

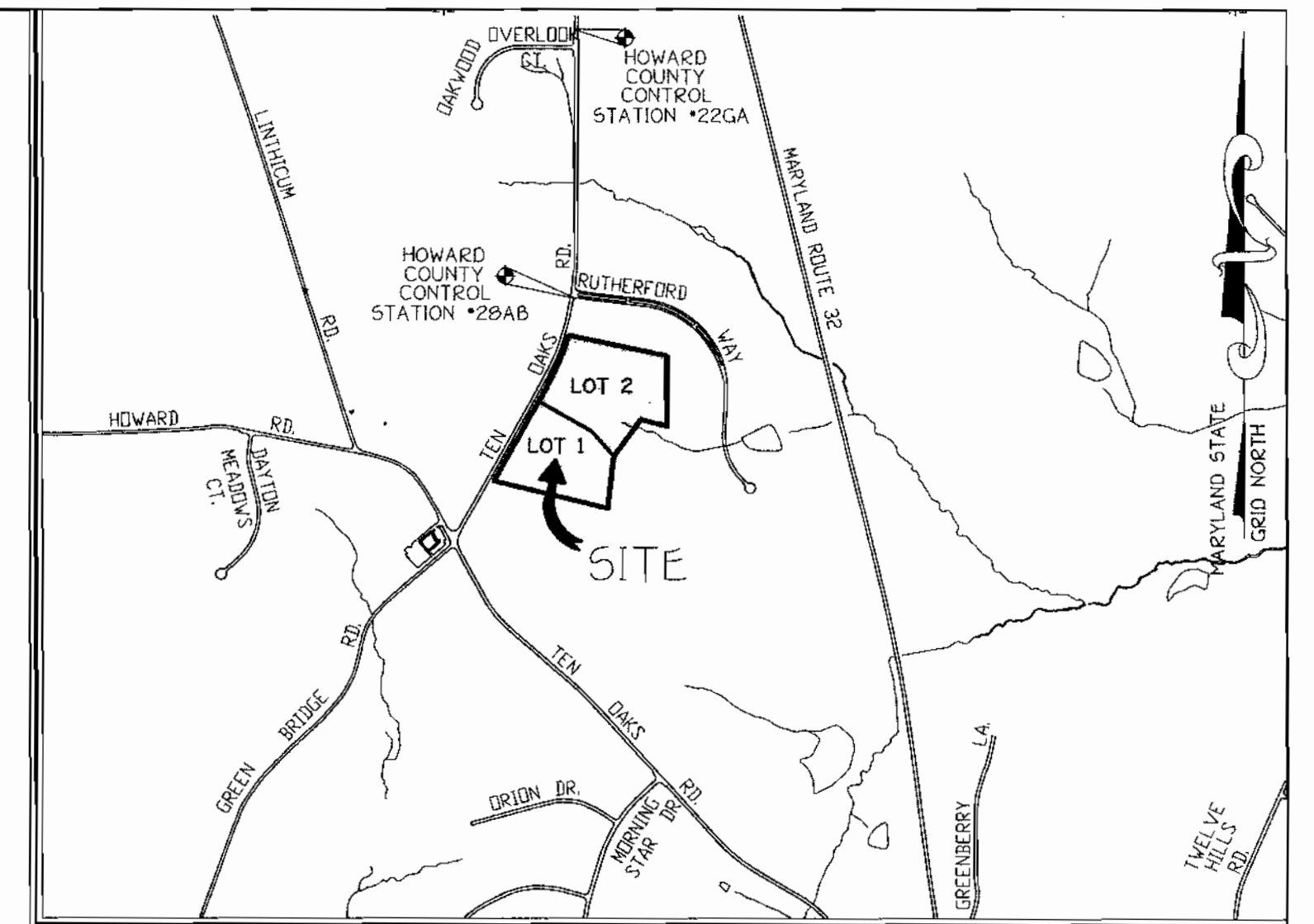
SHEET INDEX	
SHEET NUMBER	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	SITE DEVELOPMENT PLAN
4	HANDICAP ACCESS PLAN
5	SITE DETAILS
6	SITE DETAILS
7	SITE DETAILS
8	SEDIMENT AND EROSION CONTROL PLAN AND SEQUENCE OF CONSTRUCTION
9	SEDIMENT AND EROSION CONTROL PLAN
10	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
11	CROSS SECTIONS
12	CROSS SECTIONS
13	LANDSCAPE PLAN
14	LANDSCAPE PLAN
15	STORMWATER MANAGEMENT - PROFILES AND DETAILS
16	STORMWATER MANAGEMENT - PROFILES AND DETAILS
17	STORMWATER MANAGEMENT - PROFILES AND DETAILS
18	STORMWATER MANAGEMENT - PROFILES AND DETAILS
19	RETAINING WALL - ELEVATION VIEW AND CROSS SECTIONS
20	RETAINING WALL - CROSS SECTIONS
21	SOIL BORING PROFILES AND RETAINING WALL CROSS SECTIONS
22	WALKWAY GEOMETRY AND DETAILS
23	STORM DRAIN DRAINAGE AREA MAP
24	STORM DRAIN PROFILES AND DETAILS
25	STORM DRAIN PROFILES, STRUCTURE SCHEDULE AND DETAILS
26	MAINTENANCE OF TRAFFIC
27	MOT - GENERAL NOTES
28	PAVEMENT MARKING AND SIGNING PLAN

SITE DEVELOPMENT PLAN

WESTERN ELEMENTARY SCHOOL AND PARK

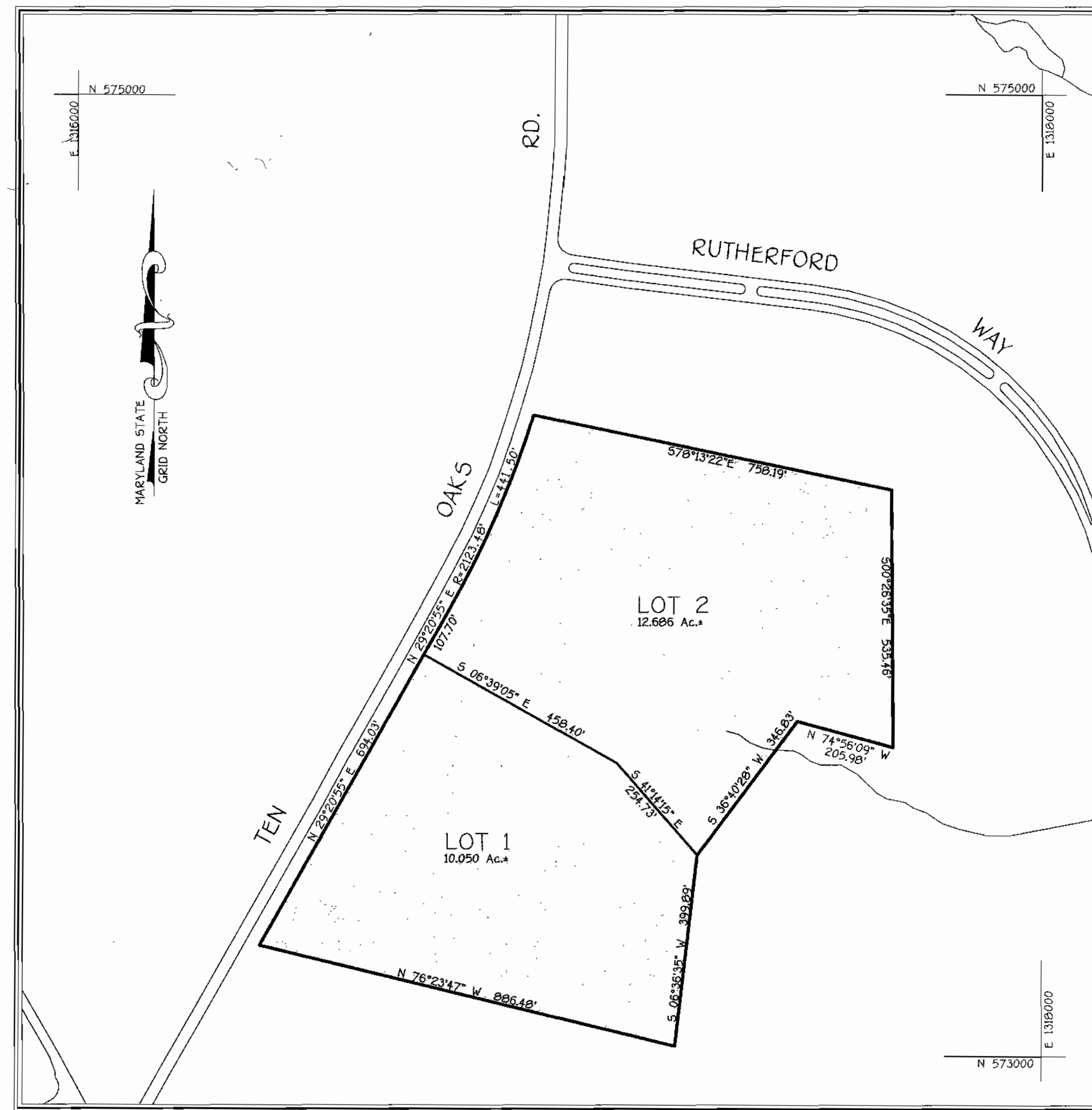
TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



General Notes

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
- The contractor shall notify the Bureau of Engineering/Construction Inspection Division at 410-313-1000 at least five working days prior to start of work.
- The contractor shall notify Miss Utility at 1-800-257-7777 at least 48 hours prior to any digging and excavation work.
- Project Background:
Location: Tax Map 28, Grid 8, Parcel 35
Zoning: This project is zoned RR-DEO per the 2/2/04 comprehensive zoning plan.
Election District: FIFTH
Section/Area: N/A
Site Area: 22.736 Ac.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to placement of any asphalt.
- All plan dimensions are to the face of curb or face of building unless otherwise noted. Dimensions are measured perpendicular or radial between items unless otherwise noted.
- Existing topography and features were derived from a field run monumented boundary survey by Fisher, Collins and Carter Inc. and Harford Aerial Surveys Inc. on or about March 2003.
- Coordinates are based on NAD 83 Maryland Coordinates System as projected by Howard County Geodetic Control Stations. 22GA N 576,646.709 28AB N 574,608.769
E 1,316,983.483 E 1,317,002.059
ELEV. 590.008 ELEV. 579.614
- Private water and sewer is to be utilized for this project.
- Stormwater management is provided on-site by a retention facility and an underground recharge facility. Both BMP's will be privately owned and maintained by the Howard County Public School System.
- All on-site storm drains under this site development plan are private.
- The existing utilities shown hereon were derived from available public records. The contractor must dig test pits by hand at all utility crossings and connection points to verify the exact location.
- All proposed ramps shall be in accordance with current A.D.A. Standards Accessibility Guidelines. Maximum sidewalk cross slope shall be two percent. Provide a (5'x5') five foot by five foot level landing (max. slope 2%) at the top and bottom of all ramps and building entrances and exits. Handrails shall be provided on all ramps in accordance with section 405.5 of the A.D.A. Standards Accessibility Guidelines.
- All driveways and parking to be owned and maintained by the Howard County Public School System.
- Any damage to County and or State owned right-of-way to be corrected at the contractor's expense.
- Trench bedding for storm drains structures shall be in accordance with Howard County Standard G2.01 Class C Bedding unless otherwise noted.
- Gutter pan of curbs shall be pitched to conform to the adjacent drainage patterns of the adjoining paving for vehicular use. See detail 13.
- For details of building profile, parking, road section, handicap, curb and gutter see sheets 5 and 6
- There are no known grave sites or cemeteries on this site based on a visual site visit.
- and based on an examination of the Howard County Cemetery Inventory MRP.
- This Project is recorded among the land records in Howard County, Maryland as Plat #16794 THRU #16796 Western Elementary School and Park.
- Other topics related to this site:
Soils Analysis prepared by: Penniman and Browne dated June 3, 2004
- All outside lighting shall comply with Zoning Regulations Section 134 which requires lights to be installed to direct/reflect light downwards and inwards on the site and away from all public streets and residential areas.
- The building shall be equipped with an automatic fire prevention sprinkler system.
- A Wetland delineation report was prepared by Eco-Science Professionals Inc. dated February 18, 2004, and field verified by the Howard Soil Conservation District on March 2004.
- Previous DPZ file numbers F 89-139, F 04-137, SDP 04-128.
- This SDP is subject to the First Amendment to the Fifth Edition of the Subdivision and Land Development Regulations dated October 2, 2003 and the Amended Zoning Regulations, per Council Bill 75-2003.
- No clearing, grading or construction is permitted within the limit of wetlands, streams or their required buffers, except as approved on this plan for necessary utility line disturbances in accordance with Section 16.116(c) of the Subdivision and Land Development Regulations.
- No landscape surety is required for this plan since it is a Howard County project.
- A Forest Conservation Report was provided by Eco-Science Professionals, and submitted with the Mass Grading Plan for the future Western Elementary School and Park SDP 04-128.
- See recorded plat #16794 thru #16796 for Forest Conservation Easement Area, for bearing and distance information.
- The Forest Conservation Act requirements for this project were addressed under SDP-04-128.
- Water wells for adjoining lots within 200 feet of the property boundaries and known septic system on or within 100 feet of the property have been shown.
- Percolation tests done in 2003 wet season.



PLAN

SCALE: 1" = 200'

General Notes (Continued)

- This area designates a private sewerage easement as required by the Maryland Department of the Environment for individual sewage disposal. Improvements of any nature in this area are restricted until public sewerage is available. These easements shall become null and void upon connection to a public sewerage system. The County Health Officer shall have the authority to grant adjustments to the private sewerage easement. Recordation of a modified easement shall not be necessary.
- Groundwater Appropriations Permit # H02003G015(01)
- Discharge Permit Number **04-DR-3479**.
- All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2" galvanized steel, perforated, square tube post (1/4 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (1/2 gauge) - 3' long. A galvanized steel pole cap shall be mounted on top of each post.

NOTES: THE CONTRACTOR SHALL NOT CREATE ANY BORROW PITS WITHIN THE PRIVATE SEWERAGE EASEMENTS OR CUT BELOW THE FINISHED GRADES SHOWN WITHIN THE PRIVATE SEWERAGE EASEMENT AREAS.

IN ACCORDANCE WITH THE HOWARD COUNTY ZONING REGULATIONS ADOPTED APRIL 13, 2004, SECTION 128 IN THE SUPPLEMENTARY ZONING DISTRICT REGULATIONS STATES IN A.10 THAT SETBACKS FROM LOT LINES INTERNAL TO A DEVELOPMENT WHEN TWO OR MORE CONTIGUOUS LOTS OR PARCELS ARE TREATED AS A SINGLE PARCEL FOR DEVELOPMENT PURPOSES, THE STRUCTURE AND USE SETBACKS FROM LOT LINES INTERNAL TO THE DEVELOPMENT SHALL NOT APPLY TO THE PROPOSED TENNIS COURTS, PLAY AREA AND RETAINING WALL

SITE ANALYSIS DATA

- General Site Data:
 - Present Zoning: RR-DEO
 - Proposed use of site or structure: Institutional; Public School and Park
 - Private water and sewer to be utilized.
- Area Tabulation:
 - Total project area: 22.736 Ac.
 - Area of this plan submission: 19.08 Ac. is the limit of submission and grading disturbance for the construction of the school, associated parking and the park
 - Impervious Coverage
Proposed Paved Areas (Parking and Walkways) - 19,768.61 sq.ft.
Building Coverage 73,281.45 Sqft.
SBR Building 3,065.72 Sqft.
Total 76,347.17 Sqft or 7.8%
- Open Space Data:
 - Total project area: N/A
 - Open Space Provided: N/A
- Parking Space Data:
 - The Number of parking spaces in accordance with the Public School System's requirements = N/A.
 - Total number of parking spaces provided on site: (Including handicap Parking) = 172.
 - Number of Handicapped parking spaces provided: (Including Handicapped Van Spaces) = 7.

LEGEND

Description	Symbol
Proposed Street Light	—●—
Existing Contour	- - - - -600 - - - - -
Proposed Contour	—600—
Existing Storm Drain Line	—5'-12" S.D.
Proposed Storm Drain Line	—24" HDPE (1507)
Existing Tree & Treeline	—x—x—x—x—x—
New Treeline	—wavy line—
Existing Fence	—x—x—x—x—x—
Limit of Grading Disturbance (L.O.D.)	—dashed line—
Wetland Buffer	—dotted line—
Stream Buffer	—dotted line—
100 Year Floodplain	—dotted line—
Private Sewerage Easement	—hatched area—
Wetland Area	—dotted area—
Super Silt Fence	—SSF—SSF—SSF—
Forest Conservation Easement	—tree symbols—
Existing Paving	—dotted pattern—
Proposed Concrete	—dotted pattern—
Proposed Macadam	—cross-hatched pattern—
Proposed Grass Pavers	—cross-hatched pattern—
Street Light by Others	—circle with cross—

Denotes 250-watt HPS vapor pendant fixture (sq) mounted at 30' on a bronze fiberglass pole using a 12' arm.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
410.461.2000



APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Wells 4/7/05
for COUNTY HEALTH OFFICER JAB DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Mark A. Coughlin 4/14/05
Director - Department of Planning and Zoning DATE

Cindy Hamilton 4/13/05
Chief, Division of Land Development DATE

John D. ... 4/4/05
Chief, Development Engineering Division DATE

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6798

TCA ARCHITECTS
2561 SIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-0700

Address Chart					
Parcel Number	Street Address				
P. 35	LOT 1 4691 TEN OAKS ROAD				
	LOT 2 4671 TEN OAKS ROAD				
PROJECT	SECTION/AREA				
WESTERN ELEMENTARY SCHOOL AND PARK	N/A				
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	8	RR-DEO	28	FIFTH	6051.01
WATER CODE	SEWER CODE				
N/A	N/A				

TITLE SHEET

WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40'
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION 4 JANUARY 05"
SHEET 1 OF 28

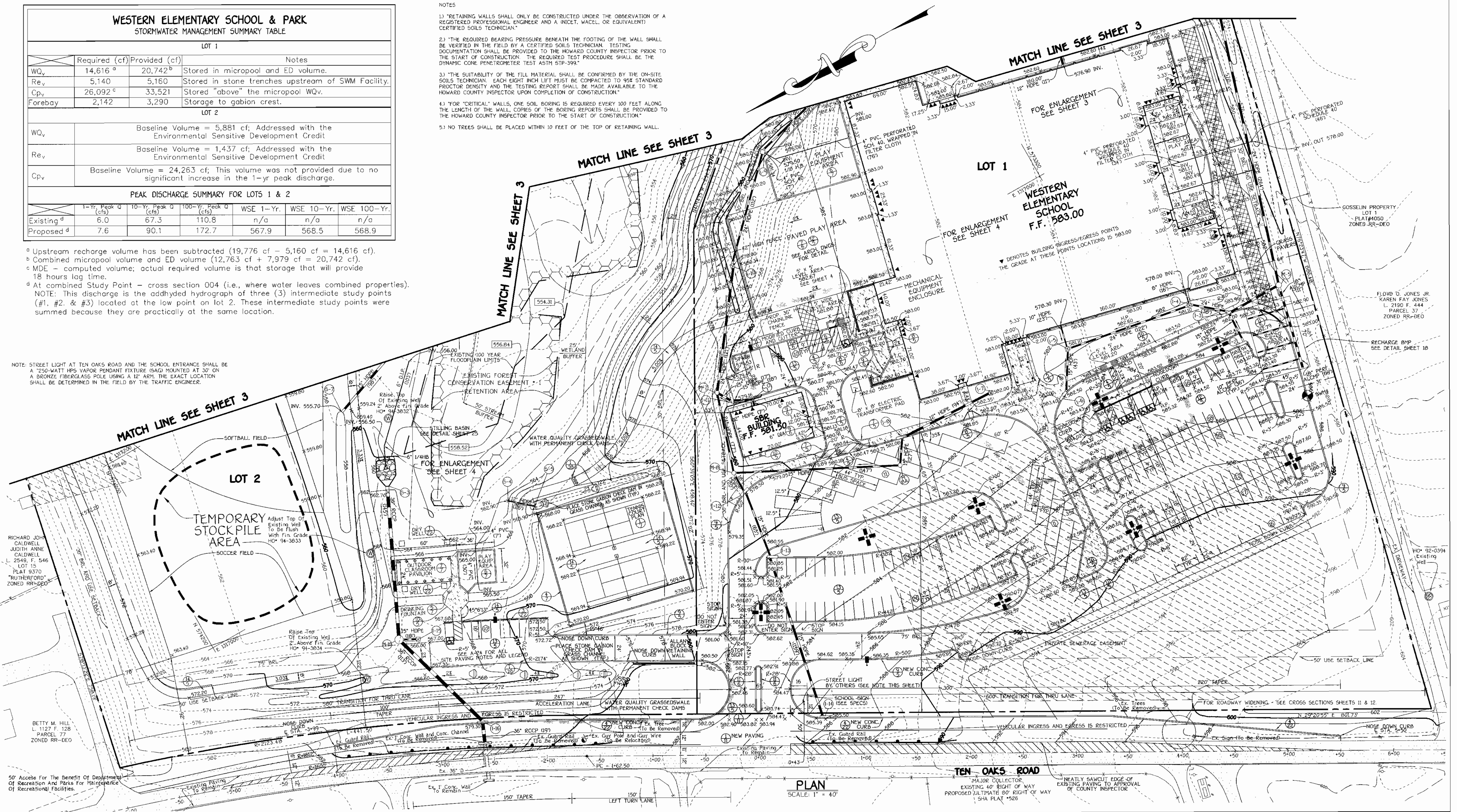
WESTERN ELEMENTARY SCHOOL & PARK
STORMWATER MANAGEMENT SUMMARY TABLE

LOT 1						
	Required (cf)	Provided (cf)	Notes			
WQ _v	14,616 ^a	20,742 ^b	Stored in micropool and ED volume.			
Re _v	5,140	5,160	Stored in stone trenches upstream of SWM Facility.			
Cp _v	26,092 ^c	33,521	Stored "above" the micropool WQ _v .			
Forebay	2,142	3,290	Storage to gation crest.			
LOT 2						
WQ _v	Baseline Volume = 5,881 cf; Addressed with the Environmental Sensitive Development Credit					
Re _v	Baseline Volume = 1,437 cf; Addressed with the Environmental Sensitive Development Credit					
Cp _v	Baseline Volume = 24,263 cf; This volume was not provided due to no significant increase in the 1-yr peak discharge.					
PEAK DISCHARGE SUMMARY FOR LOTS 1 & 2						
	1-Yr. Peak Q (cfs)	10-Yr. Peak Q (cfs)	100-Yr. Peak Q (cfs)	WSE 1-Yr.	WSE 10-Yr.	WSE 100-Yr.
Existing ^d	6.0	67.3	110.8	n/a	n/a	n/a
Proposed ^d	7.6	90.1	172.7	567.9	568.5	568.9

^a Upstream recharge volume has been subtracted (19,776 cf - 5,160 cf = 14,616 cf).
^b Combined micropool volume and ED volume (12,763 cf + 7,979 cf = 20,742 cf).
^c MDE - computed volume; actual required volume is that storage that will provide 18 hours lag time.
^d At combined Study Point - cross section 004 (i.e., where water leaves combined properties).
 NOTE: This discharge is the addhyed hydrograph of three (3) intermediate study points (#1, #2, & #3) located at the low point on lot 2. These intermediate study points were summed because they are practically at the same location.

NOTE: STREET LIGHT AT TEN OAKS ROAD AND THE SCHOOL ENTRANCE SHALL BE A 250-WATT HPS VAPOR PENDANT FIXTURE (SAG) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12" ARM. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE TRAFFIC ENGINEER.

- NOTES
- 1) "RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A INCLT, WACCL, OR EQUIVALENT CERTIFIED SOILS TECHNICIAN."
 - 2) "THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399."
 - 3) "THE SUITABILITY OF THE FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH EIGHT INCH LIFT MUST BE COMPACTED TO 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION."
 - 4) "FOR "CRITICAL" WALLS, ONE SOIL BORING IS REQUIRED EVERY 100 FEET ALONG THE LENGTH OF THE WALL. COPIES OF THE BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION."
 - 5) NO TREES SHALL BE PLACED WITHIN 10 FEET OF THE TOP OF RETAINING WALL.



PLAN
SCALE: 1" = 40'



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
NATIONAL SQUARE, OFFICE PARK - 1827 BALTIMORE NATIONAL FREE
ELICOTT CITY, MARYLAND 21042
410-481-2855

APPROVED DEPARTMENT OF PLANNING AND ZONING

Danish A. Lytle
Director - Department of Planning and Zoning
4/14/05
DATE

Cindy Hamner
Chief, Division of Land Development
4/13/05
DATE

William J. ...
Chief, Department of Engineering Division
4/14/05
DATE

APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. ...
HOWARD COUNTY HEALTH OFFICER
4/7/05
DATE

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
ELICOTT CITY, MARYLAND 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-0700

Address Chart	
Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35

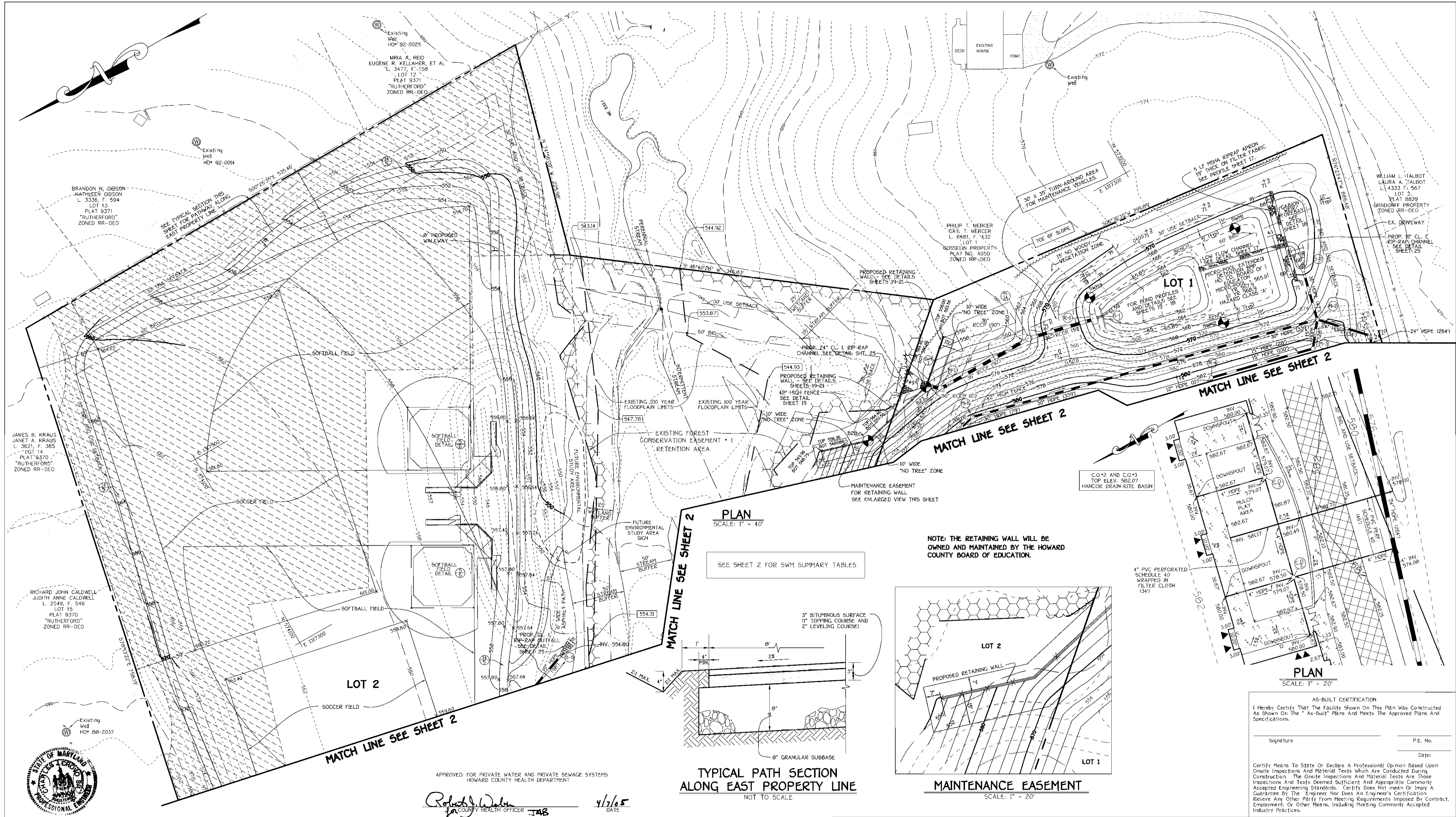
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONING	ELEC. DIST.	CENSUS TR.
16794 - 16796	8	RR-DEO	2B	FIFTH	6051.01

WATER CODE	SEWER CODE
N/A	N/A

SITE DEVELOPMENT PLAN

WESTERN ELEMENTARY SCHOOL AND PARK
LOTS 1 AND 2

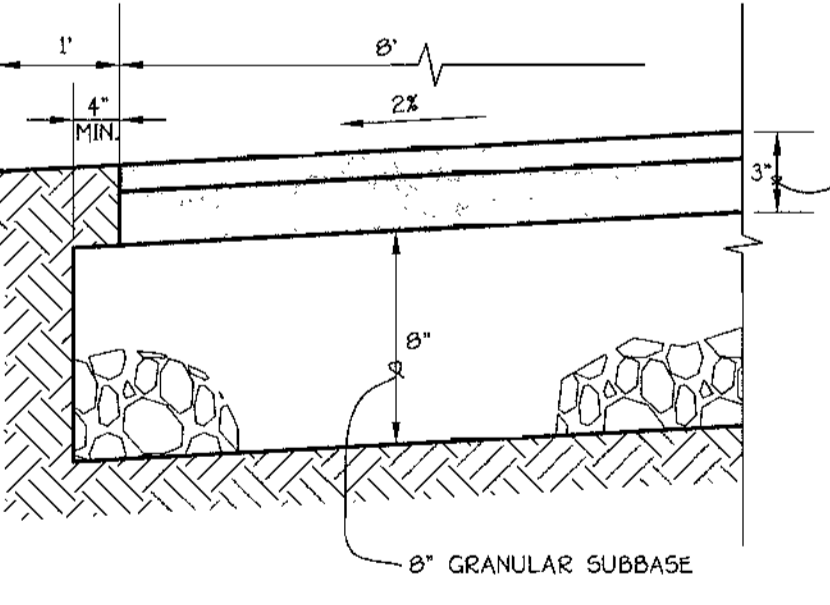
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 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 40'
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 "BID AND CONSTRUCTION 4 JANUARY 05"
 SHEET 2 OF 28



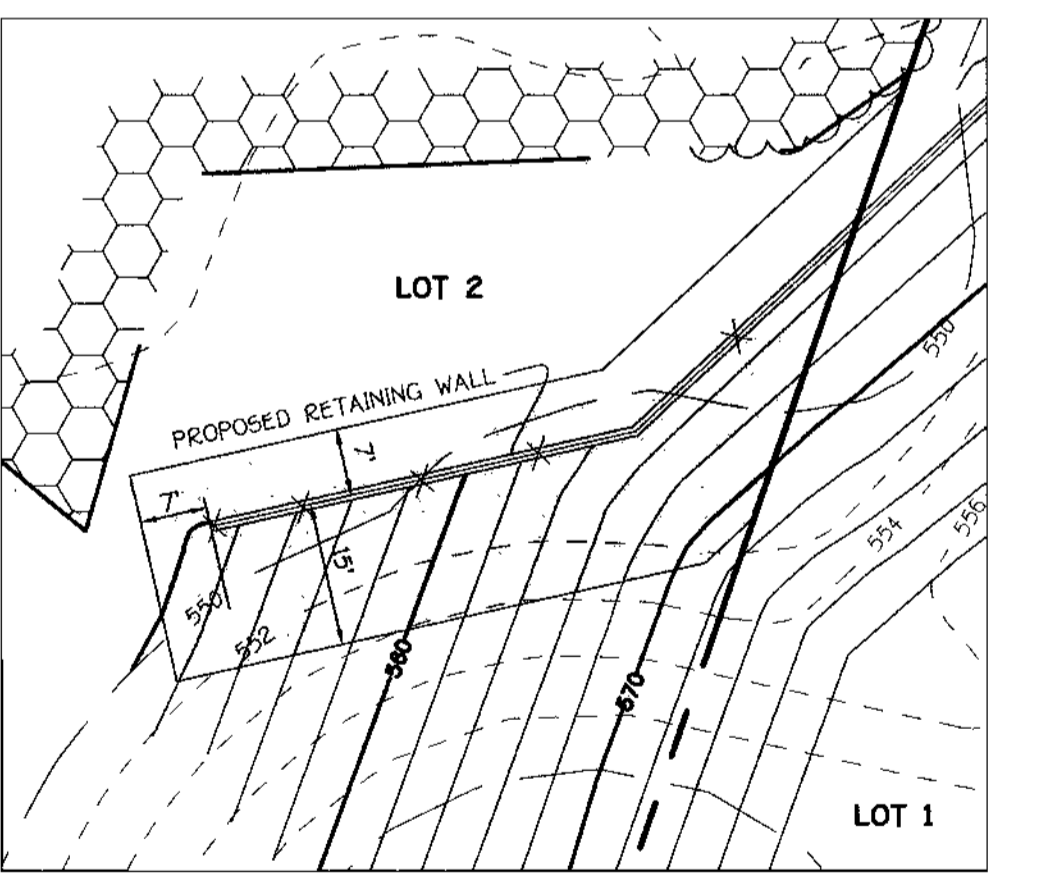
PLAN
SCALE: 1" = 40'

SEE SHEET 2 FOR SWM SUMMARY TABLES

NOTE: THE RETAINING WALL WILL BE OWNED AND MAINTAINED BY THE HOWARD COUNTY BOARD OF EDUCATION.



TYPICAL PATH SECTION
ALONG EAST PROPERTY LINE
NOT TO SCALE



MAINTENANCE EASEMENT
SCALE: 1" = 20'

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Wicks
FOR COUNTY HEALTH OFFICER JAB
4/7/05
DATE



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.

Kathleen Conley Young
Signature Of Developer
1/18/05
Date

CATHLEEN CONLEY YOUNG
Printed Name Of Developer

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.

Jim Myers
Signature
3/30/05
Date

USDA-Natural Resources Conservation Service

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.

Charles J. Crain Sr.
Signature Of Engineer
1/31/05
Date

CHARLES J. CRAIN SR.
Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Charles J. Crain Sr.
Signature
3/30/05
Date

Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING

David M. Layle
Director - Department of Planning and Zoning
3/17/05
Date

Conny Hamilton
Chief, Division of Land Development
4/13/05
Date

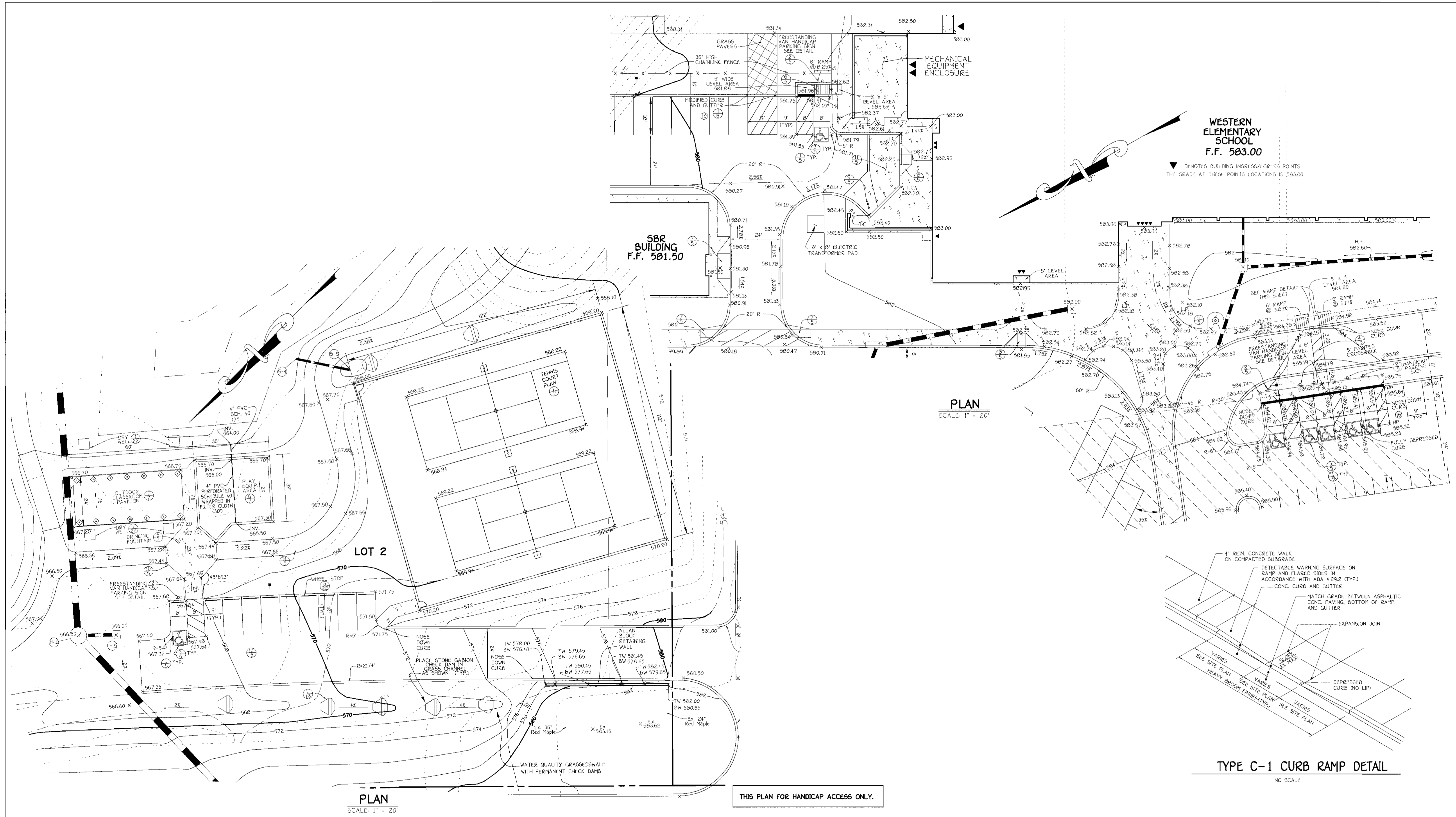
John P. ...
Chief, Development Engineering Division
4/14/05
Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 100
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

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ZONE	TAX/ZONE
RR-DEO	2B
ELEC. DIST.	CENSUS TR.
FIFTH	6051.01
WATER CODE	SEWER CODE
N/A	N/A

SITE DEVELOPMENT PLAN		
WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2		
TAX MAP No.: 2B	GRID No.: 8	PARCEL No.: 35
FIFTH ELECTION DISTRICT	HOWARD COUNTY, MARYLAND	
SCALE: 1" = 40'	DATE: OCT. 7, 2004	
BUILDING PERMIT/CD REVIEW	12 NOVEMBER 04	
"BID AND CONSTRUCTION"	4 JANUARY 05	
SHEET 3 OF 28		



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10277 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
410-461-8955

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Mark A. Wright 8/14/05
Director - Department of Planning and Zoning

Linda Hamilton 4/13/05
Chief, Division of Land Development

Robert J. Walter 4/7/05
County Health Officer

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Walter 4/7/05
DATE

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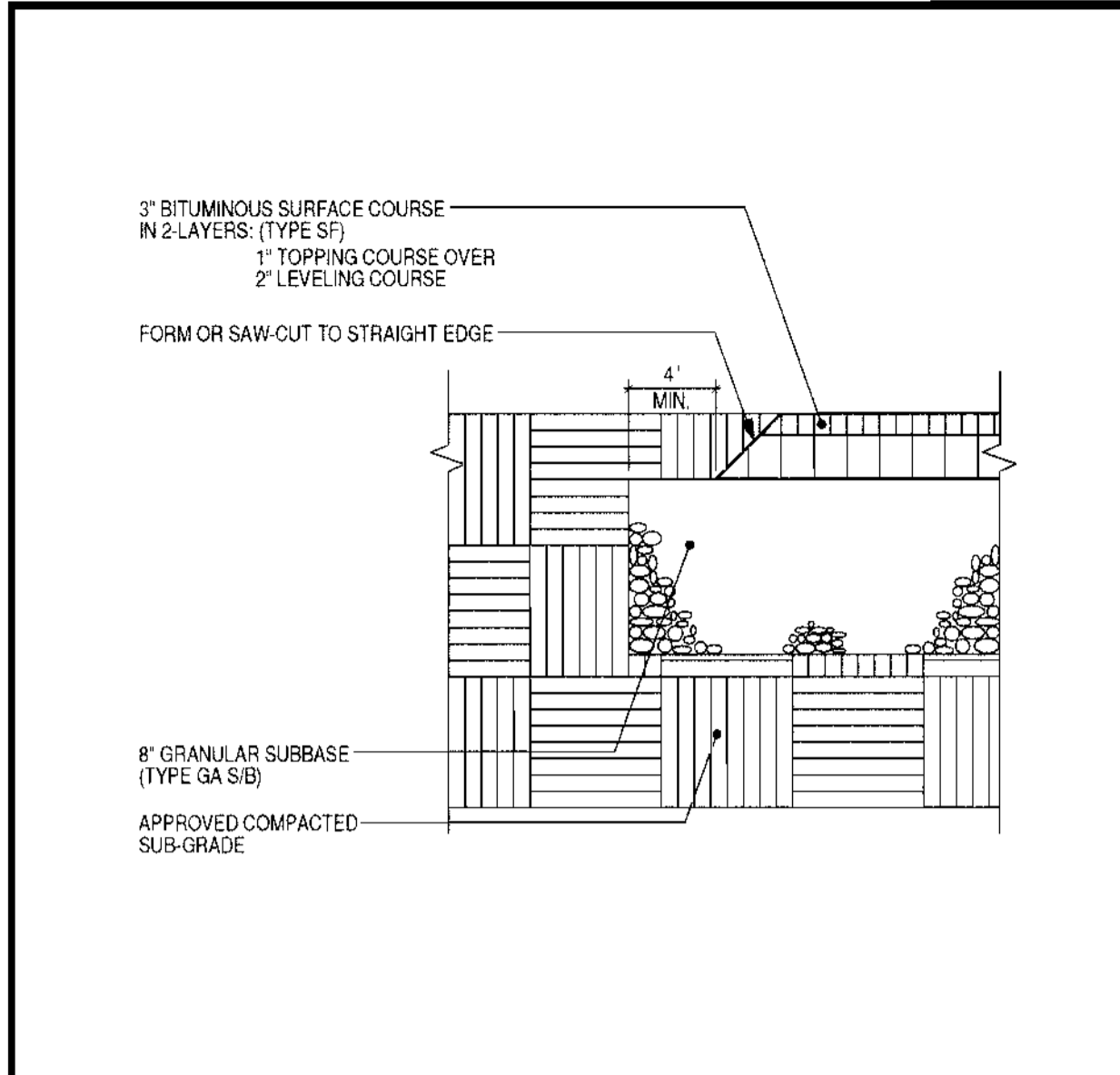
HANDICAP ACCESS PLAN

**WESTERN ELEMENTARY SCHOOL AND PARK
LOTS 1 AND 2**

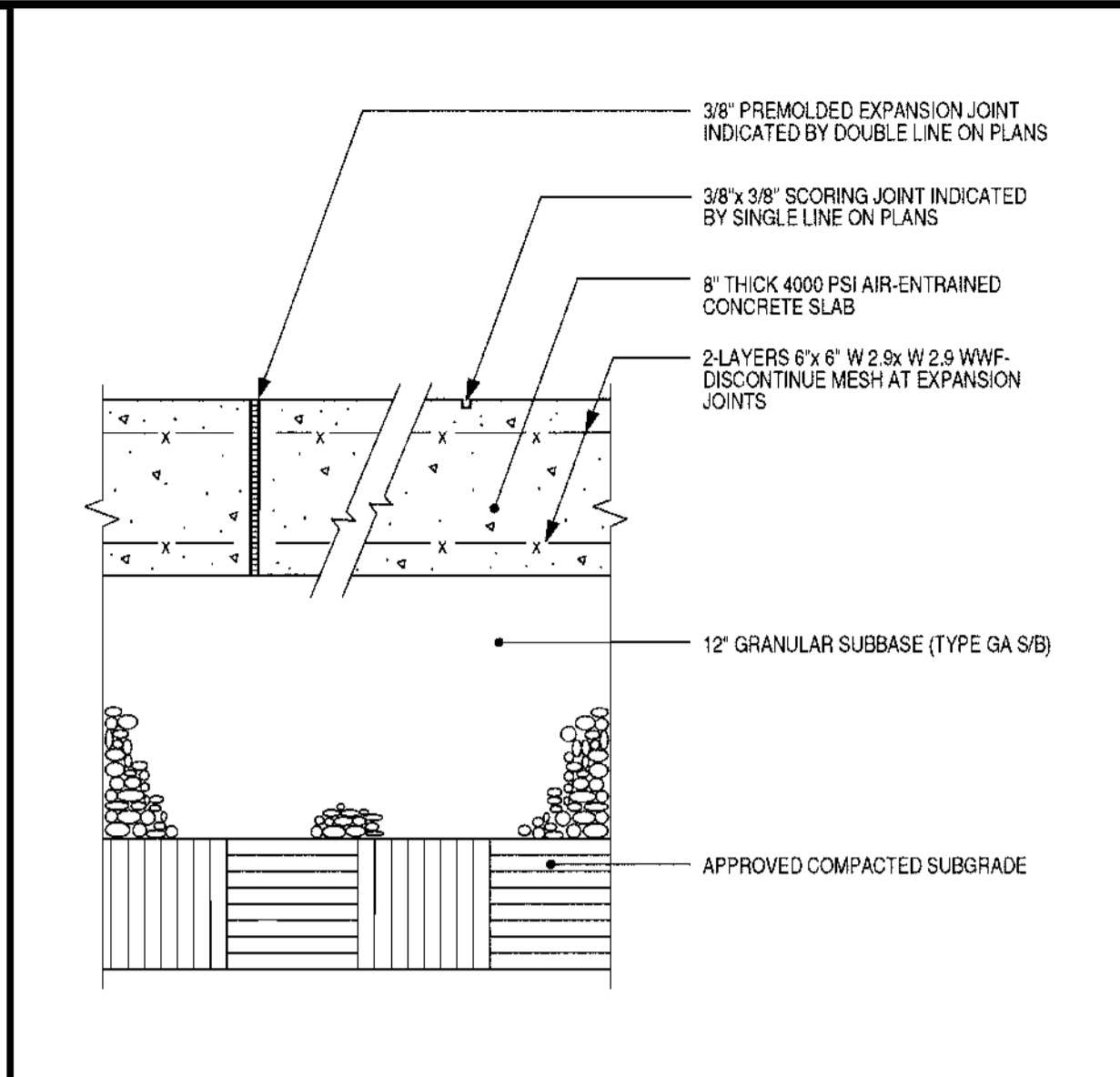
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SHEET 4 OF 28

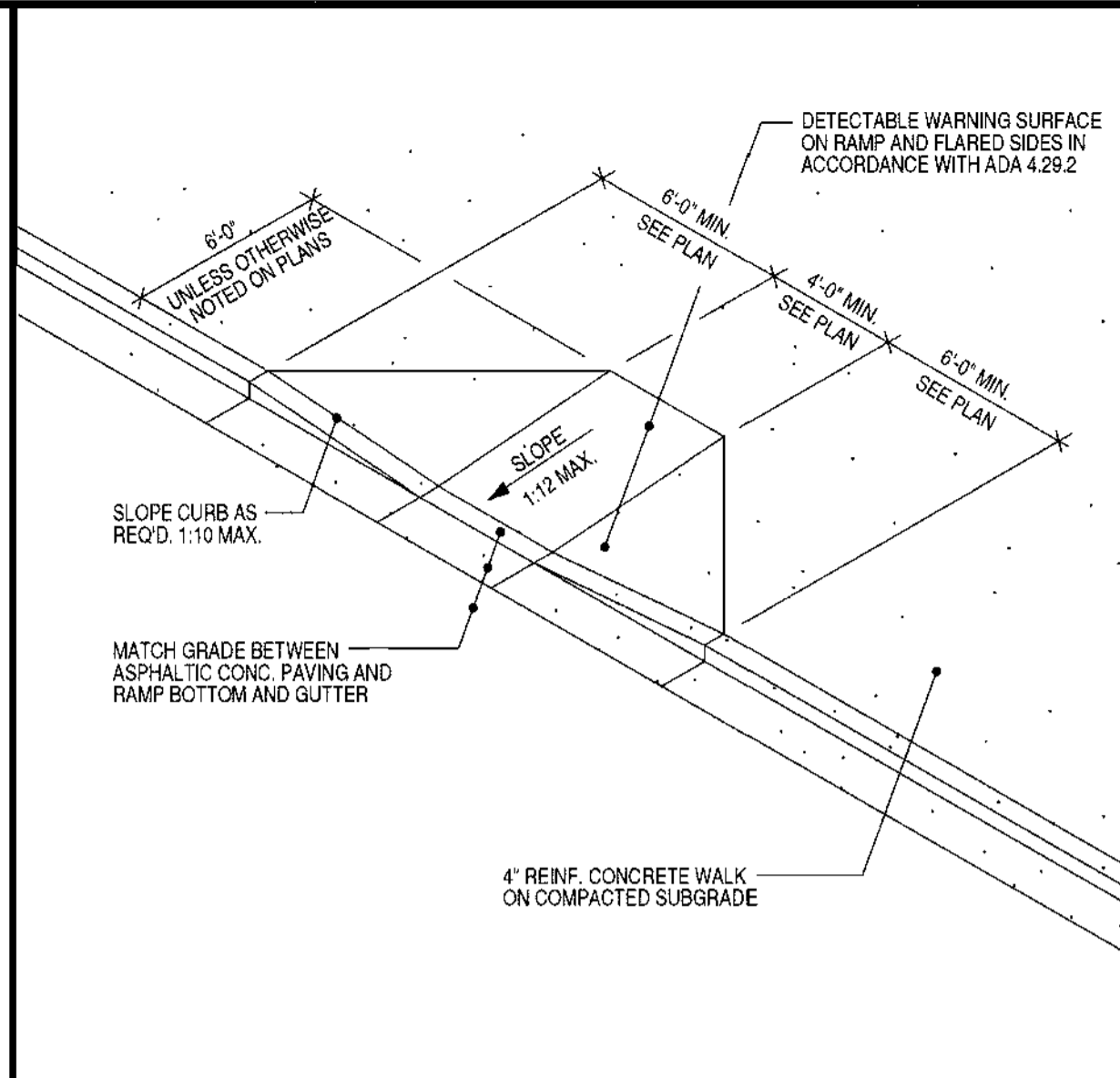
SDP05-007



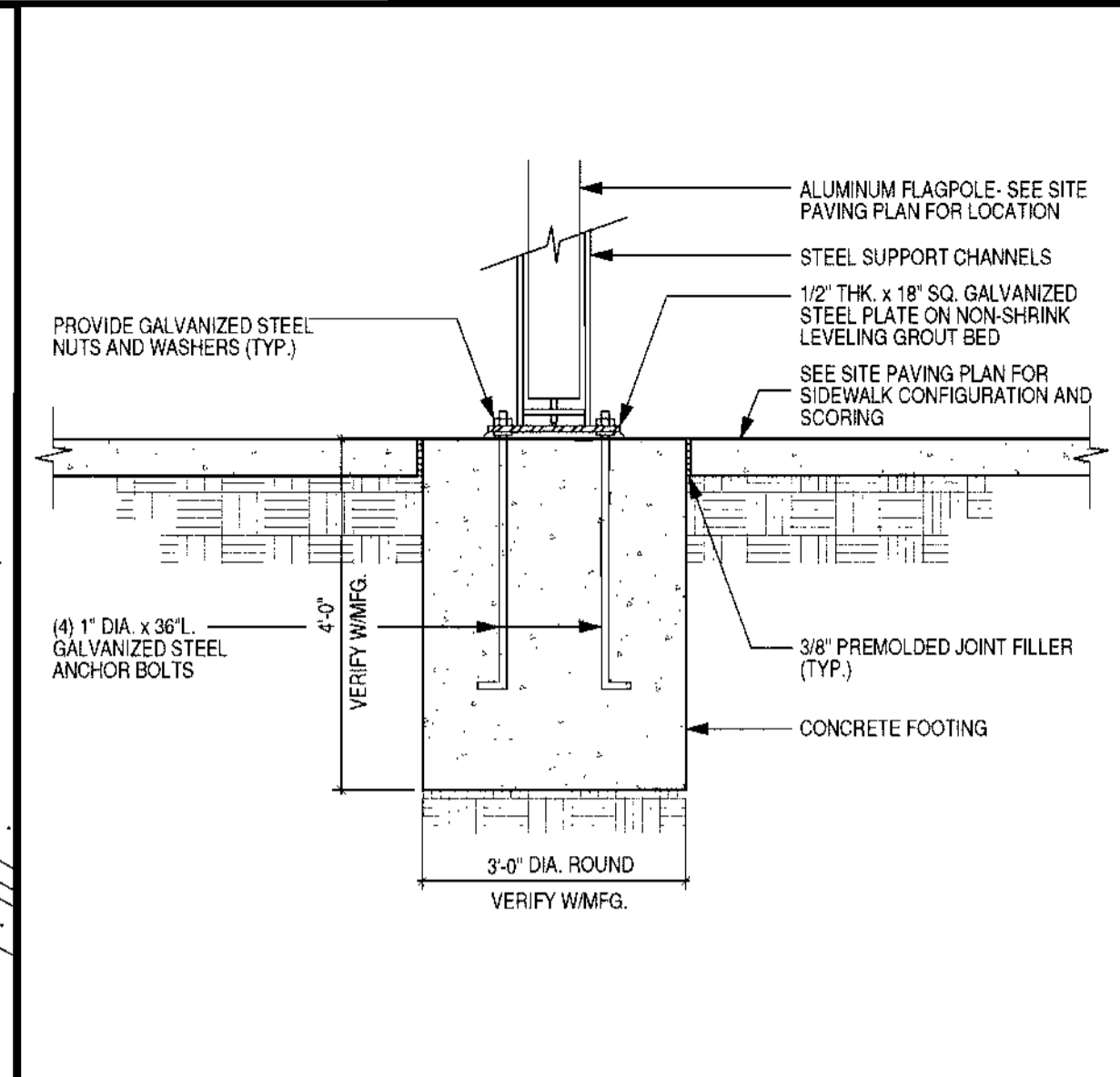
14 **5** **ASPHALTIC WALK PAVING DETAIL** **1** **1/2** **11** **5**



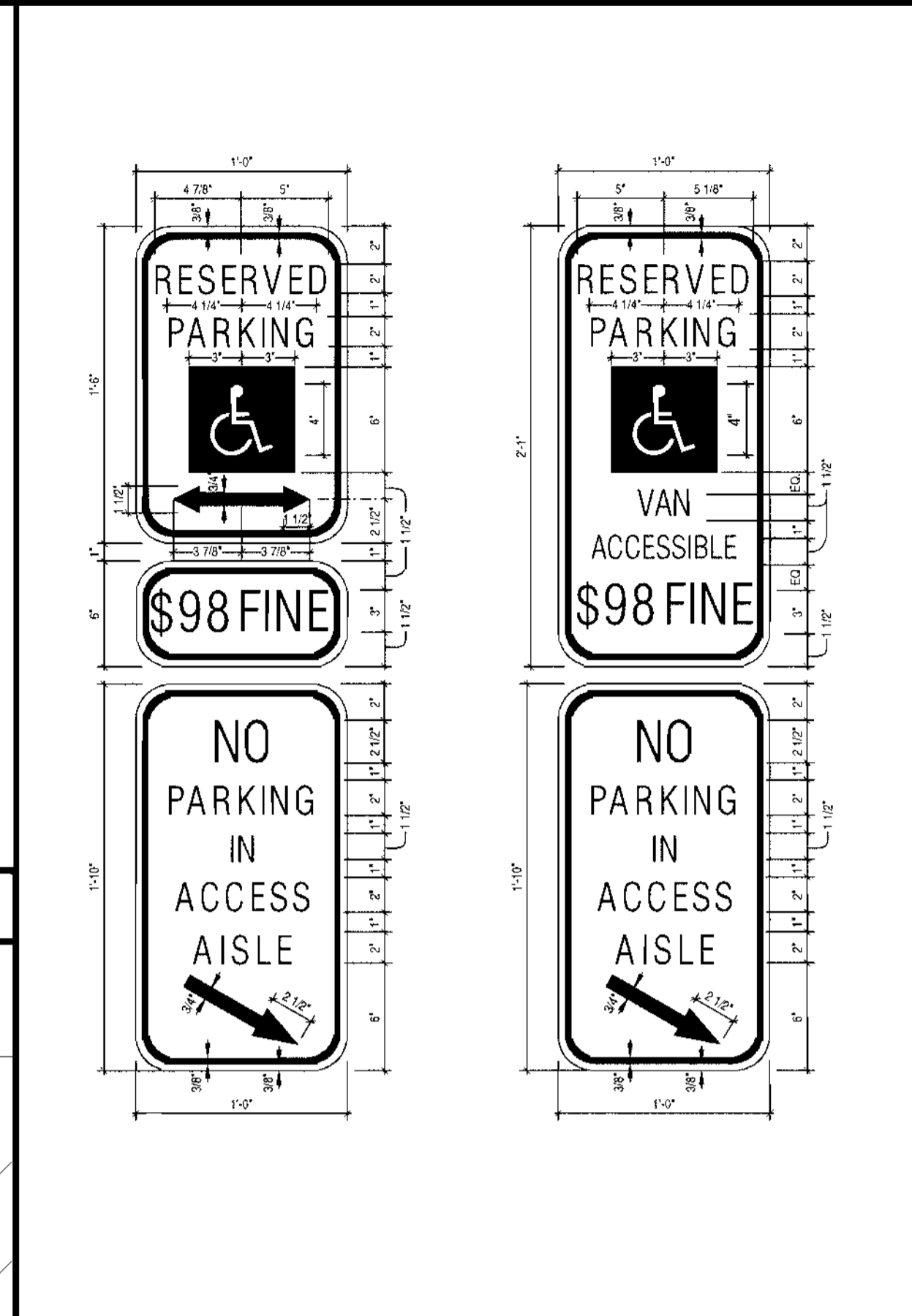
11 **5** **HEAVY DUTY CONCRETE PAVING DETAIL** **1** **1/2** **8** **5**



8 **5** **TYPE A CURB RAMP DETAIL** HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY. H.O.C.O. DETAIL R4.01. NO SCALE. **5** **5**

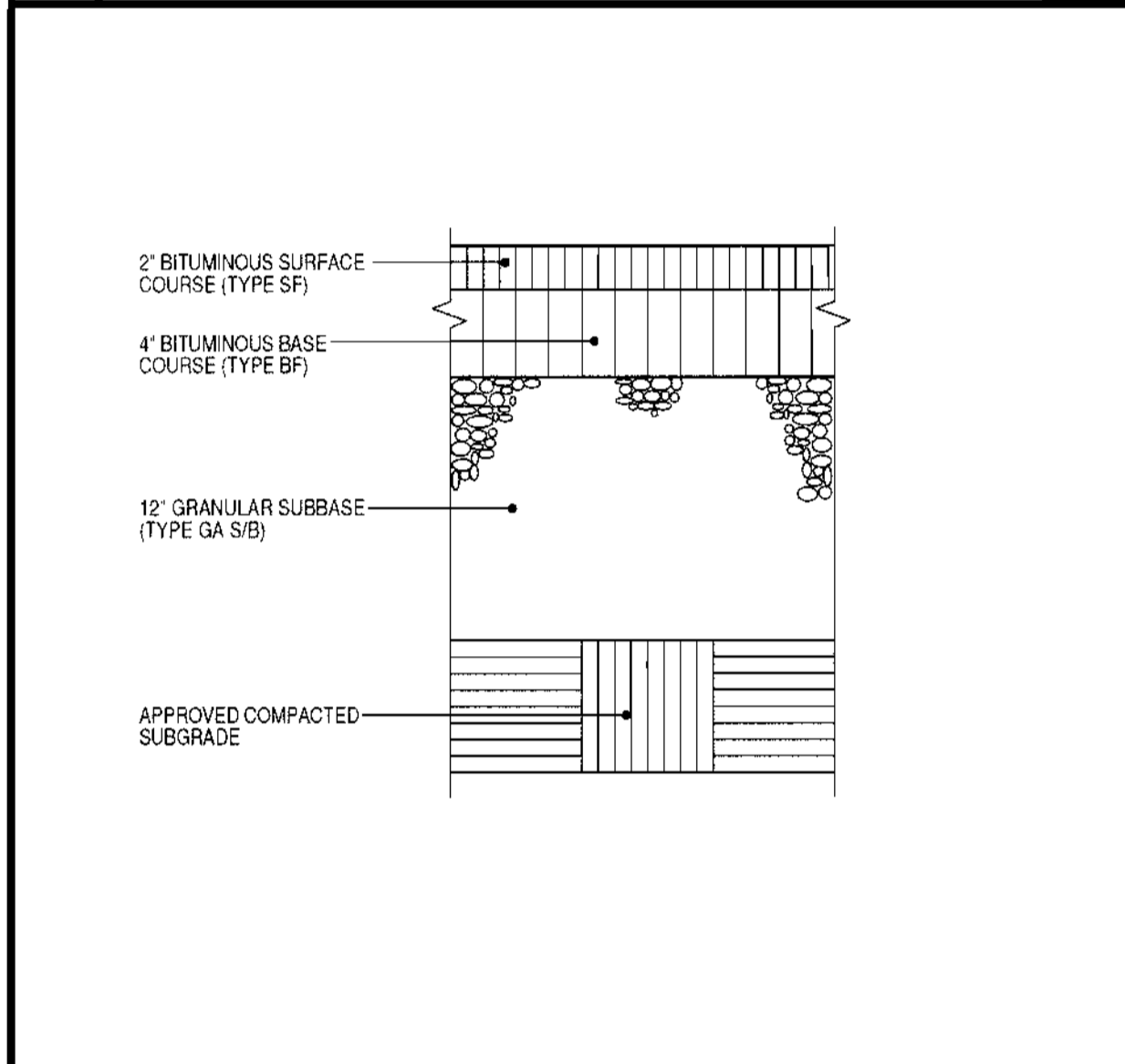


5 **2** **TILT FLAGPOLE DETAIL** **1** **1/2**

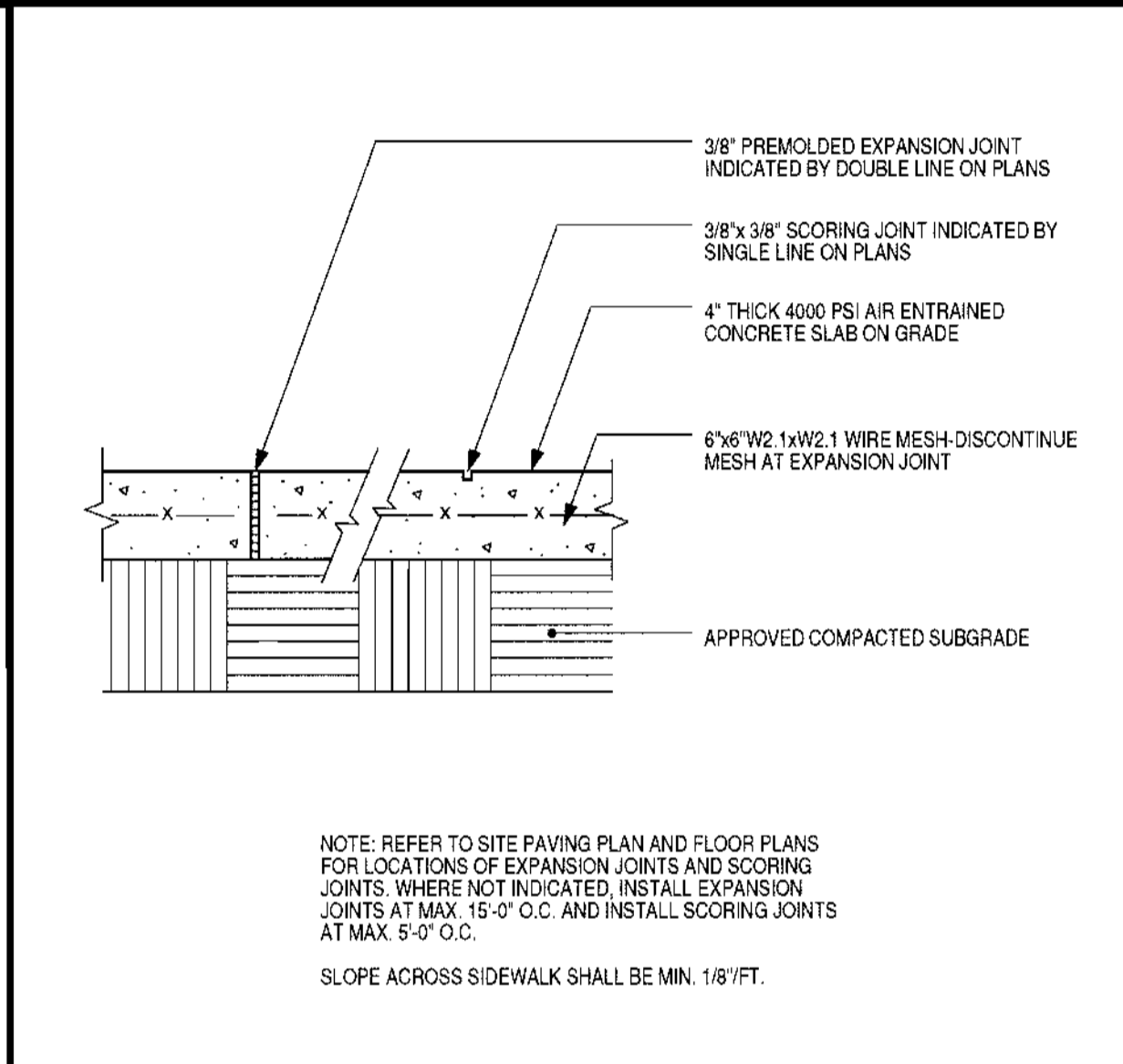


GENERAL NOTES:

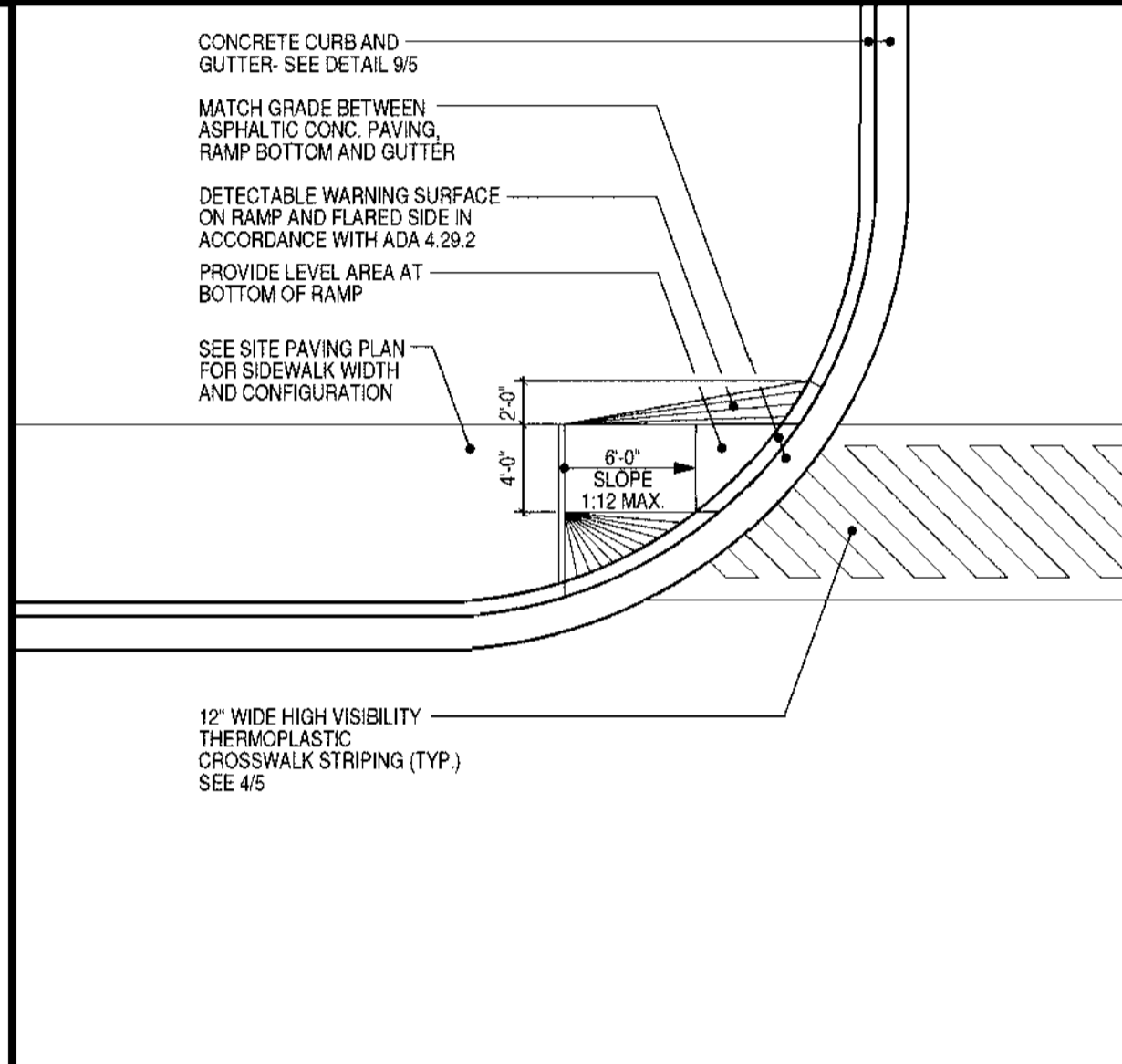
- SIGNS SHALL MEET DESIGN STANDARDS OF THE FEDERAL HIGHWAY ADMINISTRATION AND CONFORM TO THE STATE OF MARYLAND STANDARD HIGHWAY SIGN BOOKLET DETAIL 67.4.
- ONE SIGN IS REQUIRED PER SPACE. PLACE AS SHOWN ON SITE DEVELOPMENT PLAN.
- SPACES INDICATED ON SITE DEVELOPMENT PLAN AS "VAN" ACCESSIBLE SHALL BE SIGNED ACCORDINGLY.
- SIGNS SHALL BE POLE MOUNTED WITH COUNTY APPROVED HOT DIPPED GALVANIZED COUNTY APPROVED PERFORATED CHANNEL POSTS W/TOP OF SIGNS 9'-1" ABOVE FINISHED GRADE OR AS INDICATED ON SITE DRAWINGS.
- SIGN SHALL BE ATTACHED TO FLANGED SIDE OF POST. POST SHALL EXTEND INTO GROUND 2'-6" MIN.
- COLORS: LEGEND AND BORDER-GREEN SYMBOL-WHITE ON BLUE BACKGROUND BACKGROUND-WHITE
- CONTRACTOR SHALL COORDINATE ARROW DIRECTION WITH LOCATION OF ADJACENT AISLE.



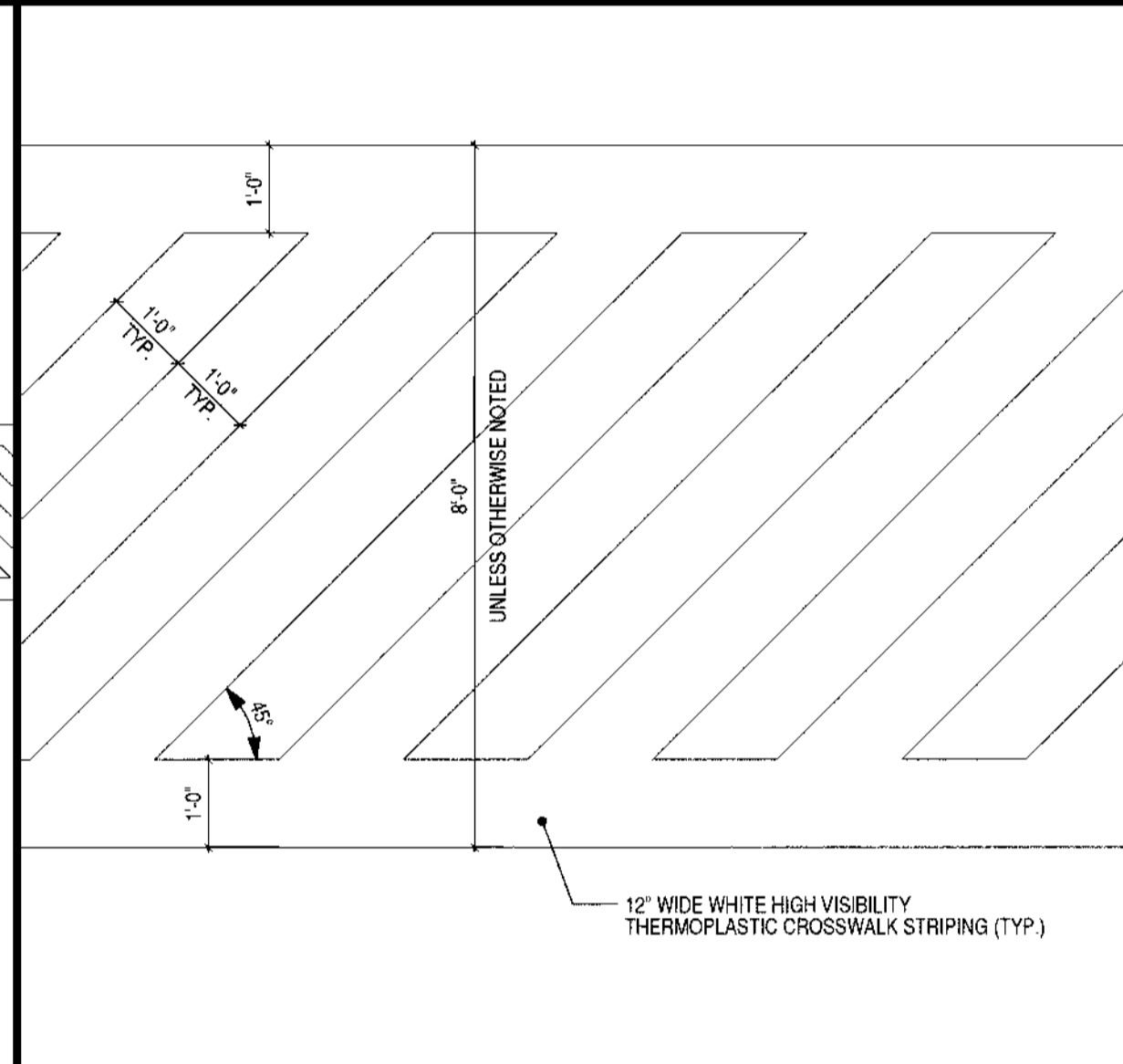
13 **5** **HEAVY DUTY ASPHALTIC PAVING DETAIL** **1** **1/2** **10** **5**



10 **5** **CONCRETE WALK DETAIL** HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY. H.O.C.O. DETAIL R3.05. **1** **1/2** **7** **5**

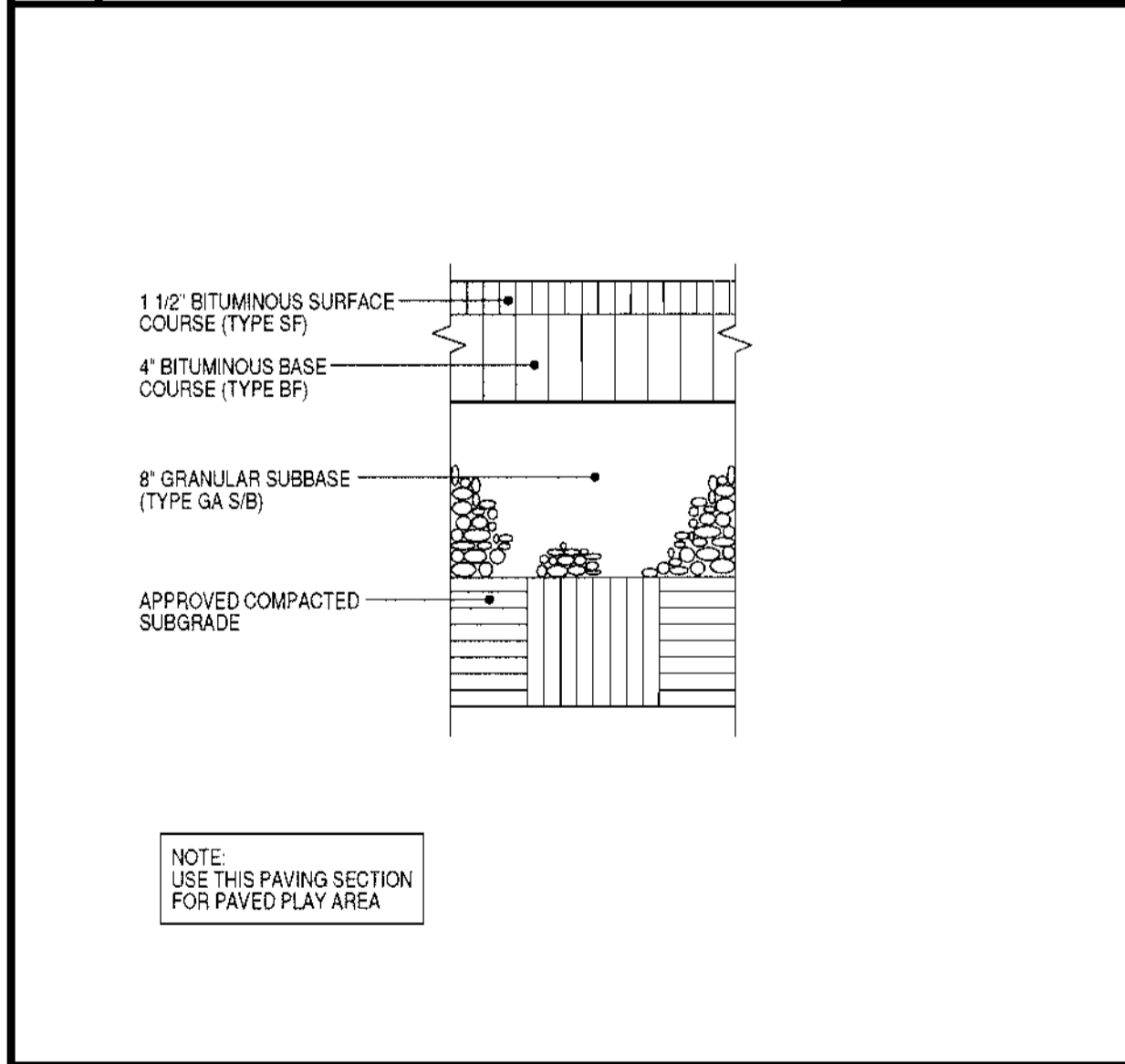


7 **5** **TYPE B CURB RAMP DETAIL** HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY. H.O.C.O. DETAIL R4.02. FOR USE AT RADIUS CURB. **1** **1/2** **4** **5**

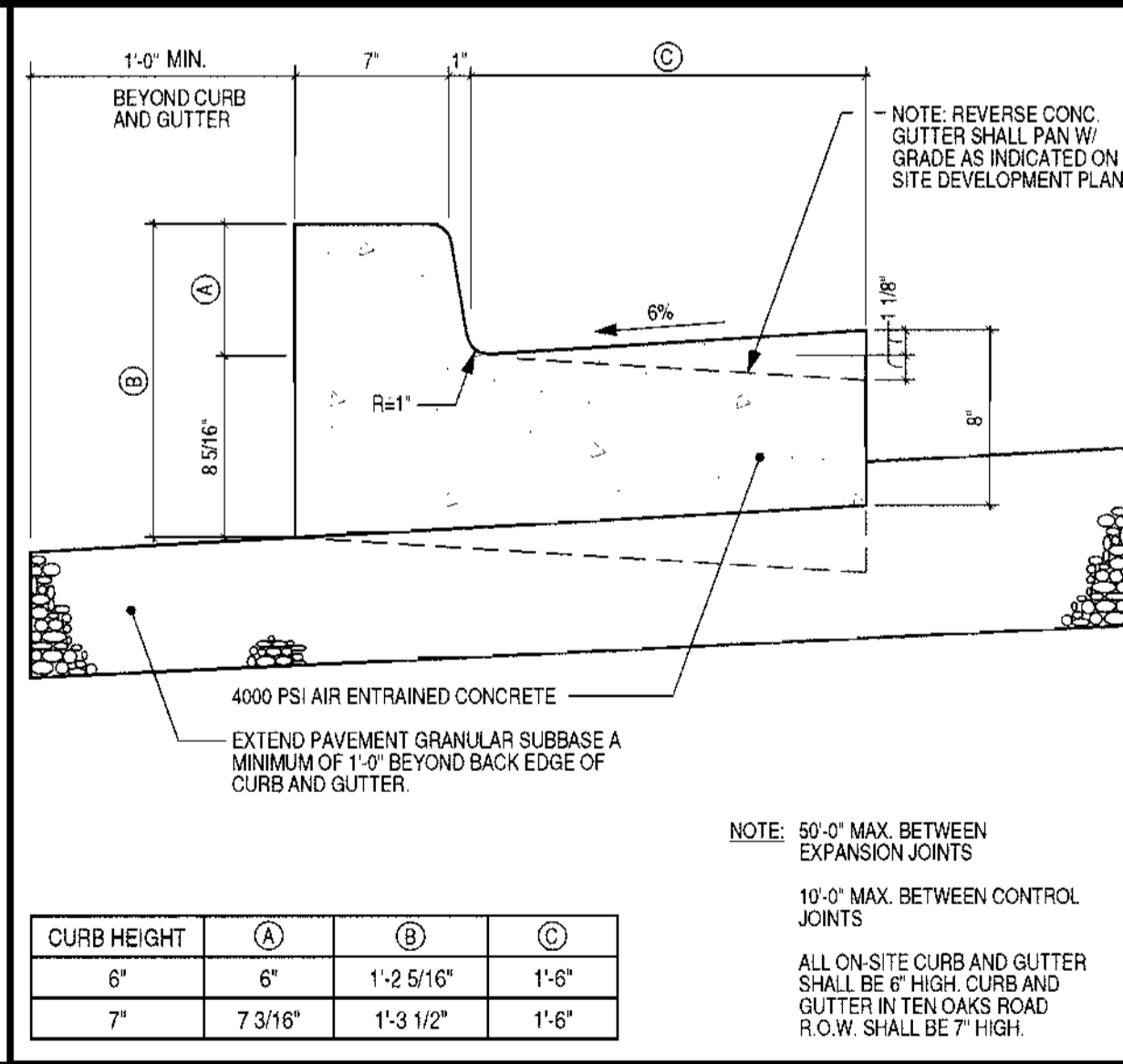


4 **5** **CROSSWALK DETAIL** **1** **1/2** **2** **5**

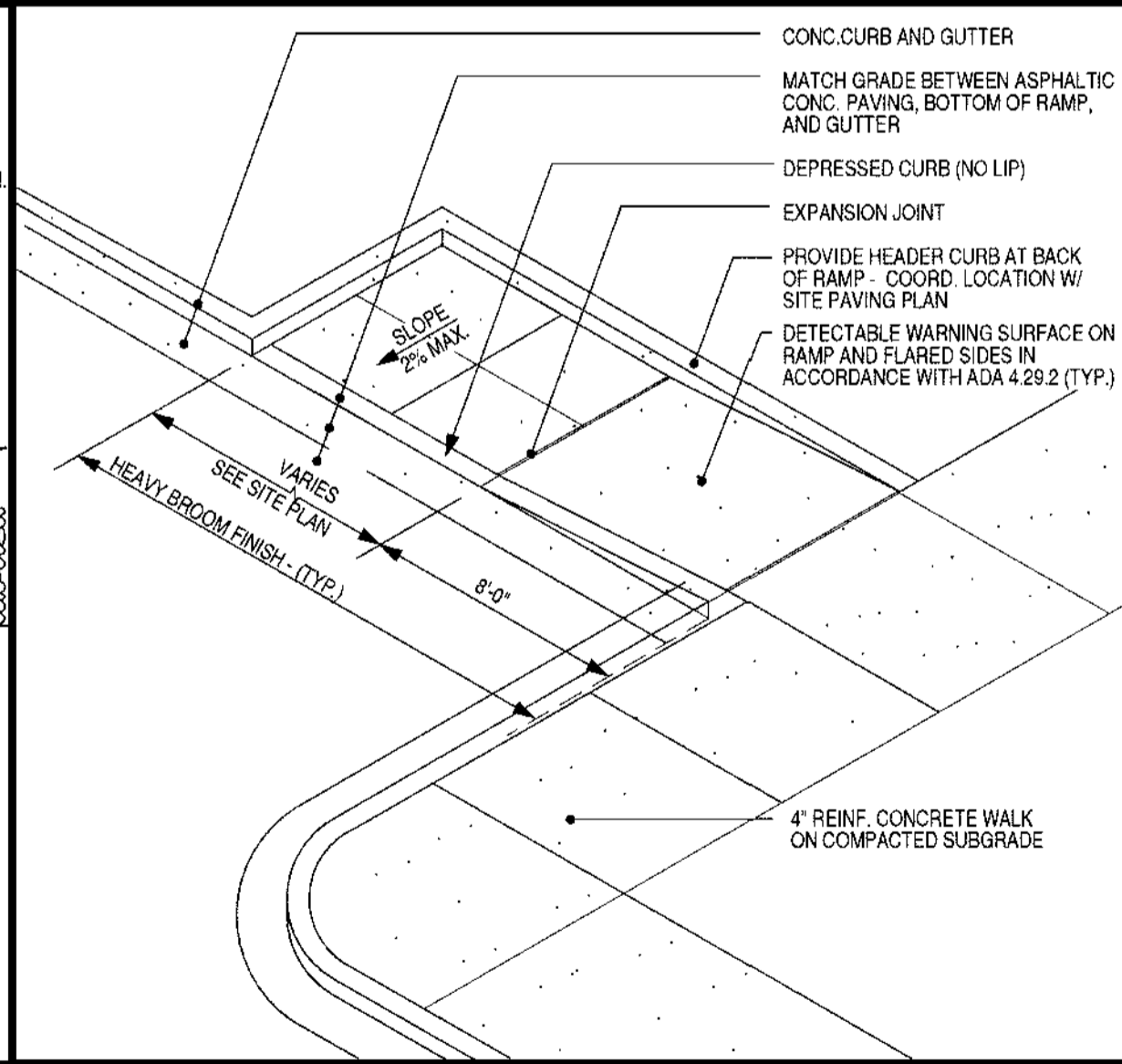
NO SCALE **HANDICAP PARKING SIGNS DETAIL**



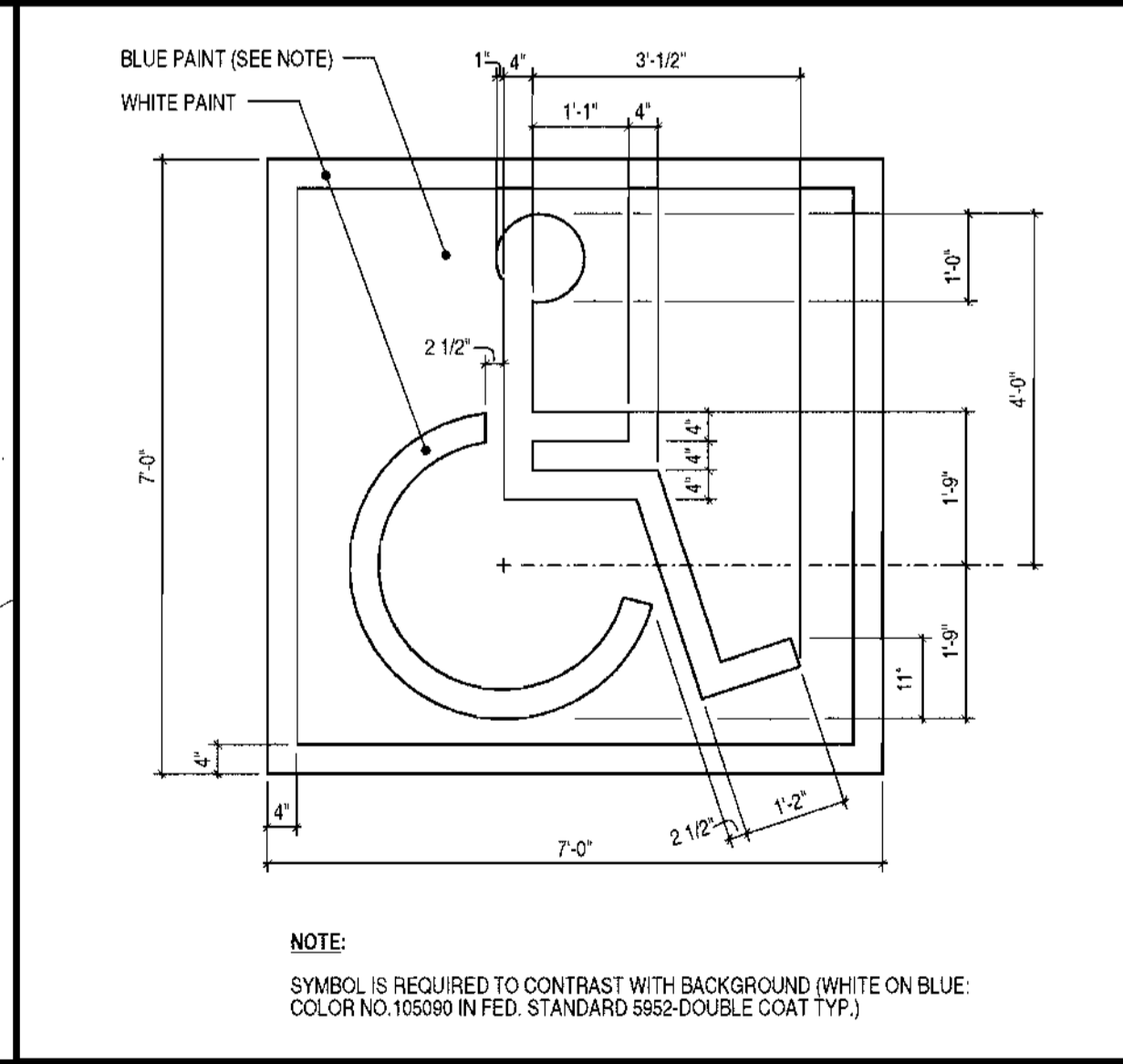
12 **5** **LIGHT DUTY ASPHALTIC PAVING DETAIL** **1** **1/2** **9** **5**



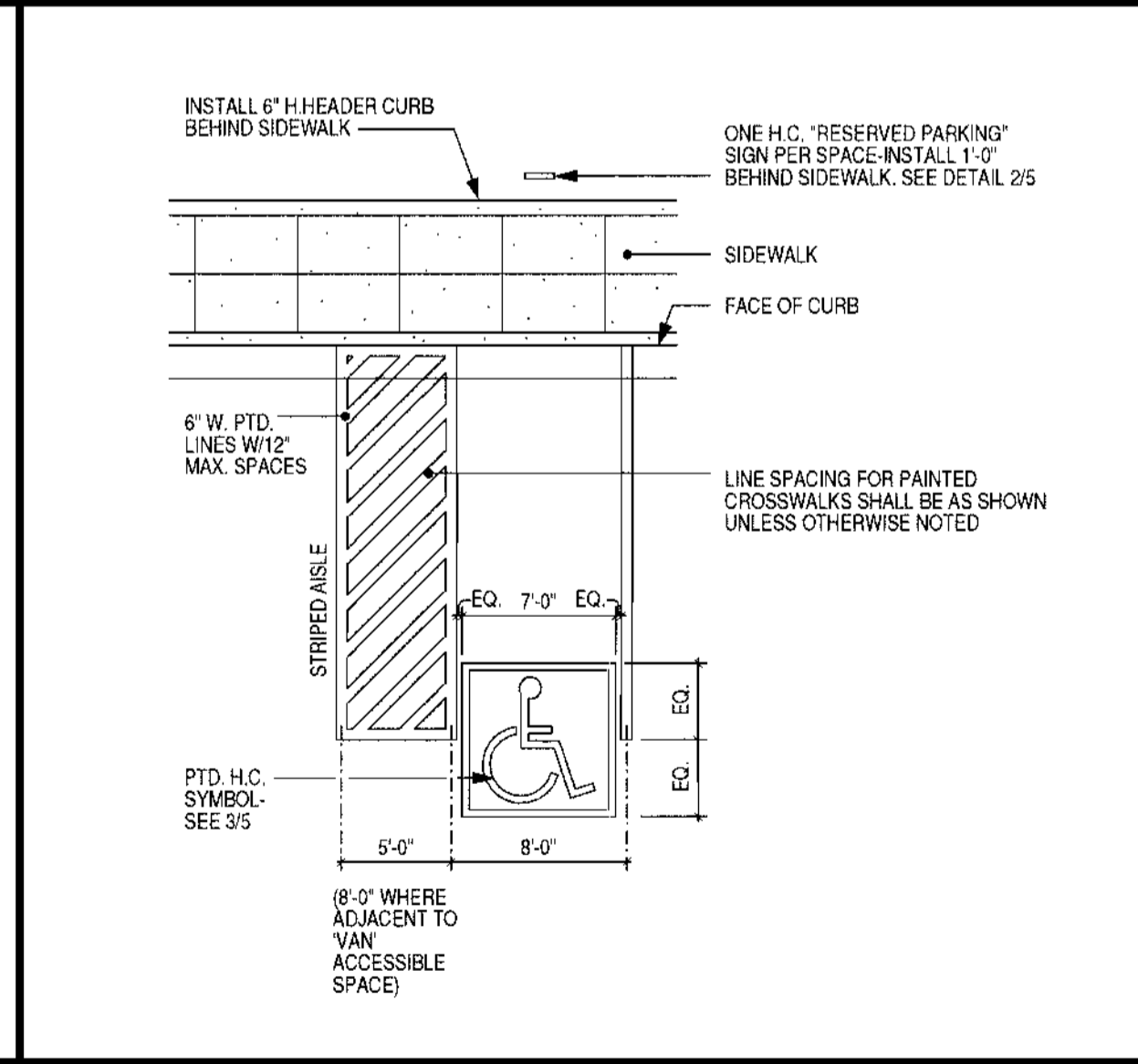
9 **5** **CONCRETE CURB AND GUTTER DETAIL** HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY. H.O.C.O. DETAIL R3.07. **1** **1/2** **6** **5**



6 **5** **TYPE C CURB RAMP DETAIL** HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY. H.O.C.O. DETAIL R4.03. NO SCALE. **3** **5**



3 **5** **ACCESSIBLE SPACE STENCIL LAYOUT** **1** **1/2** **1** **5**



1 **8** **ACCESSIBLE SPACE LAYOUT**

tca architects
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
410-841-6205

OWNER
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 ROUTE 108
ELLCOTT CITY, MARYLAND 21043

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

Robert J. Walden
COUNTY HEALTH OFFICER **4/7/05**

APPROVED: DEPARTMENT OF PLANNING AND ZONING

James A. Taylor
DIRECTOR **4/14/05**

Cindy Strimling
CHIEF, DIVISION OF LAND DEVELOPMENT **4/14/05**

Chad Dammann
CHIEF, DEVELOPMENT ENGINEERING DIVISION **4/14/05**

SITE DETAILS

WESTERN ELEMENTARY SCHOOL

TAX MAP: 28 GRID: 8 PARCEL: 35

5th ELECTION DISTRICT: HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

WESTERN ELEMENTARY SCHOOL
(Ten Oaks Road)
Howard County, Maryland
Howard County Public School System

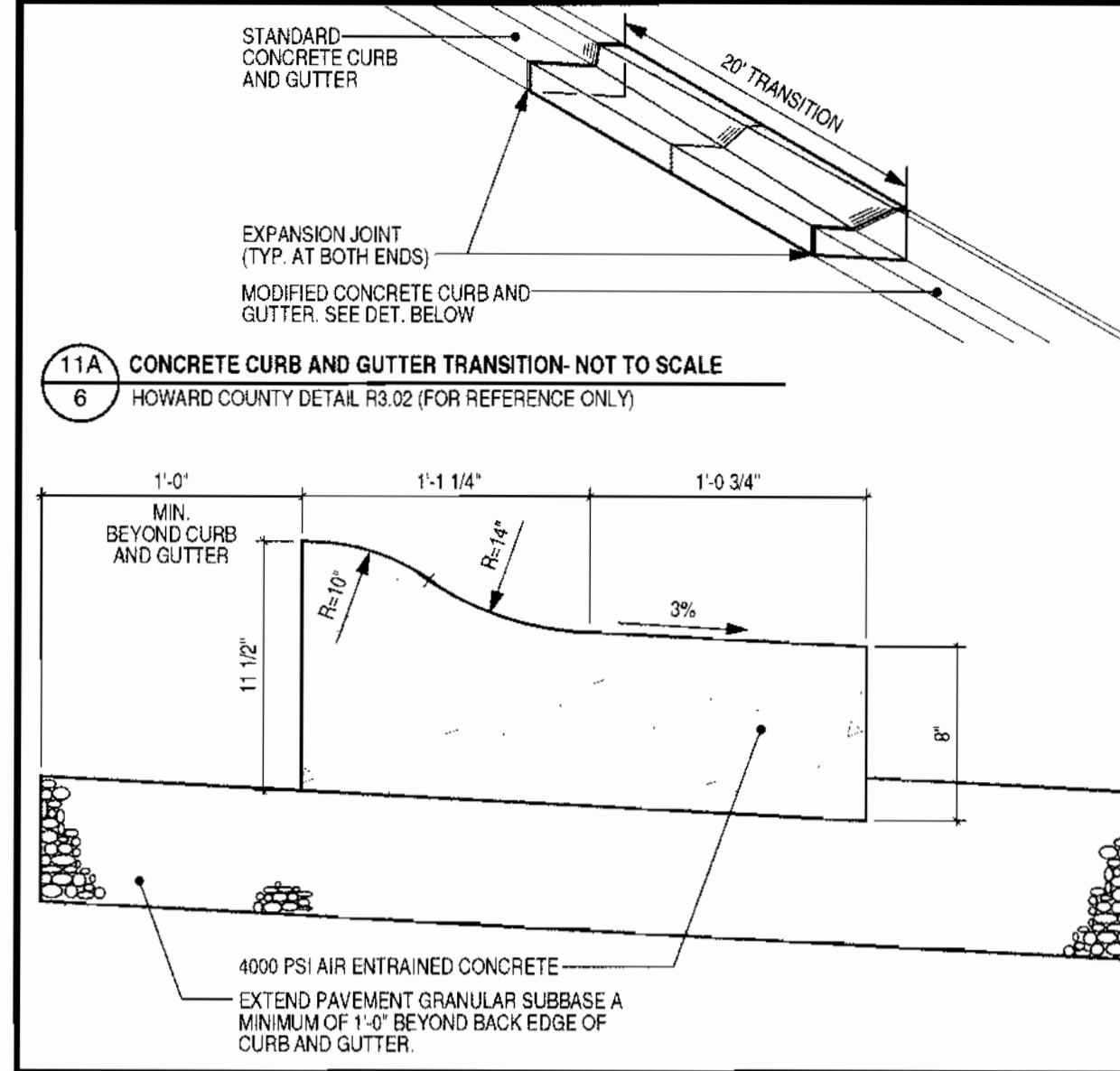
BOARD OF ARCHITECTS
8670
ANNAPOLIS, MARYLAND

tca architects
Annapolis, Maryland

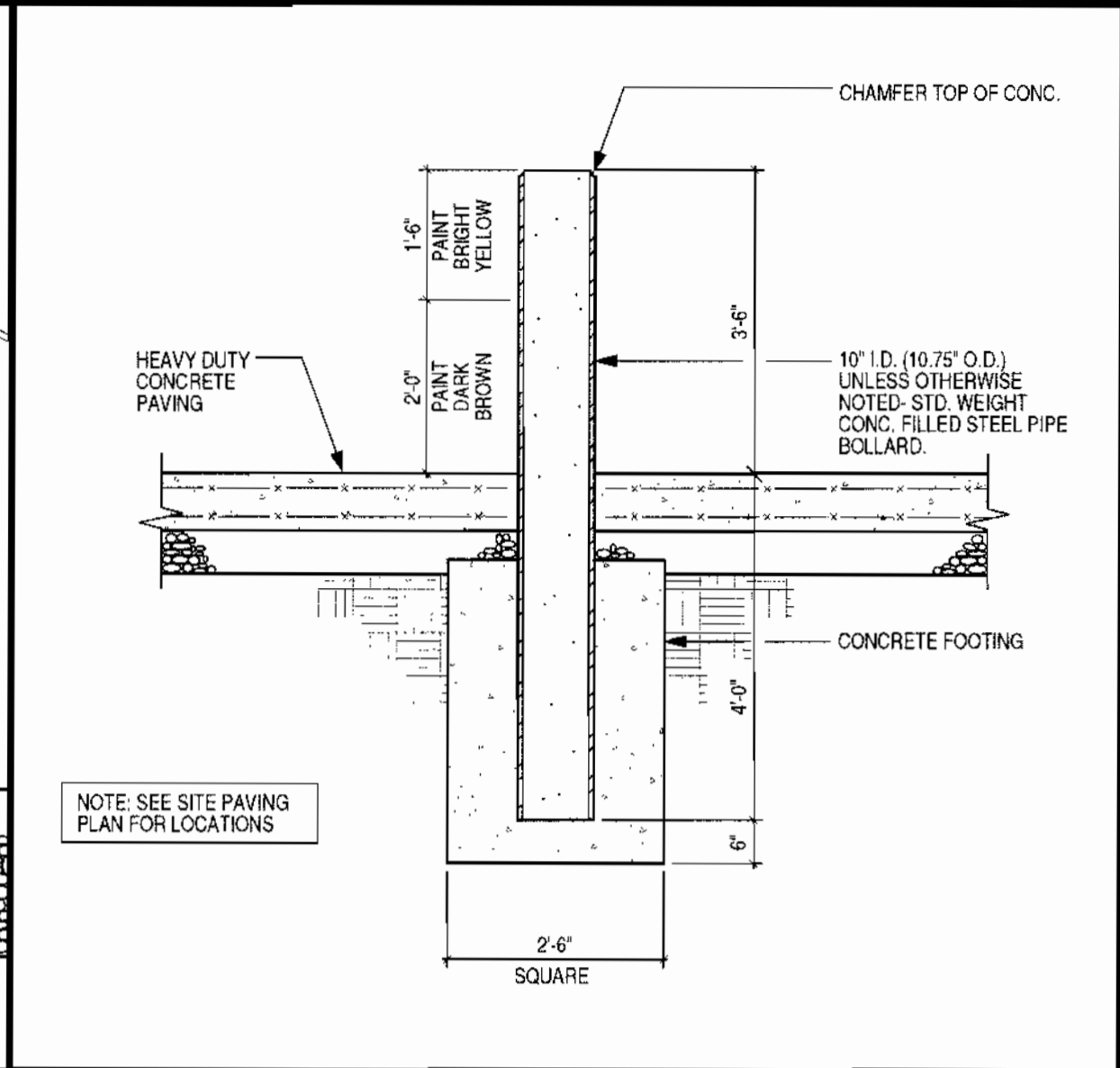
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9 JULY 04

5 of 28

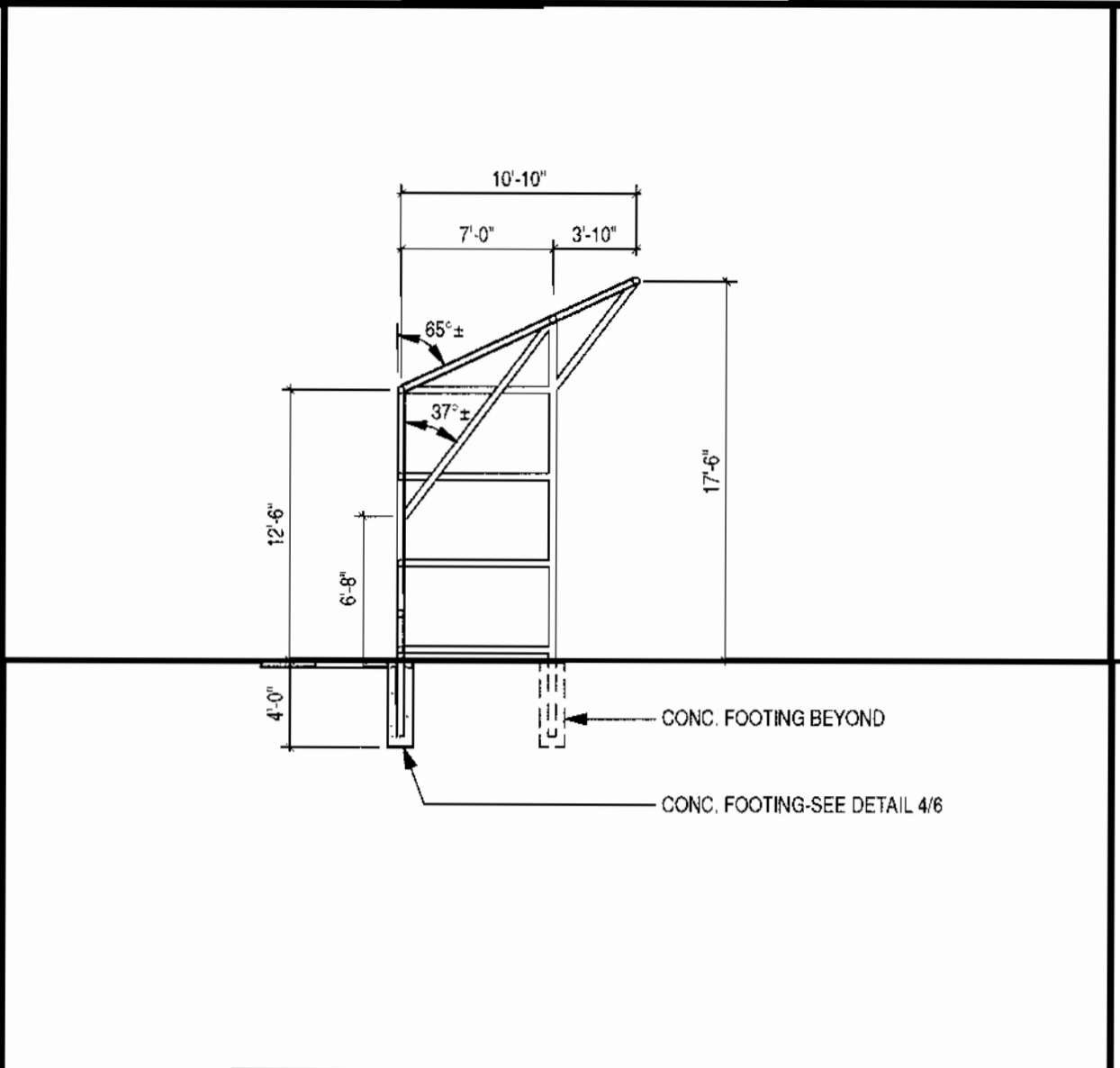
project no. 0301



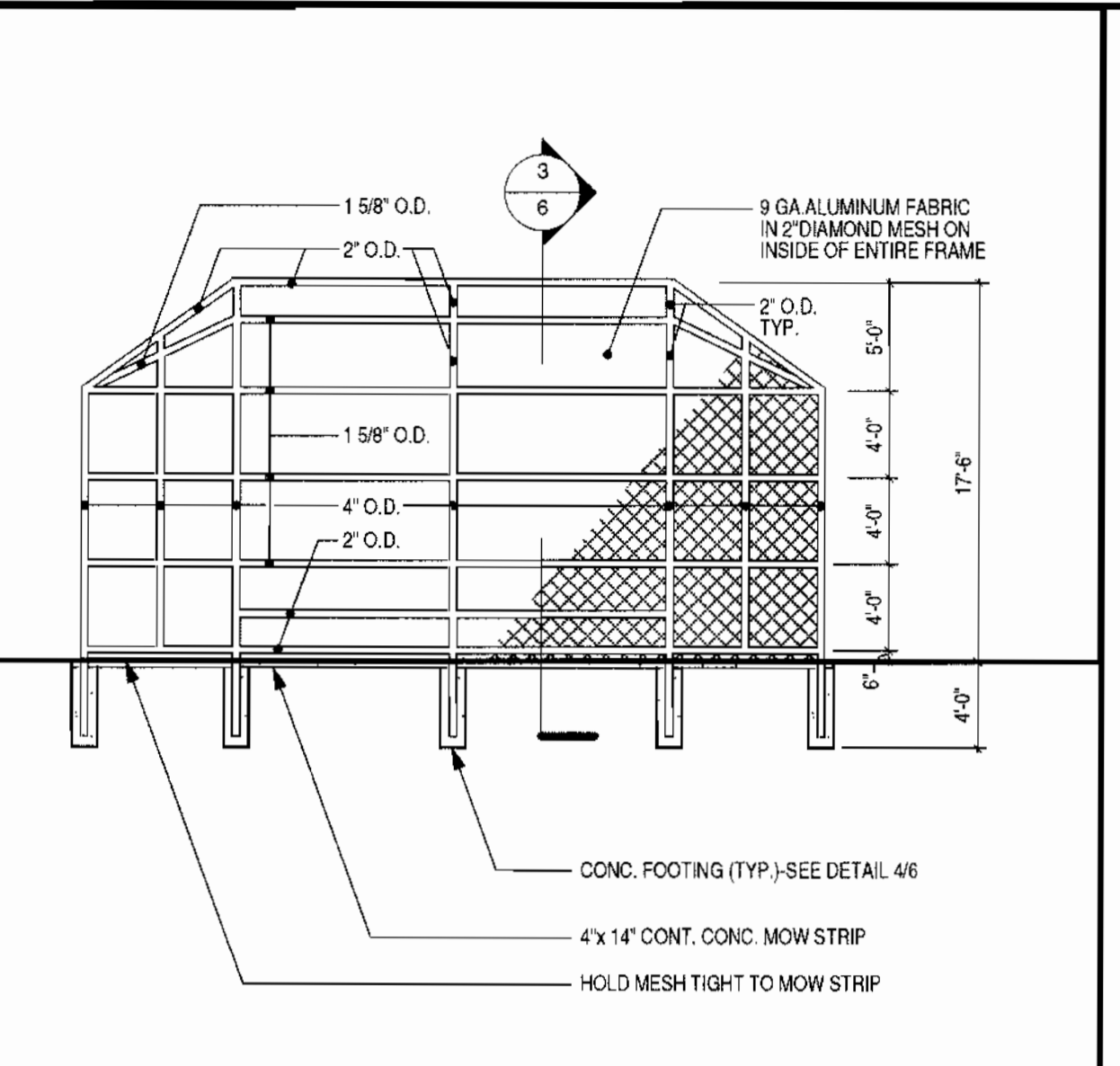
11A CONCRETE CURB AND GUTTER TRANSITION - NOT TO SCALE
HOWARD COUNTY DETAIL R3.02 (FOR REFERENCE ONLY)



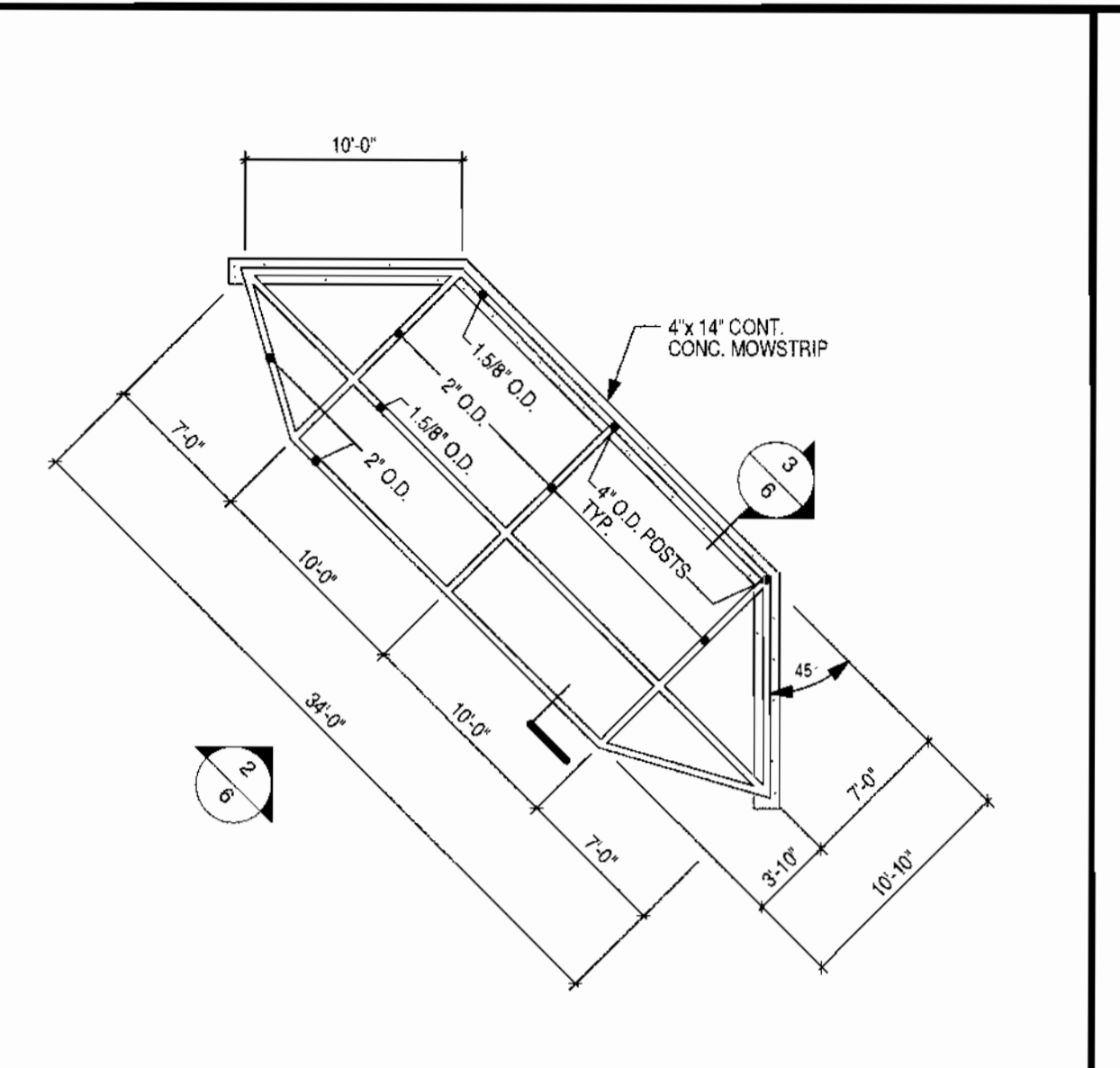
PIPE BOLLARD DETAIL



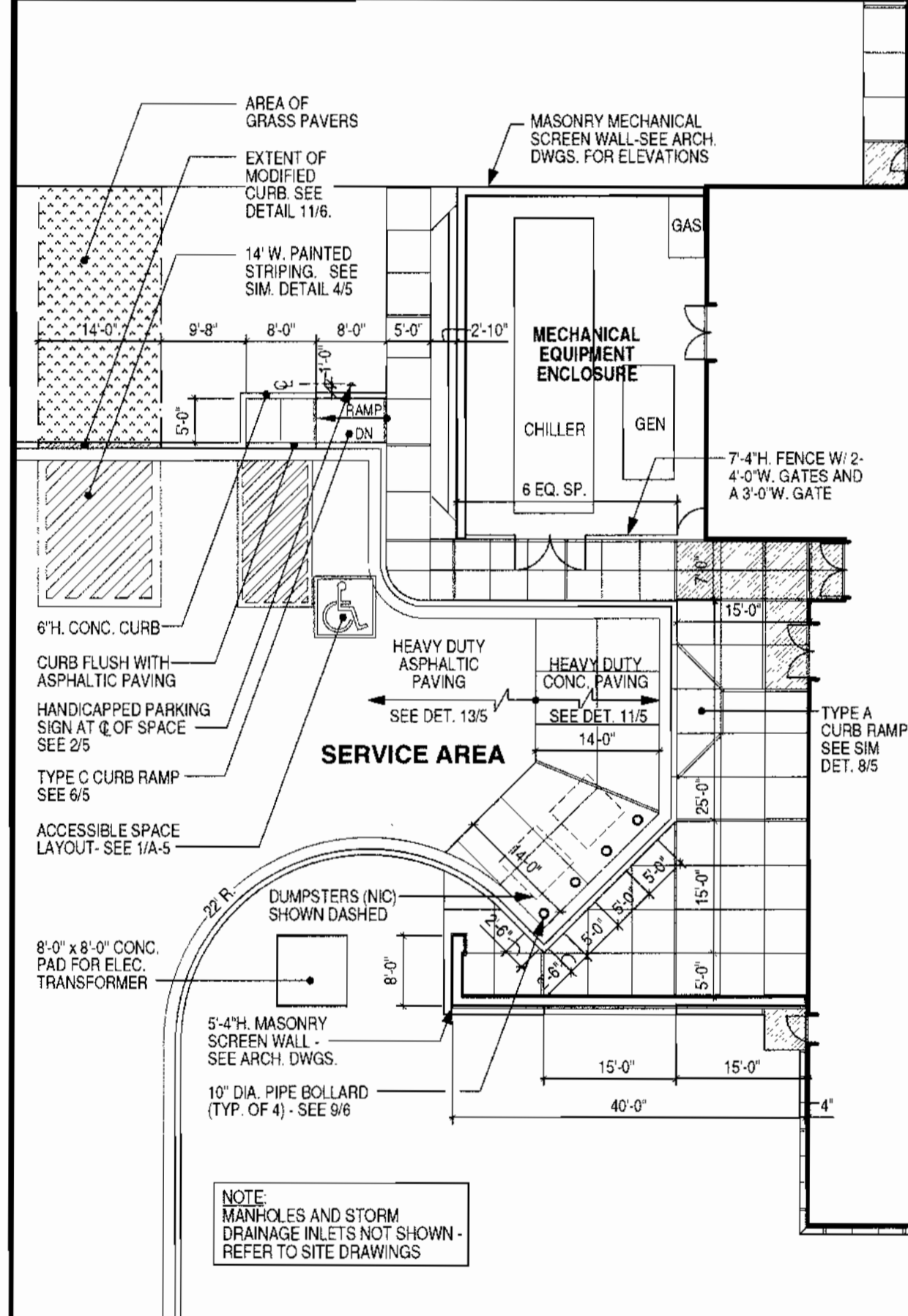
SOFTBALL BACKSTOP SECTION



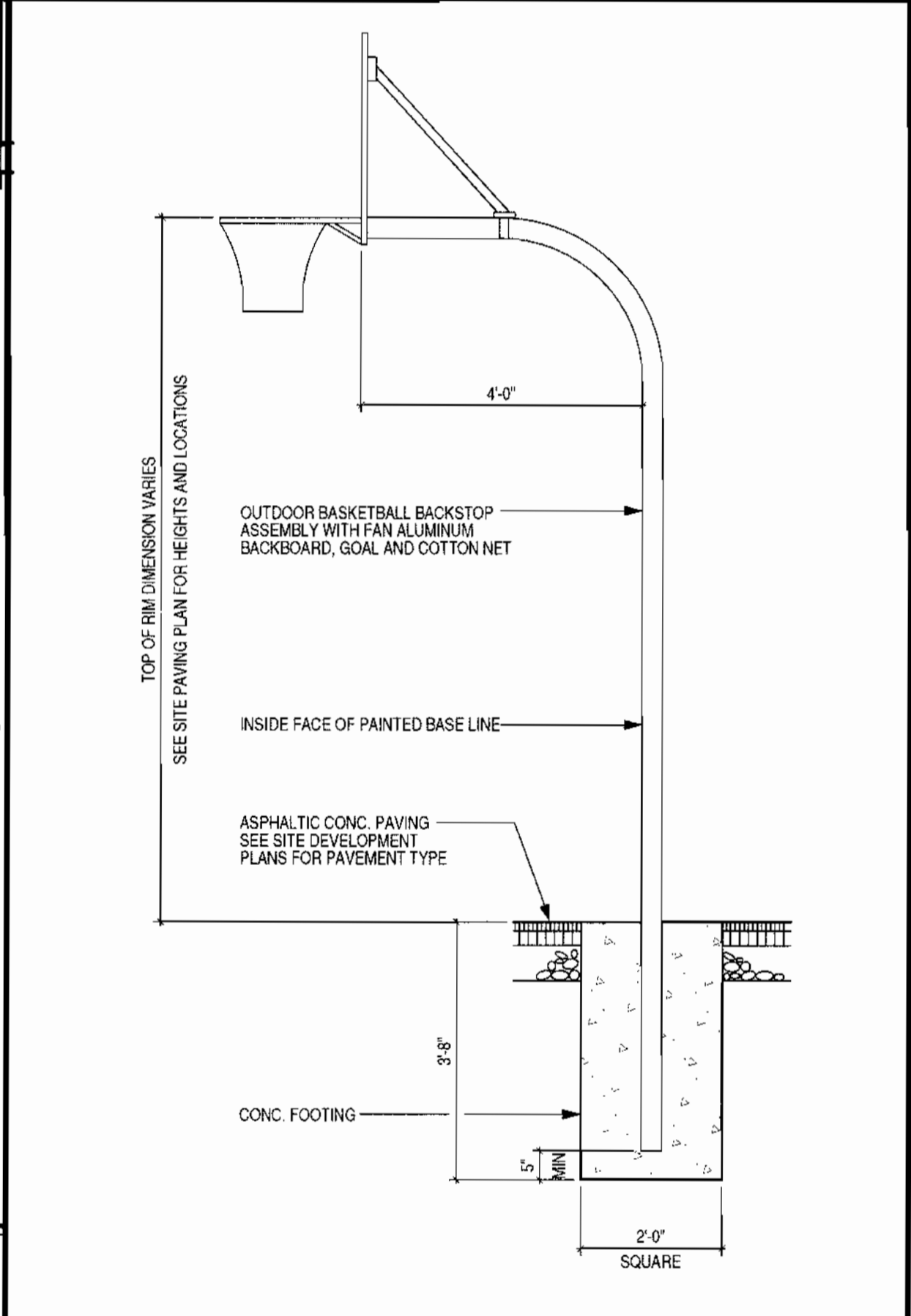
SOFTBALL BACKSTOP ELEVATION



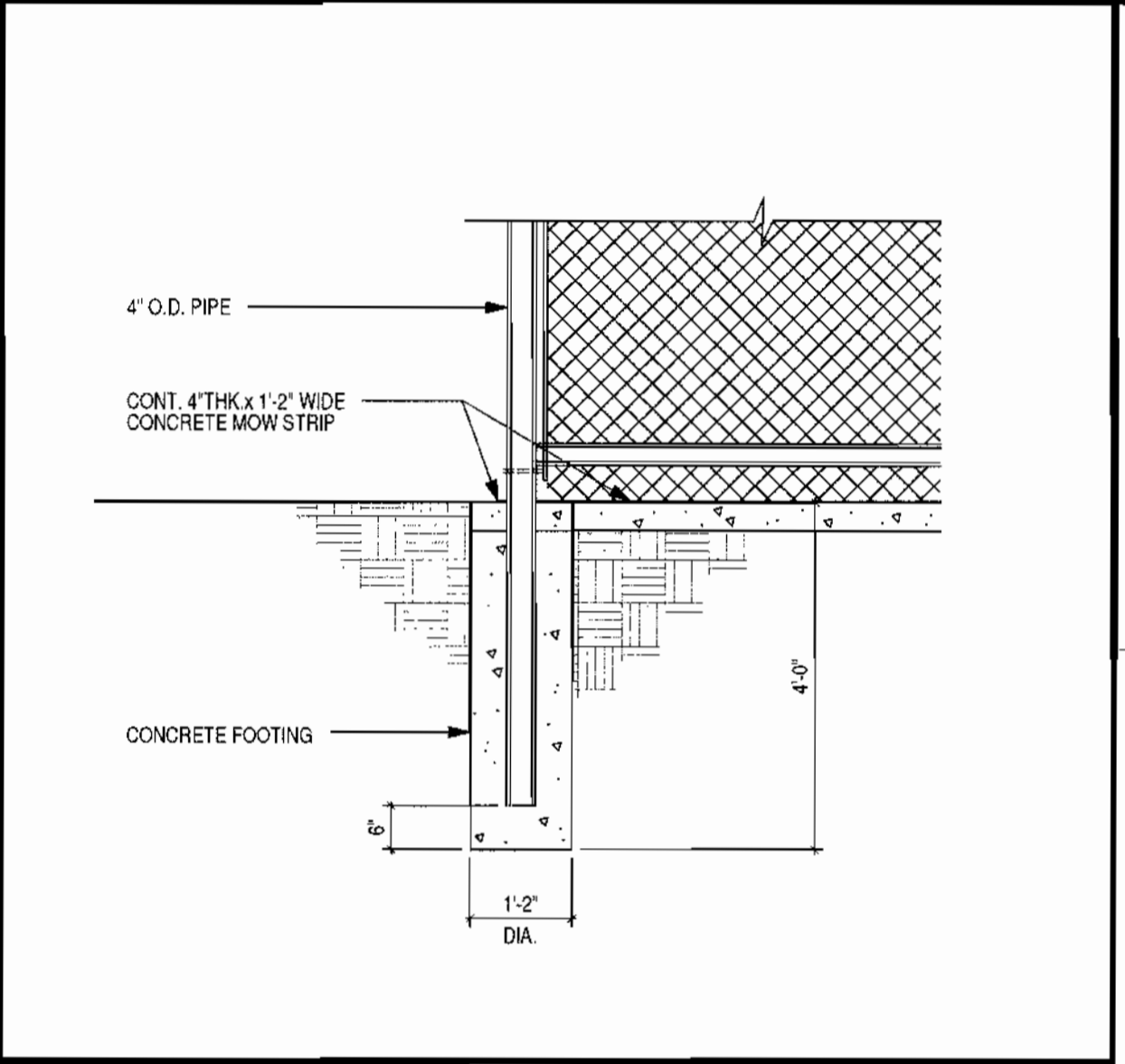
SOFTBALL BACKSTOP PLAN



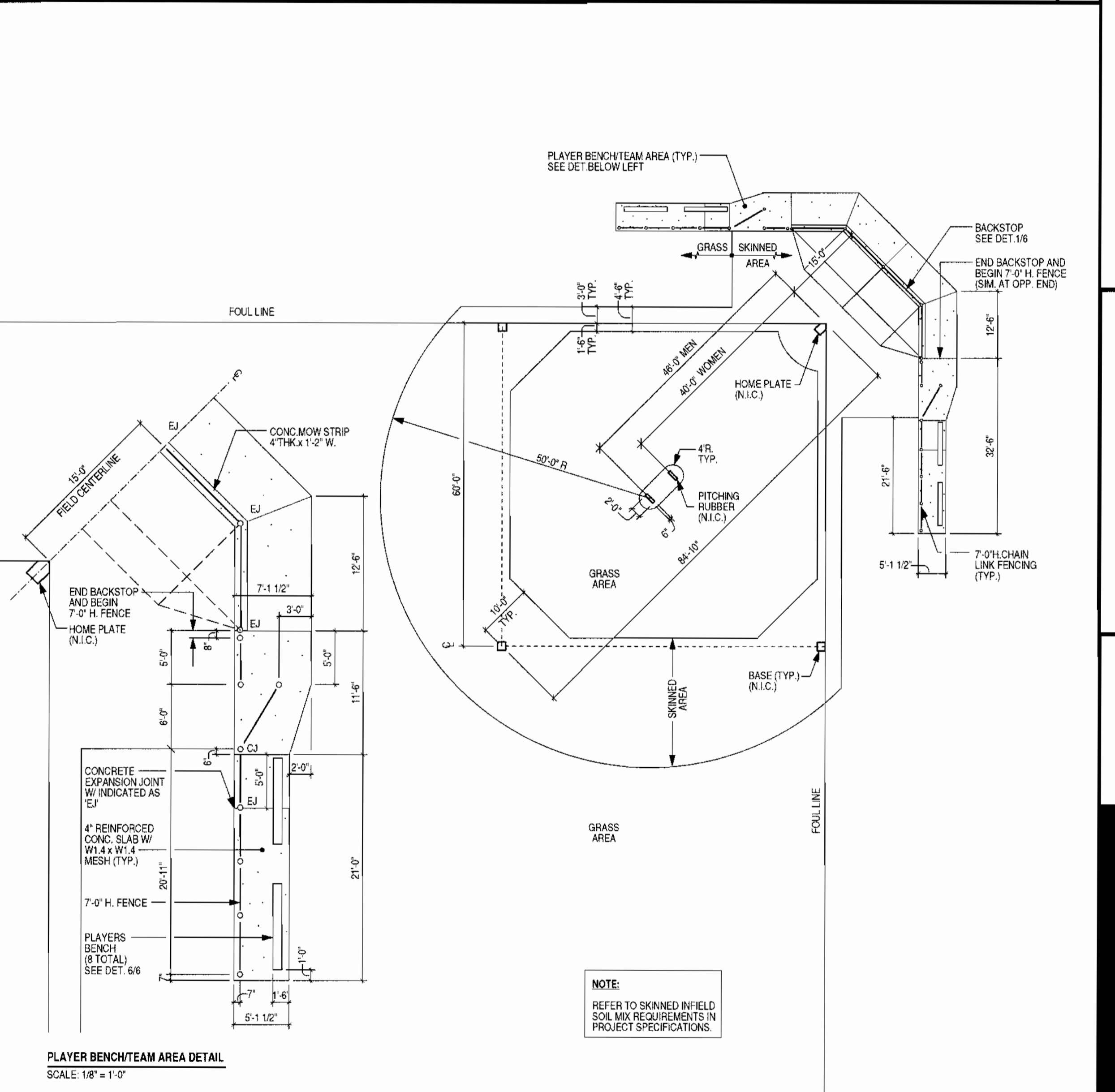
SERVICE AREA DETAIL



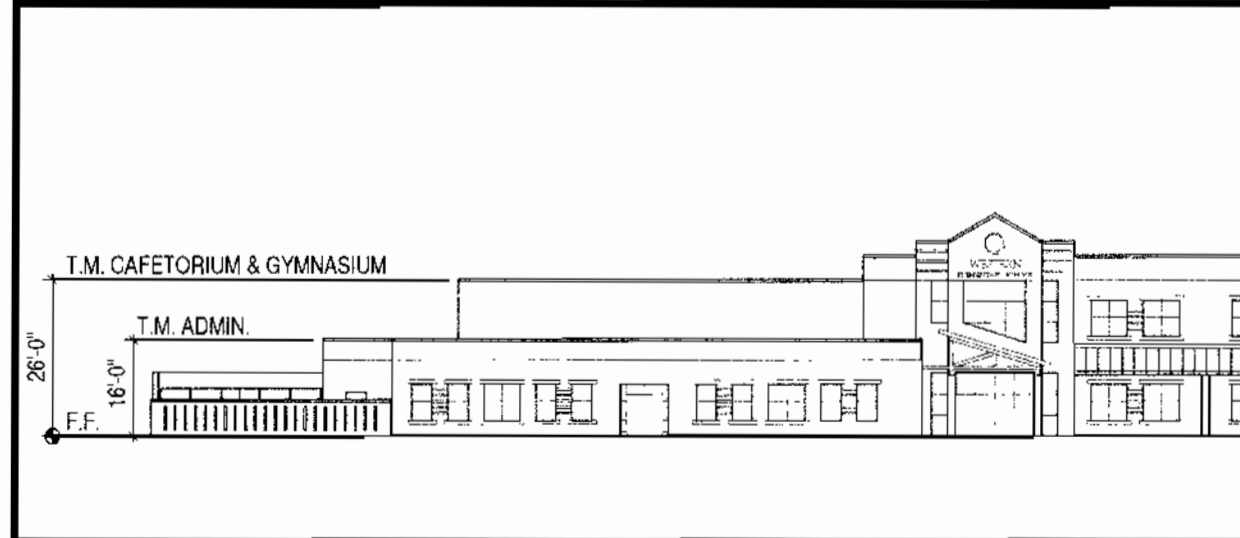
BACKBOARD DETAIL



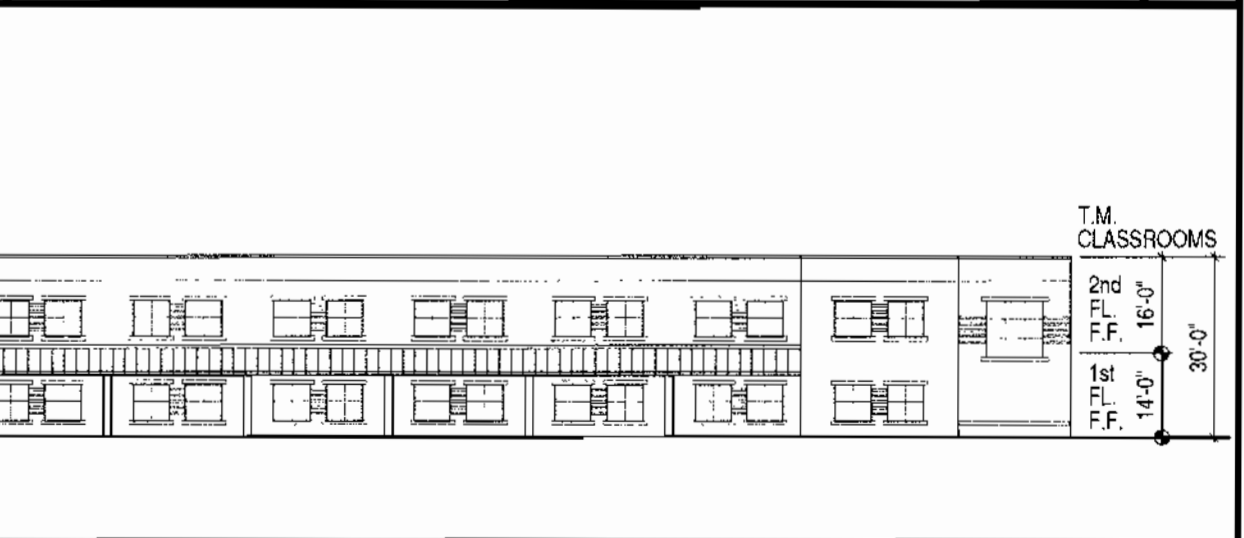
BACKSTOP FOOTING DETAIL



SOFTBALL FIELD DETAIL



FRONT ELEVATION



BENCH DETAIL

OWNER
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 ROUTE 108
ELLCOTT CITY, MARYLAND 21043

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2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND
21401
410-841-6205

APPROVED FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS,
HOWARD COUNTY HEALTH DEPARTMENT
Robert J. DeSoto 4/7/15
COUNTY HEALTH OFFICER DATE

APPROVED DEPARTMENT OF PLANNING AND ZONING
Manisha D. Lough 4/17/16
DIRECTOR DATE

Janice Hamilton 4/30/15
CHIEF DIVISION OF LAND DEVELOPMENT DATE

Clark Williamson 4/4/05
CHIEF DEVELOPMENT ENGINEERING DIVISION DATE

SITE DETAILS
WESTERN ELEMENTARY SCHOOL
TAX MAP: 28 GRID: 8 PARCEL: 35
5th ELECTION DISTRICT: HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN

WESTERN ELEMENTARY SCHOOL
(Ten Oaks Road)
Howard County, Maryland
Howard County Public School System

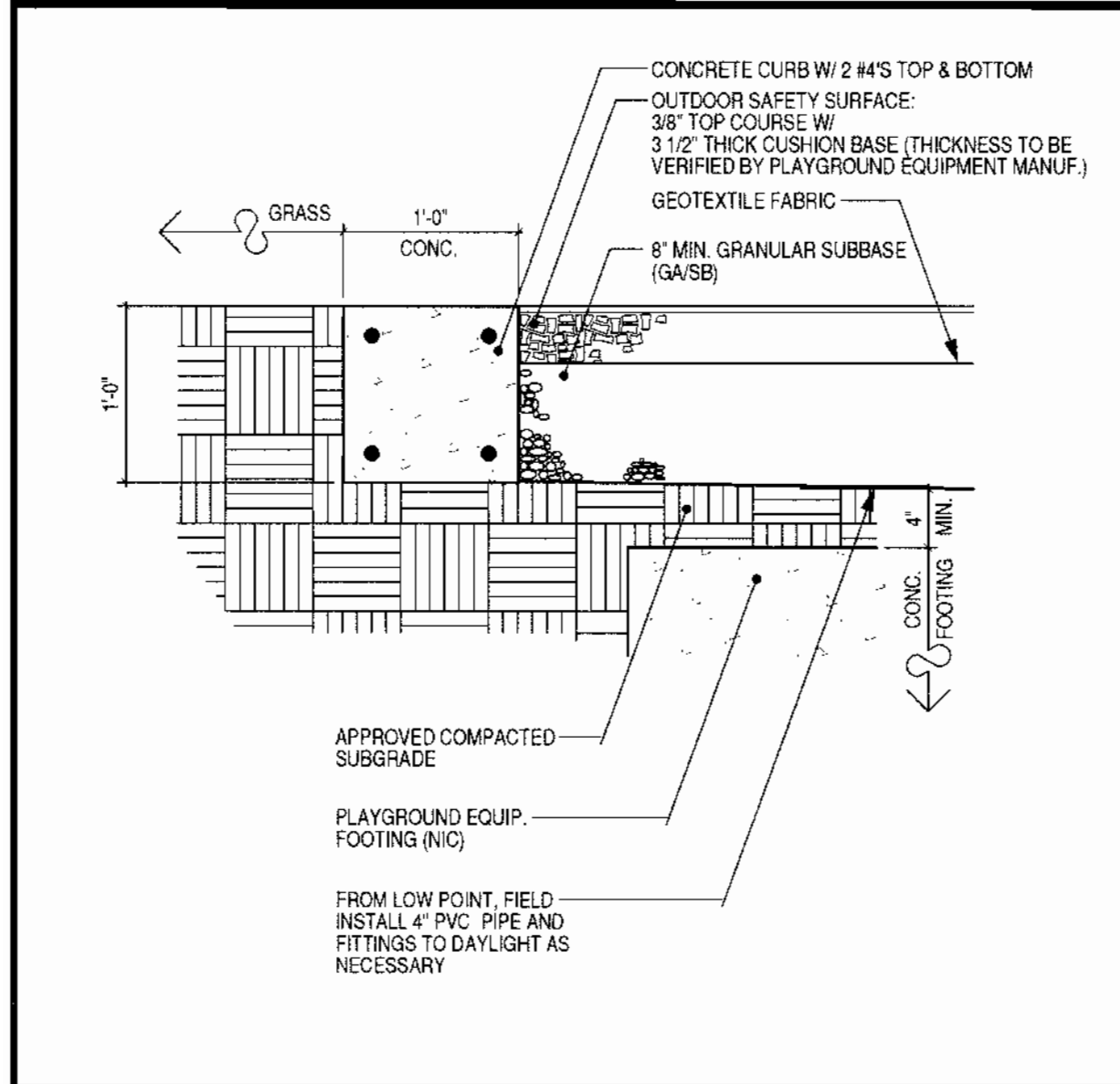
BOARD OF ARCHITECTS
8670
ANNAPOLIS, MARYLAND

tca architects
Annapolis, Maryland

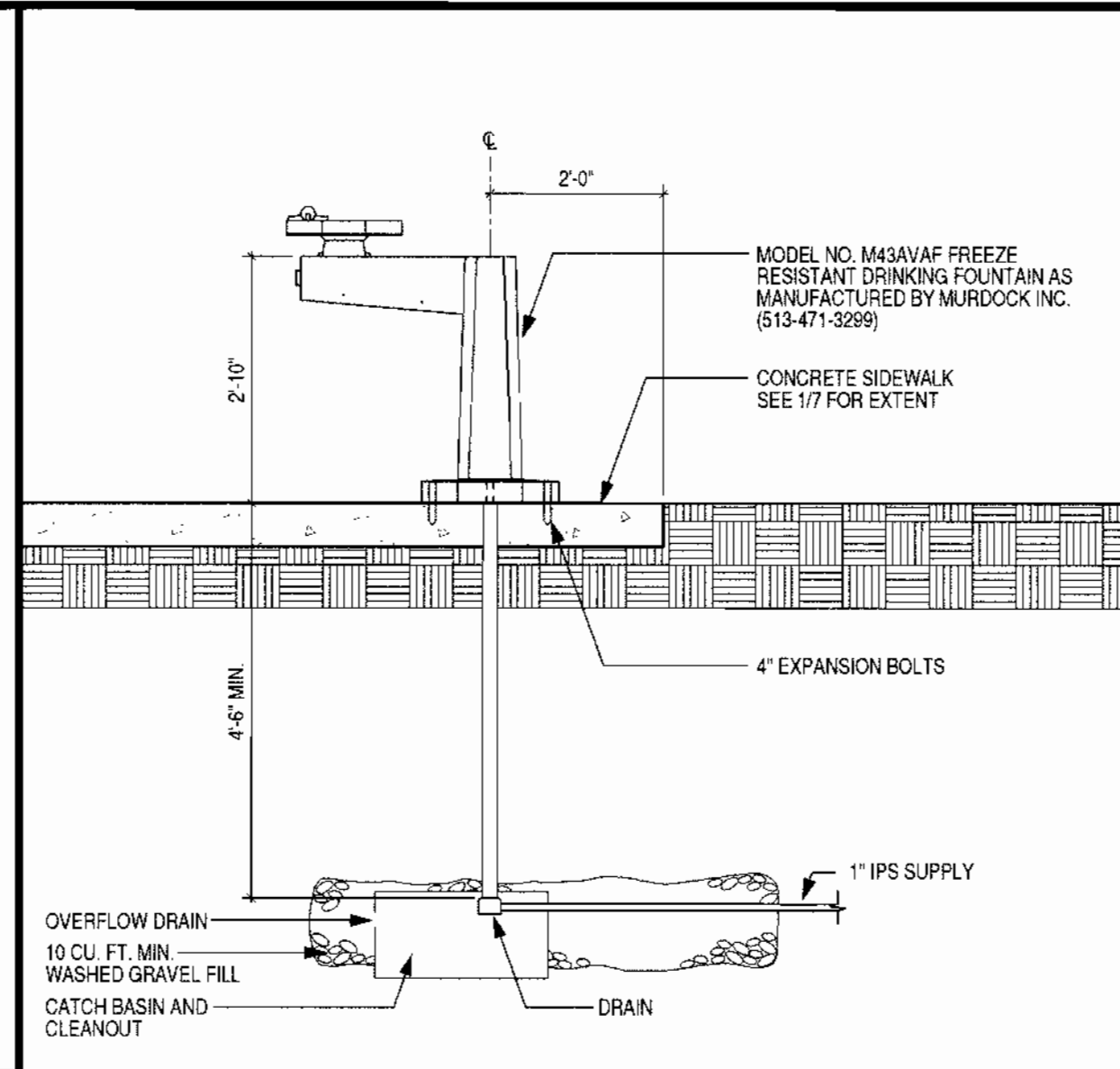
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9 JULY 04

6 of 28

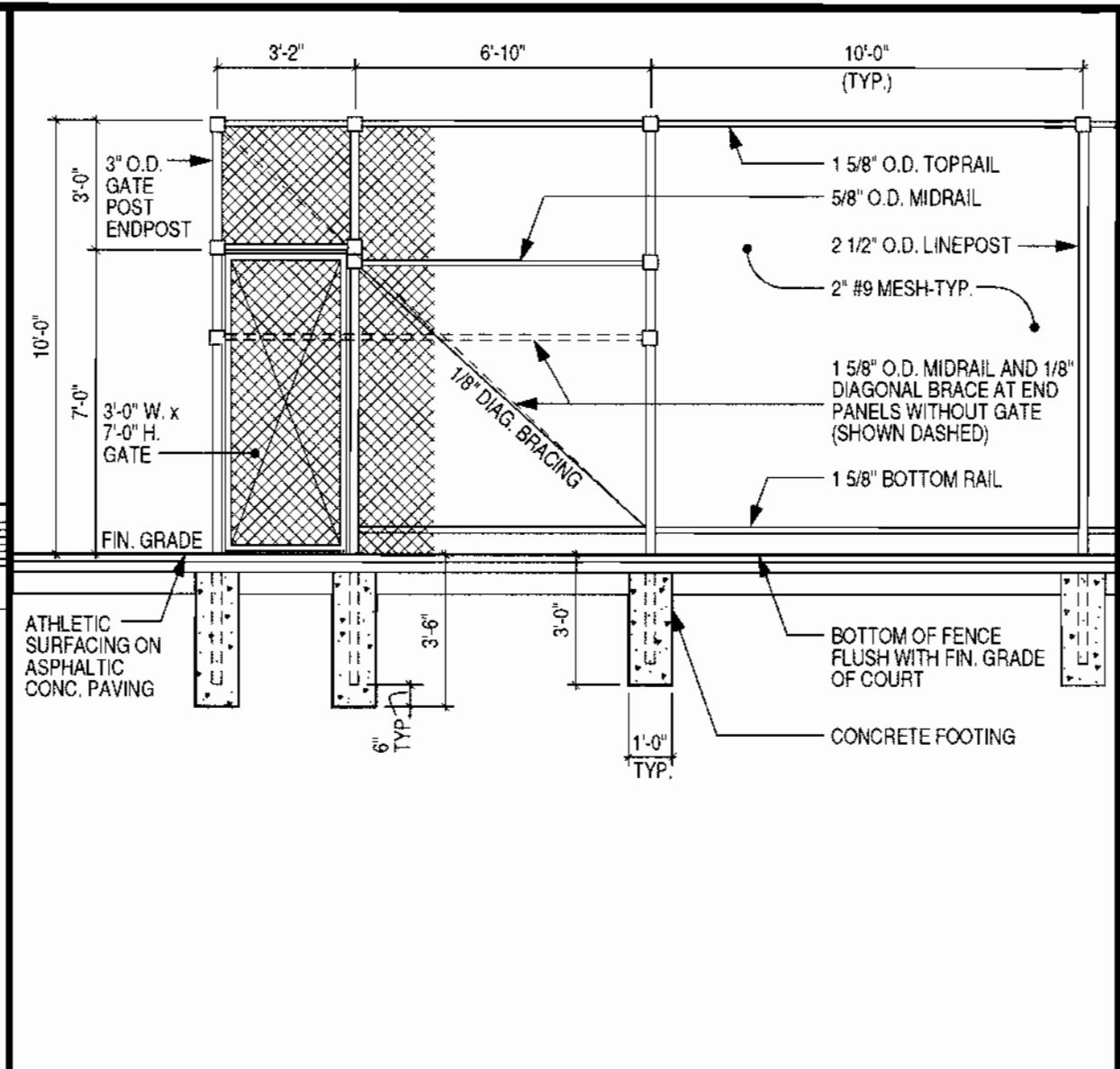
project no. 0301



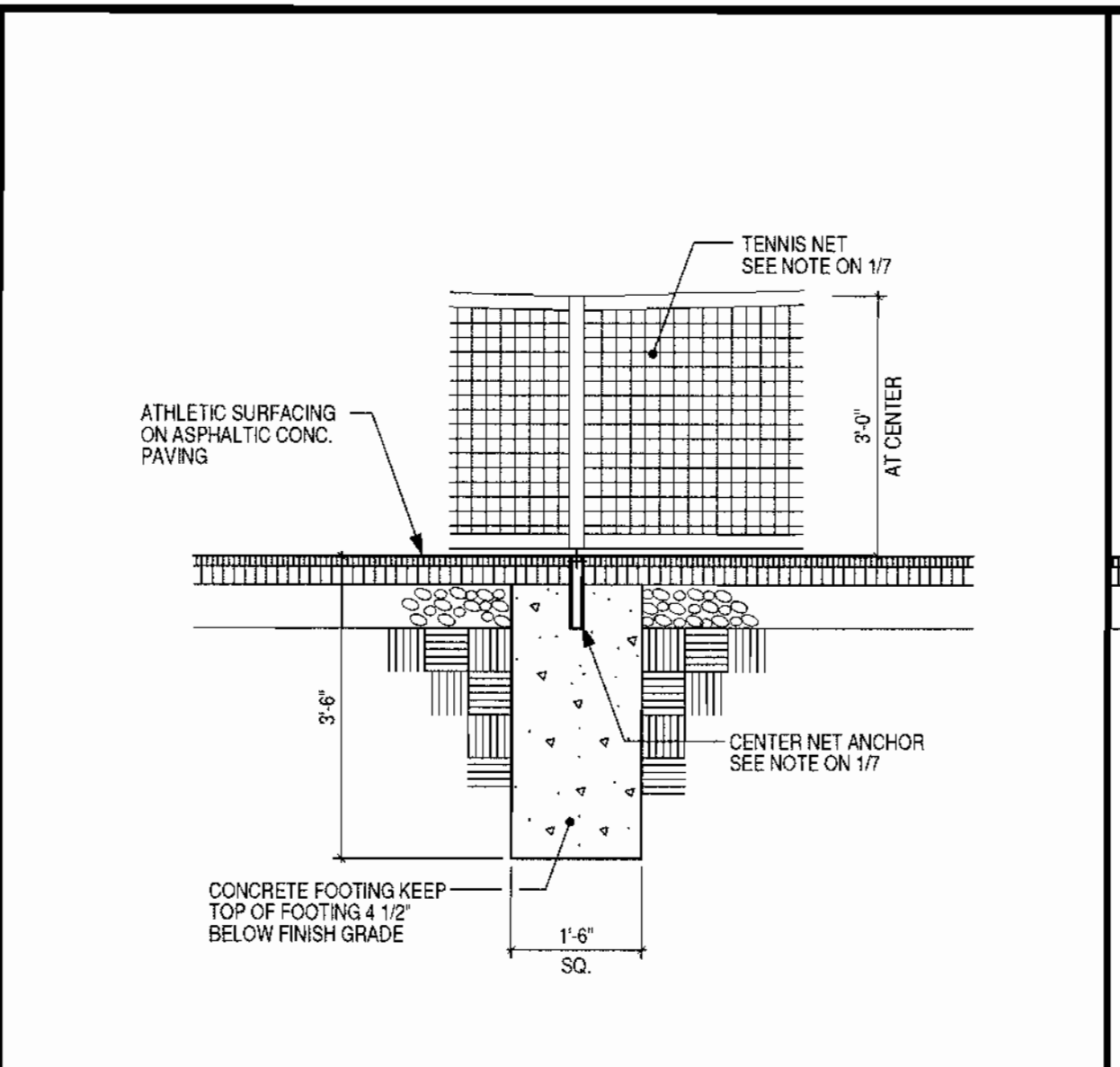
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7
PLAY AREA SURFACE/DRAINAGE DETAIL 1" / 7



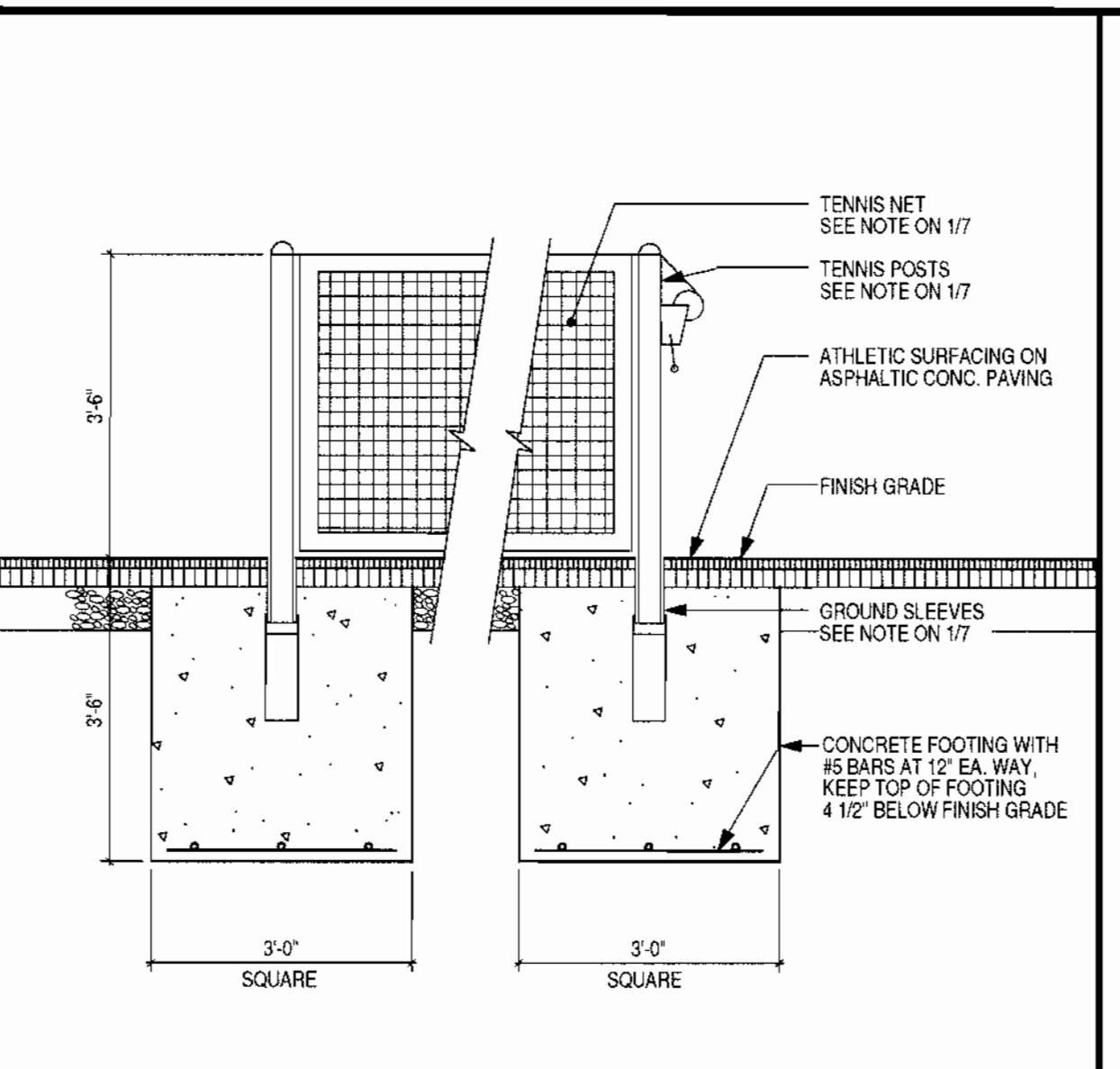
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7
DRINKING FOUNTAIN DETAIL 1" / 7



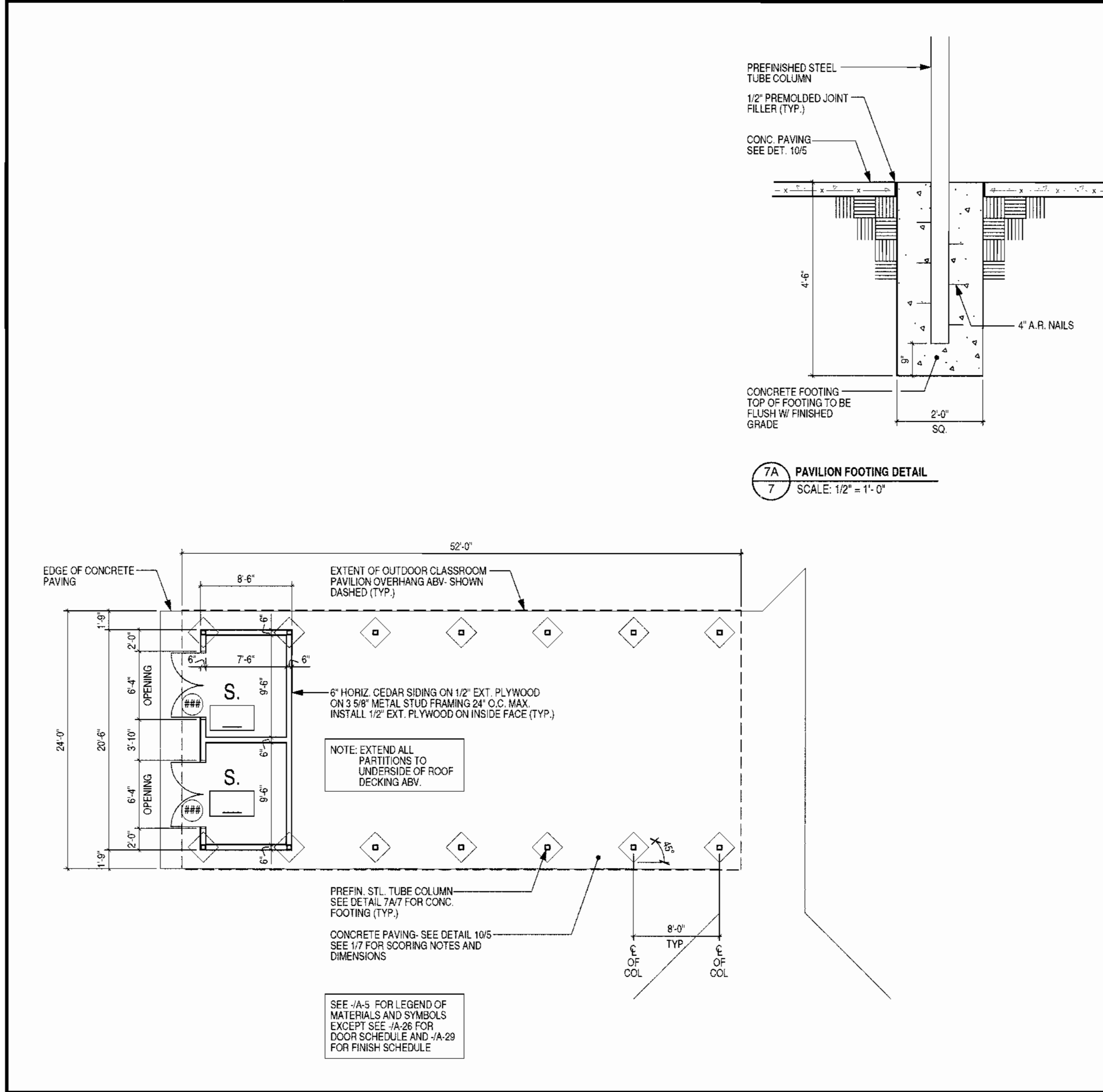
4
7
TENNIS COURT ENCLOSURE 1" / 7



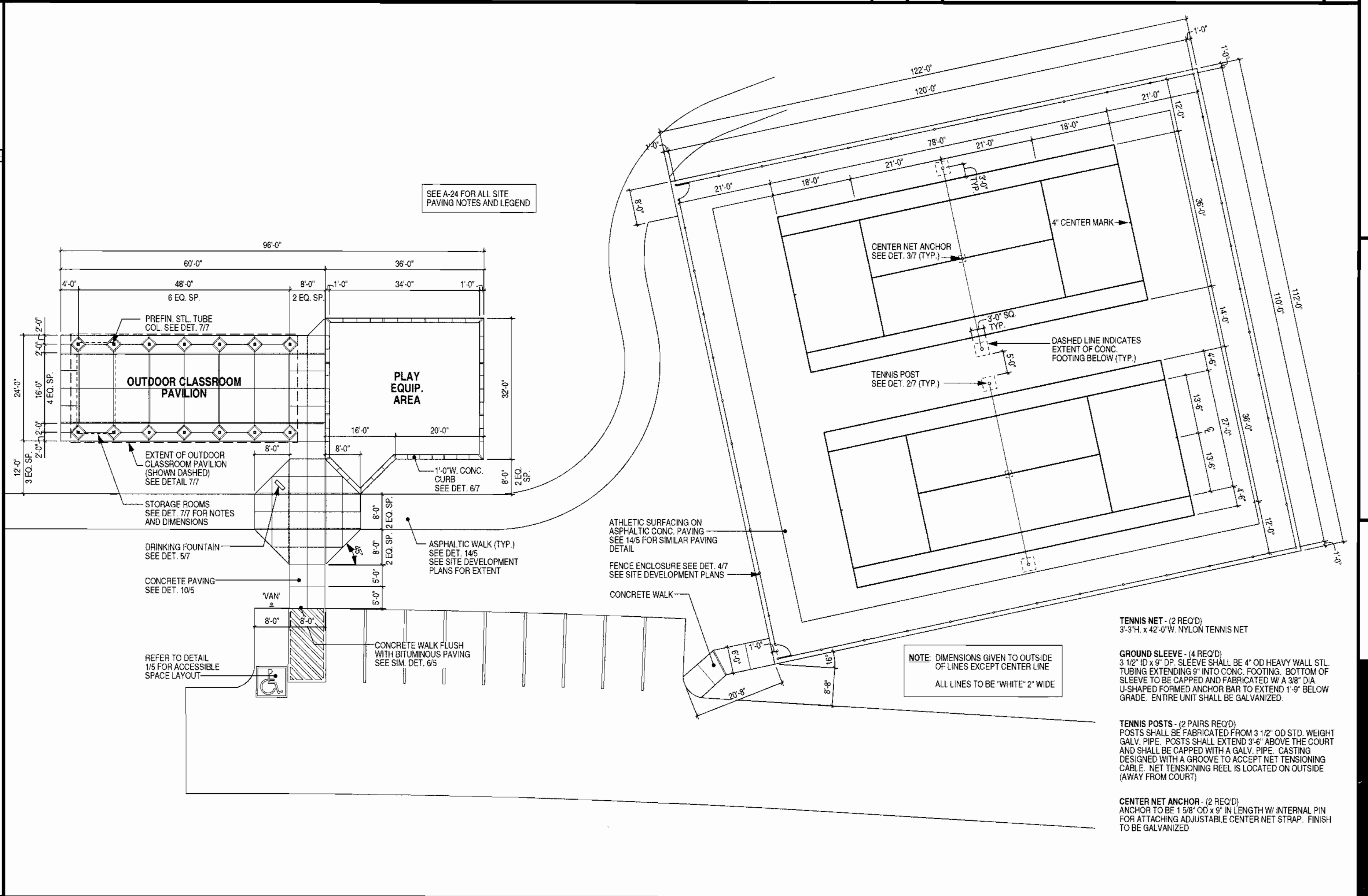
3
7
CENTER NET DETAIL 1" / 7



2
7
TENNIS NET DETAIL 1" / 7



7
7
OUTDOOR CLASSROOM PAVILION PLAN 1" / 7



1
8
OUTDOOR CLASSROOM PAVILION AND TENNIS COURT PLAN 1" / 8

<p>tca architects 2661 RIVA ROAD, SUITE 120 ANNAPOLIS, MARYLAND 21401 410-841-6205</p>	<p>APPROVED FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT</p> <p><i>Robert J. Walter</i> COUNTY HEALTH OFFICER 4/1/05 DATE</p>
	<p>APPROVED DEPARTMENT OF PLANNING AND ZONING</p> <p><i>Robert K. Light</i> DIRECTOR 4/14/05 DATE</p>
<p>OWNER</p> <p>HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 ROUTE 108 ELLCOTT CITY, MARYLAND 21043</p>	<p><i>Cindy Hamilton</i> CHIEF, DIVISION OF LAND DEVELOPMENT 4/12/05 DATE</p> <p><i>John DeWanna</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION 4/14/05 DATE</p>

SITE DETAILS

WESTERN ELEMENTARY SCHOOL

TAX MAP: 28 GRID: 8 PARCEL: 35

5th ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

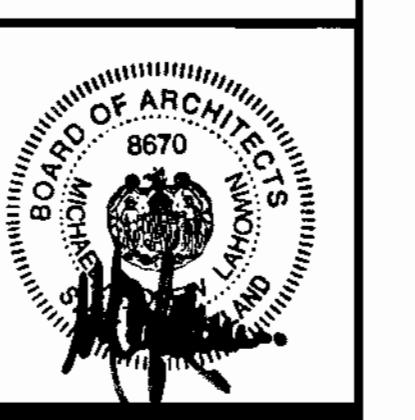
SCALE: AS SHOWN

SDP PERMIT
9 JULY 04

7 of 28

project no. 0301

WESTERN ELEMENTARY SCHOOL
(Ten Oaks Road)
Howard County, Maryland
Howard County Public School System



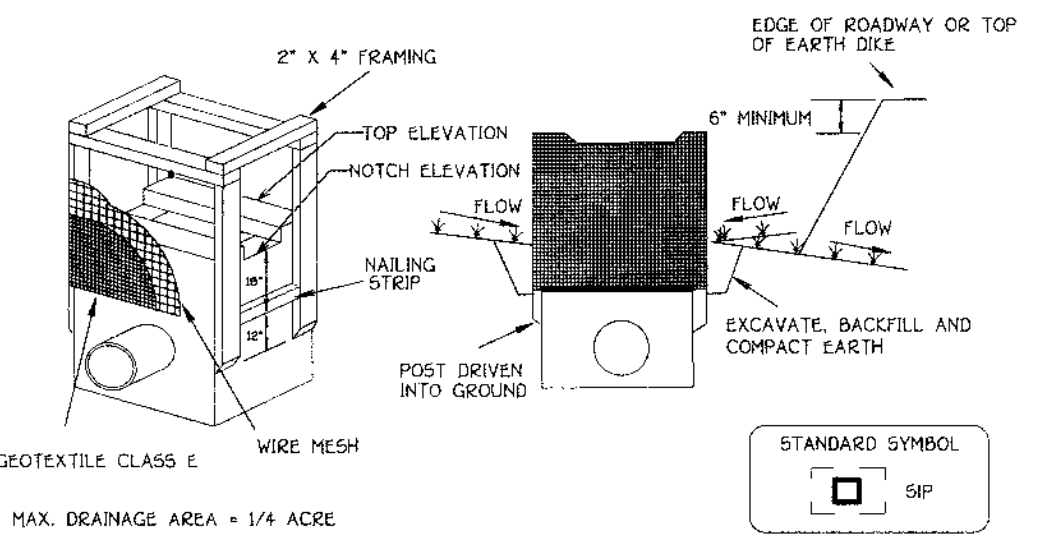
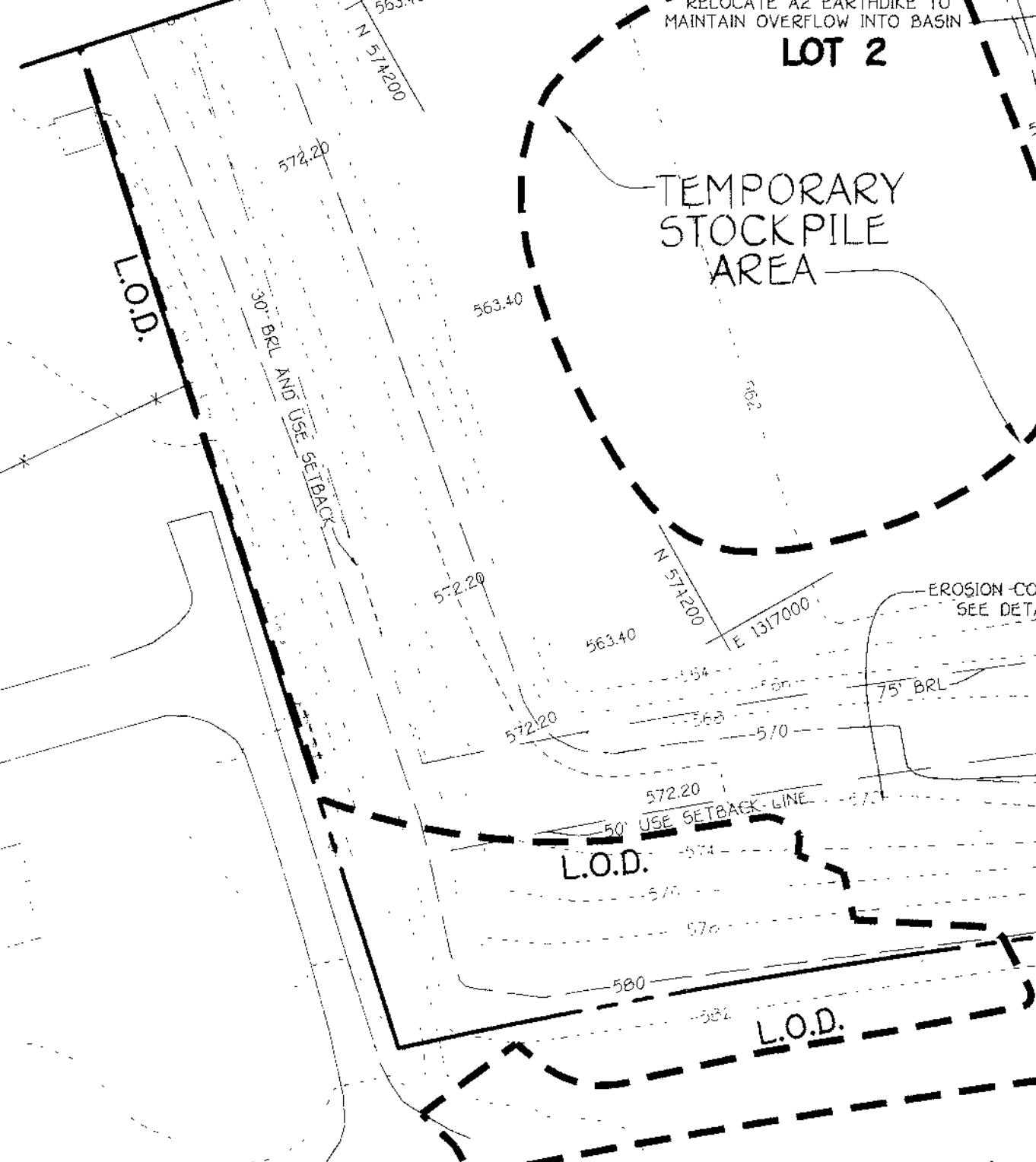
Annapolis, Maryland



SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT. (1 DAY)
 - NOTIFY MISS UTILITY (1-800-257-7777) 48 HOURS BEFORE STARTING WORK AND NOTIFY THE HOWARD COUNTY DIVISION OF CONSTRUCTION INSPECTION (410-313-8707) 24 HOURS BEFORE STARTING WORK.
 - INSTALL ALL THE SEDIMENT CONTROL DEVICES (S.C.E., SUPER SILT FENCE, TREE PROTECTION). EXISTING SEDIMENT CONTROL DEVICES SHALL BE CHECKED AND REPAIRED AS NECESSARY. SPECIFICALLY EXISTING SEDIMENT BASIN CLEANED AND REPAIRED AS NECESSARY. (1 WEEK)
 - BEGIN CONSTRUCTION OF SCHOOL BUILDING. (3 MONTHS)
 - CONSTRUCT LOT 2 STORM DRAIN SYSTEM FROM 5-3 TO EXISTING HEADWALL, AND 5-6 TO 5-7. (1 WEEK)
 - CONSTRUCT RETAINING WALL. (3 WEEKS)
 - CONSTRUCT SEDIMENT BASIN NO.3 (STORMWATER MANAGEMENT POND) WITH TEMPORARY DRAWDOWN DEVICE & RISER BRICKS. REMOVE TEMPORARY 36" HOPE PIPE TO EXISTING SEDIMENT BASIN AFTER POND IS CONSTRUCTED AND OUTFALL PIPING IS READY TO BE BUILT. (3 WEEKS)
 - INSTALL "SOUTHERN" STORM DRAIN SYSTEM (5-2/M-2/M-5/1-6) WITH INLET PROTECTION INCLUDING THE RECHARGE BMP. (NOTE: PROVIDE WATERTIGHT BLOCKED ENTRANCE TO THE RECHARGE BMP AT M-5. (3 WEEKS)
 - BEGIN LOT 2 (PARK) IMPROVEMENTS. (4 MONTHS)
- NOTE: SEQUENCE ITEMS *10-18 MUST OCCUR WITH NO DELAY BETWEEN TASKS.
- OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO FILL THE EXISTING SEDIMENT BASINS AND IMMEDIATELY COMPLETE THE CONTROLLED FILL SLOPE JUST NORTH OF THE SCHOOL. (3 WEEKS)
 - INSTALL "NORTHERN" STORM DRAIN SYSTEM (M-2/M-6/M-8/1-7/1-14) WITH INLET PROTECTION. (2 WEEKS)
 - CONSTRUCT PAVED PLAY AREA, EQUIPMENT AREA. (1 MONTH)
 - INSTALL SEPTIC FIELD, CURB & CUTTER, AND PARKING LOT PAVING. (3 MONTHS)
 - CONSTRUCT TEN OAKS ROAD IMPROVEMENTS. (2 WEEKS)
 - COMPLETE SCHOOL & PARK CONSTRUCTION. (1 MONTH)
 - STABILIZE WITH SEED & MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS. (1 WEEK)
 - REMOVE AND PROPERLY DISPOSE OF ANY AND ALL CONSTRUCTION DEBRIS, TRASH, & JUNK FROM THE FLOODPLAIN, STREAM BUFFERS AND ADJACENT AREA.
 - FOLLOWING SUCCESSFUL STABILIZATION (i.e., ESTABLISHMENT VEGETATION OR PAVING) OF ALL DISTURBED AREAS, OBTAIN PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR TO REMOVE ALL REMAINING SEDIMENT & EROSION CONTROL DEVICES AND THEN STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS WITH PERMANENT SEEDING. THIS TASK INCLUDES REMOVING THE SEDIMENT FILTER AND TEMPORARY RISER BRICKS IN THE POND AND REMOVING THE BLOCKED ENTRANCE TO THE RECHARGE BMP. (1 WEEK)

EROSION AND SEDIMENT CONTROL NOTE
THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON ALL SEDIMENT CONTROL DEVICES/PRACTICES ON A DAILY BASIS AND IMMEDIATELY AFTER A RAINFALL.



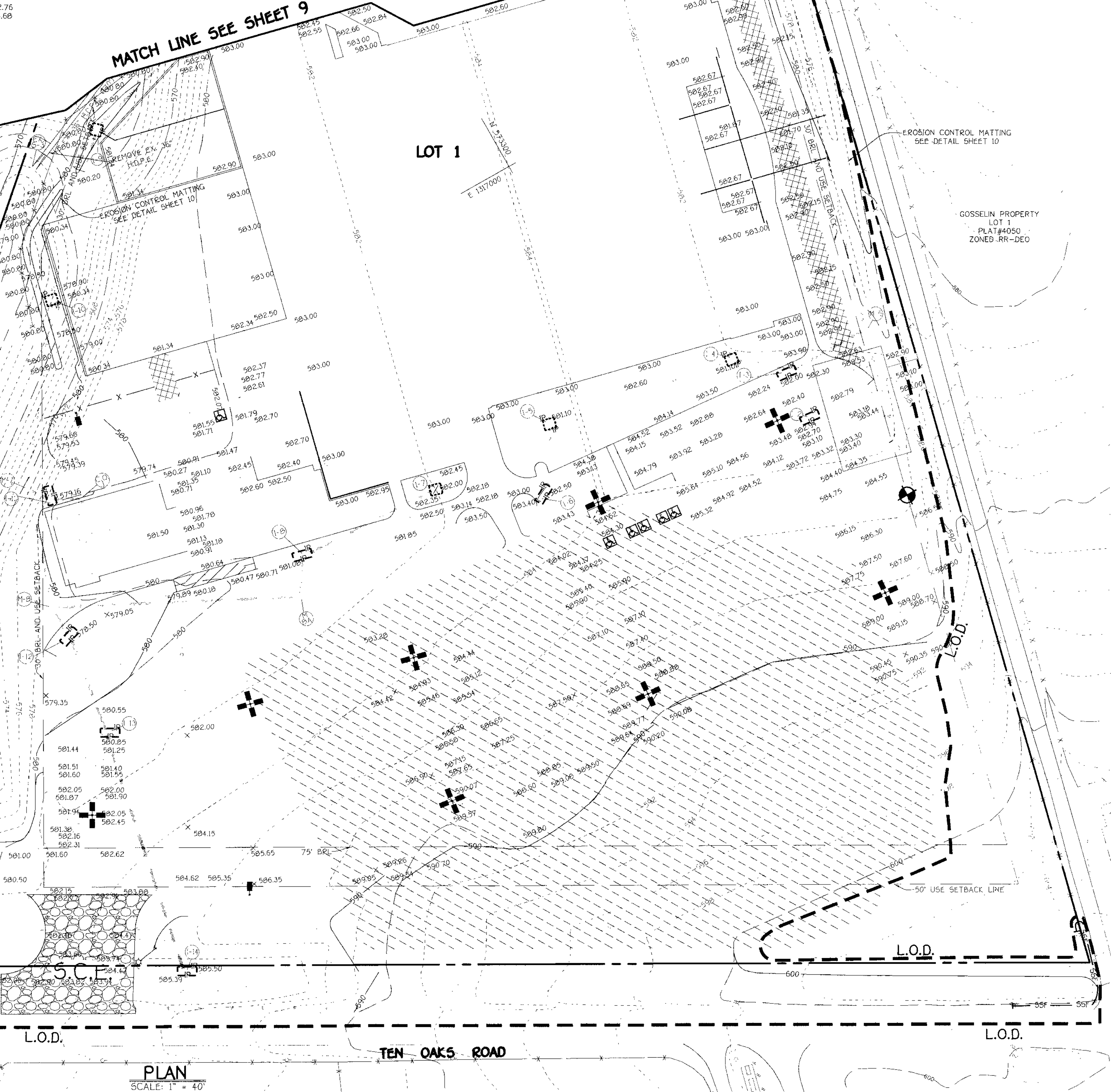
- Construction Specifications**
- Excavate completely around the inlet to a depth of 18" below the notch elevation.
 - Drive the 2" x 4" construction grade lumber posts 1" into the ground at each corner of the inlet. Place roll stripe between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (twice) must be 6" below adjacent roadways where flooding and safety issues may arise.
 - Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
 - Scratch the Geotextile Class E lightly over the wire mesh with the geotextile extending from the top of the frame to 30" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
 - Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
 - If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
 - The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

TEMPORARY SEDIMENT BASIN No. 3
INITIAL D.A. = 11.07 AC+
FINAL D.A. = 11.07 AC+
STORAGE REQUIRED
WET = 1800 x 11.07 = 19,926 CUF.
DRY = 1800 x 11.07 = 19,926 CUF.
STORAGE PROVIDED
WET = 19,926 CUF. • ELEV. 552.76
DRY = 19,926 CUF. • ELEV. 554.68
BOTTOM ELEV. = 550.00
STORAGE DEPTH = 10.07'
TOP OF EMBANKMENT = 560.00
SIDE SLOPES: 3:1
CLEAN OUT ELEV. = 551.60
RISER CREST ELEV. = 554.05
1 YR. DRIFICE INV. = 550.00
DI EXHBT. = 0.95 c.f.s.
DI PROP. = 0.80 c.f.s.

APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER: JAB DATE: _____

MATCH LINE SEE SHEET 9



PLAN
SCALE: 1" = 40'

ENGINEER'S CERTIFICATE

I hereby 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.

James J. Fisher
Signature of Engineer
1/3/05
Date

Reviewed For: Howard County Soil Conservation District and Meets Technical Requirements.
Jim Mynick
3/30/05
Date
L.S.D.A. - Natural Resources Conservation Service

DEVELOPER'S CERTIFICATE

"I/We Certify that All Development and Construction will be Done According to this Plan of Development and Plan for Erosion and Sediment Control and that All Responsible Personnel Involved in the Construction Project will Have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion Before Beginning the Project. I Also Authorize Periodic On-Site Inspection by the Howard Soil Conservation District or their Authorized Agents, as are Deemed Necessary."

Caitleen Conley Young
Signature of Developer
1/18/05
Date

Approved: This Development is Approved For Erosion and Sediment Control by the Howard Soil Conservation District.
John Del...
3/30/05
Date
District: Howard Soil Conservation District

APPROVED DEPARTMENT OF PLANNING AND ZONING

Mark Deagle
Director - Department of Planning and Zoning
4/18/05
Date

Audrey Hamilton
Chief, Division of Land Development
4/13/05
Date

Chris Damann
Chief, Development Engineering Division
4/14/05
Date

PREPARED FOR

HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35

PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	8	RR-DEO	28	FIFTH	6051.01

WATER CODE	SEWER CODE
N/A	N/A

SEDIMENT AND EROSION CONTROL PLAN AND SEQUENCE OF CONSTRUCTION

WESTERN ELEMENTARY SCHOOL AND PARK
LOTS 1 AND 2

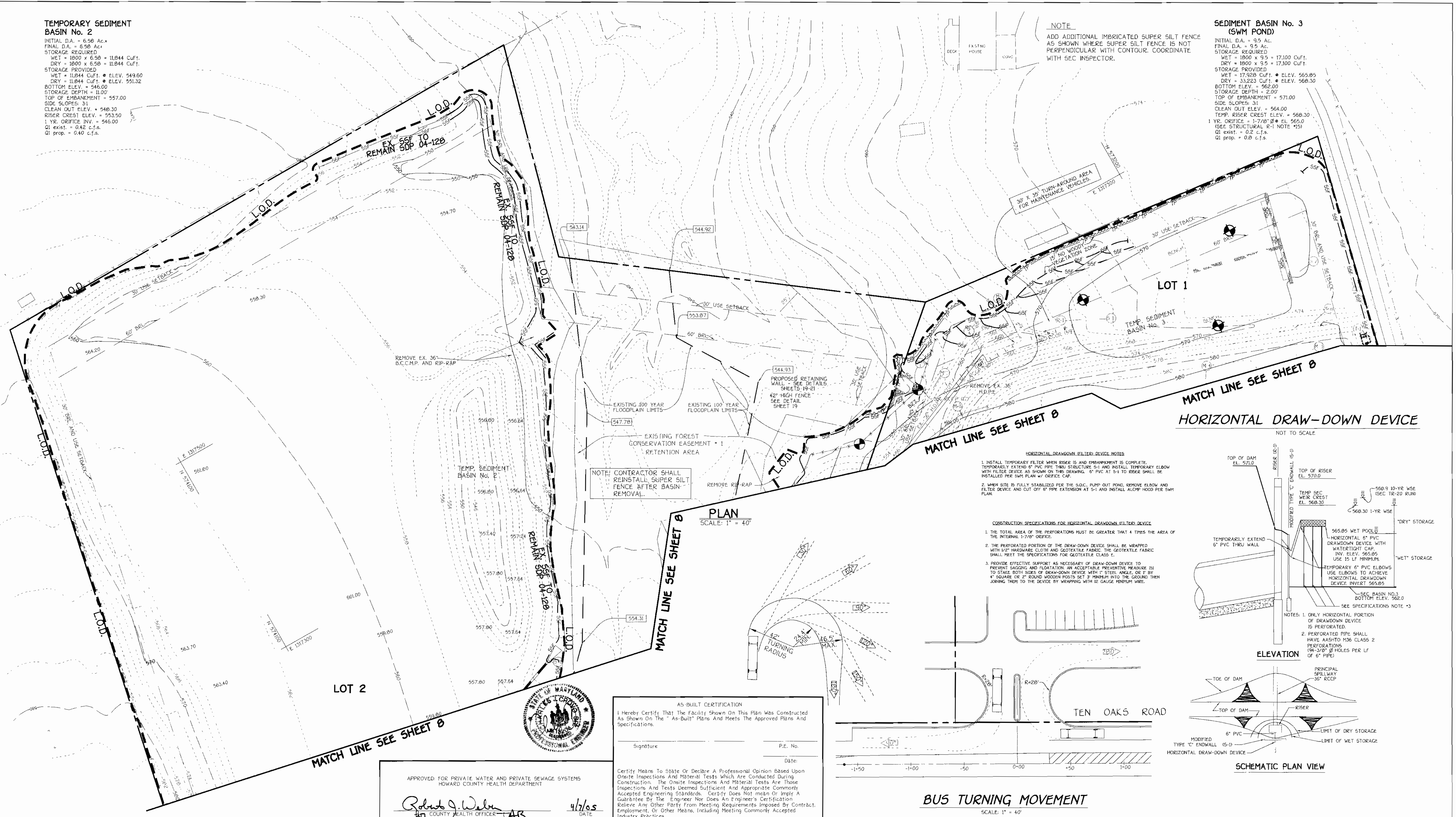
TAX MAP No. 28 GRID No. 8 PARCEL No. 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW: 12 NOVEMBER 04
"BID AND CONSTRUCTION"
4 JANUARY 05"

SHEET 8 OF 28

TEMPORARY SEDIMENT BASIN No. 2
 INITIAL D.A. = 6.50 Ac.
 FINAL D.A. = 6.50 Ac.
 STORAGE REQUIRED:
 WET = 1800 x 9.5 = 17,100 Cu.Ft.
 DRY = 1800 x 9.5 = 17,100 Cu.Ft.
 STORAGE PROVIDED:
 WET = 11,844 Cu.Ft. @ ELEV. 549.60
 DRY = 11,844 Cu.Ft. @ ELEV. 551.32
 BOTTOM ELEV. = 546.00
 STORAGE DEPTH = 11.00'
 TOP OF EMBANKMENT = 557.00
 SIDE SLOPES: 3:1
 CLEAN OUT ELEV. = 548.30
 RISER CREST ELEV. = 553.50
 1 YR. ORIFICE ELEV. = 546.00
 Q1 exist. = 0.42 c.f.s.
 Q1 prop. = 0.40 c.f.s.

SEDIMENT BASIN No. 3 (SWM POND)
 INITIAL D.A. = 9.5 Ac.
 FINAL D.A. = 9.5 Ac.
 STORAGE REQUIRED:
 WET = 1800 x 9.5 = 17,100 Cu.Ft.
 DRY = 1800 x 9.5 = 17,100 Cu.Ft.
 STORAGE PROVIDED:
 WET = 17,928 Cu.Ft. @ ELEV. 565.85
 DRY = 33,223 Cu.Ft. @ ELEV. 568.30
 BOTTOM ELEV. = 562.00
 STORAGE DEPTH = 2.00'
 TOP OF EMBANKMENT = 571.00
 SIDE SLOPES: 3:1
 CLEAN OUT ELEV. = 564.00
 TEMP. RISER CREST ELEV. = 568.30
 1 YR. ORIFICE = 1-7/8" Ø @ EL. 565.0
 (SEE STRUCTURAL R-1 NOTE #15)
 Q1 exist. = 0.2 c.f.s.
 Q1 prop. = 0.8 c.f.s.

NOTE
 ADD ADDITIONAL IMBRICATED SUPER SILT FENCE AS SHOWN WHERE SUPER SILT FENCE IS NOT PERPENDICULAR WITH CONTOUR. COORDINATE WITH SEC INSPECTOR.

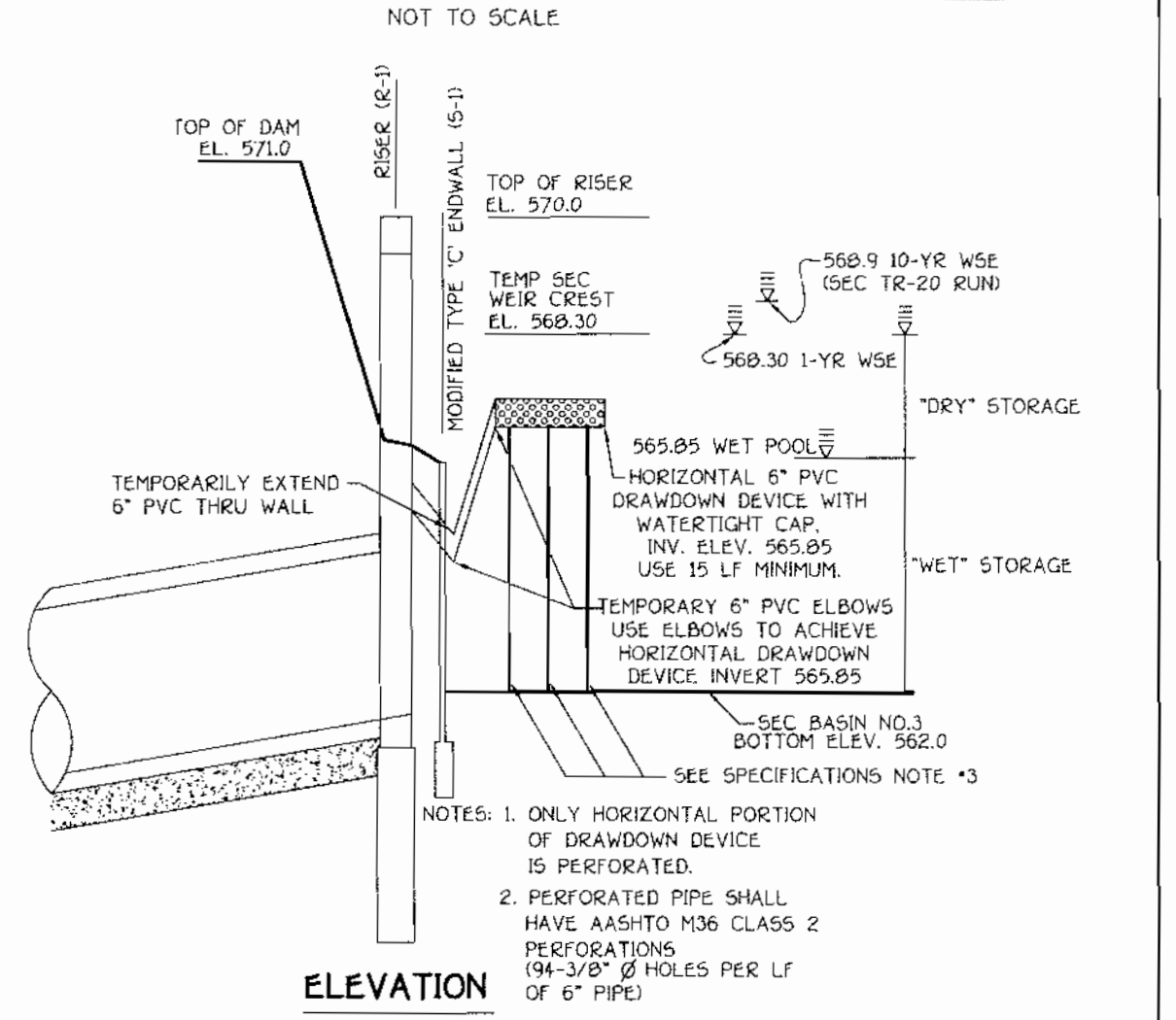


PLAN
 SCALE: 1" = 40'

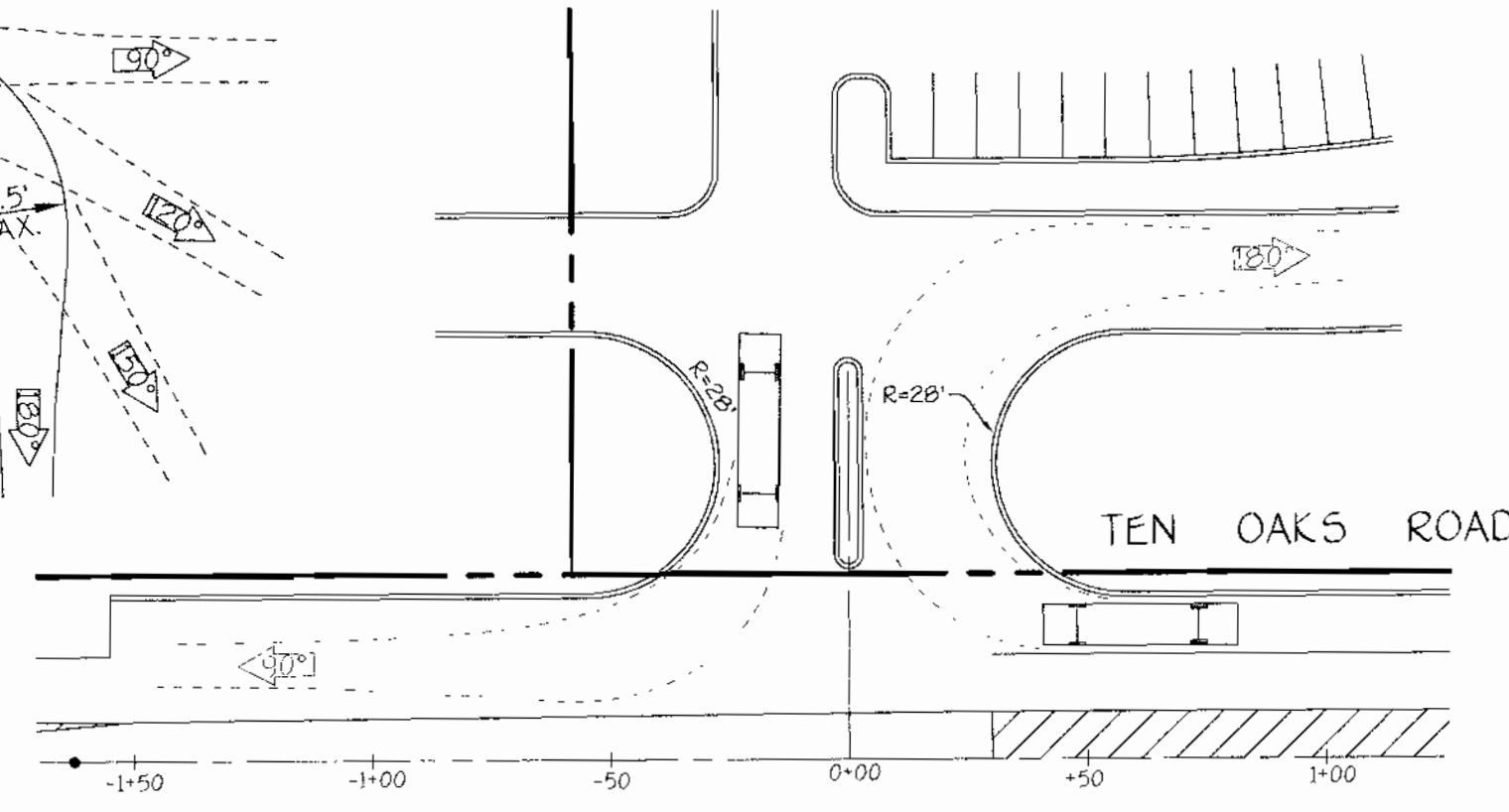
- HORIZONTAL DRAWDOWN DEVICE NOTES**
1. INSTALL TEMPORARY FILTER WHEN RISER IS AND EMBANKMENT IS COMPLETE. TEMPORARILY EXTEND 6" PVC PIPE THRU STRUCTURE S-1 AND INSTALL TEMPORARY ELBOW WITH FILTER DEVICE AS SHOWN ON THIS DRAWING. 6" PVC AT S-1 TO RISER SHALL BE INSTALLED PER SWM PLAN W/ ORIFICE CAP.
 2. WHEN SITE IS FULLY STABILIZED PER THE S.O.C. PUMP OUT POND, REMOVE ELBOW AND FILTER DEVICE AND CUT OFF 6" PIPE EXTENSION AT S-1 AND INSTALL ALUM. HOOD PER SWM PLAN.

- CONSTRUCTION SPECIFICATIONS FOR HORIZONTAL DRAWDOWN DEVICE**
1. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL 1-7/8" ORIFICE.
 2. THE PERFORATED PORTION OF THE DRAWDOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
 3. PROVIDE EFFECTIVE SUPPORT AS NECESSARY OF DRAWDOWN DEVICE TO PREVENT SAGGING AND FLUCTUATION. AN ACCEPTABLE PREVENTIVE MEASURE IS TO STAKE BOTH SIDES OF DRAWDOWN DEVICE WITH 1" STAKE ANGLE OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3" MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 1/2 GAUGE GALVANIZED WIRE.

HORIZONTAL DRAWDOWN DEVICE



ELEVATION



SCHEMATIC PLAN VIEW

NOTE: CONTRACTOR SHALL REINSTALL SUPER SILT FENCE AFTER BASIN REMOVAL.

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 Onsite Inspections and Material Tests Which Are Conducted During Construction. The Onsite 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 An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed by Contract, Employment, or Other Means, Including Meeting Commonly Accepted Industry Practices.



APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Walz
 HEALTH OFFICER - ABS 4/7/05
 DATE

BUS TURNING MOVEMENT
 SCALE: 1" = 40'

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.

Cathleen Conley Young
 Signature Of Developer 1/18/05
 Date

Jim Myers
 Signature Of Developer 3/30/05
 Date

USA-Natural Resources Conservation Service

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.

Cheryl J. Cravo SA
 Signature Of Engineer 11/31/05
 Date

Cheryl J. Cravo SA
 Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Cheryl J. Cravo SA
 Signature Of Engineer 3/30/05
 Date

Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING

David A. Loyell
 Director, Department of Planning and Zoning 4/14/05
 Date

Cindy Hamilton
 Chief, Division of Land Development 4/19/05
 Date

Chris Stevenson
 Chief, Development Engineering Division 4/14/05
 Date

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 10910 Maryland Route 109
 Ellicott City, Maryland 21042
 Attention: Bruce Gisl
 410-313-6798

TCA ARCHITECTS
 2661 RIVA ROAD, SUITE 120
 ANNAPOLIS, MARYLAND 21401
 (301) 261-8700

Address Chart					
Parcel Number	Street Address				
P. 35	LOT 1 4691 TEN OAKS ROAD				
	LOT 2 4671 TEN OAKS ROAD				
PROJECT	SECTION/AREA	PARCEL			
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35			
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	B	RR-DEO	2B	FIFTH	6051.01
WATER CODE	SEWER CODE				
N/A	N/A				

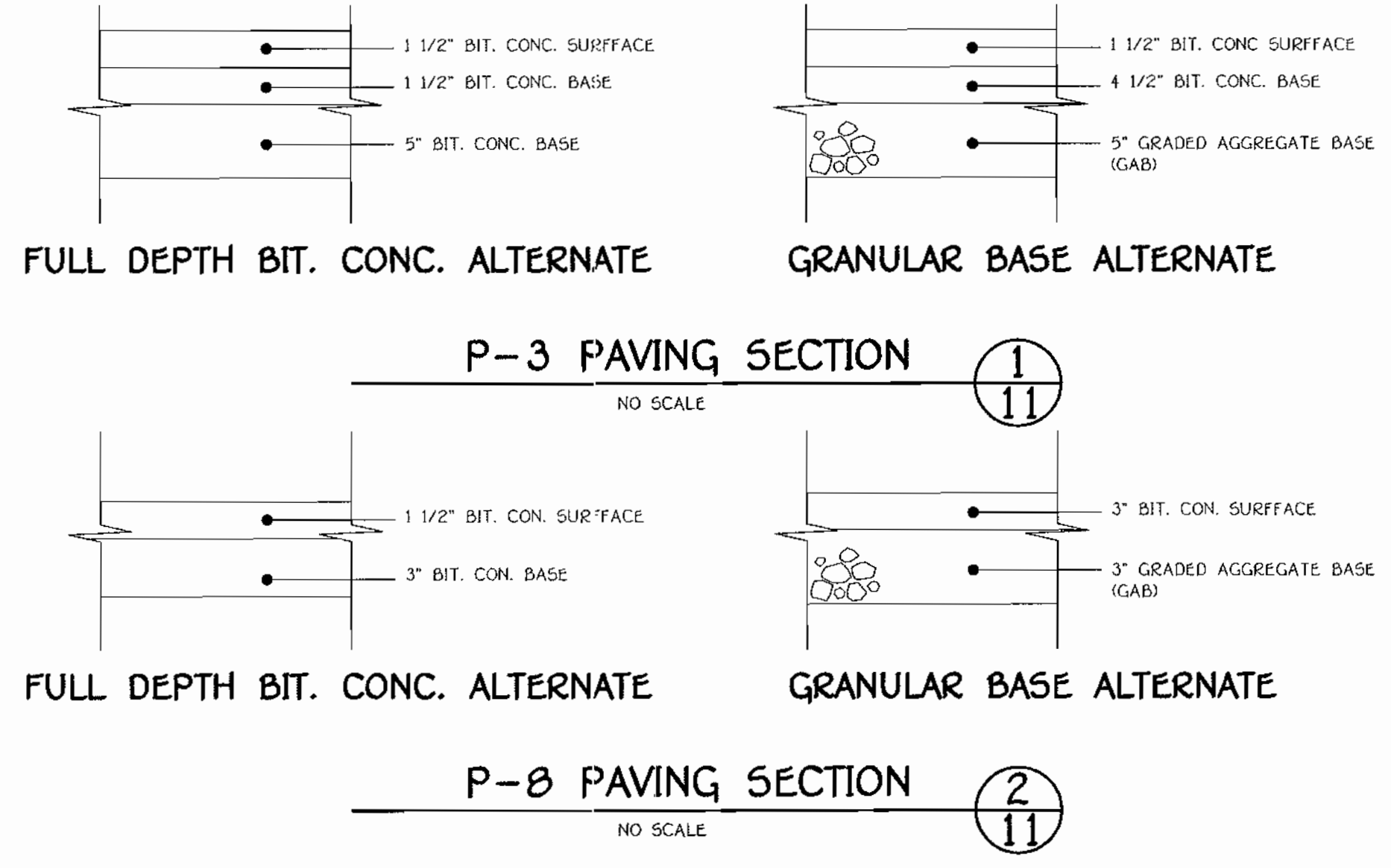
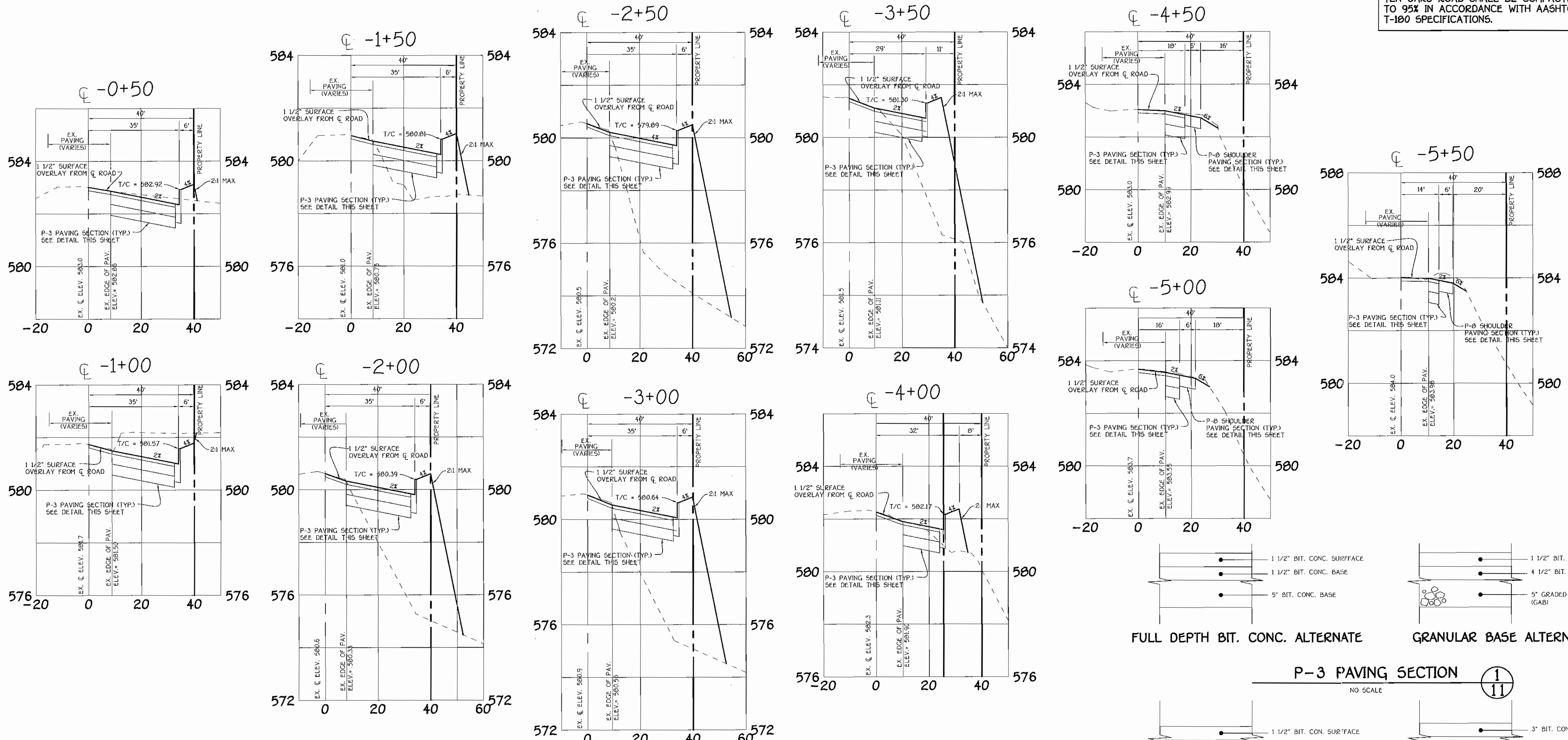
SEDIMENT AND EROSION CONTROL PLAN

WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No: 2B GRID No: B PARCEL No: 35
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 40' DATE: OCT. 7, 2004
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 "BID AND CONSTRUCTION 4 JANUARY 05"
 SHEET 9 OF 28

SDP05-007

FILL AREAS ALONG THE WIDENING FOR TEN OAKS ROAD SHALL BE COMPACTED TO 95% IN ACCORDANCE WITH AASHTO T-100 SPECIFICATIONS.



TEN OAKS ROAD CROSS SECTIONS
SCALE: HORZ. 1" = 20'
VERT. 1" = 2'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTURIAL SQUARE OFFICE PARK - 10772 BA THORNE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
410-481-2055



APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robert J. Weber
COUNTY HEALTH OFFICER - JAB 4/7/05 DATE

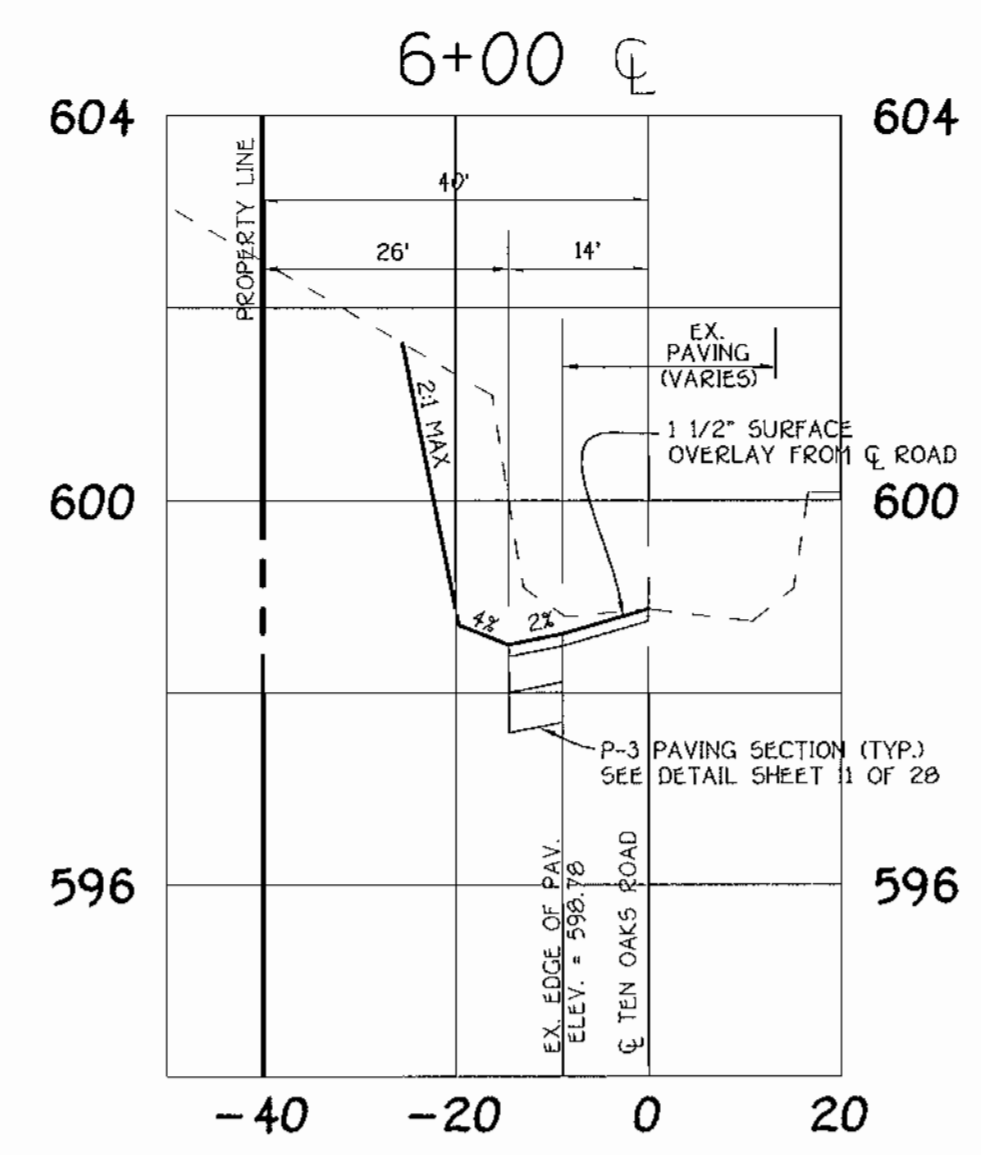
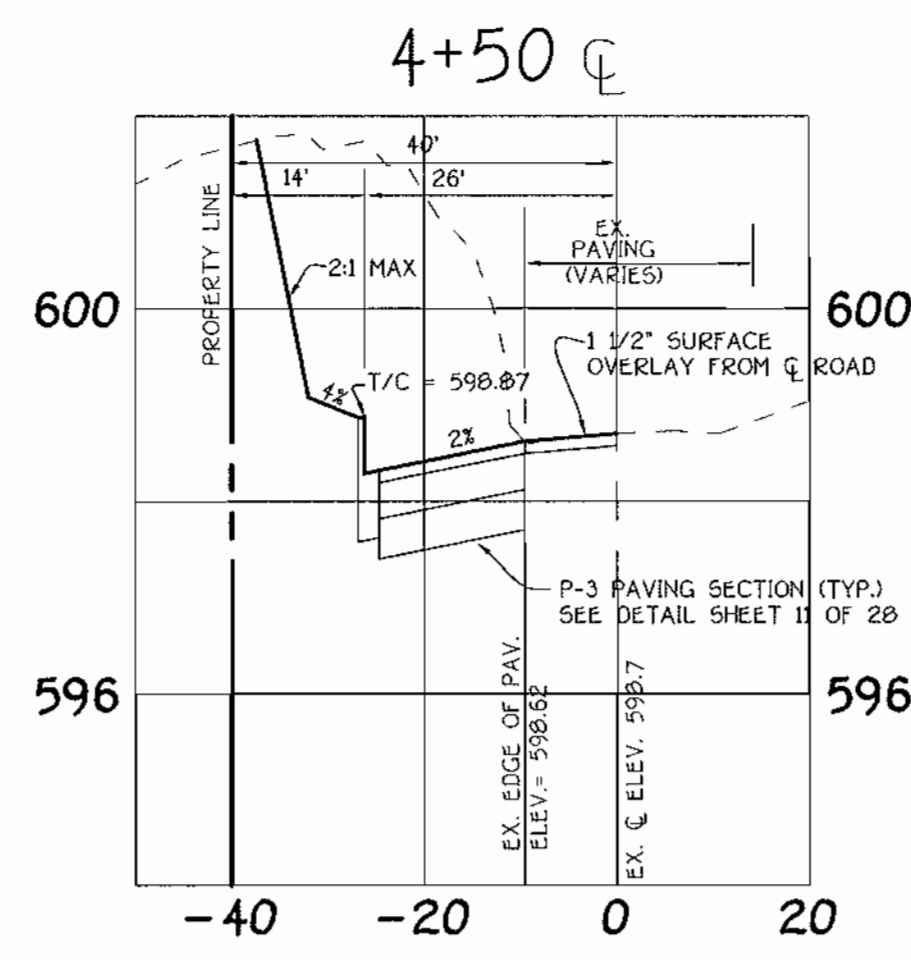
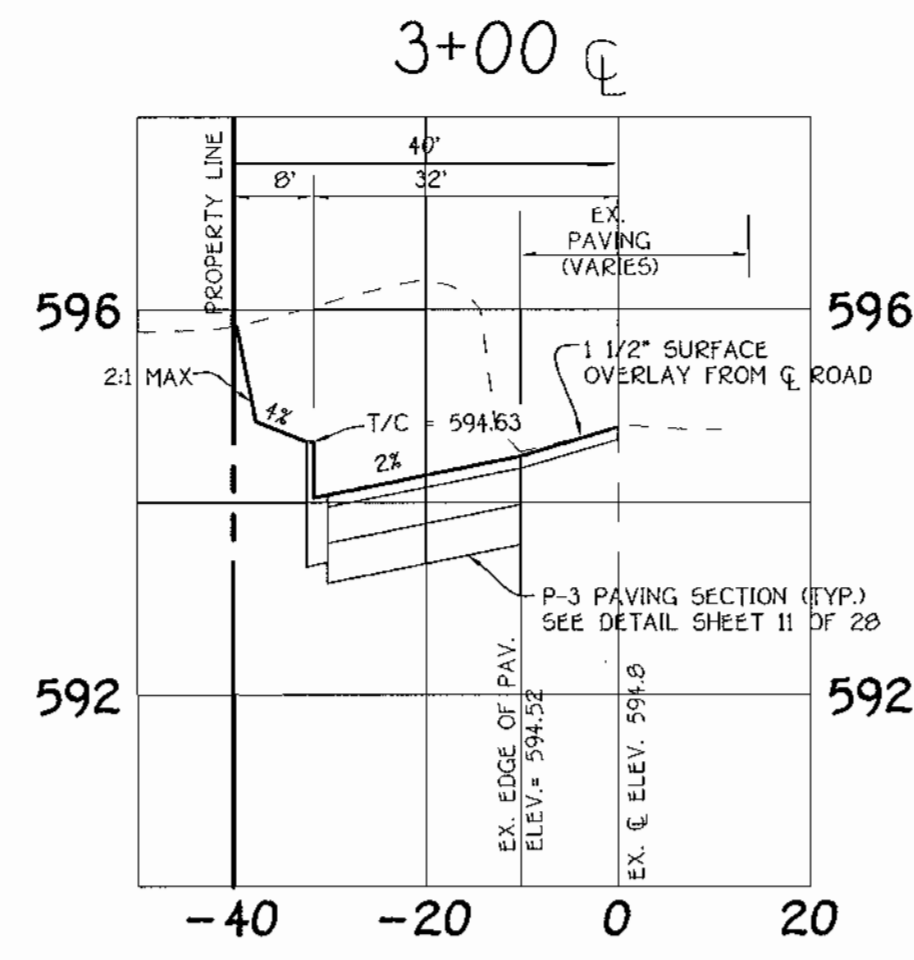
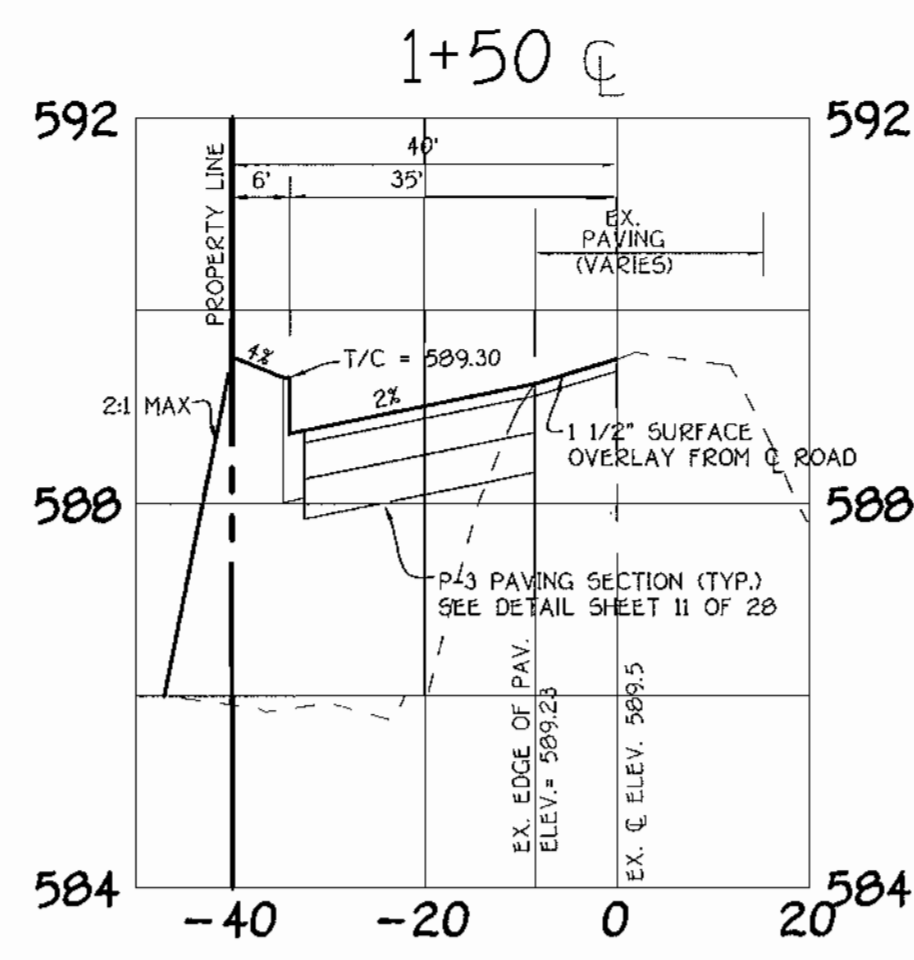
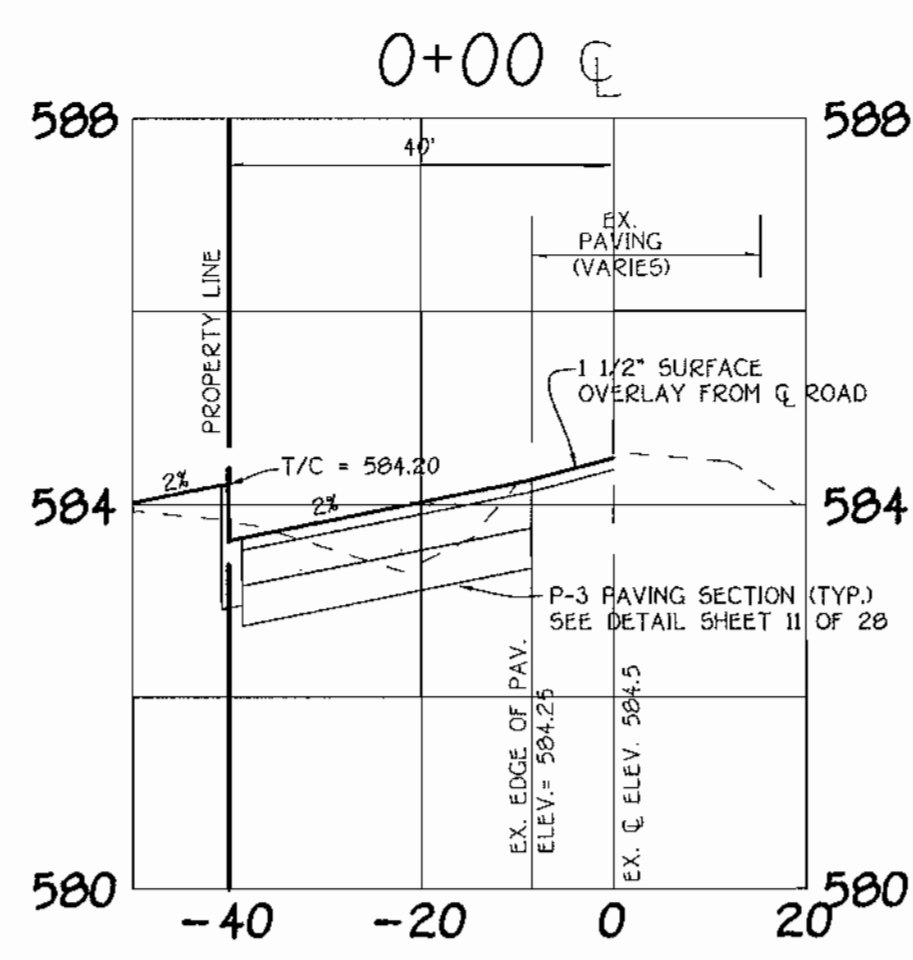
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Paul A. Wampler 4/14/05
Director - Department of Planning and Zoning
Condy Hamstra 4/13/05
Chief, Division of Land Development
Tom Deamus 4/14/05
Chief, Development Engineering Division

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6798

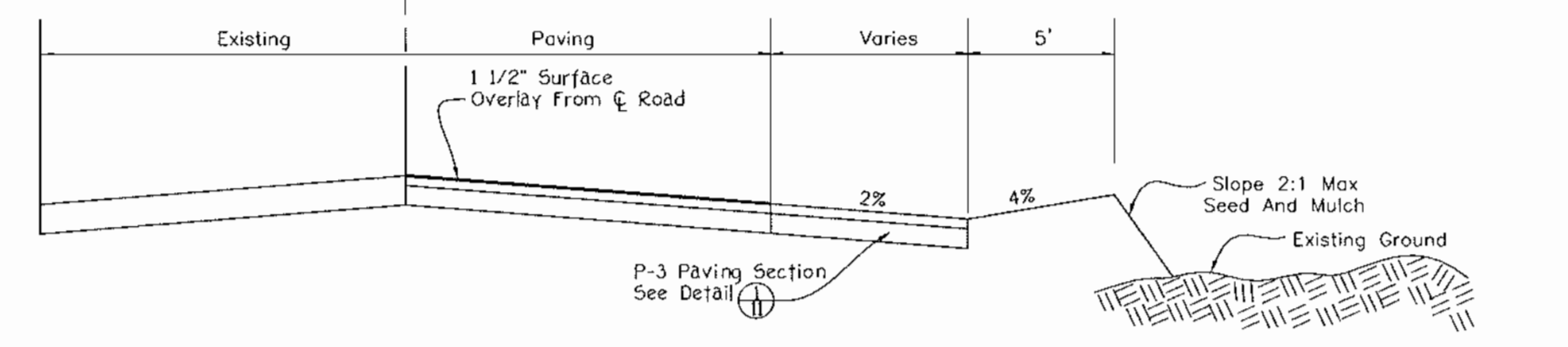
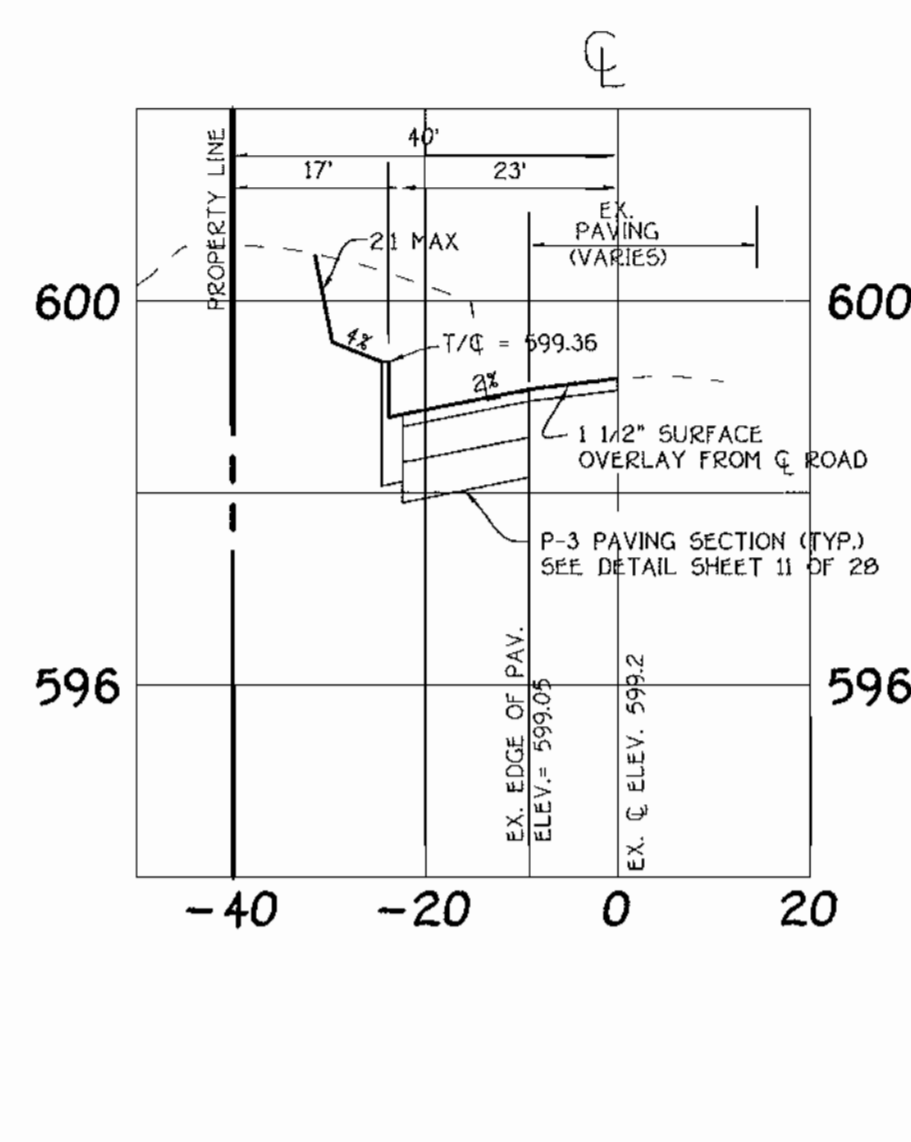
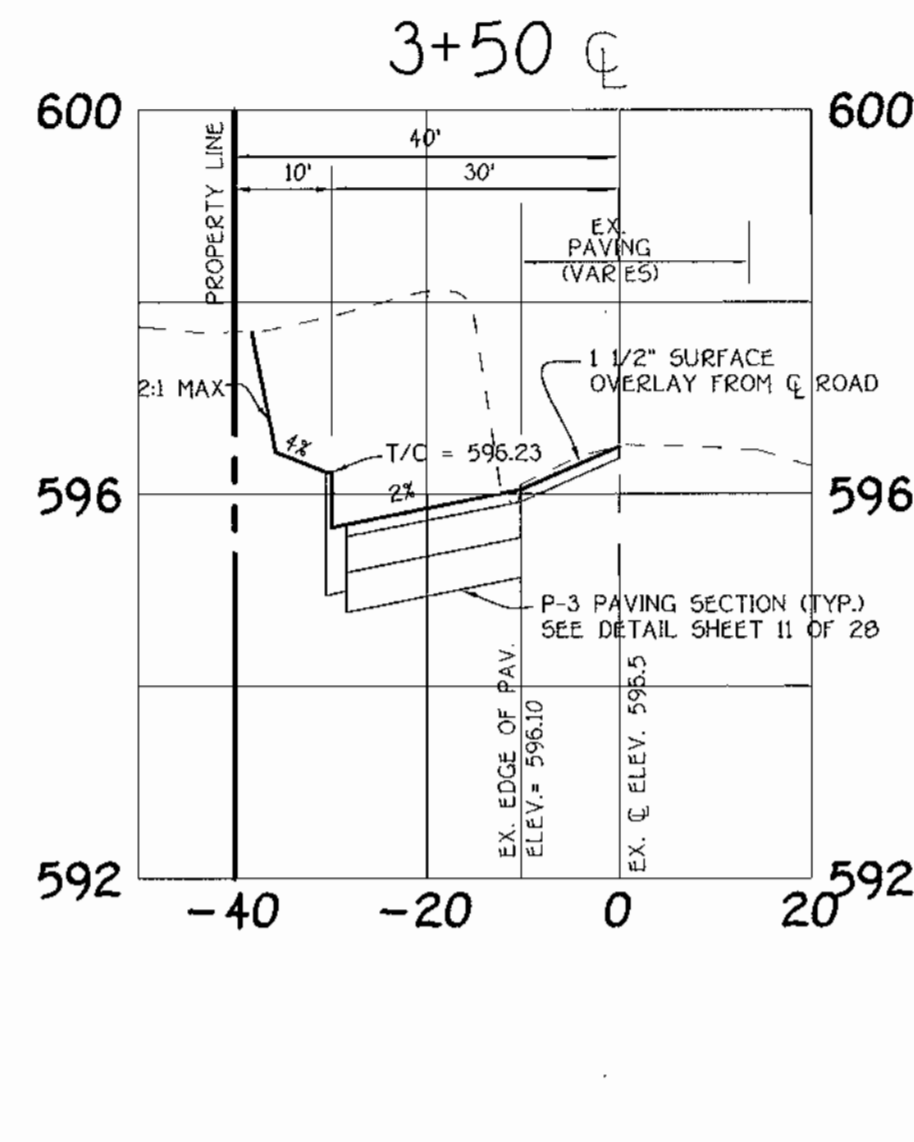
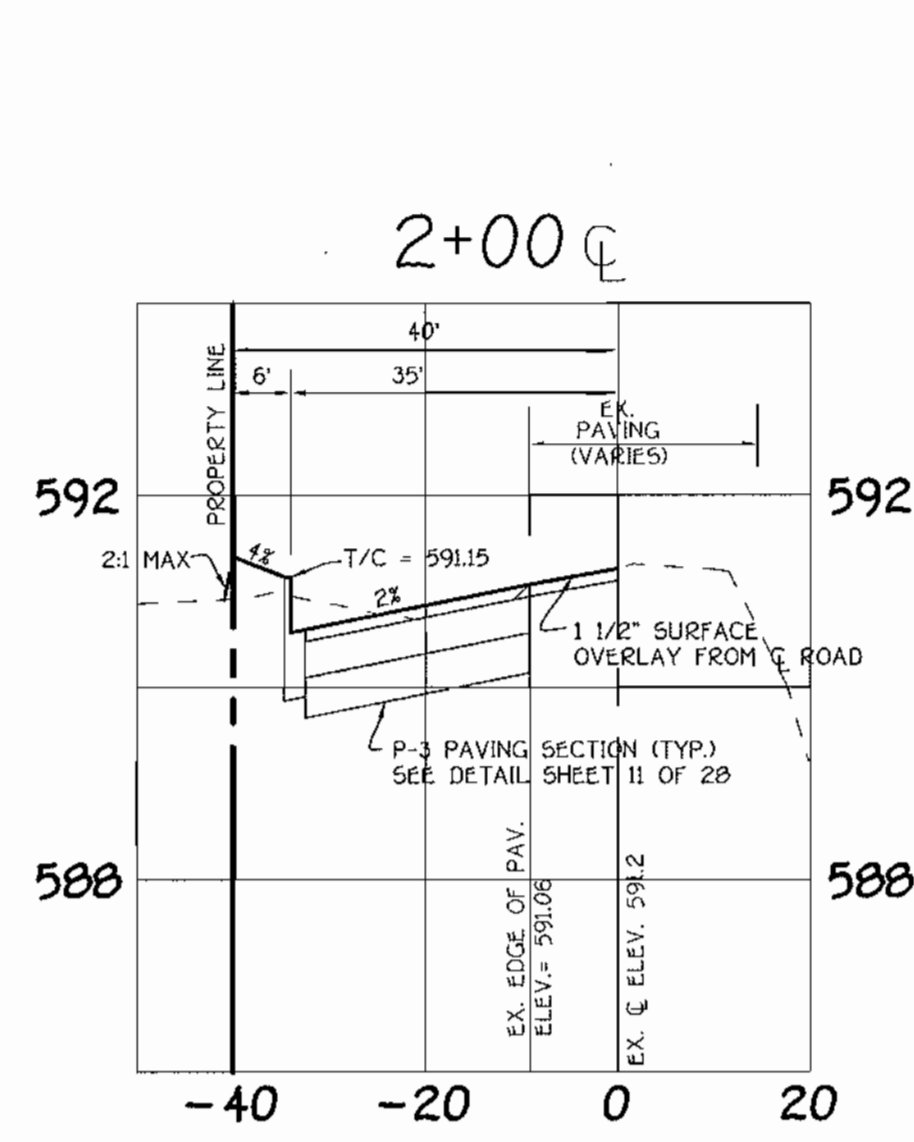
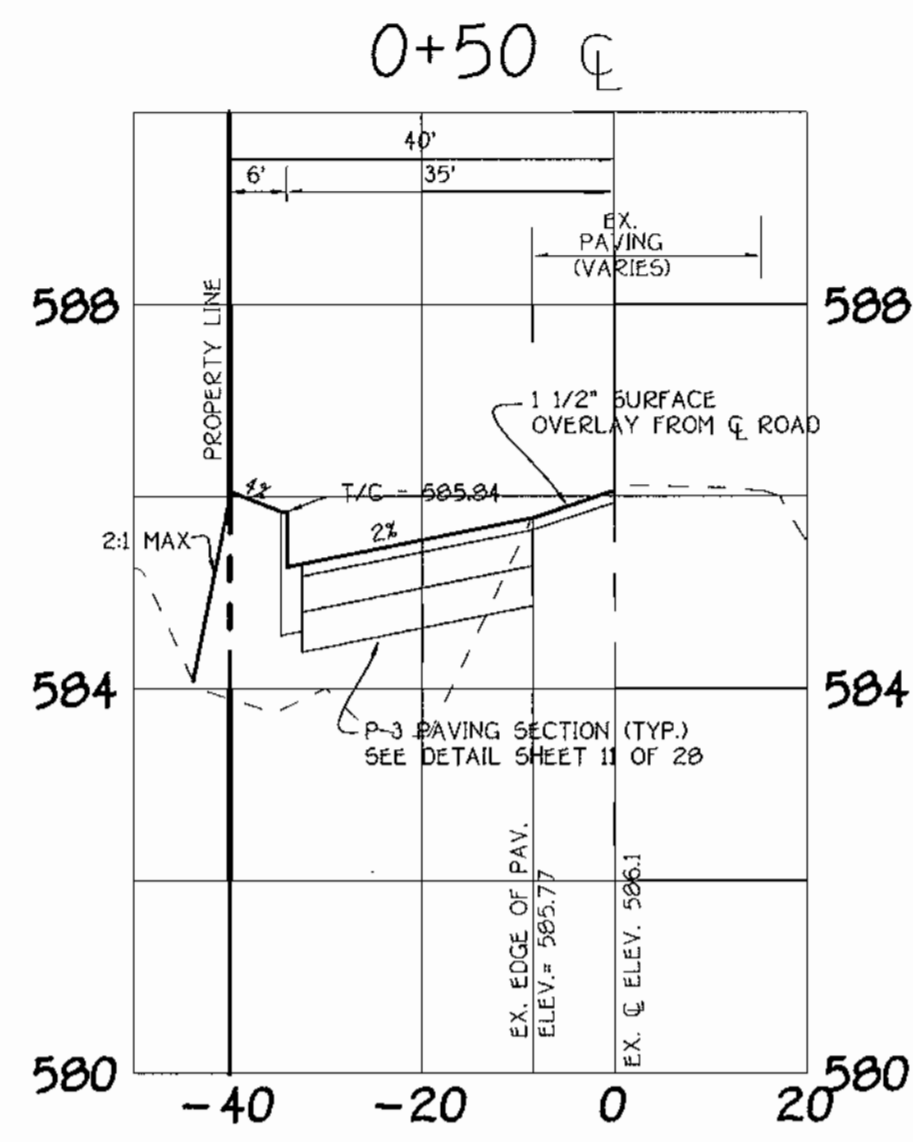
TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart					
Parcel Number	Street Address				
P. 35	LOT 1 4691 TEN OAKS ROAD				
	LOT 2 4671 TEN OAKS ROAD				
PROJECT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK		N/A			35
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	8	RR-DEO	2B	FIFTH	6051.01
WATER CODE	SEWER CODE				
N/A	N/A				

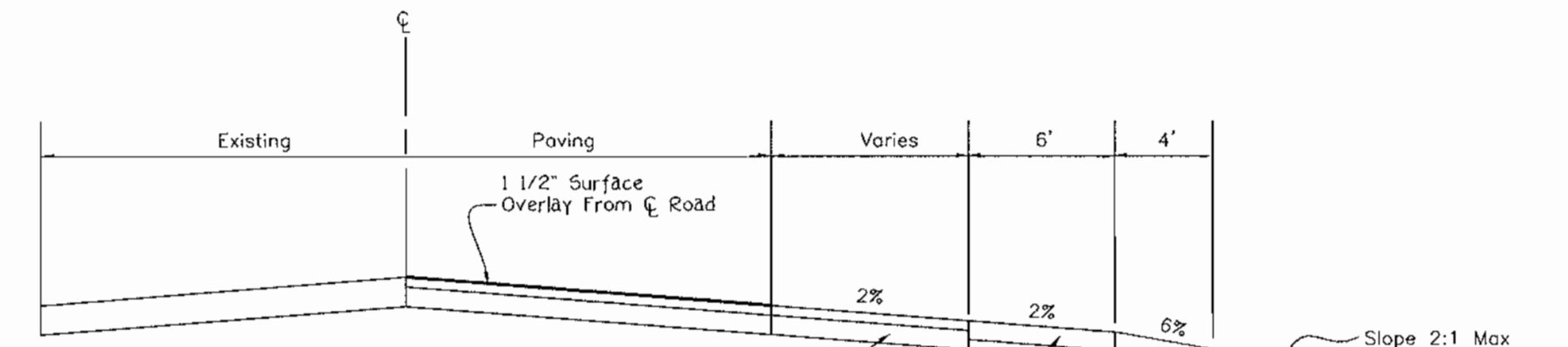
CROSS SECTIONS
WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2
TAX MAP No: 28 GRID No: 8 PARCEL No: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION 4 JANUARY 05"
SHEET 11 OF 28



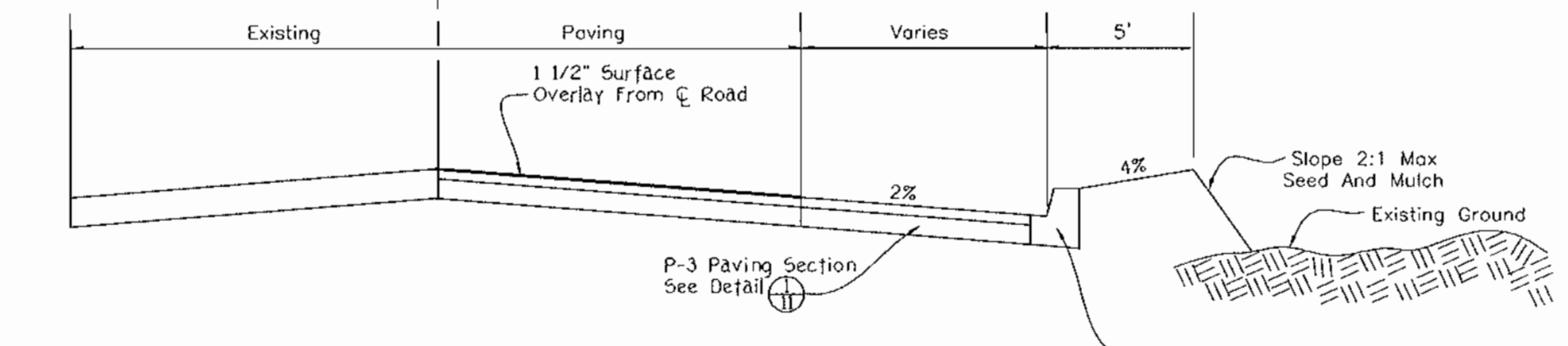
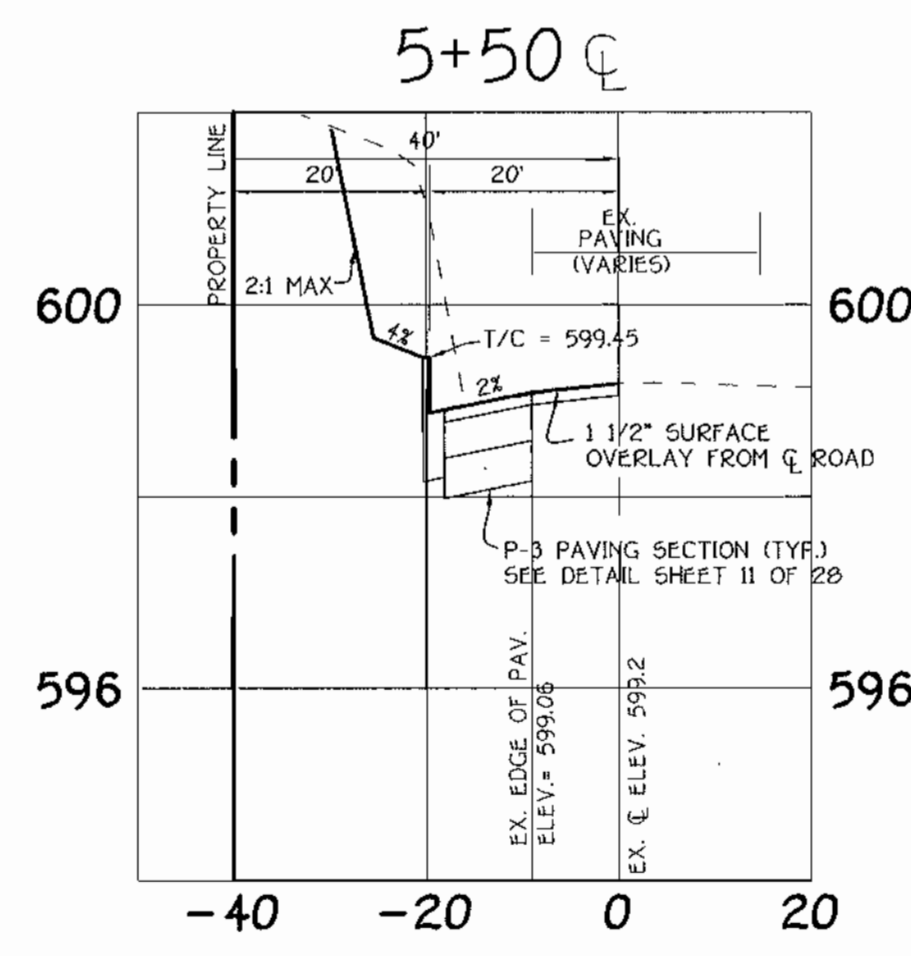
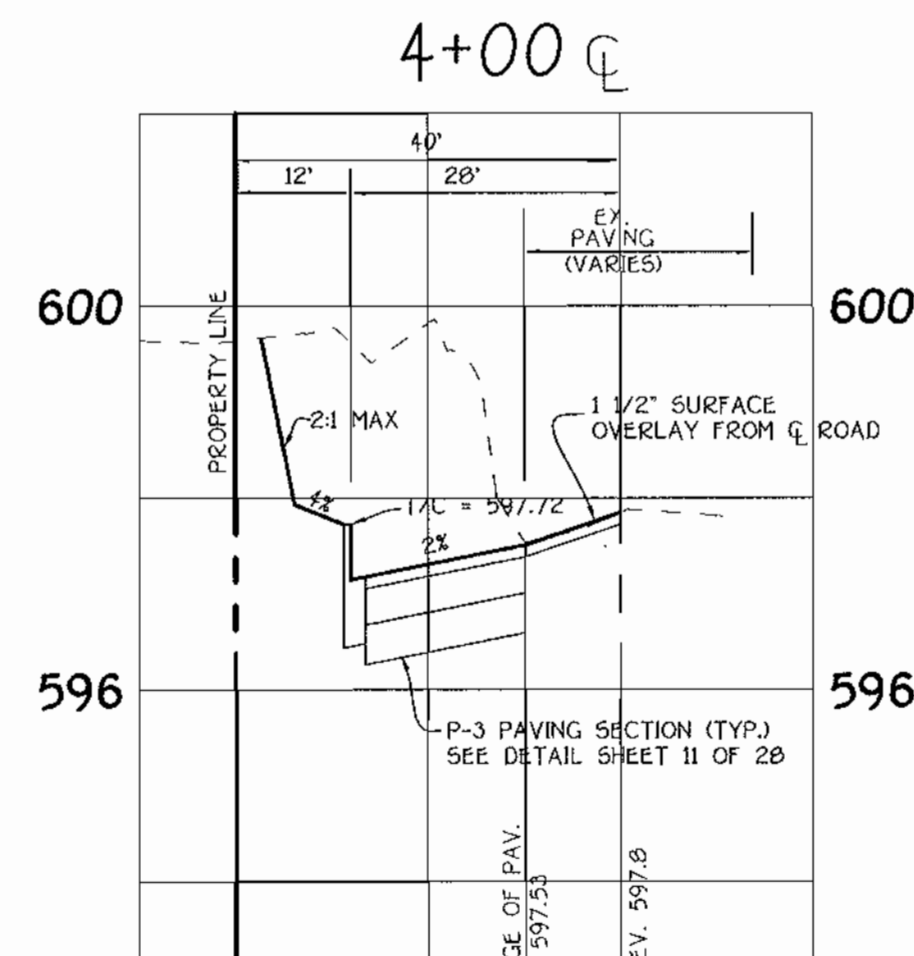
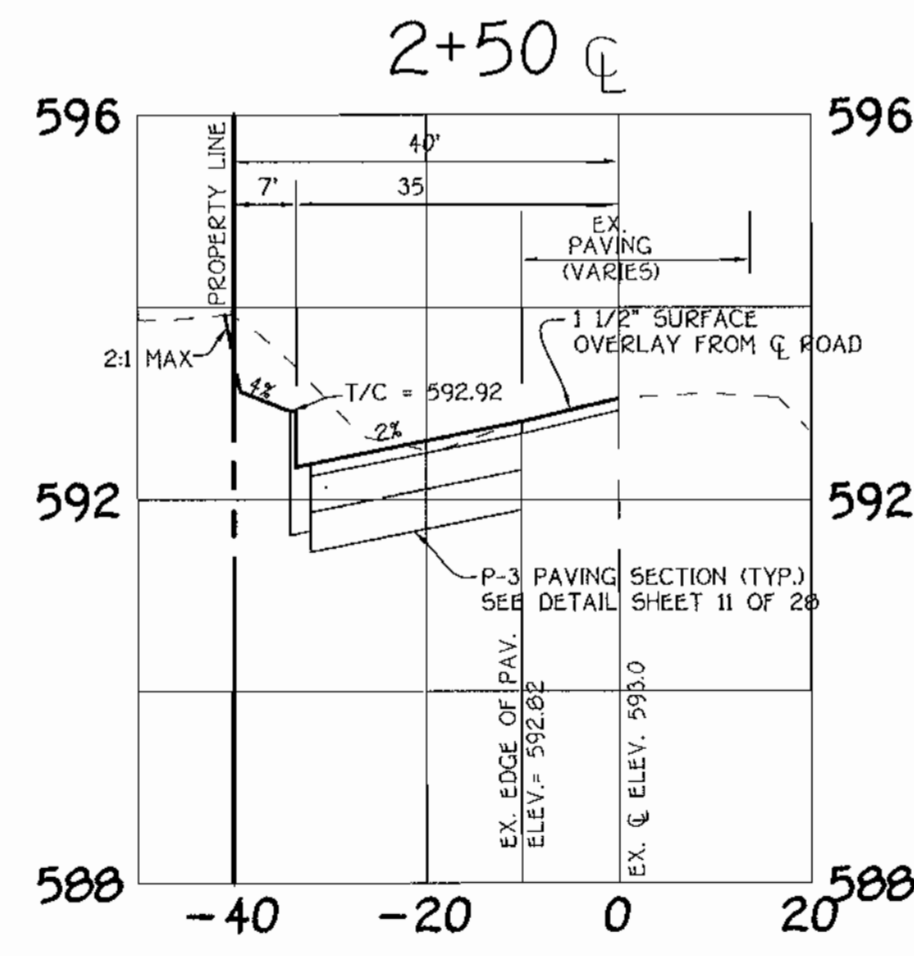
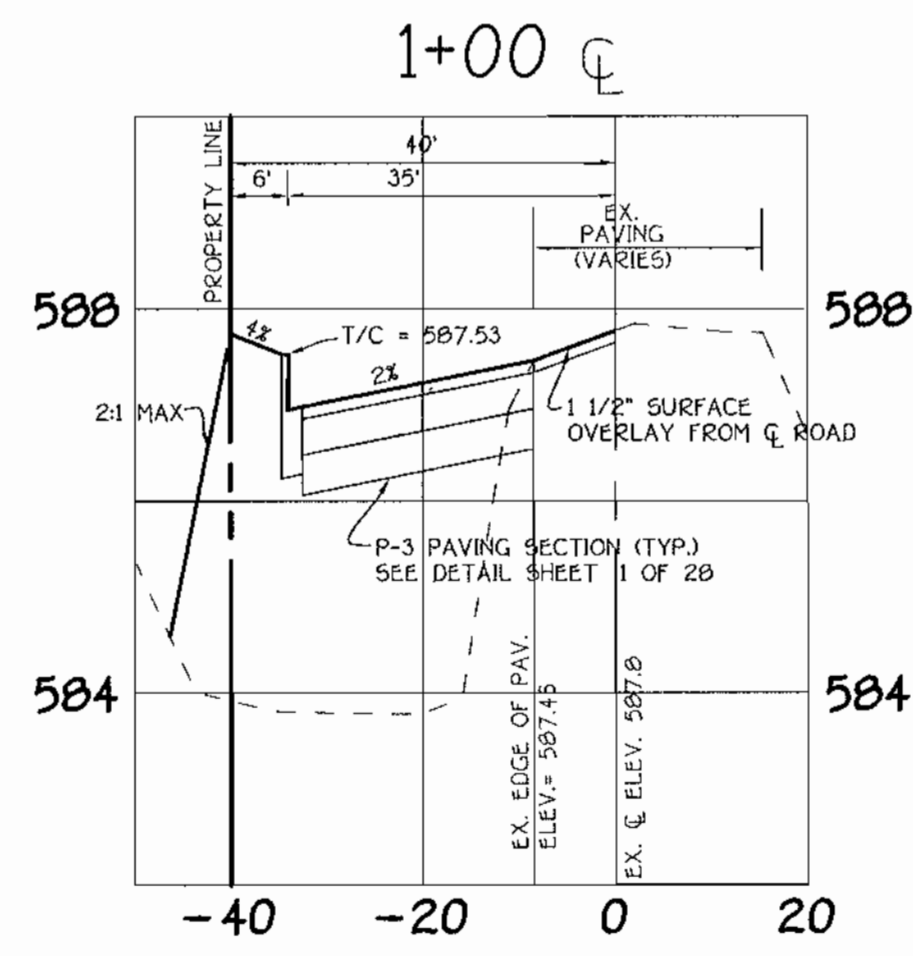
FILL AREAS ALONG THE WIDENING FOR TEN OAKS ROAD SHALL BE COMPACTED TO 95% IN ACCORDANCE WITH AASHTO T-100 SPECIFICATIONS.



TEN OAKS ROAD WIDENING SECTION
 FROM STA. 5+50 TO STA. 6+23 AND
 NO SCALE



TEN OAKS ROAD WIDENING SECTION
 FROM STA. -4+00 TO STA. -6+00
 NO SCALE



TEN OAKS ROAD WIDENING SECTION
 FROM STA. 0+50 TO STA. 5+50 AND
 FROM STA. -0+50 TO STA. -4+00
 NO SCALE

TEN OAKS ROAD CROSS SECTIONS
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855



APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert J. Walters
 COUNTY HEALTH OFFICER - AB
 4/1/05
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Mark A. Woychik
 Director - Department of Planning and Zoning
 4/1/05
 Chief, Division of Land Development
 Cindy Hamaker
 4/1/05
 Chief, Development Engineering Division
 Chris Perkinson
 4/4/05

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 10910 Maryland Route 108
 Elicott City, Maryland 21042
 Attention: Bruce Gist
 410-313-6798
 TCA ARCHITECTS
 2661 RIVA ROAD, SUITE 120
 ANNAPOLIS, MARYLAND 21401
 (301) 261-6700

Address Chart			
Parcel Number	Street Address		
P. 35	LOT 1 4691 TEN OAKS ROAD		
	LOT 2 4671 TEN OAKS ROAD		
PROJECT	SECTION/AREA	PARCEL	
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35	
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE
16794 - 16796	8	RR-DEC	28
ELEC. DIST.	CENSUS TR.		
FIFTH	6051.01		
WATER CODE	SEWER CODE		
N/A	N/A		

CROSS SECTIONS
 WESTERN ELEMENTARY SCHOOL AND PARK
 LOTS 1 AND 2
 TAX MAP No: 28 GRID No: 8 PARCEL No: 35
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 40' DATE: OCT. 7, 2004
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 *BID AND CONSTRUCTION
 4 JANUARY 05
 SHEET 12 OF 28

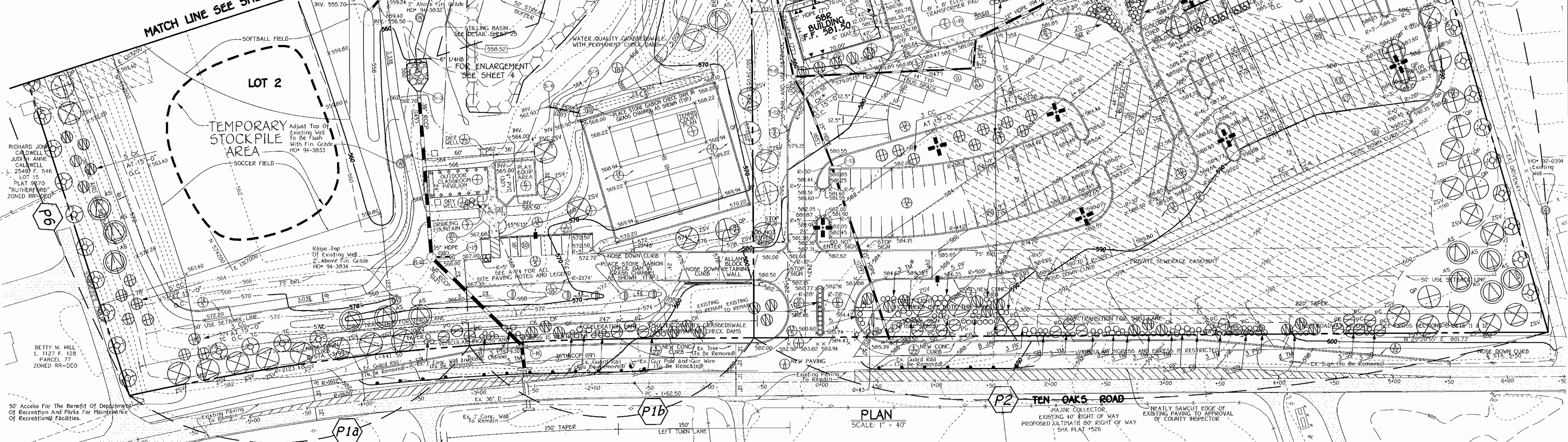
ADDITIONAL PLANT LIST						
KEY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE & CONDITION	REMARKS	QUANTITY
DECIDUOUS TREES						
AS	(Symbol)	ACER SACCHARUM "GREEN MOUNTAIN"	SUGAR MAPLE	3" - 3 1/2" CAL. D & B	30' O.C. U.O.M.	11
CC	(Symbol)	CERCIS CANADENSIS	EASTERN REDBUD	1 1/2" - 2" CAL. 8'-10' H. B & B	15' O.C. U.O.M.	3
CK	(Symbol)	CORNUS FLORIDA	FLOWERING DOGWOOD	8'-10' H. B & B	15' O.C. U.O.M.	17
PC	(Symbol)	PRUNUS CERASIFERA "MIMDERCLOUD"	PURPLELEAF FLOWERING PLUM	1 1/2" - 2" CAL. 8'-10' H. B & B	15' O.C. U.O.M.	11
QP	(Symbol)	QUERCUS PALUSTRIS	PIN OAK	3" - 3 1/2" CAL. D & B	30' O.C. U.O.M.	5
ZSV	(Symbol)	ZELKOVA SERRATA "VILLAGE GREEN"	VILLAGE GREEN JAPANESE ZELKOVA	3" - 3 1/2" CAL. D & B	30' O.C. U.O.M.	9
SHRUBS						
JA	(Symbol)	JUNIPERUS ANDROEA	ANDROEA JUNIPER	18" - 8" H. CONT.	4' O.C. U.O.M.	37
SB	(Symbol)	SPRENGERIA BIMALDA "GOLDFLAME"	GOLD FLAME SPREA	30" - 36" H. B & B	3' O.C. U.O.M.	22
TH	(Symbol)	TAXUS MEDIA "DENSIFORMIS"	DENSE JAPANESE YEW	30" - 36" H. B & B	4' O.C. U.O.M.	23

REQUIRED LANDSCAPING PLANT LIST			
QTY.	KEY	NAME	SIZE
14	AS	ACER SACCHARUM "GREEN MOUNTAIN" SUGAR MAPLE	3" - 3 1/2" CAL. D & B
37	CC	QUERCUS PALUSTRIS PIN OAK	3" - 3 1/2" CAL. D & B
17	ZSV	ZELKOVA SERRATA "VILLAGE GREEN" VILLAGE GREEN JAPANESE ZELKOVA	3" - 3 1/2" CAL. D & B
11	PC	PRUNUS CERASIFERA "MIMDERCLOUD" PURPLELEAF FLOWERING PLUM	1 1/2" - 2" CAL. 8'-10' H. B & B
5	QP	QUERCUS PALUSTRIS PIN OAK	3" - 3 1/2" CAL. D & B
9	ZSV	ZELKOVA SERRATA "VILLAGE GREEN" VILLAGE GREEN JAPANESE ZELKOVA	3" - 3 1/2" CAL. D & B
37	JA	JUNIPERUS ANDROEA ANDROEA JUNIPER	18" - 8" H. CONT.
22	SB	SPRENGERIA BIMALDA "GOLDFLAME" GOLD FLAME SPREA	30" - 36" H. B & B
23	TH	TAXUS MEDIA "DENSIFORMIS" DENSE JAPANESE YEW	30" - 36" H. B & B

Note: THERE IS NO LANDSCAPING SURETY FOR THIS PLAN.

NOTES:
 U.O.M. - UNLESS OTHERWISE NOTED
 * - INDICATES LOCATIONS WHERE CONTRACTOR MUST HAND DIG FOR NEW TREES AND SHRUBS AFTER VERIFYING LOCATIONS OF UTILITIES PROVIDE & ADDITIONAL "TM" TO BE INSTALLED AT LOCATIONS DIRECTED BY ARCHITECT TO SCREEN THE SEPTIC SYSTEM VENTS.
 Note: This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

- PLANTING NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF HOWARD COUNTY CODE AND LANDSCAPE MANUAL AND IS TO BE USED FOR PLANTING ONLY.
 - CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK. ALL GENERAL NOTES FROM SHEET 01, SHALL APPLY.
 - FIELD VERIFY UNDERGROUND UTILITY LOCATIONS AND EXISTING CONDITIONS BEFORE STARTING PLANTING WORK. EVEN WHERE PLANT LOCATIONS ARE DIMENSIONED - CONTACT CONSTRUCTION MANAGER IF ANY RELOCATION ARE REQUIRED.
 - PLANT QUANTITIES SHOWN ON PLANT LIST ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL TAKE PRECEDENCE.
 - ALL PLANT MATERIALS SHALL BE FULL AND HEAVY - BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE A.A.A. SPECIFICATIONS, AND BE INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
 - ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED OR MULCHED SHALL BE SEEDED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
 - ALL EXPOSED EARTH WITHIN THE LIMITS OF THE PLANTING BEDS SHALL BE MULCHED WITH SHREDED HARDWOOD MULCH PER PLANTING DETAILS.
 - THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF SOIL OR DRAINAGE CONDITIONS ARE ENCOUNTERED WHICH MAY BE DETRIMENTAL TO THE GROWTH OF PLANTS.
 - NO SUBSTITUTION SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR HIS REPRESENTATIVE.
 - REFER TO OTHER SITE DWGS. FOR ADDITIONAL SEEDING REQUIREMENTS.
 - NO LANDSCAPE SURETY IS REQUIRED FOR THIS PLAN HOWARD COUNTY PROJECT.



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK • 10272 BALTIMORE NATIONAL PIKE
 ELLSWORTH CITY, MARYLAND 21042
 410-431-2955

LANDSCAPE CERTIFICATION
 I/We certify that the landscaping shown on this plan will be done according to the approved plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Cathleen Conley Young 1.18.05
 CATHEEN CONLEY YOUNG DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Wale 4/3/05
 COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Mark D. Leagle 4/14/05
 Director - Department of Planning and Zoning DATE

Cindy Hamilton 4/15/05
 Chief, Division of Land Development DATE

Allen Robinson 4/14/05
 Chief, Development Engineering Division DATE

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 10910 Maryland Route 108
 Ellicott City, Maryland 21042
 Attention: Bruce Gist
 410-313-6798

TCA ARCHITECTS
 2661 RIVA ROAD, SUITE 120
 ANNAPOLIS, MARYLAND 21401
 (301) 261-8700

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT
 WESTERN ELEMENTARY SCHOOL AND PARK

SECTION/AREA	PARCEL
N/A	35

PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	8	RR-DEO	Z8	FIFTH	6051.01

WATER CODE N/A **SEWER CODE** N/A

LANDSCAPE PLAN

WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No: 28 GRID No: 8 PARCEL No: 35
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 40' DATE: OCT. 7, 2004
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 BID AND CONSTRUCTION 4 JANUARY 05

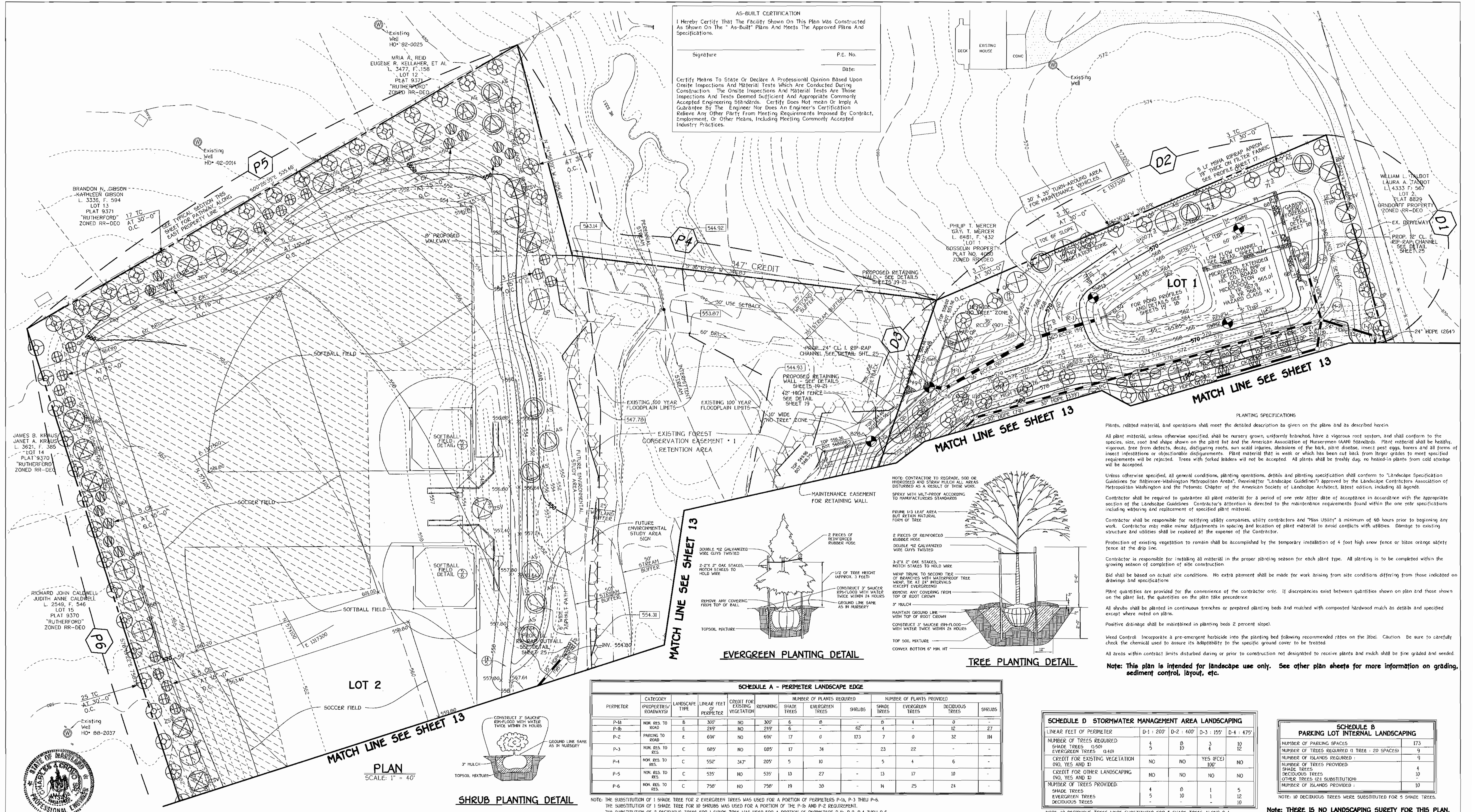
SHEET 13 OF 28

SOP05-007

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 Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite 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 An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.



MATCH LINE SEE SHEET 13

MATCH LINE SEE SHEET 13

MATCH LINE SEE SHEET 13

EVERGREEN PLANTING DETAIL

TREE PLANTING DETAIL

SHRUB PLANTING DETAIL

SCHEDULE A - PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF PERIMETER	CREDIT FOR EXISTING VEGETATION	REMARKS	NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED			
						SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES	EVERGREEN TREES	DECIDUOUS TREES	SHRUBS
P-1A	NOK RES. TO ROAD	B	300'	NO	300'	6	0	0	0	0	0	0
P-1B	NOK RES. TO ROAD	E	219'	NO	219'	6	0	62	4	0	12	27
P-2	PARKING TO ROAD	E	694'	NO	694'	17	0	173	7	0	32	111
P-3	NOK RES. TO RES.	C	685'	NO	685'	17	34	0	23	22	0	0
P-4	NOK RES. TO RES.	C	552'	347'	205'	5	10	0	5	4	6	0
P-5	NOK RES. TO RES.	C	535'	NO	535'	13	27	0	13	17	10	0
P-6	NOK RES. TO RES.	C	758'	NO	758'	19	30	0	14	25	24	0

NOTE: THE SUBSTITUTION OF 1 SHADE TREE FOR 2 EVERGREEN TREES WAS USED FOR A PORTION OF PERIMETERS P-1A, P-3 THRU P-6. THE SUBSTITUTION OF 1 SHADE TREE FOR 10 SHRUBS WAS USED FOR A PORTION OF THE P-1B AND P-2 REQUIREMENT. THE SUBSTITUTION OF 2 DECIDUOUS TREES FOR 1 SHADE TREE WAS USED FOR A PORTION OF PERIMETERS P-1B, P-2, P-4 THRU P-6.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	D-1: 200'	D-2: 400'	D-3: 155'	D-4: 475'
NUMBER OF TREES REQUIRED:				
SHADE TREES (150)	4	0	3	10
EVERGREEN TREES (140)	5	0	4	12
CREDIT FOR EXISTING VEGETATION (NO, YES AND I)	NO	NO	YES (FCE)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND I)	NO	NO	NO	NO
NUMBER OF TREES PROVIDED:				
SHADE TREES	4	0	1	5
EVERGREEN TREES	5	10	1	12
DECIDUOUS TREES	0	0	0	10

NOTE: 10 DECIDUOUS TREES WERE SUBSTITUTED FOR 5 SHADE TREES ALONG D-4.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	173
NUMBER OF TREES REQUIRED (1 TREE = 20 SPACES)	9
NUMBER OF ISLANDS PROVIDED:	9
NUMBER OF TREES PROVIDED:	9
SHADE TREES	4
DECIDUOUS TREES	10
OTHER TREES (2:1 SUBSTITUTION)	5
NUMBER OF ISLANDS PROVIDED:	10

NOTE: 10 DECIDUOUS TREES WERE SUBSTITUTED FOR 5 SHADE TREES.

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurseries (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug, no heated-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas," hereinafter "Landscape Guidelines" approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects, latest edition, including all addenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plant list take precedence.

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

Positive drainage shall be maintained in planting beds 2 percent slope.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

Note: This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELKLOTT CITY, MARYLAND 21042
 (410) 461-2999

LANDSCAPE CERTIFICATION
 I/We certify that the landscaping shown on this plan will be done according to the approved plan, section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Cathleen Conley Young 1-18-05
 CATHLEEN CONLEY YOUNG Date

APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Walz 4/14/05
 ROBERT J. WALZ DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

David A. Wright 4/14/05
 Director - Department of Planning and Zoning Date

Cindy Hamilton 4/13/05
 Chief, Division of Land Development Date

Robert J. Walz 4/14/05
 Chief, Development Engineering Division Date

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 10910 Maryland Route 109
 Elkloft City, Maryland 21042
 Attention: Bruce Gist
 410-313-6798

TCA ARCHITECTS
 2661 RIVA ROAD, SUITE 120
 ANNAPOLIS, MARYLAND 21401
 (301) 261-8700

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35

PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	8	RR-DEO	28	FIFTH	6051.01

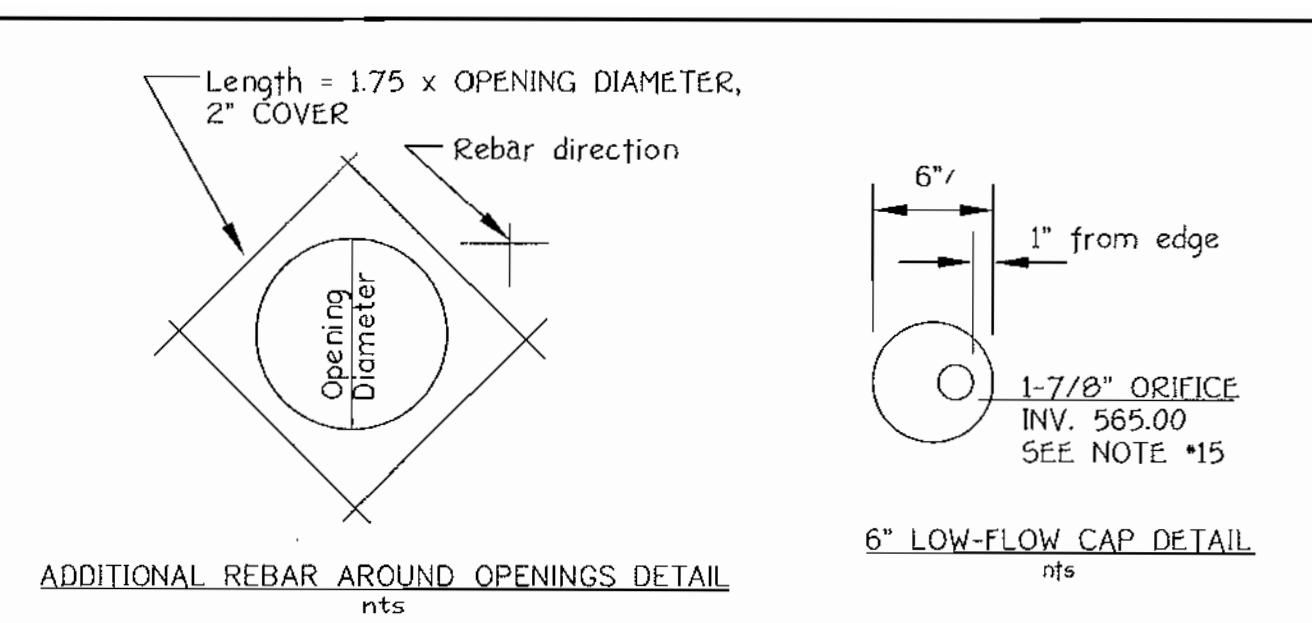
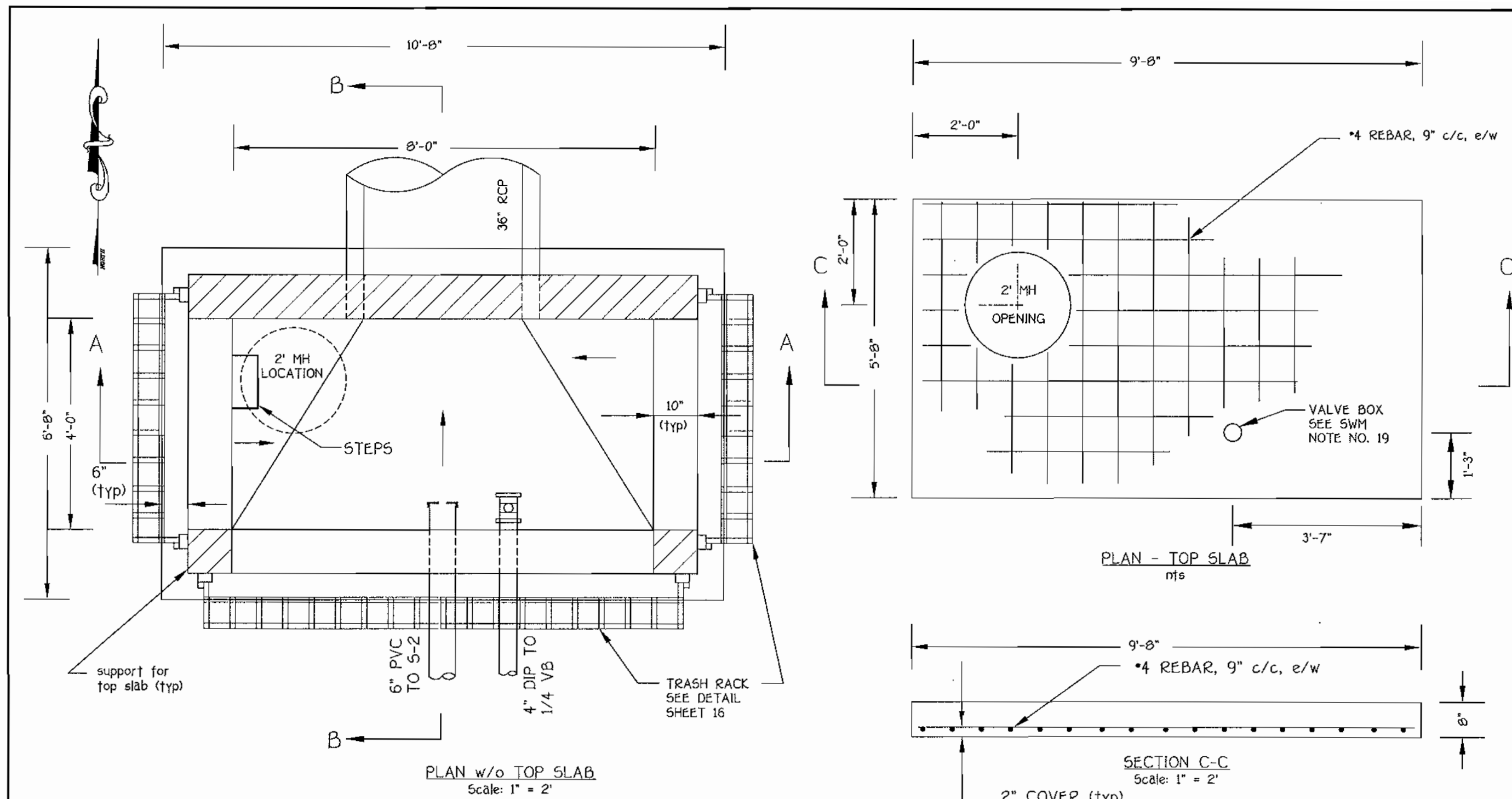
WATER CODE	SEWER CODE
N/A	N/A

LANDSCAPE PLAN

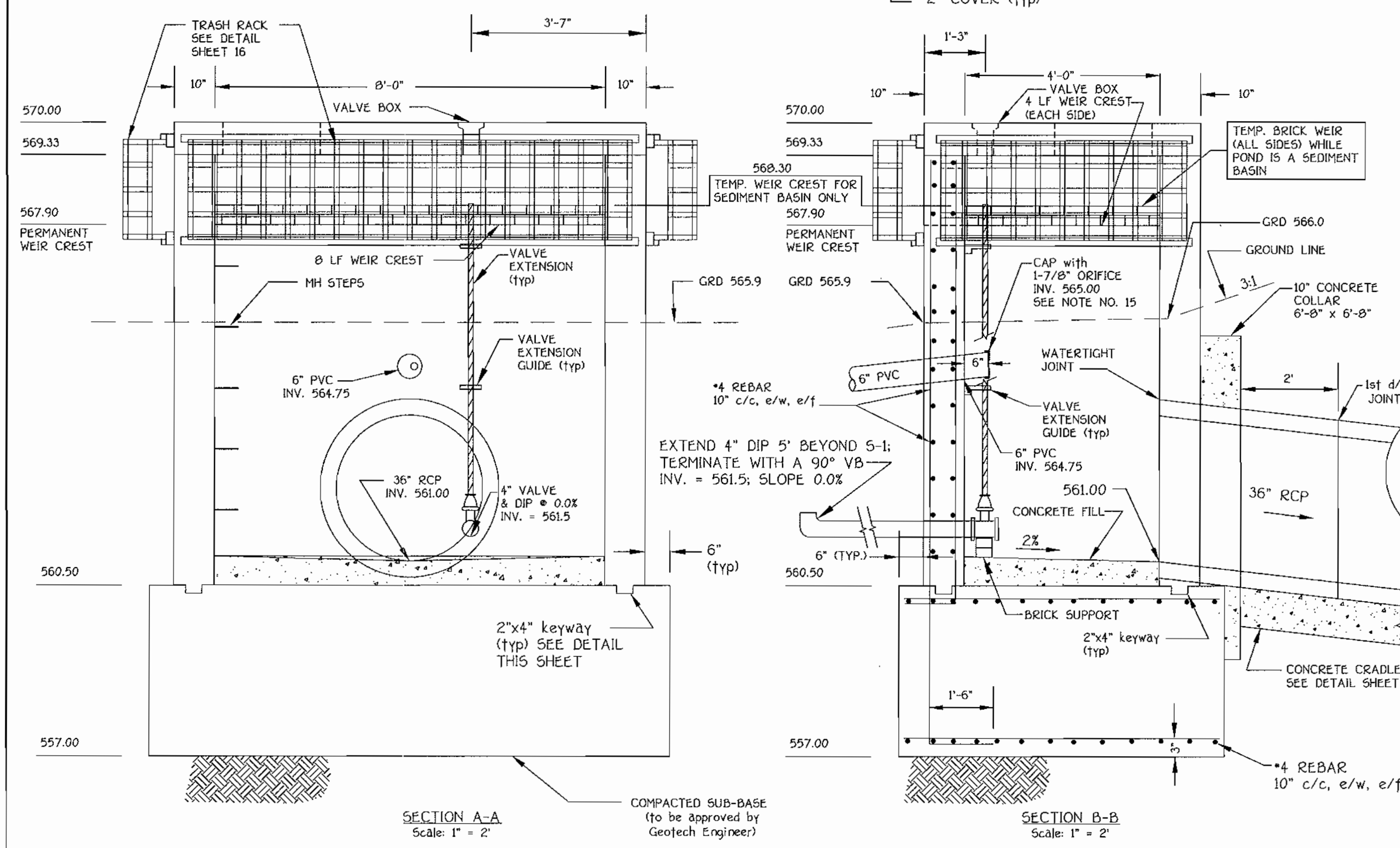
WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No: 28 GRID No: 8 PARCEL No: 35
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 40' DATE: OCT. 7, 2004
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 "BID AND CONSTRUCTION 4 JANUARY 05"

SHEET 14 OF 28



- STRUCTURE R-1 NOTES**
- Structure material for all walls and base shall be reinforced concrete MSHA mix No. 3.
 - Reinforcement shall be deformed steel and be free of rust and meet ASTM A615, grade 60, with 2" cover except as shown.
 - Horizontal rebar shall extend into the adjacent wall with a 1'-6" L-shaped overlap.
 - Wall reinforcement shown is typical for each wall. Place additional rebar around wall circular openings as shown in detail.
 - Vertical rebar shall extend into base with a 1'-6" L-shape overlap. Extend rebar (2 min.) into "posts" supporting top slab on each side of front weir.
 - Place four (4) additional rebars at a 45 degree angle around all openings as shown on detail this sheet.
 - Chamfer exposed edges 1/2" x 1/2".
 - Weirs to have a removable, galvanized, and painted, trash rack per detail. Measure riser prior to trash rack fabrication. Provide 15" min. clearance from bottom of trash rack to ground line.
 - Slope riser bottom 2% min. towards outfall.
 - Provide four (4) 2" Ø lift holes in top slab.
 - All connections must be watertight especially the 24" barrel outfall. If R-1 is precast, contractor shall install 6" thick concrete collar around 36" RCP outfall, extending 1.5 ft beyond O.D. and reinforce with WWF.
 - Provide steps per MSHA Std. Detail MD-383.92 or approved equal.
 - Place a standard 2 ft Ø Howard Co. sidewalk storm drain F&C in top slab.
 - Structure has three (3) weirs, (front (8' long) and each side (4' long)).
 - The 6" low flow pipe shall be capped inside the SWM riser (R-1). A 1-7/8" Ø orifice shall be eccentrically (1" off edge to edge) located in the cap. The orifice is off-center so the cap can be rotated to achieve the exact invert elevation of 565.00 on the 1-7/8" orifice.
 - Apply non-shrink grout to seal collar to riser.
 - Riser sections shall be watertight (see riser joint detail). Bolt sections together at each joint with three (3) rust-proof, 2" x 6" (1/4" thick) flat bar connections with 1/2" bolts embedded in to riser.
 - Use provided dimensions, do not scale drawings.
 - A pond drain shall be installed. The drain shall consist of a flanged 4" iron gate valve (HoCo. specification 909.15.01) and 12' of 4" DIP with flanged ends. Securely bolt valve to riser wall with at least three (3) 1/4" stainless steel bolts uniformly spaced around flange. Place a vertical valve extension to within 12" - 18" of the bottom of the top slab. Locate valve so it is directly under the valve box in the top slab of the riser. The valve extension shall adequately stabilized with valve guides properly secured to riser wall. All materials shall meet Howard County Standard specifications.
 - Extend 4" DIP through R-1 and S-1 walls and terminate 4" pipe with a 4" VB pointed up. Maintain 1" clear, flat area around VB. VB shall be flanged and bolted to flanged pipe with stainless steel bolts.



SWM RISER OUTFALL STRUCTURE (R-1) DETAIL
Scale: 1" = 2'

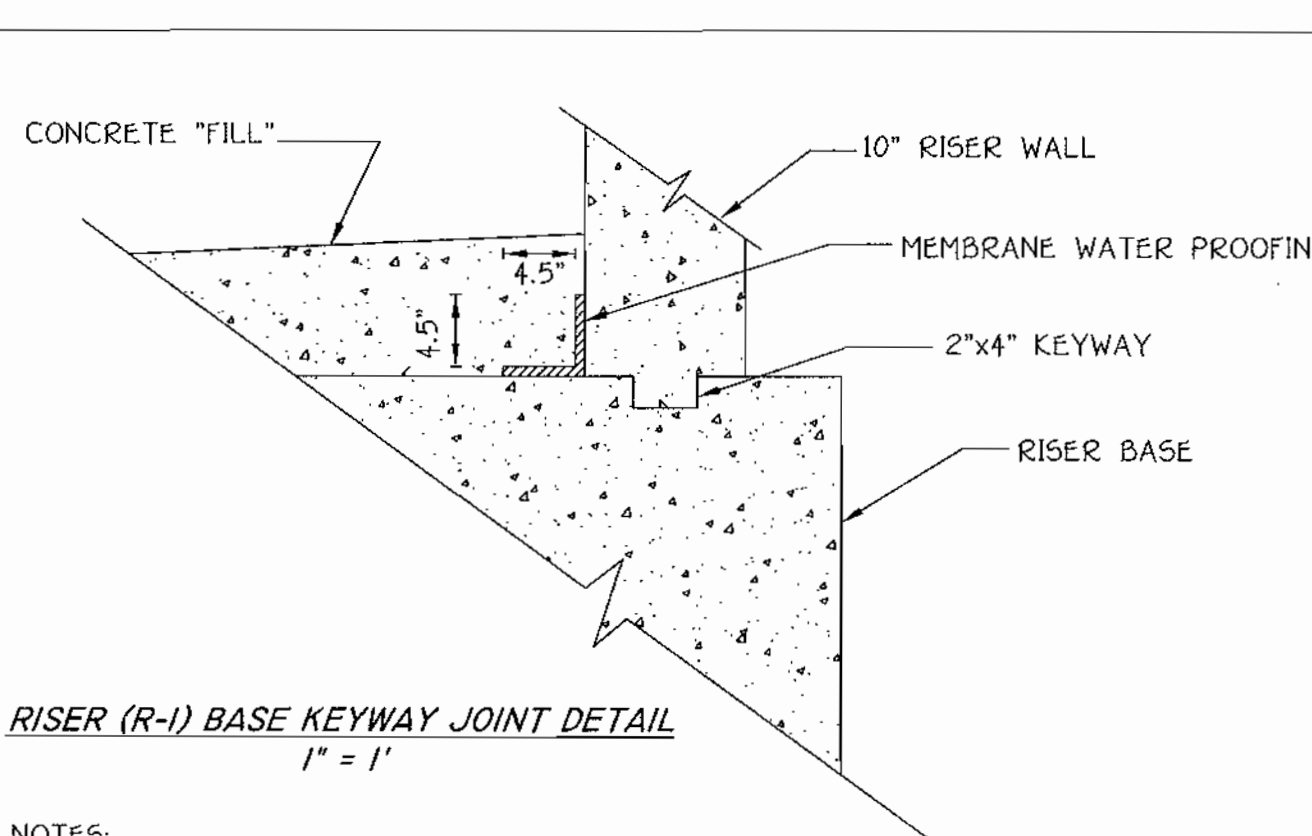
AS-BUILT CERTIFICATION
I hereby certify that the facility shown on this plan was constructed as shown on the "As-Built" Plans and Meets the Approved Plans and Specifications.

Signature: _____ P.E. No. _____
Date: _____

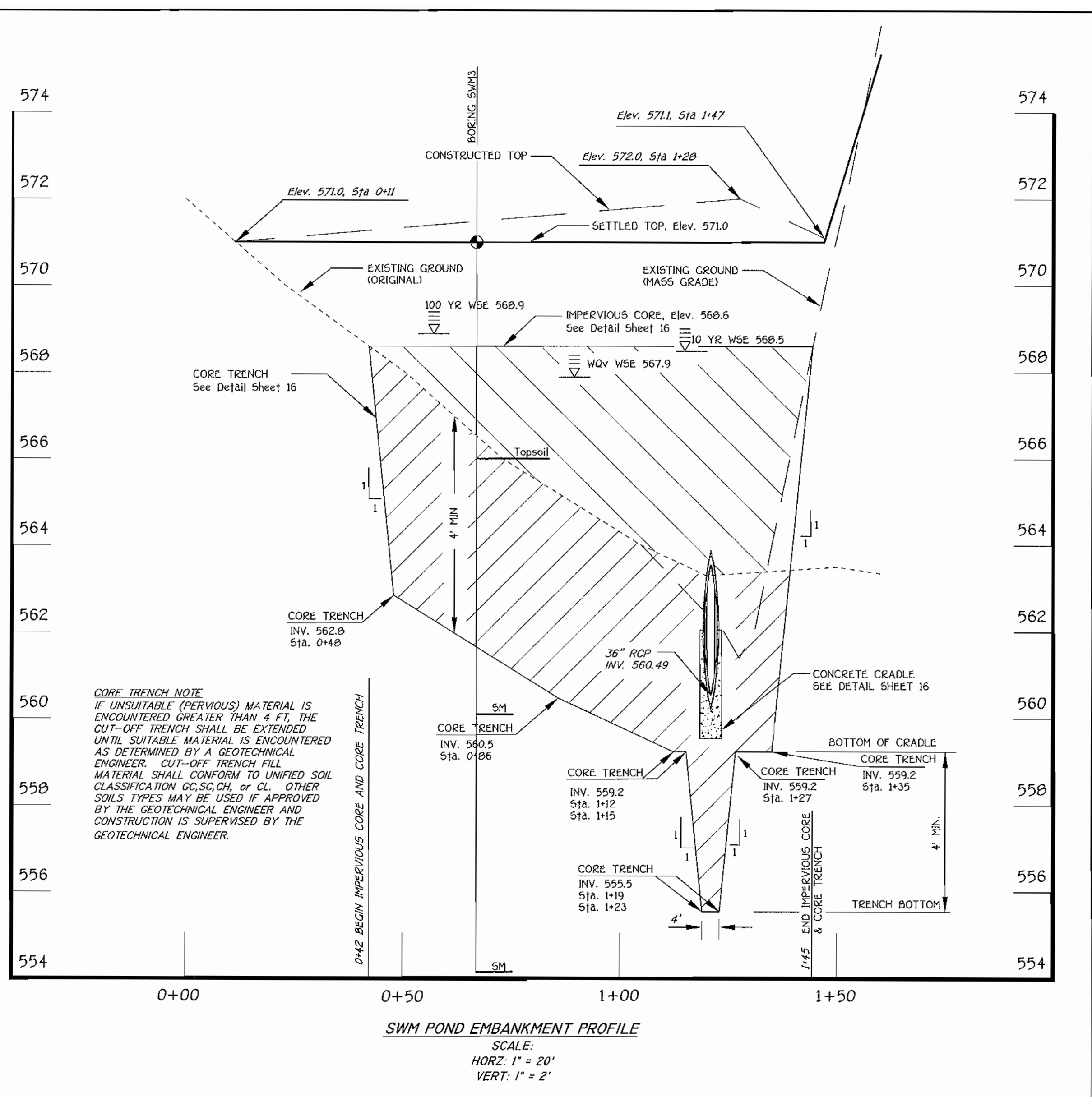
Certify Means to State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed by Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.



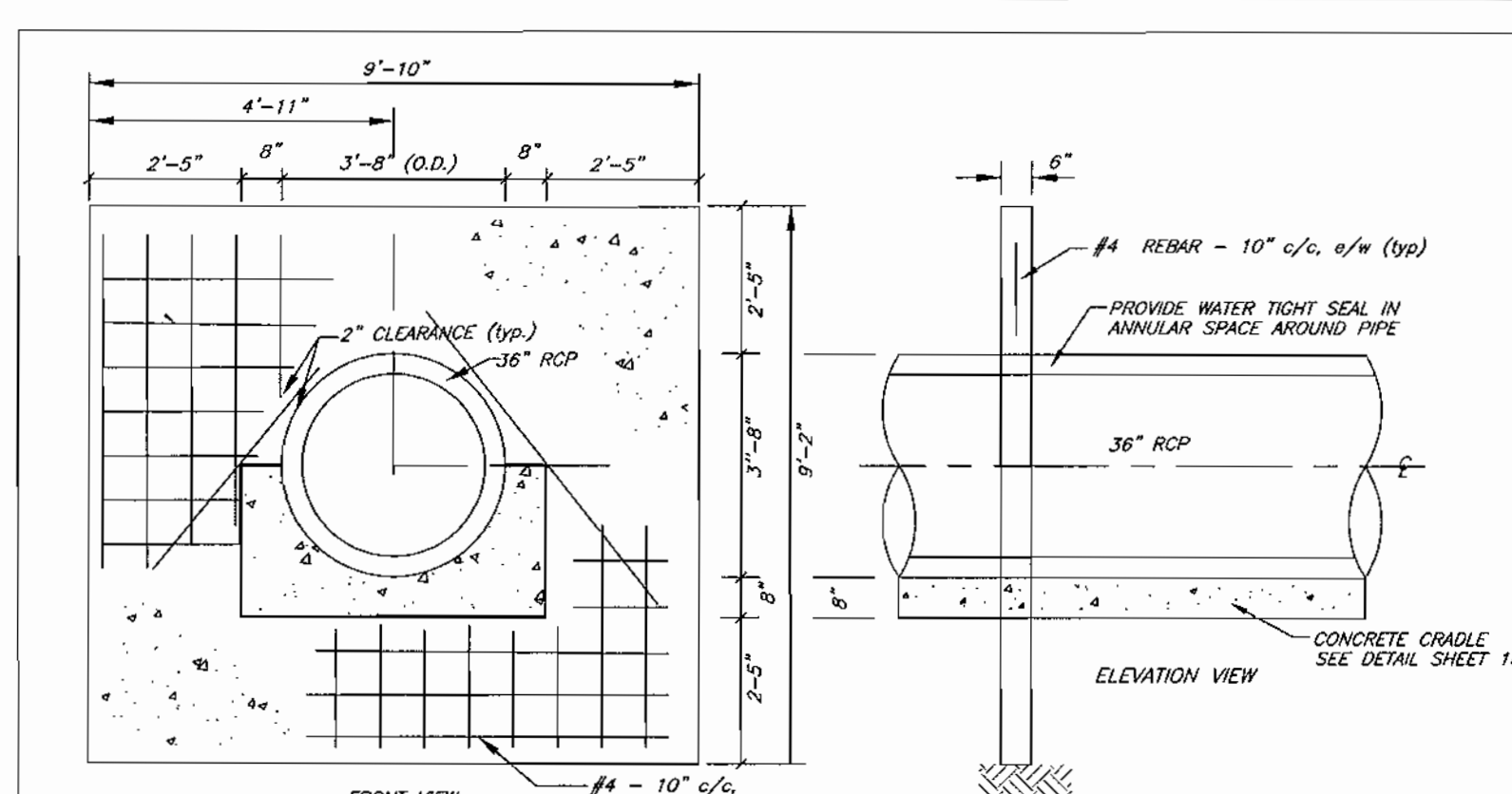
APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Signature: Robert J. Wala
Date: 4/1/05



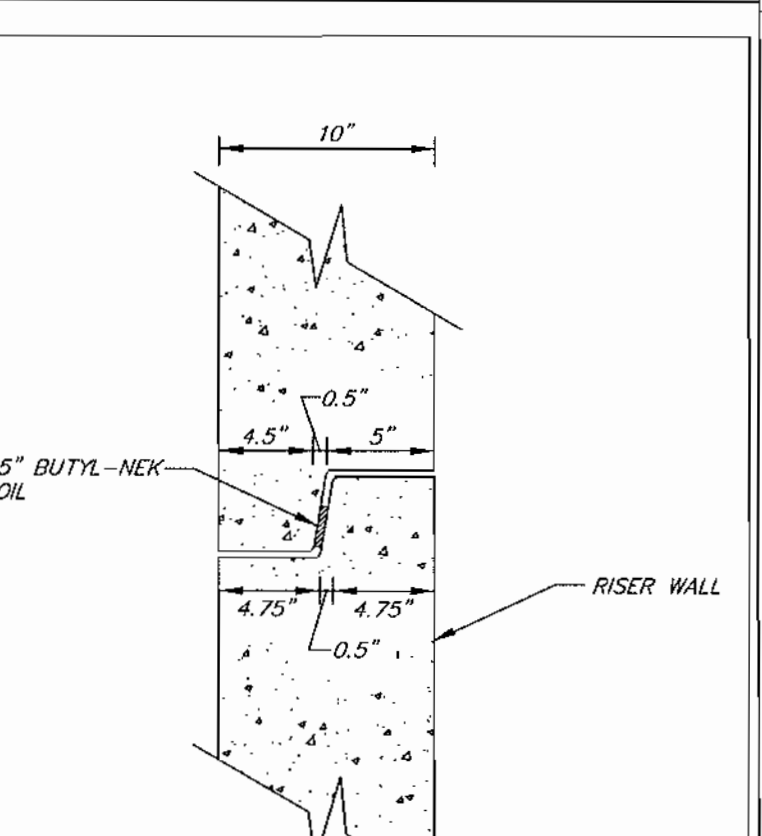
- RISER (R-1) BASE KEYWAY JOINT DETAIL**
Scale: 1" = 1"
- NOTES:
- Provide membrane water proofing per MSHA specifications along the inside joint in the bottom of SWM riser outfall structure as shown above.
 - Fold and place adhesive side of membrane to riser and base prior to placing concrete fill.
 - Each "leg" or "fold" of the membrane shall be 4.5" minimum or to the top of the concrete fill in riser bottom.
 - See Riser Detail for reinforcement.



SWM POND EMBANKMENT PROFILE
Scale: Horz: 1" = 20', Vert: 1" = 2'



- ANTI-SEEP CONCRETE COLLAR DETAIL**
Scale: 1" = 3'
- NOTES:
- LOWER HALF OF COLLAR SHALL BE POURED CONCURRENTLY WITH CRADLE POUR.
 - REBAR IS SHOWN SCHEMATICALLY AND SHALL BE PLACED THROUGHOUT ENTIRE COLLAR.
 - PROVIDE MASTIC SEAL IN ANNUAL SPACE BETWEEN PIPE AND COLLAR OR USE AN "X-LOK" JOINT SEAL PRODUCT.
 - LOCATE COLLAR 2" MINIMUM FROM JOINT AND MAINTAIN 10" MINIMUM SEPARATION FROM COLLAR TO COLLAR OR COLLAR TO RISER.
 - SEE RISER (R-1) FOR MATERIAL SPECIFICATIONS.
 - PLACE TWO (2) ADDITIONAL REBARS (4" MIN. LONG) AT RIGHT ANGLES ACROSS REBAR GRID 2" FROM PIPE O.D.



- RISER JOINT DETAIL**
Scale: 1" = 1"
- NOTES:
- Riser joints shall join evenly and be watertight. Parge joints after installation.
 - The referenced joint and joint sealant material is used by Frederick Precast, Inc. Similar joints may be used with shop drawing approval by the engineer.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 16775 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
410-331-2955

By The Developer:
Signature: Cathleen Conley Young
Date: 1/18/05

By The Engineer:
Signature: Charles J. Greve Sr.
Date: 1/31/05

By The Developer:
Signature: Cathleen Conley Young
Date: 1/18/05

By The Engineer:
Signature: Charles J. Greve Sr.
Date: 1/31/05

By The Engineer:
Signature: [Signature]
Date: 3/20/05

APPROVED DEPARTMENT OF PLANNING AND ZONING
Signature: [Signature]
Date: 4/1/05

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 10B
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL			
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35			
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794-16796	8	RR-DEO	2B	FIFTH	6051.01

WATER CODE: N/A
SEWER CODE: N/A

STORMWATER MANAGEMENT PROFILES & DETAILS

WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
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BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
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SHEET 15 OF 28

SDPO5-007

Pond MD-378: N.R.C.S. - JANUARY 2000 CONSTRUCTION SPECIFICATIONS FOR SMALL EARTHEN DAMS
 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 of 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. All trees shall be cleared and grubbed within 15 feet of the top of the embankment.
 Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-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 and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.
 Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.
 Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree 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.
 The minimum required density shall not be less than 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 (Standard Proctor).
 Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least the 10 year water elevation 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.
 Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

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 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 structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.
 Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 8" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits.
 Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all rigid pipe shall be bituminous coated. Any adjoining soil fill 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 shall completely fill all voids adjacent to the flowable fill zone. 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 structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.
 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 C-361.
 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Cradle bedding is not permitted.
 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 for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Core shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 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.
 Plastic Pipe - The following criteria shall apply for plastic pipe:
 1. Materials - PVC pipe shall be PVC-1120 or PVC-1122 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.
 2. Joints and connections to anti-seep collars shall be completely watertight.
 3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
 4. Backfilling shall conform to "Structure Backfill".
 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.
 Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.
 Geo-textile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Care of Water During Construction

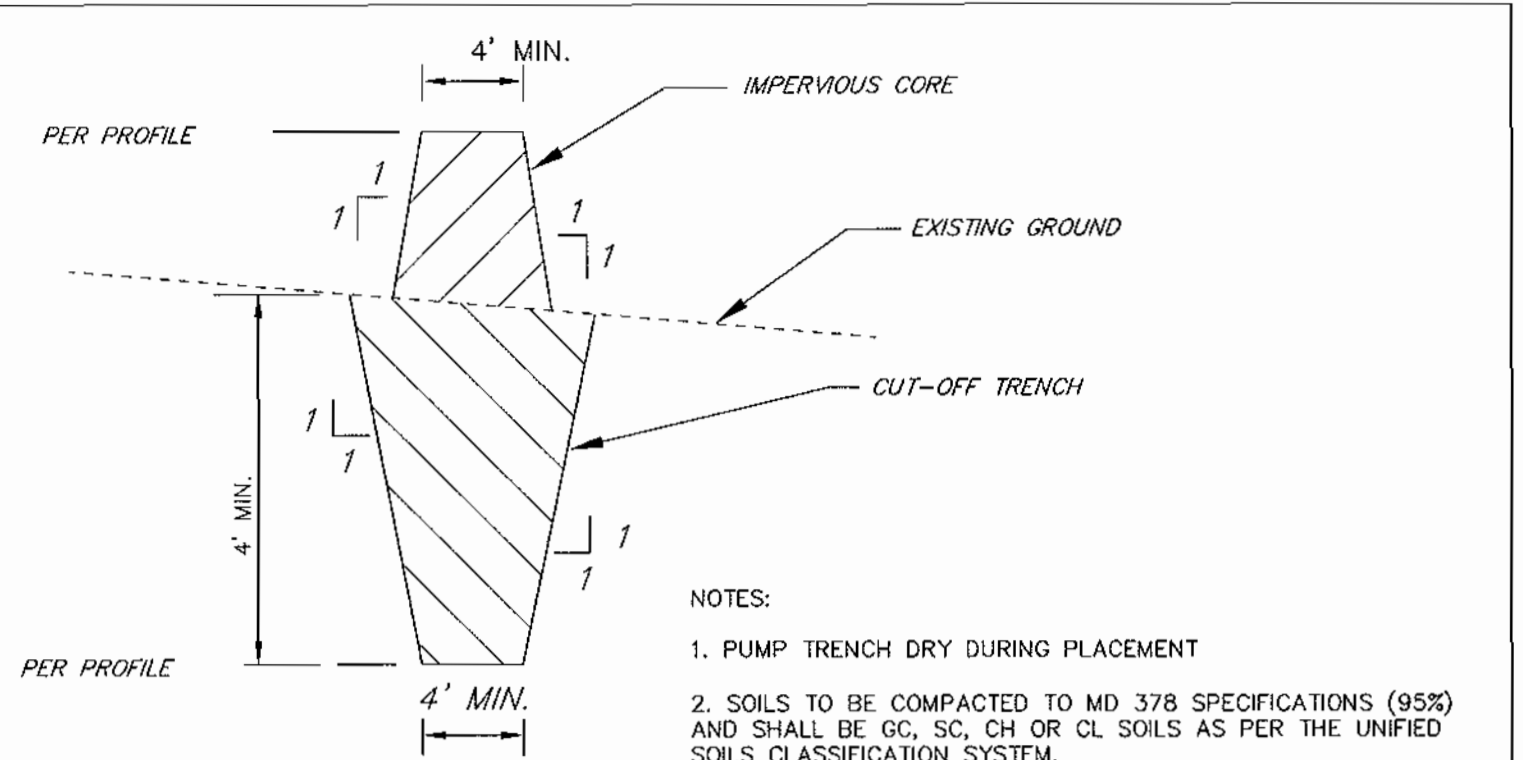
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the area to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from 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 required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting 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 sumps from which the water shall be pumped.

Stabilization

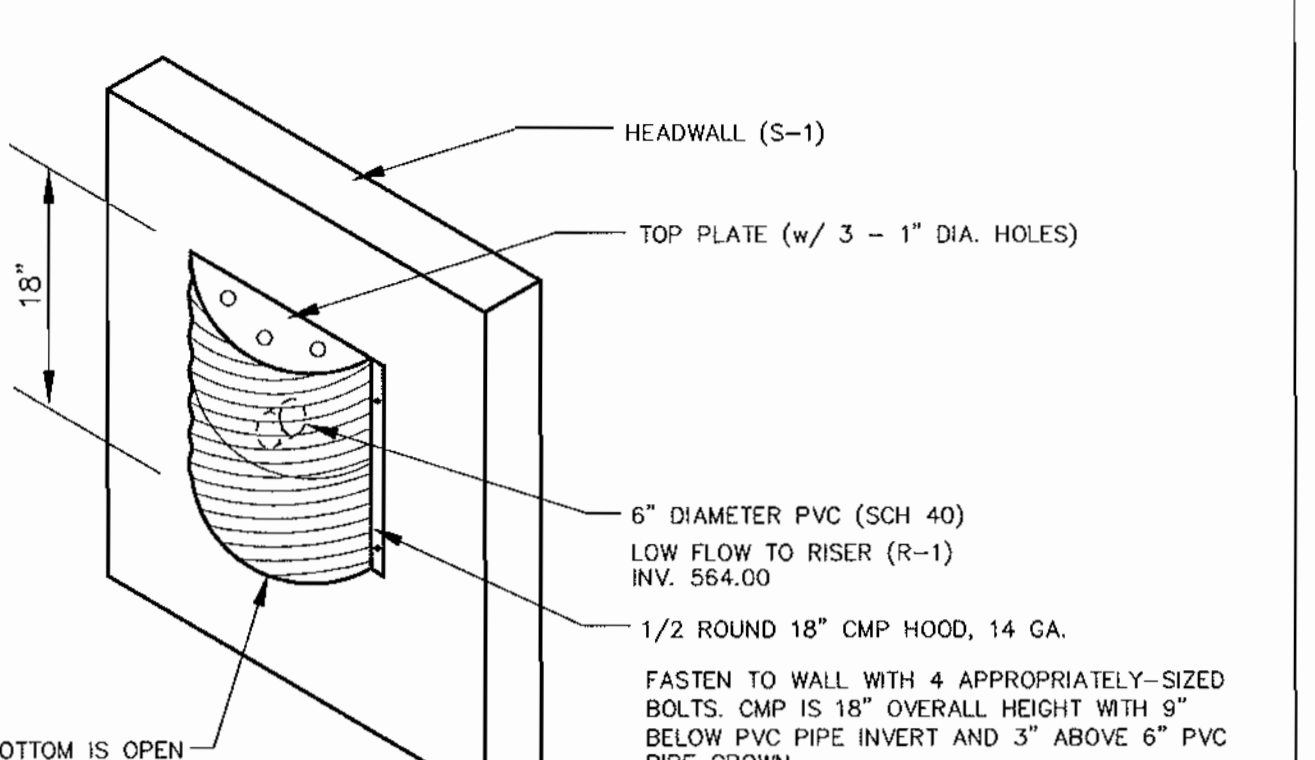
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service 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.

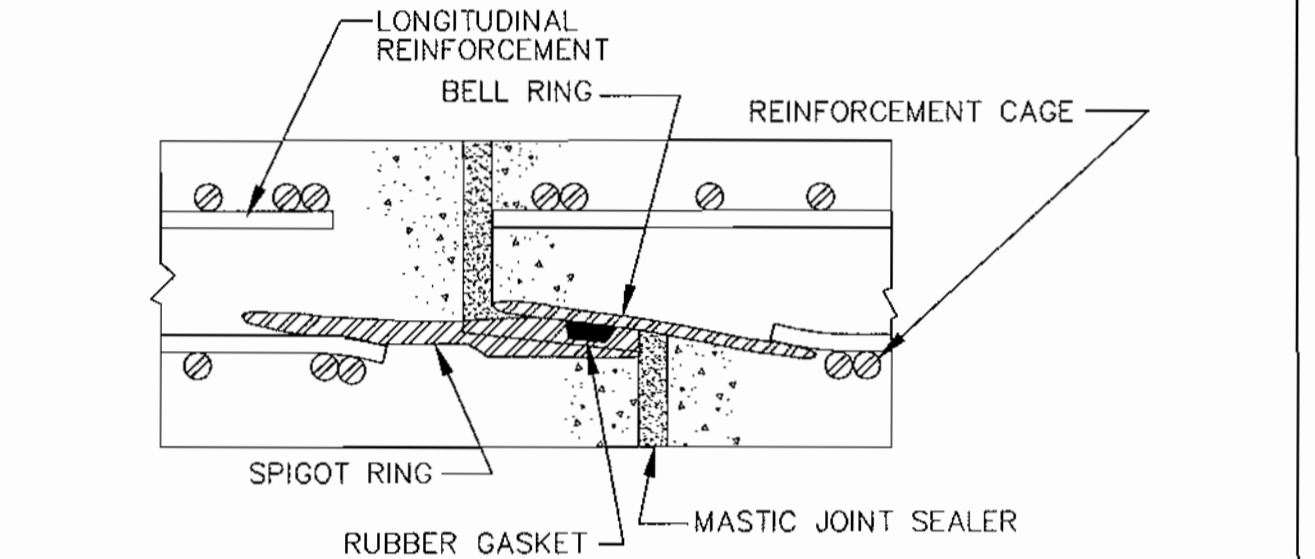


CUT-OFF TRENCH & IMPERVIOUS CORE DETAIL
NOT TO SCALE



HALF ROUND ALCMP HOOD
NOT TO SCALE

- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT PONDS**
- ROUTINE MAINTENANCE**
1. Facility shall be inspected annually and after major storms. Inspections shall 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 and maintenance access should be mowed as needed.
 3. Debris and litter shall be removed during regular mowing operations and as needed.
 4. Visible signs of erosion in the pond as well as the rip-rap or gabion 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 shall be inspected during routine maintenance operations.
 2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

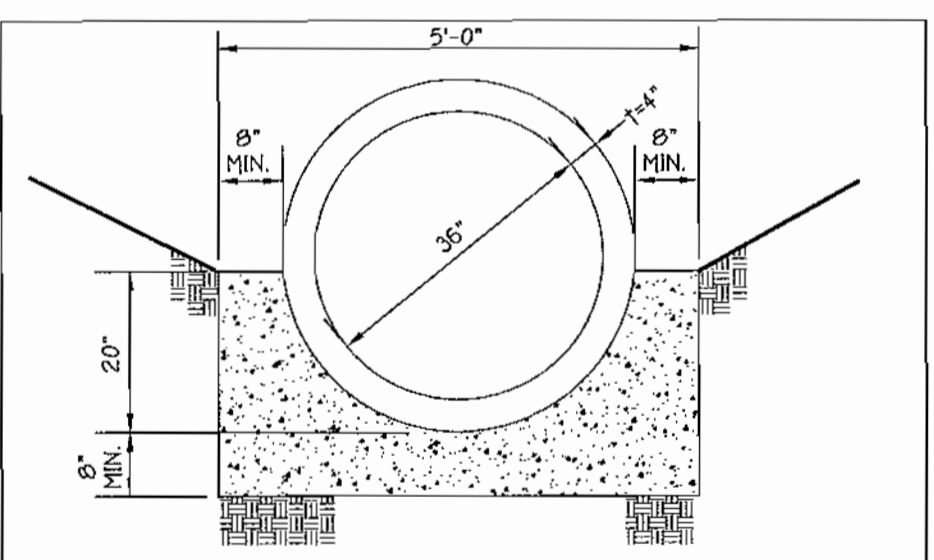


CONCRETE PIPE JOINT DETAIL
NOT TO SCALE

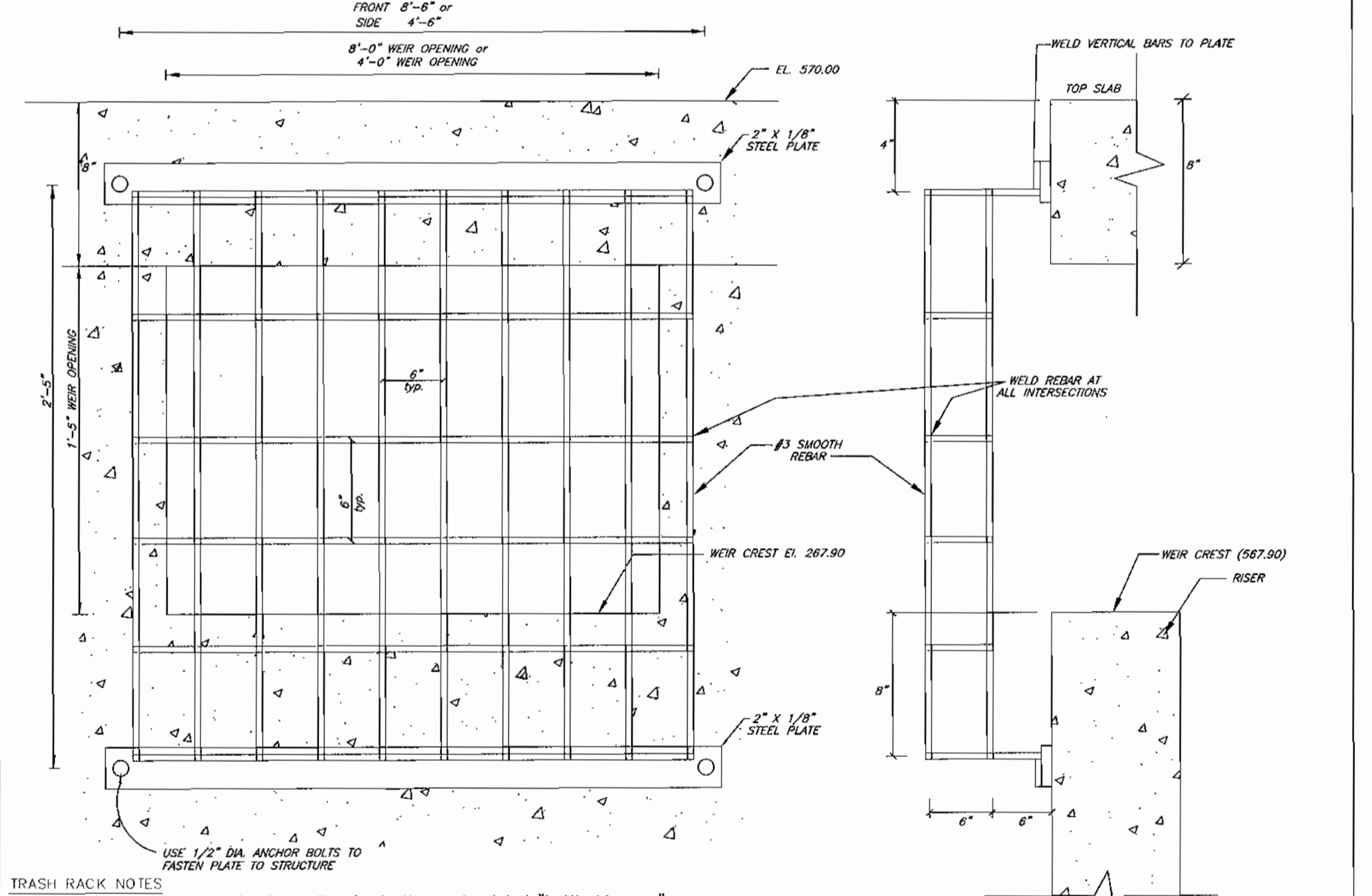
AS-BUILT CERTIFICATION
 I hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature _____ P.E. No. _____
 Date _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON
 Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite 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 An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.



CONCRETE CRADLE
SCALE: 1" = 2'



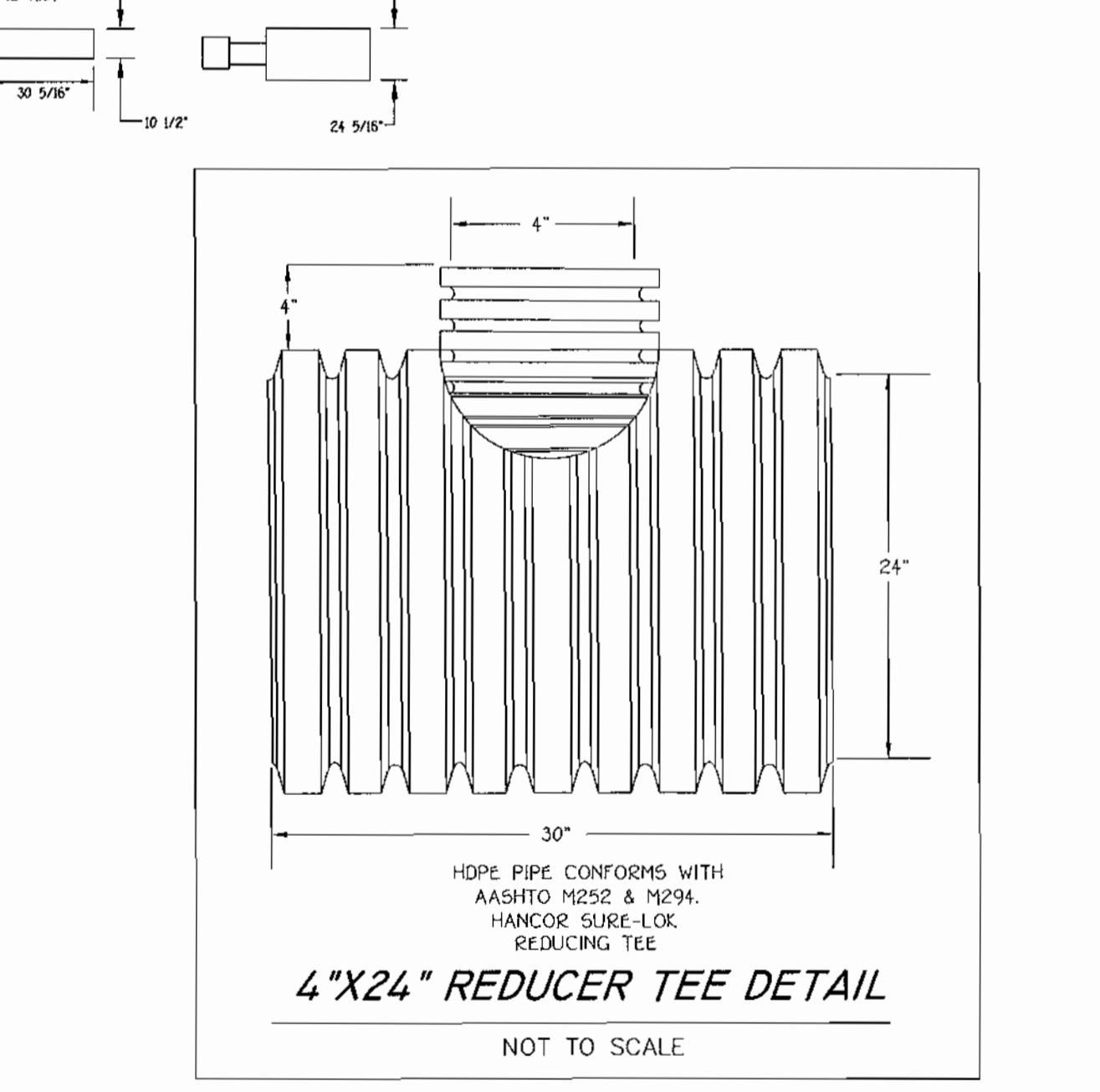
TRASH RACK DETAIL
SCALE: 1" = 1' HOR, 1" = 1/2' VER.

Embankment and Cut-off Trench Construction

THE AREA OF THE PROPOSED SWM POND SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOF-ROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR REPRESENTATIVE USING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL.

- STORMWATER MANAGEMENT POND NOTES**
1. The stormwater management pond shall be constructed to the latest edition of NRCS's Pond Standard MD-378.
 2. The stormwater management pond shall be constructed/converted after ALL upstream areas have been stabilized (i.e., established vegetation or paved) including the pond slopes.
 3. Headwall S-1 shall be constructed as per detail MSHA MD-354.01 with the following modifications: A=12", B=16", C=10", E=3'-2", F=13.2", H=5'-0" (1'-6" below grade), L=17'-0". MSHA Standards and specifications apply for this structure. (See Detail Sheet 17)



4\"/>

APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert J. Walsh
 COUNTY HEALTH OFFICER JMB 4/5/05 DATE

ARM MOUNTED RECTILINEAR CUTOFF LIGHTING
 (1000 WATT) KSF3 METAL HALIDE
 NOT TO SCALE

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.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (301) 461-2850

Signature: Catherine Conley Young
 Date: 1/31/05

CATHERINE CONLEY YOUNG
 Printed Name Of Developer

Signature: Jim Myers
 Date: 3/30/05

USA-Natural Resources Conservation Service

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: Charles J. Carver Sr.
 Date: 1/31/05

CHARLES J. CARVER SR.
 Printed Name Of Engineer

Signature: Charles J. Carver Sr.
 Date: 3/30/05

Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: Mark M. Eagle
 Date: 4/14/05
 Director - Department of Planning and Zoning

Signature: Cindy Hamada
 Date: 4/13/05
 Chief, Division of Land Development

Signature: Charles J. Carver Sr.
 Date: 4/14/05
 Chief, Development Engineering Division

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 10910 Maryland Route 108
 Ellicott City, Maryland 21042
 Attention: Bruce Gist
 410-313-6798

TCA ARCHITECTS
 2661 RIVA ROAD, SUITE 120
 ANNAPOLIS, MARYLAND 21401
 (301) 261-8700

Parcel Number		Street Address	
P. 35	LOT 1	4691 TEN OAKS ROAD	
	LOT 2	4671 TEN OAKS ROAD	

PROJECT	SECTION/AREA	PARCEL		
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35		
PLAT REF.	BLOCK NO.	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794-16798	8	RR-DEO 28	FIFTH	6051.01
WATER CODE		SEWER CODE		
N/A		N/A		

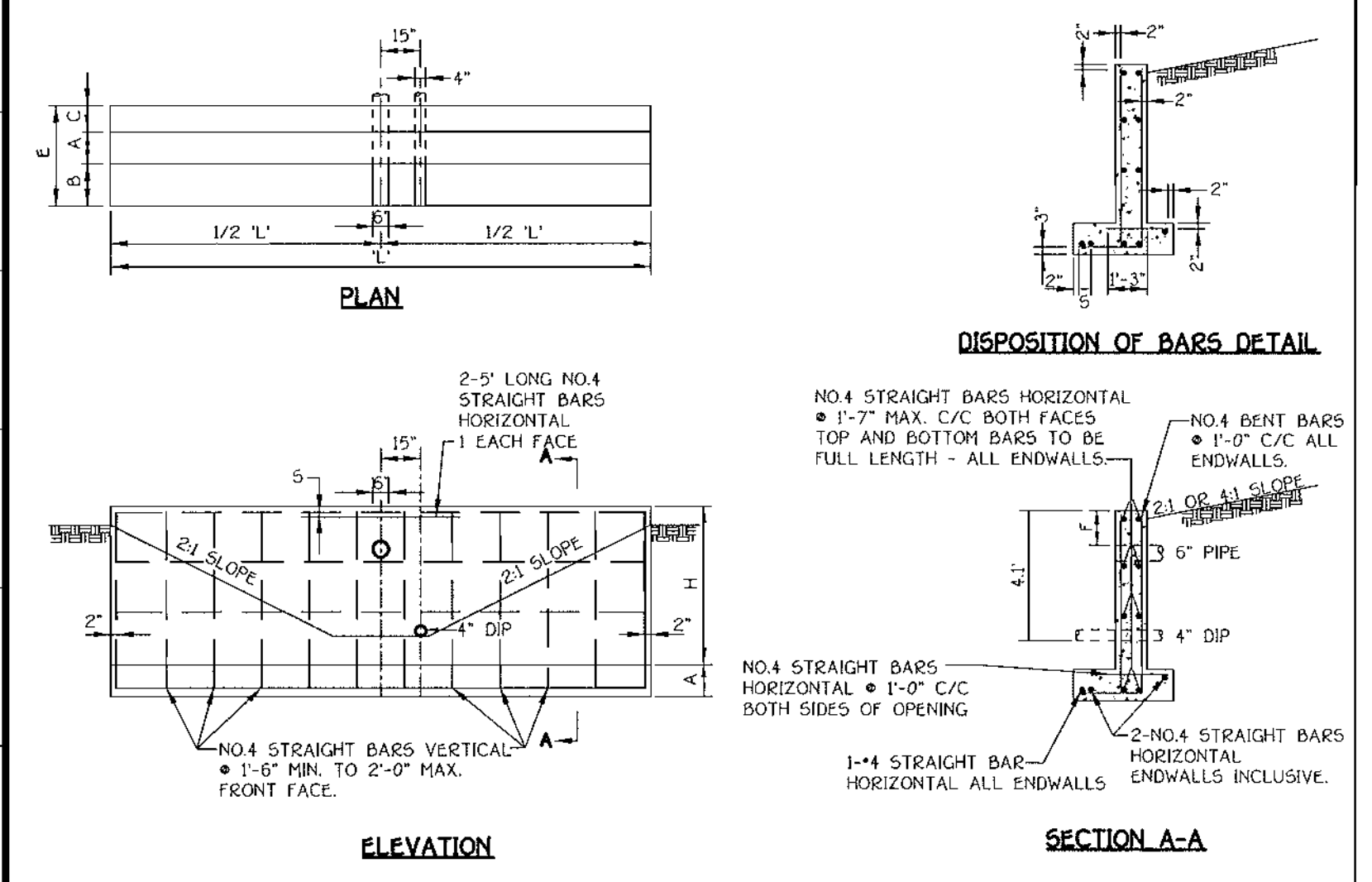
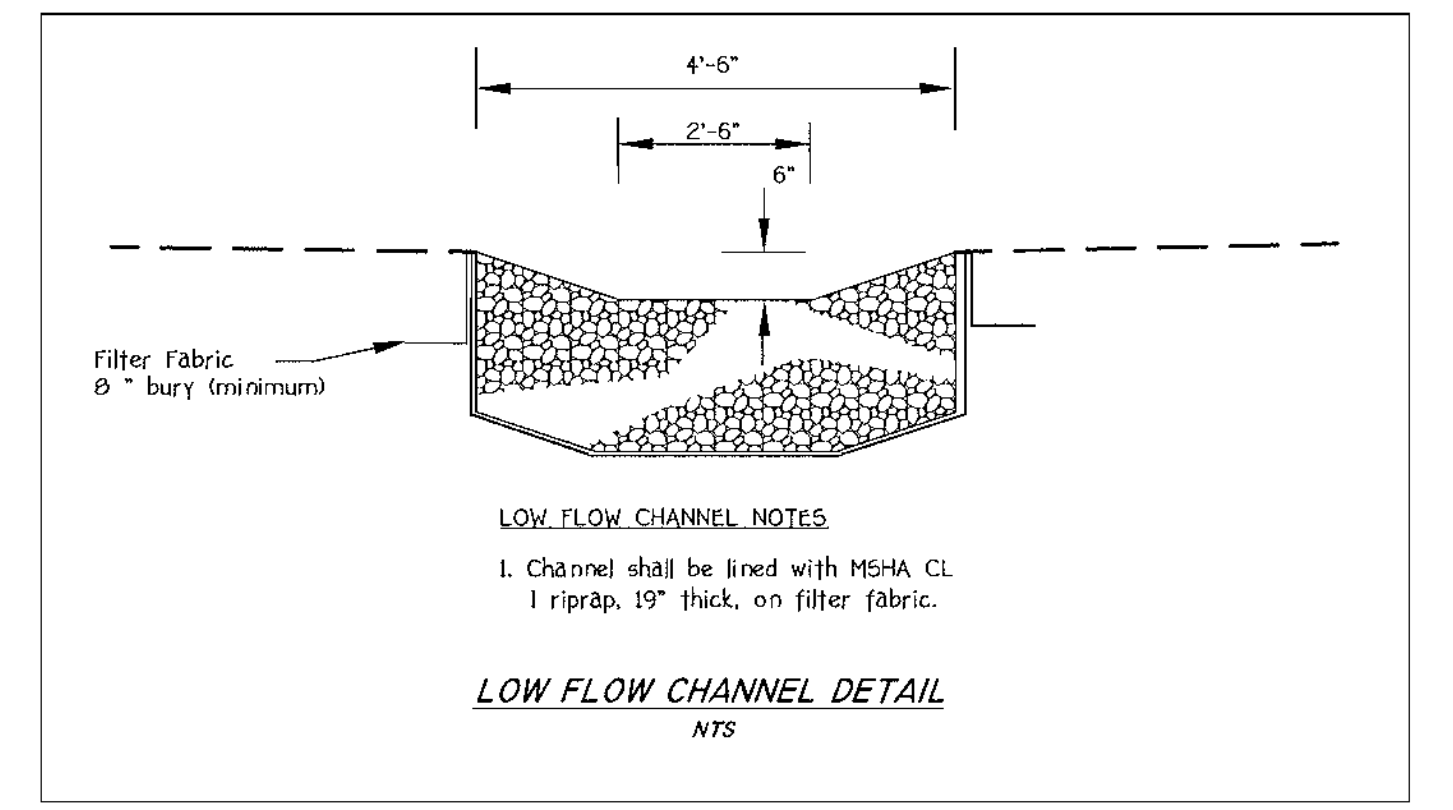
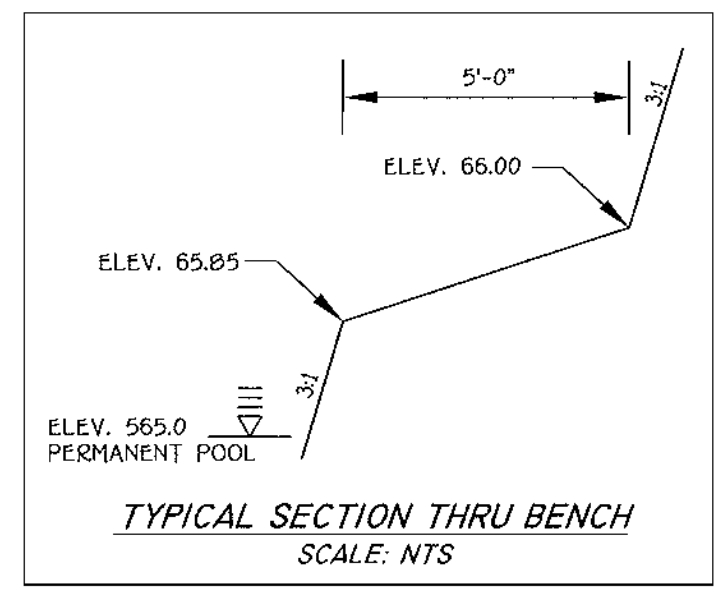
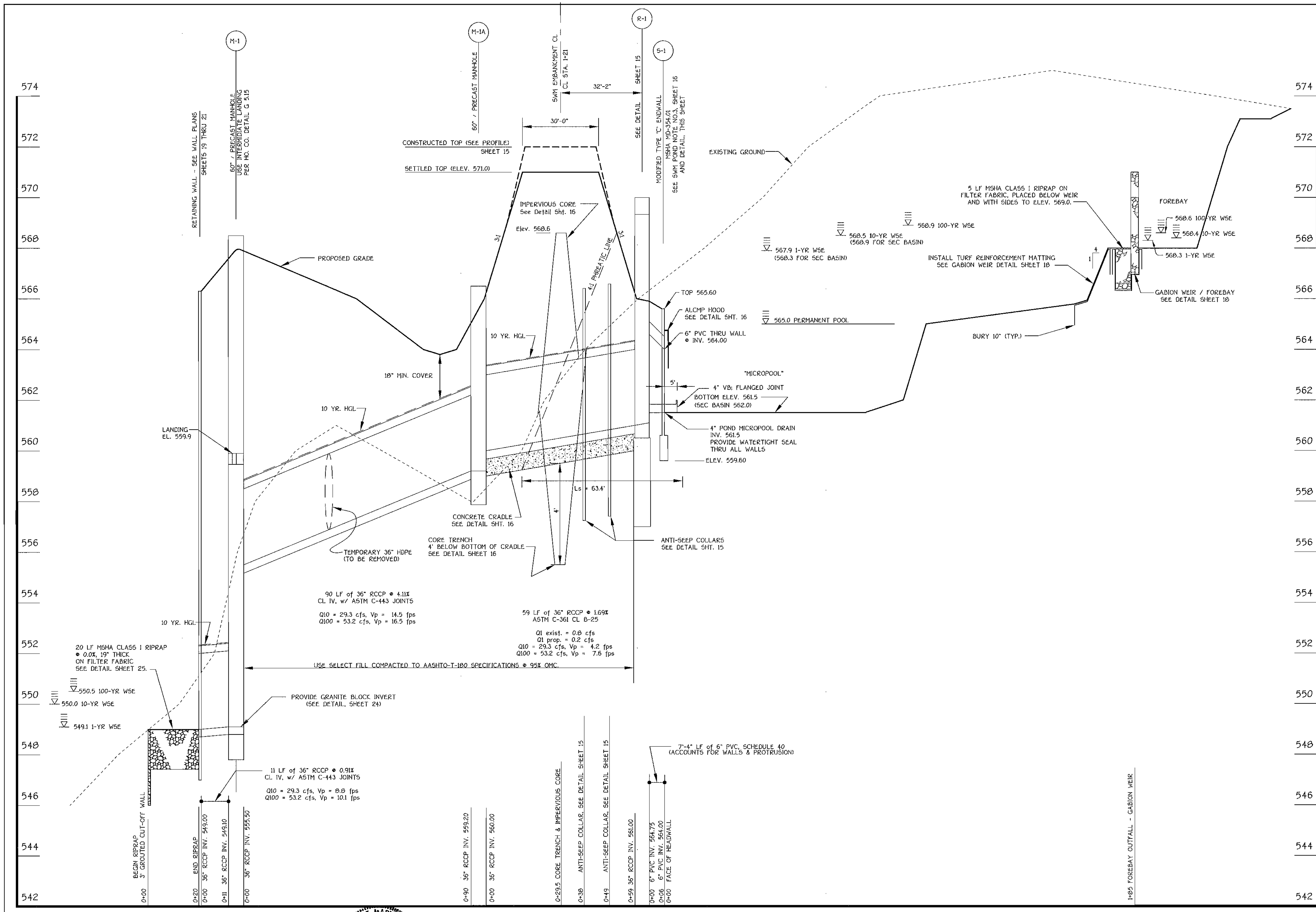
Address Chart			
Parcel Number	Street Address		
P. 35	LOT 1	4691 TEN OAKS ROAD	
	LOT 2	4671 TEN OAKS ROAD	

STORMWATER MANAGEMENT PROFILES & DETAILS

WESTERN ELEMENTARY SCHOOL AND PARK
 LOTS 1 AND 2

TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 40' DATE: OCT. 7, 2004
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 "BID AND CONSTRUCTION"
 4 JANUARY 05

SHEET 16 OF 28



OPENING	DIMENSIONS				
	A	B	C	E	F
6"	12"	16"	10"	3'-2"	13.2"

MSHA MD-354.01 - MODIFIED TYPE 'C' ENDWALL AT S-1
Scale: 1" = 5'

SWM PRINCIPAL SPILLWAY & POND PROFILE
SCALE:
HORZ. 1" = 20'
VERT. 1" = 2'

APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Wald
COUNTY HEALTH OFFICER
4/7/05
DATE



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10775 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
4100 481 - 2055

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.
Catherine Conley Jung
Signature Of Developer
1/18/05
Date
Carleen Conley Young
Printed Name Of Developer
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.
Jim Myer
Signature
3/30/05
Date
USA-Natural Resources Conservation Service

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.
Charles J. Crowe SR.
Signature Of Engineer
1/31/05
Date
Charles J. Crowe SR.
Printed Name Of Engineer
These Plans For Small Pond Construction Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.
Charles J. Crowe SR.
Signature
3/30/05
Date
Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Mark A. Wolfe
Director - Department of Planning and Zoning
4/11/05
Date
Cindy Hamilton
Chief, Division of Land Development
4/13/05
Date
Charles J. Crowe SR.
Chief, Development Engineering Division
4/14/05
Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 109
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6790
TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart		SECTION/AREA		PARCEL	
Parcel Number	Street Address				
P. 35	LOT 1 4691 TEN OAKS ROAD				
	LOT 2 4671 TEN OAKS ROAD				
PROJECT	WESTERN ELEMENTARY SCHOOL AND PARK	SECTION/AREA	N/A	PARCEL	35
PLAT REF.	16794-16796	BLOCK NO.	8	RR-DEC	28
WATER CODE	N/A	TAX/ZONE	28	ELEC. DIST.	FIFTH
		CENSUS TR.			6051.01
		SEWER CODE	N/A		

STORMWATER MANAGEMENT
PROFILES & DETAILS
**WESTERN ELEMENTARY
SCHOOL AND PARK
LOTS 1 AND 2**
TAX MAP No: 28 GRID No: 8 PARCEL No: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40'
DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION
4 JANUARY 05"
SHEET 17 OF 28

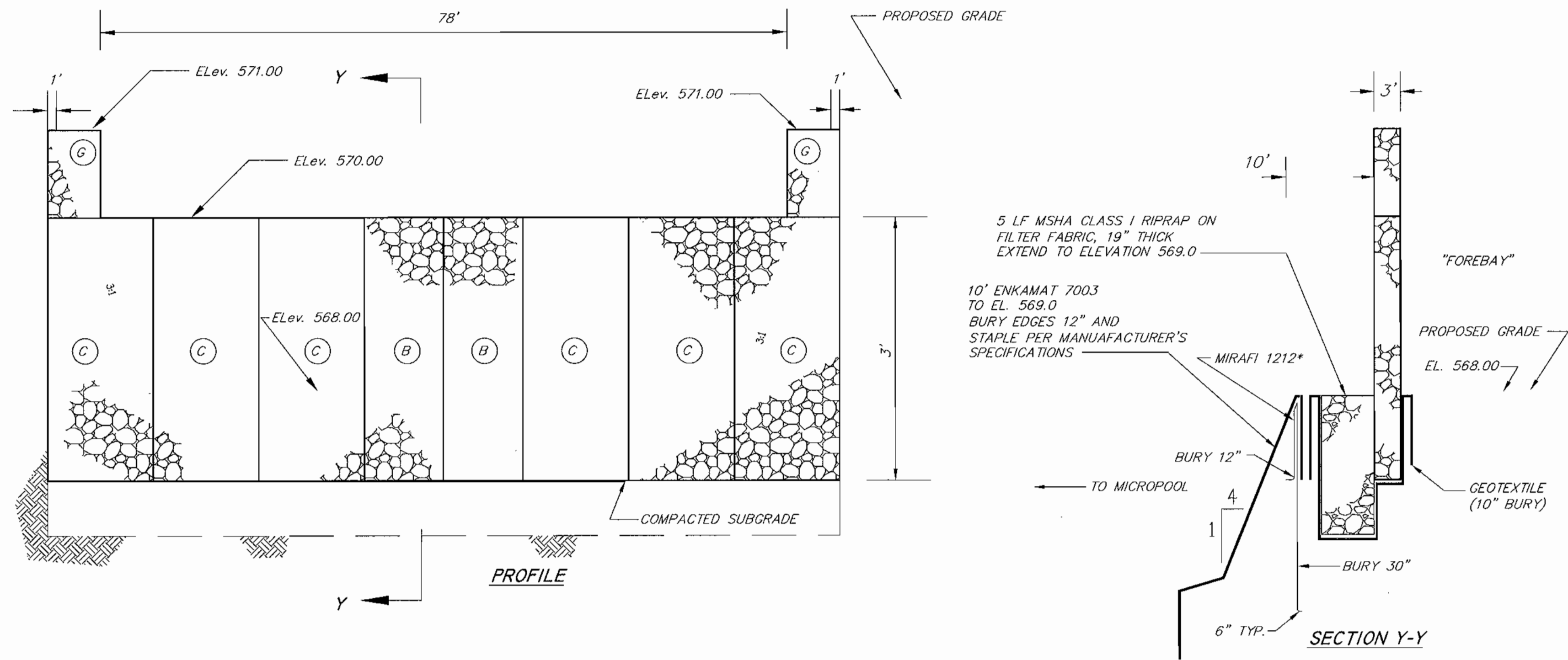
SDP05-007

GABION/FOREBAY WEIR OUTFALL NOTES

- Gabions shall be manufactured by Maccaferri Gabions Inc. or approved equal. The installation shall follow the manufacturer's specifications.
- The gabion baskets shall be PVC coated and filled with clean 4" - 7" stone. Gabion stone shall be carefully placed as to create a tight interlocking stone wall with minimal voids.
- One sheet of 8 mil or greater vinyl/plastic sheeting shall be placed on the buried upstream (forebay side) face of the baskets next to the filter fabric. Use 2 ft overlap where applicable.
- Gabions shall be placed on geotextile fabric (Mirafi 600x or approved equal) at all soil/gabion interfaces.
- Gabions shall be carefully placed with no damaged wire. Earth foundation shall be firm. Fill soil around gabions shall be well-compacted.
- Gabions shall be fastened together with appropriate wiring.

GABION SCHEDULE

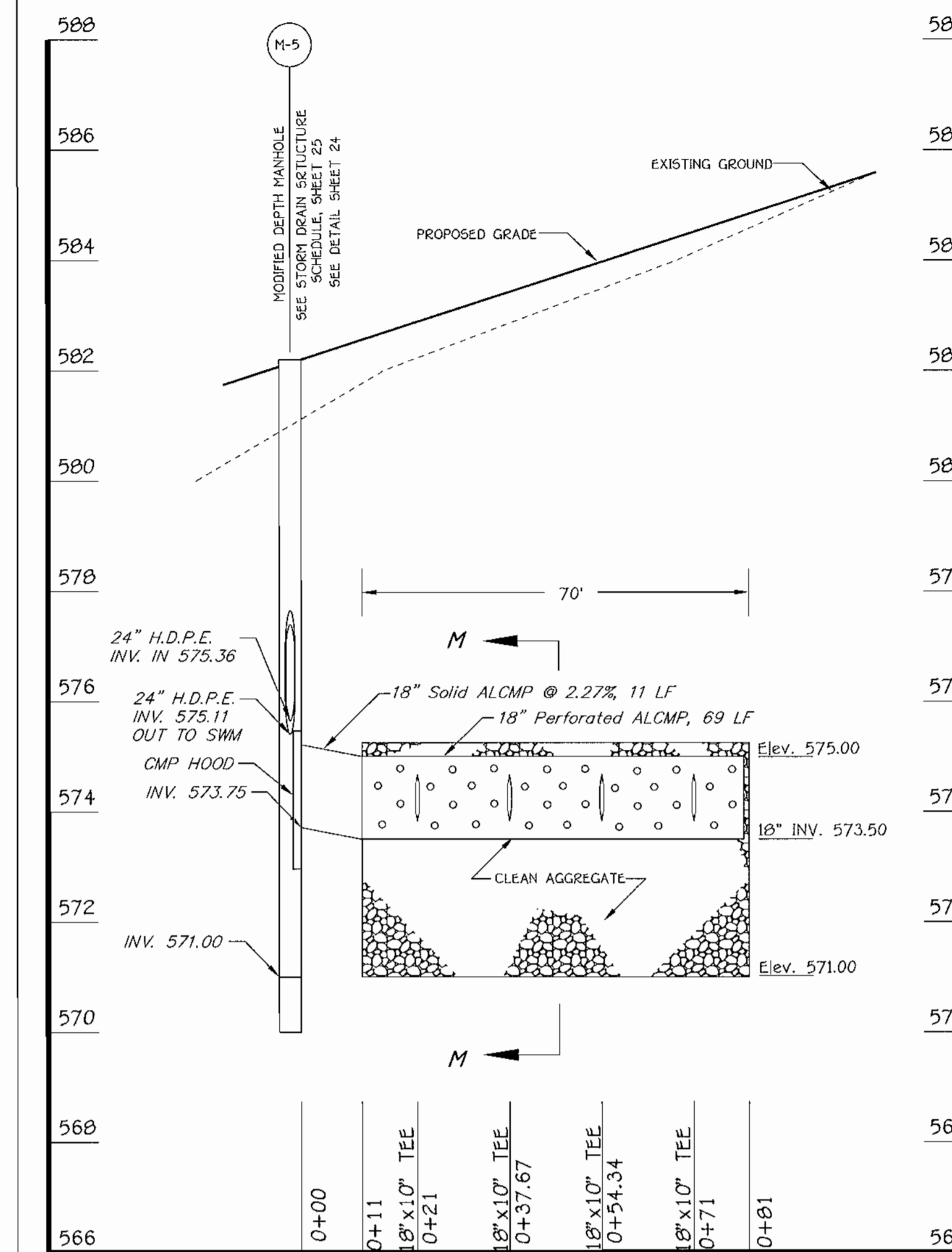
LETTER CODE	QUANTITY	DIMENSIONS
C	6	12'x3'x3'
B	2	9'x3'x3'
G	2	6'x3'x1'



GABION WEIR/FOREBAY OUTFALL DETAIL

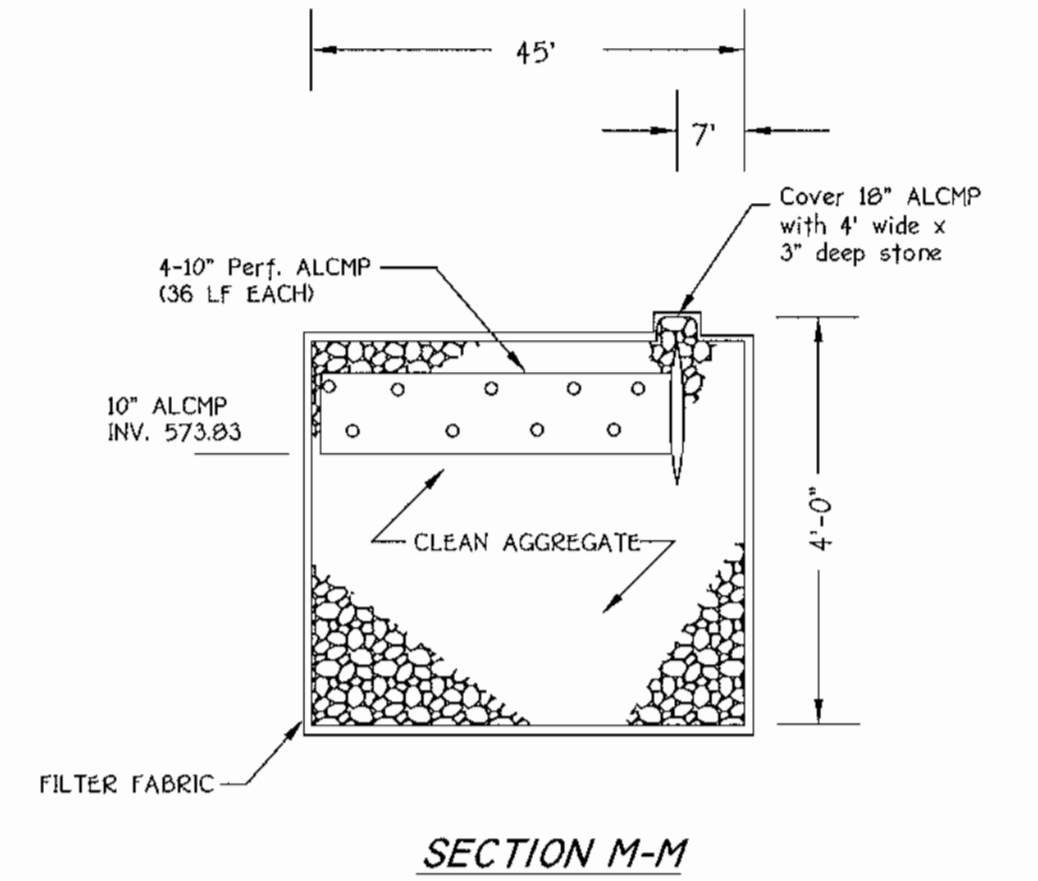
SCALE:
HORIZ: 1" = 10'
VERT: 1" = 1'

*THIS IS AN IMPERVIOUS FABRIC USED TO FORM A "CUT-OF WALL" AND SHALL BE INSTALLED ALONG THE UPHILL SIDE (LEADING EDGE) OF THE ENKAMAT TRM.



RECHARGE TRENCH NOTES

- Stone shall be clean, MD #2 stone and surrounded by filter fabric (Mirafi 140N or equal).
- Prior to allowing water to enter the recharge trench, all upstream areas shall be stabilized (established grass or paved). In addition, the storm drain system shall be flushed clean prior to connecting recharge trench.
- Pipe shall be 16 gauge aluminized CMP (ALCMP) type 2. The pipe shall be perforated inside the trench and solid outside the trench. Cap ends.



SECTION M-M

RECHARGE VOLUME PROFILE

SCALE:
HORIZ: 1" = 20'
VERT: 1" = 2'

ENKAMAT INSTALLATION NOTES

The following notes outline the basic installation procedures for Enkamät (Turf Reinforcement Matting or TRM). The contractor shall contact Cobond, Inc. (800-365-7391) to obtain a detailed installation guide, specifications, and notes.

SITE PREPARATION: The area shall be uniformly graded and free of soil clumps, stones, debris, vehicle imprints, or anything that would prevent the Enkamät from lying flush to the ground surface. For this application, it is especially important that the TRM maintain an intimate contact with the ground due to the expected water flow from the forebay.

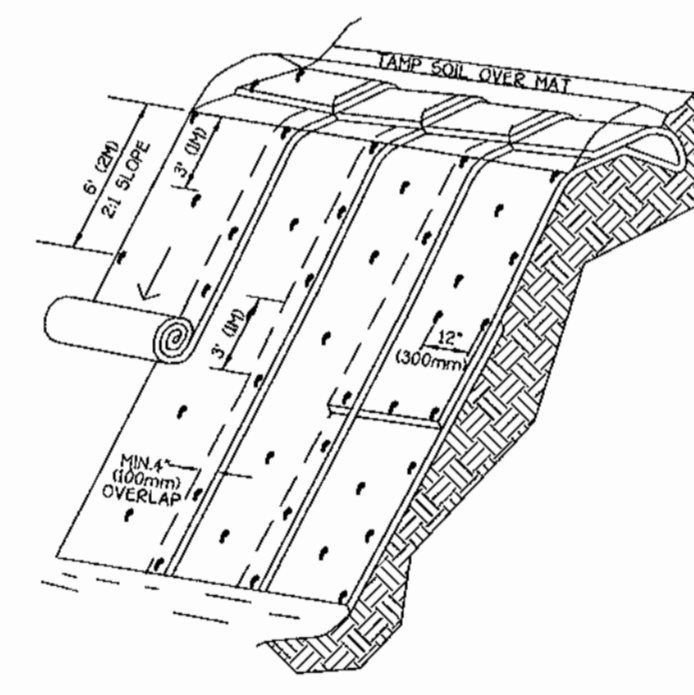
ANCHOR TRENCH: Anchor trenches are required to securely fasten the Enkamät to the ground surface. The anchor trench/intermediate check slots are then backfilled and compacted in a manner as to not damage the Enkamät.

ENKAMAT INSTALLATION: Roll the Enkamät down the slope. The overlap between rolls is 4 inches. The splice between rolls is 2 and 3 feet. Shingle the roll in the direction of water flow. Install pins down the center of each mat (mat is 3.25 feet wide) staggering them between the outside pins with a spacing interval of 3 to 5 feet. Pin patterns will vary depending upon application, soil type, slope or channel/slope.

ANCHORING/FASTENING DEVICES: Wire (sod) staples (U-shaped), geotextile pins or (triangular) wooden stakes can be used as fasteners. Staples should be made from a minimum 11 gauge metal wire and metal pins should have a minimum diameter of 3/16" with a 1.5" steel washer at one end to form a head. Staple/pin length will vary (6"-18") according to soil conditions but should be a minimum 6" and have a ground penetration sufficient to resist pulling out once installed. Staples/pins should be installed flush with the soil surface. If wooden stakes are used, approximately 2" of the stake should remain above ground to secure the Enkamät. In some cases 12"-30" J-shaped pins are used that are made from re-bar with a minimum diameter of 1/4".

SEEDING AND SOIL FILLING: Prior to seeding, place 1/2" to 3/4" of fine soil and work into the open structure of the Enkamät. You may also seed before and after soil filling to create a better established root structure and increase vegetation strength. Check with your local seeding consultant to verify appropriate seed and fertilizer mixture.

SOD INSTALLATION: If covering Enkamät with sod, soil filling is required. Place sod in the direction of water flow. Periodically install a row or two perpendicular to the flow to reduce the possibility of water flowing along the seams of the sod. In most cases, you should pin the sod down to prevent movement.



APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Signature: Robert J. Wala
DATE: 4/7/05



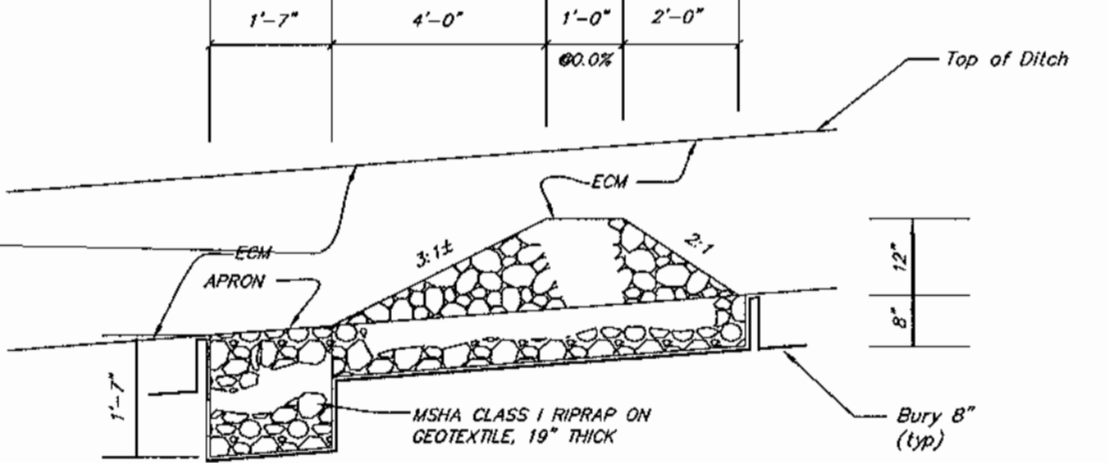
AS-BUILT CERTIFICATION
I hereby certify that the facility shown on this plan was constructed as shown on the "As-Built" Plans and Meets the Approved Plans and Specifications.

Signature: _____ P.E. No. _____
Date: _____

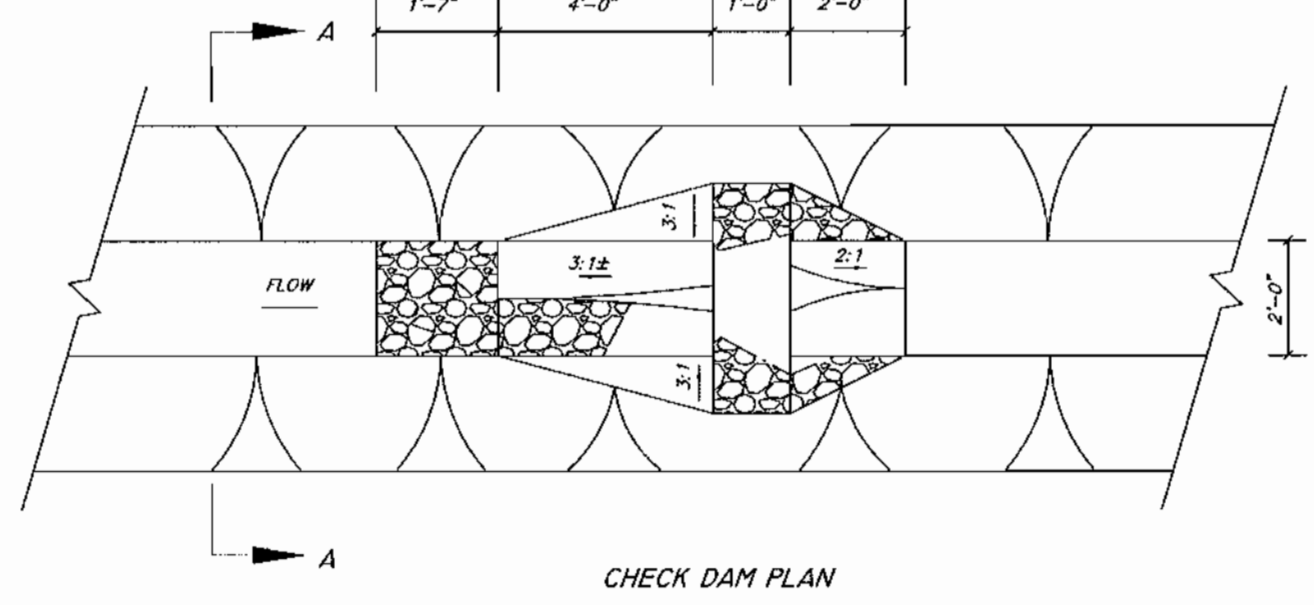
Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

GABION CHECK DAM NOTES

- Check dam shall be constructed from PVC-coated gabion wiring and filled with 4"-7" stone, tightly placed within "modified gabion". Gabions shall be 12" high and neatly "T" into the trapezoidal channel section with dimensions as shown.
- Gabion check dam shall be placed on geotextile (anchored 6' along edges).
- Locate gabion check dams as shown on lot 2 plan view in grassed channels.
- Line channel with ECM. Contractor shall ensure ECM extends to top of ditch and is well stapled at each checkdam.



CHECK DAM PROFILE



CHECK DAM PLAN

GABION CHECK DAM & DITCH DETAIL

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 16772 BALDWIN NATIONAL FIVE
ELLSWORTH CITY, MARYLAND 21042
(410) 484-2955

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: Catherine Conley Young
DATE: 1-10-05

Printed Name Of Developer: CATHERINE CONLEY YOUNG

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: Charles J. Crowder
DATE: 1/10/05

Printed Name Of Engineer: CHARLES J. CROWDER

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

Signature: Jim Myers
DATE: 3/30/05

USDA-Natural Resource Conservation Service

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: David L. Taylor
DATE: 4/14/05
Director - Department of Planning and Zoning

Signature: Cindy Hamblet
DATE: 4/13/05
Chief, Division of Land Development

Signature: Charles J. Crowder
DATE: 4/14/05
Chief, Development Engineering Division

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: _____ P.E. No. _____
Date: _____

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite 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 An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6790

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35
PLAT REF.	BLOCK NO.	ZONE
16794-16796	B	RR-DEC
WATER CODE	TAX/ZONE	ELEC. DIST.
N/A	2B	FIFTH
	SEWER CODE	CENSUS TR.
	N/A	6051.01

STORMWATER MANAGEMENT PROFILES & DETAILS

WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No.: 2B GRID No.: B PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION 4 JANUARY 05"
SHEET 18 OF 28

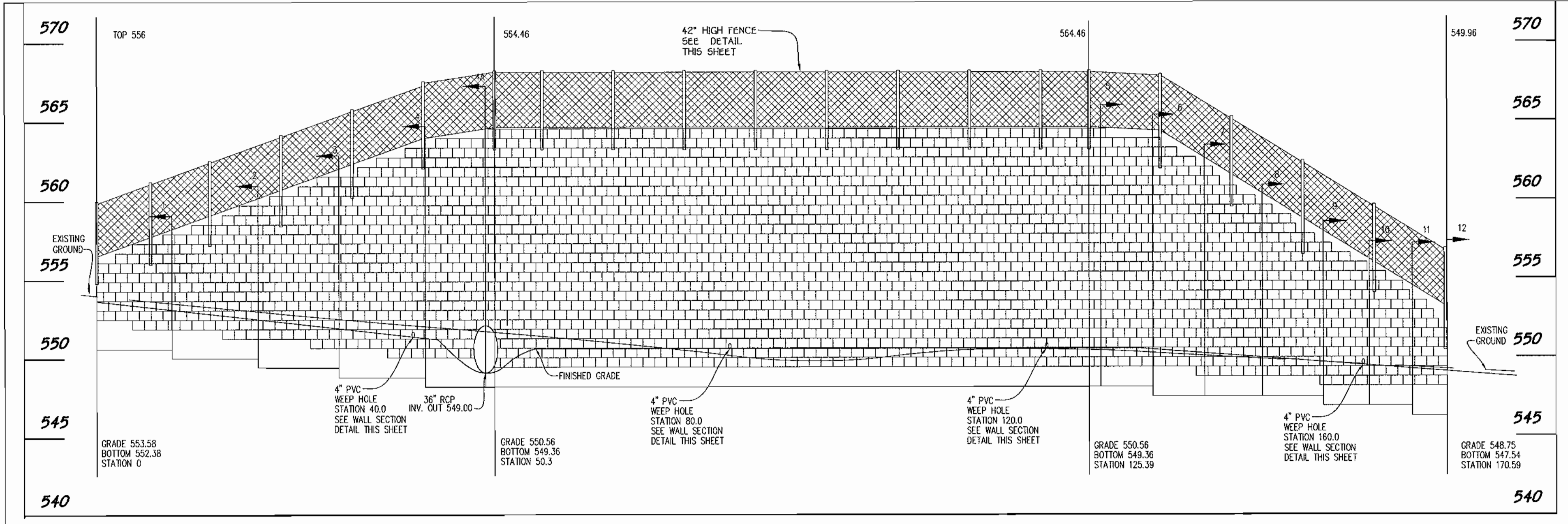
Specification Guidelines: Block Modular Retaining Wall Systems

SECTION 1
PART 1: GENERAL
1.1 Scope
Work includes furnishing and installing modular concrete block retaining wall units to the lines and grades designated on the construction drawings and as specified herein.
1.2 Applicable Sections of Related Work
A. Geogrid Wall Reinforcement (see section 2)
1.3 Reference Standards
A. ASTM C50-93 Hollow Load Bearing Masonry Unit
B. ASTM C140-91 Sampling and Testing Concrete Masonry Units
1.4 Delivery, Storage, and Handling
A. Contractor shall check the materials upon delivery to assure proper material has been received.
B. Contractor shall prevent excessive mud, wet cement, and like materials from coming in contact with the materials.
C. Contractor shall protect the materials from damage. Damaged material shall not be incorporated in the project.
PART 2: MATERIALS
2.1 Modular Wall Units
A. Wall units shall be ALLAN BLOCK Retaining Wall units as produced by licensed Manufacturer.
B. Wall units shall have minimum 28 day compressive strength of 3000 psi (20.67 MPa) in accordance with ASTM C90. The concrete units shall have adequate freeze-thaw protection with an average absorption rate of 7.5 lb/ft³ (120 kg/m³) for northern climates and 10 lb/ft³ (160 kg/m³) for southern climates.
C. Interior dimensions shall be uniform and consistent. Maximum dimensional deviations shall be .125 inch (3mm) not including textured face.
D. Wall units shall provide a minimum of 110 pounds total weight per square foot of wall face area (1,764 kg/m²). Fill contained within the units may be considered 80% effective weight.
E. Exterior face shall be textured. Color as specified by owner.
2.2 Wall Rock
A. Base material shall be # 57 stone.
B. Drainage material shall be the same as base material.
C. Backfill material shall be site excavated soils when approved by the engineer unless otherwise specified in the drawings. Unsuitable soils for backfill (heavy clays or organic soils) shall not be used in the reinforced soil mass.
D. Where additional fill is required, contractor shall submit sample and specifications to the Engineer for approval.
Part 3: WALL CONSTRUCTION
3.1 Excavation
A. Contractor shall excavate to the lines and grades shown on the construction drawings. Contractor shall use caution not to over-excavate beyond the lines shown, or to disturb the base elevations beyond those shown.
B. 4 inch perforated drain tile will be installed at the locations indicated on the section drawings.

3.2 Foundation Soil Preparation
A. Foundation soil shall be excavated as dimensioned on the plans and compacted to a min. 95% compaction prior to placement of the base material.
B. Foundation soil shall be examined by the Engineer to insure that the actual foundation soil strength meets or exceeds 2000 psf. Soil not meeting the required strength shall be removed and replaced with acceptable material.
3.3 Base
A. Base material shall be placed as shown on construction drawing. Top of base shall be located to allow bottom wall units to be buried proper depths as per wall heights and specifications.
B. Base material shall be installed on undisturbed native soils or suitable replacement fills compacted at 95% standard proctor.
C. Base shall be compacted at 95% standard proctor to provide a level hard surface on which to place the first course of blocks. The base shall be constructed to insure proper wall embedment and the final elevation shown on the plans. Well-graded sand can be used to smooth the top 1/2 inch (12.5mm) on the leveling pads.
D. Base material shall be 6 inch (75mm) depth minimum for walls under 14 feet and 12 inch (150mm) minimum depth for walls over 14 feet (1.2m). Walls over 14 feet will have a 4" wide base with 4" of Miragrid 5xt grid 8" below the top of the stone base.
3.4 Unit Installation
A. The first course of wall units shall be placed on the prepared base with the raised lip facing out and the front edges tight together. The units shall be checked for level and alignment as they are placed.
B. Interlocking units are in full contact with base. Proper care shall be taken to develop straight lines and smooth curves on base course as per wall layout.
C. All cavities in and around the base shall be filled with base materials and compacted. Backfill front and back of entire base row to firmly lock in place. Check again for level and alignment. All excess material shall be swept from top of units.
D. Install next course of wall units on top of base row. Position blocks to be offset from seams of blocks below. Perfect "tumbling bond" is not essential, but a 3-inch (75mm) minimum offset is recommended. Check each block for proper alignment and level. Install locking pins if required by manufacturer. Fill all cavities in and around wall units and to a 12 inch (305mm) depth behind block with drainage material. Spread backfill in uniform lifts not exceeding 8 inches (200mm). Employ methods using lightweight compaction equipment that will not disrupt the stability or batter of the wall. Hand-operated plate compaction equipment shall be used on the block and within 3 feet (9m) of wall to achieve consolidation. Compact to 95% of standard proctor in backfill beyond consolidation zone.
E. Install each subsequent course in like manner. Repeat procedure to the extent of wall height.
F. Allowable construction tolerance at the wall face is 2 degrees vertically and 1 inch (25mm) in 10 feet (3m) horizontally.

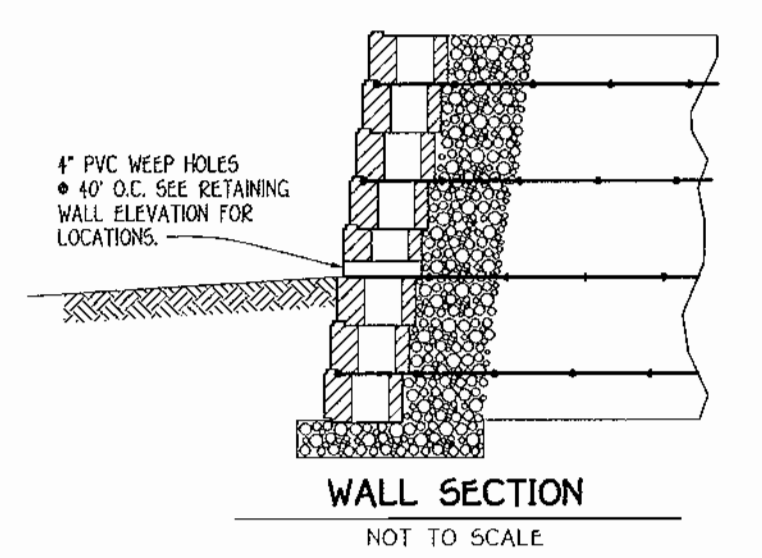
Specifications Guidelines: Geogrid Reinforcement Systems

SECTION 2
PART 1: GENERAL
1.1 Scope
Work includes furnishing and installing geogrid reinforcement, wall fill, and backfill to the lines and grades designated on the construction drawings and as specified herein.
1.2 Applicable Section of Related Work
Section 1: Block Modular Retaining Wall Systems.
1.3 Reference Standards
See specific geogrid manufacturers reference standards.
1.4 Delivery, Storage, and Handling
A. Contractor shall check the geogrid upon delivery to assure that the proper material has been received.
B. Geogrid shall be stored above 20°F (-9°C).
C. Contractor shall prevent excessive mud, wet cement, or other foreign materials from coming in contact with the geogrid material.
PART 2: GRID MATERIALS
2.1 Definitions
A. Geogrid products shall be of high density polyethylene or polypropylene yarns encapsulated in a protective coating, specifically fabricated for use as a soil reinforcement material.
B. Concrete retaining wall units are as detailed on the drawings.
C. Drainage material is free draining granular material as defined in section: Modular Concrete Retaining Wall systems as "Drainage Material".
D. Backfill is the soil used as fill for the reinforced soil mass.
E. Foundation soil is the in-situ soil.
2.2 Products
A. Geogrid shall be the type as shown on the drawings having the property requirements as described within the manufacturers specifications (Miragrid 5x).
2.3 Acceptable Manufacturers
A. Miragrid
PART 3: WALL CONSTRUCTION
3.1 Foundation Soil Preparation
A. Foundation soil shall be excavated to the lines and grades as shown on the construction drawings, or as directed by the Engineer.
B. Foundation soil shall be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength.
C. Over-excavated areas shall be filled with approved compacted backfill material.
D. Foundation soil shall be proof rolled prior to fill and geogrid placement.
3.2 Wall Construction
A. Wall construction shall be as specified under Section 1, Part 3, Wall Construction.

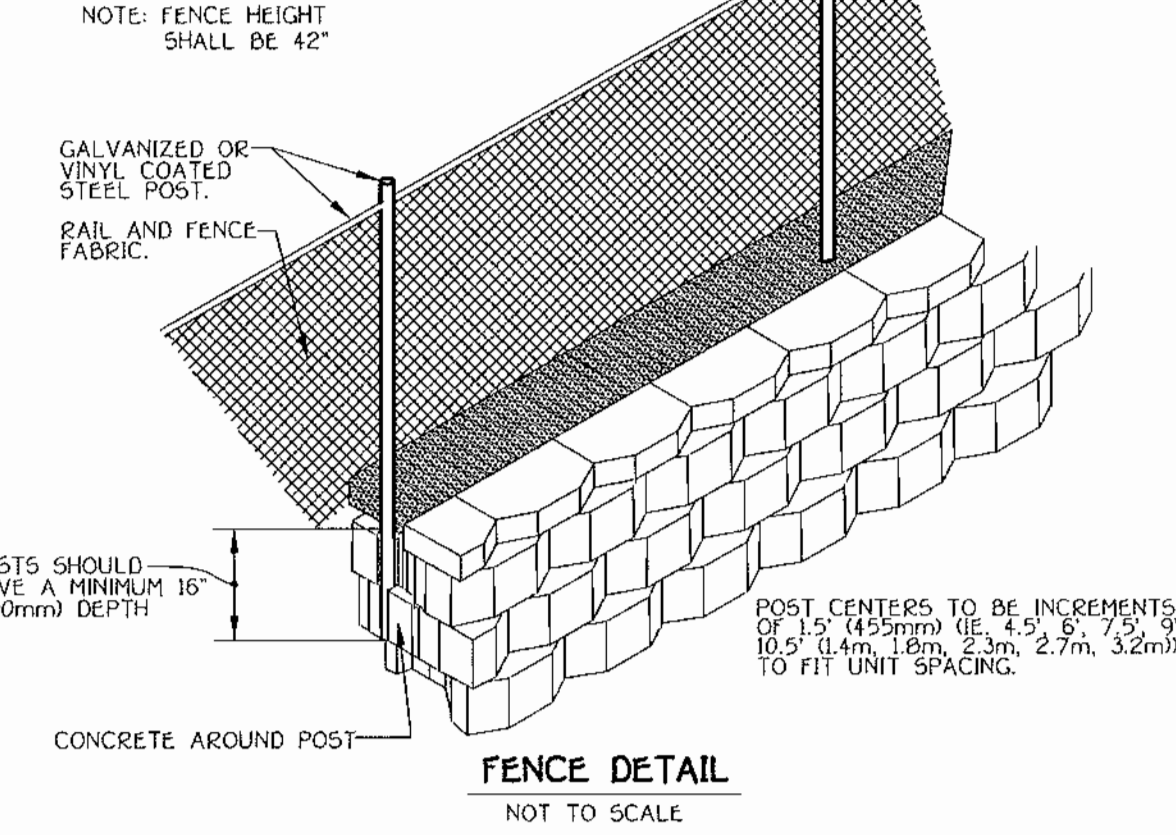


Station	1	2	3	4	5	6	7	8	9	10	11	12
Top	557.91	559.62	561.33	563.04	564.75	566.46	568.17	569.88	571.59	573.30	575.01	576.72
Grade	557.91	559.62	561.33	563.04	564.75	566.46	568.17	569.88	571.59	573.30	575.01	576.72
Bottom	557.91	559.62	561.33	563.04	564.75	566.46	568.17	569.88	571.59	573.30	575.01	576.72
Sta. Cut	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sta. End	0+00	0+20	0+40	0+60	0+80	0+100	0+120	0+140	0+160	0+180	0+200	0+220

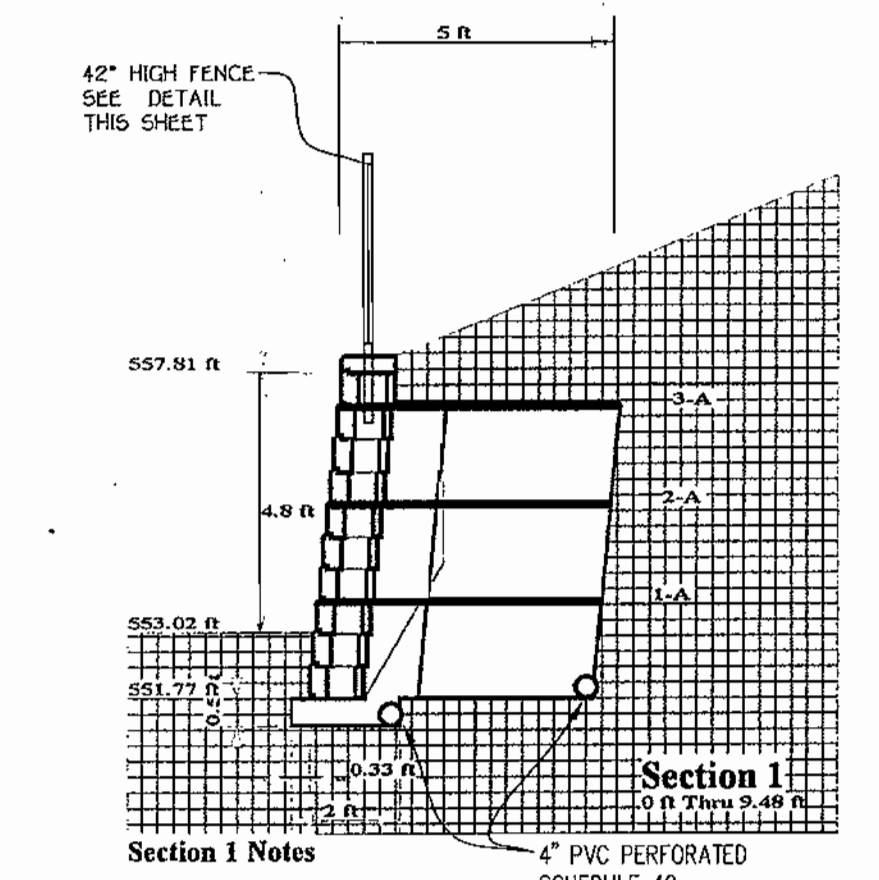
Allan Block Retaining Wall Elevation - 1
Horizontal Scale: 1"=10'-0" Vertical Scale: 1"=3'-0"



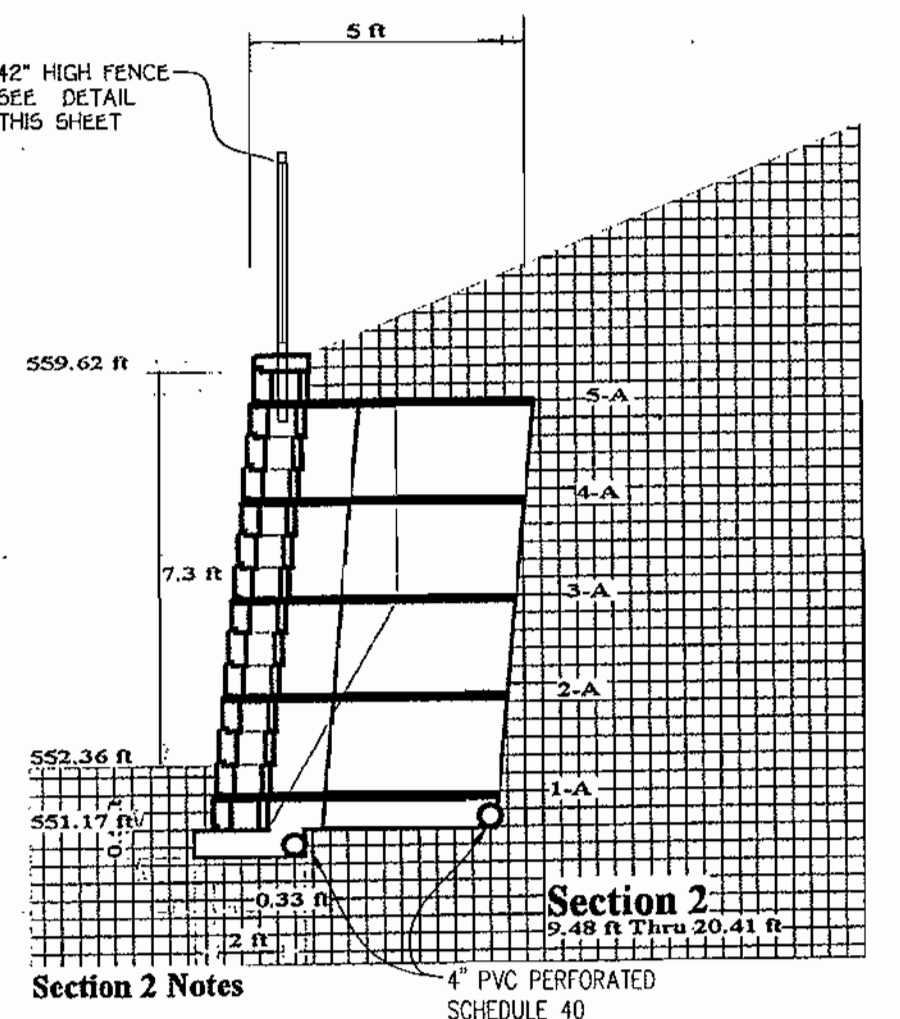
Fences can be placed at the top of a Keystone wall with fence posts placed either into the keystone units or behind the keystone units. Follow these procedures for proper installation of fence posts.
1. Install the Keystone wall per general installation instructions.
2. Select the fence post position. If fence posts will be placed into the Keystone units, the Standard Keystone Unit must be used for the retaining wall construction. The fence post may be placed in one of two positions: (1) the front unit void or (2) the full section unit void. Posts placed in the Keystone unit void may be spaced in unit multiples of 15" (45.7mm) (ie. 6", 7.5", 9", 10.5", 12", 0.310m, 2.3m, 2.7m, 3.2m, 3.7m). Do not allow unit core fill material (ie. gravel or backfill material) to collect in the voids of the units into which the post will be placed. A separation membrane such as building paper may be used for this. Posts may be anchored with concrete fill. A steel sleeve may be used as an option. Cap units installed on a wall with fence posts in the front unit void may need to be cut for a proper fit.
3. Fence posts positioned behind the Keystone units may be installed and anchored using standard installation methods. This position is recommended for retaining walls constructed using the Compact Keystone Unit. Posts should be placed by normal construction methods for anchoring. If the wall is reinforced with geogrid, the guard rail post may be placed by cutting holes in the geogrid layers as needed per the recommendations of the geogrid manufacturer.



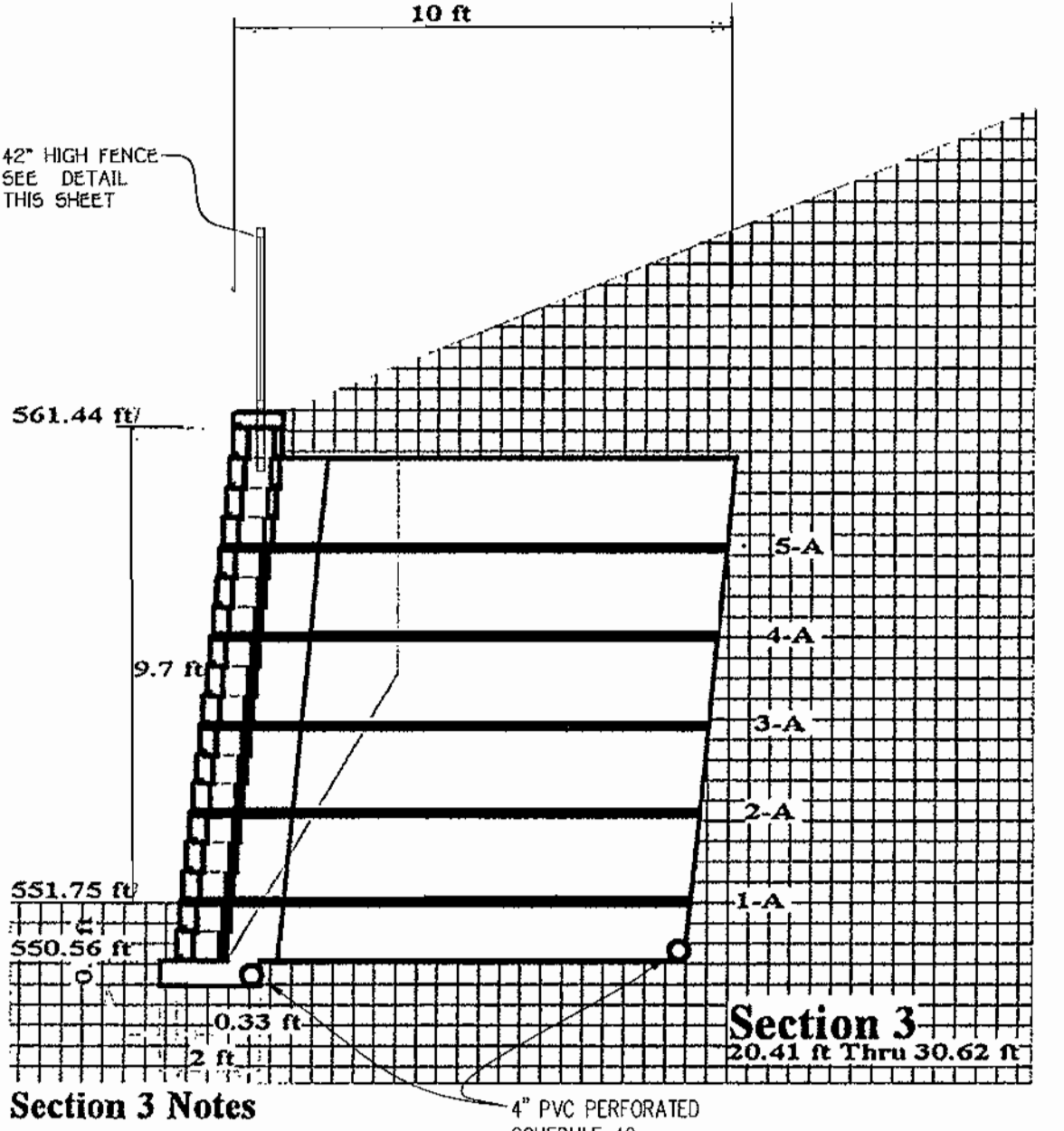
NOTES
1.) "RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN."
2.) "THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399."
3.) "THE SUITABILITY OF THE FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH EIGHT INCH LIFT MUST BE COMPACTED TO 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION."
4.) "FOR "CRITICAL" WALLS, ONE SOIL BORING IS REQUIRED EVERY 100 FEET ALONG THE LENGTH OF THE WALL. COPIES OF THE BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION."
5.) NO TREES SHALL BE PLACED WITHIN 10 FEET OF THE TOP OF RETAINING WALL.



AB Classic	
Total Wall Height = 6.04 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	Retained Soil
Friction Angle = 30 Deg.	Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 6.2	
Safety Factors Static	
Actual Sliding = 2.168	Actual Overturning = 4.766
Safety Factors Seismic	
Actual Sliding = N.A.	Actual Overturning = N.A.
Geogrid Legend	
A-Miragrid 5XT B-Miragrid 7XT C-Miragrid 8XT g-Grouted Con. Min. Length of Geogrid = 5 Feet	



AB Classic	
Total Wall Height = 8.46 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	Retained Soil
Friction Angle = 30 Deg.	Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 3.36	
Safety Factors Static	
Actual Sliding = 1.755	Actual Overturning = 3.072
Safety Factors Seismic	
Actual Sliding = N.A.	Actual Overturning = N.A.
Geogrid Legend	
A-Miragrid 5XT B-Miragrid 7XT C-Miragrid 8XT g-Grouted Con. Min. Length of Geogrid = 5 Feet	



AB Classic	
Total Wall Height = 10.87 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	Retained Soil
Friction Angle = 30 Deg.	Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 3.16	
Safety Factors Static	
Actual Sliding = 2.208	Actual Overturning = 5.061
Safety Factors Seismic	
Actual Sliding = N.A.	Actual Overturning = N.A.
Geogrid Legend	
A-Miragrid 5XT B-Miragrid 7XT C-Miragrid 8XT g-Grouted Con. Min. Length of Geogrid = 10 Feet	



6252 FALLS ROAD
P.O. BOX 65309
BALTIMORE, MARYLAND 21209-0509

THOMAS H. HINES
PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING
David J. Lough Director - Department of Planning and Zoning 4/14/05
Cindy Hamner Chief, Division of Land Development 4/15/05
Robert J. Walter Chief, Development Engineering Division 4/15/05

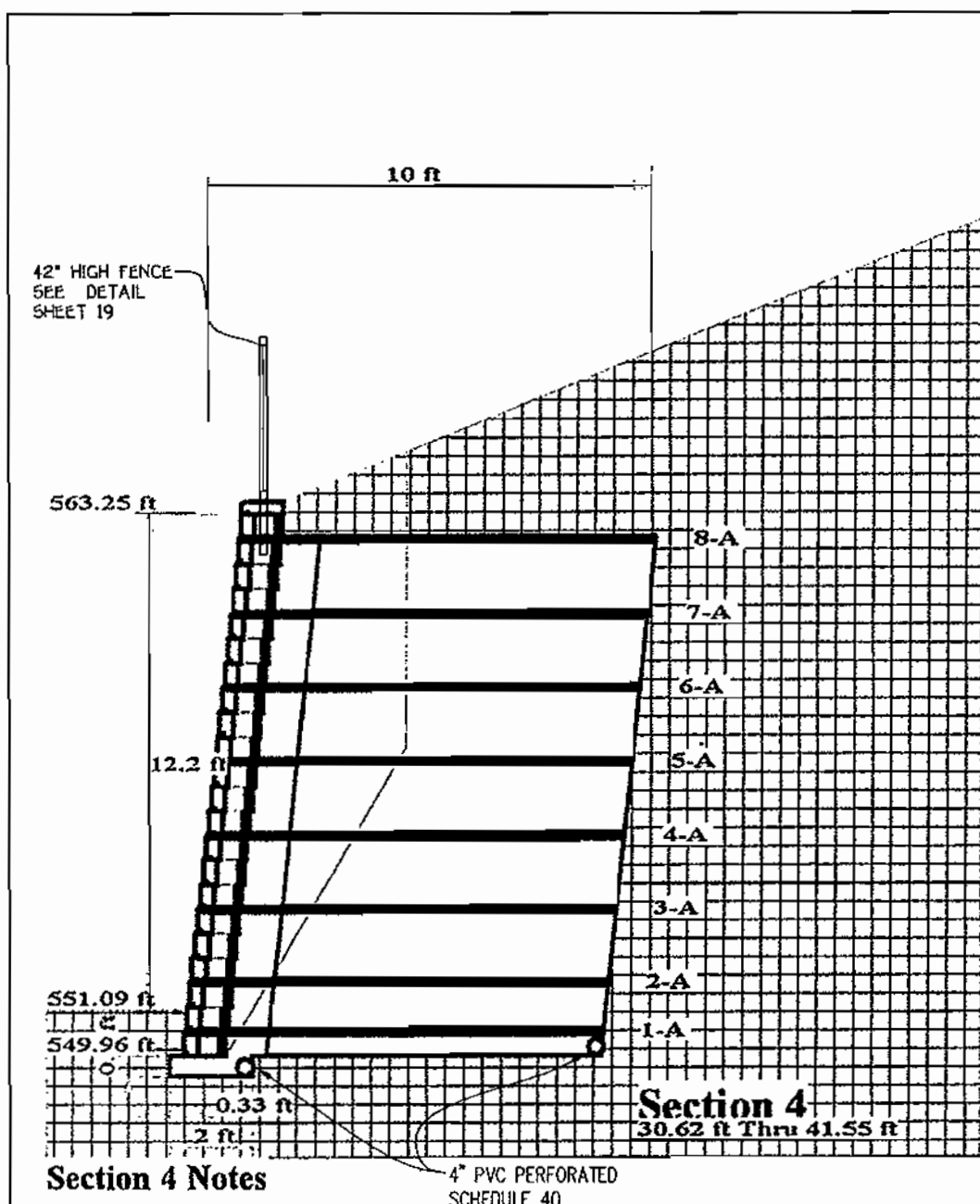
PREPARED FOR:
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention: Bruce Gist 410-313-6796
TCA ARCHITECTS
2651 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

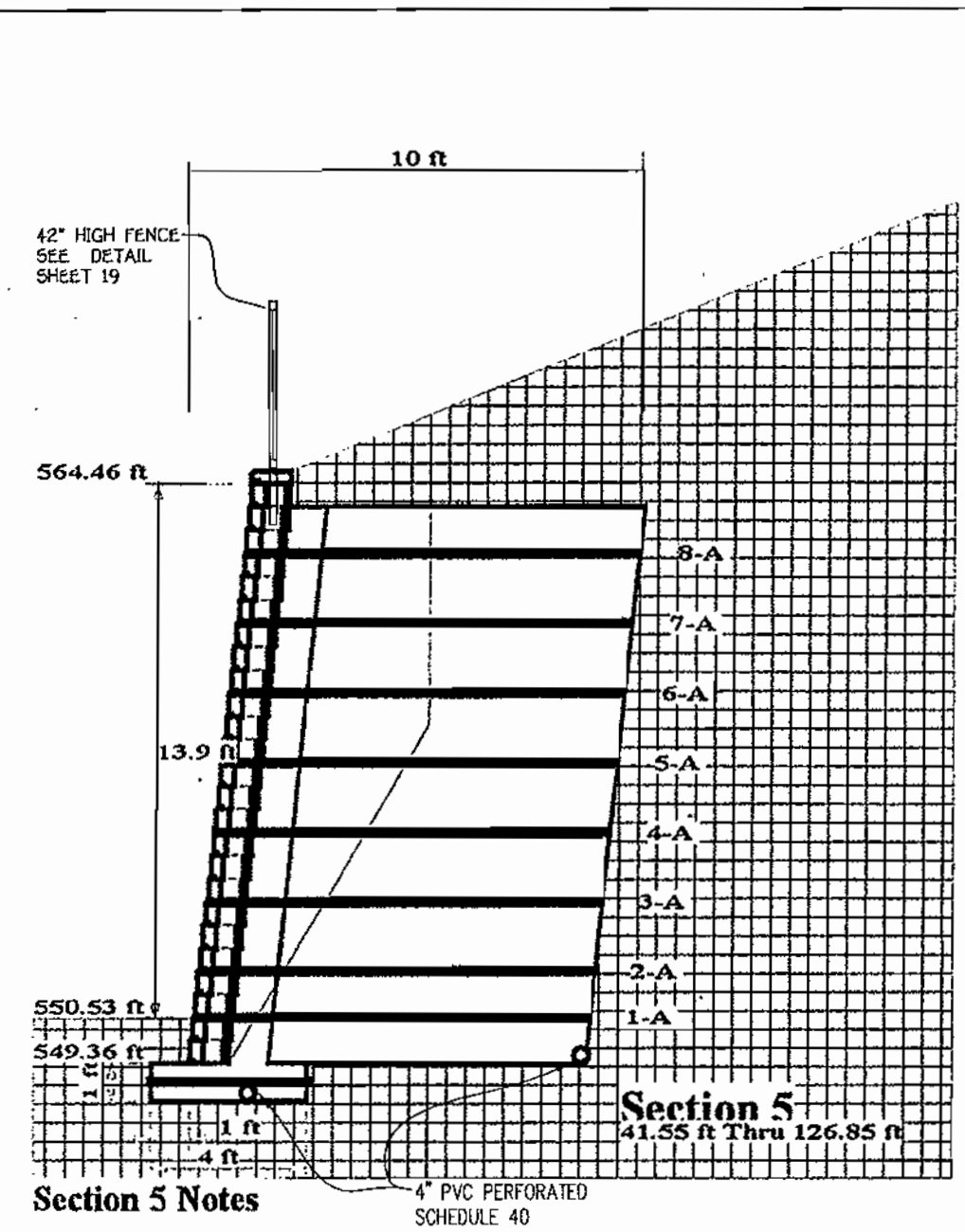
PROJECT	SECTION/AREA	PARCEL			
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35			
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	8	RR-DEO	28	FIFTH	6051.01
WATER CODE	SEWER CODE				
N/A	N/A				

RETAINING WALL ELEVATION VIEW AND CROSS SECTIONS
WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2
TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION 4 JANUARY 05"
SHEET 19 OF 28



Section 4 Notes
4" PVC PERFORATED SCHEDULE 40

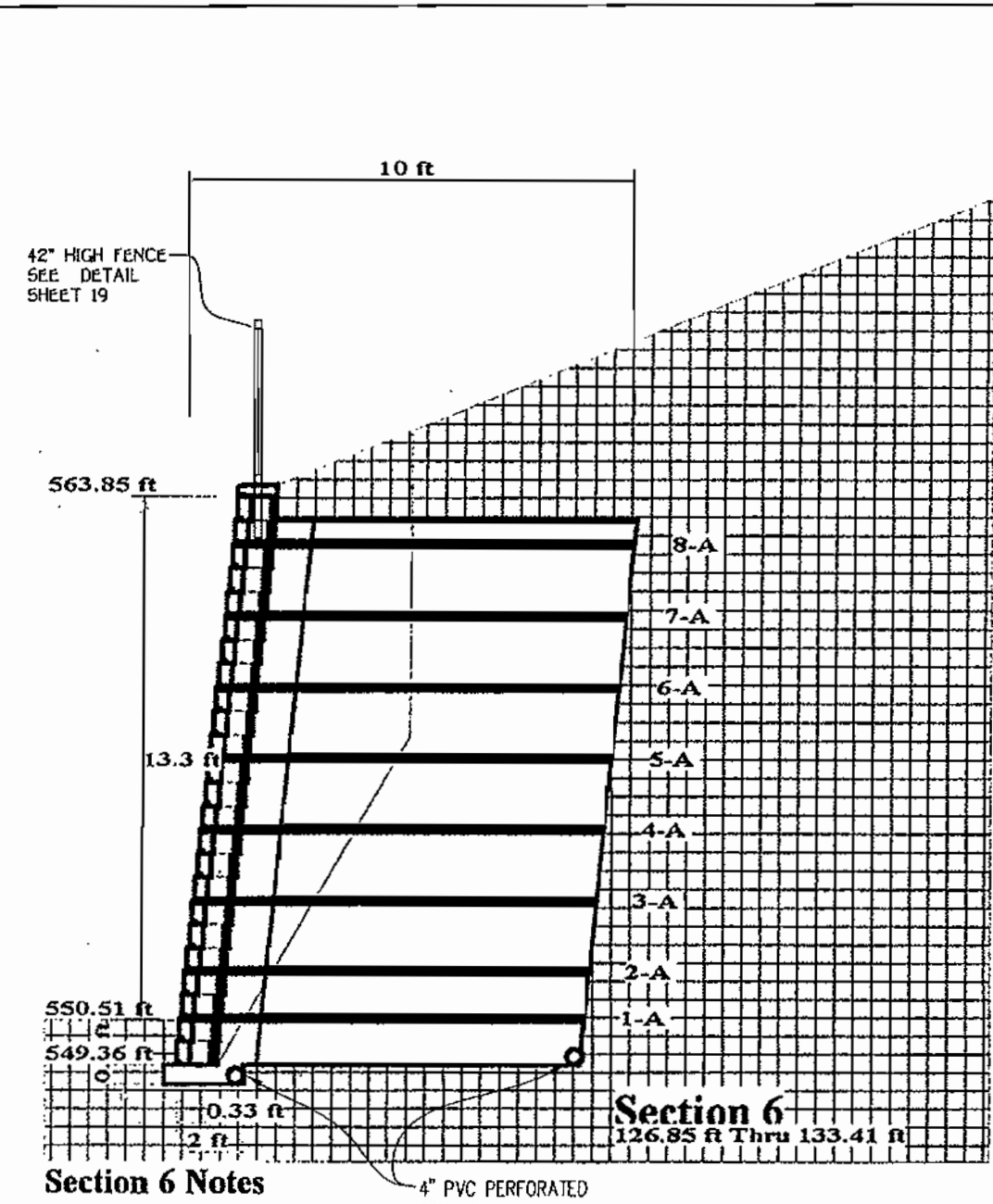
AB Classic	
Total Wall Height = 13.29 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	
Friction Angle = 30 Deg.	Retained Soil Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 2.45	
Safety Factors Static	
Actual Sliding = 1.964	
Actual Overturning = 3.945	
Safety Factors Seismic	
Actual Sliding = N.A.	
Actual Overturning = N.A.	
Geogrid Legend	
A-Mirasgrid 5XT	
B-Mirasgrid 7XT	
C-Mirasgrid 8XT	
g-Grouted Con.	
Min. Length of Geogrid = 10 Feet	



Section 5 Notes
4" PVC PERFORATED SCHEDULE 40

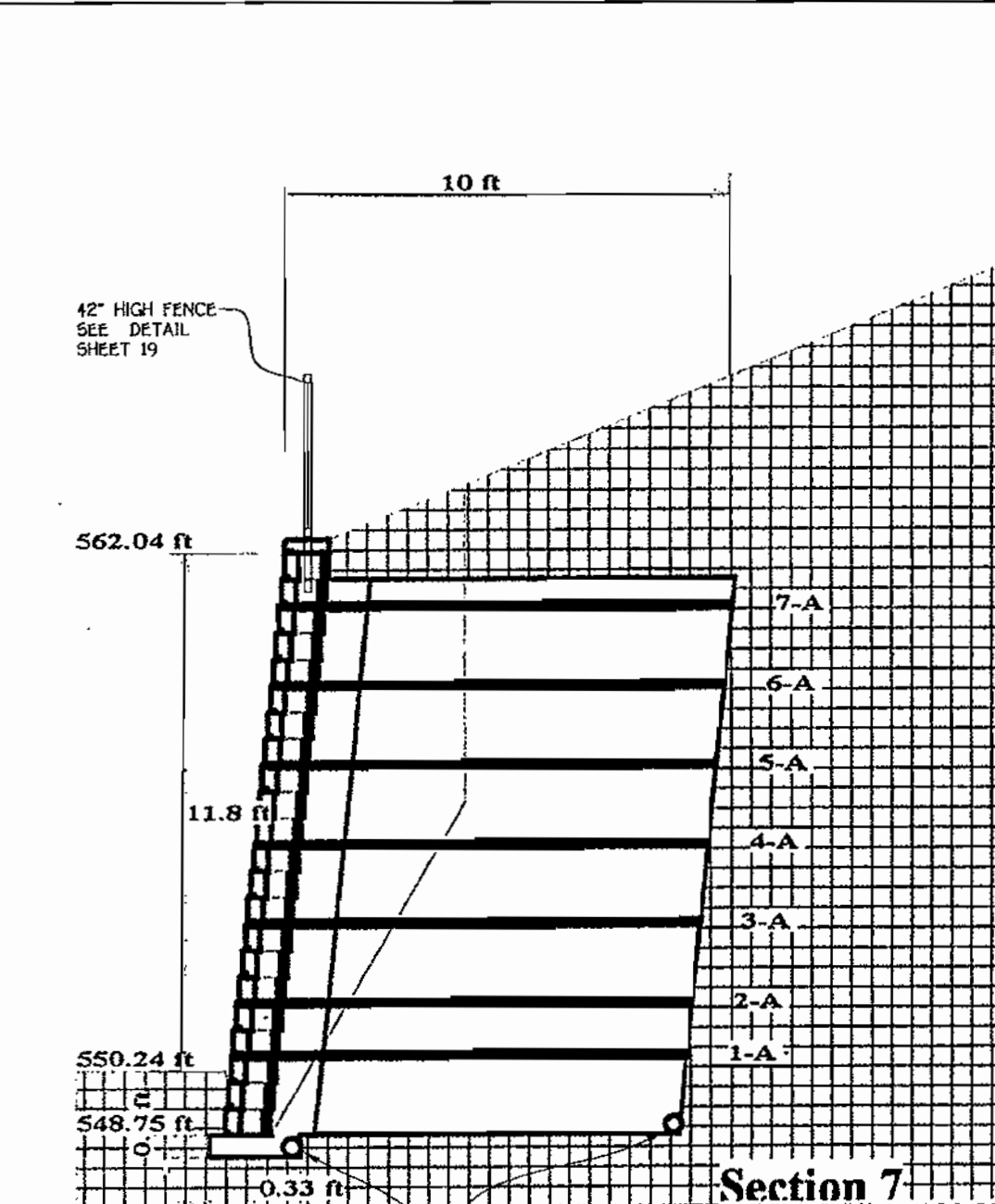
Place the geogrid, in the reinforced base, at the height of one block from the bottom of the trench.

AB Classic	
Total Wall Height = 15.1 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	
Friction Angle = 30 Deg.	Retained Soil Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 3.03	
Safety Factors Static	
Actual Sliding = 1.816	
Actual Overturning = 3.352	
Safety Factors Seismic	
Actual Sliding = N.A.	
Actual Overturning = N.A.	
Geogrid Legend	
A-Mirasgrid 5XT	
B-Mirasgrid 7XT	
C-Mirasgrid 8XT	
g-Grouted Con.	
Min. Length of Geogrid = 10 Feet	



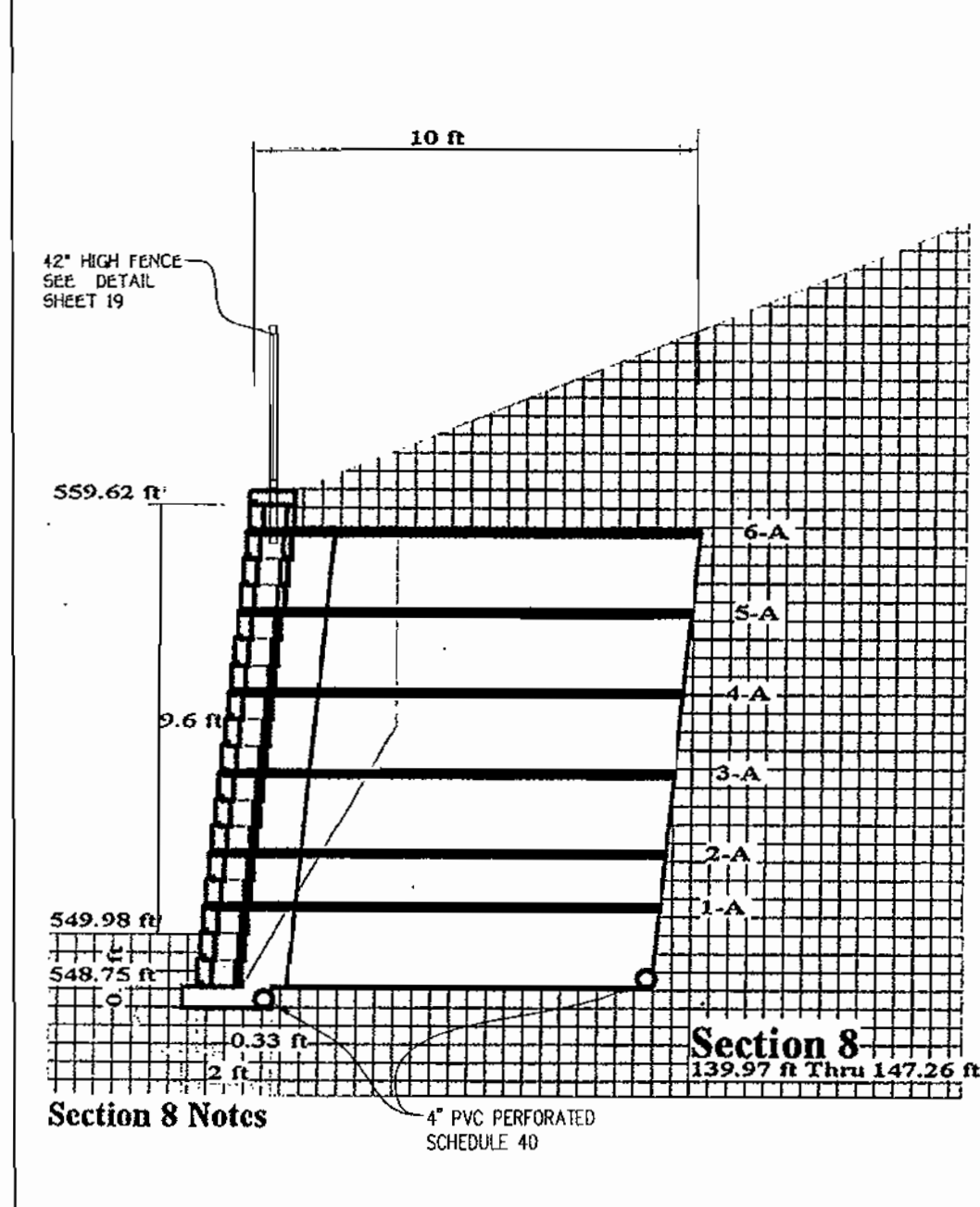
Section 6 Notes
4" PVC PERFORATED SCHEDULE 40

AB Classic	
Total Wall Height = 14.5 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	
Friction Angle = 30 Deg.	Retained Soil Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 2.11	
Safety Factors Static	
Actual Sliding = 1.862	
Actual Overturning = 3.532	
Safety Factors Seismic	
Actual Sliding = N.A.	
Actual Overturning = N.A.	
Geogrid Legend	
A-Mirasgrid 5XT	
B-Mirasgrid 7XT	
C-Mirasgrid 8XT	
g-Grouted Con.	
Min. Length of Geogrid = 10 Feet	



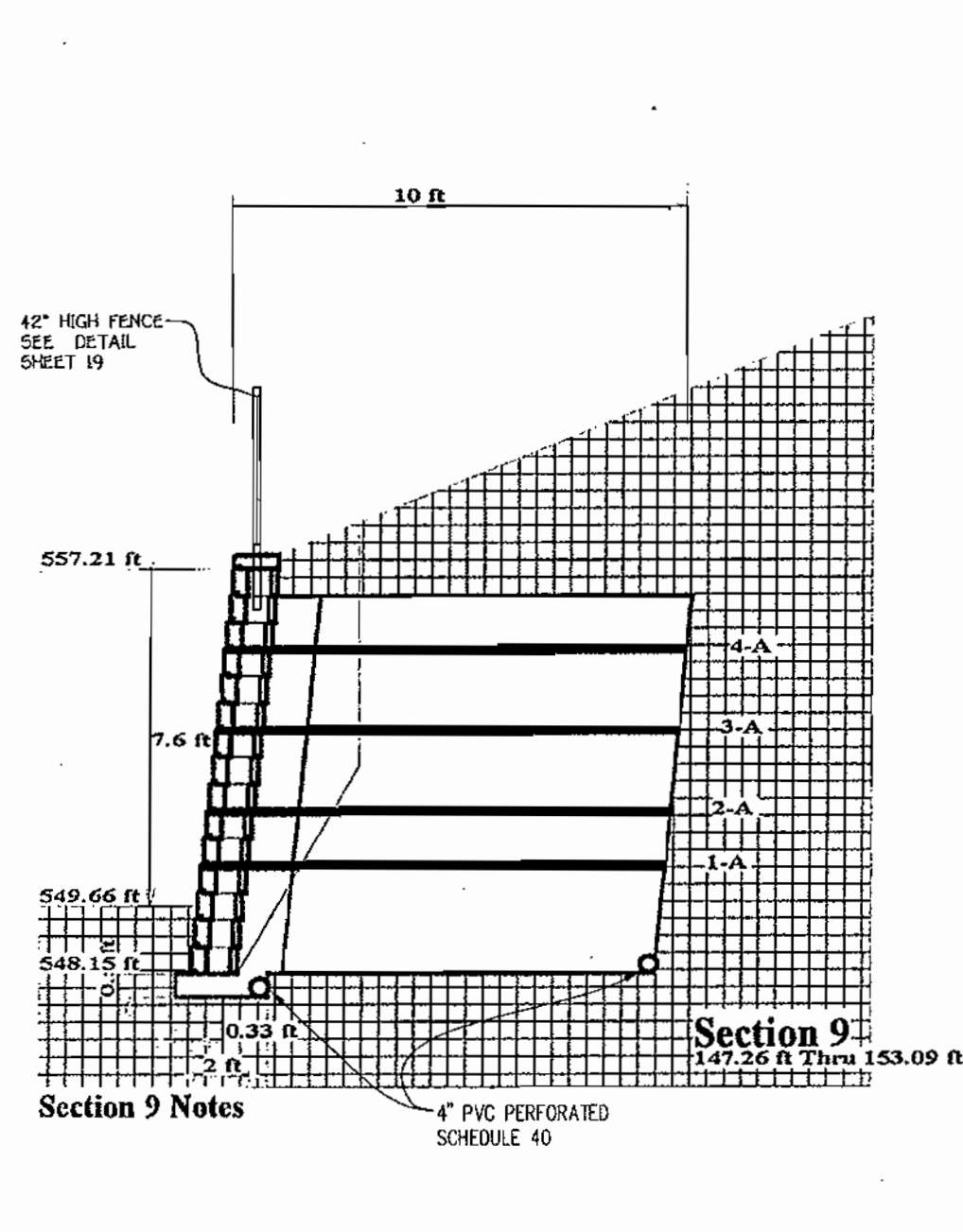
Section 7 Notes
4" PVC PERFORATED SCHEDULE 40

AB Classic	
Total Wall Height = 13.29 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	
Friction Angle = 30 Deg.	Retained Soil Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 2.81	
Safety Factors Static	
Actual Sliding = 1.964	
Actual Overturning = 3.945	
Safety Factors Seismic	
Actual Sliding = N.A.	
Actual Overturning = N.A.	
Geogrid Legend	
A-Mirasgrid 5XT	
B-Mirasgrid 7XT	
C-Mirasgrid 8XT	
g-Grouted Con.	
Min. Length of Geogrid = 10 Feet	



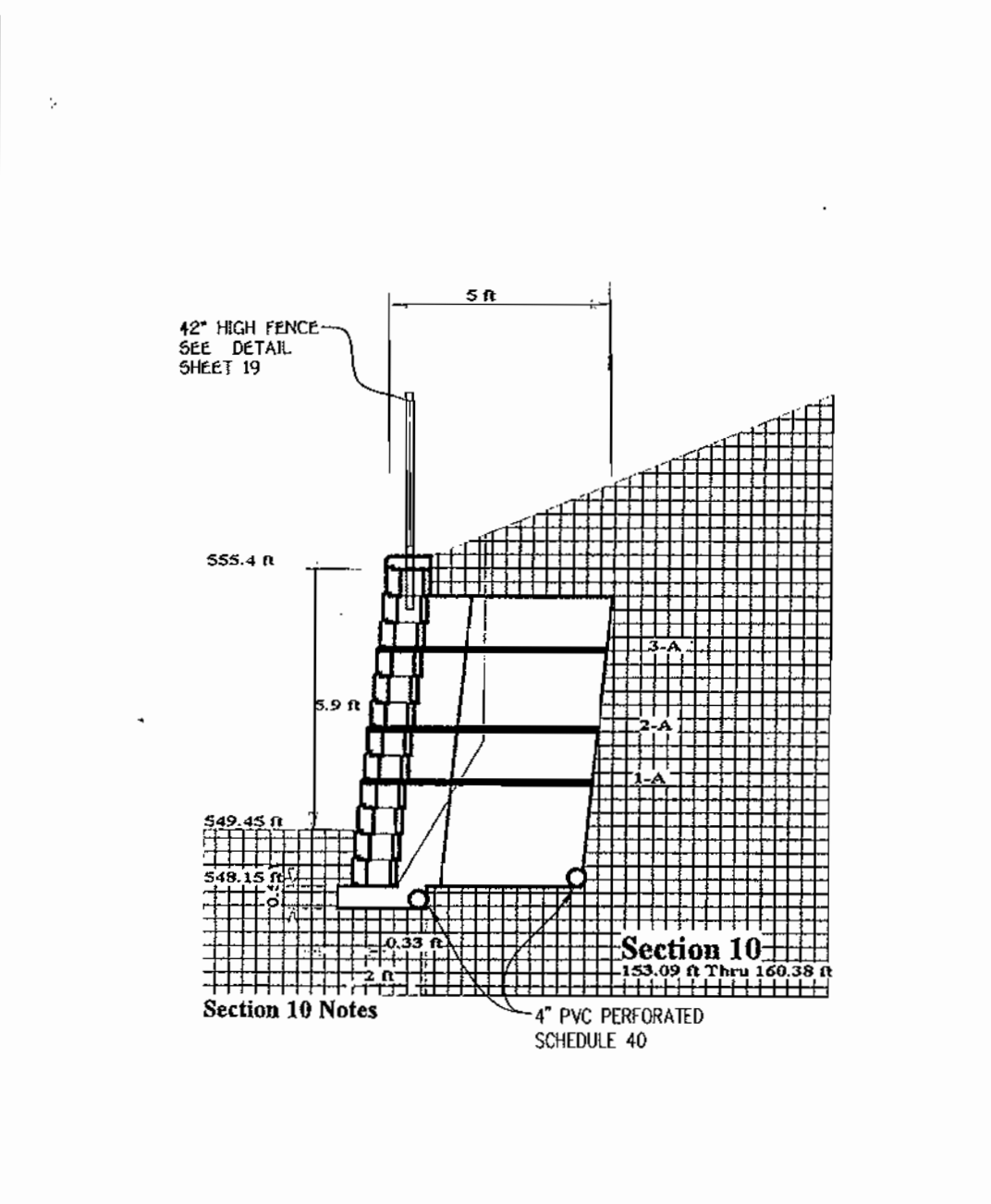
Section 8 Notes
4" PVC PERFORATED SCHEDULE 40

AB Classic	
Total Wall Height = 10.87 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	
Friction Angle = 30 Deg.	Retained Soil Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 3.22	
Safety Factors Static	
Actual Sliding = 2.208	
Actual Overturning = 5.061	
Safety Factors Seismic	
Actual Sliding = N.A.	
Actual Overturning = N.A.	
Geogrid Legend	
A-Mirasgrid 5XT	
B-Mirasgrid 7XT	
C-Mirasgrid 8XT	
g-Grouted Con.	
Min. Length of Geogrid = 10 Feet	



Section 9 Notes
4" PVC PERFORATED SCHEDULE 40

AB Classic	
Total Wall Height = 9.06 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	
Friction Angle = 30 Deg.	Retained Soil Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 3.86	
Safety Factors Static	
Actual Sliding = 2.439	
Actual Overturning = 6.29	
Safety Factors Seismic	
Actual Sliding = N.A.	
Actual Overturning = N.A.	
Geogrid Legend	
A-Mirasgrid 5XT	
B-Mirasgrid 7XT	
C-Mirasgrid 8XT	
g-Grouted Con.	
Min. Length of Geogrid = 10 Feet	



Section 10 Notes
4" PVC PERFORATED SCHEDULE 40

AB Classic	
Total Wall Height = 7.25 Feet	
Block Height = 0.604 Feet	
Angle of Setback = 6 Deg.	
Depth of Block = 1 Feet	
Length of Block = 1.458 Feet	
Infill Soil	
Friction Angle = 30 Deg.	Retained Soil Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF
Foundation Soil	
Friction Angle = 30 Deg.	Cohesion = 0 PSF
Unit Weight = 115 PCF	
Bearing Capacity	
Factor of Safety = 4.72	
Safety Factors Static	
Actual Sliding = 1.937	
Actual Overturning = 3.765	
Safety Factors Seismic	
Actual Sliding = N.A.	
Actual Overturning = N.A.	
Geogrid Legend	
A-Mirasgrid 5XT	
B-Mirasgrid 7XT	
C-Mirasgrid 8XT	
g-Grouted Con.	
Min. Length of Geogrid = 5 Feet	

- NOTES
- "RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (INICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN."
 - "THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM 51P-399."
 - "THE SUITABILITY OF THE FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH EIGHT INCH LIFT MUST BE COMPACTED TO 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION."
 - "FOR 'CRITICAL' WALLS, ONE SOIL BORING IS REQUIRED EVERY 100 FEET ALONG THE LENGTH OF THE WALL. COPIES OF THE BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION."
 - NO TREES SHALL BE PLACED WITHIN 10 FEET OF THE TOP OF RETAINING WALL.

PENNIMAN & BROWNE, INC.
6252 FALLS ROAD
P.O. BOX 65309
BALTIMORE, MARYLAND 21209-0509



APPROVED: DEPARTMENT OF PLANNING AND ZONING

David L. G. [Signature] 4/14/05
Director, Department of Planning and Zoning

Cindy [Signature] 4/13/05
Chief, Division of Land Development

[Signature] 4/14/05
Chief, Development Engineering Division

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Walker [Signature] 4/13/05
HOWARD COUNTY HEALTH OFFICER

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6798

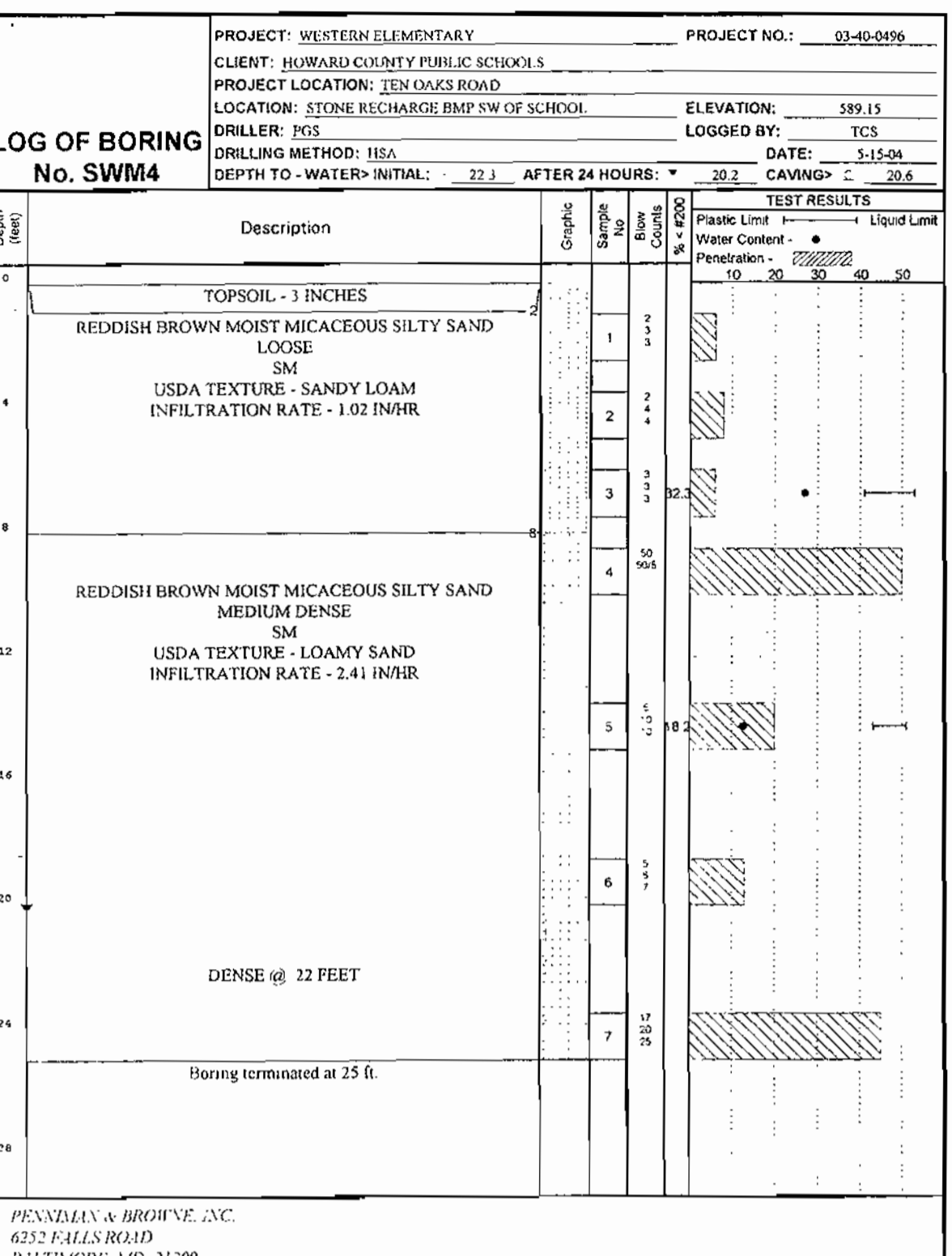
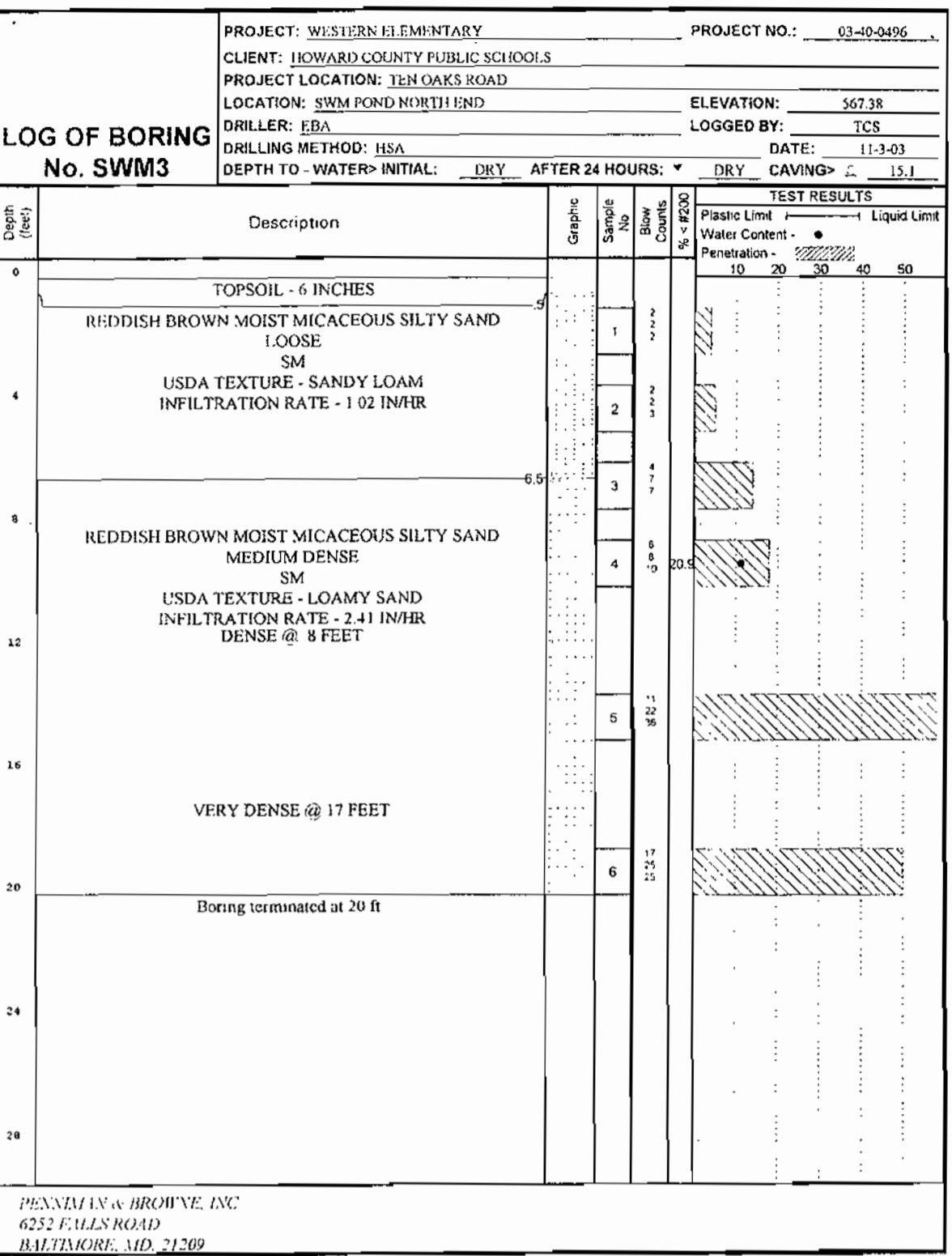
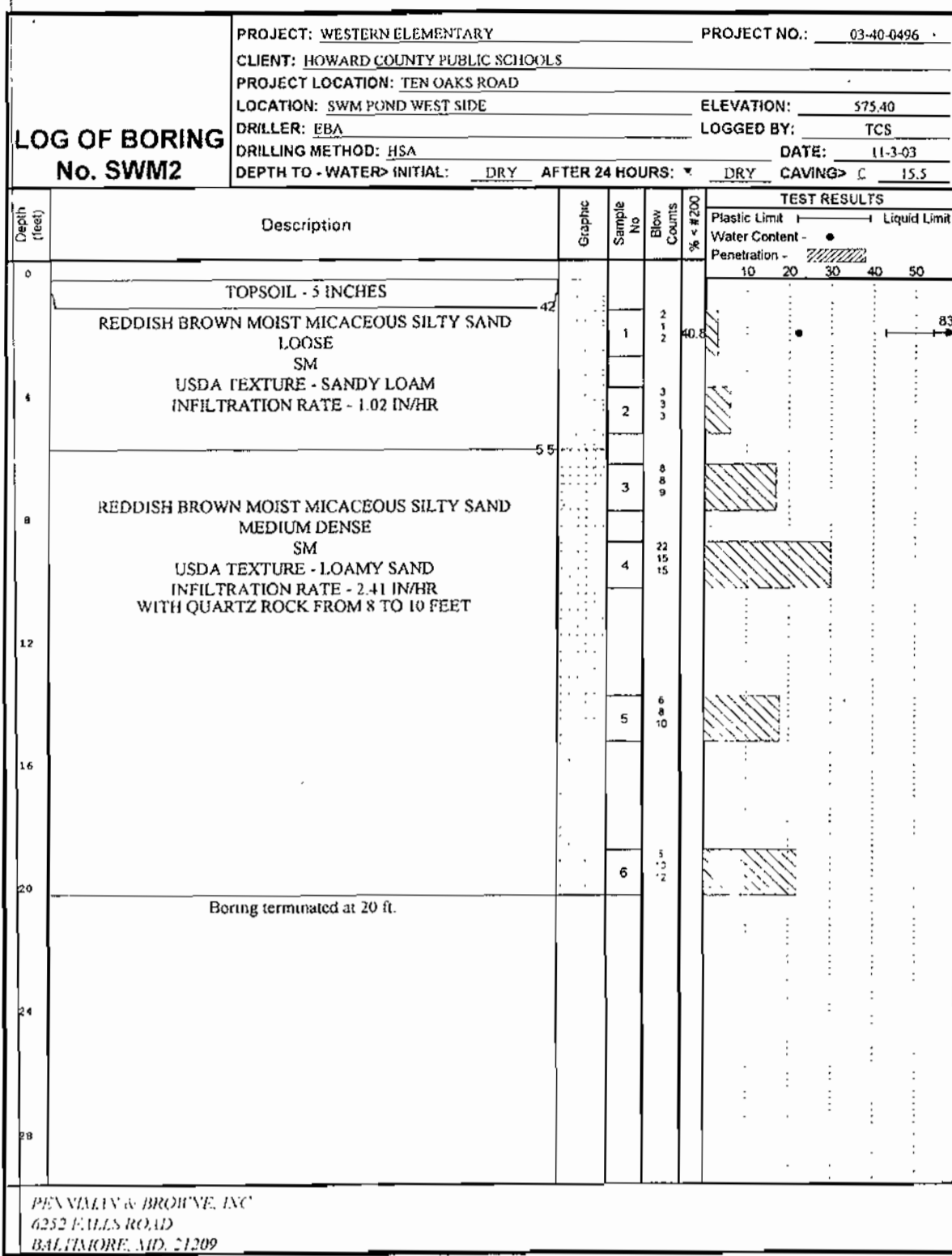
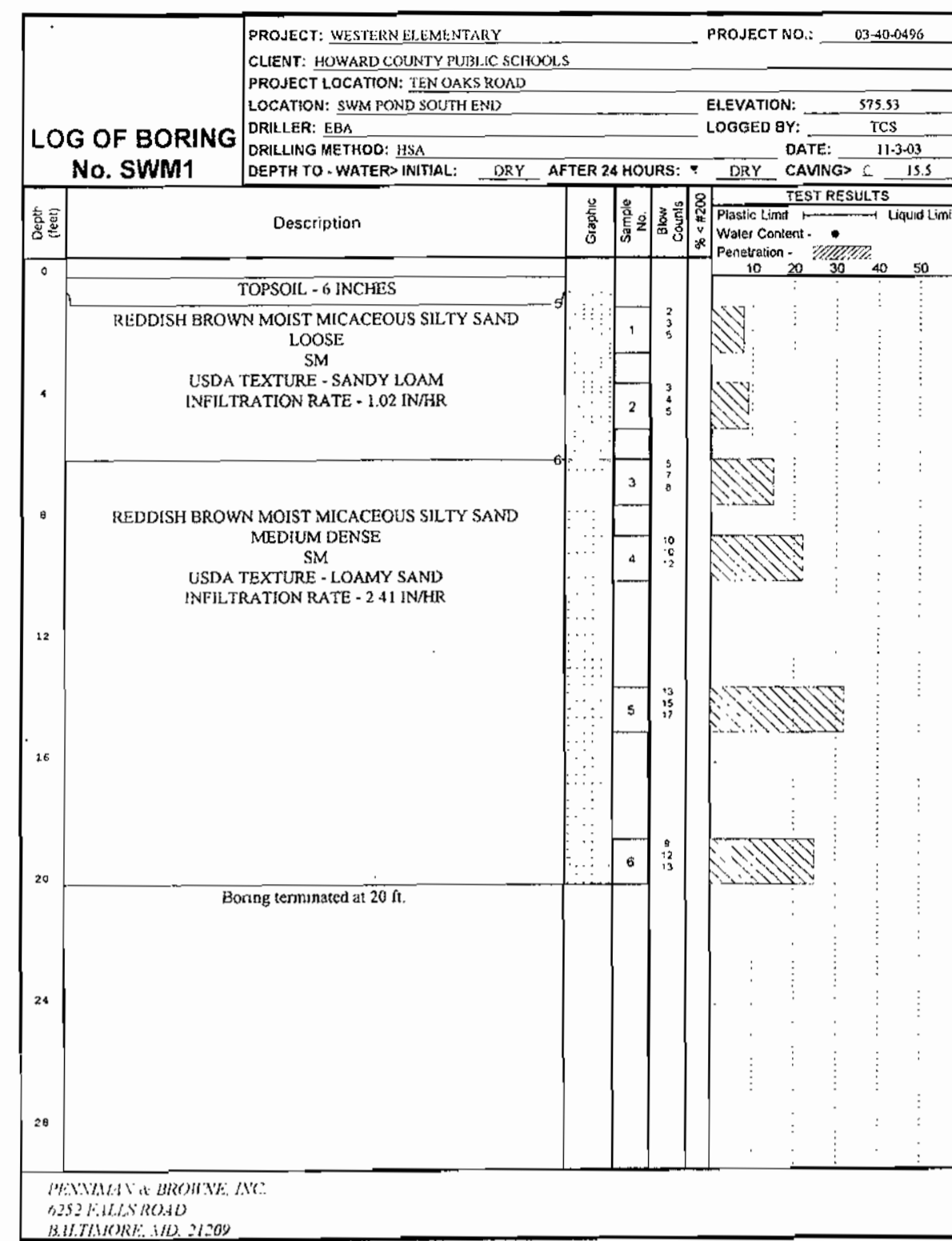
TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

Address Chart					
Parcel Number	Street Address				
P. 35	LOT 1 4691 TEN OAKS ROAD				
	LOT 2 4671 TEN OAKS ROAD				
PROJECT	SECTION/AREA	PARCEL			
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35			
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	8	RR-DEC	2B	FIFTH	6051.01
WATER CODE	SEWER CODE				
N/A	N/A				

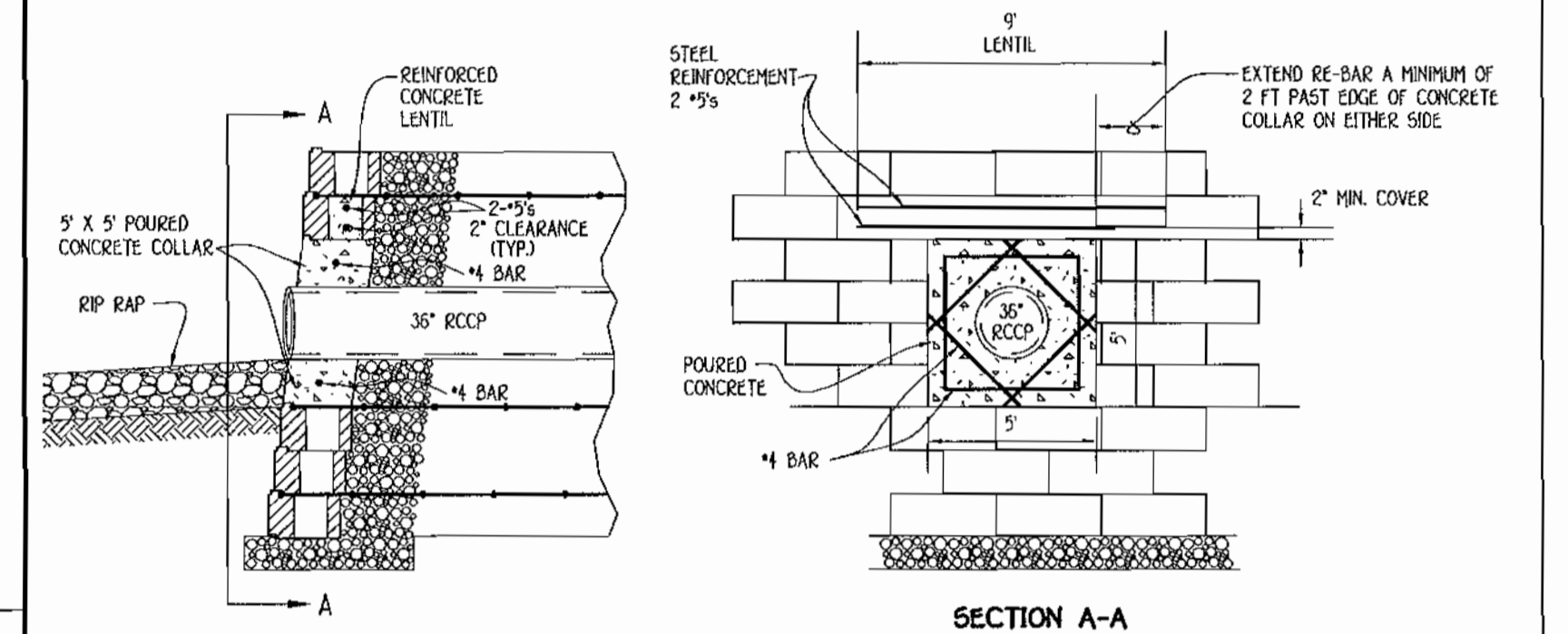
RETAINING WALL-CROSS SECTIONS

WESTERN ELEMENTARY SCHOOL AND PARK
LOTS 1 AND 2

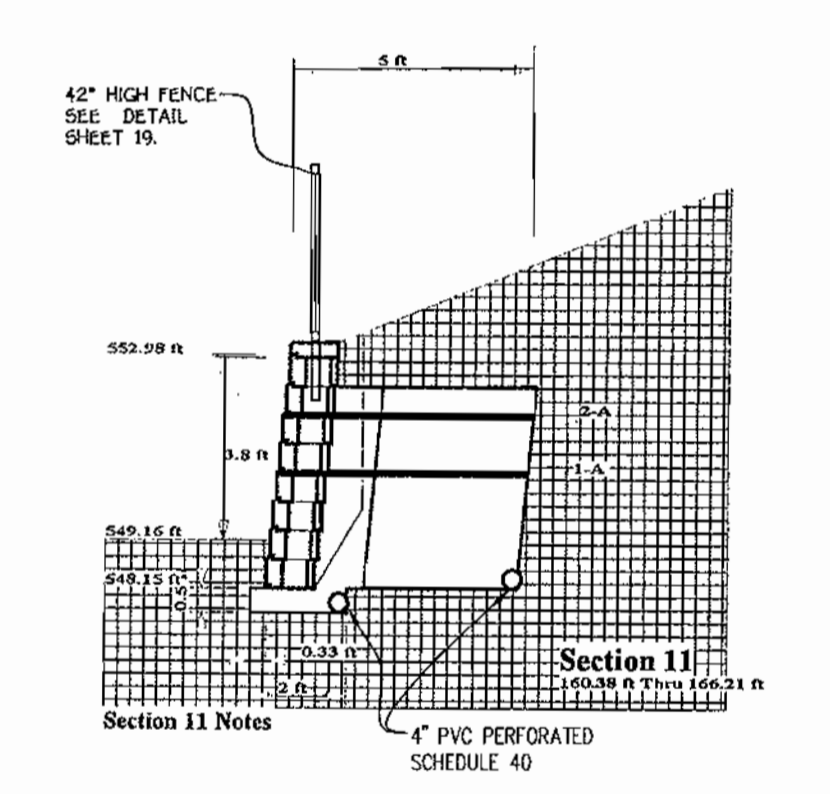
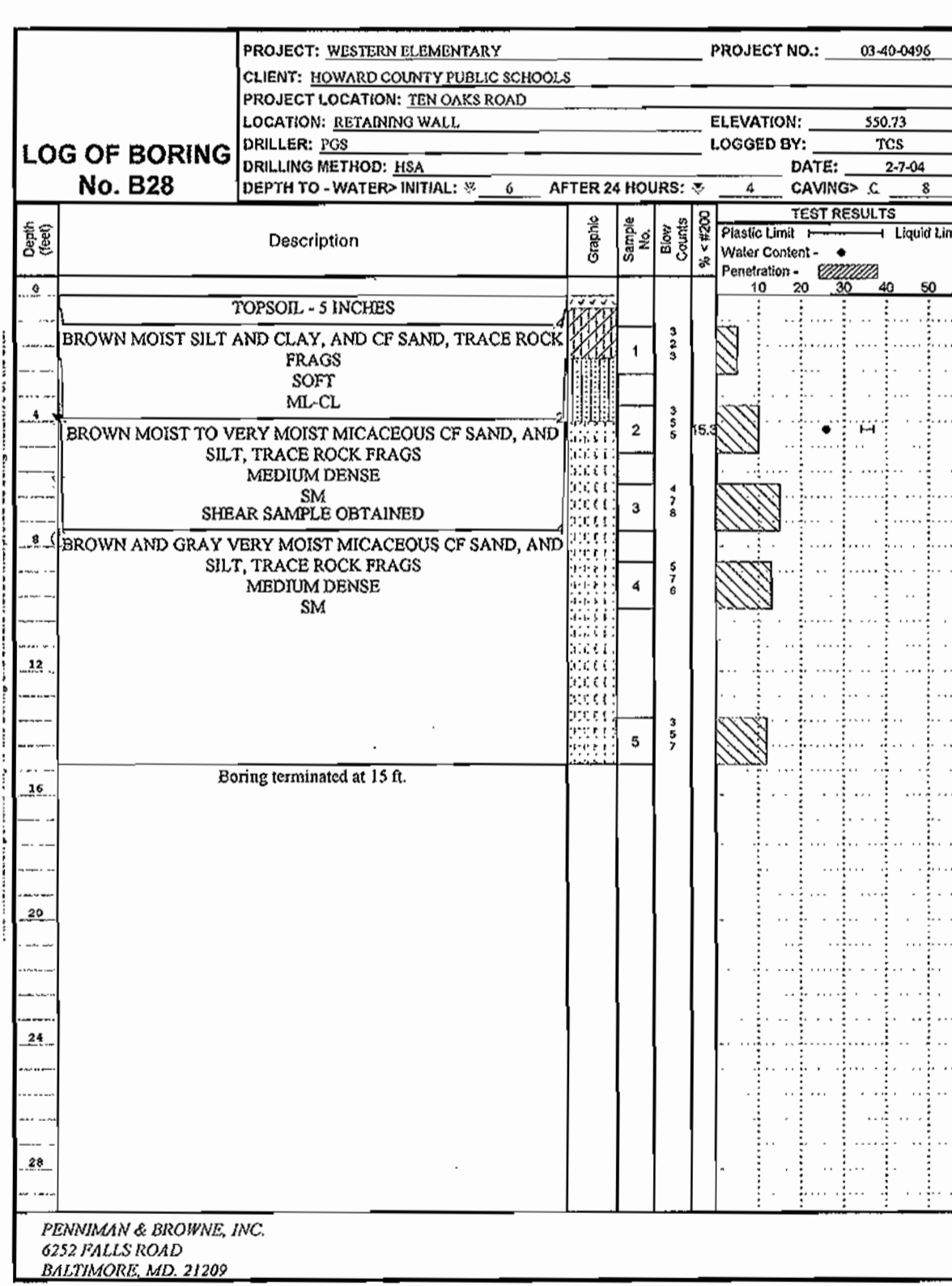
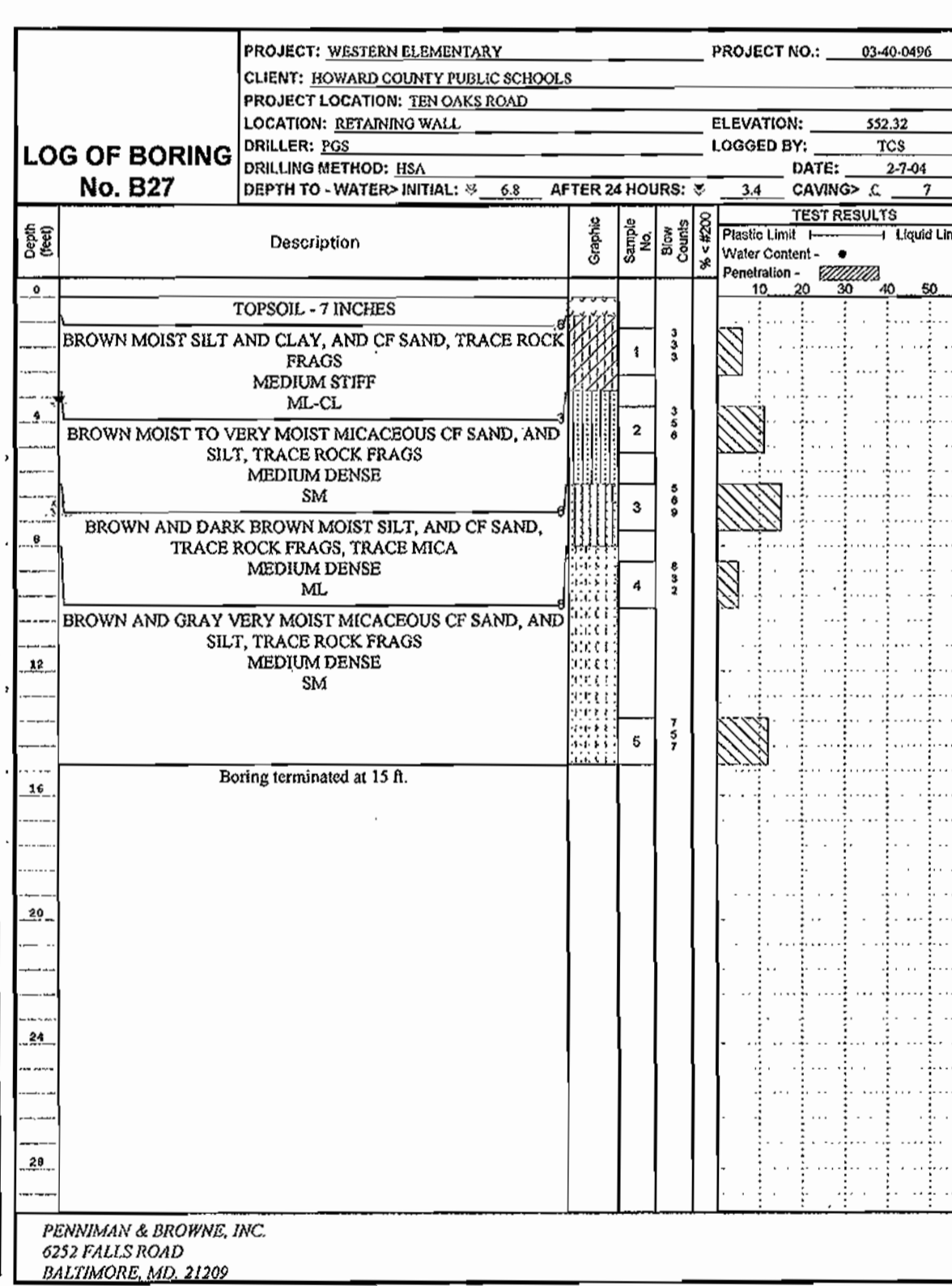
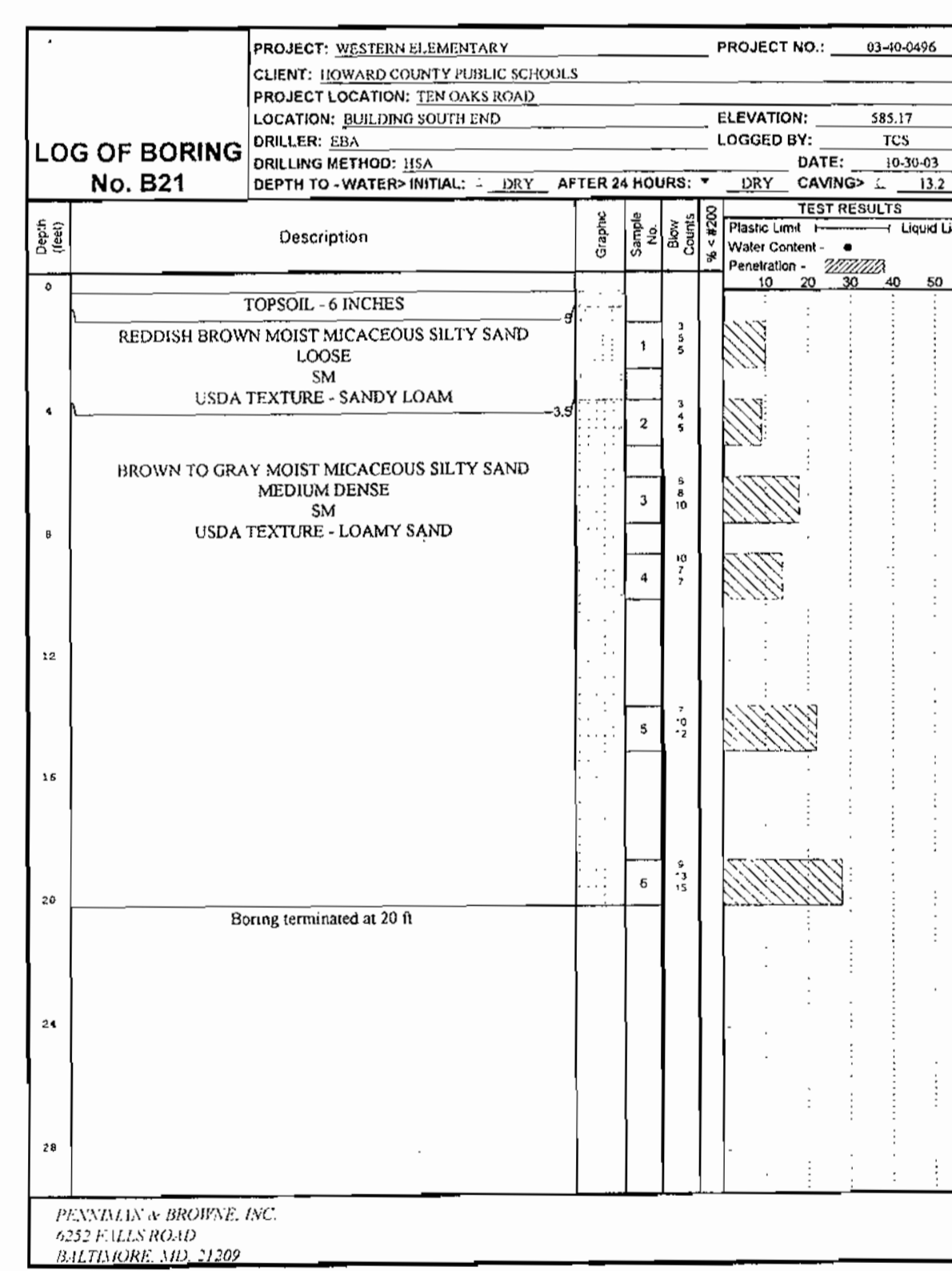
TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW: 12 NOVEMBER 04
BID AND CONSTRUCTION
4 JANUARY 05
SHEET 20 OF 28



- NOTES
- RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
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 - NO TREES SHALL BE PLACED WITHIN 10 FEET OF THE TOP OF RETAINING WALL.



36" RCCP DETAIL • RETAINING WALL (SWM-1)
 NOT TO SCALE



AB Classic

Total Wall Height = 4.83 Feet
 Block Height = 0.604 Feet
 Angle of Setback = 6 Deg.
 Depth of Block = 1 Foot
 Length of Block = 1.458 Feet

Infill Soil	Retained Soil
Friction Angle = 30 Deg.	Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF

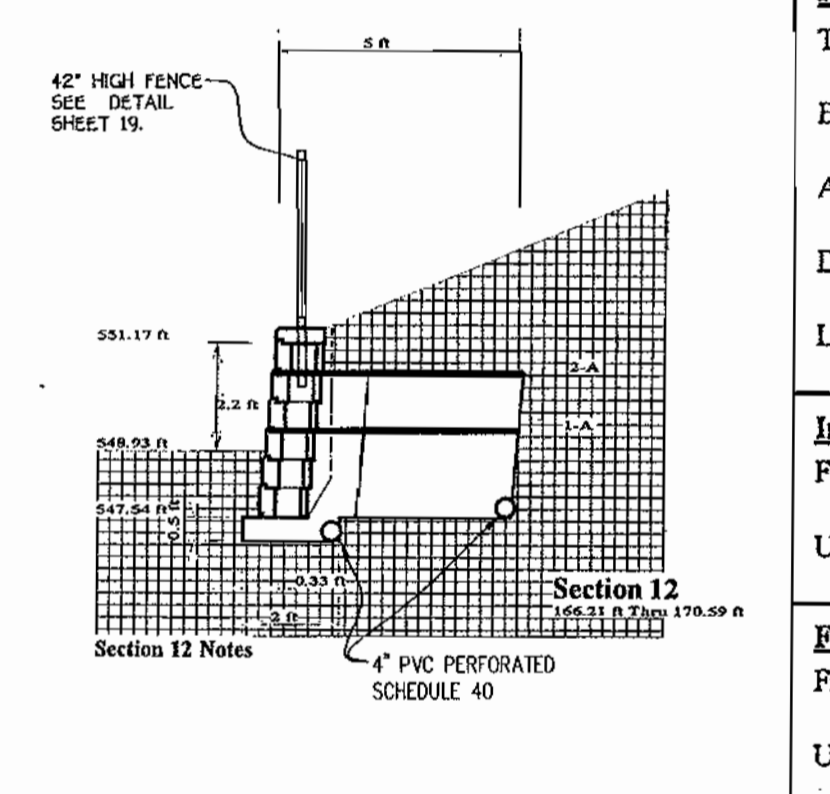
Foundation Soil
 Friction Angle = 30 Deg. Cohesion = 0 PSF
 Unit Weight = 115 PCF

Bearing Capacity
 Factor of Safety = 6.19

Safety Factors Static
 Actual Sliding = 2.466
 Actual Overturning = 6.297

Safety Factors Seismic
 Actual Sliding = N.A.
 Actual Overturning = N.A.

Geogrid Legend
 A-Miragrid 5XT
 B-Miragrid 7XT
 C-Miragrid 8XT
 g-Grouted Con.
 Min. Length of Geogrid = 5 Feet



AB Classic

Total Wall Height = 3.62 Feet
 Block Height = 0.604 Feet
 Angle of Setback = 6 Deg.
 Depth of Block = 1 Foot
 Length of Block = 1.458 Feet

Infill Soil	Retained Soil
Friction Angle = 30 Deg.	Friction Angle = 30 Deg.
Unit Weight = 115 PCF	Unit Weight = 115 PCF

Foundation Soil
 Friction Angle = 30 Deg. Cohesion = 0 PSF
 Unit Weight = 115 PCF

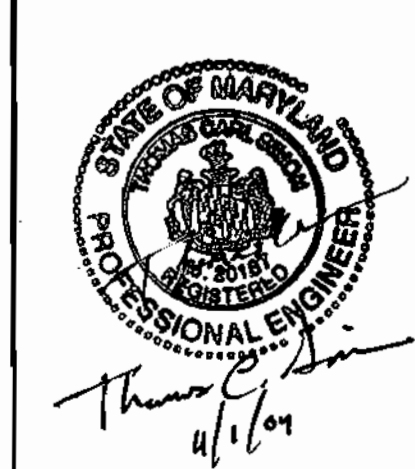
Bearing Capacity
 Factor of Safety = 8.46

Safety Factors Static
 Actual Sliding = 2.864
 Actual Overturning = 8.83

Safety Factors Seismic
 Actual Sliding = N.A.
 Actual Overturning = N.A.

Geogrid Legend
 A-Miragrid 5XT
 B-Miragrid 7XT
 C-Miragrid 8XT
 g-Grouted Con.
 Min. Length of Geogrid = 5 Feet

PENNIMAN & BROWNE, INC.
 6252 FALLS ROAD
 P.O. BOX 65309
 BALTIMORE, MARYLAND 21209-0509



APPROVED: DEPARTMENT OF PLANNING AND ZONING

David K. Goulet
 Director - Department of Planning and Zoning
 4/14/05

Andy Hamblett
 Chief, Division of Land Development
 4/13/05

Robert J. Walen
 Chief, Development Engineering Division
 4/14/05

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Walen
 HOWARD COUNTY HEALTH OFFICER JMB
 4/14/05

PREPARED FOR:
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 10910 Maryland Route 108
 Ellicott City, Maryland 21042
 Attention: Bruce Gist
 410-313-6790

TCA ARCHITECTS
 2651 RIVA ROAD, SUITE 120
 ANNAPOLIS, MARYLAND 21401
 (301) 261-6700

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35

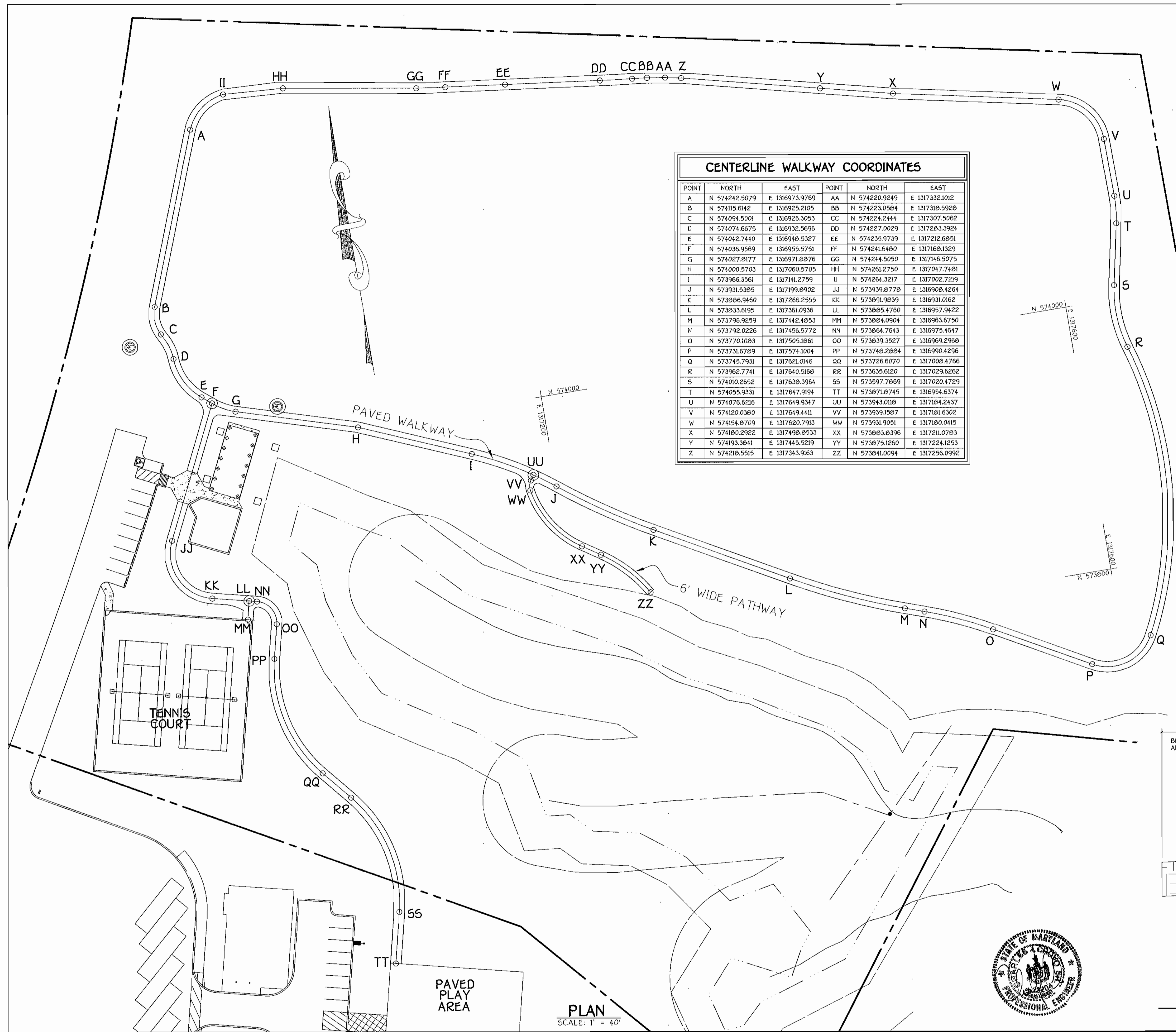
PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794 - 16796	0	RR-DEO	20	FIFTH	6051.01

WATER CODE: N/A
 SEWER CODE: N/A

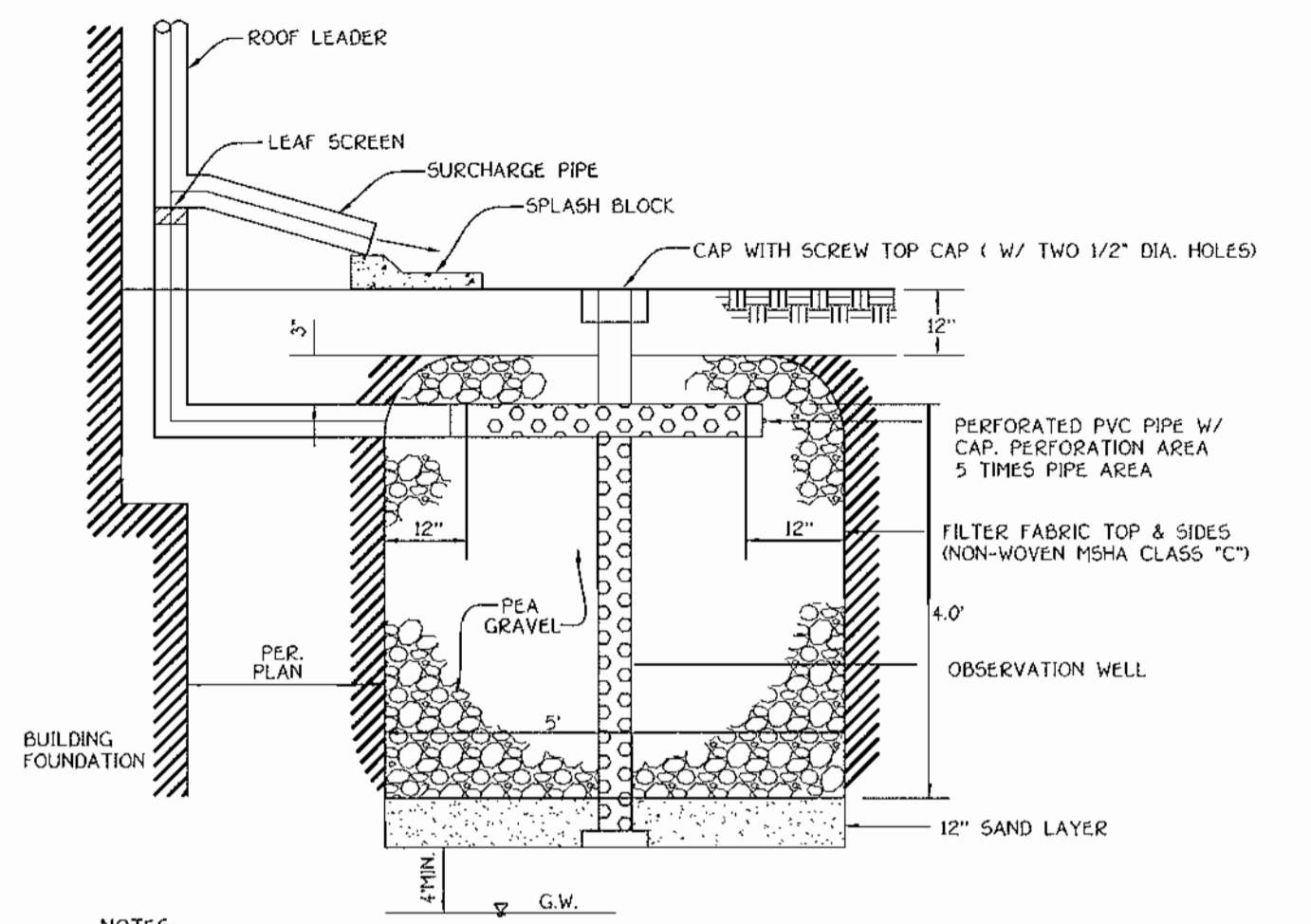
SOIL BORING PROFILES & RETAINING WALL CROSS SECTIONS

WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No.: 20 GRID No.: 0 PARCEL No.: 35
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: OCT. 7, 2004
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 "BID AND CONSTRUCTION"
 4 JANUARY 05
 SHEET 21 OF 28

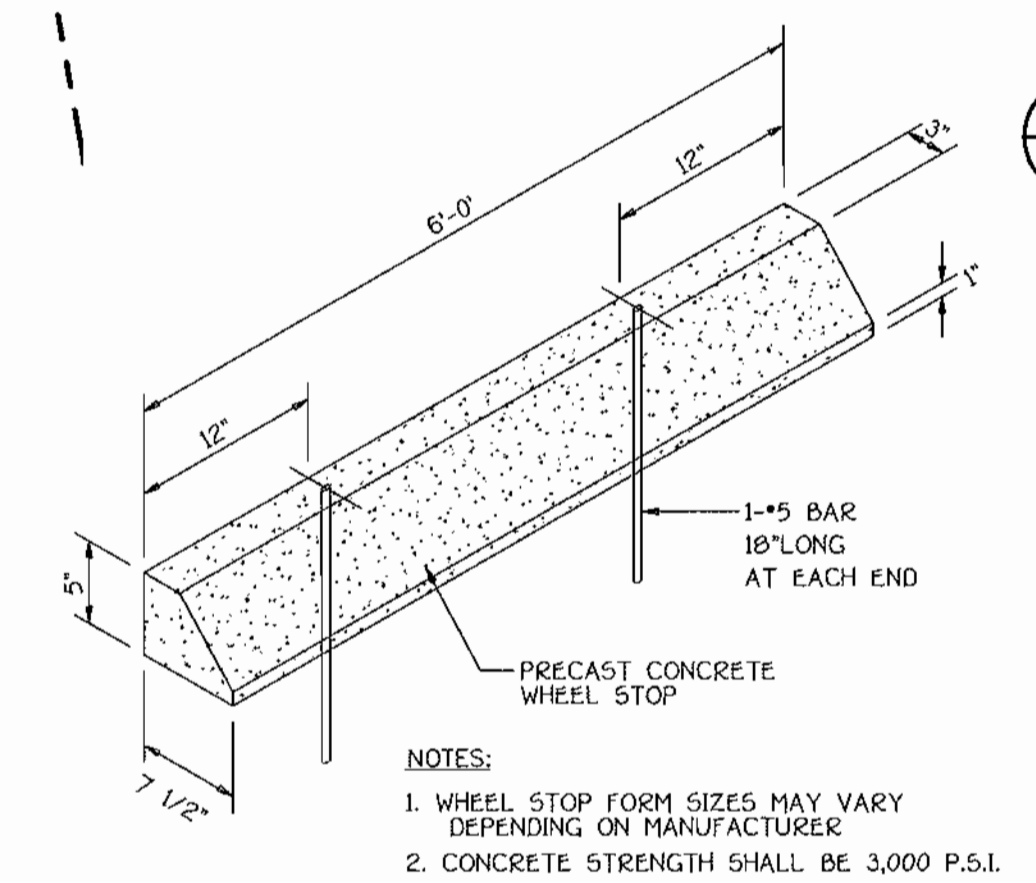


CENTERLINE WALKWAY COORDINATES					
POINT	NORTH	EAST	POINT	NORTH	EAST
A	N 574242.5079	E 1316973.9769	AA	N 574220.9249	E 1317332.1012
B	N 574115.6142	E 1316925.2105	BB	N 574223.0504	E 1317318.5928
C	N 574094.5001	E 1316925.3053	CC	N 574224.2444	E 1317307.5062
D	N 574074.6675	E 1316932.5696	DD	N 574227.0029	E 1317283.3924
E	N 574042.7440	E 1316948.5327	EE	N 574235.9739	E 1317212.6851
F	N 574036.9569	E 1316955.5791	FF	N 574241.6480	E 1317168.1329
G	N 574027.8177	E 1316971.8876	GG	N 574244.5050	E 1317146.5075
H	N 574000.5703	E 1317060.5705	HH	N 574261.2750	E 1317047.7481
I	N 573966.3561	E 1317141.2759	II	N 574264.3217	E 1317002.7219
J	N 573931.5305	E 1317199.8902	JJ	N 573939.8778	E 1316908.4264
K	N 573886.9460	E 1317266.2555	KK	N 573891.9839	E 1316931.0162
L	N 573833.6195	E 1317361.0936	LL	N 573885.4760	E 1316957.9422
M	N 573796.9259	E 1317442.4853	MM	N 573884.0904	E 1316963.6750
N	N 573792.0226	E 1317456.5772	NN	N 573864.7643	E 1316975.4647
O	N 573770.1083	E 1317505.1861	OO	N 573839.3527	E 1316969.2968
P	N 573731.6789	E 1317574.1004	PP	N 573748.2884	E 1316990.4296
Q	N 573745.7931	E 1317621.0146	QQ	N 573726.6070	E 1317008.4766
R	N 573962.7741	E 1317640.5168	RR	N 573635.6120	E 1317029.6262
S	N 574016.2552	E 1317638.3964	SS	N 573597.7959	E 1317020.4729
T	N 574059.9331	E 1317647.3194	TT	N 573581.8715	E 1316994.6374
U	N 574076.6216	E 1317649.9347	UU	N 573943.0188	E 1317194.2437
V	N 574120.0380	E 1317648.4411	VV	N 573939.1587	E 1317181.6302
W	N 574154.8709	E 1317620.7913	WW	N 573931.9091	E 1317180.0415
X	N 574180.2922	E 1317498.8533	XX	N 573883.8396	E 1317211.0783
Y	N 574193.3841	E 1317445.5219	YY	N 573875.1260	E 1317224.1253
Z	N 574218.5915	E 1317343.9163	ZZ	N 573841.0094	E 1317258.0992



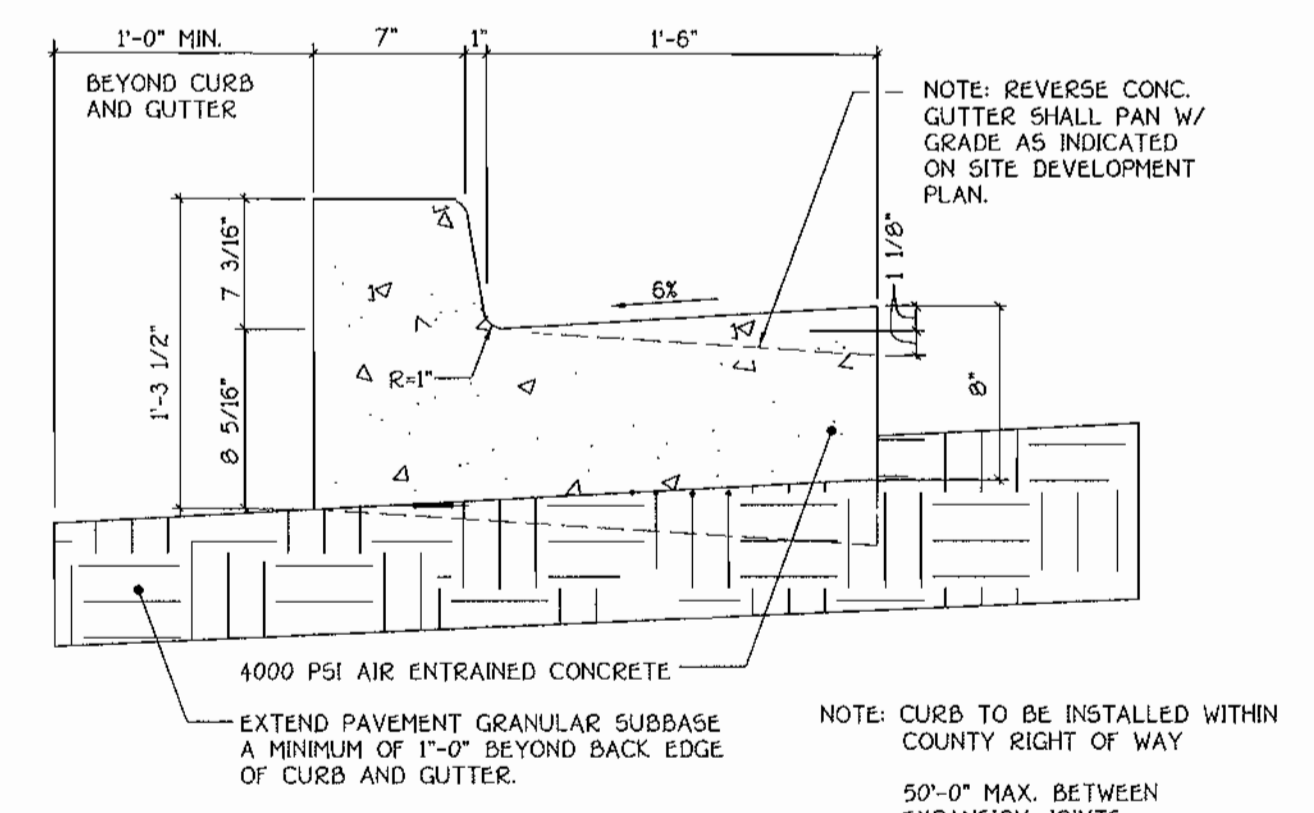
- NOTES:
- PLACE FOUR (4) DRY WELL AROUND PAVILION AS SHOWN ON PLAT
 - ALL CONSTRUCTION SHALL MEET SPECIFICATIONS OUTLINED BELOW AND IN APPLICABLE SECTIONS OF MDE'S 2000 STORMWATER DESIGN MANUAL AND HOWARD COUNTY STANDARDS & SPECIFICATIONS.
 - DRY WELL WALLS (SOIL) SHALL BE SCARIFIED TO REMOVED "SEALED" AREA CAUSE BY EXCAVATION SUCKET
 - GEOTEXTILE SHALL BE HIRAFI 140N OR APPROVED EQUAL.
 - SAND SHALL MEET ASTM C-33 FOR CONCRETE SAND AND SHALL BE CLEAN AND FREE OF DIRT & DEBRIS.
 - AGGREGATE FILL SHALL BE 3/4" STONE OR FEA GRAVEL OF UNIFORMLY SIZE STONE ALL SAME SIZE 1" AND SHALL BE CLEAN AND FREE OF DIRT & DEBRIS.
 - EXTEND PERFORATED PIPE INTO AGGREGATE ACROSS WIDTH OF DRY WELL WITH CAPPED END APPROXIMATELY 6" FROM EDGE OF WELL.
 - PVC SHALL BE SCHEDULE 40.
 - OBSERVATION WELL CAP SHALL HAVE TWO (2) 1/2" HOLES TO ALLOW AIR TO ESCAPE.

1 22 DETAIL - DRY WELL FOR PAVILION
NOT TO SCALE



- NOTES:
- WHEEL STOP FORM SIZES MAY VARY DEPENDING ON MANUFACTURER.
 - CONCRETE STRENGTH SHALL BE 3,000 P.S.I.

3 22 WHEEL STOP DETAIL
NO SCALE



- NOTE: REVERSE CONC. GUTTER SHALL PAN W/ GRADE AS INDICATED ON SITE DEVELOPMENT PLAN.
- NOTE: CURB TO BE INSTALLED WITHIN COUNTY RIGHT OF WAY
- 50'-0" MAX. BETWEEN EXPANSION JOINTS
- 10'-0" MAX. BETWEEN CONTROL JOINTS
- EXTEND PAVEMENT GRANULAR SUBBASE A MINIMUM OF 1'-0" BEYOND BACK EDGE OF CURB AND GUTTER.

4 22 CONCRETE CURB AND GUTTER DETAIL
NO SCALE

CENTERLINE WALKWAY DATA				
PT. TO PT.	BEARING AND DISTANCE	RADIUS	ARC LENGTH	LOCATION
A TO B	N 21°02'20" E, 135.94'			CIRCULAR WALK
B TO C		26.00'R	21.77'	CIRCULAR WALK
C TO D		34.25'R	15.38'	CIRCULAR WALK
D TO E		44.00'R	36.75'	CIRCULAR WALK
E TO F	N 50°29'43" W, 7.87'			AT INT. SEC.
F TO G		45.99'R	20.09'	CIRCULAR WALK
G TO H	N 72°55'15" W, 92.77'			CIRCULAR WALK
H TO J	N 67°01'34" W, 87.66'			CIRCULAR WALK
I TO J		253.21'R	68.38'	CIRCULAR WALK
J TO K		504.00'R	80.04'	CIRCULAR WALK
K TO L	N 60°39'05" W, 108.80'			CIRCULAR WALK
L TO M		504.00'R	89.40'	CIRCULAR WALK
M TO N	N 70°48'52" W, 14.92'			CIRCULAR WALK
N TO O		301.00'R	53.39'	CIRCULAR WALK
O TO P	N 60°51'15" W, 78.91'			CIRCULAR WALK
P TO Q		34.00'R	54.70'	CIRCULAR WALK
Q TO R		290.43'R	223.32'	CIRCULAR WALK
R TO S		96.00'R	48.04'	CIRCULAR WALK
S TO T	S 11°46'44" W, 46.65'			CIRCULAR WALK
T TO U		96.00'R	20.83'	CIRCULAR WALK
U TO V	S 00°39'09" E, 43.42'			CIRCULAR WALK
V TO W		36.00'R	48.74'	CIRCULAR WALK
W TO X	N 78°13'26" W, 124.58'			CIRCULAR WALK
X TO Y	N 78°12'27" W, 54.91'			CIRCULAR WALK
Y TO Z	N 78°09'17" W, 104.68'			CIRCULAR WALK
Z TO AA	N 78°38'31" W, 12.05'			CIRCULAR WALK
AA TO BB	N 81°01'29" W, 13.68'			CIRCULAR WALK
BB TO CC	N 83°53'39" E, 11.15'			CIRCULAR WALK
CC TO DD		986.73'R	24.27'	CIRCULAR WALK
DD TO EE	N 82°46'09" W, 71.27'			CIRCULAR WALK
EE TO FF	N 82°44'31" W, 44.91'			CIRCULAR WALK
FF TO GG		296.04'R	21.82'	CIRCULAR WALK
GG TO HH	N 80°21'46" E, 100.17'			CIRCULAR WALK
HH TO II	N 86°07'44" E, 45.15'			CIRCULAR WALK
II TO AA		35.85'R	37.68'	CIRCULAR WALK
F TO JJ	N 25°54'16" E, 107.32'			LINEAR WALK
JJ TO KK		34.00'R	60.70'	LINEAR WALK
KK TO LL	N 76°24'45" W, 27.71'			LINEAR WALK
LL TO MM	S 13°39'24" W, 14.00'			AT TENNIS COURT ENTRANCE
LL TO NN	N 76°24'45" E, 5.89'			LINEAR WALK
NN TO OO		16.00'R	25.15'	LINEAR WALK
OO TO PP	N 13°38'35" E, 26.15'			LINEAR WALK
PP TO QQ		104.00'R	95.96'	LINEAR WALK
QQ TO RR	N 39°45'23" W, 28.21'			LINEAR WALK
RR TO SS		104.00'R	95.89'	LINEAR WALK
SS TO TT	N 13°35'13" E, 38.92'			AT PAVED PLAY AREA
UU TO VV	N 34°08'56" E, 4.56'			LINEAR WALK
VV TO WW		10.00'R	7.61'	LINEAR WALK
WW TO XX		72.00'R	58.84'	LINEAR WALK
XX TO YY	N 56°15'45" W, 15.69'			LINEAR WALK
YY TO ZZ		103.00'R	47.17'	LINEAR WALK

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 481 - 2855

APPROVED: DEPARTMENT OF PLANNING AND ZONING

David S. Wyle 4/14/05
Director - Department of Planning and Zoning

Cindy Hamilton 4/14/05
Chief, Division of Land Development

Robert J. Weber 4/14/05
COUNTY HEALTH OFFICER JMS

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention: Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(301) 261-8700

John D. Williams 4/14/05
Chief, Development Engineering Division

Address Chart	
Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35

PLAT REF.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
16794-16796	8	RR-DEO	28	FIFTH	6051.01

WATER CODE	SEWER CODE
N/A	N/A

WALKWAY GEOMETRY AND DETAILS

WESTERN ELEMENTARY SCHOOL AND PARK
LOTS 1 AND 2

TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40'
DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION 4 JANUARY 05"

SHEET 22 OF 28



SOILS LEGEND		
SOIL	NAME	CLASS
CoB2	Chester gravelly silt loam, 3 to 8 percent slopes, moderately eroded	B
CoC2	Chester gravelly silt loam, 8 to 15 percent slopes, moderately eroded	B
ChB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	B
ChC2	Chester silt loam, 8 to 15 percent slopes, moderately eroded	B
GK2	Glenora loam, 8 to 15 percent slopes, moderately eroded	B
GrB2	Clermont silt loam, 3 to 8 percent slopes, moderately eroded	C
Hs	Hagerstown silt loam	D
MpC2	Manor gravelly loam, 8 to 15 percent slopes, moderately eroded	B
MpD2	Manor loam, 15 to 25 percent slopes, moderately eroded	B

NOTES:
 * Hydric soils and/or contains hydric inclusions
 ** May contain hydric inclusions

DRAINAGE AREA DATA				
STRUCTURE NO.	DRAINAGE AREA	AREA	%	ZONED
I-1	A	0.51 AC.	0.24	RR-DEO
I-2	B	0.94 AC.	0.49	RR-DEO
I-3	C	0.45 AC.	0.24	RR-DEO
I-4	D	0.09 AC.	0.04	RR-DEO
I-5	E	0.15 AC.	0.07	RR-DEO
I-6	F	0.53 AC.	0.27	RR-DEO
I-7	G	0.02 AC.	0.01	RR-DEO
I-8	H	0.98 AC.	0.51	RR-DEO
I-9	I	0.11 AC.	0.05	RR-DEO
I-10	J	0.43 AC.	0.22	RR-DEO
I-11	K	0.37 AC.	0.19	RR-DEO
I-12	L	0.94 AC.	0.49	RR-DEO
I-13	M	0.43 AC.	0.22	RR-DEO
I-14	N	0.49 AC.	0.25	RR-DEO
I-15	O	0.88 AC.	0.45	RR-DEO
I-16	U	0.36 AC.	0.18	RR-DEO
S-7	P	2.48 AC.	1.27	RR-DEO
S-9	Q	0.91 AC.	0.47	RR-DEO
TO I-5	R	0.51 AC.	0.26	RR-DEO
EX. 36' D	S	21.75 AC.	11.18	RR-DEO
TO M-4	T	0.80 AC.	0.41	RR-DEO
TO I-4	V	0.39 AC.	0.20	RR-DEO

THIS SHEET NOT FOR CONSTRUCTION

PLAN
SCALE: 1" = 50'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK, 10212 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 468-2855

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Paul A. Joyce 4/11/05
 Director - Department of Planning and Zoning

Cindy Hamilton 4/12/05
 Chief, Division of Land Development

Chris Deamun 4/4/05
 Chief, Development Engineering Division

Robert J. Weber 4/12/05
 COUNTY HEALTH OFFICER JAB

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 10910 Maryland Route 108
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 Attention: Bruce Gist
 410-313-6799

TCA ARCHITECTS
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 ANNAPOLIS, MARYLAND 21401
 (301) 261-8700

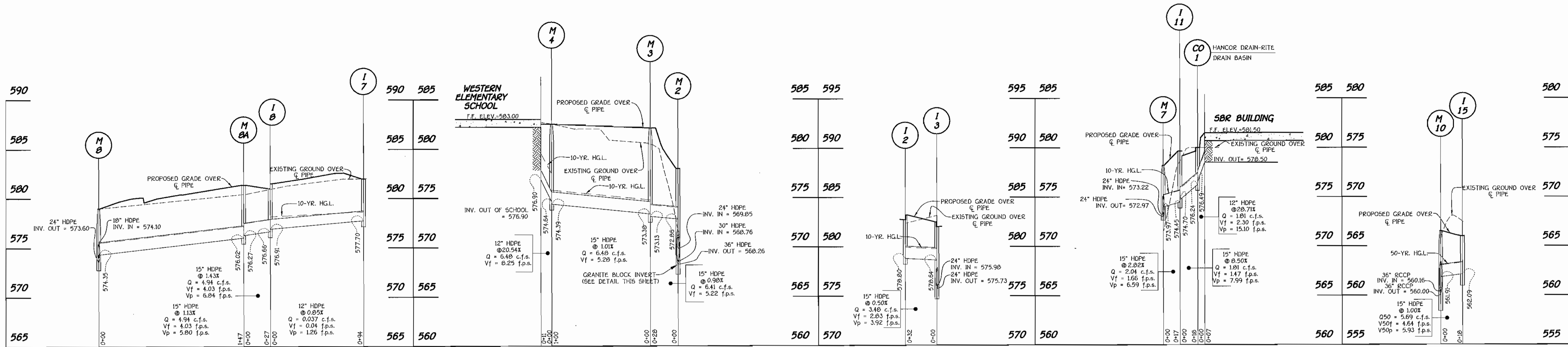
Address Chart	
Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35
PLAT REF.	BLOCK NO.	ZONE
16794 - 16795	8	RR-DEO
TAX/ZONE	ELEC. DIST.	CENSUS TR.
2B	FIFTH	6051.01
WATER CODE	SEWER CODE	
N/A	N/A	

STORM DRAIN DRAINAGE AREA MAP

WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No: 28 GRID No: 8 PARCEL No: 35
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 40'
 DATE: OCT. 7, 2004
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 "BID AND CONSTRUCTION"
 4 JANUARY 05
 SHEET 23 OF 28



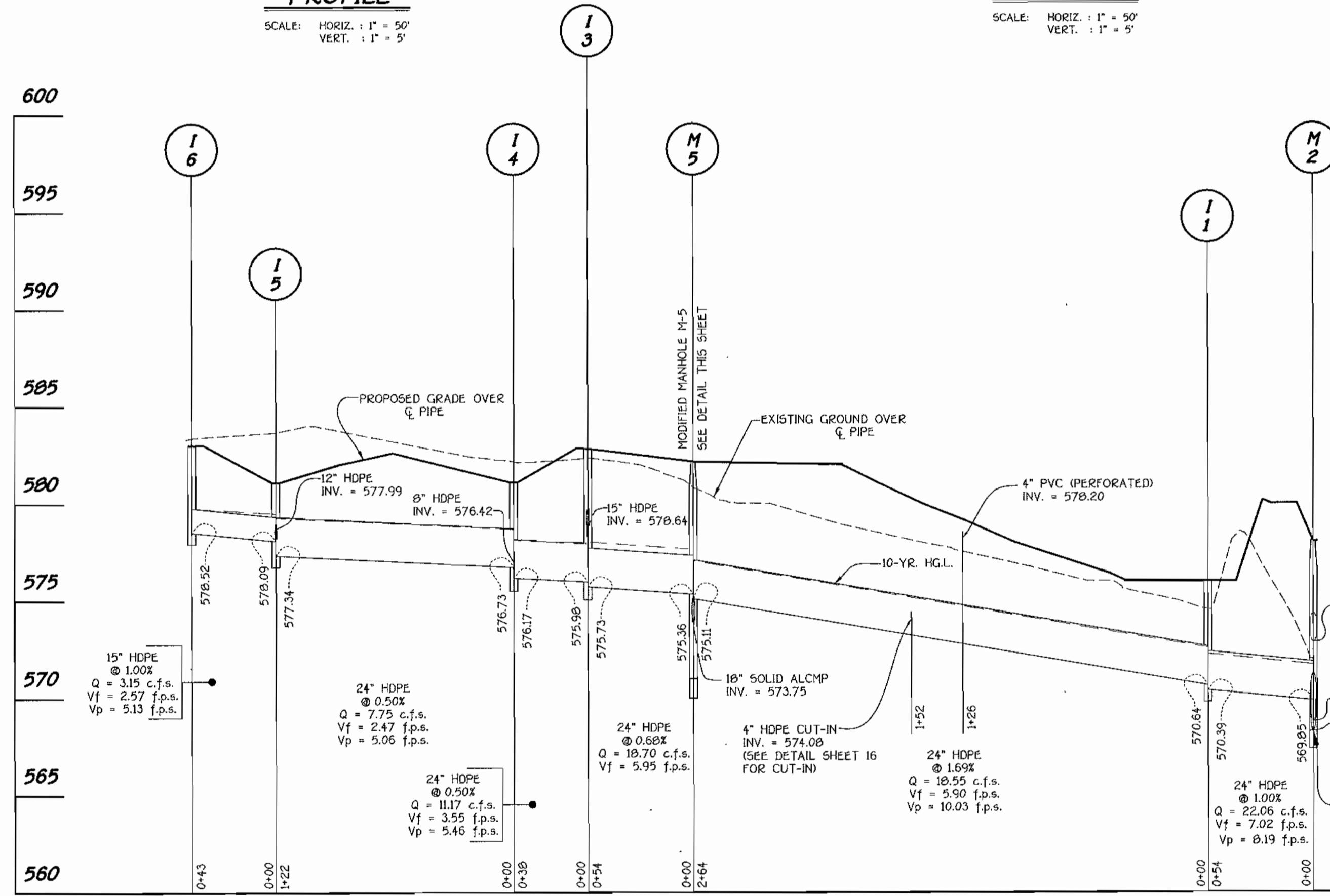
PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

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

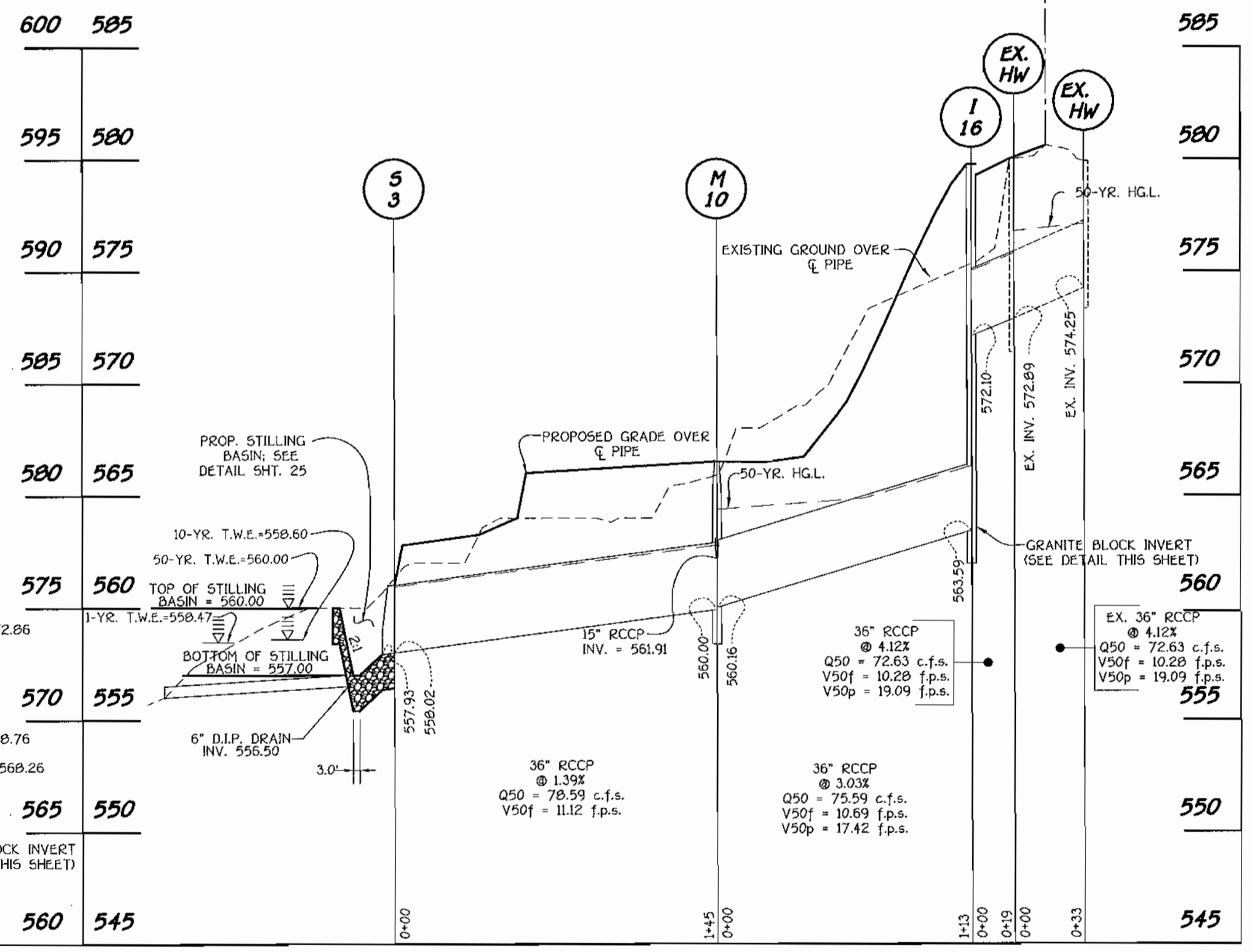
PROFILE
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PROFILE
SCALE: HORIZ. : 1" = 50'
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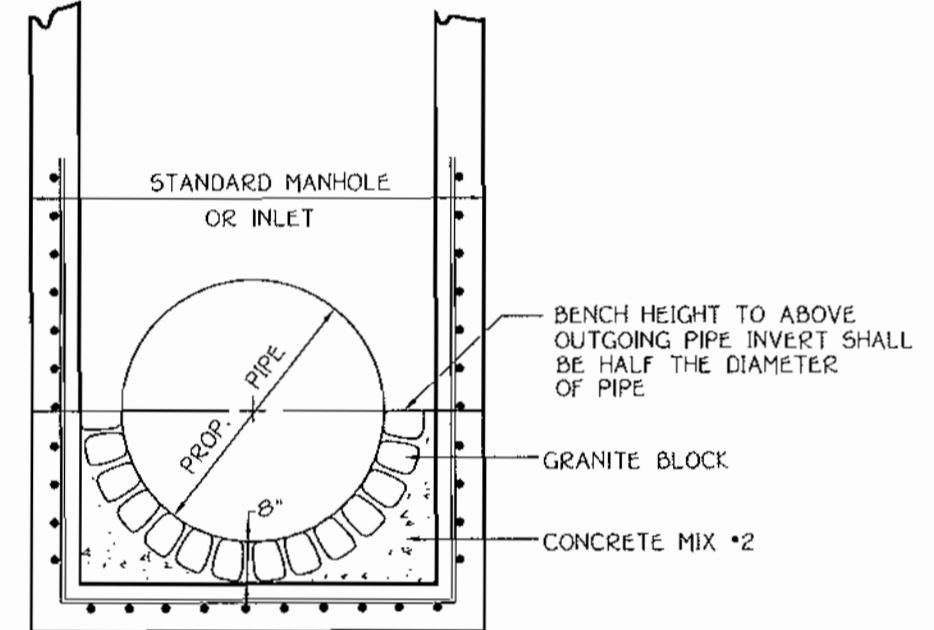
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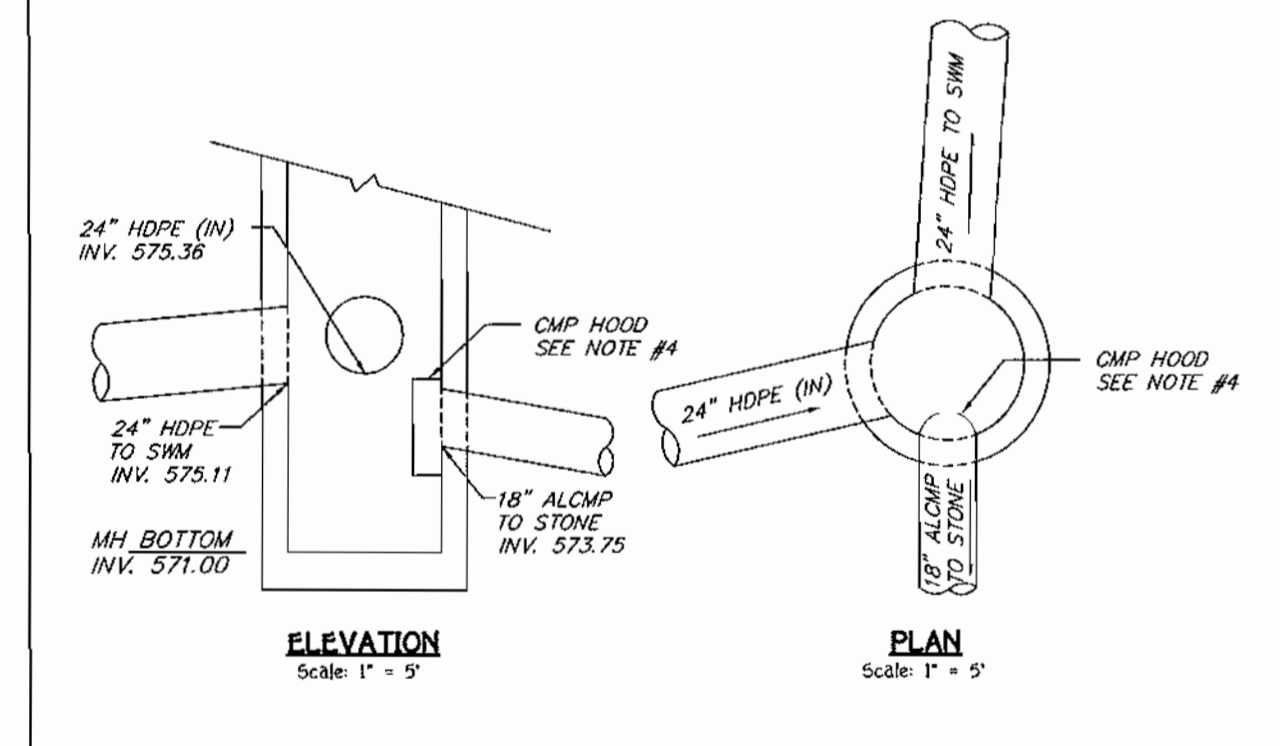
PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



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



GRANITE BLOCK DETAIL
NOT TO SCALE



MANHOLE M-5 DETAIL
SCALE: 1" = 5'

- NOTES:
- This detail shows only the non-standard design. See Howard County Standard Detail C-512 for all other information/detail not shown above.
 - Coat end of outside of ALCHP with 2 coats of zinc chromate prior to grouting annular space between pipe and manhole.
 - Manhole shall have a "catch basin" i.e. flat invert 2" below lowest outfall; no benching shall be installed.
 - Secure (both) a half round 18" ALCHP to the 18" entrance to the recharge pipe draining to the stone storage. The half pipe shall extend 3" above inlet crown and 9" below inlet invert. Place appropriate gasket between half pipe and wall (neoprene, cork, or approved equal).

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1827 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2955



APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robert J. Walz
COUNTY HEALTH OFFICER
DATE: 4/1/05

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Daryl S. Levey
Director - Department of Planning and Zoning
DATE: 4/1/05
Cindy Hamiter
Chief, Division of Land Development
DATE: 4/13/05
Paul D. ...
Chief, Development Engineering Division
DATE: 4/14/05

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TCA ARCHITECTS
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Address Chart	
Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD
PROJECT	
WESTERN ELEMENTARY SCHOOL AND PARK	SECTION/AREA: N/A
PLAT REF. 16794 - 16796	BLOCK NO. 8
WATER CODE N/A	SEWER CODE N/A
	TAX/ZONE: RR-DEO 28
	ELEC. DIST.: FIFTH
	CENSUS TR.: 6051.01

STORM DRAIN PROFILES & DETAILS
WESTERN ELEMENTARY SCHOOL AND PARK
LOTS 1 AND 2
TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION 4 JANUARY 05"
SHEET 24 OF 28

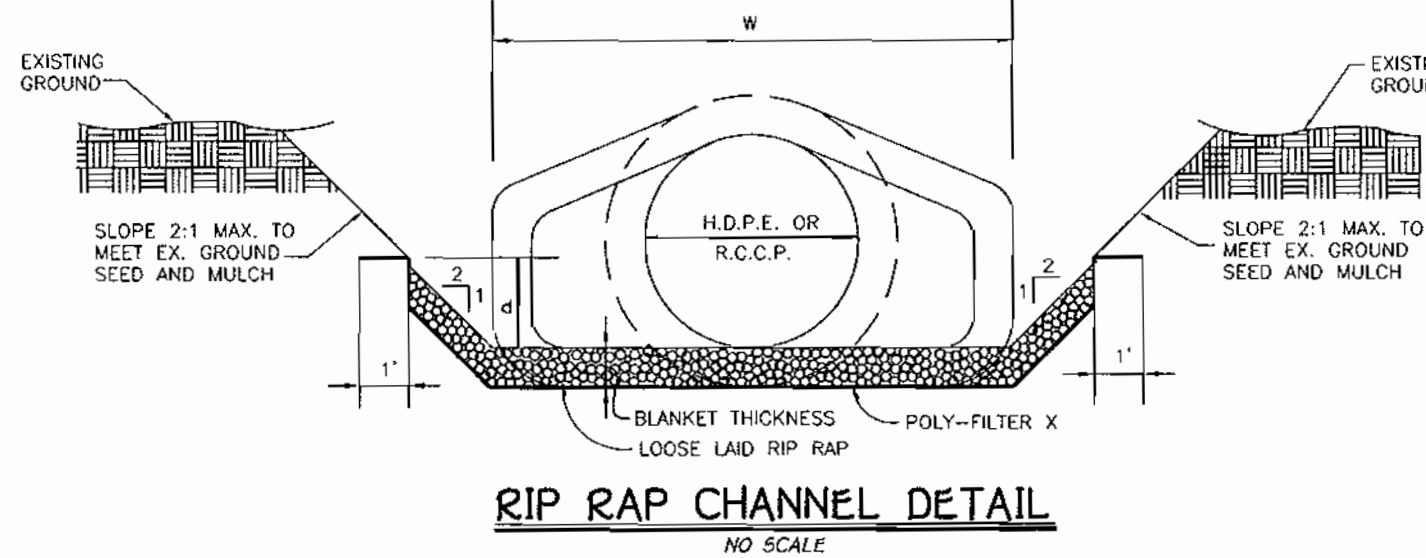
STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION		W	TYPE	REMARKS
				NORTH	EAST			
I-1	574.70	570.64	570.39	N 573076.24	E 1317050.00	3.75	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
I-2	583.32	-----	578.80	* N 573210.68	E 1316765.50	2.5'	A-10	S.D. 4.41
I-3	582.50	575.98, 578.64	575.73	* N 573209.09	E 1316797.48	2.5'	A-10	S.D. 4.41
I-4	581.10	576.73, 576.42	576.17	N 573237.86	E 1316823.36	3.75	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
I-5	581.10	578.09, 577.99	577.34	N 573308.08	E 1316844.40	3.75	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
I-6	583.00	-----	578.52	* N 573381.46	E 1316807.96	2.5'	A-10	S.D. 4.41
I-7	582.00	-----	577.70	N 573442.09	E 1316844.35	3.75	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
I-8	581.58	576.91	576.66	* N 573536.47	E 1316848.62	2.5'	A-10	S.D. 4.41
I-9	579.00	571.55	571.05	N 573516.11	E 1317149.71	3.75	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
I-10	578.00	572.36	572.11	N 573594.44	E 1317069.86	3.75	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
I-11	579.66	574.70	574.45	* N 573656.54	E 1316999.22	2.5'	A-10	S.D. 4.41
I-12	579.00	574.75	574.50	* N 573690.33	E 1316877.20	2.5'	A-10	S.D. 4.41
I-13	581.35	576.85	576.60	* N 573700.97	E 1316812.04	2.5'	A-10	S.D. 4.41
I-14	586.00	-----	581.85	STA. 0+60.50 (TEN OAKS RD.)	341	2.5'	A-10	S.D. 4.41
I-15	566.00	-----	562.09	N 574023.67	E 1316909.77	3.75	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
I-16	579.80	572.10	563.59	* N 574014.48	E 1316810.65	2.5'	A-10	S.D. 4.41
M-1	568.60	555.50	549.10	N 573453.01	E 1317208.87	5'	PRECAST MANHOLE	G. - 5.13
M-1A	566.60	560.00	559.20	N 573357.27	E 1317208.92	5'	PRECAST MANHOLE	G. - 5.13
M-2	578.00	569.85, 572.86, 568.76	568.26	N 573111.28	E 1317089.55	5'	PRECAST MANHOLE	G. - 5.13
M-3	582.10	573.38	573.13	N 573128.36	E 1317067.55	4'	PRECAST MANHOLE	G. - 5.12
M-4	582.50	574.64	574.39	N 573225.94	E 1317091.16	4'	PRECAST MANHOLE	G. - 5.12
M-5	582.20	575.36	575.11, 573.75	N 573155.08	E 1316798.25	4'	PRECAST MANHOLE	MODIFIED, SEE DETAIL SHEET 24
M-6	580.50	570.66	570.46	N 573440.57	E 1317170.50	5'	PRECAST MANHOLE	G. - 5.13
M-7	578.20	573.97, 573.22	572.97	N 573666.60	E 1316972.90	4'	PRECAST MANHOLE	G. - 5.12
M-8	579.00	574.35, 574.10	573.60	N 573690.69	E 1316999.21	4'	PRECAST MANHOLE	G. - 5.12
M-8A	581.38	576.27	576.02	N 573550.54	E 1316827.41	4'	PRECAST MANHOLE	G. - 5.12
M-10	566.50	561.91, 560.16	560.00	N 574043.57	E 1316919.24	5'	PRECAST MANHOLE	G. - 5.13
S-1	565.60	-----	-----	N 574050.20	E 1316959.67	N/A	MODIFIED TYPE 'C' ENDWALL	SEE DETAIL SHEET 17
S-2	571.02	568.02	568.00	N 573099.79	E 1317136.80	N/A	30" HDPE END SECTION	** SEE ADS INFO BELOW
S-3	561.02	558.02	557.93	N 573979.60	E 1317054.21	N/A	36" CONC. END SECTION	SD. - 5.52
S-4	563.90	-----	562.90	N 573885.04	E 1316982.85	N/A	MITERED 12" HDPE	-----
S-5	564.90	563.90	-----	N 573867.28	E 1316986.67	N/A	MITERED 12" HDPE	-----
S-6	556.05	-----	554.80	N 573891.81	E 1317166.61	N/A	MITERED 15" HDPE	-----
S-7	556.95	555.70	-----	N 573983.36	E 1317133.05	N/A	MITERED 15" HDPE	-----
R-1	570.00	-----	561.00	N 573294.76	E 1317194.15	N/A	PRECAST CONC. RISER	-----

* - DENOTES CENTER OF INLET AT FACE OF CURB
 ** - CONTACT ADS DRAINAGE SYSTEMS LONDON, OHIO 1-800-733-9554

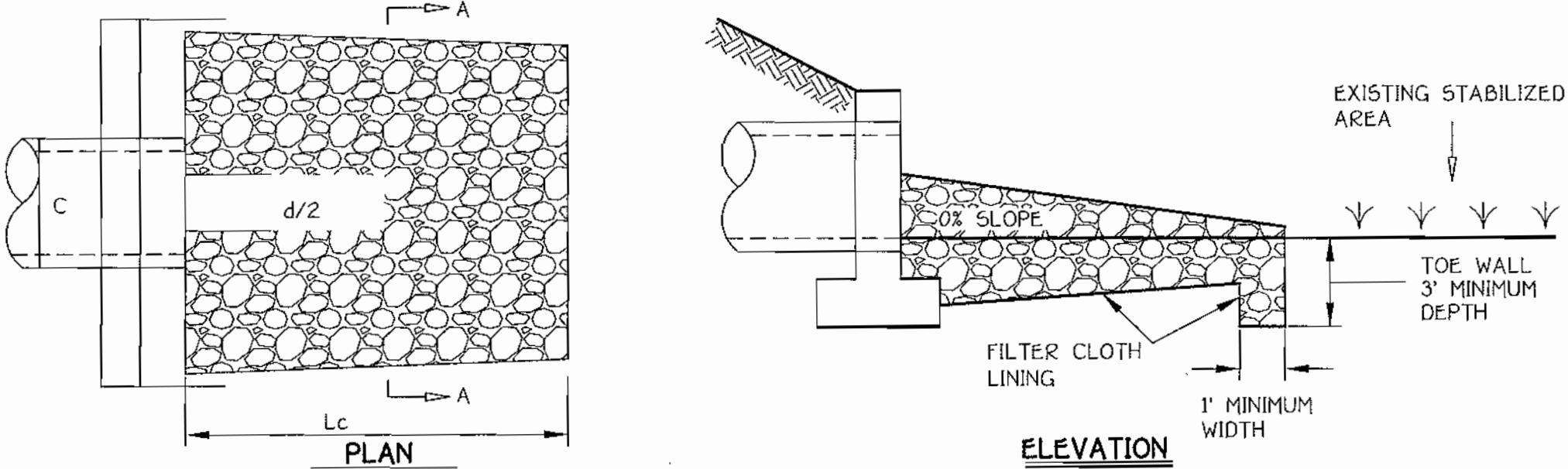
PIPE SCHEDULE

SIZE	CLASS	LENGTH
8"	HDPE	16'
10"	HDPE	23'
12"	HDPE	138'
15"	HDPE	752'
18"	HDPE	20'
24"	HDPE	842'
30"	HDPE	418'
36"	HDPE	47'
36"	RCCP	437'
4"	PVC SCHEDULE 40	14'
4"	PERF. PVC SCHEDULE 40	446'
6"	PVC SCHEDULE 40	103'
10"	PERF. ALCMP	144'
18"	ALCMP	11'
18"	PERF. ALCMP	69'



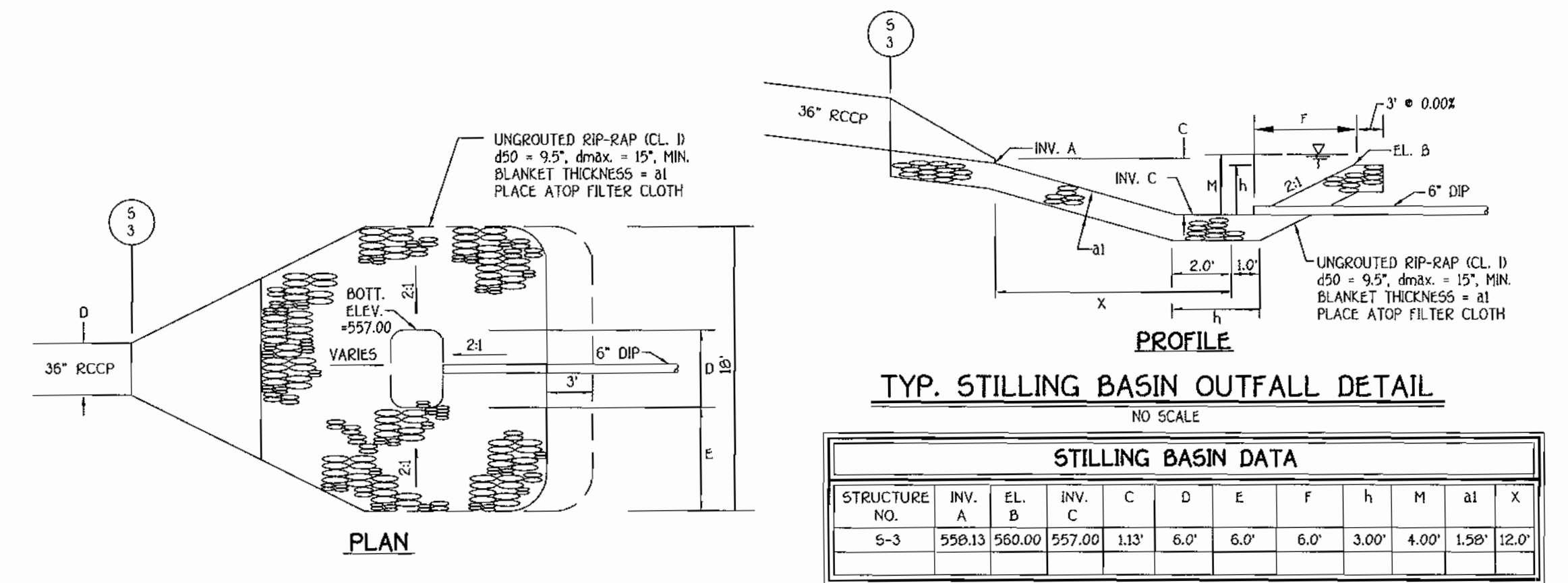
RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	Q	V	Q (C.F.S.)	BLANKET THICKNESS	DIA.		
SWM-1	22.00 SF	24.47'	0.8991	0.1991	0.0050	0.0707	20.00'	1.00'	0.04	2.45	53.20	19"	36"	
S-2	16.61 SF	17.19'	0.9663	0.3773	0.0050	0.0707	12.00'	1.16'	0.04	2.57	42.41	19.5"	19"	36"
S-6	3.18 SF	8.08'	0.3945	0.5362	0.0050	0.0707	8.00'	0.46'	0.04	1.41	4.37	9.5"	15"	15"



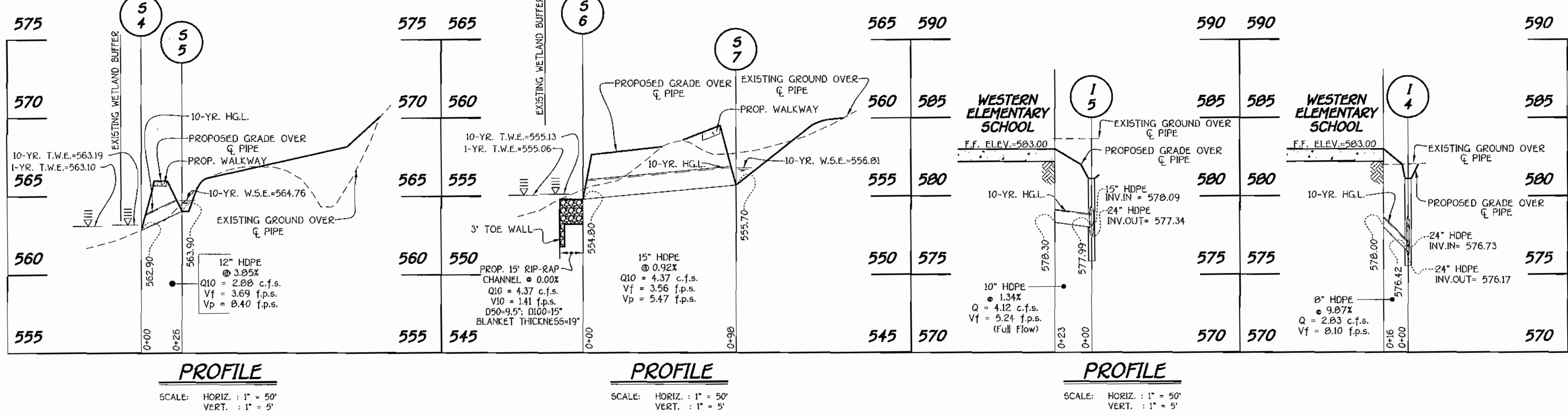
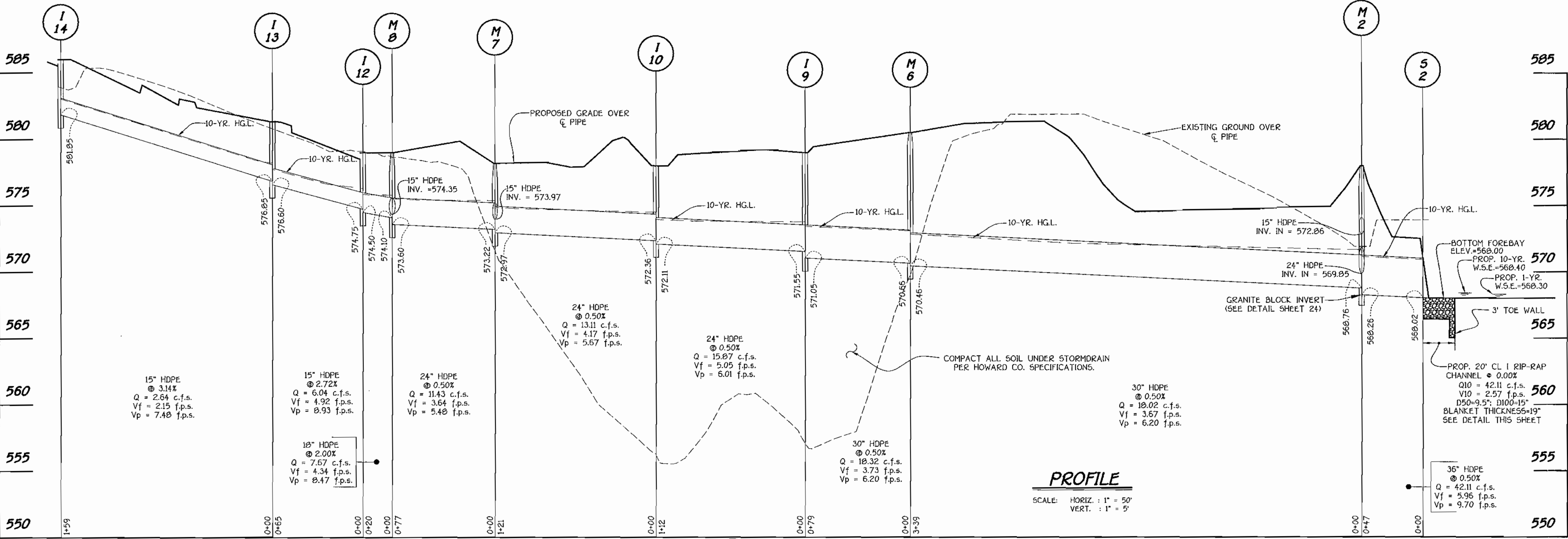
CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OFFFALLS

- 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.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



STILLING BASIN DESIGN DATA

STRUCTURE NO.	INV. A	EL. B	INV. C	D	E	F	h	M	Δ1	X	
S-3	558.13	560.00	557.00	11.3'	6.0'	6.0'	6.0'	3.00'	4.00'	1.58'	12.0'



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10275 SALTPIPER NATIONAL PIKE
 ELKLOFF CITY, MARYLAND 21042
 (410) 461-2855



APPROVED FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert J. Walker
 COUNTY HEALTH OFFICER - SAB
 4/2/05 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Director - Department of Planning and Zoning
 Chief, Division of Land Development
 Chief, Development Engineering Division

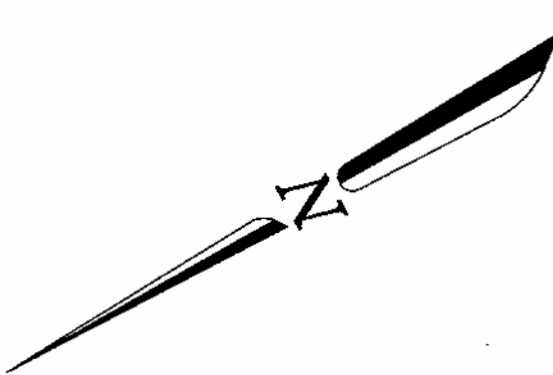
PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 10910 Maryland Route 108
 Elkloff City, Maryland 21042
 Attention: Bruce Gist
 410-313-6798
 TCA ARCHITECTS
 2661 RIVA ROAD, SUITE 120
 ANNAPOLIS, MARYLAND 21401
 (301) 261-8700

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

PROJECT	SECTION/AREA	PARCEL
WESTERN ELEMENTARY SCHOOL AND PARK	N/A	35
PLAT REF.	BLOCK NO.	ZONE
16794 - 16796	8	RR-DEC
	TAX/ZONE	ELEC. DIST.
	2B	FIFTH
	CENSUS TR.	
	6051.01	
WATER CODE	SEWER CODE	
N/A	N/A	

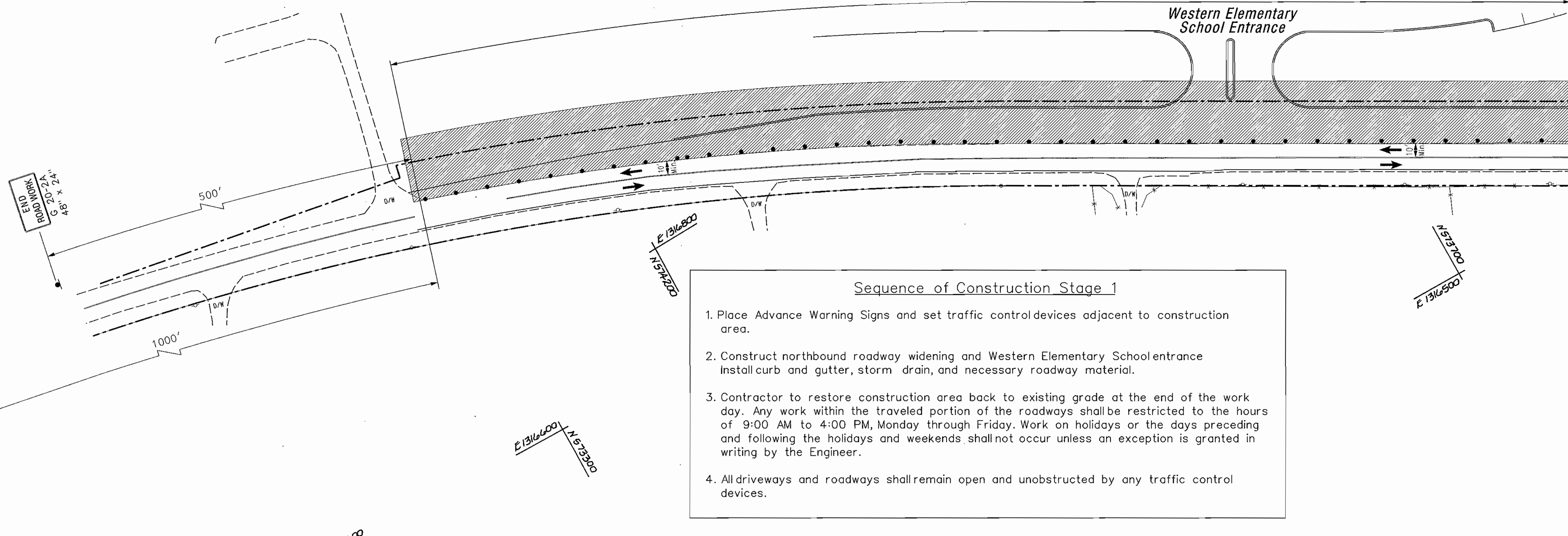
STORM DRAIN PROFILES,
 STRUCTURE SCHEDULE AND DETAILS
WESTERN ELEMENTARY SCHOOL AND PARK
 LOTS 1 AND 2
 TAX MAP No. 28 GRID No. 8 PARCEL No. 35
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 40' DATE: OCT. 7, 2004
 BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
 "BID AND CONSTRUCTION 4 JANUARY 05"
 SHEET 25 OF 28



SHA Standard No. 104.02.10
(Flagger Operation 2-Lane, 2-Way)
may be used as necessary
during periods of construction.

Western Elementary
School Entrance

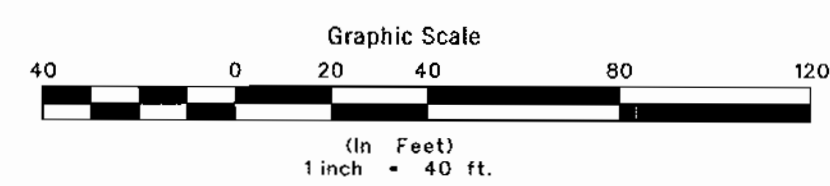
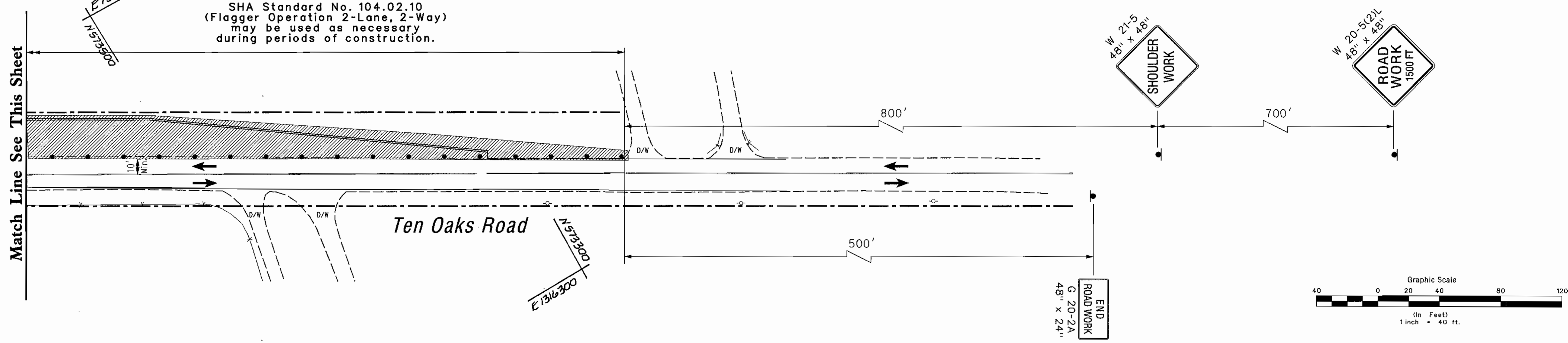
Match Line See This Sheet



Drop Off Policy
Contractor to maintain less than 5 in. of drop-off during periods of non-construction.

LEGEND

	Work Zone		Channelizing Devices (Drums)
	Existing Geometrics		Arrow Panel
	Proposed Geometrics		Direction of Travel
	Construction Signs		Type III Barricade



ENGINEER'S CERTIFICATE
I hereby certify that this Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.
[Signature]
Signature Of Engineer
Date: 1/11/05
Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.
U.S.D.A. - Natural Resources Conservation Service
Date: 1/11/05

DEVELOPER'S CERTIFICATE
"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."
[Signature]
Signature Of Developer
Date: 3/21/05
Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
District Howard Soil Conservation Dist.
Date: 3/21/05

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 4/14/05
Director - Department of Planning and Zoning
[Signature] 4/13/05
Chief, Division of Land Development
[Signature] 4/14/05
Chief, Development Engineering Division

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

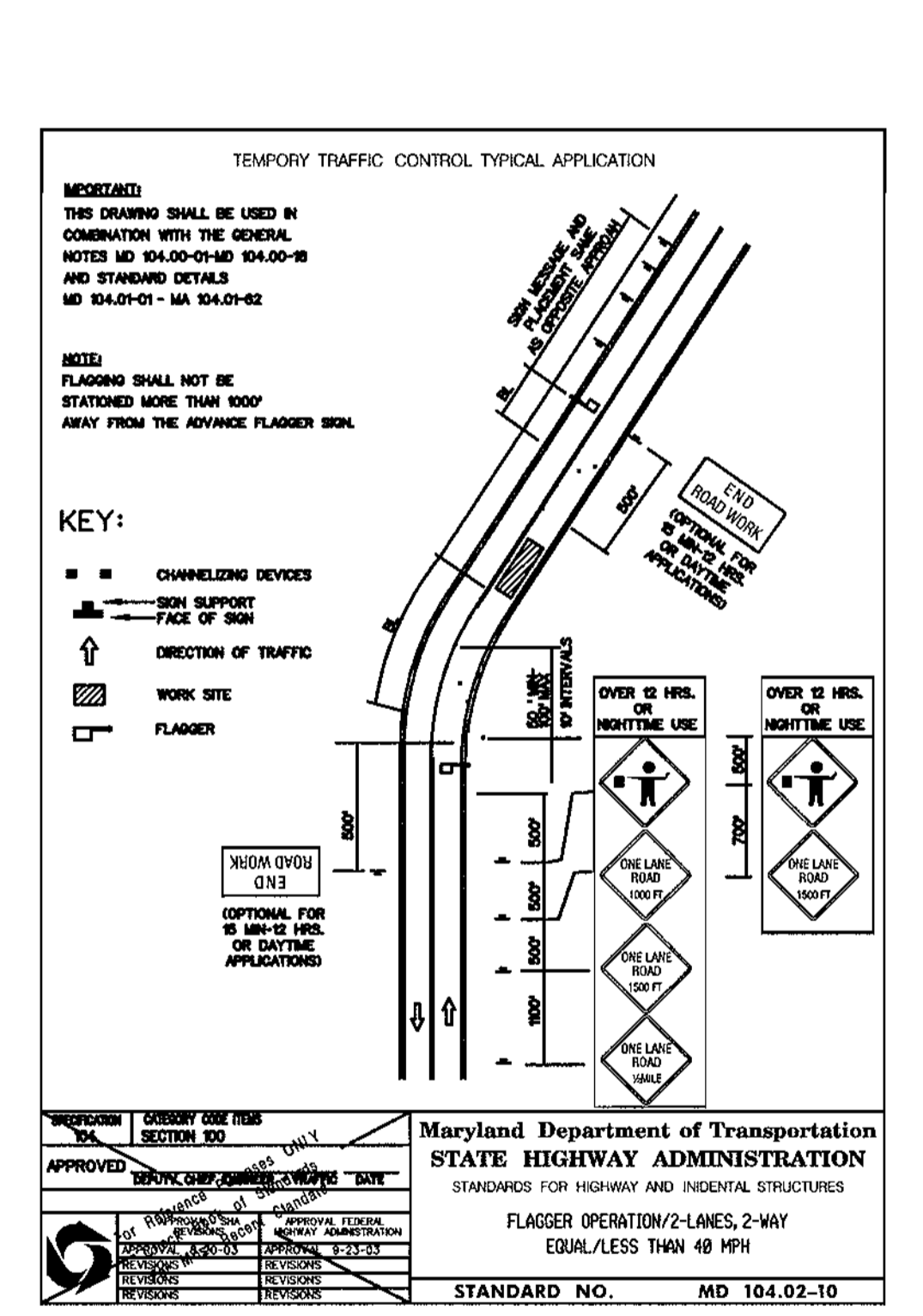
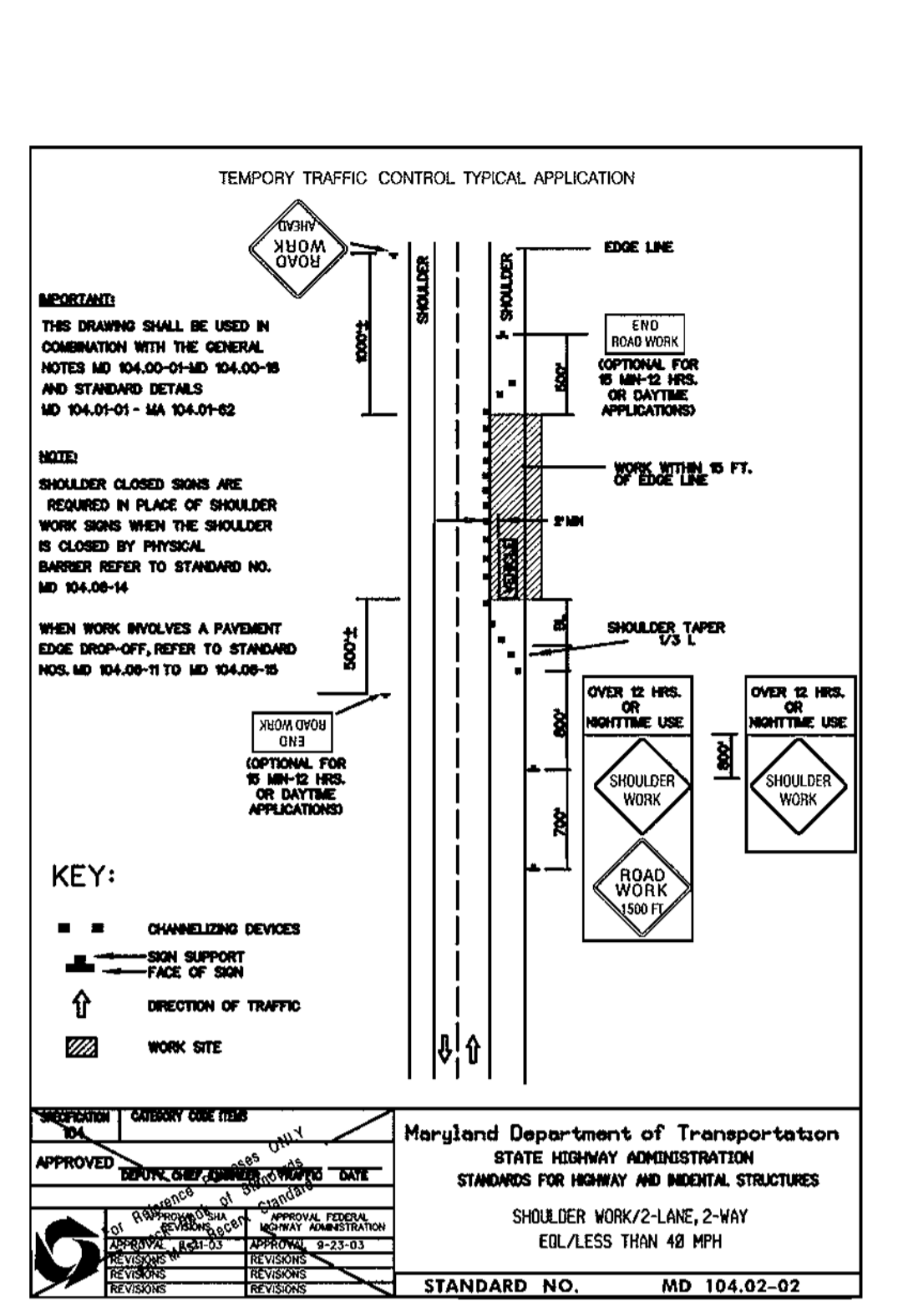
Maintenance of Traffic
WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2
TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION 4 JANUARY 05"
SHEET 26 OF 28

GENERAL NOTES FOR TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA)

- 1.0 INTRODUCTION
1.1 The General Notes (GN) supplement the TTCTA setup, and have been assembled to provide additional directions on the installation and application of traffic control devices shown on these standards.
1.2 The TTCTA show the minimum requirements necessary to plan for the safety of workers, motorists, pedestrians and other traffic throughout the temporary traffic control zone for various types of activity along roadways.
1.3 The TTCTA address a wide variety of different applications, however, every situation could not be shown.
1.4 In applying these standards and guidelines, questions for applications and interpretations should be referred to the State Highway Administration Assistant District Engineer-Traffic, County Traffic Engineer, Public Works Department and so forth, who are the experts in traffic engineering and who has jurisdiction on the appropriate roadways for applying such controls.

- 8.0 PAVEMENT MARKINGS
8.1 Pavement markings no longer applicable should be completely removed or obliterated.
8.2 Pavement markings no longer applicable should be completely removed or obliterated.
8.3 Temporary markings on intermediate pavement surfaces should be placed to full dimensions per the Contract Documents.
8.4 On straight sections of roadway with full dimension center and/or lane lines, but without edge lines, channelizing drums may be used to delineate the edge of the roadway and may be spaced up to 500 ft apart where no undue hazards exist and when directed by the Engineer.
9.0 FLAGGING
9.1 Where two or more flaggers are to be used and are unable to see each other, two-way radio communications should be used.
9.2 If the entire work area is visible from one station, a single flagger may be used, subject to other safety considerations.
9.3 All channelizing devices and flag persons shall be moved accordingly as construction progresses.
9.4 All persons designated as flaggers shall be MD-SHA certified.
10.0 VEHICLES
10.1 Work vehicles should not occupy or be stopped in a lane beyond a horizontal curve or a vertical curve (V/C).
10.2 Work vehicles, if required, should not occupy any part of the buffer area (instead vehicle) may occupy part of the work area.
10.3 Vehicle safety lights (amber in color) should be approved by the Office of Traffic & Safety.
10.4 A protection vehicle with a rear truck-mounted attenuator (TMA) should be required for all work operations on freeways, where no formal closure exists.
11.0 WORK RESTRICTIONS
11.1 Work within a lane, or within 15 ft. of the nearest edge line is prohibited during the peak hours 6 AM - 9 AM and 3 PM - 7 PM Monday - Friday.
11.2 Travel lanes shall be a minimum of ten feet in width.
11.3 All open trenches shall be closed at the end of each day.
11.4 Access shall be provided to existing driveways at all times.
12.0 TRAFFIC CONTROL PLANS
12.1 Alternate traffic control plans may be presented to the MD-SHA for approval in conformance with Specification 104.01.
12.2 For emergency repair operations, a minimum number of traffic control devices (TCD's) may be used.
12.3 All signs, channelizing devices, and other traffic control devices shall be in conformance with the latest edition of the MUTCD.

DROP-OFF GUIDELINES FOR WORK AREAS WHERE TRAFFIC IS BEING MAINTAINED
During work activities involving pavement surface work, including shoulders, it often becomes necessary to maintain traffic along-side or near lanes and shoulders having different elevations (drop-offs).
I. PAVING, RESURFACING, GRINDING AND MILLING
1. Pavement Drop-Offs of 2 inches or Less:
Adjacent pavement elevation differences, drop-offs, of two inches or less may be freely crossed by traffic.
2. Pavement Edge Drop-Offs of 2 inches or Less:
Pavement edge elevation differences, drop-offs, of two inches or less should be indicated to traffic through the use of the UNEVEN PAVEMENT warning sign.
3. Shoulder Edge Drop-Offs of 2 inches or Less:
No advance warning for traffic is necessary when shoulder edge elevation differences, drop-offs, of two inches or less exist.
II. PAVEMENT RECONSTRUCTION
1. Pavement Edge and Shoulder Edge Drop-Offs Greater Than 2 inches, But 5 inches or Less:
Drop-offs between lane and shoulder and shoulder and earth grading, exceeding two inches, but equal to or less than five inches shall be provided with an abutting wedge with a slope of 4:1 or flatter at all times while no work is being performed.
2. Drop-Offs Exceeding 5 inches:
Continuous drop-offs exceeding five inches if next to or within 12 feet of a lane of traffic, shall be provided with a temporary concrete barrier or other suitable barrier as may be approved by the Engineer.



General Notes & Standards Are For Reference Purposes ONLY Check the MD-SHA Standards For Highway and Incidental Structures For The Most Recent Standards

All Construction Signs Are To Be Fabricated Utilizing Fluorescent Orange High Performance Sign Material

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION SIGN AND BUFFER SPACING CHARTS STANDARD TEMPORARY TRAFFIC CONTROL OPERATIONS. Includes a table for sign spacing and a diagram of a work area with transition and advance warning areas.



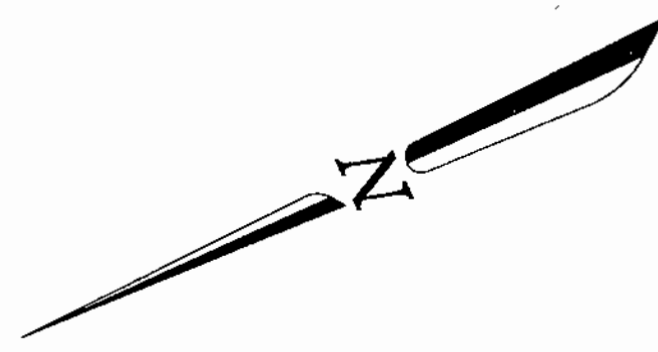
ENGINEER'S CERTIFICATE: I Herby Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge With The Requirements Of The Howard Soil Conservation District. Signature of Engineer: [Signature], Date: 1/21/05.

DEVELOPER'S CERTIFICATE: I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program. Signature of Developer: Kathleen Conley-Jones, Date: 3/21/05.

APPROVED: DEPARTMENT OF PLANNING AND ZONING. Director: [Signature], Date: 4/14/05. Chief, Division of Land Development: [Signature], Date: 7/16/05. Chief, Development Engineering Division: [Signature], Date: 4/4/05.

Address Chart table with columns: Parcel Number, Street Address. Rows: P. 35, LOT 1 4691 TEN OAKS ROAD, LOT 2 4671 TEN OAKS ROAD.

MOT - General Notes: WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2. TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35. FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND. SCALE: AS SHOWN DATE: OCT. 7, 2004. BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04. BID AND CONSTRUCTION 4 JANUARY 05. SHEET 27 OF 28.

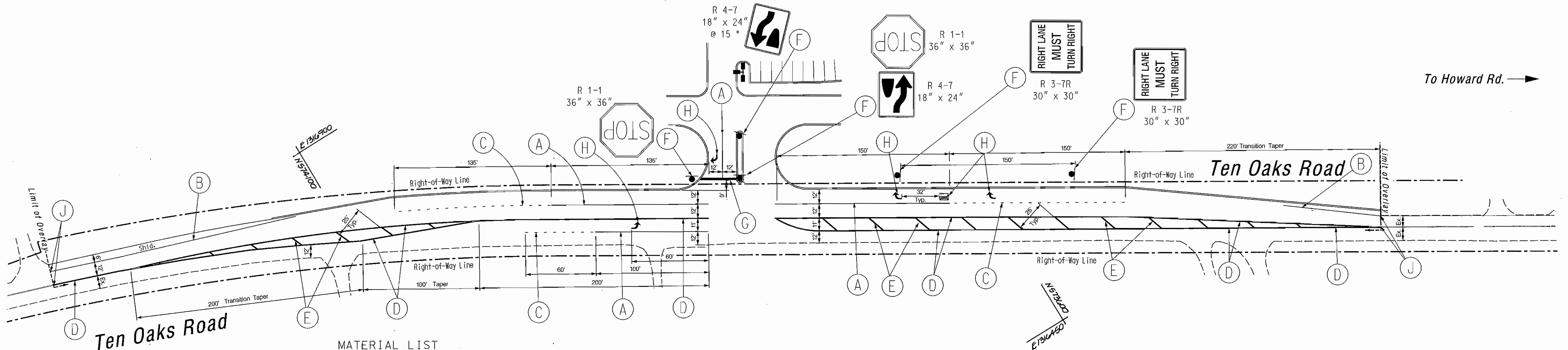


PAVEMENT MARKING DETAILS

- A. Install 5 in. wide solid white pavement marking for lane line.
- B. Install 5 in. wide solid white pavement marking for edge line.
- C. Install 5 in. wide solid white dotted pavement marking (2 ft. segment - 6 ft. gap) for lane line.
- D. Install 5 in. wide solid double yellow pavement marking for center line.
- E. Install 16 in. wide solid yellow pavement marking for gore area.
- F. Install ground mounted sign as shown.
- G. Install 24 in. wide solid white thermoplastic pavement marking for stop line.
- H. Install Thermoplastic pavement symbol as shown.
- J. Tie new pavement markings into existing pavement markings.

E 1316900
N 573400

Western Elementary School Entrance



To Howard Rd. →

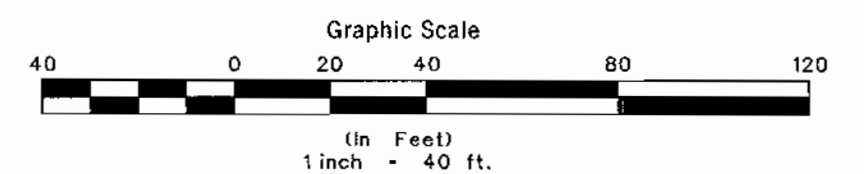
MATERIAL LIST

Material to be furnished and/or installed by the Contractor.
All material in this list shall have catalog cuts submitted for approval prior to installation.

Quantity	Units	MD-SHA Specification Section	Description
Lump Sum	LS	108	Mobilization.
Lump Sum	LS	104	Maintenance of traffic.
825	LF	539	5 in. wide white pavement marking - (Paint).
3800	LF	549	5 in. wide yellow pavement marking - (Paint).
225	LF	549	16 in. wide yellow pavement marking - (Paint).
1	EA	549	HAPPTPM symbol - white "ONLY".
3	EA	549	HAPPTPM symbol - white "Right Arrow".
1	EA	549	HAPPTPM symbol - white "Left Arrow".
35	LF	549	24 in. wide HAPPTPM - white for stop line.
75	LF	812	Square steel sign post.
2	EA	813	36 in. x 36 in. R 1-1 Sign for ground mounting.
2	EA	813	18 in. x 24 in. R 4-7 sign for ground mounting.
2	EA	813	30 in. x 30 in. R 3-7R sign for ground mounting.

NOTES:

- 1) Existing Pavement Marking To Be Remove By Milling and Overlaying.
- 2) All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2" galvanized steel perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated square tube sleeve (12 gauge) - 3' long. A galvanized steel pole cap shall be mounted on top of each post.
- 3) All pavement marking and sign locations shall be marked and/or approved by the Traffic Engineer prior to the installation of any markings and/or signs.



The Traffic Group, Inc.
Suite 111
8900 Franklin Square Drive
Baltimore, Maryland 21246
410-931-6600
1-800-583-8411
Fax: 410-931-6601

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control Represents a Practical and Workable Plan Based on My Personal Knowledge of the Site Condition and that it was prepared in accordance with the Requirements of the Howard Soil Conservation District.

[Signature]
Signature of Engineer Date 4/14/05

Reviewed For Howard County Soil Conservation District and Meets Technical Requirements.

U.S.D.A. - Natural Resources Conservation Service Date 4/14/05

DEVELOPER'S CERTIFICATE

"I/We Certify that All Development and Construction will be Done According to This Plan of Development and Plan for Erosion and Sediment Control and that All Responsible Personnel Involved in the Construction Project will have a Certificate of Attendance as a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion Before Beginning the Project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their Authorized Agents, as are deemed necessary."

[Signature]
Signature of Developer Date 4/14/05

Approved: This Development is Approved For Erosion and Sediment Control by the Howard Soil Conservation District.

District Howard Soil Conservation Dist. Date 4/14/05

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/17/05
Director - Department of Planning and Zoning Date

[Signature] 4/13/05
Chief, Division of Land Development Date

[Signature] 4/14/05
Chief, Development Engineering Division Date

Address Chart

Parcel Number	Street Address
P. 35	LOT 1 4691 TEN OAKS ROAD
	LOT 2 4671 TEN OAKS ROAD

Pavement Marking and Signing Plan

WESTERN ELEMENTARY SCHOOL AND PARK LOTS 1 AND 2

TAX MAP No.: 28 GRID No.: 8 PARCEL No.: 35
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: OCT. 7, 2004
BUILDING PERMIT/CD REVIEW 12 NOVEMBER 04
"BID AND CONSTRUCTION"
4 JANUARY 05"
SHEET 28 OF 28