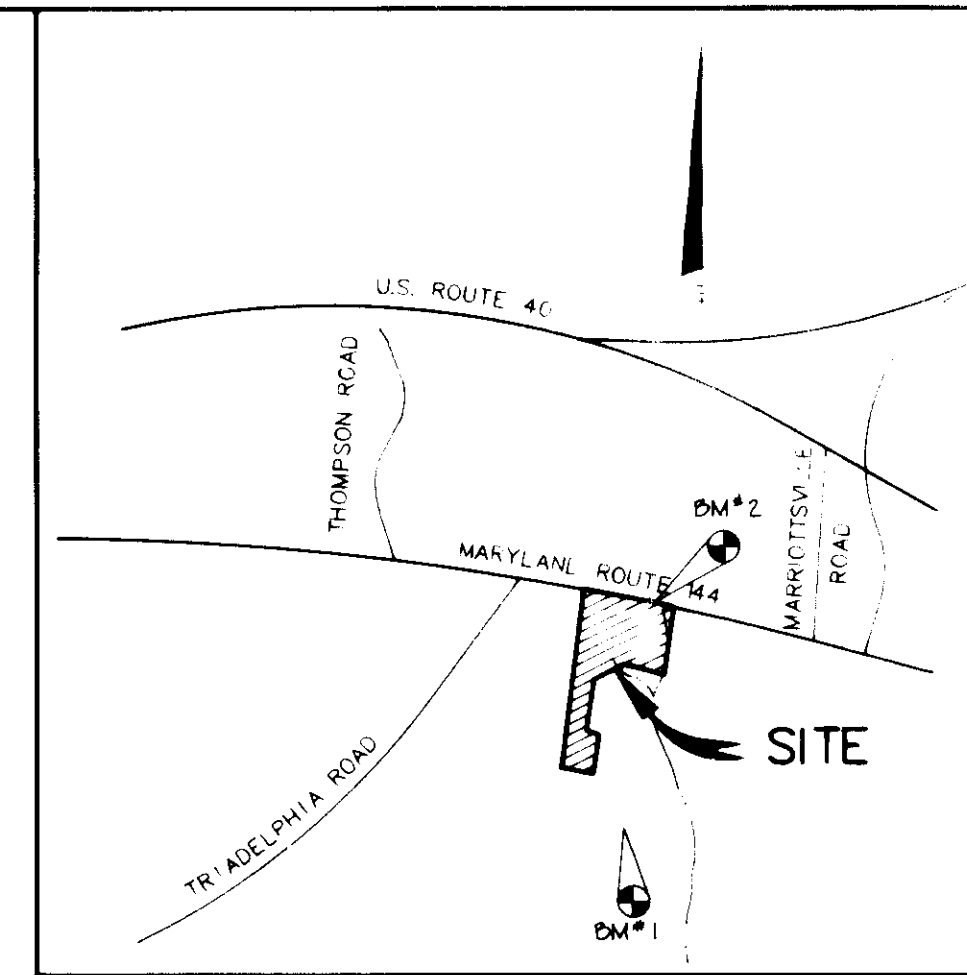
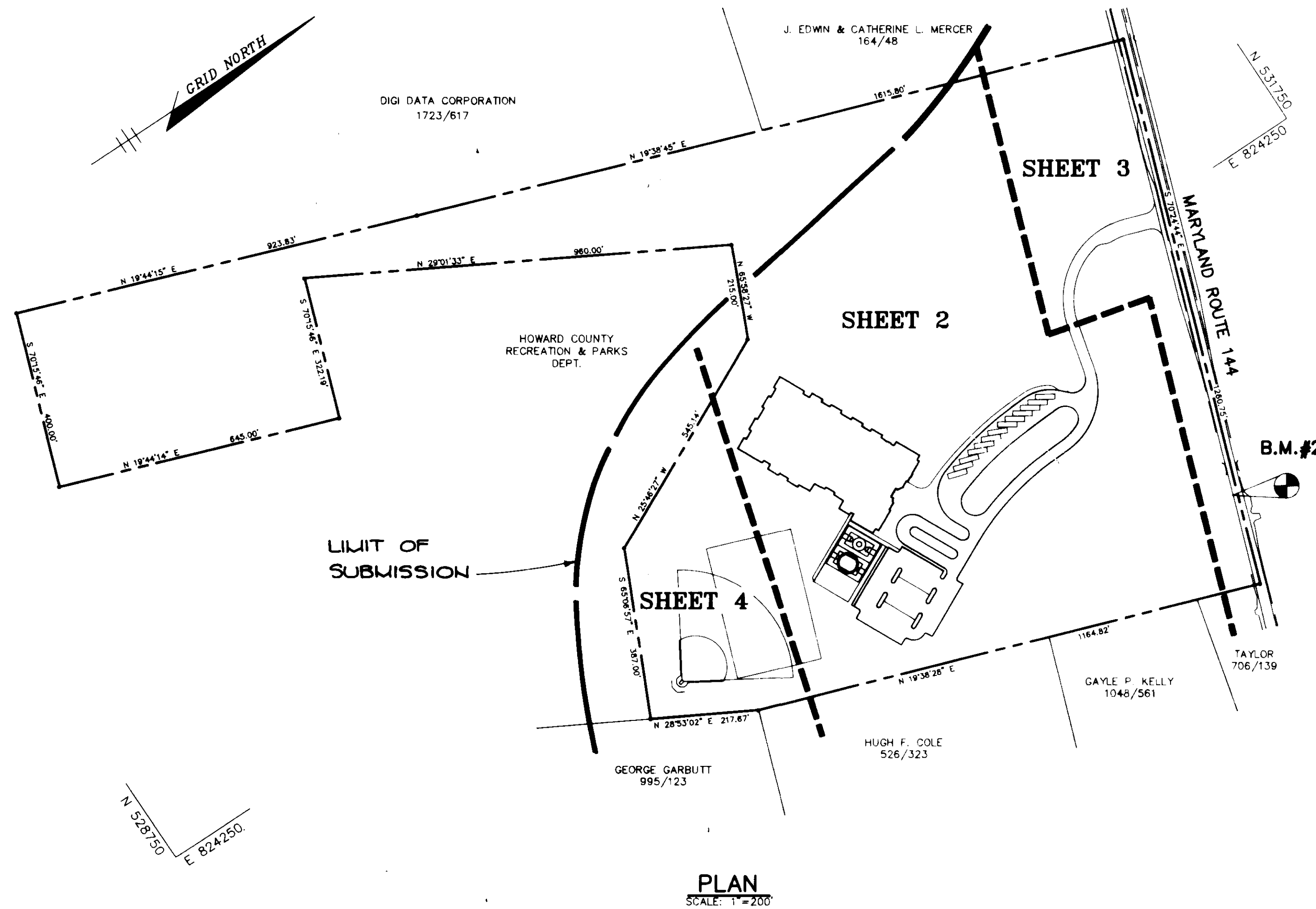


SITE DEVELOPMENT PLAN NORTHERN ELEMENTARY SCHOOL II 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND



VICINITY MAP
SCALE: 1"=2000'

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	PLAN AND PROFILE OF MD. ROUTE 144 (SOUTH SIDE)
4	SITE DEVELOPMENT PLAN
5	GRADING AND SEDIMENT CONTROL PLAN
6	GRADING AND SEDIMENT CONTROL PLAN
7	GRADING AND SEDIMENT CONTROL PLAN
8	S.W.M. AND STORM DRAIN PROFILES
9	SEDIMENT CONTROL NOTES AND DETAILS
10	CONSTRUCTION DETAILS
11	DRAINAGE AREA MAP
12	LANDSCAPE PLAN
13	LANDSCAPE PLAN
14	LANDSCAPE PLAN
15	PROFILE OF MD. ROUTE 144 (NORTH SIDE)
16	STORM DRAIN PROFILES
17	WASTEWATER SYSTEM SITE PLAN
18	WASTEWATER SYSTEM SITE PLAN
19	WASTEWATER PROFILES
20	WASTEWATER DETAILS
21	WASTEWATER DETAILS



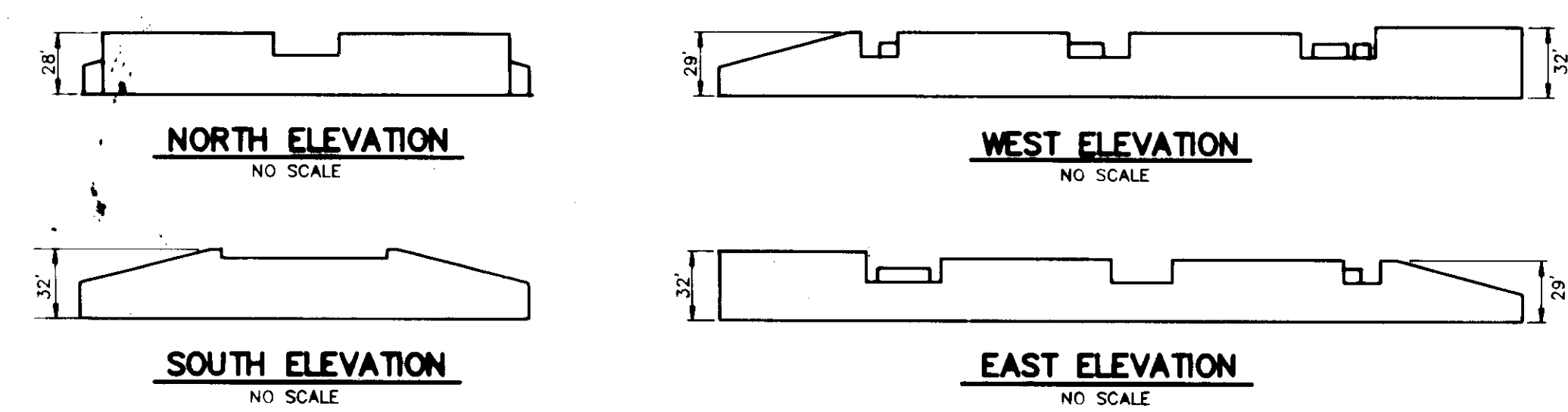
PLAN
SCALE: 1"=200'

GENERAL NOTES

- ALL WATER LINES SHALL BE CONSTRUCTED A MINIMUM OF 42" COVER BELOW FINISHED GRADE.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, 141, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. TYPICAL AMENDMENTS AND THESE CONSTRUCTION DRAWINGS IN CASE OF CONFLICT THE CONSTRUCTION DRAWINGS SHALL GOVERN.
- APPROPRIATE LOCATION OF EXISTING UTILITIES ARE SHOWN FROM BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
- CONTRACTOR TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS:
 - MSS UTILITY 1-800-252-7373
 - COMP TELEPHONE COMPANY 725-9976
 - HOWARD COUNTY BUREAU OF UTILITIES 313-4800
 - AT&T CABLE LOCATION DIVISION 383-3553
 - BALTIMORE GAS & ELECTRIC COMPANY 685-0123
 - STATE HIGHWAY ADMINISTRATION 531-5533
 - HOWARD COUNTY CONSTRUCTION INSPECTION SURVEY DIVISION 792-7272
 - TRAVESCO 1-800-675-4994
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT TO SURFACE.
- TOPO TAKEN FROM FIELD SURVEY DATED SEPT. 1992 BY RIEMER MUEGGE AND ASSOCIATES, INC. AND AERIAL SURVEY DATED OCT. 1991 BY MHS AERIAL MAPPING, INC.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL STORM DRAIN PIPE BEDDING SHALL BE AS SHOWN IN DETAIL G2.01 (TRENCH IN ROCK OR TRENCH IN EARTH AS DETERMINED BY FIELD CONDITIONS) IN VOL. IV OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR AS SHOWN ON THE DRAWINGS.
- THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEGMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
- THE PAVEMENT DETAILS SHOWN ON THESE PLANS REFLECT THE HOWARD COUNTY MINIMUM STANDARD PAVEMENT SECTIONS AND ARE NOT BASED ON SITE SPECIFIC CONDITIONS. PRIOR TO PAVING, THE FINAL PAVEMENT SECTIONS SHALL BE DETERMINED BY A QUALIFIED GEOTECHNICAL ENGINEER BASED ON IN-SITU TESTING OF THE FINISHED SUBGRADE. THE TESTING AND GEOTECHNICAL ENGINEER SHALL BE FURNISHED BY THE OWNER.
- WETLANDS DELINEATION PERFORMED BY W.A. DIRKS & CO., INC. DATED OCTOBER 1991.
- ALL EXTERIOR LIGHT POLES TO REFLECT LIGHT AWAY FROM PUBLIC-OF-WAYS AND ADJACENT RESIDENTIAL AREAS.
- SHOW ALL AREAS TO BE PRIVATELY MAINTAINED.
- THIS PLAN COMPLIED WITH THE LANDSCAPING REQUIREMENTS OF SECTION 10.12A OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. EXISTING VEGETATION TO REMAIN SATISFIED 100% OF THE REQUIRED PERMETER LANDSCAPING.

B.M. #	DESCRIPTION	ELEV.
B.M. #1	RAILROAD SPIKE IN 30" OAK TREE	ELEV. 481.00
	N 528496.93	
	E 823673.35	
B.M. #2		ELEV. 477.24
	HOWARD COUNTY MON. # 3338004	
	N 531778.26	
	E 824886.15	

SITE ANALYSIS	
TOTAL AREA OF PARCEL	43.22 AC. (1,882,863 SF)
PRESENT ZONING	RURAL, CONSERVATION
PROPOSED USE	ELEMENTARY SCHOOL AND RELATED RECREATIONAL FACILITIES
FLOOR AREA	88,000 SF
BUILDING COVERAGE PERMITTED	378,533 SF (8.6 AC) = 82% GROSS
BUILDING COVERAGE PROPOSED	88,000 SF (1.96 AC) = 3.61% GROSS
PARKING: BOARD OF EDUCATION REQUIREMENTS	92 SPACES
PARKING PROVIDED	92 SPACES, INCLUDES 4 HANDICAPPED
OPEN SPACE	86.80 AC = 99.00% GROSS
WETLANDS	2.38 AC
STORMWATER MANAGEMENT FLOODPLAIN	1.83 AC
NET OPEN SPACE	0.11 AC
AREA OF PARKING LOT	30,820 SF (0.71 AC) = 1.64% GROSS
AREA OF LANDSCAPED ISLANDS	27,084 SF (0.62 AC) = 1.44% GROSS
AREA OF PRIVATE DRIVE	82,077 SF (1.85 AC) = 5.01% GROSS



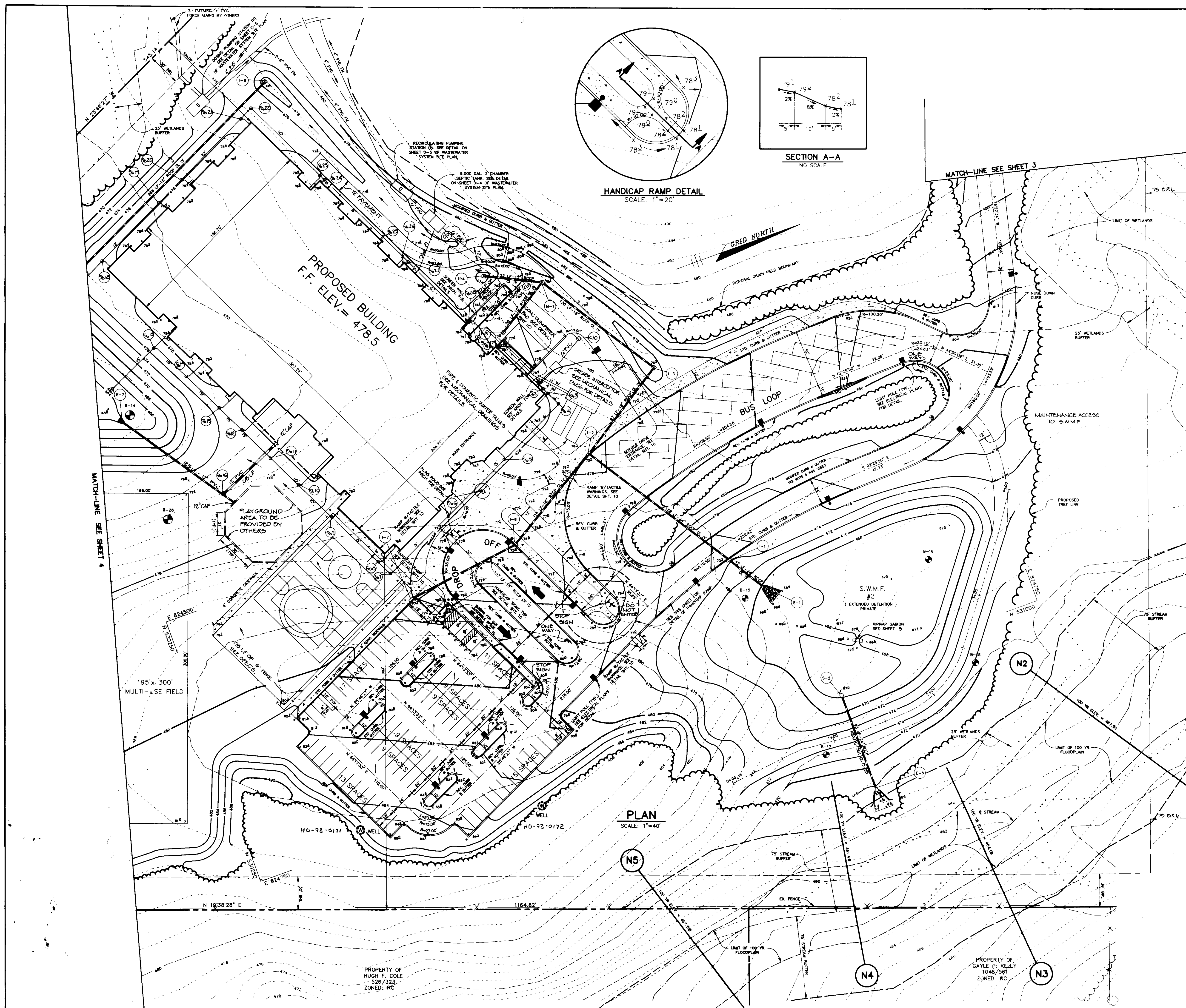
AS BUILT CERTIFICATE	
APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ON SITE WATER AND ON SITE SEWERAGE SYSTEMS.	
<i>Joyce M. Boyd</i> COUNTY HEALTH OFFICER	5/14/93 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>James M. Scott</i> DIRECTOR	5/12/93 DATE
<i>Shirley Helms</i> CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	5/11/93 DATE
APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS	
<i>James M. Kelly</i> DIRECTOR	5/7/93 DATE
<i>James M. Kelly</i> CHIEF, BUREAU OF ENGINEERING	5-7-93 DATE

DATE	NO.	REVISION
OWNER/DEVELOPER		
BOARD OF EDUCATION OF HOWARD COUNTY 10910 ROUTE 100 FELICITY CITY, MARYLAND 21041		
PROJECT		
NORTHERN ELEMENTARY SCHOOL II		
AREA		
TAX MAP 16 PARCEL 44 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TITLE		
TITLE SHEET		

RIEMER MUEGGE & ASSOCIATES, INC.
A Land Planning, Engineering and Consulting Firm
8818 Centre Park Drive + Suite 200 + Columbia, Md 21045
410-997-8900 FAX: 410-997-9282

DATE	DESIGNED BY
5-16-93	JTD
DATE	DRAWN BY
	DBS
DATE	PROJECT NO.
FEBRUARY 10, 1993	77910
DATE	SCALE
	AS SHOWN
DATE	DRAWING NO.
	1 OF 21

ADDRESS CHART																										
LOT NUMBER	STREET ADDRESS																									
PARCEL 44	11575 MARYLAND ROUTE 144																									
<table border="1"> <tr> <td>PROJECT NAME</td> <td>LOT NO.</td> <td>BLK.</td> <td>SECT.</td> <td>TRAC.</td> </tr> <tr> <td>NORTHERN ELEMENTARY SCHOOL II</td> <td>15-21</td> <td>RC</td> <td>16</td> <td>3rd</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>6030</td> </tr> <tr> <td>OWNER TYPE</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>PRIVATE</td> <td></td> <td></td> <td></td> <td>PRIVATE</td> </tr> </table>		PROJECT NAME	LOT NO.	BLK.	SECT.	TRAC.	NORTHERN ELEMENTARY SCHOOL II	15-21	RC	16	3rd					6030	OWNER TYPE					PRIVATE				PRIVATE
PROJECT NAME	LOT NO.	BLK.	SECT.	TRAC.																						
NORTHERN ELEMENTARY SCHOOL II	15-21	RC	16	3rd																						
				6030																						
OWNER TYPE																										
PRIVATE				PRIVATE																						



- LEGEND**
- CONCRETE SIDEWALKS
 - ⊙ SOIL BORING LOCATION
 - (N1) FLOODPLAIN CROSS-SECTION
- NOTES:
1. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.
 2. * INDICATES TRANSITION FROM STANDARD TO REVERSE CURB & GUTTER.
 3. ALL PAVING TO BE AS PER PAVING SECTION ON SHEET 10 UNLESS OTHERWISE NOTED.
 4. SEE SHEET 8 FOR PROFILES AND DETAILS OF S.W.M.F. #1 AND S.W.M.F. #2.
 5. GUTTER SLOPE TO MATCH PAVEMENT CROPS.
 6. ⊙ INDICATES TRANSITION TO MODIFIED CURB & GUTTER.
 7. SERVICE DRIVE PAVING TO BE THE SAME AS THE DETAIL ON SHEET 10.

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ON SITE WATER AND ON SITE SEWERAGE SYSTEMS.

James M. Boyd 5/4/93
COUNTY HEALTH OFFICER JMB DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James R. ... 5/12/93
DIRECTOR DATE
Bluma Kilomath 5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS

James J. ... 5/12/93
DIRECTOR DATE
William B. ... 5-7-93
CHIEF, BUREAU OF ENGINEERING C.M.K. DATE

DATE	NO.	REVISION

OWNER/DEVELOPER
BOARD OF EDUCATION OF HOWARD COUNTY
10910 ROUTE 1108
FELICOTT CITY, MARYLAND 21043

PROJECT
NORTHERN ELEMENTARY SCHOOL II

AREA
TAX MAP 16
PARCEL 44
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

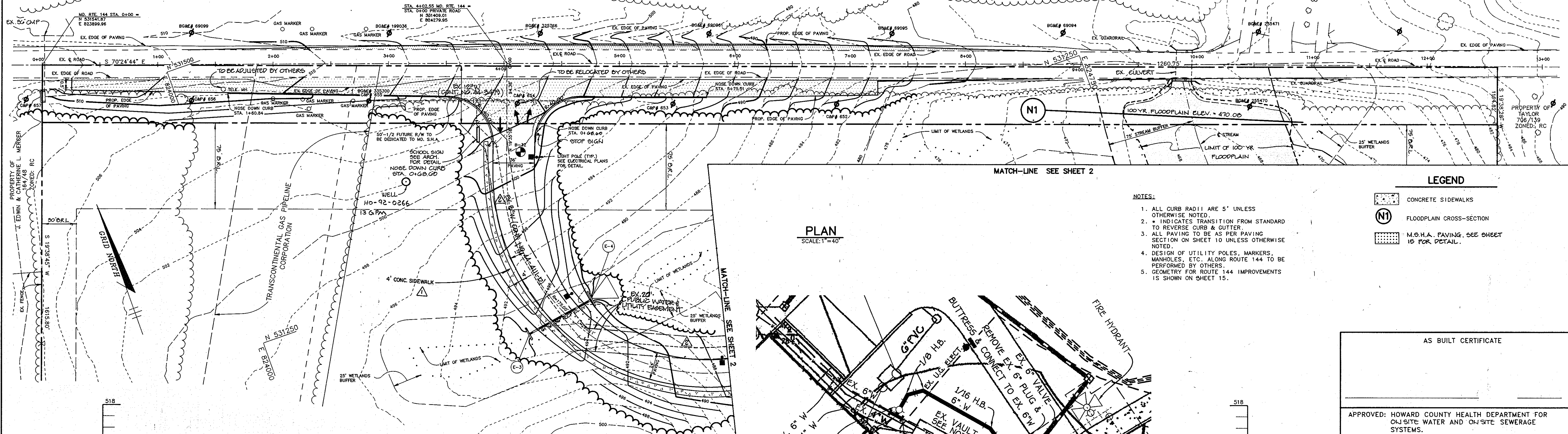
TITLE
SITE DEVELOPMENT PLAN

RIEMER MUEGGE & ASSOCIATES, INC.
A Land Planning, Engineering and Consulting Firm
8818 Centre Park Drive • Suite 200 • Columbia, Md 21045
410-997-8900 FAX: 410-997-9282

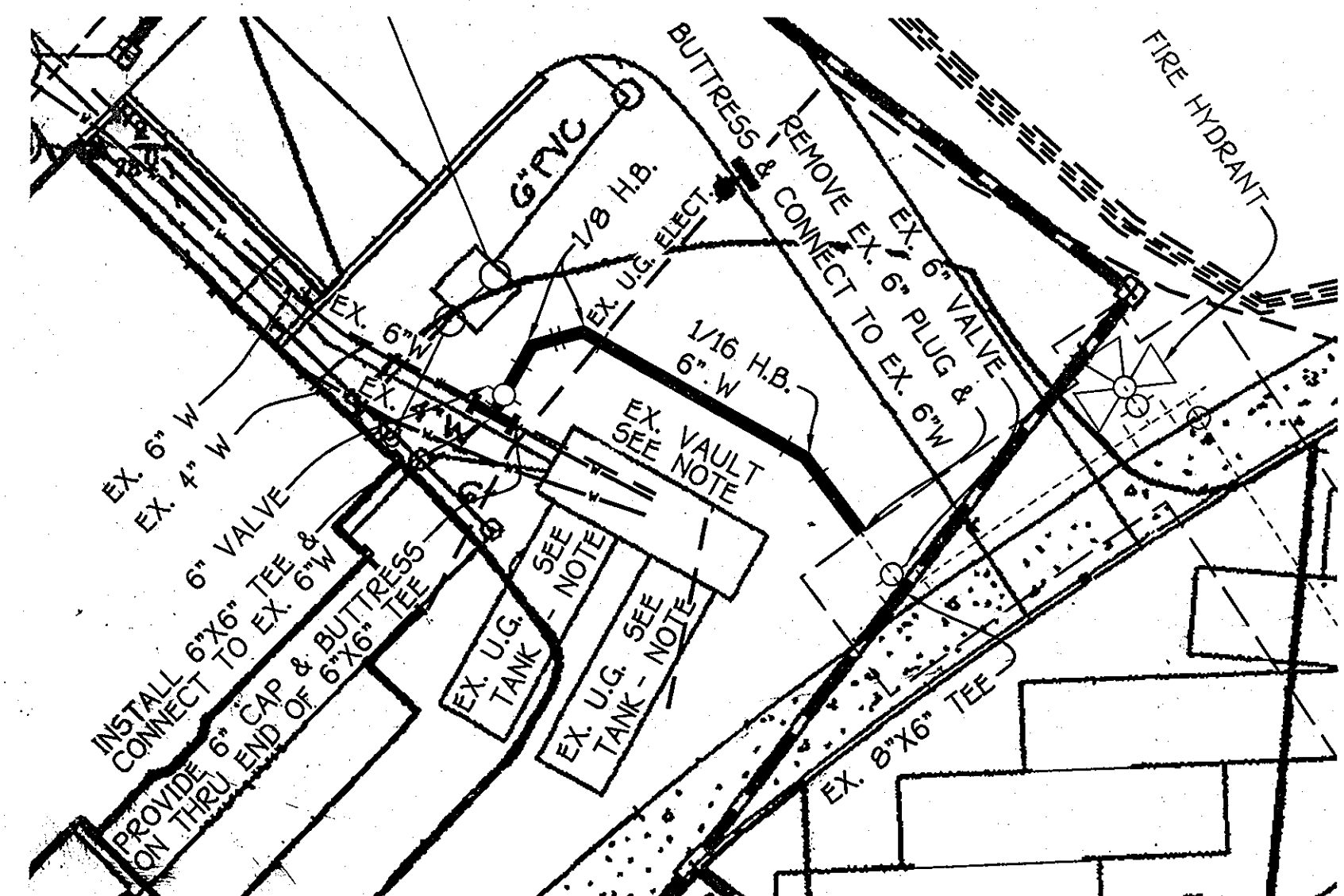
2-12-93 DATE	DESIGNED BY : JTD
	DRAWN BY : DBS
	PROJECT NO : 77910
	DATE : FEBRUARY 12, 1993
	SCALE : 1" = 40'
	DRAWING NO. 2 OF 21

SDP 93-38

MARYLAND ROUTE 144 - OLD FREDERICK ROAD
HOWARD COUNTY & MARYLAND DESIGNATED MINOR ARTERIAL



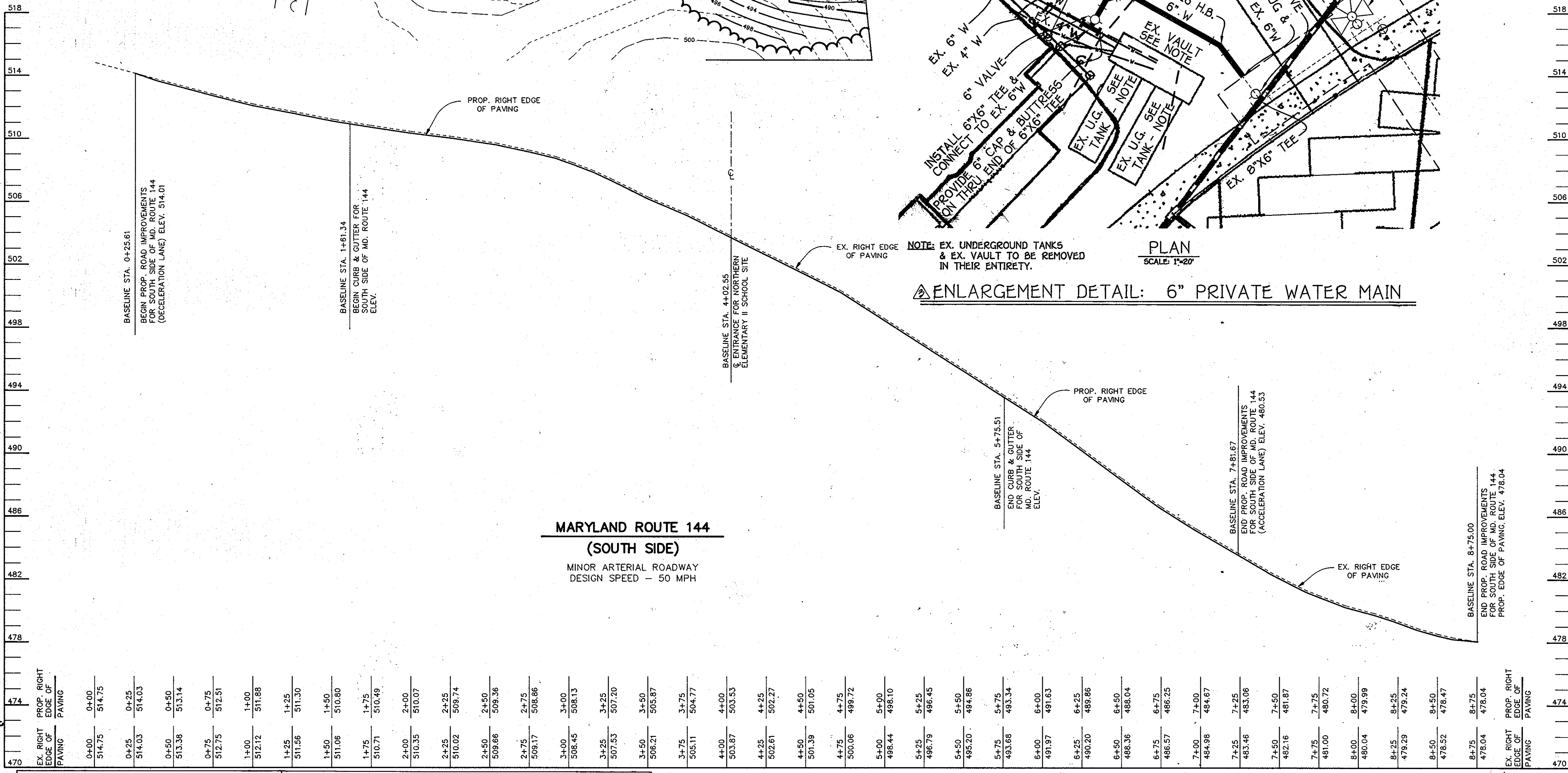
PLAN
SCALE: 1"=40'



ENLARGEMENT DETAIL: 6" PRIVATE WATER MAIN
SCALE: 1"=20'

- NOTES:
1. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.
 2. * INDICATES TRANSITION FROM STANDARD TO REVERSE CURB & GUTTER.
 3. ALL PAVING TO BE AS PER PAVING SECTION ON SHEET 10 UNLESS OTHERWISE NOTED.
 4. DESIGN OF UTILITY POLES, MARKERS, MANHOLES, ETC. ALONG ROUTE 144 TO BE PERFORMED BY OTHERS.
 5. GEOMETRY FOR ROUTE 144 IMPROVEMENTS IS SHOWN ON SHEET 15.

- LEGEND
- CONCRETE SIDEWALKS
 - FLOODPLAIN CROSS-SECTION
 - M.O.H.A. PAVING. SEE SHEET 15 FOR DETAIL.



MARYLAND ROUTE 144
(SOUTH SIDE)
MINOR ARTERIAL ROADWAY
DESIGN SPEED - 50 MPH

PROFILE
SCALE:
HOR. - 1"=40'
VERT. - 1"=4'

NO.	REVISION	DATE	DESCRIPTION
1	ADD 4' CONCRETE SIDEWALK	7/10/03	
2	INDICATE PUBLIC 6" WATER MAIN WITHIN PUBLIC WATER & UTILITY EMBANKMENT AS INSTALLER UNDER CONTRACT NO. 44-4111-13	6/19/00	
3	ADD ENLARGEMENT DETAIL OF 6" PRIVATE WATER MAIN FOR THE PROVISION OF FIRE PROTECTION & DOMESTIC WATER SERVICE TO THE EXISTING SCHOOL	6/19/00	

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS.
James M. Boyd 5/4/93
DIRECTOR DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
James M. Boyd 5/12/92
DIRECTOR DATE

APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
Emmanuel Kilonadi 5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: JAMES J. LEW 5/1/93
DIRECTOR DATE

APPROVED: JAMES J. LEW 5-7-93
CHIEF, BUREAU OF ENGINEERING DATE

DATE NO. REVISION

OWNER/DEVELOPER
BOARD OF EDUCATION OF HOWARD COUNTY
10910 ROUTE 108
ELLCOTT CITY, MARYLAND 21043

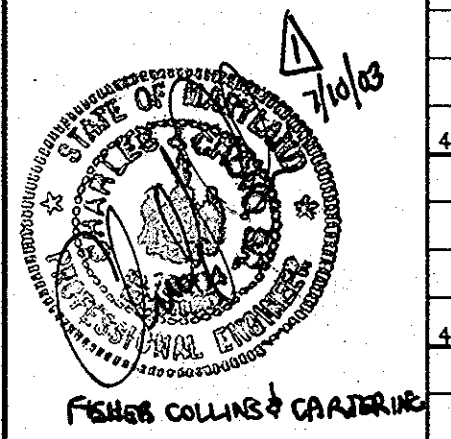
PROJECT
NORTHERN ELEMENTARY SCHOOL II

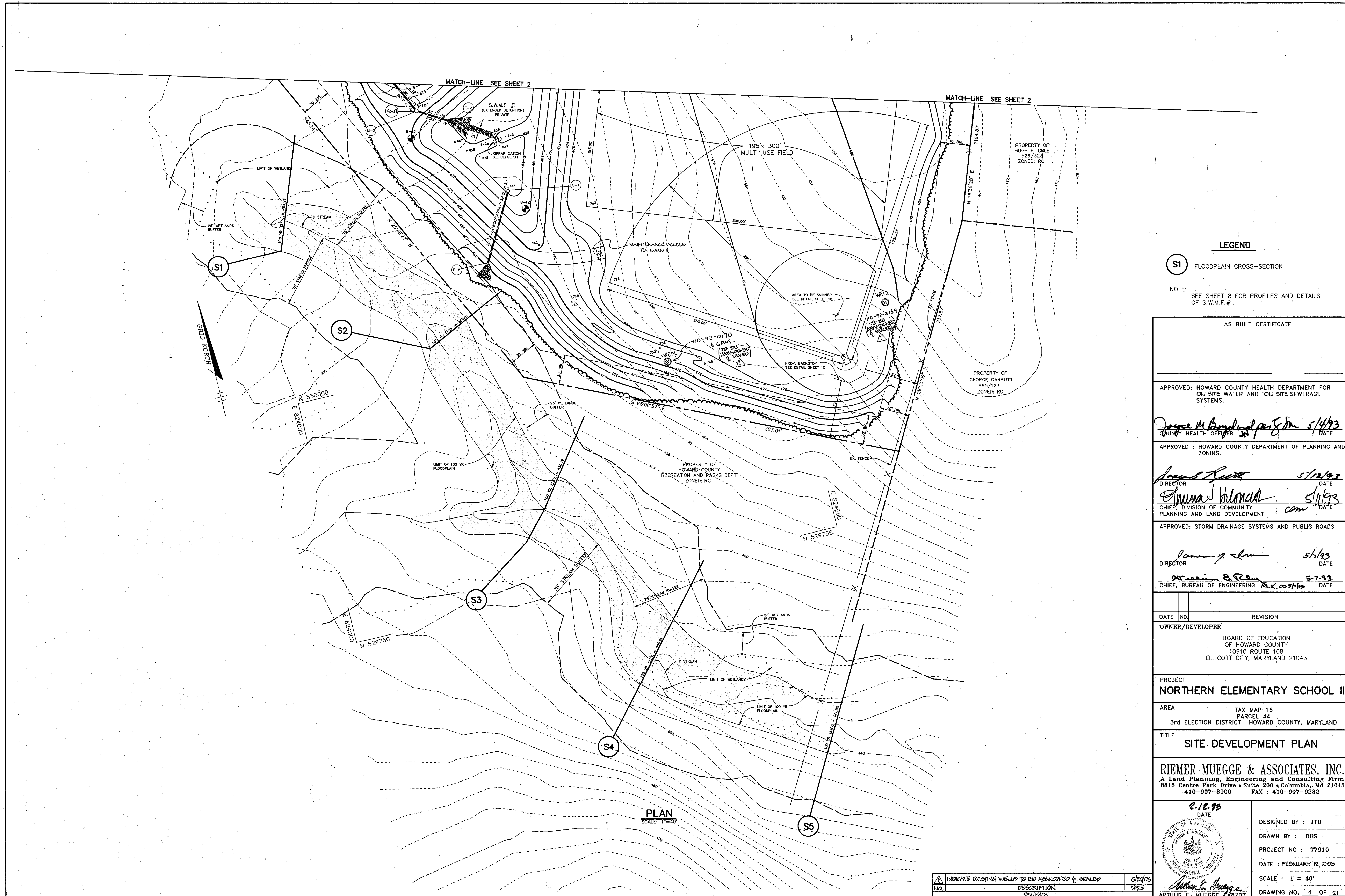
AREA TAX MAP 16
PARCEL 44
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

PLAN AND PROFILE OF MARYLAND ROUTE 144 (SOUTH SIDE)
STA. 0+00.00 TO STA. 8+75.00

RIEMER MUEGGE & ASSOCIATES, INC.
A Land Planning, Engineering and Consulting Firm
8818 Centre Park Drive • Suite 200 • Columbia, Md 21045
410-997-8900 FAX: 410-997-9282

DESIGNED BY: JTD
DRAWN BY: DBS
PROJECT NO: 77910
DATE: FEBRUARY 12, 2003
SCALE: 1"=40'
DRAWING NO. 3 OF 21





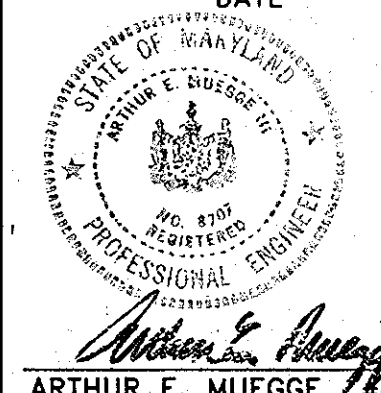
LEGEND

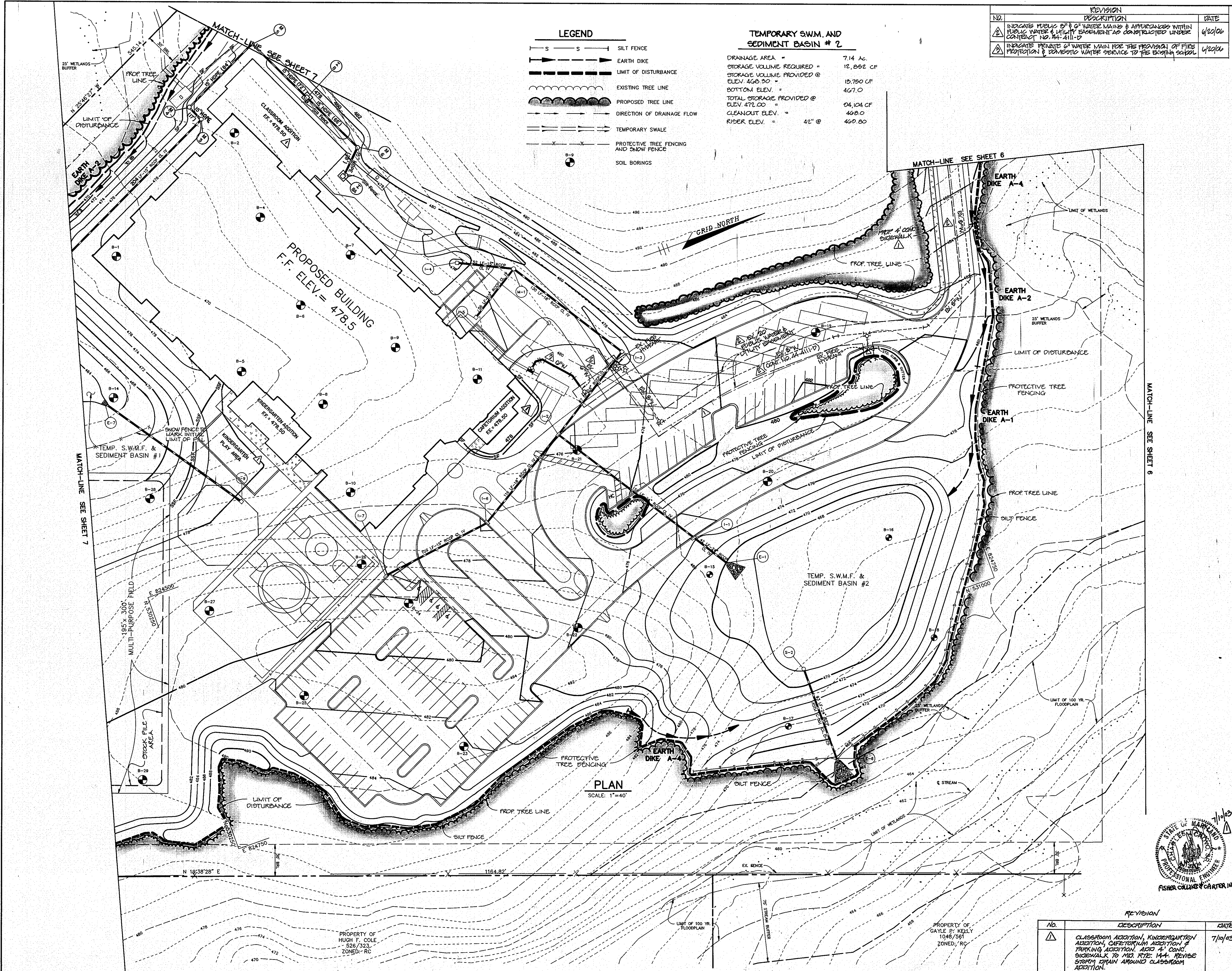
(S1) FLOODPLAIN CROSS-SECTION

NOTE: SEE SHEET 8 FOR PROFILES AND DETAILS OF S.W.M.F.#1.

AS BUILT CERTIFICATE	
APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR C&J SITE WATER AND C&J SITE SEWERAGE SYSTEMS.	
<i>Joyce M. Boyd</i>	5/4/93
COUNTY HEALTH OFFICER	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>James S. Smith</i>	5/12/93
DIRECTOR	DATE
<i>Shirley J. Belmont</i>	5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE
APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS	
<i>James J. Smith</i>	5/1/93
DIRECTOR	DATE
<i>William E. Row</i>	5-7-93
CHIEF, BUREAU OF ENGINEERING	DATE
DATE	REVISION
OWNER/DEVELOPER	
BOARD OF EDUCATION OF HOWARD COUNTY 10910 ROUTE 108 ELLCOTT CITY, MARYLAND 21043	
PROJECT	
NORTHERN ELEMENTARY SCHOOL II	
AREA	TAX MAP: 16 PARCEL: 44 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE	
SITE DEVELOPMENT PLAN	
RIEMER MUEGGE & ASSOCIATES, INC. A Land Planning, Engineering and Consulting Firm 8818 Centre Park Drive • Suite 200 • Columbia, Md 21045 410-997-8900 FAX: 410-997-9282	
DATE	DESIGNED BY: JTD
2-12-93	DRAWN BY: DBS
	PROJECT NO: 77910
	DATE: FEBRUARY 12, 1993
	SCALE: 1" = 40'
	DRAWING NO. 4 OF 21

NO.	DESCRIPTION	DATE
1	INDICATE EXISTING WELLS TO BE ABANDONED & SEALED	g/edog
2		





NO.	REVISION DESCRIPTION	DATE
1	INDICATE PUBLIC USE OF WATER MAINS & APPURTEANCES WITHIN PUBLIC WATER & UTILITY EASEMENT AS CONSTRUCTED UNDER CONTRACT NO. 44-411-D	6/20/06
2	INDICATE PRIVATE WATER MAIN FOR THE PROVISION OF FIRE PROTECTION & DOMESTIC WATER SERVICE TO THE GRADE SCHOOL	6/20/06

TEMPORARY SWM AND SEDIMENT BASIN # 2

DRAINAGE AREA =	7.14 AC.
STORAGE VOLUME REQUIRED =	12,062 CF
STORAGE VOLUME PROVIDED @ ELEV. 460.00 =	10,750 CF
BOTTOM ELEV. =	467.0
TOTAL STORAGE PROVIDED @ ELEV. 472.00 =	04,104 CF
CLEANOUT ELEV. =	460.0
RICER ELEV. =	42" @ 460.80

AS BUILT CERTIFICATE

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN 'AS-BUILT' PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Patricia Conley Young 2/22/93
DEVELOPER DATE

BY THE ENGINEER :

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

Arthur E. Muegge 2-12-93
ENGINEER DATE

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

James M. Zickler 3/31/93
U.S. SOIL CONSERVATION SERVICE DATE

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

Robert W. Zickler 3/31/93
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : FOR ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.

Joyce M. Boyd 5/4/93
COUNTY HEALTH OFFICER JN DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Joseph Smith 5/12/93
DIRECTOR DATE

Shirley J. Skonath 5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT com DATE

APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS

James J. Elmer 5/7/93
DIRECTOR DATE

Richard B. Remy 5-7-93
CHIEF, BUREAU OF ENGINEERING M.K. as shro DATE

DATE	NO.	REVISION

OWNER/DEVELOPER

BOARD OF EDUCATION
OF HOWARD COUNTY
10910 ROUTE 108
ELLCOTT CITY, MARYLAND 21043

PROJECT

NORTHERN ELEMENTARY SCHOOL II

AREA

TAX MAP 16
PARCEL 44
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE

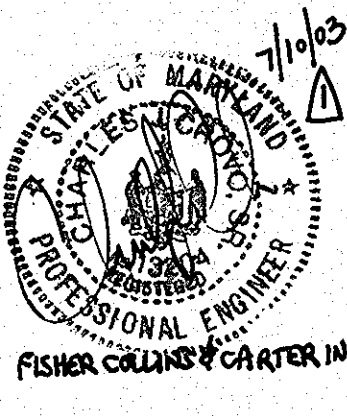
GRADING & SEDIMENT CONTROL PLAN

RIEMER MUEGGE & ASSOCIATES, INC.
Land Planning, Engineering and Consulting Firm
8818 Centre Park Drive • Suite 200 • Columbia, Md 21045
410-997-8900 FAX : 410-997-9282

DATE 2-12-93

DESIGNED BY : JTD
DRAWN BY : DBS
PROJECT NO : 77910
DATE : FEBRUARY 12, 1993
SCALE : 1" = 40'
DRAWING NO. 5 OF 21

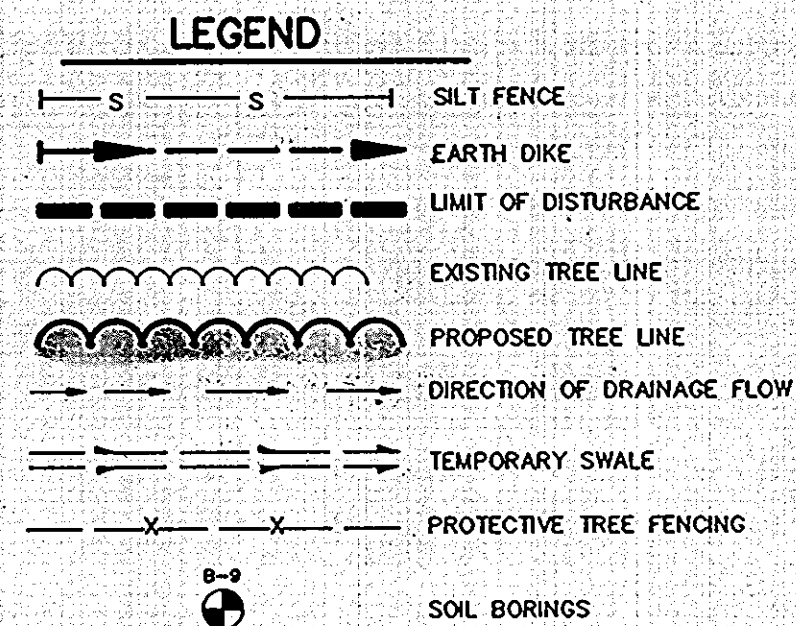
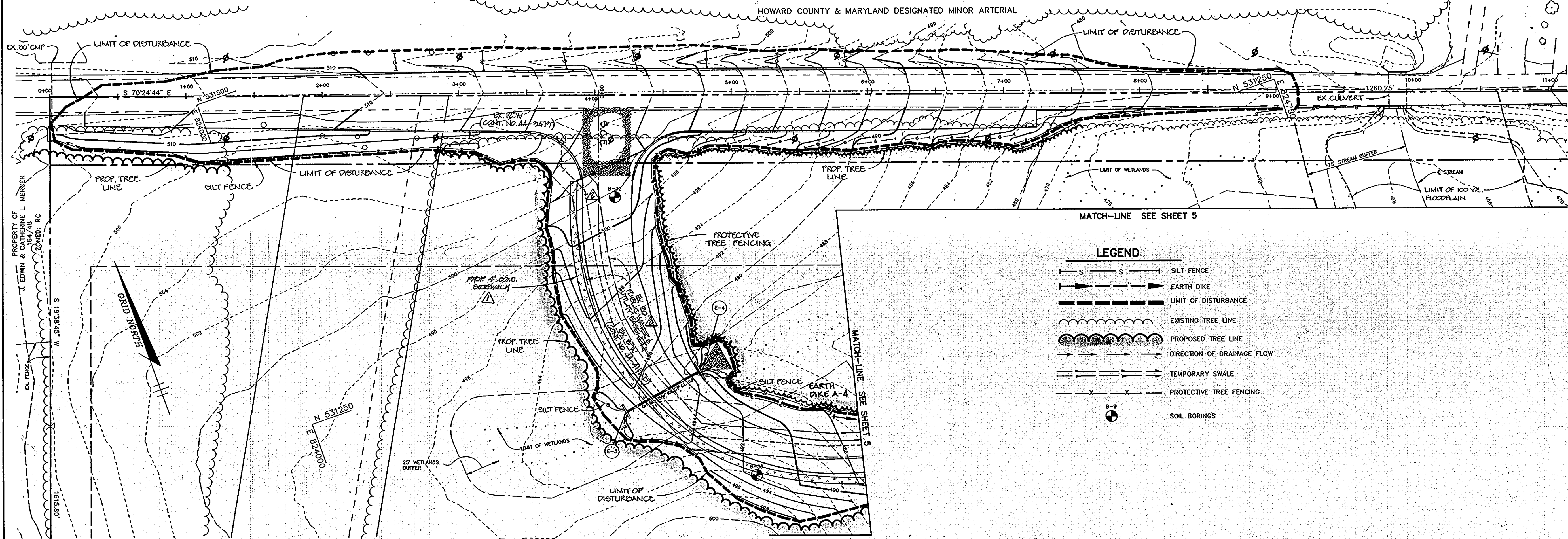
Arthur E. Muegge #8707
ARTHUR E. MUEGGE



NO.	REVISION DESCRIPTION	DATE
1	CLASSROOM ADDITION, KINDERGARTEN ADDITION, CAFETERIA ADDITION & PARKING ADDITION, ADD 4" CONC. SIDEWALK TO MD. RTE. 144. REVISE STORM DRAIN AROUND CLASSROOM ADDITION.	7/10/03

MARYLAND ROUTE 144 - OLD FREDERICK ROAD

HOWARD COUNTY & MARYLAND DESIGNATED MINOR ARTERIAL



PLAN
SCALE: 1"=40'

CONDITIONS AND PRACTICES FOR WORKING IN NON-TIDAL WETLANDS

- Remove excess fill or construction material or debris to an upland disposal area;
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland;
- Store heavy equipment in upland areas and suitably operate the equipment to prevent damage to the remaining nontidal wetlands;
- All stabilization in the wetland and buffer shall be of the following species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Barley (*Hordeum sp.*), Oats (*Avena sp.*) and/or Rye (*Secale cereale*). These species allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Division. Kentucky 31 fescue shall not be utilized in the wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands in excess of nontidal wetlands lost under the original structure or fill; To protect important aquatic species, in-stream work is prohibited as determined by the classification of the stream as follows:
 - Class I Waters. In-stream work may not be conducted during the period March 1 through June 15, inclusive, during any year.

- SEQUENCE OF CONSTRUCTION
- OBTAIN GRADING PERMIT.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE, TREE PROTECTIVE FENCE, SILT FENCE, EARTH DIKES, SEDIMENT BASINS/TEMPORARY STORMWATER MANAGEMENT FACILITIES #1 AND #2 AND THEIR CONTROL STRUCTURES AS PER THE SEDIMENT CONTROL PLAN AND SNOW FENCE. SEE CONDITIONS AND PRACTICES FOR WORKING IN NON-TIDAL WETLANDS.
 - INSTALL THE 36-INCH RCCP CULVERT FROM E-3 TO E-4 AND BRING ENTRANCE ROAD TO GRADE UP TO WHERE THE EARTH DIKE BEGINS. THIS MUST BE ACCOMPLISHED PRIOR TO ANY MASS GRADING OF THE SITE.
 - BEGIN SITE GRADING AND BUILDING CONSTRUCTION, CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE ALONG SWALES AND DIKES. STOCKPILE TOPSOIL IN THE DESIGNATED AREA FOR FUTURE USE. FULL FIELD AREA UP TO LIMIT OF SNOW FENCE.
 - INSTALL UTILITIES AS GRADING REACHES SUBGRADE ELEVATION.
 - INSTALL CURB AND GUTTER AND PAVE. STABILIZE OTHER NON-PAVED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
 - COMPLETE BASKETBALL COURT/PLAY AREA CONSTRUCTION.
 - UPON STABILIZATION OF FIELDS AND APPROVAL OF DEPARTMENT OF LICENSES AND PERMITS SEDIMENT CONTROL INSPECTOR, FLUSH STORM DRAINS AND CONVERT SEDIMENT BASINS #1 AND #2 TO FINAL STORMWATER MANAGEMENT FACILITIES PER THE FOLLOWING.
 - PUMP OUT ANY IMPOUNDED WATER.
 - REMOVE ANY SEDIMENT BUILDUP.
 - GRADE SEDIMENT BASINS/TEMPORARY STORMWATER MANAGEMENT FACILITIES #1 & #2 TO FINAL GRADES AS PER SITE DEVELOPMENT PLAN.
 - INSTALL FOREBAYS WITH GABION WINDOWS.
 - PLUG TEMPORARY LOW FLOW ORIFICES.
 - INSTALL PERMANENT LOW FLOW ORIFICES AS PER DETAIL SHEET 10.
 - STABILIZE ALL AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
 - CONSTRUCT MARYLAND ROUTE 144 IMPROVEMENTS. CONTRACTOR TO COORDINATE UTILITY RELOCATION WITH APPROPRIATE AGENCIES.
 - COMPLETE ALL CONSTRUCTION ACTIVITIES INCLUDING BUILDING CONSTRUCTION. REMOVE ALL REMAINING SEDIMENT CONTROLS UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR AND STABILIZE IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES.

AS BUILT CERTIFICATE

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN 'AS-BUILT' PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Caitlin Conley Young 2/12/93
DEVELOPER DATE

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

Arthur E. Muegge 2-12-93
ENGINEER DATE

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

Jan M. Zehn 7/21/93
U.S. SOIL CONSERVATION SERVICE DATE

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

Robert Zehn 3/31/93
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: FOR ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.

Joyce M. Boyd 5/4/93
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James H. Harte 5/12/93
DIRECTOR DATE

Anna H. Harte 5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS

James H. Harte 5/16/93
DIRECTOR DATE

James H. Harte 5-7-93
CHIEF, BUREAU OF ENGINEERING DATE

DATE	NO.	REVISION

OWNER/DEVELOPER
BOARD OF EDUCATION OF HOWARD COUNTY
10910 ROUTE 108
ELLCOTT CITY, MARYLAND 21043

PROJECT
NORTHERN ELEMENTARY SCHOOL II

AREA
TAX MAP 16
PARCEL 44
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
GRADING & SEDIMENT CONTROL PLAN

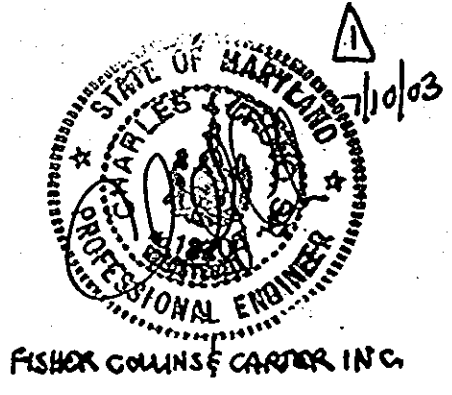
RIEMER MUEGGE & ASSOCIATES, INC.
A Land Planning, Engineering and Consulting Firm
8818 Centre Park Drive • Suite 200 • Columbia, Md 21045
410-997-8800 FAX: 410-997-9282

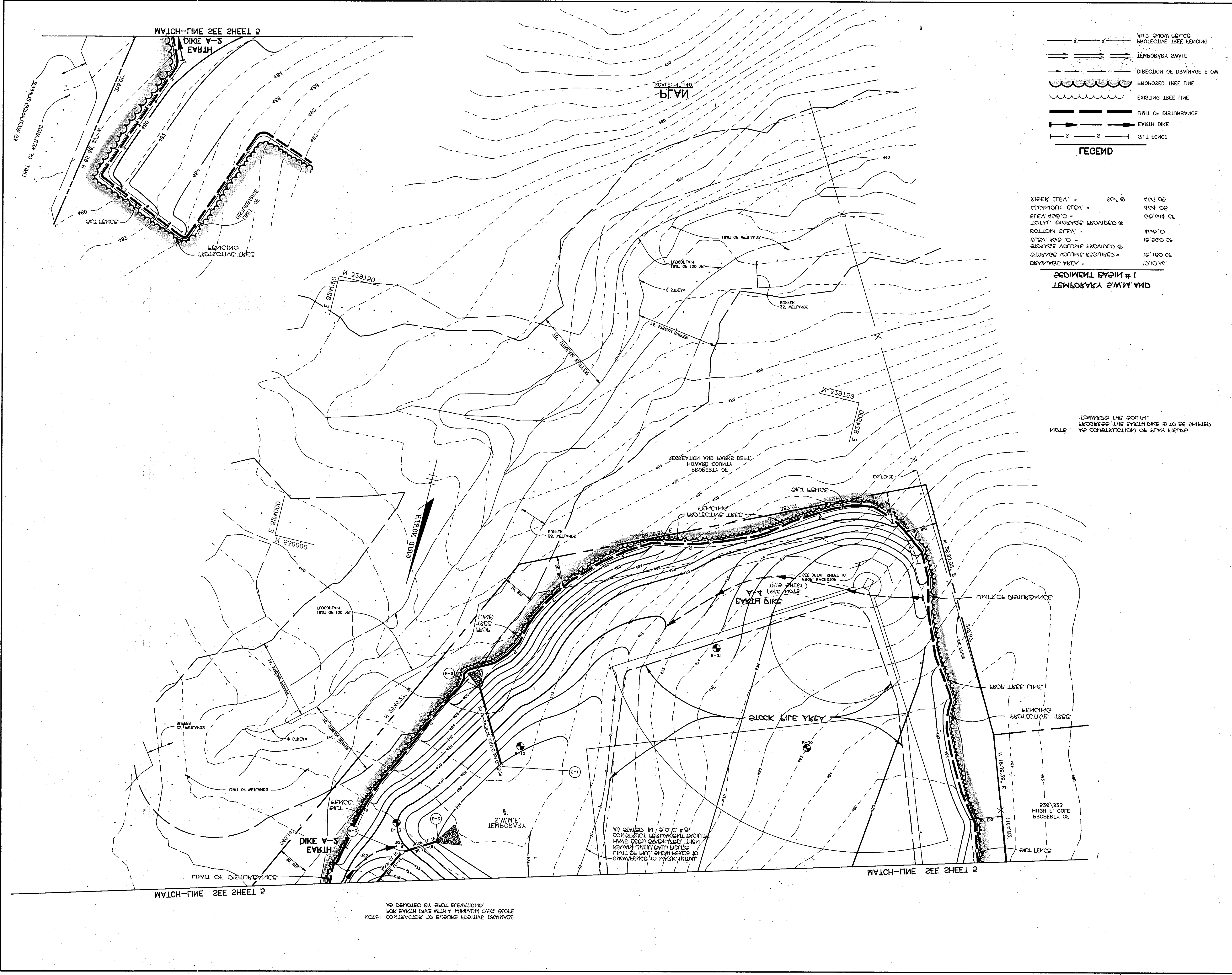
2-12-93
DATE

DESIGNED BY: JTD
DRAWN BY: DBS
PROJECT NO.: 77910
DATE: FEBRUARY 12, 1993
SCALE: 1" = 40'
DRAWING NO. 6 OF 21

Arthur E. Muegge
ARTHUR E. MUEGGE 38707

NO.	REVISION	DATE
1	INDICATE PUBLIC WATER MAIN & APPURTEANCES WITHIN PUBLIC WATER & UTILITY EMBELEM AS CONSTRUCTED UNDER CONTRACT NO. AA-4111-D	7/10/03





LEGEND

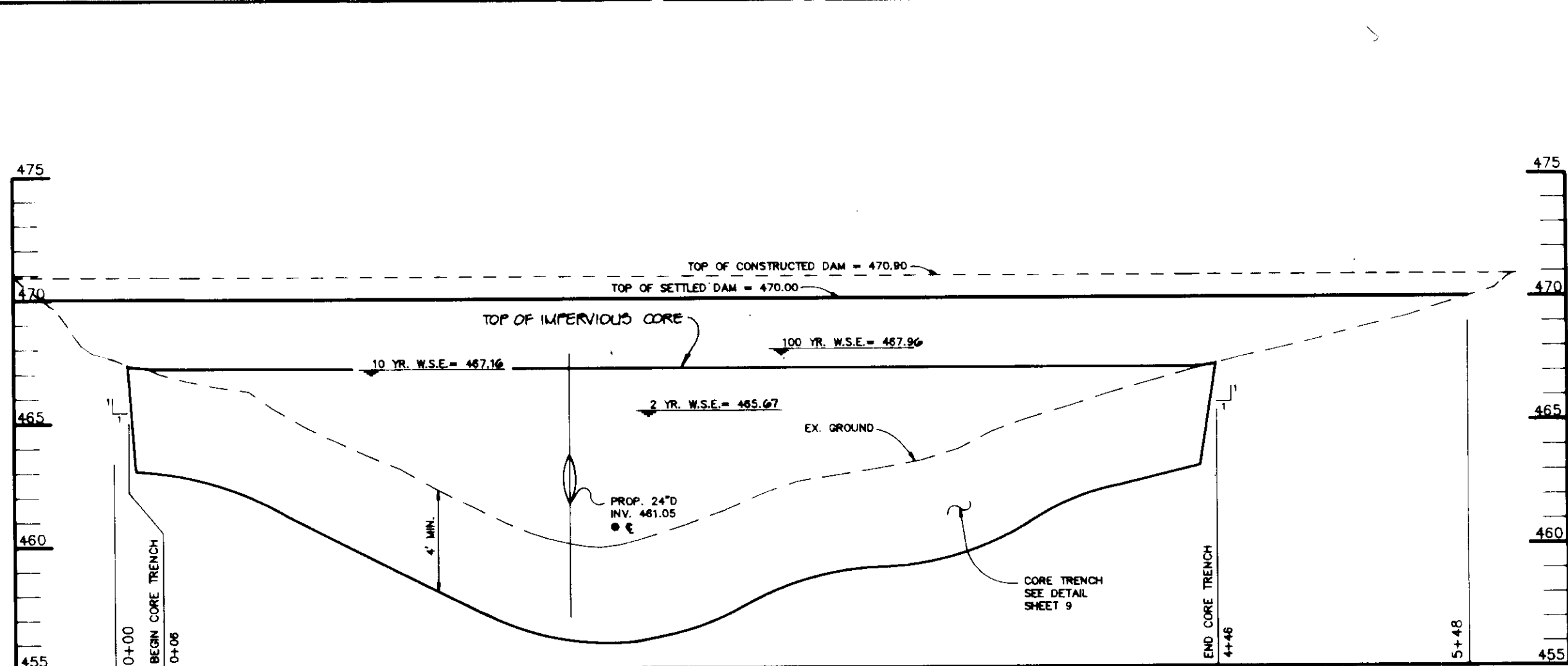
- X X WIND SNOW FENCE PROTECTIVE TREE FENCING
- == TEMPORARY SWALE
- DIRECTION OF DRAINAGE FLOW
- ~ PROPOSED TREE LINE
- ~ EXISTING TREE LINE
- LIMIT OF DISTURBANCE
- == EARTH DIKE
- SILT FENCE

DIAMETER & WEIGHT TABLE

STOCK PIPE	30" @	100 LB
STANDARD PIPE	24" @	40 LB
PIPE	18" @	15 LB
10' @	10 LB	10 LB
6" @	5 LB	5 LB
4" @	3 LB	3 LB
3" @	2 LB	2 LB
2" @	1 LB	1 LB

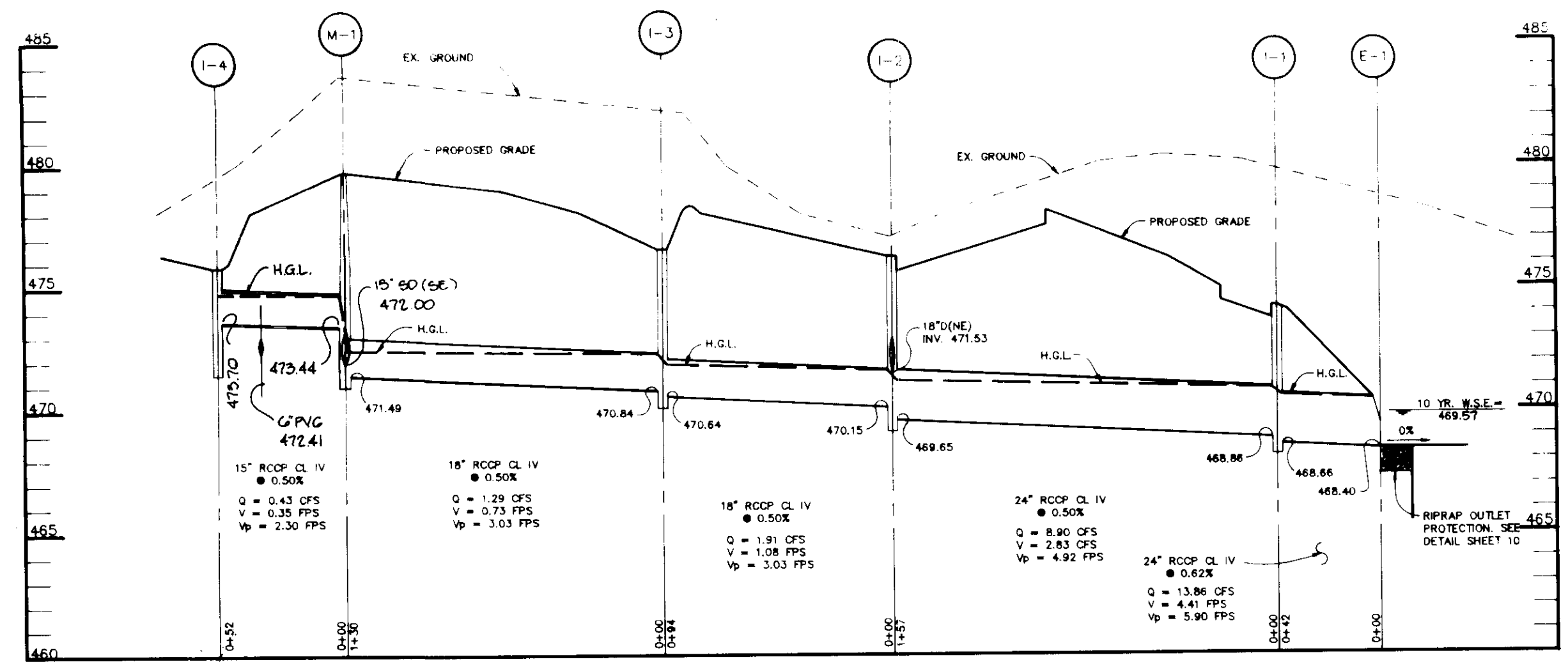
NOTE: CONSTRUCTION OF BLOCK PIPE DIKE TO BE COMPLETED BY THE END OF THE YEAR.

<p>ENGINEER: W. M. W. YAKOROV</p> <p>DATE: 2-1-82</p>	<p>DRAWING NO. 2 OF 21</p> <p>SCALE: 1" = 40'</p> <p>DATE: FEBRUARY 1982</p> <p>PROJECT NO.: 22810</p> <p>DRAWN BY: DBZ</p> <p>DESIGNED BY: JLD</p> <hr/> <p>EROSION & SEDIMENT CONTROL PLAN</p> <p>249 ELECTION DISTRICT, HONOLULU COUNTY, HAWAII</p> <p>AREA: 18' 11" X 11' 11"</p> <p>NORTHERN ELEMENTARY SCHOOL II</p> <p>PROJECT:</p> <p>10810 ROUTE 108 OF HONOLULU COUNTY BOARD OF EDUCATION</p> <p>OWNER/DEVELOPER:</p> <p>DATE: _____ REGION: _____</p> <hr/> <p>CHIEF, BUREAU OF ENGINEERING: W. K. [Signature] DATE: 2-1-82</p> <p>DIRECTOR: [Signature] DATE: 2/1/82</p> <p>APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS</p> <hr/> <p>ENGINEERING AND LAND DEPARTMENT CHIEF, DIVISION OF COMMUNITY: [Signature] DATE: 2/1/82</p> <p>DIRECTOR: [Signature] DATE: 2/1/82</p> <p>APPROVED: HONOLULU COUNTY DEPARTMENT OF ENGINEERING AND</p> <hr/> <p>CITY HEALTH OFFICER: [Signature] DATE: 2/1/82</p> <p>APPROVED: STAFF HEALTH DEPARTMENT</p> <hr/> <p>HONOLULU SOIL CONSERVATION DISTRICT: [Signature] DATE: 2/1/82</p> <p>OF THE HONOLULU SOIL CONSERVATION DISTRICT EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS THESE PLANS FOR SWIFT BOND CONSTRUCTION</p> <hr/> <p>U.S. SOIL CONSERVATION SERVICE: [Signature] DATE: 2/1/82</p> <p>EROSION AND SEDIMENT CONTROL REQUIREMENTS FOR SWIFT BOND CONSTRUCTION, SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL THESE PLANS HAVE BEEN REVIEWED FOR THE HONOLULU SOIL</p> <hr/> <p>ENGINEER: [Signature] DATE: 2-1-82</p> <p>30 DAYS OF COMPLETION</p> <p>DISTRICT WITHIN 42-DAY PERIOD OF THE BOND WITHIN THAT HE MUST PROVIDE THE HONOLULU SOIL CONSERVATION CONSERVATION DISTRICT. I HAVE NOTICED THE DEVELOPER ACCORDANCE WITH THE REQUIREMENTS OF THE HONOLULU SOIL OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE EROSION AND SEDIMENT CONTROL REQUIREMENTS A PHYSICIAN I CERTIFY THAT THIS PLAN FOR BOND CONSTRUCTION BY THE ENGINEER:</p> <hr/> <p>DEVELOPER: [Signature] DATE: 2/1/82</p> <p>INSPECTIONS BY THE HONOLULU SOIL CONSERVATION DISTRICT OF COMPLETION. I WILL PROVIDE PERIODIC ON-SITE WITHIN 42-DAY PERIOD OF THE BOND WITHIN 30 DAYS I WILL PROVIDE THE HONOLULU SOIL CONSERVATION DISTRICT SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. APPROVED TRAINING PROGRAM FOR THE CONTROL OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT CONSTRUCTION PROJECT WITH HAVE A CERTIFICATE OF AND THAT THE REQUIREMENTS FOR THE PROJECT. I HAVE THE CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS. I AM CERTAIN THAT THE DEVELOPMENT AND/OR BY THE DEVELOPER:</p> <hr/> <p style="text-align: center;">AS BUILT CERTIFICATE</p>
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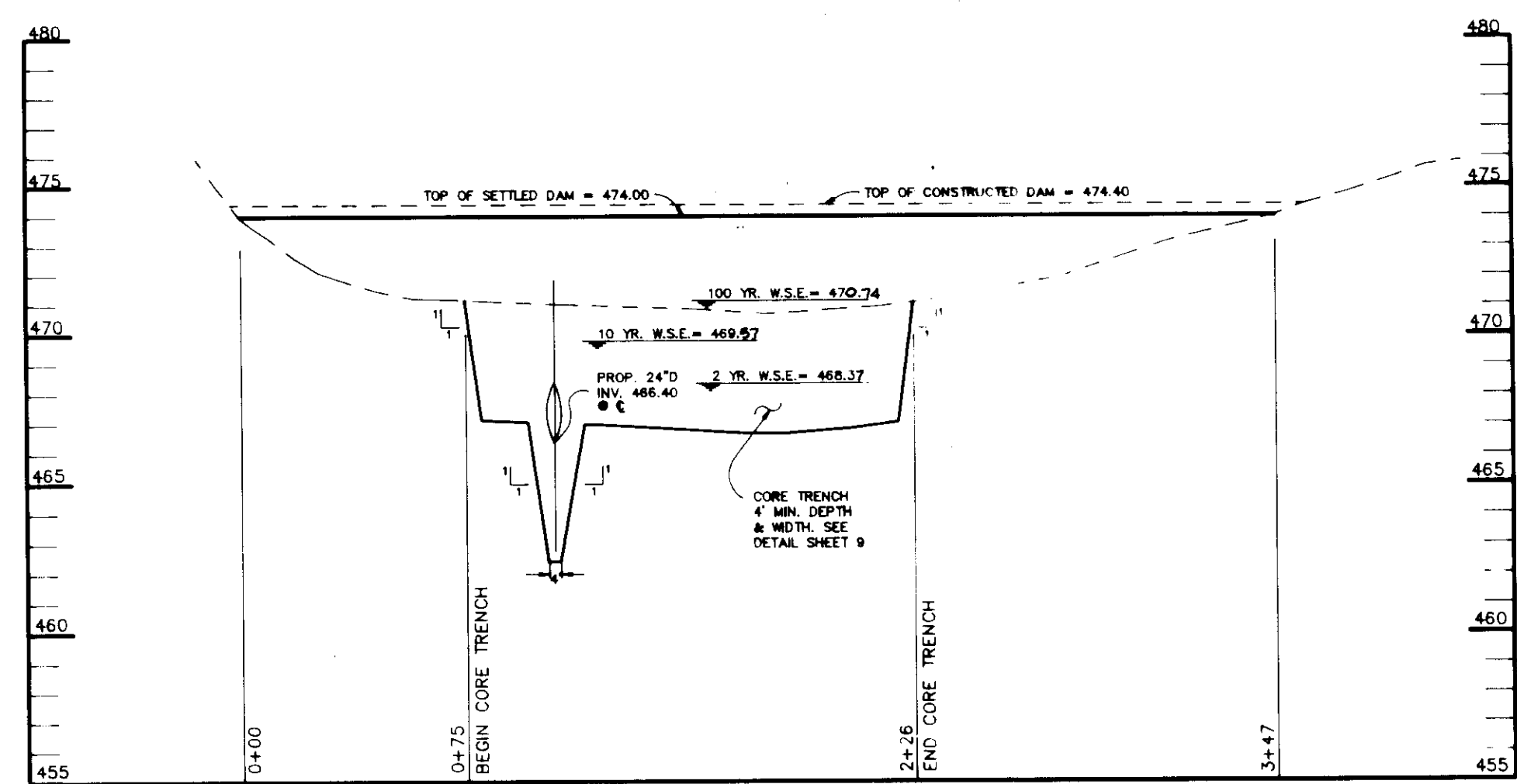
S.W.M. FACILITY #1 - PROFILE ALONG Q OF DAM

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



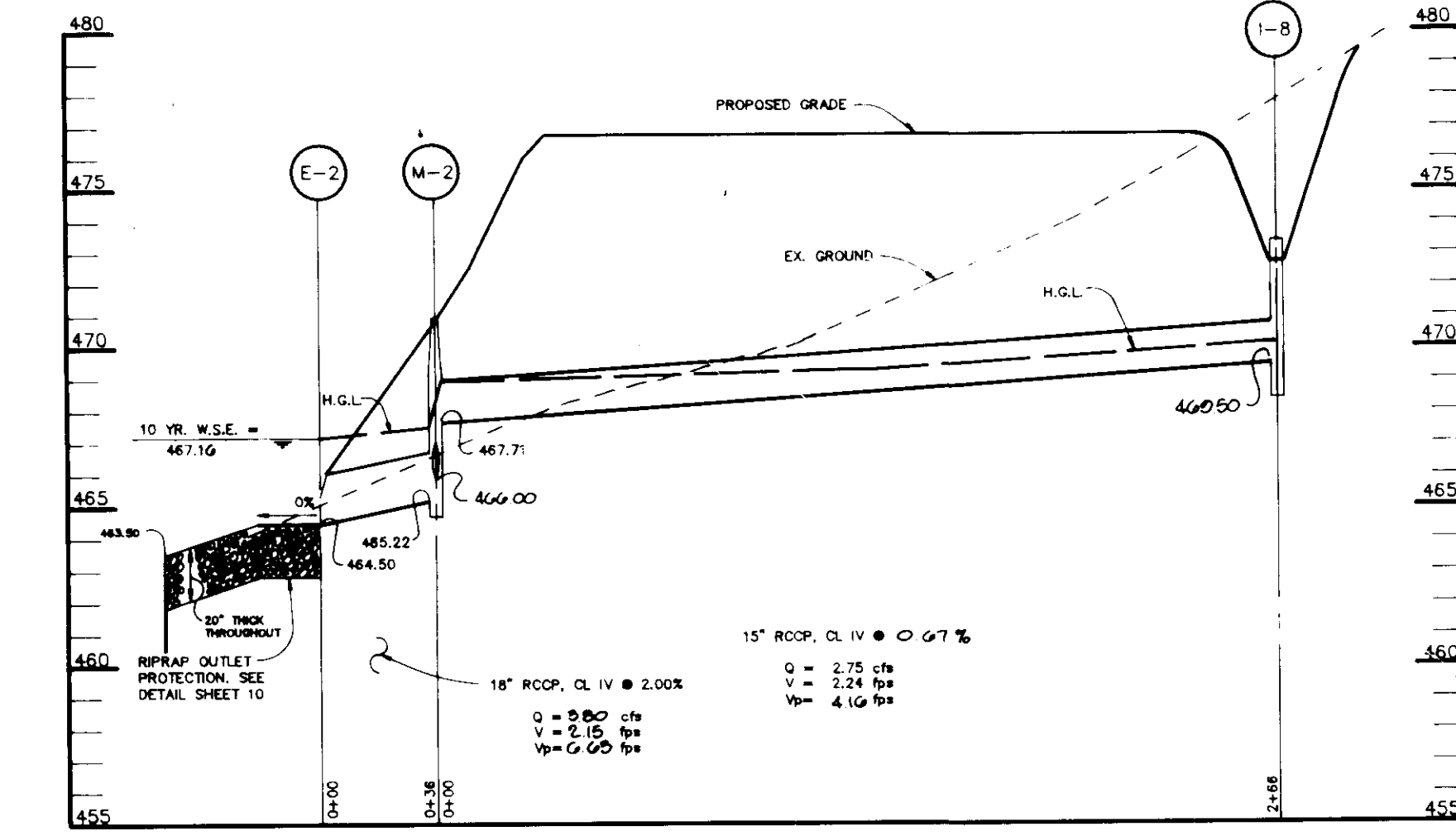
STORM DRAIN PROFILE

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



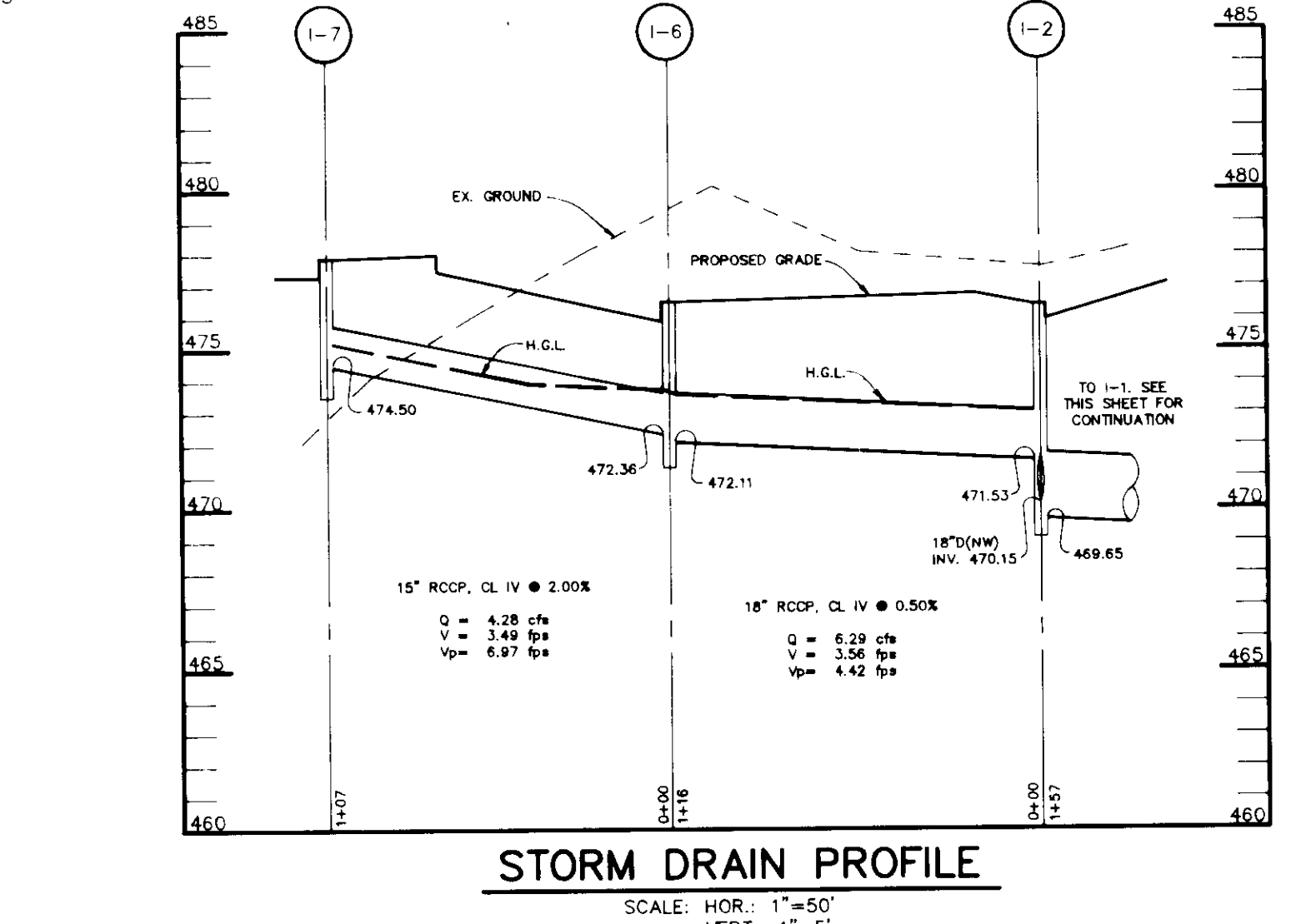
S.W.M. FACILITY #2 - PROFILE ALONG Q OF DAM

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



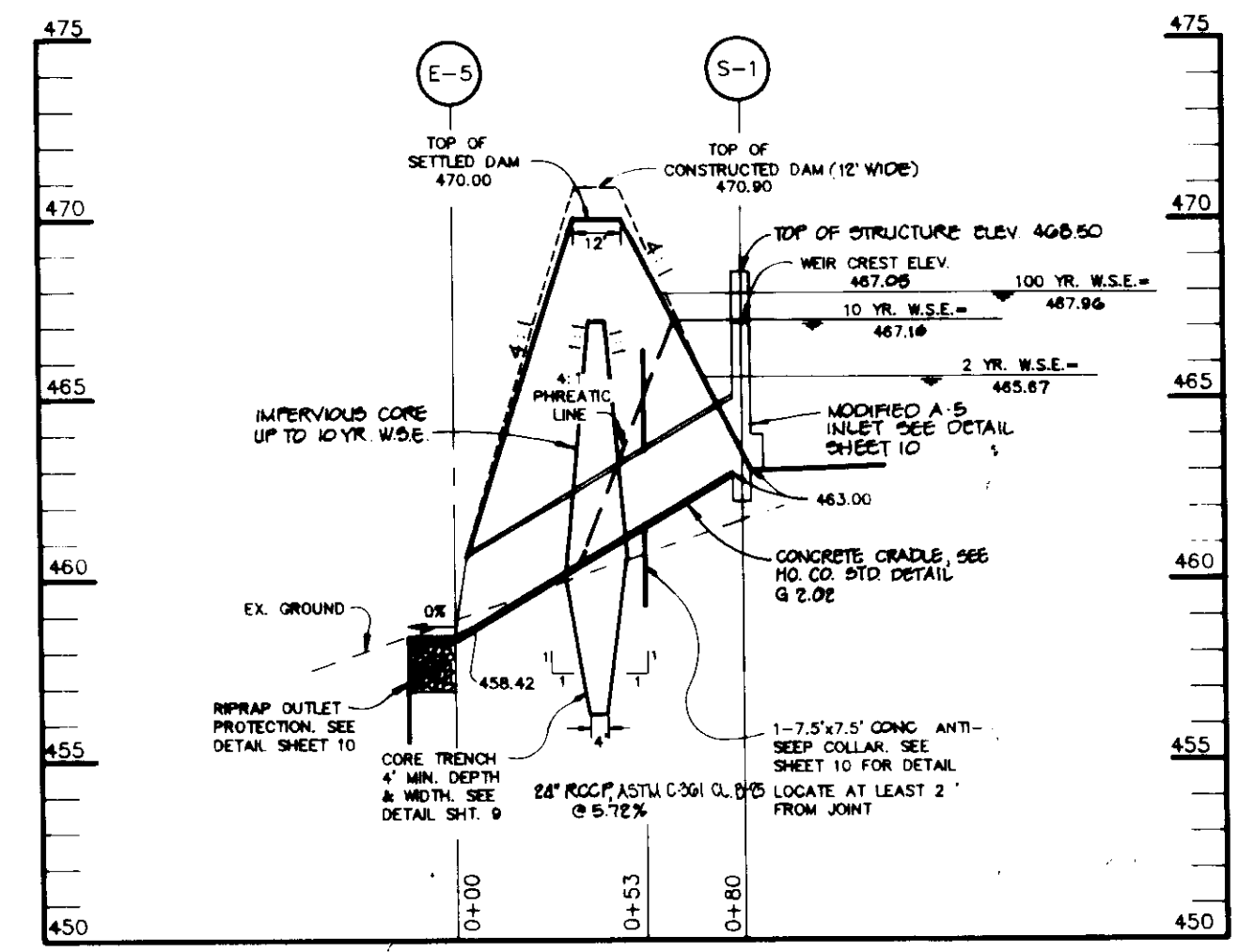
STORM DRAIN PROFILE

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



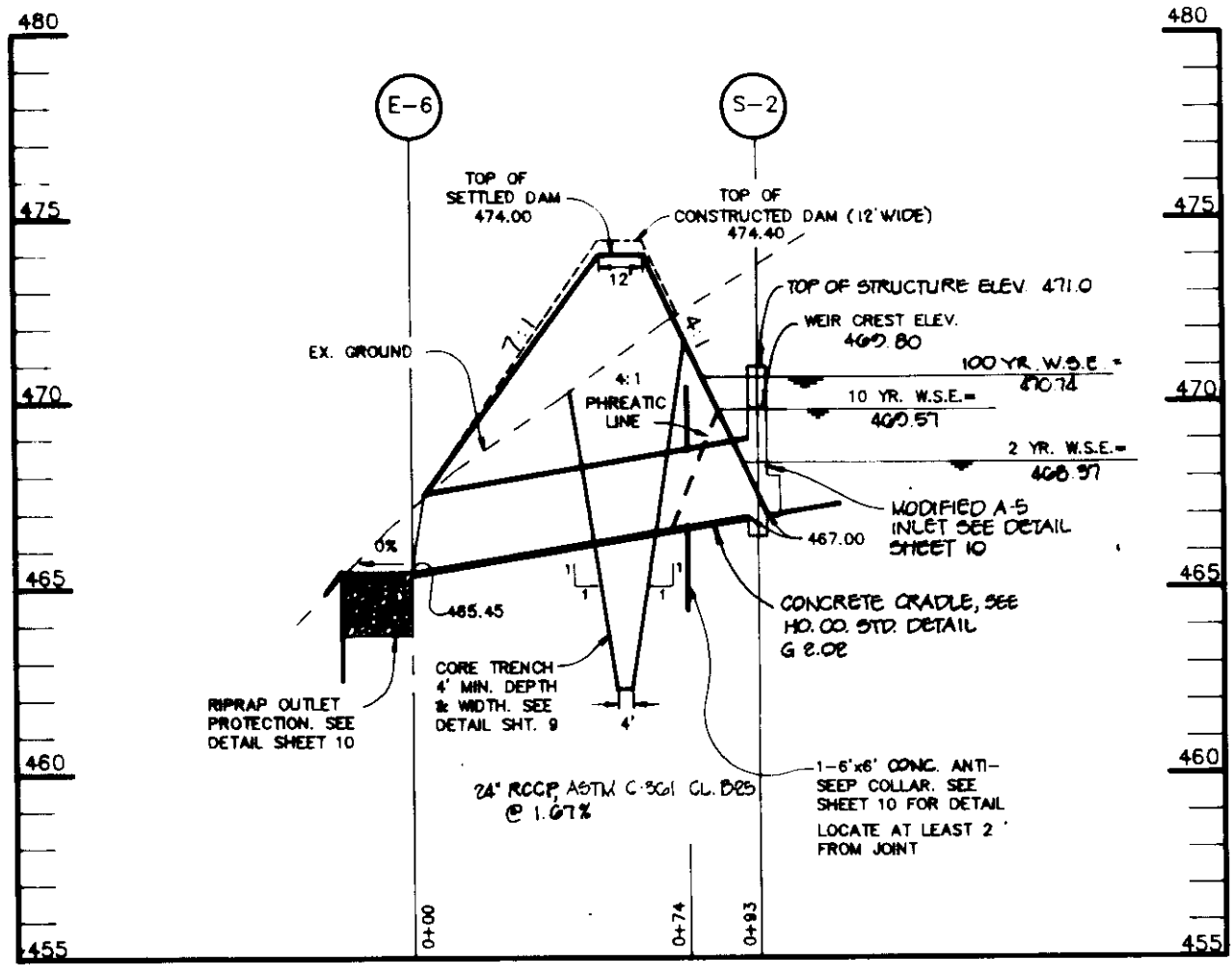
STORM DRAIN PROFILE

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



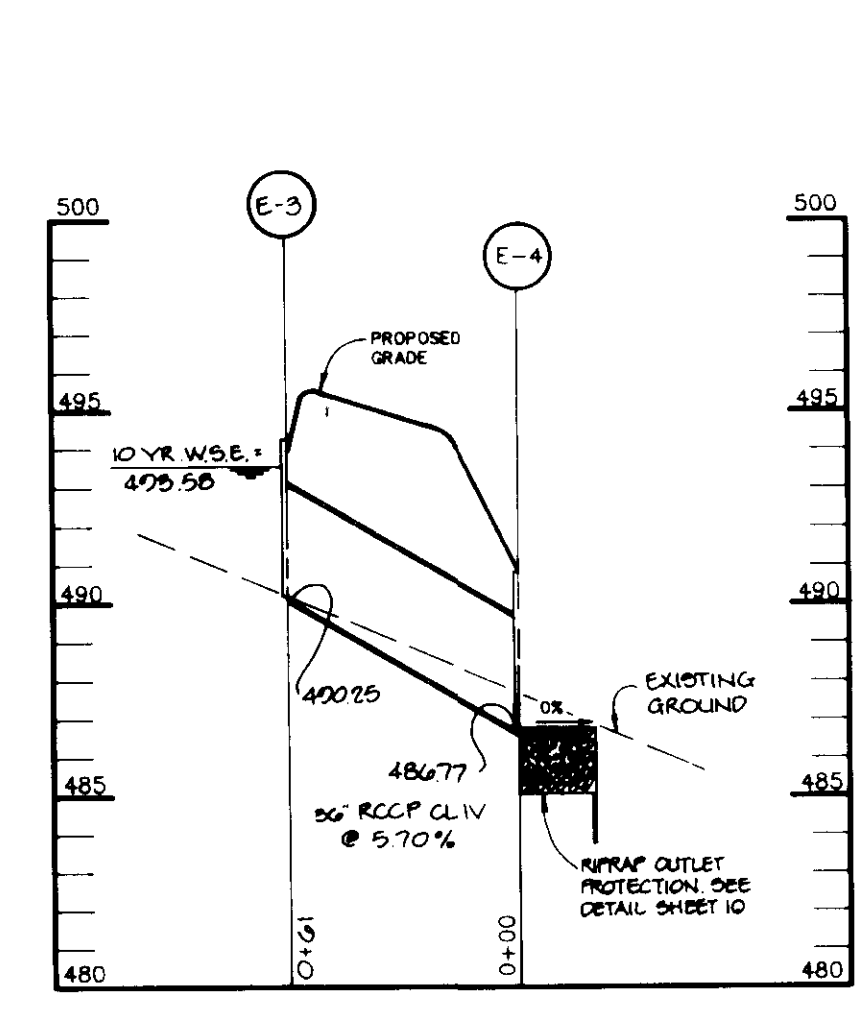
S.W.M. FACILITY #1 - PROFILE THROUGH PRINCIPAL SPILLWAY

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



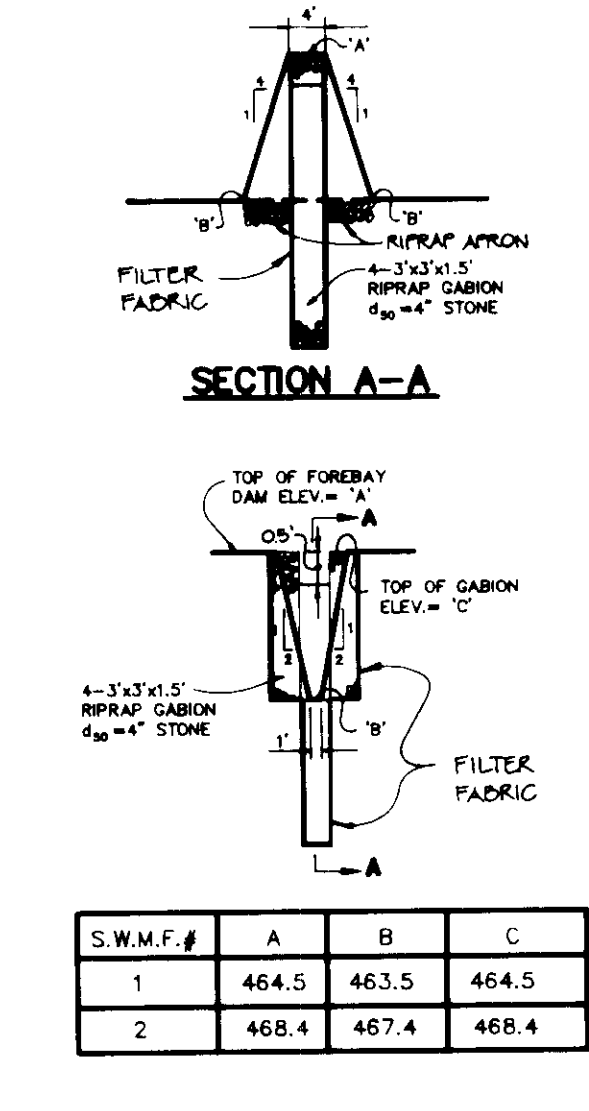
S.W.M. FACILITY #2 - PROFILE THROUGH PRINCIPAL SPILLWAY

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



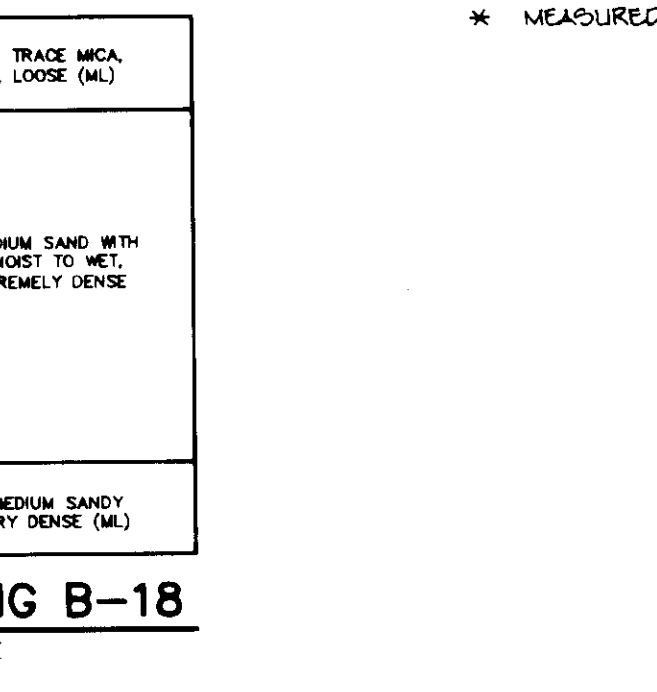
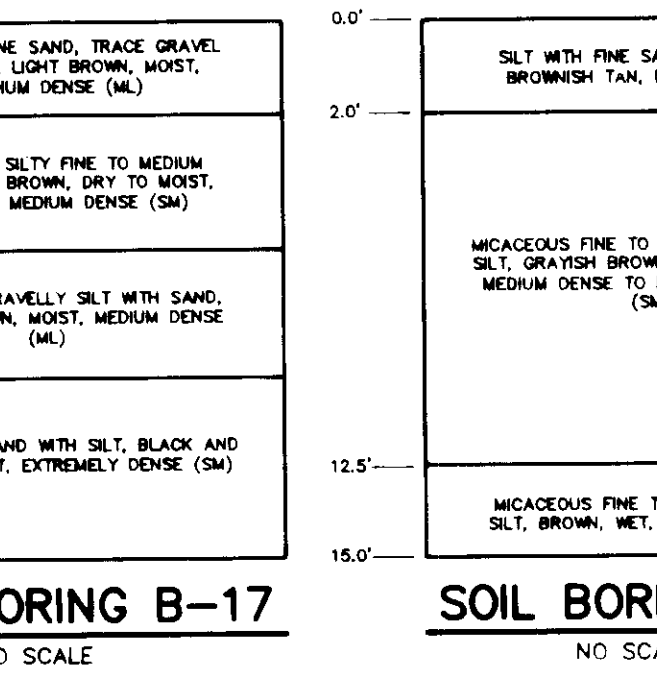
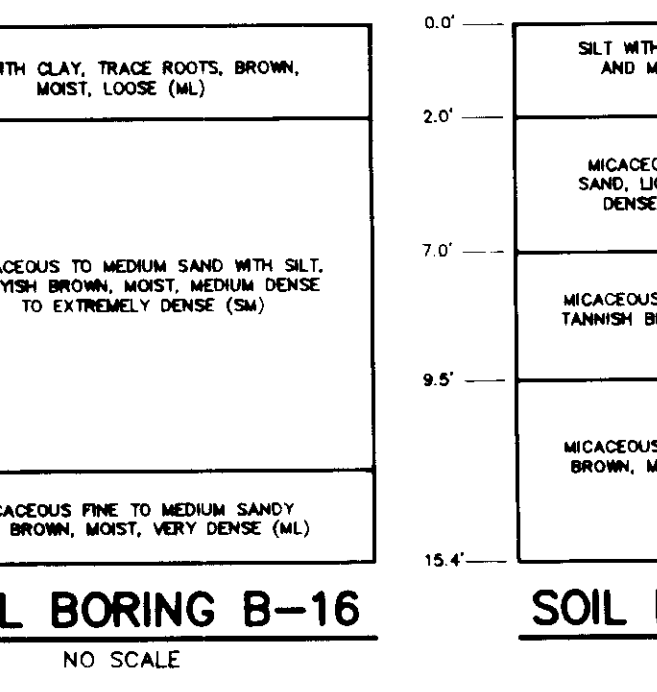
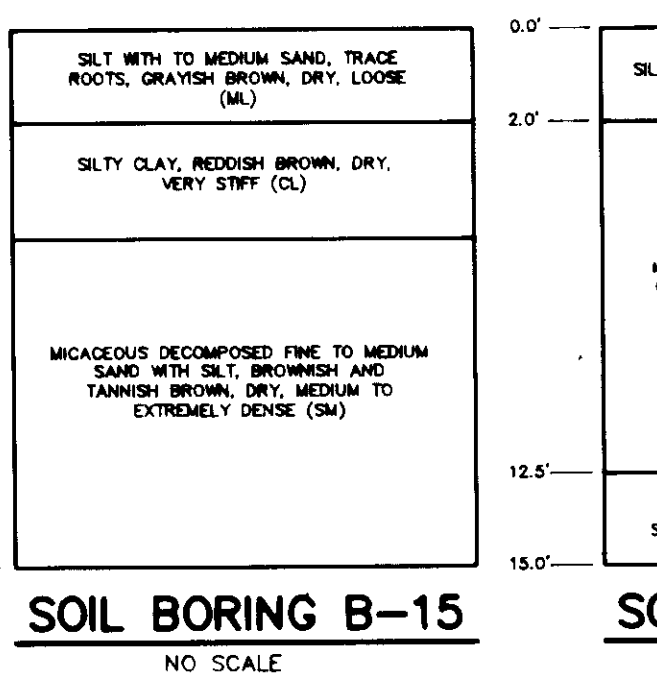
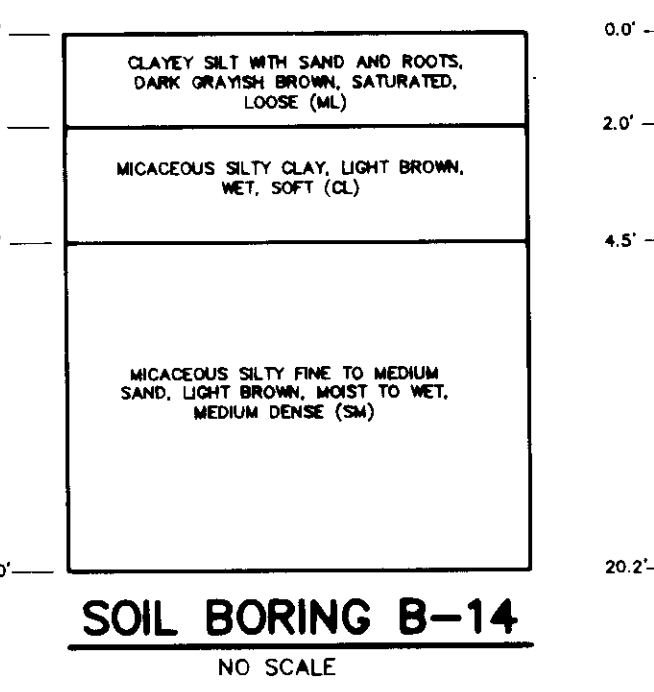
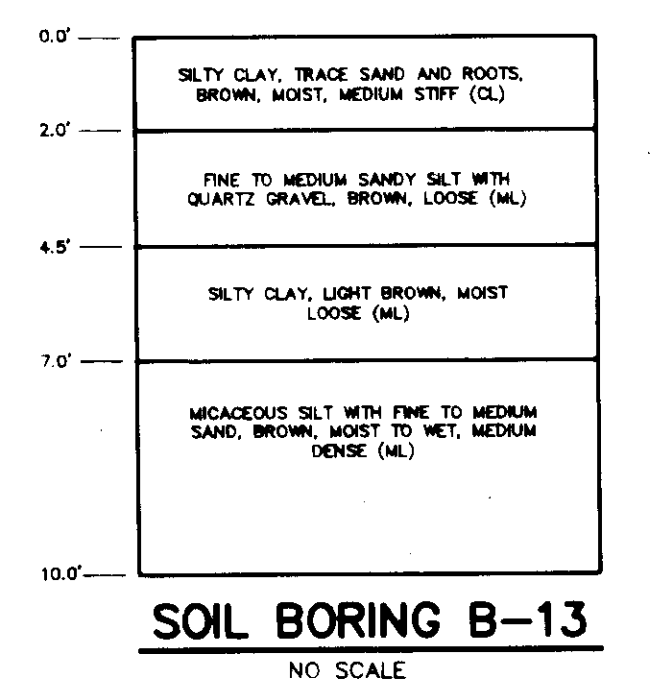
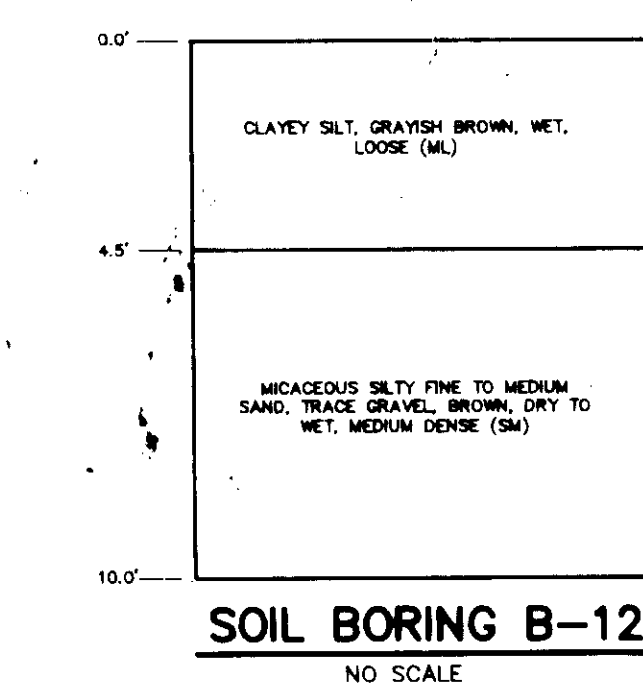
PROFILE OF CULVERT #1

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



RIP-RAP GABION DETAIL

STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION #	INV. IN	INV. OUT	TOP ELEVATION	REMARKS
1-1	A-5 INLET	N 530748.08 E 824618.48	468.88	468.88	474.10	SEE HO. CO. STD. DETAIL SD 4.01
1-2	A-5 INLET	N 530682.86 E 824487.10	470.15	469.85	476.10	SEE HO. CO. STD. DETAIL SD 4.01
1-3	10" INLET	N 530774.44 E 824432.86	470.84	470.84	477.30	SEE HO. CO. STD. DETAIL SD 4.11 OPEN ON ALL SIDES
1-4	10" INLET	N 530627.70 E 824352.43	472.00	476.50	476.50	SEE HO. CO. STD. DETAIL SD 4.11 OPEN ON ALL SIDES
1-5	5" INLET	N 530497.08 E 824358.45	473.00	477.00	477.00	SEE HO. CO. STD. DETAIL SD 4.22
1-6	A-5 INLET	N 530571.42 E 824540.97	472.36	472.11	478.40	SEE HO. CO. STD. DETAIL SD 4.01
1-7	A-5 INLET	N 530486.82 E 824557.50	474.50	477.80	477.80	SEE HO. CO. STD. DETAIL SD 4.01
1-8	10" INLET	N 530501.87 E 824325.84	469.50	479.40	479.40	SEE HO. CO. STD. DETAIL SD 4.11 OPEN ON ALL SIDES
M-1	4'-8" DIA. STD. PRECAST MANHOLE	N 530675.56 E 824325.84	471.74	471.49	479.70	SEE HO. CO. STD. DETAIL G 5.12
M-2	4'-8" DIA. STD. PRECAST MANHOLE	N 530280.89 E 824158.04	467.71	465.22	470.75	SEE HO. CO. STD. DETAIL G 5.12
E-1	24" CONCRETE END SECTION	N 530771.25 E 824655.01	468.40	468.40	468.40	SEE HO. CO. STD. DETAIL SD 5.51
E-2	18" CONCRETE END SECTION	N 530242.25 E 824218.96	464.50	464.50	464.50	SEE HO. CO. STD. DETAIL SD 5.51
E-3	50" TYPE 'C' END WALL	N 531180.38 E 824219.03	470.25	470.25	470.25	SEE HO. CO. STD. DETAIL SD 5.21
E-4	50" TYPE 'C' END WALL	N 531192.42 E 824290.18	464.77	464.77	464.77	SEE HO. CO. STD. DETAIL SD 5.21
E-5	24" CONCRETE END SECTION	N 530090.83 E 824218.50	458.42	458.42	458.42	SEE HO. CO. STD. DETAIL SD 5.51
E-6	24" CONCRETE END SECTION	N 530804.12 E 824663.20	465.45	465.45	465.45	SEE HO. CO. STD. DETAIL SD 5.51
S-1	MODIFIED A/B INLET	N 530159.80 E 824257.04	SEE SHEET 10	AND HO CO STD DETAIL 4.01		
S-2	MODIFIED A/B INLET	N 530893.59 E 824770.20	SEE SHEET 10	AND HO CO STD DETAIL 4.01		



AS BUILT CERTIFICATE

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN 'AS-BUILT' PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Cathleen Conley Young 2/20/93
DEVELOPER DATE

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

Arthur E. Muegge 2-12-93
ENGINEER DATE

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

John A. Zickler 2/11/93
HOWARD SOIL CONSERVATION SERVICE DATE

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

Robert W. Zickler 2/11/93
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: FOR ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

Joseph M. Boyd 5/14/93
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James S. Smith 5/12/95
DIRECTOR DATE

Anna Kilonath 5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS

James G. Smith 5/14/93
DIRECTOR DATE

William J. Smith 5-9-93
CHIEF, BUREAU OF ENGINEERING M.K. SMITH DATE

DATE	NO.	REVISION

OWNER/DEVELOPER: BOARD OF EDUCATION OF HOWARD COUNTY, 10910 ROUTE 10P, ELLICOTT CITY, MARYLAND 21047

PROJECT: NORTHERN ELEMENTARY SCHOOL II

AREA: TAX MAP 1F, PARCEL 44, 3rd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

TITLE: S.W.M. PROFILES AND STORM DRAIN PROFILES

RIEMER MUEGGE & ASSOCIATES, INC.
A Land Planning, Engineering and Consulting Firm
8818 Centre Park Drive • Suite 200 • Columbia, Md 21045
410-997-8900 FAX: 410-997-9282

2-12-93
DATE

DESIGNED BY: JTD
DRAWN BY: DBS
PROJECT NO.: 77910
DATE: FEBRUARY 12, 1993
SCALE: AS SHOWN
DRAWING NO.: 8 OF 21

Arthur E. Muegge
ARTHUR E. MUEGGE

POND CONSTRUCTION

SPECIFICATIONS
These specifications are appropriate to all ponds within the scope of the Standard for Practice No. 375. All references to ASTM and AASHTO specifications apply to the most recent version.

SITE PREPARATION
Areas designated for borrow areas, embankment and structural works shall be cleared, grubbed and stripped of top soil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and areas breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, stumps, rocks and other objectionable material. Areas otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry streambeds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as approved by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

EARTH FILL
Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment and out of trench shall conform to Unified Soil Classification C-1, SC, CH or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be accreted prior to placement of fill. Fill material shall be placed in maximum 8-inch lifts (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The material shall be placed and compacted concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the surface of the embankment is not damaged by not less than one track load of the equipment or compaction shall be obtained by a minimum of four complete passes of a sheepsfoot roller or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture such that if formed into a ball it will not crumble when dry so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density as determined by the Standard Proctor test. Each layer of fill shall be compacted as necessary to obtain that density, and it to be certified by the Engineer. The time of compaction shall be determined by AASHTO Method T-99.

Outfall Trench - The outfall trench shall be excavated into impervious material such as bedrock or tillite to a depth of 4 feet below the bottom of the trench. The bottom width of the trench shall be governed by the equipment used for excavation. The trench shall be excavated to a depth of 4 feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or steeper.

The back fill shall be compacted with construction equipment, rollers, or hand tampers to secure maximum density and minimum permeability.

STRUCTURE BACKFILL
Backfill adjacent to pipe or structure shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to be completely air-dried and compacted. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

PIPE CONDUITS
All pipes shall be castor in rock section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

- Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with water-tight coating bands. Any bituminous coating damaged or otherwise voided shall be repaired with cold applied bituminous coating compound. Steel pipe with polymeric coatings shall have a minimum coating thickness of 1/16" on the inside and 1/8" on the outside of the pipe. The following coatings or on approved equal may be used: Nepon, Plast-Coat, Blue-Coat, and Burt-Coat. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.
- Coating bands, anti-seep collars, and sections, etc., must be composed of the same material as the pipe. Seals must be provided from dissimilar materials with use of rubber or plastic insulating materials at least 24" x 24" in thickness.
- Connections - All connections with pipe must be completely watertight. The drain pipe or bore connection to the rear shall be welded or ground when the pipe and rear are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Concrete bands are not considered to be watertight.
- All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be provided an adequate number of corrugations to accommodate the gasket width. The following type connections are acceptable for pipe less than 48" in diameter. For pipe 48" and larger, the pipe, a 12" wide standard top type band with 12" wide by 3/8" thick closed cell circular expanded polystyrene or other approved foam band with D-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipe 48" in diameter and larger shall be connected by 24" long standard corrugated band using rods and nuts. A 12" wide by 3/8" thick closed cell circular expanded polystyrene or other approved foam band with D-ring gaskets shall be used on each pipe for a total of 24". Heavily corrugated pipe shall have either continuous welded seams or flow lock joints.
- Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, sandy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling shall conform to "Structure Backfill".
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

- Materials - Reinforced concrete pipe shall have ball and joint joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is C-362.
- Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high strength concrete placed under the pipe and up to the top of the pipe of least 12" of its outside diameter with a minimum thickness of 3" below, or as shown on the drawings.
- Laying pipe - Ball and joint pipe shall be placed with the ball and upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire length, the bedding shall be placed. After the bedding is placed, the pipe shall be searched to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the rear.
- Backfilling shall conform to "Structure Backfill".
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

- Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.
- Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, sandy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling shall conform to "Structure Backfill".
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

CARE OF WATER DURING CONSTRUCTION

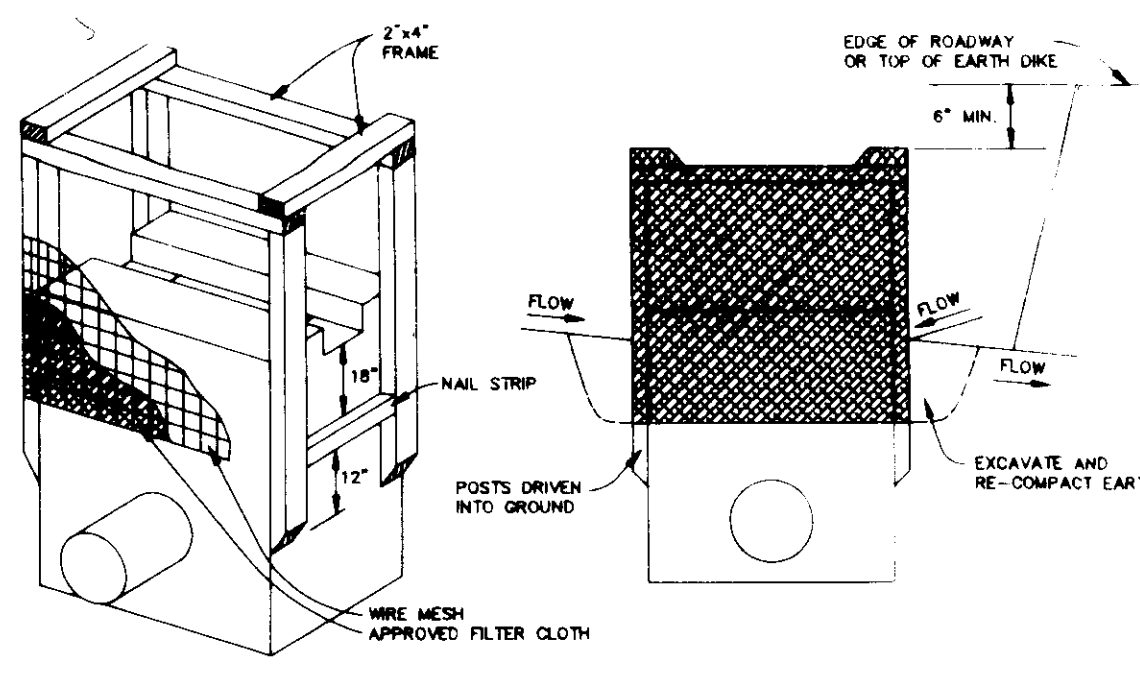
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumps and other equipment required for removal of water from the various parts of the work and for maintaining the excavation, foundation, and other parts of the work free from water or saturated or directed by the engineer for construction work part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the reservoir or outlet works and so not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level of the locations being filled shall be maintained below the bottom of the excavation of such locations which may require draining the water to pumps from which the water shall be pumped.

STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a dry condition. All exposed surfaces of the embankment, delivery area and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

EROSION AND SEDIMENT CONTROL

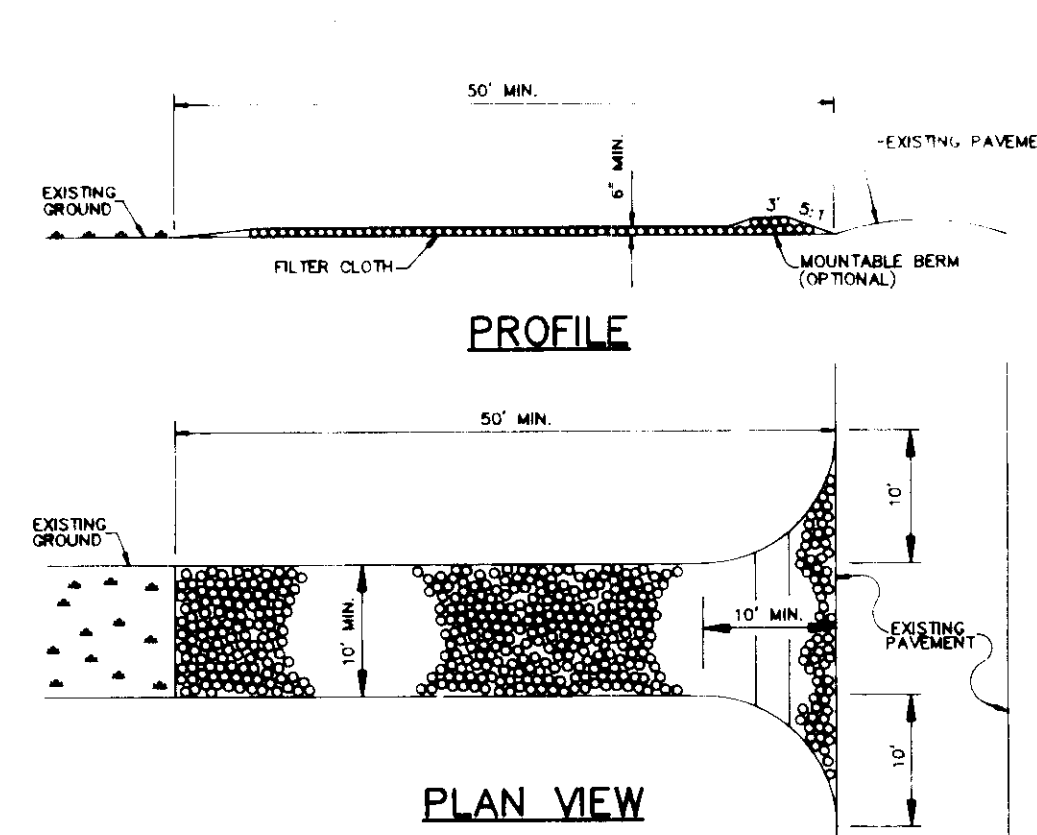
Construction operations will be carried out in such a manner that erosion will be controlled and water and sediment minimized. Storm and local low causing pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.



CONSTRUCTION SPECIFICATIONS

- WOODEN FRAME IS TO BE CONSTRUCTED OF 2" x 4" CONSTRUCTION GRADE LUMBER.
- WIRE MESH MUST BE OF SUFFICIENT STRENGTH TO SUPPORT FILTER FABRIC, WITH WATER FULLY IMPOUNDED AGAINST IT.
- FILTER CLOTH MUST BE OF A TYPE APPROVED FOR THIS PURPOSE, RESISTANT TO WASHOUT WITH SEIVE SIZE, EOC, 40-60, TO ALLOW SUFFICIENT PASSAGE OF WATER AND REMOVAL OF SEDIMENT.
- STONE IS TO BE 2" IN SIZE AND CLEAN, SAND FINES WOULD LOGG THE CLOTH.
- PROCEDURE (FOR A SMALL DIKING OR YARD INLET PROTECTION):
 - EXCAVATE COMPLETELY AROUND INLET TO A DEPTH OF 18" BELOW NOTCH PREPARATION.
 - DRIVE 2" x 4" POST INTO GROUND AT FOUR CORNERS OF INLET. PLACE NAIL STRIPS BETWEEN POSTS ON DRIVE IN INLET. ASSEMBLE TOP PORTION OF 2" x 4" FRAME USING OVERLAP JOINT SHOWN. TOP OF FRAME (WORN) MUST BE 6" BELOW EDGE OF ROADWAY SURFACE OR TOP OF EARTH DIKE.
 - STRETCH WIRE MESH TIGHTLY AROUND FRAME AND FASTEN SECURELY. ENDS MUST MEET AT POST.
 - STRETCH FILTER CLOTH TIGHTLY OVER WIRE MESH. THE CLOTH MUST EXTEND FROM TOP OF FRAME TO 18" BELOW INLET NOTCH ELEVATION. FASTEN SECURELY TO FRAME AND STRETCH TIGHT. ENDS MUST MEET AT POST AND FOLDED, THEN FASTENED DOWN.
 - BACKFILL AROUND INLET IN COMPACTED 6" LAYERS UNTIL LAYER OF EARTH IS EVEN WITH NOTCH ELEVATION ON DRIVE AND TOP ELEVATION ON SIDES.
 - IF THE INLET IS NOT IN A LOW POINT, CONSTRUCT A COMPACTED EARTH DIKE IN THE DIKING LINE BELOW IT. THE TOP OF THIS DIKE IS TO BE AT LEAST 6" BELOW EDGE OF ROADWAY SURFACE OR TOP OF EARTH DIKE.
 - THIS STRUCTURE MUST BE INSPECTED FREQUENTLY AND THE FILTER FABRIC REPLACED WHEN CLOGGED.

STONE FILTER INLET PROTECTION

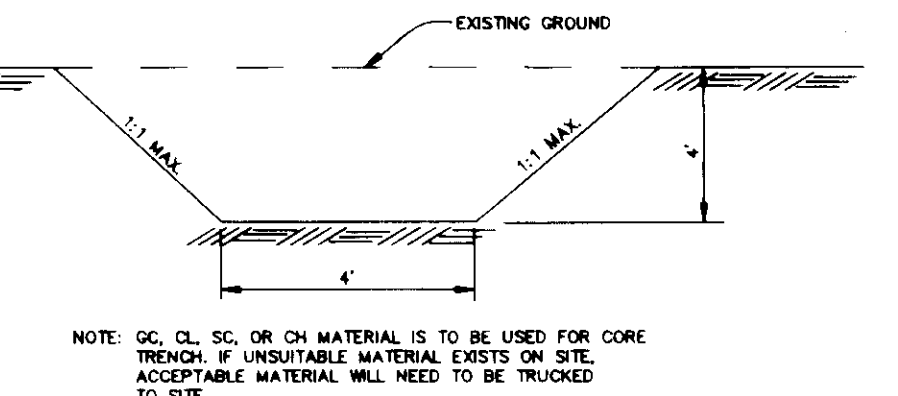


CONSTRUCTION SPECIFICATIONS

- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent, in a 30 foot maximum width.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot maximum would apply).
- Thickness - Not less than six (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width of points where ingress and egress occur.
- Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter cloth will be required on a single family residence lot.
- Surface Water - All surface water flowing or directed toward construction entrance shall be placed across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic cleaning with additional stone as conditions demand and repair and/or removal of any measures used to trap sediment. All sediment applied, dropped, spilled or tracked onto public rights-of-way must be removed immediately.
- Warning - Means shall be placed to remove sediment prior to entrance onto public rights-of-way, when warning is required. It shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE

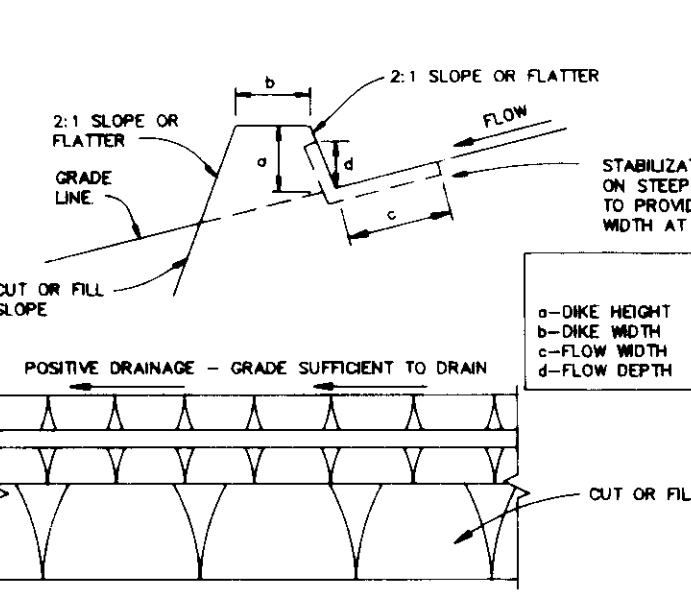
NO SCALE



CORE TRENCH DETAIL

NO SCALE

NOTE: GC, CL, SC, OR CH MATERIAL IS TO BE USED FOR CORE TRENCH IF AVAILABLE. OTHERWISE, ACCEPTABLE MATERIAL WILL NEED TO BE TRUCKED TO SITE.



PERSPECTIVE VIEW

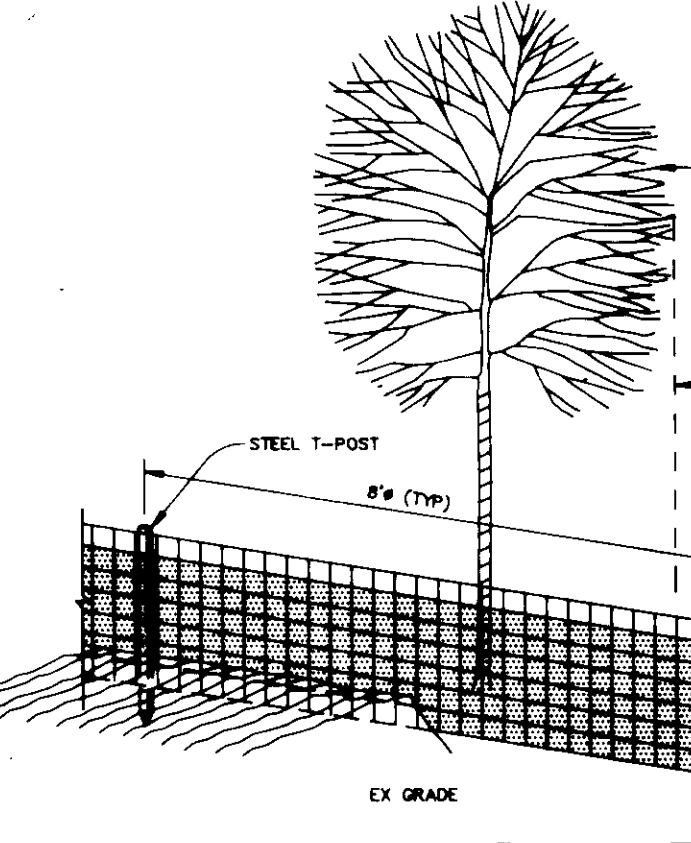
NO SCALE

CONSTRUCTION SPECIFICATIONS

- ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
 - ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
 - TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
 - FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
 - EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
 - STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW:
- | TYPE OF TREATMENT | CHANNEL GRADE | DIKE A | DIKE B |
|-------------------|---------------|----------------------------------|---|
| 1 | 0.5-3.0% | SEED & STRAW MULCH | SEED & STRAW MULCH |
| 2 | 3.1-5.0% | SEED & STRAW MULCH | SEED USING AITE, OR EXCELSDOR 500; 2" STONE |
| 3 | 5.1-8.0% | SEED WITH AITE, OR 500; 2" STONE | LINED RIPRAP 4-8" |
| 4 | 8.1-20% | LINED RIPRAP 4-8" | ENGINEERED DESIGN |
- STONE TO BE 2" INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3" INCHES IN THICKNESS AND PREPRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
 - RIPRAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PREPRESSED INTO THE SOIL.
 - APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
 - PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE

NO SCALE

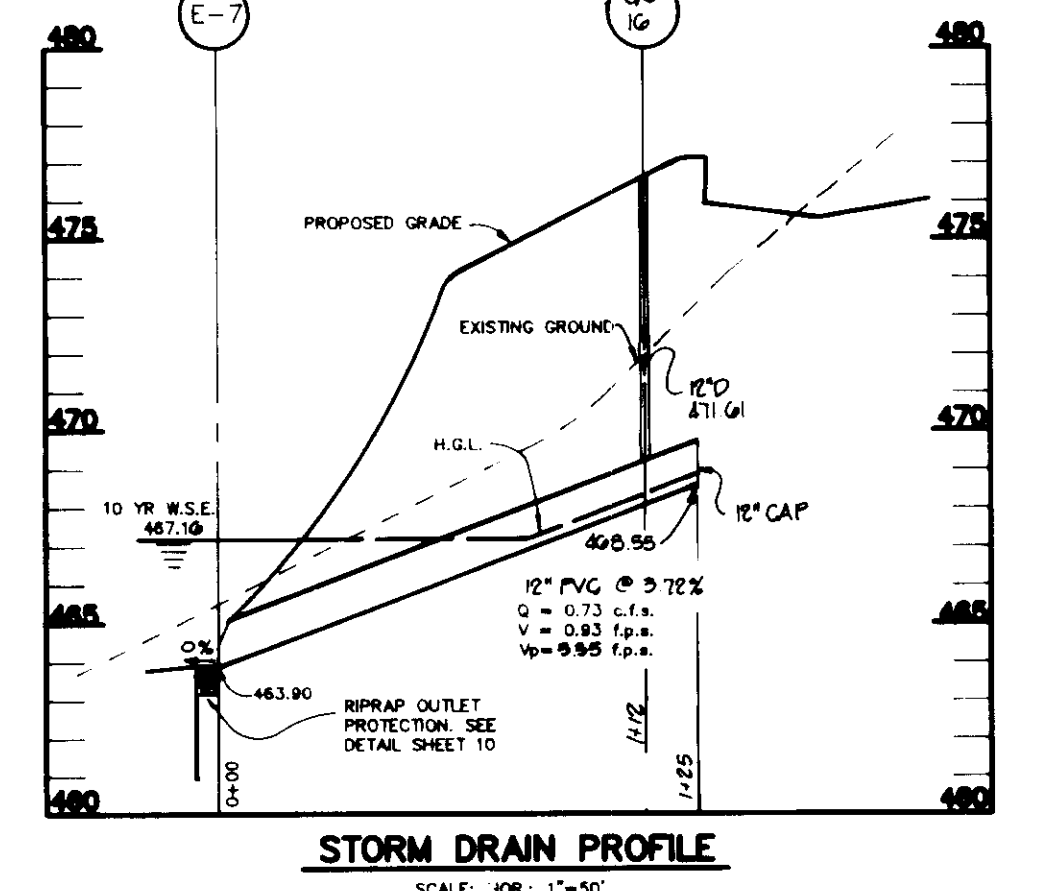


PROTECTIVE TREE FENCING ELEVATION DETAIL

NO SCALE

TREE PRESERVATION PROCEDURES

- THE EDGE OF WOODS TO BE PROTECTED WILL BE MARKED IN THE FIELD PER THE APPROVED SITE DEVELOPMENT PLAN PRIOR TO THE START OF CONSTRUCTION ACTIVITY.
- PROTECTIVE FENCING SHALL BE INSTALLED AT THE DRIP LINE OF THE EDGE OF WOODS. ALL AREAS WITHIN PROTECTIVE FENCES ARE TO BE CONSIDERED OFF LIMITS FOR ANY CONSTRUCTION OR ACTIVITY.
- PROTECTIVE FENCING WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR WILL AFFIX SIGNS TO THE FENCING INDICATING THAT THESE AREAS ARE TREES PRESERVED. THE GENERAL CONTRACTOR SHALL TAKE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING THE CONSTRUCTION CYCLE. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM MOVEMENT, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE, AND DRAINAGE OF SOLUTIONS CONTAINING MATERIALS HAZARDOUS TO TREE ROOTS.
- REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED. THE GENERAL CONTRACTOR SHALL BE PROHIBITED FROM PARKING ANY CONSTRUCTION EQUIPMENT, OR FROM STORING ANY BUILDING SUPPLIES OR EARTH STOCKPILES WITHIN THE TREE PRESERVATION AREAS.
- FOOT TRAFFIC, AS WELL AS VEHICULAR TRAFFIC, IN THE TREE PRESERVATION AREAS SHALL BE KEPT TO A MINIMUM. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TRAFFIC ON OR DESTROYED WITHIN THE TREE PRESERVATION AREAS, WHETHER CAUSED BY THE CONTRACTOR, HIS AGENTS, EMPLOYEES, SUB-CONTRACTORS, OR LICENSEES.
- CONSTRUCTION ACTIVITIES EXPRESSLY RESTRICTED WITHIN THE TREE PRESERVATION AREAS: PLACING BACKFILL IN PROTECTED AREAS; FELLING TREES INTO PROTECTED AREAS; DRIVING CONSTRUCTION EQUIPMENT INTO OR THROUGH PROTECTED AREAS; BURNING IN OR IN CLOSE PROXIMITY TO PROTECTED AREAS; STACKING OR STORING SUPPLIES IN PROTECTED AREAS; CONDUCTING TRENCHING OPERATIONS IN PROTECTED AREAS; GRADING BEYOND THE LIMITS OF DISTURBANCE.
- THE GENERAL CONTRACTOR SHALL PROVIDE A WASH AREA FOR CONCRETE TRUCKS ON SITE, WHICH WILL NOT DRAIN TOWARDS A PROTECTED AREA.
- ALL TREES WHICH ARE NOT TO BE PRESERVED WITHIN FIFTY FEET OF ANY TREE PRESERVATION AREA ARE TO BE REMOVED. IF A MARKER THAT WILL NOT DAMAGE THOSE TREES THAT ARE DESIGNATED FOR PRESERVATION, IT IS HIGHLY RECOMMENDED THAT TREE STUMPS WITHIN THIS FIFTY FOOT AREA BE GROUND OUT WITH A STUMP GRINDING MACHINE TO MINIMIZE DAMAGE.



STORM DRAIN PROFILE

SCALE: VERT. = 1"=5'

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- Woven wire fence to be fastened securely to fence posts with wire ties or staples.
 - Filter cloth to be fastened securely to woven wire fence with ties spaced every 24" of top and mid section.
 - When two sections of filter cloth overlap, each other they shall be overlapped by at least 6 inches and folded.
 - Material shall be determined as needed and material removed when "bulges" develop in the filter fabric.
- POSTS: Steel, with T or U type or 2" hardwood.
- FENCE: Woven wire, 14 1/2" x 6" mesh main opening.
- FILTER CLOTH: Filter M-1000, Stabilizer T1400 or approved equal.
- PREPARATION: Soil: Grade, Evidence of approved equal.

SILT FENCE DETAIL

NO SCALE

TEMPORARY SEEDING
Seedbed Preparation
When the area to be seeded has been recently loosened to the extent that no additional treatment is required. However, when the area to be seeded is rocky, crusted, and hard, the top 3 inches of soil shall be removed by digging, rolling or other acceptable means before seeding.

Soil Amendments
For temporary seedings, fertilizer shall be applied at the rate of 800 LBS per acre (150 LBS/1000 SF) of annual ryegrass. Soil which are highly acidic shall be limed.

Seeding
For periods March 1 thru April 30 and August 15 thru November 15: Seed with 2 1/2 BU per acre (3.2 LBS/1000 SF) of annual ryegrass.
For the period May 1 thru August 14: Seed with 3 LBS per acre (4.0 LBS/1000 SF) of Annual Ryegrass.
For the period November 16 thru February 28, protect site by applying 2 tons per acre of well-mulched straw mulch and seed as soon as possible in the spring, or use no seed.

Apply seed uniformly with a cyclone seeder, drift, outdragger seeder or hydroseeder (heavy includes seed and fertilizer) on a firm, moist seedbed. Seeding shall be done by hand if necessary.

PERMANENT SEEDING
(MINIMUM SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS)
Seedbed Preparation: Top area and slope up to 3:1 slope shall be loose and friable to a depth of at least 3 inches. The top layer of soil shall be loosened by raking, digging or other acceptable means before seeding. Slopes steeper than 3:1 shall have the top 1 to 3 inches of soil loose and friable before seeding.

Soil Amendments: Use one of the following schedules:
Lime and fertilizer according to soil tests. Lime and fertilizer needs can be determined by a soil testing laboratory, such as the University of Maryland's Soil Testing Laboratory.

ON SLOPES STEEPER THAN 3:1, THE LINE AND FERTILIZER SHALL BE WORKED THE BEST WAY POSSIBLE ON THE SLOPE. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE CONTOUR, WHEREVER FEASIBLE. NO FERTILIZER SHOULD BE APPLIED TO ANY DISKED AREA TO MAKE THE SOIL SURFACE SMOOTH AFTER DISKING.

SEEDING:
FOR THE PERIOD MARCH 1 THRU OCTOBER 15, SEED WITH 240 LBS PER ACRE (87.5 LBS/1000 SF) OF ANNUAL RYEGRASS.
1. CERTIFIED PERMANENT GRASS SEED SHALL CONSIST OF TALL FESCUE MIX CONSISTING OF 50% 25% 50% OF THREE (3) OF THE FOLLOWING: VARIETIES OF TALL FESCUE: APTAGUE, DONAZA, OLYMPIA, KENTUCKY 31, SHORTTOW OR REBELS, OR 10% ENDORGYTIC TALL FESCUE (BONNA) AND 40% DISHMAN/ANNUAL RYEGRASS (C-10). TWILIGHT SEED MIX TO BE USED IN PART EQUAL MIX TO INCLUDE AT LEAST ONE VARIETY OF ENDOGYTIC TALL FESCUE.
2. CERTIFIED PERMANENT GRASS SEED FOR SLOPES EXCEEDING 1:4 SHALL CONSIST OF ONE OF THE FOLLOWING: APTAGUE, DONAZA, OLYMPIA, KENTUCKY 31, SHORTTOW OR REBELS, OR 10% ENDORGYTIC TALL FESCUE (BONNA) AND 40% DISHMAN/ANNUAL RYEGRASS (C-10). TWILIGHT SEED MIX TO BE USED IN PART EQUAL MIX TO INCLUDE AT LEAST ONE VARIETY OF ENDOGYTIC TALL FESCUE.
FOR THE PERIOD OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY 2 TONS PER ACRE OF WELL-MULCHED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.

AS BUILT (FERTILIZED)

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Cathleen Conley Young 2/22/93
DEVELOPER

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

Arthur E. Muegge 2-12-93
ENGINEER

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

Diana M. Feltner 2/15/93
U.S. SOIL CONSERVATION SERVICE DNR

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

Robert W. Zim 3/3/93
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: FOR ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

Joyce M. Boyd and Patricia J. ... 5/14/93
COUNTY HEALTH OFFICER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James R. ... 5/12/93
DIRECTOR

Anna ... 5/11/93
CHIEF, DIVISION OF ENVIRONMENTAL PLANNING AND LAND DEVELOPMENT

APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS

James ... 5-7-93
DIRECTOR

James ... 5-7-93
CHIEF, BUREAU OF ENGINEERING

DATE	NO.	REVISION

OWNER/DEVELOPER: BOARD OF EDUCATION OF HOWARD COUNTY, 10910 ROUTE 100, ELICHTON CITY, MARYLAND 21114

PROJECT: NORTHERN ELEMENTARY SCHOOL II

AREA: TAX MAP 7E PARCEL 44 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

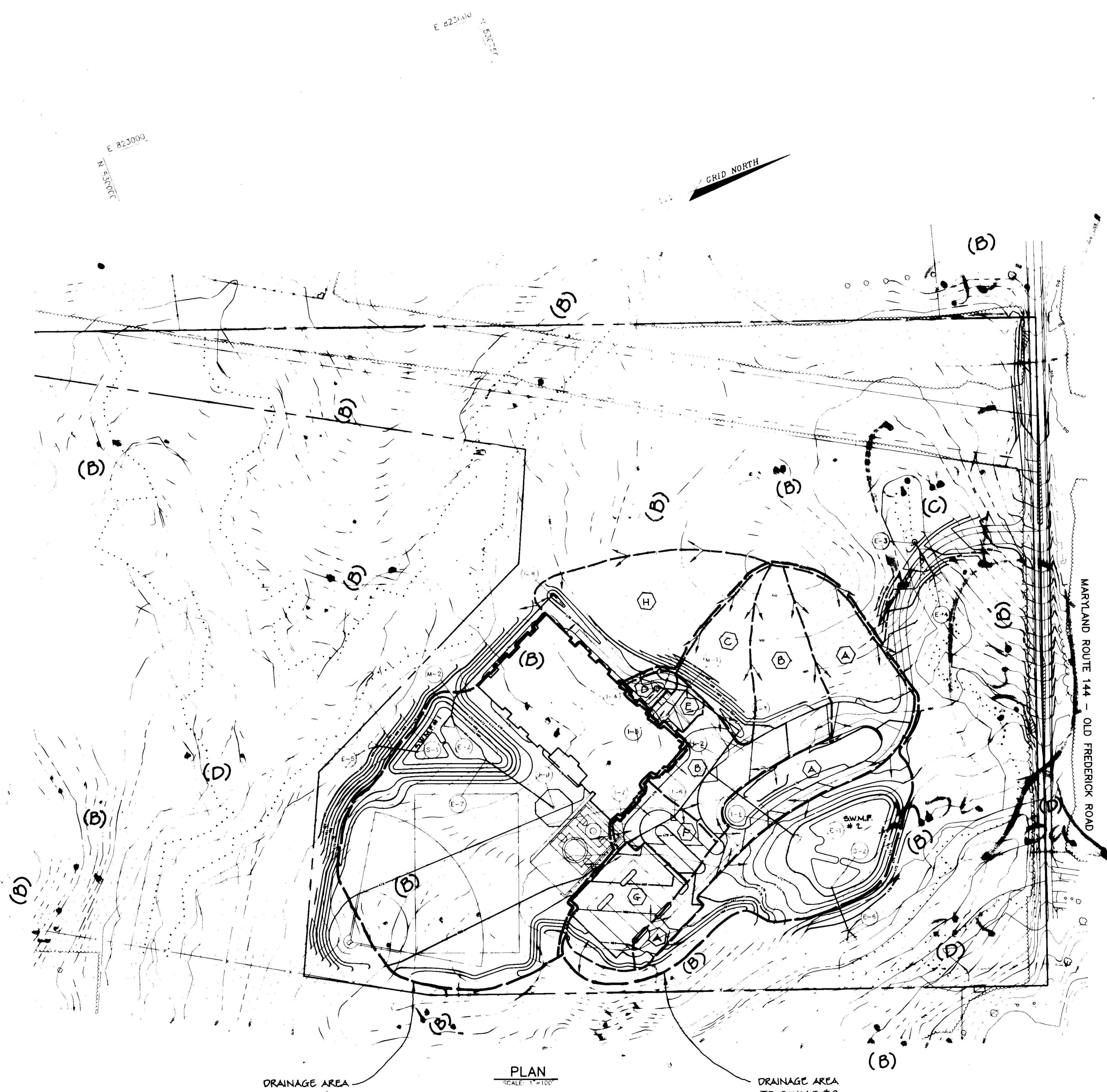
TITLE: SEDIMENT CONTROL NOTES AND DETAILS

RIEMER MUEGGE & ASSOCIATES, INC. A Land Planning, Engineering and Consulting Firm 8818 Centre Park Drive • Suite 200 • Columbia, Md 21045 410-997-8900 FAX: 410-997-9262

2-12-93
DATE

DESIGNED BY: JTD
DRAWN BY: DBS
PROJECT NO.: 77910
DATE: FEBRUARY 12, 1993
SCALE: AS SHOWN
DRAWING NO.: 9 OF 10

Arthur E. Muegge 8707



SOILS LEGEND

SOIL TYPE	SOIL GROUP
Ds	D
CgD2	B
CgC2	B
ChD2	B
GlD2	B
GmD2	C
Ha	D
MID2	B

DRAINAGE AREA DATA				
INLET NO.	LABEL	AREA	"C"	% IMP.
I-1	A	1.89	0.47	40
I-2	B	0.59	0.66	69
I-3	C	0.59	0.21	0
I-4	D	0.15	0.34	20
I-5	E	0.14	0.86	100
I-6	F	0.37	0.71	78
I-7	G	0.68	0.74	81
I-8	H	1.47	0.22	2

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS.
George M. Boyd 5/4/93
 COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Joseph R. Smith 5/12/93
 DIRECTOR DATE

Emma J. Belmont 5/11/93
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
James J. Smith 5/7/93
 DIRECTOR DATE

William E. Pugh 5-7-93
 CHIEF, BUREAU OF ENGINEERING DATE

DATE	NO.	REVISION

OWNER/DEVELOPER
 BOARD OF EDUCATION OF HOWARD COUNTY
 10810 ROUTE 108
 ELICOTT CITY, MARYLAND 21043

PROJECT
NORTHERN ELEMENTARY SCHOOL II

AREA
 TAX MAP 16
 PARCEL 44
 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
DRAINAGE AREA MAP

RIEMER MUEGGE & ASSOCIATES, INC.
 A Land Planning, Engineering and Consulting Firm
 8818 Centre Park Drive • Suite 200 • Columbia, Md 21043
 410-997-8900 FAX: 410-997-9282

DATE 2-12-93	DESIGNED BY: JTB
	DRAWN BY: DBS
	PROJECT NO: 77910
	DATE FEBRUARY 12, 1993
	SCALE: 1" = 100'
	DRAWING NO. 11 OF 12

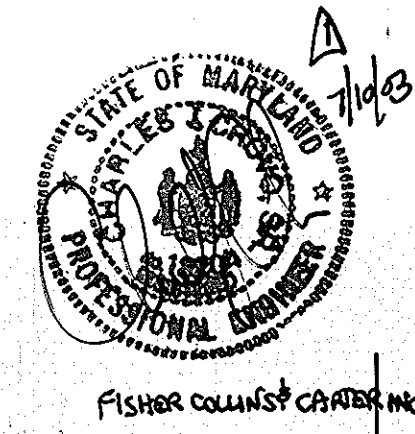
ARTHUR E. MUEGGE 2/18/93

DRAINAGE AREA TO SW.M.F.#1

PLAN
SCALE: 1"=100'

DRAINAGE AREA TO SW.M.F.#2

NO.	REVISION DESCRIPTION	DATE
1	CLASSROOM ADDITION, KINDERGARTEN ADDITION, CAFETERIUM ADDITION & PARKING ADDITION. REVISE STORM DRAIN AT CLASSROOM ADDITION. ADD 4-FOOT CONCRETE SIDEWALK TO MID. ROUTE 104.	7/10/03
2	INDICATE PUBLIC 8" & 6" WATER MAINS & APPURTANCES WITHIN PUBLIC WATER & UTILITY EASEMENT AS CONSTRUCTED UNDER CONTRACT NO. 44-A111-D	9/20/06
3	INDICATE PRIVATE 6" WATER MAIN FOR THE PROVISION OF FIRE PROTECTION & DOMESTIC WATER SERVICE TO THE EXISTING SCHOOL	9/20/06



PLANT LIST

QTY	KEY	NAME	SIZE	REMARKS
15	AR	ACER RUBRUM 'OCTOBER GLORY' October Glory Red Maple	2 1/2" - 3" Cal. 12' - 14' Ht.	B & B Full Crown
20	CC	CERCIS CANADENSIS 'FOREST PANSY' Eastern Redbud	2" - 2 1/2" Cal. 12' - 14' Ht.	B & B
9	EA	EUONYMUS ALATUS Winged Euonymus	4' - 5' Ht.	B & B
6	HV	HAMAMELIS VERNALIS Vernal Witchhazel	4' - 5' Ht.	B & B
40	IB	ILEX CORNUTA 'BURFORDI' Burford Holly	7 Cal.	Cont.
6	IO	ILEX OPACA American Holly	7' - 8' Ht.	B & B or Cont.
10	PS	PINUS STROBUS White Pine	8' - 10' Ht.	B & B Natural
3	PA	PLATANUS ACERIFOLIA 'BLOODGOOD' London Planetree	2 1/2" - 3" Cal. 12' - 14' Ht.	B & B
7	QR	QUERCUS RUBRA Red Oak	2 1/2" - 3" Cal. 12' - 14' Ht.	B & B Full Crown
3	TC	TSUGA CANADENSIS Canadian Hemlock	8' - 10' Ht.	B & B
30	VR	VIBURNUM RHYTIDOPHYLLUM 'WILLOWOOD' Willowood Viburnum	4' - 5' Ht.	B & B or Cont.
4	ZS	ZELKOVA SERRATA 'VILLAGE GREEN' Japanese Zelkova	2 1/2" - 3" Cal. 12' - 14' Ht.	B & B Full Crown

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR
ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS.
Joyce M. Boyd 5/1/93
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND
ZONING.
James J. Suter 5/12/93
DIRECTOR DATE
Thomas J. Holonath 5/11/93
CHIEF, DIVISION OF COMMUNITY
PLANNING AND LAND DEVELOPMENT DATE

APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
James J. Suter 5/1/93
DIRECTOR DATE
Michael G. Riemer 5-7-93
CHIEF, BUREAU OF ENGINEERING M.G.R./HD DATE

DATE	NO.	REVISION

OWNER/DEVELOPER
BOARD OF EDUCATION
OF HOWARD COUNTY
10910 ROUTE 108
ELLCOTT CITY, MARYLAND 21043

PROJECT
NORTHERN ELEMENTARY SCHOOL II

AREA
TAX MAP 16
PARCEL 44
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

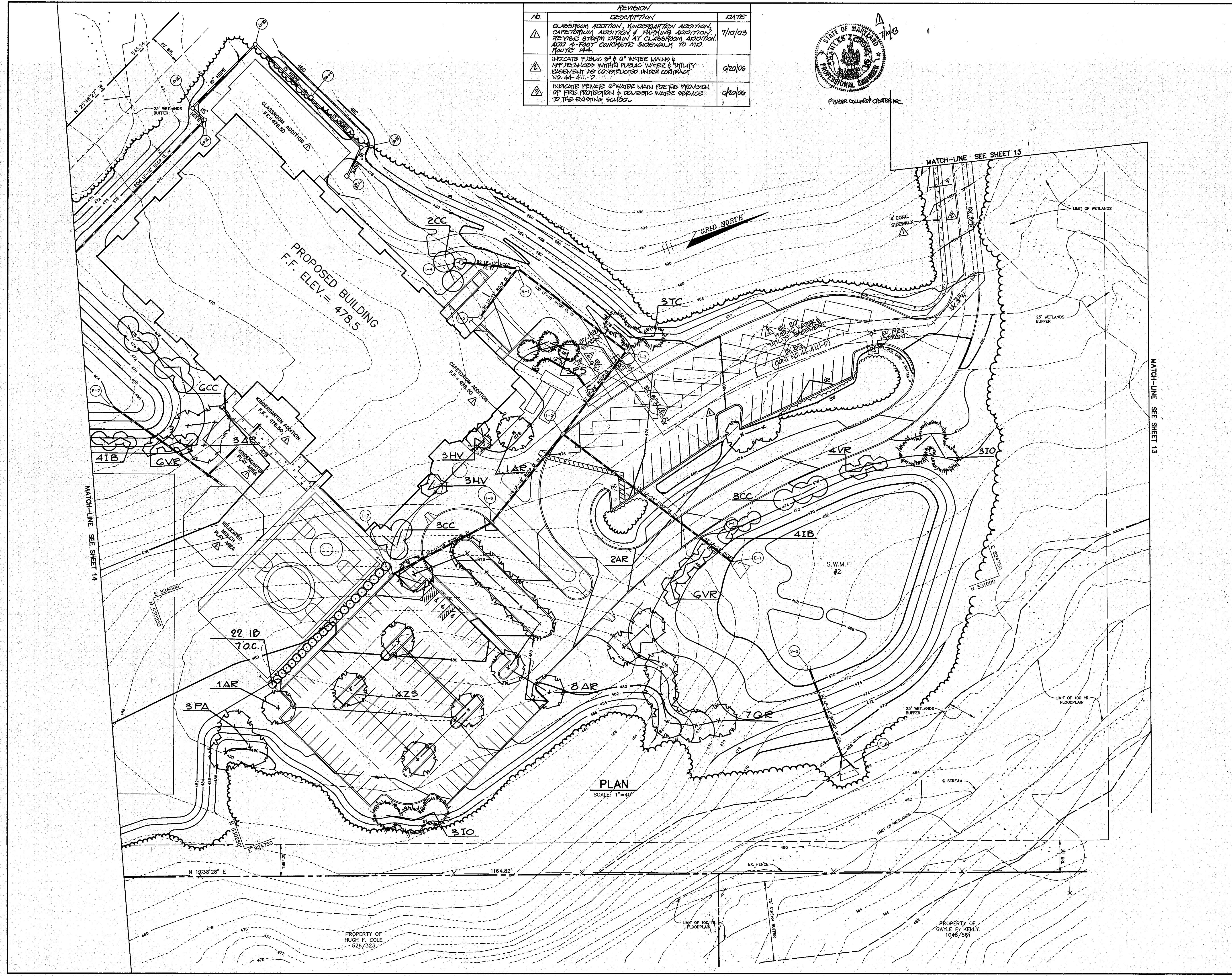
TITLE
LANDSCAPE PLAN

RIEMER MUEGGE & ASSOCIATES, INC.
A Land Planning, Engineering and Consulting Firm
8818 Centre Park Drive • Suite 200 • Columbia, Md 21045
410-997-8900 FAX: 410-997-9282

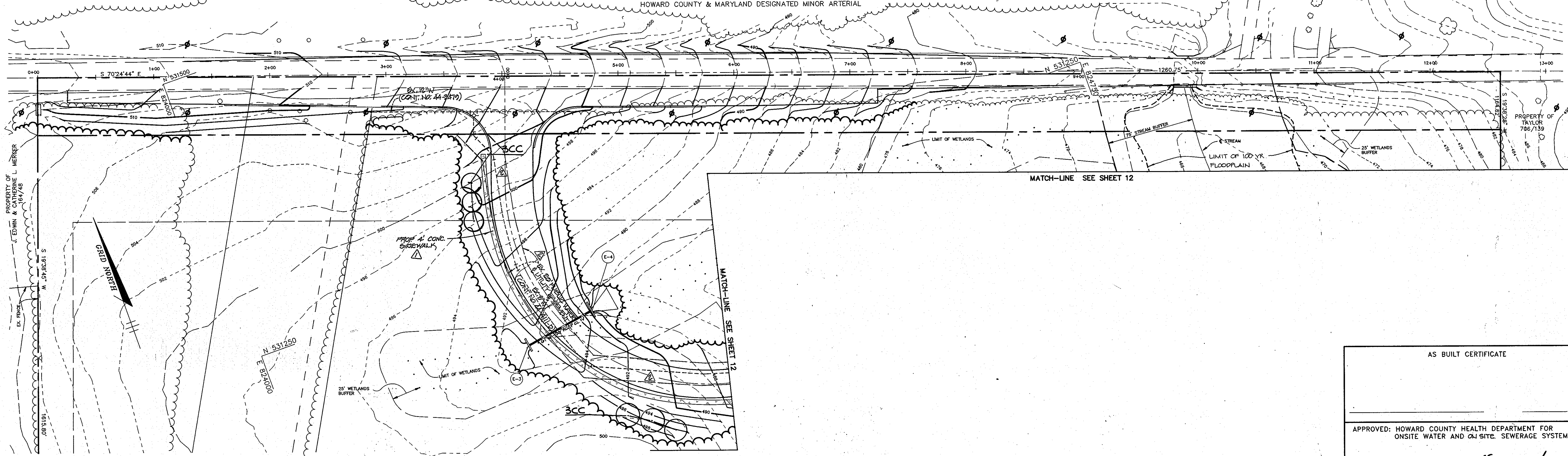
February 12, 1993
DATE

DESIGNED BY: DD
DRAWN BY: ZK
PROJECT NO: 77910
DATE: FEBRUARY 12, 1993
SCALE: 1" = 40'
DRAWING NO. 12 OF 21

STATE OF MARYLAND
REGISTERED LANDSCAPE ARCHITECT
MICHAEL G. RIEMER #201



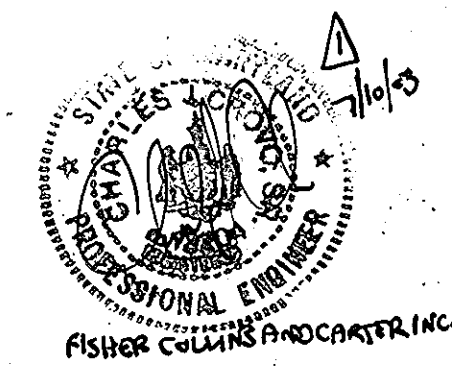
MARYLAND ROUTE 144 - OLD FREDERICK ROAD
 HOWARD COUNTY & MARYLAND DESIGNATED MINOR ARTERIAL



PLAN
 SCALE: 1" = 40'

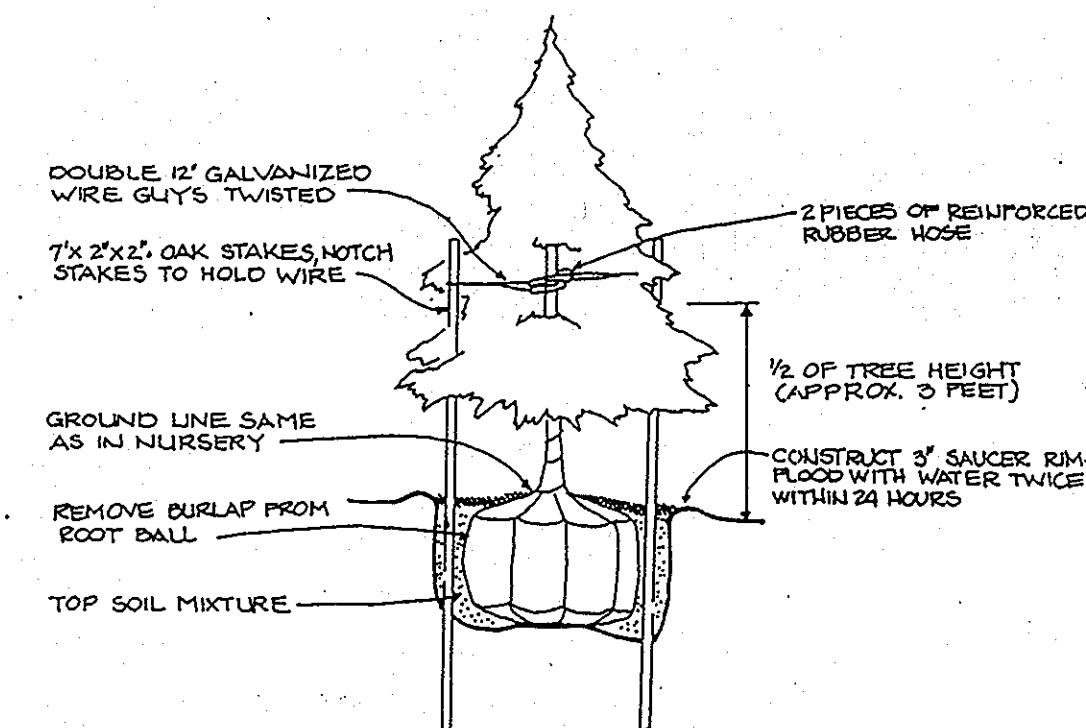
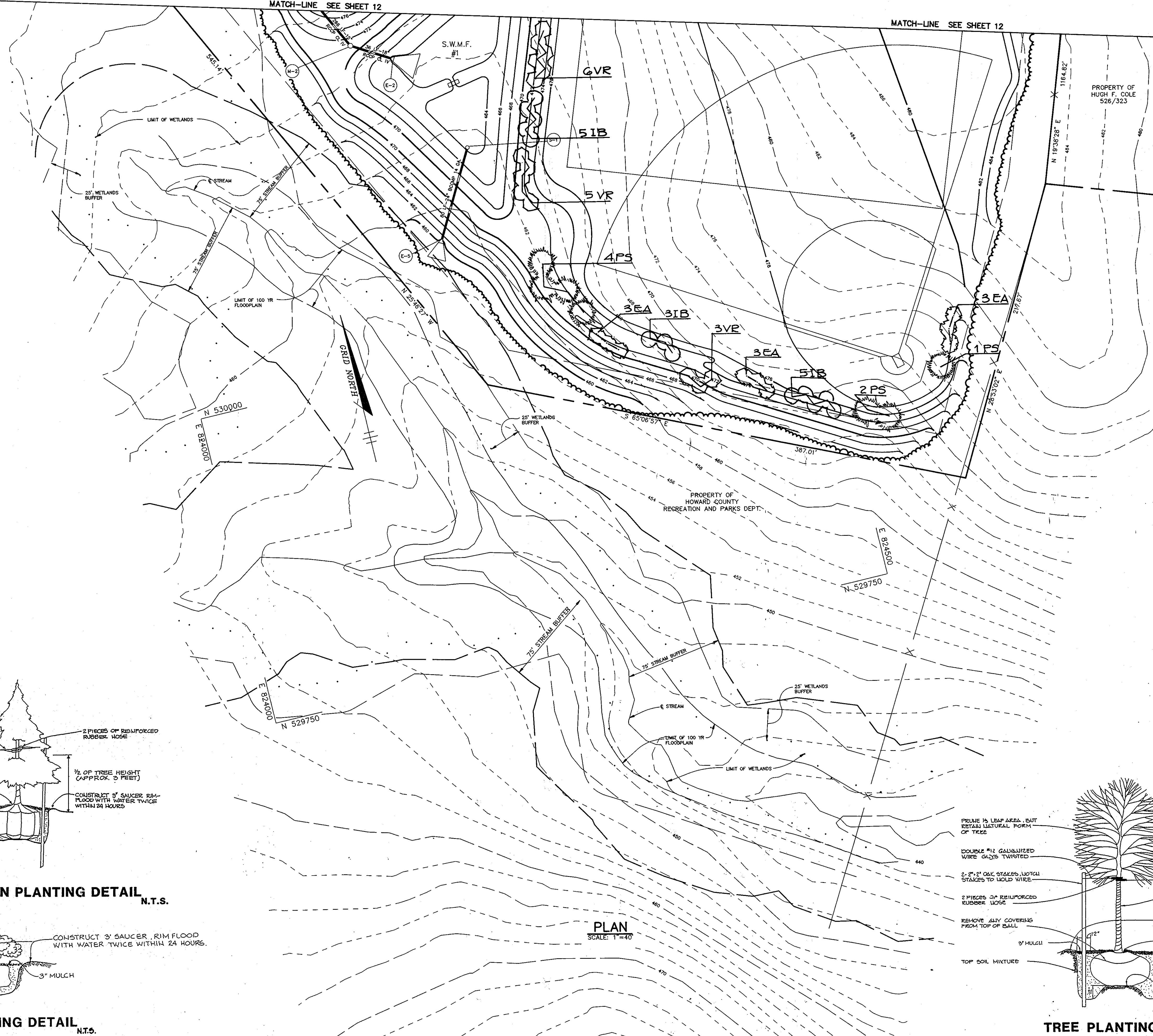
AS BUILT CERTIFICATE	
APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS.	
<i>Joyce M. Boyd</i> COUNTY HEALTH OFFICER	<i>5/4/93</i> DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>James L. Smith</i> DIRECTOR	<i>5/12/93</i> DATE
<i>Elmira J. Halimada</i> CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	<i>5/11/93</i> DATE
APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS	
<i>James J. ...</i> DIRECTOR	<i>5/1/93</i> DATE
<i>Michael G. Riemer</i> CHIEF, BUREAU OF ENGINEERING	<i>5-7-93</i> DATE
DATE NO.	REVISION
OWNER/DEVELOPER BOARD OF EDUCATION OF HOWARD COUNTY 10910 ROUTE 108 ELLCOTT CITY, MARYLAND 21043	
PROJECT NORTHERN ELEMENTARY SCHOOL II	
AREA TAX MAP 16 PARCEL 44 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
LANDSCAPE PLAN	
RIEMER MUEGGE & ASSOCIATES, INC. A Land Planning, Engineering and Consulting Firm 8818 Centre Park Drive • Suite 200 • Columbia, Md 21045 410-997-8900 FAX: 410-997-9282	

REVISION		No.	DESCRIPTION	DATE
INDICATE PUBLIC WATER MAIN & APPURTENANCES WITHIN PUBLIC WATER & UTILITY EASEMENT AS CORRELATED UNDER CONTRACT NO. AA-4111-D	4/20/06	1	ADD 4' CONCRETE SIDEWALK	JULY 10, 2003
NO.	DATE		DESCRIPTION	REVISION

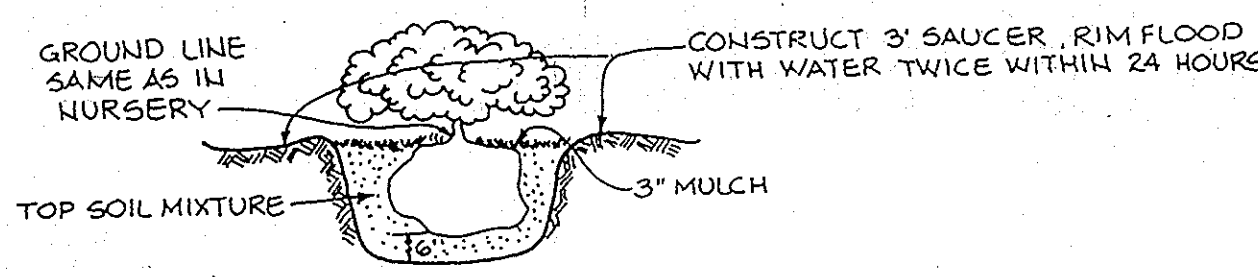


MATCH-LINE SEE SHEET 12

MATCH-LINE SEE SHEET 12

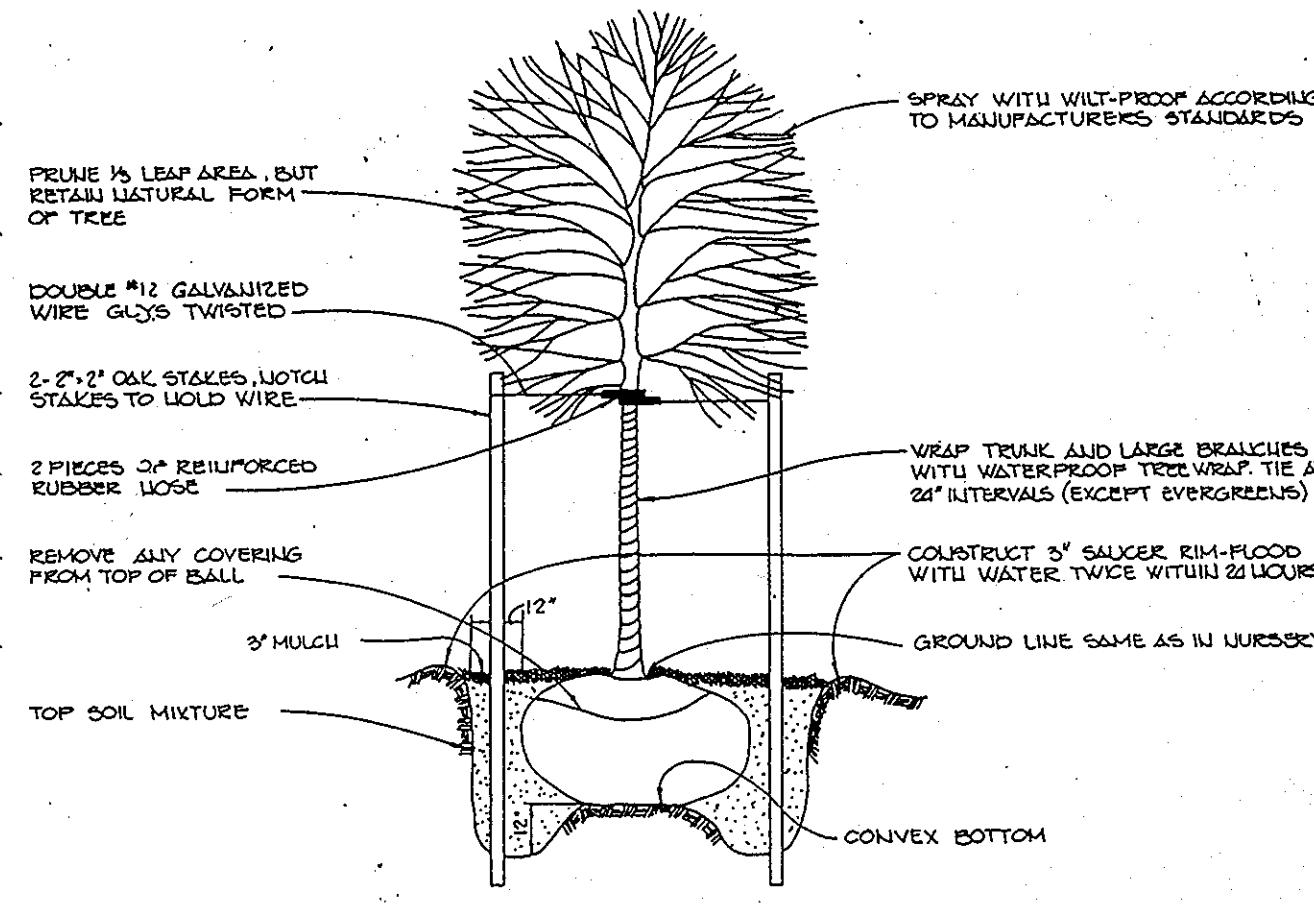


EVERGREEN PLANTING DETAIL N.T.S.



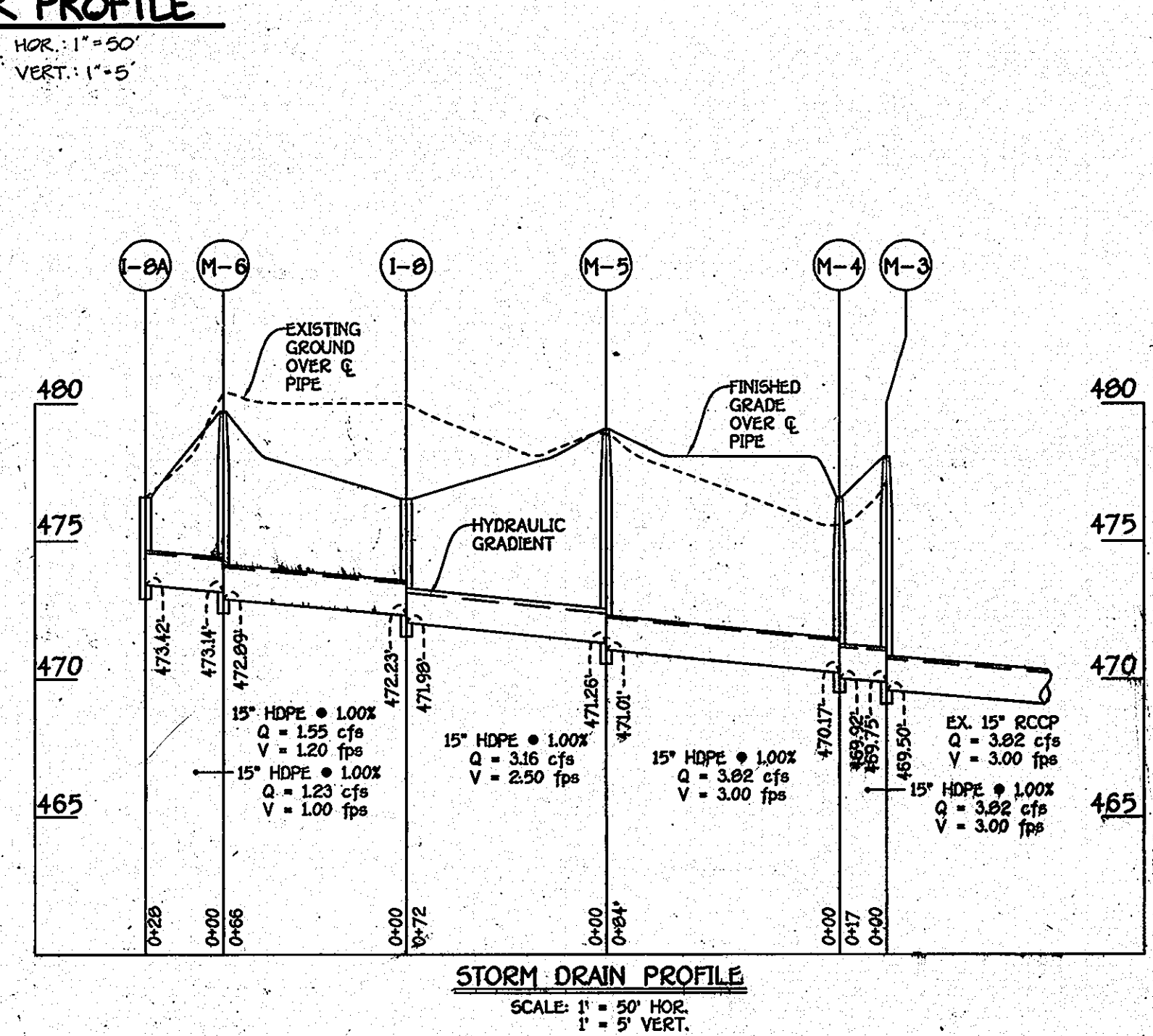
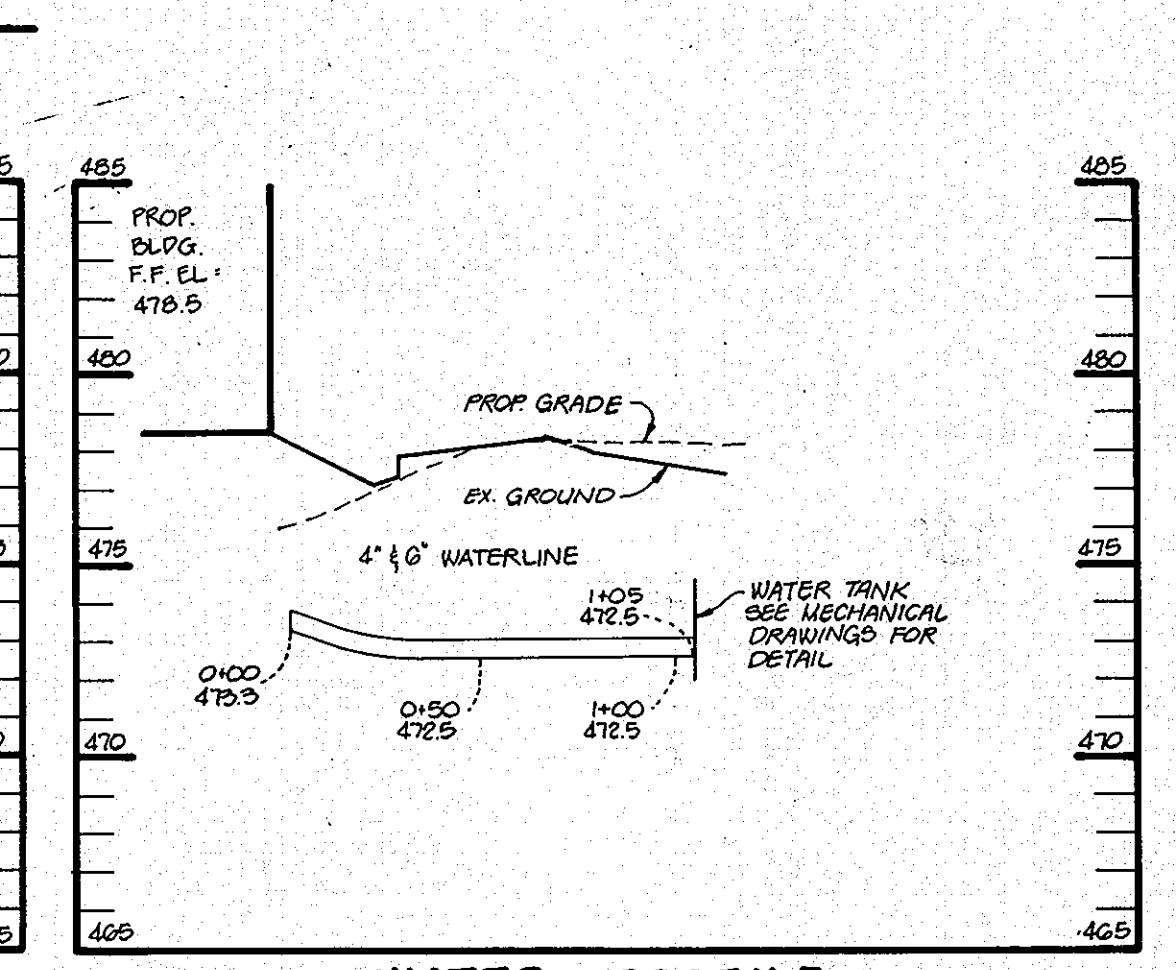
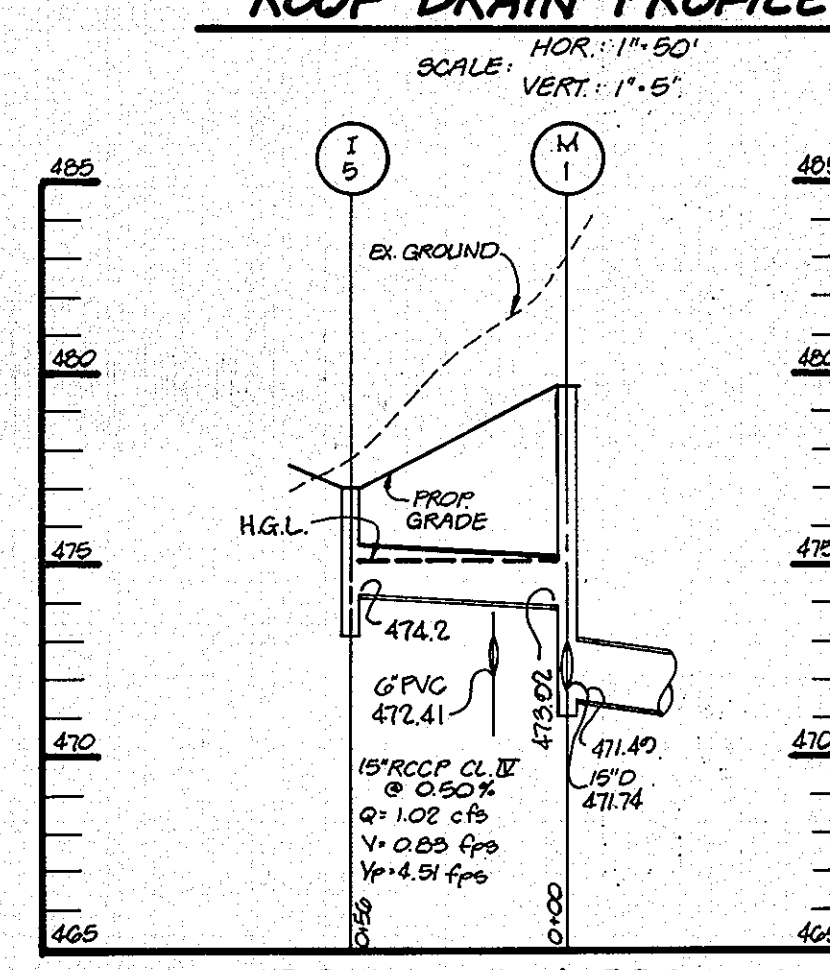
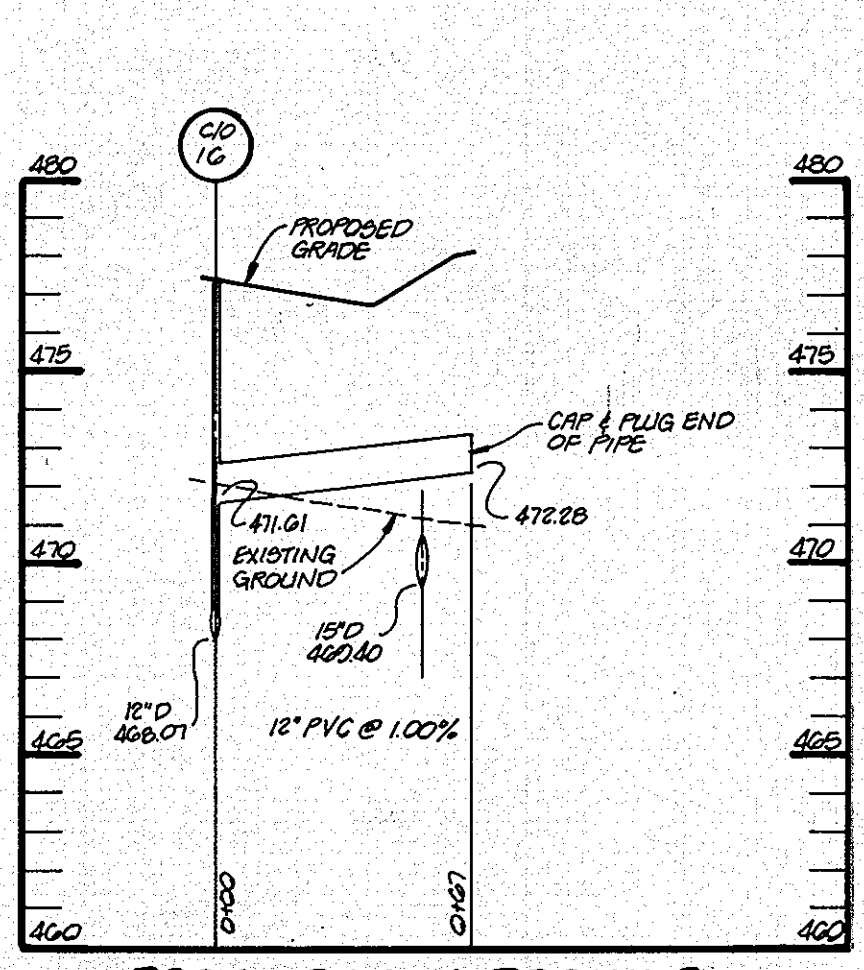
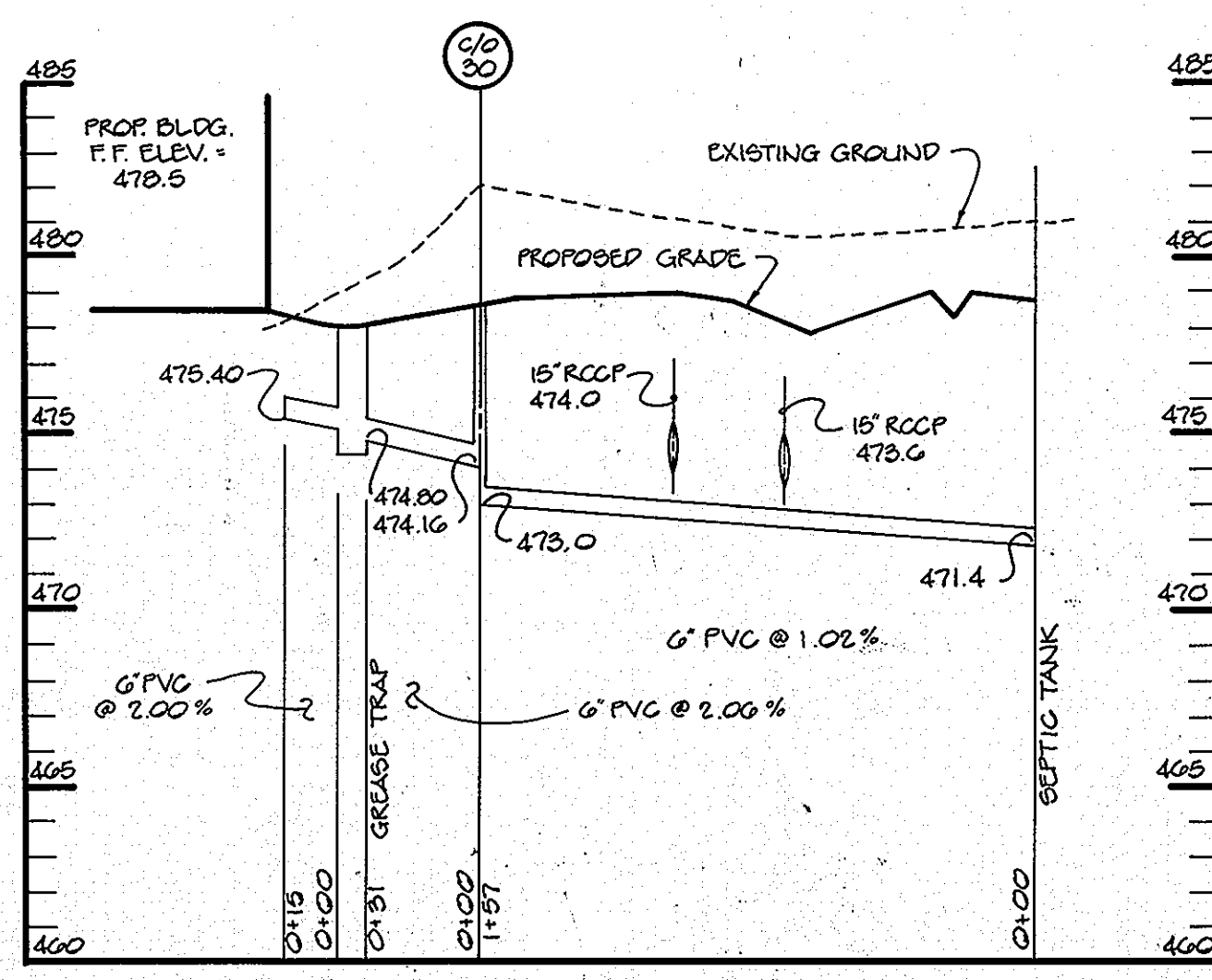
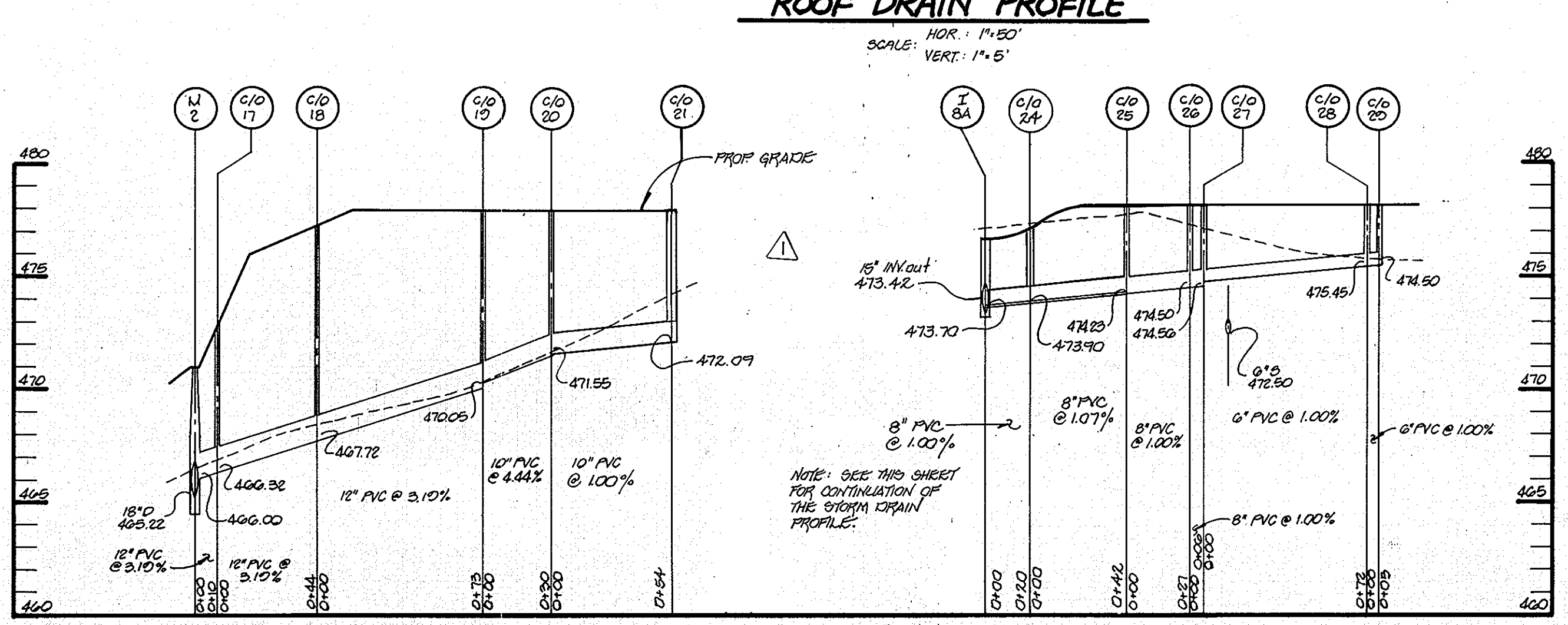
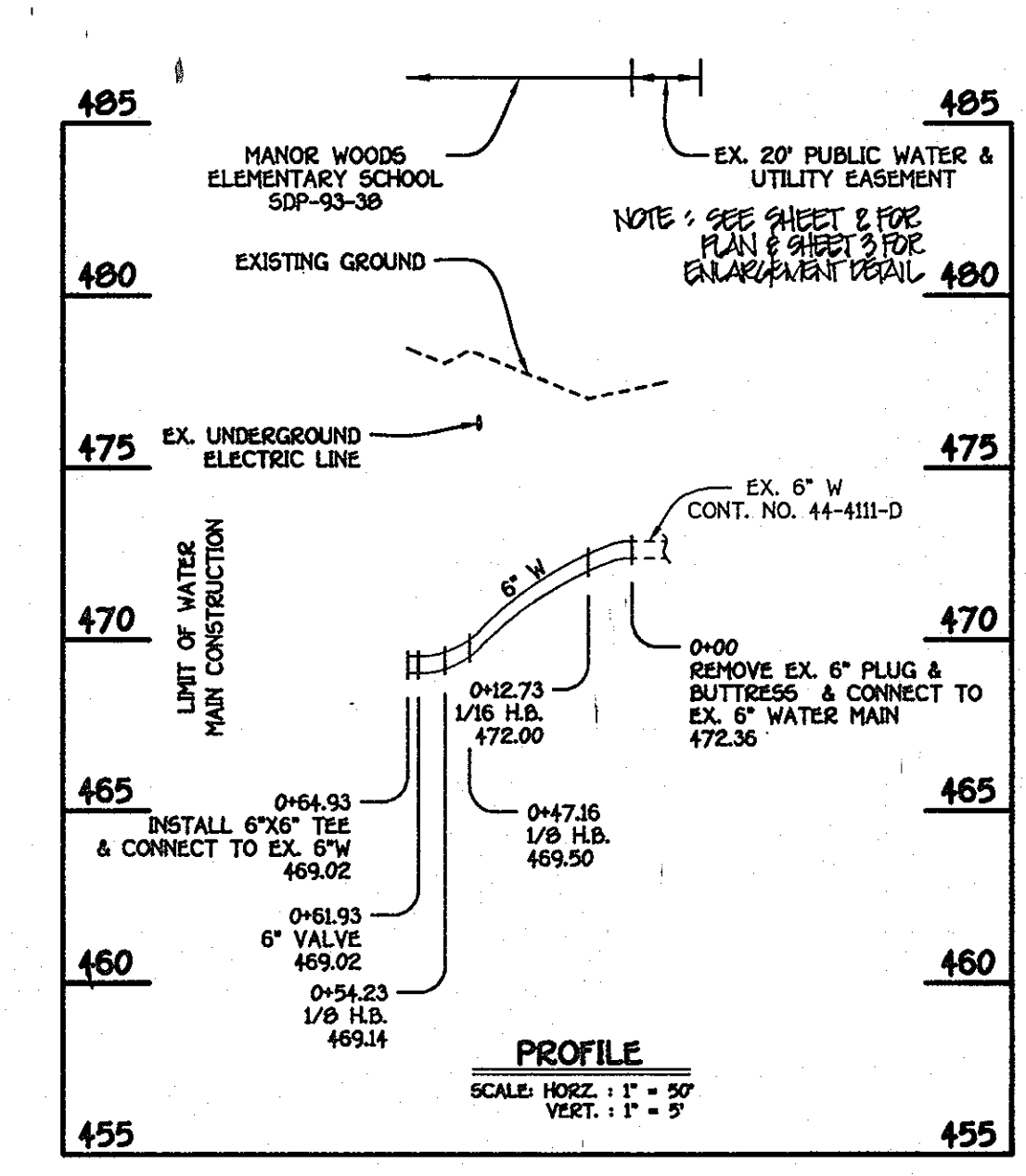
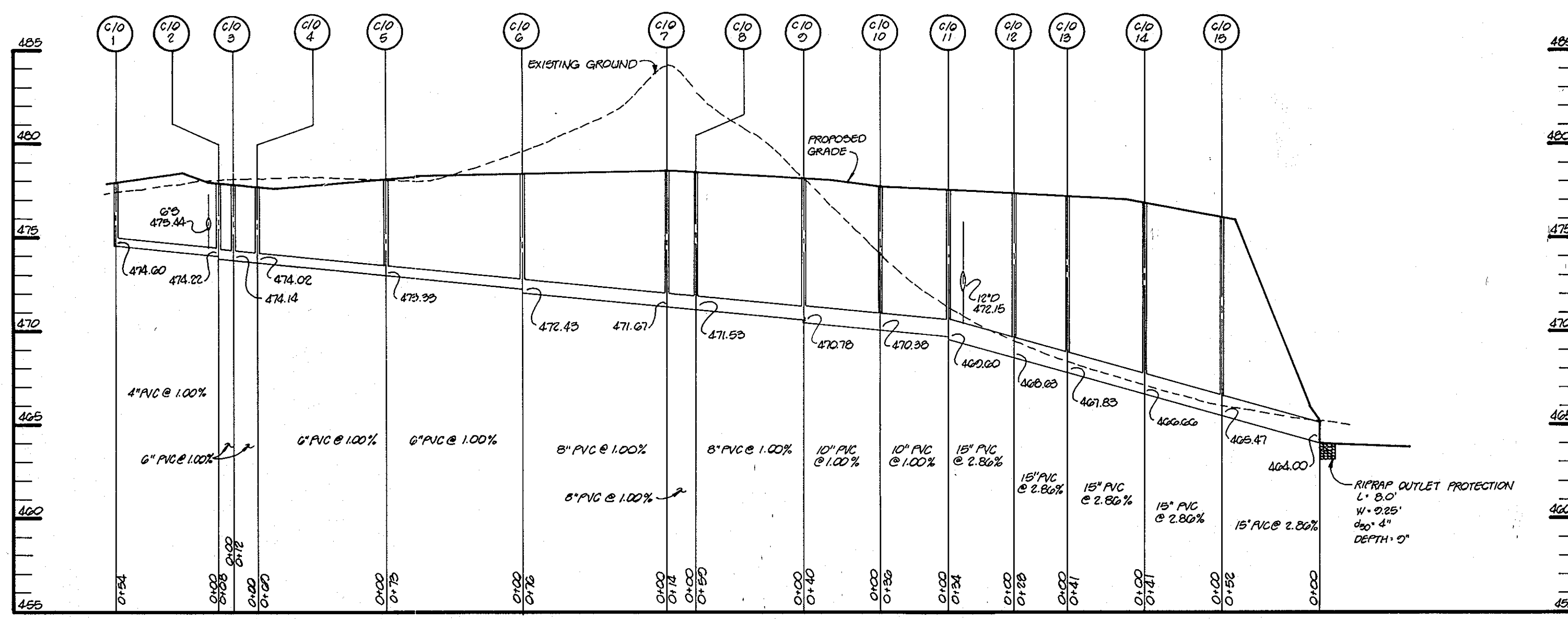
SHRUB PLANTING DETAIL N.T.S.

PLAN SCALE: 1"=40'

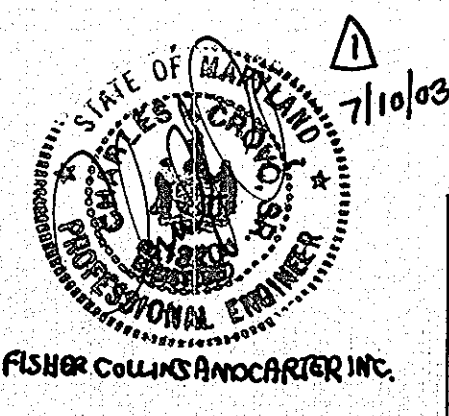


TREE PLANTING DETAIL N.T.S.

AS BUILT CERTIFICATE	
APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ONSITE WATER AND ONSITE SEWERAGE SYSTEMS. <i>Joyce M. Boyd</i> 5/14/93 COUNTY HEALTH OFFICER DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. <i>James A. Smith</i> 5/14/93 DIRECTOR DATE <i>Anna M. Holmuth</i> 5/11/93 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE	
APPROVED: STORM DRAINAGE SYSTEMS AND PUBLIC ROADS <i>Thomas J. Ryan</i> 5/14/93 DIRECTOR DATE <i>Michael G. Remer</i> 5-7-93 CHIEF, BUREAU OF ENGINEERING DATE	
DATE NO.	REVISION
OWNER/DEVELOPER BOARD OF EDUCATION OF HOWARD COUNTY 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21043	
PROJECT NORTHERN ELEMENTARY SCHOOL II	
AREA	TAX MAP 16 PARCEL 44 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE LANDSCAPE PLAN	
RIEMER MUEGGE & ASSOCIATES, INC. A Land Planning, Engineering and Consulting Firm 8818 Centre Park Drive • Suite 200 • Columbia, Md 21045 410-997-8900 FAX: 410-997-8282	
DATE February 12, 1993	DESIGNED BY: DD
STATE OF MARYLAND REGISTERED LANDSCAPE ARCHITECT NO. 201 <i>Michael G. Remer</i> MICHAEL G. REMER #201	DRAWN BY: ZK
	PROJECT NO: 77910
	DATE: FEBRUARY 12, 1993
	SCALE: 1" = 40'
DRAWING NO. 14 OF 21	



AS BUILT CERTIFICATE	
APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ON-SITE WATER AND ON-SITE SEWERAGE SYSTEMS.	
<i>Joyce M. Boardman</i>	5/14/93 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>James R. Smith</i>	5/16/93 DATE
<i>Anna J. Kolonath</i>	5/11/93 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>James J. Smith</i>	5/6/93 DATE
<i>James J. Smith</i>	5-7-93 DATE
CHIEF, BUREAU OF ENGINEERING <i>M. K. Smith</i>	
DATE	REVISION
OWNER/DEVELOPER BOARD OF EDUCATION OF HOWARD COUNTY 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21043	
PROJECT NORTHERN ELEMENTARY SCHOOL II	
AREA	TAX MAP 16 PARCEL 44 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE STORM DRAIN PROFILES	
RIEMER MUEGGE & ASSOCIATES, INC. A Land Planning, Engineering and Consulting Firm 8818 Centre Park Drive • Suite 200 • Columbia, Md 21045 410-997-8900 FAX: 410-997-9282	
DATE 2/12/93	DESIGNED BY: JTD
	DRAWN BY: DBS
	PROJECT NO: 77910
DATE: FEBRUARY 12, 1993	SCALE: AS SHOWN
<i>Arthur E. Muegge</i>	DRAWING NO. 16 OF 21



INDICATE PROFILE OF PRIVATE 6" WATER MAIN FOR THE PROVISION OF FLOOD PROTECTION & DIVERGENT WATER SERVICE TO THE BOSTONIA SCHOOL	6/15/00	
REVISE ROOF DRAIN PROFILE & ADD STORM DRAIN PROFILE DUE TO BUILDING ADDITIONS.	JULY 10, 2003	
NO.	DESCRIPTION	DATE

LEGEND

- FORCE MAINS
- - - GRAVITY PIPE
- DRAIN FIELD BOUNDARY
- PTA11 PERC TEST LOCATION

ON SITE DISPOSAL SYSTEM

General Notes :

1. Maximum total Design Sewage Flow allocation
564 Students x 15 GPD = 8460 GPD
75 Staff x 15 GPD = 1125 GPD
1 Dishwasher x 269 GPD = 269 GPD
Total Use = 9854 GPD say 10,000 GPD
2. Trench Design loading rate = 0.8 GPD/ft²
3. No installation shall commence without approval from the Maryland Department of the Environment and Howard County Health Department.
4. The Contractor shall Notify the Owner, the Maryland Department of the Environment and the Howard County Health Department a minimum of one week prior to Start of Construction.
5. Daily generated Flows, Percolation test data, Trench loading factor, Sewerage easement area and existing Topographic Survey data have been furnished by Reimer Muegge & Associates, Inc. on a Health Department Approved "Percolation Test Certification Plan".
6. Proposed Wastewater Pretreatment and Disposal System have been Design by : Whitman Requardt and Associates 2315 St. Paul Street Baltimore, Maryland
7. Disposal Trenches are to be constructed a minimum of 10' apart c/c with a 20' minimum spacing between Bed groups. Coordinate Table is provide to facilitate stakeout. Adjustments are to be made as necessary to follow the ground contour and insure a level Disposal Trench. Construction of Trenches shall begin from top to bottom of each section of Trench Bed and proceed toward the top of the Hill. Trenches shall be installed along each contour, not across or against them. The intent is that the Contractor is to construct each Trench to within six(6) inches of each Contour.
8. All Disposal Trenches shall be 100 feet in length and 3 feet wide. Perforated pipe shall be encased in 2 feet of stone as shown in Section A-A on Sheet No. D-4. Bottom elevations in each Trench area shall be as shown on variable Dimension and Elevation Table on Sheet No. D-4, subject to the following minimum depths below original ground:
A1.1 - A4.1 6.0'
A1.2 - A4.2 6.0'
B1.1 - B4.1 6.0'
B1.2 - B4.2 6.0'
C1.1 - C4.1 6.5'
C1.2 - C4.2 6.0'
9. Sewage Disposal System contractor to submit as-built drawing of system installation to Howard County Health Department prior to final Septic System inspection and approval.
10. Approval of site development plan pending approval of a Ground Water Appropriations Permit by Water Resources Administration and inclusion into the Howard County Master Water and Sewer Plan.
11. All wells and septic systems within 200 feet of the property have been shown.

STRUCTURE & LOCATION

DESCRIPTION	NORTH	EAST
Primary Distribution Box I	530831	824085
Primary Distribution Box II	530949	824166
Secondary Distribution Box A1	530787	824130
Secondary Distribution Box A2	530757	824144
Secondary Distribution Box A3	530720	824168
Secondary Distribution Box A4	530692	824189
Secondary Distribution Box B1	530927	824244
Secondary Distribution Box B2	530924	824278
Secondary Distribution Box B3	530919	824309
Secondary Distribution Box B4	530916	824335
Secondary Distribution Box C1	530890	824065
Secondary Distribution Box C2	530897	824047
Secondary Distribution Box C3	530901	824034
Secondary Distribution Box C4	530908	824016
Septic Tank	530373	824370
Recirculating Pumping Station (I)	530370	824329
Dosing Pumping Chamber (II)	530438	824069
Splitter Box	530553	824014
Distribution Box (Cell) A	530571	824007
Distribution Box (Cell) B	530538	823999

APPROVED : MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR PRIVATE SEWAGE DISPOSAL SYSTEM AND ON-SITE WATER SYSTEM PENDING THE CONSTRUCTION PERMIT ISSUED BY THE ENGINEERING AND CONSTRUCTION PROGRAM FOR THE ON-SITE WATER SYSTEM.

David A. Kim 4-May-93
REGIONAL CONSULTANT DATE
INDIVIDUAL SEPTICS AND WELLS
MARYLAND DEPARTMENT OF THE ENVIRONMENT

APPROVED : HOWARD COUNTY HEALTH DEPARTMENT FOR ON-SITE WATER AND PRIVATE SEWAGE SYSTEMS.

Joyce M. Boyd 5/4/93
COUNTY HEALTH OFFICER DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James S. Smith 5/12/93
DIRECTOR DATE
Anna J. Blonath 5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

3/23/93 SHIFTED BEDS A1.2 TO A4.2, AMENDED NOTES

DATE NO. REVISION

OWNER/DEVELOPER - I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR ON SITE WASTEWATER DISPOSAL SYSTEM

BOARD OF EDUCATION OF HOWARD COUNTY
10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21043
Cathleen Conley Young 5/12/93
SIGNATURE OF DEVELOPER DATE

PROJECT
NORTHERN ELEMENTARY SCHOOL II

AREA TAX MAP PARCEL 44
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

WASTEWATER SYSTEM SITE PLAN

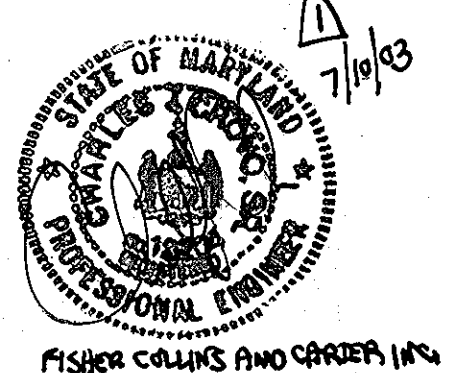
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS

BALTIMORE, MD RICHMOND, VA YORK, PA

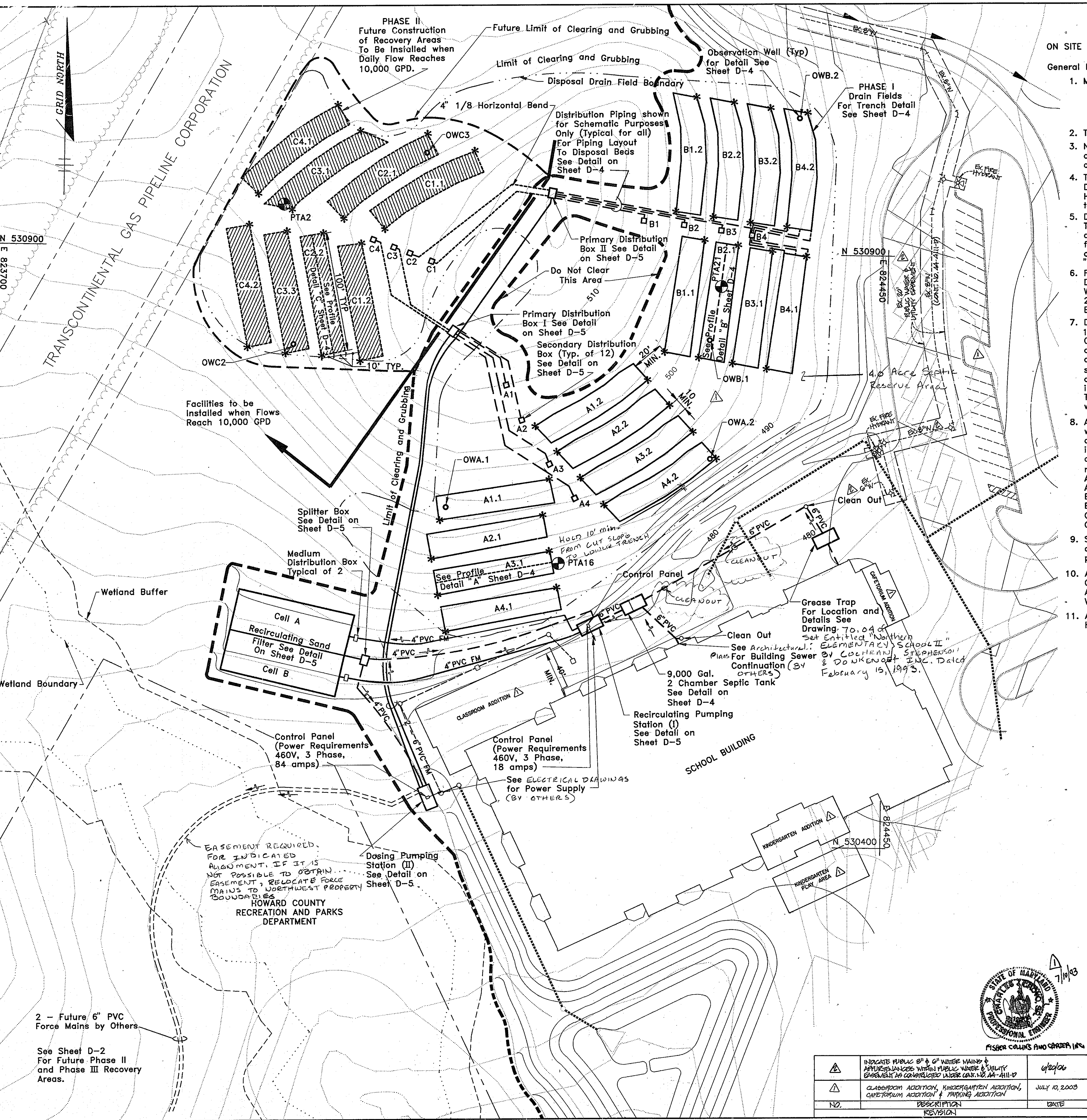
SHEET NO : D-1
DESIGNED BY :
DRAWN BY : J.R.-N.
PROJECT NO : 50277
DATE : FEBRUARY 12, 1993
SCALE : 1" = 40'
DRAWING NO. 17 OF 21

DRAIN FIELD LOCATION OPPOSITE CORNERS AS INDICATED BY *

FIELD	NORTH	EAST	NORTH	EAST
A1.1	530672	824075	530707	824168
A1.2	530752	824158	530790	824250
A2.1	530639	824069	530677	824163
A2.2	530732	824175	530770	824271
A3.1	530608	824075	530647	824169
A3.2	530710	824196	530747	824293
A4.1	530578	824082	530616	824176
A4.2	530688	824217	530726	824313
B1.1	530816	824263	530911	824295
B1.2	530935	824271	531031	824288
B2.1	530812	824292	530907	824324
B2.2	530931	824302	531027	824318
B3.1	530808	824321	530902	824353
B3.2	530927	824334	531023	824349
B4.1	530803	824349	530898	824381
B4.2	530923	824365	531019	824380
FUTURE CONSTRUCTION PHASE II				
C1.1	530779	824379	530744	824285
C1.2	530805	824007	530904	824006
C2.1	530806	824346	530764	824255
C2.2	530815	823912	530913	823974
C3.1	530787	824217	530999	824004
C3.2	530811	824944	530914	824944
C4.1	530945	823919	531020	823984
C4.2	530809	823974	530919	823912



NO.	DESCRIPTION	DATE
1	INDICATE PUBLIC 6" & 8" WATER MAINS & APPURTENANCES WITHIN PUBLIC WATER & UTILITY EASEMENT AS CONVEYANCED UNDER CON. NO. AA-411-D	4/2/00
2	CLASSROOM ADDITION, KINDERGARTEN ADDITION, CAPTATORIUM ADDITION & PARKING ADDITION	JULY 10, 2003
	REVISION	



2 - Future 6" PVC Force Mains by Others
See Sheet D-2 For Future Phase II and Phase III Recovery Areas.

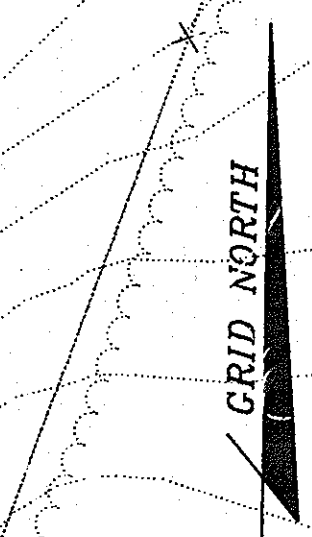
EASEMENT REQUIRED FOR INDICATED ALIGNMENT. IF IT IS NOT POSSIBLE TO OBTAIN EASEMENT, RELOCATE FORCE MAINS TO NORTHWEST PROPERTY BOUNDARIES
HOWARD COUNTY RECREATION AND PARKS DEPARTMENT

Wetland Buffer
Wetland Boundary

Facilities to be Installed when Flows Reach 10,000 GPD

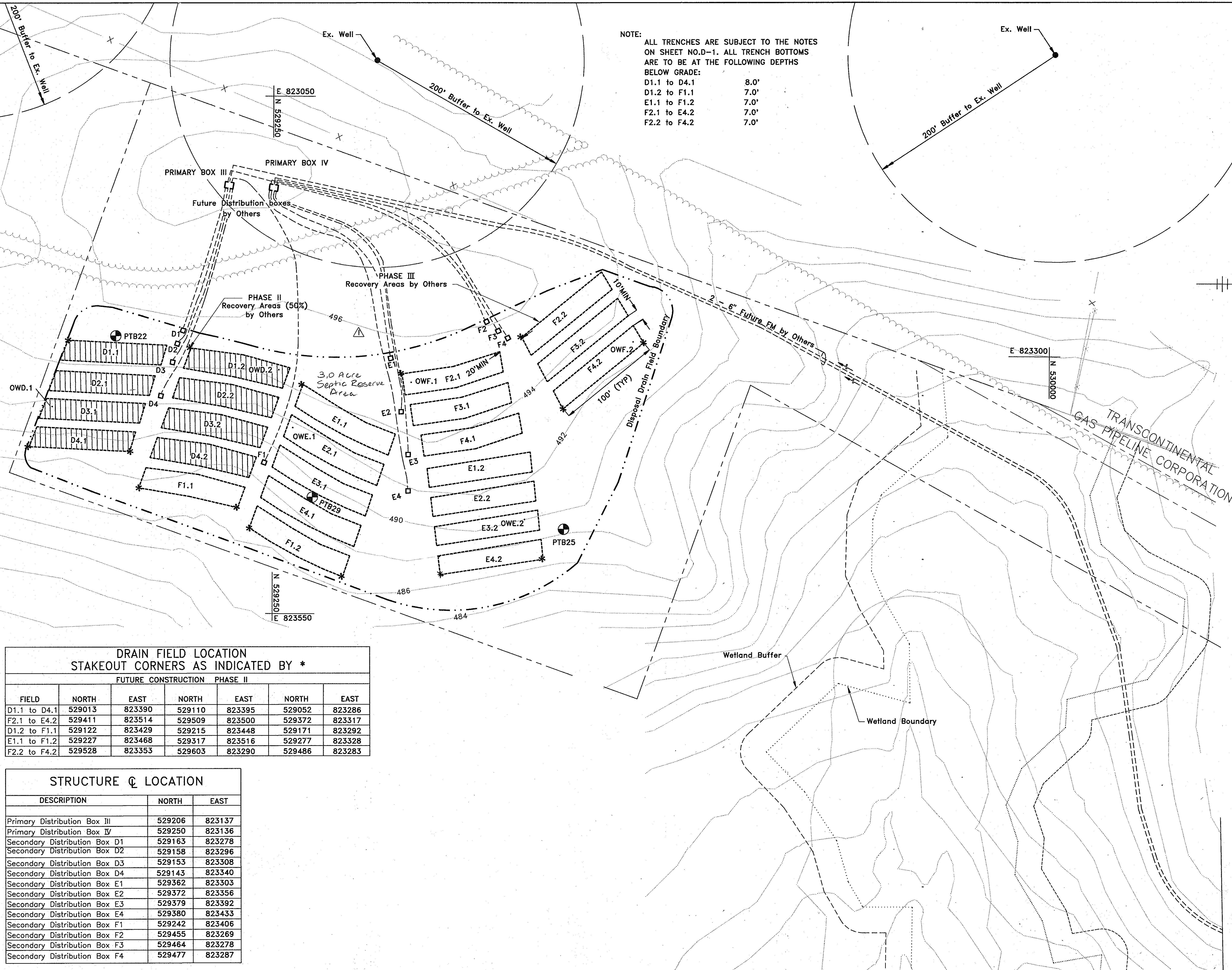
N 530900
E 824450

TRANSCONTINENTAL GAS PIPELINE CORPORATION



NOTE:
 ALL TRENCHES ARE SUBJECT TO THE NOTES
 ON SHEET NO.D-1. ALL TRENCH BOTTOMS
 ARE TO BE AT THE FOLLOWING DEPTHS
 BELOW GRADE:

D1.1 to D4.1	8.0'
D1.2 to F1.1	7.0'
E1.1 to F1.2	7.0'
F2.1 to E4.2	7.0'
F2.2 to F4.2	7.0'



APPROVED : MARYLAND DEPARTMENT OF THE ENVIRONMENT
 FOR PRIVATE SEWAGE DISPOSAL SYSTEM AND
 ON-SITE WATER SYSTEM PENDING THE
 CONSTRUCTION PERMIT ISSUED BY THE
 ENGINEERING AND CONSTRUCTION PROGRAM
 FOR THE ON-SITE WATER SYSTEM.

David A. Kern 4-May-93
 REGIONAL CONSULTANT DATE
 INDIVIDUAL SEPTICS AND WELLS
 MARYLAND DEPARTMENT OF THE ENVIRONMENT

APPROVED : HOWARD COUNTY HEALTH DEPARTMENT FOR
 ONSITE WATER AND PRIVATE SEWERAGE SYSTEMS.

Joyce M. Boyd 5/4/93
 COUNTY HEALTH OFFICER (CW) DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND
 ZONING.

James R. Smith 5/12/93
 DIRECTOR DATE

Anna J. Helonath 5/11/93
 CHIEF, DIVISION OF COMMUNITY
 PLANNING AND LAND DEVELOPMENT DATE

3/23/93 RELOCATED SECONDARY DISTRIBUTION BOXES AND
 ADDED OFFSITE WELLS.

DATE	NO.	REVISION

OWNER/DEVELOPER - I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION
 WILL BE DONE ACCORDING TO THIS PLAN FOR ON SITE
 WASTEWATER DISPOSAL SYSTEM
 BOARD OF EDUCATION OF HOWARD COUNTY
 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21043
Cathleen Conley Young 5/12/93
 SIGNATURE OF DEVELOPER DATE

PROJECT
 NORTHERN ELEMENTARY SCHOOL II

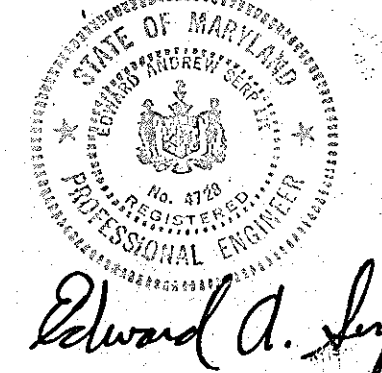
AREA TAX MAP
 PARCEL 44

WASTEWATER SYSTEM SITE PLAN

WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS

BALTIMORE, MD RICHMOND, VA YORK, PA

SHEET NO : D-2
DESIGNED BY :
DRAWN BY : J.R.-N.
PROJECT NO : 50277
DATE : FEBRUARY 12, 1993
SCALE : 1" = 40'
DRAWING NO. 10 OF 21

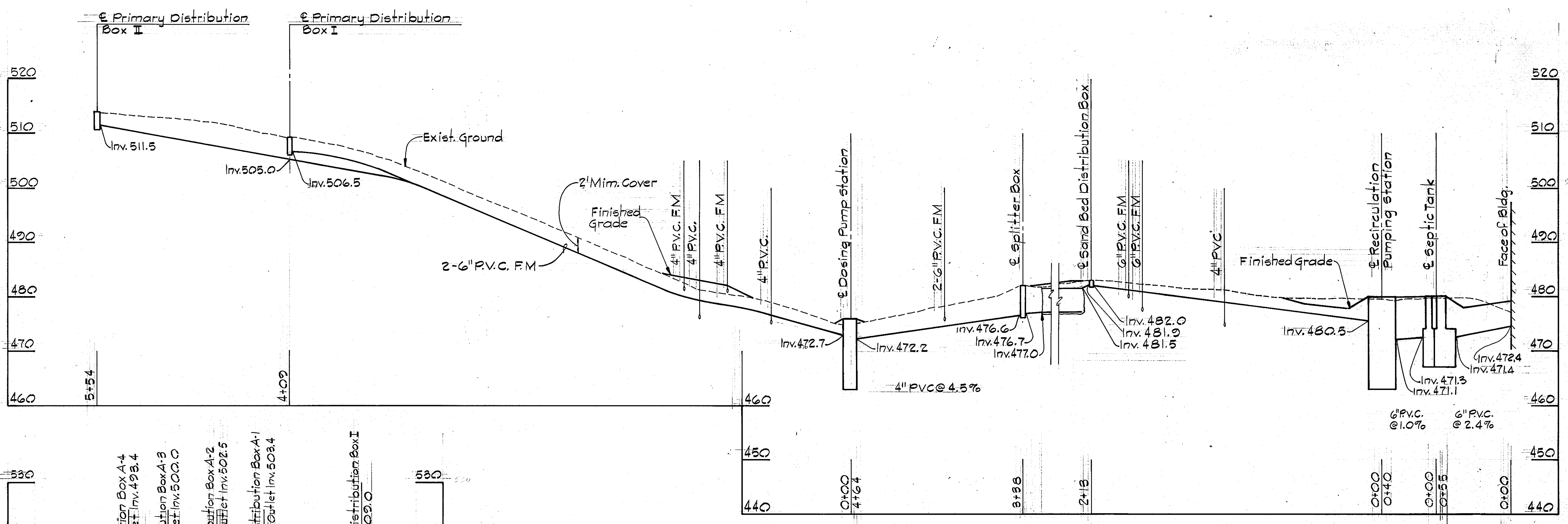


DRAIN FIELD LOCATION
 STAKEOUT CORNERS AS INDICATED BY *

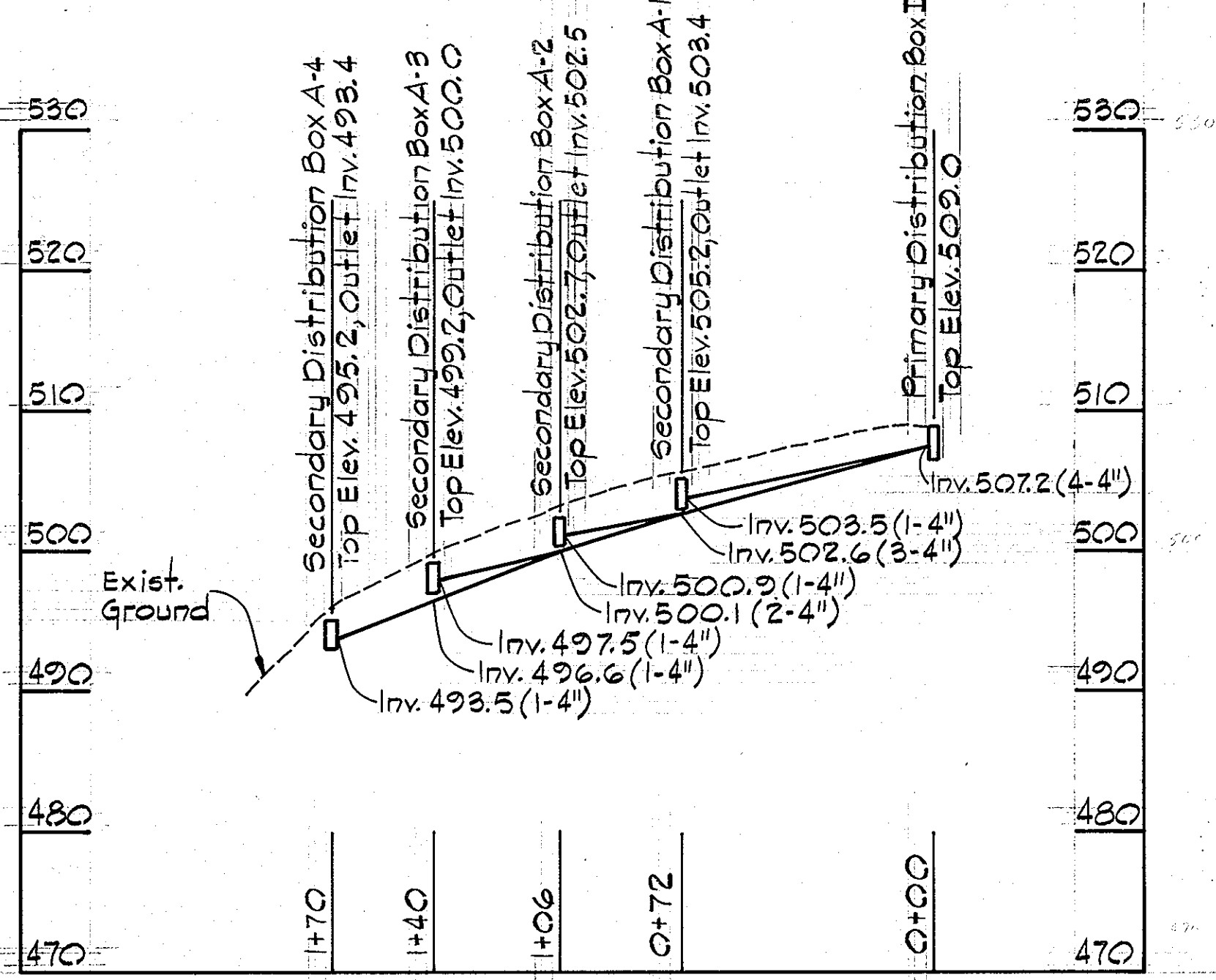
FUTURE CONSTRUCTION PHASE II						
FIELD	NORTH	EAST	NORTH	EAST	NORTH	EAST
D1.1 to D4.1	529013	823390	529110	823395	529052	823286
F2.1 to E4.2	529411	823514	529509	823500	529372	823317
D1.2 to F1.1	529122	823429	529215	823448	529171	823292
E1.1 to F1.2	529227	823468	529317	823516	529277	823328
F2.2 to F4.2	529528	823353	529603	823290	529486	823283

STRUCTURE LOCATION

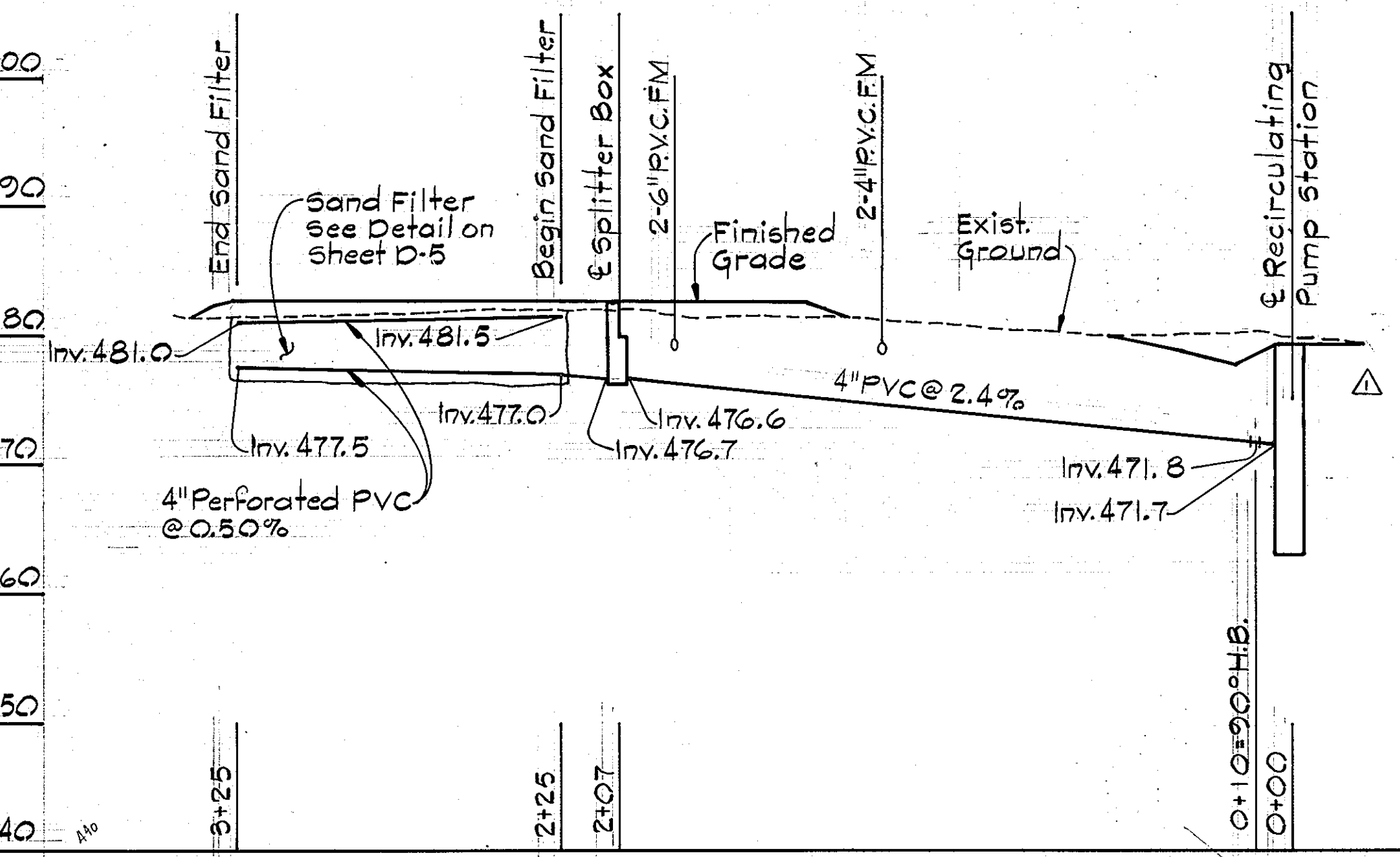
DESCRIPTION	NORTH	EAST
Primary Distribution Box III	529206	823137
Primary Distribution Box IV	529250	823136
Secondary Distribution Box D1	529163	823278
Secondary Distribution Box D2	529158	823296
Secondary Distribution Box D3	529153	823308
Secondary Distribution Box D4	529143	823340
Secondary Distribution Box E1	529362	823303
Secondary Distribution Box E2	529372	823356
Secondary Distribution Box E3	529379	823392
Secondary Distribution Box E4	529380	823433
Secondary Distribution Box F1	529242	823406
Secondary Distribution Box F2	529455	823269
Secondary Distribution Box F3	529464	823278
Secondary Distribution Box F4	529477	823287



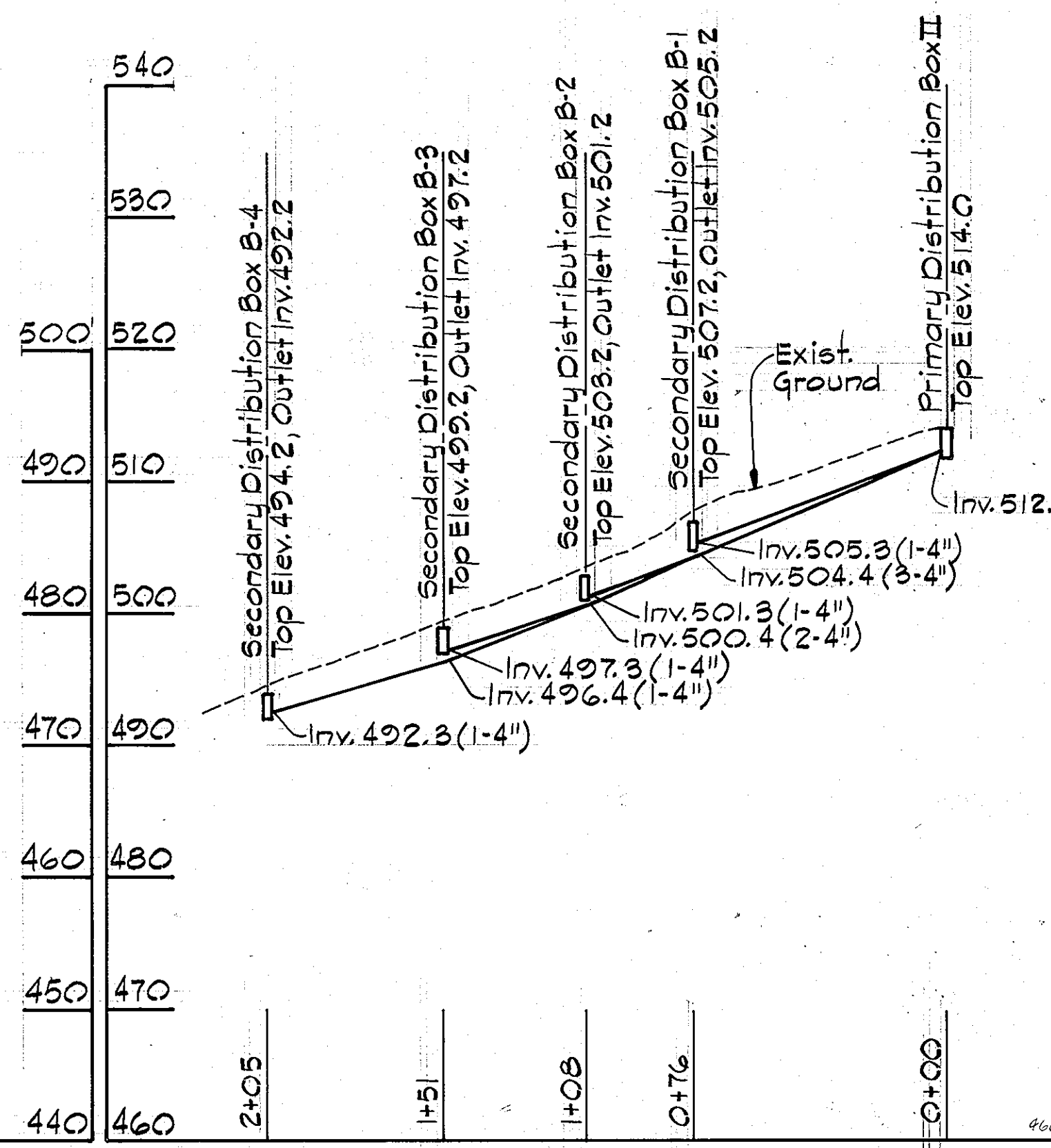
PROFILE - BUILDING SEWER TO PRIMARY DISTRIBUTION BOXES



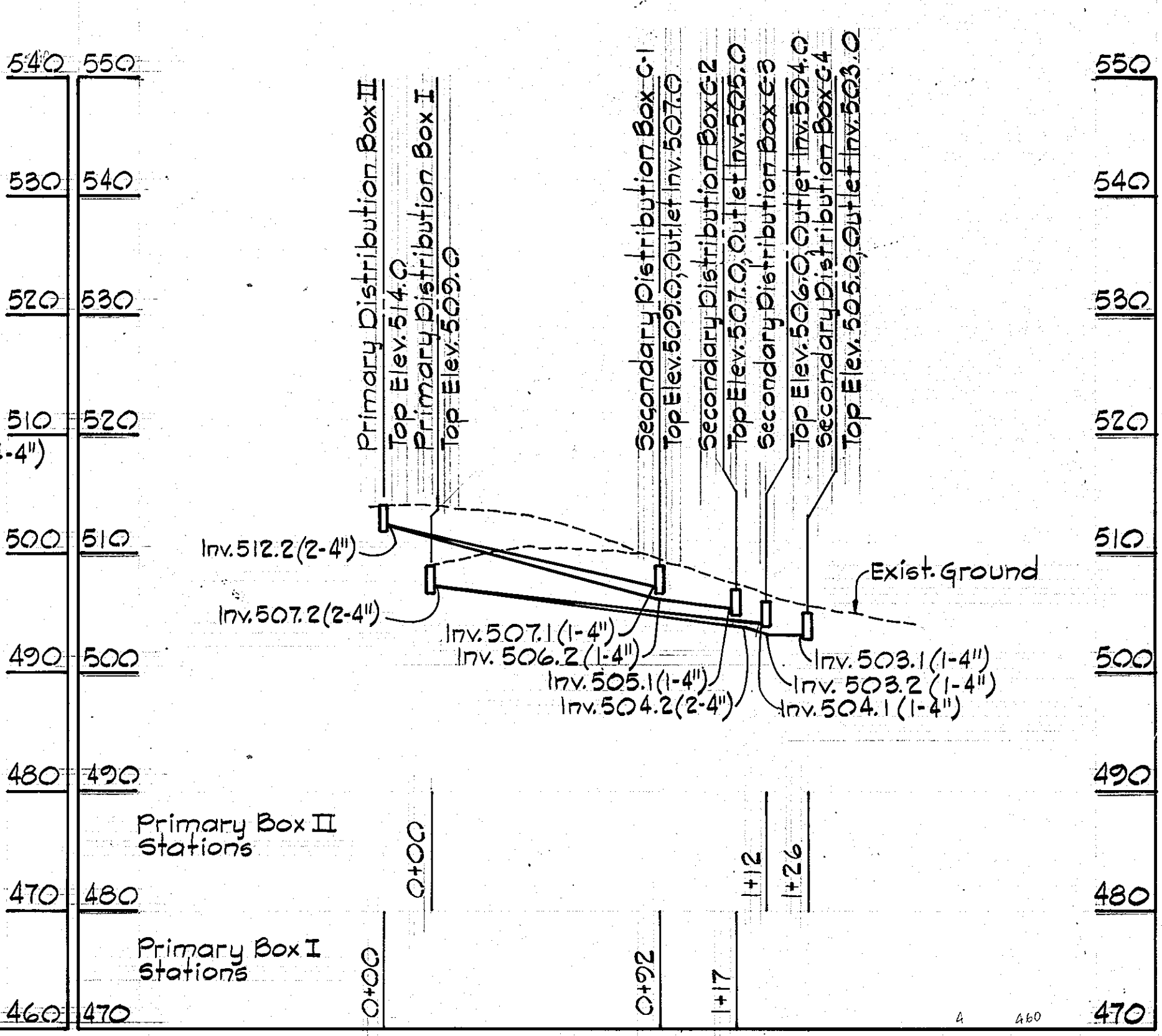
PROFILE - DISTRIBUTION BED 'A'



PROFILE - RECIRCULATING PUMPING STA. TO SAND FILTERS



PROFILE - DISTRIBUTION BED 'B'



PROFILE - DISTRIBUTION BED 'C'

MARYLAND DEPARTMENT OF THE ENVIRONMENT
DIVISION OF INDUSTRIAL SANITATION
Reviewed by: *Cheng-Fong Tien* Date: 10/30/92
Approved by: *Cheng-Fong Tien* Date: 10/30/92

APPROVED: MARYLAND DEPARTMENT OF THE ENVIRONMENT
FOR PRIVATE SEWAGE DISPOSAL SYSTEM AND
ON-SITE WATER SYSTEM PENDING THE
CONSTRUCTION PERMIT ISSUED BY THE
ENGINEERING AND CONSTRUCTION PROGRAM
FOR THE ON-SITE WATER SYSTEM.
David A. Kern 4 May 93
REGIONAL CONSULTANT DATE

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR
ONSITE WATER AND PRIVATE SEWERAGE SYSTEMS.
Joyce M. Boyd and Peter S. Smith 5/4/93
COUNTY HEALTH OFFICER (CW) DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND
ZONING.
James B. Smith 5/12/92
DIRECTOR DATE
Anna J. Holman 5/14/93
CHIEF, DIVISION OF COMMUNITY
PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PRIVATE WATER, PRIVATE SEWERAGE, STORM
DRAINAGE SYSTEMS AND PRIVATE ROADS.

DIRECTOR DATE
CHIEF, BUREAU OF ENGINEERING DATE
2/21/93 Adjusted Profile of Recirculating Pump Station

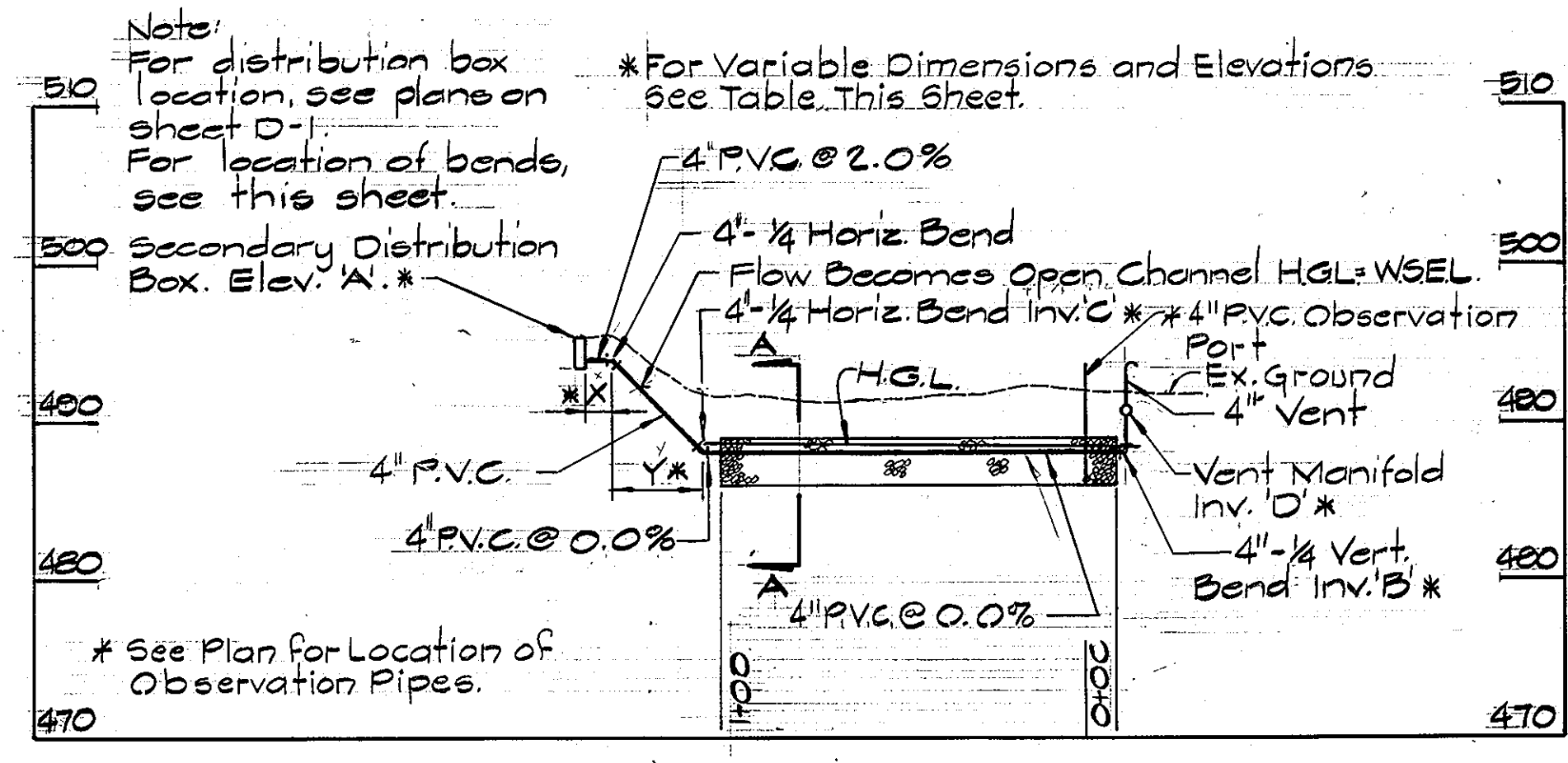
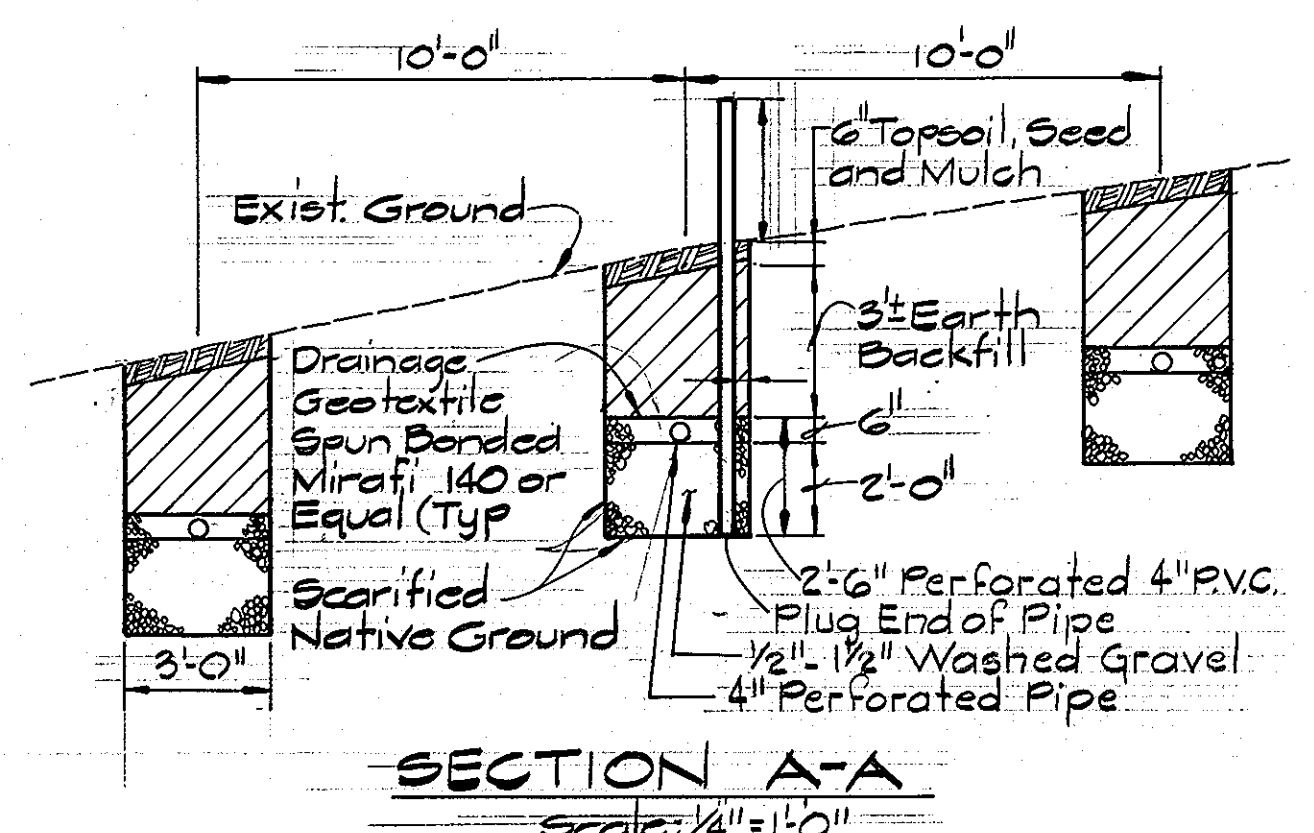
DATE NO. REVISION
OWNER/DEVELOPER
BOARD OF EDUCATION
OF HOWARD COUNTY
10910 ROUTE 108
ELLCOTT CITY, MARYLAND 21043

PROJECT
NORTHERN ELEMENTARY SCHOOL II
AREA TAX MAP
PARCEL 44
3rd ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

PROFILES
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MD RICHMOND, VA YORK, PA

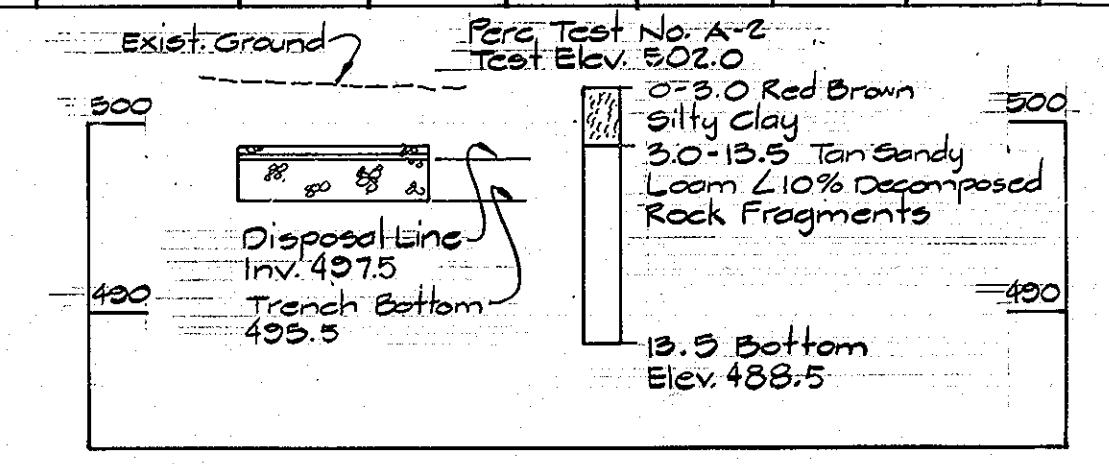
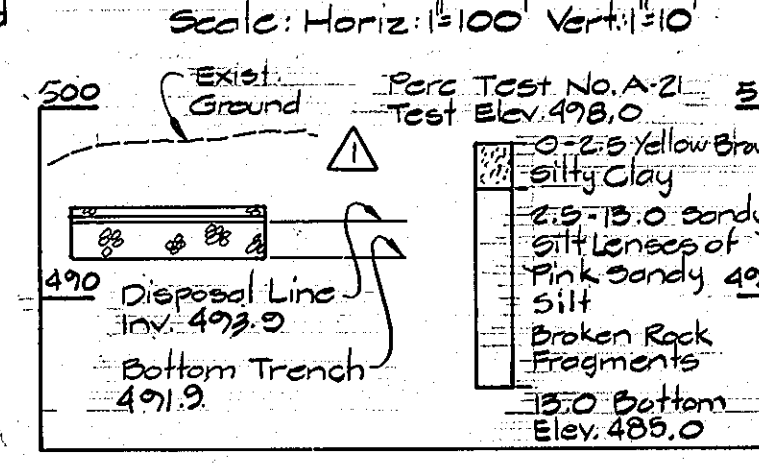
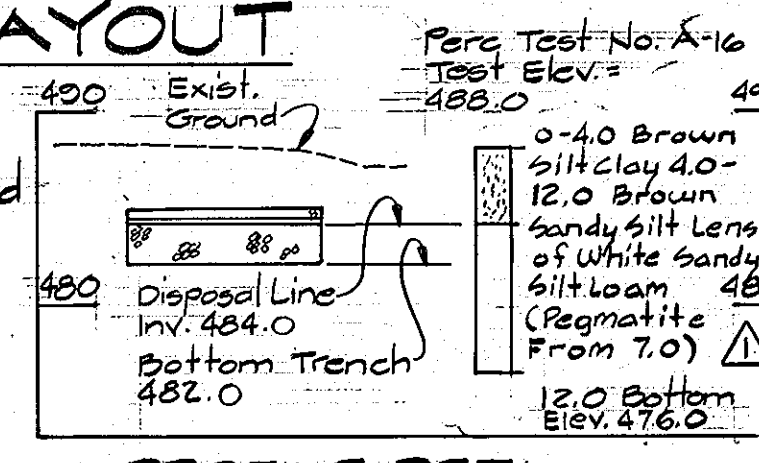
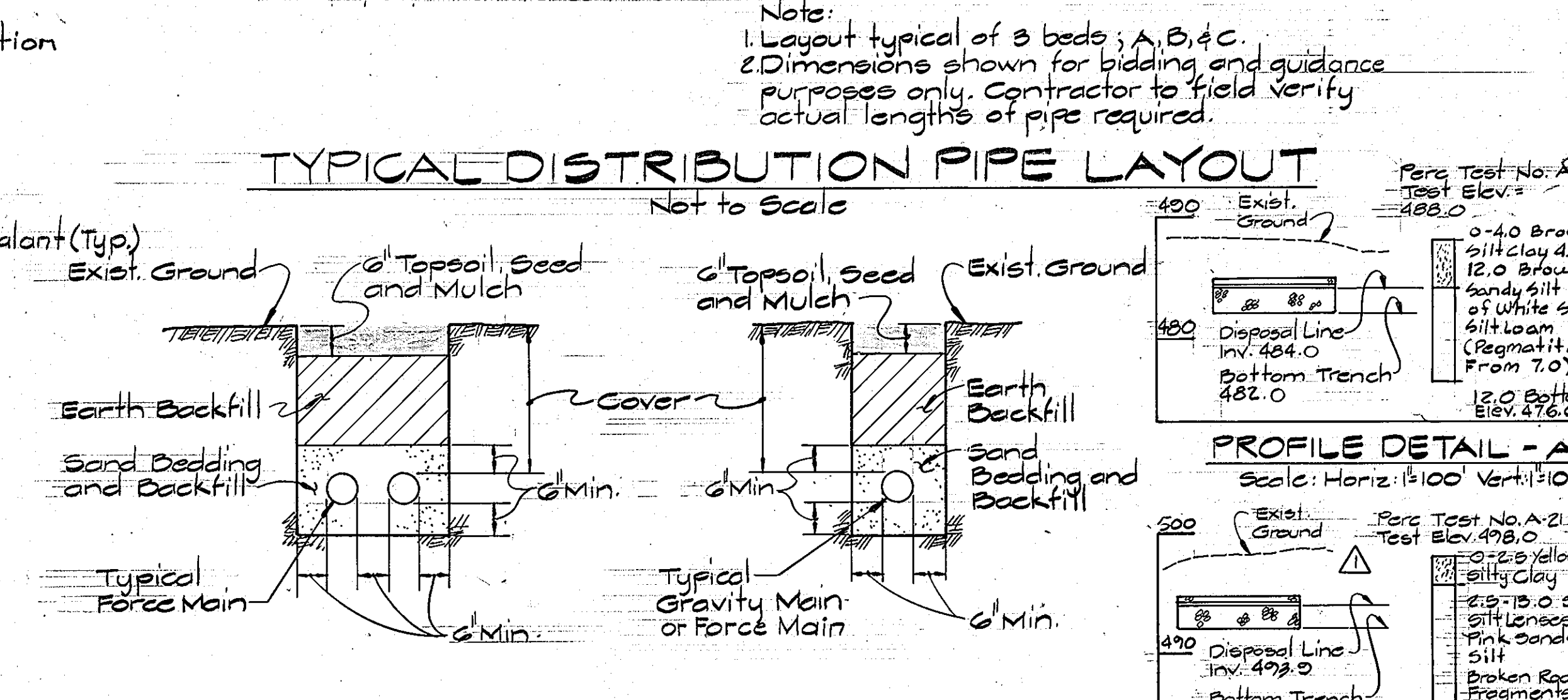
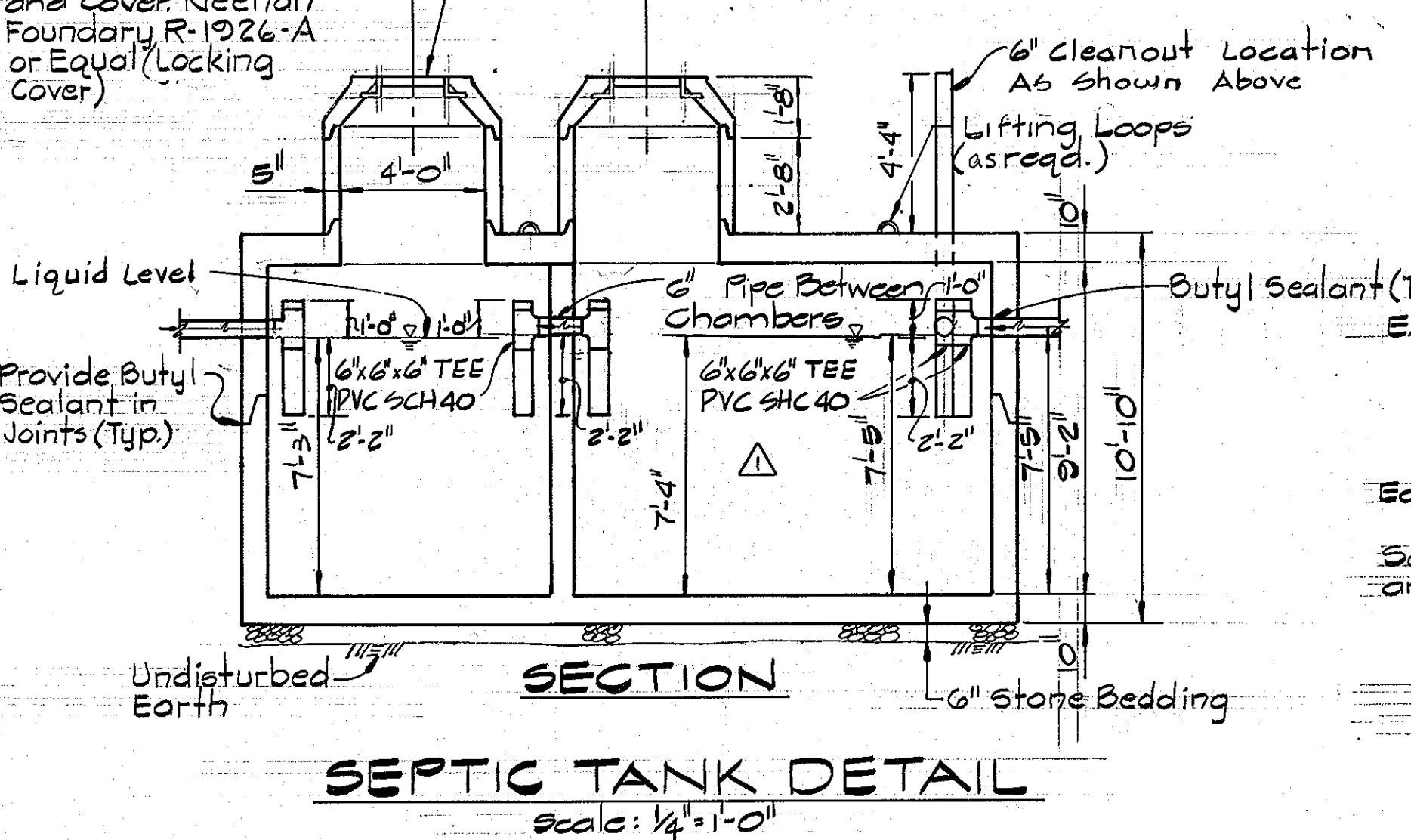
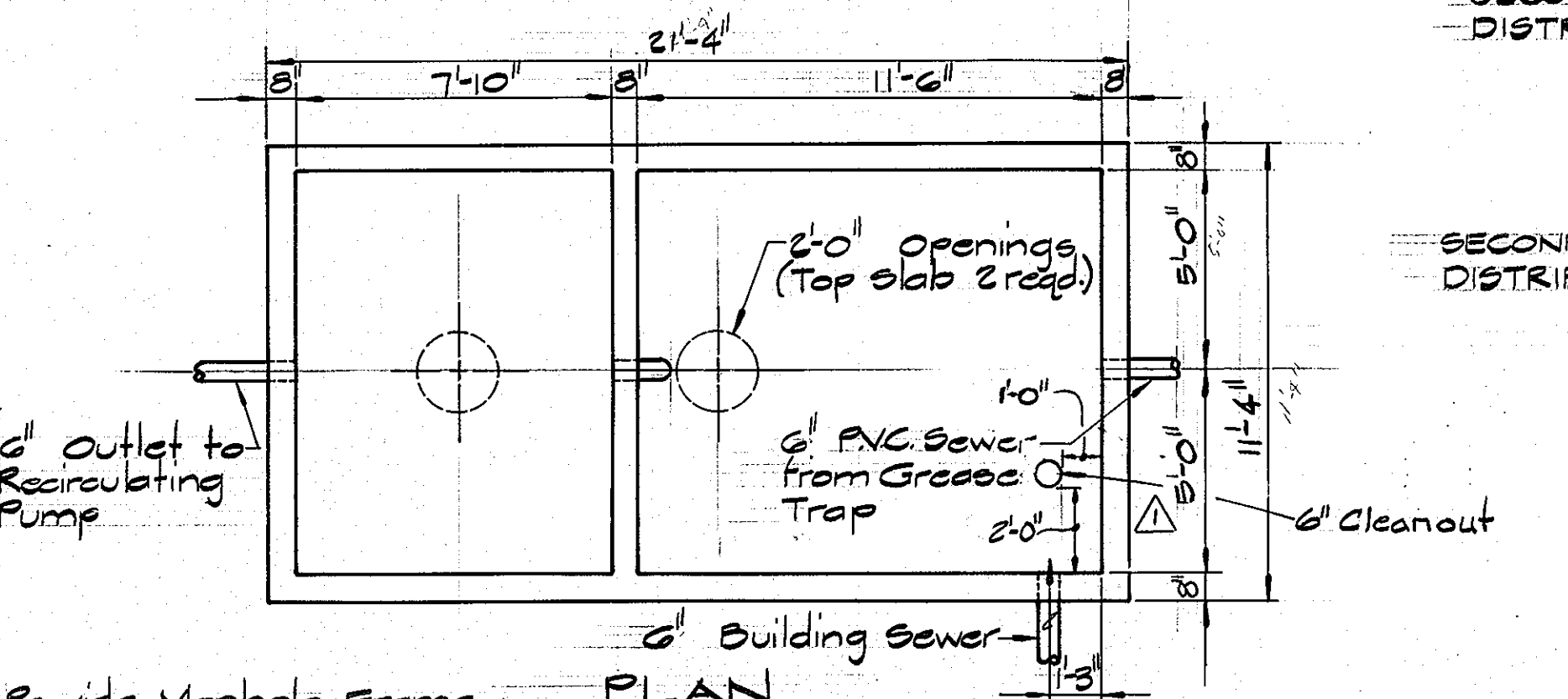
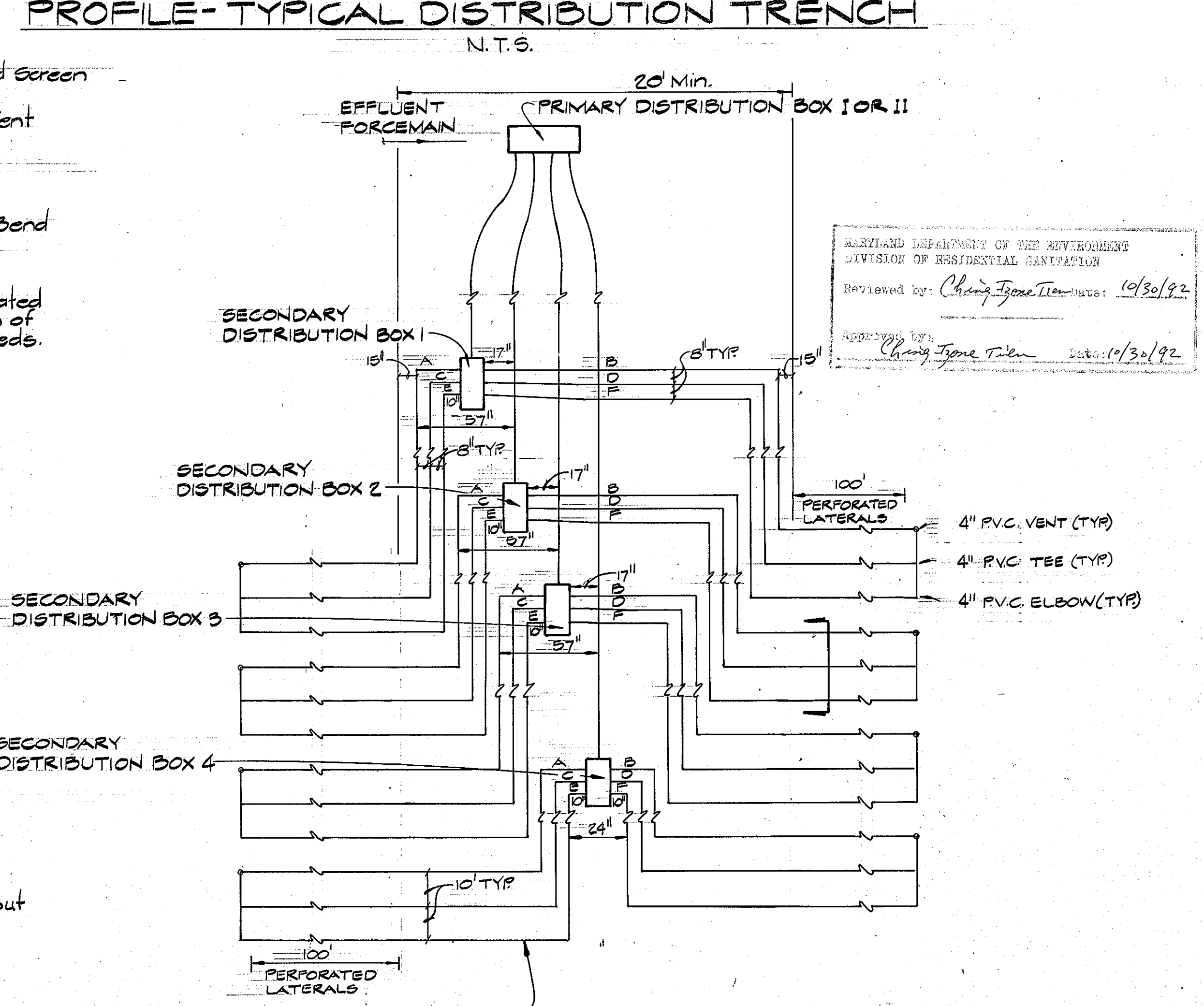
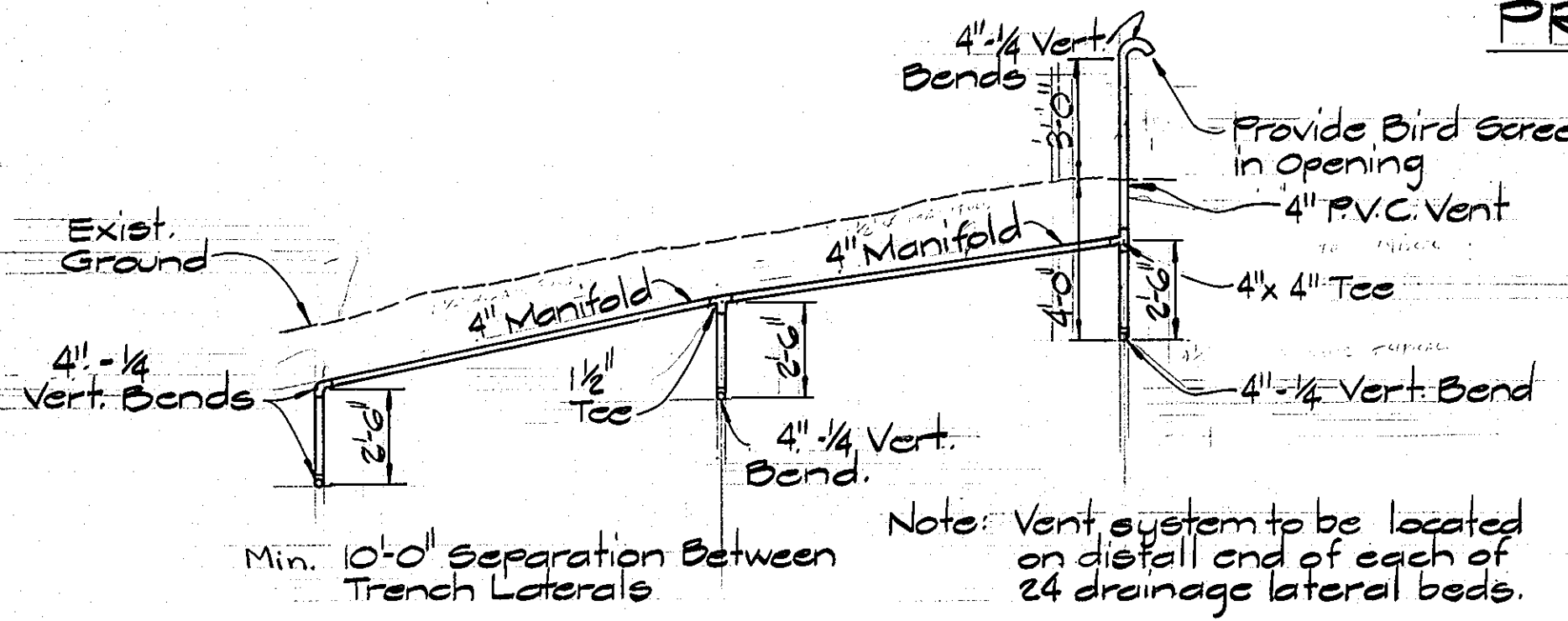
SHEET NO: D-3
DESIGNED BY:
DRAWN BY:
PROJECT NO: 50277
DATE: FEBRUARY 12, 1992
SCALE: HORIZ. 1"=40'
VERT. 1"=10'
DRAWING NO. 10 OF 21

10-22-92
Edward A. Lopez
SDP-93-38



VARIABLE DIMENSION AND ELEVATION TABLE

BED #	DISTRIBUTION BOX #	DRAIN TRENCH #	DISTANCE (FT)		ELEVATIONS (FT)			
			X	Y	A	B	C	D
A	1	A	2.2	86	503.7	494.4	494.5	497.0
A	1	B	14.2	50	503.7	497.9	498.0	500.5
A	1	C	1.5	96	503.7	493.1	493.2	495.7
A	1	D	13.5	60	503.7	496.9	497.0	499.5
A	1	E	0.8	106	503.7	491.9	492.0	494.5
A	1	F	12.8	70	503.7	495.9	496.0	498.5
A	2	A	2.2	75	502.8	489.9	490.0	492.5
A	2	B	10.2	45	502.8	495.4	495.5	498.0
A	2	C	1.5	85	502.8	488.9	489.0	491.5
A	2	D	9.5	55	502.8	494.4	494.5	497.0
A	2	E	0.8	95	502.8	486.9	487.0	489.5
A	2	F	8.8	65	502.8	492.9	493.0	495.5
A	3	A	2.2	64	497.7	485.9	486.0	488.5
A	3	B	6.2	36	497.7	491.9	492.0	494.5
A	3	C	1.5	74	497.7	484.4	484.5	487.0
A	3	D	5.5	46	497.7	490.9	491.0	493.5
A	3	E	0.8	84	497.7	483.4	483.5	486.0
A	3	F	4.8	56	497.7	489.4	489.5	492.0
A	4	A	2.2	46	493.7	481.9	482.0	484.5
A	4	B	2.2	26	493.7	487.9	488.0	490.5
A	4	C	1.5	56	493.7	479.9	480.0	482.5
A	4	D	1.5	36	493.7	485.9	486.0	488.5
A	4	E	0.8	66	493.7	479.4	479.5	482.0
A	4	F	0.8	46	493.7	485.4	485.5	488.0
B	1	A	2.2	20	497.5	489.9	490.0	492.5
B	1	B	14.2	20	497.5	489.9	490.0	492.5
B	1	C	1.5	30	497.5	489.4	489.5	492.0
B	1	D	13.5	30	497.5	489.4	489.5	492.0
B	1	E	0.8	40	497.5	487.9	488.0	490.5
B	1	F	12.8	40	497.5	487.9	488.0	490.5
B	2	A	2.2	24	494.5	486.9	487.0	489.5
B	2	B	10.2	24	494.5	486.9	487.0	489.5
B	2	C	1.5	34	494.5	484.9	485.0	487.5
B	2	D	9.5	34	494.5	485.4	485.5	488.0
B	2	E	0.8	44	494.5	483.9	484.0	486.5
B	2	F	8.8	44	494.5	483.9	484.0	486.5
B	3	A	2.2	26	489.5	481.9	482.0	484.5
B	3	B	6.2	26	489.5	481.9	482.0	484.5
B	3	C	1.5	36	489.5	480.9	481.0	483.5
B	3	D	5.5	36	489.5	480.9	481.0	483.5
B	3	E	0.8	46	489.5	479.4	479.5	482.0
B	3	F	4.8	46	489.5	479.4	479.5	482.0
B	4	A	2.2	22	485.5	477.9	478.0	480.5
B	4	B	2.2	22	485.5	477.9	478.0	480.5
B	4	C	1.5	32	485.5	476.9	477.0	479.5
B	4	D	1.5	32	485.5	476.9	477.0	479.5
B	4	E	0.8	42	485.5	475.9	476.0	478.5
B	4	F	0.8	42	485.5	475.9	476.0	478.5
C	1	A	2.2	60	508.5	500.9	501.0	503.5
C	1	B	14.2	60	508.5	500.9	501.0	503.5
C	1	C	1.5	70	508.5	500.4	500.5	503.0
C	1	D	13.5	74	508.5	499.9	500.0	502.5
C	1	E	0.8	80	508.5	499.9	500.0	502.5
C	1	F	12.8	84	508.5	499.4	499.5	502.0
C	2	A	2.2	85	507.5	499.9	500.0	502.5
C	2	B	10.2	86	507.5	498.4	498.5	501.0
C	2	C	1.5	95	507.5	499.4	499.5	502.0
C	2	D	9.5	96	507.5	497.9	498.0	500.5
C	2	E	0.8	105	507.5	498.9	499.0	501.5
C	2	F	0.8	106	507.5	497.4	497.5	500.0
C	3	A	2.2	112	506.5	498.9	499.0	501.5
C	3	B	6.2	106	506.5	496.9	497.0	499.5
C	3	C	1.5	122	506.5	498.4	498.5	501.0
C	3	D	5.5	116	506.5	495.9	496.0	498.5
C	3	E	0.8	132	506.5	495.1	495.2	500.7
C	3	F	4.8	126	506.5	494.9	495.0	497.5
C	4	A	2.2	124	505.5	497.9	498.0	500.5
C	4	B	2.2	122	505.5	494.9	495.0	497.5
C	4	C	1.5	134	505.5	497.7	497.8	500.3
C	4	D	1.5	132	505.5	493.9	494.0	496.5
C	4	E	0.8	144	505.5	497.4	497.5	500.0
C	4	F	0.8	142	505.5	492.9	493.0	495.5



GRAVITY AND FORCE MAIN - PVC: SCHEDULE 40 WITH SOLVENT WELDED JOINTS.
PERFORATED PIPE-PVC: ASTM W/3-3/8" HOLES PER 6" W/120° OF INVERT. (DRAIN SPLIT)

SEPTIC TANK
9,000 GALLON PRECAST AS MANUFACTURED BY TINDAL CONCRETE PRODUCTS, INC. OR EQUAL. DISTRIBUTION BOX

MEDIUM BOX PRECAST AS MANUFACTURED BY C.R. SEHLER, INC. OR EQUAL.
SMALL BOX PRECAST AS MANUFACTURED BY C.R. SEHLER, INC. OR EQUAL. RUBBER GASKETS SHALL MEET THE REQUIREMENTS OF ASTM C493.

SPLITTER BOX
PRECAST AS MANUFACTURED BY TINDAL CONCRETE PRODUCTS, INC. OR EQUAL. 1/4" WEIR PLATES TO BE GALVANIZED STEEL STAINLESS STEEL, ALUMINUM OR FIBERGLASS. CONNECTING HARDWARE SHALL BE COMPATIBLE WITH THE WEIR PLATE MATERIAL USED. SO AS TO PREVENT CORROSION DUE TO DISSIMILAR METALS.

PUMPING STATIONS
10,000 GALLONS PRECAST AS MANUFACTURED BY TINDAL CONCRETE PRODUCTS, INC. OR EQUAL.

STONE
WASHED GRAVEL - 1/2" - 1-1/2" FREE OF FINES, DUST, ASHES AND CLAY. STONE BEDDING IN ACCORDANCE WITH AASHTO M83 NO. 57.

DOSING PUMP
HYDROMATIC MODEL 5M, MYERS MODEL 4WHY OR EQUAL; 1750 RPM, 7.88" IMPELLER, 7.5 HORSEPOWER.

RECIRCULATING PUMP
HYDROMATIC MODEL 5HF, MYERS MODEL 4VC OR EQUAL; 1150 RPM, 7.45 IMPELLER, 1.5 HORSEPOWER.

FILTER FABRIC
MIRAFI 140 OR EQUAL.

EXCAVATION PRACTICES AND PROCEDURES
DISPOSAL TRENCH AND SAND BED SIDES SHALL BE SCARIFIED WHEN EXCAVATED, BUT SHALL OTHERWISE REMAIN UNDISTURBED DURING CONSTRUCTION. USE A 3' BUCKET. DO NOT COMPACT THESE SURFACES.

THE CONTRACTOR SHALL PROVIDE MATERIALS FOR SHORING AND SHEETING AS MAY BE REQUIRED FOR SAFETY OF PERSONNEL, IN COMPLIANCE WITH OSHA AND MSHA GUIDELINES.

IF ANY STRUCTURE IS WITHIN THE SCHOOL BUILDING BACKFILL, SOIL FOUNDATION SHALL BE COMPACTED TO 95% BY MODIFIED PROCTOR METHOD.

APPROVED: MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR PRIVATE SEWAGE DISPOSAL SYSTEM AND ON-SITE WATER SYSTEM PENDING THE CONSTRUCTION PERMIT ISSUED BY THE ENGINEERING AND CONSTRUCTION PROGRAM FOR THE ON-SITE WATER SYSTEM.

David A. Fer 4 May 93
REGIONAL CONSULTANT DATE

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ONSITE WATER AND PRIVATE SEWAGE SYSTEMS.

Joyce M. Boyd 5/4/93
COUNTY HEALTH OFFICER (CW) DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James R. Smith 5/12/93
DIRECTOR DATE

Emma Helonath 5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PRIVATE WATER, PRIVATE SEWAGE, STORM DRAINAGE SYSTEMS AND PRIVATE ROADS.

DIRECTOR DATE

CHIEF, BUREAU OF ENGINEERING DATE

3/2/93
DATE NO. REVISION

OWNER/DEVELOPER

BOARD OF EDUCATION OF HOWARD COUNTY
10910 ROUTE 108
ELLCOTT CITY, MARYLAND 21043

PROJECT
NORTHERN ELEMENTARY SCHOOL II

AREA
TAX MAP PARCEL 44
3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DETAILS

WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS

BALTIMORE, MD RICHMOND, VA YORK, PA

SHEET NO: D-4

DESIGNED BY:

DRAWN BY:

PROJECT NO: 50277

DATE: FEBRUARY 12, 1993

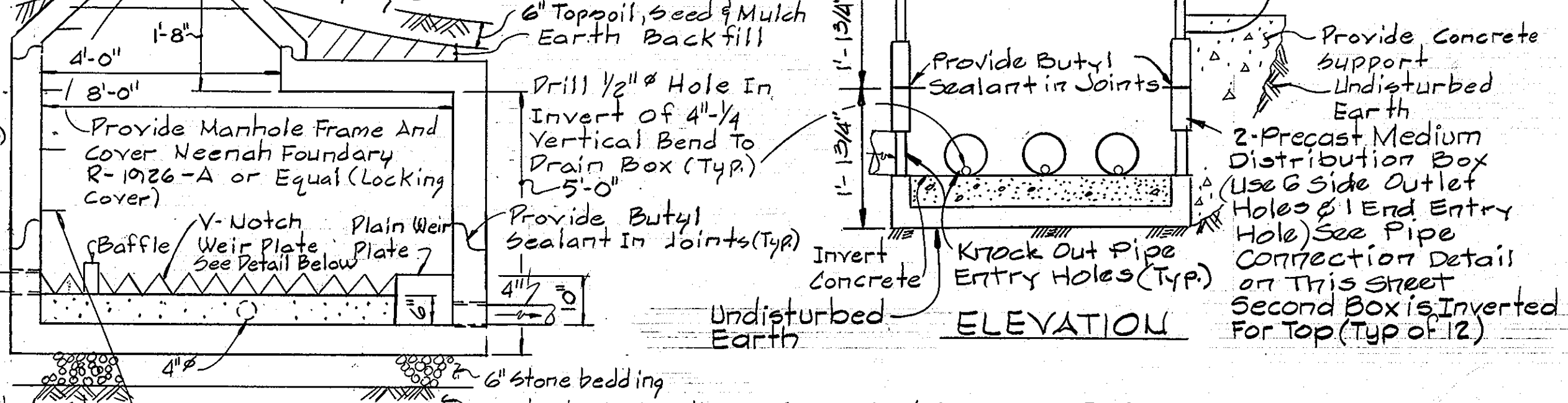
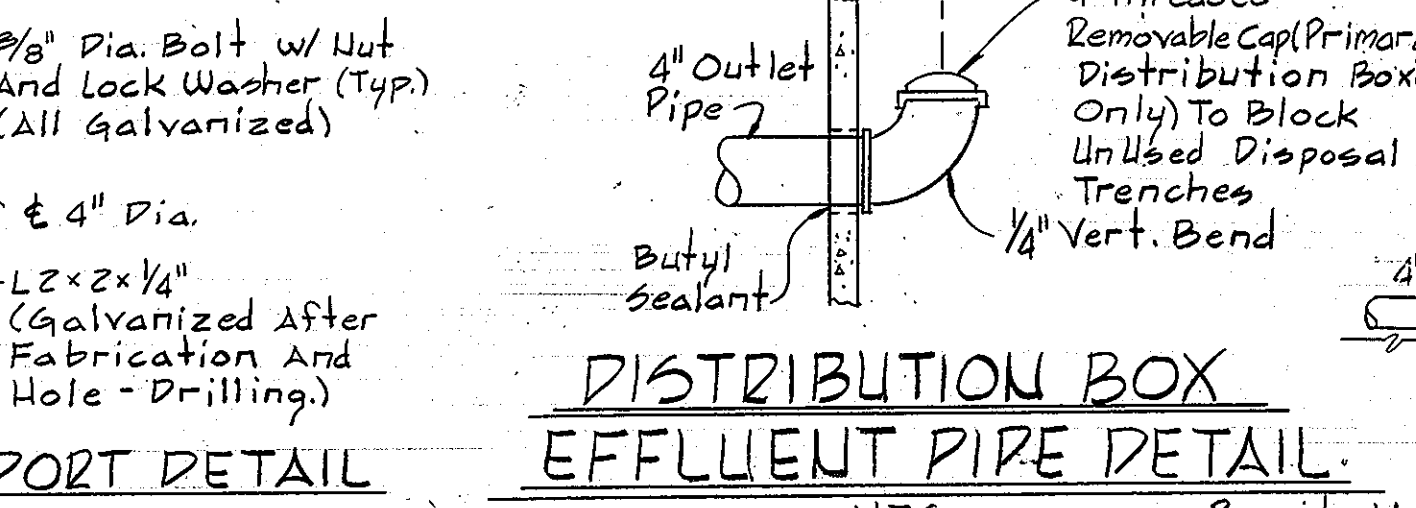
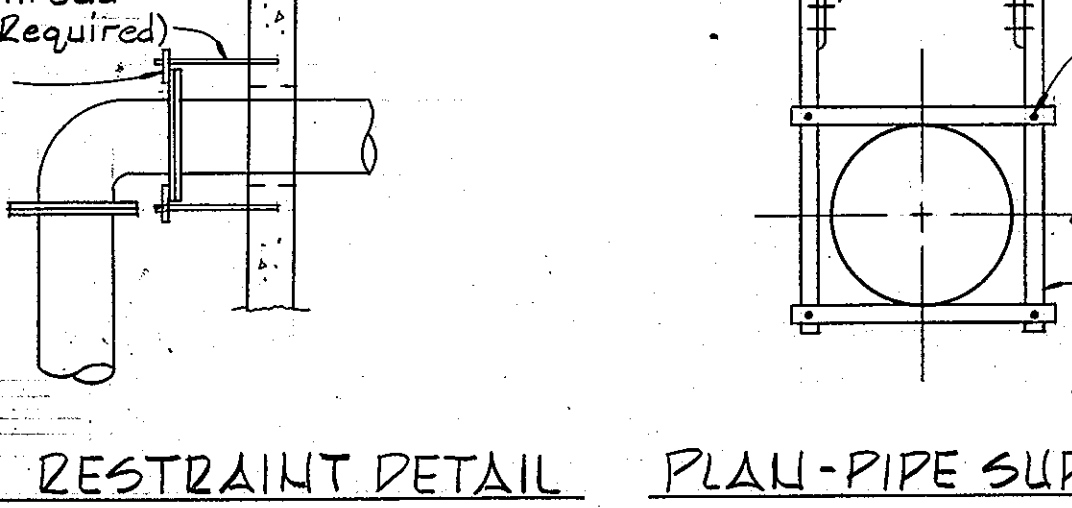
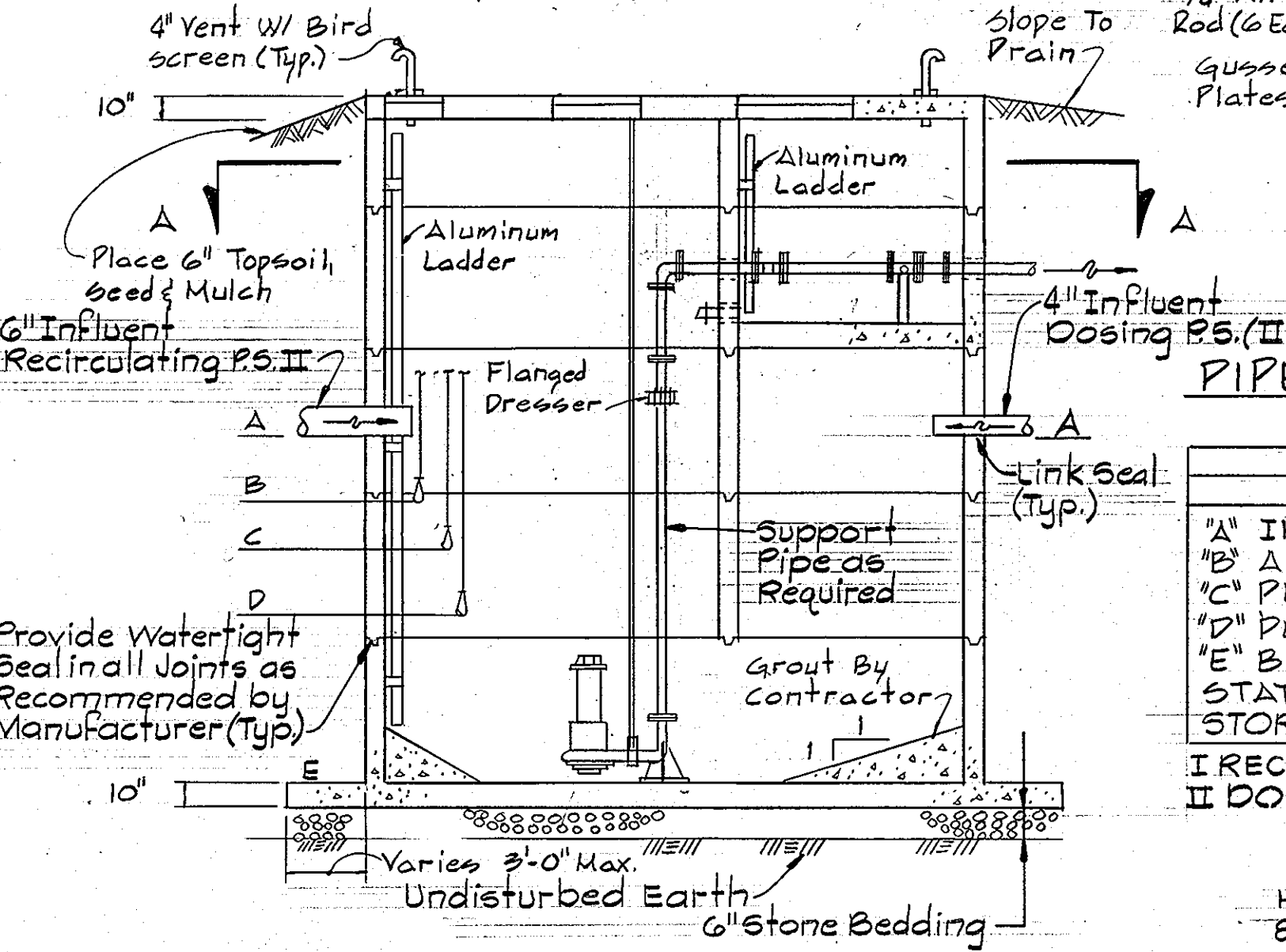
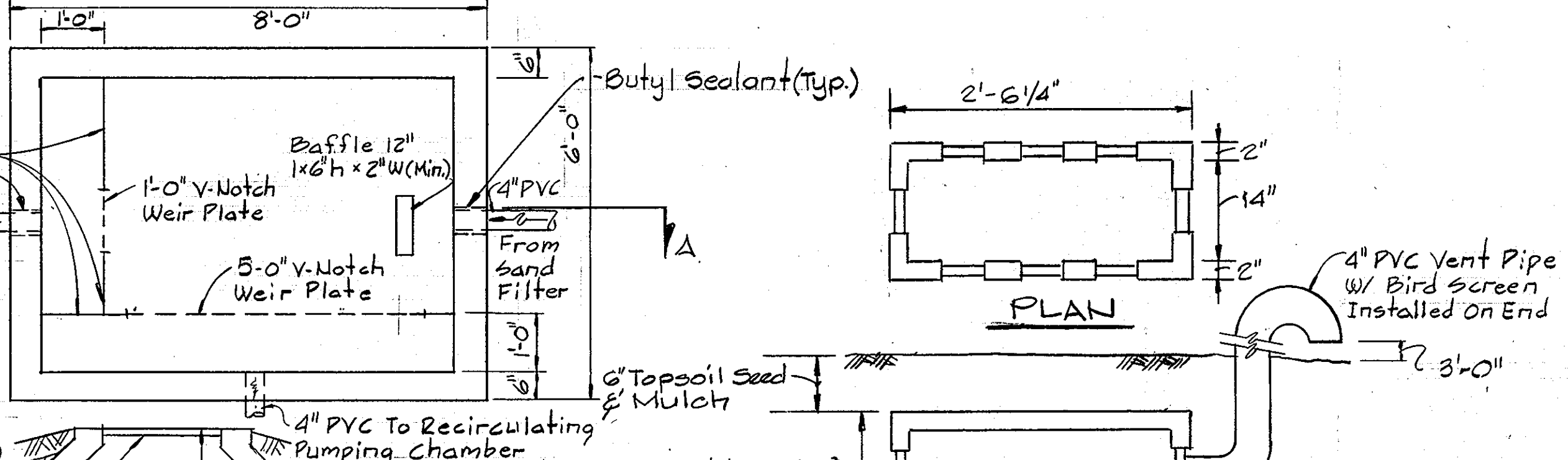
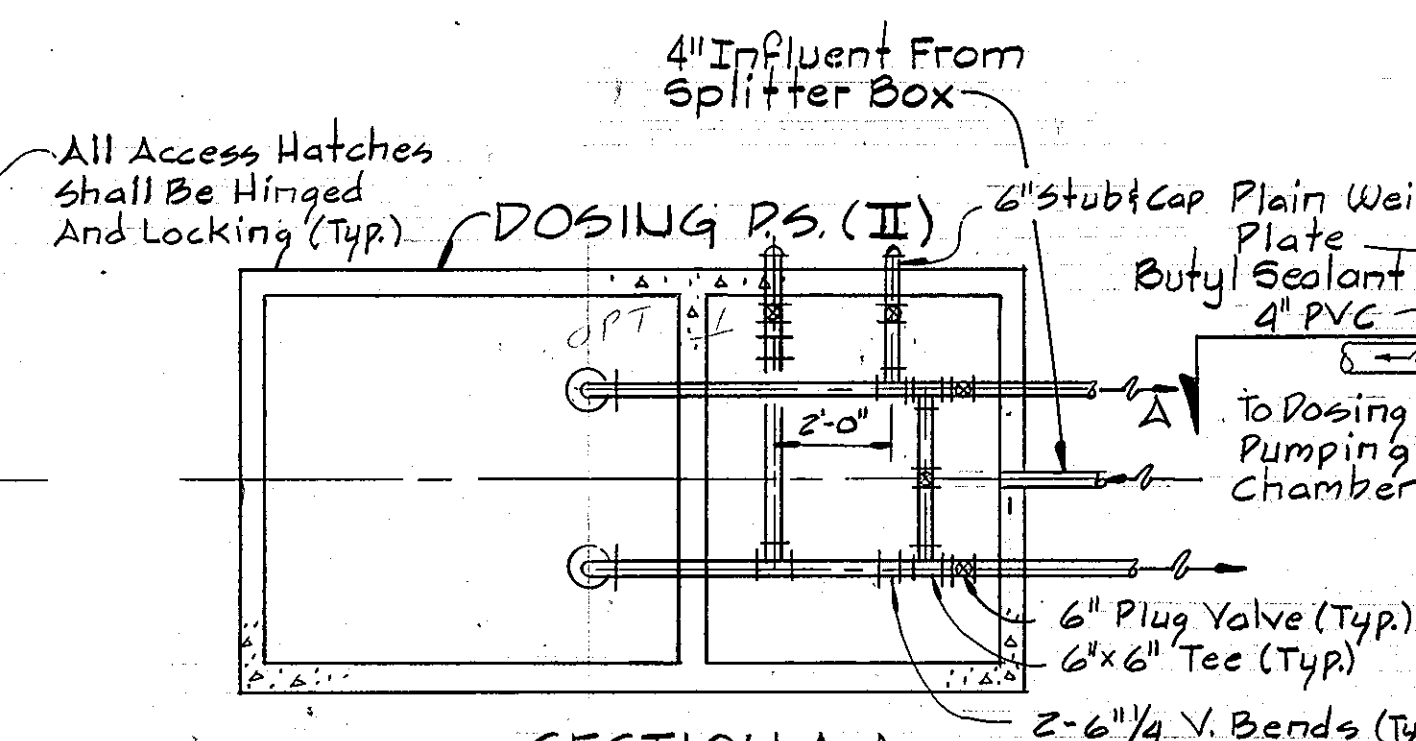
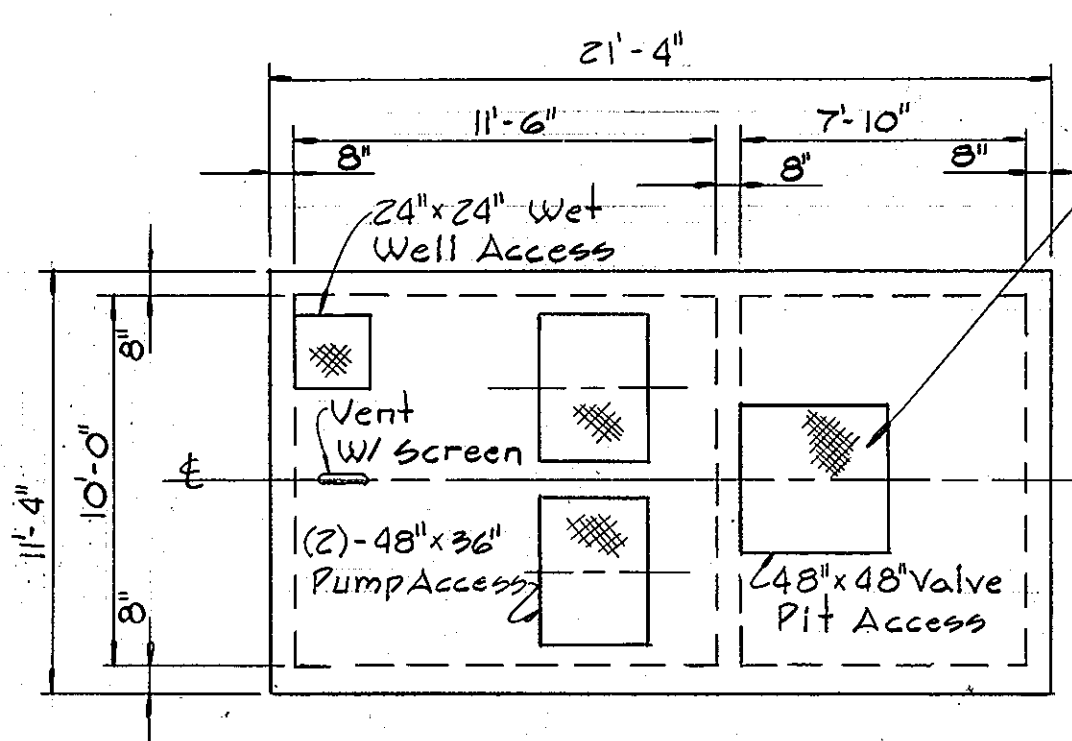
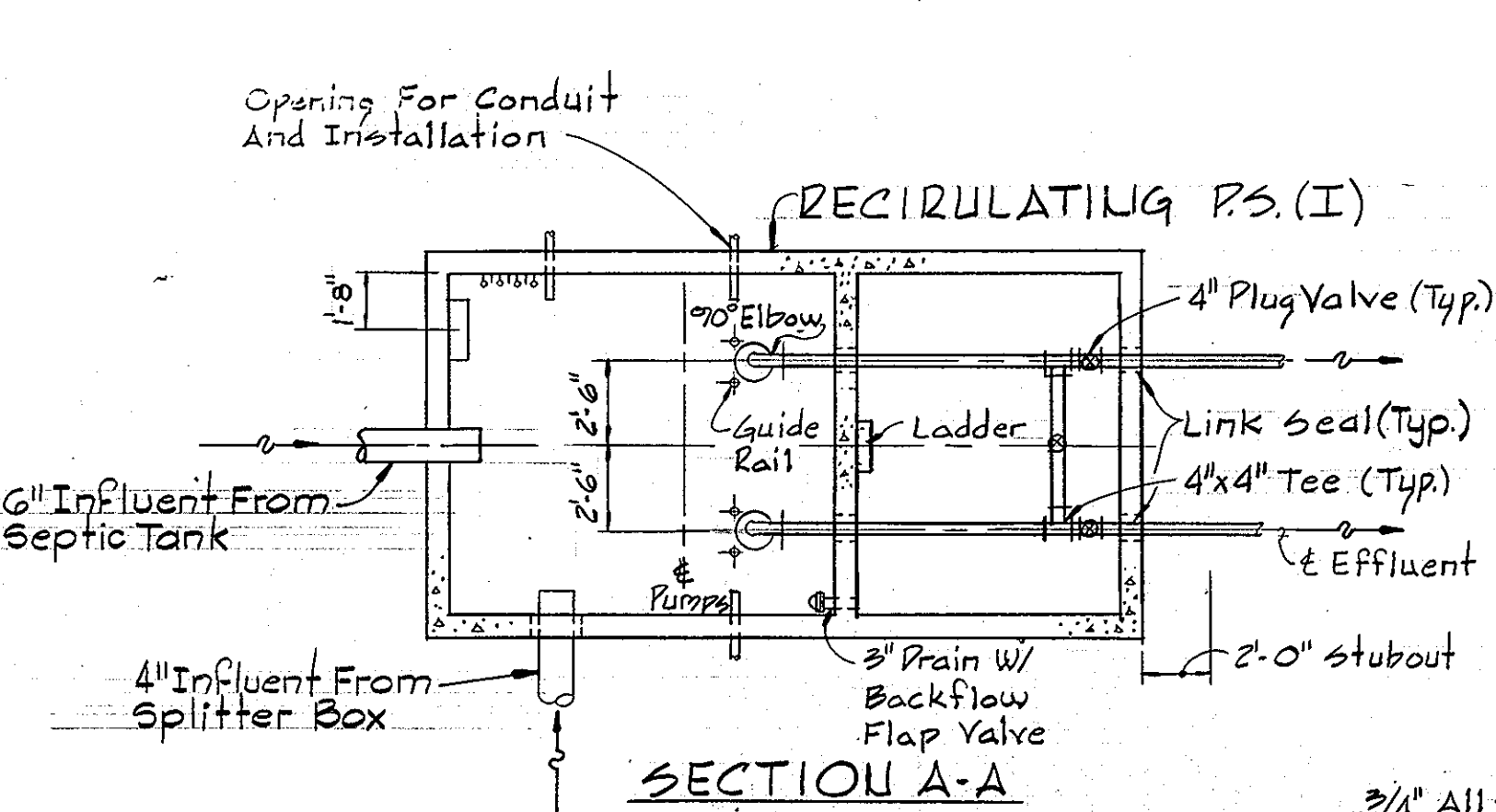
SCALE: AS SHOWN

DRAWING NO. 20 OF 21

DRAFT 10/9/92

David A. Fer

SOP 93-38



U.T.S.

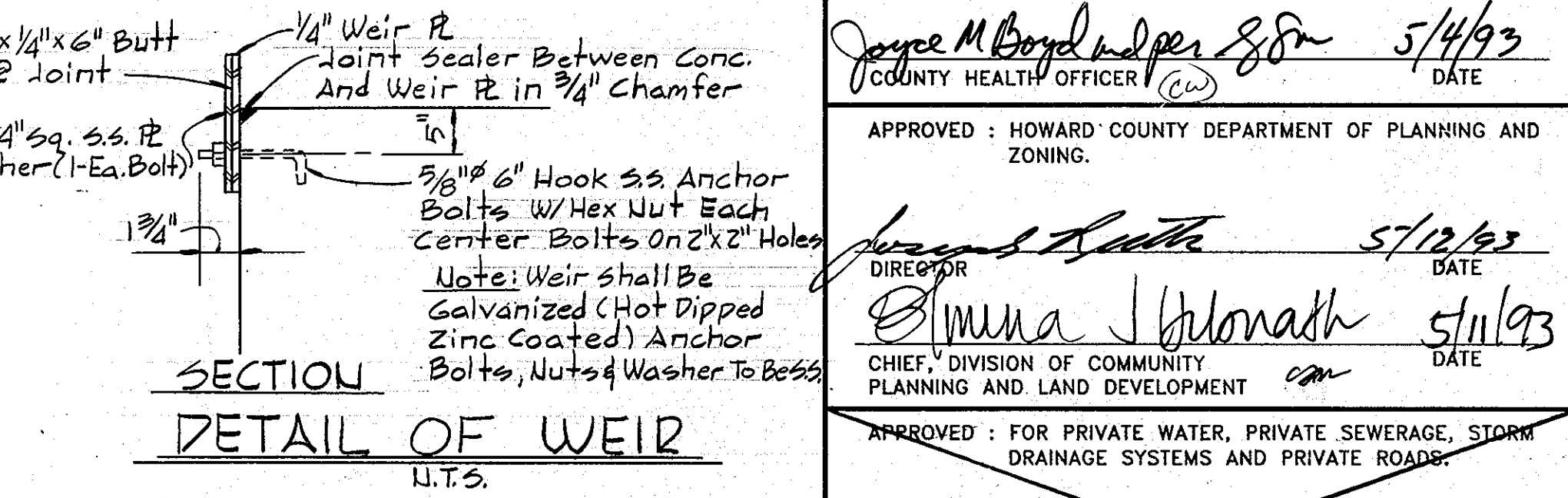
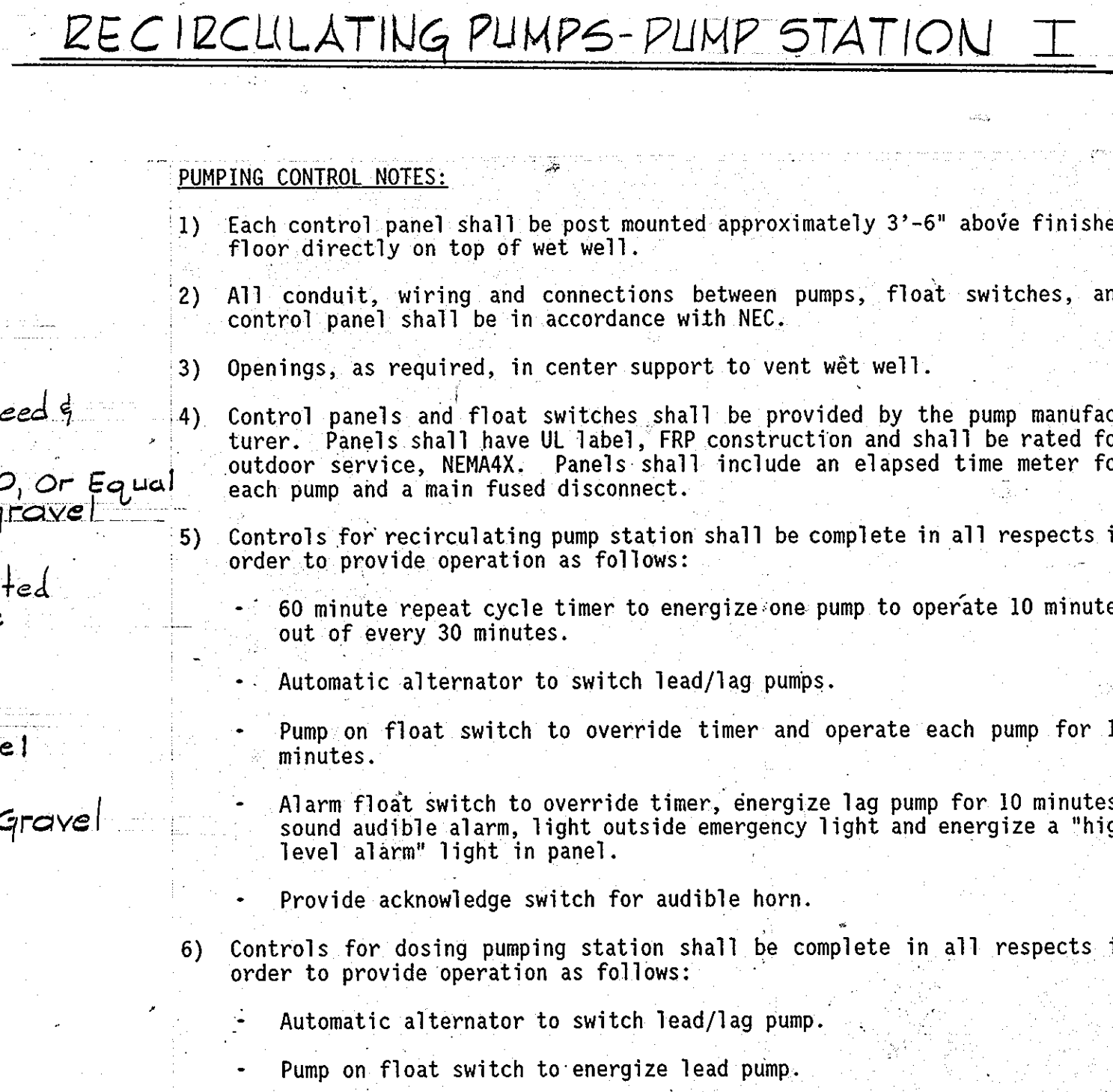
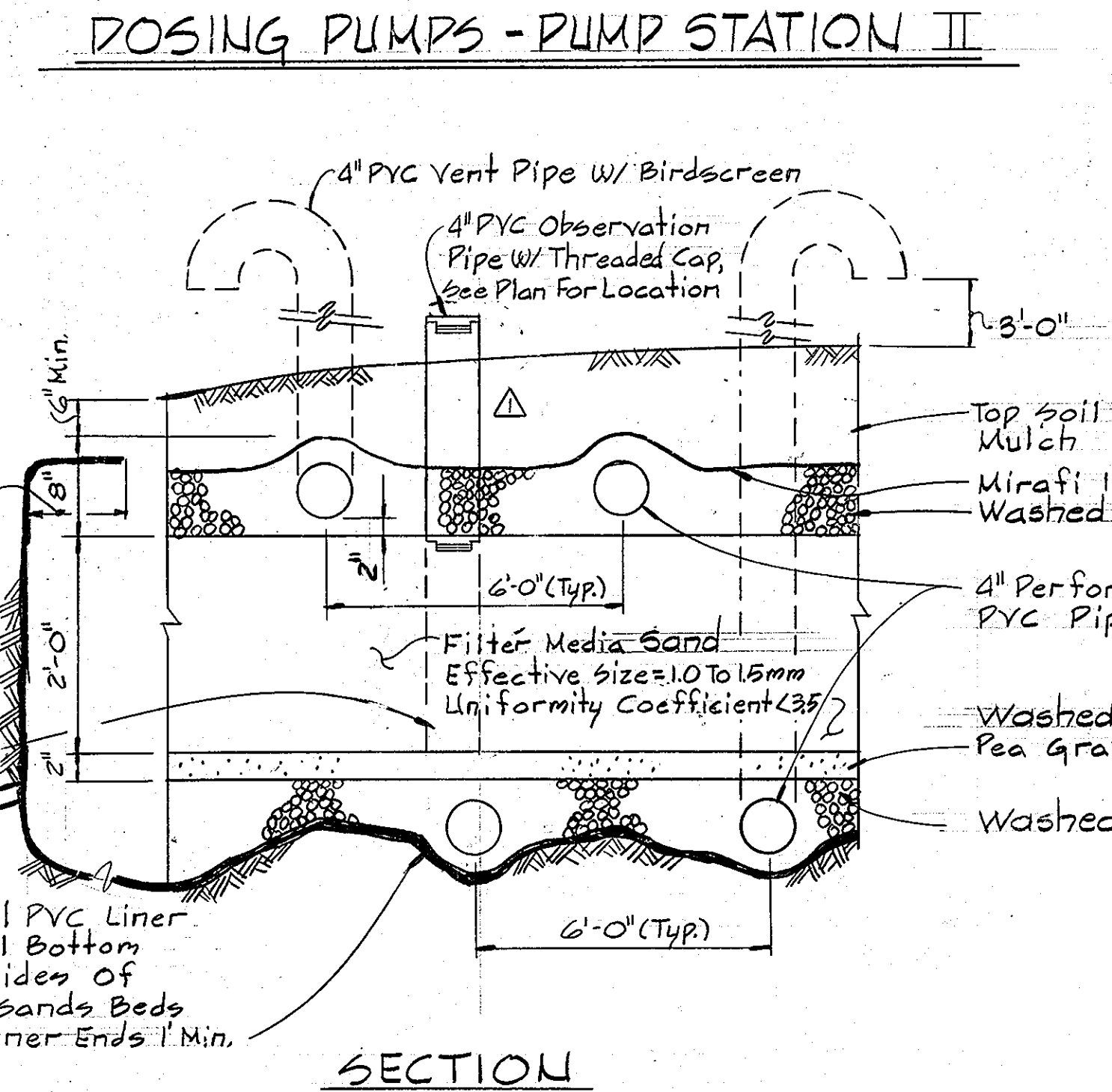
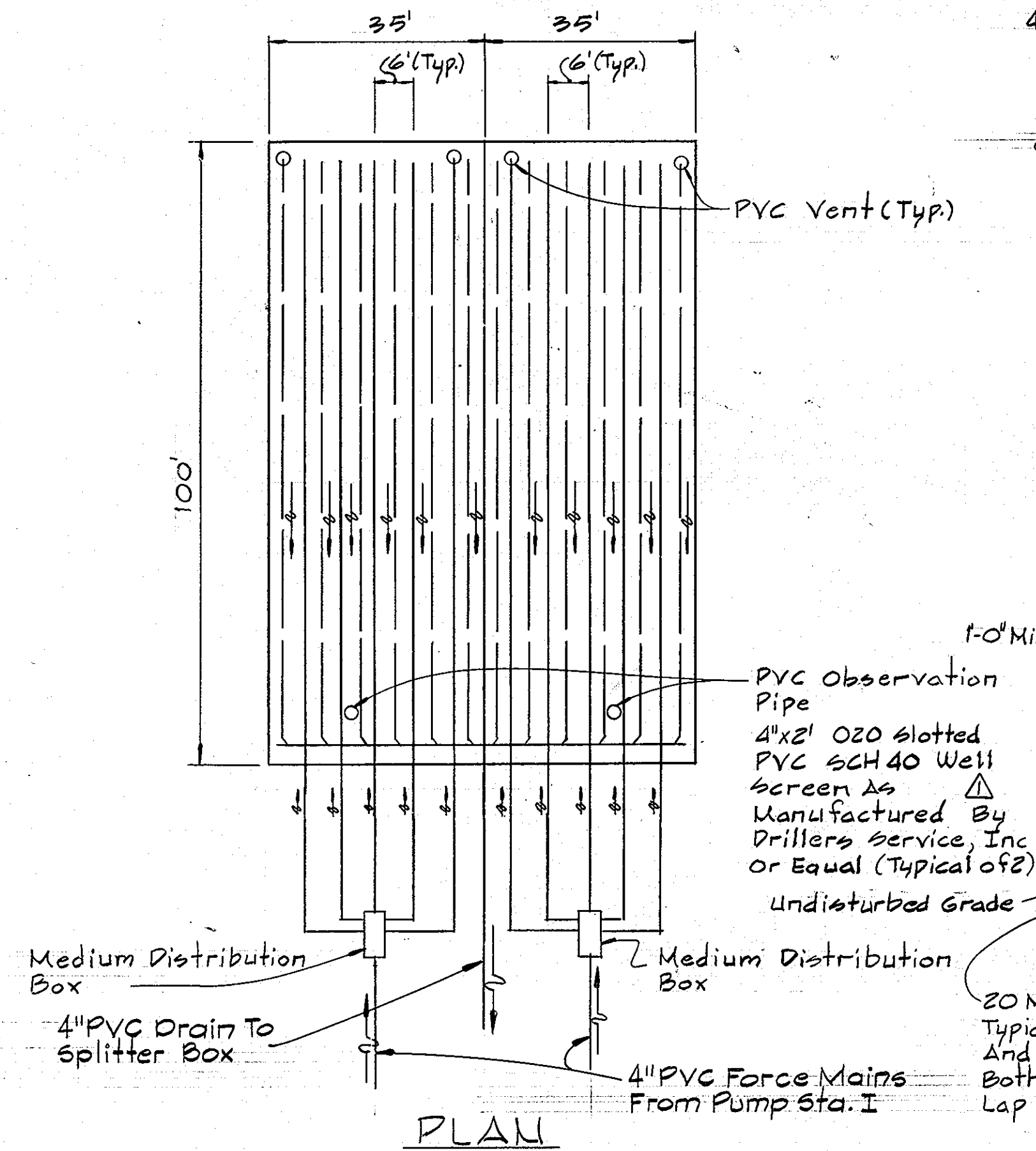
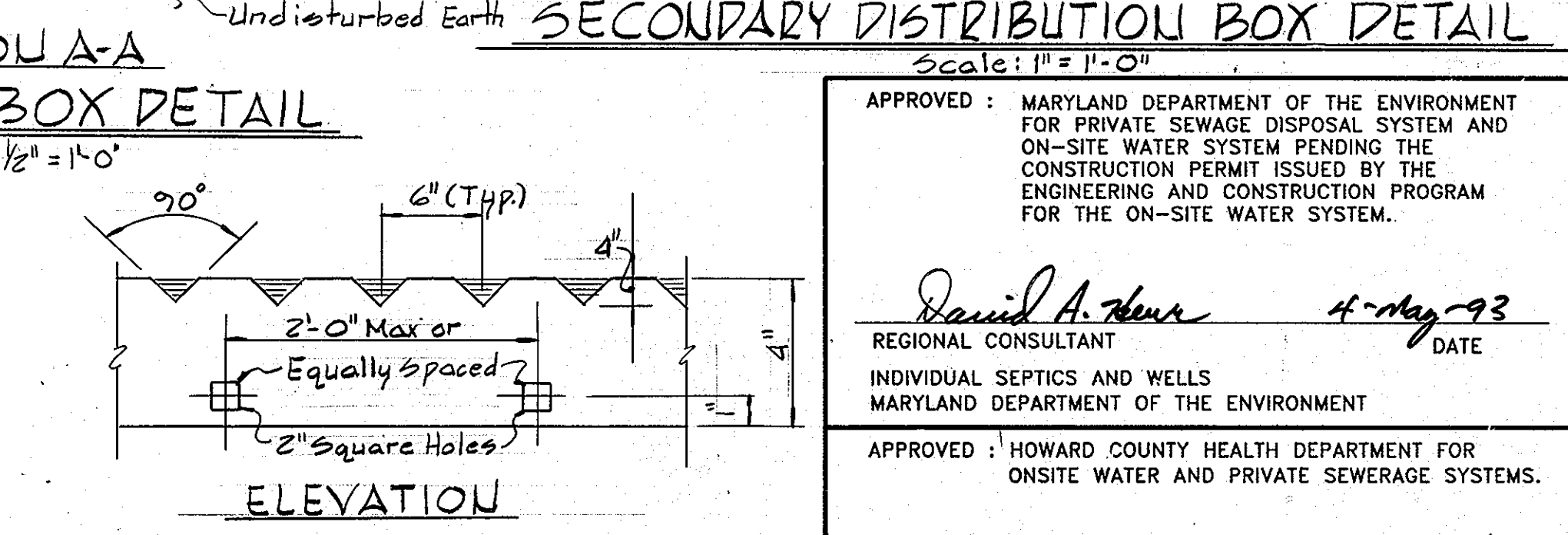
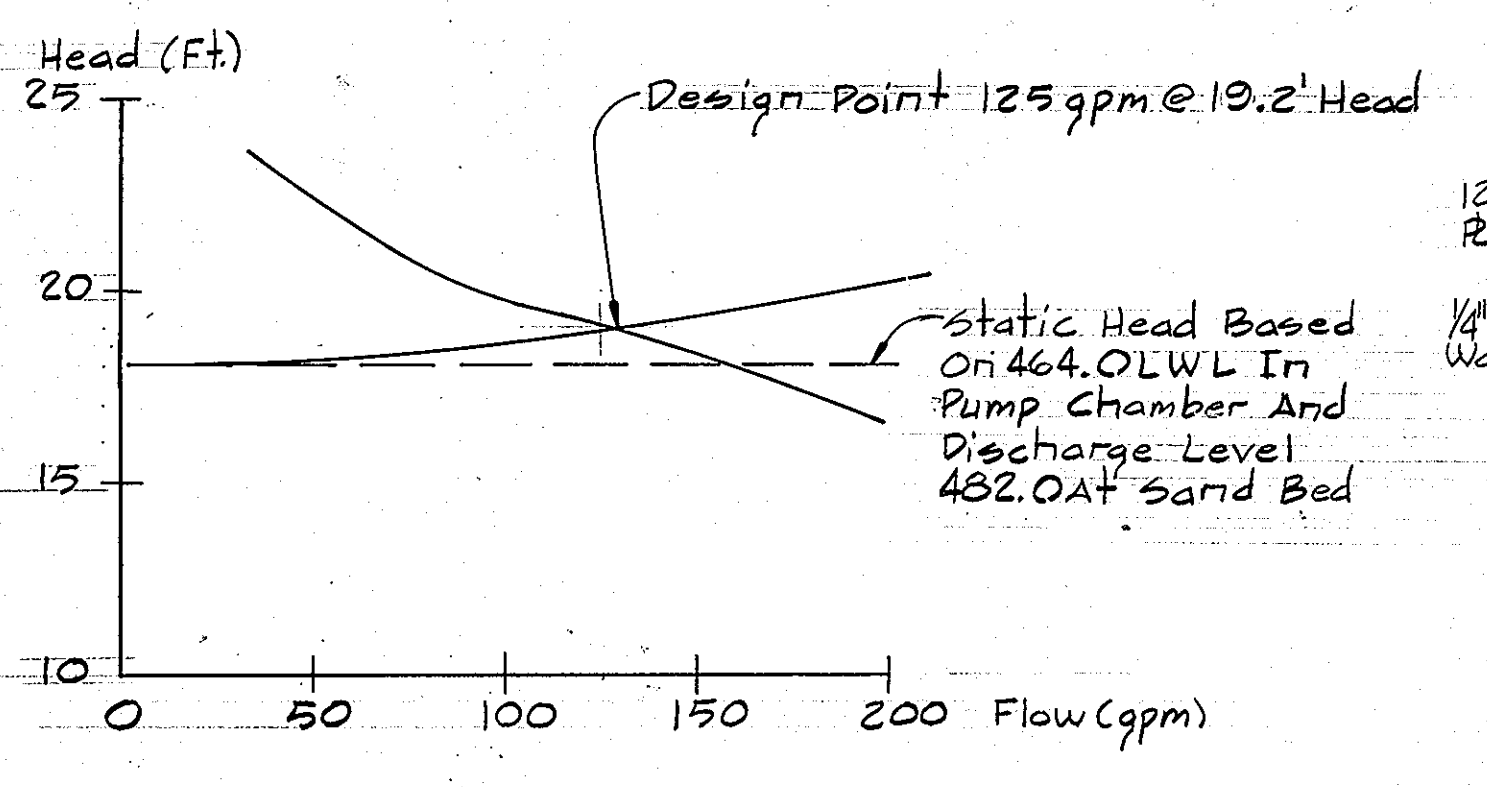
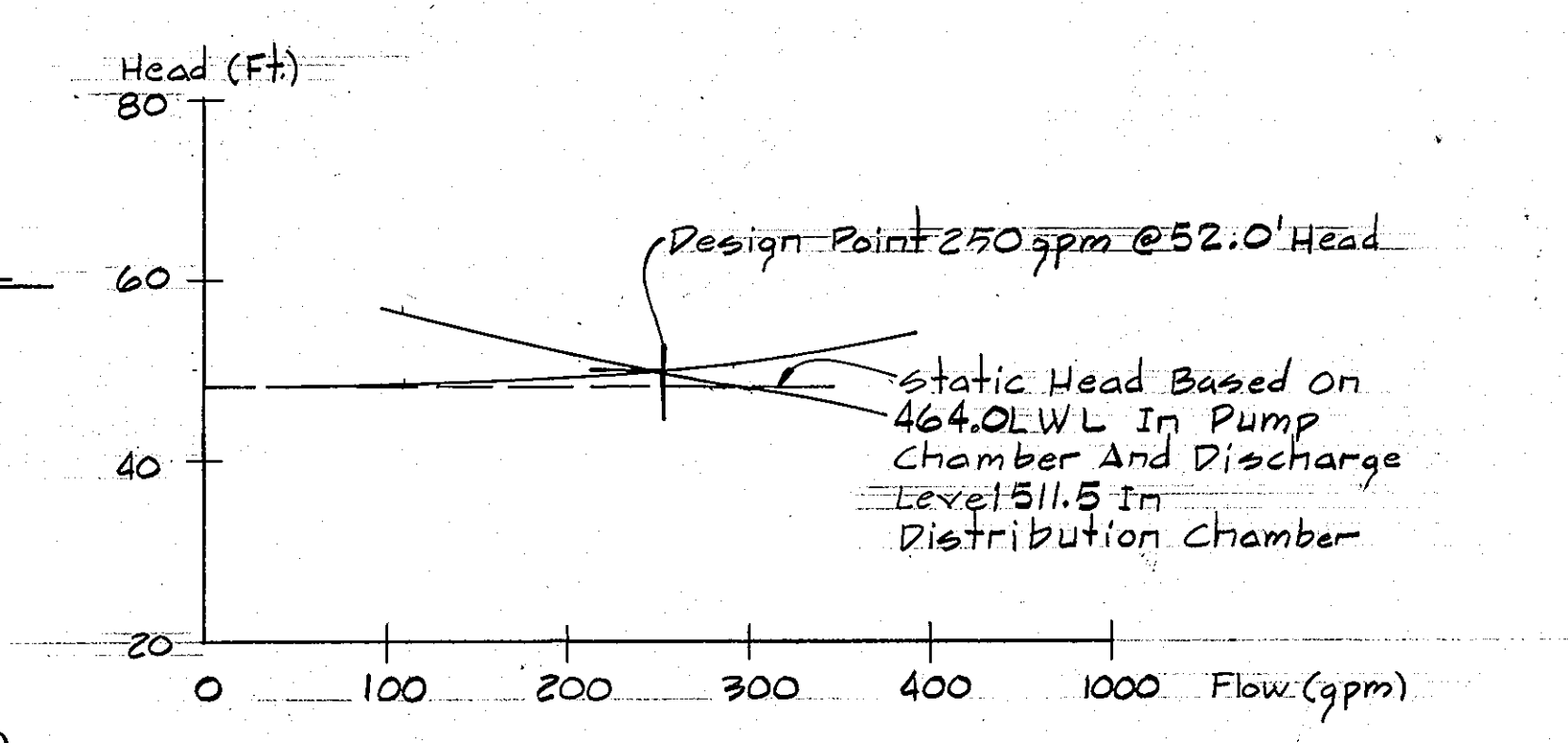
DIMENSIONAL DATA		
VARIABLE	I	II
"A" INFLUENT ELEV.	471.1	472.2
"B" ALARM ELEV.	470.1	470.2
"C" PUMP ON ELEV.	467.4	466.4
"D" PUMP OFF ELEV.	464.0	464.0
"E" BOTTOM INVERT	463.0	463.0
STATION TOP ELEV.	479.0	476.0
STORAGE VOLUME (Gal.)	10,138	11,860

I RECIRCULATION PUMP STATION
II DOSING PUMP STATION

NOTED: DEPARTMENT OF THE ENVIRONMENT
DIVISION OF SEPTIC SYSTEMS REGULATION

Developed by: *Chris Tompkins* Date: 10/30/92

Approved by: *Chris Tompkins* Date: 10/30/92



- PUMPING CONTROL NOTES:
- Each control panel shall be post mounted approximately 3'-6" above finished floor directly on top of wet well.
 - All conduit, wiring and connections between pumps, float switches, and control panel shall be in accordance with NEC.
 - Openings, as required, in center support to vent wet well.
 - Control panels and float switches shall be provided by the pump manufacturer. Panels shall have UL label, FRP construction and shall be rated for outdoor service, NEMA4X. Panels shall include an elapsed time meter for each pump and a main fused disconnect.
 - Controls for recirculating pump station shall be complete in all respects in order to provide operation as follows:
 - 60 minute repeat cycle timer to energize one pump to operate 10 minutes out of every 30 minutes.
 - Automatic alternator to switch lead/lag pumps.
 - Pump on float switch to override timer and operate each pump for 10 minutes.
 - Alarm float switch to override timer, energize lag pump for 10 minutes, sound audible alarm, light outside emergency light and energize a "high level alarm" light in panel.
 - Provide acknowledge switch for audible horn.
 - Controls for dosing pumping station shall be complete in all respects in order to provide operation as follows:
 - Automatic alternator to switch lead/lag pump.
 - Pump on float switch to energize lead pump.
 - Pump off float switch to deenergize lead pump.
 - Provide acknowledge switch in panel.

APPROVED: MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR PRIVATE SEWAGE DISPOSAL SYSTEM AND ON-SITE WATER SYSTEM PENDING THE CONSTRUCTION PERMIT ISSUED BY THE ENGINEERING AND CONSTRUCTION PROGRAM FOR THE ON-SITE WATER SYSTEM.

David A. Deur 4-May-93
REGIONAL CONSULTANT DATE

INDIVIDUAL SEPTICS AND WELLS MARYLAND DEPARTMENT OF THE ENVIRONMENT

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR ONSITE WATER AND PRIVATE SEWERAGE SYSTEMS.

Joyce M. Boyd 5/4/93
COUNTY HEALTH OFFICER (C) DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James S. Datta 5/12/93
DIRECTOR DATE

Shirley J. Blonath 5/11/93
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PRIVATE WATER, PRIVATE SEWERAGE, STORM DRAINAGE SYSTEMS AND PRIVATE ROADS.

DIRECTOR DATE

CHIEF, BUREAU OF ENGINEERING DATE

3/24/93 Made Observation Well a Well screen

DATE NO. REVISION

OWNER/DEVELOPER

BOARD OF EDUCATION OF HOWARD COUNTY 10910 ROUTE 108 ELLICOTT CITY, MARYLAND 21043

PROJECT: NORTHERN ELEMENTARY SCHOOL II

AREA: TAX MAP PARCEL 44 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DETAILS

WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS

BALTIMORE, MD RICHMOND, VA YORK, PA

SHEET NO. D-5

DESIGNED BY:

DRAWN BY:

PROJECT NO.: 50277

DATE: FEBRUARY 12, 1993

SCALE: AS SHOWN

DRAWING NO. 21 OF 21

Edward D. Supa 10-22-92