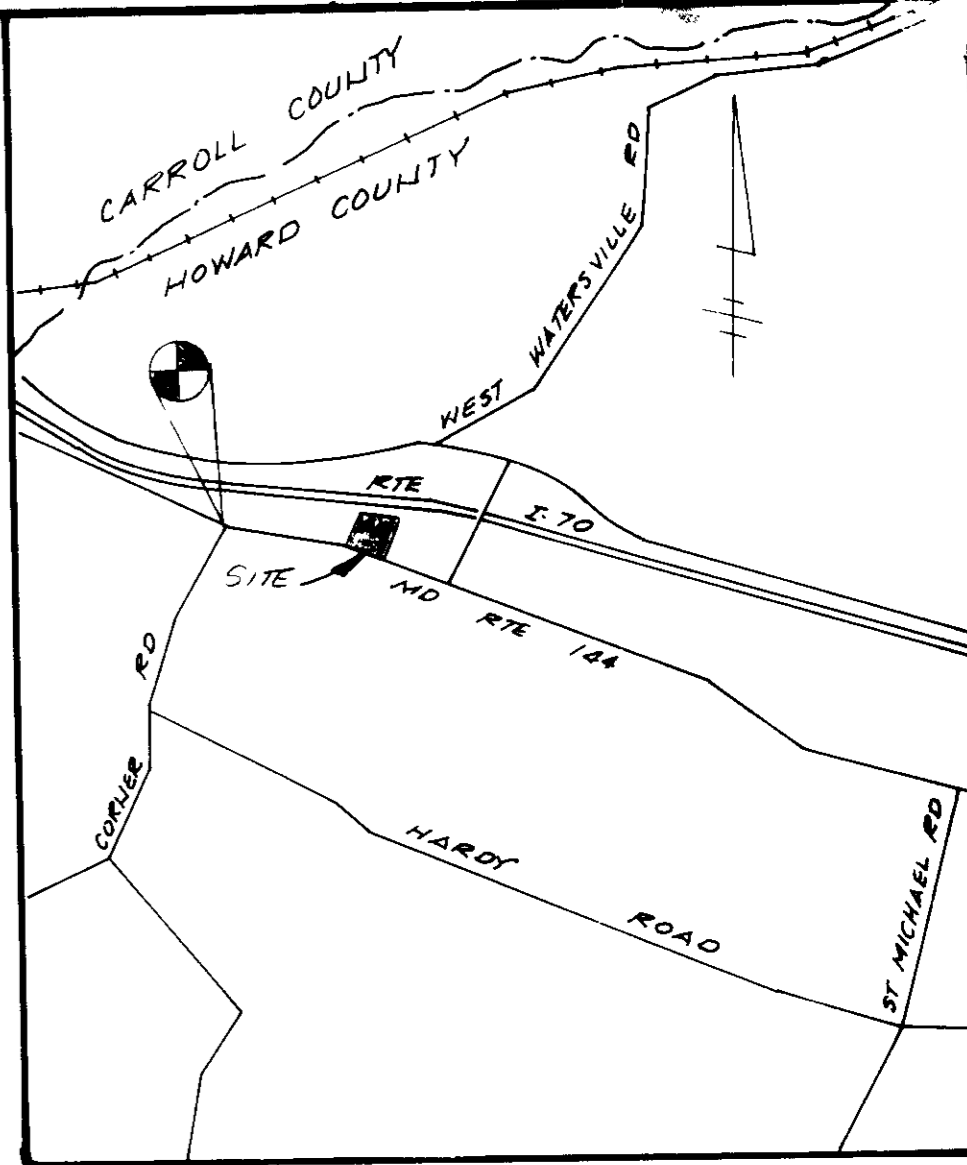


APPROVED FOR THE WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE 2/1/88
 DATE 2/19/88
 DATE 2/26/88
 DATE 2/24/88

APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE 12-30-87

BALTIMORE NATIONAL PIKE
 ROUTE 1-70

- LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - PROPOSED SPOT ELEV (TC TO C.R.E.)
 - PROPOSED REIN CONC PAVING
 - PROPOSED LIGHTNING
 - PROPOSED CONC CURB & UTTER
 - PROPOSED STORM DRAIN
 - PROPOSED 2 1/2" MIN CALIPEX DECIDUOUS TREE
 - PROPOSED DECIDUOUS SHRUBS
 - PROPOSED GRASS AND COVER PLANTS
 - PROPOSED SPARKING LOCATION
 - PERCOLATION TEST LOCATION
 - PROPOSED WATER WELL
 - LOADING DIRECTION LINES
 - PROPOSED EL. CONTIG FIELD

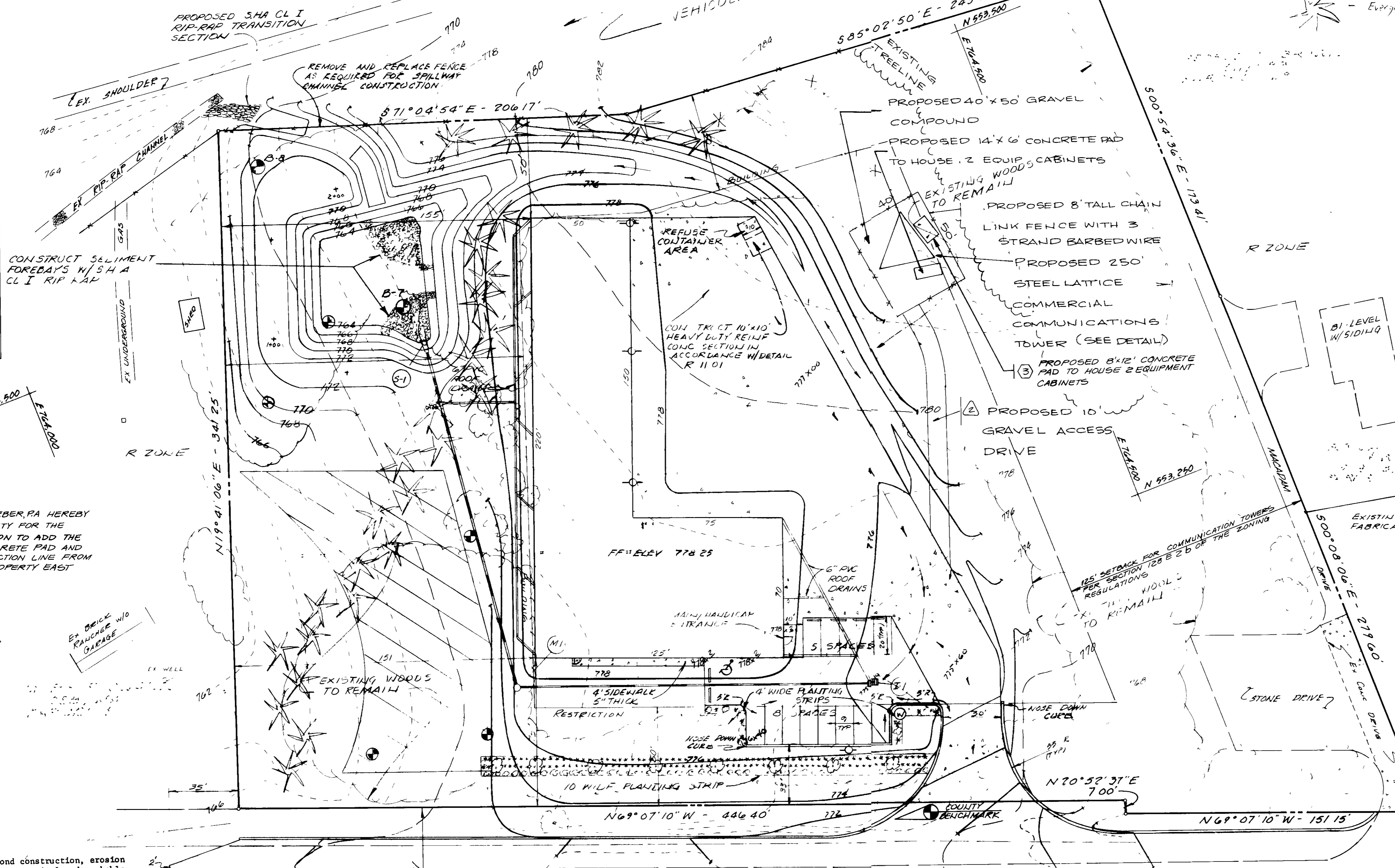
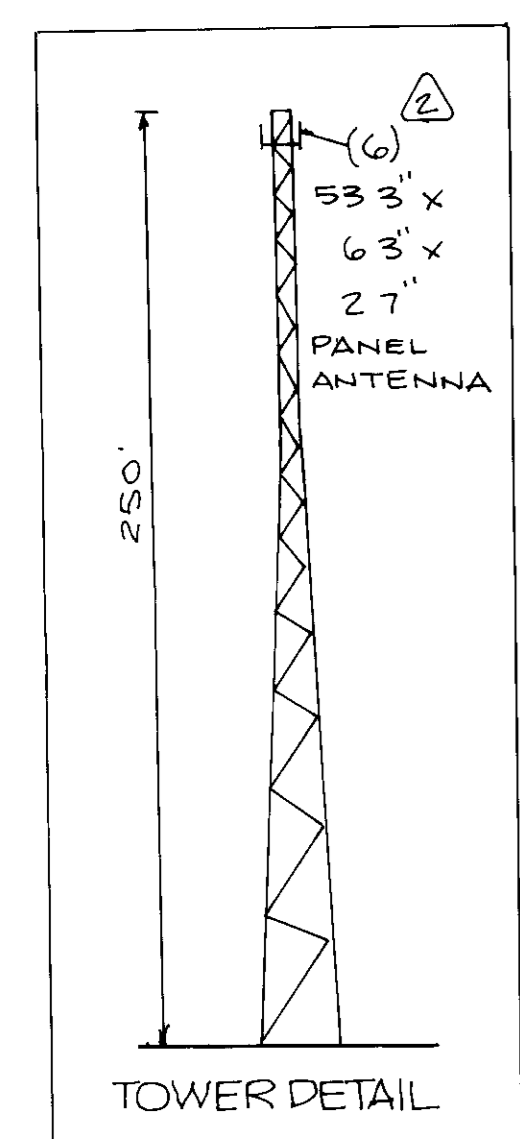


VICINITY MAP
SCALE 1"=2000'

- GENERAL NOTE**
- CONTRACTOR SHALL BE RESPONSIBLE WITH THE HOWARD COUNTY HEALTH DEPARTMENT FOR THE INSTALLATION AND MAINTENANCE OF ALL UTILITIES PERMITTED.
 - REFERENCE TO ANYTHING ON THE E PLANS PERTAINING TO STANDARD DETAILS IN THE DESIGN MANUAL VOLUME II.
 - BEARING AND ELEVATION DATA SHOWN HEREON HAS BEEN REFERRED TO THE MARYLAND STATE MAP SYSTEM AND HAVE BEEN TAKEN FROM THE REFERENCED SUBDIVISION PLAT.
 - ELEVATIONS SHOWN HEREON ARE BASED ON THE HOWARD COUNTY M.B.M.
 - BENCHMARK DATA HOWARD COUNTY BENCHMARK TA 3928002 N 55°31'43.86"E E 76°32'7.63"E ELEV 773.20' 3/4" REINFORCED ROL 0.5" BELOW SURFACE ON NORTH SIDE OF RHT 174 R/W 3 MILE EAST OF LOUISIANA ROAD HOWARD COUNTY BENCHMARK TA 91 801 N 55°14'42.11"E E 76°19'42.11"E ELEVATION 771.15' 1/4" MINIMUM WITH A BENCHMARK OF 174 144 AND 174 144 ROAD
 - ANY CHANGE IN INCREASE IN EMPLOYEE COUNTS SHALL REQUIRE APPROVAL OF THE DEPARTMENT OF PLANNING AND ZONING.
 - THE CONTRACTOR SHALL CONTACT MISS UTILITY (1-800-951-7777) AT LEAST 48 HOURS PRIOR TO STARTING WORK AND THE HOWARD COUNTY TRAFFIC INSPECTION/SURVEY DIVISION (192-2417) AT LEAST 24 HOURS PRIOR TO START WORK.
 - ALL ROOF DRAINS TO BE CONNECTED TO STORM DRAIN AS SHOWN ON PLAN.
 - TRENCH ELEVATIONS FOR UTILITIES TO BE IN ACCORDANCE WITH MARYLAND STD 14-201.
 - ALL LAMPING TO BE INSTALLED ON THE EAST END OF SITE DUE TO EXISTING GROUND COVER.
 - FINAL CONTOURS SHOWN FOR INFILTRATION BASIN ARE FOR CONSTRUCTION HEIGHT OF DAM (FINAL GRADE). THE INFILTRATION BASIN IS TO BE CONSTRUCTED IN THE SAME SHAPE AND LOCATION AS THE PERMANENT BASIN EXCEPT THAT ITS ELEVATIONS ARE TO BE EXACTLY TWO FEET HIGHER THAN FINAL GRADE (SEE SEDIMENT CONTROL PLAN).
 - THE LIGHTING SHALL BE DIRECTIONAL IN NATURE AND SHALL NOT SHINE INTO ADJACENT PROPERTIES OR RIGHTS OF VIAY.

SITE ANALYSIS

1. TOTAL AREA OF SITE	4.455 AC (194,063 S.F.)
2. TOTAL OPEN SPACE REQ (20% OF 4.46 AC)	39,727 S.F.
3. TOTAL OPEN SPACE PROVIDED (70% OF 136,718 S.F.)	95,703 S.F.
4. TOTAL PERVIOUS AREA	1.2 AC
5. TOTAL IMPERVIOUS AREA	0.95 AC
6. PARKING REQUIRED OFFICE (2 EMP/1EA)	25 TOTAL
7. PARKING PROVIDED	13 TOTAL
8. HANDICAP PARKING SPACES REQ (1% OF 13)	1
9. HANDICAP PARKING SPA. PROVIDED	1
10. TOTAL AREA OF PARKING	1,000 S.F.
11. AREA OF LAWN	1,000 S.F.



GUTSCHICK LITTLE & WEBER, P.A. HEREBY ACCEPTS RESPONSIBILITY FOR THE MARCH 12, 1987 REVISION TO ADD THE PROPOSED 8' x 12' CONCRETE PAD AND TO ADJUST THE RESTRICTION LINE FROM THE RESIDENTIAL PROPERTY EAST OF THIS SITE.

Signature of Engineer: *David Weber*
 Date: 3/17/87

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.

Signature of Engineer: *Kevin L. Quillet*
 Date: 1-19-88
 Signature of Developer: *Paul K. Jensen*
 Date: 1-27-88

I certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction of a project will have a Certificate of Attendance at a 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.

LANDSCAPING SCHEDULE

PLANT NAME	COMMON NAME	SIZE	SPACING	REMARKS
ACER RUPEM	RED MAPLE	2 1/2" DIA	30' x 6' @ 5'	
QUERCUS ALBA	WHITE CRIMSON AZALEA	15" DIA	3' x 4' CONT.	
JUNIPERUS HORIZONTALIS	JUNIPER	15" DIA	3' x 4' CONT.	
PINUS NIGRA	AUSTRIAN PINE	2 1/2" DIA	30' x 2 ROWS	



Charles P. Gilmore
 No. 8055
 DATE 10/25/85

OWNER: WALLY'S IRON WORKS, INC
 ADDRESS: 17330 FREDERICK ROAD
 MT AIRY, MARYLAND 21771
 PHONE (301) 829-2393

ADDRESS CHART

LOT NUMBER	STREET ADDRESS
PARCEL 54	17560 FREDERICK ROAD
WALLY'S IRON WORKS, INC	
PLAT/BLK/BLK	ZONE
1202/021A/19	M-1
WATER CODE	SEWER CODE
WELL	SEPTIC

JENSEN-KELLER CORPORATION
 DEVELOPER/CONTRACTOR 301-788-9247

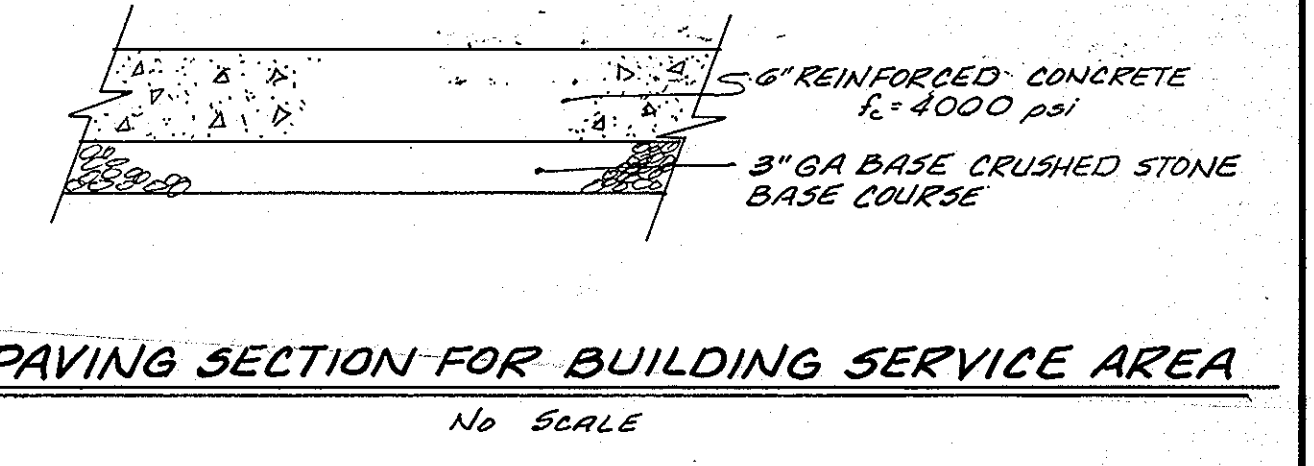
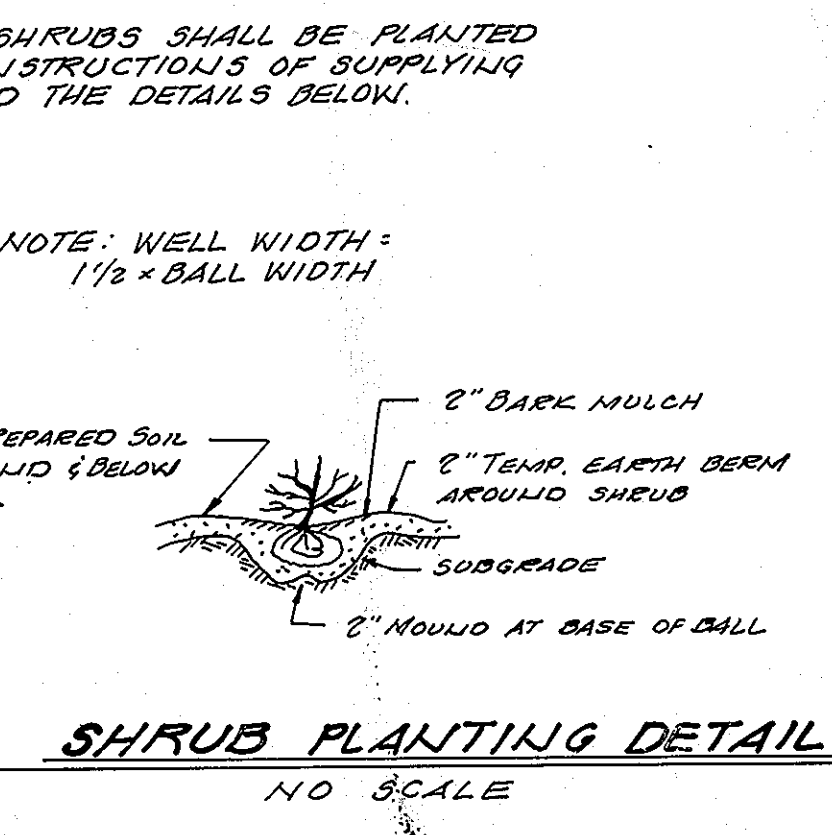
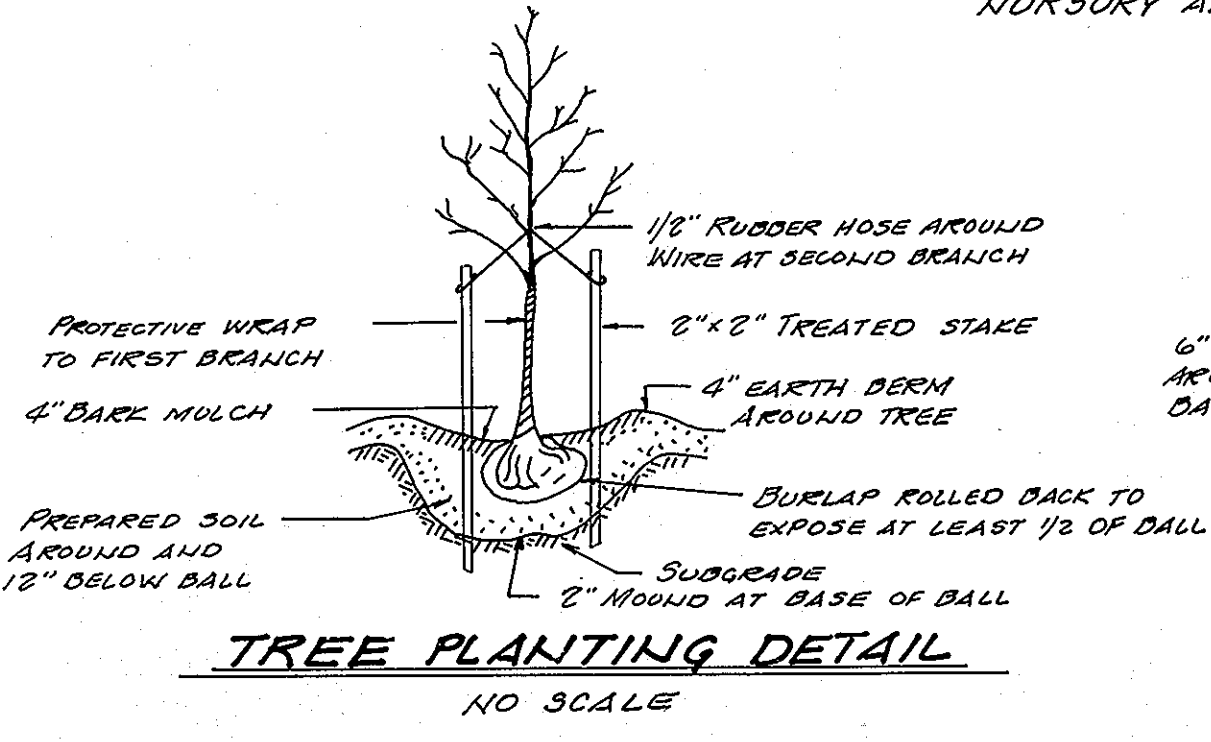
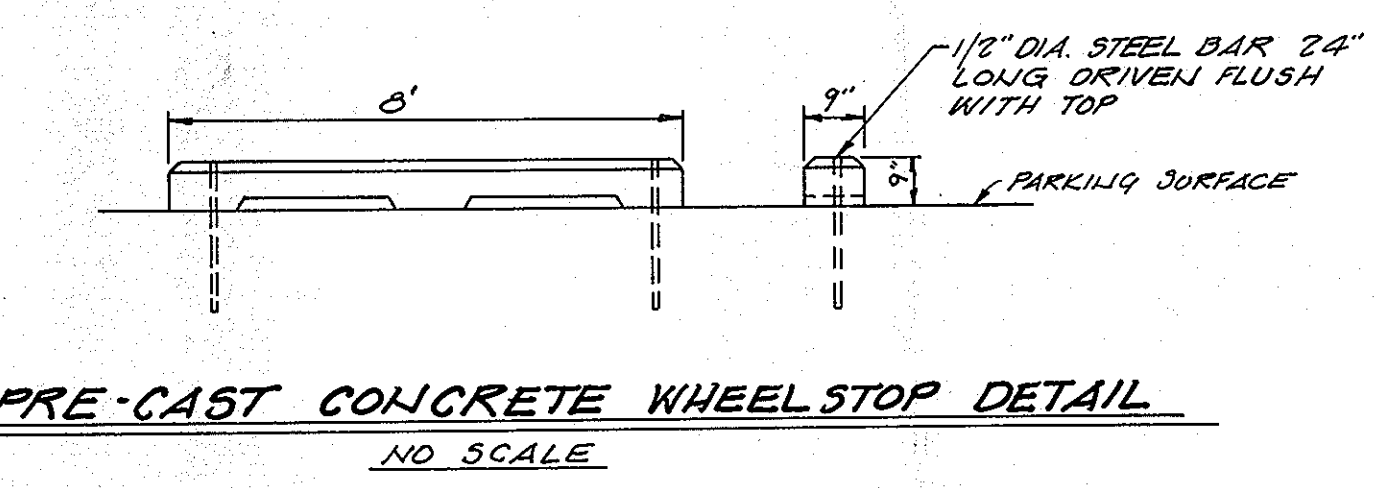
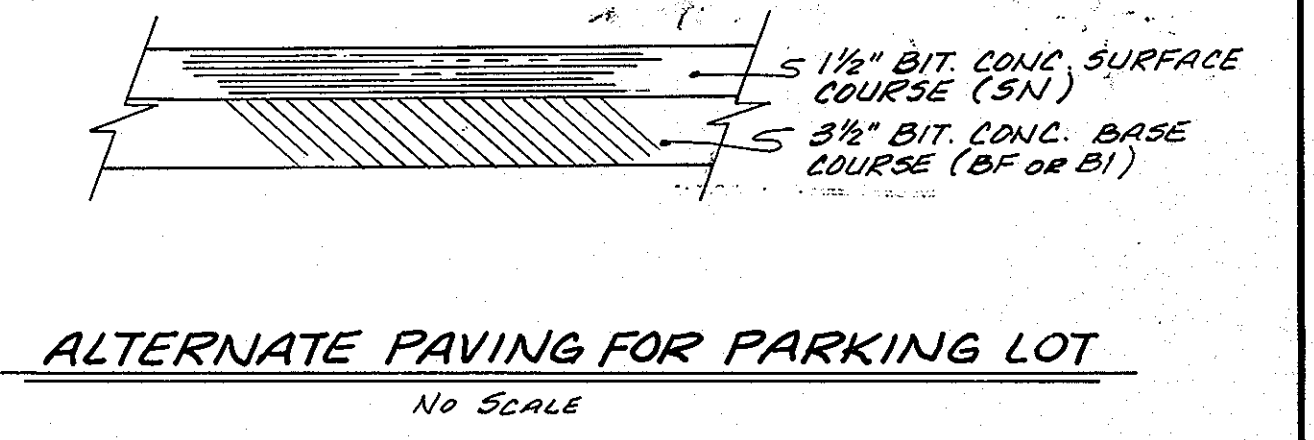
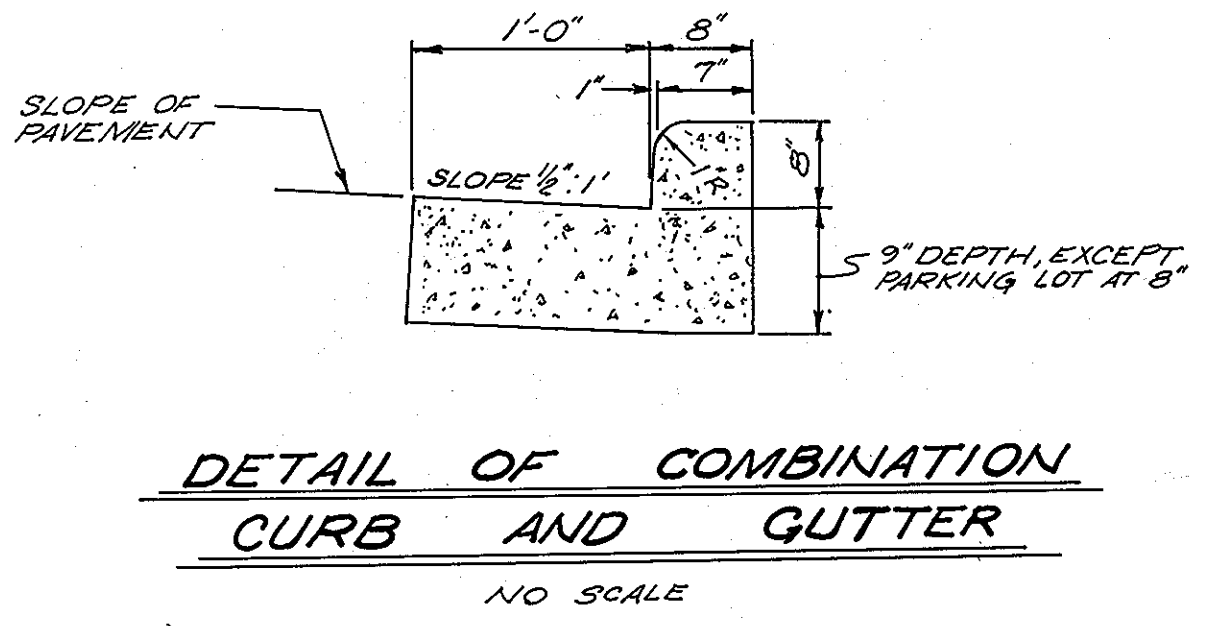
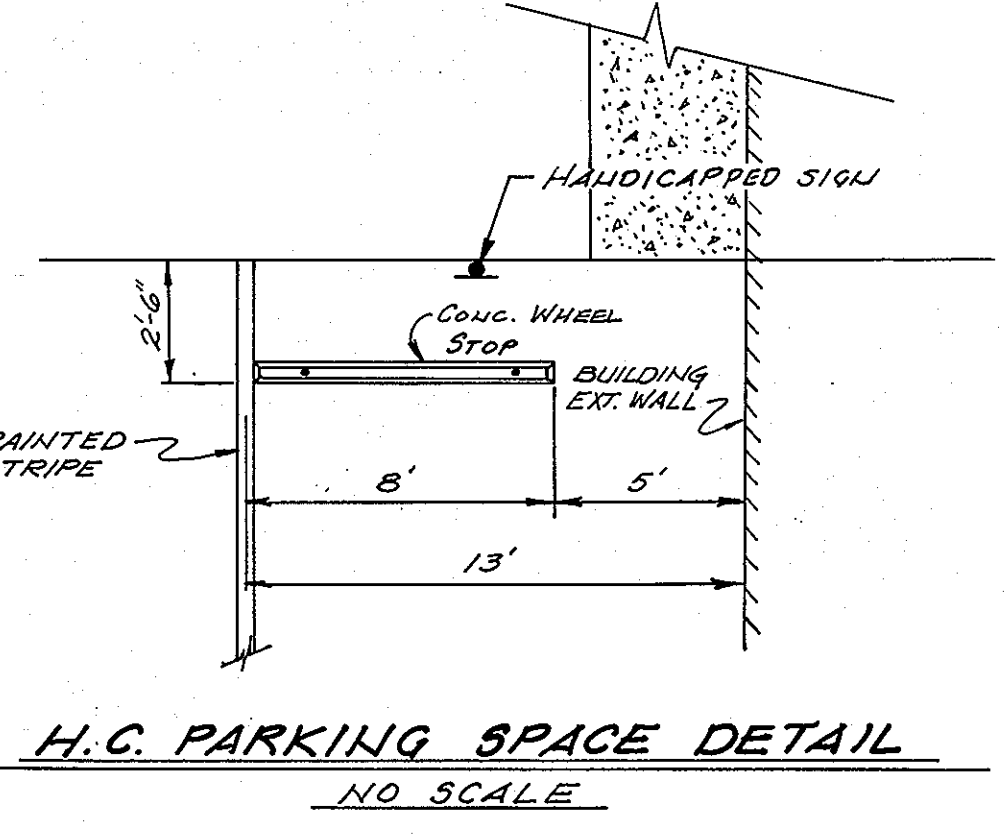
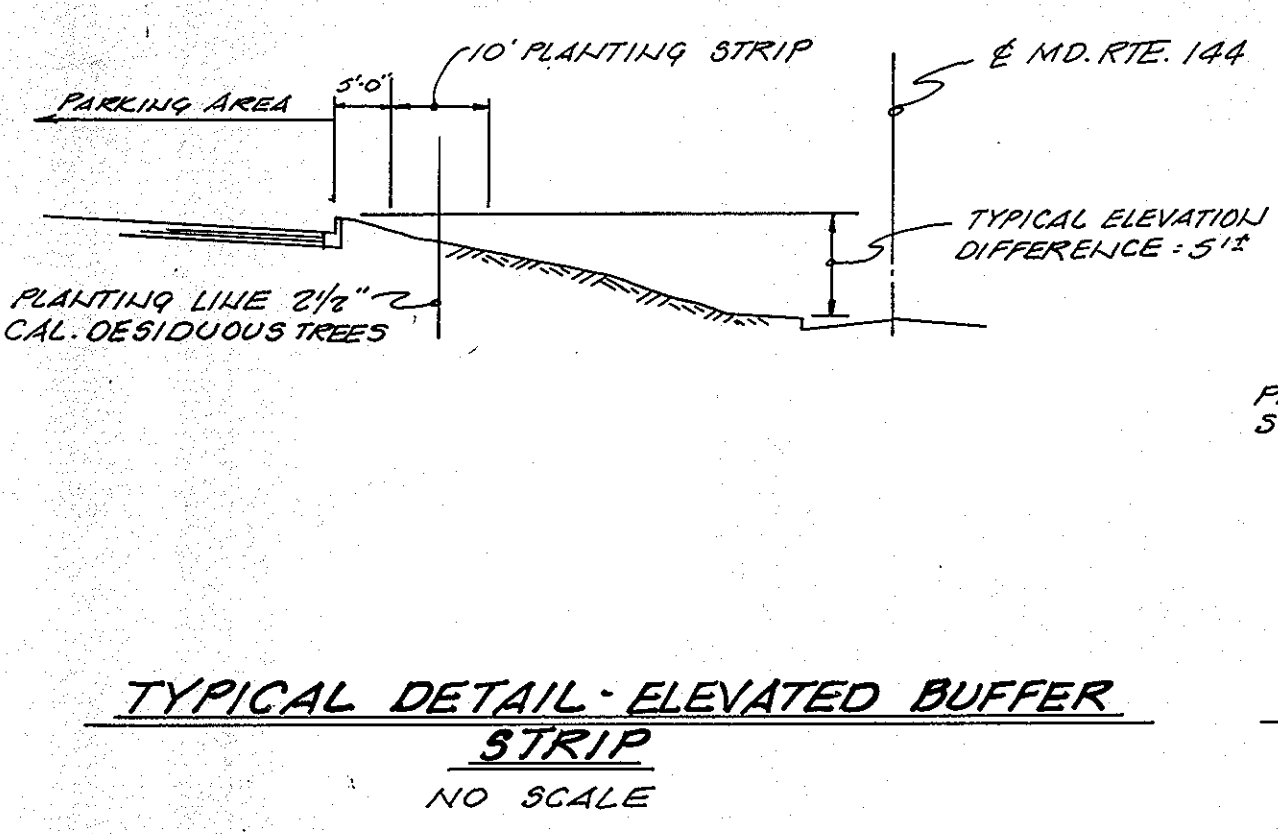
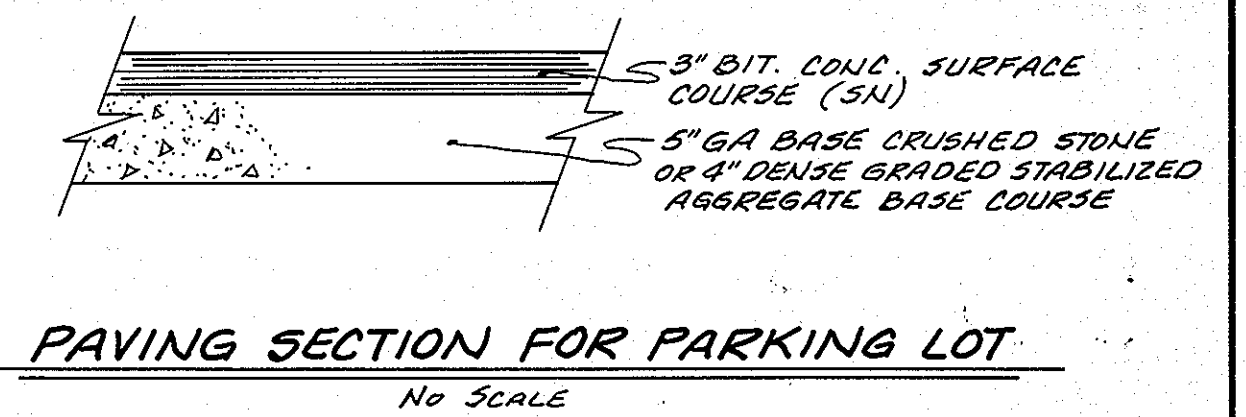
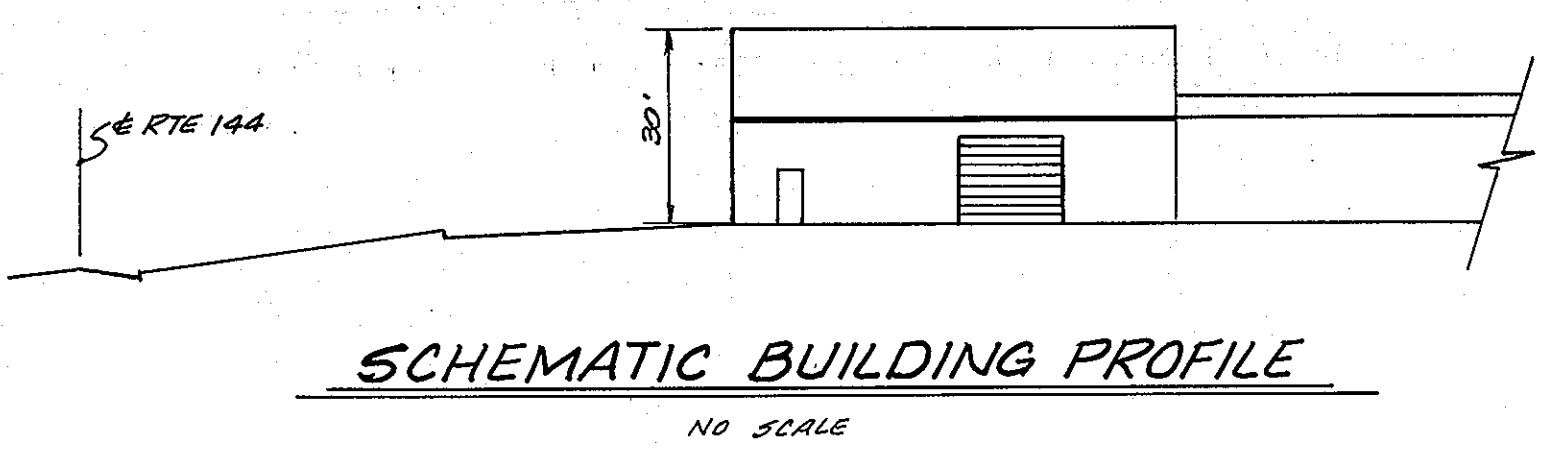
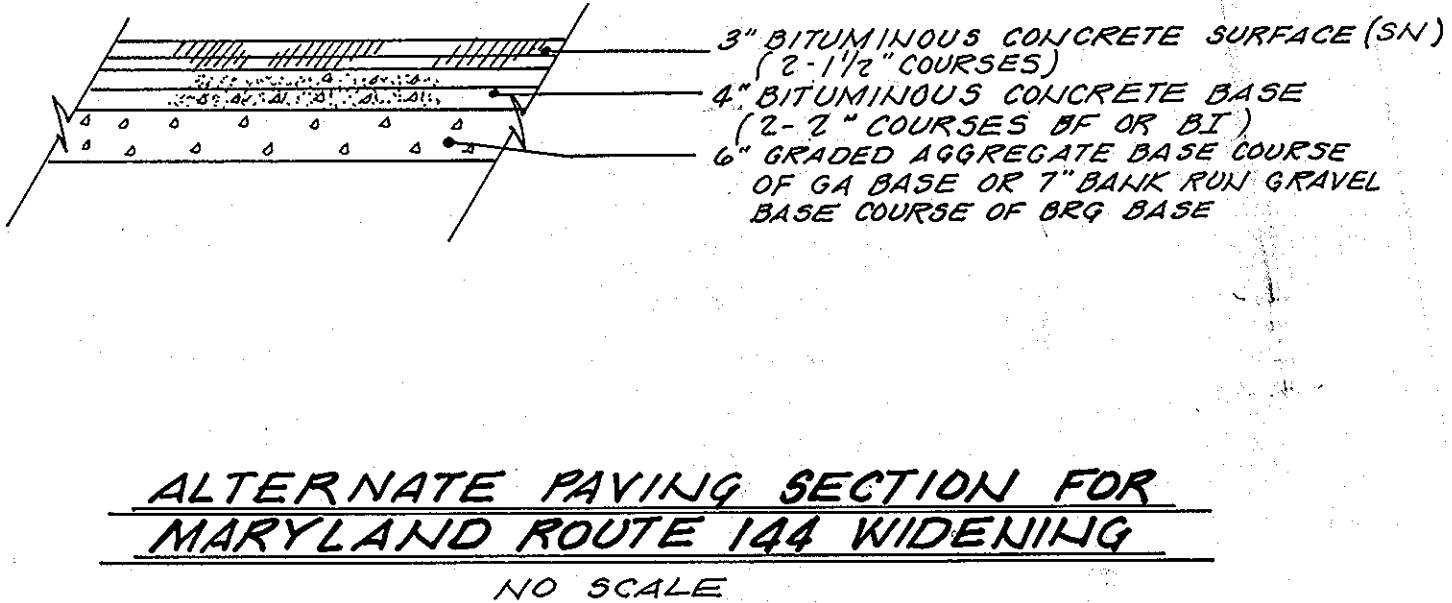
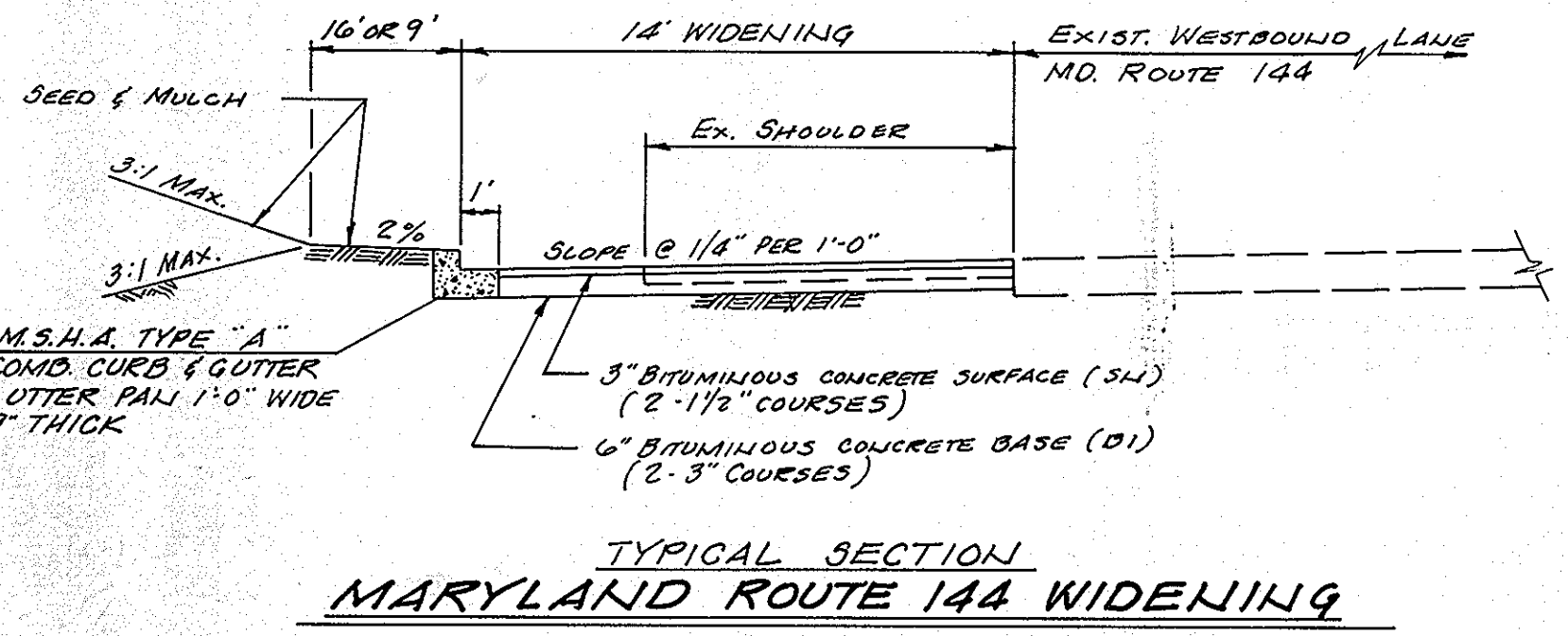
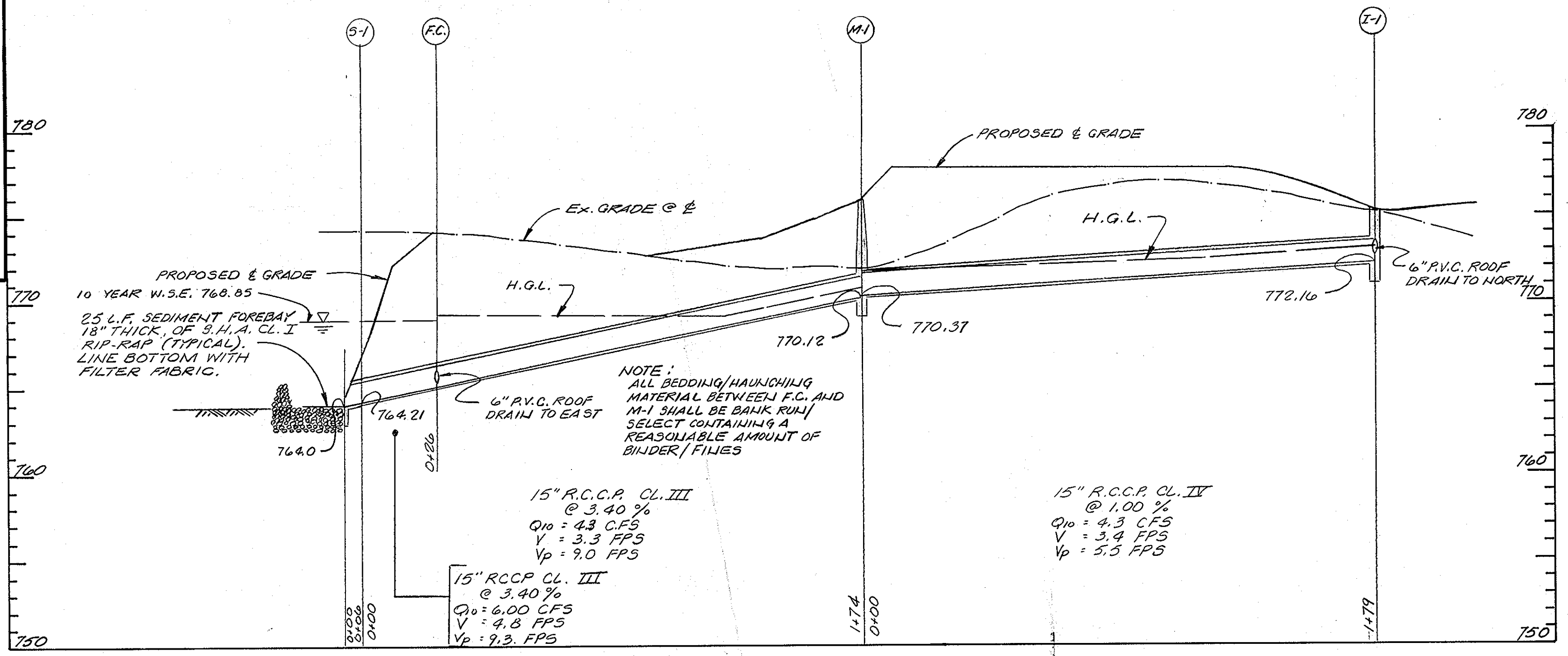
SHEET 1 OF 5
 APR ASSOCIATES, INC.
 ENGINEERS - SURVEYORS
 7427 HARFORD ROAD
 BALTIMORE, MARYLAND 21234
 444-4312

SITE DEVELOPMENT PLAN
 WALLY'S IRON WORKS, INC.
 MARYLAND ROUTE 144
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: 1"=30'
 NOVEMBER 10, 1987
 5DP-88-188

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: *John Boyle* 2-24-88
 APPROVED FOR HOWARD COUNTY OFFICE OF PLANNING & ZONING
 DIRECTOR: *John Boyle* 3-1-88
 CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 APPROVED FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR: *James A. Lewis* 2/26/88
 CHIEF BUREAU OF ENGINEERING: *James A. Lewis* 2/26/88

APPROVED
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE 12-30-87

STRUCTURE SCHEDULE			
NO.	TYPE	INV. IN	TOP ELEV.
I-1	3" INSET DETAIL 3.6, 3.22	—	772.16
M-1	4" STD. PRECAST MANHOLE DETAIL 5.2, 5.12 & 5.12	770.31	770.16
S1	5" CONC. 5/16" SECTION DETAIL 3.6, 3.21	768.01	768.00



NOTES:
 1. SIGNS SHALL BE MOUNTED ON POSTS WITH BOTTOM OF LOWER SIGN 7" MIN. ABOVE GROUND.
 2. SIGNS SHALL MEET M.D.O.T. STD. R-7B AND HOWARD COUNTY STANDARD SPECIFICATIONS.

OWNER: WALLY'S IRON WORKS, INC.
 ADDRESS: 17530 FREDERICK ROAD
 MT. AIRY, MARYLAND 21771
 PHONE: (301) 829-2393

JENSEN-KELLER CORPORATION
 DEVELOPER/CONTRACTOR 301-783-9247

SHEET 2 OF 5
 APR ASSOCIATES, INC. ENGINEERS-SURVEYORS
 7427 HARFORD ROAD BALTIMORE, MARYLAND 21284 444-8312

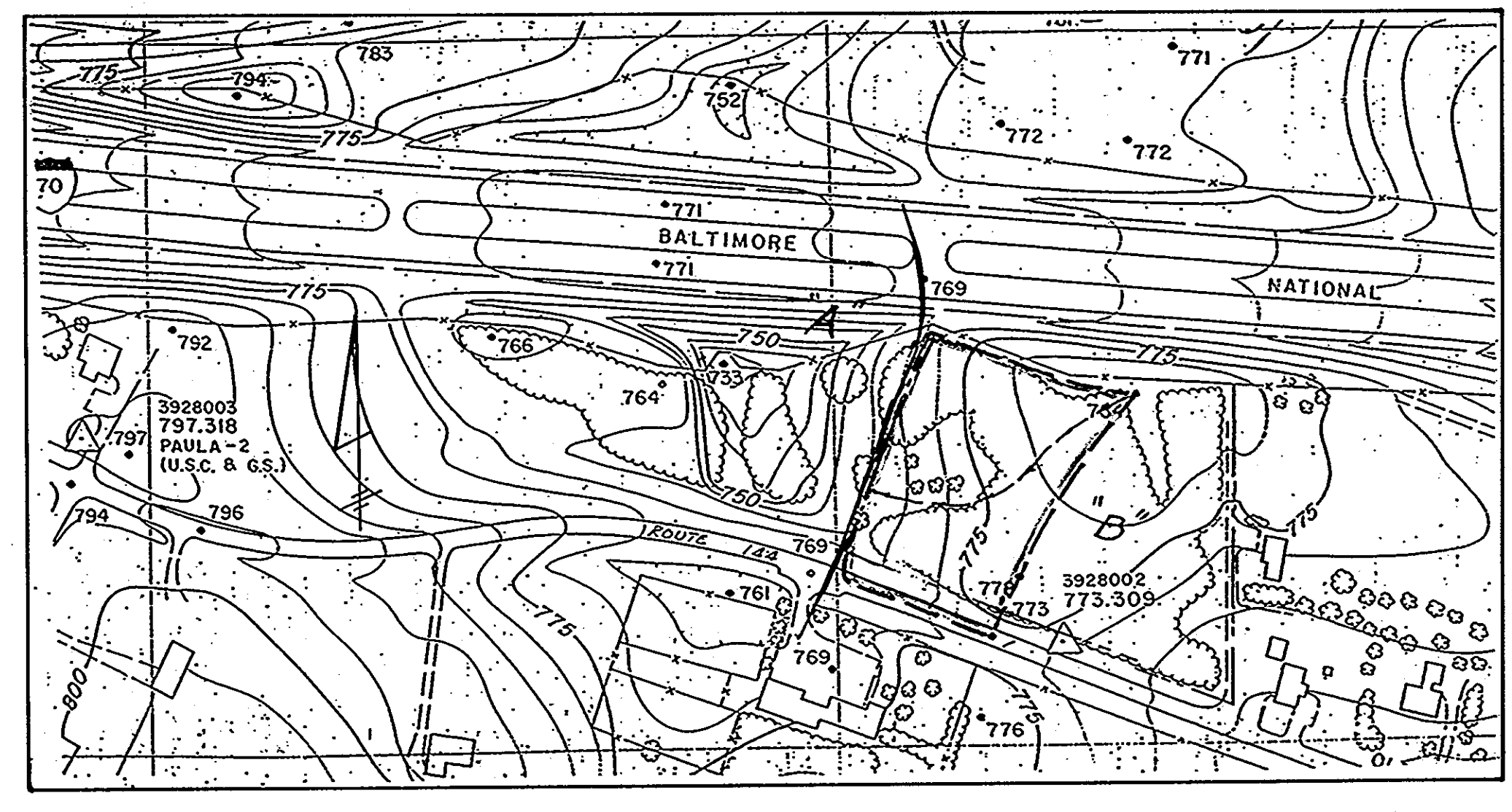
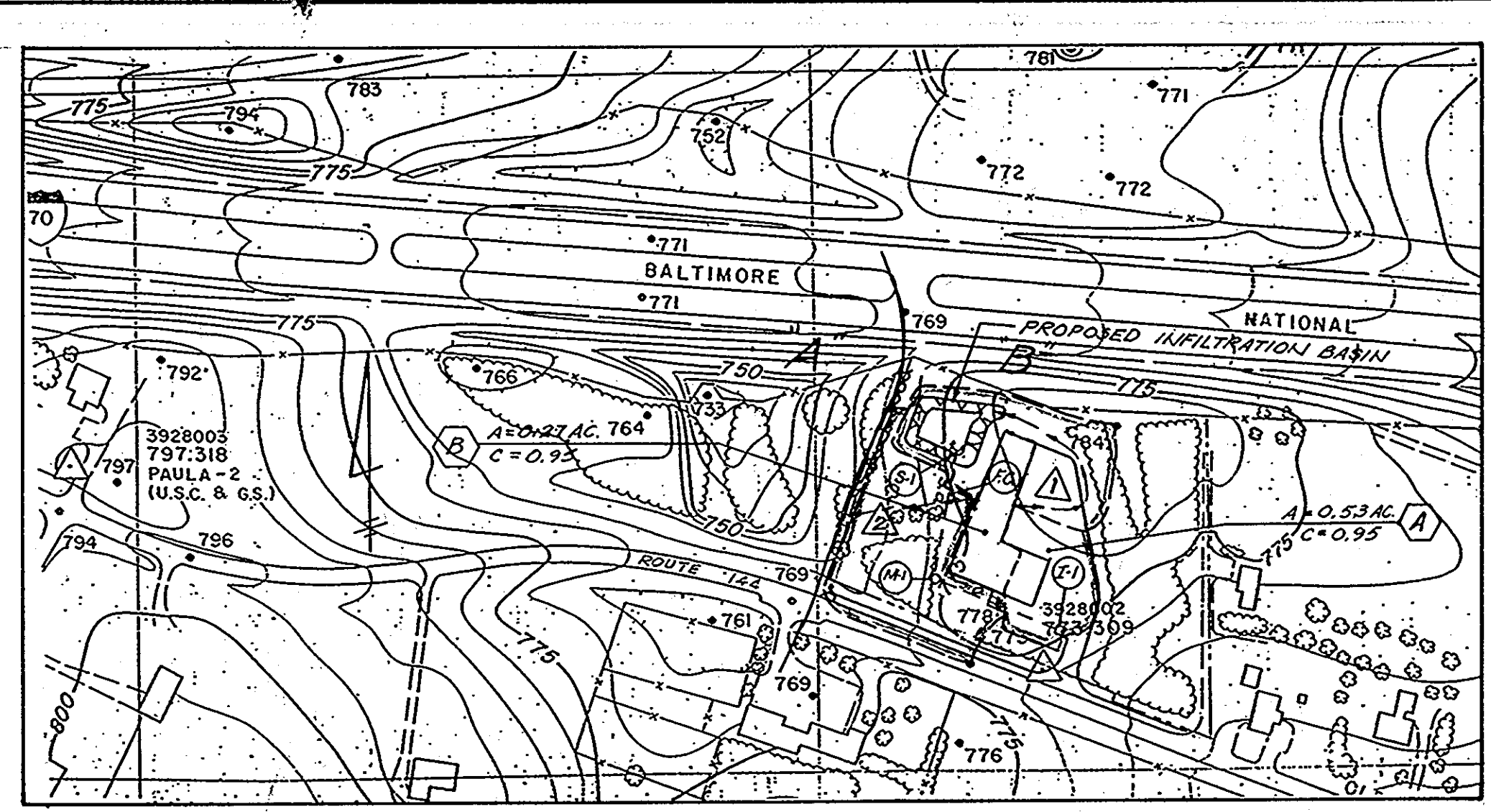
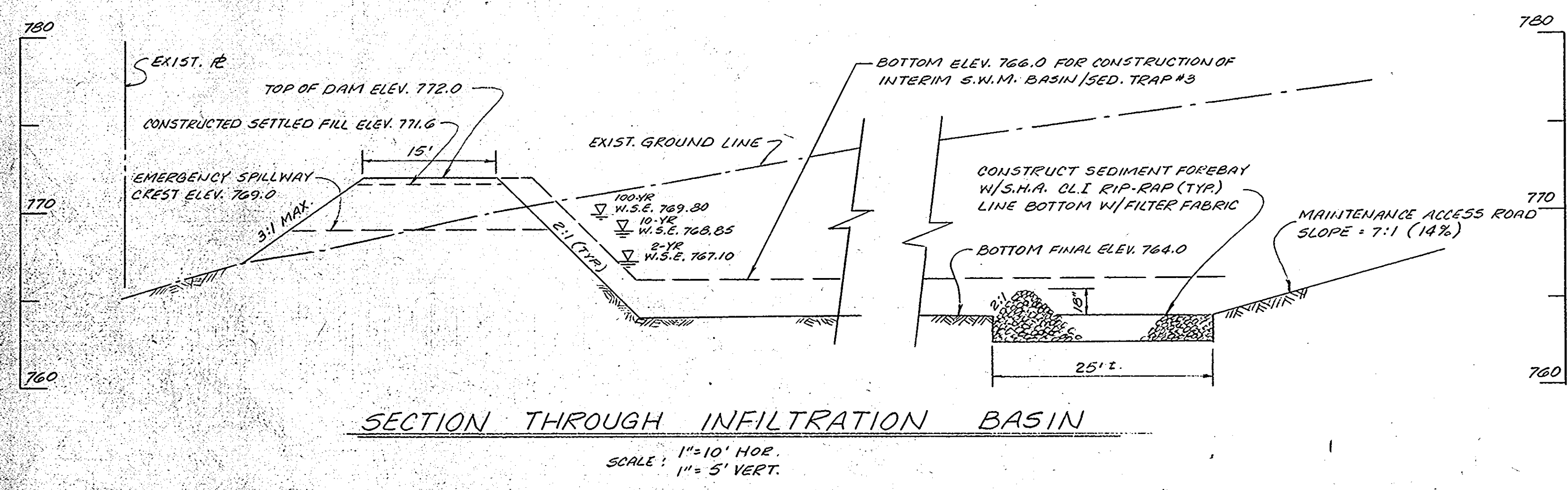
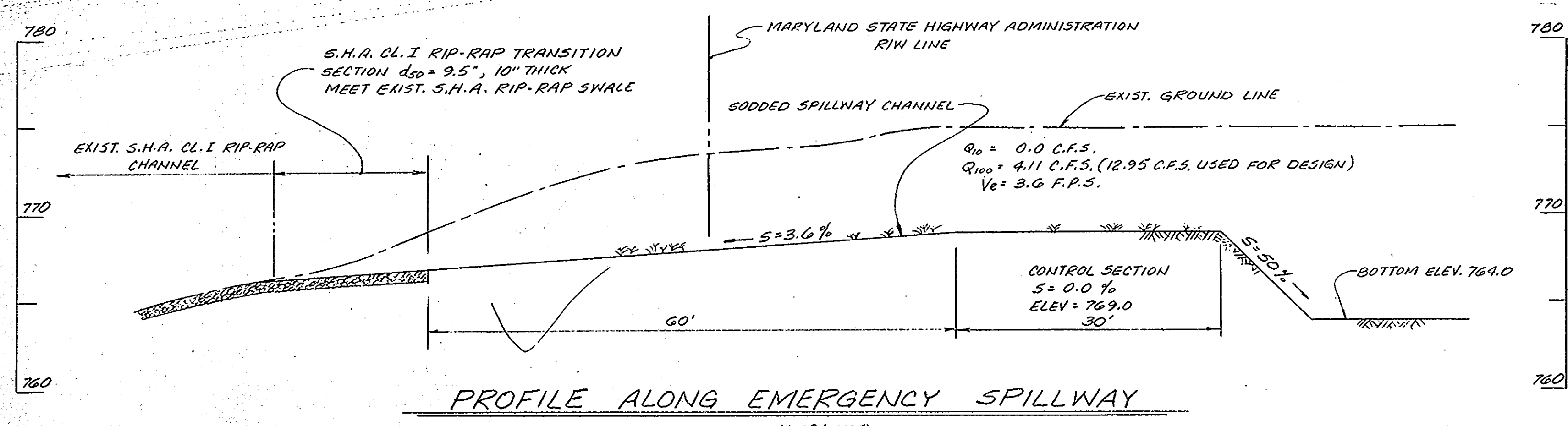
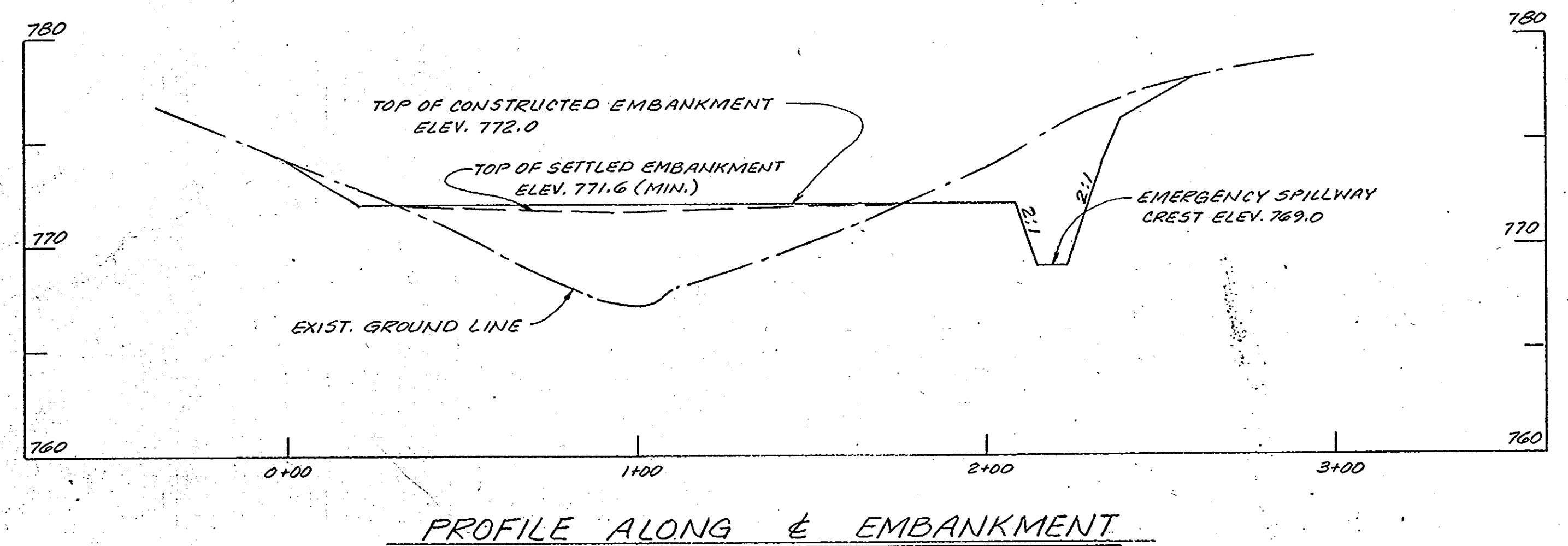
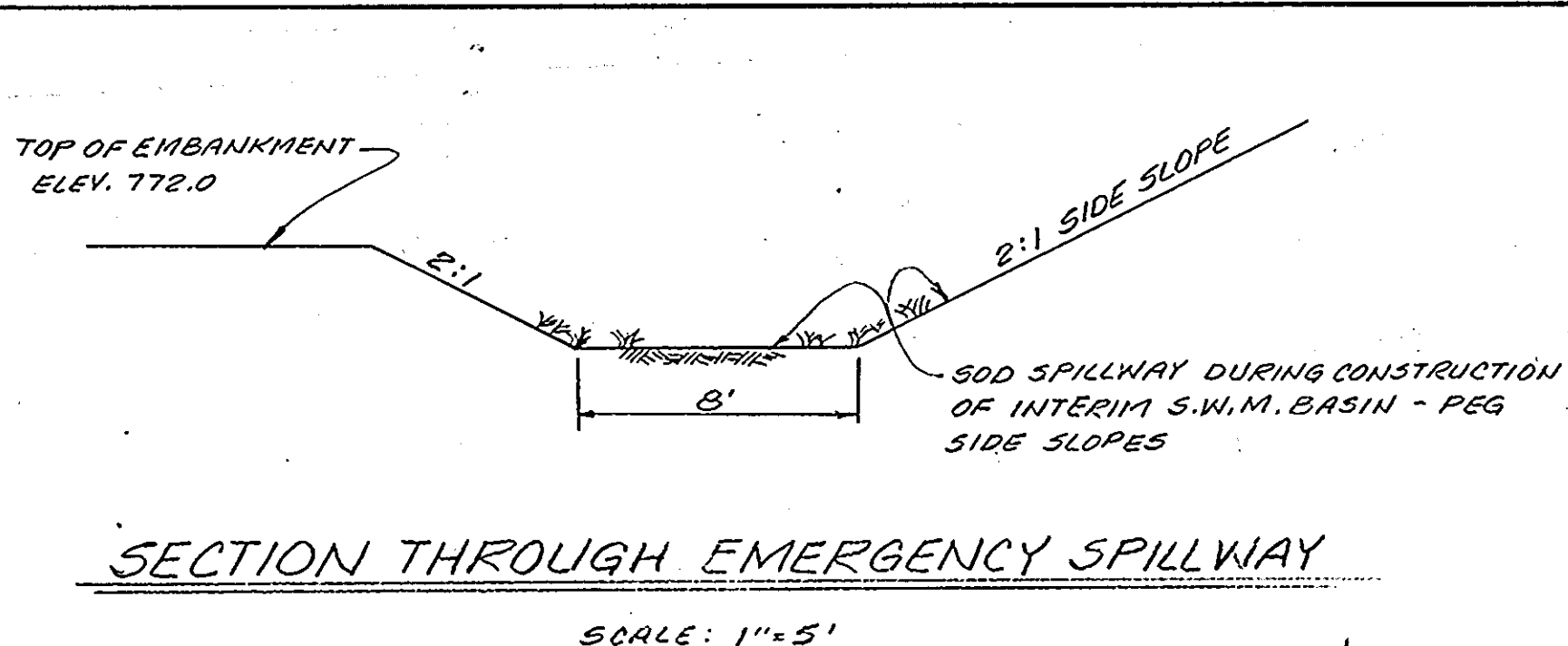
WALLY'S IRON WORKS, INC.
 MARYLAND ROUTE 144 TAX MAP 2 PARCEL 54 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN NOVEMBER 10, 1987

REVISION
 1 1-19-88 ADD H.G.L. AND DETAILS

SDP-88-100

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
 HOWARD COUNTY HEALTH DEPARTMENT.
 COUNTY HEALTH OFFICER
 DATE 2-14-88
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
 DATE 3-1-88
 DIRECTOR
 CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE 2/29/88
 APPROVED FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS.
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE 2/26/88
 DIRECTOR
 CHIEF BUREAU OF ENGINEERING
 DATE 7-25-88

APPROVED
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE 12-30-87



LEGEND

- DRAINAGE AREA FOR STORM DRAIN SYSTEM DESIGN
- DRAINAGE AREA FOR STORM WATER MANAGEMENT DESIGN
- △ TR-55 (STORMWATER MANAGEMENT SUB AREA)
- STORMWATER MANAGEMENT TIME OF CONCENTRATION
- STORM DRAIN SUB AREA
- DRAINAGE STRUCTURE
- SOIL GROUP DIVIDING LINE

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.
 Signature of Developer: *James W. Helms* Date: 2-4-88
 U.S. Soil Conservation Service
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Signature of Developer: *Stephen L. Phelan* Date: 2/4/88
 Howard Soil Conservation District

CENTER LINE OF EMBANKMENT COORDINATES

FROM STATION	TO STATION	BEARING	DIST.	RADIUS	ARC	NORTH	EAST
0+00	0+20.79	N 38° 18' 54" W	20.79			553,439.13	764,177.83
0+20.79	0+39.89	N 54° 43' 54" W	18.85	34.20	19.10	553,449.99	764,162.42
0+39.89	0+74.64	N 70° 18' 54" W	34.75			553,461.70	764,129.70
0+74.64	0+97.42	N 20° 03' 24" W	20.50	14.50	22.78	553,480.96	764,122.07
0+97.42	1+58.37	N 19° 41' 06" E	60.95			553,538.34	764,143.20
1+58.37	1+75.14	N 59° 26' 51" E	15.50	12.28	16.77	553,546.22	764,156.55
1+75.14	2+06.39	S 82° 03' 09" E	31.25			553,541.90	764,187.50
2+06.39	2+20.34	N 81° 49' 35" E	53.95			553,549.57	764,240.90

DESIGN SUMMARY

DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE
2-YR.	0.0 C.F.S.	4.04 C.F.S.	0.0 C.F.S.
10-YR.	0.13 C.F.S.	3.19 C.F.S.	0.0 C.F.S.
100-YR.	N/A	12.95 C.F.S.	4.11 C.F.S. (ACTUAL)

STORAGE VOLUME REQUIRED (10-YR. STORM) = 19,420 C.F.
 STORAGE VOLUME PROVIDED (10-YR. STORM) = 20,335 C.F.

"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."
 Signature of Developer: *Kevin L. Quilet* Date: 1/27/88
 Print name below signature: *Kevin L. Quilet*
 Signature of Engineer: *Kevin L. Quilet* Date: 1-19-88
 Print name below signature: *Kevin L. Quilet*

JENSEN-KELLER CORPORATION
 DEVELOPER/CONTRACTOR 301-788-9247
 SHEET 3 OF 5
 APR ASSOCIATES, INC.
 ENGINEERS - SURVEYORS
 7427 HARFORD ROAD
 BALTIMORE, MARYLAND 21234
 844-4312
 WALLY'S IRON WORKS, INC.
 STORMWATER MANAGEMENT DETAILS
 MARYLAND ROUTE 144
 TAX MAP 2 PARCEL 54
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN NOVEMBER 10, 1987
 SDF-88-100

OWNER: WALLY'S IRON WORKS, INC.
 ADDRESS: 17530 FREDERICK ROAD
 MT. AIRY, MARYLAND 21771
 PHONE: (301) 827-2393

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER *[Signature]* DATE 2-24-88
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
 DIRECTOR *[Signature]* DATE 3-1-88
 APPROVED: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR *[Signature]* DATE 2/29/88
 APPROVED: CHIEF BUREAU OF ENGINEERING *[Signature]* DATE 2-26-88

APPROVED
 DIVISION OF LAND DEVELOPMENT &
 ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE 12-30-87

SEDIMENT TRAP NO. 1 DATA

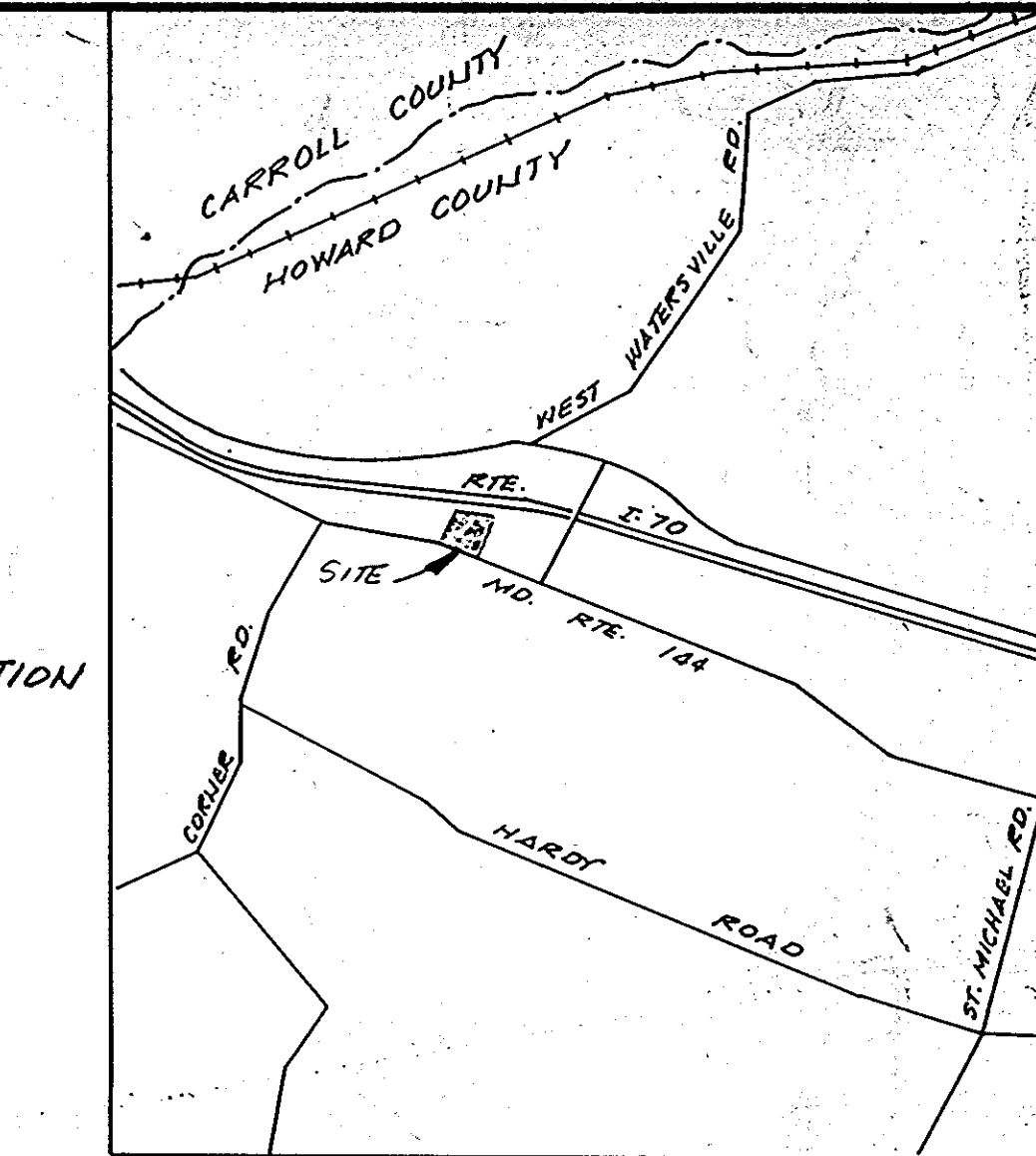
TYPE	STONE OUTLET
DRAINAGE AREA	0.91 AC.
STORAGE REQUIRED	1635 C.F.
BOTTOM DIMENSION	13'W x 13'L
BOTTOM ELEVATION	759.0
CREST ELEVATION	764.0
TOP EMBANKMENT	765.0
STONE OUTLET LENGTH	4.0 L.F.
STORAGE PROVIDED	1764 C.F.
CLEANOUT ELEVATION	764.0

SEDIMENT TRAP NO. 2 DATA

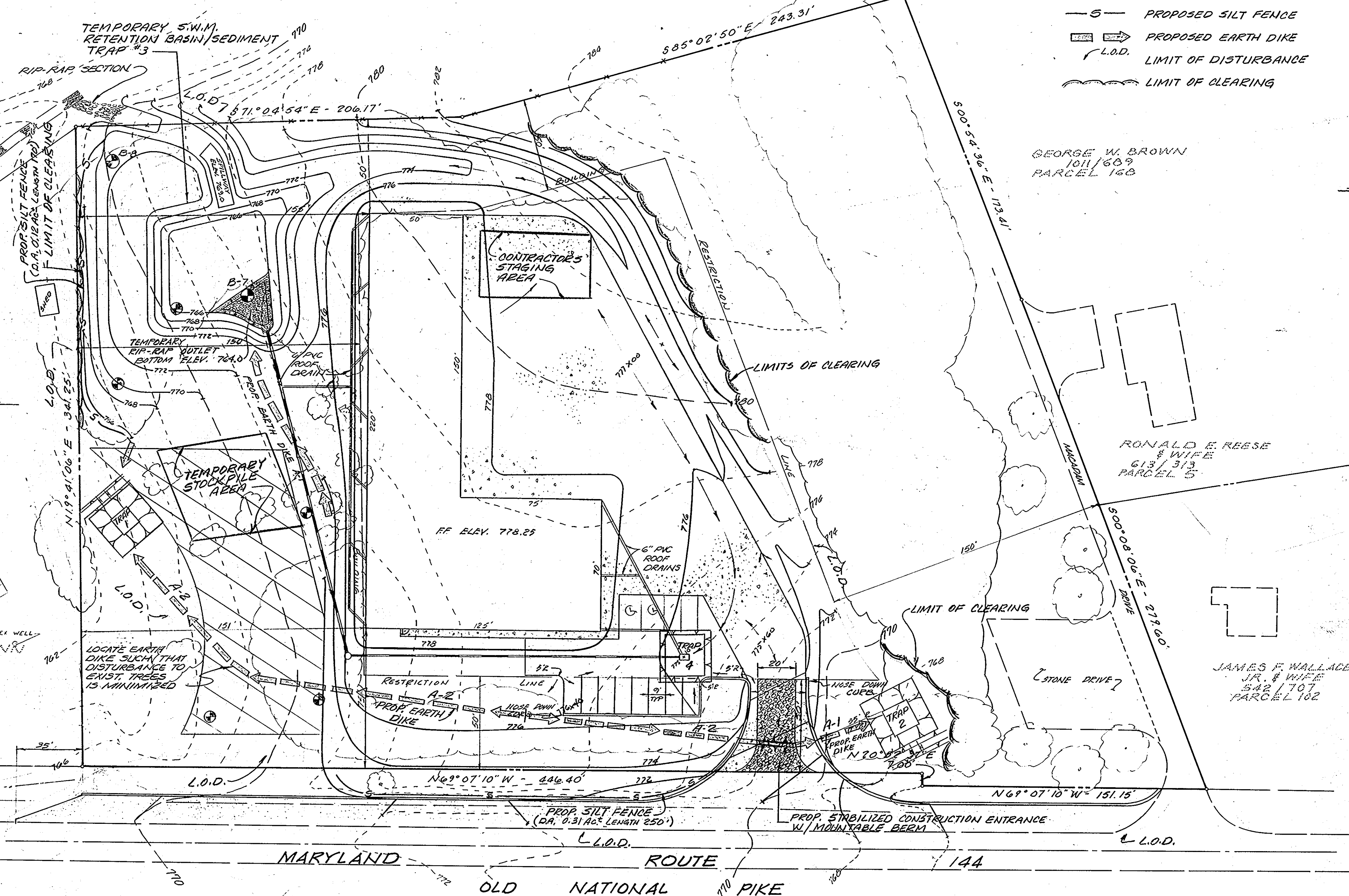
TYPE	STONE OUTLET
DRAINAGE AREA	1.14 AC.
STORAGE REQUIRED	2052 C.F.
BOTTOM DIMENSION	15'W x 15'L
BOTTOM ELEVATION	763.0
CREST ELEVATION	768.0
TOP EMBANKMENT	769.0
STONE OUTLET LENGTH	5.0 L.F.
STORAGE PROVIDED	2116 C.F.
CLEANOUT ELEVATION	765.0

TEMPORARY S.W.M. & SEDIMENT TRAP NO. 3 DATA

TYPE	GRASS OUTLET
DRAINAGE AREA	1.54 AC.
STORAGE REQUIRED FOR SEDIMENT CONTROL	2772 C.F.
FOR S.W.M.	7813 C.F.
BOTTOM SURFACE AREA	3195 S.F.
BOTTOM ELEVATION	766.0
CREST ELEVATION	769.0
TOP EMBANKMENT	772.0
SODDED OUTLET WIDTH	3.0 L.F.
STORAGE PROVIDED	10,459 C.F.
CLEANOUT ELEVATION	767.0



- LEGEND**
- 778 --- EXISTING CONTOURS
 - 778 --- PROPOSED CONTOURS
 - 775x1 PROPOSED SPOT ELEVATIONS
 - [Pattern] PROPOSED BITUMINOUS PAVING
 - [Pattern] PROPOSED CONCRETE PAVING
 - [Pattern] PROPOSED CONCRETE CURB
 - [Pattern] PROPOSED STABILIZED CONSTRUCTION ENTRANCE
 - S- PROPOSED SILT FENCE
 - [Pattern] PROPOSED EARTH DIKE
 - [Symbol] L.O.D. LIMIT OF DISTURBANCE
 - [Symbol] LIMIT OF CLEARING



- CONSTRUCTION SEQUENCE**
- PHASE I**
- OBTAIN NECESSARY GRADING AND BUILDING PERMITS.
 - CLEAR AND GRUB FOR SEDIMENT CONTROL DEVICES ONLY.
 - EXCAVATE FOR AND INSTALL SEDIMENT CONTROL DEVICES EXCEPT FOR SEDIMENT TRAP #4 AT THIS TIME. CONSTRUCT INTERIM S.W.M. BASIN/SEDIMENT TRAP #3 AND LOWER SECTION OF STORM DRAIN.
 - STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE GENERAL NOTES AND SEEDING SPECIFICATIONS.
- PHASE II**
- ROUGH GRADE FOR BUILDING, PAVED SITE AREAS AND DRAINAGE SWALES. INSTALL REMAINDER OF STORM DRAIN, SEDIMENT TRAP #4 AND EARTH DIKE TO TRAP #3 (BASIN). INSTALL ALL OTHER UTILITIES. STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE GENERAL NOTES AND SEEDING SPECIFICATIONS.
 - EXCAVATE FOR FOUNDATIONS AND CONSTRUCT BUILDING. DISCHARGE ANY PUMPED WATER FROM FOUNDATIONS INTO INSTALLED SEDIMENT TRAP #4.
 - CONNECT ROOF DRAINS TO STORM DRAIN SYSTEM AND FINE GRADE SITE PAVING AREA AND INSTALL PARKING CURB AND GUTTER. ABANDON TRAP #4. PLACE STONE SUBBASE AND INSTALL CONCRETE AND BITUMINOUS PAVING.
 - REMOVE EARTH BERM AND ROUGH GRADE REMAINING AREA AT FRONT OF SITE. FINE GRADE FOR SITE ENTRANCE AND TURNING LANE ON ROUTE 144. INSTALL STONE SUBBASE AND CURB AND GUTTER. INSTALL REMAINING PERMANENT PAVING. VEGETATIVELY STABILIZE FRONT SITE AREA.
 - EXCAVATE LAST 2' DOWN IN SEDIMENT TRAP #3 AND CONSTRUCT PERMANENT INFILTRATION BASIN. PLACE RIP-RAP FOREBAYS AND VEGETATE BASIN IN ACCORDANCE WITH STORMWATER MANAGEMENT SPECIFICATIONS.
 - INSTALL LANDSCAPING AND INSTALL PERMANENT SEEDING ON ANY AREAS NOT YET STABILIZED.
 - WHEN PERMANENT SEEDING IS ESTABLISHED, REQUEST PERMISSION FROM SEDIMENT CONTROL INSPECTOR TO REMOVE SEDIMENT CONTROL DEVICES. STABILIZE ANY REMAINING DISTURBED AREAS WITH PERMANENT SEEDING.

SEDIMENT TRAP NO. 4 DATA

TYPE	STORM INLET SEDIMENT TRAP ST-III
DRAINAGE AREA	0.67 AC.
STORAGE REQUIRED	1203 C.F.
BOTTOM DIMENSION	22'W x 22'L
BOTTOM ELEVATION	773.0
INLET GRATE	775.10
STORAGE PROVIDED	1351 C.F.
CLEANOUT ELEVATION	774.25

"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."

[Signature]
 Signature of Engineer
 Print name below signature

"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."

[Signature]
 Signature of Developer
 Print name below signature

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.

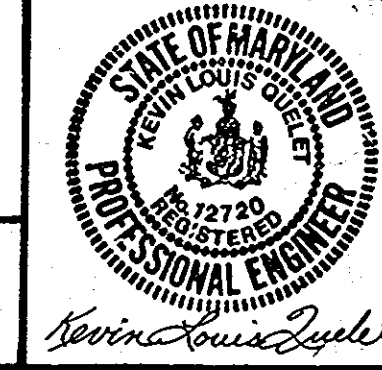
[Signature]
 U.S. Soil Conservation Service
 Date

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

[Signature]
 Howard Soil Conservation District
 Date

JENSEN-KELLER CORPORATION	
DEVELOPER/CONTRACTOR 301-788-9247	NO. DATE REVISION
1 1-19-88 ADD RIP-RAP	
SHEET 4 OF 5	
APR ASSOCIATES, INC. ENGINEERS - SURVEYORS	WALLY'S IRON WORKS, INC.
7427 HARFORD ROAD BALTIMORE, MARYLAND 21234 444-4312	MARYLAND ROUTE 144 TAX MAP 2 PARCEL 54 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1"=30' NOVEMBER 10, 1987	

OWNER: WALLY'S IRON WORKS, INC.
 ADDRESS: 17530 FREDERICK ROAD
 MR. MIKY, MARYLAND 21171
 PHONE: (301) 829-2373



APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

James Boylan 2-24-88
 COUNTY HEALTH OFFICER DATE

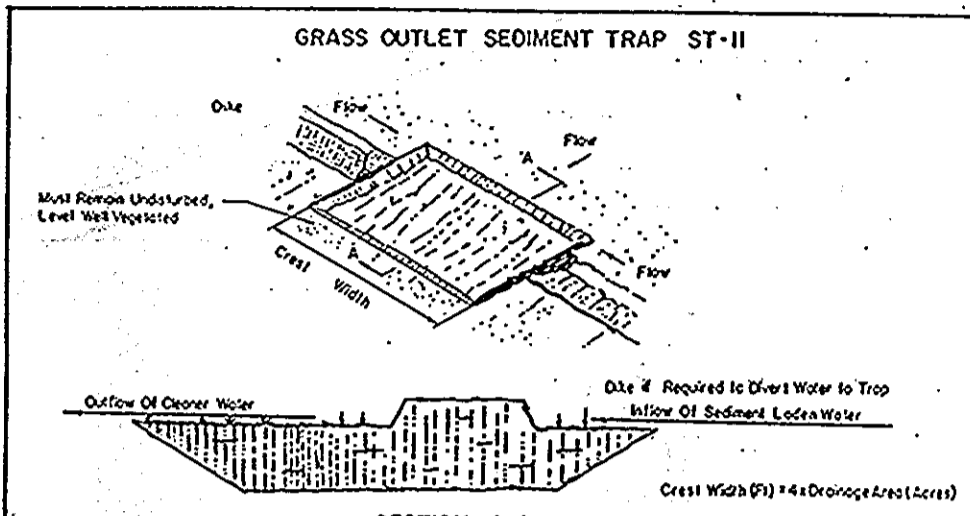
APPROVED HOWARD COUNTY OFFICE OF PLANNING & ZONING

DIRECTOR DATE
James Boylan 2/27/88
 CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR DATE
James Boylan 2/27/88
 CHIEF BUREAU OF ENGINEERING DATE

APPROVED
 DIVISION OF LAND DEVELOPMENT &
 ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE 12-30-87



EXCAVATED GRASS OUTLET SEDIMENT TRAP

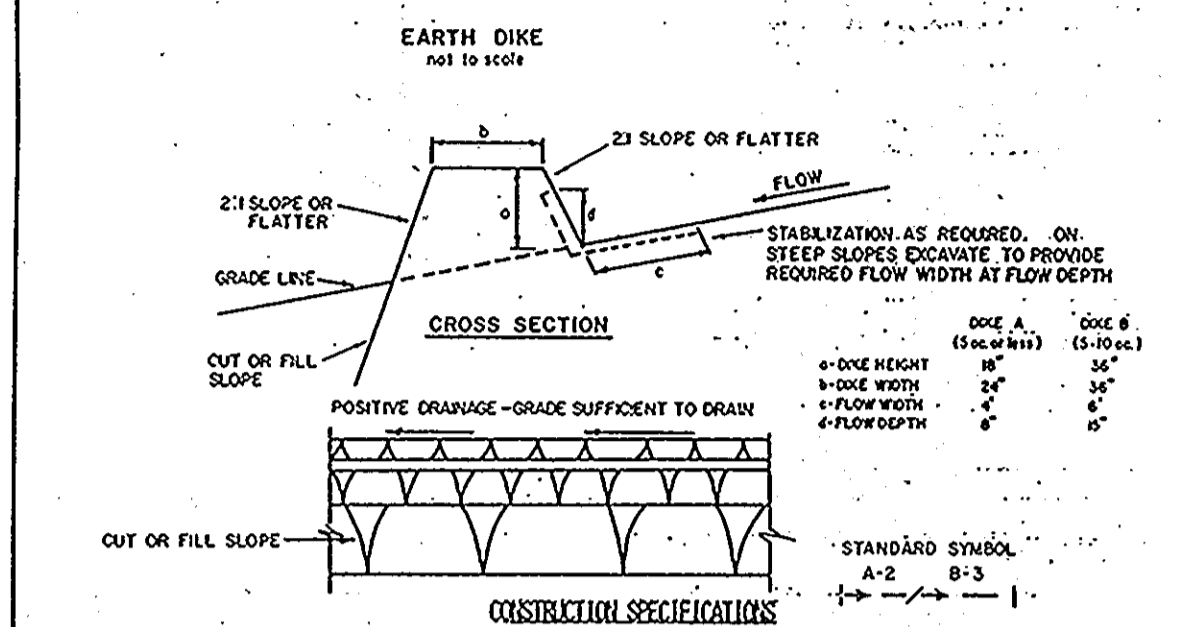
CONSTRUCTION SPECIFICATION FOR ST-II

- Volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage area.
- Minimum crest width shall be 4' X Drainage Area.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected after each rain and repairs made as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
- The sediment trap shall be removed and area stabilized when the existing drainage area has been properly stabilized.
- All cut slopes shall be 1:1 or flatter.

Maximum Drainage Area: 5 Acres

U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 COLLEGE PARK, MARYLAND

GRASS OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-II



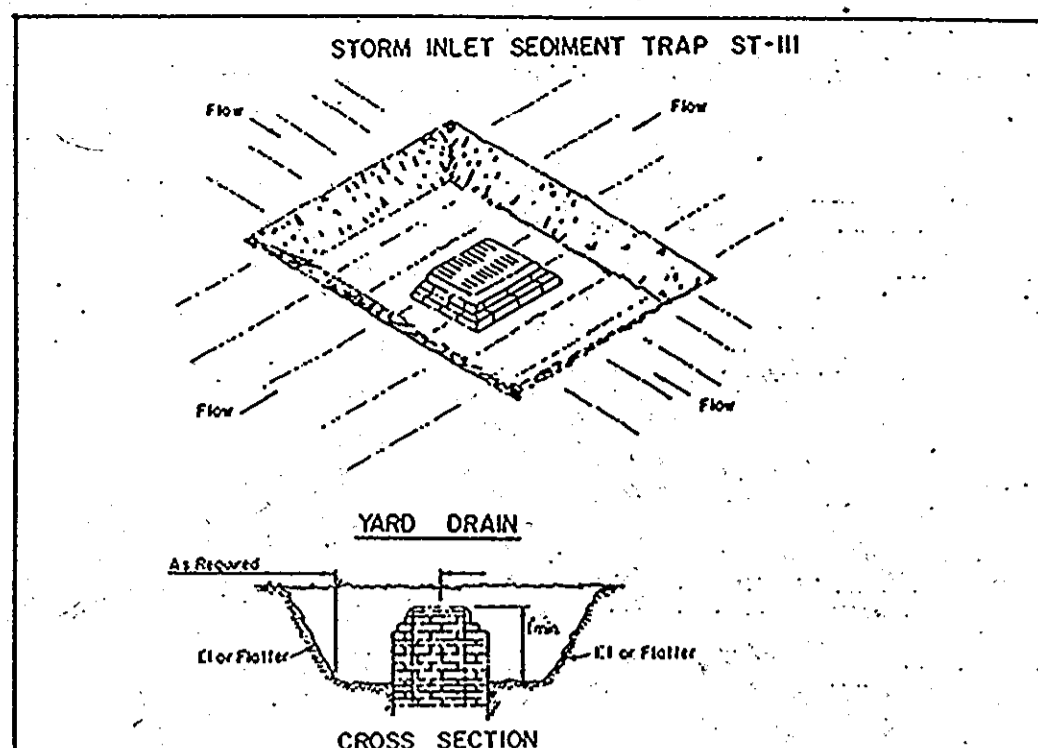
- All dikes shall be compacted by earthmoving equipment.
- All dikes shall have positive drainage to an outlet.
- Top width may be wider and side slopes may be flatter if desired to facilitate crossing by construction traffic.
- Field location shall be marked and needed to utilize a stabilized safe outlet.
- Earth dikes shall have an outlet that functions with a minimum of erosion. Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin where either the dike channel or the drainage area above the dike are not adequately stabilized.
- Stabilization shall be: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON; (B) FLOW CHANNEL AS PER THE CHART BELOW.

DISE OF CHANNEL	CHUNK SIZE	DIKE A	DIKE B
1	5-3.0"	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0"	SEED AND STRAW MULCH	SEED WITH JUTE, OR CRUSHED SOY, 2" STONE
3	5.1-8.0"	SEED WITH JUTE, OR SOY, 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20"	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
 B. RIP-RAP TO BE 4-6 INCHES IN A LAYER AT LEAST 2 INCHES THICKNESS AND PRESSED INTO THE SOIL.
 C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
 7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

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 COLLEGE PARK, MARYLAND

EARTH DIKE
 STANDARD DRAWING
 ED-1

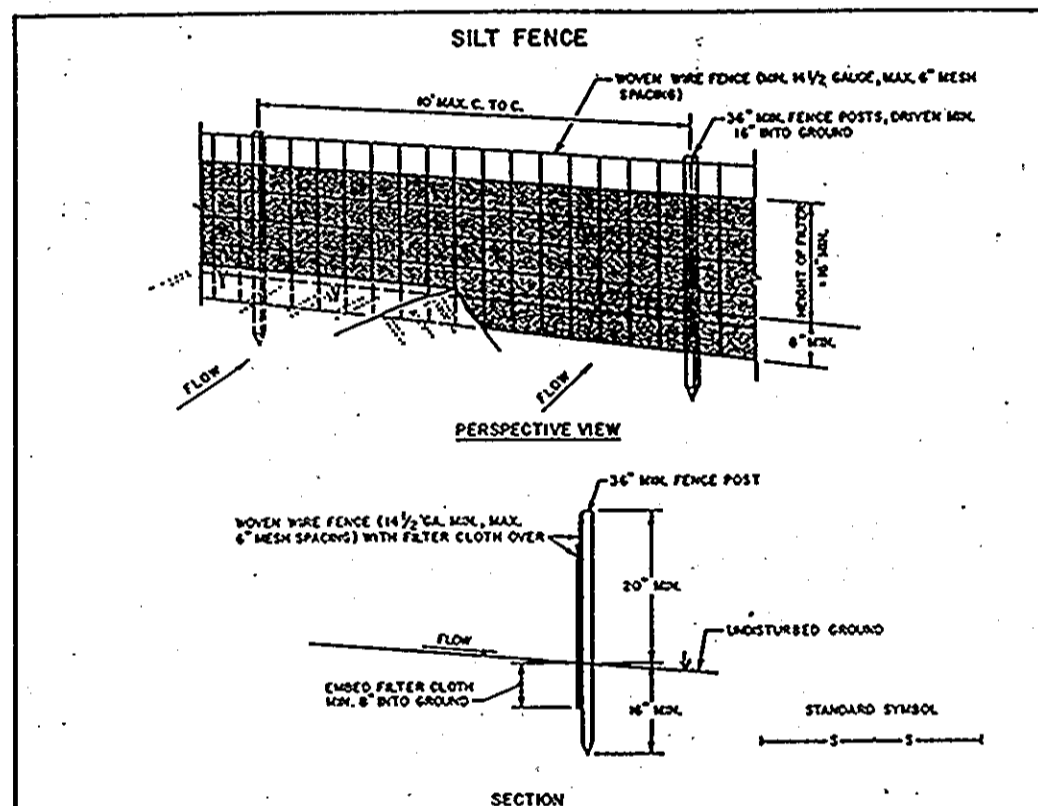


- Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage.
- 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 shall be minimized.
- The sediment trap shall be removed and the area stabilized when the existing drainage area has been properly stabilized.
- All cut slopes shall be 1:1 or flatter.

Maximum Drainage Area: 3 Acres

U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 COLLEGE PARK, MARYLAND

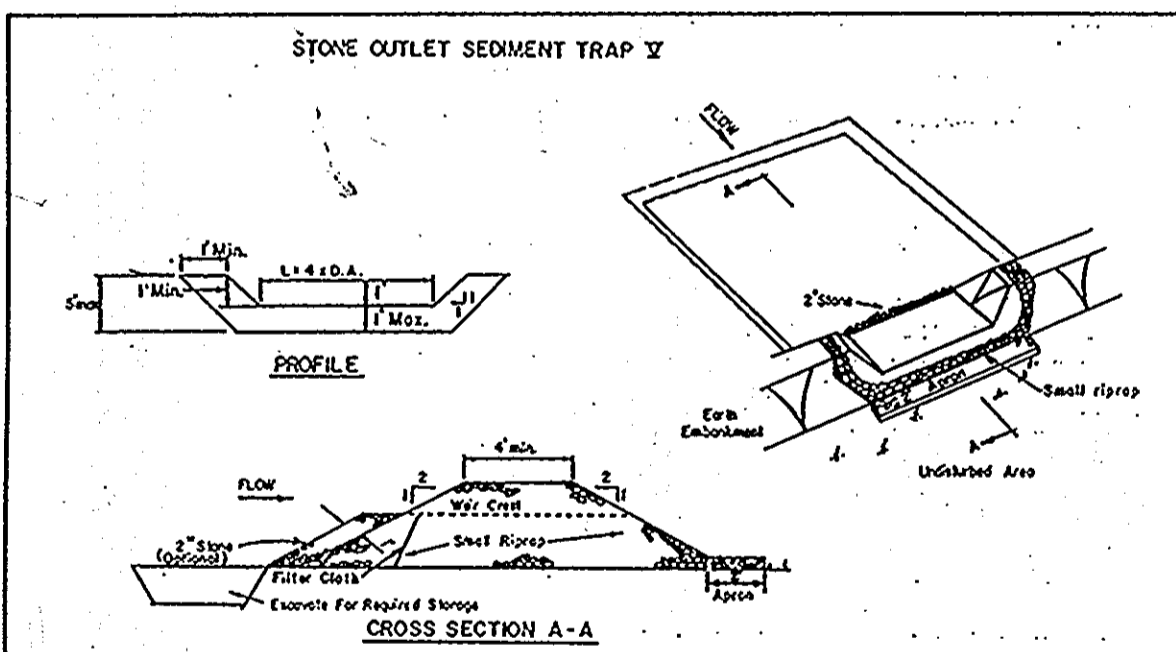
STORM INLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-III



- WOOD WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOOD WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- HIGH WIND SECTION OF FILTER CLOTH ALLOW EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
- MAINTENANCE SHALL BE PROVIDED AS NECESSARY TO PREVENT WIND DAMAGE TO THE SILT FENCE.

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 SOIL CONSERVATION SERVICE
 COLLEGE PARK, MARYLAND

SILT FENCE
 STANDARD DRAWING
 SF-1



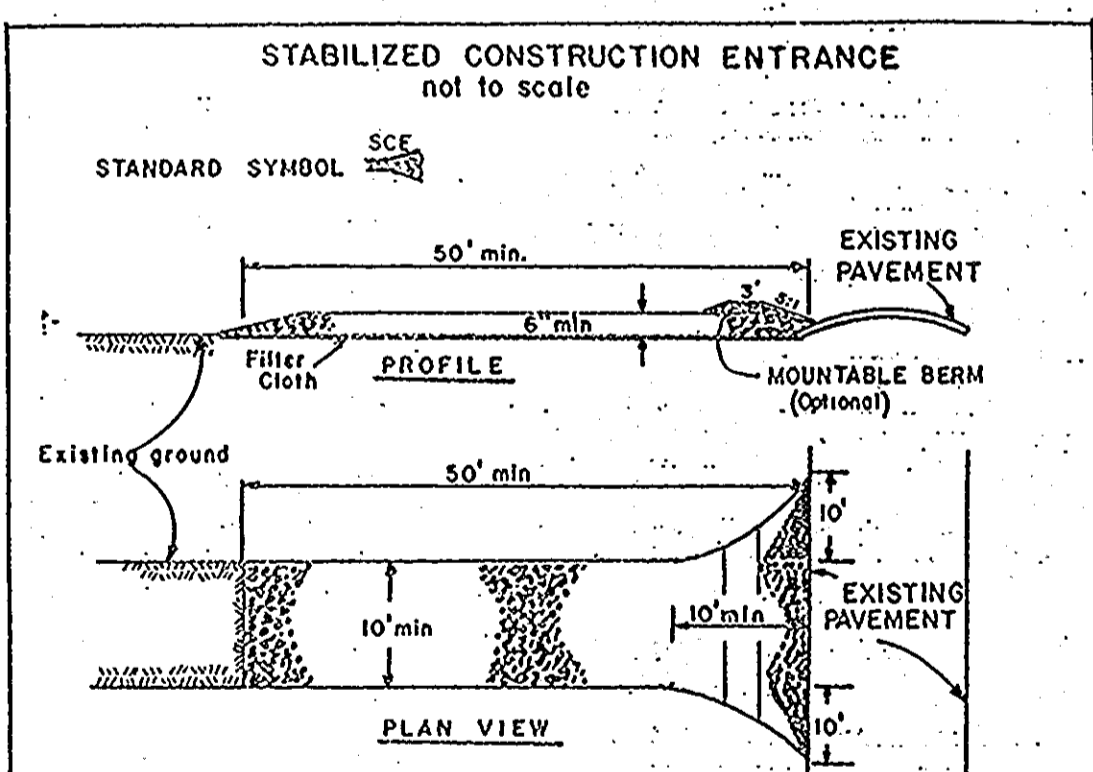
OPTION: A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.

- 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 and other woody vegetation as well as oversized stones, rocks, organic material or other objectionable materials. The embankment shall be compacted by traversing with equipment while it is being constructed.
- All cut and fill slopes shall be 2:1 or flatter.
- The stone used in the outlet shall be small riprap 4"-8" along with a 1" thickness of 2" aggregate placed on the up-grade side on the small riprap embedded filter cloth in the riprap.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
- The structure shall be inspected after each rain and repairs made as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
- The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

Maximum Drainage Area: 5 Acres

U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 COLLEGE PARK, MARYLAND

STONE OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-Z



- Stone Size - Use 2" stone, or recycled or recycled concrete equivalent.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
- Thickness - Not less than six (6) inches.
- Width - Non (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mounds berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing, with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 COLLEGE PARK, MD

STABILIZED CONSTRUCTION ENTRANCE
 Standard Drawing
 SCE-1

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.

James M. Johnson 2-4-88
 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.

Stephen L. Quib 2/4/88
 Howard Soil Conservation District Date

STORMWATER MANAGEMENT CONSTRUCTION SPECIFICATIONS

- I. SITE PREPARATION
- Areas to be covered by the pond or reservoir will be cleared of all trees, vegetation, brush, logs, fences, rubbish, and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps in the area of the embankment shall be cut approximately level with the ground surface.
- II. EXCAVATION
- Initial interim S.W.M. basin excavation shall be carried to within 1 foot of the final elevation of the basin floor. Final excavation to the finished grade shall be deferred until all disturbed areas on the watershed have been stabilized or protected. The final phase excavation shall remove all accumulated sediment. Only relatively light tracked equipment with tracks or over-sized tires shall be used for this operation to avoid compaction of the basin floor (bulldozers or front end loaders should not be used). After the final grading is completed, the basin floor shall be deeply tilled by means of rotary tillers or disc harrows to provide a well-aerated, highly porous surface texture. Several passes with a leveling drag shall be made as needed to smooth out the basin floor after lime and fertilizer have been applied.
- III. EARTH FILL
- Material
- The fill material shall be taken from the excavated basin area. It shall be free of roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials. The embankment shall be constructed to the elevations shown on the Site Development Plan and Stormwater Management Detail Sheet.
- Placement
- Areas on which fill is to be placed shall be scarified prior to placement of fill. No compaction of the embankment fill is either necessary or allowed.
- IV. EMERGENCY SPILLWAY CONSTRUCTION
- The permanent emergency spillway shall be constructed during excavation for the interim S.W.M. basin. The spillway floor and sides shall be seeded with Kentucky 31 Fescue. Side slopes shall be pegged to hold sod.
- V. STABILIZATION
- All exposed surfaces of the infiltration basin and embankment shall be permanently stabilized by fertilizing, seeding and mulching in accordance with these specifications. A temporary seeding mixture shall not be used in the basin area.
- Sodbed Preparation: The basin floor shall have been deeply tilled as specified previously and the upper three inches of the embankment soil loosened by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments, Seeding and Mulching: Soil amendments, seeding and mulching shall be in accordance with the PERMANENT SEEDING NOTES found hereon this same sheet.

SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: 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 seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area of Site	4.96 Acres
Area Disturbed	2.78 Acres
Area to be roofed or paved	1.28 Acres
Area to be vegetatively stabilized	2.95 Acres
Total Cut	6,393 Cu. yds
Total Fill	6,137 Cu. yds
Offsite waste/borrow area location	NOT REQUIRED
- 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 controls must be provided, if deemed necessary by the Howard County DPW sediment control inspector.
- On all sites with disturbed areas in excess of 2-acres, approval of the inspection agency shall be requested upon completion of site work. This approval shall be requested prior to proceeding with any other earth disturbance, other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

PERMANENT SEEDING NOTES

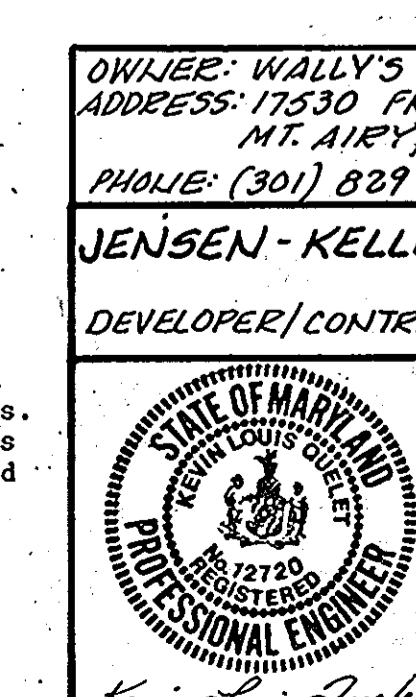
- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
- Preferred -- Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc to upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (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. Harrow or disc into upper three inches of soil.

TEMPORARY SEEDING NOTES

- Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: Apply 60 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).
- Seeding: For periods March 1 thru April 30, and from August 15 thru November 15, seed with 24 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of vernal ryegrass (1.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
- Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of mulchified asphalt on flat areas. On slopes 8 feet or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.
- Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.
- Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

SCHNABEL ENGINEERING ASSOCIATES		PROJECT		TEST BORING NO.	
GEOTECHNICAL CONSULTANTS		WALLY'S IRON WORKS		B-2	
		HOWARD COUNTY, MARYLAND		Contract No. MB71025	
GROUNDWATER LEVEL DATA					
Boring Contractor	P.T.L. INSPECTORATE, INC.	Date	9-14-87	Casing Depth	10.0'
Boring Foreman	T. GIBSON	Time	8:30	Covered	
S.E.A. Inspector	R. SELLINGS	Encountered	9-14	8-23	
Boring Elevation	EL. 772.02	Completion	9-14 2:30	None	8-23
Date Start	9-14-87	Completed	9-14-87	1 HR. RIG	9-14 4:30
U.S.D.A. Soil Classification: Sandy Loam					
Depth (ft)	Elv.	SAMPLE	TOPSOIL = #	DESCRIPTION	REMARKS
0.0	770.0	2-3-6	S	SILTY TRACED SAND, ROOT STRUCTURE PRESENT	RESIDUAL
1.0	769.0	3-7-13	S	SILTY SAND, CONTAINING ROCK FRAGMENTS, MOIST, ORANGE/BROWN	SM A W = 2.3%
2.0	768.0	8-11-23	S	DOY TAN	
3.0	767.0	7-8-17	S	SILTY TRACED SAND, MOIST, TAN	ML
10.0				BOTTOM OF BORING AT 10.0 FEET	

SCHNABEL ENGINEERING ASSOCIATES		PROJECT		TEST BORING NO.	
GEOTECHNICAL CONSULTANTS		WALLY'S IRON WORKS		B-2	
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Boring Elevation	EL. 788.0	Completion	9-14 2:30	None	8-23
Date Start	9-14-87	Completed	9-14-87	1 HR. RIG	9-14 4:30
U.S.D.A. Soil Classification: Sandy Loam					
Depth (ft)	Elv.	SAMPLE	TOPSOIL = #	DESCRIPTION	REMARKS
0.0	788.0	2-3-2	S	SILTY TRACED SAND, FEW ROOTS, MOIST, ORANGE/BROWN	RESIDUAL
1.0	787.0	4-20-24	S	ROCK FRAGMENTS, WITH SILTY SAND, DRY, TAN	ML A W = 2.3%
3.0	785.0	7-23-31	S	SILTY SAND WITH ROCK FRAGMENTS, MOIST, TAN	SM
10.0		4-17-24	S	BOTTOM OF BORING AT 10.0 FEET	



OWNER: WALLY'S IRON WORKS, INC.
 ADDRESS: 17530 FREDERICK ROAD
 MT. AIRY, MARYLAND 21771
 PHONE: (301) 829-2393

JENSEN-KELLER CORPORATION
 DEVELOPER/CONTRACTOR 301-788-9247

SHEET 5 OF 5

APR ASSOCIATES, INC.
 ENGINEERS SURVEYORS
 7427 HARFORD ROAD
 BALTIMORE, MARYLAND 21234
 444-4312

SEDIMENT CONTROL/S.W.M. NOTES AND DETAILS
 WALLY'S IRON WORKS, INC.
 MARYLAND ROUTE 144
 TAX MAP 2 PARCEL 54
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN NOVEMBER 10, 1987