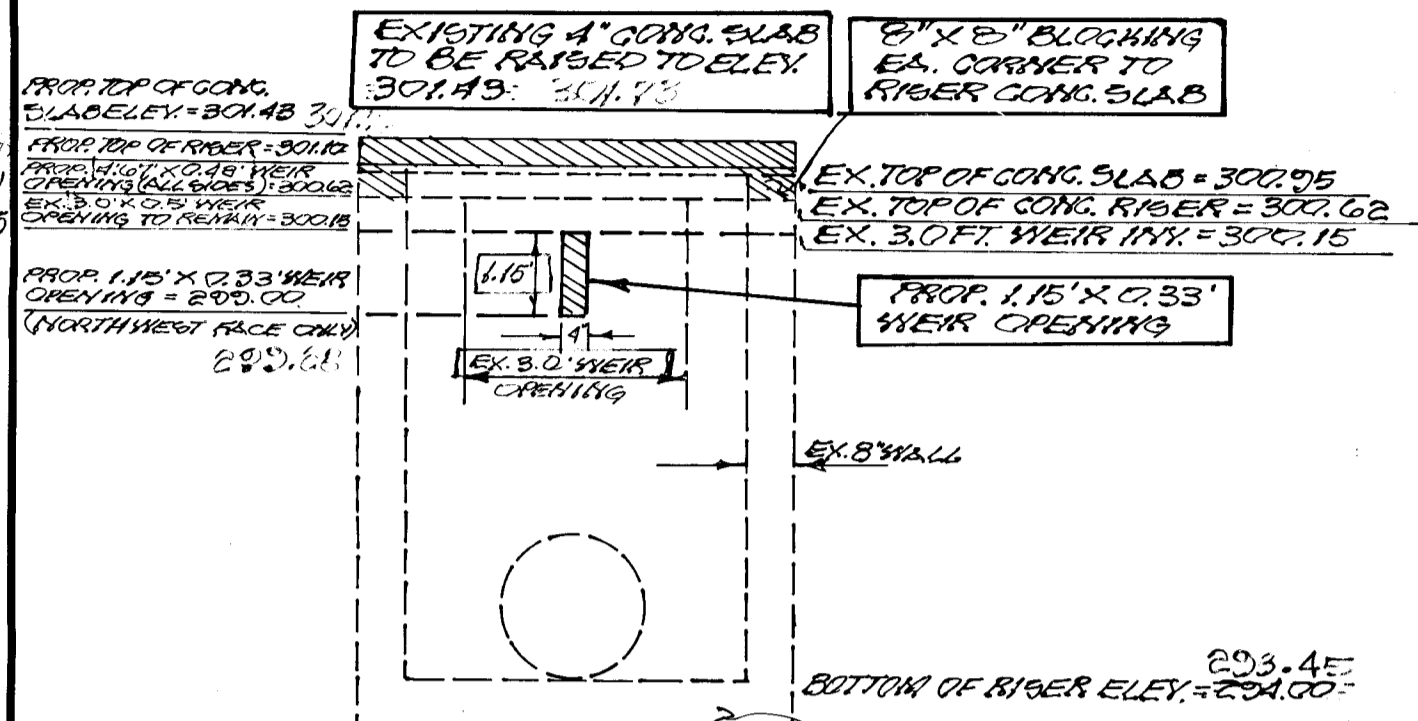
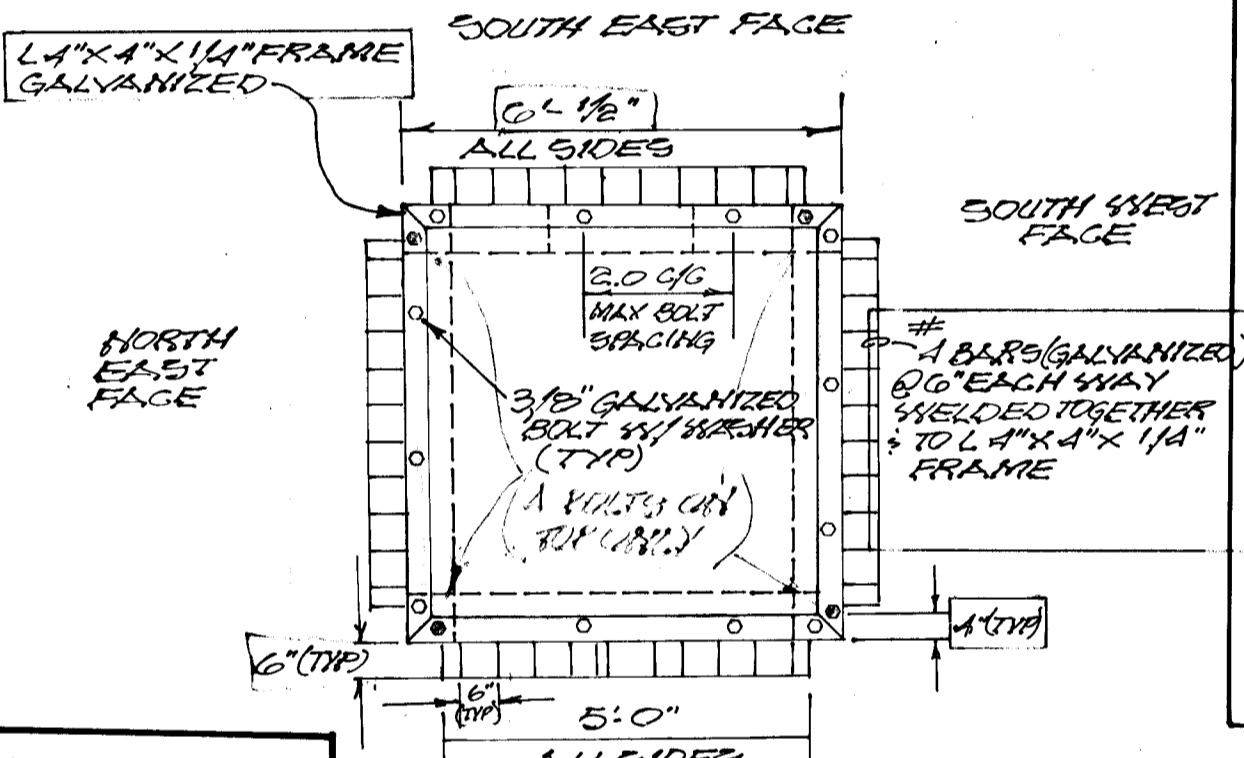


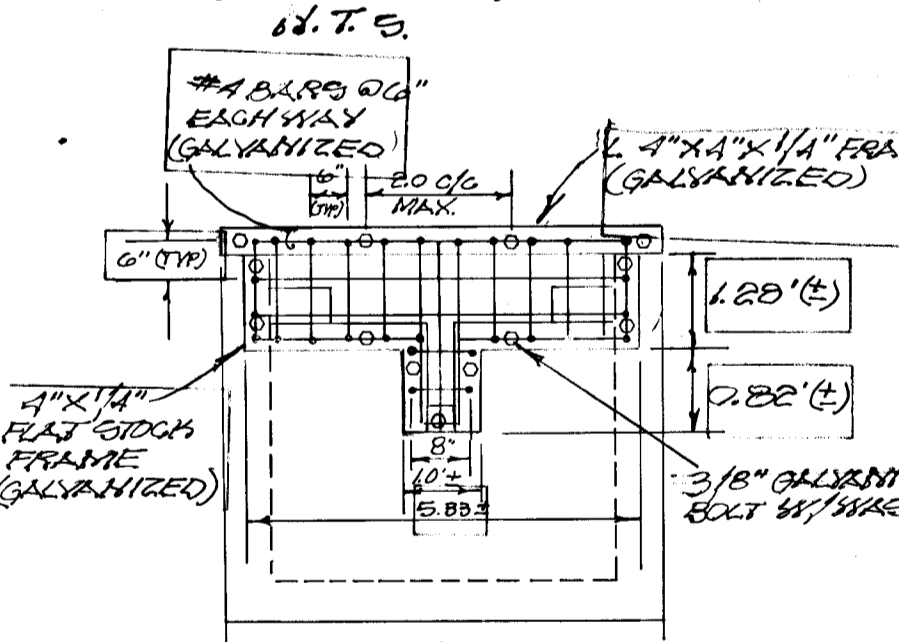
INDEX OF SHEETS	
SHEET NO.	TITLE
1	TITLE SHEET / RIVER STRUCTURE RETROFIT DETAILS
2	PLAN AND PROFILE - GARDENVIEW DRIVE
3	PLAN AND PROFILE - MONTGOMERY ROAD
4	ROAD CONSTRUCTION DETAILS
5	ONSITE DRAINAGE AREA, SOILS MAP & GRADING PLAN
6	DRAINAGE AREA MAP, SOILS MAP & SEDIMENT CONTROL DETAILS
7	STORM DRAIN PROFILES AND SEDIMENT CONTROL DETAILS



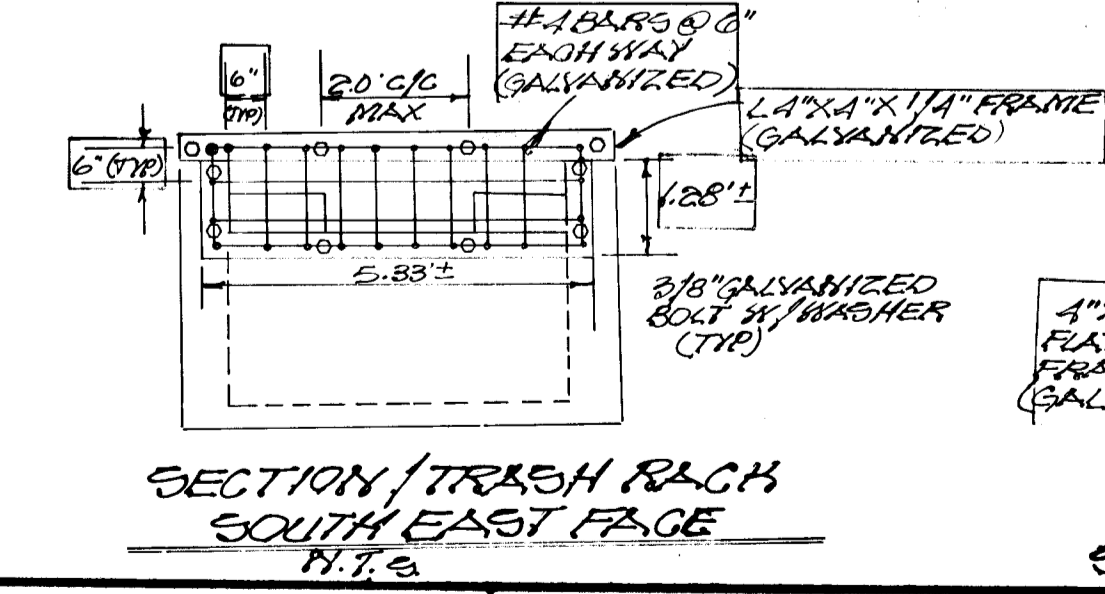
NORTH WEST FACE OF RIVER STRUCTURE / RETROFIT
 *2.0 FT. WEIR OPENING ON SOUTH EAST FACE TO REMAIN
 ** 1.5' ON EACH SIDE FOR CLARITY
 N.T.S.



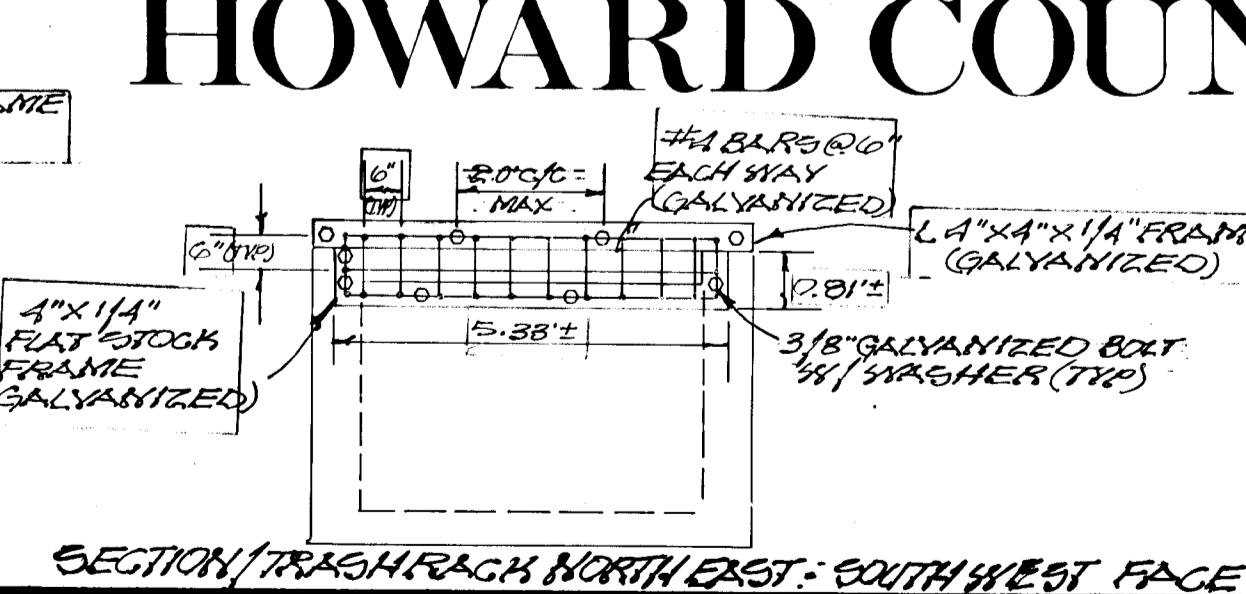
PLAN VIEW / TRASH RACK (TOP OF SLAB) N.T.S.



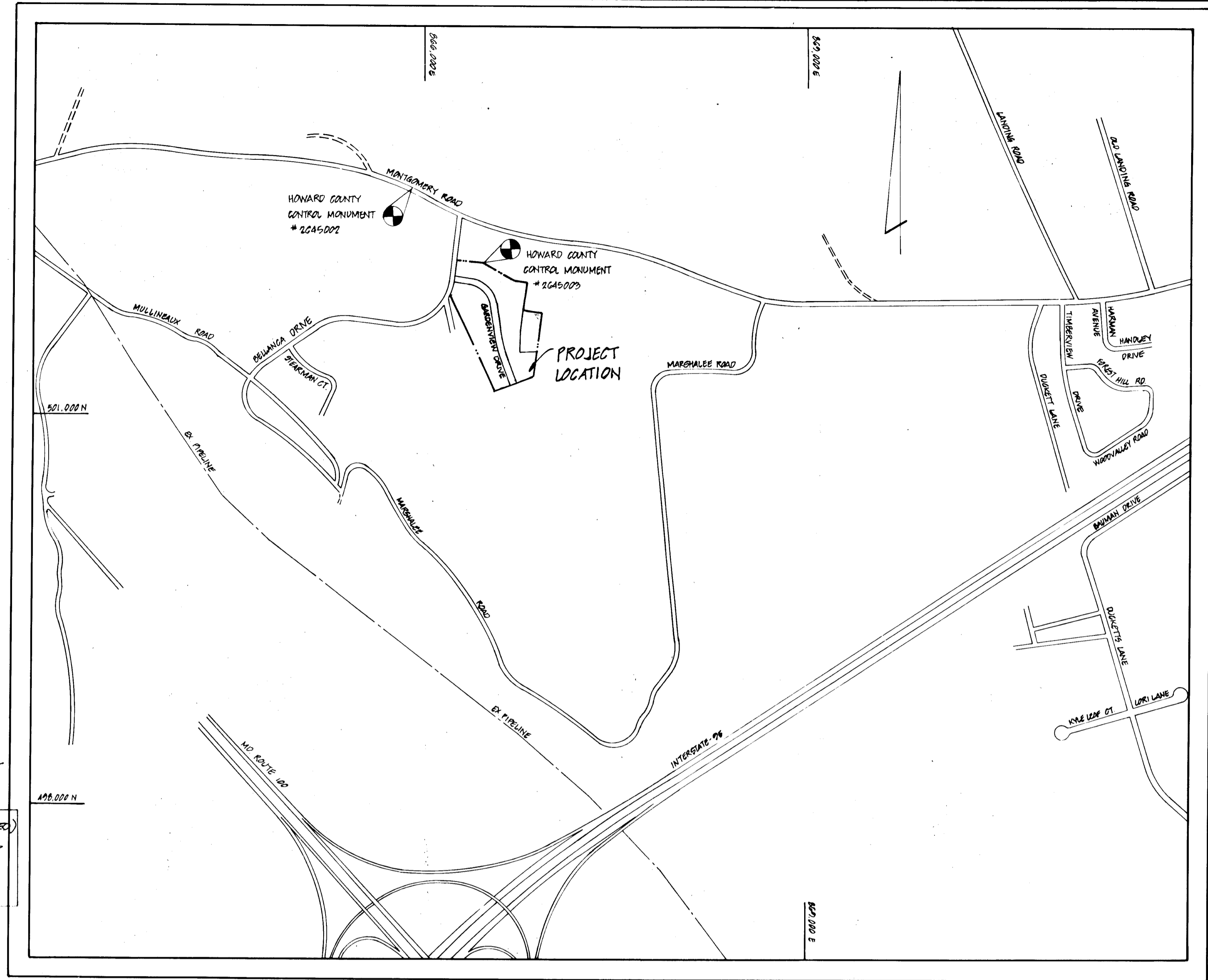
SECTION / TRASH RACK NORTH WEST FACE N.T.S.



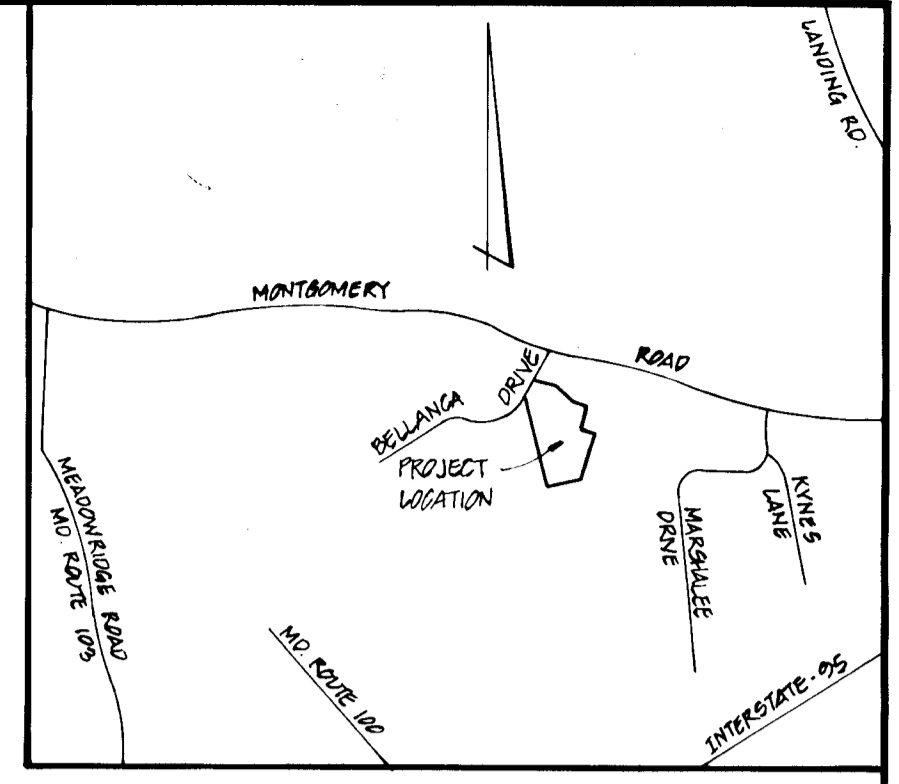
SECTION / TRASH RACK SOUTH EAST FACE N.T.S.



SECTION / TRASH RACK NORTH EAST - SOUTH WEST FACE N.T.S.



VICINITY MAP SCALE: 1" = 600'



VICINITY MAP SCALE: 1" = 2000'

GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL UTILITY COMPANIES MUST BE NOTIFIED 24 HOURS IN ADVANCE OF ANY CONSTRUCTION.
- STORM DRAINAGE TRENCHES WITHIN ROAD RIGHT-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
- ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR TO NOTIFY THE HOWARD COUNTY INSPECTIONS AND SURVEY DIVISION AT LEAST THREE DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS. TELEPHONE: 792-7272
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE.
- ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 1984 EDITION.
- STREET TREES TO BE PROVIDED AS REQUIRED BY SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

I, THE ENGINEER, 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 AS A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT 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.
 Mark J. Helms 6/5/89
 DATE

I, THE ENGINEER, 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.
 Frank Willy 6/5/89
 THOMAS L. WILEY, PROFESSIONAL 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.
 J. Helms 8/10/89
 SOIL CONSERVATION SERVICE
 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 P. Zelman 8/10/89
 HOWARD SOIL CONSERVATION DISTRICT
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 10/30/89
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 10/26/89
 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 11/10/89
 DATE

MARKHAM WOODS ROAD CONSTRUCTION DRAWINGS FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

LANDSCAPE TABULATION				
SYMBOL	QUANTITY	NAME	SIZE	REMARKS
○	00	ACER SACCHARINUM (SUGAR MAPLE) AND/OR FRAXINUS PENNSYLVANICA (GREEN ASH)	2 1/2" CAL. (MIN.)	BALLED AND BURLAPPED

BENCHMARKS

HOWARD COUNTY MONUMENT # 2645002 - ELEV. 932.920
 CONCRETE MONUMENT 0.5' BELOW SURFACE 4.5' NORTH OF NORTH EDGE OF ROAD
 HOWARD COUNTY MONUMENT # 2645003 - ELEV. 931.186
 CONCRETE MONUMENT 2.0' BELOW SURFACE AT TOP OF BANK.



I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT WITH RESPECT TO ROAD AND STORM DRAINAGE FACILITIES SHOWN, THIS AS BUILT PLAN TRULY REPRESENTS EXISTING FIELD CONDITIONS INCLUDING, BUT NOT LIMITED TO, SIZES, DIAMETERS, LWS, GRADE AND ELEVATION.

AS BUILT

DESIGNED		DATE		BY		DESCRIPTION	
K. CHAVARA	10/88	10/88	10/88	10/88	10/88	REVISAS PER COUNTY COMMENTS DATED 11/18/89	
D. PETERS	10/88	2/01	2/01	2/01	2/01	REVISIONS PER RIVER STRUCTURE	
J. ESCALANTE	11/88	11/88	11/88	11/88	11/88		
T. WILEY	11/88	11/88	11/88	11/88	11/88		

Dewberry & Davis
 ARCHITECTS - ENGINEERS - PLANNERS - SURVEYORS
 3300 N. RIDGE ROAD, SUITE 100
 ELLICOTT CITY, MD. 21043
 (301) 461-7478



OWNER & DEVELOPER
 BELLEGA CORPORATION
 COMMERCE CENTER PLAZA
 SUITE 275
 1777 REISTERSTOWN ROAD
 BALTIMORE, MARYLAND 21208
 JOSEPH F. WHEELER
 6288 MONTGOMERY ROAD
 ELK RIDGE, MARYLAND 21227

TITLE SHEET	
MARKHAM WOODS LOT 1 THRU LOT 22 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
SCALE AS SHOWN	PREVIOUS SUBMITTALS F-85-109, S-88-60, P-88-84, N-89-72
FILE NO. PD/3 EC	SHEET 1 OF 7

1475

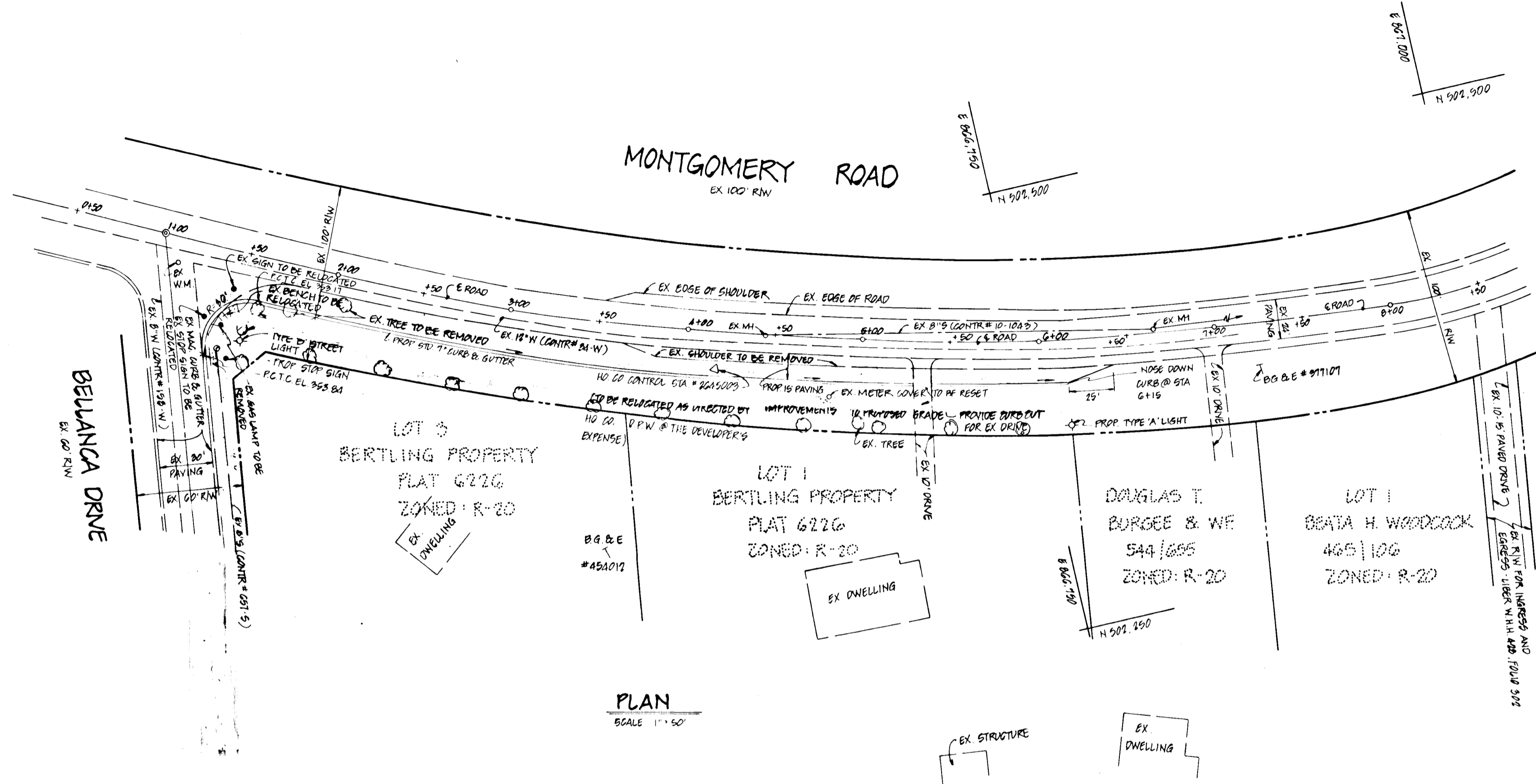
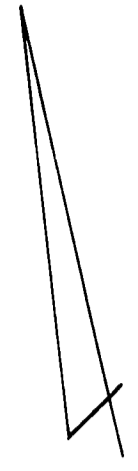
LIGHTING LEGEND

TYPE 'A': 175 WATT MERCURY VAPOR LAMP MOUNTED ON A 14' HIGH FIBERGLASS BRONZE POLE

#	NORTH	EAST	ELEV.
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505091.87	806801.07	316.76	

LIGHTING LEGEND

↔ TYPE 'B' - 250 WATT MERCURY VAPOR LAMP MOUNTED ON A 30" HIGH GALVANIZED STEEL POLE



PLAN
SCALE 1" = 50'

PLAN AND PROFILE
MONTGOMERY ROAD
MARKHAM WOODS
LOT 1 THRU LOT 22
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
OWNER / DEVELOPER

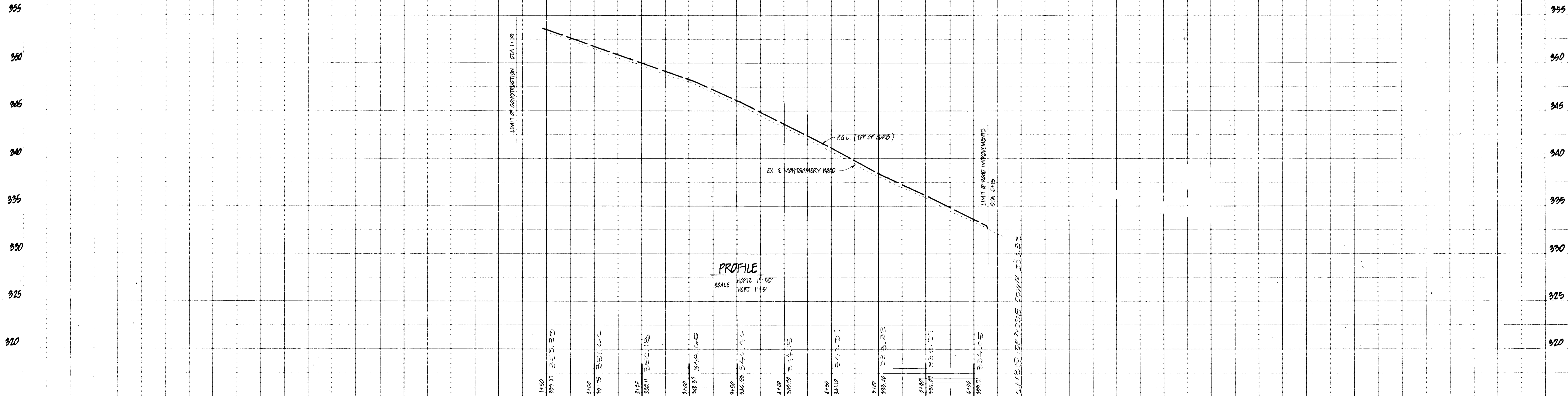
DATE	REVISION
10-2-88	REMOVE EXISTING SIGN MOUNTED ON BELLANCA DRIVE

DEWBERRY & DAVIS
ARCHITECTS • ENGINEERS • PLANNERS • SURVEYORS
3500 NORTH RIDGE ROAD
FELLICOTT CITY, MARYLAND 21045
(301) 461-7478

DEPT. OF PLANNING AND ZONING
Frank J. Kewen 11/10/89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

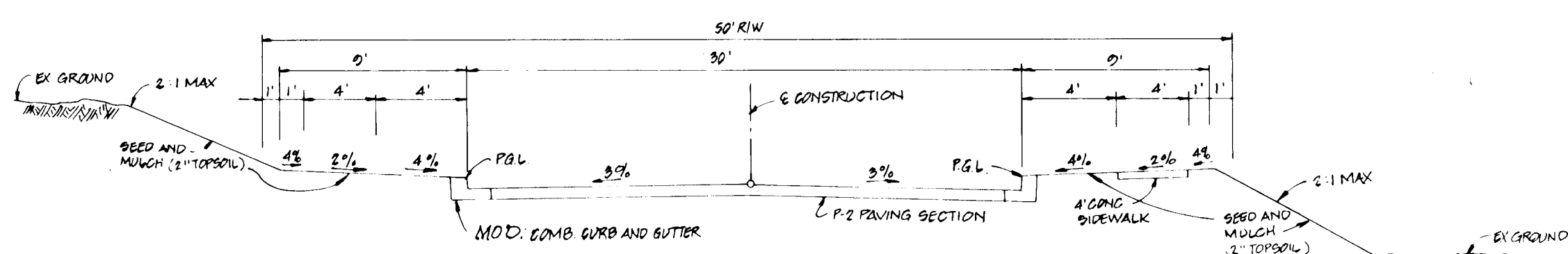
Donald W. Leppan 10/30/89
Granville W. Wallace 10/20/89
William E. Reid 10-31-89

NOTE: GRAVEL SHOULDER IN NEAR AREA TO THE CURB

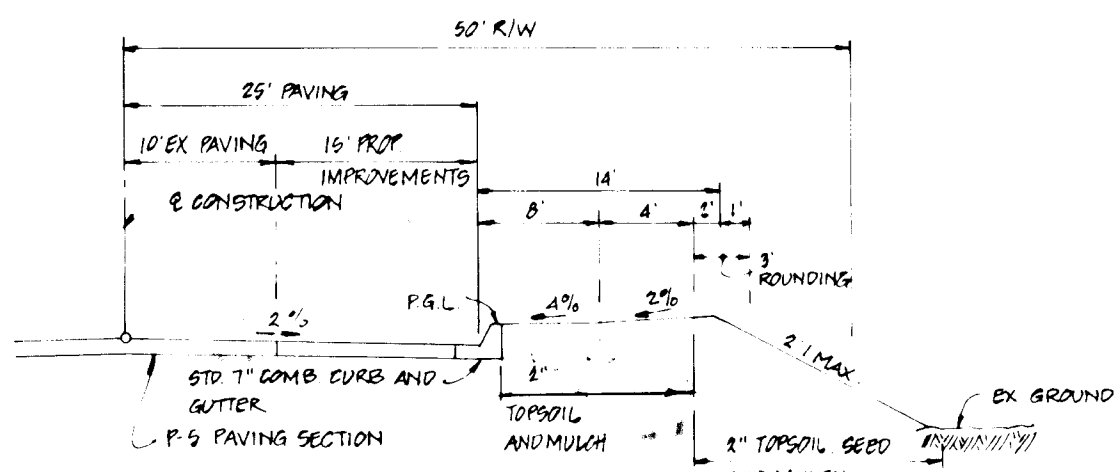


PROFILE
SCALE HORIZ 1" = 50'
VERT 1" = 5'

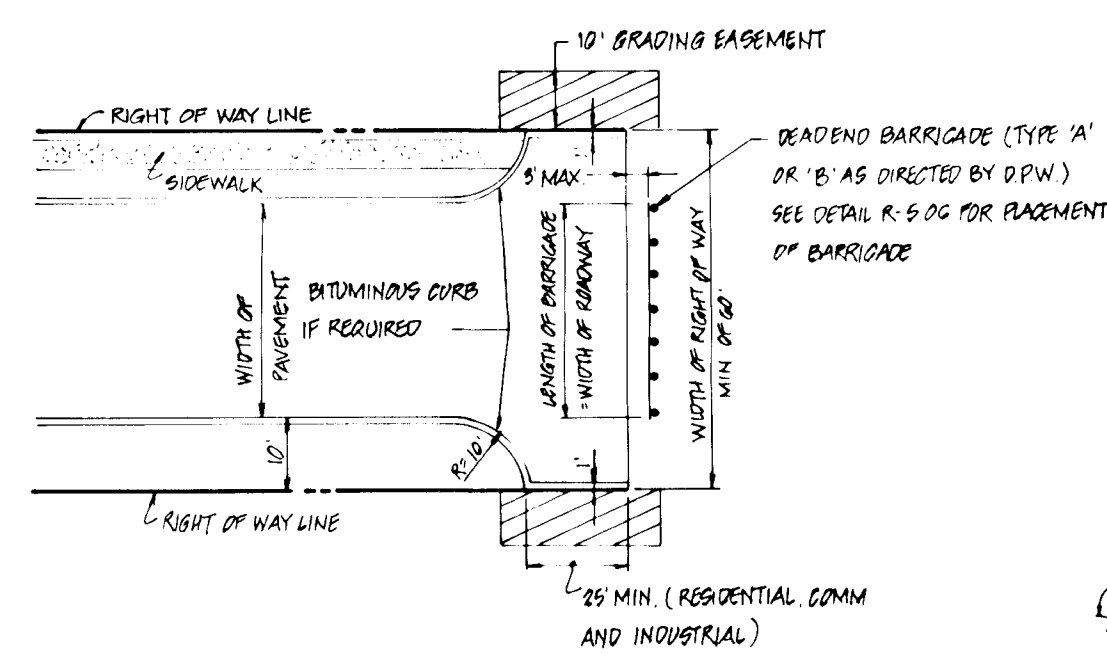
AS BUILT



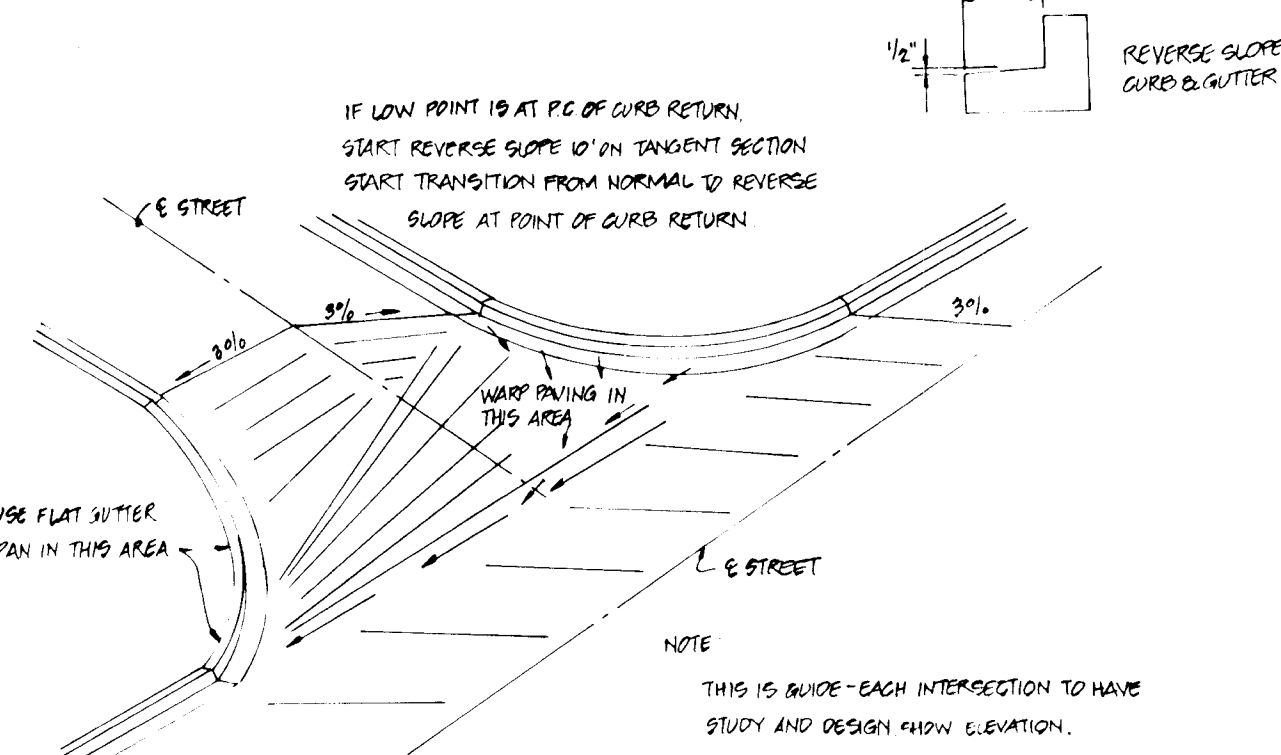
TYPICAL SECTION - LOCAL STREET
GARDENVIEW DRIVE - STA 0+15 - 1+00
AND 3+00 - 10+05
 NOT TO SCALE
 DESIGN SPEED 30 M.P.H.
 ZONED R-20 - 30' PAVING



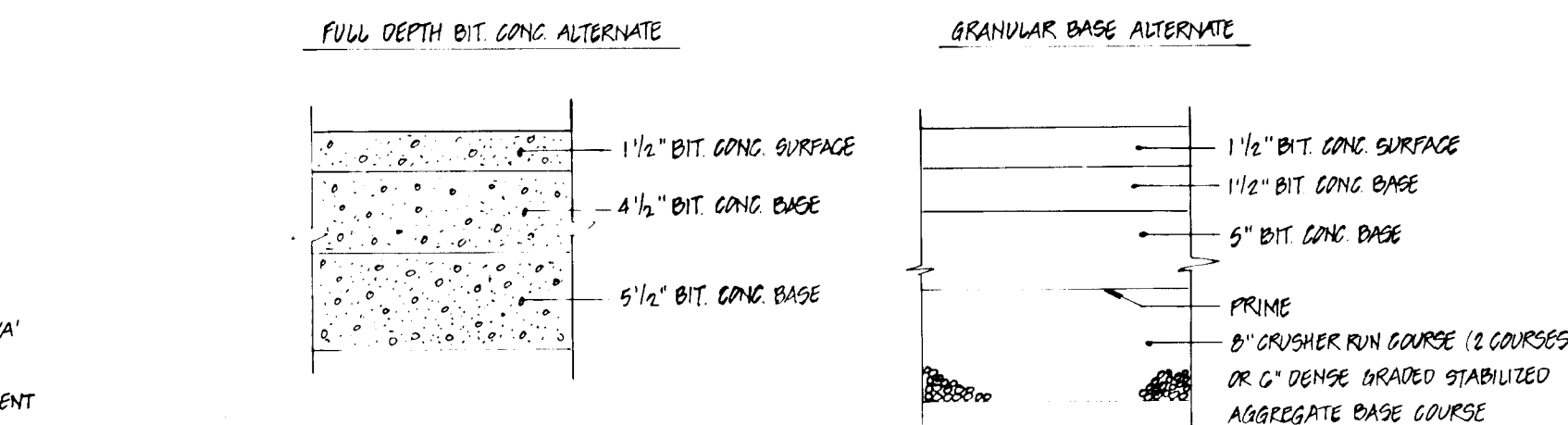
TYPICAL SECTION - MINOR ARTERIAL
MONTGOMERY ROAD - STA 1+15 TO
STA. 6+10
 NOT TO SCALE
 DESIGN SPEED 40 M.P.H.
 ZONED R-20 - 30' PAVING



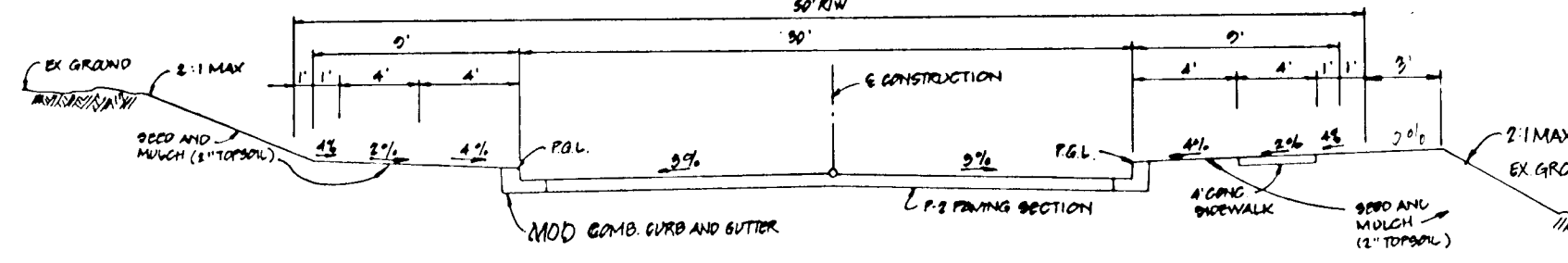
TEMPORARY TEE-TURNAROUND
 NOT TO SCALE



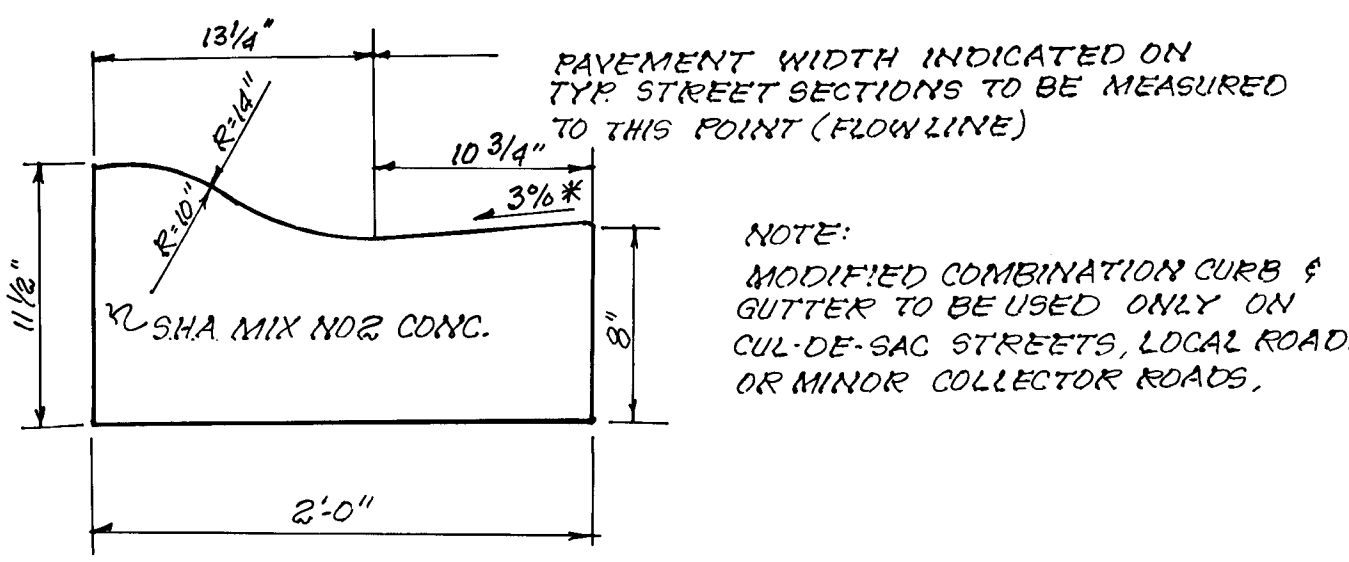
TYPICAL INTERSECTION GRADING DETAIL
 NOT TO SCALE



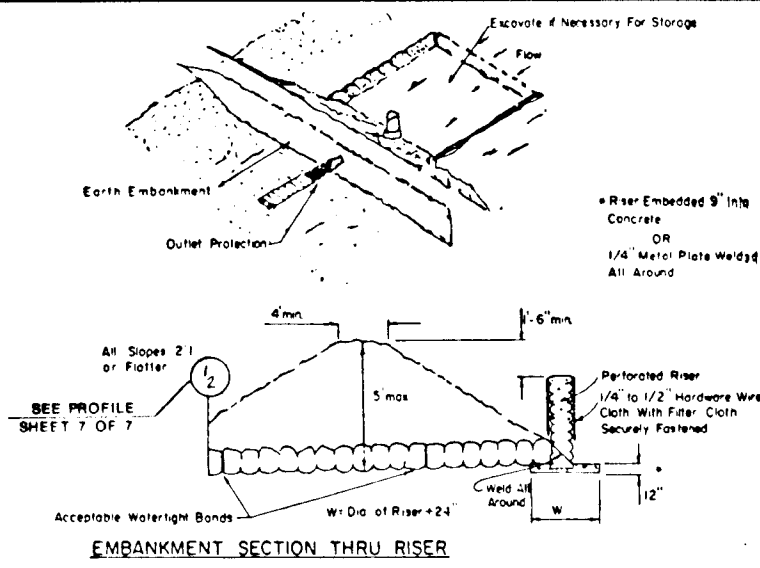
P-5 PAVING SECTION
 NOT TO SCALE



TYPICAL STREET - LOCAL STREET
GARDENVIEW DRIVE - STA 1+00 - 3+00
 NOT TO SCALE
 DESIGN SPEED 30 M.P.H.
 ZONED R-20 - 30' PAVING



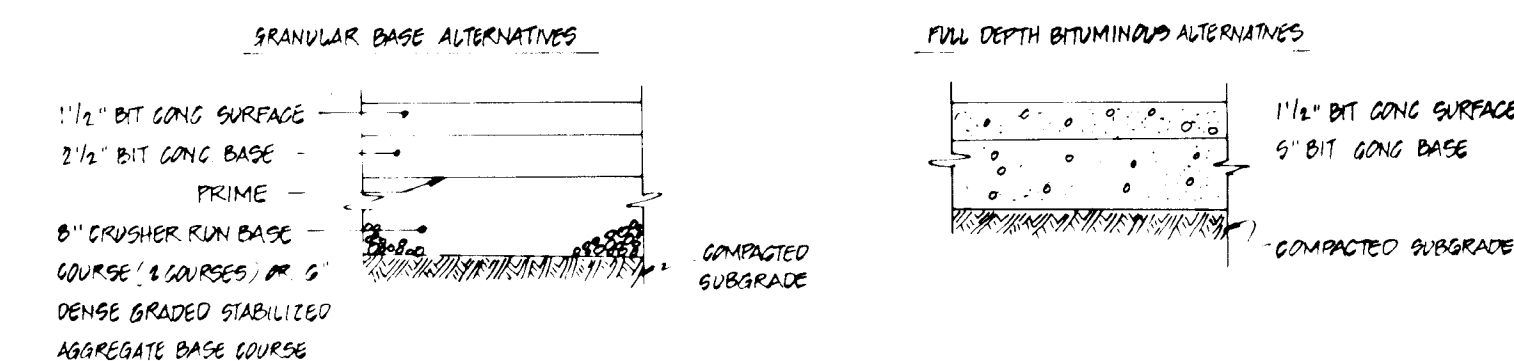
MODIFIED COMBINATION CURB & GUTTER



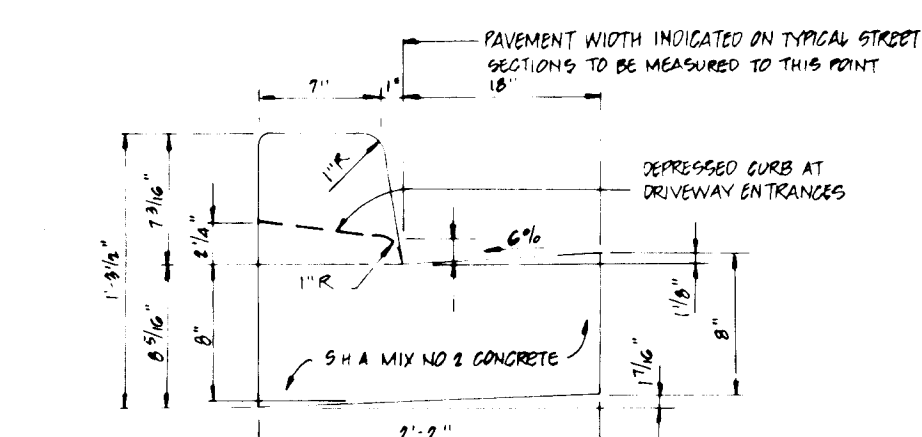
EMBEDMENT SECTION THRU RIVER
 SIZES OF PIPE NEEDED
 Barrel Diameter 15"
 Riser Diameter 21"

- CONSTRUCTION SPECIFICATION FOR ST-1**
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots or other woody vegetation as well as overcast stones, rocks, organic material, or other objectionable material. The embankment shall be compacted by treading with equipment while it is being constructed.
 - Volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage.
 - Embankment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Excess sediment shall be deposited in a suitable area and in such a manner that it will not erode.
 - The structure shall be inspected after each rain and repairs made as needed.
 - Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
 - The structure shall be removed and area stabilized when the drainage area has been properly stabilized.
 - All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
 - All pipe connections shall be watertight.
 - The top 1/2 of the riser shall be perforated with one (1) inch diameter holes or slots spaced six (6) inches vertically and horizontally and placed in the concrete portion of pipe. No holes will be allowed within six (6) inches of the horizontal barrel.
 - The riser shall be wrapped with 1/4 to 1/2 inch hardware cloth when the wrap with filter cloth (having an equivalent sieve size of 40 - 80 mesh) shall extend six (6) inches above the highest hole and six (6) inches below the lowest hole. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent bypass.
 - Staple or connecting bands shall be used to hold the filter cloth and wire fabric in place. They shall be placed at the top and bottom of the cloth.
 - Fill material around the pipe spillway shall be hand compacted in four (4) inch layers. A maximum of two (2) feet of hand-compacted backfill shall be placed over the pipe spillway before covering it with construction equipment.
 - The riser shall be anchored with either a concrete base or steel plate base to prevent flotation. For concrete base the depth shall be 12 inches with the riser embedded six (6) inches. A 1/4 inch minimum thickness steel plate shall be attached to the riser by a continuous weld around the bottom to form a watertight connection and then place two (2) feet of stone, gravel, or tamped earth on the plate.

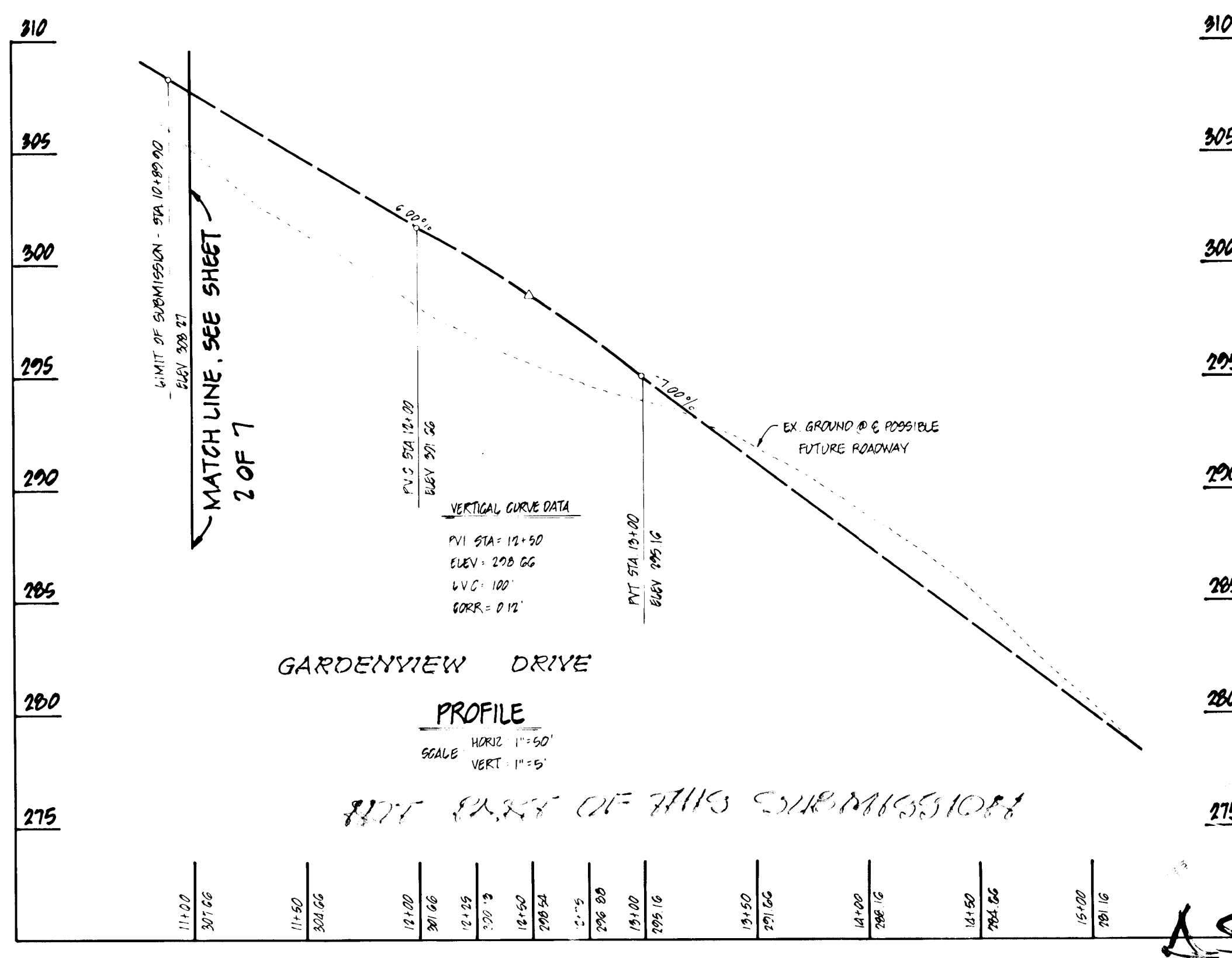
PIPE OUTLET SEDIMENT TRAP
 NOT TO SCALE



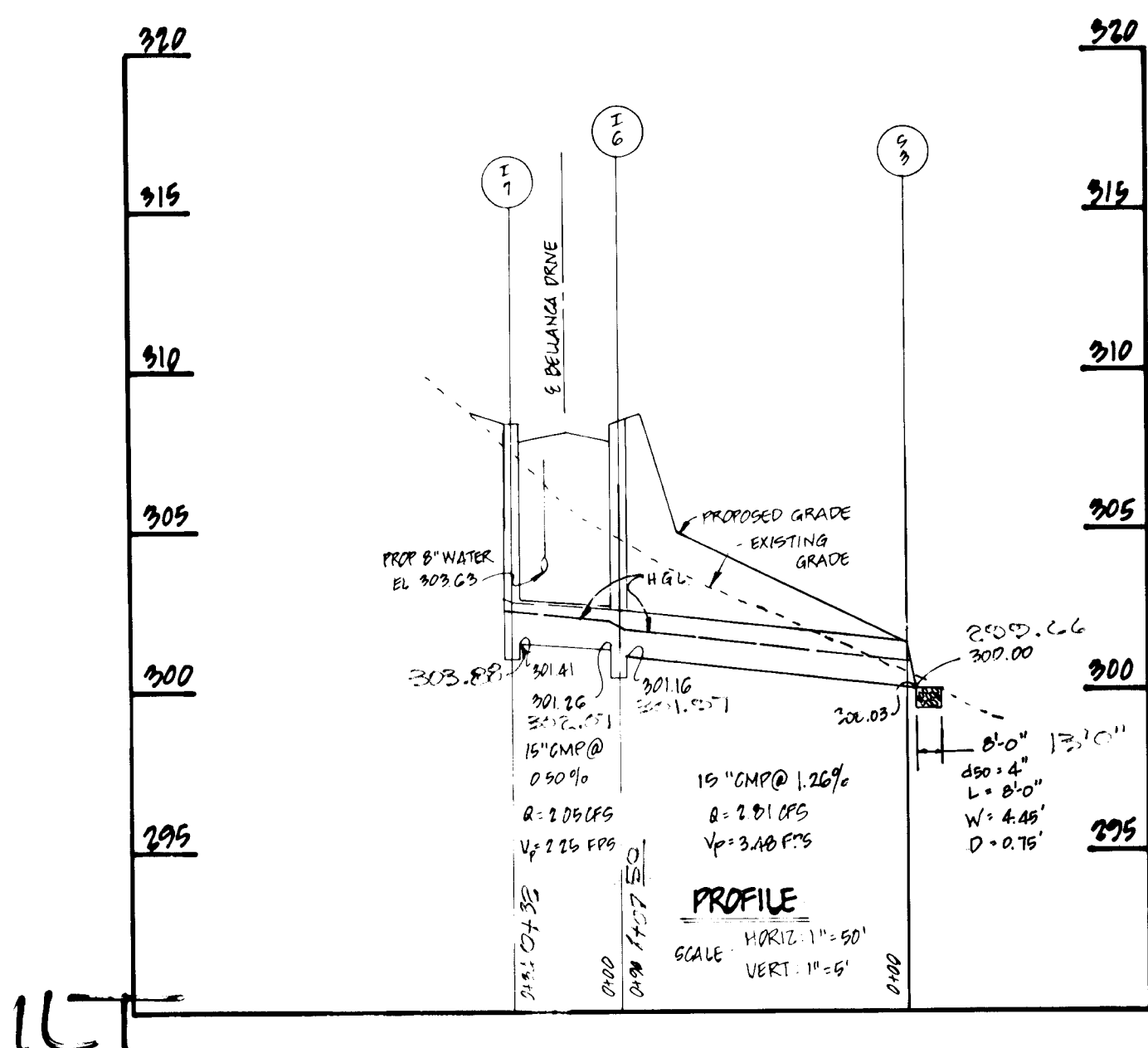
P-2 PAVING SECTION
 NOT TO SCALE



**STD. 7\"/>
 NOT TO SCALE**



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Frank J. Willey 10/30/89
Frank W. Willey 10/26/89
William E. Roy 10/31/89
 APPROVED HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Frank J. Willey 11/12/89



"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION 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."

Frank W. Willey 6/5/89
 FRANK W. WILEY, PROFESSIONAL ENGINEER, DATE

"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."

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.

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.

HOWARD SOIL CONSERVATION DISTRICT DATE

DESIGNED		DATE		BY		DESCRIPTION	
K. CHAVARA	10/88	10/30/89	10/30/89	10/30/89	10/30/89	10/30/89	10/30/89
D. PETERS	10/88	10/26/89	10/26/89	10/26/89	10/26/89	10/26/89	10/26/89
J. ESCALANTE	11/88	11/12/89	11/12/89	11/12/89	11/12/89	11/12/89	11/12/89
T. WILEY	11/88	11/12/89	11/12/89	11/12/89	11/12/89	11/12/89	11/12/89

Dewberry & Davis

ARCHITECTS - ENGINEERS - PLANNERS - SURVEYORS
 3300 N. RIDGE ROAD, SUITE 100
 ELLICOTT CITY, MD. 21043
 (301) 461-7478

OWNER & DEVELOPER

BELLAHCA CORPORATION
 COMMENCE CENTER PLAZA
 SUITE 215
 1777 REISTERSTOWN ROAD
 BALTIMORE, MARYLAND 21208

G.R. DEVELOPMENT CORPORATION
 COMMENCE CENTER PLAZA
 SUITE 215
 1777 REISTERSTOWN ROAD
 BALTIMORE, MARYLAND 21208

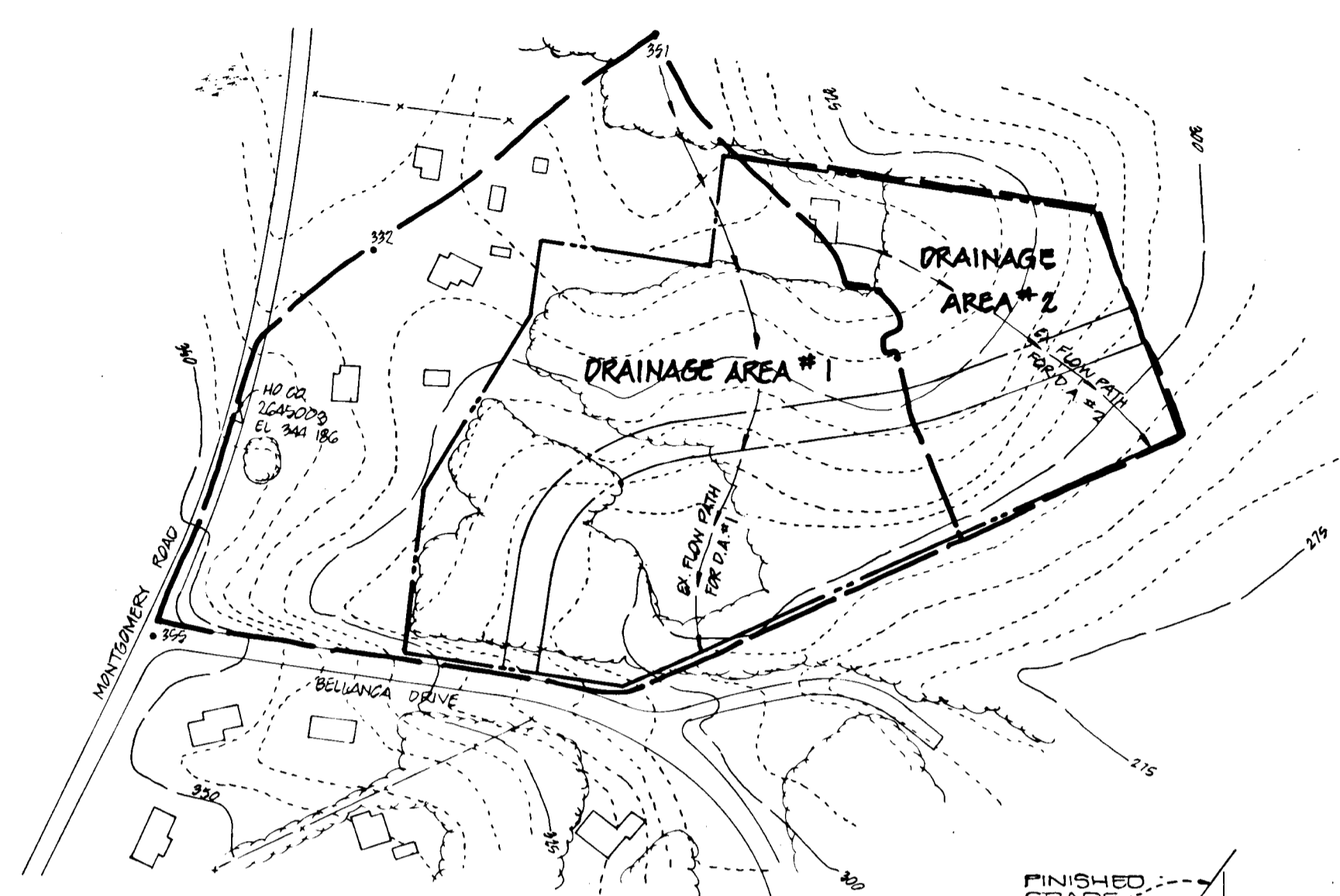
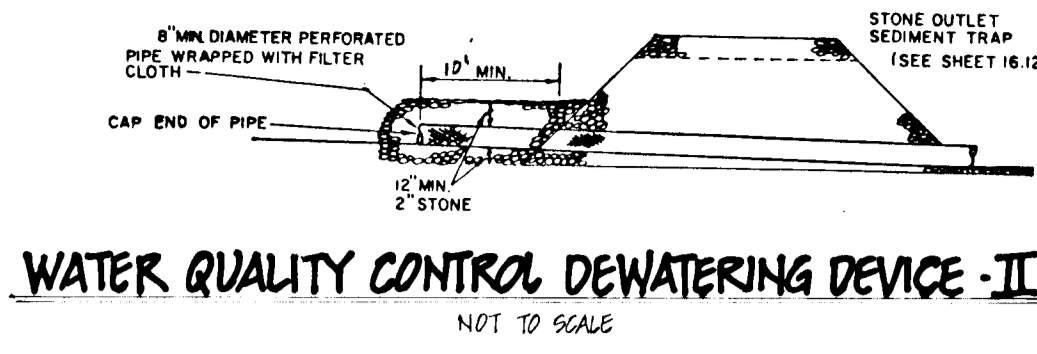
JOSEPH F. WHEELER
 6288 MONTGOMERY ROAD
 ELKRIE, MARYLAND 21227

STORM DRAIN AND ROAD CONSTRUCTION DETAILS

MARKHAM WOODS

TAX MAP 37 PARCELS 85 AND 501
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN PREVIOUS SUBMITTALS F-85-109-S 8-8-80 P-88-84 WP 8-8-80 FILE NO PD13-EC SHEET 4 OF 7

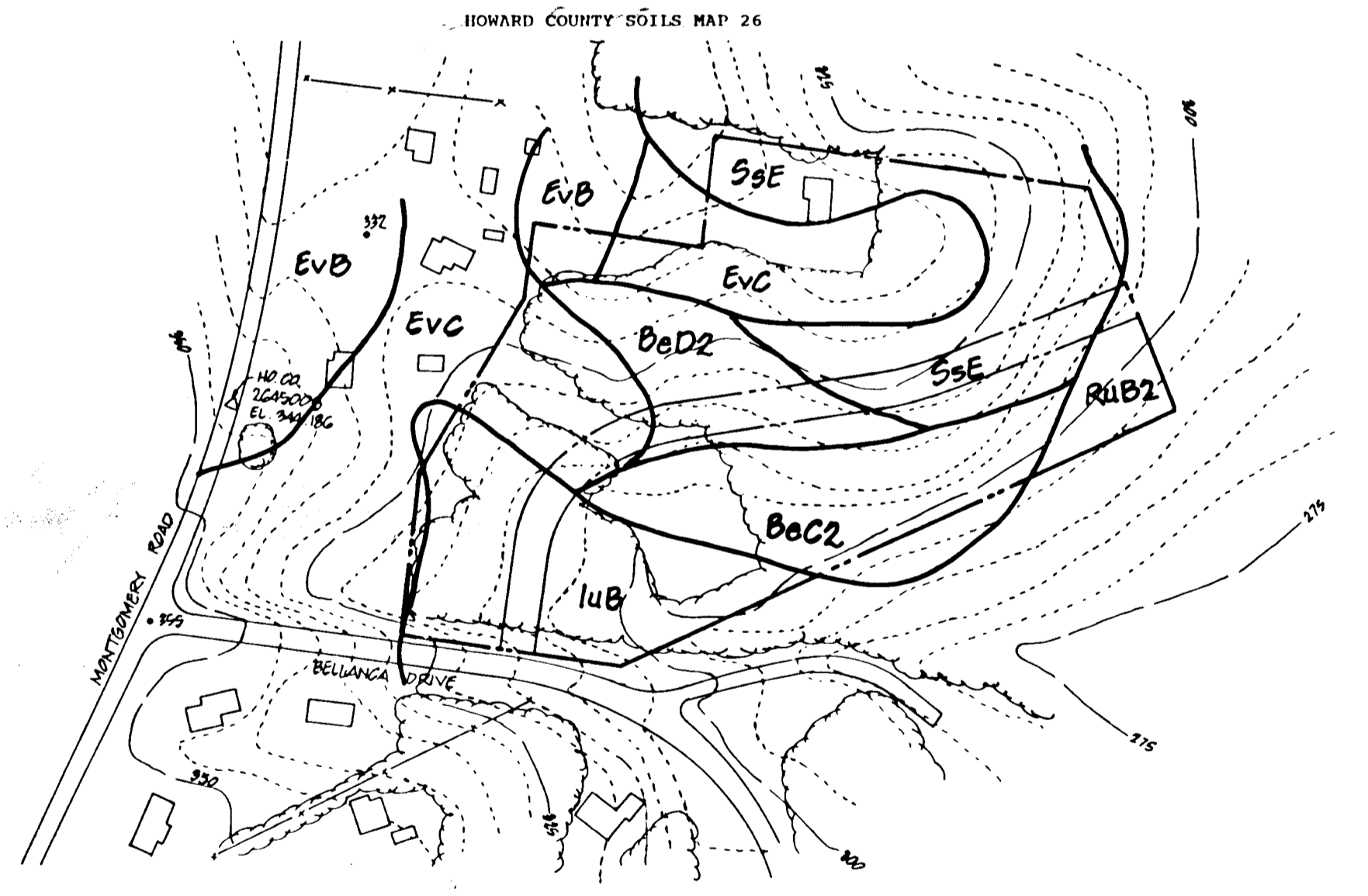


DRAINAGE AREA MAP
SCALE: 1" = 200'

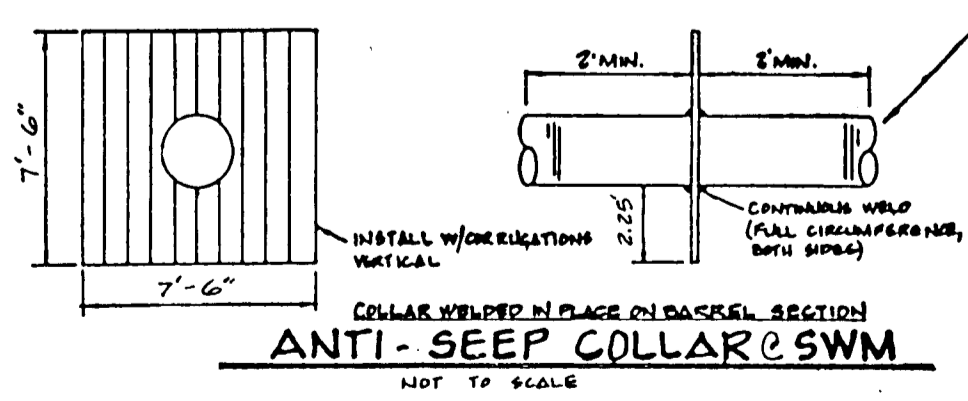
SOILS LEGEND

Bc2	-	Deltaville Silt Loam	5 - 10% Slopes, moderately eroded
Bt2	-	Deltaville Silt Loam	10 - 15% Slopes, moderately eroded
Cmb2	-	Chillum Silt Loam	1 - 5% Slopes
EVB	-	Evesboro Loamy Sand	1 - 5% Slopes
EVC	-	Evesboro Loamy Sand	5 - 15% Slopes
luB	-	Luka Loam, local alluvium	1 - 5% Slopes
Rub2	-	Rumford loamy sand	1 - 5% Slopes, moderately eroded
Sse	-	Sassafras soils	15 - 40% Slopes

HOWARD COUNTY SOILS MAP 26



SOILS MAP
SCALE: 1" = 200'



SEDIMENT CONTROL NOTES:

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction (1992-2417).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in compliance with the 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within 72 hours. Calendar days for all permitted sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1. By 14 days after all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must have warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12 of the Howard County Design Manual, Storm Drainage.
- All disturbed areas within the time period specified above in accordance with the 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control for Permanent Seedings (Sec. 511 and 512), Temporary Seedings (Sec. 501 and 502), Temporary Stabilization with Mulch (Sec. 521), Temporary Stabilization with Mulch (Sec. 522) and Temporary Stabilization with Mulch (Sec. 523) shall be completed and established by the time specified above.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been granted from the Howard County Sediment Control Inspector.
- SIZE ANALYSIS:**
TOTAL AREA OF SITE: 17.75 ACRES
AREA DISTURBED: 17.75 ACRES
AREA TO BE ROOFED OR PAVED: 0 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 0 ACRES
TOTAL CUT: 33,971 CU. YDS.
TOTAL FILL: 33,971 CU. YDS.
OFFSITE WASTE/DROPPED AREA LOCATION: 0 ACRES
- Any sediment control practices which are required by grading activity for placement of utilities must be repaired on the same day of disturbance.

PERMANENT SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREA NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOGGED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULE:

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 500 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARBOR OR DISC INTO UPPER THREE-INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE SOO. (SODIUM SULFATE) (9 LBS/1000 SQ. FT.)
- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARBOR OR DISC INTO UPPER THREE-INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 40 LBS PER ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ. FT.) OF KEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROJECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOO. (SODIUM SULFATE) (9 LBS/1000 SQ. FT.) AND 400 LBS PER ACRE OF WELL ANCHORED STRAW MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF CHIPPED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 1/8 GAL PER ACRE (5 GALLONS PER 1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 3/4 GAL PER ACRE (8 GALLONS/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

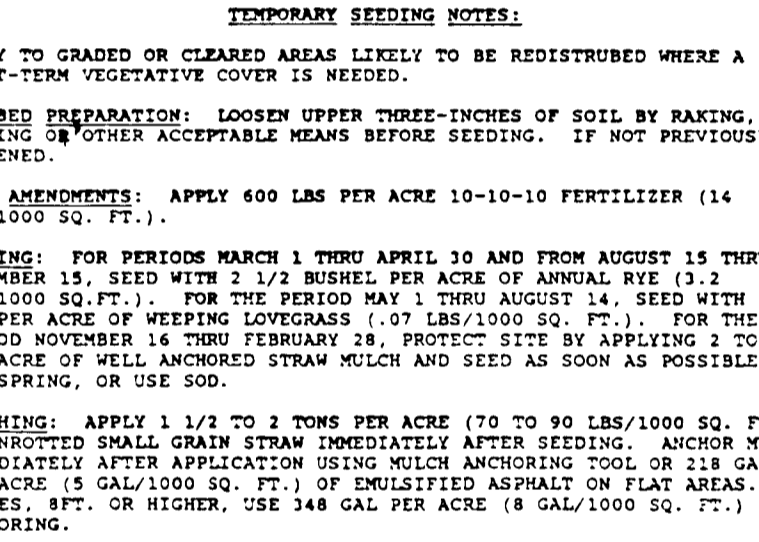
SEEDBED PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOGGED.

SOIL AMENDMENTS: APPLY 500 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 1 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (13.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 14 THRU FEBRUARY 28, PROJECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF CHIPPED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 1/8 GAL PER ACRE (5 GALLONS PER 1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT. OR HIGHER, USE 3/4 GAL PER ACRE (8 GALLONS/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.



CONSTRUCTION SPECIFICATIONS:

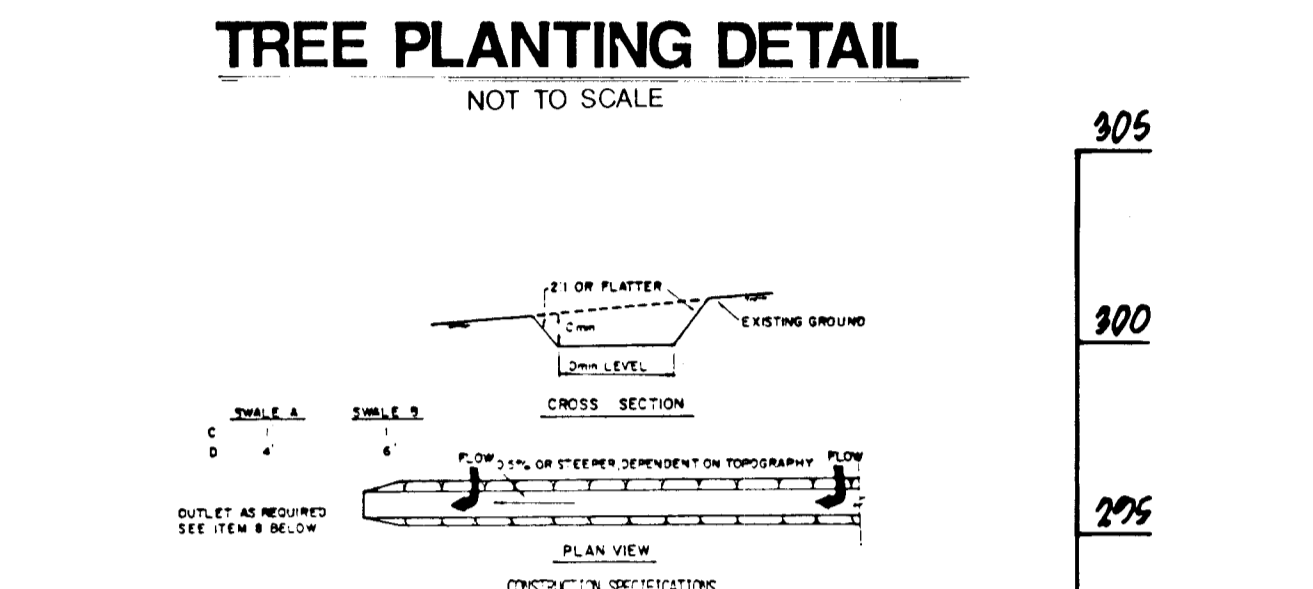
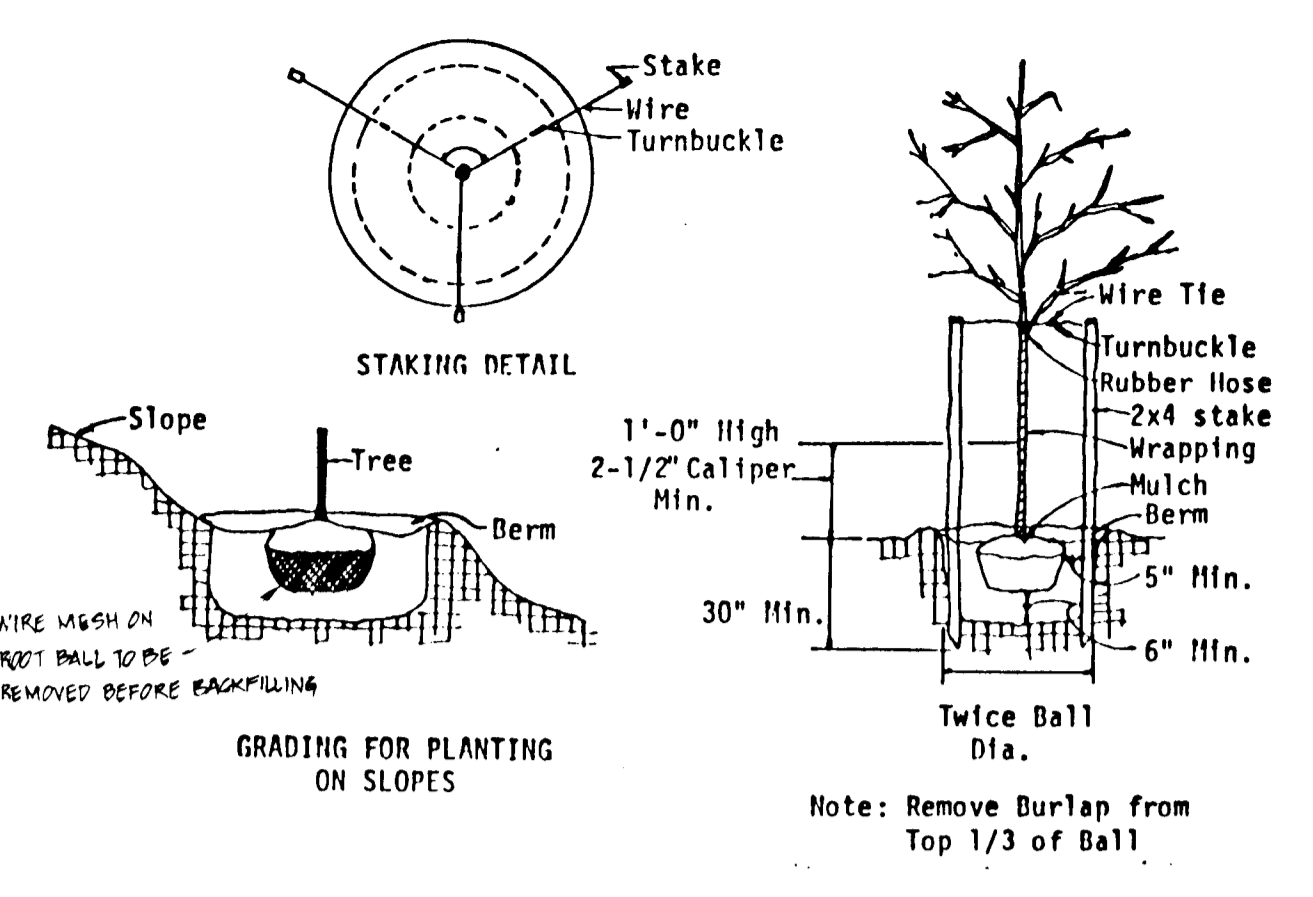
- All dikes shall be constructed by earthmoving equipment.
- Dike width shall be minimum 10 feet, but not less than 15 feet (except on a steep resistance lot where a 30 foot minimum dike width would apply).
- Thickness - not less than 6 inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where changes of slope occur.
- Filter Cloth - will be placed over the entire area prior to placing of stone. Filter will not be fastened on a slope facing resistance lot.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a portable berm with 3:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may include periodic top dressing with additional stone as conditions demand and rapid and/or cleanup of any material used to top sediment. All material spilled, dropped, washed or tracked onto public right-of-way must be removed immediately.
- Washing - Where shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area established with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

FLAN DRENEL STABILIZATION

TYPE OF DISTURBANCE	OPTION	FLAN A	FLAN B
1	1-3-02	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3-1-02	SEED AND STRAW MULCH	SEED AND STRAW MULCH
3	5-1-02	SEED WITH RATE OF SOO	LINED RIP-RAP 4-8"
4	8-1-02	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

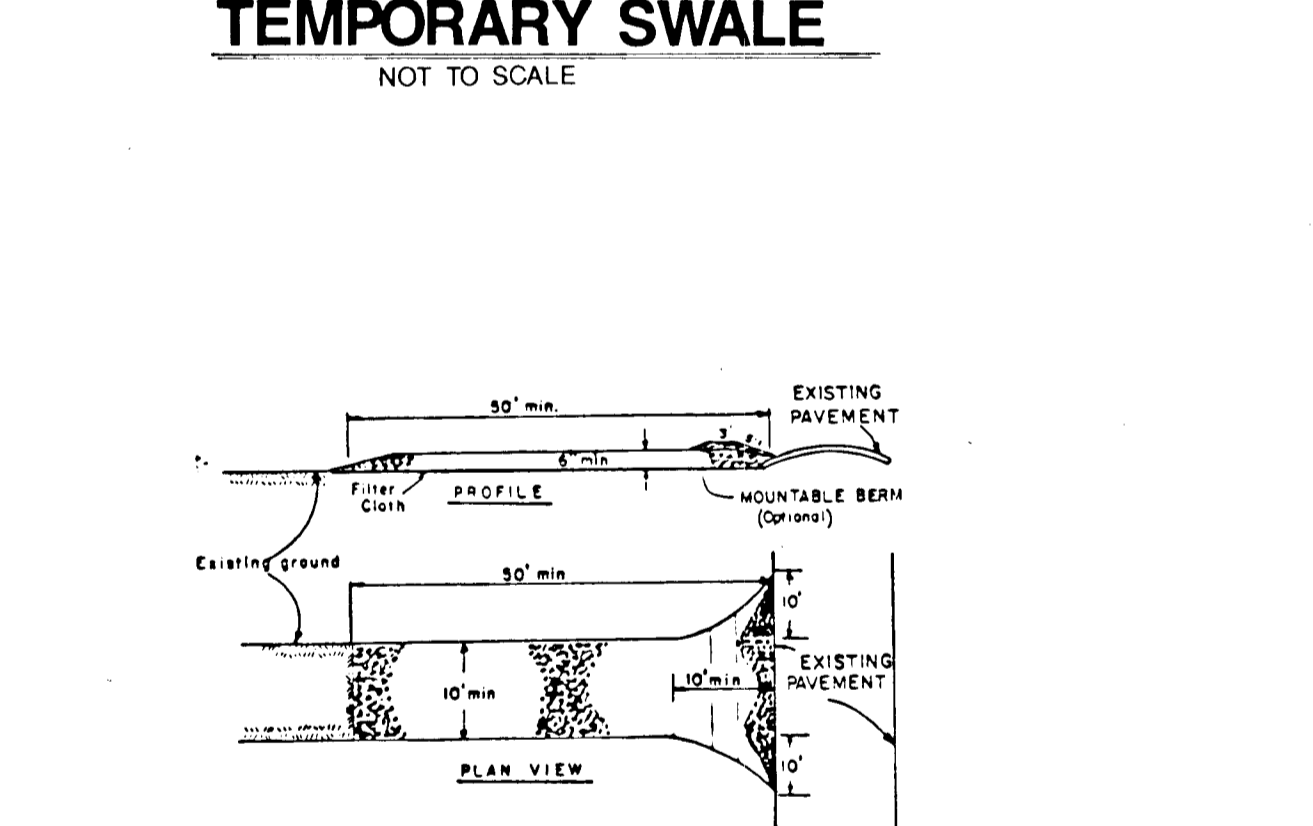
1. Stone to be 2 inch stone, or recycled concrete equivalent, in a layer at least 3 inches thick and be pressed into the soil by construction equipment.
2. Rip-rap to be 4-8 inches in a layer at least 8 inches thick and pressed into the soil by construction equipment.
3. Approved equivalents can be substituted for any of the above materials.
4. Periodic inspection and needed maintenance must be provided after each rain event.

EARTH DIKE
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

- All temporary swales shall have a minimum positive grade to an outlet.
- Diverted runoff from a disturbed area shall be conveyed to a sediment trapping device.
- Diverted runoff from an undisturbed area shall be conveyed to an undisturbed area of similar vegetation.
- All trees, shrubs, stumps, obstructions, and other obstructions shall be removed and disposed of so as not to interfere with the proper functioning of the swale.
- The swale shall be installed on a slope of 1:1 or less. A cross-section shall be provided to show the minimum depth and width of the swale. The swale shall be installed on a slope of 1:1 or less.
- All earth removal and needed maintenance shall be provided so that it will not interfere with the functioning of the swale.
- Stabilization shall be as per the chart below:



CONSTRUCTION SPECIFICATIONS:

- Stone Size - One (1) stone, or recycled concrete equivalent.
- Length - As required, but not less than 15 feet (except on a steep resistance lot where a 30 foot minimum dike width would apply).
- Thickness - not less than 6 inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where changes of slope occur.
- Filter Cloth - will be placed over the entire area prior to placing of stone. Filter will not be fastened on a slope facing resistance lot.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a portable berm with 3:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may include periodic top dressing with additional stone as conditions demand and rapid and/or cleanup of any material used to top sediment. All material spilled, dropped, washed or tracked onto public right-of-way must be removed immediately.
- Washing - Where shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area established with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

"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 NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

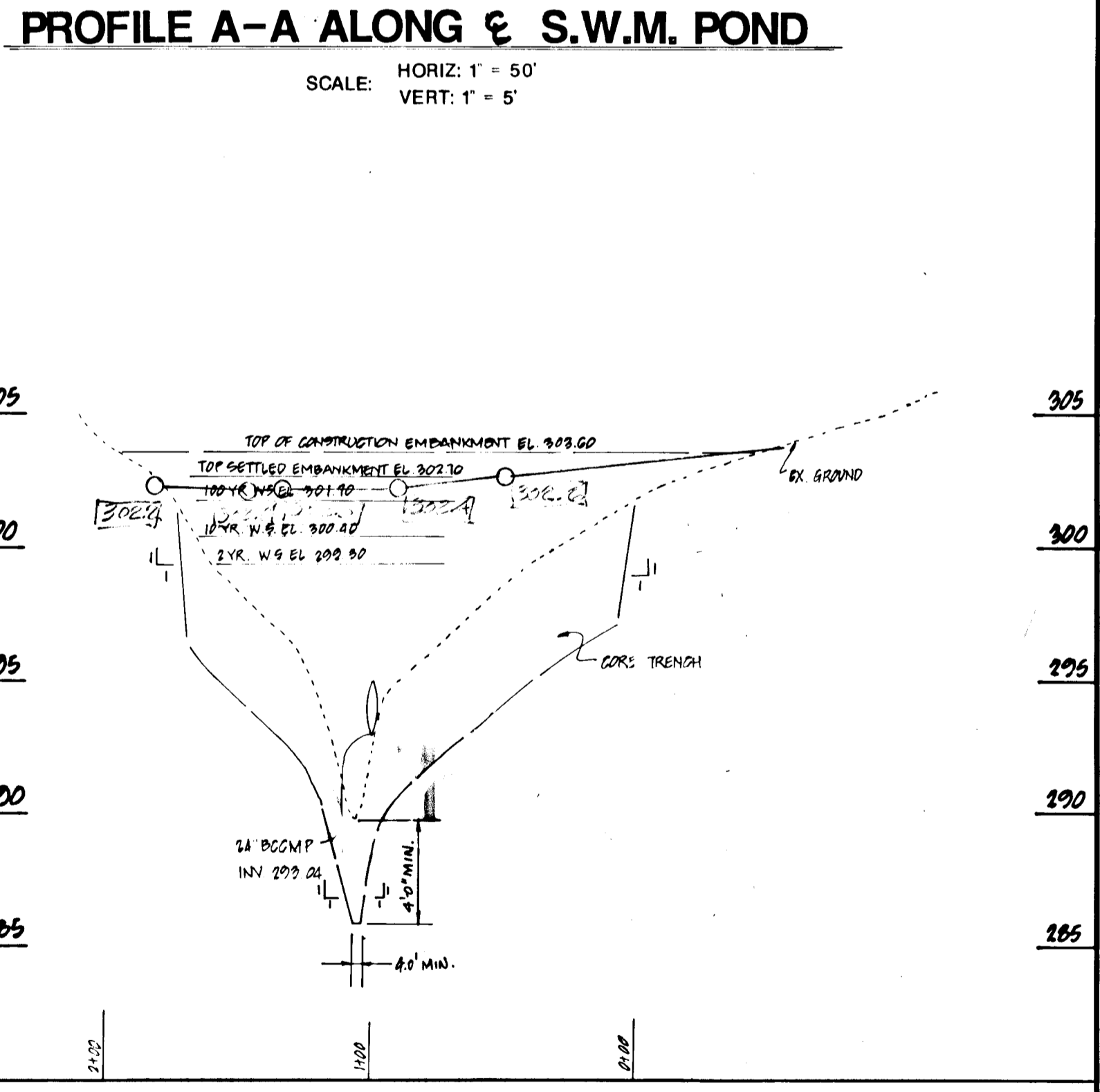
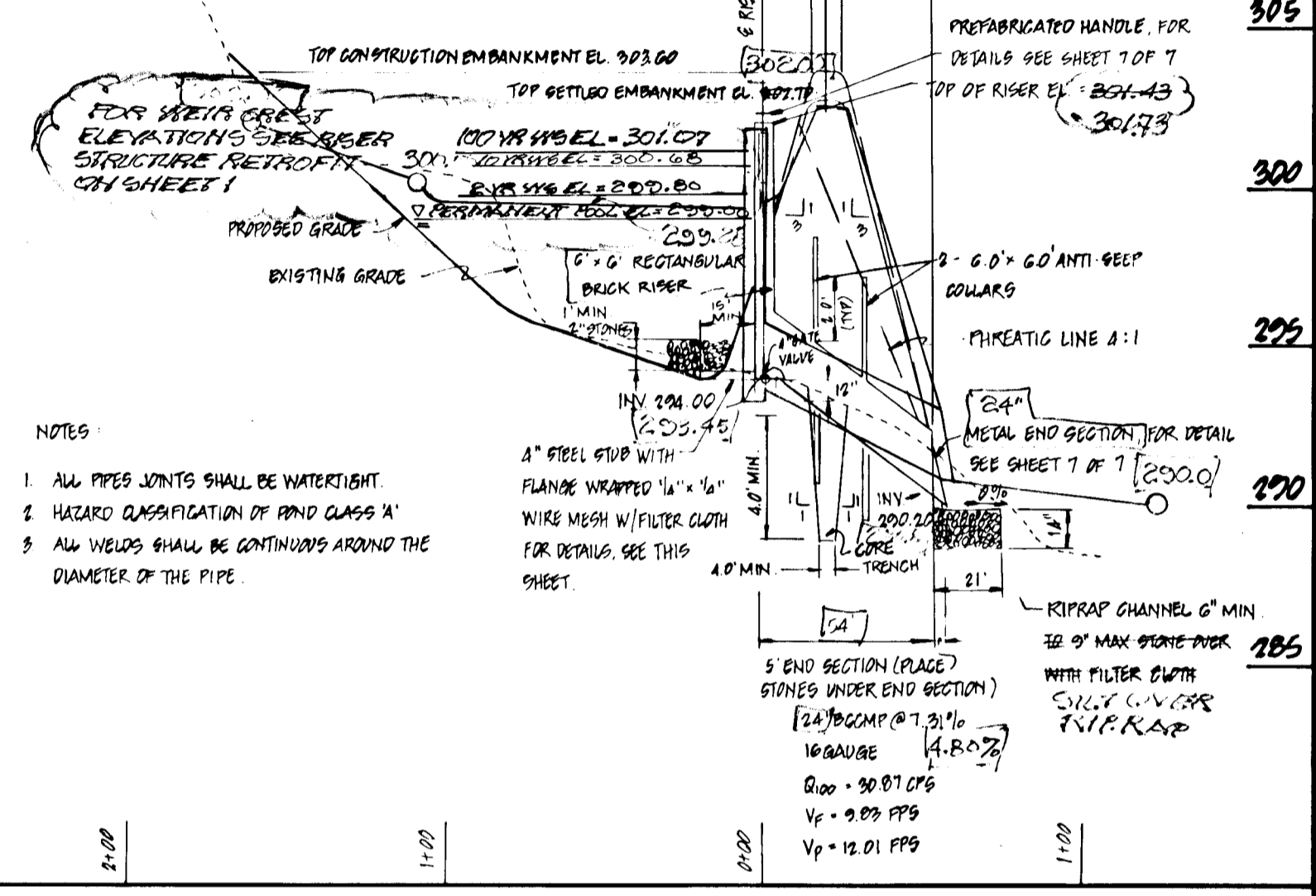
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
DATE: 10/26/89
DATE: 10-31-89

APPROVED HOWARD COUNTY DEPT. OF PLANNING AND ZONING
DATE: 11/18/89

THOMAS L. WILEY, PROFESSIONAL ENGINEER
DATE: 6/5/89

J. HELMUTZ, SOIL CONSERVATION SERVICE
DATE: 8/10/89

R. ZIEGLER, HOWARD SOIL CONSERVATION DISTRICT
DATE: 8/10/89



REVISIONS

DESIGNED	DATE	BY	DESCRIPTION
K. CHAVARA	10/80		
D. PETERS	10/80		
J. ESCALANTE	11/80		
T. WILEY	11/89		

Dewberry & Davis
ARCHITECTS - ENGINEERS - PLANNERS - SURVEYORS
3300 N. RIDGE ROAD, SUITE 100
ELLCOTT CITY, MD. 21043
(301) 461-7478

OWNER & DEVELOPER

DELANCA CORPORATION
COMMERCE CENTER PLAZA
SUITE 275
1777 REISTERSTOWN ROAD
BALTIMORE, MARYLAND 21208

JOSEPH F. WHEELER
6288 MONTGOMERY ROAD
EUKRIDGE, MARYLAND 21227

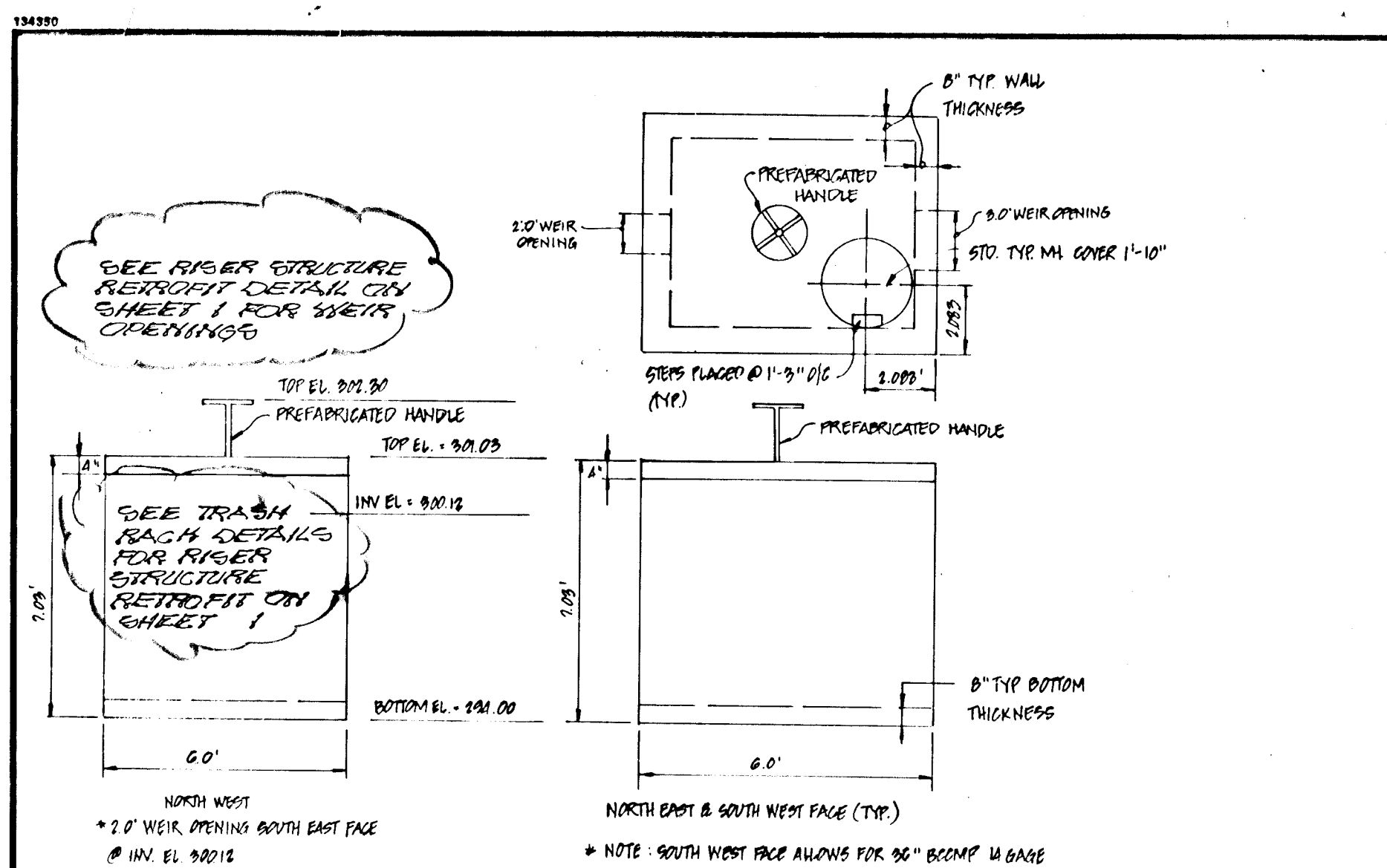
DRAINAGE AREA MAP, SOILS MAP & SEDIMENT CONTROL DETAILS

MARKHAM WOODS

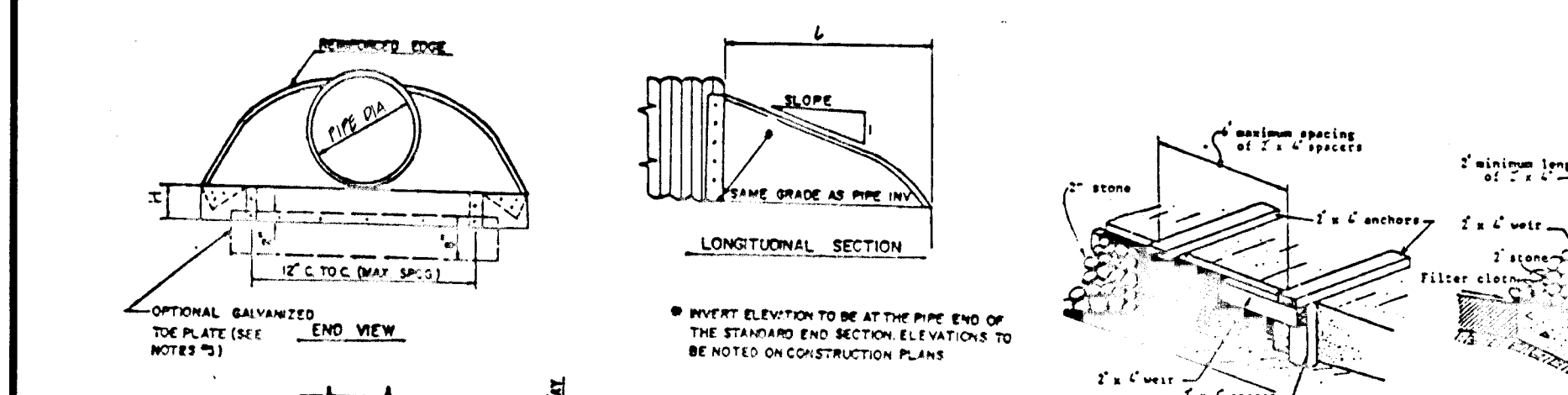
TAX MAP 37 PARCELS 85 AND 501
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
PREVIOUS SUBMITTALS: P-85-109, S-88-60
P-88-84, W-89-70
FILE NO: PD/3-EC SHEET 6 OF 7

1475



OUTLET STRUCTURE & TRASH RACK DETAIL
NOT TO SCALE



METAL END SECTION
NOT TO SCALE



CURB INLET PROTECTION
NOT TO SCALE

TABLE OF DIMENSIONS

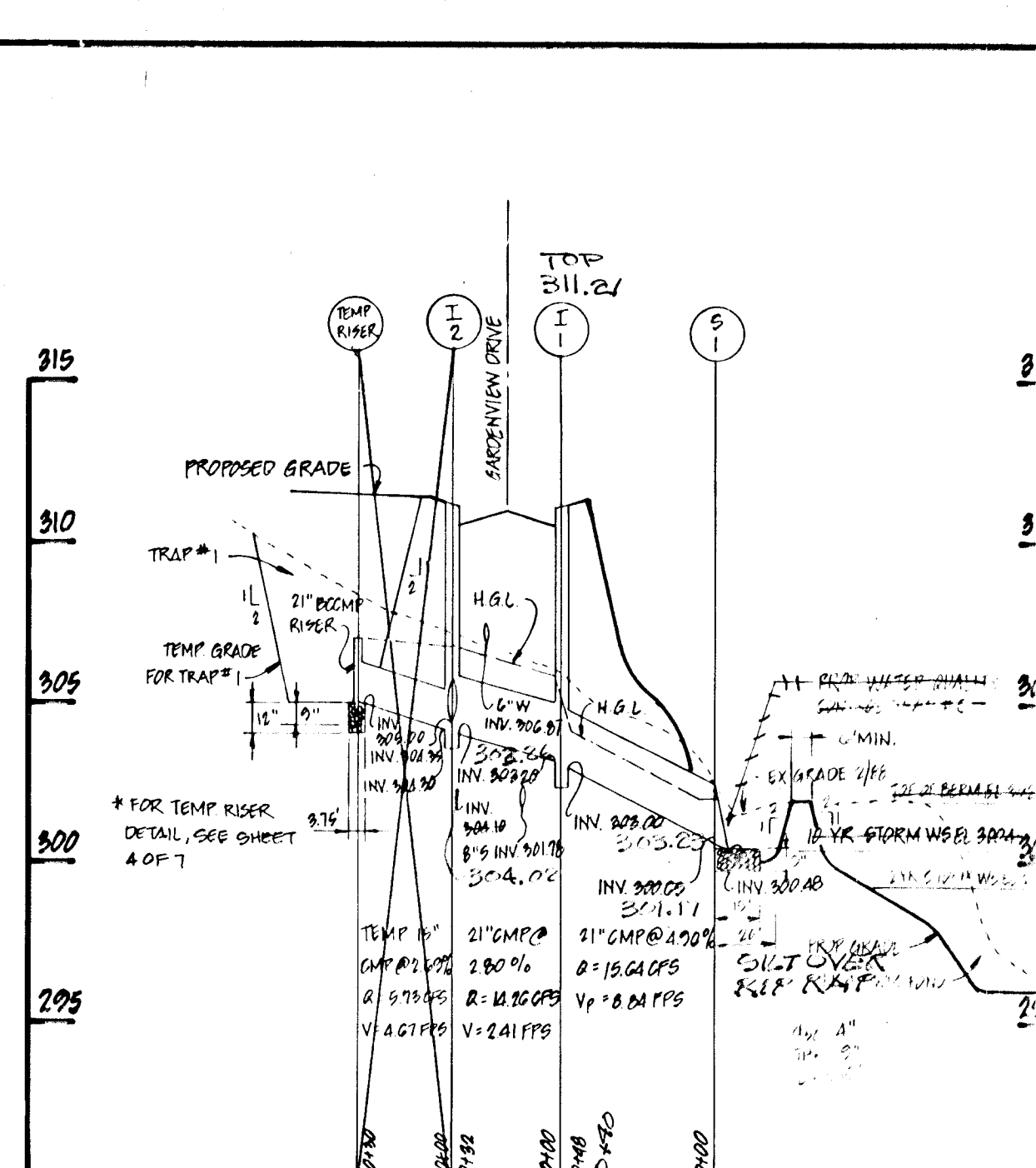
INCH DIA.	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
W/GRATE	11 1/2"	13 1/2"	15 1/2"	17 1/2"	19 1/2"	21 1/2"	23 1/2"	25 1/2"	27 1/2"	31 1/2"
W/O GRATE	11 1/2"	13 1/2"	15 1/2"	17 1/2"	19 1/2"	21 1/2"	23 1/2"	25 1/2"	27 1/2"	31 1/2"

SWALE INLET PROTECTION
NOT TO SCALE

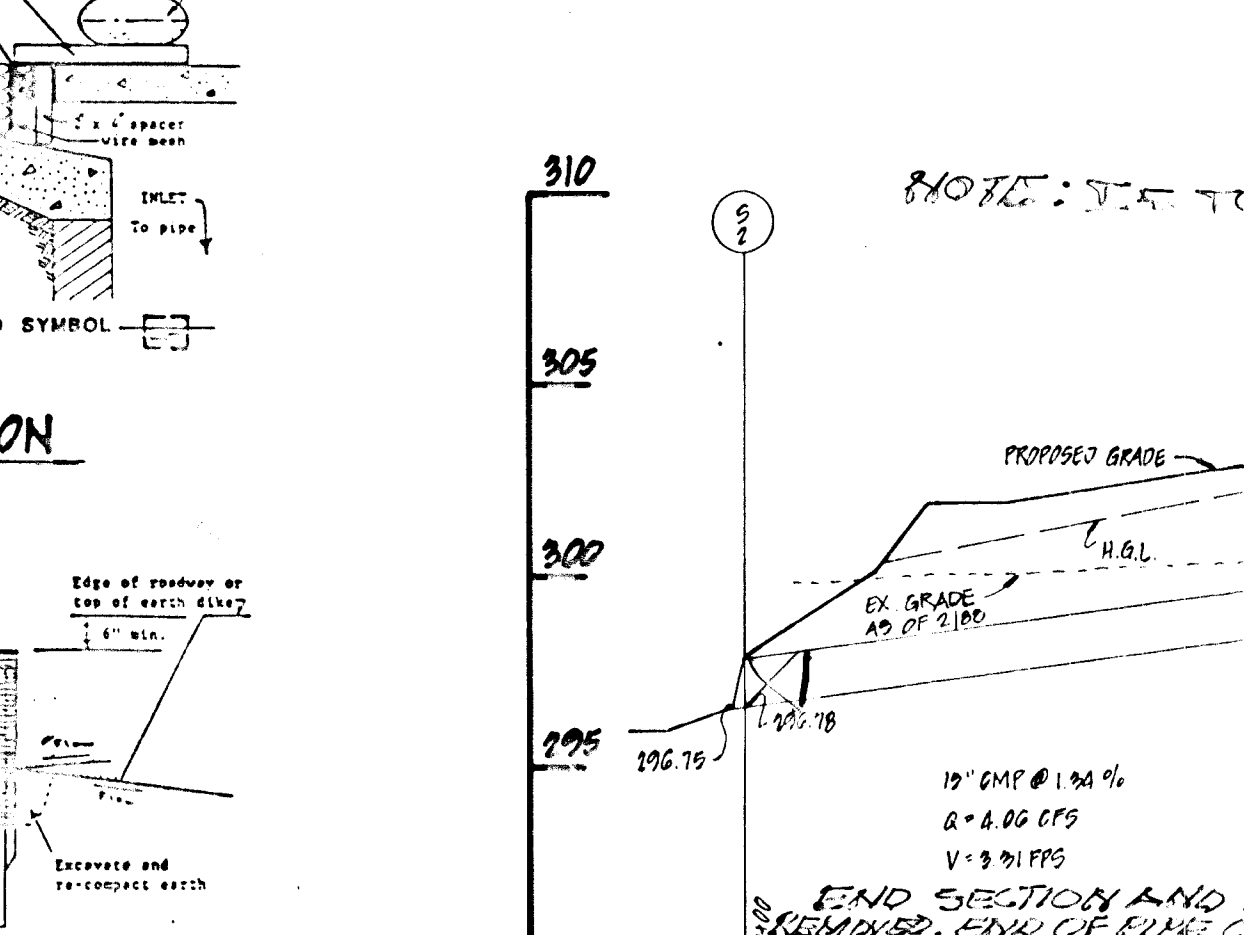
GRASSED WATERWAY LEGEND

BURDER	"D" DIMENSION	"D" DIMENSION	VEGETATIVE COVER
1	12" - 18"	12" - 18"	GRASS (SEE SPECIFICATIONS)
2	18" - 24"	18" - 24"	GRASS & WOOD CHIPS MIXTURE
3	24" - 36"	24" - 36"	GRASS & WOOD CHIPS MIXTURE

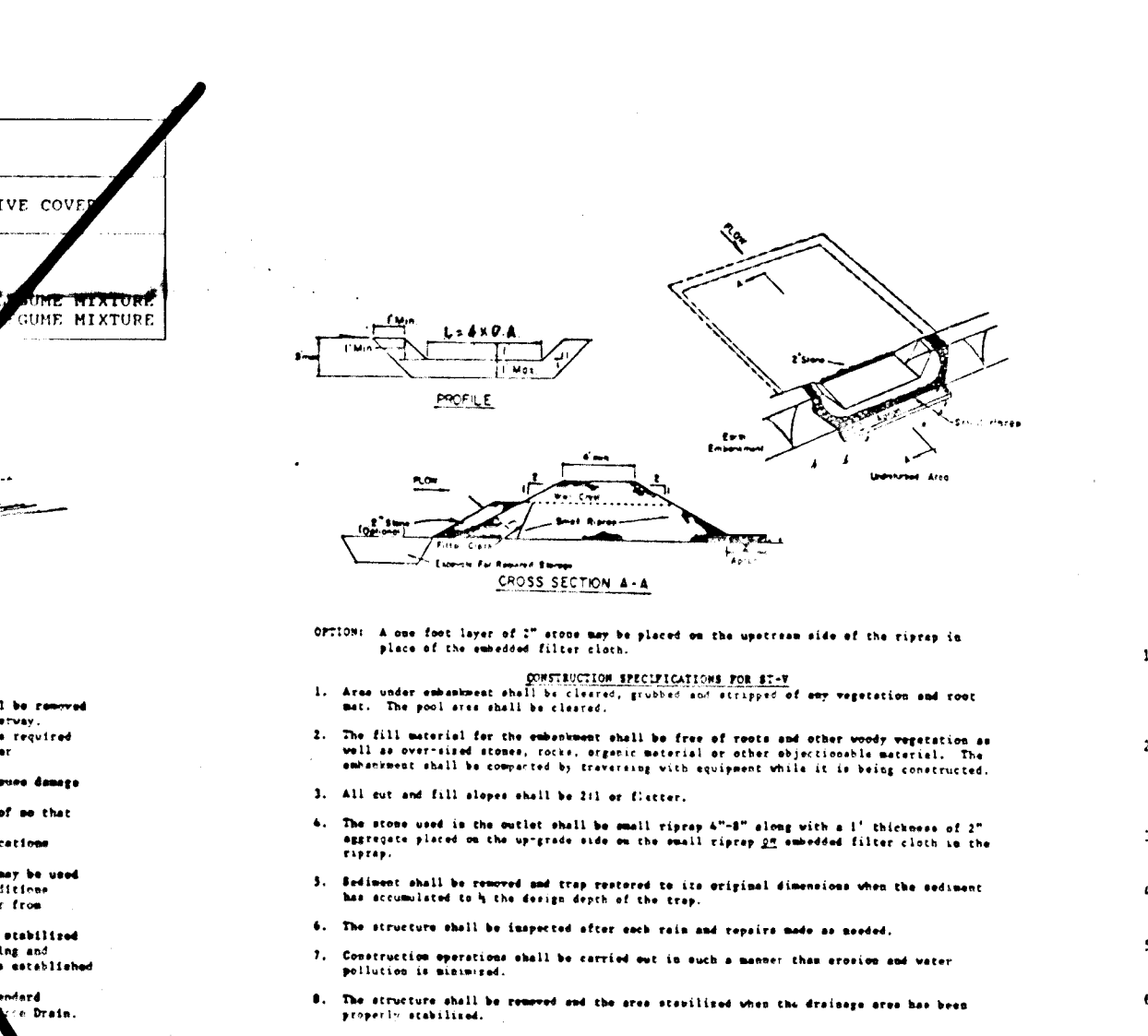
GRASSED WATERWAY
NOT TO SCALE



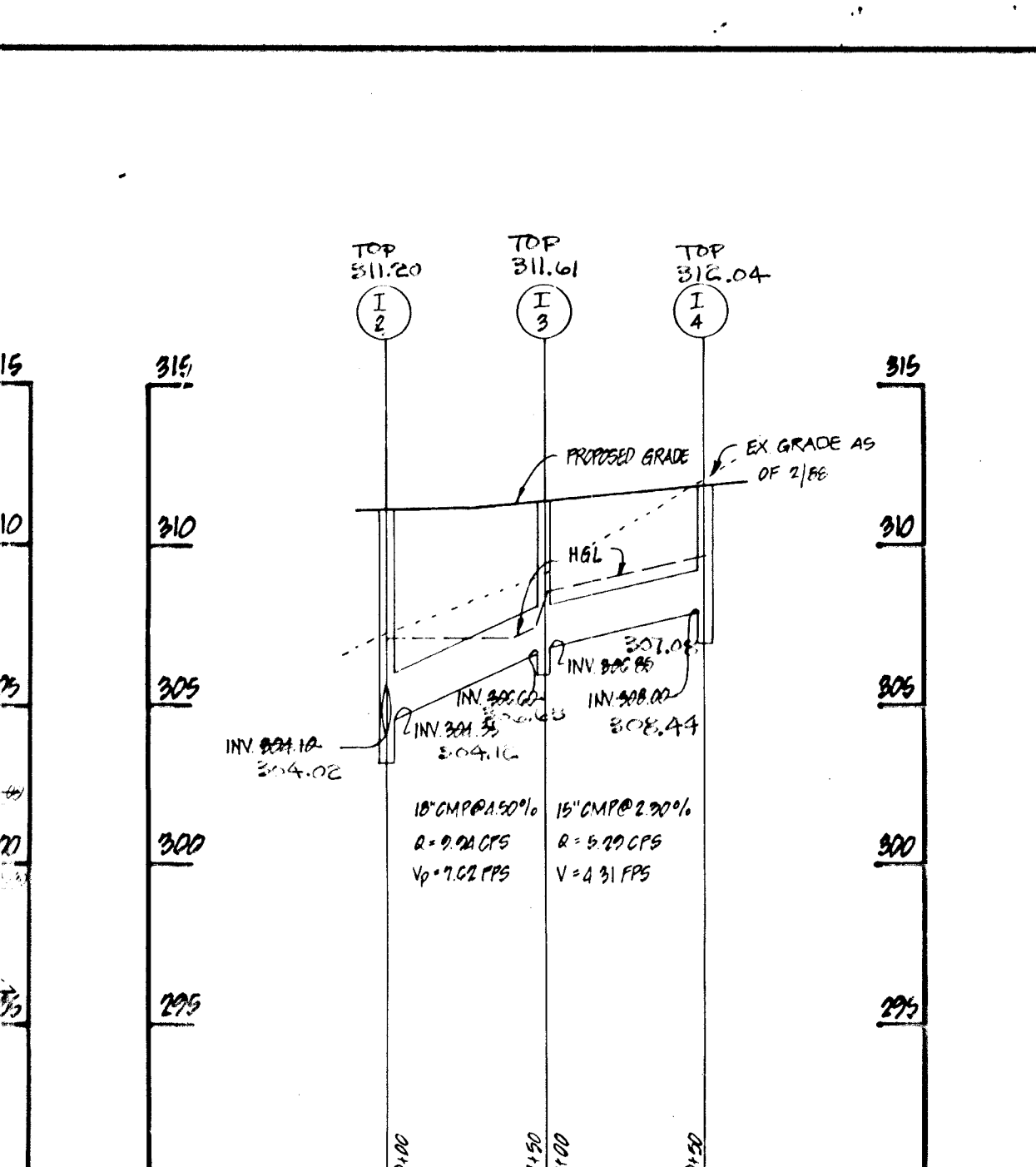
PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



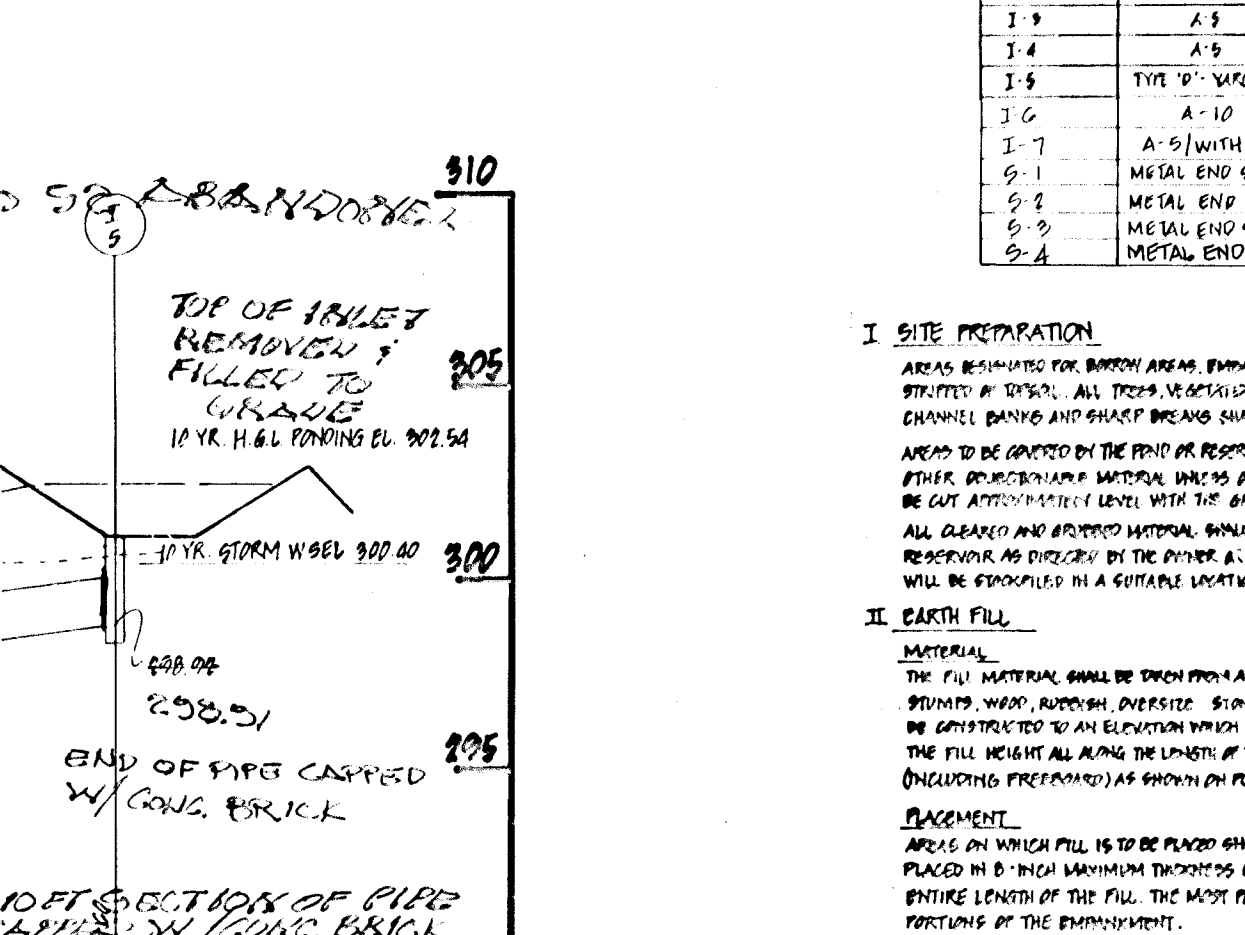
PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



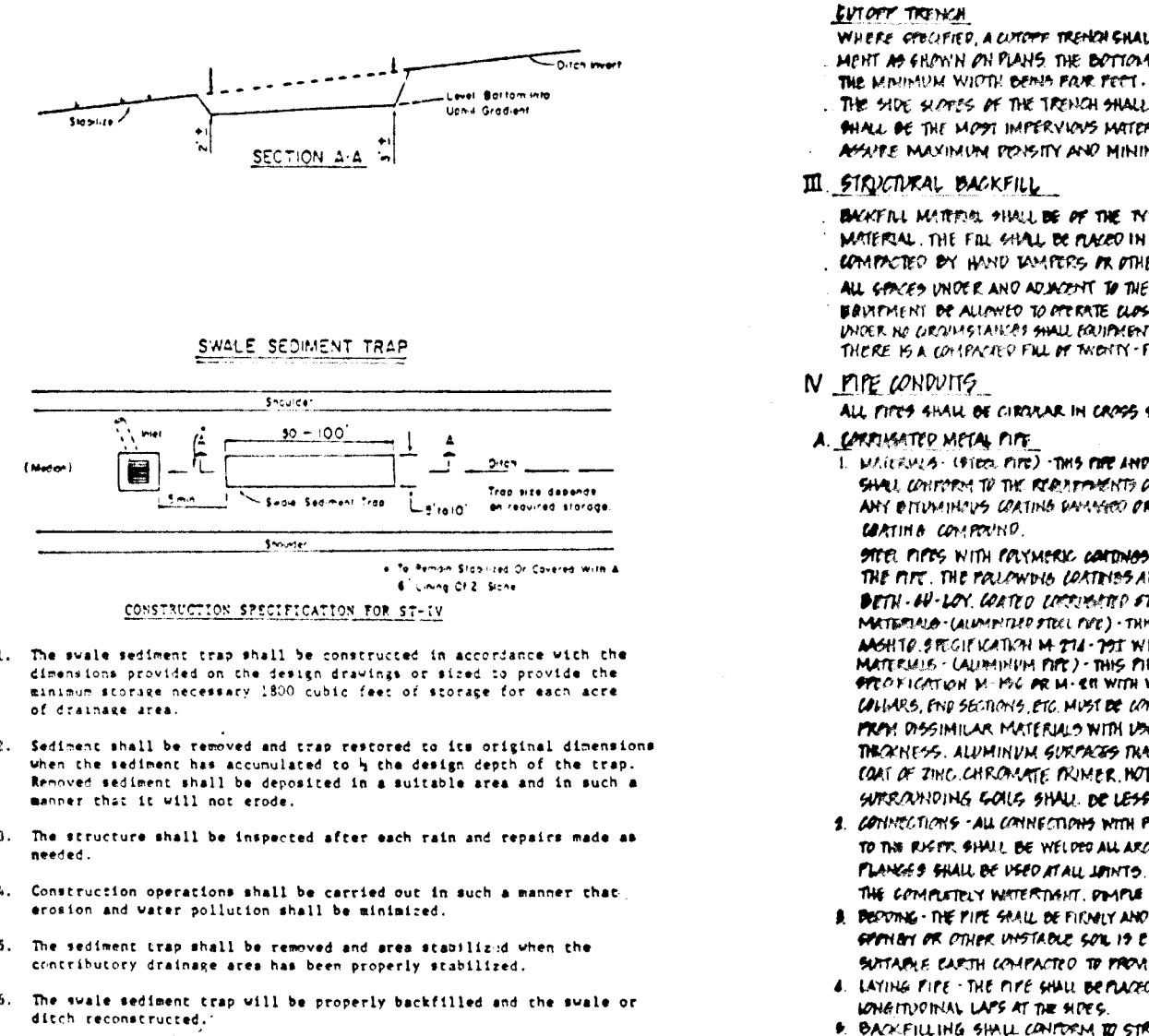
STONE OUTLET SEDIMENT TRAP
NOT TO SCALE



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



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



SWALE SEDIMENT TRAP
NOT TO SCALE

RECORD OF SOIL EXPLORATION

DATE	NO.	DEPTH	DIAMETER	NO. OF SAMPLES	DEPTH OF SAMPLES	DESCRIPTION	REMARKS
10/27/89	1	0-10'	12"	1	0-10'	TOP TO gray slightly silty clay with trace of clay and trace of mica. Moist. soft to medium stiff.	
10/27/89	2	10-15'	12"	2	10-15'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	3	15-20'	12"	3	15-20'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	4	20-25'	12"	4	20-25'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	5	25-30'	12"	5	25-30'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	6	30-35'	12"	6	30-35'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	7	35-40'	12"	7	35-40'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	8	40-45'	12"	8	40-45'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	9	45-50'	12"	9	45-50'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	10	50-55'	12"	10	50-55'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	11	55-60'	12"	11	55-60'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	12	60-65'	12"	12	60-65'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	13	65-70'	12"	13	65-70'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	14	70-75'	12"	14	70-75'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	15	75-80'	12"	15	75-80'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	16	80-85'	12"	16	80-85'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	17	85-90'	12"	17	85-90'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	18	90-95'	12"	18	90-95'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	19	95-100'	12"	19	95-100'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	
10/27/89	20	100-105'	12"	20	100-105'	Dark gray silt with trace of sand and trace of mica. Moist. soft to medium stiff.	

SOIL BORING LOG
(SEE HARDENED COPY SOIL REPORT)

STRUCTURE SCHEDULE

ITEM NO.	TYPE	QTY.	UNIT	AMOUNT	REMARKS
1-1	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-2	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-3	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-4	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-5	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-6	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-7	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-8	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-9	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-10	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-11	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-12	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-13	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-14	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-15	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-16	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-17	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-18	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-19	A-6	100	EA	100.00	SEE PLAN FOR LOCATION
1-20	A-6	100	EA	100.00	SEE PLAN FOR LOCATION

I. SITE PREPARATION
AREAS BEHIND THE SWALE AREAS, EMBANKMENT, AND STRUCTURE SHALL BE CLEARED, GRUBBED AND EXPOSED TO SOIL. ALL TOPSOIL, STUMP, ROOTS AND OTHER OBSTRUCTIVE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHOULDER BROADS SHALL BE GRADDED TO NO STEEPER THAN 1:1.

II. EARTH FILL
MATERIAL: THE FILL MATERIAL SHALL BE DRY PACKED, PREPARED APPROX. 10% BELOW FINISH GRADE. SWALE, ROAD, AND OTHER AREAS SHALL BE GRUBBED AND EXPOSED TO SOIL. THE EMBANKMENT SHALL BE CONSTRUCTED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE FILL SHALL BE COMPACTED TO THE FINISH GRADE. THE FILL SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE FILL SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS.

III. STRUCTURAL BACKFILL
BACKFILL MATERIAL SHALL BE THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE STRUCTURE. THE FILL SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE FILL SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE FILL SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS.

IV. EARTH CONDUITS
ALL PIPES SHALL BE CORROSION RESISTANT. THE PIPES SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE PIPES SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE PIPES SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS.

V. CONCRETE
CONCRETE SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE CONCRETE SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE CONCRETE SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS.

VI. SLOPE PROTECTION
SLOPE PROTECTION SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE SLOPE PROTECTION SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE SLOPE PROTECTION SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS.

VII. EROSION AND SEDIMENT CONTROL
EROSION AND SEDIMENT CONTROL SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE EROSION AND SEDIMENT CONTROL SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS. THE EROSION AND SEDIMENT CONTROL SHALL BE PLACED IN LAYERS NOT EXCEEDING 18" IN THICKNESS.

REVISIONS

DATE	BY	DESCRIPTION
10/27/89	K. CHAVARA	DESIGNED
10/27/89	D. PETERS	DRAWN
10/27/89	J. ESCALANTE	CHECKED
10/27/89	J. WILEY	APPROVED

Dewberry & Davis
ARCHITECTS - ENGINEERS - PLANNERS - SURVEYORS
3300 N. RIDGE ROAD, SUITE 100
ELLICOTT CITY, MD. 21043
(301) 461-7478

OWNED/DEVELOPER
STORM DRAIN PROFILES AND SEDIMENT CONTROL DETAILS
MARKHAM WOODS
TAX MAP 37 PARCELS 85 AND 501
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

1475