

# TROY HILL CORPORATE CENTER

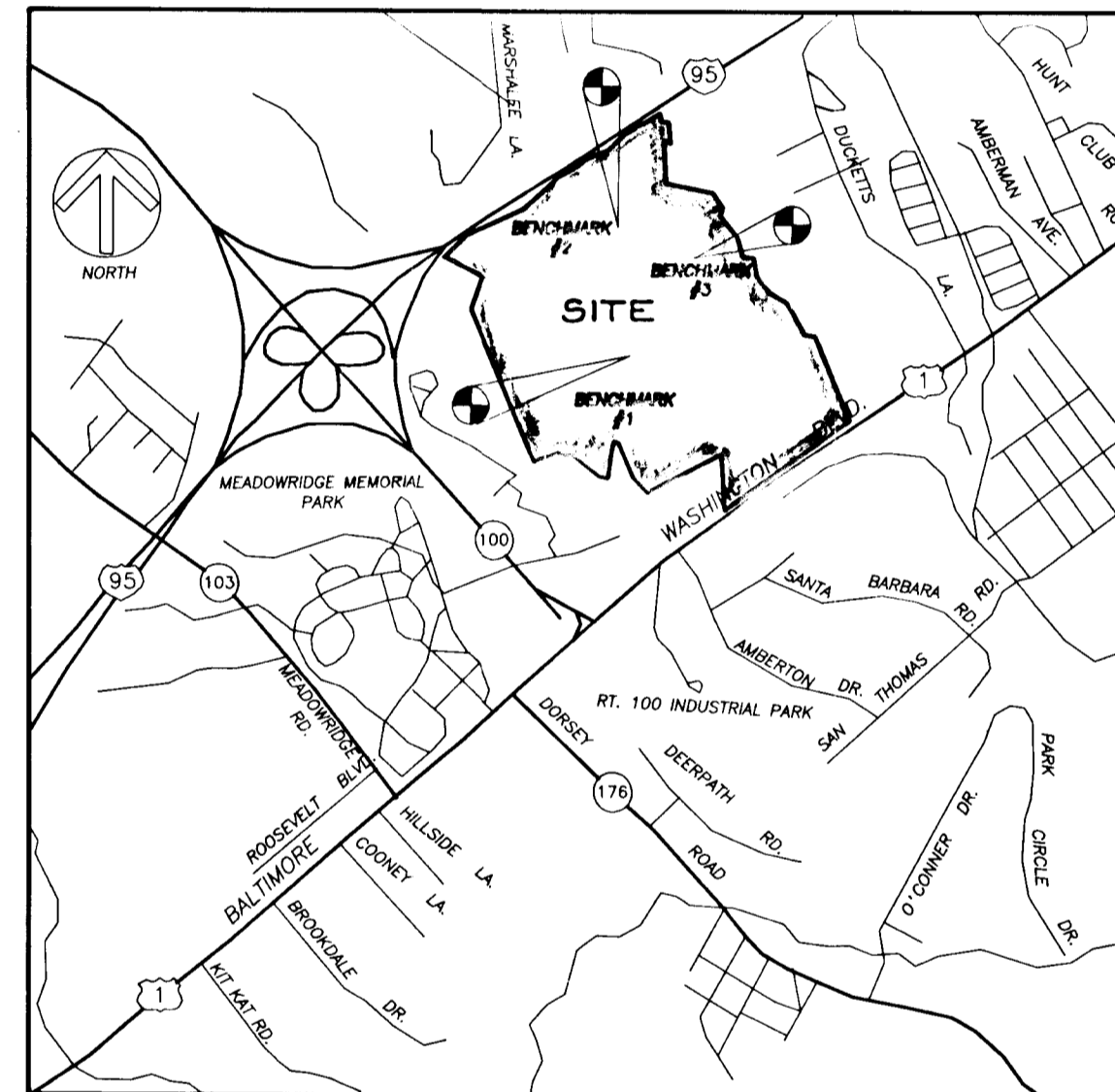
## PARCEL 'A' (REVISED FINAL F-91-24)

SKETCH PLAN S-90-05  
PRELIMINARY PLAN P-90-23  
SECTION 1 F-91-24

### INDEX

SHEET 1	COVER SHEET
SHEET 2	GRADING, STORM DRAIN PLAN
SHEET 3	STORM DRAIN DRAINAGE AREA MAP, STRUCTURE SCHEDULE
SHEET 4	STORM DRAIN PROFILES
SHEET 5	STORM DRAIN DETAILS
SHEET 6	STORM WATER MANAGEMENT PLAN
SHEET 7	STORM WATER MANAGEMENT DRAINAGE AREA MAP
SHEET 8	STORM WATER MANAGEMENT SECTIONS & DETAILS
SHEET 9	STORM WATER MANAGEMENT POND SPECIFICATIONS
SHEETS 10 & 11	SEDIMENT AND EROSION CONTROL PLAN
SHEETS 12 & 13	SEDIMENT AND EROSION CONTROL SECTIONS & DETAILS
SHEETS 14 & 15	U.S. ROUTE 1 IMPROVEMENTS PLAN
SHEET 16	U.S. ROUTE 1 GENERAL NOTES & DRAINAGE DETAILS
SHEET 17	INTERSECTION DETAILS
SHEET 18	U.S. ROUTE 1 TYPICAL SECTIONS
SHEETS 19 & 20	U.S. ROUTE 1 SIGN & PAVEMENT MARKING PLANS
SHEET 21	APFO BONDING PLAN

U.S. ROUTE 1  
IMPROVEMENT  
PLANS



VICINITY MAP  
SCALE: 1" = 2000'

## 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND TAX MAP NO. 37

**STORMWATER MANAGEMENT NARRATIVE**  
FOND #5 - PROVIDES WATER QUALITY & QUANTITY CONTROLS FOR PORTIONS OF PARCEL 'A', ULTIMATE WIDENING OF U.S. ROUTE 1 AND TROY HILL DRIVE FROM STATION 67+00 TO STATION 77+00

### GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, DETAILS AND SPECIFICATIONS FOR CONSTRUCTION.
- ALL UTILITY COMPANIES SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF CONSTRUCTION.
- ALL INLETS SHALL BE HOWARD COUNTY STANDARD UNLESS OTHERWISE SHOWN.
- ALL STREET CURB RETURNS SHALL HAVE 30' RADII UNLESS OTHERWISE NOTED.
- STORM DRAIN TRENCHES WITHIN RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY STANDARD SPECIFICATIONS.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES WHERE SHOWN OR NEEDED AS APPROVED BY THE ENGINEER, A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY CONSTRUCTION.
- CONTRACTOR TO NOTIFY THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS. TELEPHONE NO. 992-2436.
- DISTURBED SLOPE AREA TO BE STABILIZED AS SOON AS GRADING IS COMPLETED.
- ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3500 P.S.I.
- ALL SWALES AND SLOPES SHALL BE PERMANENTLY SEEDED. SEE THE SEED SPECIFICATIONS ON SHEET
- TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1988 REVISED EDITION.
- POLY-FILTER-X OR EQUAL SHALL BE PLACED UNDER ALL STONE RIP-RAP (FULL WIDTH AND LENGTH OF STONE).
- STONE FOR RIP-RAP SHALL BE AS SPECIFIED ON THE DRAWINGS. ALL RIP-RAP SHALL BE NON GROUTED UNLESS OTHERWISE NOTED.
- STUBS FOR 6" P.V.C. UNDERDRAIN PIPE TO BE INSTALLED AT CENTER OF EACH WALL OF EVERY INLET.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
STATE HIGHWAY ADMINISTRATION - 531-5533  
BALTIMORE GAS & ELECTRIC COMPANY - CONTRACTOR SERVICES 850-4620  
BALTIMORE GAS & ELECTRIC COMPANY - UNDERGROUND DAMAGE CONTROL - 787-9068  
BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4900  
COLONIAL PIPELINE - 795-1390  
MISS UTILITY - 1-800-257-7777
- PROVIDE 250 WATT SODIUM VAPOR LAMP PENDANT AS MANUFACTURED BY B.G. & E. MOUNTED ON A 30 FT. GALVANIZED STEEL POLE.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE FOR AND SUBMIT SHOP DRAWINGS THAT INDICATE ALL REQUIRED STIFFENING, BRACING AND SUPPORTS AT ALL FACTORY OR FABRICATED METAL PIPE CONNECTIONS AND APPURTENANCES.
- THE CONTRACTOR IS COMPLETELY RESPONSIBLE TO INSURE THAT ALL CONDITIONS OF CORPS OF ENGINEER, MDE AND DNR WETLAND AND WATERWAY CONSTRUCTION PERMITS ARE STRICTLY ADHERED TO. A PRE-CONSTRUCTION MEETING IS TO BE ARRANGED BY THE CONTRACTOR BETWEEN ALL SUB CONTRACTORS, THE OWNER, THE ENVIRONMENTAL CONSULTANT AND COUNTY OFFICIALS TO VERIFY COMPLIANCE. A FAILURE TO COMPLY WITH FEDERAL AND STATE PERMIT REGULATIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CERTAIN PORTIONS OF THE WETLANDS AND WETLAND BUFFERS SHOWN ON THESE PLANS MAY BE FILLED AND/OR IMPACTED IN ACCORDANCE WITH CORPS OF ENGINEERS NATIONWIDE PERMIT GENAB-OP-RW-90-0883-3 (EXPIRATION DATE 8/10/95), MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER QUALITY CERTIFICATE 91-WQC-0326 (EXPIRATION DATE 8/10/95), MARYLAND WATER RESOURCES ADMINISTRATION WATERWAYS CONSTRUCTION PERMIT 90-WC-0047 (EXPIRATION DATE 2/28/97) AND HOWARD COUNTY WAIVER PETITION FILE# WF 91-189.
- STREET TREES WILL BE REQUIRED ALONG U.S. ROUTE 1 AND WILL BE INDICATED ON A SUBSEQUENT FINAL PLAN FOR THE RESUB-DIVISION OF PARCEL 'A' AND CONSTRUCTION OF TROY HILL DRIVE.
- THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT 313-1880.
- STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL.

BENCHMARK #1  
IRON PIN • TRAVERSE #1066  
N 496501.3597 E 869134.4576  
ELEV. = 175.92  
BENCHMARK #2  
IRON PIN • TRAVERSE #1061  
N 498036.6945 E 868791.1502  
ELEV. = 242.49  
BENCHMARK #3  
IRON PIN • TRAVERSE #1034  
N 497636.7437 E 869835.6586  
ELEV. = 214.85

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Paul J. Eppson* 2/14/94  
CHIEF, BUREAU OF ENGINEERING DATE  
*Allyson* 2/14/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE  
*Andrew M. Conner* 2-2-94  
CHIEF, BUREAU OF HIGHWAYS DATE  
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*Ama Swann* 2/24/94  
CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH DATE

OWNER/APPLICANT  
TROY HILL BUSINESS PARK PARTNERSHIP  
C/O MANE KIN CORP.  
4165 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MARYLAND 21046  
(410) 290-1400

DESIGNED: PRC  
DRAWN: PT, MB, JS  
CHECK: PRC

REVISIONS

COVER SHEET



GEORGE WILLIAM STEPHENS, JR.  
AND ASSOCIATES, INC.  
CIVIL ENGINEERS & LAND SURVEYORS  
658 KENILWORTH DRIVE, SUITE 100  
TOWSON, MARYLAND 21284  
(301) 825-8120

DATE: 8-25-93

SCALE: AS SHOWN

SHEET NO.  
1 OF 21

1654



MD. STATE GRID NORTH  
Scale: 1" = 100'

STORM DRAIN STRUCTURE SCHEDULE										
NO	TYPE	INVERTS			TOP ELEV.		± RD. STA.	OFFSET	REMARKS	
		IN	IN	OUT	LT. COR.	RT. COR.				
I-22	DOUBLE 'B' INLET	132.22	135.56	131.22	140.07	140.51	75+50.0 RFC	56.79 RT.	HO. CO. STD. 4.34	
I-32	A-5 INLET	136.95		133.11	140.22	141.14	75+50 RFC	0' LT.	HO. CO. STD. 4.01	
M-1	MOD. COG. INLET	110.60	115.65	118.56			124.60	14+00.55	82.01 LT.	SEE DTL. SHT. 5 THROAT OPENING • 10' • 8 1/2"
M-1A	M.H. GO. ID	121.30	117.47	117.57			126.00	1+55.00	4.81 LT.	HO. CO. STD. G.5.02
M-1B	M.H. GO. ID	116.02		116.80			126.77	1+54.01	64.28 LT.	HO. CO. STD. G.5.02
M-2	MOD. COG. INLET	119.20	119.25	119.15			125.20	14+77.51	79.21 LT.	SEE DTL. SHT. 5 THROAT OPENING • 10'
M-3	MOD. COG. INLET	121.50	121.00	120.40			126.70	16+02.00	79.21 LT.	SEE DTL. SHT. 5 THROAT OPENING • 15'
M-4	MOD. COG. INLET	124.00	122.55	122.45			129.30	17+26.77	79.21 LT.	SEE DTL. SHT. 5 THROAT OPENING • 15'
M-5	MOD. COG. INLET	126.95		126.25			131.00	18+77.50	67.21 LT.	SEE DTL. SHT. 5 THROAT OPENING • 15'
M-6	MOD. COG. INLET	127.15	126.45	126.26			132.25	20+00.92	67.21 LT.	SEE DTL. SHT. 5 THROAT OPENING • 10'
M-7	MOD. COG. INLET	128.85	128.55	128.25			134.10	21+42.00	67.21 LT.	SEE DTL. SHT. 5 THROAT OPENING • 15'
M-8	MOD. COG. INLET	133.95	130.51	130.41			138.50	23+17.54	79.72 LT.	SEE DTL. SHT. 5 THROAT OPENING • 20'
M-17	SEE DTL. SHT. 5	125.70		125.50			131.10	19+55.12	36.62 LT.	
M-18	MOD. COG. INLET	137.55		137.55			144.90	25+12.55	71.25 LT.	THROAT OPENING • 15'
S-1	TYPE 'A' HDWL (27)			116.20			119.25			
S-2	SEE DTL. SHT. 5	124.00		123.50						
S-3	CONC. END SECTION (19')			125.50						HO. CO. STD. 5.5-52
S-4	CONC. END SECTION (27')			125.67						HO. CO. STD. 5.5-51
S-19	SEE DTL. SHT. 5	126.20								

LEGEND

AREA (AC) TYPE OF ZONING  
RUNOFF % OF IMPERVIOUS  
COEFFICIENT AREA

--- PARCEL DRAINAGE DIVIDE  
--- ROADWAY DRAINAGE DIVIDE  
--- LIMIT OF WETLANDS  
--- FLOODPLAIN  
--- GRASS DITCH

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Paul D. Seaman* 2/14/94  
 CHIEF, BUREAU OF ENGINEERING  
 DATE 2/14/94

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*Clara M. Munn* 2/24/94  
 CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH  
 DATE 2-24-94

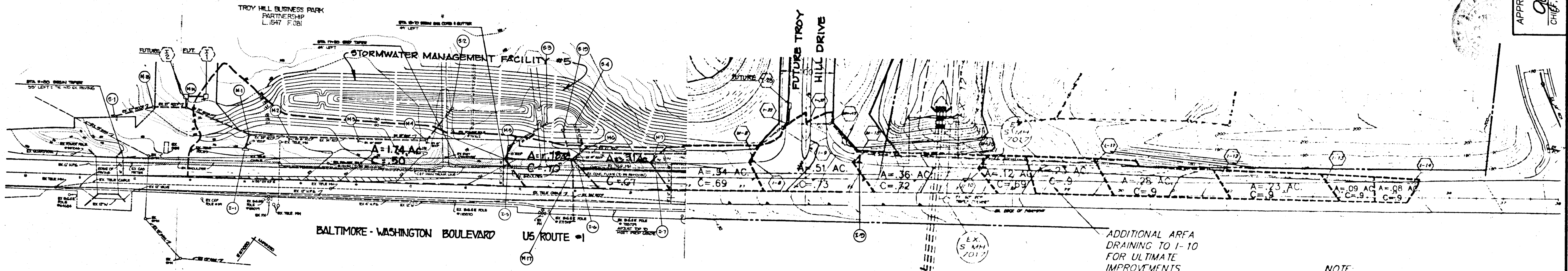
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*Clara M. Munn* 2/24/94  
 CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH  
 DATE 2-24-94

ENGINEER  
 GEORGE WILLIAM STEPHENS JR.  
 AND ASSOCIATES, INC.  
 658 KENILWORTH DRIVE  
 SUITE 100  
 TOWSON, MARYLAND 21284  
 (410) 825-5120

OWNER/APPLICANT  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 4165 CO. ROAD 100  
 COLUMBIA, MARYLAND 21046  
 (410) 280-1400

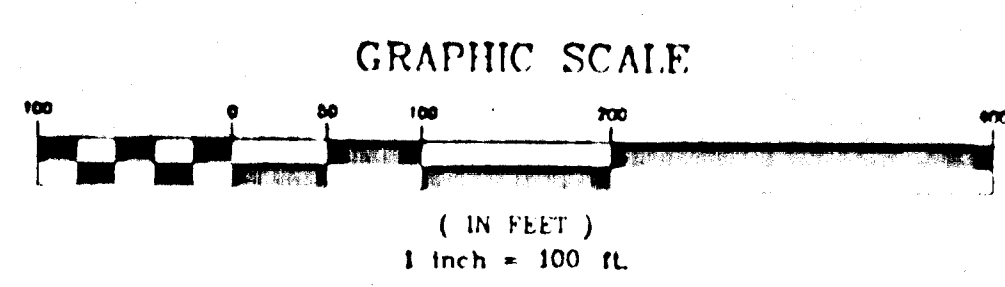
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*Clara M. Munn* 2/24/94  
 CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH  
 DATE 2-24-94

PHASE 1  
 TROY HILL CORP. CENTER  
 PARCEL 'A'  
 HOWARD COUNTY, MARYLAND  
 TAX MAP NO. 37



DRAINAGE AREAS & 'C' FACTORS ARE FOR INTERIM CONDITIONS DRAIN SYSTEM FROM S-1 TO S-2 & DRAIN SYSTEM FROM S-4 TO I-11 DESIGNED BASED ON ULTIMATE INLET LOCATION

NOTE:  
 INLETS I-11 THROUGH I-14 ARE NOT TO BE CONSTRUCTED WITH PARCEL 'A' BUT WITH FUTURE IMPROVEMENTS.

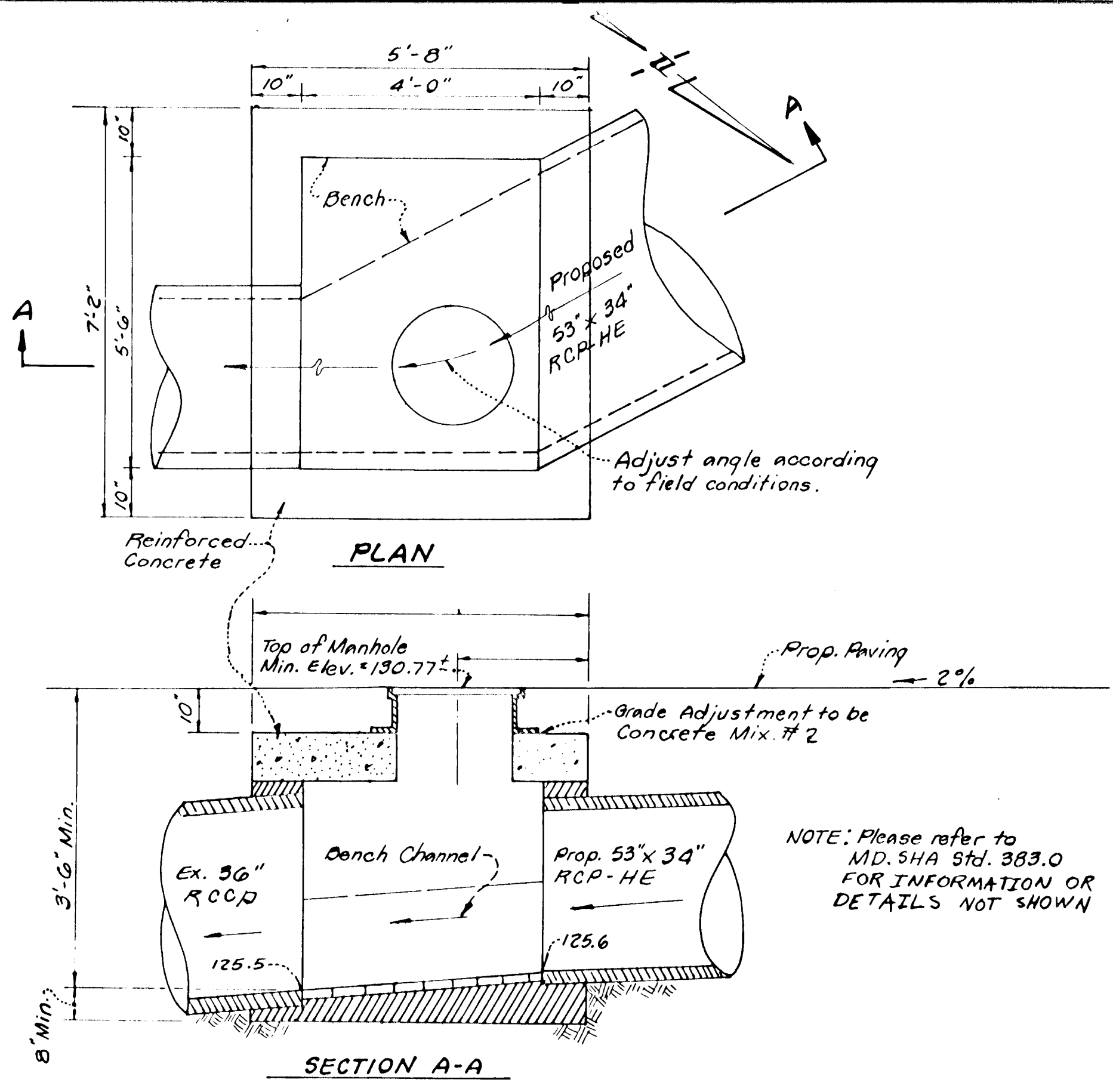


THIS SHEET FOR DRAINAGE DIVIDES ONLY

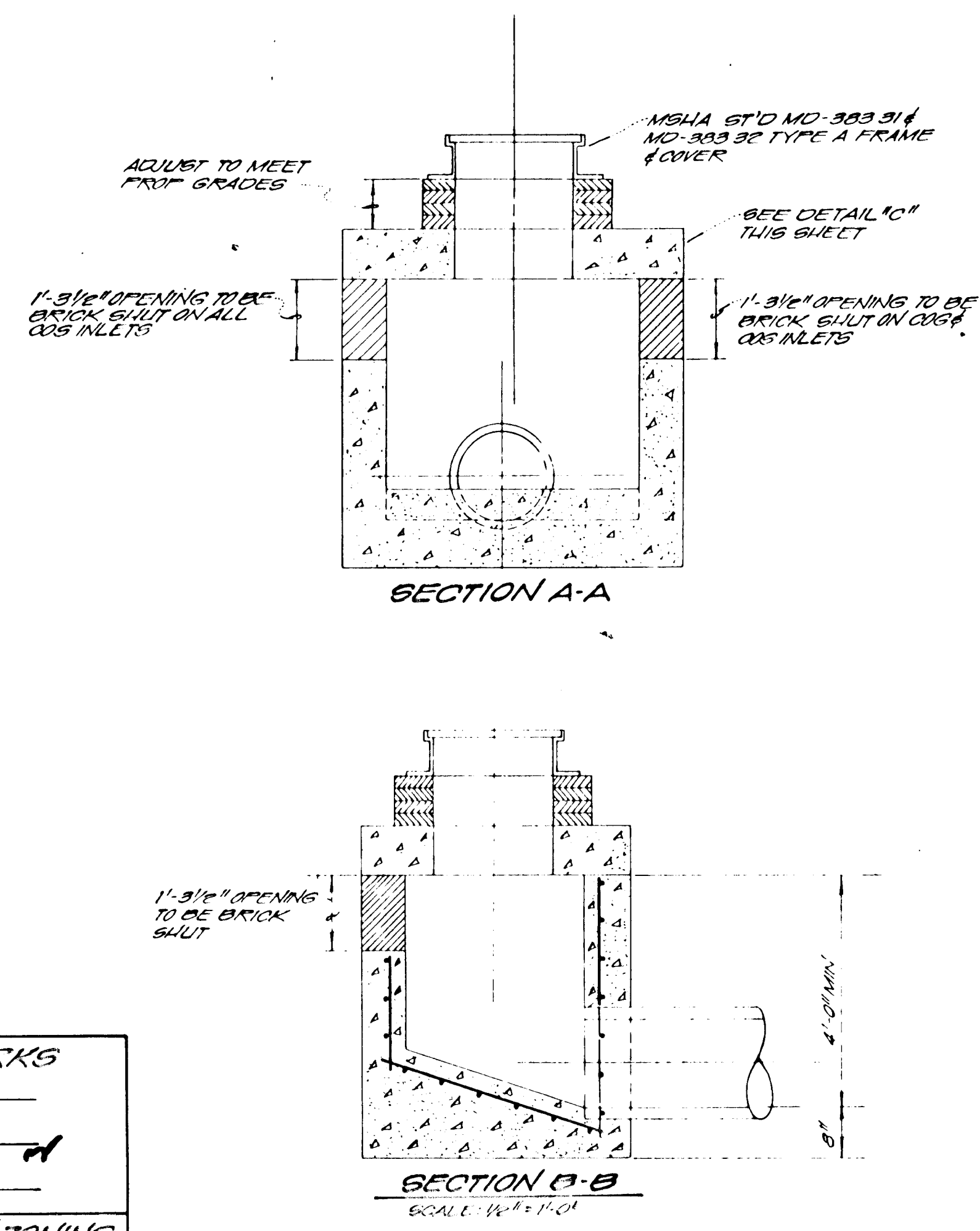
DATE: AUGUST 25, 1993  
 DES. DWN.  
 SCALE: 1" = 100'  
 PROJECT/FILE NO. 7400  
 SHEET NO. 3 OF 21  
 F-91-24

1654





**STRUCTURE M-17 MODIFIED MSHA STD. 383.00**  
SCALE: 1/2"=1'-0"



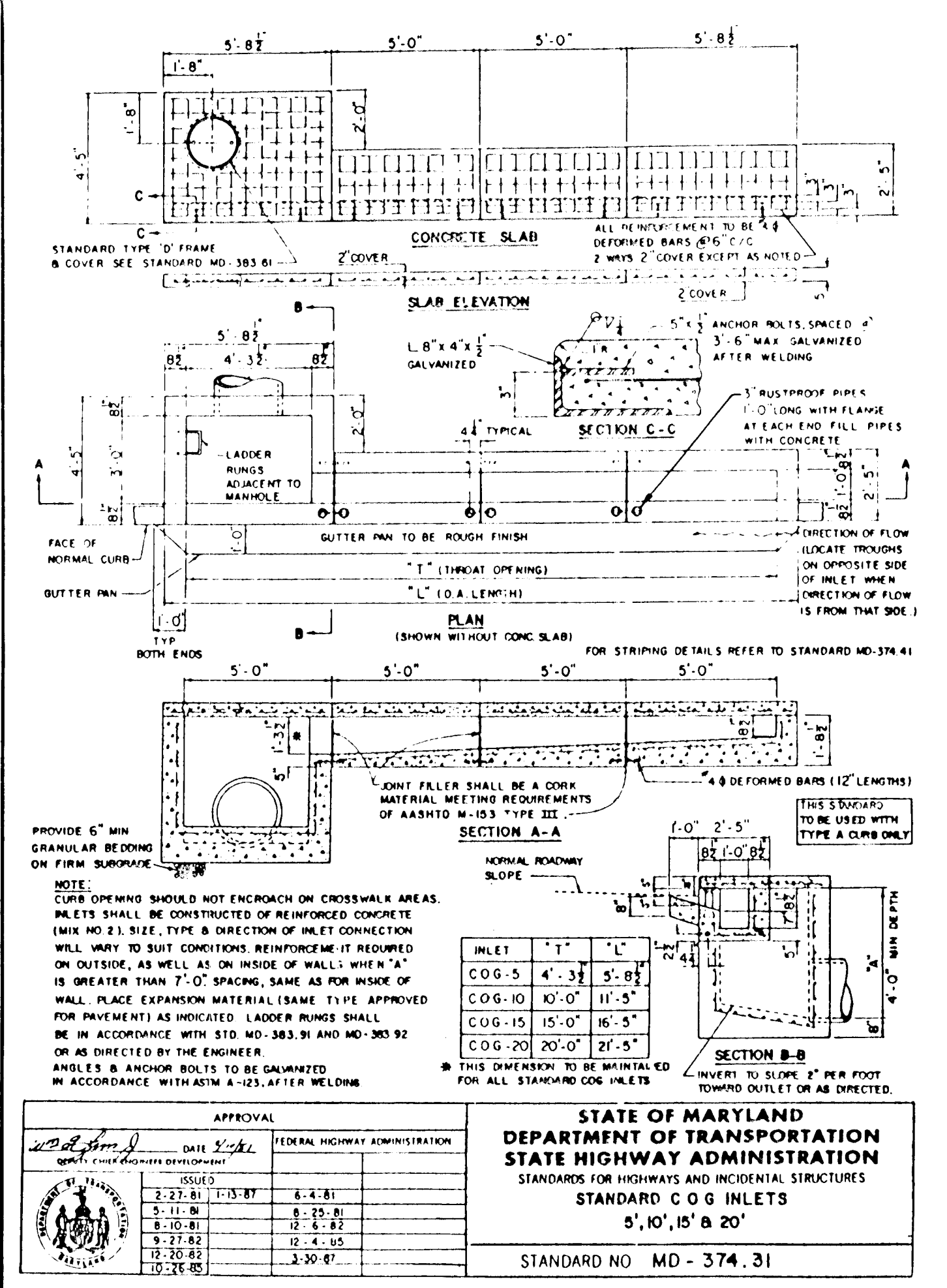
**DETAIL B MODIFIED INLET - 374.31 & 374.41**  
SCALE: 1/4"=1'-0"

**APPROVED HOWARD COUNTY DEPT. OF PUBLIC WORKS**  
 DATE: 8/25/93  
 DATE: 2/19/94  
 DATE: 2/19/94  
 DATE: 2-9-94  
 DATE: 2/24/94

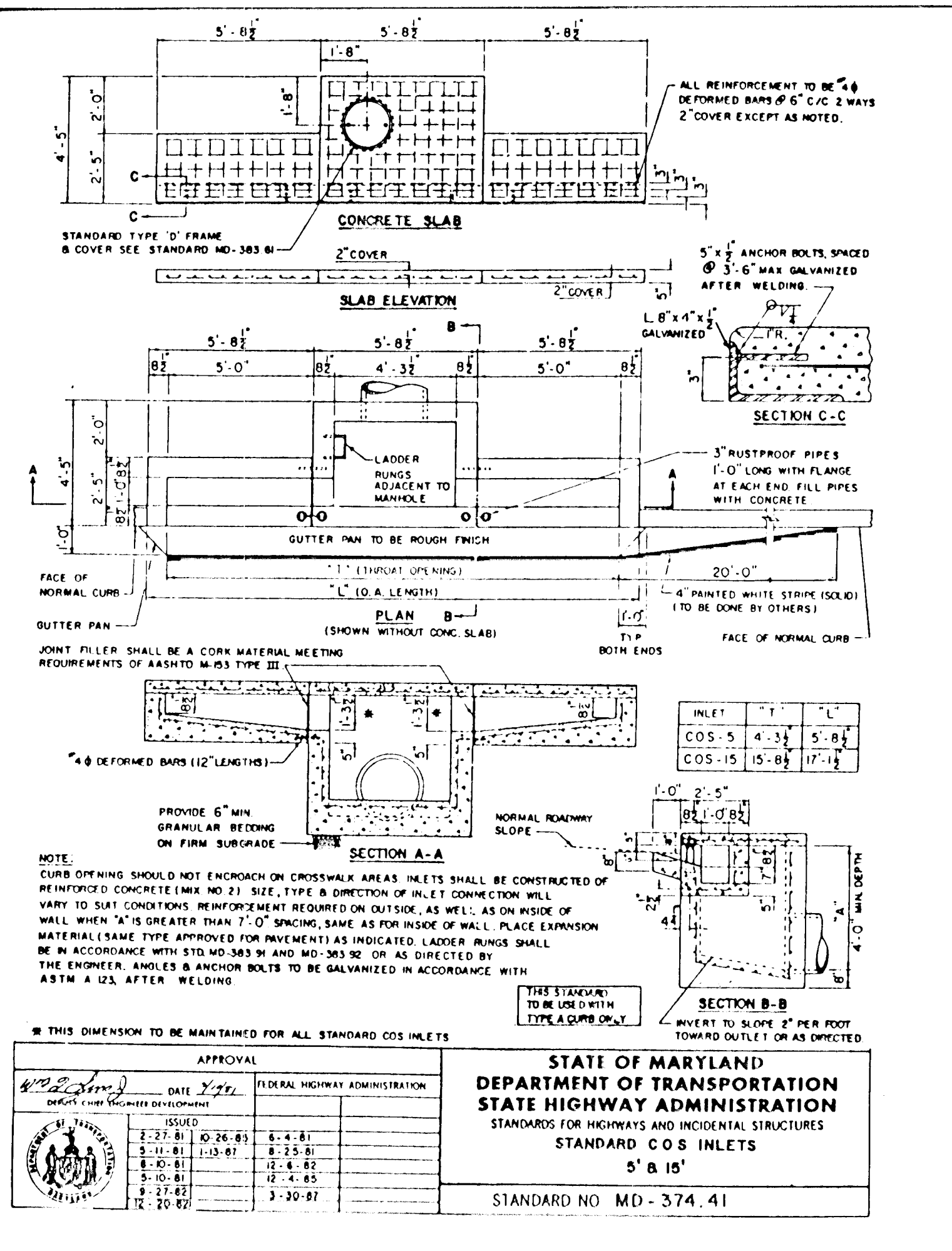
**APPROVED HOWARD COUNTY DEPT. OF PLANNING & ZONING**  
 DATE: 2/24/94

**NOTE:**  
 BOX IS TO BE CONSTRUCTED SUCH THAT IT IS COMPATIBLE WITH THE ULTIMATE MD COVERINGS TO REMAIN. ULTIMATELY A 60" MSHA MD-274-41 THROAT IS TO BE PLACED IN PLACE. THE ENGINEER SHALL BE RESPONSIBLE FOR THE PROVISION OF THE ULTIMATE COVERING. THE ULTIMATE COVERING SHALL BE IN ACCORDANCE WITH THE MSHA MD-274-41 THROAT & TOP OF STRUCTURE SHALL BE AS SHOWN FOR INLET TYPE.

**OWNER/APPLICANT**  
 TROY HILL EXISTING BANK PARTNERSHIP  
 605 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MARYLAND 21046  
 (410) 250-1400



**STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION**  
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES  
**STANDARD C&G INLETS**  
 5', 10', 15' & 20'  
 STANDARD NO. MD - 374.31



**STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION**  
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES  
**STANDARD C&G INLETS**  
 5' & 15'  
 STANDARD NO. MD - 374.41

**ENGINEER**  
 GEORGE WILLIAM STEPHENS JR.  
 AND ASSOCIATES, INC.  
 658 KENILWORTH DRIVE  
 SUITE 400  
 TOWSON, MARYLAND 21286  
 (410) 825-8120

**STORM DRAIN DETAILS**

**TROY HILL CORPORATE CENTER**  
 PARCEL A PHASE I  
 HOWARD COUNTY, MD.  
 ELECTION DISTRICT #1  
 SCALE: AS SHOWN  
 DATE: AUG 25, 1993  
 FILE NOS. S90-05, P90-25, F91-24

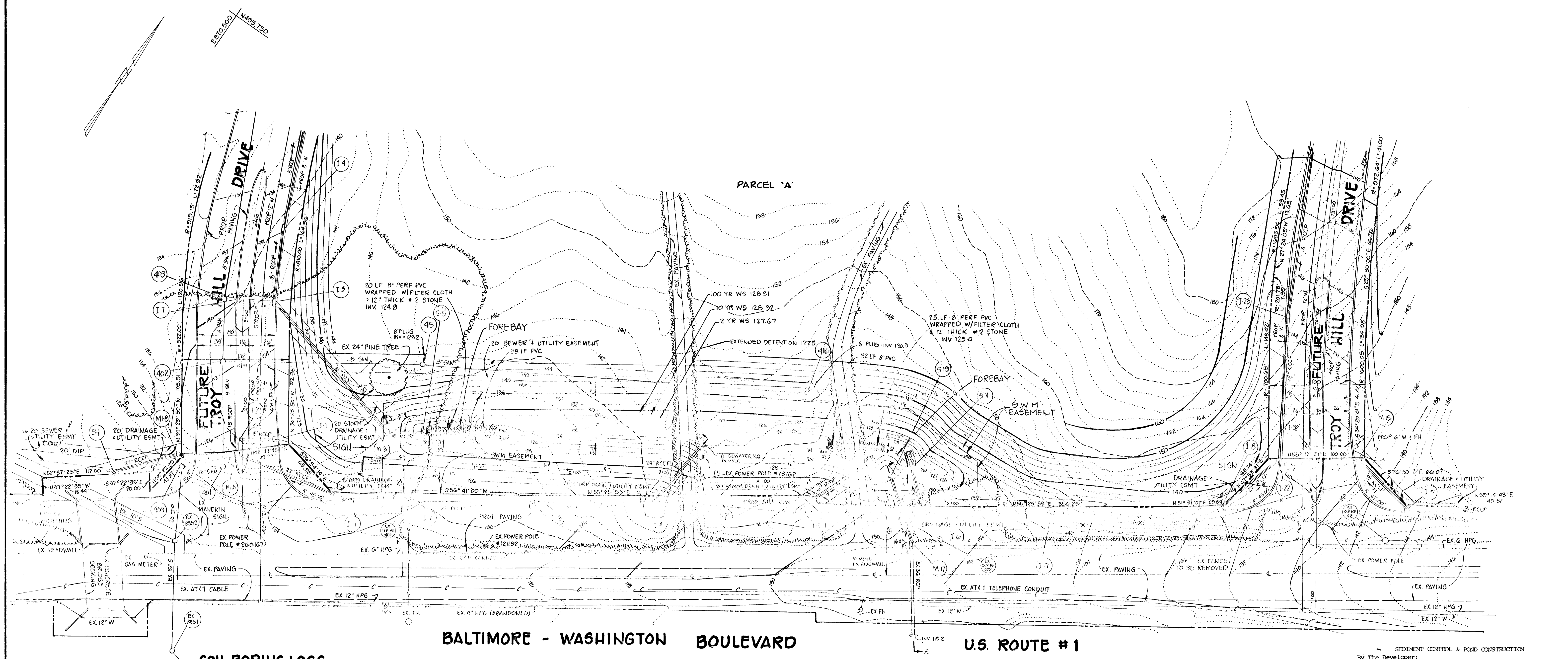
**REVISIONS**

NO.	DATE	DESCRIPTION

DATE: AUG 25, 1993  
 DES. DWN  
 SCALE: AS SHOWN  
 PROJECT FILE NO: 7400  
 SHEET NO: 5 OF 21  
 F-91-24

STORM WATER MANAGEMENT NARRATIVE  
**POND #5** - PROVIDES WATER QUALITY & QUANTITY CONTROL FOR PORTIONS OF PARCEL 'A' ULTIMATE WIDENING OF U.S. ROUTE 1 AND TROY HILL DRIVE FROM STATION 67+00 TO STATION 77+00.

THIS SHEET IS FOR STORM WATER MANAGEMENT FACILITY NUMBER FIVE CONSTRUCTION ONLY!  
 SEE SHT. NO 2 OF FOR GRADING



BALTIMORE - WASHINGTON BOULEVARD U.S. ROUTE #1

**SOIL BORING LOGS**

Station	Depth (ft)	Soil Description
P-2	0-1	Topsoil
	1-4	Brown, heavy, moist, clay & silt. Little of sand, lot of rock fragments (ML) (Clay loam)
	4-25	Brown and dark green, moist, silty, little fine sand, lot of rock fragments (ML) (Silt loam)
	25-49	Dark green, moist, silty, some fine sand, lot of rock fragments, some of clayey silt 4.0' to 6.0' (Decomposed rock) (ML) (Unconsolidated very hard weathering at 12.0') (Silt loam)
P-1	0-1	Topsoil
	1-15	Brown and green, very moist, clayey silt, little fine sand (ML) (Silt loam)
	15-50	Brown and dark green, moist, silty, little fine sand (mass of clayey silt 2.0' to 6.0' and 6.0' to 10.0') (Decomposed rock & quartz fragments 8.0' to 8.0') (Decomposed Rock) (ML) (Silt loam)
	50-60	Prop. Inv. El. 126.2

**NOTE:** PLAN REFLECTS ULTIMATE WIDENING FOR U.S. ROUTE 1, REFER TO SHT. 2 OF 21 AND U.S. ROUTE 1 PLANS FOR ROAD AND STORM DRAIN DESIGN AND CONSTRUCTION.

**PLAN**  
 SCALE: 1"=50'

**POND #5 CONSTRUCTION SPECIFICATIONS**

The construction of the basin shall comply with the criteria set forth in the Maryland S.C.S. Standards and Specifications 378-Ponds dated January 1991 and the additional criteria provided below.

**SCHEDULE:**  
 The storm water management facility shall be constructed or placed in service according to the sequence of operations on the approved sediment and erosion control plans. The storm water management facility shall be used as a sediment basin during construction.

**EXCAVATION:**  
 Initial basin excavation shall be carried to within one (1) foot of the final elevation of the basin floor. Bottom of basin is 123.01 therefore initial excavation shall be 124.0. Final excavation to the finished grade shall be deferred until all disturbed areas on the watershed have been stabilized. The final phase excavation shall remove all accumulated sediment. Heavy equipment and traffic shall be restricted from traveling over the basin bottom area. Relatively light weight equipment with tracks or oversized tires shall be used for the final excavation. In order to prevent compaction of the soil, bull dozers and front-end loaders shall be avoided.

After the final grading is completed, the bottom of the basin shall be over-excavated to a depth of one foot below the bottom of the basin, and the soil below this surface shall be rotor tilled to a depth of 4 to 8 inches. One foot of sand, conforming to the requirements of AASHTO M6 and shall be washed and protected from contamination, shall be added to and blended in with the underlying rotor tilled soil. Blending shall be accomplished by additional rotor tilling.

**LEGEND**

- EX. GRADE
- PROP. GROUND
- EX. CONC. CURB & GUTTER
- PROP. CONC. CURB & GUTTER
- PROPERTY LINE
- BLVD. EXCAVATION LINE
- EX. UTILITY LINE
- PROP. UTILITY LINE
- EX. STORM DRAIN
- PROP. STORM DRAIN
- EX. SANITARY SEWER
- PROP. SANITARY SEWER
- EX. WOODPILE
- SOIL BORING
- PROP. PAVING

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
 CHIEF, BUREAU OF ENGINEERING  
 APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
 CHIEF, LAND DEVELOPMENT DIVISION  
 DATE: 2/14/94  
 DATE: 2-9-94

**OWNER / APPLICANT**  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 9% MARSHALL CORPORATION  
 4165 COLUMBIA GATEWAY DRIVE  
 COLUMBIA MARYLAND 21046  
 (410) 990-1400  
 ATTENTION: LESLE SCHNOFF

**SEDIMENT CONTROL & POND CONSTRUCTION**  
 By The Developer:  
 "I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project."  
 Signature: *Richard M. Altier*  
 Date: 8/26/93

By the Engineer:  
 "I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District."  
 Signature: *Richard M. Altier*  
 Date: 8/26/93

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for pond construction, soil erosion, and sediment control.  
 Signature: *Richard M. Altier*  
 Date: 8/26/93

These plans for pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.  
 Signature: *Richard M. Altier*  
 Date: 8/26/93

ENGINEER  
**GEORGE WILLIAM STEPHENS JR. AND ASSOCIATES, INC.**  
 658 KENILWORTH DRIVE  
 SUITE 100  
 TOWSON, MARYLAND 21284  
 (410) 825-8120

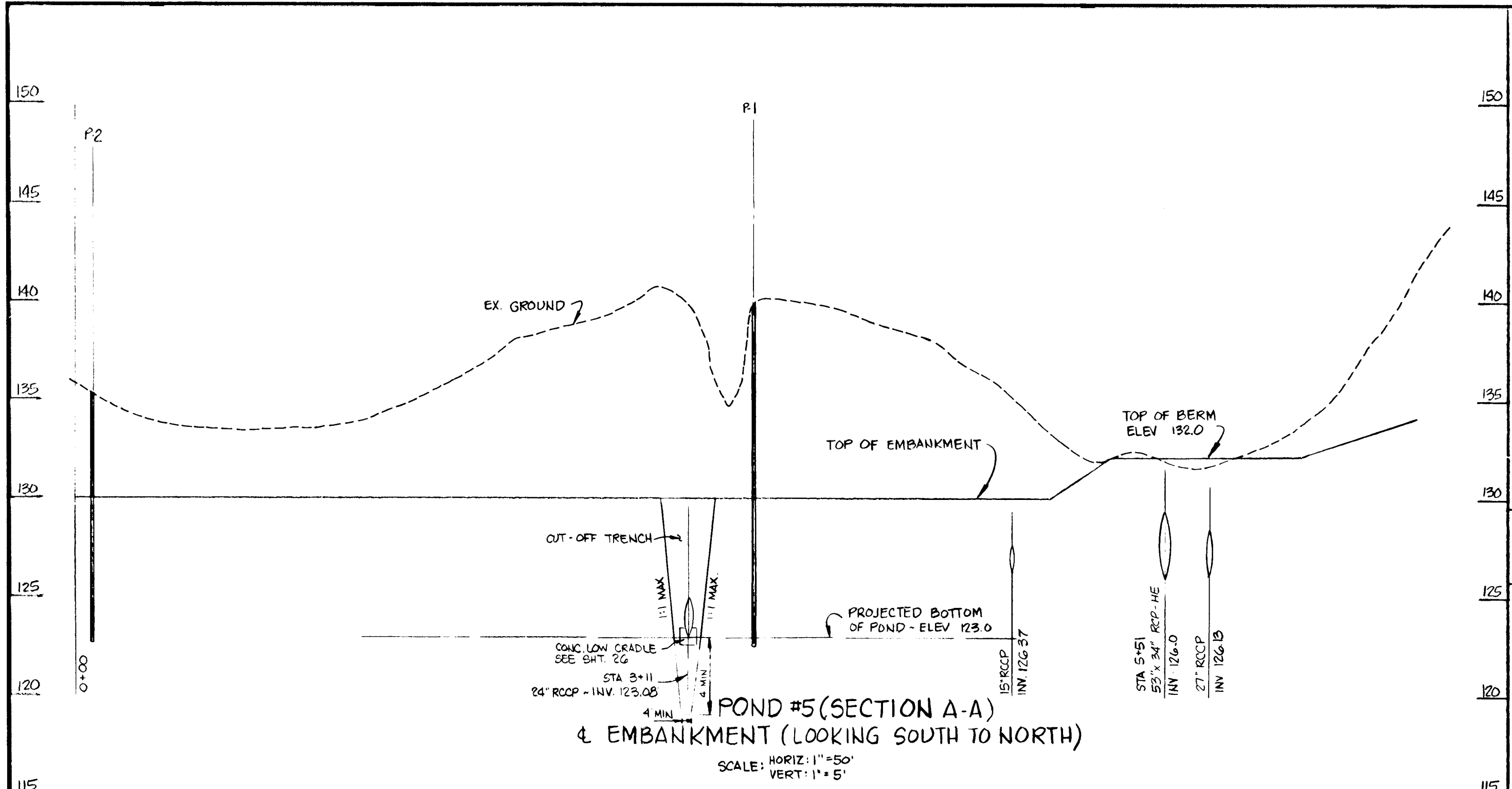
TROY HILL CORPORATE CENTER  
 PARCEL 'A' PHASE 1

HOWARD COUNTY, MD. ELECTION DISTRICT #1  
 SCALE: AS SHOWN DATE: AUGUST 1993  
 FILE NO. SB-05-PM-25-F91-24

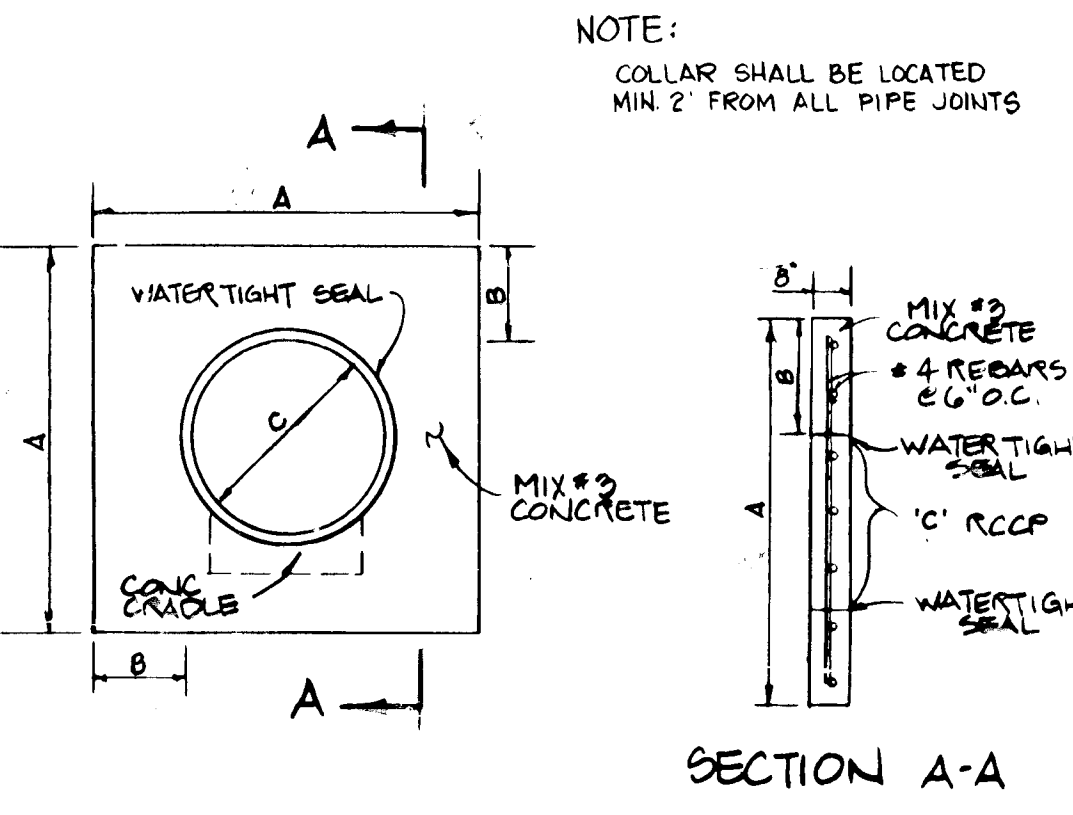
**STORM WATER MANAGEMENT PLAN**  
 POND #5

DATE: AUGUST 29, 1993  
 DRAWN: KU  
 CHECKED: COT  
 SCALE: 1"=50'  
 PROJECT FILE NO: 7100  
 SHEET NO: G OF 21  
 1-11-24

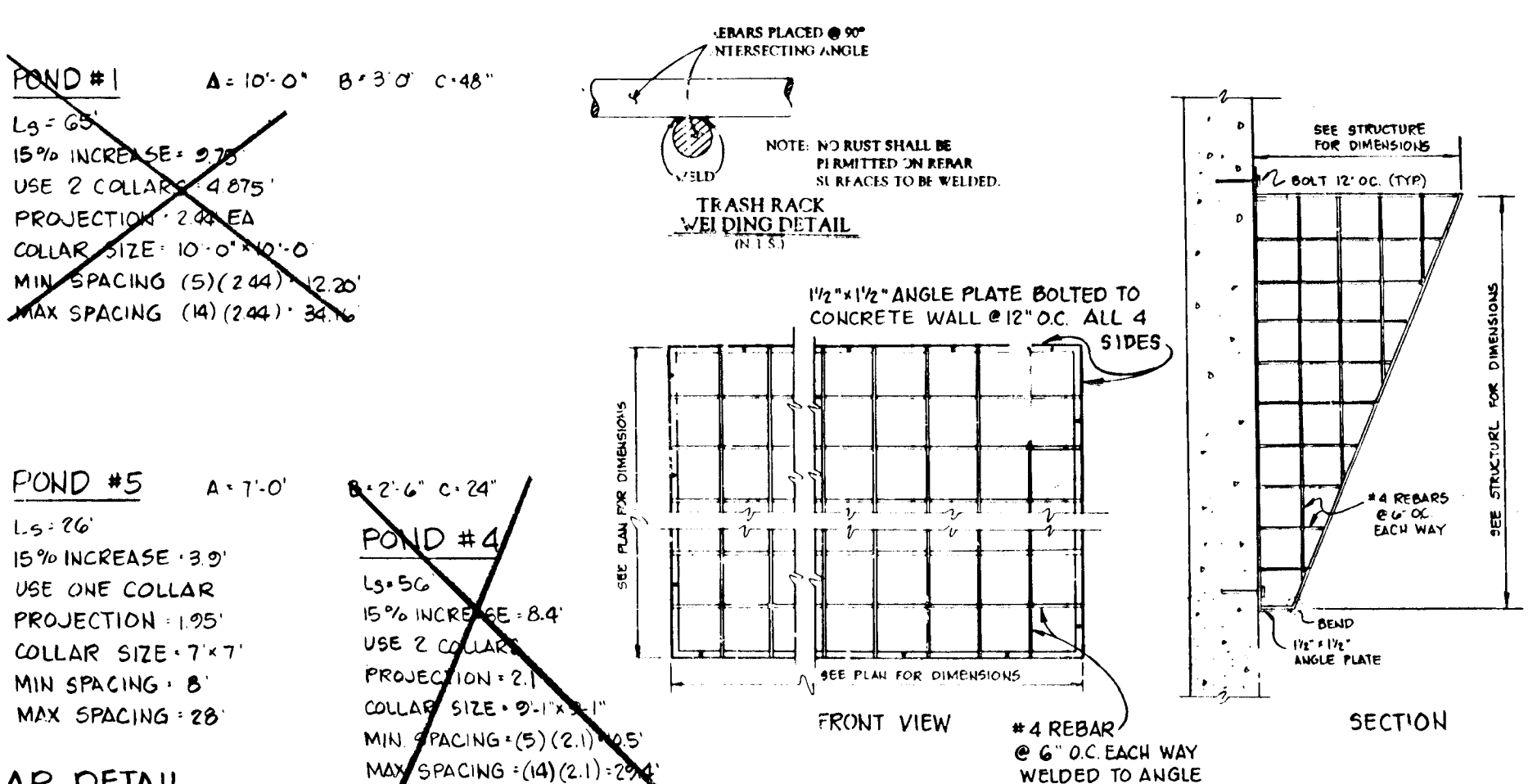




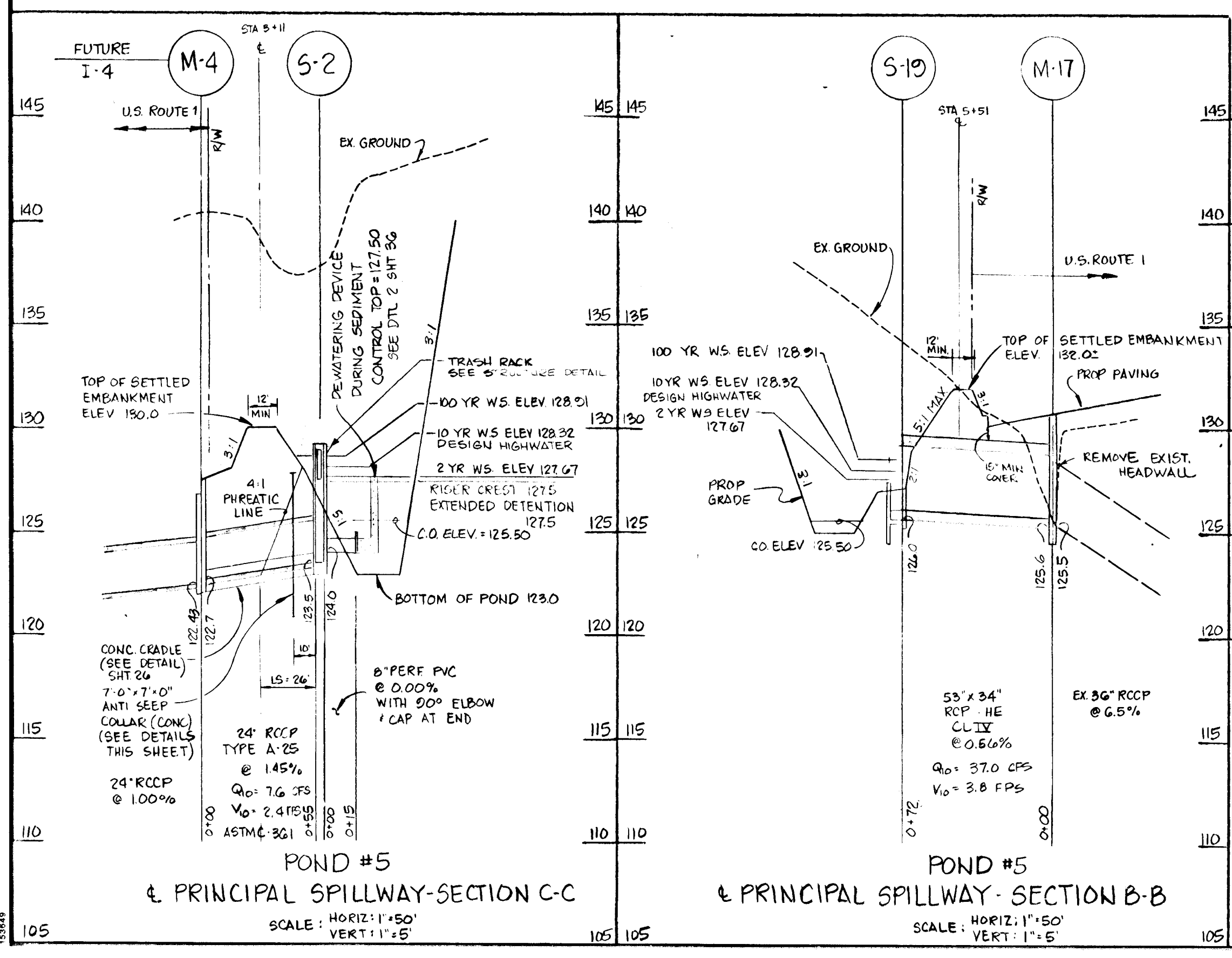
**POND #5 (SECTION A-A) & EMBANKMENT (LOOKING SOUTH TO NORTH)**  
SCALE: HORIZ: 1"=50'  
VERT: 1"=5'



**CONCRETE ANTI-SEEP COLLAR DETAIL (NO SCALE)**

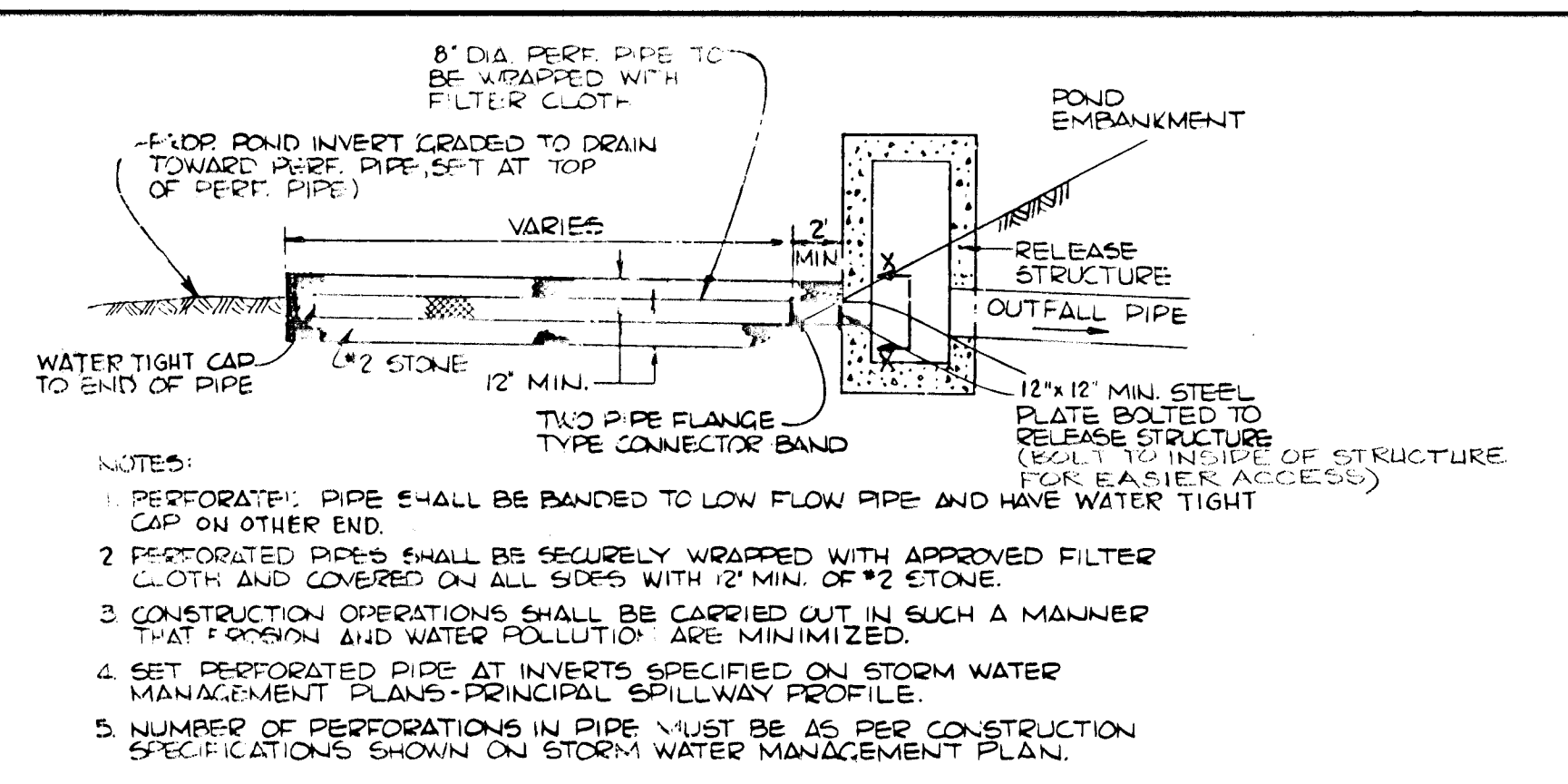


**TRASH RACK DETAIL (NO SCALE)**

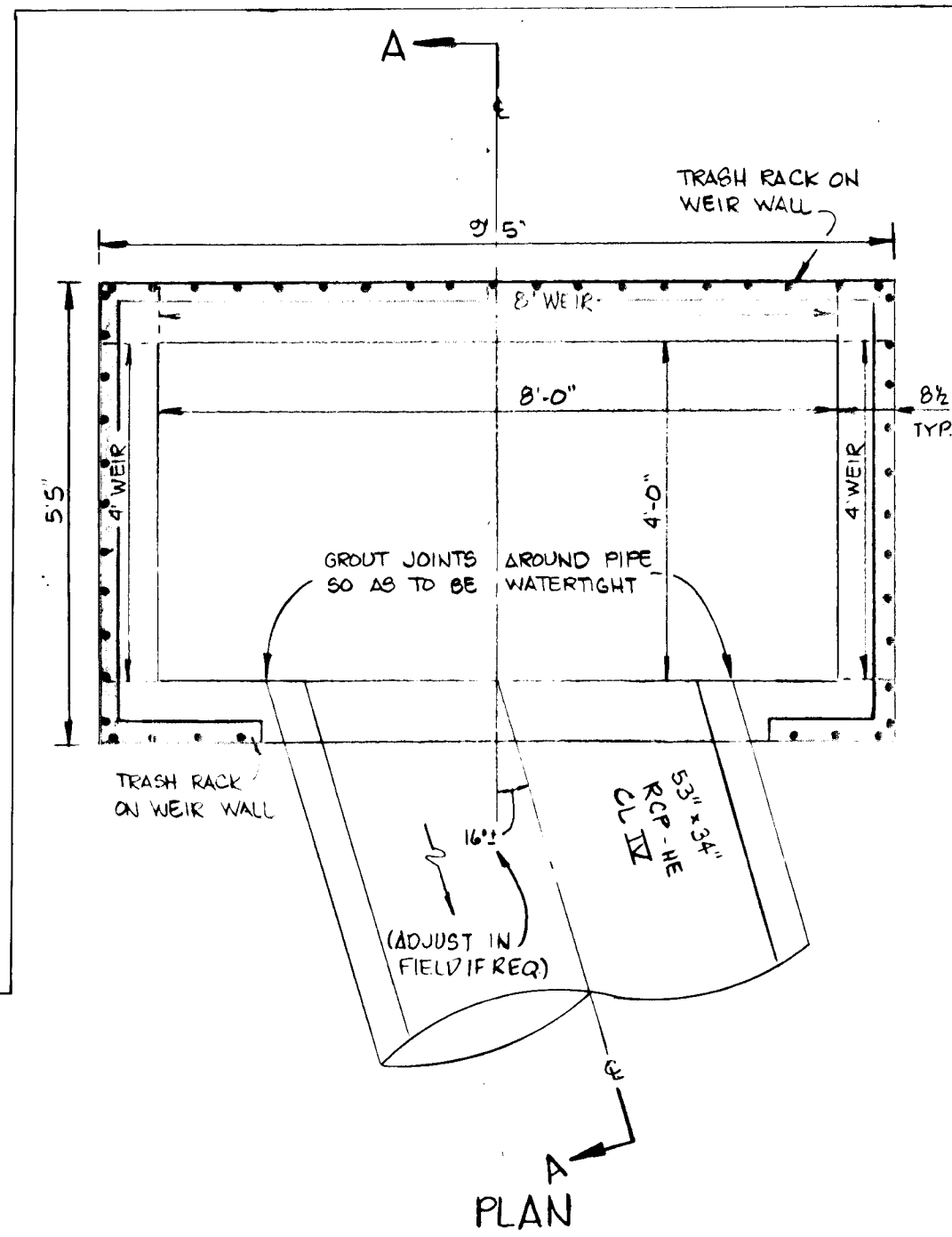


**POND #5 & PRINCIPAL SPILLWAY-SECTION C-C**  
SCALE: HORIZ: 1"=50'  
VERT: 1"=5'

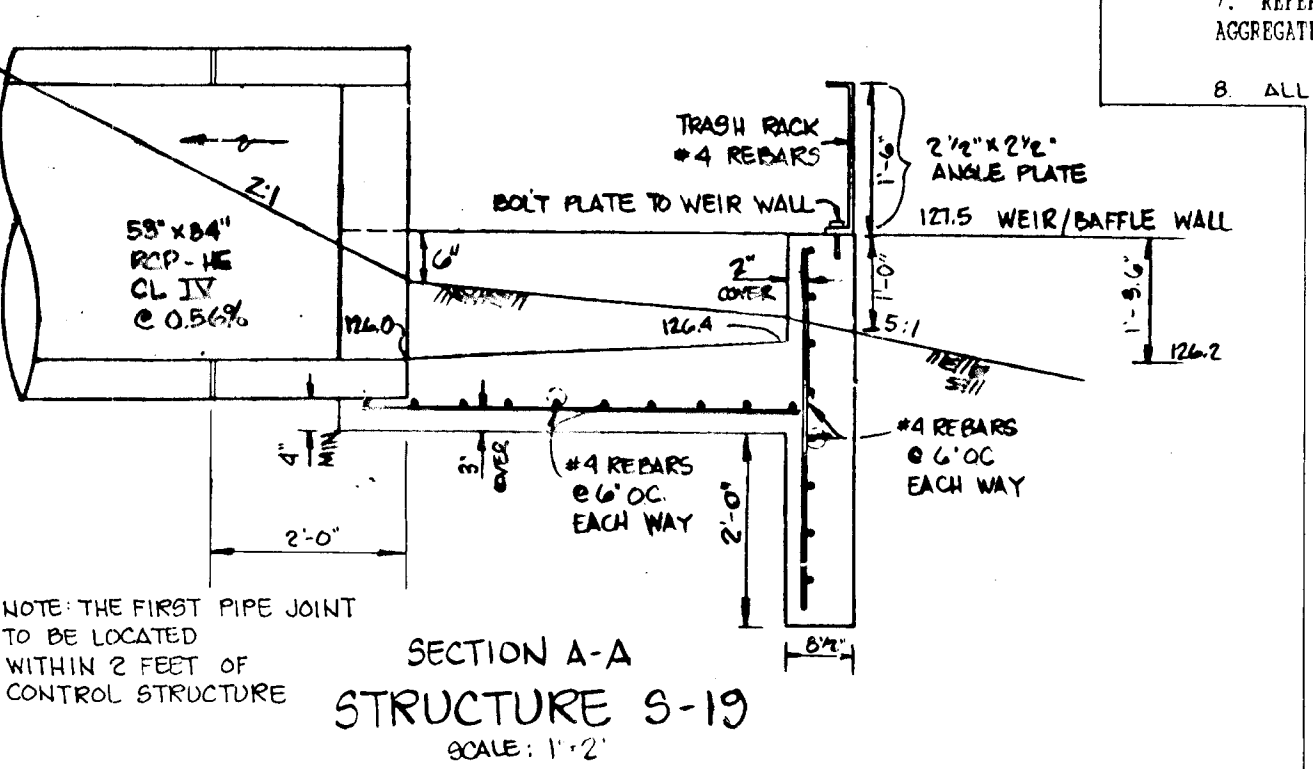
**POND #5 & PRINCIPAL SPILLWAY-SECTION B-B**  
SCALE: HORIZ: 1"=50'  
VERT: 1"=5'



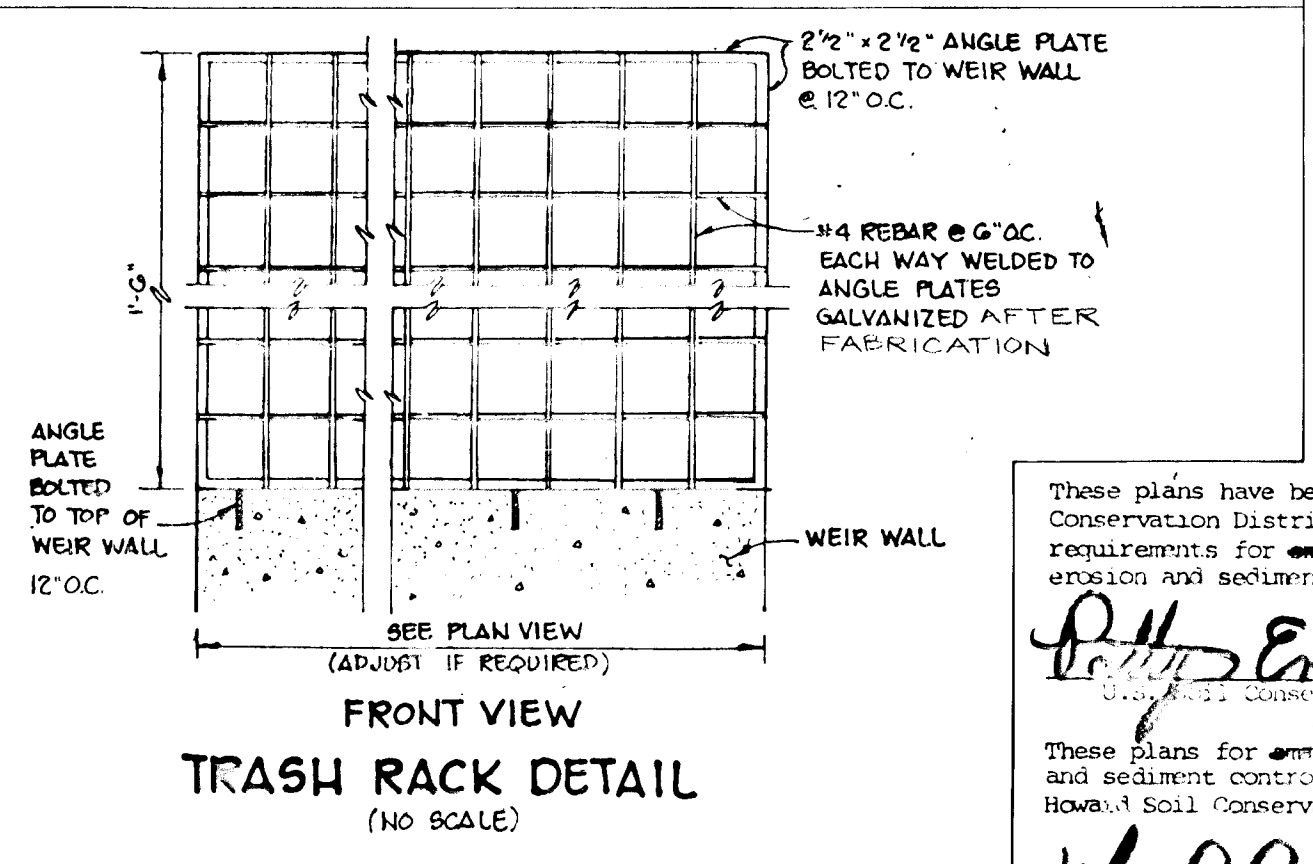
**EXTENDED DETENTION DETAILS (NOT TO SCALE)**



- NOTES**
- STRUCTURE SHALL BE PRECAST REINFORCED CONCRETE WITH 3,500 PSI STRENGTH @ 28 DAYS.
  - ALL REINFORCING TO BE CONTINUOUS THROUGHOUT STRUCTURE.
  - ALL REINFORCING TO HAVE 1'-4" MIN. OVERLAPS.
  - PROVIDE ADDITIONAL #5 REBARS ALONG THE PERIMETER OF ALL OPENINGS IN THE STRUCTURE.
  - TWO (2) INCH COVER (MIN) FOR ALL REBAR IN WALLS AND THREE (3) INCHES FOR THE BASE.
  - REFER TO HOWARD COUNTY STANDARDS AND SPECIFICATIONS FOR STANDARD DETAILS AND SPECIFICATIONS OF ITEMS SHOWN ON DETAILS.
  - REFER TO MD. 378 SPECIFICATIONS FOR PIPE AND STONE AGGREGATE DETAILS.
  - ALL REINFORCED STEEL TO BE GALVANIZED.



**SECTION A-A STRUCTURE S-19**  
SCALE: 1"=2'



**TRASH RACK DETAIL (NO SCALE)**

By the Designer:  
I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

*Richard M. Alter*  
DATE: 8/25/93

By the Engineer:  
I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

*George William Stephens Jr.*  
DATE: 8/25/93

**ENGINEER**  
**GEORGE WILLIAM STEPHENS JR. AND ASSOCIATES, INC.**  
658 KENILWORTH DRIVE  
SUITE 100  
TOWSON, MARYLAND 21204  
(410) 825-8120

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
DATE: 8/25/93  
DATE: 8/25/93  
DATE: 8/25/93  
DATE: 8/25/93

OWNER/APPLICANT:  
TROY HILL BUSINESS PARK PARTNERSHIP  
1155 COLUMBIA GREENWAY DRIVE  
COLUMBIA, MARYLAND 21046  
(410) 990-1400  
ATTENTION: COLE SCHWARTZ

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
DATE: 8/25/93

DATE: AUGUST 25, 1993  
SCALE: AS SHOWN  
PROJECT/FILE NO:  
SHEET NO: 8 OF 21

**TROY HILL CORPORATE CENTER**  
PARCEL 'A'  
**TROY HILL DRIVE**  
PHASE 1  
HOWARD COUNTY, MD.  
ELECTION DISTRICT #1  
DATE: AUGUST 25, 1993  
FILE NOS. 590-05, 590-15, F81-24

**SECTIONS & DETAILS**  
**STORM WATER MANAGEMENT**



**POND CONSTRUCTION SPECIFICATIONS**

These specifications are appropriate to all ponds within the scope of the Standard for Practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

**Site Preparation**

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the 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. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below 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.

**Earth Fill**

**Material** - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment design and construction are supervised by a geotechnical engineer.

**Placement** - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

**Compaction** - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four

complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within ± 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

**Cut Off Trench** - The cutoff trench shall be excavated into existing material 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 below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

**Structure Backfill**

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. It shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed 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 equipment be driven over any part of a concrete structure or pipe, unless there is a completed fill of 24" or greater over the structure or pipe.

**Pipe Conduits**

All pipes shall be circular in cross section.

**Corrugated Metal Pipe** - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any

bituminous coating damaged or otherwise removed shall be repaired with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasticoat, Ecolac, and Best-Coat. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

**Materials - (Aluminum Coated Steel Pipe)** - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

**Materials - (Aluminum Pipe)** - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. 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.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket, and a 12" wide hugger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and nuts. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

Helically corrugated pipe shall have either continuously welded seams or have lock seams.

4. 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.
5. Backfilling shall conform to "Structure Backfill."
6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**Reinforced Concrete Pipe** - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.
4. Backfilling shall conform to "Structure Backfill."

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**Polyvinyl Chloride (PVC) Pipe** - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.
2. Joints and connections to anti-seep collars shall be completely watertight.

3. 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.
4. Backfilling shall conform to "Structure Backfill."
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**Concrete**

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

**Rock Riprap**

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment.

The rock shall have the following properties:

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
2. Absorption not more than three percent.
3. Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. The cloth shall be placed under, all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

**Care of Water during Construction**

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The Contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

**Stabilization**

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. Exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

**Erosion and Sediment Control**

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. Storm and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

By the Developer:

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment 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."

*Richard M. Altier* 8/25/93  
Signature of Developer Date  
RICHARD M. ALTIER

By the Engineer:

"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."

*George William Stephens Jr.* 8/25/93  
Signature of Engineer Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

*Patty Eason* 11/25/94  
U.S. Soil Conservation Service Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

*John R. Robertson* 1/25/94  
Howard Soil Conservation District Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

*Carm Journeman* 2/24/94  
CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

*George William Stephens Jr.* 2/19/94  
CHIEF, BUREAU OF ENGINEERING DATE

*George William Stephens Jr.* 2/14/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

*George William Stephens Jr.* 2-9-94  
CHIEF, BUREAU OF HIGHWAYS DATE

ENGINEER  
GEORGE WILLIAM STEPHENS JR.  
AND ASSOCIATES, INC.  
658 KENILWORTH DRIVE  
SUITE 100  
TOWSON, MARYLAND 21204  
(410) 825-8120

DESIGNED:  
DRAWN:  
CHECKED:

OWNER/APPLICANT  
TROY HILL BUSINESS PARK PARTNERSHIP  
C/O MAREXIN CORP.  
4165 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MARYLAND 21046  
(410) 290-1400

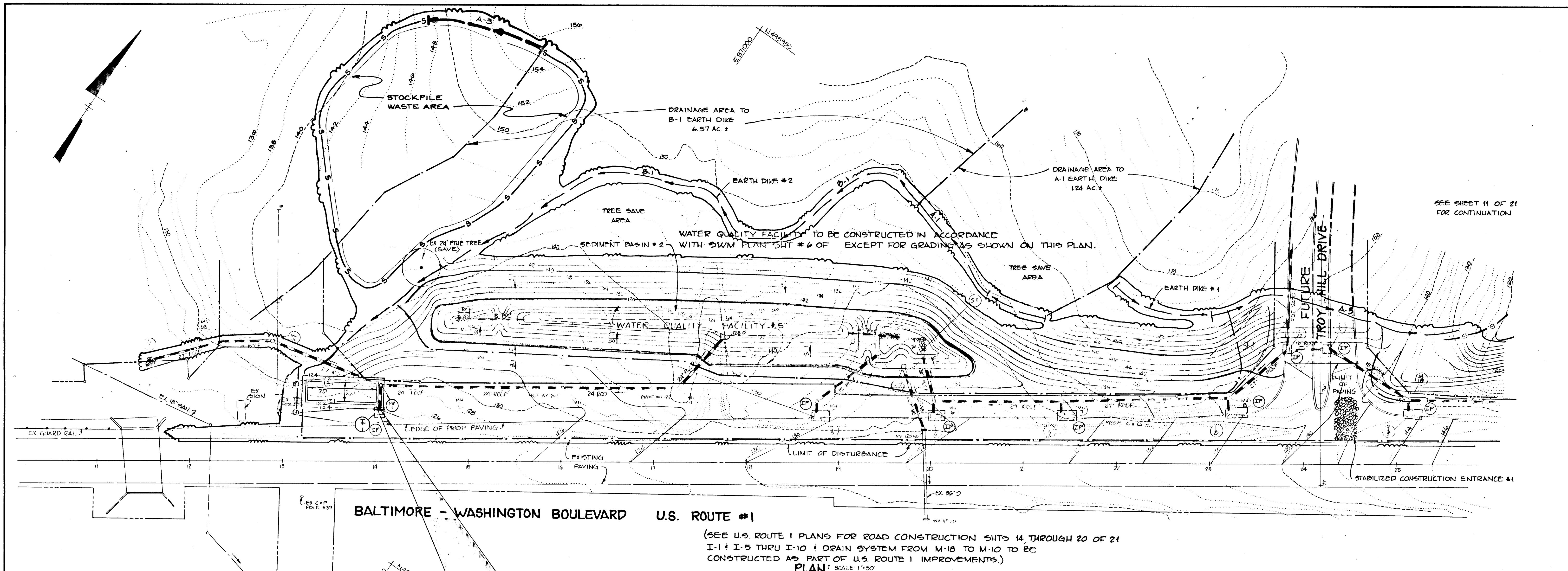
TROY HILL CORPORATE CENTER  
PARCEL A PHASE I  
SWM POND SPECIFICATIONS

HOWARD COUNTY, MD. ELECTION DISTRICT #1  
SCALE: AS SHOWN DATE: AUGUST 25, 1993  
FILE NOS. S90-05, P90-25, F91-24

SCALE: AS SHOWN

SHEET NO. 9 OF 21

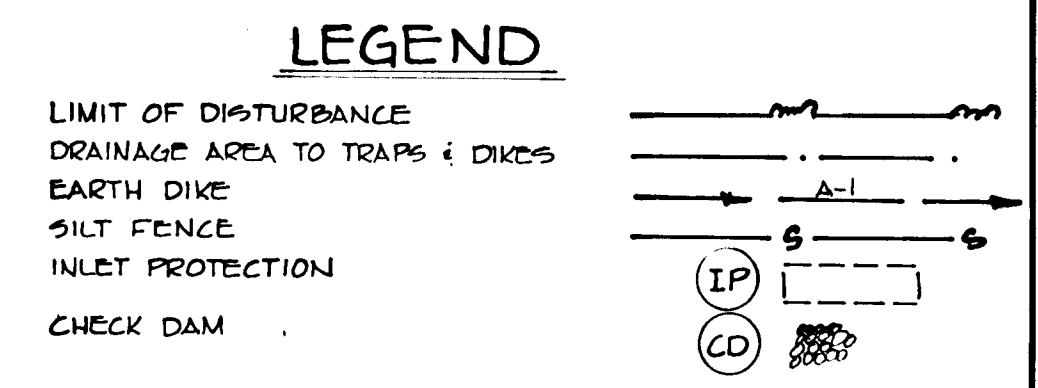
1654



SEE SHEET 11 OF 21 FOR CONTINUATION

(SEE U.S. ROUTE 1 PLANS FOR ROAD CONSTRUCTION SHITS 14 THROUGH 20 OF 21 I-1 & I-5 THRU I-10 & DRAIN SYSTEM FROM M-18 TO M-10 TO BE CONSTRUCTED AS PART OF U.S. ROUTE 1 IMPROVEMENTS.)  
**PLAN: SCALE 1"=50'**

**STORM DRAIN MANHOLE (INLET) SEDIMENT TRAP # 1**  
 AREA DRAINING TO TRAP = 2.82 AC ±  
 VOLUME REQUIRED 2.82 x 1800 = 5076 C.F.  
 VOLUME PROVIDED = 5400 C.F.  
 BOTTOM DIMENSION = 22' x 75'  
 SIDE SLOPES = 2:1  
 DEPTH = 2.5'  
 BOTTOM ELEVATION = 121.00'  
 WEIR ELEVATION = 123.50'  
 STORAGE LIMIT ELEVATION = 123.50'  
 CLEANOUT ELEVATION = 122.50'



By The Developer:  
 "I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."  
 Richard M. Altus  
 Signature of Developer  
 RICHARD M. ALTUS  
 Date 01/25/93

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
 Chief, Bureau of Engineering 2/19/93  
 Chief, Land Development Division 2/14/94  
 Chief, Bureau of Highways 2-9-94

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for pond construction, soil erosion and sediment control.  
 U.S. Soil Conservation Service  
 Date 1/25/93

By the Engineer:  
 "I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the Howard Soil Conservation District that I have notified the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."  
 Date 01/25/93

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
 Chief, Div. of Land Development and Research 2/24/94

Howard Soil Conservation District  
 Date 1/25/93

Signature of Engineer  
 Date 01/25/93

AREA OF DISTURBANCE = 383,890 SQ. FT.

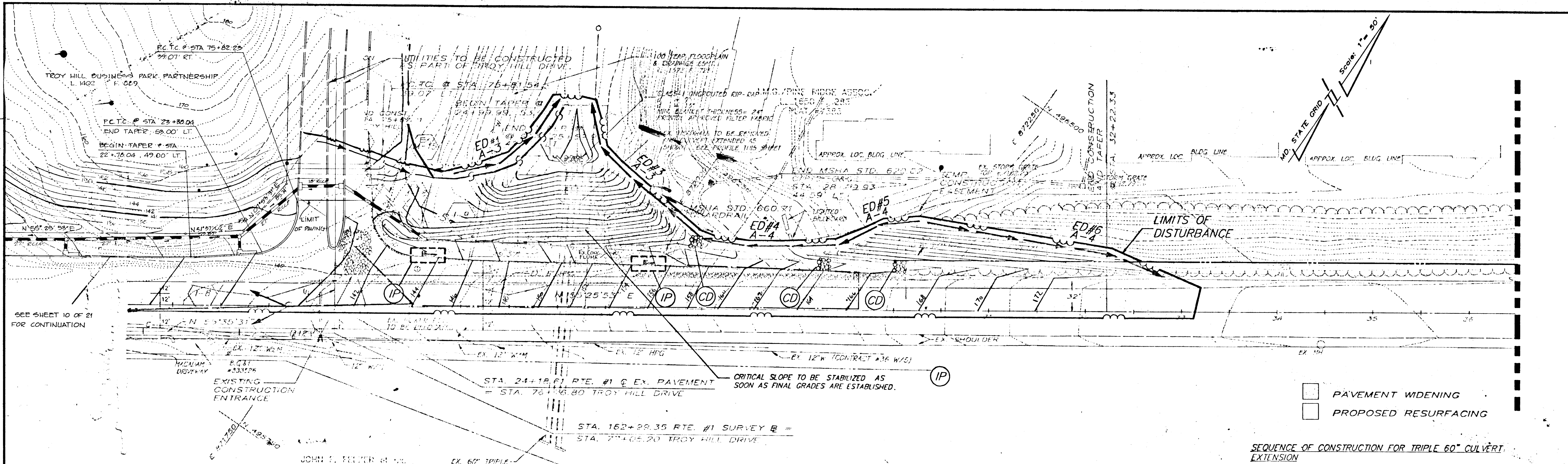
1654

**GWS**  
 GEORGE WILLIAM STEPHENS, JR.  
 AND ASSOCIATES, INC.  
 CIVIL ENGINEERS & LAND SURVEYORS  
 658 KENILWORTH DRIVE, SUITE 100  
 TOWSON, MARYLAND 21204  
 (410) 825-8120

Signature of Engineer  
 Date 01/25/93

OWNER/APPLICANT  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 C/O MANEKIN CORP.  
 4165 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MARYLAND 21046  
 (410) 290-1400

TROY HILL CORPORATE CENTER  
 PARCEL - A - PHASE 1  
 SEDIMENT CONTROL PLAN  
 HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN  
 DATE: 01/25/93  
 SHEET: 10 OF 21



BALTIMORE-WASHINGTON BOULEVARD U.S. RTE. #1

- SEQUENCE OF CONSTRUCTION FOR TRIPLE 60" CULVERT EXTENSION**
1. A MEETING WITH THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR SHALL BE HELD PRIOR TO THE START OF ANY CONSTRUCTION.
  2. INSTALL SILT FENCE AS SHOWN FROM STATION 25+25 TO 28+00.
  3. PROVIDE POSITIVE DRAINAGE FROM EXISTING CONCRETE FLUME TO TRIPLE 60" CULVERT FOR DURATION OF CONSTRUCTION.
  4. INSTALL SUMP PIT AT CULVERT CONSTRUCTION SUCH THAT SEDIMENT INTRUSION INTO THE STREAM, DUE TO DISTURBANCE, IS MINIMIZED.
  5. REMOVE EXISTING 60" TRIPLE HEADWALL.
  6. DIVERT STREAM TO OTHER FUNCTIONING CULVERTS USING A SANDBAG/STONE DIVERSION DIKE AS PER DETAIL 4, SHEET 12.
  7. EXTEND CULVERTS SUCH THAT POSITIVE DRAINAGE OVER A STABILIZED FLOW PATH THROUGH OTHER CULVERTS IS MAINTAINED PER HOWARD COUNTY INSPECTORS DISCRETION. ONLY ONE CULVERT MAY BE EXTENDED AT ONE TIME.
  8. INSTALL PROPOSED 60" TRIPLE HEADWALL.
  9. INSTALL RIP-RAP AND GRADE INLET TO 60" TRIPLE CULVERT AS SHOWN.
  10. REMOVE EXISTING CONCRETE FLUME.
  11. CONSTRUCT ENGINEERED FILL FOR ROADWAY WIDENING AS PER THE MOST RECENT VERSION OF MSHA STANDARDS AND SPECIFICATIONS.
  12. STABILIZE ENGINEERED FILL AS PER THE MOST RECENT VERSION OF MSHA STANDARDS AND SPECIFICATIONS.
  13. REMOVE ALL SEDIMENT CONTROL DEVICES.
- NOTE:** WRA PERMIT NUMBER FOR INSTALLATION OF SANDBAG/STONE DIVERSION WITHIN FLOODPLAIN IS 90-WC-0647/199000188, EXPIRATION DATE 2/29/97.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

*Patty English* 11/25/94  
U.S. SOIL CONSERVATION DISTRICT DATE

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

*John R. Robertson* 11/25/94  
HOWARD S.C.D. DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

*Richard M. Alter* 8/25/93  
CHIEF, BUREAU OF ENGINEERING DATE

*William J. ...* 2/14/94  
CHIEF, LAND DEVELOPMENT DIVISION DATE

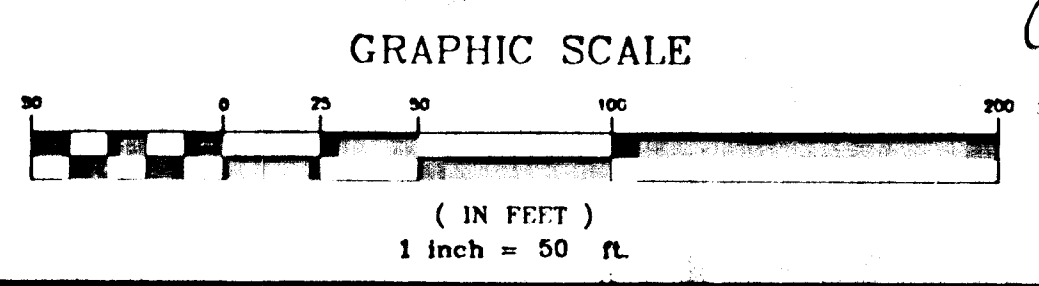
*Andrew M. ...* 2-9-94  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

*Amo ...* 2/2/94  
CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH DATE

- LEGEND**
- LIMITS OF DISTURBANCE
  - SILT FENCE
  - EARTH DIKE
  - INLET PROTECTION
  - CHECK DAM

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL PURPOSES ONLY



**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT 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.

*Richard M. Alter* 8/25/93  
RICHARD M. ALTER 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.

*Richard M. Alter* 8/25/93  
DATE

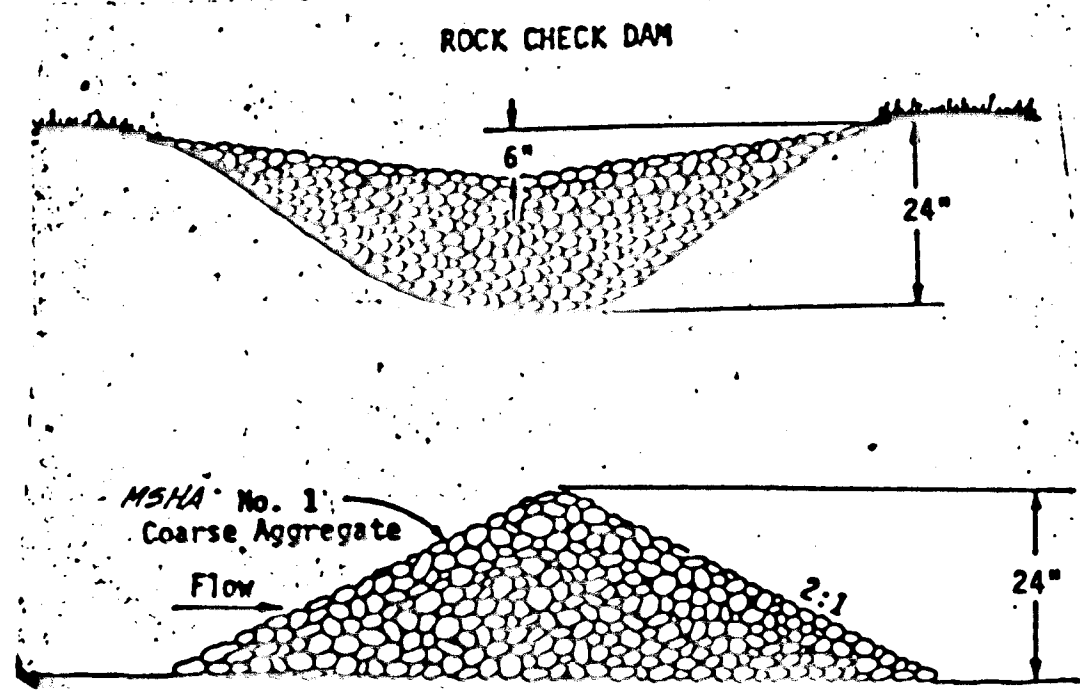
ENGINEER  
**GEORGE WILLIAM STEPHENS JR. AND ASSOCIATES, INC.**  
658 KENILWORTH DRIVE  
TOWSON, MARYLAND 21284  
(410) 825-8170

**TROY HILL CORP. CENTER**  
PARCEL 'A' - PHASE 1  
HOWARD COUNTY, MARYLAND

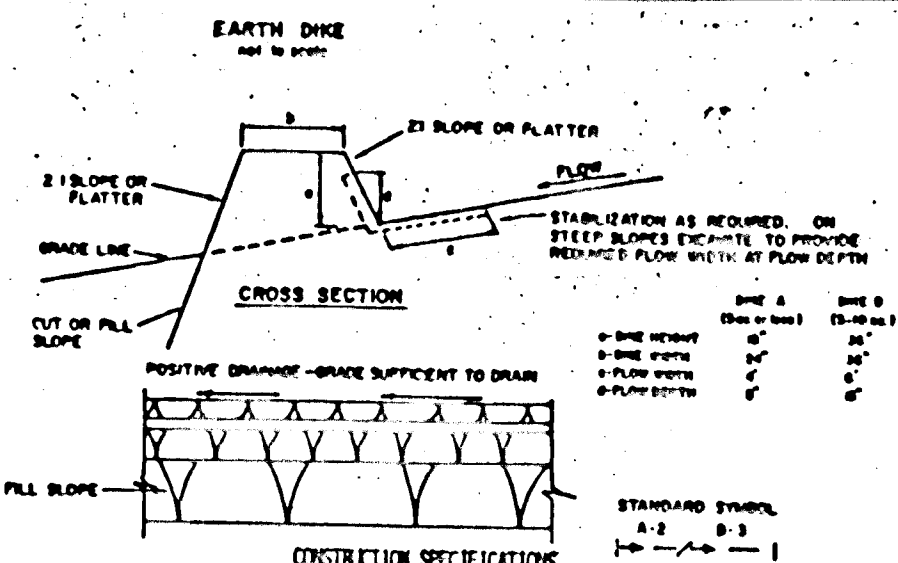
**SEDIMENT AND EROSION CONTROL**

DATE: AUGUST 25, 1993  
DES. KM DWN. RGT.  
SCALE: AS SHOWN  
PROJECT/FILE NO. 5155  
SHEET NO. 11 OF 21  
F-91-24

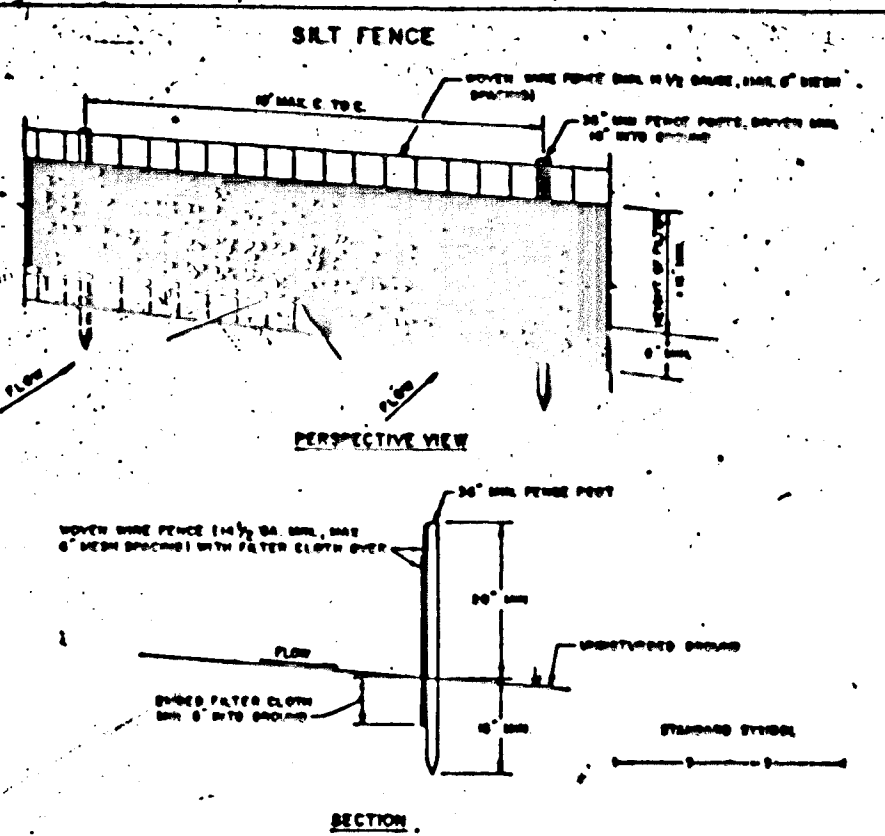
1657  
PLOT DATE: 8-25-93  
PLOT BY: RMA  
DWG. NO.: 515502



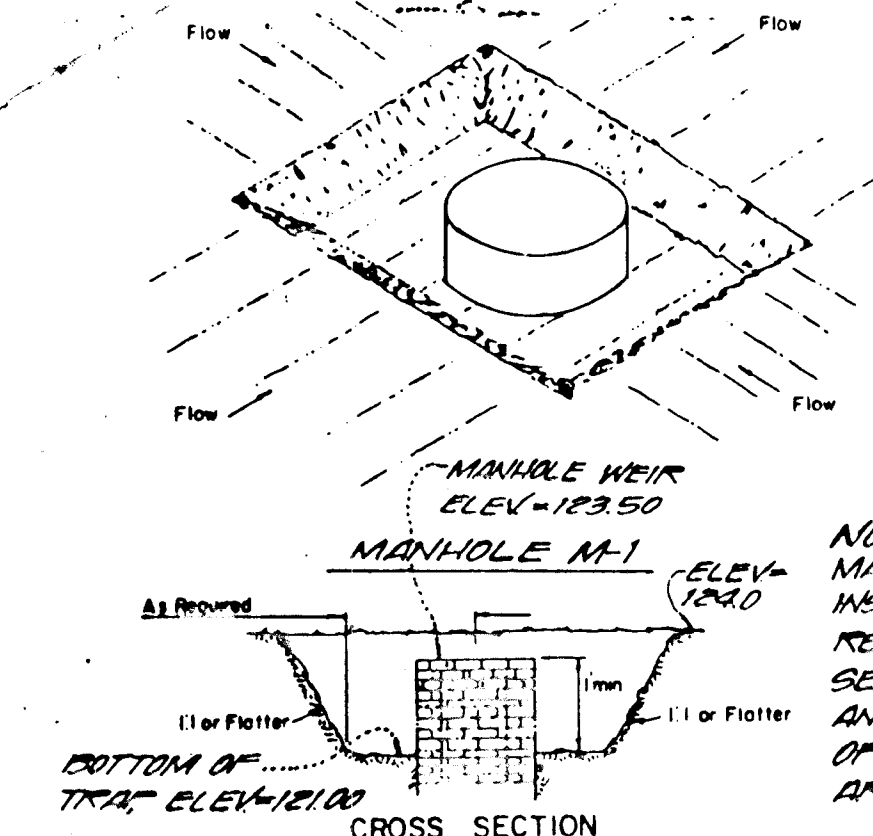
1 ROCK CHECK DAM  
NO SCALE



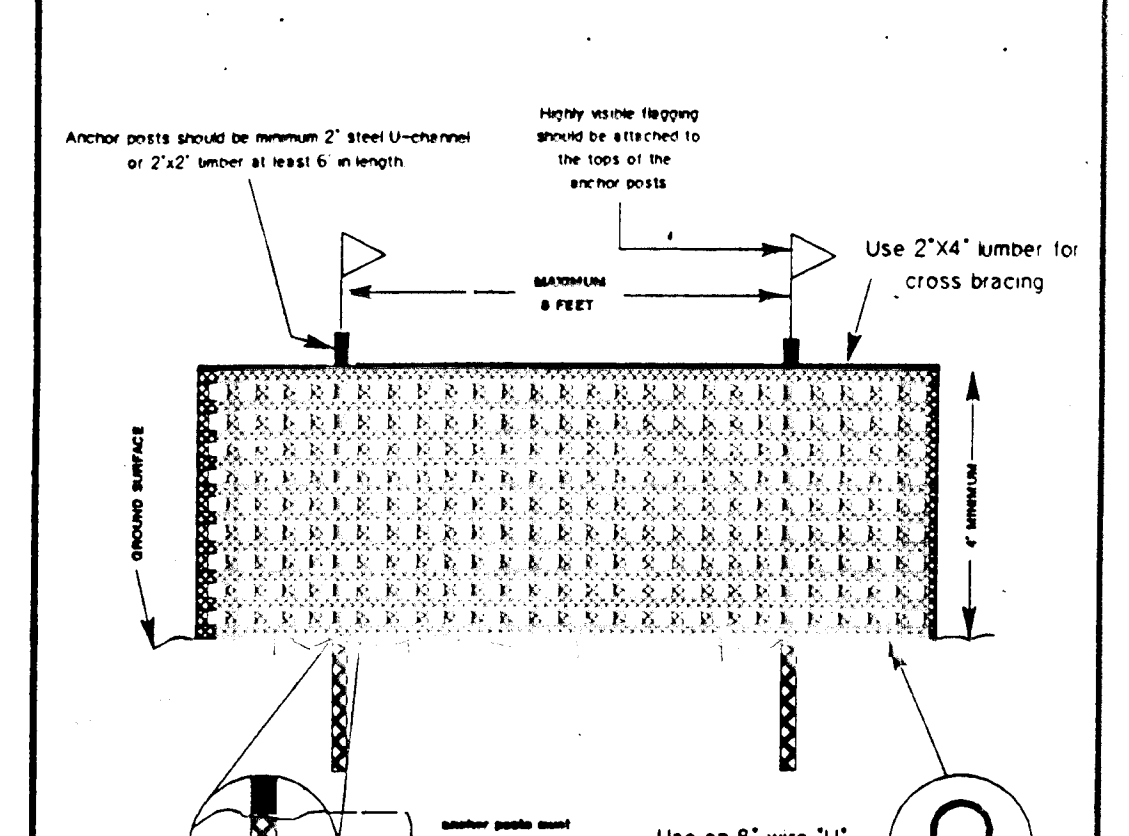
2 EARTH DIKE  
NO SCALE



3 SILT FENCE  
NO SCALE



4 STORM MANHOLE SEDIMENT TRAP  
NO SCALE



TREE PROTECTIVE DEVICE  
BLAZE ORANGE PLASTIC MESH  
OPTION 3

TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET  
(with one without an emergency spillway)

Project Troy Hill Corporate Center (SWM Pond #5)  
Location Intersection of Troy Hill Dr. & Route 1  
Total Area draining to basin, 10.26 Acres.

BASIN VOLUME DESIGN

- Min. req'd vol. = 87 cu. yds. x 10.26 ac. drainage = 888 cu. yds.
- Vol. of basin = \* From stage vs. storage chart - 1,454 cu. yds. @ Elev. 127.50
- Excavate 1,454 cu. yds. to obtain required capacity.  
Min. vol. before cleanout = 27 cu. yds. x 10.26 ac. drainage = 277 cu. yds.  
Elevation corresponding to scheduled time to clean out 125.50  
Distance below top of weir 2.0'
- Qp10 = 45.72 (Peak) 29.66 (Routed) cfs (EFM, Ch. 2 or other appropriate method, attach runoff computation sheet).

Pipe Spillway (Ops)

- Min. pipe spillway capacity, Qps = 0.2 x 10.26 ac. drainage = 2.05 cfs.  
Note: If there is no emergency spillway, then req'd Qps = Qp = 29.66 cfs.
- H = \* ft. Barrel Length = \* ft.
- Barrel Diam. = \* inches; Qps = (Q) \* x (cor. fac.) \* cfs.
- Riser Diam. = \* inches; Length = \* ft.; h = \* ft.
- Trash Rack Diam. = \* inches; H = \* inches.

Emergency Spillway Design N/A

- Emergency Spillway Flow, Qes = Qp - Qps = ----- cfs.
- Width = \* ft. Hp = \* ft.
- Entrance channel slope ----- %
- Exit channel slope ----- %

ANTI-SEEP COLLAR DESIGN (If Required)

- y = \* ft., z = \* ft.; pipe slope = \* %; Ls = \* ft.  
Use collars, square; projection = \* ft.

DESIGN ELEVATIONS

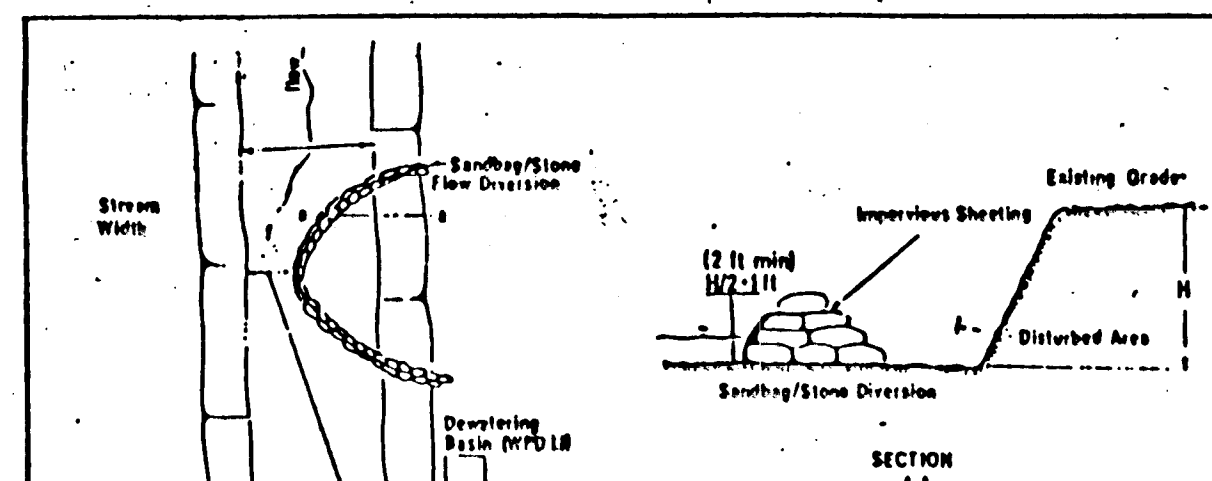
- Weir Crest = 127.50 Design High Water = 128.09  
E. Spwy. Crest = ----- Top of Dam = 130.00

See Stage vs. Discharge chart in SWM Pond No 5 computation package  
SWM structure to be used as riser

HOWARD SOIL CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (830-3453).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
- Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 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 seeding (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 22231 Acres  
Area Disturbed 6.81 Acres  
Area to be roofed or paved 1.11 Acres  
Area to be vegetatively stabilized 7.70 Acres  
Total Cut 38,626 Cu. Yds.  
Total Fill 11,242 Cu. Yds.  
Offsite waste/borrow area location ONSITE
- 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 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.
- Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.



- Description: The work shall consist of installing flow diversions for the purpose of erosion control when construction activities take place within the stream channel such as bank stabilization or bridge abutment construction.
- Material Specifications:
  - Structure: Sandbags shall consist of materials which are resistant to ultraviolet radiation, tearing and puncture and weigh tightly enough to prevent leakage of fill material (i.e., sand, lime gravel, etc.).
  - Stones: Stone shall be washed and have a minimum diameter of 6 inches.
  - Sheetpiling: Sheetpiling shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing.
- Construction Requirements:
  - All erosion and sediment control devices shall be installed as the first order of work.
  - The diversion structure shall be installed from upstream to downstream.
  - The height of the diversion structure shall be one half the distance from stream bed to stream bank plus one foot, as indicated on the cross-section view.
  - All accumulated materials shall be disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the MSA.
  - All diverting of the construction area shall be pumped to a detouring basin prior to re-entering the stream.
  - Sheetpiling shall be overlapped such that the upstream portion covers the downstream portion with at least an 18-inch overlap.
  - Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

4 SAND BAG/STONE DIVERSION  
NO SCALE

DEVELOPERS CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have Certificates of Attendance at Department of the Environment Approved Training Program before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Richard M. Altbe  
2/25/99  
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."

8/25/93  
Date

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
Chief, Bureau of Engineering  
2/13/99  
DATE

Chief, Land Development Division  
2/14/99  
DATE

Chief, Bureau of Highways  
2-9-99  
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
2/24/99  
DATE

Reviewed for HOWARD S.C.D. and Meets Technical Requirements  
2/25/99  
Date

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT  
2/25/99  
Date

ENGINEER  
GEORGE WILLIAM STEPHENS JR.  
AND ASSOCIATES, INC.  
658 KENILWORTH DRIVE  
SUITE 100  
TOWSON, MARYLAND 21284  
(410) 825-8120

TROY HILL CORP. CENTER  
PARCEL 'A'  
PHASE I

SEDIMENT AND EROSION  
CONTROL DETAILS

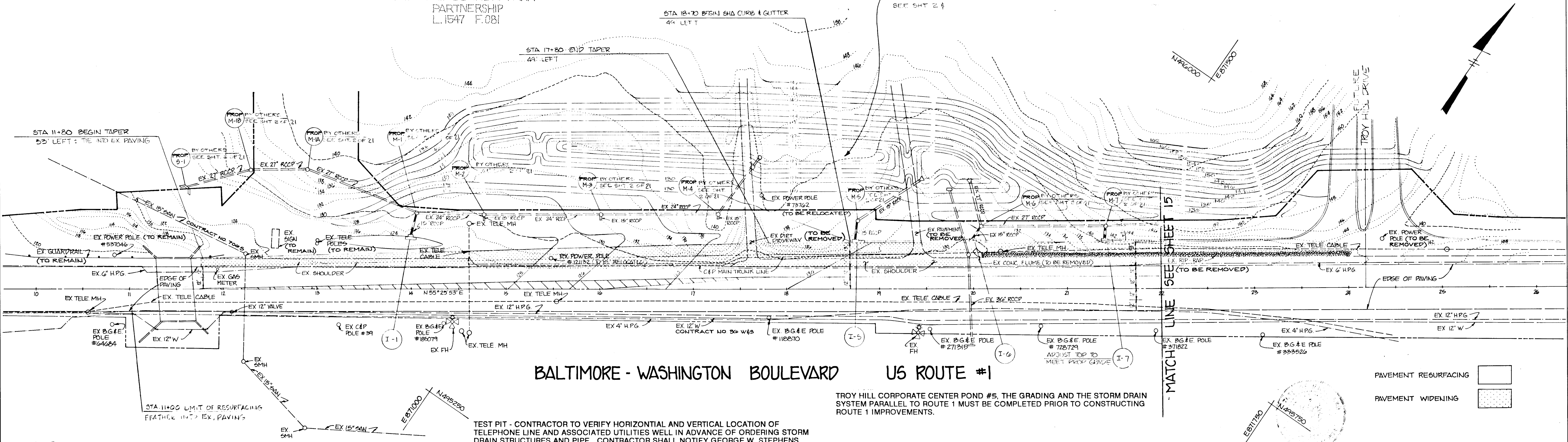
DATE AUGUST 25, 1993  
DES. DWN.  
SCALE AS SHOWN  
PROJECT/FILE NO.  
SHEET NO. 12 OF 21



TROY HILL BUSINESS PARK  
PARTNERSHIP  
L1547 F.081

TROY HILL CORPORATE CENTER  
STORM WATER MANAGEMENT POND #5  
SEE SHT 2 & 3

DATE	
BY	
SURVEYED	
ALIGNED	
CHECKED	
RT. OF WAY	
NOTE BOOK NO.	



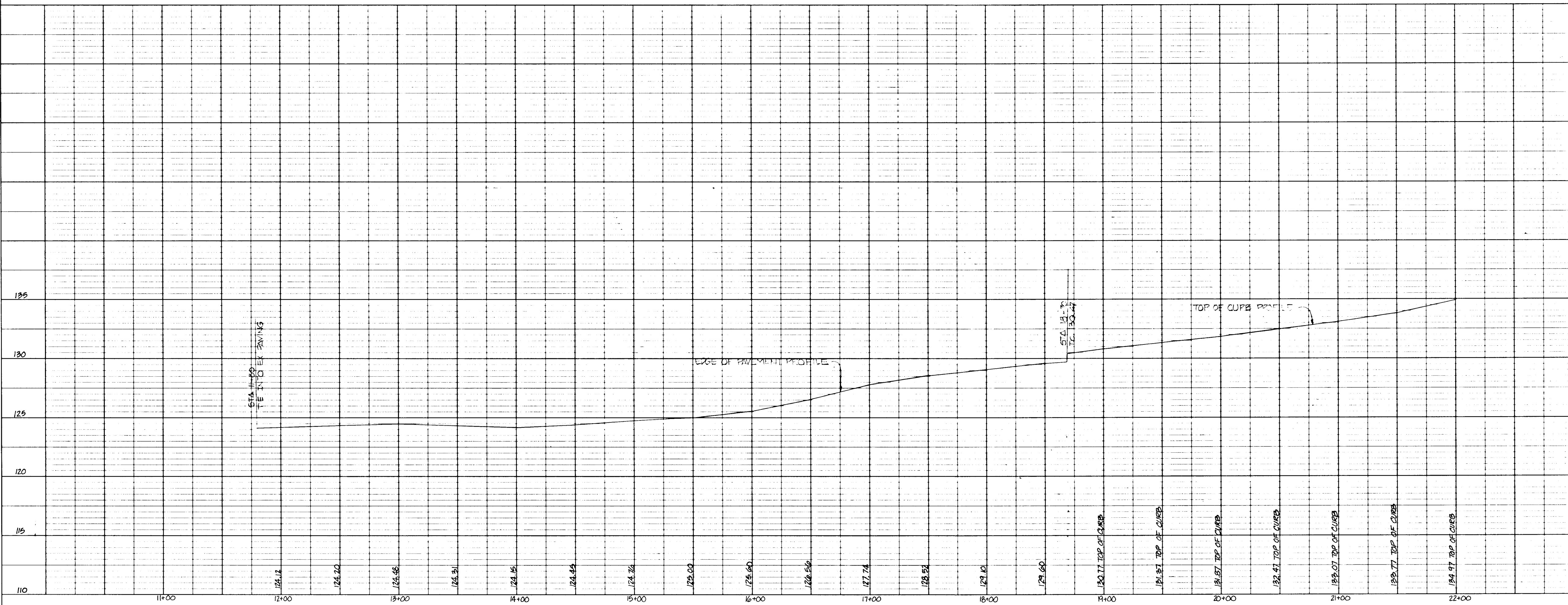
BALTIMORE - WASHINGTON BOULEVARD US ROUTE #1

TROY HILL CORPORATE CENTER POND #5, THE GRADING AND THE STORM DRAIN SYSTEM PARALLEL TO ROUTE 1 MUST BE COMPLETED PRIOR TO CONSTRUCTING ROUTE 1 IMPROVEMENTS.

TEST PIT - CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF TELEPHONE LINE AND ASSOCIATED UTILITIES WELL IN ADVANCE OF ORDERING DRAIN STRUCTURES AND PIPE. CONTRACTOR SHALL NOTIFY GEORGE W. STEPHENS AND ASSOC., INC. OF ANY DISCREPANCIES. ADJUST TOP TO MEET PROPOSED GRADE.

NOTE: FOR LAKE MARKINGS SEE SHTS 1 & 2

DATE	
BY	
SURVEYED	
PLOTTED	
CHECKED	
BY	
NOTES	
STRUCTURE NOTATIONS	
CHKD	
NOTE BOOK NO.	



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>Richard L. ...</i> CHIEF, BUREAU OF ENGINEERING	2/10/94 DATE
<i>John ...</i> CHIEF, LAND DEVELOPMENT DIVISION	2/14/94 DATE
<i>Stephen M. ...</i> CHIEF, BUREAU OF HIGHWAYS	2-9-94 DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING	
<i>Jim ...</i> CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH	2/24/94 DATE

*George W. Stephens, Jr.*  
2/24/94

**GW'S**  
GEORGE WILLIAM STEPHENS, JR.  
AND ASSOCIATES, INC.  
CIVIL ENGINEERS & LAND SURVEYORS  
658 KENILWORTH DRIVE, SUITE 100  
TOWSON, MARYLAND 21204  
(410) 825-8120

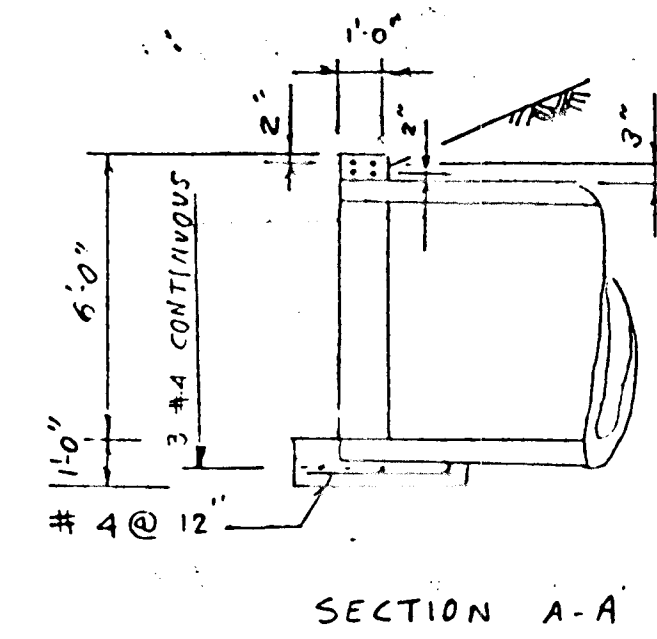
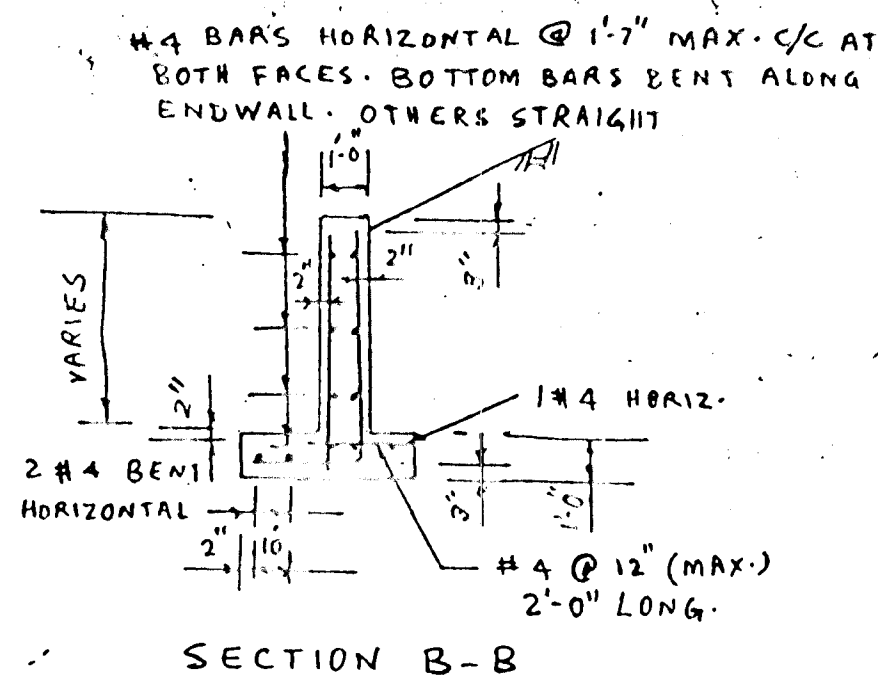
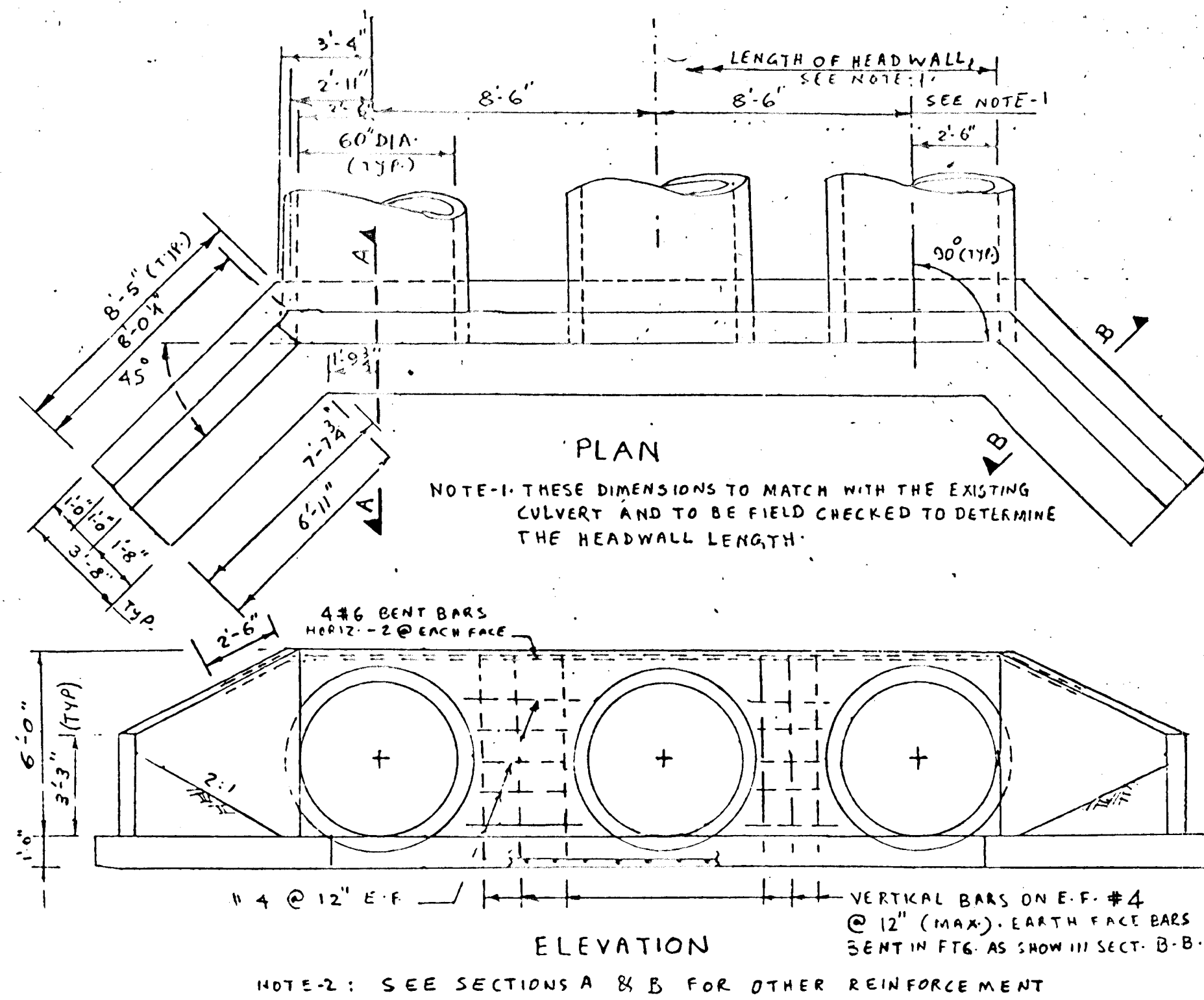
**TROY HILL CORPORATE CENTER  
U.S. ROUTE #1 IMPROVEMENTS**  
HOWARD COUNTY, MARYLAND ELECTION DISTRICT #1  
SCALE: 1" = 100 SHEET 14 OF 21  
AUGUST 25, 1993

1659



# GENERAL NOTES

- NO EXCAVATION OR CONSTRUCTION WITHIN PUBLIC RIGHTS OF WAY OR OTHERWISE SHALL BE CONDUCTED UNTIL THE LOCATION OF EXISTING UTILITIES HAS BEEN DETERMINED. CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK FOR MARKING LOCATIONS OF EXISTING UTILITIES.
- CONTRACTOR IS TO WALK THE SITE AND FAMILIARIZE HIMSELF WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT ROADWAY IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR.
- EXISTING SIDEWALK AND CURB AND GUTTER TO BE REMOVED BY CONTRACTOR TO THE EXTENT NECESSARY TO INSTALL PROPOSED IMPROVEMENTS, AND DISPOSED OF OFF-SITE AT CONTRACTORS EXPENSE.
- REPAIRS TO UTILITIES OR PRIVATE PROPERTY DAMAGED AS A RESULT OF CONTRACTOR'S WORK OR METHOD OF OPERATION MUST BE MADE AT HIS OWN EXPENSE.
- RESTORATION SHALL CONFORM TO SECTION 701 OF THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
- SELECT BACKFILL SHALL CONFORM TO SECTION 601 OF THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
- A SOILS REPORT IS CONSIDERED PART OF THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR WILL RECEIVE NO ADDITIONAL PAYMENT FOR REMOVAL OF UNSUITABLE MATERIAL OR ROCK EXCAVATION.
- GRADING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE POSITIVE DRAINAGE.
- THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENT TO STRUCTURES, WHEN NECESSARY TO MEET EXISTING CONDITIONS AS DIRECTED BY THE ENGINEER.
- ALL EXISTING VALVE COVERS, MANHOLES AND WATER METERS WITHIN PROPOSED CONSTRUCTION ARE TO BE ADJUSTED BY THE CONTRACTOR TO MEET PROPOSED FINISHED GRADE.
- ALL EXISTING MANHOLES NOT CURRENTLY WITHIN THE ROADWAY, BUT WITHIN THE LIMITS OF PROPOSED ROADWAY SHALL BE FITTED BY THE CONTRACTOR WITH FRAMES AND COVERS MEETING M.S.H.A. STANDARDS.
- THE CONTRACTOR SHALL COORDINATE WITH THE BALTIMORE GAS & ELECTRIC COMPANY (BG&E) TO PROPERLY RELOCATE POLES AND ELECTRICAL BOXES AS REQUIRED.
- THE CONTRACTOR SHALL COORDINATE WITH THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY TO PROPERLY RELOCATE ITS POLES AND OTHER UTILITIES.
- THE CONTRACTOR SHALL TRANSITION PAVING, SIDEWALK, AND CURB AND GUTTER TO MEET EXISTING LINE AND GRADE.
- ALL UTILITIES, POLES, SIGNS, BILLBOARDS, MARKINGS, GUY WIRES, ETC. WHICH REQUIRE RELOCATION OR REMOVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM THE WORK.
- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS AND OBSERVATION, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS OF THE MAINS BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR SIX INCHES WHICHEVER IS LESS, CONTACT V&A, INC. AND UTILITY OWNER BEFORE PROCEEDING WITH CONSTRUCTION.
- CONTACT THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BEFORE EXCAVATING BENEATH OR IN THE VICINITY OF EXISTING WATER OR SEWER MAINS. BACKFILL TO BE DONE UNDER THE SUPERVISION OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE GENERAL SPECIFICATIONS OF MARYLAND STATE HIGHWAY ADMINISTRATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE SERVICES OF A GEOTECHNICAL ENGINEER IN ORDER TO PROPERLY EVALUATE THE SUBGRADE, SUCH THAT A FINAL PAVEMENT DESIGN MAY BE IMPLEMENTED TO THE SATISFACTION OF M.S.H.A. BY THE DESIGN ENGINEER, V&A, INC. A GEOTECHNICAL ENGINEER SHALL BE PRESENT ON SITE DURING CONSTRUCTION TO INSPECT ALL EXCAVATION AND PREPARATION OF SUBGRADE.
- IF THE CONTRACTOR HAS ANY QUESTIONS AS TO THE NATURE, METHOD OR DETAIL OF THE PERFORMANCE OF HIS WORK, HE IS TO CONTACT G.W. STEPHENS AT 410-825-8120
- NO WORK IN PUBLIC RIGHT-OF-WAY SHALL BEGIN UNTIL APPROPRIATE PERMITS HAVE BEEN OBTAINED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION IS BEGUN, INCLUDING PHOTOGRAPHIC RECORDS DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER COMPLETION OF CONSTRUCTION. THE PHOTOGRAPHS OF THE SITE AS IT APPEARS BEFORE DEMOLITION SHALL BE DELIVERED TO THE OWNER PRIOR TO STARTING DEMOLITION. THE REMAINING RECORDS SHALL BE DELIVERED TO THE OWNER AT THE COMPLETION OF WORK.

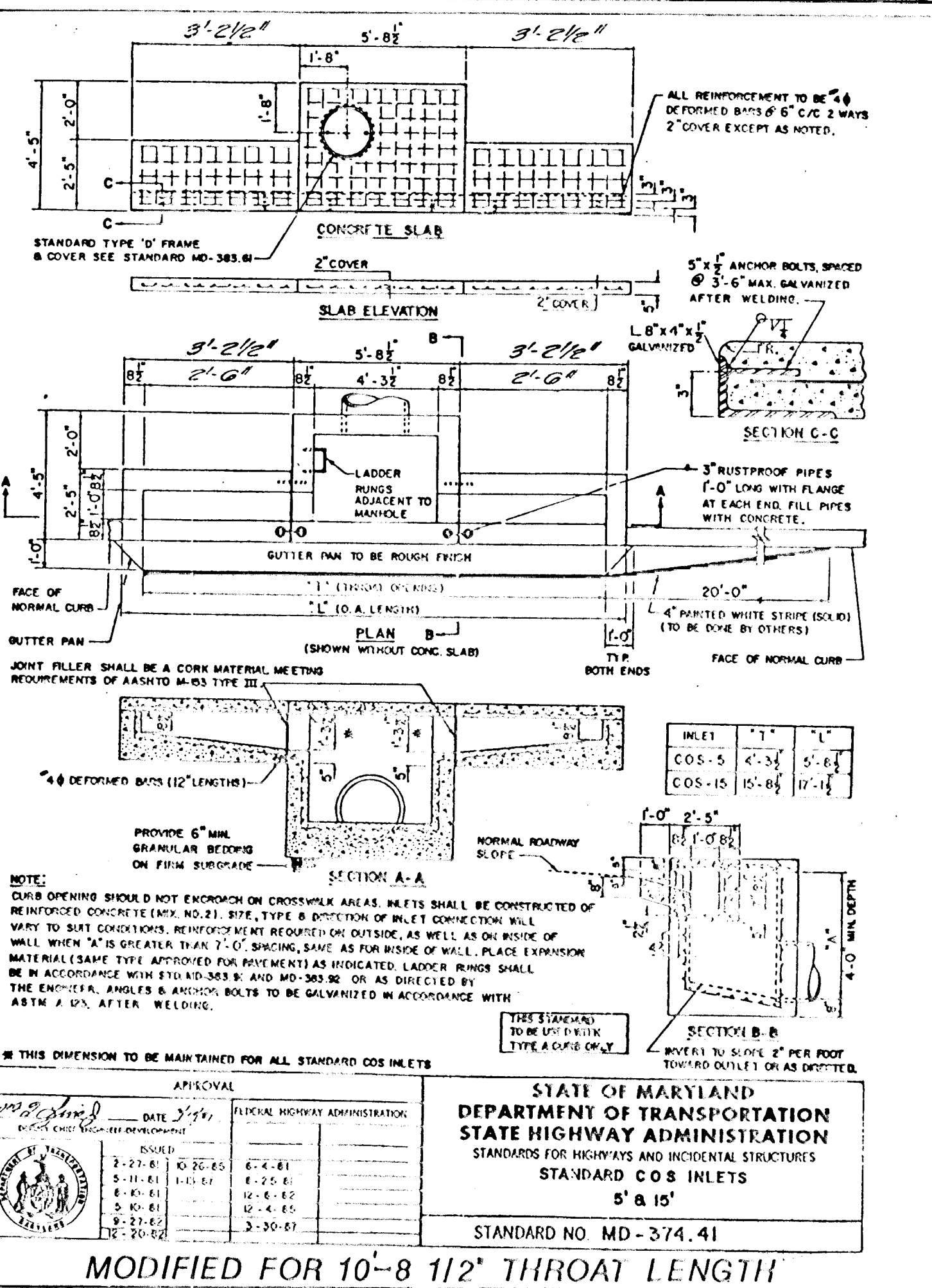
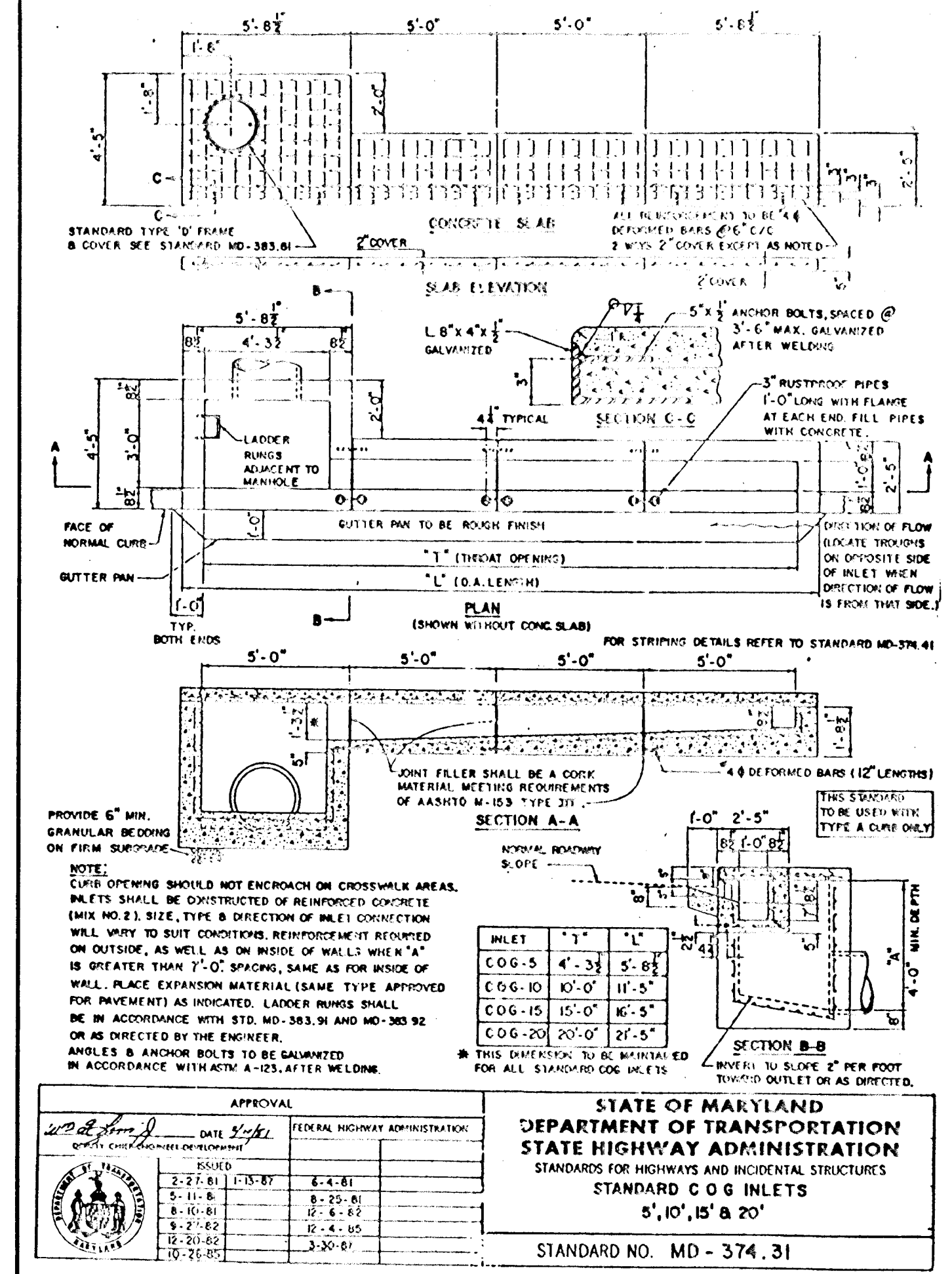


TRIPLE 60" HEADWALL DETAIL  
NTS

DIAMETER	TYPE	CLASS	LENGTH (FT.)
15"	RCP	IV	55
18"	RCP	IV	226
60"	RCP	IV	120

STR. NO.	TYPE	INVERTS			TOP ELEV.			ROAD STATION	OFFSET	REMARKS
		IN	IN	OUT	LT. COR.	RT. COR.	TOP			
I-1	MSHA STD MD-374.41 INLET	---	---	---	119.71	124.13	124.13	---	52.25'	T = 10' - 8 1/2"
I-2	MSHA STD MD-374.31 INLET	---	---	---	120.02	126.11	126.38	---	49.00'	---
I-3	MSHA STD MD-374.31 INLET	---	---	---	121.11	126.17	126.49	---	49.00'	---
I-4	MSHA STD MD-374.31 INLET	---	---	---	124.12	128.76	130.02	---	49.00'	---
I-5	MSHA STD MD-374.31 INLET	---	---	---	126.40	130.51	130.66	---	49.00'	T = 15'
I-6	MSHA STD MD-374.31 INLET	---	---	---	127.20	129.77	129.89	---	49.00'	T = 10'
I-7	MSHA STD MD-374.31 INLET	---	---	---	128.88	133.62	133.90	---	49.00'	T = 15'
I-8	MSHA STD MD-374.31 INLET	---	---	---	133.41	138.01	138.59	---	52.47'	T = 20'
I-9	MSHA STD MD-374.31 INLET	---	---	---	139.15	144.38	145.12	---	53.14'	T = 15'
I-10	MSHA STD MD-374.31 INLET	---	---	---	150.81	155.59	156.02	---	45.61'	T = 10'
M-10		150.75	---	150.50	---	---	156.1	---	62.70'	---

\* OFFSET FROM C TO CENTER OF MANHOLE  
NOTE: "T" = THROAT OPENING



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
 [Signature] 2/14/99  
 CHIEF, BUREAU OF ENGINEERING  
 [Signature] 2/14/99  
 CHIEF, LAND DEVELOPMENT DIVISION  
 [Signature] 2-9-99  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
 [Signature] 2/24/99  
 CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH

APPROVAL  
 STATE OF MARYLAND  
 DEPARTMENT OF TRANSPORTATION  
 STATE HIGHWAY ADMINISTRATION  
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES  
 STANDARD C O S INLETS  
 5' & 15'  
 STANDARD NO. MD-374.41  
 MODIFIED FOR 10'-8 1/2" THROAT LENGTH

GEORGE WILLIAM STEPHENS, JR.  
 AND ASSOCIATES, INC.  
 558 KENILWORTH DRIVE  
 TOWSON, MARYLAND 21286  
 (410) 825-8120

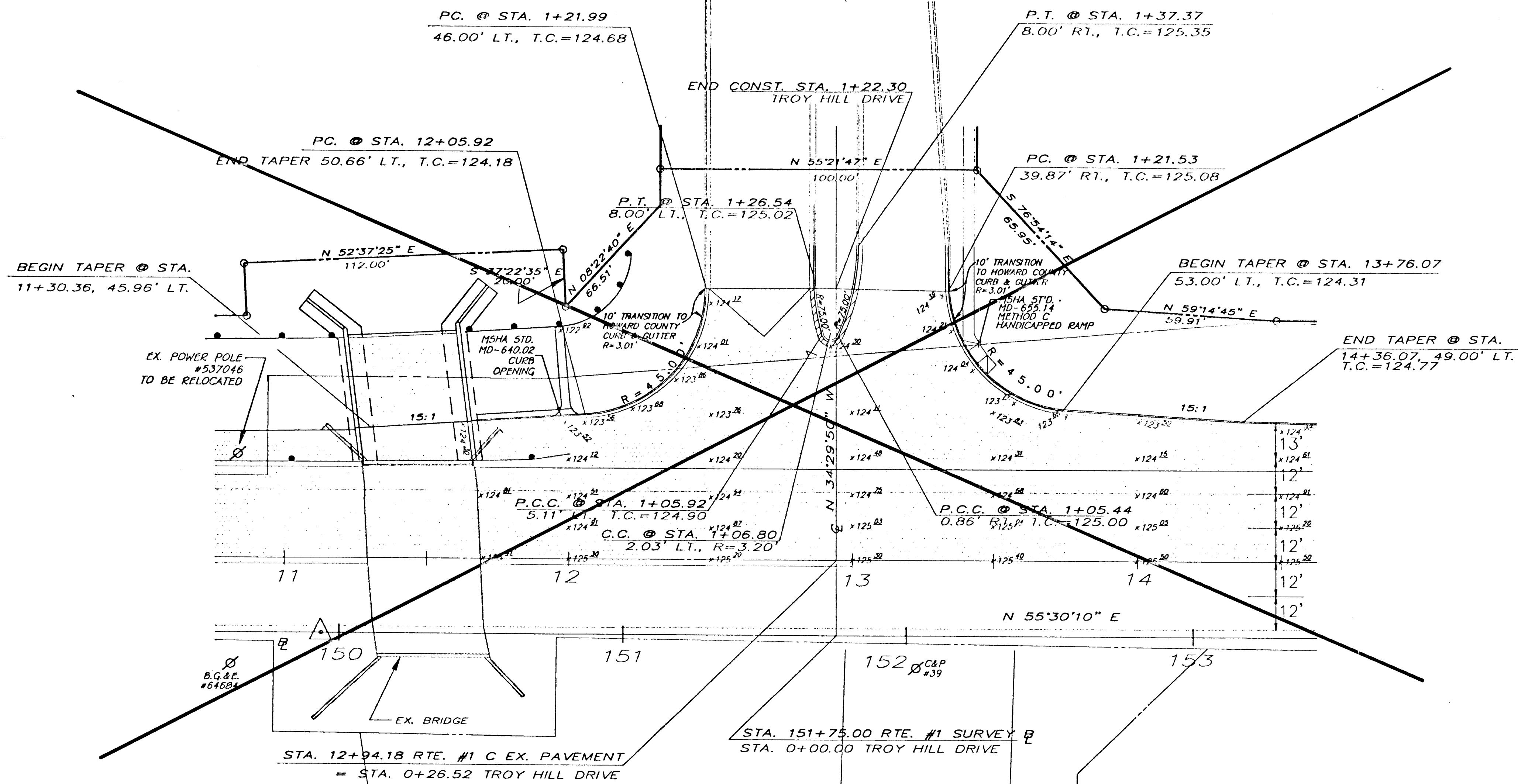
TROY HILL CORP. CENTER  
 PHASE 1 U.S. ROUTE 1  
 FRONTAGE IMPROVEMENTS  
 HOWARD COUNTY, MARYLAND

GENERAL NOTES  
 AND  
 DRAINAGE DETAILS

DATE: August 25, 1998  
 DESIGNED BY: DWN  
 SCALE: AS SHOWN  
 PROJECT FILE NO.  
 SHEET NO.  
 OF 01 21  
 1-91-24

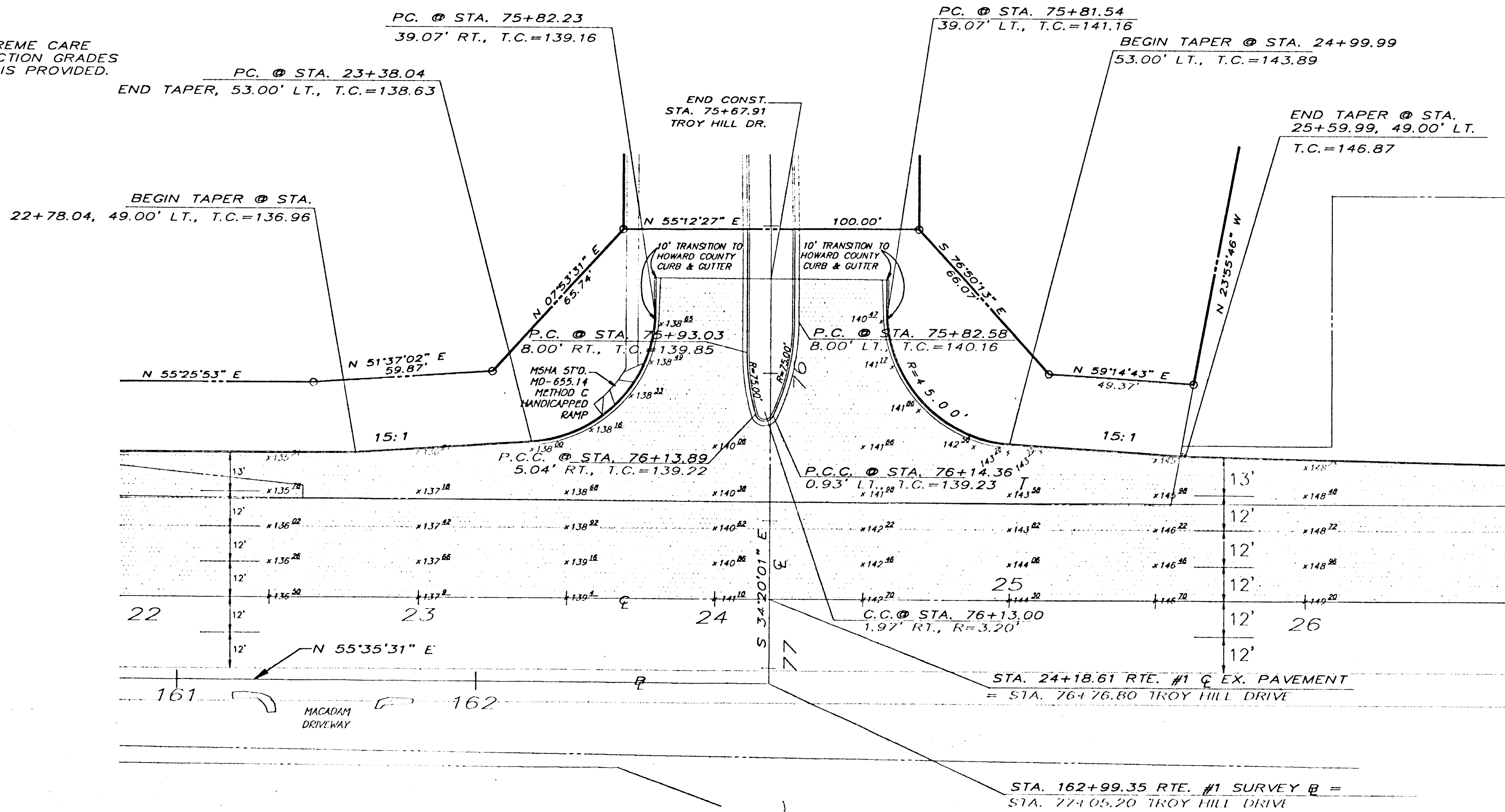


NOTE: CONTRACTOR TO EXERCISE EXTREME CARE IN MEETING PROPOSED INTERSECTION GRADES SUCH THAT POSITIVE DRAINAGE IS PROVIDED.



PAVEMENT IMPROVEMENT

NOTE: CONTRACTOR TO EXERCISE EXTREME CARE IN MEETING PROPOSED INTERSECTION GRADES SUCH THAT POSITIVE DRAINAGE IS PROVIDED.



PAVEMENT IMPROVEMENT

*Handwritten signature and date: 2/25/92*

ENGINEER  
**GEORGE WILLIAM STEPHENS JR.**  
 AND ASSOCIATES, INC.  
 656 KENILWORTH DRIVE  
 SUITE 100  
 TOWSON, MARYLAND 21284  
 (410) 825-8120

TROY HILL CORPORATE CENTER  
 PHASE 1 U.S. ROUTE 1  
 FRONTAGE IMPROVEMENTS  
 1st ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

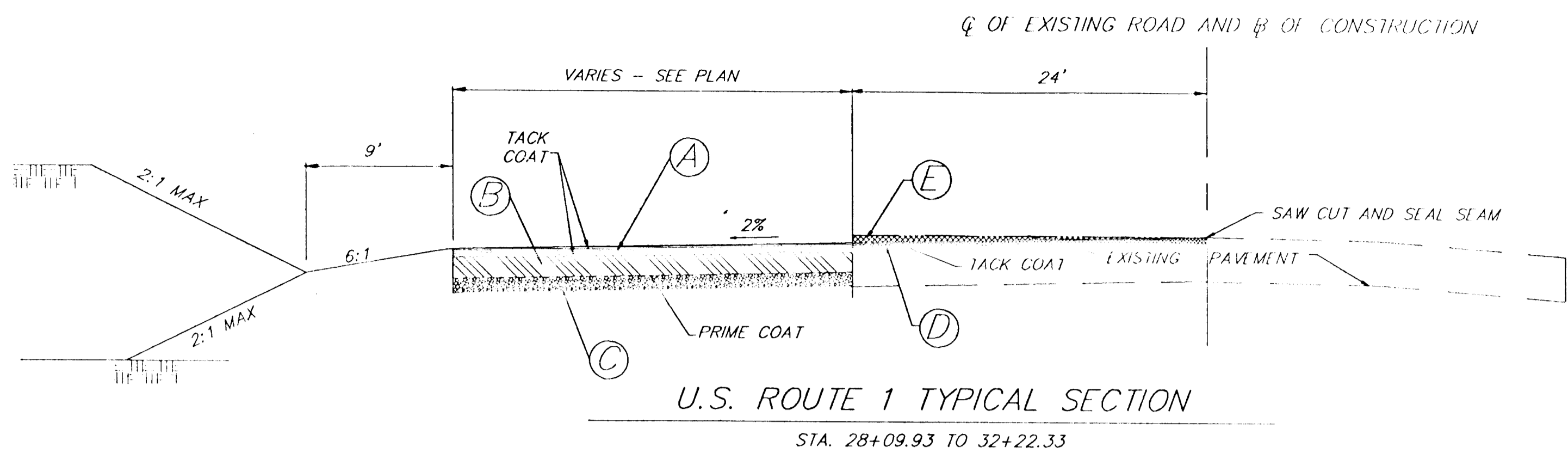
INTERSECTION DETAILS

REVISIONS

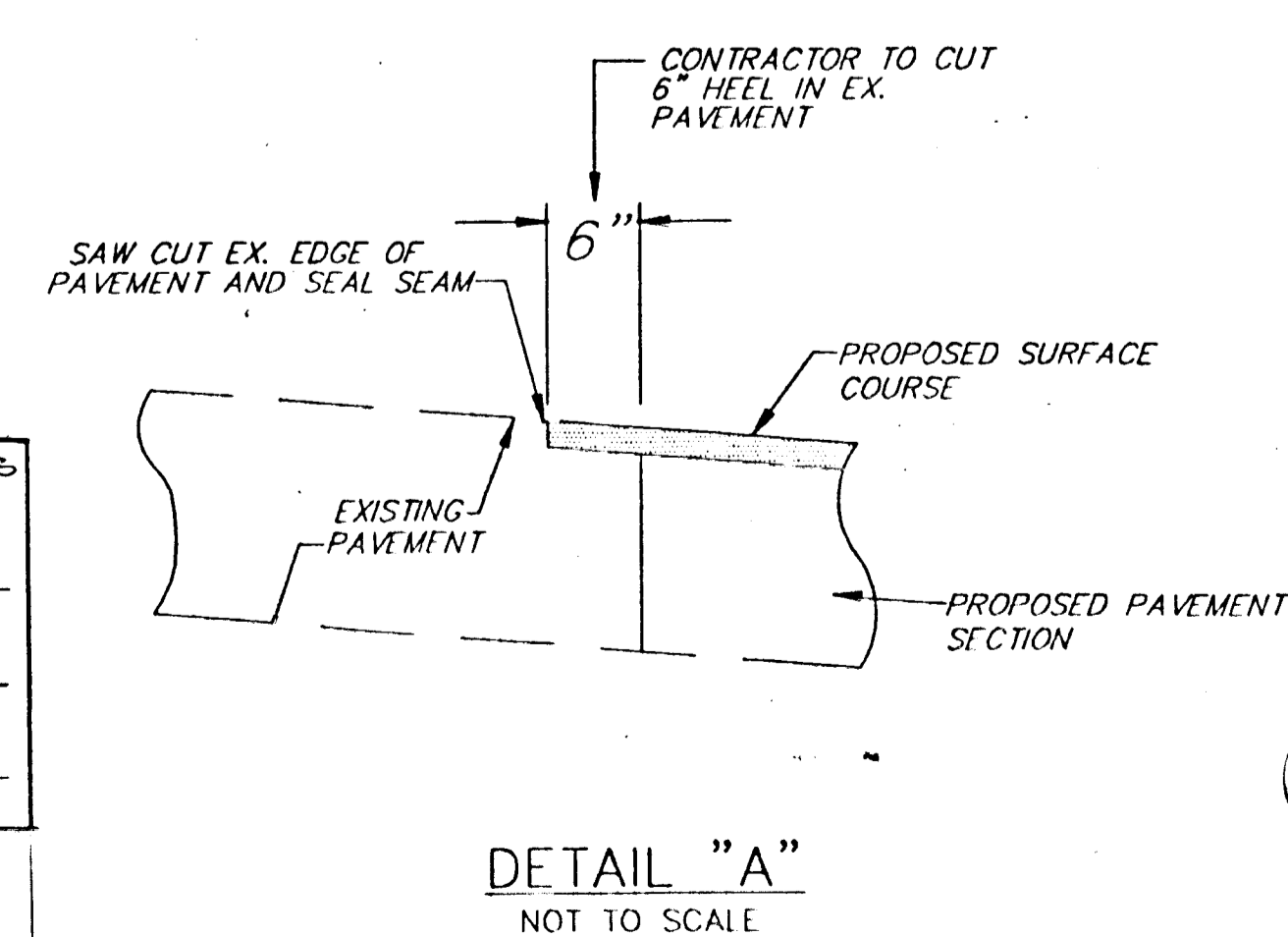
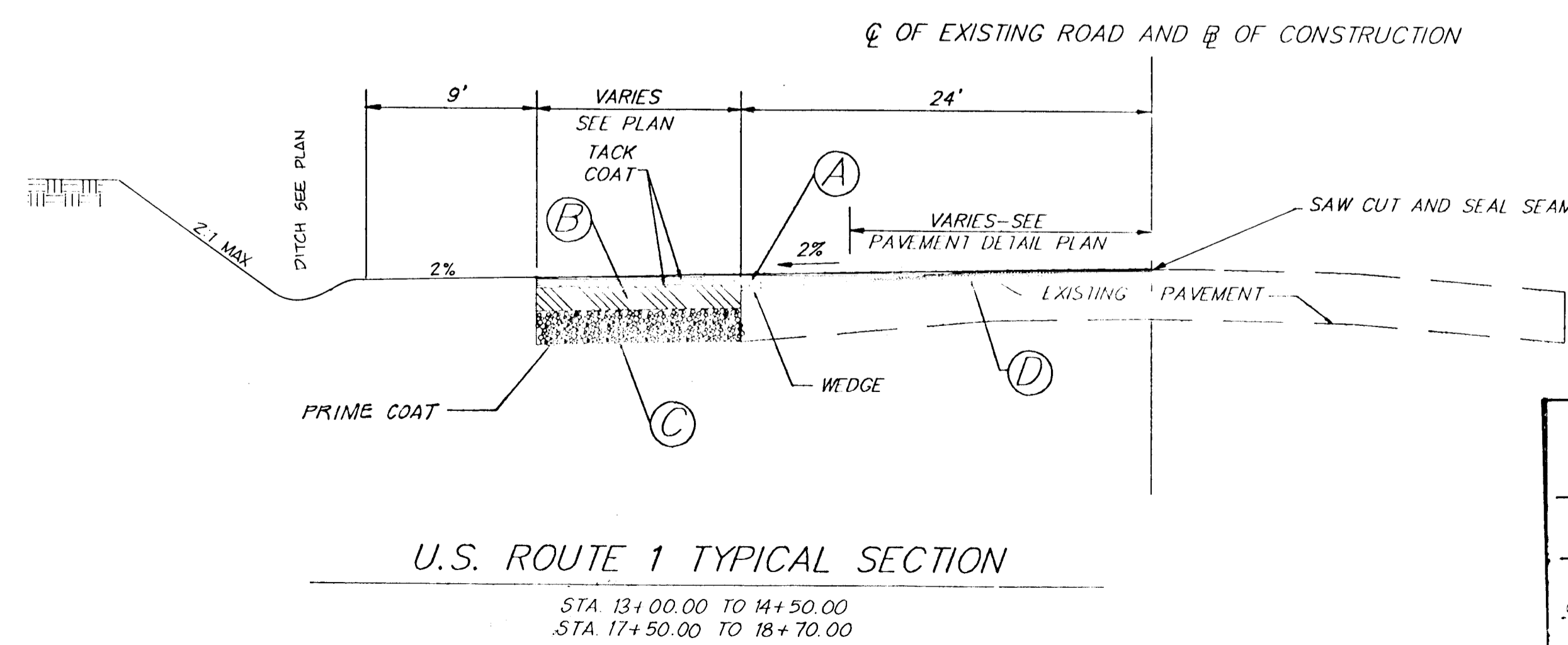
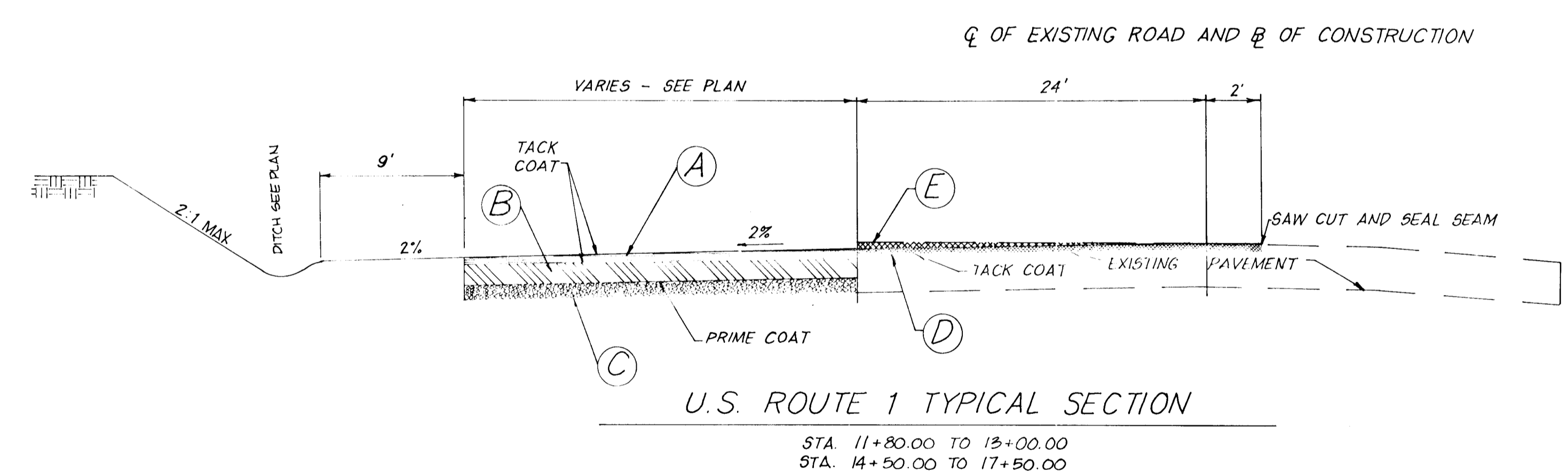
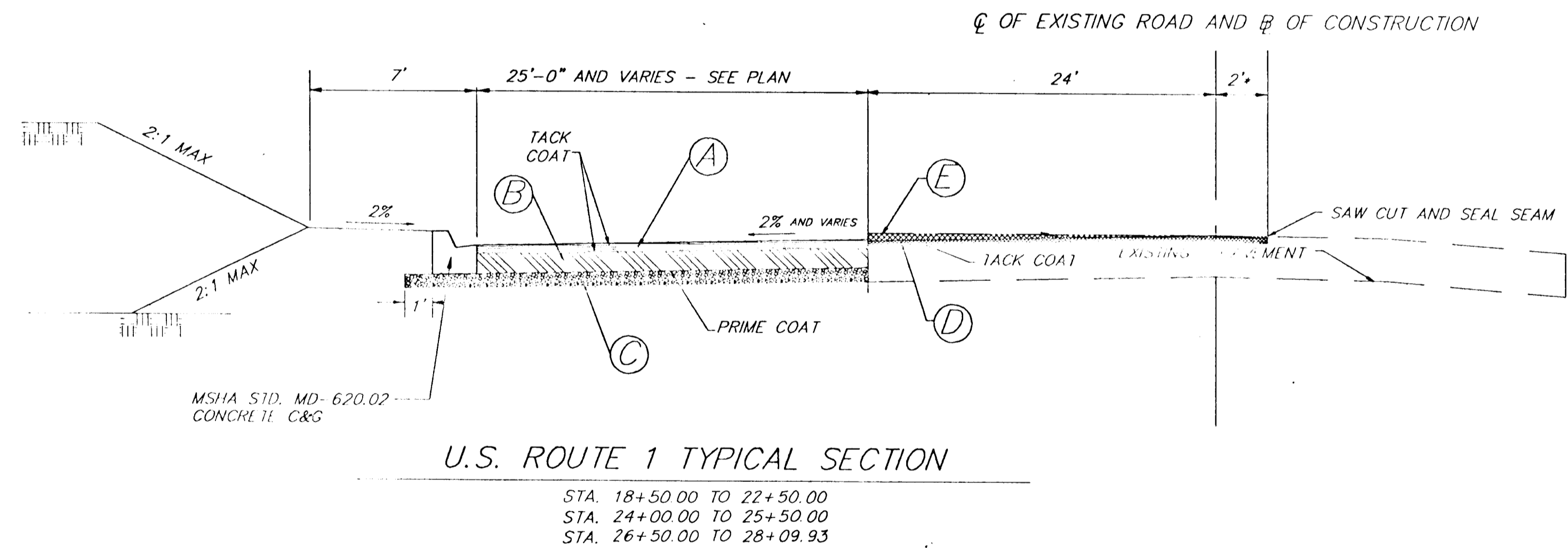
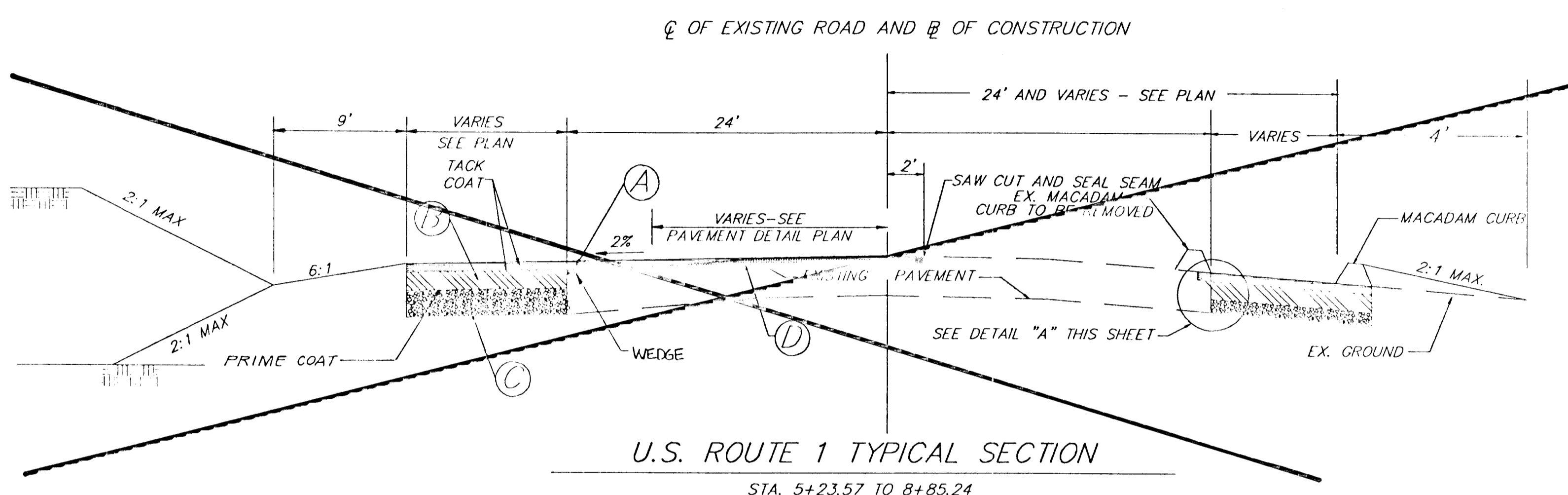
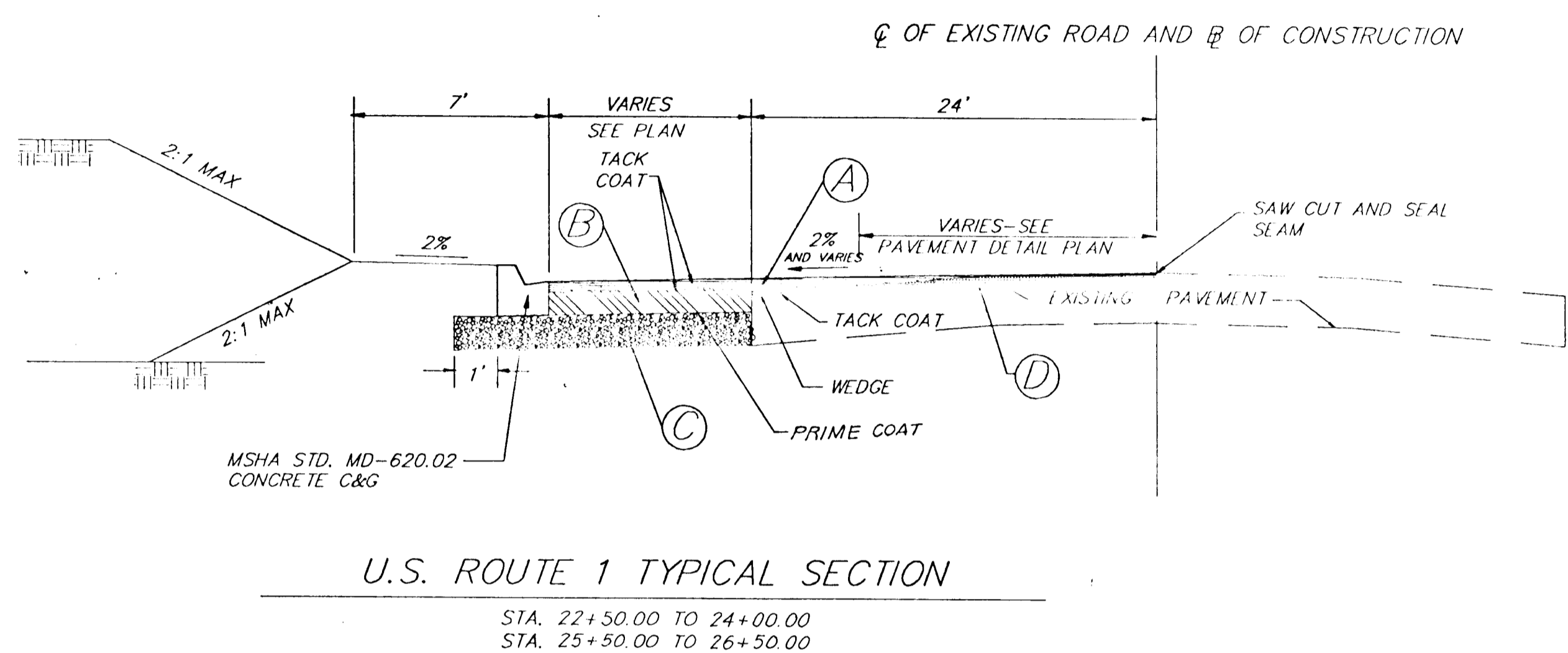
DATE: AUG 25, 1993  
 DI S. DWN.  
 SCALE: 1" = 25'  
 PROJ. C. FILE NO. 7100  
 SHEET NO. 11 OF 21  
 1-91-24

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
 CHIEF BUREAU OF ENGINEERING  
 DATE: 2/10/92  
 CHIEF, LAND DEVELOPMENT DIVISION  
 DATE: 2-9-92  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE:  
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
 CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH  
 DATE: 2/24/92

PLOT DATE: 3-4-92  
 TIME: 11:55 AM  
 DWG #: 555N1X



- PAVEMENT INDEX
- (A) 3" BITUMINOUS CONCRETE SURFACE COURSE (2 LIFTS) & WEDGE/LEVELING COURSE
  - (B) 6" BITUMINOUS CONCRETE BASE COURSE (2 LIFTS)
  - (C) 6" AGGREGATE BASE COURSE
  - (D) MILL EXISTING PAVEMENT AS REQUIRED AND RESURFACE WITH A MINIMUM 1 1/2" BITUMINOUS CONCRETE SURFACE COURSE TO MEET PROPOSED GRADES
  - (E) MILL EXISTING PAVEMENT



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

*Pulliam* 2/14/14  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 2/14/14  
CHIEF, LAND DEVELOPMENT DIVISION DATE

*[Signature]* 2-9-14  
CHIEF, BUREAU OF HIGHWAYS DATE

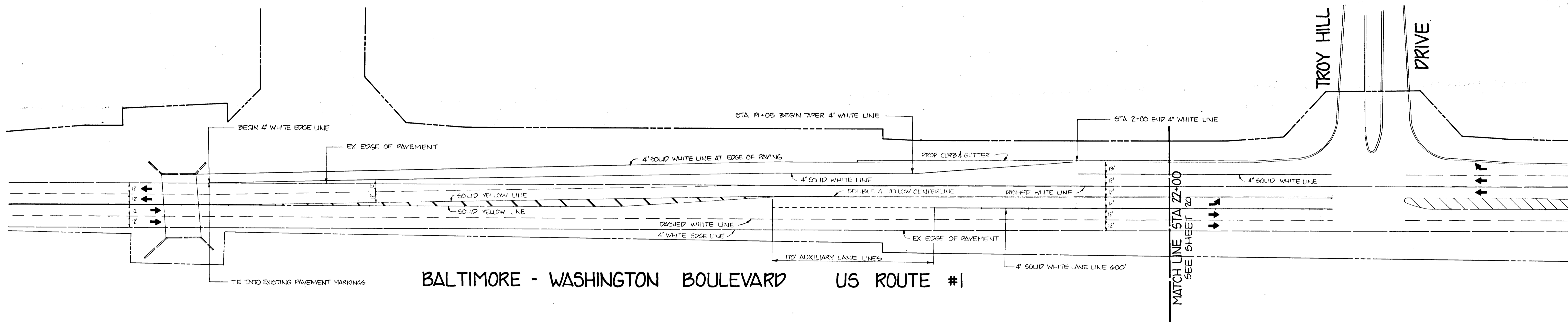
CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH DATE

GEORGE WILLIAM STEPHENS JR.  
AND ASSOCIATES, INC.  
659 KENILWORTH DRIVE  
SUITE 100  
TOWSON, MARYLAND 21286  
(410) 288-1100

TROY HILL CORP. CENTER  
PHASE 1 U.S. ROUTE 1  
FRONTAGE IMPROVEMENTS  
HOWARD COUNTY, MARYLAND

TYPICAL SECTIONS

DATE: AUGUST 26, 2013  
DES. DWN.  
SCALE: AS SHOWN  
PROJECT/FILE NO.  
SHEET NO. 18 OF 21  
F-91-24



BALTIMORE - WASHINGTON BOULEVARD US ROUTE #1

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*Chia Strimling* 2/24/94  
 CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH DATE

**GWS**  
 GEORGE WILLIAM STEPHENS, JR.  
 AND ASSOCIATES, INC.  
 CIVIL ENGINEERS & LAND SURVEYORS  
 658 KENILWORTH DRIVE, SUITE 100  
 TOWSON, MARYLAND 21204  
 (410) 825-8120

*Not to be used for other projects*  
 REVISION  
 2/24/94

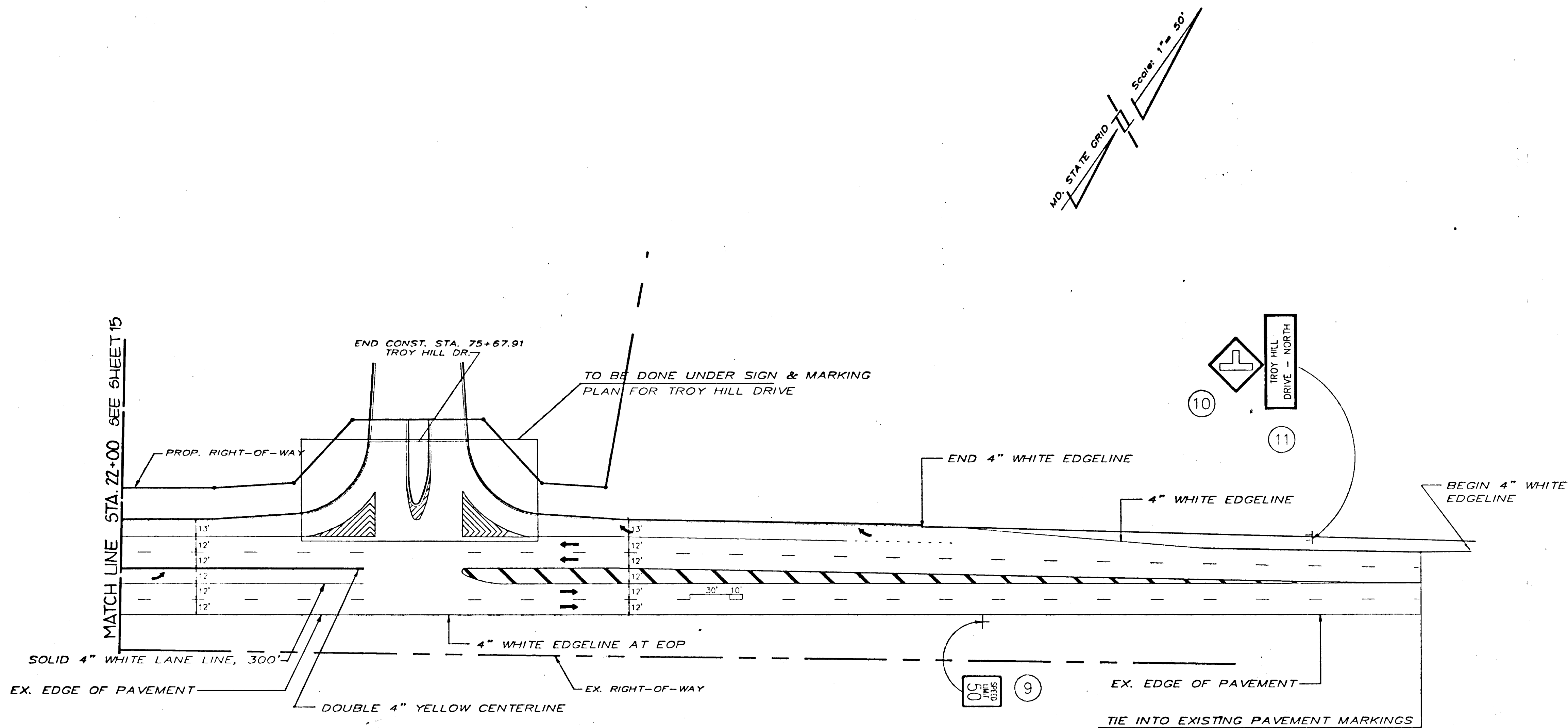
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*R. M. ...* 2/19/94  
 CHIEF, BUREAU OF ENGINEERING DATE  
*...* 2/14/94  
 CHIEF, LAND DEVELOPMENT DIVISION DATE  
*...* 2-9-94  
 CHIEF, BUREAU OF HIGHWAYS DATE

**OWNER/APPLICANT**  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 C/O MANEKIN CORP.  
 4165 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MARYLAND 21046  
 (410) 290-1400

**SIGN & PAVEMENT MARKING PLAN**  
**TROY HILL CORPORATE CENTER**  
**U.S. ROUTE #1 IMPROVEMENTS**  
 HOWARD COUNTY, MARYLAND ELECTION DISTRICT #1  
 SCALE: 1" = 50'  
 SHEET 20 OF 21

1654

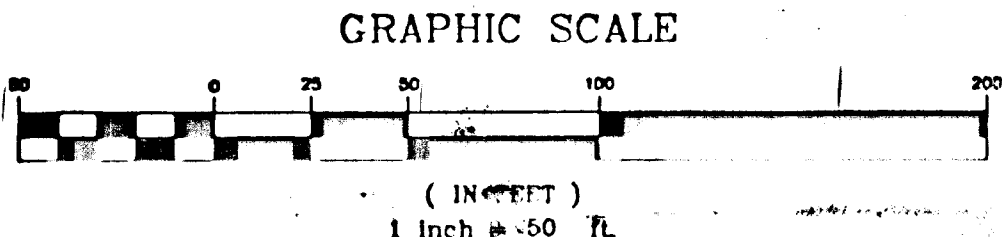
F.H.W.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			



BALTIMORE-WASHINGTON BOULEVARD U.S. RTE. #1

PAVEMENT MARKING NOTES

- MARKINGS WILL INCLUDE DOUBLE SOLID YELLOW CENTER LINES AND SOLID WHITE EDGE LINES IN ADDITION TO THE INDICATED BROKEN WHITE LANE LINES.
- ALL LINES ON THE PROJECT, UNLESS OTHERWISE NOTED SHALL BE 4 IN. WIDE AND REFLECTORIZED.
- THE INDICATED BROKEN WHITE LANE LINES SHALL HAVE 10 FT. MARKS SEPARATED BY 30 FT. GAPS.
- PAINTED MEDIANS SHALL HAVE 8 IN. WIDE, YELLOW EDGELINES AND HATCHING SHALL BE 24 IN. WIDE AND YELLOW WITH 25 FT. BETWEEN MARKINGS.
- FOR TRANSITION ZONES, E.G., ENTRANCES TO TURNING LANES AND DECELERATION LANES, AUXILIARY LANE LINES SHALL HAVE 2 FT. MARKS SEPARATED BY 6 FT. GAPS.
- ALL PAVEMENT MARKINGS INSTALLED IN ACCORDANCE WITH THE MUTCD AND MARYLAND SUPPLEMENTS.
- ALL EXISTING PAINTED PAVEMENT MARKINGS SHALL BE GRINDED OFF WITHIN PROJECT LIMITS.



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*[Signature]* 2/17/99  
 CHIEF, BUREAU OF ENGINEERING  
*[Signature]* 2/14/99  
 CHIEF, LAND DEVELOPMENT DIVISION  
*[Signature]* 2-9-99  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*[Signature]* 2/24/99  
 CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH

ENGINEER  
**GEORGE WILLIAM STEPHENS JR.**  
 AND ASSOCIATES, INC.  
 658 KENNETH DRIVE  
 SUITE 100  
 TOWSON, MARYLAND 21284  
 (410) 825-8120

OWNER/APPLICANT  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 C/O MANEKIN CORP  
 4165 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MARYLAND 21046  
 (410) 230-1200

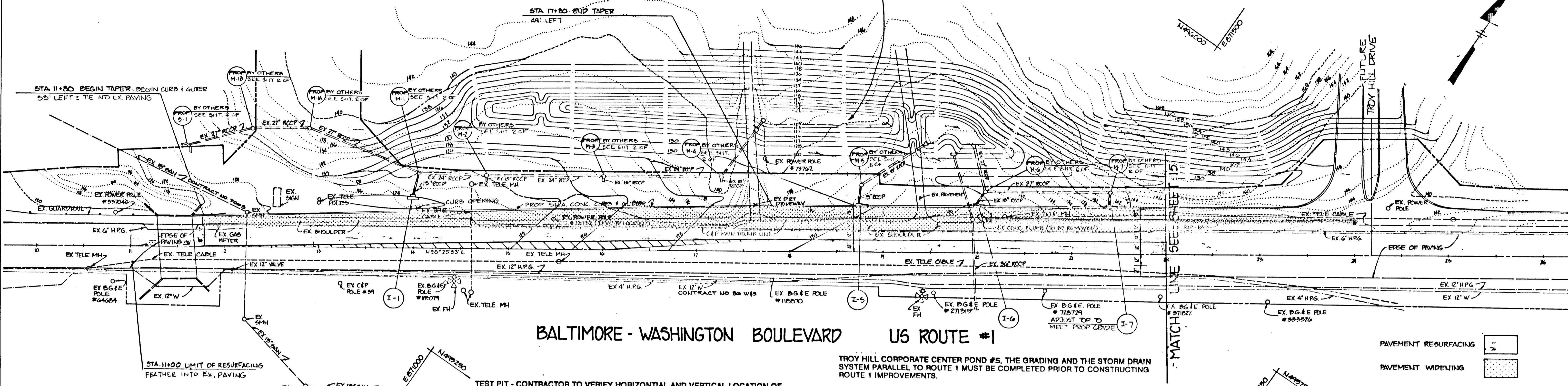
APPROVALS	REVISIONS
CHIEF, DESIGN SECTION	
ASST. DISTRICT ENGINEER, TRAFFIC	
CHIEF, TRAFFIC ENGINEERING DIVISION	
DEPUTY CHIEF ENGINEER, TRAFFIC	

PREPARED BY:	DATE: AUGUST 25, 1993
SUPERVISED BY:	DESIGNED BY:
U.S. ROUTE 1 SIGN AND PAVEMENT MARKING PLAN	
COUNTY: HOWARD	SHEET NO. 20 OF 21

1654

TROY HILL BUSINESS PARK  
PARTNERSHIP  
L.1547 F.081

TROY HILL CORPORATE CENTER  
STORM WATER MANAGEMENT POND #5  
SEE SHIT 2 & 21

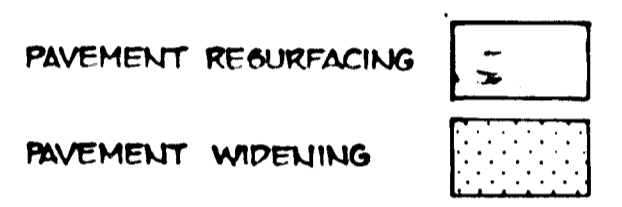


BALTIMORE - WASHINGTON BOULEVARD US ROUTE #1

TROY HILL CORPORATE CENTER POND #5. THE GRADING AND THE STORM DRAIN SYSTEM PARALLEL TO ROUTE 1 MUST BE COMPLETED PRIOR TO CONSTRUCTING ROUTE 1 IMPROVEMENTS.

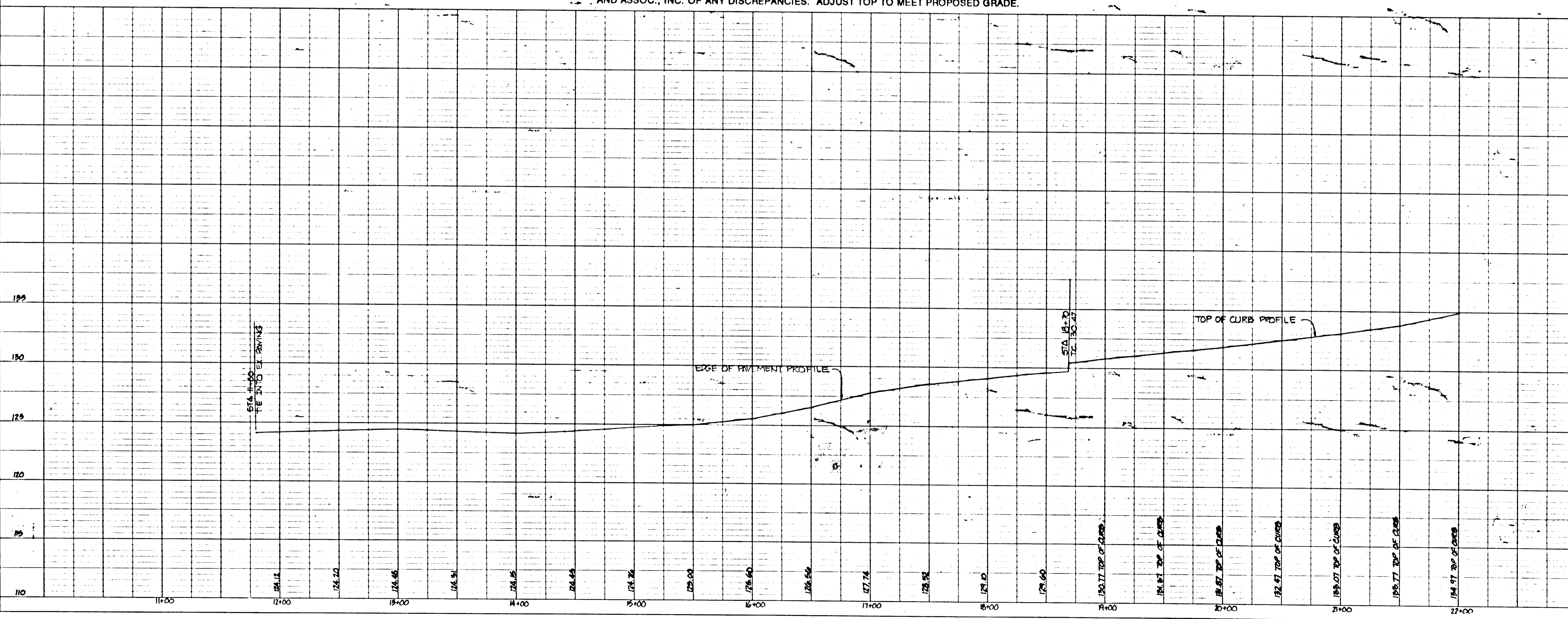
TEST PIT - CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF TELEPHONE LINE AND ASSOCIATED UTILITIES WELL IN ADVANCE OF ORDERING STORM DRAIN STRUCTURES AND PIPE. CONTRACTOR SHALL NOTIFY GEORGE W. STEPHENS AND ASSOC., INC. OF ANY DISCREPANCIES. ADJUST TOP TO MEET PROPOSED GRADE.

NOTE: FOR LAUE MARKINGS SEE SHIT 1 OF

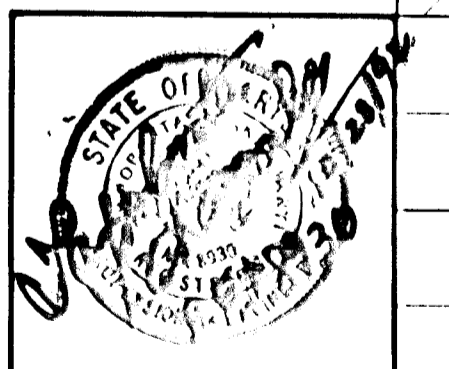


DATE	
BY	
SURVEYED	
ALIGNED CHECKED	
RT. OF WAY CHECKED	
NOTE BOOK NO.	
PLAN NO.	

DATE	
BY	
SURVEYED	
LOCATIONS CHECKED	
B.M. NOTED	
STRUCTURE NOTATIONS CHECKED	
NOTE BOOK NO.	
PROFILE NO.	



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Richard L. ...* 2/16/94  
 CHIEF, BUREAU OF ENGINEERING DATE  
*William ...* 2/14/94  
 CHIEF, LAND DEVELOPMENT DIVISION DATE  
*Andrew M. ...* 2-9-94  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING  
*Jim ...* 2/21/94  
 CHIEF, DIV. OF LAND DEVELOPMENT AND RESEARCH DATE



**GWS**  
 GEORGE WILLIAM STEPHENS, JR.  
 AND ASSOCIATES, INC.  
 CIVIL ENGINEERS & LAND SURVEYORS  
 658 KENILWORTH DRIVE, SUITE 100  
 TOWSON, MARYLAND 21204  
 (410) 825-8120

APFC BONDING PLAN  
**TROY HILL CORPORATE CENTER**  
**U.S. ROUTE #1 IMPROVEMENTS**  
 HOWARD COUNTY, MARYLAND ELECTION DISTRICT #1  
 SCALE: 1" = 100' AUGUST 25, 1993  
 SHEET 21 OF 21

1054

BRUNING 44 132 25726 1