
PLAN
SCALE: 1"=50'
OLD COLUMBIA PIKE
MARYLAND ROUTE 987
CHOCTAW DRIVE
COOKS LANE
MD. S.H.A. TYPE 'A' CURB & GUTTER (REVERSED SLOPE) NO SCALE
LIMIT OF MSHA STD. TYPE 'A' CURB & GUTTER - STA. 5+42 LT.
LIMIT OF MSHA PAVING STA. 5+12 LT.
LIMIT OF S.H.A. PAVING & TYPE 'A' CURB & GUTTER STA. 0+54
FOR CONTINUATION SEE SHEET 2 OF 11
STORM WATER MANAGEMENT POND I (FOR PLAN & PROFILES SEE SEE S.W.M. SHEET 5 OF 11)
TOP OF DAM 386.5
STA. 0+84 LIMIT OF PROPOSED PAVING
STA. 0+64 - LIMIT OF FULL PAVING SECTION AND LIMIT OF CURB AND GUTTER
LIMIT OF MSHA STD. TYPE A CURB & GUTTER - STA. 4+17 RT.
CONTRACTOR TO REGRADE AND RESHAPE EXISTING DITCH, DIRECT FLOW OF DITCH TO PROPOSED INLET.
LIMIT OF MSHA PAVING STA. 4+67
S 54° 44' 00" W
NOTES:
1. SIDEWALK RAMPS FOR HANDICAPPED TO BE PROVIDED AT ALL INTERSECTIONS.
2. EXISTING BG&E POLES ALONG OLD COLUMBIA PIKE TO BE RELOCATED BY OTHERS.
3. HOWARD COUNTY STA. 3043002 CONCRETE MONUMENT TO BE RELOCATED BY OTHERS.
MD. S.H.A. PAVING SECTION
1. PAVING: PAVING (ON A SUB BASE, ACCEPTABLE TO THE CHIEF ENGINEER OR HIS REPRESENTATIVE) TO CONSIST OF:
(A) 7" COMPACTED BITUMINOUS CONCRETE (6" BASE - 3" SURFACE) PLACED IN 3-3" COURSES, OR
(B) 3" (NOMINAL) BITUMINOUS CONCRETE SURFACE PLUS 5" (NOMINAL) BITUMINOUS CONCRETE BASE (OR 5" SAND ASPHALT BASE) ON ONE OF THE FOLLOWING: 4" CR-6, OR 4" DENSE GRADED AGGREGATE BASE, OR 6" GRAVEL, OR 12" SELECT BORROW OR EQUIVALENT MATERIAL.
(C) 4" COMPACTED BITUMINOUS CONCRETE (2" BASE - 2" SURFACE) ON ONE OF THE FOLLOWING:
3-4" CR-6, OR
3-4" DENSE GRADED AGGREGATE BASE, OR
2-6" GRAVEL
MD SHA TYPE 'A' CURB & GUTTER NO SCALE
MONUMENT LOCATION
OLD COLUMBIA PIKE
NOTE: FOR SEDIMENT CONTROL - SEE PLAN FOR GRADING & SEDIMENT CONTROL 'KEYWAYDIN'
NOTE: FOR PLAN & PROFILE OF STORM DRAIN CONSTRUCTION ALONG MD. RTE. 987, SEE STORM WATER MANAGT. POND NO. I. SHEET 5 OF 11.
BENCH MARK: HOWARD COUNTY STA. NO. 3043002 ELEVATION 377.58. DESCRIPTION: CONCRETE MONUMENT 0.50' BELOW SURFACE, 14'± OFF ℄ COLUMBIA PIKE (NORTH SIDE) 175'± NE ℄ COOKS LANE.
BENCH MARK: HOWARD COUNTY STA. NO. 3043001 ELEVATION 416.37 DESCRIPTION: CONCRETE MONUMENT AT SURFACE 12'± N OF ℄ COLUMBIA PIKE, 180'± NW OF ℄ AUTUMN DRIVE, 150'± NE. ℄ OF ℄ TOLL HOUSE ROAD.
TYPICAL SECTION
WIDENING MARYLAND ROUTE 987
NO SCALE
ENGINEERS
HUDKINS ASSOCIATES, INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117
DEVELOPER
D & G ASSOCIATES
9606 BELAIR ROAD
BALTIMORE, MARYLAND 21236
NOTE: HOWARD COUNTY MONUMENTS #3143006-R AND #3143007 WERE USED FOR HORIZONTAL & VERTICAL CONTROL.
AS-BUILT SURVEY CERTIFIED BY RICHARD S. OSBORN MD. L.S. NO. 10760 ON 9-30-87
PROPOSED TOP CURB (NORTH)
Existing Ground @ North Bldg. Restriction Line
Existing Ground ℄
Existing Ground @ South R/W Line
OLD COLUMBIA PIKE
MARYLAND ROUTE 987
SCALE: 1"=5' VERT. 1"=50' HOR.
DETAIL
PEDESTRIAN RAMP
NO SCALE
PLAN & PROFILE
OLD COLUMBIA PIKE
MARYLAND ROUTE 987
'KEYWAYDIN'
ELECT. DIST. NO. 2 HOWARD CO., MD.
SCALE: AS SHOWN SHEET 1 OF 11
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
4-23-80
CHIEF, BUREAU OF ENGINEERING DATE
OFFICE OF PLANNING & ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
AS-BUILT 9-30-87
K+E PLATE 1, PLAN-PROFILE KEUFFEL & ESSER CO.

1. BASE WILL BE PRIMED IN ACCORDANCE WITH SECTION C-3C-3 AS PROVIDED IN WITH THE HOWARD COUNTY ROAD CONSTRUCTION CODE & STANDARD SPECIFICATIONS.
2. TACK COAT IS REQUIRED IN ACCORDANCE WITH SECTION C-31-4 OF THE HOWARD COUNTY ROAD CONSTRUCTION CODE & STANDARD SPECIFICATIONS.

NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD Co. ROAD CONSTRUCTION CODE & STANDARD SPECIFICATIONS.
2. ALL UTILITY COMPANIES SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF CONSTRUCTION.
3. ALL STORM DRAINAGE STRUCTURES SHALL BE HOWARD Co. STANDARDS.
4. DESIGN SPEED: 25 M.P.H.
5. SIDEWALK RAMPS FOR HANDICAPPED TO BE PROVIDED AT ALL INTERSECTIONS.
6. FOR SEDIMENT CONTROL - SEE PLAN FOR GRADING & SEDIMENT CONTROL "KEYWAYDIN"

MON. LOCATION (NOT TO SCALE)
HOPI CT.
STREET LIGHT
CONC. MON. SET 400.26
CHOCTAW DR.
HOPI COURT
CHOCTAW COURT
CHOCTAW DRIVE
ZUNI COURT
COOKS LANE
MARYLAND ROUTE #987
ENGINEERS
HUDKINS ASSOCIATES, INC.
100 N. MAIN ST. BEL AIR, MD 21014
NOTE: FOR STORM WATER MANAGEMENT POND SEE SHEET 7 OF 9
DRAINAGE & UTILITY EASEMENT
℄ CURVE DATA
Δ = 90°00'00"
R = 210.00'
T = 210.00'
L = 329.87'
CHD. N 80°38'41"W - 296.99'
SOUTH R/W LINE
Δ = 90°00'00"
R = 199.49'
T = 199.49'
L = 313.35'
CHD. = N 80°38'41"W - 282.12'
℄ CURVE DATA (CUL-DE-SAC)
Δ = 38°56'35"
R = 112.50'
T = 39.77'
L = 76.46'
CHD = S34°55'05"W - 75.00'
PLAN
SCALE: 1"=50'
DEVELOPER
B & G ASSOCIATES
9606 BELAIR ROAD
BALTIMORE, MARYLAND 21236
LOCATION MAP
SCALE: 1"=2000'
TYPICAL SECTION
NO SCALE
CHOCTAW DRIVE
(R-20 DISTRICT, RESIDENTIAL SINGLE, 25 M.P.H. DESIGN SPEED)
STA. 0+00 TO STA. 9+12.22
1" Bit. Conc. Surface - Band C-3
2½" Bit. Conc. Binder - Band C-2
7" Crusher Run
STANDARD 7" COMBINATION CURB & GUTTER
4' CONC SIDEWALK
AS BUILT SURVEY CERTIFIED BY RICHARD S. OSBORN MD L.S. NO. 10760 ON 9-30-87
V.C. DATA
P.V.I. STA. 4+75
P.V.I. ELEV. 410.15
L.V.C. = 350'
P.V.R.C. = 2+00
P.V.R.C. = 5+50
CORR. = -5.70'
S.S.D. = 194'
CHOCTAW DRIVE
SCALE: 1"=5' VERT. 1"=50' HOR.
V.C. DATA
P.V.I. STA. 6+00
P.V.I. ELEV. 400.70'
L.V.C. = 100'
P.V.R.C. = 5+50
P.V.T. = 6+50
CORR. = +0.40
H.S.D. = 247'
V.C. DATA
P.V.I. STA. 1+12
P.V.I. ELEV. 386.95
L.V.C. = 176'
P.V.C. = 0+24
P.V.T. = 2+00
CORR. = +1.28'
H.S.D. = 175'
V.C. DATA
P.V.I. STA. 1+51.90
P.V.I. ELEV. 396.34
L.V.C. = 303.80
P.V.C. STA. 0+00
P.V.T. STA. 3+03.80
CORR. = +0.76'
LINEAR PROFILE OF CHOCTAW DRIVE
SCALE: 1"=5' VERT. 1"=50' HOR.
STANDARD
7" COMBINATION CURB & GUTTER
NO SCALE
STANDARD
7" COMBINATION CURB & GUTTER
(REVERSED SLOPE)
NO SCALE

REV.	DATE	DESC.	BY
1	[illegible]	[illegible]	S.I.B.
2	[illegible]	ADD 0 3-3A	S.I.B.
3	[illegible]	[illegible] PIPE CLASS FROM [illegible]	S.I.B.

PLAN & PROFILE
CHOCTAW DRIVE
"KEYWAYDIN"
ELECT. DIST. NO. 2 HOWARD CO., MD.
SCALE: AS SHOWN
SHEET 2 OF 11

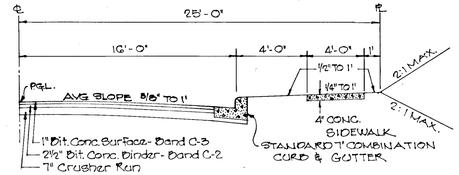
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

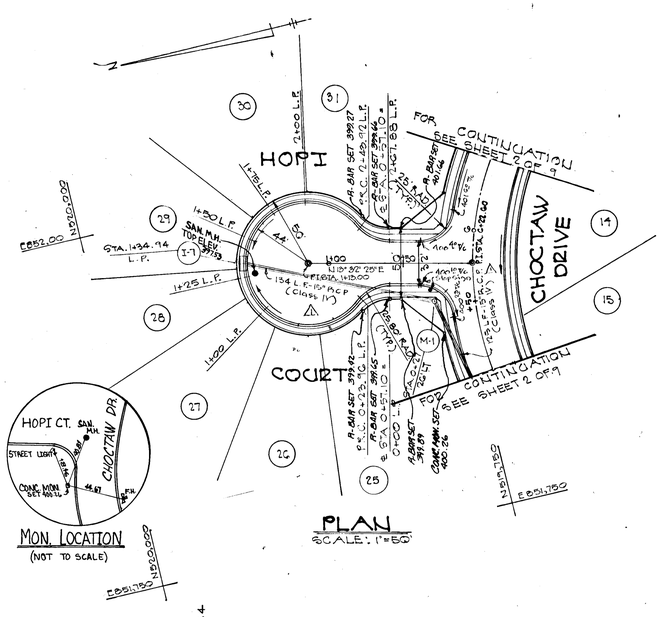
William E. Riley 4-23-80
CHIEF, BUREAU OF ENGINEERING DATE

OFFICE OF PLANNING & ZONING
[signature] 4-2-80
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

F-80-92 AS BUILT 9-30-87

#824





Rev	Date	Desc	By
1	11/27/81	Changed Pipe Classes from III to IV	SLB

1. BASE WILL BE PRIMED IN ACCORDANCE WITH SECTION C-3C-3 AS PROVIDED IN WITH THE HOWARD COUNTY ROAD CONSTRUCTION CODE & STANDARD SPECIFICATIONS.
2. TACK COAT IS REQUIRED IN ACCORDANCE WITH SECTION C-31-4 OF THE HOWARD COUNTY ROAD CONSTRUCTION CODE & STANDARD SPECIFICATIONS.

PLAN
SCALE: 1"=50'

TYPICAL HALF SECTION
NO SCALE
ZUNI COURT - HOPI COURT
(R-20 DISTRICT, RESIDENTIAL SINGLE 25 M.P.H. DESIGN SPEED)

NOTE: SIDEWALK RAMPS FOR HANDICAPPED TO BE PROVIDED AT ALL INTERSECTIONS.

NOTES:
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD CO. ROAD CONSTRUCTION CODE & STANDARD SPECIFICATIONS.
2. ALL UTILITY COMPANIES SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF CONSTRUCTION.
3. ALL STORM DRAINAGE STRUCTURES SHALL HOWARD CO. STANDARDS.
4. DESIGN SPEED, HOPI COURT & ZUNI COURT 25 MPH.
5. FOR SEDIMENT CONTROL-SEE PLAN FOR GRADING & SEDIMENT CONTROL "KEYWAYDIN"

ENGINEERS
HUDKINS ASSOCIATES INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117

Howard W. Kolecky 1/2/80
Date

PLAN
SCALE: 1"=50

DEVELOPER
B & G ASSOCIATES
9606 BELAIR ROAD
BALTIMORE, MARYLAND
21236

HOPI COURT
SCALE: 1"=5 VERT
1"=50 HOR.

LINEAR PROFILE OF ZUNI COURT
SCALE: 1"=5 VERT
1"=50 HOR.

LINEAR PROFILE OF HOPI COURT
SCALE: 1"=5 VERT
1"=50 HOR.

AS-BUILT SURVEY CERTIFIED BY
RICHARD S. OSBORN MD. L.S.
NO. 10760 ON 9-30-87.

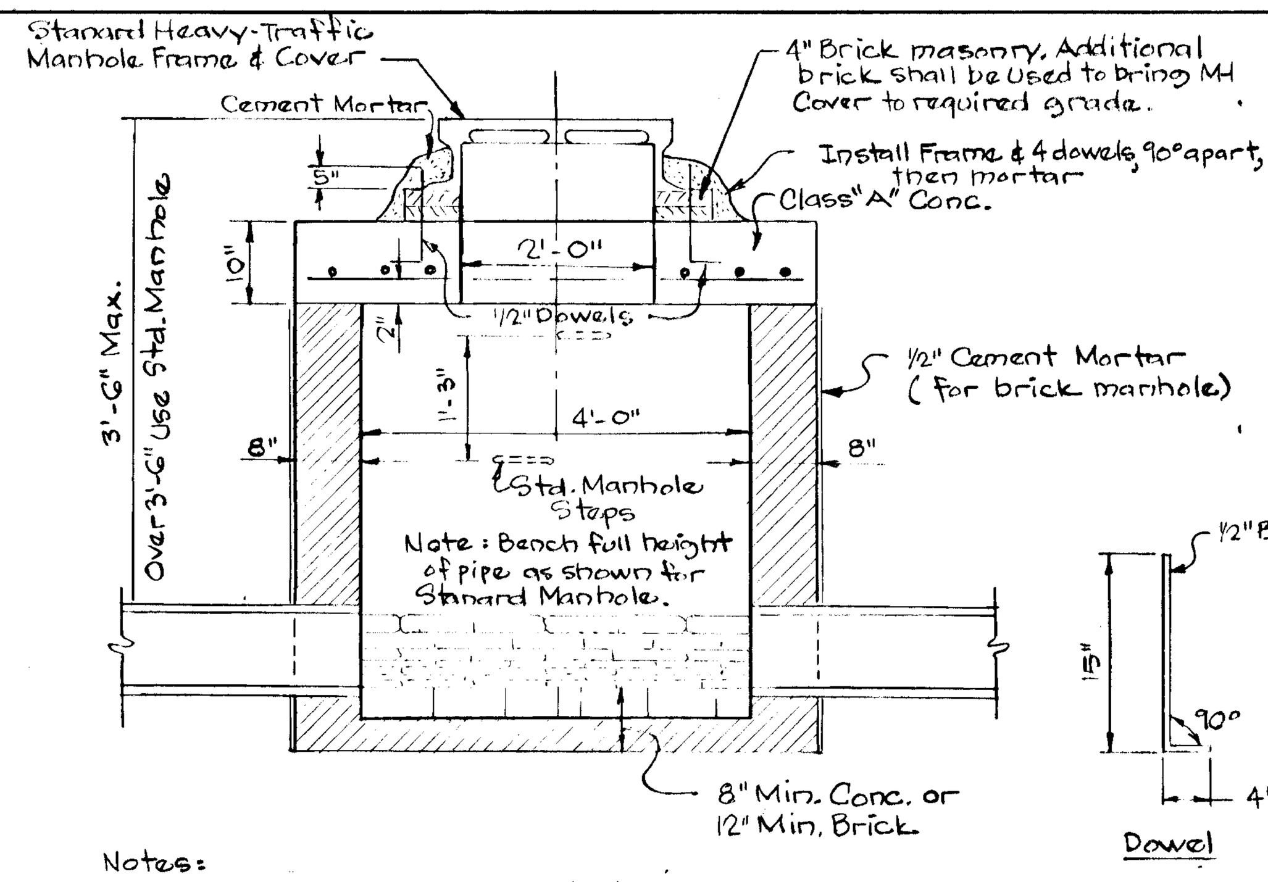
ZUNI COURT
SCALE: 1"=5 VERT
1"=50 HOR.

PLAN & PROFILE
HOPI COURT - ZUNI COURT
"KEYWAYDIN"
ELECT. DIST. NO. 2 HOWARD CO. MD
SCALE: AS SHOWN
SHEET 3 OF 11

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
William E. Riley 4-23-80
CHIEF, BUREAU OF ENGINEERING DATE
OFFICE OF PLANNING & ZONING
4-22-80
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

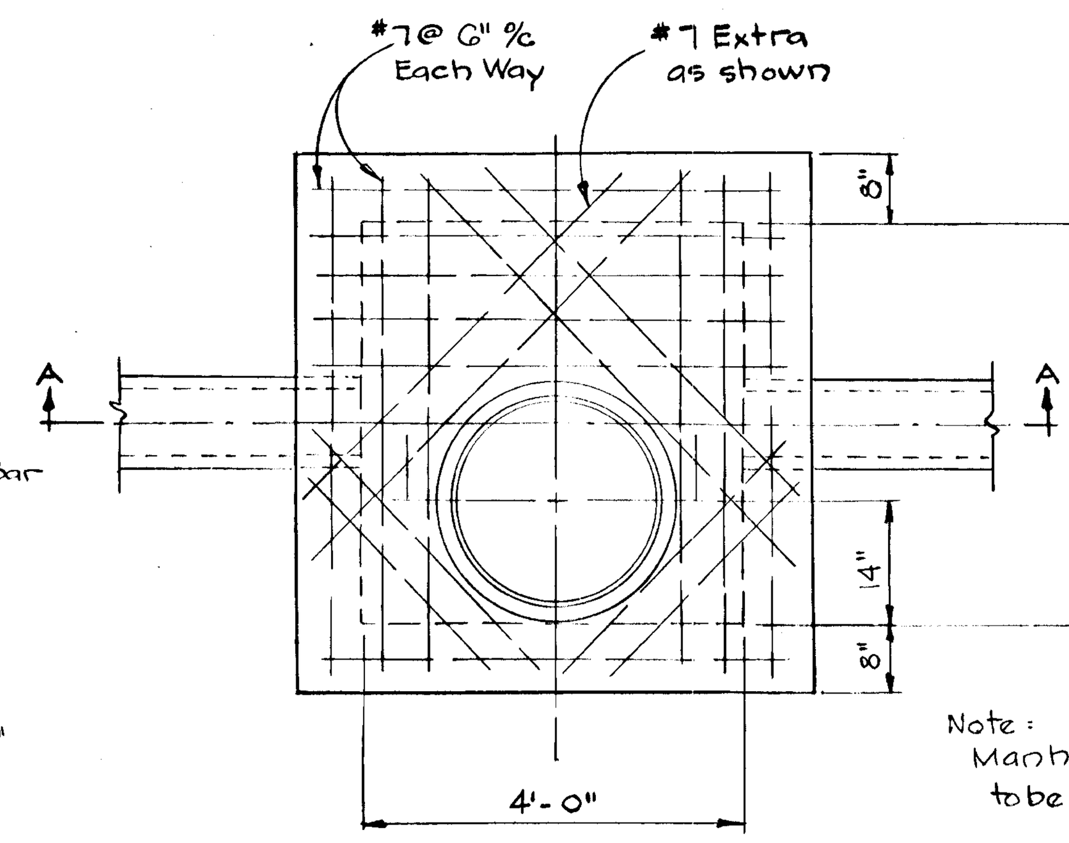
#824

F-80-92 AS-BUILT 9-30-87



Notes:
1. Walls, bottom slab and invert shall be brick or plain class 'A' concrete poured in place.
2. Apply two coats of a waterproof bituminous compound over cement mortar.

SECTION A-A

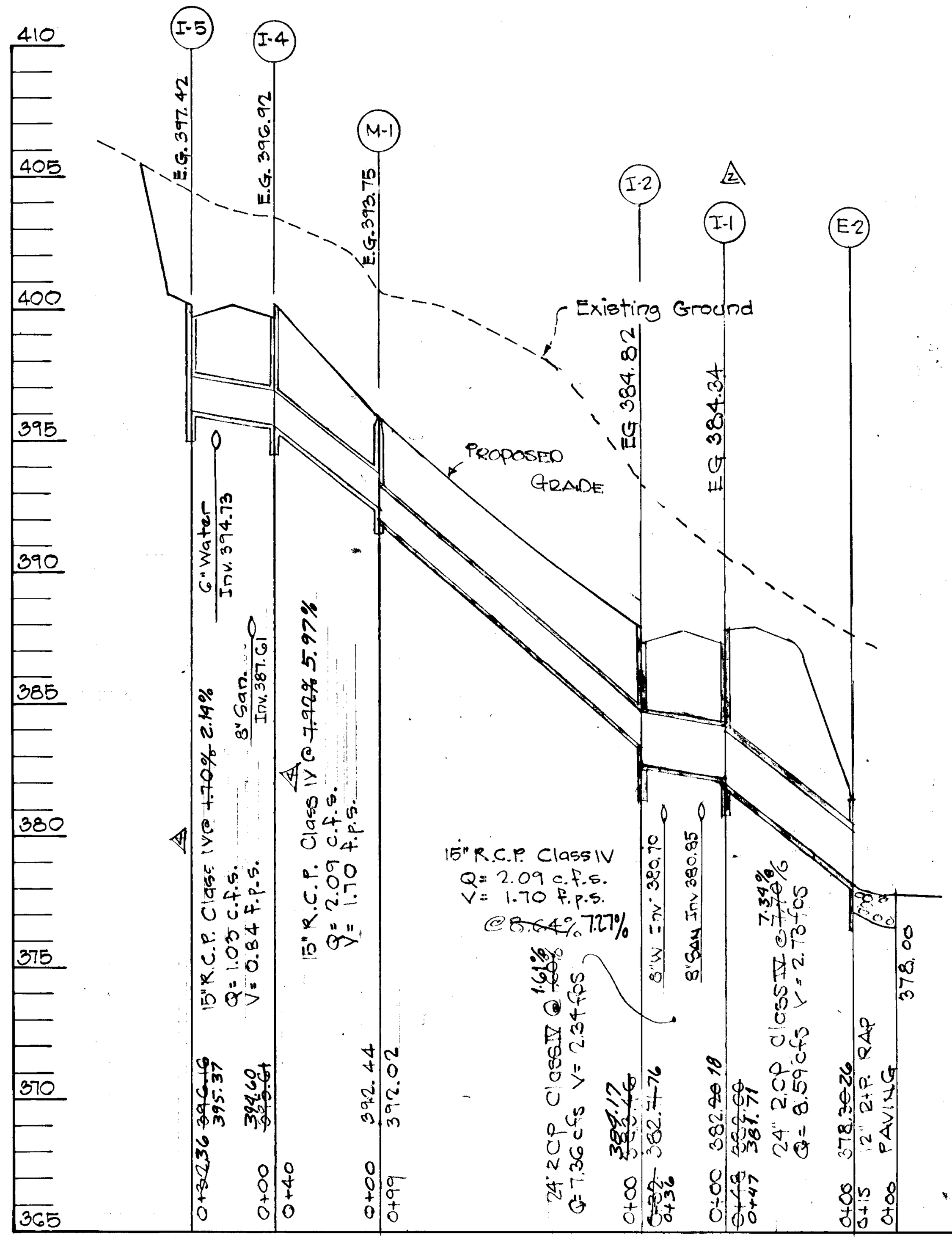


Note:
Manhole Frame and Cover to be placed as shown.

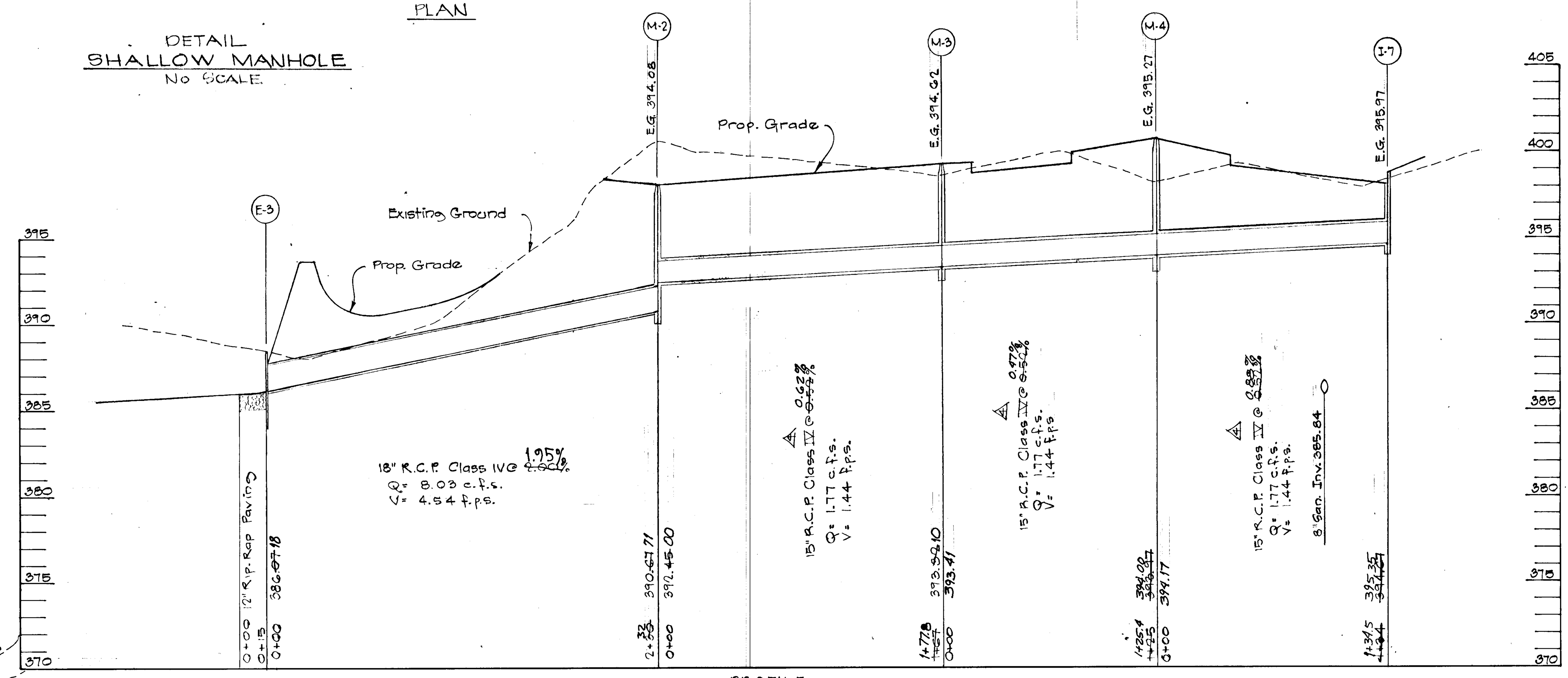
PLAN

DETAIL
SHALLOW MANHOLE
NO SCALE

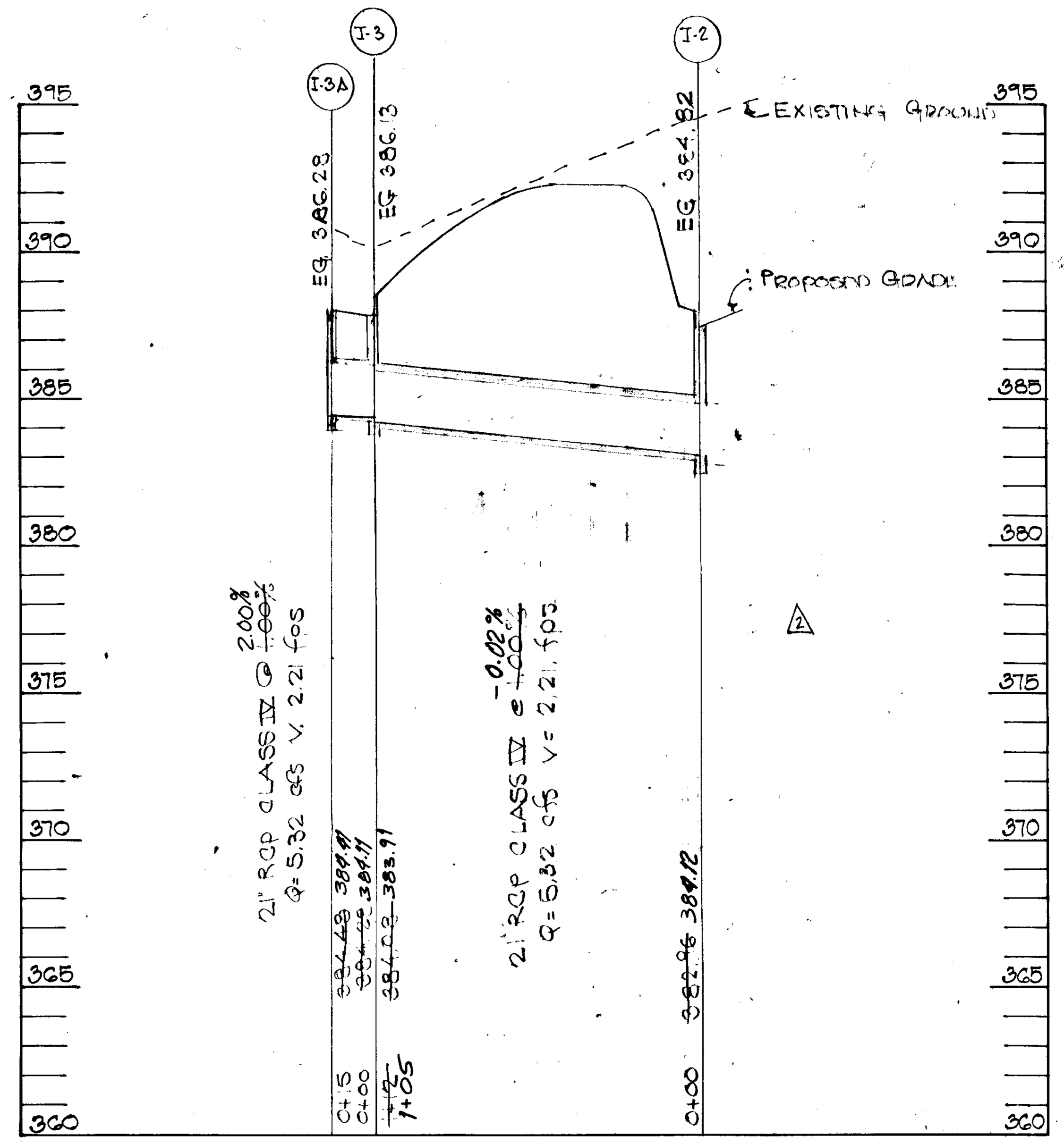
STRUCTURE SCHEDULE						
No.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
E-2	C ENDWALL	SEE PLAN & PROFILE	-	378.30	380.55	DWG. D-52, PG. 107
I-1	A-10 W/DEFLECTORS	STA. 1+05 - 16' RT. CHOCTAW DRIVE	382.20	382.00	387.87	DWG. D-64A, PG. 119A
I-2	A-10 W/DEFLECTORS	STA. 1+05 16' LT. CHOCTAW DRIVE	383.46 382.96	382.71	387.87	DWG. D-64A, PG. 119A
I-3	A-10 W/DEFLECTORS	STA. 0+93 24' RT. MD. RTE. 987	384.23	384.08	388.00	DWG. D-64A, PG. 119A
M-1	SHALLOW MH.	STA. 2+04 - 22' LT. CHOCTAW DRIVE	392.44	392.02	395.75	SEE DETAIL
I-4	A-10	STA. 0+49 - 16' LT. ZUNI COURT	395.61	395.61	399.58	DWG. D-64A, PG. 119A
I-5	A-10	STA. 0+49 - 16' RT. ZUNI COURT	-	396.16	399.58	DWG. D-64A, PG. 119A
E-3	C ENDWALL	SEE PLAN & PROFILE	-	386.07	388.32	DWG. D-52, PG. 107
M-2	DROP MANHOLE	8' BACK L. P. STA. 2+12 CHOCTAW DRIVE	392.45	390.67	388.06'	DWG. D-104, PG. 159
I-6	A-10	STA. 1+51.90 L.P. CHOCTAW DRIVE	-	393.34	397.68	DWG. D-64A, PG. 119A
M-3	STD. MANHOLE	STA. 1+60 - 18' RT. CHOCTAW DRIVE	393.32	393.32	399.24	DWG. D-103, PG. 158
M-4	STD. MANHOLE	STA. 0+27 26' LT. HOPI COURT	393.97	393.97	400.73	DWG. D-103, PG. 158
I-7	A-10	STA. 1+33.94 L.P. HOPI COURT	-	394.67	398.65	DWG. D-64A, PG. 119A
I-3A	A-10 W/DEFLECTOR	STA. 1+08 - 24' LT. MD. RTE. 987	-	384.43	388.00	DWG. D-64A, PG. 119A



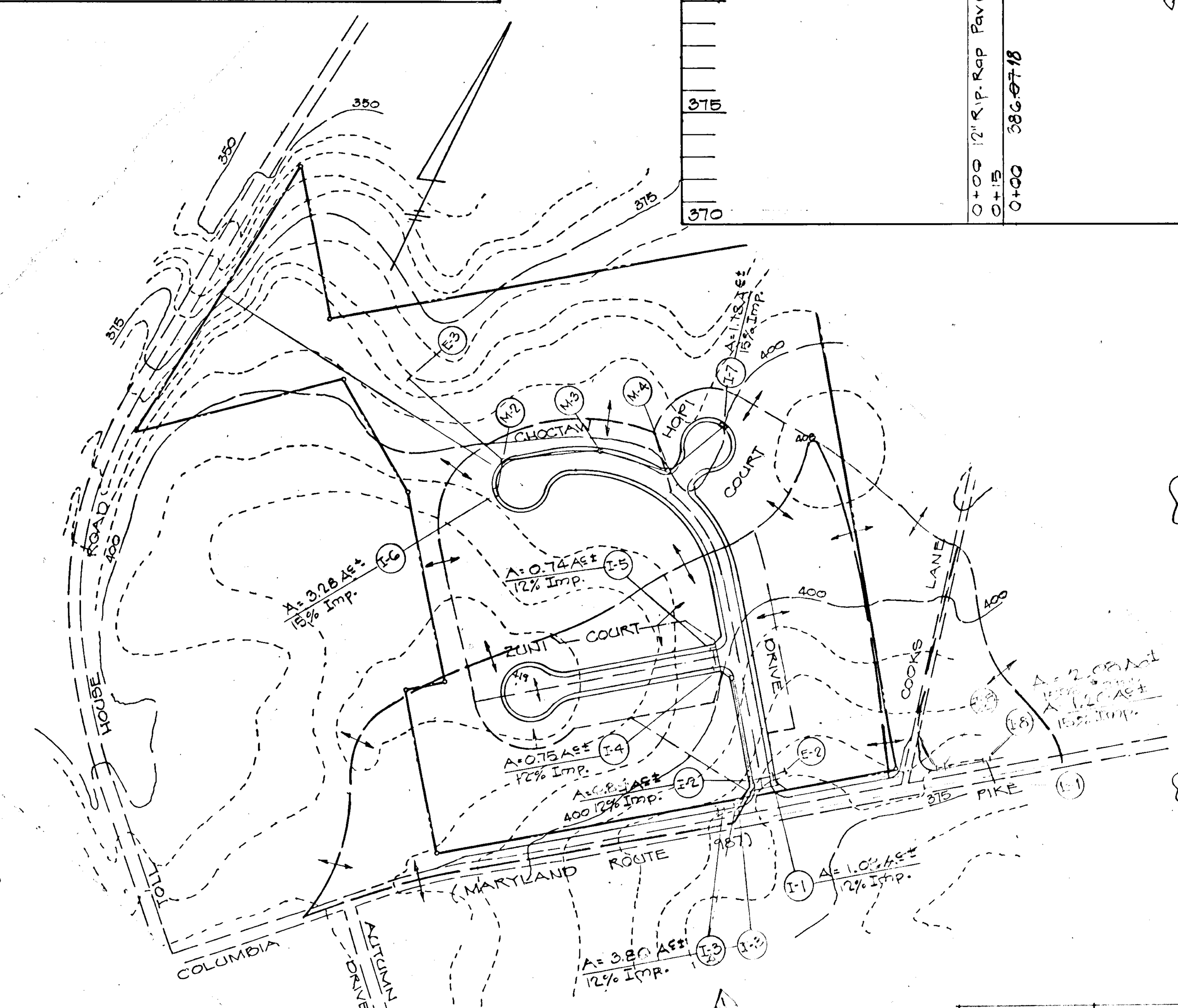
PROFILE
SCALE: HOR. 1"=50'
VERT. 1"=5'



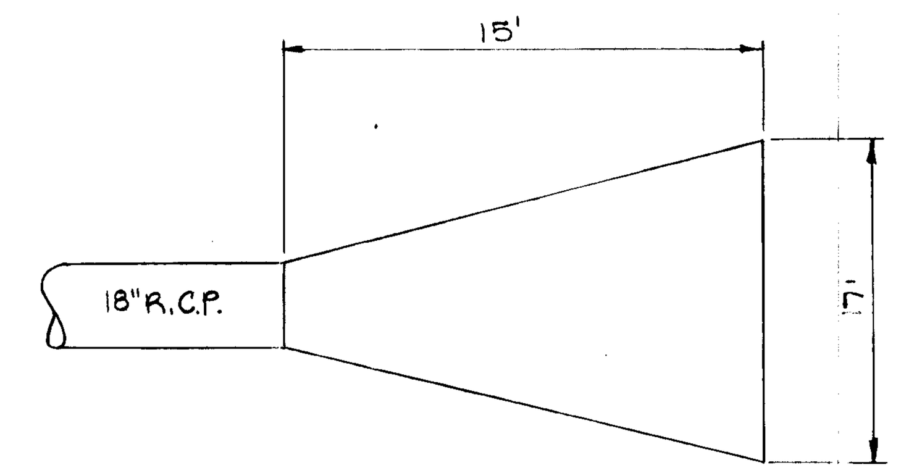
PROFILE
SCALE: HOR. 1"=50'
VERT. 1"=5'



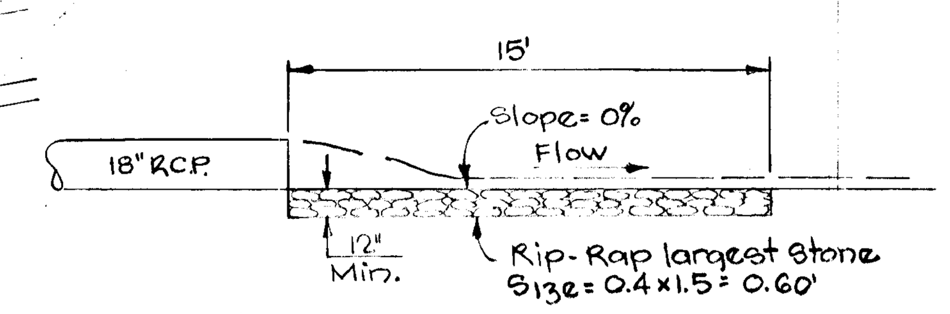
PROFILE
SCALE: HOR. 1"=50'
VERT. 1"=5'



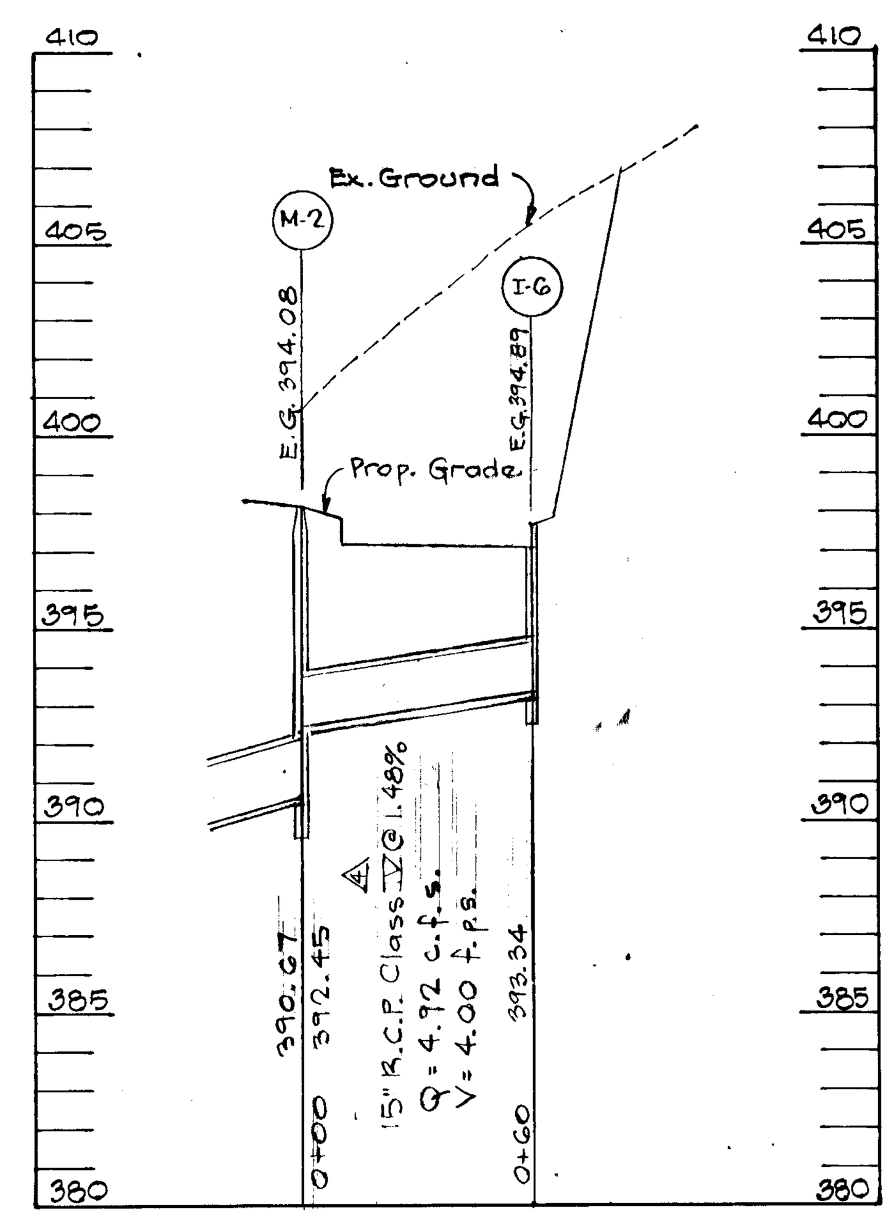
DRAINAGE MAP
SCALE: 1"=2000'



PLAN VIEW



DETAIL
OUTLET PROTECTION
NO SCALE



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

DEVELOPER
B.&G. ASSOCIATES
9606 BELAIR ROAD
BALTIMORE, MARYLAND 21236

ENGINEERS
HUDKINS ASSOCIATES, INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117

AS-BUILT SURVEY CERTIFIED BY WILLIAM H. NOYES, JR. MD. P.E. NO. 13719, ON 10-3-87.

REV	DATE	DESCS	BY
4	11/27/81	CHANGED PIPE CLASS FROM III TO IV	SLB
3	11/27/81	ADDED I-3A	SLB
2	"	REVISED E-2 to I-1 to I-2 to I-3	"
1	"	REVISED DRAINAGE MAP	"

STORM DRAIN
PROFILES
"KEYWAYDIN"

ELECT. DIST. No. 2 HOWARD Co., MD.
SCALE: AS SHOWN
SHEET 4 OF 11

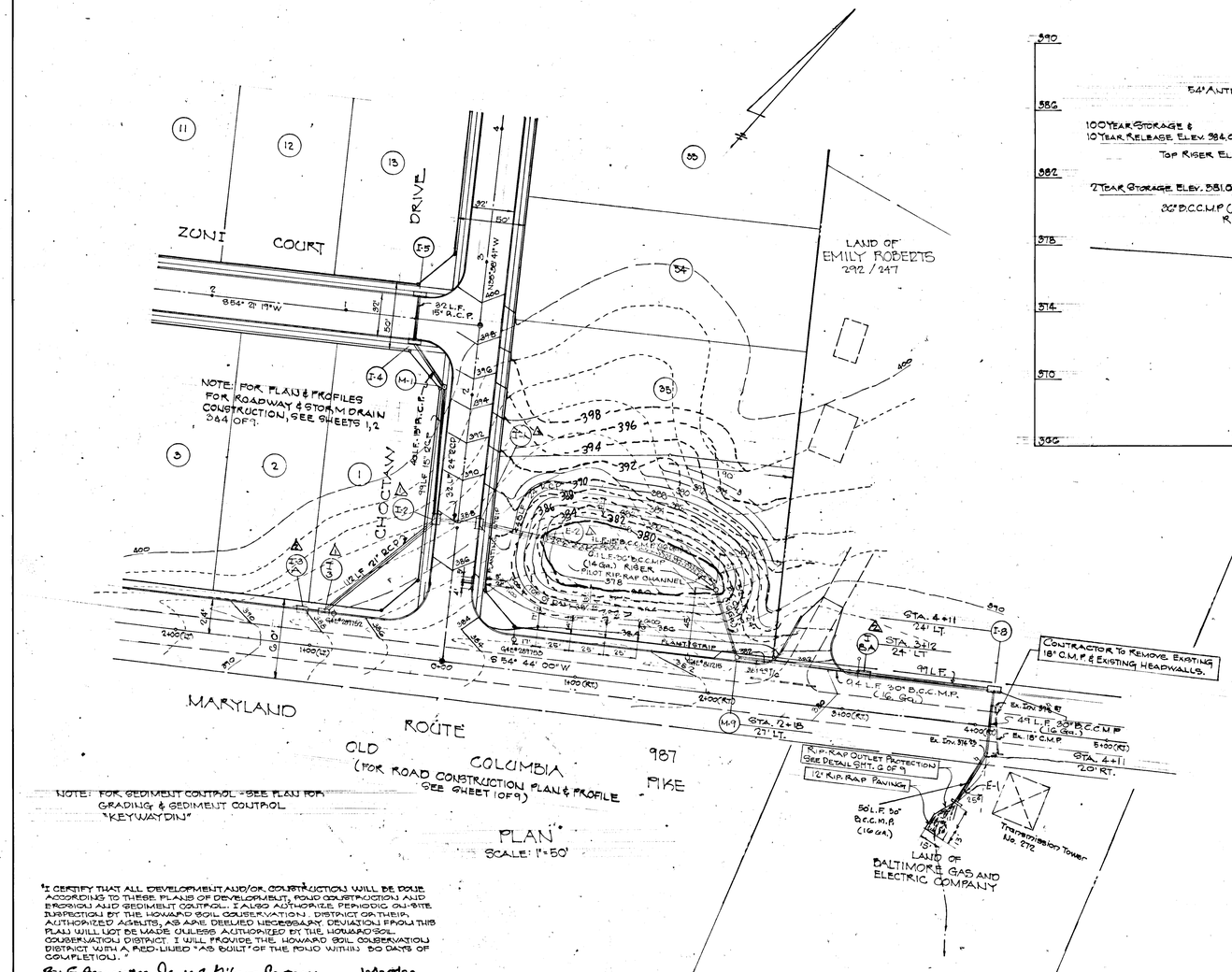
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

4-23-80
CHIEF, BUREAU OF ENGINEERING DATE
OFFICE OF PLANNING & ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

F-80-92 AS-BUILT 9-30-87

#824



NOTE: FOR SEDIMENT CONTROL - SEE PLAN FOR GRADING & SEDIMENT CONTROL "KEYWAY DIN"

PLAN
SCALE: 1"=50'

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS APE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

B & G Associates, Jack T. Gibson Partner — 1-27-80
B & G ASSOCIATES, JACK T. GIBSON - PARTNER — 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 A RED-LINED "AS BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

HUDKINS ASSOCIATES, INC. — 1/2/80 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.

U.S. SOIL CONSERVATION SERVICE — 4-21-80 DATE

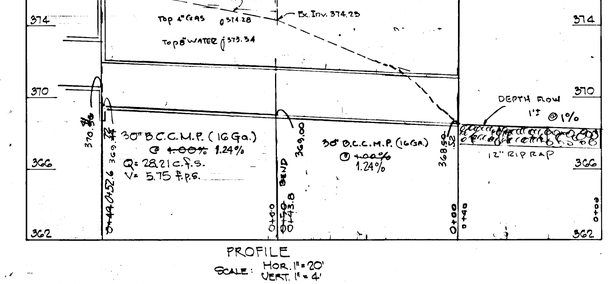
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: Robert W. Ziehm, HOWARD S.C.D. — 4-21-80 DATE

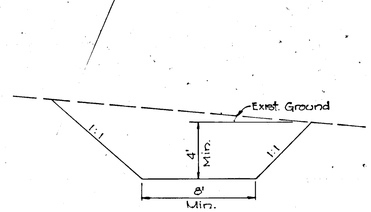
PLAN NUMBER

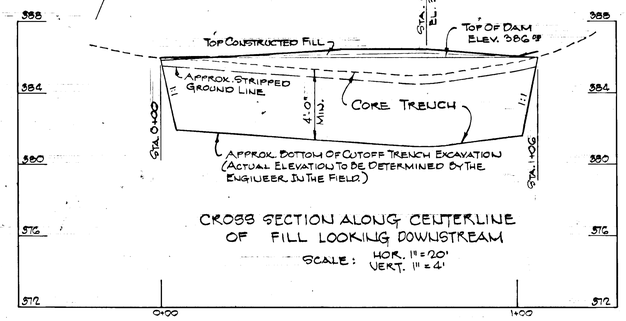
#824

PROFILE
SCALE: HOR. 1"=20'
VERT. 1"=4'



PROFILE
SCALE: HOR. 1"=20'
VERT. 1"=4'





CROSS SECTION ALONG CENTERLINE OF FILL LOOKING DOWNSTREAM
SCALE: HOR. 1"=20' VERT. 1"=4'

STRUCTURE SCHEDULE

No.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
E-1	'C' ENDWALL	STA. 2+85 - 30' RT. MD. RTE. 987	-	368.50	-	DWG. D-52, PG. 107
I-8	A-10 W/DEFLECTORS	STA. 4+11 24' LT. MD. RTE. 987	370.56	369.44	378.45	DWG. D-64A, PG. 119A
M-9	STD. MANHOLE	STA. 7+15 27' LT. MD. RTE. 987	375.44	372.54	381.80	DWG. D-103, PG. 158
I-8A	A-10 W/DEFLECTORS	STA. 3+12 24' LT MD RTE 987	371.65	371.45	380.90	DWG. D-103, PG. 158

REV	DATE	DESC	BY
4	9-16-80	REMOVE CHAIN LINK FENCE FROM AROUND THE STORM WATER MANAGEMENT FACILITY	EGH
3	10-6-83	E-1 - I-8 - I8A - M-9	WP
2	11/27/8[illegible]	ADDED I-8A & I-8A	SLB
1	11/27/8[illegible]	REVISED STORM DRAIN LOCATION E-2 I-1 I-2 I-3	SLB

As-Built survey certified by William H. Noyes, Jr. Md. P.E. No. 13719 on 10-2-87

DEVELOPER
B & G ASSOCIATES
9006 BELAIR ROAD
BALTIMORE, MARYLAND 21236

ENGINEERS
HUDKINS ASSOCIATES, INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117

STORM WATER MANAGEMENT POND - NO. 1
'KEYWAY DIN'
ELECT. DIST No. 2 HOWARD Co., MD.
SCALE: AS SHOWN
SHEET 5 OF 11

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE
OFFICE OF PLANNING & ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

F-80-92 AS-BUILT 9-30-87

SITE PREPARATIONS

AREAS UNDER THE BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND THE TOPSOIL STRIPPED TO REMOVE ALL TREES, VEGETATION, ROOTS OR OTHER OBJECTIONAL MATERIAL. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS COVERED BY THE POND OR RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONAL MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH GROUND SURFACE.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL

THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED AREA OR AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, OVER-SIZE STONES, FROZEN OR OTHER OBJECTIONAL MATERIALS. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION WHICH PROVIDES FOR ANTICIPATED SETTLEMENT TO THE DESIGN ELEVATION. THE FILL HEIGHT ALONG THE LENGTH OF THE EMBANKMENT SHALL BE INCREASED ABOVE THE DESIGN ELEVATION (INCLUDING FREEBOARD) AS SHOWN ON THE PLANS.

PLACEMENT

AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN 8-INCH MAXIMUM THICKNESS (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST POROUS BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREET PORTIONS OF THE EMBANKMENT.

COMPACTION

THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EARTH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED. ALL COMPACTION TO BE 95%.

CUT-OFF TRENCH

WHERE SPECIFIED, A CUT OFF TRENCH SHALL BE EXCAVATED ALONG OR PARALLEL TO THE CENTER-LINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL MATERIAL FOR THE CUT OFF TRENCH SHALL BE THE MOST IMPERVIOUS MATERIAL AVAILABLE AND SHALL BE COMPACTED WITH EQUIPMENT OR ROLLERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, FERTILIZING AND MULCHING (IF REQUIRED) IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS SHOWN ON OR ACCOMPANYING THE DRAWINGS.

PIPE CONDUITS

A. 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 A.A.S.H.T.O. SPECIFICATIONS M-190 TYPE A WITH WATERTIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.
(ALUMINUM PIPE) THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. SPECIFICATIONS M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS. 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. 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 LESS THAN 9 AND GREATER THAN 4.
HELICALLY CORRUGATED PIPE IN ADDITION TO THE REQUIREMENTS ABOVE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WHICH ARE CAULKED, DURING FABRICATION, WITH NEOPRENE BEAD.

2. 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. WATERTIGHT COUPLING BANDS SHALL BE USED AT ALL JOINTS. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO 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. LAYING PIPE - THE PIPE SHALL BE PLACED WITH INSIDE CIRCUMFERENTIAL LAPS POINTING DOWNSTREAM AND WITH LONGITUDINAL LAPS AT THE SIDES.

5. BACKFILLING - SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

#824

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. Helm 4.21.80
USDA SOIL CONSERVATION SERVICE — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: Robert W. Ziehm 4-24-80
HOWARD S.C.D. — DATE

PLAN NUMBER

CONCRETE

1. MATERIALS
   - A. CEMENT - NORMAL PORTLAND CEMENT SHALL CONFORM TO THE LATEST ASTM SPECIFICATION C-150.
   - B. WATER - THE WATER USED IN CONCRETE SHALL BE CLEAN, FREE FROM OIL, ACID, ALKALI, SCALES, ORGANIC MATTER, OR OTHER OBJECTIONAL SUBSTANCES.
   - C. SAND - THE SAND USED IN CONCRETE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND SHALL BE GRADED WITH 100 PERCENT PASSING A ONE-QUARTER INCH SIEVE. LIMESTONE SAND SHALL NOT BE USED.
   - D. COURSE AGGREGATE - THE COURSE AGGREGATE SHALL BE CLEAN, HARD, STRONG, DURABLE, AND FREE FROM CLAY OR DIRT. IT SHALL BE WELL GRADED WITH A MAXIMUM SIZE OF ONE AND ONE-HALF (1-½") INCHES.
   - E. REINFORCING STEEL - THE REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE BILLET STEEL OR RAIL STEEL CONFORMING TO A.S.T.M. SPECIFICATION A-615.

2. DESIGN MIX.
   THE CONCRETE SHALL BE MIXED IN THE FOLLOWING PROPORTIONS, MEASURED BY WEIGHT. THE WATER-CEMENT RATIO SHALL BE 5-½ TO 6 U.S. GALLONS OF WATER PER 94 POUND BAG OF CEMENT. THE PROPORTION OF MATERIALS FOR THE TRIAL MIX SHALL BE 1:2:3½. THE COMBINATION OF AGGREGATES MAY BE ADJUSTED TO PRODUCE A PLASTIC AND WORKABLE MIX THAT WILL NOT PRODUCE HARSHNESS IN PLACING OR HONEYCOMBING IN THE STRUCTURE.

3. MIXING - THE CONCRETE INGREDIENTS SHALL BE MIXED IN BATCH MIXERS UNTIL THE MIXTURE IS HOMOGENEOUS AND OF UNIFORM CONSISTENCY. THE MIXING OF EACH BATCH SHALL CONTINUE FOR NOT LESS THAN ONE AND ONE-HALF MINUTES AFTER ALL THE INGREDIENTS, EXCEPT THE FULL AMOUNT OF WATER, ARE IN THE MIXER. THE MINIMUM MIXING TIME IS PRESCRIBED ON PROPER CONTROL OF THE SPEED OF ROTATION OF THE MIXER, AND OF THE INTRODUCTION OF THE MATERIALS, INCLUDING WATER, INTO THE MIXER. WATER SHALL BE ADDED PRIOR TO, DURING, AND FOLLOWING THE MIXER CHARGING OPERATIONS. EXCESSIVE OVER MIXING REQUIRING THE ADDITION OF WATER TO PRESERVE THE REQUIRED CONCRETE CONSISTENCY SHALL NOT BE PERMITTED. TRUCK MIXING WILL BE ALLOWED PROVIDED THAT THE USE OF THIS METHOD SHALL CAUSE NO VIOLATION OF ANY APPLICABLE PROVISIONS OF THE SPECIFICATIONS GIVEN HERE.

4. FORMS - THE FORMS SHALL HAVE SUFFICIENT STRENGTH AND RIGIDITY TO HOLD THE CONCRETE AND TO WITHSTAND THE HYDRAULIC PRESSURE, TAMPING AND VIBRATION WITHOUT DEFLECTION FROM THE PRESCRIBED LINES. THEY SHALL BE MORTAR-TIGHT AND CONSTRUCTED SO, THAT THEY CAN BE REMOVED WITHOUT HAMMERING OR PRYING AGAINST THE CONCRETE. THE INSIDE OF FORMS SHALL BE OILED WITH A NON-STAINING MINERAL OIL OR THOROUGHLY WETTED BEFORE CONCRETE IS PLACED. FORMS MAYBE REMOVED 24 HOURS AFTER THE PLACEMENT OF CONCRETE. ALL WIRE TIES AND OTHER DEVICES USED SHALL BE RECESSED FROM THE SURFACE OF THE CONCRETE.

5. REINFORCING STEEL - ALL REINFORCING MATERIAL SHALL BE FREE OF DIRT, RUST, SCALE, OIL, PAINT OR ANY OTHER COATINGS. THE STEEL SHALL BE ACCURATELY PLACED AND SECURELY TIED AND BLOCKED INTO POSITION SO THAT NO MOVEMENT OF THE STEEL WILL OCCUR DURING PLACEMENT OF CONCRETE.

6. CONSOLIDATING - CONCRETE SHALL BE CONSOLIDATED WITH INTERNAL TYPE MECHANICAL VIBRATORS. VIBRATION SHALL BE SUPPLEMENTED BY SPADING AND HAND TAMPING AS NECESSARY TO INSURE SMOOTH AND DENSE CONCRETE ALONG FORM SURFACES IN CORNERS, AND AROUND EMBEDDED ITEMS.

7. FINISHING - DEFECTIVE CONCRETE, HONEYCOMBED AREAS, VOIDS LEFT BY THE REMOVAL OF TIE RODS, RIDGES ON ALL CONCRETE SURFACES PERMANENTLY EXPOSED TO VIEW OR EXPOSED TO WATER ON THE FINISHED STRUCTURE, SHALL BE REPAIRED IMMEDIATELY AFTER THE REMOVAL OF FORMS. ALL VOIDS SHALL BE REAMED AND COMPLETELY FILLED WITH DRY-PATCHING MORTAR.

8. PROTECTION AND CURING - EXPOSED SURFACES OF CONCRETE SHALL BE PROTECTED FROM DIRECT RAYS OF THE SUN FOR AT LEAST THE FIRST THREE (3) DAYS. ALL CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST TEN (10) DAYS AFTER BEING PLACED. MOISTURE MAY BE APPLIED BY SPRAYING. CONCRETE SHALL NOT BE EXPOSED TO FREEZING DURING THE CURING PERIOD. CURING COMPOUNDS MAY ALSO BE USED.

9. PLACING TEMPERATURE - CONCRETE MAY NOT BE PLACED AT TEMPERATURES BELOW 37 DEGREES F. WITH THE TEMPERATURE FALLING, OR 34 DEGREES WITH THE TEMPERATURE RISING.

PERMANENT SEEDING NOTES

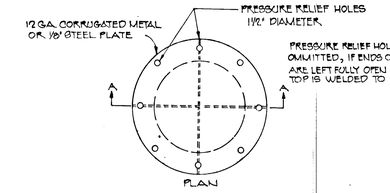
SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS: APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1,000 SQ.FT) and 600 LBS PER ACRE 0-20-20 FERTILIZER (14 LBS./1,000 SQ.FT.) HARROW OR DISC LIME AND FERTILIZER INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE (9.2 LBS./1,000 SQ.FT.) OF 38-0-0 UREAFORM FERTILIZER AND 500 LBS. PER ACRE (11.5 LBS./1,000 SQ.FT.) OF 10-20-20 FERTILIZER.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUG. 1 THRU OCT. 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS/1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS/1,000 SQ/FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT 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 SOD. OPTION (3) - SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

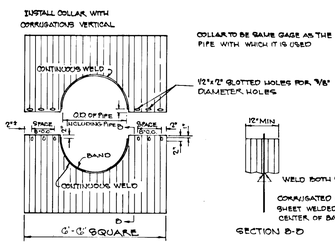
MULCHING: APPLY 1½ TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF CHOPPED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GALLONS/1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GALLONS/1,000 SQ.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MADE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.



1. THE CYLINDER MUST BE FIRMLY FASTENED TO THE TOP OF THE RISER.
2. SUPPORT BARS ARE WELDED TO THE TOP OF THE RISER OR ATTACHED BY STRAPS BOLTED TO TOP.

DETAIL TRASH RACK & ANTI-VORTEX DEVICE
NO SCALE



NOTES FOR COLLARS:
1. ALL MATERIALS TO BE IN ACCORDANCE WITH CONSTRUCTION AND CONSTRUCTION MATERIAL SPECIFICATIONS.
2. WHEN SPECIFIED ON THE PLANS, COATING OF COLLARS SHALL BE IN ACCORDANCE WITH CONSTRUCTION AND CONSTRUCTION MATERIAL SPECIFICATIONS.
3. UNASSEMBLED COLLARS SHALL BE MARKED BY PAINTING OR TAGGING TO IDENTIFY MATCHING PARTS.
4. THE LAP BETWEEN THE TWO HALF SECTIONS AND BETWEEN THE PIPE AND CONNECTING BAND SHALL BE CAULKED WITH ASPHALT MASTIC AT TIME OF INSTALLATION.
5. EACH COLLAR SHALL BE FURNISHED WITH TWO ½" DIAMETER PODS WITH STANDARD TANK RODS FOR CONNECTING COLLARS TO PIPE.

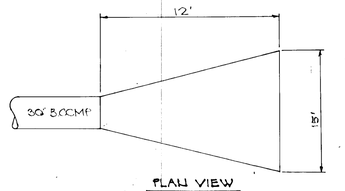
DETAILS OF CORRUGATED METAL ANTI-SEEP COLLARS
NO SCALE.

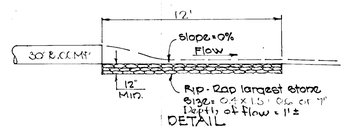
I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION.

B+G Associates - Jack T. Gibson, Partner — 12/27/79
B&G ASSOCIATES - JACK T. GIBSON, PARTNER. — DATE

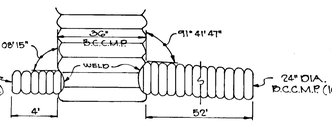
I CERIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION, AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION.

Howard W. Hawkins 1/28/80
HOWKINS ASSOCIATES INC. — DATE

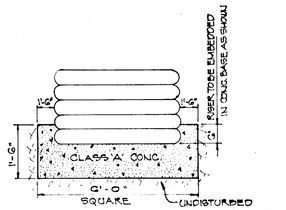




DETAIL
OUTLET PROTECTION
NO SCALE



DETAIL
RISER CONNECTION
No Scale



DETAIL CONCRETE BASE
NO SCALE

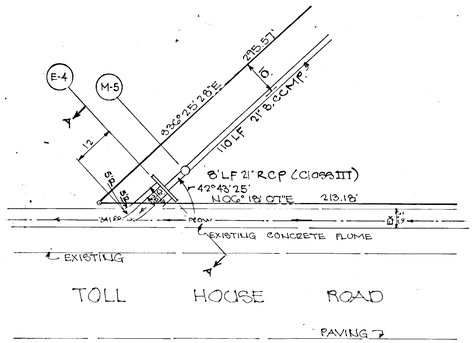
DEVELOPER
D & G ASSOCIATES
9006 BELAIR ROAD
BALTIMORE, MARYLAND 21236

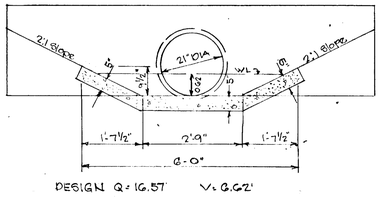
ENGINEERS
HOWKINS ASSOCIATES, INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117

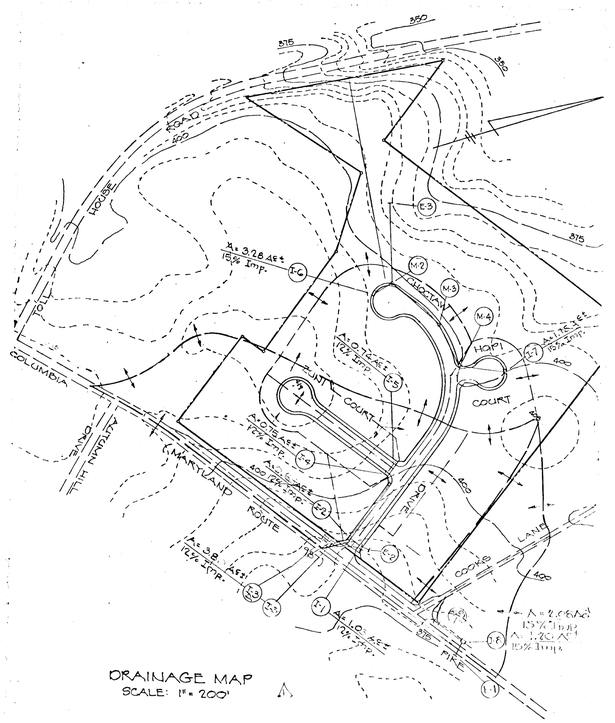
STORM WATER MANAGEMENT
POND - NO. 1
"KEYWAYDIN"
ELECT. DIST. No. — HOWARD Co. MD.
SCALE: AS SHOWN
SHEET 6 OF 11

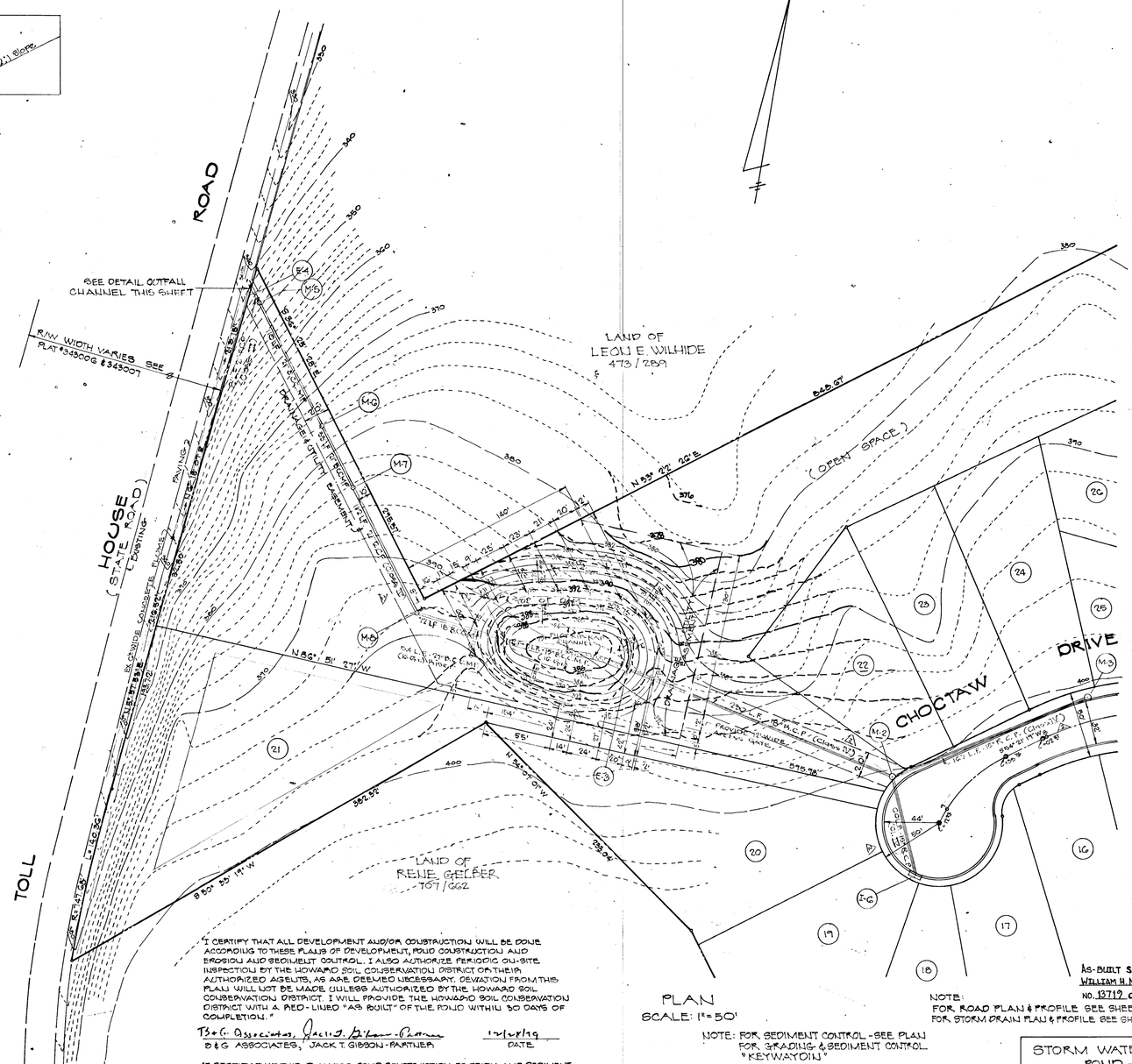
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Director — DATE
CHIEF, BUREAU OF ENGINEERING
OFFICE OF PLANNING & ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

F-80-97 AS-BUILT 9-30-87









PLAN
SCALE 1"=20'

DESIGN Q = 16.57 V = 6.62'

SECTION A-A
SCALE 1"=2'

DETAIL
OUTFALL CHANNEL

DRAINAGE MAP
SCALE: 1" = 200'

#824

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

B+G Associates, Jack T. Gibson-Partner 12/28/79
B&G ASSOCIATES, JACK T. GIBSON-PARTNER 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 A RED-LINED "AS BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

Howard U. Kolsaker 1/2/80
HUDKINS ASSOCIATES, INC. DATE

PLAN
SCALE: 1"=50'

NOTE: FOR SEDIMENT CONTROL - SEE PLAN
FOR GRADING & SEDIMENT CONTROL
"KEYWAYDIN"

DEVELOPER
B&G ASSOCIATES
% JACK GIBSON, PARTNER
9606 BELAIR ROAD
BALTIMORE, MARYLAND
21236

ENGINEERS
HUDKINS ASSOCIATES INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117

AS-BUILT SURVEY CERTIFIED BY
WILLIAM H. NOYES, JR. MD. P.E.
NO. 13719 ON 10-3-87.

NOTE:
FOR ROAD PLAN & PROFILE SEE SHEET 2 OF 9
FOR STORM DRAIN PLAN & PROFILE SEE SHEET 2&4 OF 9

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. Helm / R.Z. 4-21-80
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.

APPROVED: Robert W. Ziehm 4-21-80
HOWARD S.C.D. DATE

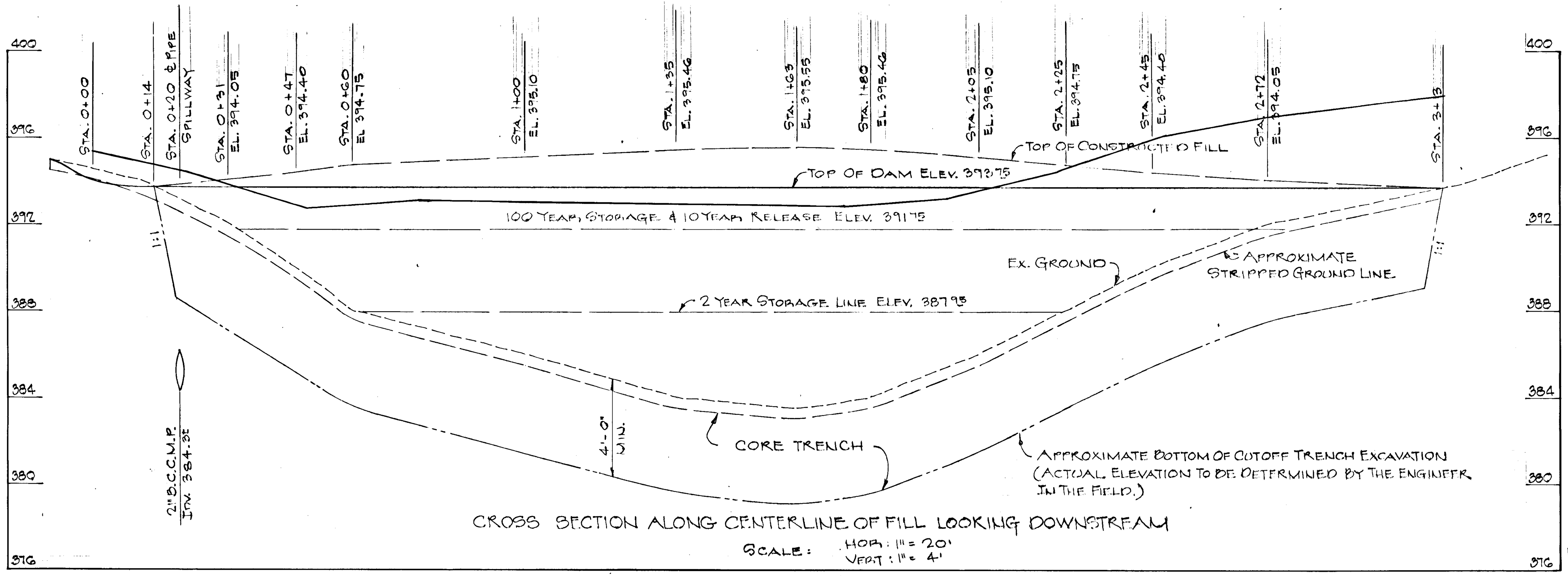
PLAN NUMBER

3	9/16/86	REMOVE CHAIN LINK FENCE FROM AROUND STORM WATER MANAGEMENT FACILITY	EBH
2	11/21/81	CHANGED PIPE CLASSES	SLB
1	11/21/81	REVISED DRAINAGE MAP	SLB
REV	DATE	DESC	BY

STORM WATER MANAGEMENT
POND - No. II
"KEYWAYDIN"
ELECT. DIST. No. 2 HOWARD Co., MD.
SCALE: AS SHOWN
SHEET 7 OF 11

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
William E. Riley 4-23-80
CHIEF, BUREAU OF ENGINEERING DATE
OFFICE OF PLANNING & ZONING
4-22-80
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

F-80-92 AS-BUILT 9-30-87



CROSS SECTION ALONG CENTERLINE OF FILL LOOKING DOWNSTREAM

SCALE: HOR.: 1" = 20' VERT.: 1" = 4'

STRUCTURE SCHEDULE						
No.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
E-4	C ENDWALL	SEE PLAN & PROFILE	–	341.12	343.62	DWG. D-52, PG. 107
M-5	STD. MANHOLE.	SEE PLAN & PROFILE	341.40	341.20	347.2	DWG. D-103, PG. 158
M-6	STD. MANHOLE	SEE PLAN & PROFILE	372.40	372.20	376.1	DWG. D-103, PG. 158
M-7	STD. MANHOLE	SEE PLAN & PROFILE	380.85	380.65	384.4	DWG. D-103, PG. 158
M-8	STD. MANHOLE	SEE PLAN & PROFILE	382.17	381.97	393.1	DWG. D-103, PG. 158

REV	DATE	DESC	BY
1	11/27/81	CHANGED PIPE CLASS M-7 to M-8	SLB

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B+G Associates, Jack T. Gibson - Partner — 12/28/79

B & G ASSOCIATES, JACK T. GIBSON - PARTNER — 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 A RED-LINED "AS BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

[signature] — 1/2/80

HUDKINS ASSOCIATES, INC. — DATE

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

J. Helm /RZ. — 4-21-80

U.S. SOIL CONSERVATION SERVICE — DATE

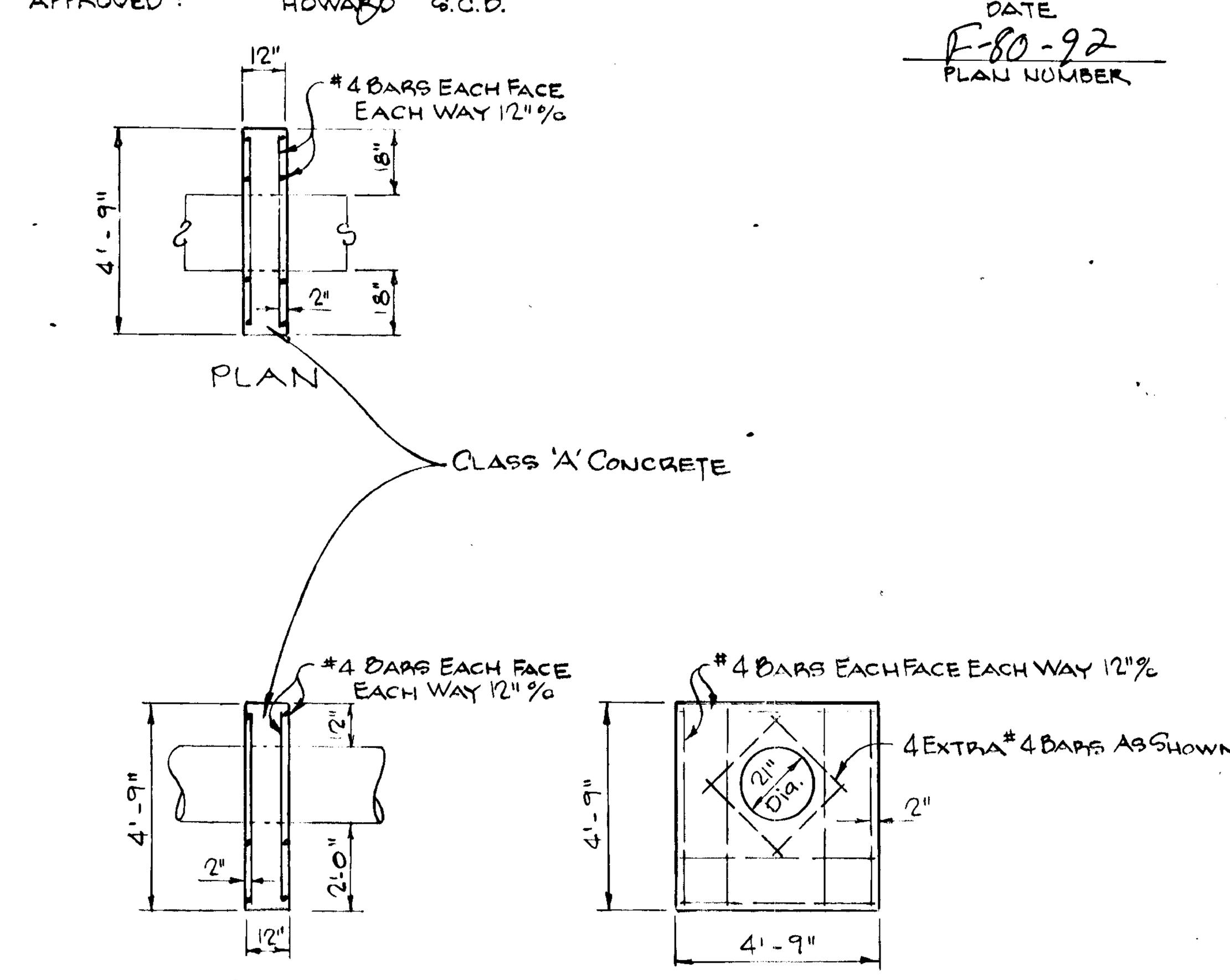
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert W. Ziehm — 4-21-80

APPROVED: HOWARD S.C.D. — DATE

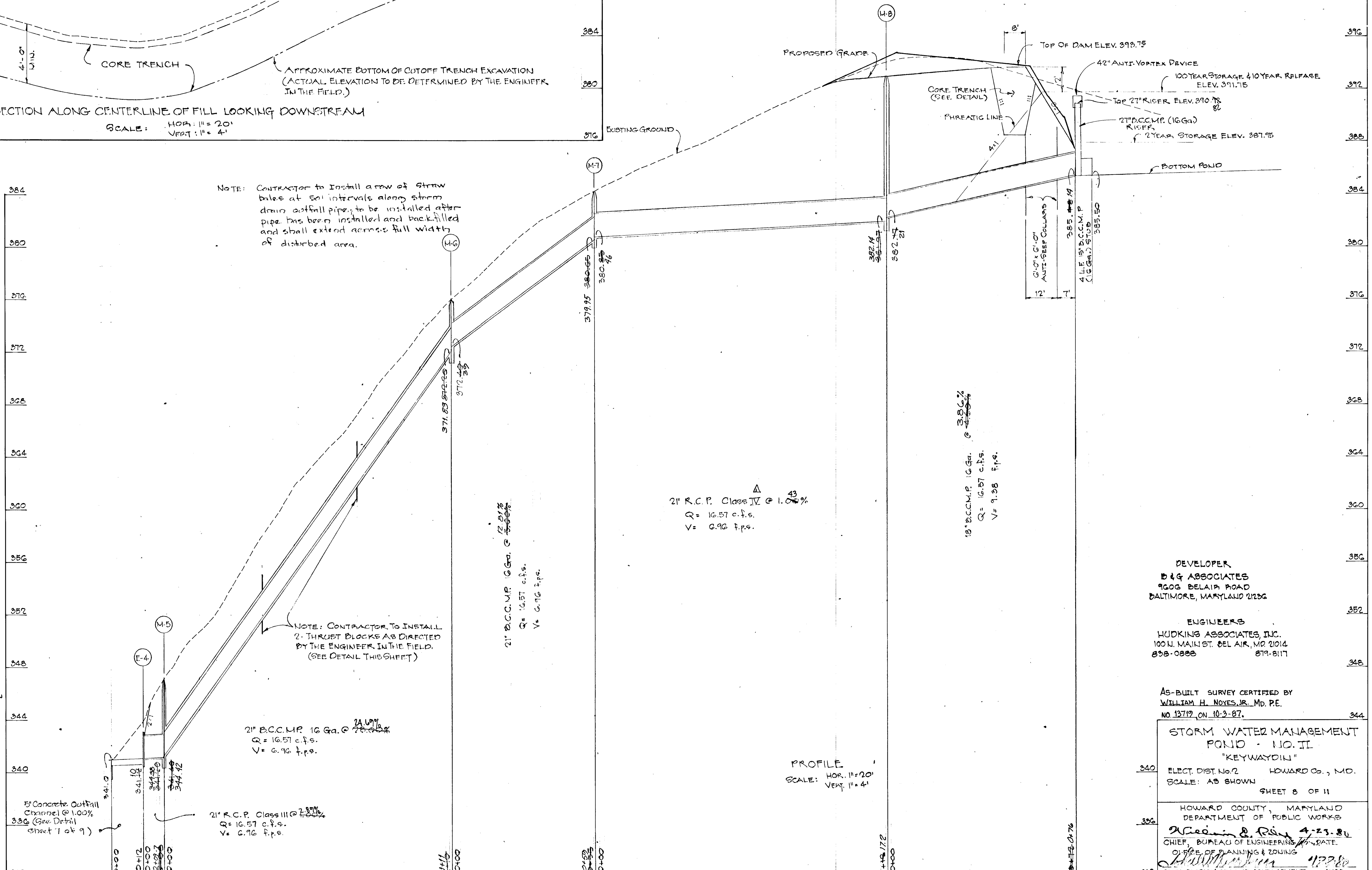
F-80-92

PLAN NUMBER



DETAIL OF THRUST BLOCK

SCALE: 1/4" = 1'-0"



DEVELOPER
B & G ASSOCIATES
9606 BELAIR ROAD
BALTIMORE, MARYLAND 21236

ENGINEERS
HUDKINS ASSOCIATES, INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117

AS-BUILT SURVEY CERTIFIED BY
WILLIAM H. NOYES, JR. MD. P.E.
NO. 13719, ON 10-3-87.

STORM WATER MANAGEMENT
POND - NO. II
"KEYWAYDIN"

ELECT. DIST. No. 2 HOWARD Co., MD.
SCALE: AS SHOWN
SHEET 8 OF 11

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

[signature] 4-23-80
CHIEF, BUREAU OF ENGINEERING — DATE

OFFICE OF PLANNING & ZONING
[signature] 4/22/80
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

F-80-92 AS-BUILT 9-30-87

#824

SITE PREPARATIONS

AREAS UNDER THE BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND THE TOPSOIL STRIPPED TO REMOVE ALL TREES, VEGETATION, ROOTS OR OTHER OBJECTIONAL MATERIAL. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS COVERED BY THE POND OR RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONAL MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH GROUND SURFACE.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL

THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED AREA OR AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, OVER-SIZE STONES, FROZEN OR OTHER OBJECTIONAL MATERIALS. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION WHICH PROVIDES FOR ANTICIPATED SETTLEMENT TO THE DESIGN ELEVATION. THE FILL HEIGHT ALL ALONG THE LENGTH OF THE EMBANKMENT SHALL BE INCREASED ABOVE THE DESIGN ELEVATION (INCLUDING FREEBOARD) AS SHOWN ON THE PLANS.

PLACEMENT

AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN 8-INCH MAXIMUM THICKNESS (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST POROUS BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT.

COMPACTION

THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EARTH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT. OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED. ALL COMPACTION TO BE 95%.

CUT-OFF TRENCH

WHERE SPECIFIED, A CUT OFF TRENCH SHALL BE EXCAVATED ALONG OR PARALLEL TO THE CENTER-LINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL MATERIAL FOR THE CUT OFF TRENCH SHALL BE THE MOST IMPERVIOUS MATERIAL AVAILABLE AND SHALL BE COMPACTED WITH EQUIPMENT OR ROLLERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, FERTILIZING AND MULCHING (IF REQUIRED) IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS SHOWN ON OR ACCOMPANYING THE DRAWINGS.

PIPE CONDUITS

A. 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 A.A.S.H.T.O. SPECIFICATIONS M-190 TYPE A WITH WATERTIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.
(ALUMINUM PIPE) THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. SPECIFICATIONS M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS. 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. 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 LESS THAN 9 AND GREATER THAN 4. HELICALLY CORRUGATED PIPE IN ADDITION TO THE REQUIREMENTS ABOVE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR, HAVE LOCK SEAMS WHICH ARE CAULKED, DURING FABRICATION, WITH NEOPRENE BEAD.

2. 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. WATERTIGHT COUPLING BANDS SHALL BE USED AT ALL JOINTS. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO 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. LAYING PIPE - THE PIPE SHALL BE PLACED WITH INSIDE CIRCUMFERENTIAL LAPS POINTING DOWNSTREAM AND WITH LONGITUDINAL LAPS AT THE SIDES.

5. BACKFILLING - SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

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 Jr. 4-21-80
US SOIL CONSERVATION SERVICE — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

APPROVED: Robert W. Ziehm 4-21-80
HOWARD S.C.D. — DATE

PLAN NUMBER

#824

CONCRETE

1. MATERIALS
   - A. CEMENT - NORMAL PORTLAND CEMENT SHALL CONFORM TO THE LATEST ASTM SPECIFICATION C-150.
   - B. WATER - THE WATER USED IN CONCRETE SHALL BE CLEAN, FREE FROM OIL, ACID, ALKALI, SCALES, ORGANIC MATTER, OR OTHER OBJECTIONAL SUBSTANCES.
   - C. SAND - THE SAND USED IN CONCRETE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND SHALL BE GRADED WITH 100 PERCENT PASSING A ONE-QUARTER INCH SIEVE. LIMESTONE SAND SHALL NOT BE USED.
   - D. COURSE AGGREGATE - THE COURSE AGGREGATE SHALL BE CLEAN, HARD, STRONG, DURABLE, AND FREE FROM CLAY OR DIRT. IT SHALL BE WELL GRADED WITH A MAXIMUM SIZE OF ONE AND ONE-HALF (1-½") INCHES.
   - E. REINFORCING STEEL - THE REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE BILLET STEEL OR RAIL STEEL CONFORMING TO A.S.T.M. SPECIFICATION A-615.

2. DESIGN MIX
   THE CONCRETE SHALL BE MIXED IN THE FOLLOWING PROPORTIONS, MEASURED BY WEIGHT. THE WATER-CEMENT RATIO SHALL BE 5-½ TO 6 U.S. GALLONS OF WATER PER 94 POUND BAG OF CEMENT. THE PROPORTION OF MATERIALS FOR THE TRIAL MIX SHALL BE 1:2:3½. THE COMBINATION OF AGGREGATES MAY BE ADJUSTED TO PRODUCE A PLASTIC AND WORKABLE MIX THAT WILL NOT PRODUCE HARSHNESS IN PLACING OR HONEYCOMBING IN THE STRUCTURE.

3. MIXING - THE CONCRETE INGREDIENTS SHALL BE MIXED IN BATCH MIXERS UNTIL THE MIXTURE IS HOMOGENEOUS AND OF UNIFORM CONSISTENCY. THE MIXING OF EACH BATCH SHALL CONTINUE FOR NOT LESS THAN ONE AND ONE-HALF MINUTES AFTER ALL THE INGREDIENTS, EXCEPT THE FULL AMOUNT OF WATER, ARE IN THE MIXER. THE MINIMUM MIXING TIME IS PREDICTED ON PROPER CONTROL OF THE SPEED OF ROTATION OF THE MIXER, AND OF THE INTRODUCTION OF THE MATERIALS, INCLUDING WATER, INTO THE MIXER. WATER SHALL BE ADDED PRIOR TO, DURING, AND FOLLOWING THE MIXER CHARGING OPERATIONS. EXCESSIVE OVER MIXING REQUIRING THE ADDITION OF WATER TO PRESERVE THE REQUIRED CONCRETE CONSISTENCY SHALL NOT BE PERMITTED. TRUCK MIXING WILL BE ALLOWED PROVIDED THAT THE USE OF THIS METHOD SHALL CAUSE NO VIOLATION OF ANY APPLICABLE PROVISIONS OF THE SPECIFICATIONS GIVEN HERE.

4. FORMS - THE FORMS SHALL HAVE SUFFICIENT STRENGTH AND RIGIDITY TO HOLD THE CONCRETE AND TO WITHSTAND THE NECESSARY PRESSURE, TAMPING AND VIBRATION WITHOUT DEFLECTION FROM THE PRESCRIBED LINES. THEY SHALL BE MORTAR-TIGHT AND CONSTRUCTED SO, THAT THEY CAN BE REMOVED WITHOUT HAMMERING OR PRYING AGAINST THE CONCRETE. THE INSIDE OF FORMS SHALL BE OILED WITH A NON-STAINING MINERAL OIL OR THOROUGHLY WETTED BEFORE CONCRETE IS PLACED. FORMS MAY BE REMOVED 24 HOURS AFTER THE PLACEMENT OF CONCRETE. ALL WIRE TIES AND OTHER DEVICES USED SHALL BE RECESSED FROM THE SURFACE OF THE CONCRETE.

5. REINFORCING STEEL - ALL REINFORCING MATERIAL SHALL BE FREE OF DIRT, RUST, SCALE, OIL, PAINT OR ANY OTHER COATINGS. THE STEEL SHALL BE ACCURATELY PLACED AND SECURELY TIED AND BLOCKED INTO POSITION SO THAT NO MOVEMENT OF THE STEEL WILL OCCUR DURING PLACEMENT OF CONCRETE.

6. CONSOLIDATING - CONCRETE SHALL BE CONSOLIDATED WITH INTERNAL TYPE MECHANICAL VIBRATORS. VIBRATION SHALL BE SUPPLEMENTED BY SPADING AND HAND TAMPING AS NECESSARY TO INSURE SMOOTH AND DENSE CONCRETE ALONG FORM SURFACES IN CORNERS, AND AROUND EMBEDDED ITEMS.

7. FINISHING - DEFECTIVE CONCRETE, HONEYCOMBED AREAS, VOIDS LEFT BY THE REMOVAL OF TIE RODS, RIDGES ON ALL CONCRETE SURFACES PERMANENTLY EXPOSED TO VIEW OR EXPOSED TO WATER ON THE FINISHED STRUCTURE, SHALL BE REPAIRED IMMEDIATELY AFTER THE REMOVAL OF FORMS. ALL VOIDS SHALL BE REAMED AND COMPLETELY FILLED WITH DRY-PATCHING MORTAR.

8. PROTECTION AND CURING - EXPOSED SURFACES OF CONCRETE SHALL BE PROTECTED FROM DIRECT RAYS OF THE SUN FOR AT LEAST THE FIRST THREE (3) DAYS. ALL CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST TEN (10) DAYS AFTER BEING PLACED. MOISTURE MAY BE APPLIED BY SPRAYING. CONCRETE SHALL NOT BE EXPOSED TO FREEZING DURING THE CURING PERIOD. CURING COMPOUNDS MAY ALSO BE USED.

9. PLACING TEMPERATURE - CONCRETE MAY NOT BE PLACED AT TEMPERATURES BELOW 31 DEGREES F WITH THE TEMPERATURE FALLING, OR 34 DEGREES WITH THE TEMPERATURE RISING.

PERMANENT SEEDING NOTES

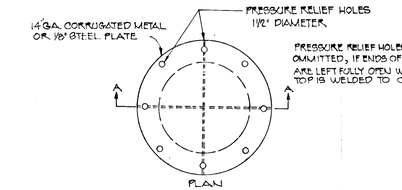
SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS: APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 lbs./1000 SQ.FT.) AND 600 lbs. PER ACRE 0-20-20 FERTILIZER (14 lbs/1,000 SQ.FT.) HARROW OR DISC LIME AND FERTILIZER INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 lbs PER ACRE (9.2 lbs./1,000 SQ.FT.) OF 38-0-0 UREAFORM FERTILIZER AND 500 lbs. PER ACRE (11.5 lbs./1,000 SQ.FT.) OF 10-20-20 FERTILIZER.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUG. 1 THRU OCT. 15, SEED WITH 60 lbs PER ACRE (1.4 lbs/1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 lbs. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 lbs PER ACRE (.05 lbs./1,000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT 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 SOD. OPTION (3) SEED WITH 90 lbs/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

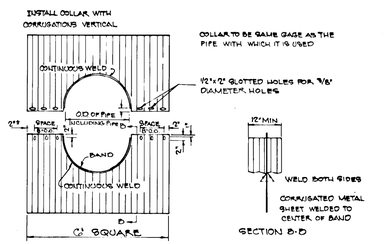
MULCHING: APPLY 1½ TO 2 TONS PER ACRE (70 TO 90 lbs/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 gallons/1,000 SQ.(ft.) OF EMULSIFIED ASPHALT ON FLAT AREAS ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GALLONS/1,000 SQ.FT.) FOR ANCHORING.

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



1. THE CYLINDER MUST BE FIRMLY FASTENED TO THE TOP OF THE RISER.
2. SUPPORT BARS ARE WELDED TO THE TOP OF THE RISER OR ATTACHED BY STRAPS BOLTED TO TOP RISER.

DETAIL TRASH RACK & ANTI-VORTEX DEVICE
NO SCALE



NOTES FOR COLLARS:
1. ALL MATERIALS TO BE IN ACCORDANCE WITH CONSTRUCTION AND CONSTRUCTION MATERIAL SPECIFICATIONS.
2. WHEN SPECIFIED ON THE PLANS, COATING OF COLLARS SHALL BE IN ACCORDANCE WITH CONSTRUCTION AND CONSTRUCTION MATERIAL SPECIFICATIONS.
3. (A) ASSEMBLED COLLARS SHALL BE MARKED BY PAINTING OR TAGGING TO IDENTIFY MATCHING PAIRS.
4. THE LAP BETWEEN THE TWO HALF SECTIONS AND BETWEEN THE PIPE AND CONJUNCTION BAND SHALL BE CAULKED WITH ASPHALT MASTIC AT TIME OF INSTALLATION.
5. (B) EACH COLLAR SHALL BE FURNISHED WITH TWO ½" DIAMETER RODS WITH STANDARD TRUCK HOOK FOR CONJUNCTING COLLARS TO PIPE.

DETAILS OF CORRUGATED METAL ANTI-SEEP COLLARS
NO SCALE

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B & G Associates, Jack T. Gibson-Partner
D & G ASSOCIATES, JACK T. GIBSON - PARTNER — 12/28/79 DATE

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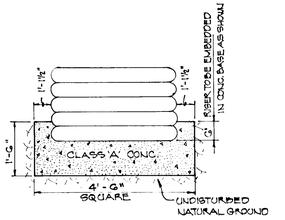
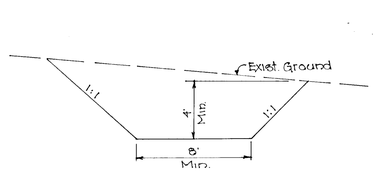
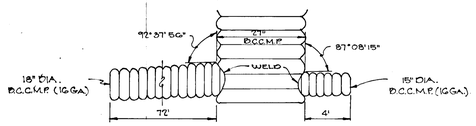
Howard K. Hudkins
HUDKINS ASSOCIATES INC. — 12/28/79 DATE



DETAIL CONCRETE BASE
NO SCALE



DETAIL
CORE TRENCH
NO SCALE



DETAIL
RISER CONNECTION
No Scale

DEVELOPER
D&G ASSOCIATES
9606 BELAIR ROAD
BALTIMORE, MARYLAND 21236

ENGINEERS
HUDKINS ASSOCIATES, INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117

STORM WATER MANAGEMENT
POND - NO. II
"KEYWAYDIN"
ELECT. DIST. No. HOWARD Co. Md.
SCALE: AS SHOWN
SHEET 9 OF 11

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Granville E. Ray 4-23-80
CHIEF, BUREAU OF ENGINEERING — DATE
OFFICE OF PLANNING & ZONING
4-22-80
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

F-80-92 AS-BUILT 9-30-87

CROSS SECTION

PLAN VIEW

NOTE: PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PROVIDED

STANDARD SYMBOL

PERIMETER DIKE
NO SCALE

NOTE: BALES ARE ANCHORED AS PER STD. & SPECS. FOR STRAW BALE DIKE. OTHER MATERIALS (I.G. TIMBER OR CONCRETE BLOCK) MAY ALSO BE USED FOR CORE. FIRMLY ANCHOR ALL MATERIAL TO GROUND.

ELEVATION

STONE OUTLET SEDIMENT TRAP
NO SCALE

PROFILE

PLAN

STONE SIZE - USE MSHA SIZE No. 2 (2½" TO 1") OR AASHTO DESIGNATION M 43, SIZE No. 2 (2½" TO 1½") USE CRUSHED STONE

STABILIZED CONSTRUCTION ENTRANCE
NO SCALE

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B&G Associates, Jack T. Gibson, Partner 2/19/80
D&G ASSOCIATES, JACK T. GIBSON - PARTNER DATE

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2/19/80
HUDKINS ASSOCIATES, INC. DATE

824

PLAN
SCALE: 1" = 50'

LOCATION MAP
SCALE: 1" = 2000'

REV	DATE	Revised Inlet Location	SLB
1	11/27/81	DESC	BY

ANCHORING DETAIL

EMBEDDING DETAIL

STANDARD SYMBOL

STRAW BALE DIKE
NO SCALE

DEVELOPER
D & G ASSOCIATES
% JACK T. GIBSON, PARTNER
9606 BELAIR ROAD
BALTIMORE, MARYLAND 21236

ENGINEERS
HUDKINS ASSOCIATES INC.
100 N. MAIN ST. BEL AIR, MD. 21014
838-0888 879-8117

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J. Helm /R.Z 4-21-80
U.S. SOIL CONSERVATION DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: Robert W. Ziehm 4-21-80
HOWARD S.C.D. DATE

PLAN No. F-80-92

GRADING & SEDIMENT CONTROL
"KEYWAYDIN"

ELECT. DIST. No. 2 HOWARD Co. MD.
SCALE: AS SHOWN SHEET 10 OF 11
F-80-92

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
William E. Riley 4-23-80
CHIEF, BUREAU OF ENGINEERING DATE
OFFICE OF PLANNING & ZONING
4-22-80
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

F-80-92

TEMPORARY SEEDING PROCEDURES

1. SEED IMEDIATELY UPON CONSTRUCTION WITH RYE GRASS 11 LBS PER 1,000 S.F.
2. APPLY 46 LBS PER 1,000 S.F. OF PULVERIZED DOLOMITIC LIMESTONES AND 11 LBS TO 18 LBS. PER 1,000 S.F. OF 10-10-10 OR EQUIVALENT FERTILIZER.
3. HARROW AND DISC LIME & FERTILIZE INTO SOIL TO A DEPTH OF AT LEAST 3 INCHES, CONTINUE TILLAGE UNTIL A REASONABLY FINE, FIRM SEED BED HAS BEEN PREPARED, ON SLOPING LAND THE FINAL HARROWING SHOULD BE ON THE CONTOUR.
4. MULCH WITH STRAW AT 75 LBS. PER 1,000 S.F

PERMANENT SEEDING & SODDING PROCEDURES

1. PLACE TOPSOIL IN DISTURBED AREAS TO A DEPTH OF 2 INCHES
2. APPLY 50 LBS PER 1,000 S.F. OF LIMESTONE.
3. APPLY FERTILIZER AT RATE OF 25 LBS. OF 10-10-10 PER 1,000 S.F., DEPENDING ON SOIL TESTS.
4. HARROW OR DISC FERTILIZER INTO SOIL TO A DEPTH OF 3 INCHES.
5. SEED WITH KENTUCKY 31 TALL FESCUE AT THE RATE OF 50 LBS PER 1,000 S.F. (IF DONE DURING PERMITTED SEASON, OTHERWISE USE SOD.)
6. MULCH WITH SMALL GRAIN STRAW AT 1.5 TO 2.0 TONS PER ACRE (75-90 LBS PER 1000 S.F.)
7. ANCHOR MULCH WITH SPRAYED ASPHALT AT 0.1 GALLONS PER SQ. YDS.
8. PLACE APPROVED OR CERTIFIED KENTUCKY 31 TALL FESCUE SOD AND ANCHOR IN CRITICAL AREAS AS REQUIRED.
9. WATER SODDED AREAS AS REQUIRED TILL FIRMLY ESTABLISHED.

VEGATIVE COVER OPTIONS

FEB 1 TO MAY 1	1. SOD 2. SEED & MULCH
MAY 1 TO AUG 15	1. SOD 2. MULCH, ANCHOR, TOOL THEN SEED DURING NEXT SEEDING PERIOD
AUG 15 TO NOV 1	1. SOD 2. SEED & MULCH
NOV 1 TO FEB 1	1. SOD, DELAY UNTIL NEXT PERIOD IF FROZEN 2. MULCH, ANCHOR, TOOL, THEN SEED DURING NEXT SEEDING PERIOD

NOTE: ANY DISTURBED EARTH LEFT IDLE LONGER THAN 30 DAYS SHALL BE ESTABLISHED ACCORDING TO TEMPORARY SEEDING PROCEDURES.

SEDIMENT CONTROL NOTES

1. ALL REFERENCES TO U.S.D.A.S.C. MANUAL APPLY TO STDS. & SPECS FOR SOIL & EROSION CONTROL IN DEVELOPING AREAS. ALL WORK ON THIS PLAN MUST BE BUILT IN ACCORDANCE WITH THIS MANUAL.
2. ALL STABILIZATION TO BE DONE IN ACCORDANCE WITH TEMPORARY & PERMANENT SEEDING PROCEDURES IN THE ABOVE REFERENCED MANUAL.
3. ON SITE INSPECTION & MAINTENANCE OF ALL SEDIMENT MEASURES WILL BE THE RESPONSIBILITY OF THE DEVELOPER ON A CONTINUING DAY TO DAY BASIS.
4. ALL LOTS ARE SUBJECT TO SEDIMENT CONTROL ON AN INDIVIDUAL BASIS IN CONNECTION WITH EACH BUILDING PERMIT.
5. NO SLOPES TO BE GREATER THAN 2:1.
6. DURING THE LAYOUT OF THE SEDIMENT CONTROL DEVICES SHOWN ON THESE PLANS, MINOR FIELD ADJUSTMENTS CAN & WILL BE MADE TO INSURE THE ARREST & CONTROL OF ANY SEDIMENT BEFORE IT LEAVES THE CONSTRUCTION SITE. CHANGES IN SEDIMENT CONTROL PRACTICES REQUIRE PRIOR APPROVAL OF THE HOWARD SOIL CONSERVATION DISTRICT.
7. ALL BERMS TO BE COMPACTED, SEEDED AND MULCHED.
8. ANY CHANGES TO THE GRADING SHOWN ON THIS PLAN WILL REQUIRE IT TO BE RESUBMITTED TO THE HOWARD SOIL CONSERVATION DISTRICT.
9. STRUCTURE MEASURES SUCH AS BERMS, DIKES, TRAPS, BASINS ETC. WILL BE INSTALLED AND STABILIZED ACCORDING TO THIS PLAN PRIOR TO ANY OTHER GRADING, CLEARING OR DISTURBANCE OF THE EXISTING SURFACE OF THE SITE, EXCEPT WHEN CLEARING IS REQ'D. TO INSTALL STRUCTURES.
10. ON SITE INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL MEASURES INCLUDING CLEANOUT OF SEDIMENT TRAPS AND BERMS AND PROPER ESTABLISHMENT OF ALL PLANNED VEGATIVE MEASURES WILL BE THE RESPONSIBILITY OF THE DEVELOPER, ON THE SITE, ON A CONTINUING DAY TO DAY BASIS.
11. UPSTREAM END OF STORM DRAIN SYSTEMS TO BE BLOCKED AT THE END OF EACH WORKING DAY.

SEQUENCE OF CONSTRUCTION

1. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS AT LEAST 48 HOURS PRIOR TO STARTING WORK.
2. CLEAR AND GRUB ROADWAYS
3. ROUGH GRADE ENTRANCE AND CONSTRUCT STONE CONSTRUCTION ENTRANCE.
4. CONSTRUCT STONE OUTLET SEDIMENT TRAP.
5. CONSTRUCT SILT FENCE ALONG MD. RTE. 987, PERIMETER DIKES AND STABILIZE
6. ROUGH GRADE ROADWAYS.
7. FINE GRADE ROADS AND STABILIZE SLOPES.
8. CONSTRUCT STORM WATER MANAGEMENT PONDS AND STABILE CONSTRUCT STRAW BALE DIKE AROUND POND No. II AS SHOWN.
9. CONSTRUCT DRAINAGE STRUCTURES, PROTECT INLETS WITH STONE FILTER UNTIL SITE IS STABILIZED.
10. CONSTRUCT UTILITIES, SANITARY SEWER AND WATER MAINS.
11. CONSTRUCT CONCRETE CURBS AND PLACE SUBGRADE MATERIALS.
12. COMPLETE ROAD CONSTRUCTION.
13. AT THE END OF EACH WORKING DAY, ALL SEDIMENT CONTROL DEVICES WILL BE INSPECTED AND LEFT IN OPERATIONAL CONDITIONS.
14. REMOVE TEMPORARY SEDIMENT CONTROL DEVICES AFTER OBTAINING APPROVAL BY THE HOWARD SOIL CONSERVATION DISTRICT.

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION, AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS BUILT" OF THE PONDS WITHIN 30 DAYS OF COMPLETION."

B + G Associates, Jack T. Gibson - Partner 2/19/80

B & G ASSOCIATES, JACK T. GIBSON - PARTNER DATE

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION, AND SEDIMENT CONTROL REPRESENTS A PRACTABLE 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. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS BUILT" OF THE PONDS WITHIN 30 DAYS OF COMPLETION."

Howard W Kohnlein 2/19/80

HUDKINS ASSOCIATES, INC. DATE

PROFESSIONAL ENGINEER

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. Helm /22. 4-21-80

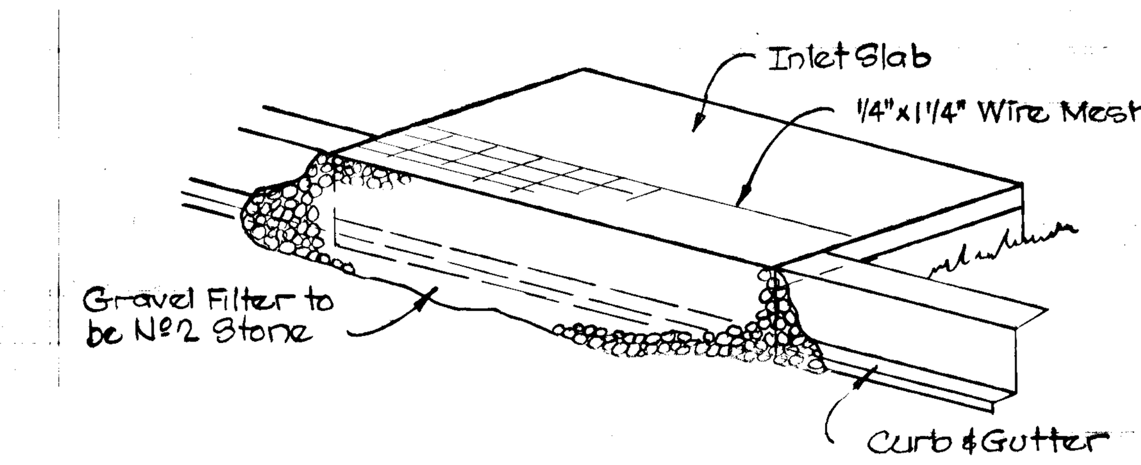
U.S. SOIL CONSERVATION DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

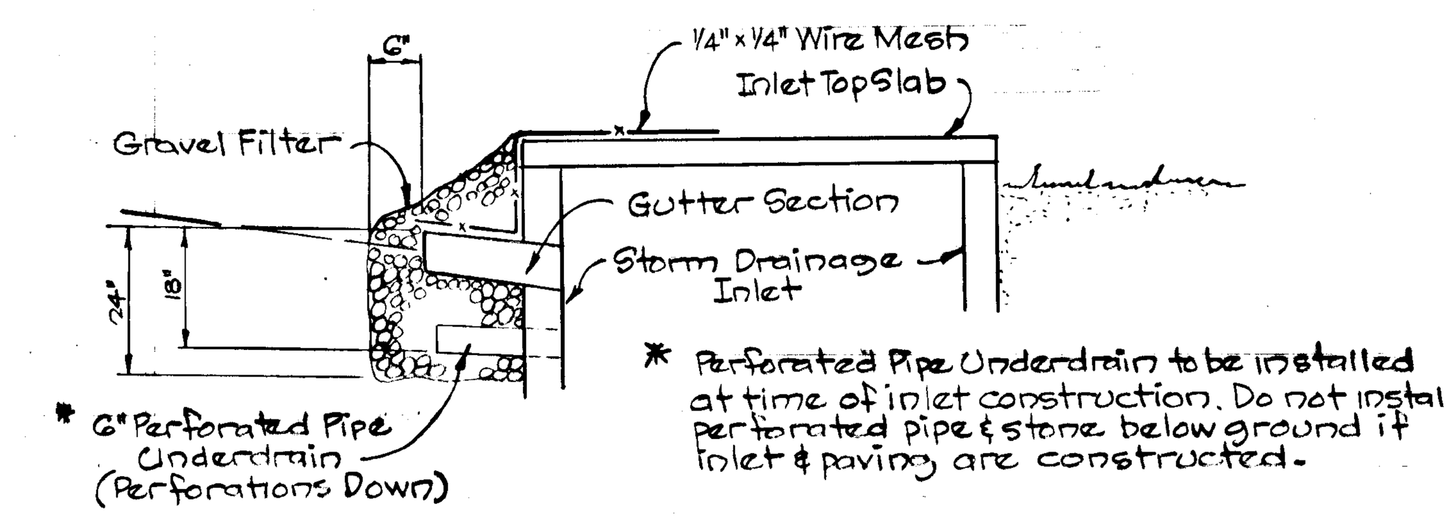
APPROVED: Robert W. Ziehm 4-21-80

HOWARD S.C.D. DATE

PLAN No. F-80-92



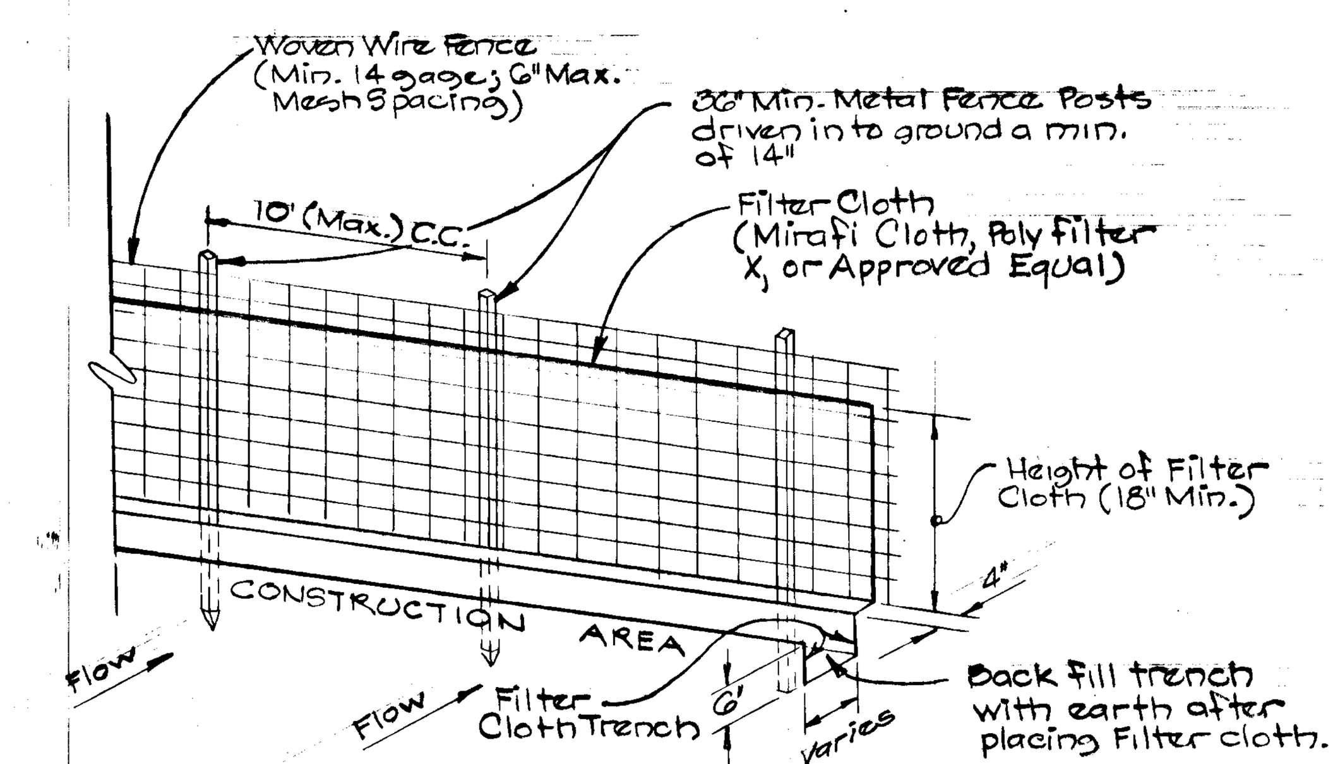
ISOMETRIC VIEW



SECTION VIEW

STONE FILTER INLET PROTECTION

NO SCALE



DETAIL

SILT FENCE

No Scale

Notes:

1. Woven Wire Fence to be fastened securely to fence posts by use of wire ties.
2. Filter Cloth to be fastened securely to woven wire fence by use of wire ties spaced every 24" x 24".

GRADING & SEDIMENT CONTROL

"KEYWAYDIN"

ELECT. DIST. No. 2 HOWARD Co. MD.

SCALE: AS SHOWN SHEET 11 OF 11

F-80-92

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

William E. Riley 4-23-80

CHIEF, BUREAU OF ENGINEERING DATE

OFFICE OF PLANNING & ZONING

4-22-80

CHIEF, DIVISION OF LAND DEVELOPMENT DATE