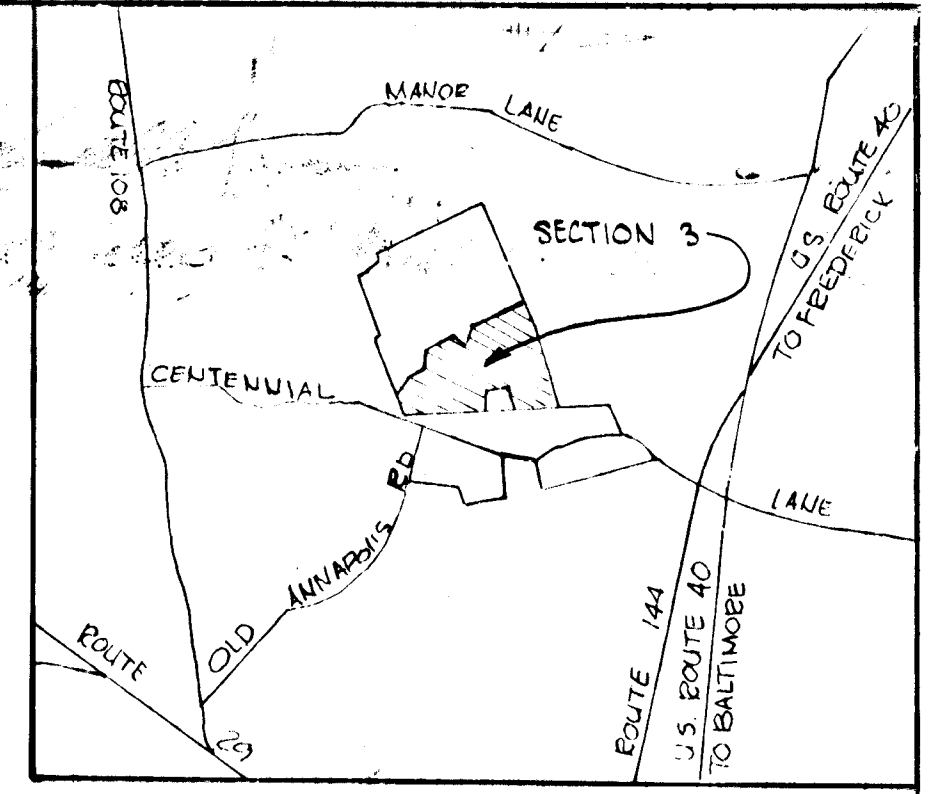
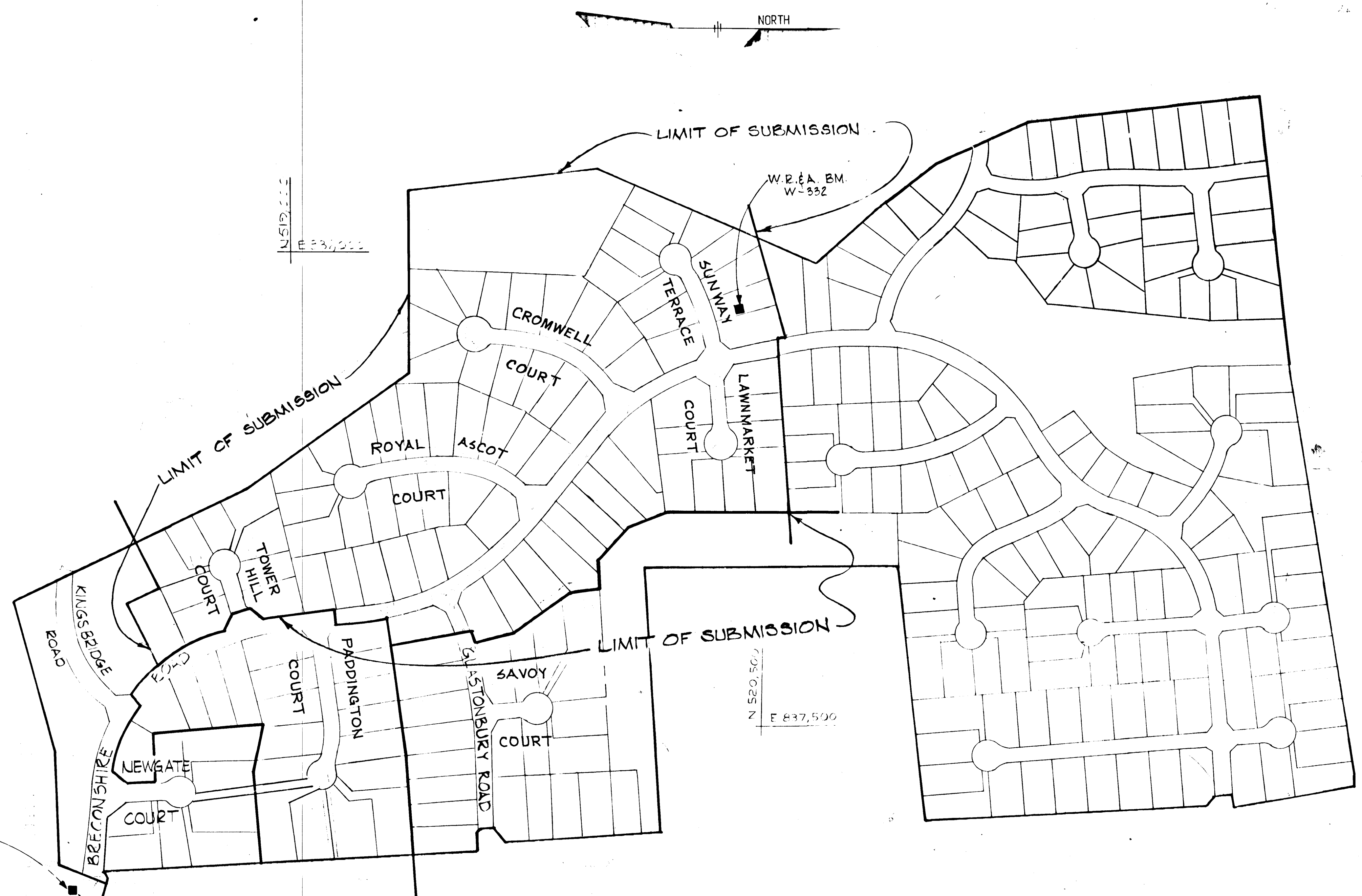


SHEET INDEX	
NO.	DESCRIPTION
1.	TITLE SHEET
2.	PLAN AND PROFILE BRECONSHIRE ROAD
3.	PLAN AND PROFILE BRECONSHIRE ROAD
4.	PLAN AND PROFILE TOWER HILL CT.
5.	PLAN AND PROFILE ROYAL ASCOT CT.
6.	PLAN AND PROFILE CROMWELL CT.
7.	PLAN AND PROFILE SUNWAY TERRACE AND LAWNMARKET CT.
8.	ROADWAY AND STORM DRAIN DETAILS
9.	DRAINAGE AREA MAP
10.	DRAINAGE AREA MAP
11.	STORM DRAIN PROFILES
12.	STORM DRAIN PROFILES
13.	STORM DRAIN PROFILES
14.	DRAINAGE AREA MAP FOR SEDIMENT CONTROL
15.	DRAINAGE AREA MAP FOR SEDIMENT CONTROL
16.	SEDIMENT CONTROL PLAN
17.	SEDIMENT CONTROL PLAN
18.	SEDIMENT CONTROL PLAN
19.	SEDIMENT CONTROL DETAILS
20.	SEDIMENT CONTROL DETAILS



- GENERAL NOTES**
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
 - ALL UTILITY COMPANIES SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF CONSTRUCTION.
 - ALL INLETS SHALL BE HOWARD COUNTY STANDARDS UNLESS OTHERWISE SHOWN.
 - ALL STREET CURB RETURNS SHALL HAVE A 30.0' RADIUS UNLESS OTHERWISE NOTED.
 - STORM DRAIN TRENCHES WITHIN ROAD RIGHTS-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY ROAD CODE.
 - APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
 - THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES WHERE DIRECTED BY THE ENGINEER A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY CONSTRUCTION.
 - TEMPORARY COMPACTED 18" HIGH EARTH FILL DIVERSION DIKS SHALL BE CONSTRUCTED ABOVE THE LIPS OF FILL SLOPES ON THE R.O.W. CONCURRENTLY WITH THE INITIAL GRADING AND DIRECTED TO UNDISTURBED SOG AREAS AT THE END OF EACH DAY.
 - CONTRACTOR TO NOTIFY THE HOWARD COUNTY DEPT. OF INSPECTIONS AND PERMITS AT LEAST 3-DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS. TELEPHONE NO. 792-2630.
 - ALL DISTURBED SLOPE AREAS TO BE STABILIZED AS SOON AS GRADING IS COMPLETED.
 - ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3500 P.S.I.
 - ALL SWALES AND SLOPES SHALL BE PERMANENTLY SEEDDED. SEE THE FIELD SPECIFICATIONS ON SHEET.
 - TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1978 REVISED EDITION.
 - PERMEABLE (FILTER CLOTH 1-100) OR EQUAL SHALL BE PLACED UNDER ALL STONE RIP-RAP (FULL WIDTH AND LENGTH OF STONE.)
 - STONE FOR RIP-RAP SHALL BE AS SPECIFIED ON THE DRAWINGS. ALL RIP-RAP SHALL BE UNPAVED.
 - STUBS FOR 6" P.V.C. UNDERDRAIN PIPE TO BE INSTALLED AT CENTER OF EACH WALL OF EVERY INLET.
 - LAMP POST - A 250-WATT MERCURY VAPOR LAMP PENDANT MOUNTED FIXTURE ON A 30-FOOT BRONZE ALUMINUM POLE.
 - LAMP POST - A 175 WATT MODERN MERCURY VAPOR LAMP POST TOP FIXTURES ON A 12-FOOT BRONZE FIBERGLASS POLE.

LOCATION PLAN
SCALE: 1" = 200'

I HEREBY CERTIFY THAT AN AS-BUILT SURVEY WAS MADE TO HORIZONTALLY AND VERTICALLY LOCATE THE ROADS AND STORM DRAINS AND THAT THEY WERE CONSTRUCTED AS SHOWN HEREON IN RED.

BENCH MARKS

HOWARD COUNTY CONTROL POINT 3040001 - CONCRETE MON. SURFACE - 25'±
E OF C OF CENTENNIAL LANE.
70'± S. OF OLD ANNAPOLIS ROAD
ELEV. 494.422

W.R. & A. B.M. W 332 - IRON PIPE (TRAVERSE POINT) - 140'±
W. OF S.A. 29+35± BRECONSHIRE ROAD
ELEV. 494.16



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James W. McLean 3/11/93
REGISTERED PROFESSIONAL LAND SURVEYOR

Elizabeth Anderson Salca 4/29/93
REGISTERED PROFESSIONAL ENGINEER

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218
James W. McLean
REGISTERED PROFESSIONAL LAND SURVEYOR

OWNER
GERALD M. KATZ &
THOMAS J. PELLERITO, TRUSTEES
BALTIMORE, MARYLAND

OFFICE OF PLANNING AND ZONING
James W. McLean 6/27/88
COMMUNITY PLANNING AND LAND DEVELOPMENT

Street Trees:
The location, type and number of trees shown on these plans are tentative and are used for bond purposes only. The final location and variety of trees may vary to reflect the field conditions and builders landscape program. Bond release is contingent upon Section 16-11 of the Howard County Subdivision Regulations, as approved by the Office of Planning and Zoning. The type of trees to be planted are American Elm (King Maple), Planting in Apples (London Plane Tree) or other species as approved by the Engineer.

REV. DATE	REV. NO.	REVISION	DESCRIPTION

BURLEIGH MANOR
SECTION 3 AREA 4 PHASE 2
LOTS 442-522
ROAD CONSTRUCTION PLANS
2nd ELECTION DISTRICT OF HOWARD COUNTY, MD.

DEVELOPER
ROSE/RICHMOND JOINT VENTURE
BALTIMORE, MARYLAND

SCALE: AS SHOWN DATE: 12-23-87

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

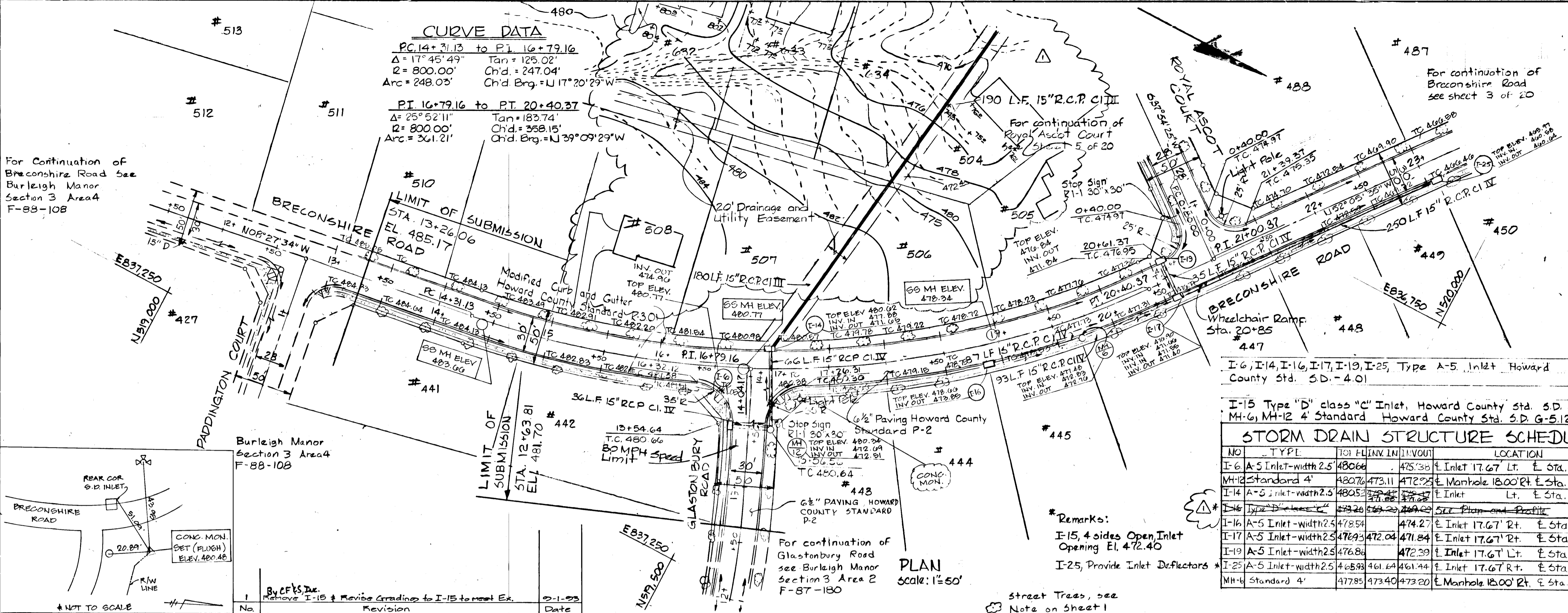
James Ruth 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE

James Ruth 6/7/88
 CHIEF, BUREAU OF HIGHWAYS DATE

James Ruth 6/29/88
 CHIEF, BUREAU OF ENGINEERING DATE

OFFICE OF PLANNING AND ZONING

James Ruth 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP ELEV. IN	INVERT	LOCATION
I-6	A-5 Inlet-width 2.5	480.66	475.30	Inlet 17.67 Lt. E Sta. 13+51.47
MH-2	Standard 4'	480.76	473.25	Manhole 18.00 Rt. E Sta. 13+56.56
I-14	A-5 Inlet-width 2.5	480.53	478.25	Inlet Lt. E Sta. 16+98.00
I-16	A-5 Inlet-width 2.5	478.54	474.27	Inlet 17.67 Rt. E Sta. 18+91.55
I-17	A-5 Inlet-width 2.5	478.23	471.84	Inlet 17.67 Rt. E Sta. 20+58.20
I-19	A-5 Inlet-width 2.5	476.88	472.39	Inlet 17.67 Lt. E Sta. 20+58.20
I-25	A-5 Inlet-width 2.5	465.93	461.44	Inlet 17.67 Rt. E Sta. 23+13.00
MH-4	Standard 4'	477.85	473.40	Manhole 18.00 Rt. E Sta. 19+78.89

3/23/88 1 As Per DPW Comments #7,11 and 15
 REVISION NO. REVISION DESCRIPTION

BURLEIGH MANOR
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DEVELOPER
 ROSE/RICHMOND JOINT VENTURE

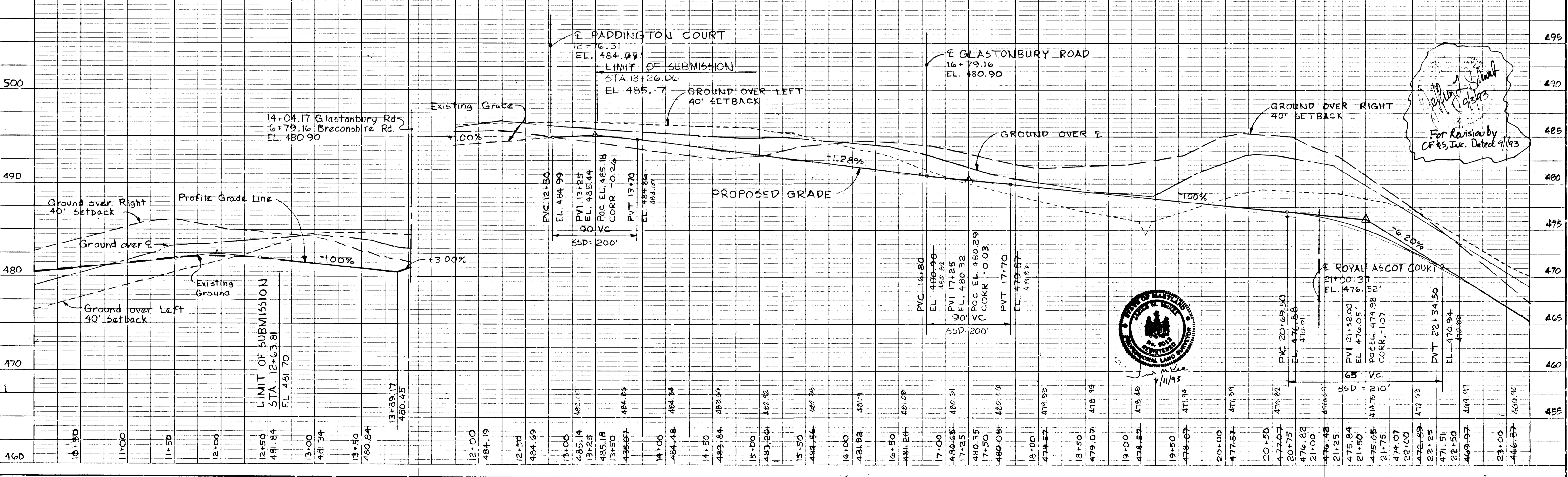
PROJECT AREA
 BURLEIGH MANOR
 SECTION 3 AREA 4 PHASE 2
 LOTS 442-582

PROJECT TITLE:
 PLAN AND PROFILE
 BRECONSHIRE ROAD

SCALE: 1"=50' DATE: 12/23/87

WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND 21218

Kenneth A. McCord
 KENNETH A. MCCORD
 Registered Engineer
 NO 1974



For Revision by
 CF 45, Inc. Dated 9/1/93



DATE: _____
 BY: _____
 CHECKED: _____
 DATE: _____

DATE: _____
 BY: _____
 CHECKED: _____
 DATE: _____

721

CURVE DATA

PC 23+63.35 to PI 25+13.92
 $\Delta = 110^\circ 27' 35''$ Tan = 75.25'
 $R = 750.00'$ Chd = 149.75'
 Arc = 150.00' Chd Brg = N46°21'48"W

PI 25+13.92 to PI 28+54.92
 $\Delta = 24^\circ 56' 54''$ Tan = 165.92'
 $R = 750.00'$ Chd = 324.00'
 Arc = 326.57' Chd Brg = N25°09'35"W

PI 28+54.92 to PT 28+54.92
 $\Delta = 01^\circ 08' 45''$ Tan = 7.50'
 $R = 750.00'$ Chd = 15.00'
 Arc = 15.00' Chd Brg = N15°06'46"W

PT 28+54.92 to Sta 30+73.37
 $\Delta = 05^\circ 41' 12''$ Tan = 109.31'
 $R = 2200.00'$ Chd = 218.36'
 Arc = 218.45' Chd Brg = N11°41'43"W

For Continuation of Storm Drain see sheet 7 of 20

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

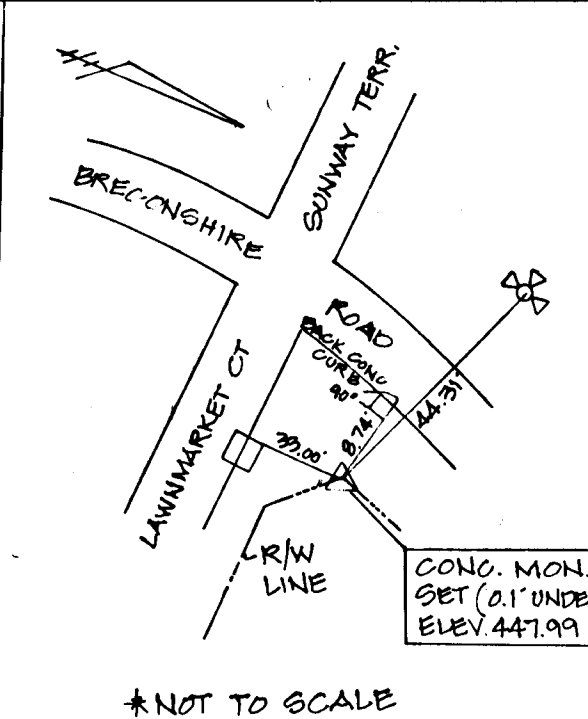
Paul J. ... 6/21/88
 Chief, Land Development Division Date

Andrew W. Welton 6/27/88
 Chief, Bureau of Highways Date

Elizabeth Anderson Calia 6/29/88
 Chief, Bureau of Engineering Date

OFFICE OF PLANNING AND ZONING

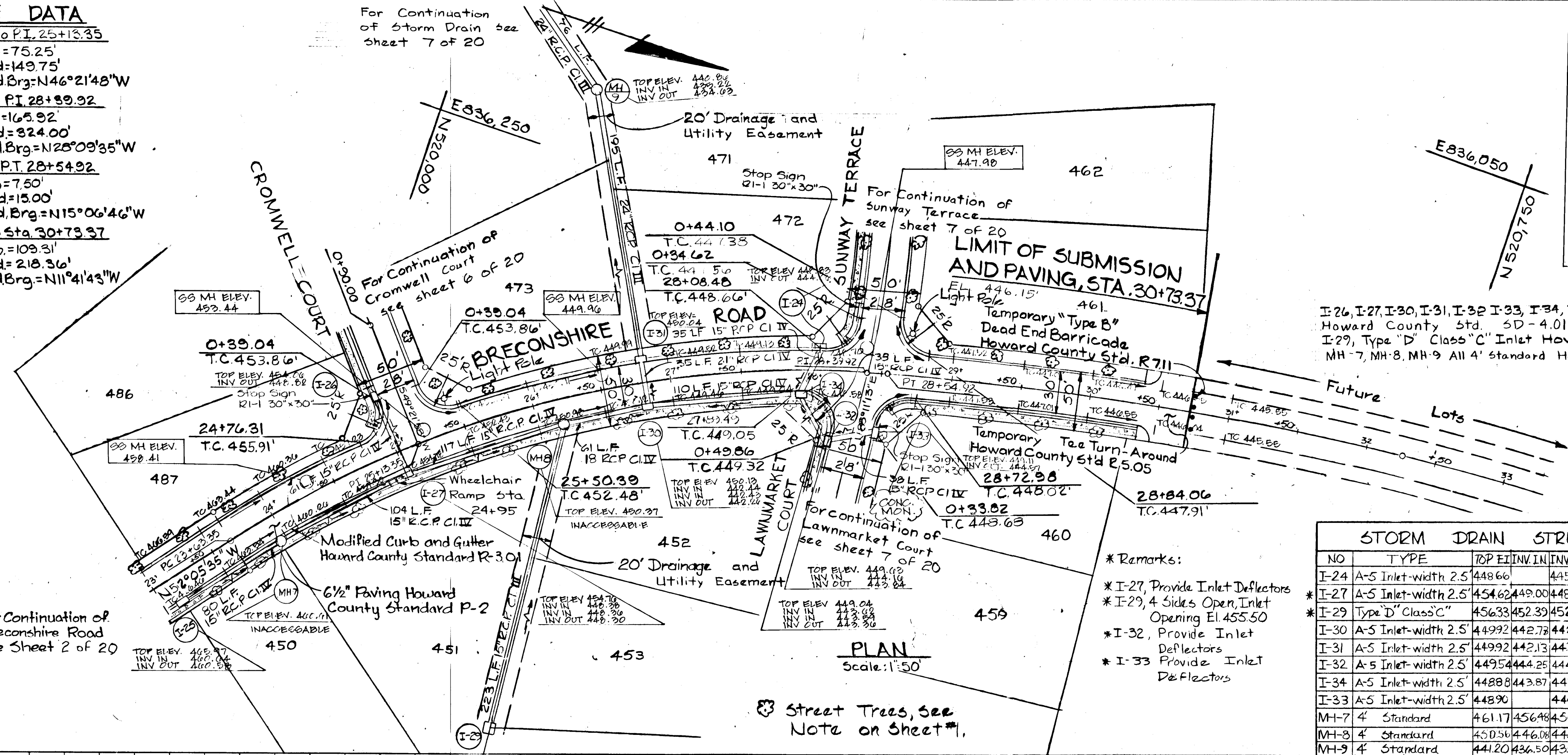
James ... 6/29/88
 Chief, Division of Community Planning and Land Development Date



DATE: _____
 BY: _____
 SUPERVISOR: _____
 NOTE BOOK: _____
 NO. _____

DATE: _____
 BY: _____
 SUPERVISOR: _____
 NOTE BOOK: _____
 NO. _____

721



I-26, I-27, I-30, I-31, I-32, I-33, I-34, I-24 Type A-5 Inlet
 Howard County Std. 5D-4.01
 I-29, Type "D" Class "C" Inlet Howard County Std. 5D-4.11
 MH-7, MH-8, MH-9 All 4' Standard Howard County Std. G-5.12

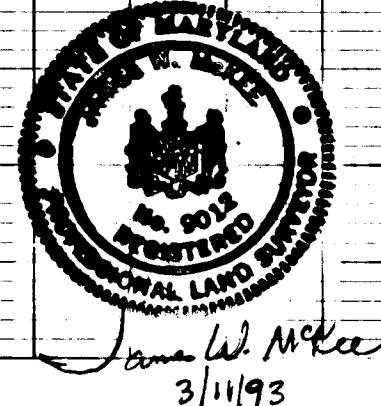
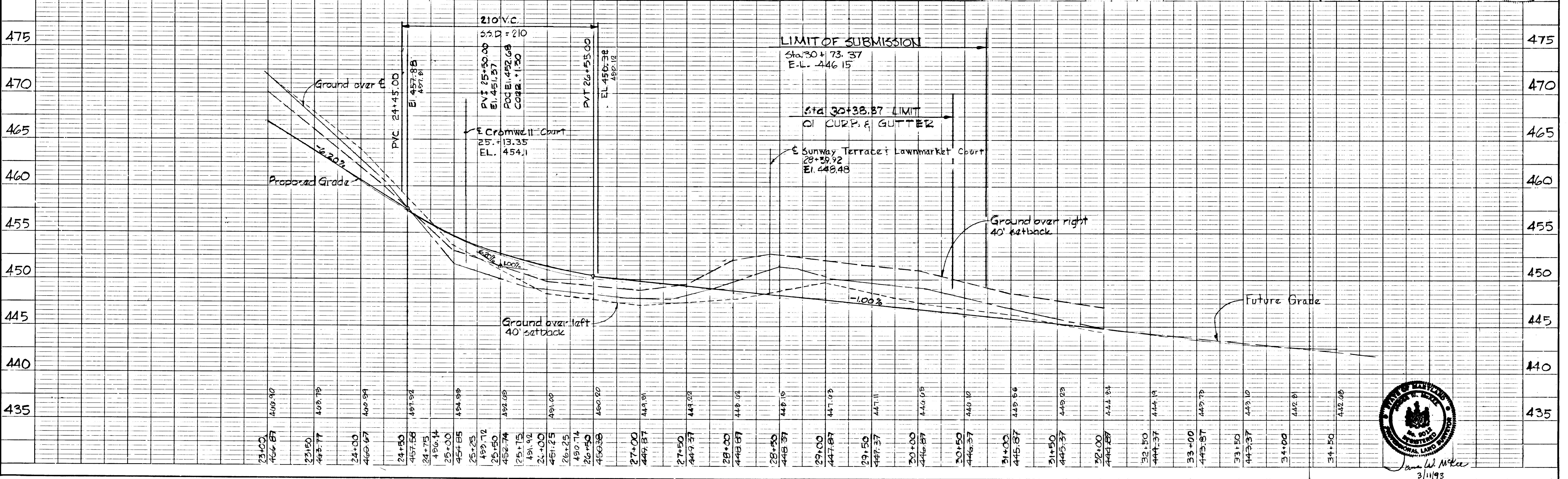
STORM DRAIN STRUCTURE SCHEDULE

NO	TYPE	TOP ELEV.	INVERT	INVERT	OUTVERT	LOCATION
I-24	A-5 Inlet-width 2.5'	448.66	449.00	448.80	448.80	Inlet 17.67' Lt. E Sta. 28+05.31
I-27	A-5 Inlet-width 2.5'	454.62	449.00	448.80	448.80	Inlet 17.67' Lt. E Sta. 25+02.00
I-29	Type "D" Class "C"	456.33	452.39	452.39	452.39	See Plan and Profile
I-30	A-5 Inlet-width 2.5'	449.92	442.78	442.78	442.78	Inlet 17.67' Rt. E Sta. 26+82.00
I-31	A-5 Inlet-width 2.5'	449.92	442.13	441.82	441.82	Inlet 17.67' Lt. E Sta. 26+82.00
I-32	A-5 Inlet-width 2.5'	449.54	444.25	444.25	444.25	Inlet 16.67' Rt. E Sta. 00+55.53
I-34	A-5 Inlet-width 2.5'	448.88	443.87	443.87	443.87	Inlet 17.67' Rt. E Sta. 27+86.15
I-33	A-5 Inlet-width 2.5'	448.90	444.63	444.63	444.63	Inlet 16.67' Lt. E Sta. 00+39.50
MH-7	4' Standard	461.17	456.48	456.28	456.28	MH 18.0' Rt. E Sta. 23+93
MH-8	4' Standard	450.50	446.08	446.28	446.28	MH 18.0' Rt. E Sta. 26+37.00
MH-9	4' Standard	441.20	436.50	435.40	435.40	See Plan and Profile

- *Remarks:
- *I-27, Provide Inlet Deflectors
 - *I-29, 4 Sides Open Inlet Opening El. 455.50
 - *I-32, Provide Inlet Deflectors
 - *I-33, Provide Inlet Deflectors

PLAN Scale: 1"=50'

Street Trees, See Note on Sheet #1.



DATE: _____ BY: _____
 CHECKED: _____
 PLAN NOTE BOOK NO. _____
 ALIGNMENT CHECKED: _____
 RT. OF WAY CHECKED: _____

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

APPROVE: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Donald R. ... 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE
Donald W. ... 6/27/87
 CHIEF, BUREAU OF HIGHWAYS DATE
Charles ... 4/29/88
 CHIEF, BUREAU OF ENGINEERING & SURVEYING DATE
 OFFICE OF PLANNING AND ZONING
... 4/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION
6/12/82	2	Added Rip Rap
3/23/88	1	As per DPW comments #5 & 7

BURLEIGH MANOR
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DEVELOPER
 ROSE / RICHMOND JOINT VENTURE

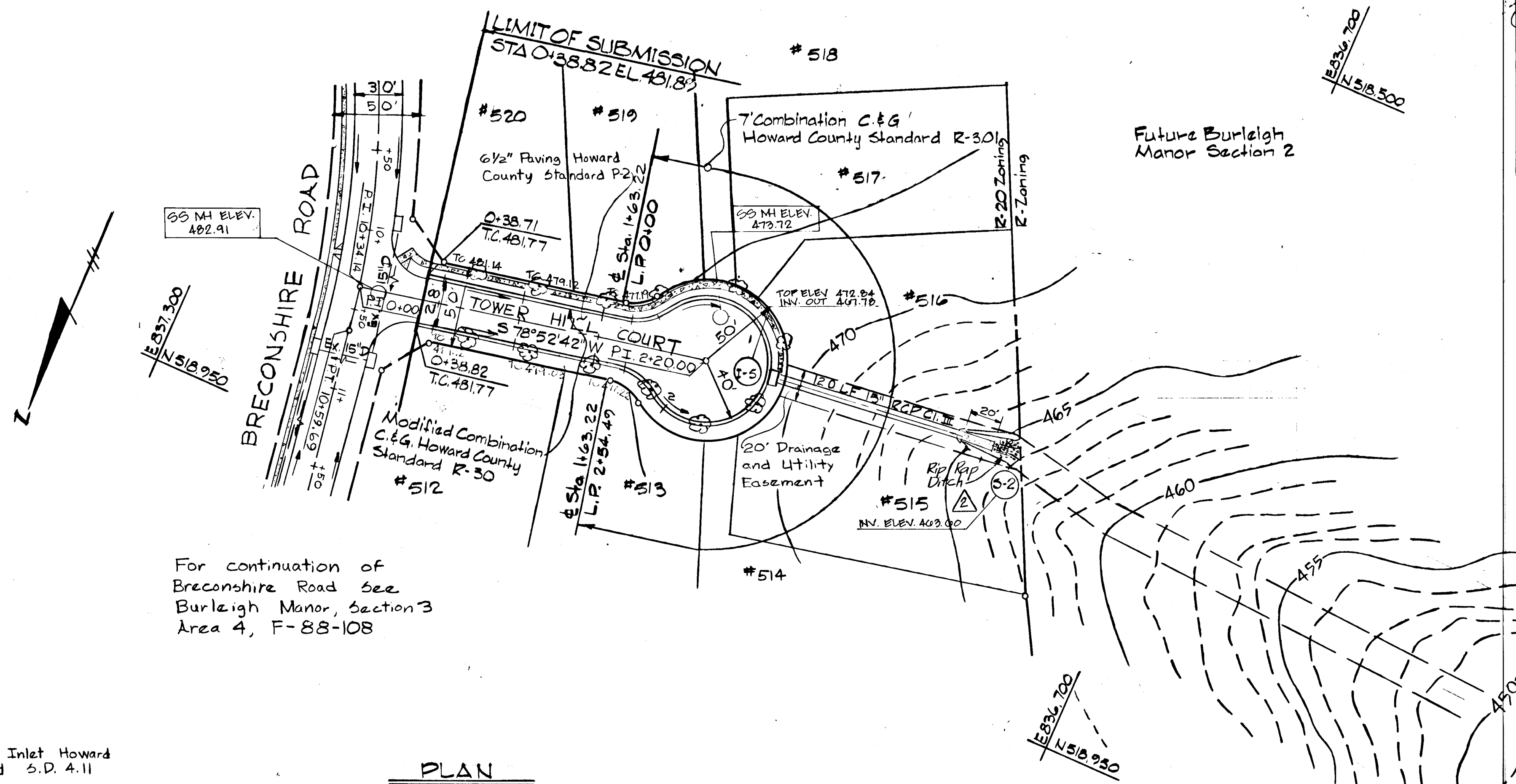
PROJECT AREA:
 BURLEIGH MANOR
 SECTION 3 AREA 4 PHASE 2
 LOTS 442-522

PROJECT TITLE:
 PLAN AND PROFILE
 TOWER HILL COURT

SCALE: 1" = 50' DATE: 12/23/87

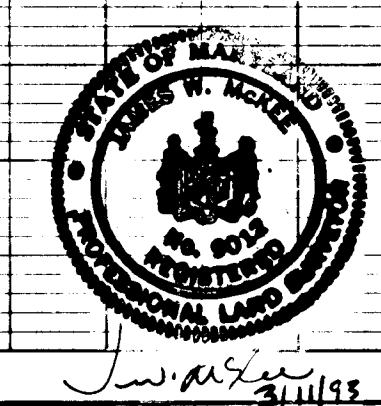
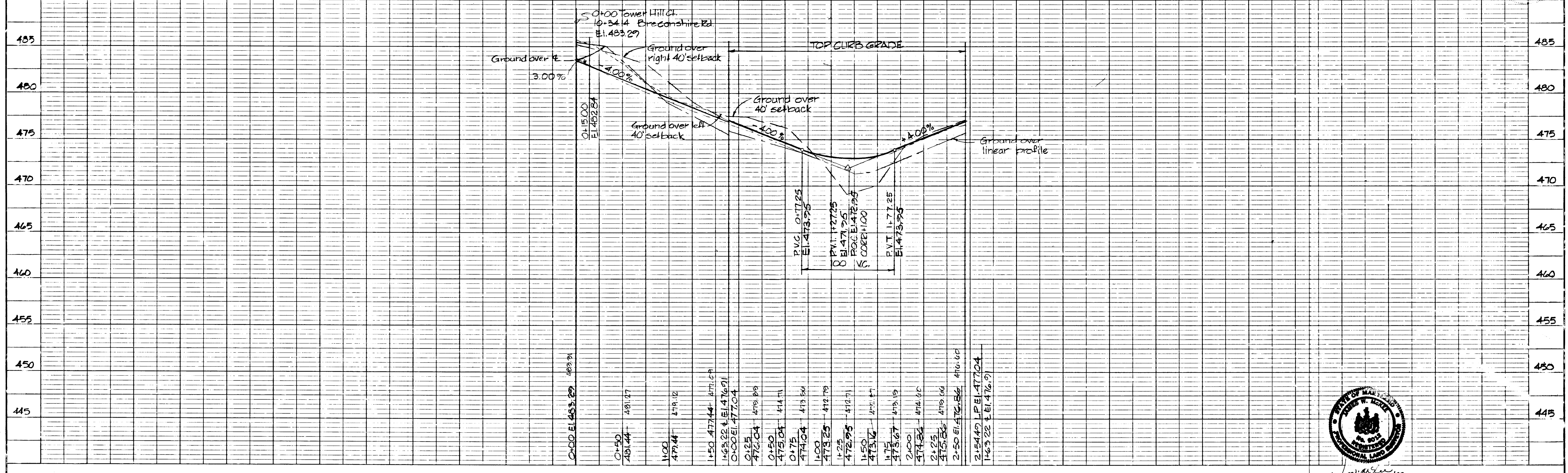
WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND 21218

Kenneth A. McCord
 KENNETH A. MCCORD
 Registered Engineer
 NO. 1974



No.	Type	Top El.	Inv. In	Inv. Out	Location
I-5	A-5 Inlet width 25'	472.92	468.20	@ Inlet Linear Profile Sta. 1+30.28	
S-2	15' End Section	463.30	462.20	See Plan	

*I-5 Type A-5 Inlet Howard County Standard S.D. 4.11



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Ronald B. Lepson 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE

Dorville W. Chesand 6/27/88
 CHIEF, BUREAU OF HIGHWAYS DATE

Elizabeth Hudson-Lewis 6/29/88
 CHIEF, BUREAU OF ENGINEERING, sections DATE

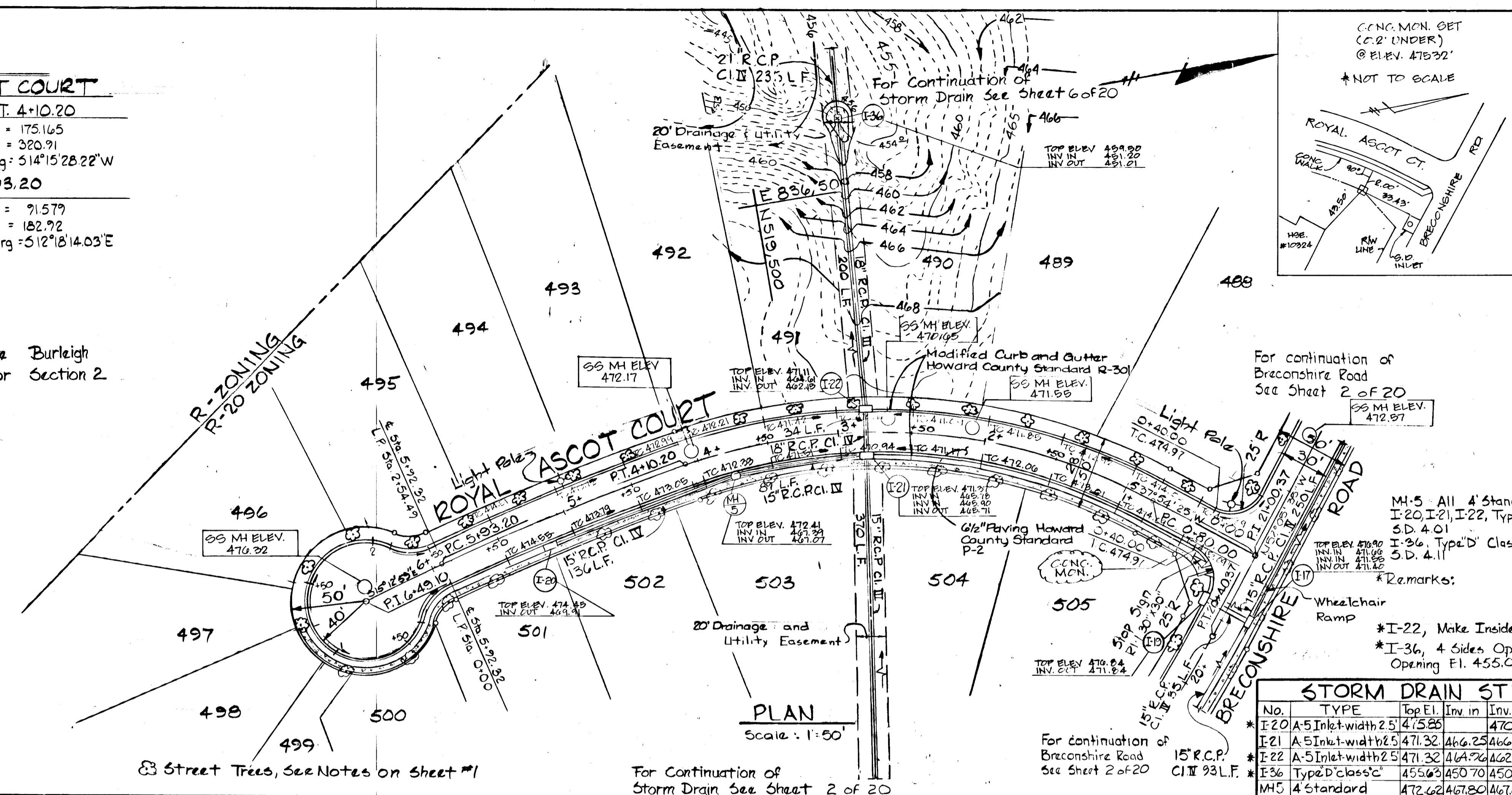
James Truth 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

CURVE DATA
ROYAL ASCOT COURT

PC: 0+80.00 PT: 4+10.20
 $\Delta = 47^{\circ}17'54.23''$ Tan. = 175.165
 Arc = 330.20 Chord = 320.91
 Rad. = 400.00 Chd Brg = $514^{\circ}15'28.22''W$

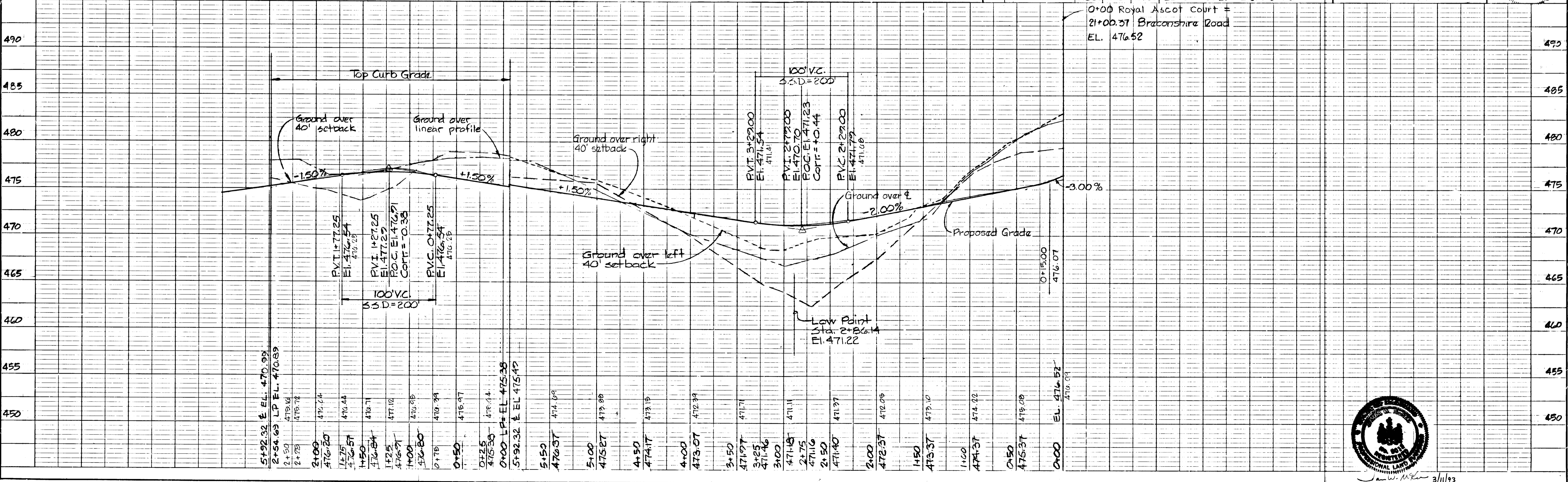
PT: 4+10.20 to 5+93.20
 $\Delta = 5^{\circ}49'30.26''$ Tan. = 91.579
 Arc = 183.00 Chord = 182.92
 Rad. = 1800.00 Chd Brg = $512^{\circ}18'14.03''E$

Future Burleigh Manor Section 2



STORM DRAIN STRUCTURE SCHEDULE

No.	TYPE	Top El.	Inv. in	Inv. out	LOCATION
*I-20	A-5 Inlet-width 2.5'	475.88	470.10	470.10	Inlet 16.67' Lt & Sta 5+17.74
*I-21	A-5 Inlet-width 2.5'	471.32	466.00	466.00	Inlet 16.67' Lt & Sta 2+85.98
*I-22	A-5 Inlet-width 2.5'	471.32	466.00	466.00	Inlet 16.67' Rt & Sta 2+85.98
*I-36	Type 'D' class 'C'	455.63	450.70	450.45	See Plan and Profile
MH-5	4' standard	472.62	467.80	467.60	Inlet 17.00' Lt & Sta 3+79.00



11/23/88	2	Revised Profile
3/23/88	1	As per D.P.W. comments #57, 11, 15
REV DATE	REV NO	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
 ROSE / RICHMOND JOINT VENTURE

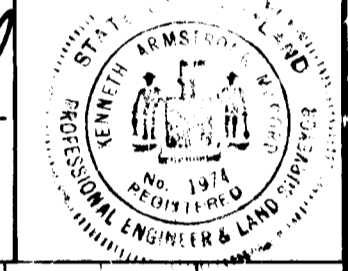
PROJECT AREA
 BURLEIGH MANOR
 SECTION 3 AREA 4 PHASE 2
 LOTS 442-522

PROJECT TITLE:
 PLAN AND PROFILE
 ROYAL ASCOT COURT

SCALE: 1" = 50' DATE: 12/23/87

WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND 21218

Kenneth A. McCord
 KENNETH A. MCCORD
 Registered Engineer
 NO. 1974



DATE: _____ BY: _____
 SUPERVISOR: _____
 CHECKED: _____
 NOTE BOOK: _____
 NO. _____

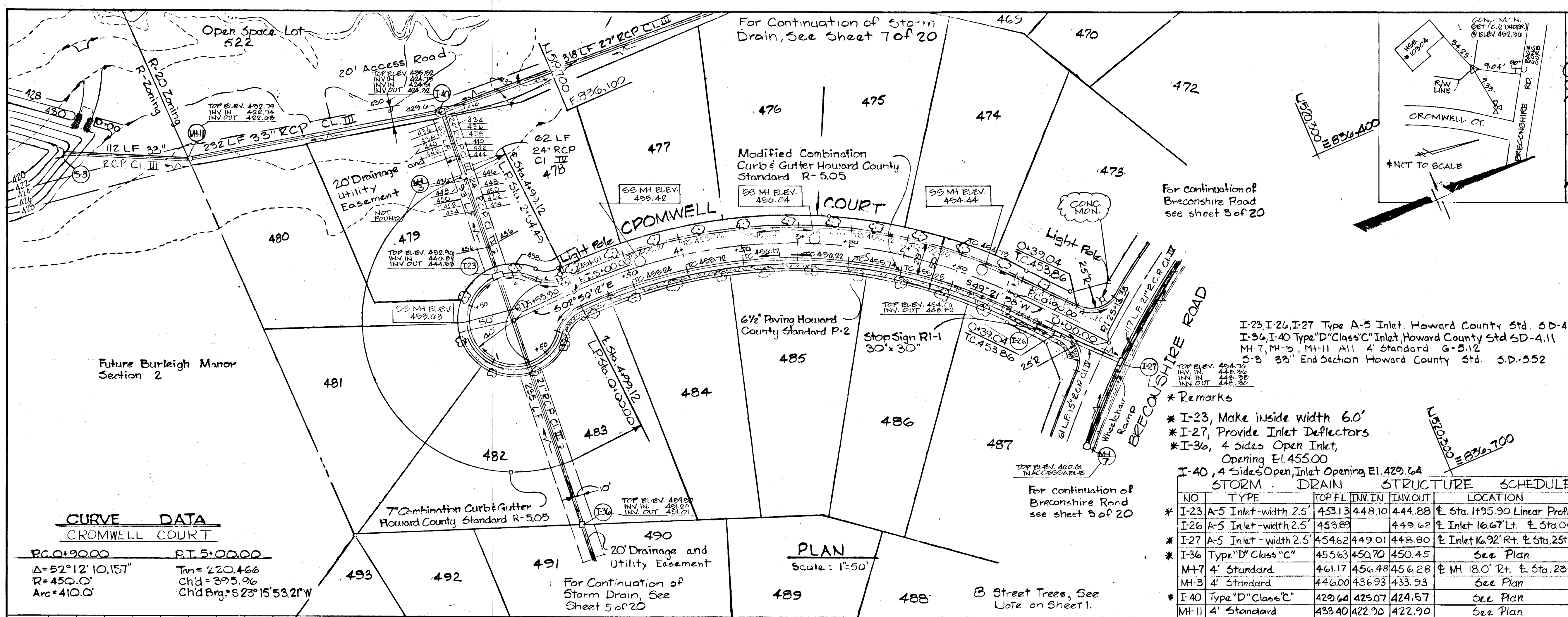
DATE: _____ BY: _____
 SUPERVISOR: _____
 CHECKED: _____
 NOTE BOOK: _____
 NO. _____

721

DATE: _____
BY: _____
NO. _____

REVISIONS:
1. SURVEYED
2. PLOTTED
3. GROUND CHECKED
4. STRUCTURE NOTATIONAL CHECKED

NOTE BOOK: _____
ALIGNMENT CHECKED: _____
ELEVATION CHECKED: _____
NO. _____



HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Paul J. ... 6/21/88
CHIEF, LAND DEVELOPMENT DIVISION DATE

Lawrence W. McLeod 6/27/88
CHIEF, BUREAU OF HIGHWAYS DATE

Elizabeth Anderson Calia 6/29/88
CHIEF, BUREAU OF ENGINEERING DATE

OFFICE OF PLANNING AND ZONING

James Keith 6/29/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

3/23/88	1	As per DPW comments #5,7,9,15
REV DATE	REV NO	REVISION DESCRIPTION
BURLEIGH MANOR		
2nd ELECTION DISTRICT		
HOWARD COUNTY, MARYLAND		
DEVELOPER		
ROSE / RICHMOND JOINT VENTURE		
PROJECT AREA:		
BURLEIGH MANOR		
SECTION 3 AREA 4 PHASE 2		
LOTS 442-522		
PROJECT TITLE:		
PLAN AND PROFILE		
CROMWELL COURT		
SCALE: 1" = 50'		DATE: 12/23/87
WHITMAN, REQUARDT AND ASSOCIATES		
ENGINEERS		
BALTIMORE, MARYLAND 21218		
<i>Kenneth A. McCord</i>		
KENNETH A. MCCORD		
Registered Engineer		
NO. 1974		

STORM DRAIN STRUCTURE SCHEDULE

NO	TYPE	TOP EL.	IN. IN	IN. OUT	LOCATION
* I-23	A-5 Inlet - width 2.5'	453.13	448.10	444.88	Sta. 1+95.90 Linear Profile
I-26	A-5 Inlet - width 2.5'	453.89		449.62	Sta. 1+67.17 Inlet 16.67' Lt. Sta. 0+42.23
* I-27	A-5 Inlet - width 2.5'	454.62	449.01	448.80	Sta. 1+92.17 Inlet 16.92' Rt. Sta. 2510.00
* I-36	Type "D" Class "C"	455.63	450.70	450.45	See Plan
MH-7	4' Standard	461.17	456.48	456.28	MH 18.0' Rt. Sta. 23+93.00
MH-3	4' Standard	446.00	436.93	433.93	See Plan
* I-40	Type "D" Class "C"	429.64	425.07	424.57	See Plan
MH-11	4' Standard	433.40	422.90	422.90	See Plan
S-3	33" End Section	424.84	422.09		See Plan

Remarks:

- * I-23, Make inside width 6.0'
- * I-27, Provide Inlet Deflectors
- * I-36, 4 sides Open Inlet, Opening El. 455.00
- I-40, 4 sides Open, Inlet Opening El. 429.64

DATE: _____
BY: _____
NO. _____

REVISIONS:
1. SURVEYED
2. PLOTTED
3. GROUND CHECKED
4. STRUCTURE NOTATIONAL CHECKED

NOTE BOOK: _____
ALIGNMENT CHECKED: _____
ELEVATION CHECKED: _____
NO. _____

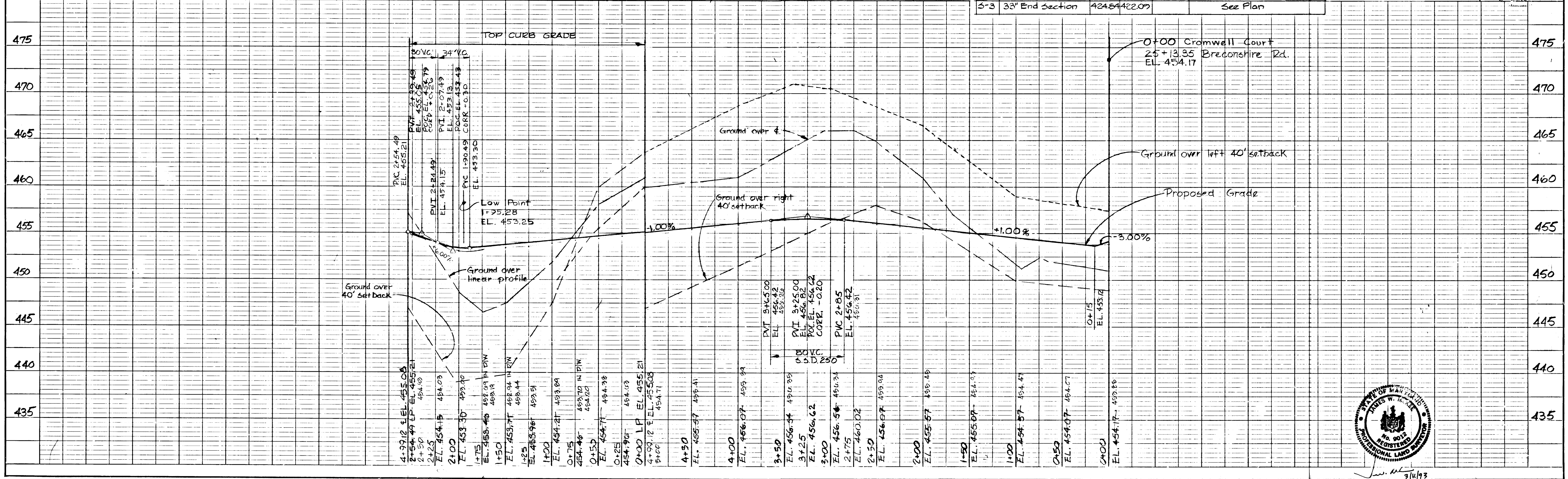


PLATE 1, PLAN PROFILE CROMWELL COURT - PROFILE
Scales: 1" = 5' V, 1" = 50' H



CURVE DATA					
SUNWAY TERRACE					
PI	Radius	Arc	Tan	Ch'd	Ch'd Brg.
0+00.00	600.00	294.00	150.01	291.07	617.0855'W

STORM DRAIN STRUCTURE SCHEDULE					
No.	TYPE	TOP EL	IN/IN	IN/OUT	LOCATION
I-28	Type 'D' class 'C'	464.00		459.67	See Plan and Profile
I-35	A-10 Inlet width 2.5	440.48		436.71	Inlet Linear Profile & Sta. 0+53.00
I-37	Type 'D' class 'C'	435.20	431.04	430.79	See Plan and Profile
NH-10	4' Standard	438.75	434.21	433.94	See Plan and Profile

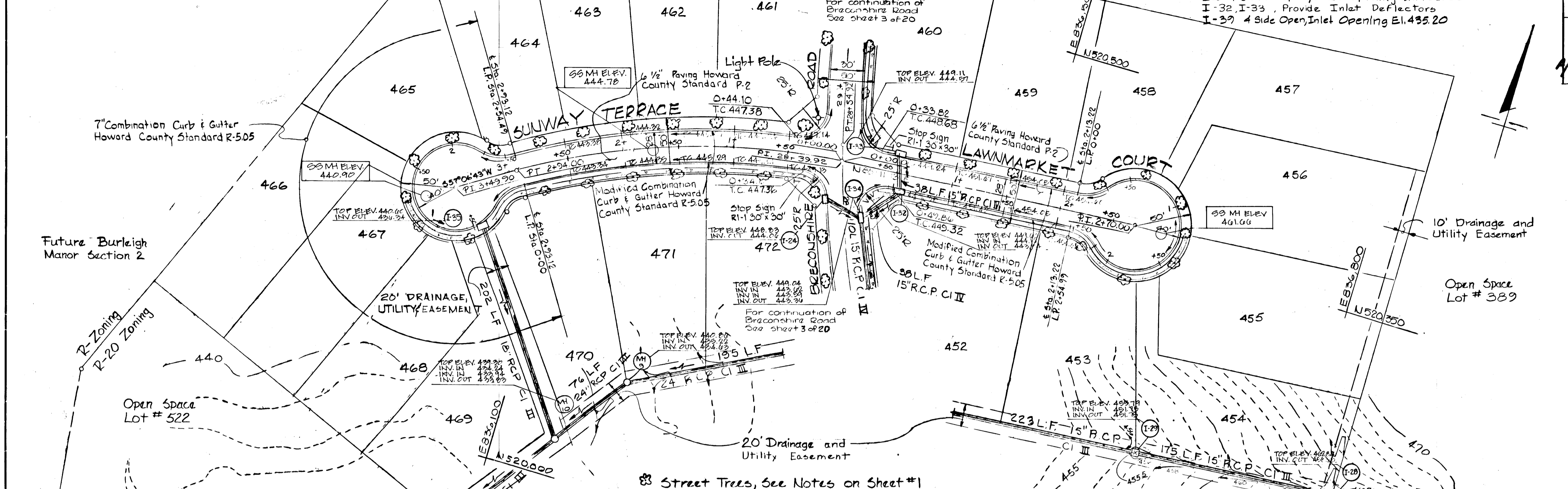
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Paul D. Johnson 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE

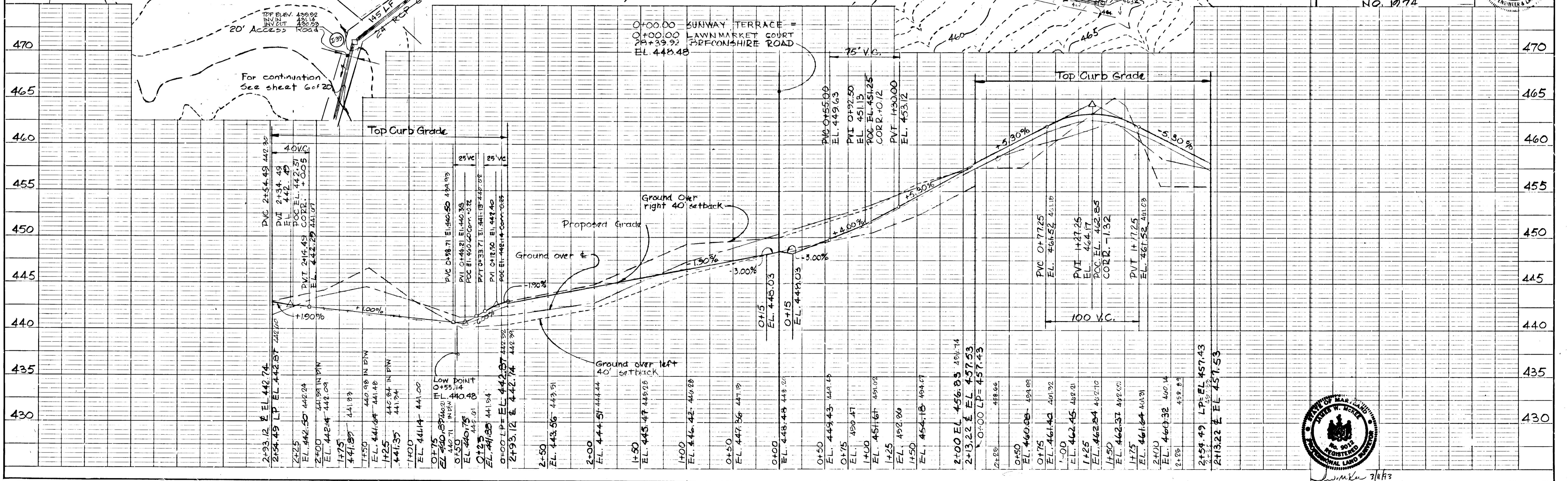
David W. M. Williams 6/27/88
 CHIEF, BUREAU OF HIGHWAYS DATE

Elizabeth Anderson Galia 4/29/88
 CHIEF, BUREAU OF ENGINEERING DATE

James R. Keith 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



3/23/88	1	As Per DPW Comments #517
REV	DATE	REVISION DESCRIPTION
BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DEVELOPER ROSE / RICHMOND JOINT VENTURE		
PROJECT AREA: BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522		
PROJECT TITLE: PLAN AND PROFILE SUNWAY TERRACE AND LAWNMARKET COURT		
SCALE: 1"=50'	DATE: 12/23/87	
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 21218		
<i>Kenneth A. McCord</i> KENNETH A. MCCORD Registered Engineer NO. 19,774		

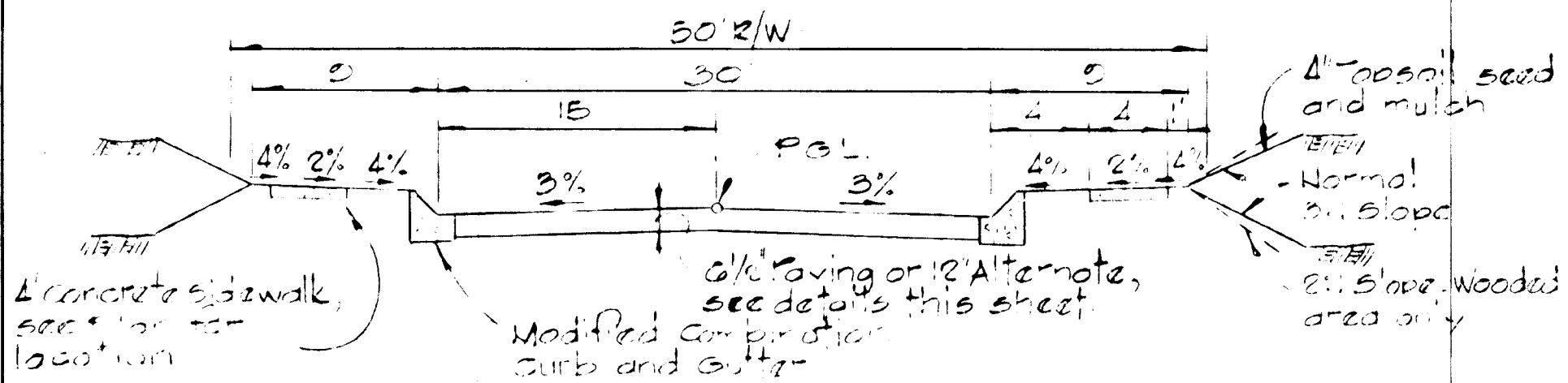


SUNWAY TERRACE - PROFILE scales: 1"=5' V, 1"=50' H
 LAWNMARKET COURT - PROFILE scales: 1"=5' V, 1"=50' H



DESIGN SPEED
30 M.P.H.

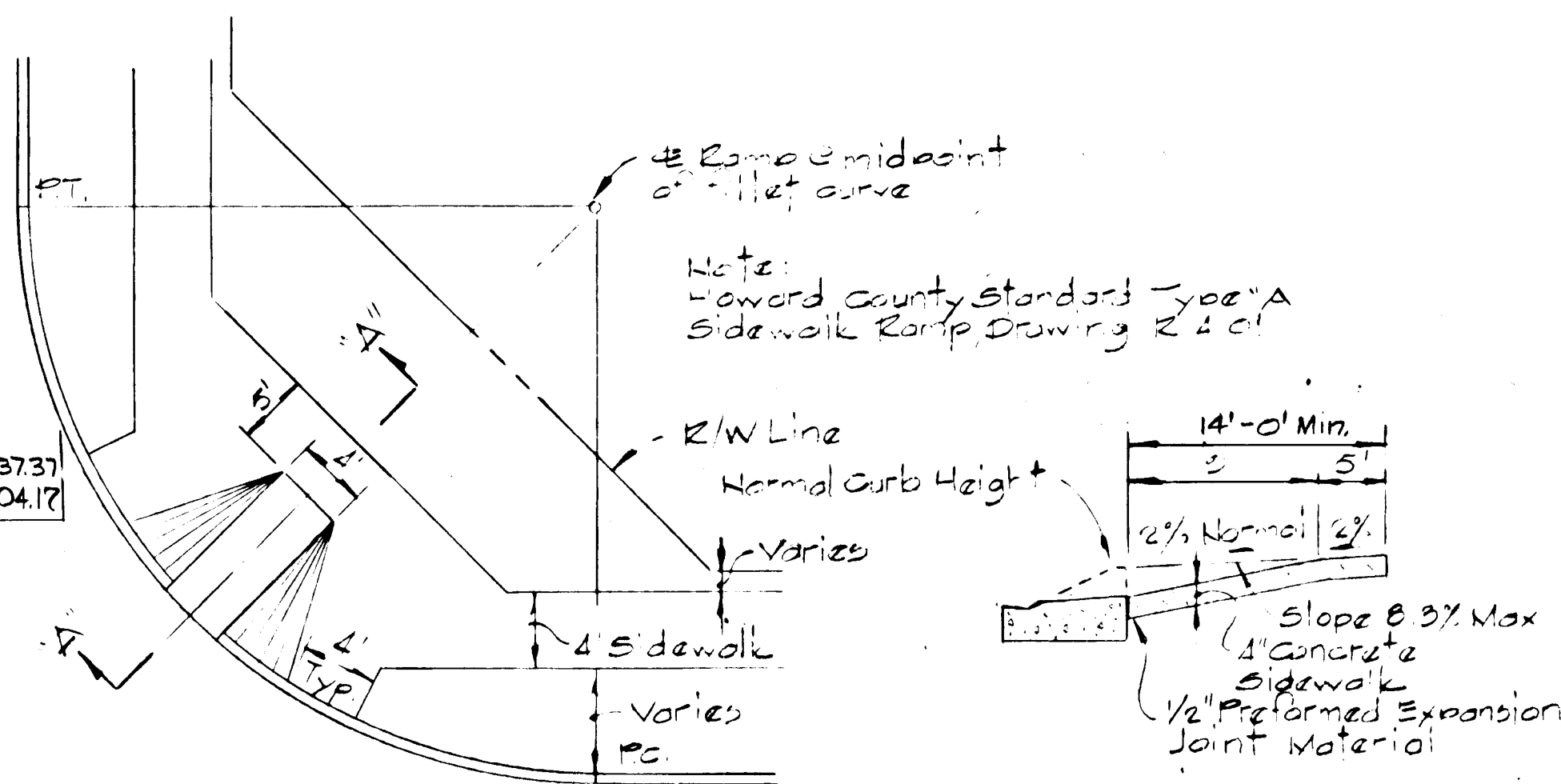
LOCAL STREET Zoning - S.F.L.D.



TYPICAL SECTION

No Scale

BRECONSHIRE ROAD 13+26.06 to 30+37.37
GLASTONBURY ROAD 12+63.81 to 14+04.17



PLAN SECTION "A-A"
WHEEL CHAIR RAMP DETAIL

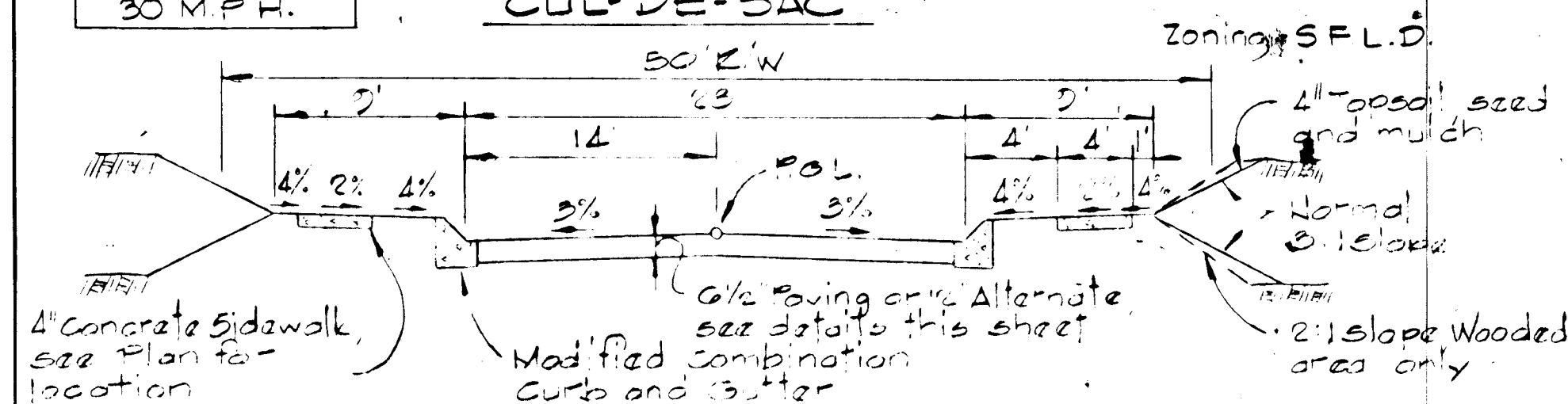
No Scale

OFFICE OF PLANNING AND ZONING
APPROVED: *Joseph R. Smith* 6/29/88
PLANNING AND LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Paul J. ... 6/21/88
Chief, Land Development Division
... Williams 6/27/88
Chief, Bureau Of Highways
... Williams 10/29/88
Chief, Bureau Of Engineering

Design Speed
30 M.P.H.

CUL-DE-SAC



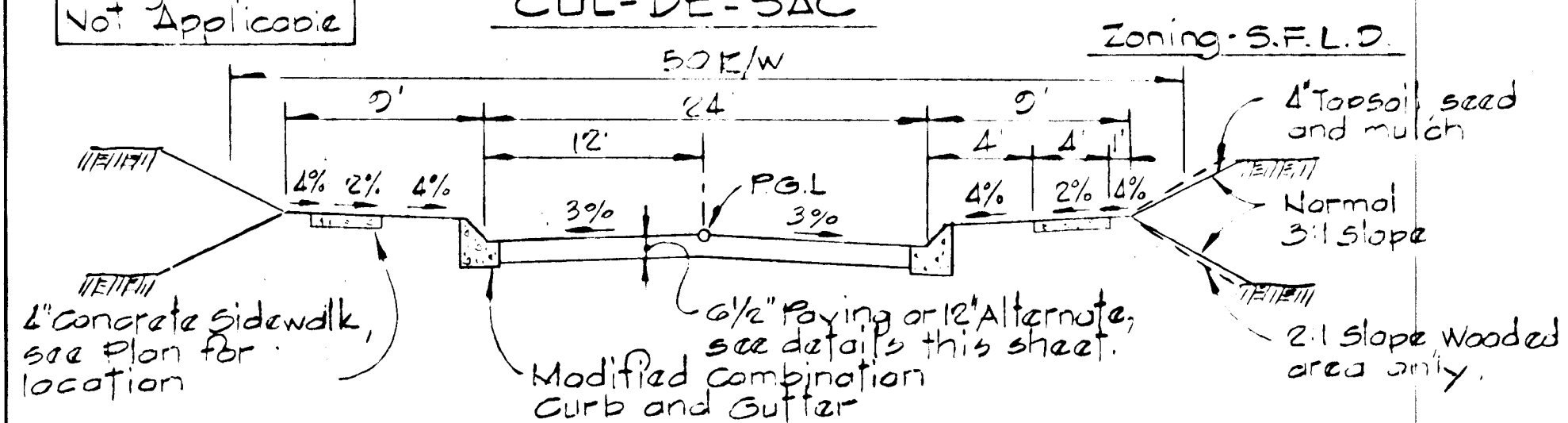
TYPICAL SECTION

No Scale

TOWER HILL CT. 0+00 to 1+63.28
PADDINGTON CT. 0+00 to 4+39.12
ROYAL ASCOT CT. 0+00 to 5+92.32
CROMWELL CT. 0+00 to 4+99.12
SUNWAY TERRACE 0+00 to 2+93.12
LAWNMARKE CT. 0+00 to 2+13.22

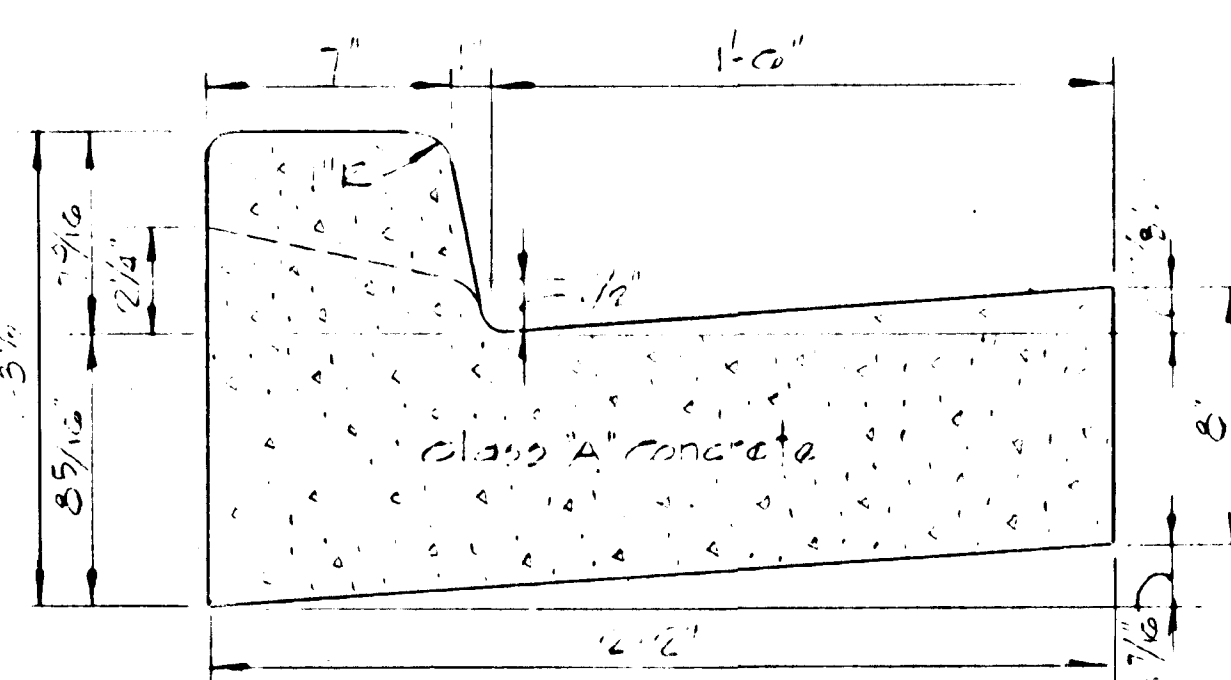
Design Speed
Not Applicable

CUL-DE-SAC



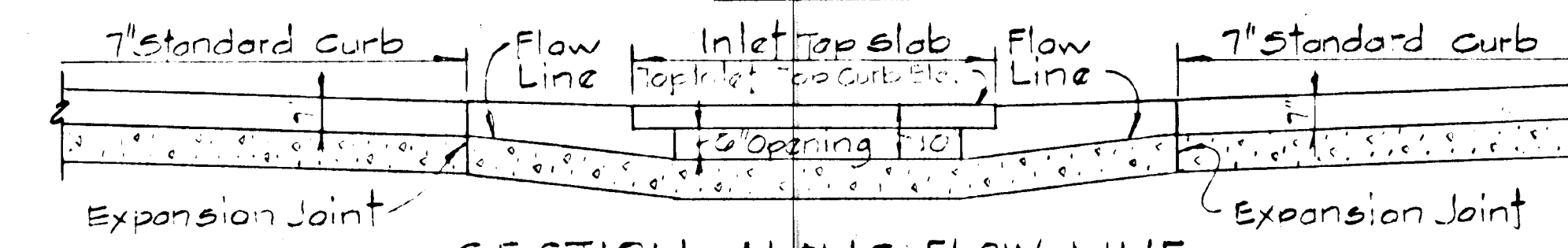
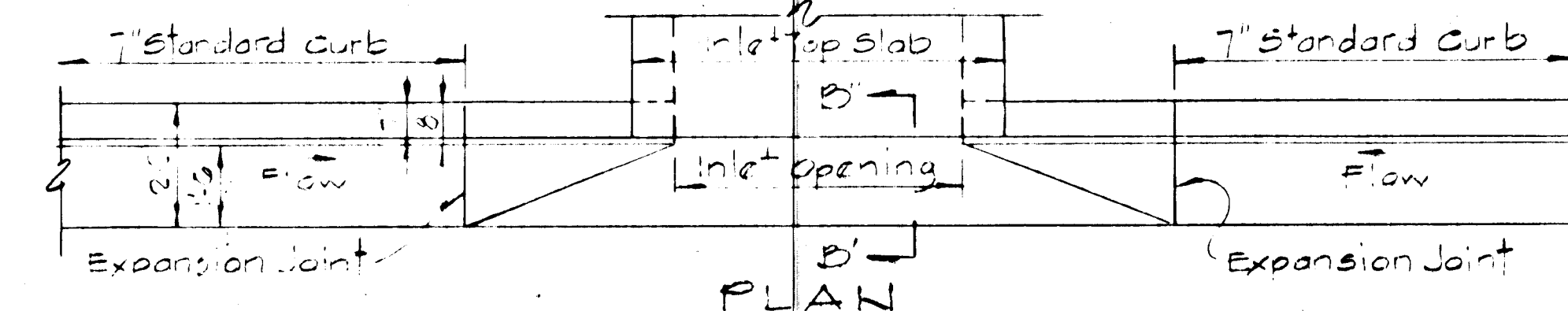
TYPICAL SECTION

No Scale

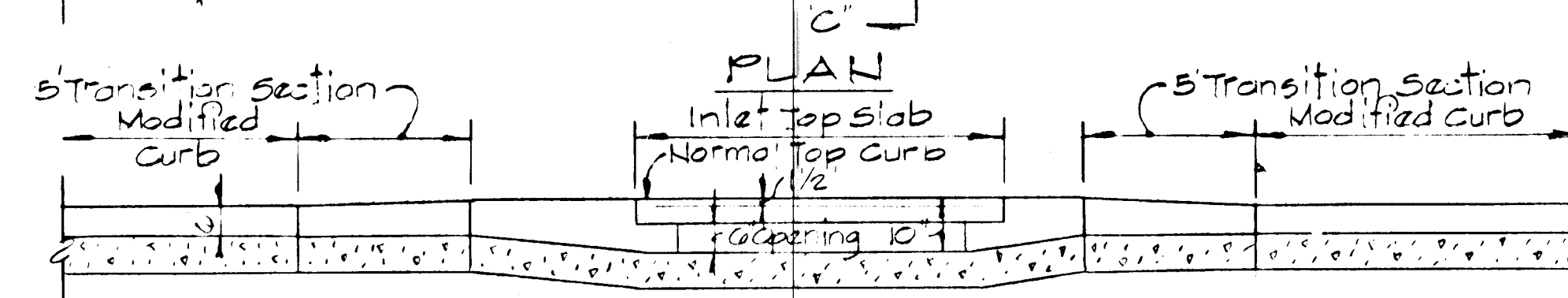
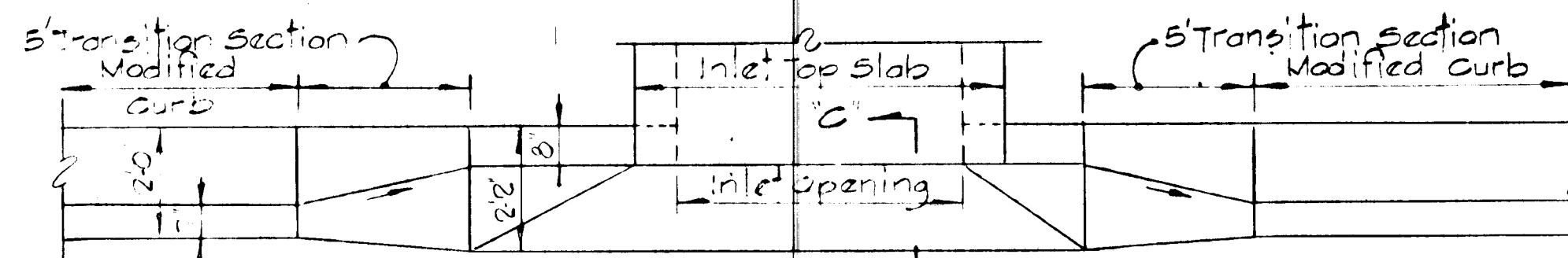


STANDARD 7" COMBINATION CURB & GUTTER

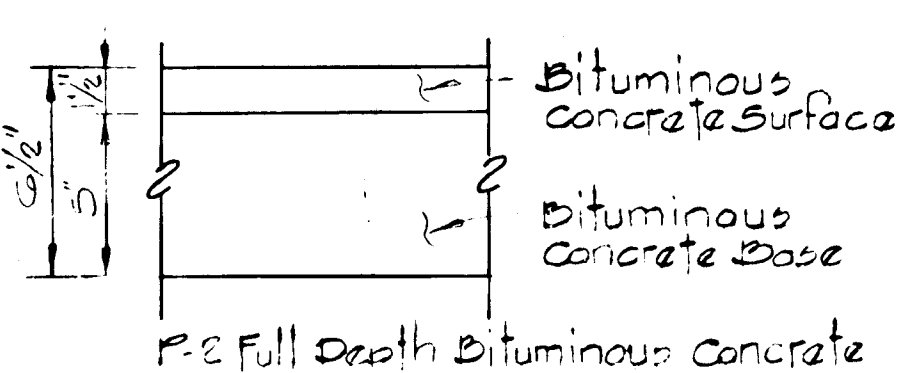
No Scale



SECTION ALONG FLOW LINE
SUMPED "A" INLETS - STANDARD CURB



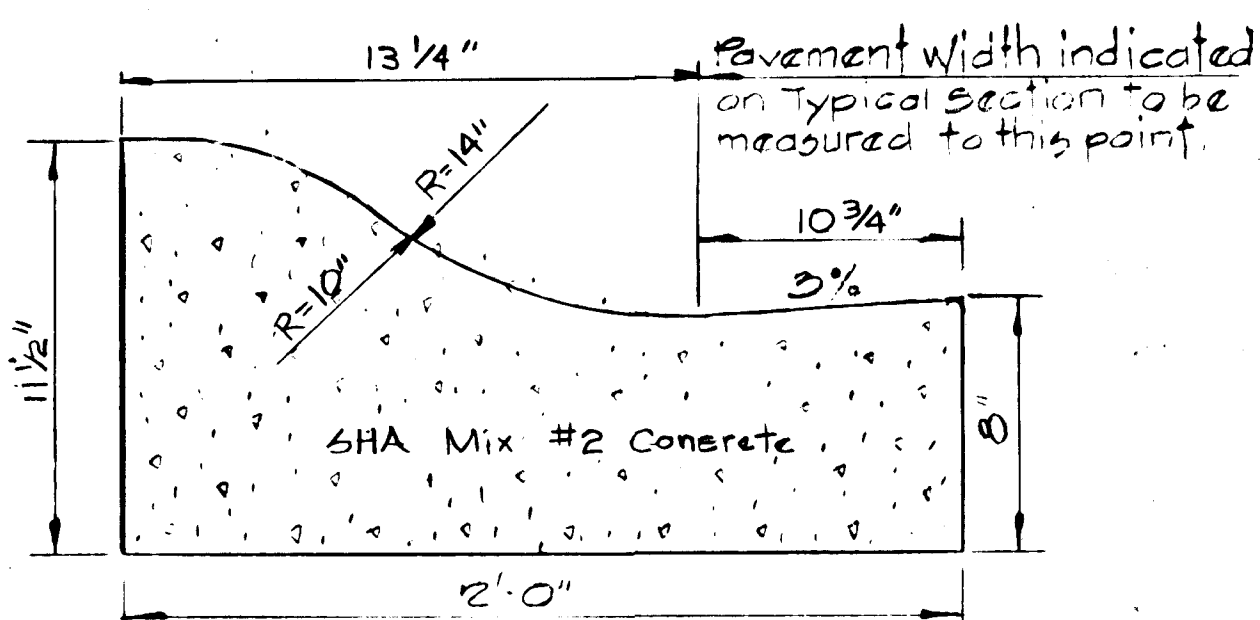
SECTION ALONG FLOW LINE
"A" INLETS - MODIFIED CURB



TYPICAL PAVING SECTION

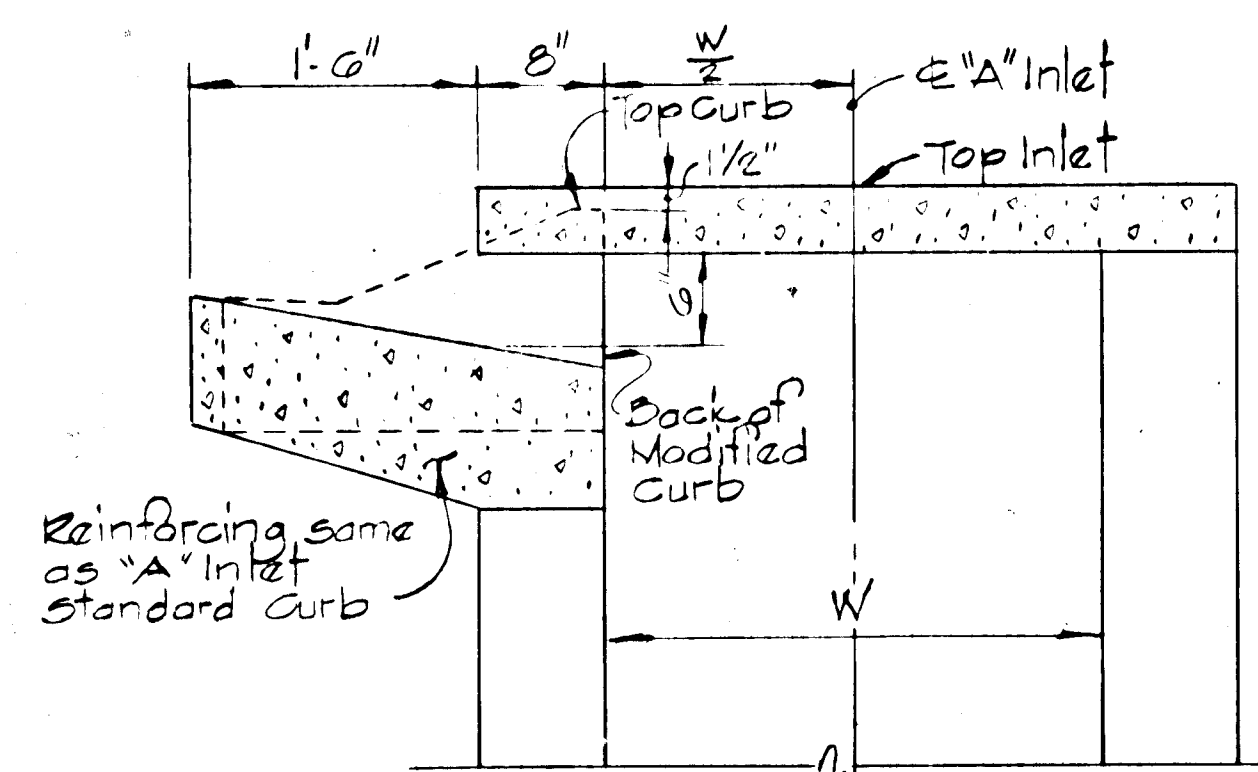
No Scale

P-2 Granular Base (Alternate)



MODIFIED COMBINATION CURB & GUTTER

No Scale

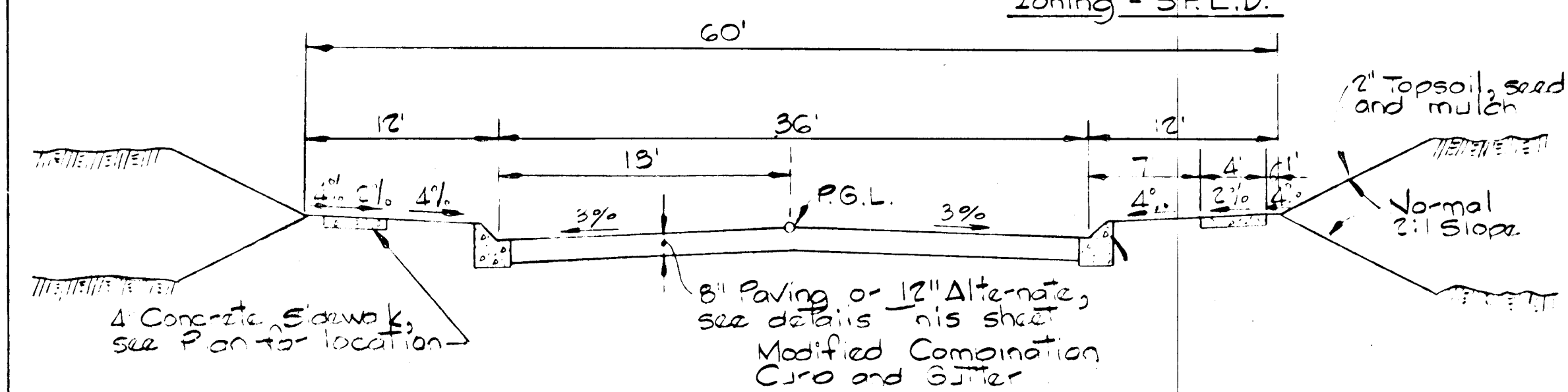


SECTION "C-C"
"A" INLET MODIFIED CURB

Design Speed
35 M.P.H.

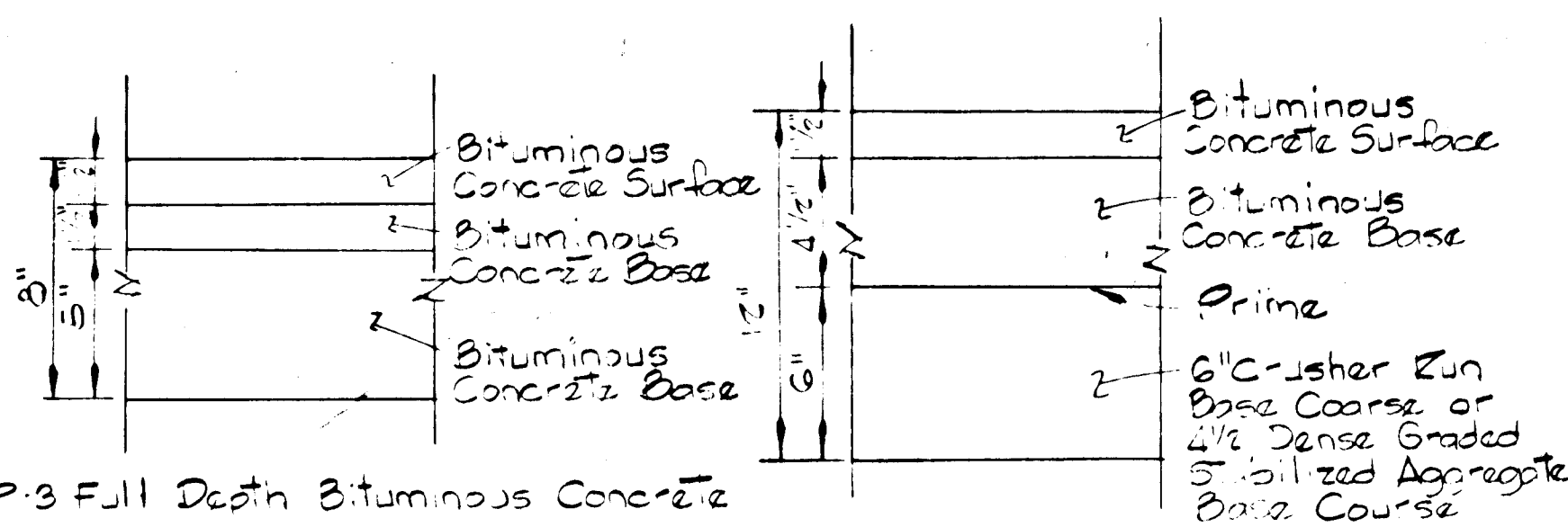
MINOR COLLECTOR

Zoning - S.F.L.D.



TYPICAL SECTION

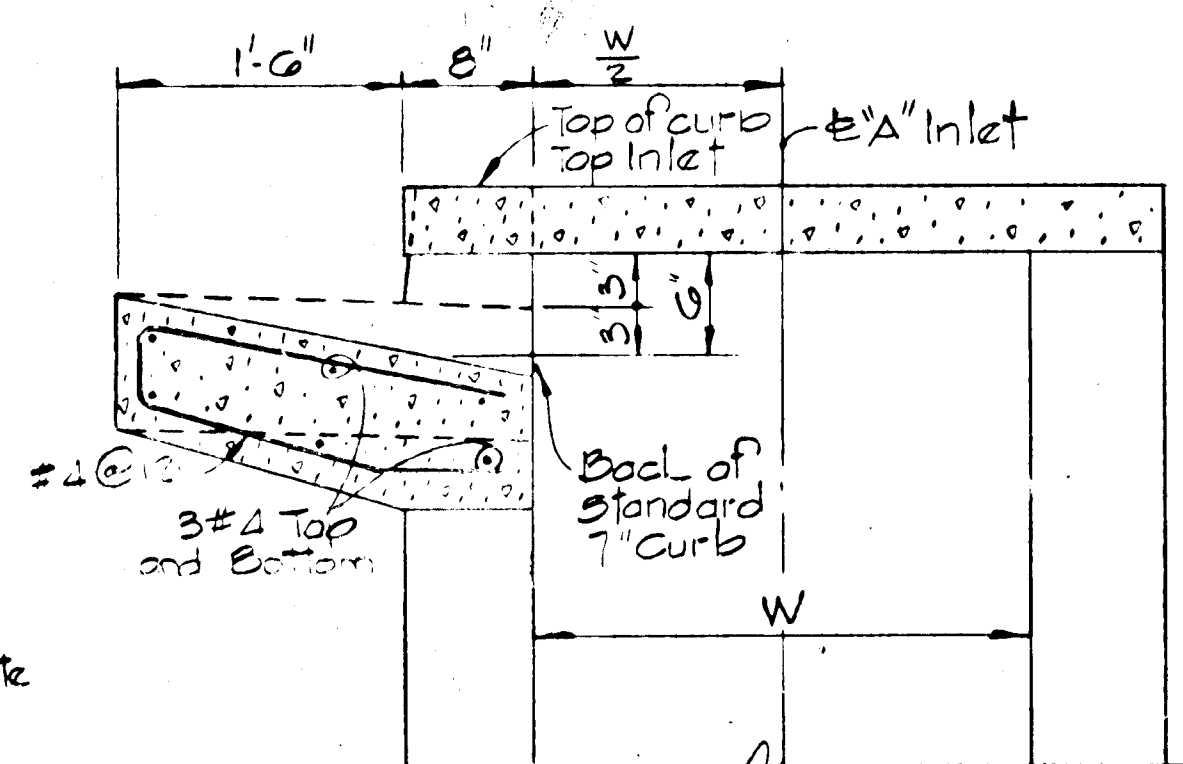
No Scale



TYPICAL PAVING SECTION

No Scale

P-3 Granular Base (Alternate)



SECTION "B-B"
"A" INLET - STANDARD CURB

REV. DATE	REV. NO.	REVISION	DESCRIPTION
3/23/88	1	As per DRW comment #13	

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE / RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 4 PHASE 2
LOTS 442-522

PROJECT TITLE
ROADWAY AND
STORMDRAIN DETAILS

SCALE: AS SHOWN DATE: 12/23/87

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

Kenneth A. McCord
KENNETH A. MCCORD
REGISTERED ENGINEER NO. 1974

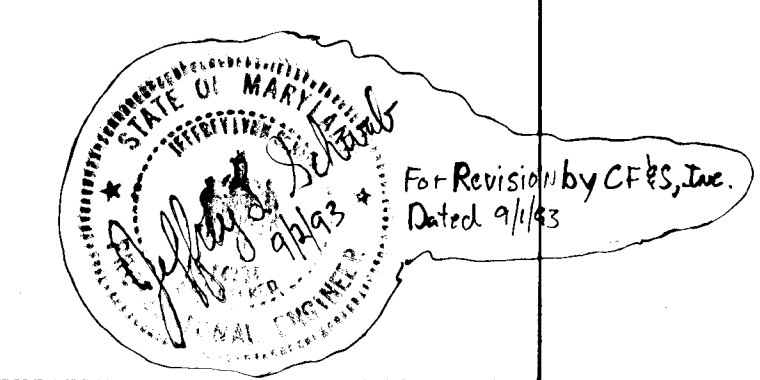
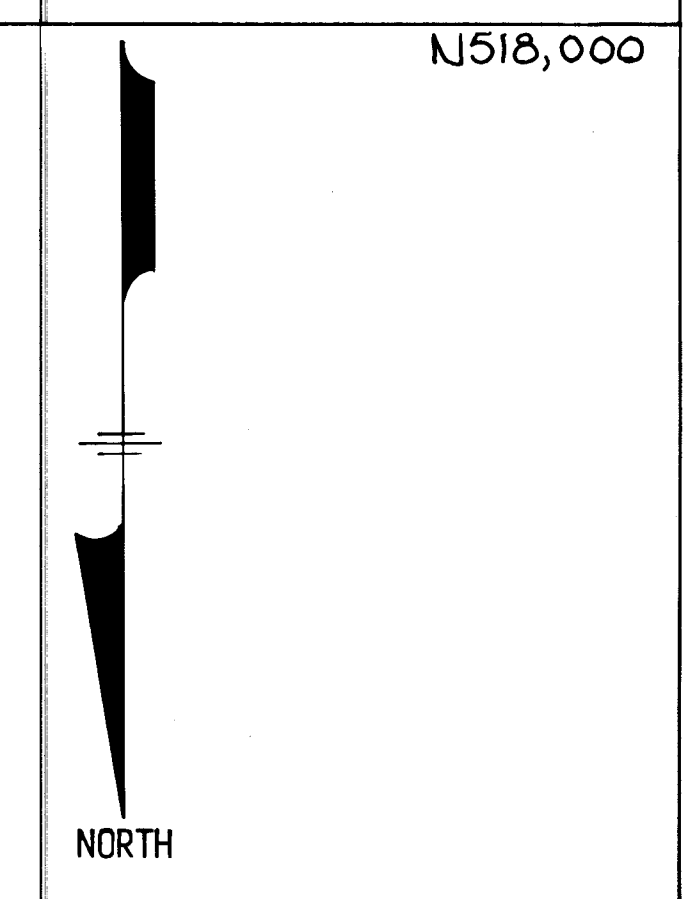
721

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Donald J. ... 6/11/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE

Draville W. Williams 6/27/88
 CHIEF, BUREAU OF HIGHWAYS DATE

Wendell ... 6/29/88
 CHIEF, BUREAU OF ENGINEERING DATE

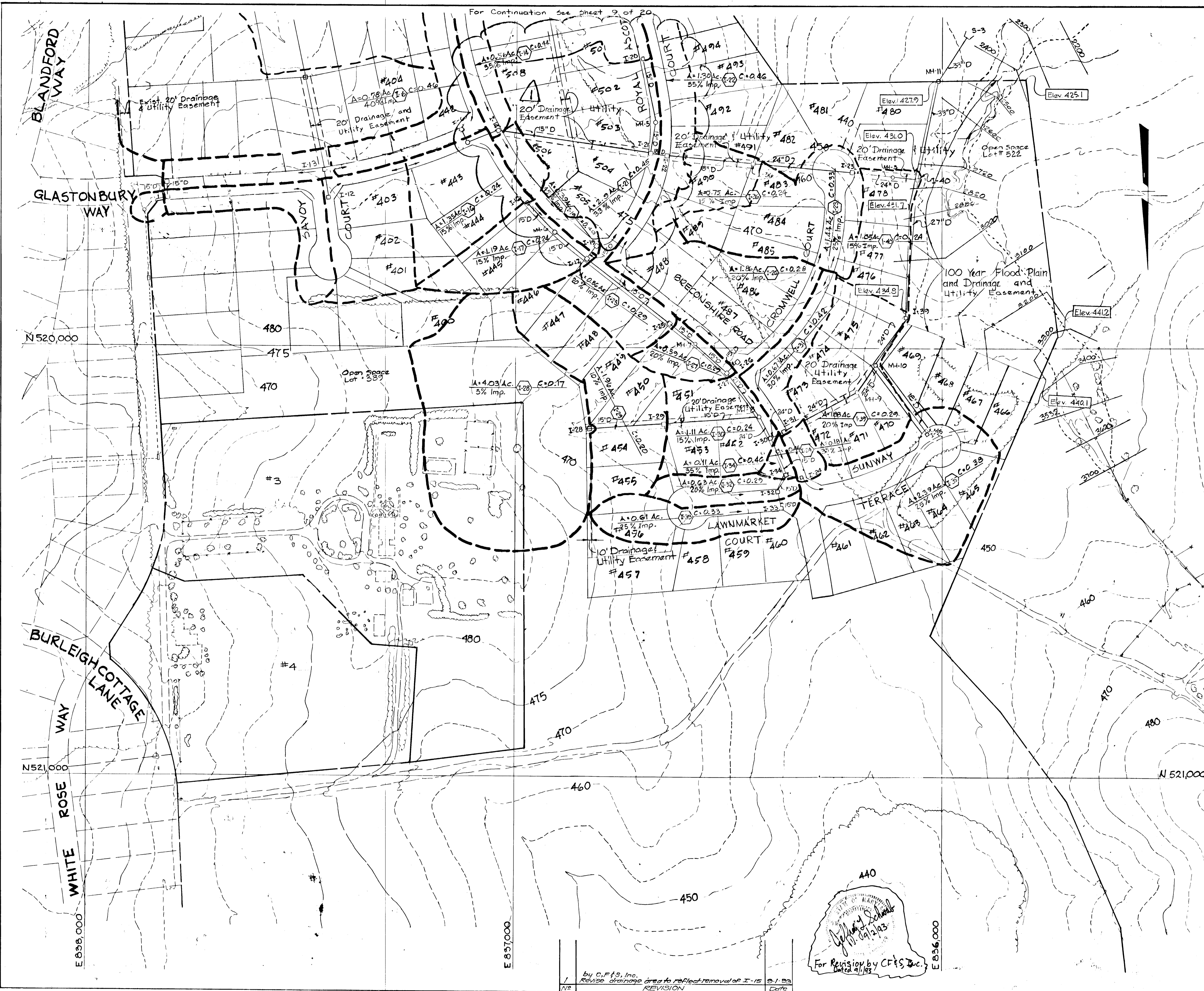
OFFICE OF PLANNING AND ZONING
... 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



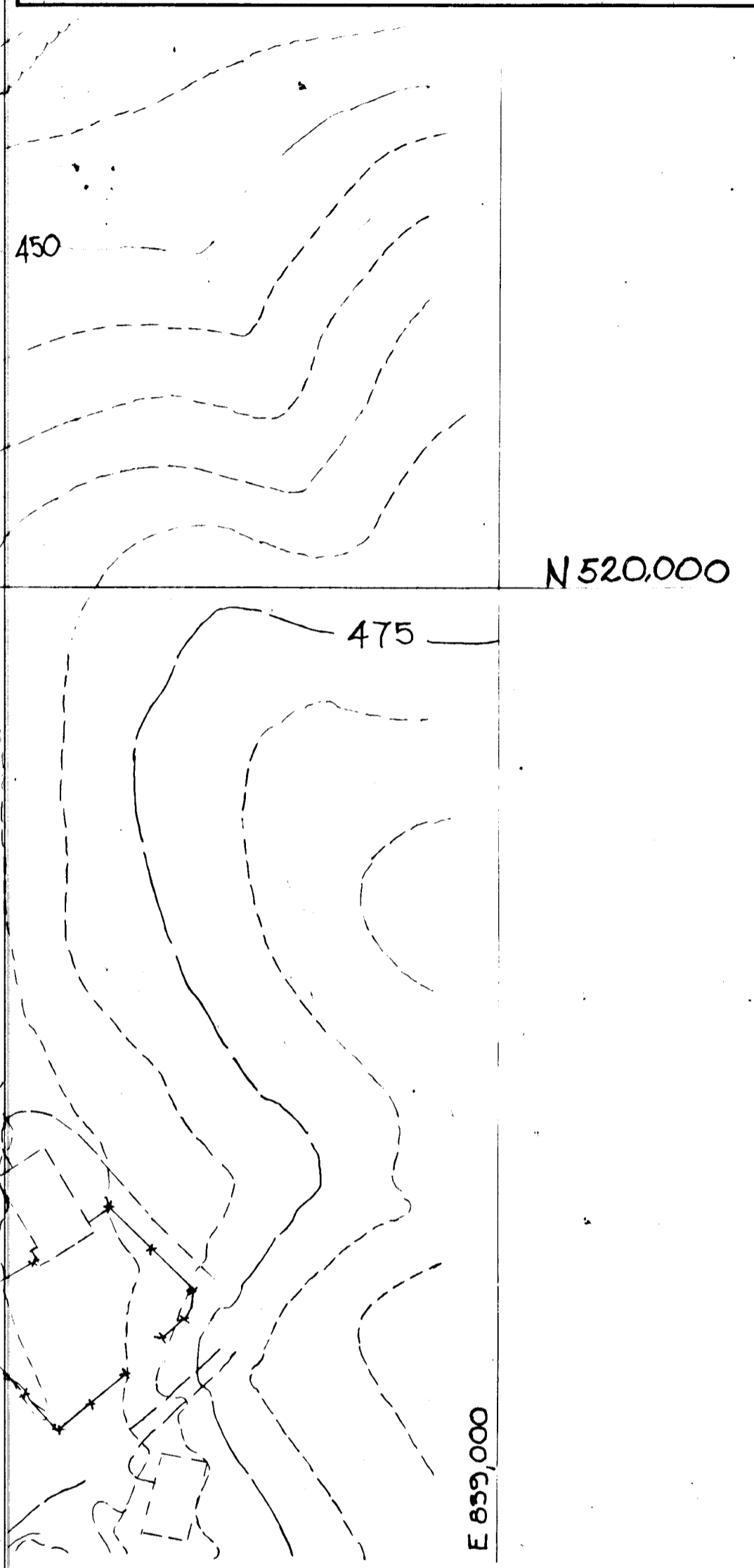
3/22/88	1	As per D.R.W. comments #2, 5, 10
REVDATE	REV NO.	REVISION DESCRIPTION
BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DEVELOPER ROSE / RICHMOND JOINT VENTURE		
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522		
PROJECT TITLE DRAINAGE AREA MAP		
SCALE: 1" = 100'		DATE: 12-23-87
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND		
<i>Kenneth A. McLeod</i> KENNETH A. MCLEOD REGISTERED ENGINEER NO. 1974		



1. Revise Drainage Area to reflect Removal of I-15. By C.F.S., Inc. 1-1-88
 No. Revision Date

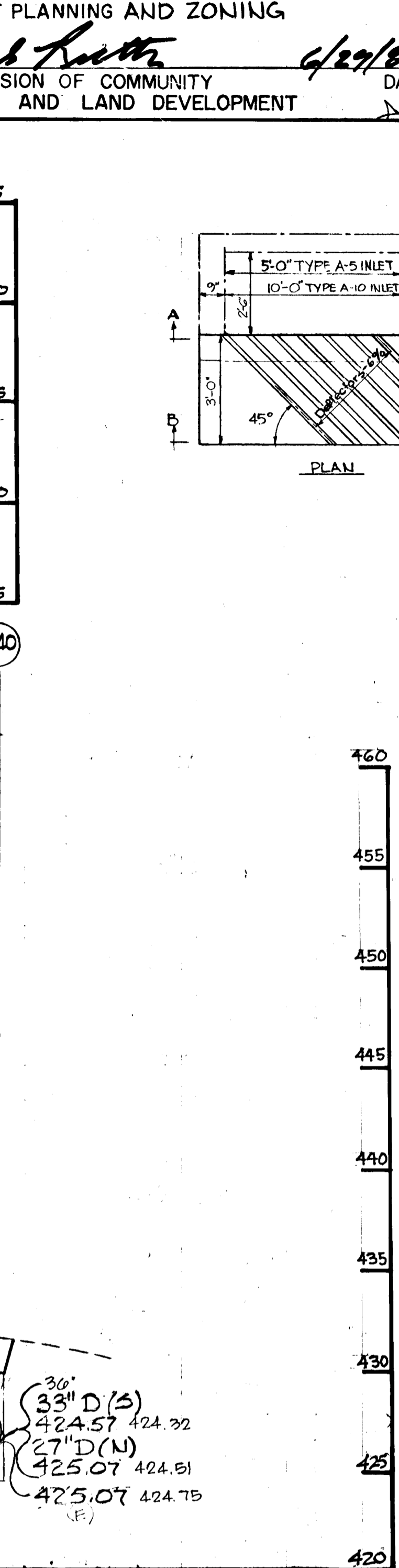
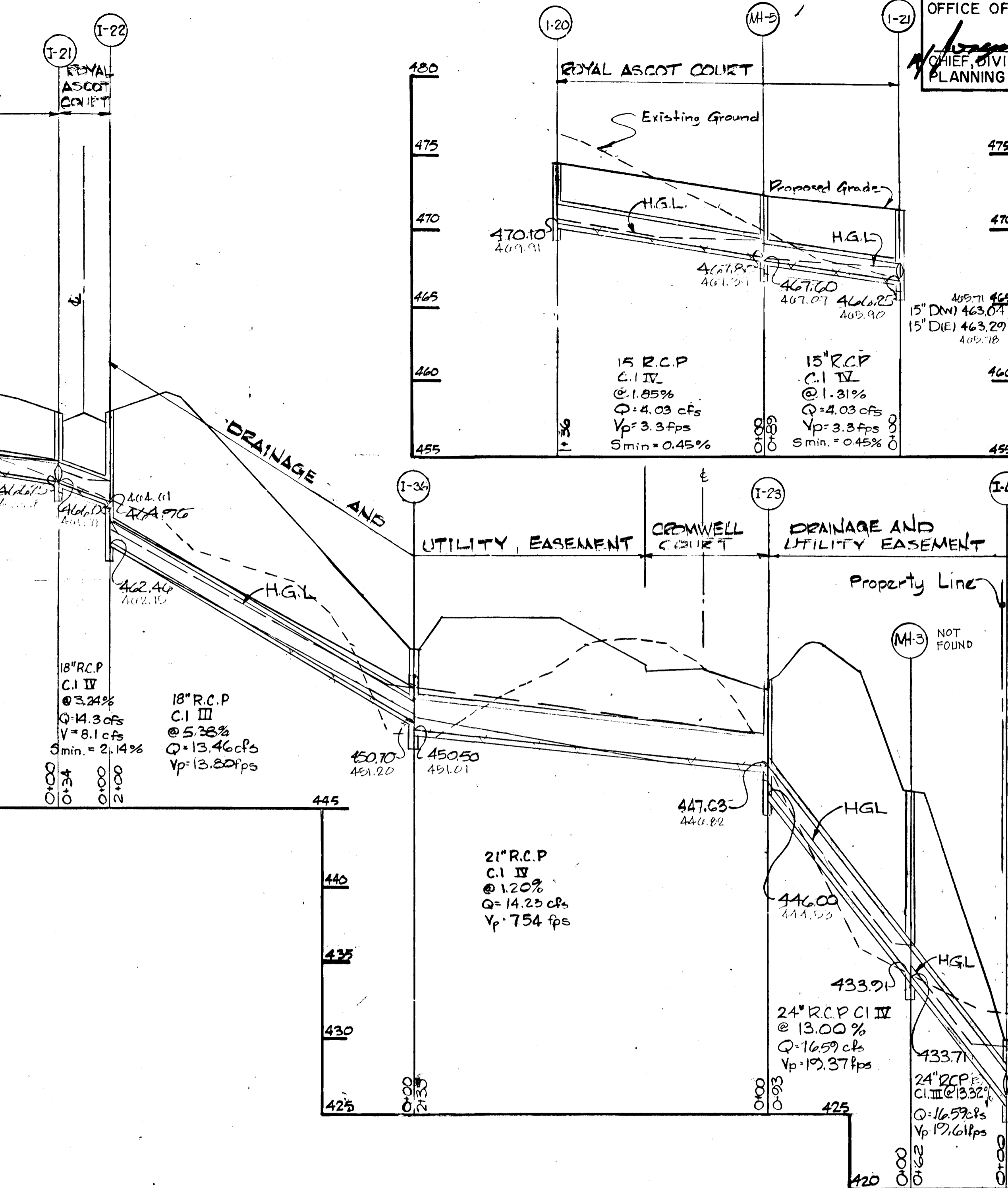
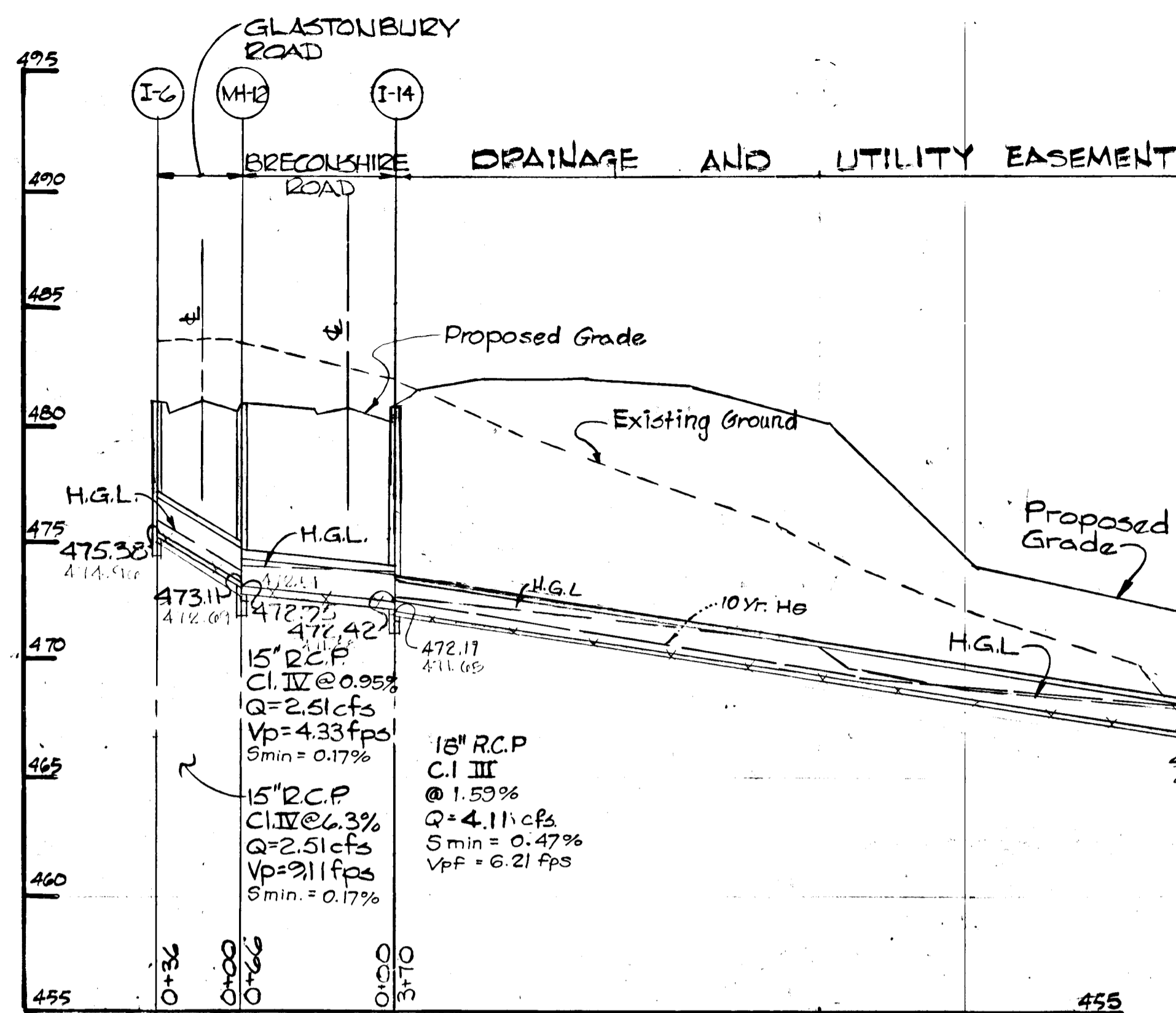


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION
 DATE 6/27/88
 CHIEF, BUREAU OF HIGHWAYS
 DATE 6/29/88
 CHIEF, BUREAU OF ENGINEERING, SECTION
 DATE
 OFFICE OF PLANNING AND ZONING
 DATE 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT



3/23/88	1	As per DPW comments #2, 5, 11
REV DATE	REV NO	REVISION DESCRIPTION
BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DEVELOPER ROSE / RICHMOND JOINT VENTURE		
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522		
PROJECT TITLE DRAINAGE AREA MAP		
SCALE 1"=100'		DATE 12/23/87
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND		
Kenneth A. McLeod REGISTERED ENGINEER NO 1974		

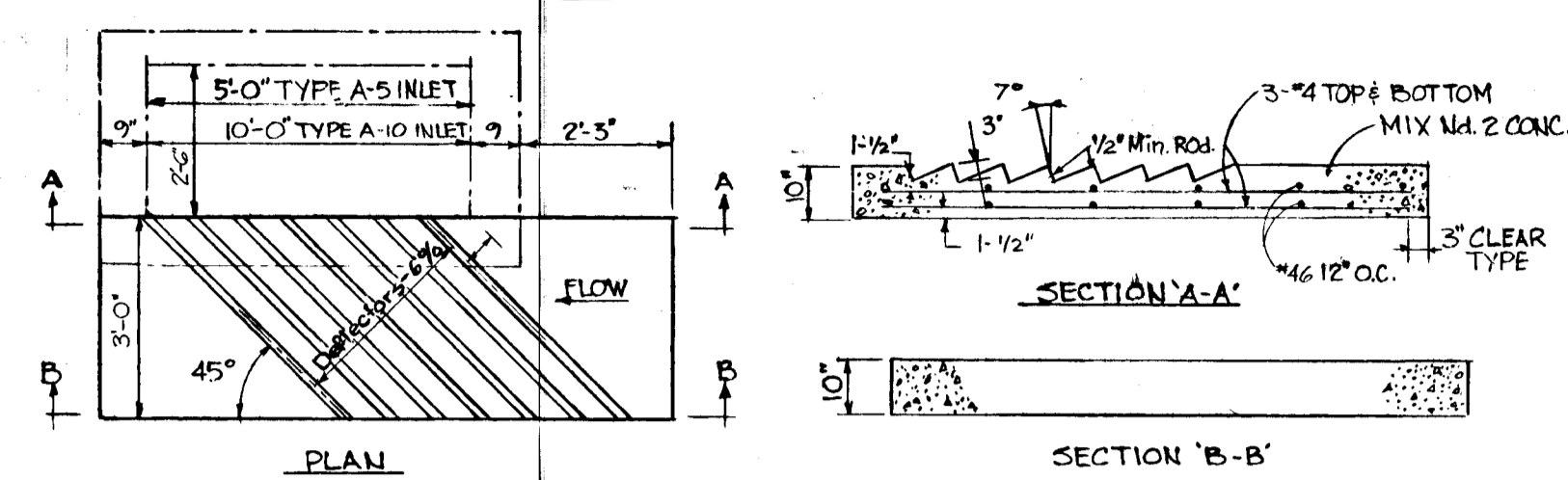
721



NOTE:
 The type of bedding used for storm drain pipe shall be Class C, shaped subgrade. If rock is encountered, the trench invert should be over excavated 6" and the over excavation of 6" refilled with granular material.

OFFICE OF PLANNING AND ZONING
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE 6/29/88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, LAND DEVELOPMENT DIVISION
 DATE 6/21/88
 CHIEF, BUREAU OF HIGHWAY
 DATE 6/27/88
 CHIEF, BUREAU OF ENGINEERING
 DATE 6/29/88



INLET DEFLECTORS
 NO SCALE

REV. DATE	REV. NO.	REVISION	DESCRIPTION
10-18-88	1	Revised Profile	

BURLEIGH MANOR
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DEVELOPER
 ROSE / RICHMOND JOINT VENTURE

PROJECT AREA
 BURLEIGH MANOR
 SECTION 3 AREA 4 PHASE 2
 LOTS 442-522

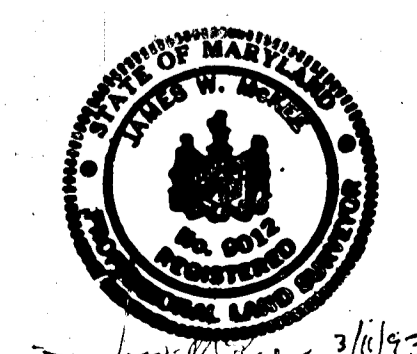
PROJECT TITLE
 STORM DRAIN
 PROFILES & DETAILS

SCALE: AS SHOWN DATE: 12/23/87

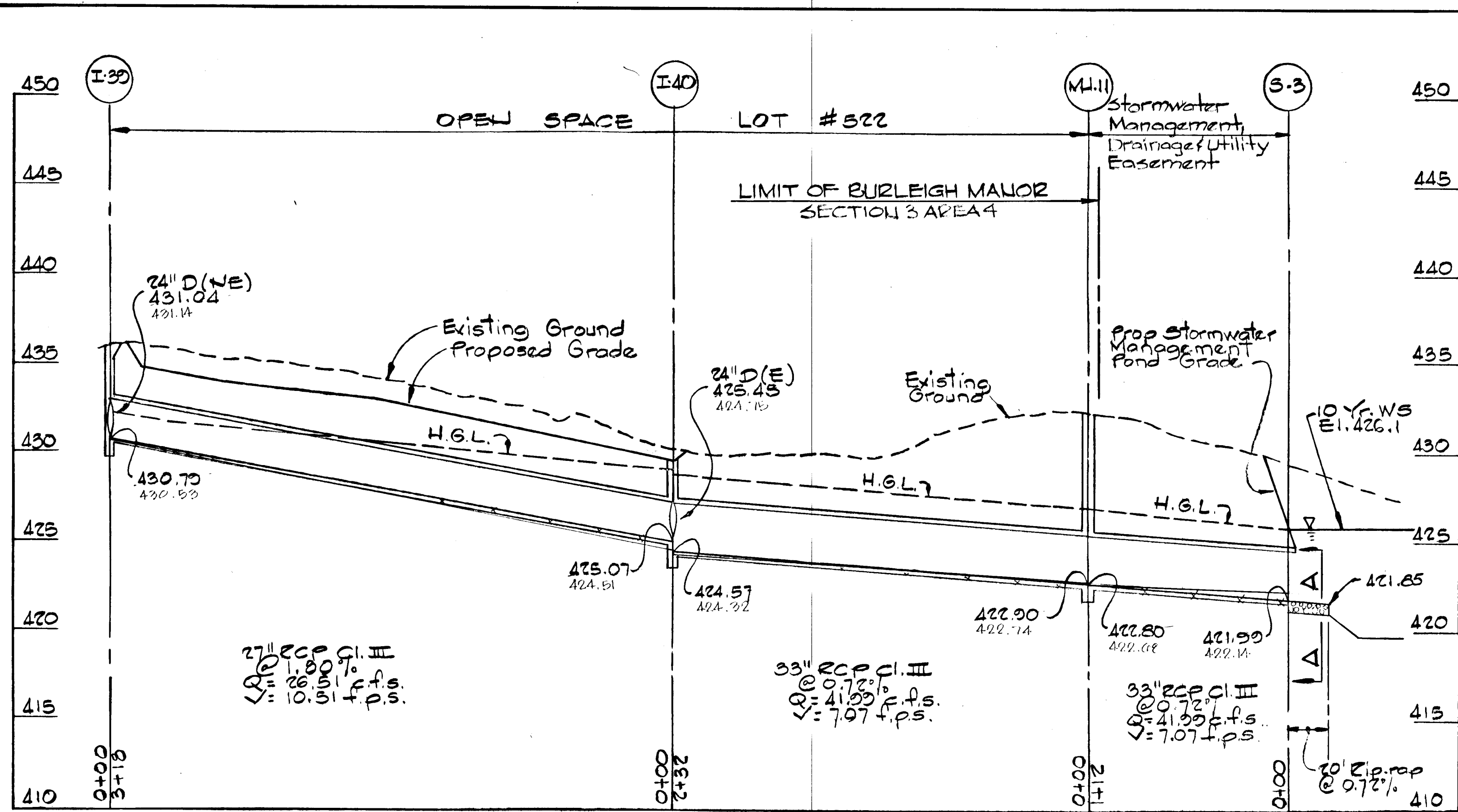
WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND

Kenneth A. McCord
 KENNETH A. MCCORD
 REGISTERED ENGINEER NO. 1974

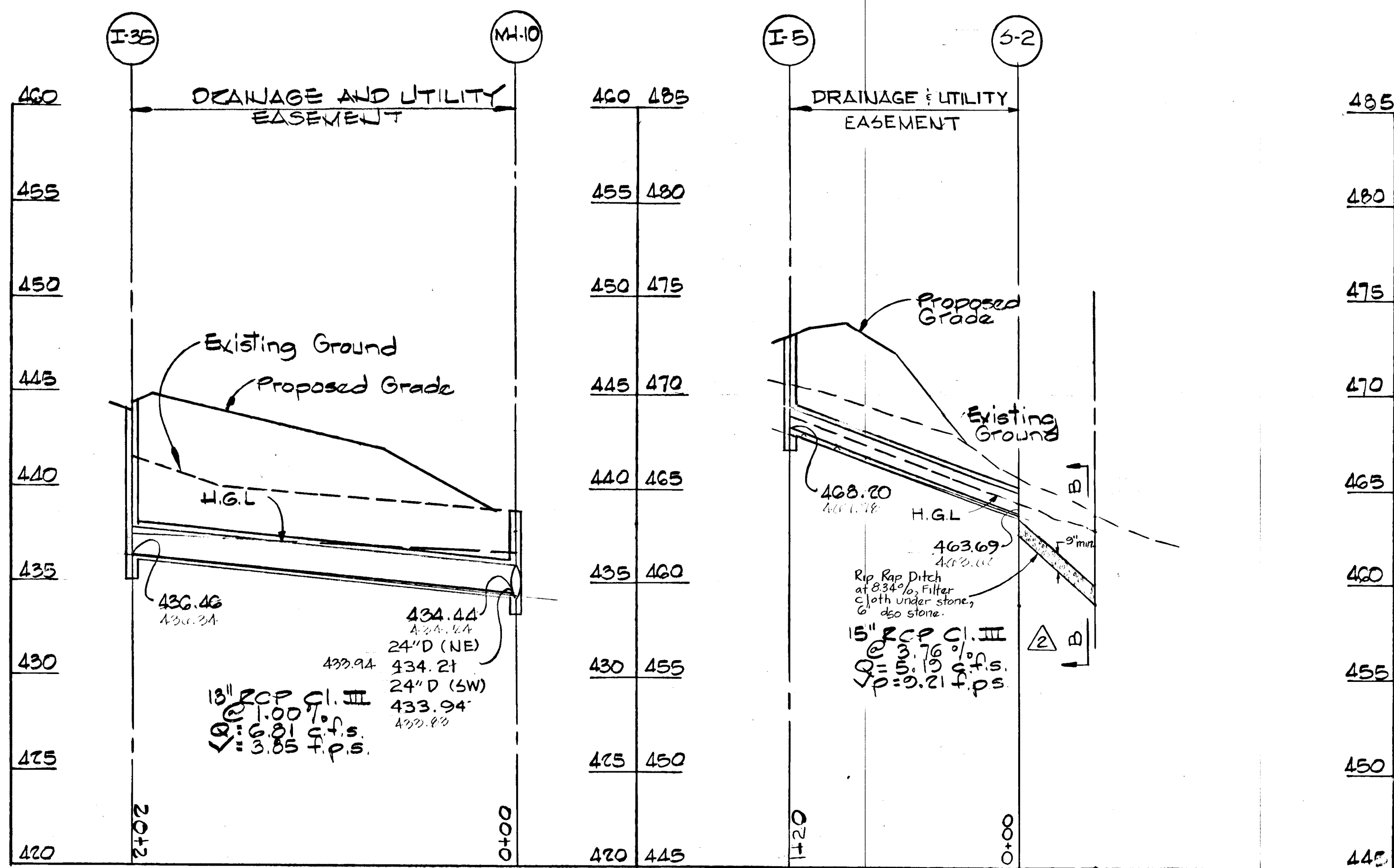
For Revision by
 C.F.S., Inc.



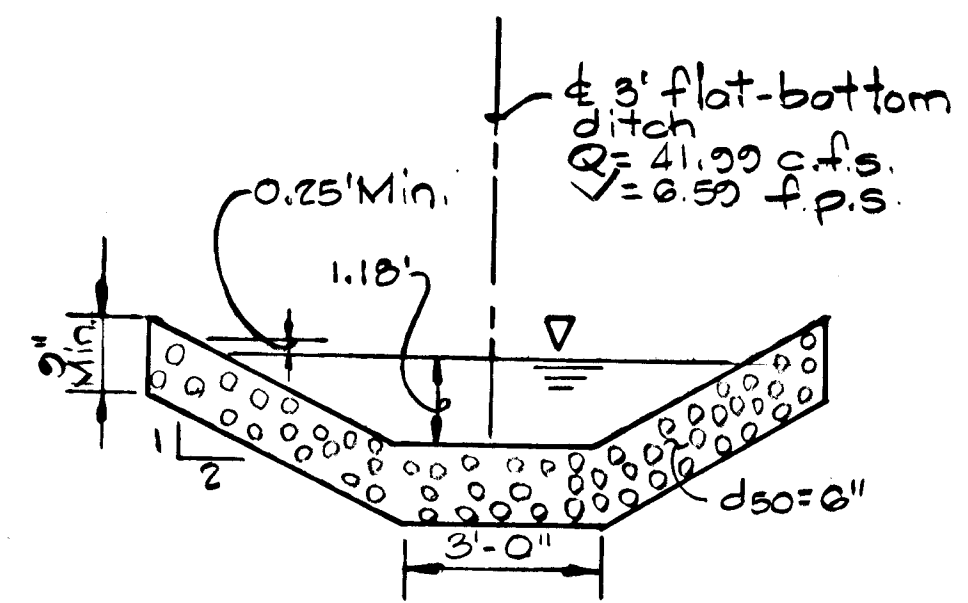
NO.	Rev. of v Notation by C.F.S., Inc.	Date
1	Rev. of v Notation by C.F.S., Inc.	9/1/88
2	REVISIONS	



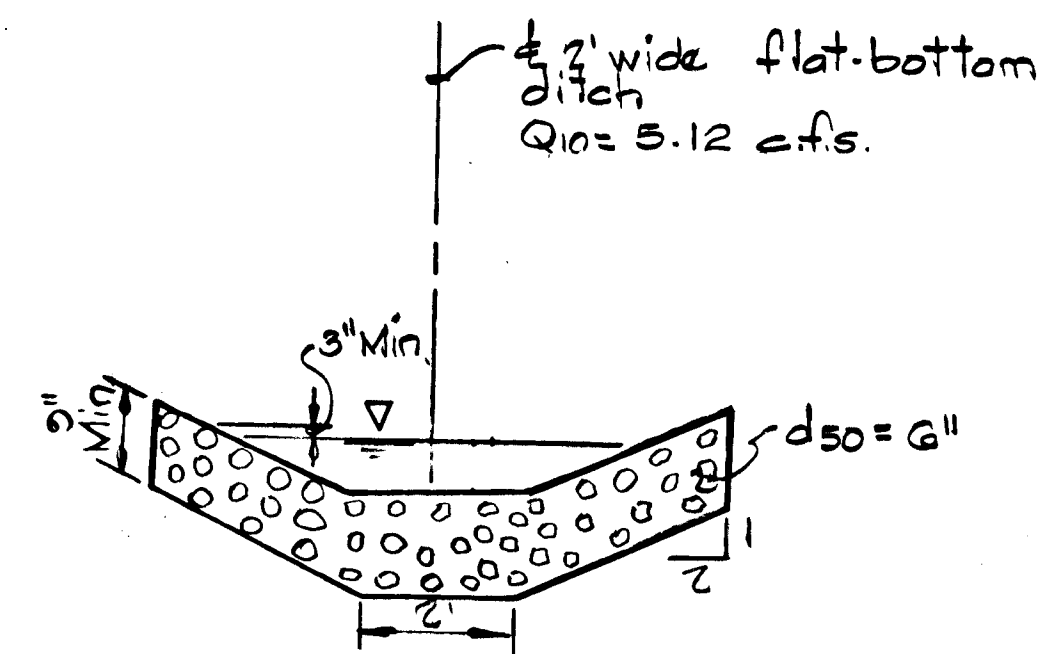
PROFILES
Scale: Hor. = 1" = 50'
Vert. = 1" = 5'



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



CROSS-SECTION 'A-A'
RIP-RAP OUTLET
No Scale



CROSS SECTION 'B-B'
RIP-RAP OUTLET
No Scale

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Paul J. ... 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE
Rowell W. ... 6/27/88
 CHIEF, BUREAU OF HIGHWAYS DATE
Elizabeth Anderson ... 6/29/88
 CHIEF, BUREAU OF ENGINEERING, DESIGN DATE
 OFFICE OF PLANNING AND ZONING
James ... 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION
6/12/82	2	Added Rip Rap
3/24/88	1	As per DPW comment #8

BURLEIGH MANOR
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DEVELOPER
 ROSE/RICHMOND JOINT VENTURE
 PROJECT AREA:
 BURLEIGH MANOR
 SECTION 3 AREA 4 PHASE 2
 LOTS 442-522
 PROJECT TITLE:
**STORM DRAIN
 PROFILES**
 SCALE: AS SHOWN DATE: 12/28/87
 WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND
Kenneth A. McCord
 KENNETH A. MCCORD
 REGISTERED ENGINEER NO. 1974



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APPROVED-HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

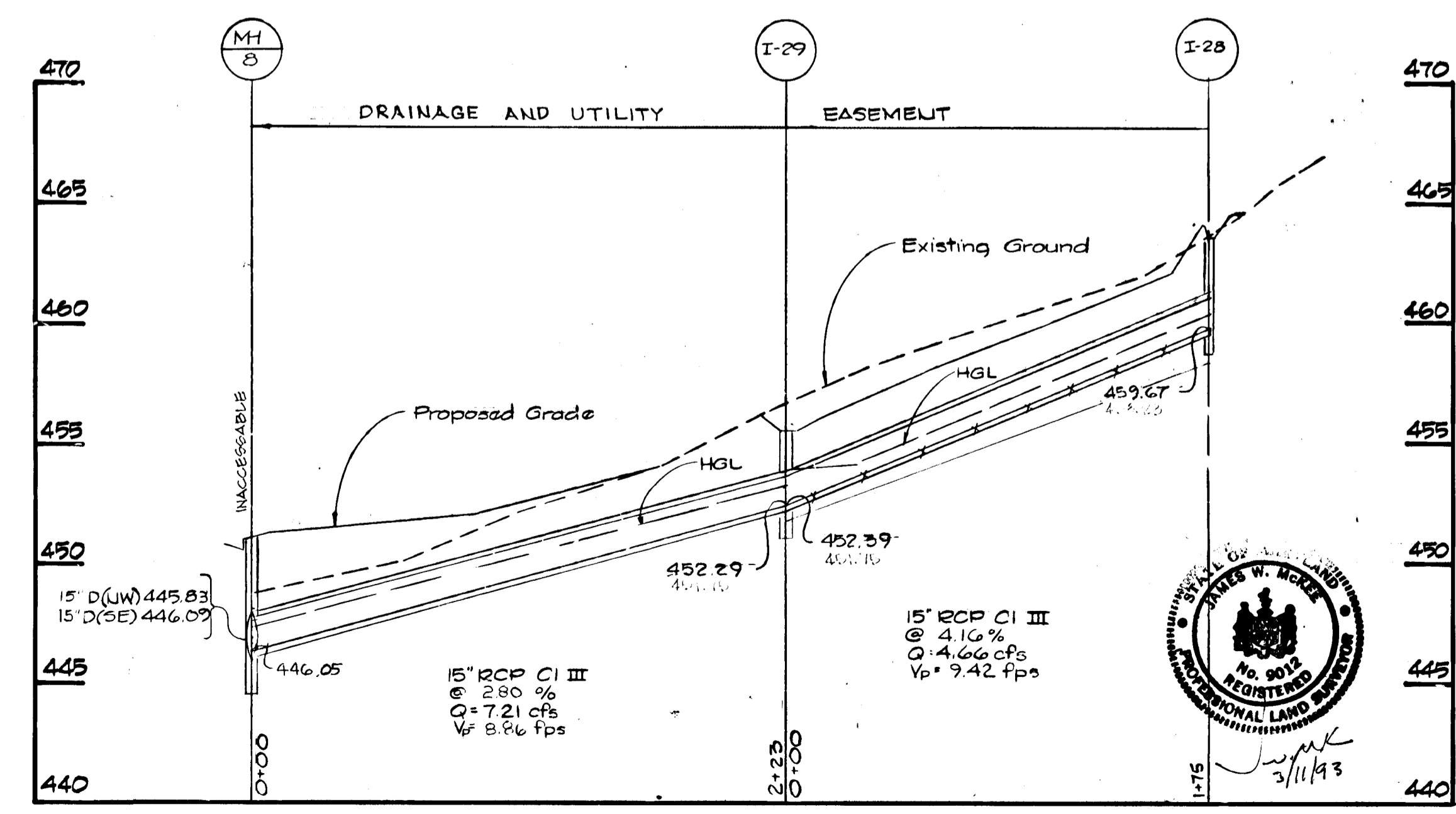
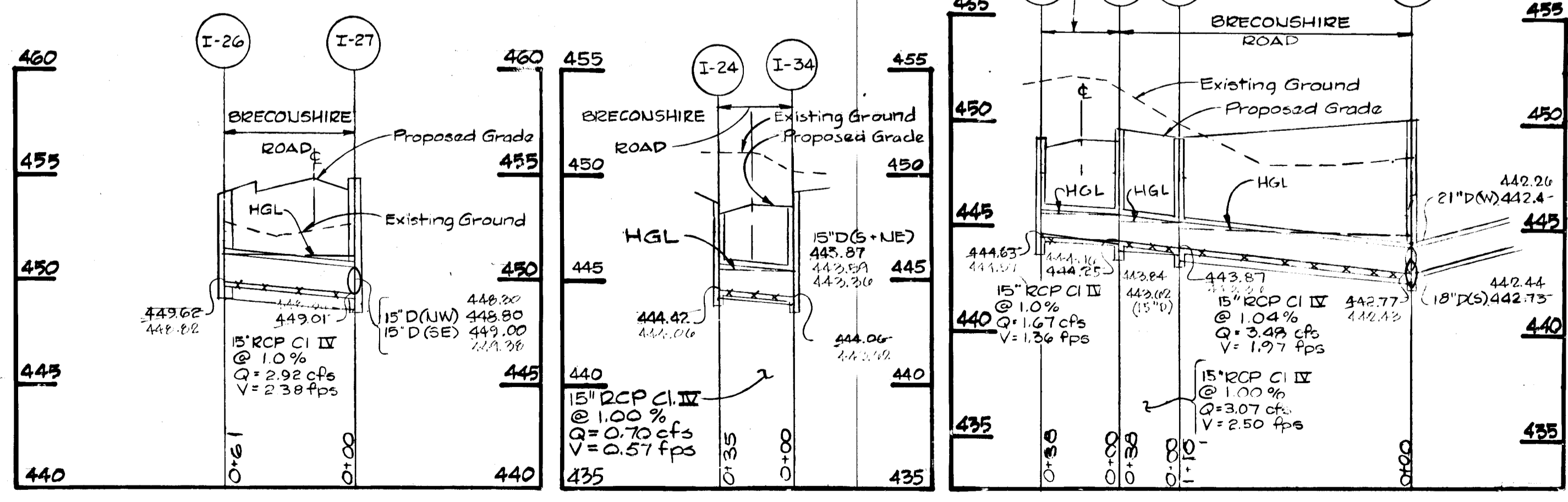
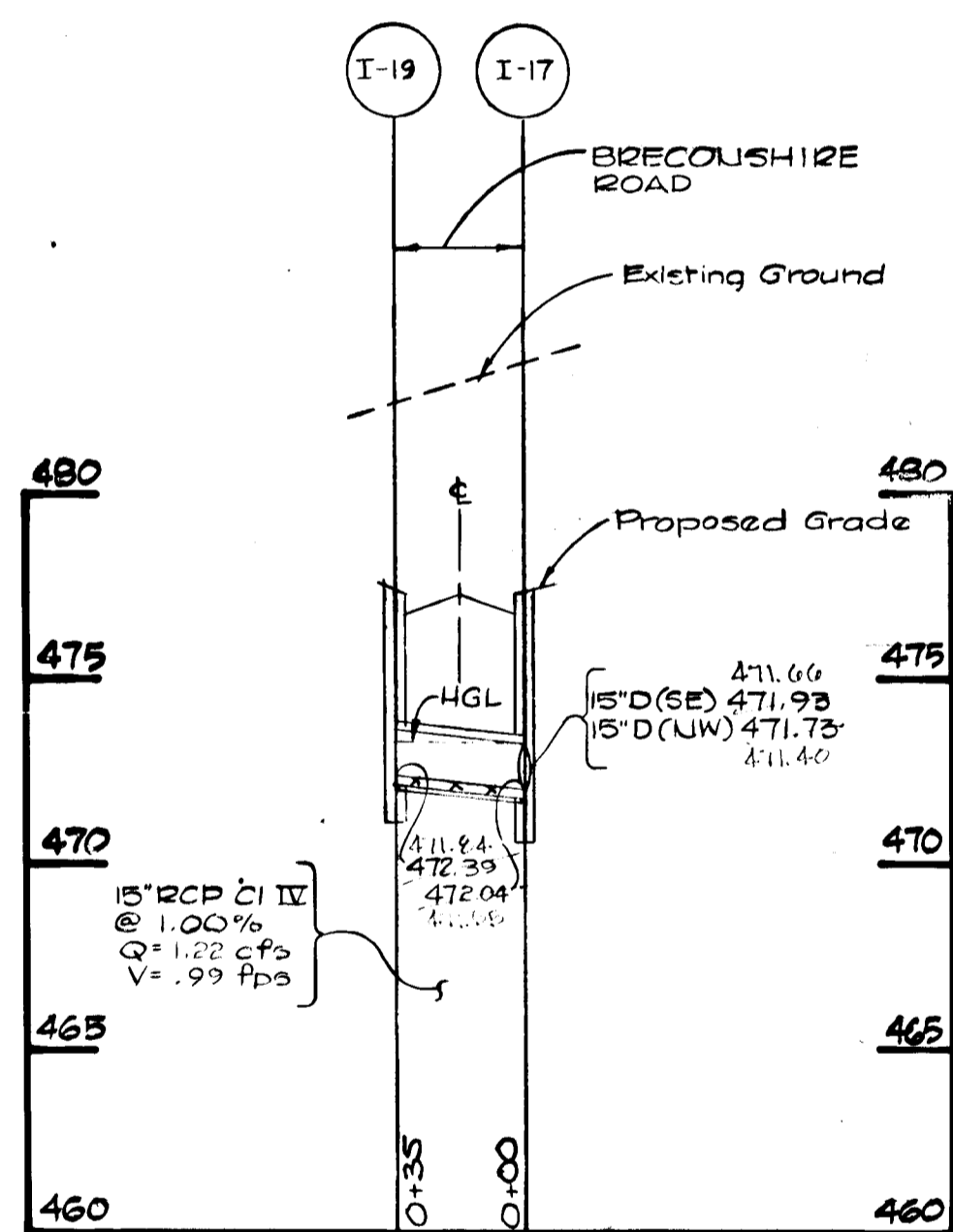
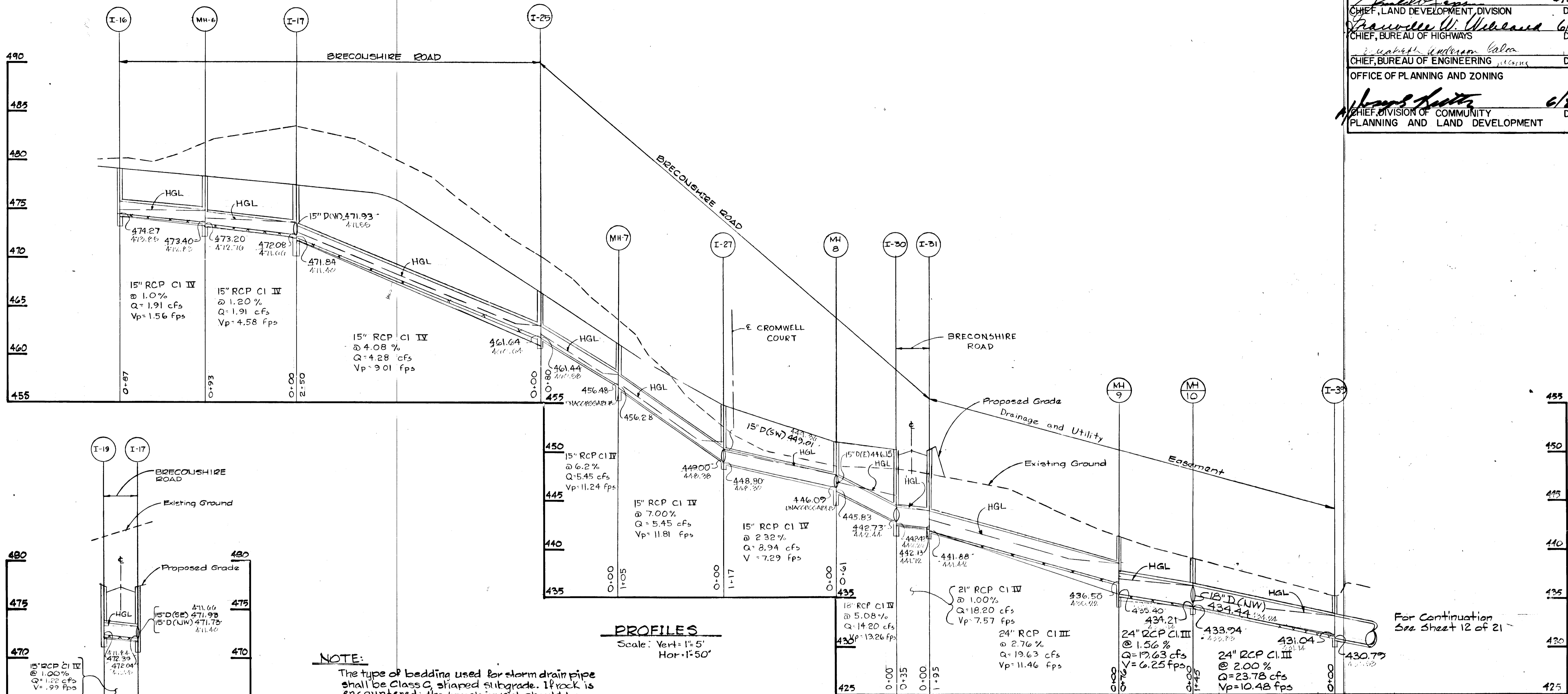
Paul D. ... 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE

David W. ... 6/27/88
 CHIEF, BUREAU OF HIGHWAYS DATE

Robert Anderson ... 4/29/88
 CHIEF, BUREAU OF ENGINEERING DATE

OFFICE OF PLANNING AND ZONING

John ... 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



REV. DATE	REV. NO.	REVISION	DESCRIPTION
BURLEIGH MANOR			
2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND			
DEVELOPER ROSE / RICHMOND JOINT VENTURE			
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522			
PROJECT TITLE STORM DRAIN PROFILES			
SCALE: AS SHOWN			DATE: 12-23-87
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND			
<i>Kenneth A. McCord</i> KENNETH A. MCCORD REGISTERED ENGINEER NO. 1974			

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Donald Eason 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE

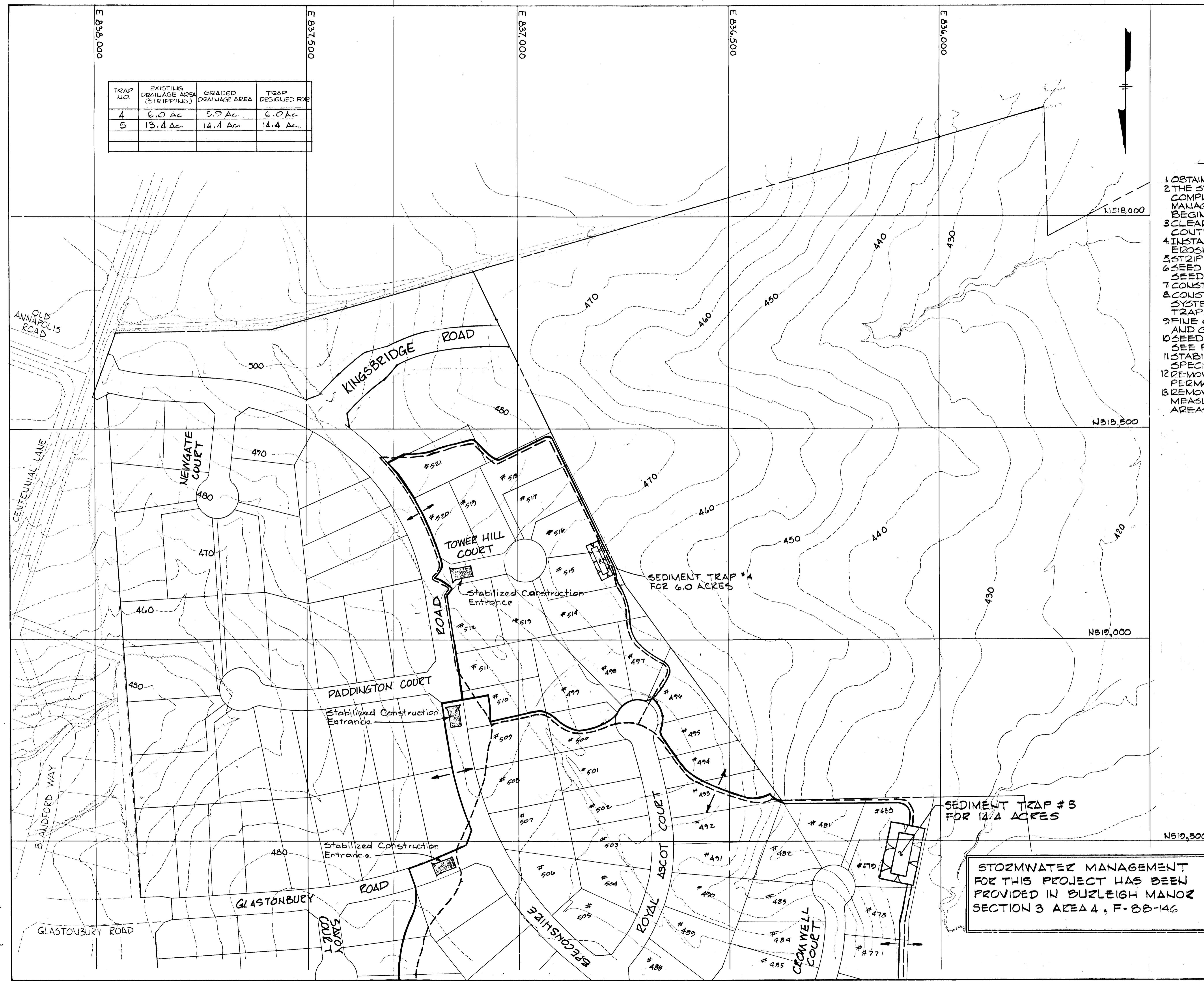
Drayville W. Weasner 6/27/88
 CHIEF, BUREAU OF HIGHWAYS DATE

Elizabeth Anderson 6/29/88
 CHIEF, BUREAU OF ENGINEERING DATE

James S. Foster 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

TRAP NO.	EXISTING DRAINAGE AREA (STRIPPING)	GRADED DRAINAGE AREA	TRAP DESIGNED FOR
4	6.0 Ac.	6.0 Ac.	6.0 Ac.
5	13.4 Ac.	14.4 Ac.	14.4 Ac.

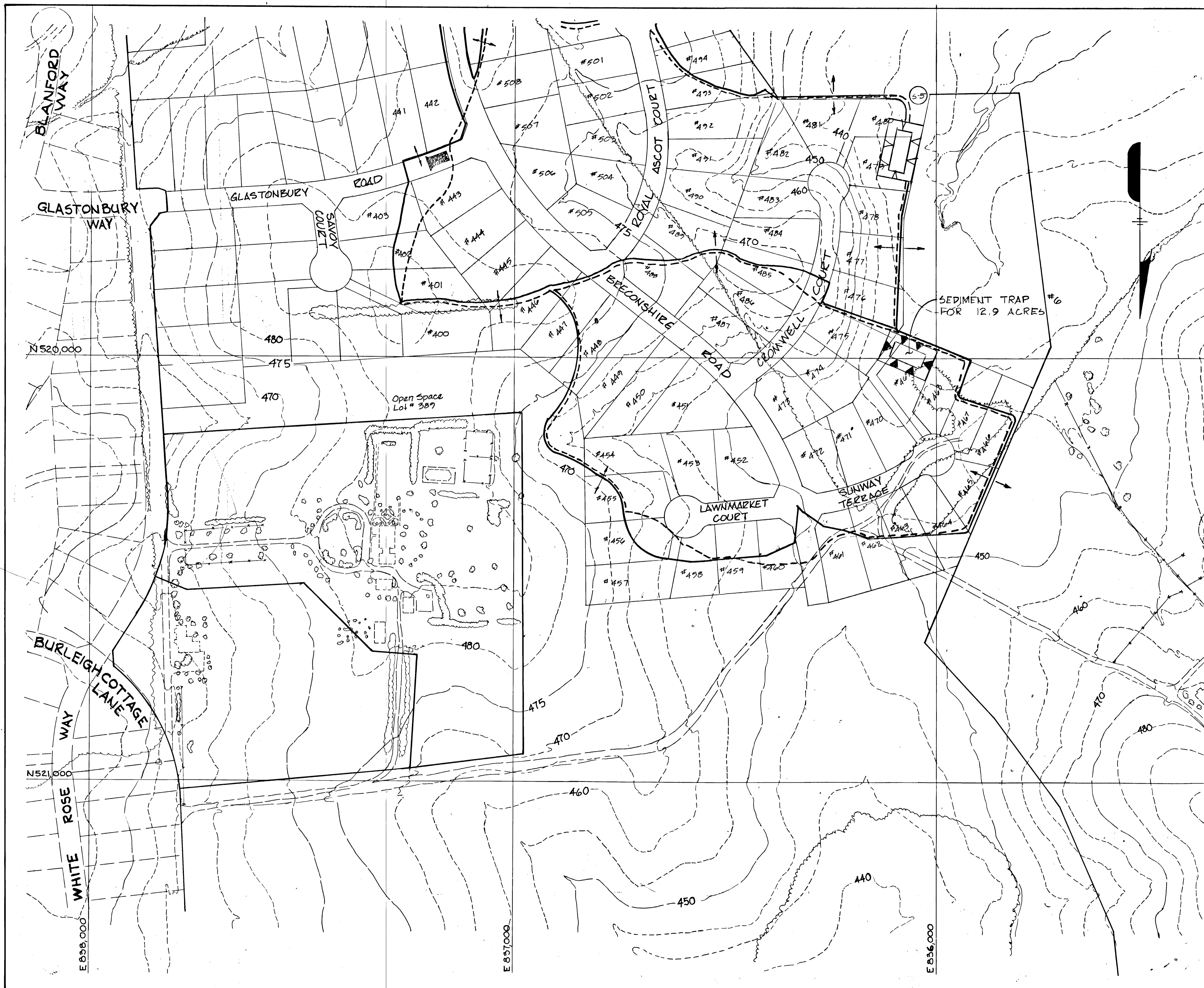
- SEQUENCE OF CONSTRUCTION**
1. OBTAIN GRADING PERMIT.
 2. THE STORMWATER MANAGEMENT FOND MUST BE COMPLETED AS PER THE STORMWATER MANAGEMENT PLAN BEFORE CONSTRUCTION CAN BEGIN.
 3. CLEAR AND GRUB FOR SEDIMENT AND EROSION CONTROL MEASURES OR DEVICES.
 4. INSTALL AND STABILIZE ALL SEDIMENT AND EROSION CONTROL MEASURES AND DEVICES.
 5. STRIP AND ROUGH GRADE LIMITS OF CONSTRUCTION.
 6. SEED ALL SLOPES WITH TEMPORARY SEEDING, SEE SEEDING NOTES ON SHEET 12.
 7. CONSTRUCT ALL UTILITIES.
 8. CONSTRUCT PERMANENT STORM DRAINAGE SYSTEM AND TEMPORARY PIPES TO SEDIMENT TRAPS #4, 5 and 6.
 9. FINE GRADE PAVED AREAS, CONSTRUCT CURB AND GUTTER AND PAVED AREAS.
 10. SEED DISTURBED AREAS WITHIN RIGHT OF WAY. SEE PERMANENT SEEDING NOTES ON SHEET 12.
 11. STABILIZE SITE AS PER TEMPORARY SEEDING SPECIFICATIONS, SEE NOTES ON SHEET 12.
 12. REMOVE TEMPORARY PIPES AND COMPLETE PERMANENT STORM DRAINAGE SYSTEM.
 13. REMOVE TEMPORARY SEDIMENT CONTROL MEASURES AND STABILIZE ANY REMAINING AREAS.



STORMWATER MANAGEMENT FOR THIS PROJECT HAS BEEN PROVIDED IN BURLEIGH MANOR SECTION 3 AREA 4, F-88-146

3/25/88	1	As Per HSCD Comments #17 B
REV DATE	REV NO.	REVISION DESCRIPTION
BURLEIGH MANOR		
2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DEVELOPER ROSE / RICHMOND JOINT VENTURE		
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522		
PROJECT TITLE DRAINAGE AREA MAP FOR SEDIMENT CONTROL		
SCALE: 1" = 100'		DATE: 12/23/87
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND		
<i>Kenneth A. McCord</i> KENNETH A. MCCORD REGISTERED ENGINEER NO. 1974		

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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land (Development Division) *Paul J. Jones* 6/21/88 DATE
 Chief, Bureau of Highways *Draville W. Wallace* 6/27/88 DATE
 Chief, Bureau of Engineering *Elizabeth Anderson-Cole* 4/28/88 DATE
 OFFICE OF PLANNING AND ZONING
 Chief, Division of Community Planning and Land Development *James R. Smith* 6/29/88 DATE

TRAP NO.	EXISTING DRAINAGE AREA (STRIPPING)	GRADED DRAINAGE AREA	TRAP DESIGNED FOR
6	12.6 Ac.	12.9 Ac.	12.9 Ac.

REV. DATE	REV. NO.	REVISION	DESCRIPTION
BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND			
DEVELOPER ROSE/RICHMOND JOINT VENTURE			
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522			
PROJECT TITLE DRAINAGE AREA MAP			
SCALE: 1"=100'		DATE: 12/23/87	
WHITMAN, REQUARD, AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND			
<i>Kenneth A. McLeod</i> KENNETH A. McLEOD REGISTERED ENGINEER NO. 1974			

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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Paul H. Spurr 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE
Drumville W. Mallard 6/27/88
 CHIEF, BUREAU OF HIGHWAYS DATE
Elizabeth Anderson-Palca 6/27/88
 CHIEF, BUREAU OF ENGINEERING DATE
James Austin 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

DESIGN DATA FOR SEDIMENT TRAP #4

Drainage Area	6.0 Acres
Disturbed Area	6.0 Acres
Volume Required	60 x 67 = 402 c.y.
Volume Available	433 c.y.
Top of Berm Elev.	464.5
Weir Crest Elev.	463.0
Length of Weir	14
Storage Elev.	462.0
Bottom Trap Elev.	458.0
Bottom Trap Dim.	20.0' x 90.0'

3/23/88	1	As per H&CD comment #1
REV. DATE	REV. NO.	REVISION DESCRIPTION
BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DEVELOPER ROSE RICHMOND JOINT VENTURE		
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522		
PROJECT TITLE GRADING & SEDIMENT CONTROL PLAN		
SCALE: 1" = 50'		DATE: 11/6/87
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND		
REGISTERED ENGINEER NO. 1974		

CERTIFICATION BY THE ENGINEER
 "I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
Kenneth A. McCord 11/6/87
 KENNETH A. MCCORD DATE

CERTIFICATION BY THE DEVELOPER
 "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 DEPT. 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."
David L. Carney 1/7/88
 DAVID L. CARNEY DATE

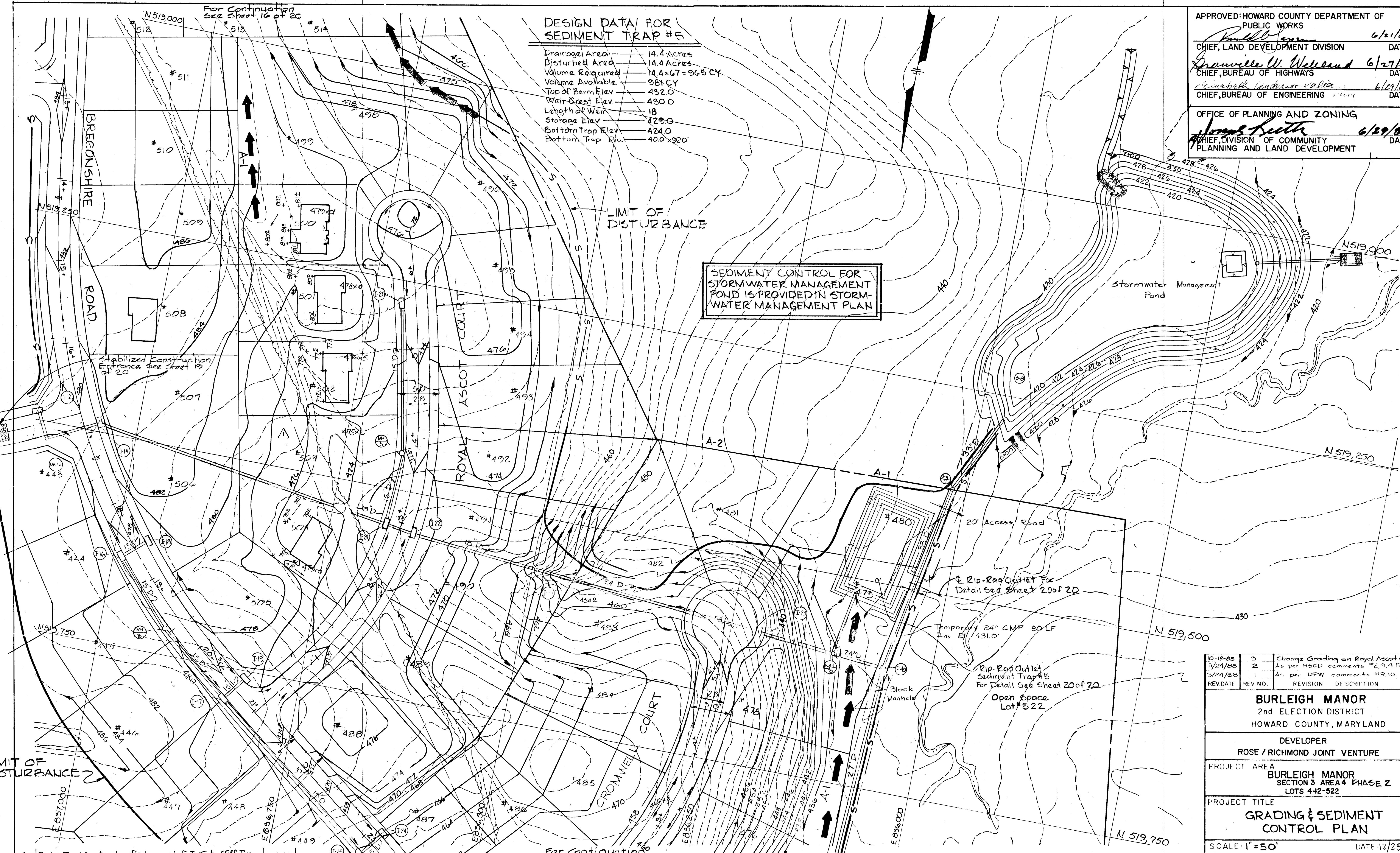
REVIEWED FOR HOWARD COUNTY S.C.D. AND MEETS TECHNICAL REQUIREMENTS.
James Austin 6/17/88
 JAMES AUSTIN DATE
 U.S. SOIL CONSERVATION SERVICE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *Kenneth A. McCord* 11/6/87
 HOWARD S.C.D. DATE
 KENNETH A. MCCORD
 REGISTERED ENGINEER NO. 1974

DESIGN DATA FOR SEDIMENT TRAP #5

Drainage Area	14.4 Acres
Disturbed Area	14.4 Acres
Volume Required	14.4 x 67 = 965 CY
Volume Available	981 CY
Top of Berm Elev.	432.0
Wall Crest Elev.	430.0
Length of Wall	18
Storage Elev.	429.0
Bottom Trap Elev.	424.0
Bottom Trap Dia.	40.0 x 92.0'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, LAND DEVELOPMENT DIVISION
 6/1/88
 DATE
James W. Wallace 6/27/88
 CHIEF, BUREAU OF HIGHWAYS
 DATE
James W. Wallace 6/29/88
 CHIEF, BUREAU OF ENGINEERING
 DATE
 OFFICE OF PLANNING AND ZONING
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 6/29/88
 DATE

SEDIMENT CONTROL FOR STORMWATER MANAGEMENT POND IS PROVIDED IN STORMWATER MANAGEMENT PLAN



10-18-88	3	Change Grading on Royal Ascot Court
3/24/88	2	As per H&CD comments #2, 3, 4, 5, 6
3/24/88	1	As per DPW comments #9, 10, 11, 12
REV DATE	REV NO.	REVISION DESCRIPTION

BURLEIGH MANOR
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DEVELOPER
 ROSE / RICHMOND JOINT VENTURE

PROJECT AREA
 BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2
 LOTS 442-522

PROJECT TITLE
GRADING & SEDIMENT CONTROL PLAN

SCALE: 1" = 50' DATE: 12/23/87

WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS
 BALTIMORE, MARYLAND

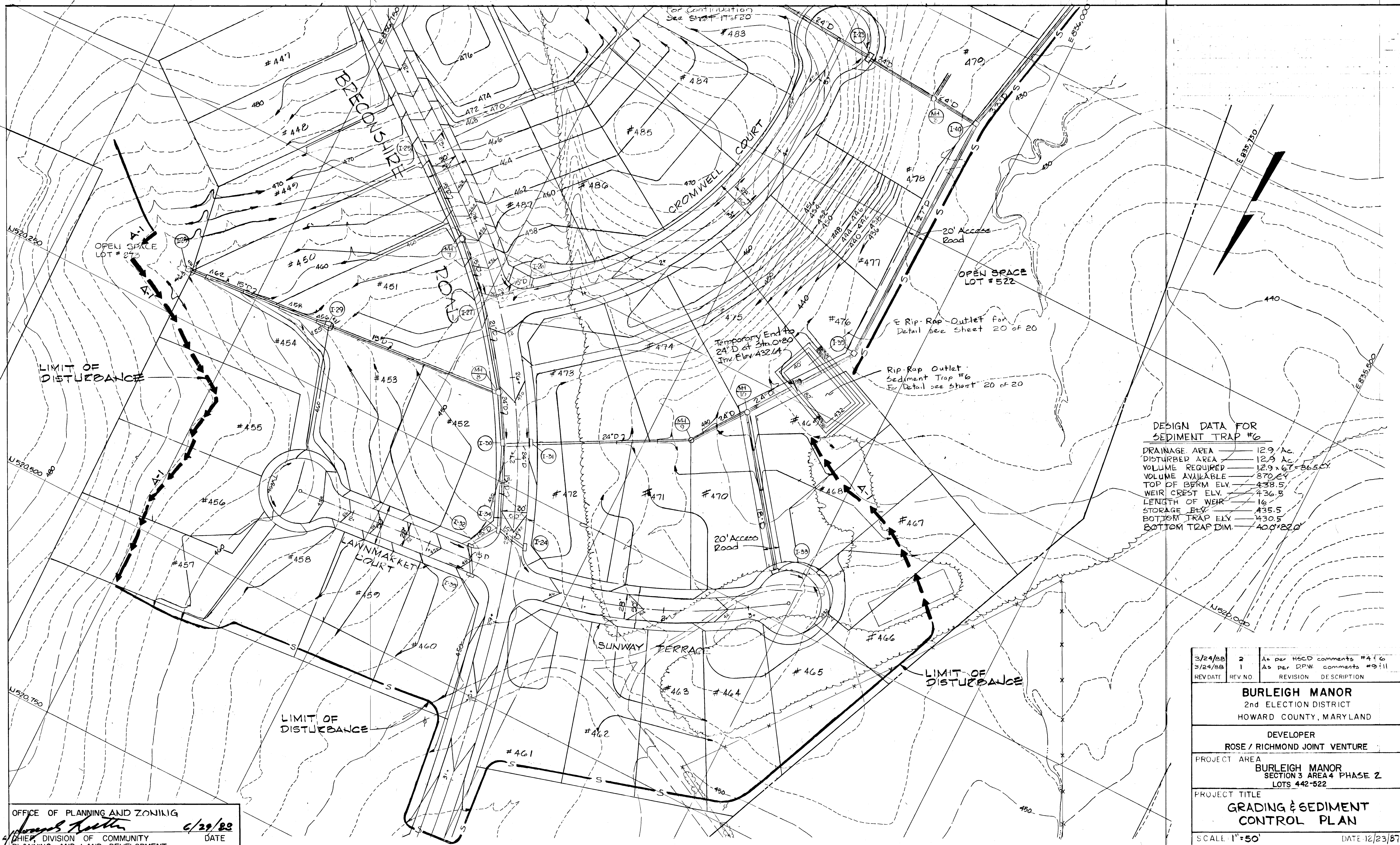
Kenneth A. McCorr
 KENNETH A. MCCORR
 REGISTERED ENGINEER NO 1974

1. Revise Plan & Grading to reflect removal of I-15 by CFE&S, Inc. 2-1-88
 No. Revision Date
 () REVIEWED FOR HOWARD CO. S.C.D. AND MEETS TECHNICAL REQUIREMENTS.
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *Stephen L. Helm* 6/13/88
 HOWARD S.C.D. DATE

Stephen L. Helm
 6/13/88
 For Review by CFE&S, Inc. Dated 9/1/93

CERTIFICATION BY THE DEVELOPER
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENTATION ON THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
David L. Carney
 DAVID L. CARNEY
 3/25/87
 DATE

CERTIFICATION BY THE ENGINEER
 "I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION, AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
Kenneth A. McCorr
 KENNETH A. MCCORR, P.E. NO. 1974
 3/26/87
 DATE



DESIGN DATA FOR SEDIMENT TRAP #6

DRAINAGE AREA	12.9 Ac.
DISTURBED AREA	12.9 Ac.
VOLUME REQUIRED	12.9 x 67 = 865.3 CY
VOLUME AVAILABLE	870.64
TOP OF BERM ELV.	438.5'
WEIR CREST ELV.	436.5'
LENGTH OF WEIR	16'
STORAGE ELV.	435.5'
BOTTOM TRAP ELV.	430.5'
BOTTOM TRAP DIM.	400' x 320'

OFFICE OF PLANNING AND ZONING
James R. Austin 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE

122
 U.S. SOIL CONSERVATION SERVICE
James M. Helm 6/28/88
 DATE

APPROVED: *Stephen L. Egan* 6/13/88
 HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Paul D. Egan 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE
Granville W. Welland 6/27/88
 CHIEF, BUREAU OF HIGHWAYS DATE
Richard W. Adams 6/27/88
 CHIEF, BUREAU OF ENGINEERING DATE

CERTIFICATION BY THE DEVELOPER
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE, I/WE TO AUTHORIZE, THE CONDUCT OF SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
David L. Carnley 3/25/87
 DATE

CERTIFICATION BY THE ENGINEER
 "I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION, AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
Kenneth A. McCord 3/26/87
 DATE
 KENNETH A. MCCORD, P.E. NO. 1974

3/24/88	2	As per H&CD comments #416
3/24/88	1	As per DPW comments #911
REV DATE	REV NO	REVISION DESCRIPTION

BURLEIGH MANOR
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

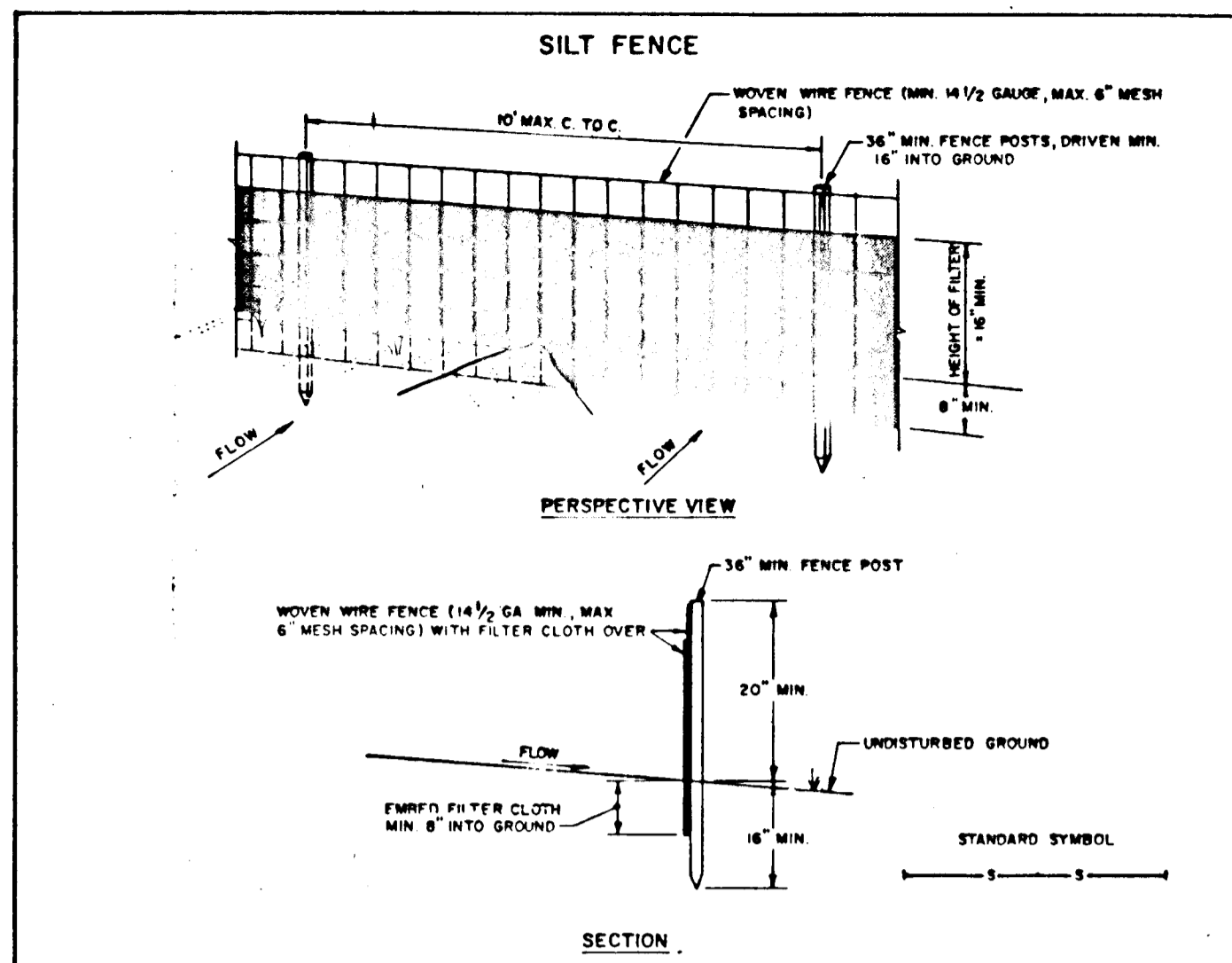
DEVELOPER
 ROSE / RICHMOND JOINT VENTURE
 PROJECT AREA
 BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2
 LOTS 442-522

PROJECT TITLE
GRADING & SEDIMENT CONTROL PLAN

SCALE: 1"=50' DATE: 12/23/87

WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND

Kenneth A. McCord
 KENNETH A. MCCORD
 REGISTERED ENGINEER NO. 1974



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
 - FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
 FENCE: WOVEN WIRE, 1/2" GA. 6" MAX. MESH OPENING
 FILTER CLOTH: FILTER X, MIRAFIL 100, STABILINA 1140N OR APPROVED EQUAL
 PREFABRICATED UNIT: GEOSAF, GYNIFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	SILT FENCE	STANDARD DRAWING SF-1
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PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules

- 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. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
- 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. Harrow 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 (1.4 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 sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well 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 reseeds.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft)

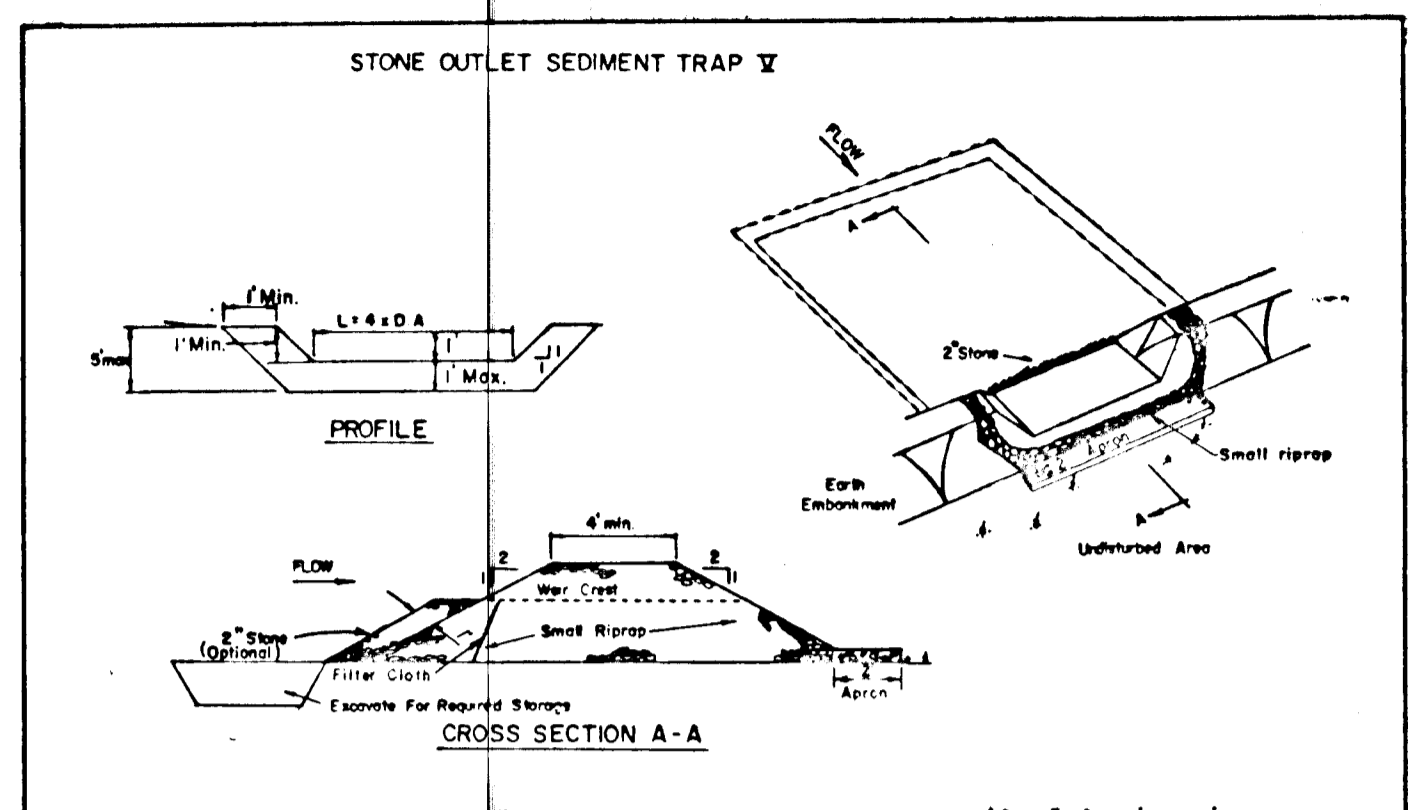
Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

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.

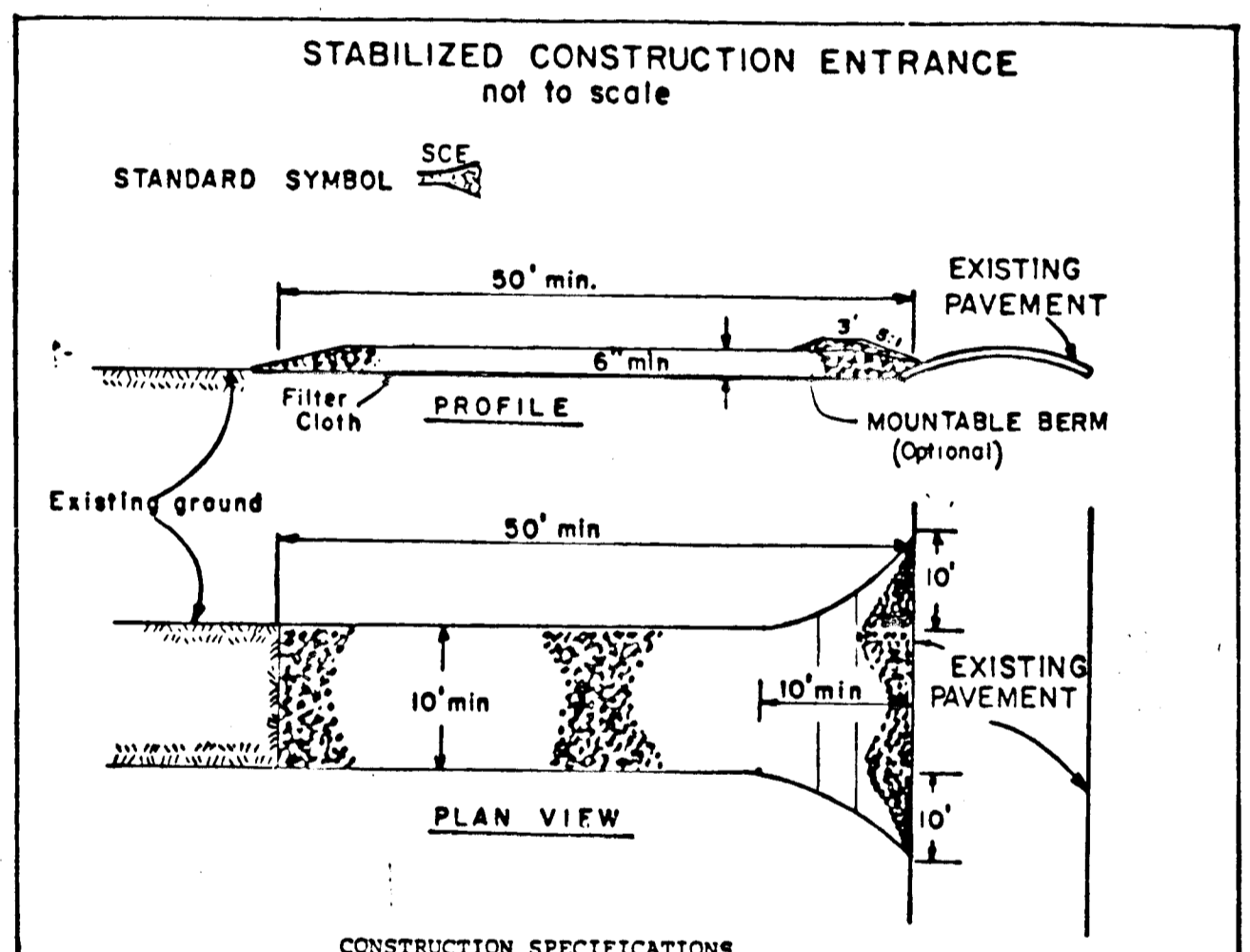
SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
- 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) sod (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: 42.42 Acres
 Area Disturbed: 31.72 Acres
 Area to be roofed or paved: 7.82 Acres
 Area to be vegetatively stabilized: 23.92 Acres
 Total Cut: 66,300± Cu. yds.
 Total Fill: 45,200± 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 DPW sediment control inspector.
- On 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.



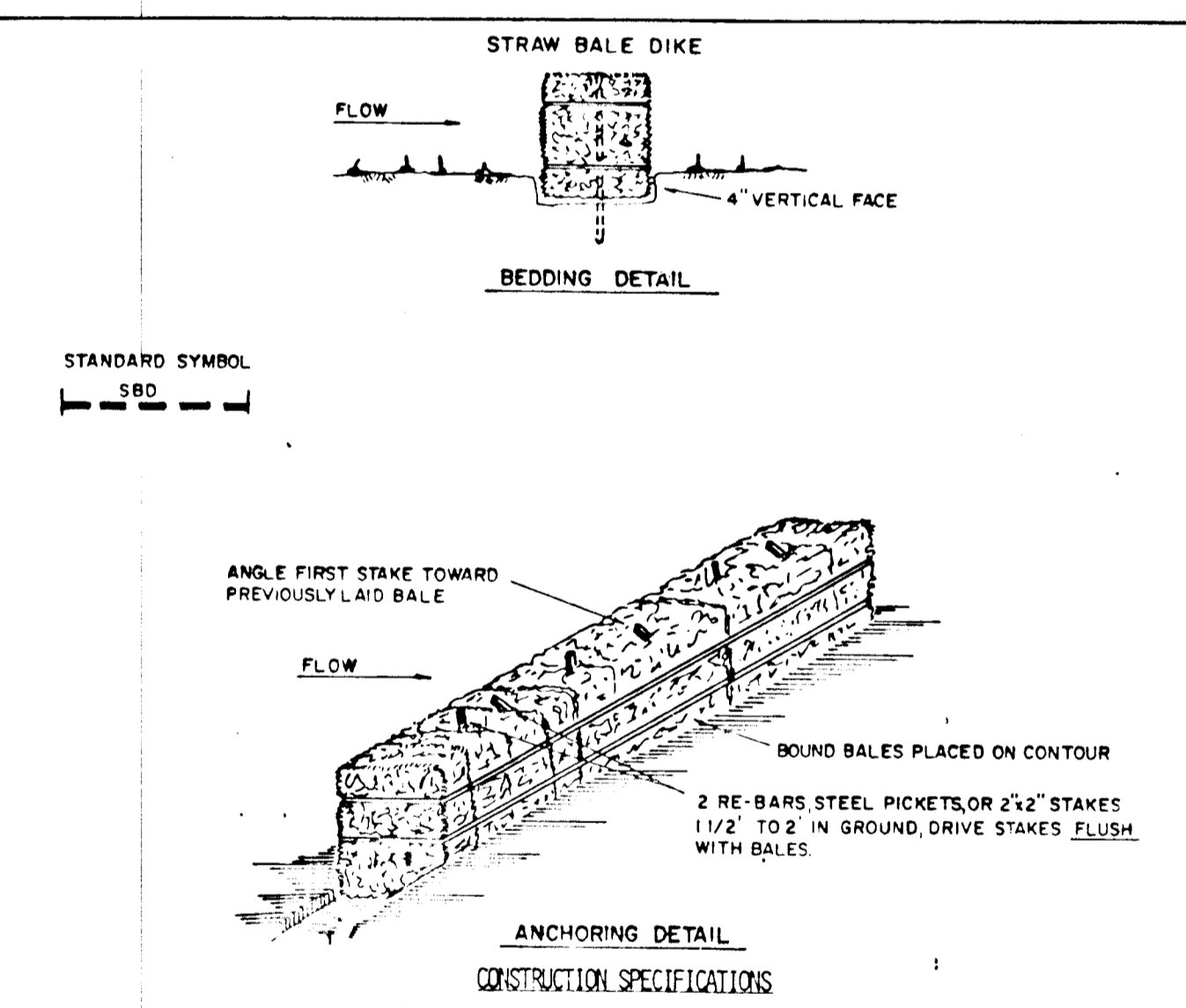
- OPTION: A one foot layer of 3" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.
- CONSTRUCTION SPECIFICATIONS FOR ST-V**
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots and other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 - All cut and fill slopes shall be 2:1 or flatter.
 - The stone used in the outlet shall be small riprap 4"-8" along with a 1' thickness of 2" aggregate placed on the up-grade side on the small riprap or embedded filter cloth in the riprap.
 - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
 - The structure shall be inspected after each rain and repairs made as needed.
 - Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
 - The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STONE OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-V
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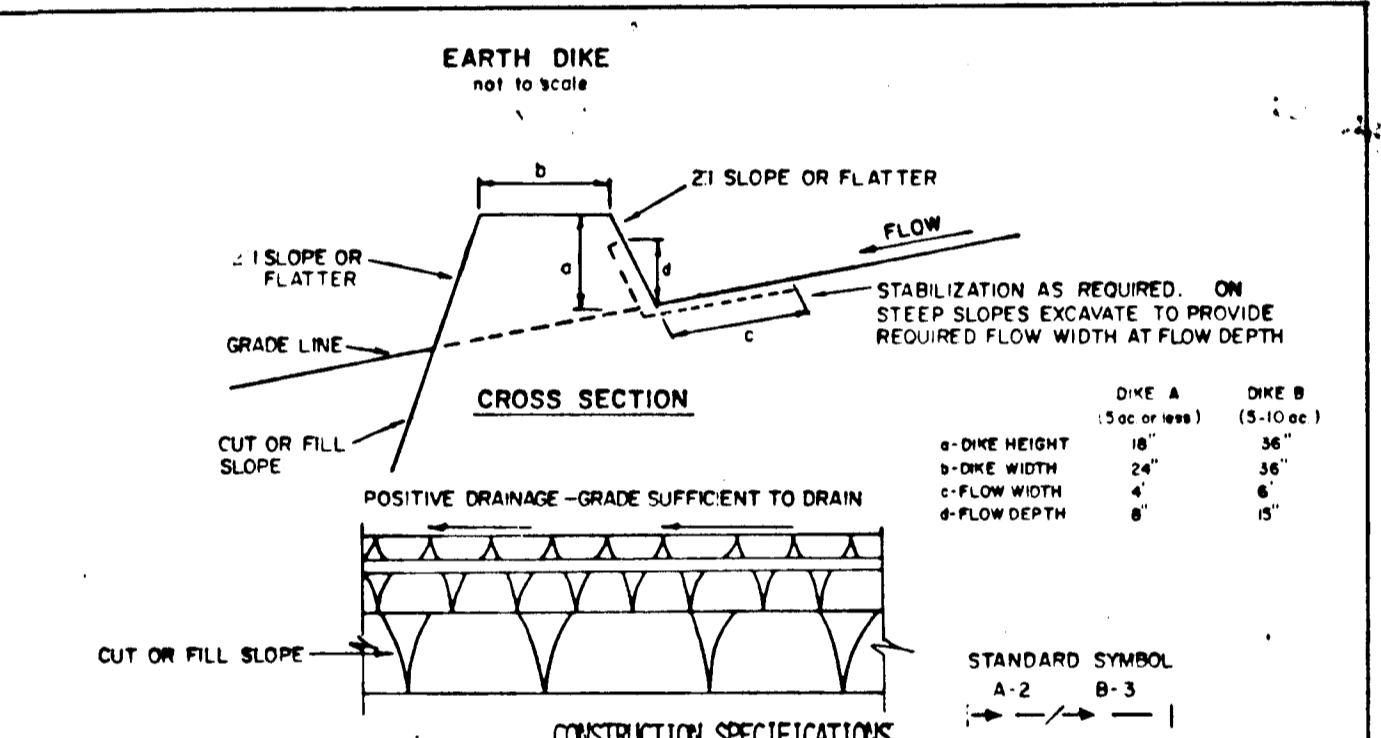
- CONSTRUCTION SPECIFICATIONS**
- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
 - Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
 - Thickness - Not less than six (6) inches.
 - Width - 7' to 10' foot minimum, but not less than the full width at points where ingress or egress occurs.
 - 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.
 - Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
 - 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 measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
 - 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.
 - Periodic inspection and needed maintenance shall be provided after each rain.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1
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- CONSTRUCTION SPECIFICATIONS**
- BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ADJUTING THE ADJACENT BALES.
 - EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
 - BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
 - INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
 - BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STRAW BALE DIKE	STANDARD DRAWING SBD-1
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- ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
 - ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
 - TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
 - FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
 - EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. FLOW OFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
 - STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.
- | TYPE OF TREATMENT | CHANNEL GRADE | DIKE A | DIKE B |
|-------------------|---------------|-----------------------------------|--|
| 1 | 5-3.0% | SEED AND STRAW MULCH | SEED AND STRAW MULCH |
| 2 | 3.1-5.0% | SEED AND STRAW MULCH | SEED USING JUTE, OR EXCELSTORP, SOOD, 2" STONE |
| 3 | 5.1-8.0% | SEED WITH JUTE, OR SOOD, 2" STONE | LINED RIP-RAP 4-8" |
| 4 | 8.1-20% | LINED RIP-RAP 4-8" | ENGINEERING DESIGN |
- A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
 B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
 C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
 7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	EARTH DIKE	STANDARD DRAWING ED-1
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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, LAND DEVELOPMENT DIVISION
 CHIEF, BUREAU OF HIGHWAYS
 CHIEF, BUREAU OF ENGINEERING

6/21/88
 6/27/88

OFFICE OF PLANNING AND ZONING
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

6/20/88

CERTIFICATION BY THE ENGINEER
 I, Kenneth J. McLeod, a duly Licensed Professional Engineer in the State of Maryland, do hereby certify that I am the author of the above described plan and that I am a duly Licensed Professional Engineer in the State of Maryland.

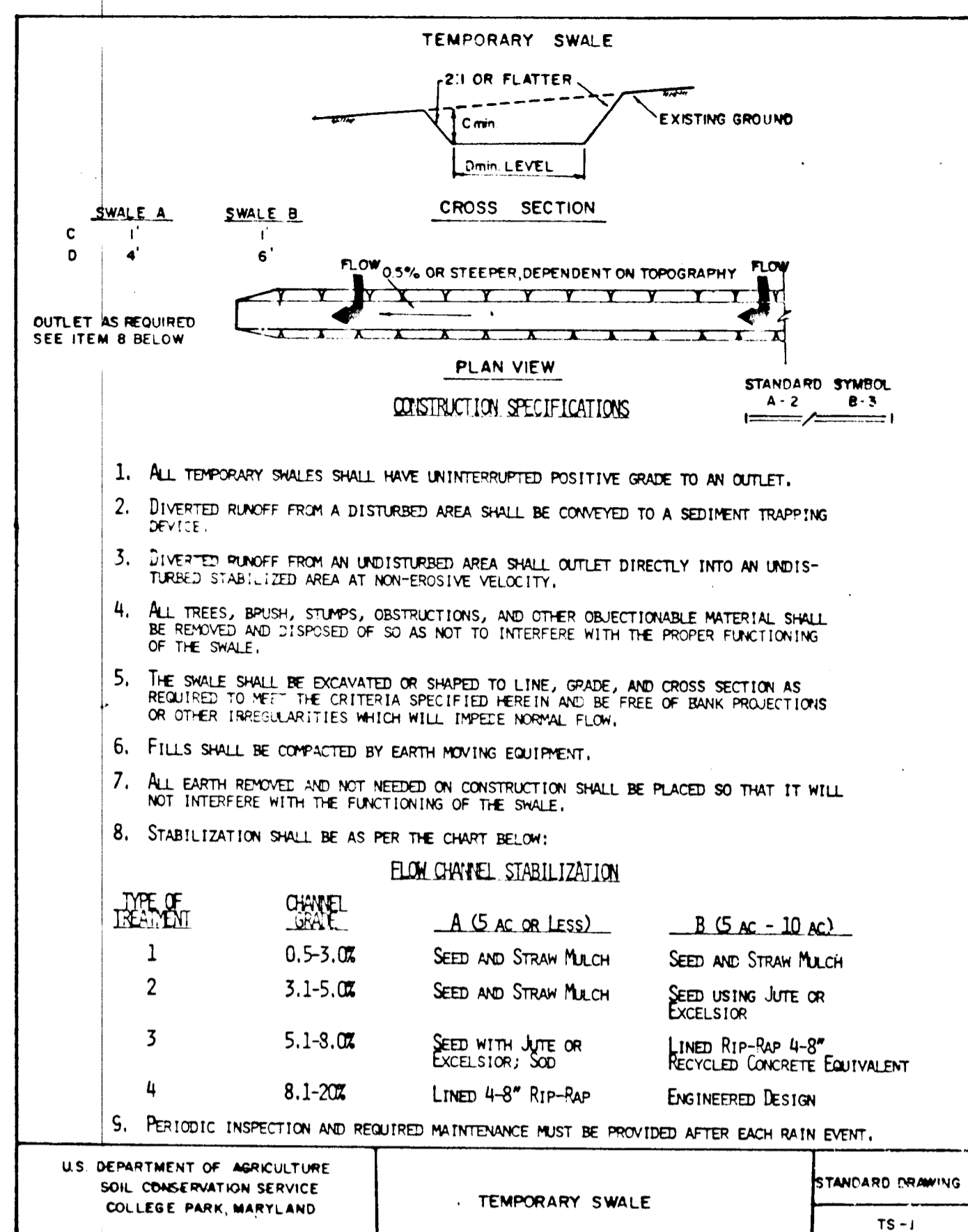
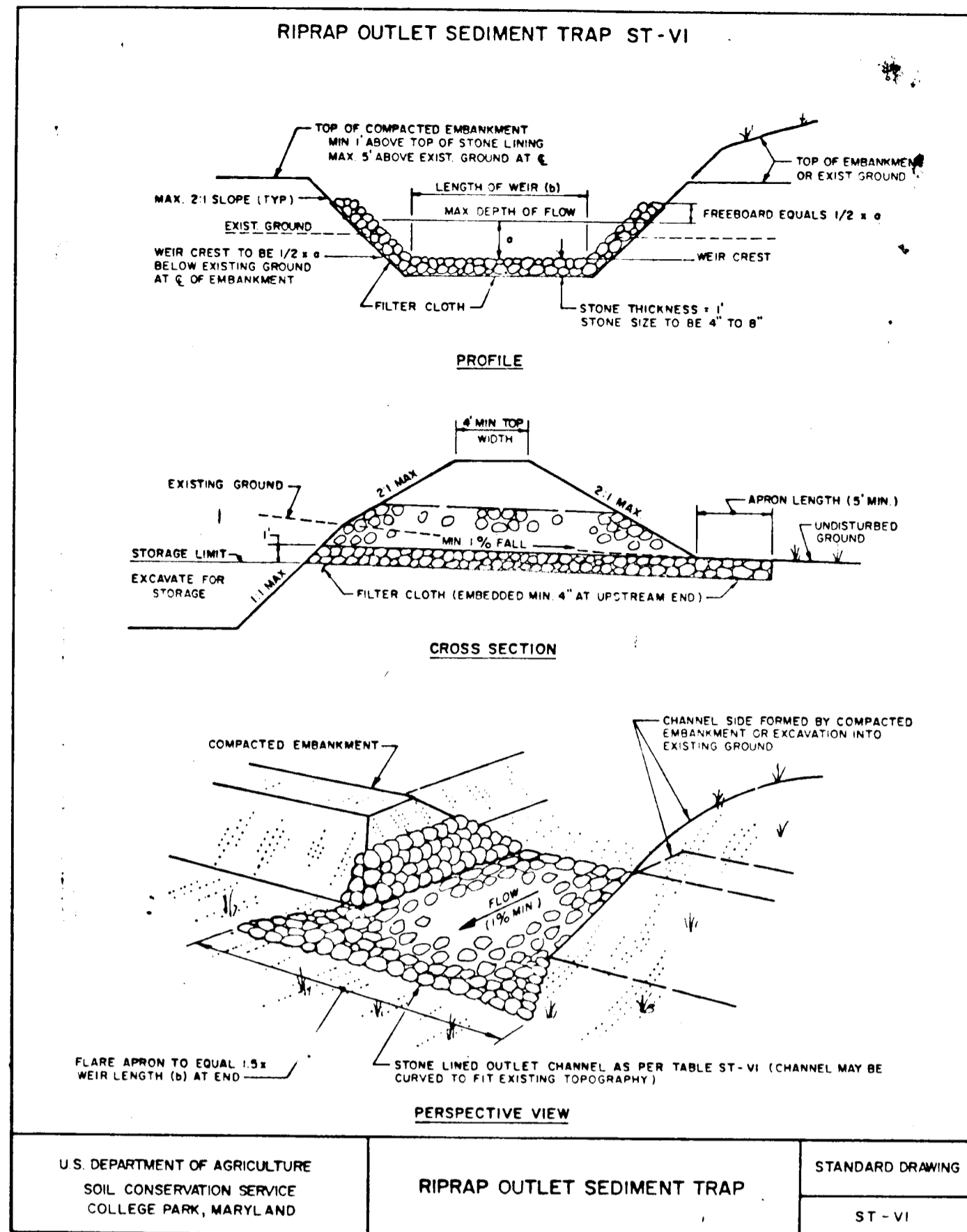
Kenneth J. McLeod 3/26/87

CERTIFICATION BY THE DEVELOPER
 I, Kenneth J. McLeod, do hereby certify that I am the author of the above described plan and that I am a duly Licensed Professional Engineer in the State of Maryland.

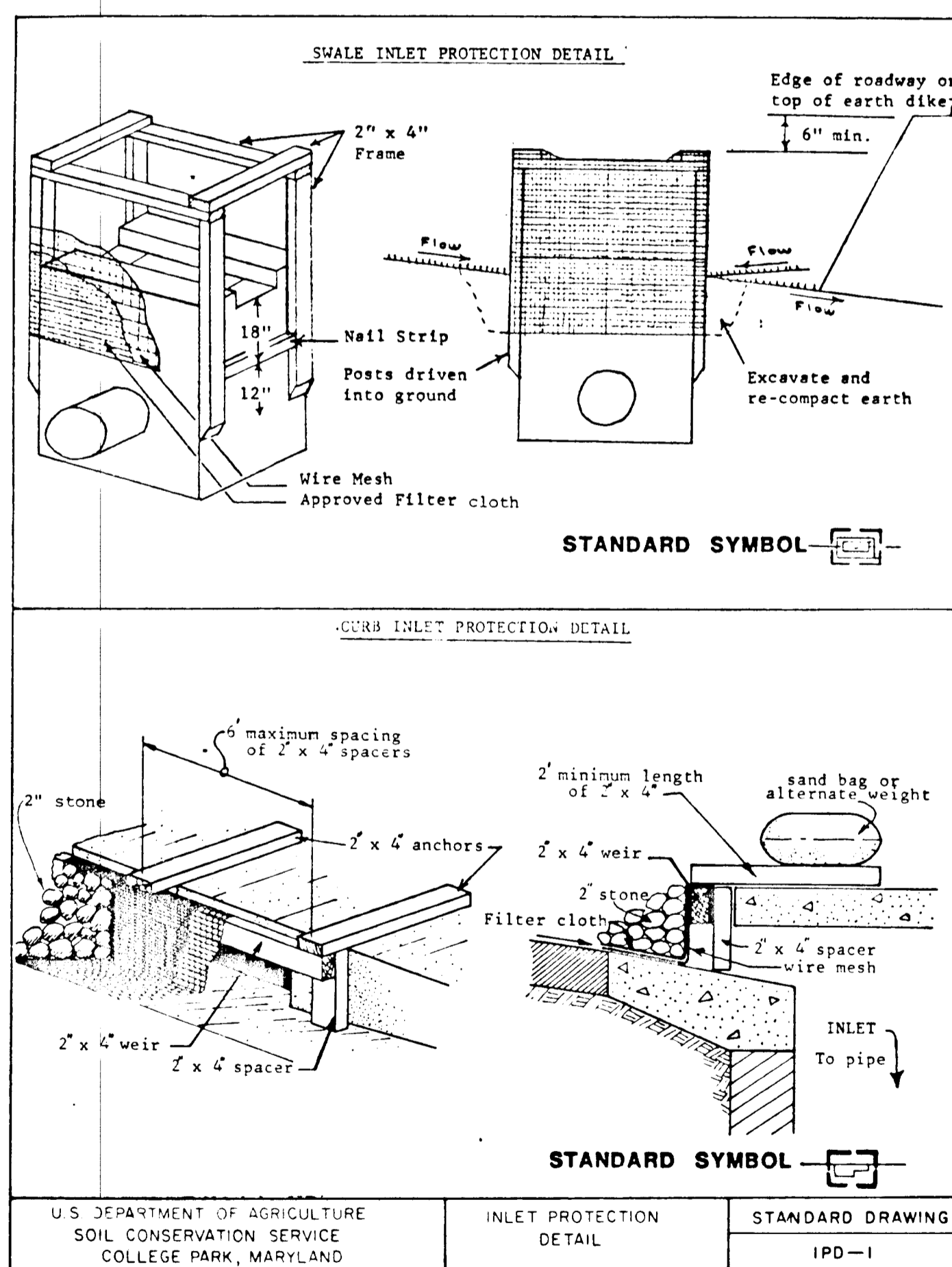
3/25/87

REVIEWED FOR HOWARD COUNTY S.C.D. AND MEETS TECHNICAL REQUIREMENTS.
 Kenneth J. McLeod 6/13/88

3/24/88	1	As per H.S.C.D. comment #9
REV. DATE	REV. NO.	REVISION DESCRIPTION
BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DEVELOPER ROSE / RICHMOND JOINT VENTURE		
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522		
PROJECT TITLE SEDIMENT CONTROL DETAILS		
SCALE: NO SCALE	DATE: 3/24/87	
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND		
REGISTERED ENGINEER NO. 1974		



- CONSTRUCTION SPECIFICATIONS FOR ST-VI**
1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
 3. All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
 4. Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
 5. Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level weir crest.
 6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
 7. Stone used in the outlet channel shall be four (4) to eight (8) inches (riprap). To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.
 8. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
 9. The structure shall be inspected after each rain and repaired as needed.
 10. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
 11. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
 12. Drainage area for this practice is limited to 15 acres or less.



CERTIFICATION BY THE ENGINEER

I CERTIFY THAT THIS PLAN AND SPECIFICATIONS REPRESENT A PROFESSIONAL ENGINEER'S DESIGN AND THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND.

Kenneth A. McCord 3/26/87

CERTIFICATION BY THE DEVELOPER

I HAVE READ THE PLAN AND SPECIFICATIONS AND I CERTIFY THAT THE SAME ACCORDING TO MY KNOWLEDGE AND BELIEF COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL LAWS, ORDINANCES, REGULATIONS AND CODES AND THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND.

David L. Carney 3/25/87

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

Kenneth A. McCord 3/25/87

SOIL CONSERVATION SERVICE

APPROVED *Stephen L. Fisher* 3/25/87

REGISTERED ENGINEER NO. 1974

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Francis W. Welton 6/16/88
CHIEF, LAND DEVELOPMENT DIVISION DATE

Francis W. Welton 6/17/88
CHIEF, BUREAU OF HIGHWAYS DATE

Francis W. Welton 6/29/88
CHIEF, BUREAU OF ENGINEERING DATE

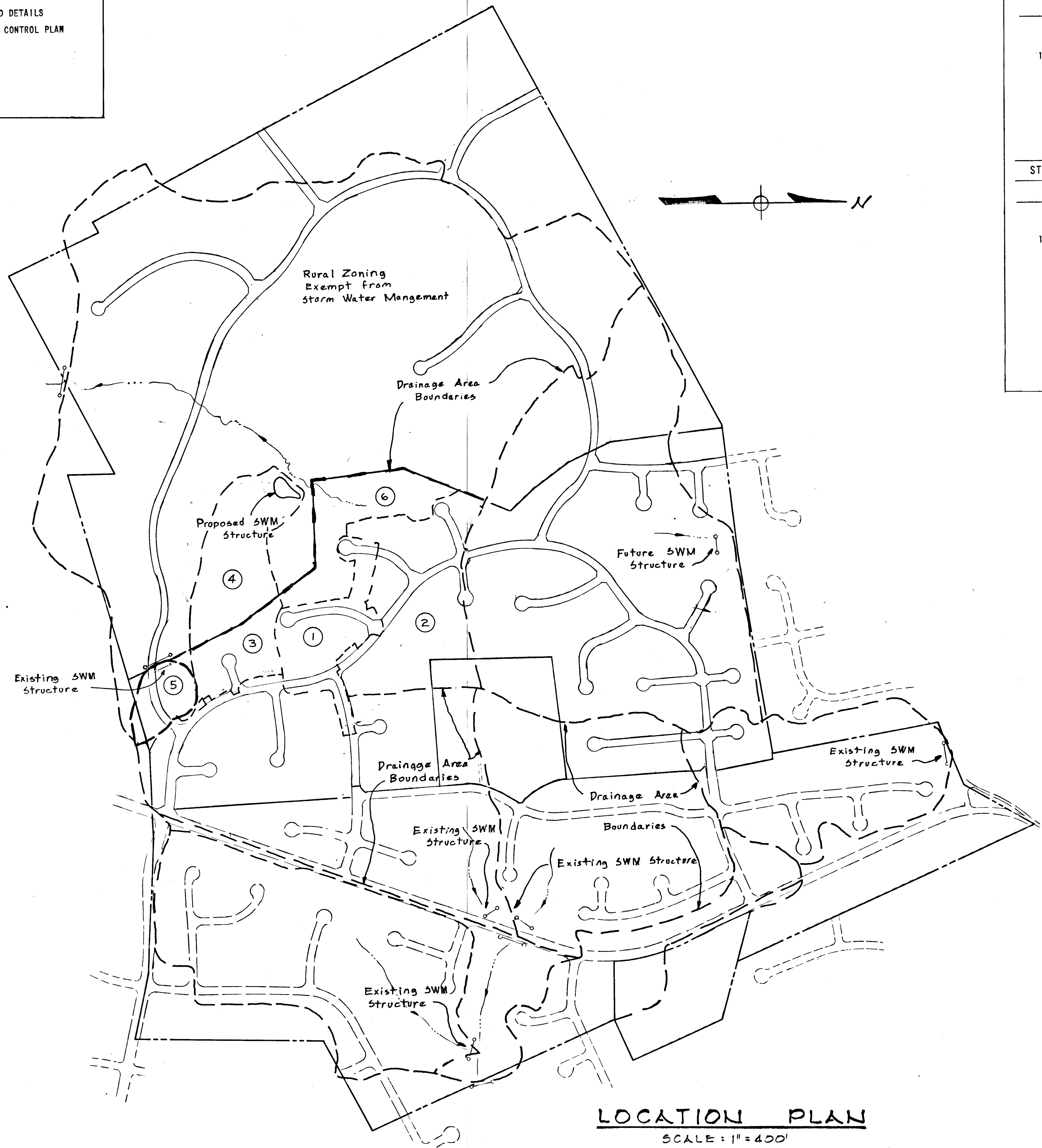
OFFICE OF PLANNING AND ZONING

Francis W. Welton 6/29/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION
		BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
		DEVELOPER ROSE / RICHMOND JOINT VENTURE
		PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2 LOTS 442-522
		PROJECT TITLE SEDIMENT CONTROL DETAILS
		SCALE: NO SCALE DATE 3/24/87
		WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND

SHEET INDEX

- 1. COVER SHEET
- 2. PLAN
- 3. DETAILS
- 4. NOTES AND DETAILS
- 5. SEDIMENT CONTROL PLAN



LOCATION PLAN
SCALE: 1" = 400'

STORMWATER MANAGEMENT DATA @ POND				INTERIM STORMWATER MANAGEMENT DATA @ POND		
STORM	Q1. (cfs)	Qout. (cfs)	ELEVATION (ft)	Q1. (cfs)	Qout. (cfs)	ELEVATION (ft)
2	45.5	2.9	424.1	77.4	7.1	425.3
10	113.2	21.3	426.0	152.3	27.8	427.4
100	203.6	51.7	428.5	245.1	102.1	429.4

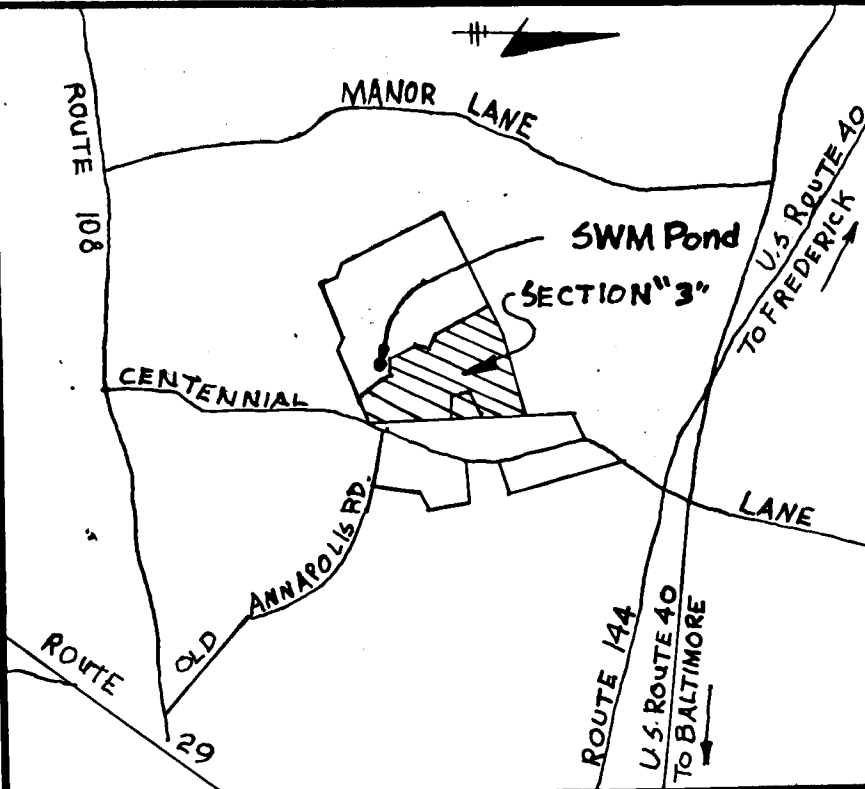
STORMWATER MANAGEMENT DATA @ DESIGN POINT			INTERIM STORMWATER MANAGEMENT DATA @ DESIGN POINT	
STORM	Qpre. (cfs)	Qpost (cfs)	Qpre. (cfs)	Qpost (cfs)
2	29.5	16.4	29.5	24.3
10	83.1	37.3	83.1	48.6
100	160.5	76.8	160.5	119.1

MISCELLANEOUS DATA

TOTAL DRAINAGE AREA -- PREDEVELOPMENT ----- 61.25 AC.
 TOTAL DRAINAGE AREA -- POST DEVELOPMENT ----- 62.88 AC.
 DRAINAGE AREA TO POND ONLY ----- 49.28 AC.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 6/21/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE
Graville W. Wessland 6/27/87
 CHIEF, BUREAU OF HIGHWAYS DATE
Robert W. Anderson 6/27/88
 CHIEF, BUREAU OF ENGINEERING DATE

OFFICE OF PLANNING AND ZONING
 6/29/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



VICINITY MAP
SCALE: 1" = 1/2 MILE

3/24/88	1	As per H&CD comment #1
REV DATE	REV NO.	REVISION DESCRIPTION
BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DEVELOPER ROSE / RICHMOND JOINT VENTURE		
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2		
PROJECT TITLE STORMWATER MANAGEMENT		
SCALE: AS SHOWN		DATE: 12/31/87
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND		
		12/31/87 DATE

721

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

James M. White 6/13/88
 U.S. SOIL CONSERVATION SERVICE DATE

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

APPROVED: *Stefan L. Ehrlich* 6/13/88
 HOWARD S.C.D. DATE

PLAN NUMBER

CERTIFICATION BY THE DEVELOPER

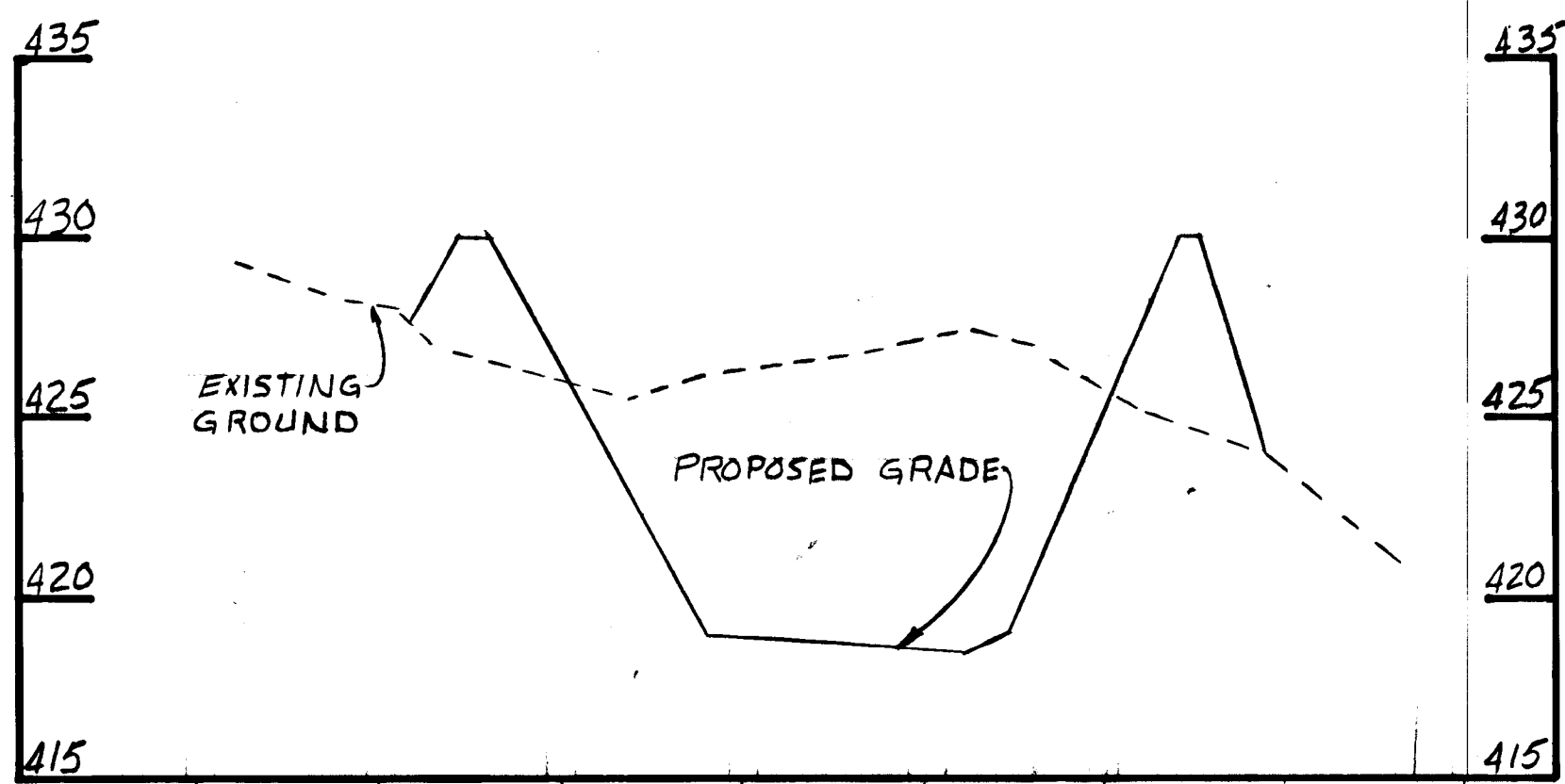
"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION."

David L. Carney 12/31/87
 DAVID L. CARNEY DATE

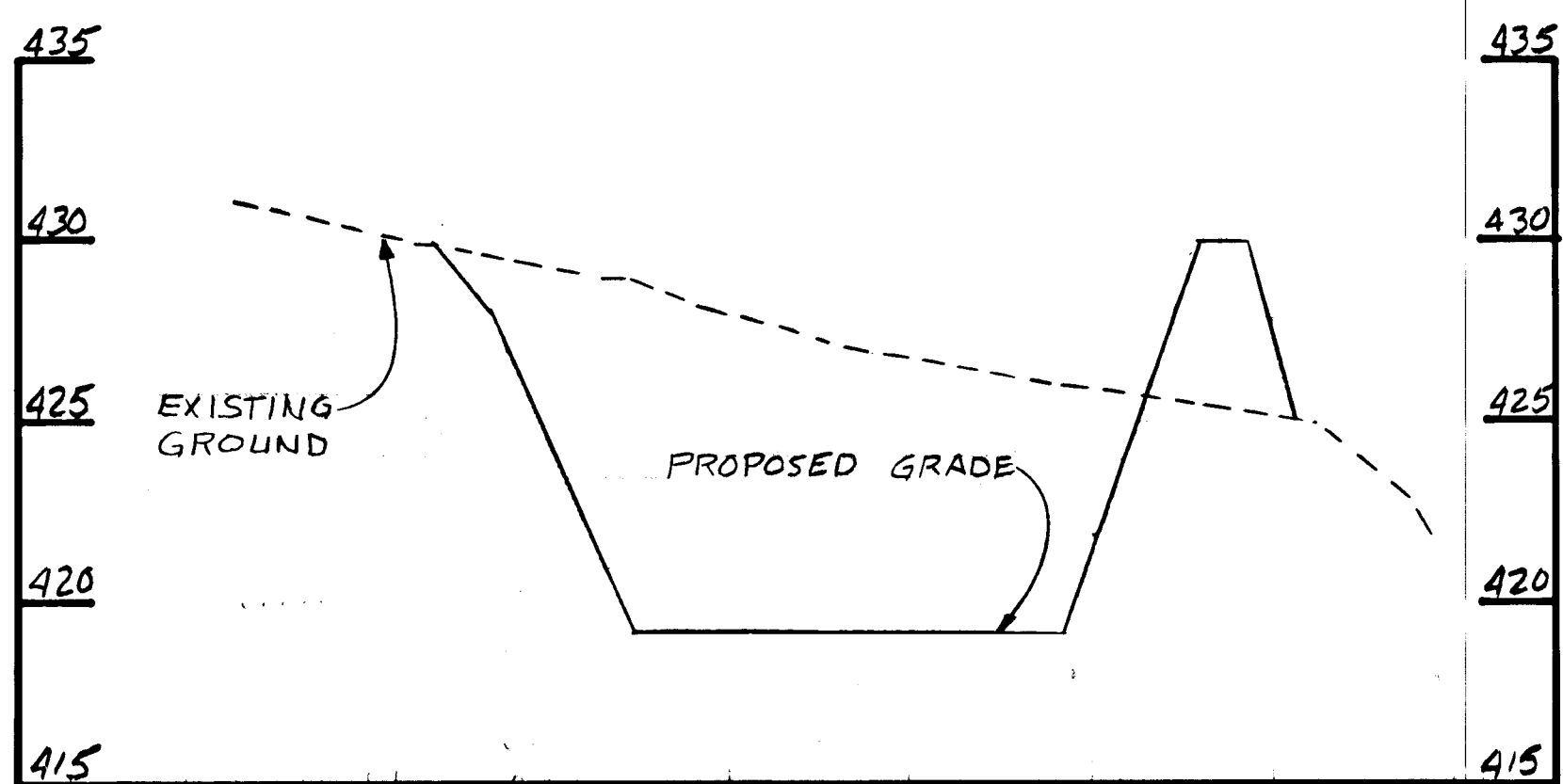
CERTIFICATION BY THE ENGINEER

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

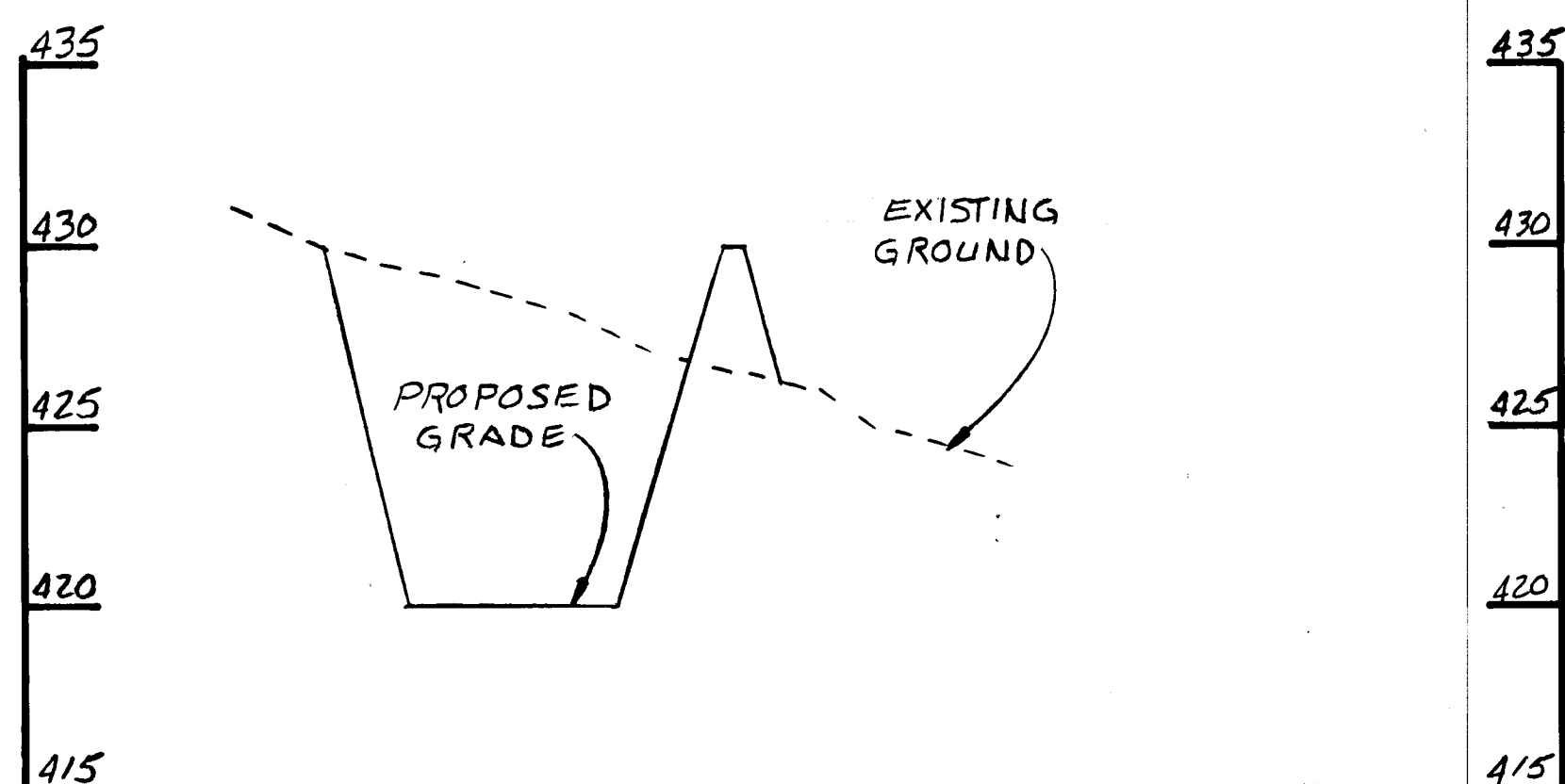
Kenneth A. McCord 12/31/87
 KENNETH A. MCCORD. P.E. NO. 1974 DATE



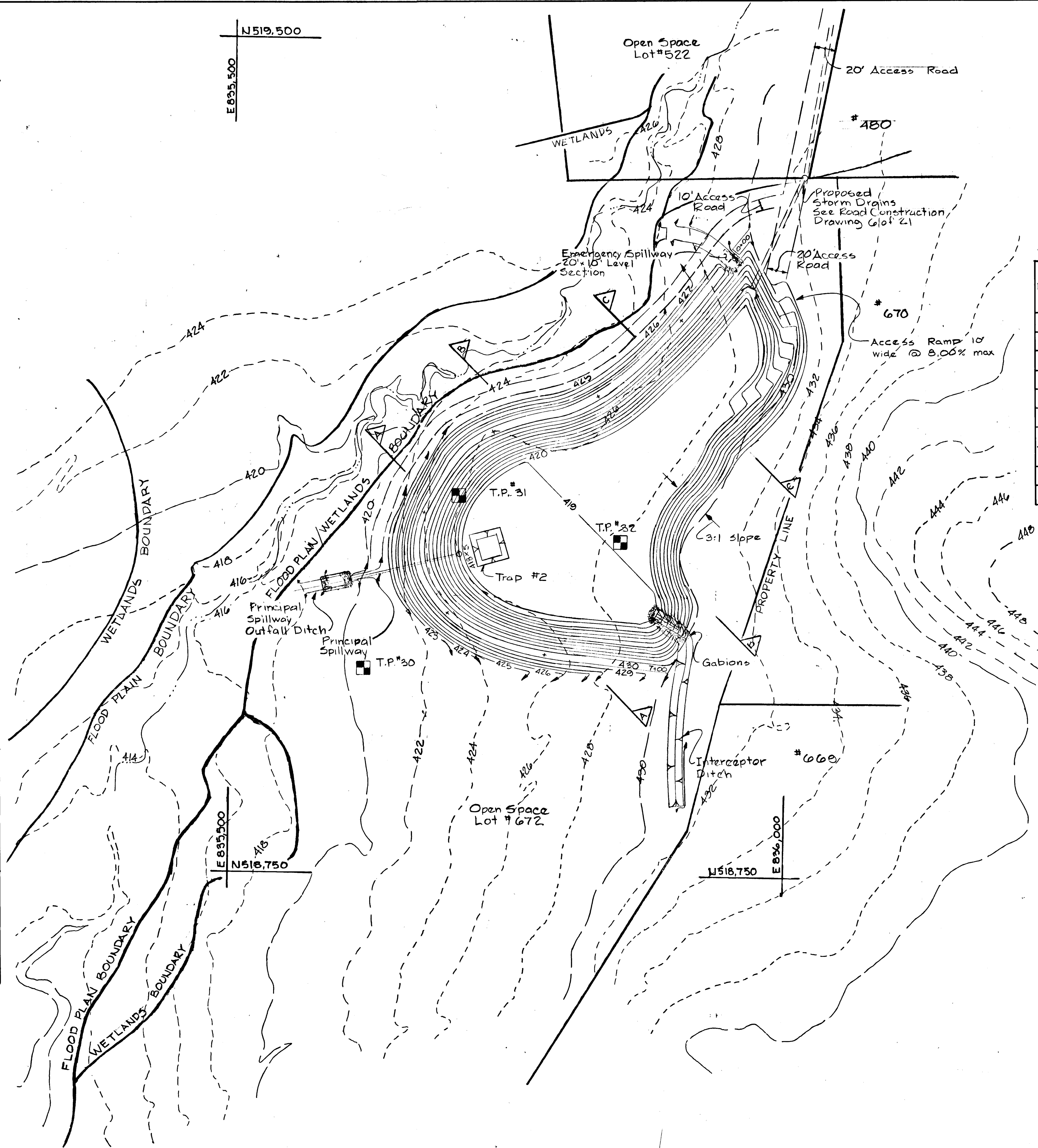
SECTION A-A
Scale H: 1"=50'
V: 1"=5'



SECTION B-B
Scale H: 1"=50'
V: 1"=5'



SECTION C-C
Scale H: 1"=50'
V: 1"=5'



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Donald L. Garney 6/21/88
CHIEF, LAND DEVELOPMENT DIVISION DATE

Braville W. Weiland 6/27/88
CHIEF, BUREAU OF HIGHWAYS DATE

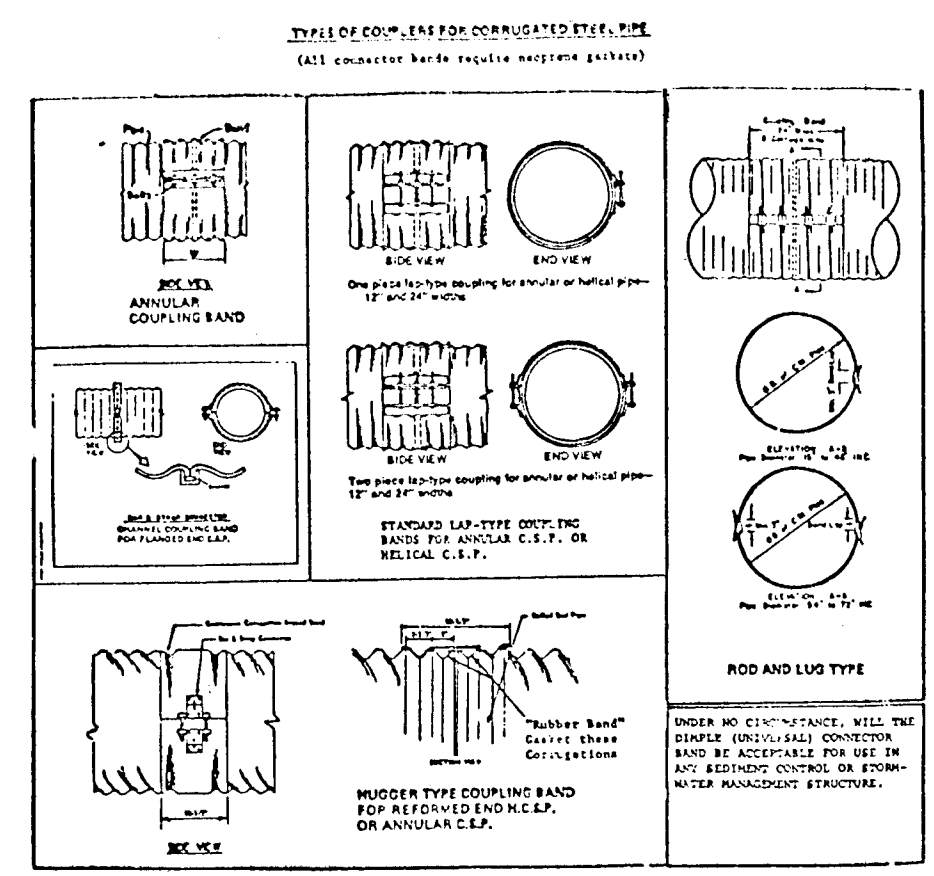
Elizabeth Anderson Salvo 6/29/88
CHIEF, BUREAU OF ENGINEERING, acting DATE

OFFICE OF PLANNING AND ZONING

James Reuther 6/29/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

TEST PIT LOGS

TEST NUMBER	DEPTH BELOW GRADE	VISUAL CLASSIFICATION AND (UNIFIED SYSTEM)	WATER CONTENT
80	3.0	GRAY AND BROWN SANDY SILTY CLAY (CL)	14.0
	7.0	GRAY AND BROWN CLAYEY SAND (SC)	22.7
81	3.0	YELLOW-BROWN SILTY CLAY, TRACE OF SAND (CL)	26.6
	7.0	GRAY AND BROWN SILTY CLAY (CL)	32.9
82	1.5	BROWN SILTY CLAY, TRACE OF SAND (CL)	18.8
	2.5	YELLOW-BROWN CLAYEY SILT, TRACE OF SAND (ML)	27.1
	5.0	YELLOW-BROWN SANDY CLAYEY SILT (ML)	26.8
	8.0	YELLOW AND GRAY CLAYEY SAND (SC)	24.5



REV. DATE	REV. NO.	REVISION DESCRIPTION
3/24/88	2	As per H&CD comments #4,7,9,11
3/24/88	1	As per DPW comments #9,14,116

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPMENT
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 4 PHASE 2

PROJECT TITLE:
STORMWATER MANAGEMENT PLAN

SCALE: 1"=50' DATE: 12-31-87

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

Kenneth A. McCord
KENNETH A. MCCORD
REGISTERED ENGINEER NO. 1974

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

APPROVED: *Stephen L. Huh* 6/13/88
HOWARD S.C.D. DATE

James M. Salvo 6/13/88
U.S. SOIL CONSERVATION SERVICE DATE

PLAN NUMBER

CERTIFICATION BY THE DEVELOPER

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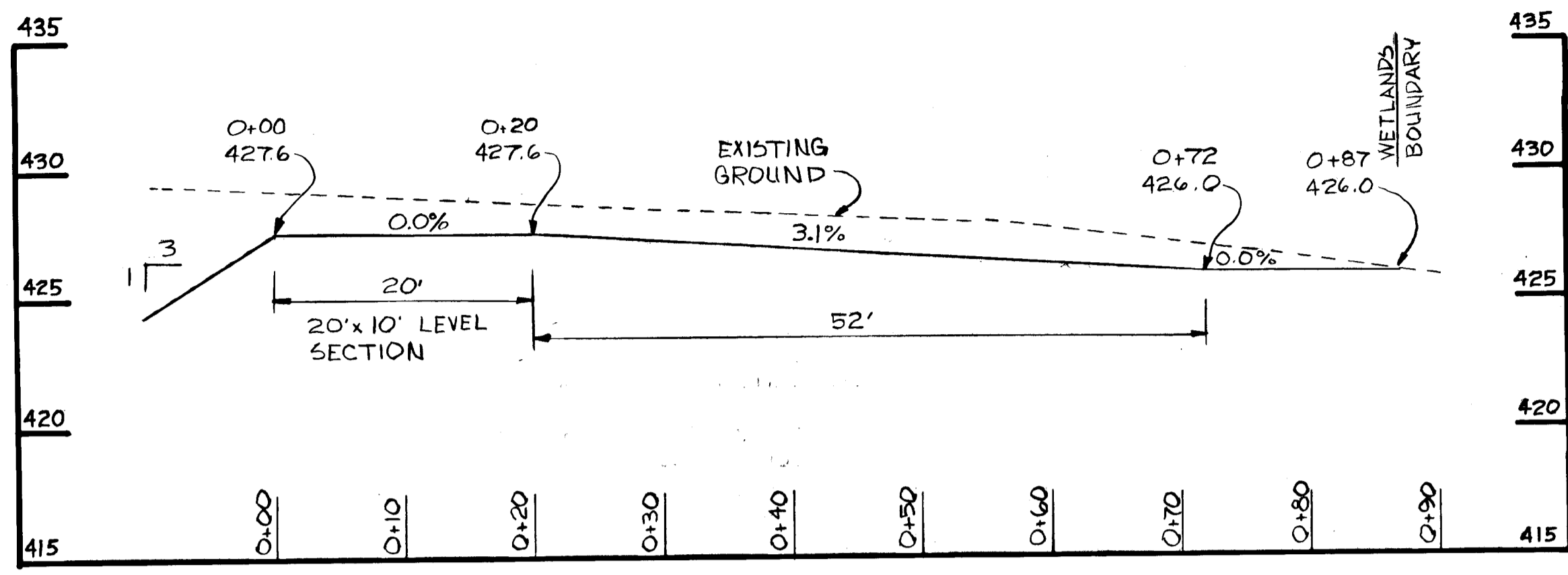
David L. Garney
DAVID L. GARNEY DATE: 12/31/87

CERTIFICATION BY THE ENGINEER

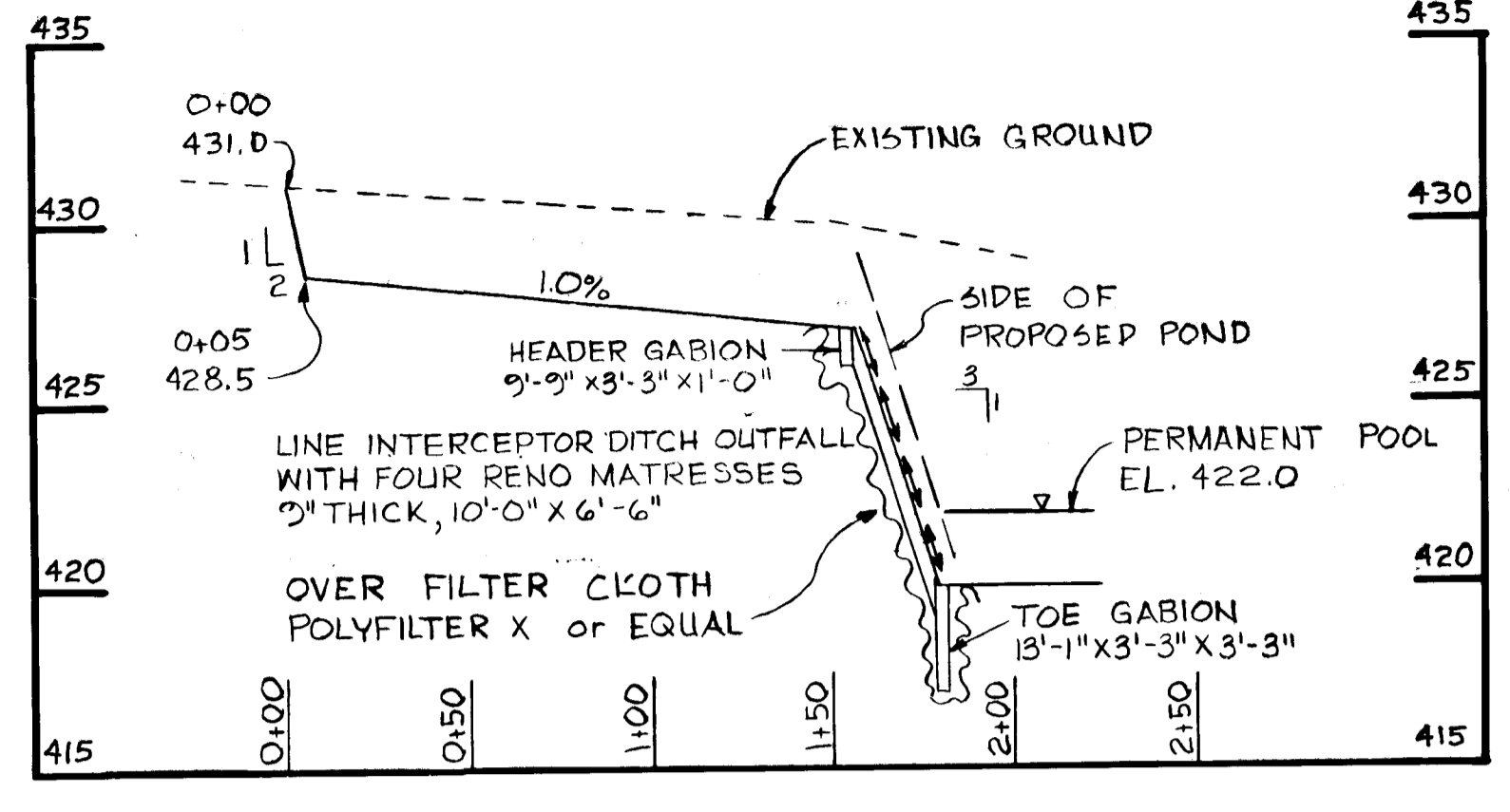
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Kenneth A. McCord
KENNETH A. MCCORD, P.E. NO. 1974 DATE: 12/31/87

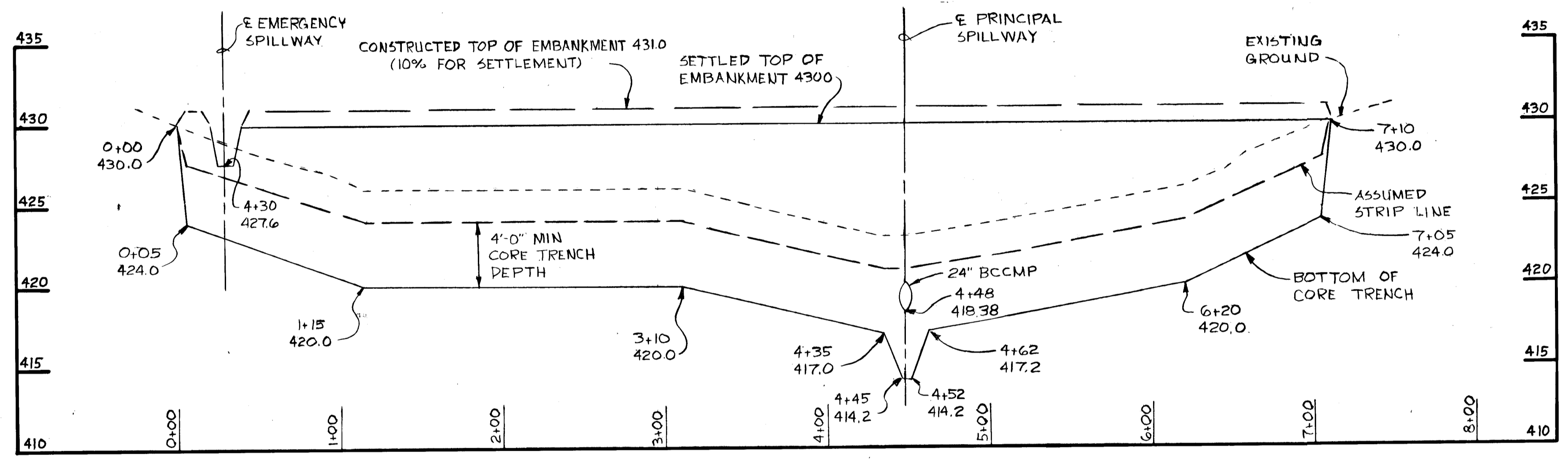
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 6/21/88 DATE
 [Signature] 6/27/88 DATE
 [Signature] 6/29/88 DATE
 CHIEF, BUREAU OF ENGINEERING
 OFFICE OF PLANNING AND ZONING
 PLANNING AND LAND DEVELOPMENT



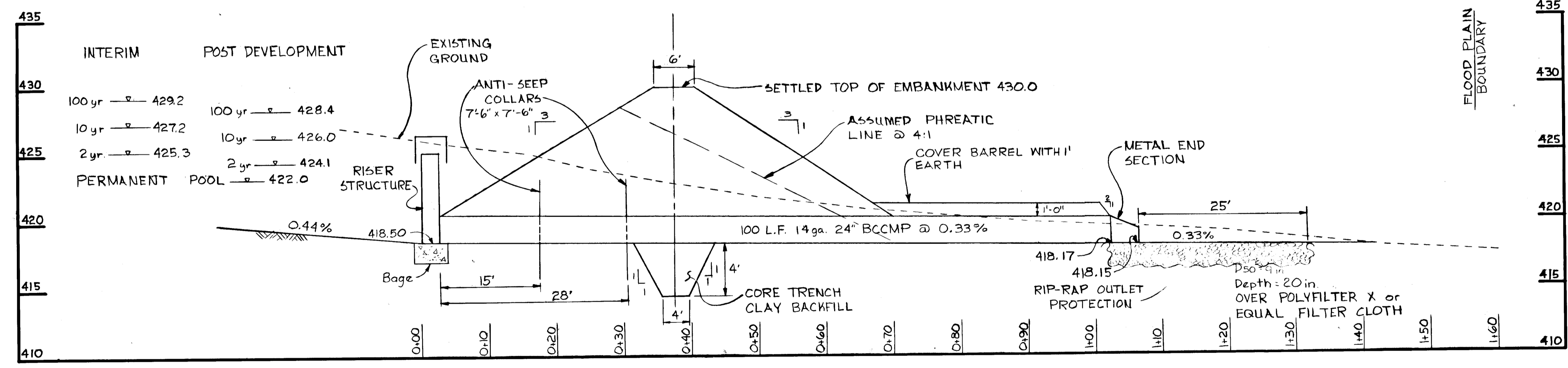
PROFILE - EMERGENCY SPILLWAY
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 V: 1" = 5'



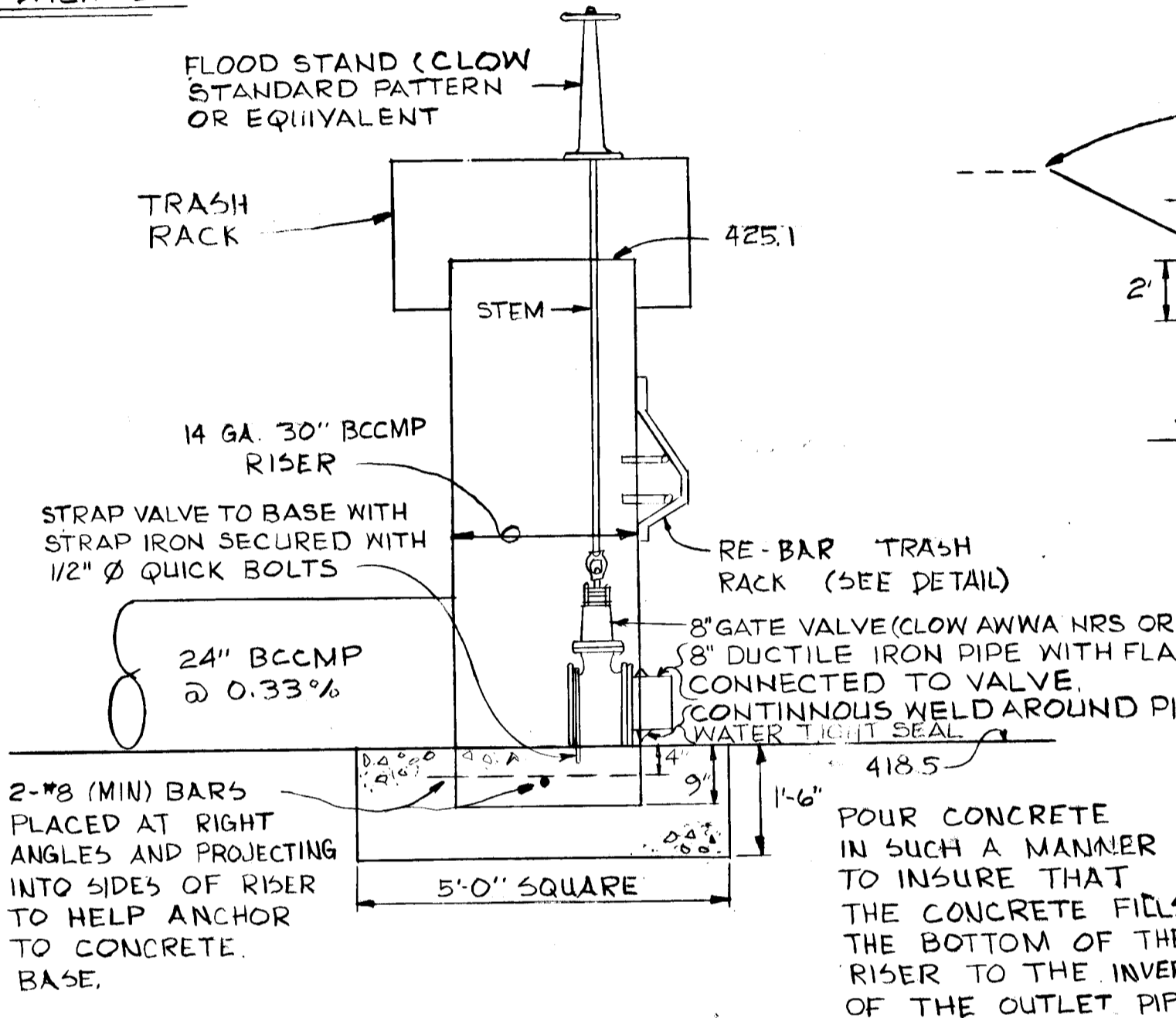
PROFILE - INTERCEPTOR DITCH E
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 V: 1" = 5'



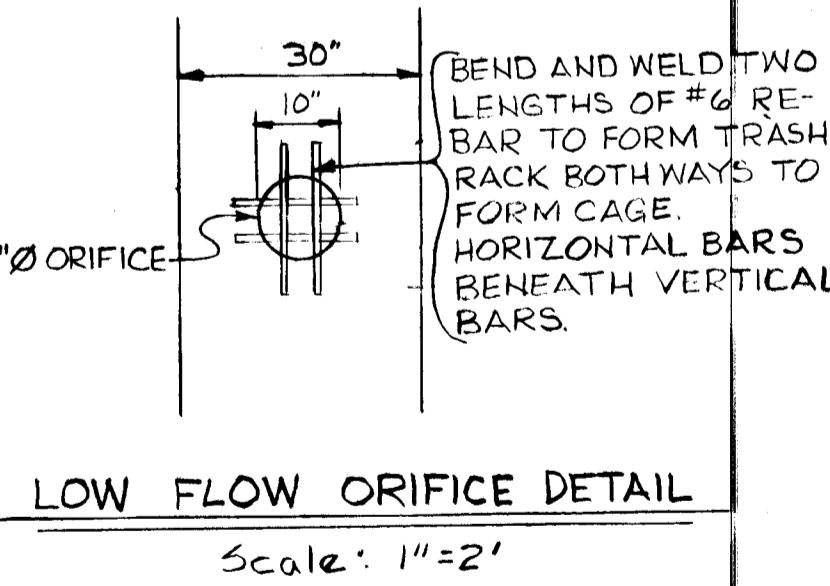
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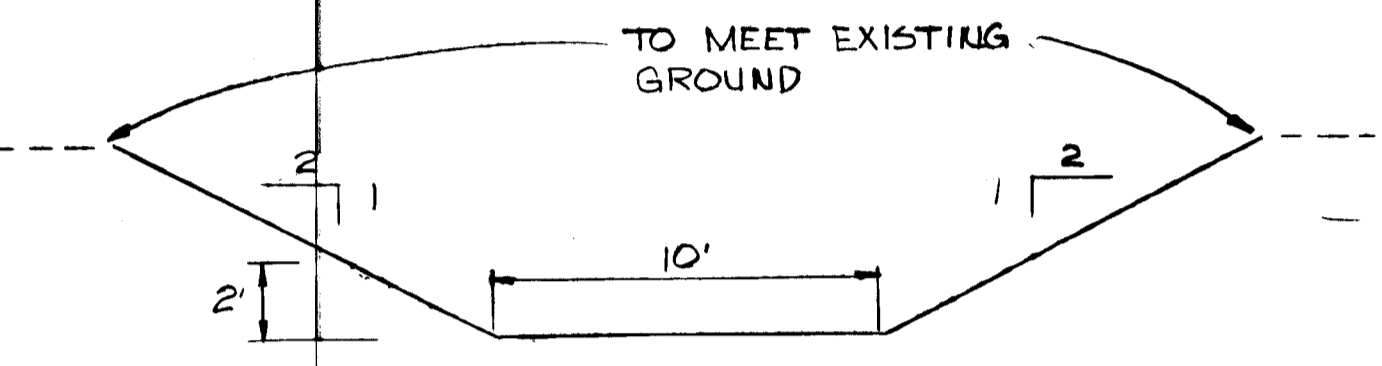
PROFILE - PRINCIPAL SPILLWAY E
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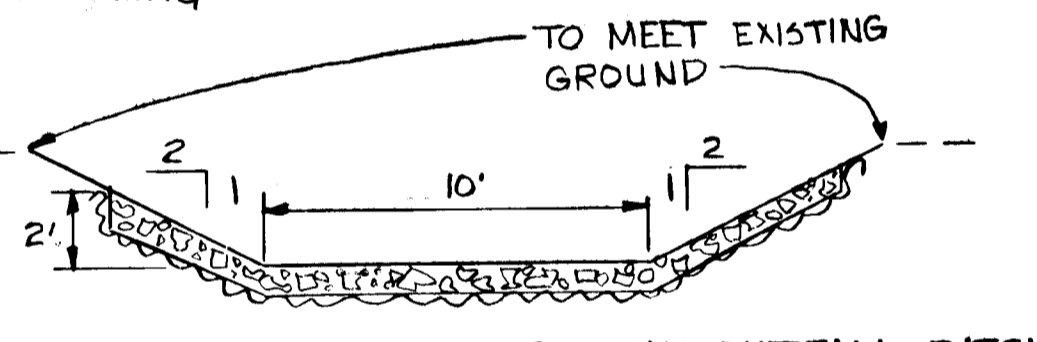
RISER STRUCTURE
 Scale: 1" = 2'



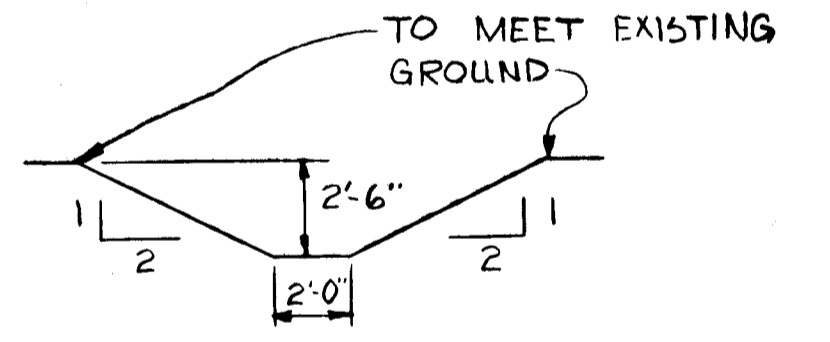
LOW FLOW ORIFICE DETAIL
 Scale: 1" = 2'



SECTION - EMERGENCY SPILLWAY
 Scale: 1" = 5'



SECTION - PRINCIPAL SPILLWAY OUTFALL DITCH
 Scale: 1" = 5'



SECTION - INTERCEPTOR DITCH
 Scale: 1" = 5'

3/24/88	1	As per HSCD comments #345678, 10/11
REV. DATE	REV. NO.	REVISION DESCRIPTION
BURLEIGH MANOR 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DEVELOPMENT ROSE/RICHMOND JOINT VENTURE		
PROJECT AREA BURLEIGH MANOR SECTION 3 AREA 4 PHASE 2		
PROJECT TITLE: STORMWATER MANGEMENT DETAILS		
SCALE: AS SHOWN		DATE: 12/31/87

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
 [Signature] 6/13/88 DATE
 U.S. SOIL CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: [Signature] 6/13/88 DATE
 HOWARD S.C.D.

CERTIFICATION BY THE DEVELOPER
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 [Signature] 12/31/87 DATE
 DAVID L. CARNEY

CERTIFICATION BY THE ENGINEER
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 [Signature] 12-31-87 DATE
 KENNETH A. MCCORD, P.E. NO. 1974

WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 BALTIMORE, MARYLAND
 [Signature] KENNETH A. MCCORD
 REGISTERED ENGINEER NO. 1974

SOIL CONSERVATION SERVICE

MARYLAND
CONSTRUCTION SPECIFICATIONS
FOR PONDS

THESE SPECIFICATIONS ARE APPROPRIATE TO PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE 378.

I. SITE PREPARATION

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

AREAS TO BE COVERED BY THE POND OR RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE.

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

II. EARTH FILL

MATERIAL

THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREA OR AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, OVERSIZE STONES, FROZEN OR OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION WHICH PROVIDES FOR ANTICIPATED SETTLEMENT TO THE DESIGN ELEVATION. THE FILL HEIGHT ALL ALONG THE LENGTH OF THE EMBANKMENT SHALL BE INCREASED ABOVE THE DESIGN ELEVATION (INCLUDING FREEBOARD) AS SHOWN ON THE PLANS.

PLACEMENT

AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN 8-INCH MAXIMUM THICKNESS (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST POROUS BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT.

COMPACTION

THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIERED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED.

WHERE A MINIMUM REQUIRED DENSITY IS SPECIFIED, EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY AND IS TO BE CERTIFIED BY THE ENGINEER.

CUTOFF TRENCH

WHERE SPECIFIED, A CUTOFF TRENCH SHALL BE EXCAVATED ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE AS SHOWN ON THE DRAWINGS, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL MATERIAL FOR THE CUTOFF TRENCH SHALL BE THE MOST IMPERVIOUS MATERIAL AVAILABLE AND SHALL BE COMPACTED WITH EQUIPMENT OR ROLLER TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

III. STRUCTURAL BACKFILL

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

IV. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

A. CORRUGATED METAL PIPE

- MATERIALS - (STEEL PIPE)** - THIS PIPE AND ITS APPURTENANCES SHALL BE GALVANIZED AND FULLY BITUMINOUS COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A WITH WATERTIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS ARE COMMERCIALY AVAILABLE: NEXON, PLASTI-COTE, BLAC-KLAD, AND BETH-CU-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-246.
- MATERIALS-(ALUMINIZED STEEL PIPE)** - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274-791 WITH WATERTIGHT COUPLING BANDS OR FLANGES.
- MATERIALS-(ALUMINUM PIPE)** - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC. MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE LESS THAN 9 AND GREATER THAN 4.
- CONNECTIONS** - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. WATERTIGHT COUPLING BANDS OR FLANGES SHALL BE USED AT ALL JOINTS ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.
- BEDDING** - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.
- LAYING PIPE** - THE PIPE SHALL BE PLACED WITH INSIDE CIRCUMFERENTIAL LAPS POINTING DOWNSTREAM AND WITH THE LONGITUDINAL LAPS AT THE SIDES.
- BACKFILLING** SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.
- OTHER DETAILS** (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

B. REINFORCED CONCRETE PIPE

- MATERIALS** - REINFORCED CONCRETE PIPE SHALL HAVE A RUBBER GASKET JOINT AND SHALL EQUAL OR EXCEED ASTM SPECIFICATION C-361. AN APPROVED EQUIVALENT IS ANMA SPECIFICATION C-301.
- BEDDING** - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3", OR AS SHOWN ON THE DRAWINGS.

B. REINFORCED CONCRETE PIPE - Continued

- LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE.
- BACKFILLING SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.
- OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

V. CONCRETE

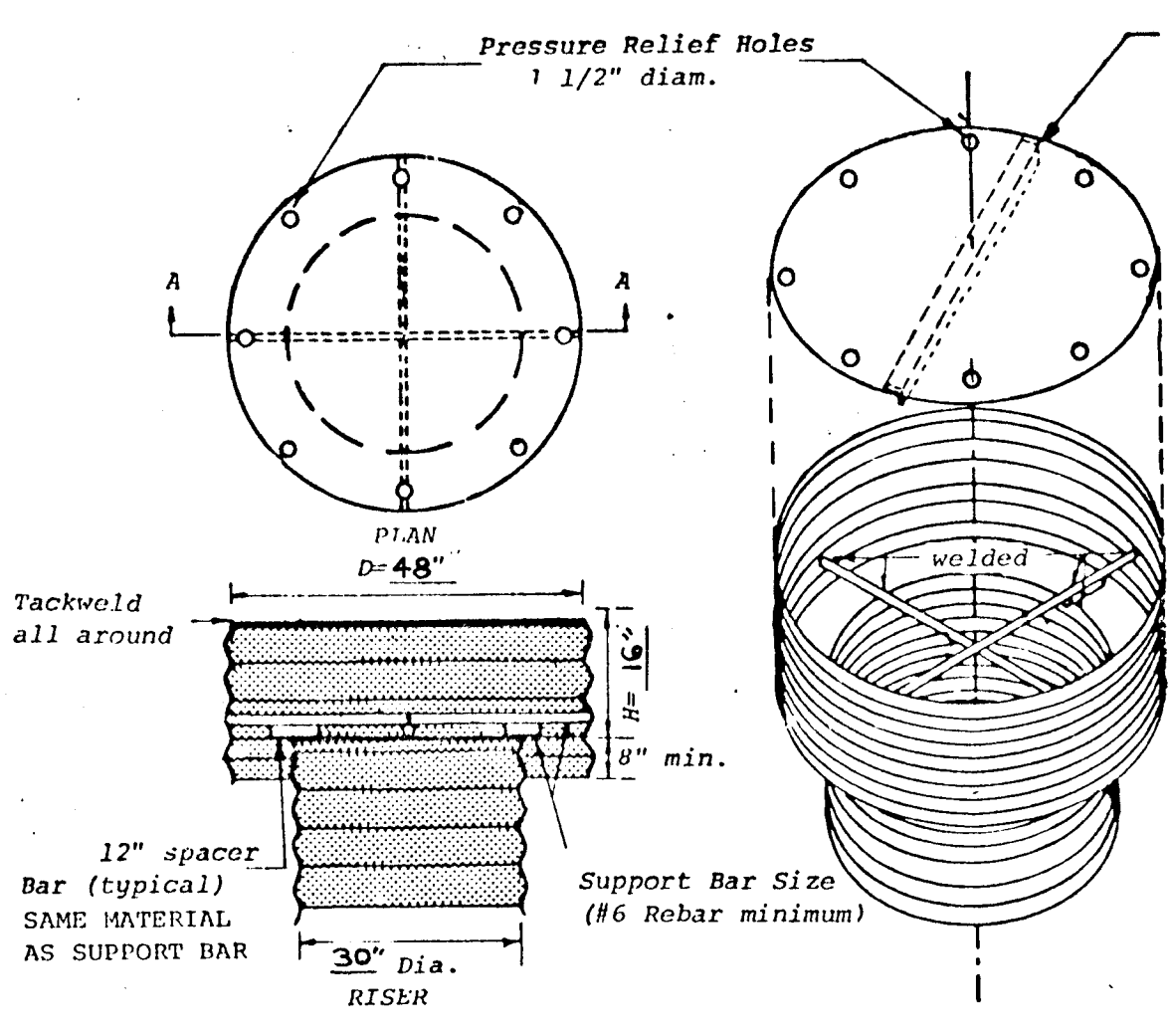
- MATERIALS**
 - CEMENT - NORMAL PORTLAND CEMENT SHALL CONFORM TO THE LATEST ASTM SPECIFICATION C-150.
 - WATER - THE WATER USED IN CONCRETE SHALL BE CLEAN, FREE FROM OIL, ACID, ALKALI, SCALES, ORGANIC MATTER OR OTHER OBJECTIONABLE SUBSTANCES.
 - SAND - THE SAND USED IN CONCRETE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND SHALL BE WELL GRADED WITH 100 PERCENT PASSING A ONE-QUARTER INCH SIEVE. LIMESTONE SAND SHALL NOT BE USED.
 - COARSE AGGREGATE - THE COARSE AGGREGATE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND FREE FROM CLAY OR DIRT. IT SHALL BE WELL GRADED WITH A MAXIMUM SIZE OF ONE AND ONE-HALF (1-1/2) INCHES.
 - REINFORCING STEEL - THE REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE BILLET STEEL CONFORMING TO ASTM SPECIFICATION A-615.
- DESIGN MIX** - THE CONCRETE SHALL BE MIXED IN THE FOLLOWING PROPORTIONS, MEASURED BY WEIGHT. THE WATER-CEMENT RATIO SHALL BE 5-1/2 TO 6 U.S. GALLONS OF WATER PER 94 POUND BAG OF CEMENT. THE PROPORTION OF MATERIALS FOR THE TRIAL MIX SHALL BE 1:2:3-1/2. THE COMBINATION OF AGGREGATES MAY BE ADJUSTED TO PRODUCE A PLASTIC AND WORKABLE MIX THAT WILL NOT PRODUCE HARSHNESS IN PLACING OR HONEYCOMBING IN THE STRUCTURE.
- MIXING** - THE CONCRETE INGREDIENTS SHALL BE MIXED IN BATCH MIXERS UNTIL THE MIXTURE IS HOMOGENEOUS AND OF UNIFORM CONSISTENCY. THE MIXING OF EACH BATCH SHALL CONTINUE FOR NOT LESS THAN ONE AND ONE-HALF MINUTES AFTER ALL THE INGREDIENTS, EXCEPT THE FULL AMOUNT OF WATER, ARE IN THE MIXER. THE MINIMUM MIXING TIME IS PREDICTED ON PROPER CONTROL OF THE SPEED OF ROTATION OF THE MIXER AND OF THE INTRODUCTION OF THE MATERIALS, INCLUDING WATER, INTO THE MIXER. WATER SHALL BE ADDED PRIOR TO DURING, AND FOLLOWING THE MIXER-CHARGING OPERATIONS. EXCESSIVE OVERMIXING REQUIRING THE ADDITION OF WATER TO PRESERVE THE REQUIRED CONCRETE CONSISTENCY SHALL NOT BE PERMITTED. TRUCK MIXING WILL BE ALLOWED PROVIDED THAT THE USE OF THIS METHOD SHALL CAUSE NO VIOLATION OF ANY APPLICABLE PROVISIONS OF THE SPECIFICATIONS GIVEN HERE.
- FORMS** - THE FORMS SHALL HAVE SUFFICIENT STRENGTH AND RIGIDITY TO HOLD THE CONCRETE AND TO WITHSTAND THE NECESSARY PRESSURE, TAMPING, AND VIBRATION WITHOUT DEFLECTION FROM THE PRESCRIBED LINES. THEY SHALL BE MORTAR-TIGHT AND CONSTRUCTED SO THAT THEY CAN BE REMOVED WITHOUT HAMMERING OR PRYING AGAINST THE CONCRETE. THE INSIDE OF FORMS SHALL BE OILED WITH A NON-STAINING MINERAL OIL OR THOROUGHLY WETTED BEFORE CONCRETE IS PLACED. FORMS MAY BE REMOVED 24 HOURS AFTER THE PLACEMENT OF CONCRETE. ALL WIRE TIES AND OTHER DEVICES USED SHALL BE RECESSED FROM THE SURFACE OF THE CONCRETE.
- REINFORCING STEEL** - ALL REINFORCING MATERIAL SHALL BE FREE OF DIRT, RUST, SCALE, OIL, PAINT OR ANY OTHER COATINGS. THE STEEL SHALL BE ACCURATELY PLACED AND SECURELY TIED AND BLOCKED INTO POSITION SO THAT NO MOVEMENT OF THE STEEL WILL OCCUR DURING PLACEMENT OF CONCRETE.
- CONSOLIDATING** - CONCRETE SHALL BE CONSOLIDATED WITH INTERNAL TYPE MECHANICAL VIBRATORS. VIBRATION SHALL BE SUPPLEMENTED BY SPADING AND HAND TAMPING AS NECESSARY TO INSURE SMOOTH AND DENSE CONCRETE ALONG FORM SURFACES, IN CORNERS, AND AROUND EMBEDDED ITEMS.
- FINISHING** - DEFECTIVE CONCRETE, HONEYCOMBED AREAS, VOIDS LEFT BY THE REMOVAL OF TIE RODS, RIDGES ON ALL CONCRETE SURFACES PERMANENTLY EXPOSED TO VIEW OR EXPOSED TO WATER ON THE FINISHED STRUCTURE, SHALL BE REPAIRED IMMEDIATELY AFTER THE REMOVAL OF FORMS. ALL VOIDS SHALL BE REAMED AND COMPLETELY FILLED WITH DRY-PATCHING MORTAR.
- PROTECTION AND CURING** - EXPOSED SURFACES OF CONCRETE SHALL BE PROTECTED FROM THE DIRECT RAYS OF THE SUN FOR AT LEAST THE FIRST THREE (3) DAYS. ALL CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST TEN (10) DAYS AFTER BEING PLACED. MOISTURE MAY BE APPLIED BY SPRAYING OR SPRINKLING AS NECESSARY TO PREVENT THE CONCRETE FROM DRYING. CONCRETE SHALL NOT BE EXPOSED TO FREEZING DURING THE CURING PERIOD. CURING COMPOUNDS MAY ALSO BE USED.
- PLACING TEMPERATURE** - CONCRETE MAY NOT BE PLACED AT TEMPERATURES BELOW 37°F WITH THE TEMPERATURE FALLING, OR 34° WITH THE TEMPERATURE RISING.

VI. STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SLOPE AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING (IF REQUIRED) IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

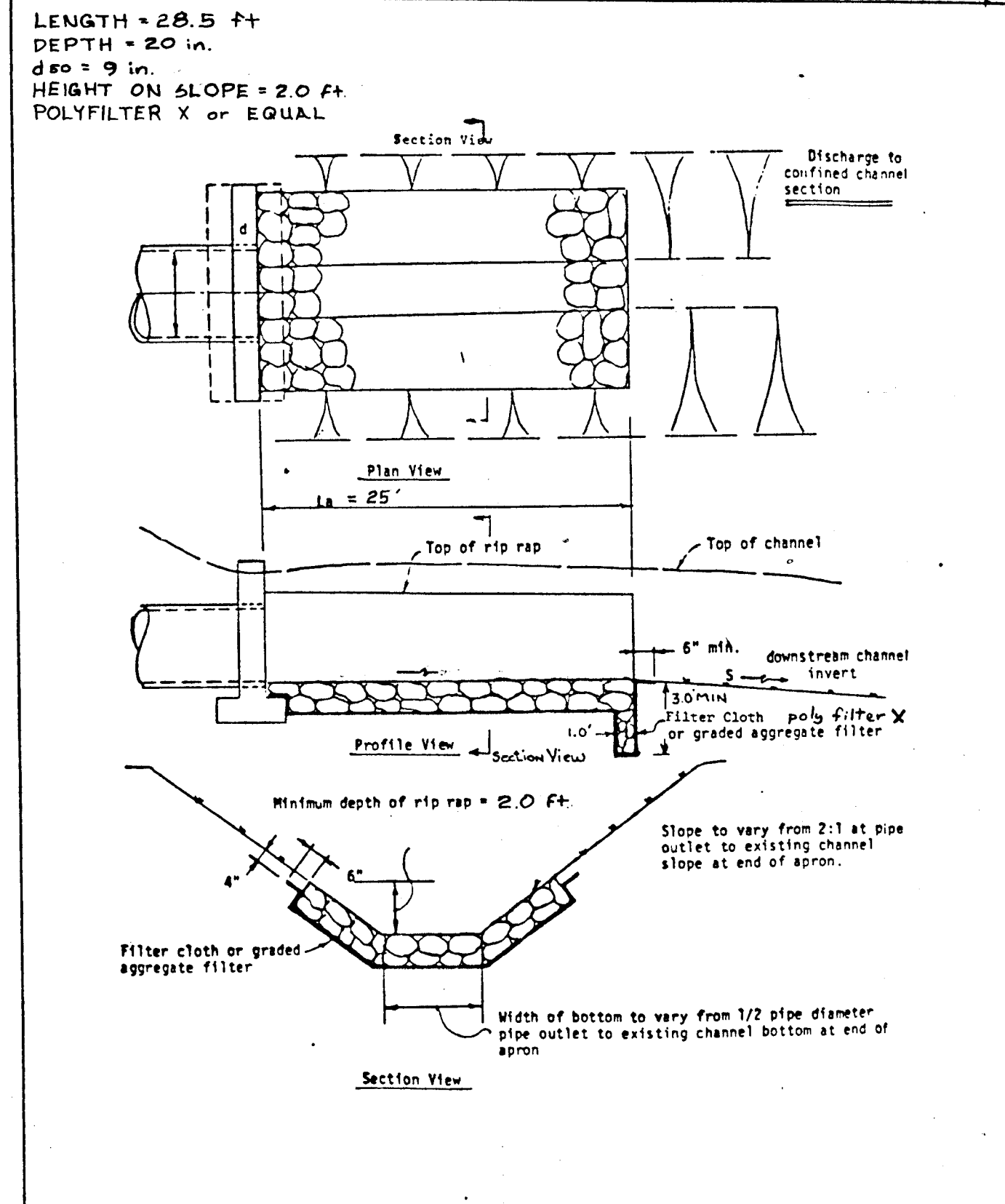
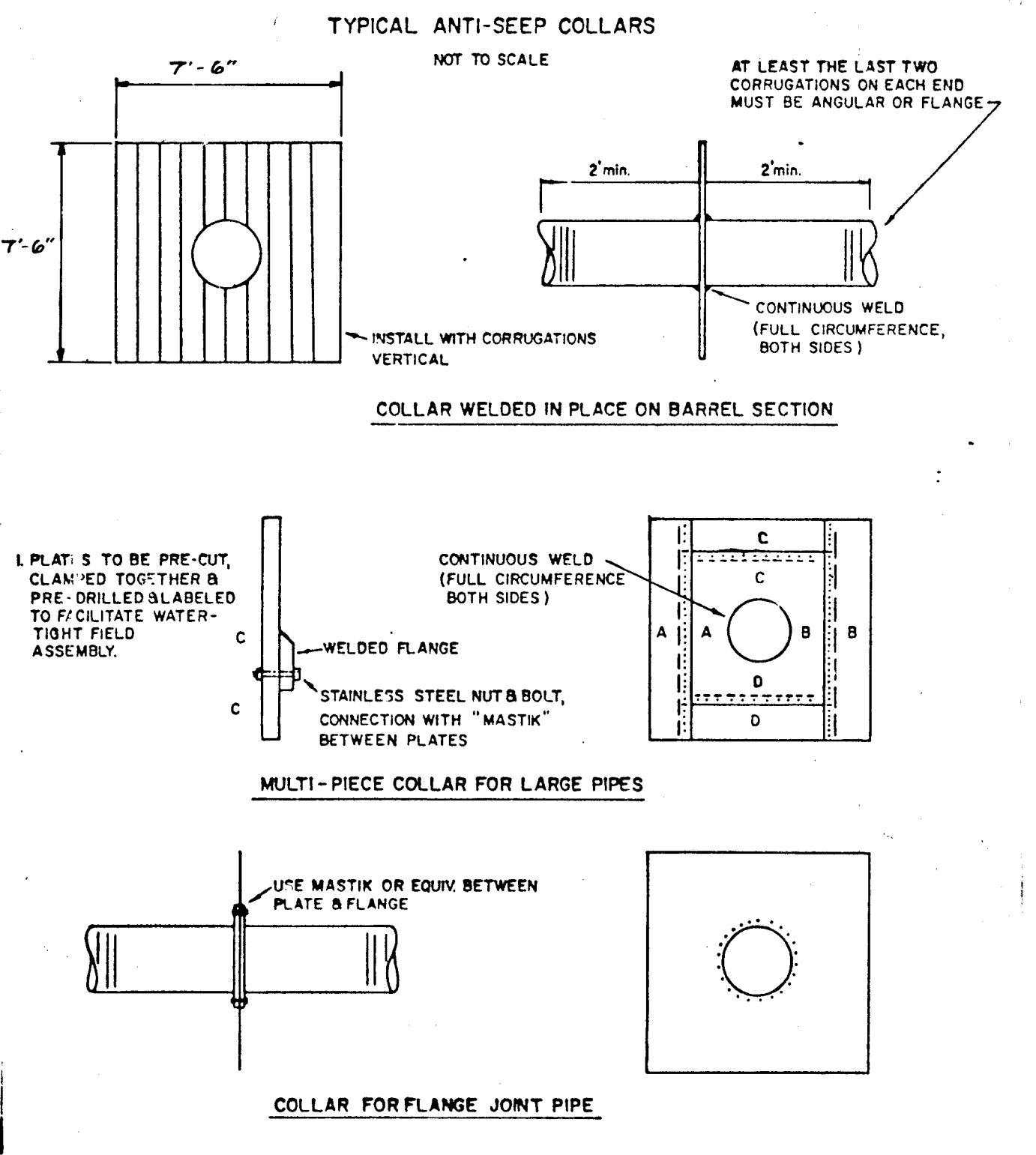
VII. EROSION AND SEDIMENT CONTROL

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



- Top stiffener (if required) is 2 x 2 x 1/4 angle welded to top and oriented perpendicular to corrugations.
 - Top is 1/4 gage corrugated metal or 1/8\" steel plate. Pressure relief holes may be omitted, if ends of corrugations are left fully open when corrugated top is welded to cylinder.
 - Cylinder is 1/4 gage corrugated metal pipe or fabricated from 1/8\" steel plate.
- Notes:
1) The cylinder must be firmly fastened to the top of the riser.
2) Support bars are welded to the top of the riser or attached by straps bolted to top of riser.

CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (not to scale)



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

RIPRAP OUTLET PROTECTION-II

STANDARD DRAWING ROP-II

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
6/21/88
CHIEF, LAND DEVELOPMENT DIVISION DATE
Grawie U. Weisand 6/27/88
CHIEF, BUREAU OF HIGHWAYS DATE
Elizabeth Anderson 6/29/88
CHIEF, BUREAU OF ENGINEERING acting DATE
Office of Planning and Zoning
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

PIPE DIA.	GA.	A	B	H	L	W	APPROX. BODY
12	18	6	6	6	12	24	2.12 PC
18	24	8	8	8	18	36	2.12 PC
24	30	10	10	10	24	48	2.12 PC
30	36	12	12	12	30	60	2.12 PC
36	42	14	14	14	36	72	2.12 PC
42	48	16	16	16	42	84	2.12 PC
48	54	18	18	18	48	96	2.12 PC
54	60	20	20	20	54	108	2.12 PC
60	66	22	22	22	60	120	2.12 PC
66	72	24	24	24	66	132	2.12 PC
72	78	26	26	26	72	144	2.12 PC
78	84	28	28	28	78	156	2.12 PC
84	90	30	30	30	84	168	2.12 PC

NOTES:
1. ALL 3 PILE BODIES TO HAVE 1/4\"/>

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
APPROVED: Elizabeth Anderson 6/29/88
CHIEF, BUREAU OF ENGINEERING

METAL END SECTION
CIRCULAR METAL PIPE

REV. DATE	REV. NO.	REVISION	DESCRIPTION
3/24/88	1	As per H&C comment #6	

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE / RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 4 PHASE 2

PROJECT TITLE
STORMWATER MANGEMENT
NOTES & DETAILS

SCALE: NONE DATE: 12-31-87

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

Kenneth A. McCord
KENNETH A. MCCORD
REGISTERED ENGINEER NO. 1974

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION."

12/31/87
DAVID L. CARNEY DATE

CERTIFICATION BY THE ENGINEER

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

12/31/87
KENNETH A. MCCORD, P.E. NO. 1974 DATE

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

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

APPROVED: James M. Helm 6/16/88
HOWARD S.C.D. DATE

JAMES M. HELM 6/16/88
U.S. SOIL CONSERVATION SERVICE DATE PLAN NUMBER

