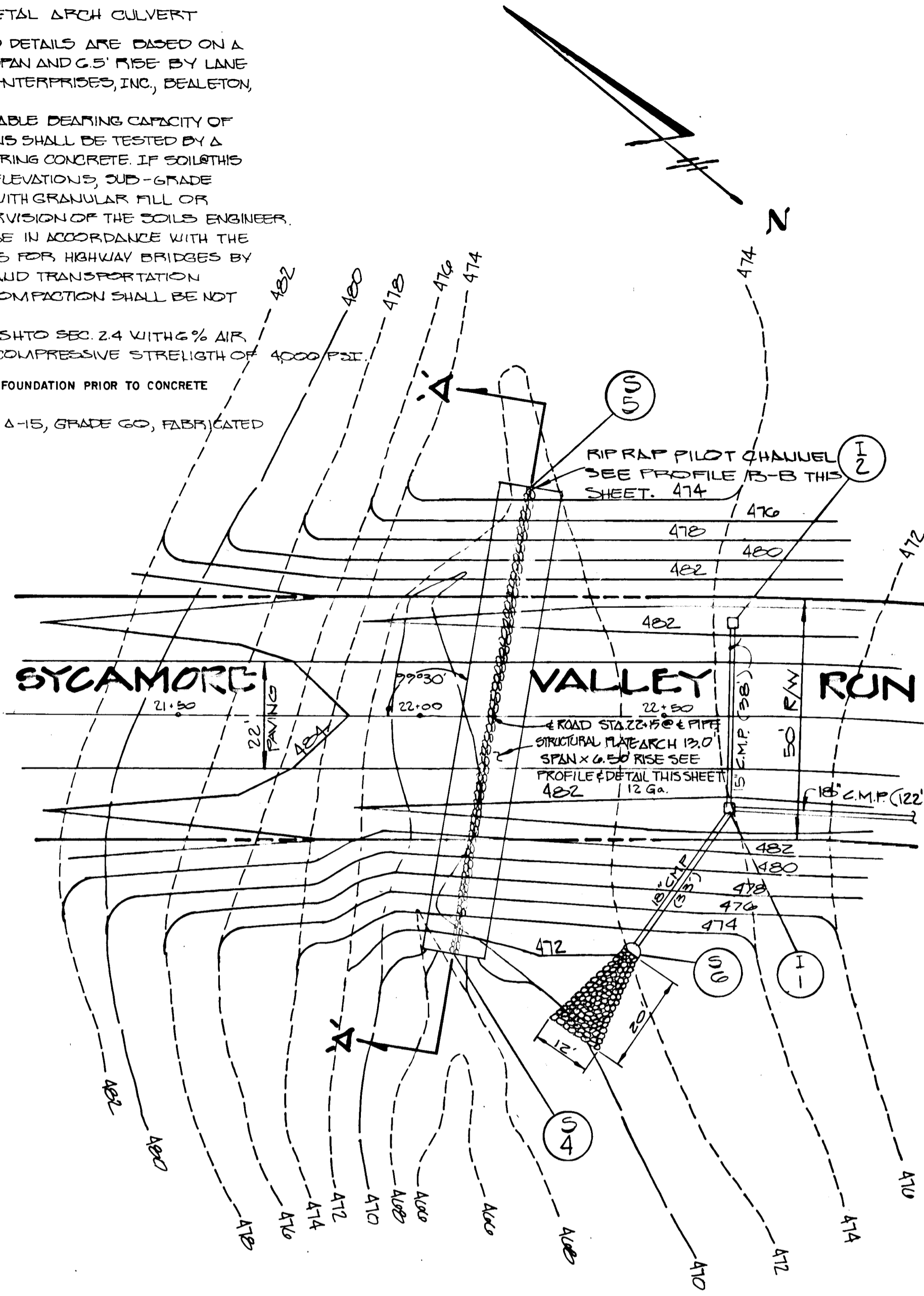
Storm Drain Profiles  
**CATTAIL CREEK COUNTRY CLUB**

LOTS 37-47  
(A Resubdivision of Lots 21-27)  
Fourth Election District  
Howard County, Maryland  
Scale AS SHOWN  
SHEET 5 OF 13

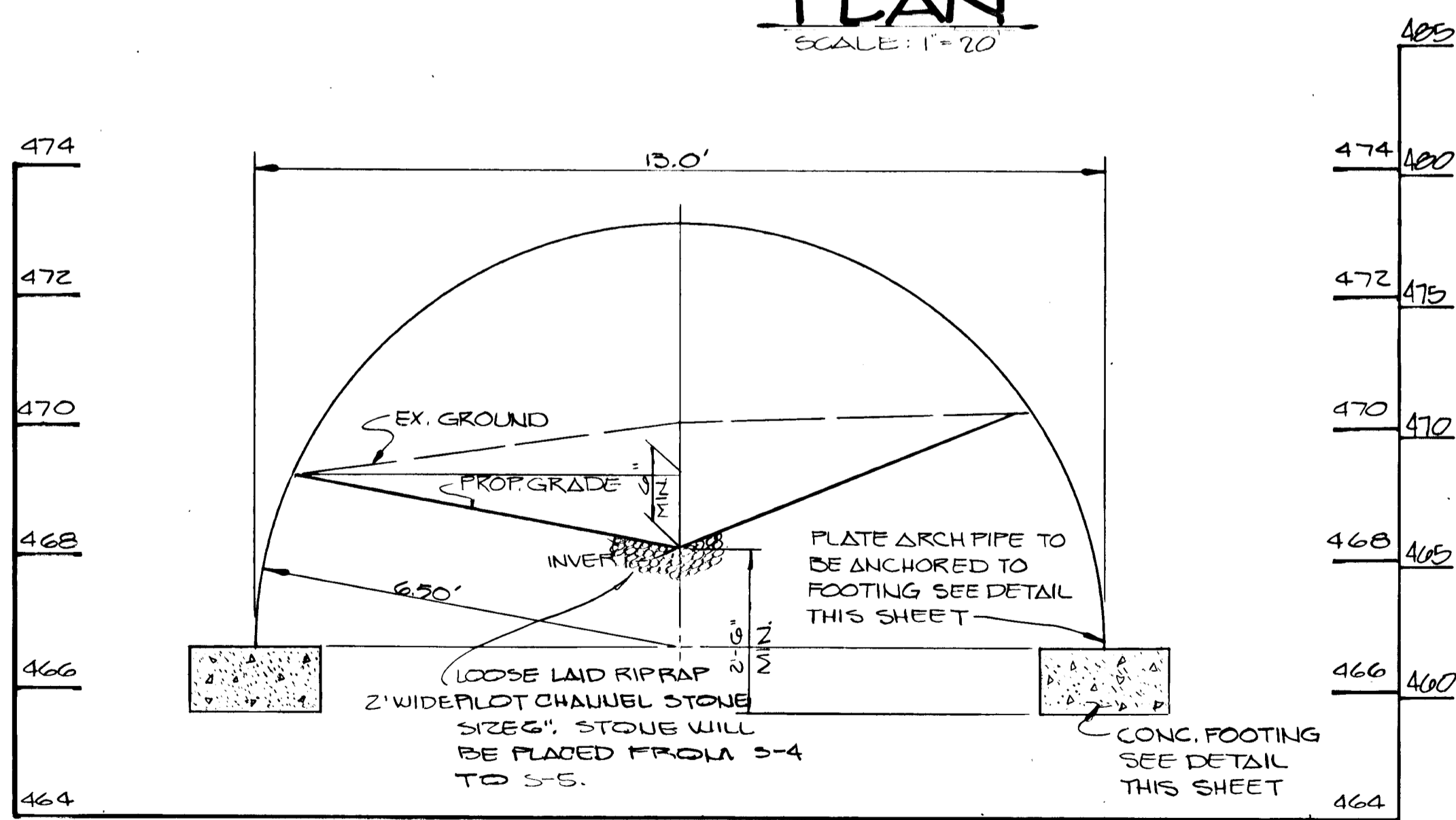
1630

**FOUNDATIONS FOR METAL ARCH CULVERT**

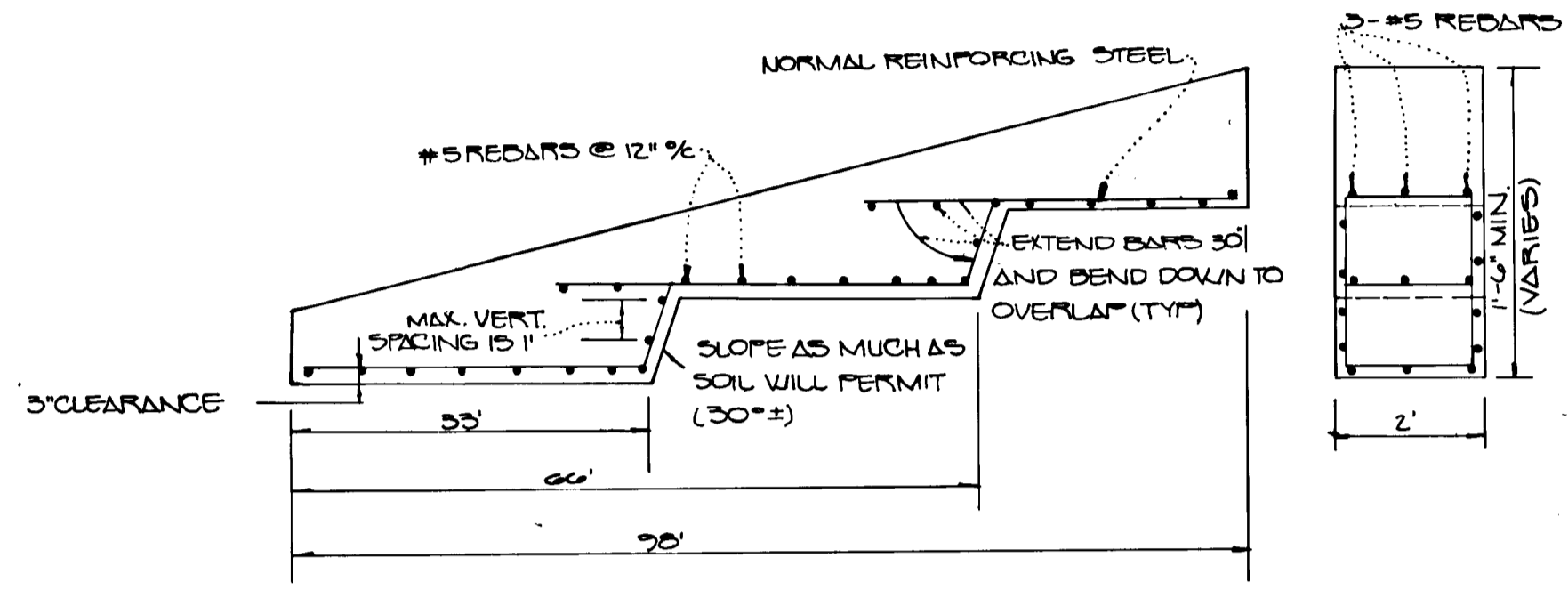
- METAL ARCH CULVERT DIMENSIONS AND DETAILS ARE BASED ON A STRUCTURAL PLATE ARCH WITH A 13.0' SPAN AND 6.5' RISE BY LANE METAL PRODUCTS DIVISION OF LANE ENTERPRISES, INC., BEALETON, VA 22712.
- FOOTINGS ARE DESIGNED FOR ALLOWABLE BEARING CAPACITY OF 4,000 PSF SOIL AT BEARING ELEVATIONS SHALL BE TESTED BY A GEOTECHNICAL ENGINEER PRIOR TO POURING CONCRETE. IF SOIL BEARING CAPACITY IS NOT FOUND AT PROPOSED ELEVATIONS, SUB-GRADE MUST BE UNDERCUT AND STABILIZED WITH GRANULAR FILL OR CONCRETE PLACED UNDER THE SUPERVISION OF THE SOILS ENGINEER. FILL AROUND ARCH CULVERT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF STANDARD SPECS FOR HIGHWAY BRIDGES BY AMERICAN ASSOC. OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS SEC. 1-7 (AASHTO) FILL COMPACTION SHALL BE NOT LESS THAN 90% PER AASHTO T-99.
- CONC. SHALL BE CLASS (A) PER AASHTO SEC. 2.4 WITH 4% AIR ENTRAINMENT. MIN. 28 DAY DESIGN COMPRESSIVE STRENGTH OF 4000 PSI.
- GEO-TECHNICAL ENGINEER TO PROVIDE CERTIFICATION OF FOUNDATION PRIOR TO CONCRETE FOOTING INSTALLATION.
- REINFORCING STEEL SHALL BE ASTM A-15, GRADE 60, FABRICATED AND PLACED PER AASHTO 2.5.



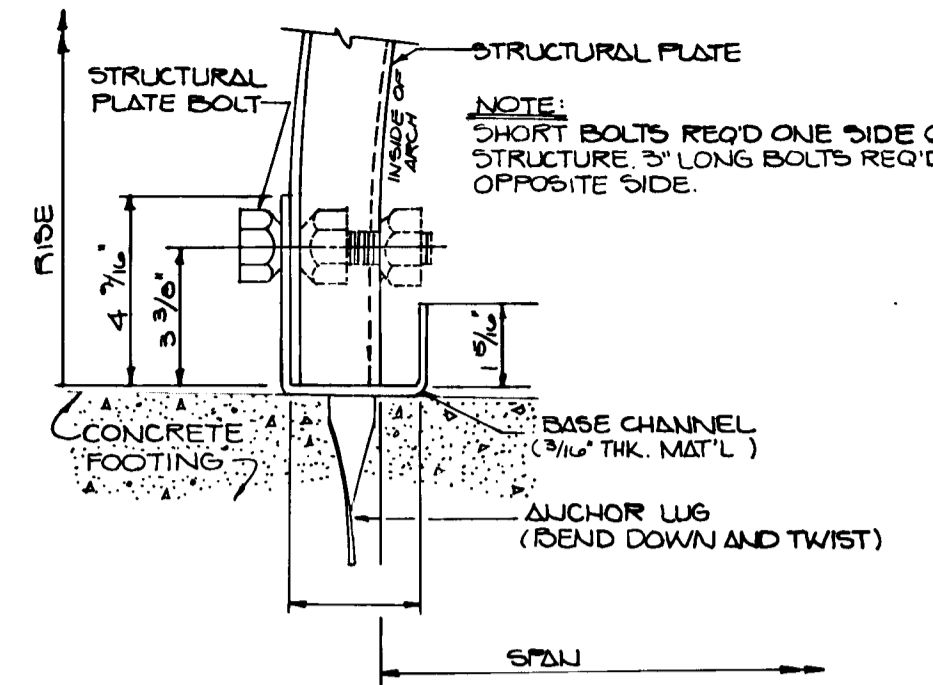
**PLAN**  
SCALE: 1" = 20'



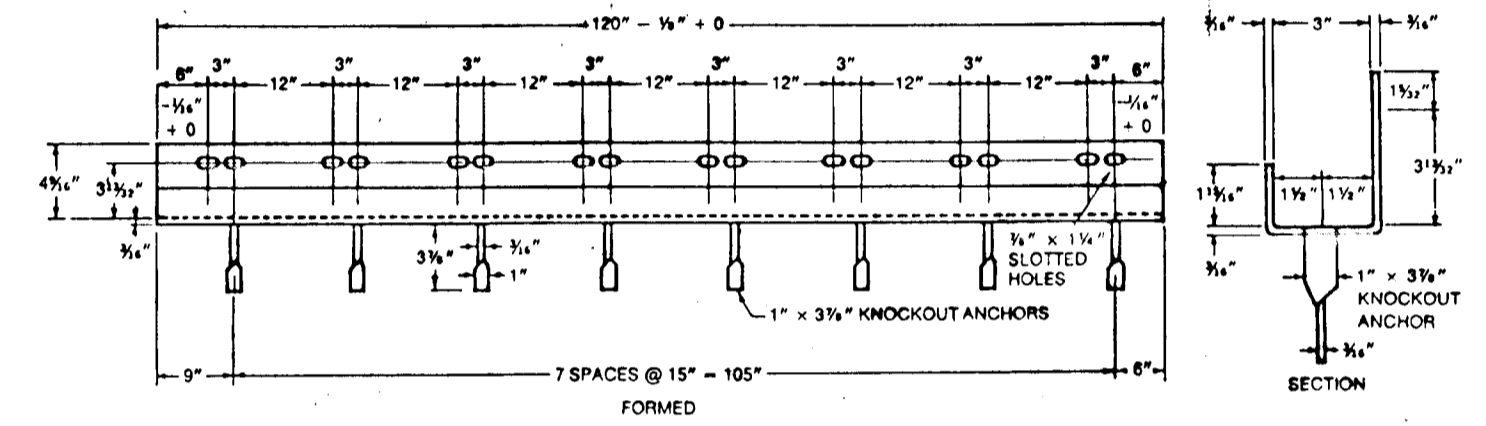
**PROFILE 'B'-'B'**  
SCALE: 1" = 2' HORIZ.  
1" = 2' VERT.



**FOOTER DETAIL FOR STRUCTURAL PLATE PIPE**  
NO SCALE

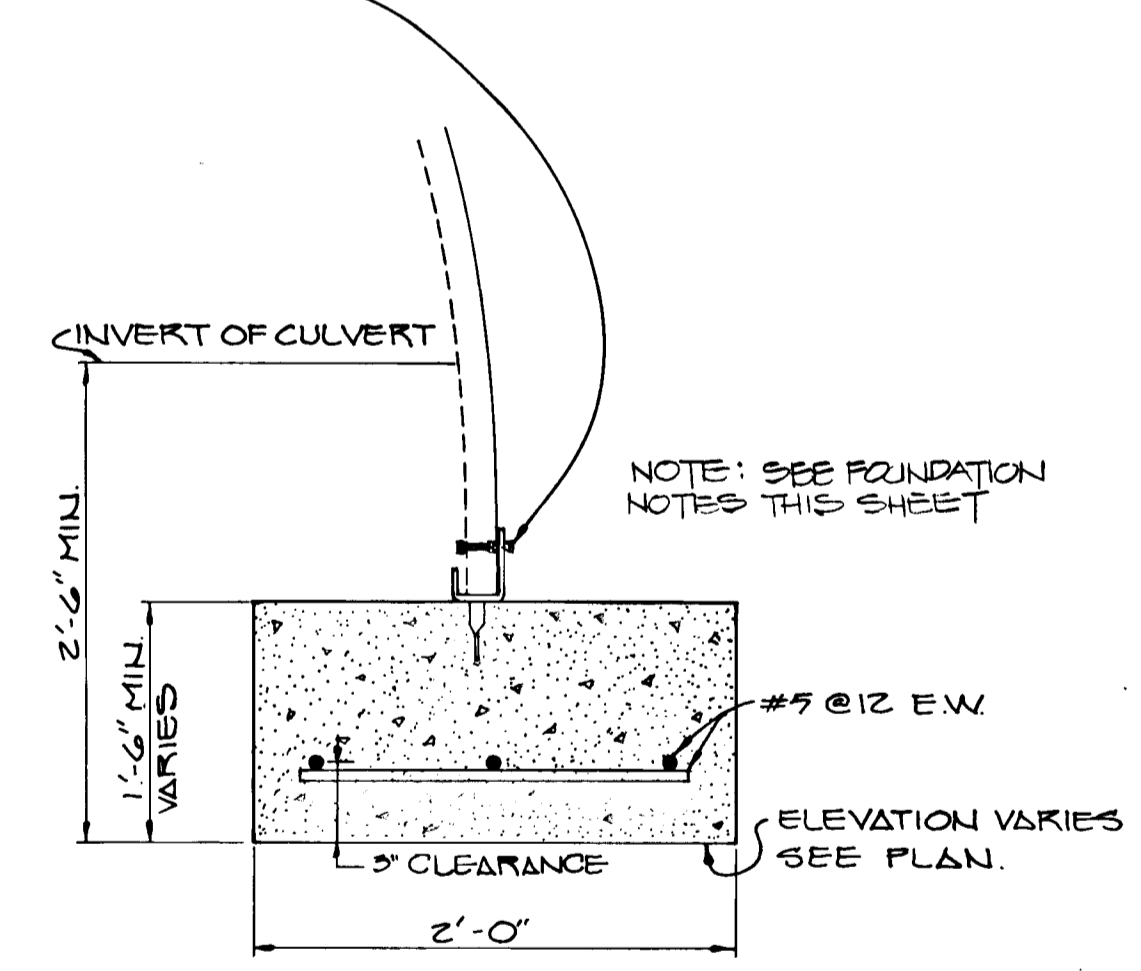


**BASE CHANNEL DETAIL FOR ARCHES**  
NOT TO SCALE



STANDARD UNBALANCED CHANNEL DETAIL

UNBALANCED CHANNEL CONNECTOR BY LANE ENTERPRISES OR EQUAL. SEE PLATE ARCH SHOP DRAWINGS FOR ANCHORAGE DETAILS.



**TYPICAL FOOTING**  
NOT TO SCALE

- \* NOTES
- DESIGN LOAD OF STRUCTURE = 1075 #/SF - H-20
  - ALL STEEL IN STRUCTURE TO BE GALVANIZED



Storm Drain Plan & Profile  
**CATTAL CREEK COUNTY CLUB**

LOTS 37-47  
(A Re subdivision of Lots 21-27)  
Fourth Election District  
Howard County, Maryland  
SCALE: AS SHOWN  
SHEET 6 OF 13

**OWNER / DEVELOPER**  
SYCAMORE VALLEY PARTNERSHIP  
56 LAND DESIGN & DEVELOPMENT, INC.  
10205 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

**PROFILE 'A'-'A'**  
SCALE: 1" = 20' HORIZ.  
1" = 5' VERT.

1630

**FISHER, COLLINS & CARTER, INC.**  
SUITES 100, 101 & 102 BETHESDA METRO CENTER  
BETHESDA, MD 20814  
(301) 481-2855

**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.

*Cliff A. Cole* 10/19/90  
 SIGNATURE OF ENGINEER DATE

**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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

*James M. Helm / JMA* 10/19/90  
 SIGNATURE OF DEVELOPER DATE

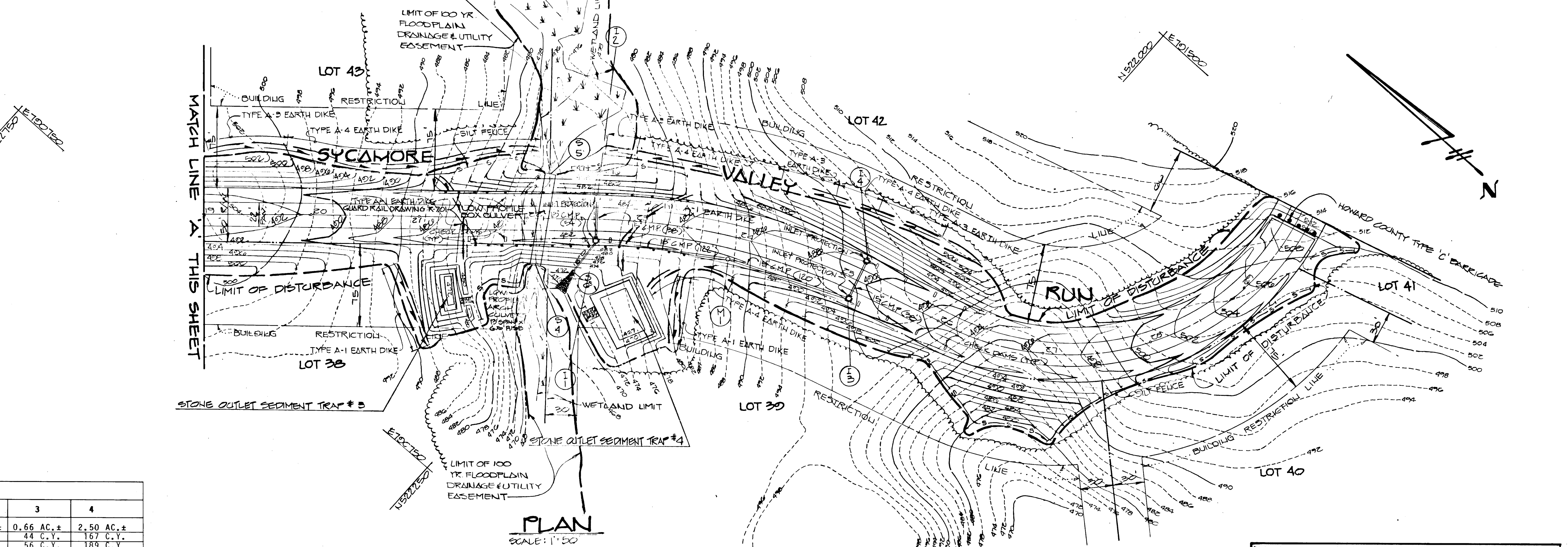
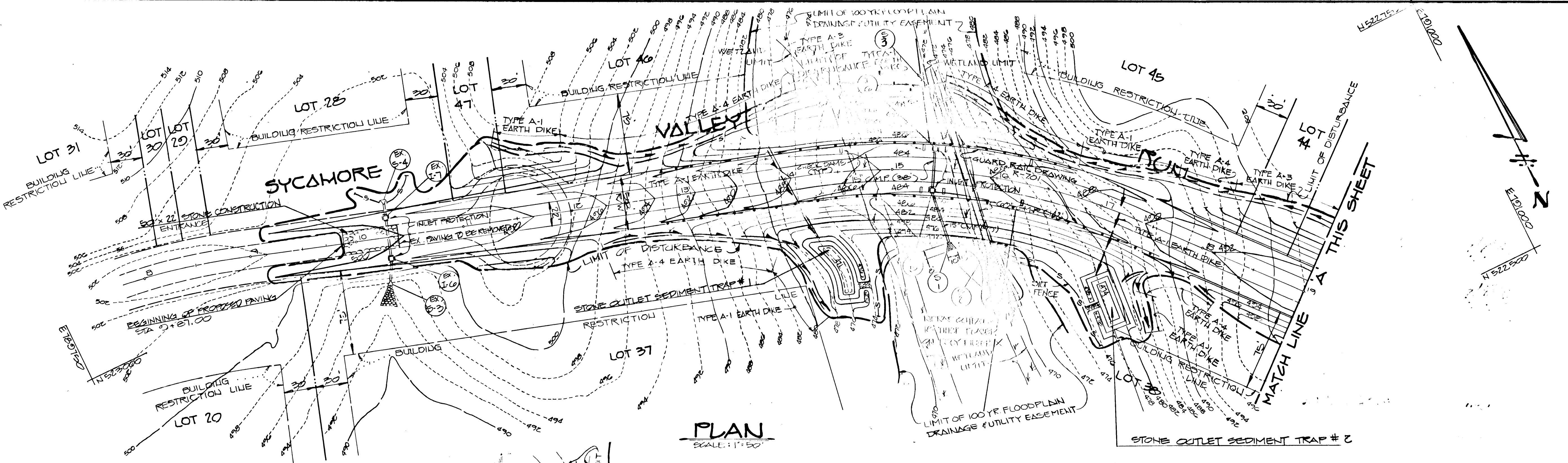
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.  
*John P. Robinson* 7/8/91  
 APPROVED: HOWARD COUNTY SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*James L. Taylor* 7/8/91  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William D. Clay* 7-15-91  
 CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Cliff A. Cole* 7/22/91  
 CHIEF, LAND DEVELOPMENT DIVISION

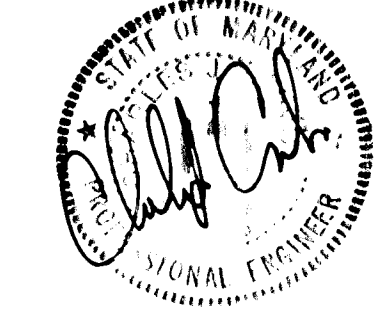
*William D. Clay* 7/11/91  
 CHIEF, BUREAU OF HIGHWAYS



SEDIMENT TRAP DATA				
STONE OUTLET TRAP #	1	2	3	4
DRAINAGE AREA	0.93 AC.±	0.42 AC.±	0.66 AC.±	2.50 AC.±
VOLUME REQUIRE	62.0 C.Y.	28.0 C.Y.	44 C.Y.	167 C.Y.
VOLUME PROVIDED	72.0 C.Y.	35.6 C.Y.	56 C.Y.	189 C.Y.
SIDE SLOPES	2:1	2:1	2:1	2:1
TOP DIMENSIONS	60'x18'	44'x16'	40'x20'	55'x40'
BOTTOM DIMENSIONS	48'x6'	36'x8'	28'x8'	43'x28'
DEPTH	3.0'	2.0'	3.0'	3.0'
WEIR CREST 'L'	4'	4'	4'	10'
WEIR CREST ELEVATIONS	475.0	477.0	479.0	471.0
BOTTOM ELEVATIONS	471.0	474.0	475.0	467.0
CLEANOUT ELEVATIONS	472.5	475.0	476.5	468.5

**NOTE:**

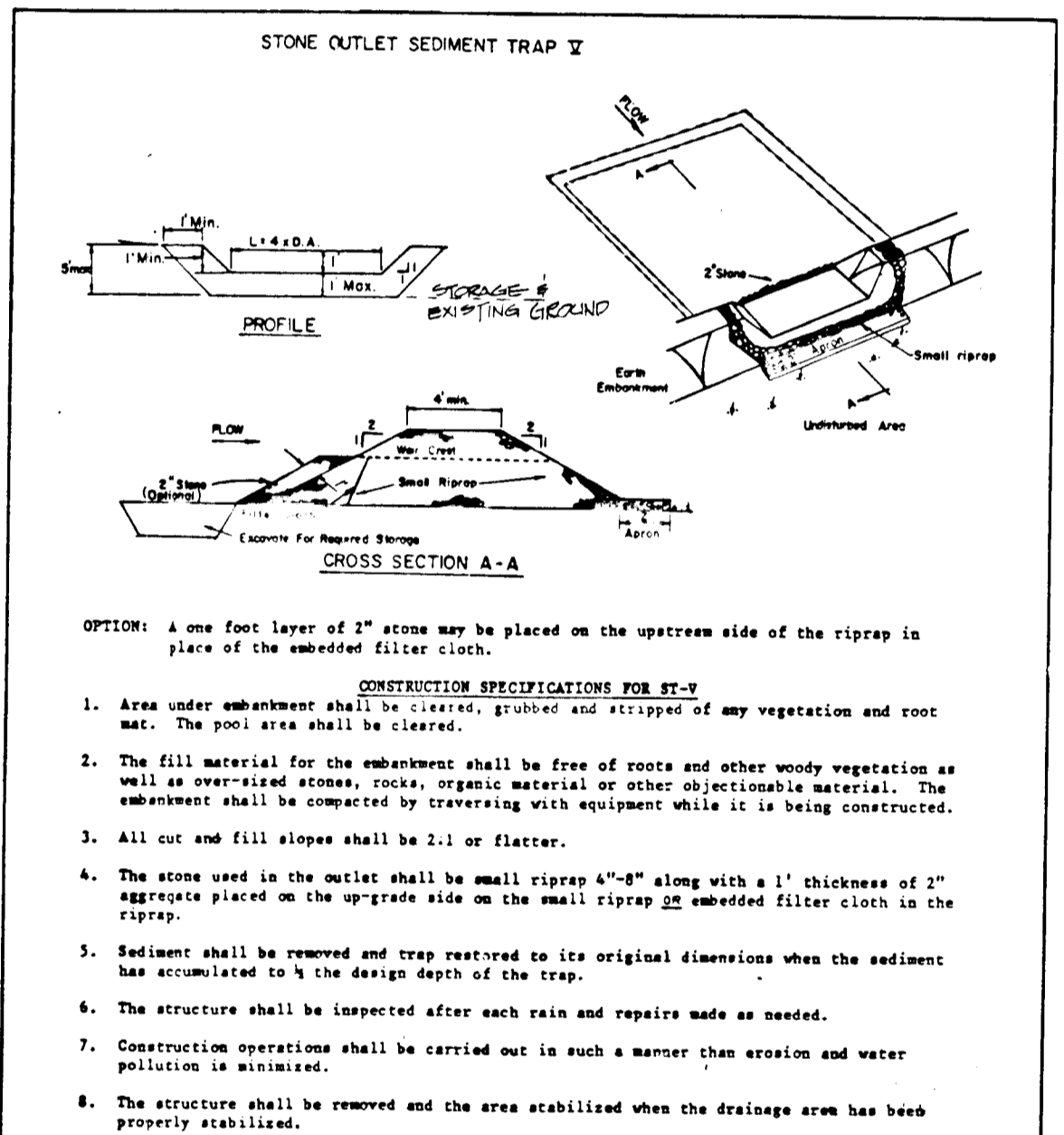
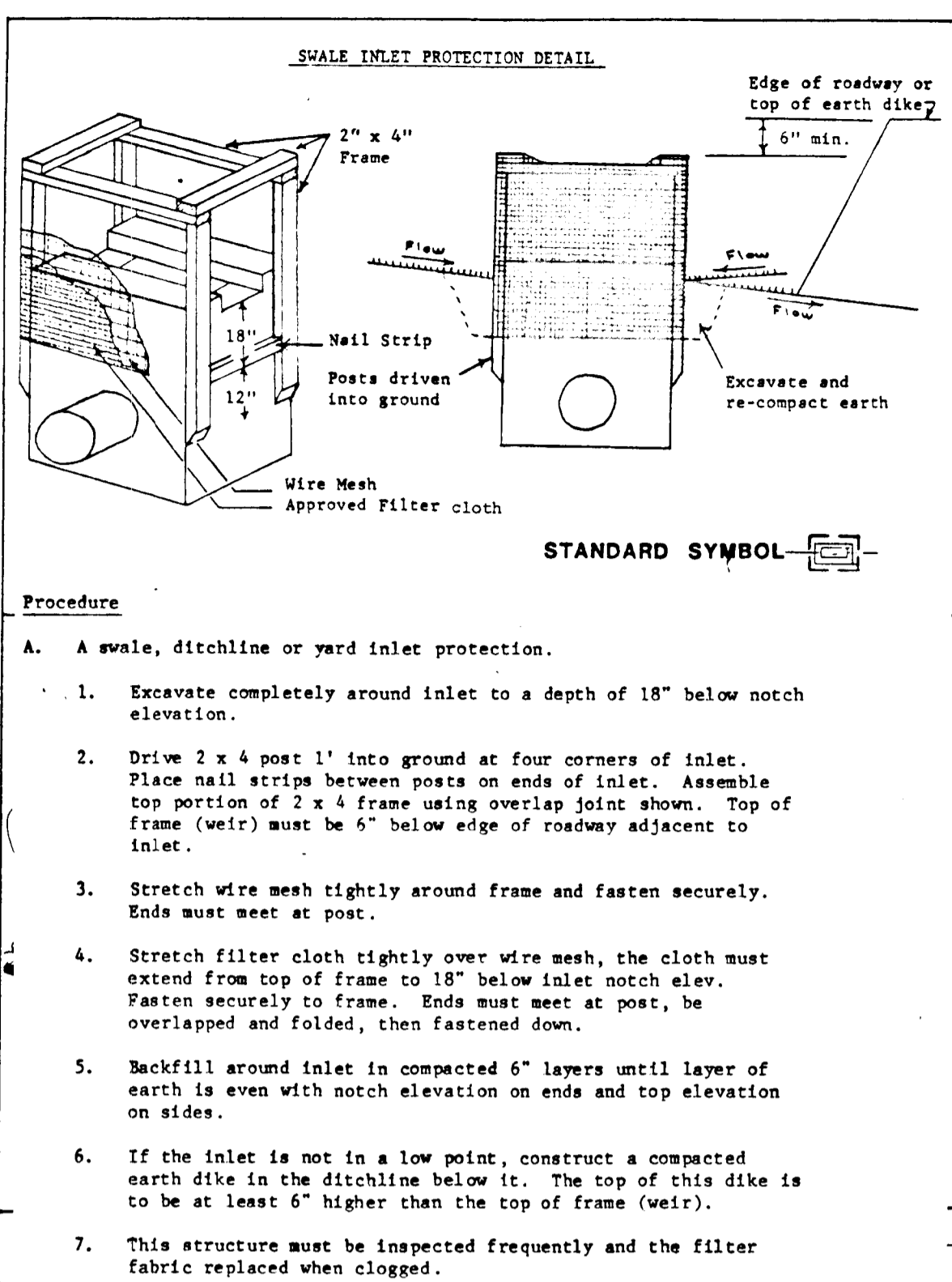
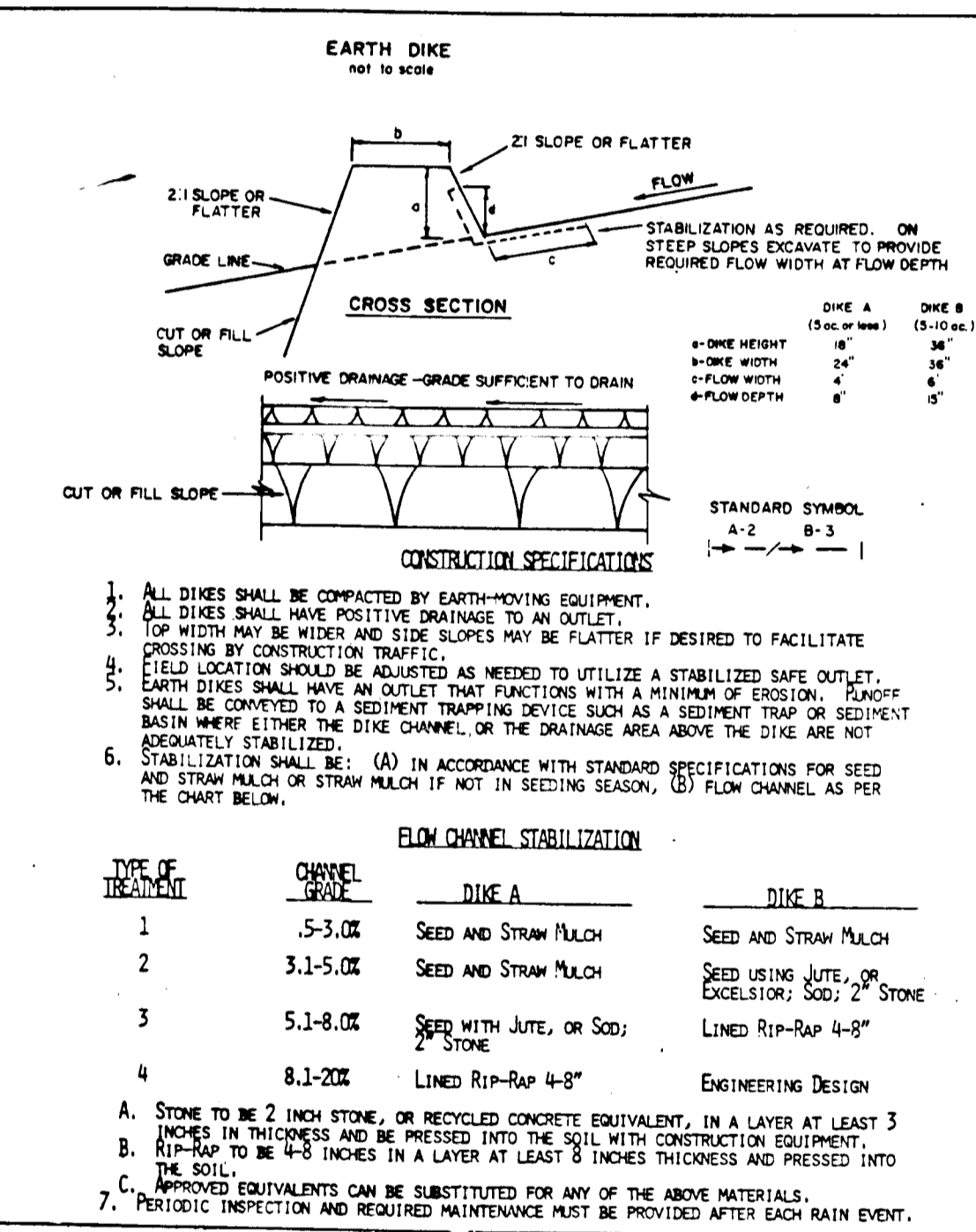
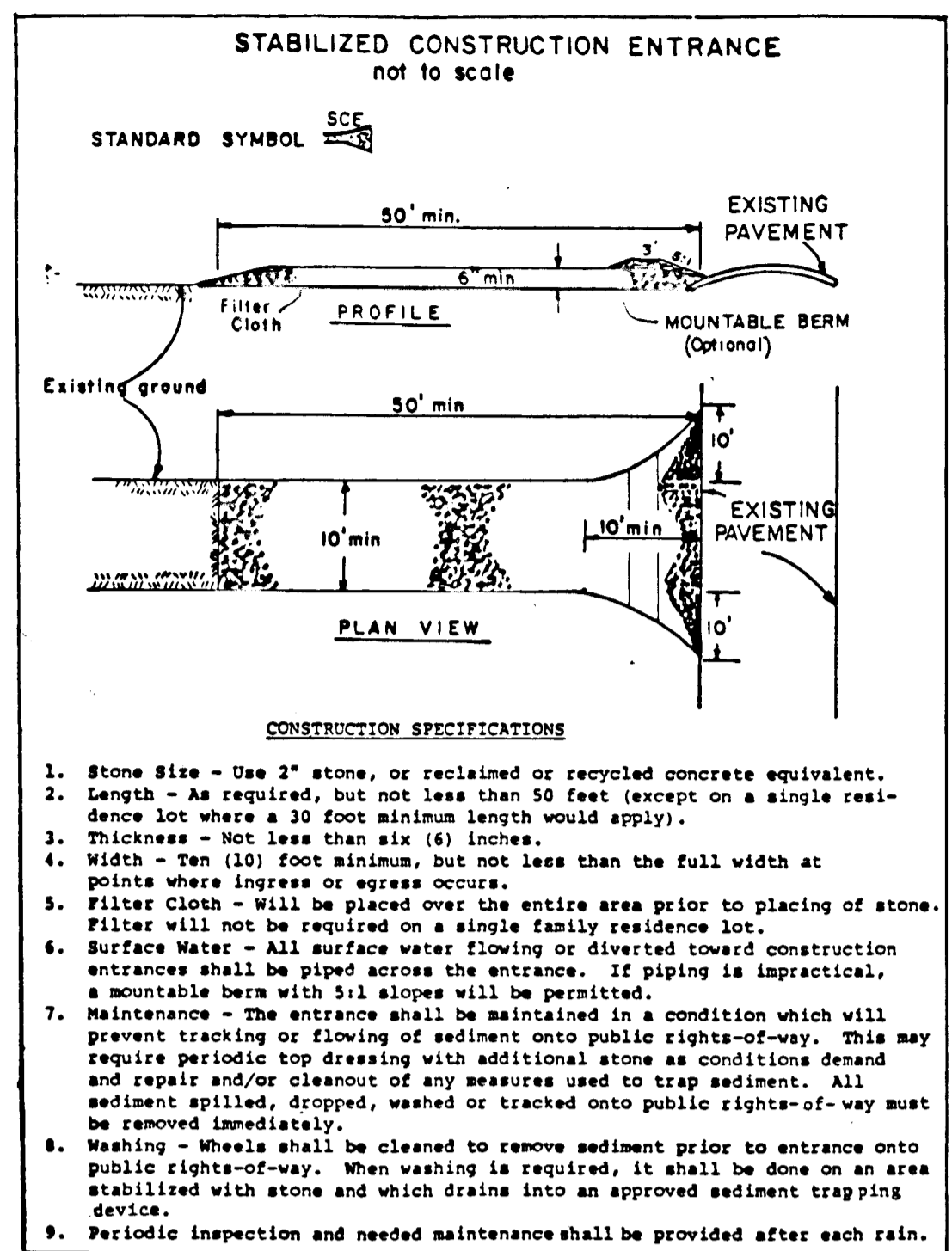
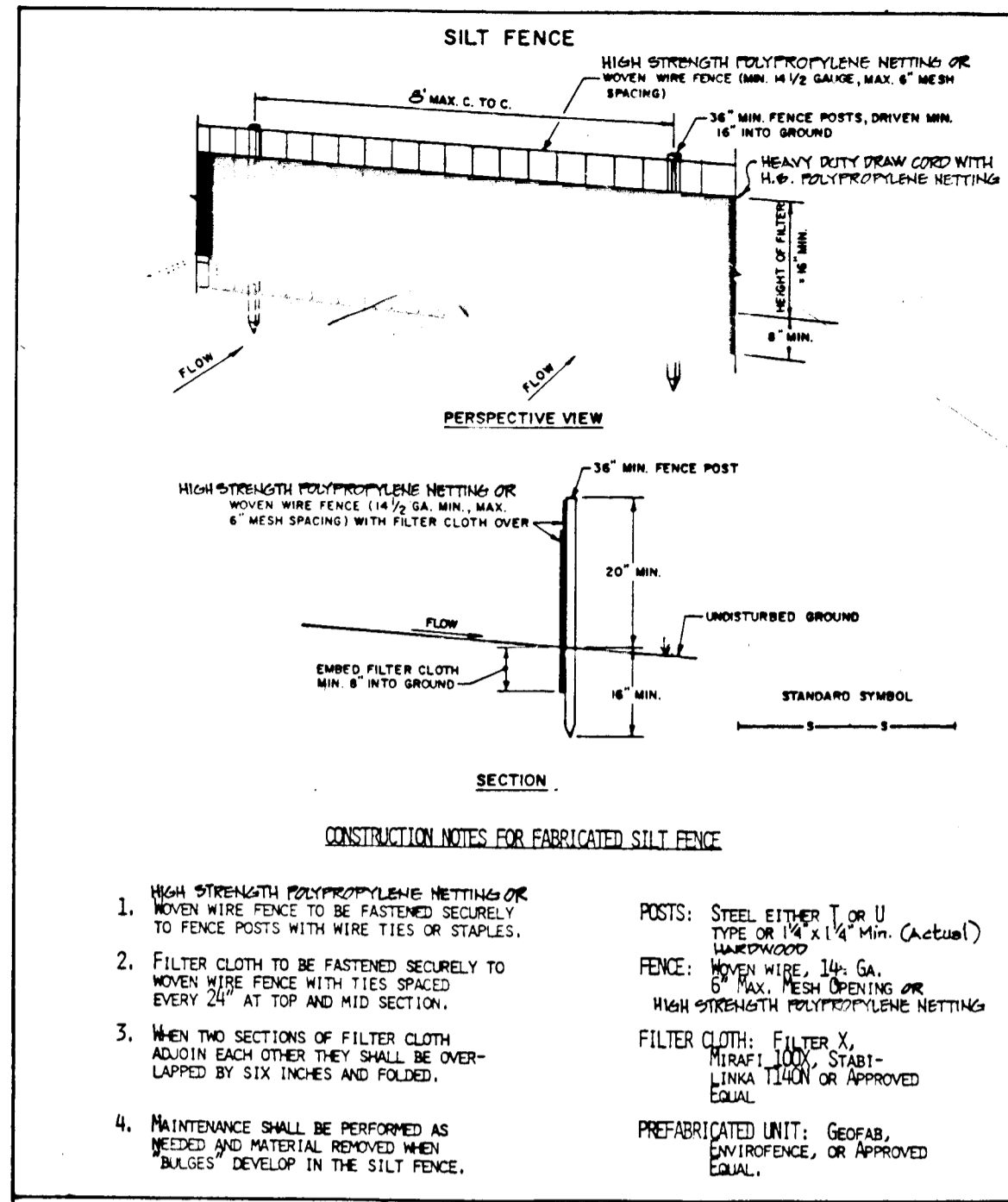
1. EARTH DIKES ARE TO BE REPLACED WITH ASPHALT BERMS AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR.
2. SEDIMENT CONTROL IS TO BE PROPERLY HANDLED DURING ALL PHASES OF CONSTRUCTION AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR, I.E., DURING FILLING OPERATION FOR ROADS.



**OWNER/DEVELOPER**  
 SYCAMORE VALLEY PARTNERSHIP  
 5% LAND DESIGN AND DEVELOPMENT, INC.  
 10803 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND 21044

GRADING & SEDIMENT CONTROL PLAN  
**CATTAIL CREEK COUNTRY CLUB**  
 LOTS 37-47  
 (A Resubdivision of Lots 21-27)  
 Fourth Election District  
 Howard County, Maryland  
 Scale AS SHOWN  
 SHEET 7 OF 13

1630  
**FISHER, COLLINS & CARTER, INC.**  
 LAND SURVEYORS  
 SUITE 100, 4175 BELMONT NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21043  
 (301) 481-2855



**PERMANENT SEEDING NOTES:**  
APPLY TO GRADED OR CLEARED AREA NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

**SEEDING PREPARATION:** LOOSEN UPPER THREE-INCHES OF SOIL BY BAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED, SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULE.

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING.
- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ.FT.) BEFORE SEEDING. HARKOR OR DISC INTO UPPER THREE-INCHES OF SOIL.

**SEEDING:** FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (14 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS/1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OPTION (2) USE SOO, OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WILL ANCHORED STRAW MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING. MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

**TEMPORARY SEEDING NOTES:**  
APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

**SEEDING PREPARATION:** LOOSEN UPPER THREE-INCHES OF SOIL BY BAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED, SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.)

**SEEDING:** FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.

**MULCHING:** APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FT. OR HIGHER, USE 348 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 CONTROL NOTES:**

- 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 (892-2437).
- 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.
- 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.
- 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.
- 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 SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 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.
- SITE ANALYSIS:  
TOTAL AREA OF SITE: 40.00 ACRES  
AREA DISTURBED: 15.00 ACRES  
AREA TO BE VEGETATIVELY STABILIZED: 15.00 ACRES  
TOTAL CUT: 15000 CU.YDS.  
TOTAL FILL: 15000 CU.YDS.  
OFFSITE WASTE/BORROW AREA LOCATION: \_\_\_\_\_
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPM SEDIMENT CONTROL INSPECTOR.
- ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL 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.

**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.  
DATE: 10/28/91  
SIGNATURE: [Signature]

**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 ARE DEEMED NECESSARY.  
DATE: 10/28/91  
SIGNATURE: [Signature]

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS:  
DATE: 2/3/91  
SIGNATURE: [Signature]

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
DATE: 2/8/91  
SIGNATURE: [Signature]

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
DATE: 2/21/91  
SIGNATURE: [Signature]

APPROVED: DEPARTMENT OF PUBLIC WORKS  
DATE: 7-25-91  
SIGNATURE: [Signature]

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DATE: 7/10/91  
SIGNATURE: [Signature]

DATE: 7/11/91  
SIGNATURE: [Signature]

**CONSTRUCTION SEQUENCE**

- OBTAIN GRADING PERMIT.
- CONSTRUCT STABILIZED ENTRANCE AND SEDIMENT TRAPS AS SHOWN ON PLAN. INSTALL SILT FENCE AS SHOWN ON THE PLAN. CONSTRUCT EARTH DIKES AND STABILIZE WITH TEMPORARY SEEDING.
- INSTALL 60" C.M.P. CULVERT (S1,S2).
- CONSTRUCT LOW PROFILE ARCH CULVERT (S3,S4).
- GRADE ROAD TO SUBGRADE.
- CONSTRUCT STORM DRAIN SYSTEM AND INSTALL INLET PROTECTION DEVICES.
- 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.
- THE SEDIMENT TRAPS SHALL BE DETAILED BY PUMPING, REMOVE SEDIMENT FROM ROADWAYS AND DRESS STONE CONSTRUCTION ENTRANCE AS REQUIRED.
- REMOVE INLET PROTECTION DEVICES AND FLUSH STORM DRAIN SYSTEM TO REMOVE ANY TRAPPED SEDIMENT.
- REMOVE STONE CONSTRUCTION ENTRANCE AND SILT FENCE, CLEAN BASE COURSE, APPLY TACK COAT TO BASE COURSE AND LAY SURFACE COURSE.
- INSTALL WATER QUALITY FACILITIES AS SHOWN ON PLAN AND STABILIZE WITH PERMANENT SEEDING.
- ALL DISTURBED AREAS DUE TO REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING, FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE. TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCH PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1 b) 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- COMPLETE STABILIZATION OF ALL DISTURBED AREAS SHALL BE DONE PRIOR TO REMOVAL OF ALL SEDIMENT CONTROLS.
- NOTIFY HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS FOR FINAL INSPECTION AT COMPLETION OF PROJECT.

1630

FISHER, COLLINS & CARTER, INC.  
SUITE 100, 1101 BURNING WOODS PARKWAY  
ELICOTT CITY, MARYLAND 21043  
(410) 481-2828

**OWNER/DEVELOPER**  
STAMMOR VALLEY PARTNERSHIP  
96 LAND DESIGN & DEVELOPMENT, INC.  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND 21044

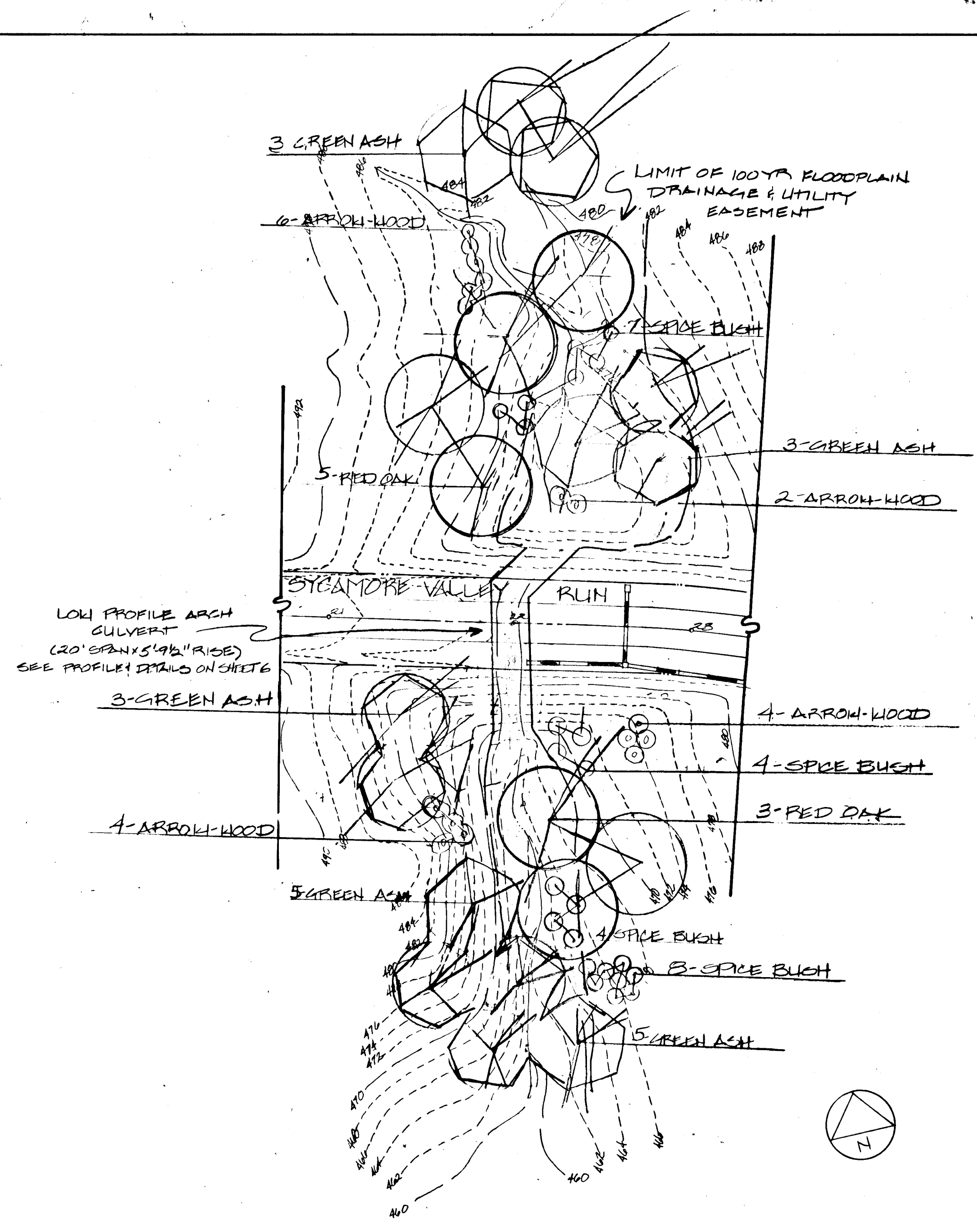


Sediment Control Details  
**CATAILCREEK COUNTRY CLUB**  
LOTS 27-47  
(A RESUBDIVISION OF LOTS 21-27)  
FOURTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN  
SHEET 8 OF 13

AS-BUILT F-91-8-A  
2-27-92

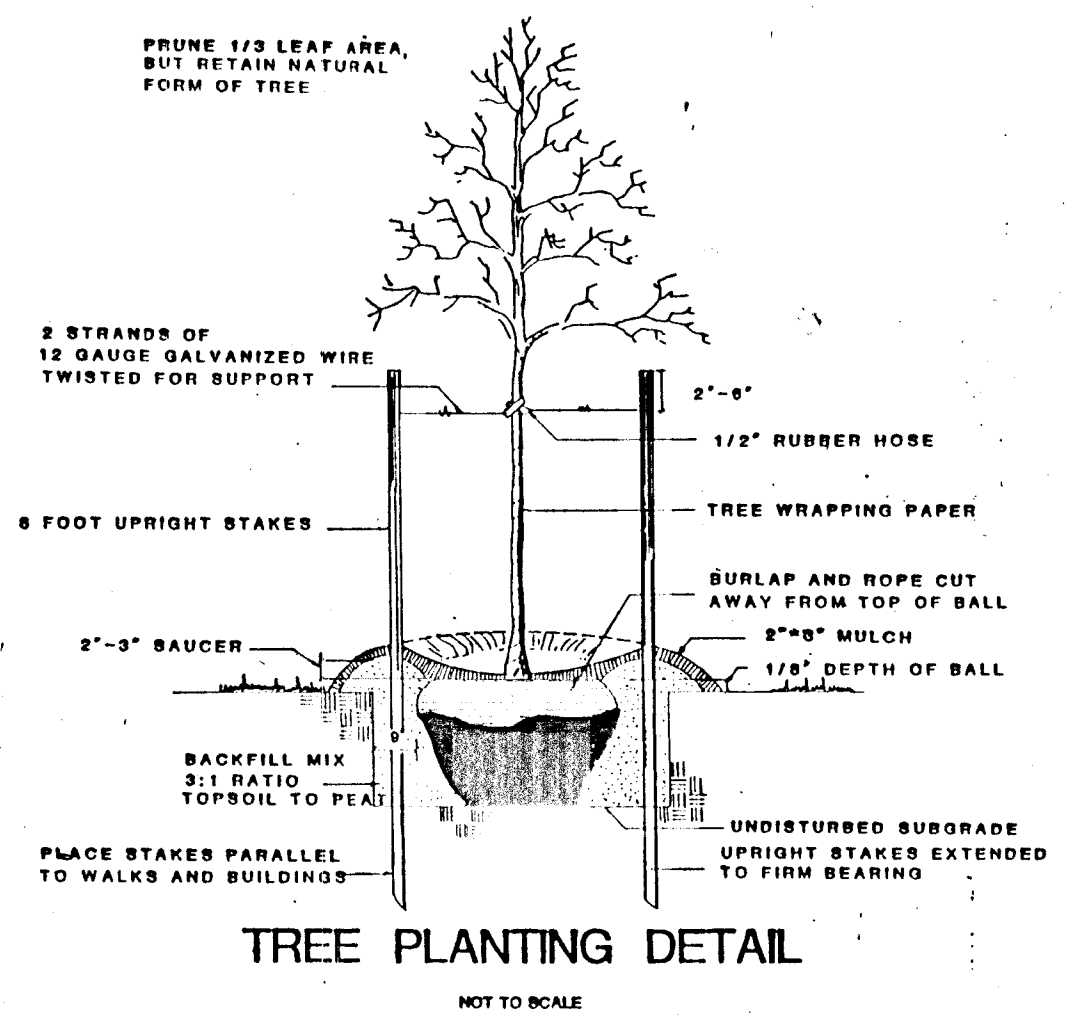






STREAM CROSSING #2

QUANTITY	COMMON NAME	SIZE
11	GREEN ASH	2" DIA.
7	RED OAK	2" DIA.
16	ARROW-WOOD	24"-36"
19	SPICE BUSH	24"-36"



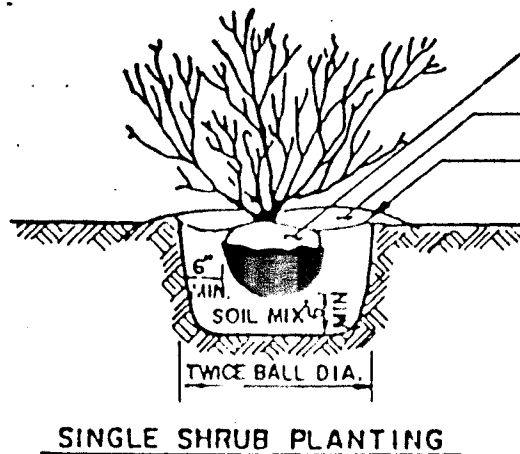
TREE PLANTING DETAIL

BALTIMORE DISTRICT CORPS OF ENGINEERS MITIGATION REQUIREMENTS

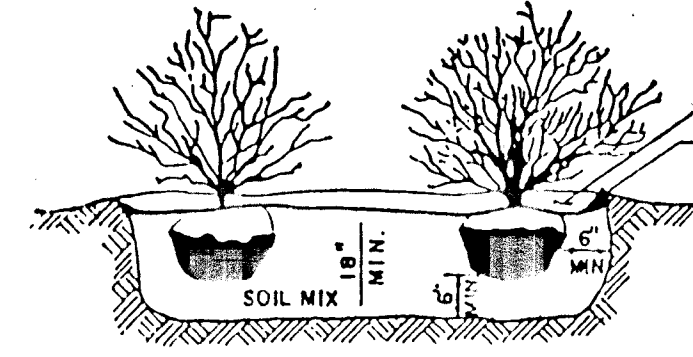
The mitigation plan is acceptable provided the following condition(s) are met:

- The permittee shall successfully create a minimum of 0.4 acre of emergent wetlands and shall plant trees along the tributary to Dorsey Branch after the construction of the road crossing to replace the shading provided by the trees which will be removed for those crossing, in accordance with the mitigation conditions required by the Maryland Department of the Environment (MDE), Water Quality Certification (WQC) 89-WQ-0675.
- The permit shall be automatically suspended if any one of the following is not met:
  - A final mitigation plan shall be submitted to MDE and the Corps prior to May 31, 1990 and shall be approved by both agencies prior to starting work.
  - The mitigation shall be implemented in accordance with the approved plan by November 30, 1990.
  - The woody species planted shall have a 70% survival rate (minimum) two (2) years after planting. Failure to achieve this rate shall require the replacement of all dead trees with new tree saplings until a 70% survival rate is obtained. Woody species vegetation proposed in the mitigation area shall have an 85% survival rate two (2) years after planting. If this rate is not achieved, additional planting(s) shall be required until this rate is achieved.
- The permittee shall obtain Corps approval for any changes of plant species or planting schedule from that specified in the mitigation plan. The permittee shall keep this office informed of the status of each stage of the project and the mitigation work.
- The permittee shall employ an environmental consultant who is knowledgeable and experienced in establishing wetlands. The consultant will supervise and monitor the work performed in the mitigation areas including establishment of elevations.

Any required State and local authorizations must be secured prior to initiating the work.



SINGLE SHRUB PLANTING



SHRUB BED PLANTING

PLANTING DETAIL  
NO SCALE

**ENGINEER'S CERTIFICATE**  
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL PRESENTS 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: *Chad C. ...* DATE: 3/6/91

**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 ARE DEEMED NECESSARY.

Signature: *James M. ...* DATE: 7/8/91

Signature: *John ...* DATE: 7/8/91

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

Signature: *John ...* DATE: 7/8/91

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Signature: *Frank ...* DATE: 7/20/91

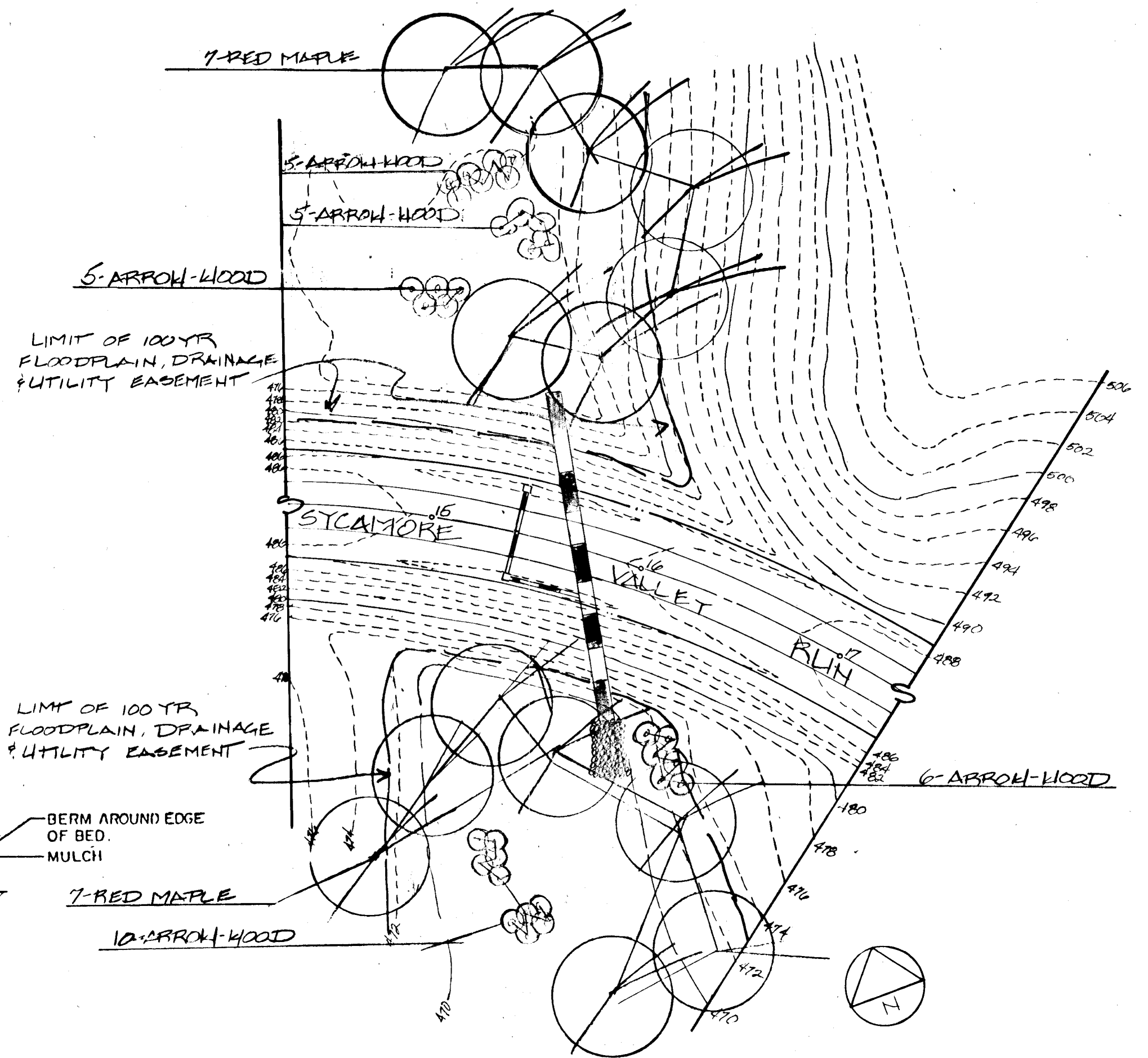
APPROVED: DEPARTMENT OF PUBLIC WORKS  
Signature: *James ...* DATE: 7-25-91

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Signature: *John ...* DATE: 7/11/91

PLANT LIST

QUANTITY	COMMON NAME	SIZE
14	RED MAPLE	2" DIA.
31	ARROW-WOOD	24"-36"

STREAM CROSSING #1



CATTAIL CREEK COUNTRY CLUB  
SECTION 1

CENAB-OP-RW (SYCAMORE VALLEY)  
89-2722-2

HOWARD COUNTY, MARYLAND

TREE PLANTING PLAN

EXPLORATION RESEARCH

ENVIRONMENTAL CONSULTANTS  
818 FOREST AVENUE  
SUITE 101  
HISTORIC ELLICOTT CITY  
MARYLAND 21043  
(301) 750-1150  
FAX #: (301) 750-7350



DRAWN BY: MAM  
DESIGNED BY: DFR  
CHECKED BY:  
SCALE: 1"=50'-0"  
DATE: 3-5-90  
SHEET: 10 OF 13

REVISIONS:  
FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
SUITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MARYLAND 21043  
(301) 461-2859

THIS DRAWING IS FOR INFORMATION PURPOSES ONLY AND IS NOT PART OF THE DEVELOPER'S AGREEMENT FOR THIS PROJECT. FOR CORPS OF ENGINEERS PERMIT SEE CENAB-OP-RW SYCAMORE VALLEY 89-2722-2

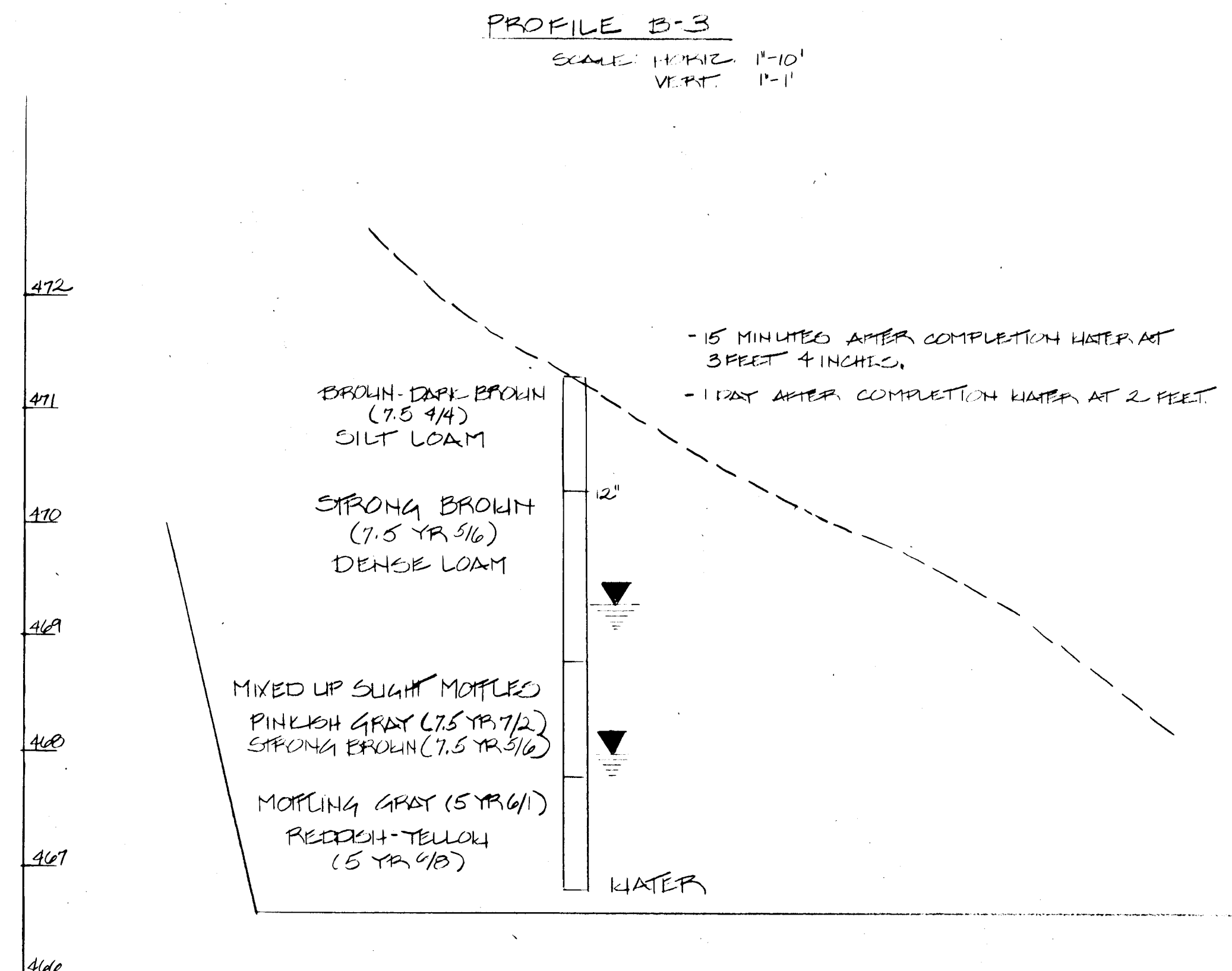
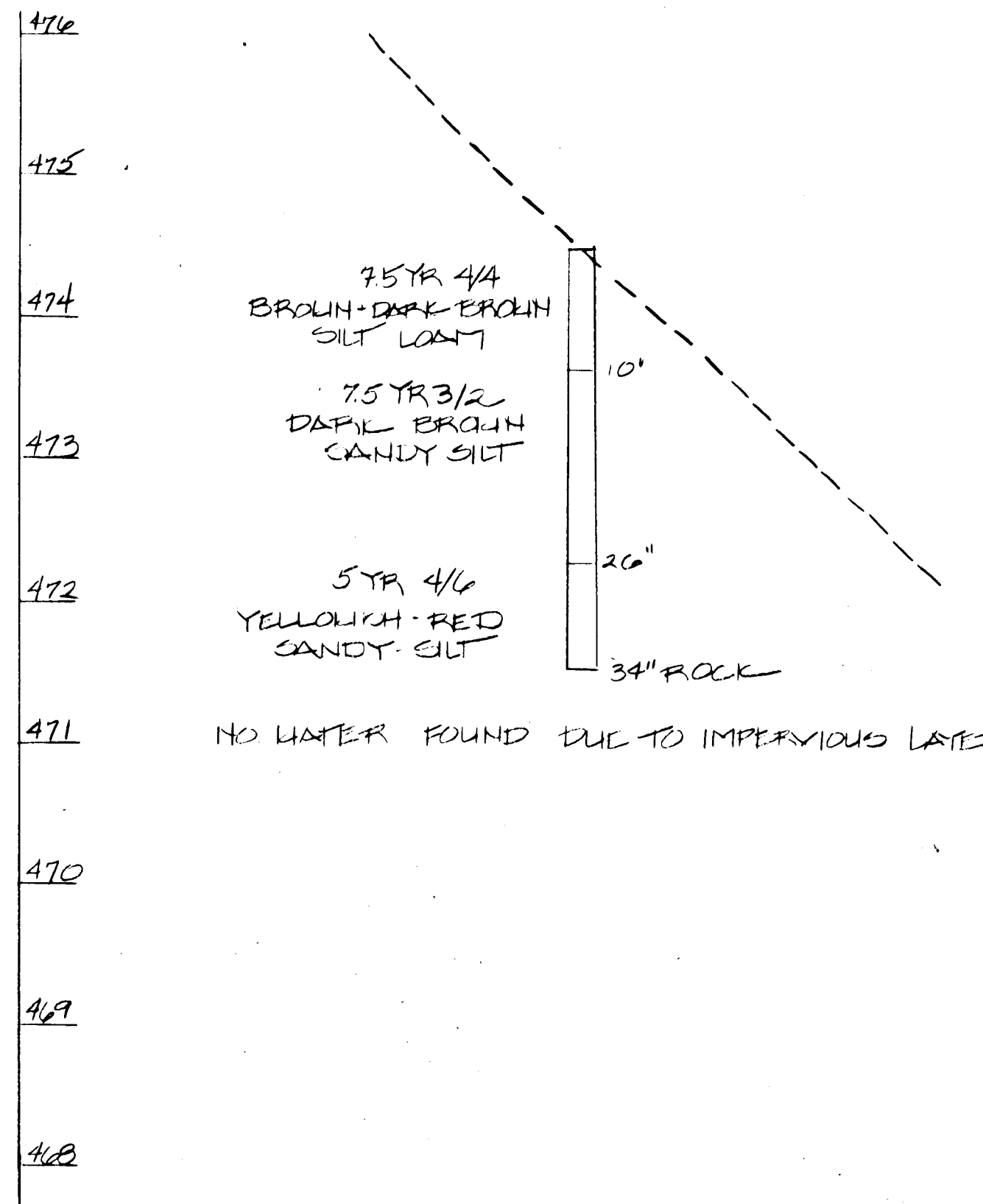
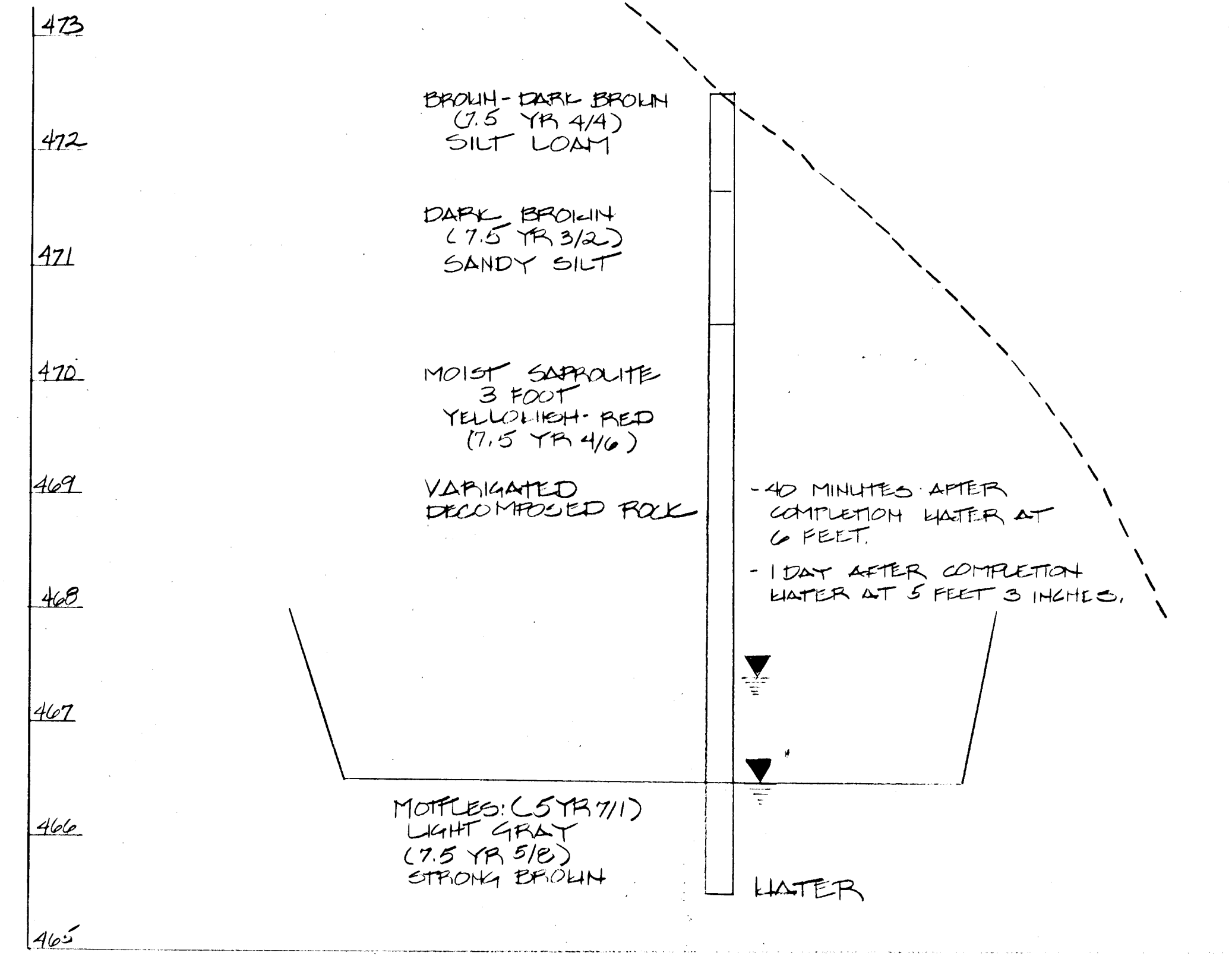
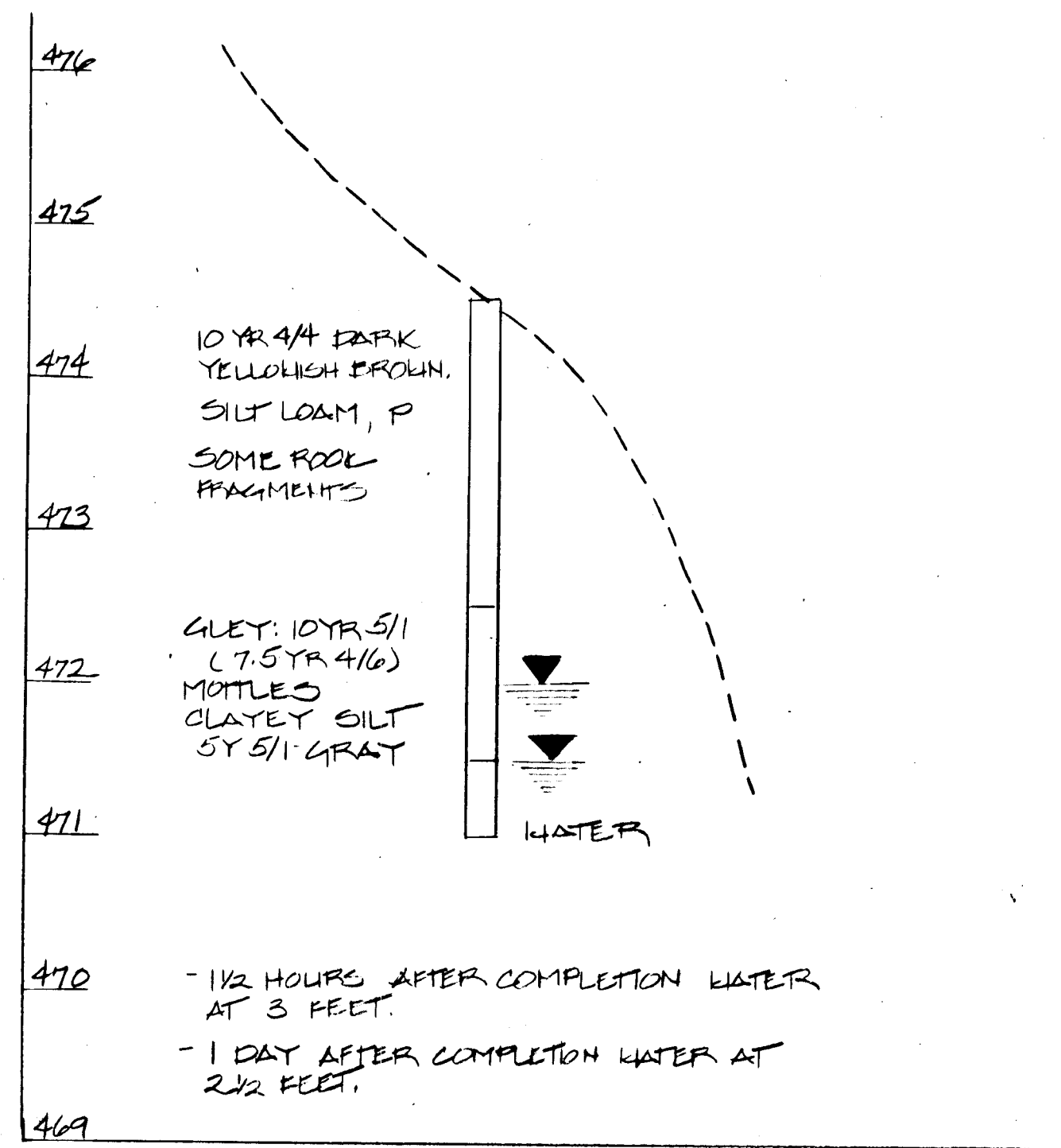
PREPARED FOR:  
SYCAMORE VALLEY FR.  
c/o  
LAND DESIGN DEVELOPMENT, INC.  
10805 HICKORY RIDGE ROAD  
COLUMBIA, MARYLAND  
21044

**PROJECT DATA**

- All information contained on this map is current as of March 9, 1990.
- Wetland areas were identified and delineated using a multi-parameter approach. This approach requires positive identification of WETLAND PLANTS, HYDRIC SOILS, and WETLAND HYDROLOGY for a determination that the area is a wetland.
  - WETLAND PLANTS:** A variety of hydrophytic plants were identified within the wetland limits and adjacent land areas.
  - HYDRIC SOILS:** Color and mottle characteristics of the undisturbed "B" horizon were used to roughly approximate the limits of the hydric soil.
  - WETLAND HYDROLOGY:** The topography of the area is characteristic of a low depression with a distinct stream channel.
- WETLAND CLASSIFICATIONS**
  - EXISTING CONDITIONS:**

System.....Palustrine  
 Class.....Emergent  
 Subclass.....Broadleaf/deciduous  
 Modifiers.....  
 Water regime.....Temporarily flooded  
 Salinity.....Fresh
  - PROPOSED CONDITIONS:**

System.....Palustrine  
 Class.....Emergent  
 Subclass.....Broadleaf/deciduous  
 Modifiers.....  
 Water regime.....Permanently flooded  
 Salinity.....Fresh
- WATERBODY:** Dorsey Branch / Classification as a Permanent-Perennial / Class III stream
- ANTICIPATED CONSTRUCTION DATE:** Fall, 1990
- ANTICIPATED RESTORATION CONSTRUCTION DATE:** Fall, 1990
- OWNER:** Sycamore Limited Partnership  
 c/o: Land Design & Development, Inc.  
 10805 Hickory Ridge Road  
 Columbia, Maryland 21044



<b>ENGINEER'S CERTIFICATE</b>	
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL PRESENTS 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.	
<i>Chad C. ...</i>	3/6/91
<b>DEVELOPER'S CERTIFICATE</b>	
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.	
<i>Donald P. ...</i>	3/6/91
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.	
<i>James M. ...</i>	7/4/91
THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.	
<i>John R. ...</i>	7/4/91
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Mark L. ...</i>	7/10/91
APPROVED: DEPARTMENT OF PUBLIC WORKS	
<i>William B. ...</i>	7-25-91
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<i>N/A</i>	
<i>John W. ...</i>	7/11/91

REVISIONS:

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 SUITE 100, 7171 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21043  
 (301) 461-2855

THIS DRAWING IS FOR INFORMATION PURPOSES ONLY AND IS NOT PART OF THE DEVELOPER'S AGREEMENT FOR THIS PROJECT. FOR CORPS OF ENGINEERS PERMIT SEE CENAB-OP-RH SYCAMORE VALLEY 89-2722-2

PREPARED FOR:  
 SYCAMORE VALLEY FFB,  
 410  
 LAND DESIGN DEVELOPMENT, INC.  
 10805 HICKORY RIDGE ROAD  
 COLUMBIA, MARYLAND  
 21044

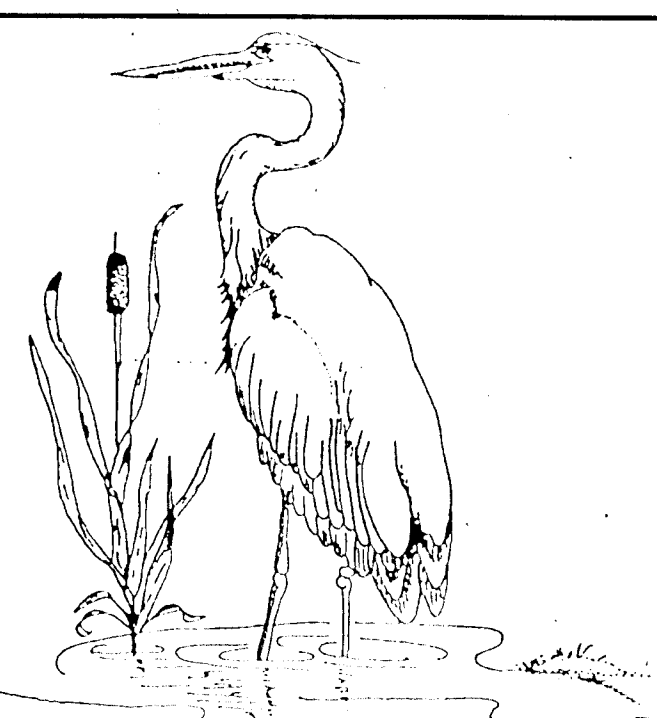
**CATTAIL CREEK COUNTRY CLUB**  
 SECTION 1

CENAB-OP-RW (SYCAMORE VALLEY)  
 89-2722-2

HOWARD COUNTY, MARYLAND

**SOIL PROFILES**

**EXPLORATION RESEARCH**  
 ENVIRONMENTAL CONSULTANTS  
 8818 FORREST AVENUE  
 SUITE 101  
 HISTORIC ELLICOTT CITY  
 MARYLAND 21043  
 (301) 750-1150  
 FAX#: (301) 750-7350



DRAWN BY  
 M.A.M.

DESIGNED BY

CHECKED BY

SCALE  
 1"=10'-0"

DATE:  
 3-5-90

SHEET  
 11 OF 15

**CONSTRUCTION REQUIREMENTS**

The site to be restored as emergent Wetland shall be graded, planted, and fertilized as shown on the plans and in accordance with these special provisions:

**A. Planting schedule shall conform to the following conditions:**

Planting shall commence after final grading, adjacent construction has been completed, and all sediment control measures have been removed. In order to coordinate the planting work with the entire construction schedule, plant material will not be shipped from the supplier until directed to do so by Exploration Research, Inc. All emergent Wetland plantings (peat plants and bare root-stock) shall be installed between September 15 to November 15 or as directed by Exploration Research, Inc.

**B. Plant Materials:**

- 1) Root-stock of the plant material shall be kept moist during transport from the source to the job site and until planted.
- 2) Plant material shall be planted in existing soil with each planting pit excavated to size sufficient to contain the entire root-stock or the entire root-mass without cramping.

**C. Planting bed preparation:**

The contractor shall prepare the area to be planted in Wetland plant materials by spreading a uniform layer of 6 inches of topsoil over the existing soil without disturbing the grade. Planting areas shall be approved by Exploration Research, Inc. prior to the installation of the plant material.

**D. Clean-up:**

Final clean up shall be the responsibility of the contractor and consist of removing all trash and materials incidental to the project, and disposing of them off-site. In addition, the construction procedure shall not damage any areas of existing plants which are to remain.

**E. The planting grids are approximate and may be varied upon the approval of Exploration Research, Inc., provided the relative ratios and areas are maintained.**

**F. Plant material selections are based upon availability at time of design. If specific plants are unavailable at time of planting, substitute plants conforming to above specifications will be made. All substitute plant materials are subject to the approval of Exploration Research, Inc. and the Army Corps of Engineers.**

**CONSTRUCTION SEQUENCE**

1. All grading to be done under approved grading permit for Cattail Creek Country Club F-90-54.
2. Install earth dikes, silt fence and temporary swale.
3. Clear and grub within limits of disturbance.
4. Remove topsoil and temporarily stockpile on site within area protected by sediment controls. Excavate to an elevation six inches (6") below proposed grade and haul material to an on-site location for controlled fill.
5. Spread topsoil to a depth of six inches (6") and stabilized with annual rye or millet depending on seeding date in accordance with standards and specifications.
6. Remove earth dike, temporary swale and stabilize.
7. Observe hydrology within planting area for six (6) months during growing season prior to planting.
8. Adjust grades as needed and install plant materials in accordance with the planting plan.

**CONSTRUCTION RESTRICTIONS**

All work in flood plain must be done in strict accordance with applicable State permit requirements.

Work in streams is prohibited during certain times of the year as follows:

Class I Streams	March 1 thru June 15
Class II Streams	June 1 thru September 30 December 16 thru March 14
Class III Streams	October 1 thru April 30
Class IV Streams	March 1 thru May 31

**CLEARING AND GRUBBING**

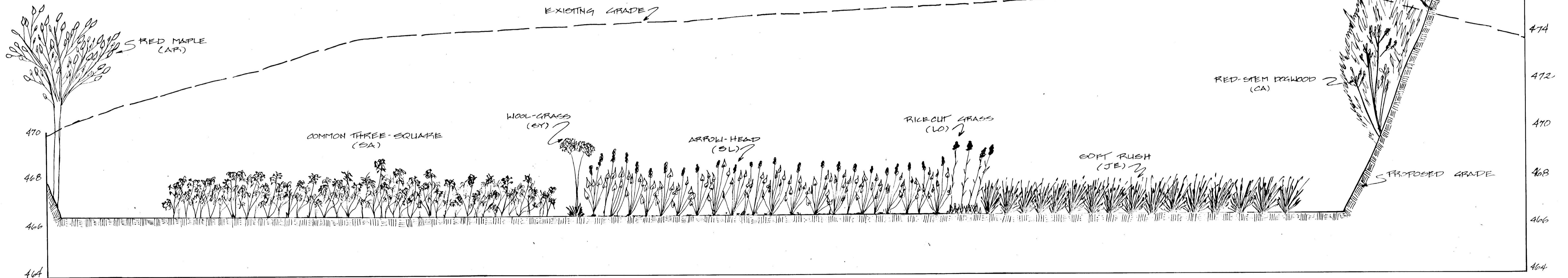
1. All vegetation, trash, and debris not marked in the field or on the plans, within the limits of disturbance, are to be disposed of off site in an approved landfill site.

**GRADING**

1. All topsoil and excess cut is to be removed and disposed of off site.
2. Grade tolerance shall be within 0.15 feet.
3. Specific field elevations for the basin bottom may be adjusted slightly during construction to allow for unanticipated field conditions.
4. Side slopes shall be excavated six inches (6") below finished grade and six inches (6") of topsoil shall be uniformly spread to finished elevation. Topsoil shall be free of stones, lumps, plants, roots, and other debris including toxic substances. Topsoil shall have a pH range of 5.0 - 7.0.
5. The basin bottom shall be excavated six inches (6") below finished grade and six inches (6") of a topsoil shall be uniformly spread to finished elevation.
6. All final elevations shall be field checked by Exploration Research, Inc. prior to the contractor removing equipment from the site.

**NOTES/SPECIFICATIONS**

1. Compact subgrade by rolling and compacting with approved multiple-wheel pneumatic tire rollers vibratory rollers or other types of approved rollers.
2. The basin bottom shall be excavated six inches (6") below finished grade and six inches (6") of topsoil shall be uniformly spread to finished elevation. Topsoil shall be free of stone, lumps, plants, roots, and other debris including toxic substances. Topsoil shall have a pH range of 5.0 - 7.0.



**ENGINEER'S CERTIFICATE**  
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL PRESENTS 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.  
*Chaffin*  
DATE: 3/6/91

**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 OF THIS 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. ALSO APPROXIMATE PLANTING ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS AND WHEN NECESSARY.  
*D. R. ...*  
DATE: 3/6/91

**SECTION A-A**  
SCALE: HORIZ: 1"=10'-0"  
VERT: 1"=2'-0"

APPROVED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND METS TECHNICAL REQUIREMENTS.  
*James M. ...* 2/9/91  
*John R. ...* 2/9/91  
THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Frank J. ...* 7/10/91  
CHIEF, DIVISION OF ZONING, PLANNING AND LAND DEVELOPMENT.  
APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Michael B. ...* 7-25-91  
CHIEF, BUREAU OF PUBLIC WORKS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
N/A  
CHIEF, LAND DEVELOPMENT DIVISION  
*H. W. ...* 7/11/91  
CHIEF, PUBLIC WORKS.

1630

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
SUITE 100, 7171 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21043  
(301) 461-2877

THIS DRAWING IS FOR INFORMATION PURPOSES ONLY AND IS NOT PART OF THE DEVELOPER'S AGREEMENT FOR THIS PROJECT. FOR CORPS OF ENGINEERS PERMIT SEE CENAB-OP-RH SYCAMORE VALLEY 872722

PREPARED FOR:  
SYCAMORE VALLEY FPI.  
910  
LAND DESIGN DEVELOPMENT, INC.  
10805 HILLOM RICHIE ROAD  
COLUMBIA, MARYLAND  
21044

**CATTAIL CREEK COUNTRY CLUB**  
SECTION 1  
CENAB-OP-RW (SYCAMORE VALLEY)  
89-2722-2  
HOWARD COUNTY, MARYLAND  
SECTIONS

**EXPLORATION RESEARCH**  
ENVIRONMENTAL CONSULTANTS  
8318 FORREST AVENUE  
SUITE 101  
HISTORIC ELLICOTT CITY  
MARYLAND 21043  
(301) 750-1150  
FAX: (301) 750-7350



1-24-91  
MAM  
DESIGNED BY  
PEP  
CHECKED BY  
SCALE: AS NOTED  
DATE:  
SHEET:  
12 OF 13

**WETLAND MANAGEMENT NOTES**

In order to establish a productive, functioning wetland ecosystem, an effective wetland management plan has been developed. The objectives of the management plan include:

- 1) Re-establish a healthy, self-sustaining vegetative cover.
- 2) Re-establish self-sustaining hydrological conditions.
- 3) Enhance and promote maximum wildlife habitat.

In order to establish an effective, workable, and practical wetland management plan, the following strategy is recommended: During and immediately preceding construction of the wetland areas, potential or existing problems will be identified and corrective management techniques will be implemented.

**HYDROLOGIC REGIME**

The duration, timing, and source of surface inundation determines and regulates wetland functions and their characteristics.

**IMMEDIATE MANAGEMENT TECHNIQUES**

Several hydrological parameters will be assessed including:

- 1) Elevations of grades
- 2) Soil profile
- 3) Runoff patterns
- 4) Springs, groundwater

As site grading and planting are implemented, hydrological parameters will be monitored, immediate and perceived problems will be corrected in the field and recommendations will be made for future management strategies. Vegetative planting will be preceded by:

- 1) Monitor the hydrologic moisture regime for a three (3) month period prior to planting.
- 2) Changing elevations of grade, if required.
- 3) Loosen soil to avoid compaction of soil profiles.

**SHORT TERM MANAGEMENT TECHNIQUES**

Surface inundation will be periodically monitored in relation to vegetative stability and climatic conditions. Appropriate management strategies will be recommended and implemented as required. Management techniques will include strategies outlined in immediate management techniques.

**LONG TERM MANAGEMENT TECHNIQUES**

Hydrological conditions will be assessed annually to determine wetland stability. Long term strategies will be recommended and implemented as needed.

**NATURAL CYCLE**

Natural cycles must be maintained to prevent "succession" from wetland to solid ground. Although this is a long term goal exceeding the limits of this management program, several techniques can be implemented over the two year period to enhance stability.

**IMMEDIATE MANAGEMENT TECHNIQUES**

No management strategies planned.

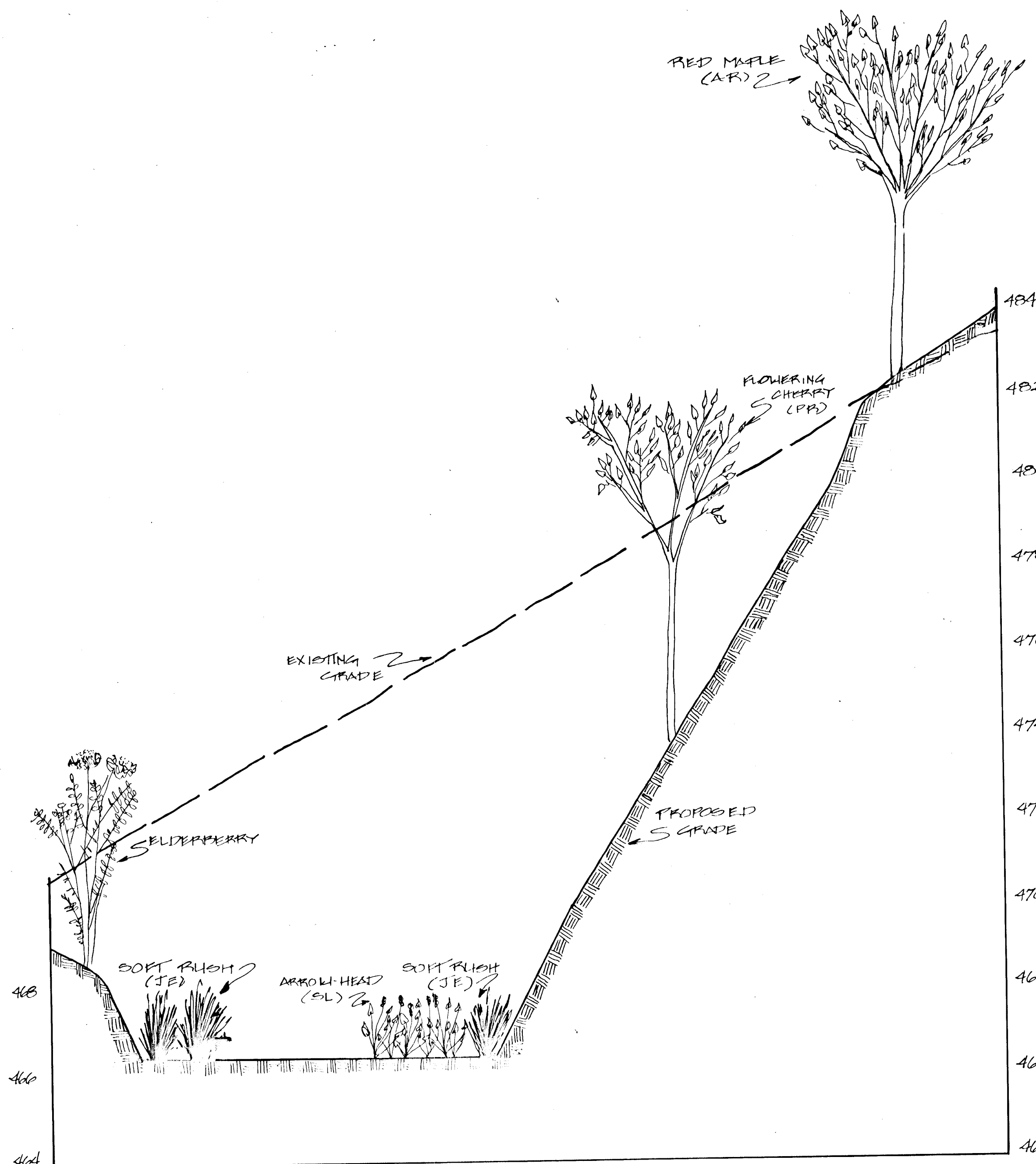
**SHORT TERM MANAGEMENT TECHNIQUES**

Wetland area will be periodically monitored for altered hydrologic conditions, invasive plant species, transition of wetland species to upland plants, and cultural impacts such as human disturbance, filling, non-point, and point source pollution. Management techniques will be recommended to stabilize unnatural ecological succession including:

- 1) Altering the hydrological regime.
- 2) Removing undesirable plant species.
- 3) Encouraging natural regeneration of desirable plant species.
- 4) Restricting or discouraging destructive human interaction.

**LONG TERM MANAGEMENT TECHNIQUES**

Overall ecology and stability of the restored wetland areas will be assessed in comparison to similar adjacent areas. Recommendations and strategies will be planned to enhance and protect the overall ecology of the site.



**SECTION B-B**  
SCALE: HORIZ. 1"=100'  
VERT. 1"=2'0"

**WETLAND PLANT MATERIAL**

**DESCRIPTION:**

This work shall consist of furnishing and planting emergent wetland plants and shrubs as shown on the plans and/or as directed by Exploration Research, Inc. and all planting operations and care and replacement as necessary to complete the work specified.

Prior to the start of the work on this project, Exploration Research, Inc. shall submit to the Army Corps of Engineers for review, the proposed planting schedule for the wetland vegetation.

**MATERIALS:**

- A. Plant material - As shown on the plans, shall conform to the following specifications: The plant species required are normally unavailable from standard landscape nursery sources. Exploration Research, Inc. will make arrangements to insure a supply of the required plant material. This shall be done five (5) months prior to planting time to allow for plant collection, storage, and preparation.
- B. Fertilizer - As required.
- C. Substitute plants - Shall conform to the above specifications and approval of Exploration Research, Inc. and the Army Corps of Engineers.

**VEGETATION**

Vegetation sustains wildlife species, filters and reduces flood velocity. A goal of 85% vegetative cover will be established in two (2) years.

**IMMEDIATE MANAGEMENT TECHNIQUES**

Vegetation demonstrating immediate stress or dieback will be replaced. In addition, soil and climatic factors will be analyzed in relation to plant growth. The following management techniques will be utilized:

- 1.) Replace plant species with similar vegetation.
- 2.) Add soil amendments to enhance survivability.
- 3.) Replace plant species with specified alternative.
- 4.) Prune plant species to establish desired growth characteristics and enhance survivability.

**SHORT TERM MANAGEMENT TECHNIQUES**

Survey vegetation after major storm events or droughts to determine appropriate management techniques as specified in Immediate Management Techniques.

**LONG TERM MANAGEMENT TECHNIQUES**

Re-assess vegetation for its functional value in relation to wetland cycles and habitat enhancement. Recommend and implement corrective and preventive action.

<p><b>ENGINEER'S CERTIFICATE</b></p> <p>I HEREBY CERTIFY THAT THIS PLAN FOR DESIGN AND CONSTRUCTION OF THE PROJECT DESCRIBED HEREIN IS A COMPLETE AND CORRECT PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.</p> <p><i>Chad C. ...</i> 3/6/91</p>		<p>APPROVED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.</p> <p><i>James M. Hula</i> 7/8/91</p>		<p>APPROVED: DEPARTMENT OF PUBLIC WORKS</p> <p><i>William E. Ray</i> 7-25-91</p>	
<p><b>DEVELOPER'S CERTIFICATE</b></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 SOIL AND WATER CONSERVATION DISTRICT PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT FROM CONSTRUCTION PROJECTS. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS AND FREQUENTLY REQUIRED.</p> <p><i>Paul R. ...</i> 3/6/91</p>		<p>THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.</p> <p><i>John R. ...</i> 7/8/91</p>		<p>APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS</p> <p>N/A</p>	
<p>APPROVED: DEPARTMENT OF PLANNING AND ZONING</p> <p><i>David J. ...</i> 7/8/91</p>		<p>APPROVED: DEPARTMENT OF PLANNING AND ZONING</p> <p><i>David J. ...</i> 7/8/91</p>		<p>APPROVED: DEPARTMENT OF PLANNING AND ZONING</p> <p><i>W. W. ...</i> 7/11/91</p>	

1630

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
SUITE 100, 9171 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MARYLAND 21043  
(301) 461-2877

THIS DRAWING IS FOR INFORMATION PURPOSES ONLY AND IS NOT PART OF THE DEVELOPER'S AGREEMENT FOR THIS PROJECT. FOR CORPS OF ENGINEERS PERMIT SEE CENAB-OP-RW SYCAMORE VALLEY 89-2722-2

PREPARED FOR:  
SYCAMORE VALLEY F.P.R.  
410  
LAND DESIGN DEVELOPMENT, INC.  
10805 HILARY RIDGE ROAD  
COLUMBIA, MARYLAND  
21044

**CATTAIL CREEK COUNTRY CLUB**  
SECTION 1  
  
CENAB-OP-RW (SYCAMORE VALLEY)  
89-2722-2  
  
HOWARD COUNTY, MARYLAND

**EXPLORATION RESEARCH**  
ENVIRONMENTAL CONSULTANTS  
8312 FOREST AVENUE  
SUITE 101  
HISTORIC ELLICOTT CITY  
MARYLAND 21043  
CSD 750-1150  
PW# (301) 950-7350



EXPLAN STC  
MAM  
RESOURCES  
DATE  
CHECK DATE  
SCALE  
AS NOTED  
DATE  
SHEET  
13 OF 13