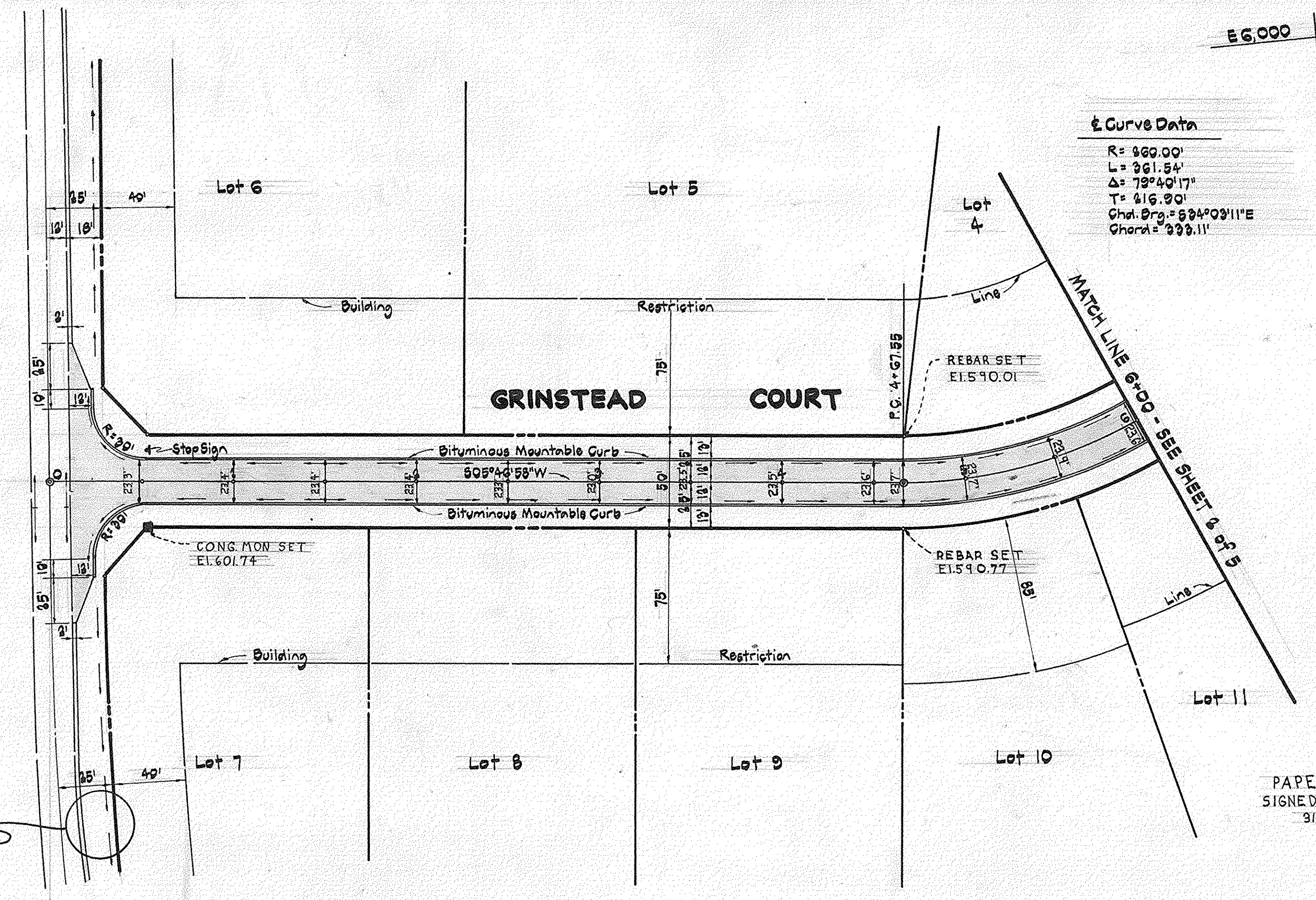


Note: OLD FREDERICK ROAD shall be improved along entire property frontage of Section Two See Typical Widening Section Sheet 4 of 5

Construct Standard S.H.A. Intersection See Howard County Road Construction Code and Standard Specifications, Page 170.

See Typical Widening Section Sheet 4 of 5

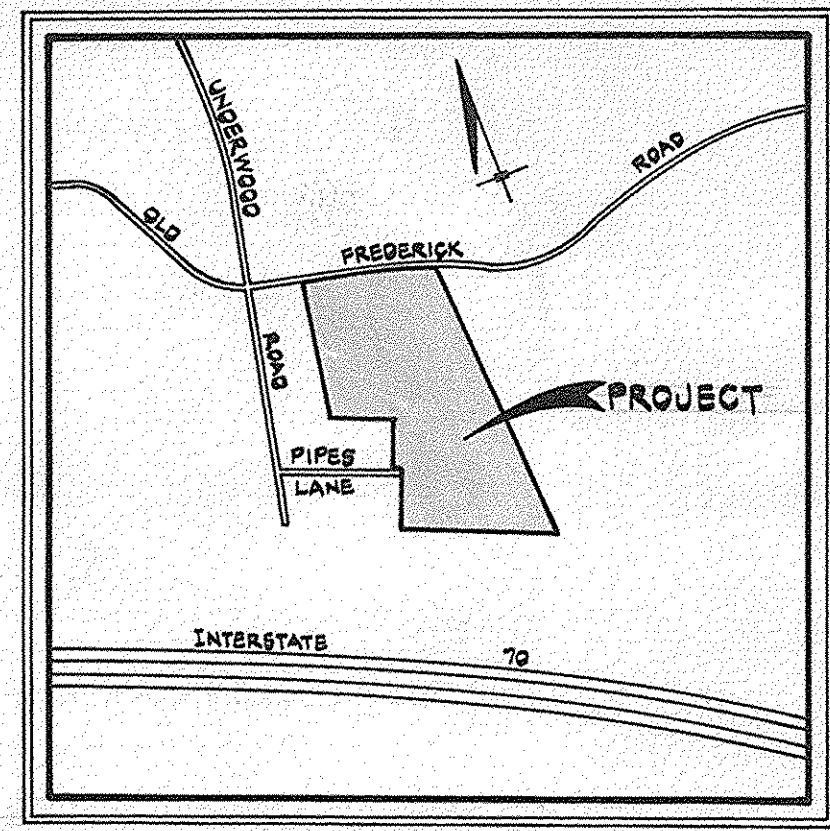
FREDERICK ROAD
OLD



Curve Data
 R = 300.00'
 L = 361.54'
 Δ = 79°40'17"
 T = 416.90'
 Chd. Br = 534°09'11"
 Chord = 323.11'

PAPER AS BUILT
 SIGNED WALTER PARKS
 9/22/77

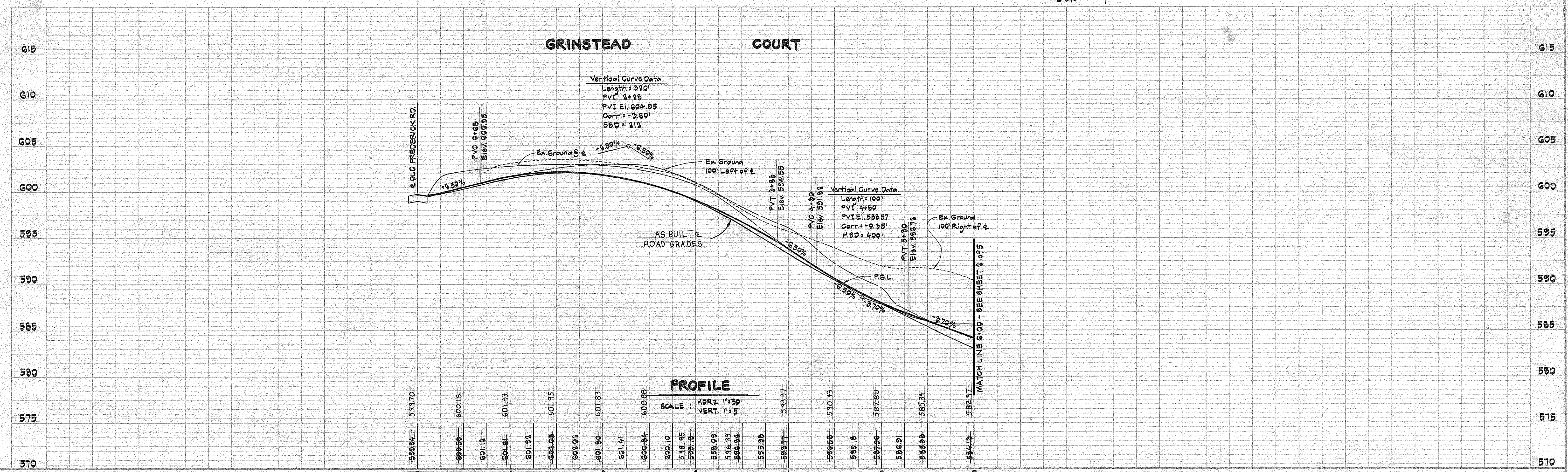
PLAN
 SCALE: 1" = 50'



VICINITY MAP
 SCALE: 1" = 100'

GENERAL NOTES

- All construction shown herein shall be in accordance with the Howard County Road Construction Code and Standard Specifications.
- Reference to drawing and page numbers shown herein are referred to the above mentioned Howard County Road Construction Code and Standard Specifications.
- Design Speed - 30 miles/hour
- All fill areas shall be compacted to a minimum of 95% compaction.
- Elevations shown herein are based on an assumed datum.
- The contractor shall notify "Miss Utility" (350-0100) at least three (3) days prior to beginning any construction shown herein.
- The contractor shall maintain positive drainage along Old Frederick Road.
- The relocation of any existing utilities is the responsibility of the developer.
- All concrete to be used on this project shall be air entrained.

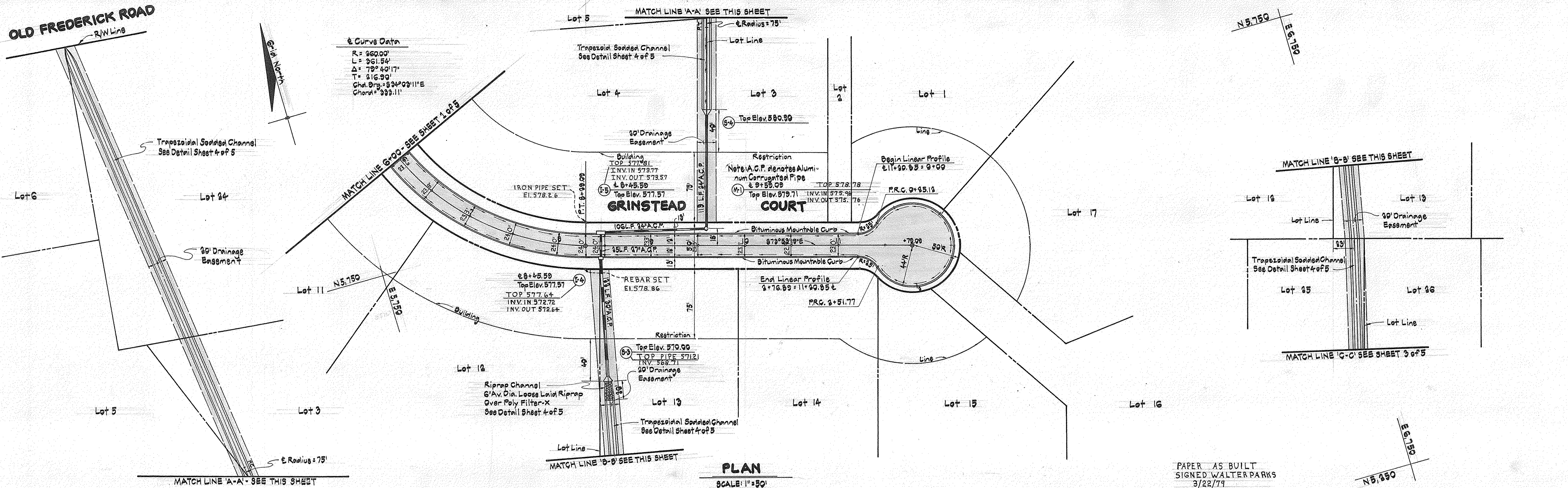


APPROVED: Department of Public Works <i>W. O. Rabbit</i> 10-14-77 Chief, Bureau of Highways Date	Reviewed for Howard Soil Conservation District and meets Technical Requirements. <i>C. Wayne Ray</i> 11-23-77 U.S.D.A. Soil Conservation Service Date	DEVELOPER'S CERTIFICATE I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspections by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviation from this plan will not be made unless authorized by the Howard Soil Conservation District. <i>Fred J. Pipes</i> 8/15/77 Fred J. Pipes Date	ENGINEER'S CERTIFICATE 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. <i>John F. Lipartini</i> 10/16/77 John F. Lipartini, Md. Reg. No. 8410 Date	CROVO & ASSOCIATES, INC. CIVIL ENGINEERING LAND SURVEYING 8669 OAK ROAD BALTIMORE, MARYLAND 21234	OWNER & DEVELOPER FRED J. PIPES 13555 OLD FREDERICK ROAD SYKESVILLE, MARYLAND 21784	PLAN & PROFILE: GRINSTEAD COURT ANNANDALE SECTION TWO 3 RD ELECTION DISTRICT HOWARD COUNTY, MD. AUGUST 9, 1977 SCALE: AS SHOWN SHEET 1 of 5
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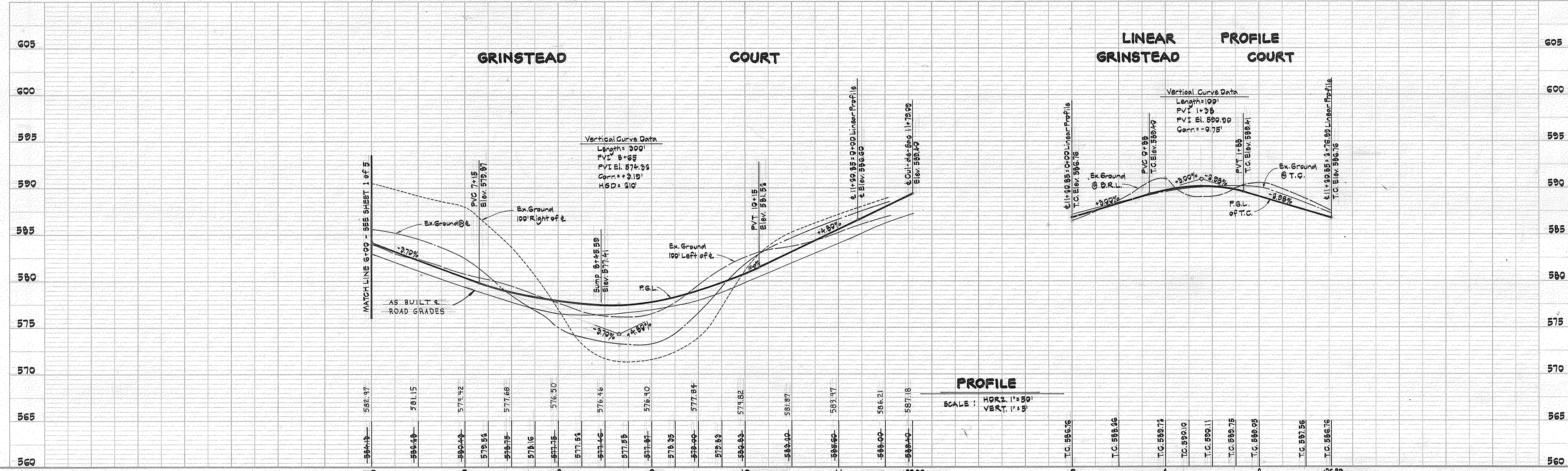
513-2

OLD FREDERICK ROAD
R/W Line

Curve Data
R = 260.00'
L = 261.54'
Δ = 79° 40' 17"
T = 216.90'
Chd. Org. = 594° 09' 11"E
Chord = 399.11'



PAPER AS BUILT
SIGNED WALTER PARKS
3/22/77



APPROVED: Department of Public Works
W. O. West
Chief, Bureau of Highways
Date: 10-14-77

APPROVED: Office of Planning and Zoning
John D. Mayo
Chief, Division of Land Development
Date: 11-23-77

Reviewed for Howard Soil Conservation District and meets Technical Requirements.
C. Wayne Ray
U.S.D.A. Soil Conservation Service
Date: 11-23-77

This development plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.
John D. Mayo
District Coordinator, Howard Soil Conservation District
Date: 11-23-77

DEVELOPER'S CERTIFICATE
I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviation from this plan will not be made unless authorized by the Howard Soil Conservation District.
Fred U. Pipes
Fred U. Pipes
Date: 8/15/77

ENGINEER'S CERTIFICATE
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.
John F. Lipinski
John F. Lipinski, M.A.S.C.E., No. 8419
Date: 10/6/77

CROVO & ASSOCIATES, INC.
CIVIL ENGINEERING
LAND SURVEYING
8669 OAK ROAD
BALTIMORE, MARYLAND
21234

OWNER & DEVELOPER
FRED U. PIPES
13555 OLD FREDERICK ROAD
SYKESVILLE, MARYLAND
21784

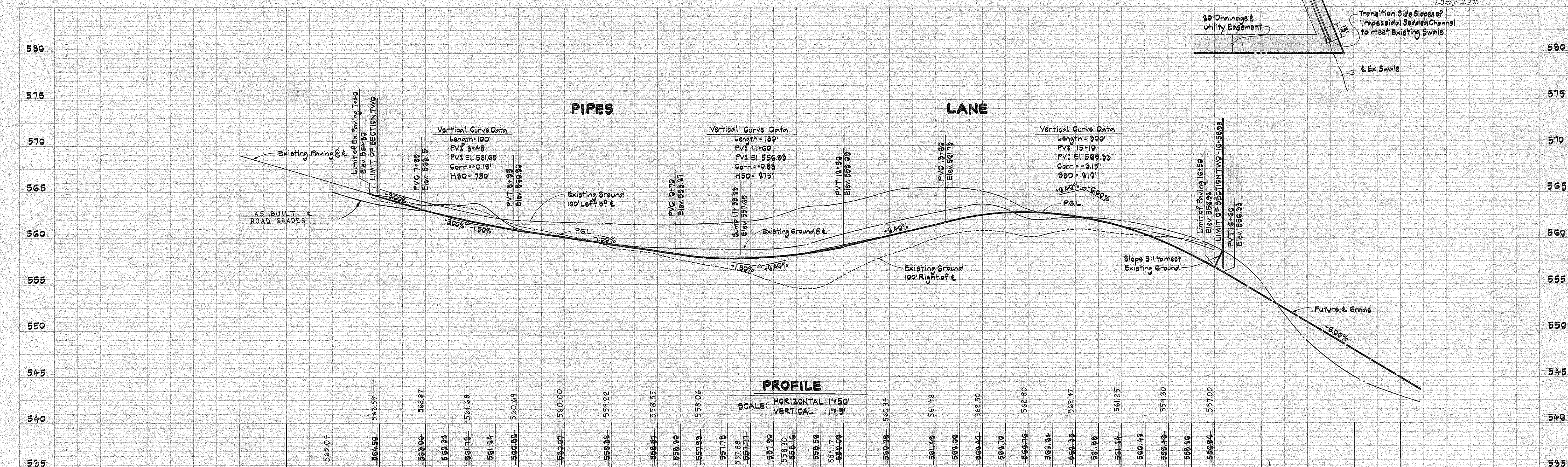
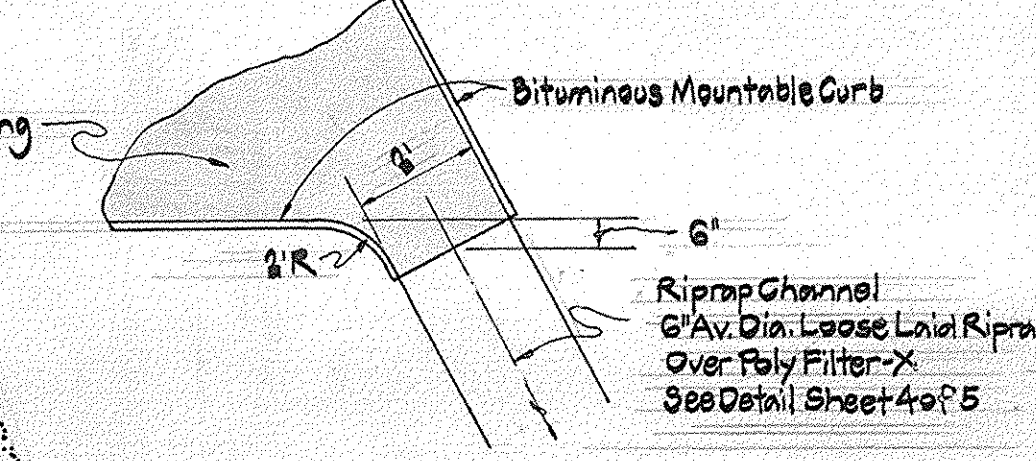
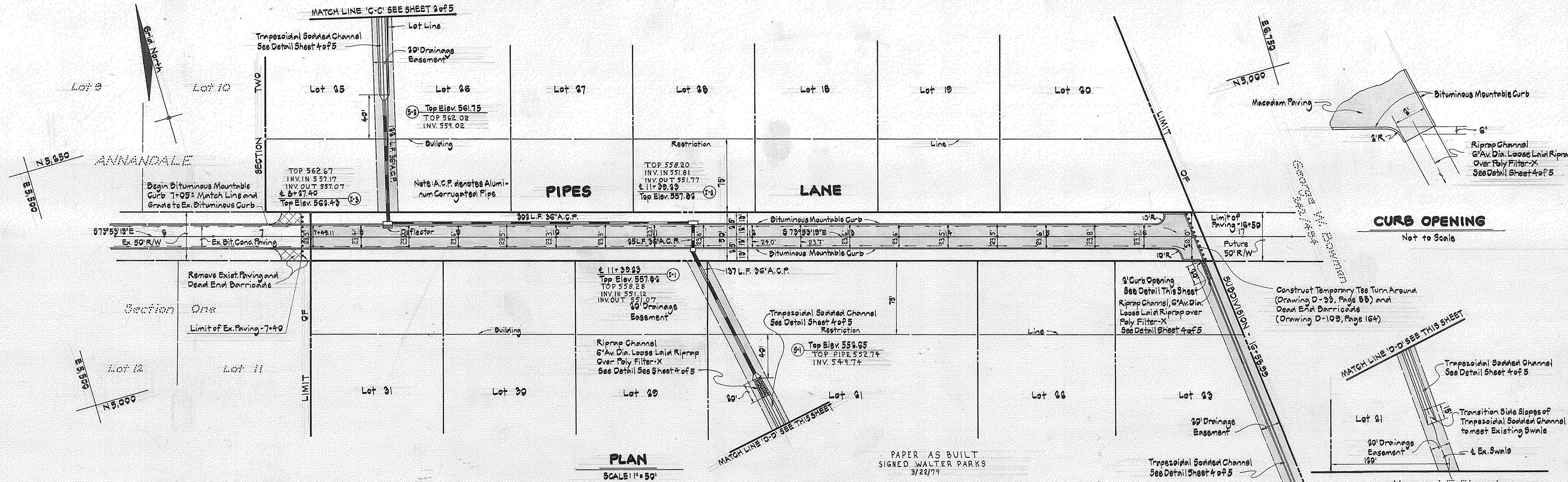
PLAN & PROFILE: GRINSTEAD COURT
ANNANDALE
SECTION TWO
3RD ELECTION DISTRICT HOWARD COUNTY, MD.
AUGUST 2, 1977 SCALE: AS SHOWN
SHEET 2 OF 5

352

F-78-36

AS BUILT

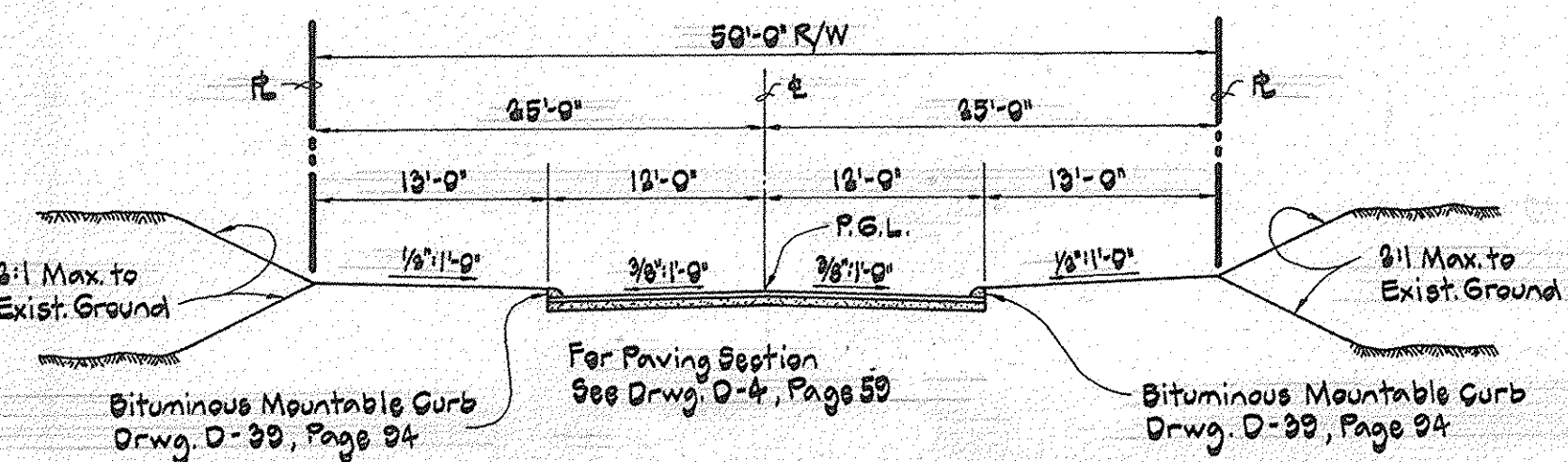
J. J. 7/6/77



APPROVED: Department of Public Works <i>W.O. Lambert</i> 11-23-77 Chief, Bureau of Highways APPROVED: Office of Planning and Zoning <i>John D. Meyer</i> 11-23-77 Chief, Division of Land Development	Reviewed for Howard Soil Conservation District and meets Technical Requirements. <i>John D. Meyer</i> 11-23-77 U.S.D.A. Soil Conservation Service This development plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District. <i>John D. Meyer</i> 11-23-77 District Coordinator, Howard Soil Conservation District	DEVELOPER'S CERTIFICATE I, certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviation from this plan will not be made unless authorized by the Howard Soil Conservation District. <i>Fred J. Pipes</i> 8/15/77 Fred J. Pipes	ENGINEER'S CERTIFICATE 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. <i>John F. Lipari</i> 10/1/77 John F. Lipari, Md. Reg. No. 8410	CROVO & ASSOCIATES, INC. CIVIL ENGINEERING LAND SURVEYING 8669 OAK ROAD BALTIMORE, MARYLAND 21234	OWNER & DEVELOPER FRED J. PIPES 13555 OLD FREDRICK ROAD SYKESVILLE, MARYLAND 21784	PLAN & PROFILE: PIPES LANE ANNANDALE SECTION TWO 3 RD ELECTION DISTRICT HOWARD COUNTY, MD. AUGUST 3, 1977 SCALE: AS SHOWN SHEET 3 OF 5
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GRINSTEAD COURT PIPES LANE

Design Speed - 30 Miles/Hour
Zoned - R-40



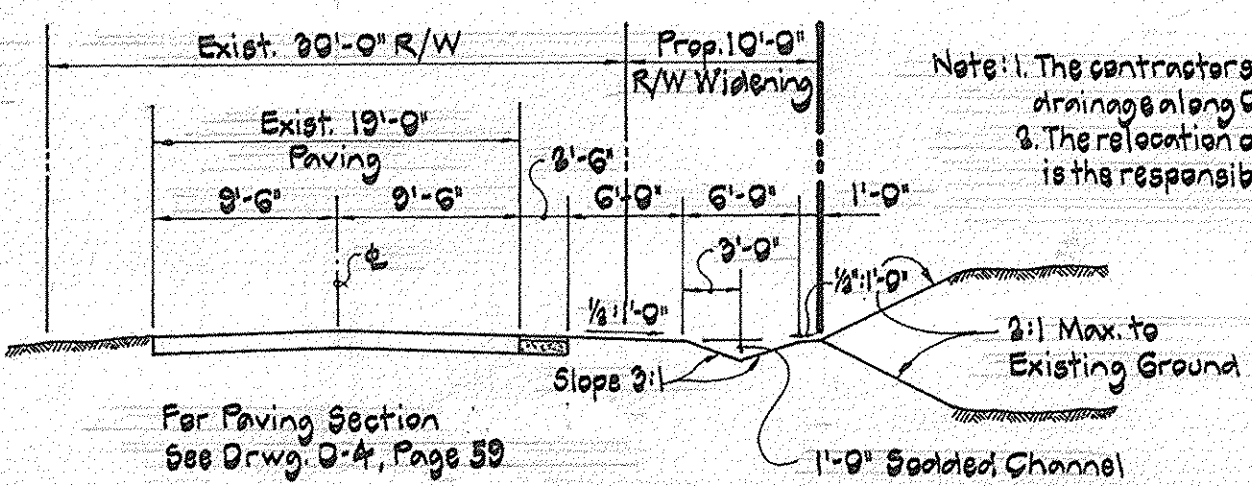
TYPICAL PAVING SECTION

Not to Scale
Limit of Work - Grinstead Court 0+00 to 1+83.00
- Pipes Lane 7+49.11 to 10+50

PAVING NOTES

- Tack coat in accordance with Section C-31-4 of the Howard County Road Construction Code and Standard Specifications.
- Base will be primed in accordance with Section C-30-2 of the Howard County Road Construction Code and Standard Specifications.

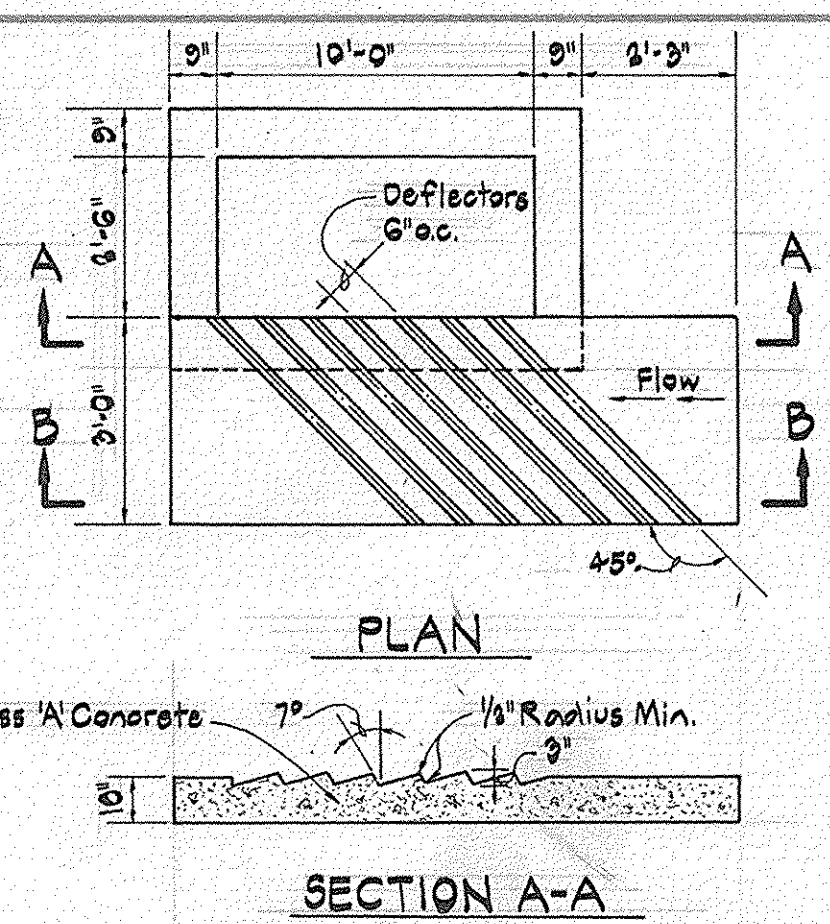
OLD FREDERICK ROAD



TYPICAL WIDENING SECTION

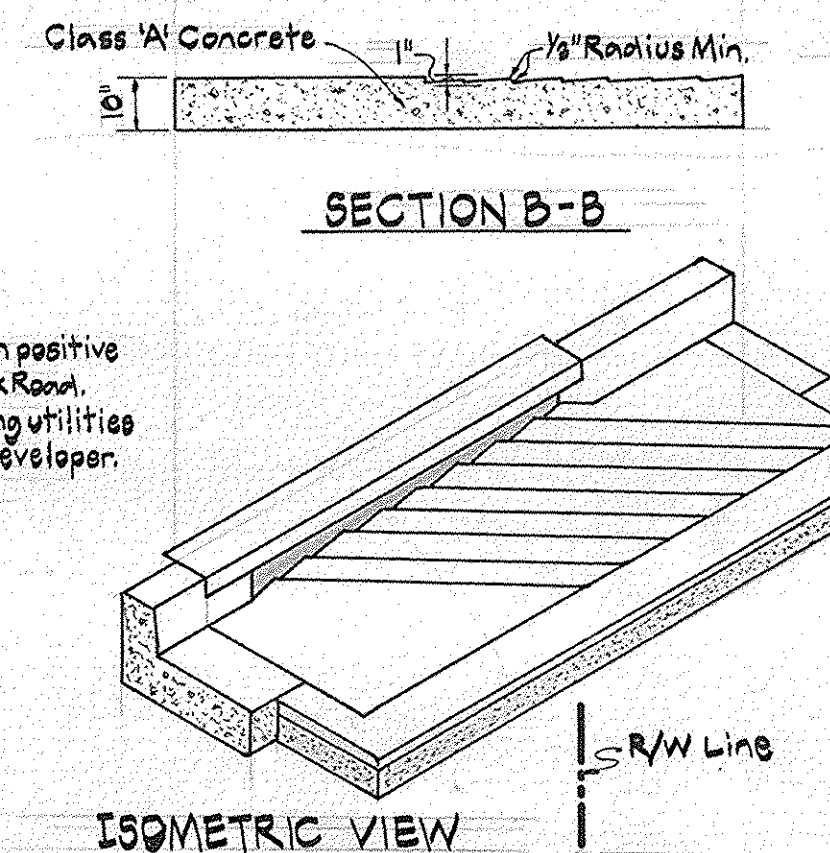
Not to Scale

- Note: 1. The contractor shall maintain positive drainage along Old Frederick Road.
2. The relocation of any existing utilities is the responsibility of the developer.



PLAN

SECTION A-A



SECTION B-B

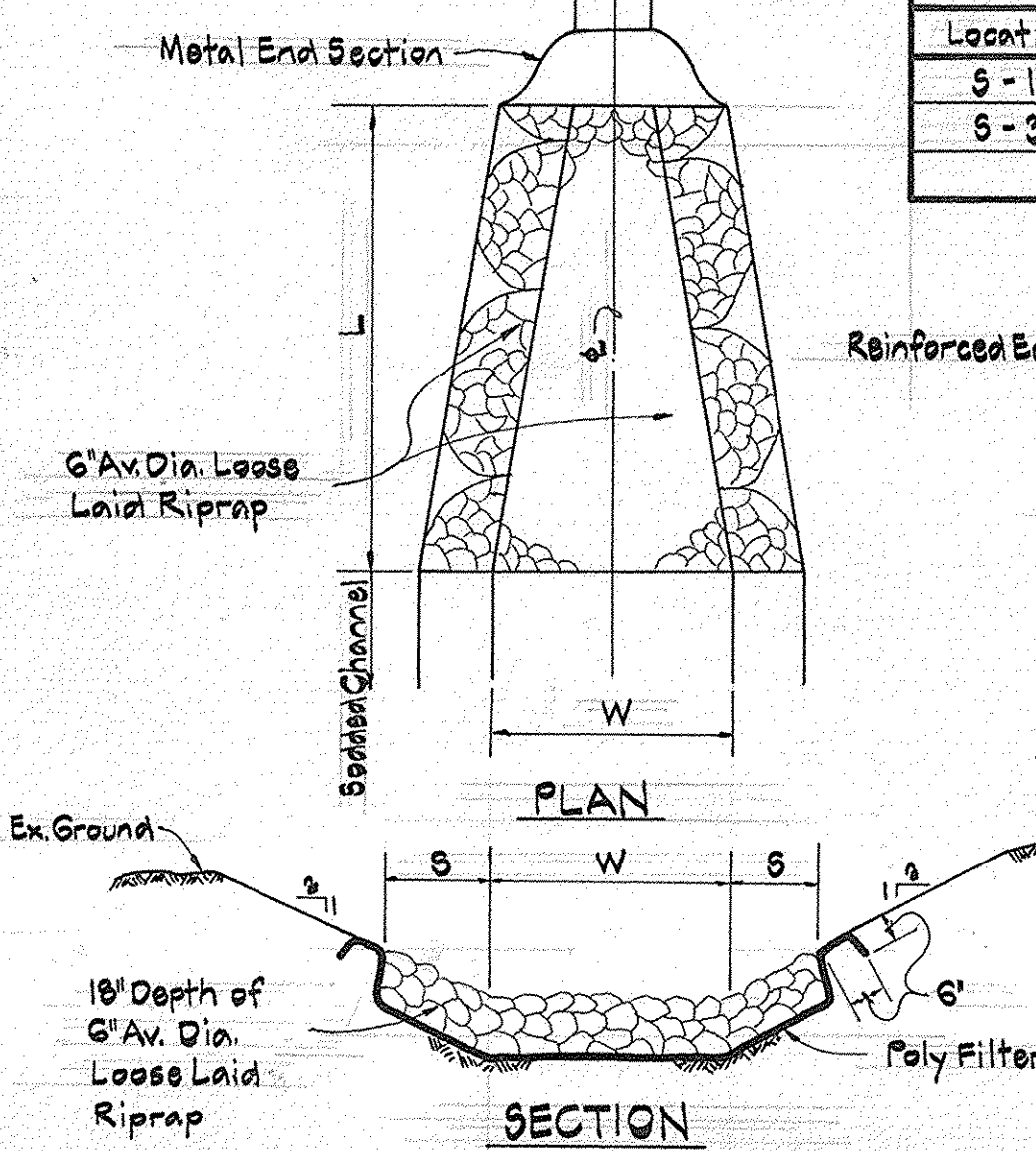
ISOMETRIC VIEW

**TYPE 'A' INLET
W/DEFLECTORS**

Not to Scale

RIPRAP CHANNEL DATA

Location	W	L	S	D
S-1	10'	20'	1.5'	36"
S-2	8'	20'	2.4'	36"



PLAN

SECTION

RIPRAP CHANNEL

Not to Scale

D	A	B	H	L	W	S
24"	10"	18"	6"	4 1/2"	4 1/2"	2 1/2%
30"	14"	16"	8"	5 1/2"	6 1/2"	2 1/2%
36"	14"	18"	9"	6 1/2"	7 1/2"	2 1/2%

METAL END SECTION

Not to Scale

SODDED CHANNEL DESIGN DATA

Location	Q ₀	V ₀	W	S	d	Slope
S-1	45.0 c.f.s.	2.8 f.p.s.	10'	1.5'	1.5'	0.50%
S-2	25.0 c.f.s.	2.8 f.p.s.	8'	2.4'	1.3'	1.00%
S-3	25.0 c.f.s.	4.7 f.p.s.	8'	1.0'	0.8'	4.00%
S-4	15.0 c.f.s.	2.8 f.p.s.	2'	2.8'	1.4'	1.00%
S-4	15.0 c.f.s.	4.4 f.p.s.	2'	1.8'	0.9'	6.00%
S-4	15.0 c.f.s.	3.5 f.p.s.	2'	2.0'	1.0'	3.00%
@Curb Opening	1.4 c.f.s.	3.0 f.p.s.	2'	0.4'	0.2'	4.00%

STRUCTURE SCHEDULE

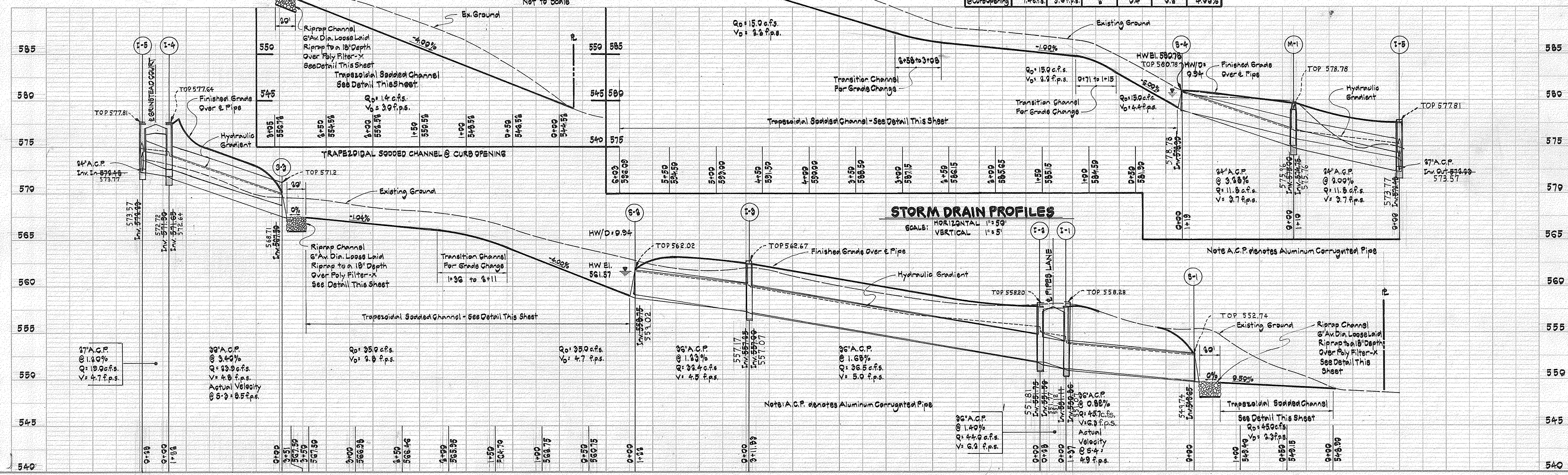
No.	Type	Inv. In	Inv. Out	Top	Remarks
I-1	A-5	551.11	550.86	557.83	Drwg. 064-A.P.118-A
I-2	A-10	551.75	551.50	557.83	Drwg. 064-A.P.118-A
I-3	A-10 w/Deflectors	557.45	557.90	563.42	Drwg. 064-A.P.118-A
I-4	A-5	571.90	571.65	577.57	Drwg. 064-A.P.118-A
I-5	A-10	574.48	574.23	577.57	Drwg. 064-A.P.118-A
M-1	Howard County Standard Manhole	575.00	574.75	579.71	Drwg. D.109, P.158
S-1	Metal End Section		549.65	553.65	MD-379.01(w)
S-2	Metal End Section		558.75	561.75	MD-379.01(w)
S-3	Metal End Section		567.59	570.90	MD-379.01(s)
S-4	Metal End Section		578.99	580.99	MD-379.01(s)

Note: All details taken from the Howard County Road Construction Code and Standard Specifications unless otherwise noted (w). All (s) details taken from the State Highway Administration Book of Standard Highway and Incidental Structures.

NOTES

- All sodded channel design data taken from Section 36.01 of the Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas. (G/75)
- A.C.P. denotes Aluminum Corrugated Pipe.
- Aluminum Corrugated Pipe to be 16 Gauge and have a minimum of cover.
- All concrete to be used on this project shall be air entrained.

PAPER AS BUILT
SIGNED WALTER PARKS
3/22/79



APPROVED: Department of Public Works
W.O. Libert
Chief, Bureau of Highways
Date: 10-14-77

Reviewed for Howard Soil Conservation District and meets Technical Requirements.
C. Wayne Bay
U.S.D.A. Soil Conservation Service
Date: 11-23-77

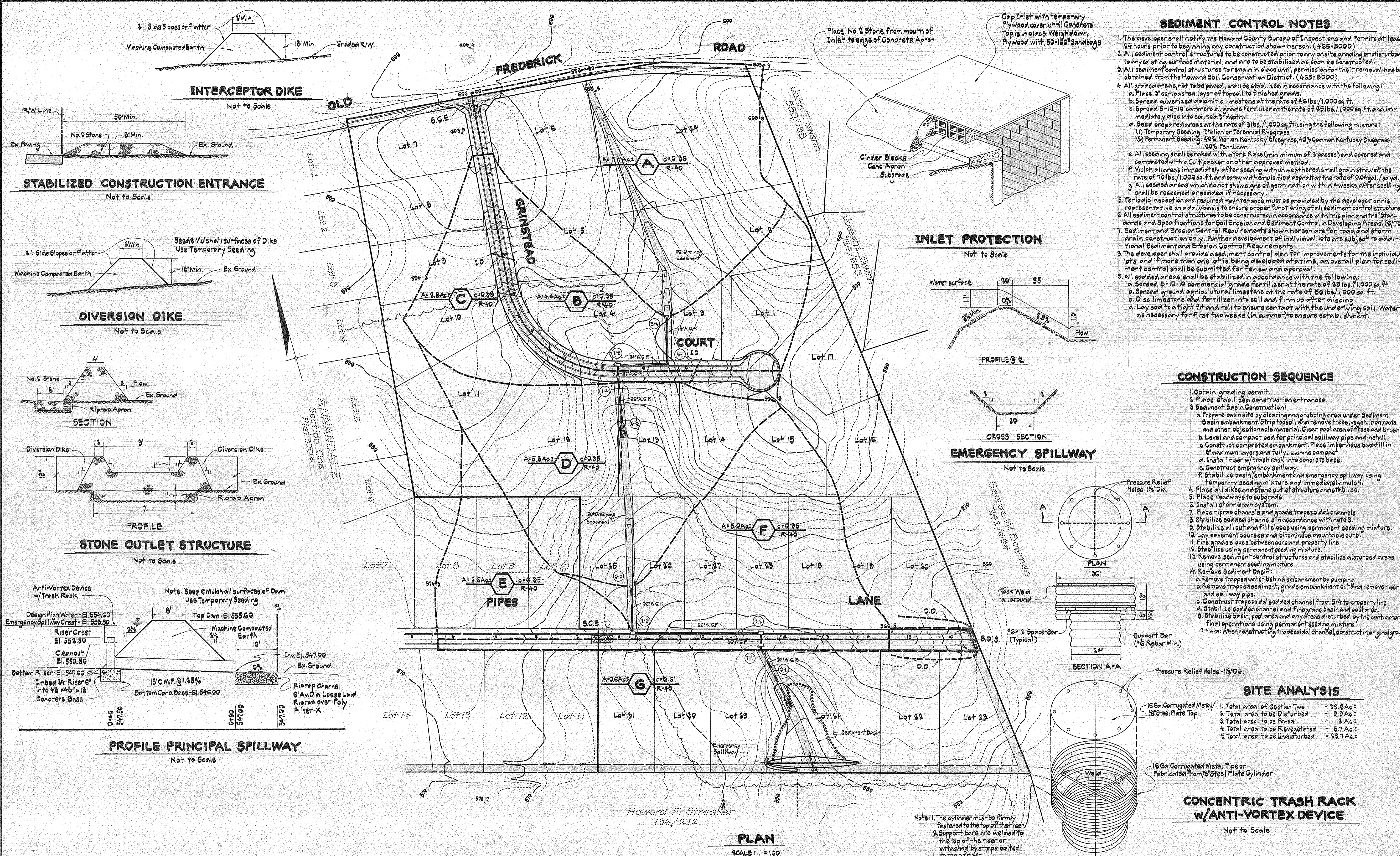
DEVELOPER'S CERTIFICATE
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Fred U. Pipes
Date: 8/15/77

ENGINEER'S CERTIFICATE
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John A. Liparini, M.S., R.S.
Date: 8/15/77

CROVO & ASSOCIATES, INC.
CIVIL ENGINEERING
LAND SURVEYING
8669 OAK ROAD
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21234

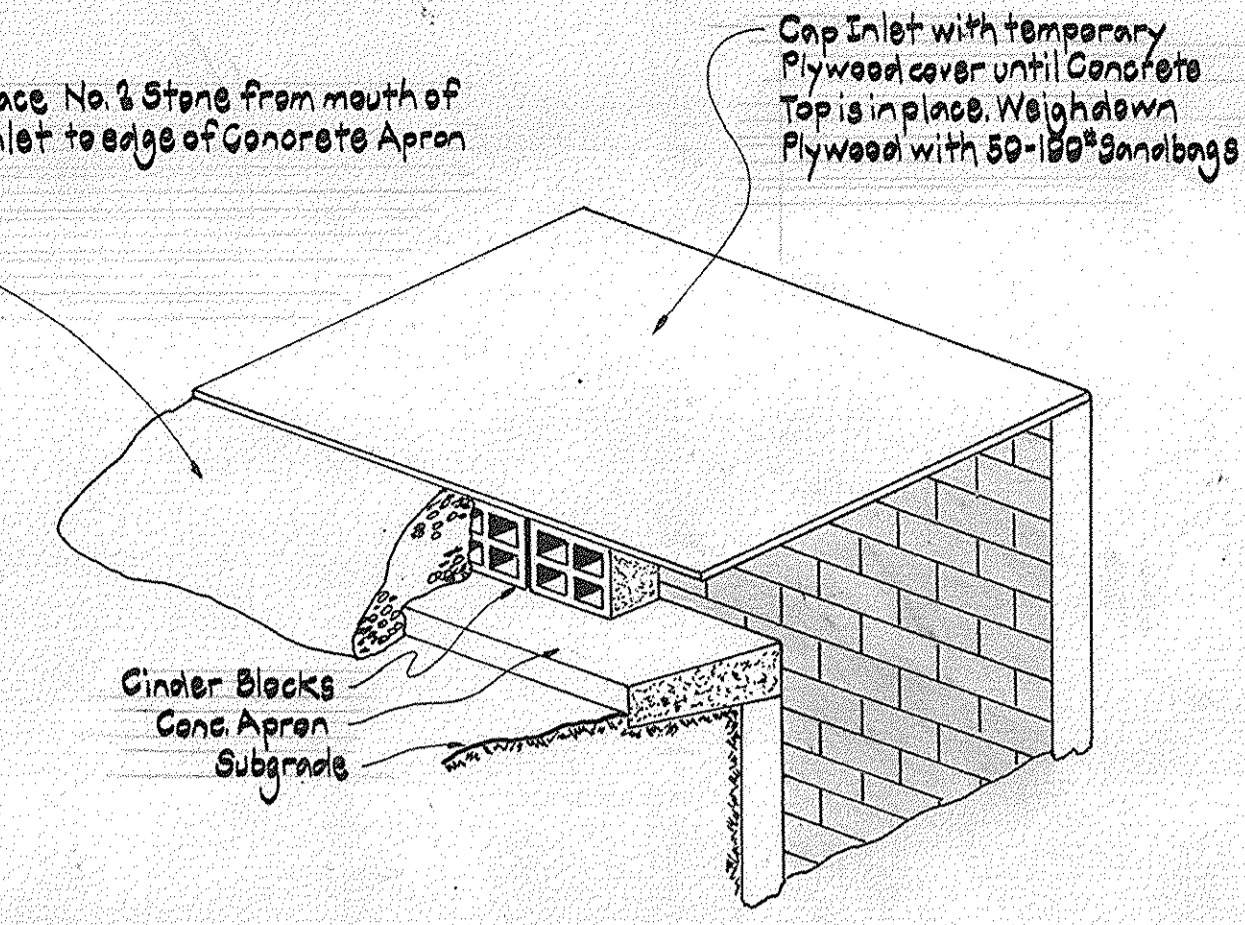
OWNER & DEVELOPER
FRED U. PIPES
13555 OLD FREDERICK ROAD
SYKESVILLE, MARYLAND
21784

STORM DRAIN PROFILES & DETAILS
ANNANDALE
SECTION TWO
3RD ELECTION DISTRICT HOWARD COUNTY, MD.
AUGUST 3, 1977
SCALE: AS SHOWN
SHEET 4 of 5

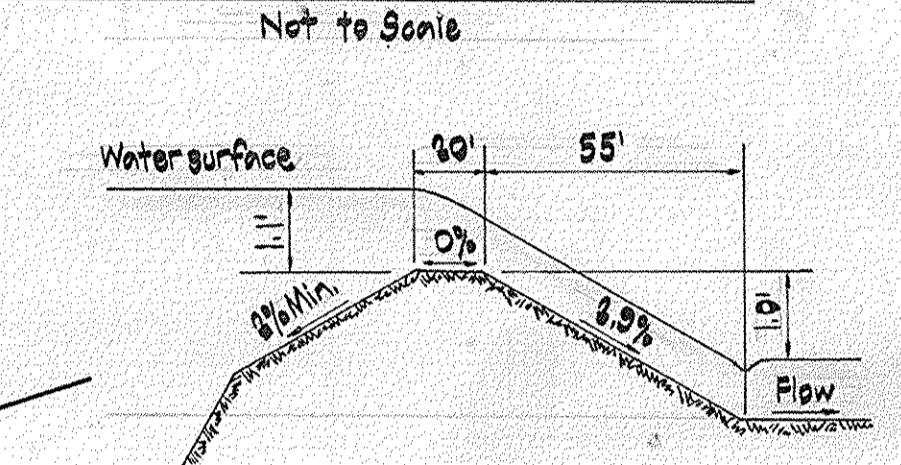


SEDIMENT CONTROL NOTES

- The developer shall notify the Howard County Bureau of Inspections and Permits at least 24 hours prior to beginning any construction shown hereon. (465-5000)
- All sediment control structures to be constructed prior to any onsite grading or disturbance to any existing surface material, and are to be stabilized as soon as constructed.
- All sediment control structures to remain in place until permission for their removal has been obtained from the Howard Soil Conservation District. (465-5000)
- All graded areas, not to be paved, shall be stabilized in accordance with the following:
 - Place 2" compacted layer of topsoil to finished grade.
 - Spread pulverized dolomitic limestone at the rate of 40 lbs./1,000 sq. ft.
 - Spread 5-10 commercial grade fertilizer at the rate of 25 lbs./1,000 sq. ft. and immediately disc into soil to 2" depth.
 - Seed prepared areas at the rate of 3 lbs./1,000 sq. ft. using the following mixture:
 - Temporary Seeding: Italian or Perennial Ryegrass
 - Permanent Seeding: 40% Merion Kentucky Bluegrass, 40% Common Kentucky Bluegrass, 20% PennLawn
- All seeding shall be raked with a York Rake (minimum of 3 passes) and covered and compacted with a Gullpacker or other approved method.
- Mulch all areas immediately after seeding with unweeded small grain straw at the rate of 70 lbs./1,000 sq. ft. and spray with emulsified asphalt at the rate of 9.0 gal./sq. yd.
- All seeded areas which do not show signs of germination within 4 weeks after seeding shall be reseeded or sodded if necessary.
- Periodic inspection and required maintenance must be provided by the developer or his representative on a daily basis to ensure proper functioning of all sediment control structures.
- All sediment control structures to be constructed in accordance with this plan and the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" (S/75)
- Sediment and Erosion Control Requirements shown hereon are for road and storm drain construction only. Further development of individual lots are subject to additional Sediment and Erosion Control Requirements.
- The developer shall provide a sediment control plan for improvements for the individual lots, and if more than one lot is being developed at a time, an overall plan for sediment control shall be submitted for review and approval.
- All sodded areas shall be stabilized in accordance with the following:
 - Spread 5-10 commercial grade fertilizer at the rate of 25 lbs./1,000 sq. ft.
 - Spread ground agricultural limestone at the rate of 50 lbs./1,000 sq. ft.
 - Disc limestone and fertilizer into soil and firm up after discing.
 - Lay sod to a tight fit and roll to ensure contact with the underlying soil. Water as necessary for first two weeks (in summer) to ensure establishment.



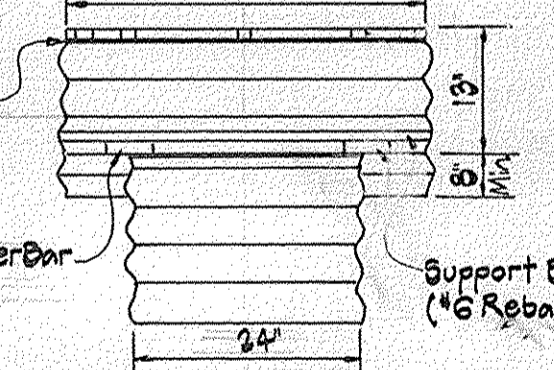
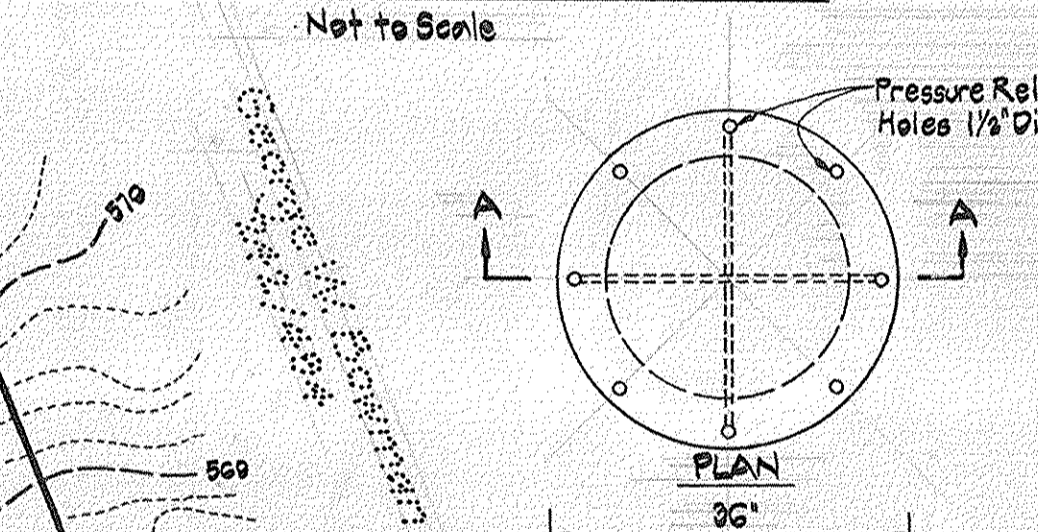
INLET PROTECTION



CONSTRUCTION SEQUENCE

- Obtain grading permit.
- Place stabilized construction entrances.
- Sediment Basin Construction:
 - Prepare basin site by clearing and grubbing area under Sediment Basin embankment. Strip topsoil and remove trees, vegetation, brush and other objectionable material. Clear pool area of trees and brush.
 - Level and compact bed for principal spillway pipe and install. Construct of compacted embankment. Place impervious backfill in 8" max. num. layers and fully machine compact.
 - Install riser w/ trash rack into concrete base.
 - Construct emergency spillway.
 - Stabilize basin embankment and emergency spillway using temporary seeding mixture and immediately mulch.
- Place roadways to subgrade.
- Install storm drain system.
- Place riprap channels and grade trapezoidal channels.
- Stabilize sodded channels in accordance with note 3.
- Stabilize all out and fill slopes using permanent seeding mixture.
- Lay pavement courses and bituminous mountable curb.
- Final grade slopes between curb and property line.
- Stabilize using permanent seeding mixture.
- Remove sediment control structures and stabilize disturbed areas using permanent seeding mixture.
- Remove Sediment Basin:
 - Remove trapped water behind embankment by pumping.
 - Remove trapped sediment, grade embankment out and remove riser and spillway pipe.
 - Construct trapezoidal sodded channel from 9'4" to property line.
 - Stabilize sodded channel and final grade basin and pool area.
 - Stabilize basin, pool area and any areas disturbed by the contractor's final operations using permanent seeding mixture.
 - Note: When constructing trapezoidal channels, construct in original ground.

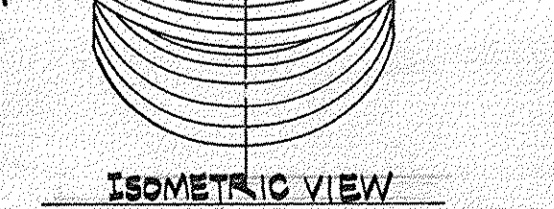
EMERGENCY SPILLWAY



SITE ANALYSIS

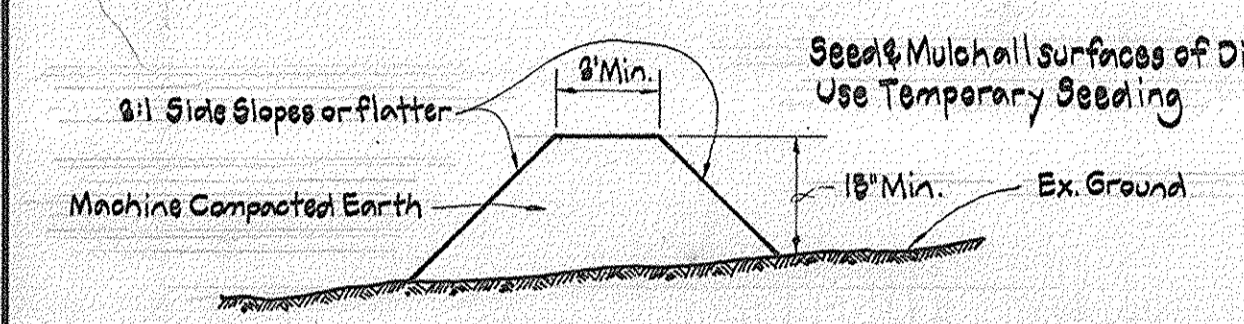
- Total area of Section Two - 29.6 Ac.
- Total area to be Disturbed - 2.9 Ac.
- Total area to be Paved - 1.4 Ac.
- Total area to be Revegetated - 2.7 Ac.
- Total area to be Undisturbed - 22.7 Ac.

CONCENTRIC TRASH RACK w/ANTI-VORTEX DEVICE



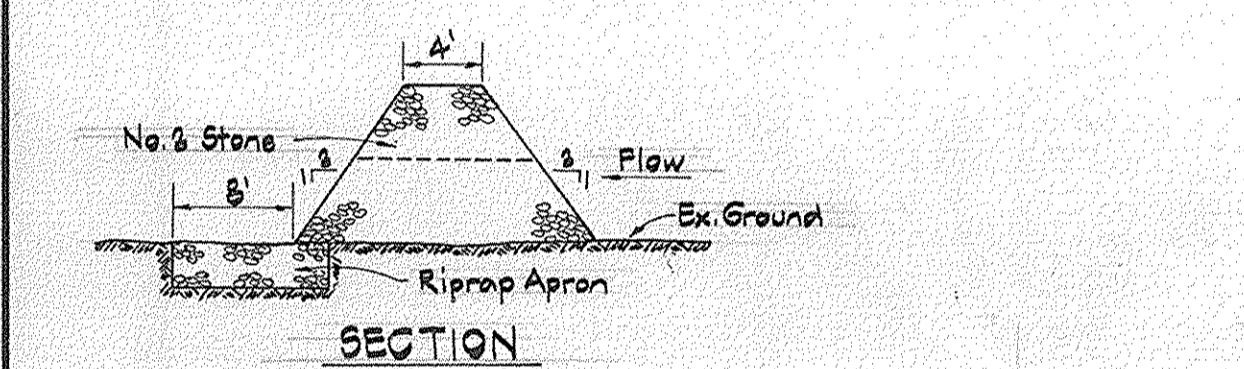
STABILIZED CONSTRUCTION ENTRANCE

Not to Scale



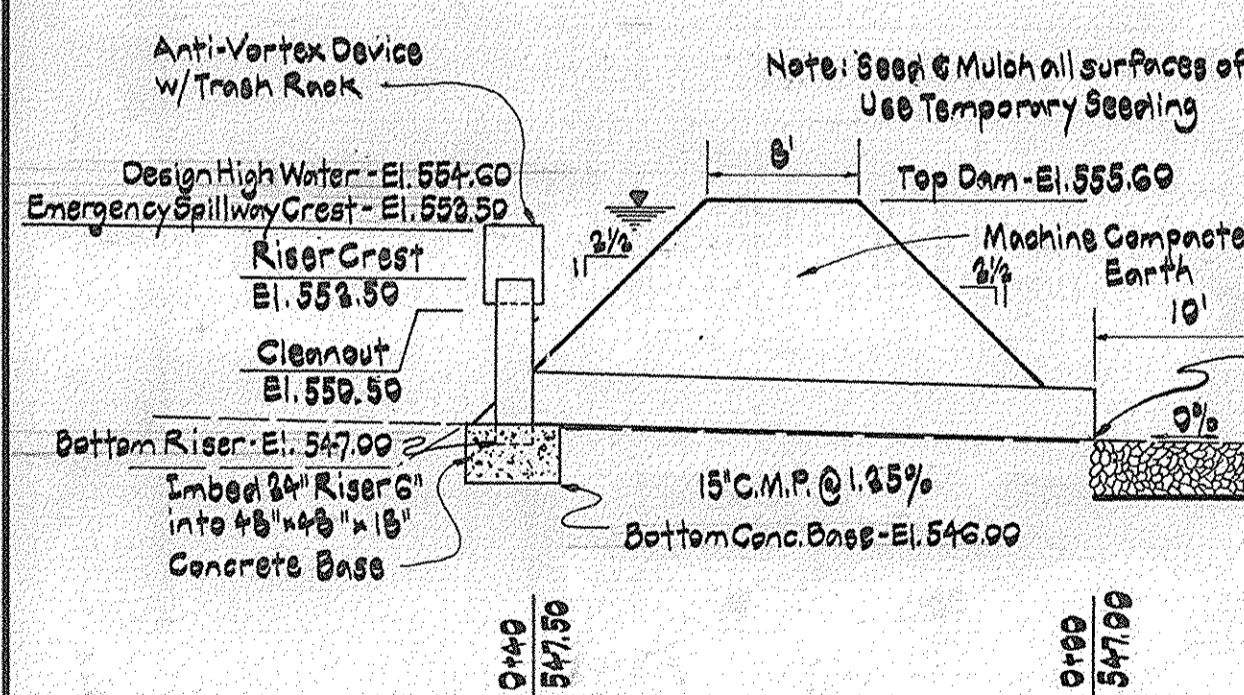
DIVERSION DIKE

Not to Scale



STONE OUTLET STRUCTURE

Not to Scale



PROFILE PRINCIPAL SPILLWAY

Not to Scale

APPROVED: Department of Public Works
 W. O. Gilbert, Chief, Bureau of Highways, 10-14-77
 APPROVED: Office of Planning and Zoning
 John D. Myers, Chief, Division of Land Development, 11-23-77

Reviewed for Howard Soil Conservation District and meets Technical Requirements.
 J. D. Myers, U.S.D.A. Soil Conservation Service, 11-23-77
 This development plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.
 John D. Myers, District Coordinator, Howard Soil Conservation District, 11-23-77

DEVELOPER'S CERTIFICATE
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 Fred U. Pipes, 8/15/77

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 John F. Liparini, M.D., R.C.S., No. 8410, 10/16/77

CROVO & ASSOCIATES, INC.
 CIVIL ENGINEERING
 LAND SURVEYING
 8609 OAK ROAD
 BALTIMORE, MARYLAND
 21284

OWNER & DEVELOPER
 FRED U. PIPES
 13555 OLD FREDERICK ROAD
 SYKESVILLE, MARYLAND
 21784

DRAINAGE AREA MAP
ANNANDALE
SECTION TWO
 3RD ELECTION DISTRICT HOWARD COUNTY
 AUGUST 3, 1977 SCALE: AS SHOWN
 SHEET 5 OF 5