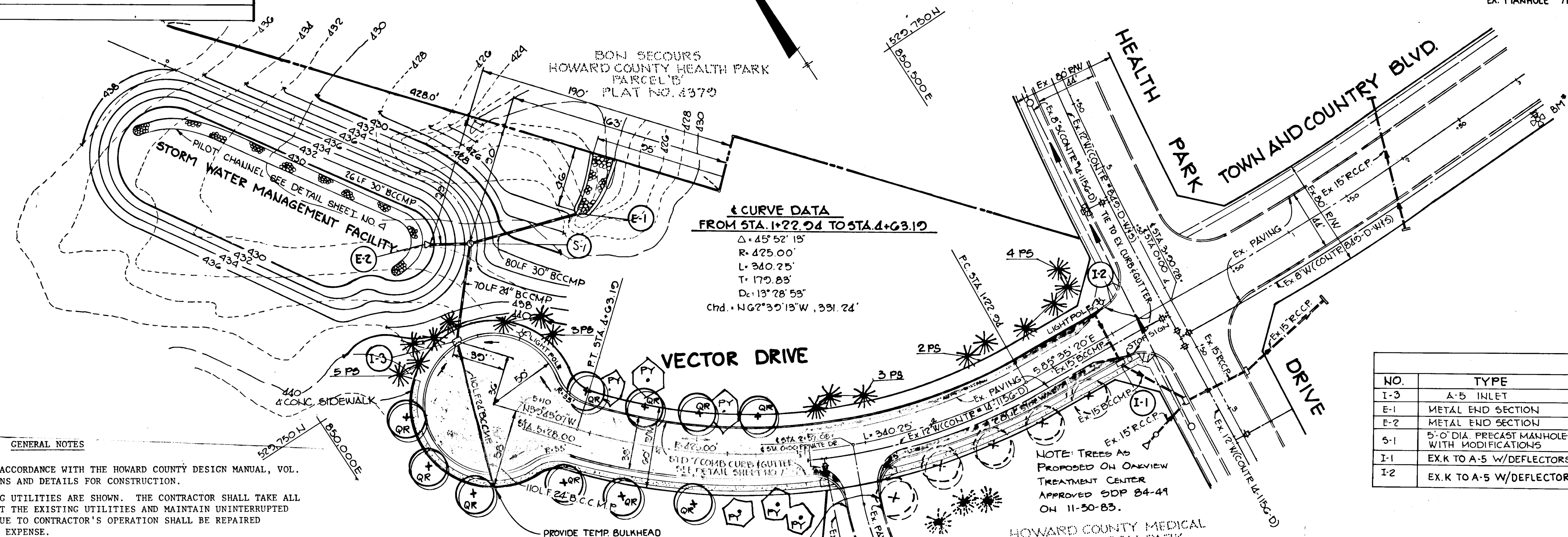
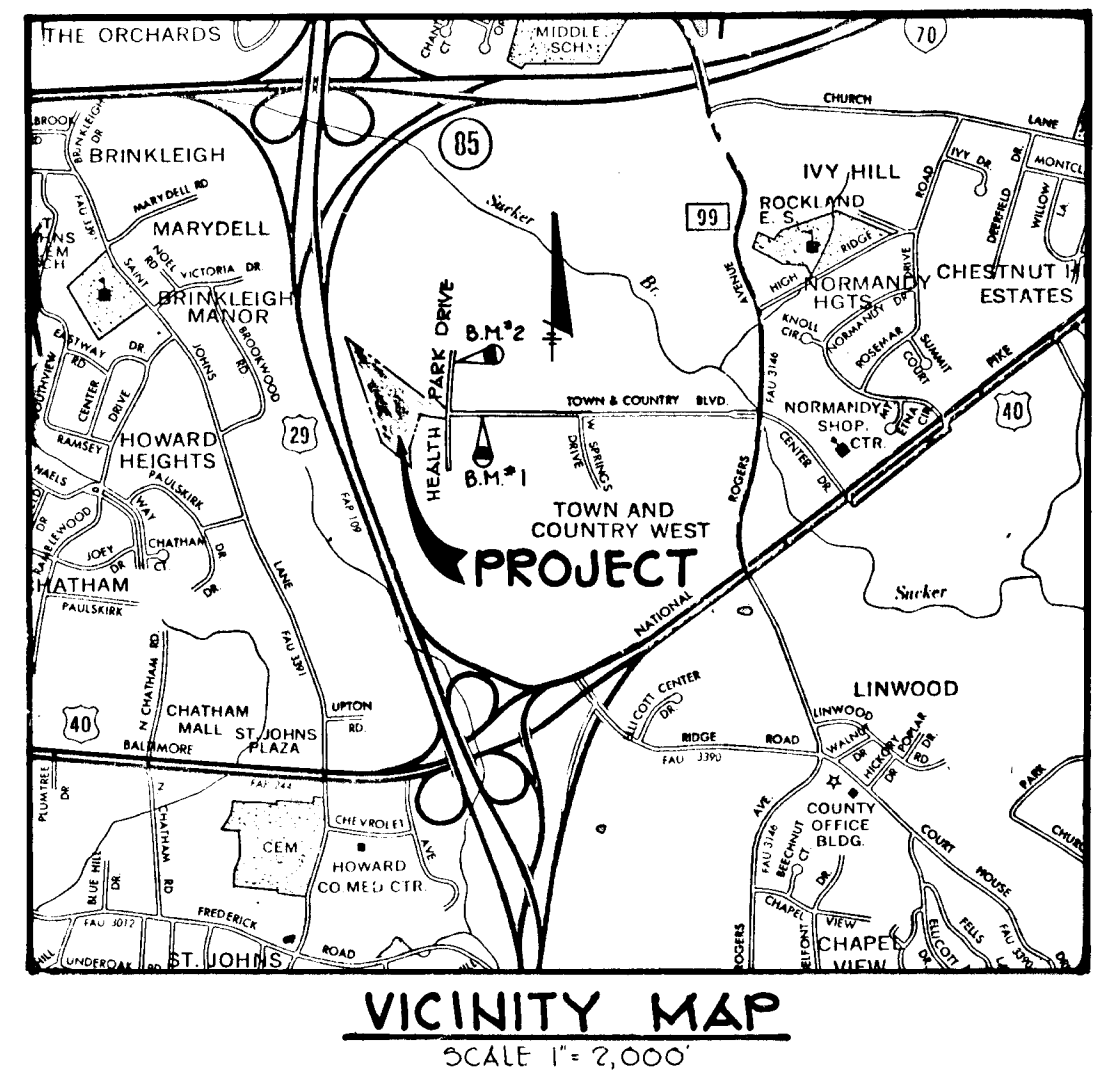


SHEET INDEX	
NO.	DESCRIPTION
1.	PLAN AND PROFILE OF OAKVIEW DRIVE
2.	DRAINAGE AREA MAP AND DETAILS
3.	STORM WATER MANAGEMENT SEDIMENT CONTROL PLAN
4.	PROFILES AND DETAILS

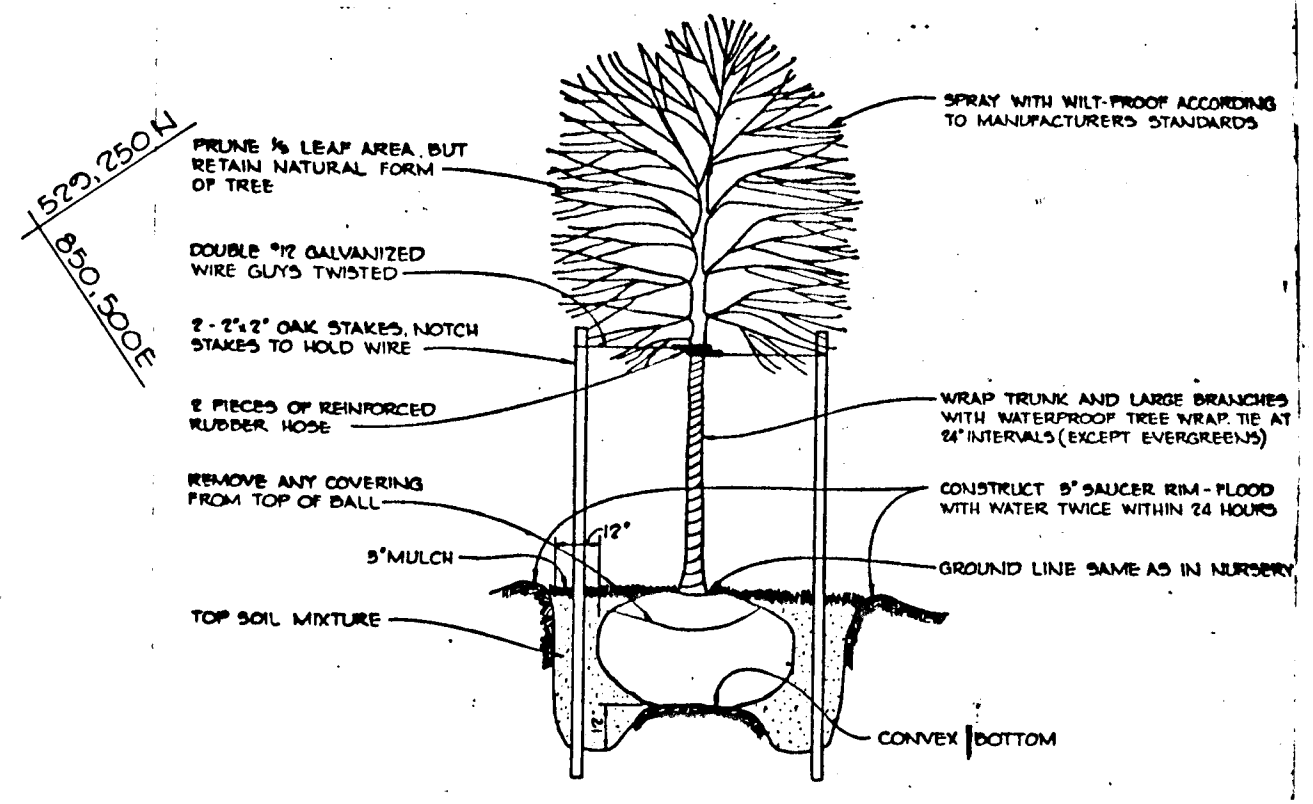
BENCH MARKS
 B.M.#1
 TOP OF EX.FH ON SOUTHEAST SIDE OF TOWN AND COUNTRY BLVD E STA. 3+00.2
 B.M.#2
 EX. MANHOLE #7177 TOP OF RIM ELEV. 411.68



STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	DESCRIPTION
I-3	A-5 INLET	SEE PLAN	435.50	435.30	439.63	HO.CO. STD. 30.401
E-1	METAL END SECTION	SEE PLAN		422.20		HO.CO. STD. 50.561
E-2	METAL END SECTION	SEE PLAN		427.22		HO.CO. STD. 50.561
S-1	5'-0" DIA. PRECAST MANHOLE WITH MODIFICATIONS	SEE PLAN	426.70	426.7	436.1	SEE DETAIL SHEET NO. 4
I-1	EX.K TO A-5 W/DEFLECTORS	SEE PLAN	428.37	428.17	432.76	HO.CO. STD. 50.401
I-2	EX.K TO A-5 W/DEFLECTORS	SEE PLAN		428.70	432.76	HO.CO. STD. 50.401

- GENERAL NOTES**
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
 - APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. 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 FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
 - CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS:
 MISS UTILITY 559-0100
 BELL TELEPHONE SYSTEM 393-3649
 LONG DISTANCE CABLE DIVISION 393-3553 or 3554
 BALTIMORE GAS AND ELECTRIC COMPANY 539-8000, ext. 691
 HOWARD COUNTY BUREAU OF UTILITIES 992-2366
 HOWARD COUNTY CONSTRUCTION/INSPECTION SURVEY DIVISION (24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK) 792-7272
 - ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
 - ALL STREET CURB RETURNS SHALL HAVE 35.0' RADII UNLESS OTHERWISE NOTED.
 - STORM DRAIN TRENCHES WITHIN ROAD RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
 - INSTALLATION OF TRAFFIC CONTROL DEVICES, MARKING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 1971 EDITION.
 - PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
 - DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS:
 ALL 60' RIGHT-OF-WAYS 30 M.P.H.
 - ALL ELEVATIONS SHOWN ARE BASED ON U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
 - ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
 - PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
 - SUBJECT PROPERTY ZONED FOR PER 10-03-77 COMPREHENSIVE ZONING PLAN.
 - TOPO TAKEN FROM FIELD RUN SURVEY DATED FEBRUARY, 1984 BY THE RIEMER GROUP, INC.
 - NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
 - ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C' AS SHOWN IN FIG. 11.4, VOLUME I OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
 - SUBJECT TO VP-84-74

NOTE: TREES AS PROPOSED ON OAKVIEW TREATMENT CENTER APPROVED ODP 84-41 ON 11-30-83.
 HOWARD COUNTY MEDICAL RESEARCH PARK PARCEL C-2 PLAT NO. 5677



SYM.	QUAN.	NAME	SIZE	REMARKS
QR	10	QUERCUS RUBRA -Northern Red Oak	2 1/2"-3" Cal. 12'-14' Ht.	B & B Full Head
PY	6	FRUNUS YEDOENSIS -Yoshino Cherry	2 1/2" Cal. 6'-8" Ht.	B & B Full Head
PS	17	PINUS STROBUS -Eastern White Pine	2 1/2" Cal. 6'-8" Ht.	B & B Unsheared

PLAN
 SCALE 1"=50'
VECTOR DRIVE

PLANTING DETAIL
 NO SCALE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF ENGINEERING

DATE 7-24-84

DATE NO. REVISION

OWNER: PETER KIRK, PATRICK MCCUJAN AND WILBUR E. SIMMONS JR. TRUSTEES
 1000 EQUITABLE BANK CENTER
 COLUMBIA, MARYLAND 21044

DEVEL: K.M.S. INC.
 1000 EQUITABLE BANK CENTER
 COLUMBIA, MARYLAND 21044

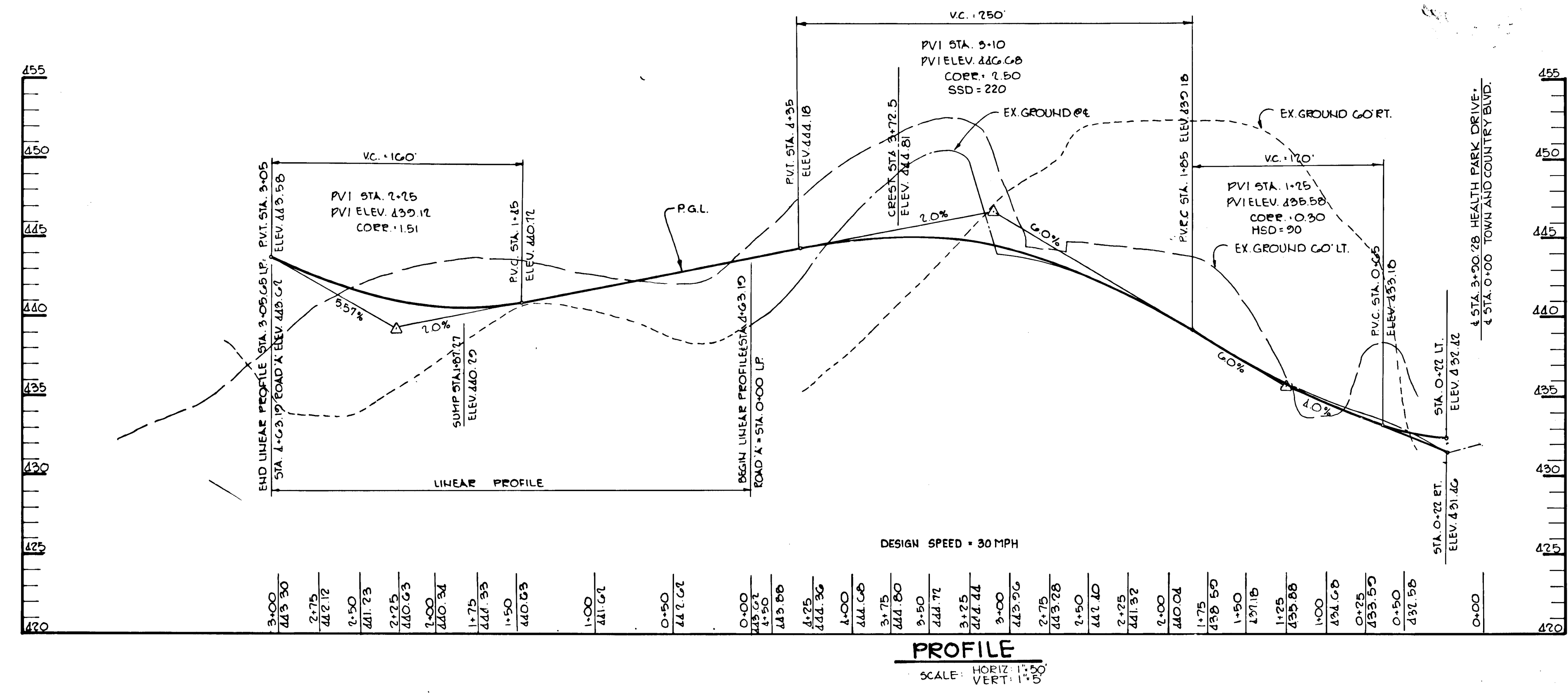
PROJECT: HOWARD COUNTY MEDICAL RESEARCH PARK PARCEL C-1

AREA RECORD PLAT RECORDING REFERENCE NO. TAX MAP NO. 17 PARCEL 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: PLAN AND PROFILE OF OAKVIEW DRIVE

SITE TABULATION

TOTAL NUMBER OF PARCELS	1
TOTAL AREA OF PARCEL	13.156 AC
TOTAL AREA OF ROAD R/W	0.868 AC
TOTAL AREA OF SUBDIVISION	14.024 AC

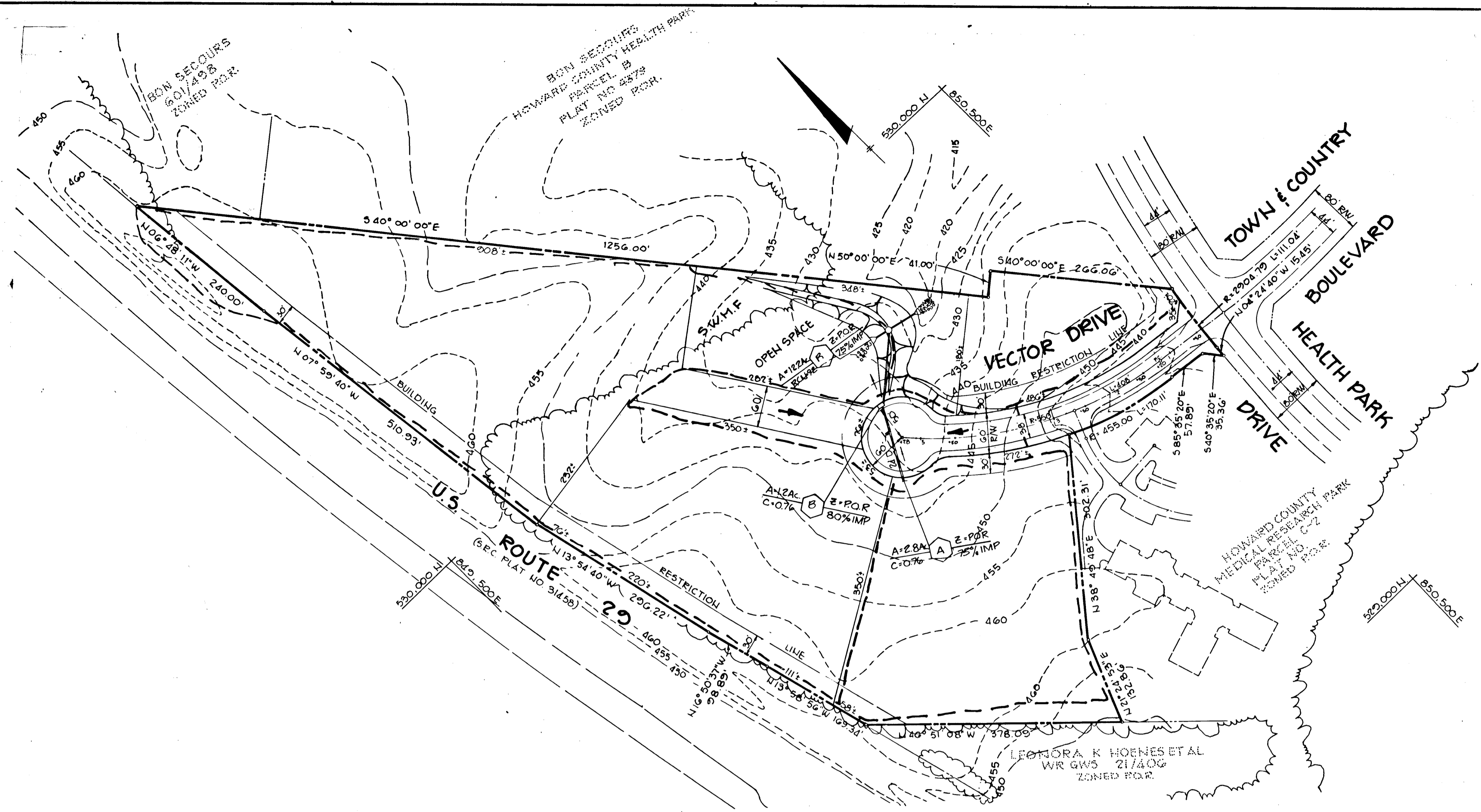


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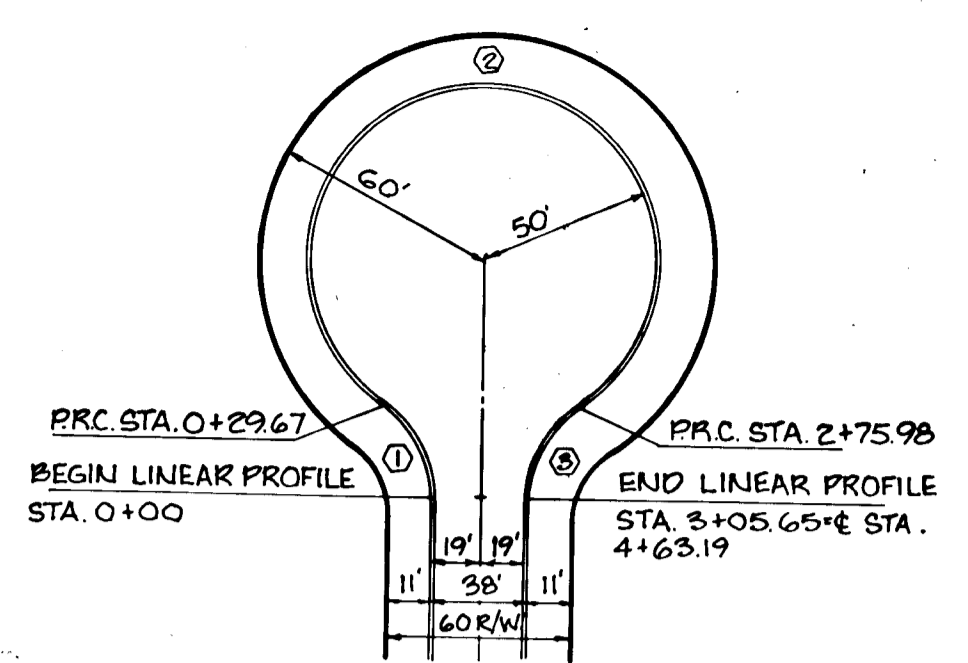
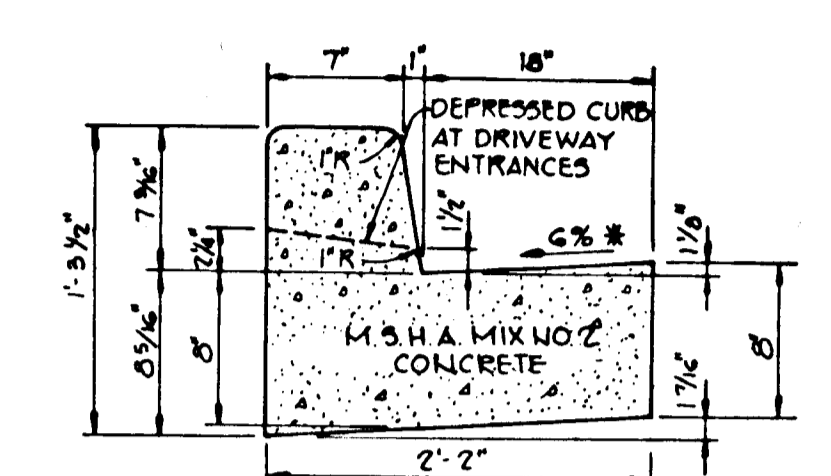
THE RIEMER GROUP, INC.
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
 8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301-461-2690

7/10/84
 DATE

DESIGNED BY: D.L.W.
 DRAWN BY: D.A.M.
 PROJECT NO: 009000
 DATE: 4/16/84
 SCALE: AS SHOWN
 DRAWING NO. 1 OF 4



DRAINAGE AREA
SCALE: 1" = 100'

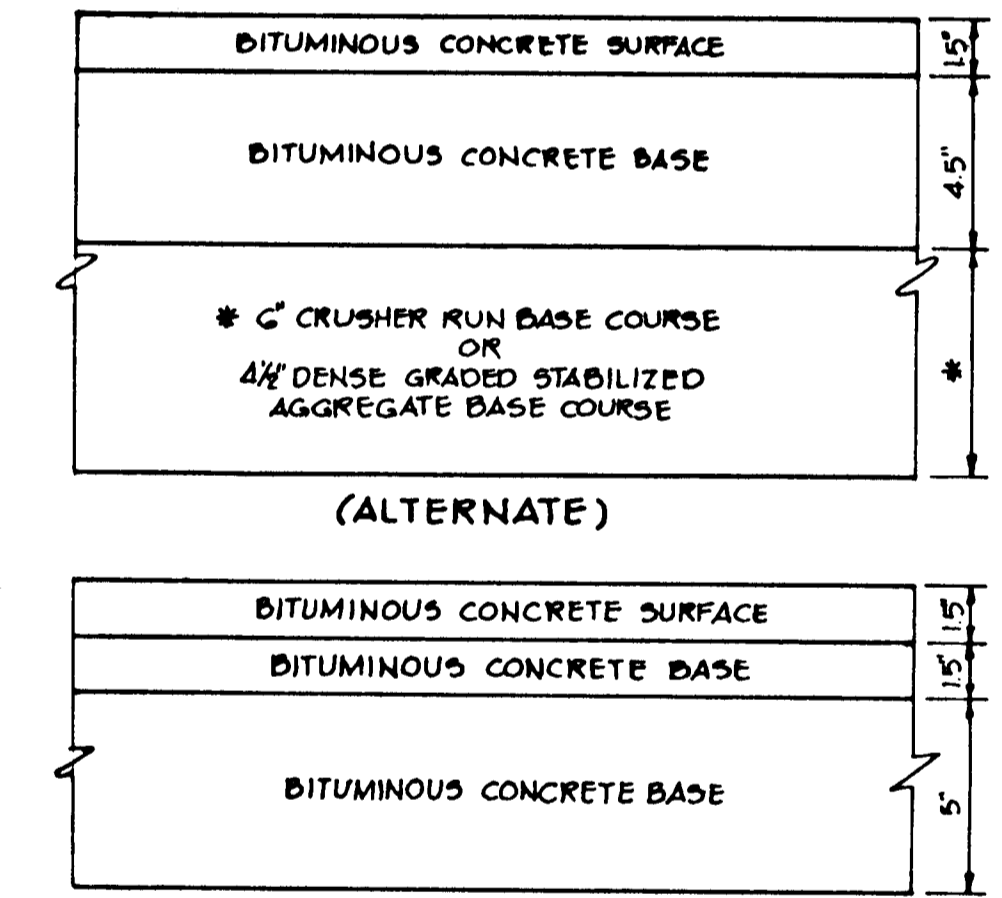


CURVE DATA			
CURVE	RADIUS	LENGTH	TAN.
①	33.25	29.67	51-07-30 15.90
②	50.00	246.31	282-15-00 ~
③	33.25	29.67	51-07-30 15.90

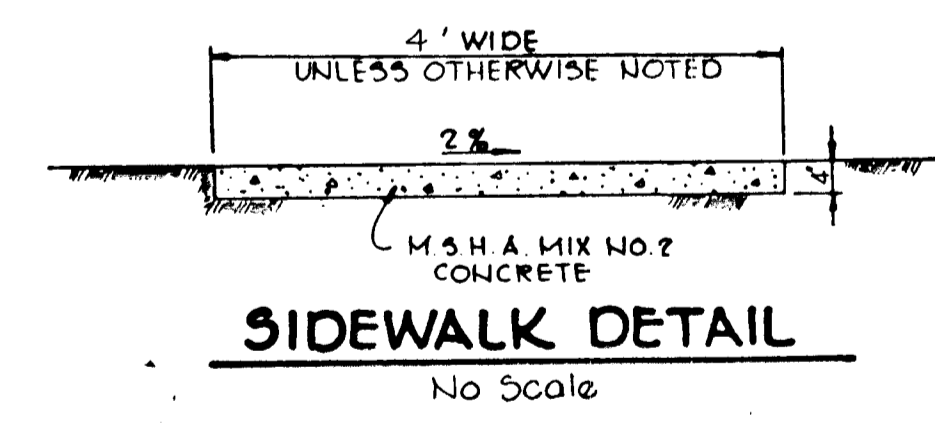
CUL-DE-SAC DETAIL

HOWARD COUNTY DESIGN MANUAL VOLUME IX - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-301)
* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

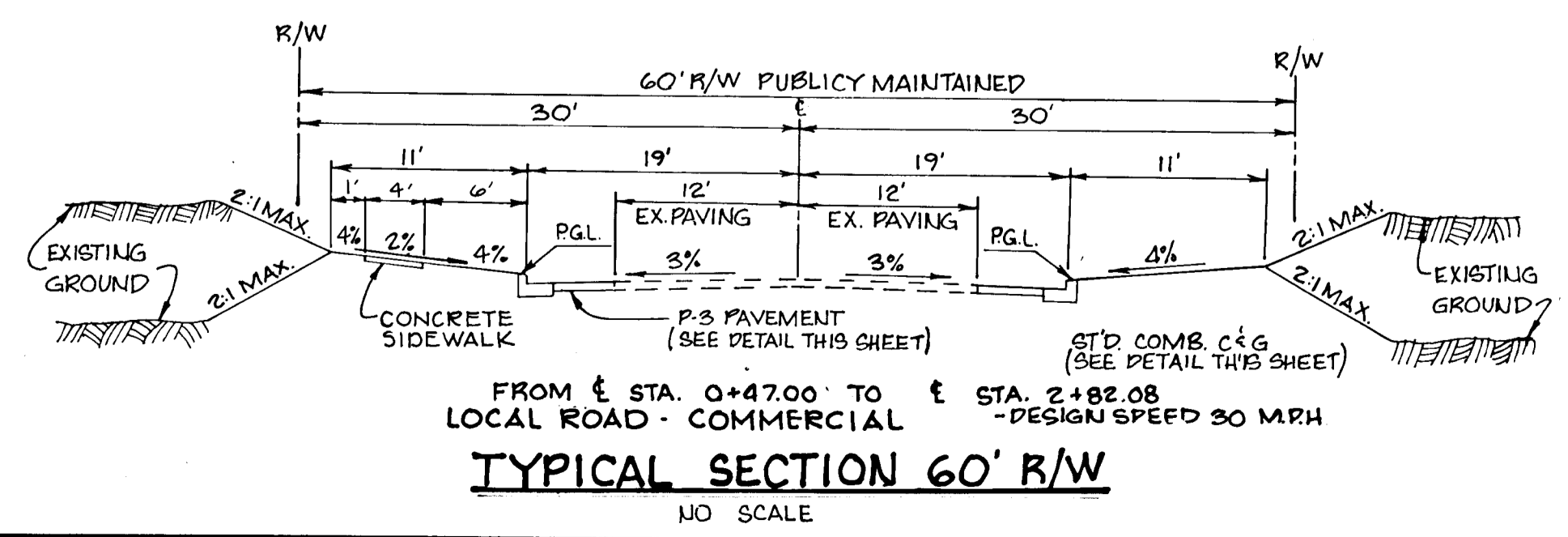
STANDARD 7" COMBINATION CURB AND GUTTER
No Scale



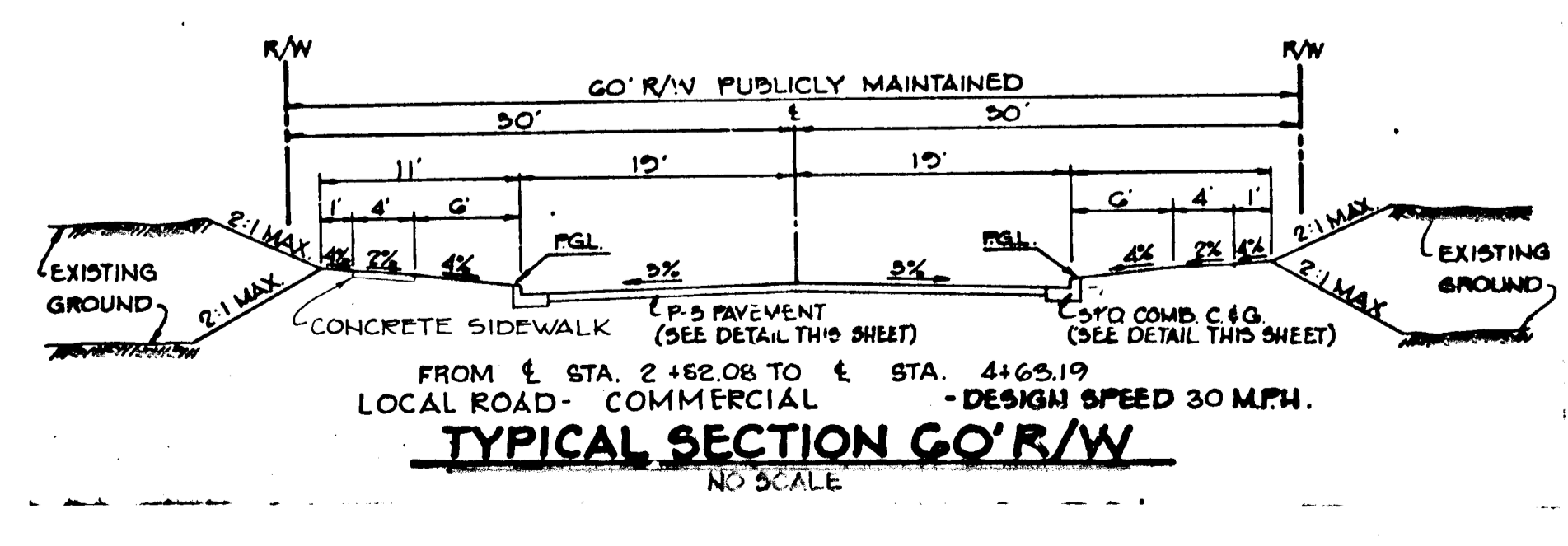
HOWARD COUNTY DESIGN MANUAL VOLUME IX - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-201)
(8" PAVING, P-3) TYPICAL PAVING SECTION



SIDEWALK DETAIL
No Scale



FROM & STA. 0+47.00 TO & STA. 2+82.08
LOCAL ROAD - COMMERCIAL - DESIGN SPEED 30 MPH
TYPICAL SECTION 60' R/W
NO SCALE



FROM & STA. 2+62.08 TO & STA. 4+63.19
LOCAL ROAD - COMMERCIAL - DESIGN SPEED 30 MPH
TYPICAL SECTION 60' R/W
NO SCALE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING
DATE: 7-24-84

DATE NO. REVISION

OWNER: PETER KIRM, PATRICK McCUAN AND WILBUR E. SIMMONS JR. TRUSTEES
1000 EQUITABLE BANK CENTER
COLUMBIA, MARYLAND 21044

DEVEL: KMS
1000 EQUITABLE BANK CENTER
COLUMBIA, MARYLAND 21044

PROJECT: HOWARD COUNTY MEDICAL RESEARCH PARK
PARCEL C-1

AREA RECORD PLAT RECORDING REFERENCE NO.
TAX MAP NO. 17 PARCEL
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
DRAINAGE AREA MAP AND DETAIL

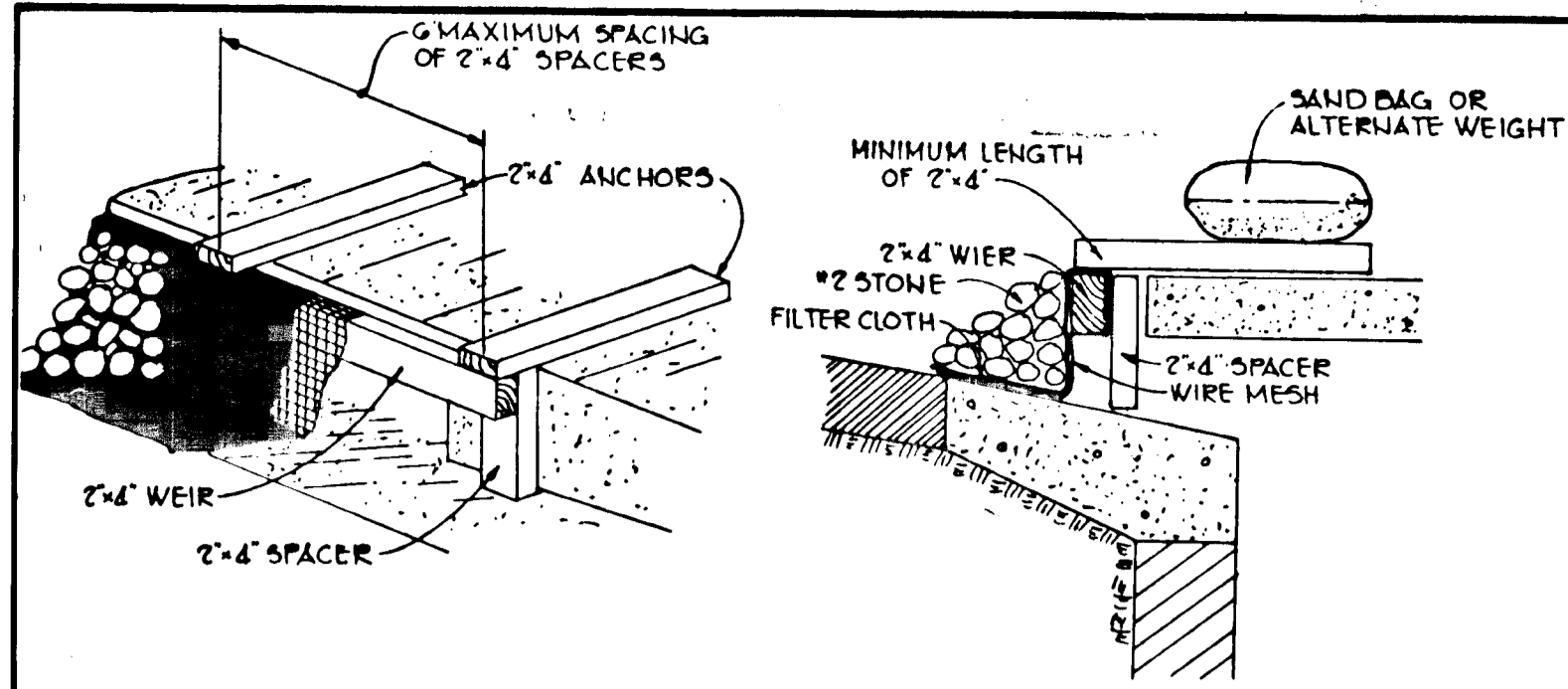
THE RIEMER GROUP, INC.
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301 461-2690

7-10-84 DATE

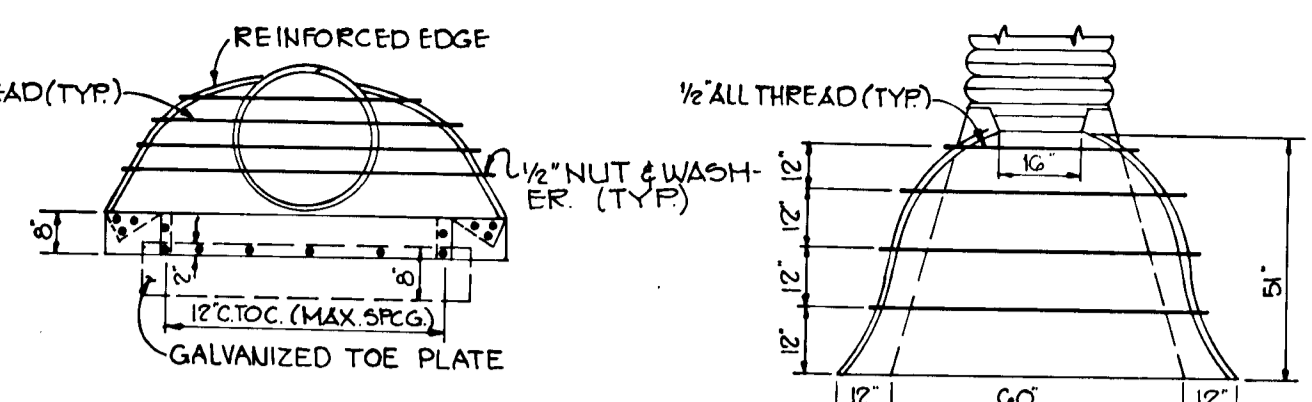
DESIGNED BY: D.L.W.
DRAWN BY: E.T.J.
PROJECT NO: 003000
DATE: 4/16/84
SCALE: AS SHOWN
DRAWING NO. 2 OF 4

MARYLAND BLUEPRINT CO., INC. 120000

#1023



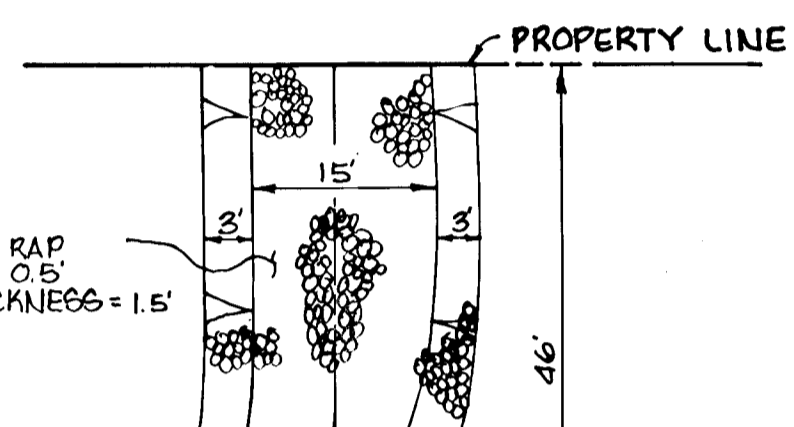
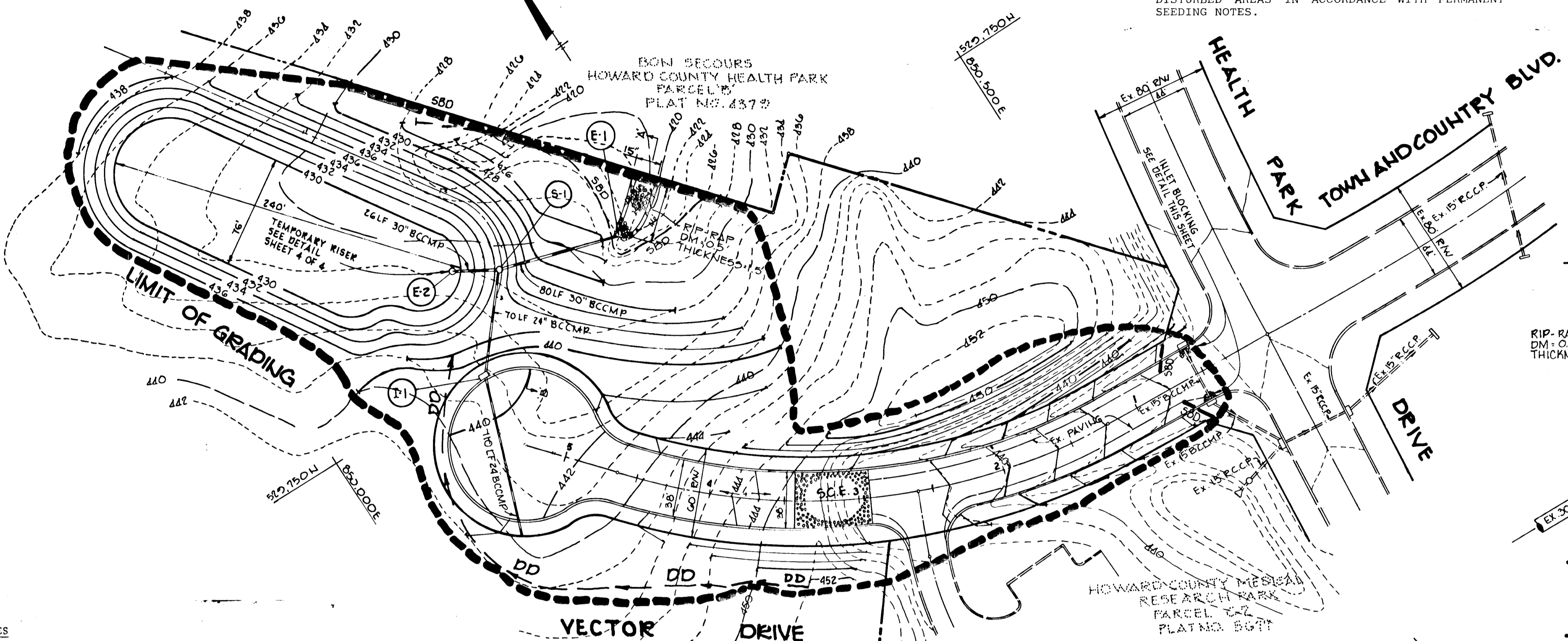
SEDIMENT BASIN
 A = 12.2 Ac
 STORAGE REQUIRED = 816 C4
 STORAGE PROVIDED = 2400 C4
 CREST ELEV. = 432.50
 CLEANOUT ELEV. = 431.50
 BOTTOM DIMENSIONS = 240' x 76'



- SEQUENCE OF CONSTRUCTION**
1. OBTAIN A GRADING PERMIT
 2. CLEAR AND GRUB AREAS REQUIRED FOR INSTALLATION OF SEDIMENT CONTROL DEVICES ONLY
 3. INSTALL STABILIZED CONSTRUCTION ENTRANCE
 4. INSTALL STORM WATER MANAGEMENT / SEDIMENT CONTROL BASIN AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES
 5. INSTALL REMAINING SEDIMENT CONTROLS AND STABILIZE DIVERSION DIKES IN ACCORDANCE WITH TEMPORARY SEEDING NOTES
 6. COMPLETE ALL GRADING
 7. STABILIZE SIDE SLOPES OF VECTOR DRIVE BETWEEN STA 0+50 AND STA 3+75 IMMEDIATELY AFTER GRADING IN ACCORDANCE WITH PERMANENT SEEDING NOTES
 8. INSTALL UTILITIES (WATER, SEWER AND STORM DRAINS) AND BLOCK NEW STORM DRAIN INLETS
 9. COMPLETE ALL CONSTRUCTION AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
 10. IF WORK ON DEVELOPMENT OF PARCEL C-1 HAS COMMENCED THEN MAINTENANCE OF SEDIMENT CONTROLS WILL BECOME THE RESPONSIBILITY OF THE SITE DEVELOPER
 11. IF WORK HAS NOT COMMENCED ON PARCEL C-1, UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR CONVERT THE SEDIMENT BASIN TO STORM WATER MANAGEMENT AND REMOVE ALL SEDIMENT CONTROLS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
 - a) PUMP ANY STANDING WATER THRU SPILLWAY CLEAN OUT SEDIMENT AND RESTORE BASIN TO PLAN DIMENSIONS
 - b) SPREAD REMOVED SEDIMENT IN AN AREA PROTECTED BY SEDIMENT CONTROLS OR IMMEDIATELY STABILIZE WITH PERMANENT SEEDING
 - c) REMOVE TEMPORARY RISER AND REPLACE WITH MODIFIED METAL END SECTION/TRASH RACK
 - d) STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES

INLET BLOCKING DETAIL
NO SCALE

MODIFIED METAL END SECTION/TRASH RACK
NO SCALE



RIP-RAP DETAIL @ E-1
NO SCALE

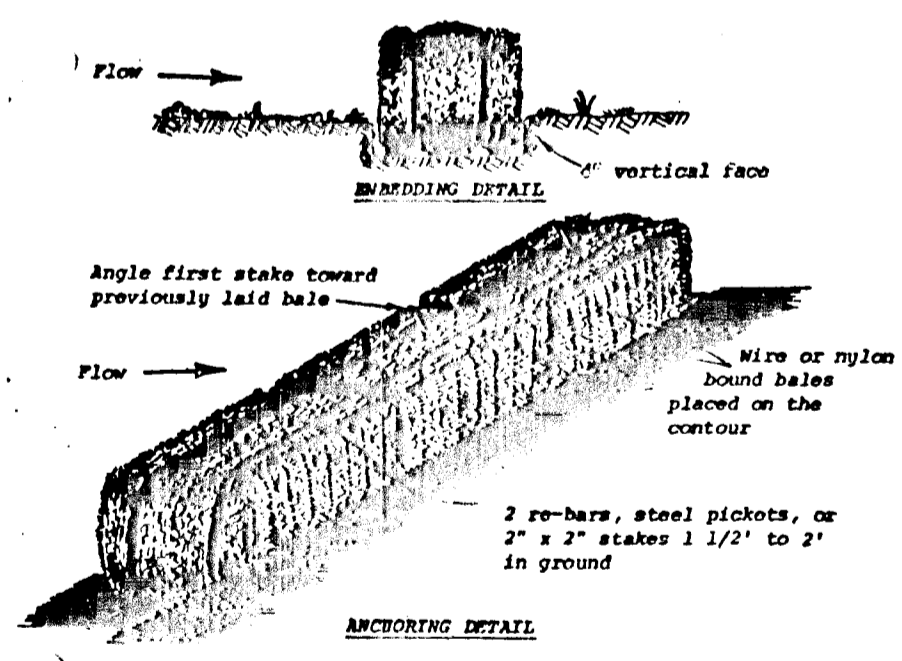
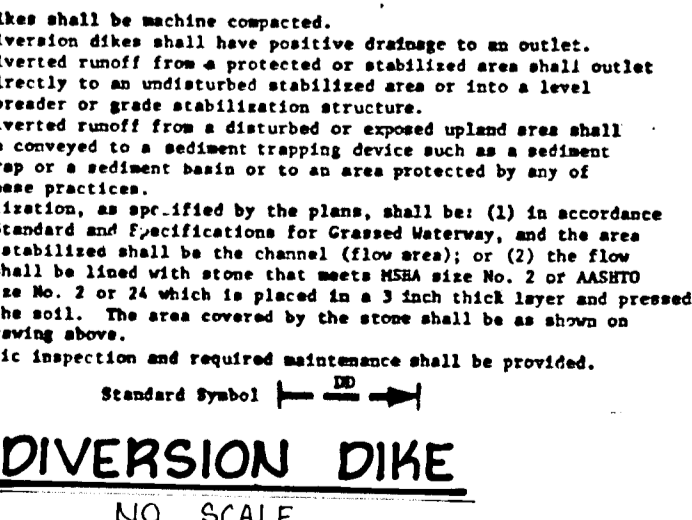
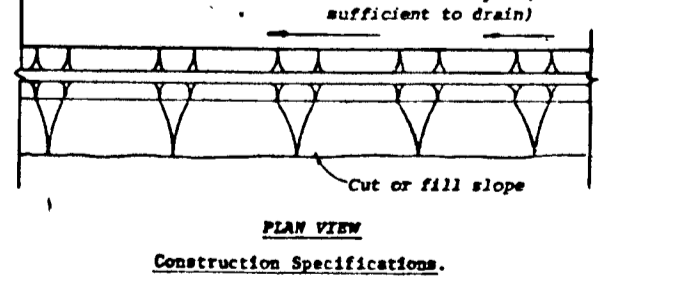
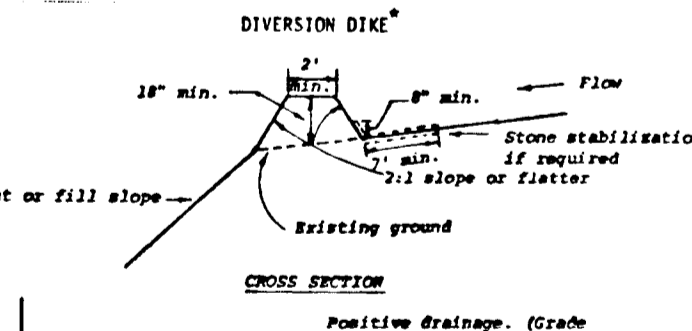
SITE ANALYSIS

TOTAL DISTURBED AREA 3.22 Ac
 AREA TO BE REVEGETATED 2.62 Ac

- SEDIMENT CONTROL CONSTRUCTION NOTES**
GENERAL NOTES
1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction (922-2070).
 2. All sediment control structures will be installed in accordance with "The Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" as prepared by the U.S. Department of Agriculture Soil Conservation Service.
 3. Site grading will begin only after all perimeter sediment control measures have been installed and are in a functioning condition.
 4. All disturbed areas are to be dressed and stabilized according to the temporary or permanent seeding schedules as soon as proper weather conditions exist for the establishment of a permanent vegetative cover.
 5. Sediment will be removed from traps when the depth reaches the clean out elevation shown on the plans.
 6. Fertilizer and lime rates may be changed through authorization by the Howard Soil Conservation District if soil tests determine a reduction in the specified rates is justified.
 7. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
 8. References called for on the sediment control construction plan and details are made to "The Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas".
 9. Sediment control will be installed before clearing and grubbing remainder of site.

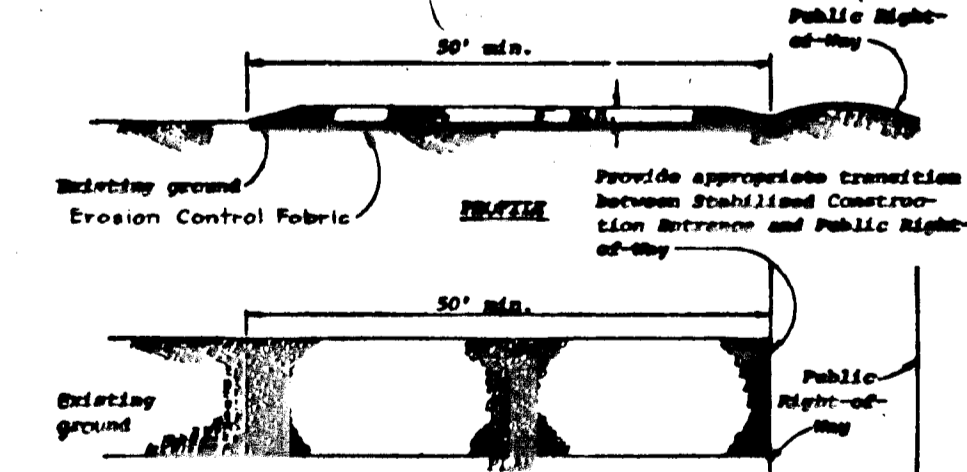
- TEMPORARY SEEDING**
- Area to be seeded shall be recently loosened. If the ground is packed, crusted or hard, the top layer of soil shall be loosened by discing, raking or other acceptable means.
- A. Apply 10-20-10 fertilizer (or equivalent) at the rate of 600 lbs. per acre or 15 lbs. per 1000 square feet.
 - B. Where soil is known to be highly acid, apply dolomitic limestone at the rate of 1 ton per acre.
 - C. Work both into soil and seed with cyclone seeder, drill, cutpacker seeder or hydroseeder (slurry will include seed and fertilizer) at the rate of 40 lbs. per acre of Italian or perennial ryegrass.
 - D. Mulch with unweathered small grain straw at the rate of 1 1/2 to 2 tons, per acre and anchor with a cutback asphalt or emulsified asphalt at the rate of 5 gal. per 1000 square feet.

- PERMANENT SEEDING**
- Final stabilization will take place as soon as possible as weather conditions permit, as follows:
- A. Apply dolomitic limestone at the rate of 2 tons per acre (one ton per acre if application of ton per acre was made for temporary seeding.)
 - B. Apply 0-20-20 fertilizer at the rate of 600 lbs. per acre harrow or disc line and 0-20-20 fertilizer into the soil to a minimum depth of 3" lumps or high maintenance areas will be dragged and leveled with a York rake. At the time of seeding apply 400 pounds of 30-0-0 ureaform fertilizer and 500 lbs. of 10-20-20 or equivalent fertilizer per acre.
 - C. Seed with a mixture of certified "Merion" Kentucky bluegrass - 40 lbs. per acre; common Kentucky bluegrass @ 40 lbs. per acre; Red Fescue, Pennlawn or Jamestown @ 20 lbs. per acre.
 - D. Mulch with unweathered small grain straw at the rate of 1 1/2 to 2 tons per acre and anchor with a cutback asphalt or emulsified asphalt at the rate of 5 gallons per 1000 square feet.
 - E. Seed all slopes with a mixture of certified Kentucky 31 tall fescue @ 50 lbs. per acre and inoculated Korean Lespedeza @ 15 lbs. per acre.
 - F. Sodded swales shall be Kentucky 31 tall fescue.



- Construction Specifications**
1. Bales shall be placed in a row with ends tightly abutting the adjacent bales.
 2. Each bale shall be embedded in the soil a minimum of 4".
 3. Bales shall be securely anchored in place by stakes or rebar- driven through the bales. The first stake in each bale shall be angled toward previously laid bale to force bales together.
 4. Inspection shall be frequent and repair or replacement shall be made promptly as needed.
 5. Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

STRAW BALE DIKE
NO SCALE



- Construction Specifications**
1. Stone size - Use MSA size No. 2 (2-1/2" to 3") or AASHTO designation M43, size No. 2 (2-1/2" to 1-1/2"). Use crushed stone.
 2. Length - An effective, but not less than 50 feet.
 3. Thickness - Not less than 8" (8" thick).
 4. Width - Not less than full width of all points of ingress or egress.
 5. Working - When necessary, wheels shall be cleaned to remove sediment prior to entrance upon public right-of-way. When working is required, it shall be done on an area stabilized with crushed stone which drains into an approved sediment trap or sediment basin. All sediment shall be prevented from entering any storm drain, ditch, or watercourse through use of sand bags, gravel, boards or other approved methods.
 6. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as sediment is removed and repair and/or cleanout of any watercourse used to trap sediment. All sediment spilled, dropped, washed or tracked onto public right-of-way must be removed immediately.

STABILIZED CONSTRUCTION ENTRANCE
NO SCALE

BY THE DEVELOPER:

"I 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 NATURAL RESOURCES 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."

DEVELOPER: PAT McCUAN 7/10/84 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."

ENGINEER: ARTHUR E. MOEGGE 7/10/84 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.

U.S. SOIL CONSERVATION SERVICE 7-16-84 DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF ENGINEERING 7-24-84 DATE

DATE	NO.	REVISION

OWNER: PETER KIRK, PATRICK McCUAN AND WILBUR E. SIMMONS JR. TRUSTEES
 1000 EQUITABLE BANK CENTER
 COLUMBIA, MARYLAND 21044

DEVEL: K.M.S. INC.
 1000 EQUITABLE BANK CENTER
 COLUMBIA, MARYLAND 21044

PROJECT: HOWARD COUNTY MEDICAL RESEARCH PARK
 PARCEL C-1

AREA RECORD PLAT RECORDING REFERENCE NO.
 TAX MAP NO. 17 PARCEL
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: STORM WATER MANAGEMENT AND SEDIMENT CONTROL PLAN

THE RIEMER GROUP, INC.
 The Riemer Group, Inc. - A Land Planning, Design & Civil Engineering Firm
 8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301 461-2690

DESIGNED BY: D.L.W.
 DRAWN BY: T.J.M.
 PROJECT NO: 009000
 DATE: 4/10/84
 SCALE: AS SHOWN
 DRAWING NO. 3 OF 4

I. SITE PREPARATION

Areas under the borrow areas, embankment, and structural works shall be cleared, grubbed and the topsoil stripped to remove all trees, vegetation, roots or other objectionable material. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas covered by the pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface.

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

II. EARTH FILL

Material

The fill material shall be taken from approved borrow areas or areas it shall be free of roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 6-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of 95% of the dry unit weight as determined by A.A.S.H.T.O. designation T-99-57.

Cutoff Trench

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL

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

Corrugated Metal Pipe

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specifications M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Watertight coupling bands shall be used at all joints. Antiseep collars shall be connected to the pipe in such a manner as to be completely watertight.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

V. CONCRETE

1. Materials

a. **Cement** - Normal Portland cement shall conform to the latest ASTM Specification C-150.

b. **Water** - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.

c. **Sand** - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a one-quarter inch sieve. Limestone sand shall not be used.

d. **Coarse Aggregate** - The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with a maximum size of one and one-half (1-1/2) inches.

e. **Reinforcing Steel** - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

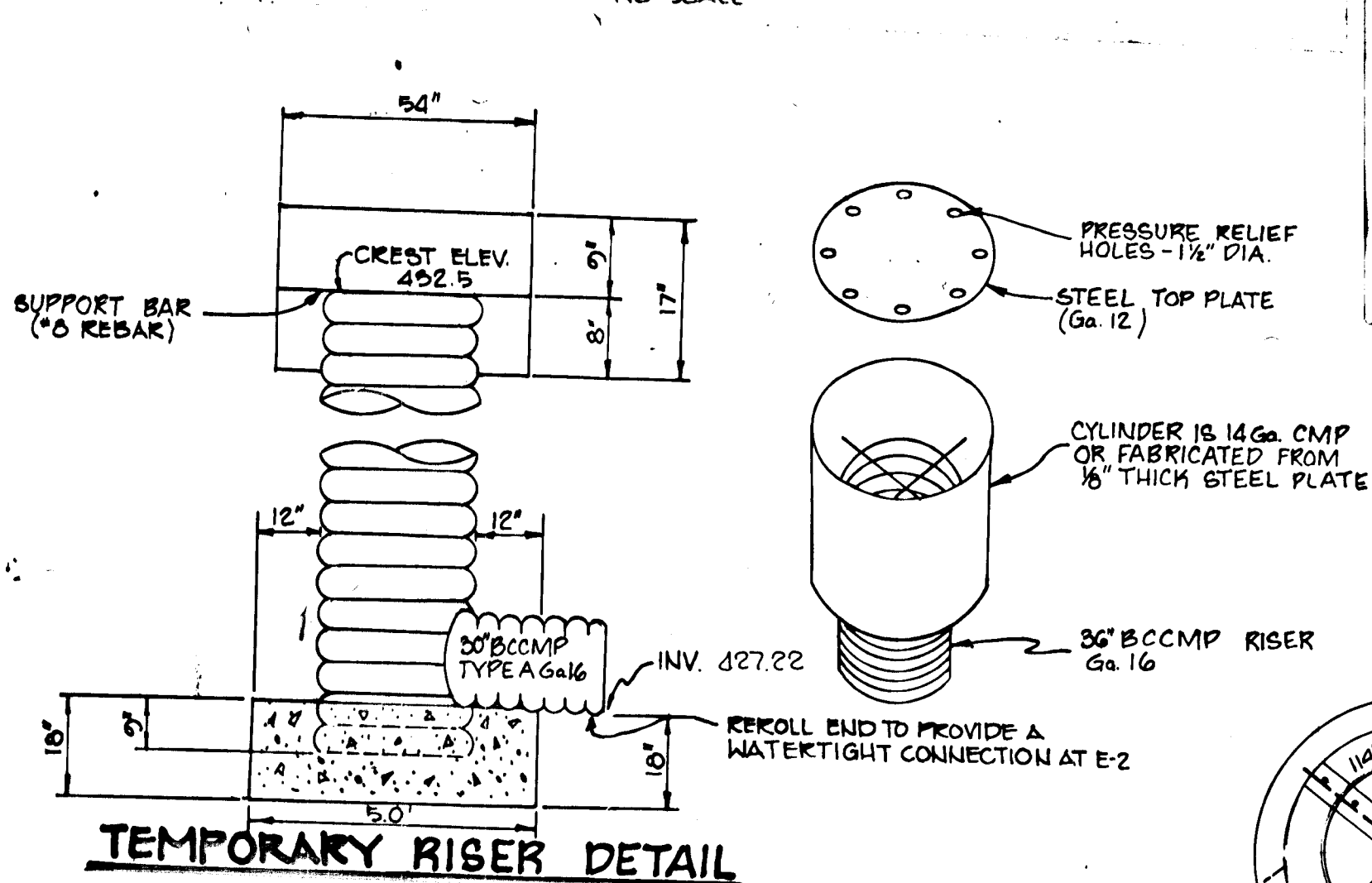
- Design Mix** - The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5-1/2 to 6 U. S. gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.
- Mixing** - The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicated on proper control of the speed of rotation of the mixer and of the introduction of the materials, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the addition of water to preserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.
- Forms** - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping, and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.

- The inside of forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed.
- Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.
- Reinforcing Steel** - All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.
- Consolidating** - Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.
- Finishing** - Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry-patching mortar.
- Protection and Curing** - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least the first three (3) days. All concrete shall be kept continuously moist for at least ten (10) days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may also be used.
- Placing Temperature** - Concrete may not be placed at temperatures below 32° F with the temperature falling, or 34° with the temperature rising.

VI. STABILIZATION

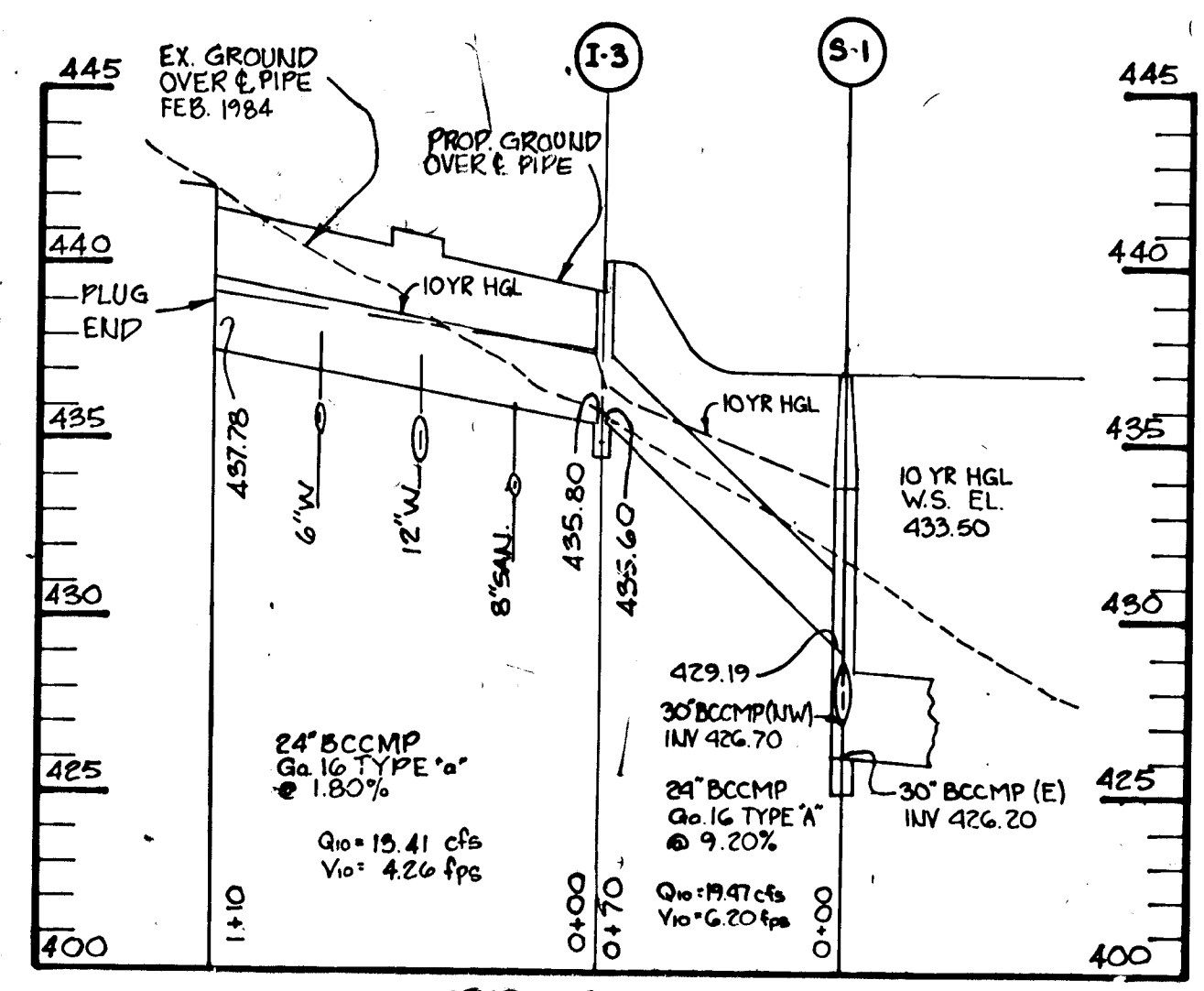
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, apron and borrow areas, and berms shall be stabilized by seeding, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications shown on or accompanying the drawings.

CORE TRENCH TYP. SECTION



TEMPORARY RISER DETAIL

THE RISER IS TO BE REMOVED UPON COMPLETION OF THE BASIN TO THE STORM WATER MANAGEMENT FACILITY.



PROFILE

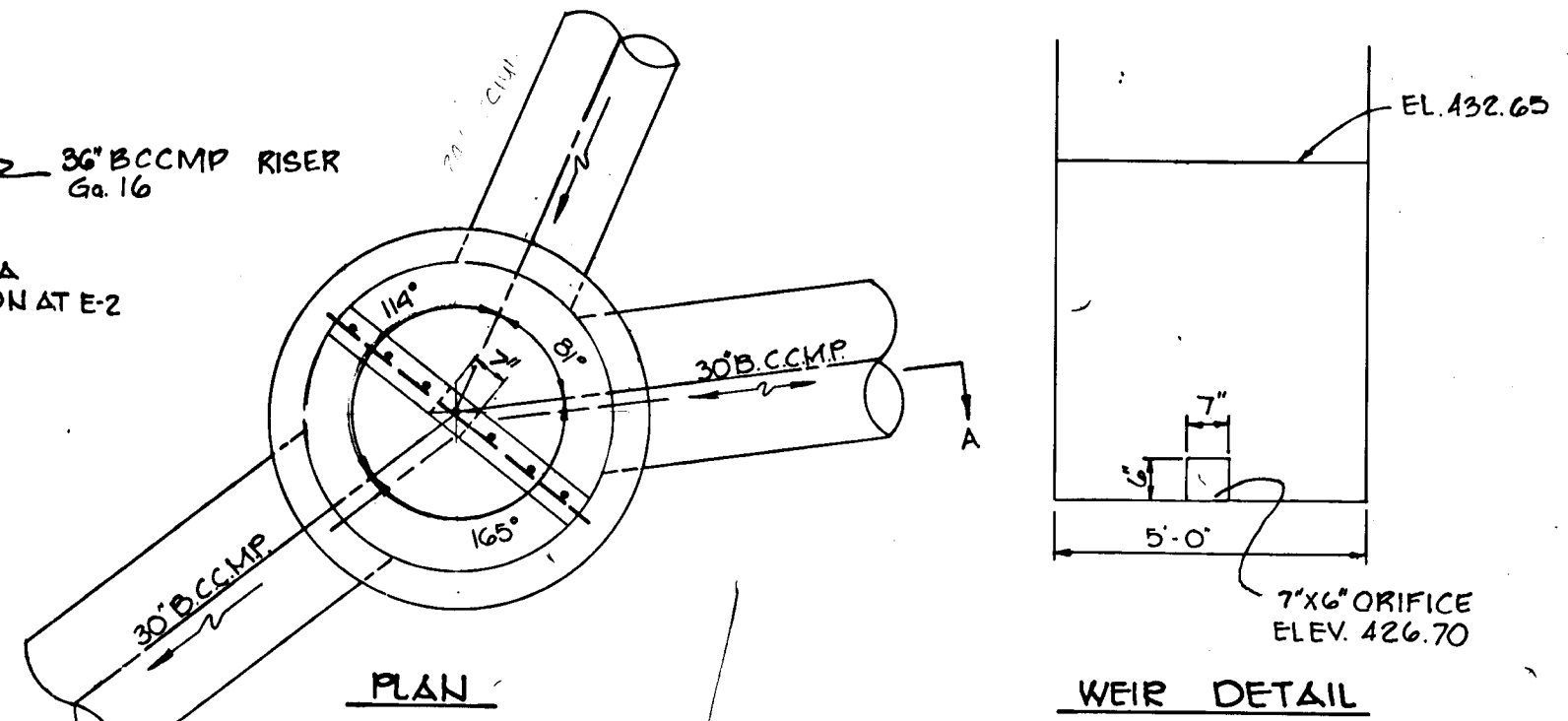
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ANTI-SEEP COLLAR

NOTES FOR COLLARS:

- All materials to be in accordance with construction and construction material specifications.
- When specified on the plans, coating of collars shall be in accordance with construction and construction material specifications.
- Use 2 collars 6\"/>

NO SCALE



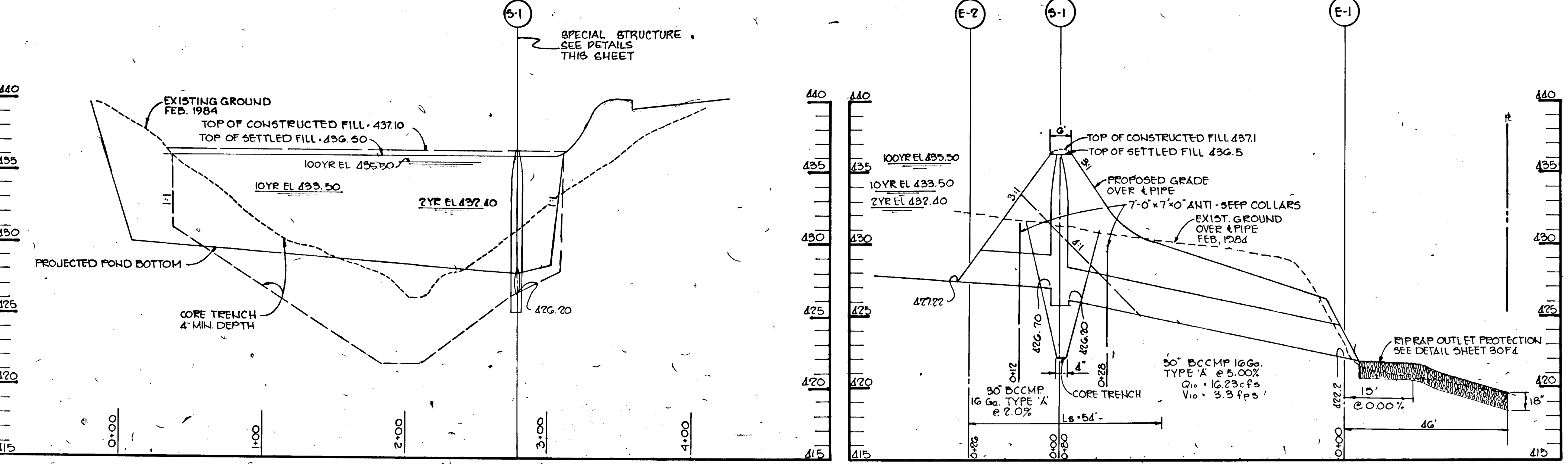
PLAN

NOTE: CARRY REINFORCING STEEL INTO WALLS & BASE. GROUT AROUND STEEL PRIOR TO POURING WEIR.

WEIR DETAIL

STORM WATER MANAGEMENT STRUCTURE 5-1

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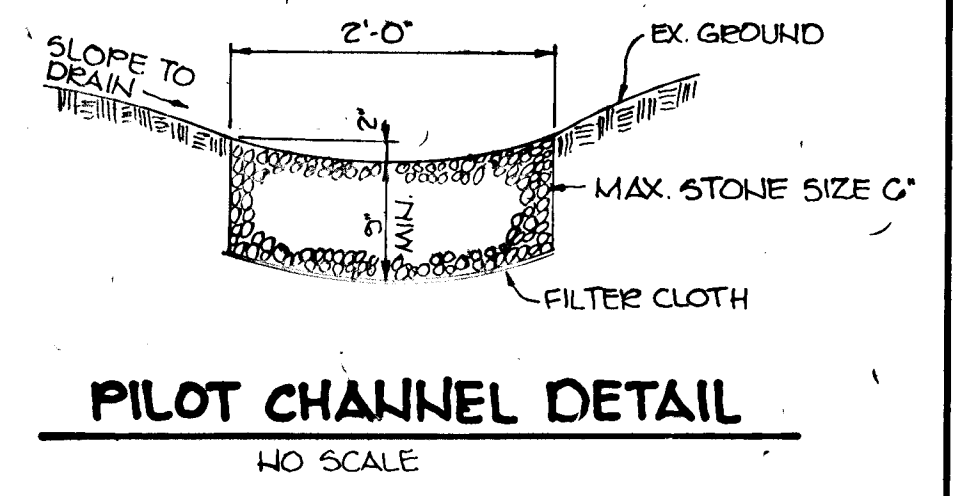


SECTION B-B

SCALE: HORIZ: 1\"/>

PROFILE

SCALE: HORIZ: 1\"/>



PILOT CHANNEL DETAIL

NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<i>William E. Reay</i>	7-24-84
CHIEF, BUREAU OF ENGINEERING	DATE
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION	DATE
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.	
<i>W. M. K. Smith</i>	7-16-84
HOWARD COUNTY SOIL CONSERVATION SERVICE	DATE
I 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 NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD COUNTY SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.	
<i>Pat McCuan</i>	7/16/84
PAT McCUAN	DATE
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 COUNTY SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD COUNTY SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.	
<i>Arthur E. Muegge</i>	7/16/84
ARTHUR E. MUEGGE	DATE
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.	
<i>Howard S. C. D.</i>	7-16-84
HOWARD S.C.D.	DATE
DATE	NO.
REVISION	
OWNER: PETER KIRK, PATRICK McCUAN AND WILBUR E. SIMMONS OR TRUSTEES 1000 EQUITABLE BANK CENTER COLUMBIA, MARYLAND 21044	
DEVELOPER: F.M.B. INC. 1000 EQUITABLE BANK CENTER COLUMBIA, MARYLAND 21044	
PROJECT: HOWARD COUNTY MEDICAL RESEARCH PARK PARCEL C-1	
AREA RECORD PLAT RECORDING REFERENCE NO. TAX MAP NO. 17 PARCEL 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: PROFILES AND DETAILS	
THE RIEMER GROUP, INC.	
The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm 8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301 461-2100	
7-10-84	DATE
DESIGNED BY DLW	
DRAWN BY D.A.M.	
PROJECT NO: 003000	
DATE: 4/16/84	
SCALE: AS SHOWN	
DRAWING NO. 4 OF 4	