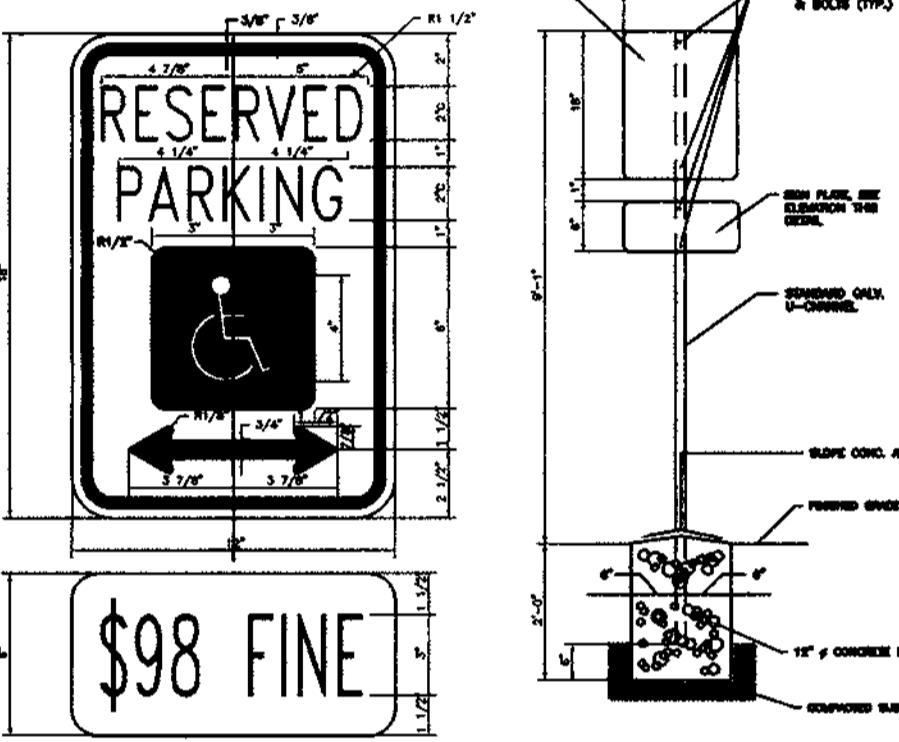


LEGEND

- POWER POLE
- OHE OVERHEAD ELEC.
- ⊕ EX. SANITARY MANHOLE
- ⊕ EX. STORM DRAIN MANHOLE
- ⊕ S.H.C. CLEANOUT
- ⊕ WATER VALVE
- ⊕ FIRE HYDRANT
- COMBINATION CURB & GUTTER
- CHAIN LINK FENCE
- WOODLINE
- PROP. CORNER FOUND
- ▨ CONC. SIDEWALK
- ▨ WETLANDS
- ▨ P-1 PAVING
- FLOW DIRECTION



HANDICAPPED SIGN AND POST
NOT TO SCALE

PRIVATE STORMWATER MANAGEMENT POND SUMMARY TABLE

ORANGE AREA: 1.77 AC	TYPE - EXCAVATED DETENTION POND
BOTTOM POND ELEVATION: 349.00	LOW FLOW 2" CURB @ EL. 349.00
WEIR FLOW @ CONC. RISER - 3" WER @ EL. 353.50	RELEASE STRUCTURE - 24" RCP @ INV. EL. 345.00
ALLOWABLE DISCHARGE @ STUDY POINT	1 YEAR STORM - 0.50 CFS
2 YEAR STORM - 2.13 CFS	5 YEAR STORM - 5.00 CFS
10 YEAR STORM - 11.25 CFS	DISCHARGE FROM POND
2 YEAR STORM - 0.19 CFS @ EL. 352.50	STORAGE = 0.3157 AC-FT
5 YEAR STORM - 0.41 CFS @ EL. 352.76	STORAGE = 0.25 AC-FT
10 YEAR STORM - 0.83 CFS @ EL. 354.30	STORAGE = 0.3129 AC-FT

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

C. Stuart Knudsen
SIGNATURE OF DEVELOPER
C. STUART KNUDSEN
PRINTED NAME OF DEVELOPER
1/26/99 DATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

R. Jacob Nikmat
SIGNATURE OF ENGINEER
R. JACOB NIKMAT
PRINTED NAME OF ENGINEER
1/27/99 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Carol Simmons
USDA - NATURAL RESOURCE CONSERVATION SERVICE
2/5/99 DATE

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

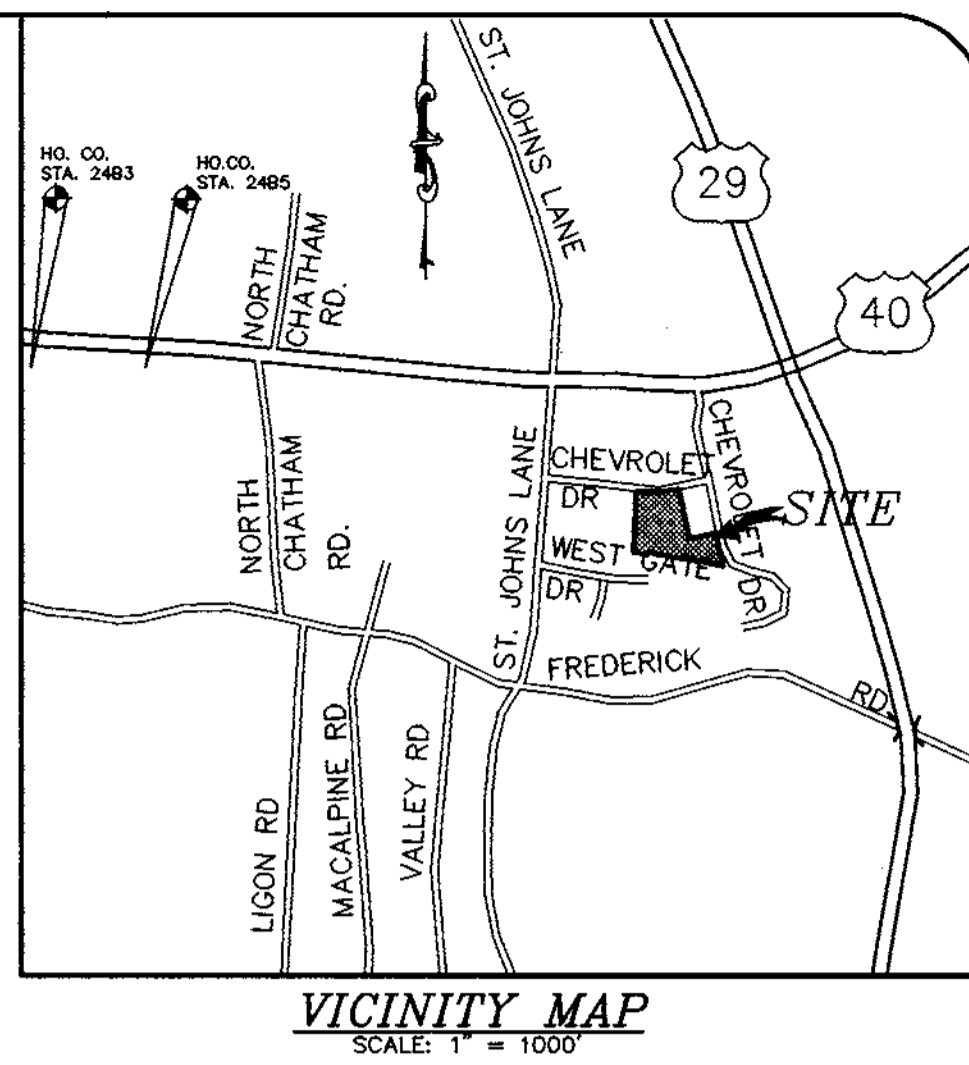
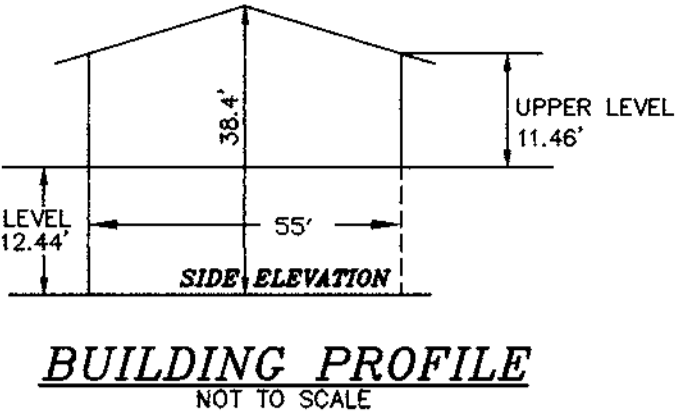
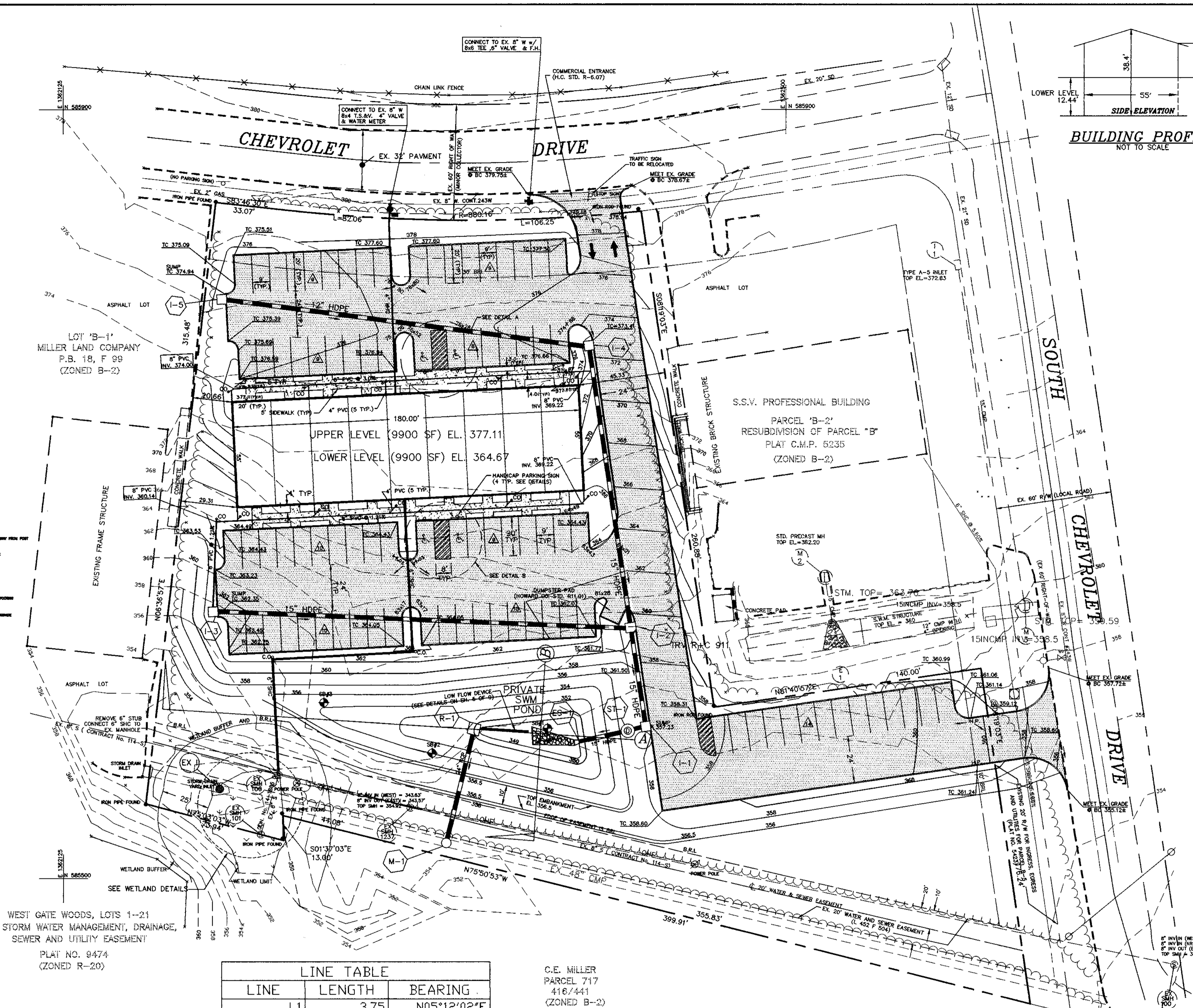
John L. Robertson
HOWARD COUNTY SOIL CONSERVATION DISTRICT
2/5/99 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

John P. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
2/6/99 DATE

...
CHIEF, DIVISION OF LAND DEVELOPMENT
2/17/99 DATE

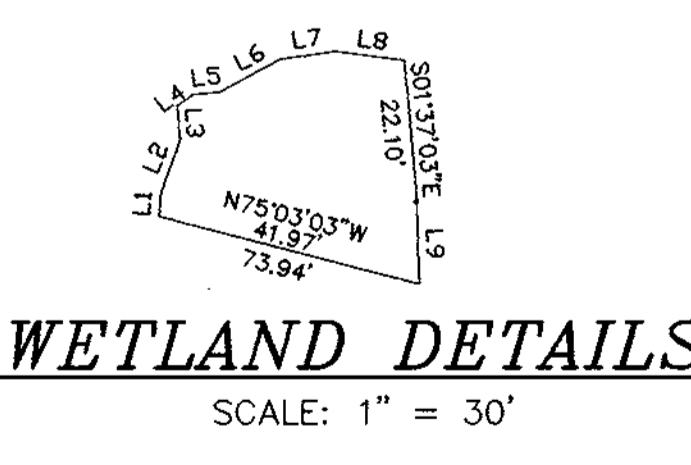
...
DIRECTOR
2/18/99 DATE



GENERAL NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:
 - MISS UTILITY 1-800-257-7777
 - C&P TELEPHONE COMPANY (410) 725-9976
 - HOWARD COUNTY BUREAU OF UTILITIES (410) 313-4900
 - AT&T CABLE LOCATION DIVISION (410) 393-3533
 - BALTIMORE GAS & ELECTRIC (410) 685-0123
 - STATE HIGHWAY ADMINISTRATION (410) 531-5533
 - HOWARD COUNTY DEPT. OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION (410) 313-1880
- PROJECT BACKGROUND:
 - LOCATION: 2ND ELECTION DISTRICT, TAX MAP 24, P/O PARCEL B-6
 - ZONING: B-2 PER 10/3/77 COMPREHENSIVE ZONING PLAN
 - TOTAL TRACT AREA: 2.535 AC±
- TOPOGRAPHY SHOWN HEREON IS BASED ON APRIL, 1998 FIELD RUN SURVEY BY MILDENBERG, BOENDER AND ASSOCIATES, INC. AND BY CARROLL ENGINEERS, INC. DATED 8/17/95.
- COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 24B3 AND 24B5.
 - STA. No. 24B3 N 586,661.2634
 - E 1,359,226.4000
 - EL. = 385.295
 - STA. No. 24B5 N 586,956.2658
 - E 1,356,570.8230
 - EL. 390.965
- WATER AND SEWER ARE PUBLIC, CONTRACT #'S 114-S & 243-W.
- STORMWATER MANAGEMENT QUANTITY IS PROVIDED BY DETENTION POND. QUALITY CONTROL IS PROVIDED BY "STORMCEPT" WATER QUALITY MANHOLE.
- STORMWATER MANAGEMENT WILL BE PRIVATELY OWNED AND MAINTAINED.
- WETLAND SHOWN IS PER THE "WETLAND INVESTIGATION AND FOREST STAND DELINEATION REPORT" BY WILDMAN ENVIRONMENTAL SERVICES ON MAY 10, 1998.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLANDS EXCEPT AS SHOWN ON APPROVED PLANS.
- USE COMBINATION CURB & GUTTER (STD. DETAIL R-3.01)
- SITE ANALYSIS DATA CHART:
 - TOTAL PROJECT AREA: 2.535± ACRES
 - LIMIT OF DISTURBED AREA: 1.95 AC±
 - PRESENT ZONING: B-2
 - PROPOSED USE: GENERAL OFFICE - 8800 SF
 - GENERAL OFFICE OR RETAIL - 11,000 SF
 - BUILDING COVERAGE OF SITE: 9,900 SF± (OR 9% OF GROSS AREA)
 - NUMBER OF PARKING SPACES REQUIRED: 30 (8,800 SF @ 3.3/1,000 SF)
 - PROPOSED USE: 55 (11,000 SF @ 5.1/1,000 SF)
 - NUMBER OF PARKING SPACES PROVIDED: 88 (9' x 20' TYP.)
- ALL STORM DRAIN PIPE TO BE HOPE UNLESS OTHERWISE SHOWN.
- THE FOREST CONSERVATION OBLIGATIONS INCURRED BY THIS SITE DEVELOPMENT (1.21 ACRES OF REFORESTATION) HAVE BEEN MET BY PAYMENT OF \$15,812 TO THE HOWARD COUNTY FOREST CONSERVATION FUND.
- ALL OUTDOOR LIGHTING WILL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 13.4.
- RELATED DPZ FILE NUMBER: F-82-90, VP-82-95, F-68-7, PLAT C.M.P. NO. 5423, F-83-49, F-98-162, PLAT NO. 13323.

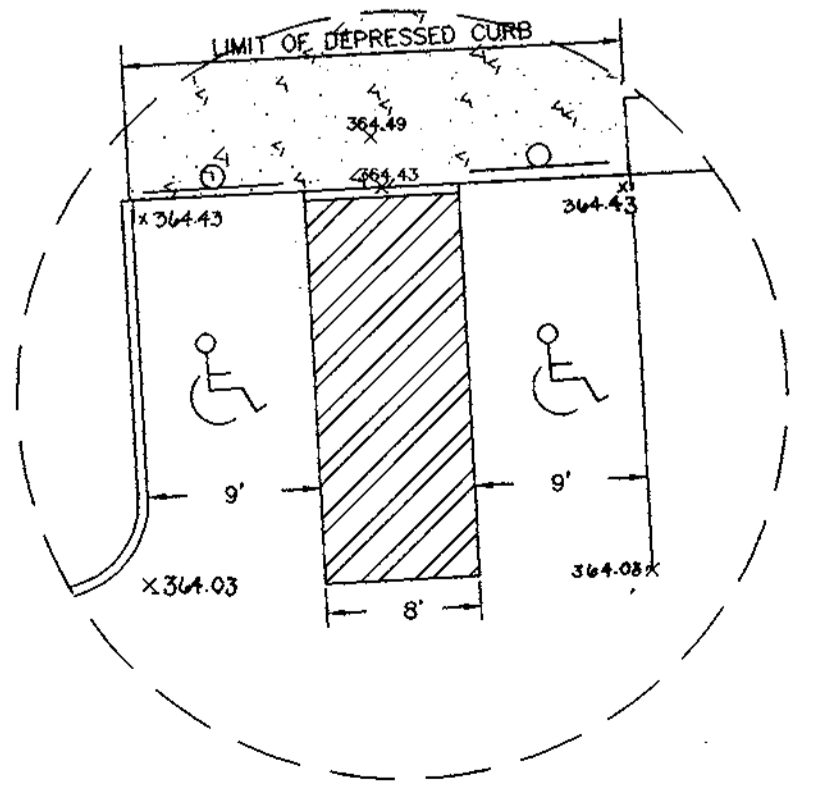
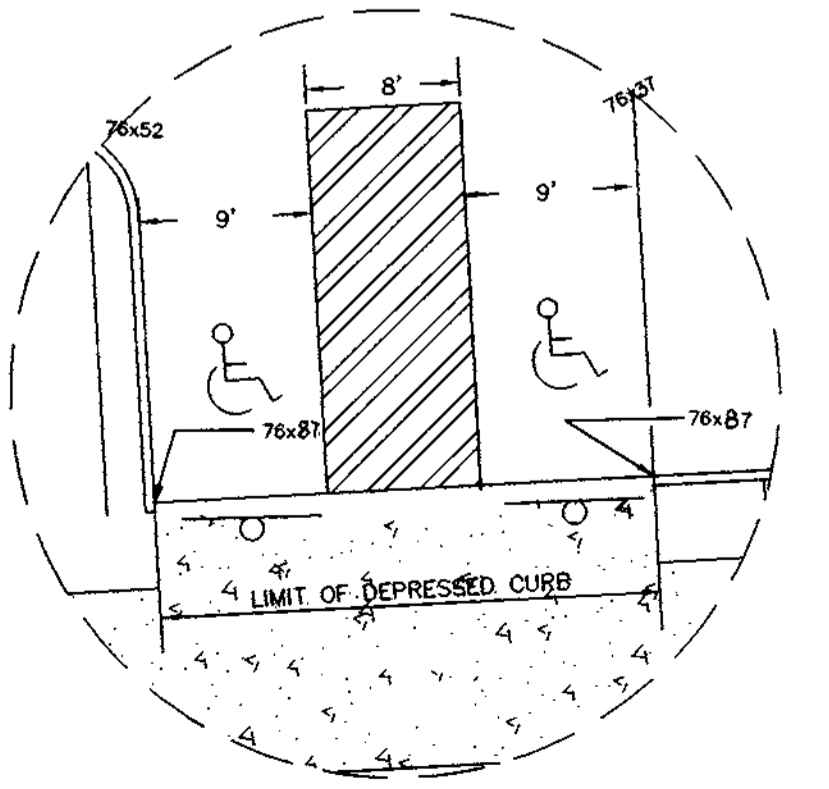
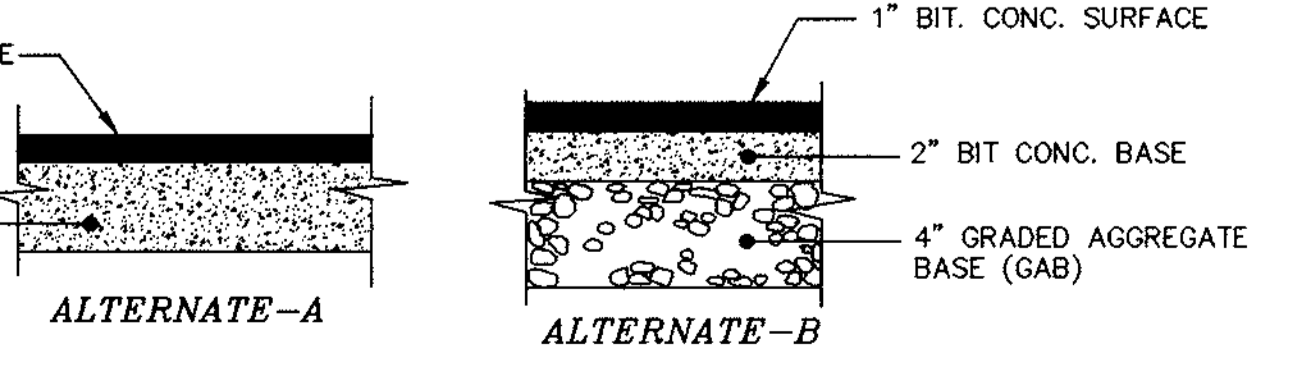
WEST GATE WOODS, LOTS 1-21
STORM WATER MANAGEMENT, DRAINAGE,
SEWER AND UTILITY EASEMENT
PLAT NO. 9474
(ZONED R-20)



LINE TABLE

LINE	LENGTH	BEARING
L1	3.75	N05°12'02"E
L2	8.66	N20°07'03"E
L3	5.37	N04°14'29"W
L4	3.14	N55°20'13"E
L5	3.99	N84°17'46"E
L6	10.84	N61°35'09"E
L7	8.62	N82°03'57"E
L8	10.81	S82°37'22"E
L9	13.00	S01°53'55"E

C.E. MILLER
PARCEL 717
416/441
(ZONED B-2)



INDEX OF SHEETS

NO	TITLE
1	SITE DEVELOPMENT PLAN
2	EROSION & SEDIMENT CONTROL PLAN
3	SEDIMENT CONTROL NOTES & DETAILS
4	STORM DRAIN, WATER & SEWER PROFILES
5	STORMWATER MANAGEMENT DETAILS
6	STORMWATER MANAGEMENT DETAILS
7	STORMWATER MANAGEMENT SPECIFICATIONS
8	DRAINAGE AREA & SOILS MAP
9	LANDSCAPE PLAN

PERMIT INFORMATION CHART

SUBDIVISION NAME KMS ASSOCIATES	SECTION/AREA B-6	LOT/PARCEL #
PLAT # OR L/F 13323	BLOCK # 5 & 11	ZONE B-2
TAX MAP 24	ELEC. DIST. SECOND	CENSUS TRACT 6023.01
WATER CODE FO-7	SEWER CODE 1403200	

PERMIT INFORMATION CHART

LOT NUMBER	STREET ADDRESS
PARCEL B-6	9011 CHEVROLET DRIVE

OWNERS & DEVELOPER
KMS ASSOCIATES
8455 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND
21043
(410) 465-2222

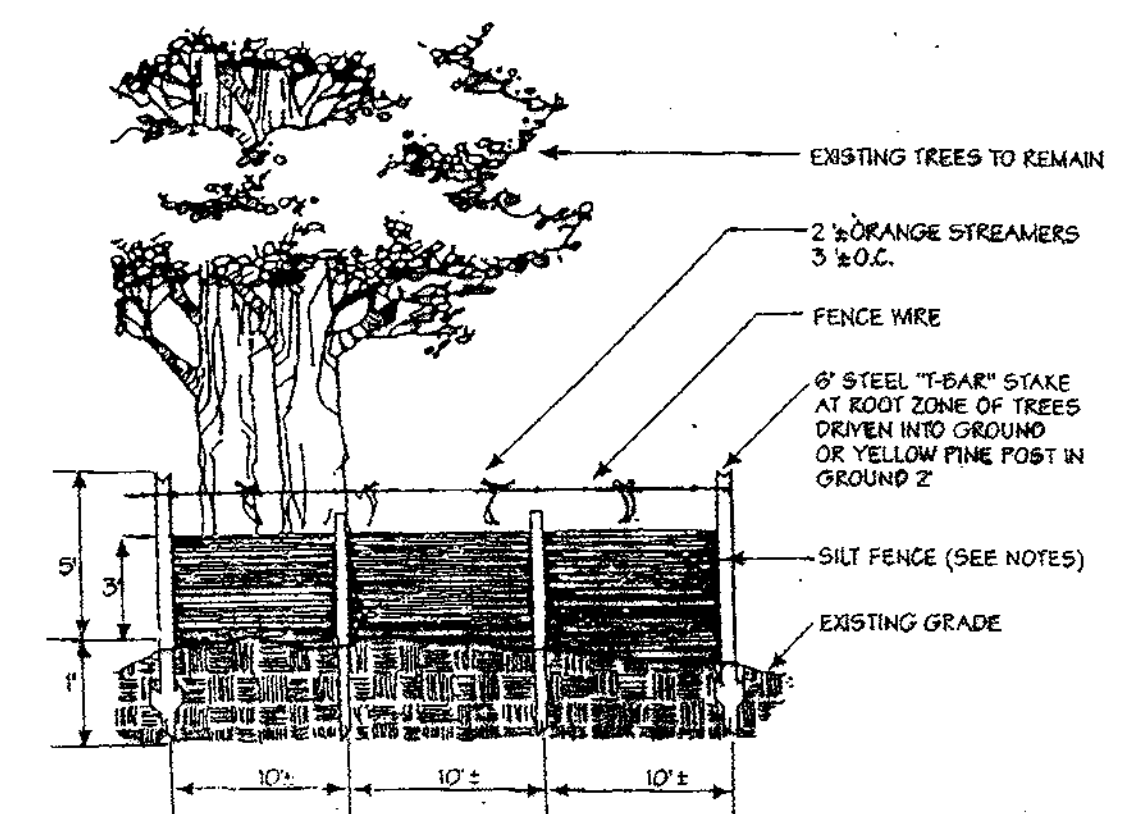
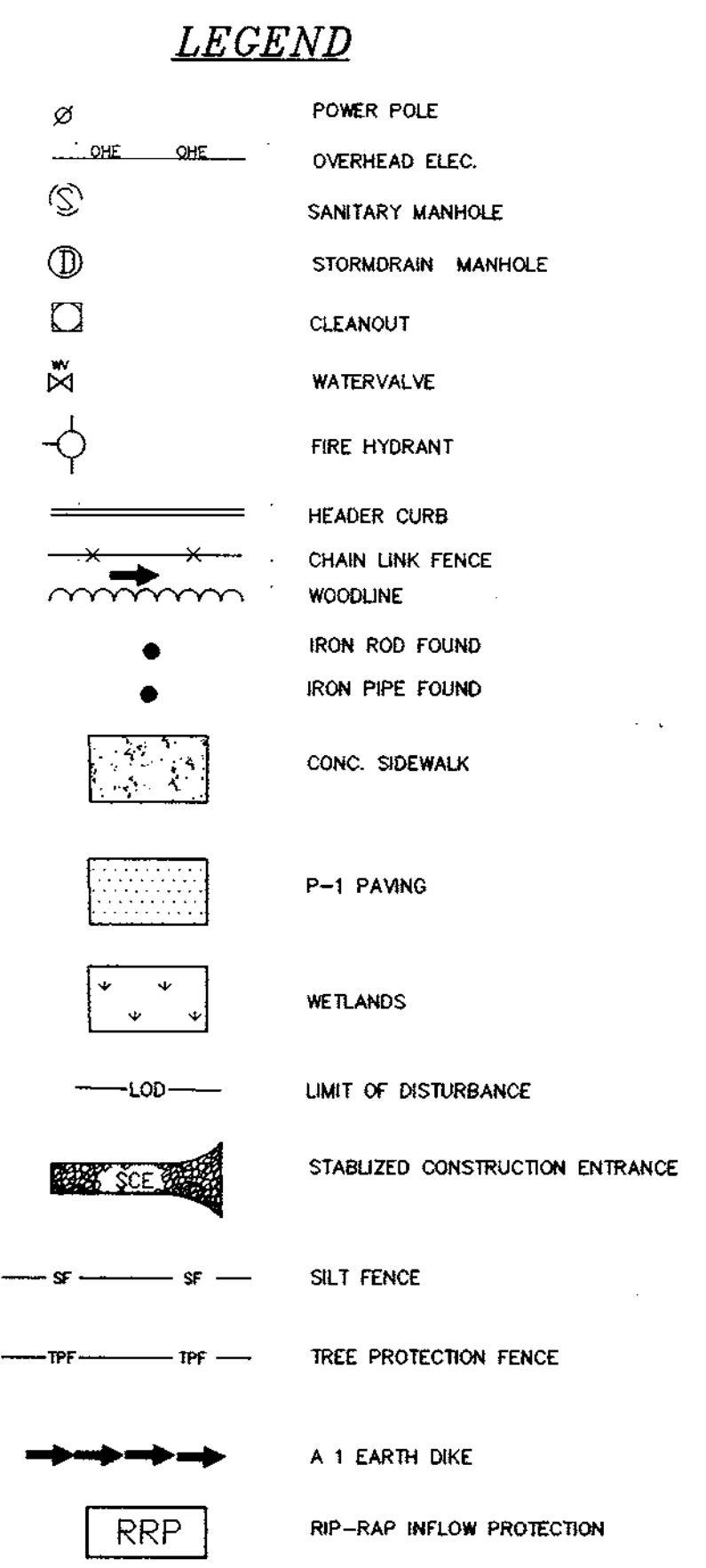
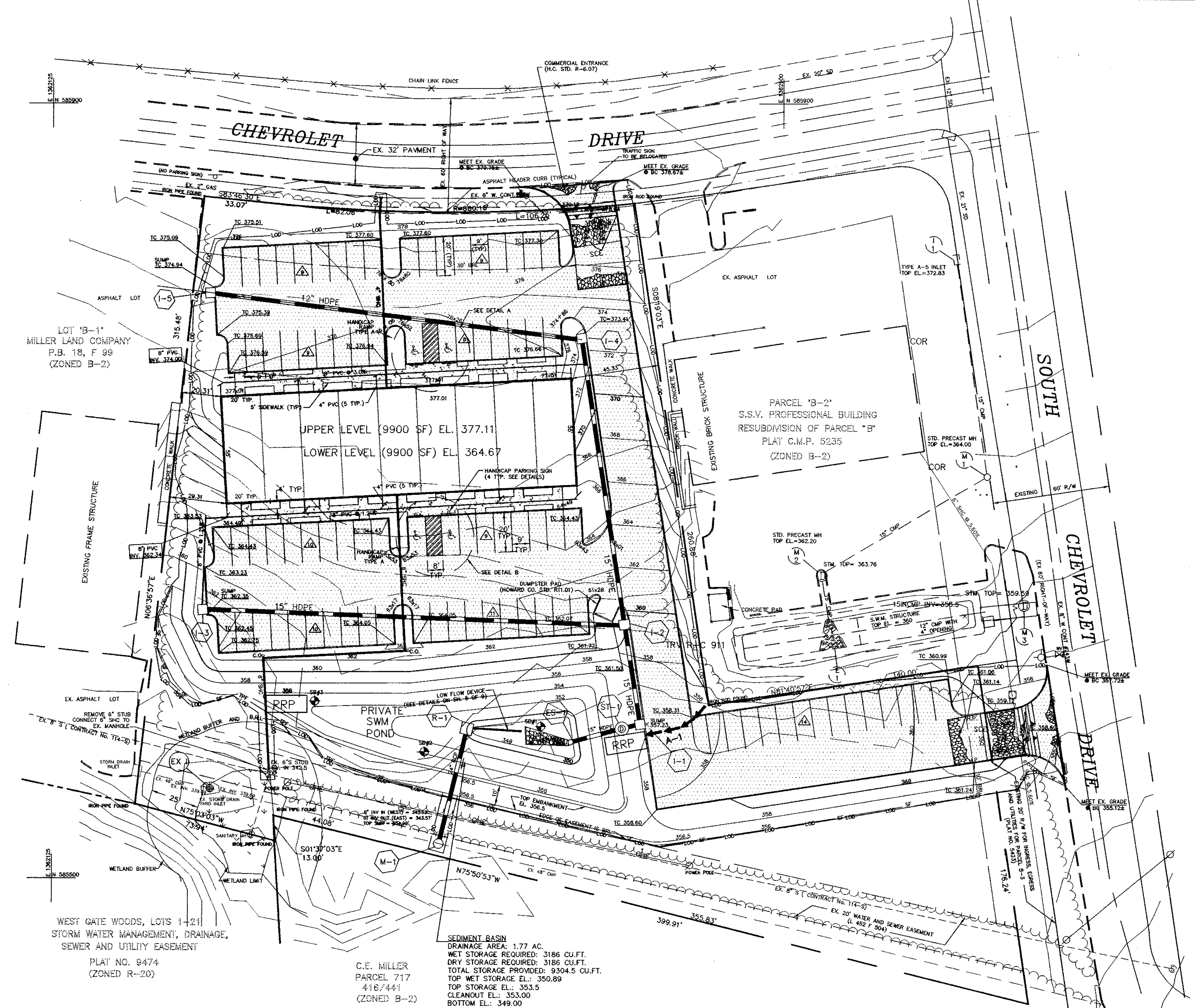
Project: 98025
date: OCT 1998
illustration: FCL
scale: 1" = 30'

description: SITE DEVELOPMENT PLAN
revisions: [blank]

TAX MAP 24, PARCEL B6
KMS PROFESSIONAL BUILDING
SECOND ELECTION DISTRICT
HOWARD COUNTY
SITE DEVELOPMENT PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5092 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042
(410) 987-0286 Bldg. (301) 621-5521 Wash. (410) 987-0288 Fax.

THIS PLAN IS FOR THE PURPOSE OF SEDIMENT CONTROL ONLY



Notes:
 1. Silt fence to be tamped into the soil.
 2. Wire, snow fence, etc. for tree protection only.
 3. Boundaries of Retention Area will be established as part of the forest conservation plan review process.
 4. Boundaries of Retention Area should be staked and flagged prior to installing device.
 5. Avoid root damage when placing anchor posts.
 6. Device should be properly maintained throughout construction.
 7. Protection signs are also required, see Figure C-4.
 8. Locate fence outside the Critical Root Zone.

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 SIGNATURE: _____ P.E. NO.: _____ DATE: _____

DEVELOPER'S CERTIFICATE
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND TRAINING RECEIVED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT



SEDIMENT BASIN
 DRAINAGE AREA: 1.77 AC.
 WET STORAGE REQUIRED: 3186 CU.FT.
 DRY STORAGE REQUIRED: 3186 CU.FT.
 TOTAL STORAGE PROVIDED: 9304.5 CU.FT.
 TOP STORAGE EL.: 350.89
 TOP STORAGE EL.: 353.5
 CLEANOUT EL.: 353.00
 BOTTOM EL.: 349.00
 TOP WEIR EL.: 353.50 (SEE FRONT WALL ELE. ON SH.5)
 TOP EMBANK EL.: 356.50
 PIPE SIZE: 24" RCP

OWNERS & DEVELOPER
 KMS ASSOCIATES
 8455 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND
 21043
 (410) 465-2222

Project	98025	date	OCT. 1998
Illustration	FCL	engineering	FCL
scale	1" = 30'	approval	JBM

no.	description	revisions	date

TAX MAP 24, PARCEL B6
KMS PROFESSIONAL BUILDING
 HOWARD COUNTY
 SECOND ELECTION DISTRICT
EROSION & SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 987-0286 Fax: (301) 621-5521 Wash. (410) 987-0298 Fax

HOWARD SOIL CONSERVATION DISTRICT

STANDARD AND SPECIFICATIONS FOR TOPSOIL

PERMANENT SEEDING NOTES

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

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

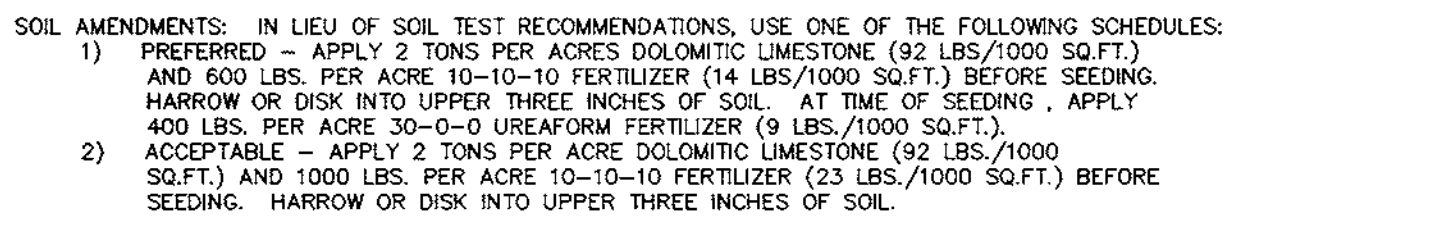
SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO 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 DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE 1.4 LBS./1000 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./1000 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 TONE/ACRE WELL ANCHORED STRAW.

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 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

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



TEMPORARY SEEDING NOTES

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

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

SOIL AMENDMENTS: APPLY 600 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 OCTOBER 15, SEED WITH 2-1/2 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 WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU NOVEMBER 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 WEED FREE 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 EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

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

STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOW 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 1981 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC.5), 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:	2.535 ACRES
AREA DISTURBED:	1.95 ACRES
AREA TO BE ROOFED OR PAVED:	1.15 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0.80 ACRES
TOTAL CUT:	6,200 CU. YDS.
TOTAL FILL:	CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION:	

 THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY. CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITY MEASUREMENTS.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCES, WITH MOUNTABLE BERM, AT LOCATIONS SHOWN. (1 DAY)
- CONSTRUCT TREE PROTECTION FENCE, SILT FENCES & EARTH DIKES. (3 DAYS)
- CONSTRUCT SEDIMENT BASIN (w/o LOW FLOW DEVICE) AND INFLOW PROTECTION AS INDICATED. (5 DAY)
- BRING SITE TO GRADE & INSTALL THE PROPOSED WATER HOUSE CONNECTION, SEWER HOUSE CONNECTION AND STORM DRAIN SYSTEMS. (15 DAYS)
- REMOVE EARTH DIKE NEAR ST-1. (1 DAY)
- CONSTRUCT PAVEMENT AND CURB AND GUTTER AS INDICATED. (10 DAYS)
- STABILIZE ALL REMAINING DISTURBED AREAS. (3 DAYS)
- WHEN ALL CONTRIBUTING DRAINAGE AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CONVERT THE SEDIMENT BASIN TO THE PROPOSED STORMWATER MANAGEMENT POND. (3 DAYS)
- CLEAN THE INSTALLED STORMCEPTER. (1 DAY)
- STABILIZE THE REMAINING DISTURBED AREA. (2 DAYS)
- WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE THE REMAINING SEDIMENT CONTROL DEVICES. (1 DAY)

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

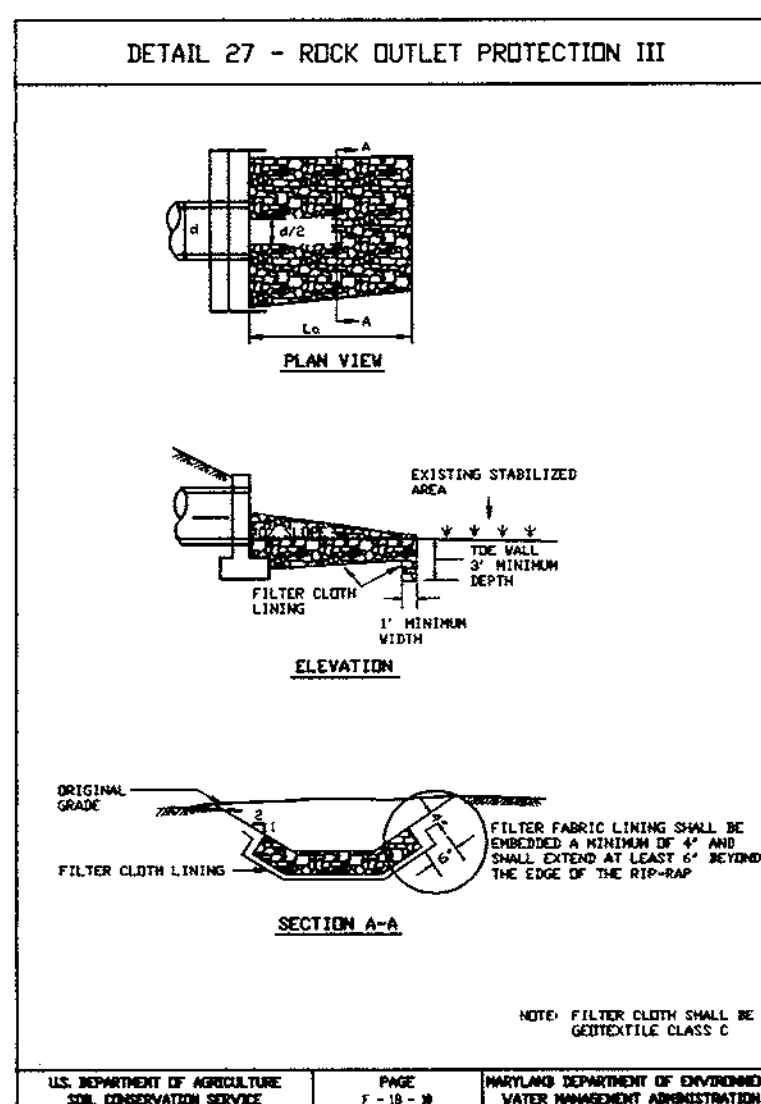
- THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATION. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONSON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, QUACK LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
 - FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
 - FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
 - ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 - pH FOR TOPSOILS SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PERSCRIBED TO RAISE THE pH TO 6.5 OR HIGHER.
 - ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
 - TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
 - NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
 - NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

- TOPSOIL APPLICATION
 - WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE, AND SEDIMENT TRAPS AND BASINS.
 - GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" - 8" HIGHER IN ELEVATION.
 - TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" TO 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
 - ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW.
 - COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS WHO ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
 - COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
 - COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

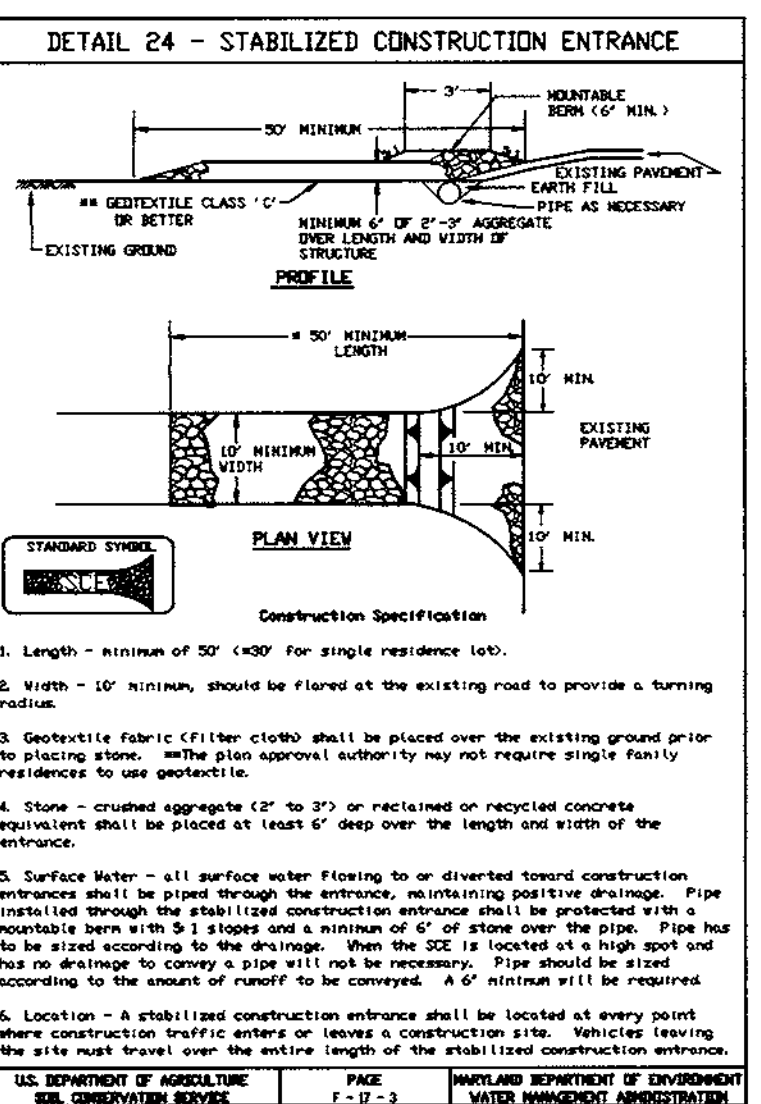
REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SOODING. MD-VA. PUB. #1. COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.



ROCK OUTLET PROTECTION III

CONSTRUCTION SPECIFICATIONS

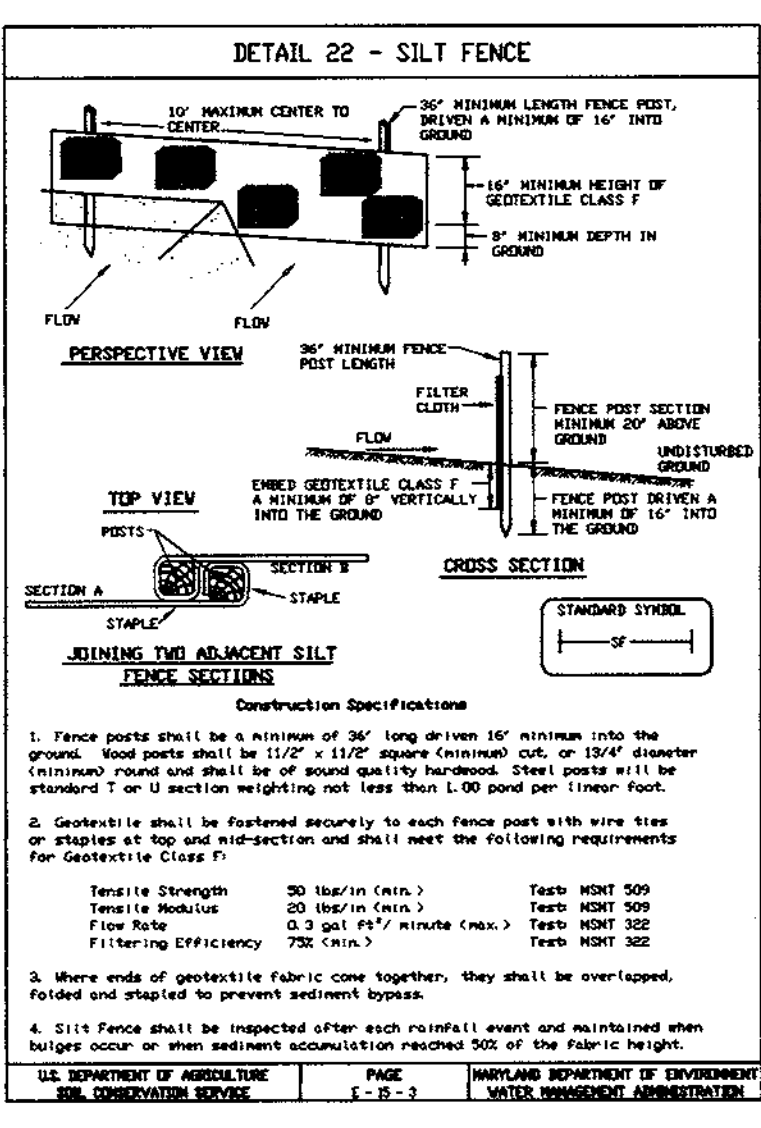
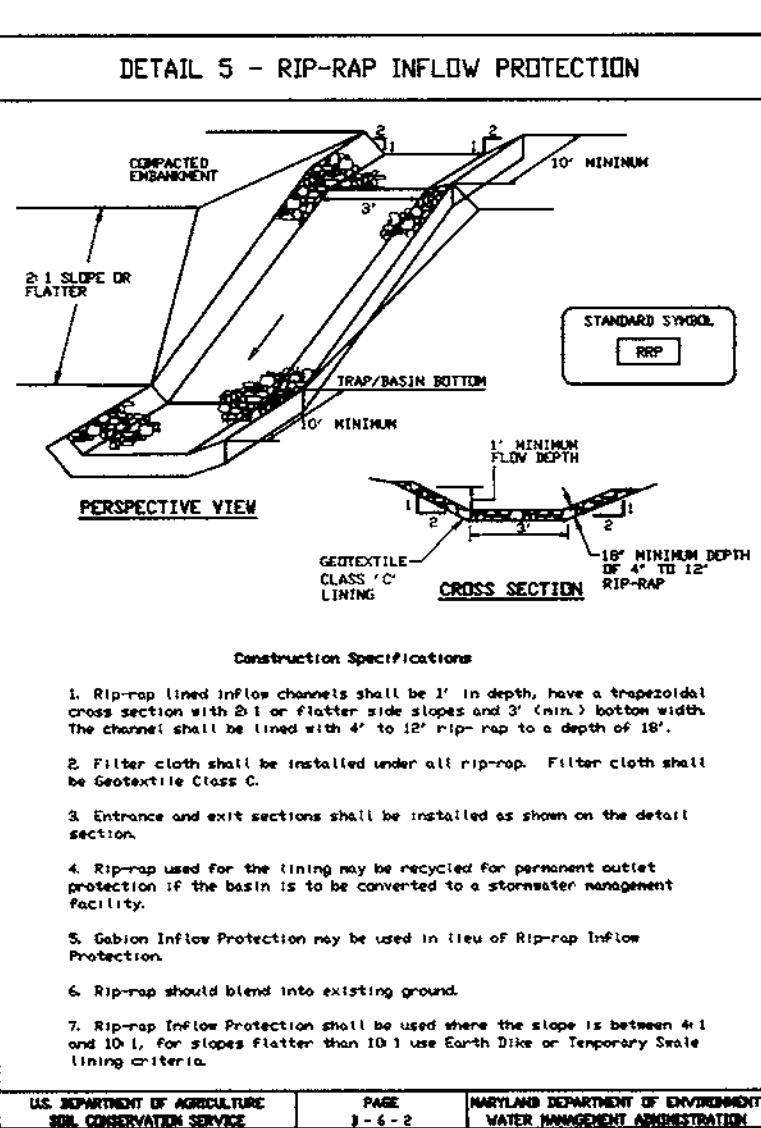
- The subgrade for the filter, riprap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Geotextile shall be protected from puncturing, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlap shall be for joining two pieces of geotextile shall be a minimum of one foot.
- Stones for the riprap or gabion outlet may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying material. The stone for riprap or gabion outlets shall be delivered and placed in a manner to prevent damage to the filter fabric or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent stone.
- The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.



DETAIL 1 - EARTH DIKE

CONSTRUCTION SPECIFICATIONS

1. All temporary earth dikes shall have unimpaired positive grade to its crest. Soil erosion may be necessary for grades less than 1:1.
1. Dikes shall be placed on a prepared subgrade to a minimum of 12 inches.
1. Dikes shall be placed on an undisturbed area that shall be a minimum of 12 inches wide.
1. All trees, brush, stumps, obstructions, and other adjacent material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
1. The dike shall be protected or draped to its top, grade and cross section as required to meet the criteria specified herein and be free of loose portions of other implements which will impede runoff.
1. All shall be completed by north facing equipment.
1. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
1. Inspection and maintenance must be provided periodically and after each rain event.



SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Minimum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A), maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: _____ P.E.N.O. _____
 DATE: _____

CERTIFY MEANS TO START OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER'S NOISE DUES AND ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETINGS COMMONLY ACCEPTED INDUSTRY PRACTICES.

DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF DEVELOPER: *C. Stuart Knudsen*
 DATE: 1/26/99

PRINTED NAME OF DEVELOPER: C. STUART KNUDSEN

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF ENGINEER: *John M. Anderson*
 DATE: 1/23/99

PRINTED NAME OF ENGINEER: JOHN M. ANDERSON

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

SIGNATURE: *Deaf Simmon*
 DATE: 2/5/99

USDA - NATURAL RESOURCE CONSERVATION SERVICE

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

SIGNATURE: *John M. Anderson*
 DATE: 2/5/99

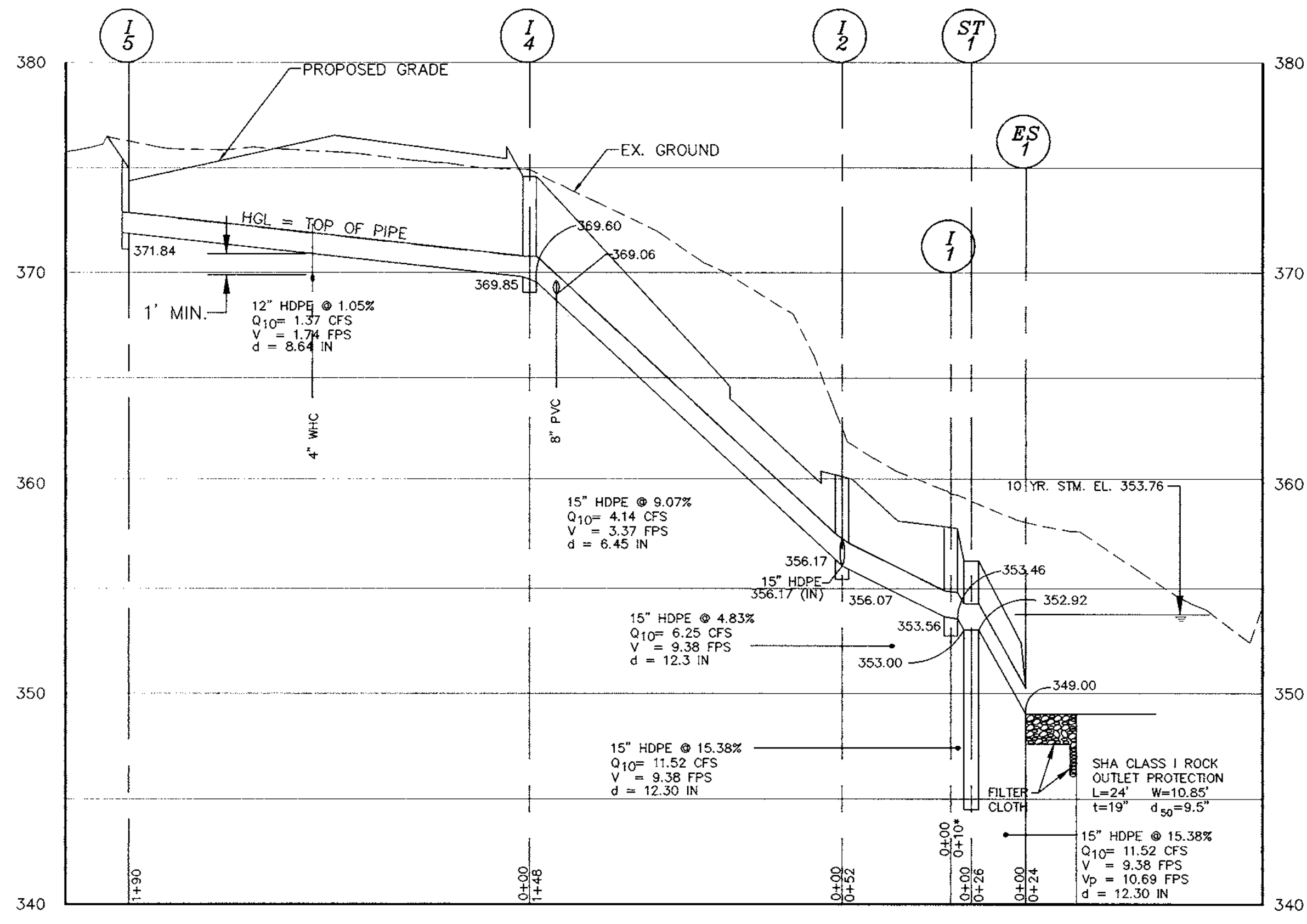
HOWARD SOIL CONSERVATION DISTRICT

APPROVED DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *Deaf Simmon* DATE: 2/6/99
 CHIEF, DIVISION OF LAND DEVELOPMENT: *Deaf Simmon* DATE: 2/7/99
 DIRECTOR: *Deaf Simmon* DATE: 2/11/99

TAX MAP 24, PARCEL B6
 KMS PROFESSIONAL BUILDING
 HOWARD COUNTY, MARYLAND
 SECOND ELECTION DISTRICT
 SEDIMENT CONTROL NOTES AND DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 987-0296 Balt. (301) 621-6521 Wash. (410) 997-0298 Fax.



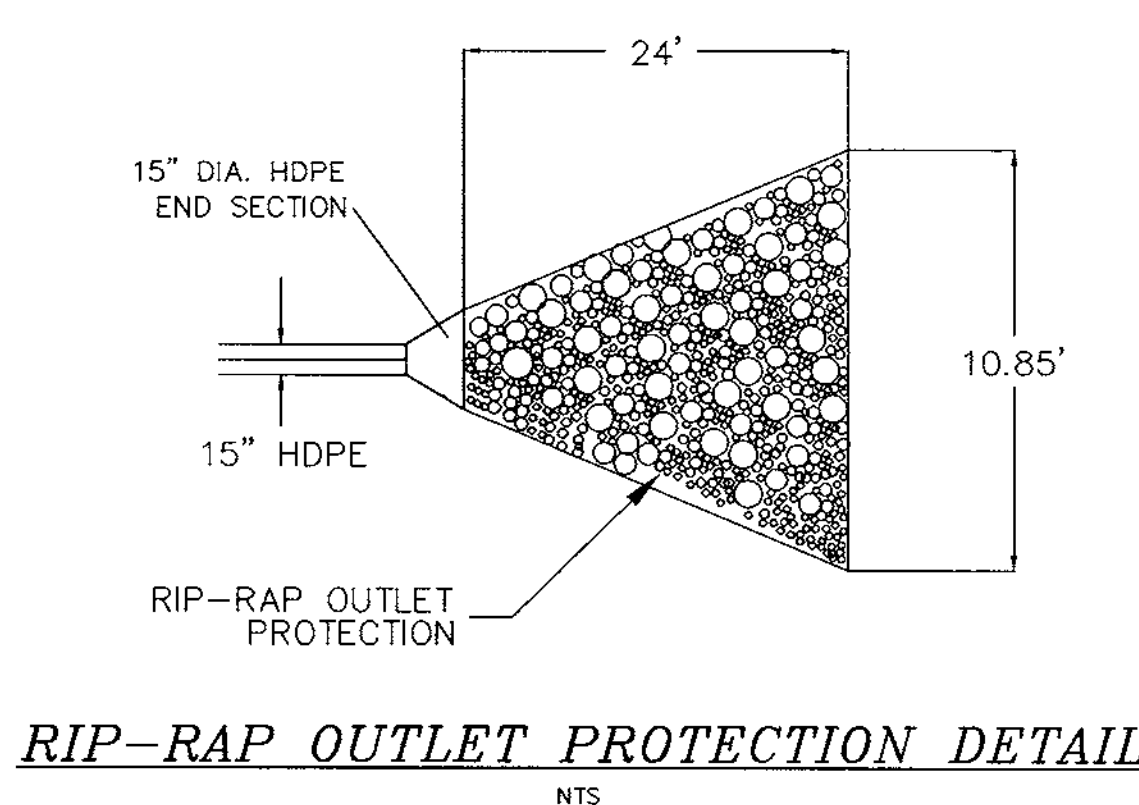
* CLEARANCE BETWEEN I-1 & ST-1 IS 4.83'

15 TO ES1
 SCALE: 1" = 50' HORIZONTAL
 1" = 5' VERTICAL
 NOTE: HGL IS @ TOP OF PIPE.

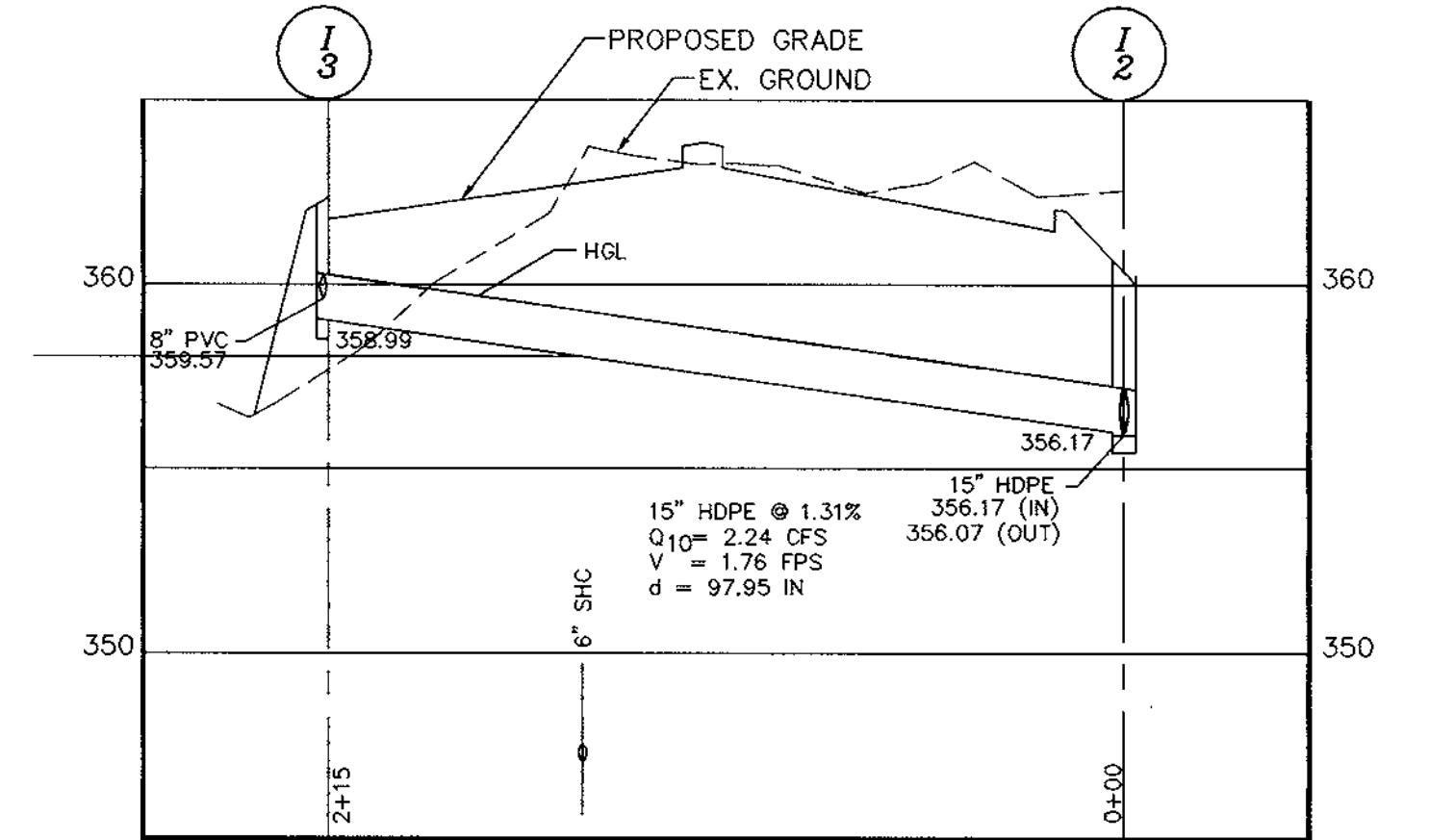
STRUCTURE SCHEDULE

NO.	LOCATION	TOP	INV. IN	INV. OUT	COMMENTS
I-1*	N 585,579.99 E 1,362,429.66	357.81	353.56	353.46	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5' - SUMP
I-2*	N 585,631.04 E 1,362,422.11	360.10	356.17 (N & W)	356.07	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5'
I-3*	N 585,639.00 E 1,362,205.23	362.35	---	358.99	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5' - SUMP
I-4*	N 585,777.66 E 1,362,400.23	373.21	369.85	369.60	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5'
I-5*	N 585,800.97 E 1,362,209.70	374.94	---	371.84	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5' - SUMP
M-1	N 585,518.60 E 1,362,323.54	355.00	336.28(W) 338.28(N)	336.18(E)	STANDARD MANHOLE (HO. CO. STD. G 5.03)
ST-1	N 585,576.77 E 1,362,417.82	356.50	353.00	352.92	STC-1800 STORMCEPTOR
ES1	N 585,571.19 E 1,362,392.42	INV. = 349.00	---	---	15" DIA. HDPE END SECTION
R-1	N 585,577.70 E 1,362,338.03	355.00	349.00	345.00	SEE DETAIL ON SH. 5 OF 9

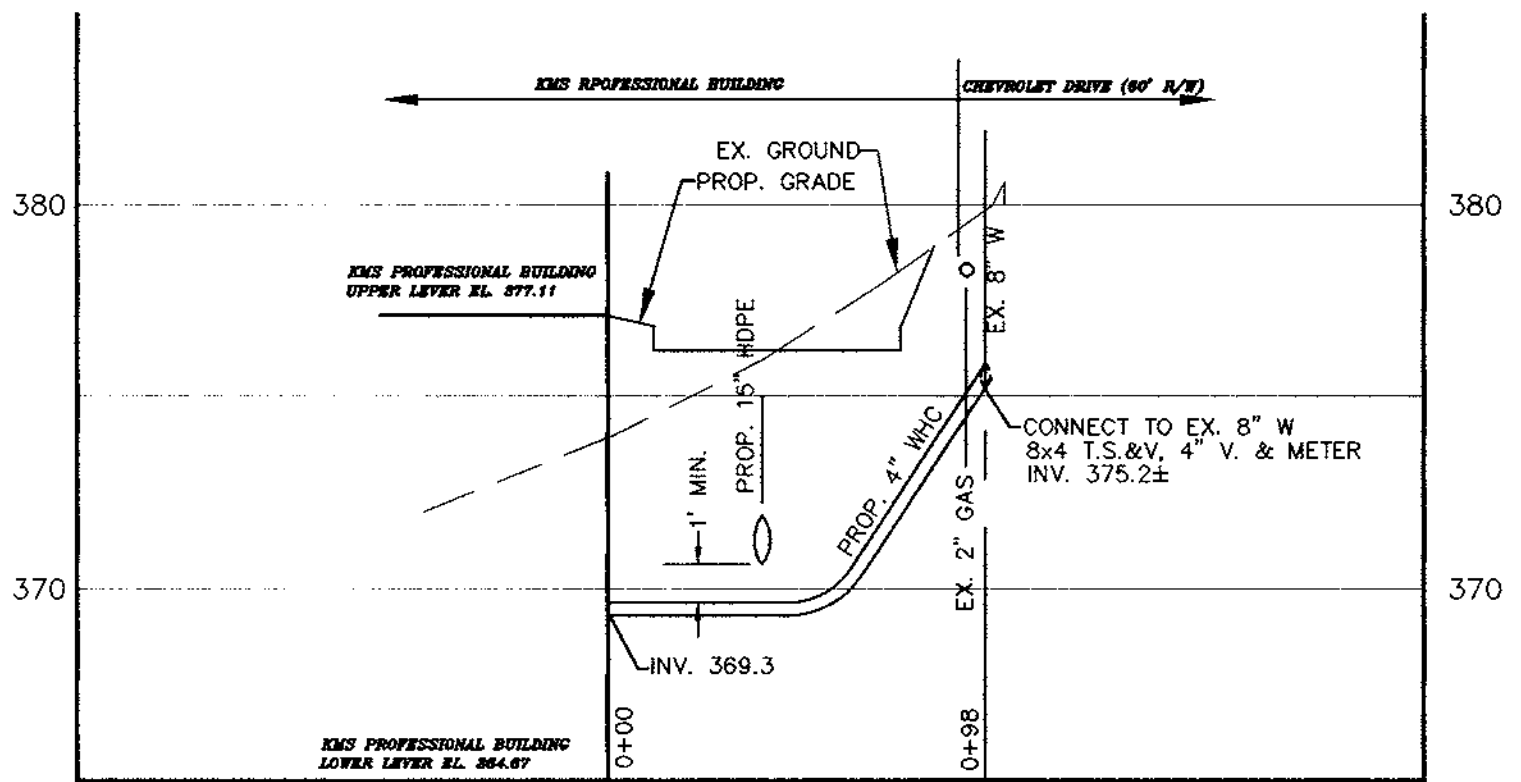
* COORDINATES SHOWN ARE AT E. OF INLET AT THE FACE OF CURB.



RIP-RAP OUTLET PROTECTION DETAIL
 NTS



13 TO 12
 SCALE: 1" = 50' HORIZONTAL
 1" = 5' VERTICAL



4" WHC
 SCALE: 1" = 50' HORIZONTAL
 1" = 5' VERTICAL

CSR 4800 Lakeside Road, Springfield, VA 22150 (703) 971-1900

DR. BY: EPOM
 CK. BY: RCH
 DATE: 12-18-96
 SCALE: NTS
 DWG. # CA-0225-04

STC 1800
 PRECAST CONCRETE STORMCEPTOR

GENERAL NOTES

- STORMCEPTOR SECTIONS SHALL CONFORM TO ASTM C 478, PROFILE CACKETED JOINTS CONFORMING TO ASTM C 443.
- MANHOLE STEPS PROVIDED ABOVE INSERT @ 18" O.C. AND SHALL BE COPOLYMER POLYPROPYLENE PLASTIC ENCAPSULATED GR. 60 STEEL.
- MINIMUM CONCRETE STRENGTH FOR 4000 PSI MINIMUM STEEL STRENGTH 70,000 PSI
- REINFORCEMENT DESIGN SHALL MEET ASTM C 430.
- FLEXIBLE PIPE CONNECTORS SHALL MEET ASTM C 923.
- HANDLING:
 - ALL RISERS SHALL HAVE 2 EA. 1/2" DIA. HOLES FOR LIFTING @ 1/3 WAY DOWN FROM SPOUT.
 - ALL G. DAM. BASE SECTIONS OUTLETS, AND RISERS TO HAVE LIFT HOOPS.
- DESIGNED FOR ASHRO H-20 LOADING.
- FIBERGLASS STORMCEPTOR INSERT REFER TO DRAWING # CA-0225-01

PLAN
 (FRAME AND COVER NOT SHOWN FOR CLARITY)

SECTION

REV. DESCRIPTION BY: DATE

Order Request Form
 Precast Concrete Stormceptor

Contractor Information

Name: _____
 Address: _____
 City: _____
 State: _____
 Zip Code: _____
 Contact: _____
 Phone: _____
 Fax: _____

Owner Information

Name: _____
 Address: _____
 City: _____
 State: _____
 Zip Code: _____
 Contact: _____
 Phone: _____
 Fax: _____

PERVIOUS DRAINAGE AREA FOR THIS UNIT

Stormceptor Model	Inset Size
STC 900	18" U.F.
1200	22"
1800	32"
2400	44"
	CUSTOM

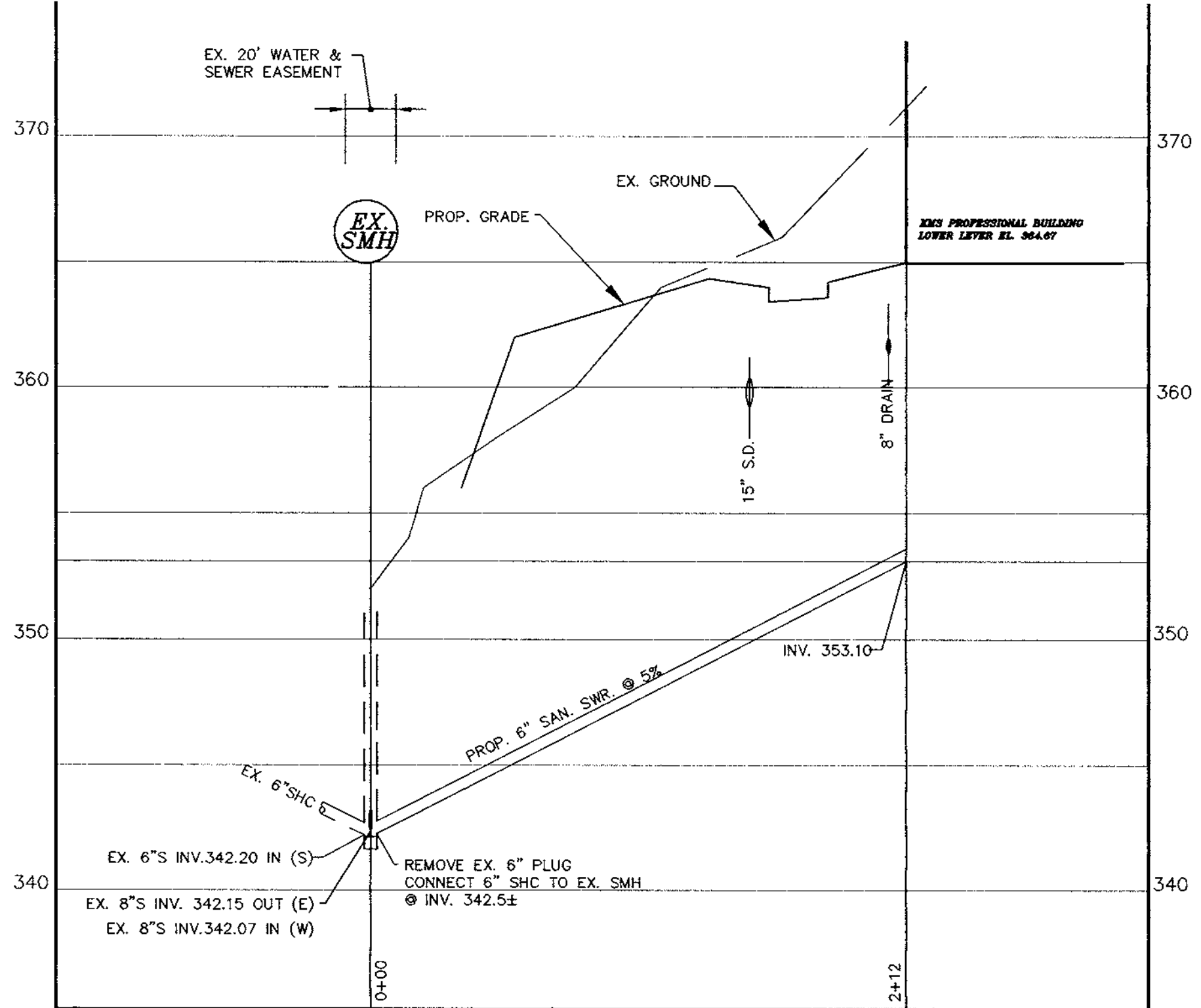
Method Number: _____
 Top Elevation (ft): _____
 Inlet Pipe Invert (ft): _____
 Outlet Pipe Invert (ft): _____
 Pipe Type: HDPE
 Inlet Pipe Inside Diameter (in): 15"
 Inlet Pipe Outside Diameter (in): _____
 Outlet Pipe Inside Diameter (in): 15"
 Outlet Pipe Outside Diameter (in): _____

Project Name: EXECUTIVE CENTER - PARCEL D
 Approximate Time frame of delivery (weeks): _____
 Delivery Address: Street _____
 City: _____ State: _____ Zip Code: _____
 Designer Company: MILDENBERG, BOENDER & ASSOC., INC.
 Designer Contact: J.B. MILDENBERG Phone 410-997-0296 Fax _____

PLEASE FILL OUT COMPLETELY AND FAX **CSR**
 ATTN: ED O'MALLEY FAX: (703)922-3659, PHONE: (703)971-1900
 FOR TECHNICAL ASSISTANCE PLEASE CALL MIKE BARG,
 PHONE (703)971-1900

OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTOR WATER QUALITY DEVICE

- STORMCEPTOR WATER QUALITY STRUCTURES WILL REQUIRE PERIODIC INSPECTION AND CLEANING TO MAINTAIN OPERATION AND FUNCTION. OWNERS WILL HAVE THE STORMCEPTOR UNIT INSPECTED NEARLY OR AS REQUIRED BY HOWARD COUNTY. UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS CAN BE DONE BY USING A CLEAR FIBERGLASS TUBE (SLODGE JERKY) TO EXTRACT A WATER COLUMN SAMPLE. WHEN SEDIMENT DEPTHS EXCEED THE SPECIFIED LEVEL (TABLE 6 OF TECHNICAL MANUAL) THEN CLEANING OF THE UNIT IS REQUIRED.
- STORMCEPTOR WATER QUALITY STRUCTURES MUST BE CHECKED AND CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. CONTACT APPROPRIATE REGULATORY AGENCIES.
- MAINTENANCE OF STORMCEPTOR UNITS SHOULD BE DONE BY A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN UNIT. THE PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED.
- INLET AND OUTLET PIPES MUST BE CHECKED FOR ANY OBSTRUCTIONS AND IF ANY OBSTRUCTIONS ARE FOUND THEY MUST BE REMOVED. STRUCTURAL PARTS OF THE STORMCEPTOR WILL BE REPAIRED AS NEEDED.
- OWNER SHALL RETAIN AND MAKE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.



6" SHC
 SCALE: 1" = 50' HORIZONTAL
 1" = 5' VERTICAL

OWNER/DEVELOPER

KMS ASSOCIATES
 8455 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21043
 (410) 465-2222
 ATTN: STUART KNUDSEN

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 12/29/96

[Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 2/17/97

[Signature]
 DIRECTOR
 DATE: 2/19/97

STORMCEPTOR MANHOLE S2

project: 96025 date: OCT. 1996
 illustration: FCL engineering
 scale: 1" = 50' FCL approval: JBM
 description: revisions: no.

KMS PROFESSIONAL BUILDING
 TAX MAP 24, PARCELS B6 HOWARD COUNTY, MARYLAND
 SECOND ELECTION DISTRICT
STORM DRAIN, WATER & SEWER PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax (301) 621-5521 Wash. (410) 997-0298 Fax

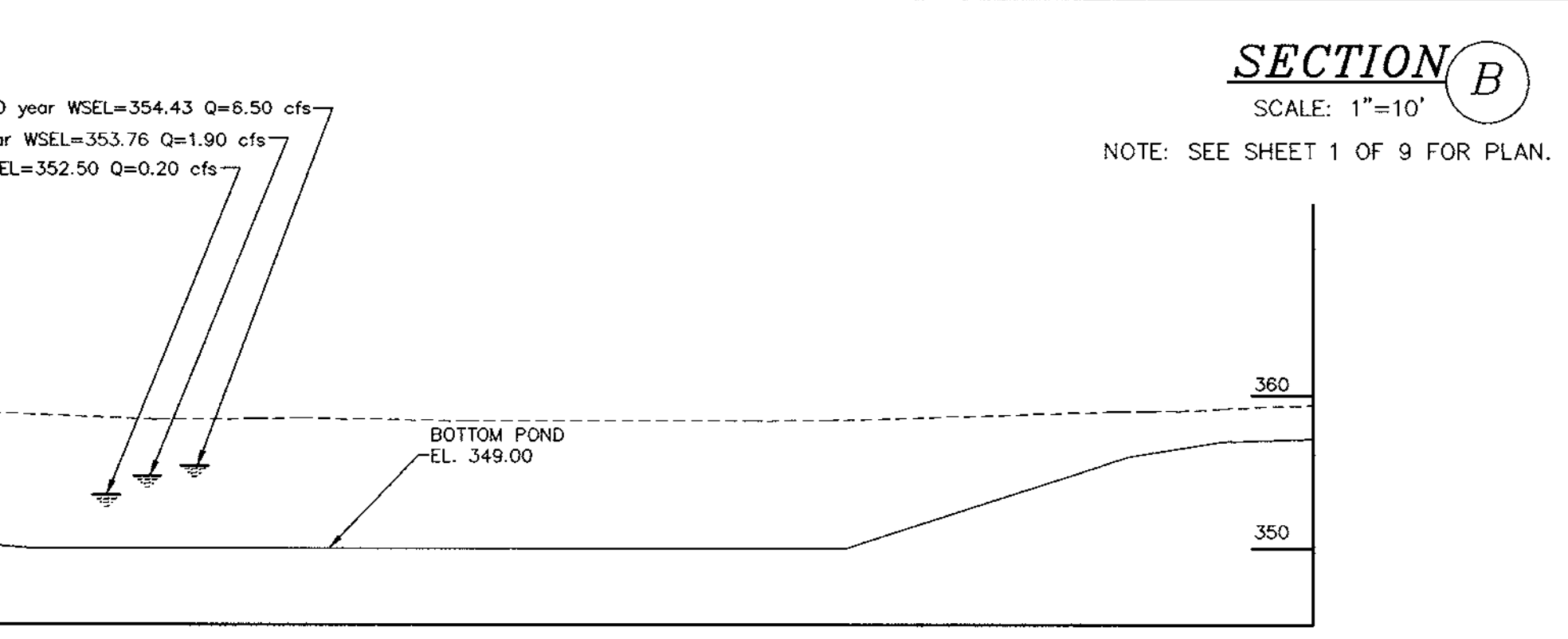
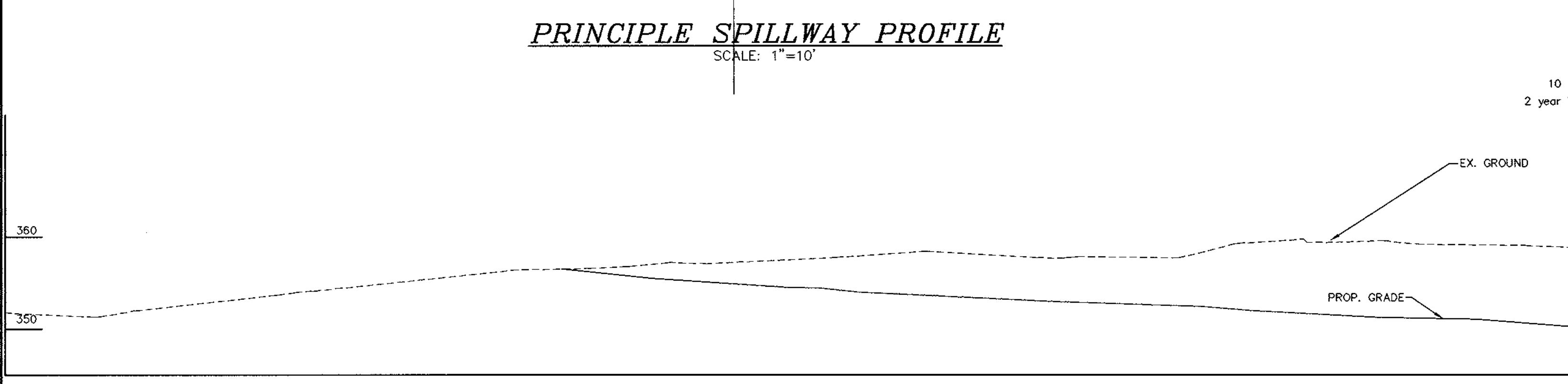
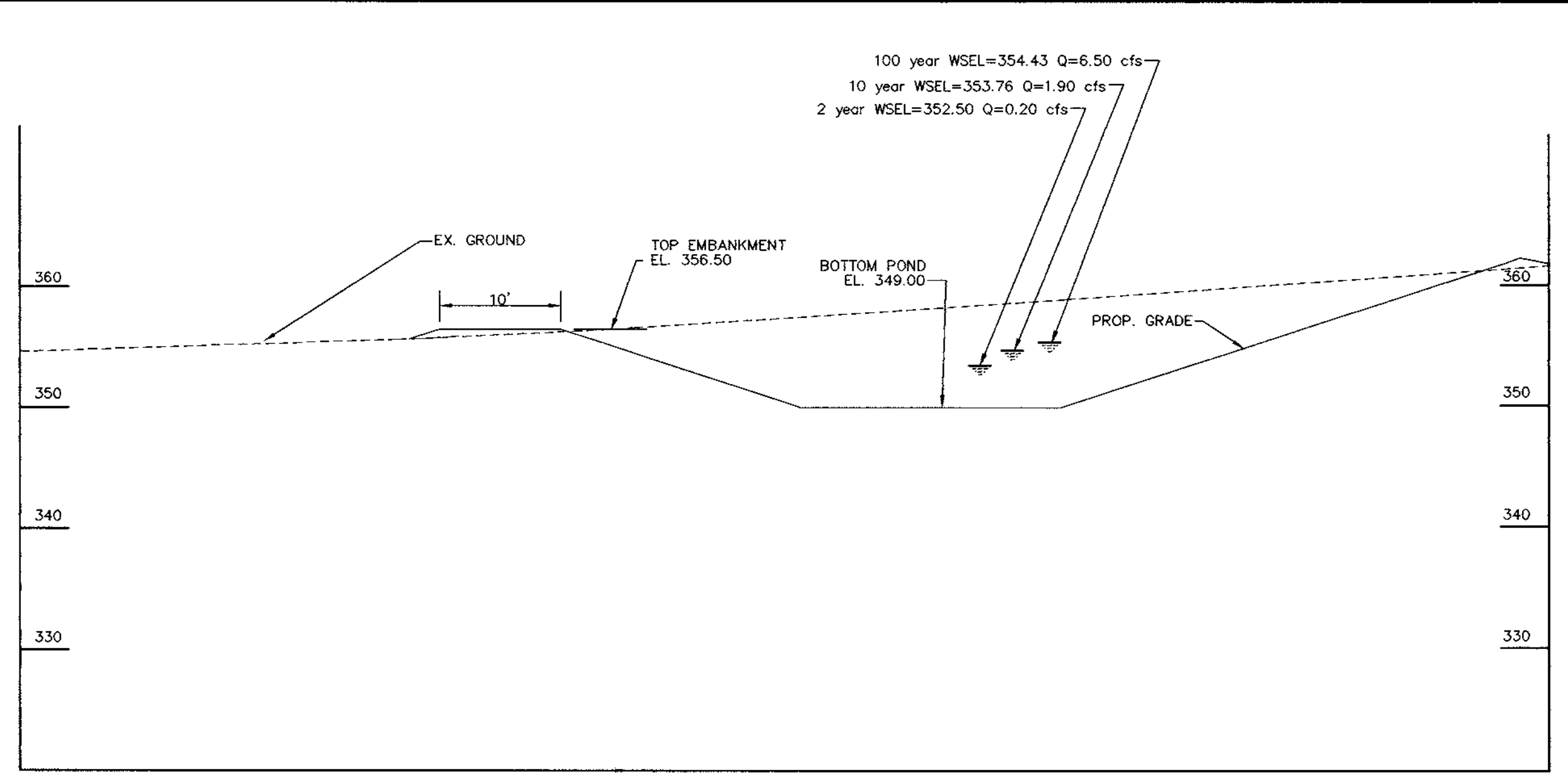
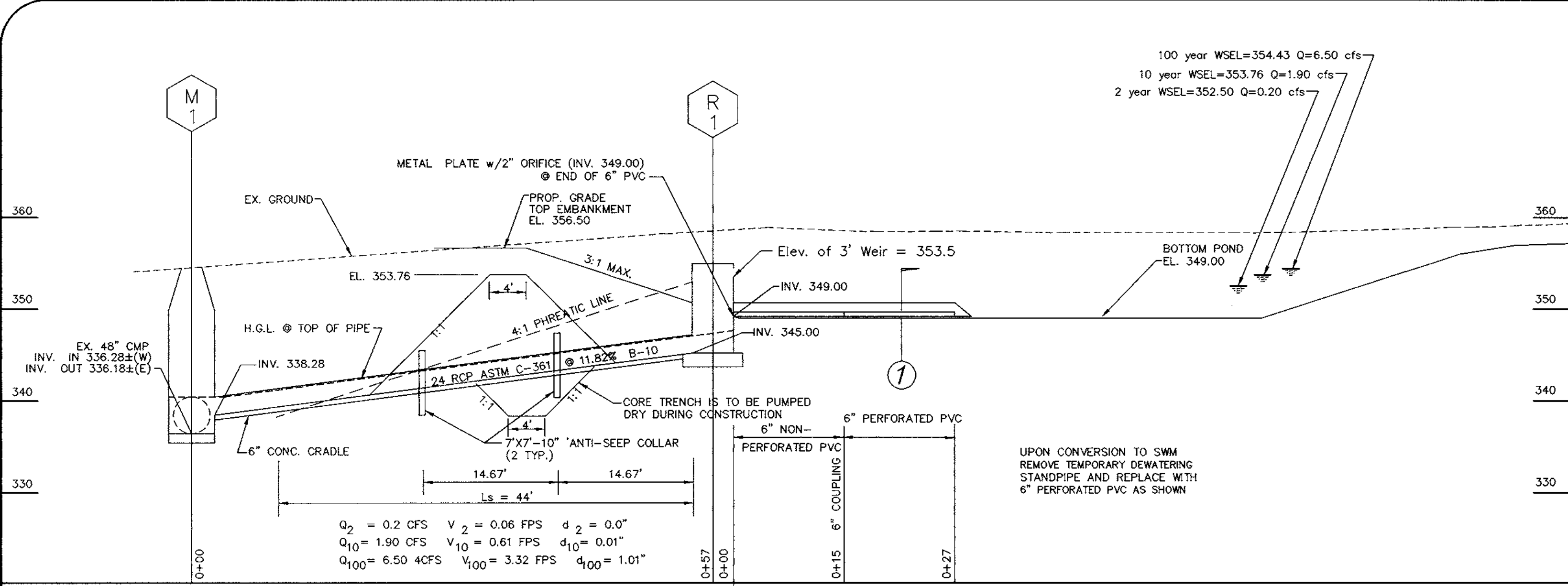
4 OF 9

Project	98025	date	OCT. 98
Illustration	FCL	engineering	FCL
Scale	AS SHOWN	approval	JBM

no.	description	date

TAX MAP 24, PARCEL B4 & B5
KMS PROFESSIONAL BUILDING
 HOWARD COUNTY, MARYLAND
 2ND ELECTION DISTRICT
STORMWATER MANAGEMENT DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsy Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 987-0286 Fax (301) 621-5521 Wash. (410) 987-0288 Fax



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 SIGNATURE: _____ P.E. NO. _____ DATE: _____

DEVELOPER'S CERTIFICATE
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.
 SIGNATURE OF DEVELOPER: *C. Stuart Knudsen* DATE: 1/26/99
 PRINTED NAME OF DEVELOPER: C. STUART KNUDSEN

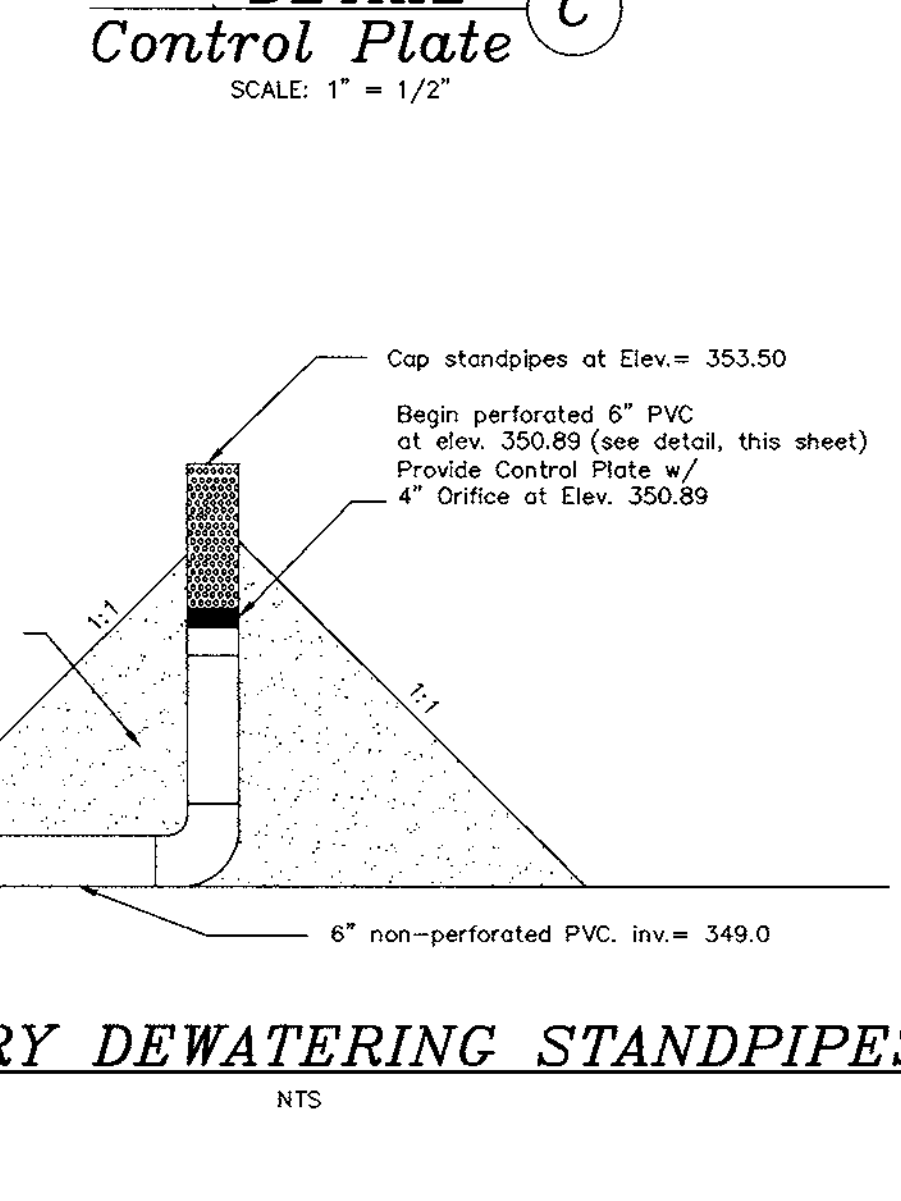
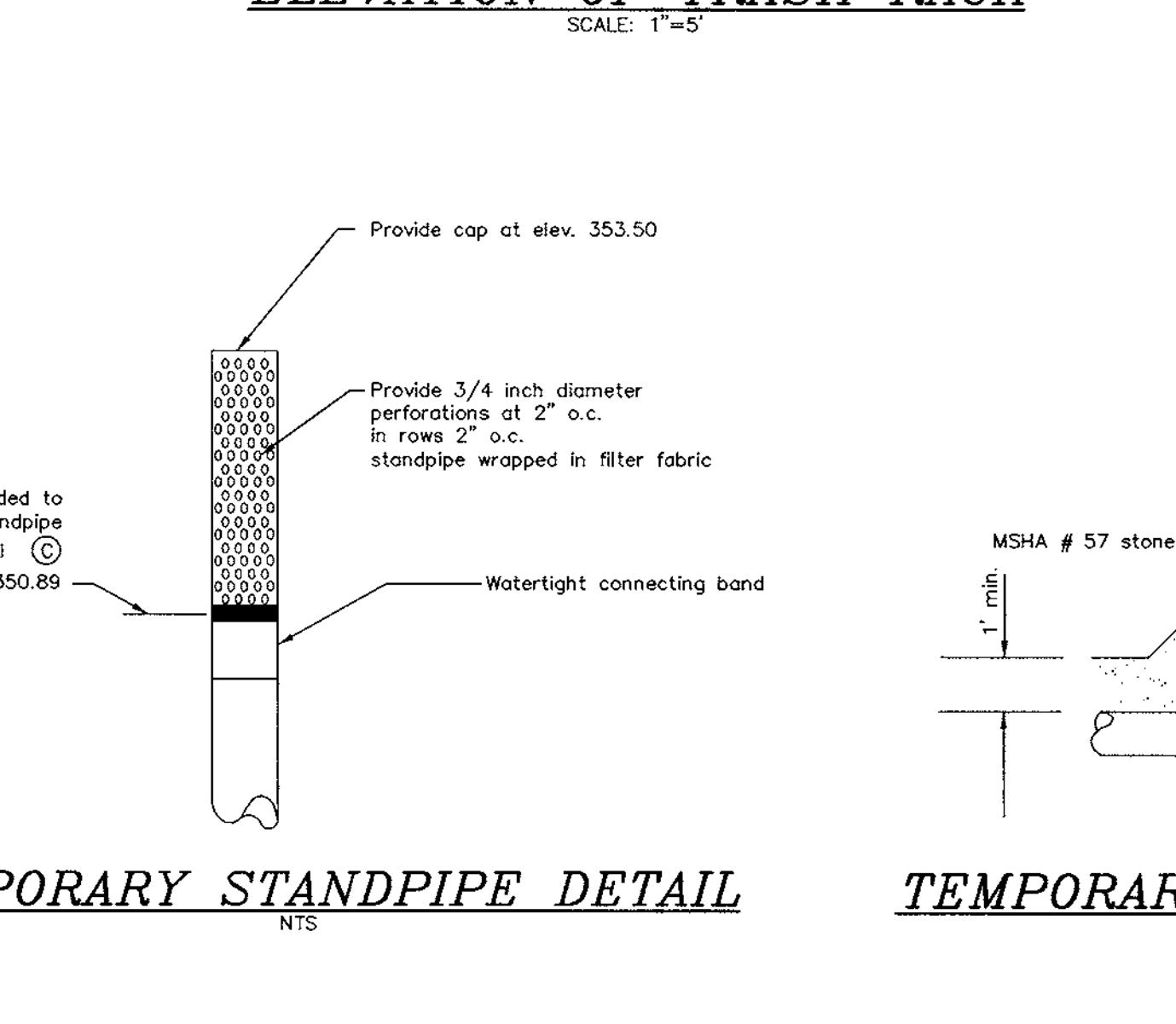
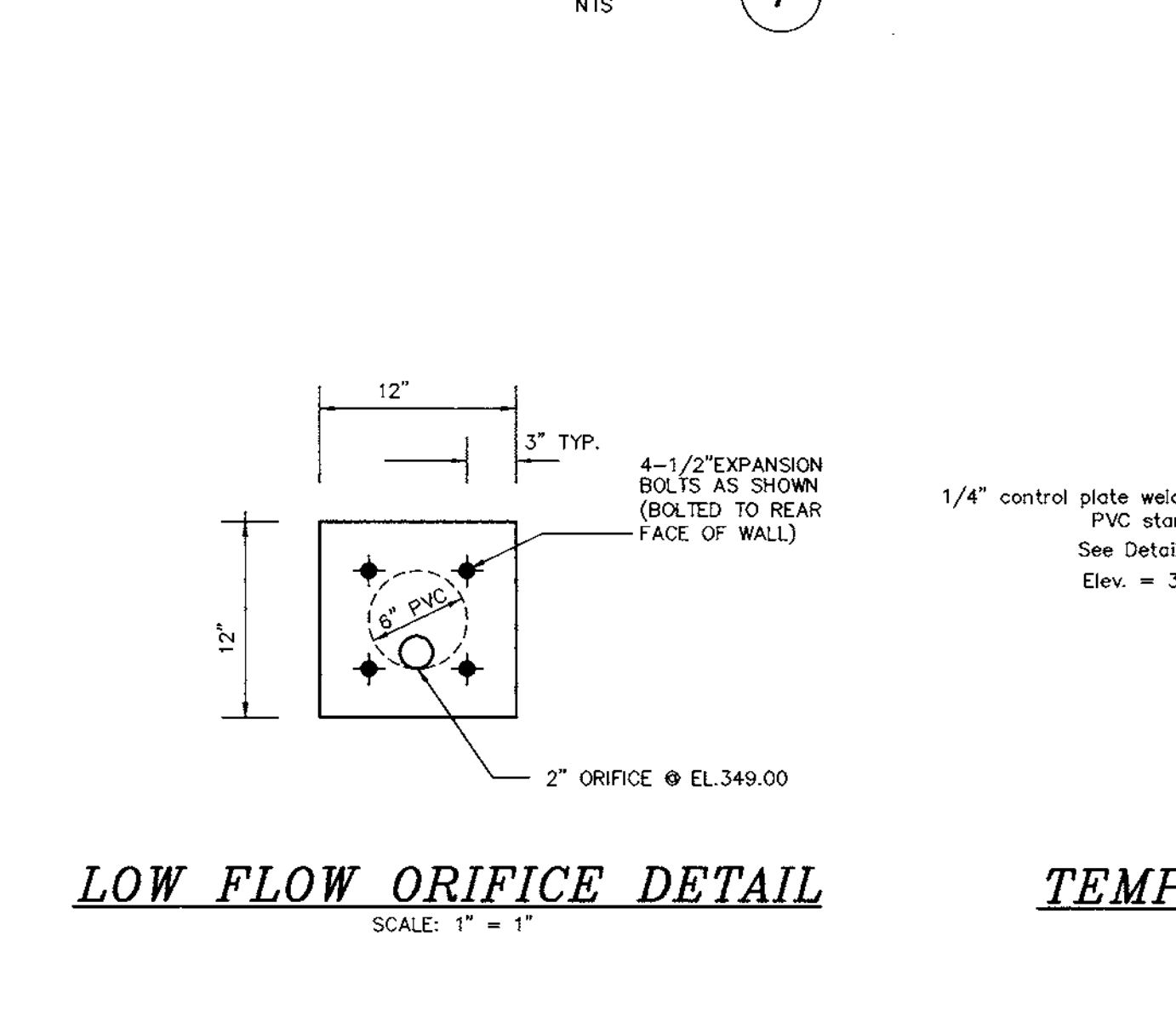
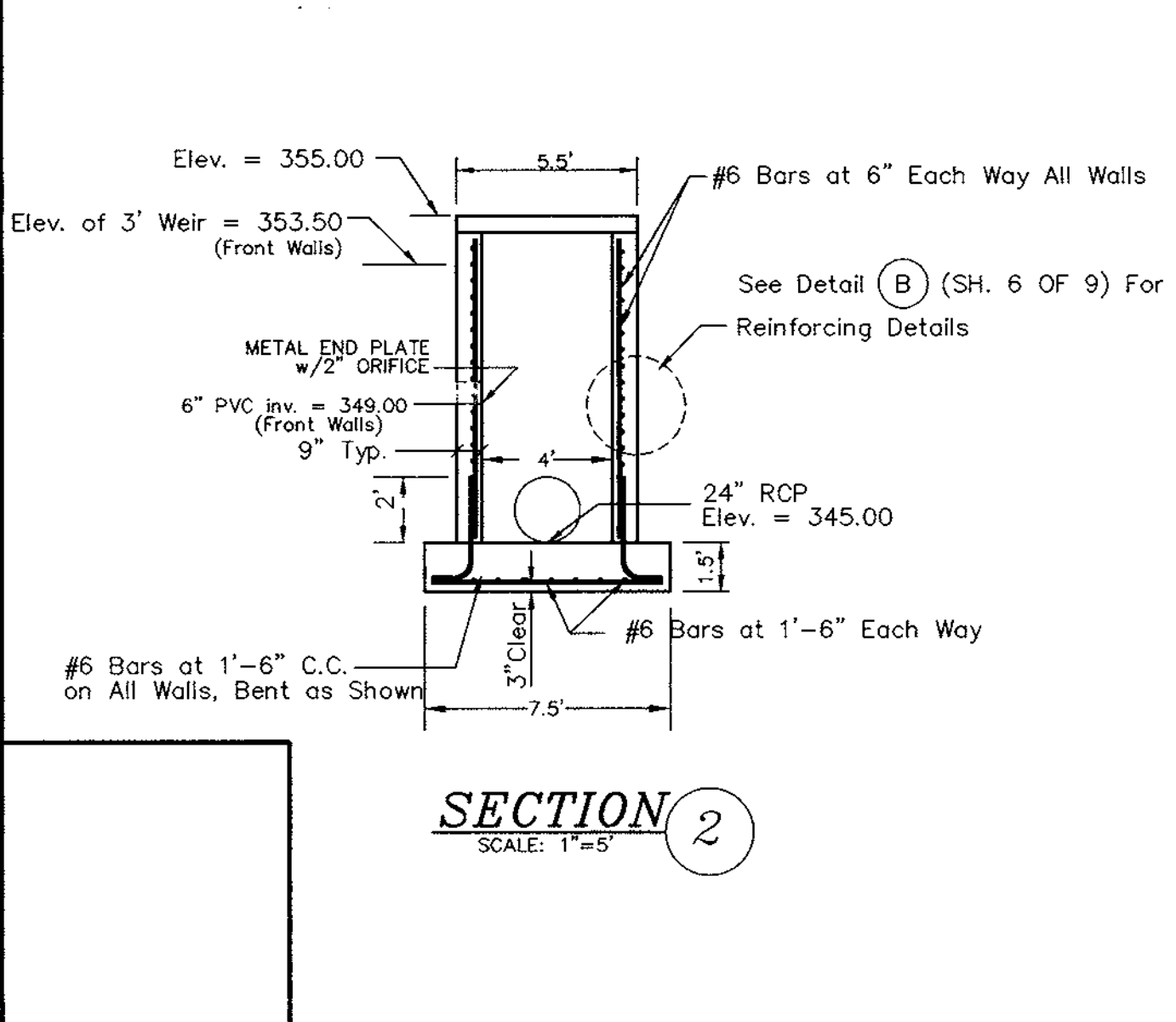
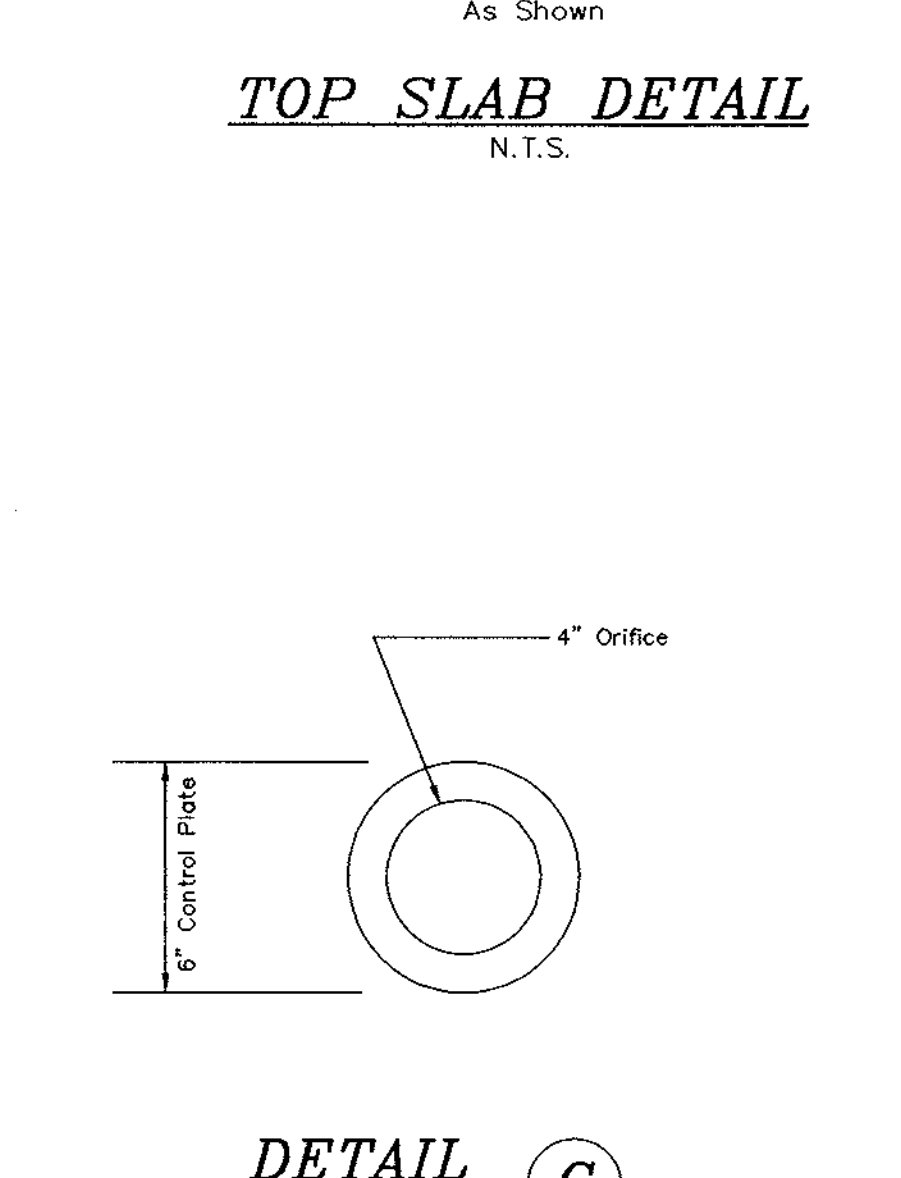
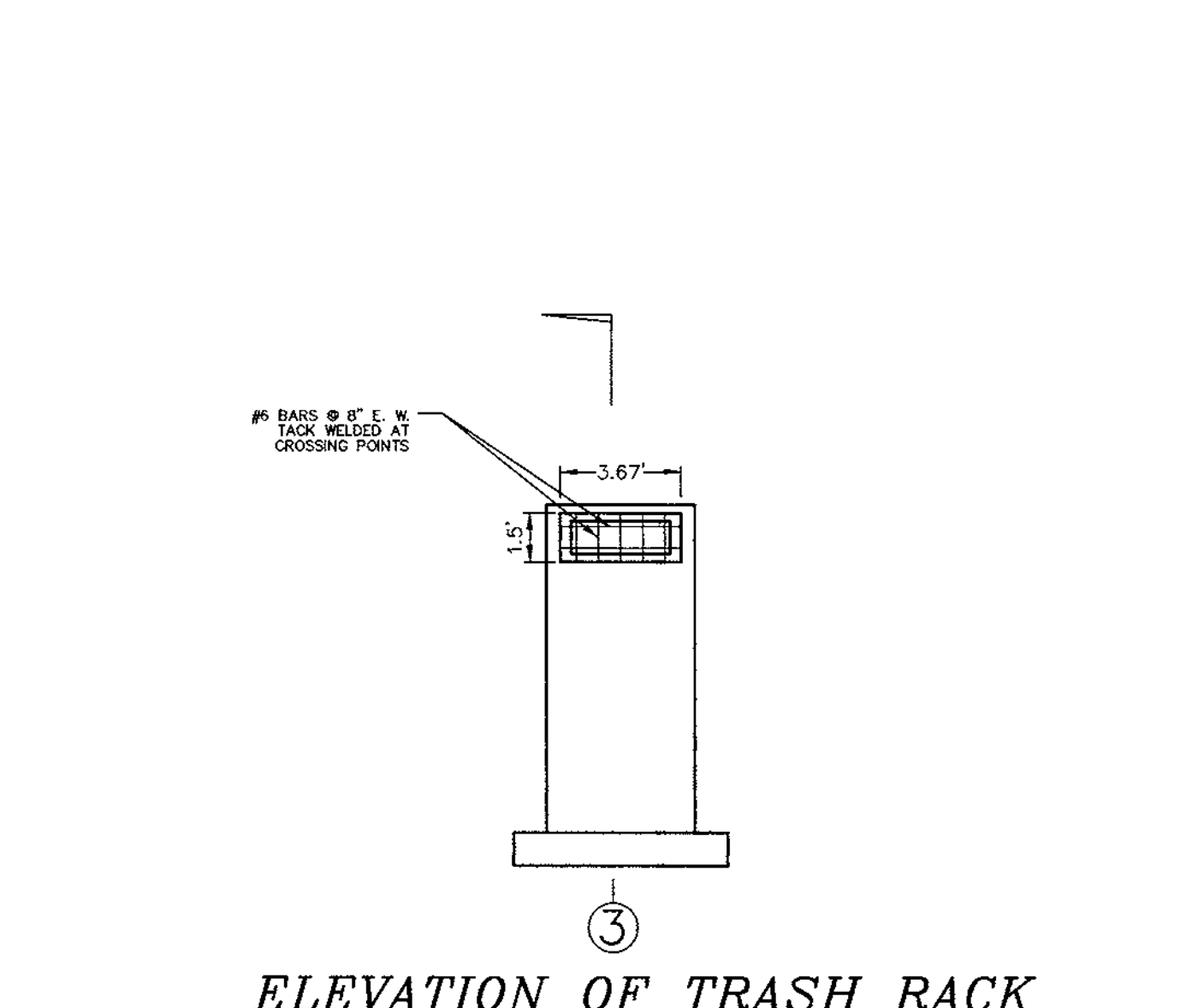
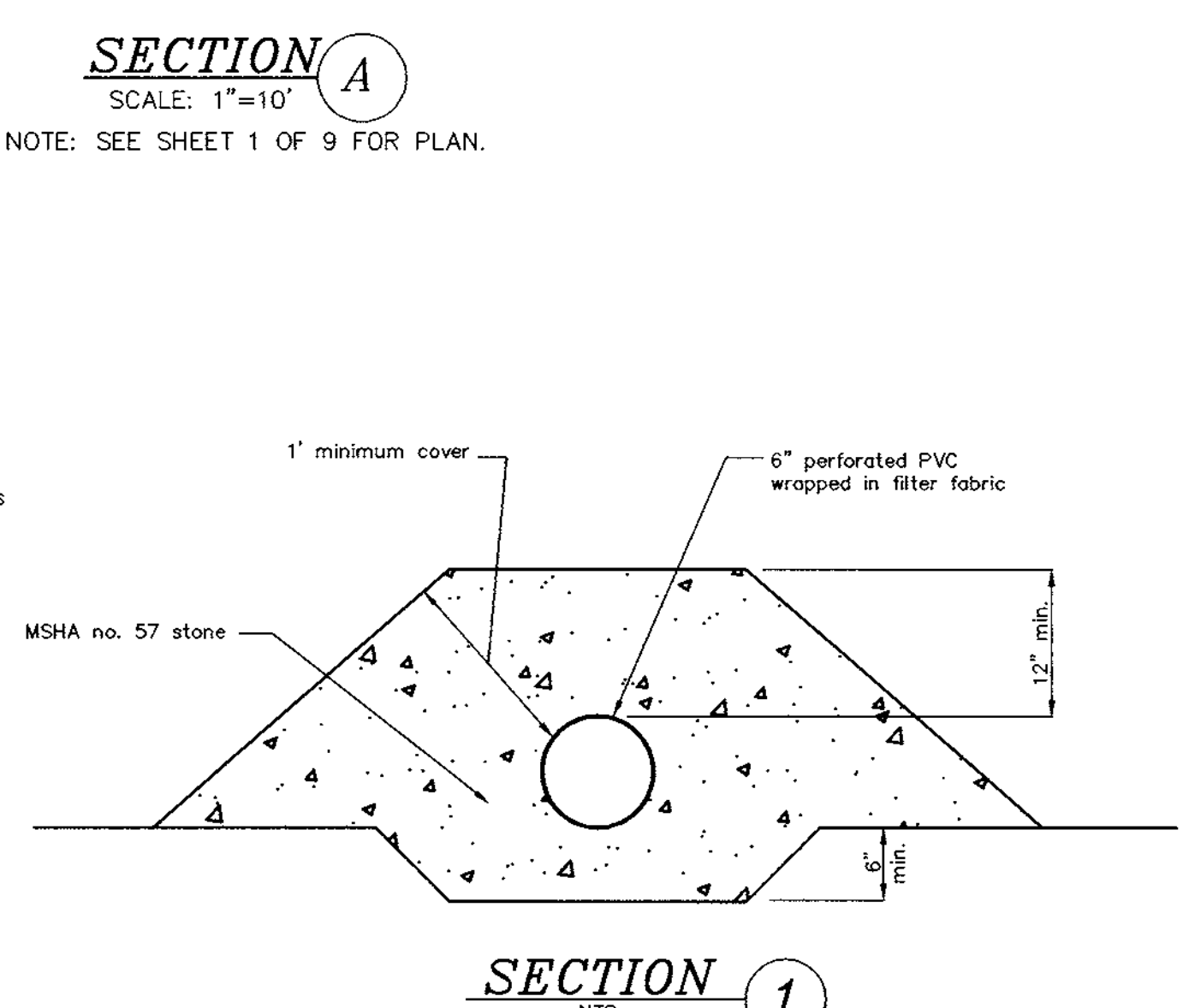
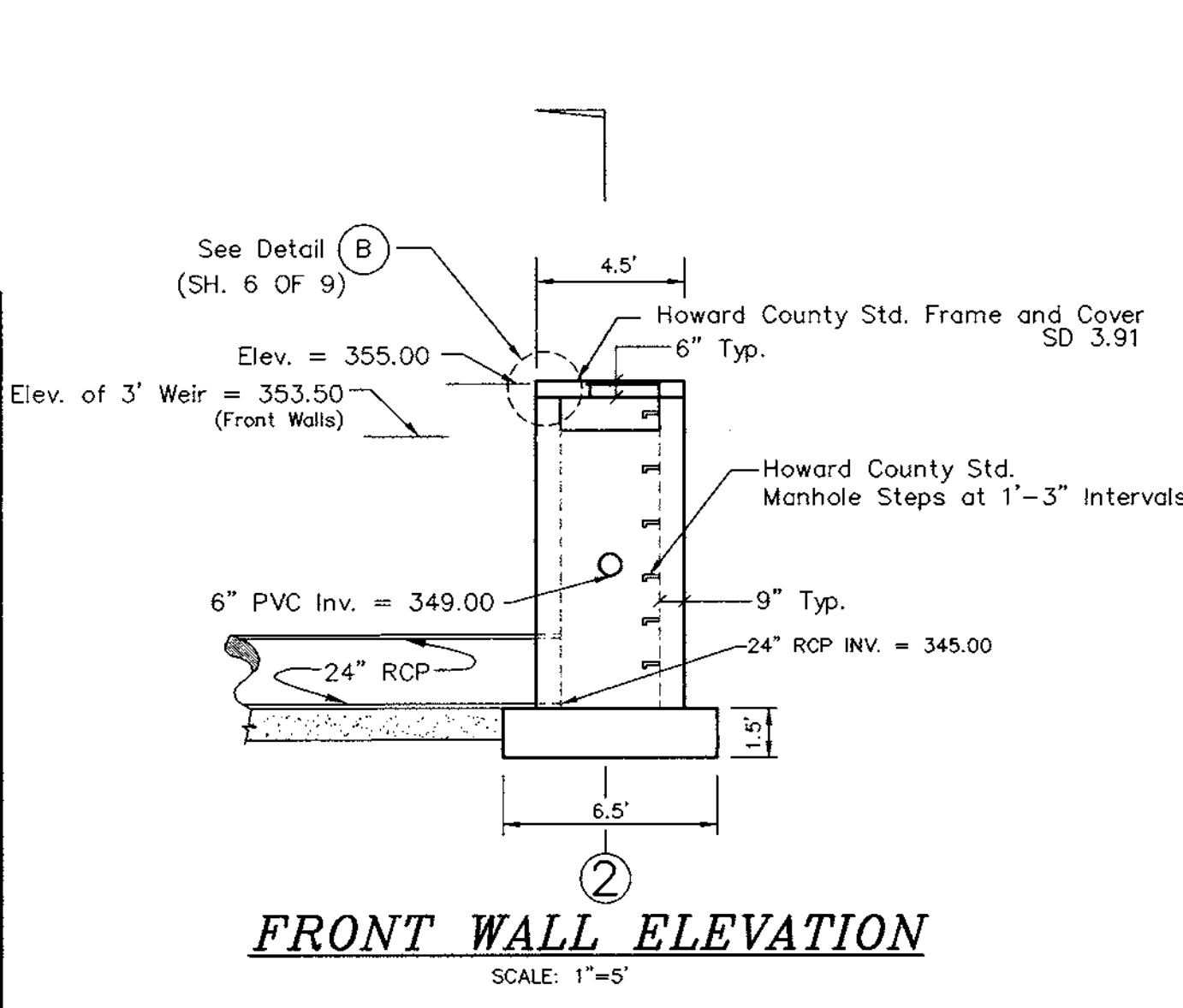
ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON A REASONABLE ASSESSMENT OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.
 SIGNATURE OF ENGINEER: *John Milberger* DATE: 02/23/99
 PRINTED NAME OF ENGINEER: JOHN MILBERG, PROFESSIONAL ENGINEER

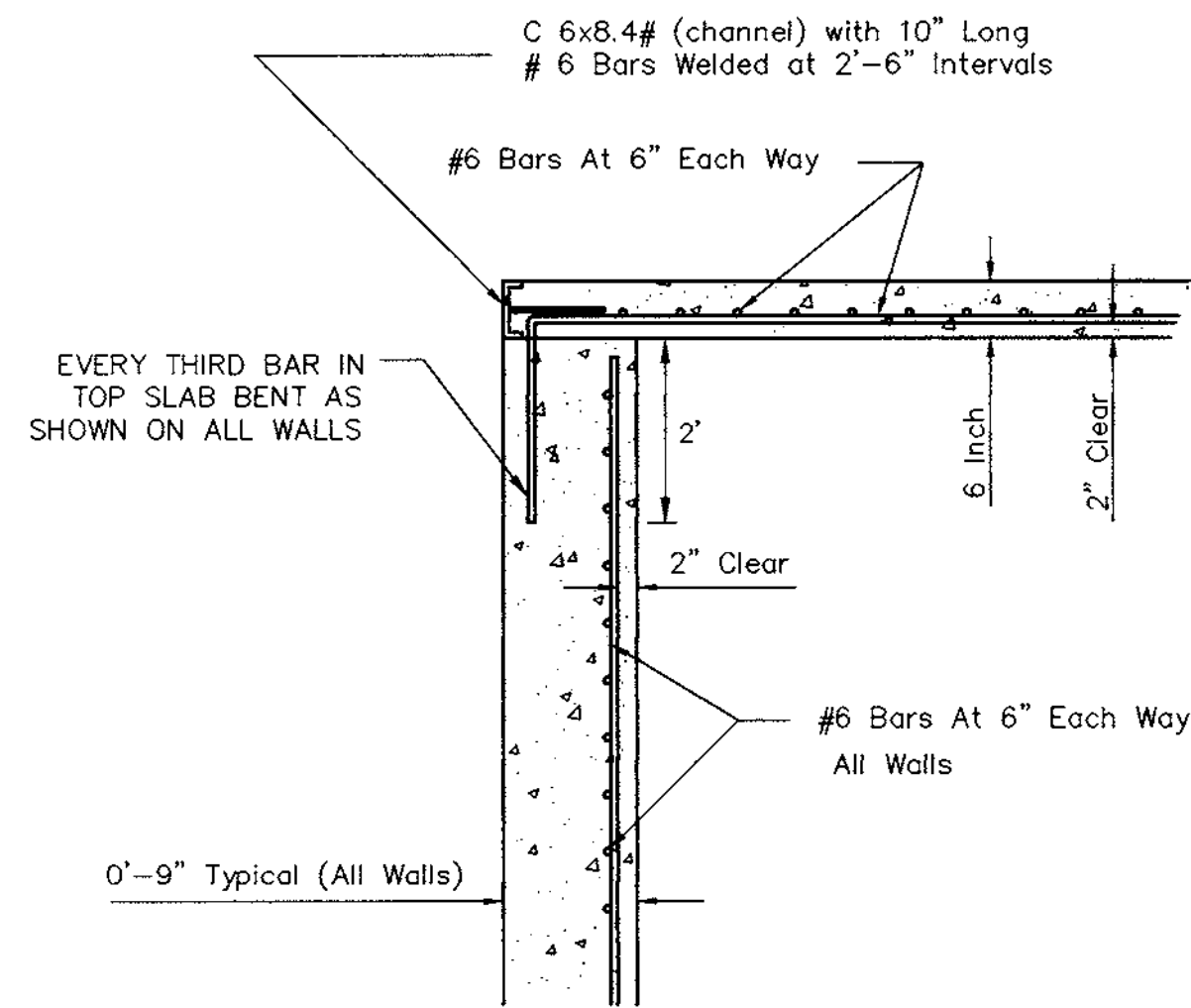
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 SIGNATURE: *Cheyl Simmons* DATE: 2/5/99
 NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE: *John R. Kautz* DATE: 2/5/99
 HOWARD SOIL CONSERVATION DISTRICT

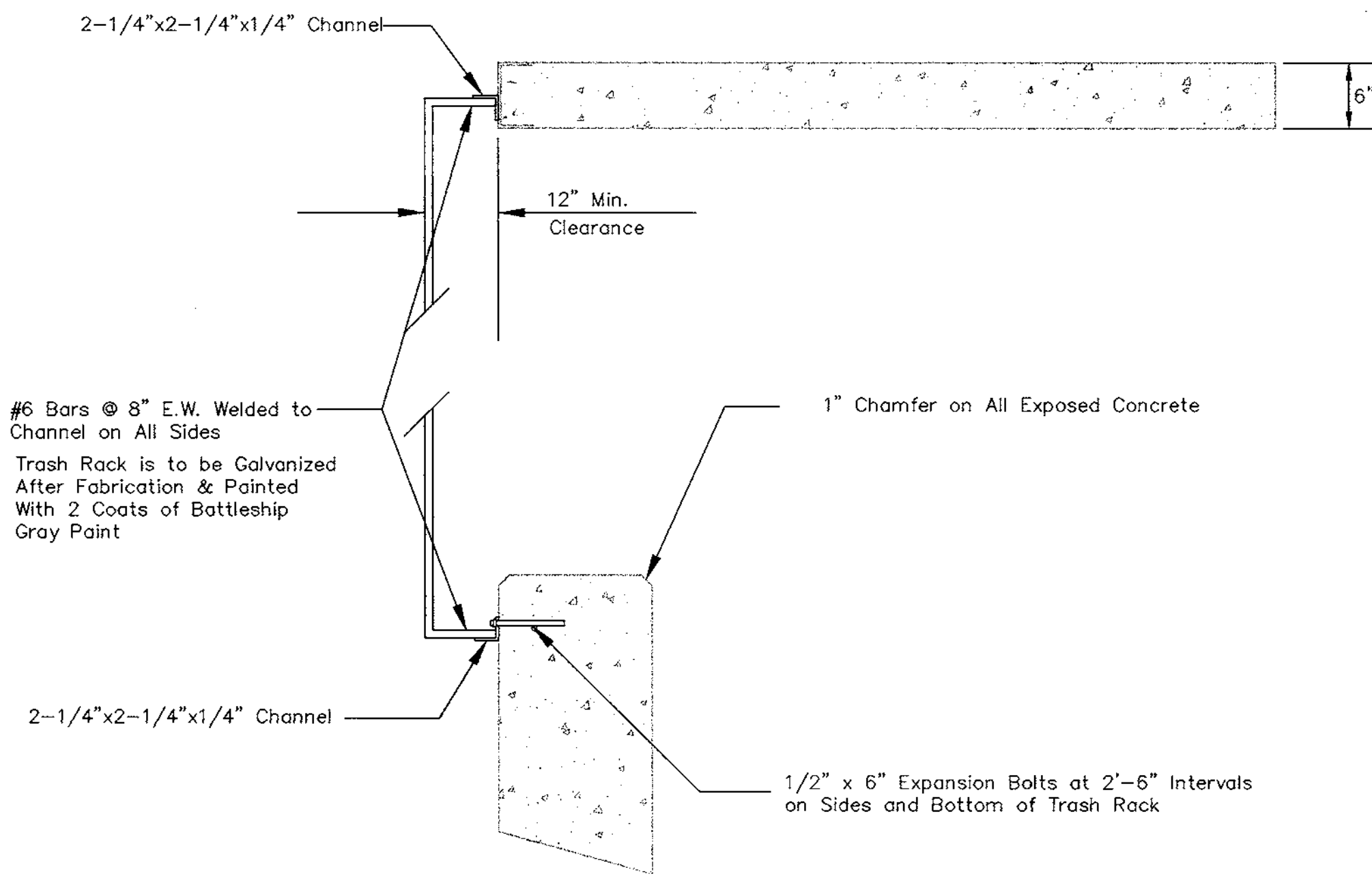
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 SIGNATURE: *John R. Kautz* DATE: 2/9/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION LAND DEVELOPMENT
 SIGNATURE: *Andy Horvath* DATE: 2/17/99
 SIGNATURE: *John R. Kautz* DATE: 2/18/99
 DIRECTOR

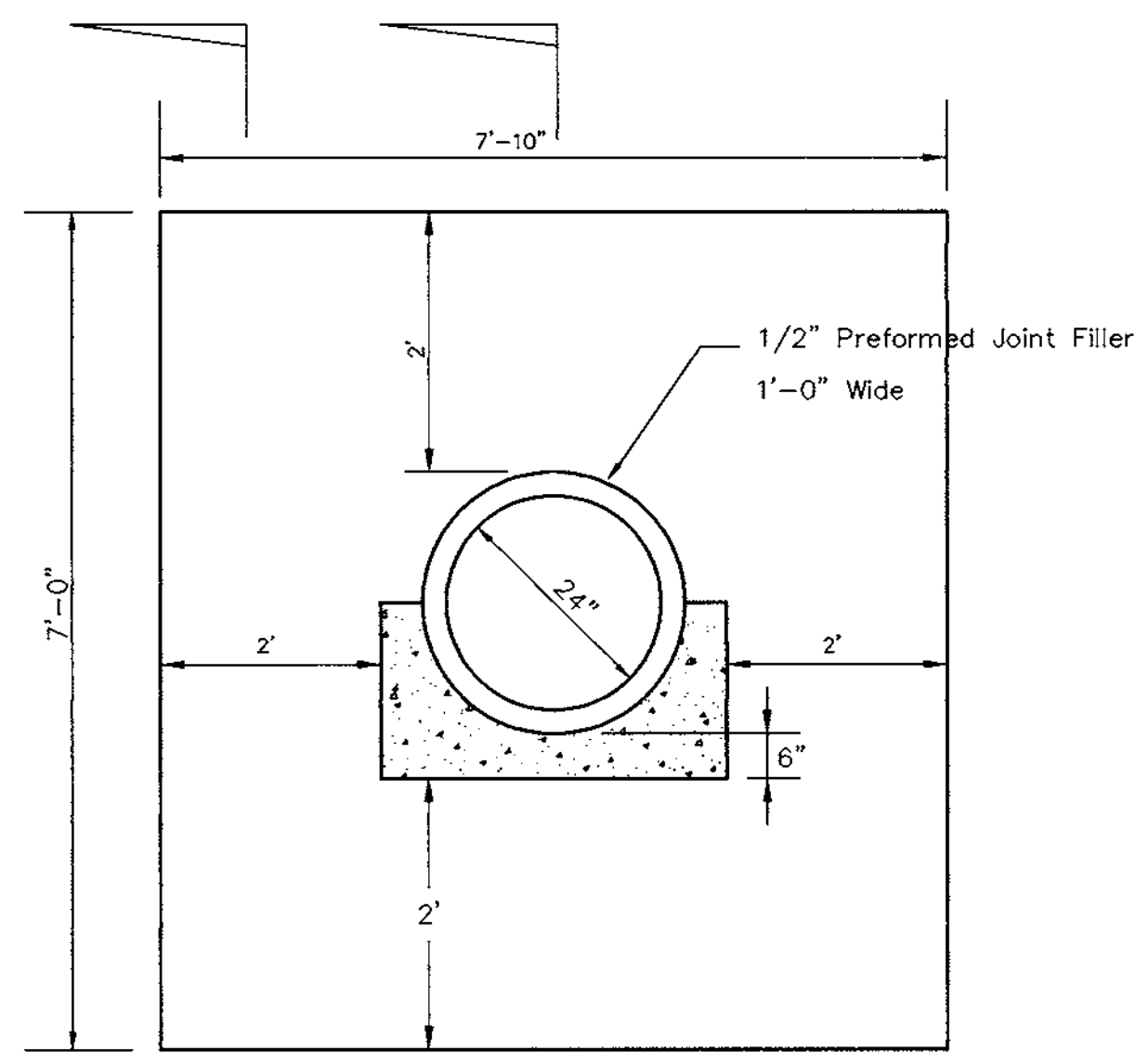




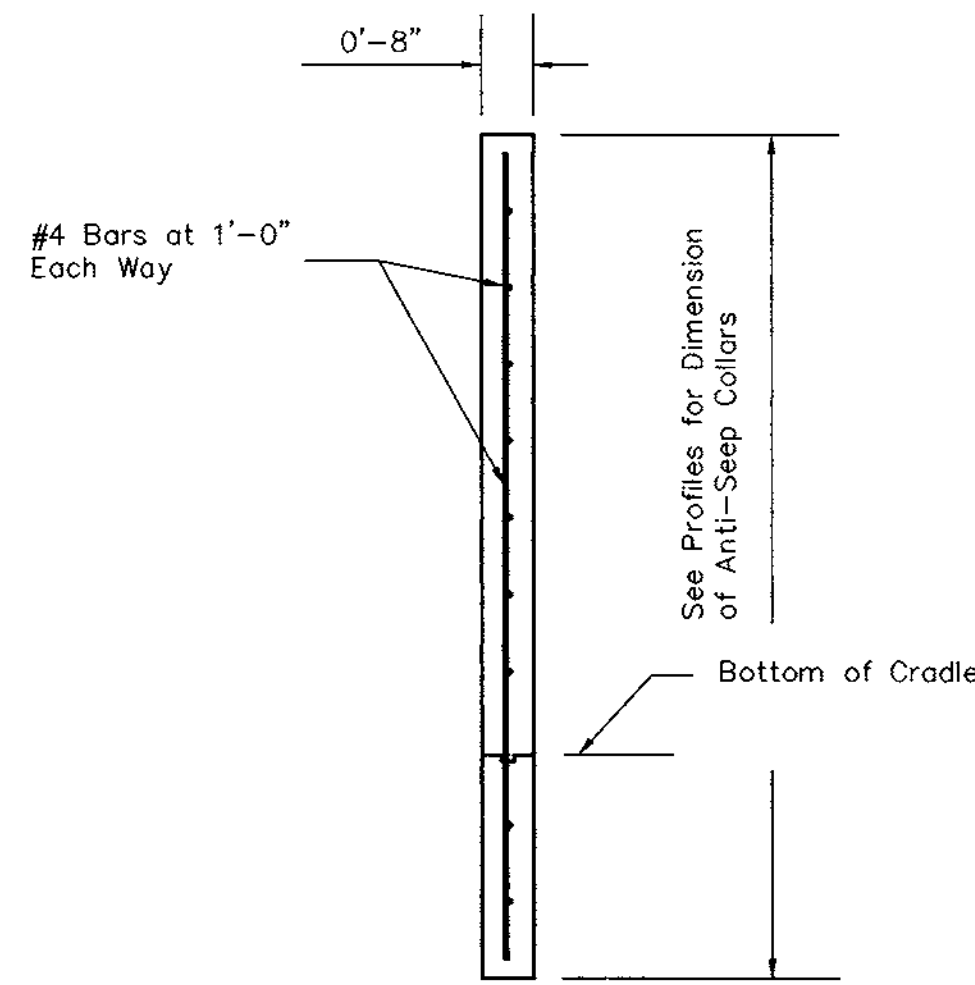
DETAIL B
N.T.S.



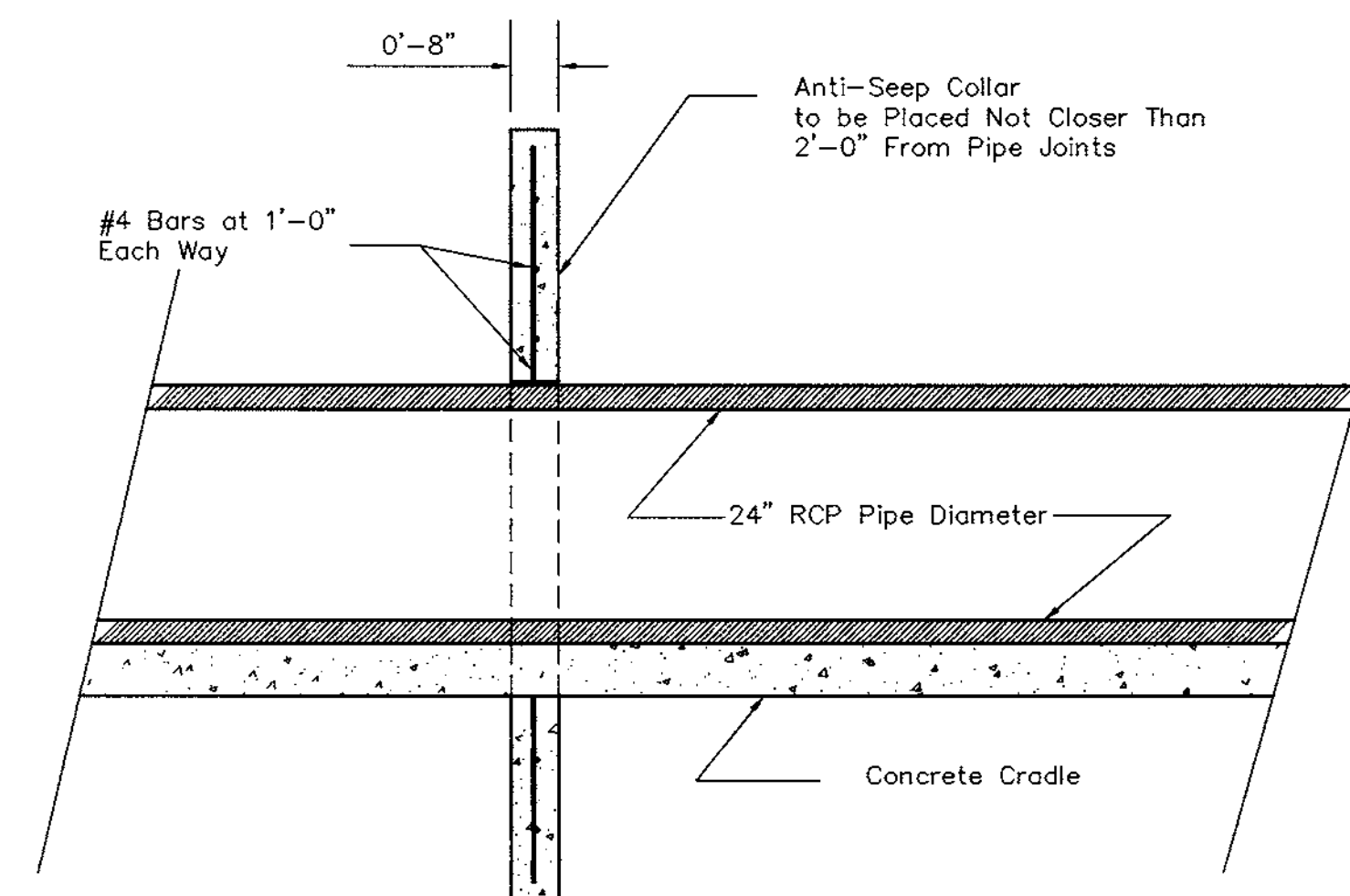
SECTION 3
N.T.S.



ANTI-SEEP COLLAR DETAIL
N.T.S.

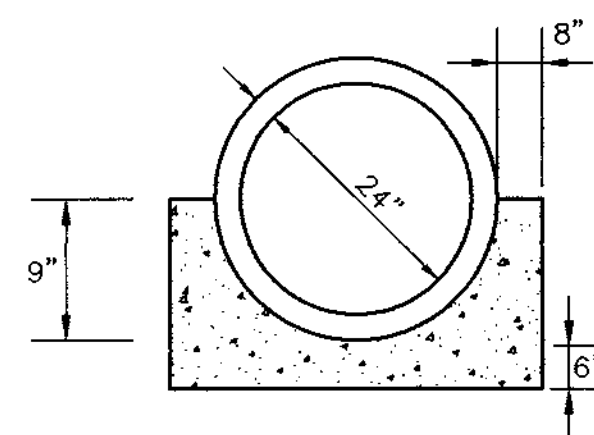


SECTION 4
N.T.S.

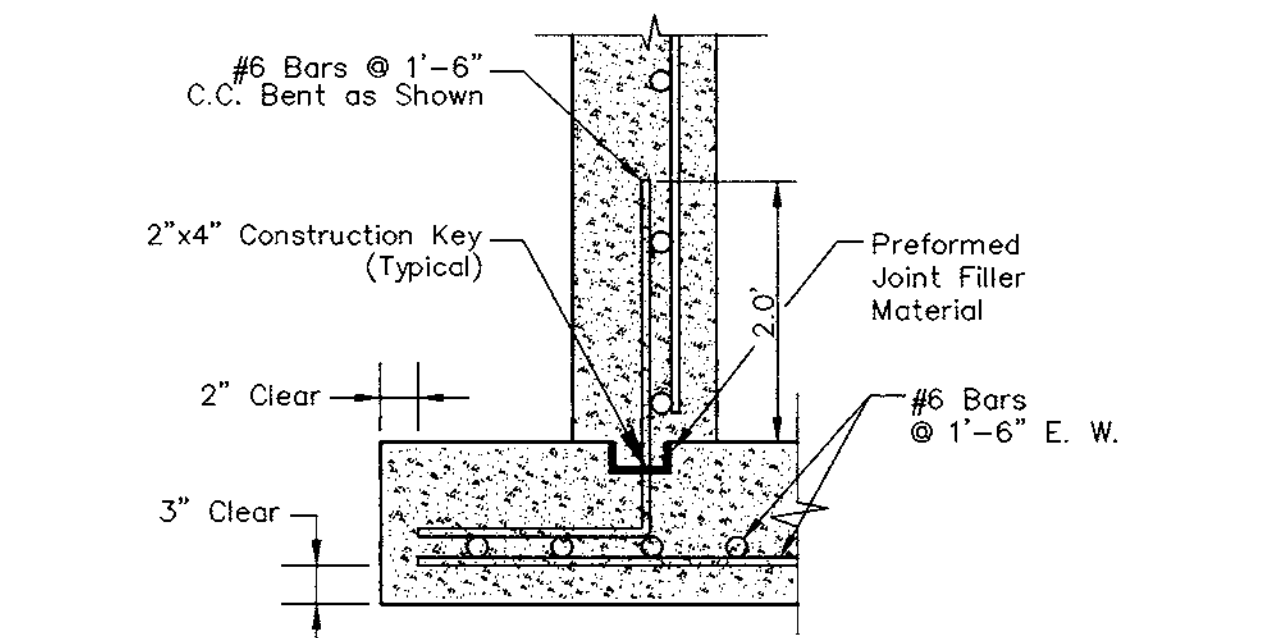


SECTION 5
N.T.S.

NOTE: PLACE ANTI-SEEP COLLAR 2' MIN. FROM PIPE JOINTS.



DETAIL OF CONCRETE CRADLE
N.T.S.



WALL TO BOTTOM SLAB CONNECTION DETAIL
N.T.S.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: _____ P.E. NO. _____
DATE: _____

DEVELOPER'S CERTIFICATE
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF DEVELOPER: *C. Stuart Knudsen* DATE: 1/26/99
PRINTED NAME OF DEVELOPER: C. STUART KNUDSEN

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR CONSTRUCTION AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED UPON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THE PREPARATION OF THIS PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF ENGINEER: *John M. Simms* DATE: 10/23/98
PRINTED NAME OF ENGINEER: JOHN M. SIMMS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Clayton Simms DATE: 2/5/99
USDA - NATURAL RESOURCE CONSERVATION SERVICE

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

John M. Simms DATE: 2/5/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
John M. Simms DATE: 2/6/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION
John M. Simms DATE: 2/17/99
CHIEF, DIVISION OF LAND DEVELOPMENT
John M. Simms DATE: 2/18/99
DIRECTOR

Project	98025	date	OCT. 98
Illustration	FCL	engineering	FCL
scale	AS NOTED	approval	JBM

no.	description	revisions	date

TAX MAP 24 7, PARCELS B6
KMS PROFESSIONAL BUILDING
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
STORMWATER MANAGEMENT DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Doveson Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0286 Bldg. (301) 621-5521 Wash. (410) 997-0288 Fax.

OWNERS & DEVELOPER
RMS ASSOCIATES
8455 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND
21043
(410) 465-2222

POND SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, RUBBISH AND OTHER OBJECTIONABLE MATERIALS. AREAS TO BE CLEARED SHALL BE CLEARED TO THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

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

EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

PLACEMENT - AREAS ON WHICH FILL IS TO BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIAL SHALL BE LIFTED BY THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRVERSE 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 TIRE OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DENSITY OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHERE A MINIMUM REQUIRED DENSITY IS SPECIFIED, IT SHALL NOT BE LESS 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ± 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99.

CUT OFF TRENCH - THE CUT OFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:
1. MATERIALS - (STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL BE GALVANIZED AND FULLY BITUMINOUS COATED TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A WITH WATER TIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. STEEL PIPES WITH POLYURETHANE COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.09 INCH (2.3 MM) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS OR AN APPROVED EQUAL MAY BE USED: NEXON, PLASTI-COTE, BLAC-KLAD, AND BETH-CO-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-246.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC. MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATER TIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATER TIGHT. DUMPLE BANDS ARE NOT CONSIDERED TO BE WATER TIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE ROLLED AND ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPE LESS THAN 24" IN DIAMETER. FLANGES ON BOTH ENDS OF THE PIPE, A 12" WIDE STANDARD LAP TYPE BAND WITH 12" WIDE BY 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET, AND A 12" WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING MINIMUM DIAMETER OF 1/2" GREATER THAN THE CORRUGATION DEPTH. PIPES 24" IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24" LONG ANNULAR CORRUGATED BAND USING RODS AND LUGS. A 12" WIDE BY 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED ON THE END OF EACH PIPE FOR A TOTAL OF 24".

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.

2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL BE A MINIMUM OF 4" THICK PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE DRAWINGS.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

POLYVINYL CHLORIDE (PVC) PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR POLYVINYL CHLORIDE (PVC) PIPE:

1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATER TIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 905. THE RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE REPLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 919.12.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON THE PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF THE REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL AND CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTION OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO PUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE MARYLAND SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

SWM POND MAINTENANCE REQUIREMENTS

ROUTINE MAINTENANCE

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, THE BOTTOM OF THE POND, AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY BY THE HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378), THE POND OWNER(S) AND THE HEIRS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

GEOTECHNICAL RECOMMENDATIONS

- a. WITHIN THE EMBANKMENT AREA, STRIP THE TOPSOIL AND ANY SOFT OR OTHERWISE UNSUITABLE MATERIALS TO EXPOSE STABLE, UNDISTURBED NATIVE SOILS.
- b. PROOF ROLL THE STRIPPED SURFACE TO A UNIFORM CONDITION FURTHER CUTTING OUT ANY SOFT OR OTHERWISE UNSUITABLE SPOTS AND REPLACING WITH CONTROLLED FILL.
- c. EXCAVATE THE CUT OFF TRENCH, BACKFILL THE RESULTING EXCAVATION WITH ACCEPTABLE FINE-GRAINED MATERIALS AND CONSTRUCT THE PROPOSED RISER AND OUTFALL PIPE. THE CUT OFF TRENCH, RISER AND OUTFALL PIPE CONSTRUCTION FOR THE SWM POND SHOULD BE COMPLETED IN ACCORDANCE WITH APPROPRIATE COUNTY SPECIFICATIONS. THE SOIL TYPES USED IN THE CUT OFF TRENCH CONSTRUCTION SHOULD BE APPROVED FOR THE INTENDED USAGE.
- d. FILL THE DESIGNATED EMBANKMENT AREA WITH CONTROLLED FILL TO ACHIEVE PLAN GRADE. IT IS RECOMMENDED THAT THE EMBANKMENT BE PROVIDED WITH AN IMPERVIOUS CORE EXTENDING UPWARDS TO THE 100-YEAR RETENTION LEVEL SO THAT THE MORE GRANULAR MATERIALS AVAILABLE ON SITE MAY BE USED IN THE OUTER REGIONS OF THE EMBANKMENT WITH THE MOST POROUS MATERIALS PLACED IN THE DOWNSTREAM CONSTRUCTION. ALL FILL PLACEMENT AND COMPACTION SHALL BE IN ACCORDANCE WITH APPROVED STANDARDS.
- e. WITHIN THE POND BASIN AREA, CUT THE POND TO PLAN GRADE. IT IS NOTED THAT VERY DENSE DISINTEGRATED ROCK WAS ENCOUNTERED ABOVE THE UPPER AND LOWER LIMITS OF THE PLAN POND BOTTOM AT B-8 WITH HARD ROCK ENCOUNTERED NEAR THE LOWER PLAN BOTTOM AT B-9. ACCORDINGLY, IN ORDER TO ACHIEVE THE POND BOTTOM GRADE, PRE-RIPPING COMBINED WITH JACKHAMMERING WILL MOST LIKELY BE REQUIRED IN VARIOUS AREAS TO EXCAVATE THE VERY DENSE DISINTEGRATED TO HARD ROCK MATERIALS. BLASTING WITHIN THE POND AREA IS NOT RECOMMENDED, SINCE STRESS FRACTURES WITHIN THE UNDERLYING ROCK MAY DEVELOP, THEREBY, POSSIBLY DAMAGING THE INTEGRITY OF THE SWM POND.

LOCATION: 01
PROJECT: SUBSURFACE EXPLORATION
PROPOSED STORMWATER MANAGEMENT POND
PROJECT LOCATION: CHEVROLET DRIVE
ELLIOTT CITY, MARYLAND
COMPLETION DATE: 5/17/98
FIELD REPRESENTATIVE: STEFAN SMITH
GILES ENGINEERING ASSOCIATES, INC.

MATERIAL DESCRIPTION	Depth Below Surface	Sample No. & Type	N	q _u	q _p	q _s	w	PID	NOTES
6" +/- Brown Micaceous Silt, trace fine Sand and Organic Matter (Roots) (Topsoil) - Very Moist	1-SS	8					4.0	BDL	
Brown Micaceous Silty fine Sand, trace to little medium to coarse Sand, trace fine to coarse Gravel - Moist	2-SS	10					12.0	BDL	
Brown fine Sandy Silt, trace medium to coarse Sand, fine to coarse Gravel and Mica - Moist	3-SS	10					18.0	BDL	
Brown fine Sandy Silt to Silty fine Sand, trace medium to coarse Sand and Mica - Moist	4-SS	6					13.0	BDL	
Brown fine Sandy Silt to Silty fine Sand, trace medium to coarse Sand, fine to coarse Gravel and Mica - Moist	5-SS	7					18.0	BDL	
Brown fine Sandy Silt to Silty fine Sand, trace medium to coarse Sand, fine to coarse Gravel and Mica - Moist	6-SS	7					17.0	BDL	
Brown Clayey Silt, trace fine Sand and Mica - Moist	7-SS	9					4.0	BDL	
Brown fine Sandy Silt to Silty fine Sand, trace medium to coarse Sand, fine to coarse Gravel and Mica - Moist	8-SS	9					14.0	BDL	
Brown Clayey Silt, trace fine Sand and Mica - Moist	9-SS	6					17.0	BDL	
Brown Micaceous Silt, little fine Sand - Moist	10-SS	14					17.0	BDL	
Brown Micaceous fine Sandy Silt - Moist									

Boring Terminated at 16'

GROUNDWATER OBSERVATIONS	REMARKS
WATER ENCOUNTERED AT 9.5 ft during drilling	
WATER LEVEL AT 6.0 ft after removal	
CAVED TO 6.0 ft after removal	
WATER LEVEL AT ft after hours	
CAVED TO ft after hours	

BORING NO.: 02
PROJECT: SUBSURFACE EXPLORATION
PROPOSED STORMWATER MANAGEMENT POND
PROJECT LOCATION: CHEVROLET DRIVE
ELLIOTT CITY, MARYLAND
COMPLETION DATE: 5/17/98
FIELD REPRESENTATIVE: STEFAN SMITH
GILES ENGINEERING ASSOCIATES, INC.

MATERIAL DESCRIPTION	Depth Below Surface	Sample No. & Type	N	q _u	q _p	q _s	w	PID	NOTES
7" +/- Brown Micaceous fine Sandy Silt, trace Organic Matter (Roots, Wood) (Topsoil) - Moist	1-SS	3					8.0	BDL	
Brown Micaceous fine Sandy Silt, trace Organic Matter (Roots) - Moist	2-SS	2					10.0	BDL	
Brown Micaceous fine Sandy Silt to Silty fine Sand, trace medium to coarse Sand and fine Gravel - Moist	3-SS	3					10.0	BDL	
Brown Micaceous fine Sandy Silt to Silty fine Sand, trace medium to coarse Sand and fine Gravel - Moist	4-SS	3					7.0	BDL	
Brown Silty fine Sand, trace Mica and fine to coarse Sand Seams - Moist	5-SS	15					5.0	BDL	
Brown fine Sandy Silt, trace Mica, medium to coarse Sand and Silty Clay Lenses - Moist	6-SS	9					8.0	BDL	
Gray-Brown fine Sandy Silt to Silty fine Sand, trace to little medium to coarse Sand and Mica - Moist	7-SS	9					5.0	BDL	
	8-SS	8					8.0	BDL	
	9-SS	8					8.0	BDL	
	10-SS	11					5.0	BDL	

Boring Terminated at 16'

GROUNDWATER OBSERVATIONS	REMARKS
WATER ENCOUNTERED AT None ft during drilling	
WATER LEVEL AT None ft after removal	
CAVED TO 9.9 ft after removal	
WATER LEVEL AT ft after hours	
CAVED TO ft after hours	

BORING NO.: 03
PROJECT: SUBSURFACE EXPLORATION
PROPOSED STORMWATER MANAGEMENT POND
PROJECT LOCATION: CHEVROLET DRIVE
ELLIOTT CITY, MARYLAND
COMPLETION DATE: 5/17/98
FIELD REPRESENTATIVE: STEFAN SMITH
GILES ENGINEERING ASSOCIATES, INC.

MATERIAL DESCRIPTION	Depth Below Surface	Sample No. & Type	N	q _u	q _p	q _s	w	PID	NOTES
6" +/- Brown Micaceous Silt, trace fine Sand and Organic Matter (Roots, Leaves) (Topsoil) - Moist	1-SS	5					10.0	BDL	
Brown Micaceous Silty fine Sand, trace medium to coarse Sand, fine Gravel and Organic Matter (Roots) - Moist	2-SS	WOH					11.0	BDL	
Brown Micaceous Silty fine Sand, trace medium to coarse Sand, fine Gravel and Organic Matter (Roots) - Moist	3-SS	2					6.0	BDL	
Brown Micaceous Silty fine Sand, trace medium to coarse Sand and fine Gravel - Moist	4-SS	3					5.0	BDL	
Brown fine Sandy Silt, trace medium to coarse Sand, fine Gravel and Mica - Moist	5-SS	3					10.0	BDL	
Brown fine Sandy Silt, trace medium to coarse Sand, fine Gravel and Mica - Moist	6-SS	3					14.0	BDL	
	7-SS	7					11.0	BDL	
	8-SS	12					4.0	BDL	
	9-SS	5					6.0	BDL	
	10-SS	10					8.0	BDL	

Boring Terminated at 16'

GROUNDWATER OBSERVATIONS	REMARKS
WATER ENCOUNTERED AT None ft during drilling	WOH = Weight of Hammer
WATER LEVEL AT None ft after removal	
CAVED TO 10.5 ft after removal	
WATER LEVEL AT ft after hours	
CAVED TO ft after hours	

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: _____ P.E. NO.: _____
DATE: _____

CERTIFY MEANS TO START OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

DEVELOPER'S CERTIFICATE
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE: *C. Stuart Knudsen* 1/26/99
DATE: 1/26/99
PRINTED NAME OF DEVELOPER: C. STUART KNUDSEN

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE: *Paul Simmas* 1/26/99
DATE: 1/26/99
PRINTED NAME OF ENGINEER: PAUL SIMMAS

THESE PLANS HAVE BEEN REVIEWED BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

SIGNATURE: *Paul Simmas* 2/5/99
DATE: 2/5/99
NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
SIGNATURE: *Paul Simmas* 2/5/99
DATE: 2/5/99
HOWARD COUNTY SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
SIGNATURE: *Paul Simmas* 2/5/99
DATE: 2/5/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION
SIGNATURE: *Paul Simmas* 2/5/99
DATE: 2/5/99
CHIEF, DIVISION OF LAND DEVELOPMENT
SIGNATURE: *Paul Simmas* 2/5/99
DATE: 2/5/99
DIRECTOR

OWNERS & DEVELOPER
KMS ASSOCIATES
8455 BALTIMORE NATIONAL PIKE
ELLIOTT CITY, MARYLAND
21043
(410) 465-2222

DATE: JUNE 96
PROJECT: 98025
ENGINEERING: FCL
ILLUSTRATION: FCL
SCALE: AS SHOWN
APPROVAL: JDM

NO. _____
DATE: _____
DESCRIPTION: _____
REVISIONS: _____

THIS PLAN IS FOR DRAINAGE AREA PURPOSES ONLY

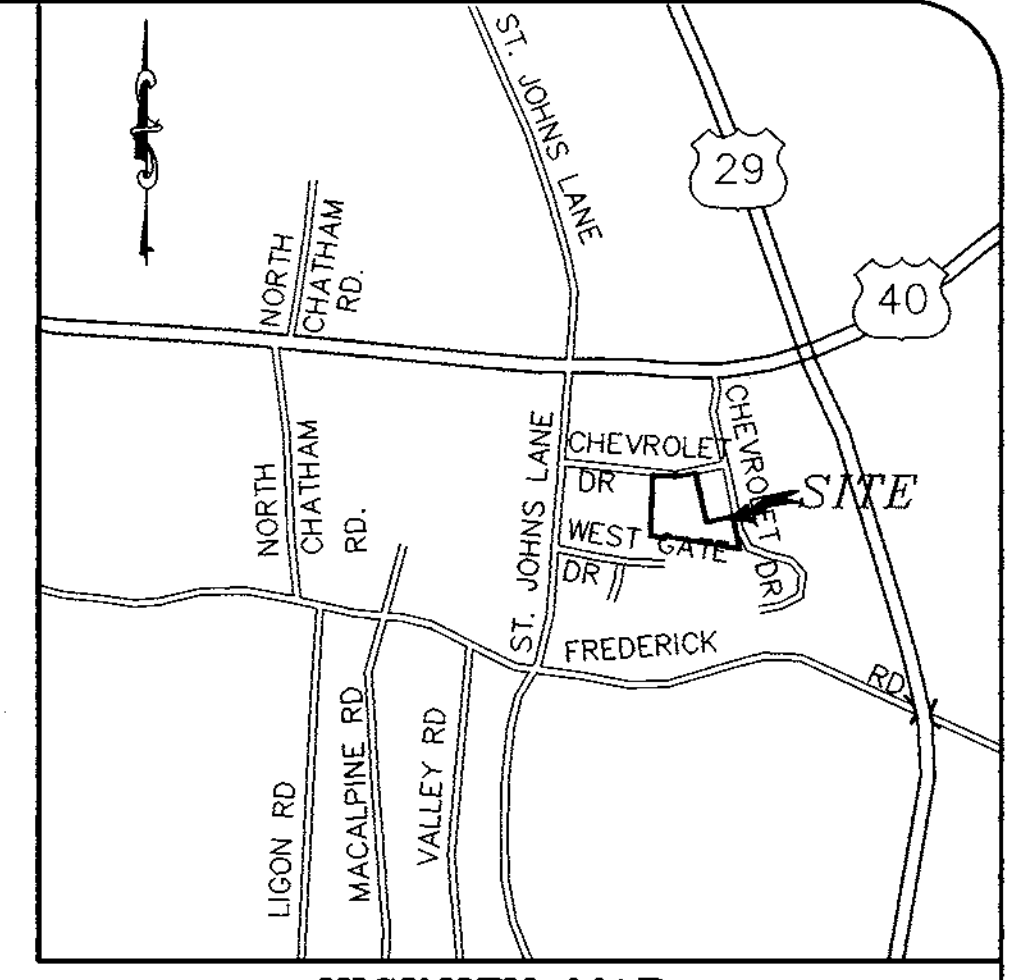
0.33 AC
0.08 HR
I 4
68%
B-2

0.23 AC
0.08 HR
I 5
59%
B-2

0.29 AC
0.8 HR
I 3
80%
B-2

0.33 AC
0.8 HR
I 2
72%
B-2

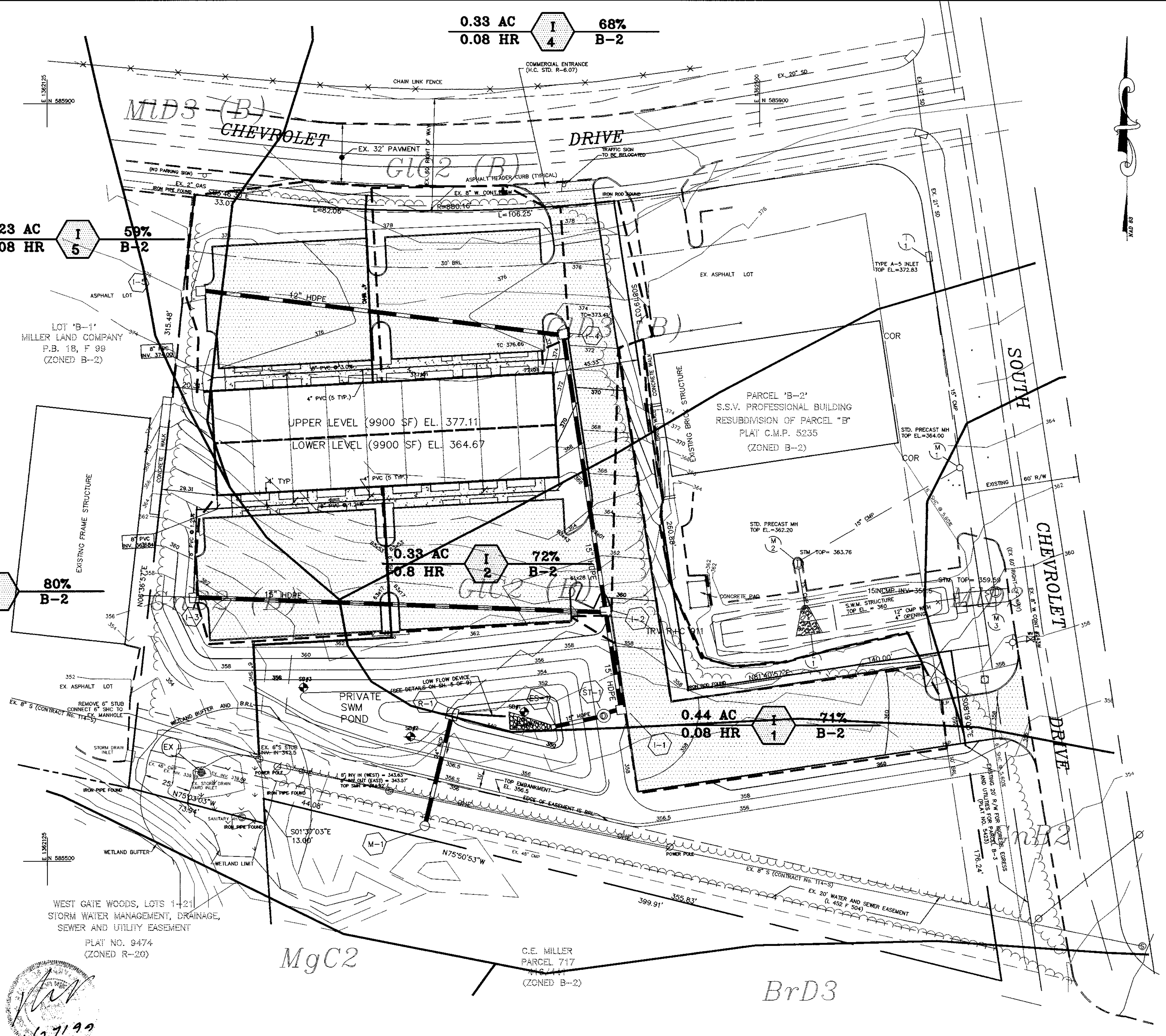
0.44 AC
0.08 HR
I 1
71%
B-2



VICINITY MAP
SCALE: 1" = 1000'

LEGEND

- ⊙ POWER POLE
- OVERHEAD ELEC.
- ⊙ SANITARY MANHOLE
- ⊙ STORMDRAIN MANHOLE
- CLEANOUT
- ⊗ WATERVALVE
- ⊙ FIRE HYDRANT
- HEADER CURB
- CHAIN LINK FENCE
- WOODLINE
- IRON ROD FOUND
- IRON PIPE FOUND
- ▭ CONC. SIDEWALK
- ▭ WETLANDS
- ▭ P-1 PAVING
- Ha BeC2 BeD2 SOIL DIVIDE
- DRAINAGE DIVIDE



SOILS LEGEND
GIC2 GLENELG LOAM, 8 TO 15 PERCENTS, MODERATELY ERODED.
GID3 GLENELG LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED
GnBE GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED

NOTE:
USED HOWARD COUNTY SOILS SURVEY MAP, SHEET NO. 16.

OWNERS & DEVELOPER
KMS ASSOCIATES
8455 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND
21045
(410) 465-2222

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: _____ P.E. NO.: _____
DATE: _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND 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: *C. Stuart Knudsen* DATE: 1/26/99
PRINTED NAME OF DEVELOPER: C. STUART KNUDSEN

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

SIGNATURE OF ENGINEER: *R. Jacob Hikmat* DATE: 1/27/99
PRINTED NAME OF ENGINEER: R. JACOB HIKMAT

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.

DATE: 1/27/99

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

DATE: 2/15/99

HOWARD SOIL CONSERVATION DISTRICT

APPROVED PRIVATE WATER AND SEWER SYSTEM IN ACCORDANCE WITH THE MASTER PLAN FOR WATER AND SEWERAGE IN HOWARD COUNTY. (FOR LOT TOP ONLY)

COUNTY HEALTH OFFICER: N/A DATE: _____

APPROVED DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS: N/A DATE: _____

APPROVED DEPARTMENT OF PLANNING AND ZONING

DATE: 2/10/99

CHIEF DEVELOPMENT ENGINEERING DIVISION: DATE: 2/18/99

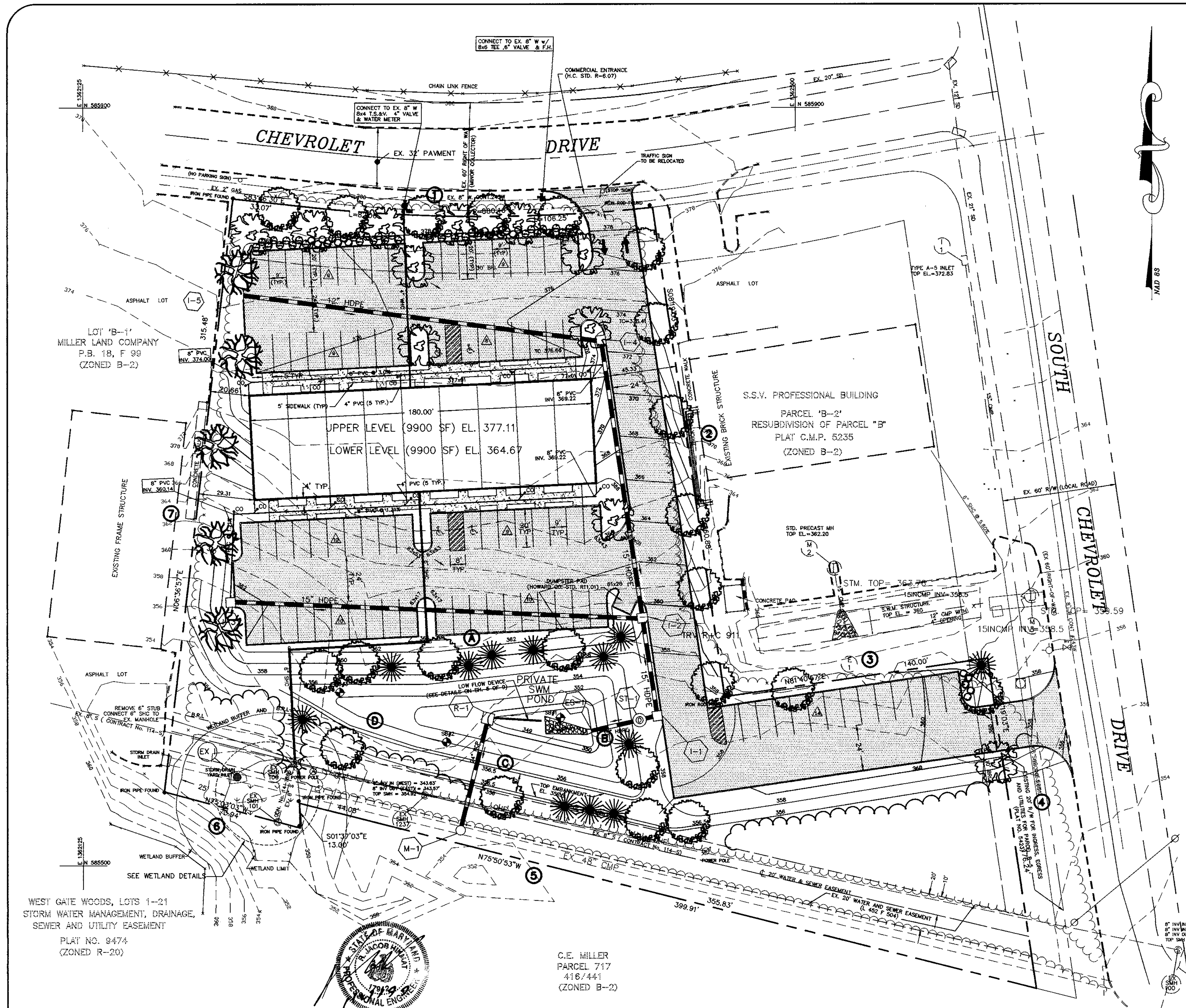
DATE: 2/19/99

Project	98025	date	AUG. 1998
Illustration	FCL	engineering	FCL
scale	1" = 30'	approval	JEM

description	revisions	date	
no.			

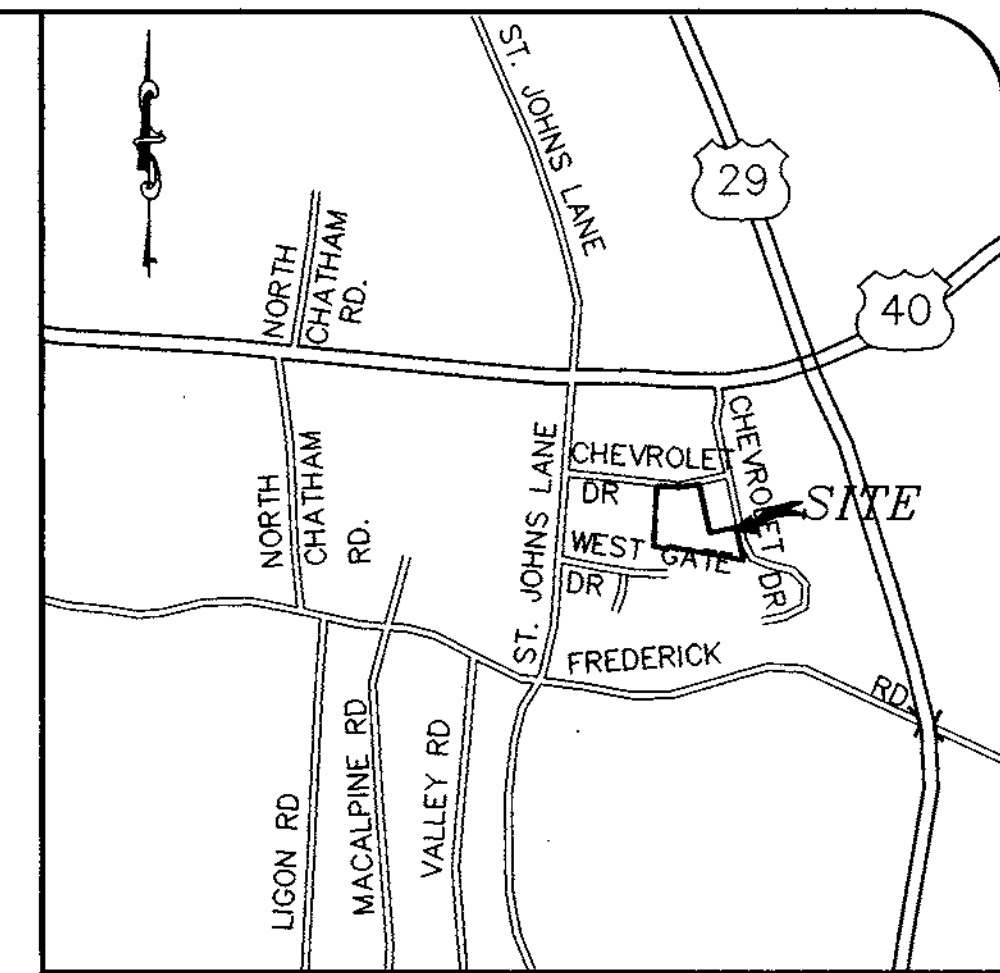
TAX MAP 24, PARCEL B6
KMS PROFESSIONAL BUILDING
SECOND ELECTION DISTRICT
HOWARD COUNTY
DRAINAGE AREA & SOILS MAP

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0236 Bmt. (301) 621-5521 Wash. (410) 997-0998 Fax.



LEGEND

- POWER POLE
- OVERHEAD ELEC.
- ⊗ EX. SANITARY MANHOLE
- ⊗ EX. STORMDRAIN MANHOLE
- ⊗ S.H.C. CLEANOUT
- ⊗ WATER VALVE
- ⊗ FIRE HYDRANT
- COMBINATION CURB & GUTTER
- CHAIN LINK FENCE
- WOODLINE
- ⊗ PROP. CORNER FOUND
- ▨ CONC. SIDEWALK
- ▨ WETLANDS
- ▨ P-1 PAVING
- FLOW DIRECTION
- ⊙ LANDSCAPE PERIMETER EDGE



NOTE: THIS DRAWING IS TO BE USED FOR LANDSCAPE PLAN PURPOSES ONLY.

SCHEDULE B: PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	88
NUMBER OF PLANTING ISLANDS REQUIRED	5
NUMBER OF PLANTING ISLANDS PROVIDED	6
NUMBER OF TREES REQUIRED	5 SHADE TREES
NUMBER OF TREES PROVIDED	5 SHADE TREES 0 TREES
OTHER TREES (2:1 SUBSTITUTION)	0 TREES

PERIMETER	EDGE TYPE
PERIMETER 1	
ENTRANCE - 24 LF	N/A
PARKING TO ROAD - 197.38 LF	E
1 SHADE TREE / 40 LF	5
1 SHRUB / 4 LF	49
PERIMETER 2	
NON-RES TO NON-RES - 260.88 LF	A
1 SHADE TREE / 60 LF	5
PERIMETER 3	
NON-RES TO NON-RES - 140 LF	A
1 SHADE TREE / 60 LF	2
PERIMETER 4	
ENTRANCE - 24 LF	N/A
EASEMENT - 21.49 LF	N/A
PARKING TO ROAD - 18 LF	E
1 SHADE TREE / 40 LF	0
1 SHRUB / 4 LF	5
NON-RES TO ROAD - 70 LF	B
EXISTING TREES TO REMAIN	
NON-RES TO ROAD - 42.75 LF	B
1 SHADE TREE / 50 LF	1
1 EVERGREEN / 40 LF	1
PERIMETER 5	
NON-RES TO NON-RES - 176 LF	A
EXISTING TREES TO REMAIN	
SWM TO NON-RES - 185 LF	B
CREDIT FOR SWM LANDSCAPING	
NON-RES TO NON-RES - 51.91 LF	A
1 SHADE TREE / 60 LF	1
PERIMETER 6	
NON-RES TO RES - 73.94 LF	C
EXISTING TREES TO REMAIN	
PERIMETER 7	
NON-RES TO NON-RES - 315.48 LF	A
1 SHADE TREE / 60 LF	5
TOTAL PLANTING OBLIGATION	
SHADE TREES	19
EVERGREEN TREES	1
SHRUBS	54

SCREEN CALCULATIONS
 SCREEN #1
 DUMPSTER - 10 LF - TYPE D BUFFER
 0 SHADE TREE AND 1 EVERGREEN REQUIRED
 0 SHADE TREE AND 1 EVERGREEN PROVIDED

STREET TREE CALCULATIONS
 CHEVROLET DRIVE - 228 / 40 = 6
 CHEVROLET DRIVE - 100 LF
 EXISTING TREES TO REMAIN
 TOTAL TREES REQUIRED = 6 TREES
 TOTAL TREES PROVIDED = 6 TREES

SCHEDULE A: PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES		
	B (P/O PERIMETER 4)	E (PERIMETERS 1 & P/O 4)	A (PERIMETERS 2, 3, P/O 5, 7)	B (P/O PERIMETER 5)	C (PERIMETER 6)
LANDSCAPE TYPE	112.75 LF	215.38 LF	944.27 LF	185 LF	73.94 LF
LINEAR FEET OF PERIMETER	112.75 LF	215.38 LF	944.27 LF	185 LF	73.94 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	YES, 70 LF OF EXISTING TREES	NO	YES, 176 LF OF EXISTING TREES	NO	YES, 73.94 LF OF EXISTING TREES
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	NO	NO	YES, CREDIT FOR 185 LF OF SWM LANDSCAPING	NO
NUMBER OF PLANTS REQUIRED					
SHADE TREES	1 SHADE TREES	5 SHADE TREES	13 SHADE TREES	0 SHADE TREES	0 SHADE TREES
EVERGREEN TREES	1 EVERGREEN TREES	0 EVERGREEN TREES	0 EVERGREEN TREES	0 EVERGREEN TREES	0 EVERGREEN TREES
SHRUBS	1 SHRUBS	54 SHRUBS	0 SHRUBS	0 SHRUBS	0 SHRUBS
NUMBER OF PLANTS PROVIDED					
SHADE TREES	1 SHADE TREES	5 SHADE TREES	13 SHADE TREES	0 SHADE TREES	0 SHADE TREES
EVERGREEN TREES	1 EVERGREEN TREES	0 EVERGREEN TREES	0 EVERGREEN TREES	0 EVERGREEN TREES	0 EVERGREEN TREES
OTHER TREES (2:1 SUBSTITUTION)	0 SUBSTITUTION TREES	0 SUBSTITUTION TREES	0 SUBSTITUTION TREES	0 SUBSTITUTION TREES	0 SUBSTITUTION TREES
SHRUBS (10:1 SUBSTITUTION)	0 SHRUBS	54 SHRUBS	0 SHRUBS	0 SHRUBS	0 SHRUBS

LANDSCAPE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
11	⊗	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" - 3" CAL.
20	⊗	EUONYMUS ALATUS 'COMPACTA'	DWARF WINGED EUONYMUS	2' - 2 1/2' HT.
34	⊗	ILEX CRENATA 'GREEN LUSTRE'	GREEN LUSTRE HOLLY	2' - 2 1/2' HT.
12	⊗	PINUS STROBUS	EASTERN WHITE PINE	6' - 8' HT.
5	⊗	QUERCUS PALUSTRIS	PIN OAK	2 1/2" - 3" CAL.
22	⊗	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	2 1/2" - 3" CAL.
TOTAL				
104 TREES & SHRUBS (38 SHADE TREES, 12 EVERGREEN TREES, 54 SHRUBS)				(THIS INCLUDES 6 STREET TREES)

SCHEDULE D: STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	415 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	N/A
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	N/A
NUMBER OF TREES REQUIRED	8 SHADE TREES 10 EVERGREEN TREES
NUMBER OF TREES PROVIDED	8 SHADE TREES 10 EVERGREEN TREES 0 TREES (0 SUBSTITUTION TREES)

EDGE TYPE	PERIMETER	SHADE TREES	EVERGREEN TREES	SHRUBS
B	SWM PERIMETER A - 160 LF	1	4	3
B	SWM PERIMETER B - 70 LF	1	2	1
B	SWM PERIMETER C - 130 LF	1	3	3
B	SWM PERIMETER D - 55 LF	1	1	1
	TOTAL PLANTING OBLIGATION	8	10	0

OWNERS & DEVELOPER
 KMS ASSOCIATES
 8455 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND
 21043
 (410) 465-2222

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature]

DATE: 2/17/99
 DATE: 2/18/99

Project	88025	date	OCT 1988
Illustration	FCL/SJD	engineering	SJD
scale	1" = 30'	approval	

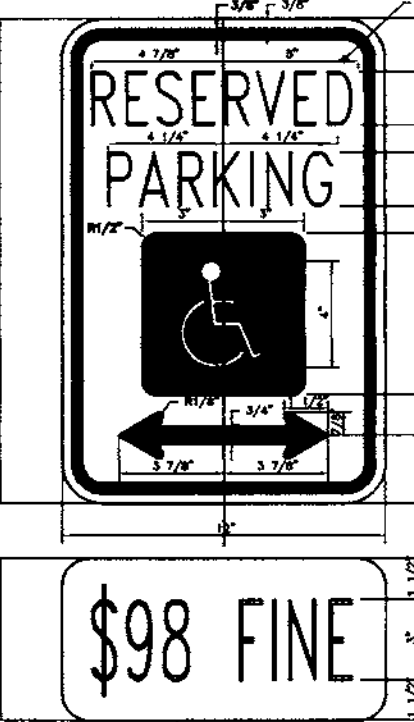
description	LANDSCAPE PLAN	date	
revisions			

TAX MAP 24, PARCEL B6
KMS PROFESSIONAL BUILDING
 HOWARD COUNTY
 SECOND ELECTION DISTRICT
LANDSCAPE PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Surveyors
 Planners
 Engineers
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0256 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

LEGEND

- POWER POLE
- OVERHEAD ELEC.
- EX. SANITARY MANHOLE
- EX. STORM DRAIN MANHOLE
- S.H.C. CLEANOUT
- WATER VALVE
- FIRE HYDRANT
- COMBINATION CURB & GUTTER
- CHAIN LINK FENCE
- WOODLINE
- PROP. CORNER FOUND
- CONC. SIDEWALK
- WETLANDS
- P-1 PAVING
- FLOW DIRECTION



HANDICAPPED SIGN AND POST
NOT TO SCALE

PRIVATE STORMWATER MANAGEMENT POND SUMMARY TABLE

DRAINAGE AREA (AC)	TYPE	EXCAVATED DETENTION POND	BOTTOM POND ELEVATION
1.77 AC	TYPE - EXCAVATED DETENTION POND		349.00
	WEIR FLOW - 2" ORIFICE @ EL. 349.00		
	WEIR FLOW @ CONC. RISER - 3" WEIR @ EL. 349.20		
	RELEASE STRUCTURE - 24" RISE @ INV. EL. 345.00		
	ALLOWABLE DISCHARGE @ STUDY POINT		
	2 YEAR STORM - 0.30 CFS		
	10 YEAR STORM - 2.13 CFS		
	100 YEAR STORM - 5.00 CFS		
	INFLOW TO POND		
	2 YEAR STORM - 4.10 CFS		
	10 YEAR STORM - 8.11 CFS		
	100 YEAR STORM - 12.51 CFS		
	DISCHARGE FROM POND		
	2 YEAR STORM - 0.40 CFS @ EL. 352.97		
	10 YEAR STORM - 0.31 CFS @ EL. 352.97		
	100 YEAR STORM - 1.20 CFS @ EL. 354.40		
	100 YEAR STORM - 7.00 CFS @ EL. 354.40		
	STORAGE = 0.3157 AC-FIT		
	STORAGE = 0.3129 AC-FIT		

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

C. Stuart Knudsen
SIGNATURE OF DEVELOPER
C. STUART KNUDSEN
PRINTED NAME OF DEVELOPER
DATE: 1/26/99

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

R. Jacob Nikmat
SIGNATURE OF ENGINEER
R. JACOB NIKMAT
PRINTED NAME OF ENGINEER
DATE: 1/27/99

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Clay Simmons
USDA - NATURAL RESOURCE CONSERVATION SERVICE
DATE: 2/5/99

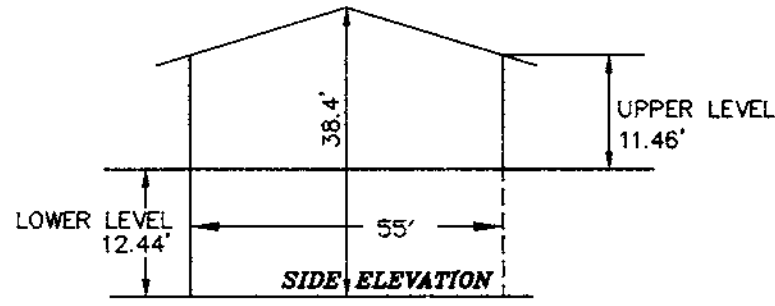
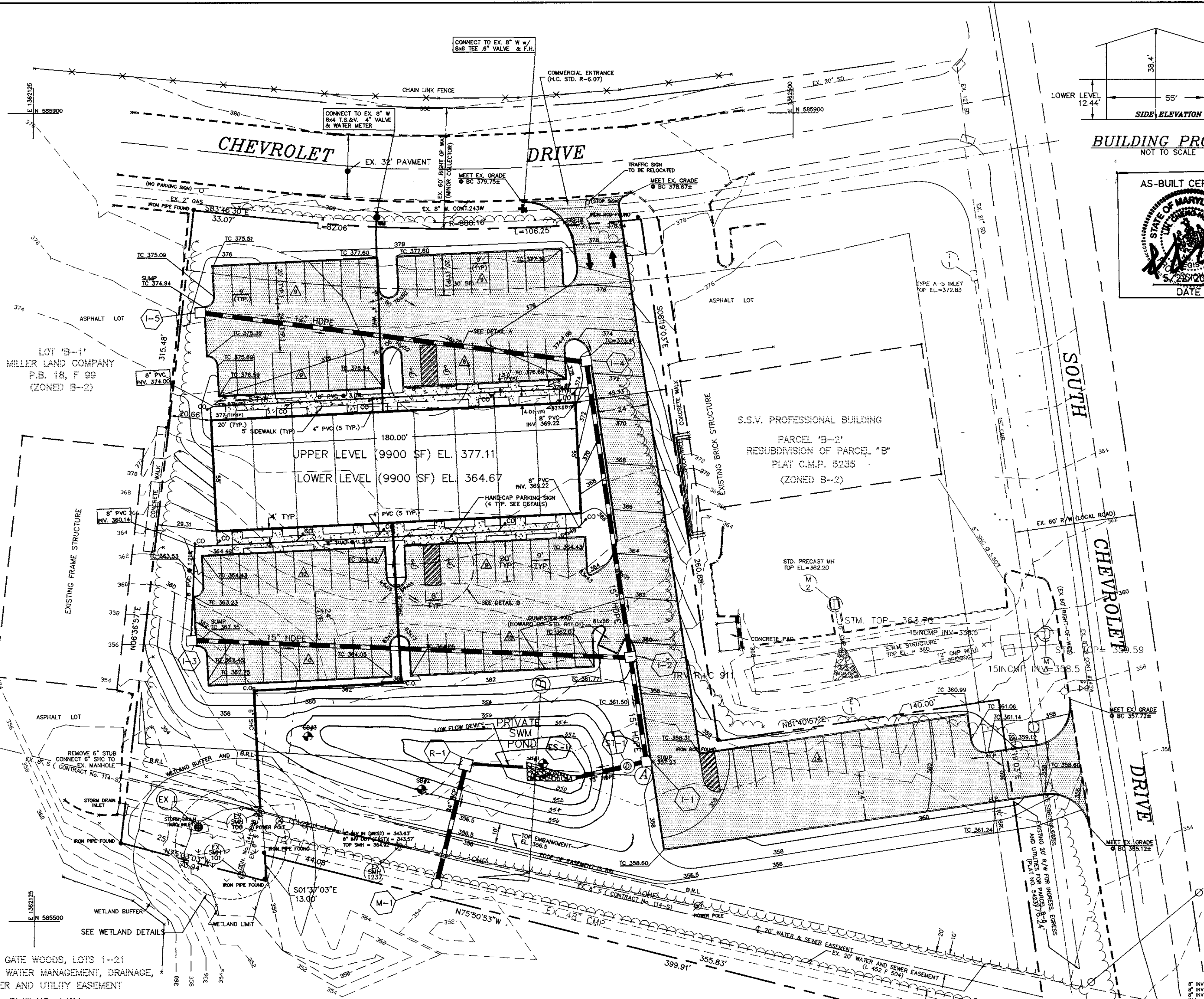
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Roberts
HOWARD SOIL CONSERVATION DISTRICT
DATE: 2/5/99

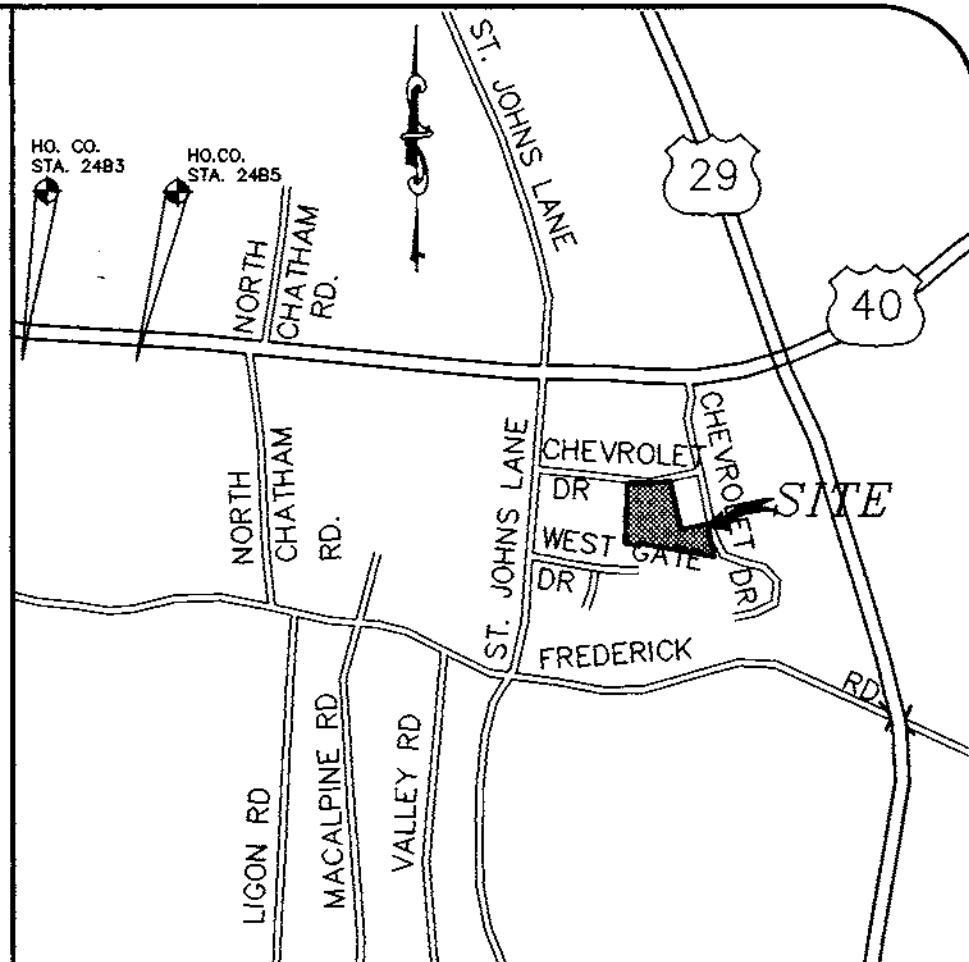
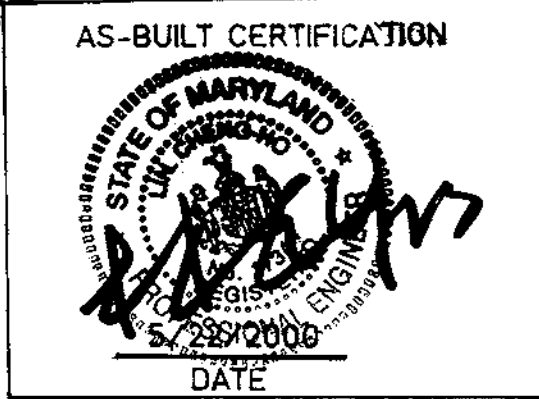
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Stenitzer
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 2/12/99

John Smith
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 2/18/99



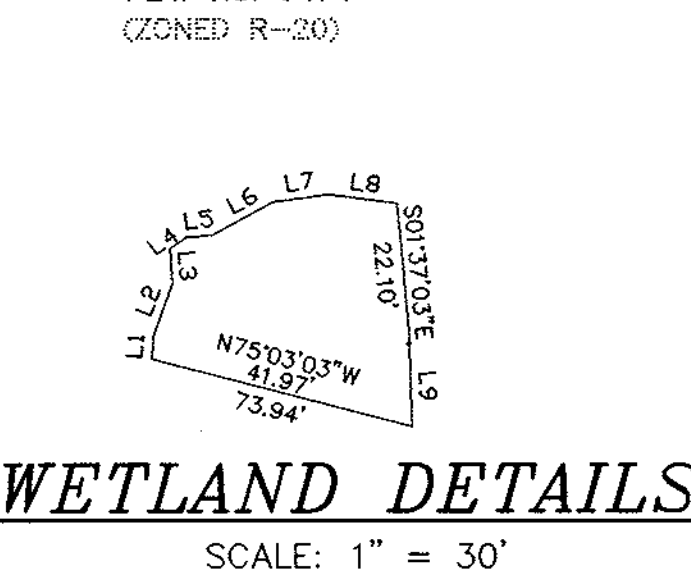
BUILDING PROFILE
NOT TO SCALE



VICINITY MAP
SCALE: 1" = 1000'

- GENERAL NOTES:**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 - THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:
 - MISS UTILITY 1-800-257-7777
 - C&P TELEPHONE COMPANY (410) 725-9976
 - HOWARD COUNTY BUREAU OF UTILITIES (410) 313-4900
 - AT&T CABLE LOCATION DIVISION (410) 393-3533
 - BALTIMORE GAS & ELECTRIC (410) 685-0123
 - STATE HIGHWAY ADMINISTRATION (410) 531-5533
 - HOWARD COUNTY DEPT. OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION (410) 313-1880
 - PROJECT BACKGROUND:
 - LOCATION: 2ND ELECTION DISTRICT, TAX MAP 24, P/O PARCEL B-6
 - ZONING: B-2 PER 10/3/77 COMPREHENSIVE ZONING PLAN
 - TOTAL TRACT AREA: 2.535 Ac.±
 - TOPOGRAPHY SHOWN HEREON IS BASED ON APRIL, 1998 FIELD RUN SURVEY BY MILDBERG, BOENDER AND ASSOCIATES, INC. AND BY CARROLL ENGINEERS, INC. DATED 8/17/95.
 - COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 24B3 AND 24B5.
 - STA. NO. 24B3 N 586.661, 2634 E. 1,359,226.4000
 - E. 1,359,226.4000
 - N 586.956, 2858 E. 1,356,570.8230
 - E. 1,356,570.8230
 - 390.965
 - WATER AND SEWER ARE PUBLIC, CONTRACT #'S 114-S & 243-W.
 - STORMWATER MANAGEMENT QUANTITY IS PROVIDED BY DETENTION POND. QUALITY CONTROL IS PROVIDED BY "STORMCEPTER" WATER QUALITY MANHOLE.
 - STORMWATER MANAGEMENT WILL BE PRIVATELY OWNED AND MAINTAINED.
 - WETLAND SHOWN IS PER THE "WETLAND INVESTIGATION AND FOREST STAND DELINEATION REPORT" BY WILDMAN ENVIRONMENTAL SERVICES ON MAY 10, 1998.
 - NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLANDS EXCEPT AS SHOWN ON APPROVED PLANS.
 - USE COMBINATION CURB & GUTTER (STD. DETAIL R-3.01)
 - SITE ANALYSIS DATA CHART:
 - TOTAL PROJECT AREA: 2.535± ACRES
 - LIMIT OF DISTURBED AREA: 1.95 AC±
 - PRESENT ZONING: B-2
 - PROPOSED USE: GENERAL OFFICE - 8800 SF
 - GENERAL OFFICE OR RETAIL - 11,000 SF
 - BUILDING COVERAGE OF SITE: 9,900 SF± (OR 9% OF GROSS AREA)
 - NUMBER OF PARKING SPACES REQUIRED: 30 (3,800 SF @ 3.3/1,000 SF)
 - NUMBER OF PARKING SPACES PROVIDED: 55 (11,000 SF @ 5/1,000 SF)
 - NUMBER OF PARKING SPACES PROVIDED: 88 (9' x 20' TYP.)
 - ALL STORM DRAIN PIPE TO BE HDPE UNLESS OTHERWISE SHOWN.
 - THE FOREST CONSERVATION OBLIGATIONS INCURRED BY THIS SITE DEVELOPMENT (1.21 ACRES OF REFORESTATION) HAVE BEEN MET BY PAYMENT OF \$15,812 TO THE HOWARD COUNTY FOREST CONSERVATION FUND.
 - ALL OUTDOOR LIGHTING WILL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 13.4.
 - RELATED DPZ FILE NUMBER: F-82-90, VP-82-95, F-68-7, PLAT C.M.P. NO. 5423, F-83-49, F-98-162, PLAT NO. 13323.

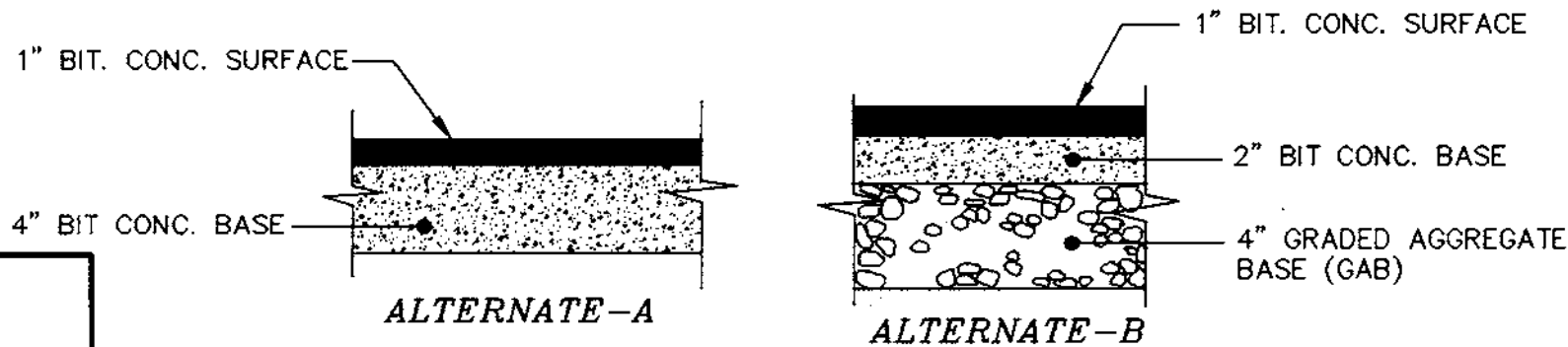
WEST GATE WOODS, LOTS 1-21
STORM WATER MANAGEMENT, DRAINAGE, SEWER AND UTILITY EASEMENT
PLAT NO. 9474
(ZONED R-20)



LINE TABLE

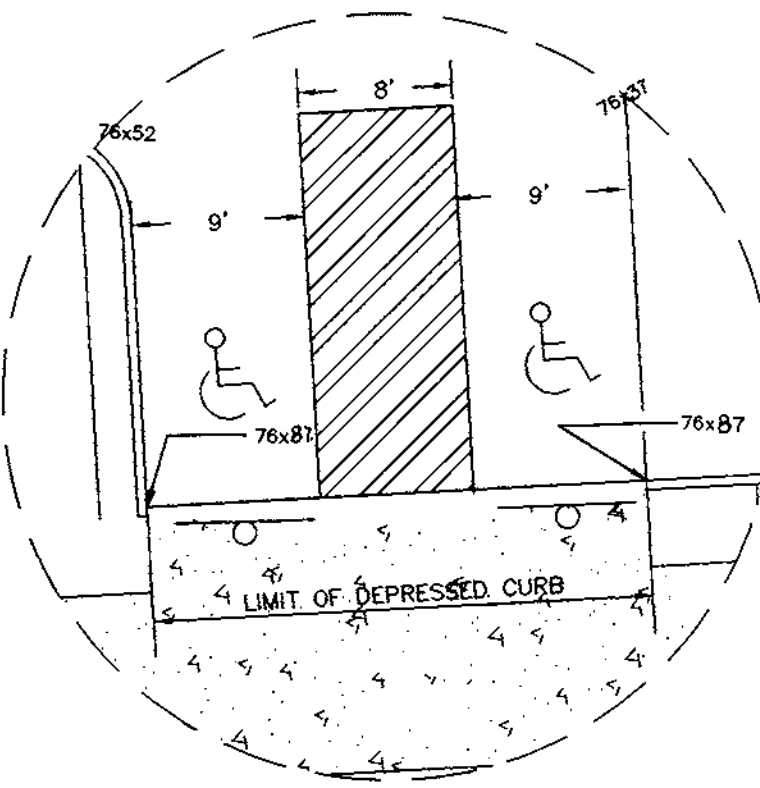
LINE	LENGTH	BEARING
L1	3.75	N05°12'02"E
L2	8.66	N20°07'03"E
L3	5.37	N04°14'29"W
L4	3.14	N55°20'13"E
L5	3.99	N84°17'46"E
L6	10.84	N61°35'09"E
L7	8.62	N82°03'57"E
L8	10.81	S82°37'22"E
L9	13.00	S01°53'55"E

C.E. MILLER
PARCEL 717
416/441
(ZONED B-2)

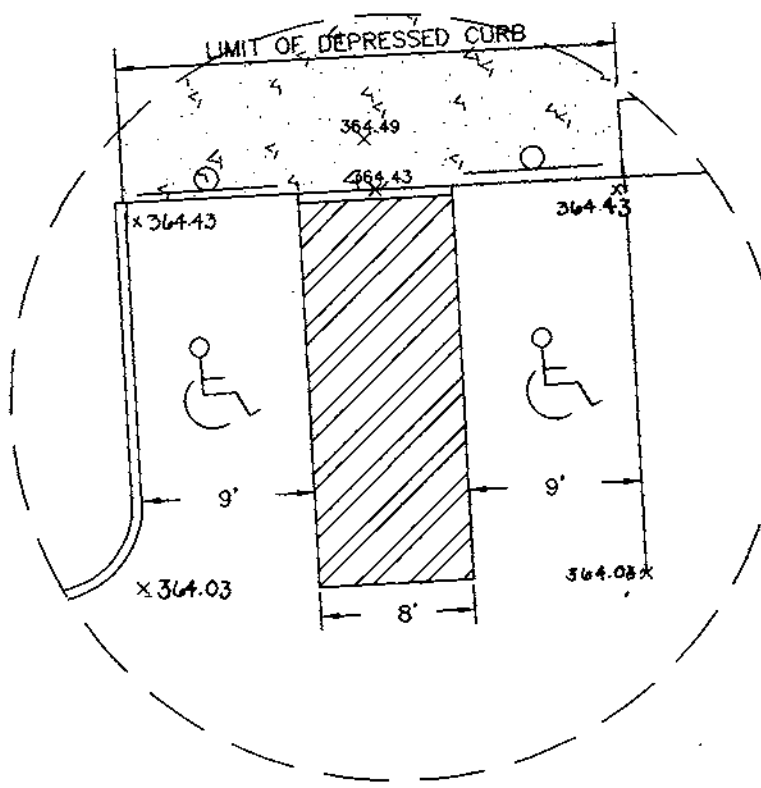


PAVING SECTIONS

P-1
N.T.S.



DETAIL A
1" = 10'



DETAIL B
1" = 10'

INDEX OF SHEETS

NO	TITLE
1	SITE DEVELOPMENT PLAN
2	EROSION & SEDIMENT CONTROL PLAN
3	SEDIMENT CONTROL NOTES & DETAILS
4	STORM DRAIN, WATER & SEWER PROFILES
5	STORMWATER MANAGEMENT DETAILS
6	STORMWATER MANAGEMENT DETAILS
7	STORMWATER MANAGEMENT SPECIFICATIONS
8	DRAINAGE AREA & SOILS MAP
9	LANDSCAPE PLAN

PERMIT INFORMATION CHART

SUBMISSION NAME KMS ASSOCIATES	SECTION/AREA B-6	LOT/PARCEL # B-6
PLAT # OR L/F 13322	BLOCK # 5 & 11	ZONE B-2
TAX MAP 24	ELEC. DIST. SECOND	CENSUS TRACT 6023.01
WATER CODE FO-7	SEWER CODE 1403200	

PERMIT INFORMATION CHART

LOT NUMBER	STREET ADDRESS
PARCEL B-6	9011 CHEVROLET DRIVE

OWNERS & DEVELOPER
KMS ASSOCIATES
8455 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND
21043
(410) 465-2222

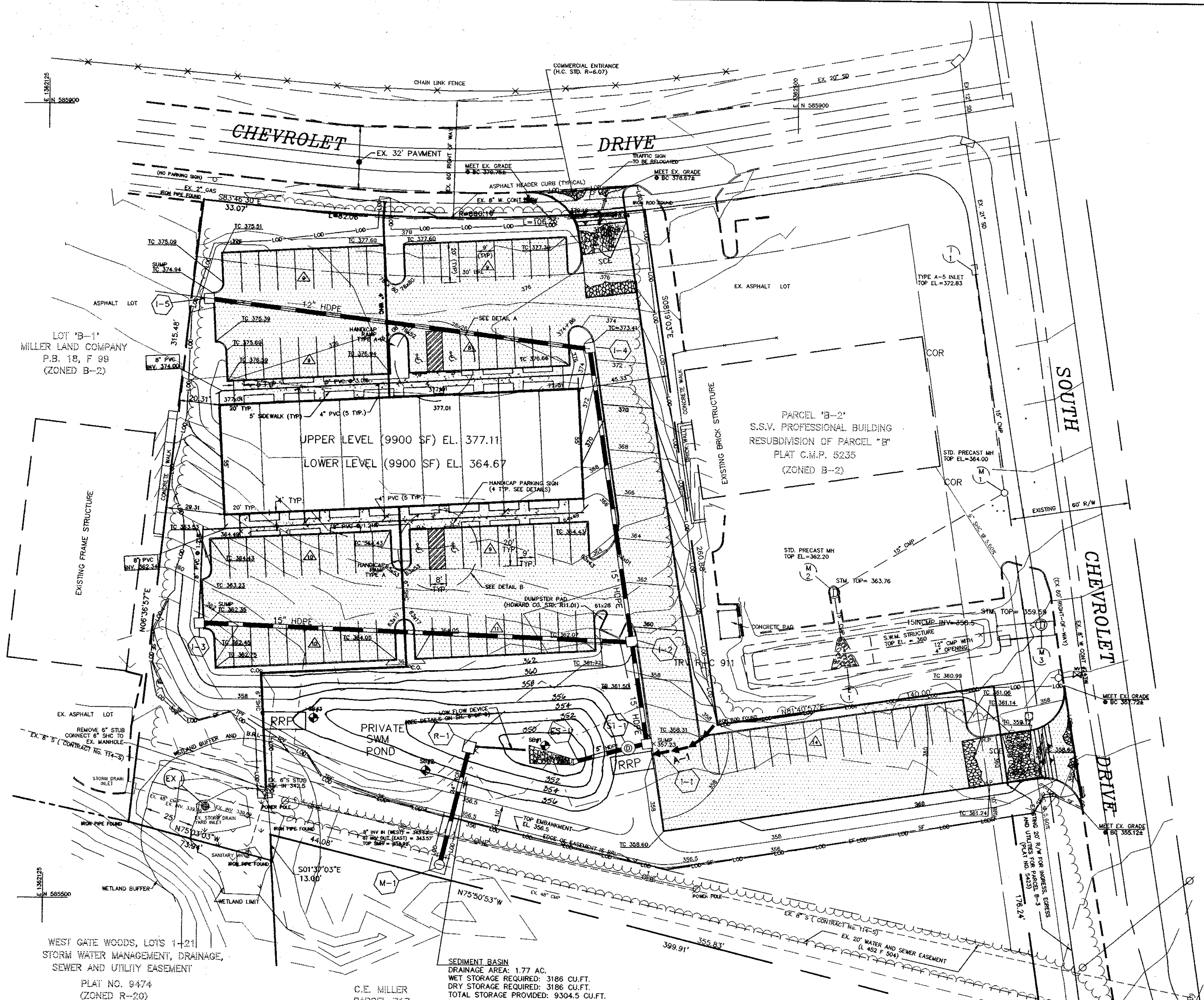
Project	date	Project	date
98025	OCT 1998	98025	OCT 1998
Illustration	engineering	Illustration	engineering
FCL	FCL	FCL	FCL
scale	approval	scale	approval
1" = 30'	JBN	1" = 30'	JBN

Project	date
98025	3/05/00
Revision	description
1	REVISED POND GRADING
2	revisions

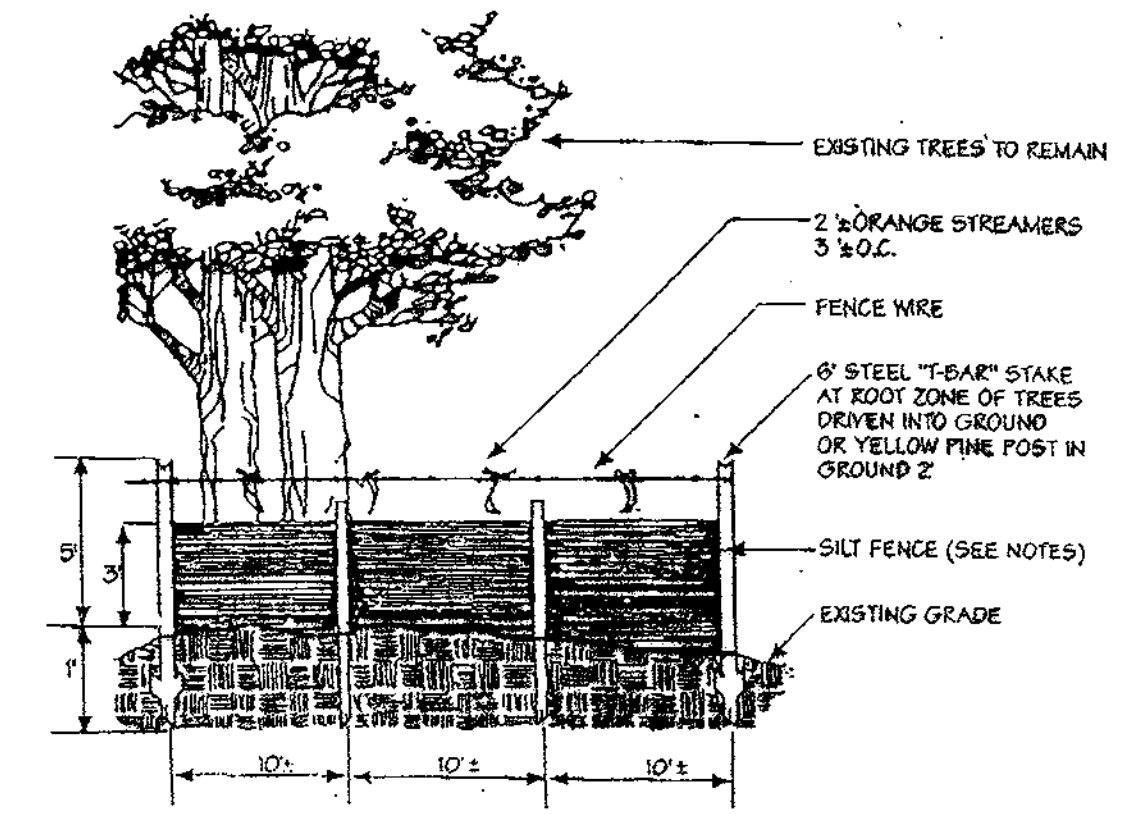
TAX MAP 24, PARCEL B6
KMS PROFESSIONAL BUILDING
HOWARD COUNTY
SECOND ELECTION DISTRICT
SITE DEVELOPMENT PLAN

MILDBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Fax: (301) 621-5521 Wash. (410) 997-0298 Fax.

THIS PLAN IS FOR THE PURPOSE OF SEDIMENT CONTROL ONLY



- LEGEND**
- POWER POLE
 - OVERHEAD ELEC.
 - SANITARY MANHOLE
 - STORMDRAIN MANHOLE
 - CLEANOUT
 - WATER VALVE
 - FIRE HYDRANT
 - HEADER CURB
 - CHAIN LINK FENCE
 - WOODLINE
 - IRON ROD FOUND
 - IRON PIPE FOUND
 - CONC. SIDEWALK
 - P-1 PAVING
 - WETLANDS
 - LIMIT OF DISTURBANCE
 - STABILIZED CONSTRUCTION ENTRANCE
 - SILT FENCE
 - TREE PROTECTION FENCE
 - A-1 EARTH DIKE
 - RIP-RAP INFLOW PROTECTION



- Notes:**
- Silt fence to be heeled into the soil.
 - Wire, snow fence, etc. for tree protection only.
 - Boundaries of Retention Area will be established as part of the forest conservation plan review process.
 - Boundaries of Retention Area should be staked and flagged prior to installing device.
 - Avoid root damage when placing anchor posts.
 - Device should be properly maintained throughout construction.
 - Protection signs are also required, see Figure C-4.
 - Locate fence outside the Critical Root Zone.

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 P.E. NO. _____
 SIGNATURE _____ DATE _____

DEVELOPER'S CERTIFICATE
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.
 SIGNATURE OF DEVELOPER _____ DATE 1/26/99
 C. STUART KAUJSEN
 PRINTED NAME OF DEVELOPER

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND TRAINING RECEIVED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE OF ENGINEER _____ DATE 02/12/99
 J. SIMMONS
 PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 SIGNATURE _____ DATE 2/5/99
 J. SIMMONS
 USDA - NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE _____ DATE 2/5/99
 J. SIMMONS
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 SIGNATURE _____ DATE 2/5/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 SIGNATURE _____ DATE 2/17/99
 CHIEF, DIVISION OF LAND DEVELOPMENT
 SIGNATURE _____ DATE 2/18/99
 DIRECTOR

WEST GATE WOODS, LOTS 1-21
 STORM WATER MANAGEMENT, DRAINAGE, SEWER AND UTILITY EASEMENT
 PLAT NO. 9474
 (ZONED R-20)

C.E. MILLER
 PARCEL 717
 416/441
 (ZONED B-2)

SEDIMENT BASIN
 DRAINAGE AREA: 1.77 AC.
 WET STORAGE REQUIRED: 3186 CU.FT.
 DRY STORAGE REQUIRED: 3186 CU.FT.
 TOTAL STORAGE PROVIDED: 9304.5 CU.FT.
 TOP WET STORAGE EL.: 350.88
 TOP STORAGE EL.: 353.5
 CLEANOUT EL.: 353.00
 BOTTOM EL.: 349.00
 TOP WEIR EL.: 354.20 (SEE FRONT WALL ELEV. ON SH.5)
 TOP EMBANK EL.: 356.50
 PIPE SIZE: 24" RCP

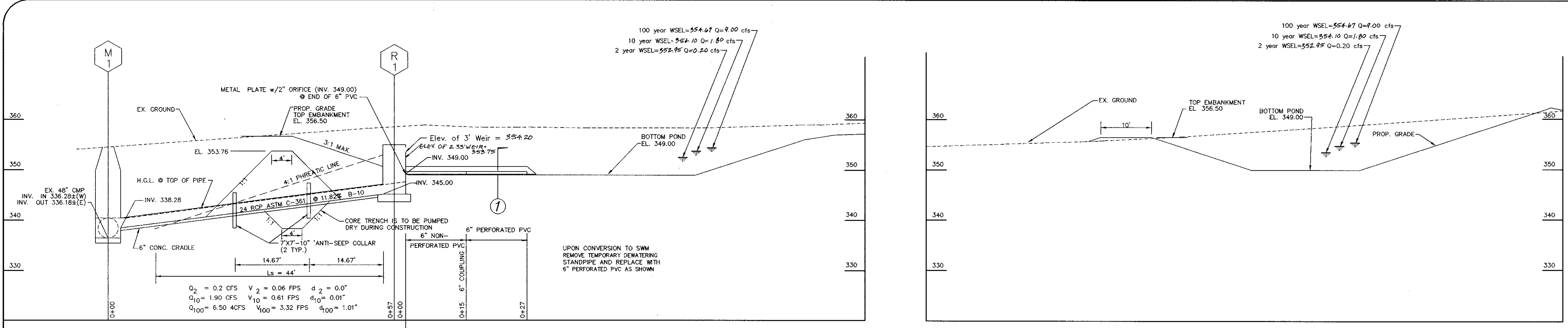
OWNERS & DEVELOPER
 KMS ASSOCIATES
 8455 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21043
 (410) 465-2222

Project	98025	date	OCT. 1998
Illustration	FCL	engineering	
Scale	1" = 30'	FCL	approval
no.		description	
no.		revisions	

no.		description	
no.		revisions	

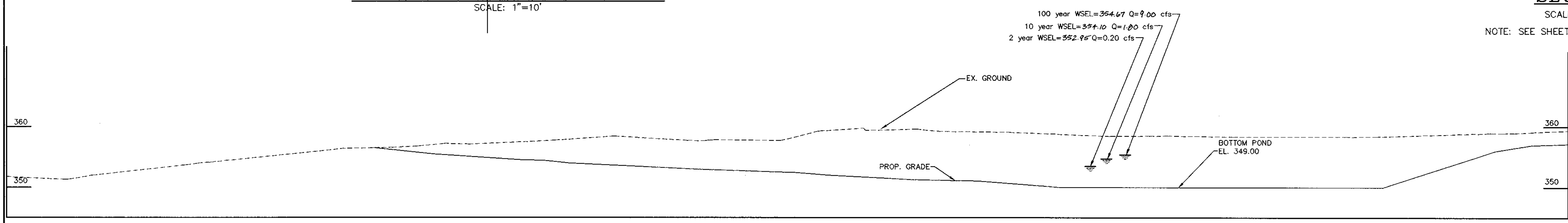
TAX MAP 24, PARCEL B6
KMS PROFESSIONAL BUILDING
 HOWARD COUNTY
 SECOND ELECTION DISTRICT
EROSION & SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax (301) 621-5621 Wash. (410) 997-0298 Fax

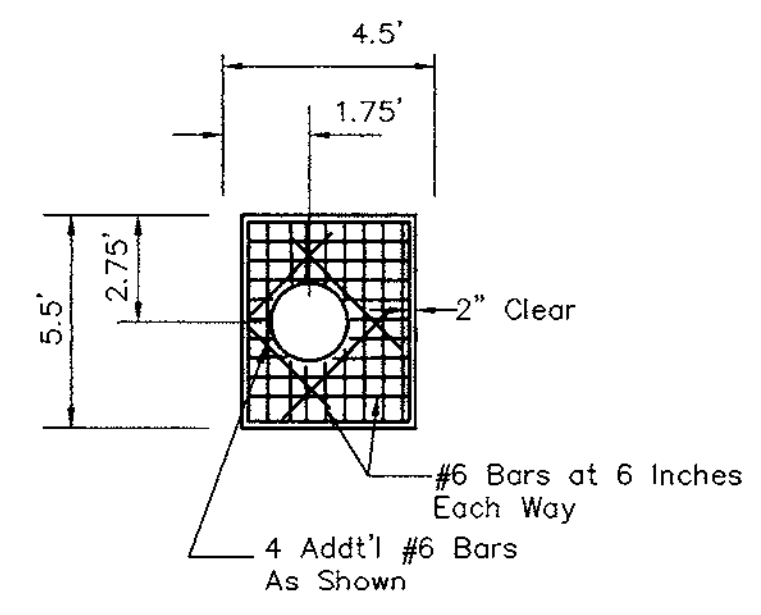


PRINCIPLE SPILLWAY PROFILE
SCALE: 1"=10'

SECTION B
SCALE: 1"=10'
NOTE: SEE SHEET 1 OF 9 FOR PLAN.



SECTION A
SCALE: 1"=10'
NOTE: SEE SHEET 1 OF 9 FOR PLAN.



TOP SLAB DETAIL
N.T.S.



AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
SIGNATURE: _____ P.E. NO. _____
DATE: _____

CERTIFY MEANS TO START OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES THE ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

DEVELOPER'S CERTIFICATE
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

Signature: *C. Stuart Knudsen* 1/26/99
DATE: 1/26/99
PRINTED NAME OF DEVELOPER: C. STUART KNUDSEN

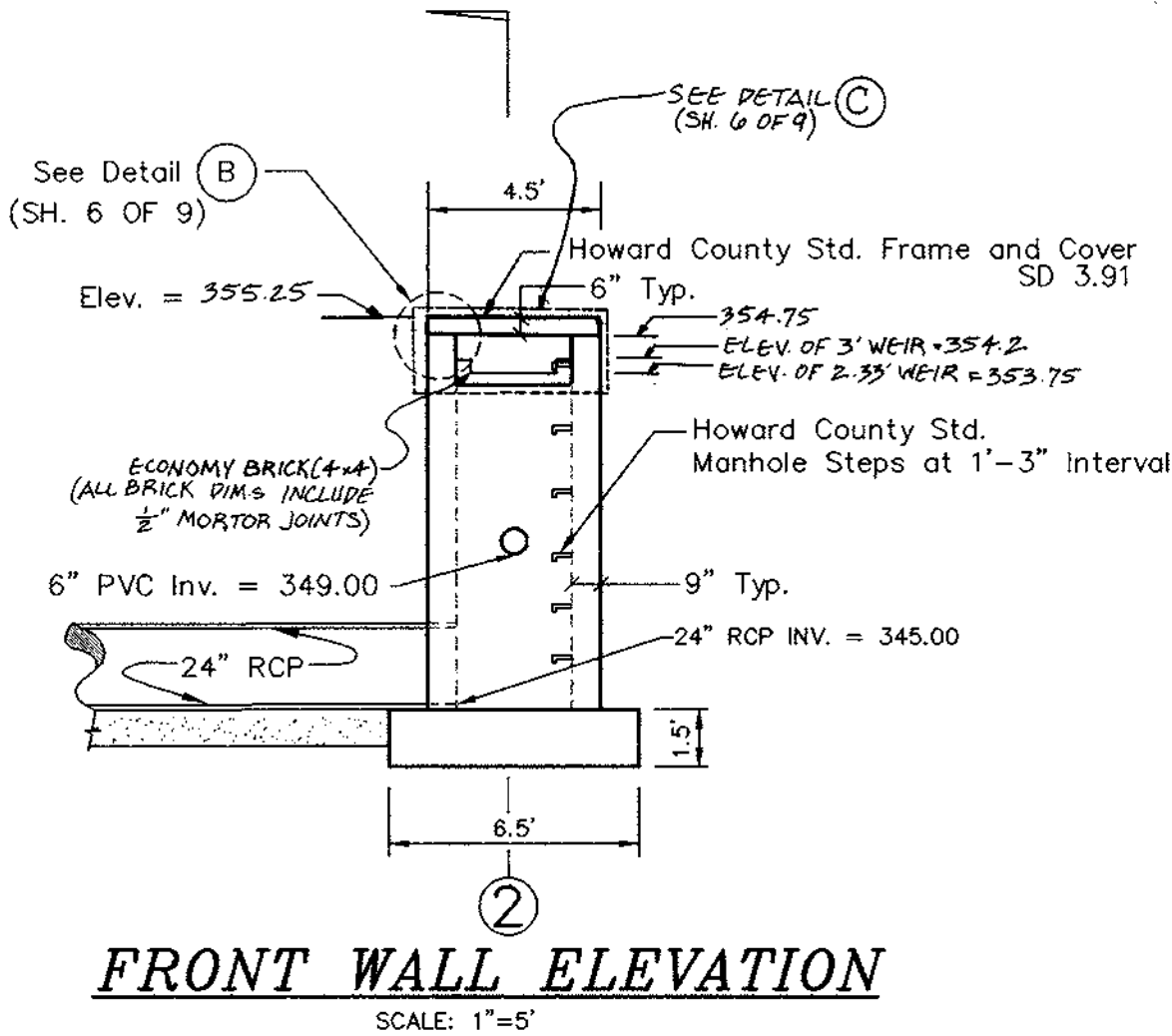
ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON THE BEST AVAILABLE DATA OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

Signature: *John Mildeberg* 02/23/99
DATE: 02/23/99
PRINTED NAME OF ENGINEER: JOHN MILDEBERG

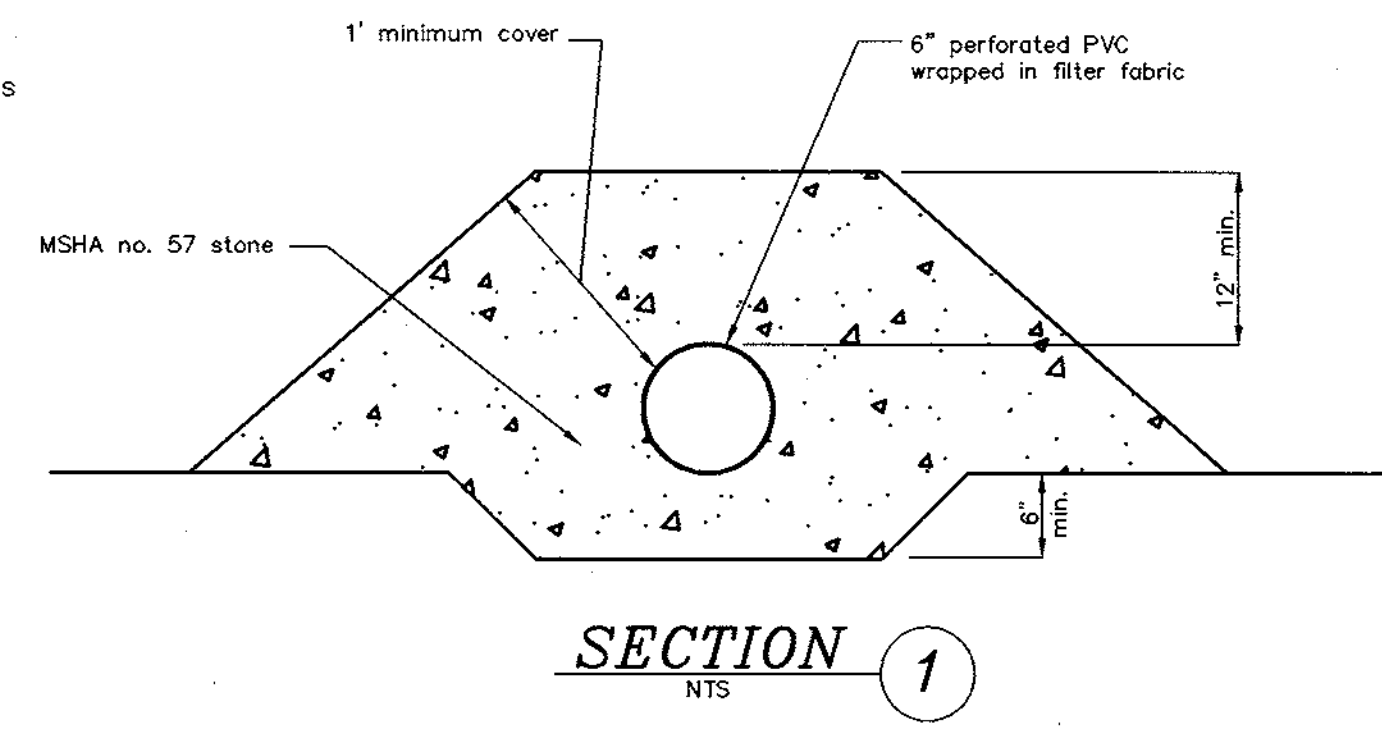
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Signature: *Deyley Simmons* 2/5/99
DATE: 2/5/99
MEDIA - NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Signature: *John R. Johnson* 2/5/99
DATE: 2/5/99
HOWARD SOIL CONSERVATION DISTRICT

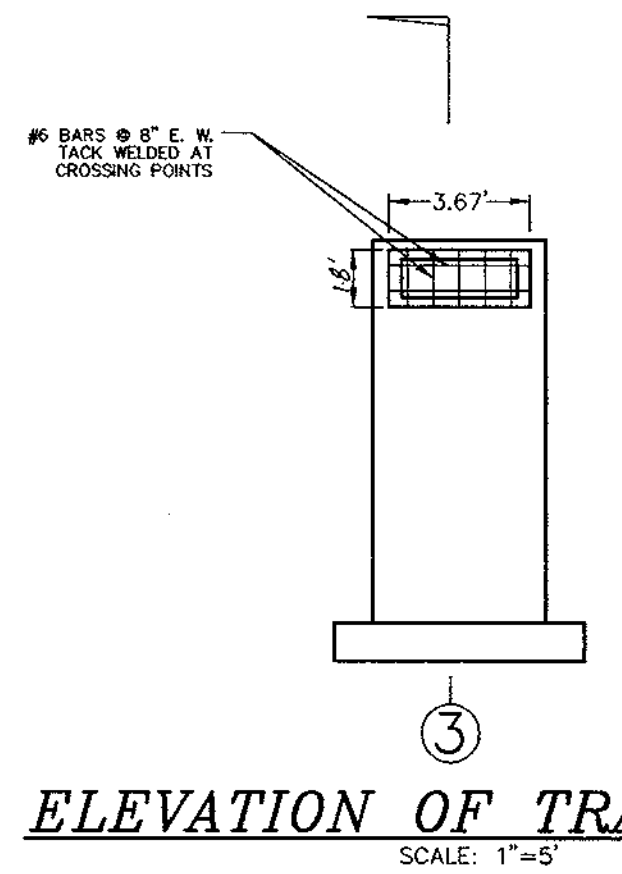
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: *Michael Drummond* 2/9/99
DATE: 2/9/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Signature: *Carol Herron* 2/11/99
DATE: 2/11/99
CHIEF, DIVISION OF LAND DEVELOPMENT
Signature: *Paula Smith* 2/15/99
DATE: 2/15/99
DIRECTOR



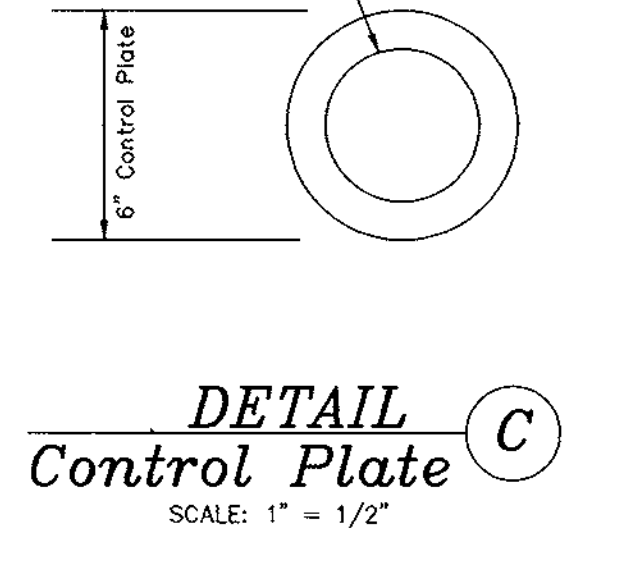
FRONT WALL ELEVATION
SCALE: 1"=5'



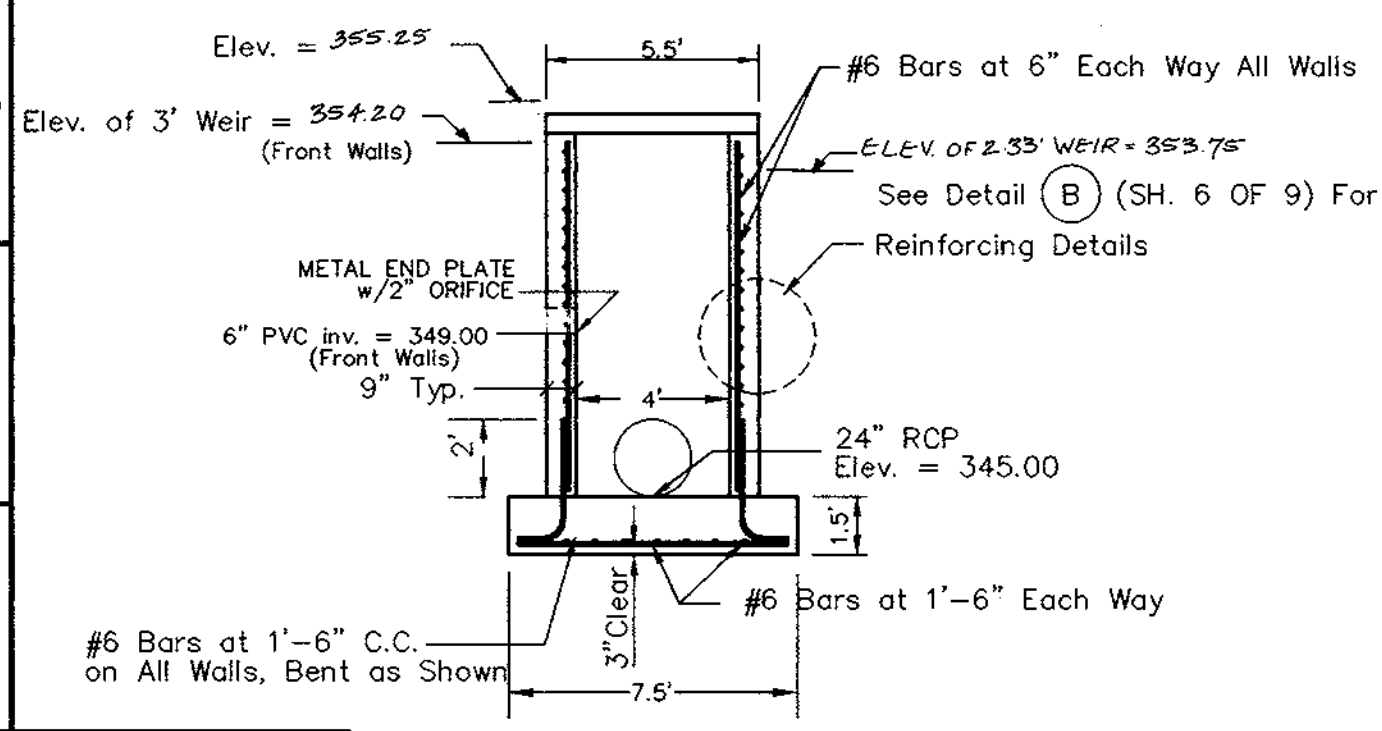
SECTION 1
N.T.S.



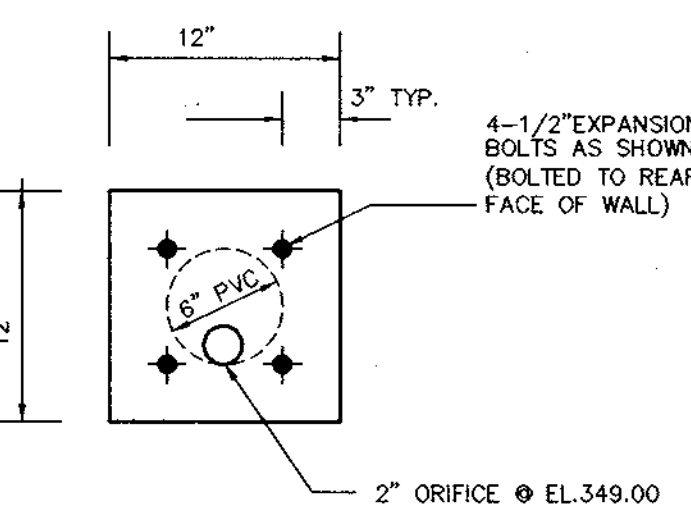
ELEVATION OF TRASH RACK
SCALE: 1"=5'



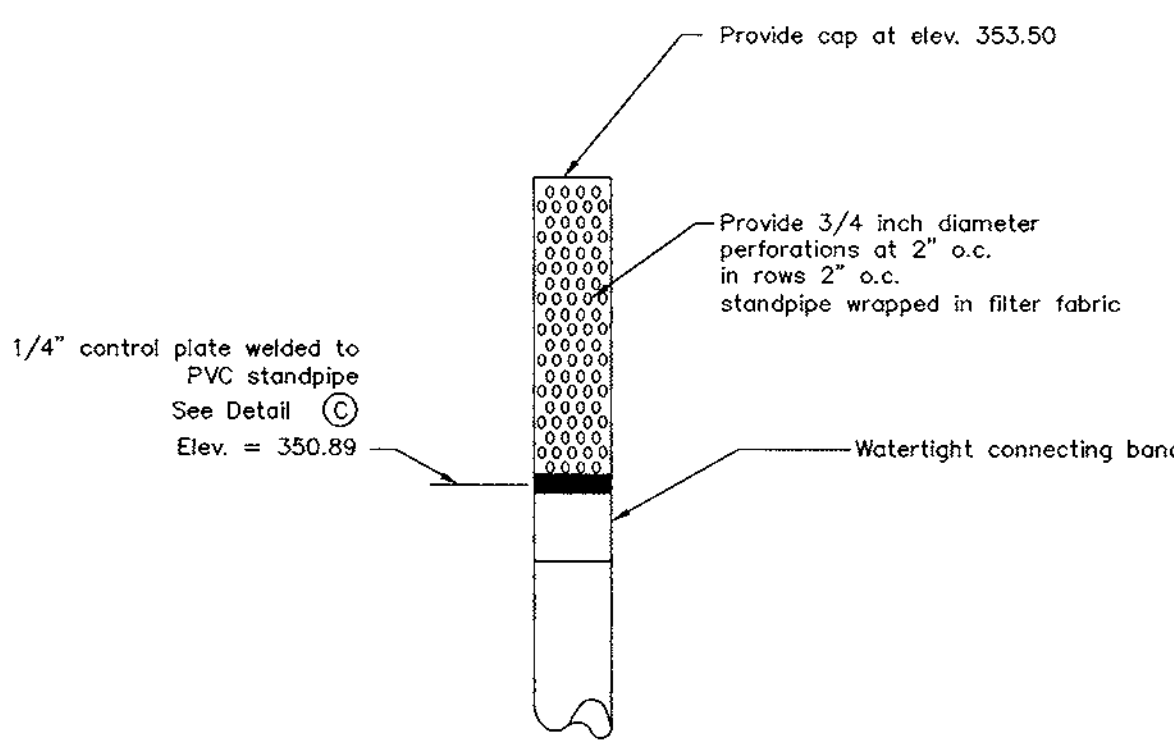
DETAIL C
Control Plate
SCALE: 1" = 1/2"



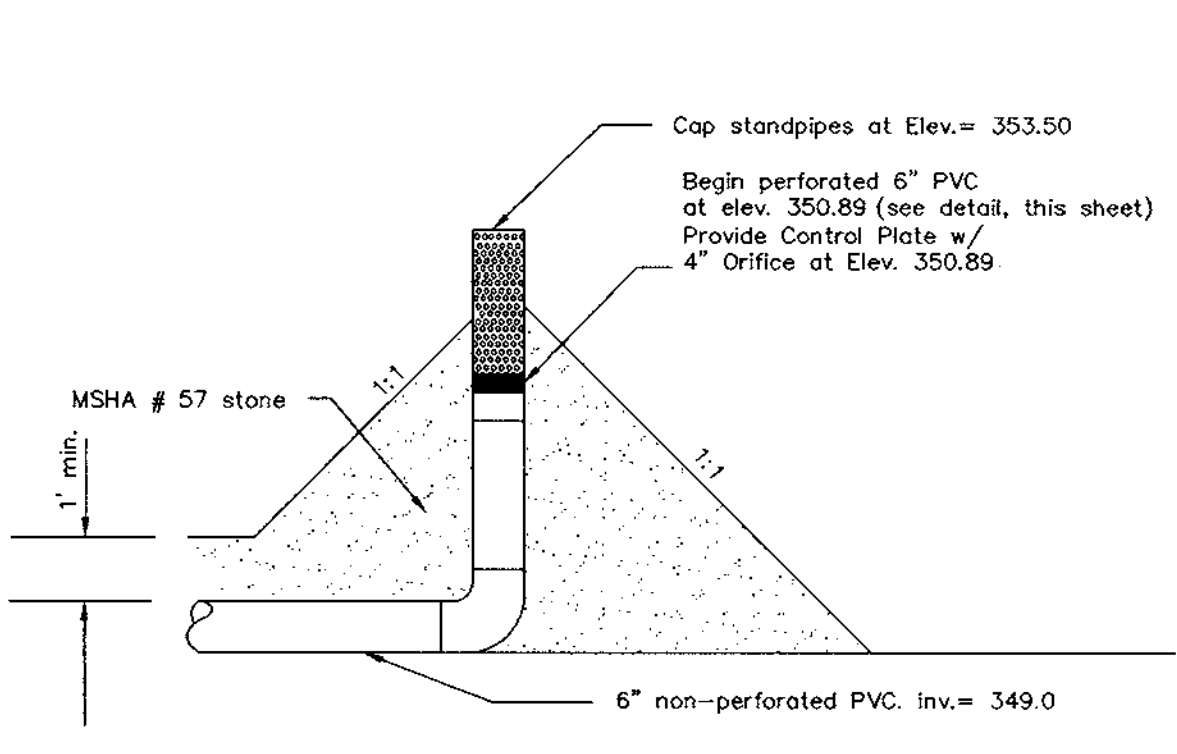
SECTION 2
SCALE: 1"=5'



LOW FLOW ORIFICE DETAIL
SCALE: 1" = 1"



TEMPORARY STANDPIPE DETAIL
N.T.S.



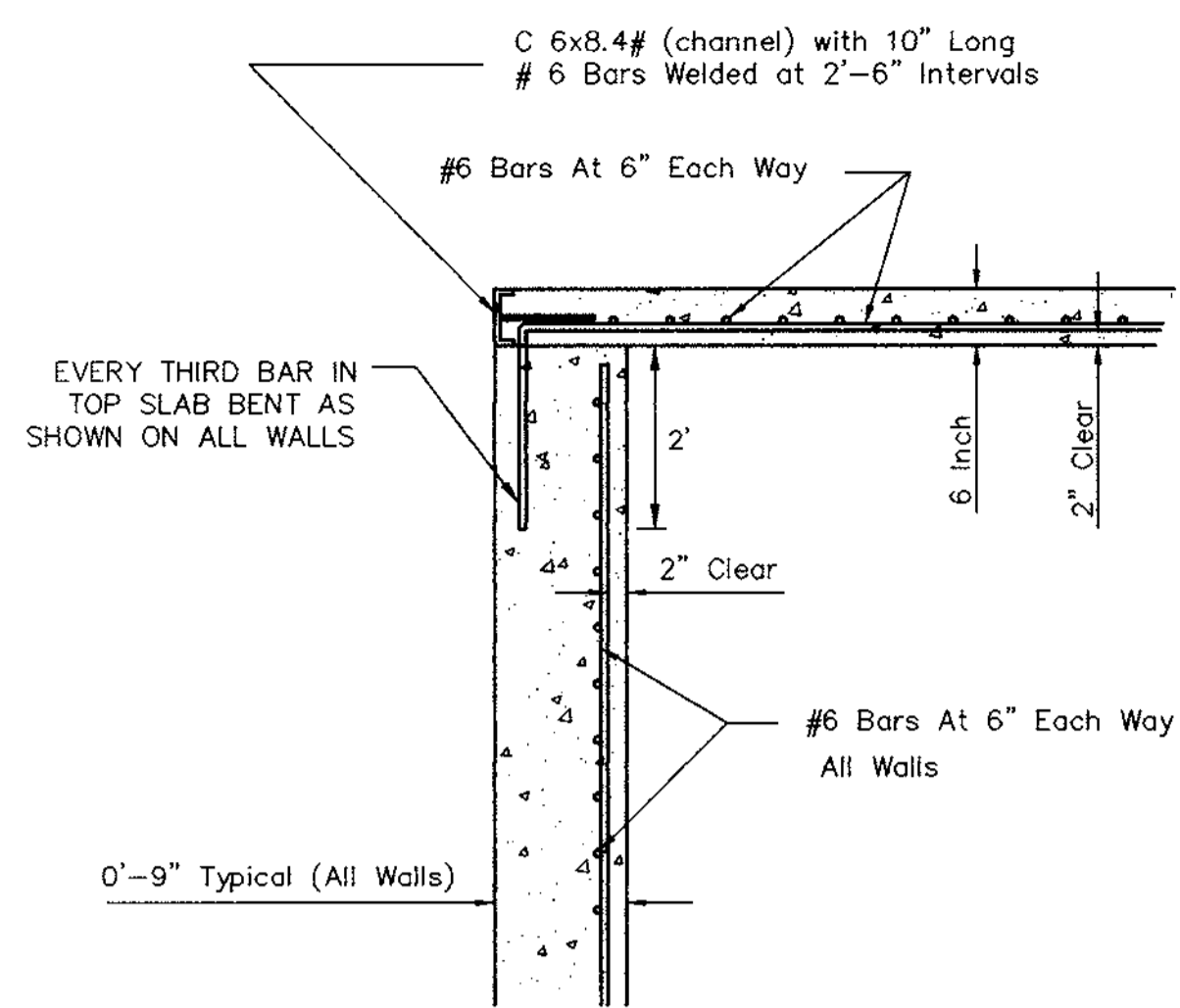
TEMPORARY DEWATERING STANDPIPES
N.T.S.

project	date
08025	OCT. 98
illustration	engineering
PCL	PCL
scale	approval
AS SHOWN	JBM

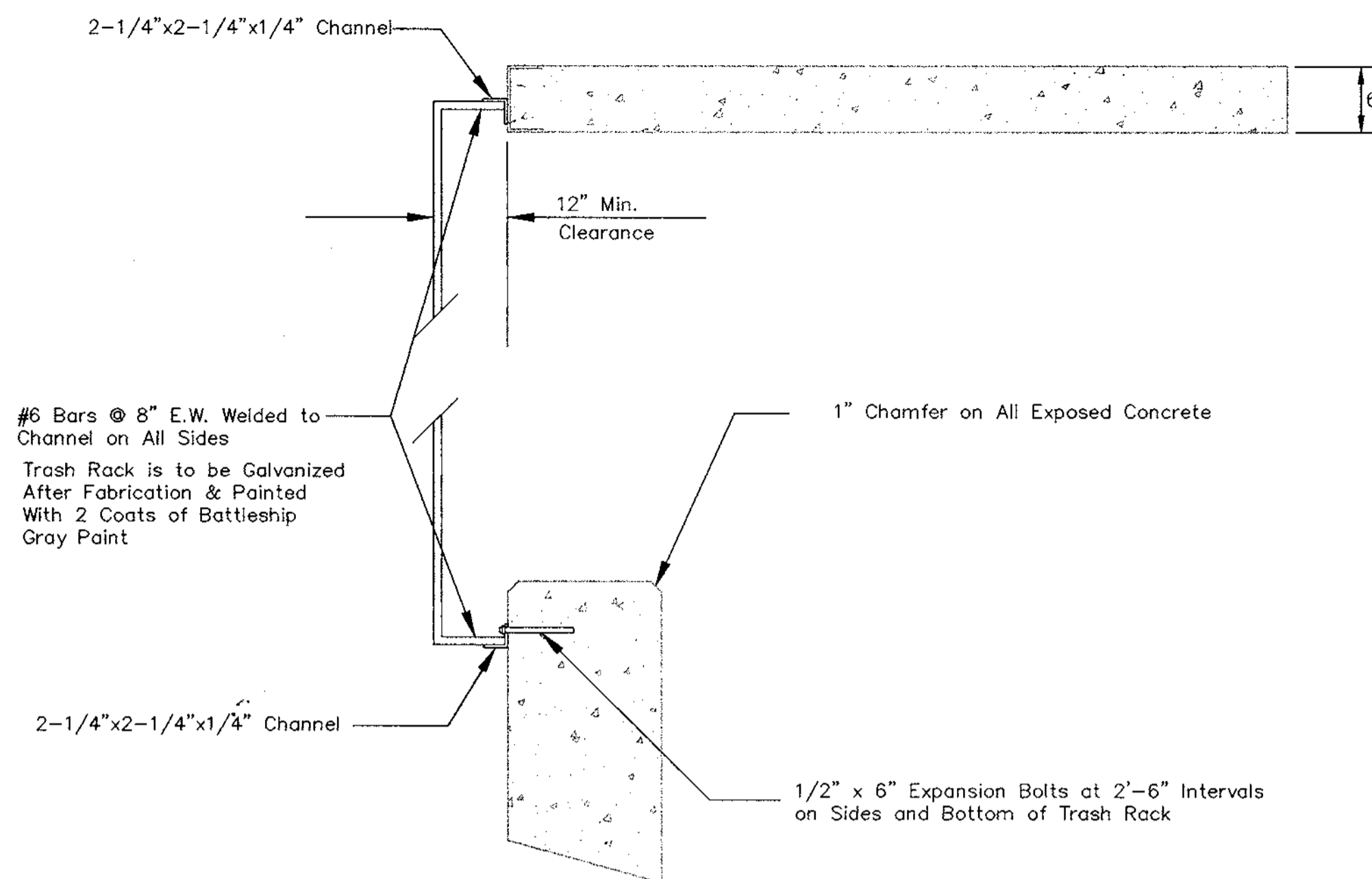
no.	description	date
1	RE-VISE PER RASTER STRUCTURE	5/15/2008

TAX MAP 24, PARCEL B4 & B5
KMS PROFESSIONAL BUILDING
HOWARD COUNTY, MARYLAND
2ND ELECTION DISTRICT
STORMWATER MANAGEMENT DETAILS

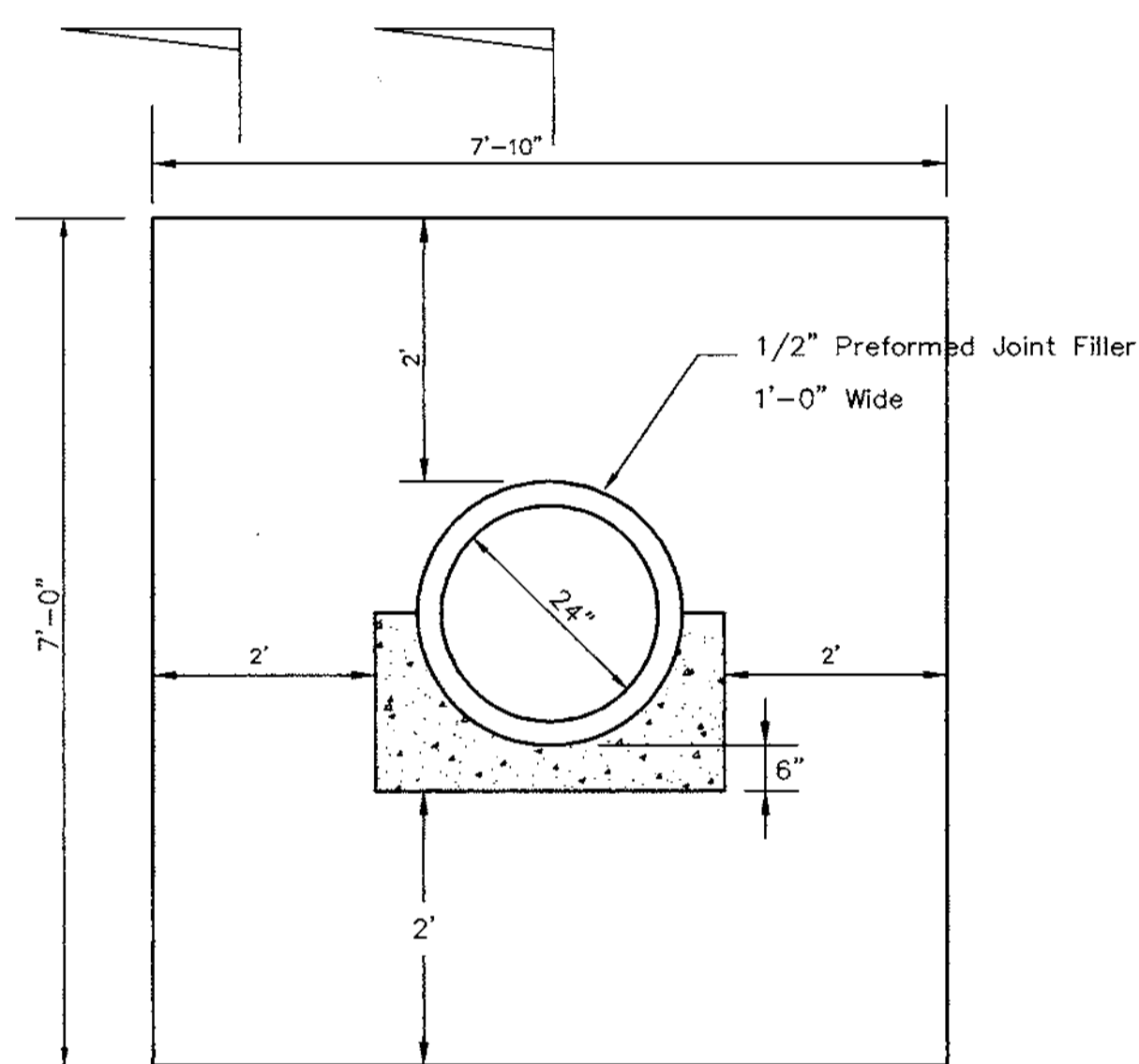
MILDEBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Fax (301) 621-5521 Wash. (410) 997-0298 Fax



DETAIL B
N.T.S.

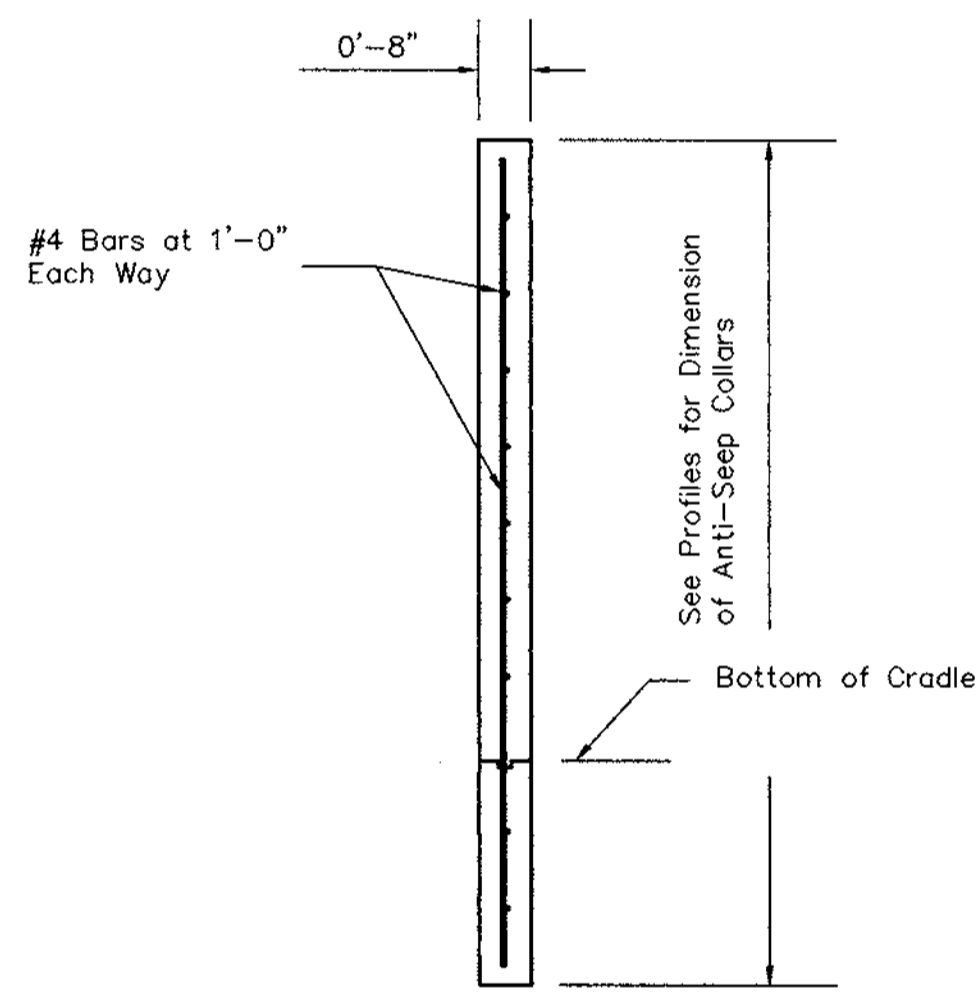


SECTION 3
N.T.S.

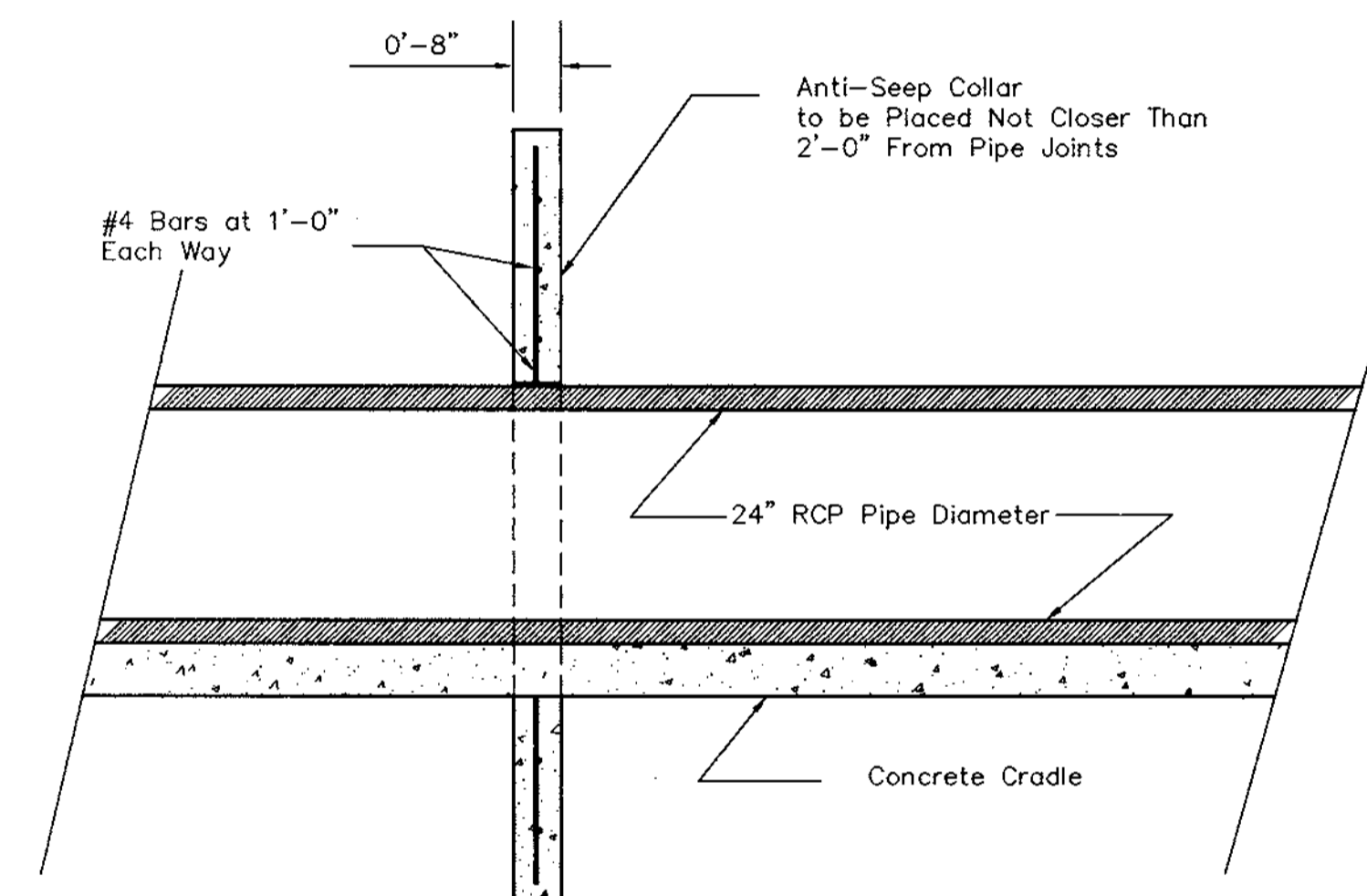


ANTI-SEEP COLLAR DETAIL
N.T.S.

NOTE: PLACE ANTI-SEEP COLLAR 2' MIN. FROM PIPE JOINTS.



SECTION 4
N.T.S.



SECTION 5
N.T.S.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
SIGNATURE: _____ P.E.N.O. _____
DATE: _____

DEVELOPER'S CERTIFICATE
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THE BEST AVAILABLE INFORMATION IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

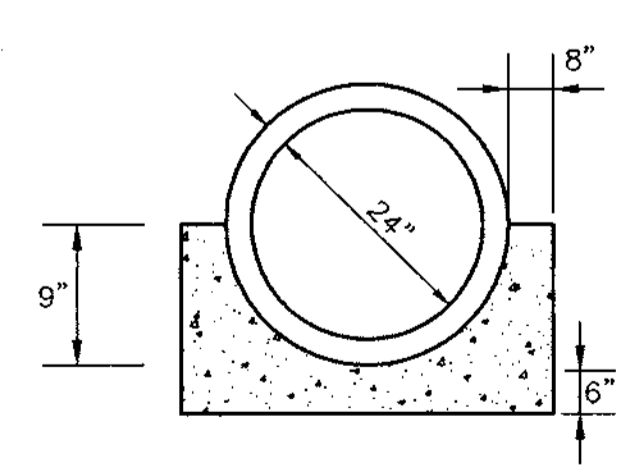
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCE CONSERVATION SERVICE

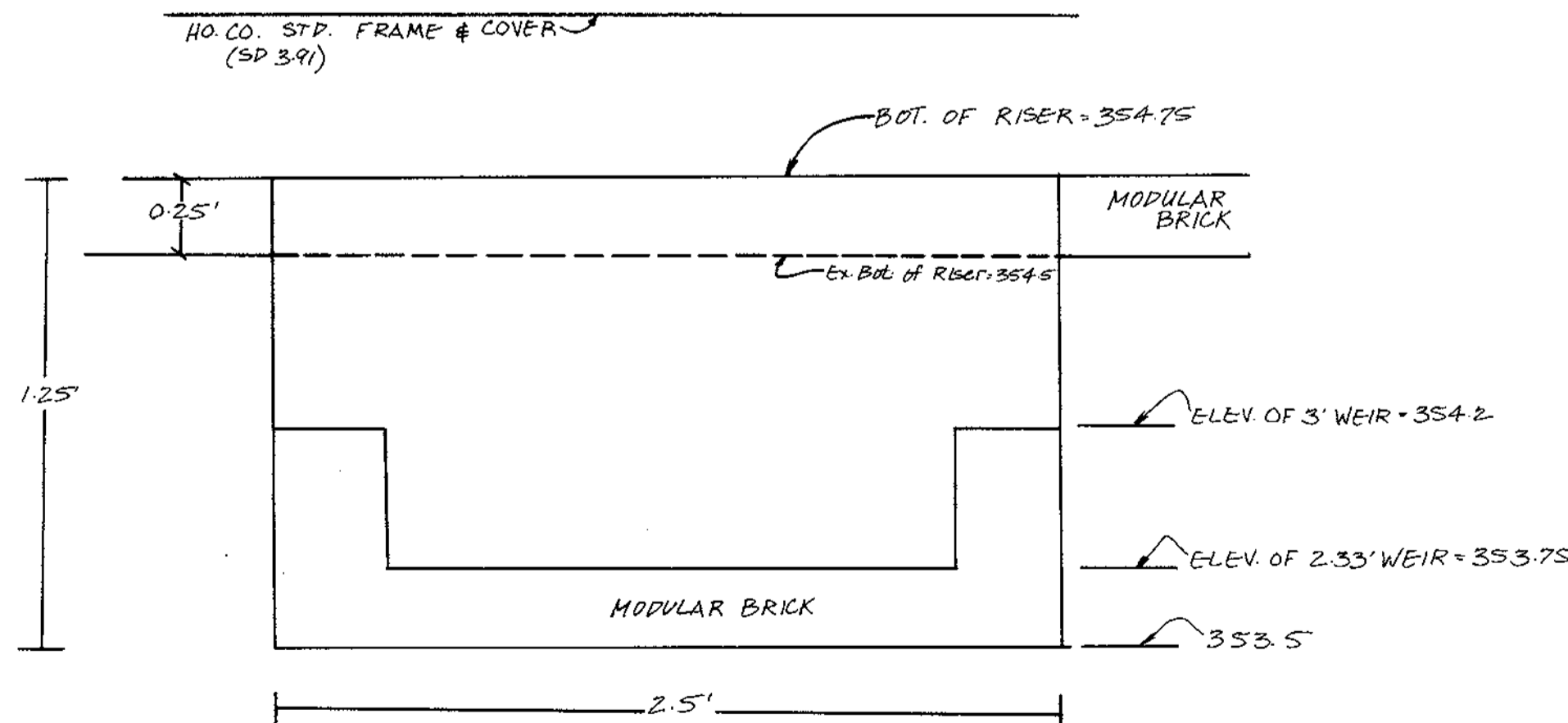
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

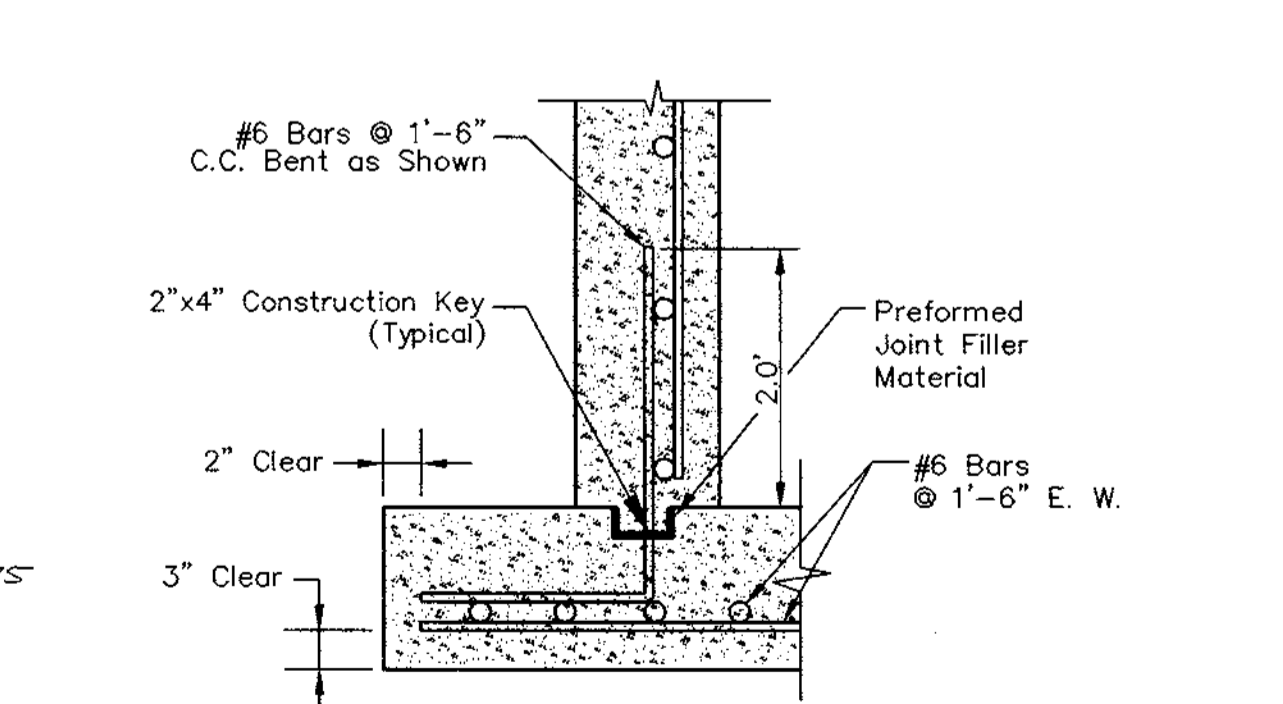
4 5



DETAIL OF CONCRETE CRADLE
N.T.S.



DETAIL C
SCALE: 1"=0.5'



WALL TO BOTTOM SLAB CONNECTION
DETAIL
N.T.S.

OWNERS & DEVELOPER
KMS ASSOCIATES
8455 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND
21043
(410) 465-2222

date	OCT. 98	engineering	FCL	approval	JBM
project	980025	illustration	FCL	scale	AS NOTED

date	5/15/00	description	revisions
no.	1	APP DETAIL	

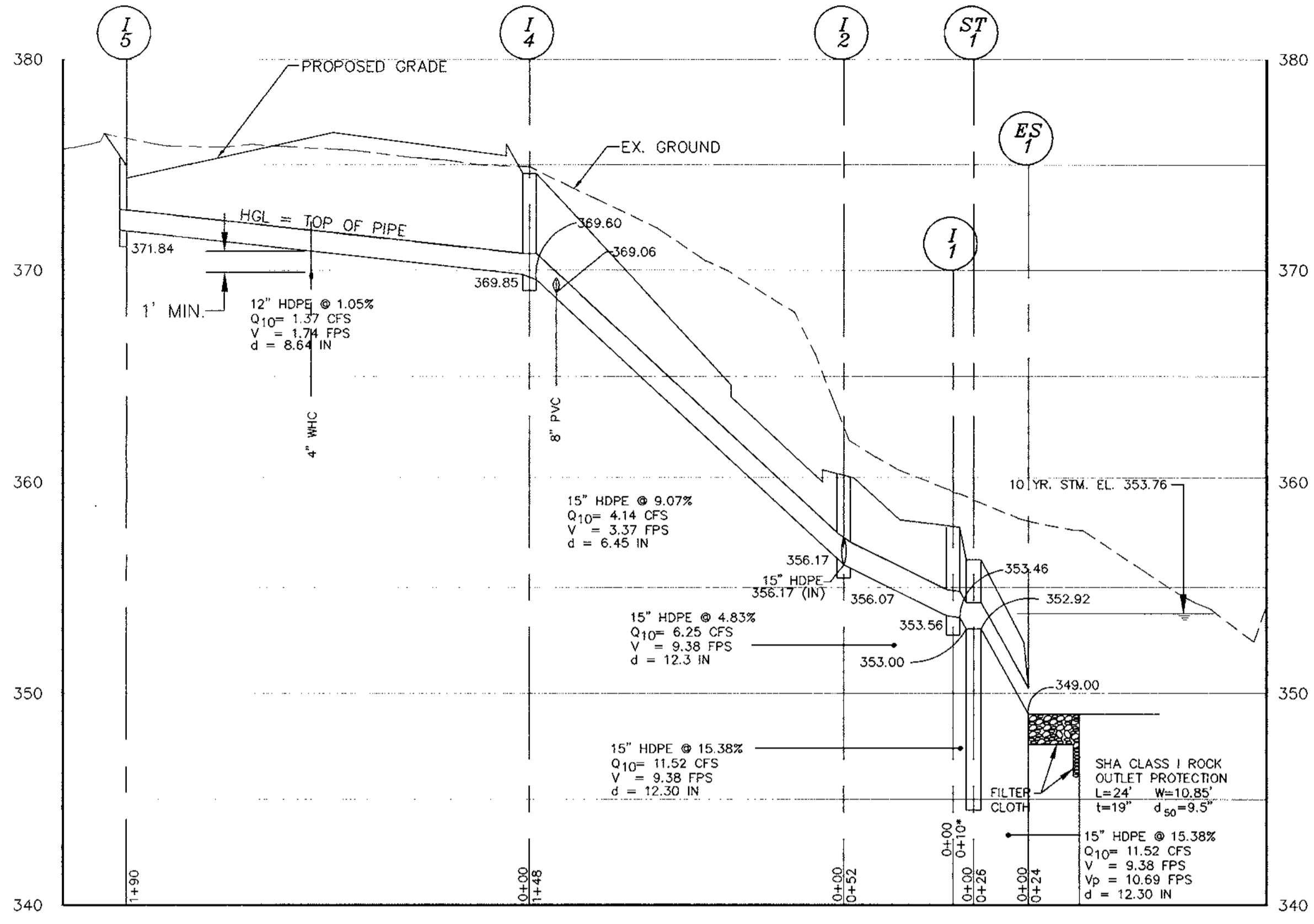
TAX MAP 24 7, PARCELS B6
KMS PROFESSIONAL BUILDING
HOWARD COUNTY, MARYLAND
2ND ELECTION DISTRICT
STORMWATER MANAGEMENT DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorssey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0286 Ext. (301) 621-5521 Wash. (410) 997-0288 Fax.

STRUCTURE SCHEDULE

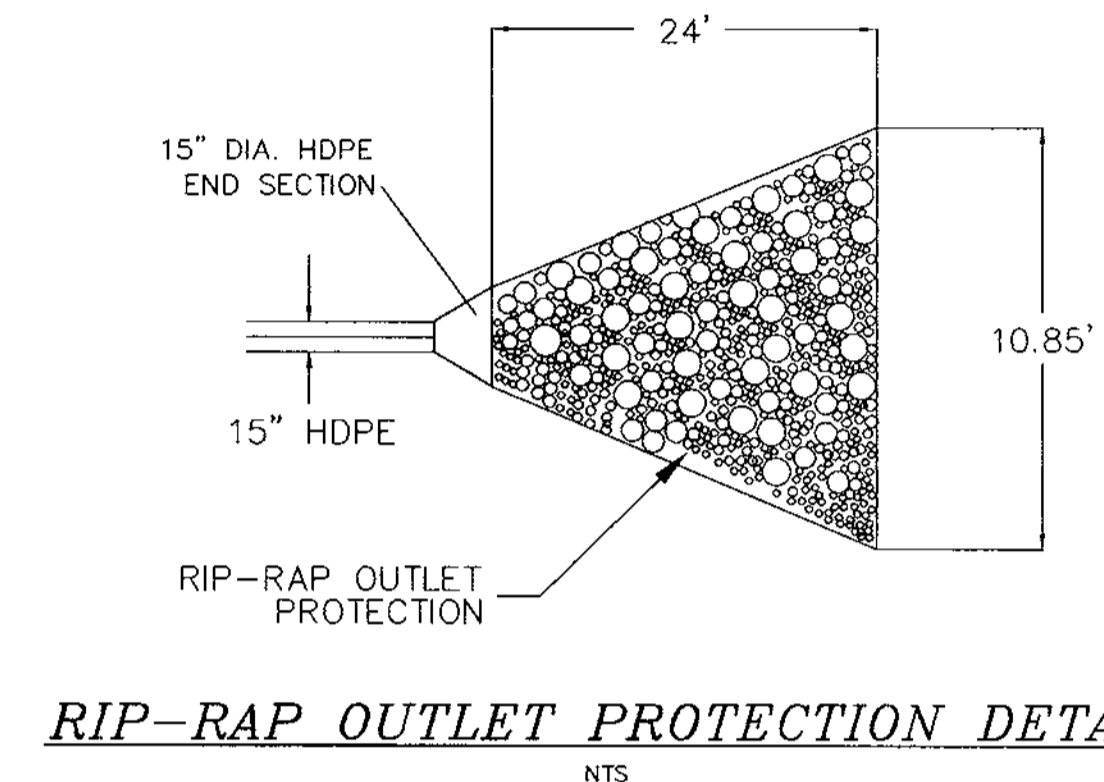
NO.	LOCATION	TOP	INV. IN	INV. OUT	COMMENTS
I-1*	N 585,579.99 E 1,362,429.66	357.81	353.56	353.46	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5' - SUMP
I-2*	N 585,631.04 E 1,362,422.11	360.10	356.17 (N & W)	356.07	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5'
I-3*	N 585,639.00 E 1,362,205.23	362.35	---	358.99	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5' - SUMP
I-4*	N 585,777.66 E 1,362,400.23	373.21	369.85	369.60	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5'
I-5*	N 585,800.97 E 1,362,209.70	374.94	---	371.84	TYPE 'A-5' INLET (HO. CO. STD. SD-4.01) W = 2.5' - SUMP
M-1	N 585,518.60 E 1,362,323.54	355.00	336.28(W) 338.28(N)	336.18(E)	STANDARD MANHOLE (HO. CO. STD. C 5.03)
ST-1	N 585,576.77 E 1,362,417.82	356.50	353.00	352.92	STC-1800 STORMCEPTOR
ES1	N 585,571.19 E 1,362,392.42	---	349.00	---	15" DIA. HDPE END SECTION
R-1	N 585,577.70 E 1,362,338.03	355.00	349.00	345.00	SEE DETAIL ON SH. 5 OF 9

* COORDINATES SHOWN ARE AT E OF INLET AT THE FACE OF CURB

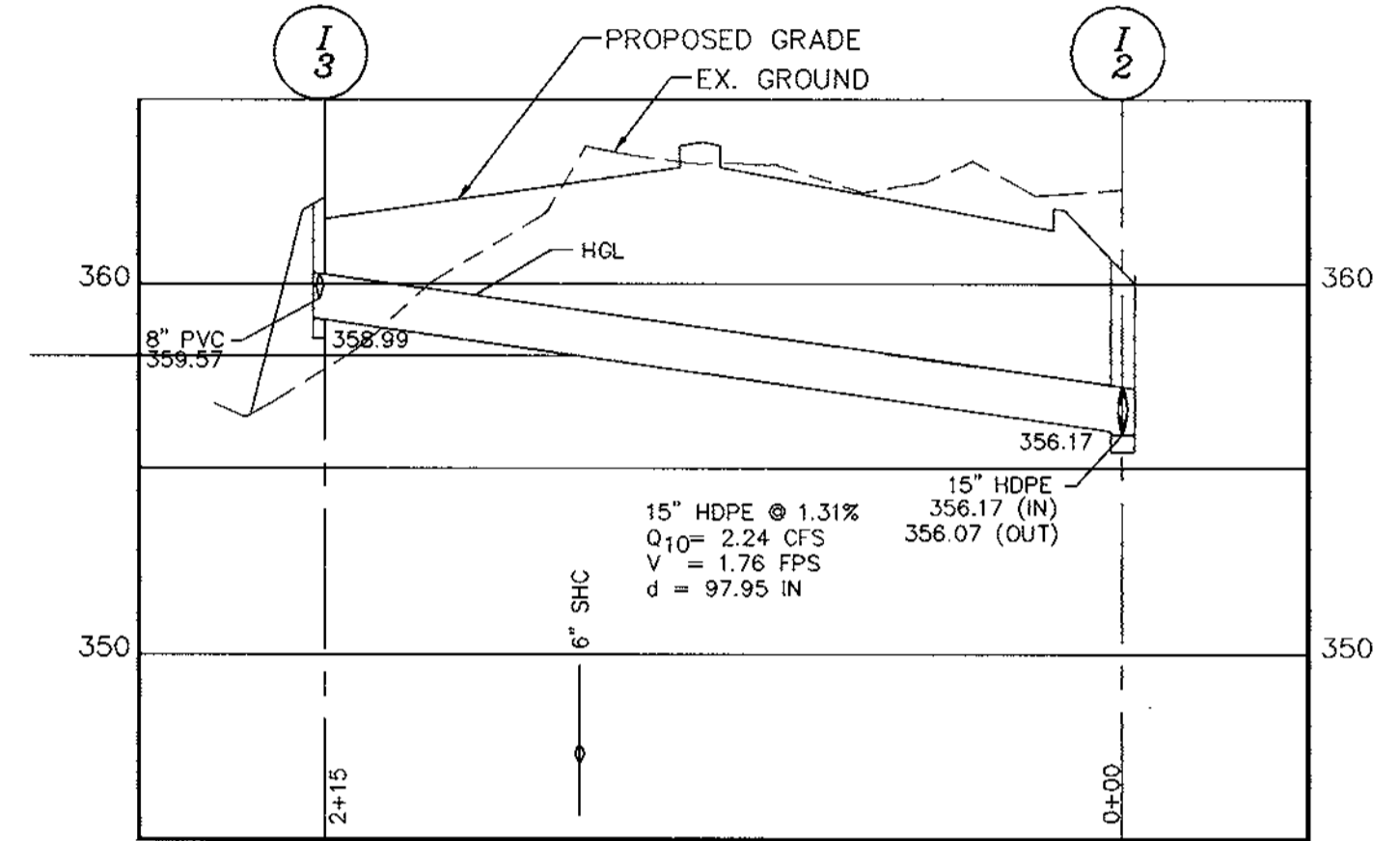


* CLEARANCE BETWEEN I-1 & ST-1 IS 4.85'

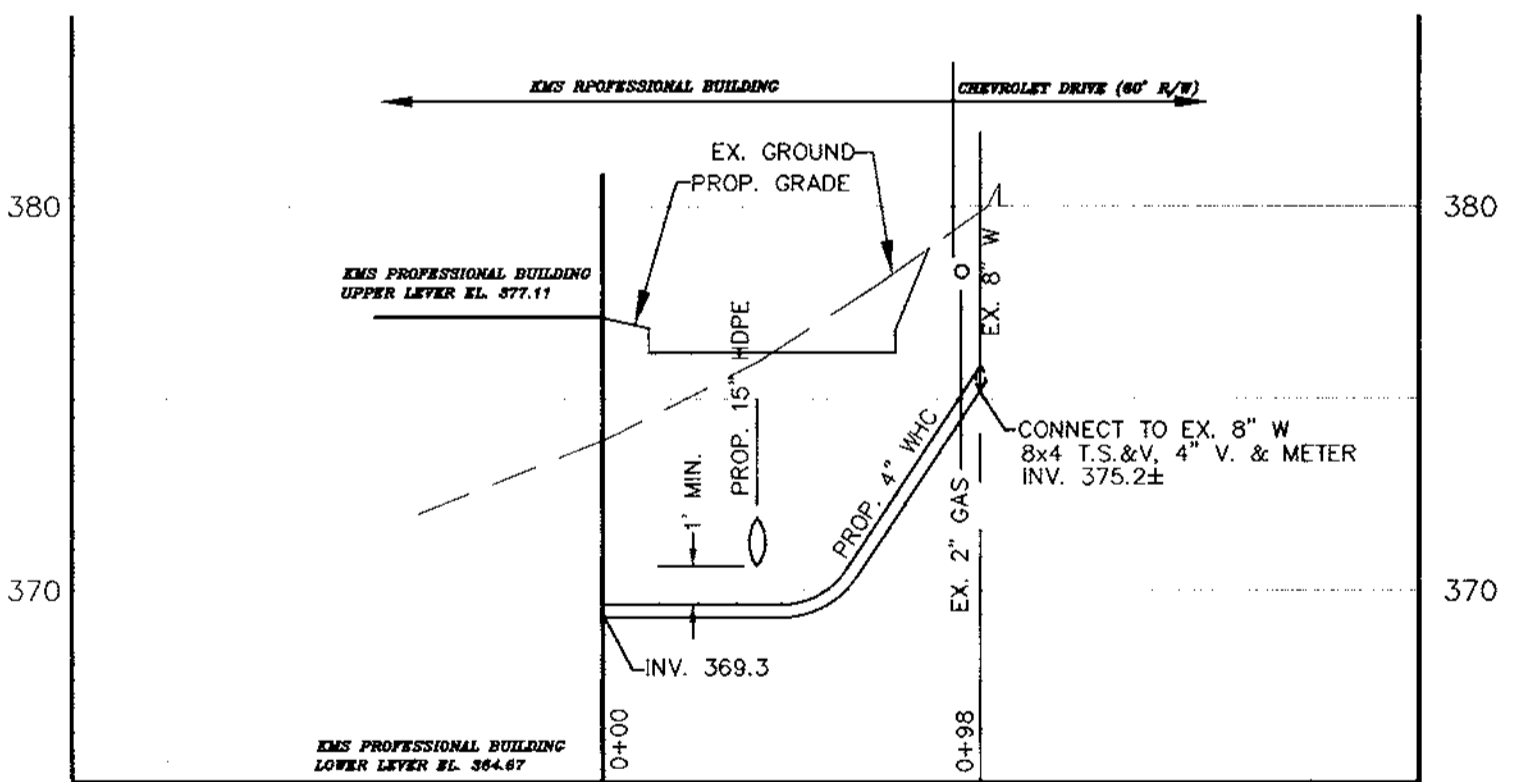
15 TO ES1
SCALE: 1" = 50' HORIZONTAL
5" = 5' VERTICAL
NOTE: HGL IS @ TOP OF PIPE.



RIP-RAP OUTLET PROTECTION DETAIL
NTS



13 TO I2
SCALE: 1" = 50' HORIZONTAL
5" = 5' VERTICAL



4" WVC
SCALE: 1" = 50' HORIZONTAL
5" = 5' VERTICAL

CSR 600 Lonsdale Road, Springfield, VA 22150 (703) 971-1900
STC 1800
 PRECAST CONCRETE STORMCEPTOR

DR. BY: EPDM
 CK. BY: RCH
 DATE: 12-18-96
 SCALE: NTS
 DWG.# CA-0225-04

GENERAL NOTES

- STORMCEPTOR SECTIONS SHALL CONFORM TO ASTM C 478, PROFILE CACKETED JAWS CONFORMING TO ASTM C 443.
- MANHOLE STEPS PROVIDED ABOVE INSET @ 10" O.C. AND SHALL BE COPOLYMER POLYPROPYLENE PLASTIC ENCAPSULATED GR. 60 STEEL.
- MINIMUM CONCRETE STRENGTH FOR 4000 PSI MINIMUM STEEL STRENGTH 50,000 PSI
- REINFORCEMENT DESIGN SHALL MEET ASTM C 478
- FLEXIBLE PIPE CONNECTIONS SHALL MEET ASTM C 923.
- HANDLING:
 - ALL RISERS SHALL HAVE 2 EA. 1/2" HOLES FOR LIFTING @ 1/3 WAY DOWN FROM SPROUT.
 - ALL LG. DAM BASE SECTIONS FLATTOPS, AND RISERS TO HAVE LIFT HOODS.
- DESIGNED FOR ASHTO H-20 LOADING.
- FIBERGLASS STORMCEPTOR INSERT REFERENCE DRAWING # CA-0225-01

PLAN
(FRAME AND COVER NOT SHOWN FOR CLARITY)

SECTION

REV.	DESCRIPTION	BY:	DATE

Order Request Form
 Precast Concrete Stormceptor

Contractor Information
 Name: UTILITIES UNLIMITED, INC.
 Address: 1271 LINDSEYWOOD RD.
 City: SYLVESVILLE, MD.
 State: 21784
 Zip Code: 21784
 Contact: JIM BARRISH
 Phone: (410) 542-1755
 Fax: (410) 442-1837

Owner Information
 Name: KMS ASSOCIATES
 Phone: (410) 545-2222
 Fax: (410) 545-2222

INTERFASIS DRAINAGE AREA FOR THIS UNIT

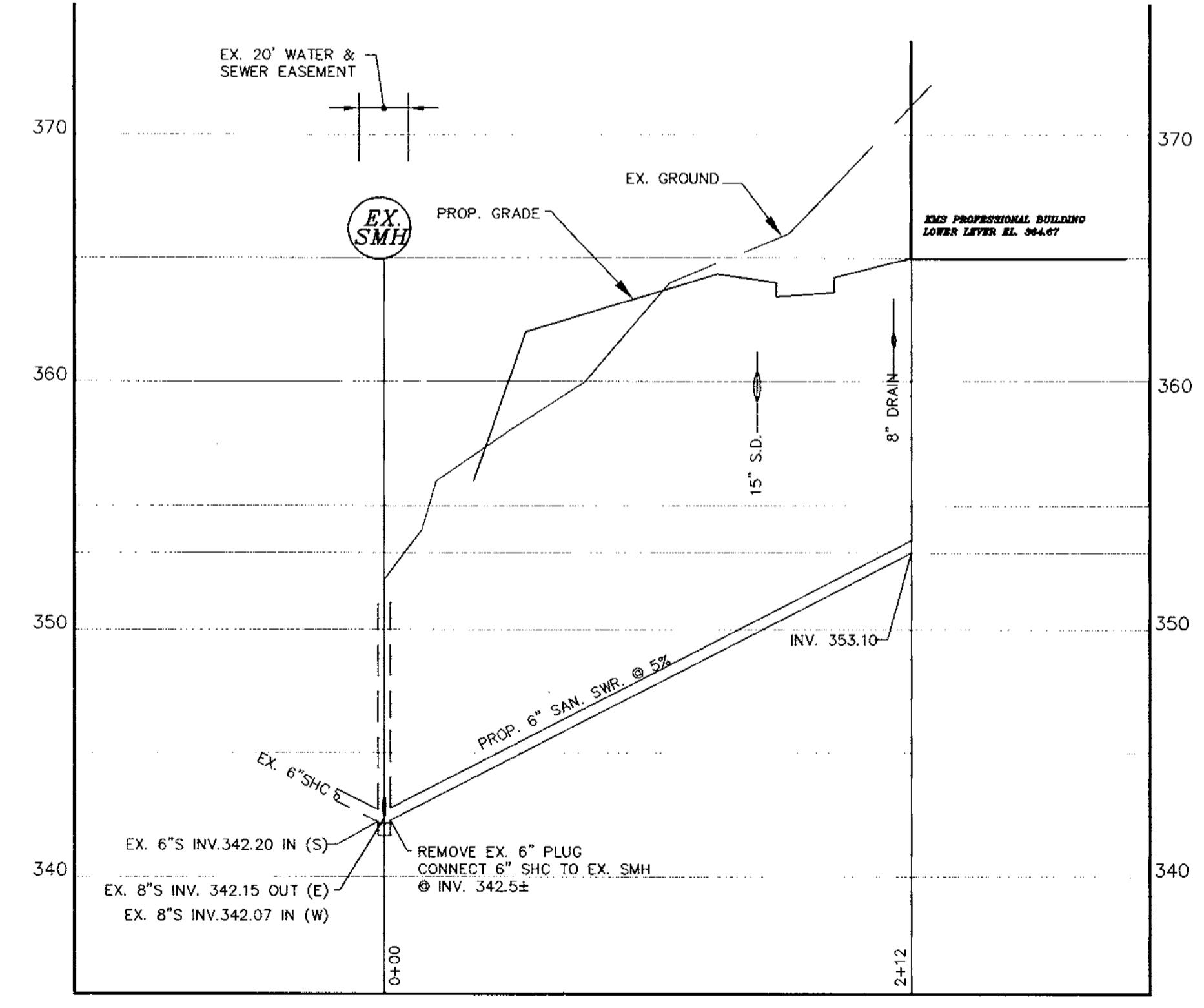
Stormceptor Model	Insert Size	Manhole Number
STC	18" U.F.	Top Elevation (ft)
900	3600	Inlet Pipe Invert (ft)
1200	4800	Outlet Pipe Invert (ft)
1800	6000	Pipe Type
2400	7200	Inlet Pipe Inside Diameter (in)
		Inlet Pipe Outside Diameter (in)
		Outlet Pipe Inside Diameter (in)
		Outlet Pipe Outside Diameter (in)

Project Name: KMS PROFESSIONAL BUILDING
 Approximate time frame of delivery (weeks):
 Delivery Address: Street: _____ State: _____ Zip Code: _____
 Designer Company: MILDENBERG, BOENDER & ASSOC., INC.
 Designer Contact: J.B.MILDENBERG Phone: 410-997-0296 Fax: _____

PLEASE FILL OUT COMPLETELY AND FAX **CSR**
 ATTN: ED O'MALLEY FAX: (703)922-3659, PHONE: (703)971-1900
 FOR TECHNICAL ASSISTANCE PLEASE CALL MIKE BARG,
 PHONE (703)971-1900

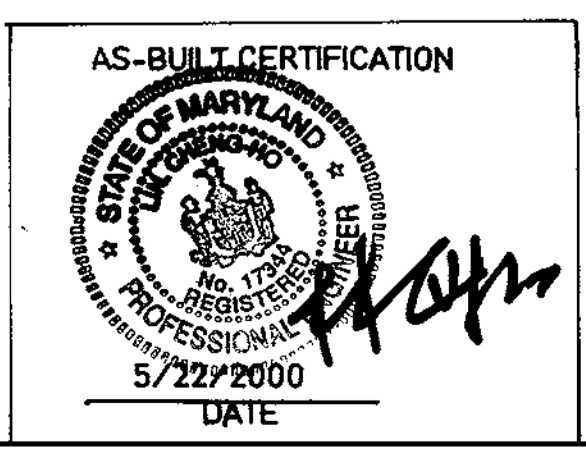
OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTOR WATER QUALITY DEVICE

- STORMCEPTOR WATER QUALITY STRUCTURES WILL REQUIRE PERIODIC INSPECTION AND CLEANING TO MAINTAIN OPERATION AND FUNCTION. OWNERS WILL HAVE THE STORMCEPTOR UNIT INSPECTED YEARLY OR AS REQUIRED BY HOWARD COUNTY. UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS CAN BE DONE BY USING A CLEAR PLEXIGLASS TUBE ("GLASS BLOCK") TO EXTRACT A WATER COLUMN SAMPLE. WHEN SEDIMENT DEPTHS EXCEED THE SPECIFIED LEVEL (TABLE 6 OF TECHNICAL MANUAL) THEN CLEANING OF THE UNIT IS REQUIRED.
- STORMCEPTOR WATER QUALITY STRUCTURES MUST BE CHECKED AND CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. CONTACT APPROPRIATE REGULATORY AGENCIES.
- MAINTENANCE OF STORMCEPTOR UNITS SHOULD BE DONE BY A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN UNIT. THE PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED.
- INLET AND OUTLET PIPES MUST BE CHECKED FOR ANY OBSTRUCTIONS AND IF ANY OBSTRUCTIONS ARE FOUND THEY MUST BE REMOVED. STRUCTURAL PARTS OF THE STORMCEPTOR WILL BE REPAIRED AS NEEDED.
- OWNER SHALL RETAIN AND MAKE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.



6" SHC
SCALE: 1" = 50' HORIZONTAL
5" = 5' VERTICAL

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature]
 CHIEF DEVELOPMENT ENGINEERING DIVISION
 [Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature]
 DATE: 2/9/99
 DATE: 2/17/99
 DATE: 2/18/99



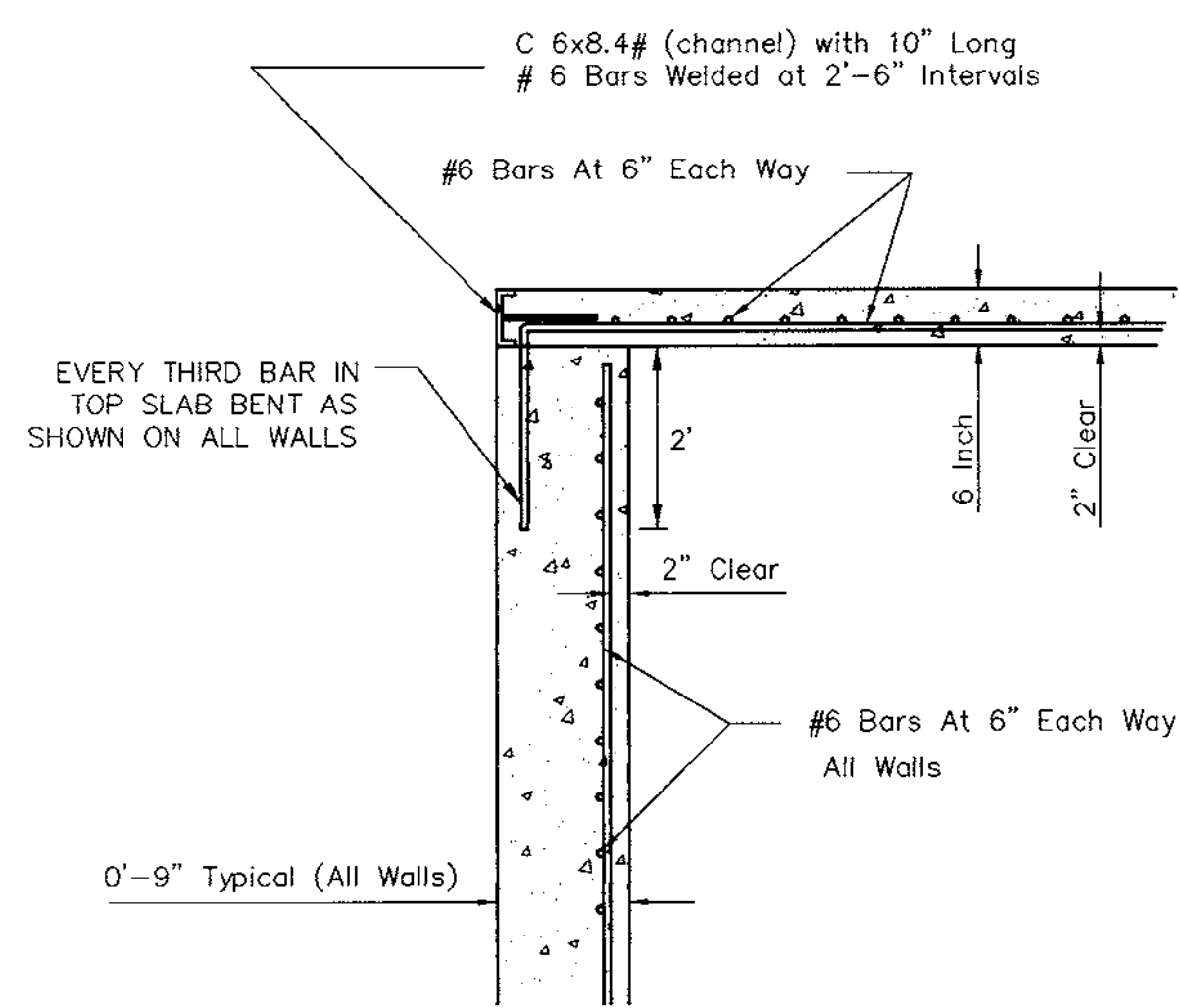
STORMCEPTOR MANHOLE S2

Project: 98025
 Illustration: FCL
 Scale: 1" = 50'
 Date: OCT. 1998
 Engineering: FCL
 Approval: JEM

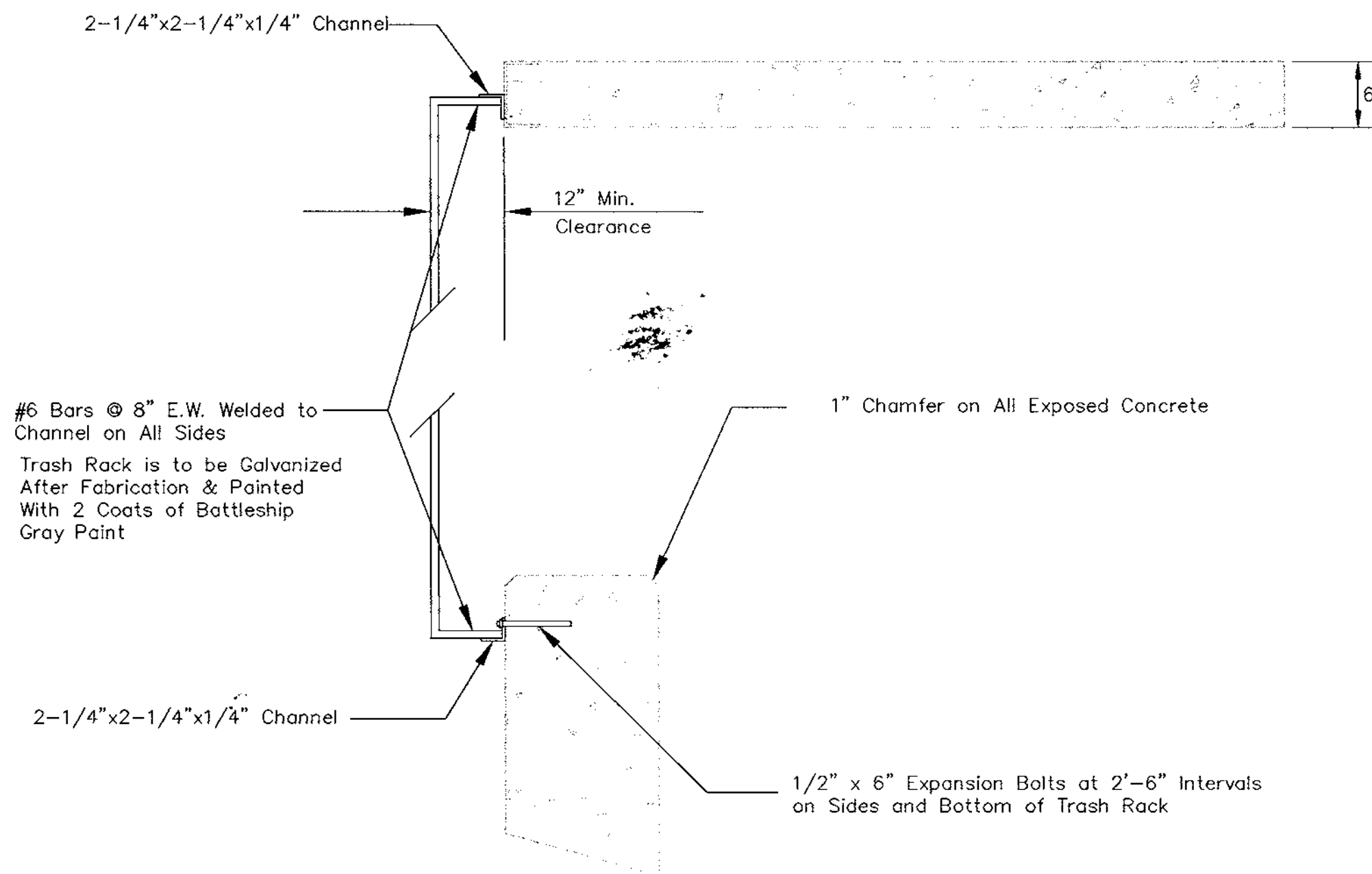
KMS PROFESSIONAL BUILDING
 TAX MAP 24, PARCELS B6
 HOWARD COUNTY, MARYLAND
 SECOND ELECTION DISTRICT
 STORM DRAIN, WATER & SEWER PROFILES
 MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax (301) 621-5521 Wash. (410) 997-0298 Fax.

OWNER/DEVELOPER
 KMS ASSOCIATES
 8455 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21043
 (410) 465-2222
 ATTN: STUART KNUDSEN

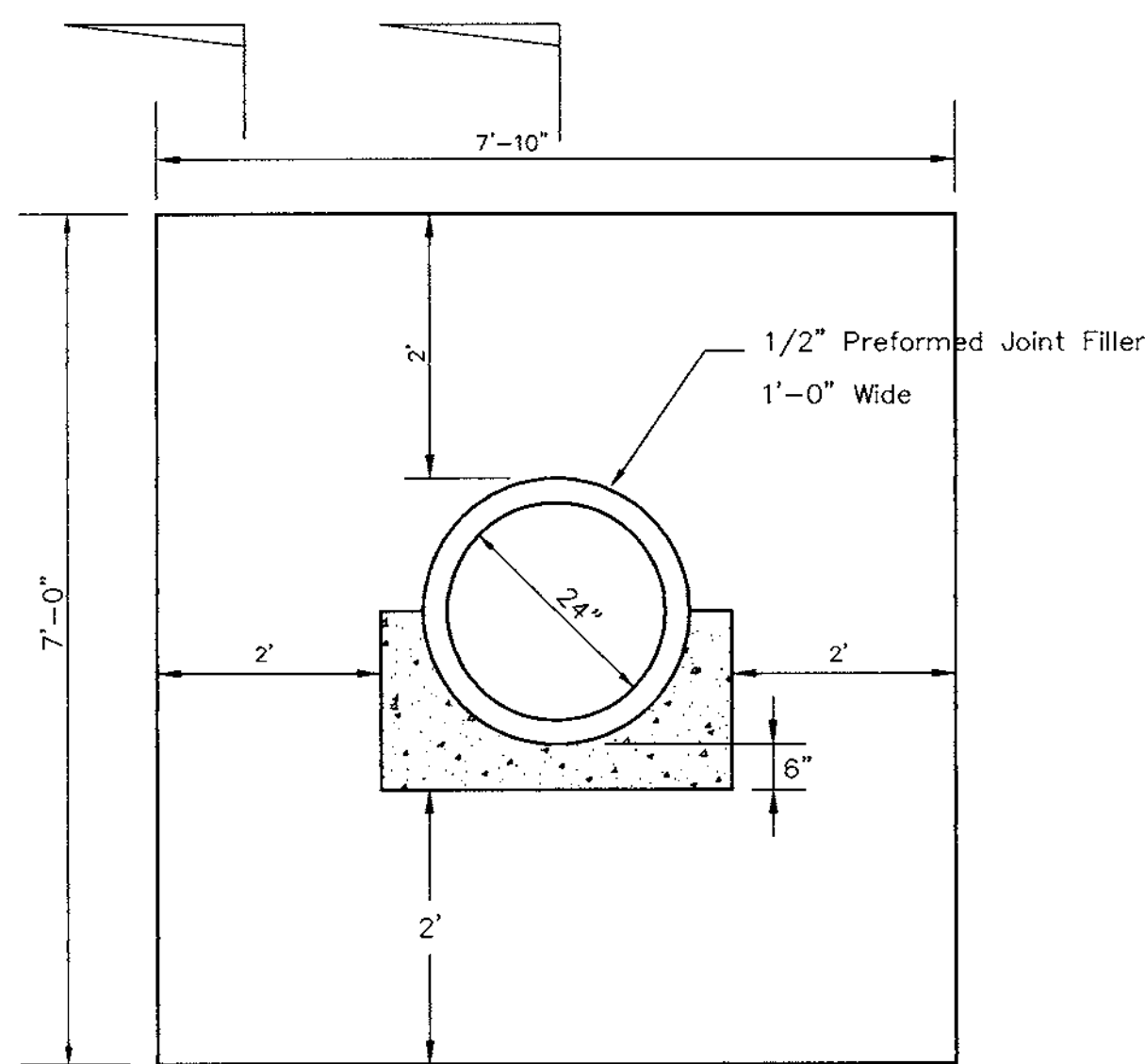
4 OF 9



DETAIL B
N.T.S.



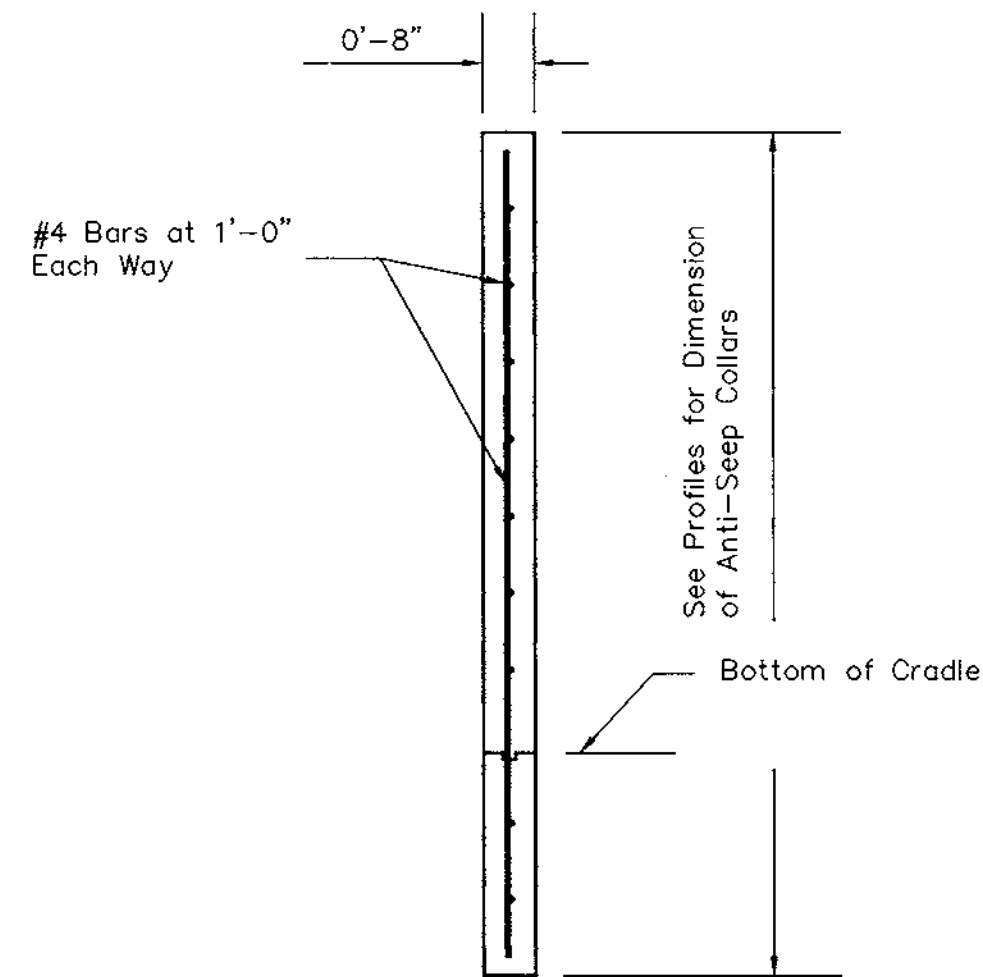
SECTION 3
N.T.S.



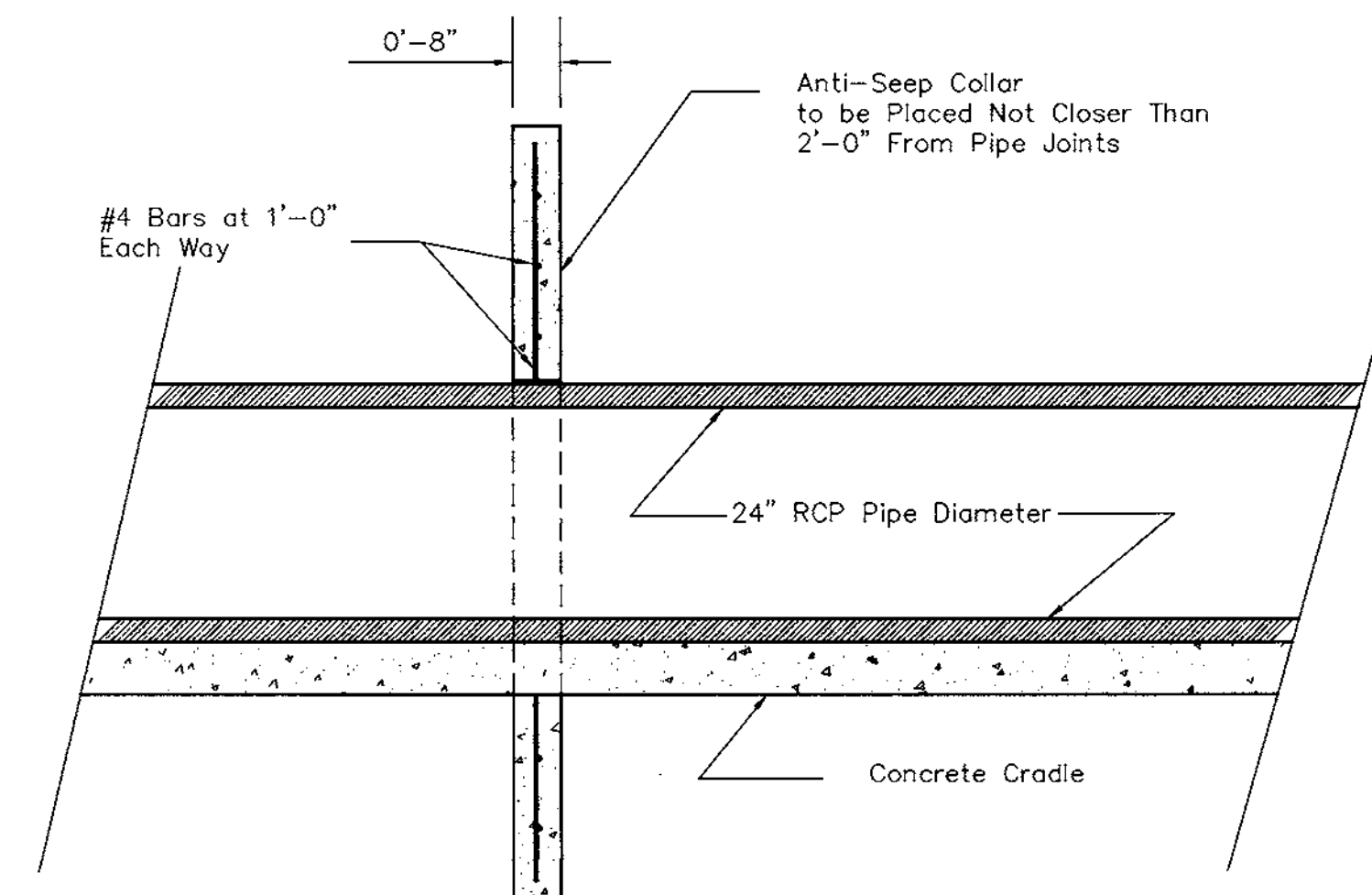
ANTI-SEEP COLLAR DETAIL

N.T.S.

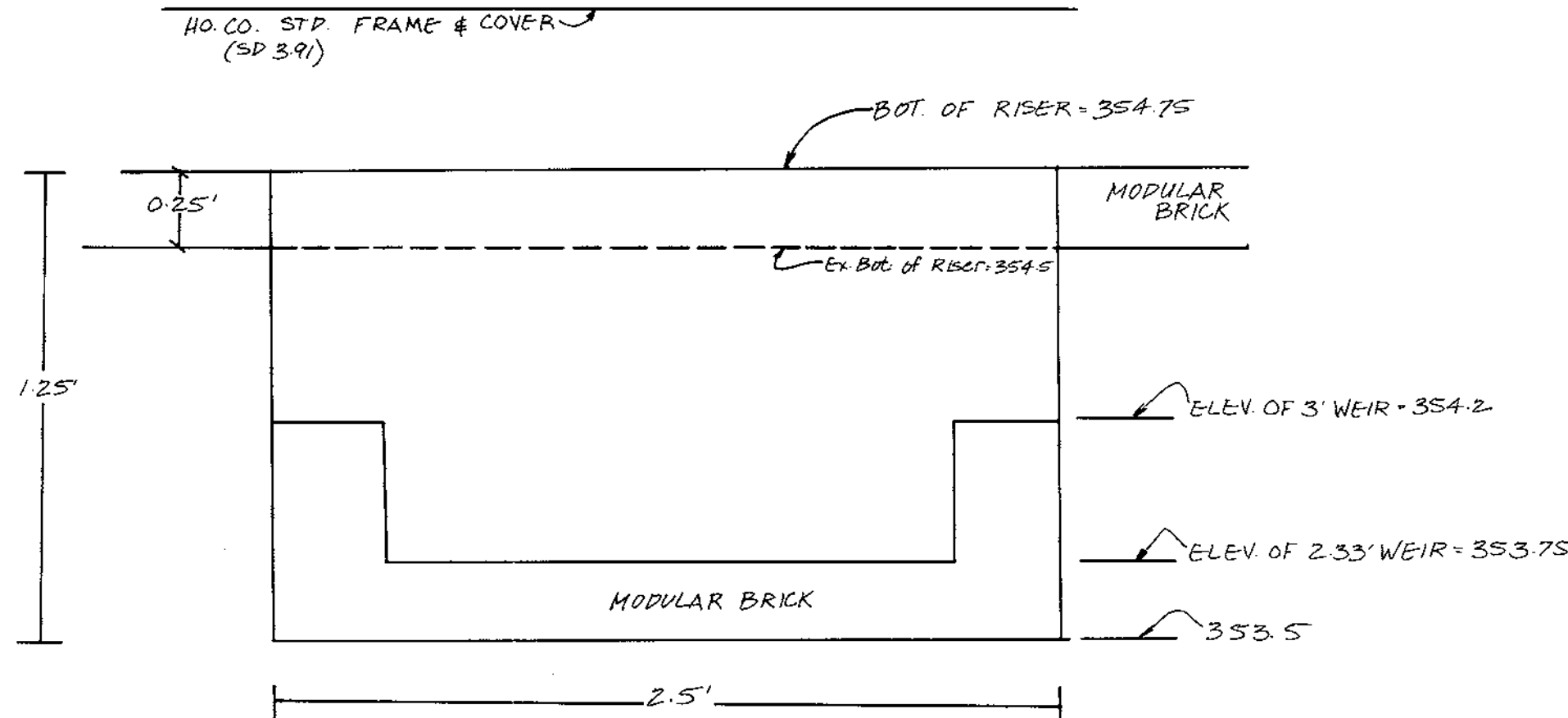
NOTE: PLACE ANTI-SEEP COLLAR 2' MIN. FROM PIPE JOINTS.



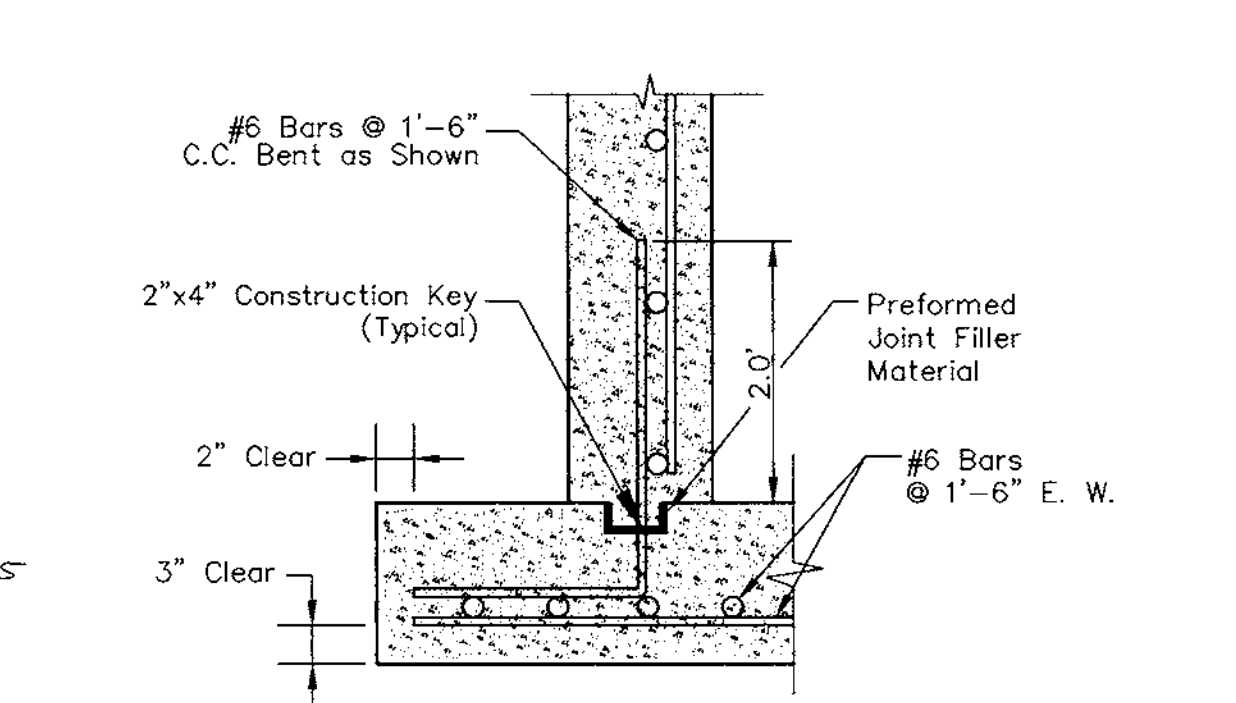
SECTION 4
N.T.S.



SECTION 5
N.T.S.



DETAIL C
SCALE: 1" = 0.5'



WALL TO BOTTOM SLAB CONNECTION DETAIL

N.T.S.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
SIGNATURE: _____ P.E. NO. _____
DATE: _____

DEVELOPER'S CERTIFICATE
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.
SIGNATURE OF DEVELOPER: *C. Stuart Knudsen* DATE: 1/26/99
PRINTED NAME OF DEVELOPER: C. STUART KNUDSEN

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PROFESSIONAL KNOWLEDGE OF THE SITE CONDITIONS AND THE APPLICABLE REGULATIONS AND STANDARDS. I AM NOT PROVIDING ANY GUARANTEE OF THE RESULTS OF THE PLAN OR THE SERVICE.
SIGNATURE OF ENGINEER: *John C. Danvers* DATE: 12/23/98
PRINTED NAME OF ENGINEER: John C. Danvers

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE: 2/5/99

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT DATE: 2/5/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 2/6/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 2/12/99
DIRECTOR DATE: 2/18/99



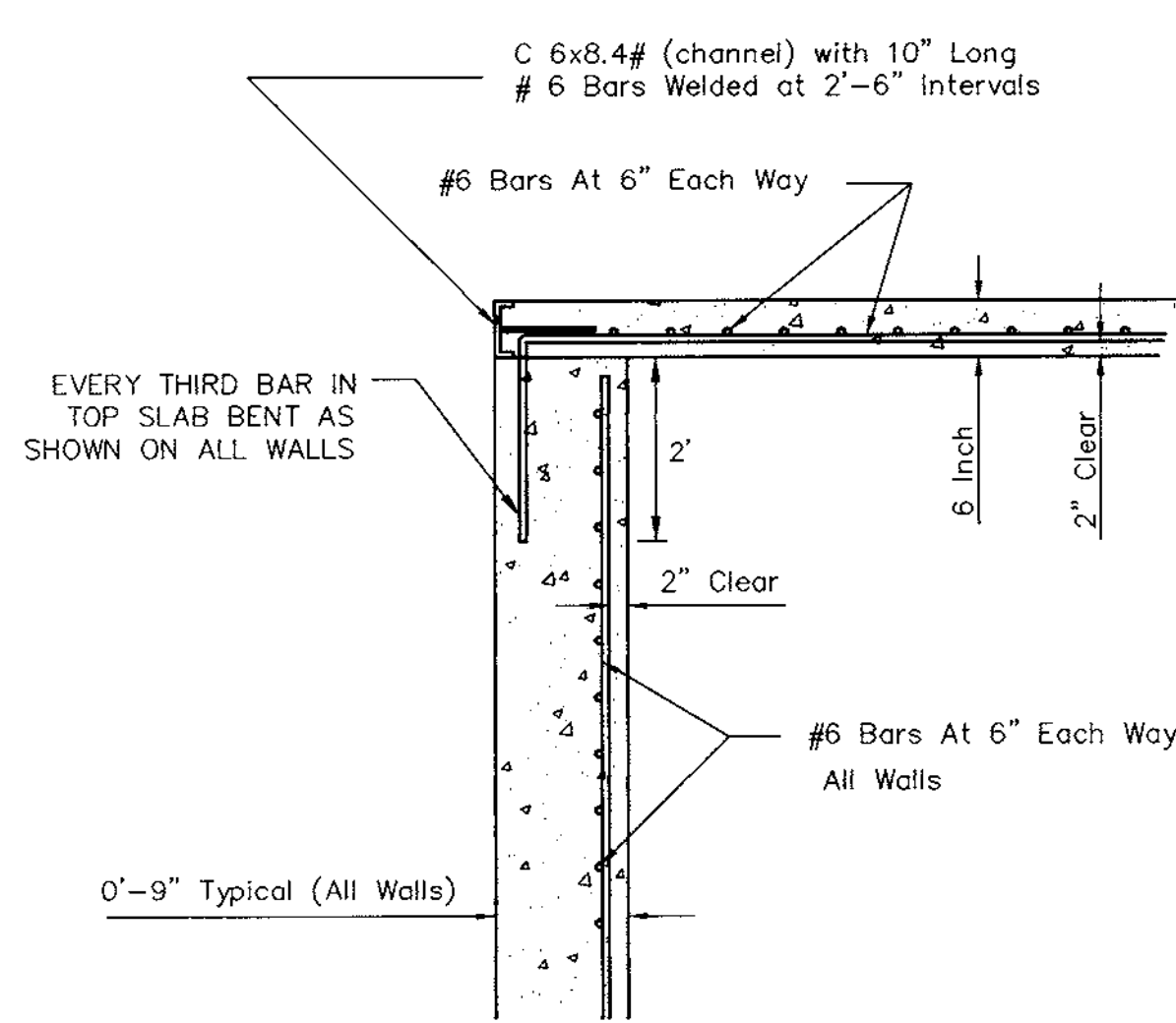
OWNERS & DEVELOPER
KMS ASSOCIATES
8455 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND
21043
(410) 463-2222

date	OCT. 98
project	98025
illustration	FCL
scale	FCL
approval	AS NOTED JBM

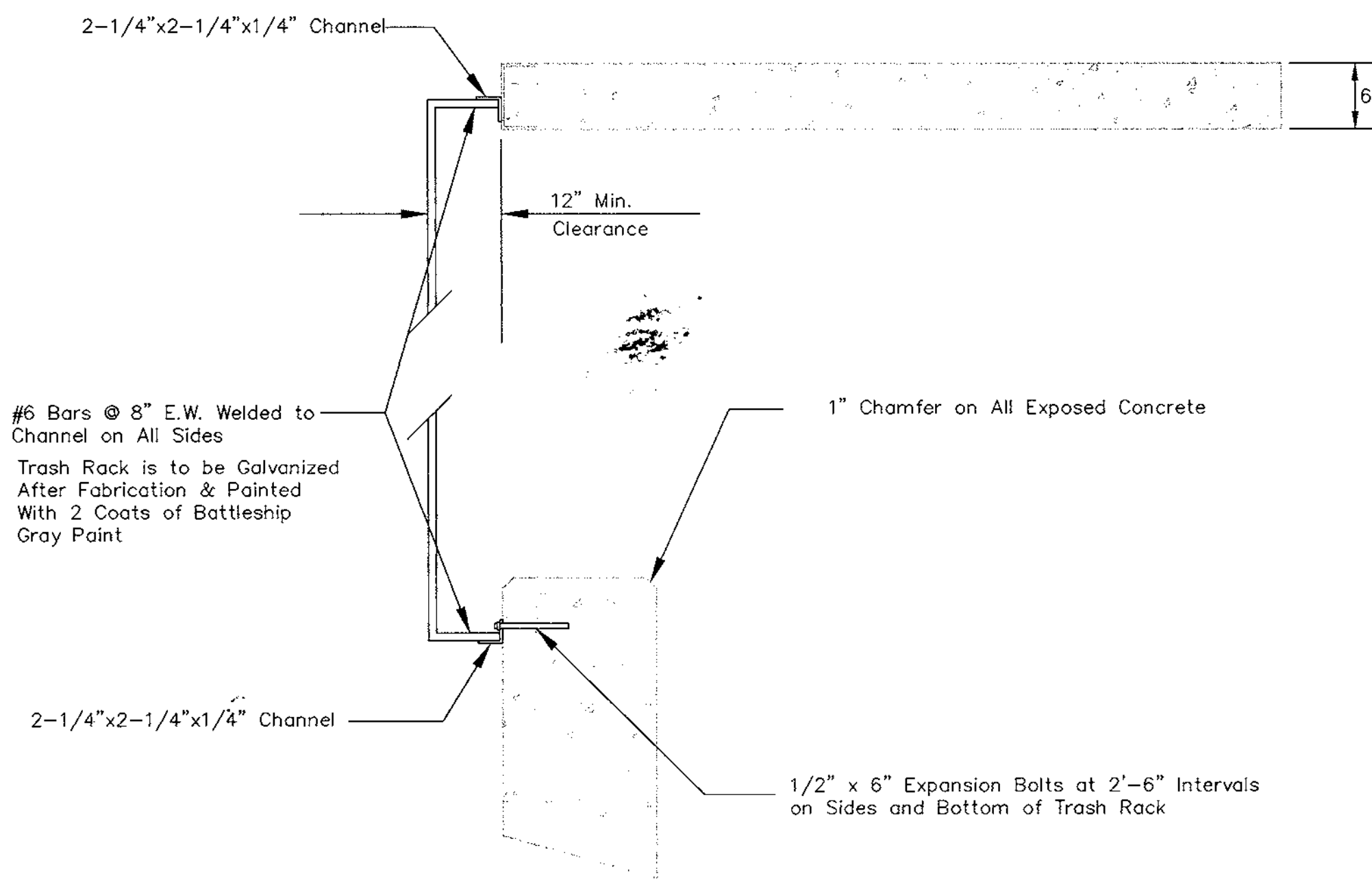
no.	1	description	APP DETAIL	date	9/15/00
revisions					

TAX MAP 24 7, PARCELS B6
KMS PROFESSIONAL BUILDING
HOWARD COUNTY, MARYLAND
2ND ELECTION DISTRICT
STORMWATER MANAGEMENT DETAILS

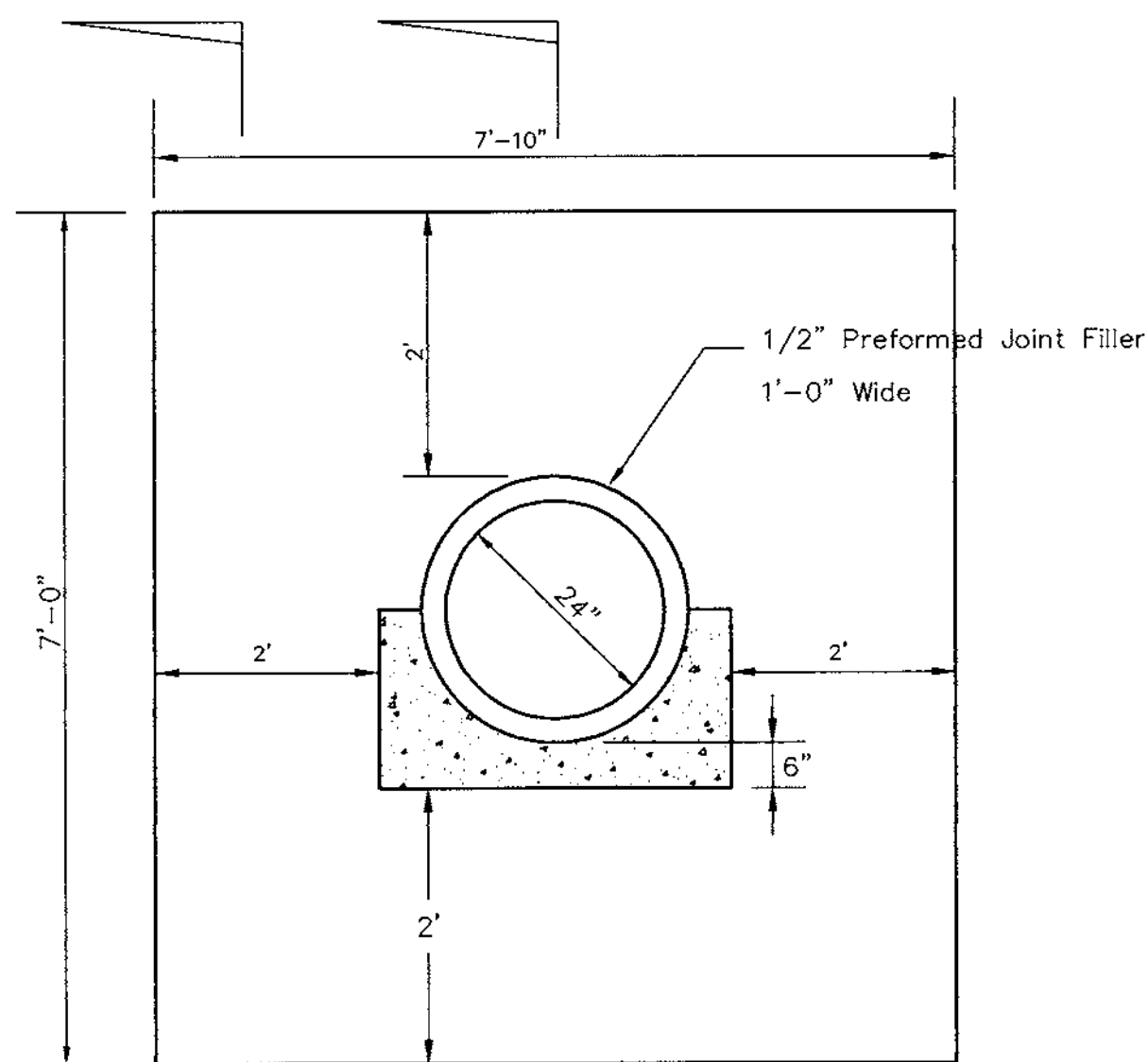
MILLENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland, 21042
(410) 997-0296 Fax, (301) 621-5521 Wash.



DETAIL B
N.T.S.

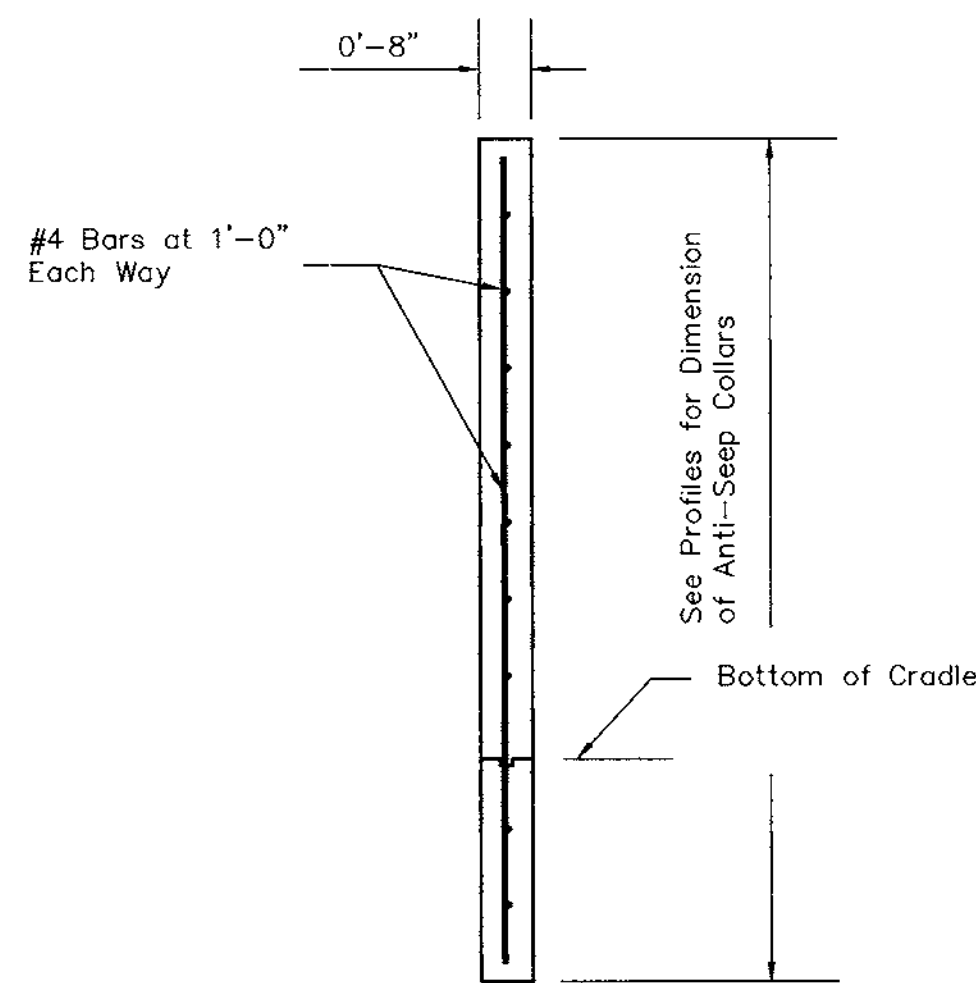


SECTION 3
N.T.S.

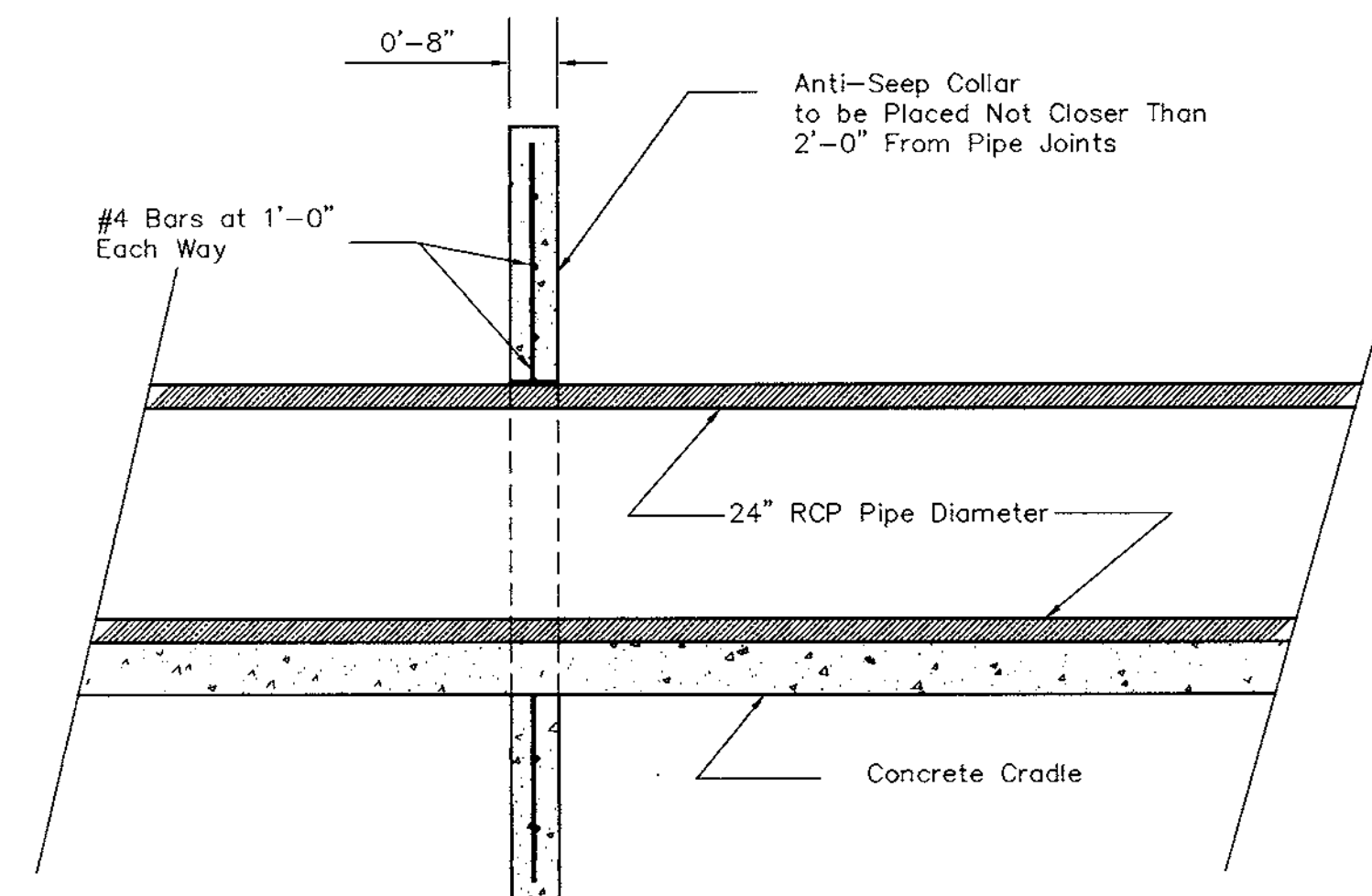


ANTI-SEEP COLLAR DETAIL
N.T.S.

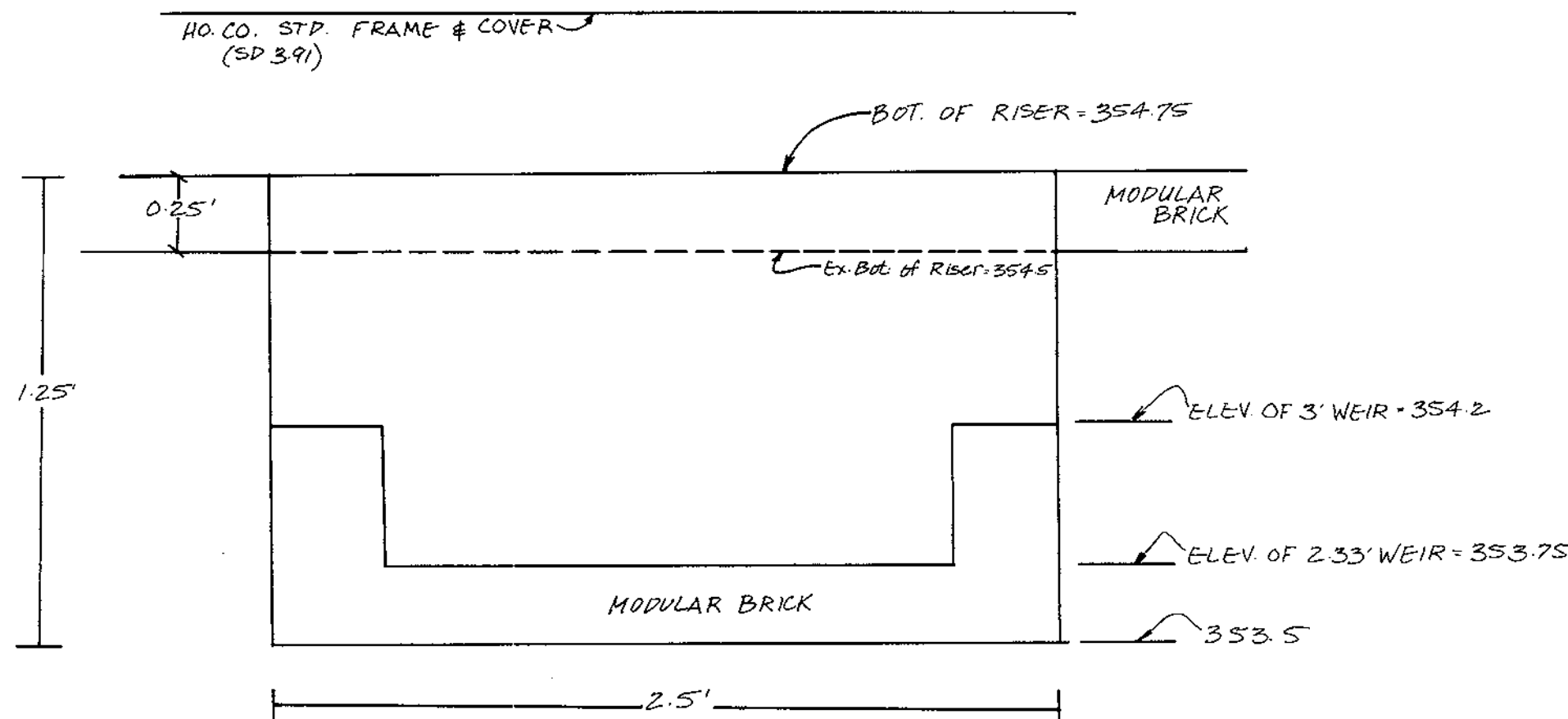
NOTE: PLACE ANTI-SEEP COLLAR 2' MIN. FROM PIPE JOINTS.



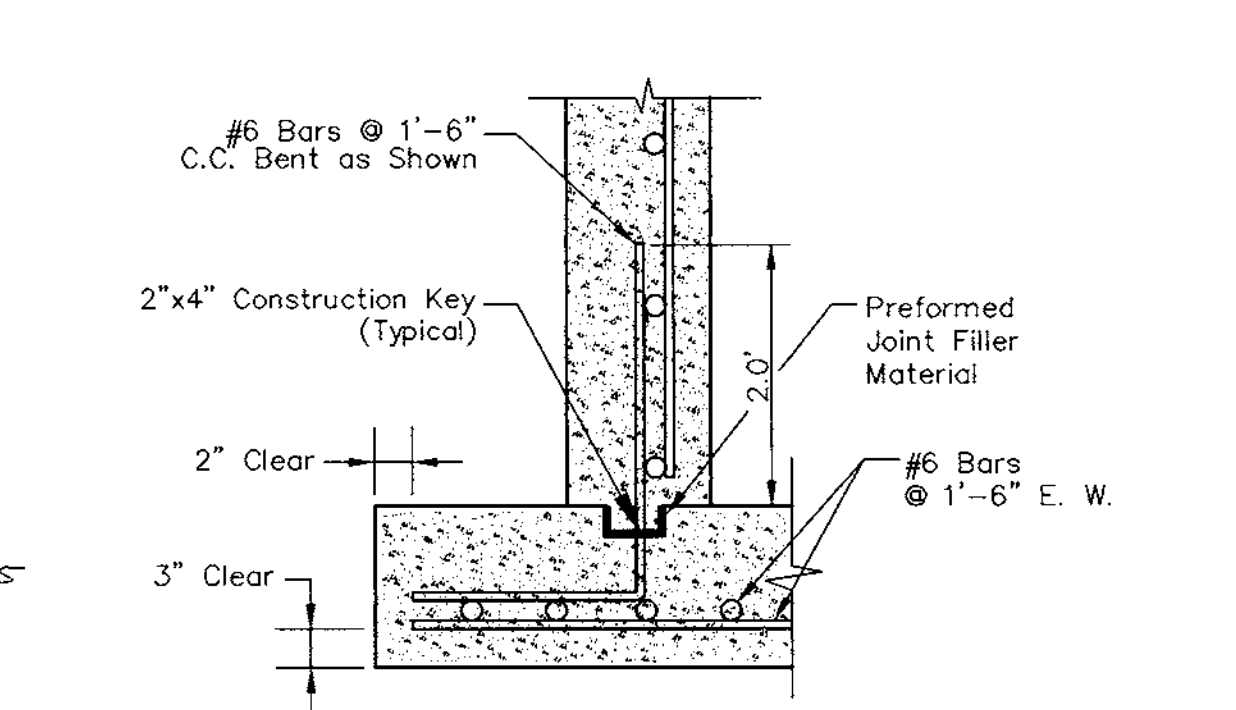
SECTION 4
N.T.S.



SECTION 5
N.T.S.



DETAIL C
SCALE: 1" = 0.5'



WALL TO BOTTOM SLAB CONNECTION
N.T.S.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE: _____ P.E. NO. _____
DATE: _____

CERTIFY MEANS TO START OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUITABLE AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER'S WORK DOES AND ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

DEVELOPER'S CERTIFICATE
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF DEVELOPER: *C. Stuart Knudsen* 1/26/99
DATE

PRINTED NAME OF DEVELOPER: **C. STUART KNUDSEN**

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED UPON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THE BEST AVAILABLE INFORMATION IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF ENGINEER: *John C. Knudsen* 1/26/99
DATE

PRINTED NAME OF ENGINEER: **John C. Knudsen**

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCE CONSERVATION SERVICE
DATE: 2/5/99

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

HOWARD SOIL CONSERVATION DISTRICT
DATE: 2/5/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 2/17/99

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 2/18/99

DIRECTOR
DATE: 2/18/99



OWNERS & DEVELOPER
KMS ASSOCIATES
8455 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND
21043
(410) 465-2222

date	OCT. 98
project	98025
illustration	engineering
FCL	FCL
scale	AS NOTED
approval	JBM

no.	1	APP DETAIL	description	revisions
date	5/15/00			

TAX MAP 24 7, PARCELS B6
KMS PROFESSIONAL BUILDING
HOWARD COUNTY, MARYLAND
2ND ELECTION DISTRICT
STORMWATER MANAGEMENT DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsy Hill Drive, Suite 202, Ellicott City, Maryland, 21042
(410) 987-0298 Fax. (301) 621-5521 Wash.