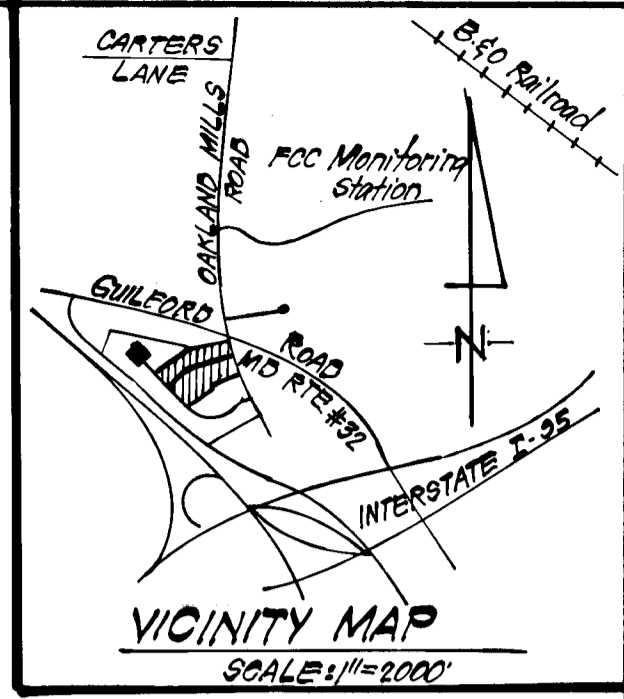
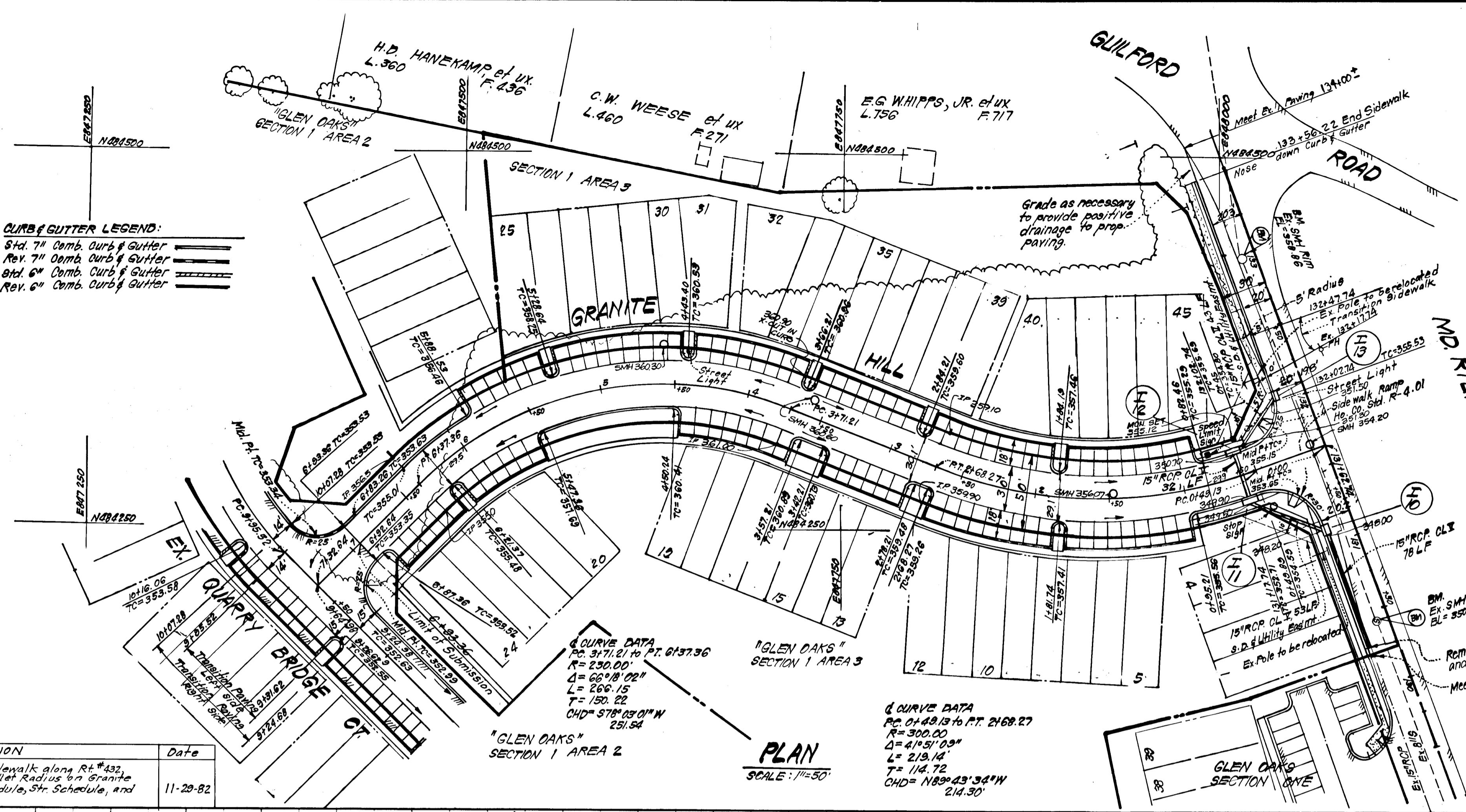


GENERAL NOTES

- All storm Drain & Paving shall be constructed in accordance with the latest details and Specifications of Howard Co. & Md. S.H.A.
- Types of Storm Drain structures refer to the standard Details of Howard County & Maryland State Highway Administration.
- Trench Compaction for Storm Drains within Road or Street right of way limits shall be in accordance with the Howard County Design Manual Vol. II.
- Information concerning underground utilities was obtained from available records, but the Contractor must determine the exact location and elevation of the mains by digging test pits, by hand, at all utility crossings, well in advance of construction.
- All utility companies shall be notified 24 hrs. in advance of construction.
- All traffic control services, parking and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices", 1971 Edition.
- Sag and Crest Vertical Curves were obtained in accordance with "A Policy on Geometric Design of Rural Highways", 1965, by A.A.S.H.O.
- Provide Concrete Sidewalk Ramps in curbs, where shown in plan. (Max. 12:1 Slope) See Ho. Co. Std. Sidewalk Ramp, Type A - R-4.0.
- Zoning: R-3-A.
- Design speed: 30 mph - 30' Paving.
- Class "C" Bedding shall be used for all storm drainage construction, unless otherwise noted. See Ho. Co. Std. S.D. 2.03.
- Curvey Based on Howard County Control Stations 224 2001 R & 224 2002.
- Storm Water Management for this site has been provided. See Previously Approv. Rd. Constr. Plans for Glen Oaks Section One F-82-67 and Glen Oaks Sect 1 Area 2.
- Regrade existing slope on southeast corner of Md. Rte. 432/Guilford Rd. to insure adequate sight distance.



CURB & GUTTER LEGEND:
 Std. 7" Comb. Curb & Gutter
 Rev. 7" Comb. Curb & Gutter
 Std. 6" Comb. Curb & Gutter
 Rev. 6" Comb. Curb & Gutter



CURVE DATA
 P.C. 3171.21 to P.T. 6137.36
 R = 230.00'
 Δ = 60° 18' 02"
 L = 266.15'
 T = 150.22'
 CHD = S78° 03' 01" W
 251.54'

CURVE DATA
 P.C. 0744.13 to P.T. 2168.27
 R = 300.00'
 Δ = 41° 51' 09"
 L = 219.14'
 T = 114.72'
 CHD = N83° 43' 34" W
 214.30'

PLAN
 SCALE: 1" = 50'

APPROVED: Department of Public Works
 Chief, Bureau of Engineering 9-30-82
 APPROVED: Howard County Office of Planning and Zoning
 Chief, Division of Land Development & Zoning Administration 9-27-82

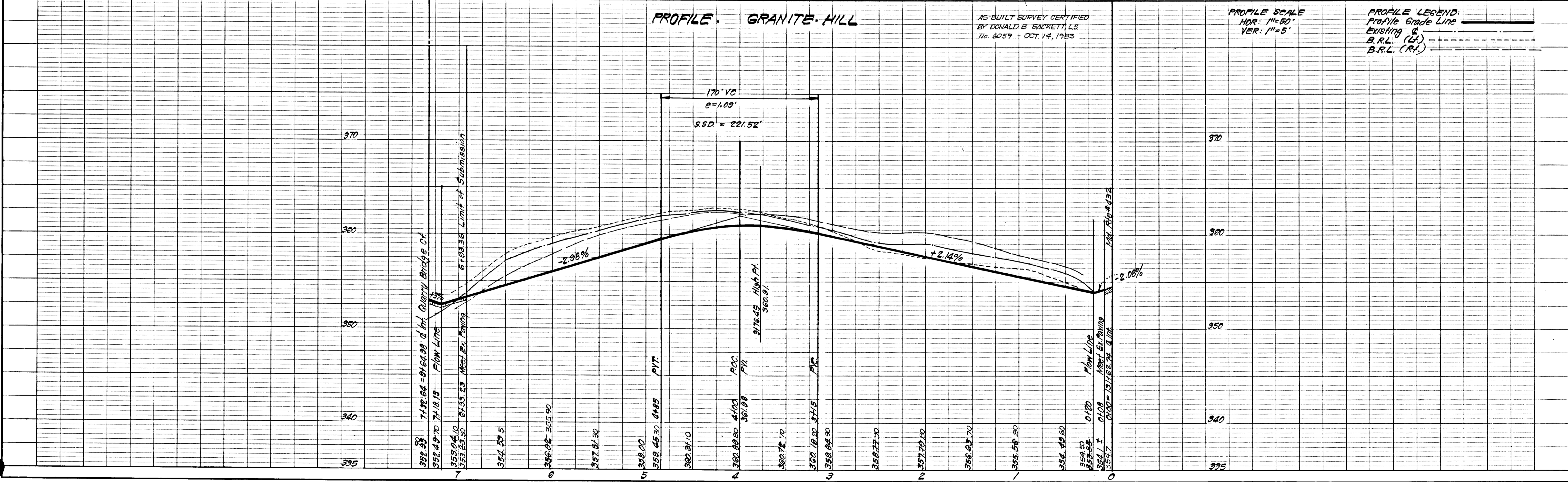
CLARK • FINEFROCK & SACKETT
 ENGINEERS • PLANNERS • SURVEYORS
 1315 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400

DESIGNED	J.L.S.	ROAD CONSTRUCTION PLANS	SCALE	AS SHOWN
DRAWN	K.I.W.	GRANITE HILL & MD. RTE. NO. 432	DRAWING	1 OF 4
CHECKED	J.L.S.	GLEN OAKS	JOB NO.	81-079
DATE	5-21-82	SECTION ONE AREA THREE 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	FILE NO.	81-079-D

FOR: EARL ARMIGER
 3867 DUCKS FOOT LANE
 ELICOTT CITY, MD 21043

No.	REVISION	Date
1	Revised location of sidewalk along Rt. #432, Location of I-13, NW fillet Radius on Granite Hill, Revised Pipe Schedule, Str. Schedule, and Profile.	11-29-82

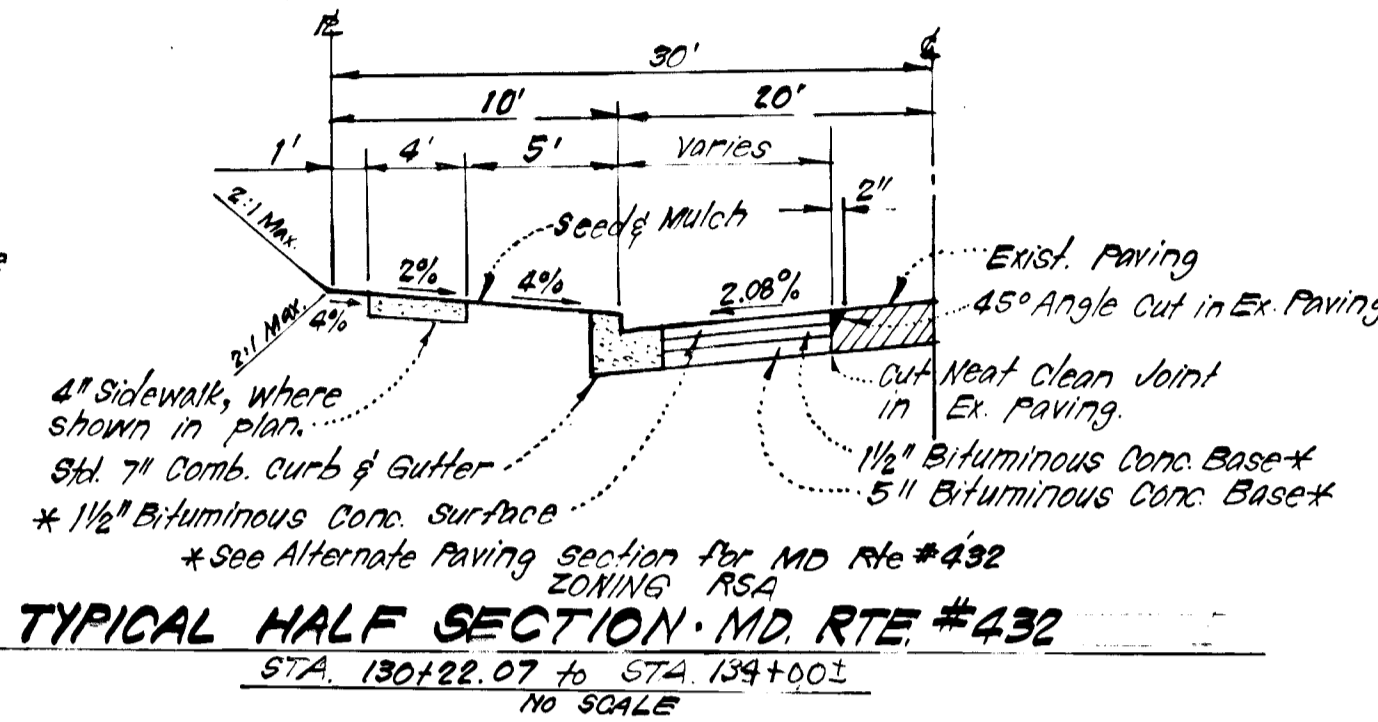
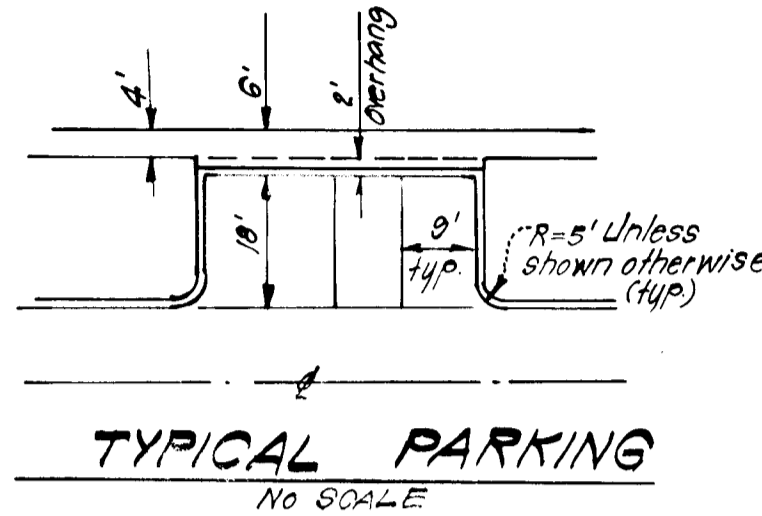
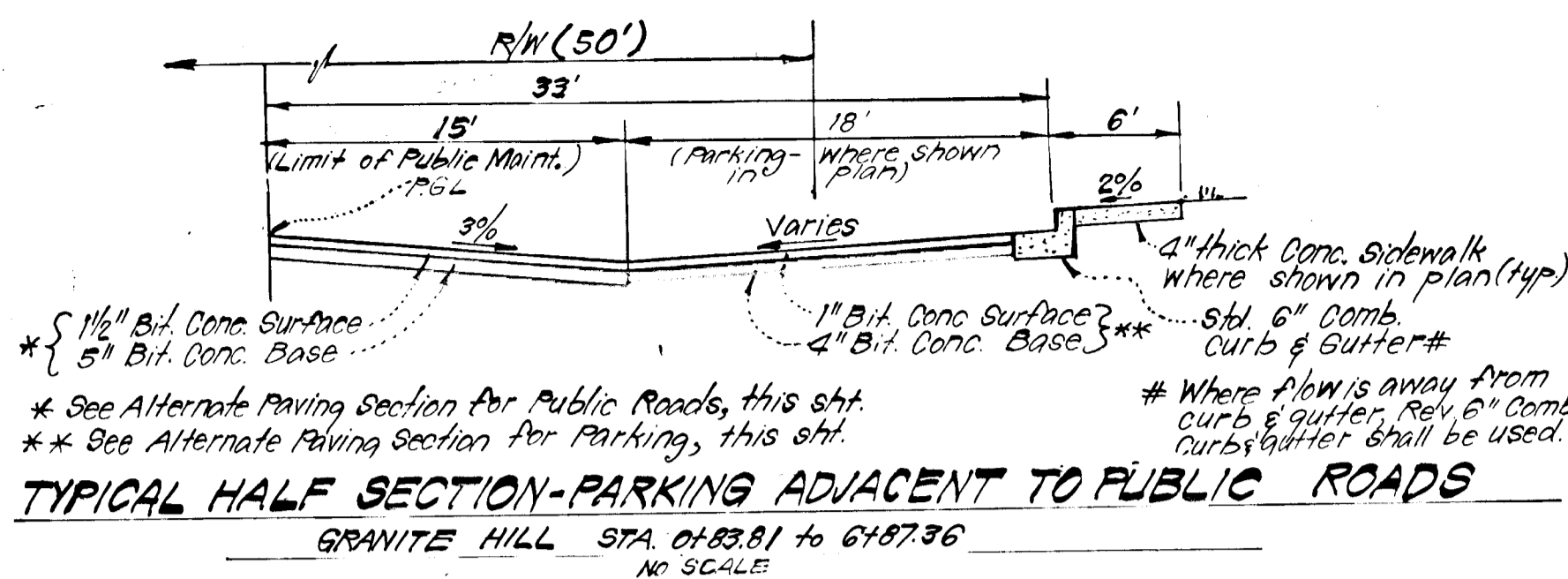
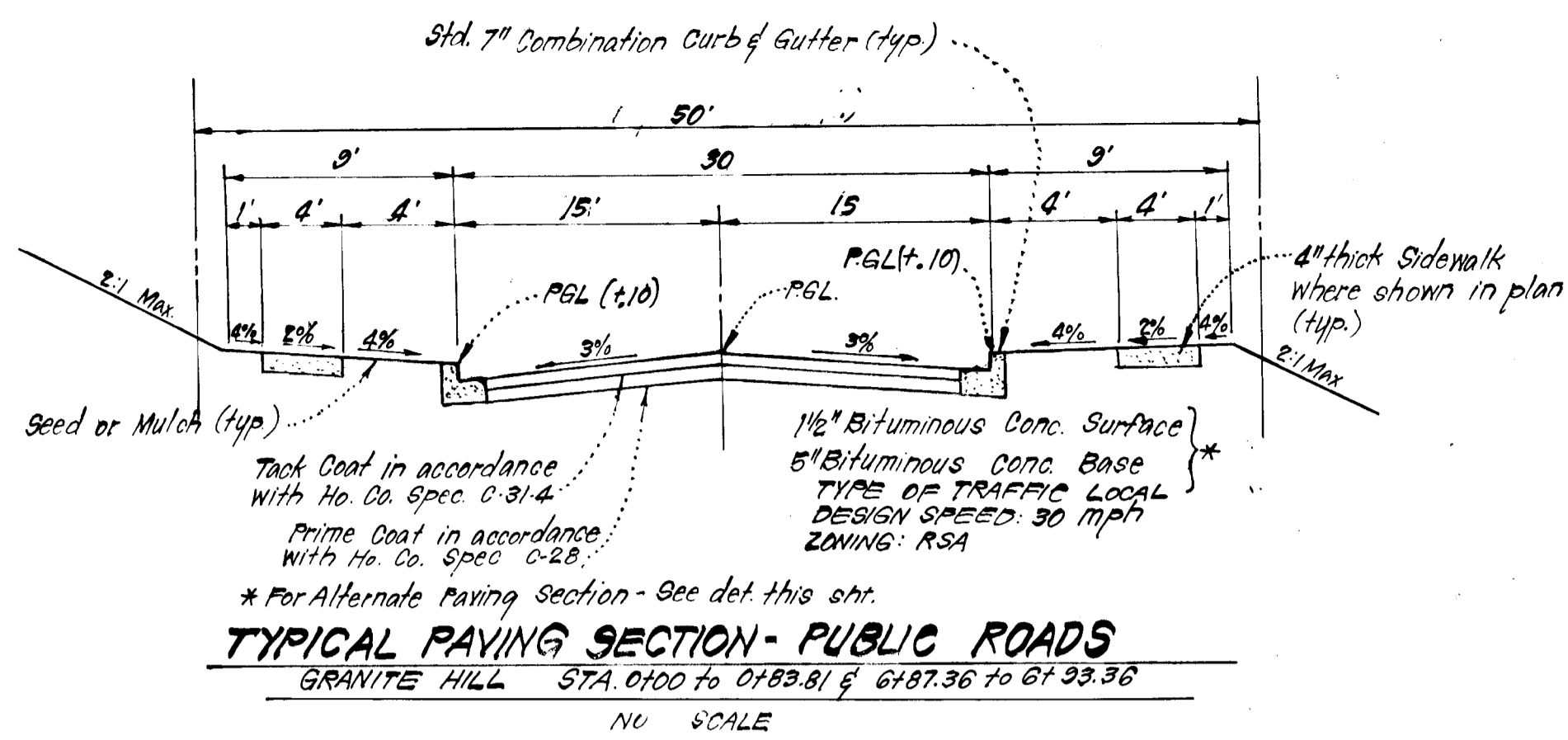
PROFILE GRANITE HILL



PROFILE SCALE
 HOR: 1" = 50'
 VER: 1" = 5'

PROFILE LEGEND:
 Profile Grade Line
 Existing G.
 B.R.L. (L.F.)
 B.R.L. (R.F.)

933



Bituminous Conc. Surface	1 1/2"
Bituminous Conc. Base	4 1/2"
Prime	1"
6" Dense Graded Stabilized Aggregate Base Course or	6" or 8"
8" Crusher Run Base Course (2 Courses)	

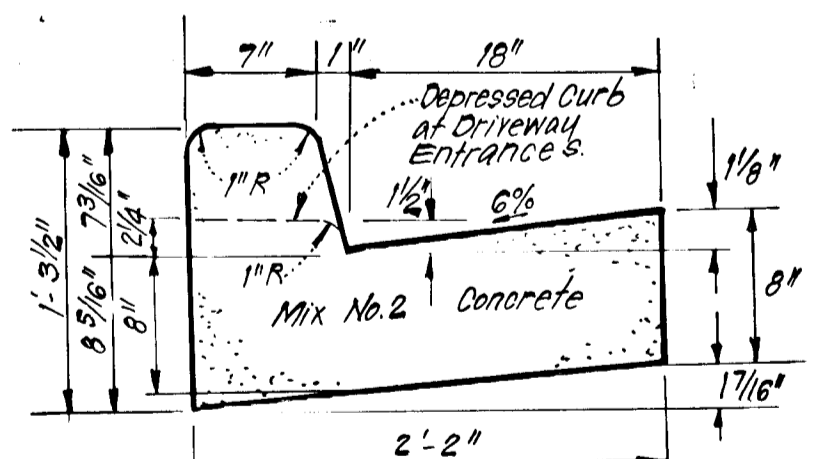
ALTERNATE PAVING SECTION MD ROUTE #432
NO SCALE

Bituminous Conc. Surface	1 1/2"
Bituminous Conc. Base	2 1/2"
Prime	1"
8" Crusher Run Base (Placed in 2 Courses) or	8" or 6"
6" Dense Graded Stabilized Aggregate Base Course	

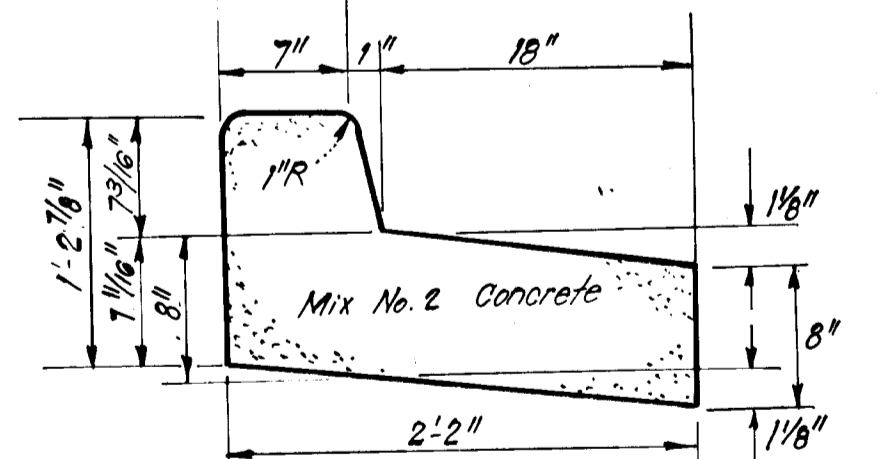
ALTERNATE PAVING SECTION FOR PUBLIC ROADS

Bituminous Conc. Surface	1"
Bituminous Conc. Base	2"
Prime	1"
5" Crusher Run Base Course or	5" or 4"
4" Dense Graded Stabilized Aggregate Base Course	

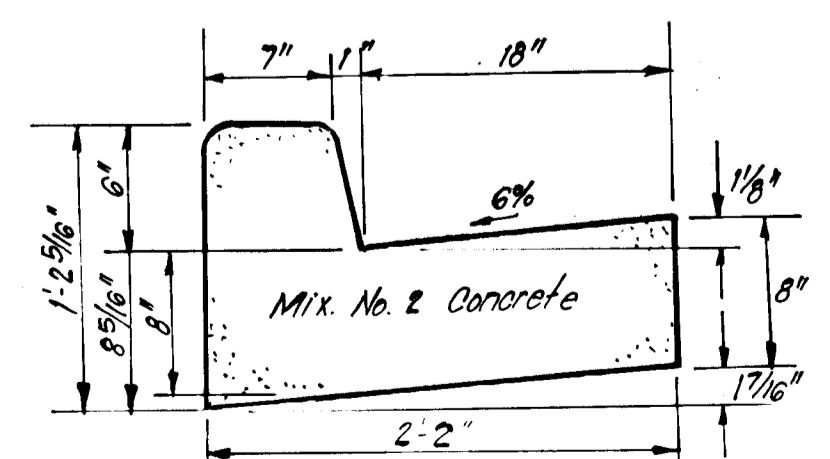
ALTERNATE PAVING SECTION FOR PARKING AREAS
NO SCALE



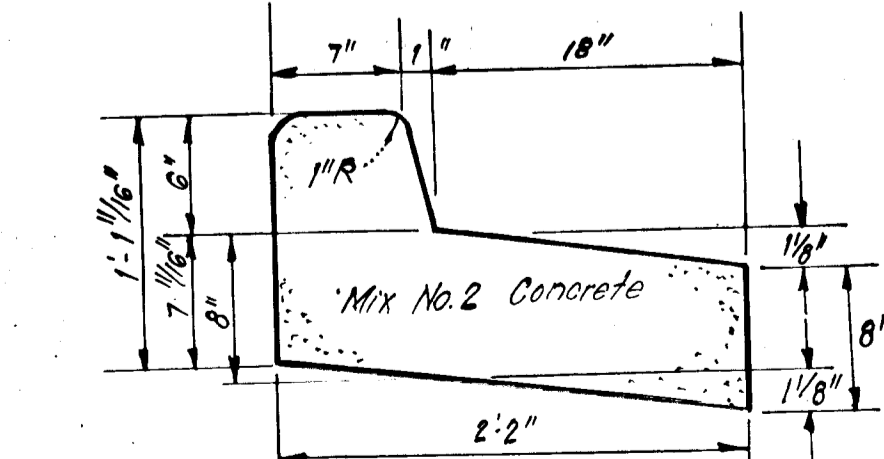
STANDARD 7" COMBINATION CURB & GUTTER
NO SCALE



REVERSE 7" COMBINATION CURB & GUTTER
NO SCALE

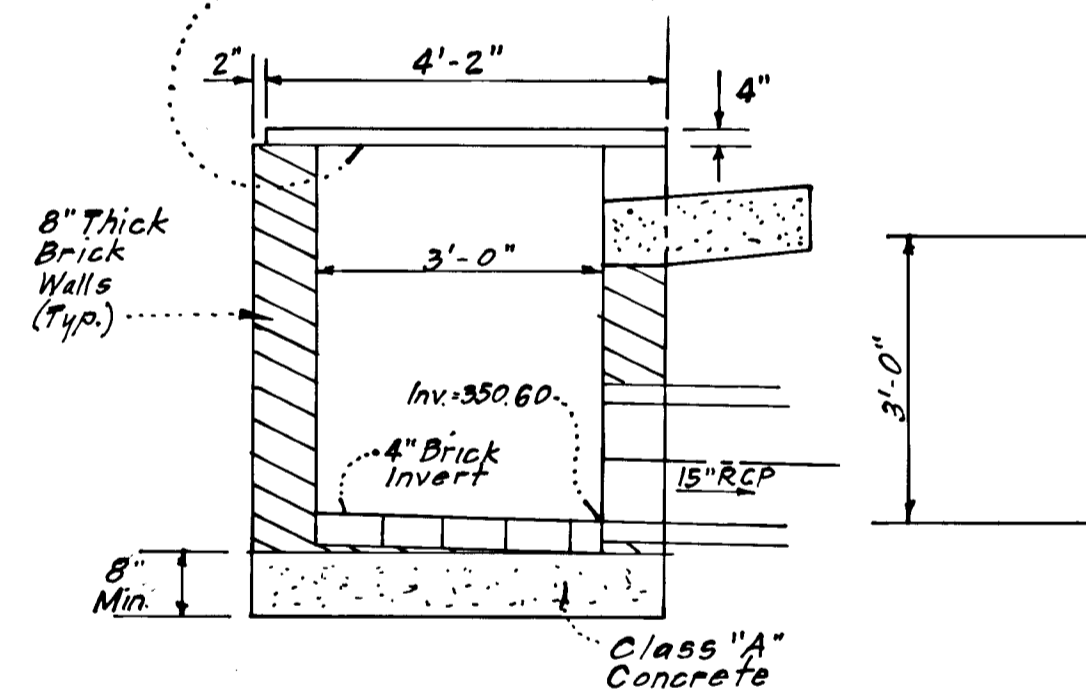


STANDARD 6" COMBINATION CURB & GUTTER
NO SCALE



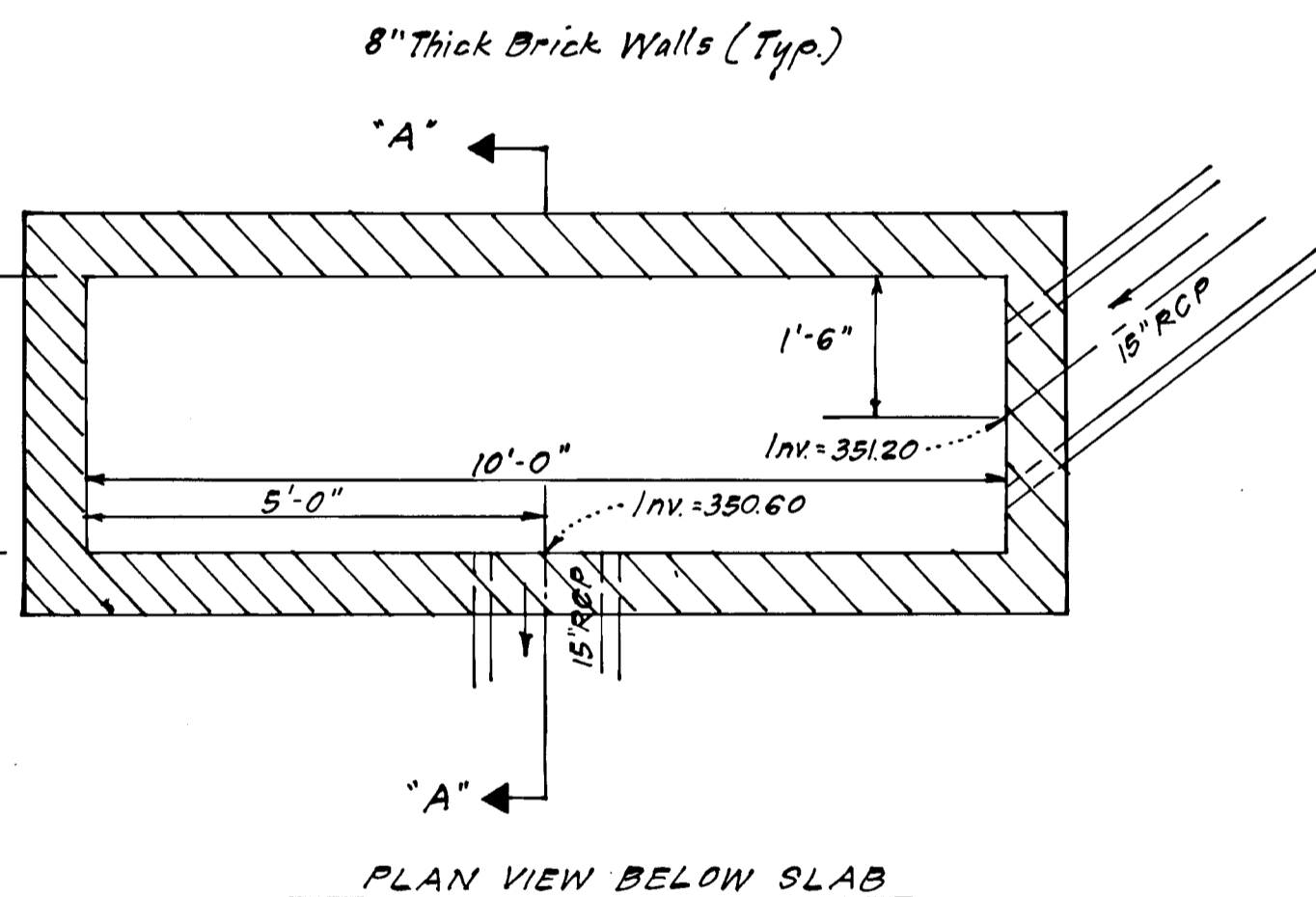
REVERSE 6" COMBINATION CURB & GUTTER
NO SCALE

Top Slab to be 11'-0" Long (See Ho. Co. Std. SD4.02)



SECTION "A"-A
No Scale

DETAIL OF STR. I-12
NO SCALE

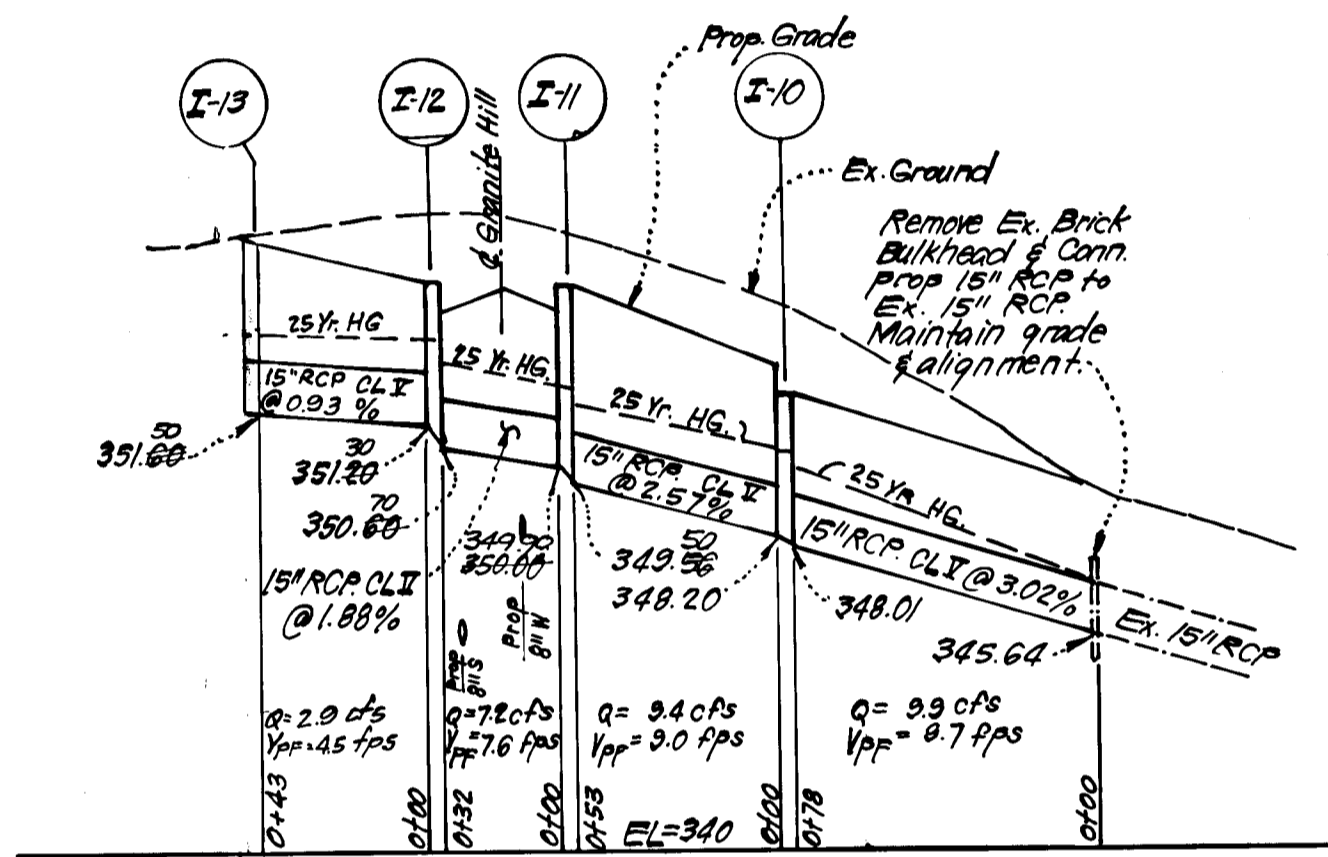


PLAN VIEW BELOW SLAB

No.	TYPE	INV IN	INV OUT	TOP ELEVATION	REMARKS	LOCATION
I-10	SHA Std. W.R. Inlet	348.20	348.01	352.80	SHA Std. MD 374.02 W=3'5 1/4"	Sta. 13+11.28 Md #432 20' LT.
I-11	A-10 Inlet	350.00	349.56	354.65	Ho. Co. Std. SD/ 4.02 W=2'6"	Sta. 01+58.39 Granite Hill 15' LT.
I-12	A-10 Inlet	351.20	350.60	354.86	Ho. Co. Std. SD/ 4.02 W=3'-0"	Sta. 01+58.67 Granite Hill 15' LT.
I-13	SHA Std. W.R. Inlet	-	351.60	355.75	SHA Std. MD 374.02 W=3'5 1/4"	Sta. 13+10.20 Md #432 20' LT.

All inverts to be fully developed.

SIZE	TYPE	LENGTH
15"	RCP	206 LF



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

- Notes:
- See Howard Co. Std. SD4.02 for Details not shown.
 - Invert to be fully developed.

AS-BUILT SURVEY CERTIFIED BY DONALD B. SACKETT, L.S. No. 6059 - OCT. 14, 1983

No.	REVISION	DATE
1.	Revised Location of Sidewalk along Rte. #432, Location of I-13, NW Fillet Radius on Granite Hill, revised Pipe Schedule, Str. Schedule and Profile.	11-20-82

APPROVED: Department of Public Works
 Chief, Bureau of Engineering
 APPROVED: Howard County Office of Planning and Zoning
 Acting Louis F. Danner
 Chief, Division of Land Development & Zoning Administration



CLARK • FINEFROCK & SACKETT
 ENGINEERS • PLANNERS • SURVEYORS
 11314 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-1400

DESIGNED: JLS
 DRAWN: JLS
 CHECKED: JLS
 DATE: 5-21-82

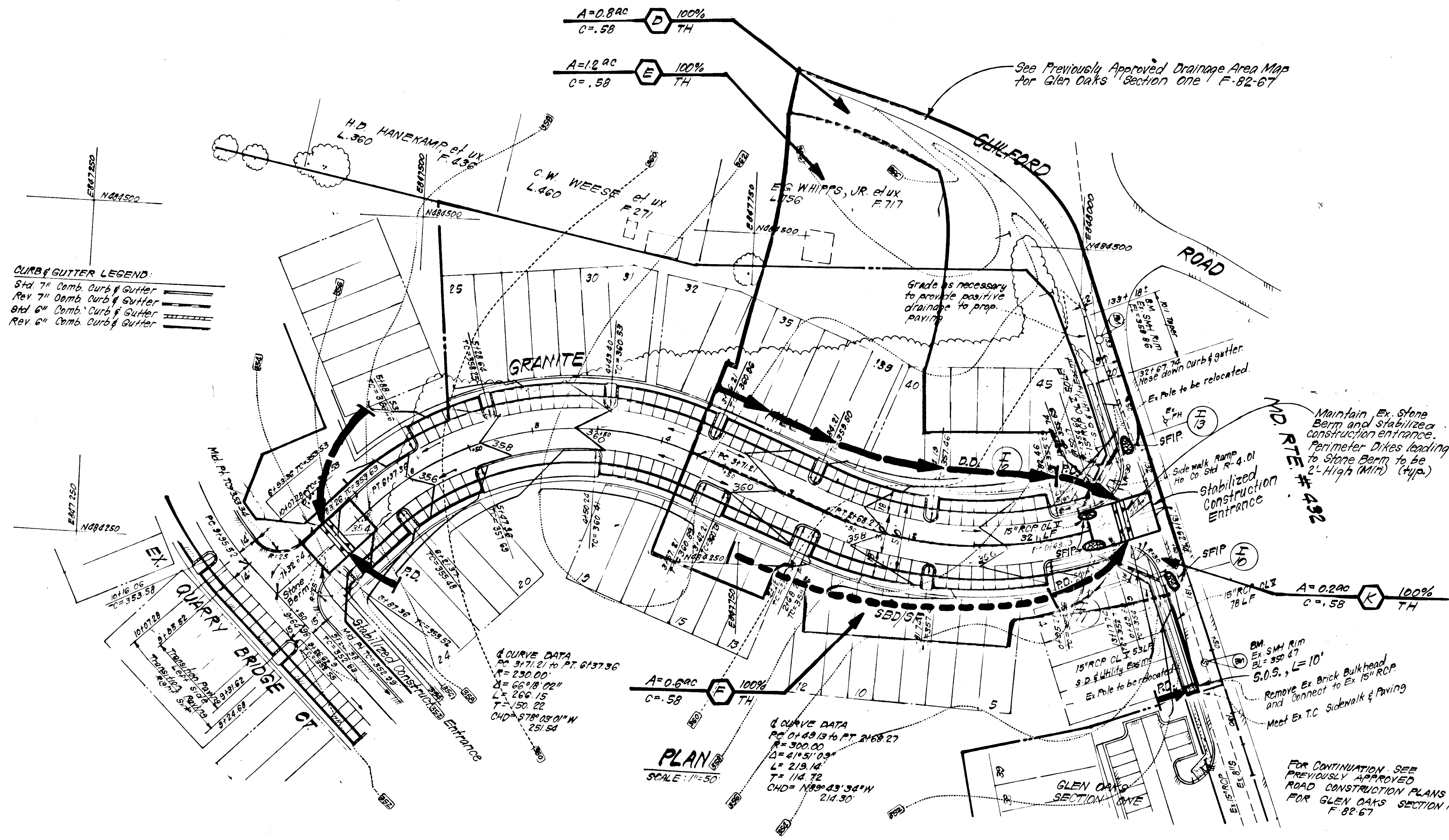
SCALE: As Shown
 DRAWING: 20-4
 JOB NO.: 81-079
 FILE NO.: 81-079-D

FOR: EARL ARMIGER
 3967 Ducks Foot Lane
 Ellwood City, Md. 21043

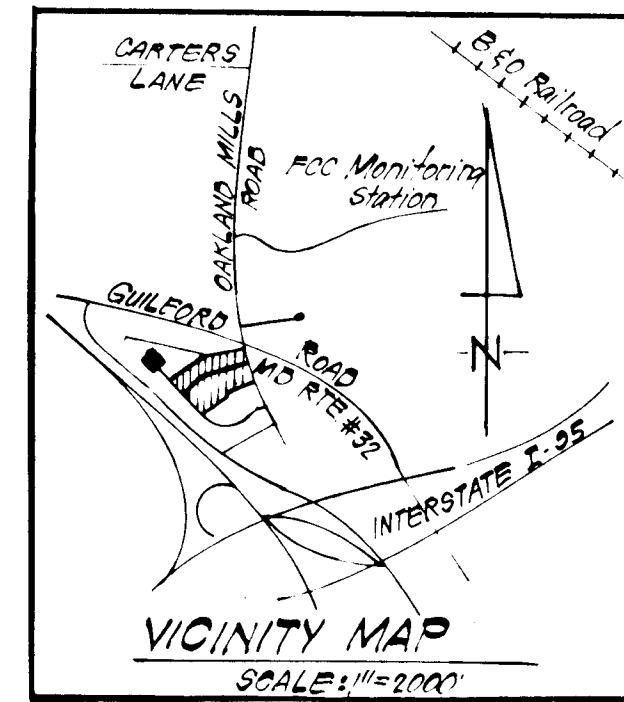
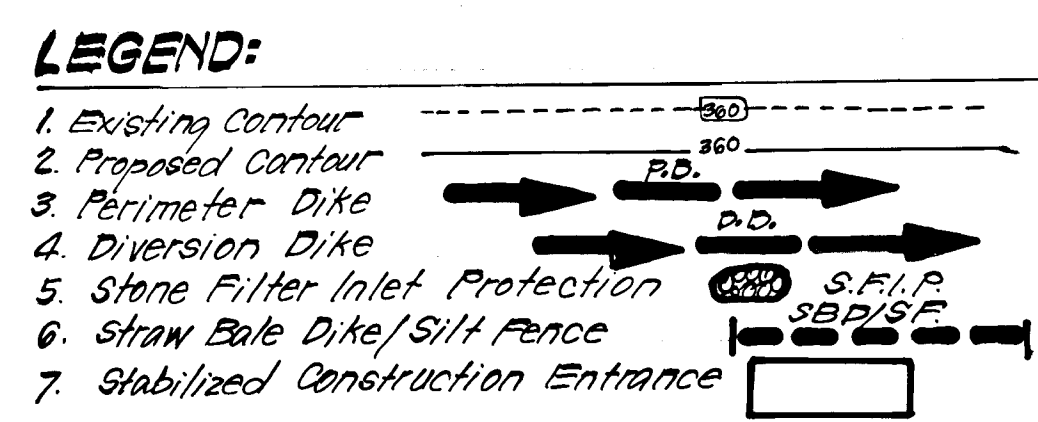
933



CURB & GUTTER LEGEND:
 Std. 7" Comb. Curb & Gutter
 Rev. 7" Comb. Curb & Gutter
 Std. 6" Comb. Curb & Gutter
 Rev. 6" Comb. Curb & Gutter



- CONSTRUCTION SEQUENCE:**
1. Install Sediment & Erosion Control Measures.
 2. Rough Grade Roadway
 3. Construct Utilities
 4. Construct Storm Drainage.
 5. Fine Grade and Construct Paving, Sidewalks, etc.
 6. Stabilize all other disturbed areas onsite in accordance with Stds. and Specs.
 7. Remove Sediment & Erosion Control Measures after all areas draining to them have been stabilized.



933

Reviewed for: HOWARD S.C.D.
 Name
 and meets Technical Requirements
 Signature: James M. Holmes Date: 9-27-82
 U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: Wm. T. [unclear] Date: 9-27-82
 Approved Date

DEVELOPER'S/BUILDER'S CERTIFICATE
 "I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature: L. Earl Armiger Date: 6-4-82
 Signature of Developer/Builder Date

ENGINEER'S CERTIFICATE
 I hereby 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.

Signature: G. Nelson Clark Date: 5-25-82
 Signature Date



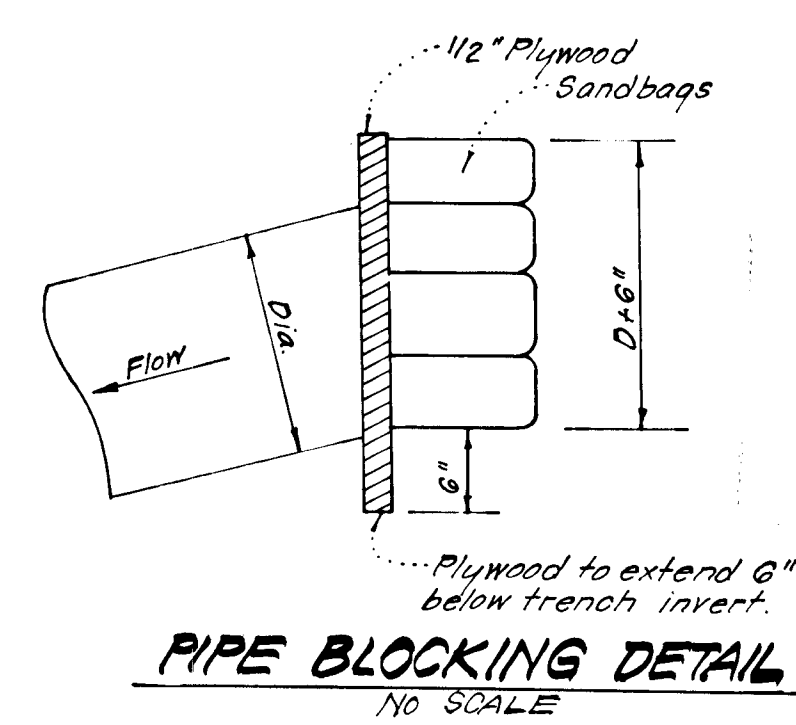
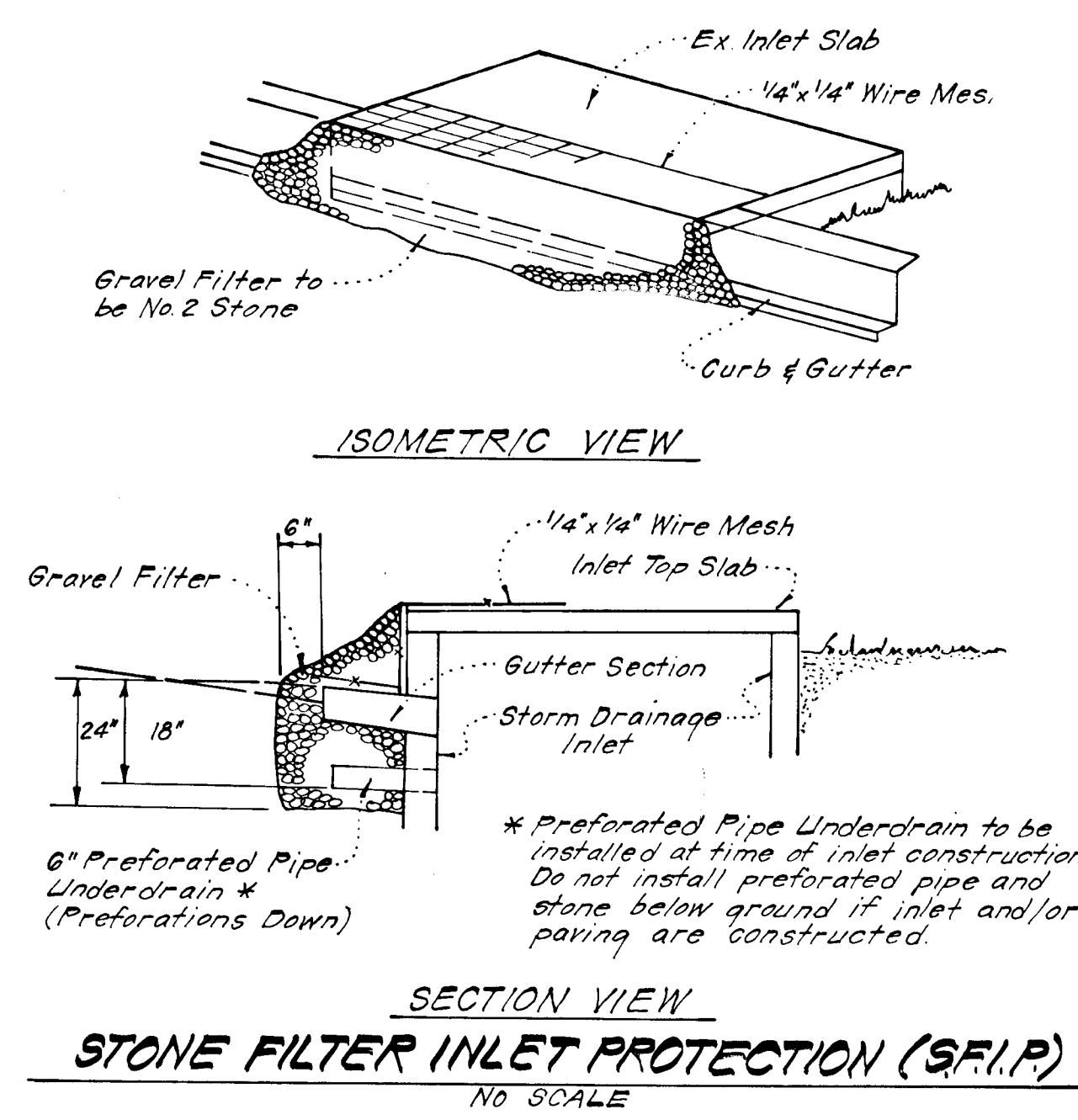
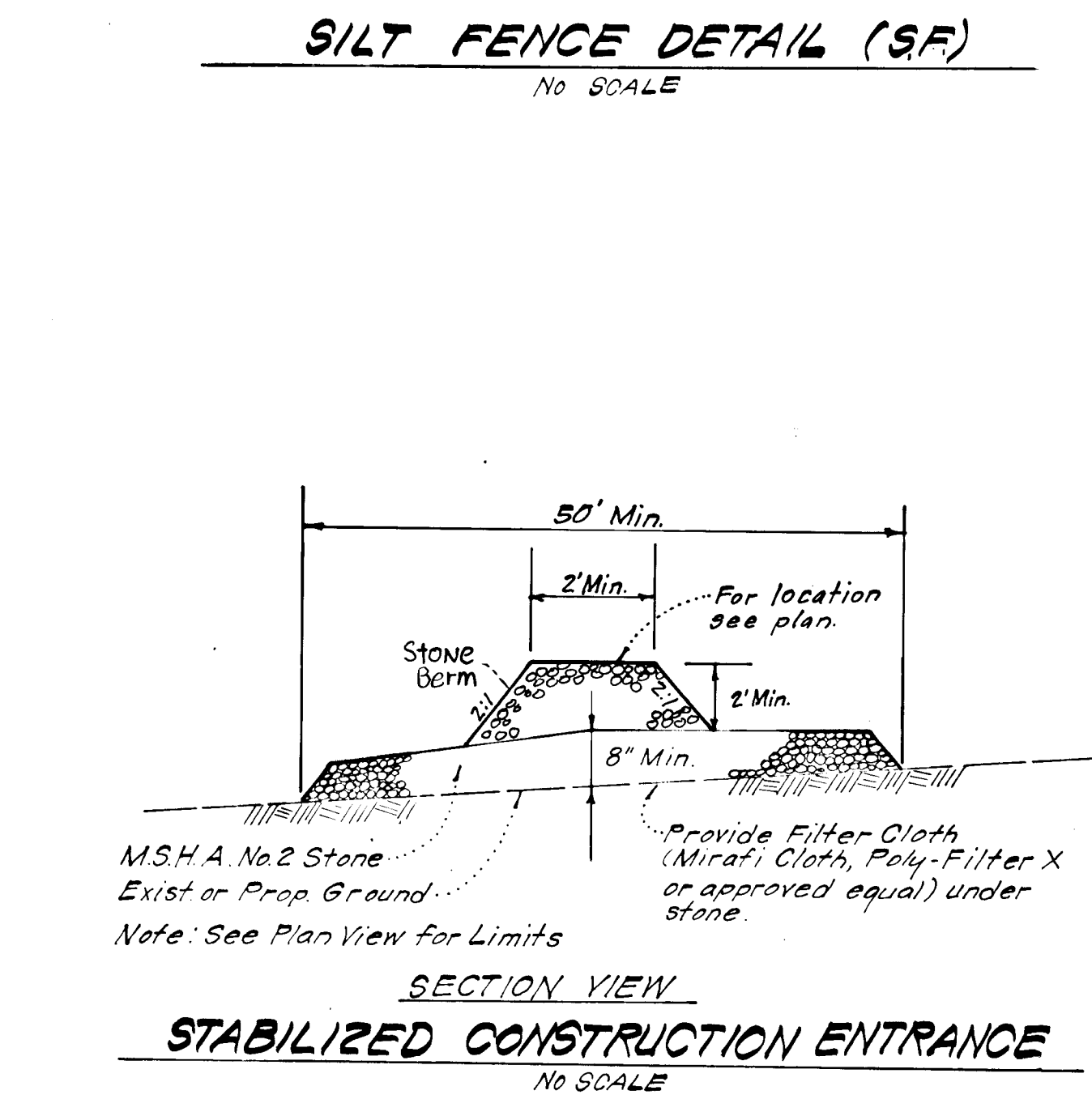
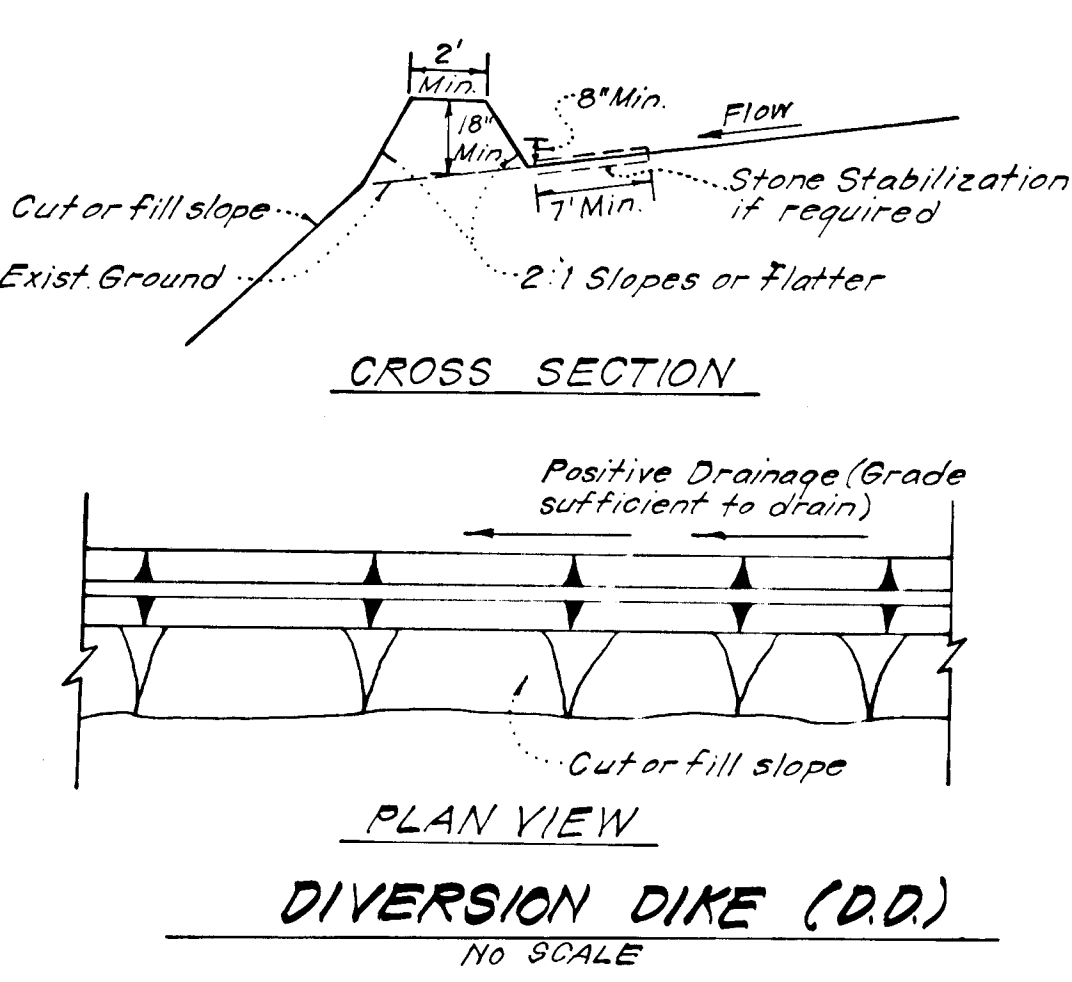
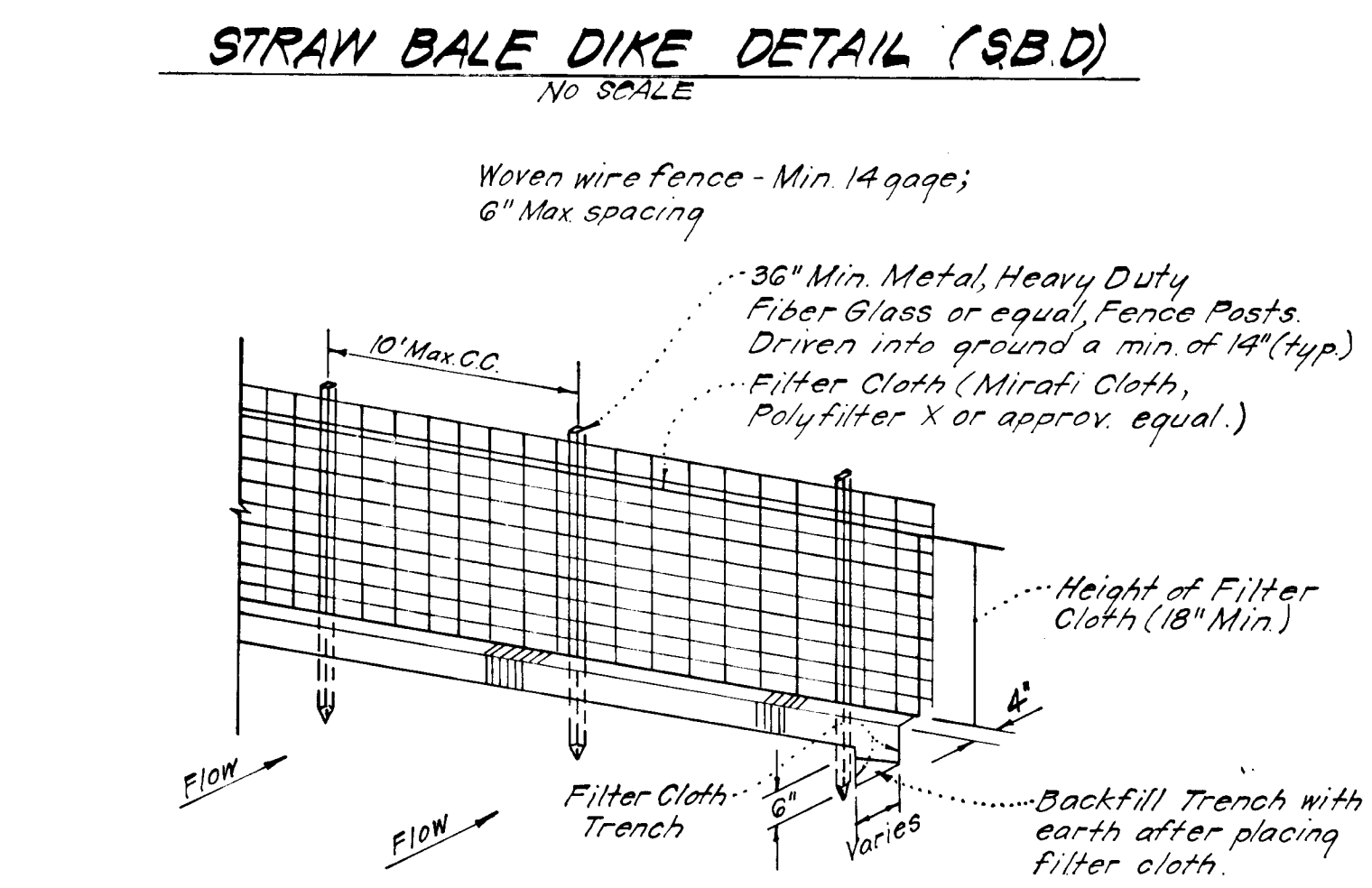
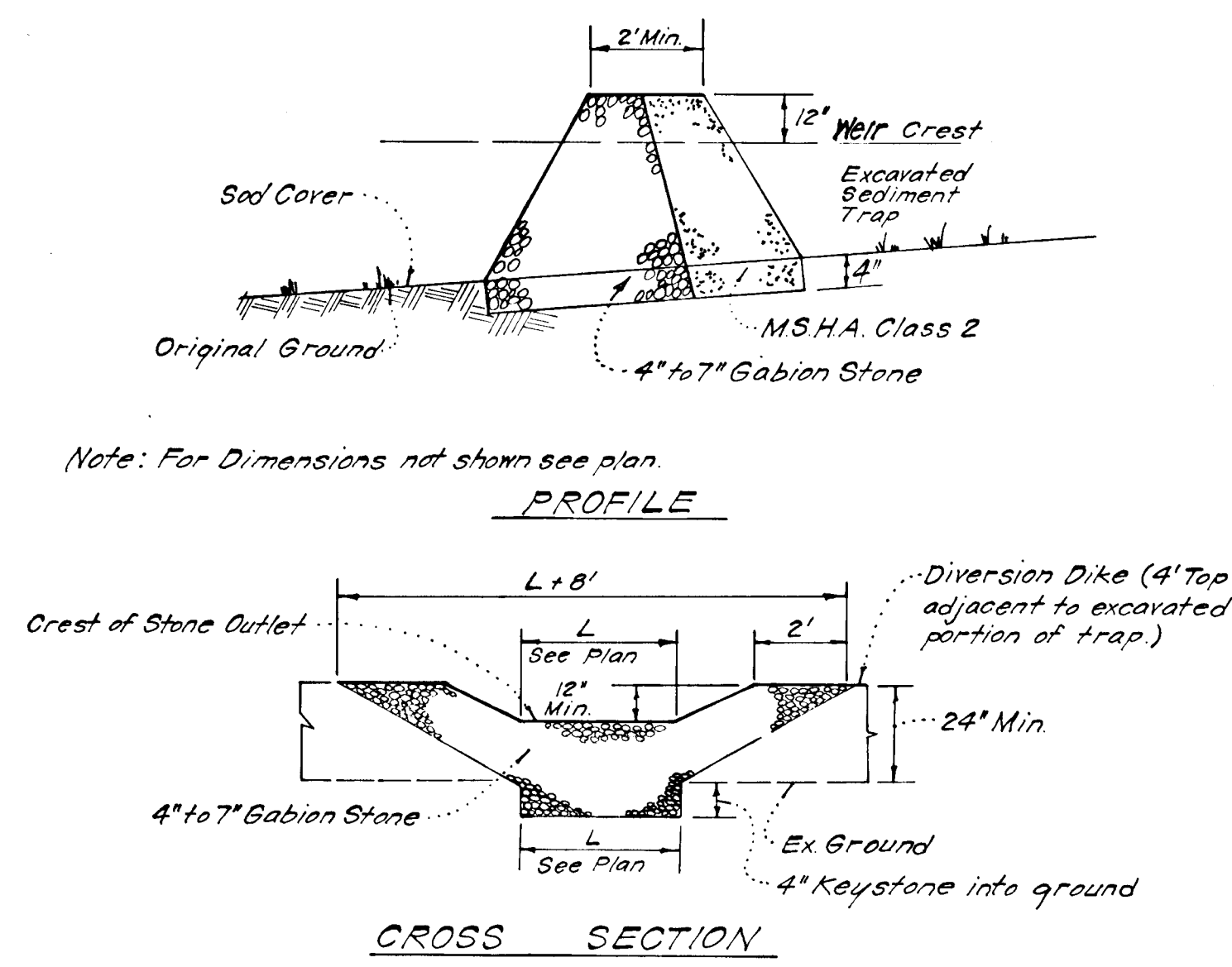
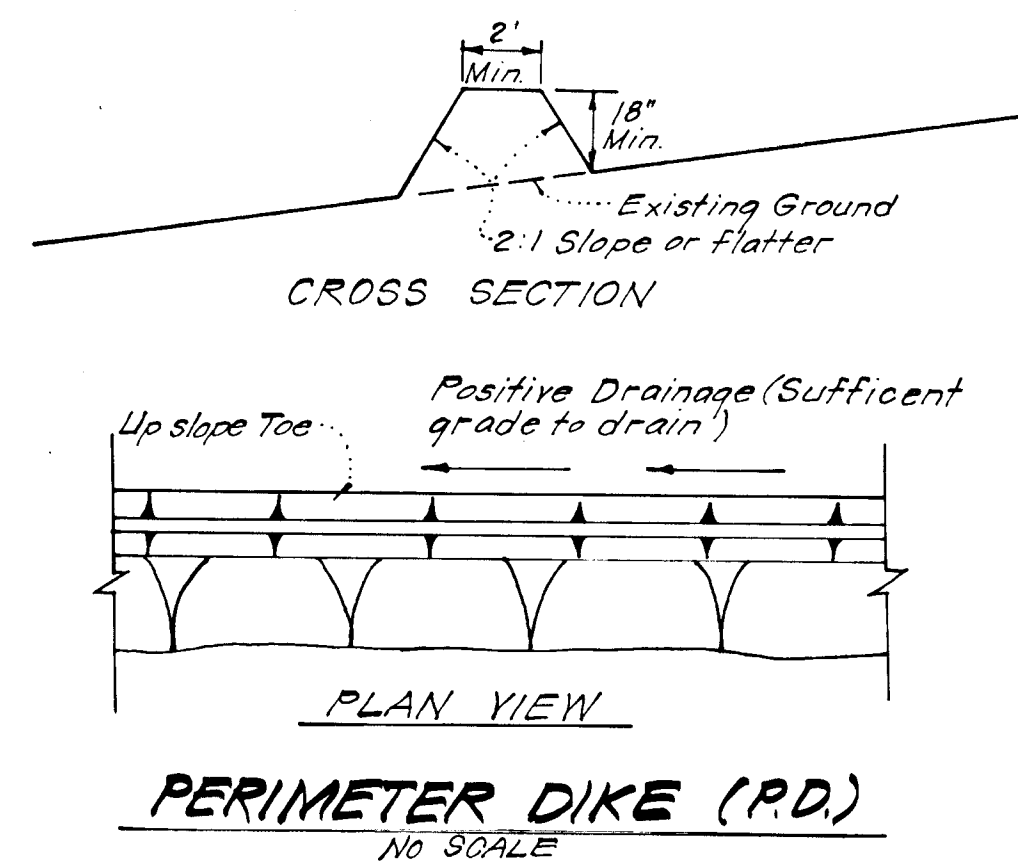
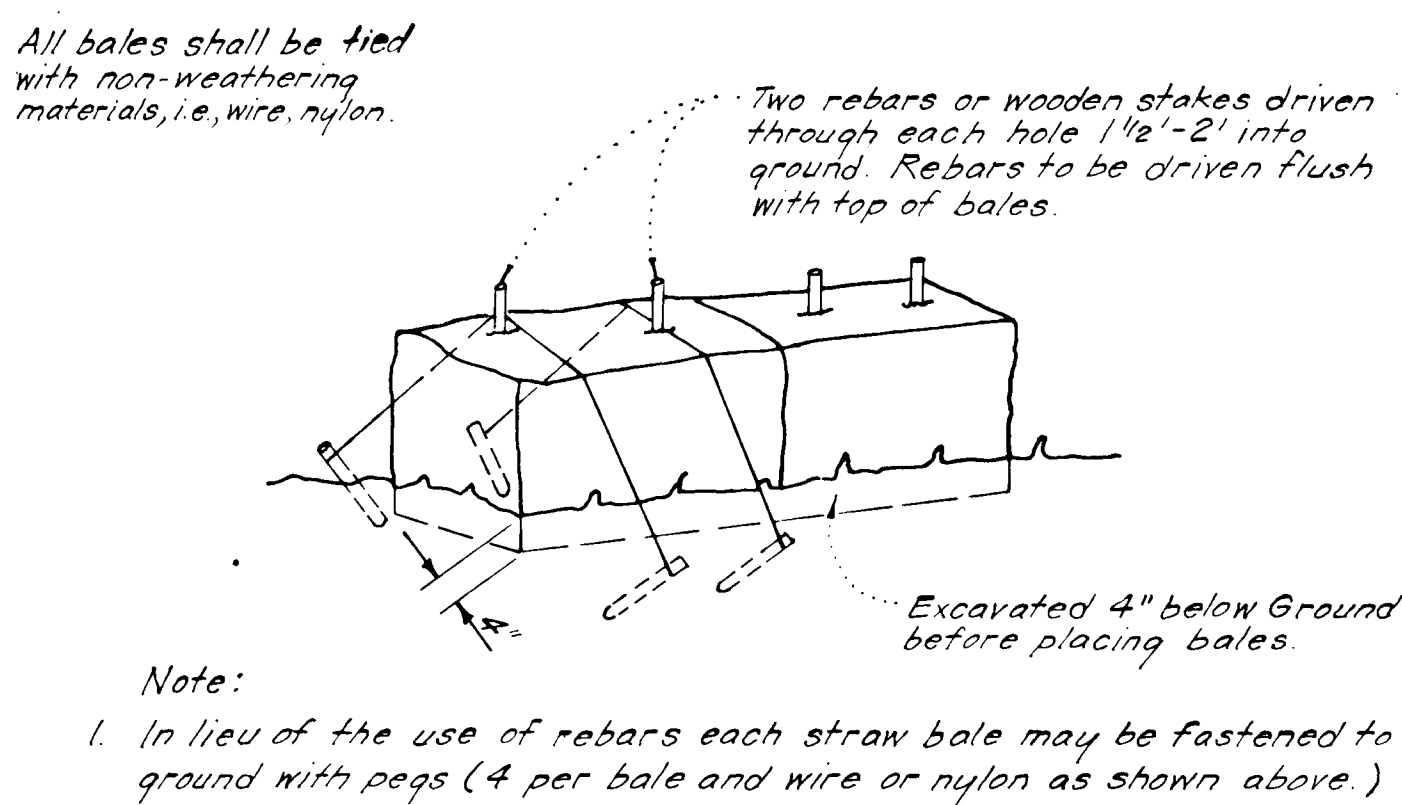
APPROVED: Department of Public Works
 Signature: [unclear] Date: 9-30-82
 Chief, Bureau of Engineering
 APPROVED: Howard County Office of Planning and Zoning
 Signature: Louis F. [unclear] Date: 9-27-82
 Chief, Division of Land Development & Zoning Administration

CLARK • FINEFROCK & SACKETT
 ENGINEERS • PLANNERS • SURVEYORS
 11315 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400

DESIGNED J.L.S.	ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL PLAN & DRAINAGE AREA MAP	SCALE AS SHOWN
DRAWN K.I.W.	GLEN OAKS	DRAWING 3 OF 4
CHECKED J.L.S.	SECTION ONE AREA THREE 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 81-079
DATE 5-21-82	FOR: EARL ARMIGER 3967 Ducks Foot Lane Ellicott City, Md 21043	FILE NO. 81-079-D

GENERAL NOTES

- Grading Permits shall be obtained prior to installation of Sediment Control & Grading.
- All Sediment and Erosion Control Measures will be installed and stabilized according to this plan prior to any other grading, clearing or disturbance of the existing surface of the site. See note #6 for stabilization except that the seed mixture will be annual rye applied at a rate of 14 lbs/1000 sf.
- Notify the Bureau of Inspections and Permits at least 24 hrs before starting any work.
- All Sediment Control Practices to conform to the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" and shall be adjusted to meet actual field conditions.
- Stabilization of Disturbed ground to be done as soon after construction as possible.
- All disturbed area to be stabilized in accordance with the following Specifications:
 - Seed - certified 85% germination applied at the rate of 3 lbs/1000 sf. Mixture - 40% Kentucky Blue, 20% chewing Fescue, 20% Kentucky 31 and 20% annual rye.
 - Fertilizer - 10-10-10 applied at a rate of 23 lbs/1000 sf. Ground Agricultural Lime or Dolomitic Lime applied at a rate of 90 lbs/1000 sf.
 - Mulch - Weed free grain straw applied at a rate of 70-90 lbs/1000 sf. Mulch shall be secured to the ground by any approved method i.e.; asphalt tacks, chemical binder etc.
 - All Sod used shall be Maryland State Certified.
- All structural Sediment Control Measures are to remain in place until permission for their removal has been obtained from the Bureau of Inspections and Permits.
- On-Site Inspection and Maintenance of all Sediment Control Measures including clean out of Sediment Traps and Dikes, and proper establishment of all planned vegetative measures will be the responsibility of the developer or his representative on the site, on a continuing day to day basis.
- It will be the developer's responsibility to provide additional Sediment & Erosion Control Devices to protect stabilized areas during construction.
- The Contractor shall keep all public roads free of sediment deposits left from traffic leaving construction site.
- Approval of this plan is conditional upon the approval of Sediment Control Plan for the off-site waste or borrow area prior to the import of any borrow or export of waste to or from this site.
- All pipes to be blocked at the end of each day. See detail this sheet.
- Total Amount of Straw Bales or Silt Fence shown = 250 L.F.
- SITE ANALYSIS:
 - Total Area: 4.855 Acres
 - Area to be Roofed: None Acres
 - Area to be Paved: 0.993 Acres
 - Area to be Seeded: 1.107 Acres
 - Area Undisturbed: 2.755 Acres



Reviewed for HOWARD S.C.D. Name
and meets Technical Requirements
James M. Blum Signature Date
U.S. Soil Conservation Service
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Wm. T. ... 9-27-82 Approved Date

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."
L. Earl Armiger Signature of Developer/Builder Date 6-4-82

ENGINEER'S CERTIFICATE
I hereby 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.
G. Nelson Clark 5-25-82 Date



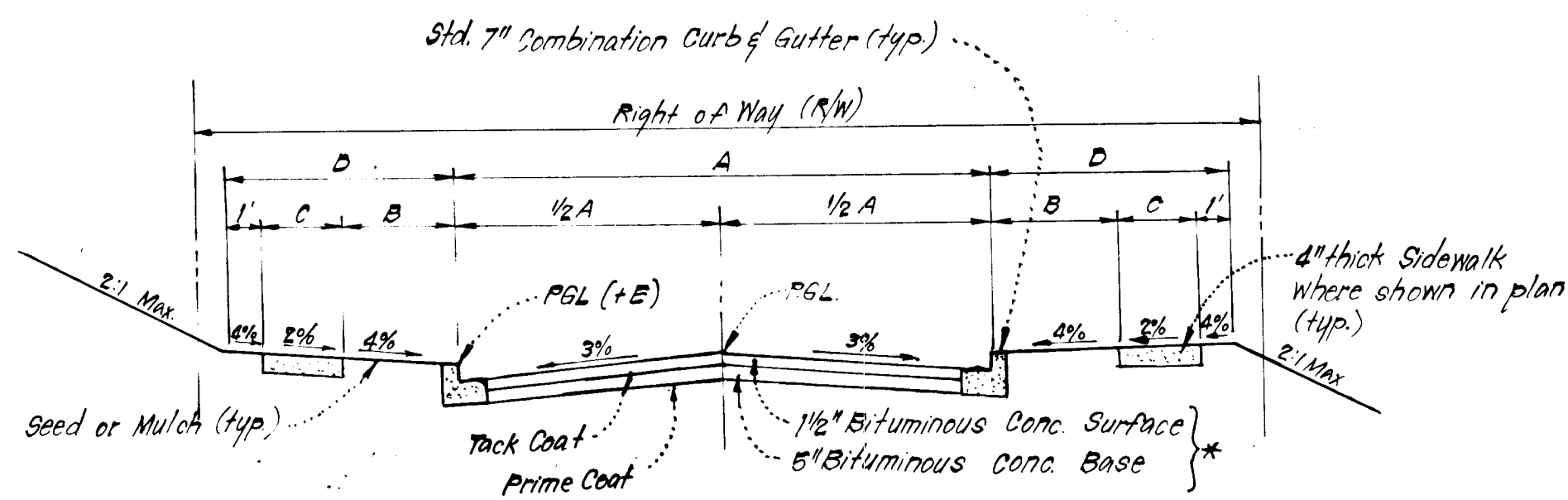
APPROVED: Department of Public Works
William & Rain 9-30-82 Chief, Bureau of Engineering Date
APPROVED: Howard County Office of Planning and Zoning
Louis F. ... 9-27-82 Chief, Division of Land Development & Zoning Administration Date

CLARK • FINEFROCK & SACKETT
ENGINEERS • PLANNERS • SURVEYORS
11315 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 (301) 593-3400

DESIGNED	J.L.S.	ROAD CONSTRUCTION PLANS	SCALE
DRAWN	K.I.W.	SEDIMENT & EROSION CONTROL DETAILS	AS SHOWN
CHECKED	J.L.S.	GLEN OAKS	DRAWING
DATE	5-21-82	SECTION ONE AREA THREE	4054
		6TH ELECTION DISTRICT	JOB NO
		HOWARD COUNTY, MARYLAND	81-079
		FOR: EARL ARMIGER	FILE #
		3907 DUCKS FOOT LANE	81-079-D
		ELICOTT CITY, MD 21043	

F-63-210 AS-BUILT 10-14-83

933



TYPICAL PAVING SECTION - PUBLIC ROADS

STRUCTURE SCHEDULE					
No.	TYPE	INVERT IN	INVERT OUT	TOP ELEVATION UPPER LOWER	REMARKS
* T-101	Shallow Manhole	401.83	399.82	409.8	Ho. Co. Std. G 5.05 60" Sq.
* M-46	Shallow Manhole	401.83	401.78	406.83	Ho. Co. Std. G 6.05 48" Sq.
* M-48	Shallow Manhole	403.42	403.17	407.83	Ho. Co. Std. G 6.05 48" Sq.
* T-50	A-5 Inlet	405.14	404.34	409.79	Ho. Co. Std. SD 4.01 W=3'6"
* T-52	B Manhole	406.50	406.30	410.80	Ho. Co. Std. G 5.05 48" Sq.
* T-54	A-10 Inlet W/Defl.	415.53	414.45	420.83	Ho. Co. Std. SD 4.02 W=3'6"
* T-56	A-10 Inlet W/Defl.	415.53	414.30	420.83	Ho. Co. Std. SD 4.02 W=3'6"
* T-58	A-10 Inlet W/Defl.	415.53	415.90	420.83	Ho. Co. Std. SD 4.02 W=3'6"
* T-60	A-10 Inlet	415.53	408.55	409.79	Ho. Co. Std. SD 4.02 W=3'6"
S-100	Metal End Section	399.82	20	-	Ho. Co. Std. SD 5.01 42" Dia.
T-102	Special Structure	400.58	400.36	400.20	See detail sht. 5.
S-104	Metal End Section	403.90	-	-	Ho. Co. Std. SD 5.01 42" Dia.
FC-105	Field Connection	405.51	404.39	-	Per Manufacture Specs.
S-106	Metal End Section	407.15	-	-	Ho. Co. Std. SD 5.01 42" Dia.
T-107	A-5 Inlet	410.05	409.85	415.33	Ho. Co. Std. SD 4.01 W=2'6"
T-109	A-5 Inlet	-	410.20	415.33	Ho. Co. Std. SD 4.01 W=2'6"

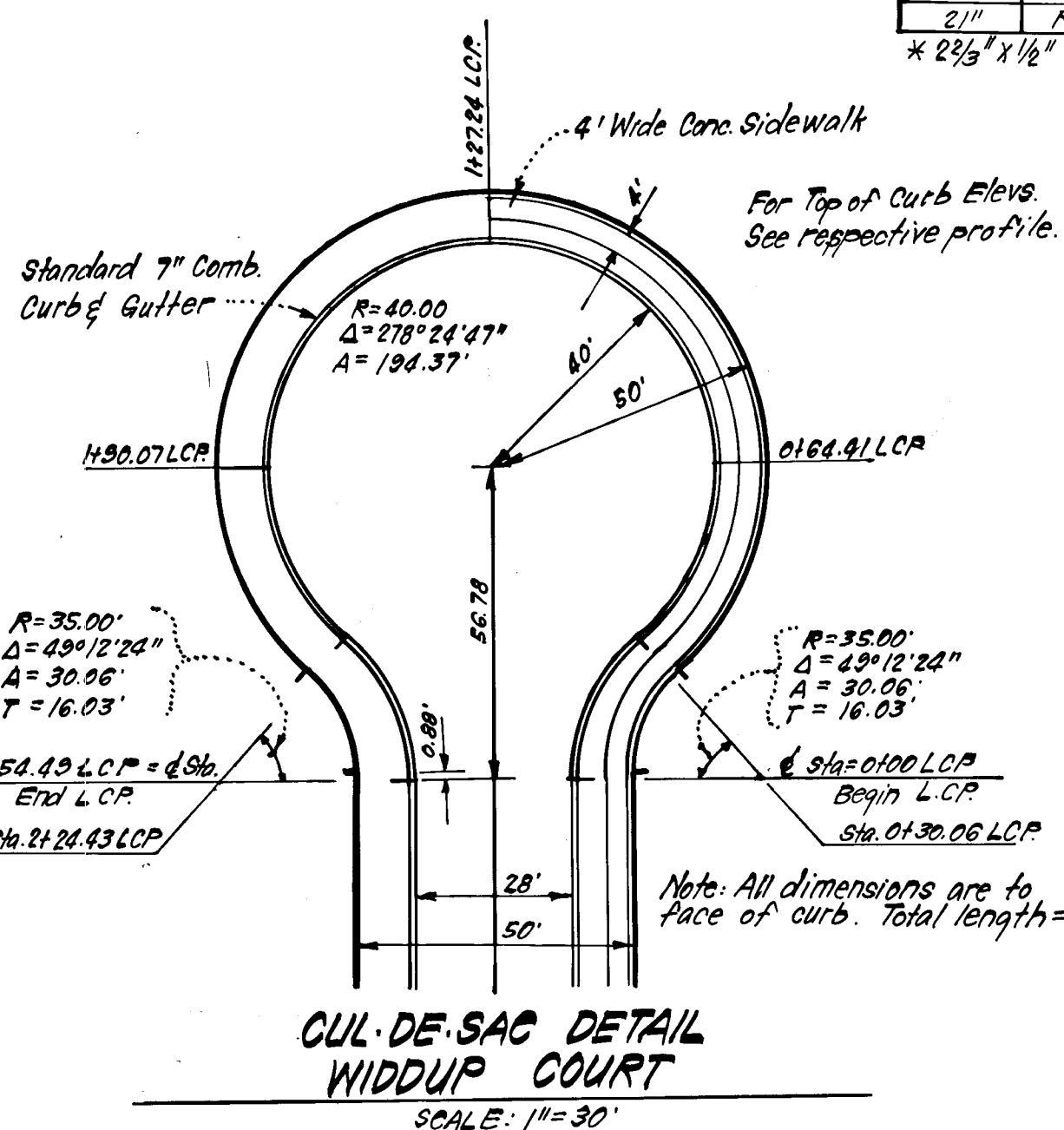
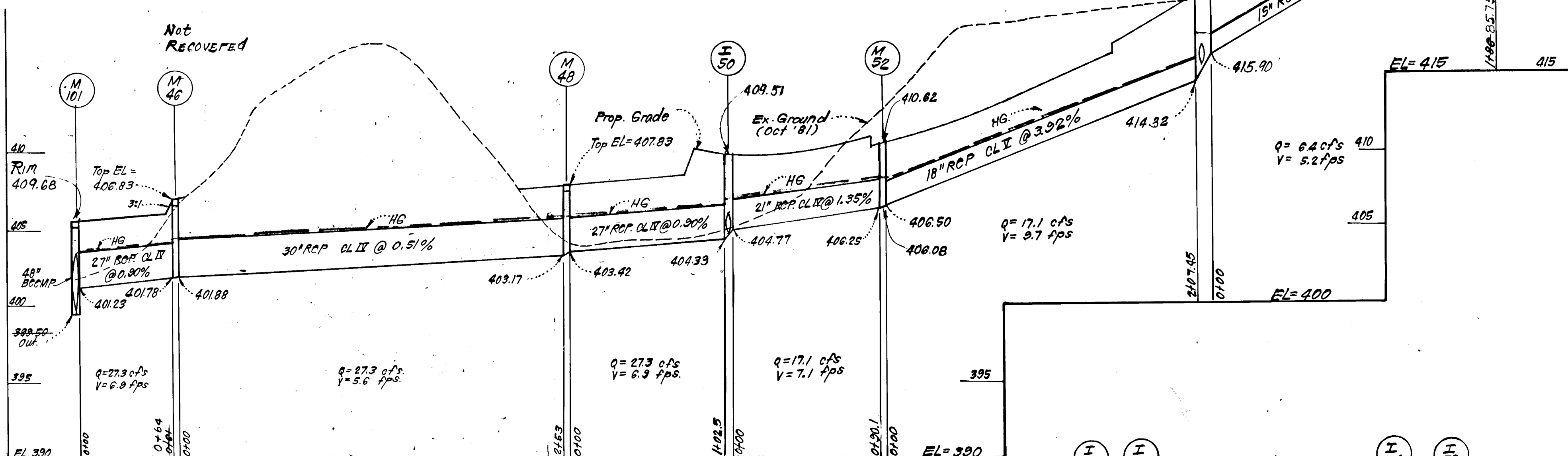
* Cast Inlet Fram in 4" top slab as per Ho. Co. Std.
See Ho. Co. Std. SD 4.83 for deflectors.

AS-BUILT SURVEY CERTIFIED
BY G. NELSON CLARK
P.E. No. 7139
DECEMBER 31, 1987

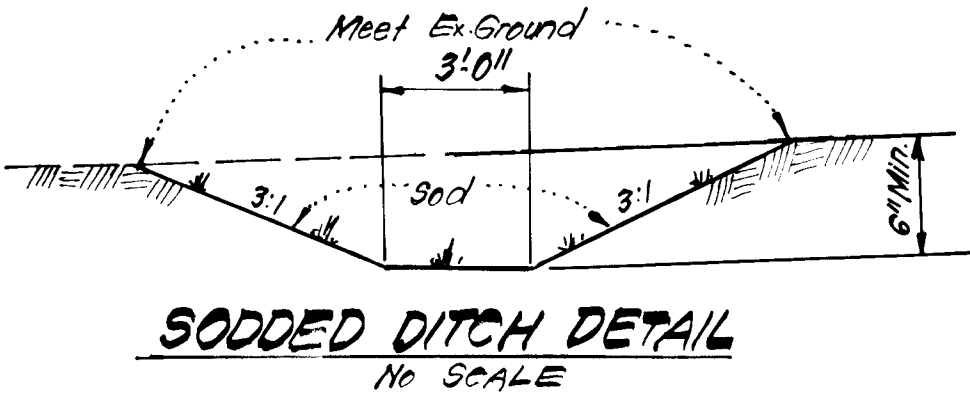
STREET NAME & STATION	TYPE OF TRAFFIC	A	B	C	D	R/W	ZONING	DESIGN SPEED	E
WILLEY MOOR LANE 409.40-18157.44	LOCAL	30'	4'	4'	8'	50'	R-20	30 mph	t.11
WIDDUP COURT 0100-8155.84	CUL-DE-SAC	28'	4'	4'	8'	50'	R-20	NA	t.13

PIPE SCHEDULE		
SIZE	TYPE	LENGTH
15"	RCP CL II	220 LF
18"	RCP CL II	62 LF
15"	BCCMP 16.9222	44 LF
18"	RCP CL II	163 LF
24"	RCP CL II	153 LF
48"	BCCMP 16.9222	31.3 LF
48"	BCCMP 16.9222	61 LF
48"	ALCOSP 16.9222	220 LF
30"	RCP CL II	253 LF
21"	RCP CL II	36 LF

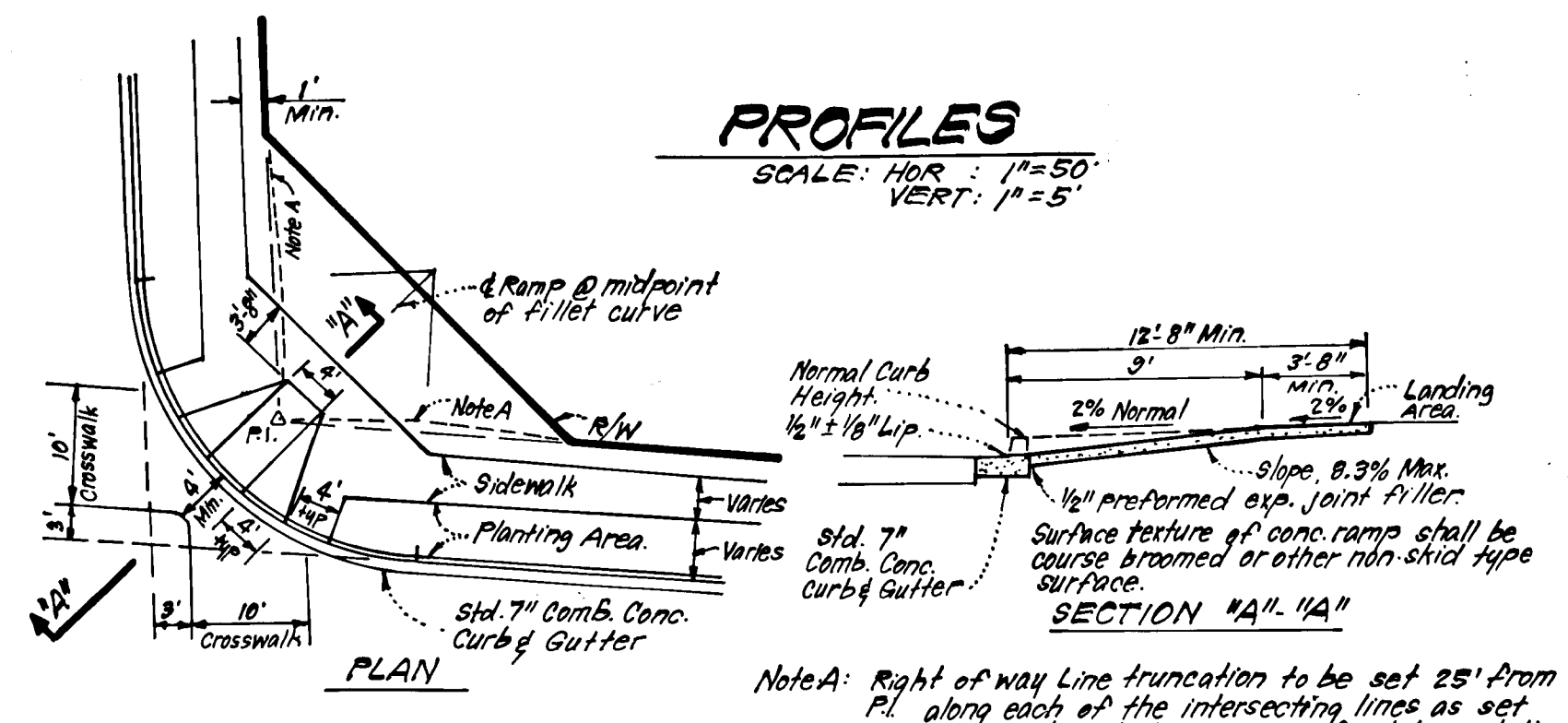
* 2 3/8" x 1/2" Corrugations



CUL-DE-SAC DETAIL WIDDUP COURT

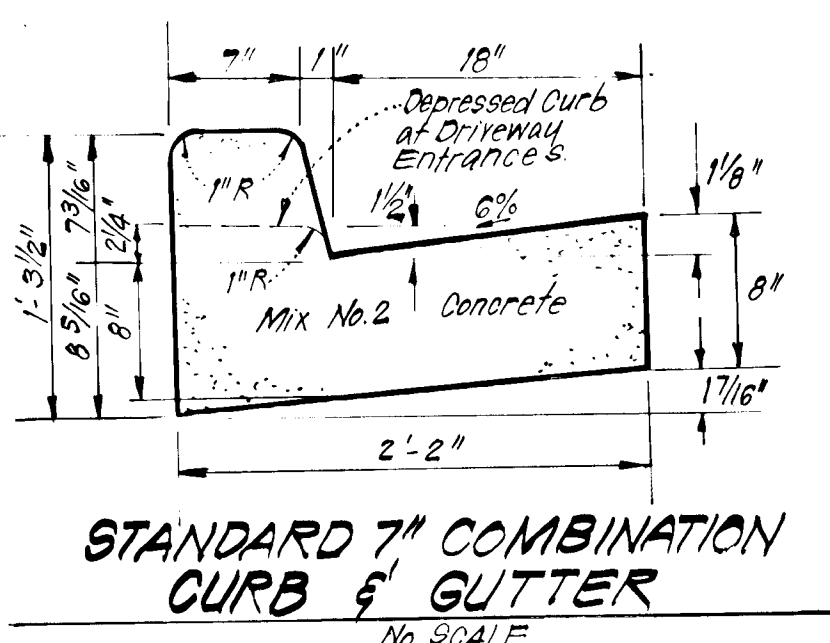


SODDED DITCH DETAIL

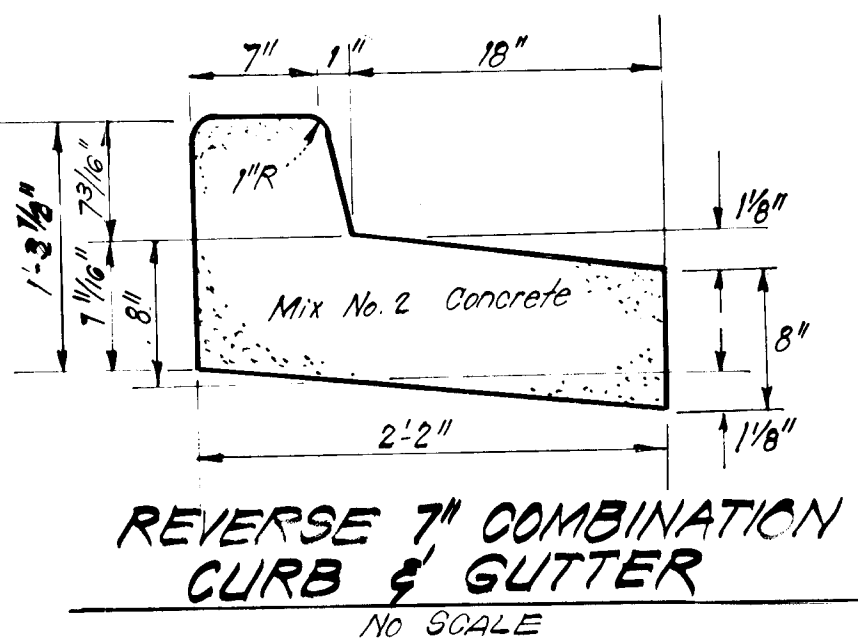


HANDICAP SIDEWALK RAMP

ALTERNATE PAVING SECTION FOR PUBLIC ROADS

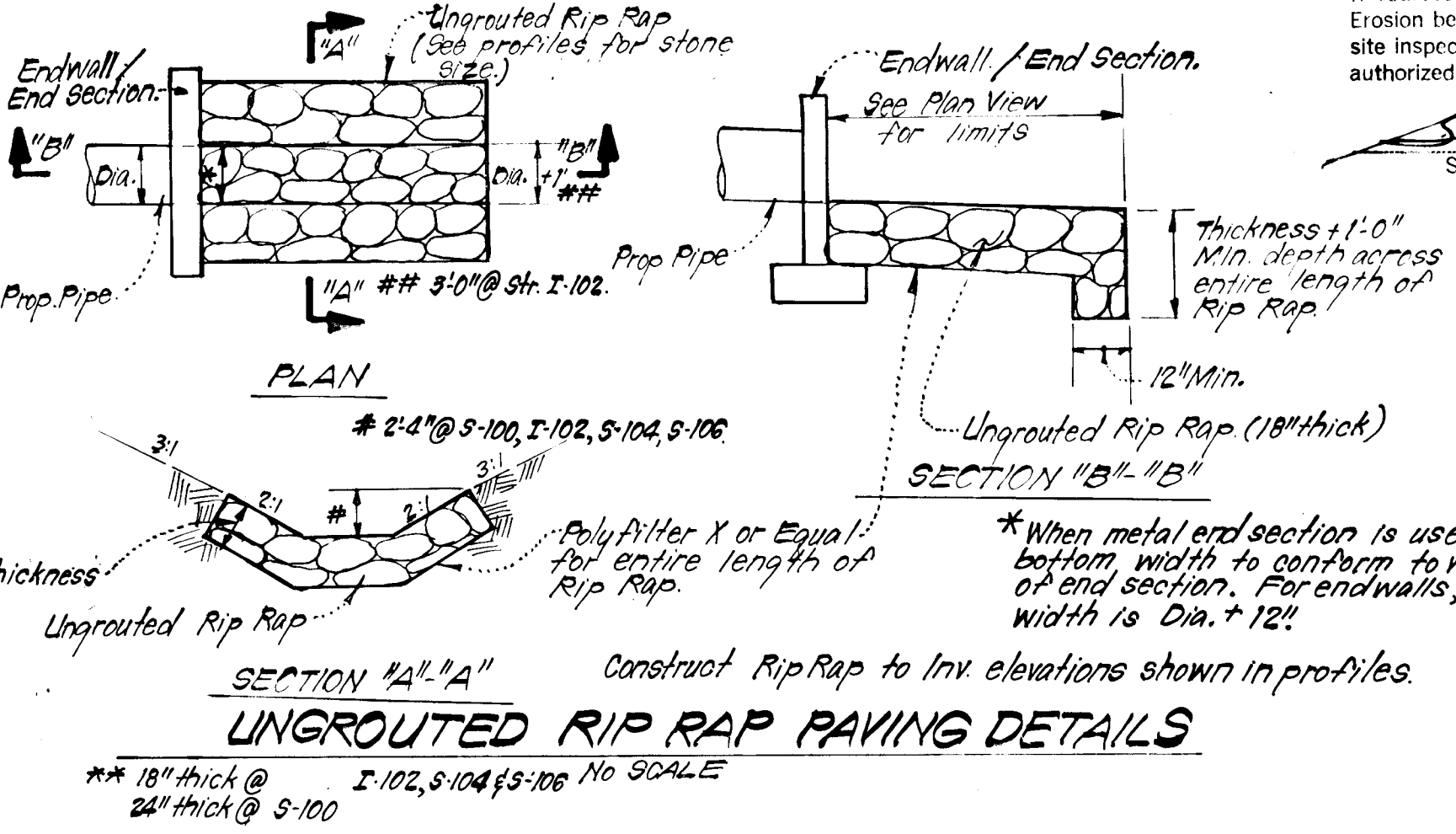


STANDARD 7" COMBINATION CURB & GUTTER



REVERSE 7" COMBINATION CURB & GUTTER

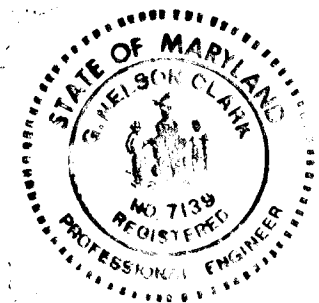
- GENERAL SODDING NOTES:
1. Apply 10-10-10 Fertilizer @ 1000#/acre (25#/1000 sq ft)
 2. Apply Ground Agricultural Limestone @ 2000#/acre (50#/1000 sq ft)
 3. Incorporate both Lime and Fertilizer into soil by discing. Firm up after incorporation.
 4. Lay sod to a tight fit. Roll to insure contact with underlying soil. Water as necessary for 1st 2 weeks in summer to ensure establishment.
 5. All sod to be used must be certified by the state of Maryland.
 6. Sod to be pegged and stapled.



UNGRAINED RIP RAP PAVING DETAILS

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."
Signature of Developer/Builder: *[Signature]* Date: 2/23/82

Reviewed for HOWARD S.C.D. Requirements
[Signature] Date: 12-7-82
U.S. Soil Conservation Service
"THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT."
[Signature] Date: 12-10-82



ENGINEER'S CERTIFICATE
I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan and that I am my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
[Signature] Date: 2-23-82

NO.	REVISION	DATE
1	REV. PROFILES SH. I-50 THRU M-101	12-4-83

APPROVED: Department of Public Works
[Signature] Date: 12-13-82
APPROVED: Howard County Office of Planning and Zoning
[Signature] Date: 12-8-82
APPROVED: Chief, Division of Land Development & Zoning Administration

CLARK · FINEFROCK & SACKETT
ENGINEERS · PLANNERS · SURVEYORS
11314 LOCKWOOD DRIVE · SILVER SPRING, MARYLAND 20904 · (301) 593-1400

DESIGNED	R.J.S.	SCALE	As Shown
DRAWN	K.I.W.	DRAWING	4 OF 8
CHECKED	R.V.S.	JOB NO.	81-091
DATE	10-14-82	FILE NO.	81-091-D

FOR: ROAD CONSTRUCTION PLANS
STORM DRAIN & PAVING DETAILS
BRAMPTON HILLS
SECTION 2 - AREA 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
FOR: DELTA CORPORATION
Suite 110, 101 Chestnut St
Gaithersburg, Md. 20877

STORM WATER MANAGEMENT POND NOTES

I. CONCRETE:

A. MATERIALS:

- a. Cement: Normal Portland Cement shall conform to the latest ASTM Spec. C-150.
- b. Water: The water used in concrete shall be clean free from oil, acids, alkali, scales, organic matter or other objectionable substances.
- c. Sand: The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a one-quarter inch sieve. Lime-stone sand shall not be used.
- d. Coarse Aggregate: The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with a maximum size of one and one half (1 1/2) inches.
- e. Reinforcing Steel: The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

B. DESIGN MIX:

The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5/8; 6 U.S. gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3 1/2. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

C. MIXING:

The concrete ingredients shall be mixed in batch mixes until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than 1 1/2 minutes after all the ingredients, except the full amount of water are in the mixer. The minimum mixing time is predicated on proper control of the speed of rotation at the mixer and of the introduction of the materials, including water into the mixer. Water shall be added prior to, during, and following the mixer charging operations. Excessive overmixing requiring the addition of water to preserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specs. given here.

D. FORMS:

- a. The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.
- b. The inside of forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed.
- c. Forms may be removed 24 hrs. after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

E. REINFORCING STEEL:

All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.

F. CONSOLIDATING:

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

G. FINISHING:

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

H. PROTECTION AND CURING:

Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least the first 3 days. All concrete shall be kept continuously moist for at least ten (10) days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may also be used.

I. PLACING TEMPERATURE:

Concrete may not be placed at temperatures below 37°F with the temperature falling, or 36°F with the temperature rising.

II. STABILIZATION:

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

* The pond embankment will be constructed with ML & CL.

III. SITE PREPARATION:

- A. Areas under the borrow areas, embankment, and structural works shall be cleared, grubbed and the top soil stripped to remove all trees, vegetation, roots or other objectionable material.
- B. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. Areas covered by the pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface.
- C. All cleared and grubbed material shall be disposed of outside the limits of the dam and reservoir as directed by the owner or his representative. When specified a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

IV. EARTH FILL:

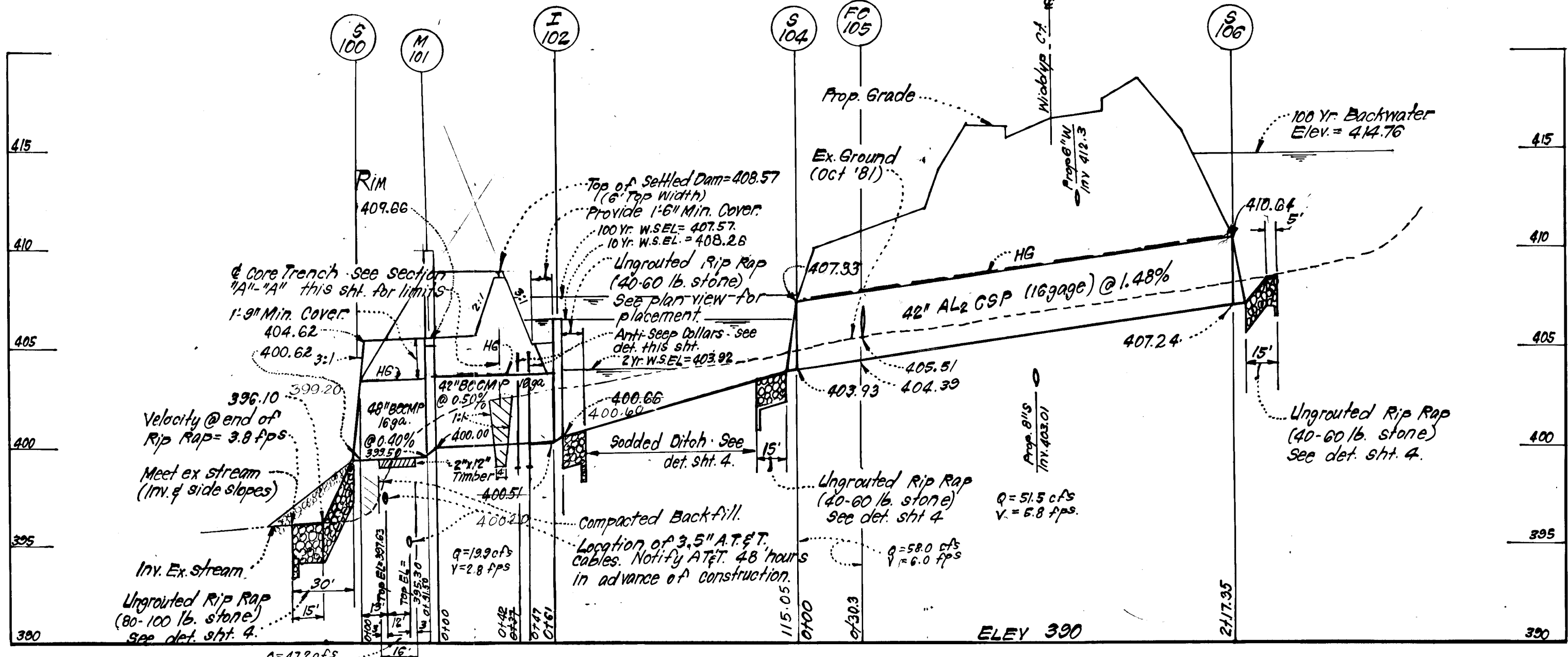
- A. MATERIAL: The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood rubbish, over size stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.
- B. PLACEMENT: Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8" max. thickness (before scarification) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.
- C. COMPACTION: The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment, or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.
- D. CUTOFF TRENCH: Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1:1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

V. STRUCTURAL BACKFILL:

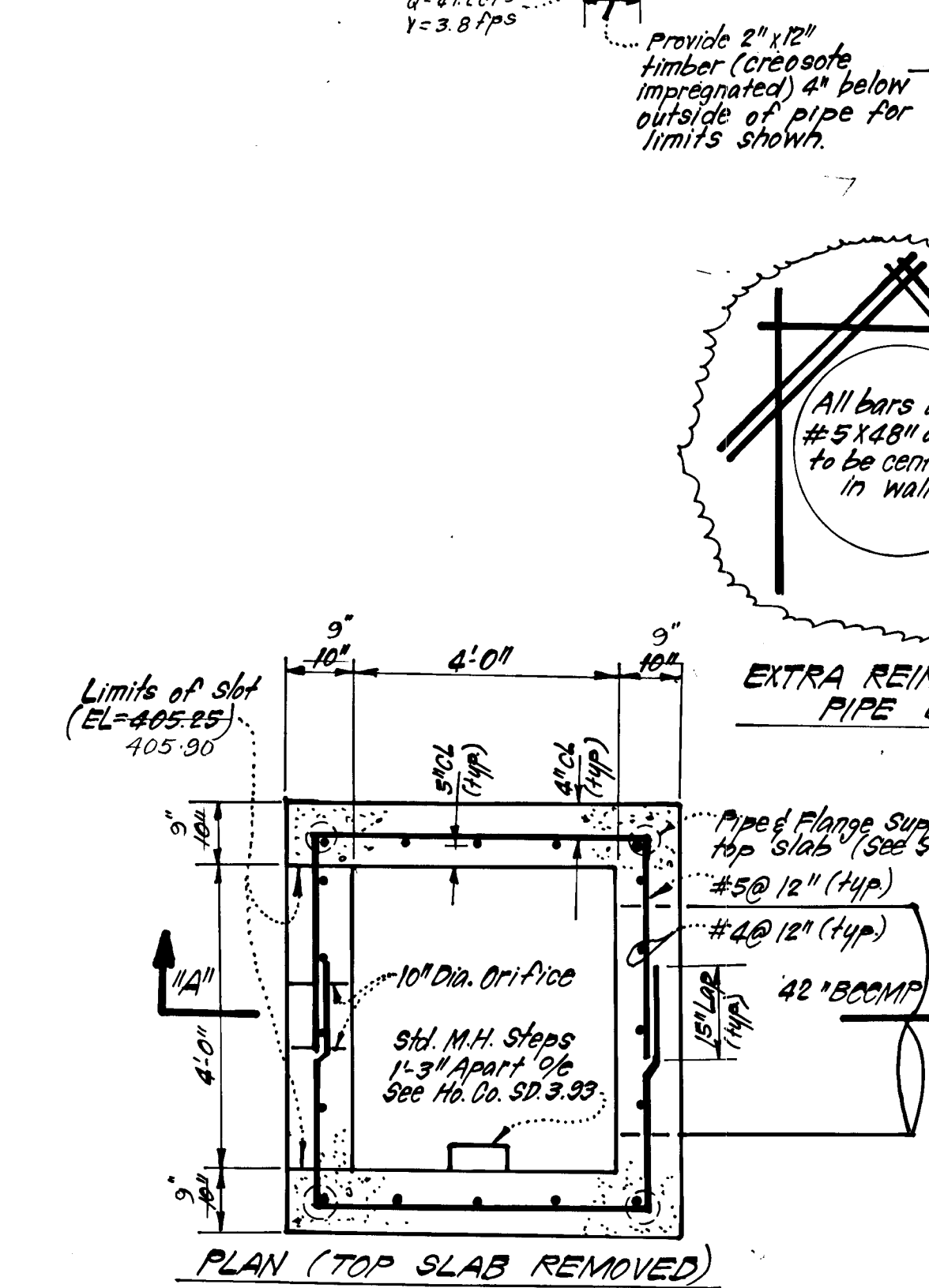
Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other compaction equipment. The material needs to fill completely all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

VI. CORRUGATED METAL PIPE:

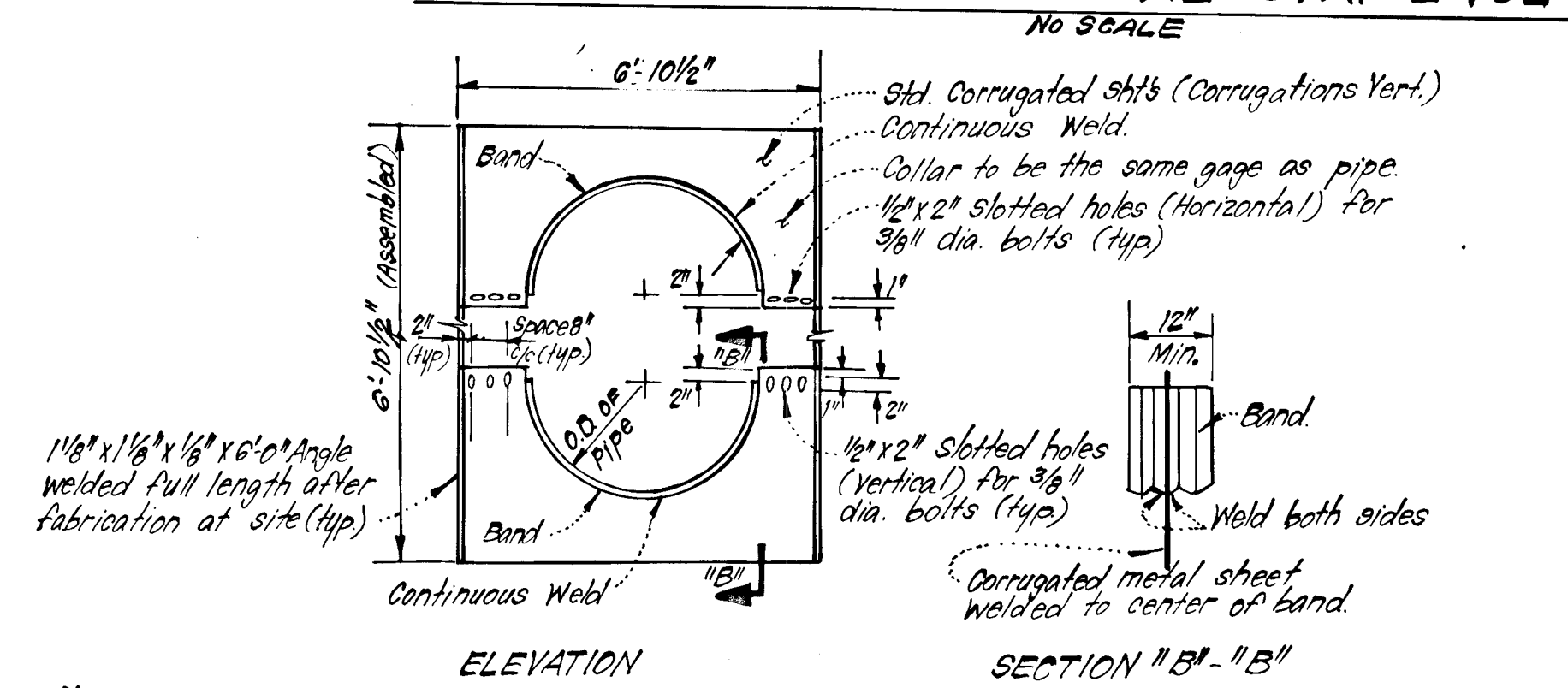
- A. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.
- B. Backfilling shall conform to structural backfill as shown above.
- C. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.
- D. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- E. Laying Pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
- F. Connections: All connections with pipes must be completely watertight. Watertight coupling bands or flanges shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.



PROFILE
SCALE: HOR. 1"=50'
VERT. 1"=5'



DETAILS OF SPECIAL STR. I-102
NO SCALE

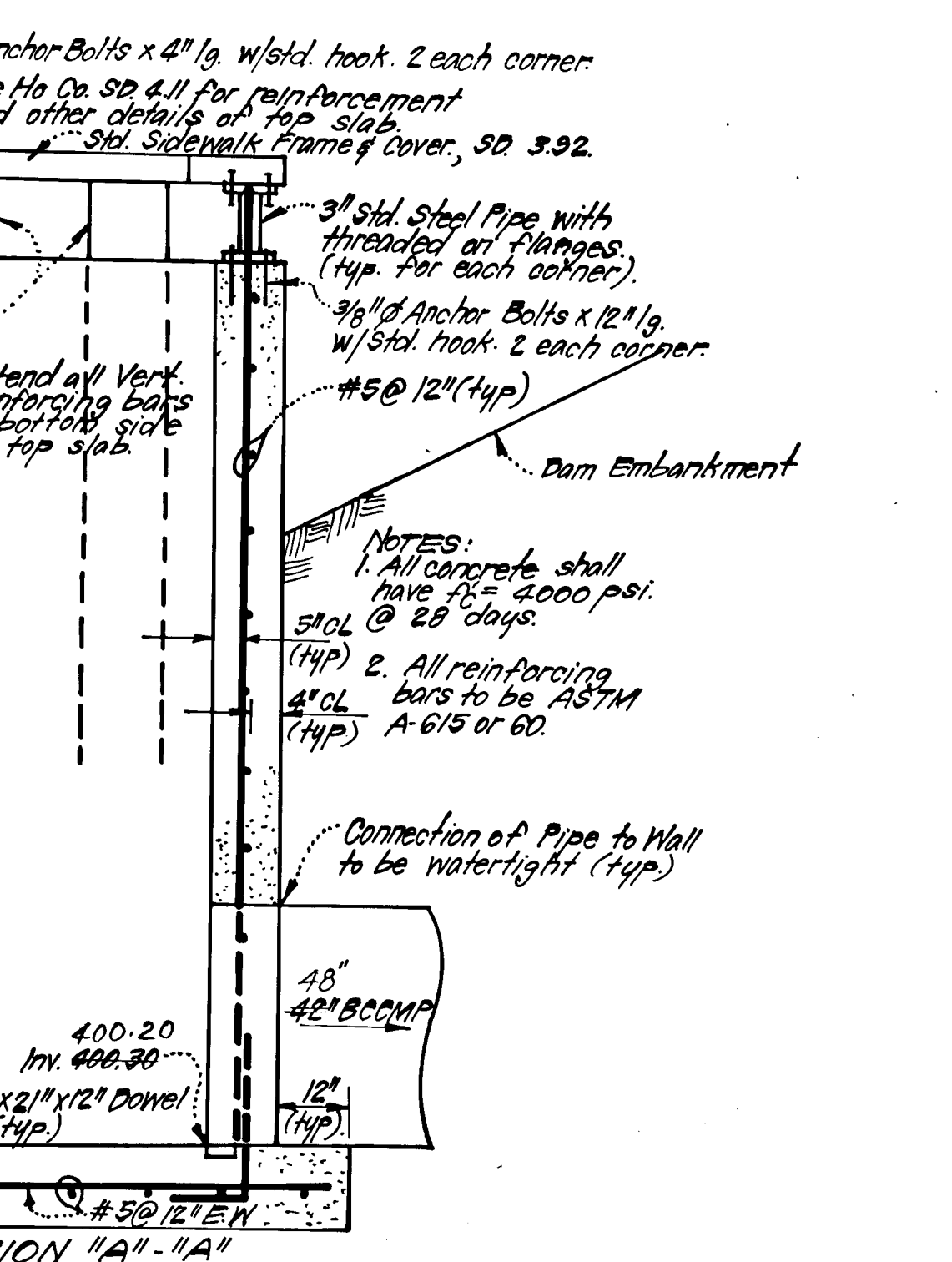


ELEVATION

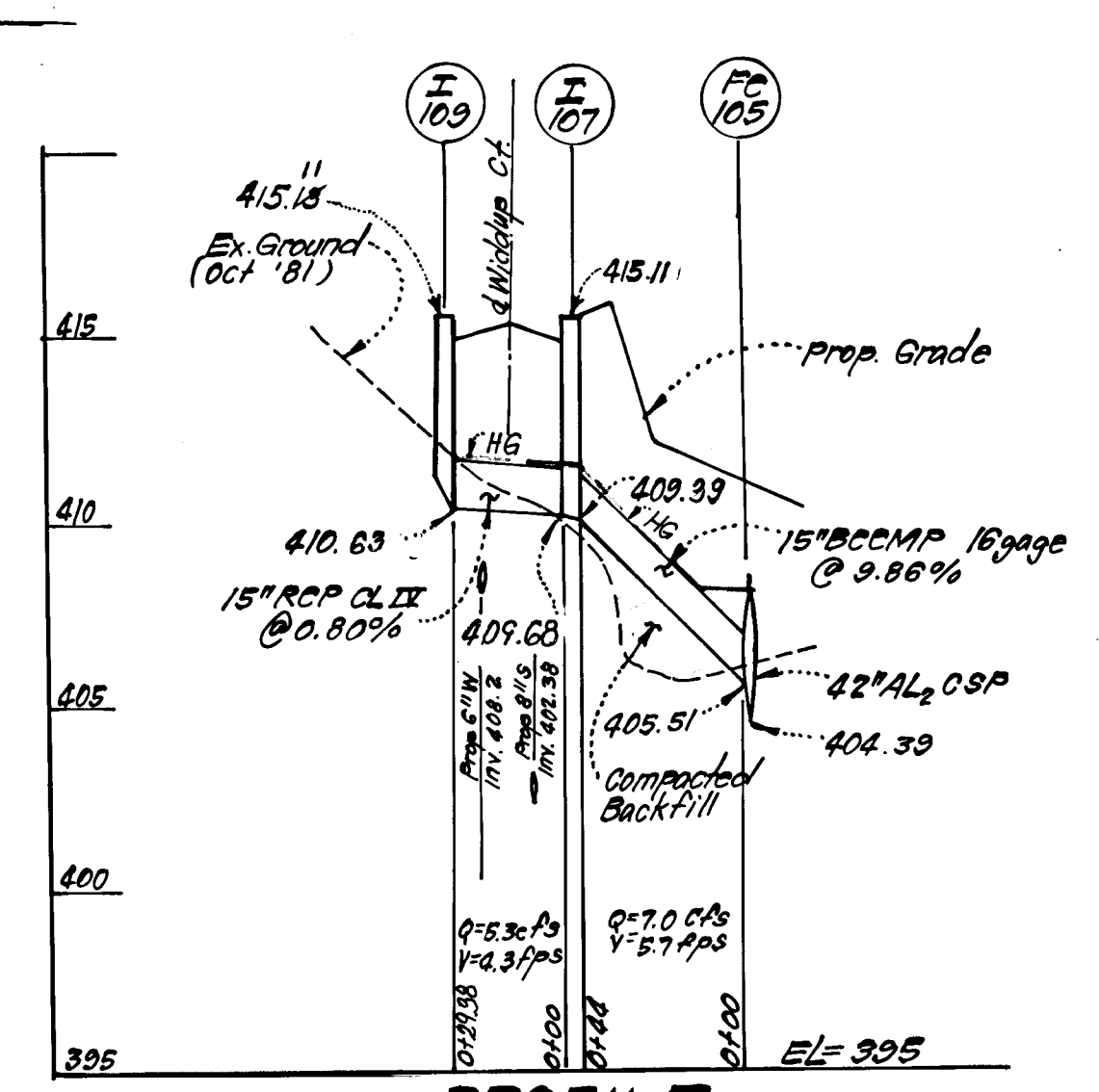
SECTION "B"-"B"

- NOTES:**
1. All materials to be in accordance with construction and construction Material Specification.
 2. When specified on the plans, coating of collars shall be in accordance with Constr. Constr. Material Specs.
 3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
 4. The top between the two half sections and between the pipe and connection band shall be caulked with asphalt mastic at time of installation.
 5. Each collar shall be furnished with two 1/2" dia. rods with std. tank lugs for connecting collars to pipe.

CORRUGATED METAL ANTI-SEEP COLLAR DETAIL
NO SCALE



SECTION "A"-"A"



PROFILE
SCALE: HOR. 1"=50'
VERT. 1"=5'

AS-BUILT SURVEY CERTIFIED
BY G. NELSON CLARK
P.E. 7139
DECEMBER 31, 1987

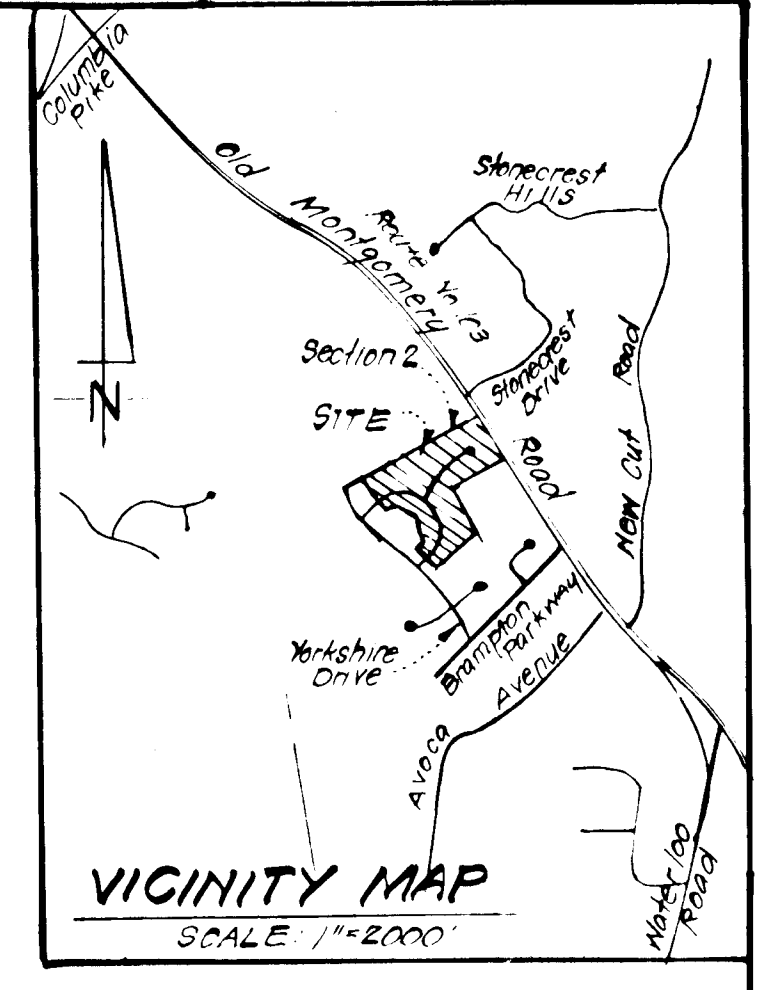
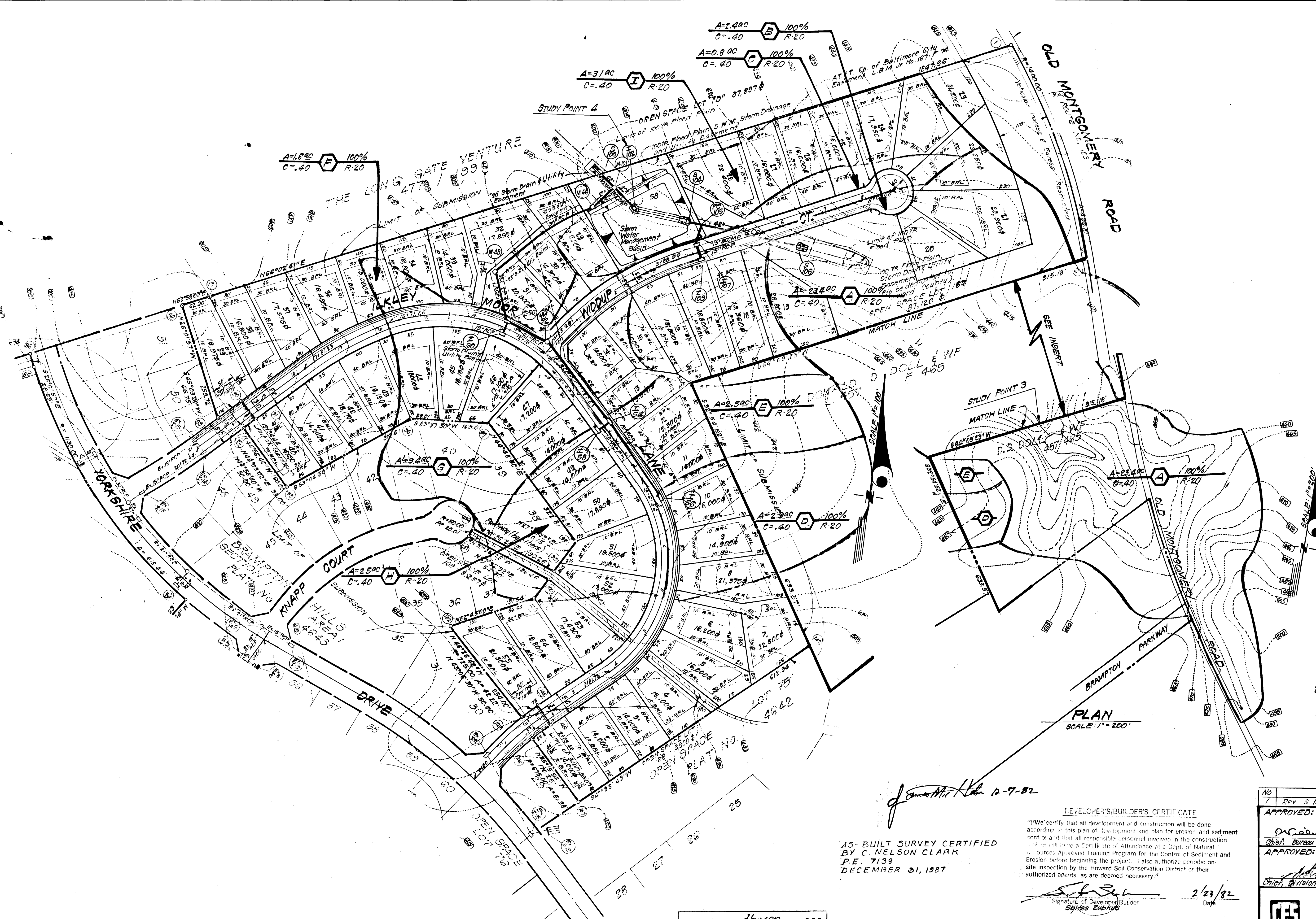
These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Approved: Robert J. Zilber 12-10-82
Soil Conservation District

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.
Approved: [Signature] 12-7-82
Soil Conservation District

DEVELOPER'S CERTIFICATE
"I certify that all development and/or construction will be done according to these plans of development, and that the erosion and sediment control measures shown on these plans are 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 a red-lined "as built" of the pond within 30 days of completion."
Signature of Developer: Robert J. Zilber
Date: 2/23/82

ENGINEER'S CERTIFICATE
"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 a red-lined "as built" of the pond within 30 days of completion."
Signature of Engineer: G. Nelson Clark
Date: 2-23-82

APPROVED: Department of Public Works		
[Signature]	12-13-82	Date
APPROVED: Howard County Office of Planning and Zoning		
[Signature]	12-28-82	Date
CLARK • FINEFROCK & SACKETT ENGINEERS • PLANNERS • SURVEYORS 11314 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400		
DESIGNED	ROAD CONSTRUCTION PLANS	SCALE
R.J.S.	STORM DRAIN & STORM WATER MANAGEMENT DETAILS	AS SHOWN
DRAWN		DRAWING
K.H.W.		50FB
CHECKED		JOB NO.
R.J.S.		81-091
DATE		FILE NO.
10-14-82		81-091-D
FOR: DELTA CORPORATION Suite 110, 101 Chestnut St. Gaithersburg, Md. 20877		



- STUDY POINT NOTES:**
1. Study Point No. 1 is total area of section 2.
 2. Study Point No. 2 is that part of section 2 that bypasses storm water management. See Plan.
 3. Study Point No. 3 is off-site area draining storm water management. See Plan.
 4. Study Point No. 4 is Str. I-102 and is total area (Section 2 and off-site) draining to storm water management.

PLAN
SCALE 1/4" = 200'

AS-BUILT SURVEY CERTIFIED
BY C. NELSON CLARK
P.E. 7139
DECEMBER 31, 1987

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/we certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will first attend a course of instruction at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

[Signature] 2/23/82
Signature of Developer/Builder
Spiras Zubkus Date

ENGINEER'S CERTIFICATE

I hereby 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.

[Signature] 2-23-82
G. Nelson Clark Date

Reviewed for Howard S.C.D.
and Soil Conservation District Requirements
[Signature] 7-30-82
Date
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED
FOR SOIL EROSION AND SEDIMENT
CONTROL BY THE HOWARD SOIL
CONSERVATION DISTRICT.

[Signature] 12-10-82
Approved Date
Robert W. Zilmer

PLAN
SCALE 1/4" = 100'

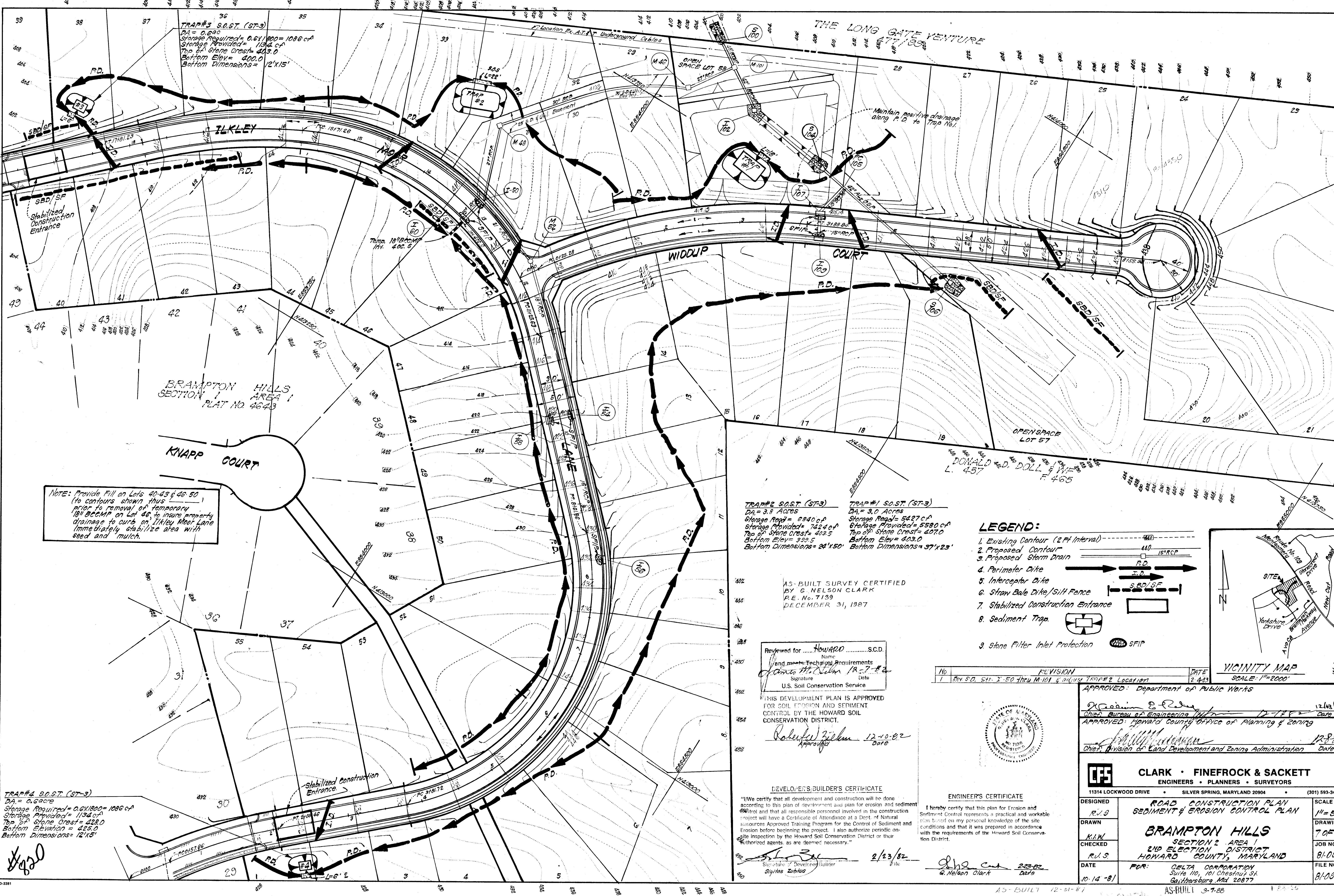
NO.	REVISION	DATE
1	REV. S.P. FROM F-50 1/1/81 AA 101	2-4-83

APPROVED: Department of Public Works
[Signature] 12-13-82
Date
Chief, Bureau of Engineering

APPROVED: Howard County Office of Planning & Zoning
[Signature] 12-8-82
Date
Chief, Division of Land Development & Zoning Administration

CLARK • FINEFROCK & SACKETT
ENGINEERS • PLANNERS • SURVEYORS
11314 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400

DESIGNED	CONSTRUCTION PLANS	SCALE
R.U.S.	ROAD CONSTRUCTION PLANS	As Shown
DRAWN	DRAINAGE AREA MAP	DRAWING
CHECKED	BRAMPTON HILLS	JOB NO.
R.U.S.	SECTION 2	81-001
DATE	2ND ELECTION DISTRICT	FILE NO.
10-12-82	HOWARD COUNTY, MARYLAND	81-001-D
	FOR DELTA CORPORATION (OWNER)	
	Suite 110, 101 Chestnut St.	
	Gaithersburg, Maryland 20877.	



TRAP#3 S.O.S.T. (ST-3)
 DA = 0.600
 Storage Required = 0.61 (100) = 1086 CF
 Storage Provided = 1134 CF
 Top of Stone Crest = 403.0
 Bottom Elev = 400.0
 Bottom Dimensions = 12'x15'

TRAP#2 S.O.S.T. (ST-3)
 DA = 3.8 Acres
 Storage Req'd = 6940 CF
 Storage Provided = 7424 CF
 Top of Stone Crest = 403.5
 Bottom Elev = 399.5
 Bottom Dimensions = 24'x50'

TRAP#1 S.O.S.T. (ST-3)
 DA = 3.0 Acres
 Storage Req'd = 5427 CF
 Storage Provided = 5580 CF
 Top of Stone Crest = 407.0
 Bottom Elev = 403.0
 Bottom Dimensions = 37'x23'

NOTE: Provide Fill on Lots 40-43 & 46-50 (to contours shown thus) prior to removal of temporary 18" BC&MP on Lot 46 to insure property drainage to curb on Tikley Moor Lane. Immediately stabilize area with seed and mulch.

TRAP#4 S.O.S.T. (ST-3)
 DA = 0.600
 Storage Required = 0.61 (100) = 1086 CF
 Storage Provided = 1134 CF
 Top of Stone Crest = 422.0
 Bottom Elevation = 425.0
 Bottom Dimensions = 12'x15'

- LEGEND:**
- Existing Contour (2 Ft Interval) - - - - -
 - Proposed Contour - - - - -
 - Proposed Storm Drain - - - - -
 - Perimeter Dike - - - - -
 - Interceptor Dike - - - - -
 - Straw Bale Dike/Silt Fence - - - - -
 - Stabilized Construction Entrance - - - - -
 - Sediment Trap - - - - -
 - Stone Filter Inlet Protection - - - - -

AS-BUILT SURVEY CERTIFIED
 BY G. NELSON CLARK
 P.E. No. 7139
 DECEMBER 31, 1987

Reviewed for **HOWARD** S.C.D.
 Name
 and meets Technical Requirements
 Signature: *Janet M. Nelson* 12-7-82
 Date
 U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED
 FOR SOIL EROSION AND SEDIMENT
 CONTROL BY THE HOWARD SOIL
 CONSERVATION DISTRICT.

Signature: *Robert Zickler* 12-10-82
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/we certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

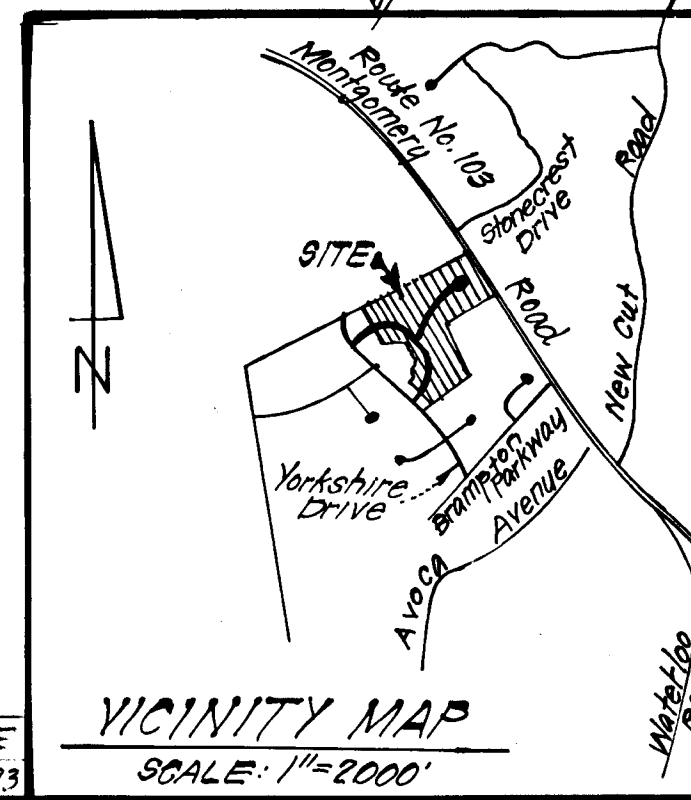
Signature: *Robert Zickler* 2/23/82
 Date

ENGINEER'S CERTIFICATE

I hereby 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.

Signature: *G. Nelson Clark* 2-23-82
 Date

No.	REVISION	DATE
1	REV 5.0, ST-1, 2-50 thru M-101 & adjust TRAP#2 Location	2-4-83



APPROVED: Department of Public Works
 Signature: *William S. Reed* 12-12-82
 Date

APPROVED: Howard County Office of Planning & Zoning
 Signature: *William S. Reed* 12-8-82
 Date

Chief, Division of Land Development and Zoning Administration

CLARK • FINEFROCK & SACKETT
 ENGINEERS • PLANNERS • SURVEYORS
 11314 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400

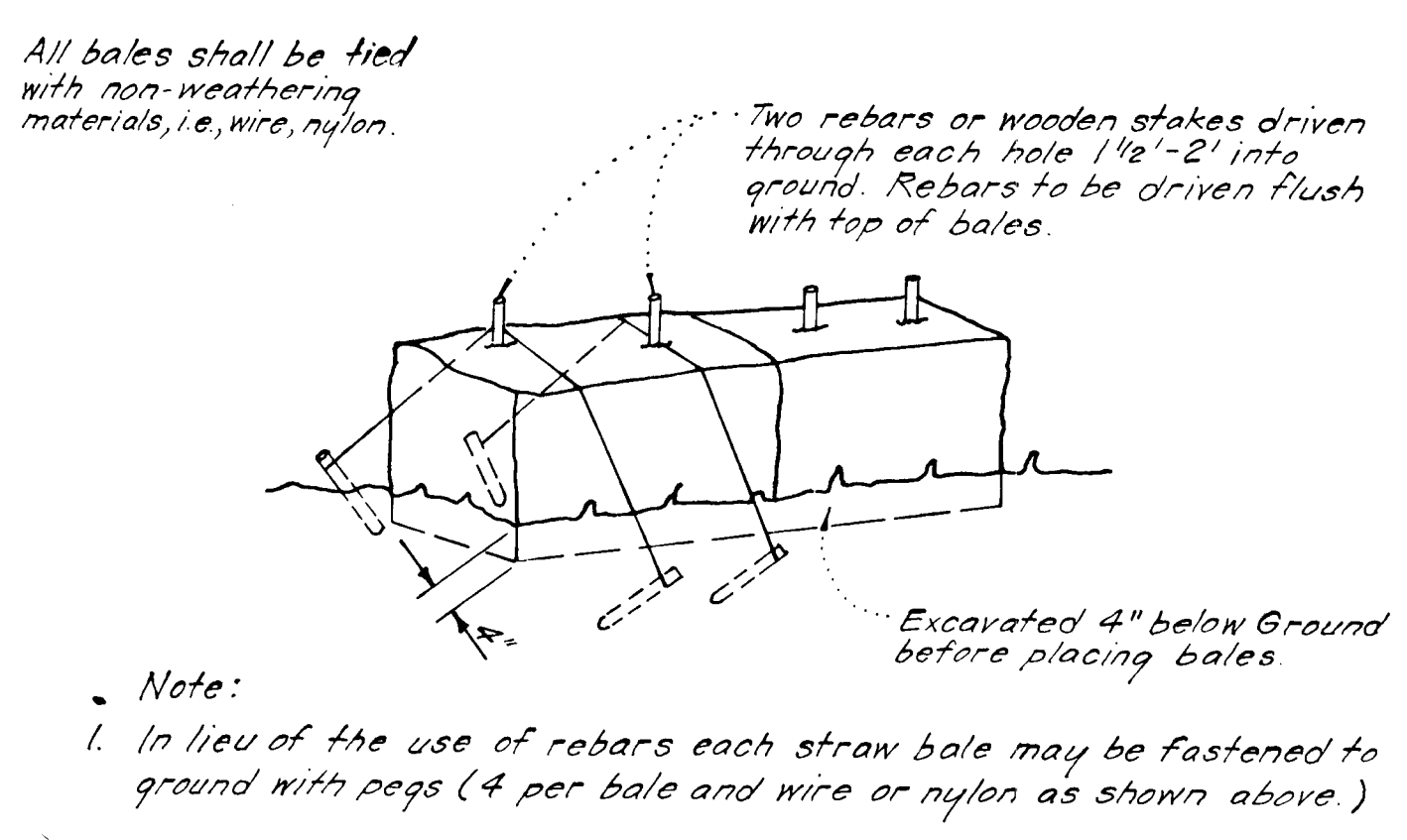
DESIGNED R.V.S.	ROAD CONSTRUCTION PLAN SEDIMENT & EROSION CONTROL PLAN	SCALE 1"=50'
DRAWN K.L.W.		DRAWING 7 OF 8
CHECKED R.V.S.	BRAMPTON HILLS SECTION 2 AREA 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 81-091
DATE 10-14-81		FILE NO. 81-091-D

FOR: **DELTA CORPORATION**
 Suite 110, 101 Chestnut St.
 Gaithersburg, Md 20877

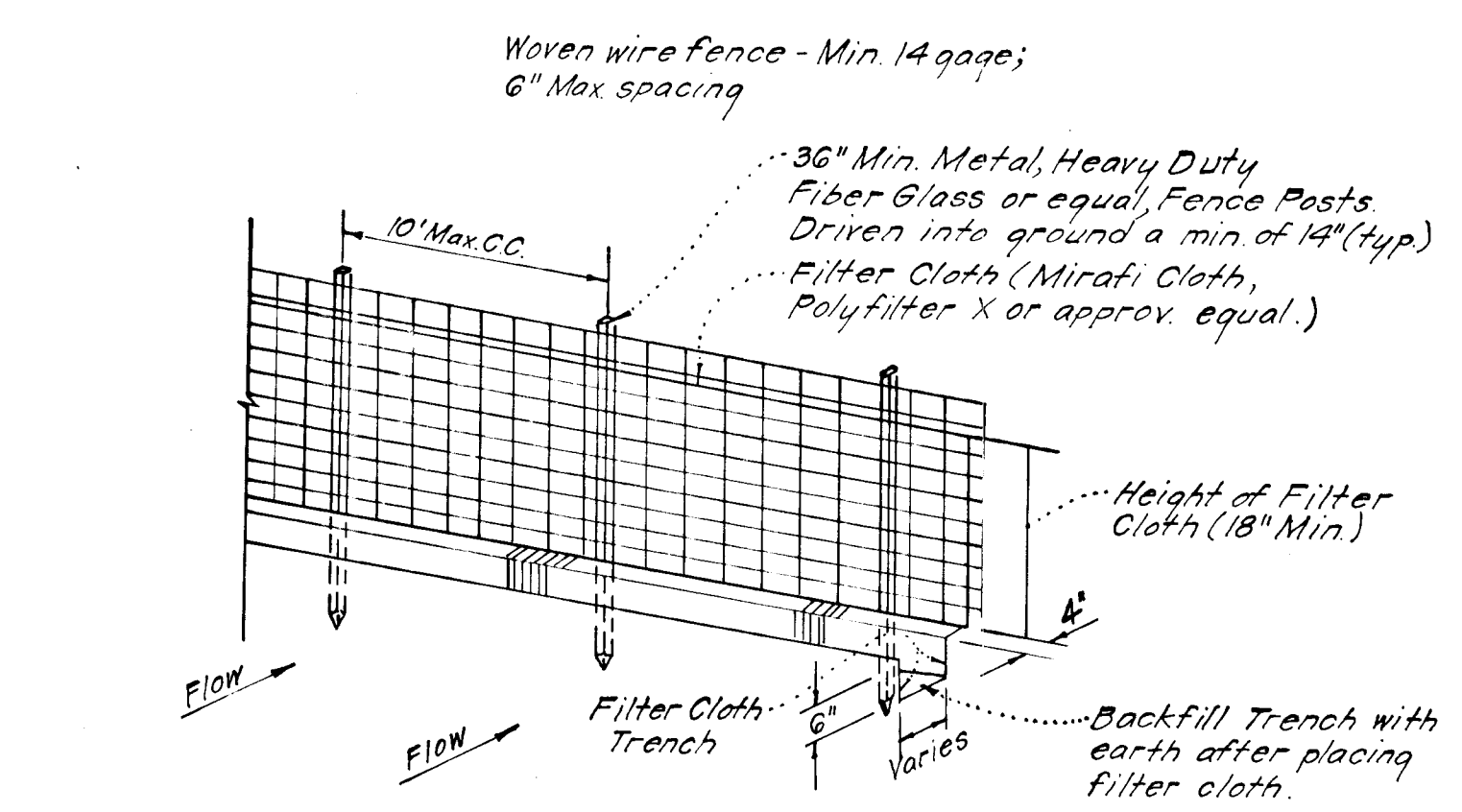
GENERAL NOTES

- Grading Permits shall be obtained prior to installation of Sediment Control & Grading.
- All Sediment and Erosion Control Measures will be installed and stabilized according to this plan prior to any other grading, clearing or disturbance of the existing surface of the site. See note #6 for stabilization except that the seed mixture will be annual rye applied at a rate of 14 lbs/1000 sf.
- Notify the Bureau of Inspections and Permits at least 24 hrs. before starting any work.
- All Sediment Control Practices to conform to the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" and shall be adjusted to meet actual field conditions.
- Stabilization of Disturbed ground to be done as soon after construction as possible.
- All disturbed area to be stabilized in accordance with the following Specifications:
 - Seed - certified 85% germination applied at the rate of 3 lbs/1000 sf. Mixture - 40% Kentucky Blue, 20% chewing Fescue, 20% Kentucky 31 and 20% annual rye.
 - Fertilizer - 10-10-10 applied at a rate of 23 lbs/1000 sf. Ground Agricultural Lime or Dolomitic Lime applied at a rate of 30 lbs/1000 sf.
 - Mulch - Weed free grain straw applied at a rate of 70-90 lbs/1000 sf. Mulch shall be secured to the ground by any approved method i.e.; asphalt tacks, chemical binder etc.
 - All Sod used shall be Maryland State Certified.
- All structural Sediment Control Measures are to remain in place until permission for their removal has been obtained from the Bureau of Inspections and Permits.
- On-Site Inspection and Maintenance of all Sediment Control Measures including clean out of Sediment Traps and Dikes, and proper establishment of all planned vegetative measures will be the responsibility of the developer or his representative on the site, on a continuing day to day basis.
- It will be the developers responsibility to provide additional Sediment & Erosion Control Devices to protect stabilized areas during construction.
- The Contractor shall keep all public roads free of sediment deposits left from traffic leaving construction site.
- Approval of this plan is conditional upon the approval of Sediment Control Plan for the off-site waste or borrow area prior to the import of any borrow or export of waste to or from this site.
- All pipes to be blocked at the end of each day. See detail this sheet.
- Total Amount of Straw Bales or Silt Fence shown = 730 L.F.
- SITE ANALYSIS:**
 - Total Area: 23.70 Acres
 - Area to be Roofed: Acres
 - Area to be Paved: Acres
 - Area to be Seeded: 5.30 Acres
 - Area to be Undisturbed: 24.40 Acres

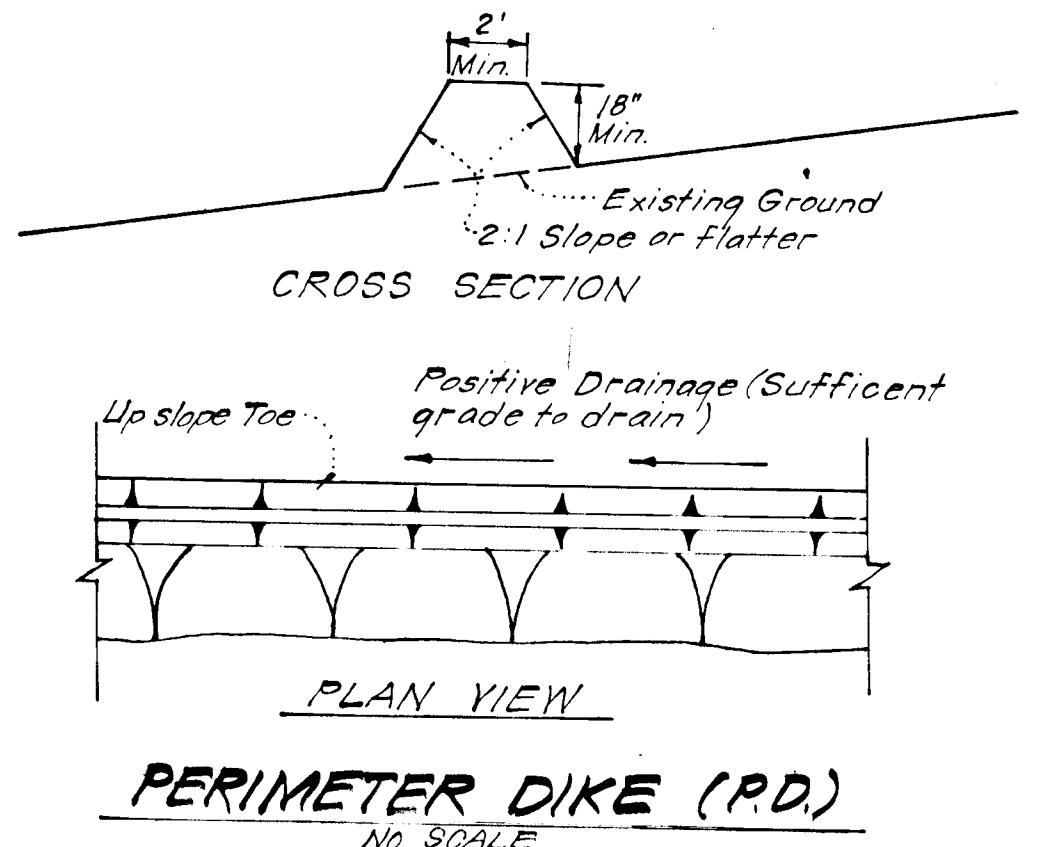
- CONSTRUCTION SEQUENCE:**
 - Install all sediment & erosion control devices except S.F.I.P.'s and immediately construct storm drain structures S-46, M-27, I-50, I-60, S-104, S-106 and connecting pipe including temporary 18" S.C.M.P. to str. I-60.
 - Rough grade roadways and install remaining storm drainage and S.F.I.P.'s.
 - Install Water and Sewer, Curb & Gutter and sidewalks.
 - Install Paving.
 - Final Grade and stabilize in accordance with note #6.
- SEDIMENT & EROSION CONTROL NOTES FOR STORM DRAIN CONSTRUCTION**
- All excavation to be placed on upstream side of trench.
 - All areas disturbed during out-fall construction to be immediately stabilized.



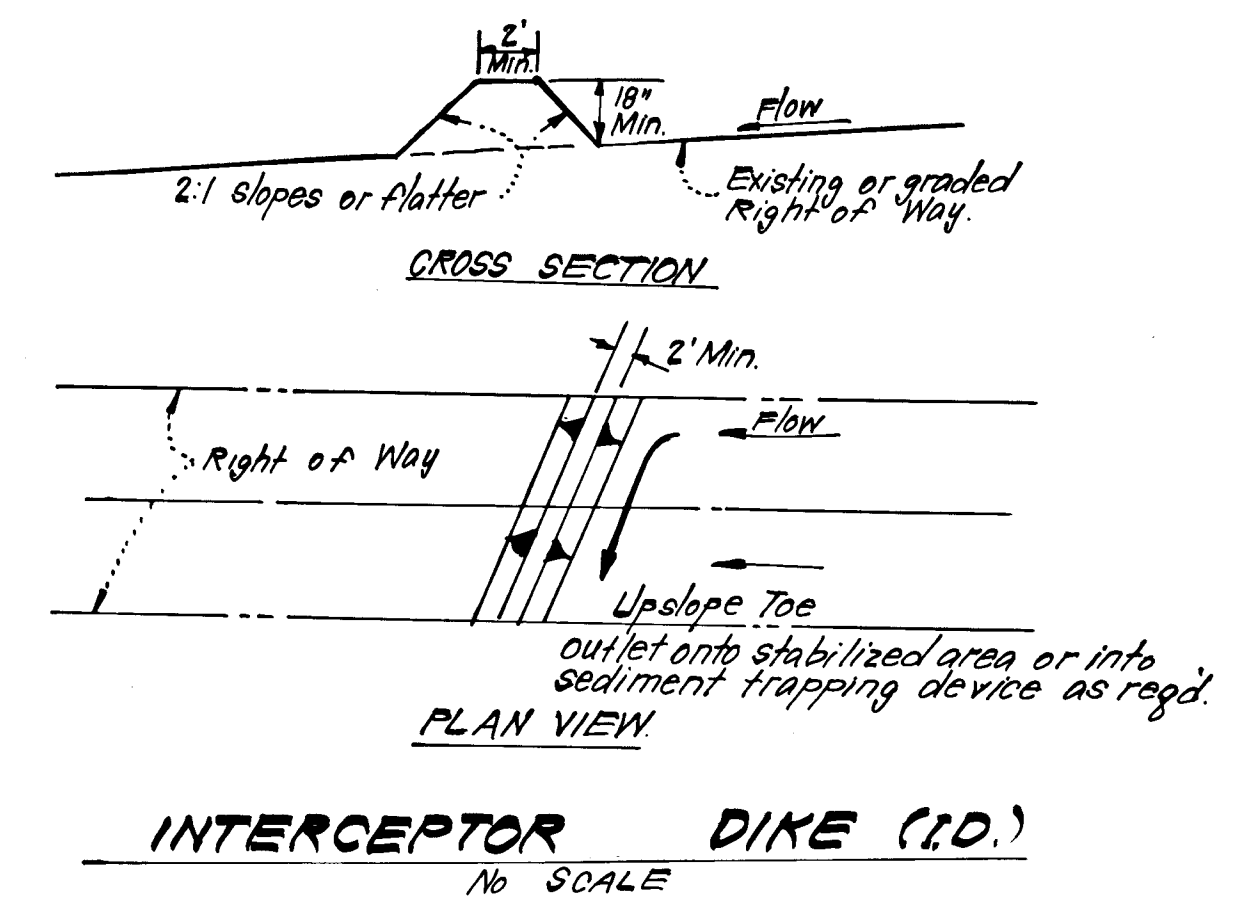
STRAW BALE DIKE DETAIL (S.B.D.)
No SCALE



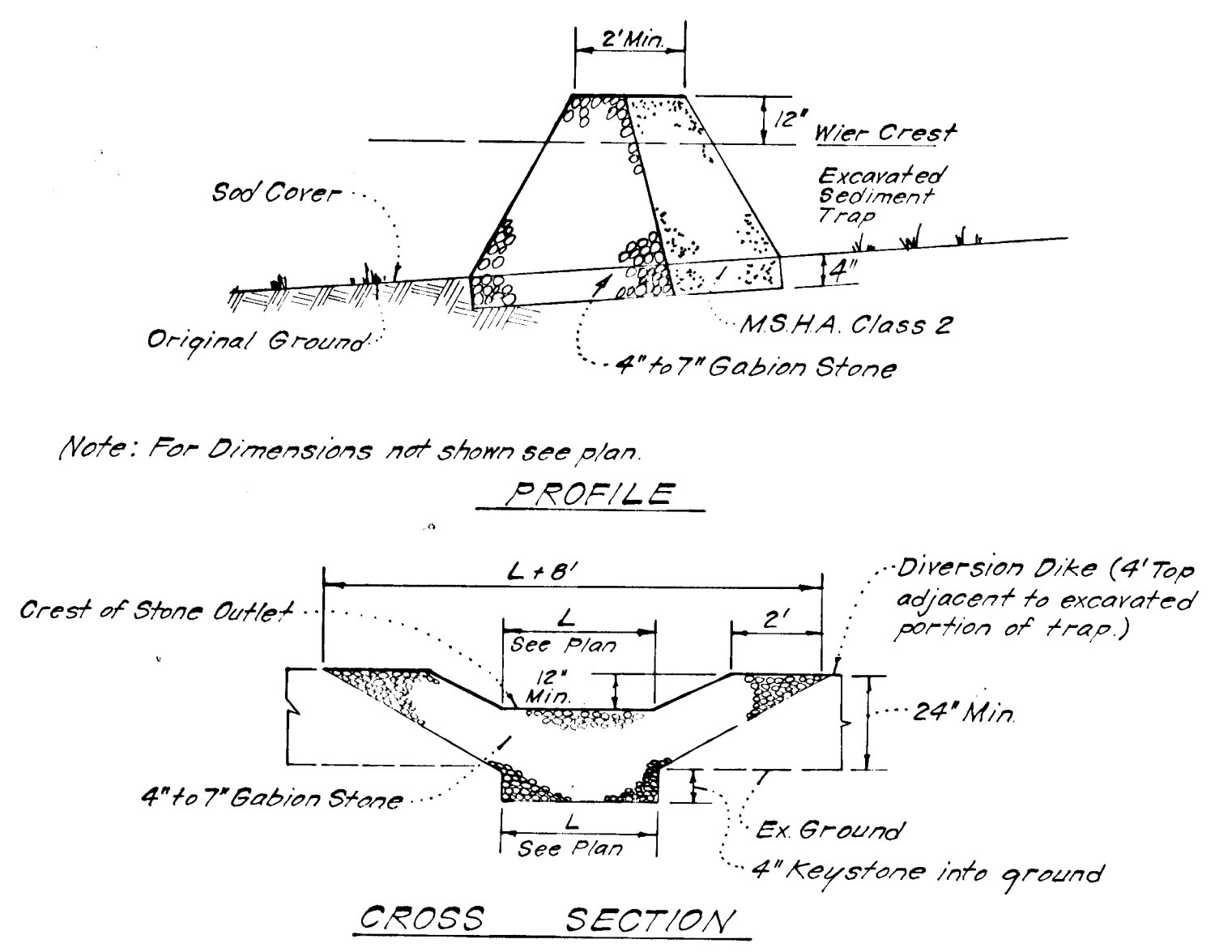
SILT FENCE DETAIL (S.F.)
No SCALE



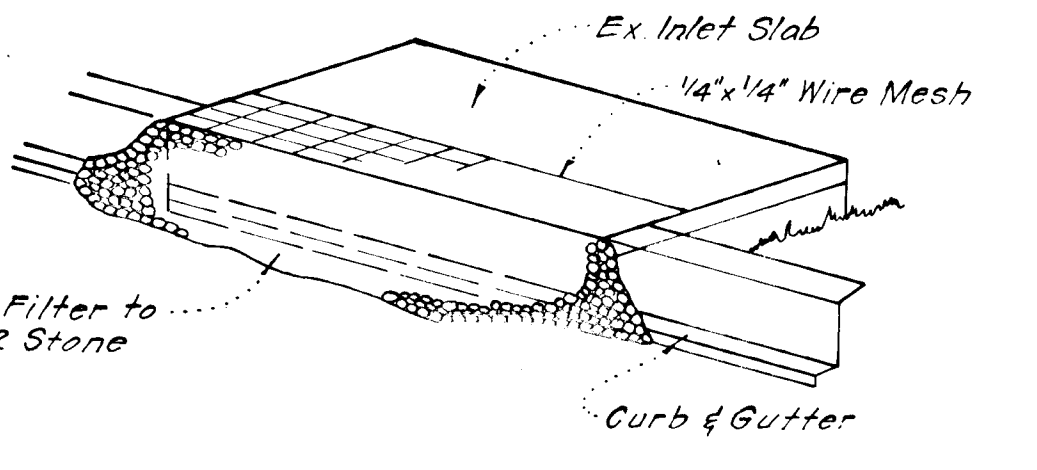
PERIMETER DIKE (P.D.)
No SCALE



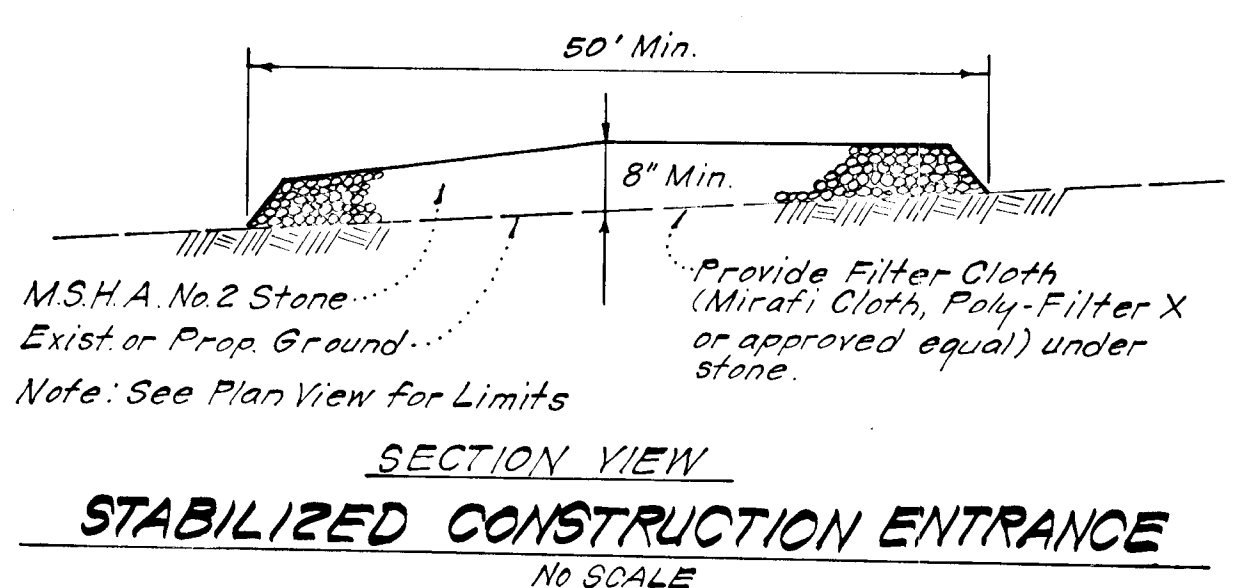
INTERCEPTOR DIKE (I.D.)
No SCALE



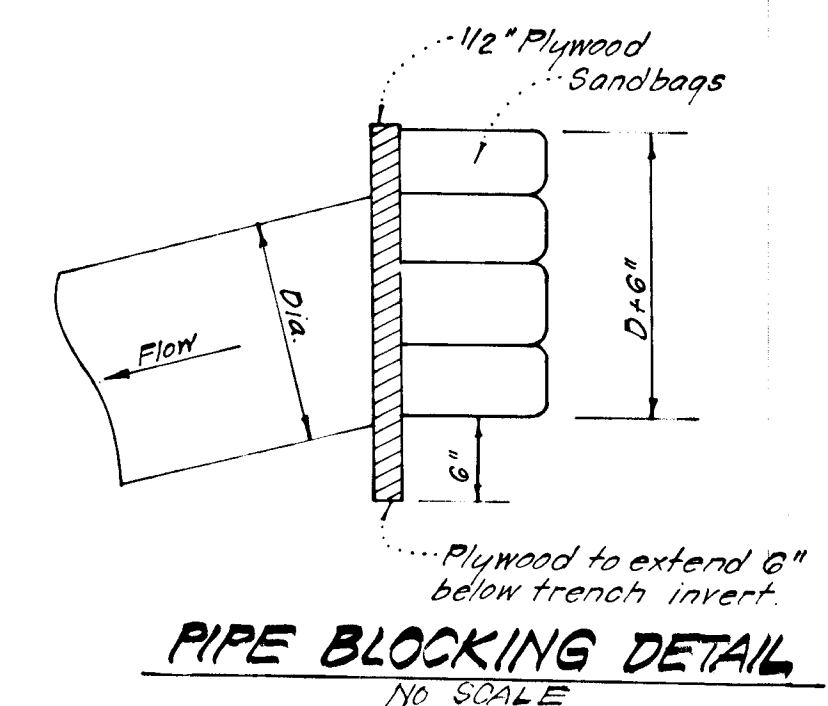
DETAILS OF STONE FILTER OUTLET FOR STONE OUTLET SEDIMENT TRAP
No SCALE



STONE FILTER INLET PROTECTION (S.F.I.P.)
No SCALE



STABILIZED CONSTRUCTION ENTRANCE
No SCALE



PIPE BLOCKING DETAIL
No SCALE

AS-BUILT SURVEY CERTIFIED
BY G. NELSON CLARK
I.P. No. 7139
DECEMBER 31, 1987

Reviewed for HOWARD, S.C.D.
Signature: *[Signature]* Date: 7-30-82
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Signature: *[Signature]* Date: 12-10-82
Approved

DEVELOPER'S/BUILDER'S CERTIFICATE
"I/we certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction work will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."
Signature: *[Signature]* Date: 2/23/82
Signature: *[Signature]*

ENGINEER'S CERTIFICATE
I hereby 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.
Signature: *[Signature]* Date: 2-23-82
G. Nelson Clark

APPROVED: Department of Public Works
[Signature] 12-13-82
Chief, Bureau of Engineering
APPROVED: Howard County Office of Planning and Zoning
[Signature] 12-13-82
Chief, Division of Land Development & Zoning Administration

CLARK • FINEFROCK & SACKETT
ENGINEERS • PLANNERS • SURVEYORS
11315 LORWOOD DRIVE, SILVER SPRING, MARYLAND 20904 301-593-3400

DESIGNED R.J.S.	SEDIMENT & EROSION CONTROL PLAN DETAILS BRAMPTON HILLS SECTION 2 AREA 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: CELTA CORPORATION Suite 110, 101 Chestnut St. Gaithersburg, Md 20877	SCALE As shown
DRAWN K.I.W.		DRAWING 80/F8
CHECKED R.J.S.		JOB NO. 81-091
DATE 10-14-82		DATE 01-09-82
		F83-25

#420