

SHEET INDEX

NO.	DESCRIPTION
1	PLAN AND PROFILE MANAHAN DRIVE
2	PLAN AND PROFILE TOLL HOUSE ROAD
3	DETAILS AND STORM DRAIN PROFILES
4	DRAINAGE AREA MAP, SEDIMENT CONTROL PLAN & STORM WATER MANAGEMENT
5	STORM WATER MANAGEMENT NOTES AND DETAILS
6	STORM WATER MANAGEMENT DETAILS

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 ON THESE DRAWINGS:

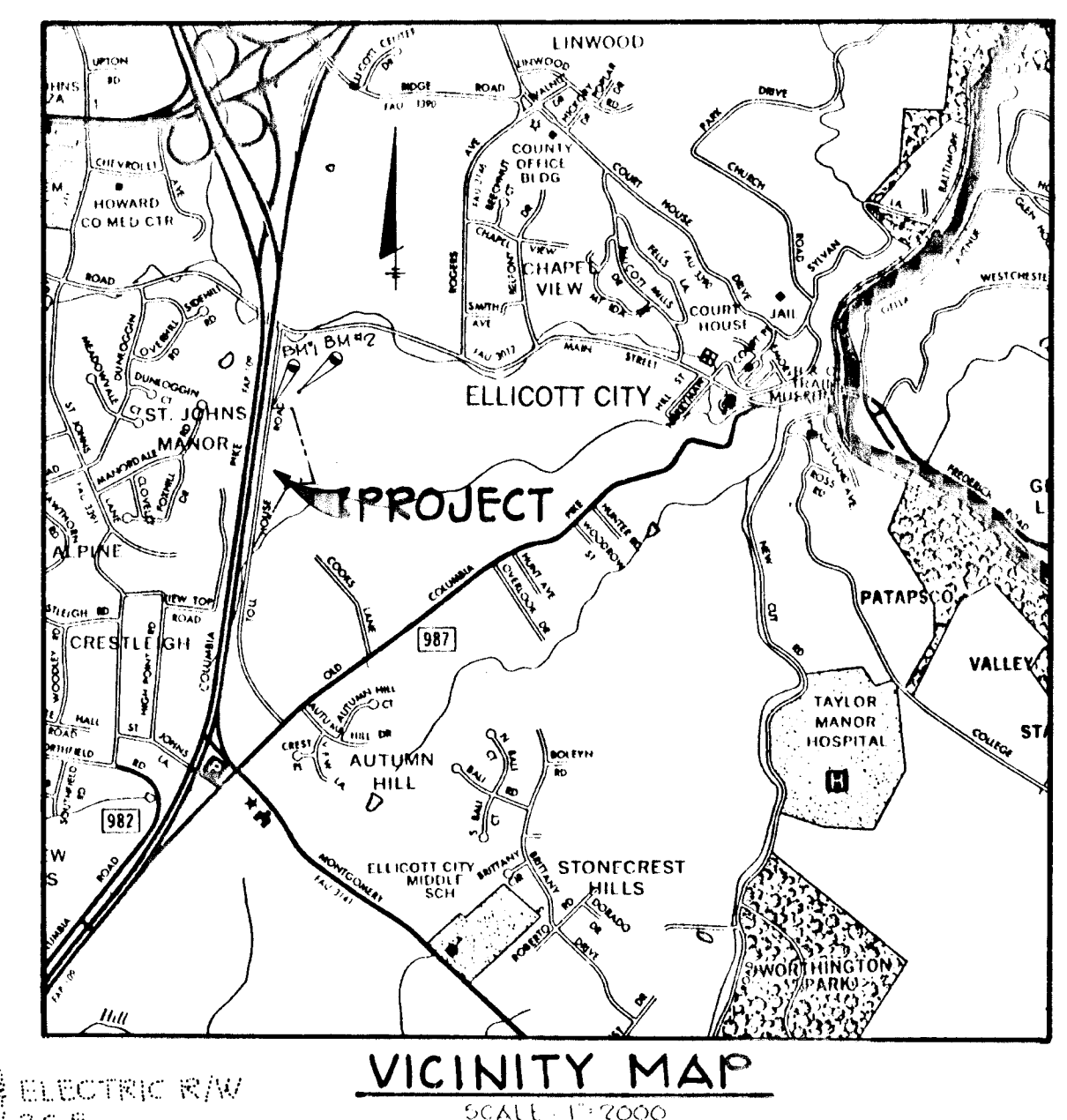
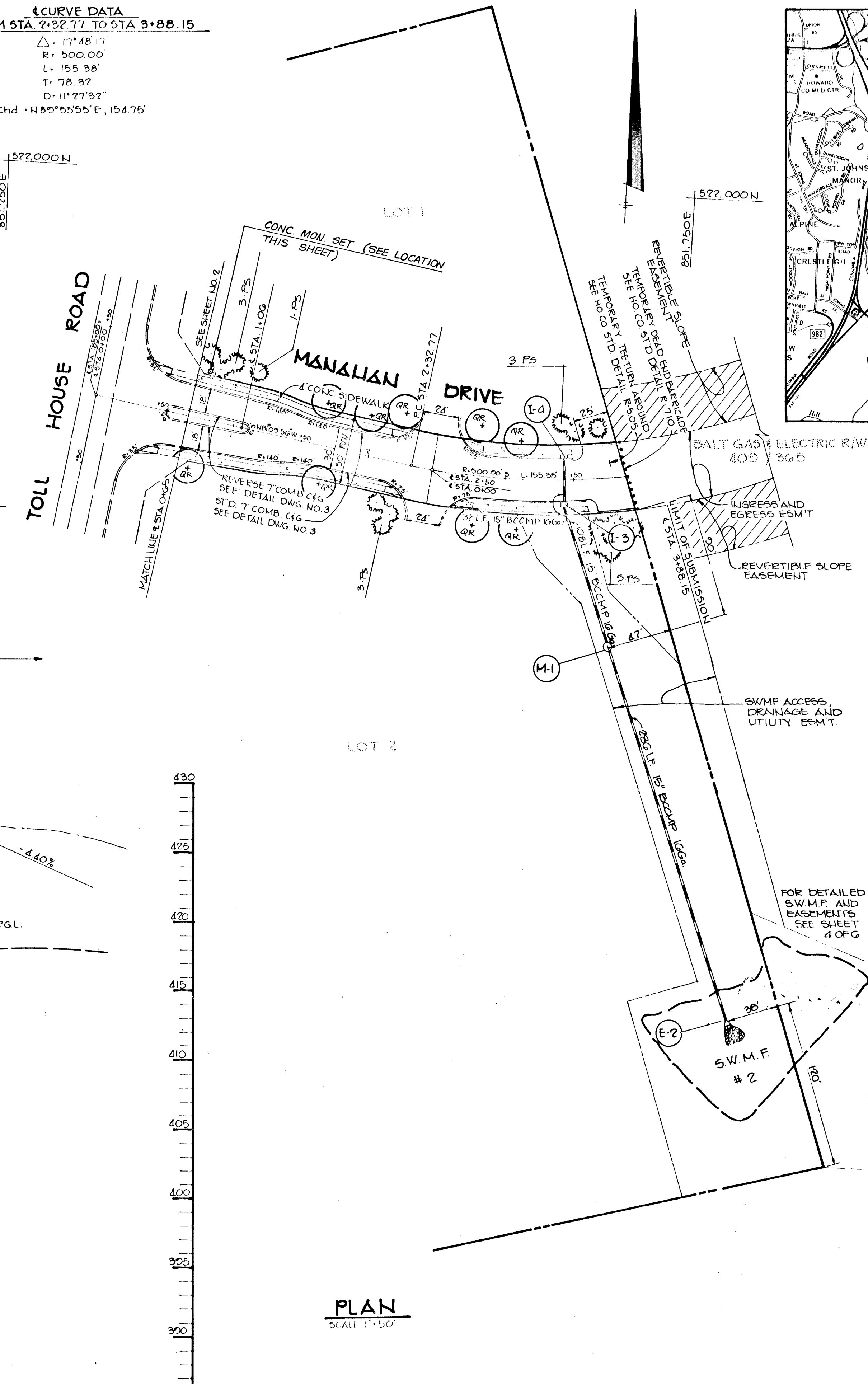
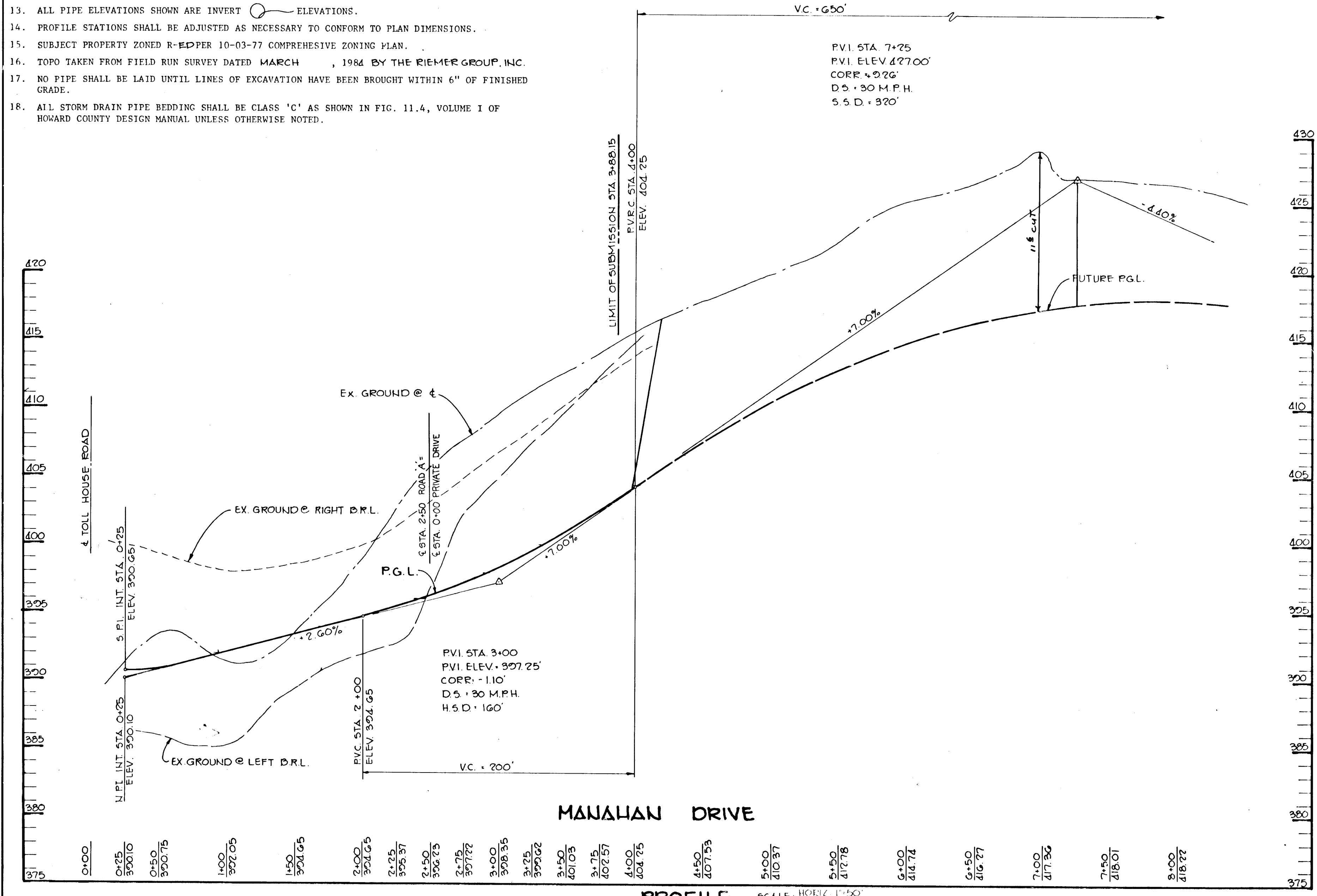
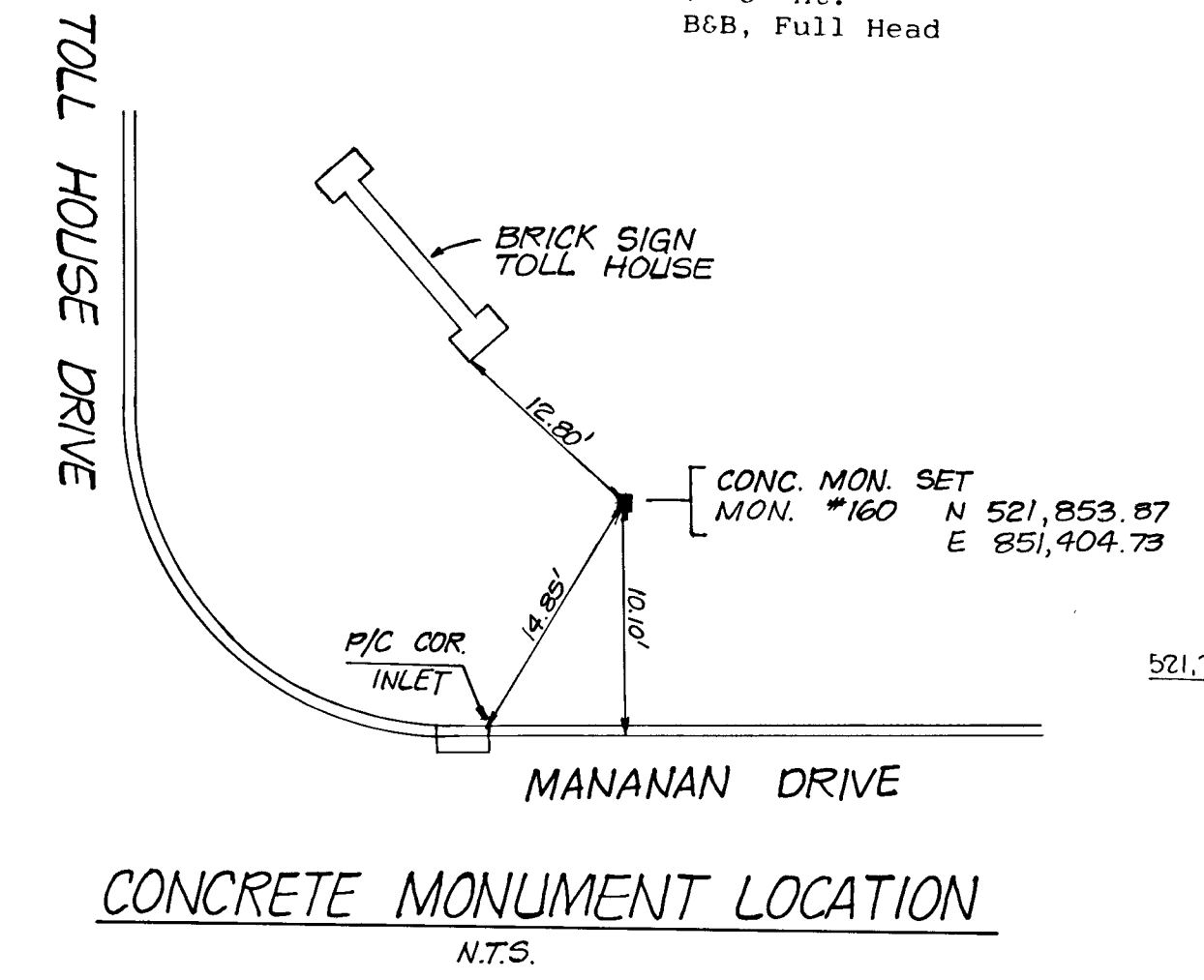
MISS UTILITY	559-0100
BELL TELEPHONE SYSTEM	393-3649
LONG DISTANCE CABLE DIVISION	393-3553 or 3554
BALTIMORE GAS AND ELECTRIC COMPANY	539-8000, ext. 691
HOWARD COUNTY BUREAU OF UTILITIES	992-2366
HOWARD COUNTY CONSTRUCTION/INSPECTION SURVEY DIVISION (24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK)	792-7272
- 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 50' RIGHT-OF-WAYS	30 M.P.H.
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- 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 R-ED PER 10-03-77 COMPREHENSIVE ZONING PLAN.
- TOPO TAKEN FROM FIELD RUN SURVEY DATED MARCH, 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.

CURVE DATA
 FROM STA 2+32.77 TO STA 3+88.15
 $\Delta = 17^{\circ}48'11"$
 $R = 500.00'$
 $L = 155.38'$
 $T = 78.92'$
 $D = 11^{\circ}27'32"$
 Chd. N80°55'55"E, 154.75'

PLANT LIST

SYM.	QUAN.	NAME	REMARKS
GR	9	SHADE TREE Quercus Rubra -Northern Red Oak	2 1/2"-3" Cal. 13'-15' Ht. B&B, Full Head
PS	15	EVERGREEN TREE Pinus Strobus -Eastern White Pine	2 1/2" Cal. 7'-8' Ht. B&B, Full Head



BENCH MARKS

BM #1
TOP OF REBAR IN CONCRETE MONUMENT AT NORTH CORNER OF PROPERTY ALONG EAST SIDE OF TOLL HOUSE ROAD NEAR E STA 182+50

BM #2
PUNCH HOLE IN TOP OF BOLT NEAREST ROUTE #20 IN BG E TOWER #20 250' LT OF E STA 178+56 TOLL HOUSE ROAD.

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John W. Manahan 10-23-84
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William S. Zeng 10-26-84
 CHIEF, BUREAU OF ENGINEERING

DATE	NO.	REVISION

OWNER: DOROTHY W. MANAHAN
 5050 UPTON ROAD
 ELLICOTT CITY, MARYLAND 21043

DRAWN BY: MANGIONE FAMILY ENTERPRISES
 1205 YORK ROAD (PENTHOUSE)
 LUTHERVILLE MD 21098

PROJECT: TOLL HOUSE (SECTION ONE)

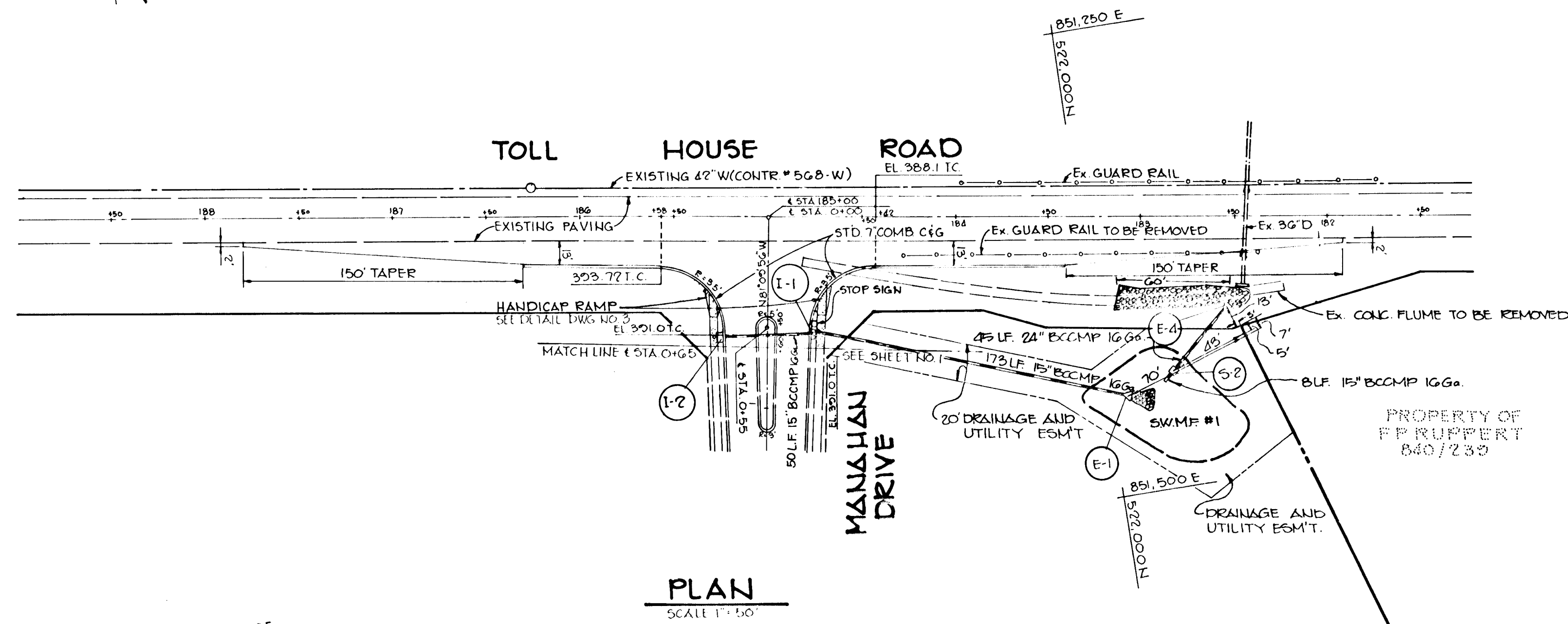
AREA TAX MAP NO 24 PARCEL 254
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: PLAN AND PROFILE MANAHAN DRIVE

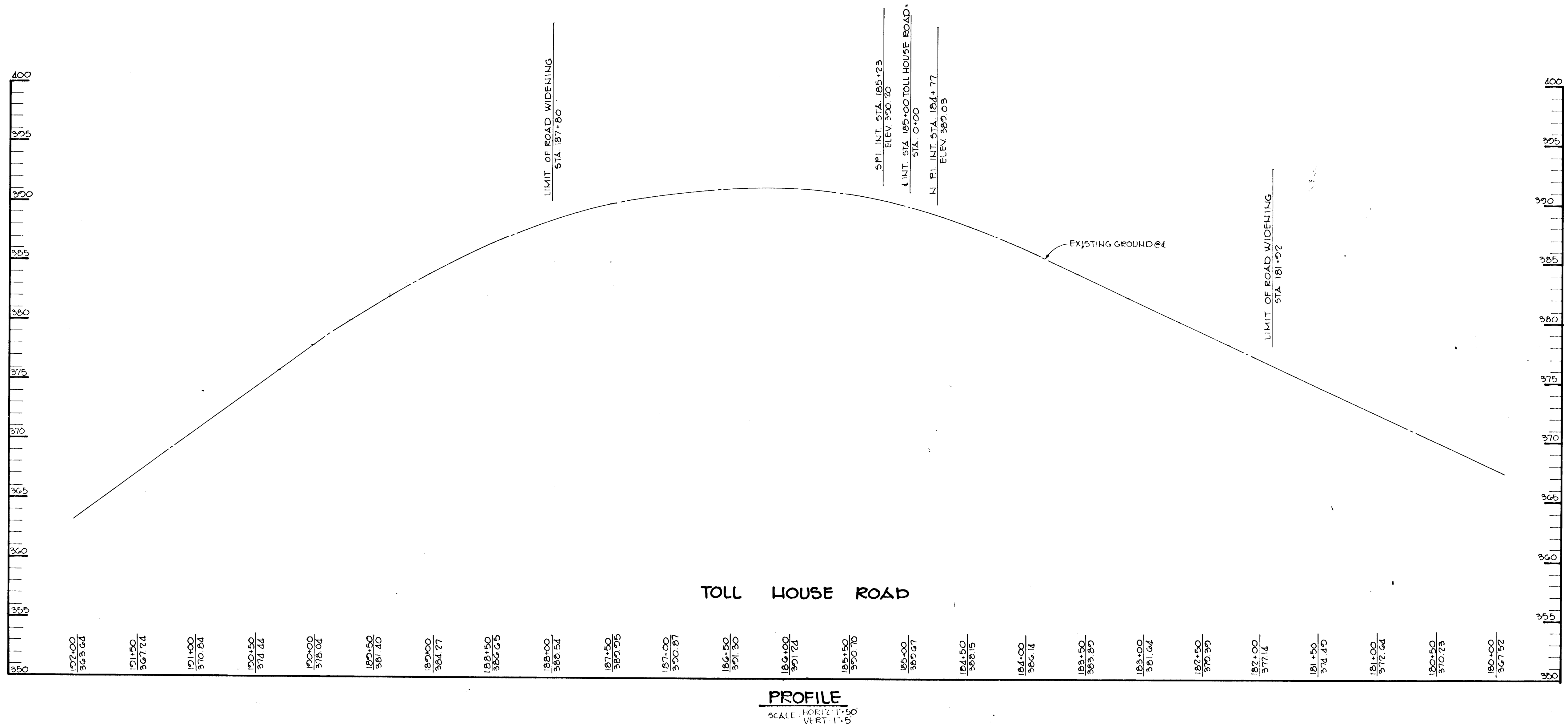
THE RIEMER GROUP, INC.
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
 8659 Baltimore-National Pike, Ellicott City, Maryland, 21043 301 461-2690

DESIGNED BY: DLW
 DRAWN BY: D.A.M.
 PROJECT NO: 001000
 DATE: 4-2-84
 SCALE: AS SHOWN
 DRAWING NO. 1 OF 6

AS-BUILT SURVEY CERTIFIED BY ALEXANDER RAYCH, MD REG. P.E. No. 3933 ON 12-29-88.



PLAN
SCALE 1"=50'



TOLL HOUSE ROAD

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

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John M. ... 10-23-84
 DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William E. ... 10-26-84
 CHIEF, BUREAU OF ENGINEERING

DATE	NO	REVISION

OWNER: DOROTHY W. MANAHAN
 2000 UPTON ROAD
 ELLICOTT CITY, MARYLAND 21043

DEVEL: MANGIONE FAMILY ENTERPRISES
 1205 YORK ROAD (PENTHOUSE)
 LUTHERVILLE MD. 21098

PROJECT: TOLL HOUSE (SECTION ONE)

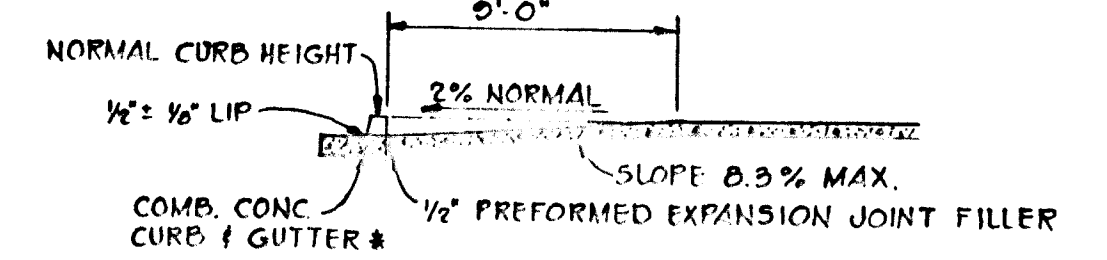
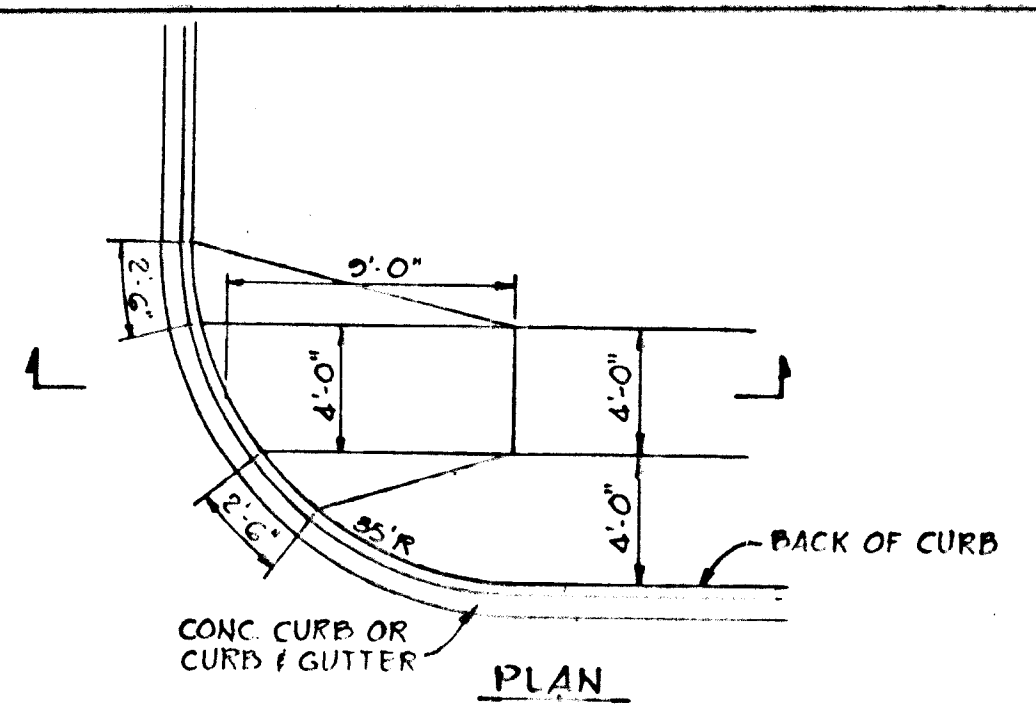
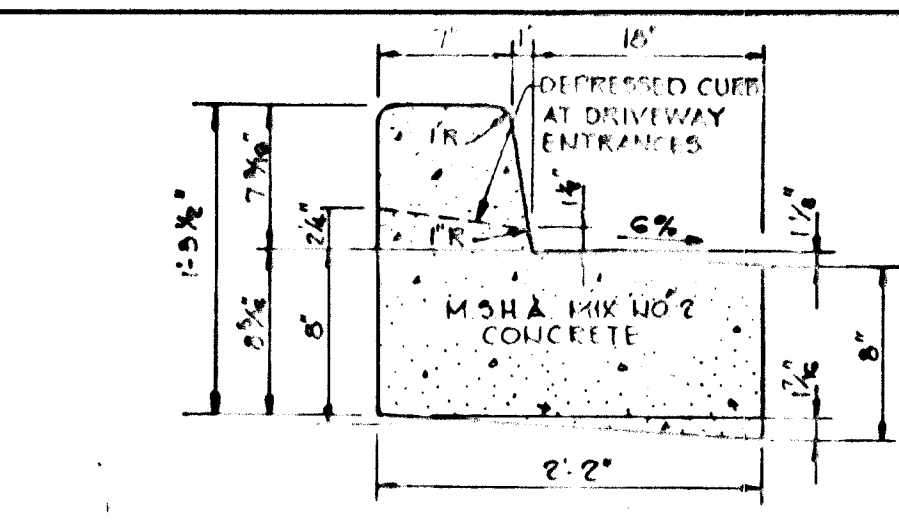
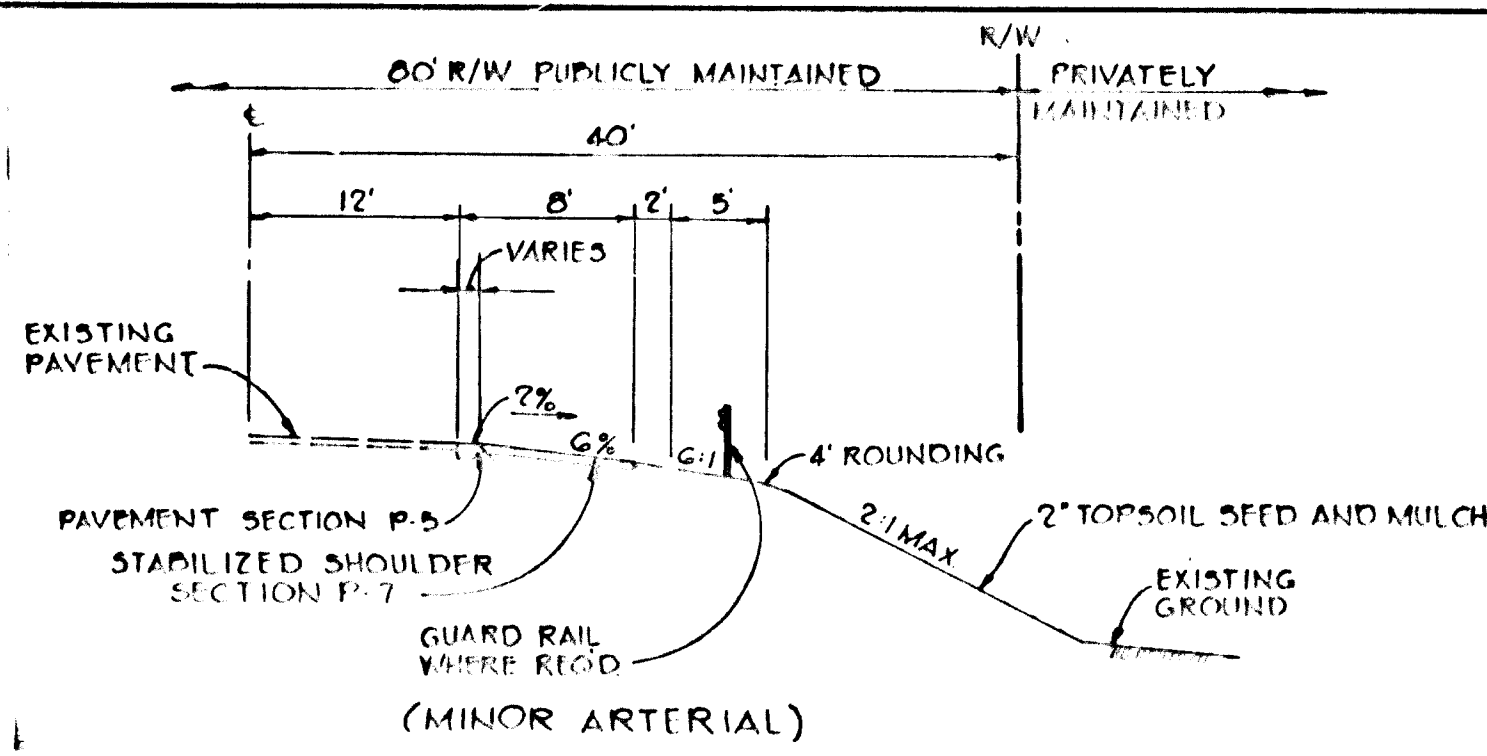
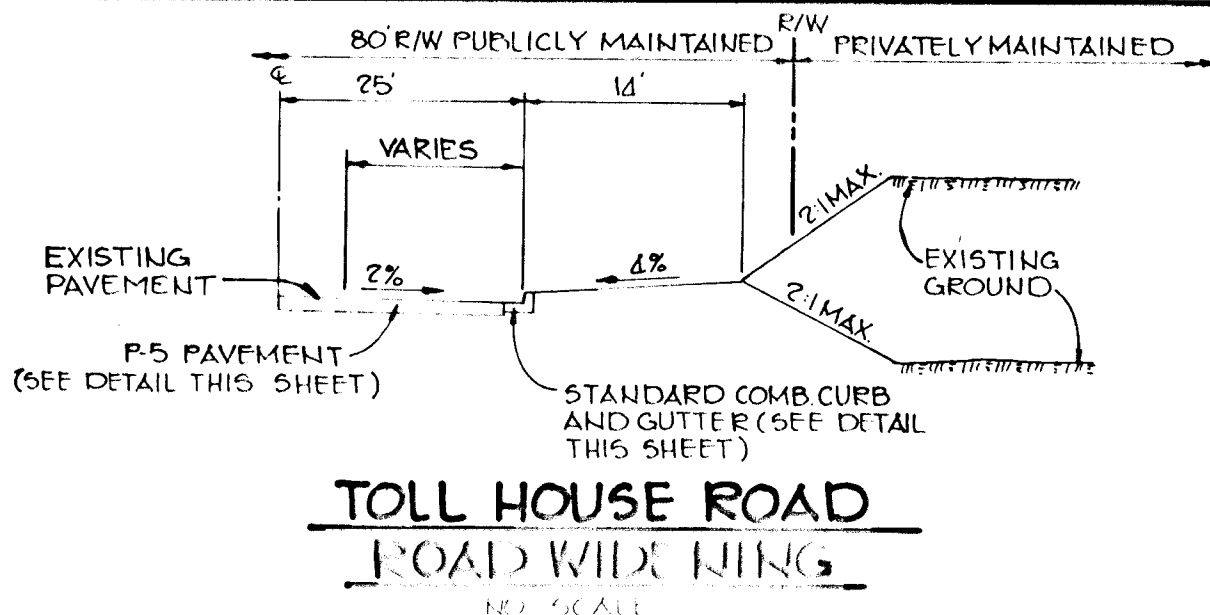
AREA: TAX MAP NO 24 PARCEL 254
 2ND ELECTION DISTRICT
 HOWARD COUNTY MARYLAND

TITLE: TOLL HOUSE ROAD PLAN & PROFILE

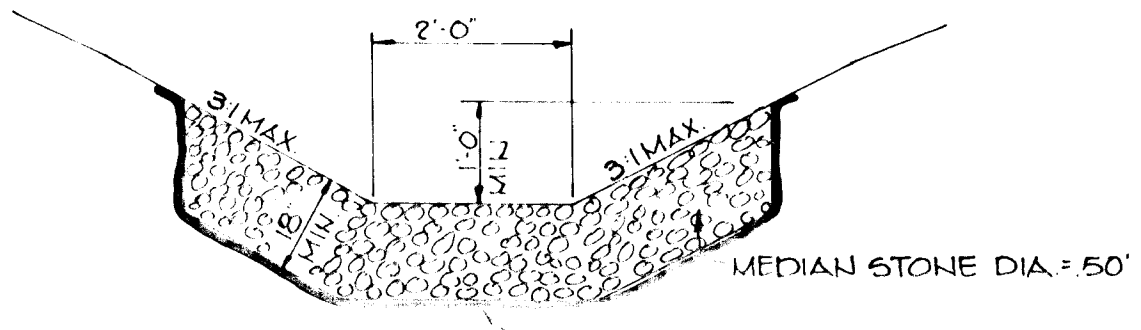
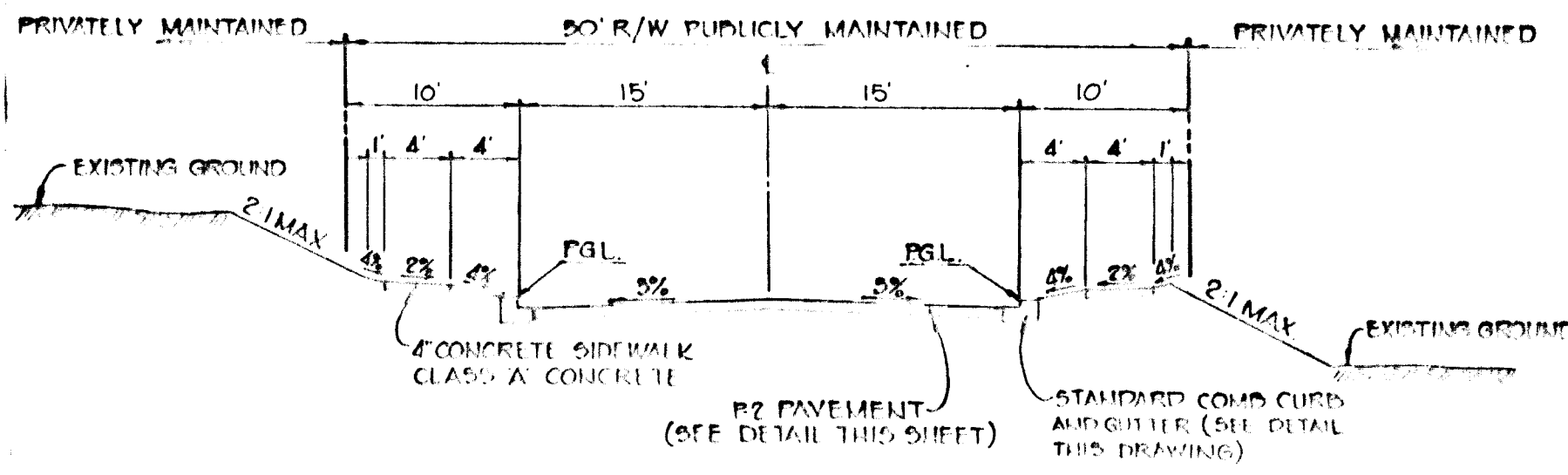
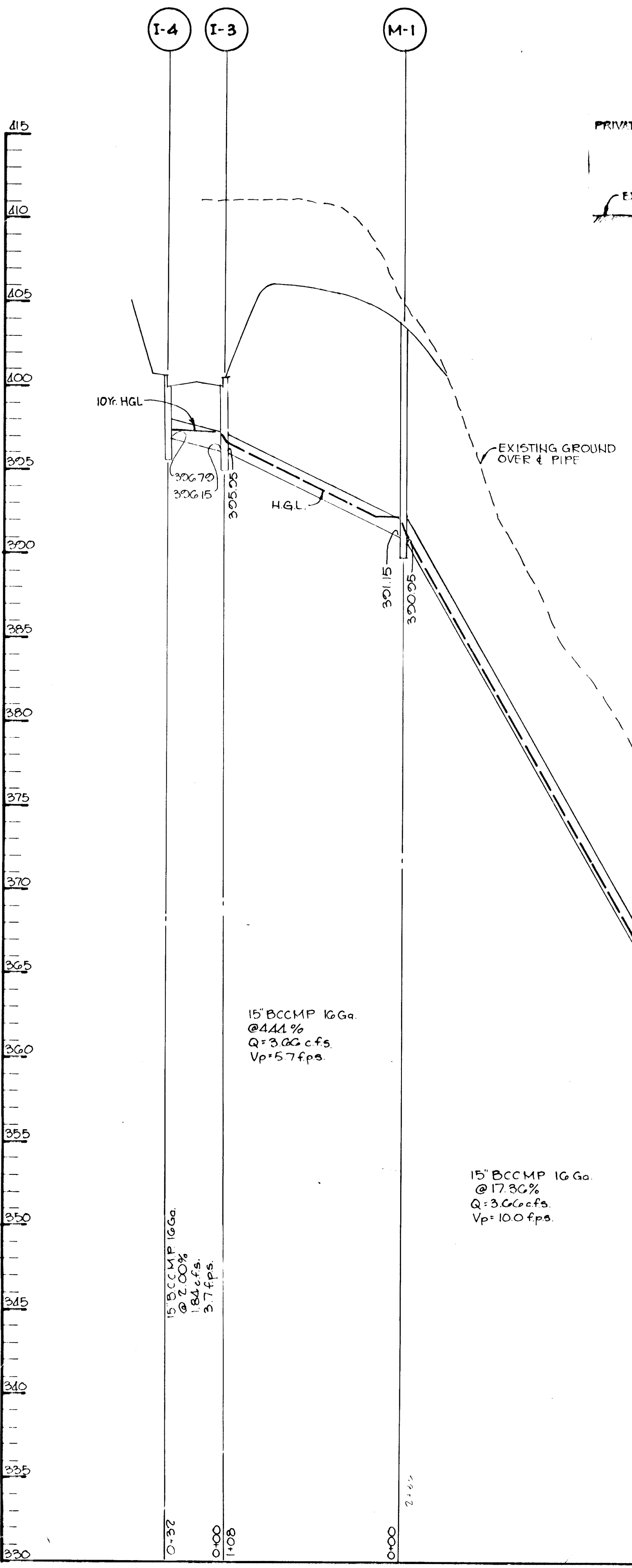
THE RIEMER GROUP, INC.
 The Riemer Group, Inc. A Land Planning, Design & Civil Engineering Firm
 8659 Baltimore National Pike, Ellicott City, Maryland, 21043 301-461-2690

DESIGNED BY: D.L.W.
 DRAWN BY: D.A.M.
 PROJECT NO: 001000
 DATE: 4-2-84
 SCALE: AS SHOWN
 DRAWING NO. 2 OF 6

Arthur E. ...

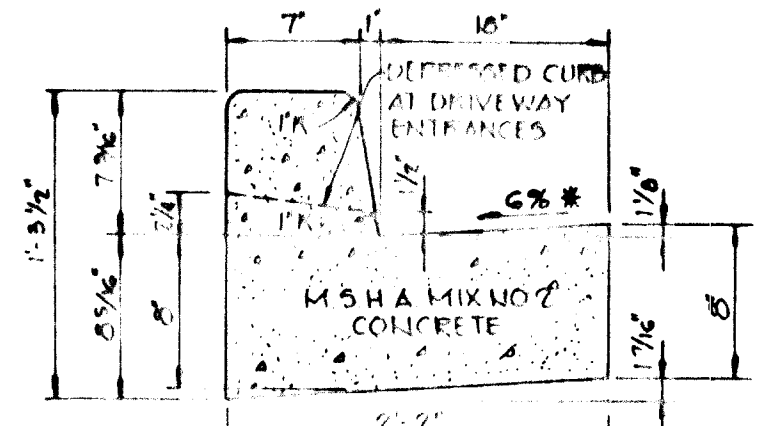


SURFACE TEXTURE OF CONCRETE RAMP SHALL BE COARSE BROOMING OR OTHER NON-SKID TYPE FINISH.
* STANDARD 7" COMBINATION CURB AND GUTTER IS SHOWN. DETAILS TO BE SIMILAR FOR MODIFIED CURB AND GUTTER AND BITUMINOUS CURB EXCEPT THAT FLOW LINE LIP IS TO BE OMITTED.



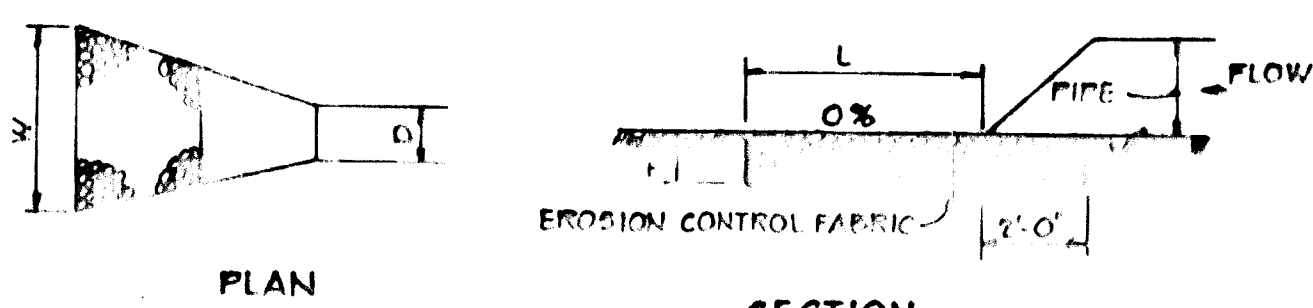
NOTE: TO BE USED IN CHANNEL PARALLEL TO TOLL HOUSE ROAD ADJACENT TO E-4

REVERSE 7" COMBINATION CURB AND GUTTER



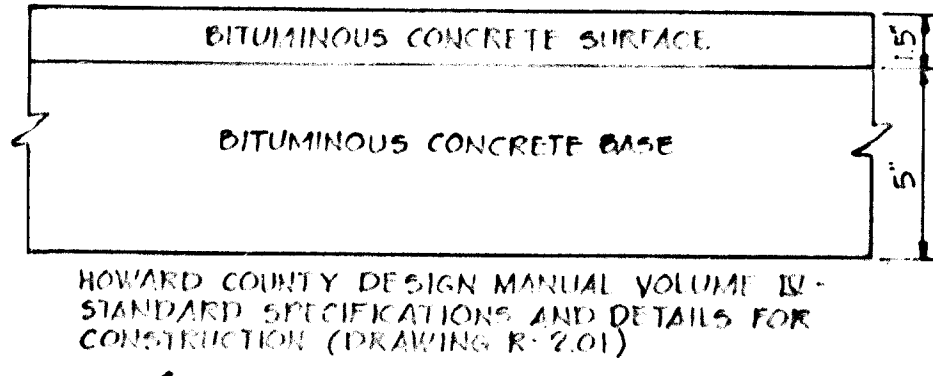
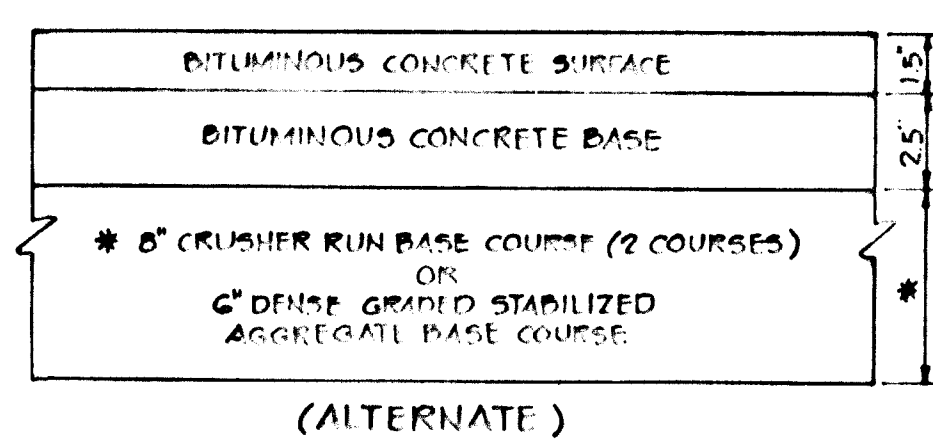
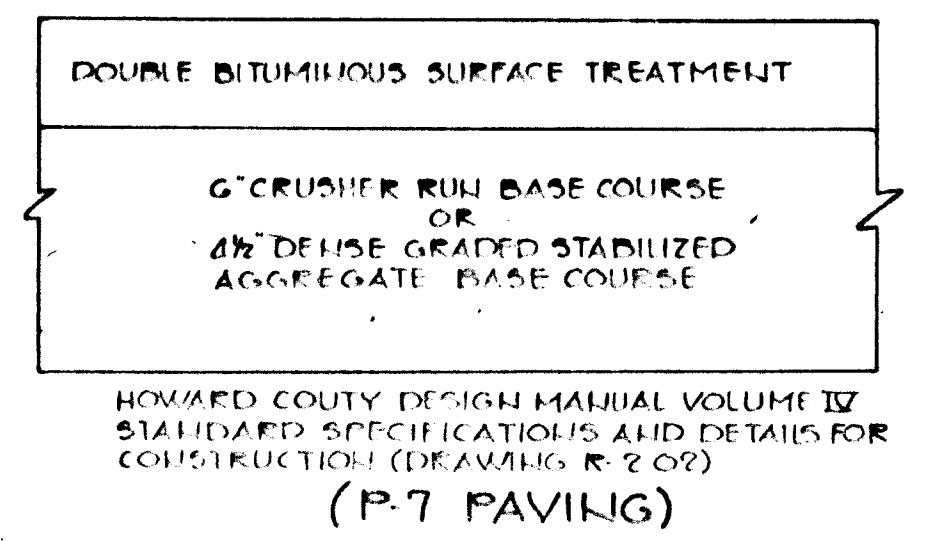
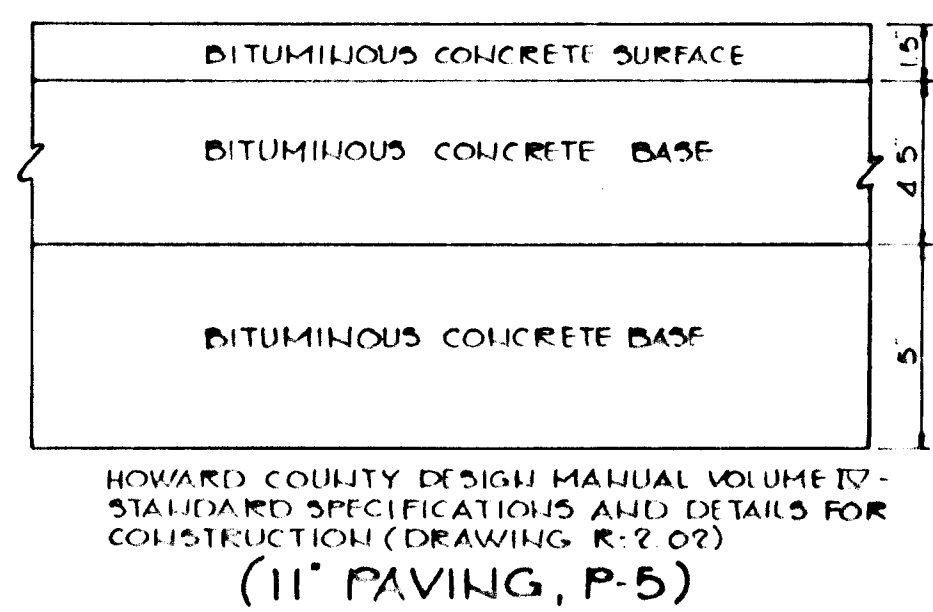
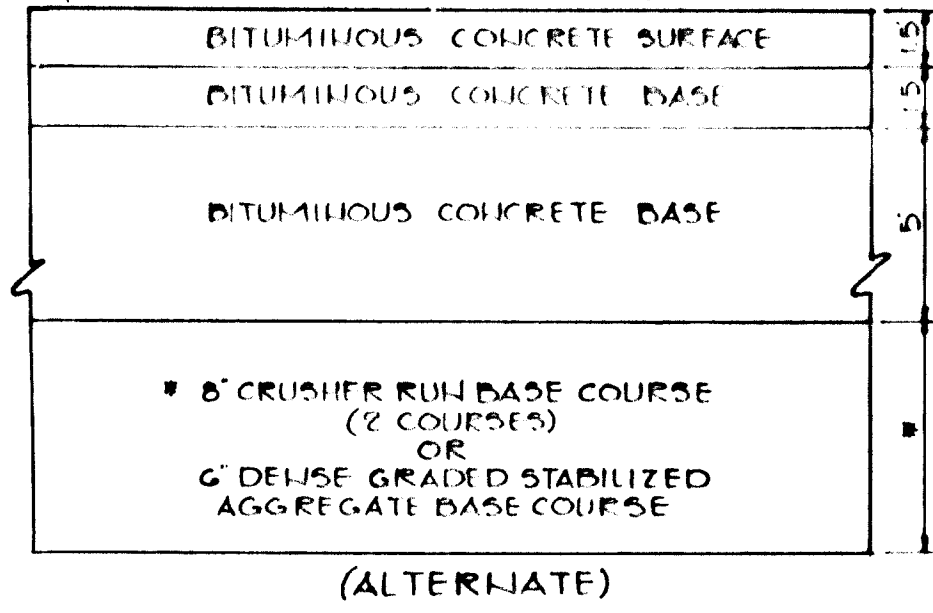
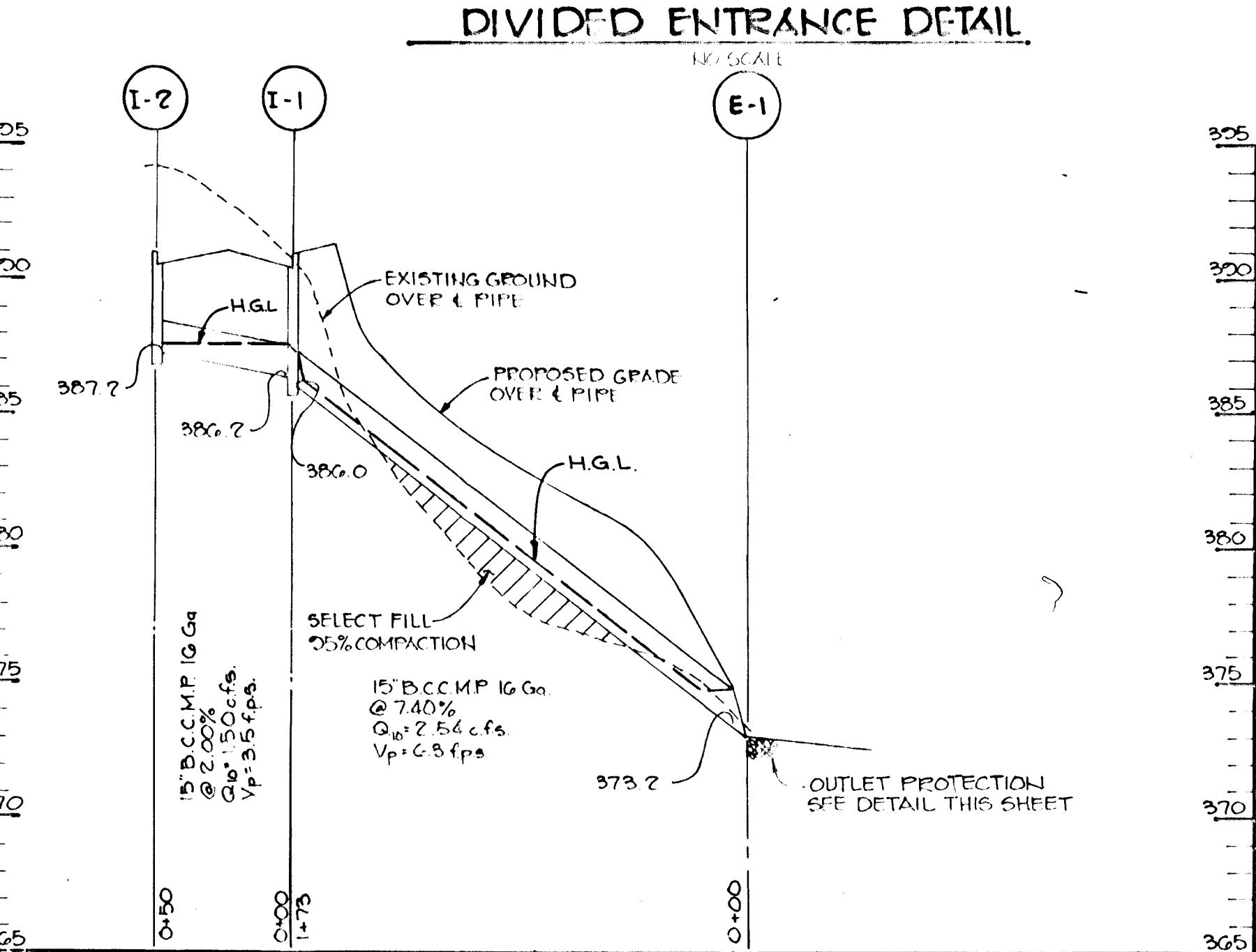
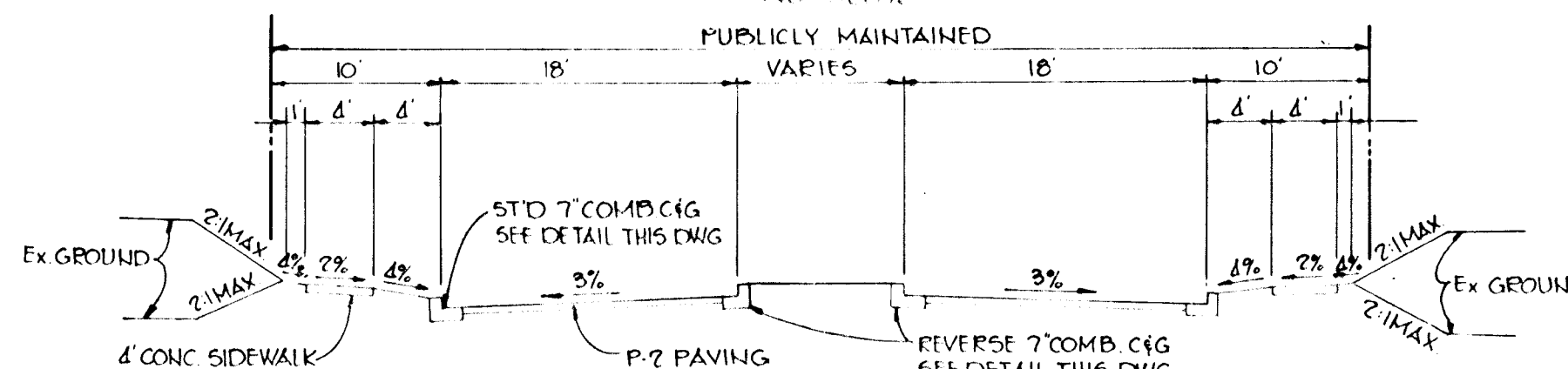
HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-801)
* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

STANDARD 7" COMBINATION CURB AND GUTTER

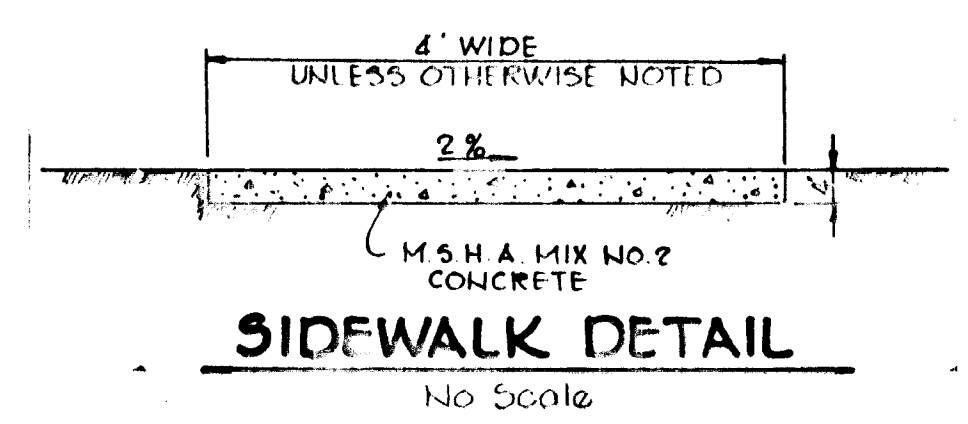


STRUCTURE	MEDIAN STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	50"	10'	12"	15"
E-2	50"	12'	14"	15"
E-3	50"	30'	14"	15"
E-4	50"	20'	10"	15"

OUTLET PROTECTION DETAIL



TYPICAL HANDICAP RAMP



APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John W. Muechman 10-23-84
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John W. Muechman 10-26-84
CHIEF, DIVISION OF ENGINEERING

DATE NO. REVISION
OWNER: DOROTHY W. MANAHAN, 2050 UPTON ROAD, ELLICOTT CITY, MARYLAND 21038
DEVELOPER: MANGIONE FAMILY ENTERPRISES, 1205 YORK ROAD (PENTHOUSE), LUTHERVILLE, MD. 21038

PROJECT: TOLL HOUSE (SECTION ONE)
AREA: TAX MAP NO. 24, PARCEL 254, 2ND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
TITLE: STORM DRAIN 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, 21033 301-461-2600

DESIGNED BY: DLW
DRAWN BY: D.A.M.
PROJECT NO: 001000
DATE: 4-2-84
SCALE: AS SHOWN
DRAWING NO. 3 OF 6

F-84-152 SEPTEMBER 27, 1984

SEDIMENT CONTROL CONSTRUCTION NOTES

GENERAL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction. (892-2431)
2. All sediment control structures will be installed in accordance with '1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control' as published by Soil Conservation Service, Water Resources Administration and State Soil Conservation Committee.
3. Site grading will begin only after all perimeter sediment control measures have been installed and are in a functioning condition.
4. All perimeter sediment control structures, dikes, swales, ditches, perimeter slopes and all slopes greater than 3:1 will be stabilized with in (7) seven calendar days and all other disturbed or graded areas on the site with in (14) fourteen calendar days.
5. Sediment will be removed from traps when its 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 test 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 '1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control.'
9. Sediment control will be installed before clearing and grubbing remainder of the site.

TEMPORARY SEEDING

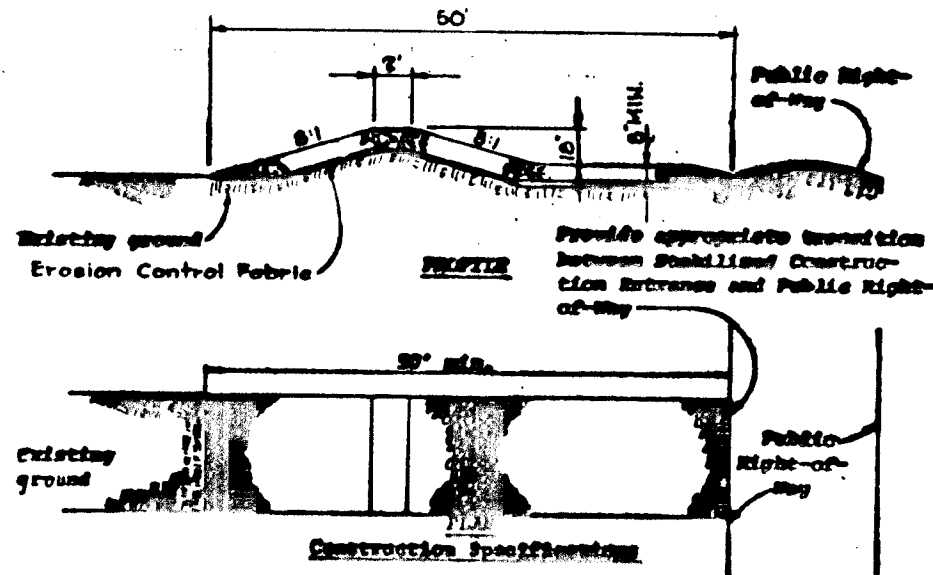
Area to be seeded shall be recently loosened. If the ground is packed, crusted or hard, the top layer of soil shall be loosened by digging, raking or other acceptable means.

- 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, cultipacker 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:

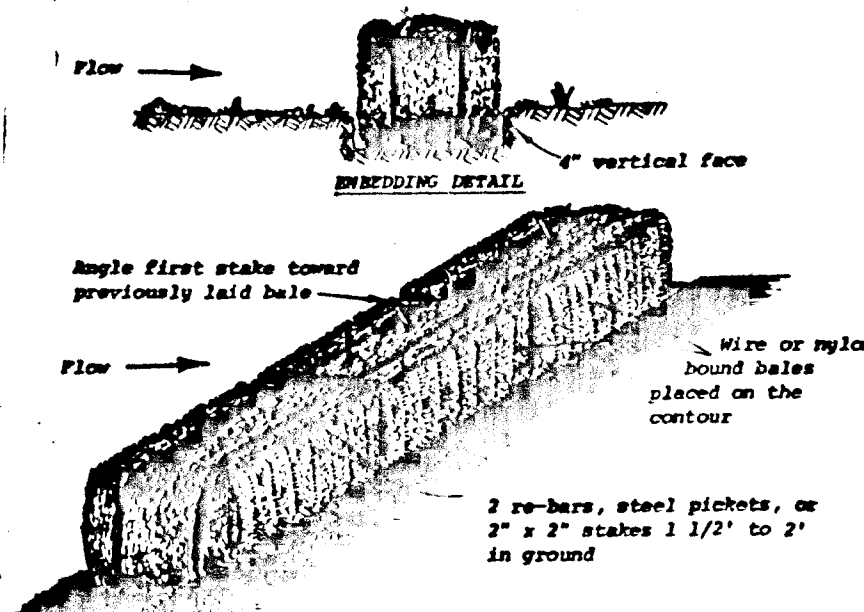
- A. Apply dolomitic limestone at the rate of 2 tons per acre (one ton per acre if application of ton per acre was made for temporary seeding.)
- B. Apply 0-20-20 fertilizer into the soil to a minimum depth of 3" lawns or high maintenance areas will be dragged and leveled with a York rake. At the time 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.



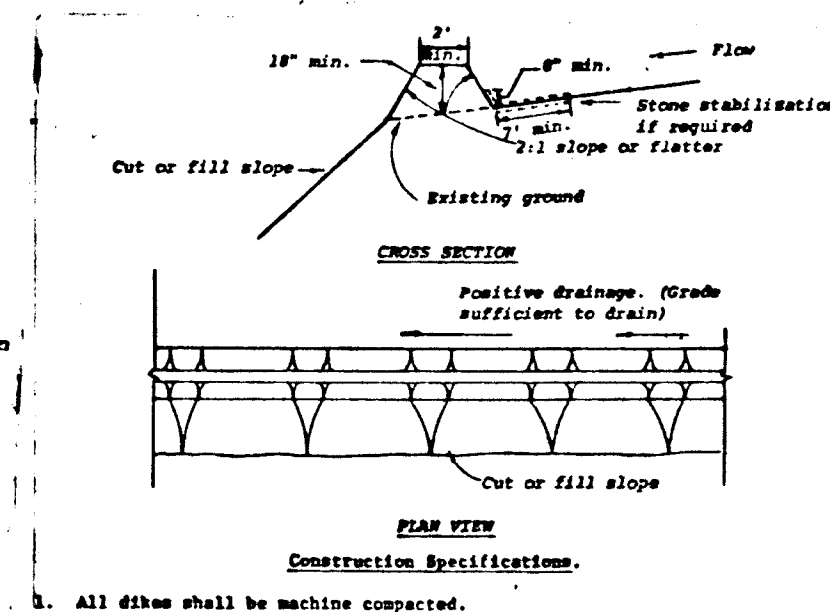
MODIFIED STABILIZED CONSTRUCTION ENTRANCE
NO SCALE

1. Stone size - Use ASTM spec No. 2 (3-1/2" to 1") of ASTM designation M31, size No. 2 (3-1/2" to 1-1/2"). Use crushed stone.
2. Length - As effective, but not less than 50 feet.
3. Thickness - Not less than eight (8) inches.
4. Width - Not less than full width of all paths of ingress or egress.
5. Working - When necessary, wheels shall be cleaned to remove sediment prior to entrance onto 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 drains, 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 determined and repair under clearance of any structure used in conjunction. All sediment applied, dropped, washed or tracked onto public right-of-way must be removed immediately.

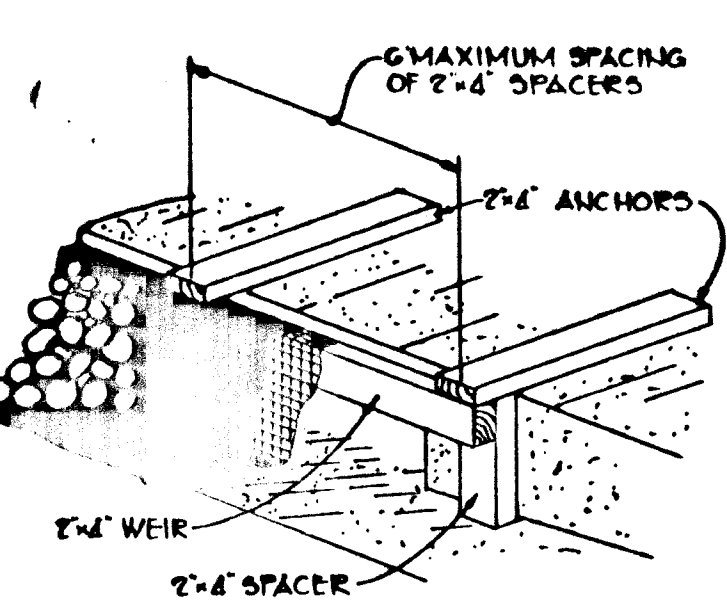
Standard Symbol



STRAW BALE DIKE
NO SCALE



DIVERSION DIKE
NO SCALE



INLET BLOCKING DETAIL
NO SCALE

STANDARD SYMBOL

STRUCTURE SCHEDULE

STRUCTURE NO.	TYPE	LOCATION	INV. IN.	INV. OUT.	TOP ELEV.	DESCRIPTION
I-1	TYPE 'A-5' INLET W/DEF	25' LT STA. 0+60	386.20	386.00	#300.46	5D 4.01
I-2	TYPE 'A-5' INLET W/DEF	25' RT STA. 0+60	-	387.20	#300.46	5D 4.01
I-3	TYPE 'A-5' INLET W/DEF	16' RT STA. 3+44	306.15	305.95	#400.07	5D 4.01
I-4	TYPE 'A-5' INLET W/DEF	16' LT STA. 3+44	-	306.79	#400.07	5D 4.01
M-1	ST'D. MANHOLE	SEE PLAN SHEET N#1	391.15	390.95	#403.50	G 5.12
E-1	18" METAL END SECTION	SEE PLAN SHEET N#2	-	379.20	-	5D 5.61
E-2	18" METAL END SECTION	SEE PLAN SHEET N#1	-	341.30	-	5D 5.61
E-3	24" METAL END SECTION	SEE PLAN SHEET N#4	-	325.50	-	5D 5.61
E-4	24" METAL END SECTION	SEE PLAN SHEET N#2	-	367.50	-	5D 5.61
S-1	SPECIAL STRUCTURE	SEE PLAN SHEET N#4	340.50	340.00	342.50	SEE DETAIL SHEET N#5
S-2	SPECIAL STRUCTURE	SEE PLAN SHEET N#2	372.50	372.00	377.50	SEE DETAIL SHEET N#6

NOTE: FOR EXISTING SEDIMENT CONTROL SEE DRAWINGS GP-84-15

EX. TRAP #3 DATA

DRAINAGE AREA 184 Ac.
STORAGE REQUIRED 123 CY
STORAGE PROVIDED 144 CY
CREST ELEVATION 359.5
BOTTOM ELEVATION 356.0
CLEANOUT ELEVATION 358.0
BOTTOM DIMENSIONS 20' x 50'

SEDIMENT BASIN #1 DATA

BASIN
DRAINAGE AREA 25 Ac.
STORAGE REQUIRED 154 CY
STORAGE PROVIDED 216 CY
CREST ELEVATION 375.4
CLEANOUT ELEVATION 374.4

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE
3. CLEAR AND GRUB AREA REQUIRING SEDIMENT CONTROL DEVICES ONLY
4. REMOVE EXISTING TRAP #2 AND IMMEDIATELY INSTALL STORM WATER MANAGEMENT FACILITY #2
5. INSTALL ALL REMAINING SEDIMENT CONTROL DEVICES INCLUDING STORM WATER MANAGEMENT POND #1 AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES, BLOCK LOW FLOW ORIFICES.
6. INSTALL STORM DRAINS, WATER AND SEWER AND BLOCK STORM DRAIN INLETS
7. COMPLETE ALL CONSTRUCTION
8. STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES
9. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR REMOVE ALL SEDIMENT CONTROL DEVICES AND CONVERT SEDIMENT BASINS TO STORM WATER MANAGEMENT FACILITIES AS FOLLOWS:
a) PUMP OUT IMPOUNDED WATER THRU SPILLWAY
b) REMOVE SEDIMENT AND RESTORE BASIN TO ORIGINAL PLAN DIMENSIONS
c) SEED ALL DISTURBED AREAS AS PER THE PERMANENT SEEDING NOTES

PLAN
SCALE: 1"=50'

SEDIMENT BASIN #2 DATA
DRAINAGE AREA 64 Ac.
STORAGE REQUIRED 450 CY
STORAGE PROVIDED 472 CY
CREST ELEVATION 347.2
CLEANOUT ELEVATION 344.2

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."
Louis Mangione 10/18/84
DEVELOPER: LOUIS MANGIONE 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 10/18/84
ENGINEER: ARTHUR E. MUEGGE 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 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Zichow 10-23-84
HOWARD C.D. DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John W. Muschman 10-23-84
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William E. Reddy 10-26-84
CHIEF, BUREAU OF ENGINEERING DATE

DATE	NO.	REVISION

OWNER: DOROTHY W. MANAHAN
2000 UPTON ROAD
ELICOTT CITY, MARYLAND 21045

DEVELOPER: MANGIONE FAMILY ENTERPRISES
1205 YORK ROAD (PENTHOUSE)
LUTHERVILLE MD 21098

PROJECT: TOLL HOUSE (SECTION ONE)

AREA: TAX MAP NO 24 PARCEL 254
2ND ELECTION DISTRICT
HOWARD COUNTY MARYLAND

TITLE: DRAINAGE AREA MAP
SEDIMENT CONTROL PLAN
STORM WATER MANAGEMENT

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

DATE: 4-2-84
DESIGNED BY: JKB
DRAWN BY: DAM
PROJECT NO: 001000
DATE: 4-2-84
SCALE: AS SHOWN
DRAWING NO. 4 OF 6

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 designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, over-size stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.

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.

2. 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 1/2: 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.

3. Mixing - The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixer and of the introduction of the materials, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the addition of water to preserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.

4. 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.

5. 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.

6. 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.

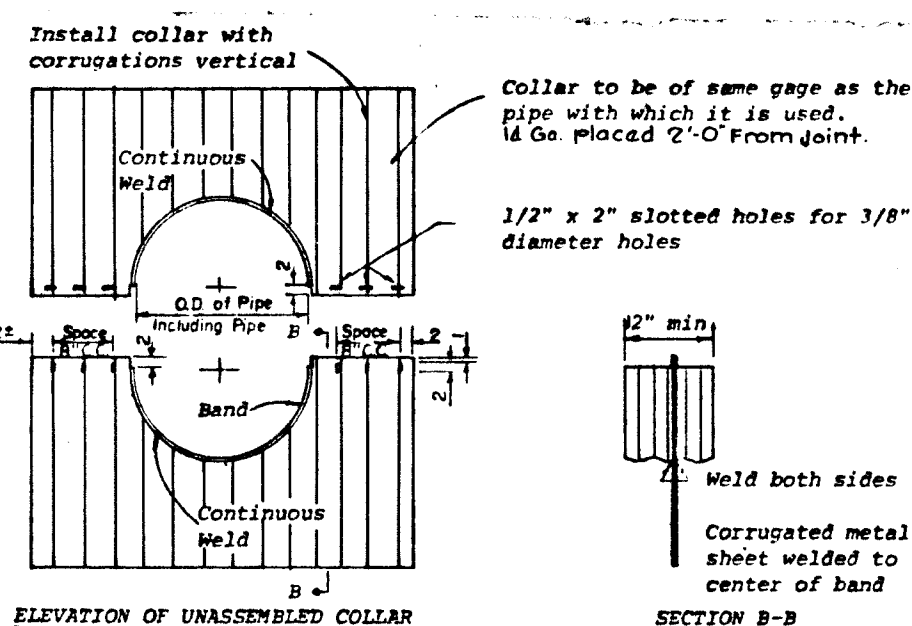
7. Finishing - Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry-patching mortar.

8. 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.

9. Placing Temperature - Concrete may not be placed at temperatures below 32°F with the temperature falling, or 36°F with the temperature rising.

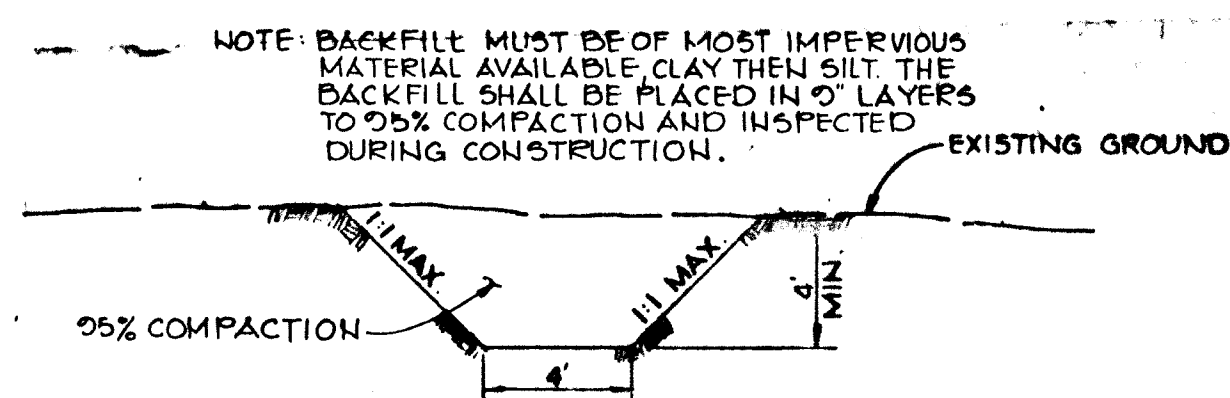
VI. STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, scull 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.

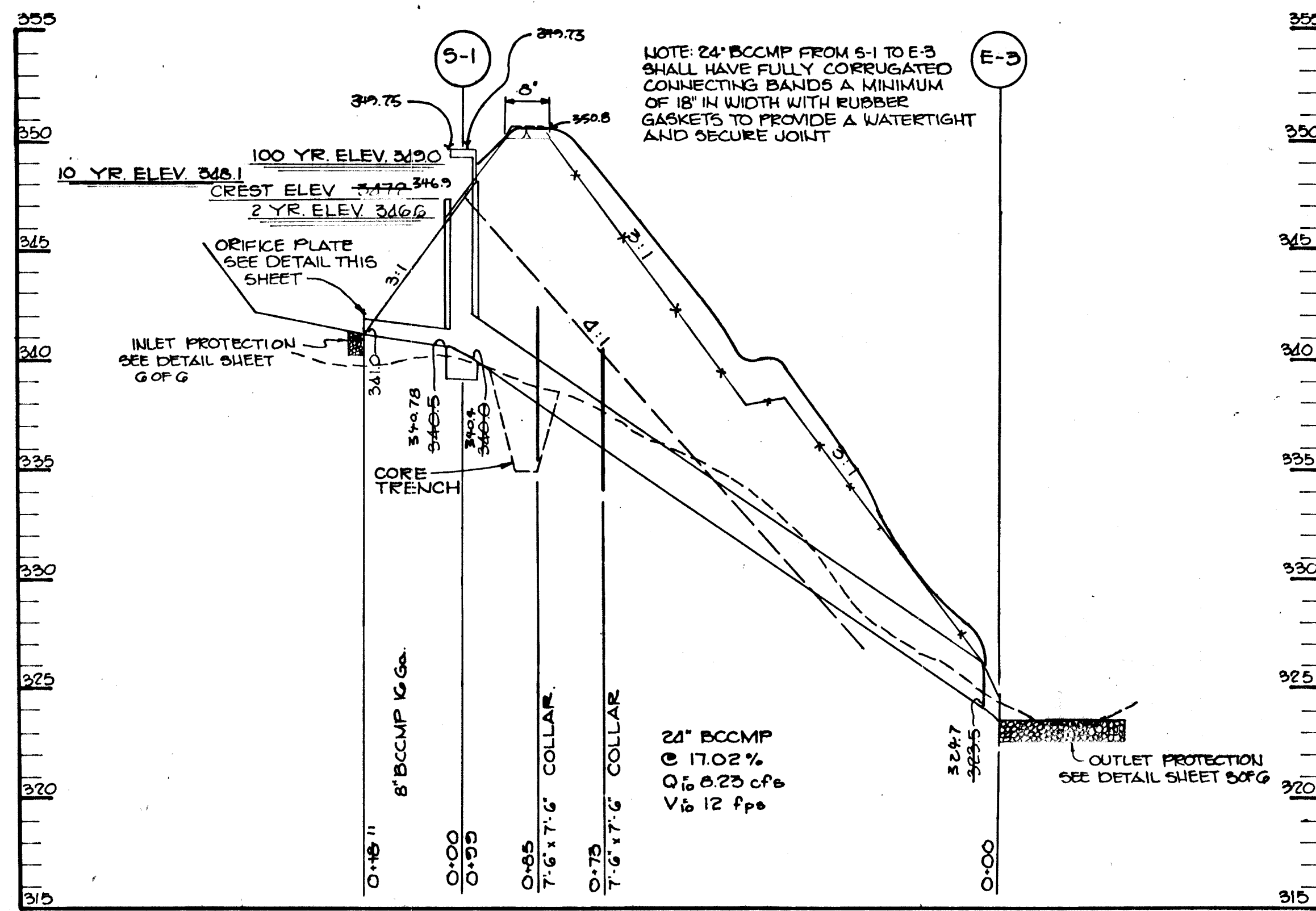


- NOTES FOR COLLARS:
- All materials to be in accordance with construction and construction material specifications.
 - When specified on the plans, coating of collars shall be in accordance with construction and construction material specifications.
 - Unassembled collars shall be marked by painting or tagging to identify matching pairs.
 - The lap between the two half sections and between the pipe and connecting band shall be caulked with asphalt mastic at time of installation.
 - Each collar shall be furnished with two 1/2" diameter rods with standard tank lugs for connecting collars to pipe.

ANTI-SEEP COLLAR DETAIL

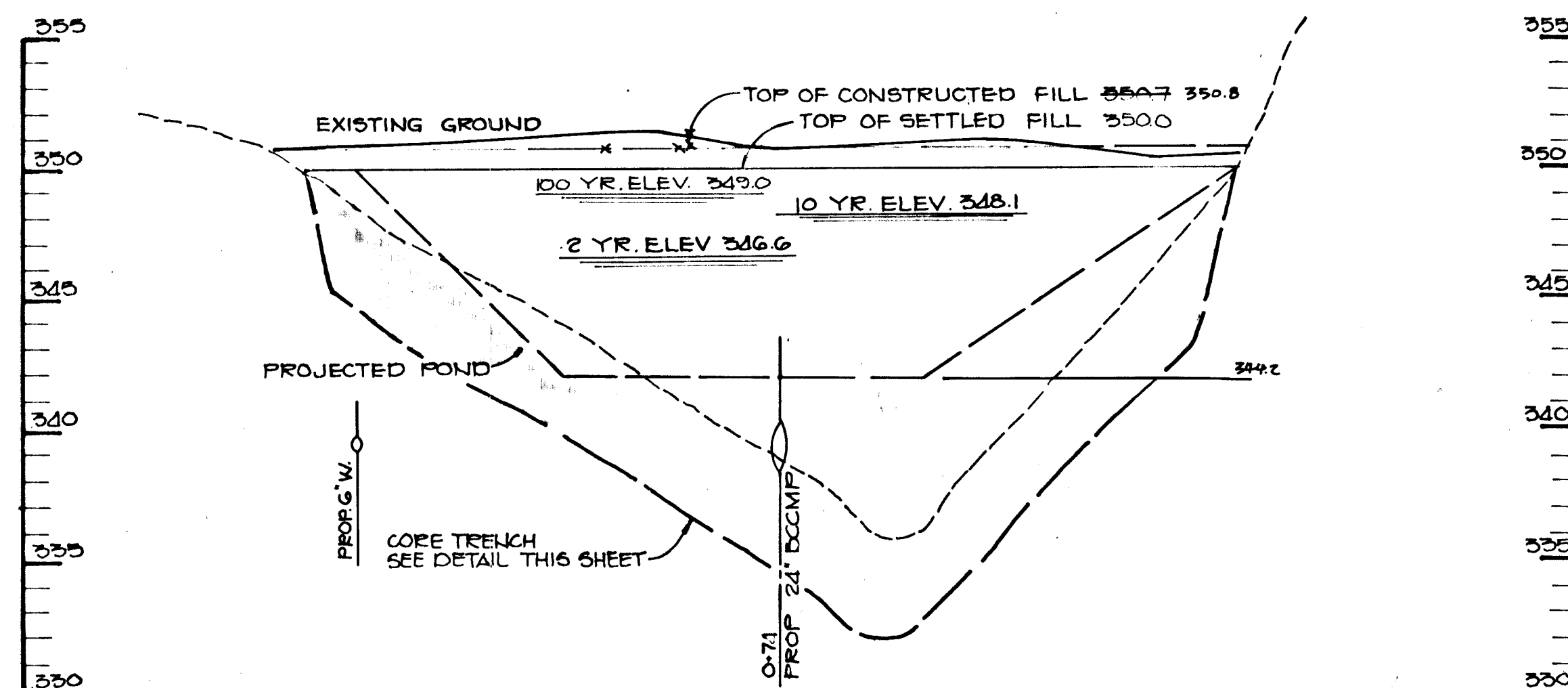


CORE TRENCH TYPICAL SECTION



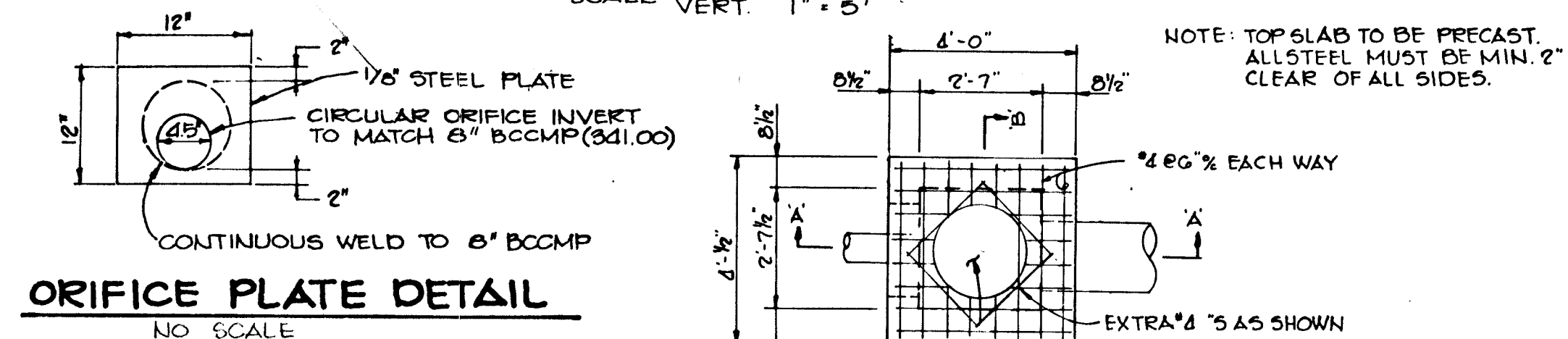
PROFILE THRU SPILLWAY FACILITY # 2

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

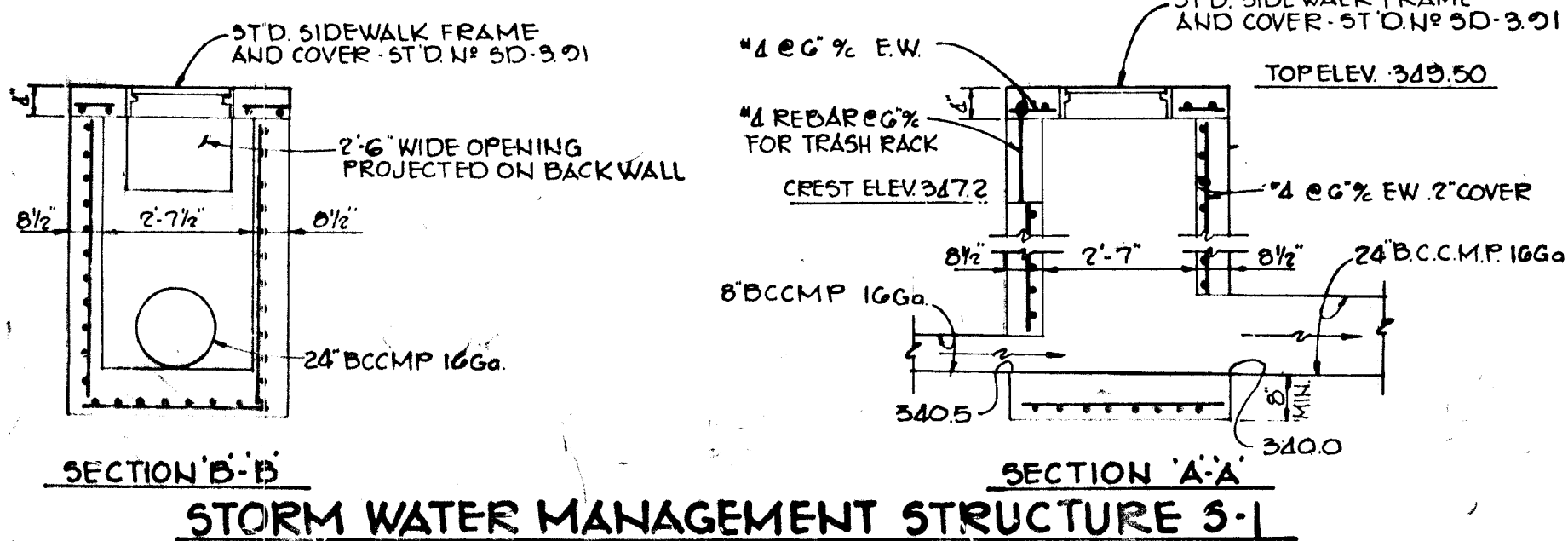
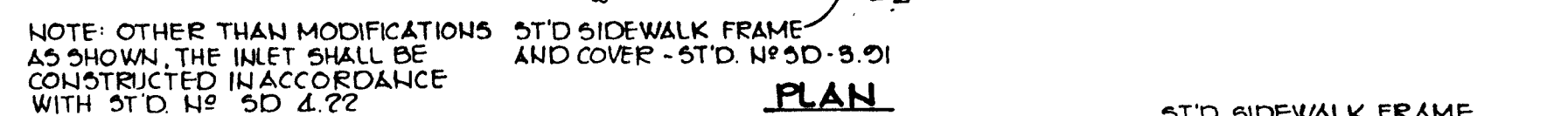


EMBANKMENT PROFILE - FACILITY # 2

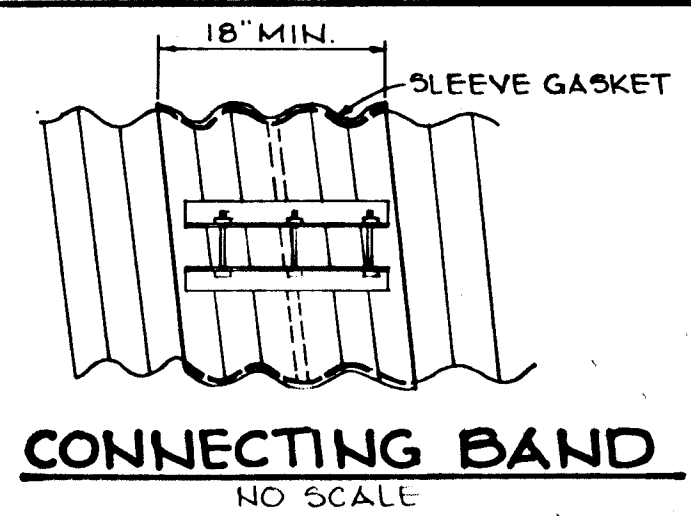
SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



ORIFICE PLATE DETAIL



STORM WATER MANAGEMENT STRUCTURE S-1



CONNECTING BAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Robert E. Kelly 10-26-84
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Arthur W. Manahan 10-23-84
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION 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. Helm 10-23-84
U.S. SOIL CONSERVATION SERVICE DATE

THE DEVELOPER CERTIFIES THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL EMPLOYED 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.

Louis Mangione 10-18-84
LOUIS MANGIONE 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 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.

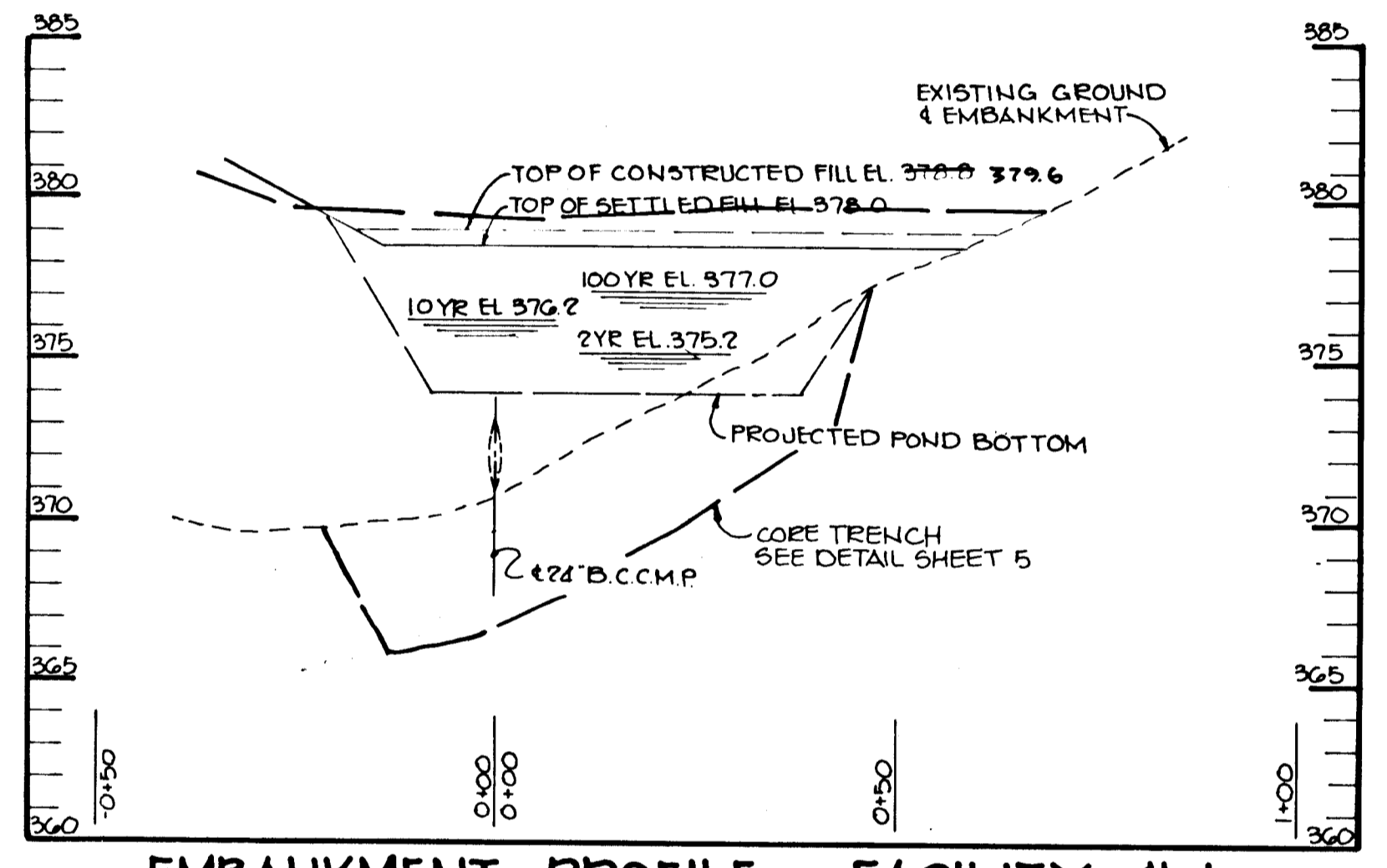
Arthur E. Muegge 10/18/84
ARTHUR E. MUEGGE DATE

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

APPROVED: *Robert W. Helm* 10/22/84
HOWARD COUNTY DATE

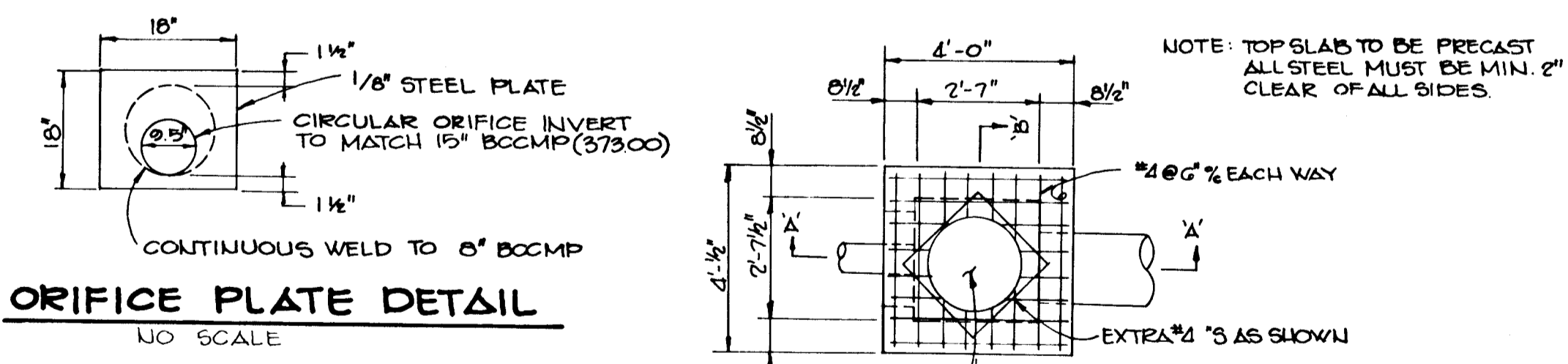
DATE	NO	REVISION
OWNER: DOROTHY W. MANAHAN 5500 UPTON ROAD ELICOTT CITY, MARYLAND 21043		
DEVEL: MANGIONE FAMILY ENTERPRISES 1205 YORK ROAD (FENHOUSE) LUTHERVILLE MD. 21098		
PROJECT: TOLL HOUSE (SECTION ONE)		
AREA: TAX MAP NO 24 PARCEL 254 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TITLE: STORM WATER MANAGEMENT NOTES 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 301 461-2690		
DESIGNED BY:	DLW	
DRAWN BY:	D.A.M.	
PROJECT NO:	001000	
DATE:	4-2-84	
SCALE:	AS SHOWN	
DRAWING NO:	5 OF 6	

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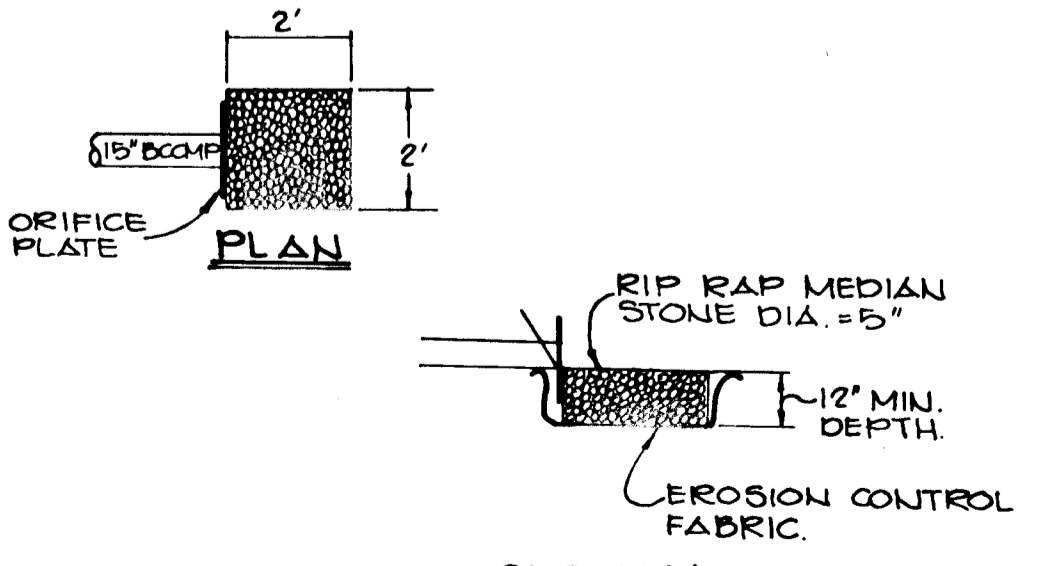
EMBankment Profile - Facility # 1

SCALE: HORIZ 1"=20'
VERT 1"=5'

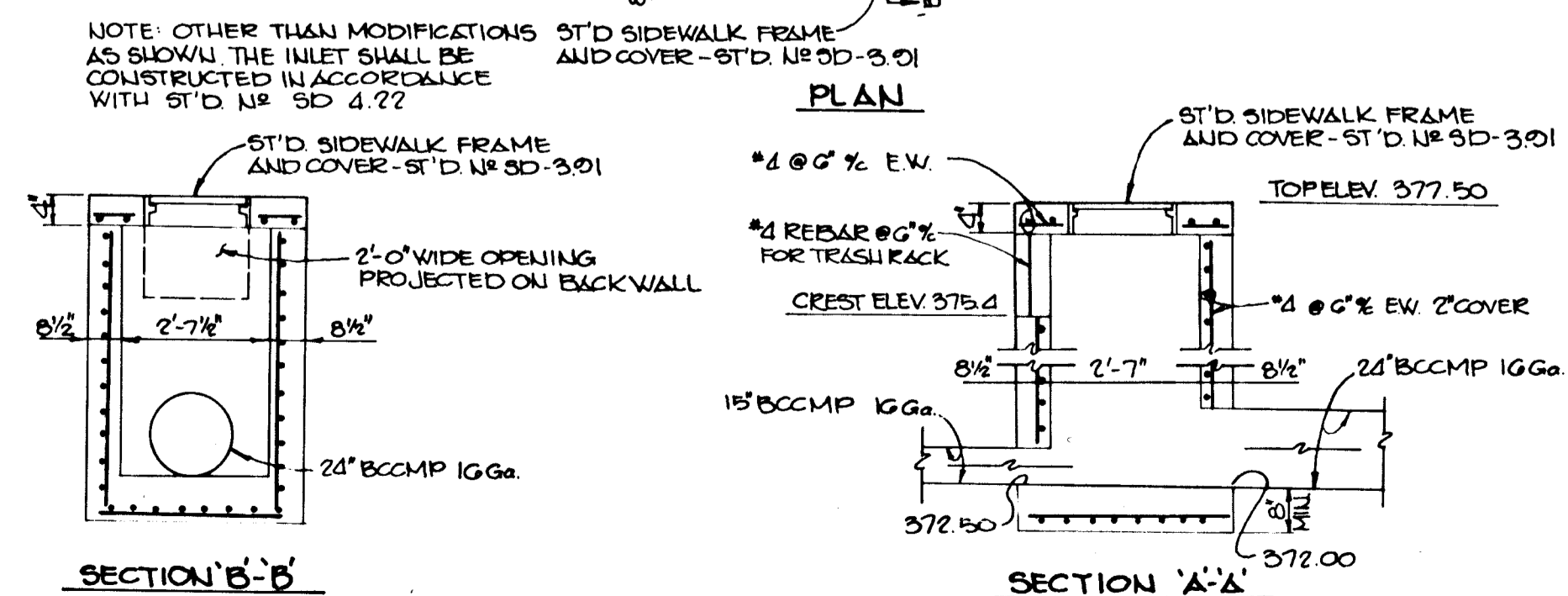


ORIFICE PLATE DETAIL

NO SCALE

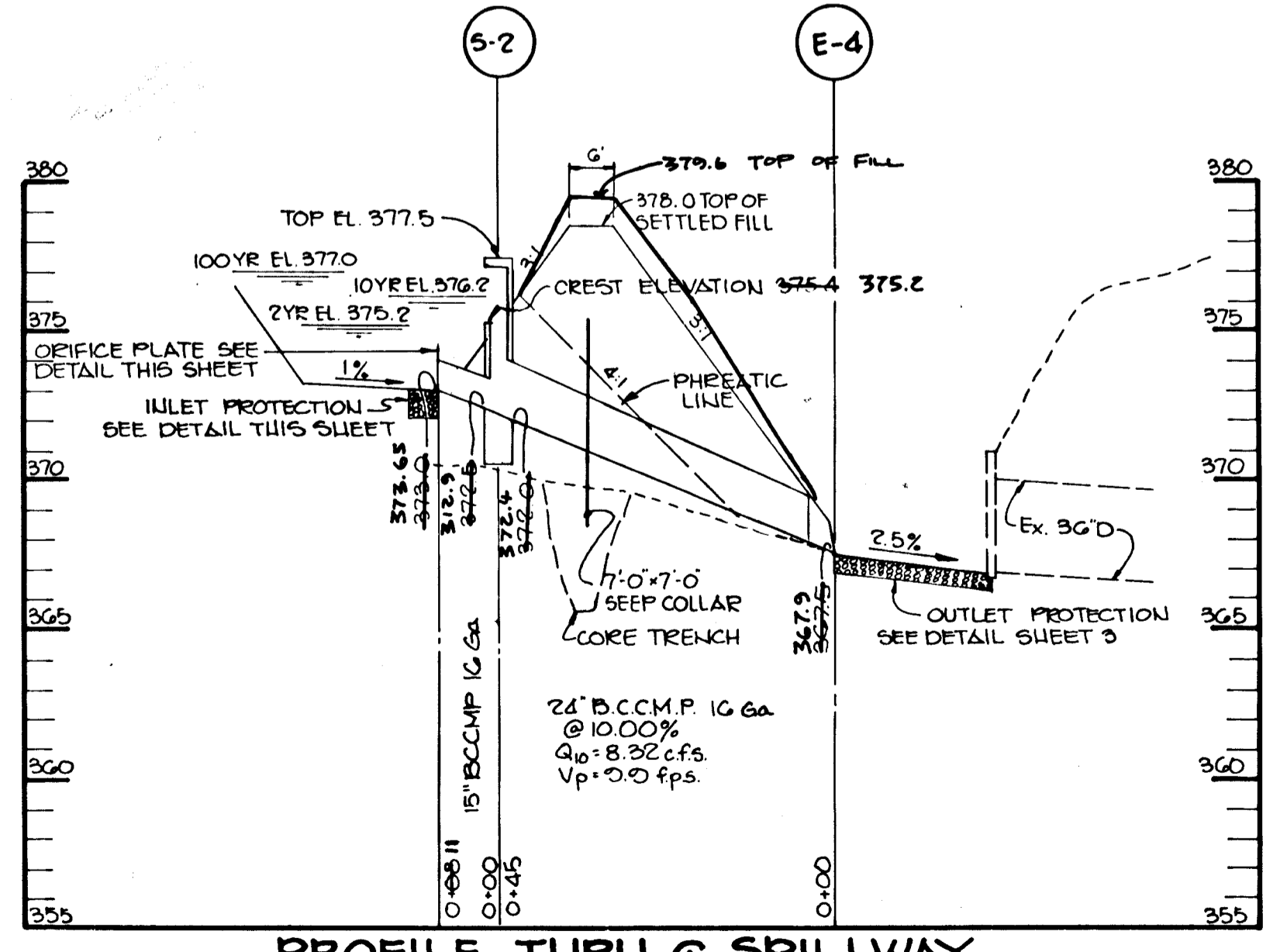


INLET PROTECTION DETAIL



STORM WATER MANAGEMENT STRUCTURE S-2

NO SCALE



PROFILE THRU & SPILLWAY FACILITY # 1

SCALE: HORIZ 1"=20'
VERT 1"=5'

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: Louis Mangione DATE: 10/18/84

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. Muegg DATE: 10/18/84

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 DATE: 10-23-84

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED: Robert W. Ziehm DATE: 10-22-84
HOWARD COUNTY C.D.

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
John W. Muschman DATE: 10-23-84
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Robert E. Riley DATE: 10-23-84
CHIEF, BUREAU OF ENGINEERING

OWNER: DOROTHY W. MANAHAN
5050 UPTON ROAD
ELLICOTT CITY, MARYLAND 21043

DEVELOPER: MANGIONE FAMILY ENTERPRISES
1205 YORK ROAD (PENTHOUSE)
LUTHERVILLE, MD 21098

PROJECT: **TOLL HOUSE (SECTION ONE)**

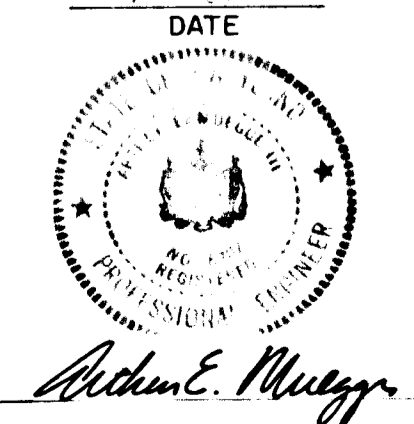
AREA TAX MAP NO. 24 PARCEL 254
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: **STORM WATER MANAGEMENT DETAILS**

THE RIEMER GROUP, INC.

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

DATE: 10-23-84
DESIGNED BY: J.K.B.
DRAWN BY: D.A.M.
PROJECT NO: 001000
DATE: 7-13-84
SCALE: AS SHOWN
DRAWING NO. 6 OF 6



AS-BUILT DEC. 11, 1984

F-84-152 SEPTEMBER 27, 1984