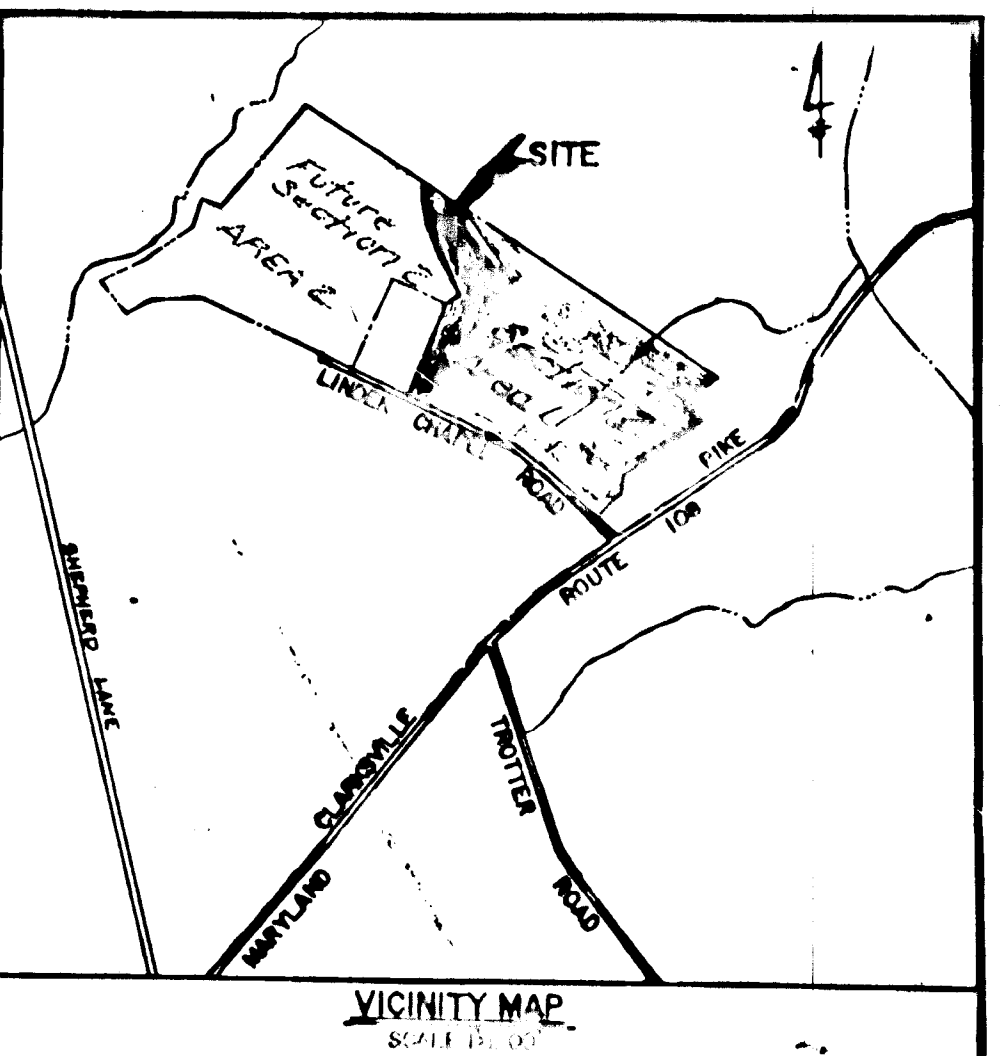
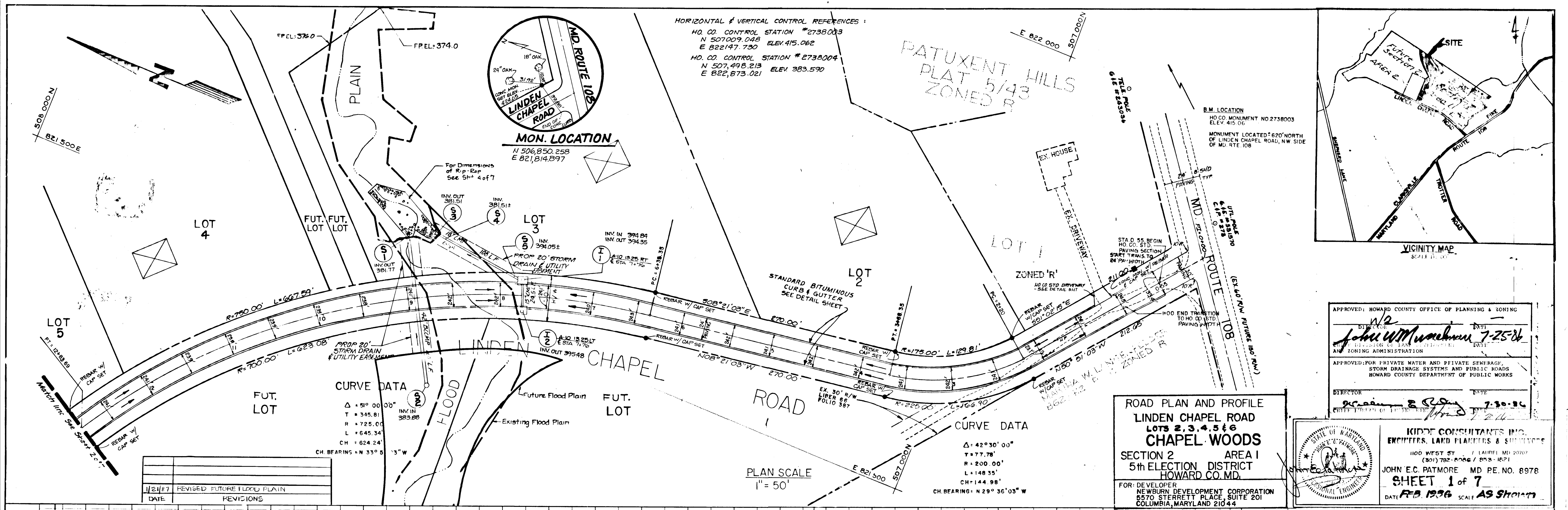
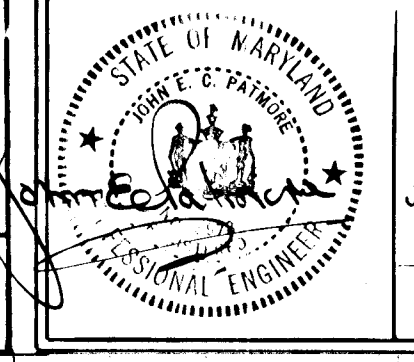


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 PLOTTED BY DATE
 ALIGNMENT CHECKED BY DATE
 NOTE BOOK NO. BY
 RT. BY
 NO. BY

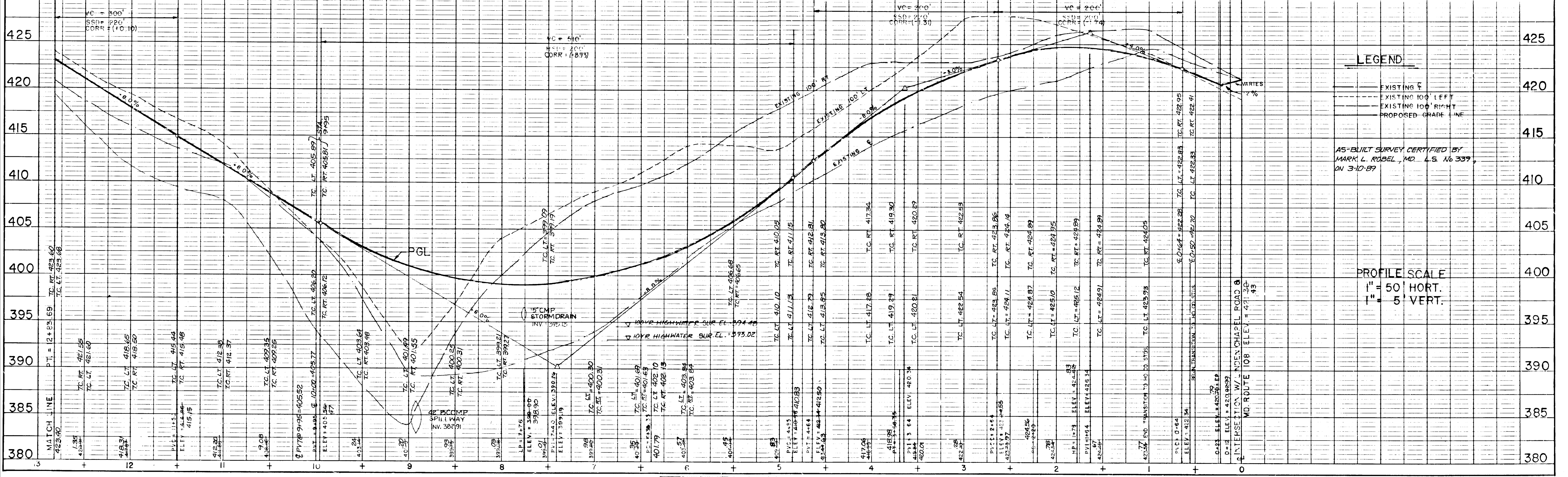
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 PLOTTED BY DATE
 B.M.'S NOTED BY DATE
 STRUCTURE NOTATIONS BY DATE
 NO. BY



APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
 DIRECTOR: *W. J. ...* DATE: 7-25-86
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR: *...* DATE: 7-30-86

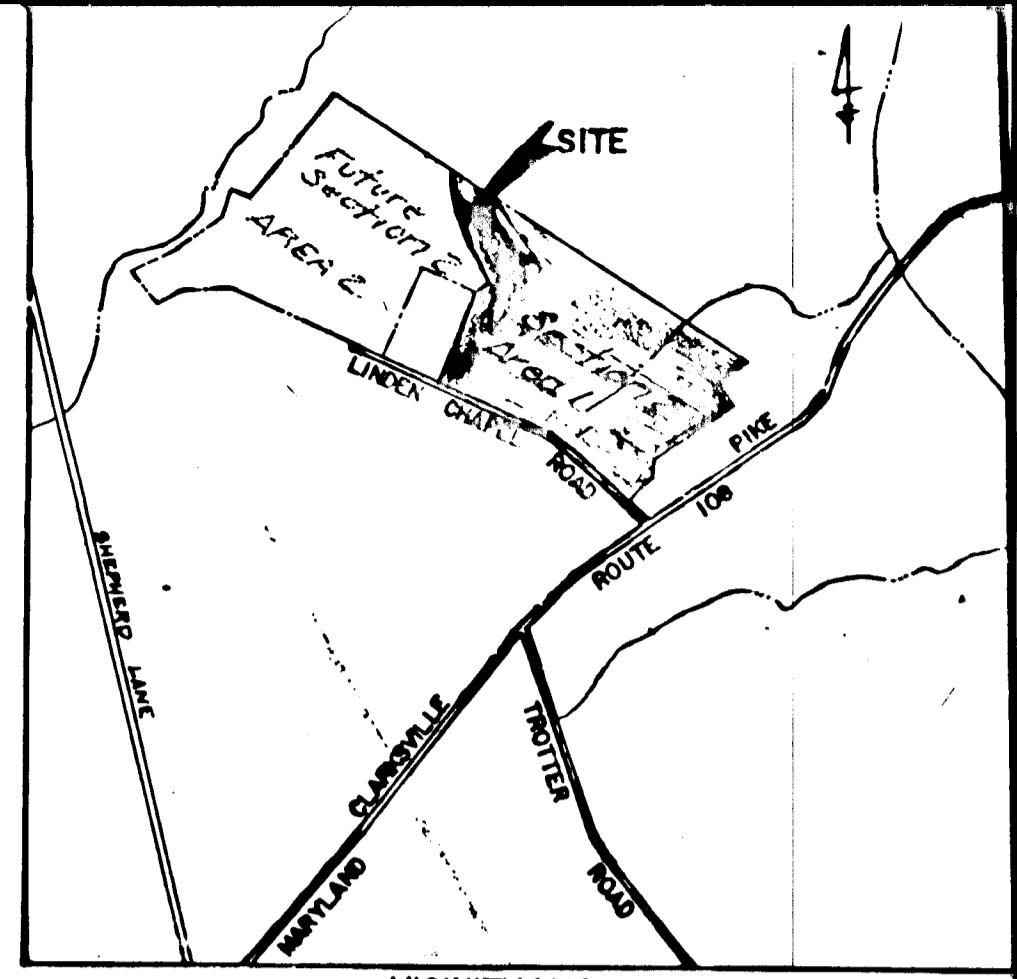
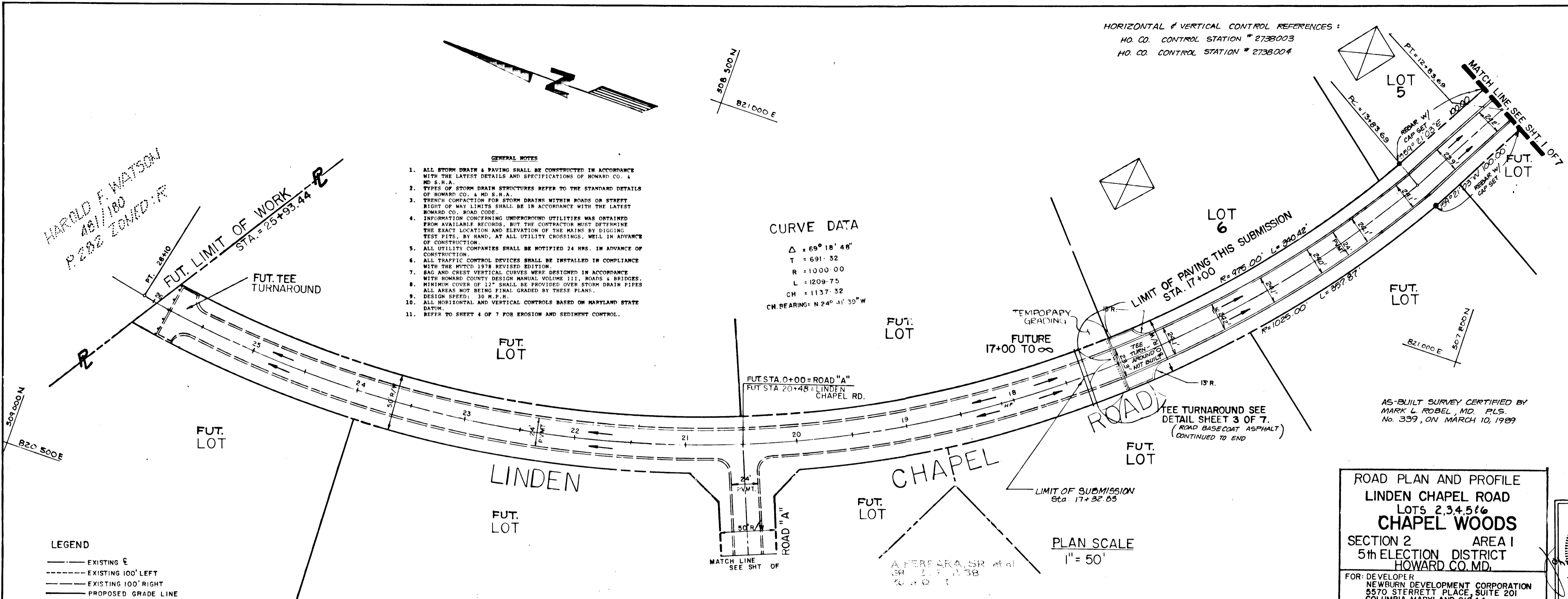


KIDD CONSULTANTS INC.
 ENGINEERS, LAND PLANNERS & SURVEYORS
 1100 WEST ST. LAUREL MD 20707
 (301) 782-8000 / 853-1621
 JOHN E.C. PATMORE MD PE. NO. 8978
SHEET 1 of 7
 DATE: FEB 1986 SCALE: AS SHOWN



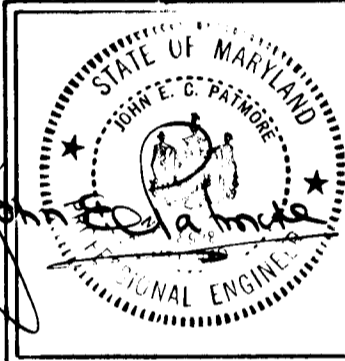
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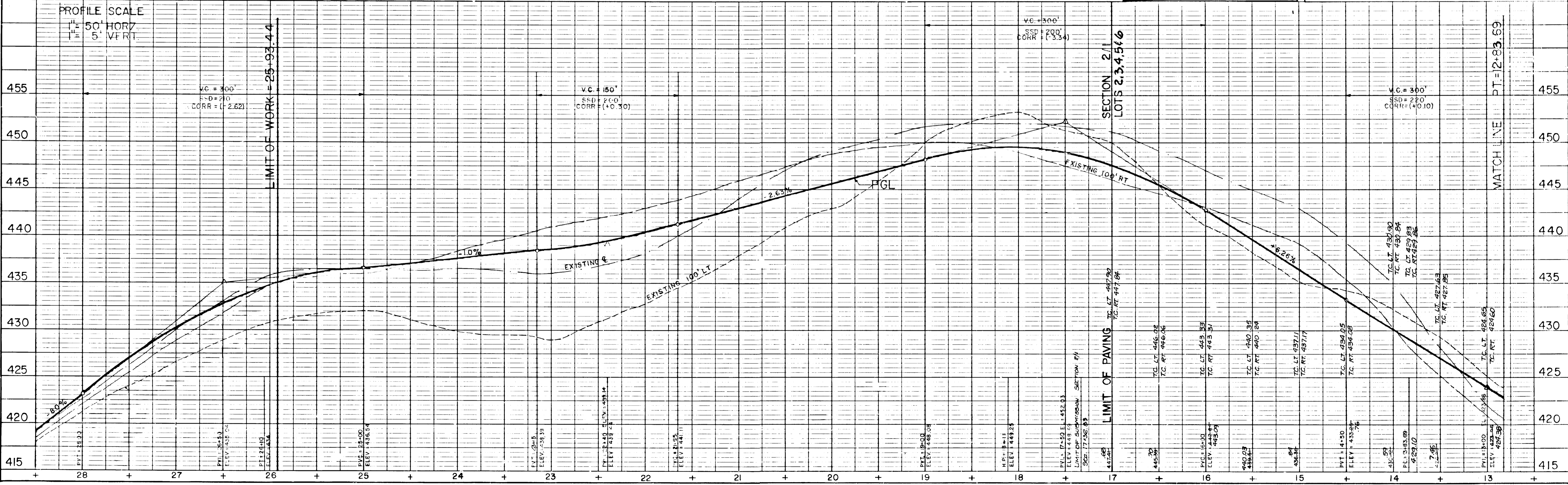


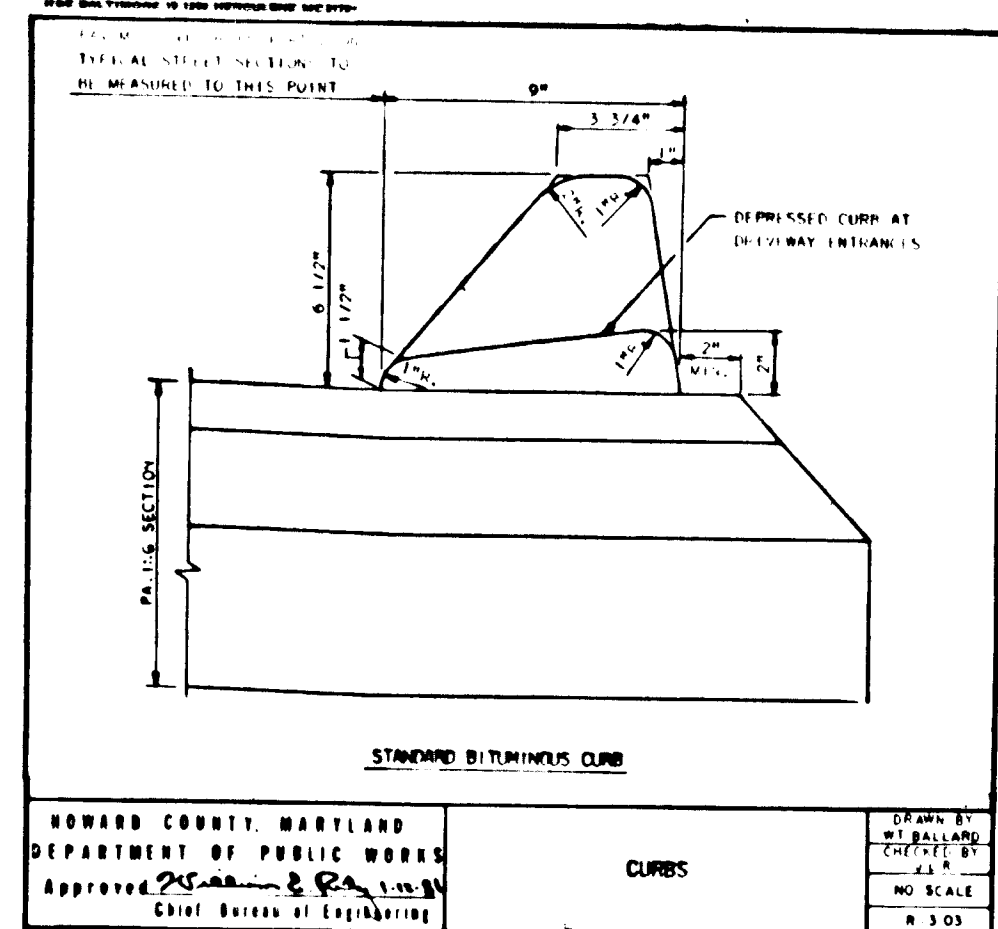
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 DATE: 7-25-86
 APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR: [Signature] DATE: 7-30-86
 CHIEF ENGINEER OF PUBLIC WORKS: [Signature] DATE: 7-30-86

ROAD PLAN AND PROFILE
 LINDEN CHAPEL ROAD
 LOTS 2, 3, 4, 5 & 6
 CHAPEL WOODS
 SECTION 2 AREA I
 5th ELECTION DISTRICT
 HOWARD CO. MD.
 FOR DEVELOPER:
 NEWBURN DEVELOPMENT CORPORATION
 5570 STREETT PLACE, SUITE 201
 COLUMBIA, MARYLAND 21044

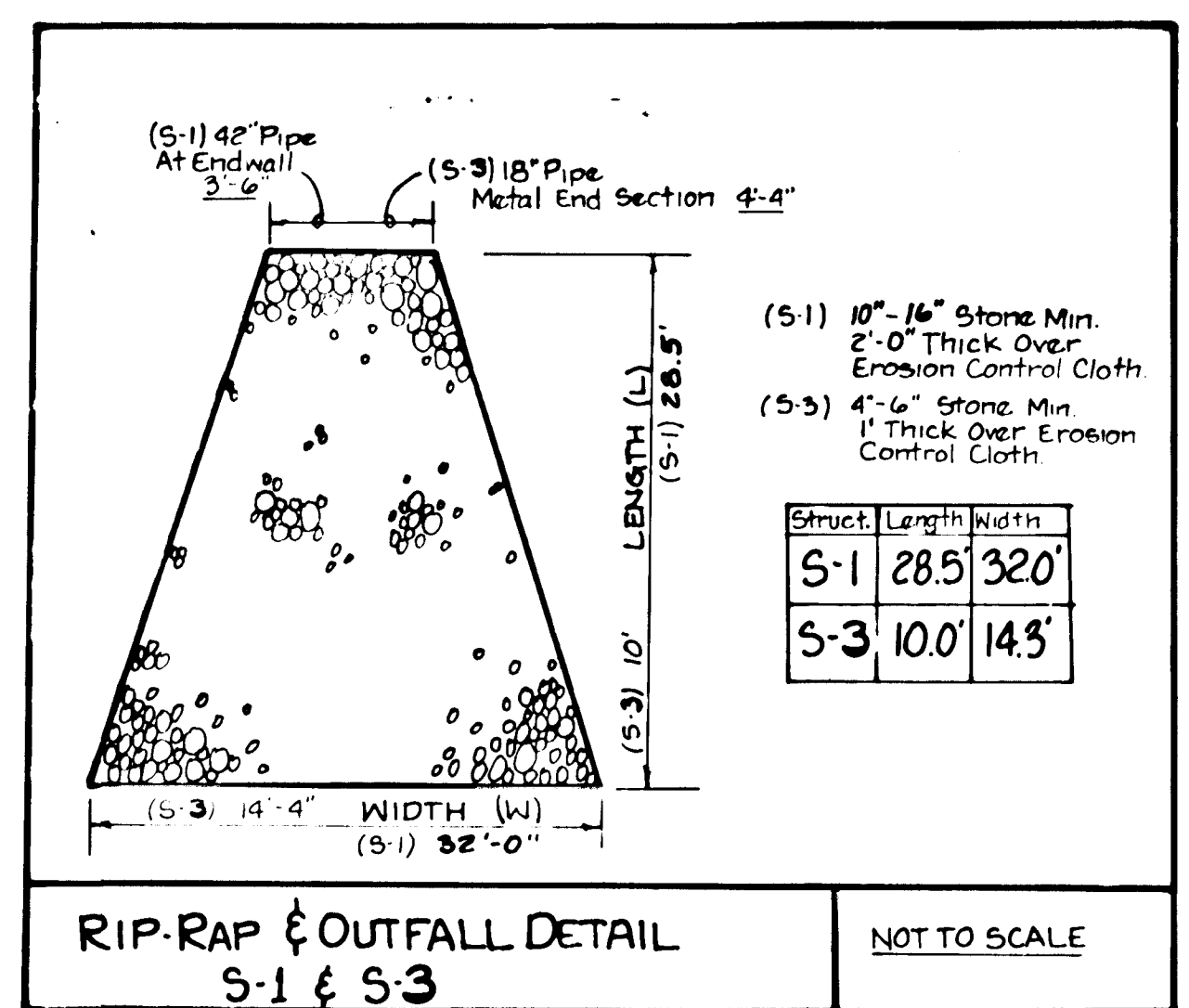
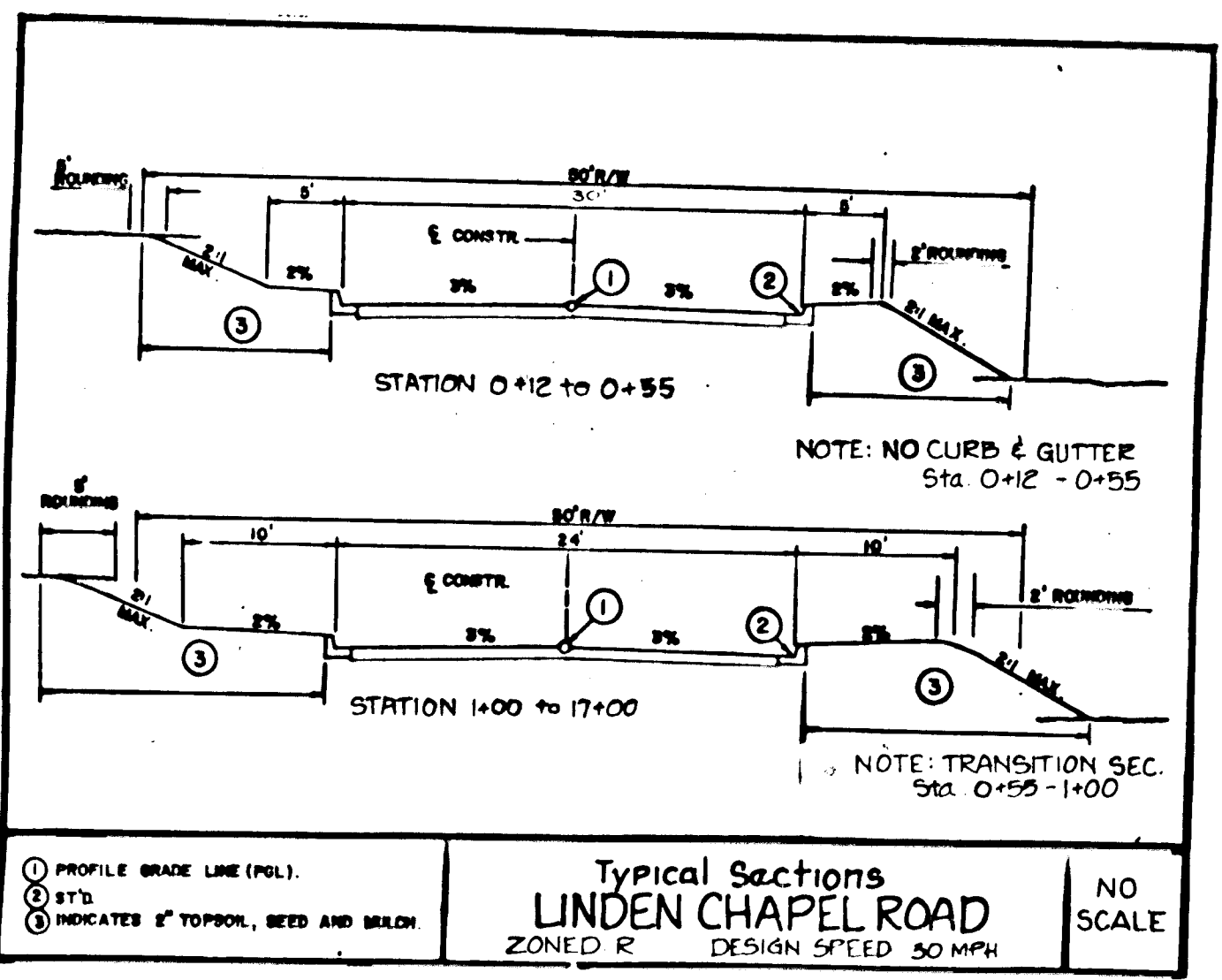


KIDDE CONSULTANTS, INC.
 ENGINEERS, LAND PLANNERS & SURVEYORS
 8101 SANDY SPRING ROAD / LAUREL MD 20707
 (301) 725-0565 / 782-8386
 JOHN E.C. PATMORE MD PE. NO. 8978
SHEET 2 of 7
 DATE FEB. 1986 SCALE AS SHOWN



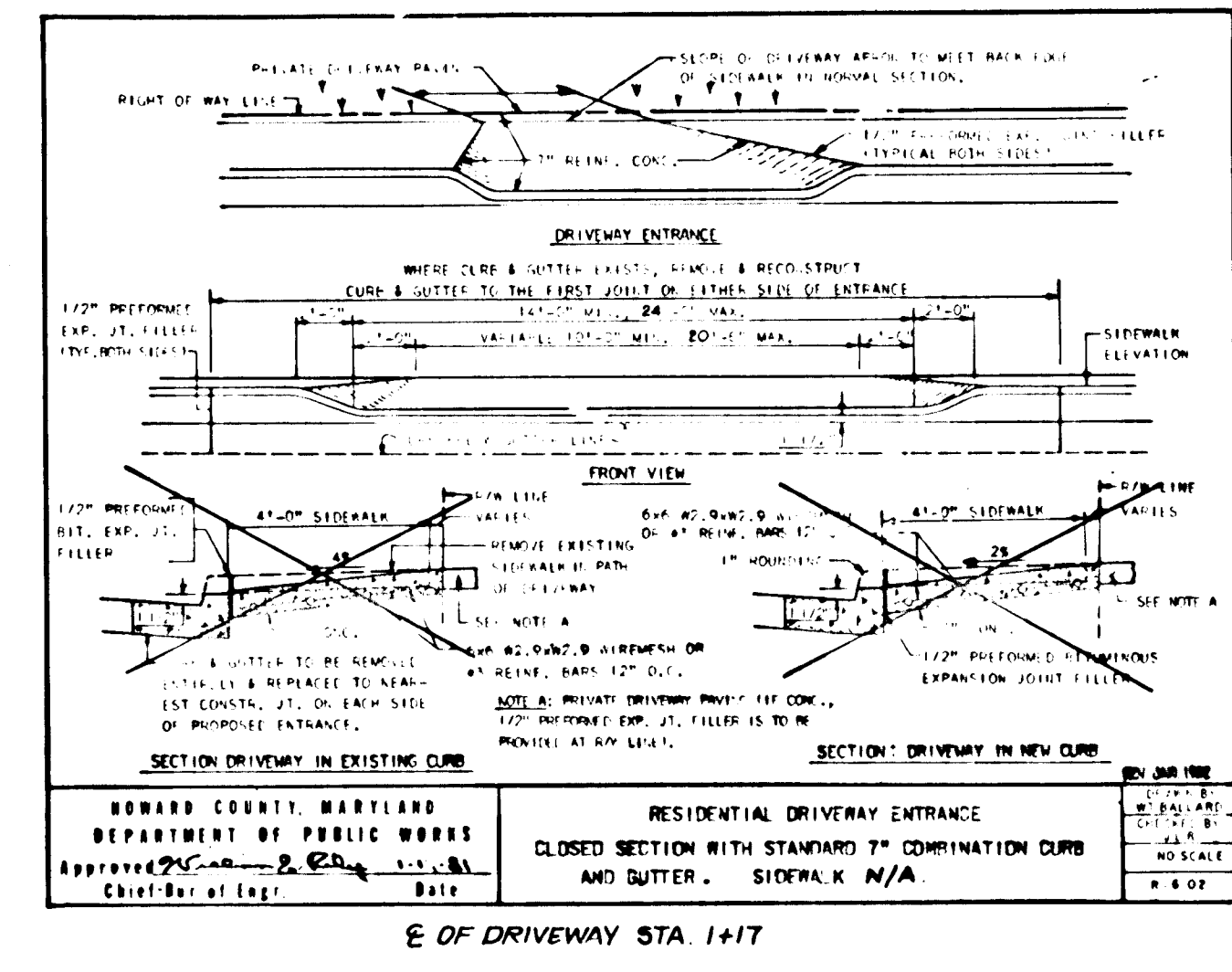
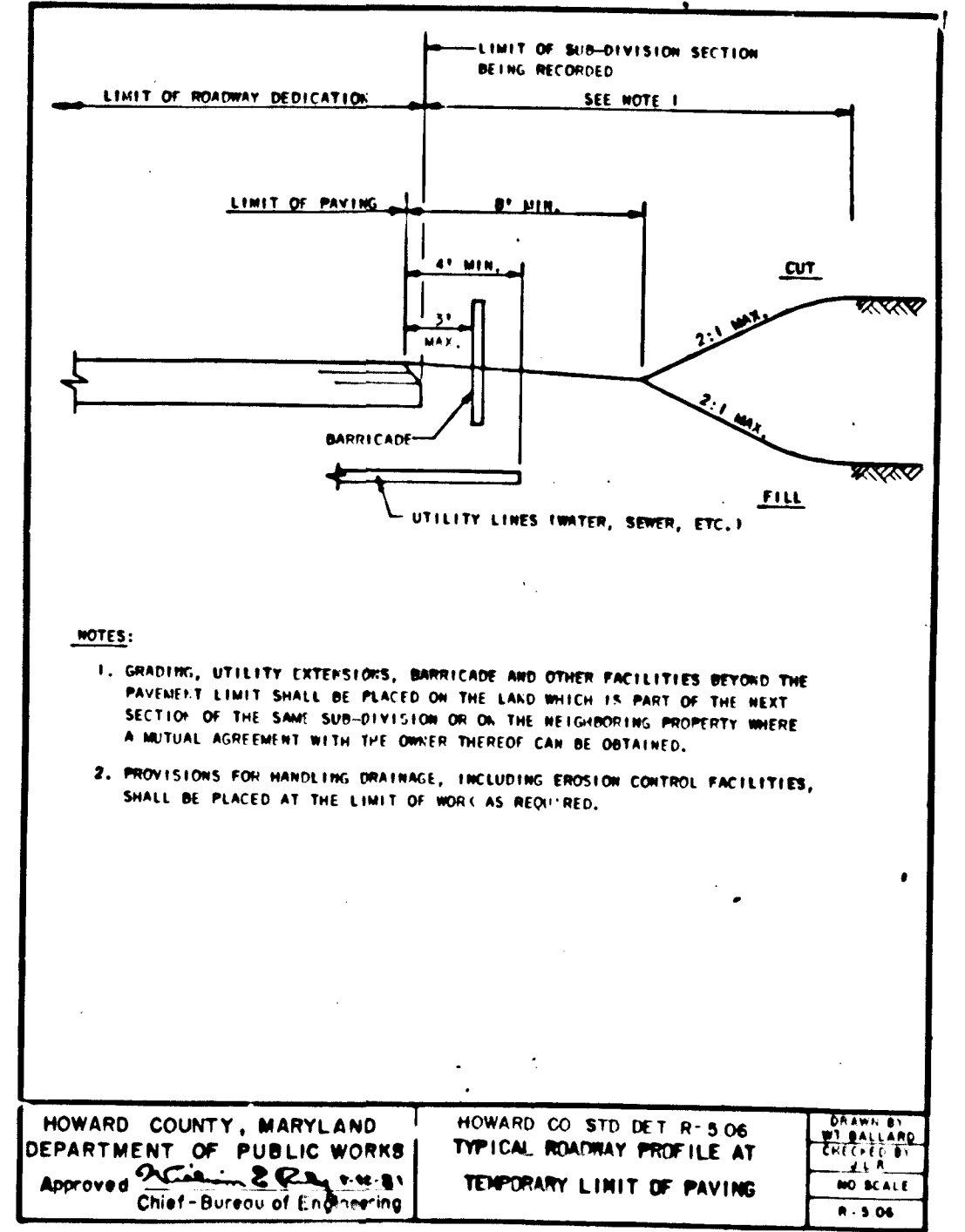
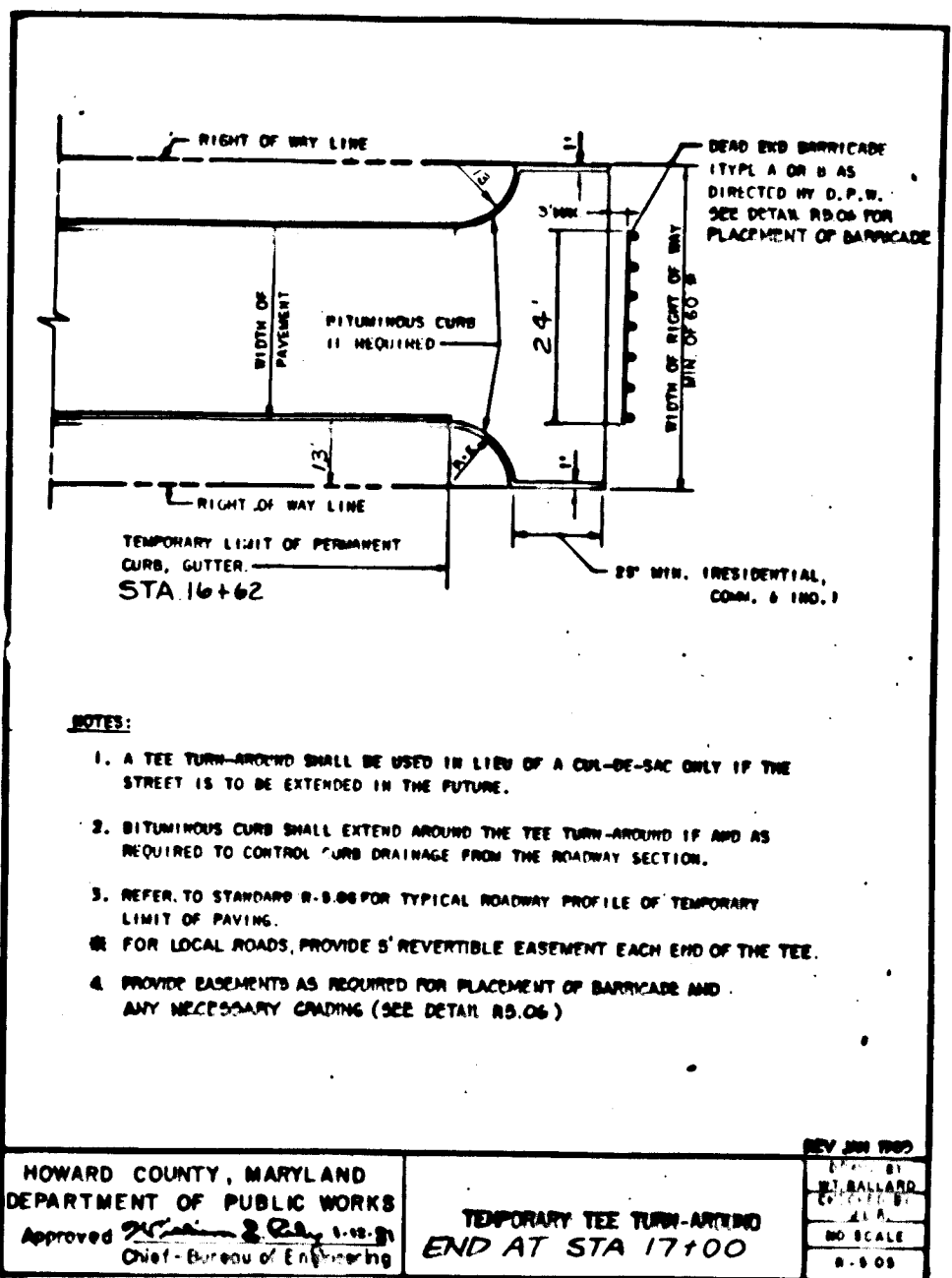
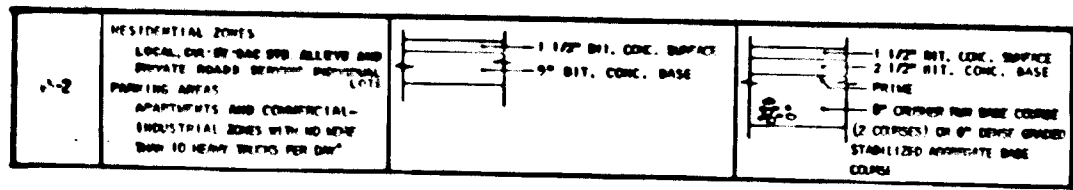


STA 0+55 - 17+00
NOSE UP TO MEET CURB & GUTTER

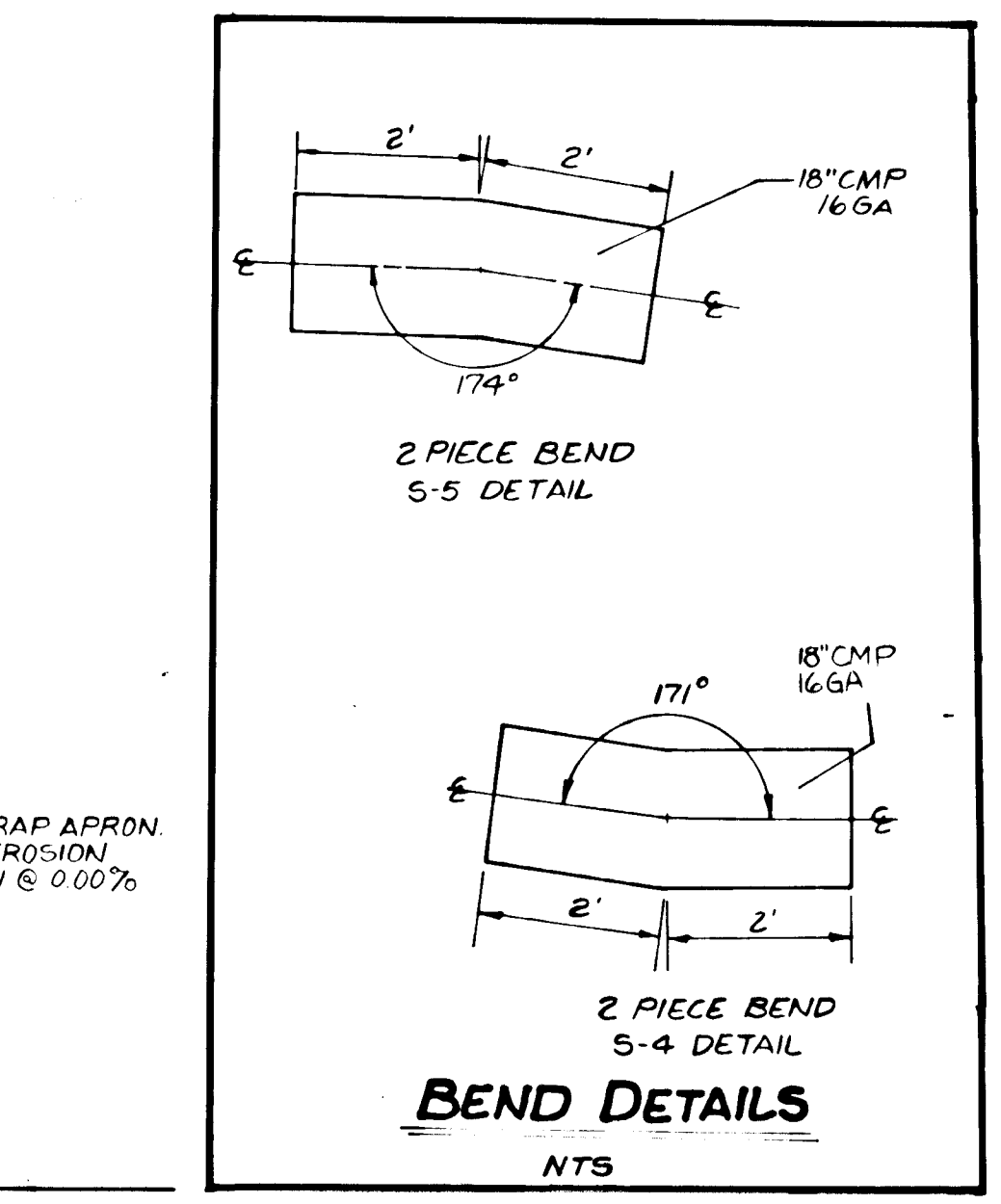
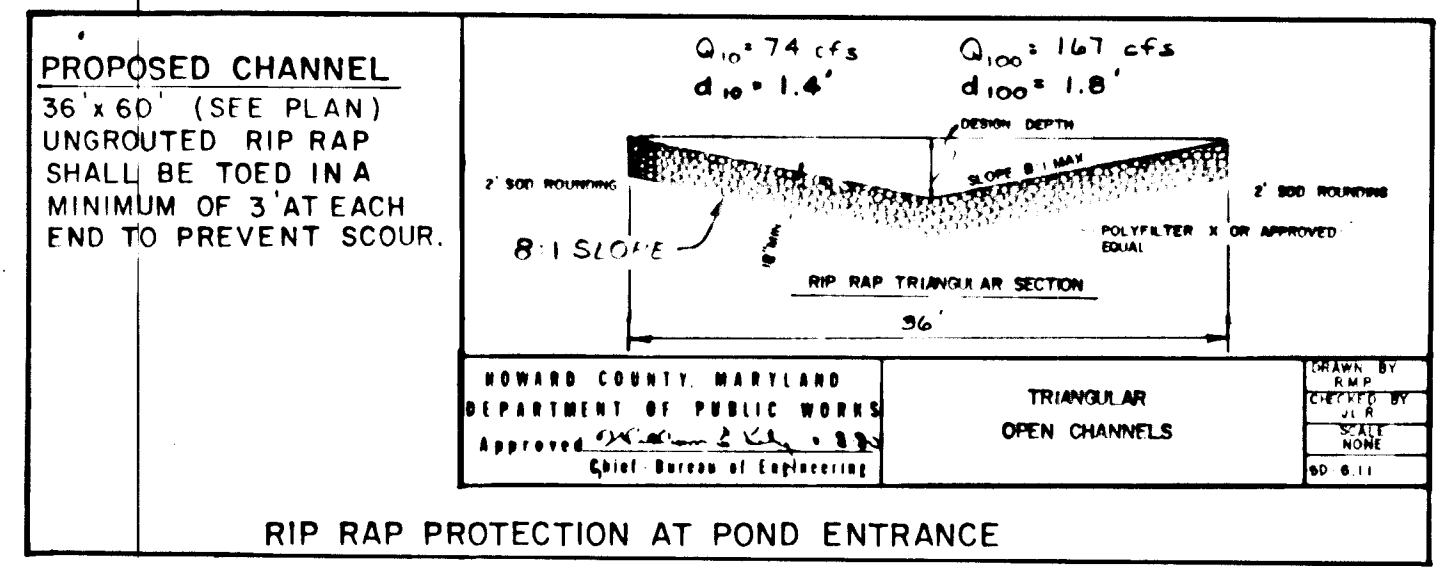


MSHA PAVING SECTION
STA 0+00 TO 0+55

3" BIT CONC SURFACE	OR	3" BIT CONC SURFACE
4" BIT CONC BASE		4" BIT CONC BASE
6" GRAVEL AGGREGATE BASE		7" BANK RUN GRAVEL BASE

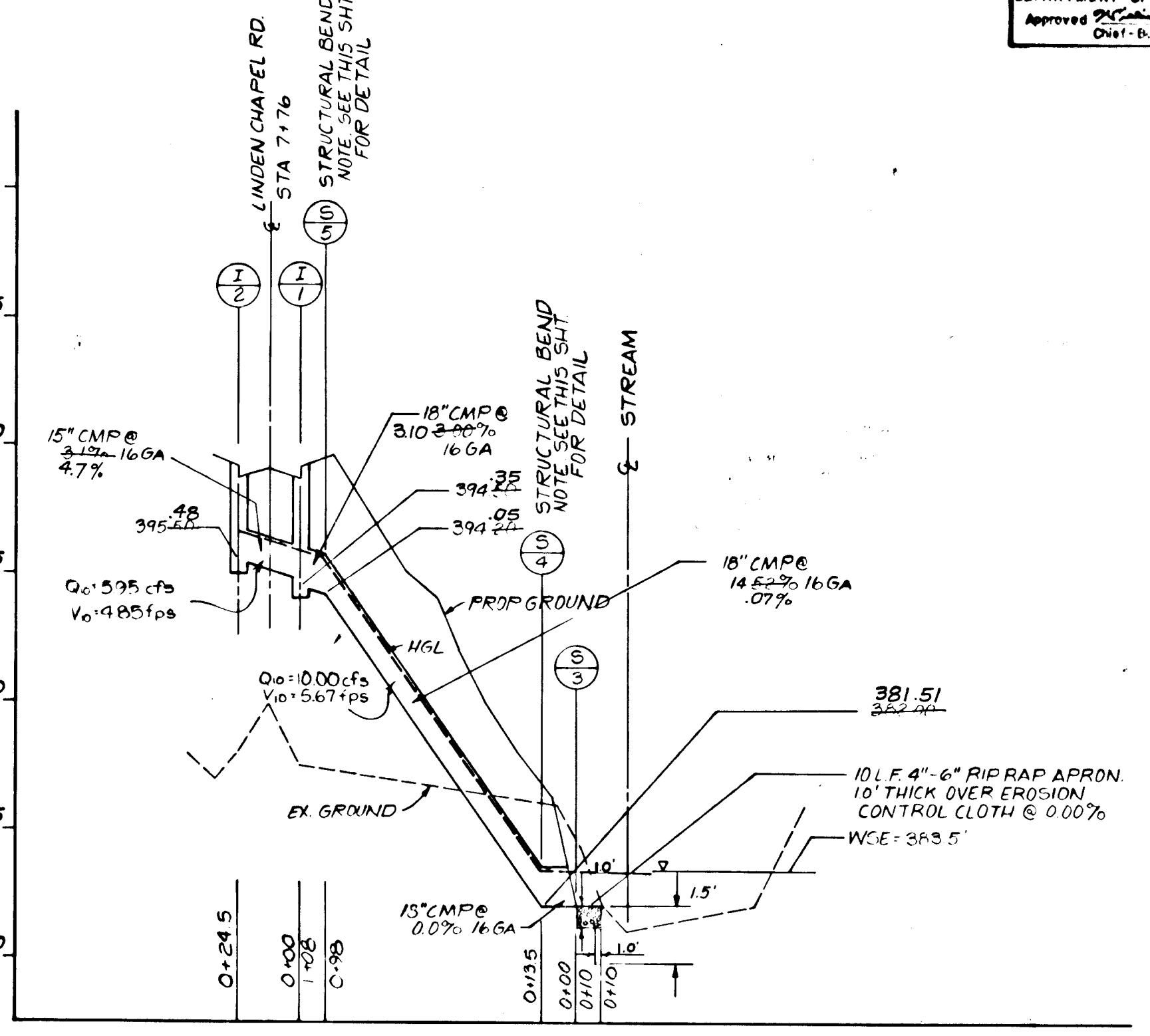


AS-BUILT SURVEY CERTIFIED BY
MARK ROBEL, MD. PLS. No. 339, ON MARCH 10, 1989



DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEV.	REMARKS
I-1	Ho. Co. Std. Class A-10 Inlet	394.55	394.55	398.85 399.14	See Ho. Co. Std. Date: 1 SD 4.02 Top El. is T.O.C.
I-2	Ho. Co. Std. Class A-10 Inlet	--	395.18	398.82 399.14	See Ho. Co. Std. Detail SD 4.02 Top El. is T.O.C.
S-1	Ho. Co. Std. Type "C" Endwall	381.77 382.00	381.77 382.00	385.85	See Ho. Co. Std. Detail SD 5.21
S-2	Fabricated BCCMP Riser	383.88 384.00	383.88 384.00	394.54 394.09	See Detail Sheet 5 of 7
S-3	Ho. Co. Std. Metal End Section	381.51 382.00	381.51 382.00	383.50	See Ho. Co. Std. Detail JJ 5.61
S-4	Fabricated 2 Piece Bend	At Bend 382.00 381.51	At Bend 382.00 381.51	--	See Detail This Sheet
S-5	Fabricated 2 Piece Bend	At Bend 394.00 394.05	At Bend 394.00 394.05	--	See Detail This Sheet



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.

[Signature] 7-17-86
Signature of 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.

[Signature] 7/17/86
Signature of 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.

[Signature] 7-24-86
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.

[Signature] 7-24-86
Howard Soil Conservation District Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING

[Signature] 7-25-86
DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR [Signature] 7-26-86
DATE

DETAIL SHEET
CHAPEL WOODS
LOTS 2,3,4,5,8,6
SECTION 2, AREA 1
TAXMAP29 PARCEL 41 & 38
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
FEBRUARY, 1986
SHEET 3 OF 7

KIDDER CONSULTANTS, INC.

DATE: [] BY: []

ENGINEERS, LAND PLANNING & SURVEYING
8101 SANDY SPRING ROAD / LAURIE, MD. 20707
(301) 725-0655 / 782-9905

APPROVED BY: [Signature]
DATE: FEB. 1986 SCALE: AS SHOWN

DEVELOPER
NEWBURN DEVELOPMENT CORPORATION
8570 STERRETT PLACE, SUITE 201
COLUMBIA, MARYLAND 21044

OWNER
CHAPEL WOODS PARTNERSHIP
c/o MITCH NATHANSON
662 QUAIL RUN COURT
ARNOLD, MARYLAND 21012

- Sequence of Construction**
1. Obtain Grading Permit
 2. Install SCE. One Day
 3. Clear & grub for installation of Earth Dikes #1 and #2 and install. One Week.
 4. Clear and grub for installation of Sediment Basin (Pond #1). One Week.
 5. Install Sediment Basin with gate valve open, rip rap existing stream bed as shown, overexcavate outfall area as shown in profile, leaving a 3 foot weir in original ground. One Week.
 6. Install SD system. Block inlet I-2, install inlet protection on Inlet I-1. 3 Days.
 7. Install remainder of earth dikes and grass outlet trap. One Week.
 8. Clear & grub and grade for road. Stabilize areas not to be paved. One Week.
 9. Install curb & gutter; do not install 10' section adjoining inlet I-2. One Week.
 10. Install paving. One Week.
 11. Stabilize any remaining disturbed areas. One Day.
 12. With approval of sediment control inspector, unblock inlets, and remove all sediment control devices. Remove temporary dewatering device after excavation back to design depth, and close gate valve. Two Days.
 13. Install balance of curb and gutter, and paving. One Day.
 14. Construct outfall area to final specifications. Two Days.

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."

Robert Zeln 7-24-86
Signature of Developer Date
U.S. Soil Conservation Service

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.

Robert Zeln 7-24-86
Signature of District Engineer Date
Howard Soil Conservation District

GRASS OUTLET TRAP
 SIZE: 20' x 20' x 20' (DIA) x 3' (WIDTH)
 DA: 40 AC.
 SR: 710 GALT
 SA: 725 AM FT.
 OUTLET EL: 400
 BOTTOM EL: 395.5
 CLEANOUT EL: 397.5

NOTE:
 NORMAL POOL ELEV. FOR RETENTION POND IS 391.75'

RIP-RAP EXISTING STREAM BED AS SHOWN. MAXIMUM GRADE 5%.

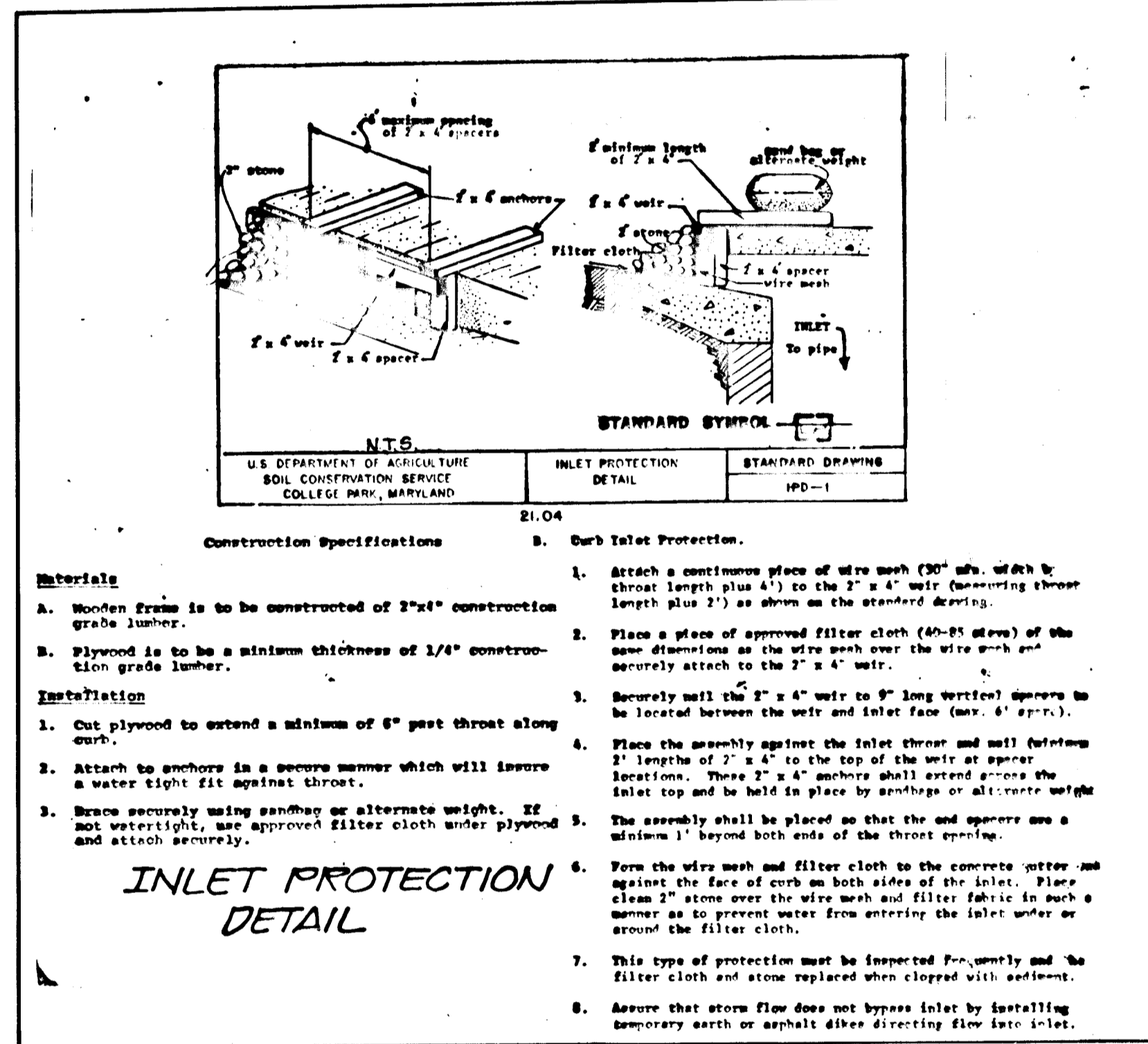
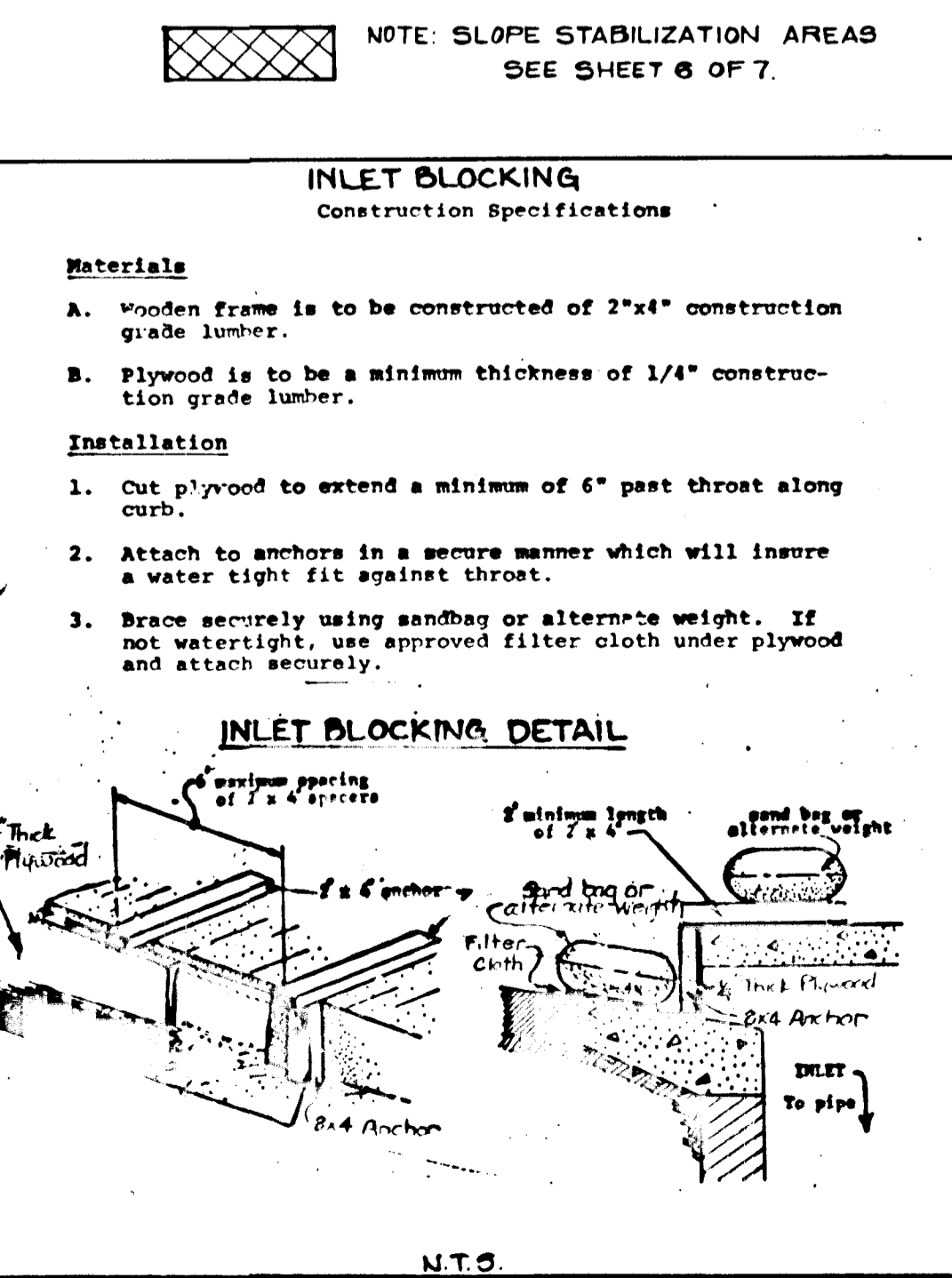
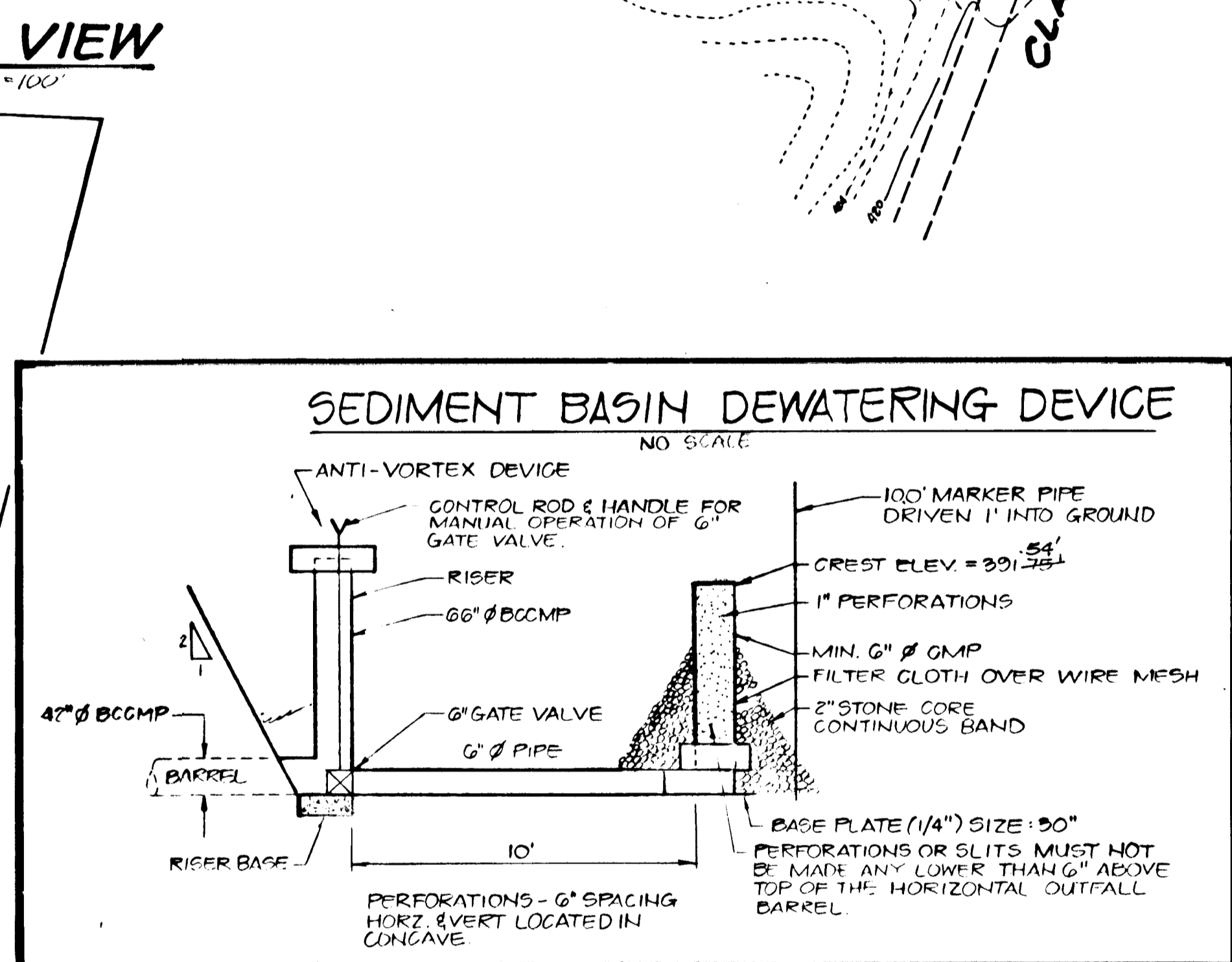
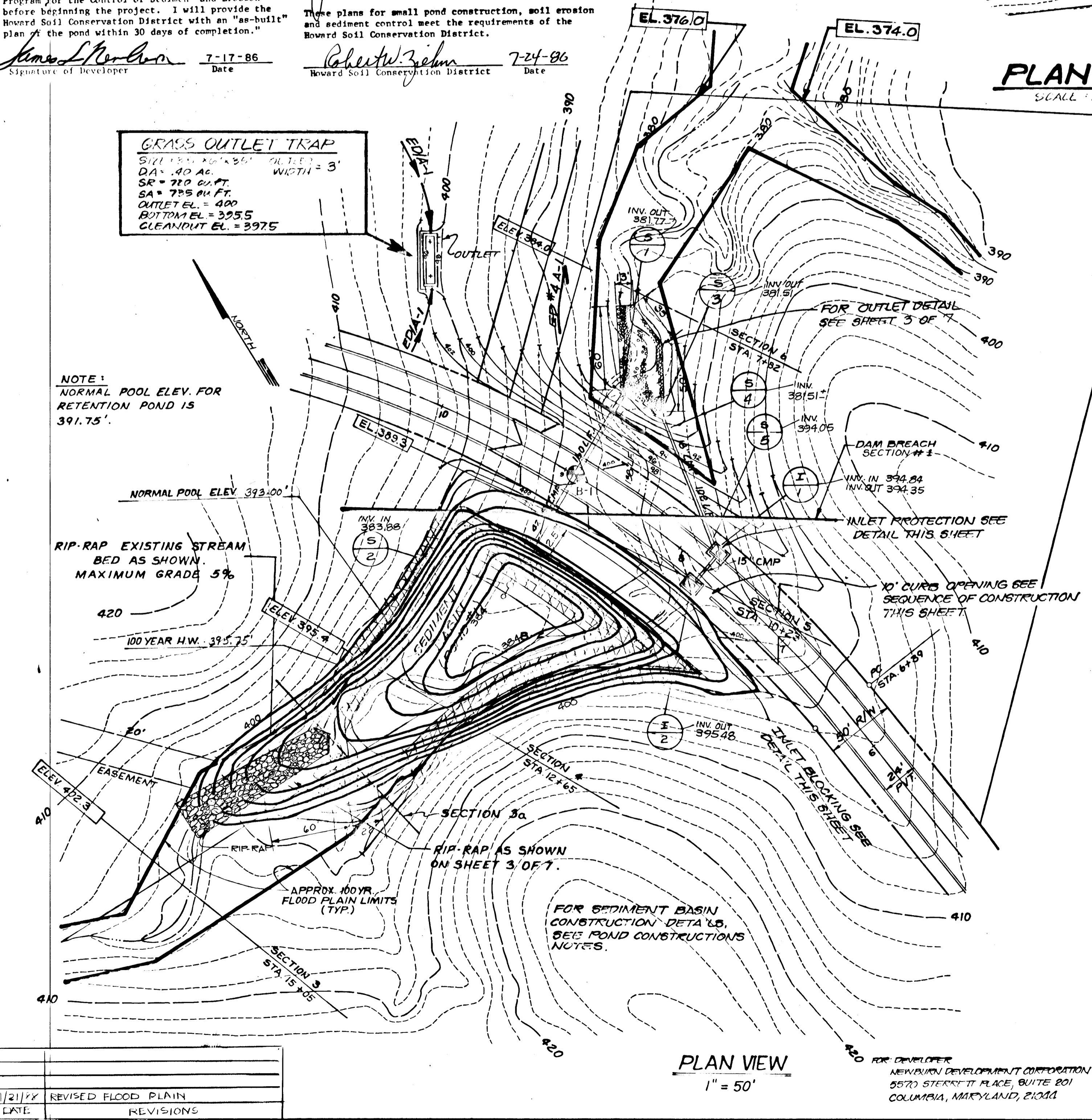
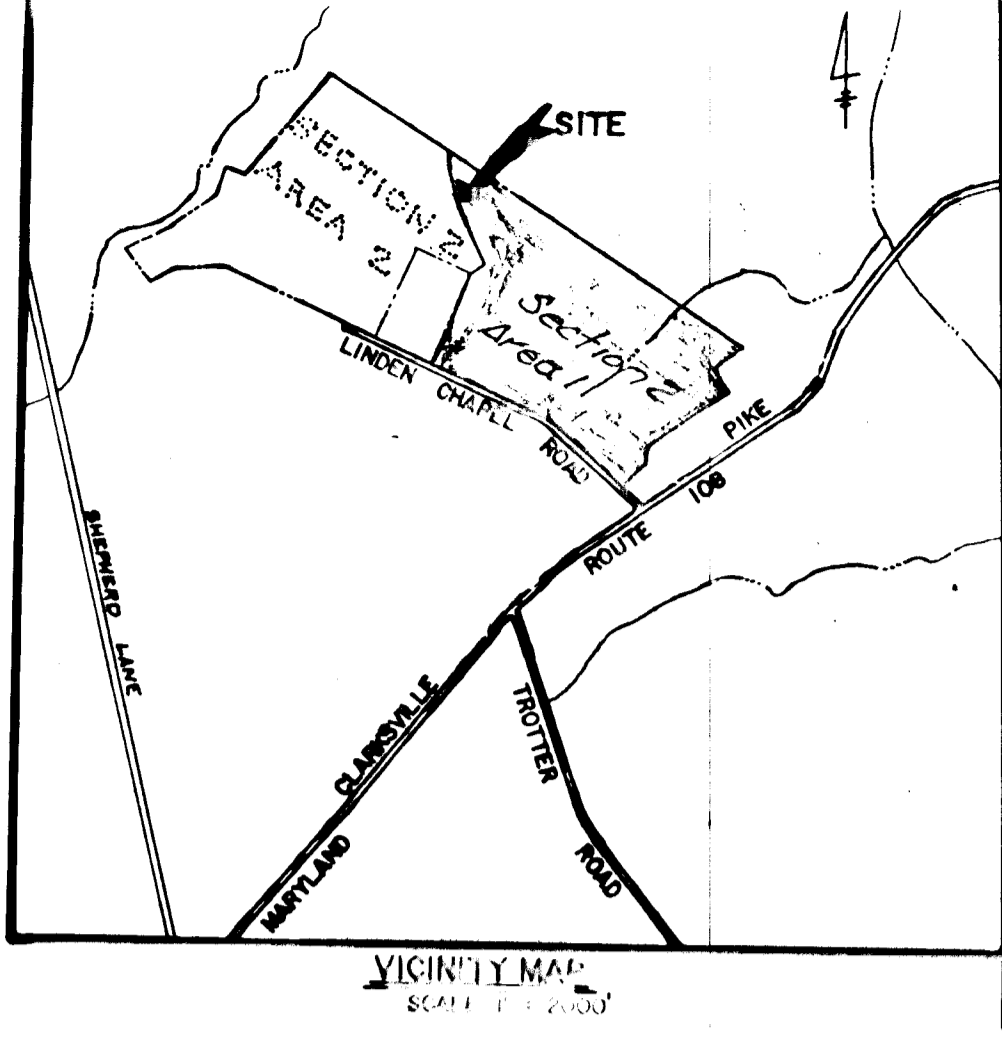
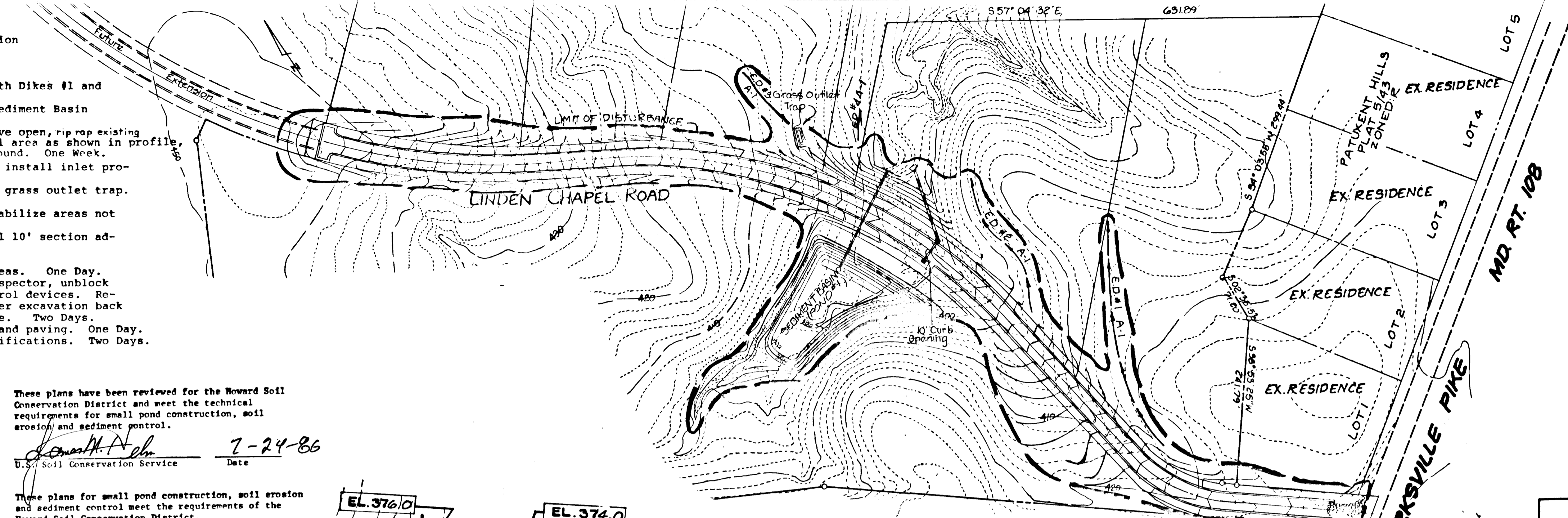
100 YEAR H.W. 395.75'

APPROX. 100 YR. FLOOD PLAIN LIMITS (TYP.)

RIP-RAP AS SHOWN ON SHEET 3 OF 7.

FOR SEDIMENT BASIN CONSTRUCTION DETAILS, SEE POND CONSTRUCTION NOTES.

DATE	REVISIONS
1/21/86	REVISED FLOOD PLAIN
LATE	REVISIONS



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."

John E. Patmore 7-17-86
Signature of Engineer Date

AS-BUILT SURVEY CERTIFIED BY
 MARK L. ROBEL, MD. P.L.S. No. 339, ON MARCH 10, 1989

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING

DATE: 7-25-86

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 7-30-86

GRADING & SEDIMENT CONTROL PLAN
CHAPEL WOODS
 SECTION 2, AREA 1
 TAXMAP 29 PARCEL 41 & 38
 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 LOTS 2, 3, 4, 5 & 6

APPROVED: KIDBY CONSULTANTS, INC.

DATE: 7-25-86

APPROVED: JOHN E.C. PATMORE MD. P.E. NO. 8978

DATE: FEB. 1986

AS-BUILT 3-10-89 7-86-137

II. SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, rocks and other objectionable material shall be removed. Grubbed topsoil and other borrow material shall be stored in an approved area.

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

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

III. FILL

The fill material shall be taken from approved designated borrow areas or areas. It shall be of a fine, silty, sand, gravel, granite, limestone, or other objectionable material. The embankment shall be constructed in an alternate layers which are to be compacted to the design specification. The fill height shall be the length of the embankment shall be approved under the design elevation (including crest) as shown on the plans.

IV. EMBANKMENT

Areas on which fill to be placed shall be specified prior to placement of fill. Fill materials shall be placed in uniform thickness (uniform construction) layers which are to be compacted to the design specification. The fill height shall be the length of the embankment shall be approved under the design elevation (including crest) as shown on the plans.

V. CONCRETE

1. Materials

- Concrete - Ready Mixed concrete shall conform to the latest ASTM Specification C-150.
- Water - The water used in concrete shall be clean, free from oil, acid, alkali, sugar, organic matter or other objectionable substances.
- Sand - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a No. 20 sieve. Limestone shall not be used.
- Coarse Aggregate - The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with a maximum size of one and one-half (1-1/2) inches.
- Reinforcing Steel - The reinforcing steel shall be deformed bars of intermediate grade with steel or wall steel conforming to ASTM Specification A-615.
- Design Mix - The concrete shall be used in the following proportions, measured by weight. The water-cement ratio shall be 5-7/10 to 6-2/10. Ballings of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:1.5:2.75. The combination of aggregate may be adjusted to produce a plastic and workable mix that will not produce hairiness in placing or honeycombing in the structure.
- Finishing - The concrete surface shall be finished in such a manner as to provide a smooth and uniform finish. The surface of each batch shall continue for not less than one and one-half minutes after all the ingredients, except for full amount of water, are in the mixer. The minimum mixing time is specified on proper control of the speed of rotation of the mixer and of the introduction of the aggregate, including water, into the mixer. Water shall be added prior to, during, and following the mixing operation. Excessive overwatering resulting in the addition of water to produce the desired concrete consistency shall not be permitted. Each mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specification 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 line. They shall be watertight and constructed so that they can be removed without hammering or prying against the concrete.

The inside of forms shall be lined with a non-staining material oil or thoroughly wetted before concrete is placed.

Forms may be removed 24 hours after the placement of concrete. All side and end devices used shall be removed from the surface of the concrete.

2. Reinforcing Steel - All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coating. The steel shall be adequately placed and securely tied and braced into position so that no movement of the steel will occur during placement of concrete.

3. Consolidation - Concrete shall be consolidated with internal mechanical vibrators. Vibration shall be supplemented by rapping and hand tamping, as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.

VI. CONSTRUCTION DETAILS

1. Riser

The riser shall be constructed of 66" diameter concrete pipe. The riser shall be installed in a trench excavated to the design elevation. The riser shall be supported by a concrete base. The riser shall be surrounded by a 12" layer of sand. The riser shall be surrounded by a 12" layer of sand. The riser shall be surrounded by a 12" layer of sand.

2. Core Trench

The core trench shall be excavated to the design elevation. The core trench shall be filled with a 12" layer of sand. The core trench shall be filled with a 12" layer of sand. The core trench shall be filled with a 12" layer of sand.

3. Spillway

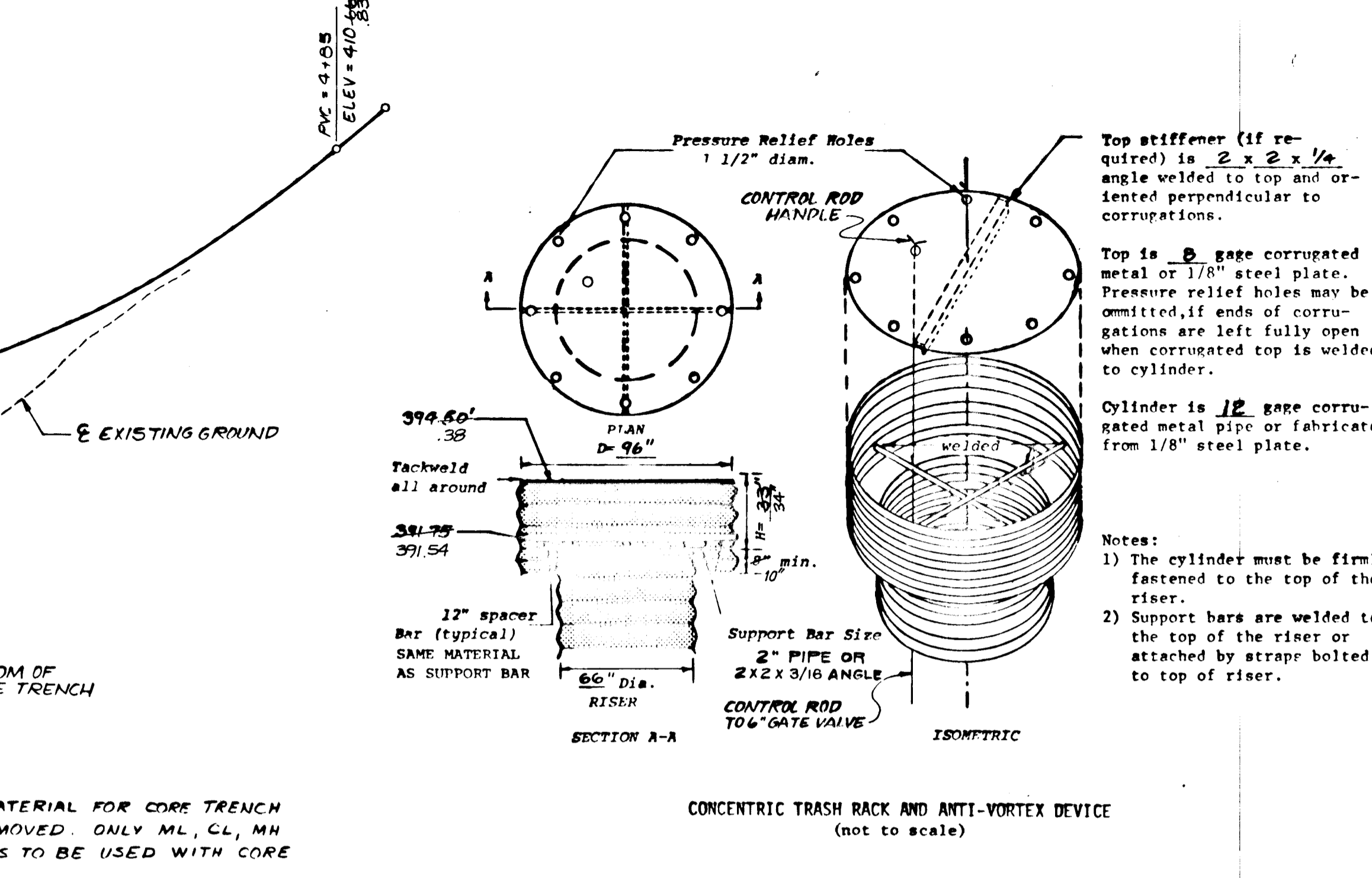
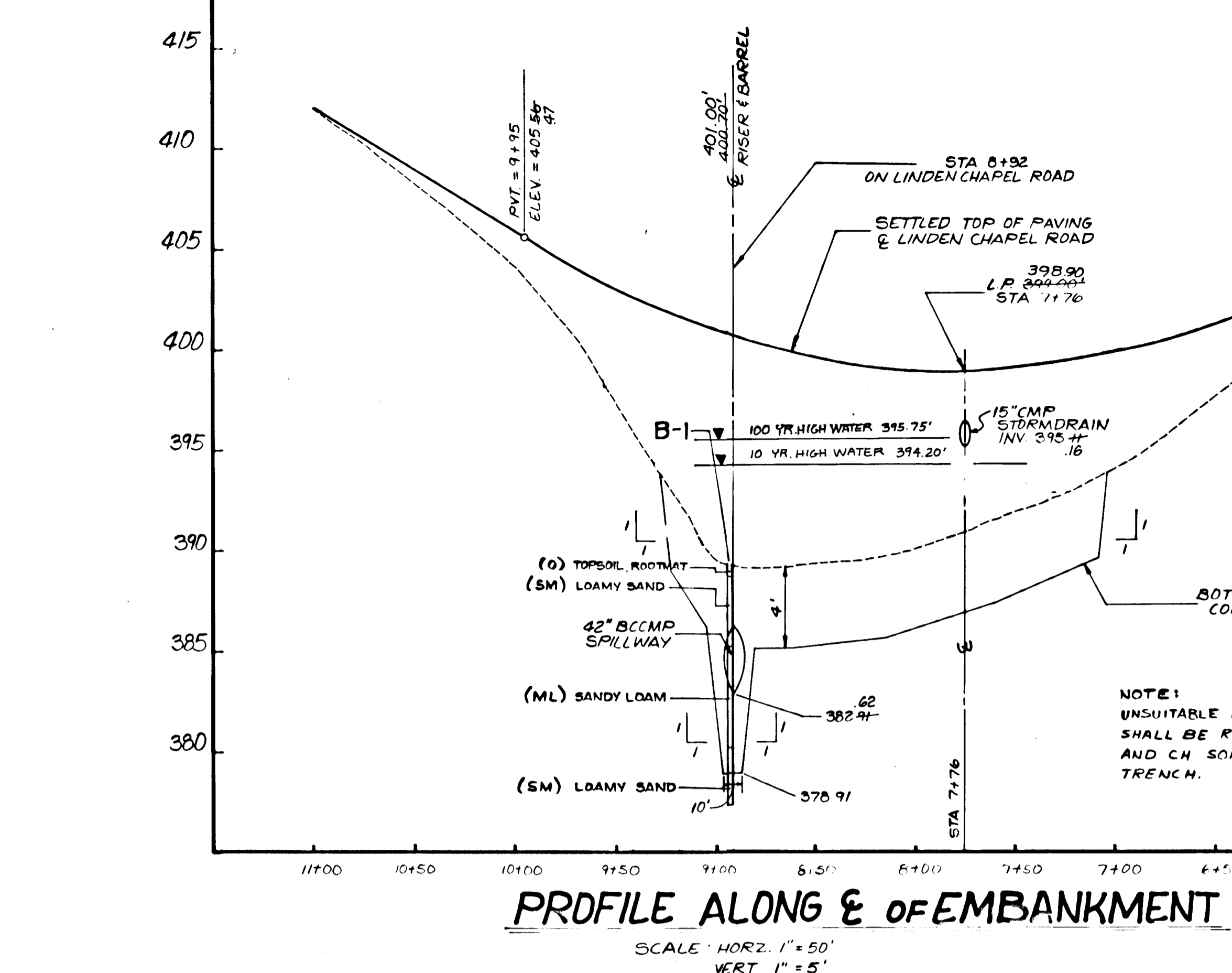
The spillway shall be constructed of 42" diameter concrete pipe. The spillway shall be installed in a trench excavated to the design elevation. The spillway shall be supported by a concrete base. The spillway shall be surrounded by a 12" layer of sand. The spillway shall be surrounded by a 12" layer of sand. The spillway shall be surrounded by a 12" layer of sand.

4. Gate Valve

The gate valve shall be installed in the riser. The gate valve shall be surrounded by a 12" layer of sand. The gate valve shall be surrounded by a 12" layer of sand. The gate valve shall be surrounded by a 12" layer of sand.

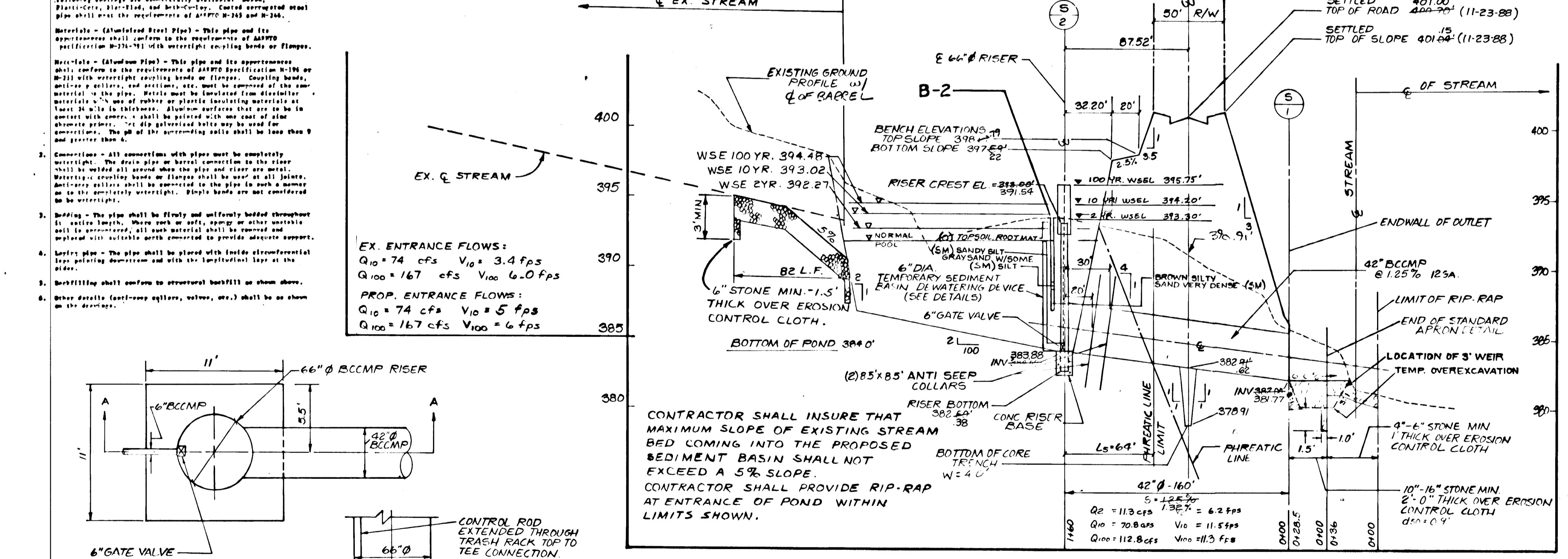
5. Control Rod

The control rod shall be installed in the riser. The control rod shall be surrounded by a 12" layer of sand. The control rod shall be surrounded by a 12" layer of sand. The control rod shall be surrounded by a 12" layer of sand.



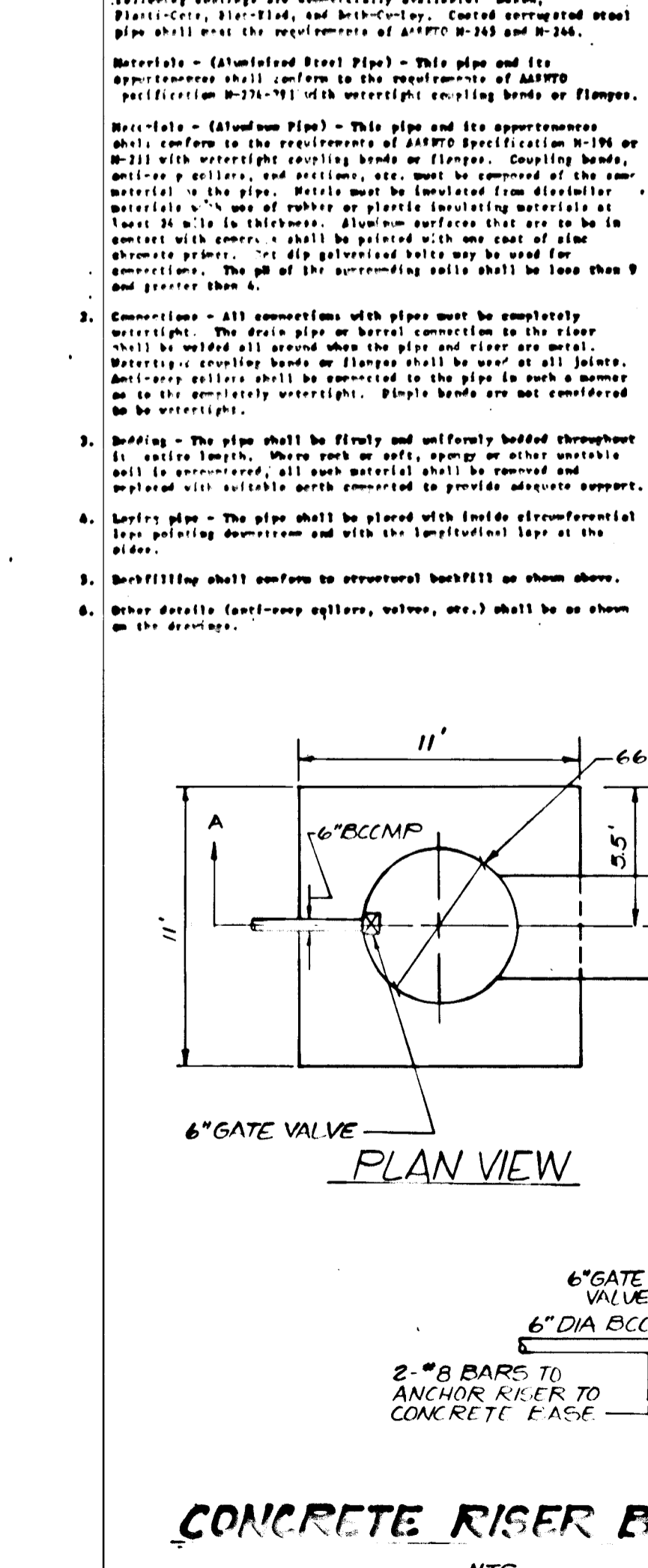
PROFILE ALONG & OF EMBANKMENT
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

NOTE: CONSERVATION OF SEDIMENT BASIN TO PERMANENT POND AFTER STABILIZING REMAINING DISTURBED AREAS AND REMOVING ALL SEDIMENT CONTROL DEVICES, EXCAVATE POND TO DESIGN DEPTH. REMOVE TEMPORARY DEWATERING DEVICE (LUT 6" DIA PIPE 2' FROM 66" DIA RISER.) CLOSE 6" GATE VALVE W/ CONTROL ROD SYSTEM.



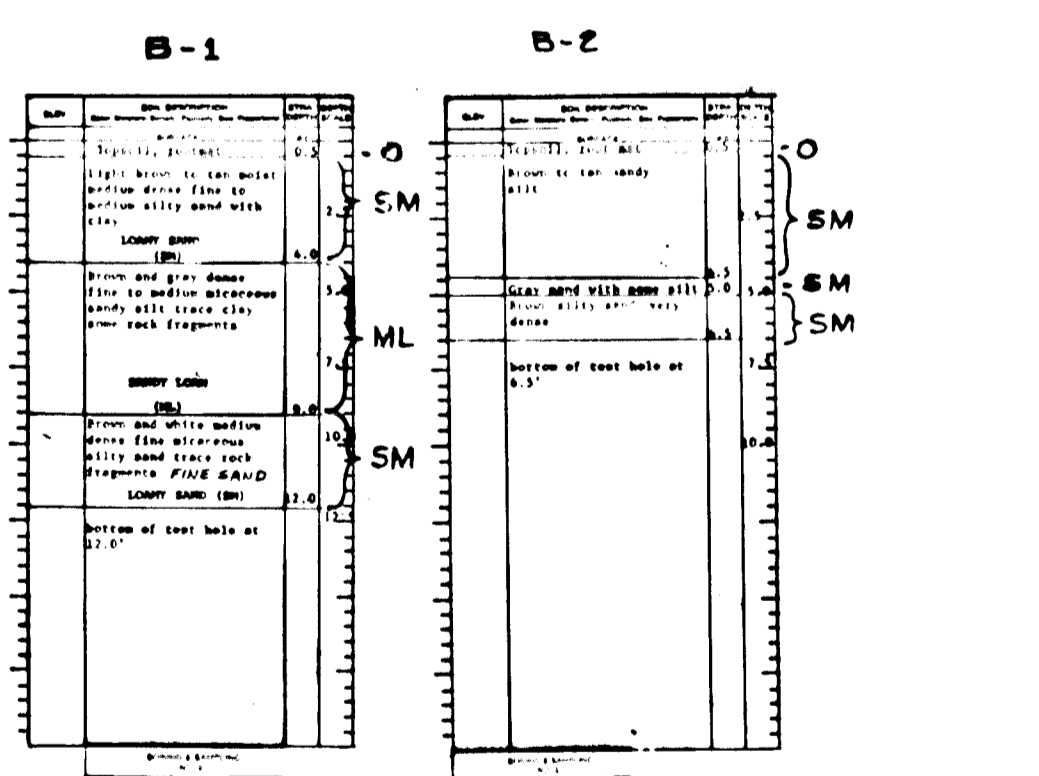
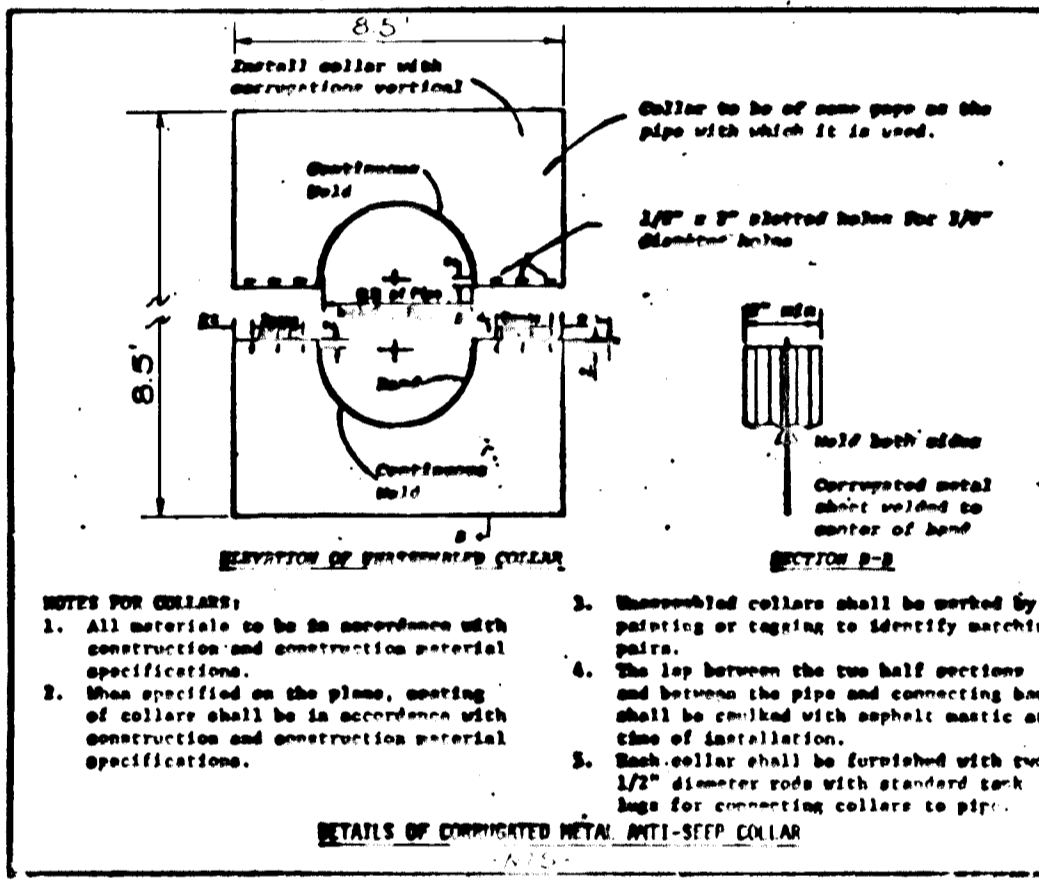
PROFILE ALONG & OF BARREL
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

HAZARD CLASSIFICATION = "A" FOR PLAN VIEW SEE SHEET 4 OF 7



EX. ENTRANCE FLOWS:
 $Q_{10} = 74 \text{ cfs}$ $V_{10} = 3.4 \text{ fps}$
 $Q_{100} = 167 \text{ cfs}$ $V_{100} = 6.0 \text{ fps}$

PROP. ENTRANCE FLOWS:
 $Q_{10} = 74 \text{ cfs}$ $V_{10} = 5 \text{ fps}$
 $Q_{100} = 167 \text{ cfs}$ $V_{100} = 6 \text{ fps}$



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.

Robert W. Zolm 7-24-86
Howard Soil Conservation District Date

By the Engineer:

James L. Newburn 7-17-86
Signature of Engineer Date

By the Developer:

James L. Newburn 7-17-86
Signature of Developer Date

POND PROFILES & DETAILS
CHAPEL WOODS
LOTS 2,3,4,5,6 & SECTION 2, AREA I
TAX MAP 29 PARCELS 41 6 38
5TH ELECTION DISTRICT HOWARD CO. MD.
FEBRUARY, 1986
SHEET 5 OF 7

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING

John W. Murchman 7-25-86
DIRECTOR DATE

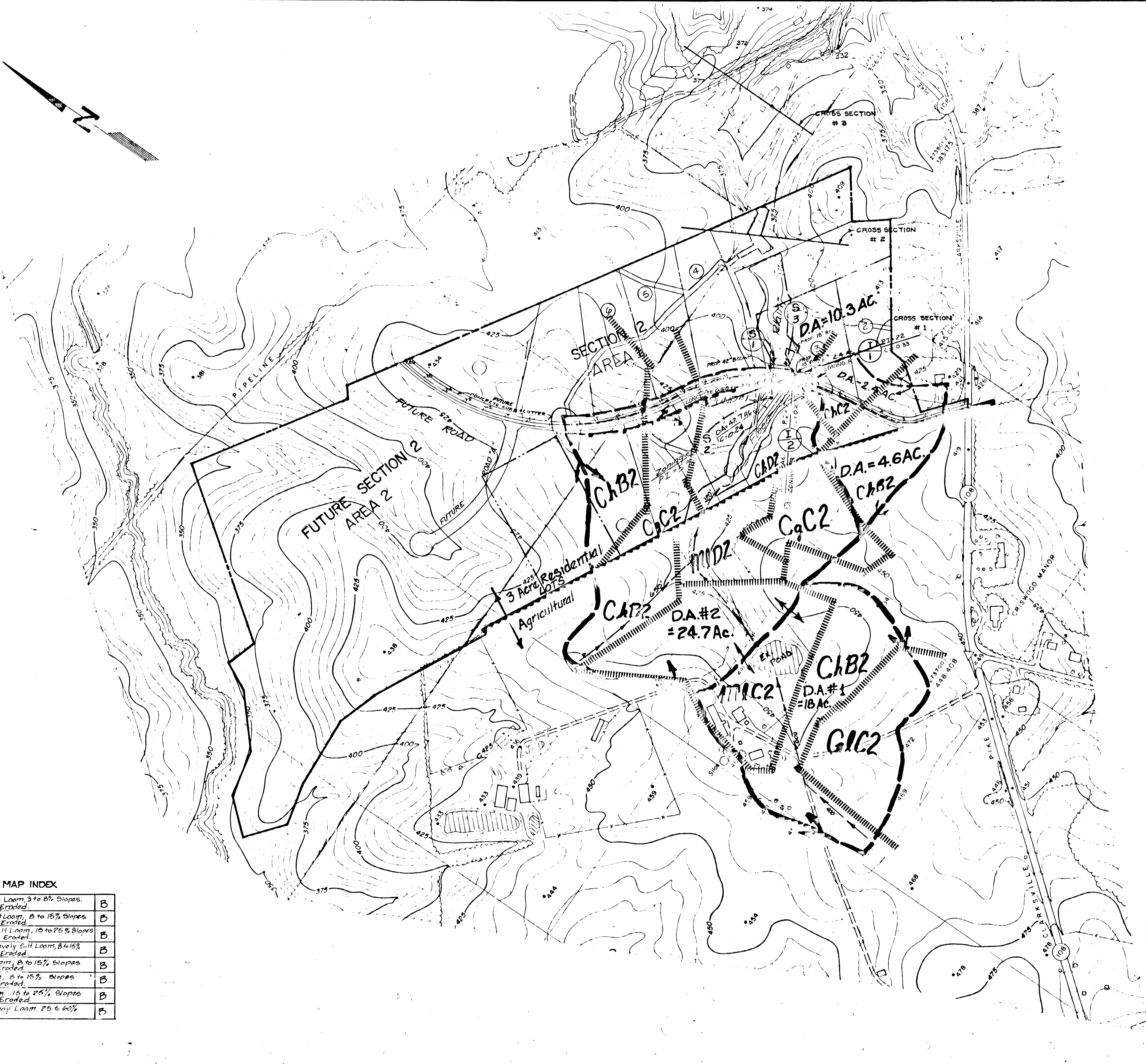
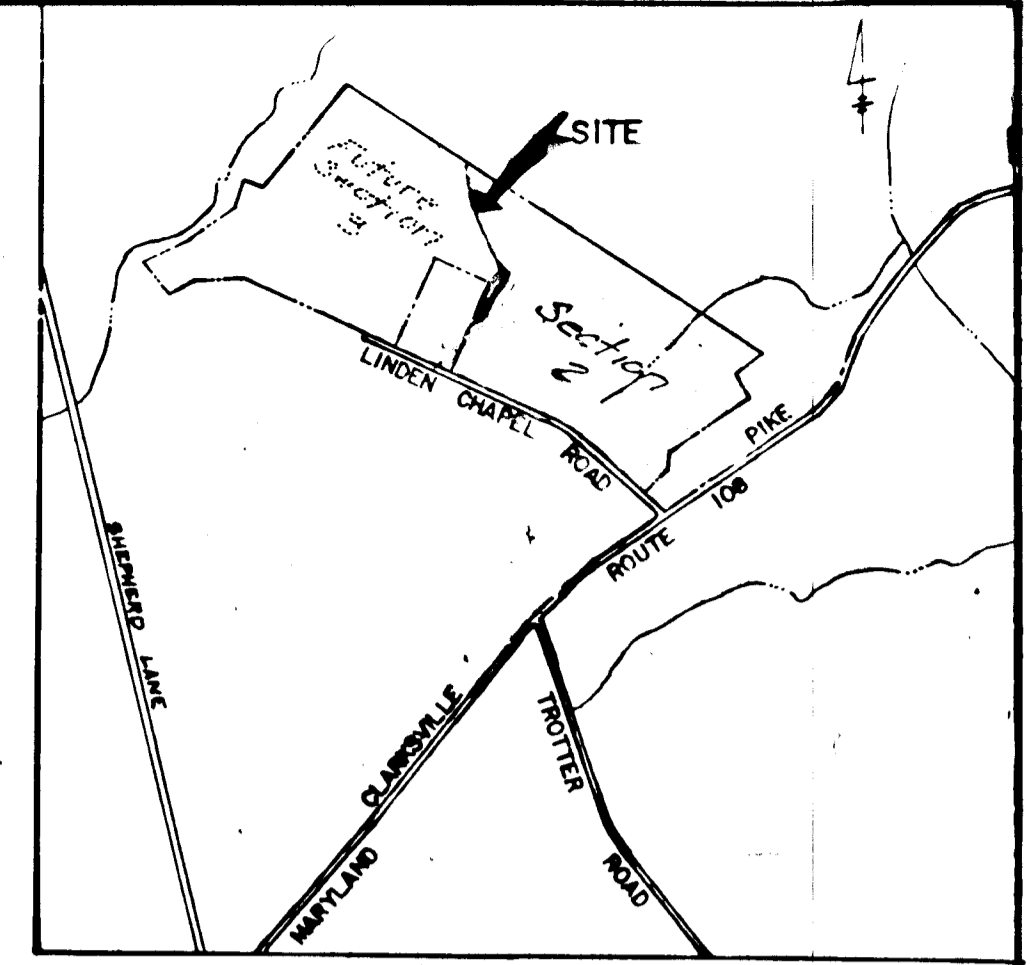
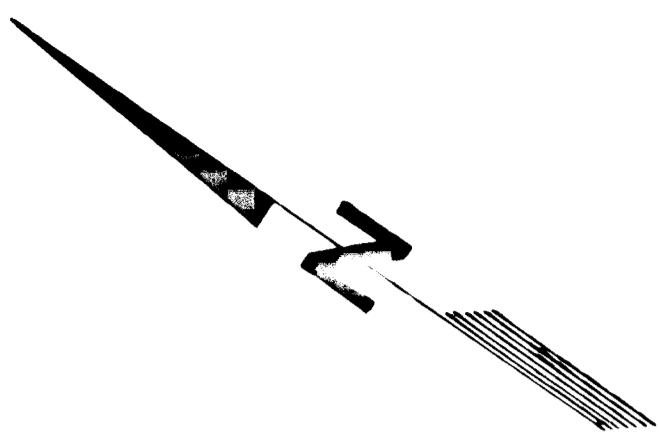
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC PONDS

James L. Newburn 7-30-86
DIRECTOR DATE

RIPE CONSULTANTS, INC.

8101 SANDY SPRING ROAD / LAUREL, MD 20646
(301) 726-0155 / (301) 726-0155

JOHN E.C. PATHORE, MD, PE, LEED AP
DATE: 7/17/86



APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING

DIRECTOR: *John W. Muschman* DATE: 7-25-86

CHIEF DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *Arthur C. ...* DATE: 7-30-86

CHIEF BUREAU OF ENGINEERING: *MS 7-30-86*

DRAINAGE AREA MAP
CHAPEL WOODS
 SECTION 2, AREA 1
 LOTS 2,3,4,5 & 6

TAXMAP 29 PARCEL 41 & 38
 5TH ELECTION DISTRICT HOWARD COUNTY MARYLAND
 MAY, 1985 SCALE: 1"=200'

Sheet 7 of 7

SOILS MAP INDEX

ChB2	Chester Silt Loam, 3 to 8% Slopes, Moderately Eroded.	B
ChC2	Chester Silt Loam, 8 to 15% Slopes, Moderately Eroded.	B
ChD2	Chester Silt Loam, 15 to 25% Slopes, Moderately Eroded.	B
CgC2	Chester Gravely Silt Loam, 8 to 15% Slopes, Moderately Eroded.	B
GIC2	Glencly Loam, 8 to 15% Slopes, Severely Eroded.	B
MIC2	Major loam, 8 to 15% Slopes, Severely Eroded.	B
MID2	Major loam, 15 to 25% Slopes, Severely Eroded.	B
MmF	Major Sandy Loam, 25 to 60% Slopes, Severely Eroded.	B

KIEDE CONSULTANTS, INC.

ENGINEERS, LAND PLANNERS & SURVEYORS
 8101 SANDY SPRING ROAD / LAUREL, MD 20707
 (301) 725-0665 / 782-8086

DATE: 7/27/86 REVISION: 3/27/86
 DRAWN BY: RTTJR
 CHECKED BY: [Signature]

JOHN E.C. PATMORE MD PE NO. 6978
 DATE: 9/16/85 SCALE: 1"=200'

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