

APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE: 6-19-85

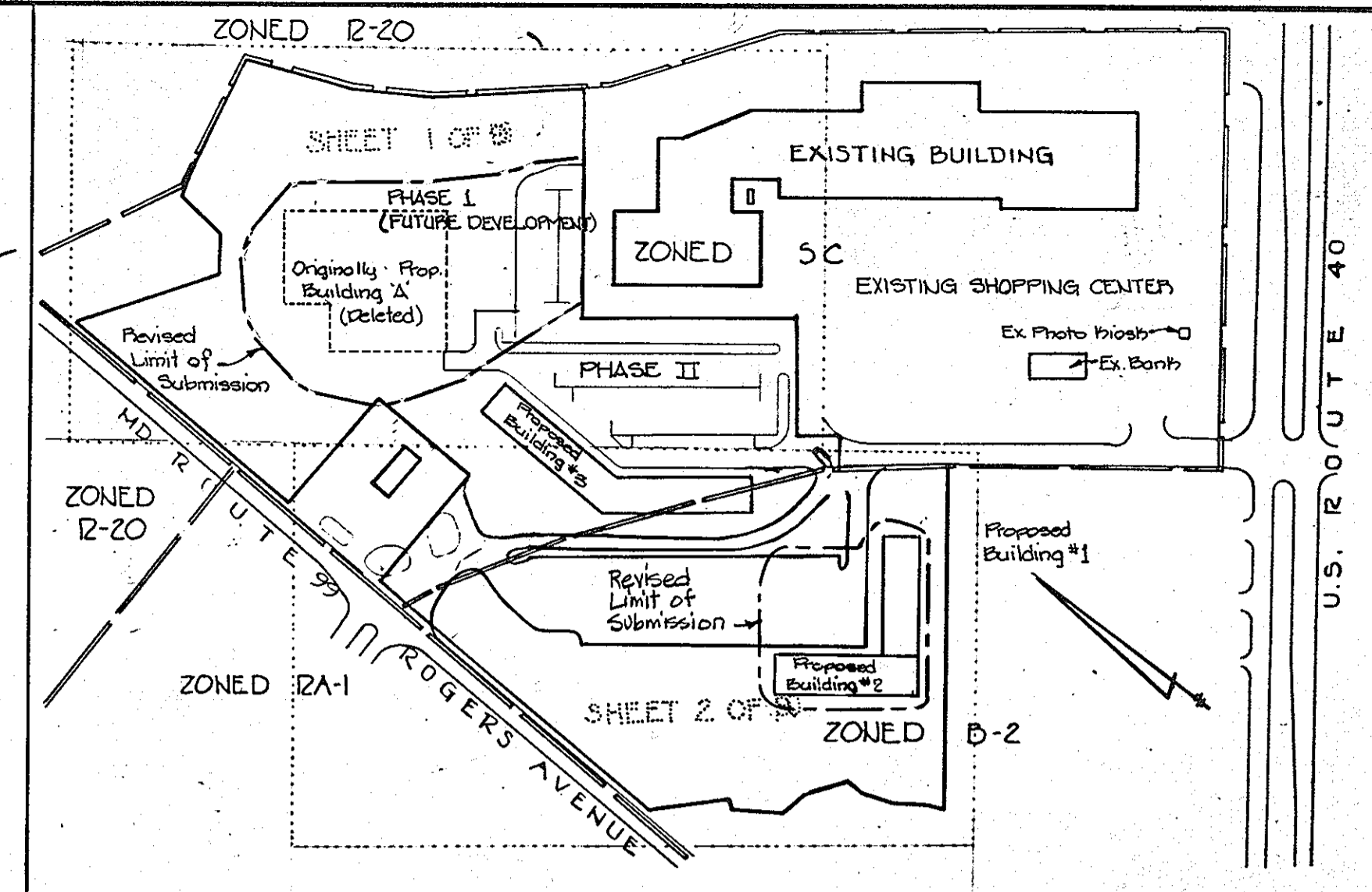
ZONED R-20

E DITCH
R = 30'
Δ = 75°

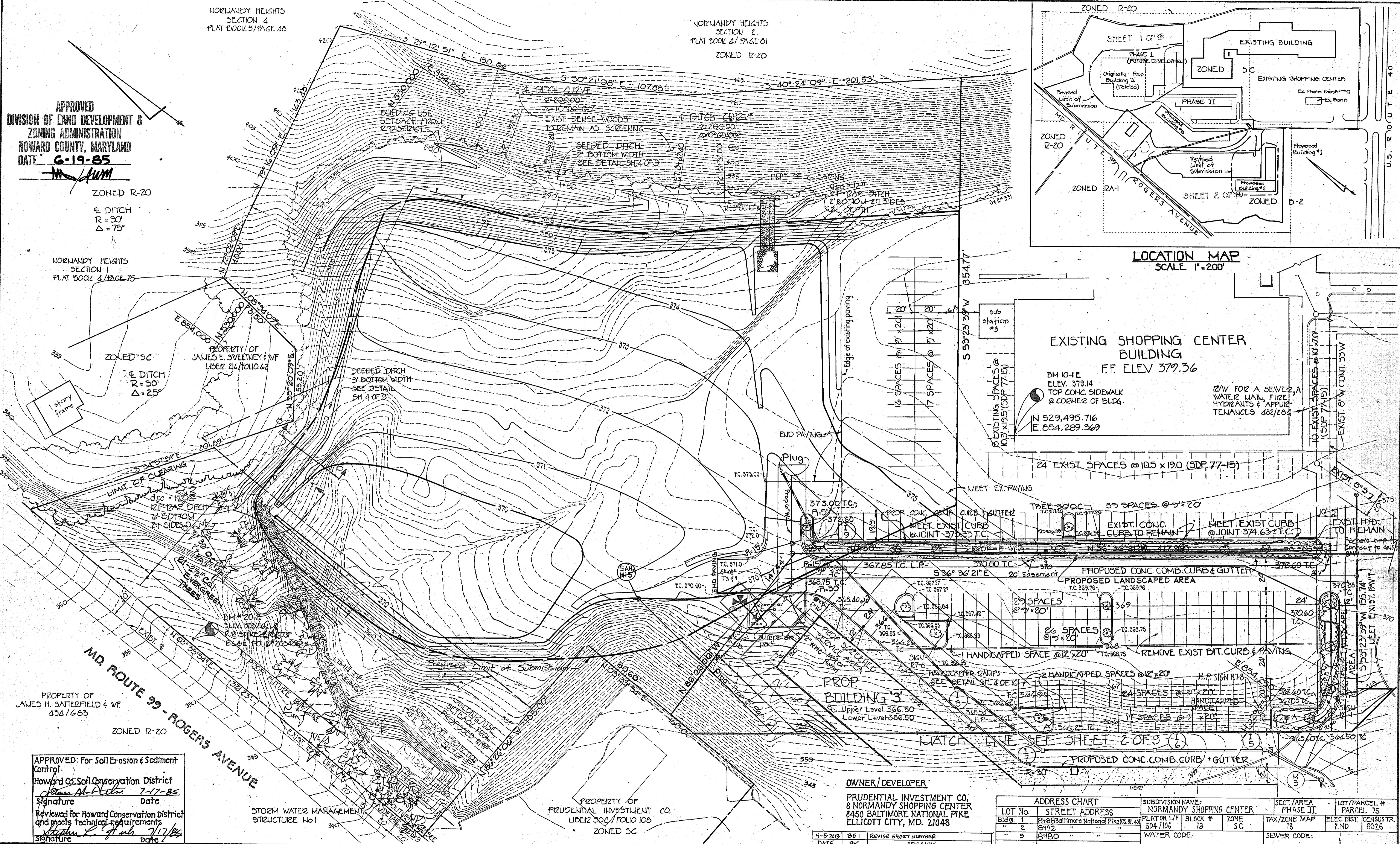
NORMANDY HEIGHTS
SECTION 1
PLAT BOOK 4/PAGE 75

NORMANDY HEIGHTS
SECTION 4
PLAT BOOK 5/PAGE 48

NORMANDY HEIGHTS
SECTION 2
PLAT BOOK 4/PAGE 01
ZONED R-20



LOCATION MAP
SCALE 1"=200'



EXISTING SHOPPING CENTER
BUILDING
F.F. ELEV 379.36

BM 10-1E
ELEV. 379.14
TOP CONC. SIDEWALK
@ CORNER OF BLDG.
N 529,495.716
E 654,289.369

24 EXIST. SPACES @ 10.5 x 19.0 (SDP 77-15)

39 SPACES @ 9 x 20

29 SPACES @ 9 x 20

24 SPACES @ 9 x 20

17 SPACES @ 9 x 20

22 HANDICAPPED SPACES @ 12 x 20

PROPOSED CONC. COMB. CURB & GUTTER

PROPOSED CONC. COMB. CURB & GUTTER

OWNER / DEVELOPER
PRUDENTIAL INVESTMENT CO.
8 NORMANDY SHOPPING CENTER
8450 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MD. 21043

ADDRESS CHART		SUBDIVISION NAME		SECT./AREA		LOT/PARCEL #	
LOT No.	STREET ADDRESS	NORMANDY SHOPPING CENTER		PHASE II		PARCEL 75	
Bldg. 1	8488 Baltimore National Pike (Rt. 40)	PLAT OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
" 2	8492 "	504/106	19	SC	18	2ND	6026
" 3	8480 "	WATER CODE:		SEWER CODE:			

APPROVED: For Soil Erosion & Sediment Control.
Howard Co. Soil Conservation District
Signature: *[Signature]* Date: 7-17-85
Reviewed for Howard Conservation District and meets technical requirements
Signature: *[Signature]* Date: 7/17/85

STORM WATER MANAGEMENT
STRUCTURE No 1

PROPERTY OF
PRUDENTIAL INVESTMENT CO.
LIBER 304 / FOLIO 108
ZONED SC

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1023 North Calvert Street
Baltimore, Maryland 21202 301/837-0194

APPROVED: For Public Water, Public Sewerage, Storm Drainage and Roads, Howard County, Dept. of Public Works
Director: *[Signature]* Date: 7-18-85
Chief, Bureau of Engineering: *[Signature]* Date: 7/18/85

APPROVED: For Public Water and Public Sewerage Systems, Howard County Health Department
County Health Officer: *[Signature]* Date: 7/18/85

APPROVED: Howard Co. Office of Planning & Zoning
Chief, Division of Land Development and Zoning Administration: *[Signature]* Date: 7/22/85
Planning Director: *[Signature]* Date: 7/22/85

DEVELOPER'S CERTIFICATION
I certify that all development and construction will be done according to this plan and any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources Training program for the control of any sediment erosion before beginning.

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



NORMANDY SHOPPING CENTER (PHASE II)
REVISIONS TO
SITE DEVELOPMENT PLAN SDP 84-297
2nd Election District
Tax Map Nos. 17 & 18
Scale: 1"=50'
Designed by: D.E.
Drawn by: J.R.B.
Checked by: D.E.
SHEET 1 OF 11
General Revisions 1/5/81
Convert to Md. State
Coord. Grid - revise per
Ho. Co. Com. 2/2/81
1/20/81

NOTES

- DRAWING AND PAGE NUMBERS SHOWN HEREON ARE REFERENCED TO THE HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE BASED ON THE LATEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL HOWEVER, DETERMINE THE EXACT LOCATION BEFORE MAKING CONNECTIONS.
- THE CONTRACTOR SHALL NOTIFY 'MISS UTILITY' AT LEAST THREE DAYS PRIOR TO BEGINNING ANY WORK SHOWN HEREON.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION UNLESS OTHERWISE SPECIFIED.
- HANDICAPPED FACILITIES TO BE PROVIDED
- ALL ROADS & DRIVEWAYS WITHIN THE LIMITS OF SUBMISSION ARE PRIVATE ROADWAYS.
- ALL NEW WATER MAINS (EXCEPT WATER HOUSE CONNECTIONS) ARE TO BE PUBLIC WATER MAINS CONSTRUCTED UNDER CONTRACT NO. 44-1323-D
- HANDICAPPED PARKING SPACE SIGN USE R7-8 PAGE 2B-24 OF M.D. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE 'H' OF SIGN 6' FROM GROUND
- AREA OF REVISED LIMIT OF SUBMISSION = 4.75 AC ±.

DRIVE 'A' CURVE DATA
 R = 65.00'
 Δ = 118°41'40"
 L = 134.65'
 T = 109.68'

ZONED 9C
 PROPERTY OF
 PRUDENTIAL INVESTMENT CO
 504408

PROPERTY OF
 TOWN & COUNTRY-WEST, INC
 4497738

SITE ANALYSIS

- TOTAL AREA OF SITE 13.869 AC ±
- PRESENT ZONING: 9C 6.010 AC ±
 B2 5.859 AC ±
- TOTAL AREA DISTURBED 9.718 AC ±
- TOTAL AREA PAVED 10,280 SQ
- LOT COVERAGE - STRUCTURES 6.7%
- OPEN SPACE 61.1%
- PAVING ANALYSIS:
 NO. OF EXIST. PAVING SPACES 606
 (SDP 77-15 & SDP 79-140)
 NO. OF SPACES TO REMAIN 513
 NEW SPACES PROVIDED
 (INCLUDING 12 HANDICAPPED SPACES) 295
 TOTAL PAVING SPACES PROVIDED 808
 PAVING REQUIREMENTS:
 TOTAL EXISTING BUSINESS AREA (SDP 79-140) 77,355 S.F.
 NEW CONSTRUCTION: BUILDING 1 OFFICE 21,000 S.F.
 BUILDING 2 OFFICE 19,500 S.F.
 BUILDING 3 RETAIL 20,100 S.F.
 OFFICE 20,100 S.F.
 TOTAL RETAIL BUSINESS AREA 97,455 S.F.
 SPACES REQUIRED @ 1 SPACE/200 S.F. 487
 TOTAL OFFICE AREA 60,600 S.F.
 SPACES REQUIRED @ 7 SPACES/10 PERSONS 182
 TOTAL SPACES REQUIRED 669
- AREA OF LANDSCAPED ISLANDS WITHIN PROPOSED PARKING LOTS
 LANDSCAPED ISLANDS % OF TOTAL PAVED AREA 9.9%

NOTE:
 A PAVING ANALYSIS SHALL BE SUBMITTED WITH ANY NEW SDP FOR THE SHOPPING CENTER REDEVELOPMENT.

PARKING AREA LIGHTING FIXTURES

- TYPE 'A': 4-250 W LUCALUX FIXTURES ON 20' SPUN ALUMINUM POLE.
 - TYPE 'B': 2-250 W LUCALUX FIXTURES ON 20' SPUN ALUMINUM POLES.
- OTHER EXTERIOR LIGHTING WILL CONSIST OF BUILDING MOUNTED FIXTURES FOR STORE FRONT ILLUMINATION AND BUILDING MOUNTED SECURITY LIGHTING FOR PAVED AREAS NORTH OF BUILDING 'A'
- EXTERIOR LIGHTING SHALL BE REFLECTED/DIRECTED AWAY FROM ADJACENT RESIDENTIALLY ZONED PROPERTIES AND PUBLIC RIGHTS-OF-WAY.

- RETAINING WALL ELEVATIONS
- ① TW = 335.75 BW = 335.75
 - ② TW = 335.00 BW = 332.00
 - ③ TW = 335.00 BW = 332.00
 - ④ TW = 336.00 BW = 336.00

Date	By	Revisions
5-7-85	LBB	Delete Building A, Add Buildings 1 and 2.
5-7-85	LBB	Relocate storm drains, water mains & sanitary sewer.
7-28-85	PS	Add Landscaping.
4-10-84	APF	Added Meter Rooms & Brick Wall @ Bldg. 3 f 6' W to Bldg. 2 & Bldg. 3
4-5-2-83	BE1	ADD DECK TO END OF BLDG #3, REVISE SIDEWALK, REVISE SHEET NUMBER. DELETE OLD RETAINING WALL IN FRONT OF BLDG #3. ADD PAVING ANALYSIS NOTE.
6-5-2-83	BE1	ADD WALL AND PAD FOR FUTURE REFUSE COLLECTION. SHOW TWO TREE RELOCATIONS

APPROVED
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE **6-19-85**

APPROVED: For Soil Erosion & Sediment Control.
 Howard Co. Soil Conservation District
 Signature *John McWorm* Date **7-17-85**
 Reviewed for Howard Conservation District and meets technical requirements.
 Signature *Stephen L. Shuler* Date **7/17/85**

PURDUM & JESCHKE
 CONSULTING ENGINEERS
 LAND SURVEYORS
 1023 North Calvert Street
 Baltimore, Maryland 21202 301/837-0194

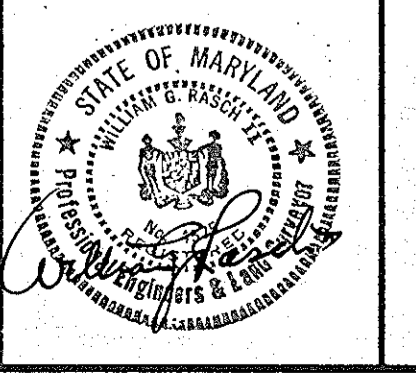
APPROVED: For Public Water, Public Sewerage, Storm Drainage and Roads, Howard County, Dept. of Public Works
 Signature *Walter Murray* Date **7-18-85**
 Chief, Bureau of Engineering Date

APPROVED: For Public Water and Public Sewerage Systems.
 Howard County Health Department
 Signature *John McWorm* Date **7-18-85**
 County Health Officer Date

APPROVED: Howard Co. Office of Planning & Zoning
 Signature *James M. McKeay* Date **7-19-85**
 Chief, Division of Land Development and Zoning Administration
 Signature *James M. McKeay* Date **7-22-85**
 Planning Director Date

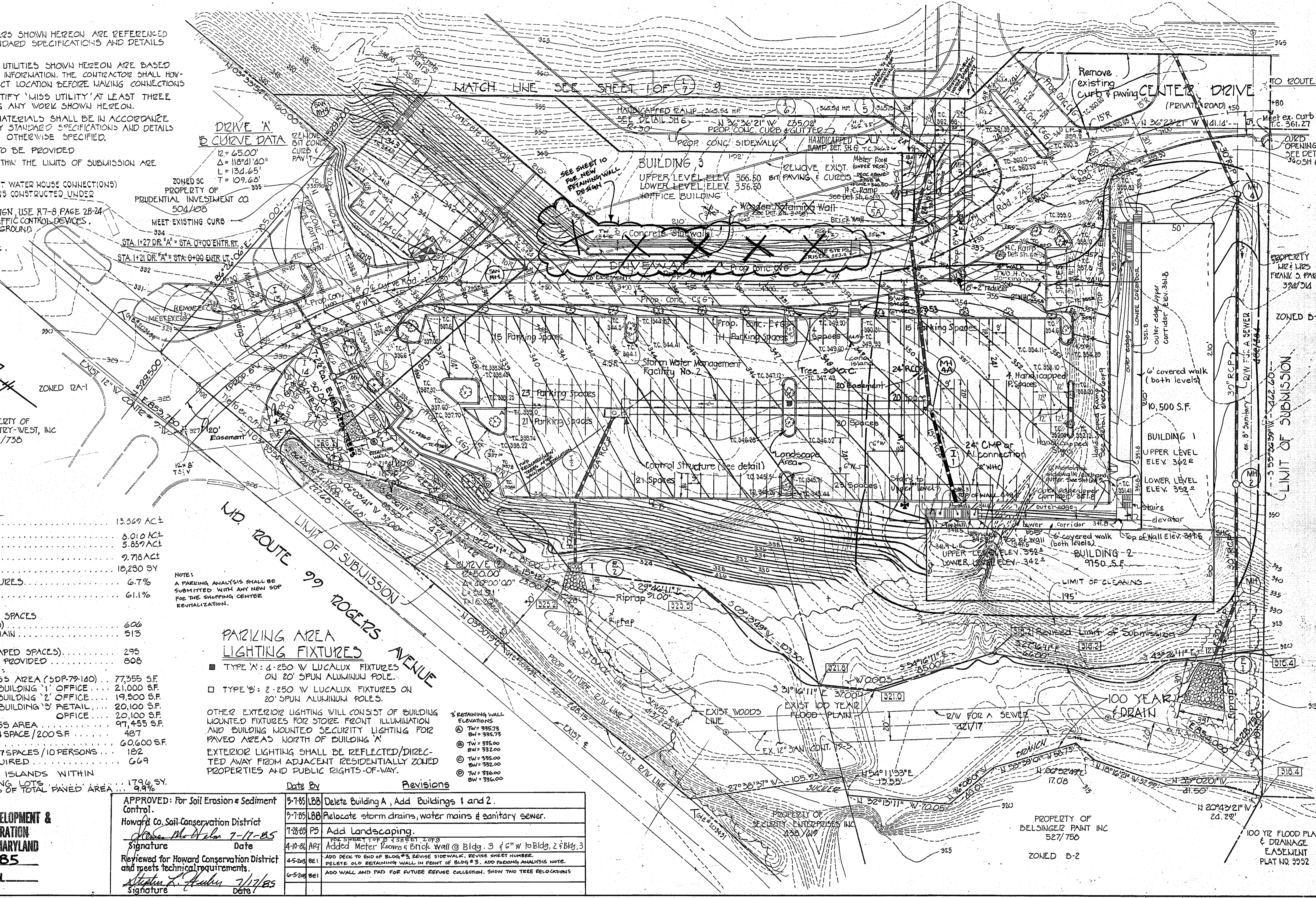
DEVELOPER'S CERTIFICATION
 I certify that all development and construction will be done according to this plan and any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources training program for the control of any sediment erosion before beginning the project.
 Signature *James M. McKeay* Date **5/1/85**

ENGINEER'S CERTIFICATION
 I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature *William G. Jeschke* Date **5/1/85**
 WILLIAM G. JESCHKE II

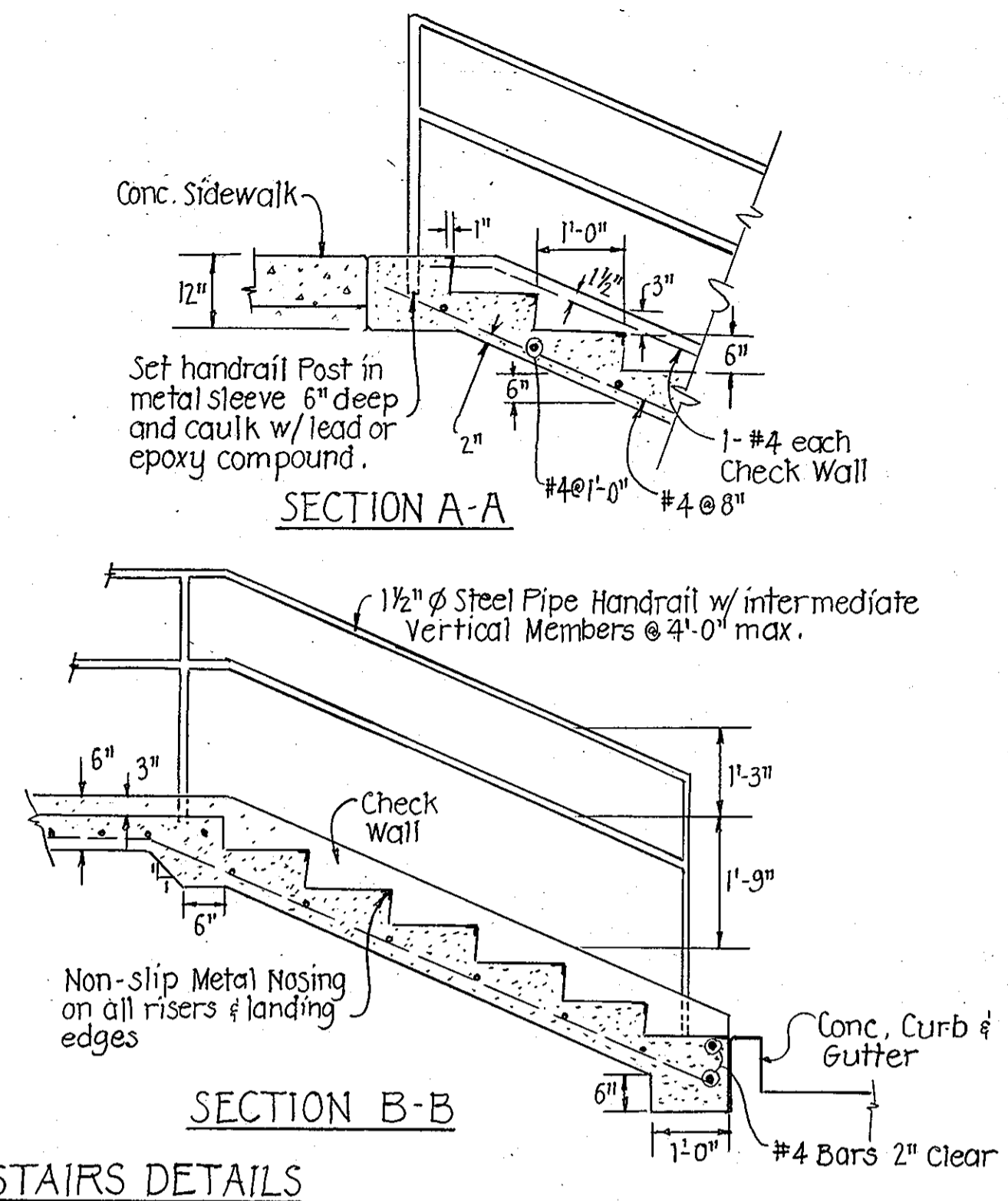
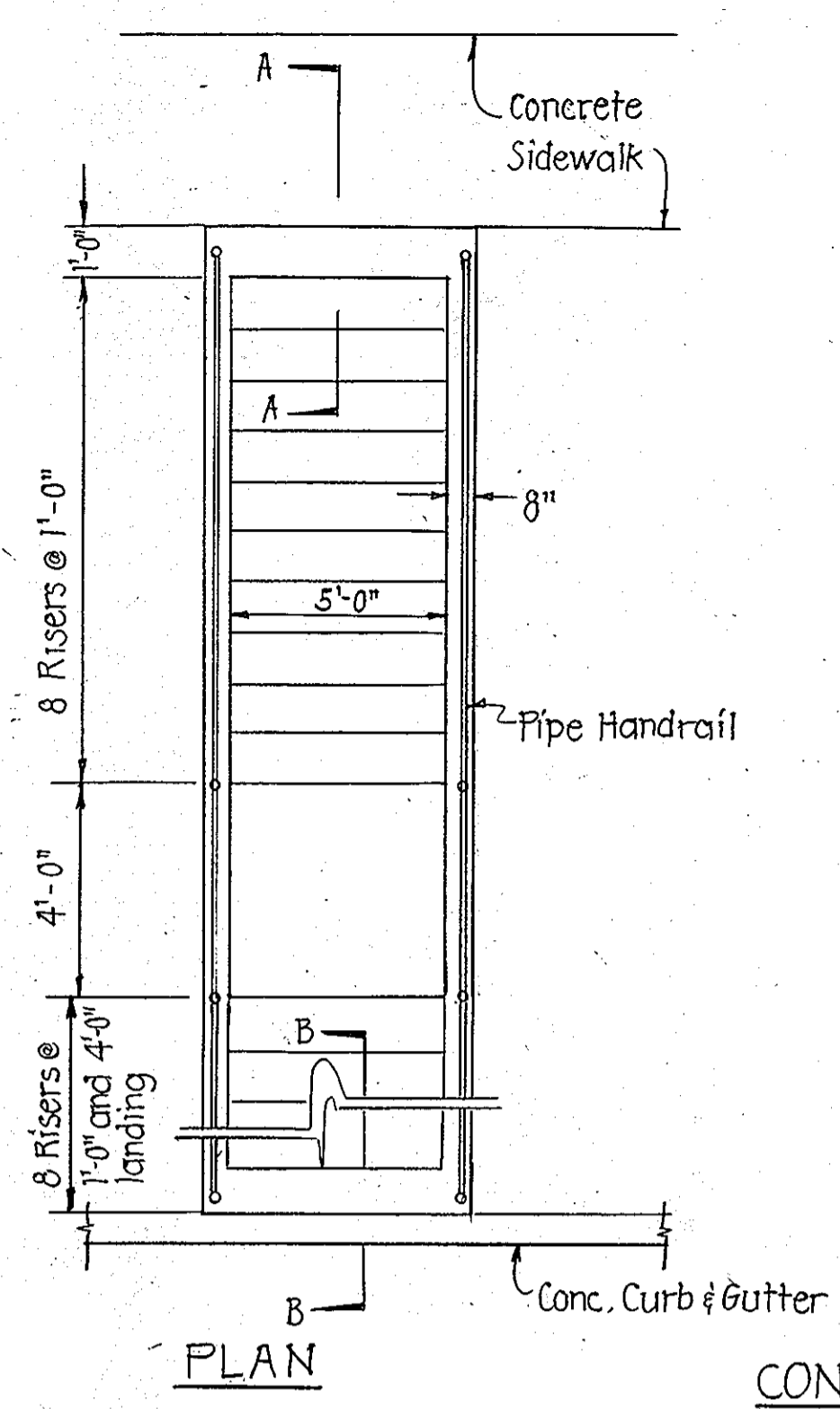


NORMANDY SHOPPING CENTER (PHASE II)
 REVISIONS TO SITE DEVELOPMENT & LANDSCAPE PLAN
 2nd Election District Howard County, Md.
 Tax Map No. 17118 Parcel No. 754155
 Scale: 1"=30' SDP-64-297 Date: 7-29-80
 Designed: D.E.
 Drawn by: JCB
 Checked by: B.E.

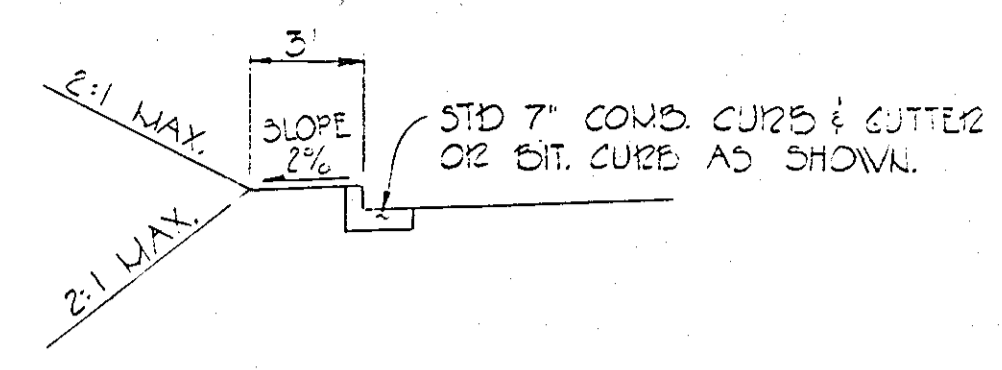
SHEET 2 OF 11
 General Revisions 1/5/81
 Convert to Md. State Coord. Grid. Revise per Ho. Co. Com. 3/3/81
 SDP-85-205



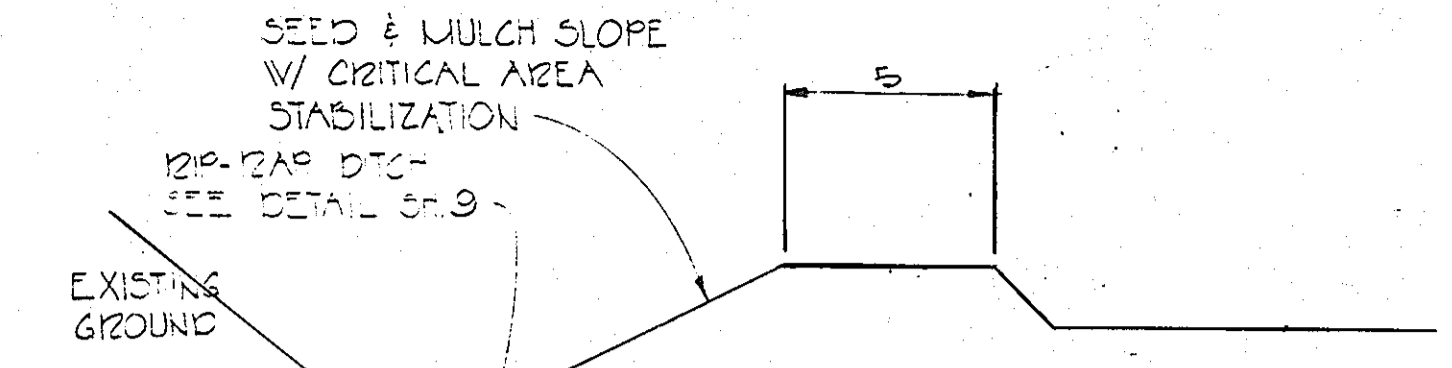
APPROVED: For Soil Erosion & Sediment Control.
 Howard Co. Soil Conservation District
Stephen J. Huber 7/19/85
 Signature Date
 Reviewed for Howard Conservation District and meets technical requirements.
 Signature Date



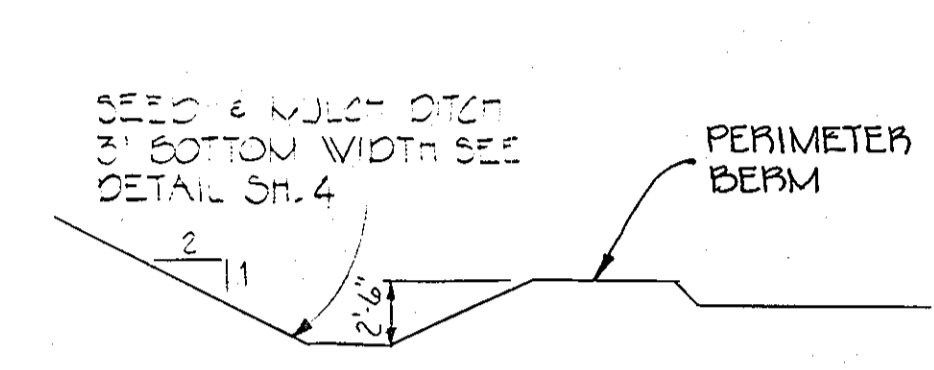
CONCRETE STAIRS DETAILS



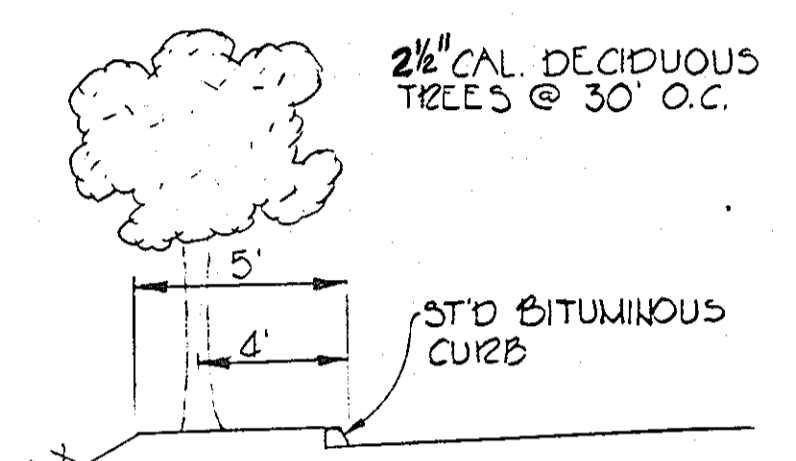
TYPICAL SECTION PAVEMENT EDGE
 NO SCALE



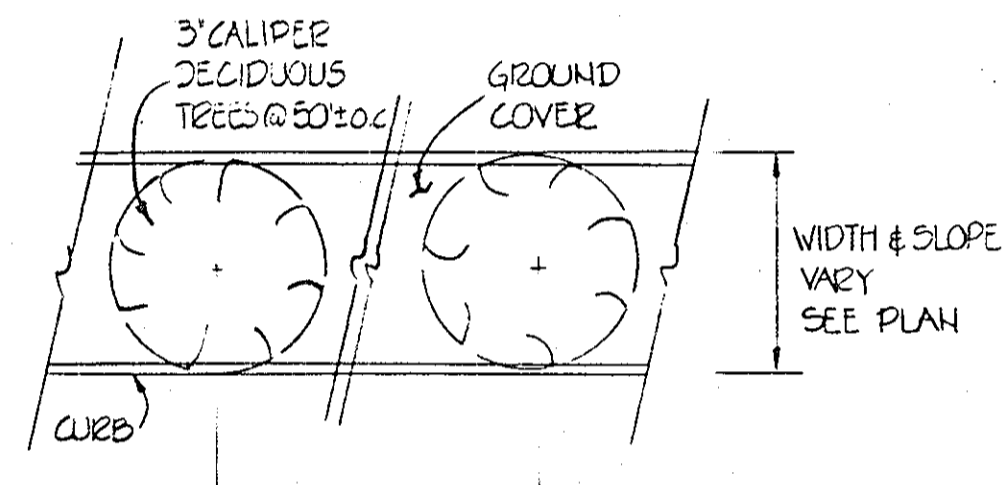
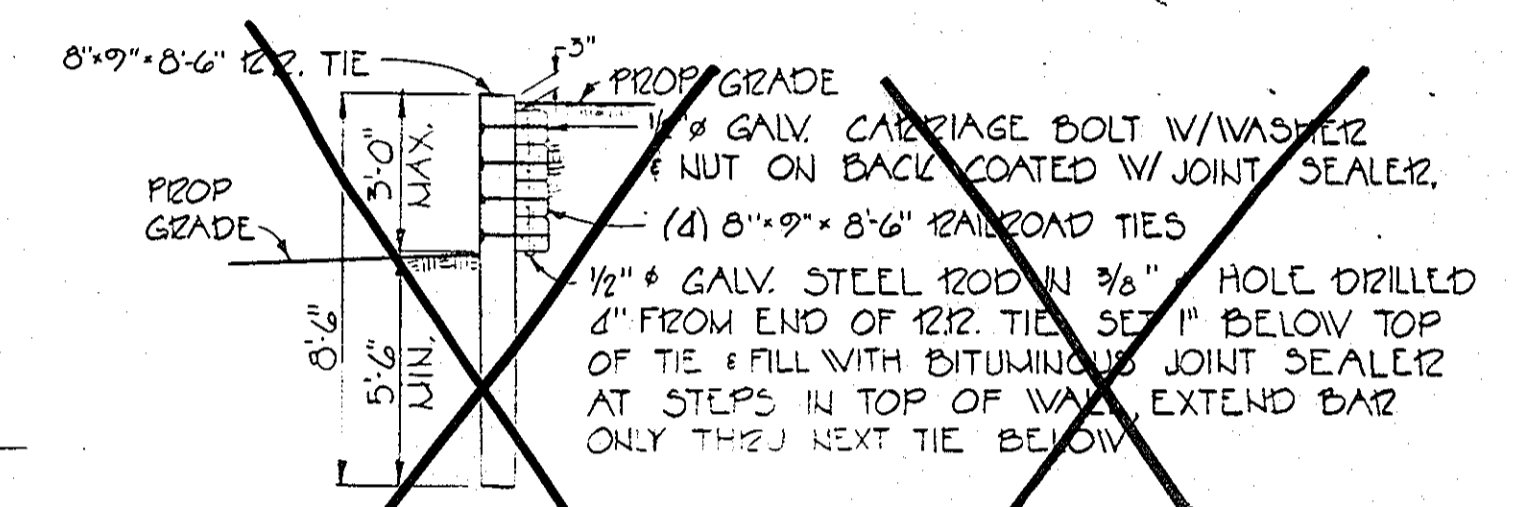
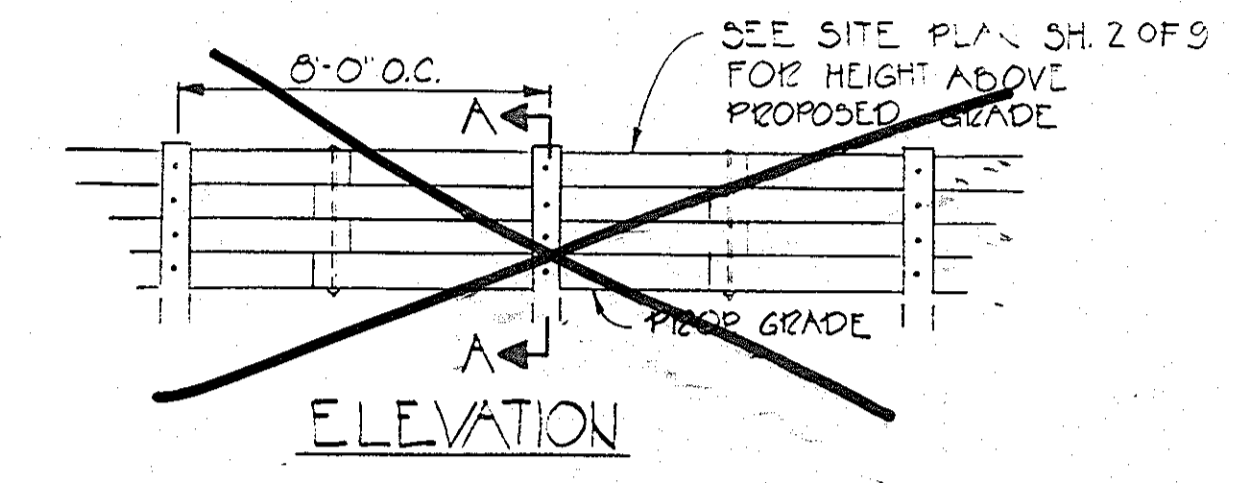
SITE SECTION A-A
 NO SCALE



SITE SECTION B-B
 NO SCALE



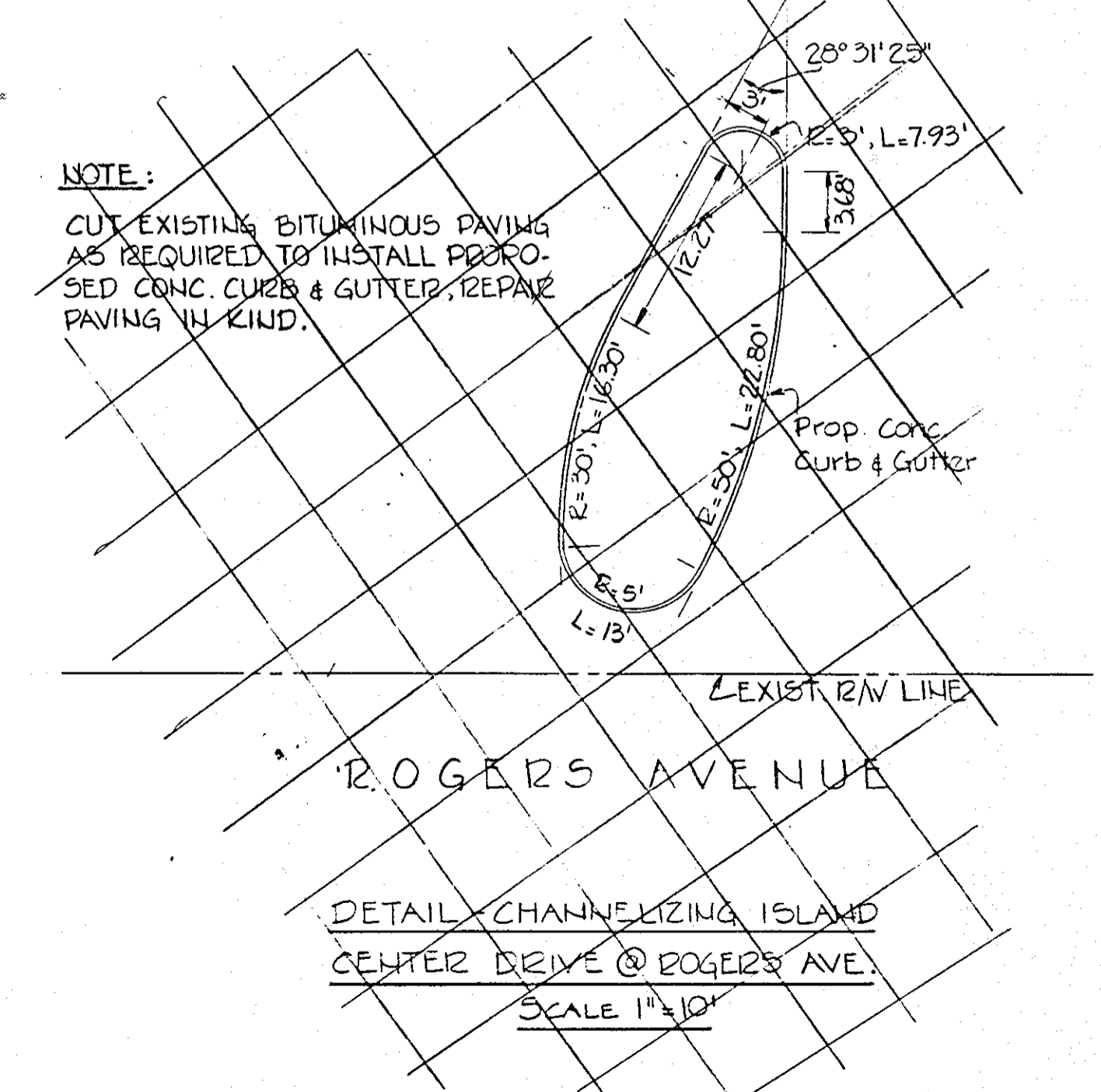
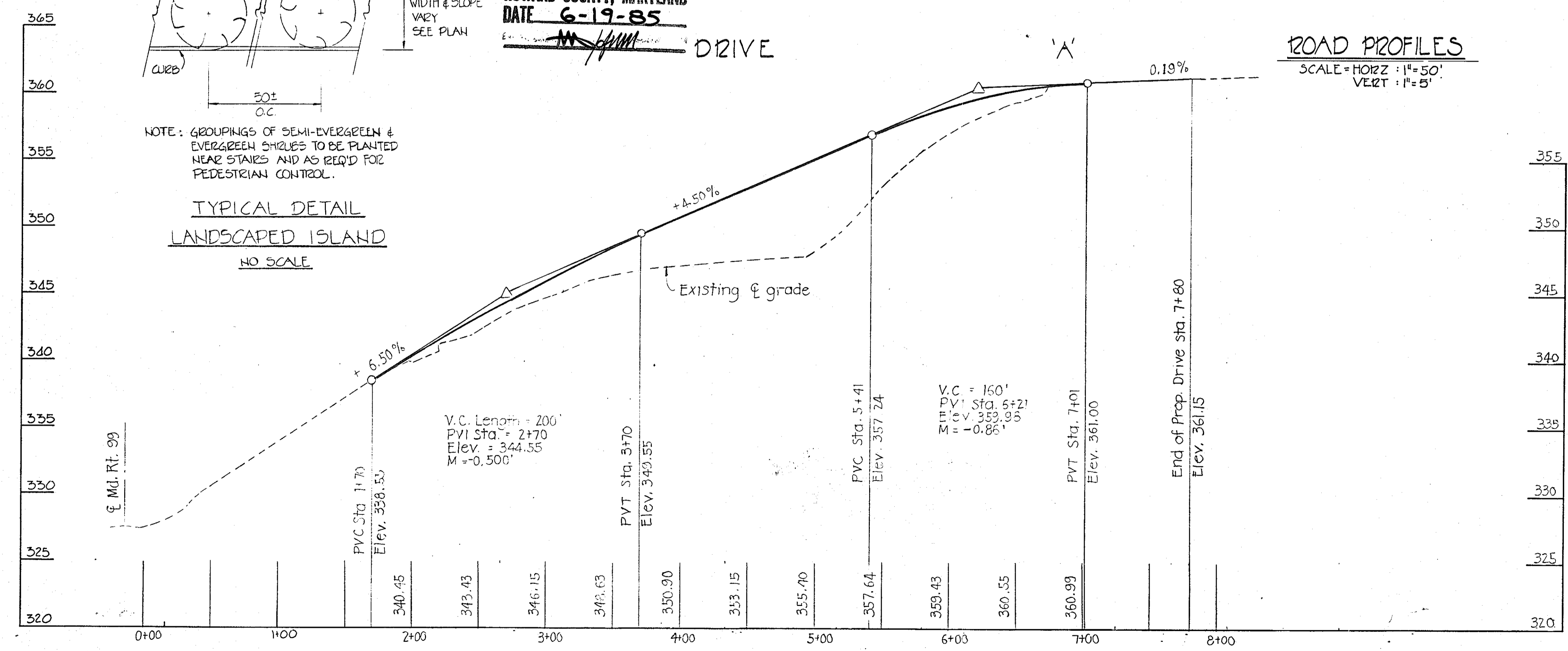
TYPICAL SECTION PAVEMENT EDGE W/ LANDSCAPE BUFFER STRIP
 NO SCALE



TYPICAL DETAIL LANDSCAPED ISLAND
 NO SCALE

APPROVED
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE 6-19-85

DRIVE



4-5-203	BE-1	REVISE SHEET NUMBER, DELETE EXT. WALL DETAIL
DATE	BY	REVISION

7/10/85 Revised Sept 21, 1984, 5-7-85

PURDUM & JESCHKE
 CONSULTING ENGINEERS
 LAND SURVEYORS
 1023 North Calvert Street
 Baltimore, Maryland 21202 301/837-0194

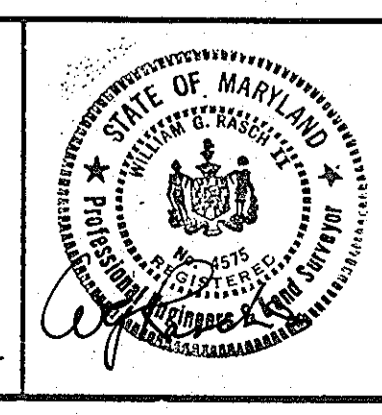
APPROVED: For Public Water, Public Sewerage, Storm Drainage and Roads
 Howard Co., Dept. of Public Works
Walter F. Mumby 7-11-85
 Director Date
William J. Reschke 7/19/85
 Chief, Bureau of Engineering Date

APPROVED: For Public Water and Public Sewerage Systems.
 Howard County Health Department
John M. Boyd, M.D. 7/19/85
 County Health Officer Date

APPROVED:
 Howard Co. Office of Planning & Zoning
William J. Reschke 7-19-85
 Chief, Division of Land Development Date
 and Zoning Administration
William J. Reschke 7-22-85
 Planning Director Date

DEVELOPER'S CERTIFICATION
 I certify that all development and construction will be done according to this plan and any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources training program for the control of any sediment erosion before beginning the project.
James R. Moxley 5/7/85
 DATE

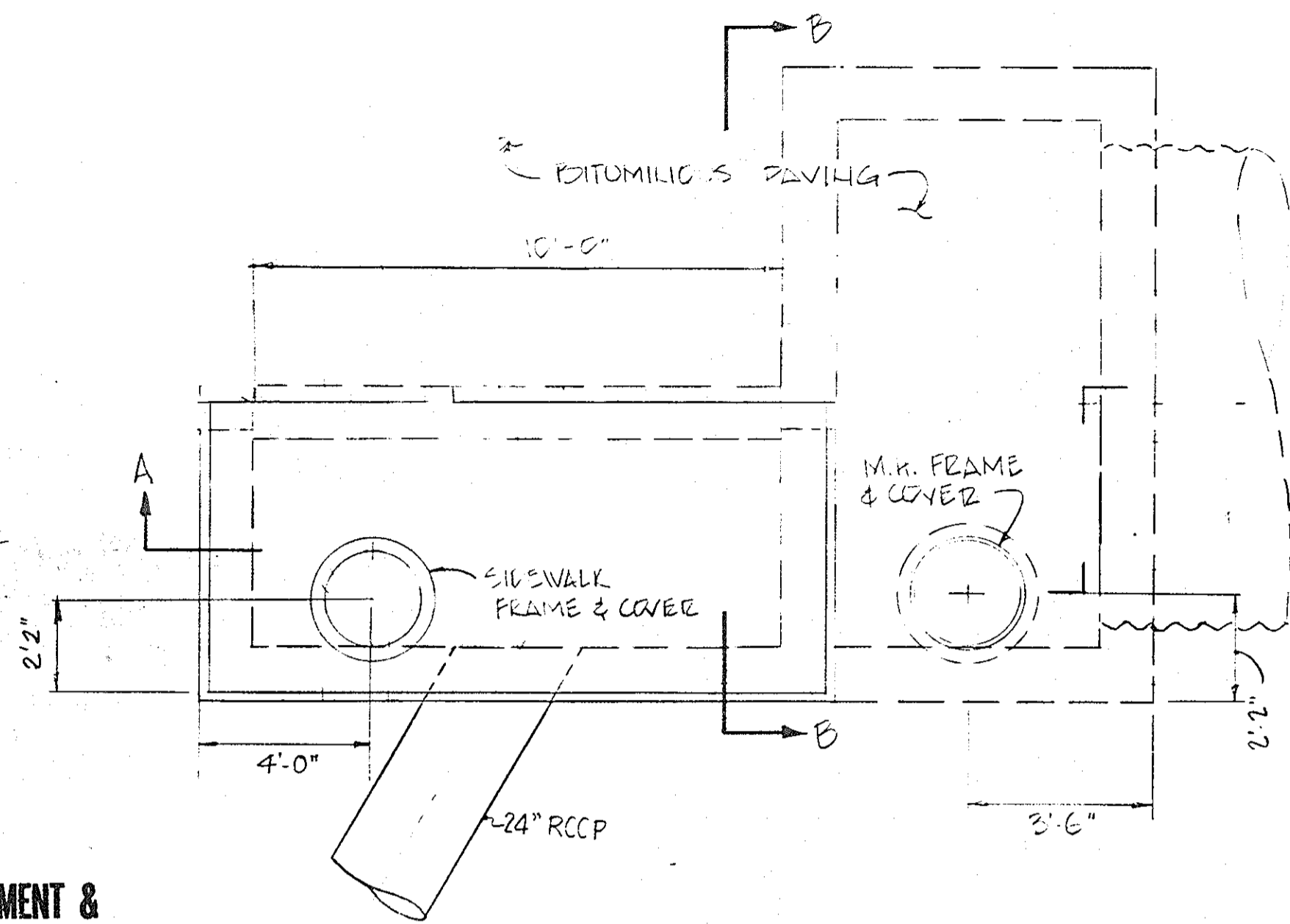
ENGINEER'S CERTIFICATION
 I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
William J. Reschke 5/7/85
 WILLIAM J. RESCHKE
 DATE



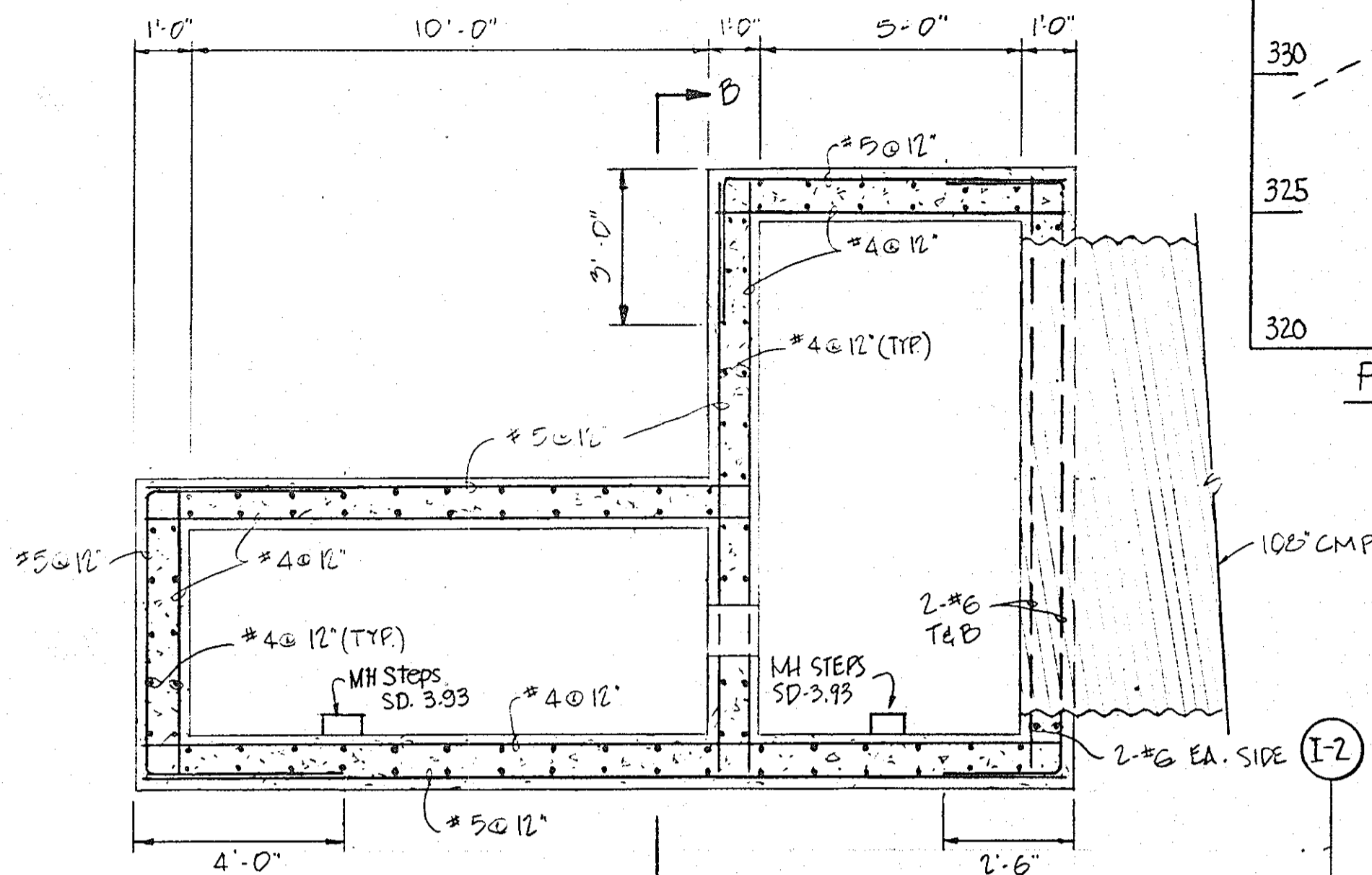
NORMANDY SHOPPING CENTER (PHASE II)
 PAVING PROFILES AND DETAILS
 2nd Election District
 Tax. Map Nos. 17 & 18
 Scale: AS SHOWN
 Howard County, Md.
 Parcel Nos. 75 & 155
 Date: 7-27-80

SHEET 3 OF 11
 General Revisions 1/5/81
 Revised per Ho. Co. Cmtes. 3/5/81
 Designed: BE
 Drawn by: DJB
 Checked by: BE

APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 6-19-85

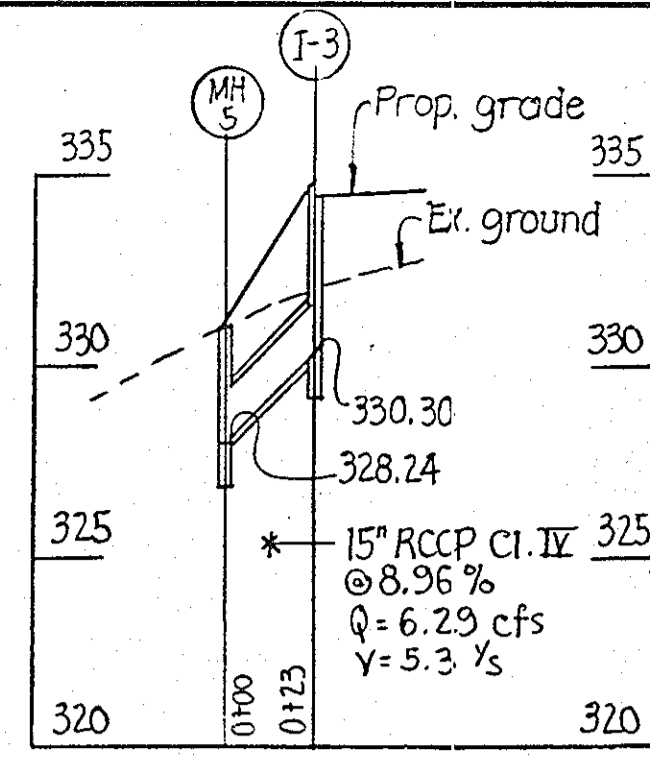


PLAN

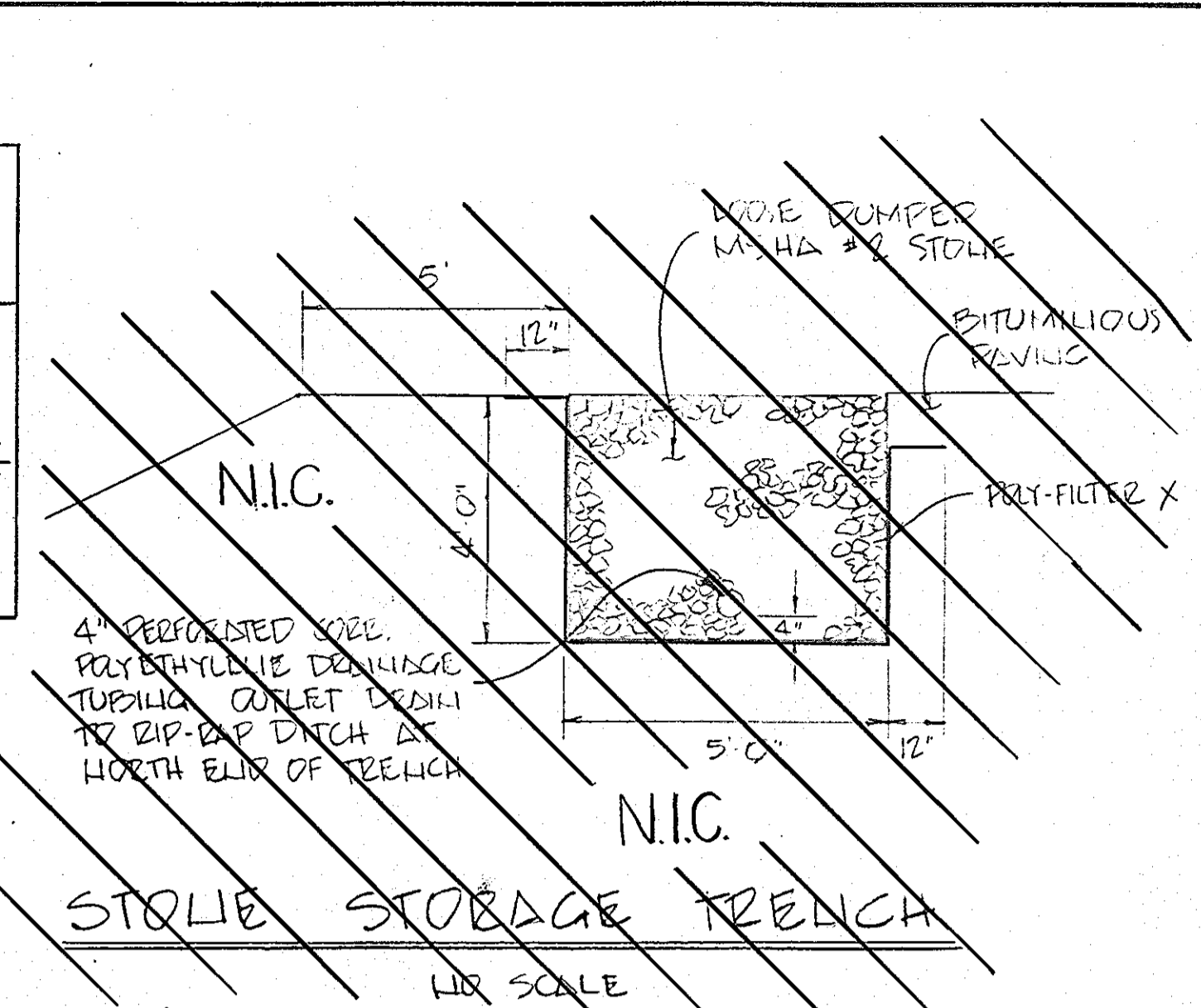


NOTE: SEE SECTION A-A FOR VARIATION IN WALL REINFORCEMENT.

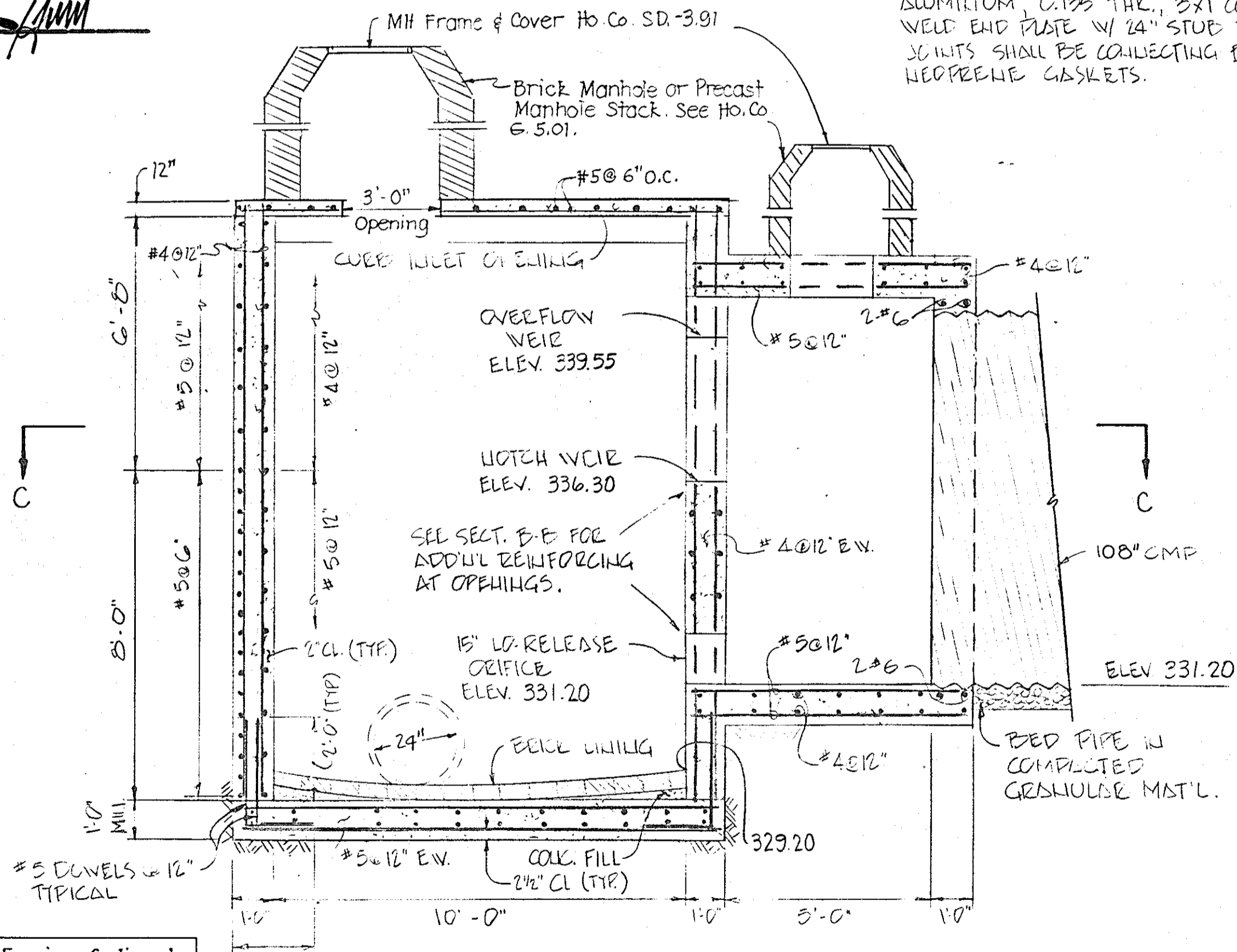
SECTION 'C-C'



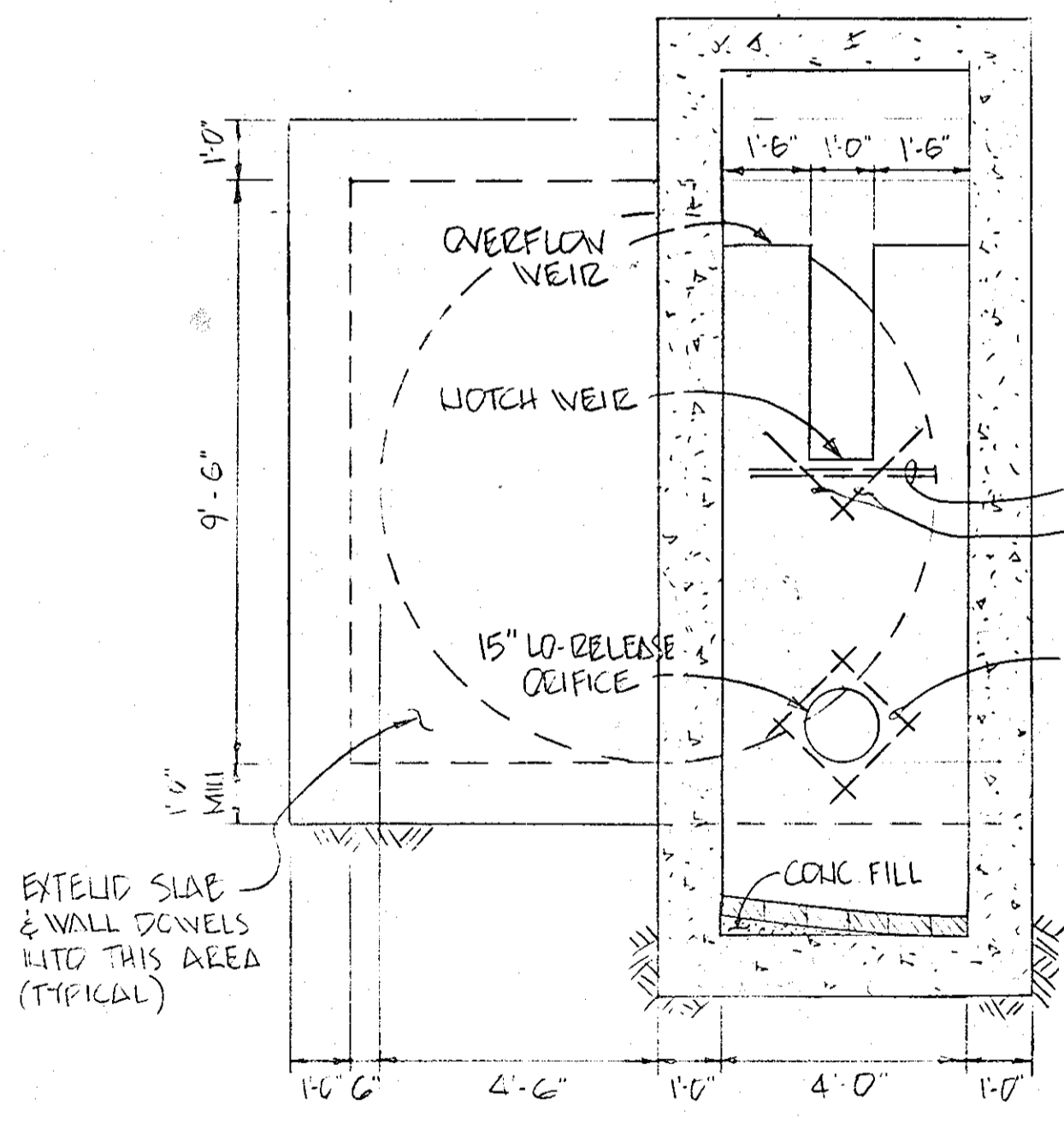
PROFILE



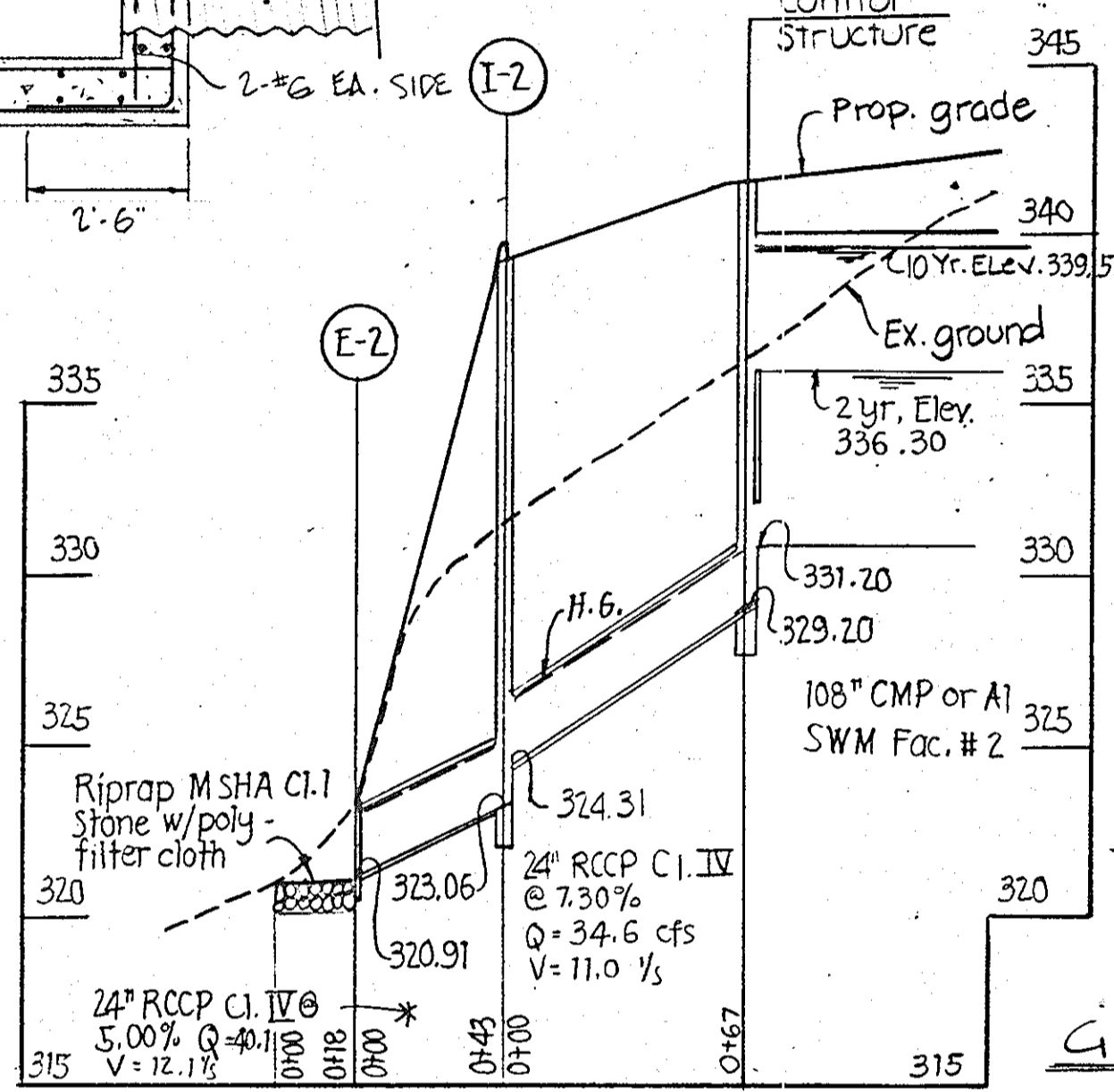
STONE STORAGE TRENCH
1/4" SCALE



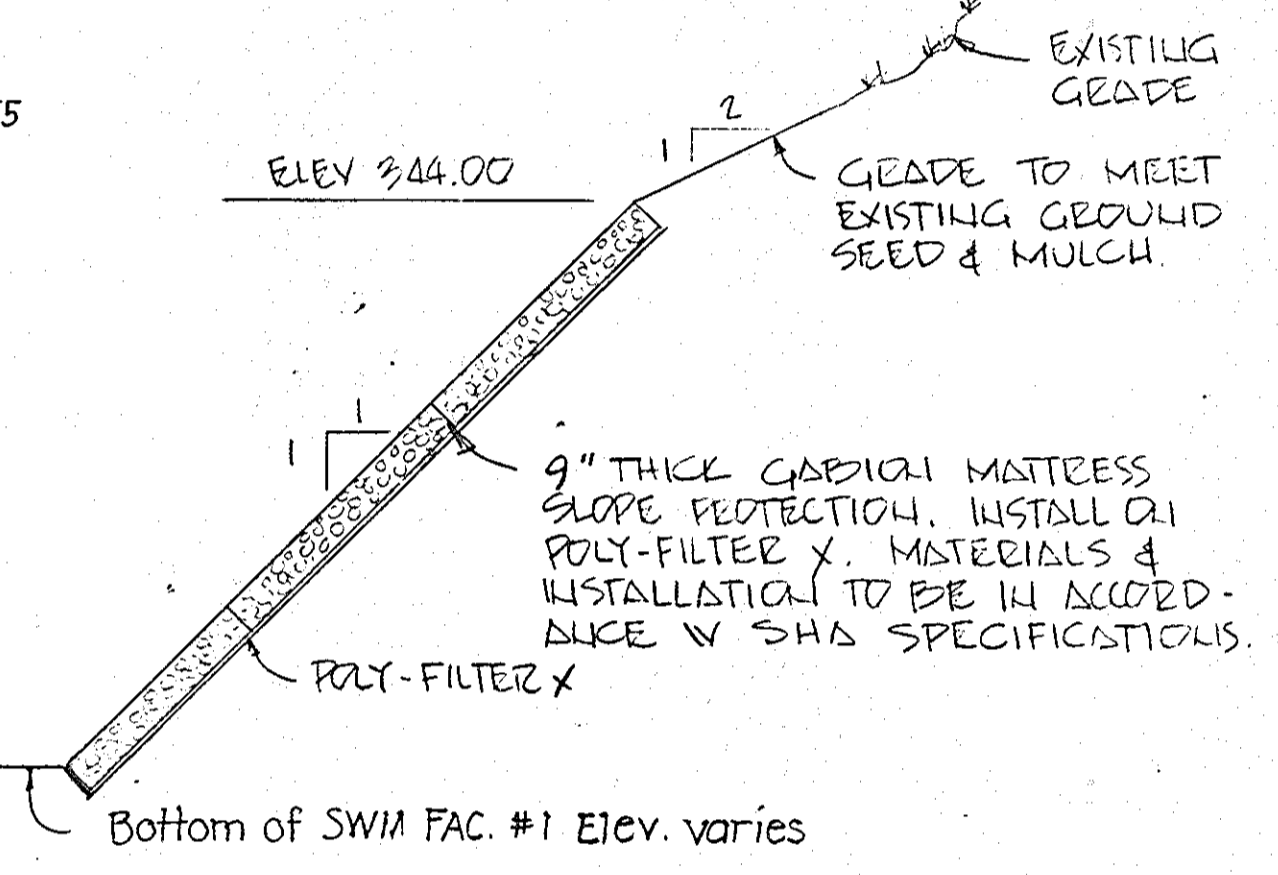
SECTION 'A-A'



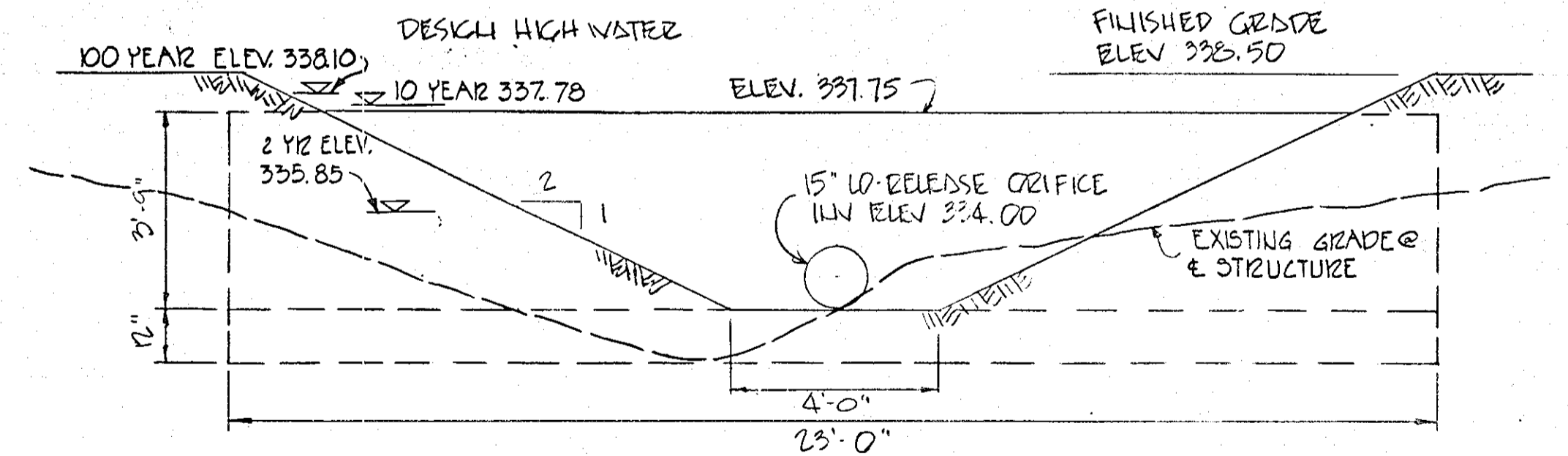
SECTION 'B-B'



PROFILE



GABION SLOPE PROTECTION
1/4" SCALE



NOTE: STRUCTURE SHALL CONFORM TO DETAIL SD-5.21 FOR HEADWALL FOR 36" PIPE EXCEPT DIMENSIONS 'H' & 'L' SHALL BE AS SHOWN. MATERIALS & REINFORCING SHALL BE AS REQ'D BY DETAIL SD-5.21.

OUTLET STRUCTURE
SWM FACILITY #1
1/4" SCALE

APPROVED: For Soil Erosion & Sediment Control:
Howard Co. Soil Conservation District
Signature: *Stephen L. Hub* Date: 7/17/85
Reviewed for Howard Conservation District and meets technical requirements.
Signature: *James M. Decker* Date: 7-17-85

CONTROL STRUCTURE - SWM FACILITY #2
SCALE 3/8" = 1'

DATE	BY	REVISE SHEET NUMBER	REVISION
4-5-2015	BEZ		

7/16/85 Revised 9-21-84, 5-7-85

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1023 North Calvert Street
Baltimore, Maryland 21202 301/837-0194

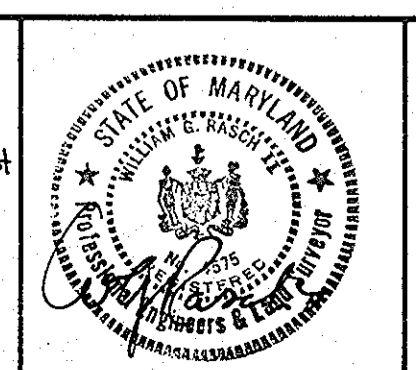
APPROVED: For Public Water, Public Sewerage, Storm Drainage and Roads, Howard County, Dept. of Public Works
Signature: *Walter F. Nummy* Date: 7-16-85
Chief, Bureau of Engineering

APPROVED: For Public Water and Public Sewerage Systems.
Howard County Health Department
Signature: *James M. Decker* Date: 7-17-85
County Health Officer

APPROVED: Howard Co. Office of Planning & Zoning
Signature: *William G. Jeschke* Date: 7-19-85
Chief, Division of Land Development and Zoning Administration

DEVELOPER'S CERTIFICATION
I certify that all development and construction will be done according to this plan and any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources Training Program for the control of any sediment erosion before beginning the project.
Signature: *James R. Moly* Date: 5/7/85

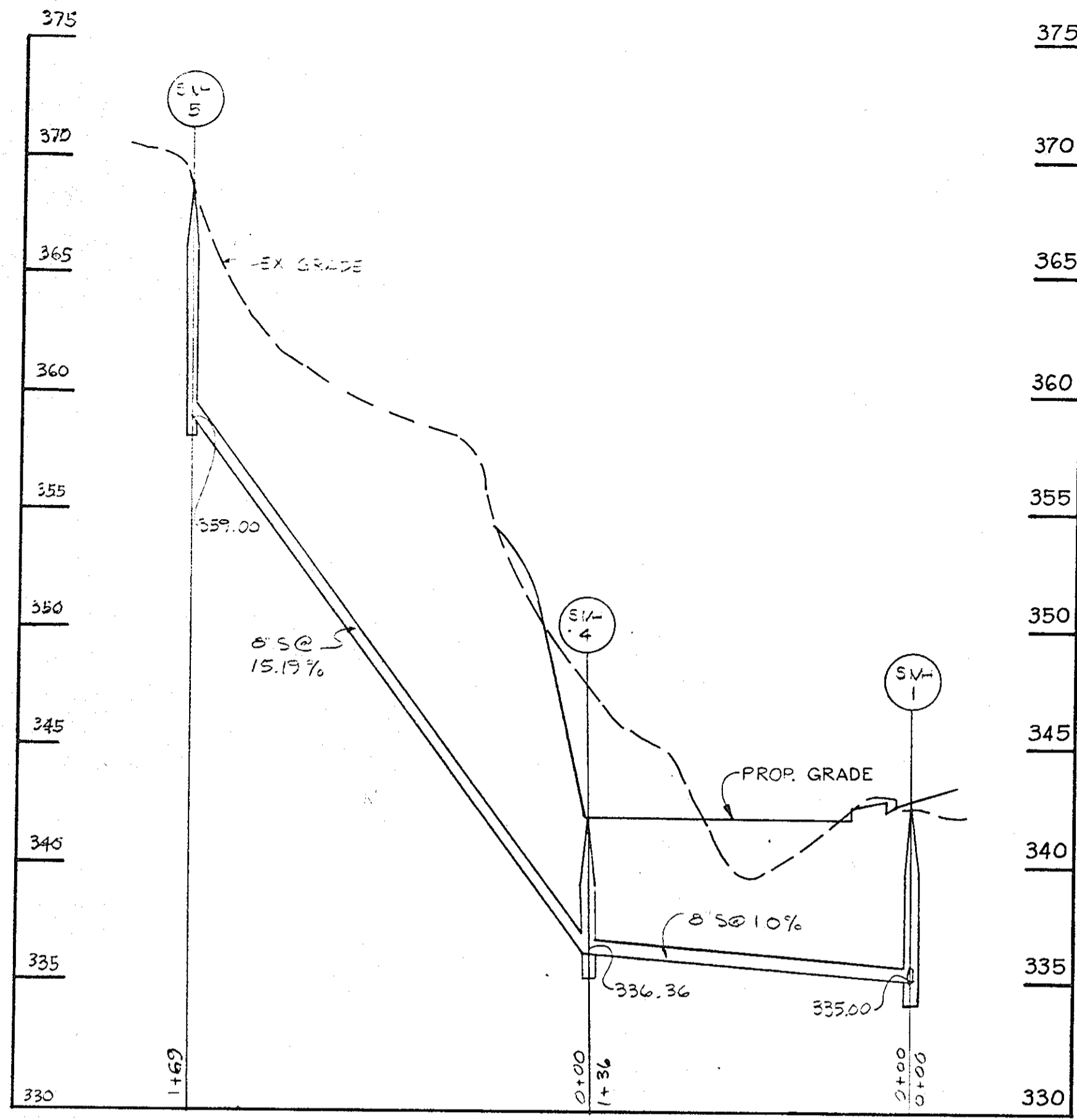
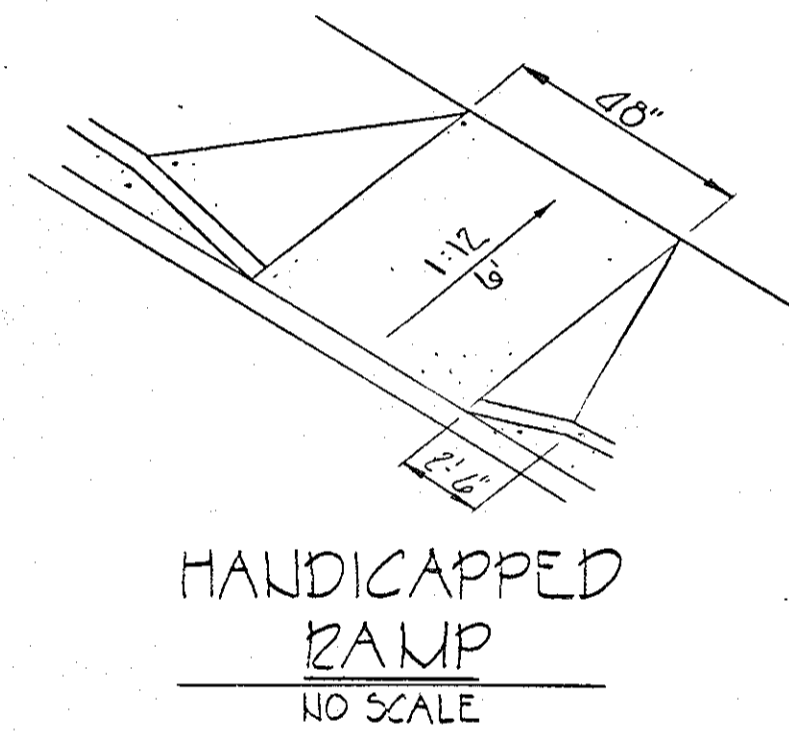
ENGINEER'S CERTIFICATION
I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
Signature: *William G. Jeschke II* Date: 5/7/85



NORMANDY SHOPPING CENTER (PHASE II)
STORM WATER MANAGEMENT DETAILS
2nd Election District
Tax. Map Nos. 17 & 18
Scale: 1" = 30'
Howard County, Md.
Parcel Nos. 75 & 155
Date: 4-27-81

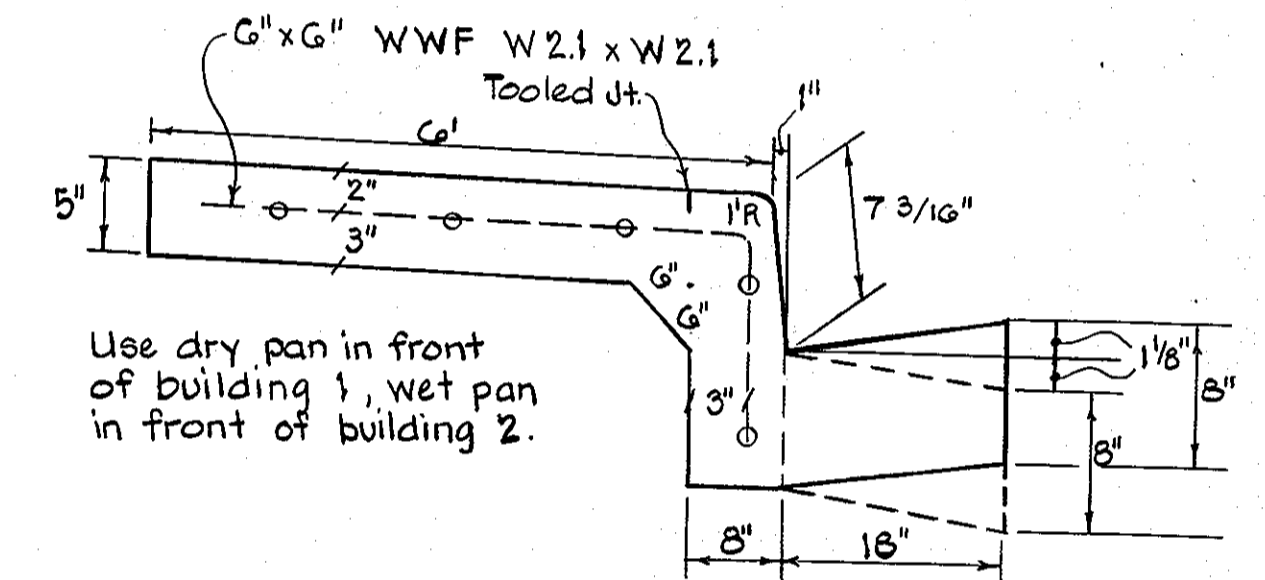
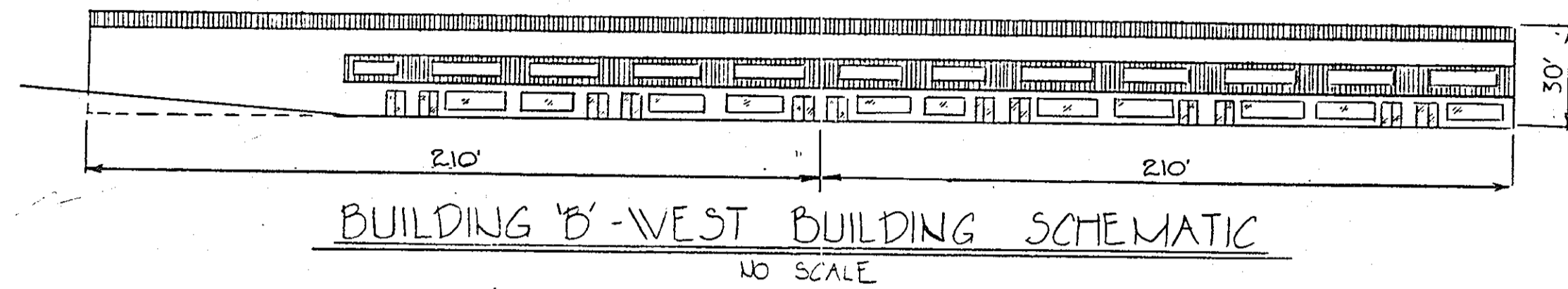
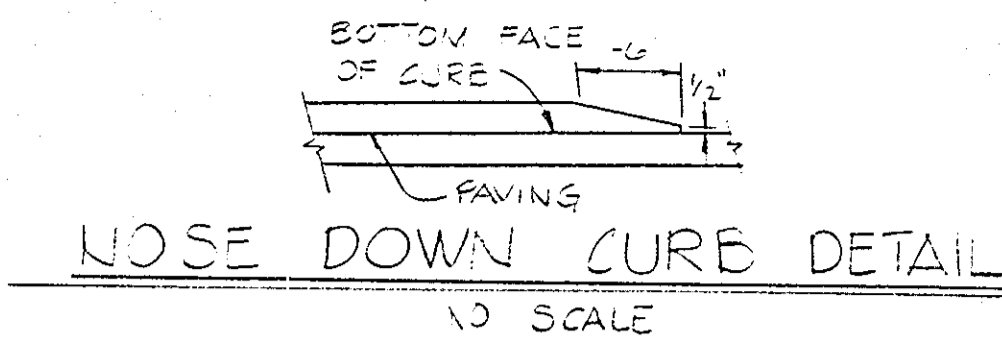
SHEET 5 OF 11
Designed: D.E.
Drawn by:
Checked by:

APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 6-19-85
[Signature]

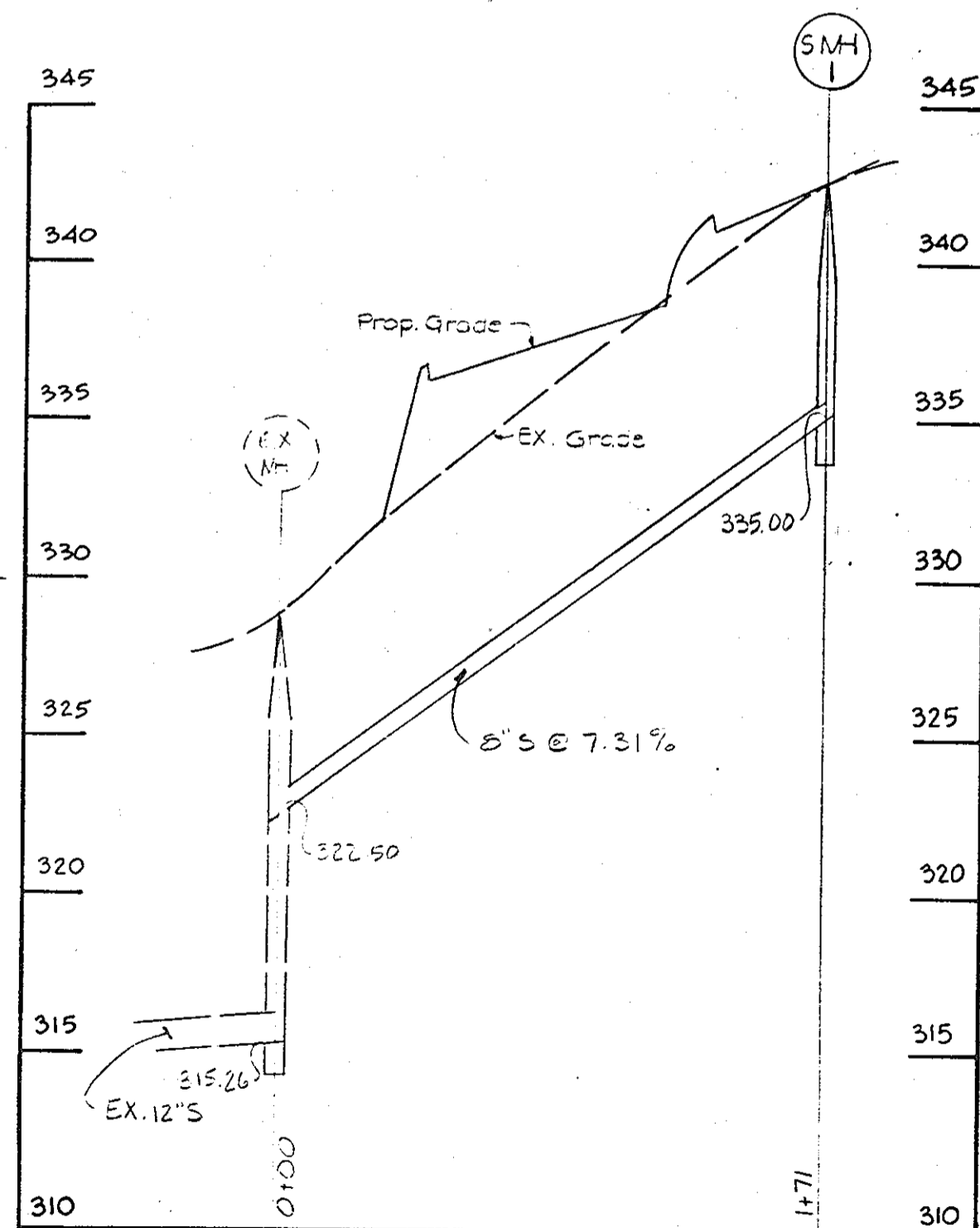
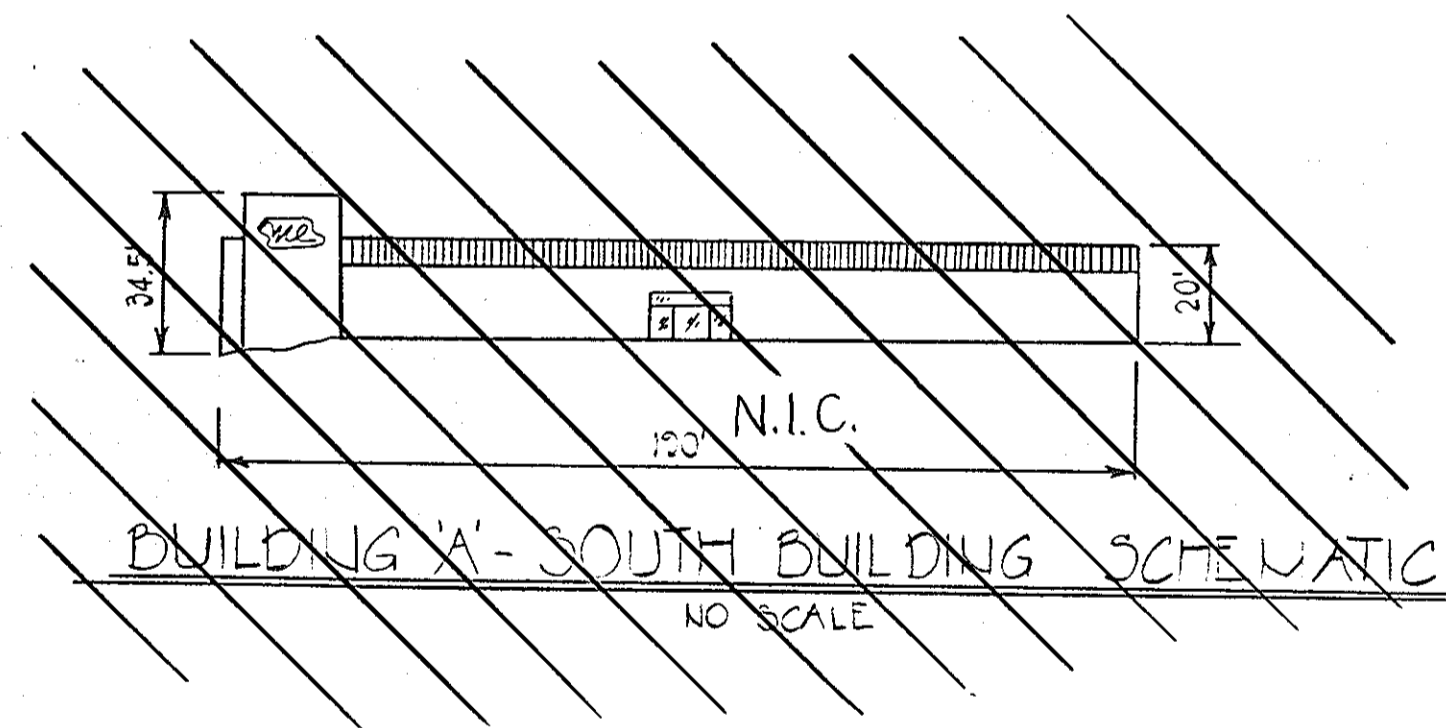


PRIVATE SEWER PROFILE
SCALE: Hor. 1"=50'
Vert. 1"=5'

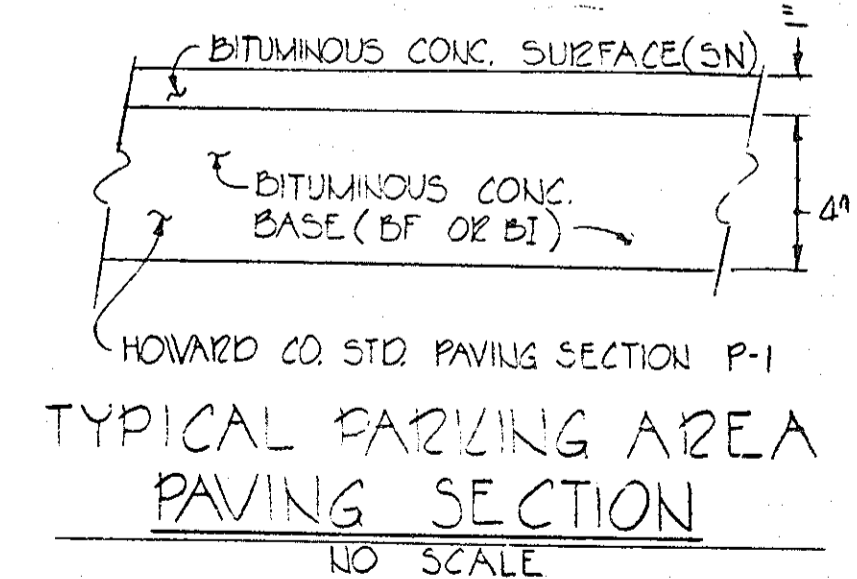
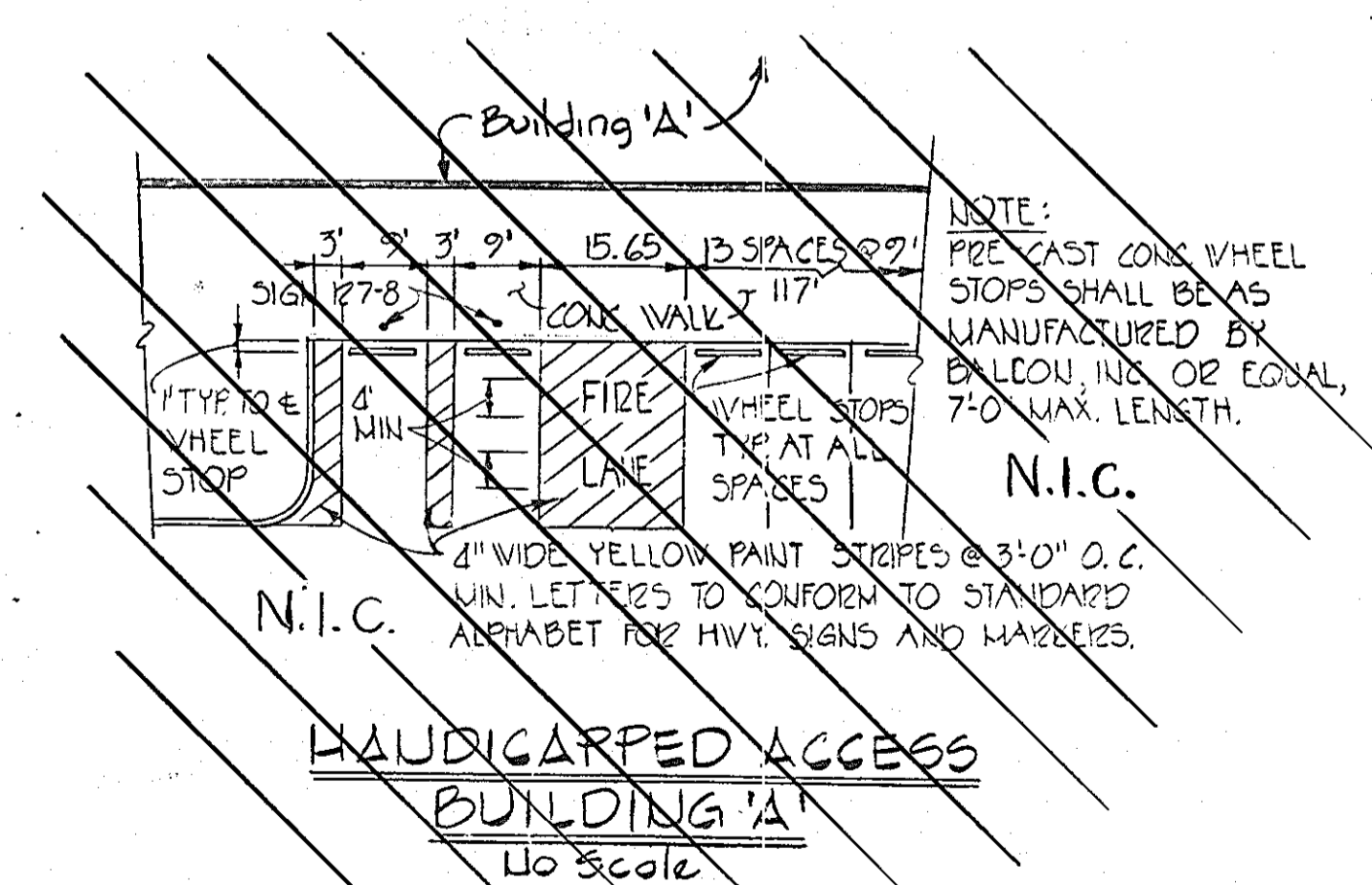
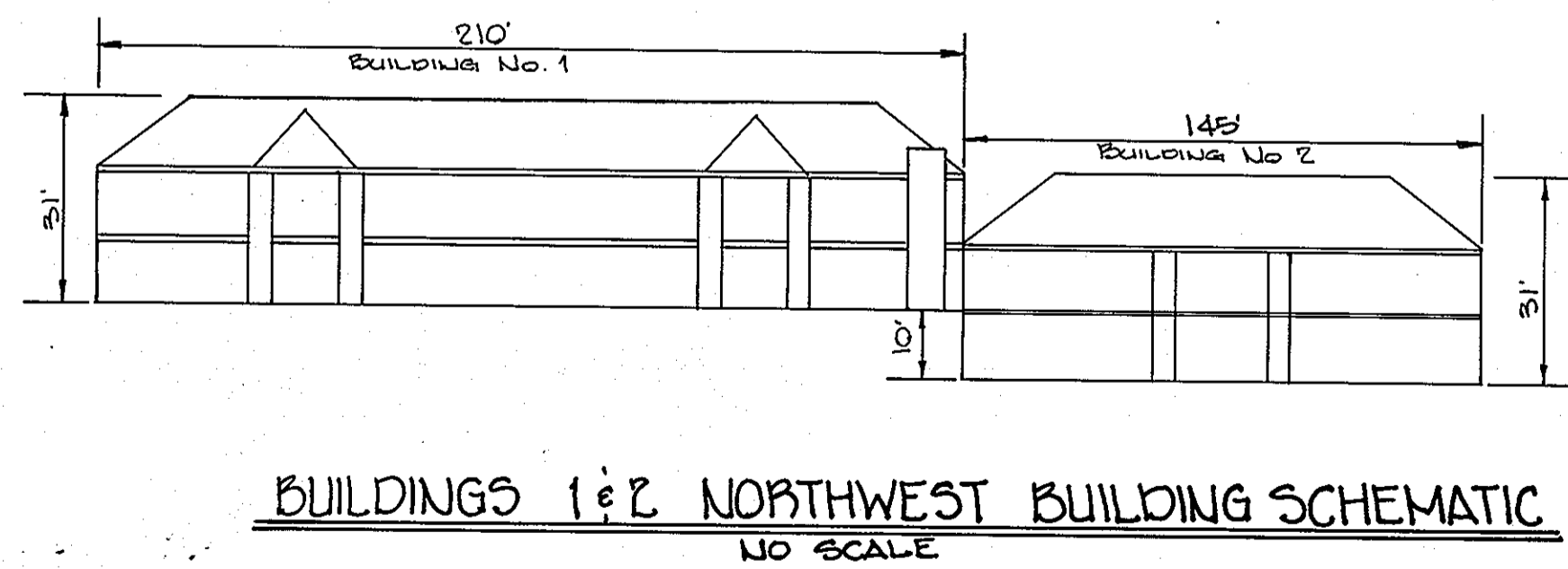
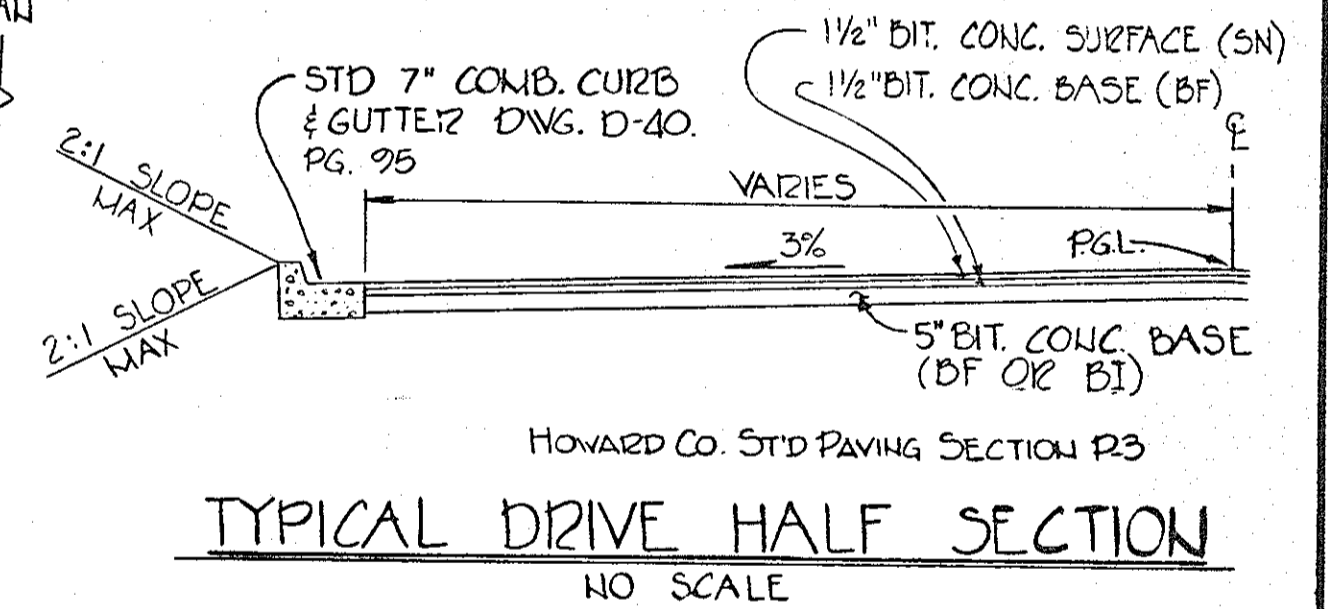
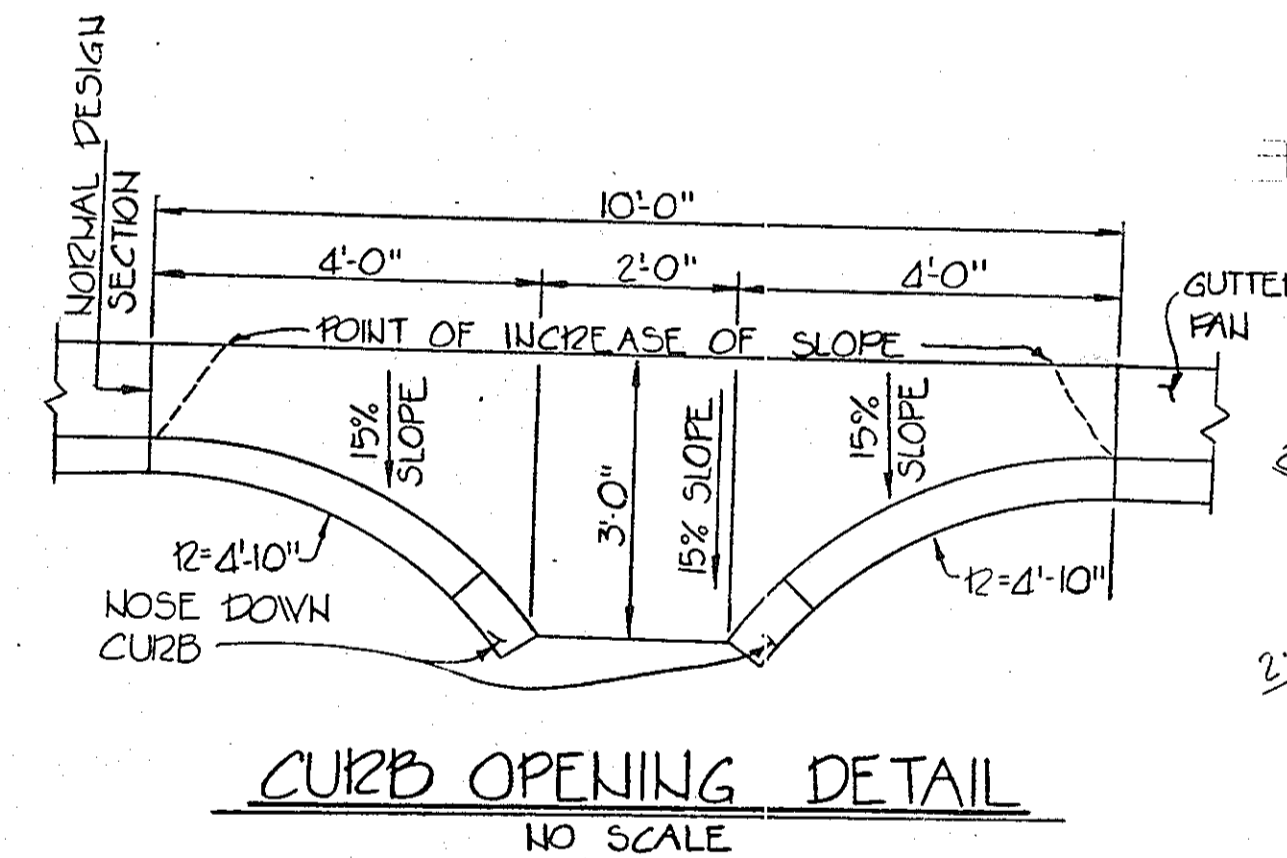
APPROVED: For Soil Erosion & Sediment Control.
Howard Co. Soil Conservation District
[Signature] 7/10/85
Signature Date
Reviewed for Howard Conservation District and meets technical requirements.
[Signature] 7/10/85
Signature Date



- NOTES: (For Private Sewer)
- All manholes shall be Ho. Co. Det. G.5.11
 - All sewer mains shall be C.S.P.X., RCSP VCPX, ACP Class 2400 or PVC unless otherwise noted.



PRIVATE SEWER PROFILE
SCALE: Hor. 1"=50'
Vert. 1"=5'



PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS

1023 North Calvert Street
Baltimore, Maryland 21202 301/837-0194

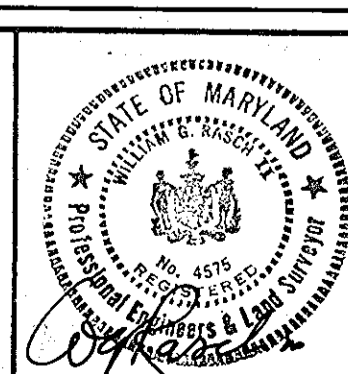
APPROVED: For Public Water, Public Sewerage, Storm Drainage and Roads
Howard Co., Dept. of Public Works
[Signature] 7-11-85
Director Date
[Signature] 7-11-85
Chief, Bureau of Engineering Date

APPROVED: For Public Water and Public Sewerage Systems.
Howard County Health Department
[Signature] 7/11/85
County Health Officer Date

APPROVED:
Howard Co. Office of Planning & Zoning
[Signature] 7-19-85
Chief, Division of Land Development Date
and Zoning Administration
[Signature] 7-22-85
Planning Director Date

DEVELOPER'S CERTIFICATION
I certify that all development and construction will be done according to this plan and any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources training program for the control of any sediment erosion before beginning the project.
[Signature] 7/10/85
DATE

ENGINEER'S CERTIFICATION
I certify that this plan of erosion and sediment control represents a practical and verifiable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
[Signature] 5/7/85
WILLIAM G. JESCHKE DATE

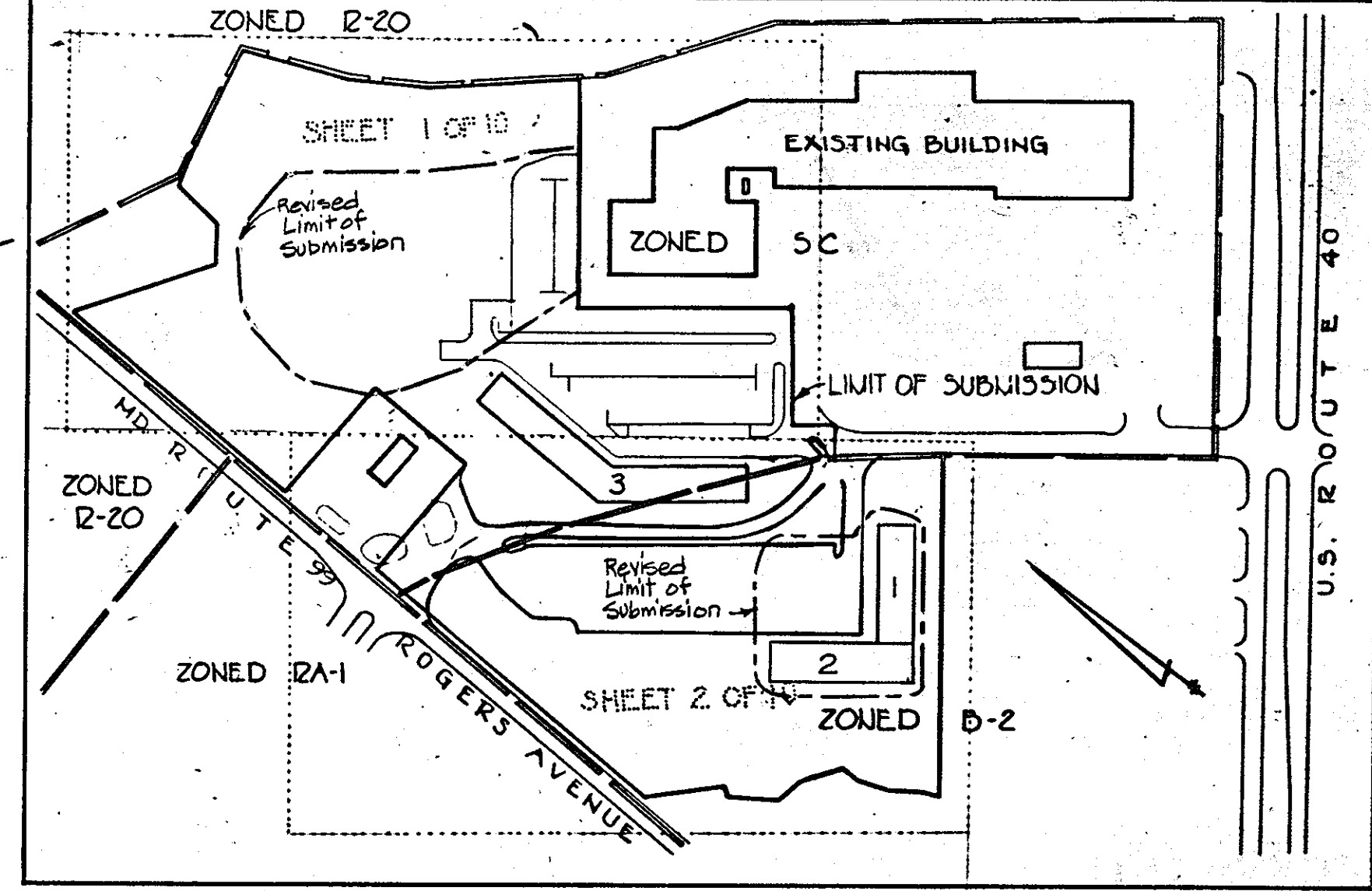


7/10/85 Revised 9-21-84, 5-7-85
NORMANDY SHOPPING CENTER (PHASE II)
PAVING PROFILES AND DETAILS AND SANITARY SEWER PROFILE
2nd Election District Howard County, Md.
Tax Map Nos. 17 & 18 Parcel Nos. 75 & 155
Scale: AS SHOWN Date: 7-27-80
SHEET 6 OF 11
General Revisions 1/3/81
Revised Paving Sect 3/3/81 11/27/81
Designed: DE
Drawn by: SJB
Checked by: B.E.

NORMANDY HEIGHTS
SECTION 4
PLAT BOOK 5/PAGE 46
APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 6-19-85

NORMANDY HEIGHTS
SECTION 2
PLAT BOOK 4/PAGE 01
ZONED R-20

NOTE: All inlets shall be blocked from sediment. See inlet protection detail.

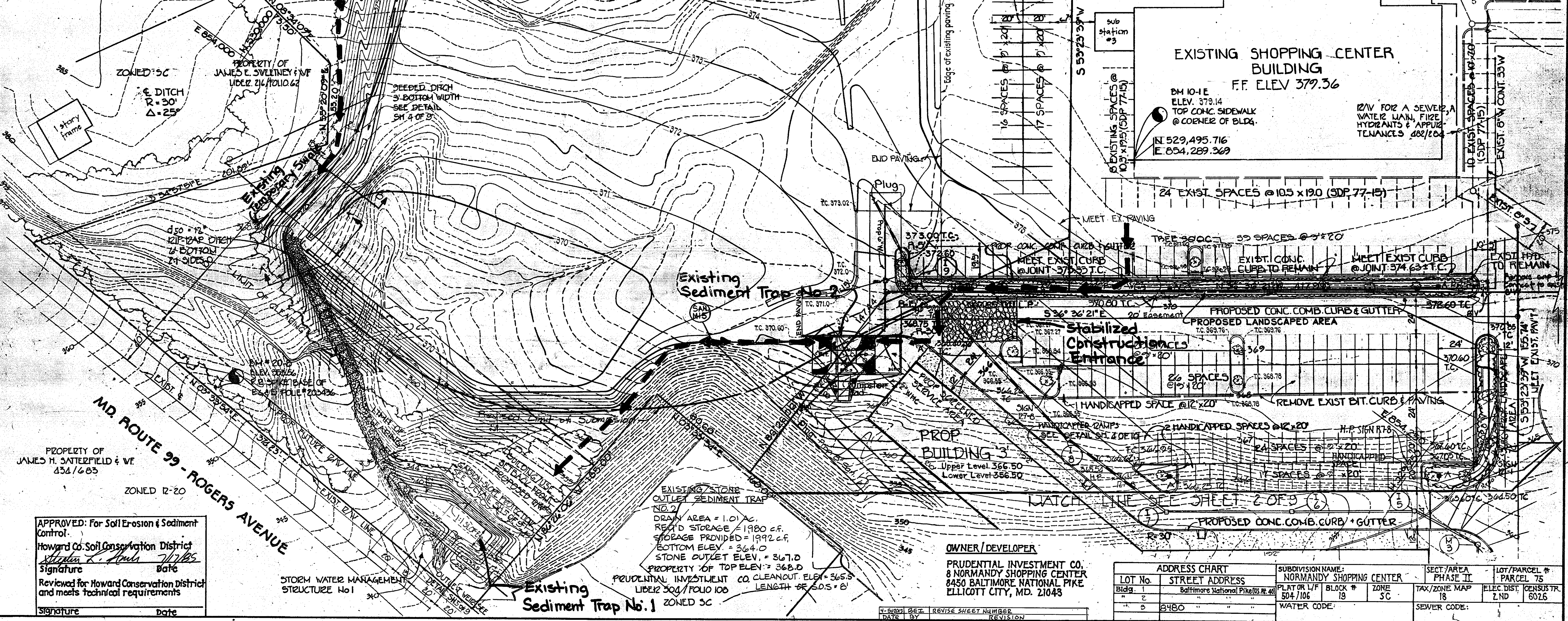


EXISTING SEDIMENT TRAP No. 1
D.A. = 2.10 AC.
Req'd Storage = 3780 CF
Available Storage = 4214 CF
Bottom Elev. 334'
Stone Outlet Structure Length = 16'

Note: 1. Block Lo-Release Orifice in outlet structure w/ plywood and #2 stone for use as sed. trap.
2. See pipe slope drawing sheet to be installed on Sed. Trap No. 1.

ZONED R-20
E DITCH
R = 30'
Δ = 75'

NORMANDY HEIGHTS SECTION 1
PLAT BOOK 4/PAGE 75



EXISTING SHOPPING CENTER BUILDING
F.F. ELEV 379.36

BM 10-E
ELEV. 379.14
TOP CONC. SIDEWALK @ CORNER OF BLDG.
N 529,495.716
E 854,289.369

1/4" FOR A SEWER, WATER MAIN, FIRE HYDRANTS & APPURTENANCES @ 88/8.04

24 EXIST. SPACES @ 10.5 x 19.0 (SDP 77-15)

Stabilized Construction Entrance

PROPOSED CONC. COMB. CURB & GUTTER

PROP BUILDING 3
Upper Level 366.50
Lower Level 366.50

EXISTING STONE OUTLET SEDIMENT TRAP NO. 2
DRAIN AREA = 1.01 AC.
REQ'D STORAGE = 1980 CF.
STORAGE PROVIDED = 1992 CF.
BOTTOM ELEV. = 364.0
STONE OUTLET ELEV. = 367.0
PROPERTY OF TOPELEV. = 368.0

PRUDENTIAL INVESTMENT CO. CLEANOUT ELEV. = 365.5
LIBER 304 / FOLIO 108 LENGTH OF S.O.S. = 8'

OWNER / DEVELOPER

PRUDENTIAL INVESTMENT CO.
8 NORMANDY SHOPPING CENTER
8450 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MD. 21043

ADDRESS CHART		SUBDIVISION NAME		SECT./AREA	LOT/PARCEL #
LOT NO.	STREET ADDRESS	NORMANDY SHOPPING CENTER		PHASE II	PARCEL 75
Bldg. 1	Baltimore National Pike (Rt. 40)	PLAT OR L/F	BLOCK #	TAX/ZONE MAP	ELEC. DIST. (CENSUS TR.)
2		504/106	19	18	2ND 6026
3	3480	WATER CODE:		SEWER CODE:	

APPROVED: For Soil Erosion & Sediment Control.
Howard Co. Soil Conservation District
Stephen L. Lewis 7/1/85
Signature Date
Reviewed for Howard Conservation District and meets technical requirements
Signature Date

STORM WATER MANAGEMENT STRUCTURE No. 1

Existing Sediment Trap No. 1

PURDUM & JESCHKE
CONSULTING ENGINEERS
LAND SURVEYORS
1023 North Calvert Street
Baltimore, Maryland 21202 301/637-0198

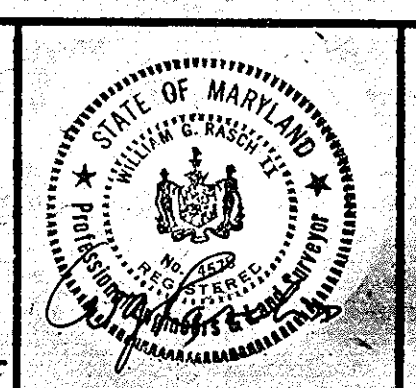
APPROVED: For Public Water, Public Sewerage, Storm Drainage and Roads, Howard County, Dept. of Public Works
John F. Murphy 7-11-85
Director Date
Robert E. Ryan 7/1/85
Chief, Bureau of Engineering Date

APPROVED: For Public Water and Public Sewerage Systems, Howard County Health Department
Joyce M. Wood 7/1/85
County Health Officer Date

APPROVED: Howard Co. Office of Planning & Zoning
John W. Hershman 7-19-85
Chief, Division of Land Development Date
James L. Hambl 7-22-85
Planning Director Date

DEVELOPER'S CERTIFICATION
I certify that all development and construction will be done according to this plan and any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources Training program for the control of any sediment erosion before beginning.

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



NORMANDY SHOPPING CENTER (PHASE II)
REVISIONS TO EROSION & SEDIMENT CONTROL PLAN SDB84-297
2nd Election District
Tax Map No. 17:1B
Scale: 1"=30'
Howard County, Md.
Parcel No. 15:155
Date: 9-29-80

SHEET 7 OF 11
General Revisions 11/5/81
Convert to Md. State Coord. Grid - revise per H.C. Com. 2/3/82
Designed by: DE
Drawn by: J.R.D.
Checked by: D.E.

NOTES

- DRAWING AND PAGE NUMBERS SHOWN HEREON ARE REFERRED TO THE HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- THE LOCATION OF EXISTING UTILITIES SHOWN HEREON ARE BASED ON THE LATEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL HOWEVER, DETERMINE THE EXACT LOCATION BEFORE MAKING CONNECTIONS.
- THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT LEAST THREE DAYS PRIOR TO BEGINNING ANY WORK SHOWN HEREON.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION UNLESS OTHERWISE SPECIFIED.
- HANDICAPPED FACILITIES TO BE PROVIDED
- ALL ROADS & DRIVEWAYS WITHIN THE LIMITS OF SUBMISSION ARE PRIVATE ROADSWAYS.
- ALL NEW WATER MAIN & EXISTING WATER HOUSE CONNECTIONS ARE TO BE RIPPAP WITH 12" SAND BEDDED UNDERLAY.
- HANDICAPPED PARKING SPACE SIGN, USE R7-3, PAGE 2B-24 OF M.D. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE SIGN TO BE 6' FROM GROUND.

DRIVE 'A' CURVE DATA
 R = 65.00'
 Δ = 118°11'40"
 L = 134.65'
 T = 109.68'

MATCH LINE SEE SHEET 1 OF 9

PHASE 2

BUILDING 3
 UPPER LEVEL ELEV. 366.50
 LOWER LEVEL ELEV. 356.50
 OFFICE BUILDING

BUILDING 1
 UPPER LEVEL ELEV. 362.2
 LOWER LEVEL ELEV. 352.2
 10,500 S.F.

BUILDING 2
 UPPER LEVEL ELEV. 352.2
 LOWER LEVEL ELEV. 342.2
 9,750 S.F.

SITE ANALYSIS

1. TOTAL AREA OF SITE	13.369 AC±
2. PRESENT ZONING: SC	5.010 AC±
3. TOTAL AREA DISTURBED	9.716 AC±
4. TOTAL AREA PAVED	24.356 AC±
5. LOT COVERAGE - STRUCTURES	9.5 %
6. OPEN SPACE	45.8 %
7. PARKING ANALYSIS:	
NO. OF EXIST. PARKING SPACES (SDP 77-5 & SDP 79-140)	606
NO. OF SPACES TO REMAIN	456
NEW SPACES PROVIDED (INCLUDING H. HANDICAPPED SPACES)	442
TOTAL PARKING SPACES PROVIDED	978
PARKING REQUIREMENTS:	
TOTAL EXISTING BUSINESS AREA (SDP 79-140)	77,355 S.F.
NEW CONSTRUCTION: BUILDING 'A' = 9,750 S.F.; BUILDING 'B' = 10,500 S.F. (NET BUSINESS AREA)	19,250 S.F.
BUILDING 'C': UPPER FLOOR RETAIL - 18,570 S.F. LOWER FLOOR OFFICES - 19,550 S.F.	38,120 S.F.
BUILDING 'D' = 30,400 S.F.	30,400 S.F.
TOTAL BUSINESS AREA	124,625 S.F.
AREA OF IMPROVEMENTS (1/4" x 1/4" x 1/2" OF 200 S.F.)	600 S.F.
TOTAL OFFICE AREA	19,550 S.F.
AREA OF IMPROVEMENTS (1/4" x 1/4" x 1/2" OF 10 PERSONS)	60 S.F.
TOTAL SPACES REQUIRED	720
PERCENT OF LANDSCAPED ISLANDS WITHIN PROPOSED AREAS	1.536 %
LANDSCAPED ISLANDS - PERCENT OF TOTAL PAVED AREA	7.4 %

PARKING AREA LIGHTING FIXTURES

- TYPE 'A': 4-250 W LUCALUX FIXTURES ON 20' SPUN ALUMINUM POLE.
 - TYPE 'B': 2-250 W LUCALUX FIXTURES ON 20' SPUN ALUMINUM POLES.
- OTHER EXTERIOR LIGHTING WILL CONSIST OF BUILDING MOUNTED FIXTURES FOR STORE FRONT ILLUMINATION AND BUILDING MOUNTED SECURITY LIGHTING FOR PAVED AREAS NORTH OF BUILDING 'A'. EXTERIOR LIGHTING SHALL BE REFLECTED/DIRECTED AWAY FROM ADJACENT RESIDENTIALLY ZONED PROPERTIES AND PUBLIC RIGHTS-OF-WAY.

RIPRAP OUTLET SEDIMENT TRAP NO. 3

D.A. = 6.00 AC
 Vol. req'd = 6.00 AC x 67 CY/AC.
 Vol. provided = 402.00 CY
 Bottom Elev. = 317.15
 Stone Crest Elev. = 322.
 Cleanout Elev. = 313.15
 Top of Dike Elev. = 325.25
 Length of Stone = 14'

APPROVED
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE 6-19-85

APPROVED: For Soil Erosion & Sediment Control.
 Howard Co. Soil Conservation District
 Signature: [Signature] Date: 7/17/85
 Reviewed for Howard Conservation District and meets technical requirements.
 Signature: [Signature] Date: 7/17/85

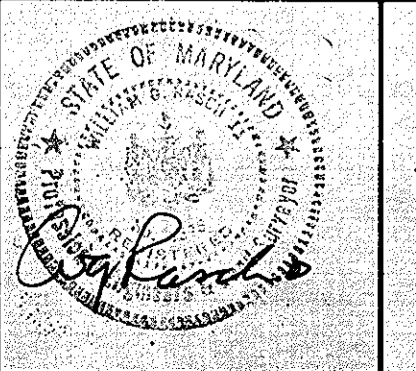
APPROVED: For Public Water, Public Sewerage, Storm Drainage and Roads, Howard County, Dept. of Public Works
 Signature: [Signature] Date: 7-16-85
 Chief, Bureau of Engineering

APPROVED: For Public Water and Public Sewerage Systems.
 Howard County Health Department
 Signature: [Signature] Date: 7/16/85
 County Health Officer

APPROVED: Howard Co. Office of Planning & Zoning
 Signature: [Signature] Date: 7-19-85
 Chief, Division of Land Development and Zoning Administration
 Signature: [Signature] Date: 7-22-85
 Planning Director

DEVELOPER'S CERTIFICATION
 I certify that all development and construction will be done according to this plan and any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources training program for the control of any sediment erosion before beginning the project.
 Signature: [Signature] Date: 5/17/85

ENGINEER'S CERTIFICATION
 I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature: [Signature] Date: 5/17/85
 WILLIAM BRASCH II



NORMANDY SHOPPING CENTER (PHASE II)
 REVISIONS TO EROSION & SEDIMENT CONTROL PLAN SDP84-297
 2nd Election District
 Tax. Map Nos. 17 & 18
 Scale: 1" = 30'
 Howard County, Md.
 Parcel Nos. 75 & 155
 Date: 7-29-80
 Designed by: B.E.
 Drawn by: SJB
 Checked by: B.E.

SHEET 8 OF 11
 General Revisions 11/5/81
 Convert to Md. State Coord. Grid - revise per Ho.Co. Com. 3/2/81
 Drawn by: SJB
 Checked by: B.E.

DATE	BY	REVISION	7/10/85	Revised 9-21-84	5-7-85
------	----	----------	---------	-----------------	--------

PURDUM & JESCHKE CONSULTING ENGINEERS LAND SURVEYORS
 1023 North Calvert Street
 Baltimore, Maryland 21202 301/837-0194

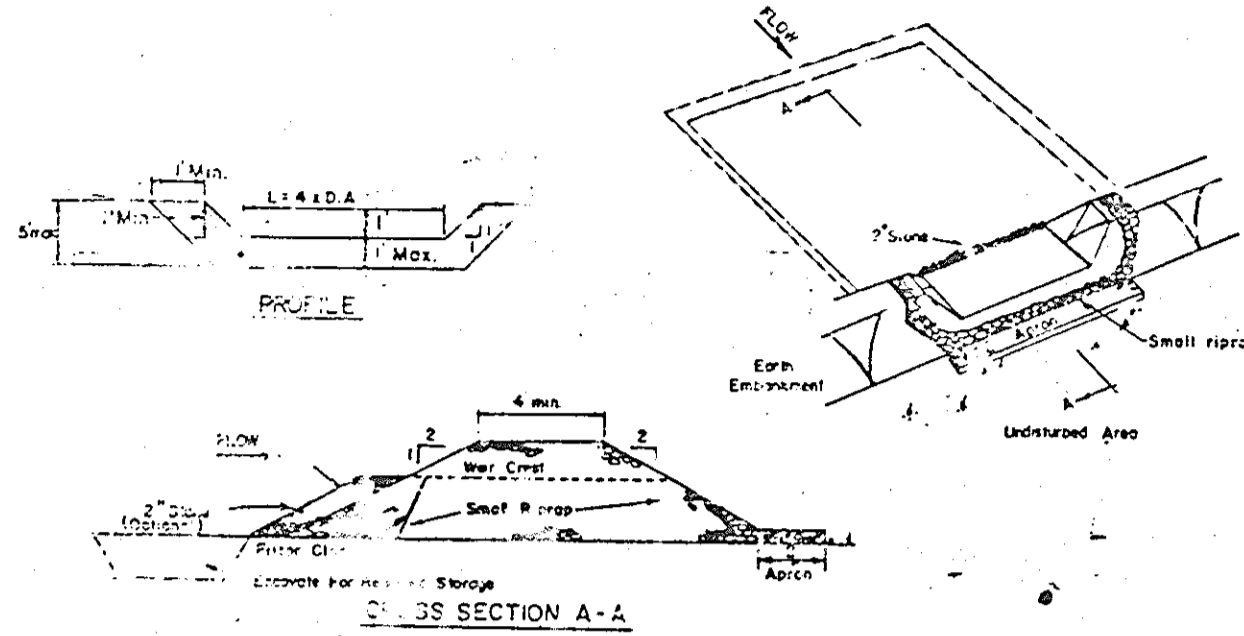
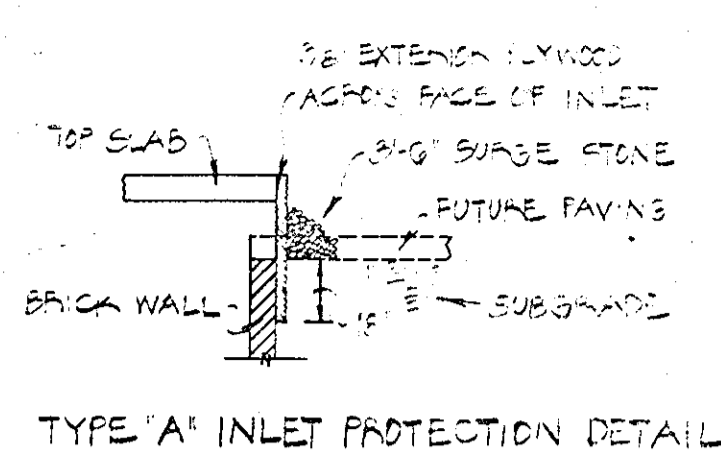
SEDIMENT CONTROL NOTES

- 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 (992-2437).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within:
 - 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1,
 - 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 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.
- Site Analysis:

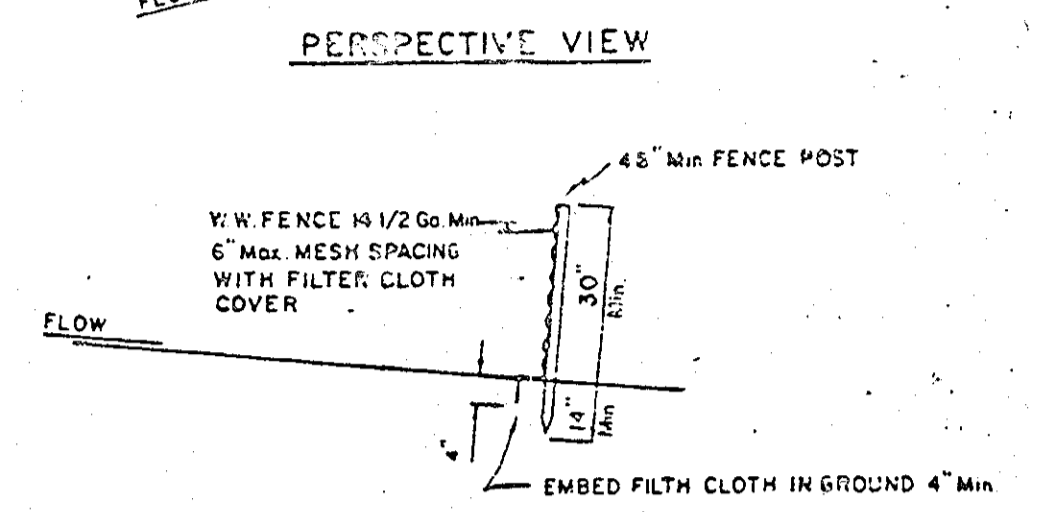
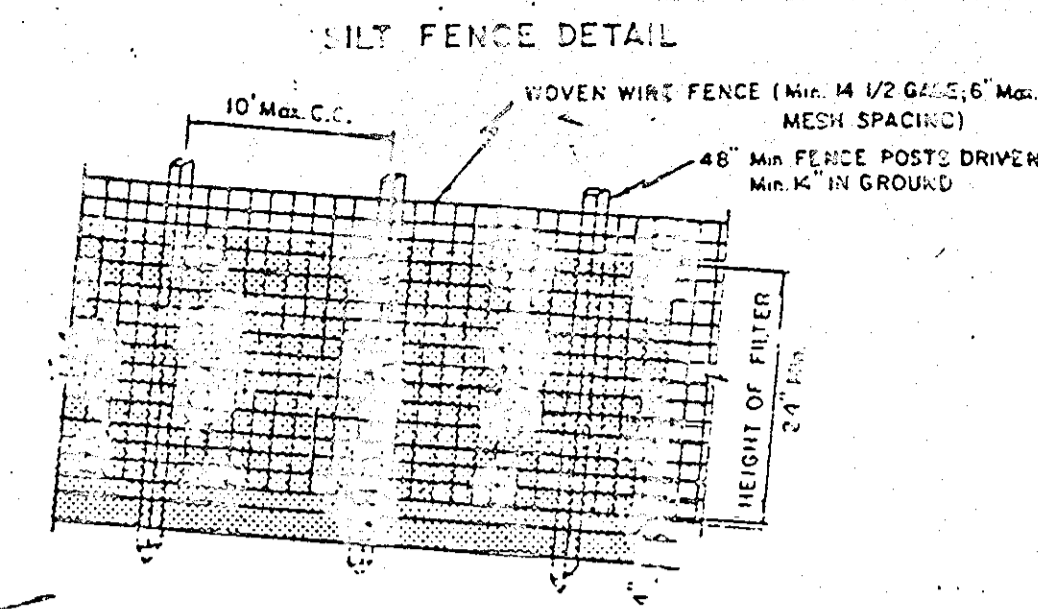
Total Area of Site	13,869 Ac.
Area Disturbed	2,718 Ac.
Area to be roofed or paved	4,696 Ac.
Area to be vegetatively stabilized	5,022 Ac.
Total Cut	27,600 C.Y.
Total Fill	31,600 C.Y.

Offsite waste/borrow area location 1/2 mile E of St. Johns Lane, just S of Rt. 144
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County DPW sediment control inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

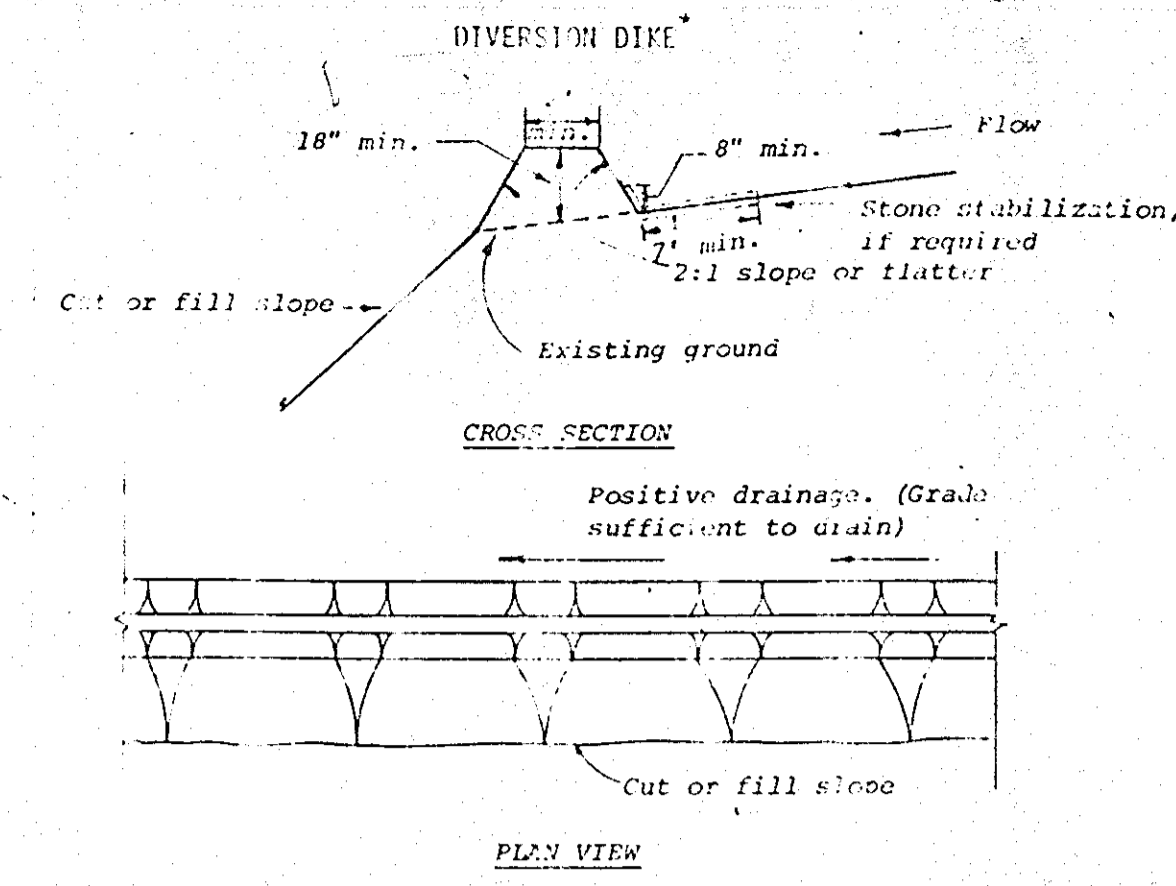
APPROVED: For Soil Erosion & Sediment Control
 Howard Co. Soil Conservation District
 Signature: *[Signature]* Date: 7/17/85
 Reviewed for Howard Conservation District and meets technical requirements
 Signature: *[Signature]* Date: 7/17/85



- OPTION: A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.
- CONSTRUCTION SPECIFICATION FOR ST-VI
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 - All cut and fill slopes shall be 2:1 or flatter.
 - The stone used in the outlet shall be small riprap 4"-8" along with a 1" thickness of 2" aggregate placed on the up grade side on the wall riprap on embedded filter cloth in the riprap.
 - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
 - The structure shall be inspected after each rain and repairs made as needed.
 - Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
 - The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.



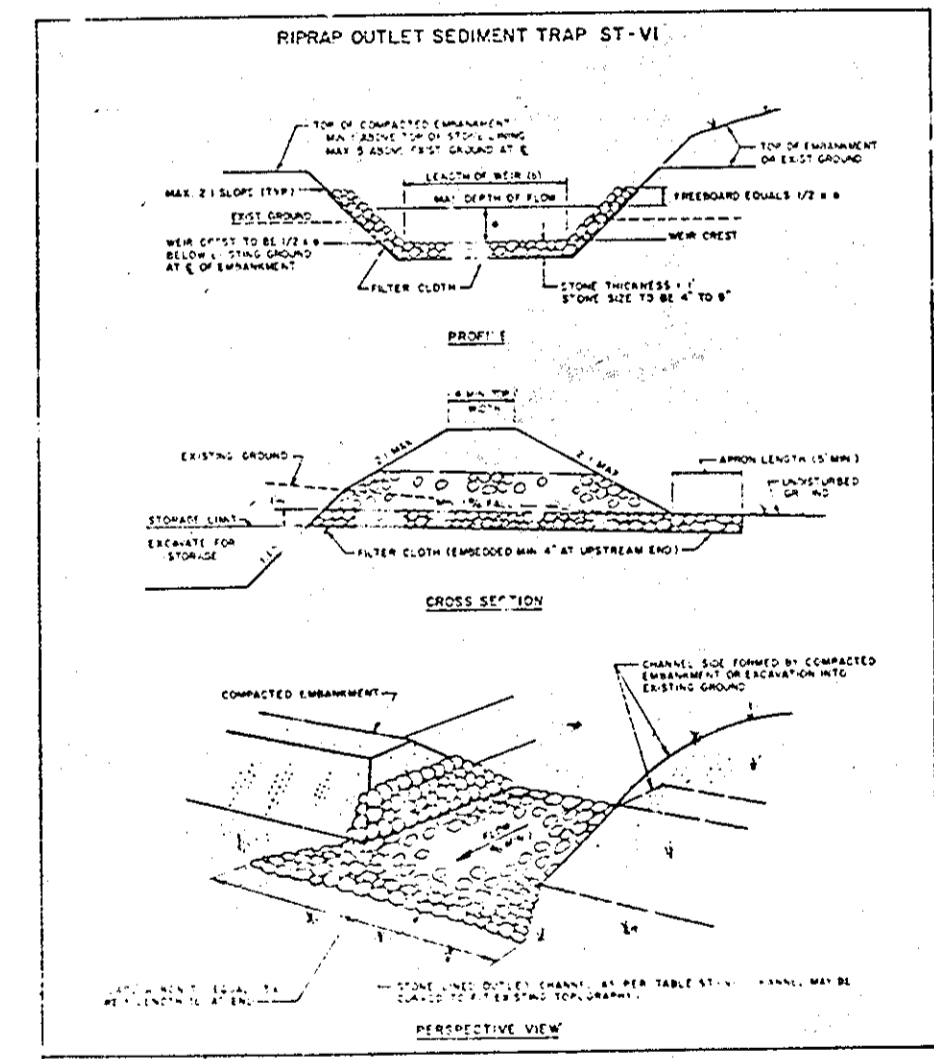
- CONSTRUCTION NOTES
- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
 - FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH WIRE TIES SPACED EVERY 24" AT TOP AND MID SECTION
 - SEE STEP BY STEP PROCEDURE ON BACK OF THIS SHEET.
- POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
 FENCE: WOVEN WIRE, 1/4 1/2 GA. Max. 6" MESH OPENING
 FILTER CLOTH: FILTER # 100, MIRIFLOX, LAUREL EROSION CONTROL CLOTH, BIDIM, POLYFILTER X OR EQUAL
- STANDARD SYMBOL: DRAINAGE AREA LESS THAN 1/2 ACRE



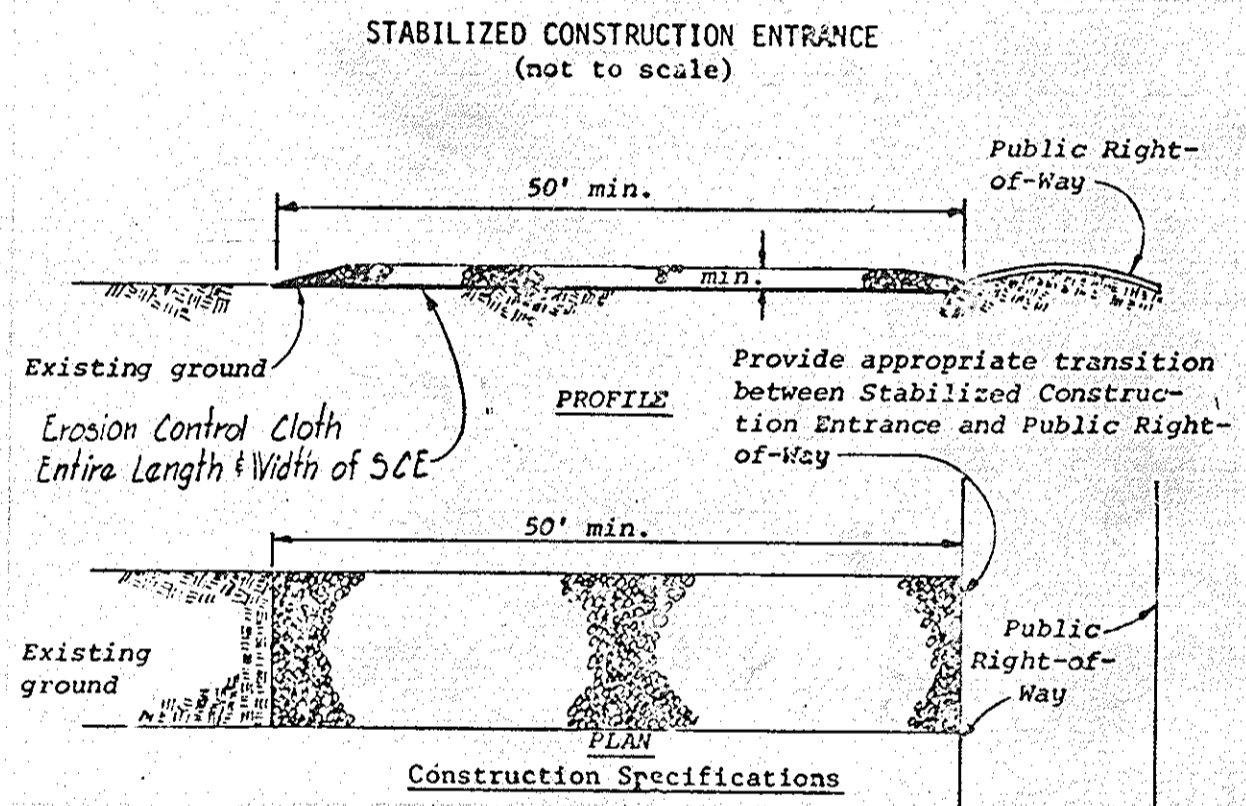
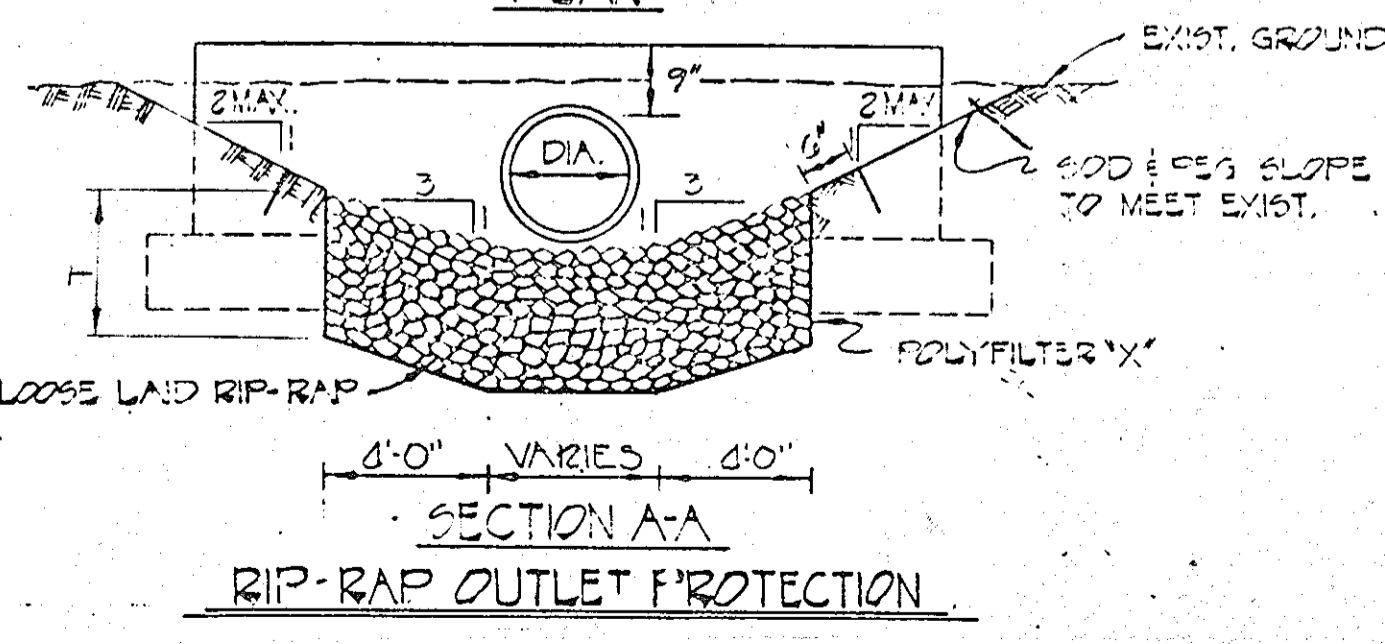
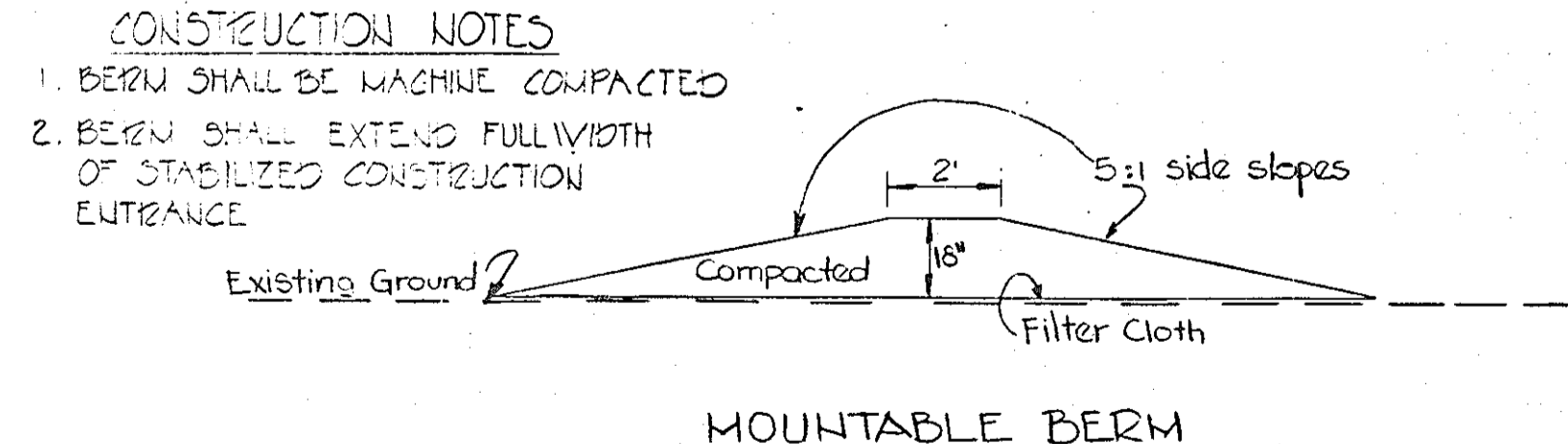
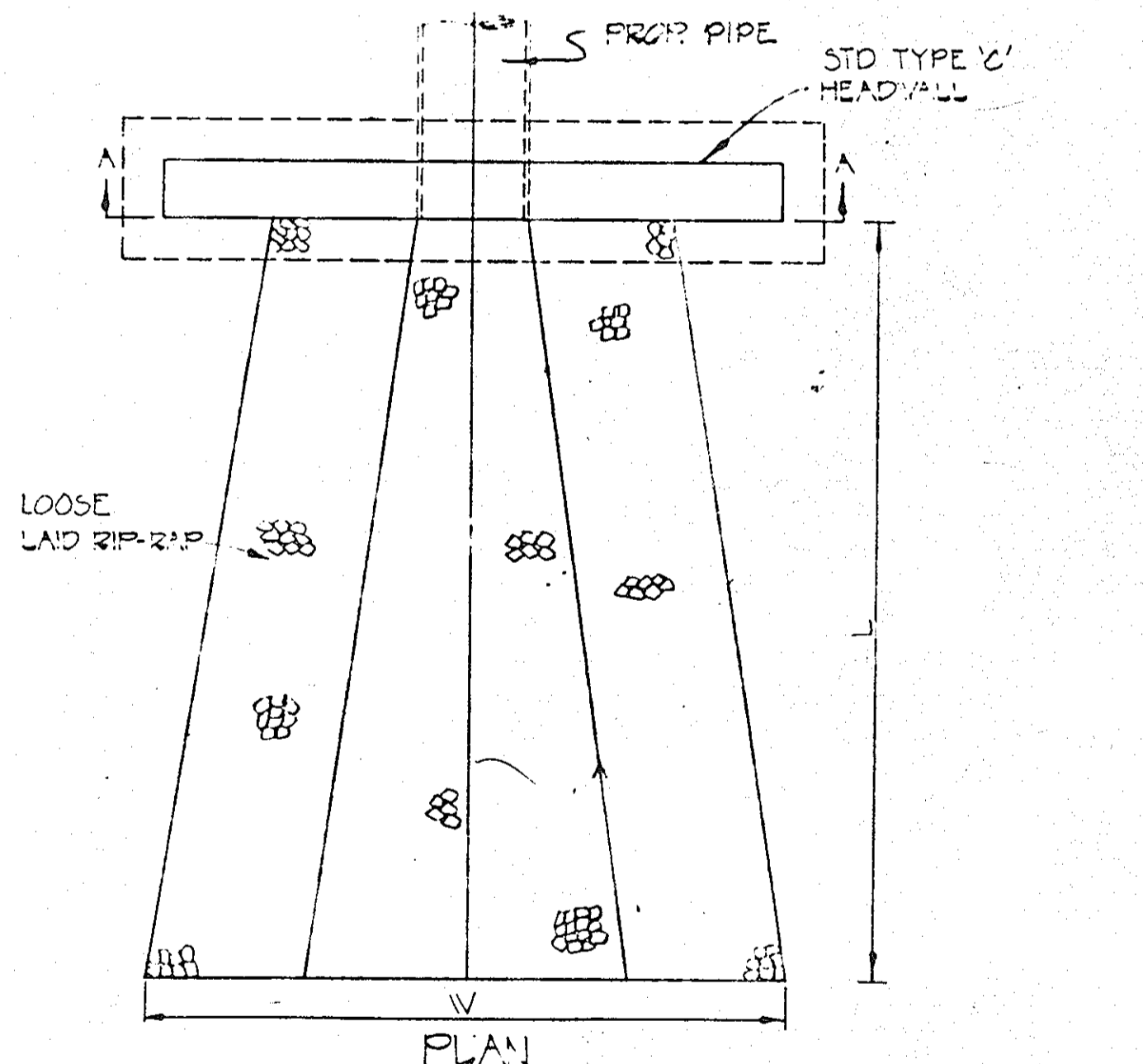
- CONSTRUCTION SPECIFICATIONS
- All dikes shall be machine compacted.
 - All diversion dikes shall have positive drainage to an outlet.
 - Disturbed runoff from a protected or stabilized area shall outlet directly to an undisturbed stabilized area or into a level spreader or grade stabilization structure.
 - Disturbed runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap or a sediment basin or to an area protected by any of these practices.
 - Stabilization, as specified by the plans, shall be: (1) in accordance with standard and Specifications for Grassed Waterways, and the area to be stabilized shall be the channel (flow area); or (2) the flow area shall be lined with stone that meets MSHA size No. 2 or AASHTO #43 size No. 2 or 24 which is placed in a 3 inch thick layer and pressed into the soil. The area covered by the stone shall be as shown on the drawing above.
 - Periodic inspection and required maintenance shall be provided.
- Standard Symbol: DRAINAGE AREA LESS THAN 5 ACRES

SEQUENCE OF CONSTRUCTION

- Obtain grading permit for revised plan.
- Seed and mulch graded areas for Phase 1 (Future Development).
- Direct existing stormwater flow to existing rip-rap ditch.
- Dewater existing sediment trap #1 and retrofit new dewatering device (12" perforated CMP wrapped with filter cloth, wire mesh and stone) to better dewater trap.
- Continue building and utility construction for Phase 2 while maintaining existing sediment control devices.
- Provide inlet protection to all inlets while directing water safely to traps.
- Pave parking areas, stabilize all disturbed areas.
- Remove sediment control devices once their drainage areas are stabilized as directed by sediment control inspector.



- CONSTRUCTION SPECIFICATIONS FOR ST-VI
- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at entrance of embankment.
 - All fill slopes shall be 2:1 or flatter; cut slopes 3:1 or flatter.
 - Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
 - Storage area provided shall be figured by computing the vol. available behind the outlet channel up to an elevation of 1/2 foot below the level water crest.
 - Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
 - Stone used in the outlet channel shall be four (4) to eight (8) inches (rip-rap). To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.
 - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
 - The structure shall be inspected after each rain and repaired as needed.
 - Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
 - The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
 - Drainage area for this practice is limited to 15 acres or less.



- CONSTRUCTION SPECIFICATIONS
- Stone size - Use MSHA size No. 2 (2-1/2" to 1") or AASHTO designation M43, size No. 2 (2-1/2" to 1-1/2"). Use crushed stone.
 - Length - As effective, but not less than 50 feet.
 - Thickness - Not less than eight (8) inches.
 - Width - Not less than full width of all points of ingress or egress.
 - Washing - When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing 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. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanup of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Standard Symbol: SCE

RIP-RAP SCHEDULE

STRUCT	L	W	T	RIP-RAP
E-1	30'	23"	30"	SHA CLASS 1 1"200 MAX
E-2	16'	20"	16"	SHA CLASS 1
E-3	20'	15"	12"	SHA CLASS 1

APPROVED
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE: 6-19-85
[Signature]

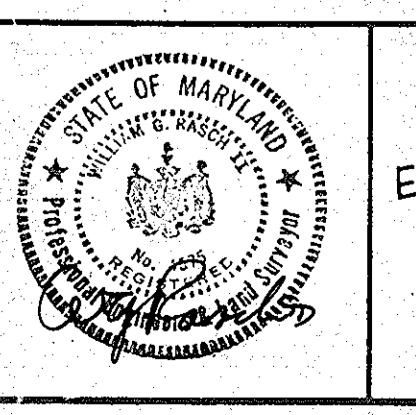
APPROVED: For Public Water, Public Sewerage, Storm Drainage and Roads
 Howard Co. Dept. of Public Works
 Signature: *[Signature]* Date: 7-11-85
 Chief, Bureau of Engineering

APPROVED: For Public Water and Public Sewerage Systems
 Howard County Health Department
 Signature: *[Signature]* Date: 7/14/85
 County Health Officer

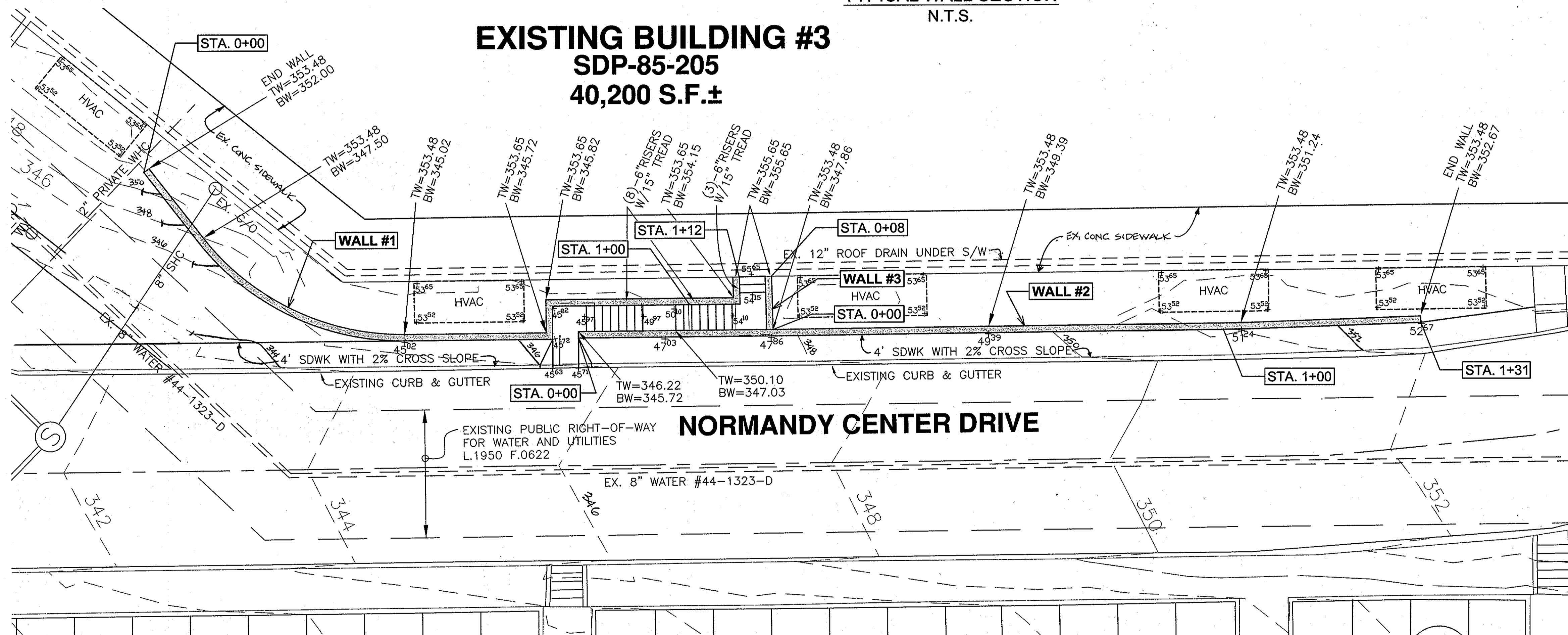
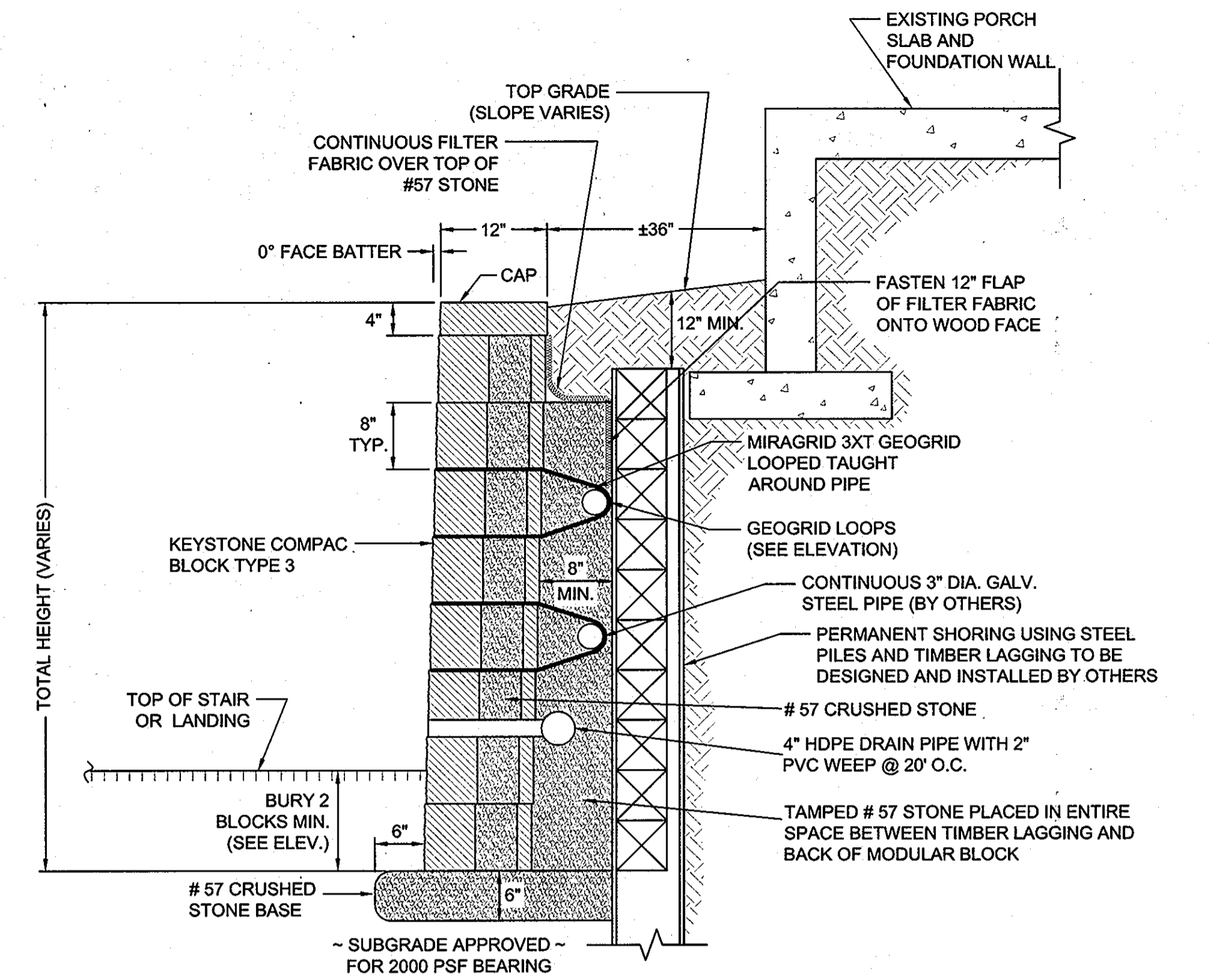
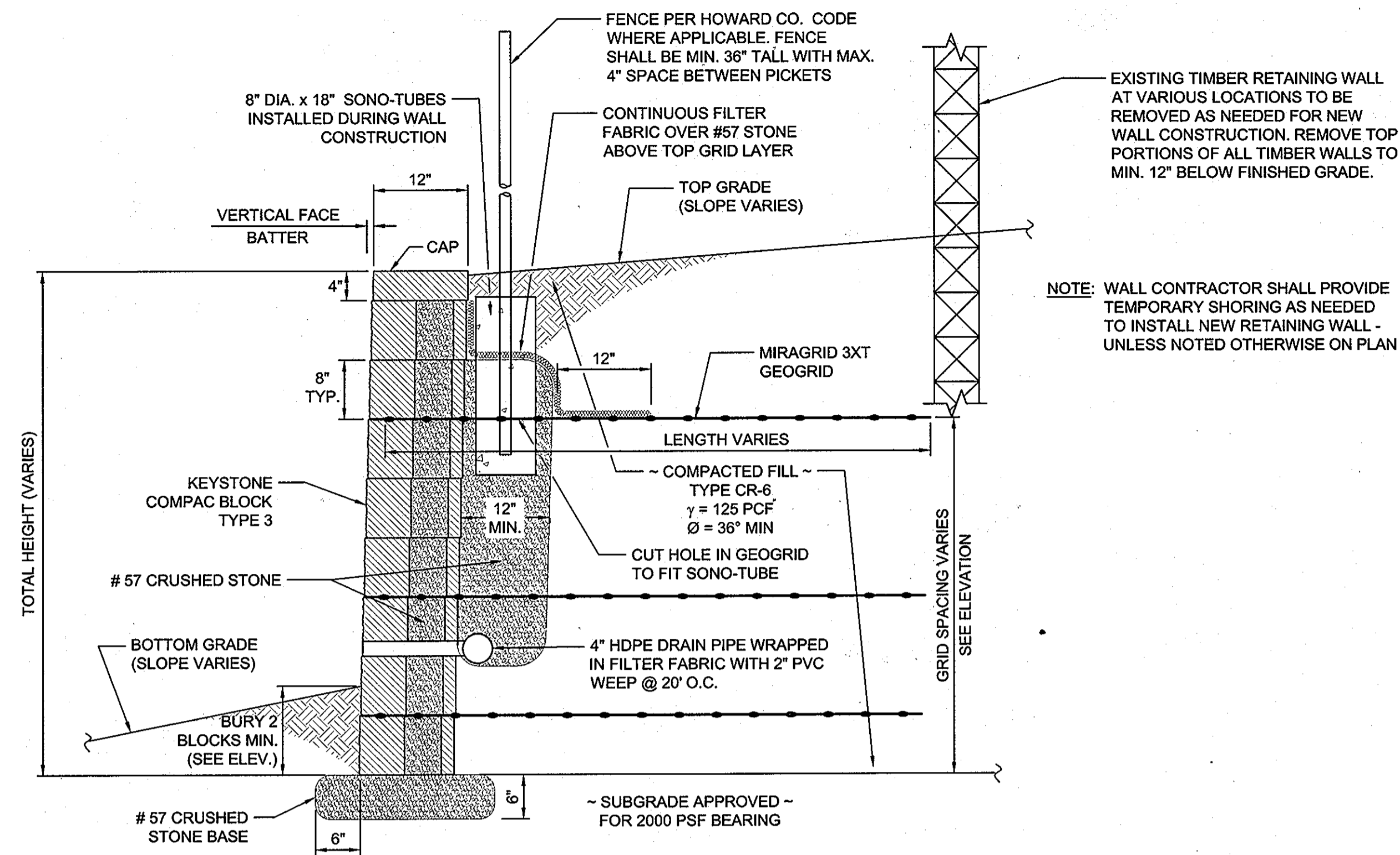
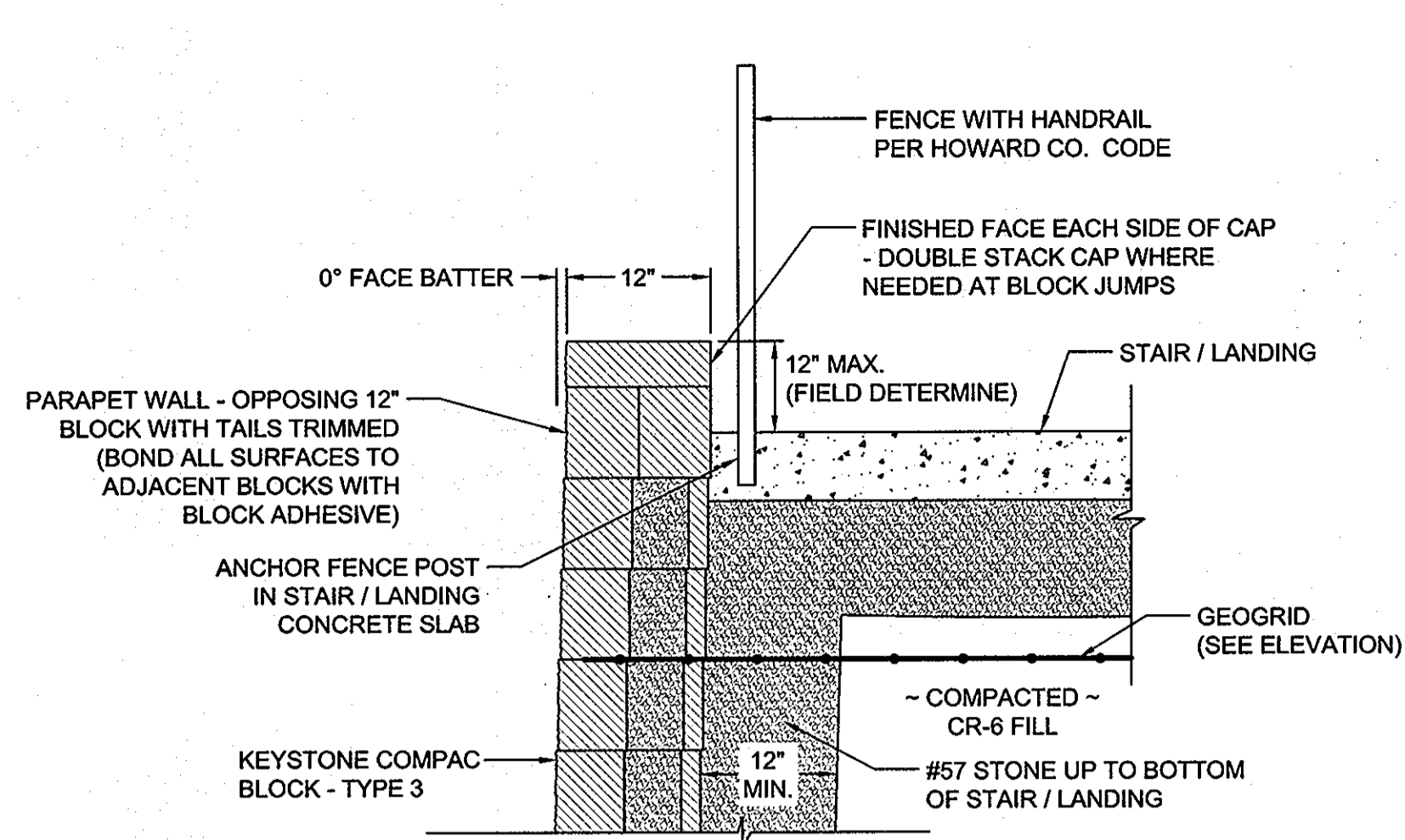
APPROVED:
 Howard Co. Office of Planning & Zoning
 Signature: *[Signature]* Date: 7/14/85
 Planning Director

DEVELOPER'S CERTIFICATION
 I certify that all development and construction will be done according to this plan and any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources training program for the control of any sediment erosion before beginning the project.
 Signature: *[Signature]* Date: 6/17/85

ENGINEER'S CERTIFICATION
 I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of Howard Soil Conservation District.
 Signature: *[Signature]* Date: 6/17/85
 WILLIAM F. RASCH II



7/10/85 Revised 9-21-84, 5-7-85
 NORMANDY SHOPPING CENTER (PHASE II)
 EROSION & SEDIMENT CONTROL DETAILS
 2nd Election District
 Tax. Map Nos. 17 & 18
 Scale: AS SHOWN
 Howard County, Md.
 Parcel Nos. 75 & 155
 Date: 7-29-80
 SHEET 9 OF 11
 General Revision: 1/5/84
 Revised per Ho Co. Comts. 3/3/85
 11/20/81
 Designed: B.E.
 Drawn by: S.R.D.
 Checked by: B.E.



EXISTING BUILDING #3
SDP-85-205
40,200 S.F.±

- GENERAL NOTES:**
- No trees shall be planted within 10 feet of the top of the retaining wall.
 - Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
 - The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
 - The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.
 - Walls shall not be constructed on uncertified fill materials.
 - Walls shall not be constructed within a Howard Co. right-of-way or easement.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 5/21/13 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 5/16/13 DATE

DIRECTOR *[Signature]* 5/16/13 DATE

RETAINING WALL PLAN AND DETAILS
NORMANDY SHOPPING CENTER
HOWARD COUNTY, MARYLAND

REVISION NO.	DESCRIPTION	DATE	JOB NUMBER:	DESIGNED BY:
			13084-A	AM
			SCALE:	DRAWN BY:
			AS SHOWN	AM
			DATE:	APPROVED BY:
			02/28/13	RWS

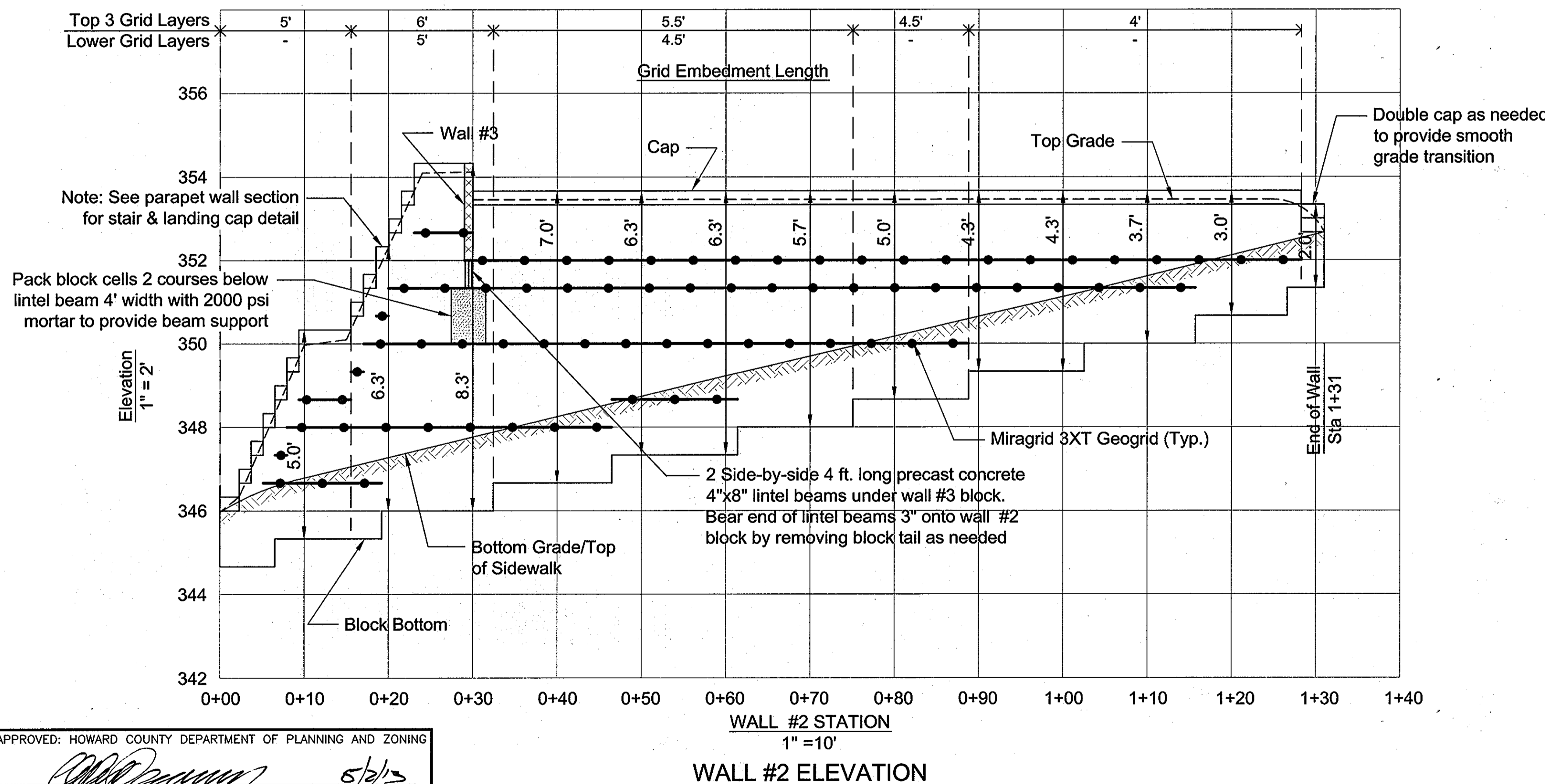
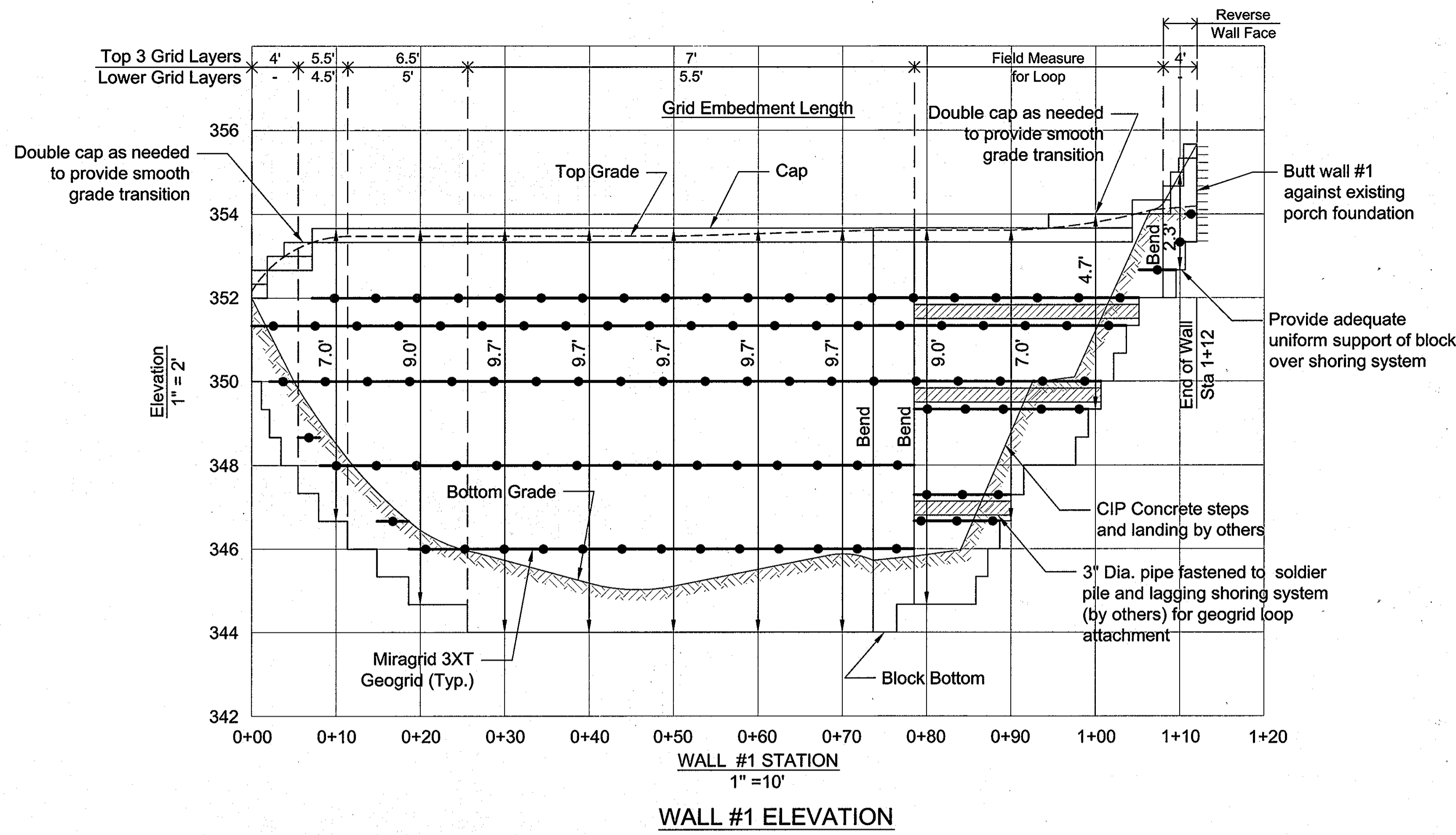
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14434, EXPIRATION DATE: 09/31/13.



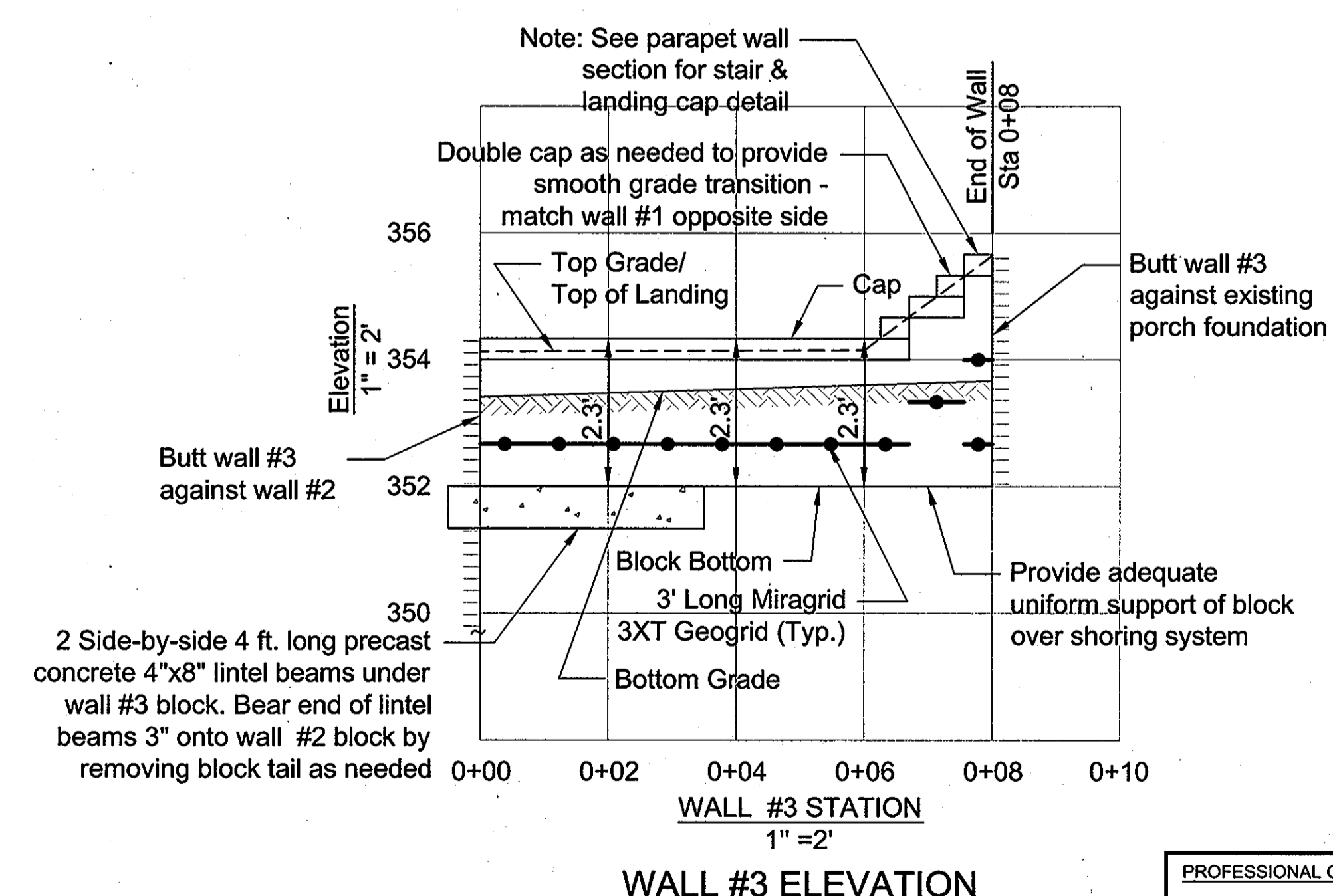
HILLIS-CARNES
ENGINEERING ASSOCIATES

10975 Guilford Road, Suite A Annapolis Junction, MD
(410) 880-4788 Fax: (410) 880-4098



SPECIFICATIONS MODULAR CONCRETE BLOCK RETAINING WALL

- PART 1: GENERAL**
- 1.01 Description**
- A. Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
 - B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
 - C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.
- 1.02 Delivery, Storage and Handling**
- A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
 - B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.
- PART 2: PRODUCTS**
- 2.01 Modular Concrete Retaining Wall Units**
- A. Modular concrete units shall conform to the following architectural requirements:
 - face color - color may be specified by the Owner.
 - face finish - sculptured rock face in angular tri-planer or flat configuration. Other face finishes will not be allowed without written approval of Owner.
 - bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
 - exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.
 - B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.
 - compressive strength = 3000 psi minimum; absorption = 8% maximum (6% in northern states) for standard weight aggregates;
 - dimensional tolerances = ±1/8" from nominal unit dimensions not including rough split face, ±1/16"
 - unit height - top and bottom planes; unit size - 8" (H) x 18" (W) x 12" (D) minimum;
 - unit weight - 75 lbs/unit minimum for standard weight aggregates;
 - inter-unit shear strength - 1000 pif minimum at 2 psi normal pressure; at 2 psi normal force.
 - geogrid/unit peak connection strength - 1000 pif minimum
 - C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
 - vertical setback = 1/8" ± per course (near vertical) or 1" ± per course per the design; alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
 - maximum horizontal gap between erected units shall be - 1/2 inch.
- 2.02 Shear Connectors (if applicable)**
- A. Shear connectors shall be 1/2 inch diameter theroset isophthalic polyester resin-primed fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F. B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.
- 2.03 Base Leveling Pad Material**
- A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.
- 2.04 Unit Drainage Fill**
- A. Unit drainage fill shall consist of #57 crushed stone
- 2.05 Geogrid Reinforced Backfill - CR-6**
- A. **2.06 Geogrid Soil Reinforcement**
 - A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.
- 2.07 Drainage Pipe**
- A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.
- PART 3 EXECUTION**
- 3.01 Excavation**
- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.
- 3.02 Base Leveling Pad**
- A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.
 - B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.
- 3.03 Modular Unit Installation**
- A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
 - B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
 - C. Install shear/connecting devices per manufacturer's recommendations.
 - D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
 - E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.
- 3.04 Structural Geogrid Installation**
- A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
 - B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
 - C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
 - D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.
- 3.05 Reinforced Backfill Placement**
- A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
 - B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
 - C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.
 - D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.
 - E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
 - F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
 - G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.
- 3.06 Cap Installation**
- A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.
- 3.07 Field Quality Control**
- A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.
 - B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/2/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 5/26/13
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 5/6/13
DIRECTOR

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14434, EXPIRATION DATE: 05/31/13.



HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, MD
(410) 880-4798 Fax: (410) 880-4098

RETAINING WALL ELEVATIONS AND SPECIFICATIONS
NORMANDY SHOPPING CENTER
HOWARD COUNTY, MARYLAND

REVISION NO.	DESCRIPTION	DATE	JOB NUMBER:	DESIGNED BY:	AM
			13084-A	DRAWN BY:	AM
			SCALE:	APPROVED BY:	RWS
			DATE:	02/28/13	

11 of 11
SHEET

SDP-85-205