

SHEET INDEX

1. COVER SHEET
2. OPEN SPACE PATHWAY LAYOUT
3. SEDIMENT CONTROL & CONSTRUCTION DETAIL SHEET
4. BRIDGE DETAIL SHEET.

OAKLAND RIDGE INDUSTRIAL PARK OPEN SPACE MASTER PLAN

COLUMBIA PARK AND RECREATION ASSOCIATION

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE SYSTEMS, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS.
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
James G. [Signature] 4/1/92
DIRECTOR DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
James G. [Signature] 4/1/92
CHIEF, BUREAU OF ENGINEERING DATE

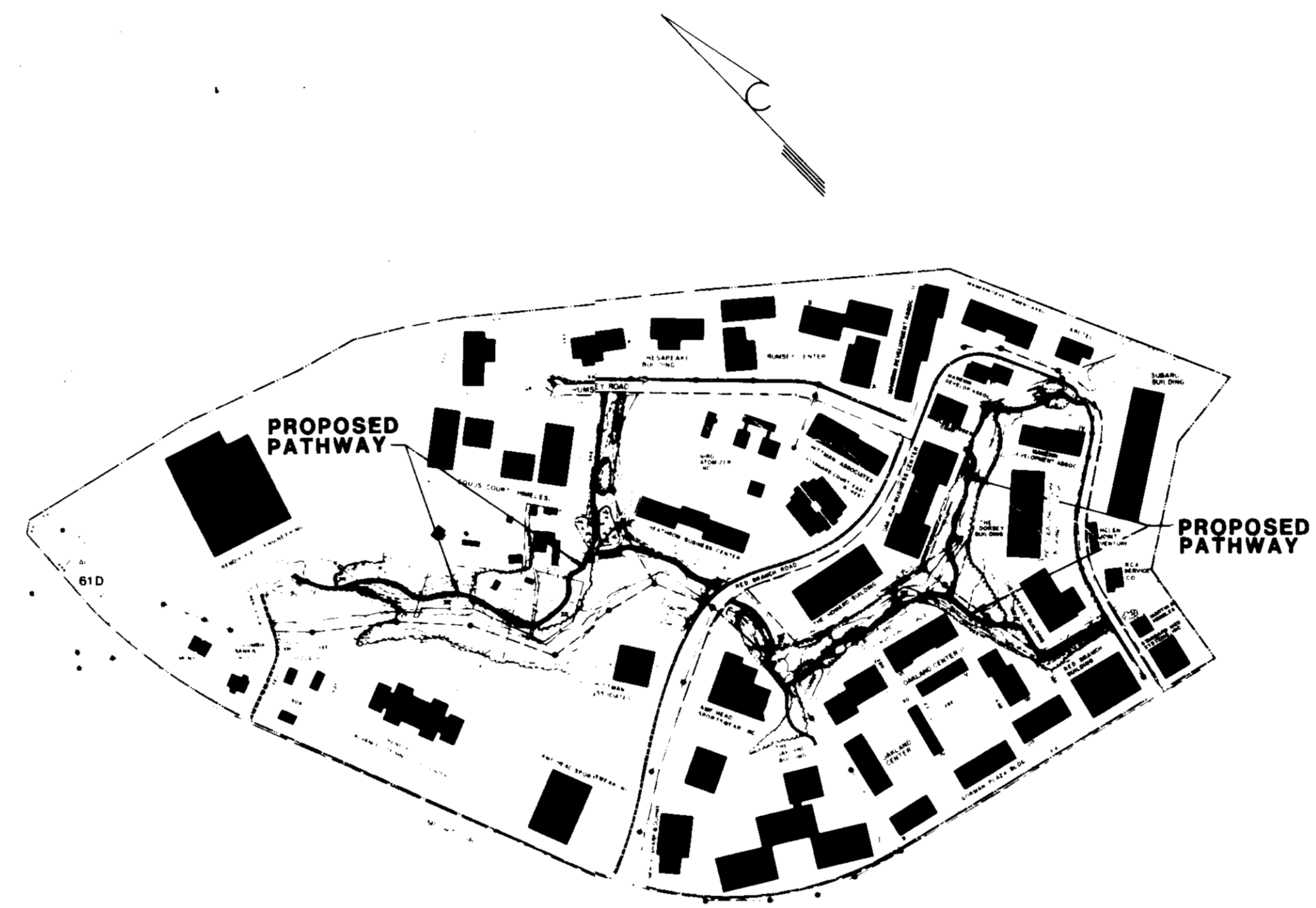
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
James G. [Signature] 4/14/92
DIRECTOR DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Anna J. [Signature] 4/10/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
James M. [Signature] 4/6/92
COUNTY HEALTH DEPARTMENT DATE

APPROVED
PLANNING
DATE: 6-25-91
[Signature]

- GENERAL NOTES
1. TOPOGRAPHY SHOWN ON THIS DRAWING HAS BEEN TRACED FROM TOPOGRAPHIC SURVEYS AND MAPS PREPARED BY HOWARD COUNTY. THE OWNER OR ARCHITECT DO NOT IN ANY WAY GUARANTEE THE INFORMATION SHOWN HEREON, NOR DOES ANY INFORMATION SHOWN OR LACK THEREOF RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR CORRECT AND PROPER COMPLETION OF GRADING.
 2. ALL TREES 12" IN DIAMETER OR GREATER SHALL REMAIN PROTECTED AND UNDAMAGED AT ALL TIMES.
 3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
 4. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE CIVIL ENGINEER MAY CAUSE THE WORK TO BE UNACCEPTABLE.
 5. ADJUSTMENTS TO THE SEQUENCE OF CONSTRUCTION SHALL BE APPROVED BY THE HOWARD COUNTY SEDIMENT CONTROL DIVISION PRIOR TO SUCH ADJUSTMENTS.
 6. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
 7. THE CONTRACTOR SHALL COMPLY WITH SEDIMENT CONTROL NOTES AS DOCUMENTED ON THESE PLANS.
 8. EXISTING UTILITIES ARE NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR LOCATIONS AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF CONSTRUCTION.
 9. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS.
"MILL UTILITY" 1-(800) 257-7777
BALTIMORE GAS & ELECTRIC COMPANY (301) 234-5691
A & P TELEPHONE COMPANY (301) 393-3648
 10. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NOT BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM SUCH WORK.
 11. THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS FOR CONSTRUCTION.
 12. ALL UTILITIES ARE TO BE RETAINED UNLESS MARKED OTHERWISE AND APPURTENANCES ARE TO BE ADJUSTED TO FINISHED GRADE.
 13. THE CONTRACTOR SHALL REPAIR AND MAINTAIN EXISTING SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN THE LIMIT OF CONSTRUCTION ARE STABILIZED. AT THAT POINT, ALL SEDIMENT CONTROL DEVICES SHALL BE REMOVED AND AREAS RESTORED AND STABILIZED PER APPROVAL BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 14. THE MEASURES REQUIRED IN THE APPROVED SEDIMENT CONTROL PLAN SHALL APPLY AS IF SHOWN ON ALL PLANS.
 15. THE CONTRACTOR SHALL CONTACT THE CONSTRUCTION INSPECTION SURVEY DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT 992-2417 OR 992-2418.
 16. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ON OR ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
 17. PRIOR TO START OF ANY CONSTRUCTION, CONTRACTOR SHALL STAKEOUT ALL CONSTRUCTION AND VERIFY ALL OFFSETS, SETBACKS, EXISTING UTILITY LOCATIONS (HORIZONTAL AND VERTICAL) AND DIMENSIONS.
 18. CONTRACTOR SHALL USE DIMENSIONS SHOWN. SCALING OF THESE PLANS IS DISCOURAGED UNLESS DIRECTED BY CIVIL ENGINEER.
 19. THE CONTRACTOR SHALL TEST FIT EXISTING UTILITIES, WHERE DIRECTED BY THE ENGINEER, A MINIMUM OF TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS.
 20. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
 21. THE DEVELOPER MUST REQUEST THAT THE DEPARTMENT OF INSPECTIONS AND PERMITS APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT, AND THE ORDINANCE.
 22. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE DEPARTMENT OF INSPECTIONS AND PERMITS SHALL BE REQUIRED ON 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 THE INITIAL APPROVAL BY THE DEPARTMENT OF INSPECTIONS AND PERMITS IS GIVEN.
 23. APPROVAL SHALL BE REQUESTED ON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES BEFORE REMOVAL OF CONTROLS.
 24. ANY DAMAGE TO COUNTY RIGHTS-OF-WAY AND PAVING OF PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY SPECIFICATIONS AND STANDARDS.
 25. ALL FILL SHALL BE ROLLED TO A MINIMUM DEGREE OF COMPACTION OF 95% OF THE DRY UNIT WEIGHT AS DETERMINED BY ASTM D-698.
 26. ALL CONCRETTE FOR SITE WORK SHALL BE CLASS 2 CONCRETE AND SHALL BE IN ACCORDANCE WITH THE MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS AS AMENDED TO DATE.
 27. STRUCTURES NOTED FOR REMOVAL SHALL BE REMOVED ENTIRELY AND COMPLETELY. REMOVAL OF UTILITIES OR MATERIALS THAT ARE BELOW GRADE SHALL HAVE THE SURFACE ABOVE RESTORED TO MATCH ADJACENT GRADES.
 28. ALL DISTURBED AREAS SHALL BE STABILIZED WITH PERMANENT SEED AND MULCH IN ACCORDANCE WITH THE HOWARD COUNTY SPECIFICATIONS AND STANDARDS.
 29. THE DEVELOPER MUST OBTAIN APPROVAL OF WAIVER WP-91-173 ON JUNE 5, 1991 FROM THE HOWARD COUNTY BOARD OF ZONING AND LAND DEVELOPMENT REGULATIONS, SECTION 11-111(b). THIS WAIVER IS FOR PERFORMING PATHWAY CONSTRUCTION WITHIN WETLANDS, WETLAND BUFFERS, AND STREAM BUFFERS.
 30. IN CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLAND OR STREAM BUFFERS EXCEPT AS APPROVED PER WAIVER PETITION, WP 91-173.
 31. APPROVE DEPARTMENT OF PLANNING AND ZONING FILES: F-91-100, FDP-36A, WP-91-91, FDP-88-36, SDP-88-36, SDP-88-37, SDP-88-38, F-90-120, SDP-90-176, FDP-90-111, FDP-3, FDP-1, FDP-36, SDP-91-77, F-79-117, SDP-80-133, SDP-88-39, SDP-89-74, SDP-81-306, SDP-83-78.
 32. A SEDIMENT AND EROSION CONTROL SHALL BE IN ACCORDANCE WITH THE AGREEMENT MADE BETWEEN COLUMBIA ASSOCIATION AND HCD DATED 3/27/87, AS AMENDED MAY 1991.
 33. A WAIVER HAS BEEN OBTAINED FOR STORMWATER MANAGEMENT QUANTITY AND QUALITY CONTROL.
 34. PERMIT NO. 89-02 NO. 16371404 REC # 89-2619-31 DNR REF # 89-MC-0940
 35. PATHWAY USE RESTRICTIONS: NO MOTORIZED VEHICLES. HOWARD COUNTY POLICE TO PROVIDE ENFORCEMENT.



MASTER PLAN
SCALE: 1"=600'

GENERAL PLAN NOTE:

THESE PLANS WERE PREPARED FOR PATHWAY CONSTRUCTION ONLY. THESE PLANS WERE PREPARED FOR THE COLUMBIA PARK AND RECREATION ASSOCIATION. ALL SITE PLAN REQUIREMENTS WERE BASED ON PREVIOUS MEETINGS AND AGREEMENTS AS DOCUMENTED PER THE ENCLOSED CORRESPONDENCE. PLEASE CONTACT THE HOWARD COUNTY DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT FOR MODIFICATIONS TO THE STANDARD S.D.P. PROCESS FOR C.A.'s PATHWAYS.

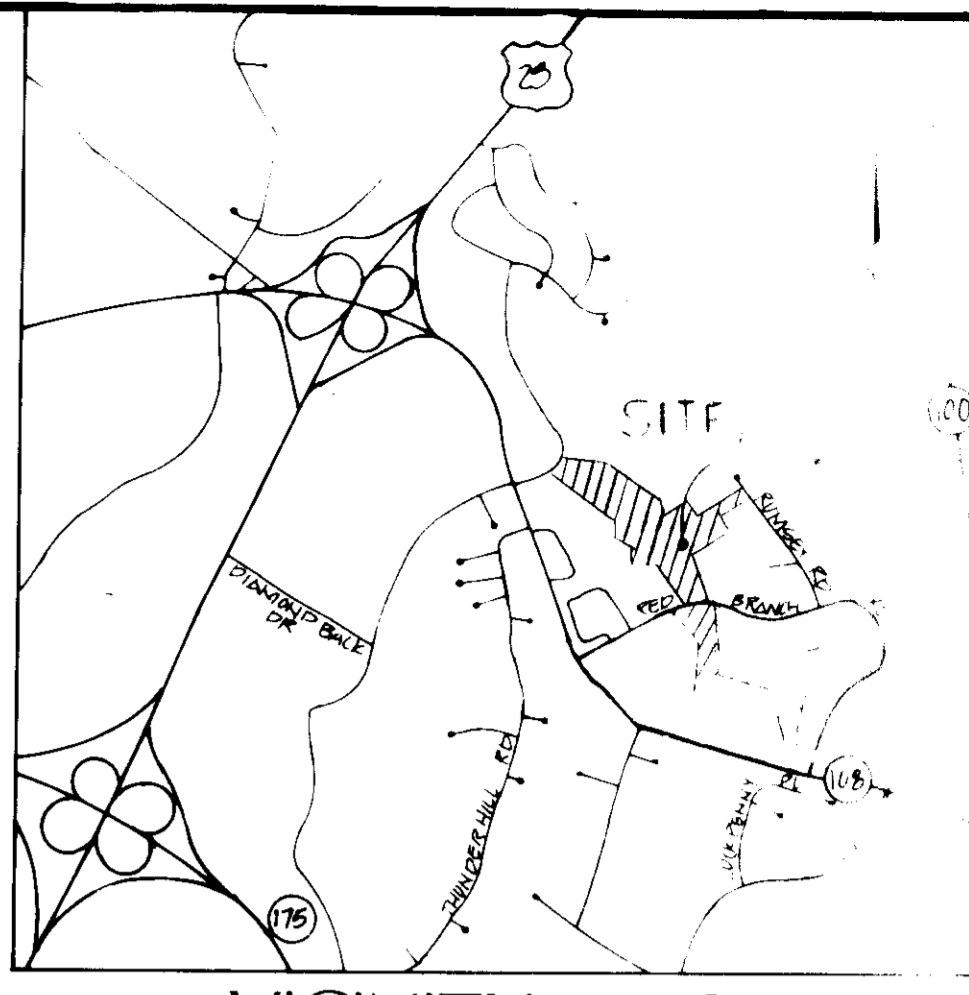
OWNER/DEVELOPER		
COLUMBIA PARK & RECREATION ASSOCIATION 9861 BROKEN LAND PARKWAY SUITE 300 COLUMBIA, MD. 21046 PHONE: (301) 381-0020		
ADDRESS CHART		
BUILDING	STREET	ADDRESS
	9100 Red Branch Road	
SUBDIVISION NAME		
OAKLAND RIDGE INDUSTRIAL PARK		
PLAT	BLOCK	ZONE/TAX/ZONE MAP/ELEC. DIST./CENSUS TR.
17MB	8	6023.02
WATER CODE		SEWER CODE
N/A		N/A

<p>RESPONSIBLE PERSONNEL CERTIFICATION</p> <p>"I HEREBY CERTIFY THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM A TRAINING PROGRAM APPROVED BY THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."</p> <p><i>Denis Ellis</i> 1/27/92 SIGNATURE OF DEVELOPER DATE</p>	<p>CERTIFICATION BY THE ENGINEER</p> <p>"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."</p> <p><i>Vijay Balusu</i> 01-28-92 SIGNATURE OF ENGINEER DATE</p>	<p>CERTIFICATION BY THE DEVELOPER</p> <p>"I CERTIFY THAT ALL DEVELOPMENT AND OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OF THEIR AUTHORIZATION AGENTS, AS DEEMED NECESSARY."</p> <p><i>Denis Ellis</i> 1/27/92 SIGNATURE OF DEVELOPER DATE</p>	<p>THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p>APPROVED: <i>[Signature]</i> DATE</p> <p>REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.</p> <p>APPROVED: <i>[Signature]</i> DATE</p>	<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DESCRIPTION	DATE				<p>PREPARED BY:</p> <p>KCI TECHNOLOGIES, INC. ENGINEERS-PLANNERS-SURVEYORS 13992 BALTIMORE AVENUE / SUITE 300 LAUREL, MD. 20707 PHONE: (301) 792-8086</p>	<p>COVER SHEET</p> <p>OAKLAND RIDGE INDUSTRIAL PARK OPEN SPACE MASTER PLAN</p> <p>SCALE: AS SHOWN</p> <p>DRAWN: [Signature] CHECKED: [Signature]</p> <p>PROJ. NO.: 1887128C DATE: MARCH 1992</p> <p>SHEET 1 OF 4</p>
NO.	DESCRIPTION	DATE										

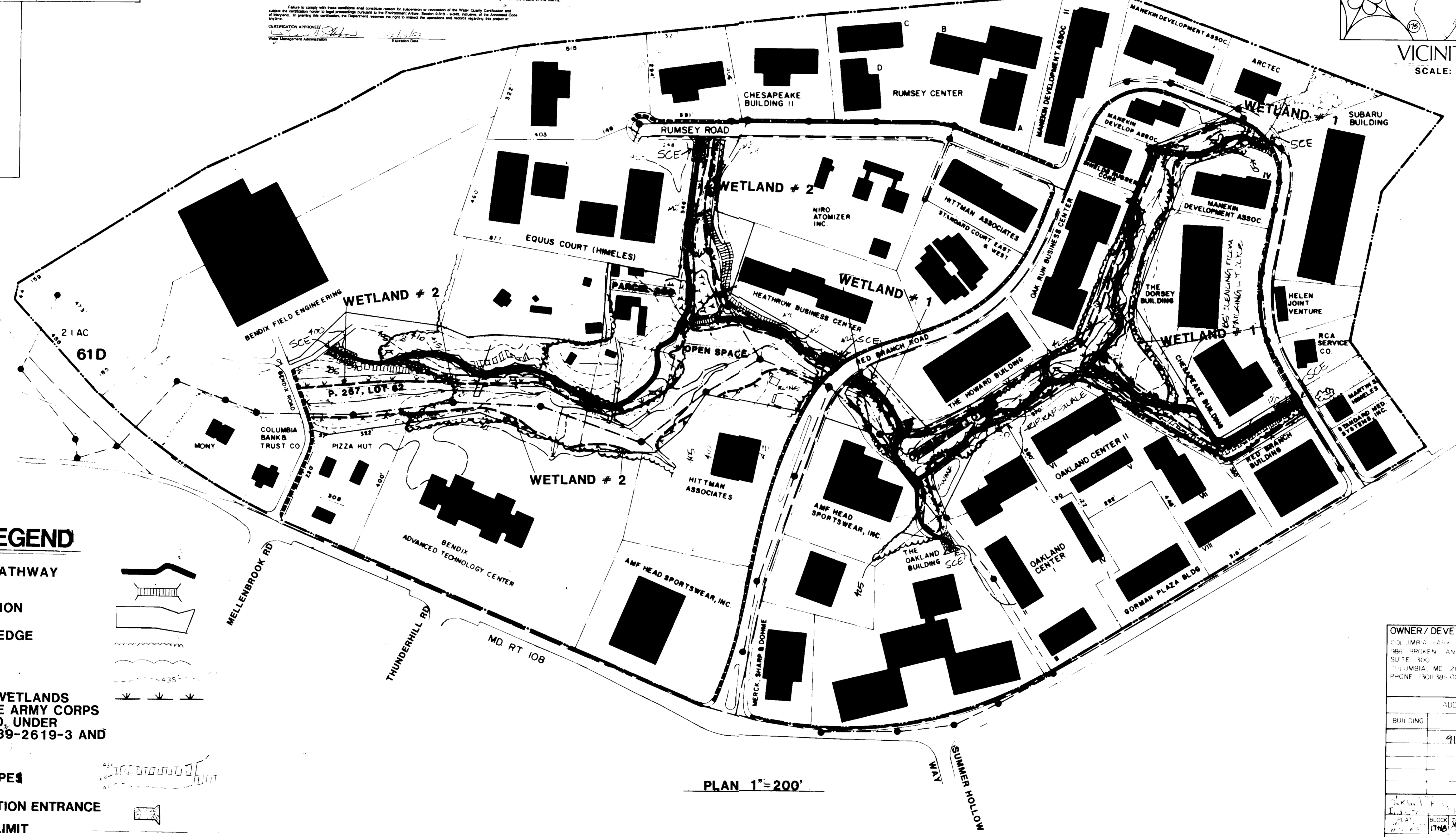
STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR: *James Z. [Signature]* DATE: 4/1/92
 CHIEF BUREAU OF ENGINEERING: *[Signature]* DATE: 4-1-92
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT
 APPROVED: *James M. Boyd* DATE: 4/6/92

The water quality certification is based upon authority of Section 403 of the Federal Water Pollution Control Act and its Amendments...
 1. The proposed project shall be constructed in accordance with the plan and as it is revised as approved by the...
 2. The proposed project shall be constructed in accordance with the plan and as it is revised as approved by the...
 3. Construction of the proposed project shall begin only when all the required licenses, permits, notifications of approval, or letters of approval have been obtained...
 4. All wet and riparian areas... shall be protected and preserved...
 5. During the construction period...
 6. The applicant shall notify the Department upon transferring the responsibility for compliance with these conditions to another person...
 7. The certification holder shall allow the Maryland Department of the Environment or its representatives to inspect the project area at reasonable times...
 8. Construction of the project shall be completed prior to filing for the building...
 9. The disturbance of the bottom of the water and sediment transport into the adjacent State waters shall be minimized...
 10. The applicant shall comply with the conditions stated in the permit...
 11. The applicant shall comply with the conditions stated in the permit...
 12. The applicant shall comply with the conditions stated in the permit...
 13. The applicant shall comply with the conditions stated in the permit...
 14. The applicant shall comply with the conditions stated in the permit...
 15. The applicant shall comply with the conditions stated in the permit...
 16. The applicant shall comply with the conditions stated in the permit...
 17. The applicant shall comply with the conditions stated in the permit...
 18. The applicant shall comply with the conditions stated in the permit...
 19. The applicant shall comply with the conditions stated in the permit...
 20. The applicant shall comply with the conditions stated in the permit...

NOTE: ONLY A 10' WIDE CONSTRUCTION STRIP WILL BE USED FOR PATHWAY CONSTRUCTION. THEREFORE THE LIMIT OF DISTURBANCE IS 5' FROM THE PATHWAY CENTERLINE ON BOTH SIDES OF THE PROPOSED PATH.



APPROVED PLANNING BOARD OF HOWARD COUNTY DATE: 6-25-91



LEGEND
 PROPOSED 6.0 FT. PATHWAY
 PROPOSED BRIDGE
 COLUMBIA ASSOCIATION
 OPEN SPACE
 EXISTING TREELINE (EDGE OF WOODS)
 PROPOSED TREELINE
 EXISTING CONTOUR
 LIMIT OF NON-TIDAL WETLANDS (AS APPROVED BY THE ARMY CORPS OF ENGINEERS IN 1990, UNDER NATIONWIDE PERMIT # 89-2619-3 AND 89-WQ-0647)
 STEEP SLOPES 20% OR GREATER SLOPE
 STABILIZED CONSTRUCTION ENTRANCE
 25' WETLAND BUFFER LIMIT

OWNER / DEVELOPER
 COLUMBIA ASSOCIATION
 9180 Red Branch Road
 ADDRESS CHART
 BUILDING: [] STREET: []
 9180 Red Branch Road
 WATER CODE: [] SEWER CODE: []

I, DENIS ELLIS, CERTIFY THAT ANY RESPONSIBLE PERSONS... SIGNATURE OF DEVELOPER: <i>Den Ellis</i> DATE: 11/27/92	CERTIFICATION BY THE ENGINEER I, VITAY PALUSU, CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN... SIGNATURE OF ENGINEER: <i>Vitay Palusu</i> DATE: 01-28-92	CERTIFICATION BY THE DEVELOPER I, DENIS ELLIS, CERTIFY THAT ALL DEVELOPMENT AND OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT... SIGNATURE OF DEVELOPER: <i>Den Ellis</i> DATE: 11/27/92	THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. APPROVED: <i>[Signature]</i> DATE: 2/1/92 REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS. APPROVED: <i>[Signature]</i> DATE: 2/1/92	REVISIONS NO. DESCRIPTION DATE PREPARED BY: KCI TECHNOLOGIES, INC. ENGINEERS-PLANNERS-SURVEYORS 13992 BALTIMORE AVENUE / SUITE 300 LAUREL, MD 20707 PHONE: (301) 792-8086	OAKLAND RIDGE INDUSTRIAL PARK OPEN SPACE MASTER PLAN SCALE: 1"=200' DRAWN BY: [] CHECKED BY: [] DATE: [] SHEET: 2 OF 4
--	--	---	---	---	---

SEDIMENT AND EROSION CONTROL NOTES

- A MINIMUM OF 72 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION... ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL...

PERMANENT SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS WANTED... SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING... SOIL AMENDMENTS: LIEU OF SOIL TESTS RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES...

TEMPORARY SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED... SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING... SOIL AMENDMENTS: APPLY 60 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)...

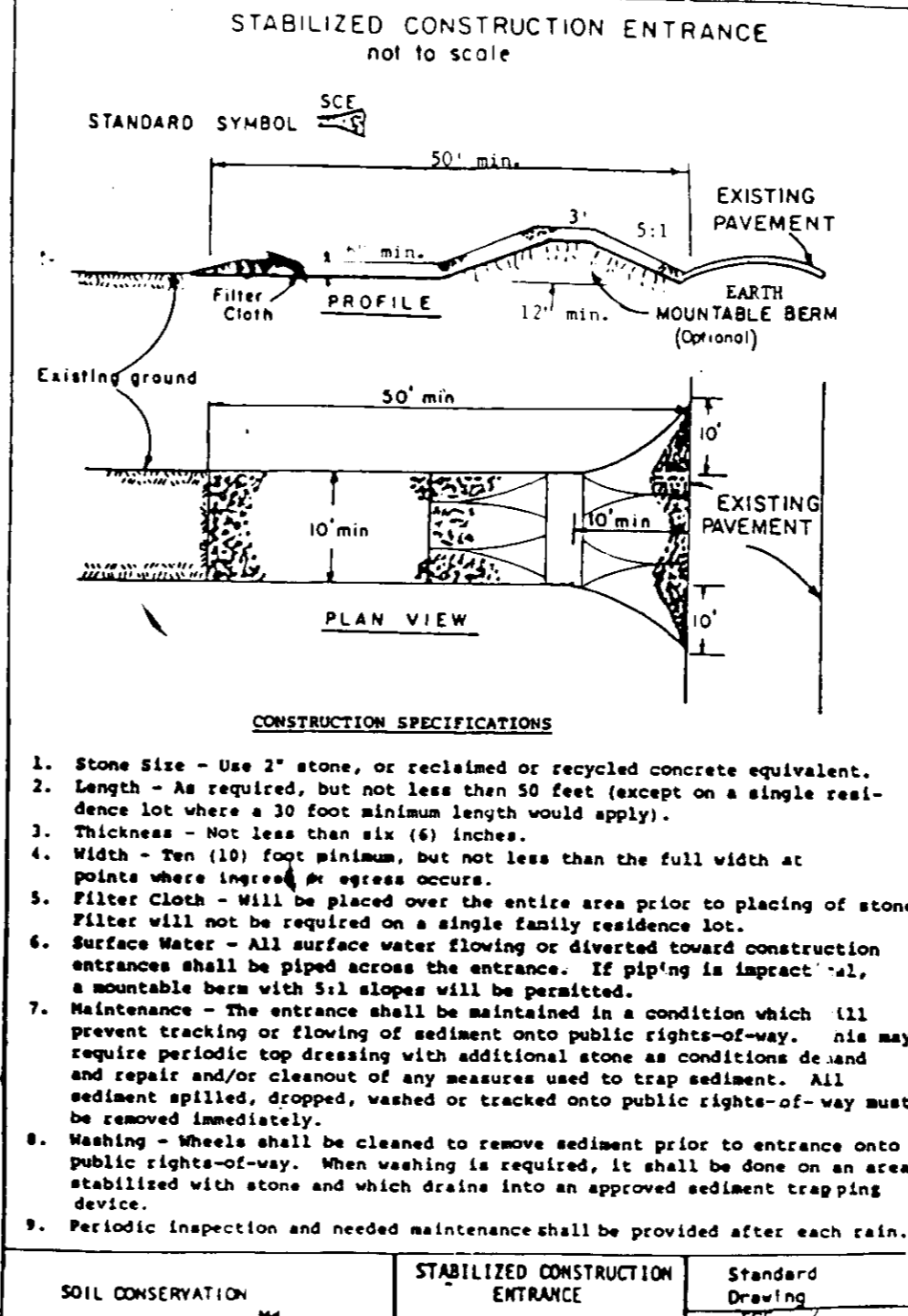
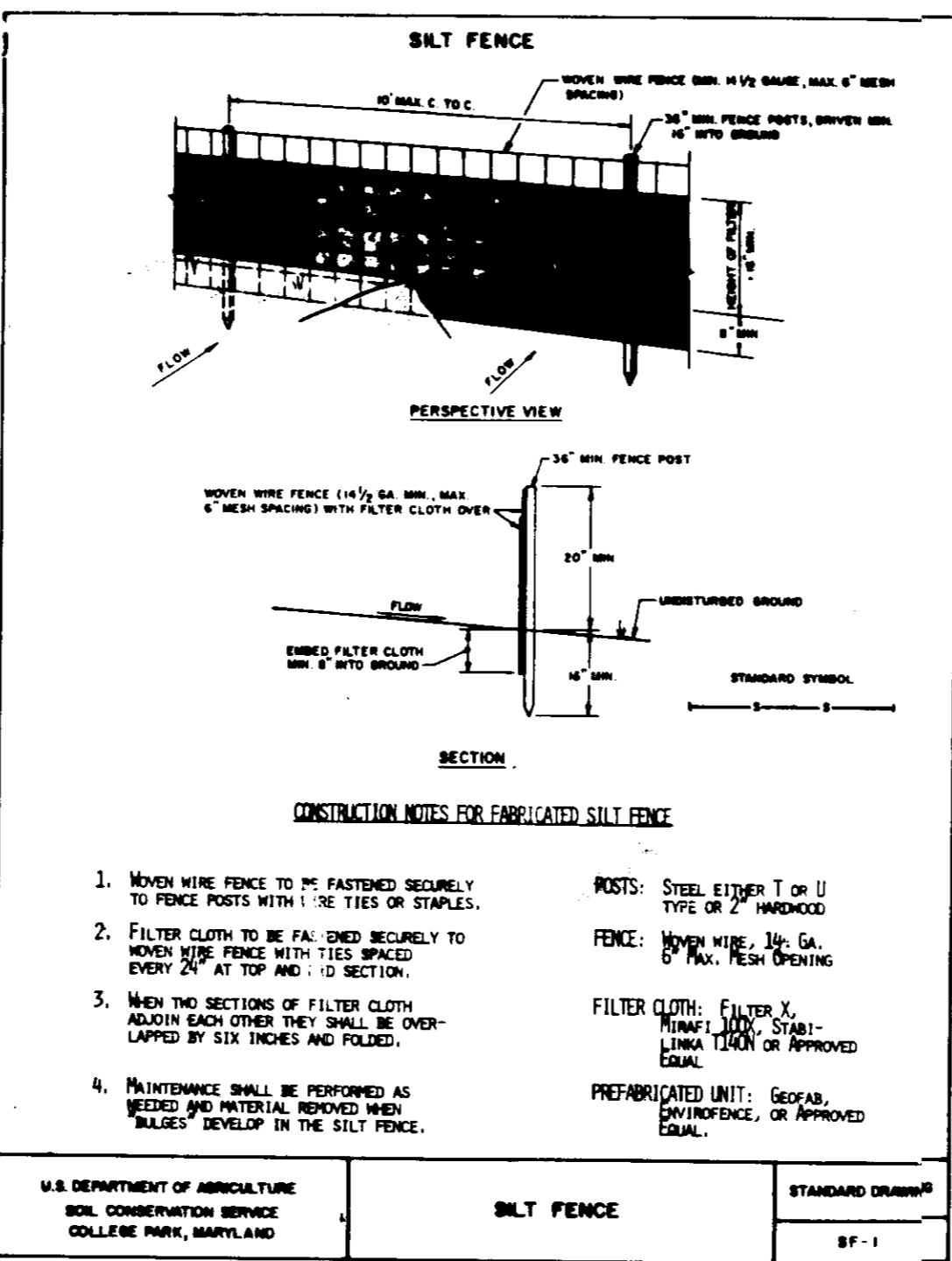
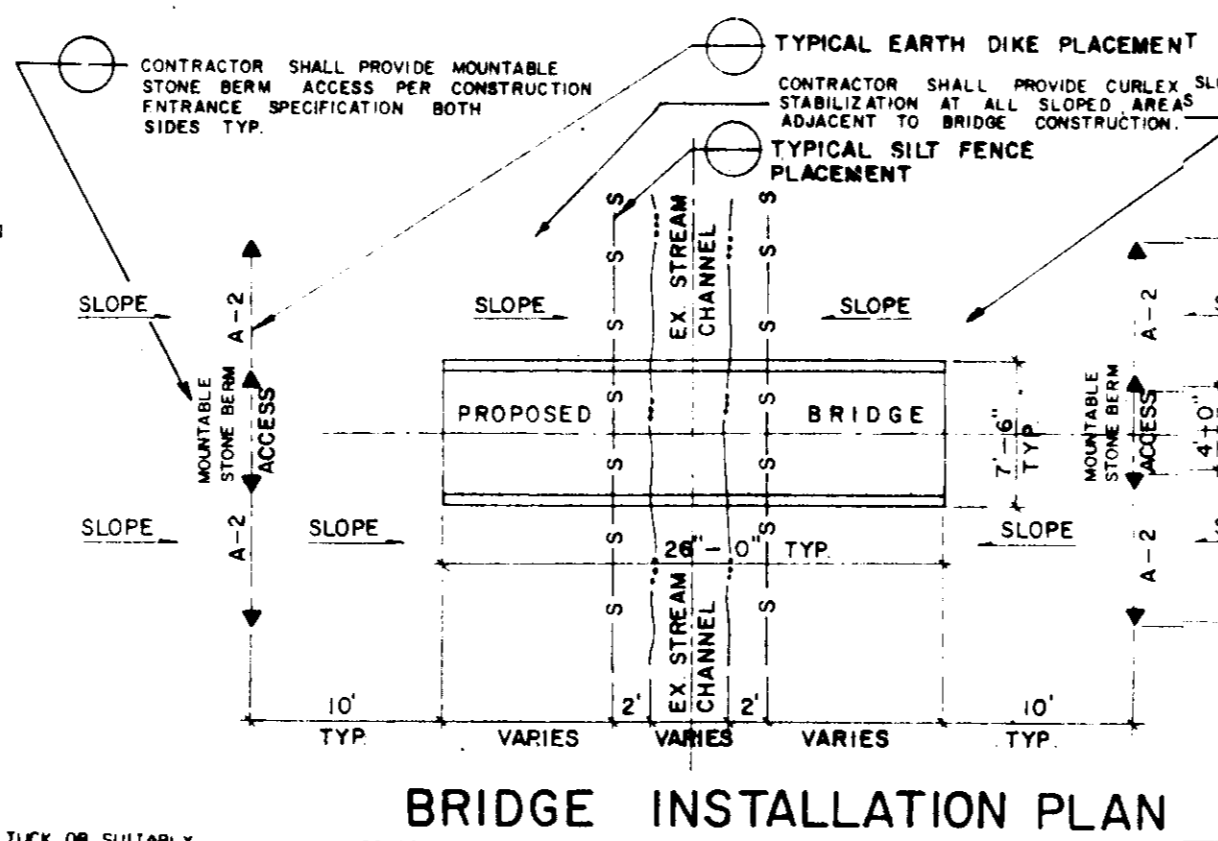


Table with columns: TYPE OF EARTH DIKE, CHANNEL, DRAIN, and DRAINAGE. Includes construction specifications and a table for ROW CHANNEL STABILIZATION.

Handwritten signatures and dates: 4/1/92, 4/14/92, 4/6/92. Includes 'APPROVED PLANNING BOARD OF HOWARD COUNTY' stamp dated 6-25-91.

- THE HOWARD COUNTY SEDIMENT CONTROL DIVISION WILL CONSIDER THIS PLAN FOR APPROVAL... THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, MINOR FIELD ADJUSTMENTS CAN BE MADE TO INSURE THE CONTROL OF ANY SEDIMENT... AN APPLICATION FROM THE SEQUENCE OF OPERATIONS STATED ON THIS PLAN REQUIRES THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE HOWARD COUNTY SOIL CONSERVATION DISTRICT...

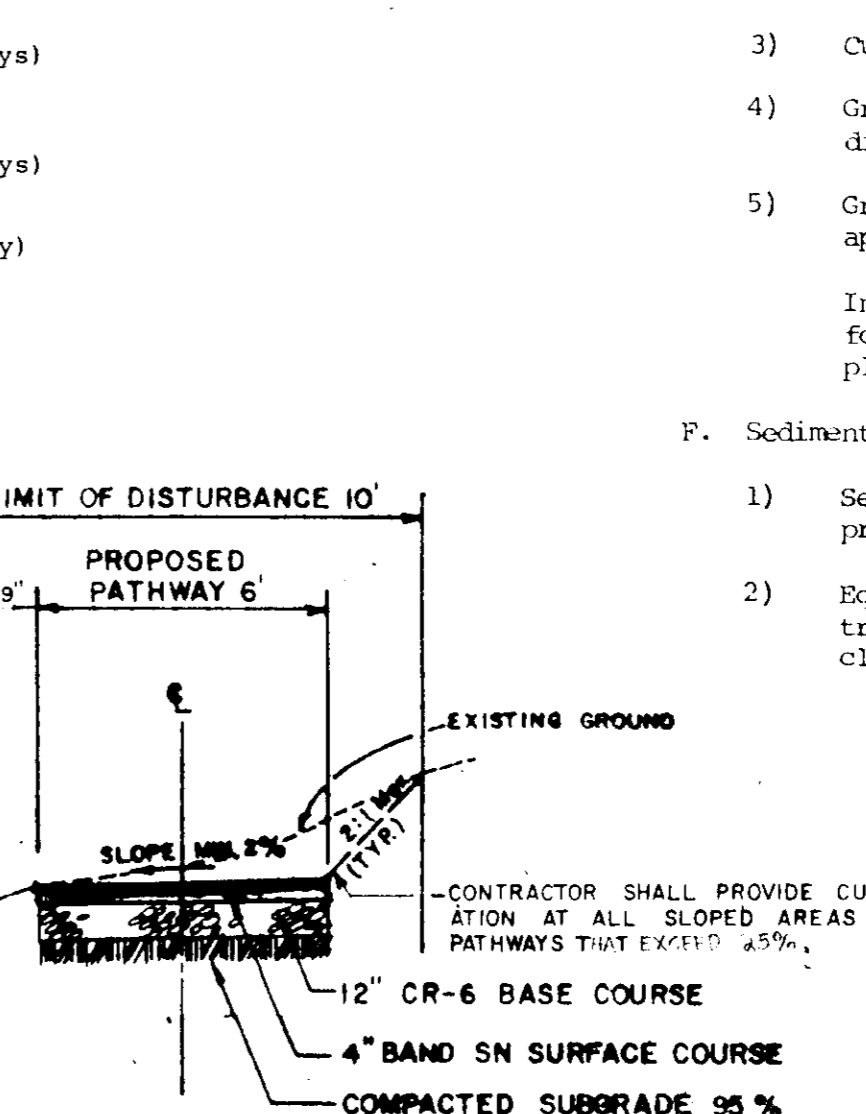
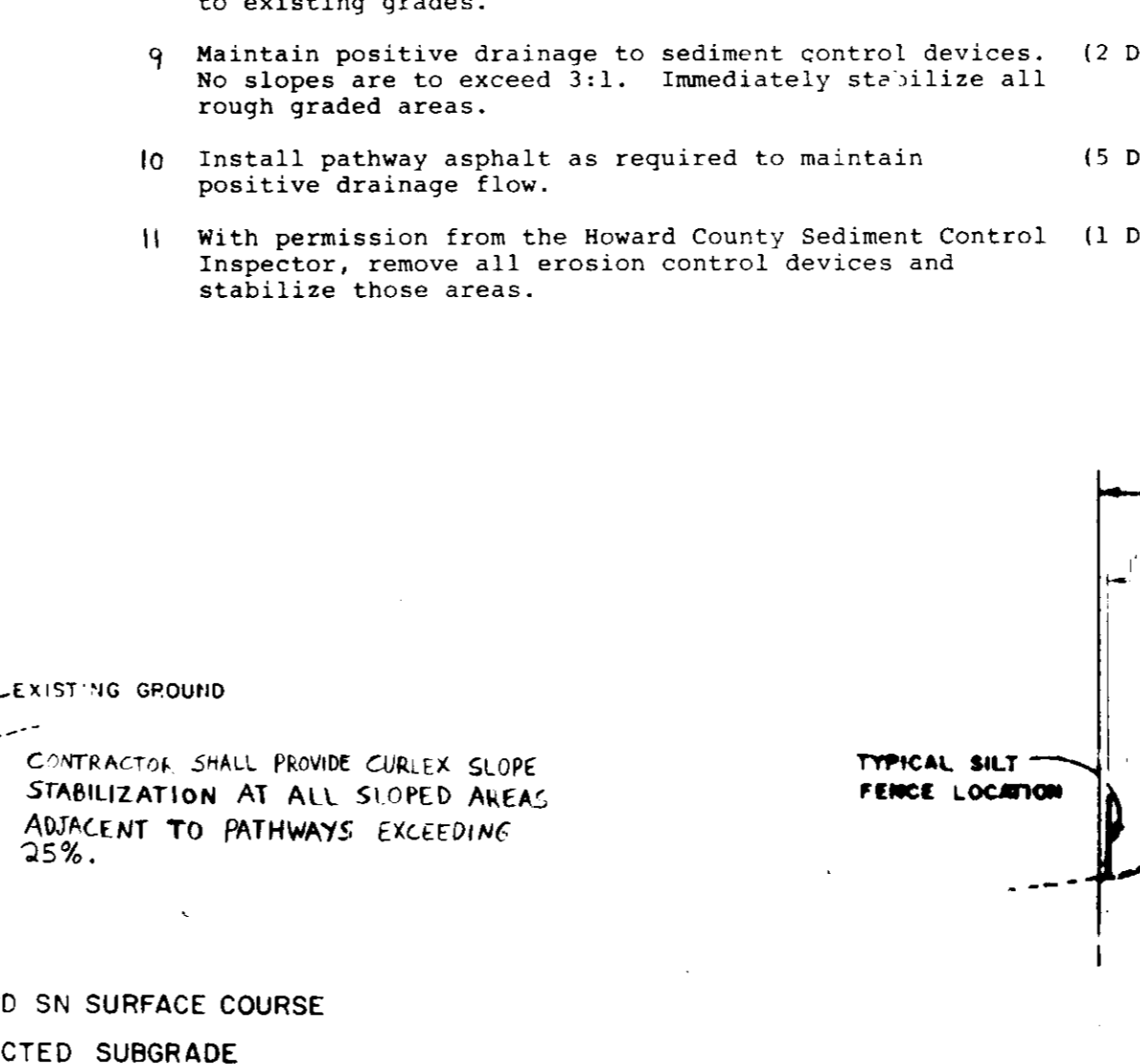
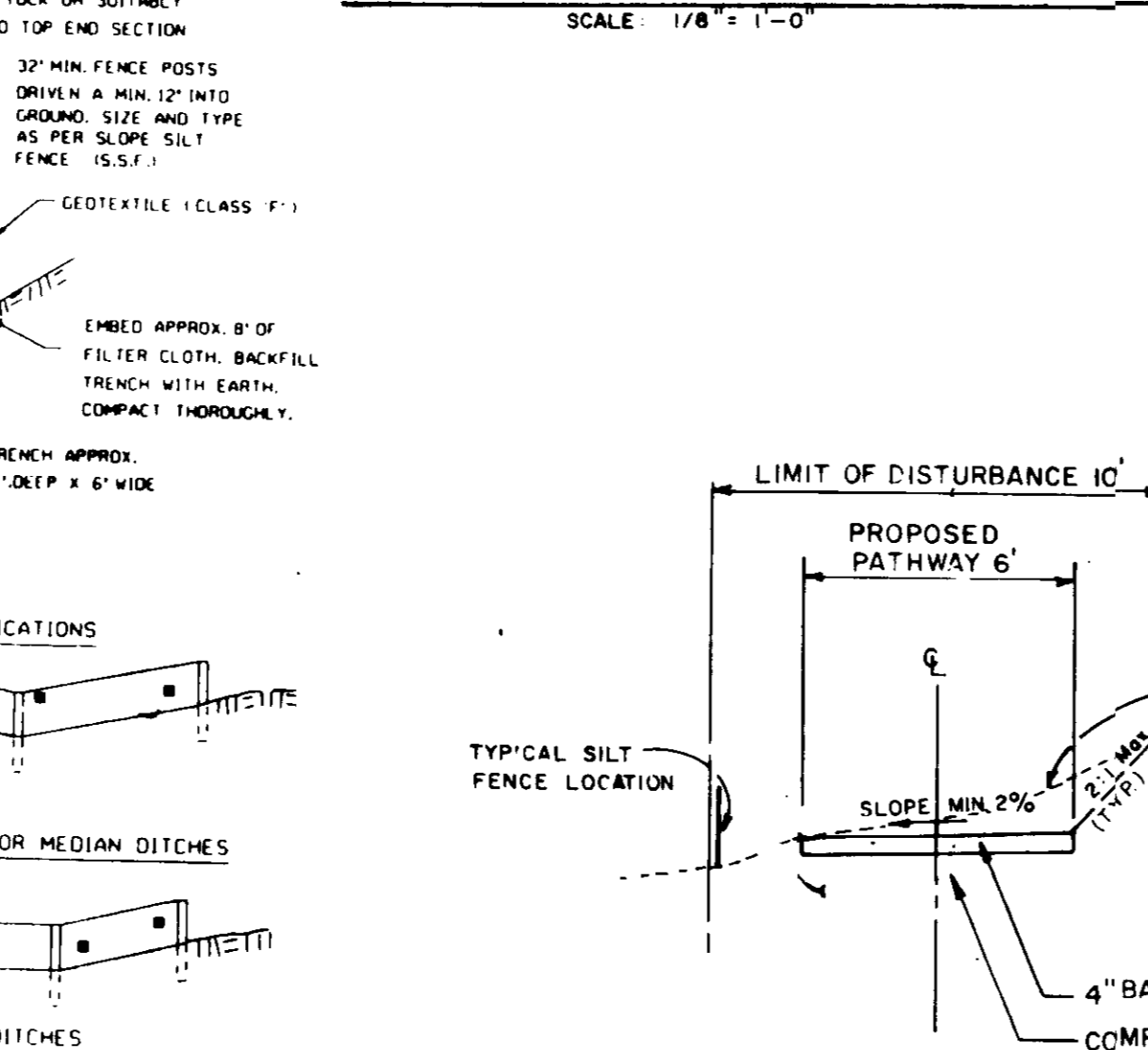
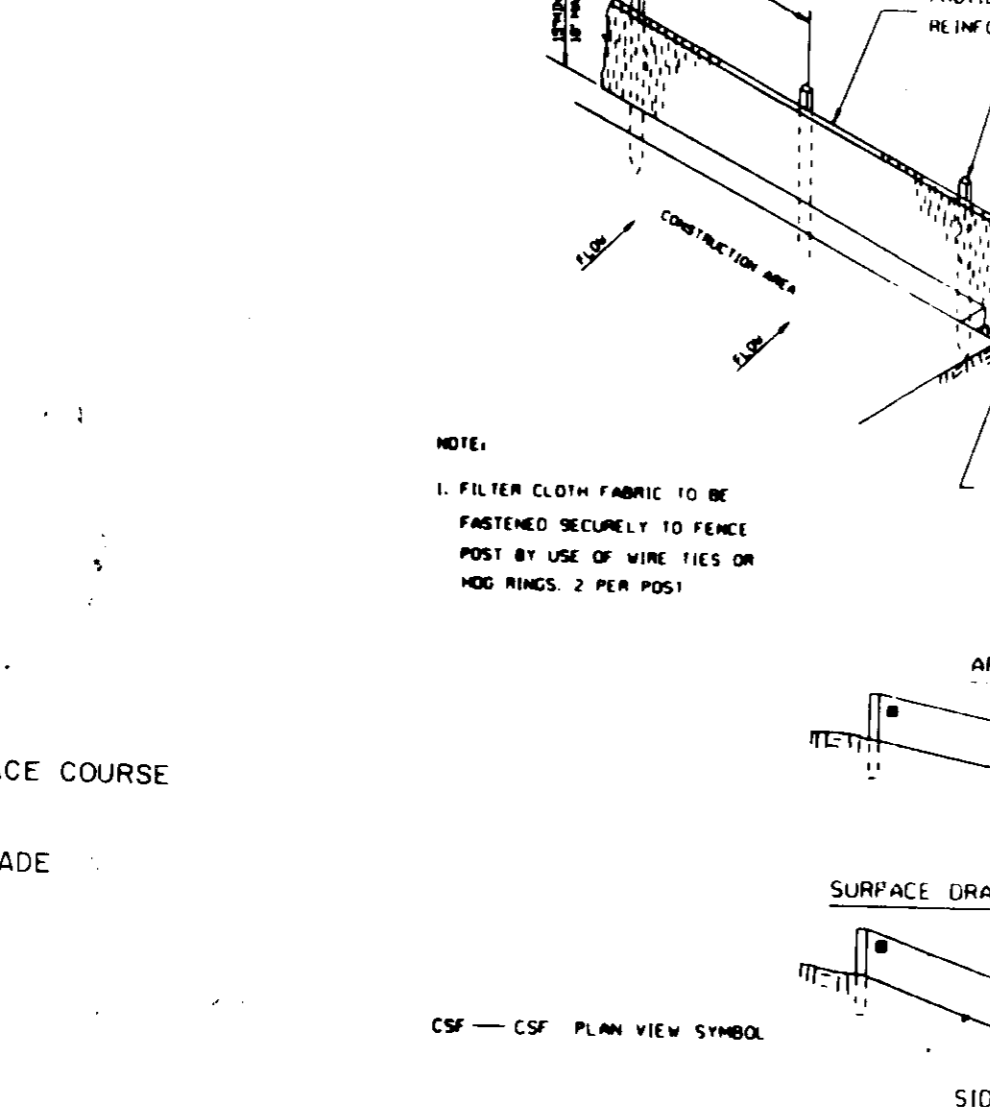
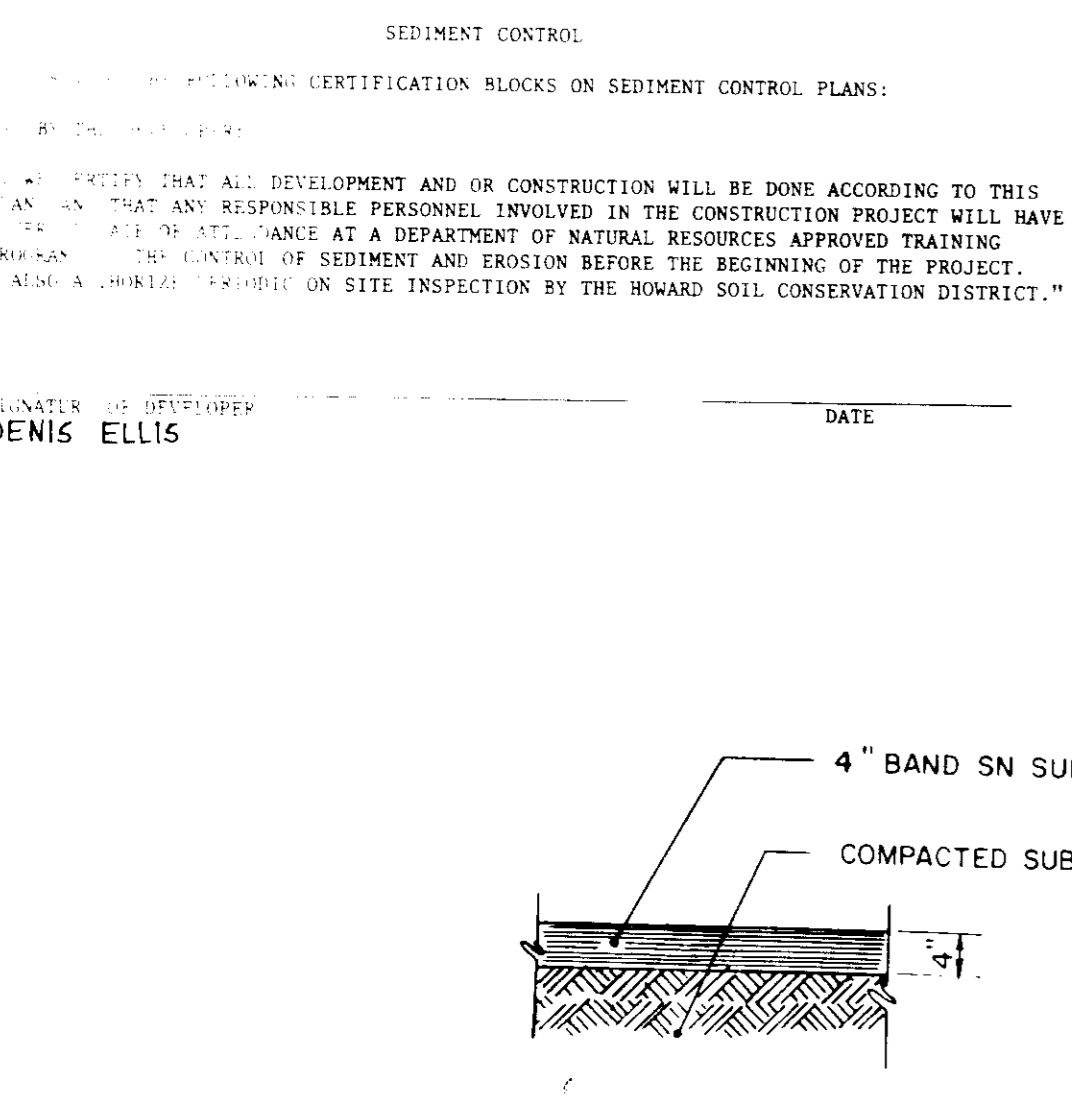
- CONTRACTOR SHALL PROVIDE MOUNTABLE STONE BEAM ACCESS PER CONSTRUCTION ENTRANCE SPECIFICATION BOTH SIDES TYP... CONTRACTOR SHALL PROVIDE CURLEX SLOPE STABILIZATION AT ALL SLOPED AREAS ADJACENT TO BRIDGE CONSTRUCTION... BRIDGE INSTALLATION PLAN showing PROPOSED BRIDGE, EXISTING CHANNEL, and SLOPE dimensions.



- 1) Obtain grading permit. Notify MDE at least (10) days prior to starting any work. (1) Day
2) Notify the Howard County Sediment Control Division at least 48 hours prior to starting any work at 880-3450. (1) Day
3) Clear and grub for sediment and erosion control measures only. Clear only for (1) days work or 1000'/day. (1) Day
4) Install silt fence along the pathway section to be constructed. Place silt fence on the downhill side of the proposed pathway. In accordance with the Howard County Soil Conservation District, Division of Licenses and Permits and the 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control and all latest revisions. (1) Day

- 5) Notify Howard County Department of Permits and Licenses, Sediment Control Division, upon completion of said installation. (4 Days)
6) The proposed pathway alignment shall be field staked and approved by the engineer. (4 Days)
7) Once approval is given by the Howard County Department of Permits and Licenses and the Sediment Control Inspector, clear and grub areas for pathway construction. (4 Days)
8) Grade for pathway construction as close as possible to existing grades. (4 Days)
9) Maintain positive drainage to sediment control devices. No slopes are to exceed 3:1. Immediately stabilize all rough graded areas. (2 Days)
10) Install pathway asphalt as required to maintain positive drainage flow. (5 Days)
11) With permission from the Howard County Sediment Control Inspector, remove all erosion control devices and stabilize those areas. (1 Day)

- Specific Terms
A. All work performed under this agreement shall comply fully with the requirements of the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control and/or specific requirements which may be issued by HSCD.
B. No work covered by this agreement shall be started until written approval (defined herein) has been received from HSCD.
C. CA shall be responsible for arranging for immediate repair or replacement of existing erosion or sediment control measures which are removed, damaged or rendered ineffective by work covered under this agreement.
D. This agreement applies to earth disturbing activities necessary for the construction of recreational pathways which may be surfaced with asphalt, paving, concrete, stone or mulch.
E. The following grading limitations are imposed:
1) Earth work is limited to grubbing, cutting and filling (as defined herein) necessary to construct pathways.
2) Fill must be properly compacted, fill height not to exceed 3 feet, and be not steeper than 3:1.
3) Cut slopes may not exceed 2:1, 50 percent.
4) Grading may not impair surface drainage, create an embankment or discharge sediment into any adjacent waterway.
5) Grading or filling in wetlands and/or the 100 year flood plain shall be approved by the appropriate permitting agency (DNR, MDE, etc.).
In cases where these conditions cannot be met, CA must submit a plan for specific recommendations. (This may involve preparation of a plan by CA).
F. Sediment and erosion control measures will be performed as follows:
1) Sediment control measures shall be placed as clearing and grubbing progresses on a day-to-day basis.
2) Equipment entrances must be stabilized with stone to prevent tracking of sediment onto public streets. If tracking occurs, cleanup is required.



OWNER/DEVELOPER: KCI TECHNOLOGIES, INC. 1740 35 30 6023.02

RESPECTABLE PERSONNEL CERTIFICATION
I CERTIFY THAT ALL DEVELOPMENT AND OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE BEEN PROVIDED WITH ATTENDANCE FROM A MDE TRAINING PROGRAM APPROVED TRAINING PROGRAM FOR CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

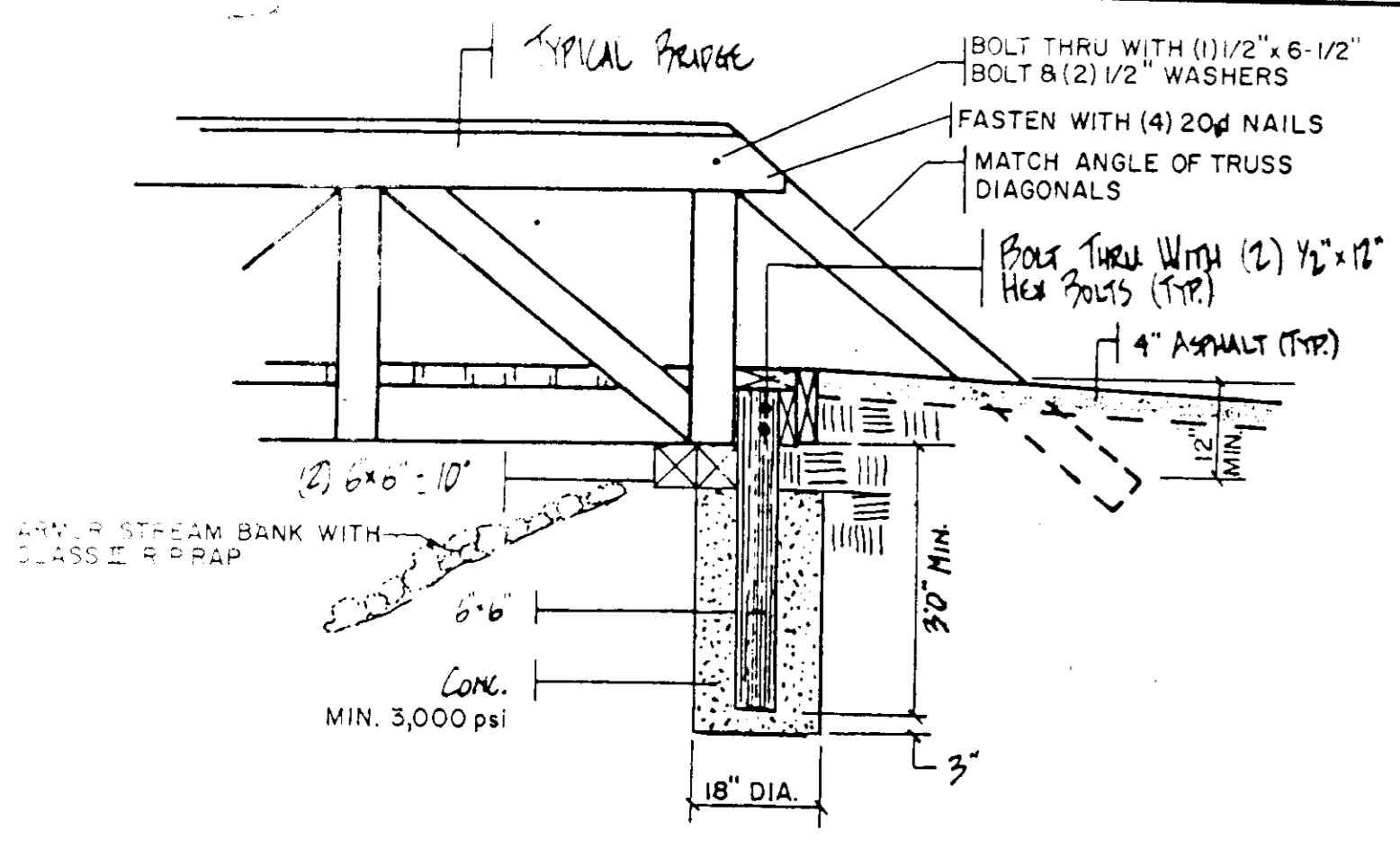
CERTIFICATION BY THE ENGINEER
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS.

CERTIFICATION BY THE DEVELOPER
I CERTIFY THAT ALL DEVELOPMENT AND OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OF THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY.

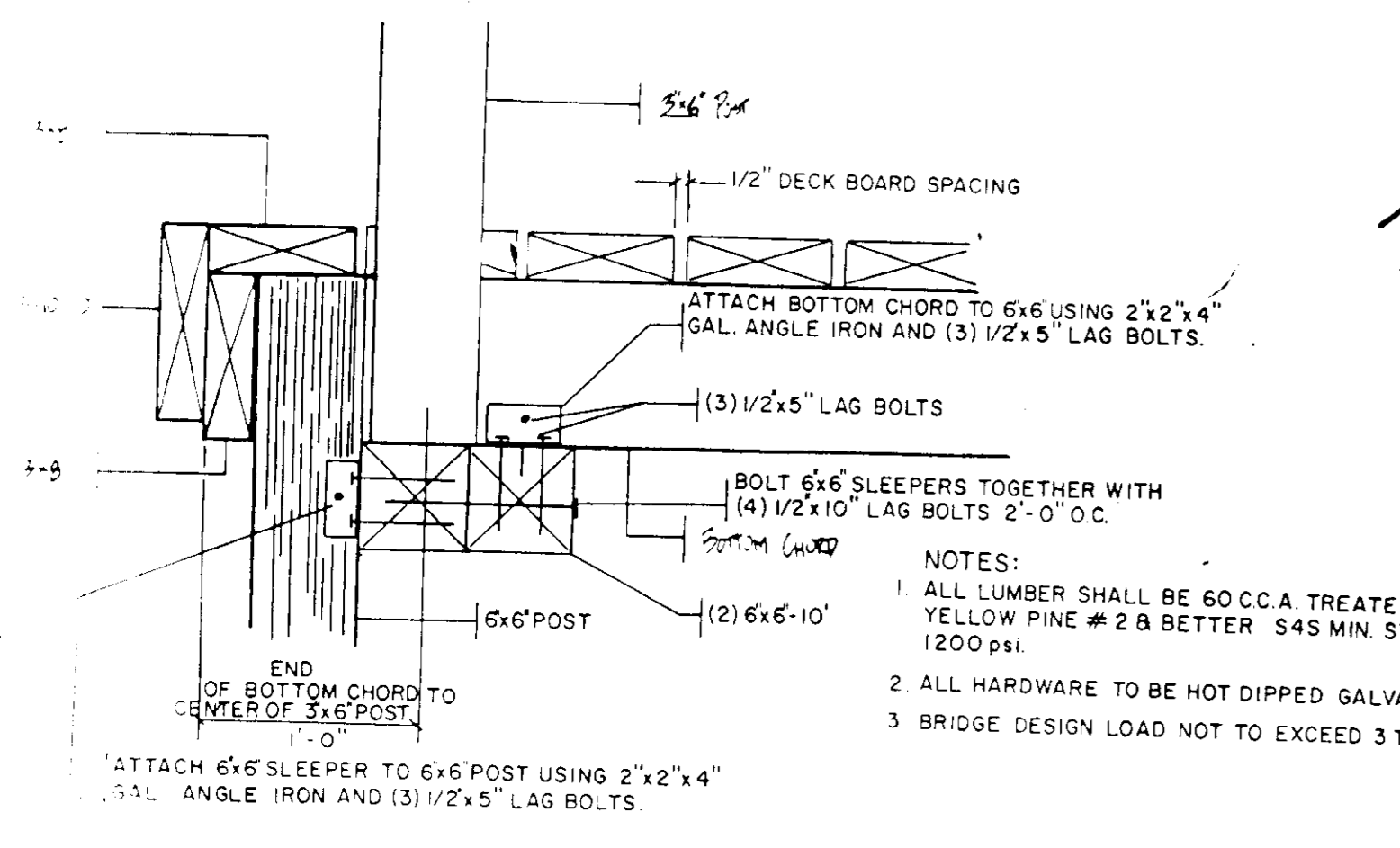
APPROVED: [Signature] DATE: 4/26/92
REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.
APPROVED: [Signature] DATE: 4/26/92

PREPARED BY: KCI TECHNOLOGIES, INC. ENGINEERS PLANNERS SURVEYORS
1992 BALTIMORE AVENUE SUITE 300 LAUREL, MD 20707 PHONE: (301) 792-8086

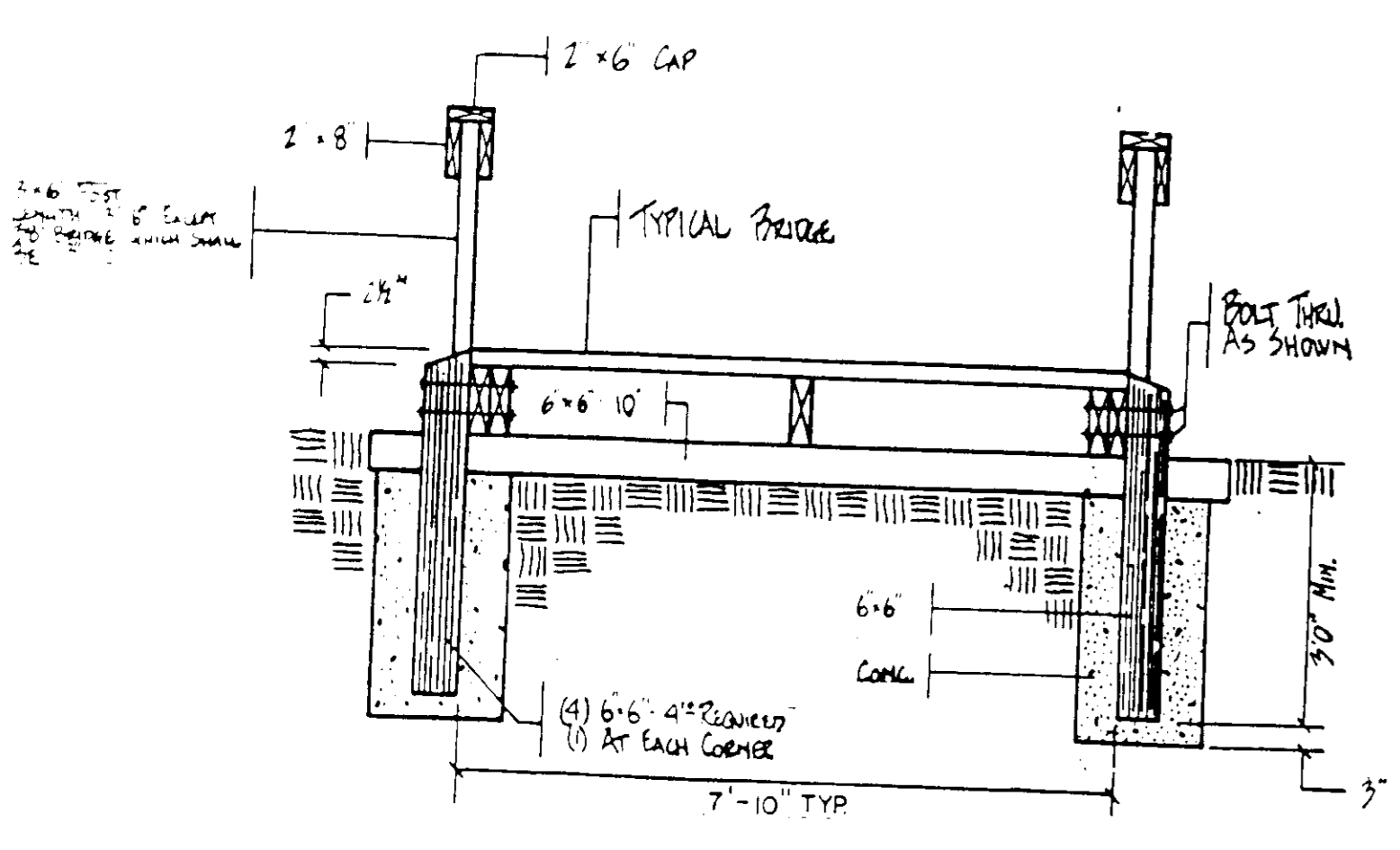
DETAIL SHEET
OAKLAND RIDGE INDUSTRIAL PARK
3-EN SPACE MASTER PLAN
SHEET 3 OF 4
SCALE: 1/4" = 1'-0"



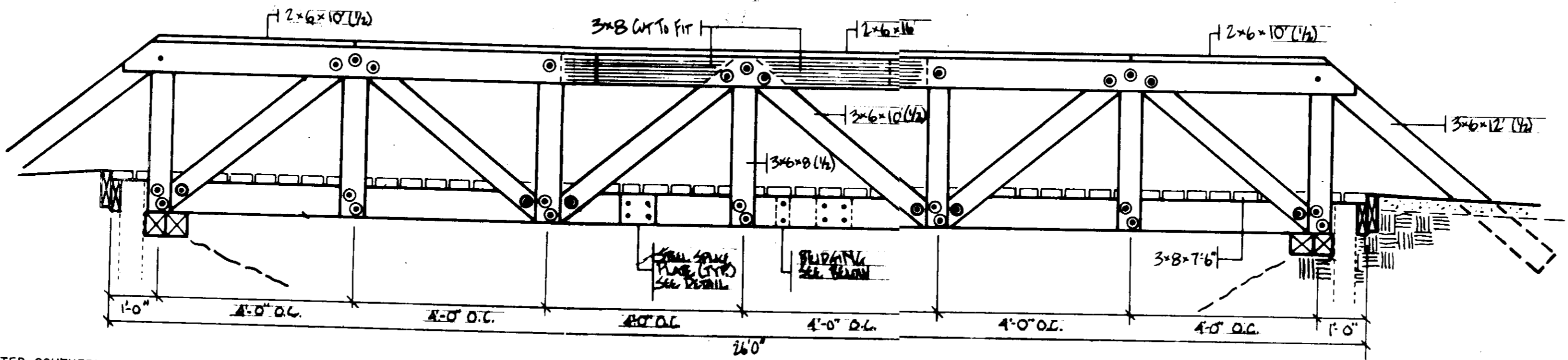
SIDE VIEW FOOTING DETAIL



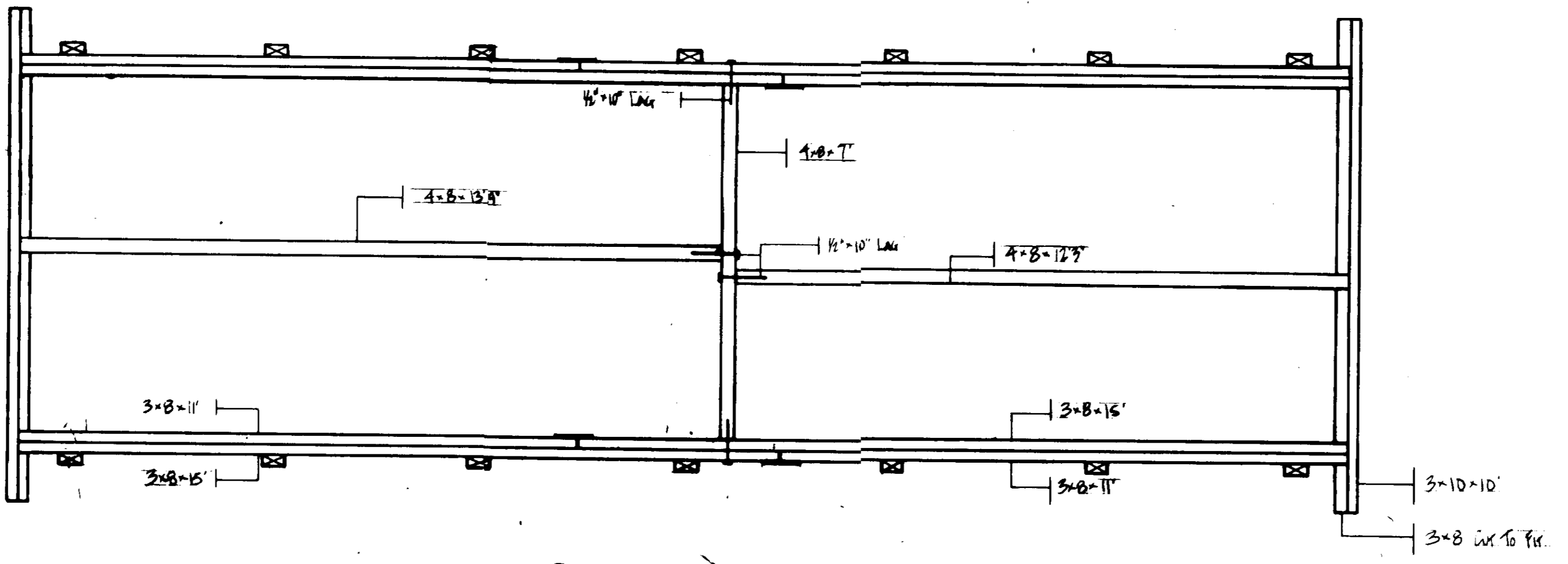
END PLATE SIDE VIEW



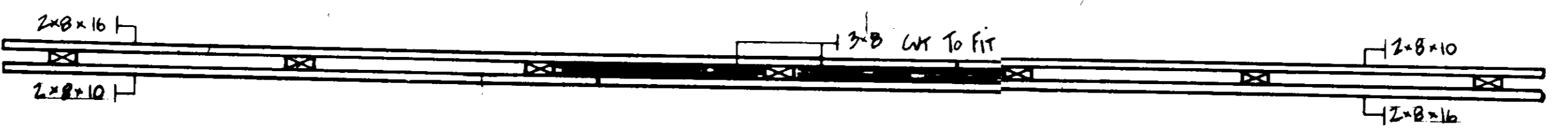
END VIEW FOOTING DETAIL SECTION B-B



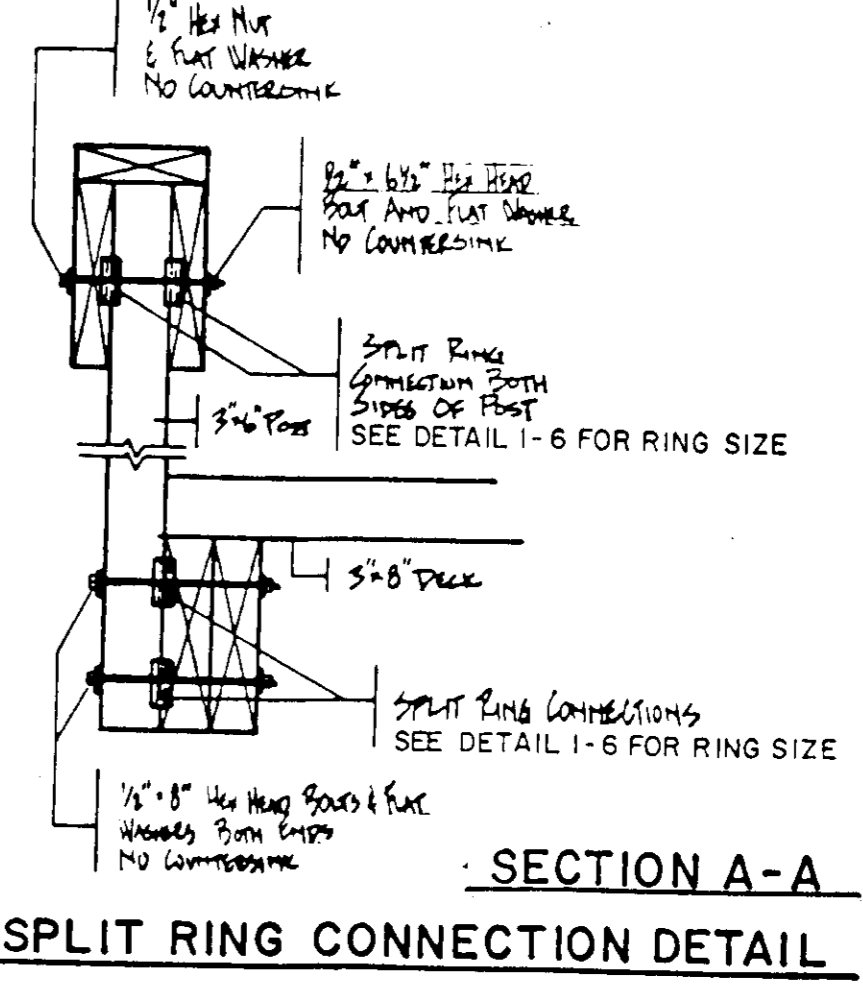
SIDE VIEW



DECK FRAMING PLAN



TOP CHORD

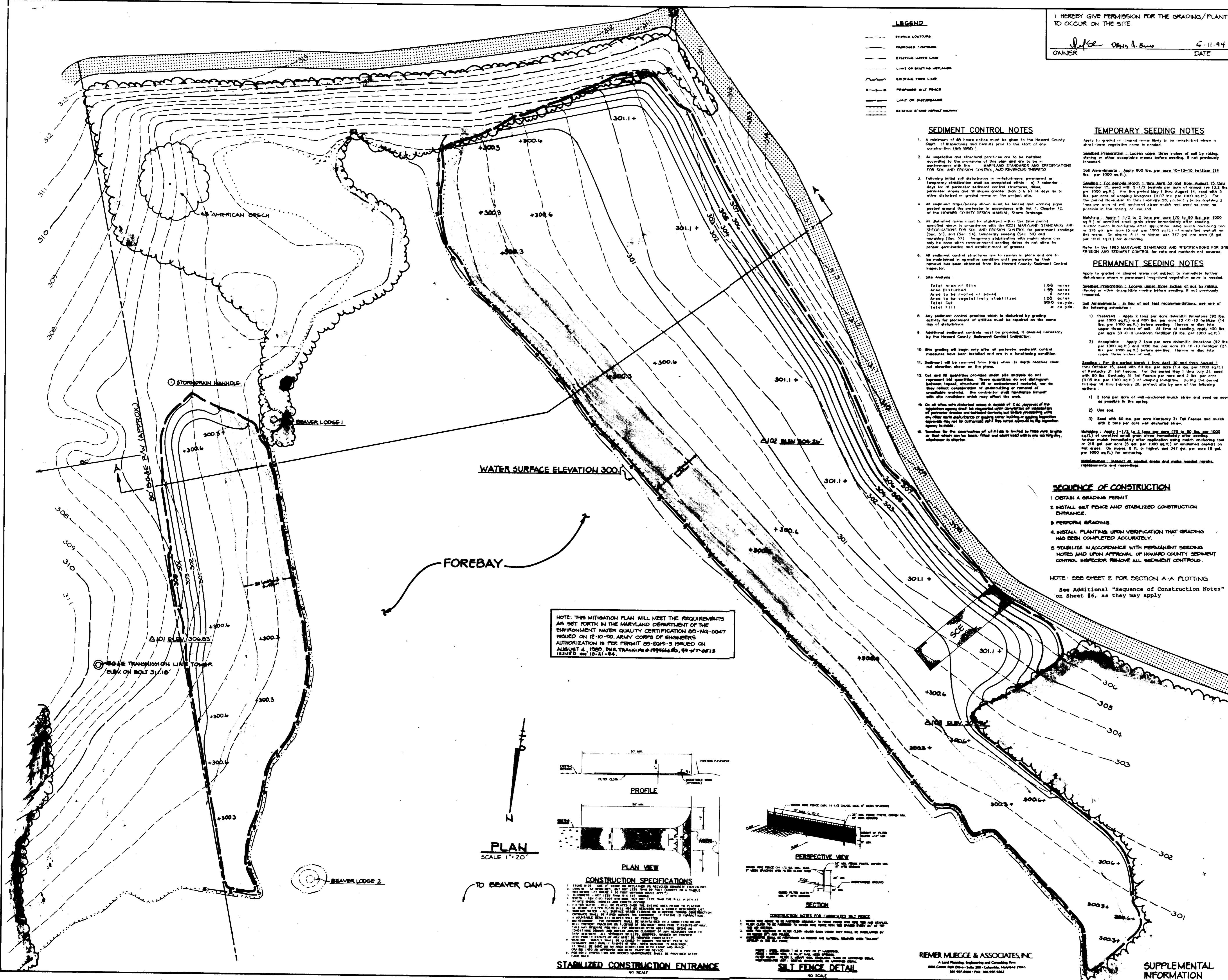


HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 PUBLIC ROADS
 BRIDGE WORKS
 4/1/92
 4-1-92 SH
 4/14/92
 4/10/92
 4/6/92

APPROVED
 PLANNING BOARD
 of HOWARD COUNTY
 DATE 6-25-91

NOTE: THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS REVIEWS BRIDGE DRAWINGS FOR LINE, GRADE AND FLOODPLAIN IMPACT ONLY. THE DEPARTMENT OF LICENSES AND PERMITS PERFORMS RELATED STRUCTURAL REVIEW.

RESPONSIBLE PERSONNEL CERTIFICATION I CERTIFY THAT ANY RESPONSIBLE PERSONNEL IN THE CONSTRUCTION PROJECT WILL HAVE ATTENDED AN APPROVED TRAINING PROGRAM IN THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. SIGNATURE OF DEVELOPER: Denis Ellis DATE: 1/27/92	CERTIFICATION BY THE ENGINEER I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. SIGNATURE OF ENGINEER: Vijay Balusu DATE:	CERTIFICATION BY THE DEVELOPER I CERTIFY THAT ALL DEVELOPMENT AND OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OF THEIR AUTHORIZATION AGENTS, AS DETERMINED NECESSARY. SIGNATURE OF DEVELOPER: Denis Ellis DATE: 1/27/92	THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. APPROVED: [Signature] DATE: 2/1/92 REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS. APPROVED: [Signature] DATE: 2/1/92 VIJAY BALUSU PE MD. NO. 8044	REVISIONS NO. DESCRIPTION DATE PREPARED BY: KCI TECHNOLOGIES, INC. ENGINEERS-PLANNERS-SURVEYORS 13992 BALTIMORE AVENUE SUITE 300 LAUREL, MD 20707 PHONE: (301) 792-8086	BRIDGE DETAIL SHEET OAKLAND RIDGE INDUSTRIAL PARK OPEN SPACE MASTER PLAN SHEET 4 4	OWNER/DEVELOPER COLUMBIA PARK RECREATION ASSOCIATION 9861 BROKEN HILL PARKWAY SUITE 300 COLUMBIA, MD 21044 PHONE: (301) 381-1223 6023-02
--	--	---	---	---	---	--



- LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EXISTING WATER LINE
 - LIGHT OF EXISTING SURFACES
 - EXISTING TREE LINES
 - PROPOSED SALT PENCE
 - LIGHT OF DISTURBANCE
 - EXISTING 6" WOOD FRAME DRAINAGE

I HEREBY GIVE PERMISSION FOR THE GRADING/PLANTING TO OCCUR ON THE SITE.

OWNER: *John O. Buss* DATE: 5-11-94

SEDIMENT CONTROL NOTES

1. A minimum of 40 hours notice must be given to the Howard County Dept. of Inspections and Permits prior to the start of any construction (90 1005).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL AND PREVENTION TECHNIQUES.
3. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: (a) 7 calendar days for all permanent sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1; (b) 14 days for all other disturbed or graded areas on the project site.
4. All sediment traps/basins shall be fenced and warning signs posted around the perimeter in accordance with Vol. 1, Chapter 12, of the Howard County DEPARTMENT OF PERMITS, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the (201) MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL for permanent seedings (Sec. 51) and (Sec. 54) temporary seedings (Sec. 52) and mulching (Sec. 53). Temporary stabilization with mulch alone can only be done where recommended seeding rates do not allow for proper germination and establishment of grasses.
6. 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.
7. Site Analysis:

Total Area of Site	193 acres
Area to be graded or paved	150 acres
Area to be vegetatively stabilized	0 acres
Total Cut	0 cu yds
Total Fill	0 cu yds
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. Site grading will begin only after all permanent sediment control measures have been installed and are in a functioning condition.
11. Sediment will be removed from ditches when its depth reaches down and discharge above the ditches.
12. Cut and fill quantities provided under site analysis do not represent bid quantities. These quantities do not distinguish between borrow, stockpile, fill or embankment material, nor do they reflect consideration of undercutting or removal of material not needed. The contractor shall furnish himself with site conditions which may affect the work.
13. On all sites with disturbed areas in excess of 100,000 sq. ft., a sediment control plan shall be submitted to the Howard County Sediment Control Inspector for approval. The contractor shall furnish himself with site conditions which may affect the work.
14. Location for the construction of utilities is limited to three feet length of trench to be backfilled and stabilized within one working day, whenever it is required.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-term vegetative cover is needed.

Seeding Prescription: Loam, use three inches of soil by raking, harrow or other acceptable means before seeding, if not previously loosened.

Soil Amendments: 1. Apply 400 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq. ft.).

Seeding: For the period March 1, thru April 30 and from August 15, thru November 15, seed with 1 1/2 bushels per acre of annual ryegrass (2.2 lbs. per 1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of annual ryegrass (0.07 lbs. per 1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well-mulched straw mulch and seed in spots as possible in the spring or late fall.

Mulching: Apply 1 1/2 to 2 tons per acre (20 to 30 lbs. per 1000 sq. ft.) of well-mulched straw straw immediately after seeding. Another mulch immediately after application using mulch spreading tool at 2 lbs. per acre (5 gpt per 1000 sq. ft.) of mulch spreader on flat areas. On slopes, 8 ft. or higher, use 24 gpt per acre (8 gpt per 1000 sq. ft.) for mulching.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rates and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-term vegetative cover is needed.

Seeding Prescription: Loam, use three inches of soil by raking, harrow or other acceptable means before seeding, if not previously loosened.

Soil Amendments: 1. In line of soil test recommendations, use one of the following activities:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (82 lbs. per 1000 sq. ft.) and 80 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 10-10-10 granular fertilizer (8 lbs. per 1000 sq. ft.).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (82 lbs. per 1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (21 lbs. per 1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the period March 1, thru April 30 and from August 15, thru October 15, seed with 80 lbs. per acre (1.6 lbs. per 1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 80 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq. ft.) of annual ryegrass. During the period October 16 thru February 28, protect site by one of the following options:

- 1) 2 tons per acre of well-anchored straw and seed as possible in the spring.
- 2) Use seed.
- 3) Seed with 80 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well-anchored straw.

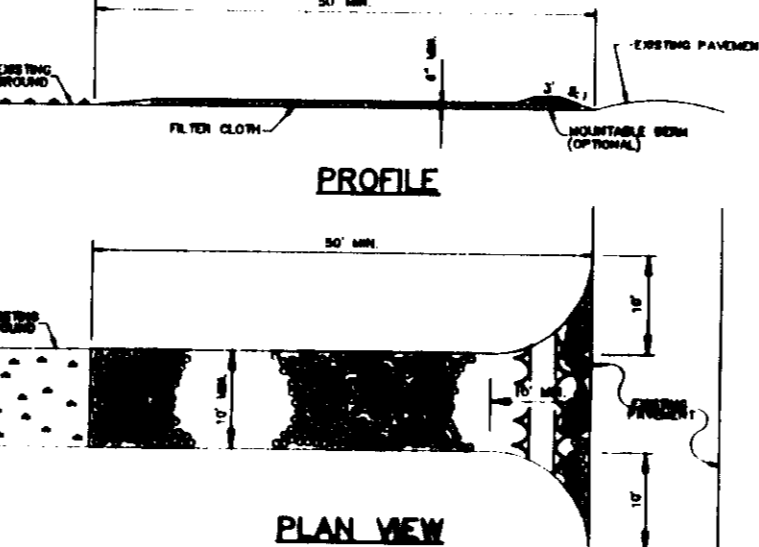
Mulching: Apply 1 1/2 to 2 tons per acre (20 to 30 lbs. per 1000 sq. ft.) of well-mulched straw straw immediately after seeding. Another mulch immediately after application using mulch spreading tool at 2 lbs. per acre (5 gpt per 1000 sq. ft.) of mulch spreader on flat areas. On slopes, 8 ft. or higher, use 24 gpt per acre (8 gpt per 1000 sq. ft.) for mulching.

Maintenance: Mow at regular intervals and make needed repairs, reseedings and reseedings.

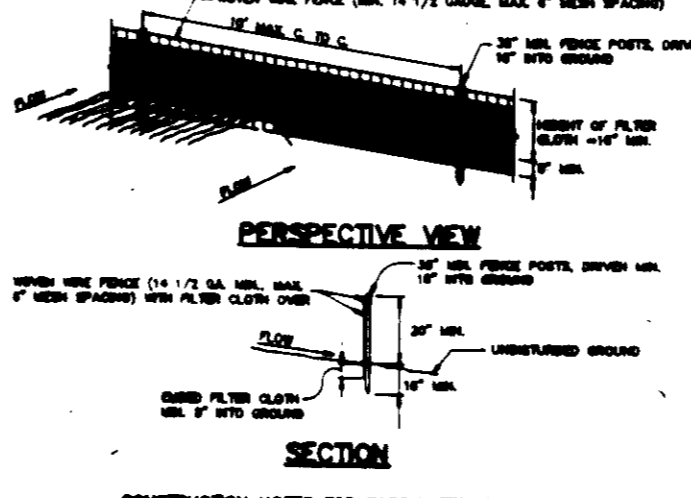
SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
 2. INSTALL SALT PENCE AND STABILIZED CONSTRUCTION ENTRANCE.
 3. PERFORM GRADING.
 4. INSTALL PLANTINGS UPON VERIFICATION THAT GRADING HAS BEEN COMPLETED ACCURATELY.
 5. STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES AND UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR REMOVE ALL SEDIMENT CONTROLS.
- NOTE: SEE SHEET 2 FOR SECTION A-A PLOTTING.
- See Additional "Sequence of Construction Notes" on Sheet #6, as they may apply.

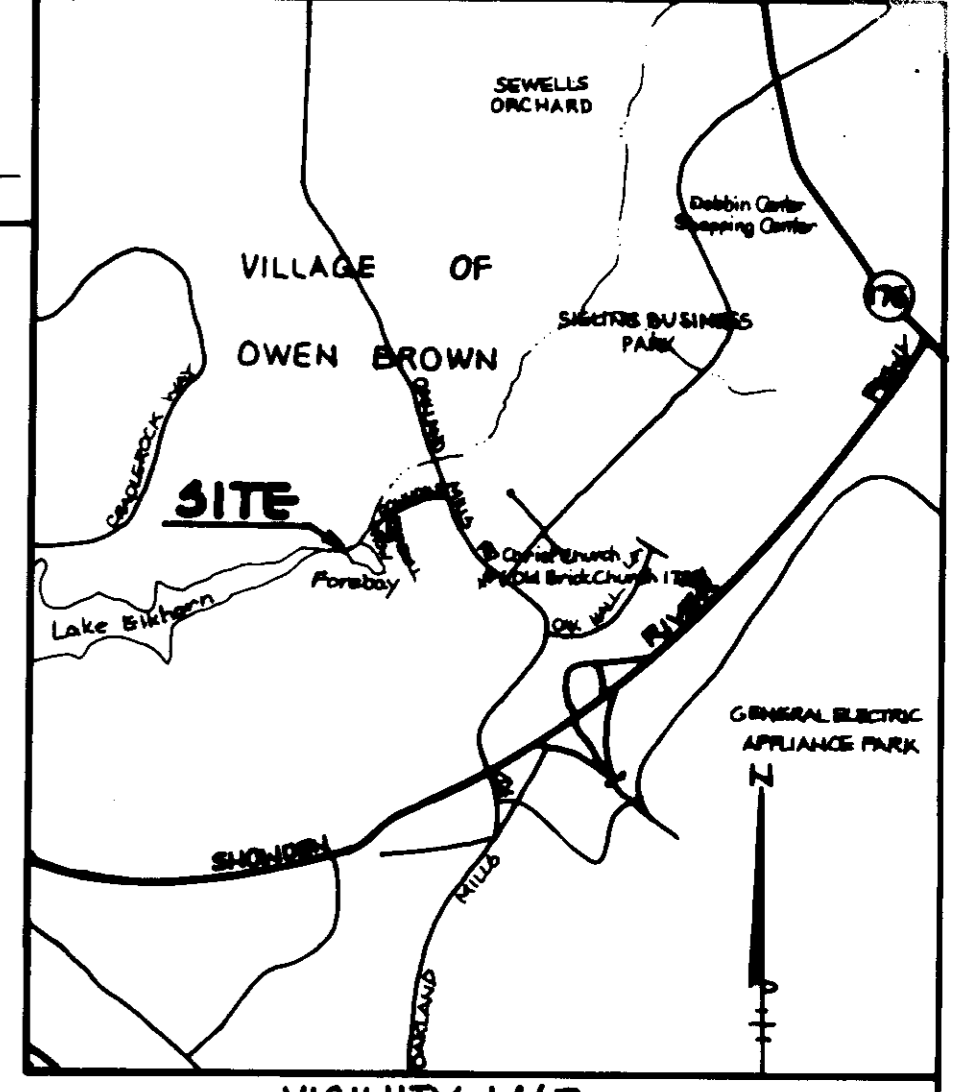
NOTE: THIS MITIGATION PLAN WILL MEET THE REQUIREMENTS AS SET FORTH IN THE MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER QUALITY CERTIFICATION 60-WQ-0047 ISSUED ON 12-10-90, ARMY CORPS OF ENGINEERS AUTHORIZATION IS FOR PERMIT 60-040-5 ISSUED ON AUGUST 4, 1989, DRAIN TRACING # 19944660, 94-W-0818 ISSUED ON 10-21-94.



- CONSTRUCTION SPECIFICATIONS**
1. FORMS SHALL BE 1/2" THICK OR EQUIVALENT AND SHALL BE REINFORCED WITH 1/2" X 1/2" X 12" STEEL OR EQUIVALENT.
 2. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.
 3. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.
 4. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.
 5. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.
 6. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.
 7. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.
 8. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.
 9. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.
 10. FORMS SHALL BE SET UP TO WITHSTAND THE FULL WEIGHT OF THE CONCRETE AND SHALL BE PROTECTED FROM COLLAPSE BY BRACING OR SHORING.



- CONSTRUCTION NOTES FOR FABRICATED SALT PENCE**
1. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 2. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 3. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 4. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 5. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 6. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 7. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 8. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 9. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.
 10. THE SALT PENCE SHALL BE FABRICATED FROM GALVANNEED STEEL SHEET NOT LESS THAN 1/8" THICK.



BY THE DEVELOPER:

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

John O. Buss 5-11-94
DEVELOPER DATE

BY THE ENGINEER:

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

J. Farrell 5-2-94
ENGINEER DATE

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

Patricia Engle 3/15/95
U.S. SOIL CONSERVATION SERVICE DATE

John P. Rhoten 3/15/95
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Jim J. Jaramila 3/15/95
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

DATE	NO.	REVISION

OWNER/DEVELOPER

COLUMBIA PARKS AND RECREATION ASS.
SUITE 300 9846 BROOKLAND PARKWAY
COLUMBIA, MARYLAND 21046

PROJECT OAKLAND RIDGE INDUSTRIAL CENTER MITIGATION PLAN AT LAKE ELKHORN

AREA TAX MAP 5G ZONED - NEW TOWN
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

GRADING PLAN

M.A. DIRCKS & CO., INC.
2906 PEBBLE BEACH DRIVE
BELLICOTT CITY, MD 21042
WILDMAN ENVIRONMENTAL SERVICES

5-2-94 DATE

DESIGNED BY R.W.M., M.A.D.
DRAWN BY R.W.M.
PROJECT NO. 100200
DATE MAY 2, 1994
SCALE AS SHOWN
DRAWING NO. 5 OF 7

- a.) Remove excess fill or construction material or debris to an upland disposal area, outside of any floodplain, waterway, wetland or buffer.
- b.) If backfill is obtained, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- c.) Rectify any nontidal wetlands or buffers temporarily impacted by any activities. All stabilization in the wetland or buffer shall be of the following recommended species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Oats (*Avena sp.*), and/or Rye (*Secale cereale*). Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in the wetland or buffer.
- d.) No removal of vegetation, grading, filling, draining or other alteration of the nontidal wetlands or buffer outside the limits of disturbance shall occur without written authorization from the Water Resources Administration.

LEGEND

SYM.	PLANT COMMUNITY (PC)	DESCRIPTION	AREA (Ac)
[Symbol]	PC-A	PALUSTRINE EMERGENT (BELOW WATER LINE)	0.26
[Symbol]	PC-B	PALUSTRINE EMERGENT (ABOVE WATER LINE)	0.32
[Symbol]	PC-C	SHRUB	0.10
[Symbol]	PC-D	SHRUB/SCRUB (WITH MIXED TREES)	0.22
[Symbol]	PC-E	PALUSTRINE FORESTED (WITH MIXED SHRUBS)	0.44
[Symbol]	PC-F	UPLAND FORESTED (WETLAND BUFFER)	0.15
[Symbol]	PC-G	UPLAND HERBACEOUS (WETLAND BUFFER)	0.05

TOTAL MITIGATION 1.53 Acres

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Jina Summerville 3/15/95
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

DATE	NO.	REVISION
------	-----	----------

OWNER/DEVELOPER
 COLUMBIA PARKS AND RECREATION ASS.
 SUITE 200 984 BROOKLAND PARKWAY
 COLUMBIA, MARYLAND 21046

PROJECT OAKLAND RIDGE INDUSTRIAL CENTER
 MITIGATION PLAN
 AT LAKE ELKHORN

AREA TAX MAP 30 ZONED: NEW TOWN
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

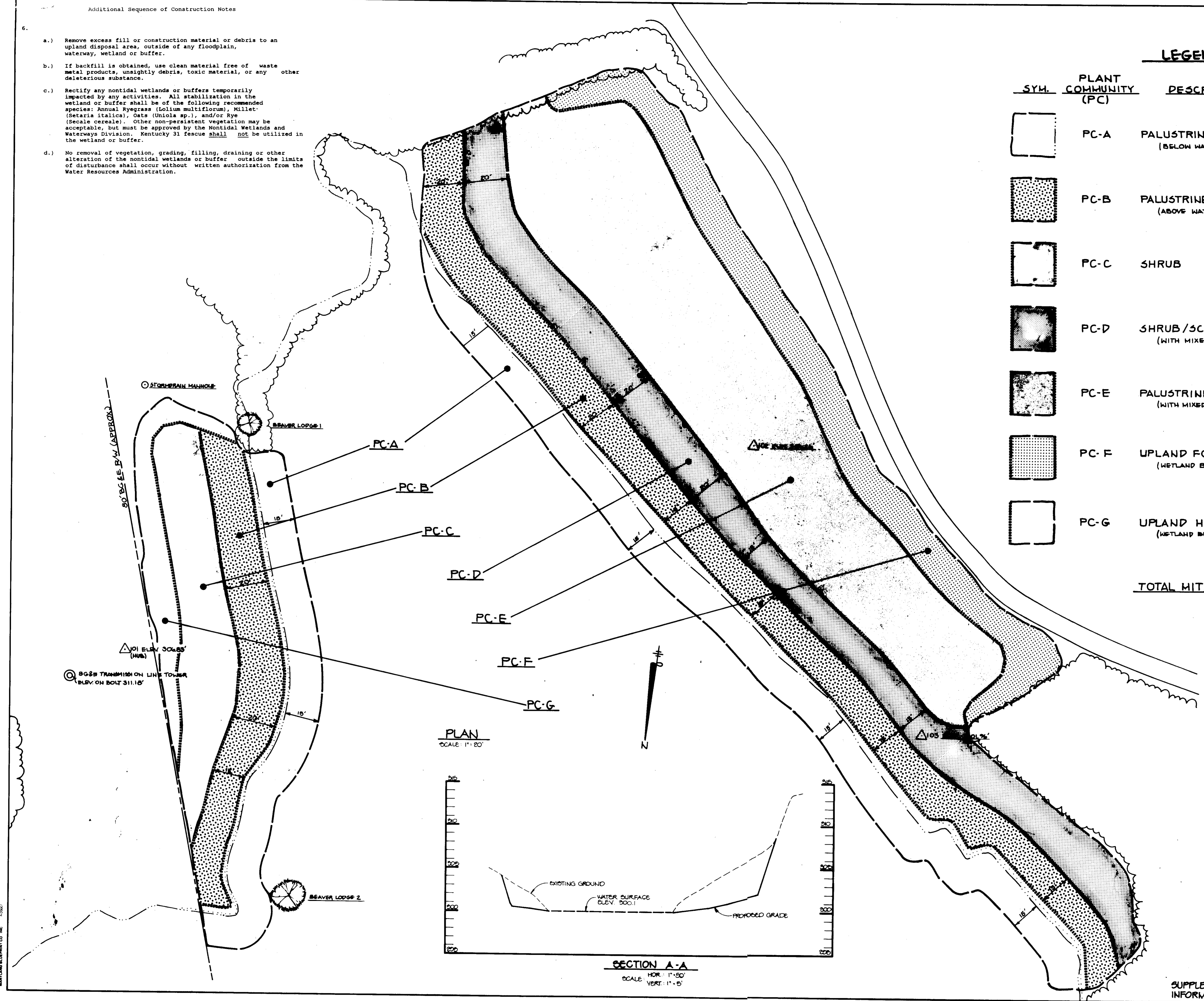
TITLE **PLANTING PLAN**

M.A. DIRCKS & CO., INC.
 2986 PEBBLE BEACH DRIVE
 ELLICOTT CITY, MD 21042
 WILDHAN ENVIRONMENTAL SERVICES

DATE 5-2-79

DESIGNED BY RBW, M.A.P.
 DRAWN BY RBW
 PROJECT NO 100200
 DATE MAY 2, 1994
 SCALE AS SHOWN
 DRAWING NO. G OF 7

J. J. Walsh
 JAYKANT D. PAREKH #1042



MARYLAND BLUEPRINT CO. INC. 1/2007

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

- Silt fences for sediment and erosion control are to be installed as a first order of business.
- Both areas are to be cleared of existing vegetation and grubbed if needed leaving as much topsoil intact as possible.
- Exposed topsoil shall be salvaged from within the project limits of work as indicated on the plan and stockpiled for ultimate application to the mitigation area.
- Contractor shall then grade areas according to plan keeping in mind that finished grades on plan include topsoil mixtures; 6 inches for emergent plant community above water line and a minimum of 8 inches for all other plant communities within wetland planting areas.
- Topsoil mixture for all plant material: 200 lb. dehydrated raw manure and ten 5.5 cu. ft. bale humus to 12 cu. yds of on site furnished topsoil. Composted sludge in the amount of 4.0 cu. yds. may be substituted for the raw manure, peat moss or peat humus.
- Soil mix for all plants except ericaceous material: Soil mix shall consist of existing topsoil mixture at each planting pit location into which the contractor shall thoroughly incorporate 33% by volume of composted sludge.
- Soil mix for ericaceous material: Soil mix shall consist of existing topsoil mixture at each planting pit location into which the contractor shall thoroughly incorporate 33% by volume peat moss.
- All mixing in 6 and 7 shall be limited to shrub and/or tree ball and burlap or container grown stock only and confined to the planting pit and immediate adjacent soil surface area and shall be accomplished to the satisfaction of the design team or Engineer.

LIMITS OF WORK

- The construction procedure shall not damage wetlands outside of the grading limits or damage areas designated to be undisturbed on the plans that occur within the project limits. Any damage shall be restored by the Contractor at his expense and to the satisfaction of the design team or Engineer.

WETLAND PLANT AVAILABILITY

- Plant species required are normally available from standard landscape nursery sources. The Contractor must make arrangements with competent wetlands restoration specialists to insure a supply of the required material.
- The Contractor and/or his subcontractor should be aware of the site design conditions and should take all prudent steps to insure that the plant material specified on the plans is acclimated to wetland conditions prior to delivery to the job site. If the material is available from sources where wetland conditions are duplicated at the nursery, the Contractor should favor these sources as the supplier.
- Rootstock of wetland plant material should be kept moist during the transport from the source to the job site and until planted.

FERTILIZING

- Emergent plants below the water line should not be fertilized at this time.
- Emergent plants above the water line shall be fertilized using 16-6-12 (3 to 4 month slow release) or equal approved by design team or Engineer.
- Fertilizer for wetland trees and shrubs shall be a 21 gr. tightly compressed, long-lasting slow release (2 year) planting tablet with a minimum guaranteed analysis of 20-10-5.
- Fertilizer for container grown material shall apply the following rates:
1 gal. container 1 ea. 21 gr. tablets
3 gal. container 2 ea. 21 gr. tablets
5 gal. container 3 ea. 21 gr. tablets
7 gal. container 5 ea. 21 gr. tablets
- B & B or Container stock shall be positioned in the planting hole. Backfill halfway up the root mass. Place tablet(s) beside the root mass approx. 1 inch from the root tips. Do not place tablets in the bottom of the hole. Complete backfill, tamp and water.

PLANTING SCHEDULE

- It is recommended that the planting be done early in the spring.

HYDROLOGY

- Hydrology to support the mitigation will be achieved by grading into existing water table and blending into existing wetlands. Additional water will come from rainfall and run-off from surrounding area.

PEST CONTROL

- All planted oak trees shall be protected from gypsy moth damage by using gypsy moth repellent tape or other suitable means after planting.
- A nylon line fence shall be installed to prevent waterfowl depredation. Stakes shall be placed at the PCA/open water interface with approximately four (4) rows of nylon line. A second nylon line fence shall be installed at the PCA/PCB interface.

WETLAND PLANTING PROCEDURES AND ESTABLISHMENT

- Plant Community A, Palustrine Emergent, below existing water line in both Areas 1 and 2, shall be planted according to planting depths and spacing as shown in Plant List on Specifications and Detail sheet. Species should be evenly dispersed over entire designated area in groups of twenty (20) to thirty (30) per species.
- Plant Community B, Palustrine Emergent, above existing water line in both Areas 1 and 2, shall be planted according to spacings as shown in Plant List on Specifications and Detail sheet. Species shall be evenly dispersed over entire designated area in groups of twenty (20) to thirty (30) per species.
- Plant Community C, Shrub, shall consist of shrubs only. Shrubs are to be planted over entire designated area at an average spacing of five (5) feet. Contractor shall avoid planting in a straight grid pattern. Shrubs shall be planted within a range of four (4) to six (6) feet apart to create a more natural and non-mechanical appearance when completed.
- Plant community D, Shrub/Scrub, shall consist of planting area according to specifications for Plant Community C (No. 3) first. After this, trees are to be planted over entire area at an average spacing of twenty (20) feet (15 to 25 feet apart) to create a natural appearance.
- For all shrub planting areas, Contractor shall evenly disperse species in groups of 3 to 5 per species over entire designated area.
- For trees planted in No. 4, Contractor shall evenly disperse species over entire area to be planted but not in groups.
- Plant Community E, Palustrine Forested, shall consist of planting trees over the entire designated area at an average of ten (10) feet (8' to 12' apart).
- Avoid planting in a straight grid pattern.
- For trees planted in #7 (Plant Community E), Contractor shall evenly disperse species in groups of two (2) to four (4) per species over the entire designated area to be planted.
- All trees planted in all areas shall be planted using Tubex Tree Shelters to aid in their growth and as a deterrent to beaver predation (See Tubex Procedure and Notes).
- For Plant Community E, shrubs shall be planted among the trees singly in every opening between trees being sure to evenly disperse all species over entire designated area.
- For Plant Community C, D, and E, staying within designated areas, Contractor shall bag seed all areas with TestTech Seed Mix consisting of: 25% Red Top, Agrostis alba; 15% Dear-tongue, Dichanthelium clandestinum; 15% Perennial Ryegrass; 10% Rough Bluegrass, Poa trivialis; 10% Wild Rye, Elymus virginicus; 10% Gamma Grass, Tripsacum dactyloides, 05% Slender Wheatgrass, Agropyron trachycaulum; 05% Dutch White Clover, Trifolium repens
- All woody plants specified in this plan are to be container grown. When planting a container grown tree or shrub, cut the container loose and remove the plant. Gently separate pot-bound roots so that they can grow into the prepared planting area. Severely encircled roots may have to be cut with a knife. The preparation of the planting area is critical to woody plant survival and vigorous growth. Rather than digging a hole, prepare the planting area at least three times the diameter of the root ball. Set the plant in the center of the area so that the upper surface of the root ball is level with the surrounding soil.
- Plant Community F, Upland Forest, shall serve as a forested buffer to the newly created wetlands. It is to be seeded according to the stabilization Permanent Seeding Notes while simultaneously seeding with Wildlife Nurseries-Wildflower Seed Mixture consisting of at least twelve (12) different species. Recommended seeding rate of four (4) lbs. per acre at \$40.00 per lb.
- After completion of No. 14 upland trees shall be planted evenly dispersing species over entire area in species groups of two (2). An average spacing of ten feet (8 to 12 feet) should be used at random to insure a natural appearance.
- Plant Community G, Upland Herbaceous, shall be planted according to No. 14 but without trees. This area is to remain in an open field condition and serve as a buffer to the newly created wetlands.

MAINTENANCE SCHEDULE

- Annual maintenance during the growing season, for a three year period.
- Assess tree mortality of planting stock, remove and replace any dead or diseased plantings.
- Volunteer seeding of native, local and endemic vegetation is to be expected. Do not discourage this effort unless it is negatively affecting the planted stock.
- Remove through manual means (grubbing, pulling, cutting) aggressive, noxious, invasive species (ie. phragmites, cattail, Japanese knotweed, etc.) and all herbaceous vegetation within a 3-foot radius surrounding the planted woody nursery stock.
- Remove and dispose of man-made trash, including items contained within flotsam drift lines. Do not remove down and dead material naturally occurring or accumulating, unless it is smothering planting stock.

OPTIONAL LONG TERM EVALUATION

- This site can be considered successful if after the fifth growing season, a comprehensive point intercept sampling procedure reveals that a prevalence ecological index (PEI) of 3.0 or less is expressed within the mitigation site. (PEI of <= 3.0 is a plant community consisting of 50% or greater, native, indigenous and endemic hydrophytic vegetation. A qualifying index will also confirm viable wetland hydrology).

EMERGENTS (PLANT COMMUNITY A-below water line)

QTY	SYMBOL	SPECIES	INDICATOR STATUS	PLANTING DEPTH	SPACING
155	Pc	Pontederia cordata Pickerswee	OBL	0-1'	3'0C
155	Pv	Peltandra virginica Arrow Arum	OBL	0-1'	3'0C
353	Sc	Saururus cernuus Lizards Tail	OBL	0-1'	2'0C
353	Sa	Scirpus americanus Common Three-Square	OBL	0-0.5'	2'0C
353	Ip	Iris pseudoacorus Yellow Iris	OBL	0-0.5'	2'0C
353	Iv	Iris versicolor Blue Flag	OBL	0-0.5'	2'0C
353	Ac	ACORUS calamus Sweet Flag	OBL	0-0.5'	2'0C
353	Lo	Leersia oryzoides Rice Cutgrass	OBL	0-3"	2'0C

Note: Bare root or container

EMERGENTS (PLANT COMMUNITY B-above water line)

QTY	SYMBOL	SPECIES	INDICATOR STATUS	AVERAGE SPACING	REMARKS
256	Sc	Scirpus cyperinus Woolgrass	FACW	3.0'0C	Bare root or cont
580	ic	Impatiens capensis Jewelweed	FACW	2.0'0C	Bare root or cont
580	Lo	Leersia oryzoides Rice Cutgrass	OBL	2.0'0C	Bare root or cont
580	Lc	Lobelia cardinalis Cardinal Flower	FACW+	2.0'0C	Bare root or cont
580	Pv	Panicum virgatum Switchgrass	FAC	2.0'0C	Bare root or cont
580	Ed	Eupatorium dubium Joe-Pye-Weed	FACW	2.0'0C	Bare root or cont

SHRUBS (PLANT COMMUNITY C and D)

QTY	SYMBOL	SPECIES	INDICATOR STATUS	SIZE	REMARKS
93	Iv	Ilex verticillata Winterberry	FACW+	18-24"	BBB or cont
93	Vd	Viburnum dentatum Arrowwood	FAC	18-24"	BBB or cont
93	Lb	Lindera benzoin Spicebush	FACW+	18-24"	BBB or cont
93	Sc	Sambucus canadensis Common Elderberry	FACW+	18-24"	BBB or cont
93	Vc	Vaccinium corymbosum Highbush Blueberry	FACW+	18-24"	BBB or cont
93	Rv	Rhododendron viscosum Swamp Azalea	OBL	18-24"	BBB or cont

TREES (PLANT COMMUNITY E)

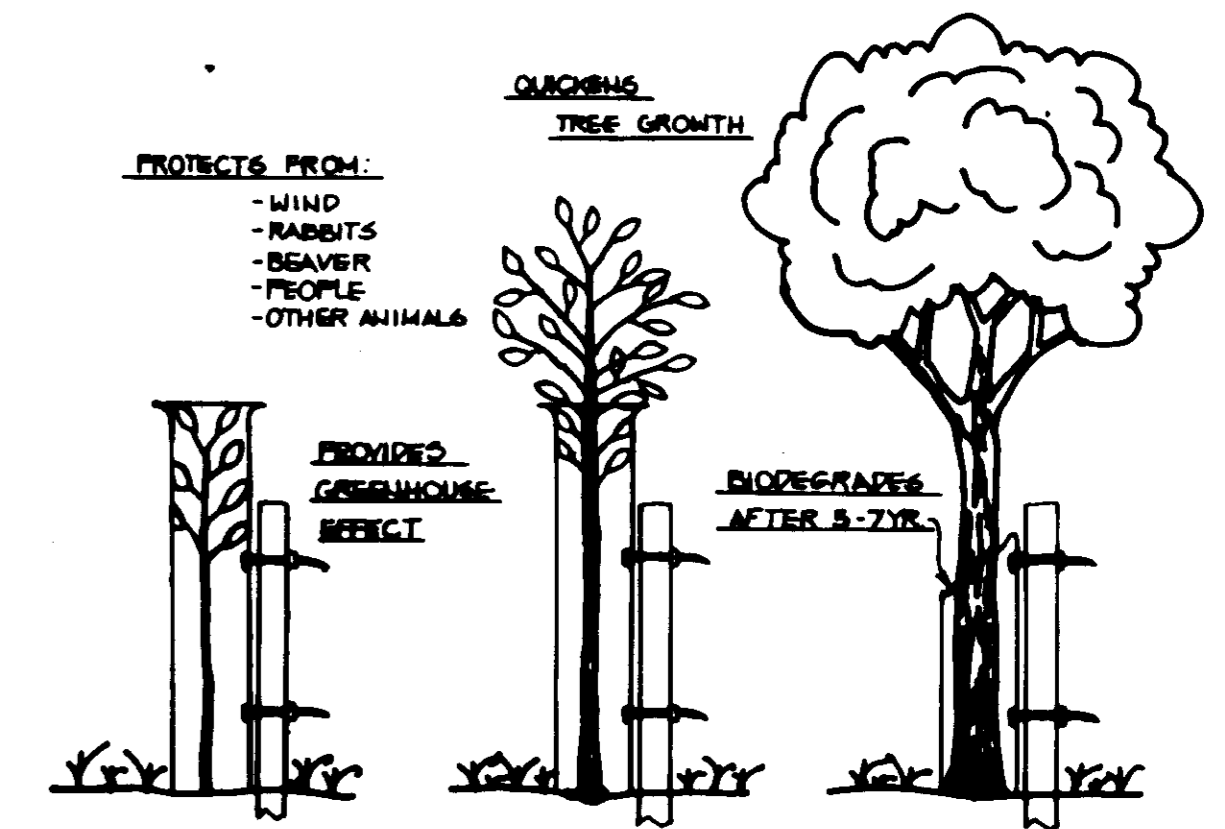
QTY	SYMBOL	SPECIES	INDICATOR STATUS	SIZE	REMARKS
40	Ar	Acer rubrum Red Maple	FAC	3-4'	BBB or cont
40	Fp	Fraxinus pennsylvanica Green Ash	FACW	3-4'	BBB or cont
40	Pt	Pinus taeda Loblolly Pine	FAC-	3-4'	BBB or cont
40	Io	Ilex opaca American Holly	FACU+	3-4'	BBB or cont
40	Qp	Quercus palustris Pin Oak	FACW	3-4'	BBB or cont
40	Po	Platanus occidentalis American Sycamore	FACW-	3-4'	BBB or cont

TREES (PLANT COMMUNITY F)

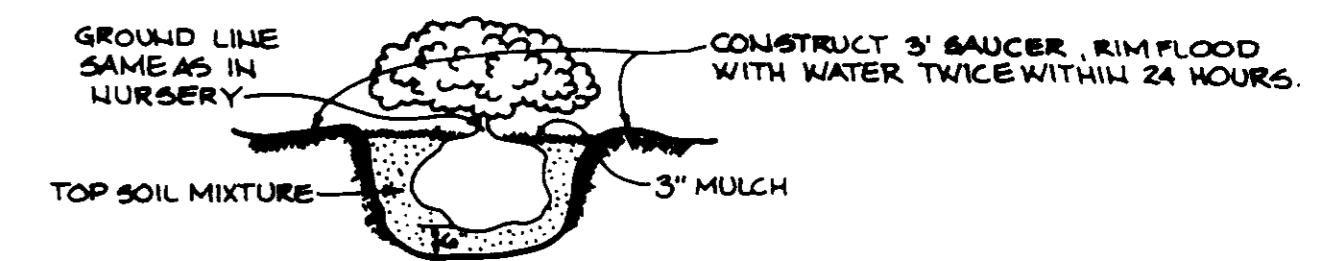
QTY	SYMBOL	SPECIES	INDICATOR STATUS	SIZE	REMARKS
13	Ps	Pinus strobus White Pine	FACU	3-4'	BBB or cont
13	Rp	Robinia pseudo-acacia Black locust	FACU-	3-4'	BBB or cont
13	Cc	Carya cordiformis Bitternut Hickory	NI	3-4'	BBB or cont
13	Ma	Magnolia acuminata Cucumber Magnolia	FACU	3-4'	BBB or cont
13	Qm	Quercus muhlenbergii Chinquapin Oak	NI	3-4'	BBB or cont

TUBEX PROCEDURES AND SPECIFICATIONS

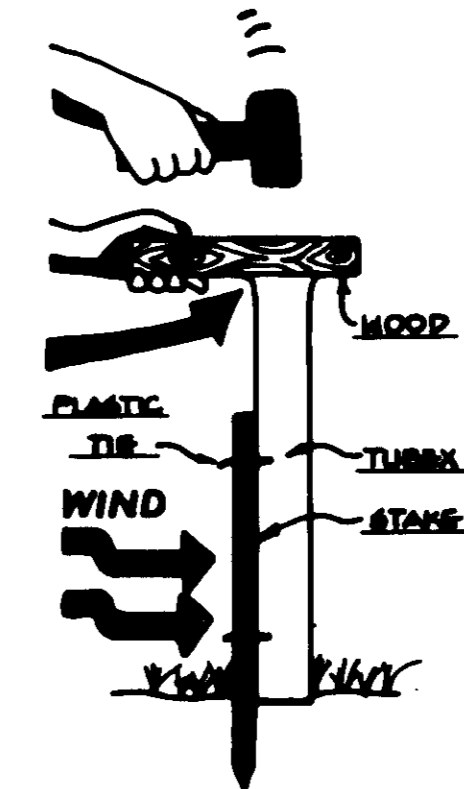
- Drive the stake into the ground 1.5" from the tree to a depth of 12-14". In open fields, drive the stake on the windward side of the seedling for added support. In shady areas, drive the stake on the north side to prevent the stake from shading the tree.
- Guide the TUBEX down the stake, making sure to loop the tie(s) over the stake as you go.
- Gently slip the TUBEX over the tree. Be sure to keep the tree free of the ties as you lower the TUBEX into place.
- Drive the base of the TUBEX 1" into the ground. This is critical. It forms an air-tight seal, to capture transpired water vapor. The easiest way to do this is by placing a 5x5" or bigger board over the shelter and wrapping it with a mallet. When pounding TUBEX into the sod, first loosen the ground and matted roots.
- Pull the ties tight.
- Place protective mesh over the top of the TUBEX to prevent entry by birds. They can become trapped and die inside the tubes without the mesh covering.



TUBEX TREE GROWTH
NO SCALE



SHRUB PLANTING DETAIL
NO SCALE



TUBEX INSTALLATION
NO SCALE

SUPPLEMENTAL INFORMATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>Jina Jinnamany</i>	3/15/95
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH	
DATE	REVISION
OWNER/DEVELOPER	
COLUMBIA PARKS AND RECREATION ASS. SUITE 300 3064 BROKEN LAND PARKWAY COLUMBIA, MARYLAND 21046	
PROJECT: OAKLAND RIDGE INDUSTRIAL CENTER MITIGATION PLAN AT LAKE ELKHORN	
AREA TAX MAP 36	ZONED-NEW TOWN
6 TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: DETAILS & SPECIFICATIONS	
M.A. DIRCKS & CO., INC. 2786 PEBBLE BEACH DRIVE ELICOTT CITY, MD 21042 WILDMAN ENVIRONMENTAL SERVICES	
5.2.99	DATE
DESIGNED BY: R.B.W. + M.A.D.	
DRAWN BY: R.B.W.	
PROJECT NO: 100200	
DATE: MAY 2, 1994	
SCALE: AS SHOWN	
DRAWING NO: 7 OF 7	
STATE OF MARYLAND PROFESSIONAL ENGINEER J. Farrell JAYKANT D. PAREKH #10148	