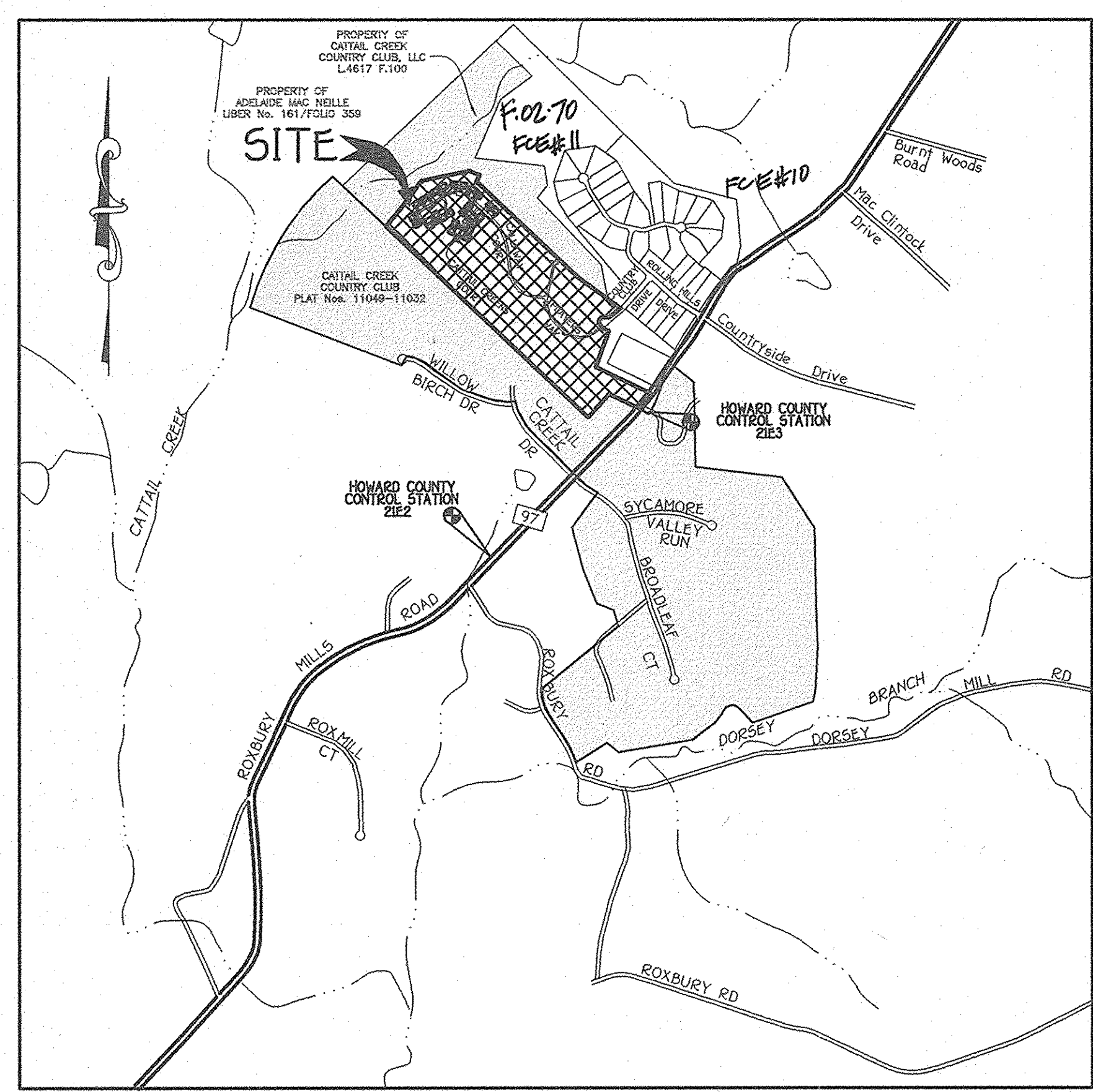


SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET
2	SITE DEVELOPMENT PLAN AND PROFILE - PLAYERS WAY
3	SITE DEVELOPMENT PLAN AND PROFILE - CALLAWAY COURT & CATTAIL GREENS COURT
4	SITE DEVELOPMENT PLAN AND PROFILE - CALLAWAY COURT
5	GRADING AND SEDIMENT CONTROL PLAN
6	GRADING AND SEDIMENT CONTROL PLAN
7	GRADING AND SEDIMENT CONTROL PLAN
8	WATER AND SEWER LAYOUT
9	WATER AND SEWER LAYOUT
10	WATER AND SEWER PROFILES
11	WATER AND SEWER PROFILES
12	STORM DRAIN PROFILES
13	STORM DRAIN PROFILES
14	STORM DRAIN PROFILES
15	DRAINAGE AREA MAP
16	LANDSCAPE PLAN
17	SEDIMENT CONTROL NOTES AND DETAILS
18	SEDIMENT CONTROL NOTES AND DETAILS
19	OFF-SITE FOREST CONSERVATION PLAN
20	FOREST CONSERVATION NOTES AND DETAILS
21/50	COVER SHEET, INDEX OF DRAWINGS, LEGEND, NOTES
22/51	DISPOSAL FIELD SITE PLAN
23/52	DISPOSAL FIELD SITE PLAN, FIELDS C & D
24/53	DISPOSAL FIELD SITE PLAN, FIELDS A & B
25/54	DISPOSAL FIELD / FORCE MAIN PROFILES
26/55	DISPOSAL FIELD / FORCE MAIN PROFILES
27/56	PUMP STATION PLAN / SECTION AND DETAILS DETAILS
28/57	HYDRAULIC PROFILE
29/58	WTP PLAN - SECTION AND DETAILS
30/59	HYDRO-PNEUMATIC TANK AND DETAILS
31/60	HYDRAULIC PROFILE
32/61	ELECTRICAL ABBREVIATION AND SYMBOLS
33/62	WTP ELECTRICAL PLAN AND SCHEDULES
34/63	WTP ELECTRICAL SCHEMATIC
35/64	GENERATOR DETAILS AND SCHEMATICS
36/65	WV PUMP STATION - ELECTRICAL PLAN
37/66	WV PUMP STATION - ELECTRICAL PLAN

ADDRESS CHART (90P 01-115)		
UNIT NO.	ADDRESS	
1	15274	CALLAWAY COURT
2	15276	CALLAWAY COURT
3	15278	CALLAWAY COURT
4	15280	CALLAWAY COURT
5	15282	CALLAWAY COURT
6	15284	CALLAWAY COURT
7	15286	CALLAWAY COURT
8	15288	CALLAWAY COURT
9	15290	CALLAWAY COURT
10	15292	CALLAWAY COURT
11	15294	CALLAWAY COURT
12	15296	CALLAWAY COURT
13	15298	CALLAWAY COURT
14	15300	CALLAWAY COURT
15	15295	CALLAWAY COURT
16	15293	CALLAWAY COURT
17	15291	CALLAWAY COURT
18	3700	CATTAIL GREENS COURT
19	3702	CATTAIL GREENS COURT
20	3704	CATTAIL GREENS COURT
21	3706	CATTAIL GREENS COURT
22	3707	CATTAIL GREENS COURT
23	3705	CATTAIL GREENS COURT
24	3703	CATTAIL GREENS COURT
25	3701	CATTAIL GREENS COURT

NOTE: ALL ROADS WITHIN THIS SUBDIVISION ARE PRIVATE.



VICINITY MAP
SCALE: 1"=1200'

ADDRESS CHART (90P 99-148)	
UNIT NO.	ADDRESS
1	15111 PLAYERS WAY
2	15113 PLAYERS WAY
3	15115 PLAYERS WAY
4	15117 PLAYERS WAY
5	15119 PLAYERS WAY
6	15121 PLAYERS WAY
7	15123 PLAYERS WAY
8	15125 PLAYERS WAY
9	15127 PLAYERS WAY
10	15129 PLAYERS WAY
11	15131 PLAYERS WAY
12	15133 PLAYERS WAY
13	15135 PLAYERS WAY
14	15137 PLAYERS WAY
15	15139 PLAYERS WAY
16	15141 PLAYERS WAY
17	15143 PLAYERS WAY
18	15145 PLAYERS WAY
19	15147 PLAYERS WAY
20	15149 PLAYERS WAY
21	15151 PLAYERS WAY
22	15153 PLAYERS WAY
23	15155 PLAYERS WAY
24	15157 PLAYERS WAY
25	15159 PLAYERS WAY
26	15161 PLAYERS WAY
27	15163 PLAYERS WAY
28	15165 PLAYERS WAY
29	15167 PLAYERS WAY
30	15169 PLAYERS WAY
31	15171 PLAYERS WAY
32	15173 PLAYERS WAY
33	15175 PLAYERS WAY
34	15177 PLAYERS WAY
35	15179 PLAYERS WAY
36	15181 PLAYERS WAY
37	15183 PLAYERS WAY
38	15185 PLAYERS WAY
39	15187 PLAYERS WAY
40	15189 PLAYERS WAY
41	15191 PLAYERS WAY
42	15193 PLAYERS WAY
43	15195 PLAYERS WAY
44	15197 PLAYERS WAY
45	15199 PLAYERS WAY
46	15201 CALLAWAY COURT
47	15203 CALLAWAY COURT
48	15205 CALLAWAY COURT
49	15207 CALLAWAY COURT
50	15209 CALLAWAY COURT
51	15211 CALLAWAY COURT
52	15213 CALLAWAY COURT
53	15215 CALLAWAY COURT
54	15217 CALLAWAY COURT
55	15219 CALLAWAY COURT
56	15221 CALLAWAY COURT
57	15223 CALLAWAY COURT
58	15225 CALLAWAY COURT
59	15227 CALLAWAY COURT
60	15229 CALLAWAY COURT

Professional Certification: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20749, EXPIRATION DATE 2/22/09.

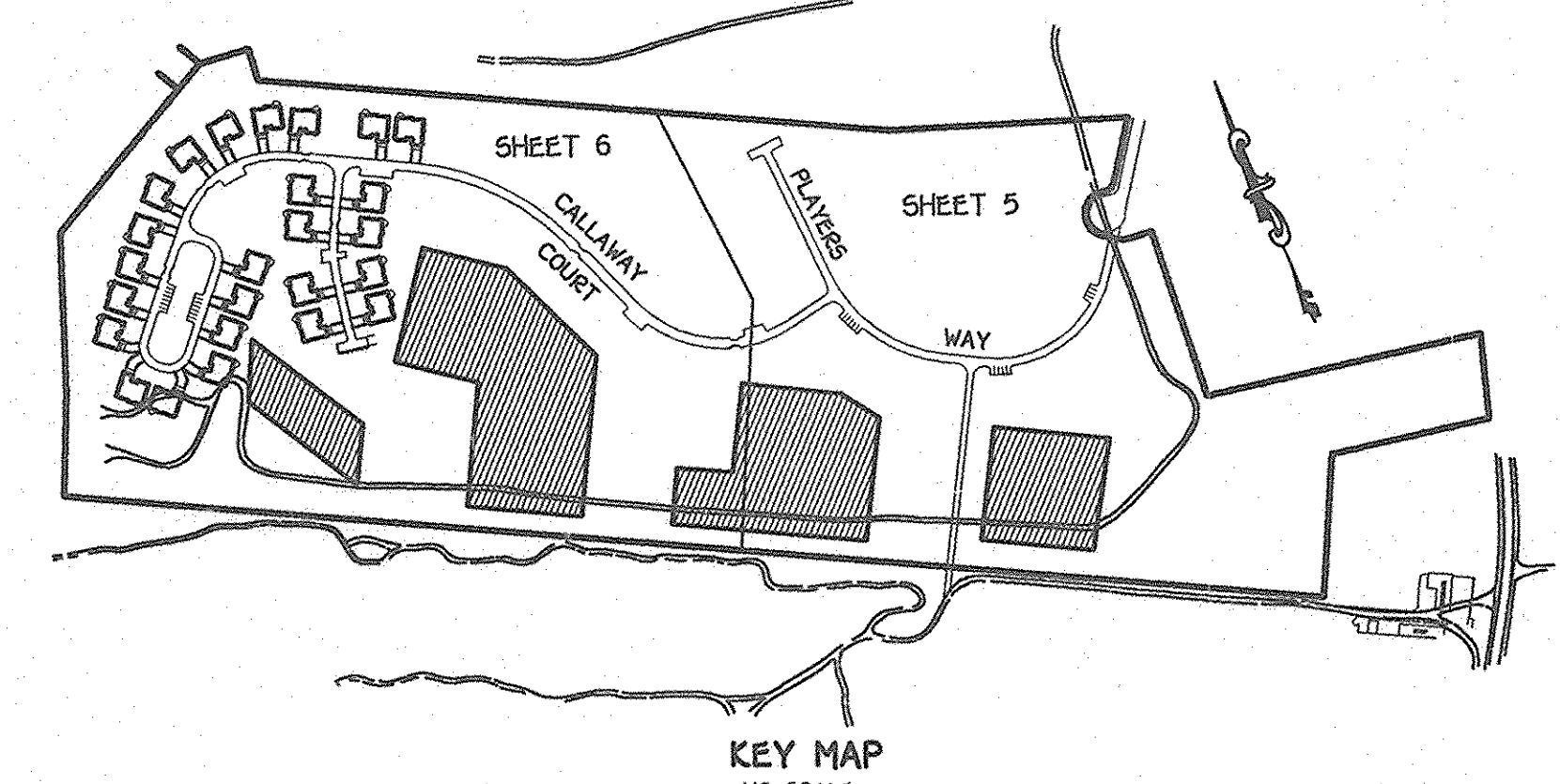
SITE DEVELOPMENT PLAN

THE VILLAS AT CATTAIL CREEK

BOARD OF APPEALS CASE No. BA 00-10E
ZONING: RC-DEO

TAX MAP No: 21 GRID No. 2 PARCEL No: 229
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

TRAFFIC CONTROL SIGNS				
STREET NAME	CL. STA.	OFFSET	POSTED SIGN	SIGN CODE
PLAYERS WAY	3+12	12R	ROAD NARROWING	V5-1
PLAYERS WAY	4+14	12L	ROAD NARROWING	V5-1
PLAYERS WAY	9+02	10R	ROAD NARROWING	V5-1
PLAYERS WAY	9+95	10L	ROAD NARROWING	V5-1
CALLAWAY COURT	0+26	18L	STOP	R1-1
CALLAWAY COURT	1+40	12R	ROAD NARROWING	V5-1
CALLAWAY COURT	3+12	12L	ROAD NARROWING	V5-1
CALLAWAY COURT	6+25	12R	ROAD NARROWING	V5-1
CALLAWAY COURT	7+22	12L	ROAD NARROWING	V5-1
CALLAWAY COURT	12+85	10R	ROAD NARROWING	V5-1
CALLAWAY COURT	13+86	10L	ROAD NARROWING	V5-1
CALLAWAY COURT	15+30	10R	ROAD NARROWING	V5-1
CALLAWAY COURT	16+30	10L	ROAD NARROWING	V5-1
CALLAWAY COURT	17+35	10R	ROAD NARROWING	V5-1
CALLAWAY COURT	18+80	10L	ROAD NARROWING	V5-1
CALLAWAY COURT	24+06	14R	STOP	R1-1
CATTAIL GREENS COURT	0+26	14L	STOP	R1-1
CATTAIL GREENS COURT	0+94	10R	ROAD NARROWING	V5-1
CATTAIL GREENS COURT	1+93	10L	ROAD NARROWING	V5-1



ADDRESS CHART (90P 99-148)	
UNIT NO.	ADDRESS
49	15209 CALLAWAY COURT
50	15205 CALLAWAY COURT
51	15207 CALLAWAY COURT
52	15203 CALLAWAY COURT
53	15201 CALLAWAY COURT
54	15202 CALLAWAY COURT
55	15204 CALLAWAY COURT
56	15206 CALLAWAY COURT
57	15208 CALLAWAY COURT
58	15210 CALLAWAY COURT
59	15212 CALLAWAY COURT
60	15214 CALLAWAY COURT
61	15216 CALLAWAY COURT
62	15218 CALLAWAY COURT
63	15220 CALLAWAY COURT
64	15222 CALLAWAY COURT
65	15224 CALLAWAY COURT
66	15226 CALLAWAY COURT
67	15228 CALLAWAY COURT
68	15230 CALLAWAY COURT

NO.	REVISIONS	DATE
1	ADD ADDRESS CHART FOR SHEET 6 AND REMOVE THE EXISTING SIGNAGE.	1/21/09

NOTE:
SEE GENERAL NOTE NO. 11 FOR REFUSE COLLECTION RESPONSIBILITIES.

Approved for private well and private septic by Howard County Health Department.
Henry B. ... 1-7-02
Health Officer Date

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 1972 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2555

ENGINEER'S CERTIFICATE
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Jim M. ... 12-04-01
Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE
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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

James ... 10-02-01
Signature of Developer (Print name below signature) Date

Reviewed for HOWARD SCD and meets Technical Requirements.
Jim M. ... 12/14/01
U.S.A. - Natural Resources Conservation Service Date

This development plan is for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
Jim M. ... 12/14/01
Howard SCD Date

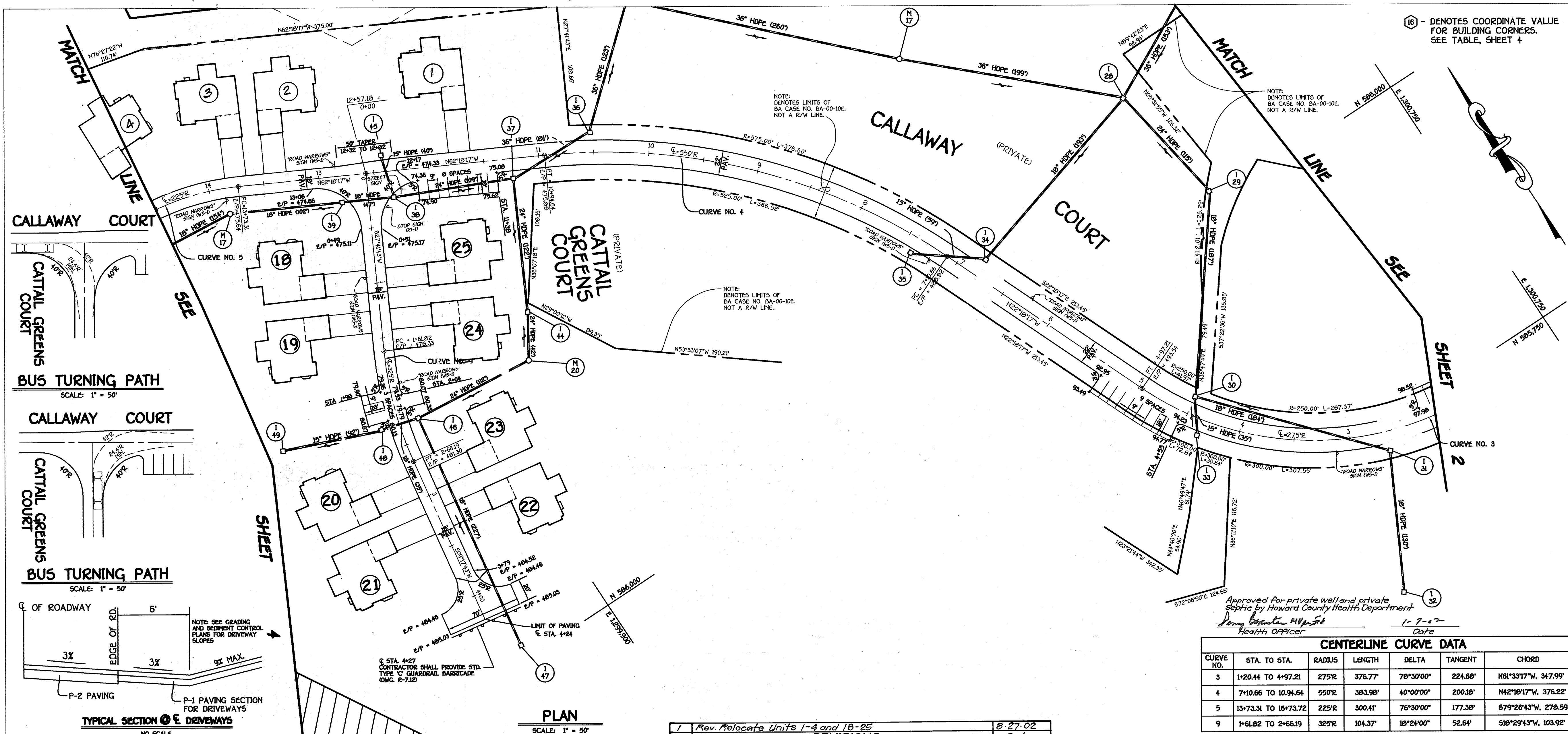
OWNER / DEVELOPER
THE VILLAS AT CATTAIL CREEK, L.L.C.
8000 MAIN STREET
ELLCOTT CITY, MARYLAND 21043

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cathy ... 1/15/09
Chief, Division of Land Development Date

John ... 12/12/08
Chief, Development Engineering Division Date

PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK	---	1 - 25
DEED	BLOCK NO.	ZONE
L. 4228, F. 442	3	RC-DEO
TAX/ZONE	ELEC. DIST.	CENSUS TR.
21	4th	---
WATER CODE	SEWER CODE	
---	---	

COVER SHEET
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
ZONING: RC-DEO
TAX MAP No: 21 PARCEL: 229
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER, 2001
SHEET 1 OF 37



16 - DENOTES COORDINATE VALUE FOR BUILDING CORNERS. SEE TABLE, SHEET 4

ENGINEER'S CERTIFICATE
 I certify that the plan and sediment control represents a practical and workable plan based on the site conditions and that it was prepared in accordance with the Howard Soil Conservation District.

Signature: [Signature] Date: 10-02-01

DEVELOPER'S CERTIFICATE
 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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer (Print name below signature): [Signature] Date: 11/29/01

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service Date: [Signature]

This development plan is approved for sediment and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD Date: [Signature]

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: Cindy Hamilton Date: 1/15/02
 Chief, Development Engineering Division: [Signature] Date: 12/12/01
 Director, Department of Planning and Zoning: [Signature] Date: 1/25/02

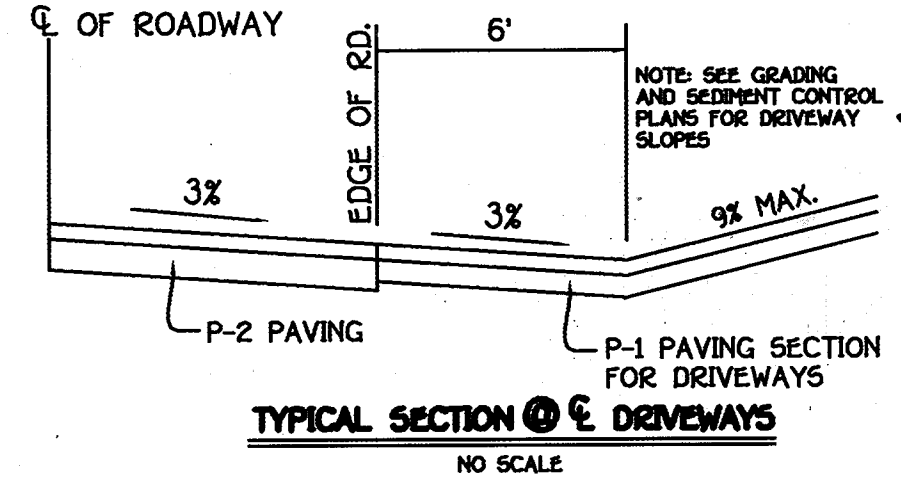
PROJECT: THE VILLAS AT CATTAIL CREEK SECTION/AREA: UNITS: 1 - 25
 DEED: L. 4228 F. 442 BLOCK NO. 3 ZONE RC-DEO TAX/ZONE 21 ELEC. DIST. 4th CENSUS TR. —
 WATER CODE — SEWER CODE —

SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

CALLAWAY COURT PLAN AND PROFILE
CATTAIL GREENS COURT PLAN AND PROFILE

SCALE: AS SHOWN DATE: SEPTEMBER, 2001 DWG. NO. 3 OF 37
 DES. A.M.V. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10372 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 410.866.2000

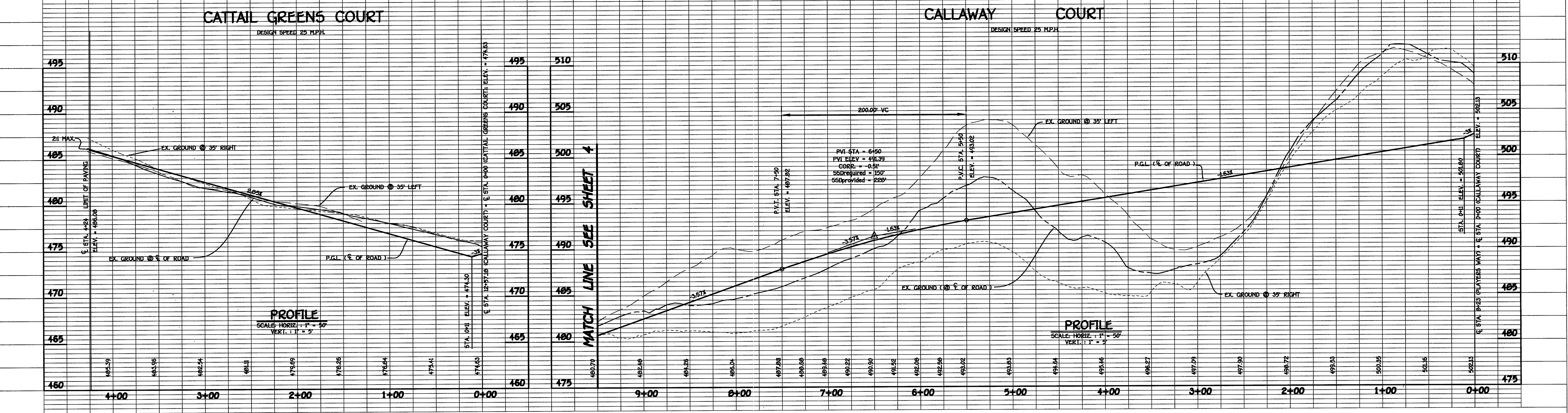


CENTERLINE CURVE DATA

CURVE NO.	STA. TO STA.	RADIUS	LENGTH	DELTA	TANGENT	CHORD
3	1+20.44 TO 4+97.21	275'R	376.77'	79°30'00"	224.66'	N61°33'17"W, 347.99'
4	7+10.66 TO 10.94.64	550'R	383.98'	40°00'00"	200.18'	N42°18'17"W, 376.22'
5	13+73.31 TO 16+73.72	225'R	300.41'	76°30'00"	177.38'	S79°26'43"W, 278.59'
9	1+61.82 TO 2+66.19	325'R	104.37'	18°24'00"	52.64'	S18°29'43"W, 103.92'

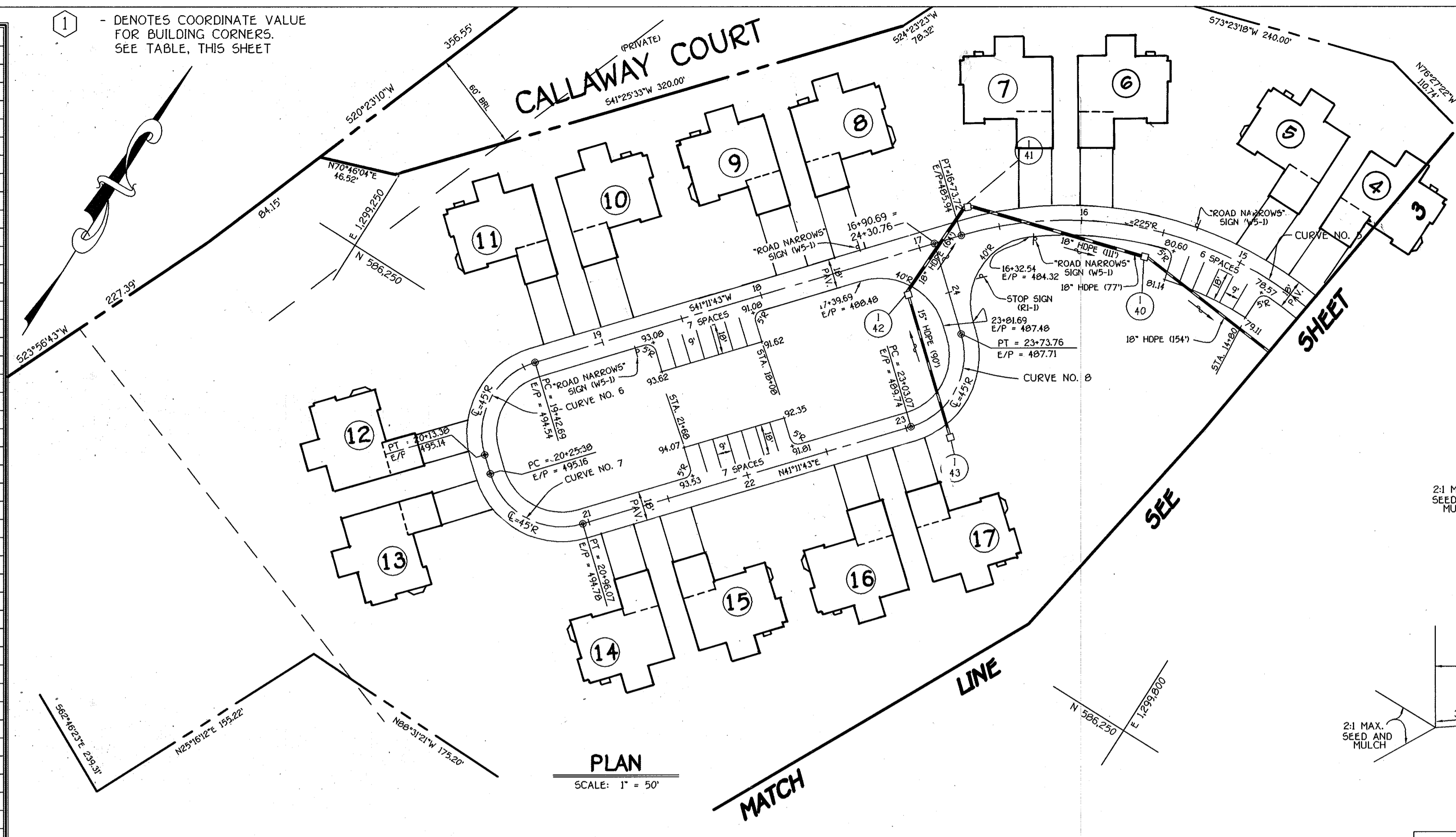
REVISIONS

No.	Rev. Relocate Units 1-4 and 18-25	Date
1		8-27-02
2		

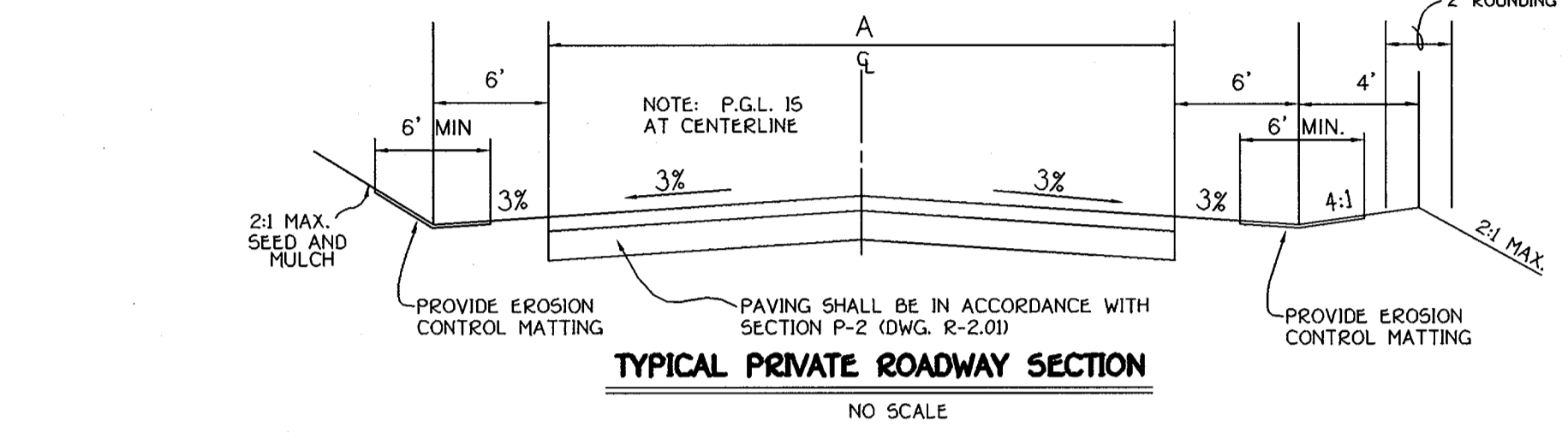


CORNER NUMBER	NORTH	EAST
1	506459.02	1300130.22
2	506487.27	1300085.54
3	506495.25	1300070.26
4	506523.49	1300015.58
5	506565.15	1299932.85
6	506593.39	1299878.97
7	506611.62	1299856.90
8	506626.25	1299798.03
9	506659.80	1300004.88
10	506636.40	1299976.10
11	506620.99	1299909.53
12	506623.70	1299940.75
13	506626.79	1299931.90
14	506656.91	1299922.19
15	506640.60	1299919.46
16	506600.73	1299909.75
17	506609.74	1299704.91
18	506669.59	1299714.80
19	506691.06	1299718.16
20	506650.91	1299728.05
21	506635.44	1299757.25
22	506638.76	1299786.20
23	506649.55	1299794.30
24	506649.06	1299823.24
25	506634.06	1299753.11
26	506631.00	1299682.57
27	506623.40	1299646.00
28	506607.75	1299587.39
29	506577.85	1299538.78
30	506530.84	1299495.02
31	506502.03	1299470.74
32	506465.84	1299431.42
33	506491.96	1299460.31
34	506406.16	1299380.53
35	506393.17	1299369.14
36	506347.52	1299329.19
37	506333.47	1299317.33
38	506287.67	1299277.55
39	506158.23	1299274.48
40	50617.84	1299319.73
41	506106.20	1299332.17
42	506095.81	1299377.42
43	506084.58	1299507.47
44	506130.37	1299547.24
45	506152.95	1299555.81
46	506198.60	1299595.75
47	506203.65	1299613.47
48	506249.30	1299653.42
49	506253.70	1299666.03
50	506309.50	1299705.81

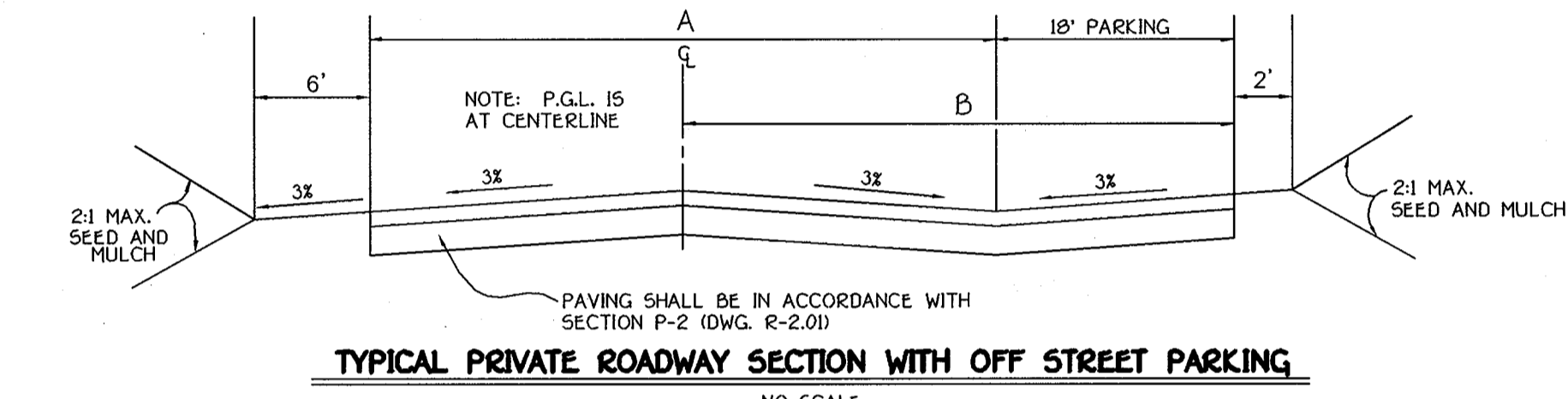
1 - DENOTES COORDINATE VALUE FOR BUILDING CORNERS. SEE TABLE, THIS SHEET



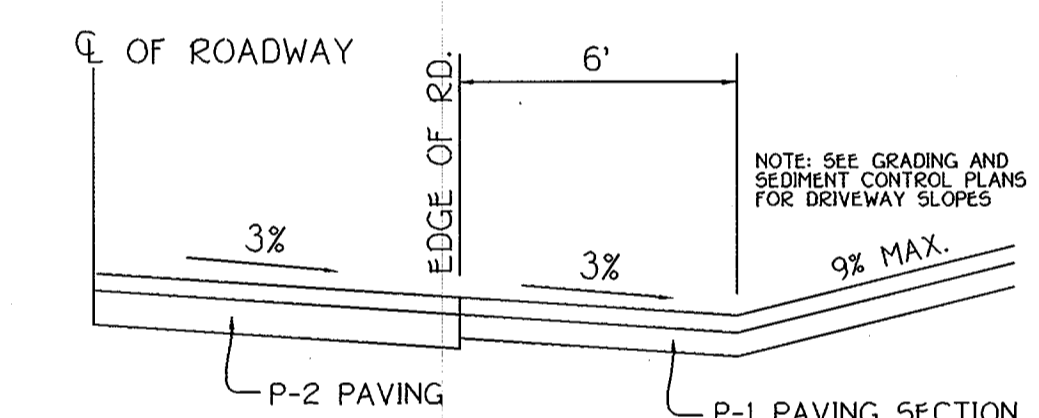
PLAN
SCALE: 1" = 50'



TYPICAL PRIVATE ROADWAY SECTION
NO SCALE



TYPICAL PRIVATE ROADWAY SECTION WITH OFF STREET PARKING
NO SCALE

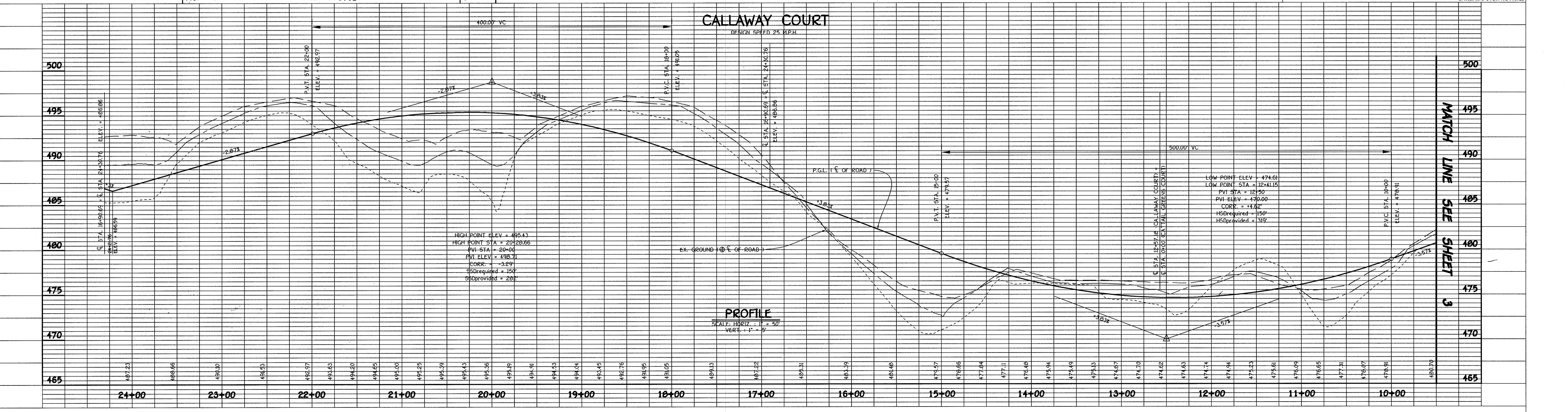


TYPICAL SECTION @ DRIVEWAYS
NO SCALE

ROAD NAME	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION	A	B
PLAYERS WAY	25 MPH	RC-DEO	0+17 TO 0+23	P-2	22'	29'
PLAYERS WAY	25 MPH	RC-DEO	0+23 TO 12+03	P-2	18'	27'
CALLAWAY COURT	25 MPH	RC-DEO	0+00 TO 12+57.18	P-2	22'	29'
CALLAWAY COURT	25 MPH	RC-DEO	12+57.18 TO 24+30.76	P-2	18'	27'
CATTAL GREENS COURT	25 MPH	RC-DEO	0+00 TO 4+24	P-2	18'	27'

CURVE NO.	STA. TO STA.	RADIUS	LENGTH	DELTA	TANGENT	CHORD
5	13+73.31 TO 16+73.72	225'	300.41'	76°30'00"	177.38'	579°26'43"W, 278.59'
6	19+42.69 TO 20+13.38	45'	70.69'	90°00'00"	45.00'	503°48'17"E, 63.64'
7	20+25.38 TO 20+36.07	45'	70.69'	90°00'00"	45.00'	586°11'43"W, 63.64'
8	23+03.07 TO 23+73.76	45'	70.69'	90°00'00"	45.00'	N03°48'17"W, 63.64'

No.	REVISIONS	Date
1	Revise House Locations 4-17, Remove Traffic Calming Devices	8-28-02



CALLAWAY COURT
DESIGN SPEED 25 MPH

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

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
HOWARD COUNTY SOIL CONSERVATION DISTRICT

DEVELOPER'S CERTIFICATE

I certify that this plan for erosion control represents a practical and workable plan based on my personal knowledge and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer: *[Signature]* Date: 7-20-01
 Signature of Developer: *[Signature]* Date: 11/29/01

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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S.D.A.-Natural Resources Conservation Service Date: *[Signature]*
 Approved for private well and private septic by Howard County Health Department.
 Health Officer: *[Signature]* Date: 1-7-02

OWNER / DEVELOPER
 THE VILLAS AT CATTAL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21045

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *[Signature]* Date: 11/18/01
 Chief, Development Engineering Division: *[Signature]* Date: 12/12/01
 Director, Department of Planning and Zoning: *[Signature]* Date: 11/20/02

PROJECT: THE VILLAS AT CATTAL CREEK SECTION/AREA: UNITS: 1 - 25
 DEED: L. 4228 F. 442 BLOCK NO. 3 ZONE RC-DEO TAX/ZONE 21 ELEC. DIST. 4th CENSUS TR. -----
 WATER CODE: SEWER CODE:

SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

CALLAWAY COURT
 PLAN AND PROFILE

SCALE: AS SHOWN DATE: SEPTEMBER, 2001 DWG. NO. 4 OF 37
 DES. A.M.V. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERS, CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 8075 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 410 46 - 2005

P.O.S.T. NO. 4
 INITIAL D.A. = 4.66 AC.
 FINAL D.A. = 4.96 AC.
 STORAGE REQUIRED:
 WET: 1800 x 4.96 = 8928 CUFT.
 DRY: 1800 x 4.96 = 8928 CUFT.
 STORAGE PROVIDED:
 WET: 10,172 CUFT. @ ELEV. 494.90
 DRY: 19,778 CUFT. @ ELEV. 495.75
 BOT. ELEV. = 494.00
 STORAGE DEPTH = 3.0'
 SIDE SLOPES = 2:1
 TOP OF EMBANKMENT = 498.00
 CLEAN-OUT ELEV. = 494.50
 INV. LOW FLOW ORIFICE = 495.75
 RISER CREST ELEV. = 497.00
 Q_{25c} = 5.0 C.F.S.
 Q_{25prop} = 2.5 C.F.S.



PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE 2/22/09.

DATE: 2-1-08

SEE SHEET 28 FOR PUMPING STATION PLANS AND DETAILS

10,000 GALLON UNDERGROUND STATIC SUPPLY TANK
 20,000 GALLON UNDERGROUND HYDRO-PNEUMATIC STORAGE TANK

DETAIL SCALE 1" = 20'

NO.	REVISIONS	Date
4	REMOVE THE EXISTING REARER BUILDING AND ASSOCIATED MECHANICAL EQUIPMENT AND REPLACE WITH A CORP BUILDING	1/31/08
3	ADD GATEHOUSE, COMMON DINING AREA & WATER TREATMENT BLDG.	7/7/05
2	Reduced size of WWTP Reactor Bldg	1-27-08
1	Remove Traffic Calming Devices	8-26-02

Approved for private well and private septic by Howard County Health Department
 Health Officer: [Signature] Date: 1-7-08

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2555

ENGINEER'S CERTIFICATE
 I certify that the soil erosion and sediment control represents a practical and workable plan based on the personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer: [Signature] Date: 11-27-01

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer: [Signature] Date: 11/29/01

Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S. Fish & Wildlife Conservation Service
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Signature: [Signature] Date: 12/14/01
 Signature: [Signature] Date: 12/14/01

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELICOTT CITY, MARYLAND 21043

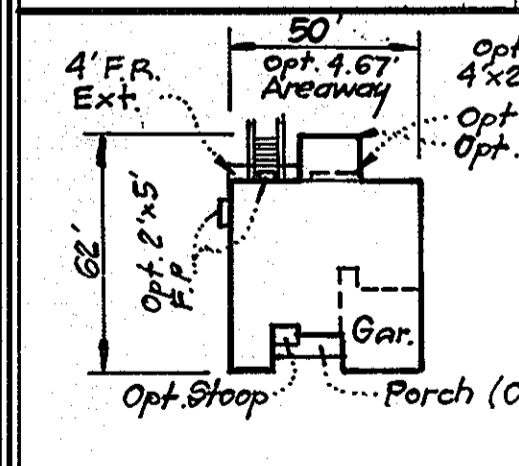
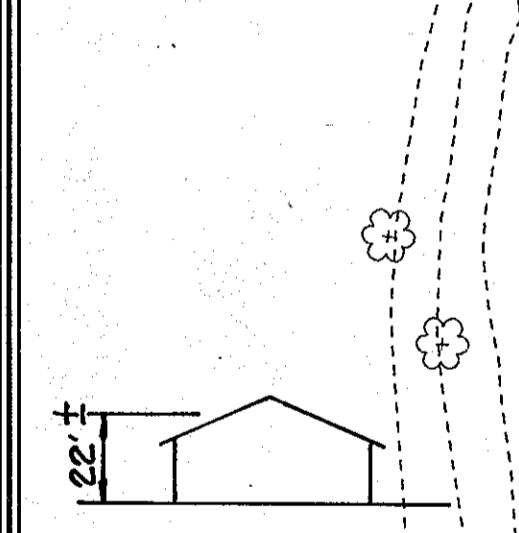
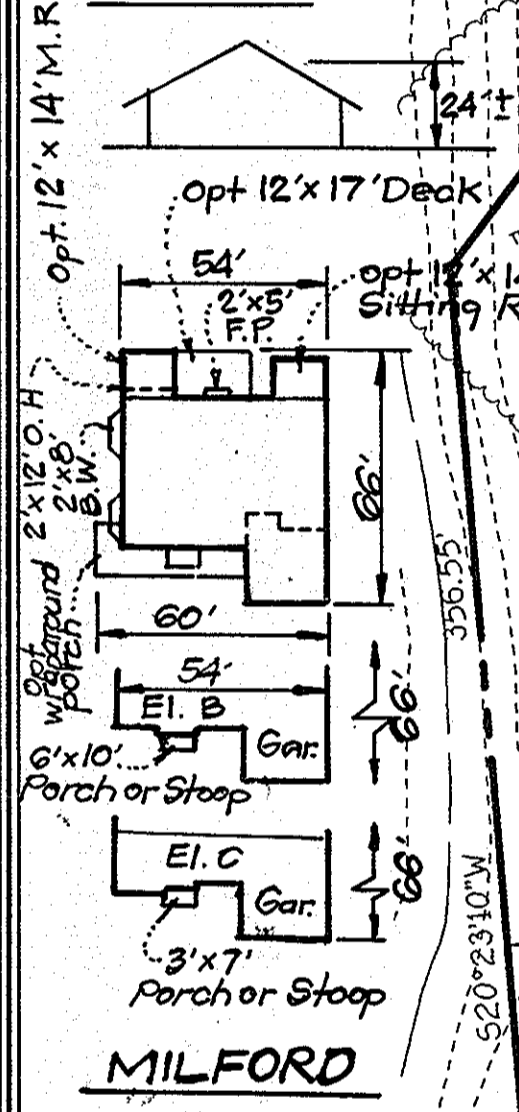
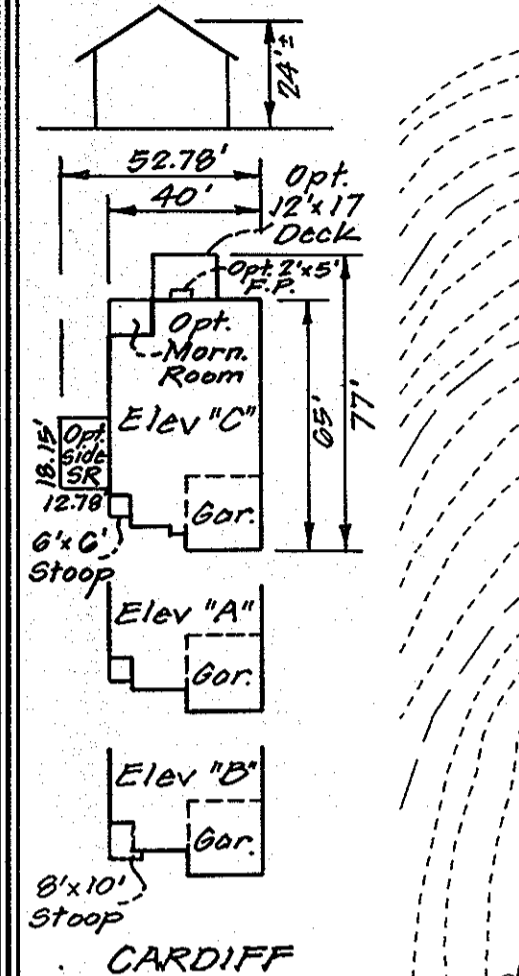
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development: [Signature] Date: 1/18/02
 Chief, Development Engineering Division: [Signature] Date: 2/12/01
 Director, Department of Planning and Zoning: [Signature] Date: 1/25/02

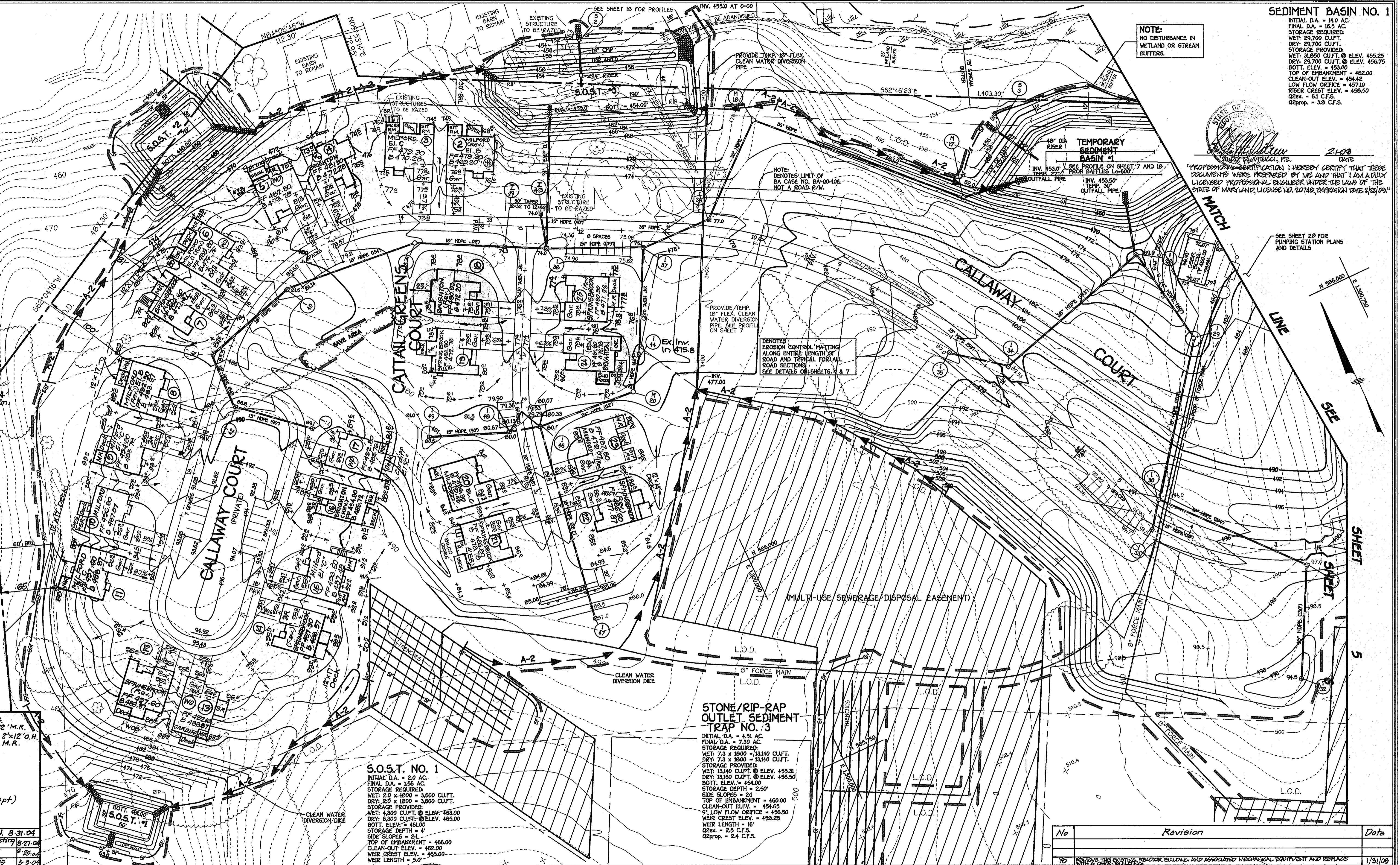
PROJECT	SECTION/AREA	LOT NO.			
THE VILLAS AT CATTAIL CREEK	---	1 - 25			
DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 4228, F. 442	3	RC-DEO	21	4th	---
WATER CODE	SEWER CODE				

GRADING AND SEDIMENT CONTROL
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 3
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1" = 50' DATE: OCTOBER, 2001
 SHEET 5 OF 37

S.O.S.T. NO. 2
 INITIAL D.A. = 3.88 AC.
 FINAL D.A. = 1.60 AC.
 STORAGE REQUIRED:
 WET: 3,880 x 1800 = 6,984 CUFT.
 DRY: 3,880 x 1800 = 6,984 CUFT.
 STORAGE PROVIDED:
 WET: 7,000 CUFT. @ ELEV. 450.00
 DRY: 9,000 CUFT. @ ELEV. 452.00
 BOTT. ELEV. = 440.00
 STORAGE DEPTH = 4"
 SIDE SLOPES = 2:1
 TOP OF EMBANKMENT = 453.00
 CLEAN-OUT ELEV. = 449.00
 WEIR CREST ELEV. = 452.00
 WEIR LENGTH = 10'0"



No	Revision	Date
17	Rev. grad. lot 25 to show Ex. Cond.	8-31-04
16	Rev. grad. lot 23 to show Existing	8-27-04
15	Revise and to show 2nd built Road	8-25-04
14	Rev. hse. & grad. Lots 22 & 25	5-9-04
13	Rev. hse. 4 grad. Lots 2 & 3	4/4/04
12	Rev. hse. 4 grad. Lots 4 & 5	2/12/04
11	Rev. hse. & grad. Lot 24	2/12/04
10	Rev. hse. & grad. Lot 22	1/12/04
9	Rev. hse. grad. Lots 19 & 21	11-9-04



S.O.S.T. NO. 1
 INITIAL D.A. = 2.0 AC.
 FINAL D.A. = 1.56 AC.
 STORAGE REQUIRED:
 WET: 2,000 x 1800 = 3,600 CUFT.
 DRY: 2,000 x 1800 = 3,600 CUFT.
 STORAGE PROVIDED:
 WET: 4,300 CUFT. @ ELEV. 463.00
 DRY: 6,300 CUFT. @ ELEV. 465.00
 BOTT. ELEV. = 461.00
 STORAGE DEPTH = 4"
 SIDE SLOPES = 2:1
 TOP OF EMBANKMENT = 466.00
 CLEAN-OUT ELEV. = 462.00
 WEIR CREST ELEV. = 465.00
 WEIR LENGTH = 5'0"

STONE/RIP-RAP OUTLET SEDIMENT TRAP NO. 3
 INITIAL D.A. = 4.51 AC.
 FINAL D.A. = 7.30 AC.
 STORAGE REQUIRED:
 WET: 7.3 x 1800 = 13,140 CUFT.
 DRY: 7.3 x 1800 = 13,140 CUFT.
 STORAGE PROVIDED:
 WET: 13,140 CUFT. @ ELEV. 455.31
 DRY: 13,150 CUFT. @ ELEV. 456.50
 BOTT. ELEV. = 454.00
 STORAGE DEPTH = 2.50'
 SIDE SLOPES = 2:1
 TOP OF EMBANKMENT = 460.00
 CLEAN-OUT ELEV. = 454.00
 LOW FLOW ORIFICE = 454.50
 WEIR CREST ELEV. = 458.25
 WEIR LENGTH = 16'
 G2prop. = 2.5 C.F.S.
 G2prop. = 2.4 C.F.S.

SEDIMENT BASIN NO. 1
 INITIAL D.A. = 14.0 AC.
 FINAL D.A. = 16.5 AC.
 STORAGE REQUIRED:
 WET: 23,700 CUFT.
 DRY: 23,700 CUFT.
 STORAGE PROVIDED:
 WET: 31,850 CUFT. @ ELEV. 455.25
 DRY: 23,700 CUFT. @ ELEV. 457.75
 BOTT. ELEV. = 453.00
 TOP OF EMBANKMENT = 462.00
 CLEAN-OUT ELEV. = 454.42
 LOW FLOW ORIFICE = 457.10
 RISER CREST ELEV. = 458.50
 G2prop. = 6.1 C.F.S.
 G2prop. = 3.8 C.F.S.

Approved for private well and private septic by Howard County Health Department.
 Howard County Health Officer

No	Revision	Date
8	Revise house & grading on Lot 16	12-5-03
7	Revise house & grading on Lot 6	11-18-03
6	Revise house & grade Lot 5, 9, 15 & 17	10-31-03
5	Added Cardiff hse types; revise hse & grade Lots 10 & 13	9-5-03
4	Add Springbrook and Milford hse types; Revise house and grade lots 3, 8, 11, 12, 14 and 22	3-25-03
3	Rev. hse. type Unit 18 from Reconcrest to Brighton	8-27-02
2	Reduced size of WINTA Reactor Bldg	8-27-02
1	Rev. hse. and grade All Units	8-27-02

DEVELOPER'S CERTIFICATE
 I certify that the erosion control plan and sediment control represents a practical and workable plan based on the best knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Developer (Print name below signature) _____ Date 11-29-01

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

Approved for Howard SCD and meets Technical Requirements.
 U.S.D.A. Natural Resources Conservation Service
 Signature of _____ Date 12/4/04
 Signature of _____ Date 12/1/04

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature of _____ Date 1/10/02
 Signature of _____ Date 12/12/01
 Signature of _____ Date 12/1/02

PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK		1 - 25

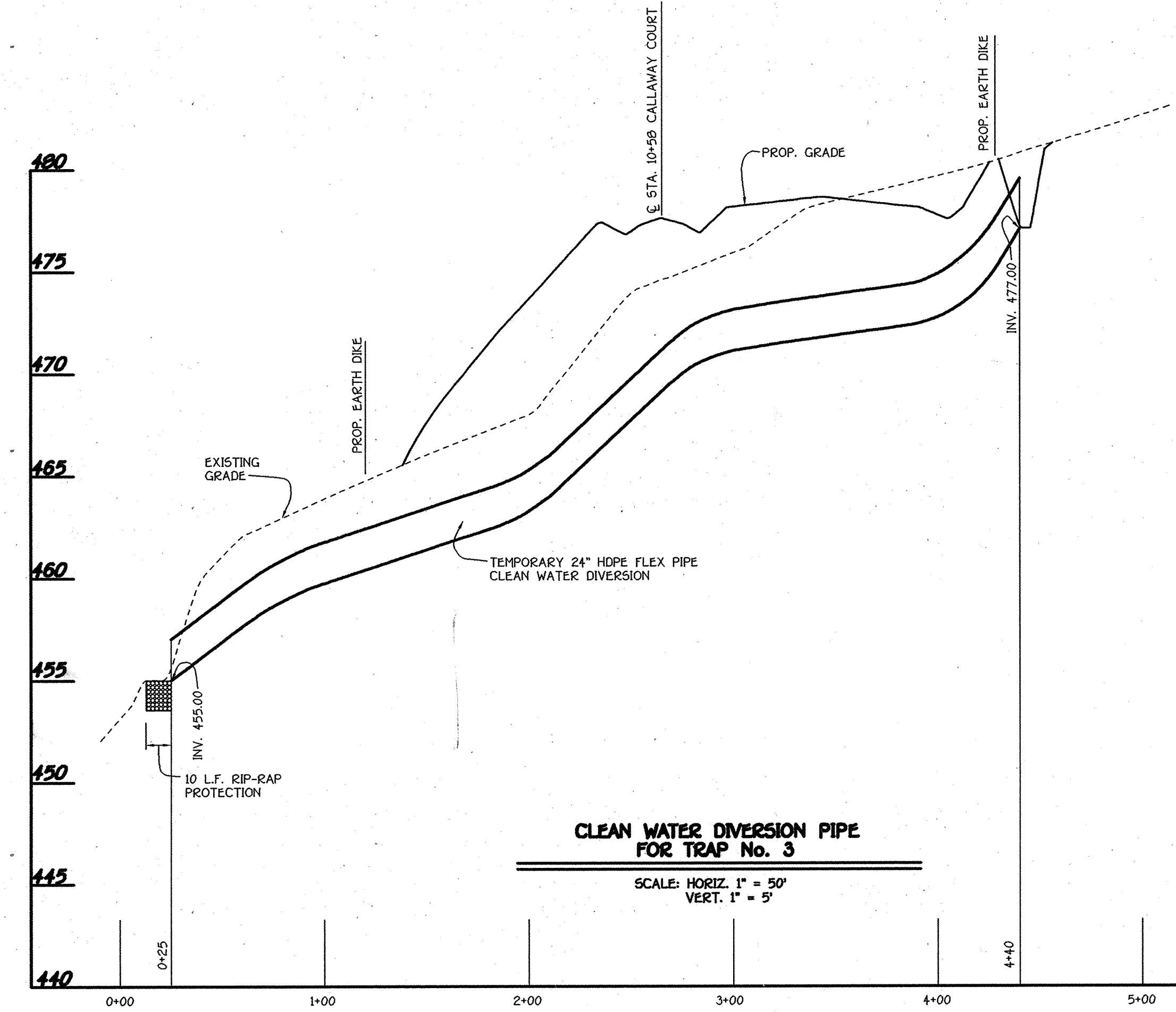
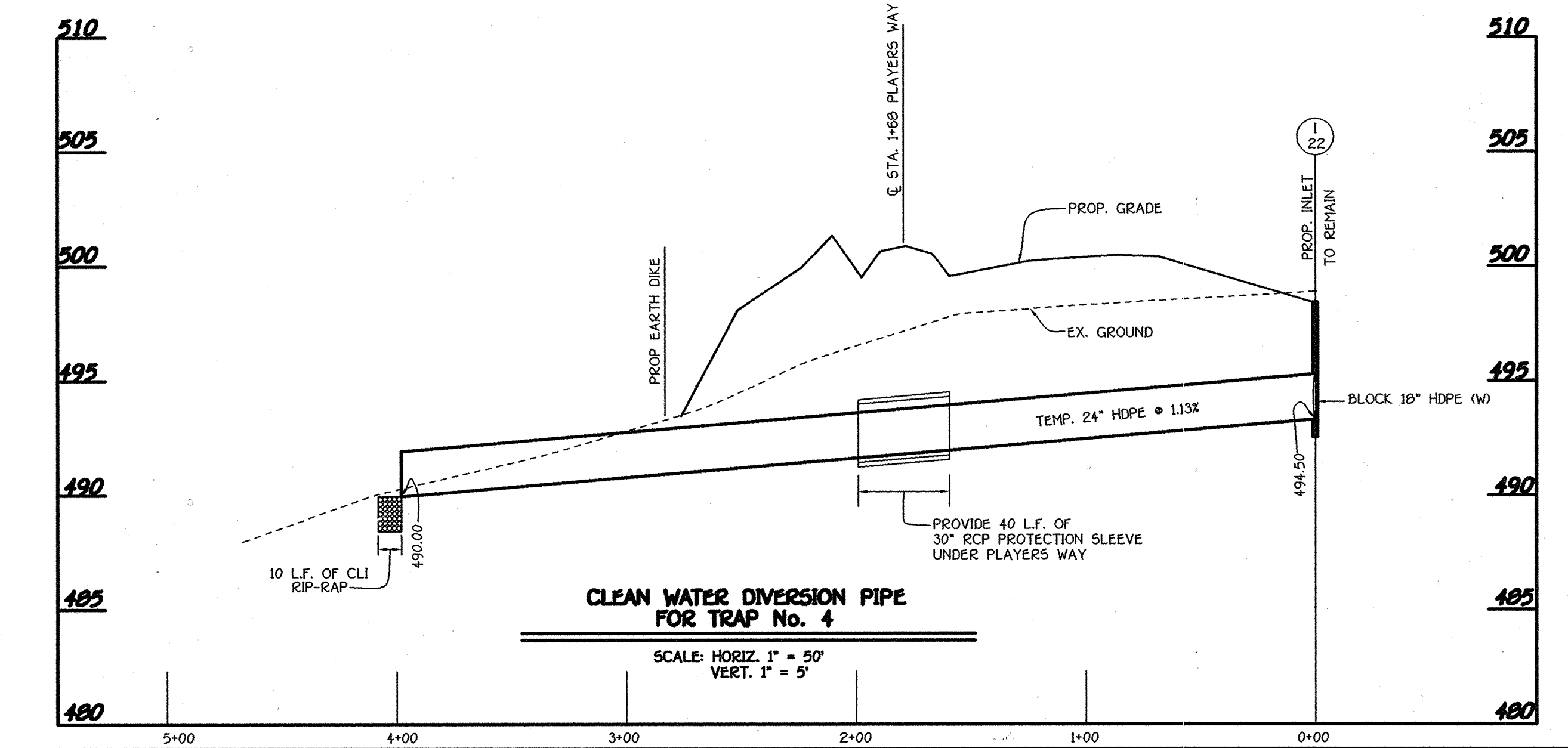
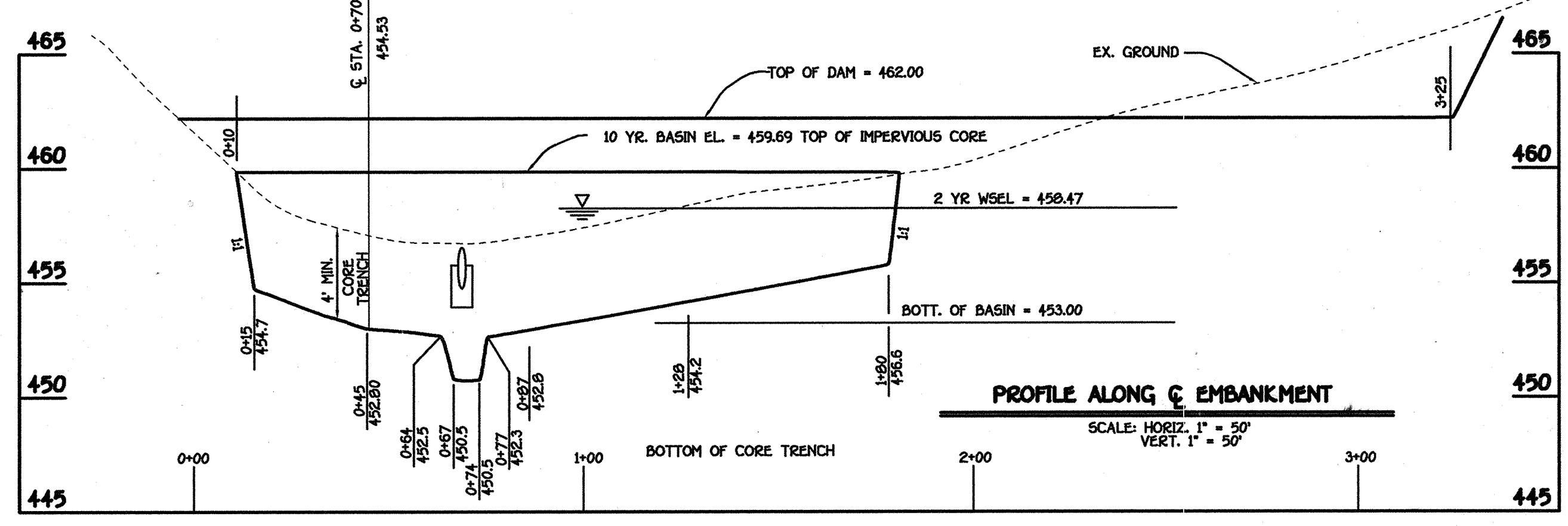
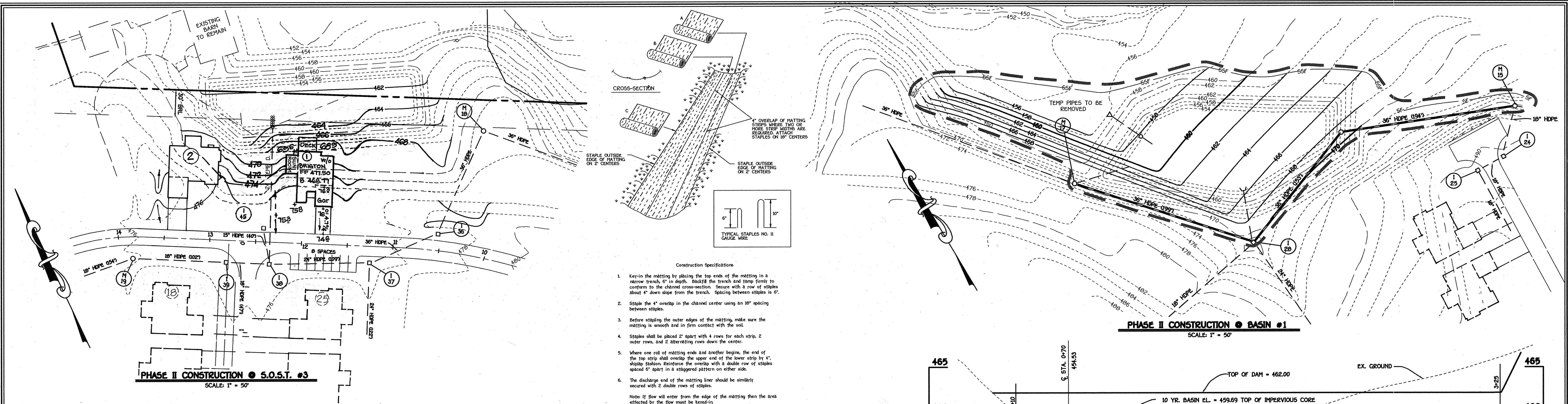
DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 4228, F. 442	3	RC-DEO	21	4th	

WATER CODE	SEWER CODE

GRADING AND SEDIMENT CONTROL

SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK

ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 3
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1" = 50' DATE: SEPTEMBER, 2001
 SHEET 6 OF 37



SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMITS. (2 weeks)
- NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777, NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION DIVISION AT 410-313-1970 AT LEAST 24 HOURS BEFORE STARTING ANY WORK.
- INSTALL TEMPORARY FLEX PIPES ALONG WITH THE CLEAN WATER DIVERSION DIKES ASSOCIATED WITH TRAPS 3 AND 4. ALSO INSTALL STORM DRAIN RUNS THAT CONVEY CLEAN WATER. THIS WOULD INCLUDE STRUCTURES M-13, M-14, I-17, I-18 AND I-19. (2 weeks)
- INSTALL SEDIMENT CONTROL MEASURES, STABILIZED CONSTRUCTION ENTRANCE, EARTH DIKES, SILT FENCE, SEDIMENT TRAPS AND BASIN. NOTE THAT SILT FENCE LOCATED WITHIN THE SEPTIC FIELDS TO BE INSTALLED UNDER PHASE 2 OF THE SITE WORK. (3 weeks)
- GRADE SITE TO SUBGRADE AND STABILIZE USING TEMPORARY SEEDING NOTES. INSTALL STORM DRAINS, WATER MAINS, SEWER MAINS AND FORCE MAIN WITHIN THE LIMITS OF DISTURBANCE ASSOCIATED WITH PHASE 1 OF SITE WORK. (6 weeks)
- THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS.
- INSTALL ROADWAY BASE COURSE AND STABILIZE ROADWAY DITCHES IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 weeks)
- STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED TO PHASE 2 OF THE SITE WORK.
- INSTALL SILT FENCE WITHIN THE SEPTIC FIELD AREAS TO CONSTRUCT THE FORCE MAIN AND DISTRIBUTION TRENCHES. (4 weeks)
- UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES NOT NEEDED. THIS SHOULD INCLUDE THE REMOVAL OF THE TRAPS AND BASIN #1. (2 weeks)
- CONNECT THE REMAINING STORM DRAIN SYSTEM AND FLUSH TO REMOVE TRAPPED SEDIMENT. (2 weeks)
- ALL AREAS DISTURBED DUE TO THE REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED OUT AND STABILIZED WITH PERMANENT SEEDING. (1 week)

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
NATIONAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL Pk.
ELLICOTT CITY, MARYLAND 21042
410-981-2855

Approved For private well and private septic by Howard County Health Department:
Penny Dunbar, M.D., M.P.H., Health Officer 1-7-02 Date

NO.	REVISIONS	DATE
1	Rev. grad. to show Existing Conditions Lot 1	7-6-04
3	Add sun room to hse on Lot 1	4-14-04
2	Rev. hse type & grad. Lot 1	2-19-04
	Revise house locations	8-27-02

ENGINEER'S CERTIFICATE
I certify that this erosion and sediment control represents a practical and workable plan based on the best knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
Signature of Engineer: *[Signature]* Date: 10-02-01

DEVELOPER'S CERTIFICATE
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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
Signature of Developer: *[Signature]* Date: 11/29/01

Reviewed for HOWARD SCD and meets Technical Requirements.
Signature: *[Signature]* Date: 12/11/01
U.S.D. - Natural Resources Conservation Service
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
Signature: *[Signature]* Date: 12/14/01
Howard SCD

OWNER / DEVELOPER
THE VILLAS AT CATTAIL CREEK, L.L.C.
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21043

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: *[Signature]* Date: 11/18/02
Chief, Division of Land Development
Signature: *[Signature]* Date: 12/12/01
Chief, Development Engineering Division
Signature: *[Signature]* Date: 1/25/02
Director, Department of Planning and Zoning

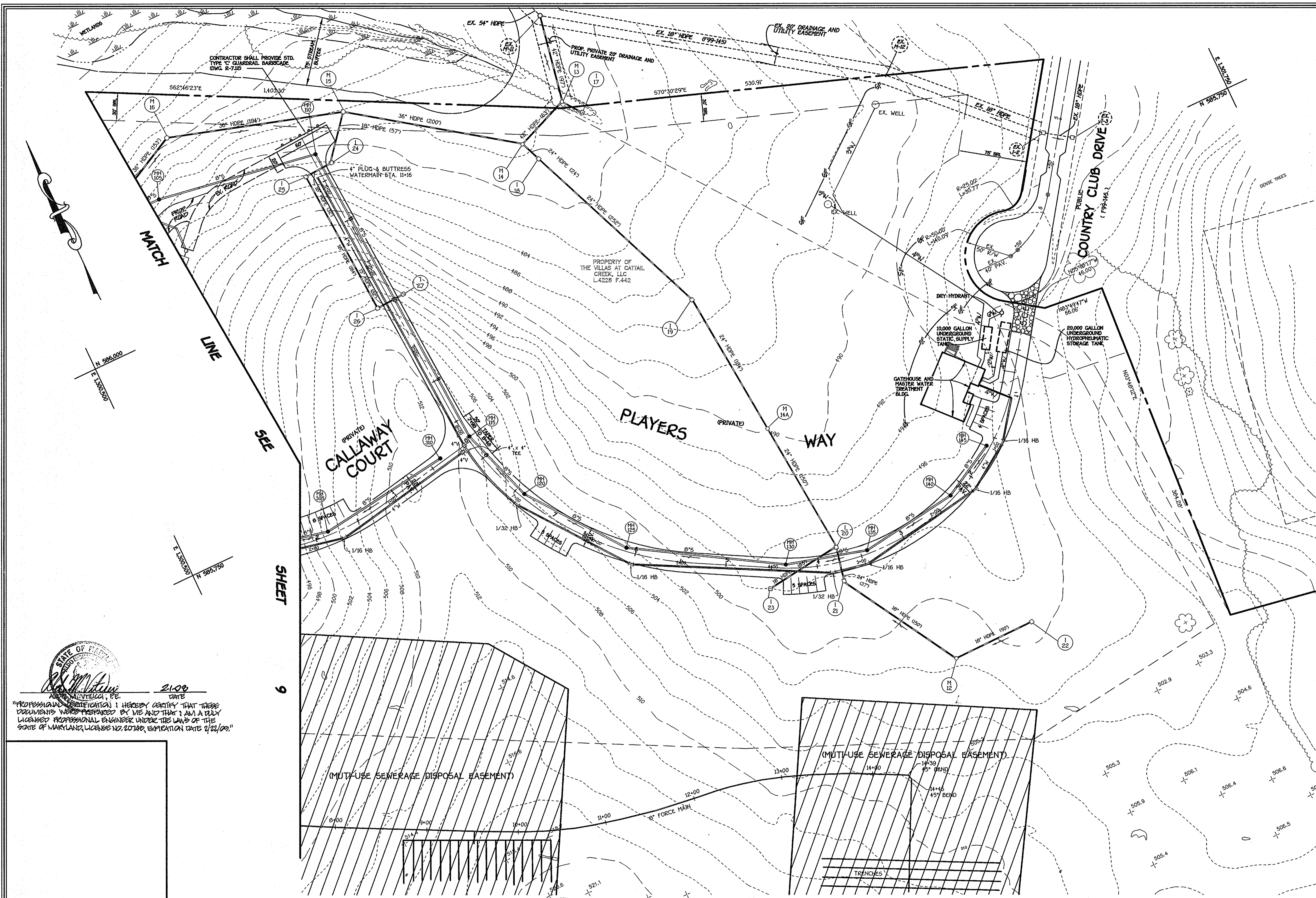
PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK		1-25

DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L 4228, F.442	3	RC-DEO	21	4TH	

WATER CODE	SEWER CODE

GRADING AND SEDIMENT CONTROL
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK

ZONING: RC-DEO
TAX MAP No: 21 PARCEL: 229
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1"=50' DATE: SEPTEMBER, 2001
SHEET 7 OF 37



SEWER SERVICE CHART			
STATION	UNIT	ELEV. @ 5' FROM BLDG. WALL	MIN. SERVICE ELEV.
MH 220 TO MH 225			
1+13 RT.	1	463.33 @ 1.00%	470.13
MH 225 TO MH 230			
0+75 RT.	2	467.18 @ 1.00%	470.99
① MH 230 RT.	3	467.75 @ 1.00%	471.50
MH 230 TO MH 235			
0+80 RT.	4	468.25 @ 1.00%	472.04
MH 235 TO MH 240			
0+50 RT.	5	470.56 @ 1.00%	474.21
1+18 RT.	6	473.16 @ 1.00%	476.91
① MH 240 RT.	7	474.12 @ 1.00%	477.87
MH 245 TO MH 250			
0+75 RT.	8	477.07 @ 1.00%	480.92
1+13 RT.	9	477.83 @ 1.00%	481.68
1+31 RT.	10	479.39 @ 1.00%	483.19
2+70 RT.	11	480.97 @ 1.00%	484.82
MH 250 TO MH 255			
0+41 RT.	12	482.12 @ 1.00%	485.92
① MH 255 RT.	13	482.50 @ 1.00%	486.30
MH 255 TO MH 260			
① MH 260 CT.	17	478.43 @ 1.00%	482.18
MH 260 TO MH 265			
0+87 LT.	16	480.08 @ 1.00%	483.83
1+13 LT.	15	481.66 @ 1.00%	485.41
2+46 LT.	14	483.39 @ 1.00%	487.14
MH 265 TO MH 270			
0+57 LT.	25	468.25 @ 1.00%	472.05
0+60 RT.	18	468.42 @ 1.00%	472.17
1+36 LT.	24	470.22 @ 1.00%	474.02
1+40 RT.	19	470.42 @ 1.00%	474.27
MH 270 TO MH 275			
0+54 LT.	23	470.43 @ 1.00%	474.18
① MH 275 RT.	20	470.58 @ 1.00%	474.48
MH 275 TO MH 280			
0+78 LT.	22	473.77 @ 1.00%	477.82
0+82 RT.	21	474.05 @ 1.00%	477.90

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 DATE 2-10-02
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20740, EXPIRATION DATE 2/22/02.

(MULTI-USE SEWERAGE DISPOSAL EASEMENT)

(MULTI-USE SEWERAGE DISPOSAL EASEMENT)

Approved for private well and private septic by
 Howard County Health Department
 Health Officer
 Date 1-7-02

ENGINEER'S CERTIFICATE
 I certify that the erosion and sediment control represents a practical and workable plan based on my knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature: [Signature] Date: 10-22-01

DEVELOPER'S CERTIFICATE
 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 of a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Signature of Developer (Print name below signature) Date: 11/29/01

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Director, Department of Planning and Zoning
 PROJECT: THE VILLAS AT CATTAIL CREEK
 SECTION/AREA: 1-25
 LOT NO.: 25
 DEED: L. 4228, F. 442
 BLOCK NO.: 3
 ZONE: RC-DEO
 TAX/ZONE: 21
 ELEC. DIST.: 4th
 CENSUS TR.:
 WATER CODE: SEWER CODE:

REVISIONS

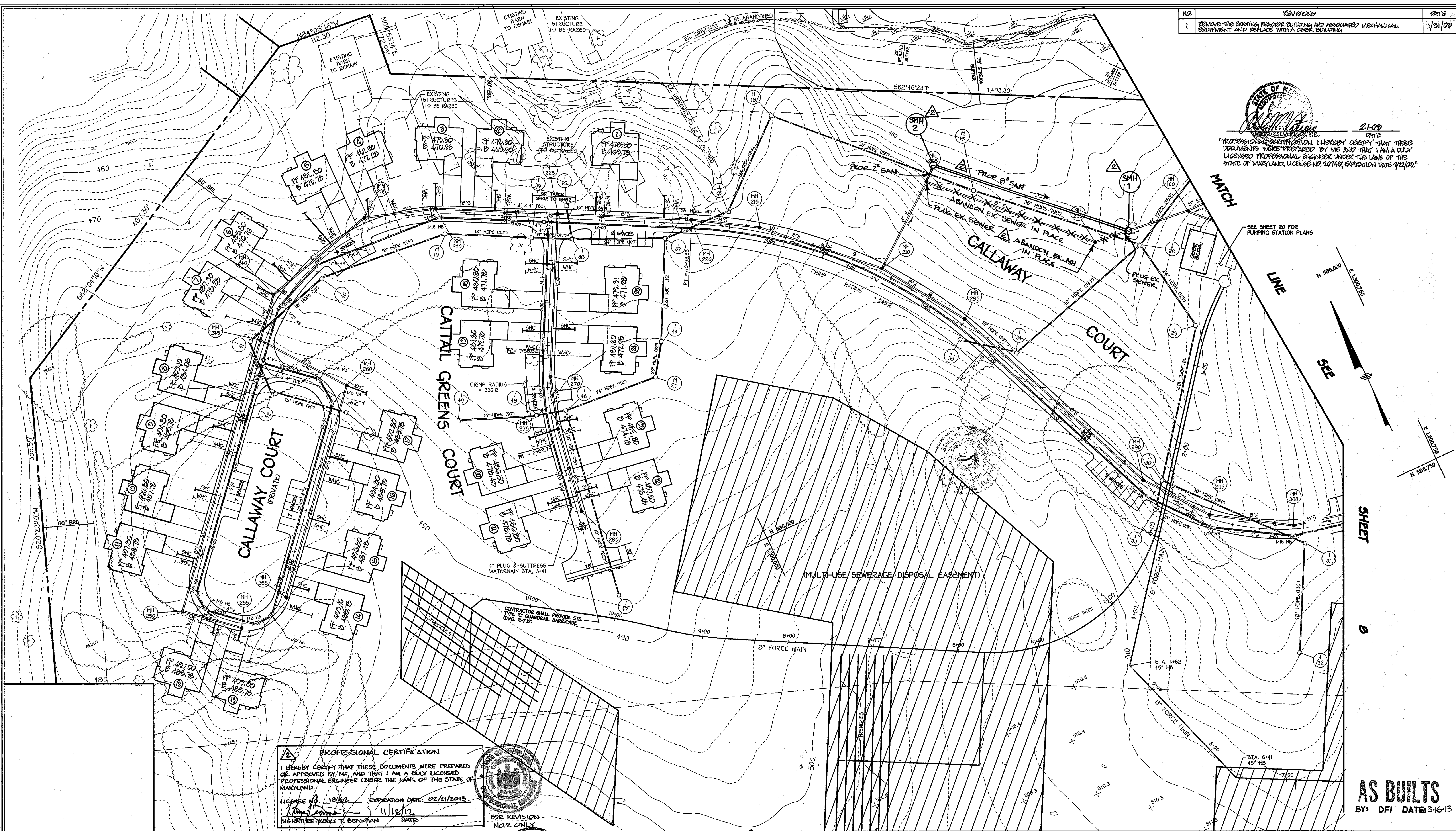
3	REMOVE THE EXISTING RECTOR BUILDING, AND ASSOCIATED MECHANICAL EQUIPMENT AND REPLACE WITH A COVER BUILDING	1/31/02
2	ADD CATCHHOUSE, CONCRETE PAVING AREA & WATER TREATMENT PLANT	7/7/02
1	Remove Traffic Calming Devices	8-26-02
N/A	REVISIONS	Date

WATER & SEWER LAYOUT
 SITE DEVELOPMENT PLAN
 THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 3
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1" = 50' DATE: SEPTEMBER, 2001
 SHEET 8 OF 37

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK • 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 410 418 - 2855

NO.	REVISIONS	DATE
1	REMOVE THE EXISTING REAR PORCH BUILDING AND ASSOCIATED MECHANICAL EQUIPMENT AND REPLACE WITH A GARBAGE BUILDING	1/31/09

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 10748, EXPIRATION DATE 9/22/09.



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 12662 EXPIRATION DATE: 02/01/2013
 SIGNATURE: [Signature] DATE: 11/15/12
 FOR REVISION NO. 2 ONLY

ENGINEER'S CERTIFICATE
 I certify that the erosion and sediment control represents a practical and workable plan based on the physical conditions of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Engineer (Print name below signature) [Signature] DATE: 10-02-01

DEVELOPER'S CERTIFICATE
 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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Signature of Developer (Print name below signature) [Signature] DATE: 11/29/01

APPROVED FOR HOWARD COUNTY AND MEETS TECHNICAL REQUIREMENTS.
 U.S.D.A. Natural Resources Conservation Service
 This development plan is approved for erosion and sediment control by the HOWARD COUNTY COMMISSIONER OF SOIL CONSERVATION.
 Signature: [Signature] DATE: 12/11/09
 Signature: [Signature] DATE: 12/14/09

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC BY HOWARD COUNTY HEALTH DEPARTMENT.
 Signature: [Signature] DATE: 1-7-09
 HEALTH OFFICER

PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK	---	1 - 25

DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 4228, F. 442	3	RC-DEO	21	4th	---

WATER CODE: --- SEWER CODE: ---

WATER & SEWER LAYOUT
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1" = 50' DATE: SEPTEMBER, 2001
 SHEET 9 OF 37

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 NATIONAL SQUARE OFFICE PARK - 19275 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2255

Approved: Department of Planning and Zoning

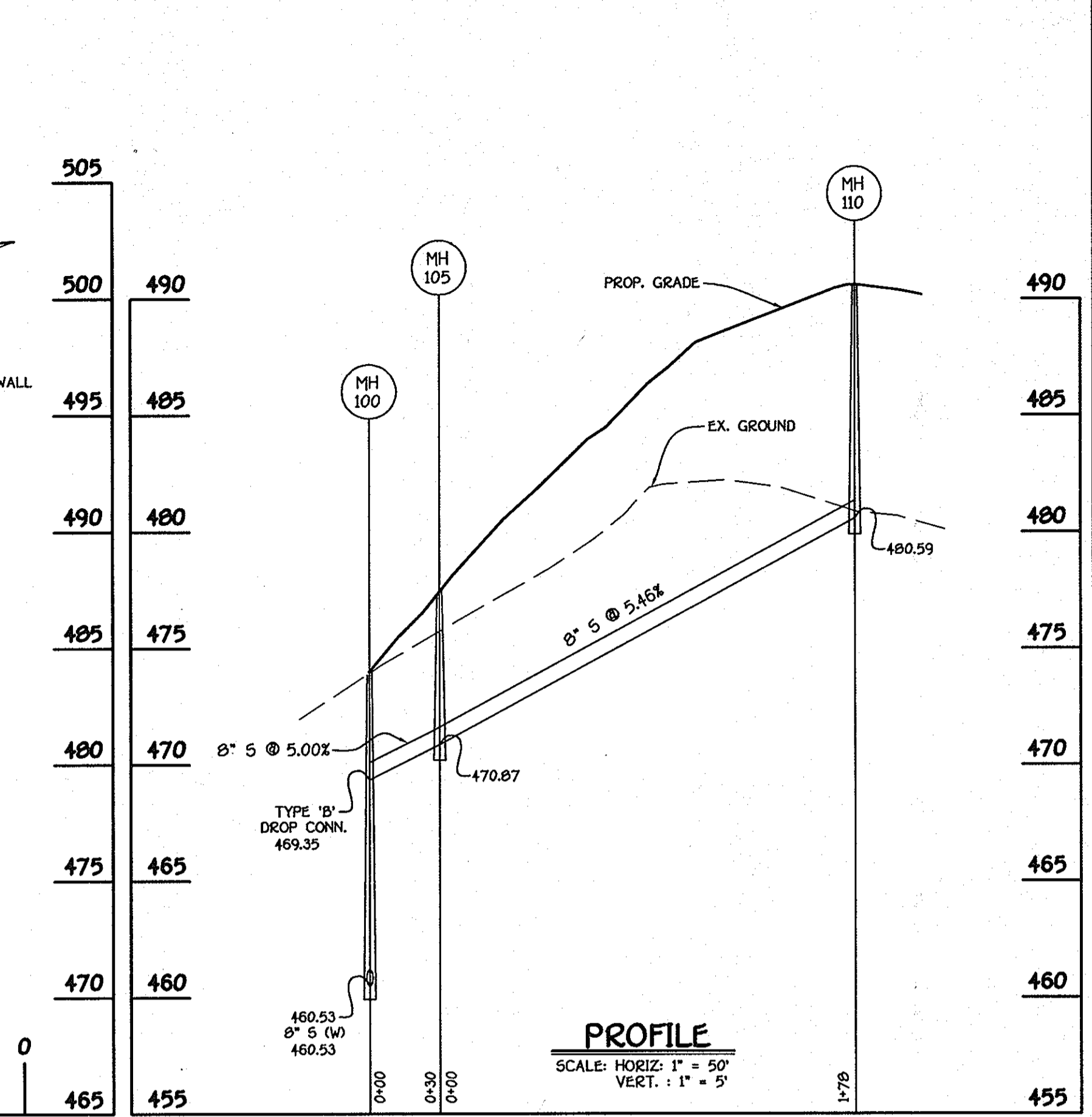
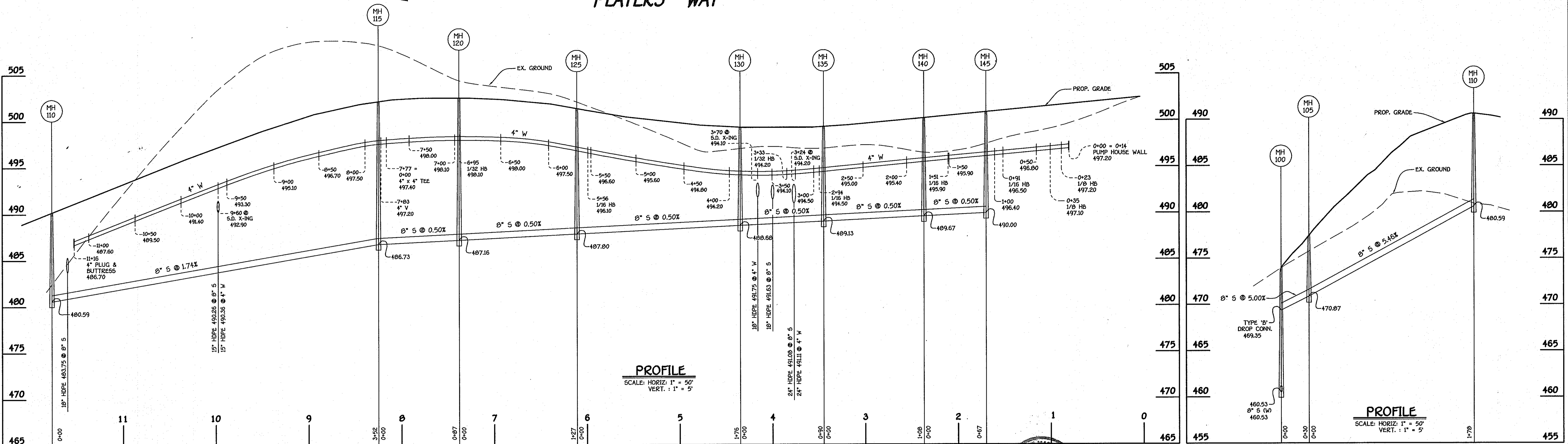
Signature: [Signature] DATE: 11/18/02
 Chief, Division of Land Development

Signature: [Signature] DATE: 11/14/02
 Chief, Development Engineering Division

Signature: [Signature] DATE: 11/25/02
 Director, Department of Planning and Zoning

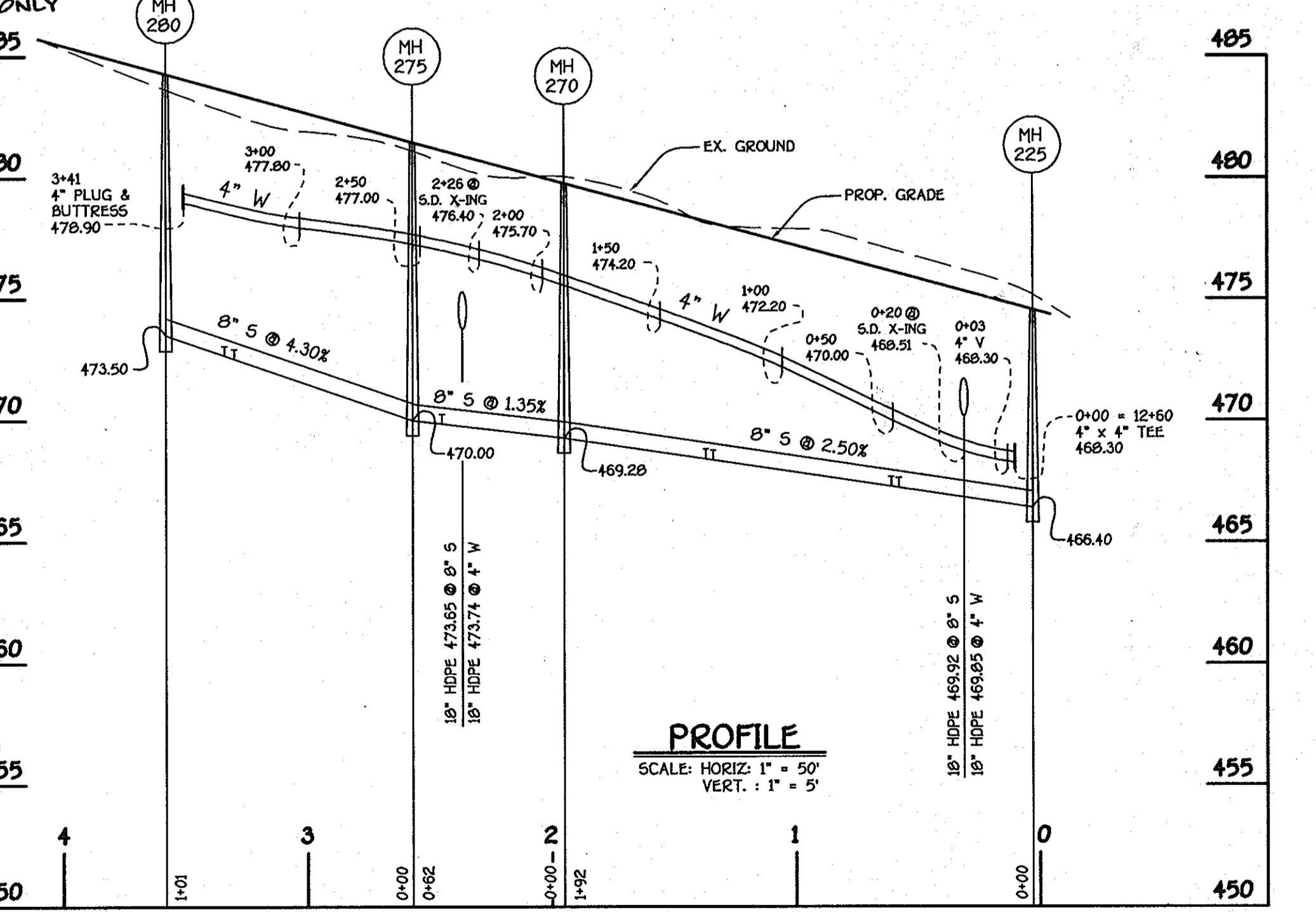
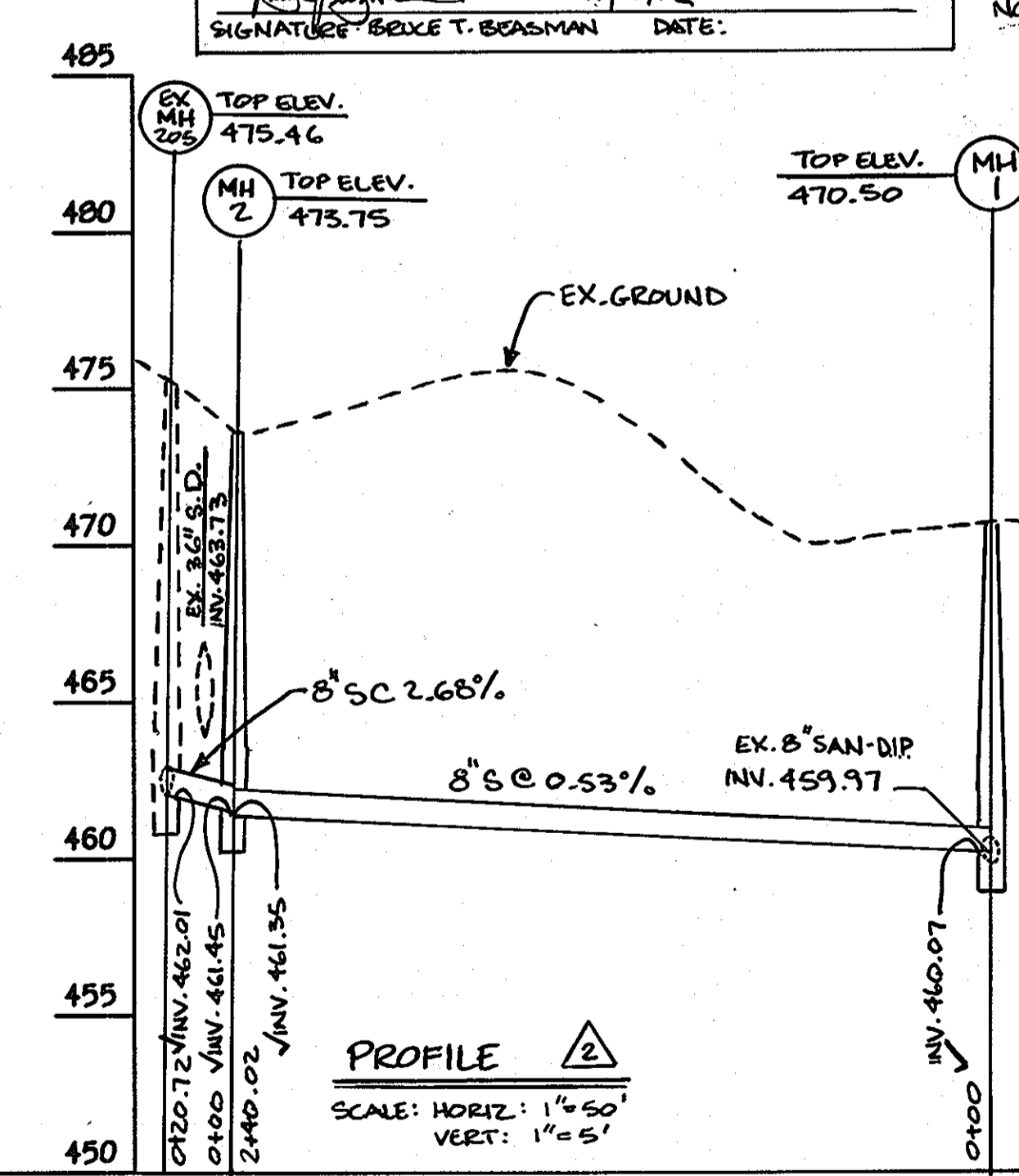
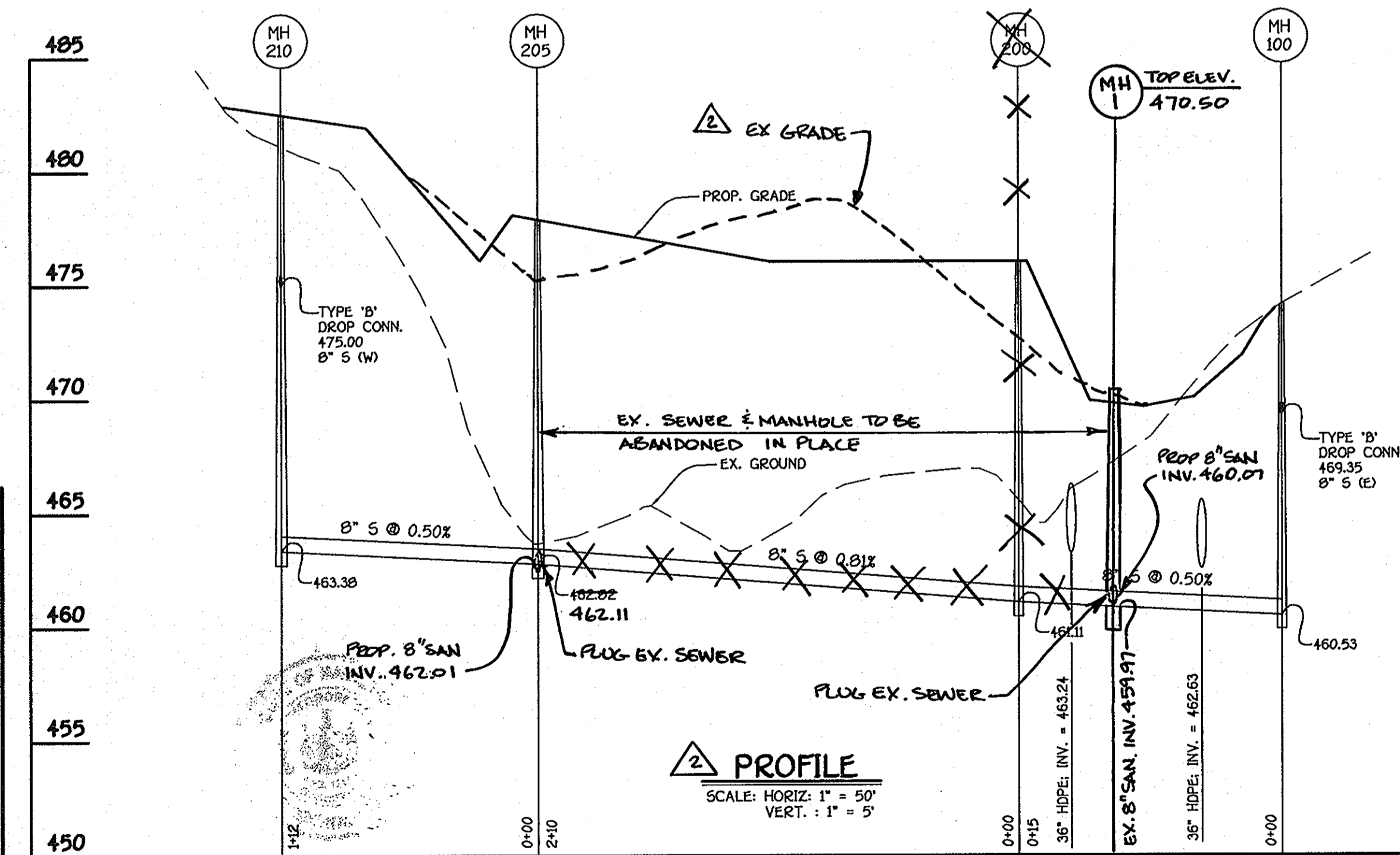
NO.	REVISIONS	DATE
2	RELOCATE SEWER - MH 200 TO MH 205 BY FWA	10-26-12
1	Rev. hse. & grd. All Units	8-27-02
NS		

PLAYERS WAY



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 18162 EXPIRATION DATE: 02/21/2013
SIGNATURE: EDIXE T. BRASMAN DATE: 11/15/12
FOR REVISION NO. 2 ONLY

AS BUILTS
BY: DFI DATE: 5-16-13



Approved: Department of Planning and Zoning
Cindy Hamilton, Chief, Division of Land Development, 11/18/02
Chief Development Engineering Division, 11/14/02
Director, Department of Planning and Zoning, 1/25/02
2 RELOCATE EX. SEWER - MH 200 TO MH 205 BY FWA, 10-26-12
REVISIONS, DATE

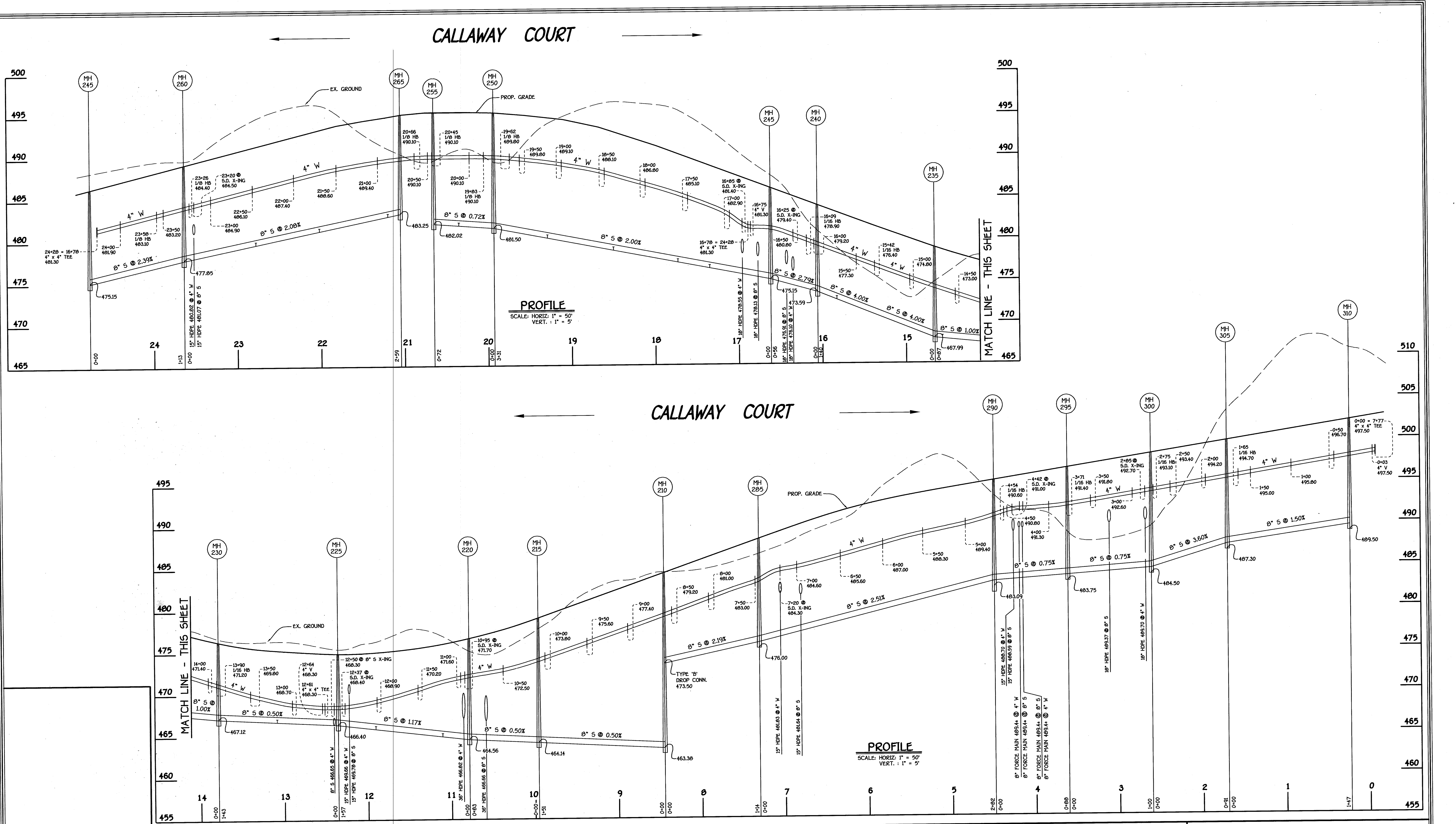
ENGINEER'S CERTIFICATE
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
Signature of Engineer: [Signature], Date: 3-9-01
DEVELOPER'S CERTIFICATE
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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
Signature of Developer: [Signature], Date: 3/9/01

Reviewed for HOWARD SCD and meets Technical Requirements.
Jim Meyer, U.S.D. Natural Resources Conservation Service, 12/11/01
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
John P. [Signature], HOWARD SCD, 12/11/01
OWNER / DEVELOPER
THE VILLAS AT CATTAIL CREEK, L.L.C.
8000 MAIN STREET
ELLCOTT CITY, MARYLAND 21043

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC BY HOWARD COUNTY HEALTH DEPARTMENT.
Dennis [Signature], HEALTH OFFICER, 1-7-02
PROJECT: THE VILLAS AT CATTAIL CREEK, SECTION/AREA: ---, LOT NO.: 1-25
DEED: L. 4228, F. 442, BLOCK NO.: 3, ZONE: RC-DEO, TAX/ZONE: 21, ELEC. DIST.: 4th, CENSUS TR.: ---
WATER CODE: ---, SEWER CODE: ---

WATER & SEWER PROFILES
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
ZONING: RC-DEO
TAX MAP No: 21 PARCEL: 229
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 50' DATE: SEPTEMBER, 2001
SHEET 10 OF 37





FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 2275 BALTIMORE NATIONAL PKWY.
 ELLICOTT CITY, MARYLAND 21114
 410-481-2955

Approved: Department of Planning and Zoning
Christy Harriott
 Chief, Division of Land Development
 Date: 1/18/02
John J. [Signature]
 Chief, Development Engineering Division
 Date: 1/14/02
[Signature]
 Director, Department of Planning and Zoning
 Date: 1/23/02

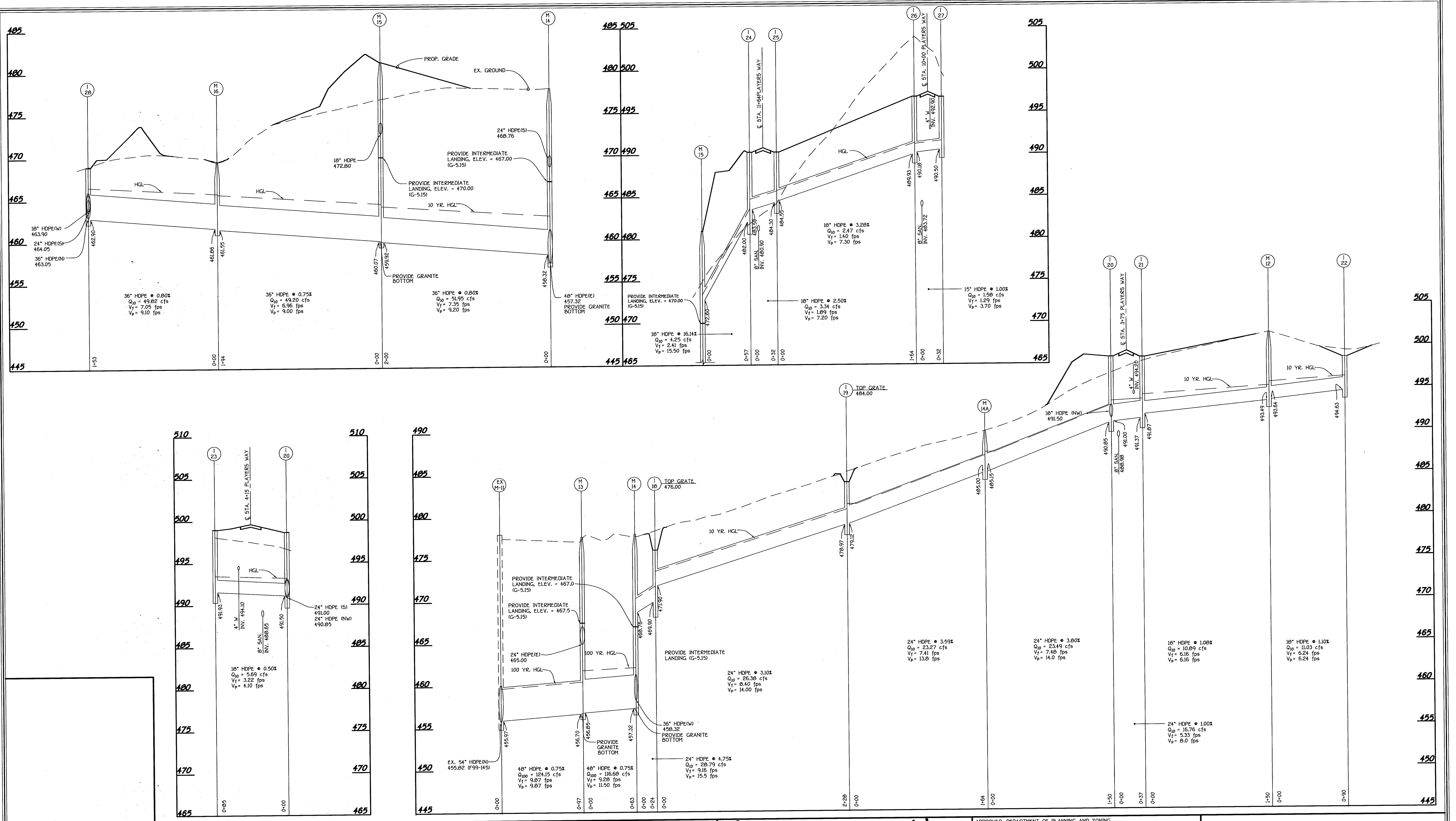
ENGINEER'S CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Engineer: *[Signature]* Date: 3-8-01
DEVELOPER'S CERTIFICATE
 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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Signature of Developer (Print name below signature): *[Signature]* Date: 3/9/01

Reviewed for HOWARD SCD and meets Technical Requirements.
 Signature: *[Signature]* Date: 12/11/01
 U.S.D. Natural Resources Conservation Service
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *[Signature]* Date: 12/11/01
OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21143

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC BY HOWARD COUNTY HEALTH DEPARTMENT.
 Signature: *[Signature]* Date: 1-7-02
 HEALTH OFFICER

PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK	----	1 - 25
DEED	BLOCK NO.	ZONE
L. 422B, F. 442	3	RC-DEO
TAX/ZONE	ELEC. DIST.	CENSUS TR.
21	4th	----
WATER CODE	SEWER CODE	----

WATER & SEWER PROFILES
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1" = 50' DATE: SEPTEMBER, 2001
 SHEET 11 OF 37



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10222 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2895

Approved for private well and private septic by
 Howard County Health Department:
Randy Jones Health Officer
 Date: 11/29/01

ENGINEER'S CERTIFICATE
 I certify that the design and sediment control represents a practical and workable plan based on the knowledge of the site conditions and that it was prepared in accordance with the standards of the Howard Soil Conservation District.
 Signature of *[Signature]* Date: 7-20-01

DEVELOPER'S CERTIFICATE
 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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Signature of Developer (Print name below signature) Date: 11/29/01

Reviewed for Howard SCD and meets Technical Requirements.
Jim Meyer Date: 12/11/01
 U.S.D. Natural Resources Conservation Service
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
John Williams Date: 12/11/01
 Howard SCD

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELICOTT CITY, MARYLAND 21043

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cathy Hamilton Date: 11/18/02
 Chief, Division of Land Development
[Signature] Date: 12/12/01
 Chief, Development Engineering Division
[Signature] Date: 11/25/02
 Director, Department of Planning and Zoning

DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 4228, f. 442	3	RC-DEO	21	4th	----

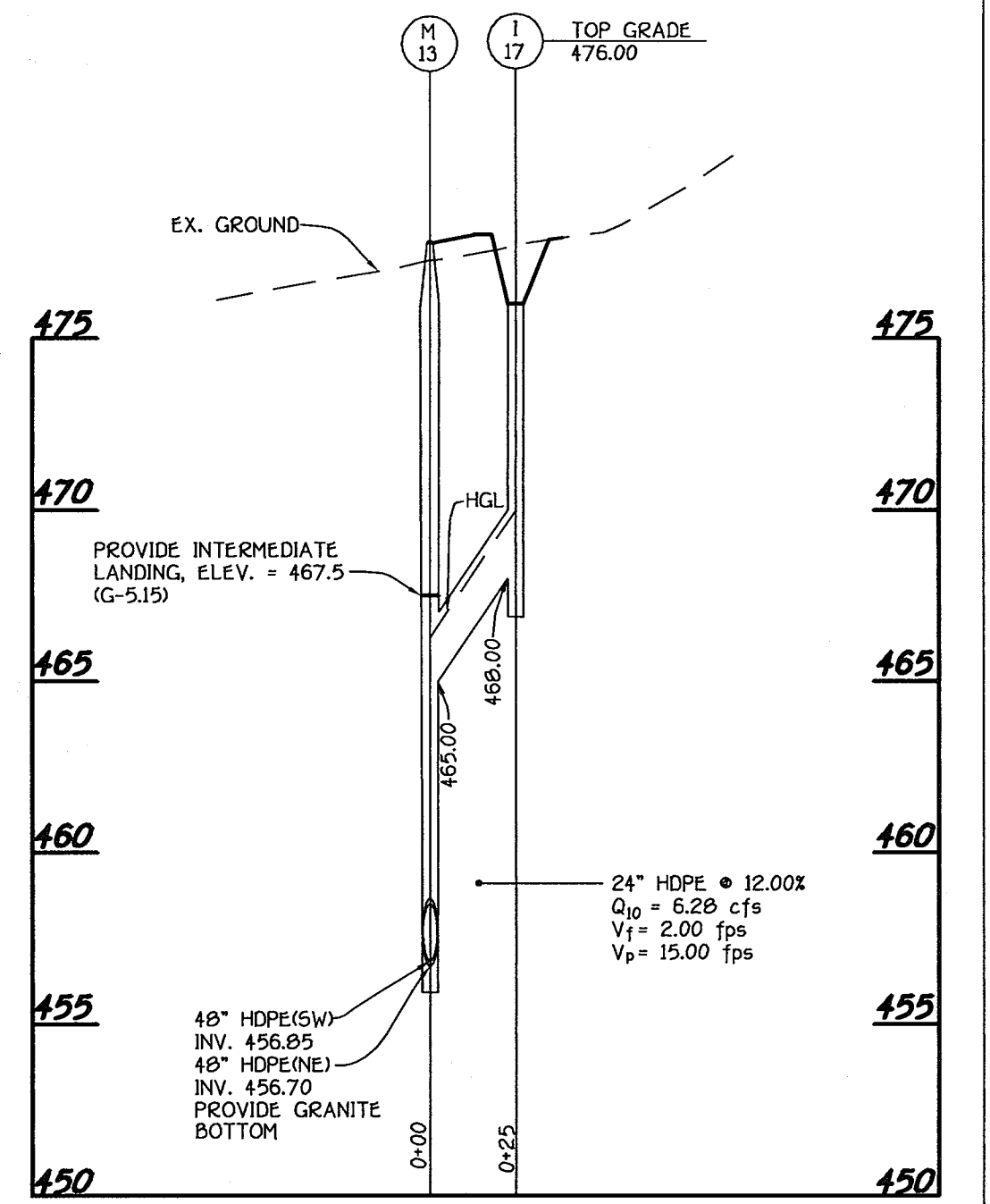
PROJECT: THE VILLAS AT CATTAIL CREEK SECTION/AREA: ---- LOT NO.: 1 - 25

STORM DRAIN PROFILES
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: HORIZ. : 1" = 50' DATE: SEPTEMBER, 2001
 VERT. : 1" = 5'
 SHEET 12 OF 37

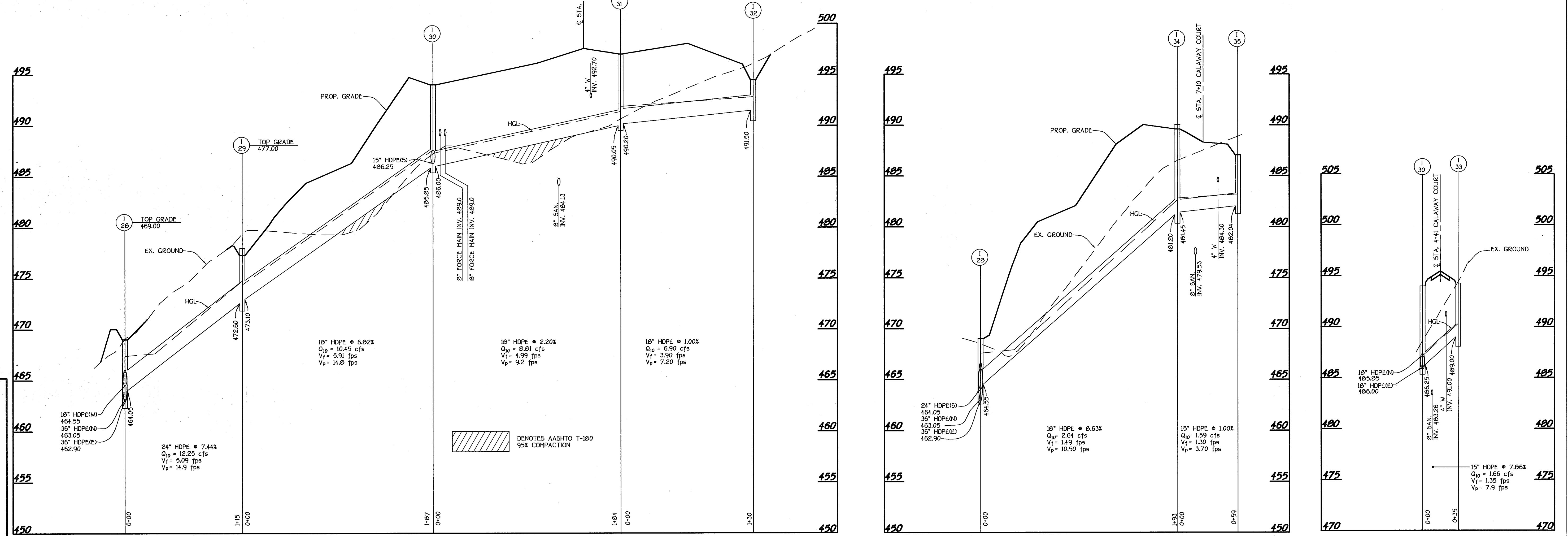
INLET SCHEDULE									
STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS	
I-17	476.00	---	468.00	---	N 586282.85	---	'S' INLET	S.D. 4.22	
I-18	476.00	471.90	469.90	---	E 130000.04	---	'S' INLET	S.D. 4.22	
I-19	484.00	479.12	478.97	---	N 586282.85	---	'S' INLET	S.D. 4.22	
I-20	498.75	491.50, 491.00	490.85	PLAYERS WAY	3+75	19R	*OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-21	498.90	491.87	491.37	PLAYERS WAY	3+75	19L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-22	498.50	---	494.63	---	N 586322.48	---	'S' INLET	S.D. 4.22	
I-23	499.00	---	491.93	PLAYERS WAY	4+50	17L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-24	490.40	477.94	477.79	PLAYERS WAY	11+64	16R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-25	490.40	484.55	484.30	PLAYERS WAY	11+64	16L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-26	496.90	490.18	489.93	PLAYERS WAY	10+00	16L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-27	496.40	---	490.50	PLAYERS WAY	10+00	16R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-28	469.00	463.05, 462.90, 463.05	462.90	---	N 586322.48	---	'S' INLET	S.D. 4.22	
I-29	477.00	473.10	472.85	---	E 130000.04	---	'S' INLET	S.D. 4.22	
I-30	494.00	486.00, 486.25	485.85	CALLAWAY COURT	4+50	17R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-31	497.00	490.20	490.05	CALLAWAY COURT	2+66	17L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-32	496.00	---	491.50	---	N 586282.85	---	'S' INLET	S.D. 4.22	
I-33	494.30	---	489.00	CALLAWAY COURT	4+35	15L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-34	489.94	481.45	481.20	CALLAWAY COURT	6+80	17R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-35	487.00	---	482.04	CALLAWAY COURT	7+10	15L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-36	477.00	466.32	466.27	CALLAWAY COURT	10+53	18R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-37	468.03	468.03	467.03	CALLAWAY COURT	11+25	18L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-38	469.35	469.60	468.85	CATTAIL GREENS COURT	0+24	23L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-39	473.75	469.85	469.70	CATTAIL GREENS COURT	0+24	23R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-40	481.50	474.70	474.55	CALLAWAY COURT	15+58	17L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-41	485.45	477.65	477.50	CALLAWAY COURT	16+65	16R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-42	486.82	479.40	479.25	CALLAWAY COURT	24+06	24L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-43	489.10	---	482.25	CALLAWAY COURT	23+19	17R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-44	476.00	471.33	471.08	---	N 586282.85	---	'S' INLET	S.D. 4.22	
I-45	474.10	---	470.00	CALLAWAY COURT	12+115	15R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-46	480.00	473.52, 473.27	473.02	CATTAIL GREENS COURT	2+30	18L	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-47	487.00	---	478.95	---	N 586322.48	---	'S' INLET	S.D. 4.22	
I-48	480.00	474.12	473.87	CATTAIL GREENS COURT	2+30	18R	OPEN END GRATE	5.0, 4.36 w/ S.D. 4.13	
I-49	480.50	---	475.25	---	E 130000.04	---	'S' INLET	S.D. 4.22	

MANHOLE SCHEDULE									
STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	PIPE DIA. IN / OUT	TYPE	REMARKS
M-12	501.5	493.64	493.49	---	N 586487.23	---	18", 18"	STD. 4' MANHOLE	G. - 5.12
M-13	477.90	465.00, 456.85	456.70	---	E 130000.04	---	24", 48", 48"	4' BRICK MANHOLE	G. - 5.03
M-14	477.80	466.76, 458.32	457.32	---	N 586282.85	---	24", 36", 48"	4' BRICK MANHOLE	G. - 5.03
M-14A	490.0	485.15	485.00	---	N 586282.85	---	24", 24"	STD. 4' MANHOLE	G. - 5.12
M-15	481.00	472.80, 460.07	459.92	---	E 130000.04	---	18", 36", 36"	STD. 4' MANHOLE	G. - 5.13
M-16	469.50	461.68	461.53	---	N 586282.85	---	36", 36"	STD. 4' MANHOLE	G. - 5.13
M-17	475.50	464.20	464.05	---	E 130000.04	---	36", 36"	STD. 4' MANHOLE	G. - 5.13
M-18	473.00	465.65	465.50	---	N 586282.85	---	36", 36"	STD. 4' MANHOLE	G. - 5.13
M-19	476.30	470.77	470.62	CALLAWAY COURT	13+84	24L	18", 18"	STD. 4' MANHOLE	G. - 5.12
M-20	479.80	471.90	471.75	---	E 130000.04	---	24", 24"	STD. 4' MANHOLE	G. - 5.12

PIPE SCHEDULE	
PIPE SIZE	LENGTH
15" HDPE	256 L.F.
18" HDPE	2,101 L.F.
24" HDPE	1,120 L.F.
36" HDPE	1,210 L.F.
48" HDPE	160 L.F.



*SEE MODIFIED OPEN END GRATE DETAIL ON SHEET H FOR ALL LOCATIONS



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 18772 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 4102 481 - 2955

Approved for private well and private septic by
 Howard County Health Department.
 Deputy Director M. J. [Signature]
 Health Officer
 1-7-02
 Date

ENGINEER'S CERTIFICATE
 I certify that the design and sediment control represents a practical and workable plan based on the knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of [Signature]
 Date 7/20/01

DEVELOPER'S CERTIFICATE
 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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Signature of Developer (Print name below signature)
 Date 11/29/01

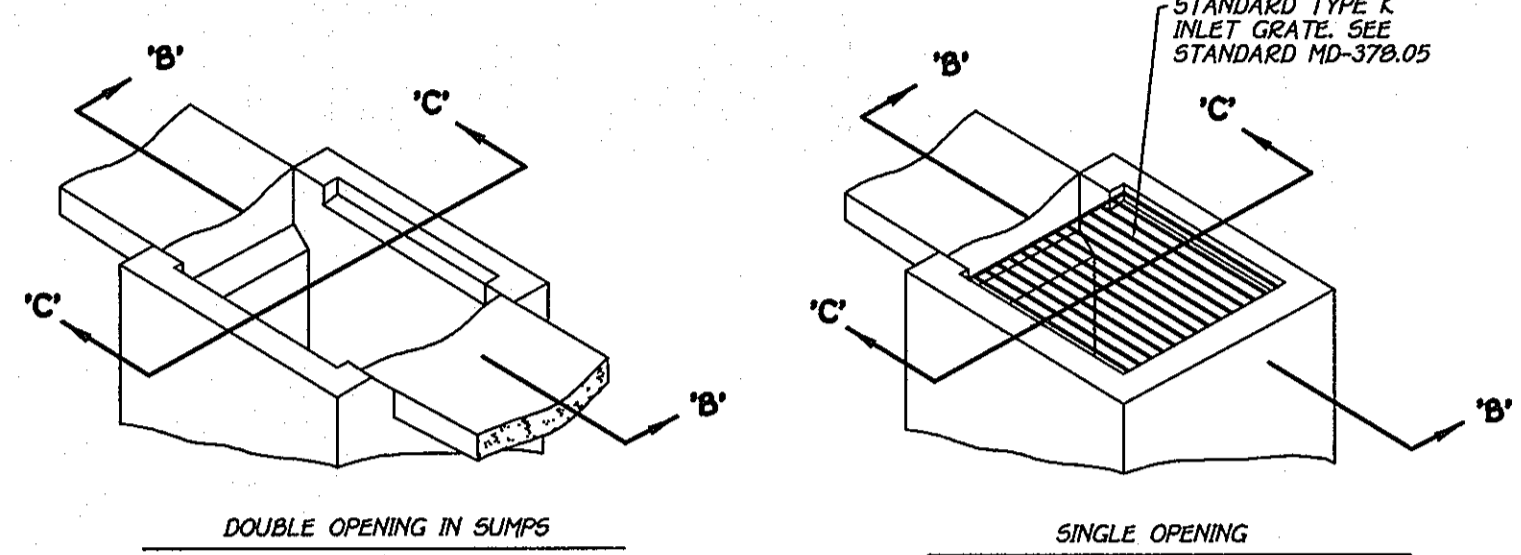
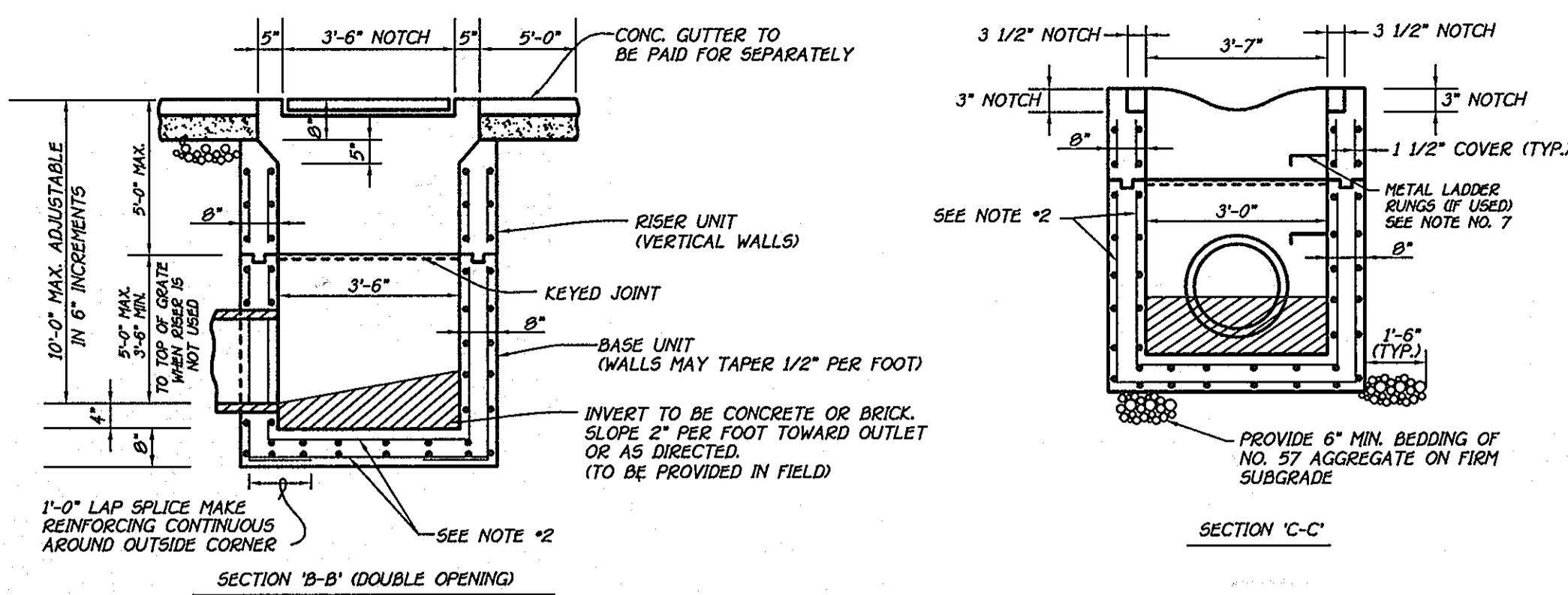
Reviewed for Howard SCD and meets Technical Requirements.
 U.S.D. Natural Resources Conservation Service
 This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
 Signature of [Signature]
 Date 12/11/01

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21045

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Director, Department of Planning and Zoning
 11/15/02
 12/12/01
 1/25/02

PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK	---	1 - 25
DEED	BLOCK NO.	ZONE
L. 4228, F. 442	3	RC-DEO
TAX/ZONE	ELEC. DIST.	CENSUS TR.
21	4th	---
WATER CODE	SEWER CODE	---

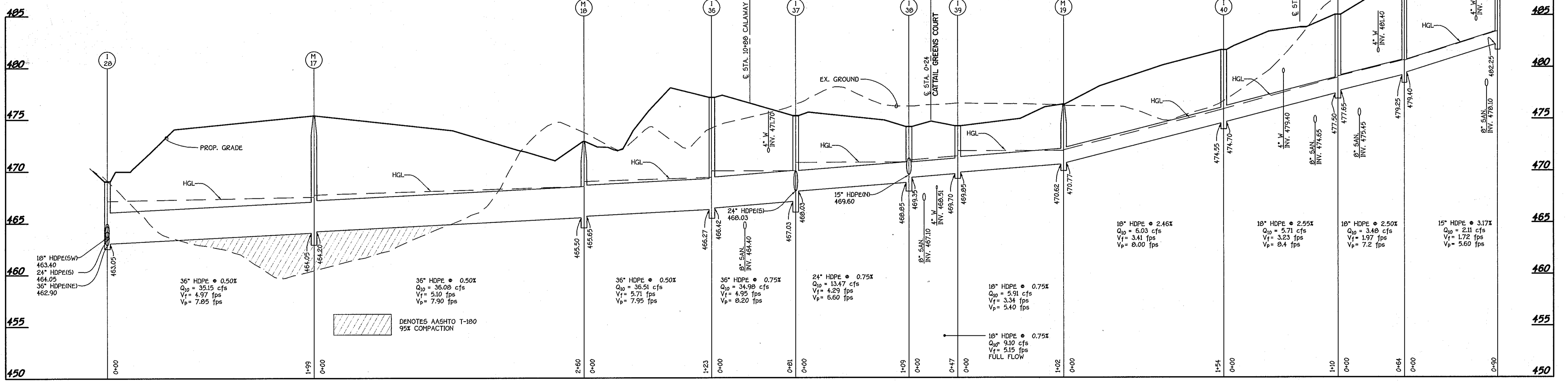
STORM DRAIN PROFILES
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: HORIZ. : 1" = 50' DATE: SEPTEMBER, 2001
 VERT. : 1" = 5'
 SHEET 13 OF 37



GENERAL NOTES:

1. CONCRETE TO BE MIX NO. 6 (4500 PSI).
2. REINFORCING - 2 LAYERS OF 4 x 4 - W 4.0 x W 4.0 WELDED WIRE FABRIC.
3. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
4. FOR GRATE DETAILS SEE STANDARD MD. - 378.05. GRATE TO BE AS SHOWN OR FURNISH APPROVED EQUIVALENT.
5. PIPE OPENINGS TO BE PROVIDED AS REQUIRED, FOR SIZE, LOCATION AND INVERT ELEVATIONS REFER TO CONSTRUCTION PLANS.
6. PLACEMENT OF SUBGRADE DRAINAGE WILL BE AS DIRECTED BY THE ENGINEER OR AS NOTED ON THE CONSTRUCTION PLANS.
7. LADDER RUNGS SHALL BE IN ACCORDANCE WITH STANDARD MD. - 383.91 AS SHOWN OR AS DIRECTED BY THE ENGINEER.
8. MINIMUM DEPTH PAYMENT PER "EACH" INLET INCLUDES DEPTHS UP TO 3'-6". VERTICAL DEPTH PAYMENT PER LINEAR FOOT INCLUDES DEPTHS IN EXCESS OF 3'-6".
9. A 6" PERFORATED CIRCULAR PIPE, FOR EROSION AND SEDIMENT CONTROL, SHALL BE PLACED IN THE INLET WALL AT ALL INLET SEDIMENT TRAPS AS SHOWN ON THE PLANS.
10. FOR USE IN NON-TRAFFIC LOCATIONS ONLY.

MODIFIED OPEN END GRATE
NOT TO SCALE



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 12722 RALLTOWN NATIONAL Fwy
ELLCOTT CITY, MARYLAND 21042
(410) 481 - 2299

Approved For private well and private septic by
Howard County Health Department.
Diana Bruckner, M.U., S.E.
Health Officer
1-7-02
Date

ENGINEER'S CERTIFICATE
"I certify that the design of erosion and sediment control represents a practical and workable plan based on the knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
[Signature]
Signature of Engineer (Print name below signature) **3-8-01**
Date

DEVELOPER'S CERTIFICATE
"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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."
[Signature]
Signature of Developer (Print name below signature) **3/9/01**
Date

Reviewed for HOWARD SCD and meets Technical Requirements.
[Signature] **12/11/01**
Date
U.S.D. Natural Resources Conservation Service
The development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
[Signature] **12/11/01**
Date
Howard SCD

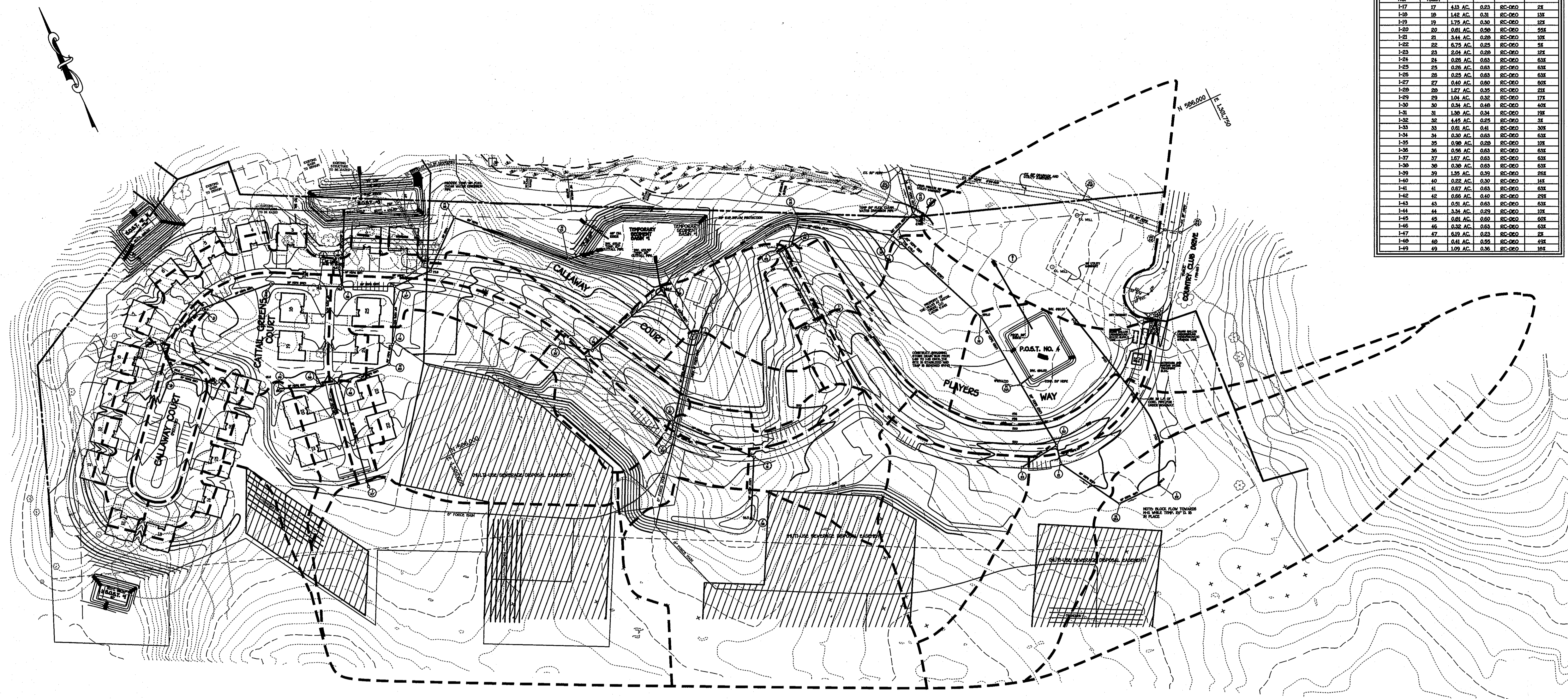
OWNER / DEVELOPER
THE VILLAS AT CATTAIL CREEK, L.L.C.
8000 MAIN STREET
ELLCOTT CITY, MARYLAND 21043


APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] **11/8/02**
Date
Chief, Division of Land Development
[Signature] **12/12/01**
Date
Chief, Development Engineering Division
[Signature] **12/12/02**
Date
Director, Department of Planning and Zoning

PROJECT	SECTION/AREA	LOT NO.			
THE VILLAS AT CATTAIL CREEK	----	1 - 25			
DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 4228, F. 442	3	RC-DEO	21	4th	----
WATER CODE	SEWER CODE				

STORM DRAIN PROFILES
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
ZONING: RC-DEO
TAX MAP No: 21 PARCEL: 229
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'
DATE: SEPTEMBER, 2001
SHEET 14 OF 37

DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA	°	ZONED	S.D.P.
I-17	17	4.13 AC.	0.23	RC-DEO	2E
I-18	18	1.42 AC.	0.31	RC-DEO	13E
I-19	19	1.75 AC.	0.30	RC-DEO	12E
I-20	20	0.81 AC.	0.50	RC-DEO	55E
I-21	21	3.44 AC.	0.29	RC-DEO	10E
I-22	22	6.72 AC.	0.25	RC-DEO	9E
I-23	23	2.04 AC.	0.29	RC-DEO	12E
I-24	24	0.26 AC.	0.63	RC-DEO	63E
I-25	25	0.26 AC.	0.63	RC-DEO	63E
I-26	26	0.25 AC.	0.63	RC-DEO	63E
I-27	27	0.49 AC.	0.60	RC-DEO	60E
I-28	28	1.77 AC.	0.35	RC-DEO	21E
I-29	29	1.61 AC.	0.32	RC-DEO	17E
I-30	30	0.34 AC.	0.46	RC-DEO	46E
I-31	31	1.30 AC.	0.34	RC-DEO	19E
I-32	32	4.45 AC.	0.25	RC-DEO	3E
I-33	33	0.81 AC.	0.41	RC-DEO	50E
I-34	34	0.30 AC.	0.63	RC-DEO	63E
I-35	35	0.30 AC.	0.29	RC-DEO	10E
I-36	36	0.56 AC.	0.63	RC-DEO	63E
I-37	37	1.57 AC.	0.63	RC-DEO	63E
I-38	38	0.30 AC.	0.63	RC-DEO	63E
I-39	39	1.35 AC.	0.32	RC-DEO	25E
I-40	40	0.22 AC.	0.30	RC-DEO	14E
I-41	41	0.67 AC.	0.63	RC-DEO	63E
I-42	42	0.66 AC.	0.40	RC-DEO	29E
I-43	43	0.21 AC.	0.63	RC-DEO	63E
I-44	44	3.34 AC.	0.29	RC-DEO	10E
I-45	45	0.81 AC.	0.60	RC-DEO	60E
I-46	46	0.32 AC.	0.63	RC-DEO	63E
I-47	47	6.49 AC.	0.29	RC-DEO	9E
I-48	48	0.41 AC.	0.25	RC-DEO	4E
I-49	49	1.09 AC.	0.36	RC-DEO	18E




 ALDO M. VITALE
 PROFESSIONAL ENGINEER
 STATE OF MARYLAND
 LICENSE NO. 20742 EXPIRATION DATE 2/22/09
 DATE: 2/10/08

Approved for private well and private septic by
 Howard County Health Department
 Denise Patterson, M.P.H.
 Health Officer
 DATE: 1-7-02

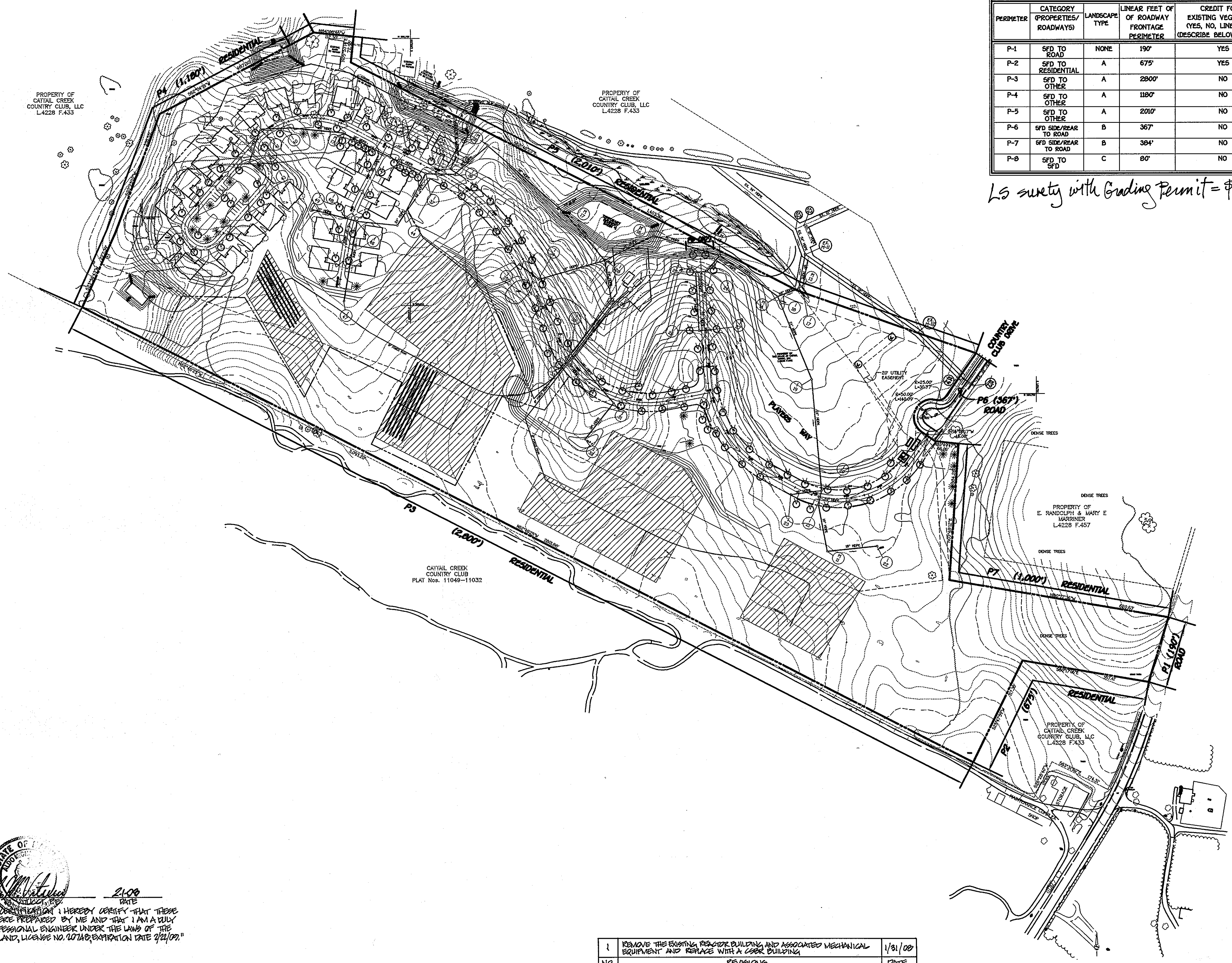
ENGINEER'S CERTIFICATE
 I certify that the erosion and sediment control represents a practical and workable plan based on my professional knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Engineer: [Signature] DATE: 10-02-01
DEVELOPER'S CERTIFICATE
 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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Signature of Developer: [Signature] DATE: 11/29/01

1 REMOVE THE EXISTING RESIDOR BUILDING AND ASSOCIATED MECHANICAL EQUIPMENT AND REPLACE WITH A COOR BUILDING 1/31/08
 NO. REVISIONS DATE
 Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S. Fish & Wildlife Service
 Conservation Service
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Signature: [Signature] DATE: 12/14/01
 Signature: [Signature] DATE: 12/14/01
OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Director, Department of Planning and Zoning
 DATE: 1/18/02
 DATE: 12/12/01
 DATE: 1/25/02
 PROJECT: THE VILLAS AT CATTAIL CREEK SECTION/AREA: --- LOT NO.: 1-25
 DEED: L. 4228, F. 442 BLOCK NO.: 3 ZONE: RC-DEO TAX/ZONE: 21 ELEC. DIST.: 4th CENSUS TR.: ---
 WATER CODE: --- SEWER CODE: ---

DRAINAGE AREA MAP
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 3
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1" = 100' DATE: SEPTEMBER, 2001
 SHEET 15 OF 37

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10775 HALLTHROPE NATIONAL Fwy.
 ELLICOTT CITY, MARYLAND 21042
 (410) 484 - 2555



SCHEDULE A PERIMETER LANDSCAPE EDGE								
PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED AND PROVIDED		
						SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	SFD TO ROAD	NONE	190'	YES (09')	NO	0	-	-
P-2	SFD TO RESIDENTIAL	A	675'	YES (675')	NO	0	-	-
P-3	SFD TO OTHER	A	2800'	NO	NO	47	-	-
P-4	SFD TO OTHER	A	1180'	NO	NO	20	-	-
P-5	SFD TO OTHER	A	2010'	NO	NO	34	-	-
P-6	SFD SIDE/REAR TO ROAD	B	367'	NO	NO	8	10	-
P-7	SFD SIDE/REAR TO ROAD	B	384'	NO	NO	8	10	-
P-8	SFD TO SFD	C	80'	NO	NO	2	-	-

LS surety with Grading Permit = \$38,700⁰⁰

PLANT LIST			
QTY	KEY	NAME	SIZE
119		ACER RUBRUM 'RED SUNSET' RED MAPLE	2 1/2" - 3" CAL.
20		WHITE PINE	6' - 8' HT.

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 90748, EXPIRATION DATE 2/21/02.

Approved for private well and private septic by
 Howard County Health Department.
 Deputy Director MUPERT
 Health Officer
 1-7-01
 Date

ENGINEER'S CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on the best knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Professional Engineer:
 Date: 11-29-01

DEVELOPER'S CERTIFICATE
 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 the Environment Approved Training Program for the control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Signature of Developer (Print name below signature):
 Date: 11/29/01

NO.	REVISIONS	DATE
1	REMOVE THE EXISTING REAR DECK BUILDING AND ASSOCIATED MECHANICAL EQUIPMENT AND REPLACE WITH A GORG BUILDING	1/31/02

Approved for HOWARD SCD and meets Technical Requirements.
 U.S.D.C. - Natural Resource Conservation Service
 The development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Howard SCD
 Date: 12/14/01

OWNER / DEVELOPER
 THE VILLAS AT CATTAL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

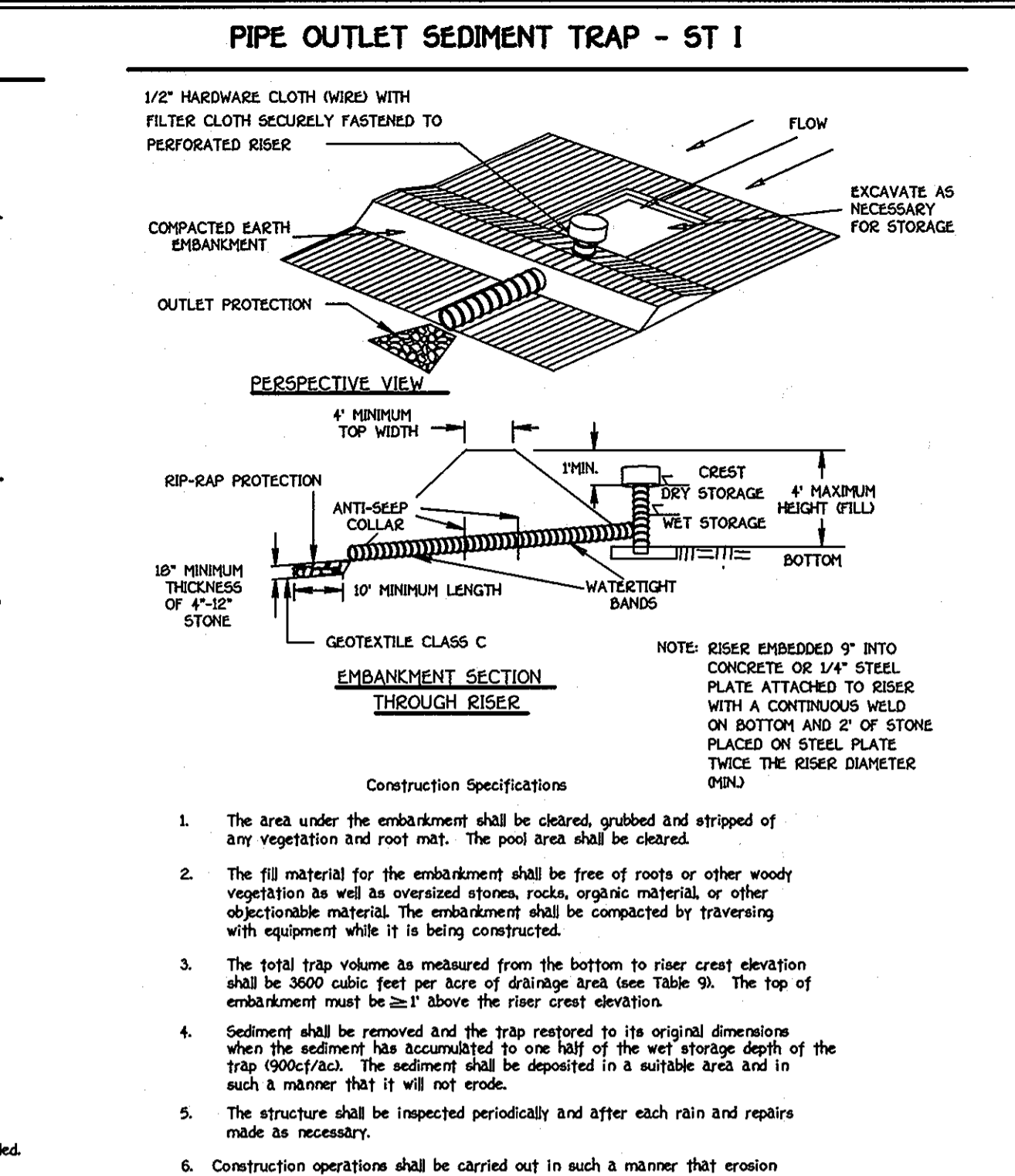
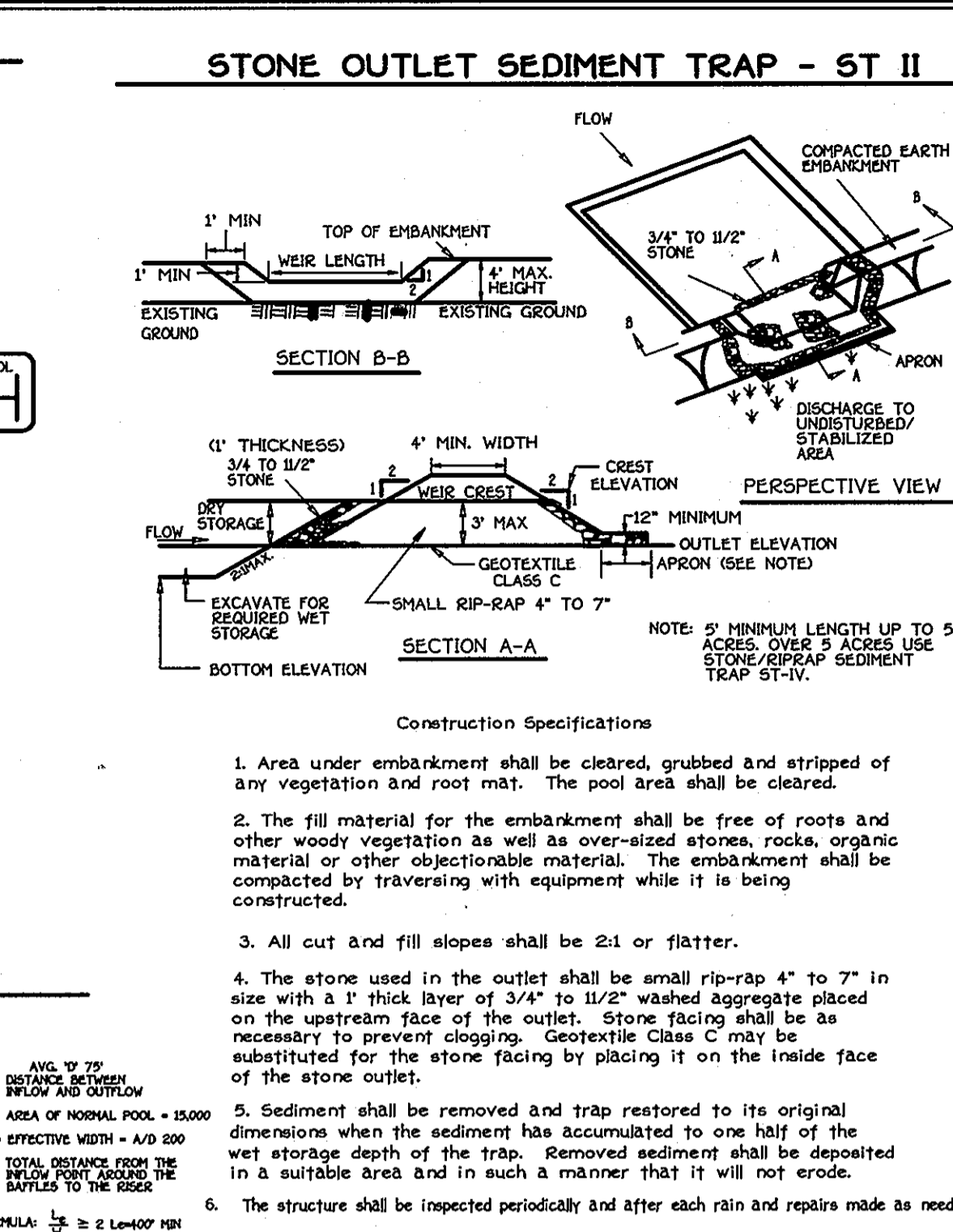
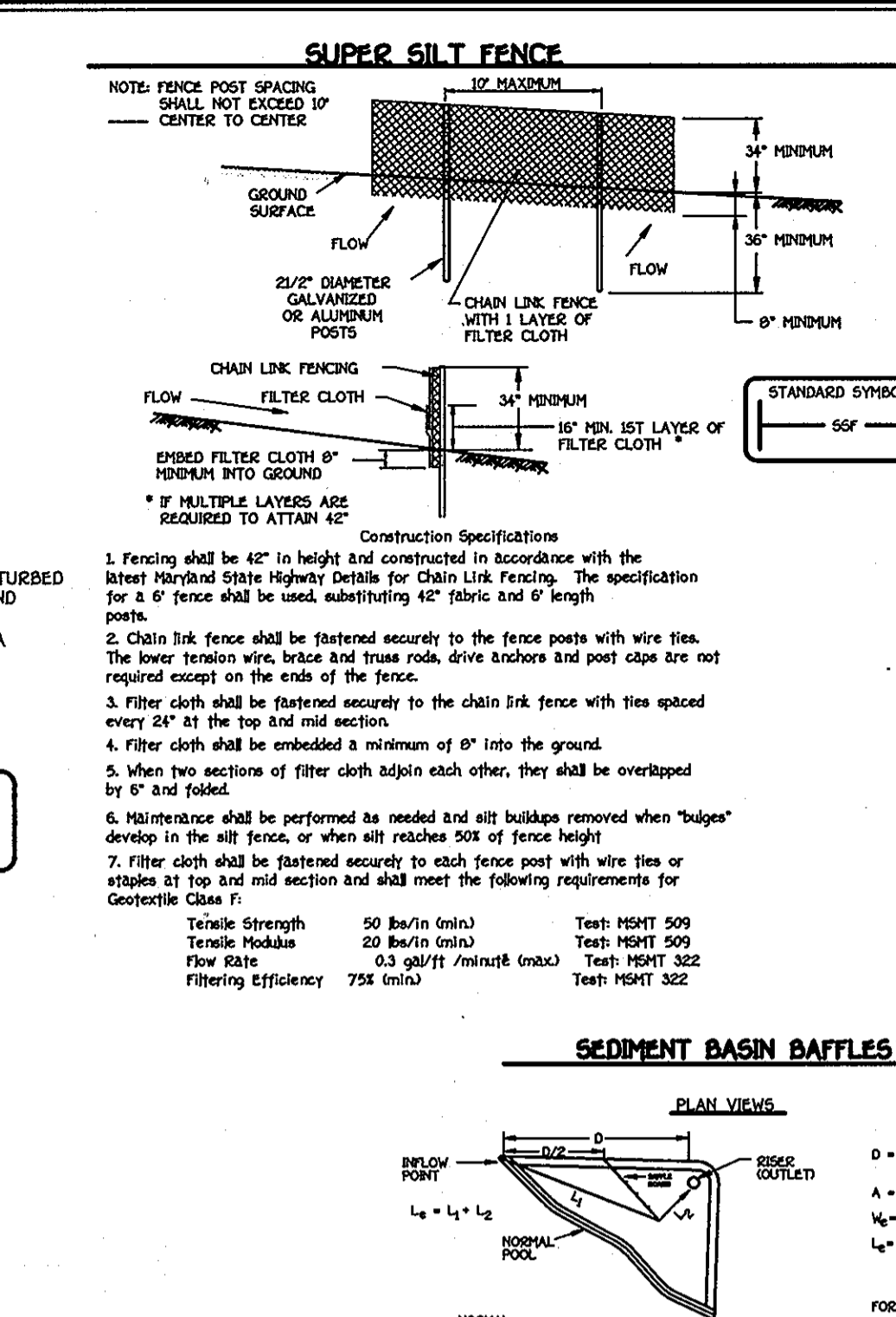
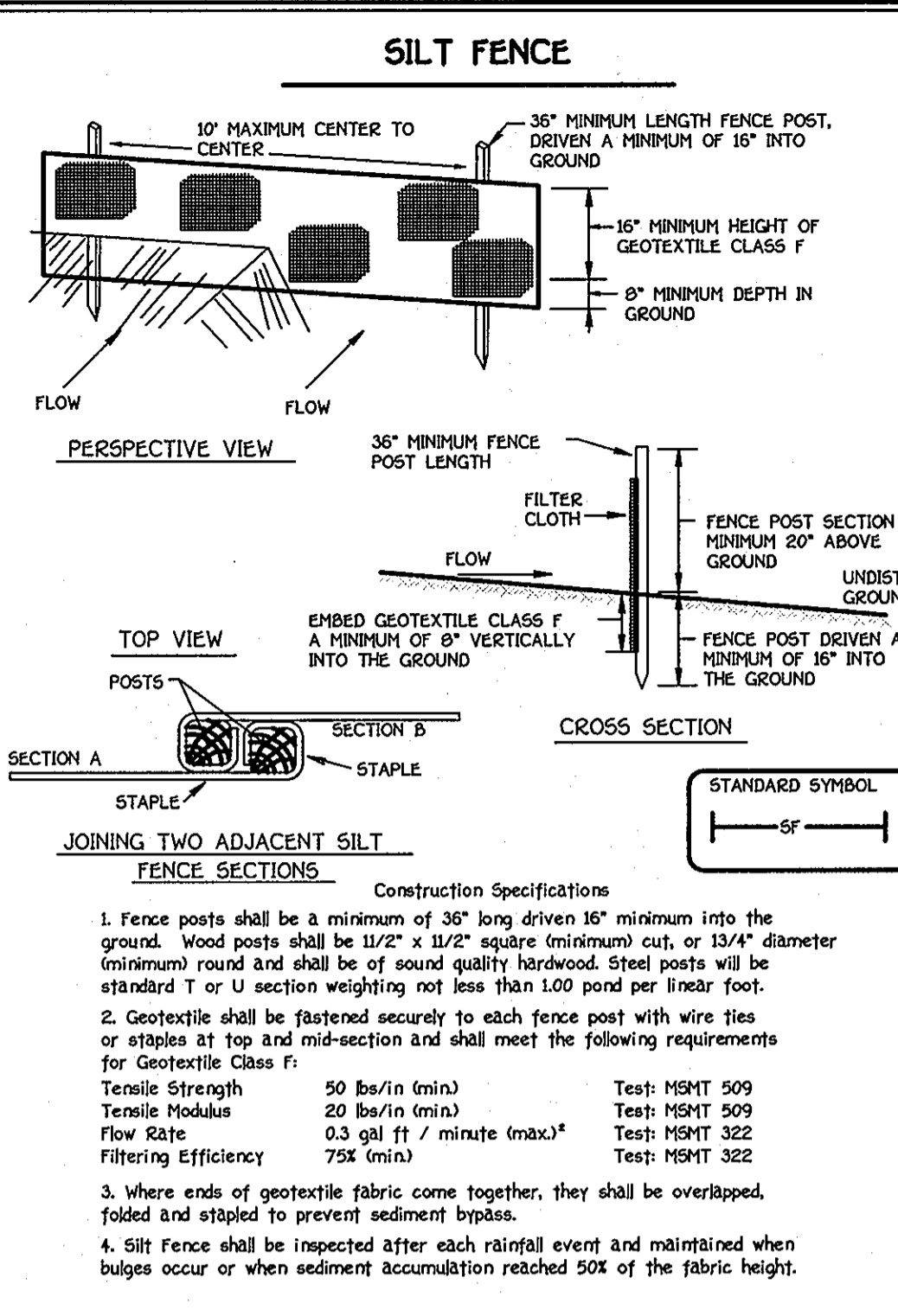
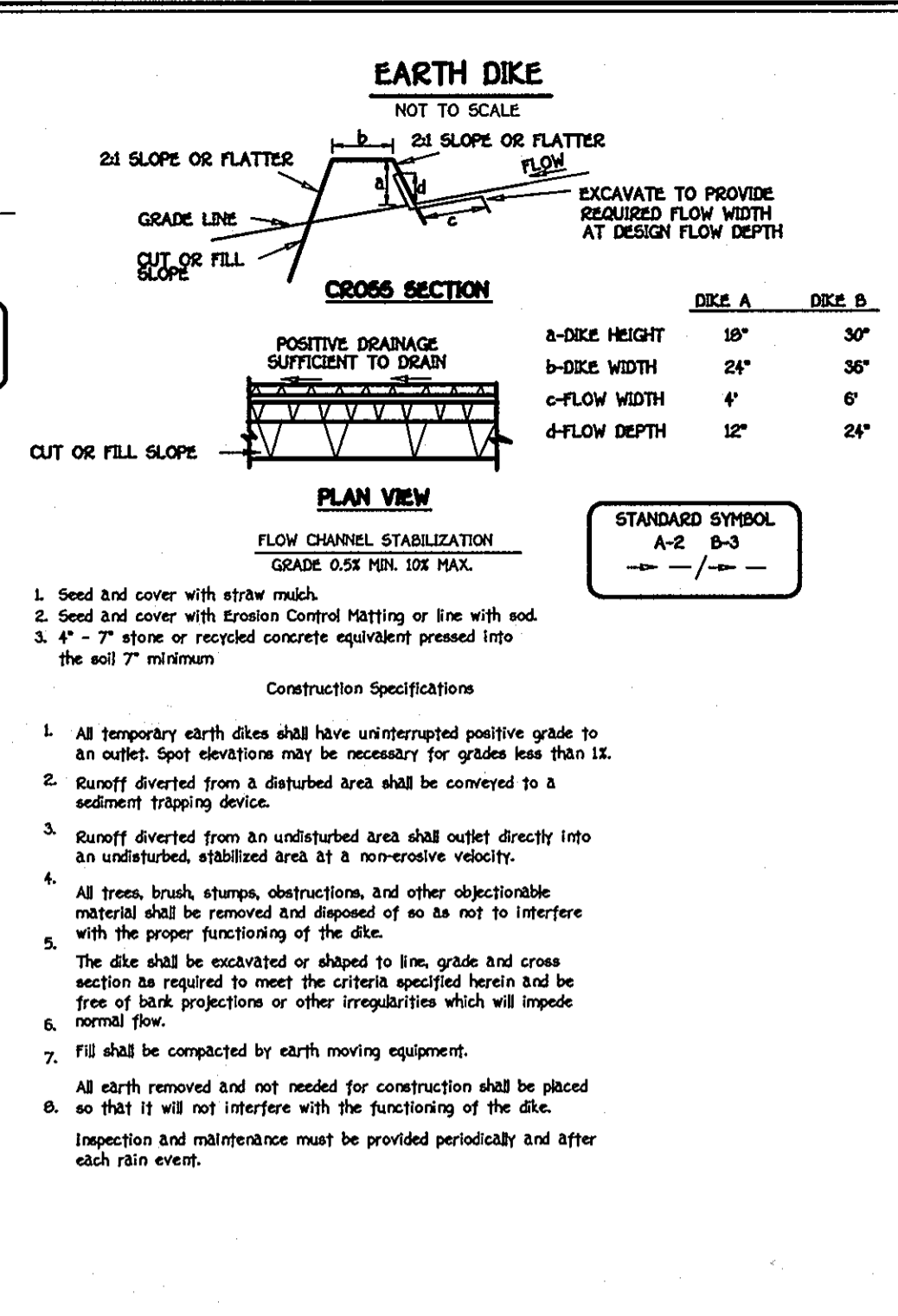
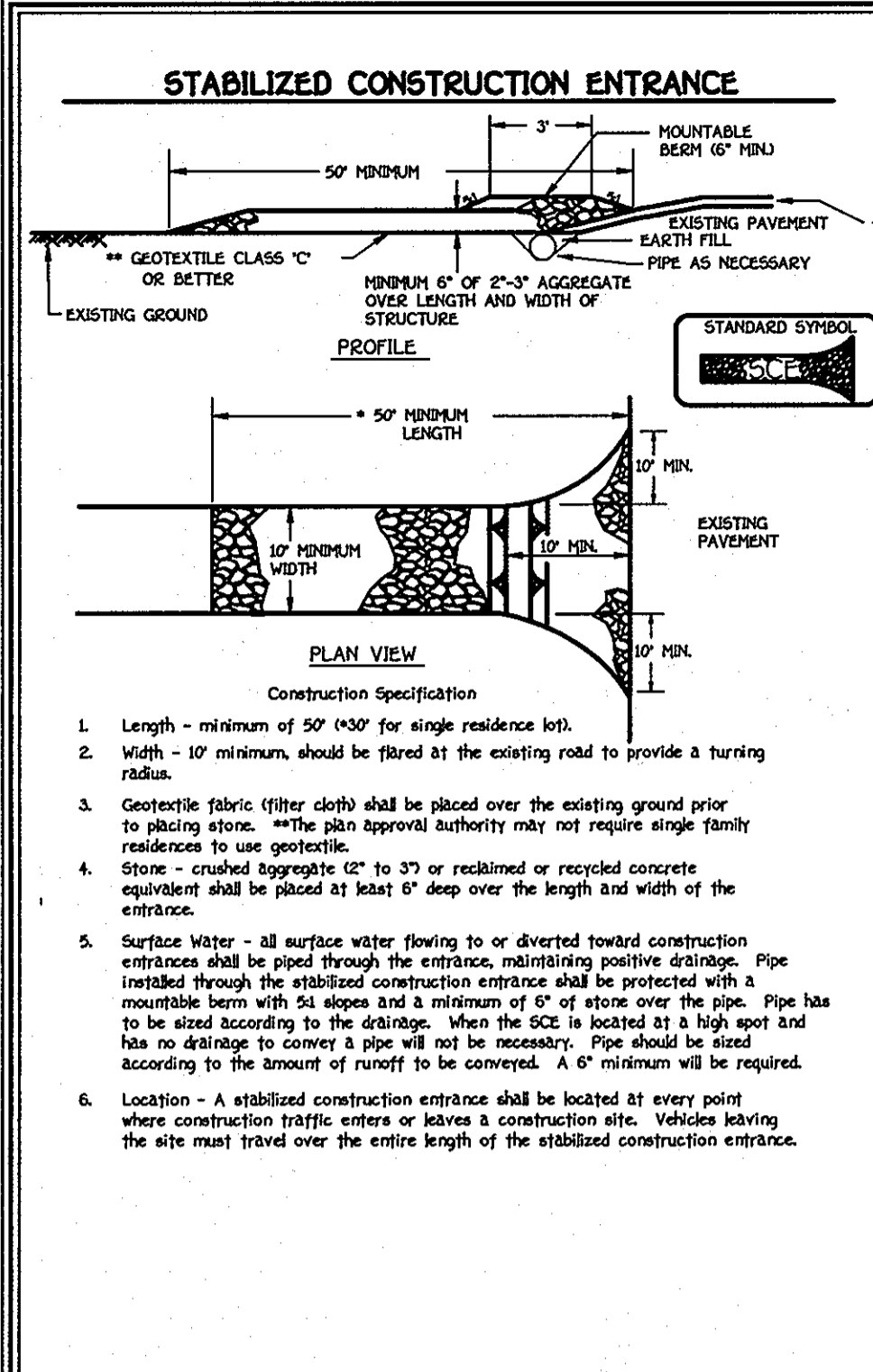
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development:
 Chief, Development Engineering Division:
 Director, Department of Planning and Zoning:
 Dates: 1/15/02, 12/12/01, 1/25/02

PROJECT: THE VILLAS AT CATTAL CREEK SECTION/AREA: --- LOT NO.: 1 - 25

DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 4228, F. 442	3	RC-DEO	21	4th	---
WATER CODE	SEWER CODE				

LANDSCAPE PLAN
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1"=100' DATE: SEPTEMBER, 2001
 SHEET 16 OF 37

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10275 BALTIC NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2255



200 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION: Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE: Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES: This practice shall be used on disturbed areas as specified on the plan and may be used on light erodible or artificially eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration Oup to one year, and Permanent Seeding, for long term vegetative cover. Examples of applications for Temporary Seeding are: temporary soil stabilization, disturbed areas along left side between construction phases, earth dikes, etc. and for Permanent Seeding are: lawn, drive, cut and fill slopes and other areas at final grade, former stockpiles and staging areas, etc.

Planting Vegetation in Disturbed Areas: has an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect granular filter media by stabilizing the soils and reducing the sediment and nutrients carried by runoff to receiving waters. Permanent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation

- Install erosion and sediment control structures (either temporary or permanent) such as diversion, grade stabilization structures, berms, wireways, or sediment control basins.
- Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
- Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.

B. Soil Amendment (Fertilization)

- Soil tests must be performed to determine the exact ratios and application rates for both time and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for fertilization.
- Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Fertilizer may be substituted for fertilizer with prior approval from the appropriate authority. Fertilizers shall be applied to the site fully banded according to the applicable state fertilizer laws and shall bear the name, trade name or trademark, and warranty of the producer.
- Urea materials shall be ground limestone (hydrated or burnt lime) may be substituted which contains at least 50% total oxygen calcium oxide plus magnesium oxide. Limestone shall be ground to such fineness that at least 50% will pass through a #20 mesh sieve and 90% will pass through a #40 mesh sieve.
- Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.

C. Seeded Preparation

- Temporary Seeding
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plow or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Spaced areas greater than 30" should be tracked having the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plan.
 - Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.
- Permanent Seeding
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 5.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 10% clay, but enough fine grained material (20% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is for loess or other soils which are known to be fertile, then a sandy soil (60% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soil on site, adding topsoil is required. In accordance with Section 21 Standard and Specification for Topsoil.
 - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then diked or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check dikes to prevent topsoil to the surface area and to create horizontal erosion check dikes to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plan.
 - Mix soil amendments into the top 3-5" of topsoil by diking or other suitable means. Lawn areas shall be rolled to smooth the surface, remove large objects like stones and lumps, and ready the area for seed application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a doker leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 3-5" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within 6 months immediately preceding the date of seeding such material on this job.
- Seed tags shall be made available to the inspector to verify type and rates of seed used.
- Hydroseeding (mixture of seed, mulch, and water) shall be used for areas where the normal recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperature above 75-80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding

- Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a soil/seeder.
 - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following:
 - 200 lbs/acre (max) 200 lbs/acre (max) 200 lbs/acre (max)
 - 200 lbs/acre (max) 200 lbs/acre (max) 200 lbs/acre (max)
 - Use one dry pound of fertilizer per acre, plus 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time.
 - Soil and fertilizer shall be mixed on site and seeding shall be done immediately and uniformly.
- Dry Seeding: This includes use of conventional drop or broadcast seeders.
 - Temporary or Permanent Seeding Specifications or Tables 259 or 260.
 - The seeded area shall be covered with straw mulch or other suitable material to provide good seed to soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other.
 - Apply half the seed in each direction.
- Drill or Cultivator Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultivating operations are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeding must be firm after planting.
 - Where practical, seed should be applied in two directions perpendicular to each other.
 - Apply half the seed in each direction.
- Mulch Specifications (in order of preference)
 - Straw shall consist of thoroughly threshed wheat, rice or oat straw, reasonable bright in color, and shall not be overly moist, coated, decayed, or excessively dirty and shall be free of noxious weed seeds.
 - Wood Cask Fiber: High (WCFH)
 - WCFH shall be straw-free or contain a green dye that will provide an appropriate color to facilitate visual inspection of the uniformity spread.
 - WCFH shall contain no penetration or growth inhibiting factors.
 - WCFH materials shall be manufactured and processed in such a manner that the wood cask fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a shorter-like ground cover, with application having moisture absorption and penetration properties and shall cover and hold grade seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFH shall contain no elements or compounds that will be phytotoxic.
 - WCFH shall conform to the following physical requirements: fiber length to approximately 10 mm, diameter approximately 1 mm, pH range of 4.0 to 6.5, bulk density approximately 1.0 g/cc, and moisture content of 20% minimum.
 - Mulch Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding. If grading is completed outside of the seeding season, mulch shall be applied as prescribed. Mulch shall be applied in a uniform layer and seeding shall be performed in accordance with these specifications.
 - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2.0 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall adhere to the soil surface a minimum of 1/4 inch and shall be applied in most effective manner possible.
 - Wood cask fiber mulch shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cask fiber per 100 gallons of water. The mixture shall be applied to a uniform depth of 1.500 lbs. per acre. The wood cask fiber mulch shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cask fiber per 100 gallons of water.
 - Application of liquid binders should be heavier at the edges where wind catches mulch, such as in ridges and crest of dikes. The remainder of the area should be sprayed uniformly after binder application. Synthetic binders - such as Acrylics (DCA-Agro-Tack), DCA-70 Polymer, Terra Tex E, Terra Tack, etc. or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
 - Lightweight netting may be established over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' wide and 200 to 3,000 feet long.
- Incremental Stabilization - Cut Slopes
 - All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
 - Construction equipment (other than fill slopes)
 - Excavate and stabilize all temporary erosion, side ditches, or berms that will be in place during construction.
 - Perform Phase 1 excavation, dress and stabilize.
 - Perform Phase 2 excavation, dress and stabilize. Overseed previously seeded areas as necessary.
 - Final final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

Notes: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil of required grading and permanent seed and mulch. Any interruptions in the operation or completion of the seeding season will necessitate the application of temporary stabilization.

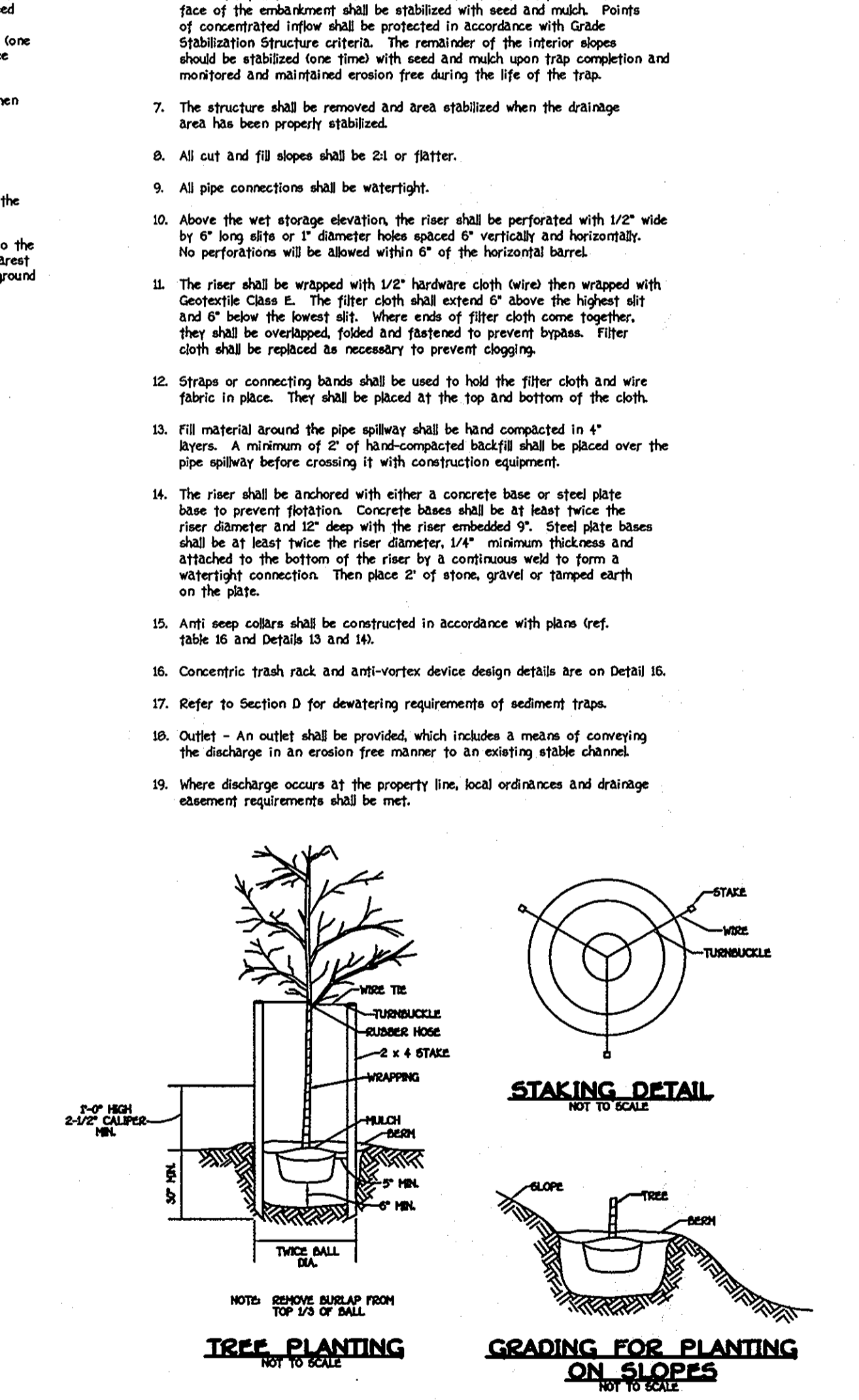
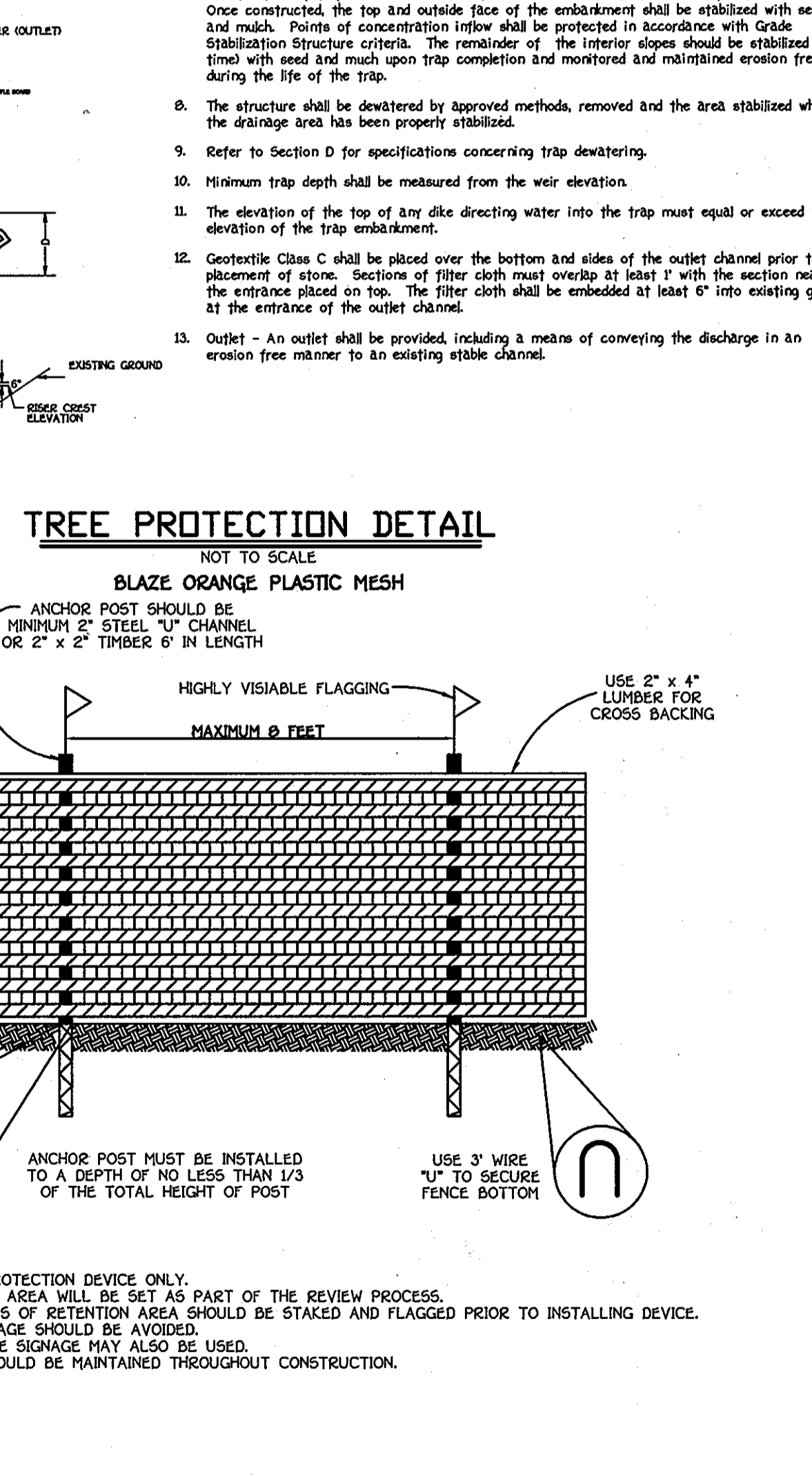
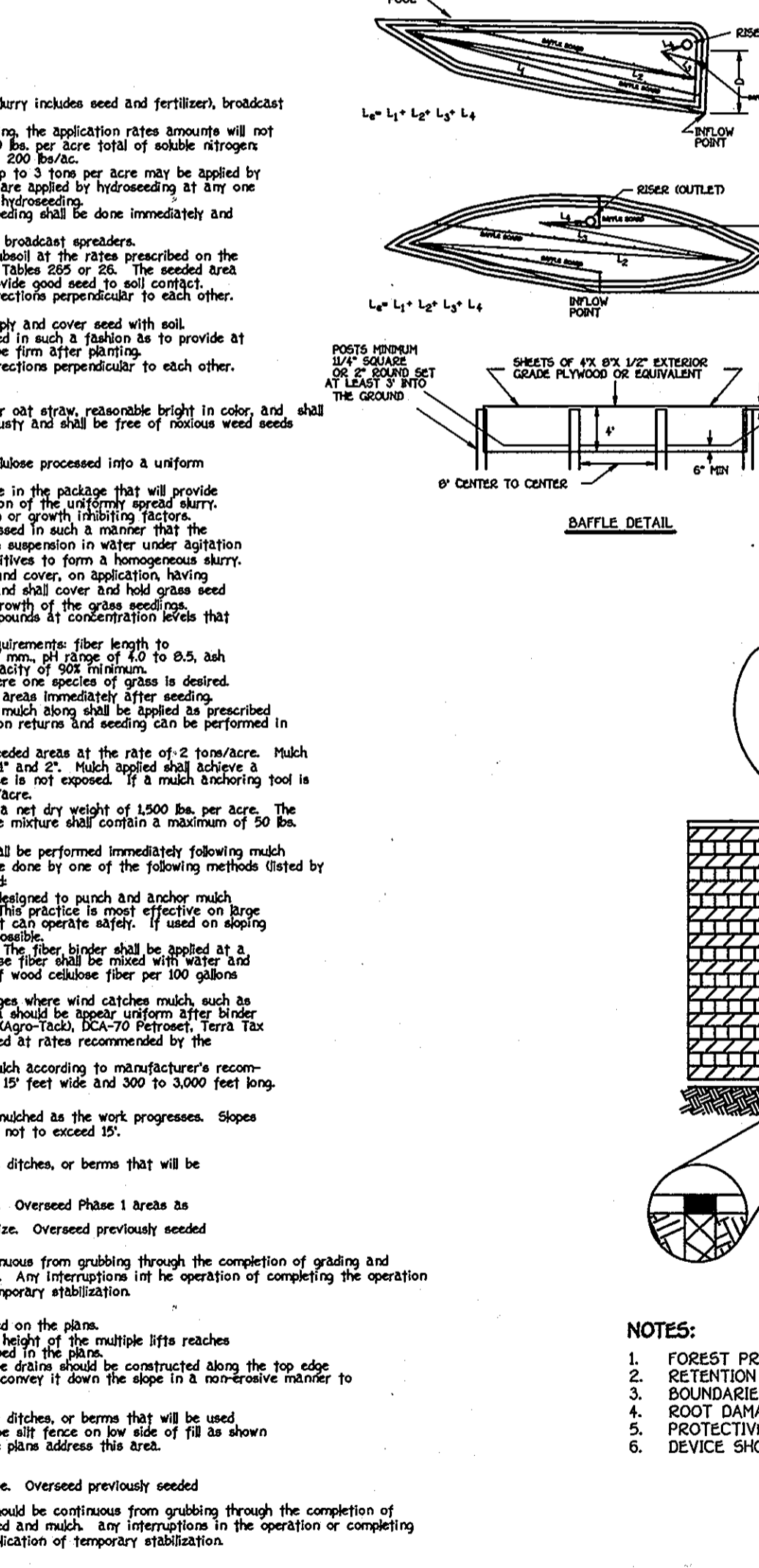
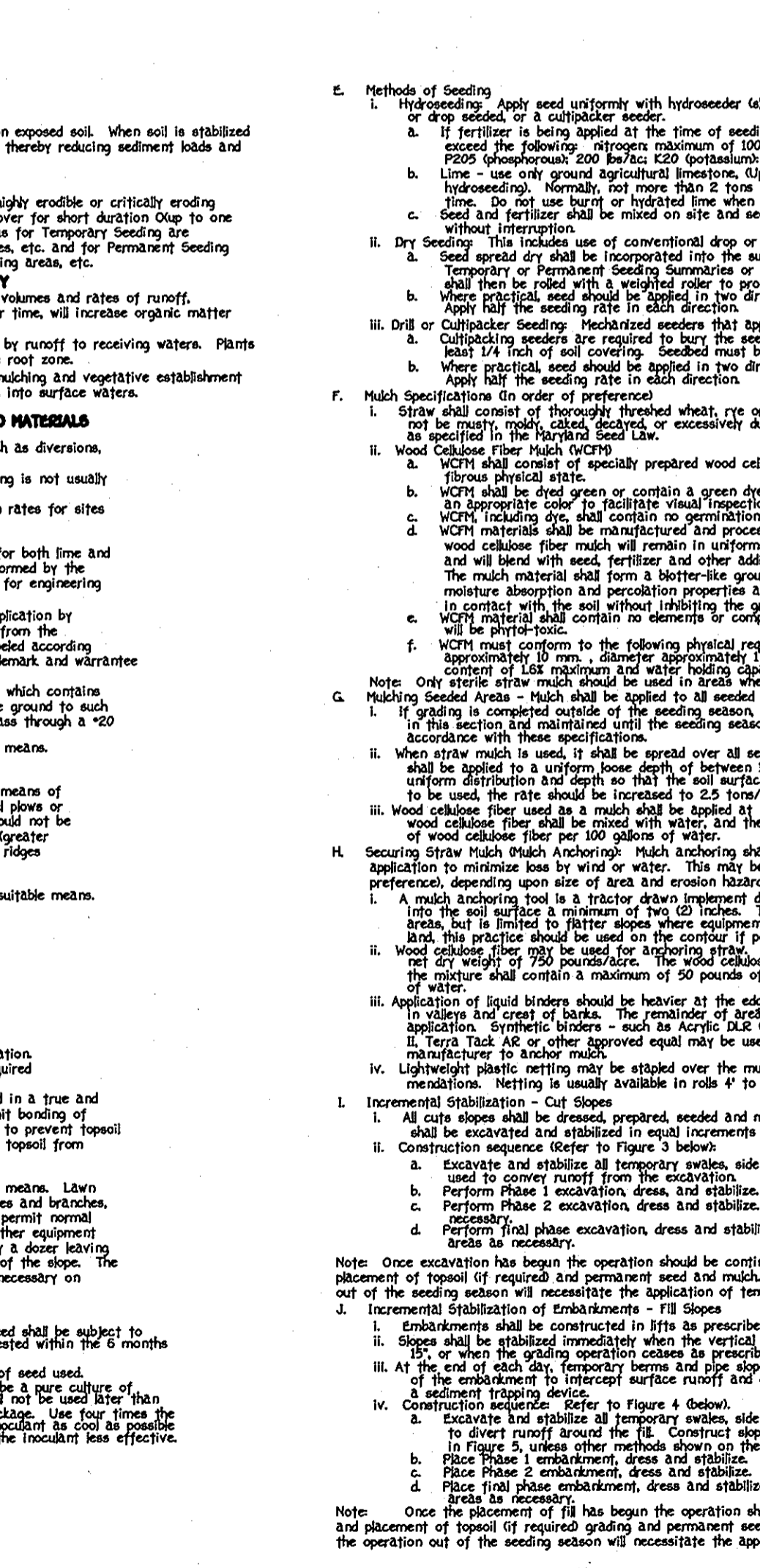
Incremental Stabilization of Embankments - Fill Slopes

- Embankments shall be constructed in lifts as prescribed on the plan.
- Slopes shall be established immediately when the vertical height of the multiple lifts reaches 15' or when grading operation ceases as a practical job.
- At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept and convey it down the slope in a non-erosive manner to a sediment trapping device.

Construction Equipment - Fill Slopes

- Excavate and stabilize all temporary erosion, side ditches, or berms that will be in place during construction.
- Perform Phase 1 excavation, dress and stabilize.
- Perform Phase 2 excavation, dress and stabilize.
- Final final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

Notes: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil of required grading and permanent seed and mulch. Any interruptions in the operation or completion of the seeding season will necessitate the application of temporary stabilization.



Approved for private well and private septic by Howard County Health Department.
 Dennis D. Murrain, M.P.E., Health Officer, Date: 1-7-01

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10775 BALTIMORE NATIONAL, FEE
 ELLICOTT CITY, MARYLAND 21114
 (410) 481-2855

ENGINEER'S CERTIFICATE
 I certify that the Sediment and erosion control plan represents a practical and workable plan based on my professional knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Engineer: [Signature] Date: 10-02-01

DEVELOPER'S CERTIFICATE
 I 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 the Environment Approved Training Program for the Control of Sediment and Erosion before the start of the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Signature of Developer: [Signature] Date: 11/29/01

Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S.D.A. - Natural Resources Conservation Service
 Signature: [Signature] Date: 12/14/01

This development plan approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Signature: [Signature] Date: 12/14/01

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21043

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Engineering Division
 Director, Department of Planning and Zoning

Signature: [Signature] Date: 1/10/02
 Signature: [Signature] Date: 12/12/01
 Signature: [Signature] Date: 1/25/02

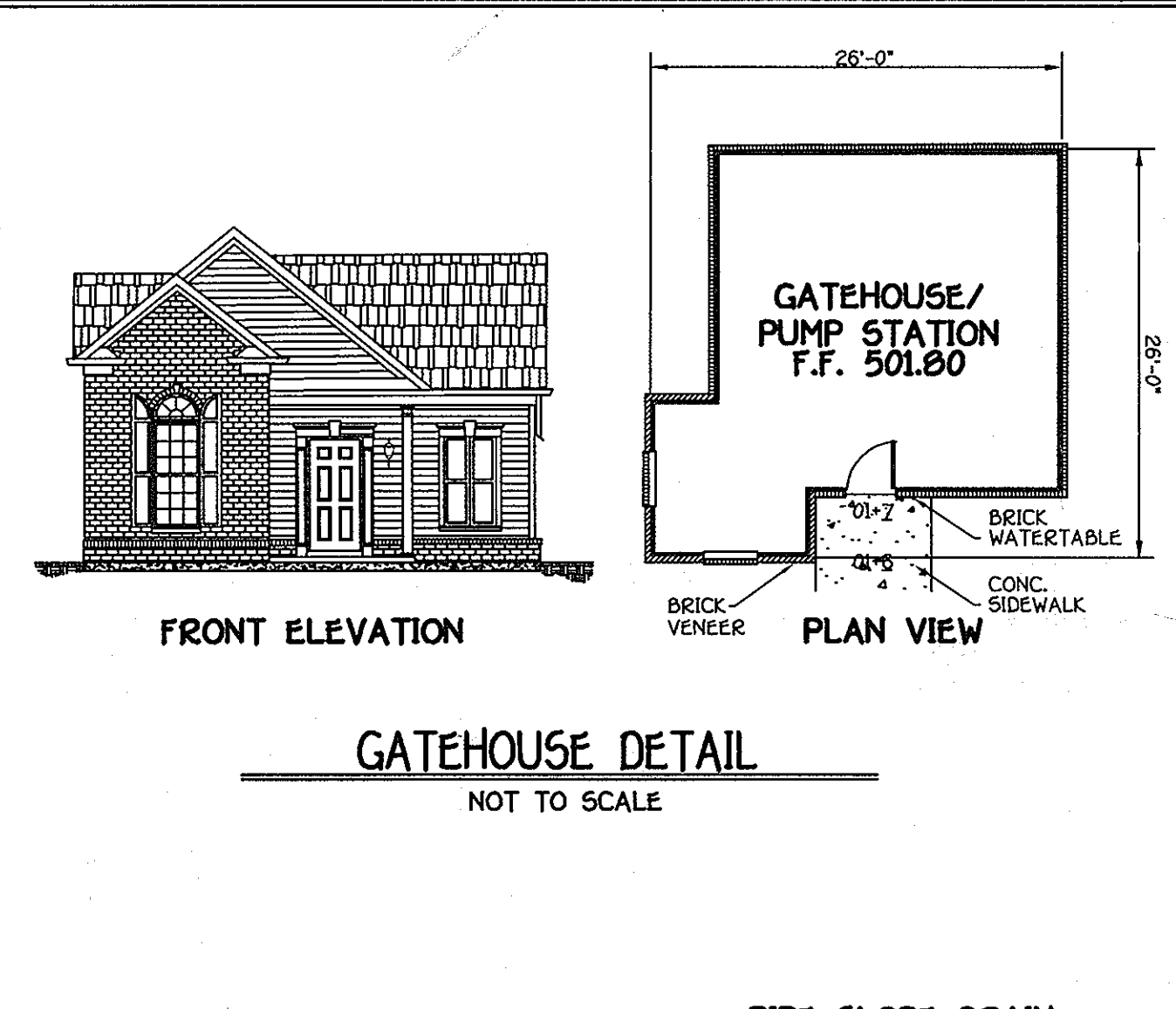
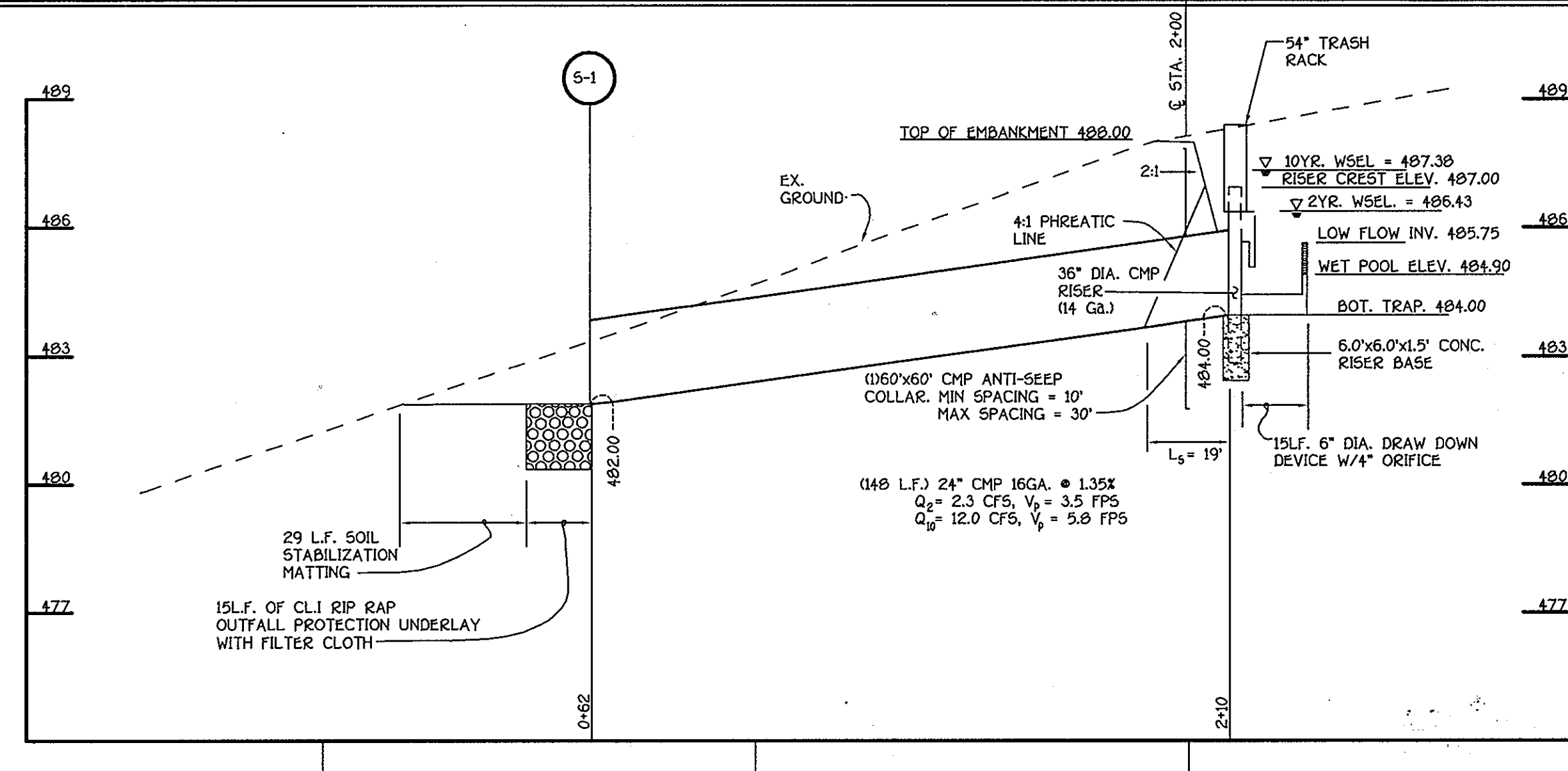
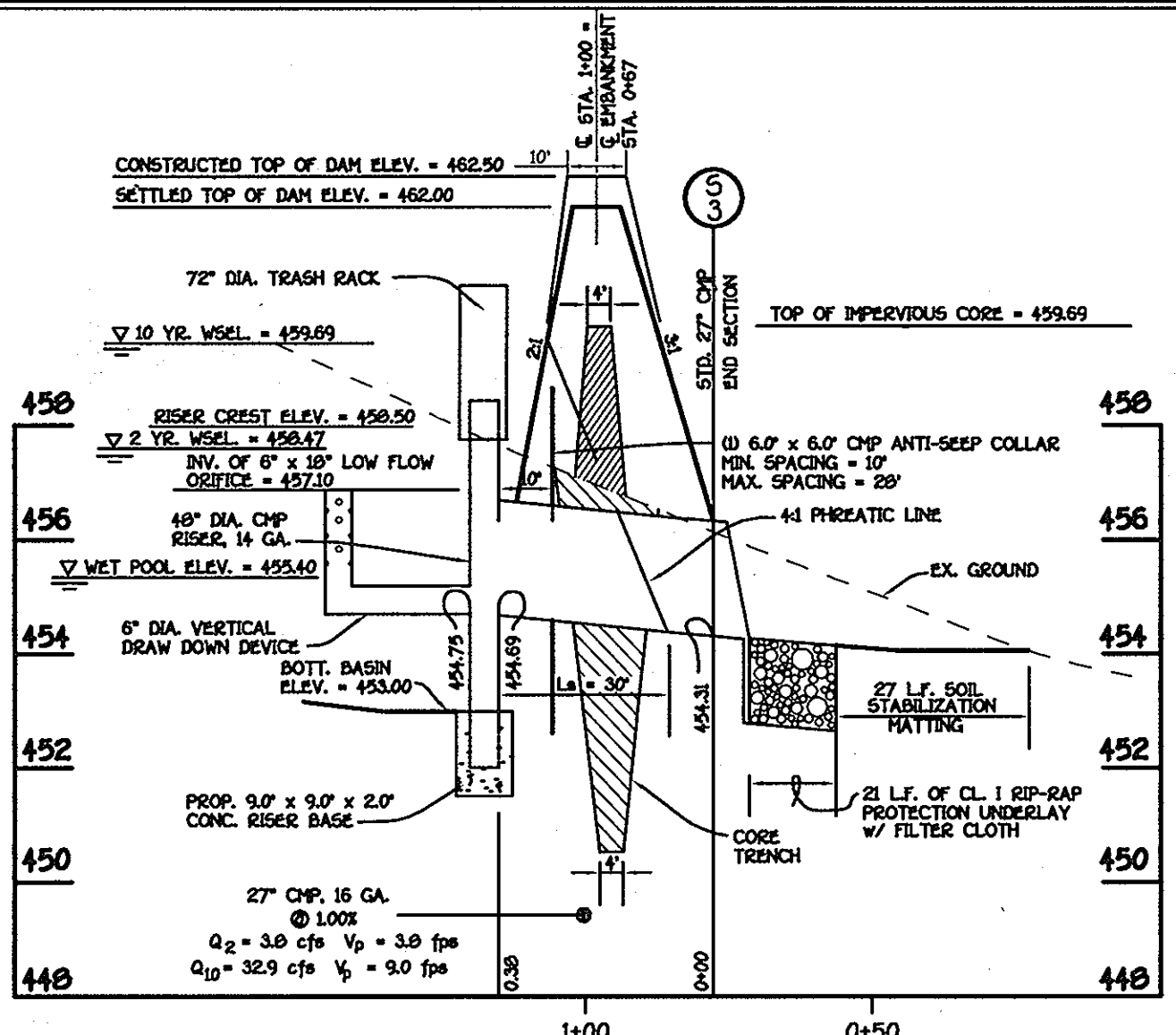
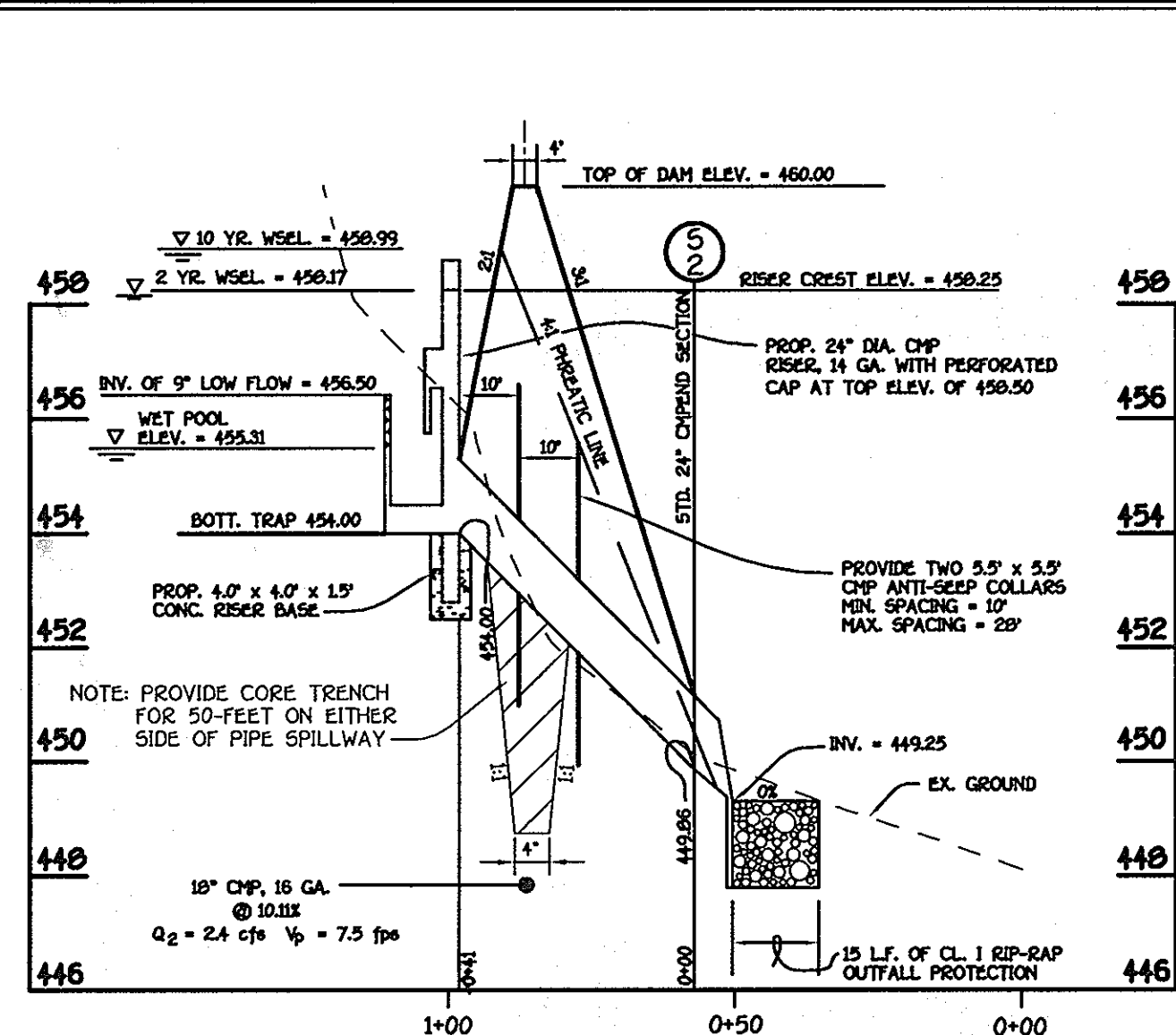
PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK		1 - 25
DEED	BLOCK NO.	ZONE
L. 4228, F. 442	3	RC-DEO
TAX/ZONE	ELEC. DIST.	CENSUS TR.
21	4th	
SEWER CODE		

SEDIMENT CONTROL NOTES AND DETAILS

SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK

ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: SEPTEMBER, 2001
 SHEET 17 OF 37

SDP 01-115

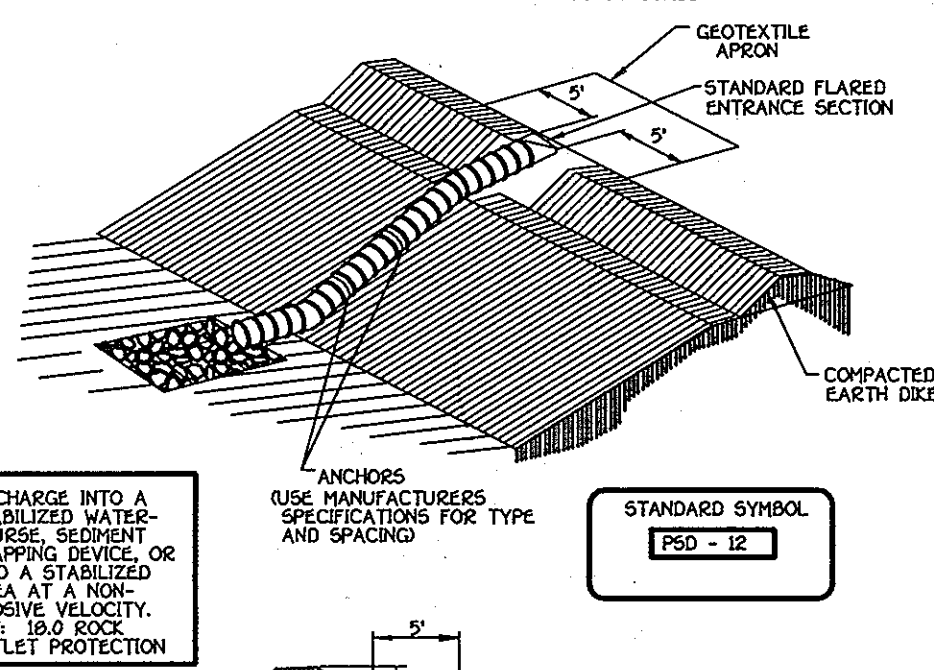


PRINCIPAL SPILLWAY PROFILE @ STONE OUTLET SEDIMENT TRAP NO. 3

PRINCIPAL SPILLWAY PROFILE @ SEDIMENT BASIN NO. 1

PRINCIPAL SPILLWAY PROFILE @ SEDIMENT TRAP NO. 4

PIPE SLOPE DRAIN NOT TO SCALE



- The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.
- The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.
- Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.
- A fitted end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 2' from the inlet. The filter cloth shall be keyed in on all sides.
- The Pipe Slope Drain shall be securely anchored to the slope by staking at the grommets provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details shall be provided by pipe suppliers.
- The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.
- All pipe connections shall be watertight.
- Whenever possible where a PSD drains an unstabilized area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyance that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be as far away from the sediment control outlet as possible.
- When the drainage area is stabilized, the PSD shall discharge onto a stabilized area at a non-erosive velocity.
- Inspection and any required maintenance shall be performed periodically and after each rain event.
- The inlet must be kept open at all times.

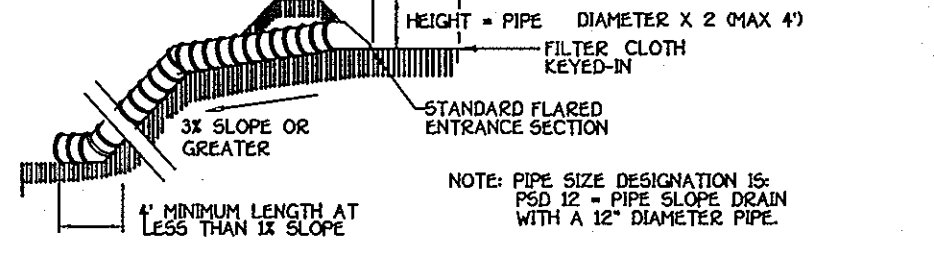
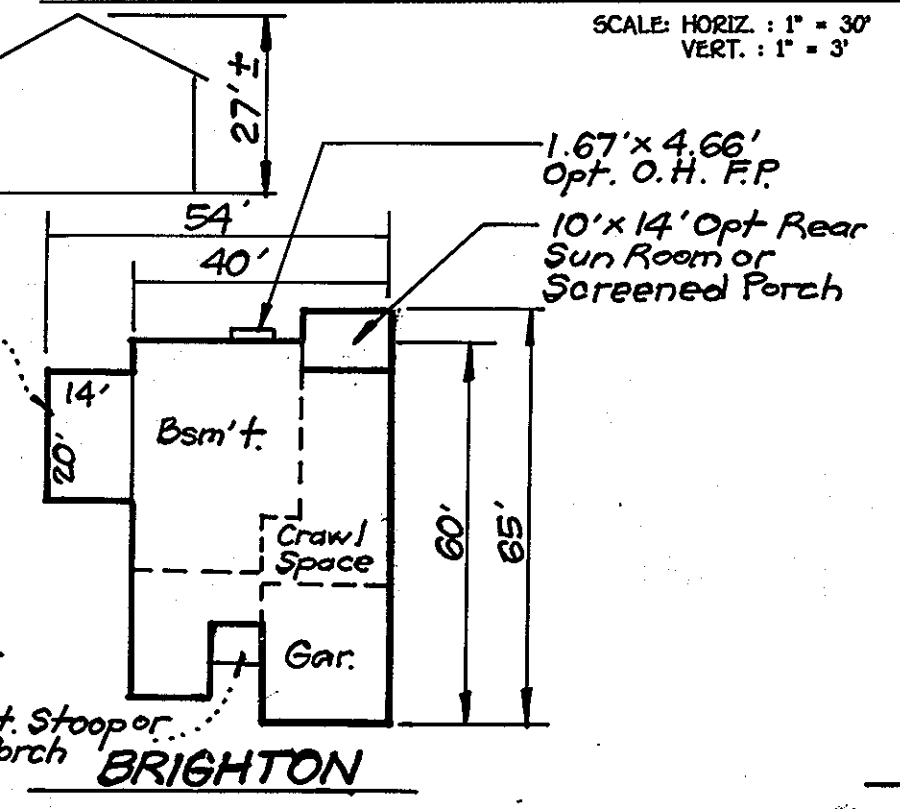
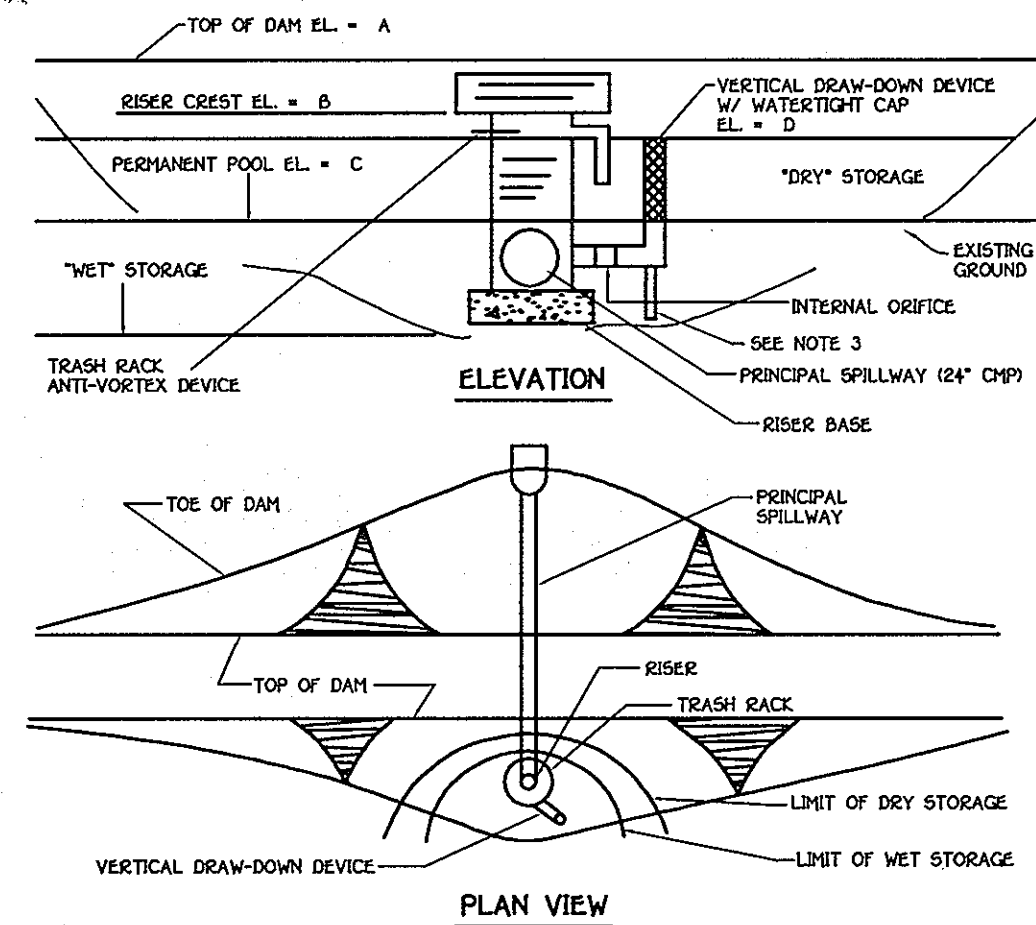


Table 6 Design Criteria for Pipe Slope Drain

Size	Pipe/Tubing Diameter (D) in	Maximum Drainage Area (Acres)
PSD-12	12	0.5
PSD-18	18	1.5
PSD-24	24	2.5
PSD-24 (2)	24	3.5
PSD-24 (2)	24	5.0

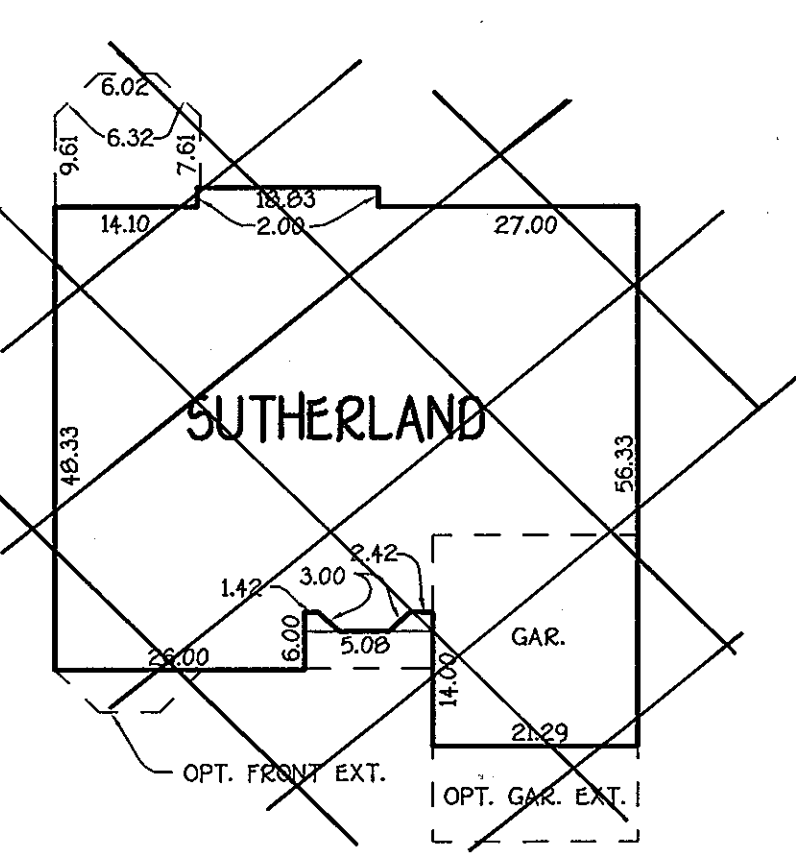


BASIN DRAW-DOWN SCHEMATIC VERTICAL DRAW-DOWN DEVICE

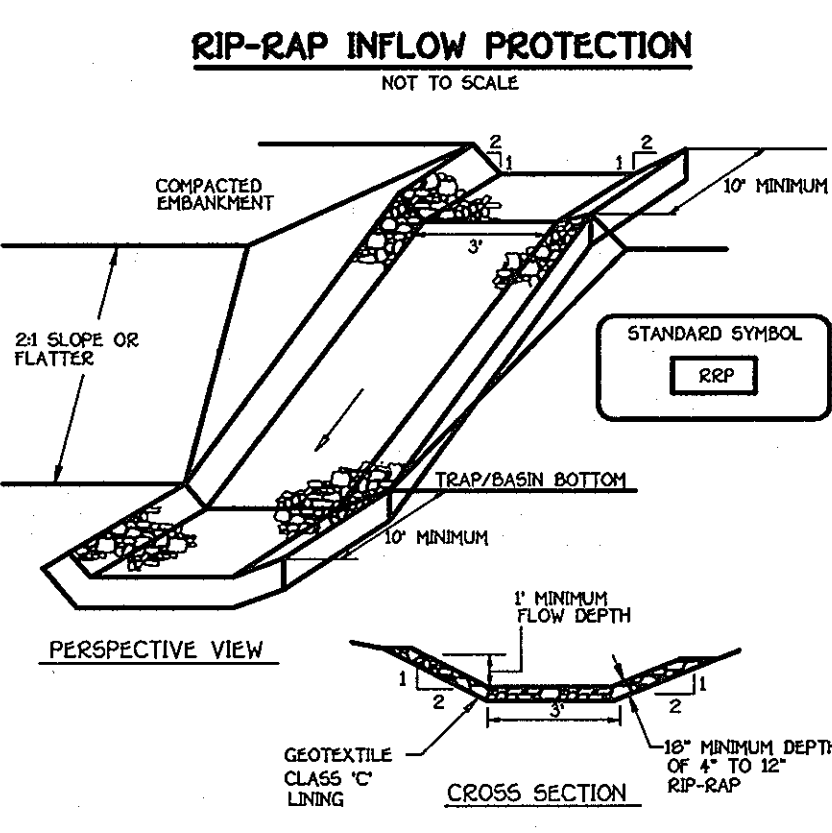


- PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
- THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
- THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
- PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOUTATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

TRAP / BASIN NO.	ELEV. A	ELEV. B	ELEV. C	ELEV. D
BASIN NO. 1	460.00	458.00	455.25	456.75
TRAP NO. 3	460.00	458.25	455.31	456.50
TRAP NO. 4	460.00	458.00	455.50	454.50



PROPOSED HOUSING DETAIL NOT TO SCALE



- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
- Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
- Entrance and exit sections shall be installed as shown on the detail section.
- Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
- Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
- Rip-rap should blend into existing ground.
- Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Seepage Lining criteria.

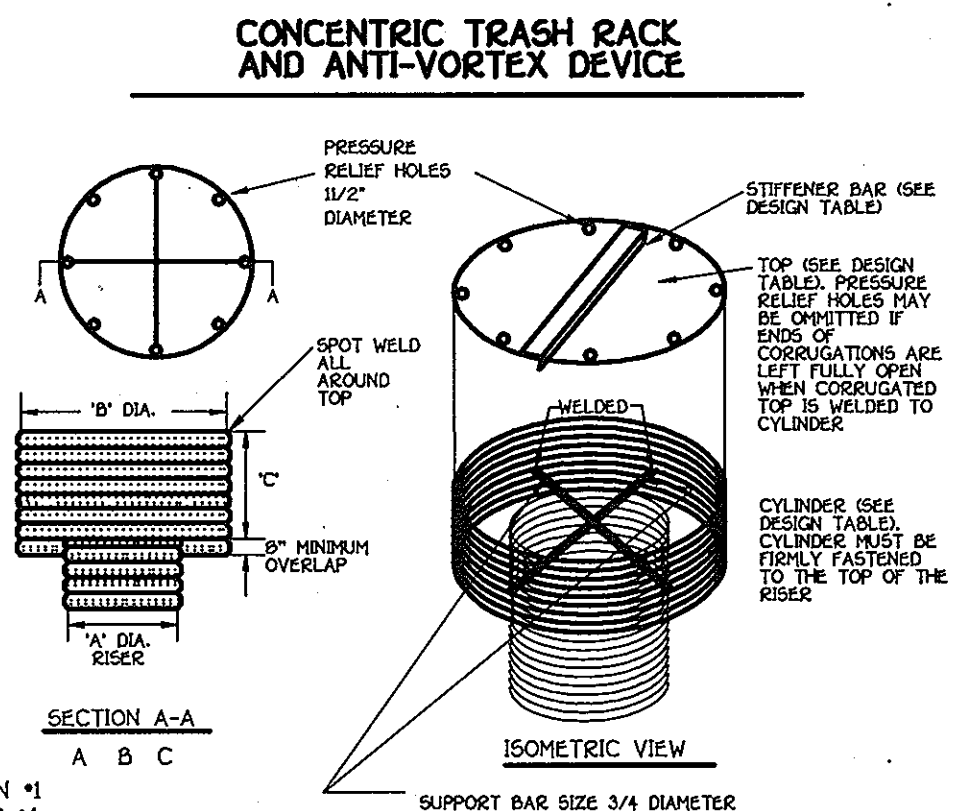
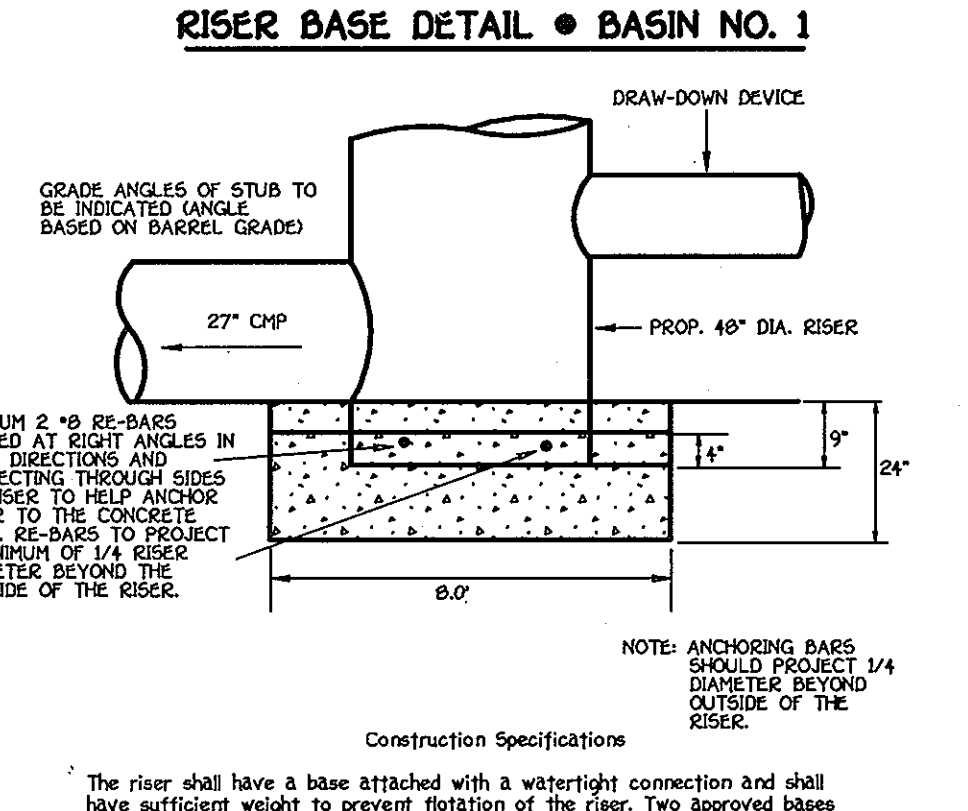
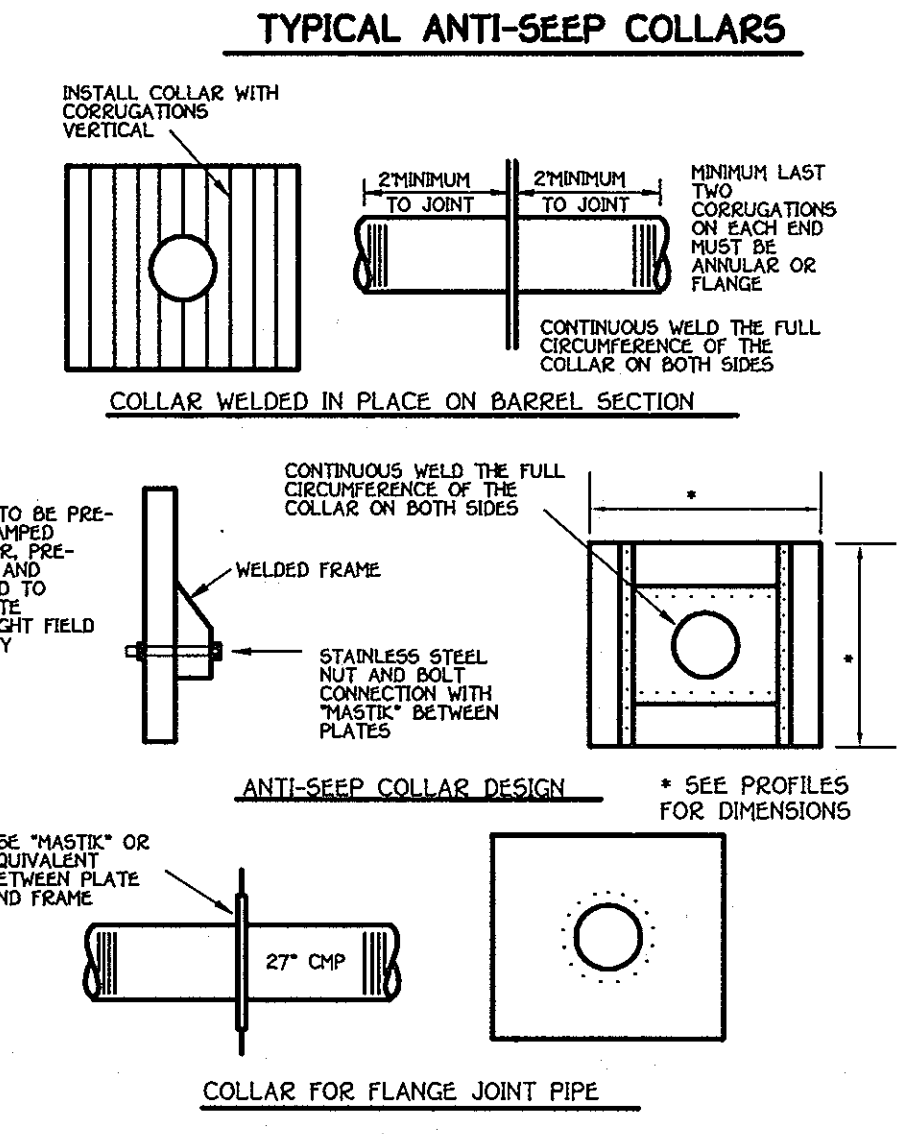


Table 7 Design Criteria for Concentric Trash Rack and Anti-Vortex Device

Riser Diam. in	Trash Rack Diam. in	Trash Rack Spacing in	Minimum Size Support Bar	Minimum Top Thickness	Stiffener
36	54	14	17	1/8" rebar	12 ga.
42	72	12	21	1 1/4" ANGLE	10 ga.



- A concrete base 18" thick with the riser embedded 9" in the base.
- A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2" of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.



SEDIMENT CONTROL NOTES AND DETAILS

SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK

ZONING: RC-DEO
TAX MAP No: 21 PARCEL: 229
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER, 2001
SHEET 18 OF 37

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
410 414 - 2255

Approved for private well and private septic by Howard County Health Department.
Date: 11-29-01
Health Officer

3-25-03
3-27-02
REVISIONS

ENGINEER'S CERTIFICATE
I certify that the spillway and sediment control represents a practical and workable plan based on the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

11-29-01
Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE
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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

11-29-01
Signature of Developer (Print name below signature) Date

Approved for HOWARD SCD and meets Technical Requirements.
12/1/01
12/1/01
Signature of Engineer (Print name below signature) Date

OWNER / DEVELOPER
THE VILLAS AT CATTAIL CREEK, L.L.C.
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21043

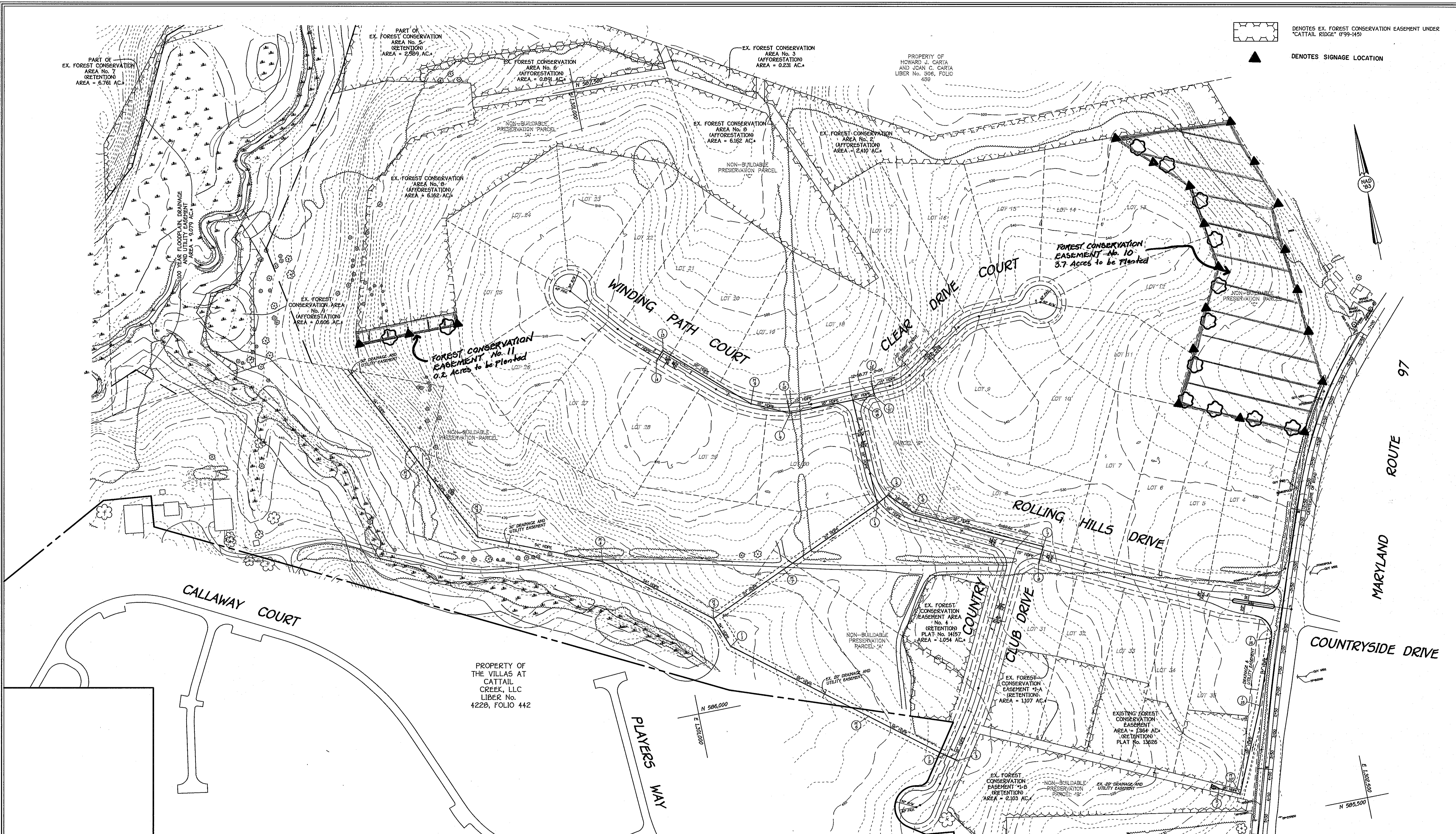
APPROVED: DEPARTMENT OF PLANNING AND ZONING

11/18/02
12/12/01
12/25/02
Signature of Engineer (Print name below signature) Date

PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK	---	1 - 25

DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 4228, F. 442	3	RC-DEO	21	4th	---

WATER CODE	SEWER CODE
---	---



DENOTES EX. FOREST CONSERVATION EASEMENT UNDER "CATTAIL RIDGE" (F99-145)
 DENOTES SIGNAGE LOCATION

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 410.461.2895

Approved For private well and private septic by
 Howard County Health Department
Deanna V. ... Health Officer
 Date: 1-7-02

MD DNR Qualified Professional
 USACE Wetland Delimitation
 Certification # MD-9334000100448
John P. ...
 JOHN P. ... 3/8/01

ENGINEER'S CERTIFICATE
 I certify that the erosion and sediment control represents a practical and workable plan based on the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
[Signature] Date: 10-22-01

OWNER / DEVELOPER'S CERTIFICATE
 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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
[Signature] Date: 11/29/01

Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S.D.A.-Natural Resources Conservation Service
 This development plan is approved for soil erosion treatment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Howard SCD Date:

OWNER / DEVELOPER
 THE VILLAS AT CATTAIL CREEK, L.L.C.
 8000 MAIN STREET
 ELLICOTT CITY, MARYLAND 21103

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] Date: 11/10/02
 Chief, Division of Land Development
 Conservation Service
[Signature] Date: 12/12/01
 Chief, Development Engineering Division
[Signature] Date: 1/25/02
 Director, Department of Planning and Zoning

PROJECT	SECTION/AREA	LOT NO.
THE VILLAS AT CATTAIL CREEK	---	1 - 116

DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
L. 4228, F. 442	3	RC-DEO	21	4th	---

WATER CODE	SEWER CODE
---	---

OFF-SITE FOREST CONSERVATION PLAN
CATTAIL RIDGE, F.02-70, FCE10&11
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
 ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 229
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1" = 100' DATE: SEPTEMBER, 2001
 SHEET 19 OF 37

VILLA'S @ CATTAIL CREEK Offsite Planting Schedule


Planting Area (3.7 acres) (FCE#10, F-02-70)

Qty.	Species	Size	Spacing
4	Acer rubrum - Red maple	1" cal.	**
7	Fraxinus americana - White ash	1" cal.	**
160	Acer rubrum - Red maple	2-3 whip	**
70	Cercis canadensis - Red bud	2-3 whip	**
250	Fraxinus americana - White ash	2-3 whip	**
230	Liriodendron tulipifera - Poplar	2-3 whip	**
90	Nyssa sylvatica - Black gum	2-3 whip	**
150	Prunus serotina - Black cherry	2-3 whip	**
150	Quercus rubra - Red oak	2-3 whip	**
80	Viburnum dentatum - Arrowwood	2-3' b.t.	**
80	Viburnum prunifolium - Blackhaw	2-3' b.t.	**

FCE Planting Area #2 (0.2 acres) (FCE#11, F-02-70)

Qty.	Species	Size	Spacing
2	Acer rubrum - Red maple	1" cal.	**
15	Acer rubrum - Red maple	2-3 whip	**
15	Fraxinus americana - White ash	2-3 whip	**
10	Liriodendron tulipifera - Poplar	2-3 whip	**
10	Prunus serotina - Black cherry	2-3 whip	**
13	Viburnum dentatum - Arrowwood	2-3' b.t.	**

Key: ** Plantings to be spaced on 11 foot centers, no shelters required - plantings should be installed in rows to facilitate future maintenance. Where possible rows should be made along contour.

One caliper plants shall be planted in locations shown by  b.t. - branched transplant

Estimated Planting/Maintenance Cost: \$19,500 NA

Surety for planting
3.9 ac = \$84,948.00
(\$0.50/lf)

FISHER, COLLINS & CARTER, INC.
CIVIL, ENGINEERING, CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21114
(410) 461-2855

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USA (N) Wetland Delineator
Certificate # W-0000000048
JOHN P. CAGLES
3/16/01
7/17/01

ENGINEER'S CERTIFICATE
"I certify that the erosion and sediment control represents a practical and workable plan based on the best knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
Signature of [Signature] Date 11-29-01
DEVELOPER'S CERTIFICATE
"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 the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."
Signature of Developer (Print name below signature) Date 11/29/01

APPROVED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
U.S.D.A.-Natural Resources Conservation Service
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
Signature of [Signature] Date
Howard SCD Date
OWNER / DEVELOPER
THE VILLAS AT CATTAIL CREEK, L.L.C.
8000 MAIN STREET
ELLICOTT CITY, MARYLAND 21043

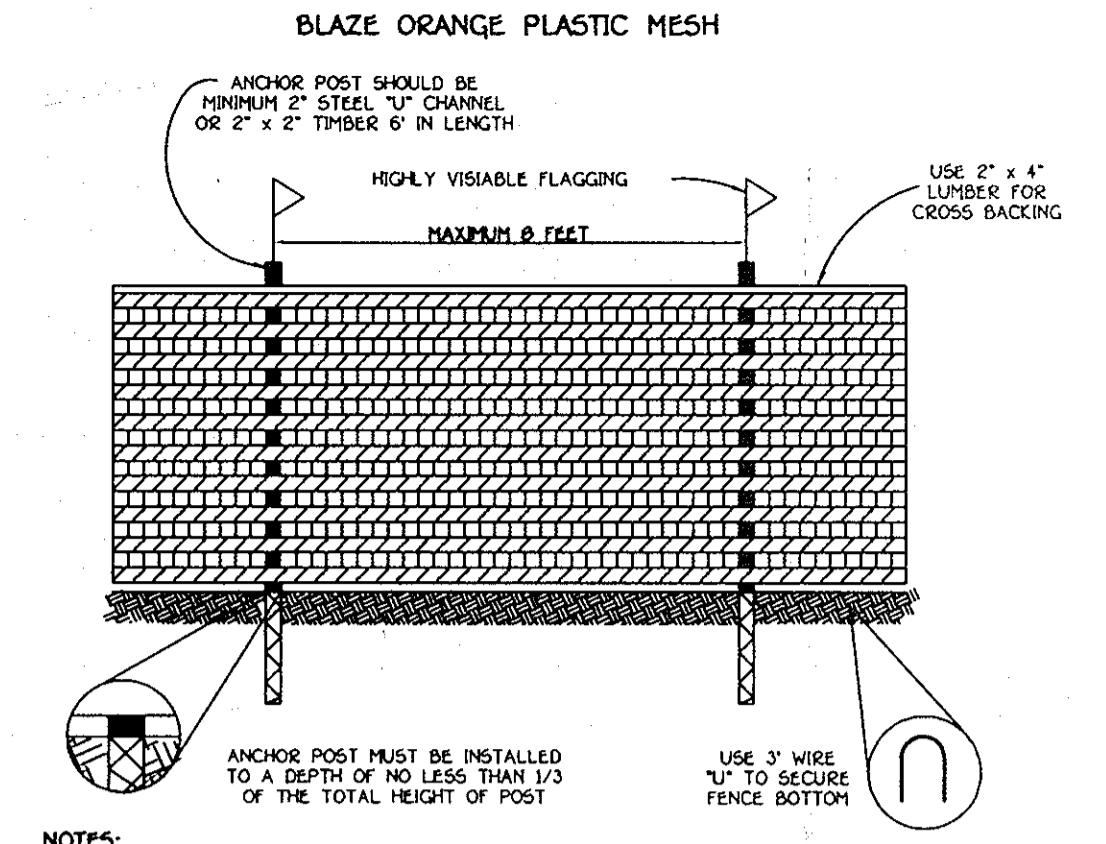
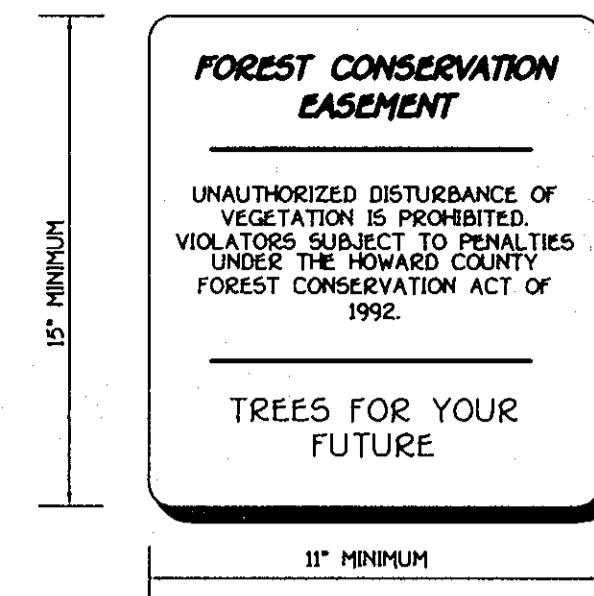
APPROVED DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development
Chief, Development Engineering Division
Director, Department of Planning and Zoning
Date 11/18/02
Date 12/12/01
Date 1/25/02
PROJECT: THE VILLAS AT CATTAIL CREEK SECTION/AREA: --- LOT NO.: 1-25
DEED: L. 4228, F. 442 BLOCK NO.: 3 ZONE: RC-DEO TAX/ZONE: 21 ELEC. DIST.: 4th CENSUS TR.: ---
WATER CODE: --- SEWER CODE: ---

FOREST CONSERVATION NOTES AND DETAILS
SITE DEVELOPMENT PLAN
THE VILLAS AT CATTAIL CREEK
ZONING: RC-DEO
TAX MAP No: 21 PARCEL: 229
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER, 2001
SHEET 20 OF 37

FOREST CONSERVATION WORKSHEET

BASIC SITE DATA	ACRES
GROSS SITE AREA:	19.5
AREA WITHIN 100 YEAR FLOODPLAIN:	0
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL:	0
AREA WITHIN OVERHEAD TRANSMISSION LINES:	0
NET TRACT AREA (NTA):	19.5
LAND USE CATEGORY:	RC-DEO
INFORMATION FOR CALCULATIONS	
NET TRACT AREA (NTA):	19.5
FOREST CONSERVATION THRESHOLD (20% x NTA):	3.9
AFFORESTATION THRESHOLD (5% x NTA):	0.975
EXISTING FOREST ON NTA:	0
EXISTING FOREST ABOVE CONSERVATION THRESHOLD:	0
EXISTING FOREST ABOVE AFFORESTATION THRESHOLD:	0
BREAK-EVEN POINT (if applicable):	---
FOREST TO BE CLEARED WITHOUT MITIGATION:	---
FOREST TO BE RETAINED ABOVE THRESHOLD WITH NO MITIGATION:	---
PROPOSED FOREST CLEARING	
TOTAL AREA OF FOREST TO BE CLEARED:	0
TOTAL AREA OF FOREST TO BE RETAINED:	0
AFFORESTATION CALCULATIONS	
NO FOREST CLEARING AFFORESTATION THRESHOLD - EXISTING FOREST:	3.9
FOREST CLEARING (AFF. THRES. - EX. FOREST) + (FOREST TO BE CLEARED x 2):	---
REFORESTATION CALCULATIONS	
CLEARING ABOVE THRESHOLD	
a. FOREST CLEARED ABOVE THRESHOLD (2.34 x 1/4):	---
b. FOREST RETAINED ABOVE CONSERVATION THRESHOLD:	---
REFORESTATION REQUIRED (a - b):	---
CLEARING BELOW THRESHOLD	
a. FOREST CLEARED ABOVE THRESHOLD x 1/4:	---
b. FOREST CLEARED BELOW THRESHOLD x 2:	---
REFORESTATION REQUIRED (a + b):	---

PERMANENT PROTECTIVE SIGNAGE



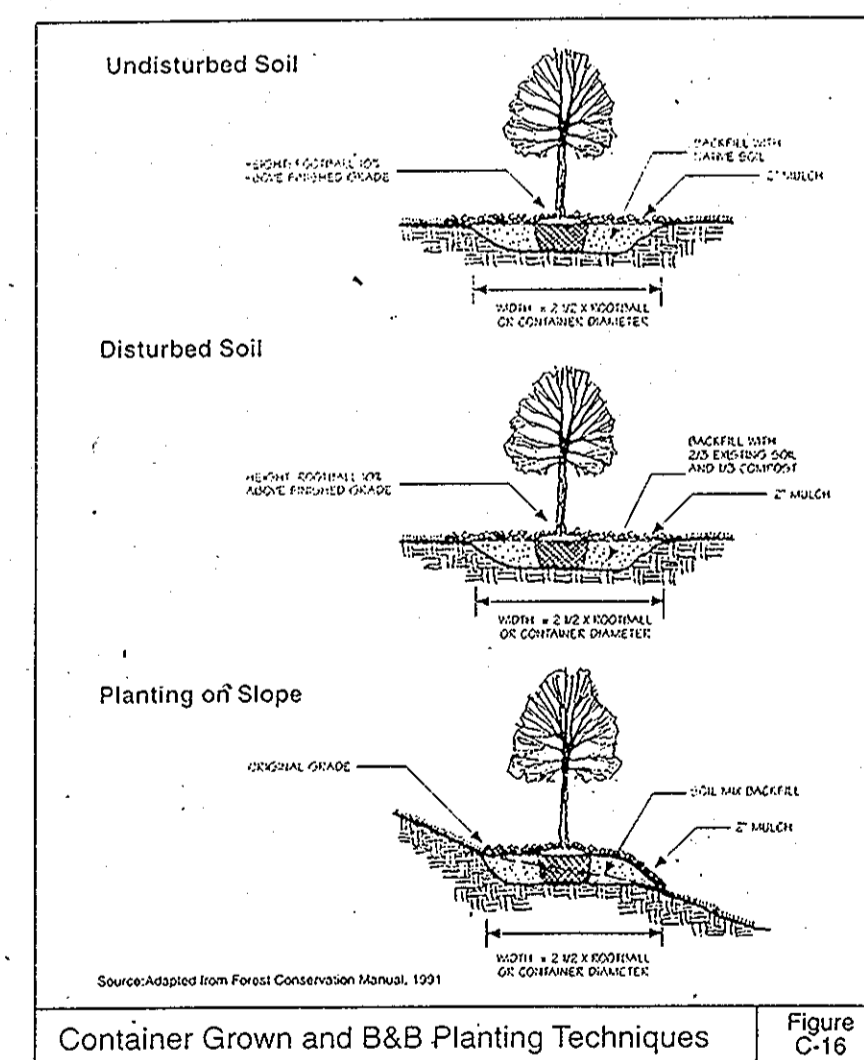
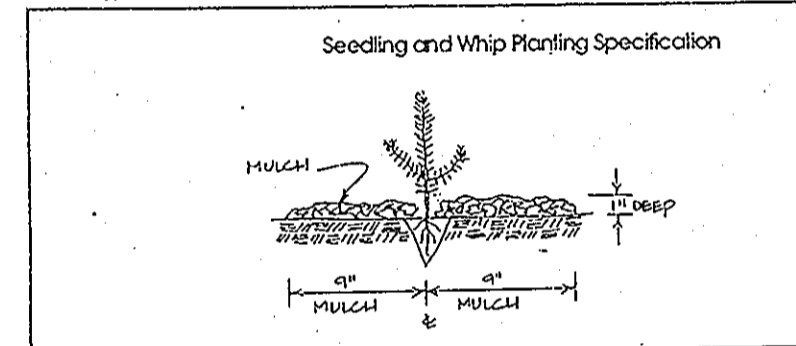
- NOTES:
- FOREST PROTECTION DEVICE ONLY.
 - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 - ROOT DAMAGE SHOULD BE AVOIDED.
 - PROTECTIVE SIGNAGE MAY ALSO BE USED.
 - DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION DETAIL

FCP NOTES

- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 161200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS OF DISTURBANCE.
- PERMANENT SIGNAGE SHALL BE PLACED 50 - 100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.

5. sum ty = \$84,948.00 (\$0.50/lf planting on 3.9 acres)

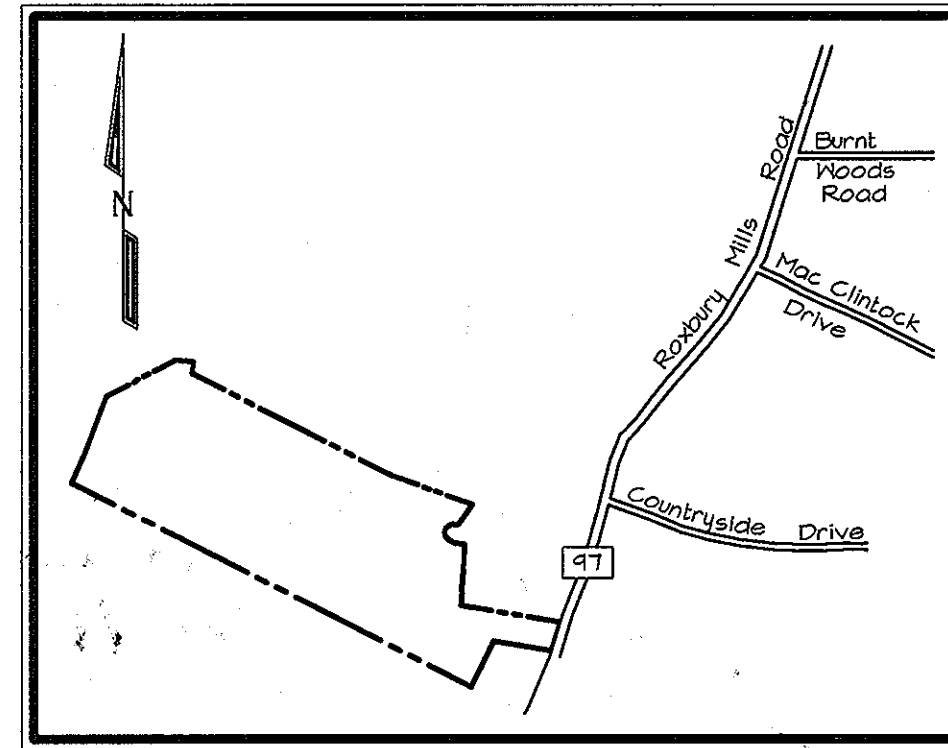


FOREST DATA		ACRES
GROSS AREA:		19.5
NET TRACT AREA (NTA):		0
EXISTING FOREST ON NTA:		0
AFFORESTATION THRESHOLD:		3.9
REFORESTATION TRESHOLD:		4.9
BREAK-EVEN POINT:		---
FOREST TO BE CLEARED:		---
FOREST TO BE RETAINED IN FCE:		---

VILLAS AT CATTAIL CREEK SUBSURFACE INFILTRATION SYSTEM AND WATER TREATMENT FACILITY

TESTING

- THE DOSING PUMP STATION SHALL BE TESTED FOR LEAKAGE BY PLUGGING ALL OPENINGS AND FILLING STRUCTURES ABOVE HIGHEST SEAM. MEASURE WATER LEVEL AND ALLOW WATER TO REMAIN 24 HOURS AND REMEASURE WATER LEVEL. TO BE ACCEPTED, THERE SHALL BE NO CHANGE IN LEVEL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER FOR ALL TESTING.
- THE MANHOLE AND SEPTIC TANK SHALL BE VACUUM TESTED AS FOLLOWS:
 - FOLLOWING COMPLETION OF THE INSTALLATION OF THE STRUCTURES, INCLUDING ACCESSWAYS WHERE APPLICABLE, BUT PRIOR TO THE COMPLETION OF BACKFILLING AND MAIN CONNECTION, THE STRUCTURES SHALL BE TESTED TO AN APPLIED VACUUM. THE STRUCTURES SHALL BE CONSIDERED AS PASSING THE VACUUM TEST WHEN:
 - THE STRUCTURE HAS BEEN EVACUATED TO 4.0 PSIG VACUUM AND HELD AT THIS VACUUM FOR 15 MINUTES WITH OR WITHOUT VACUUM PUMP RUNNING. THIS PERIOD IS FOR TEMPERATURE STABILIZATION.
 - AFTER THE 15 MINUTE STABILIZATION PERIOD, THE VACUUM PUMP SHALL BE TURNED OFF AND A MINIMUM 4.0 PSIG VACUUM STARTING PRESSURE SHALL BE OBSERVED.
 - THE STRUCTURES SHALL HOLD 4.0 PSIG VACUUM WITH MAXIMUM 1.0 PSIG DROP IN A PERIOD OF 20 MINUTES.
 - THE STRUCTURES SHALL BE TESTED WITH AN INITIAL VACUUM OF 4.0 PSIG. FINAL VACUUM, AFTER SPECIFIED TIME, SHALL NOT BE LESS THAN 3.0 PSIG.
- THE TEST SHALL BE PERFORMED BY PLUGGING ALL THE INLET AND OUTLET OPENINGS OF THE STRUCTURE WITH SUITABLE INFLATABLE PLUGS AND EVACUATING THE TANK THROUGH ONE PLUG USING A VACUUM TO THE REQUIRED PRESSURE. THE CONTRACTOR SHALL SUPPLY ALL TEST EQUIPMENT INCLUDING PLUGS, VACUUM PUMPS, HOSES, VALVES, FITTINGS AND COUPLINGS AS SPECIFIED HEREIN.
- ALL TESTS SHALL BE OBSERVED BY THE OWNER. THREE ATTEMPTS SHALL BE ALLOWED FOR A STRUCTURE TO PASS AN ACCEPTANCE TEST BEFORE IT IS REJECTED. AFTER THREE UNSUCCESSFUL TESTS, THE CONTRACTOR SHALL REMOVE THE STRUCTURE AND REPLACE WITH ANOTHER STRUCTURE. THE REPLACEMENT STRUCTURE MUST PASS THE VACUUM TEST.
- THE PVC PRESSURE PIPE SHALL BE TESTED FOR LEAKAGE AS FOLLOWS:
 - ALL LINES SHALL BE SUBJECT TO A PRESSURE OF 80 PSI FOR A DURATION OF 2 HOURS. AFTER THE 2 HOUR TESTING PERIOD, NO PIPING INSTALLATION SHALL BE ACCEPTED IF THE DROP IN PRESSURE IS GREATER THAN 5 PSI.
- ALL FOUR DISPOSAL FIELDS SHALL BE TESTED BY OPERATING PUMPS AND CHECKING THE PRESSURE / WATER LEVEL IN EACH LATERAL TURN-UP. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER FOR TESTING. THE ENGINEER WILL PROVIDE THE CONTRACTOR WITH A LIST OF WHAT PRESSURE / WATER LEVEL SHOULD BE READ IN EACH LATERAL.



VICINITY MAP
SCALE: 1"=1200'

INDEX OF DRAWINGS

- S-0. COVER SHEET, INDEX OF DRAWINGS, LEGEND, NOTES
- S-1. DISPOSAL FIELD SITE PLAN
- S-2. DISPOSAL FIELD SITE PLAN, FIELDS C & D
- S-3. DISPOSAL FIELD SITE PLAN, FIELDS A & B
- S-4. DISPOSAL FIELD / FORCE MAIN PROFILES
- S-5. DISPOSAL FIELD / FORCE MAIN PROFILES
- S-6. PUMP STATION PLAN / SECTION AND DETAILS DETAILS
- S-7. TREATMENT SYSTEM LAYOUT
- W-1. WTP PLAN - SECTION AND DETAILS
- W-2. HYDROPNEUMATIC TANK AND DETAILS
- E-1. ELECTRICAL ABBREVIATION AND SYMBOLS
- E-2. WTP ELECTRICAL PLAN AND SCHEDULES
- E-3. WTP ELECTRICAL SCHEMATIC
- E-4. GENERATOR DETAILS AND SCHEMATICS
- E-5. WTP PUMP STATION - ELECTRICAL PLAN

LEGEND

- 500--- EXISTING CONTOUR
- EXISTING HOODS LINE
- X-X- EXISTING FENCE LINE
- W EXISTING GROUND WATER TEST WELL POINTS (OBSERVATION WELL)
- W EXISTING TOP WELL
- ⊙ PROPOSED NUMBER OF PARKING SPACES
- PROPOSED PRIVATE SEWAGE DISPOSAL AREA
- ⊕ PROPOSED GOLF FAIRWAY AND TEE LOCATIONS
- ⊕ PROPOSED BUILDING LOCATIONS
- PROPOSED DISPOSAL LINE
- PROPOSED STRUCTURE

GENERAL NOTES

- MAXIMUM TOTAL DESIGN SEWAGE FLOW ALLOCATION = 99,000 GPD
- TRENCH DESIGN LOADING RATE = 2 GALLONS PER SQUARE FOOT PER DAY. TRENCHES DESIGNED TO MAINTAIN A MINIMUM OF 4 FEET OF TREATMENT ZONE ABOVE ESTABLISHED GROUNDWATER TABLE.
- NO INSTALLATION SHALL BE STARTED UNTIL APPROVAL HAS BEEN OBTAINED FROM THE APPROPRIATE STATE AND COUNTY AGENCIES.
- THE CONTRACTOR SHALL OBTAIN THE STANDARD HOWARD COUNTY SEPTIC SYSTEM INSTALLATION PERMIT AND ADHERE TO INSPECTION SCHEDULE INCLUDED IN PERMIT.
- THE CONTRACTOR SHALL PROVIDE FIVE (5) SETS OF SHOP DRAWINGS FOR PIPE, PUMPS, CONTROLS, AND ALL STRUCTURES INCLUDING THE SEPTIC TANK AND PUMP STATION, AND STRUCTURAL CALCULATIONS FOR PRECAST ITEMS. ALL SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE RETURNED BY THE OWNER WITHIN FOURTEEN (14) DAYS OF RECEIPT.
- THE CONTRACTOR SHALL NOTIFY MARYLAND DEPARTMENT OF ENVIRONMENT (MDE) AND THE HOWARD COUNTY HEALTH DEPARTMENT 48 HOURS PRIOR TO SETTING ANY STRUCTURES.
- ALL ACCESSWAYS AND OPENINGS FOR MANHOLE, SEPTIC TANK, AND PUMP STATION SHALL BE WATERTIGHT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING STAKE-OUT OF THE ENTIRE SEPTIC SYSTEM INCLUDING ALL STRUCTURES AND EACH TRENCH. THE SYSTEM MUST BE STAKED-OUT BY A SURVEYOR OR ENGINEER REGISTERED IN THE STATE OF MARYLAND. DEPTH OF CUT SHOULD BE SHOWN ON EACH STAKE.
- THE CONTRACTOR SHALL EXCAVATE TRENCHES TO GRADE SHOWN ON DRAWINGS.
- THE CONTRACTOR SHALL INSTALL OBSERVATION WELLS IN EACH TRENCH IN ALL FOUR CELLS. PIPE SHOULD BE SCHEDULE 40 WELL SCREEN OR SCHEDULE 40 WITH HOLES DRILLED. PLACE PIPE ON BOTTOM OF TRENCH AND TERMINATE 2 FEET ABOVE GRADE WITH TIGHT FITTING PLASTIC CAP.
- THE CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS OF THE SEPTIC SYSTEM.
- THE DRAWING ELEVATIONS, LAYOUT, AND INFORMATION IS COMPLETE ENOUGH TO PROVIDE THE CONTRACTOR WITH A METHOD TO BUILD A SAFE, ADEQUATE, FUNCTIONING SEWAGE DISPOSAL SYSTEM.
- ALL SPOILS ASSOCIATED WITH CONSTRUCTION OF THE SEPTIC SYSTEM SHALL BE STOCKPILED OUTSIDE OF DISPOSAL AREA AT A LOCATION TO BE DESIGNATED BY THE CONSTRUCTION MANAGEMENT SUPERINTENDENT.

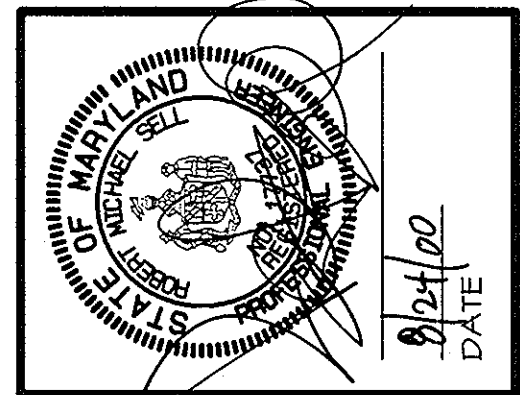
CONVERSION NOTE:
TO NAD 83 NORTH COORDINATES
ADD 60748.75 TO DETERMINE
NAD 83 NORTH COORDINATE VALUE.
TO NAD 83 EAST COORDINATES
ADD 518418.79 TO DETERMINE
NAD 83 EAST COORDINATE VALUE.

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC
BY HOWARD COUNTY HEALTH DEPARTMENT

Douglas Borestein Municipal Health Officer
DATE: 1-2-02

Approved for private well and private septic by
Howard County Health Department

Health Officer: _____ Date: _____



REV. #	DATE	DESCRIPTION

McCRONE
ENGINEERING-ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING-CONSTRUCTION SERVICES
300 W. BELLEVILLE AVENUE
ANNAPOLIS, MARYLAND 21401
Tel: (410) 287-9821
Fax: (410) 287-9822

ANNAPOLIS CENTREVILLE ELKTON PRINCE FREDERICK SALISBURY

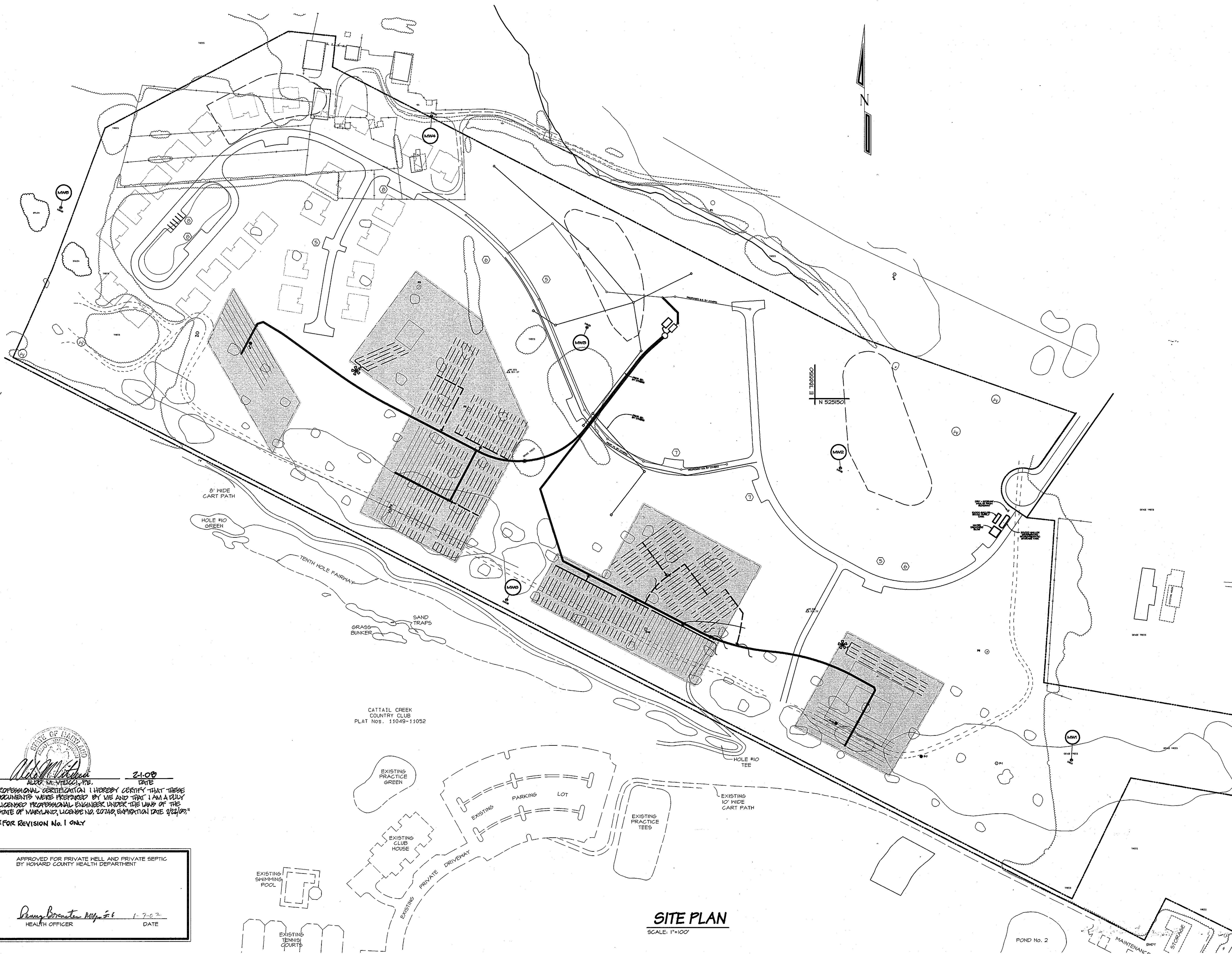
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COVER SHEET

THE VILLAS AT CATTAIL CREEK

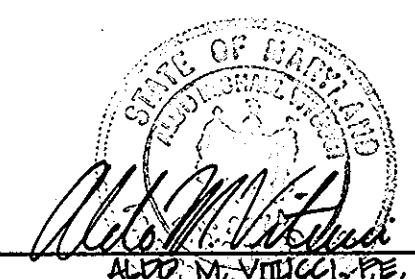
ZONING: RC-DEO
TAX MAP No. 21 PARCEL: 3
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SHEET NO. 50 / 21
CADD FILE: HAANSITE.PRO
FILE NO.



CATTAIL CREEK
COUNTRY CLUB
PLAT Nos. 11049-11052

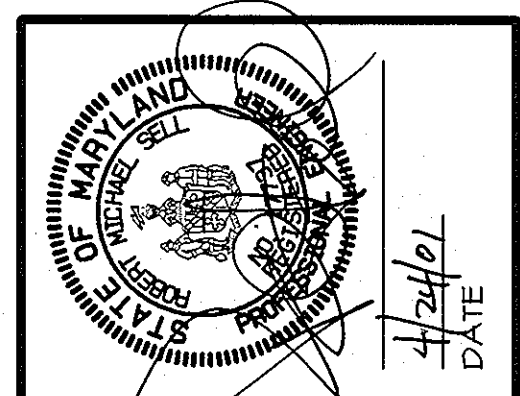
SITE PLAN
SCALE: 1"=100'



ALDO M. VITALE, P.E.
DATE: 2-1-09
"PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE 9/22/09."
*FOR REVISION No. 1 ONLY

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC
BY HOWARD COUNTY HEALTH DEPARTMENT

Penny Bonneton, M.P.H. S.E.
HEALTH OFFICER DATE: 1-7-09



REV. #	DATE	DESCRIPTION
1	1/31/09	ISSUE THE EXISTING DESIGN BUILDING AND ASSOCIATED MECHANICAL EQUIPMENT AND REPLACE WITH A CORK BUILDING

McCRONE
ENGINEERING & ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING-CONSTRUCTION SERVICES
ANNAPOLIS, MARYLAND 21401
Tel: (410) 287-8821
Fax: (410) 287-8822
ANNAPOLIS CENTREVILLE ELKTON PRINCE FREDERICK SALISBURY

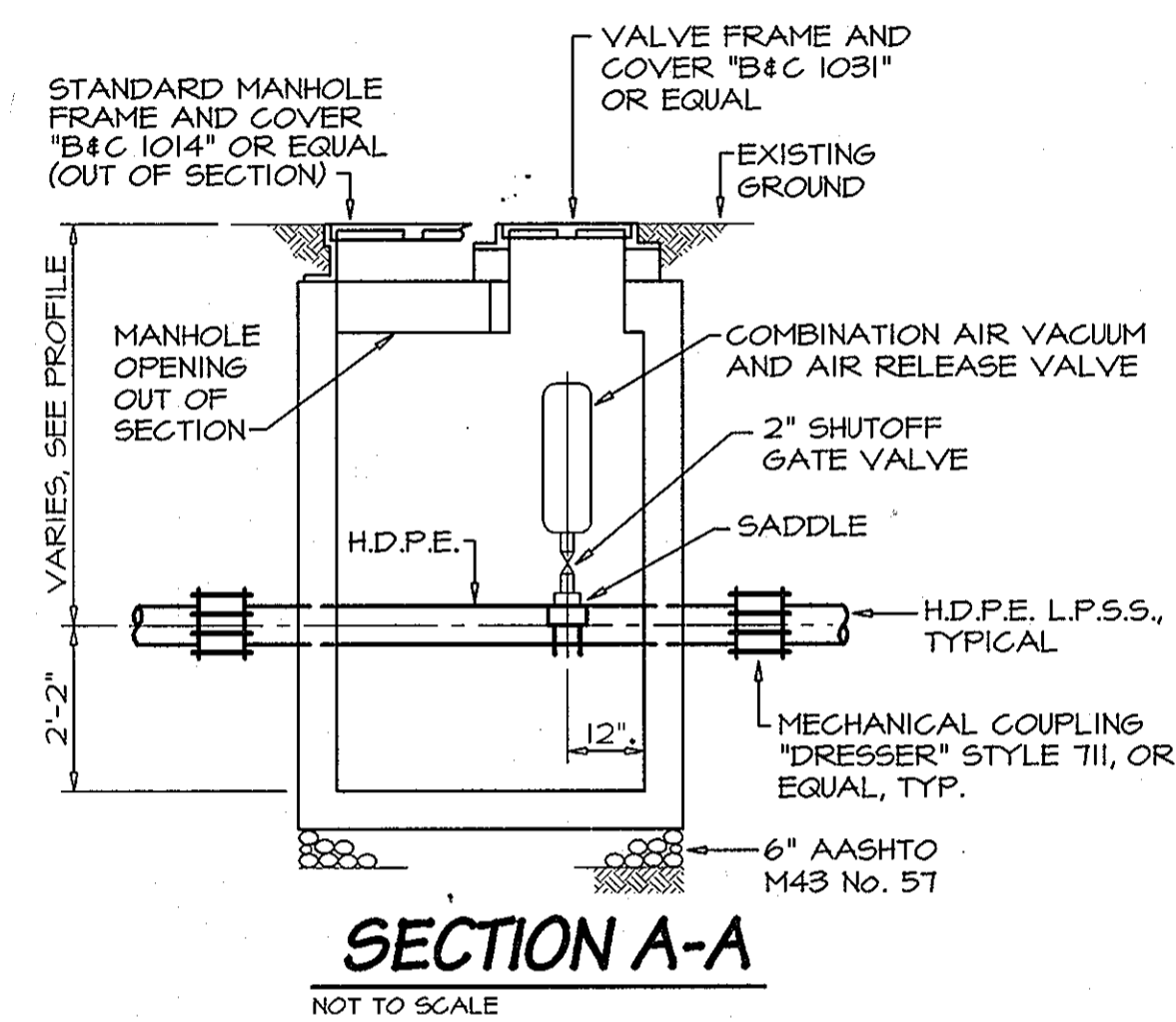
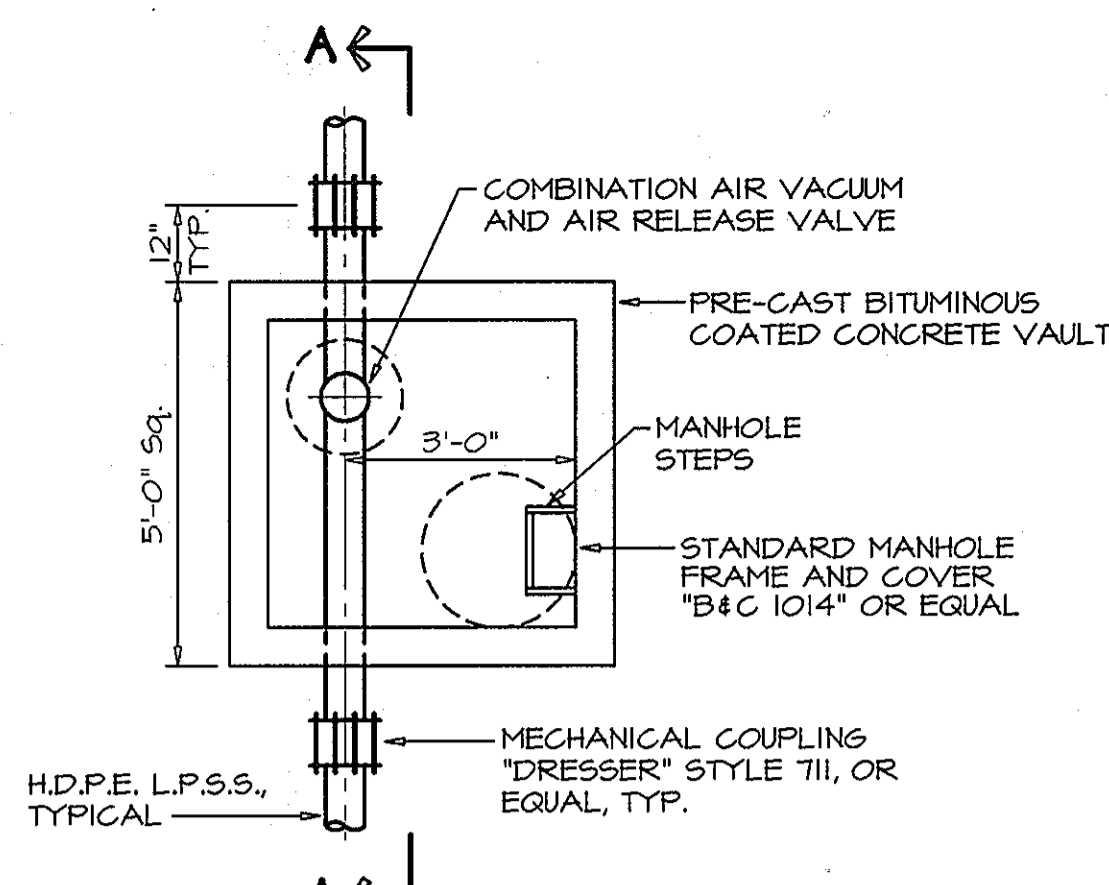
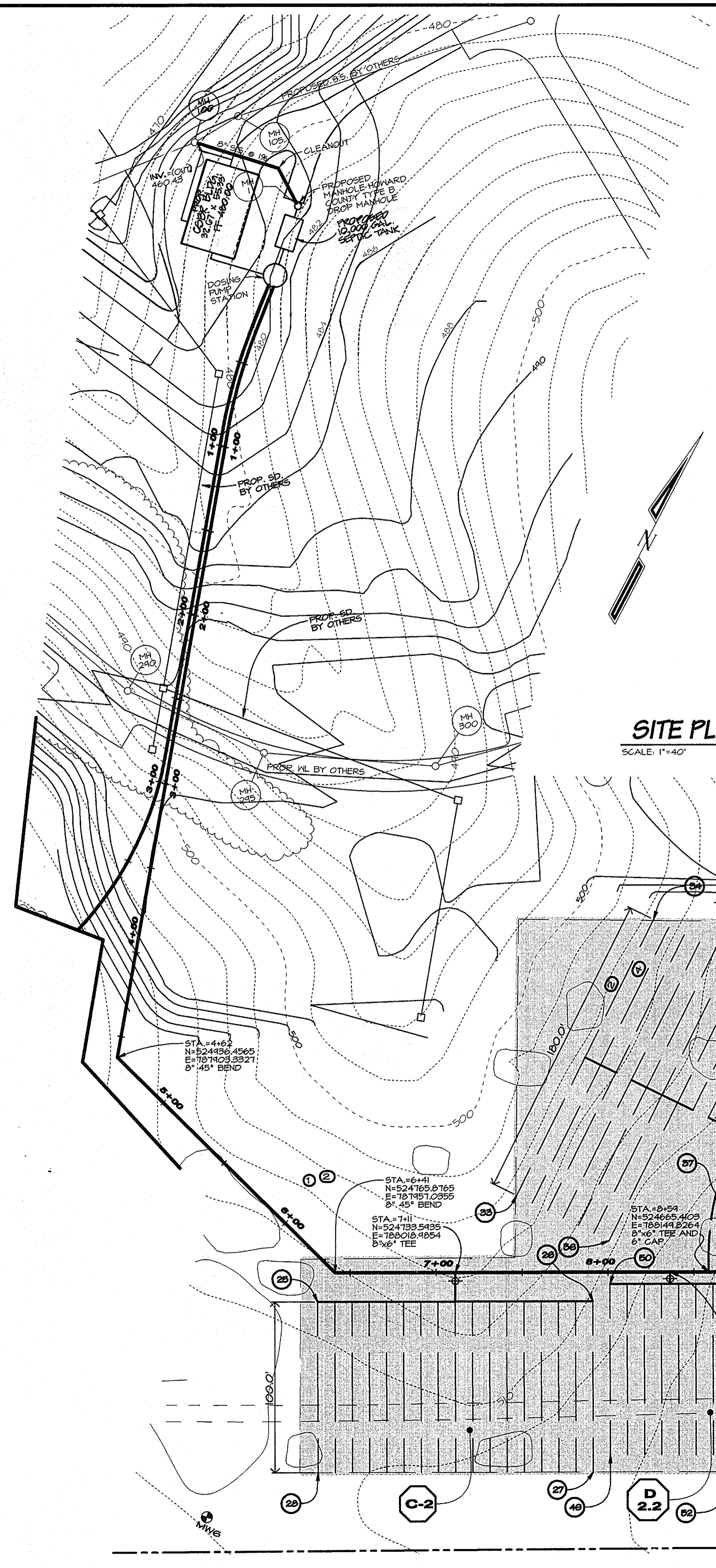
DATE	SCALE	DATE	SCALE
DATE	SCALE	DATE	SCALE

DISPOSAL FIELD SITE PLAN

THE VILLAS AT CATTAIL CREEK

ZONING: RC-DEO
TAX MAP No. 21 PARCEL: 3
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SHEET NO. 5-1/22
CADD FILE: HAANSITE.PRO
FILE NO.



LATERAL SIZING SUMMARY

FIELD TRENCH	LATERAL LENGTH	INVERT ELEVATION	HOLE DIAMETER	NUMBERS OF HOLES	HOLE SPACING	TRENCH BOTTOM	
A-1	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
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	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
	100 ft	489.36	1/4 in	10	10 ft	484.86	
B-1	240 ft	498.75	1/4 in	12	10 ft	493.57	
	240 ft	498.75	1/4 in	12	10 ft	493.57	
	240 ft	498.75	1/4 in	12	10 ft	493.57	
	240 ft	498.75	1/4 in	12	10 ft	493.57	
	240 ft	498.75	1/4 in	12	10 ft	493.57	
	240 ft	498.75	1/4 in	12	10 ft	493.57	
	240 ft	498.75	1/4 in	12	10 ft	493.57	
C-1	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	100 ft	512.70	1/4 in	10	10 ft	508.51	
	D-1	200 ft	508.76	1/4 in	10	10 ft	504.26
		200 ft	508.76	1/4 in	10	10 ft	504.26
200 ft		508.76	1/4 in	10	10 ft	504.26	
200 ft		508.76	1/4 in	10	10 ft	504.26	
200 ft		508.76	1/4 in	10	10 ft	504.26	
200 ft		508.76	1/4 in	10	10 ft	504.26	
200 ft		508.76	1/4 in	10	10 ft	504.26	

STAKEOUT DATA

POINT	NORTHING	EASTING
25	524755.4881	787940.1842
26	524681.5472	788082.0741
27	524592.8682	788035.8621
28	524666.8091	787893.9722
29	524648.8236	788166.5084
30	524574.8826	788308.3983
31	524486.2036	788262.1864
32	524560.1445	788120.2965
33	524756.9610	788071.5461
34	524862.9809	788217.0101
35	524798.3302	788264.1301
36	524708.4730	788106.8860
37	524697.5163	788176.7427
38	524803.5361	788322.2067
39	524738.8855	788369.3267
40	524632.8656	788223.8626
41	524429.7611	788561.5664
42	524332.7805	788736.4970
43	524279.9669	788708.0151
44	524376.9475	788533.0846
45	524639.6863	788258.6878
46	524698.5862	788339.5012
47	524658.1795	788368.9512
48	524599.2796	788288.1378

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC BY HOWARD COUNTY HEALTH DEPARTMENT

HEALTH OFFICER: *[Signature]* DATE: 1-20-07

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 20748, EXPIRATION DATE 2/22/07. *FOR REVISION No. 1 ONLY

ALDO V. VITALE, P.E. DATE: 2-1-08

McCRONE
ENGINEERING, ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING-CONSTRUCTION SERVICES
2000 WOODBURN AVENUE
ANNAPOLIS, MARYLAND 21401
(410) 297-8821
FAX (410) 297-8822

ANNAPOLIS CENTREVILLE ELKTON PRINCE FREDERICK SALISBURY

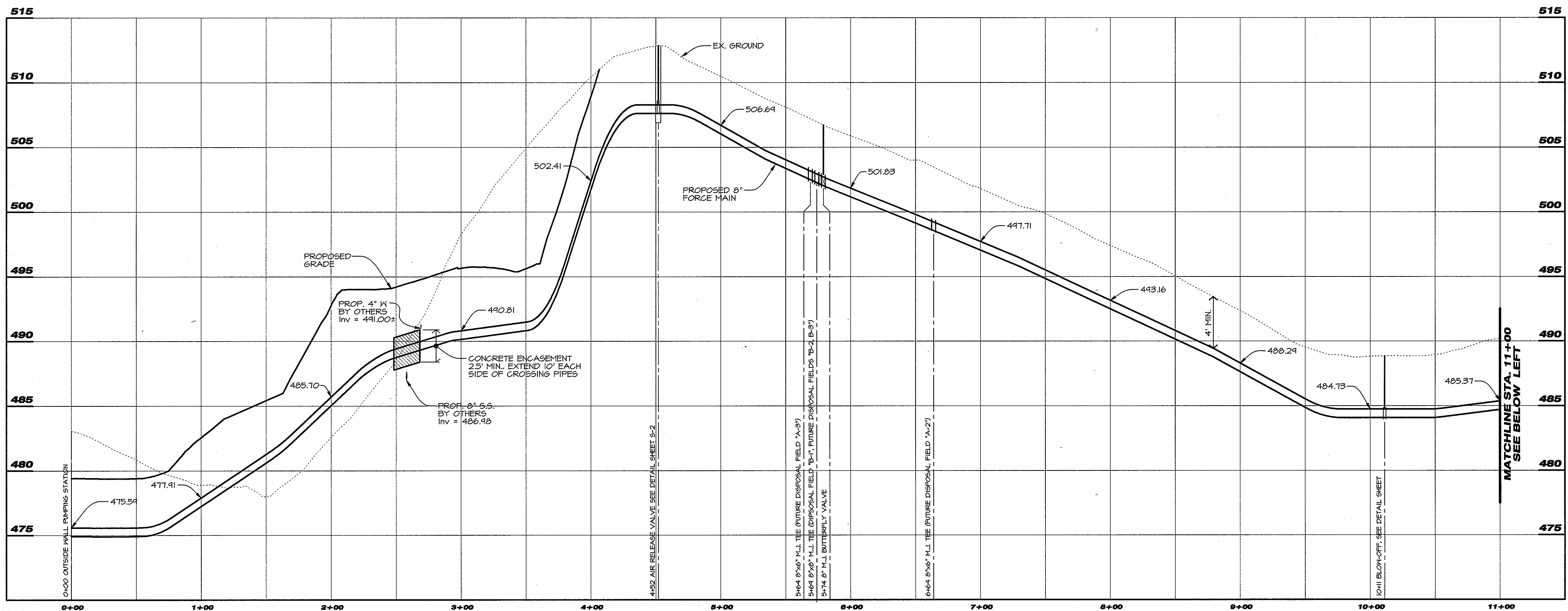
DISPOSAL FIELD SITE PLAN, FIELDS C & D
THE VILLAS AT CATTAIL CREEK
ZONING: RC-DEO
TAX MAP No. 21 PARCEL : 3
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SHEET NO. 5-3/24
CADD FILE: HAANSITE.PRO
FILE NO.

DATE: JULY 1999
SCALE: AS SHOWN
DRAWN BY: S.A.C.
FOLDER REF: APPROVED
REVISION: R.M.S.
RECORDED: 10/17/99

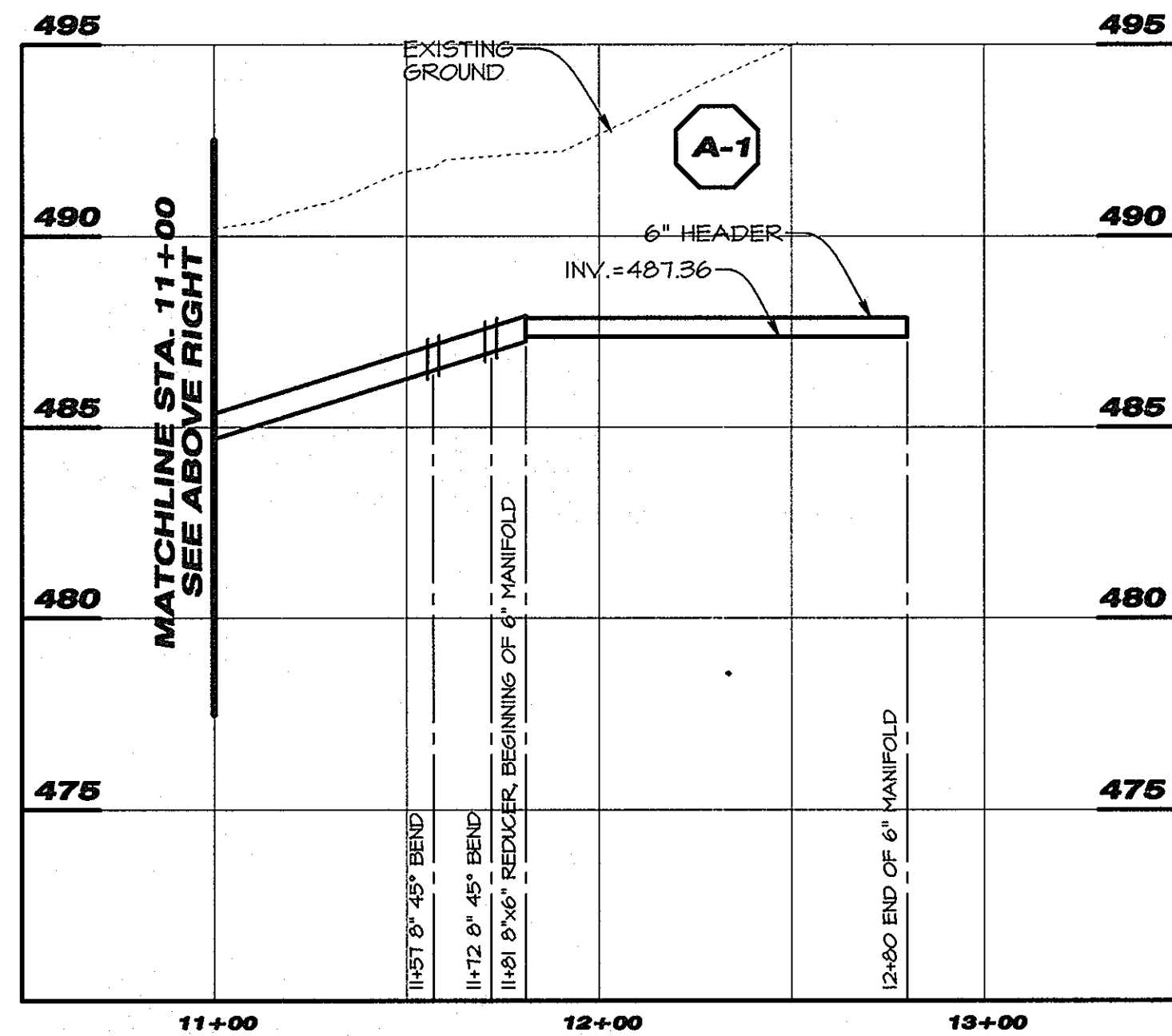
REVISIONS
DATE: 1/31/08
DESCRIPTION: REMOVE THE EXISTING REAR PORCH BUILDING AND ADJACENT MECHANICAL EQUIPMENT AND REPLACE WITH A CORP BUILDING

DATE: 4/24/08



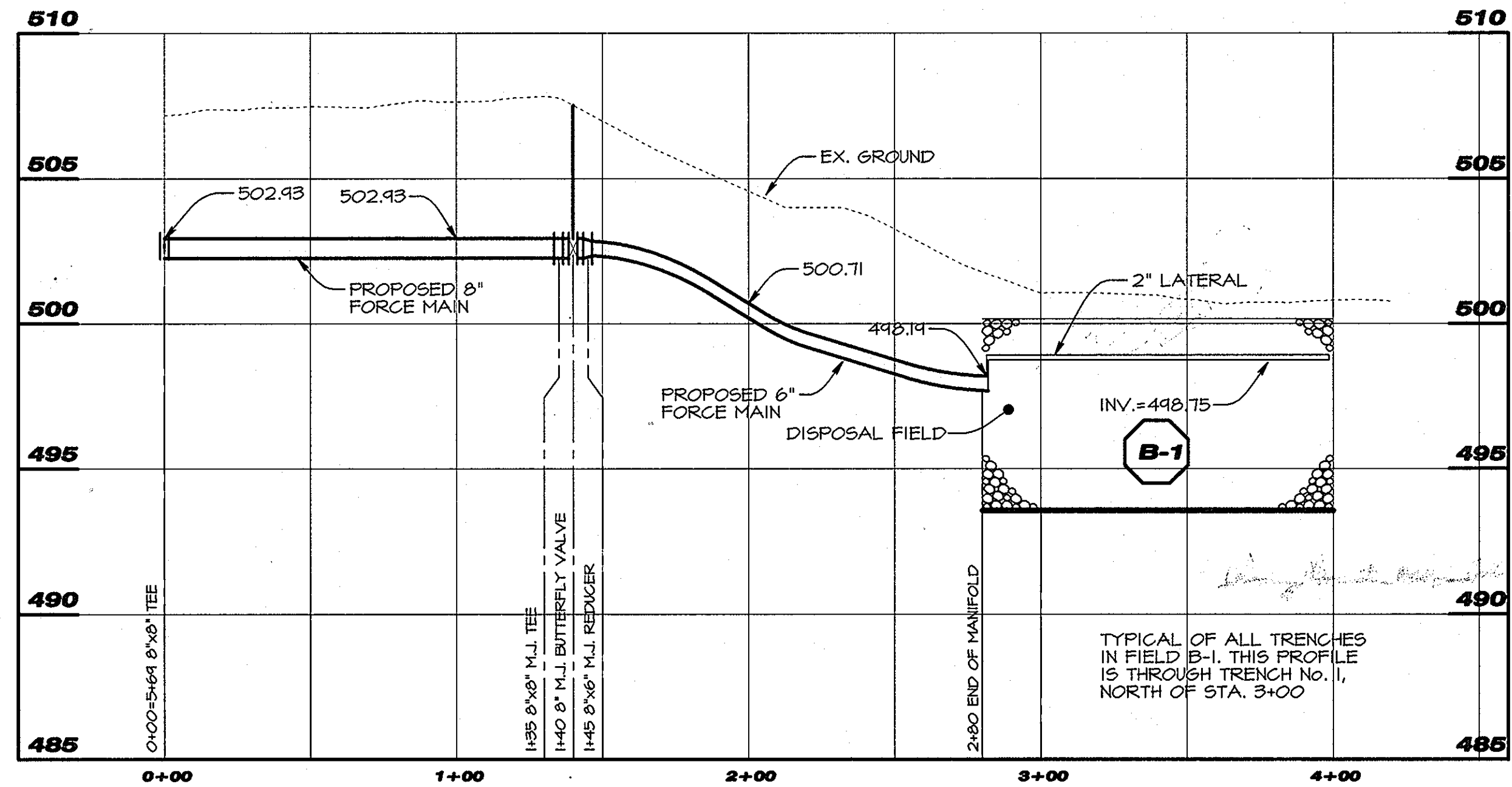
PROFILE-FORCE MAIN "A" TO DISPOSAL FIELD "A-1"

SCALE: HORIZ. 1"=40', VERT. 1"=4'



PROFILE-FORCE MAIN "A" TO DISPOSAL FIELD "A-1"

SCALE: HORIZ. 1"=40', VERT. 1"=4'



PROFILE-FORCE MAIN "A" TO DISPOSAL FIELD "B-1"

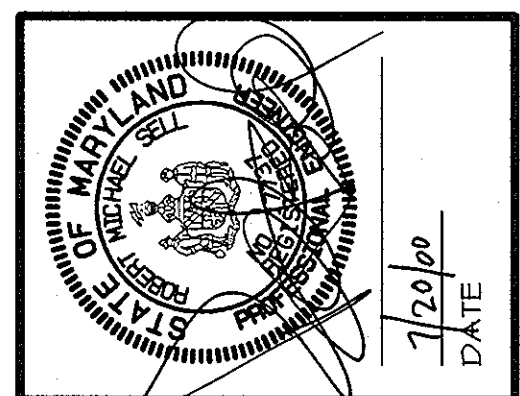
SCALE: HORIZ. 1"=40', VERT. 1"=4'

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC BY HOWARD COUNTY HEALTH DEPARTMENT

HEALTH OFFICER _____ DATE _____

Approved for private well and private septic by
 Howard County Health Department

 Health Officer
 1-7-02
 Date



REV. #	DATE	DESCRIPTION

McCRONE
 ENGINEERING-ENVIRONMENTAL SCIENCES
 LAND PLANNING & SURVEYING-CONSTRUCTION SERVICES
 ANNAPOLIS, MARYLAND 21401
 (410) 287-9821
 Fax: (410) 287-9822

ANNAPOLIS CENTREVILLE ELKTON PRINCE FREDERICK SALISBURY

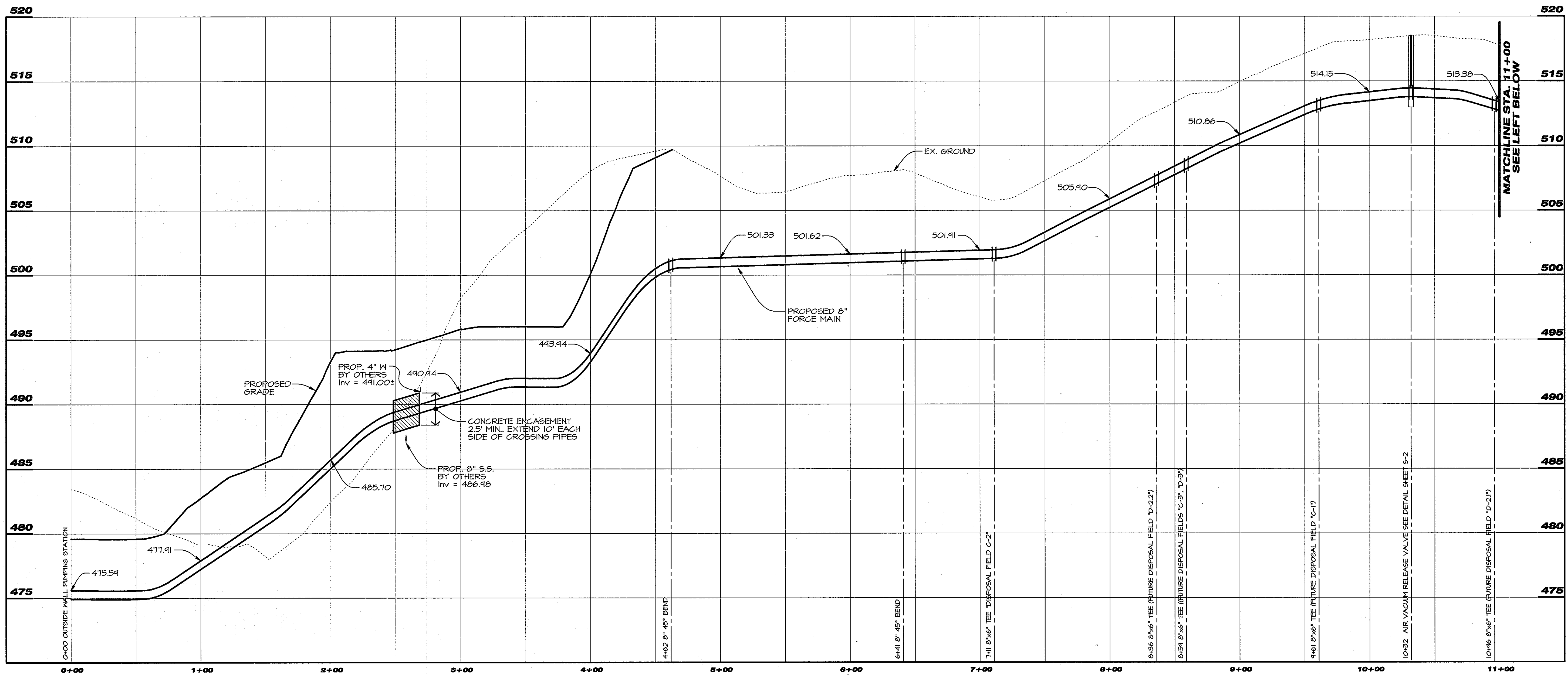
DATE	SCALE	AC-COMPL	DESIGNED BY	APPROVED

DISPOSAL FIELD PROFILES

THE VILLAS AT CATTAIL CREEK

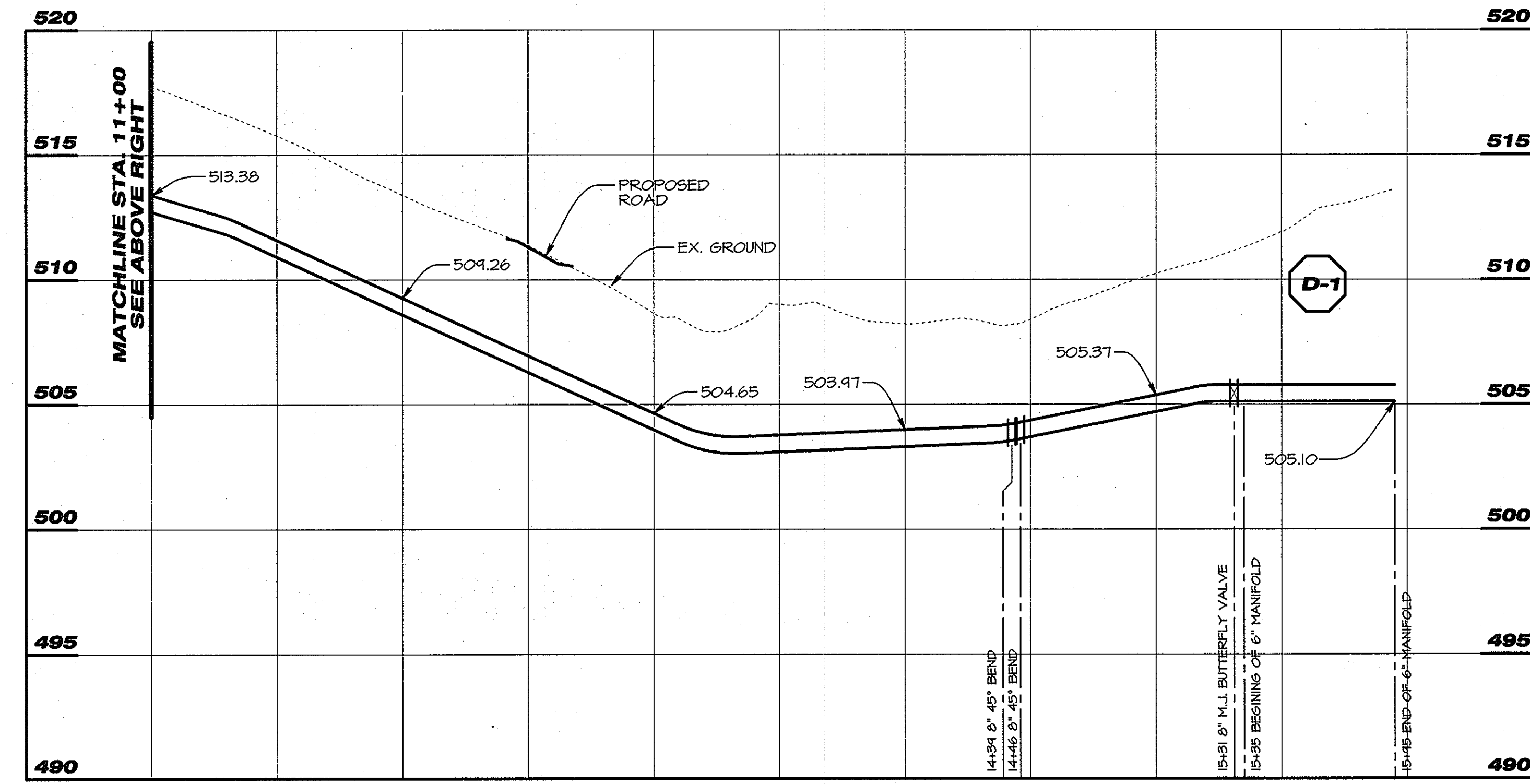
ZONING: RC-DEO
 TAX MAP No. 21 PARCEL : 3
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SHEET NO.	5-4/05
CADD FILE:	HAANSITE.PRO
FILE NO.	



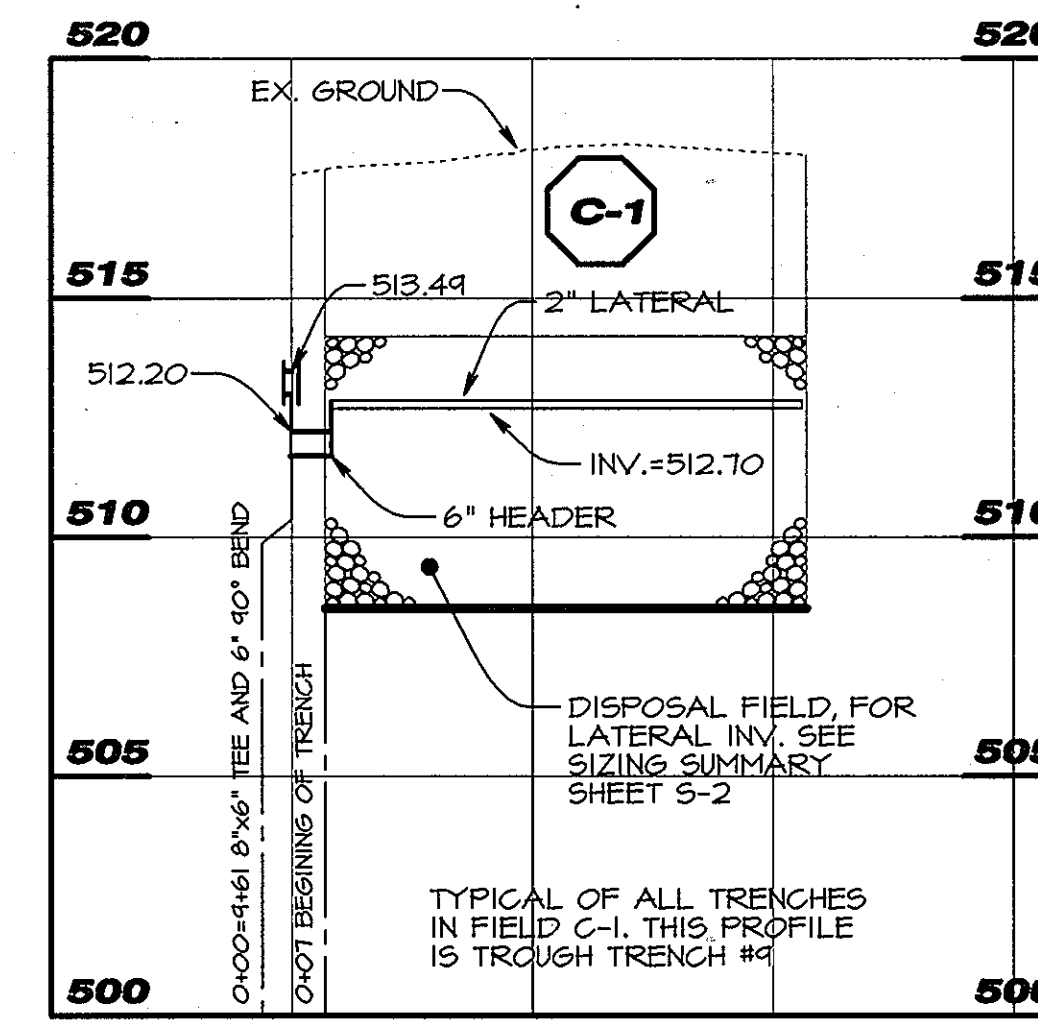
PROFILE-FORCE MAIN "B" TO DISPOSAL FIELD "D-1"

SCALE: HORIZ. 1"=40', VERT. 1"=4'



PROFILE-FORCE MAIN "B" TO DISPOSAL FIELD "D-1"

SCALE: HORIZ. 1"=40', VERT. 1"=4'

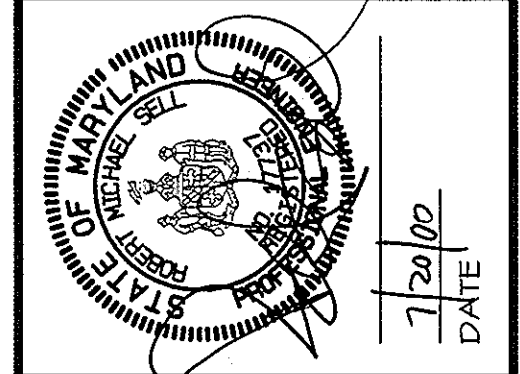


PROFILE-FORCE MAIN "C" TO DISPOSAL FIELD "C-1"

SCALE: HORIZ. 1"=40', VERT. 1"=4'

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC
BY HOWARD COUNTY HEALTH DEPARTMENT

Donna Brent 1-7-02
HEALTH OFFICER DATE



REV. #	DATE	DESCRIPTION

McCRONE
ENGINEERING-ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING-CONSTRUCTION SERVICES
30 RIDGELY AVENUE
ANNAPOLIS, MARYLAND 21401
Tel: (410) 287-8821
Fax: (410) 287-8822

ANNAPOLIS CENTREVILLE ELKTON PRINCE FREDERICK SALISBURY

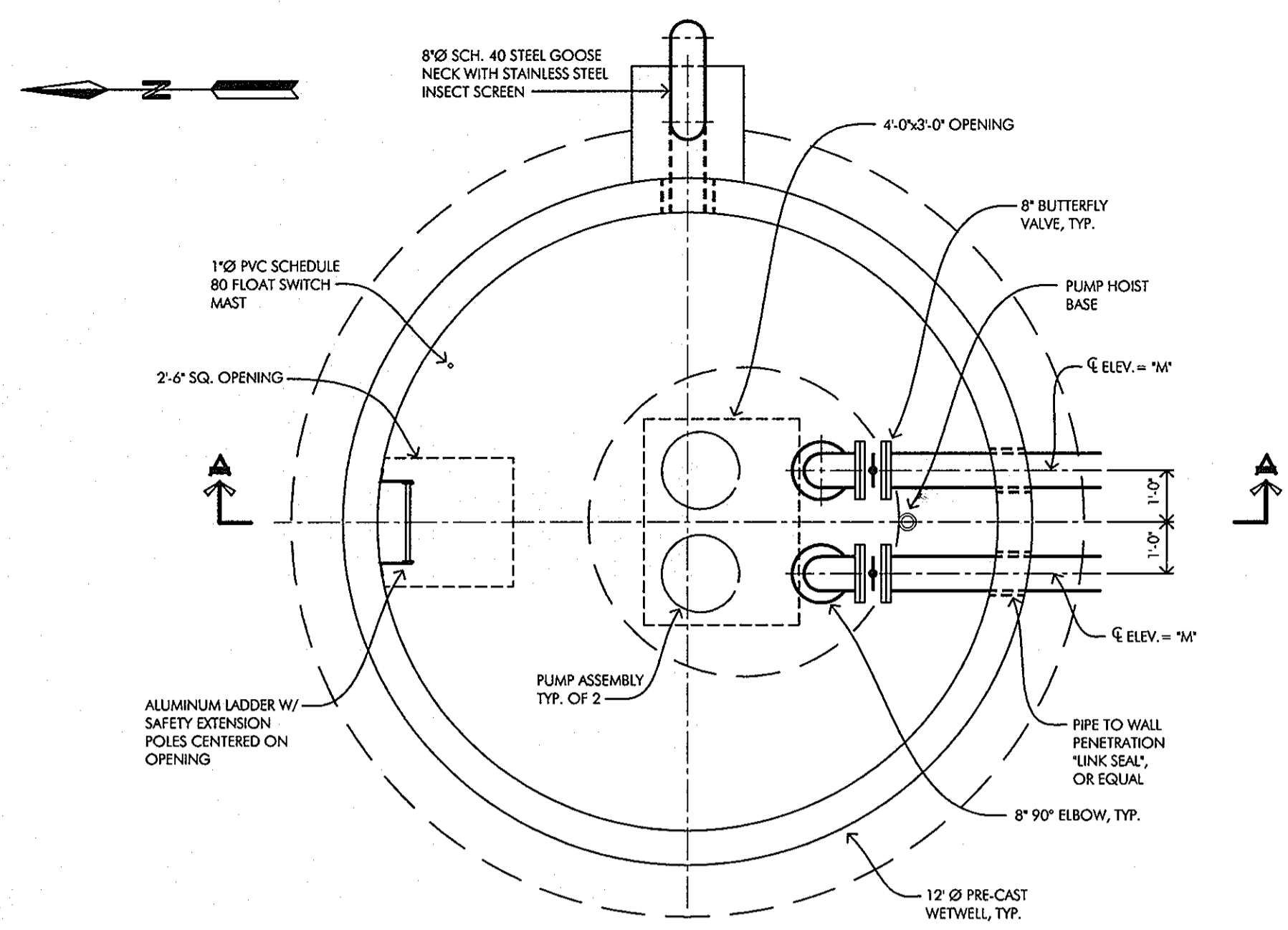
DATE	SCALE	AS SHOWN	DESIGNED BY	DESIGNED BY	APPROVED

DISPOSAL FIELD PROFILES

THE VILLAS AT CATTAIL CREEK

ZONING: RC-DEO
TAX MAP NO. 21 PARCEL: 3
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

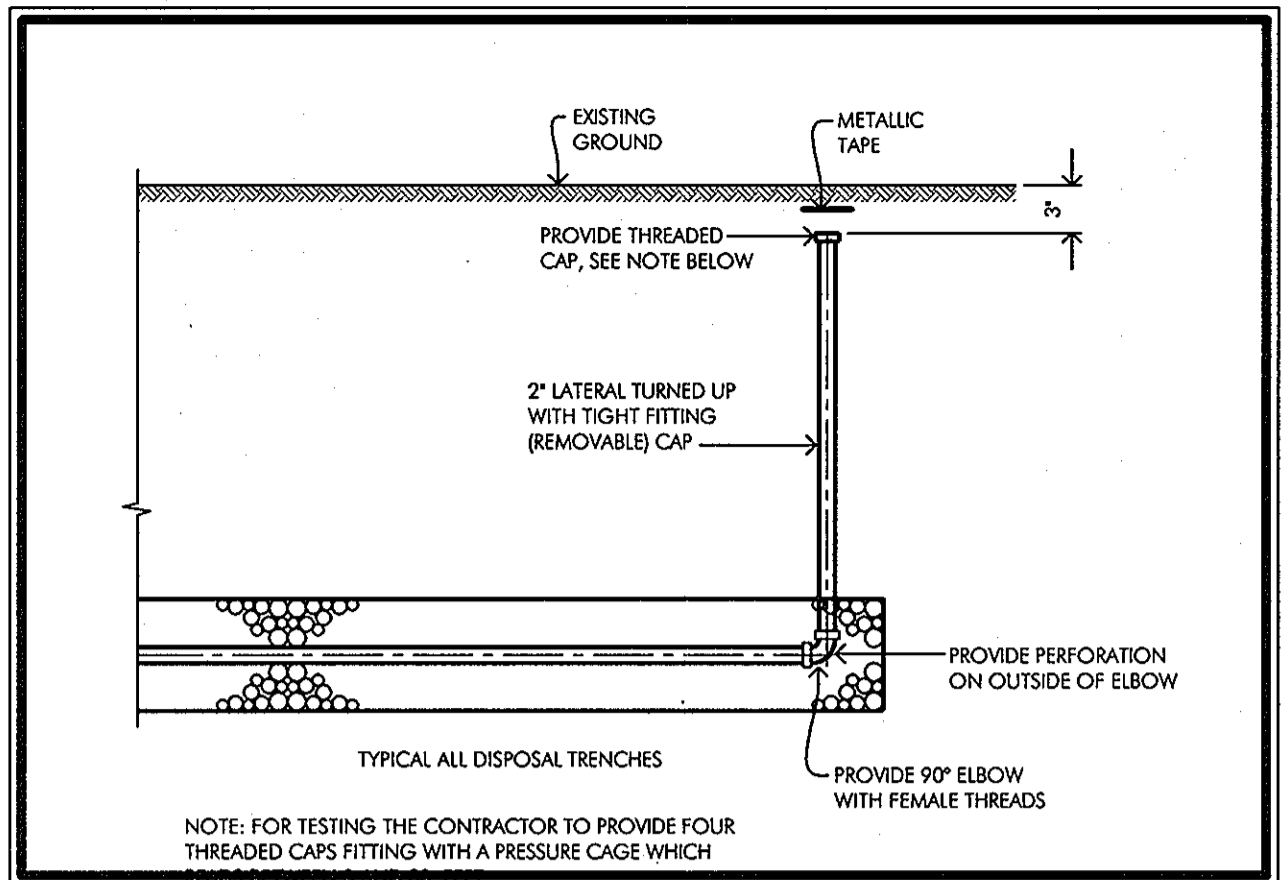
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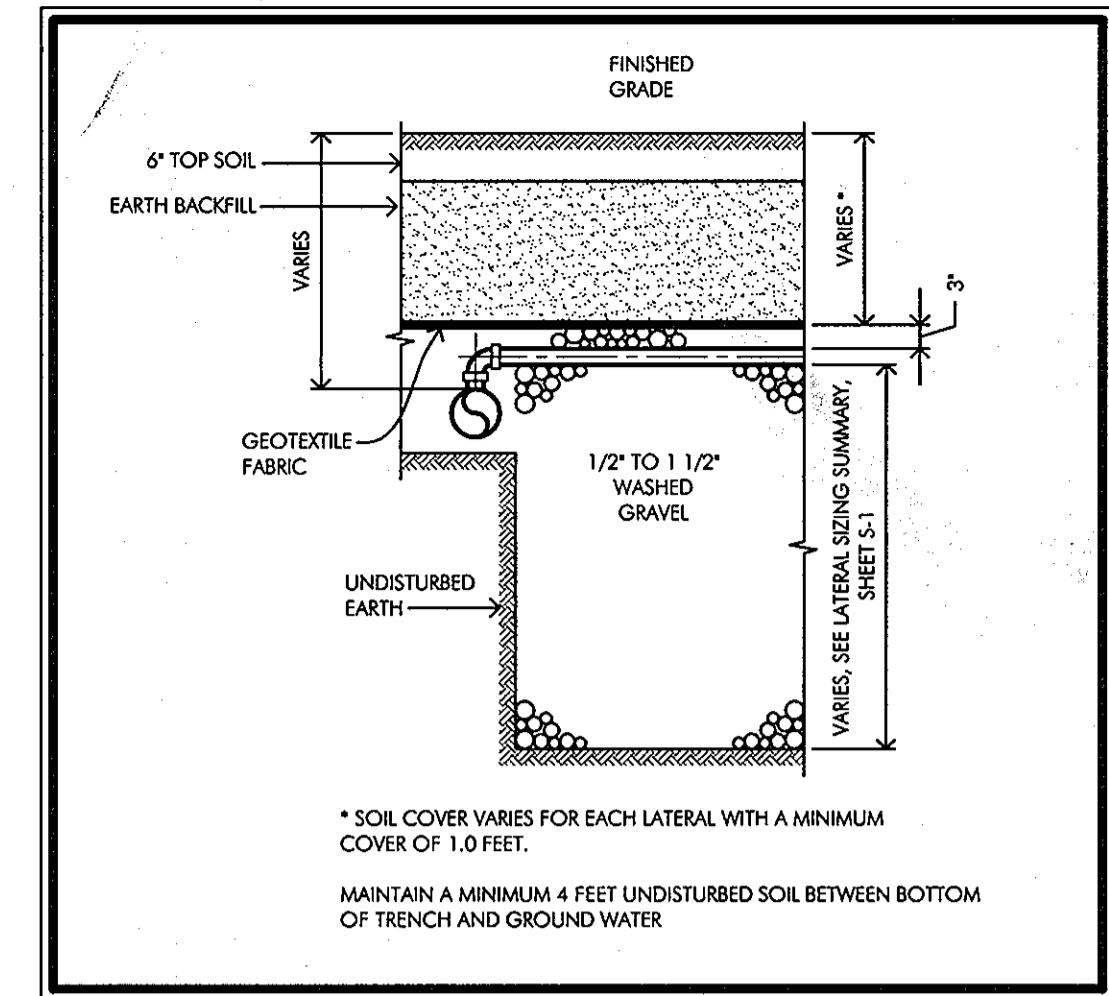
PUMP STATION PLAN
NOT TO SCALE

DIMENSIONAL DATA	
DESCRIPTION	DOSING P.S.
A	STATION HEIGHT 26.37
B	FINISHED GRADE ELEVATION 480.00
C	TOP OF WET WELL ELEVATION 480.50
D	INVERT OF INFLUENT ELEVATION 476.00
E	HIGH WATER ALARM/PUMP START 475.50
F	HIGH WATER PUMP STOP 474.50
G	LOW WATER CUT-OFF/RESTART 469.88
H	LOW WATER CUT-OFF 468.88
J	WET WELL FLOOR ELEVATION 466.88
K	BOTTOM ELEVATION 465.88
L	PIPE AND VALVE SIZE 8"
M	DISCHARGE ELEVATION 476.00

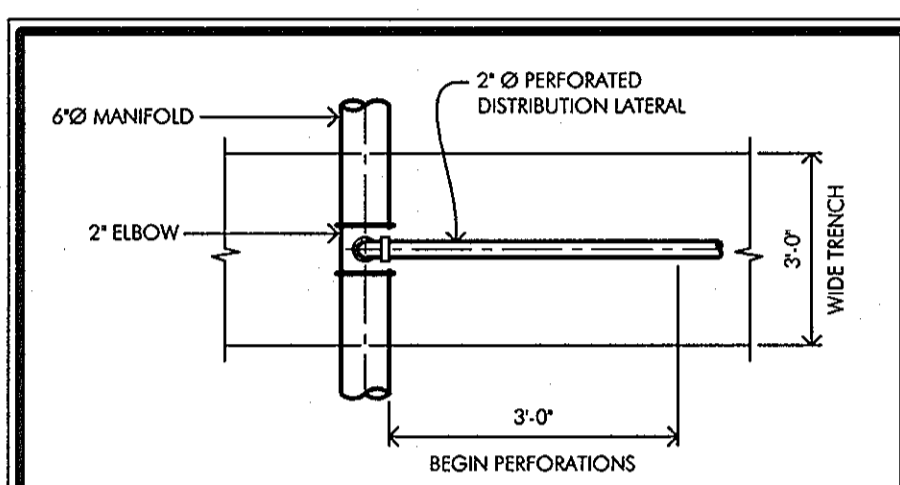
- NOTES:
- CONTROL PANEL SHALL BE MOUNTED ADJACENT TO WET WELL ON MARINE GRADE, PLYWOOD.
 - ALL FIELD WIRING AND CONNECTIONS BETWEEN PUMPS, FLOAT SWITCHES AND CONTROL PANEL BY SEWAGE TREATMENT DISPOSAL SYSTEM CONTRACTOR.
 - FLOAT, POWER AND CONTROL CABLES MAY BE RUN TO PANEL THROUGH CONDUIT.



PROFILE TURNED UP LATERAL DETAIL-DOSING FIELDS
NOT TO SCALE

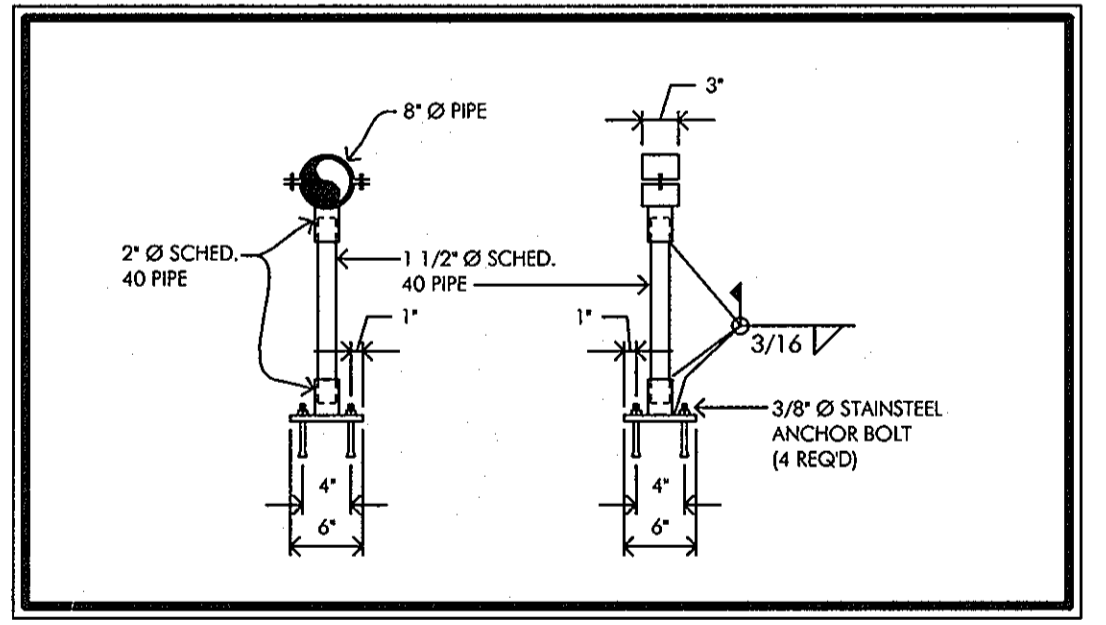


DISTRIBUTION LATERAL PROFILE-DOSING FIELDS
NOT TO SCALE

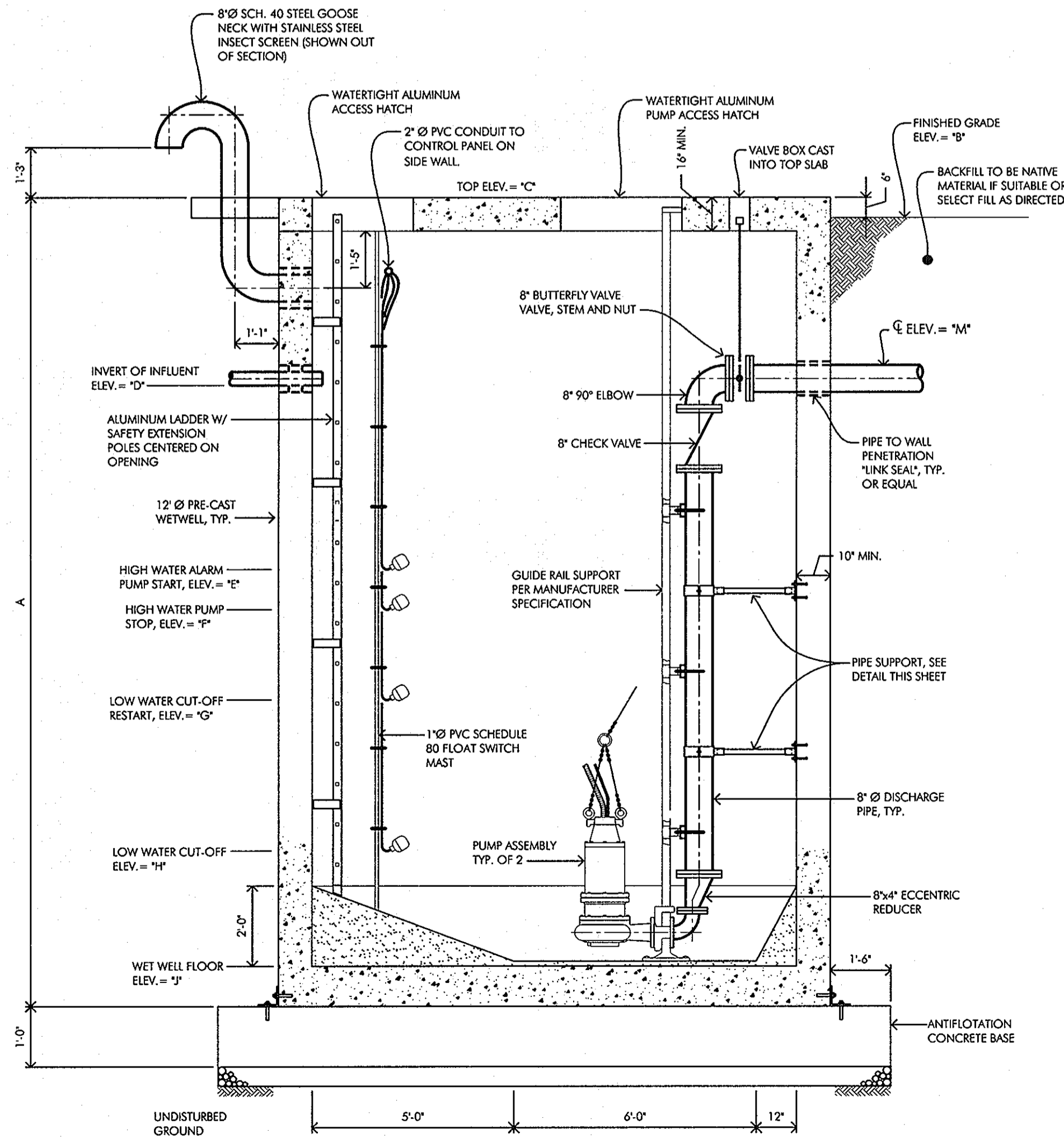


- NOTES:
- CONTRACTOR TO BUILD/INSTALL 3' WIDE DISPOSAL TRENCHES AS SHOWN ON SITE PLAN AND DETAILS HEREON.
 - MANIFOLD PIPE AND DISTRIBUTION LATERALS TO BE INSTALLED ON LEVEL GRADE, SEE LATERAL SIZING SUMMARY, SHEET S-1.
 - BOTTOM OF TRENCH TO BE EXCAVATED ON LEVEL GRADE.
 - CONTRACTOR TO DRILL HOLES IN DISTRIBUTION LATERALS AS SHOWN IN LATERAL SIZING SUMMARY SHEET S-1. INSTALL PIPE HOLES DOWNWARD.

DOSING FIELD TRENCH DETAIL
NOT TO SCALE



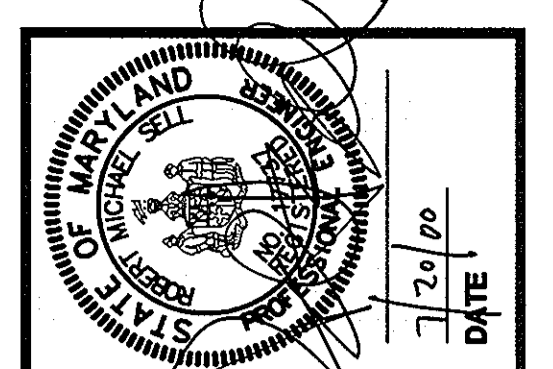
PIPE SUPPORT DETAIL
NOT TO SCALE



SECTION A-A
NOT TO SCALE

APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC
BY HOWARD COUNTY HEALTH DEPARTMENT

James D. ... 1-7-02
HEALTH OFFICER DATE



REV. #	DATE	DESCRIPTION

McCRONE
ENGINEERING & ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES
20 PROBEY AVENUE, SUITE 5401
ANNAPOLIS, MD 21403
(410) 291-5400
FAX: (410) 297-9633

ANNAPOLIS CENTREVILLE ELKTON PRINCE FREDERICK SALISBURY

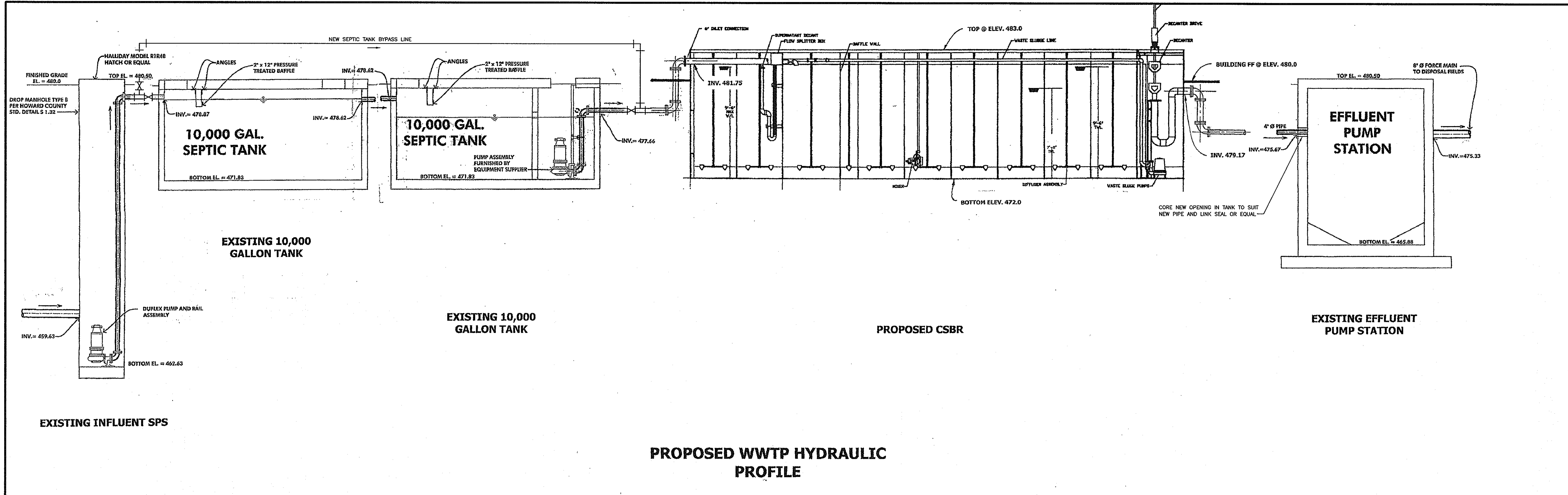
SCALE	DATE	JOB NO.	DESIGNED	CHECKED	APPROVED	REVISION
As Shown	JULY 1999	02102005				

DOSING PUMP STATION - PLAN - SECTION - DETAILS

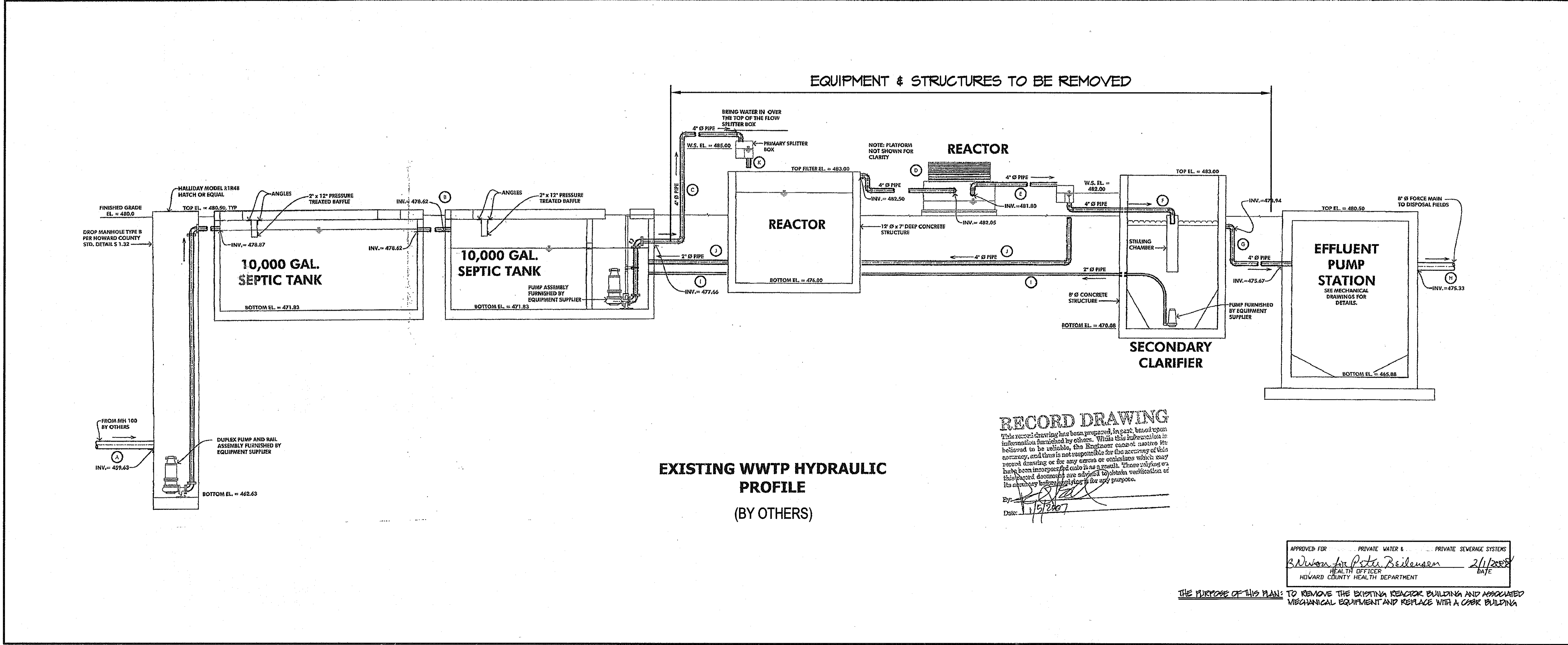
THE VILLAS AT CATTAIL CREEK

ZONING: RC-DEO
TAX MAP No: 21 PARCEL: 3
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SHEET NO. S-6/27
CADD FILE: HAN-506
FILE NO.



PROPOSED WWTP HYDRAULIC PROFILE

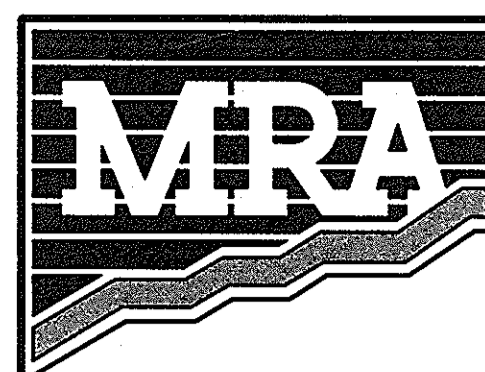


EXISTING WWTP HYDRAULIC PROFILE (BY OTHERS)

RECORD DRAWING
 This record drawing has been prepared, in part, based upon information furnished by others. While the information is believed to be reliable, the Engineer cannot assume any responsibility for the accuracy or completeness of this record drawing or for any errors or omissions which may have been incorporated into this record drawing. Those relying on this record drawing are advised to obtain verification of its accuracy before applying it for any purpose.
 By: *[Signature]*
 Date: 1/19/2007

APPROVED FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS
[Signature]
 HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

THE PURPOSE OF THIS PLAN: TO REMOVE THE EXISTING REACTOR BUILDING AND ASSOCIATED MECHANICAL EQUIPMENT AND REPLACE WITH A COOK BUILDING



MORRIS & RITCHE ASSOCIATES, INC.
 Architects, Engineers, Planners,
 Surveyors and Landscape Architects
 3445-A Box Hill Corporate Center Drive
 Abingdon, Maryland 21009
 410-515-9000
 410-515-9002 Fax

REVISED SITE DEVELOPMENT PLAN
**The Villas at Cattail Creek
 Wastewater Treatment Plant**
 Howard County, Maryland



I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, license number 22061, expiration date 08/04/2008.

© CONTENTS COPYRIGHT 2007 MORRIS & RITCHE ASSOCIATES, INC.

NO.	REVISION	DATE
15487	JPD	10/19/07

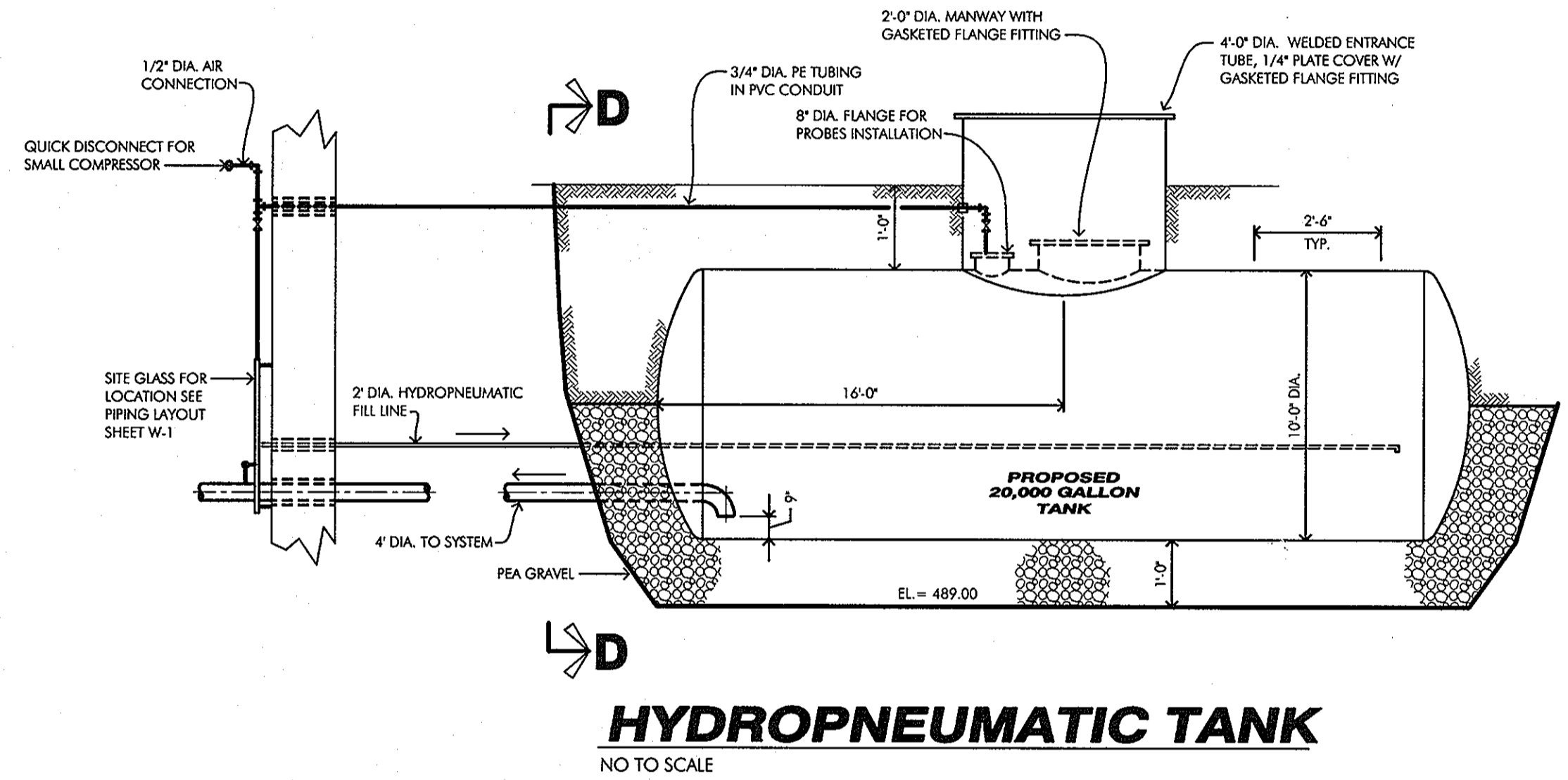
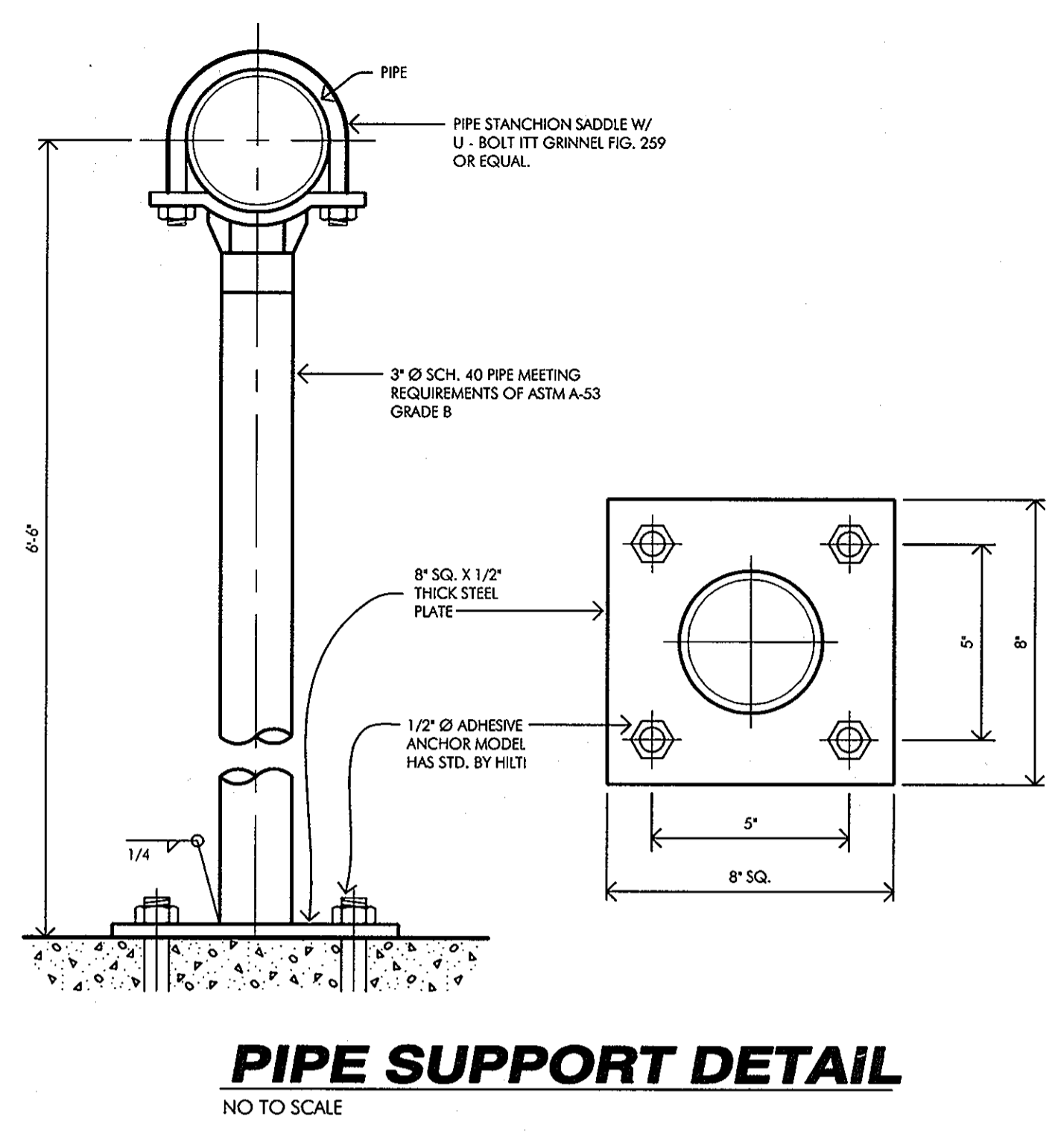
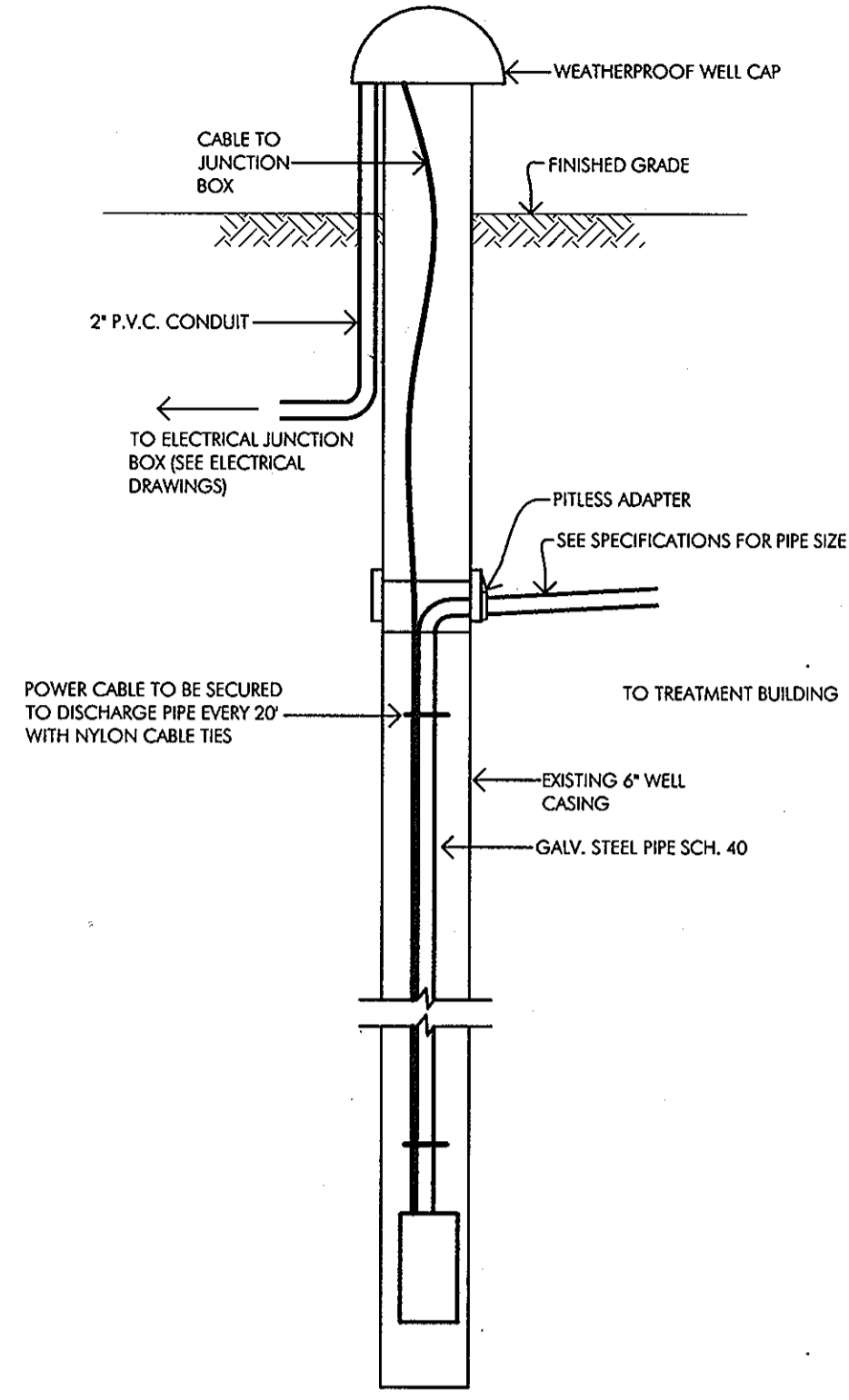
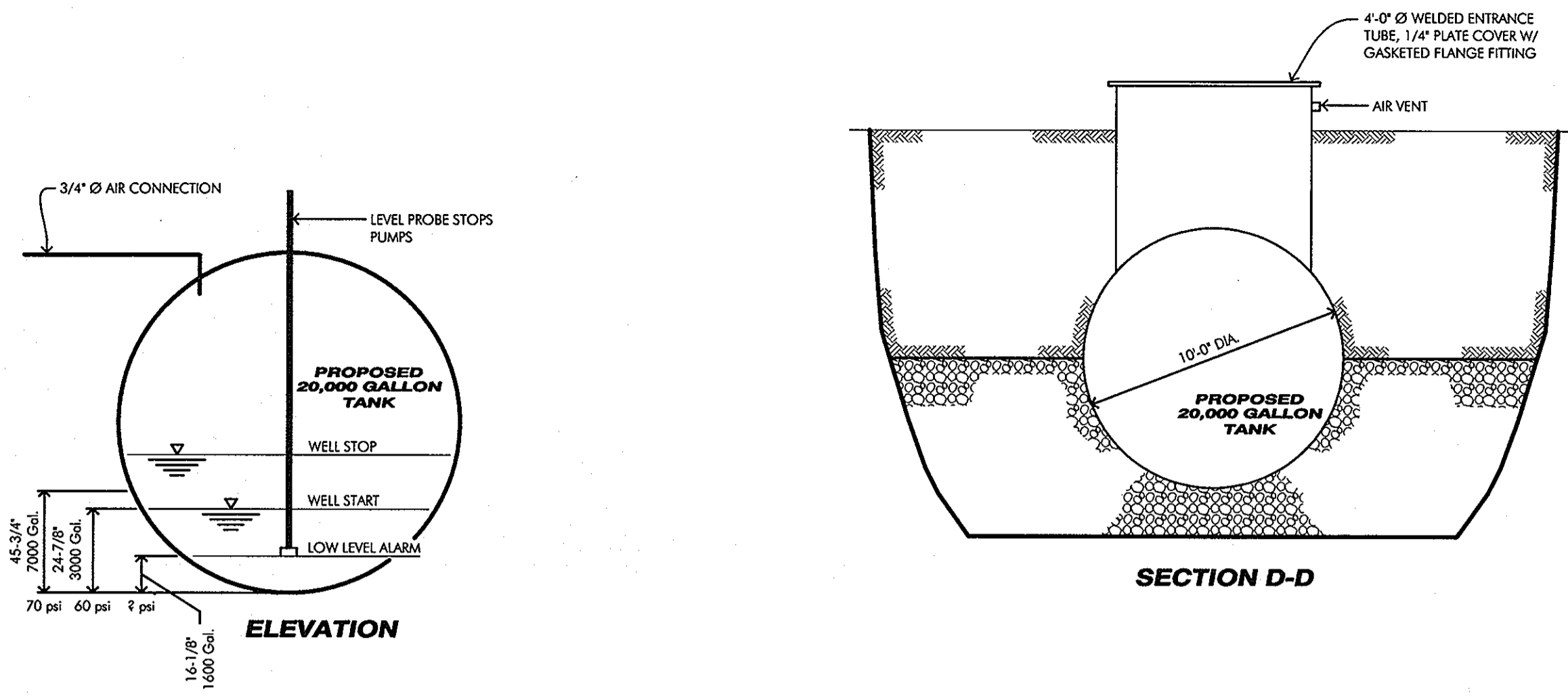
Hydraulic Profile

S-7/28

Construction Documents

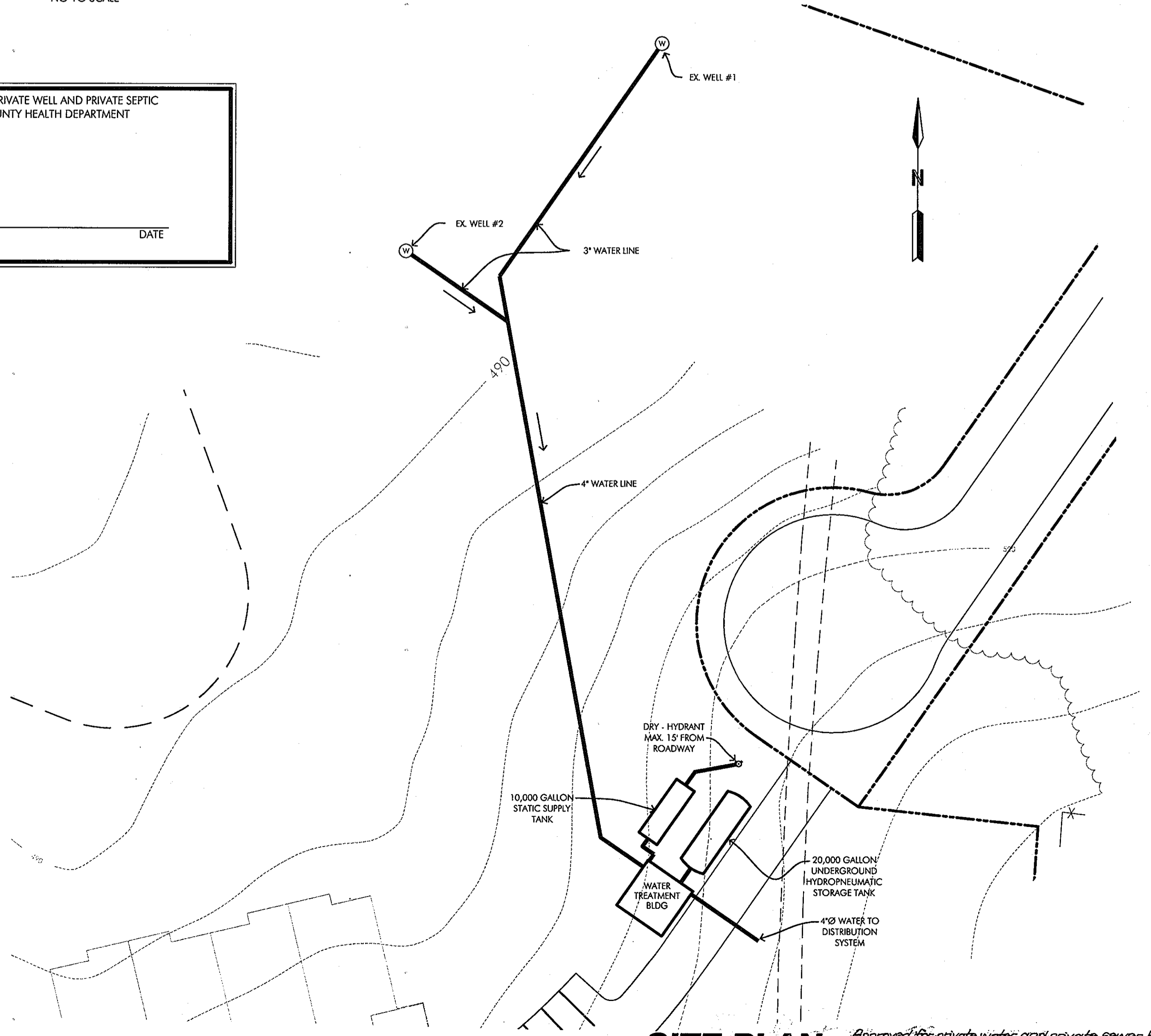
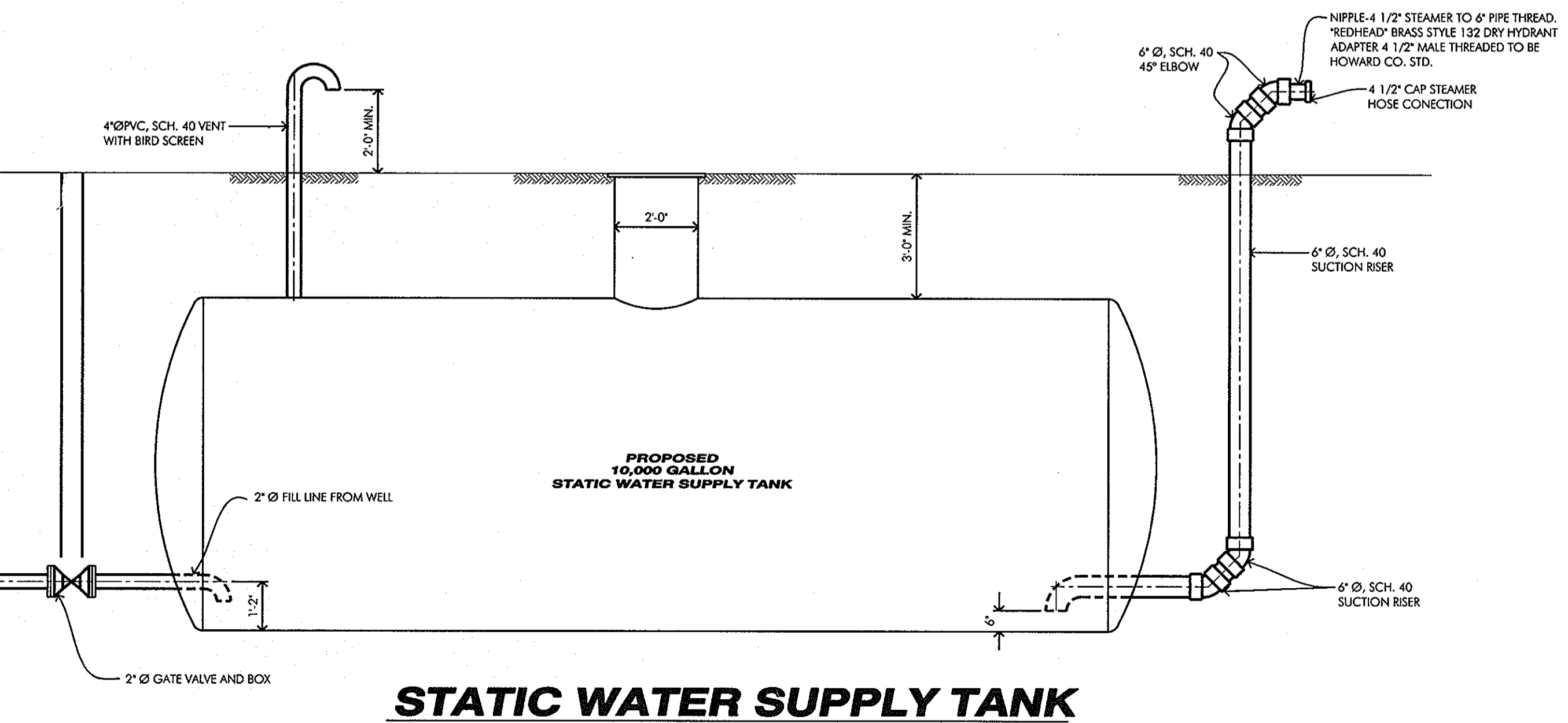
SDF01-115

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APPROVED FOR PRIVATE WELL AND PRIVATE SEPTIC
BY HOWARD COUNTY HEALTH DEPARTMENT

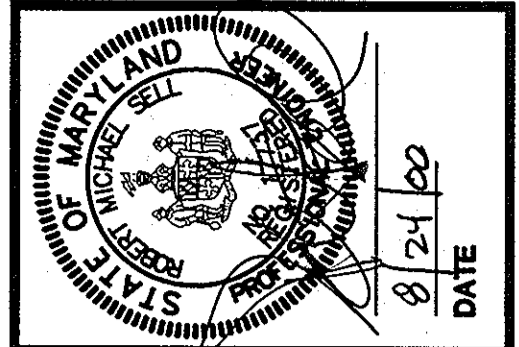
HEALTH OFFICER _____ DATE _____



STATIC WATER SUPPLY TANK
NOT TO SCALE

NOTE: INSTALLATION OF SYSTEM SHALL MEET NFPA 1231 WATER SUPPLIES FOR SUBURBAN AND RURAL FIREFIGHTING

SITE PLAN
SCALE: 1"=30'
Approved for private water and private sewer by Howard County Health Department.
Health Officer _____ Date _____



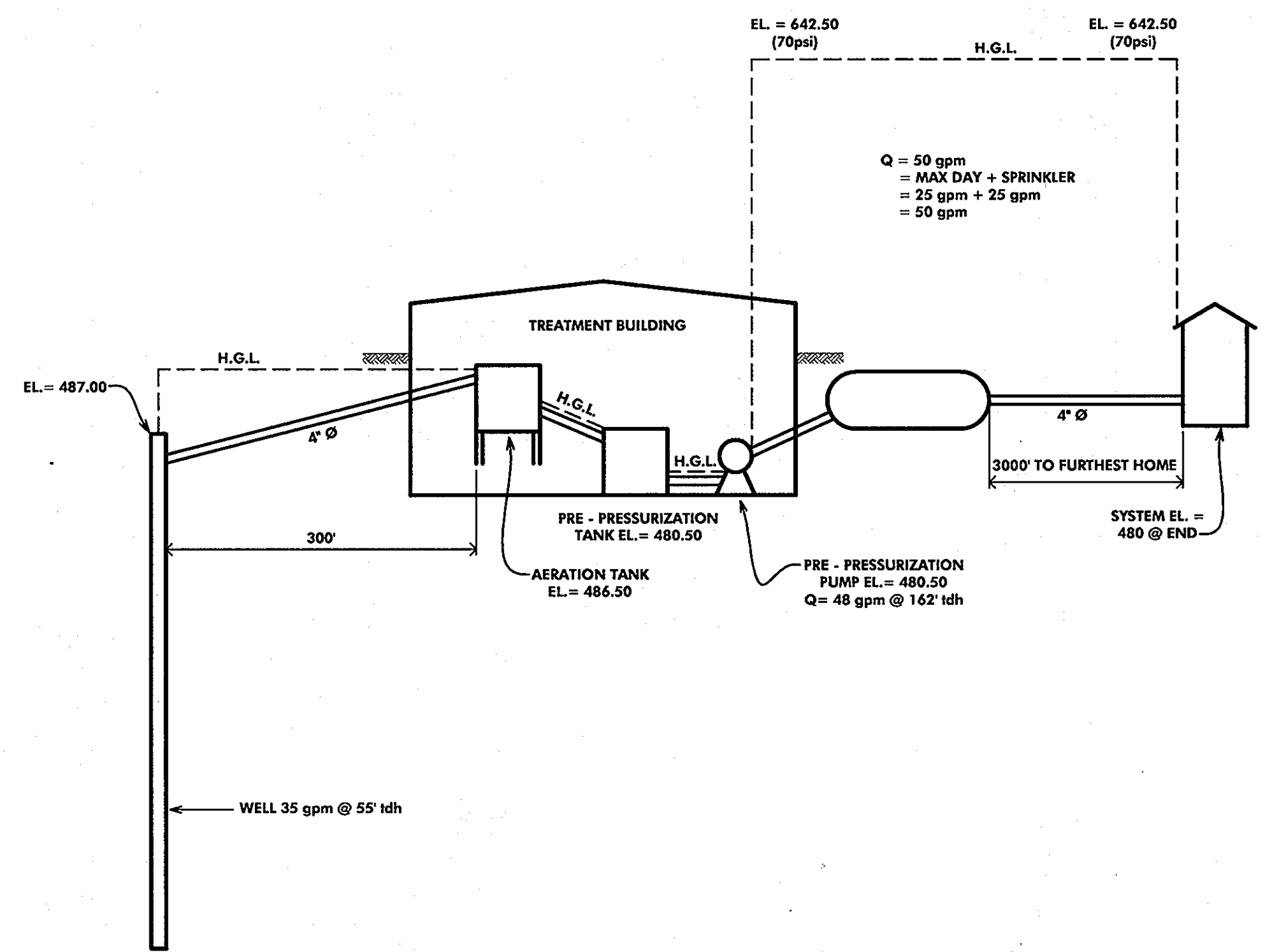
REV. #	DATE	DESCRIPTION

McCRONE
ENGINEERING & ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES
20 RIDGELY AVENUE
ANNAPOLIS, MARYLAND 21401
Fax: (410) 287-9822
ANNAPOLIS CENTREVILLE ELKTON PRINCE FREDERICK SALISBURY

DATE	SCALE	AS SHOWN	DATE	SCALE	AS SHOWN
JULY 1999	AS SHOWN	AS SHOWN			

HYDROPNEUMATIC TANK AND DETAILS
THE VILLAS AT CATTAIL CREEK
ZONING: RC-DEO
TAX MAP No. 21 PARCEL: 9
FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SHEET NO. W-2/30
CADD FILE: HAN-W02
FILE NO. _____

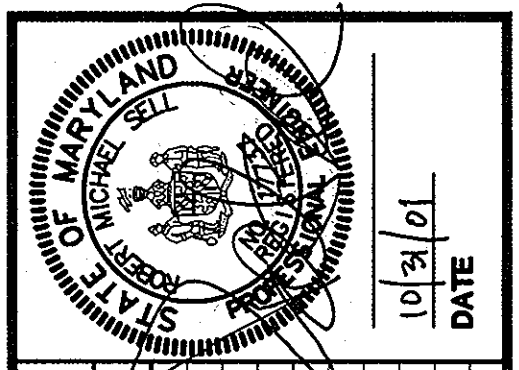


HYDRAULIC PROFILE

NO TO SCALE

Approved for private well and private septic by
Howard County Health Department.

James R. ... 1-7-02
Health Officer Date



REV. #	DATE	DESCRIPTION

McCRONE
 ENGINEERING & ENVIRONMENTAL SCIENCES
 LAND PLANNING & SURVEYING & CONSTRUCTION SERVICES
 20 ROBEY AVENUE
 ANNAPOLIS, MARYLAND 21401
 (410) 267-8821
 Fax (410) 267-8822

ANNAPOLIS CENTREVILLE ELKTON PRINCE FREDERICK SALISBURY

DATE	SCALE	DESIGNED BY	APPROVED BY
October 2001 <td>As Shown <td> </td> <td> </td> </td>	As Shown <td> </td> <td> </td>		

HYDRAULIC PROFILE

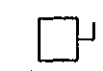

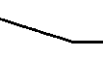


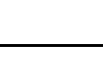
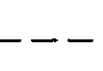
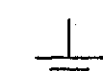
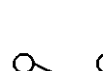







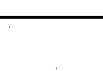
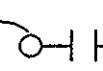
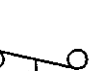
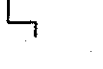
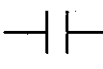
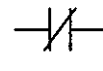
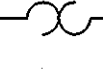


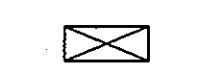

THE VILLAS AT CATTAIL CREEK

ZONING: RC-DEO
 TAX MAP No: 21 PARCEL: 3
 FOURTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SHEET NO. W-3/31
 CADD FILE HAN-W03
 FILE NO.

SYMBOLS

ELECTRICAL

	NON-FUSED DISCONNECT SWITCH, SIZE AS INDICATED
	CIRCUIT BREAKER
	TOGGLE SWITCH
	MOTOR
	HOMERUN TO PANEL LP INDICATES NUMBER OF #12 CONDUCTORS AND GROUND (UON)
	CONDUIT OR CONDUCTOR - EXPOSED
	CONDUIT OR CONDUCTOR - DIRECT BURIAL, IN SLAB, OR CONCEALED
	GROUND CONNECTION
	CONTACT - TIME DELAY
	ELECTRICALLY INTERLOCKED
	JUNCTION BOX
	KEY INTERLOCK
	LIMIT SWITCH
	CONDUIT TURNS UP
	CONDUIT TURNS DOWN
	NEMA MOTOR STARTER WITH C/B
	TEMPERATURE ACTUATED SWITCH HEAVY DUTY TYPE
	CONTACT - N.O.
	CONTACT - N.C.
	MOTOR OVERLOAD HEATER
	PILOT LIGHT (R-RED, A-AMBER, G-GREEN)
	FUSE
	PANELBOARD
	TRANSFORMER
	TERMINAL BLOCK
	HAND-OFF-AUTOMATIC SELECTOR SWITCH
	FUSED DISCONNECT

MISCELLANEOUS

CALL-OUT FOR DETAIL OR SECTION ON DWG.
 "3" INDICATES NUMERICAL ORDER ON DETAIL DWG.
 "DE-2" INDICATES DETAIL DWG. REFERENCED.

3
DE-2

ABBREVIATIONS

⊙	AT
A	A AMPERE AC ALTERNATING CURRENT AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AL ALUMINUM ATS AUTOMATIC TRANSFER SWITCH AWG AMERICAN WIRE GAUGE
B	BKR BREAKER
C	/C CONDUCTOR C CONDUIT C/B CIRCUIT BREAKER CKT CIRCUIT CONT CONTINUATION/CONTINUED CP CONTROL PANEL
D	DWG DRAWING
E	EMT ELECTRICAL METALLIC TUBING ETM ELAPSED TIME METER EXIST or EX EXISTING
F	F/D FLOOR DRAIN FIN FINISHED FVNR FULL VOLTAGE NON-REVERSING
G	G GROUND GFI GROUND FAULT INTERRUPTER GND GROUND
H	HP HORSE POWER
J	JB JUNCTION BOX
M	MAX MAXIMUM MIN MINIMUM MISC MISCELLANEOUS
N	N NEUTRAL NEC NATIONAL ELECTRICAL CODE NTS NOT TO SCALE
O	OL OVERLOAD
P	P POLE P/E PHOTO ELECTRIC CELL PLC PROGRAMMABLE LOGIC CONTROLLER PNL PANEL PVC POLYVINYL CHLORIDE PWR POWER
Q	QTY QUANTITY
R	RGS RIGID GALVANIZED STEEL
S	SST STAINLESS STEEL STL STEEL
T	TYP TYPICAL
U	UG UNDERGROUND UL UNDERWRITERS LABORATORIES UON UNLESS OTHERWISE NOTED
V	V VOLT
W	W/ WITH WP WEATHERPROOF W/W WASTEWATER
X	XFER TRANSFER XFMR TRANSFORMER XMTR TRANSMITTER

GENERAL NOTES:

1. MOUNT ALL EQUIPMENT ± 5' AFF, EXCEPT AS NOTED.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE NEC, LOCAL ELECTRICAL CODES, AND AS SPECIFIED.

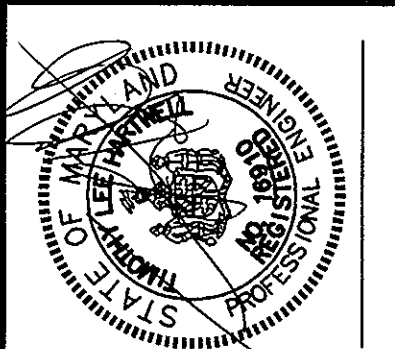
WASTE WATER SYSTEM CONTROL LOGIC

THE CONTROL PANEL FOR THE PUMP STATION SHALL CONTAIN THE REQUIRED RELAYS, TIMERS AND OTHER ELECTRICAL COMPONENTS TO MAKE THE PUMPS PERFORM AS FOLLOWS:

A PUMP SHALL RUN FOR AN ADJUSTABLE PERIOD OF THE TOTAL CYCLE TIME (BETWEEN 0% AND 95% OF THE TOTAL CYCLE TIME). THE TOTAL CYCLE TIME FOR THE DOSING PUMP STATION IS 4 HOURS WITH A PUMPING TIME OF 7 MINUTES. THE CONTROL LOGIC SHALL CONTAIN AN ALTERNATOR TO ALTERNATE THE PUMPS. IF THE LEVEL IN THE WET WELL IS BELOW THE LOW WATER CUT OFF, THE FLOAT IN THE WET WELL SHALL OVERRIDE THE TIMER AND WILL NOT ALLOW THE PUMP TO RUN UNTIL THE LEVEL IN THE WET WELL IS ABOVE THE LOW LEVEL CUT OFF RESTART ELEVATION. THE FLOAT SHALL ONLY INTERRUPT POWER TO THE PUMPS, NOT TO THE PERCENTAGE TIMER.

IF THE LEVEL IN THE WET WELL IS ABOVE THE HIGH LEVEL ELEVATION, THE FLOAT IN THE WET WELL SHALL START THE NEXT PUMP IN SEQUENCE AND THE PUMP SHALL CONTINUE TO RUN UNTIL THE LEVEL DROPS TO THE PUMP STOP ELEVATION OR THE TIMER TIMES OUT.

THE HIGH LEVEL ALARM FLOAT SHALL LIGHT A RED LIGHT ON THE CONTROL PANEL. THE OPERATOR PUSHES THE ACKNOWLEDGE BUTTON AND THE LEVEL IS BELOW THE HIGH LEVEL ALARM ELEVATION, THE LIGHT WILL GO OUT. THE HIGH LEVEL FLOAT SHALL ALSO BE WIRED TO THE WATER SYSTEM CONTROL PANEL AND AUTO DIALER TO ACTIVATE AN ALARM CONDITION.



DATE

REV. #	DATE	DESCRIPTION

HARTWELL
ENGINEERING, INC.
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ENGINEERING • ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING • CONSTRUCTION SERVICES


DATE	SCALE	AS SHOWN	DRAWN BY	APPROVED	REVISION
4/23/99	1" = 10'				
JOB NO.	FOLDER REF.	DATE	DATE	DATE	DATE

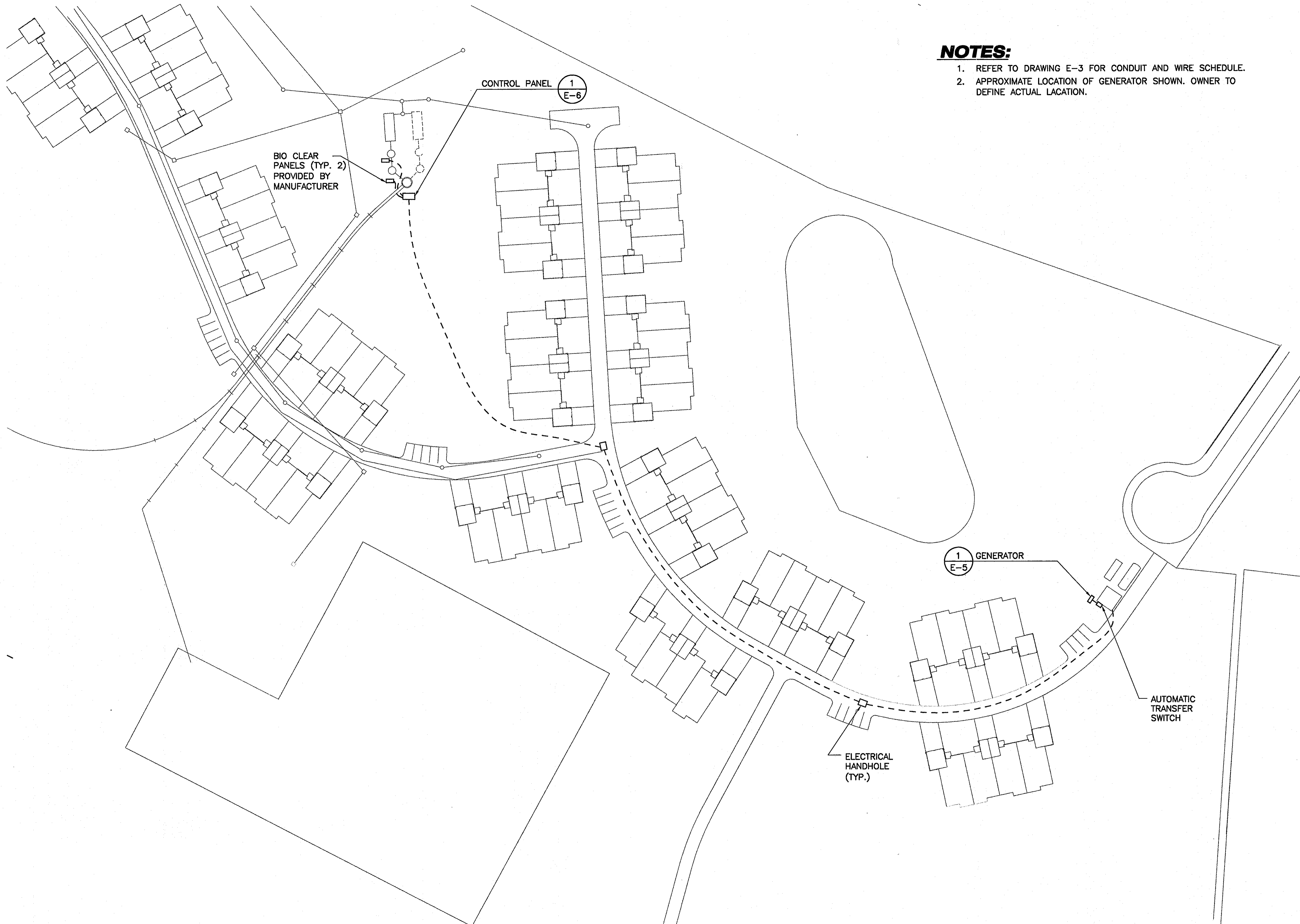
ELECTRICAL ABBREVIATIONS AND SYMBOLS

VILLAS AT CATTAIL CREEK
SUBSURFACE INFILTRATION
AND
WATER SYSTEMS

SHEET NO.	E-1/32
CADD FILE:	M1001-1015
FILE NO.	SDP-01-115

Approved for private well and private septic by
Howard County Health Department.

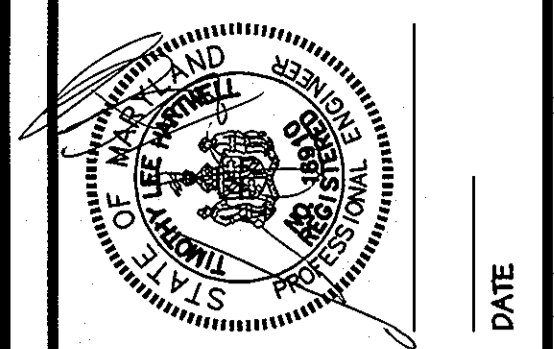

 Health Officer 1-7-02
 Date



- NOTES:**
1. REFER TO DRAWING E-3 FOR CONDUIT AND WIRE SCHEDULE.
 2. APPROXIMATE LOCATION OF GENERATOR SHOWN. OWNER TO DEFINE ACTUAL LOCATION.

SITE PLAN
SCALE: 1" = 50'

Approved for private well and private septic by
Howard County Health Department.
Denny Bennett, M.P.S.C.
Health Officer
1-7-02
Date



REV. #	DATE	DESCRIPTION

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ENGINEERS & INTEGRATORS

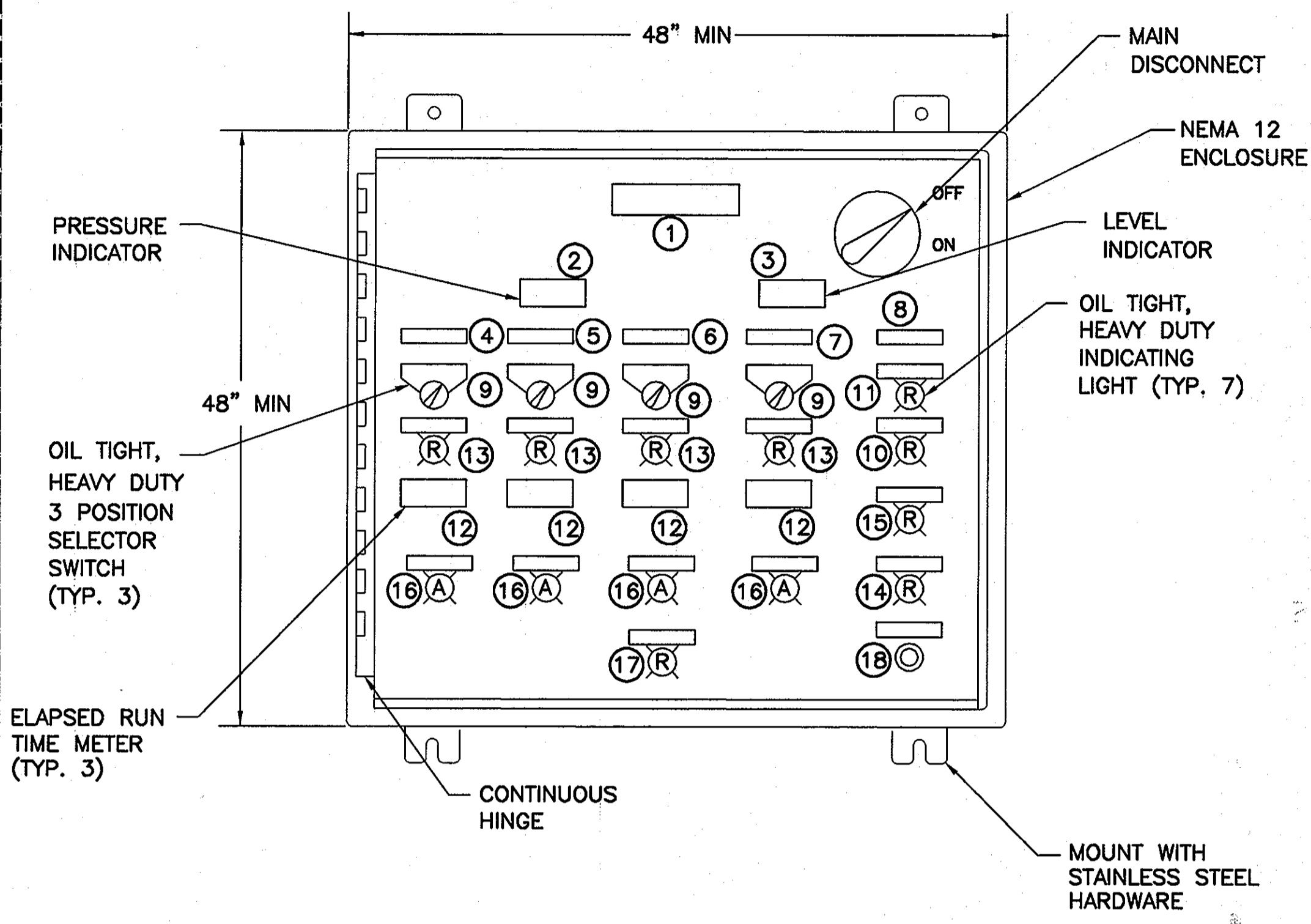
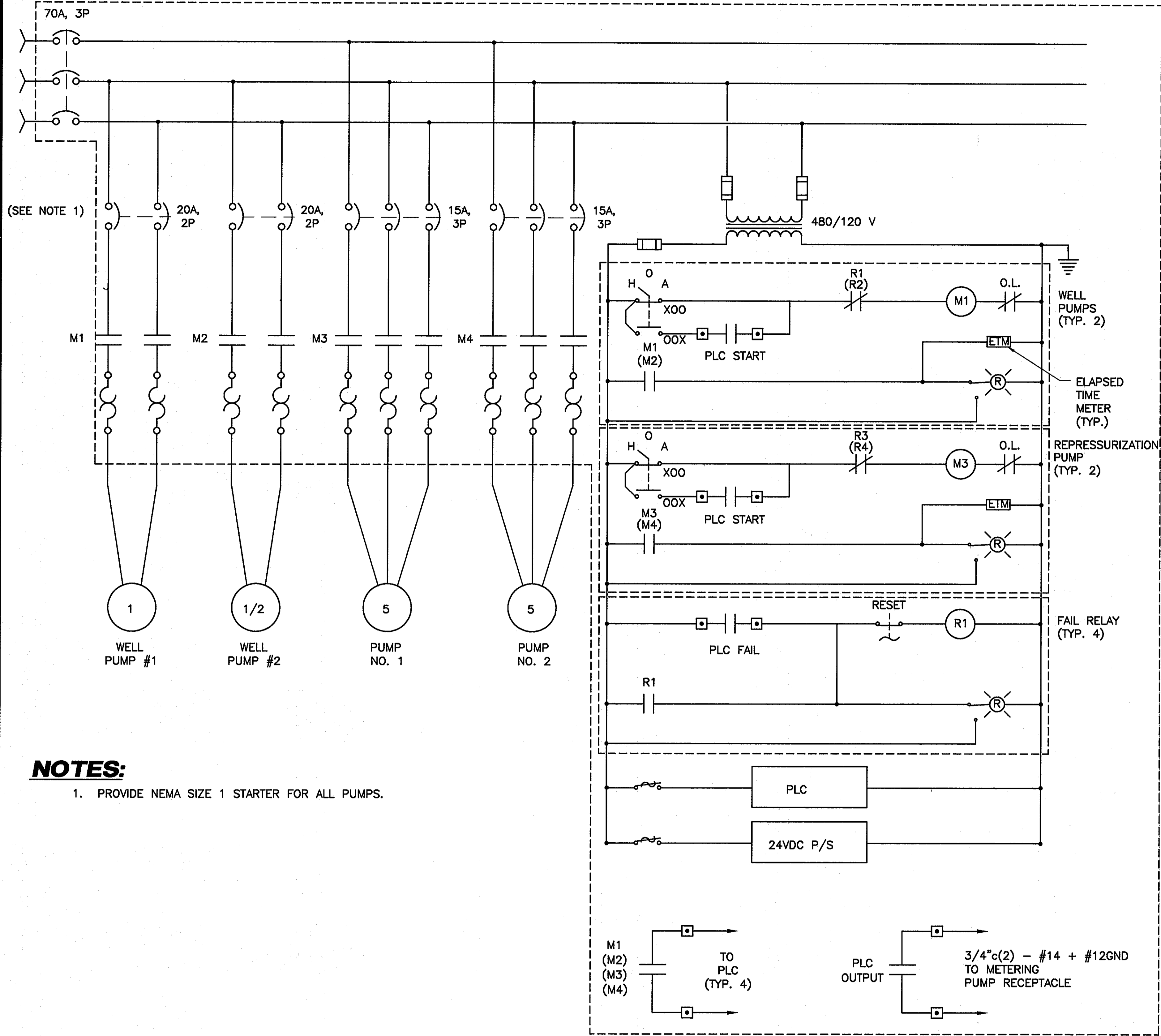
McCRONE
ENGINEERING & SURVEYING CONSTRUCTION SERVICES

DATE	SCALE	DATE	SCALE

ELECTRICAL SITE PLAN
**VILLAS AT CATTAIL CREEK
SUBSURFACE INFILTRATION
AND
WATER SYSTEMS**

SHEET NO.	E-2/02
CADD FILE:	M1001-1015
FILE NO.	SDP-01-115

WATER SYSTEM CONTROL PANEL



WATER SYSTEM CONTROL PANEL
SCALE: NOT TO SCALE

CONDUIT/WIRE SCHEDULE	
ITEM	DESCRIPTION
1	WATER SYSTEM CONTROL PANEL
2	PRESSURE SYSTEM
3	REPRESSURIZATION TANK LEVEL
4	WELL PUMP #1
5	WELL PUMP #2
6	REPRESSURIZATION PUMP #1
7	REPRESSURIZATION PUMP #2
8	ALARMS
9	HAND-OFF-AUTOMATIC
10	LOW LEVEL
11	HIGH LEVEL
12	ELAPSED RUN TIME
13	RUN
14	LOW PRESSURE
15	HIGH PRESSURE
16	FAIL
17	WASTEWATER HIGH LEVEL
18	RESET P/B

NOTES:

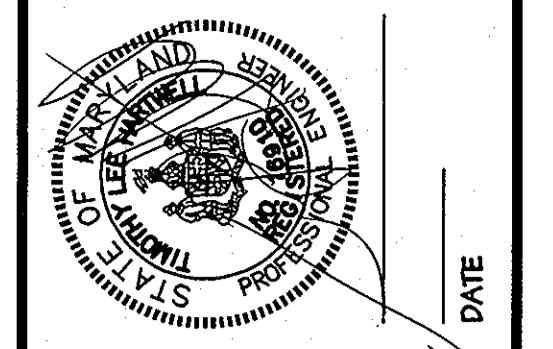
1. PROVIDE NEMA SIZE 1 STARTER FOR ALL PUMPS.

1 PUMP CONTROL SCHEMATIC
SCALE: NOT TO SCALE

NOTES:

1. PROVIDE ALL WIRING AND DEVICES FOR INDICATION AND CONTROL SHOWN ON THE CONTROL PANEL.
2. ALL TRANSDUCER AND TRANSMITTERS SHALL BE INPUT INTO THE PLC FOR USE BY THE CONTROL SYSTEM.

Approved for private well and private septic by
Howard County Health Department.
Debra Davidson MUP, RLS
Health Officer Date



REV. #	DATE	DESCRIPTION

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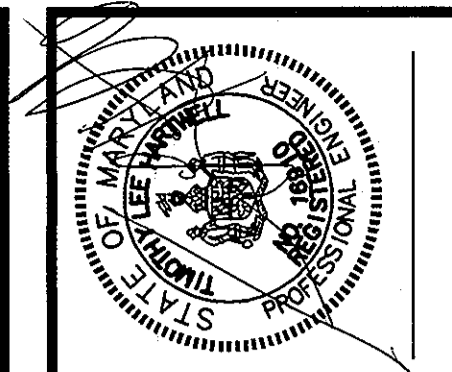
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DATE	SCALE	AS SHOWN	DATE	SCALE	AS SHOWN
4/23/99	AS SHOWN	AS SHOWN			

WTP ELECTRICAL SCHEMATIC

**VILLAS AT CATTAIL CREEK
SUBSURFACE INFILTRATION
AND
WATER SYSTEMS**

SHEET NO.	E-4/05
CADD FILE:	M1001-1015
FILE NO.	SDP-01-115



DATE

REV. #	DATE	DESCRIPTION

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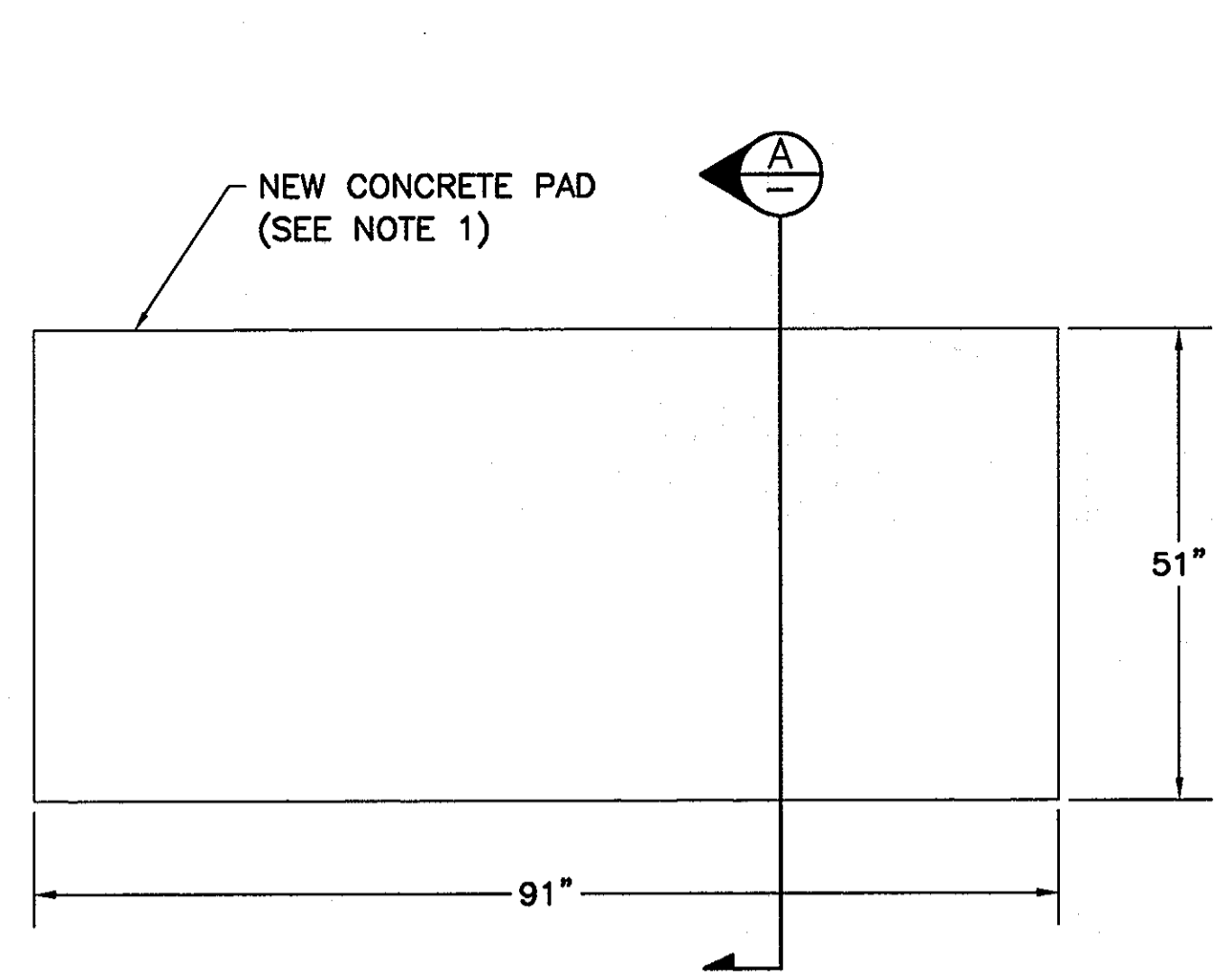
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DATE	SCALE	NO.	BY	APPROVED	DATE

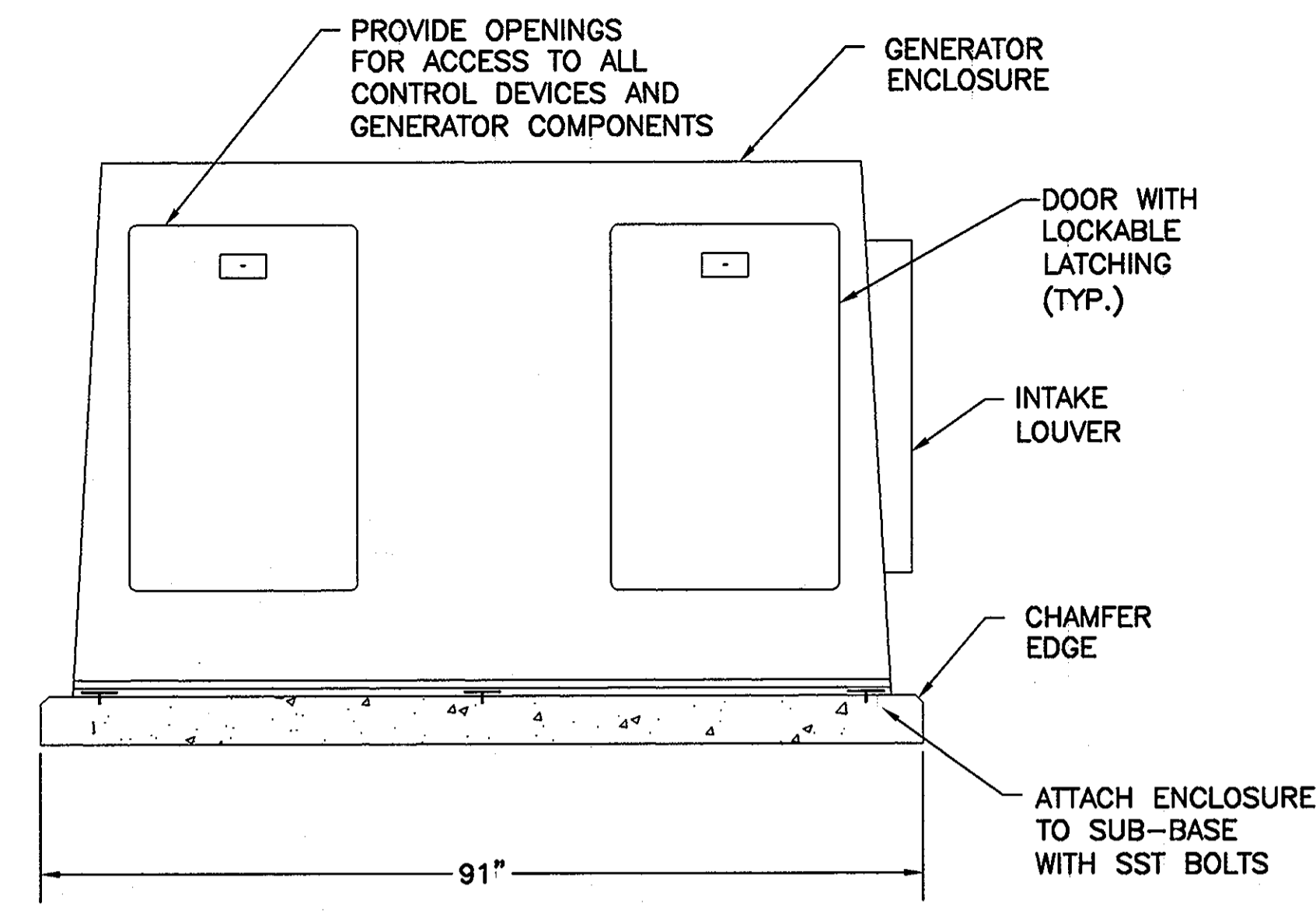
GENERATOR DETAILS AND SCHEMATICS

**VILLAS AT CATTAIL CREEK
SUBSURFACE INFILTRATION
AND
WATER SYSTEMS**

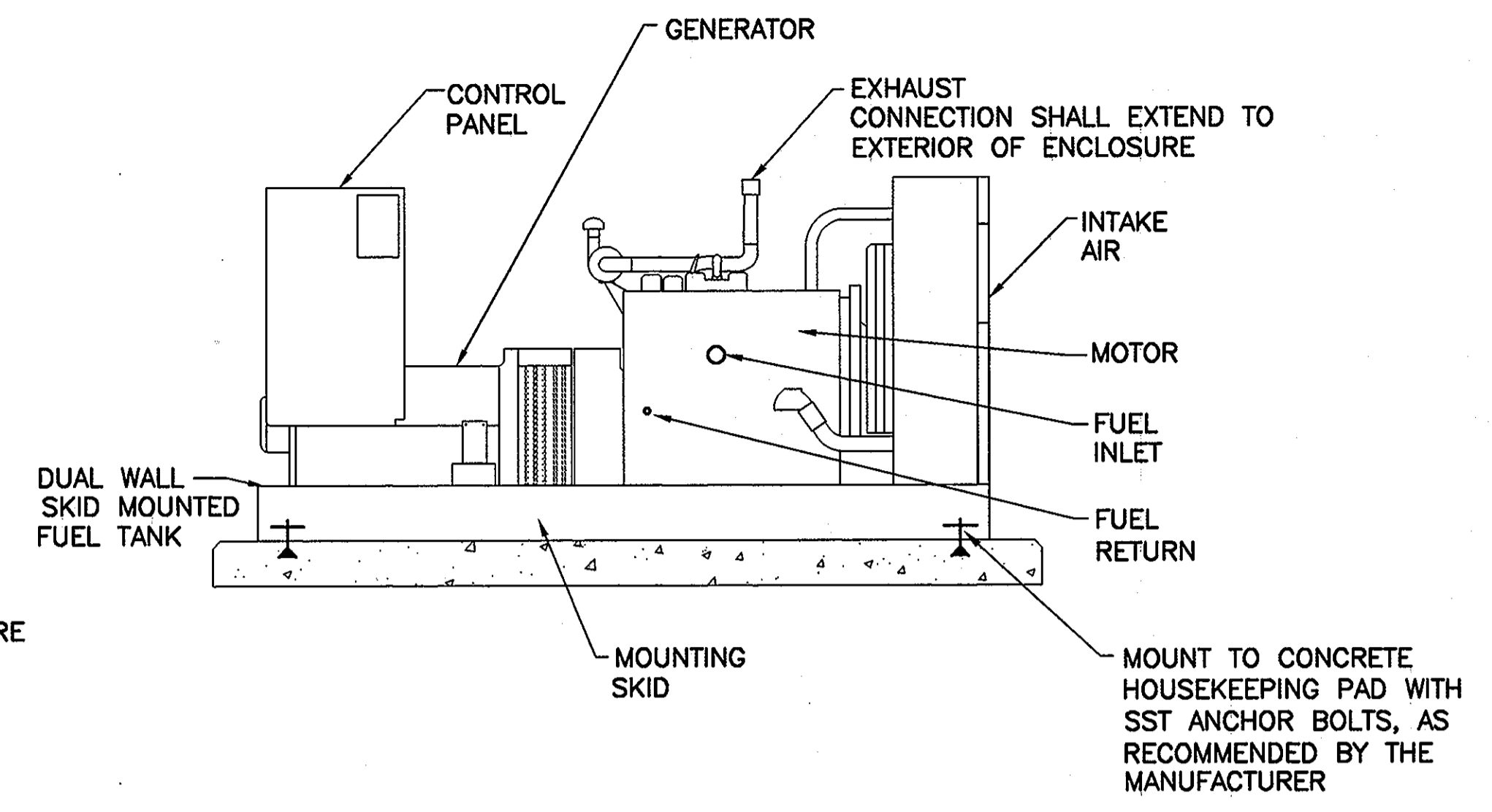
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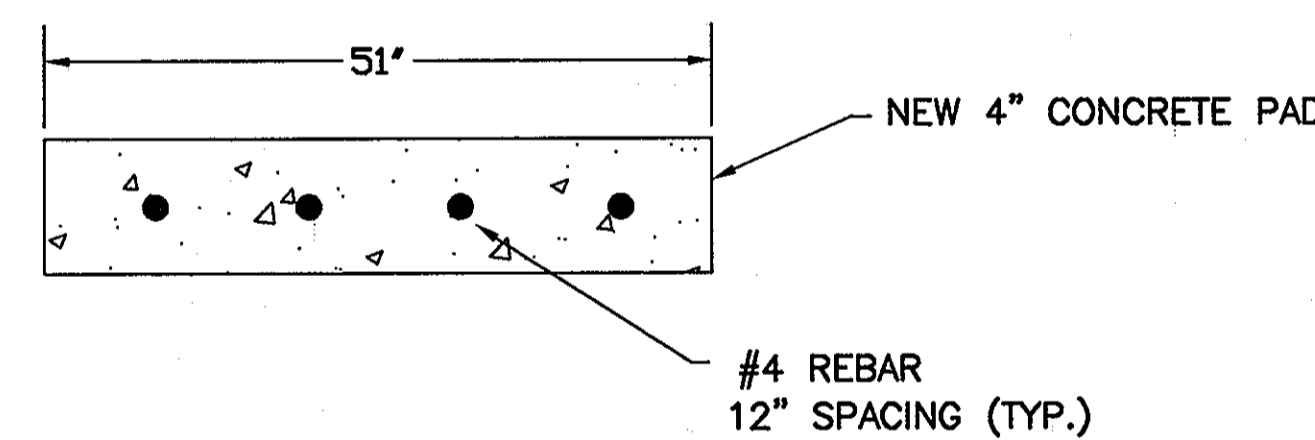
1 GENERATOR CONCRETE HOUSEKEEPING PAD
SCALE: NOT TO SCALE



2 NEW GENERATOR ENCLOSURE
SCALE: NOT TO SCALE



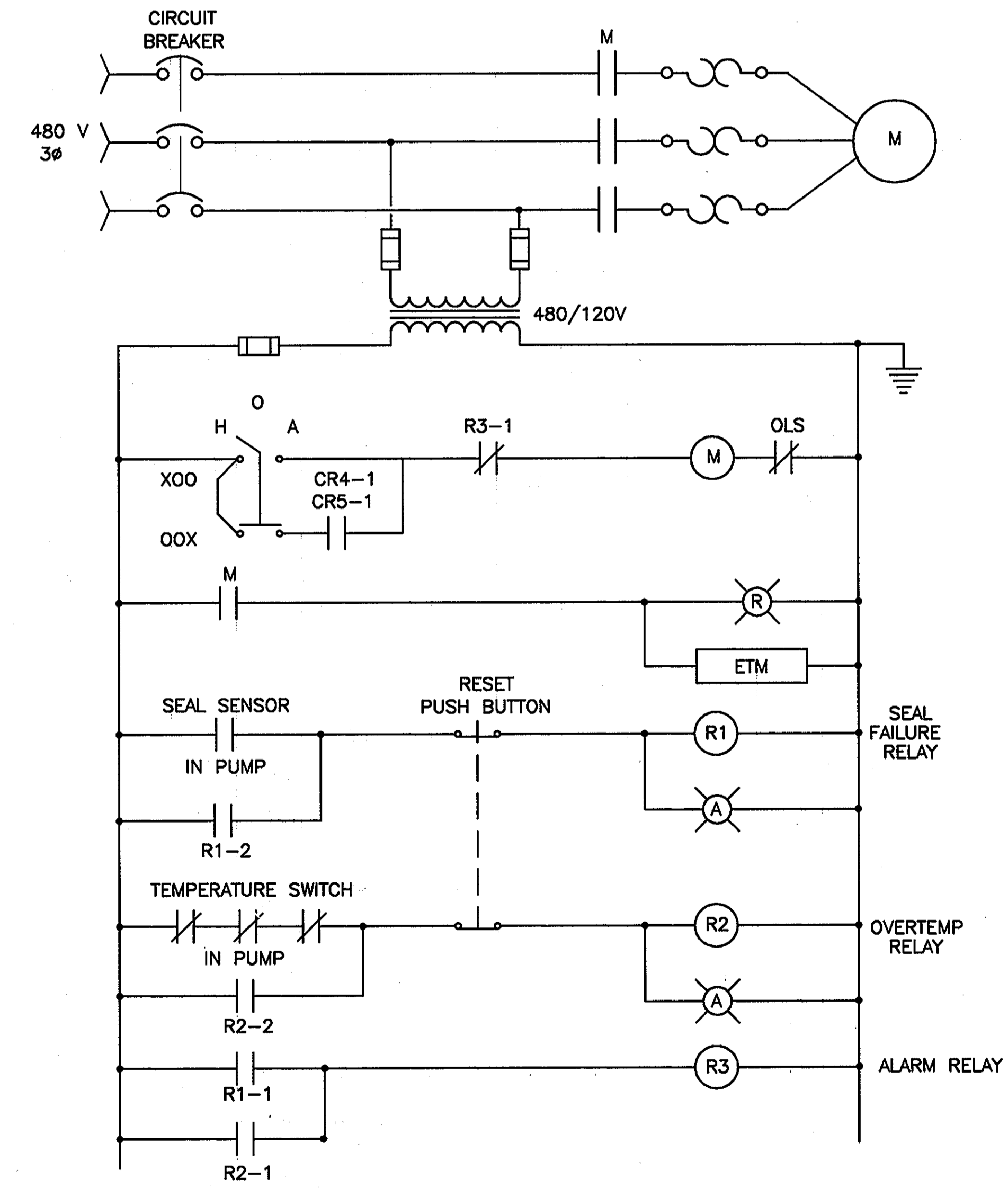
3 NEW GENERATOR
SCALE: NOT TO SCALE



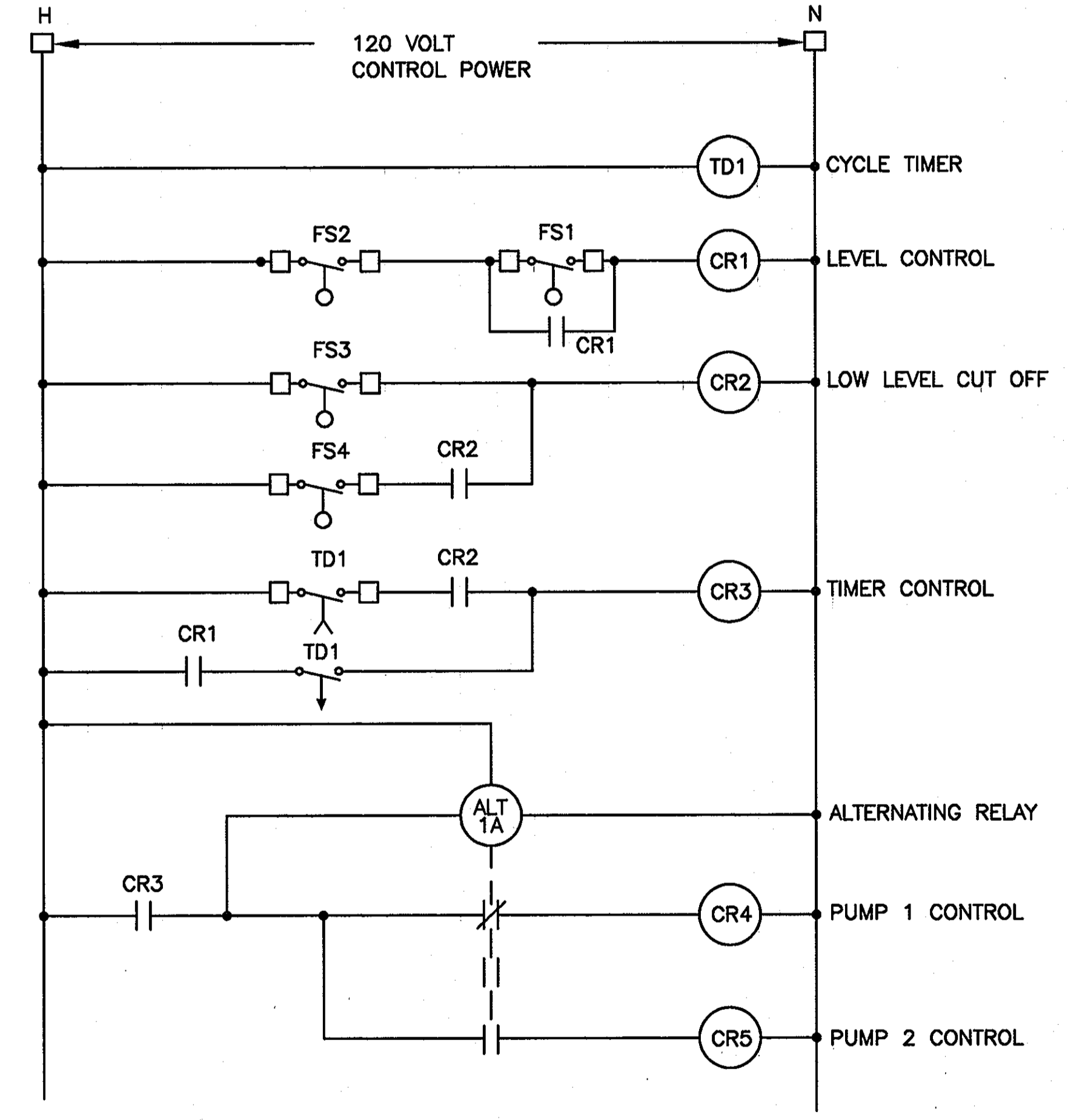
A PAD SECTION
SCALE: NOT TO SCALE

NOTES:

- CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONCRETE PAD, AS SHOWN, INCLUDING EXCAVATION.
- REFER TO ELECTRICAL SITE PLAN FOR LOCATION OF GENERATOR.
- REFER TO DRAWING E-1 FOR CONTROL LOGIC DESCRIPTIONS FOR WASTEWATER SYSTEM AND DRAWING E-6 FOR THE PANEL LAYOUT.

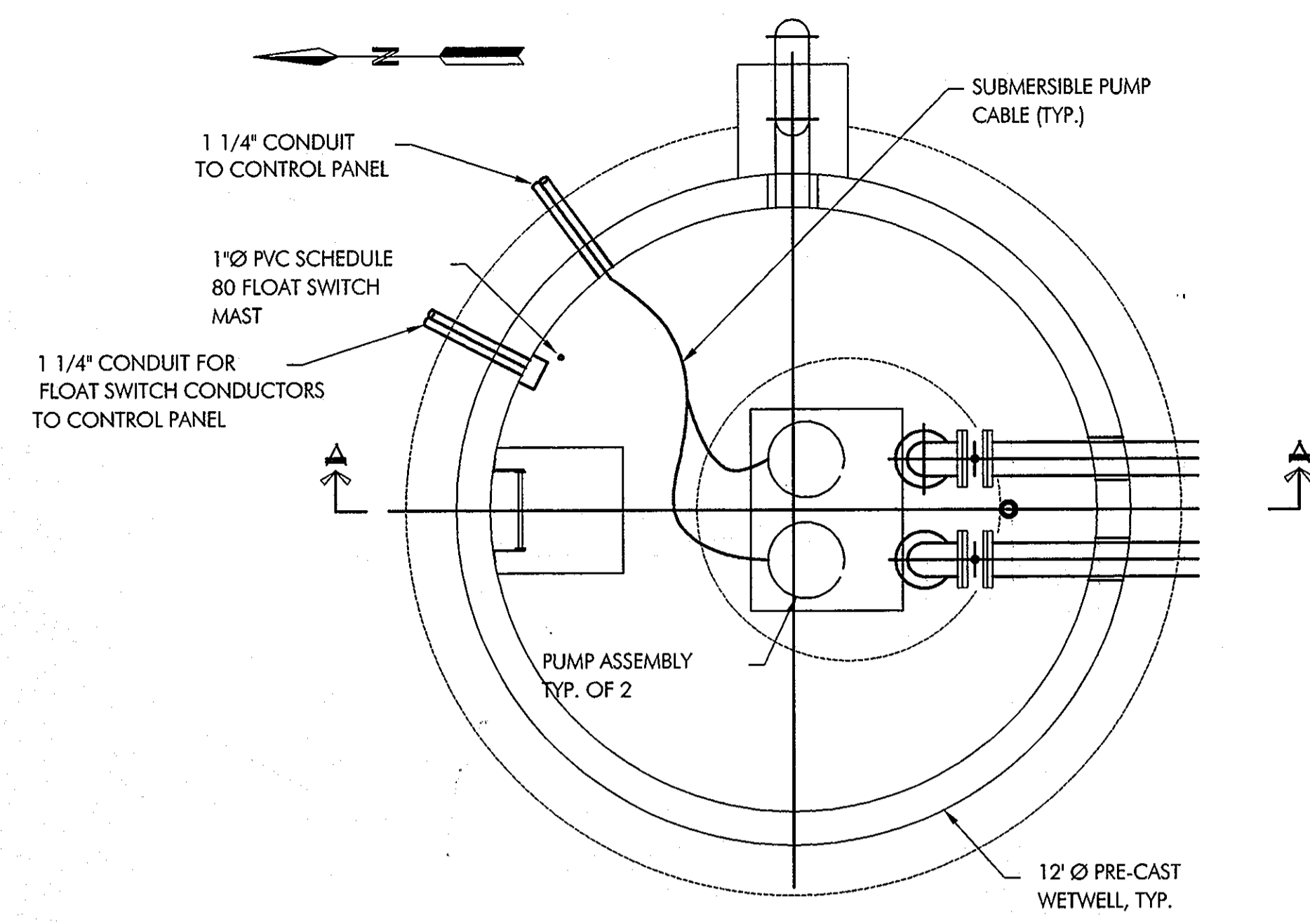
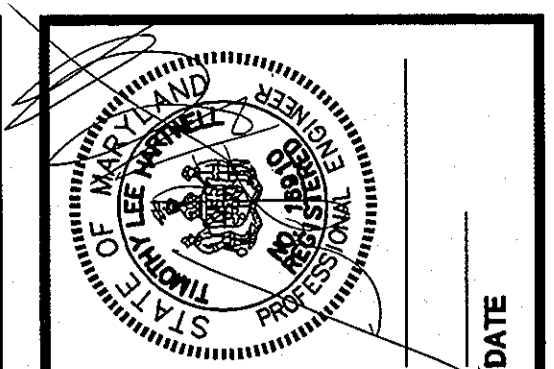


W/W PUMP CONTROL DIAGRAM (TYP. 2)
SCALE: NOT TO SCALE (SEE NOTE 1, DRAWING E-4)

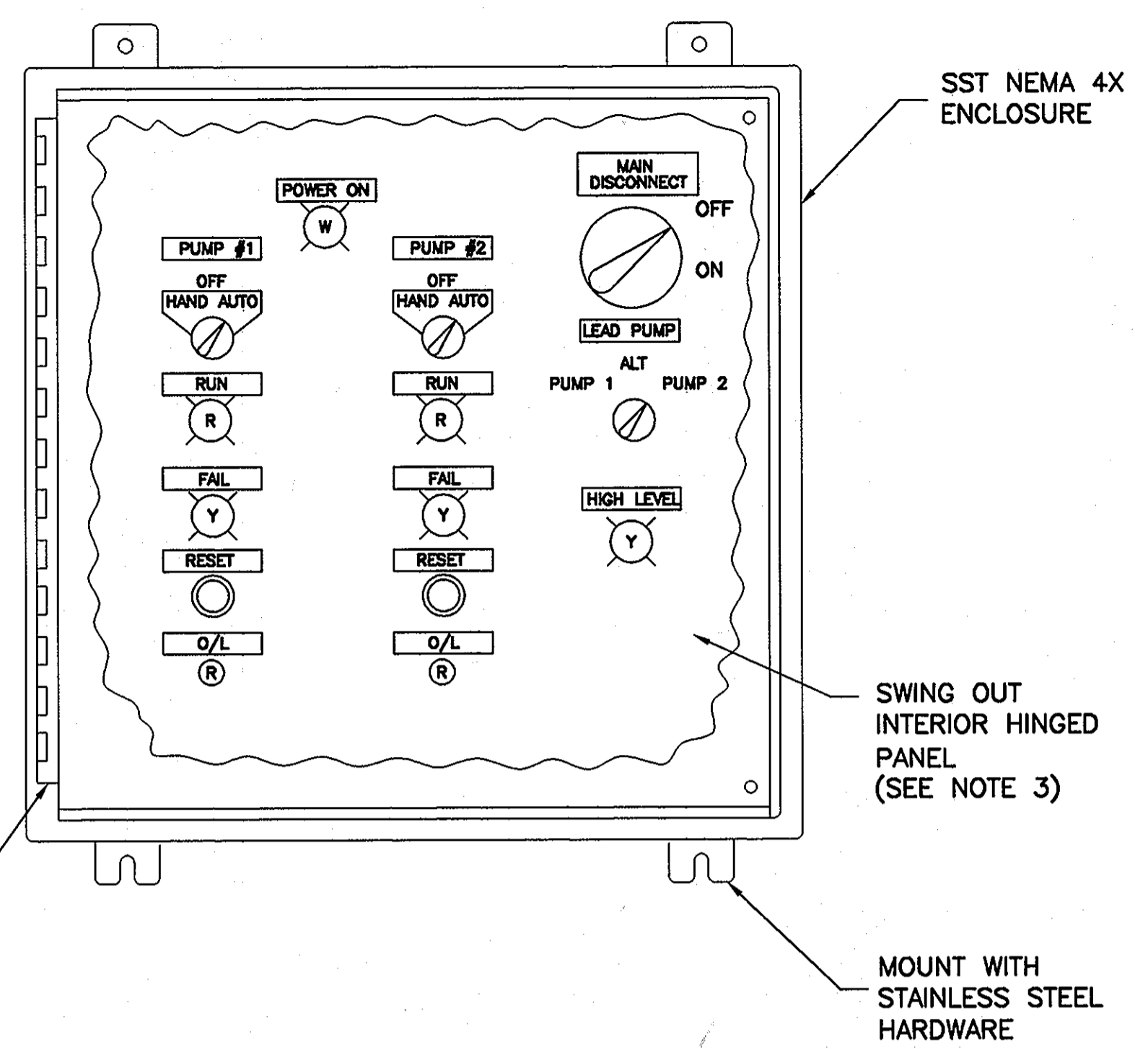


W/W PUMP CONTROL DIAGRAM
SCALE: NOT TO SCALE

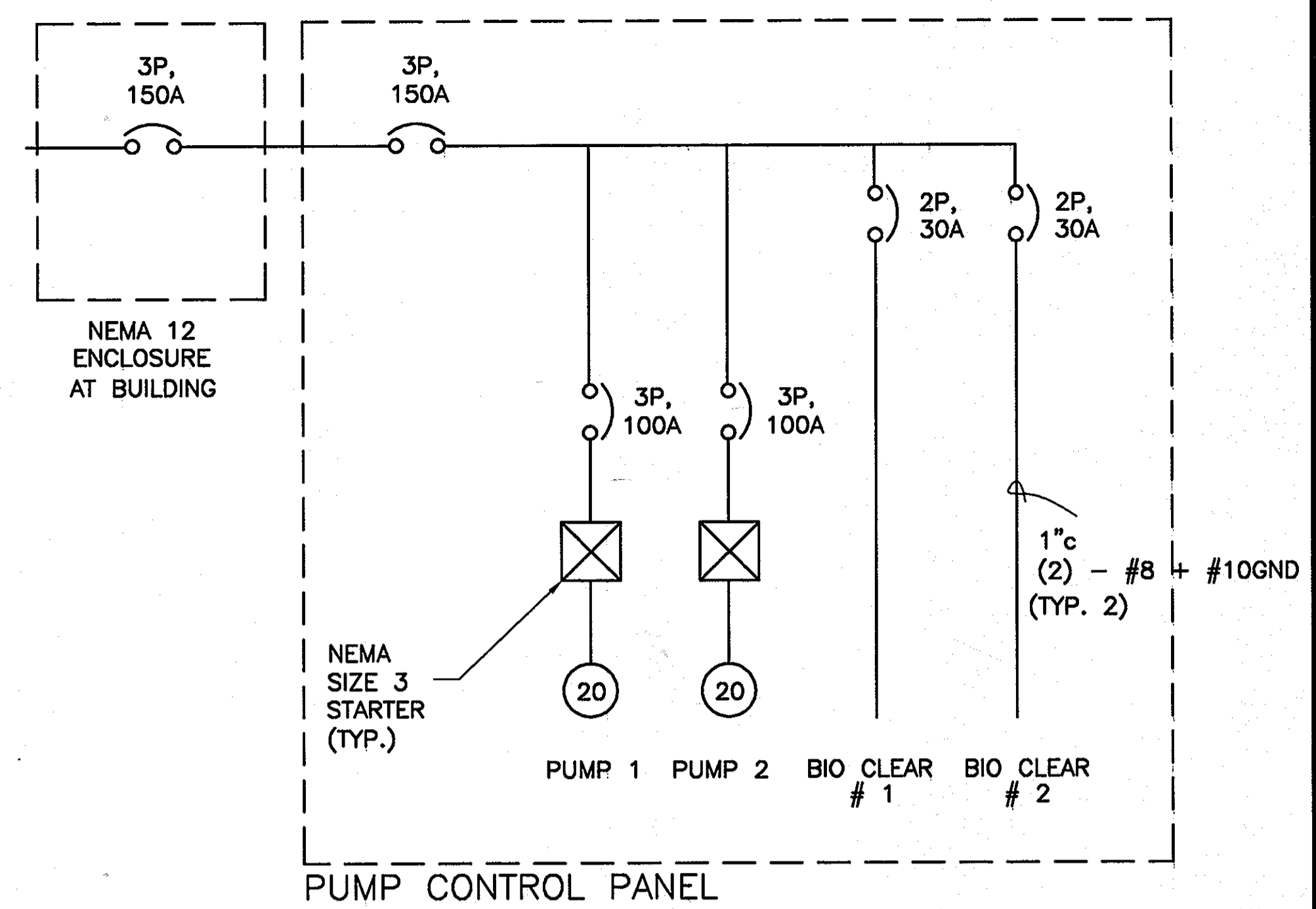
Approved for private well and private septic by
Howard County
Dennis D. [Signature] 1-7-02
Health Officer Date



PUMP STATION PLAN
 SCALE: NOT TO SCALE

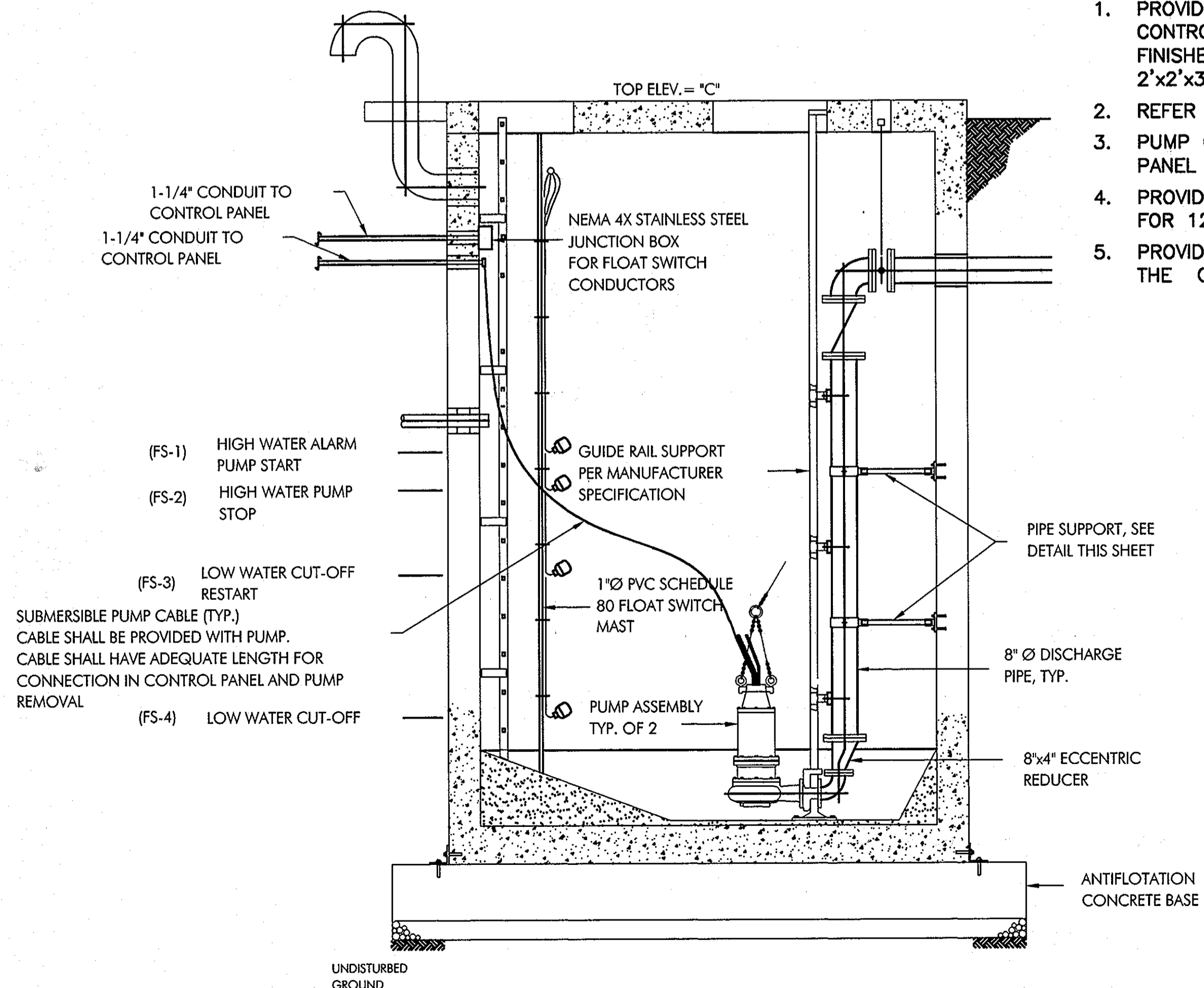


PUMP CONTROL PANEL
 SCALE: NOT TO SCALE (SEE NOTE 3)

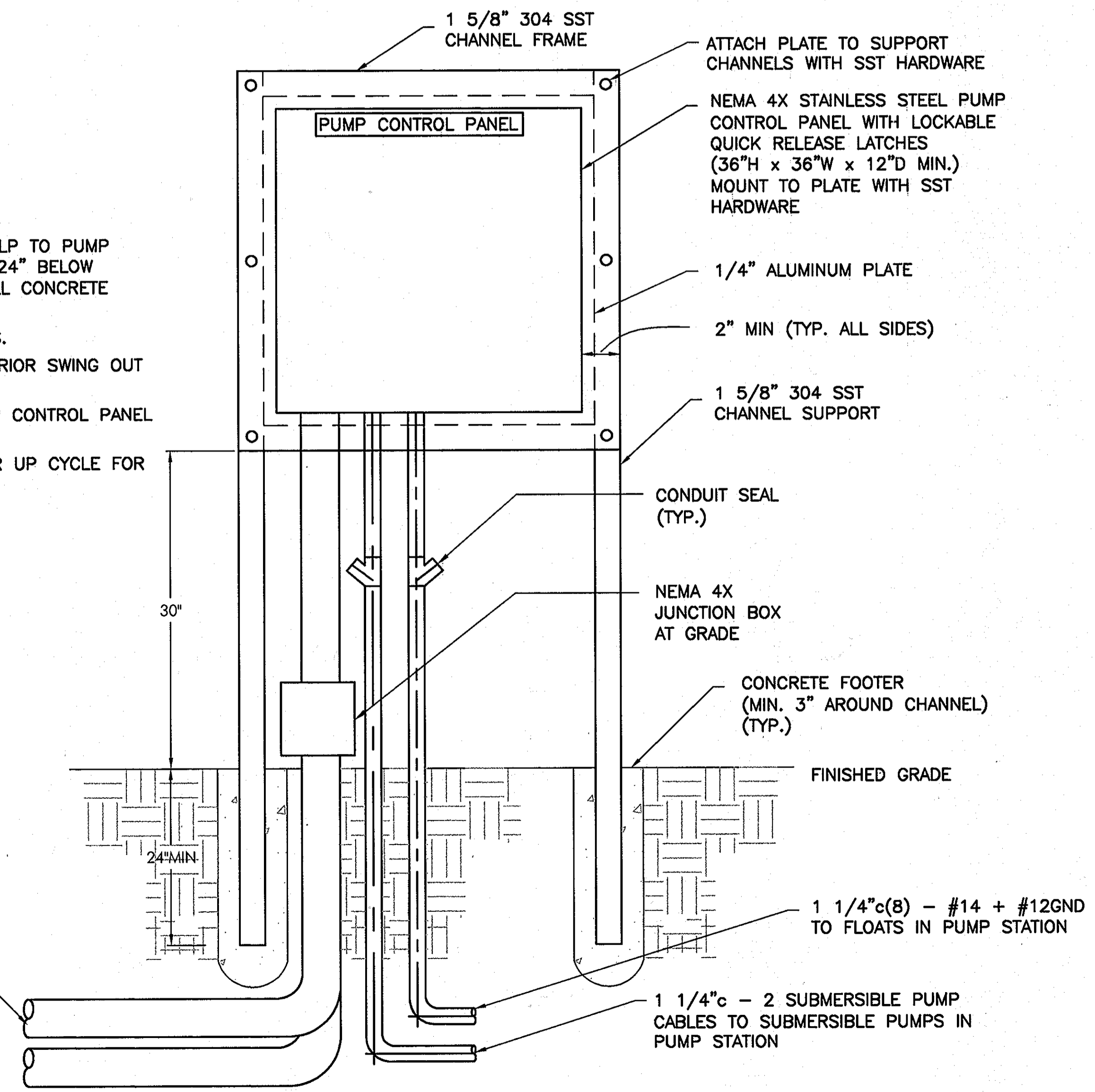


NOTES:

1. PROVIDE AND INSTALL CONDUIT AND WIRING FROM PANEL LP TO PUMP CONTROL PANEL. CONDUIT SHALL BE MINIMUM DEPTH OF 24" BELOW FINISHED GRADE. CONTRACTOR SHALL PROVIDE AND INSTALL CONCRETE 2'x2'x3' DEEP AS REQUIRED FOR PULLING THE CABLE.
2. REFER TO DRAWING E-5 FOR PUMP CONTROL SCHEMATICS.
3. PUMP CONTROL PANEL SHALL BE PROVIDED WITH AN INTERIOR SWING OUT PANEL FOR MOUNTING CONTROL DEVICES.
4. PROVIDE 1000VA CONTROL POWER TRANSFORMER IN PUMP CONTROL PANEL FOR 120V, SINGLE PHASE POWER.
5. PROVIDE A 60 SECOND TIME DELAY RELAY ON THE POWER UP CYCLE FOR THE CONTROL POWER ON THE PUMP PANEL.



SECTION A-A
 SCALE: NOT TO SCALE



FRONT ELEVATION PANEL MOUNTING DETAIL
 SCALE: NOT TO SCALE

REV. #	DATE	DESCRIPTION

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DATE	SCALE	DATE	SCALE

WW PUMP STATION - ELECTRICAL PLAN

**VILLAS AT CATTAIL CREEK
 SUBSURFACE INFILTRATION
 AND
 WATER SYSTEMS**

Approved for private well and private septic by
 Howard County Health Department.
 Perry D. ...
 Health Officer
 1-7-02
 Date