

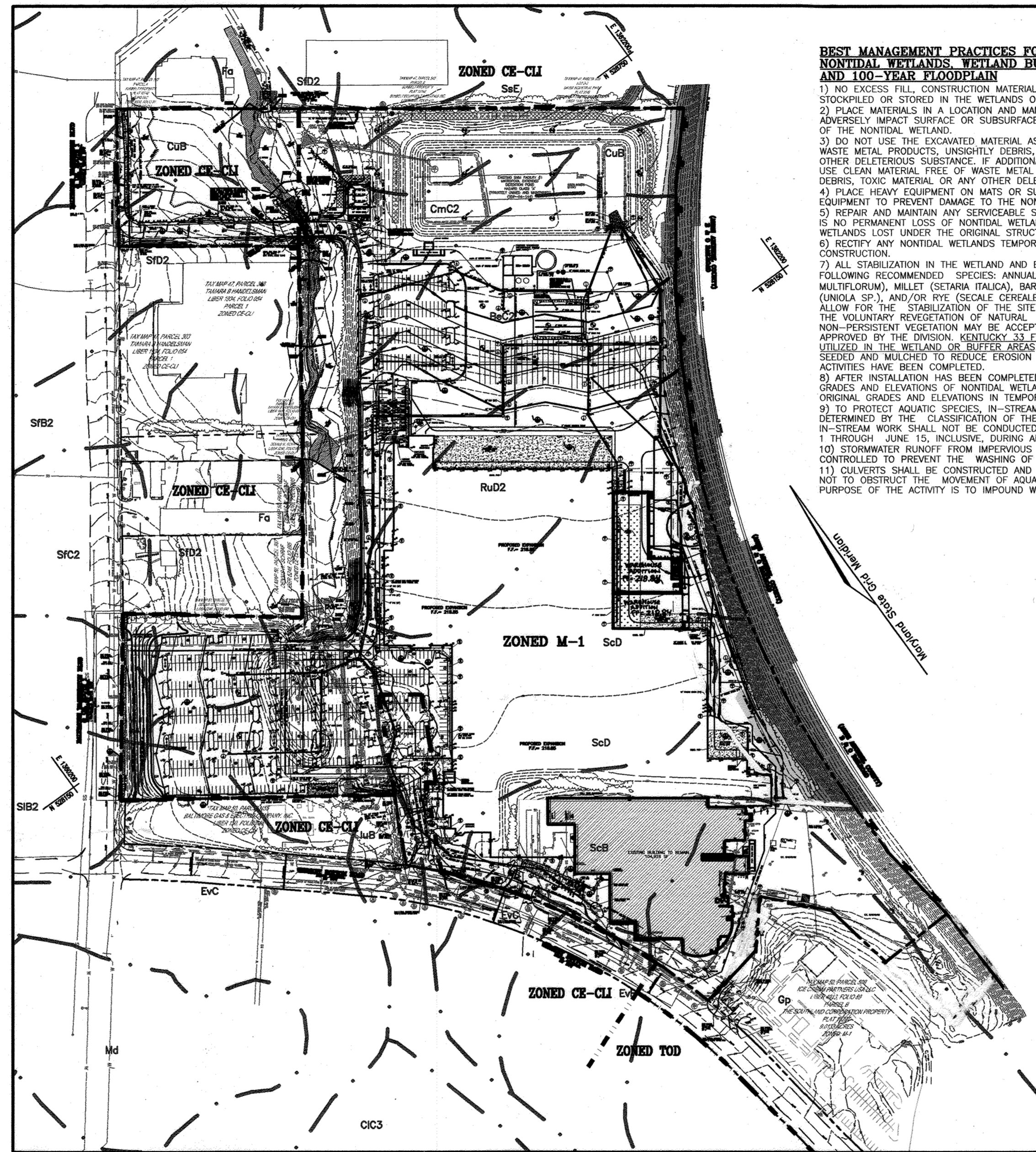
GENERAL NOTES

- 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 "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- The contractor is to notify the following utilities or agencies at least five days before starting work on these drawings:
 - Miss Utility: 1-800-257-7777
 - Verizon Telephone Company: 1-410-954-6281
 - Howard County Bureau of Utilities: 313-2366
 - AT&T Cable Location Division: 393-3553
 - B.G.&E. Co. Contractor Services: 850-4620
 - B.G.&E. Co. Underground Damage Control: 787-4620
 - State Highway Administration: 531-5533
- Site analysis:
 - Area of Parcel: 48.32 Ac.
 - Present Zoning: M-1, CE-CL1
 - Proposed Use: Expand existing Nestle's Ice Cream Facility, add associated parking & loading areas, provide improvements along Rte 1.
 - Building Area: 558,550 sf. + 13,149 SF WAREHOUSE ADDITION + 26,603 SF WAREHOUSE ADDITION = 598,302 SF (SEE NOTE #43)
 - Building Coverage On Site: 13.74 Ac. OR 28.9% OF GROSS AREA
 - Paved Parking Lot/Area On Site: 16.67 Ac. or 34.38% of Gross Area
 - Area of Landscape Island: 0.74 Ac. or 1.53% of Gross Area
 - Limit of Disturbed Area: 36.82 Ac. or 75.93% of Gross Area
 - Cut: 10,000 sf. Fill: 10,000 sf.
- Project background:
 - Location: Laurel, MD; Tax Map 47 & 50, Block 5, Parcel 509, 271, 341, 420, 302 & 293
 - Zoning: M-1, CE-CL1
 - Subdivision: N/A
 - Section/Area: N/A
 - Site Area: 48.32 Ac.
 - DPZ references: SDP-04-144, FOS-167 (PLATS 17462-66)
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to starting work.
- Any damage to public right-of-ways, paving, or existing utilities will be corrected at the contractor's expense.
- Existing utilities located from Road Construction Plans, Field Surveys, Public Water and Sewer Extension Plans and available record drawings. Approximate location of existing utilities are shown for the contractor's information. Contractor shall locate existing utilities well in advance of construction activities and take all necessary precautions to protect the existing utilities and to maintain uninterrupted service. Any damage incurred due to contractor's operation shall be repaired immediately at the contractor's expense.
- All reinforced concrete for storm drain structures shall have a minimum of 28 days strength of 3,500 p.s.i.
- 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 the placement of any asphalt.
- Estimates of earthwork quantities are provided solely for the purpose of calculating fees.
- Soil compaction specifications, requirements, methods and materials are to be in accordance with the recommendations of the project Geotechnical Engineer. Geotechnical Engineer to confirm acceptability of proposed paving section, based on soil test prior to construction.
- The existing topography is taken from field run survey with two foot contour intervals prepared by Frederick Ward and Associates, dated May 22, 2001, from the mass grading approved under SDP-04-144, and topographic survey prepared by Harms (SDP-01-59). The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System.
- A noise study is not required for this project.
- For paving section details, see sheet 7, C6.1. The geotechnical engineer to confirm paving section prior to construction.
- All curb and gutter to be Howard County Standard Detail 3.01 unless otherwise noted. (Detail on sheet 7, C6.1)
- Contractor responsible to construct all handicap ramps and handicap access in accordance with current ADA requirements.
- Where drainage flows away from curb, contractor to reverse the gutter pan.
- All elevations are to flowline/bottom of curb unless otherwise noted.
- All dimensions are to face of curb unless otherwise noted.
- Public water provided by Cont. 1-W, Cont. 44-1639, and private on-site water.
- Public sewer provided by Cont. 112-S, Cont. 242-S, and private on-site sewer.
- Stormwater management quantity is provided by the existing stormwater management micropool pond, which provides Cpv and Wv (REF: SDP-04-144). The proposed stone trench provides Rev. The proposed Bio-Retention facility provides Wv. The proposed stormwater management system and water quality system are to be privately owned and maintained by Nestle Ice Cream Company, Inc.
- All exterior lighting to conform to section 134 of the Howard County Zoning Regulations. (Detail on Sheet 7, C6.1)
- Geotechnical report prepared by Engineering Consulting Services, LTD. dated May 14, 2004.
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and Landscape Manual.
- Any existing street trees damaged or destroyed during construction will be replaced by the contractor.
- Perimeter Landscaping in accordance with Section 16.124 of the Howard County Code and Landscape Manual, shall be provided as shown on the approved landscape plan. Financial surety in the amount of \$42,270 for the 122 shade trees, 31 evergreen trees and 34 shrubs shall be posted with the Developer's Agreement.
- The wetlands shown on this plan were delineated by Eco-Science Professionals, Inc. dated May 16, 2004.
- Traffic study prepared by The Traffic Group dated August 3, 2004.
- This plan is subject to compliance with the Amended Fifth Edition of the Subdivision Regulations, per Council Bill 45-2003, and the Amended Zoning Regulations, per Council Bill 75-2003.
- Floodplain analysis prepared by Robert H. Vogel Engineering, Inc. dated July 2004.
- The existing building on Parcel # 509 is to remain, but no additions or alterations are allowed unless in compliance with the Zoning Regulations.
- Reference WP-05-037, approved December 2, 2004, to waive Section 16.115, which prohibits disturbance to floodplain areas; Section 16.116, which prohibits disturbance to wetland areas and streams/stream buffers; and Section 16.119(f), which prohibits access onto intermediate arterial roads for non-residential developments. Approval is subject to the following conditions:
 - The Petitioner shall utilize an 84" RCP in the design of the stream crossing for the internal roadway, or whatever design is approved by DED/DPW.
 - The petitioner shall comply with all SHA requirements for design of the access onto Route 1.
- All trash dumpsters and compactors are internal to the building, unless notes otherwise.
- Total parking spaces provided is 590, with 19 of those spaces being handicapped. (SEE NOTE #42)
- Howard County DPZ has determined that the steep slope disturbance for the storm drain installation is "necessary". Forest conservation obligation to be provided by six on-site forest conservation easements totaling 5.28 acres (229,997 SF x \$0.20 = \$45,999.00 Surety), and by an off-site forest conservation easement of 9.20 acres (400,752 SF x \$0.50 = \$200,376.00 Surety) located on Bulbait Preservation Parcel A in the Fox Creek Subdivision (See Sheets 30-32/L1.9-L1.11), and by a fee-in-lieu payment of \$5,445.00 for the remaining 0.25 ac. The total Forest Conservation surety in the amount of \$246,375 will be posted with the Developer's Agreement.
- Contractor to test pit to determine vertical and horizontal location of all existing utilities at crossings and all tie in locations prior to construction. Should any conflict arise, contractor should contact the engineer before installation of any proposed utility shown on this plan.
- This plan is subject to MDE Application Tracking Number 200560820.
- Foundation soil shall be examined by a soil engineer to assure the actual foundation soil strength meets or exceeds assumed design strengths.
- The proposed construction of the retaining walls shall be performed under the observation of a Maryland Registered Professional Engineer.

DREYER'S GRAND ICE CREAM

SITE DEVELOPMENT PLAN

PARCELS 509, 420, 302, 271, 241



LOCATION MAP
SCALE: 1"=200'

42. THE FACILITY WILL EMPLOY A TOTAL OF 650 EMPLOYEES ONCE FULLY OPERATIONAL IN 2007. THE NUMBER OF SPACES PROVIDED WILL BE MORE THAN SUFFICIENT TO PROVIDE AMPLE PARKING FOR BOTH EMPLOYEES AND VISITORS. THE BREAKDOWN OF EMPLOYEES BY SHIFT IS AS FOLLOWS:

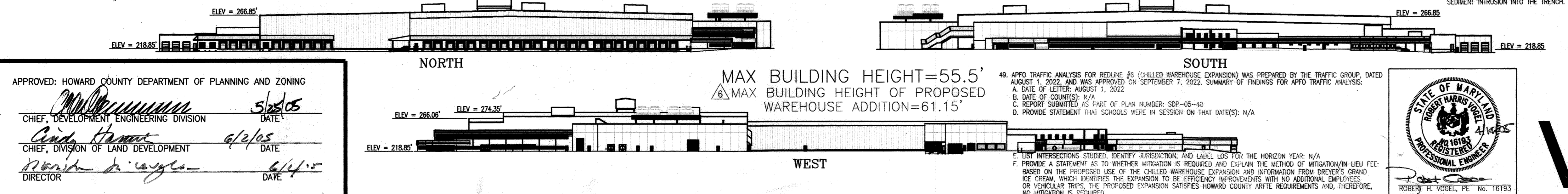
IS MS FOLLOWS	2008	2009	2010	2011	2012
SHIFT 1 (6am-2pm)	104	153	200	242	282
SHIFT 2 (2pm-10pm)	68	120	182	242	282
SHIFT 3 (6pm-6am)	60	117	125	135	145

43. A TOTAL OF 449 PARKING SPACES ARE REQUIRED (0.75 SPACES/1,000 SF X 598,302 SF = 449 SPACES) AND 590 PARKING SPACES ARE PROVIDED.

46. REVISION #4 INCLUDES FOUR (4) NEW 15,000 GALLON SLOES TO STORE ICE CREAM WAX.

47. THE PROPOSED HEIGHT OF THE REVISION #8 WAREHOUSE ADDITION IS 59.28'. THE PROPOSED BUILDING ADDITION IS LOCATED ON PROPERTY THAT IS ZONED M-1. IN ACCORDANCE WITH SECTION 122.03.1 OF THE ZONING REGULATIONS, THE SETBACK REQUIRED FOR THE PROPOSED WAREHOUSE ADDITION TO THE RIGHT-OF-WAY IS 58.10'. THE SETBACK PROVIDED TO THE WHISKEY BOTTOM ROAD RIGHT-OF-WAY IS 63.9'.

48. THE REVISION #6 ESD DESIGN ADHERES TO THE SPECIAL STORMWATER SIZING CRITERIA FOR REDEVELOPMENT. STORMWATER MANAGEMENT SHALL BE ADDRESSED BY PROVIDING PEAK-TREATMENT FOR 60% OF EXISTING IMPERVIOUS WITHIN THE LOD. NOTE THAT THERE IS NO NEW PAVING (ABOVE THE AREA OF EXISTING IMPERVIOUS WITHIN THE LOD) AND, THEREFORE, NEW DEVELOPMENT CRITERIA IS NOT APPLICABLE. THE ESD DESIGN INCLUDES ONE (1) STORMWATER INLET AND ONE (1) STORMWATER TRENCH (1-1) AND ONE (1) STORMWATER TRENCH (1-1) TO MINIMIZE SEDIMENT INTRUSION INTO THE TRENCH.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* 5/21/05
 Chief, Division of Land Development: *[Signature]* 6/2/05
 Director: *[Signature]* 6/14/05

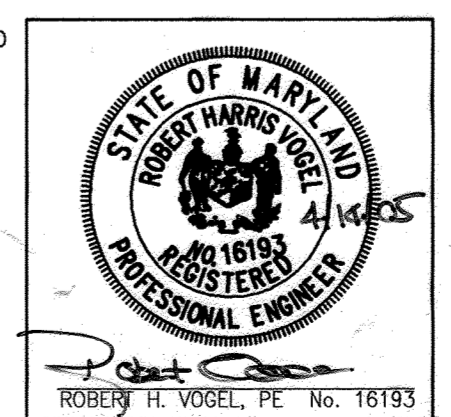
MAX BUILDING HEIGHT=55.5'
 MAX BUILDING HEIGHT OF PROPOSED WAREHOUSE ADDITION=61.15'

49. APPRO TRAFFIC ANALYSIS FOR REDLINE #6 (CHILLED WAREHOUSE ADDITION) WAS PREPARED BY THE TRAFFIC GROUP, DATED AUGUST 1, 2002, AND WAS APPROVED ON SEPTEMBER 7, 2002. SUMMARY OF FINDINGS FOR APPRO TRAFFIC ANALYSIS:

- DATE OF LETTER: AUGUST 1, 2002
- DATE OF COUNTY: N/A
- REPORT SUBMITTED AS PART OF PLAN NUMBER: SDP-05-40
- PROVIDE STATEMENT THAT SCHOOLS WERE IN SESSION ON THAT DATE(S): N/A

5. LIST INTERSECTIONS STUDIED, IDENTIFY JURISDICTION, AND LABEL LOS FOR THE HORIZON YEAR: N/A

6. PROVIDE A STATEMENT AS TO WHETHER MITIGATION IS REQUIRED AND LIST THE METHOD OF MITIGATION/IN LIEU FEE: BASED ON THE PROPOSED USE OF THE CHILLED WAREHOUSE EXPANSION AND INFORMATION FROM DREYER'S GRAND ICE CREAM, WHICH IDENTIFIES THE EXPANSION TO BE EFFICIENCY IMPROVEMENTS WITH NO ADDITIONAL EMPLOYEES OR CIRCULAR TRIPS, THE PROPOSED EXPANSION SATISFIES HOWARD COUNTY ARTE. REQUIREMENTS AND, THEREFORE, NO MITIGATION IS REQUIRED.



ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
509, 271, 341, 420, 302 & 293	9090 WHISKEY BOTTOM ROAD

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	PARCEL NUMBER	
N/A	N/A	509, 271, 341, 420, 302 & 293	
DEED REF. #	BLOCK NO.	ZONE	TAX/ZONE
324/499, 6329/142, 4913/95, 286/351, & 1934/54	5	M-1, CE-CL1	47 & 50
			ELECT. DIST.
			6th
			CENSUS TR.
			6069.02
WATER CODE: C04		SEWER CODE: 7101800	

* See FOS-107, plate # 17462-17466

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET, ELICOTT CITY, MD 21043
 TEL: 410.461.7666 FAX: 410.461.8961

REV.	DATE	BY	APP.	RELEASED FOR
1	5-11-06	DZ	RHV	REVISED PLAN TO SHOW REVISIONS TO FACILITIES & VARIOUS FACILITY INFORMATION
3	01-05-22	TS	VTG	REVISED PLAN TO SHOW THE 15' SETBACK TO THE WHISKEY BOTTOM ROAD AND ASSOCIATED STORMWATER MANAGEMENT FACILITIES
4	05-03-22	RHV	VTG	IMP BEING SHIP AND TRAIL TRAILHEAD THIS BEING THE USE OF THE BUILDING AND THE TRAILHEAD TRAILHEAD
6	10-12-22	TS	VTG	IMP BEING SHIP AND TRAIL TRAILHEAD THIS BEING THE USE OF THE BUILDING AND THE TRAILHEAD TRAILHEAD

DREYER'S GRAND ICE CREAM
 9090 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

COVER SHEET

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
 SPRINGFIELD MASSACHUSETTS 01101
 801-531-8585 FAX 801-531-8586

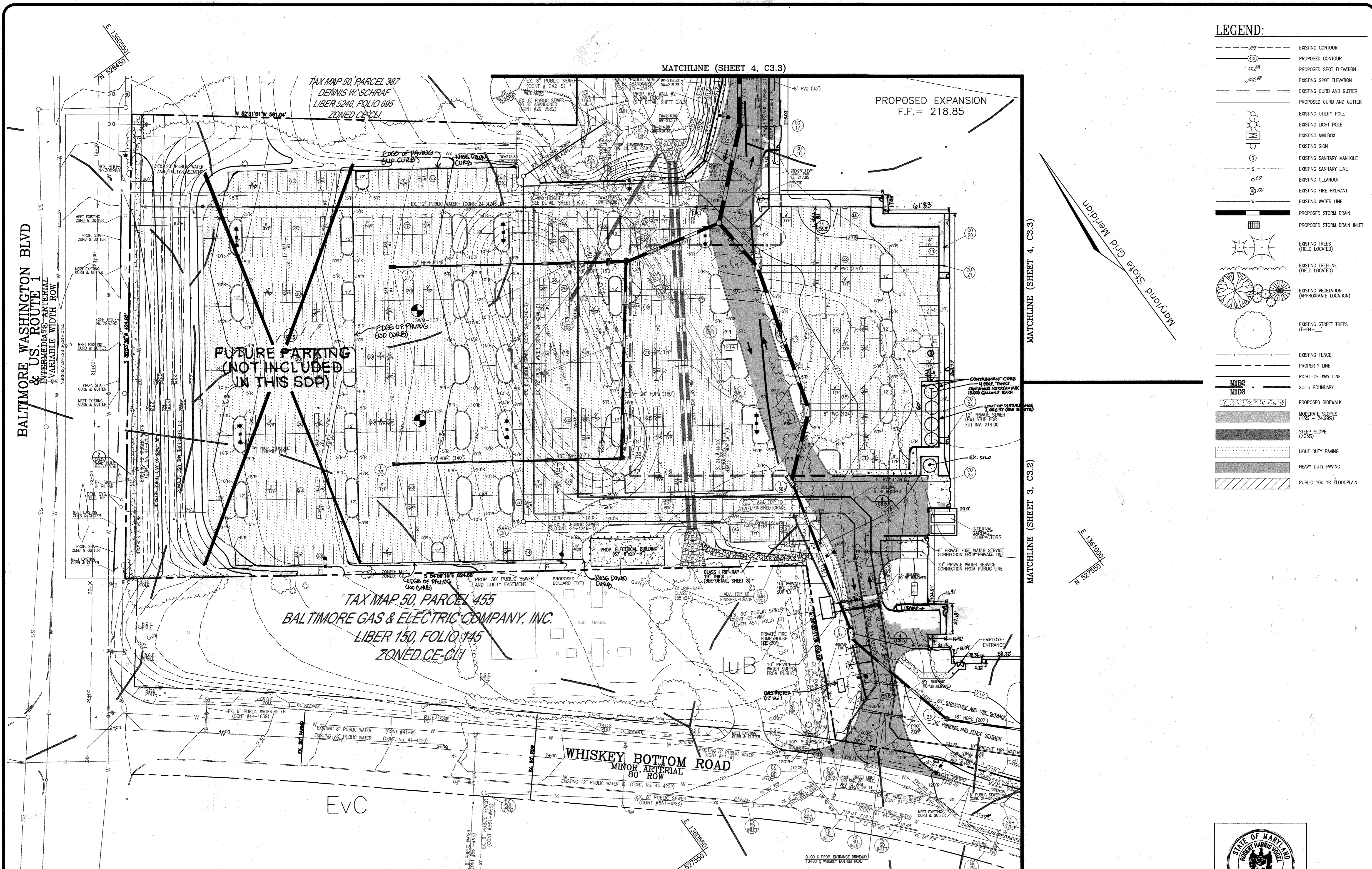
1301 MAIN STREET
 SPRINGFIELD MASSACHUSETTS 01101
 413-767-1785 FAX 413-787-1786

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
509, 271, 341, 420, 302 & 293	9090 WHISKEY BOTTOM ROAD

DRAWING NO. **C0.2**

HO. CO. DPZ SHEET: 1 OF 40

SDP-05-40



LEGEND:

	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	EXISTING SPOT ELEVATION
	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	EXISTING TREES (FIELD LOCATED)
	EXISTING TREELINE (FIELD LOCATED)
	EXISTING VEGETATION (APPROXIMATE LOCATION)
	EXISTING STREET TREES (7'-04'")
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SOILS BOUNDARY
	PROPOSED SIDEWALK
	MODERATE SLOPES (1.5% - 24.99%)
	STEEP SLOPE (>25%)
	LIGHT DUTY PAVING
	HEAVY DUTY PAVING
	PUBLIC 100 YR FLOODPLAIN

REV	DATE	BY	APP.	RELEASED FOR
1	05-25-06	DZE	RN	RELEASED TO SHOW RE-BUILD
2	01-05-22	TS	VTB	REVISIONS AND RE-DESIGN
3	01-05-22	TS	VTB	REVISIONS AND RE-DESIGN
4	05-05-22	RHV	VTG	REVISIONS AND RE-DESIGN
5	01-12-22	TS	VTB	REVISIONS AND RE-DESIGN
6	01-12-22	TS	VTB	REVISIONS AND RE-DESIGN

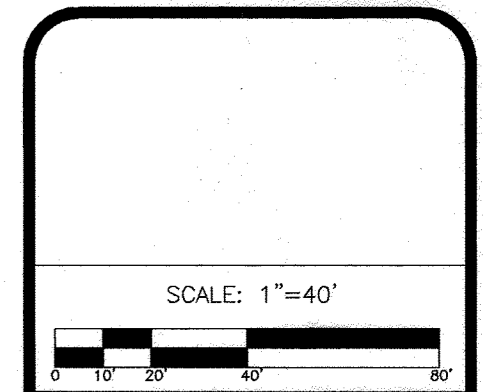
DREYER'S GRAND ICE CREAM
 9080 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

SITE LAYOUT PLAN

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
 LAUREL CITY, MD 20640
 801-531-8585, FAX 801-531-8586

1391 MAIN STREET
 SPRINGFIELD MASSACHUSETTS 01105
 413-787-1785, FAX 413-787-1786



DRAWING NO.
C3.1

HO. CO. DPZ SHEET:
 2 OF 40

SDP-05-40

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County Seal
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/25/05

Sandy Smith
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/16/05

Mark A. Leyle
 DIRECTOR
 DATE: 6/14/05

***NOTE:**
 THE LOD OF 1,000 SF IS LESS THAN 5,000 SF. THEREFORE, THE IMPROVEMENTS ARE EXEMPT FROM PROVIDING STORMWATER MANAGEMENT. ANY FUTURE IMPROVEMENT WHERE THE CUMULATIVE LOD EXCEEDS 5,000 SF WILL REQUIRE STORMWATER MANAGEMENT TO BE PROVIDED.

OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 4900E
 SCOTTSDALE, AZ 85261
 (516) 652-8187

OWNERS

DEVELOPER

ROBERT H. VOGEL
 ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
 ELLEGGITT CITY, MD 21043 TEL: 410.461.7666
 FAX: 410.461.7661

PROPOSED EXPANSION
F.F. = 218.85

ScD

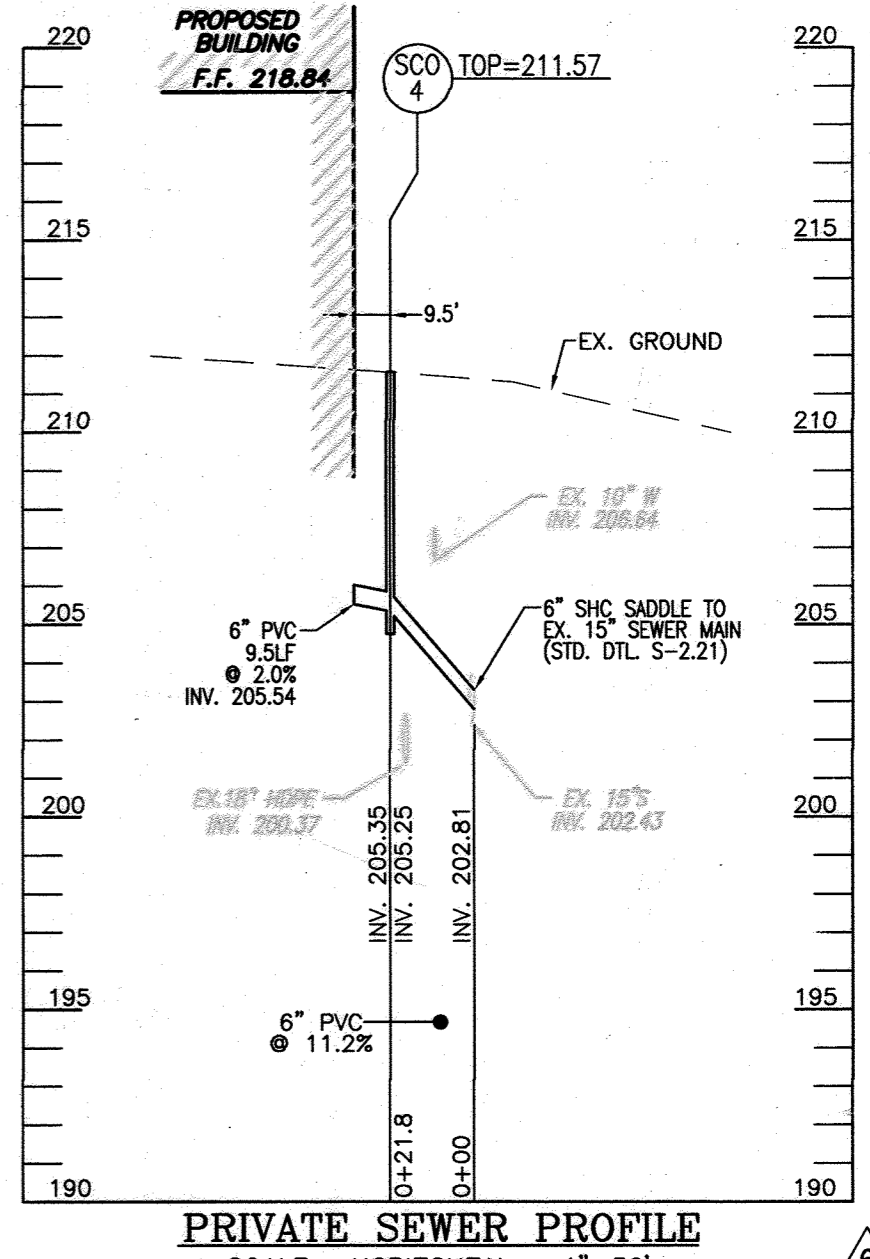
ScB

EXISTING BUILDING TO REMAIN
104,926 SF

EvB

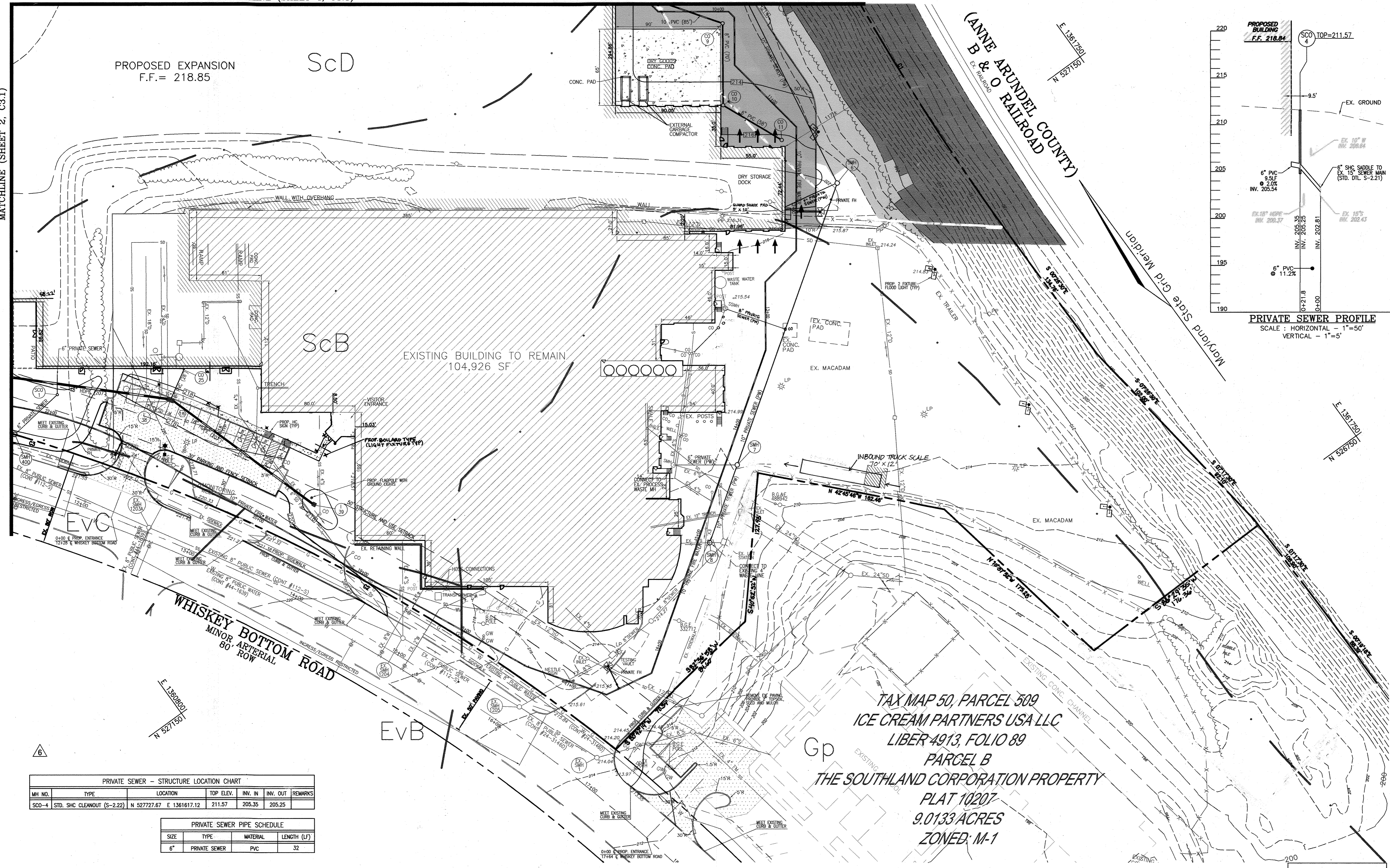
Gp

(ANNE ARUNDEL COUNTY)
B & O RAILROAD



PRIVATE SEWER PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

MATCHLINE (SHEET 2, C3.1)



TAX MAP 50, PARCEL 509
ICE CREAM PARTNERS USA LLC
LIBER 4913, FOLIO 89
PARCEL B
THE SOUTHLAND CORPORATION PROPERTY
PLAT 10207
9.0133 ACRES
ZONED: M-1

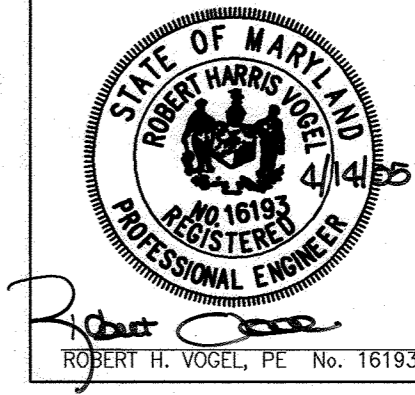
MH NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
SC0-4	STD. SHC CLEANOUT (S-2.22)	N 52727.67 E 136167.12	211.57	205.35	205.25	

SIZE	TYPE	MATERIAL	LENGTH (LF)
6"	PRIVATE SEWER	PVC	32

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5/25/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION (DATE)
 [Signature] 6/1/06
 CHIEF, DIVISION OF LAND DEVELOPMENT (DATE)
 [Signature] 6/1/06
 DIRECTOR (DATE)

OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 4900 E
 SCOTTSDALE, AZ 85261
 (50) 652-8187

DESIGNED BY: [Redacted]
 CHECKED BY: [Redacted]
 DEVELOPER: [Redacted]



ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

REV.	DATE	BY	APP.	RELEASED FOR
1	05-25-06	DZ		
2	11-20-07			
3	01-05-22	TS		
6	10-12-22	TS		

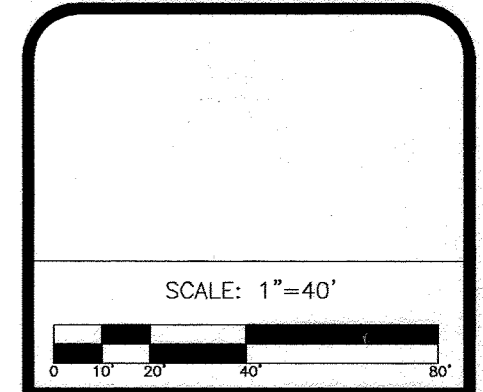
DREYER'S GRAND ICE CREAM
 9090 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

SITE LAYOUT PLAN

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1391 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01105
 413-787-1785, FAX 413-787-1786

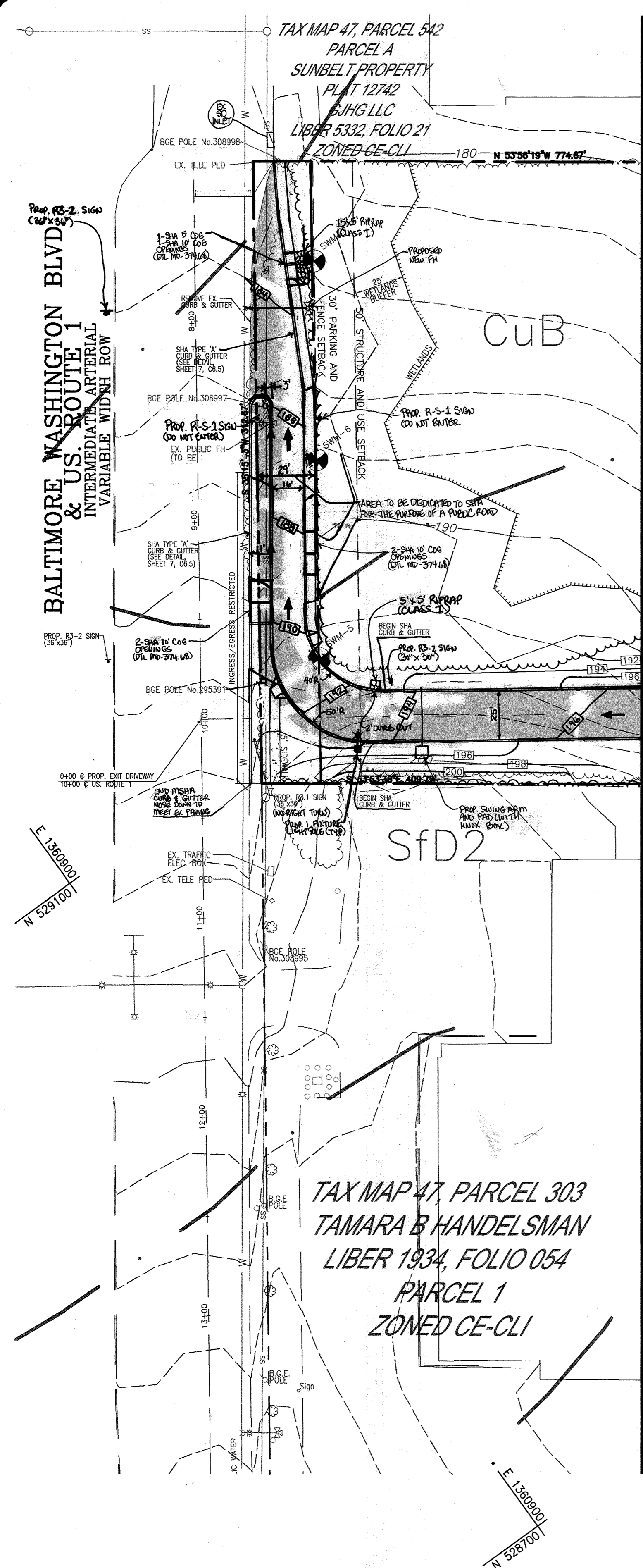
136 SOUTH MAIN STREET
 SALT LAKE CITY, UT 84101
 801-531-8585, FAX 801-531-8586



DRAWING NO.
C3.2

HO. CO. DPZ SHEET:
 3 OF 40

SDP-05-40



MATCHLINE (SHEET 5, C3.4)

E 1361300
N 5291700

E 1361300
N 5291700

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County
6/25/05
DATE

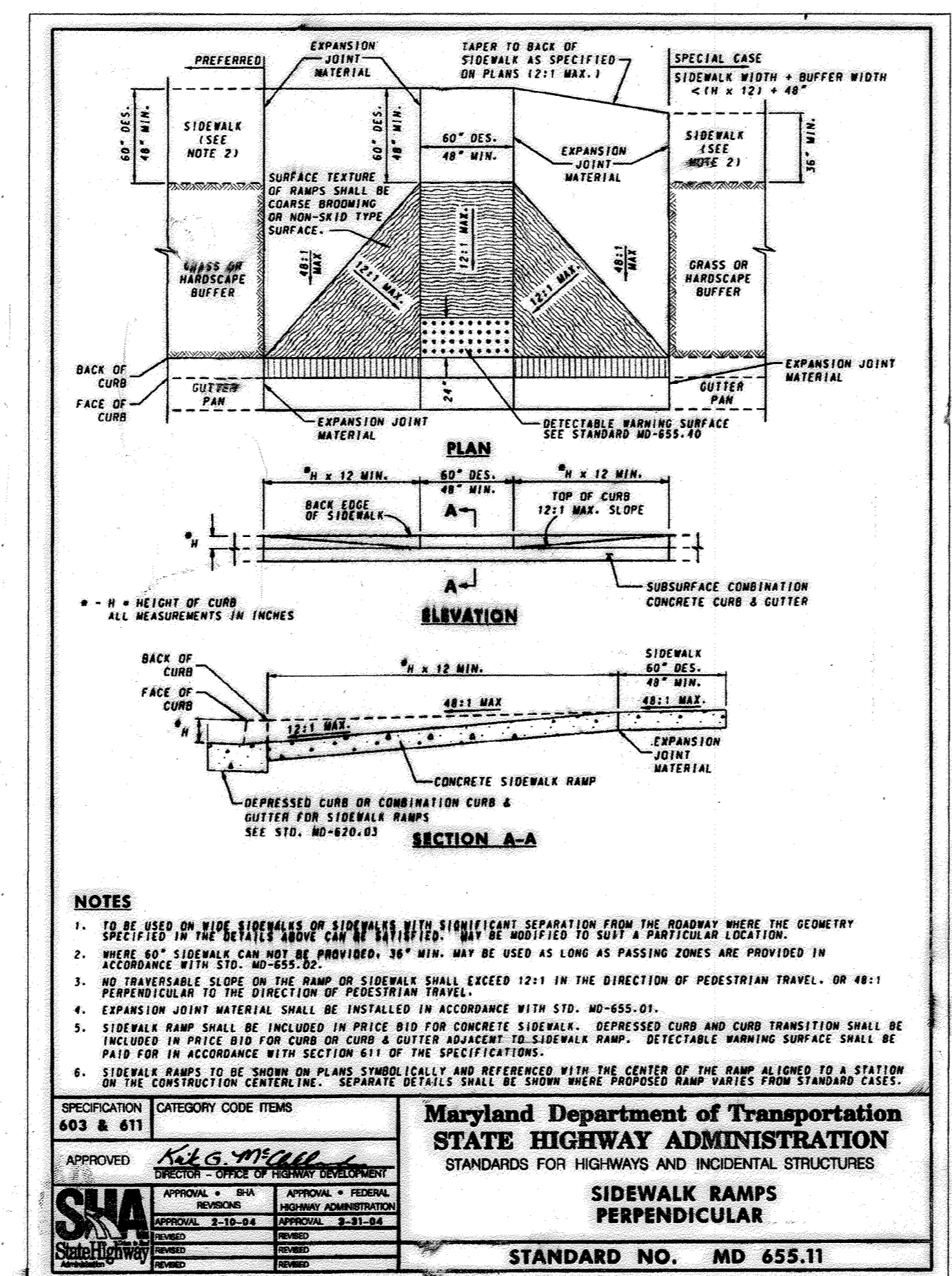
Andy Stankovic
6/26/05
DATE

David K. Coughlin
6/26/05
DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR



NOTES

- TO BE USED ON RAMP SIDEWALKS OR SIDEWALKS WITH SIGNIFICANT SEPARATION FROM THE ROADWAY WHERE THE GEOMETRY SPECIFIED IN THIS DRAWING IS NOT FEASIBLE TO MAINTAIN AT PARTICULAR LOCATION.
- WHERE 60" SIDEWALKS CAN NOT BE PROVIDED, 36" MIN. MAY BE USED AS LONG AS PASSING ZONES ARE PROVIDED IN ACCORDANCE WITH STD. NO. 603-01.
- NO TRAVERSABLE SLOPE ON THE RAMP OR SIDEWALK SHALL EXCEED 1:21 IN THE DIRECTION OF PEDESTRIAN TRAVEL, OR 40:1 PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.
- EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STD. NO. 655-01.
- SIDEWALK RAMP SHALL BE INCLUDED IN PRICE BID FOR CONCRETE SIDEWALK. DEPRESSED CURB AND CURB TRANSITION SHALL BE INCLUDED IN PRICE BID FOR CURB & GUTTER ADJACENT TO SIDEWALK RAMP. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
- SIDEWALK RAMPS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERRED TO WITH THE CENTER OF THE RAMP ALLOWED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASE.

SPECIFICATION 603 & 611 CATEGORY CODE ITEMS

APPROVED: *Gregory M. Miller*
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

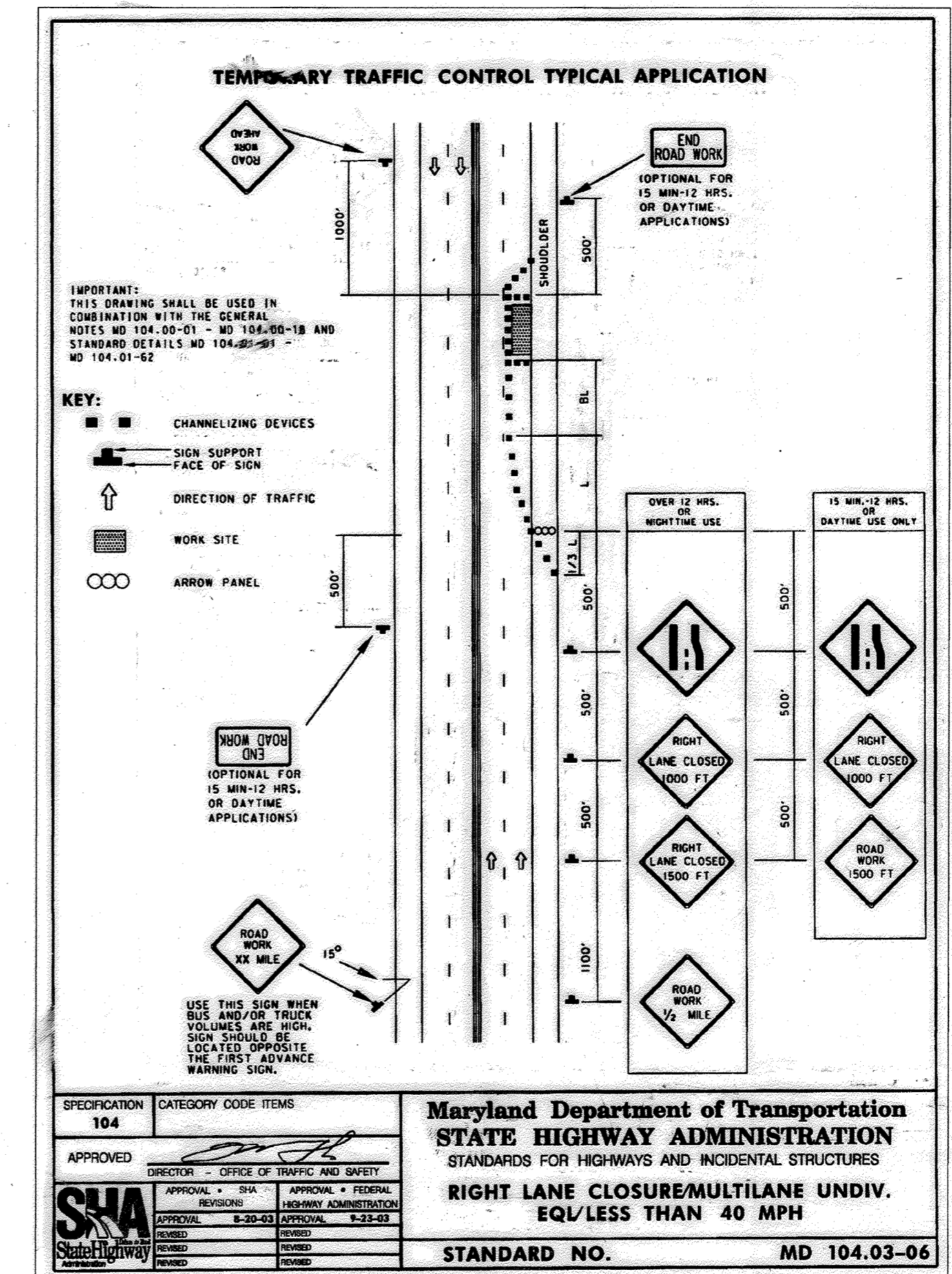
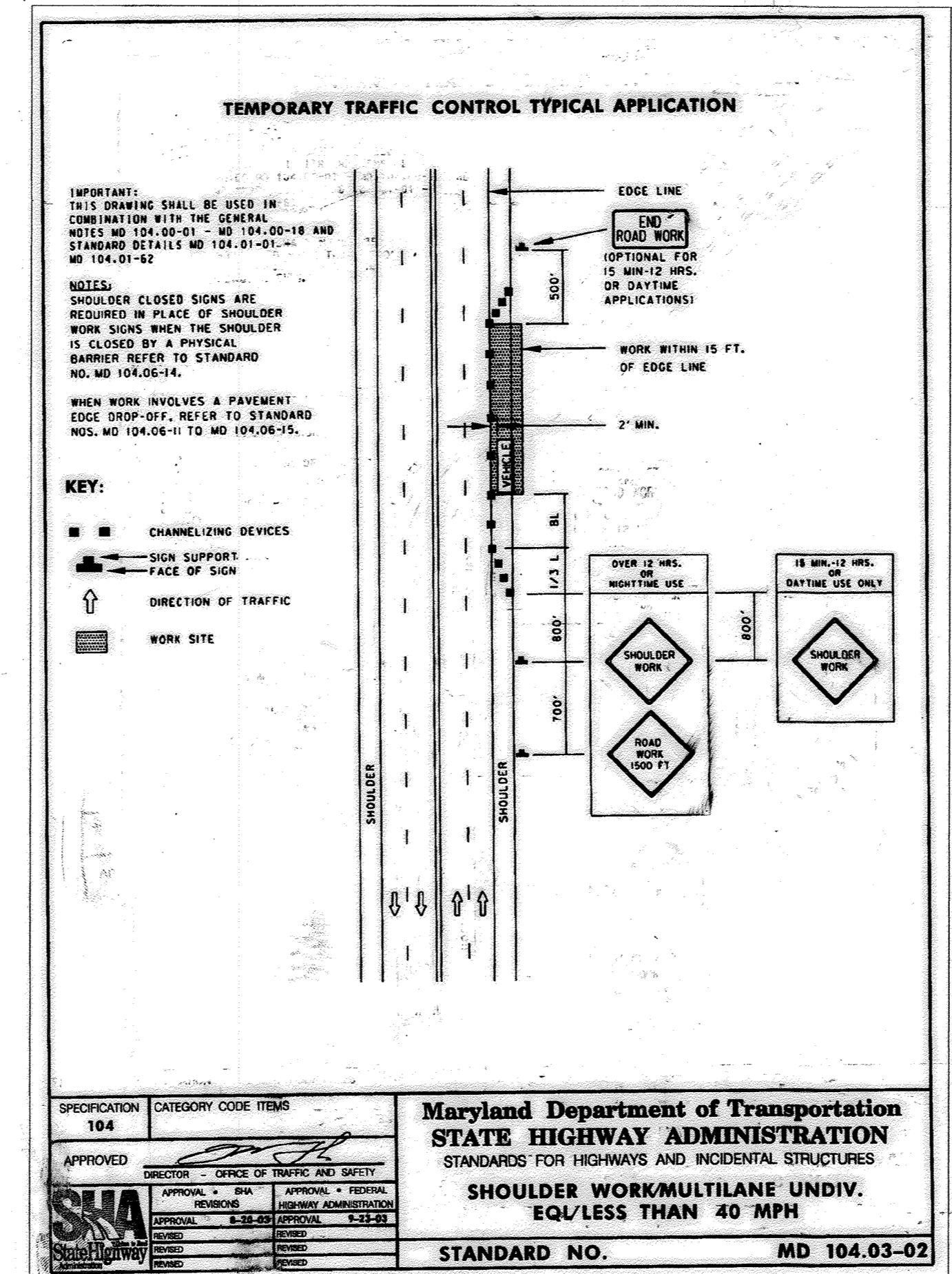
APPROVAL: *SHA* STATE HIGHWAY ADMINISTRATION

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SIDEWALK RAMPS PERPENDICULAR

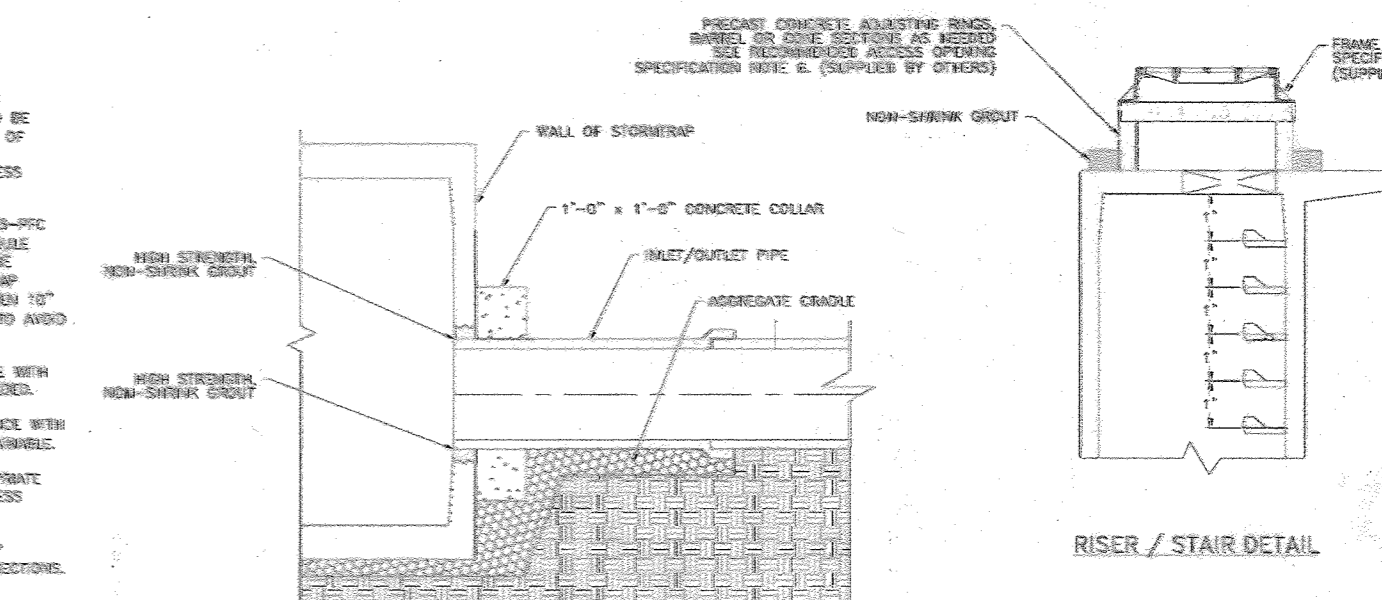
STANDARD NO. MD 655.11

*RAMP TO BE PROVIDED ON SIDEWALK AT BEGINNING OF EGRESS ROAD, SHOWN ON THIS SHEET.



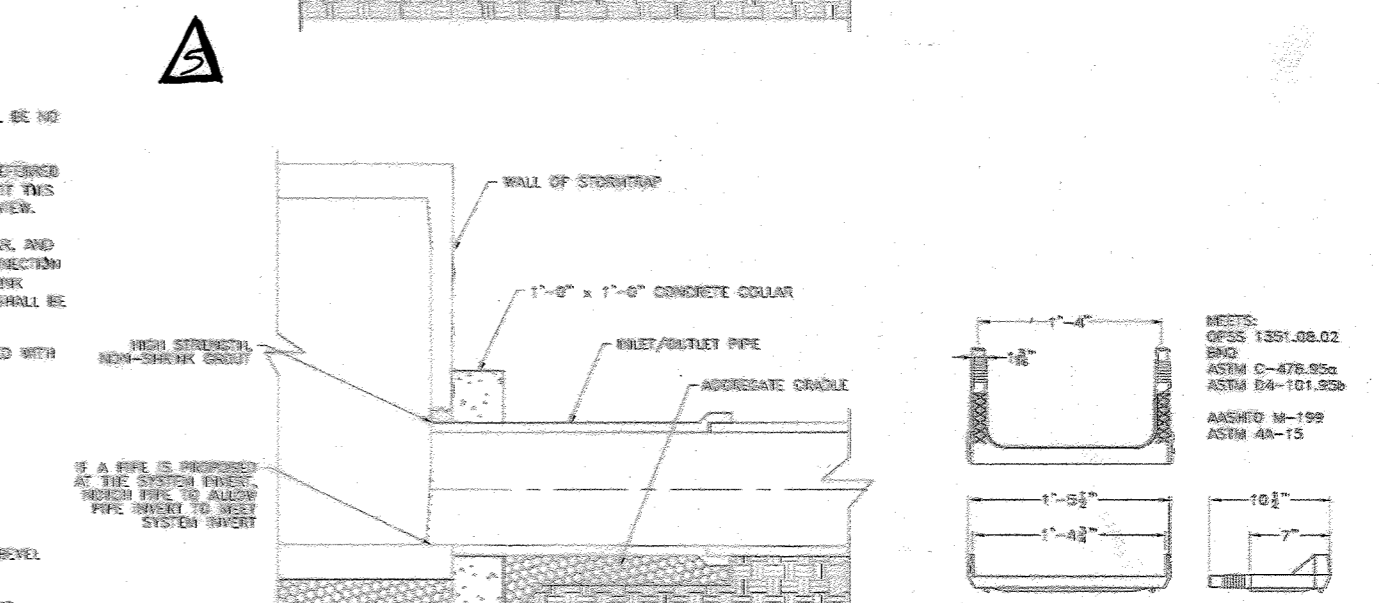
RECOMMENDED ACCESS OPENING SPECIFICATION

- A TYPICAL ACCESS OPENING FOR THE STORMWATER SYSTEM ARE 2'-0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 2'-0" IN DIAMETER NEED TO BE APPROVED BY THE DESIGNER. ALL OPENINGS MUST BE AT LEAST 1'-0" OF CLEARANCE FROM THE END OF THE STORMWATER CHANNEL. ALL ACCESS OPENINGS MUST BE LOCATED ON THE SIDE OF THE CHANNEL UNLESS OTHERWISE SPECIFIED.
- PLASTIC COATED STEEL STEPS PRODUCED BY B.A. INDUSTRIES PART #203-01C OR APPROVED EQUAL (SEE STEP DETAIL) ARE PROVIDED UNDER ANY WALKWAY OR WALKWAY OVERPASS. THE WALKWAY STEPS IN THE SIDEWALK ARE TO BE PLACED AT A SPACING OF 1'-0" FROM THE WALKWAY TO THE WALKWAY. ALL WALKWAY STEPS SHALL BE PLACED AS A SPACING BETWEEN 10" MIN AND 14" MAX BETWEEN STEPS. STEPS MAY BE LOCATED OR ALTERED TO AVOID OPENINGS OR OTHER OBSTACLES IN THE WALKWAY.
- STORMWATER SYSTEMS SHOULD BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS ON THE CENTER OF GRAVITY OF THE WALKWAY AS NECESSARY.
- STORMWATER ACCESS OPENINGS SHOULD BE RELOCATED TO AVOID INTERFERENCE WITH WALKWAY AND/OR GUTTER PIPE OPENINGS OR PLACEMENT OF STEPS AS APPROPRIATE.
- ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE MINIMUM REQUIREMENTS. STORMWATER ACCUMULATED AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.
- USE PRECAST ADJUSTING RINGS AS NEEDED TO ADJUST CURB OR GUTTER. PRECASTING FOR COVER OVER 2" TO USE PRECAST BUILT OR CONE SECTION. (PRODUCED BY OTHERS).



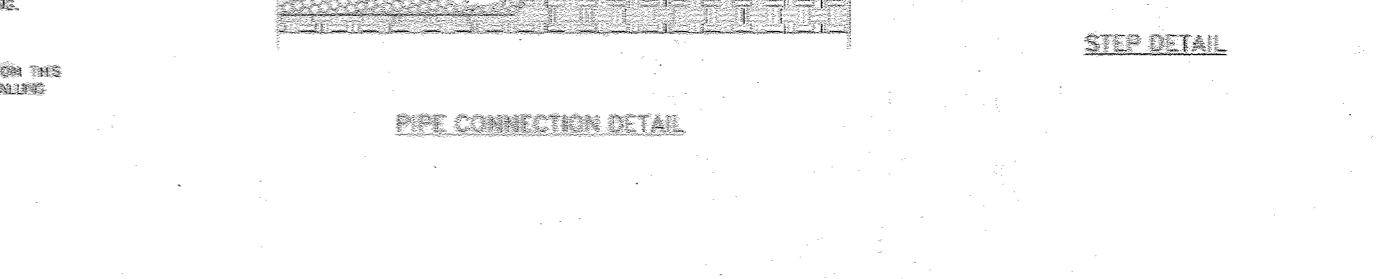
RECOMMENDED PIPE OPENING SPECIFICATION

- WALKWAY EDGE RESTRAINT FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'-0".
- WALKWAY OPENING SIDE TO BE DETERMINED BY THE WALKWAY. PREFERRED OPENING SIDE IS SET OR LESS. ANY OPENING WHICH DOES NOT FIT THIS CRITERIA SHALL BE SUBJECT TO THE ATTENTION OF STORMWATER FOR REVIEW.
- CONNECTING PIPES SHALL BE INSTALLED WITH A 1'-0" CONCRETE COLLAR, AND AN APPROPRIATE CRADLE FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH NON-SINKING GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
- THE ANNULAR SPACE BETWEEN THE PIPE AND THE WALL SHALL BE FILLED WITH HIGH STRENGTH NON-SINKING GROUT.



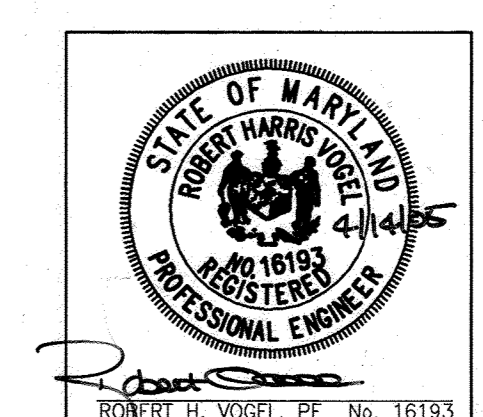
RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

- CLEAN AND LIBERALLY LUBRICATE ALL OF THE PIPE TO BE RECEIVED INTO STORMWATER.
- IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES, HOLES AND UNNECESSARY LEAKS OF PIPE.
- ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.



NOTE: ALL INCIDENTAL PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE BY THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODES/REGULATIONS.

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 4900
SCOTSDALE, AZ 85261
(510) 652-8187



ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

REVISE PLAN TO SHOW AS-BUILT	DATE	BY
PROVIDE AND REPAIR VARIATIONS	05-22-06	DRZ
INSTALLATION OF 12\"/>		

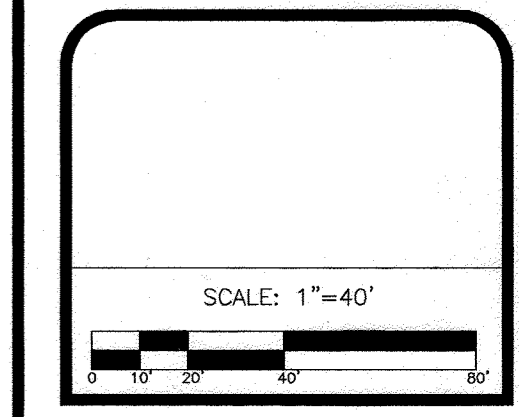
DREYER'S GRAND ICE CREAM
9090 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

SITE LAYOUT PLAN

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
SALISBURY, CT 06481
801-531-8585

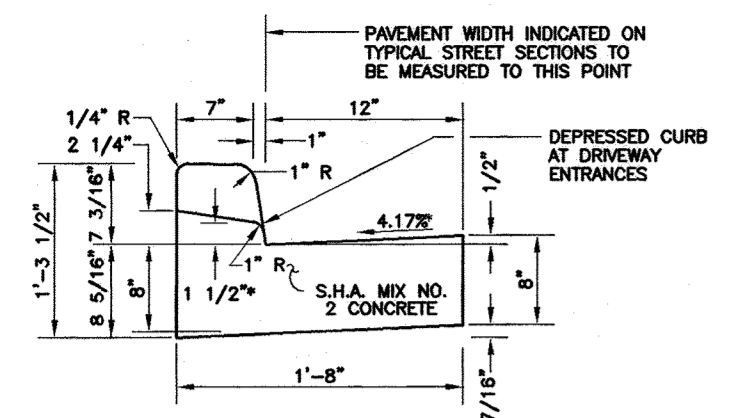
1901 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
415-757-1785



DRAWING NO.
C3.5

NO. CO. DPZ SHEET:
6 OF 40

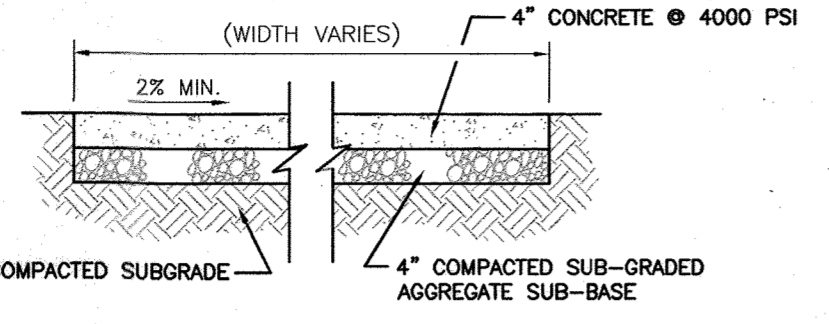
SDP-05-40



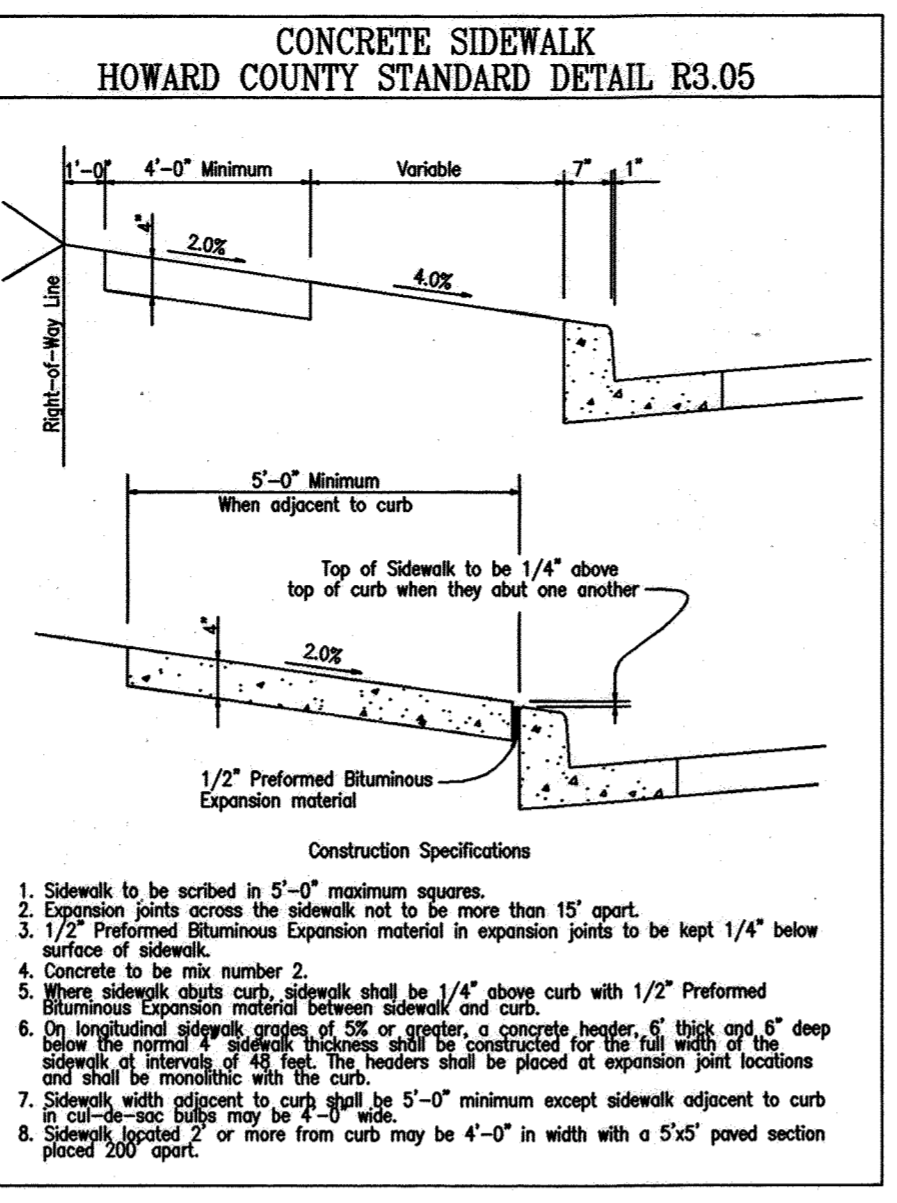
NOTE: DEPRESSION CURB IN HANDICAP ACCESSIBLE AREAS SHALL HAVE A 0.0417(1/24) RISE FROM PAVING TO TOP OF CURB.

* CUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE MATERIAL ON THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.

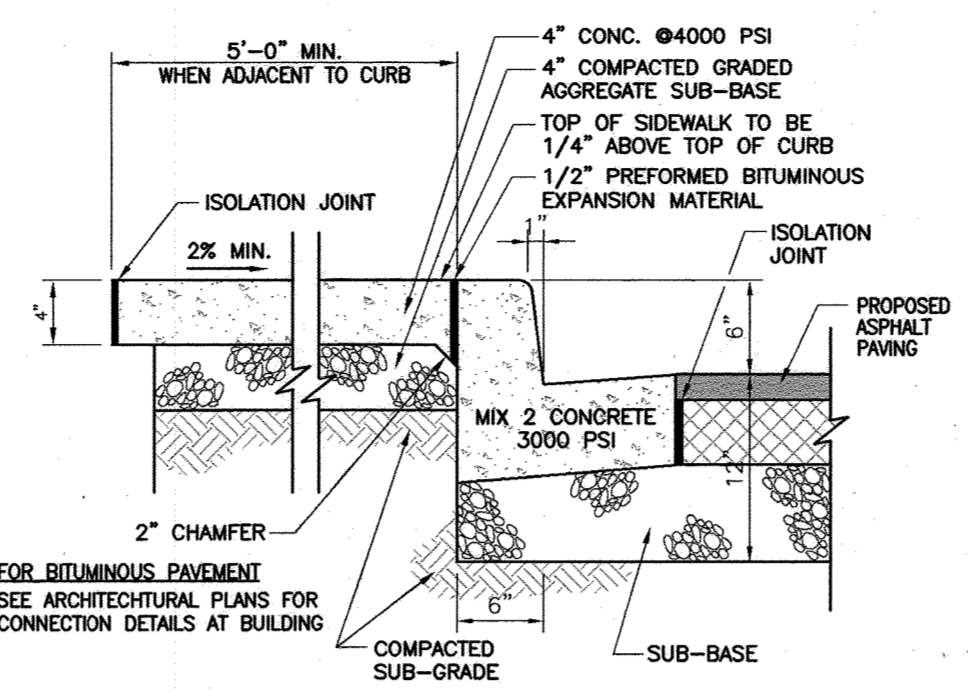
STANDARD COMBINATION CURB AND GUTTER
HOWARD COUNTY STANDARD R-3.01
(NOT TO SCALE)



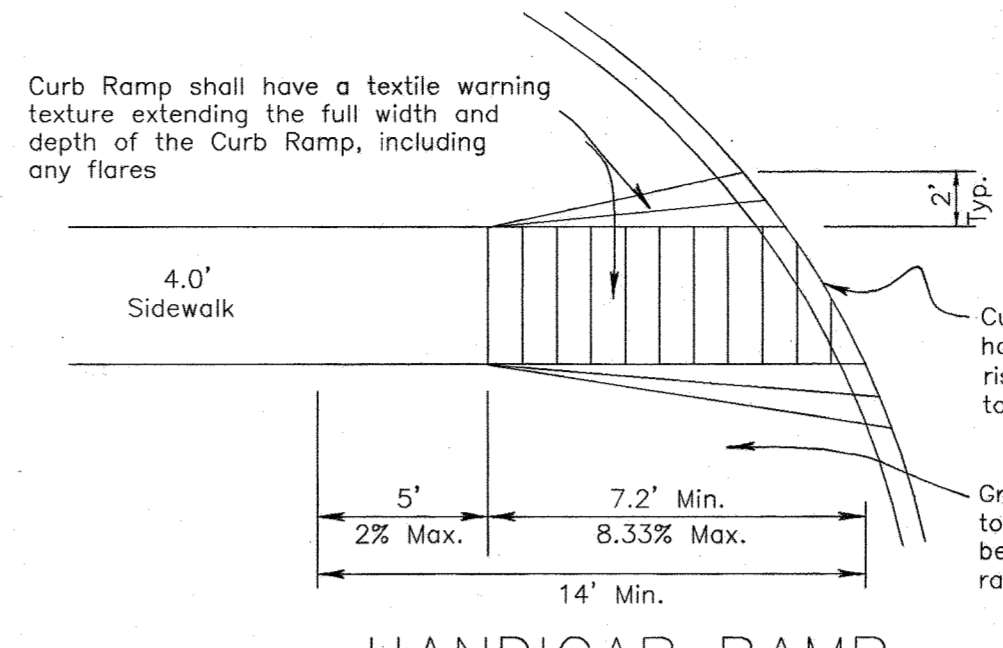
HO. CO. STD. R-3.05
TYPICAL SIDEWALK DETAIL
(N.T.S.)



CONCRETE SIDEWALK
HOWARD COUNTY STANDARD DETAIL R3.05



HO. CO. STD. R-3.05
TYPICAL SIDEWALK AT BUILDING
(N.T.S.)



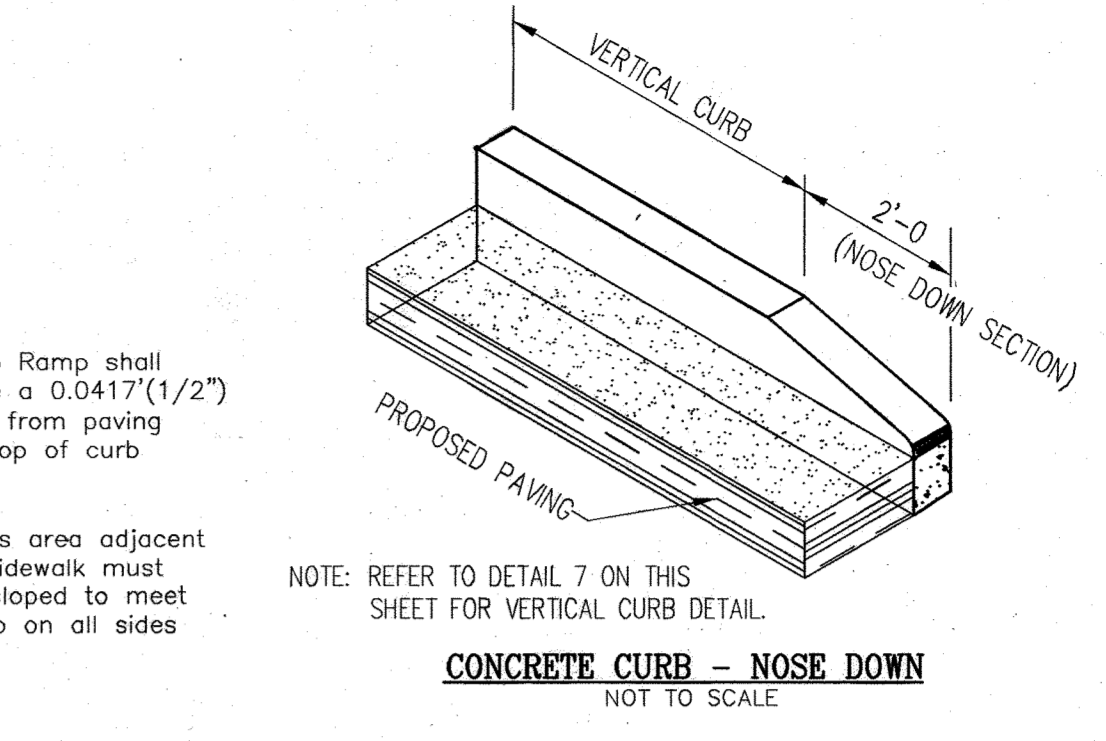
HANDICAP RAMP
NOT TO SCALE

APPROVED ZONE 2 BACKFILL OPTIONS

ZONE	MINIMUM	MAXIMUM
ZONE 1	12"	18"
	18"	24"
	24"	30"
ZONE 2	12"	18"
	18"	24"
	24"	30"
ZONE 3	12"	18"
	18"	24"
	24"	30"

ZONE CHART

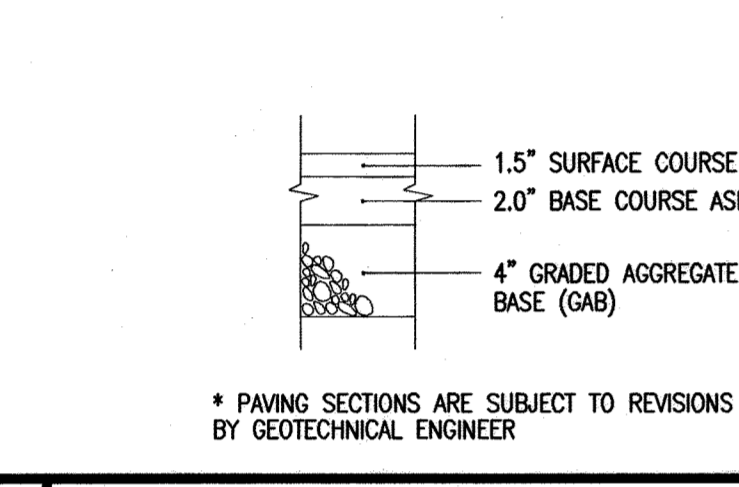
ZONE	MINIMUM	MAXIMUM
ZONE 1	12"	18"
	18"	24"
	24"	30"
ZONE 2	12"	18"
	18"	24"
	24"	30"
ZONE 3	12"	18"
	18"	24"
	24"	30"



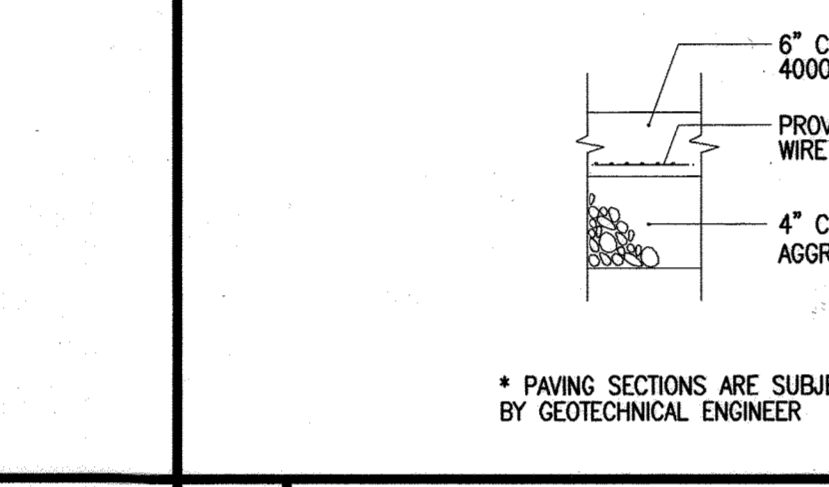
CONCRETE CURB - NOSE DOWN
NOT TO SCALE

1 CURB AND GUTTER DETAIL

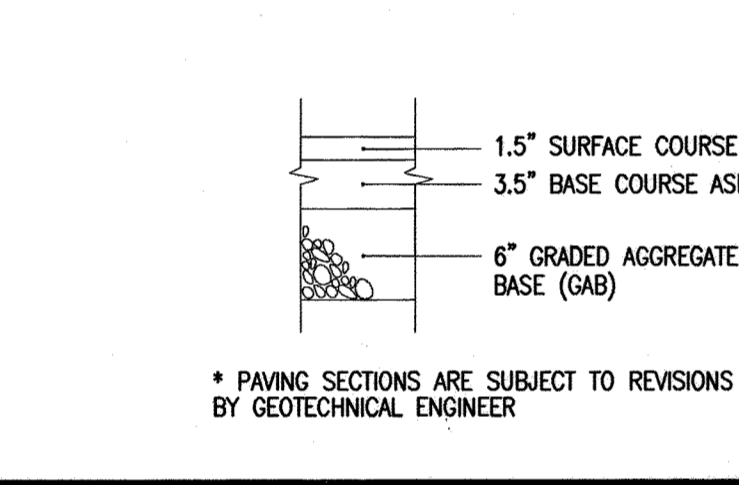
2 SIDEWALK DETAILS



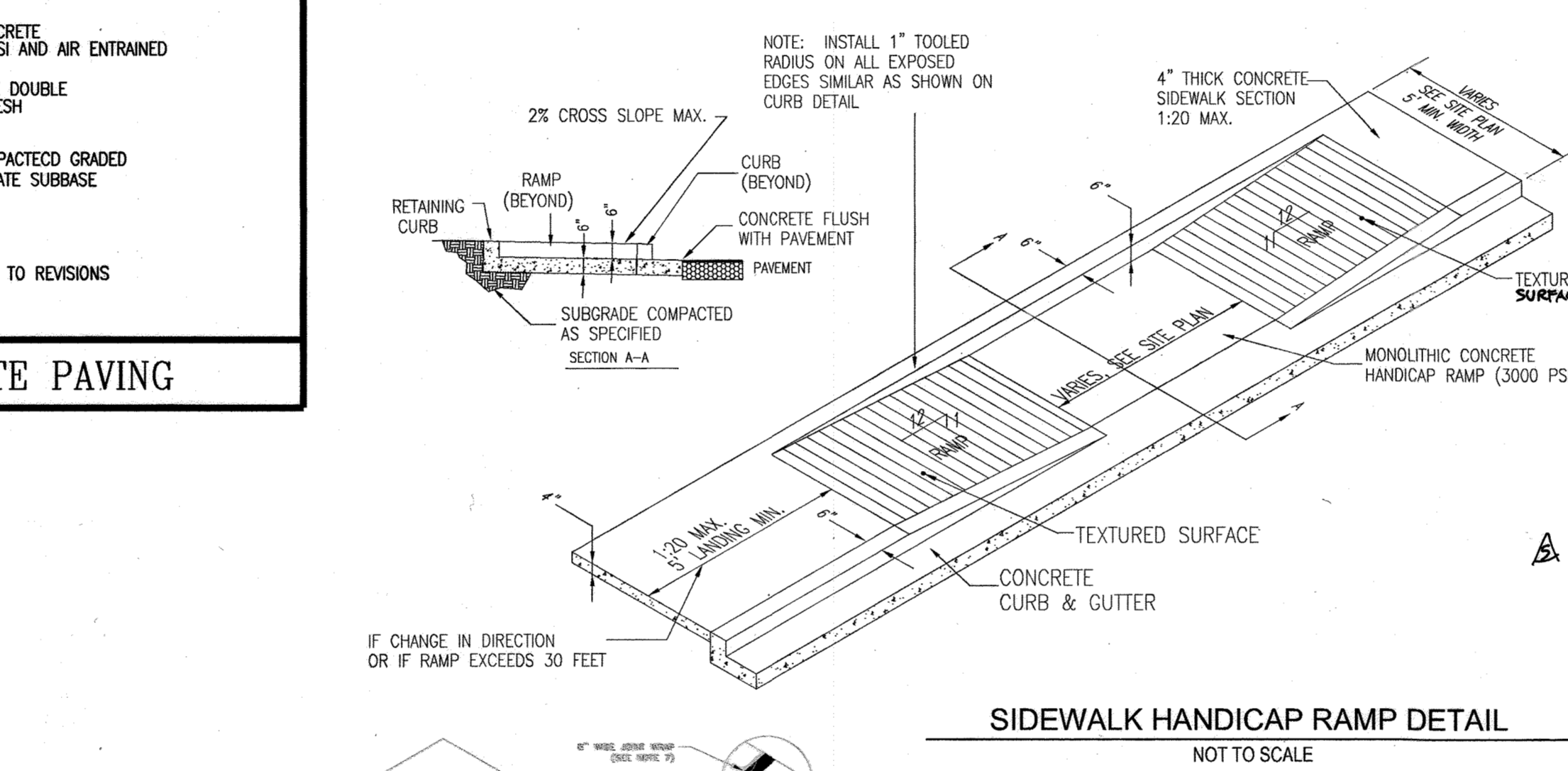
3 REGULAR DUTY PAVING DETAIL



5 HEAVY DUTY CONCRETE PAVING



4 HEAVY DUTY PAVING DETAIL



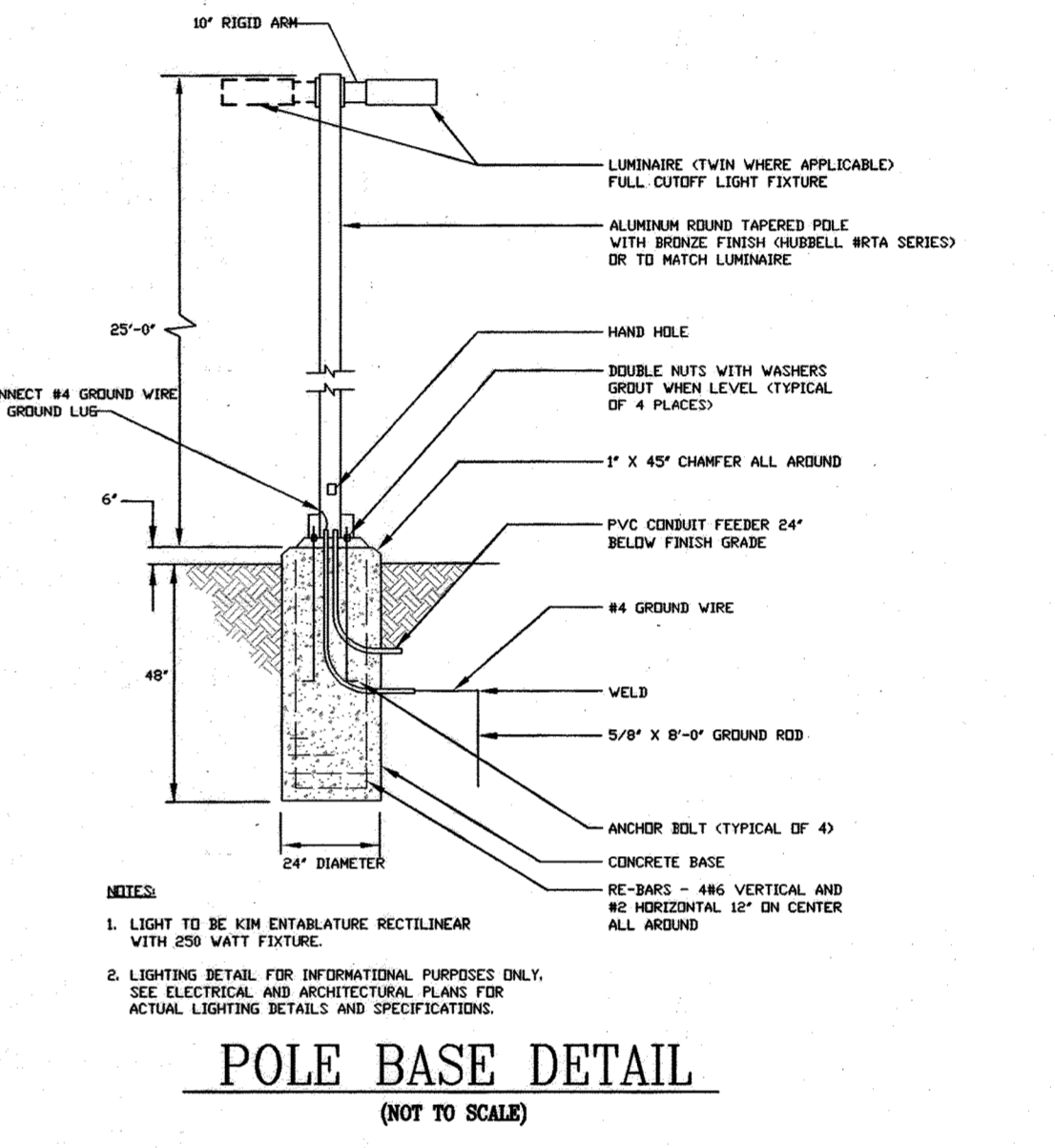
SIDEWALK HANDICAP RAMP DETAIL
NOT TO SCALE

STORMTRAP ZONE INSTALLATION SPECIFICATIONS/PROCEDURES

- THE FILL PLACED ABOVE THE STORMTRAP SHALL BE COMPACTED ON BOTH SIDES AT THE SAME RATE AND TO APPROXIMATELY THE SAME DEPTH AS TO THE SMALLER FILL DEPTH. THE FILL SHALL BE COMPACTED TO A MINIMUM OF 2\"/>

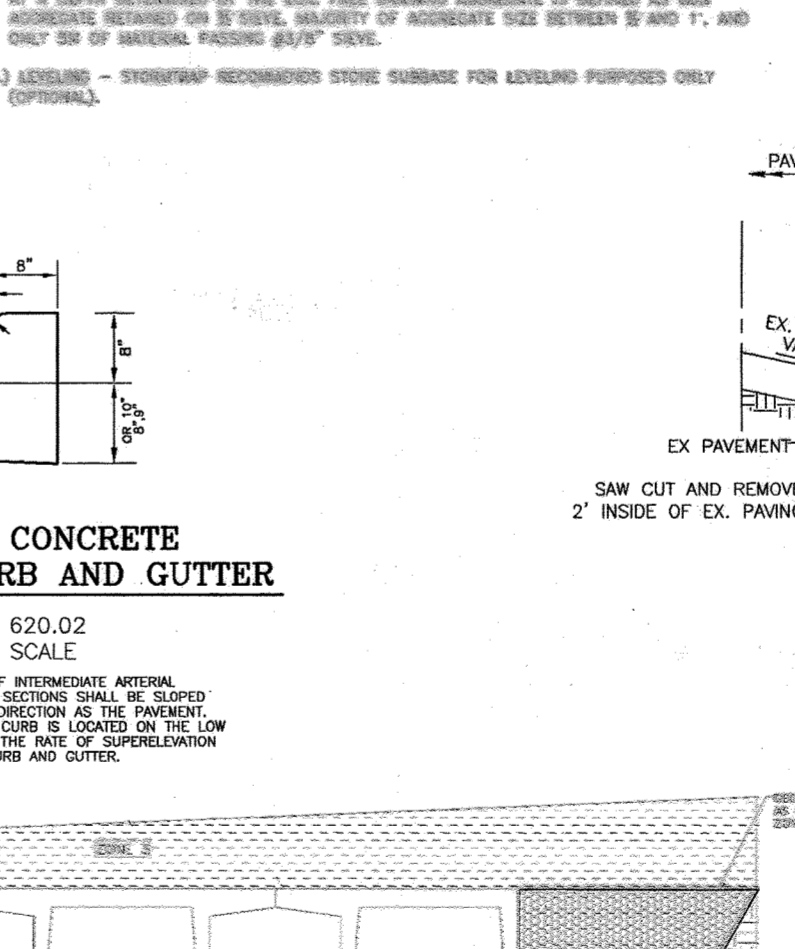
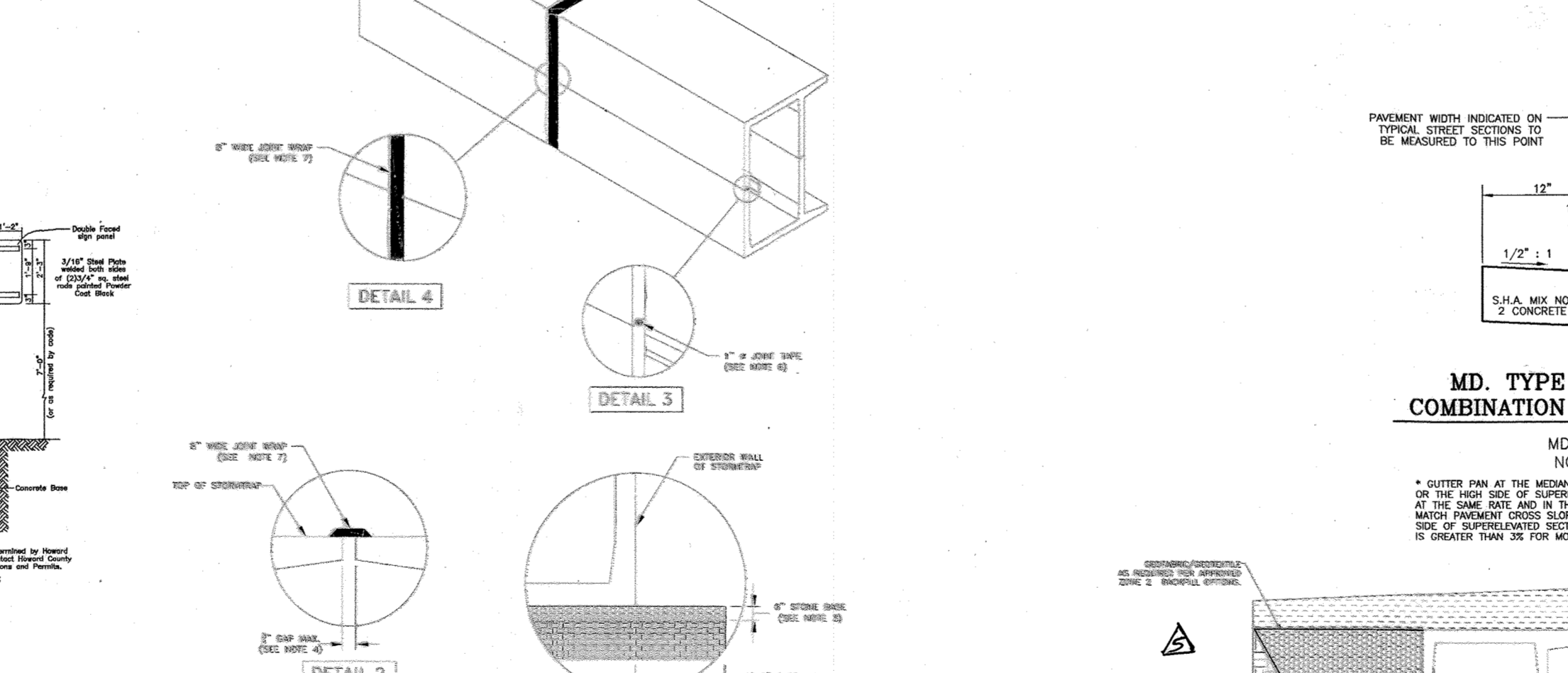
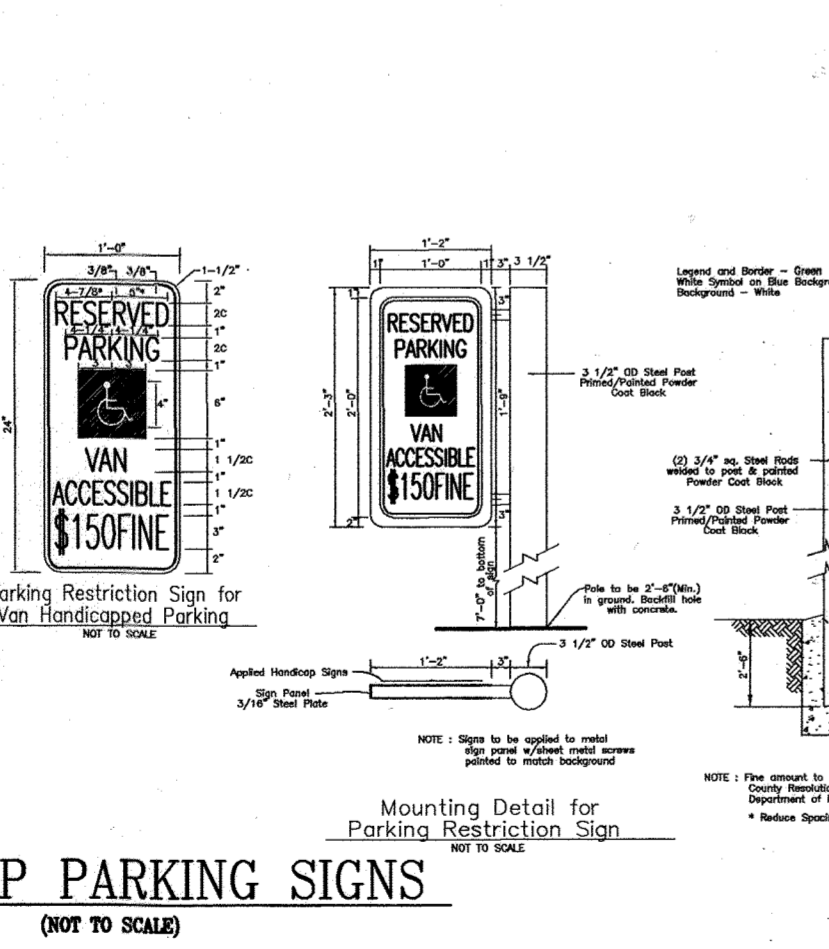
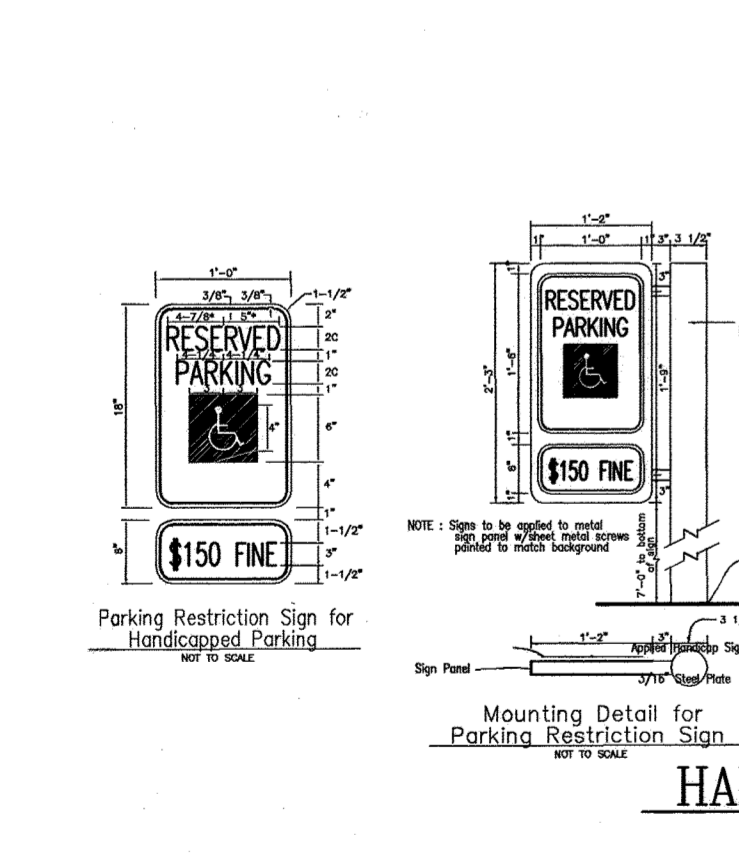
STORMTRAP ZONE INSTALLATION SPECIFICATIONS/PROCEDURES

- THE FILL PLACED ABOVE THE STORMTRAP SHALL BE COMPACTED ON BOTH SIDES AT THE SAME RATE AND TO APPROXIMATELY THE SAME DEPTH AS TO THE SMALLER FILL DEPTH. THE FILL SHALL BE COMPACTED TO A MINIMUM OF 2\"/>

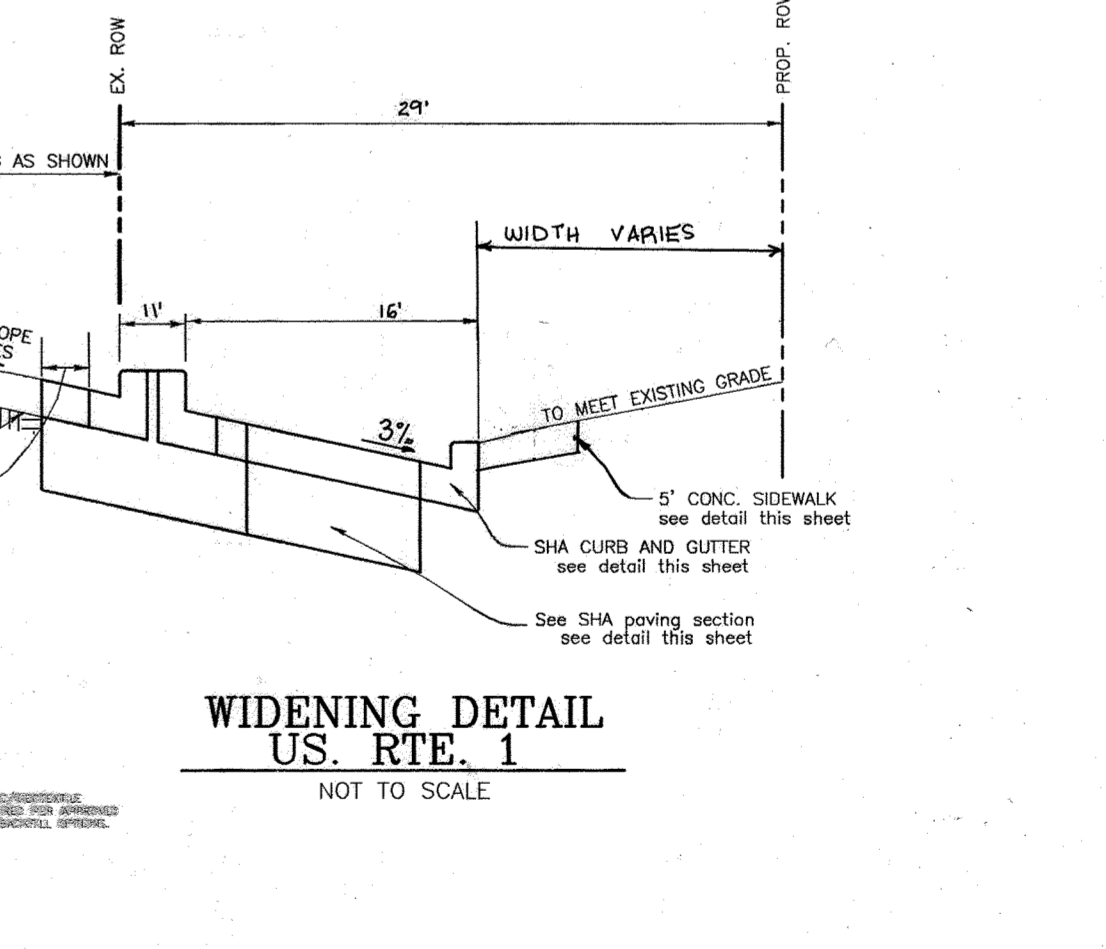


POLE BASE DETAIL
(NOT TO SCALE)

4 HANDICAP PARKING SIGNS



MD. TYPE 'A' CONCRETE COMBINATION CURB AND GUTTER
MD. NO. 620.02
NOT TO SCALE



WIDENING DETAIL
US. RTE. 1
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 5/25/05
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 6/2/05
 DIRECTOR: *[Signature]* 6/4/05

STORMTRAP INSTALLATION SPECIFICATIONS

- STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ALL CITY, STATE AND FEDERAL REQUIREMENTS OF UNDERGROUND PRODUCT CONCRETE UTILITY STRUCTURES. THE FOLLOWING ADDITIONAL AND/OR EXCEPTIONS SHALL APPLY:
- IT IS THE RESPONSIBILITY OF THE INSTALLER CONTRACTOR TO OBTAIN THE NECESSARY PERMITS AND EQUIPMENT TO USE TO INSTALL THE STORMTRAP.
- STORMTRAP MODELS CAN BE PLACED ON A LEVEL, 4\"/>

STORMTRAP INSTALLATION SPECIFICATIONS

- ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODELS SHALL BE SEALED WITH 1\"/>
- IF THE STORMTRAP IS TO BE INSTALLED ON A SLOPE, THE STORMTRAP SHALL BE INSTALLED WITH THE ADJACENT EXTERIOR JOINT BEING SEALED TO THE FOLLOWING INSTALLATION INSTRUCTIONS:
- USE A BRUSH OR MET. CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT MEETS TO BE SEALED.
- APPLY A BEAD OF SEALANT TO THE JOINT SURFACE. PLACE THE ADHESIVE TAPE OVER THE BEAD AND PRESS THE JOINT WIPER AGAINST THE STRUCTURE, REMOVING THE EXCESS SEALANT AS YOU GO. PRESS THE JOINT WIPER AGAINST THE STRUCTURE TO REMOVE THE EXCESS SEALANT FROM THE JOINT.
- IF THE CONTRACTOR NEEDS TO CANCEL ANY SUPPLIES, THEY MUST DO SO AS EARLY AS POSSIBLE TO THEIR SCHEDULED INSTALLATION AT THE JOB SITE. IF CANCELLATION AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.
- IF THE STORMTRAP IS TO BE INSTALLED ON A SLOPE, THE STORMTRAP SHALL BE INSTALLED WITH THE ADJACENT EXTERIOR JOINT BEING SEALED TO THE FOLLOWING INSTALLATION INSTRUCTIONS:
- IF THE STORMTRAP IS TO BE INSTALLED ON A SLOPE, THE STORMTRAP SHALL BE INSTALLED WITH THE ADJACENT EXTERIOR JOINT BEING SEALED TO THE FOLLOWING INSTALLATION INSTRUCTIONS:
- IF THE STORMTRAP IS TO BE INSTALLED ON A SLOPE, THE STORMTRAP SHALL BE INSTALLED WITH THE ADJACENT EXTERIOR JOINT BEING SEALED TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 4900E
SEATTLE, AZ 85261
(510) 652-8187

OWNER
[Redacted]

DEVELOPER
[Redacted]

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8911

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1391 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-787-1785, FAX 413-787-1786

136 SOUTH MAIN STREET
SALT LAKE CITY, UTAH 84101
801-531-8585, FAX 801-531-8586

DRAWING NO. **C6.5**
HO. CO. DPZ SHEET: 7 OF 40
SCALE: 1"=40'

REVISIONS

NO.	DATE	DESCRIPTION
1	05-20-06	RHW
3	01-05-22	TS
5	08-24-22	TS
6	10-12-22	TS

REL. DATE BY APP. RELEASED FOR

DREYER'S GRAND ICE CREAM
9090 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

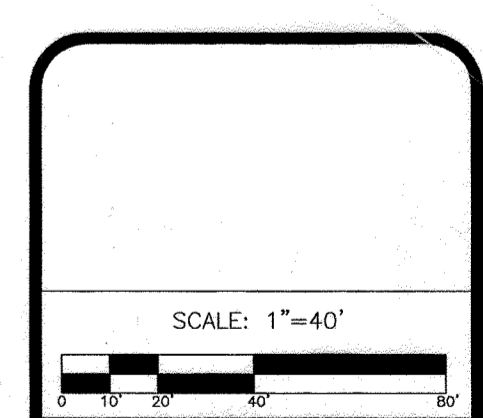
Dreyer's

SITE DETAILS

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1391 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-787-1785, FAX 413-787-1786

136 SOUTH MAIN STREET
SALT LAKE CITY, UTAH 84101
801-531-8585, FAX 801-531-8586



MATCHLINE (SHEET 10, C2.7)

PROPOSED EXPANSION
F.F. = 218.85

BALTIMORE WASHINGTON BLVD
& U.S. ROUTE 1
INTERMEDIATE-ARTERIAL
VARIABLE WIDTH ROW

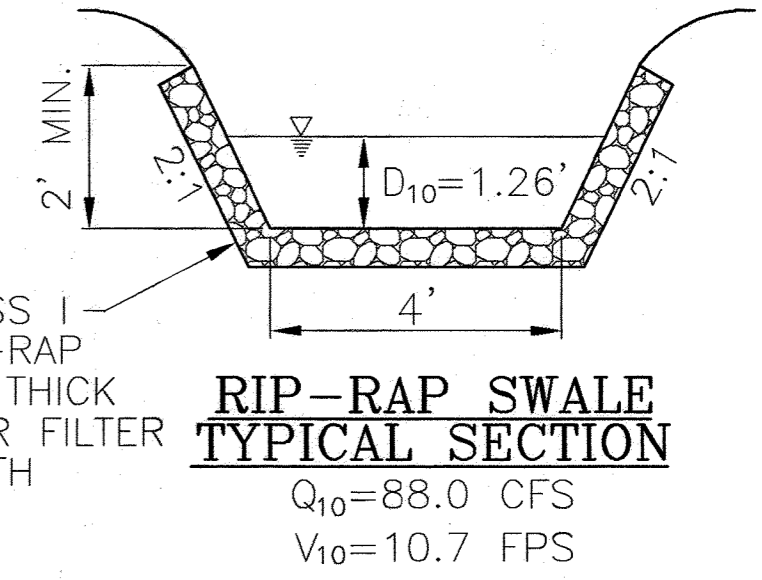
FUTURE PARKING
(NOT INCLUDED
IN THIS SDP)

TAX MAP 50, PARCEL 455
BALTIMORE GAS & ELECTRIC COMPANY, INC.
LIBER 150, FOLIO 145
ZONED CE-OU

WHISKEY BOTTOM ROAD
MINOR ARTERIAL
80' ROW

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- + 40.28 PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREELINE (FIELD LOCATED)
- EXISTING VEGETATION (APPROXIMATE LOCATION)
- EXISTING STREET TREES (7'-04'-)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- PROPOSED SIDEWALK
- MODERATE SLOPES (10% - 24.99%)
- STEEP SLOPE (>25%)
- PUBLIC 100 YR FLOODPLAIN
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- CURB INLET PROTECTION
- AT GRADE INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE



CLASS 1
RIP-RAP
19" THICK
OVER FILTER
CLOTH

**RIP-RAP SWALE
TYPICAL SECTION**
Q₁₀ = 88.0 CFS
V₁₀ = 10.7 FPS

MATCHLINE (SHEET 10, C2.7)

MATCHLINE (SHEET 9, C2.6)

E 1361000
N 5281500

E 1361000
N 5281500

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County Department of Planning and Zoning
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Candy Shindler 6/21/05
CHIEF, DIVISION OF LAND DEVELOPMENT
Mark Bouyele 6/21/05
DIRECTOR

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

Jim Meyer 4/21/05
USDA-NATURAL RESOURCES
CONSERVATION SERVICE
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND
SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Guy 4/21/05
HOWARD S.C.D.

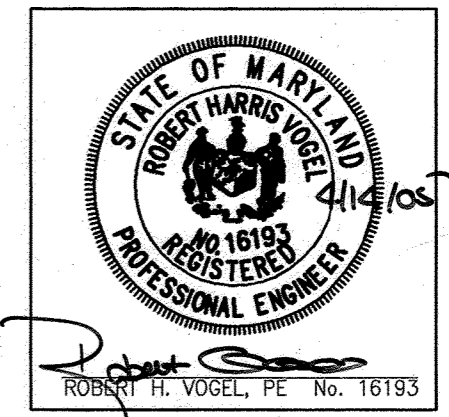
BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL
BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION
CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN
THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF
ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED
TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION
BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC
ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
Robert H. Vogel 4-14-05
SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL
REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PER-
SONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS
PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD
SOIL CONSERVATION DISTRICT."
Robert H. Vogel 4/14/05
SIGNATURE OF ENGINEER DATE

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO Box 4900E
SCOTSDALE, AZ 85261
(510) 652-8187



**ROBERT H. VOGEL
ENGINEERING, INC.**
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666
FAX: 410.461.8961

REV.	DATE	BY	APP.	RELEASED FOR
3	01-05-22	TS	WVB	REVISED PER COMMENTS FROM THE STATE OF MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES REGARDING THE INSTALLATION OF THE STABILIZED CONSTRUCTION ENTRANCE
4	05-05-22	REV	VTE	ADD BEARING TO THE PROPOSED TRAIL TO THE EAST SIDE OF THE BUILDING
6	10-12-22	TS	VTE	ADD TO THE BEARING TO THE EAST SIDE OF THE BUILDING

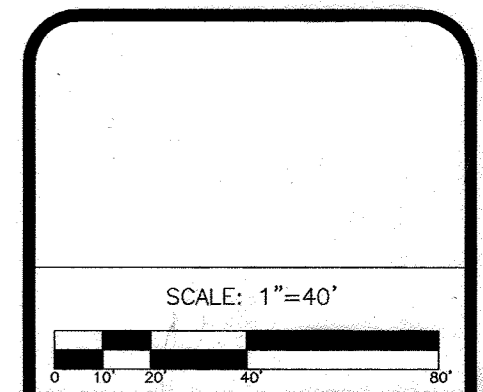
DREYER'S GRAND ICE CREAM
9090 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

SITE GRADING AND SEDIMENT CONTROL PLAN

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
SALISBURY CITY, UTAH 84101
801-537-8585, FAX 801-531-8586

1391 MAIN STREET
SPRINGFIELD MASSACHUSETTS 01105
413-787-1785, FAX 413-787-1786



DRAWING NO.
C2.5
NO. CO. DPZ SHEET:
8 OF 40

PROPOSED EXPANSION
F.F. = 218.85

ScD

ScB

EXISTING BUILDING TO REMAIN
104,926 SF

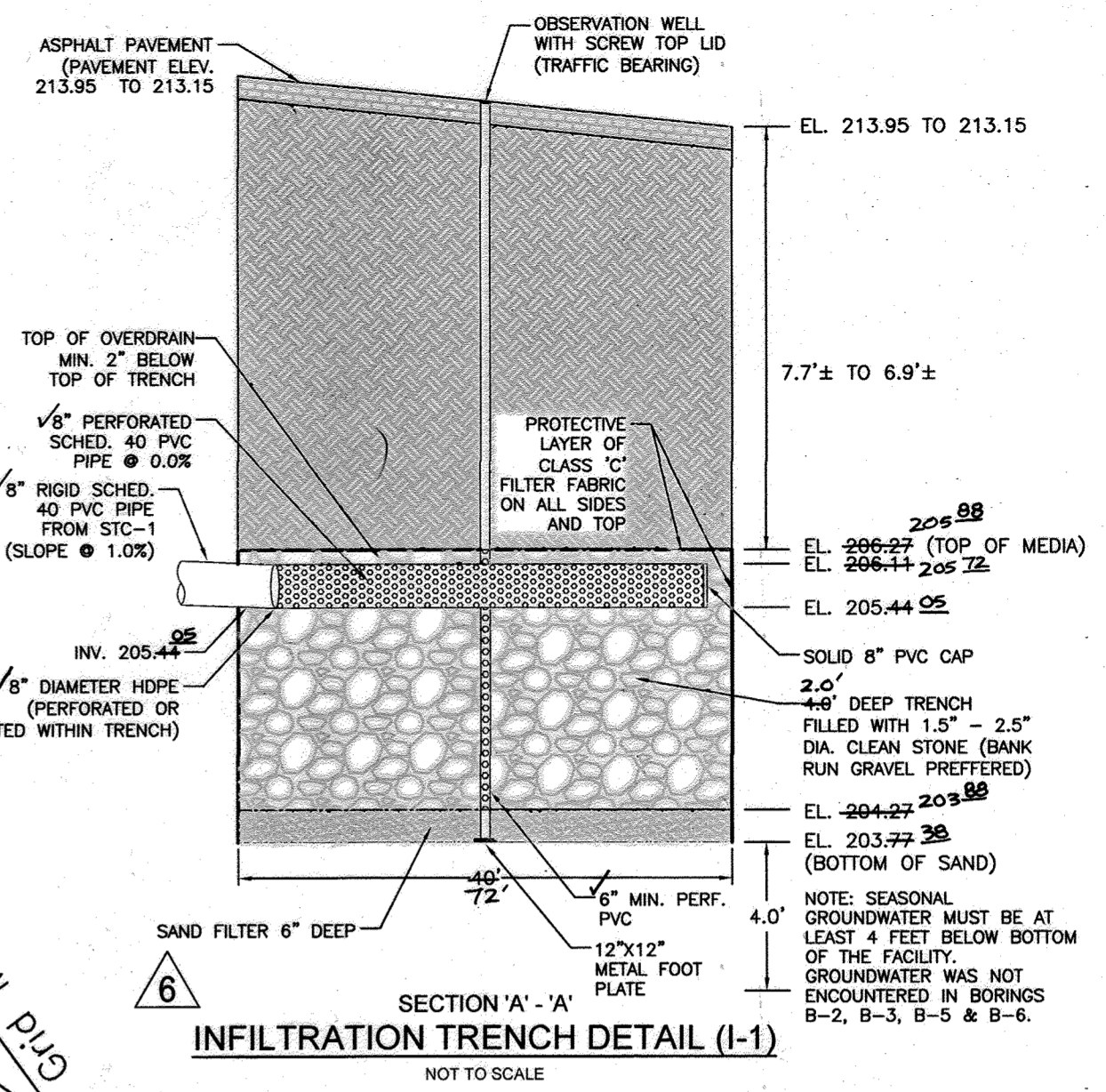
EvB

Gp

TAX MAP 50, PARCEL 509
ICE CREAM PARTNERS USA LLC
LIBER 4913, FOLIO 89
PARCEL B
THE SOUTHLAND CORPORATION PROPERTY
PLAT 10207
9.0133 ACRES
ZONED: M-1

MATCHLINE (SHEET 8, C2.5)

(ANNE ARUNDEL COUNTY)
EX. RAILROAD
E. 1367.1200
N. 527.193



SECTION 'A'- 'A'
INFILTRATION TRENCH DETAIL (I-1)
NOT TO SCALE

INFILTRATION TRENCH
DIVERSION DETAIL
STORMCEPTOR (STC-1)
NOT TO SCALE

APPENDIX B.2. CONSTRUCTION SPECIFICATIONS FOR INFILTRATION PRACTICES
B.2.A INFILTRATION TRENCH GENERAL NOTES AND SPECIFICATIONS

- 1. AN INFILTRATION TRENCH MAY NOT BECOME RUN-OFF UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA TO THE INFILTRATION TRENCH HAS RECEIVED FINAL STABILIZATION.
- 2. HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM TRAVELING OVER THE PROPOSED LOCATION OF THE INFILTRATION TRENCH TO MINIMIZE COMPACTION OF THE INFILTRATION TRENCH TO THE DESIGN DIMENSIONS. EXCAVATED MATERIALS SHALL BE PLACED AWAY FROM THE TRENCH SIDES TO ENHANCE TRENCH WALL STABILITY. LARGE TREE ROOTS MUST BE TRIMMED WITH THE TRENCH SIDES IN ORDER TO PREVENT FABRIC PUNCTURING OR TEARING OF THE FILTER FABRIC DURING SUBSEQUENT INSTALLATION PROCEDURES. THE SIDE WALLS OF THE TRENCH SHALL BE ROUGHENED, MADE SHARPED AND SEALED BY HEAVY EQUIPMENT.
- 3. A CLASS "C" GEOTEXTILE OR BETTER (SEE SECTION 24.0 MATERIAL SPECIFICATIONS, 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, INC. 1994) SHALL INTERLOCK BETWEEN THE TRENCH SIDE WALLS AND BETWEEN THE STONE RESERVOIR AND GRAVEL FILTER LAYERS. A PARTIAL LIST OF NON-WOVEN FILTER FABRICS THAT MEET THE CLASS "C" CRITERIA FOLLOWS. ANY ALTERNATIVE FILTER FABRIC MUST BE APPROVED BY THE PLAN APPROVAL AUTHORITY.
MUSCO 5552
CARTAGE 71-855
GELON 170
MIRAF 180-N
WESTEC 107

- 9. VERTICALLY EXCAVATED WALLS MAY BE DIFFICULT TO MAINTAIN IN AREAS WHERE SOIL MOISTURE IS HIGH OR WHERE SOFT COHESIVE OR COMPRESSION SOILS ARE DOMINANT. THESE CONDITIONS MAY REQUIRE LAYING BACK OF THE SIDE SLOPE TO MAINTAIN STABILITY.
- 10. PVC DISTRIBUTION PIPES SHALL BE SCHEDULE 40 AND MEET ASTM-D-1785. ALL FITTINGS SHALL MEET ASTM-D-2729. PERFORATIONS SHALL BE 3/8 INCH IN DIAMETER. A PERFORATED PIPE SHALL BE PROVIDED ONLY WITHIN THE INFILTRATION TRENCH AND SHALL TERMINATE 1 FOOT SHORT OF THE INFILTRATION TRENCH WALL. THE END OF THE PVC PIPE SHALL BE CAPPED. NOTE: PVC PIPE WITH A WALL THICKNESS CLASSIFICATION OF SDR-35 (MEDIUM DENSITY POLYETHYLENE) IS AN ACCEPTABLE SUBSTITUTE FOR THE SCHEDULE 40 PVC.
- 11. THE OBSERVATION WELL IS TO CONSIST OF 6-INCH DIAMETER PERFORATED PVC SCHEDULE 40 PIPE (N 278 OR F758, TYPE PS 28) WITH A SCREW TOP TRAFFIC BEARING LID AND IS TO BE LOCATED NEAR THE LONGITUDINAL CENTER OF THE INFILTRATION TRENCH. THE PIPE SHALL HAVE A PLASTIC COLLAR WITH RISERS TO PREVENT ROTATION WHEN REMOVING THE CAP. THE SCREW TOP LID SHALL BE A CLEANOUT WITH A LOCKING MECHANISM OR SPECIAL BOLT TO DISCONNECT WINDSHIELD. THE JOINT TO THE WELLS SHALL BE MARKED ON THE LID. THE PIPE SHALL BE PLACED VERTICALLY WITHIN THE GRAVEL PORTION OF THE INFILTRATION TRENCH AND A CAP PROVIDED AT THE BOTTOM OF THE PIPE. THE BOTTOM OF THE CAP SHALL REST ON THE INFILTRATION TRENCH BOTTOM.
- 12. CORRUGATED METAL DISTRIBUTION PIPES SHALL CONFORM TO ASTM-A-36 AND SHALL BE ALUMINIZED IN ACCORDANCE WITH ASTM-A-242. ALUMINIZED PIPE CONTACT WITH CONCRETE SHALL BE COATED WITH AN INERT COMPOUND CAPABLE OF PREVENTING THE OXIDIZING EFFECT OF THE ALUMINUM ON THE CONCRETE. PERFORATED DISTRIBUTION PIPES SHALL CONFORM TO ASTM-A-36. CLASS 2 AND SHALL BE PROVIDED ONLY WITHIN THE INFILTRATION TRENCH AND SHALL TERMINATE 1 FOOT SHORT OF THE INFILTRATION TRENCH WALL. AN ALUMINIZED METAL PLATE SHALL BE WELDED TO THE END OF THE PIPE.
- 13. IF A DISTRIBUTION STRUCTURE WITH A WET WELL IS USED, A 4-INCH DRAIN PIPE SHALL BE PROVIDED AT OPPOSITE ENDS OF THE INFILTRATION TRENCH DISTRIBUTION STRUCTURE. TWO (2) CURB FEET OF PRODUCE BACKFILL MEETING ASTM-A-43, SIZE NO. 57 SHALL BE PROVIDED AT EACH DRAIN.
- 14. IF A DISTRIBUTION STRUCTURE IS USED, THE MANHOLE COVER SHALL BE BOLTED TO THE FRAME.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Howard County
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Cathy Hamilton
CHIEF, DIVISION OF LAND DEVELOPMENT
Dorothy M. Cople
DIRECTOR

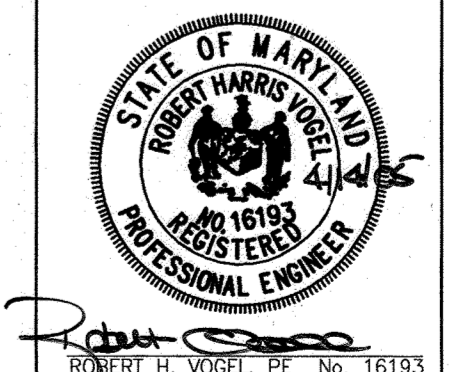
REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
Jim Hays
USDA-NATURAL RESOURCES CONSERVATION SERVICE
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Jeffrey
HOWARD S.C.D.

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Edy's Grand Ice Cream
04-14-05

BY THE ENGINEER:
I/WE 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.
Robert H. Vogel
4/14/05

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 49008
SCOTTSDALE, AZ 85261
(510) 652-8187

AS-BUILT CERTIFICATION FOR PROFESSIONAL ENGINEER
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.
Robert H. Vogel
16193 7-25-23
P.E.# DATE



ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DRAWING NO.
C2.6
HO. CO. DPZ SHEET:
9 OF 40

REV.	DATE	BY	APP.	RELEASED FOR
1	05-28-06	DZ	RHV	EVALUATED & RECALCULATED EXISTING FACILITY INFORMATION
3	01-05-22	TS	YTG	REVISED PLAN TO SHOW THE 13' 10" ST. WALKWAY TO ASSOCIATED STORAGE AREA AND EXISTING FACILITIES
6	10-12-22	TS	YTG	REVISED PLAN TO SHOW THE 13' 10" ST. WALKWAY TO ASSOCIATED STORAGE AREA AND EXISTING FACILITIES

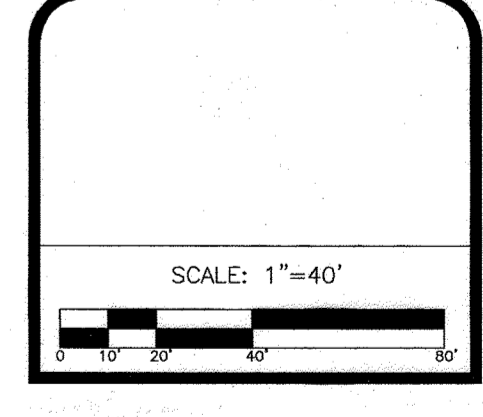
DREYERS GRAND ICE CREAM
9090 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

SITE GRADING AND SEDIMENT CONTROL PLAN

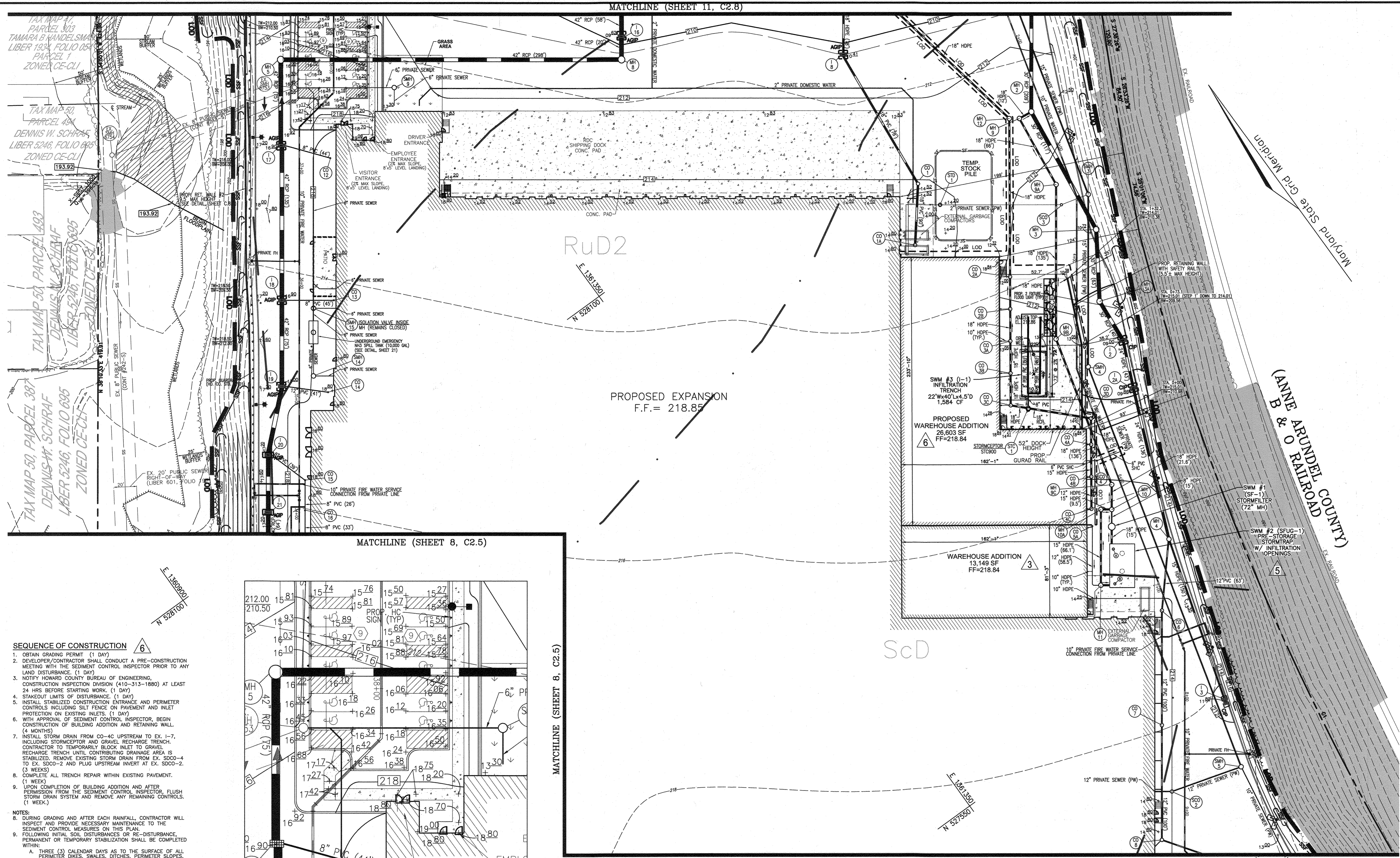
THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1391 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-787-1785, FAX 413-787-1786

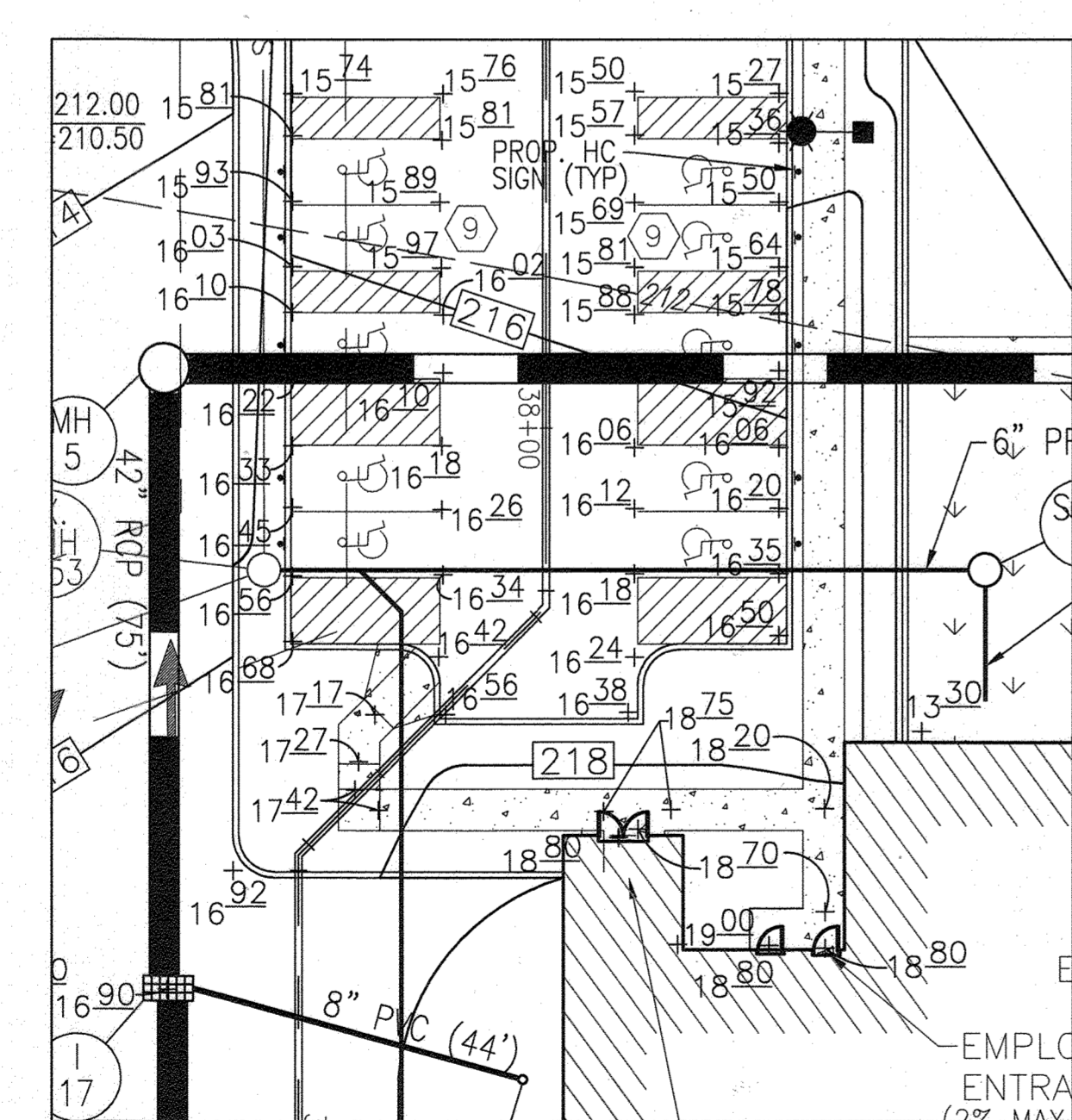
136 SOUTH MAIN STREET
SALT LAKE CITY, UTAH 84101
801-531-8585, FAX 801-531-8586



AS-BUILT JULY 2023



- SEQUENCE OF CONSTRUCTION**
- OBTAIN GRADING PERMIT (1 DAY)
 - DEVELOPER/CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE (1 DAY)
 - NOTIFY HOWARD COUNTY BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION (410-313-1880) AT LEAST 24 HRS BEFORE STARTING WORK (1 DAY)
 - STAKEOUT LIMITS OF DISTURBANCE (1 DAY)
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE AND PERIMETER CONTROLS INCLUDING SILT FENCE ON PAVEMENT AND INLET PROTECTION ON EXISTING INLETS (1 DAY)
 - WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, BEGIN CONSTRUCTION OF BUILDING ADDITION AND RETAINING WALL (4 MONTHS)
 - INSTALL STORM DRAIN FROM CO-4C UPSTREAM TO EX. I-7, INCLUDING STORMCEPTOR AND GRAVEL RECHARGE TRENCH. CONTRACTOR TO TEMPORARILY BLOCK INLET TO GRAVEL RECHARGE TRENCH UNTIL CONTRIBUTING DRAINAGE AREA IS STABILIZED. REMOVE EXISTING STORM DRAIN FROM EX. SDCO-4 TO EX. SDCO-2 AND PLUG UPSTREAM AT EX. SDCO-2 (3 WEEKS)
 - COMPLETE ALL TRENCH REPAIR WITHIN EXISTING PAVEMENT (1 WEEK)
 - UPON COMPLETION OF BUILDING ADDITION AND AFTER PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, FLUSH STORM DRAIN SYSTEM AND REMOVE ANY REMAINING CONTROLS (1 WEEK)
- NOTES:**
- DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.
 - FOLLOWING INITIAL SOIL DISTURBANCES OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - SEVEN (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
 - ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.



EMPLOYEE ENTRANCE HANDICAPPED ACCESS
SCALE: 1"=20'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Director, Dept. of Planning and Zoning Date 1-12-23

1/10/23
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

1/12/23
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

BY THE DEVELOPER:

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

Signature of Developer: [Signature] DATE: 12/5/22

BY THE ENGINEER:

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

Signature of Engineer: [Signature] DATE: 12/9/22

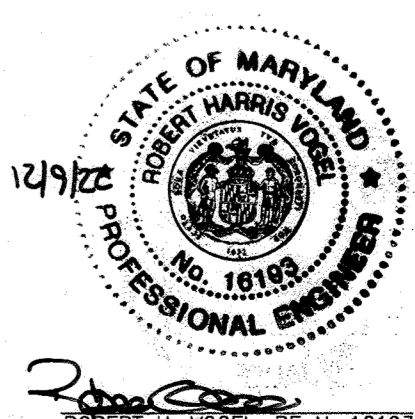
THIS DEVELOPMENT PLAN IS APPROVED, FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: [Signature] DATE: 01/05/23
HOWARD S.C.D.

AS-BUILT CERTIFICATION FOR PWSM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

Signature: [Signature] DATE: 7-25-23
F.E. NAME: [Name] F.E. #: [Number]



OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 4800E
SCOTTSDALE, AZ 85261
(510) 652-8187

NO.	DATE	BY	REVISION
6	10-12-22	TS	VTG REVISE TO ADD CHILLED WAREHOUSE EXPANSION, RETAINING WALL, SWM, GRADING AND CHANGE SHEET NUMBERS
5	06-24-22	TS	VTG REVISE THE PLAN TO RELOCATE THE ESD PRACTICES AND SD SYSTEM
3	01-05-22	TS	VTG REVISE THE PLAN TO SHOW THE 13,000 SFT WAREHOUSE EXPANSION & THE INSTALLATION OF ASSOC. STORMWATER MANAGEMENT FACILITIES
1	05-25-06	DZ	RHV REVISE PLAN TO SHOW AS-BUILT FACILITIES AND REVISE VARIOUS

REVISED SITE DEVELOPMENT PLAN
SITE GRADING AND SEDIMENT CONTROL PLAN
DREYER'S GRAND ICE CREAM
8900 QUINCY AVENUE, SUITE 100
LAUREL, MD 20723
L: 008737.378 F: 410-241-2122

TAX MAP 50, GRID 5 (LOT A-2)
6TH ELECTION DISTRICT
PARCEL 509
HOWARD COUNTY, MARYLAND

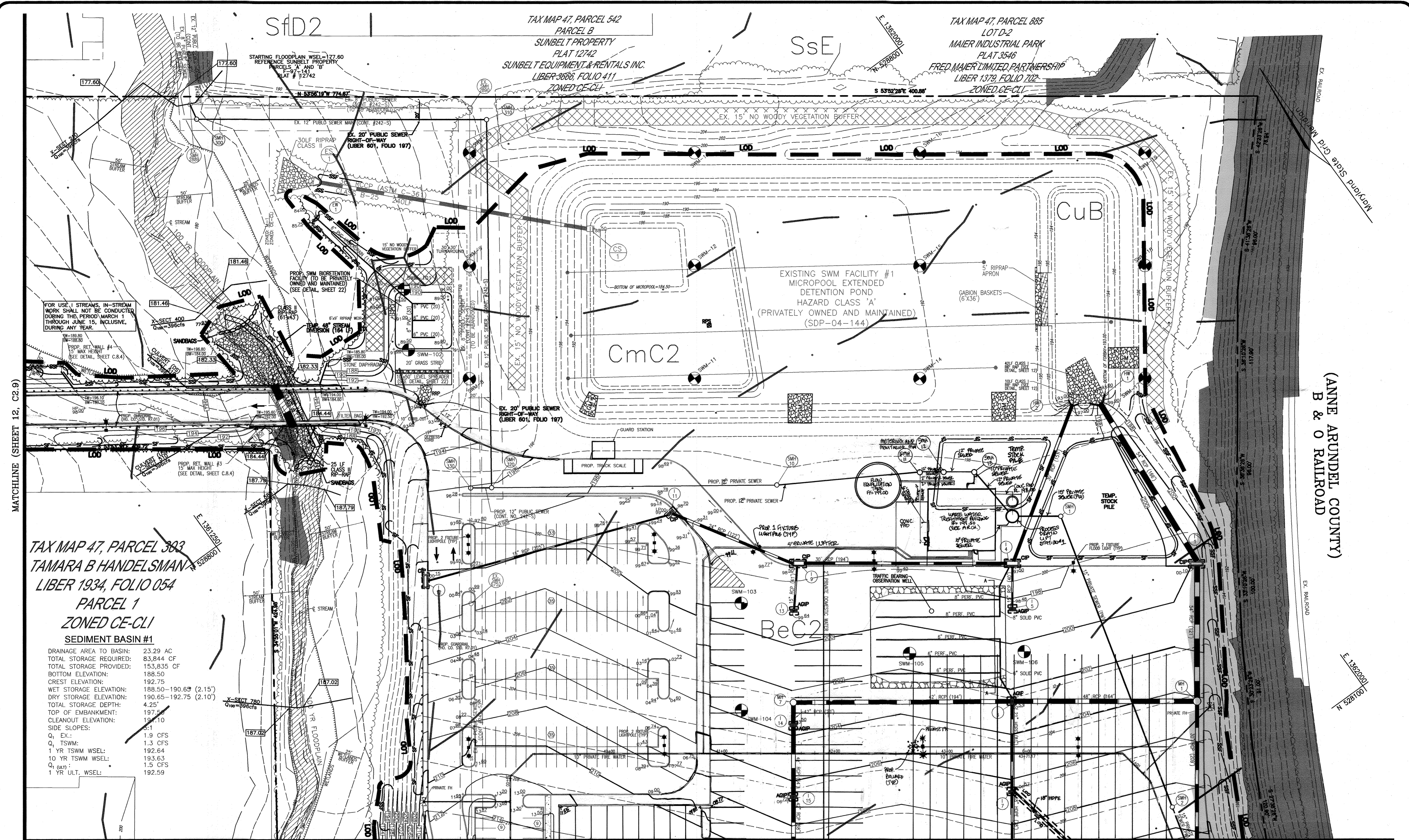
VOGEL ENGINEERING
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410-461-7666 F: 410-461-8951 www.timmons.com

DESIGN BY: RHV
DRAWN BY: VE+TG
CHECKED BY: RHV
DATE: OCTOBER 2022
SCALE: AS SHOWN
W.O. NO.: 49641

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2024

C2.7
10 SHEET OF 40



TAX MAP 47, PARCEL 383
 TAMARA B HANDELSMAN
 LIBER 1934, FOLIO 054
 PARCEL 1
 ZONED CE-CL1
 SEDIMENT BASIN #1

DRAINAGE AREA TO BASIN:	23.29 AC
TOTAL STORAGE REQUIRED:	83,844 CF
TOTAL STORAGE PROVIDED:	153,835 CF
BOTTOM ELEVATION:	188.50
CREST ELEVATION:	192.75
WET STORAGE ELEVATION:	188.50-190.65 (2.15')
DRY STORAGE ELEVATION:	190.65-192.75 (2.10')
TOTAL STORAGE DEPTH:	4.25'
TOP OF EMBANKMENT:	197.50
CLEANOUT ELEVATION:	194.10
SIDE SLOPES:	
Q ₁ EX:	1.9 CFS
Q ₁ TSWM:	1.3 CFS
1 YR TSWM WSEL:	192.64
10 YR TSWM WSEL:	193.63
Q ₁ (ULT):	1.5 CFS
1 YR ULT. WSEL:	192.59

MATCHLINE (SHEET 12, C2.9)

MATCHLINE (SHEET 10, C2.7)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/25/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

[Signature] 6/2/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

[Signature] 6/2/05
 DIRECTOR
 DATE

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

[Signature] 4/21/05
 USDA-NATURAL RESOURCES
 CONSERVATION SERVICE
 DATE

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

[Signature] 4/21/05
 HOWARD S.C.D.
 DATE

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL
 BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION
 CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN
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 BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC
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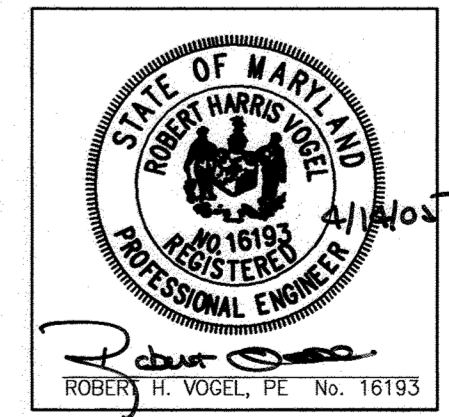
[Signature] 04-14-05
 SIGNATURE OF DEVELOPER
 DATE

BY THE ENGINEER:

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

[Signature] 4/14/05
 SIGNATURE OF ENGINEER
 DATE

OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 4900E
 SCOTTSDALE, AZ 85261
 (510) 652-8187



ROBERT H. VOGEL
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

DRAWING NO.
C2.8
 HO. CO. DPZ SHEET:
 11 OF 40

REV.	DATE	BY	APP.	RELEASED FOR
1	05-22-04	DZE		PERMITS AND REUSE PERMITS
2	01-05-05	TS		FACILITY IDENTIFICATION, THE 12.11.01 ST. MARGARET'S AND THE INSTALLATION OF MANAGEMENT FACILITIES
3	01-05-05	TS		FOR THE 12.11.01 ST. MARGARET'S AND THE INSTALLATION OF MANAGEMENT FACILITIES
4	10-12-05	TS		FOR THE 12.11.01 ST. MARGARET'S AND THE INSTALLATION OF MANAGEMENT FACILITIES
5	10-12-05	TS		FOR THE 12.11.01 ST. MARGARET'S AND THE INSTALLATION OF MANAGEMENT FACILITIES

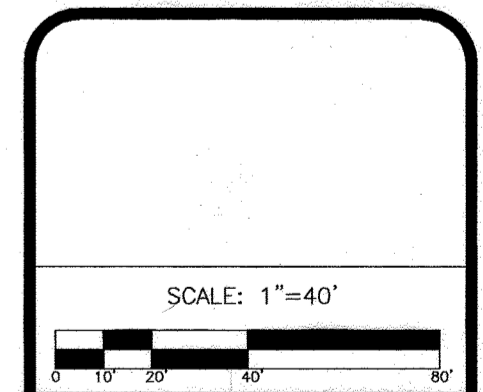
DREYER'S GRAND ICE CREAM
 9080 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

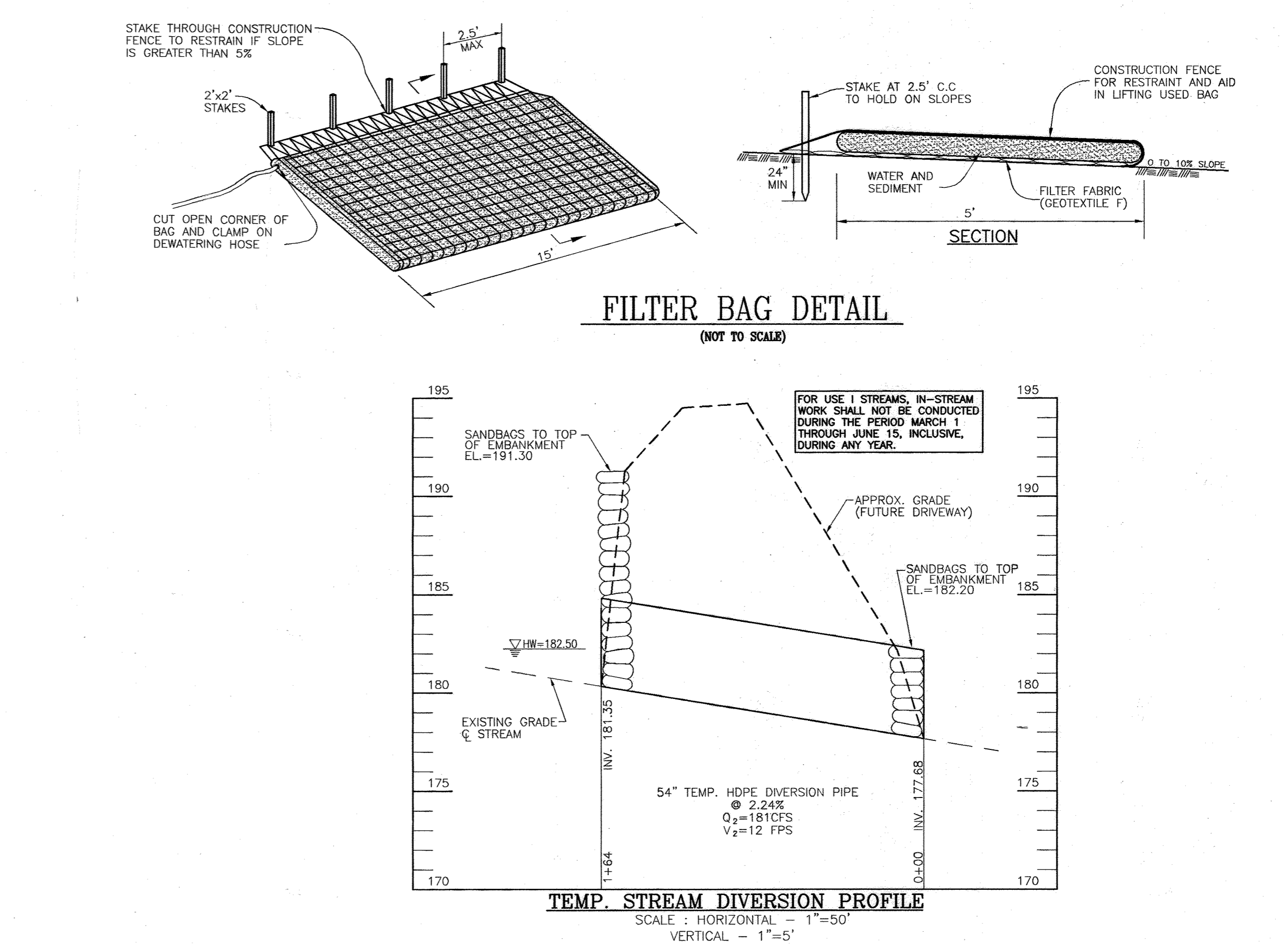
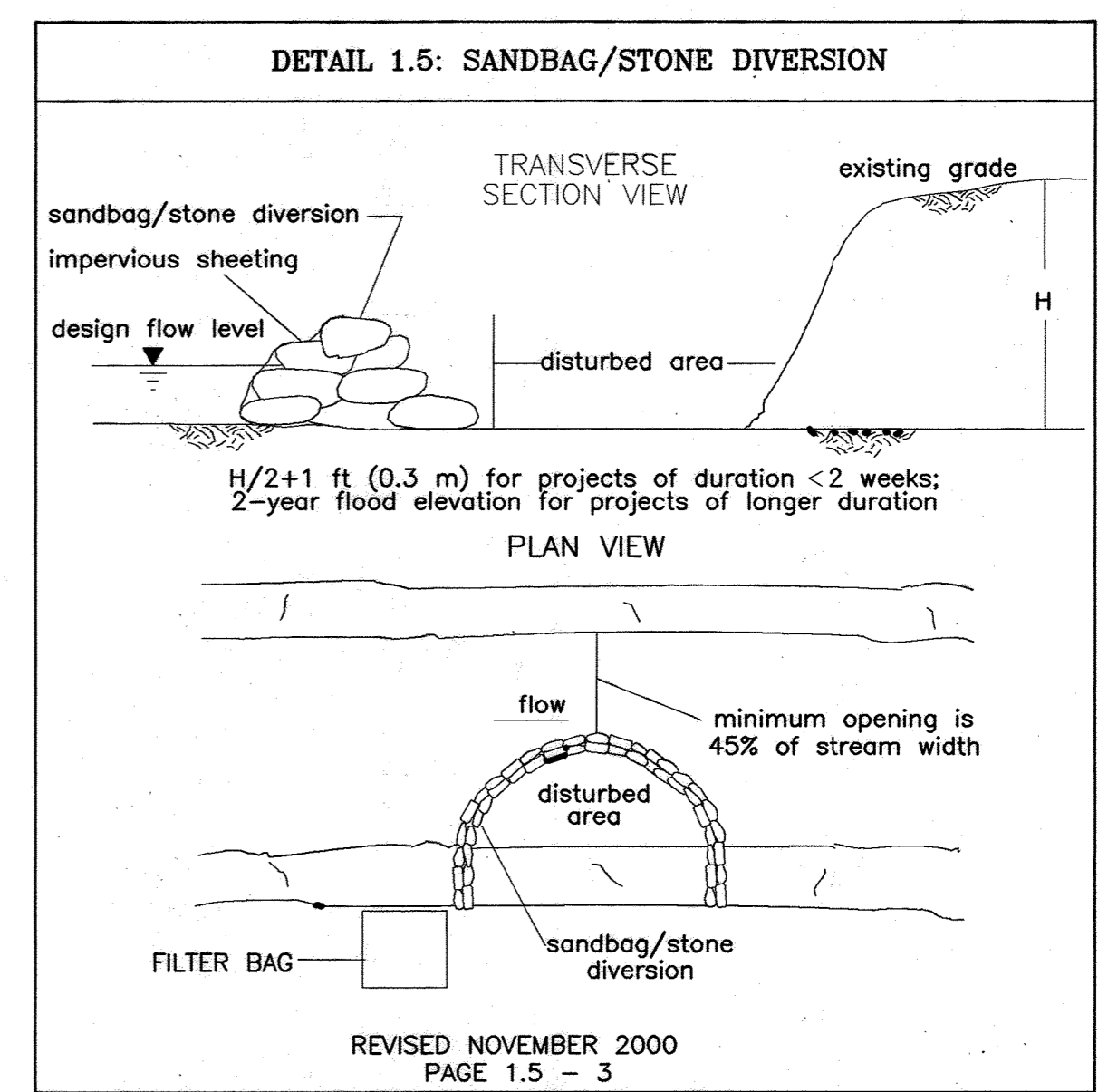
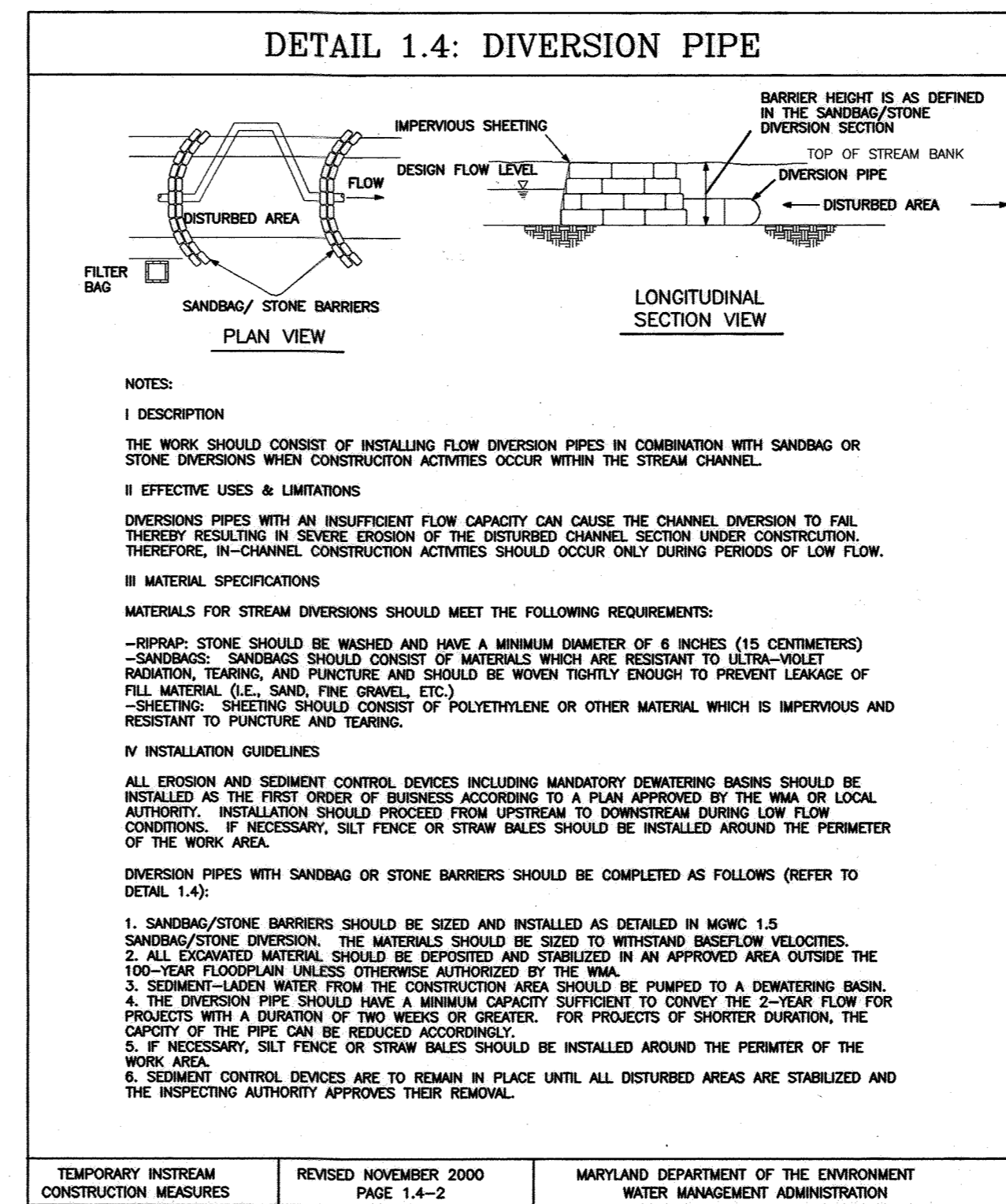
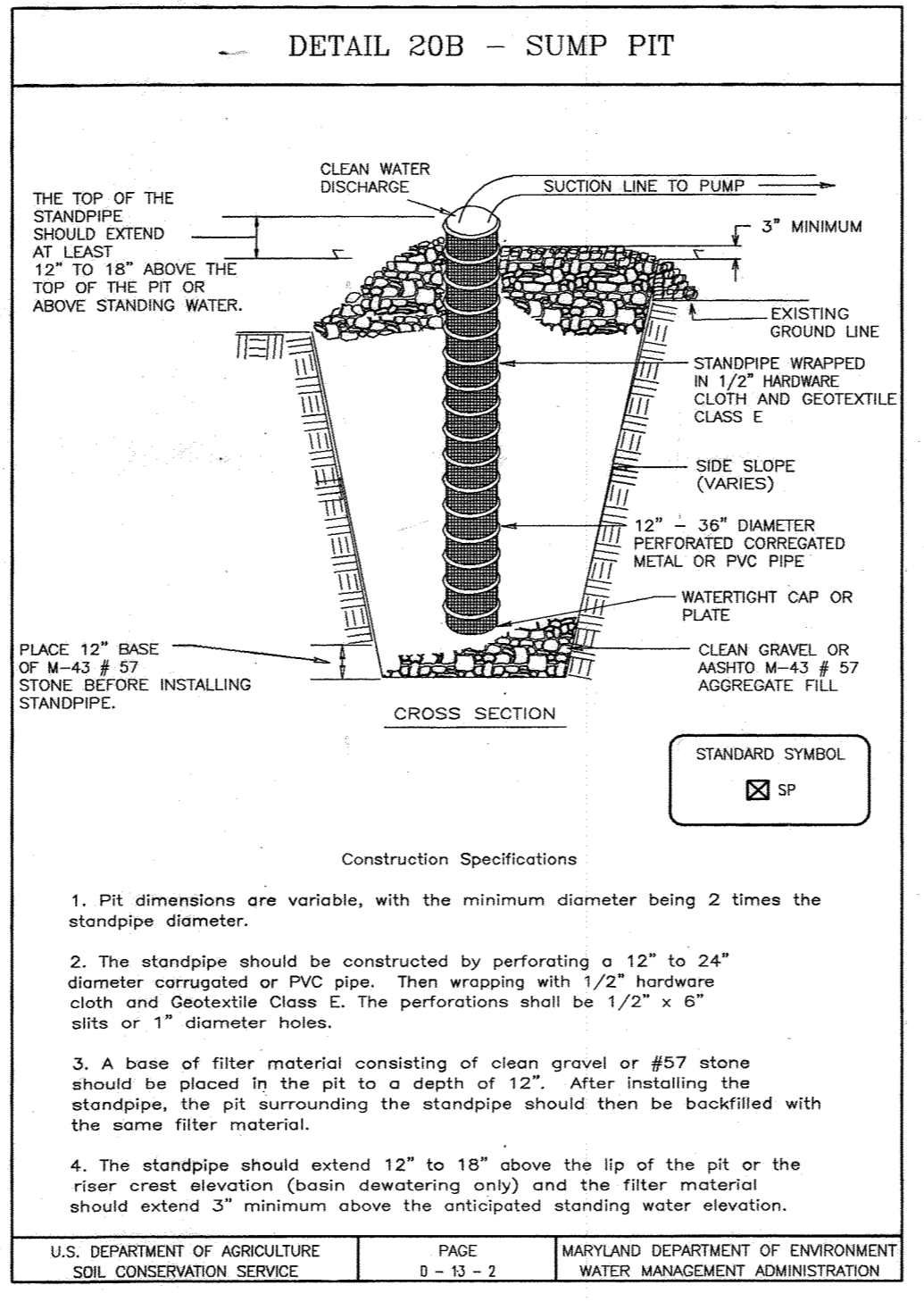
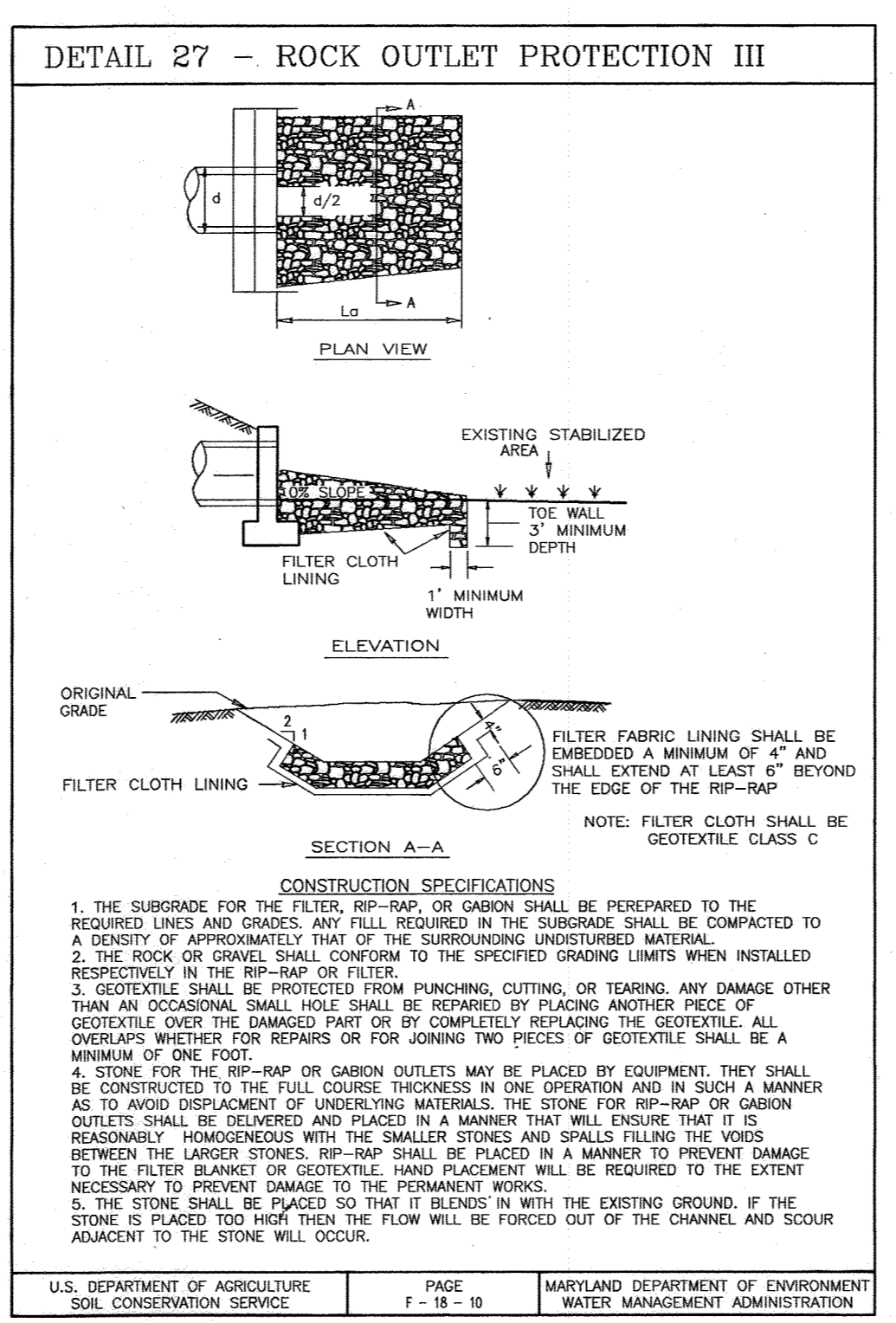
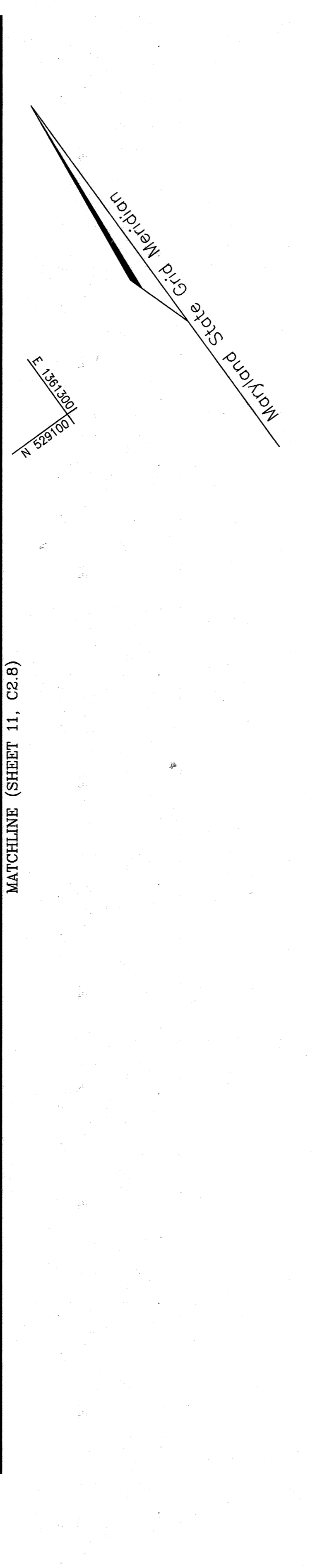
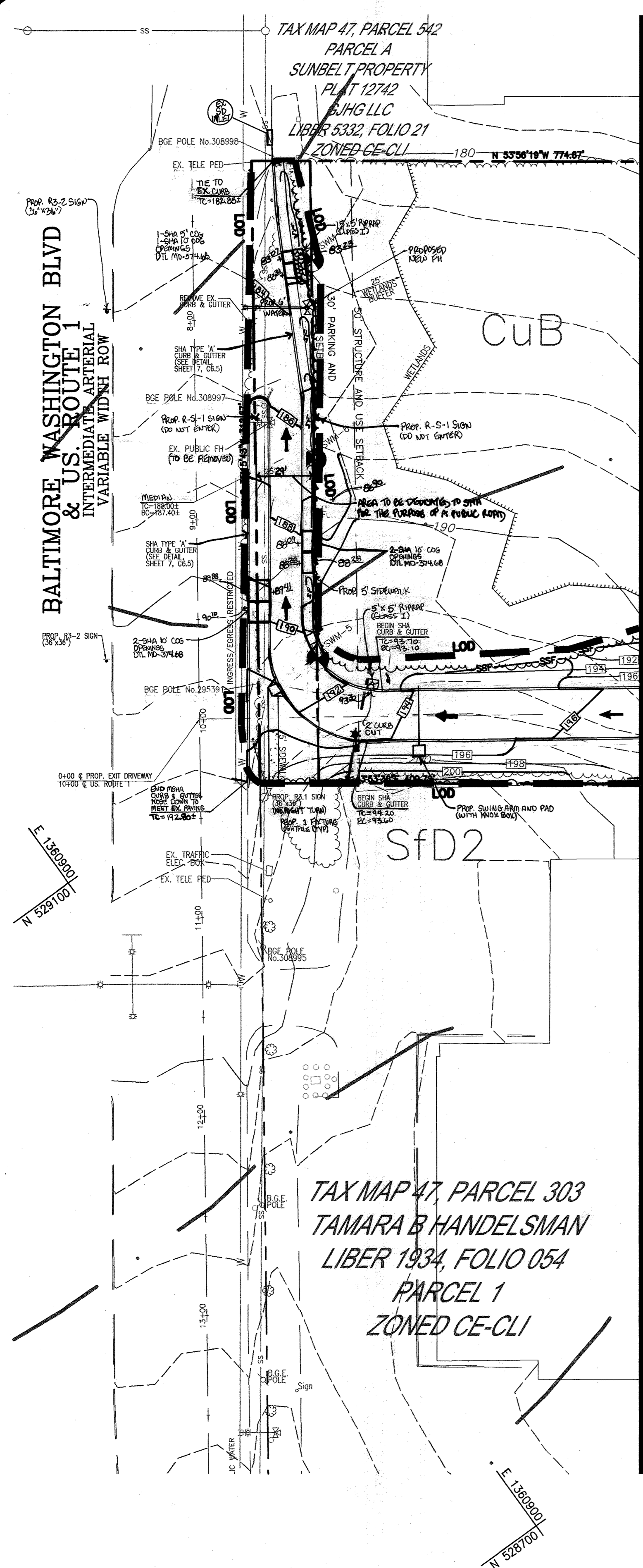
SITE GRADING AND SEDIMENT CONTROL PLAN

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1391 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01105
 413-787-1785 • FAX 413-787-1786

136 SOUTH MAIN STREET
 LAKE CHARLES, LOUISIANA 70601
 801-531-8585 • FAX 801-531-8586





APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County 5/25/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Andy Hamilton 6/6/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Frank M. Wright 6/4/05
DIRECTOR DATE

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

Jim Moya 4/21/05
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Jeffery A. Kelly 4/21/05
HOWARD S.C.D. DATE

BY THE DEVELOPER:

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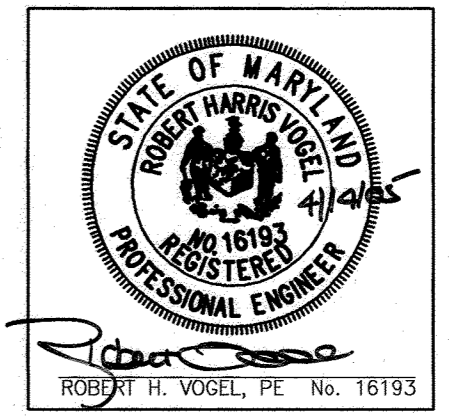
Katherine Anthony-Frost 04-14-05
SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

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

Robert H. Vogel 4/14/05
SIGNATURE OF ENGINEER DATE

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO Box 4900E
SCOTTSDALE, AZ 85261
(602) 652-8187



ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DRAWING NO. C2.9
HO. CO. DPZ SHEET: 12 OF 40
SDP-05-40

NO.	DATE	BY	APP.	DESCRIPTION
1	05-28-06	RVN		REVISED PLAN TO SHOW AS-BUILT FACILITIES AND REPAIR VARIATIONS
2	01-05-22	TS		REVISED PLAN TO SHOW THE 100-YEAR FLOOD ELEVATION AND THE INSTALLATION OF SANDBAG/STONE DIVERSIONS
3	10-12-22	TS		REVISED PLAN TO SHOW THE 100-YEAR FLOOD ELEVATION AND THE INSTALLATION OF SANDBAG/STONE DIVERSIONS

DREYER'S GRAND ICE CREAM
9080 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

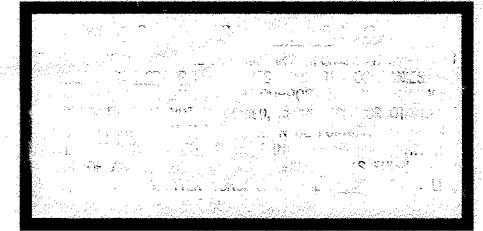
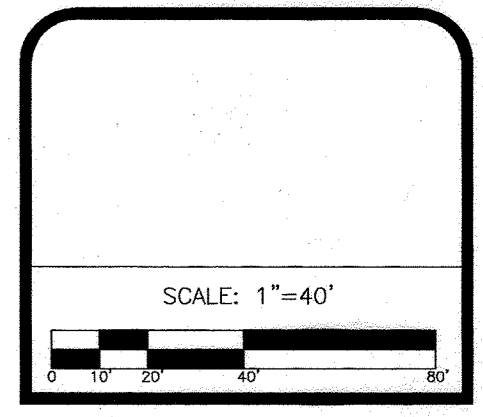
Dreyer's

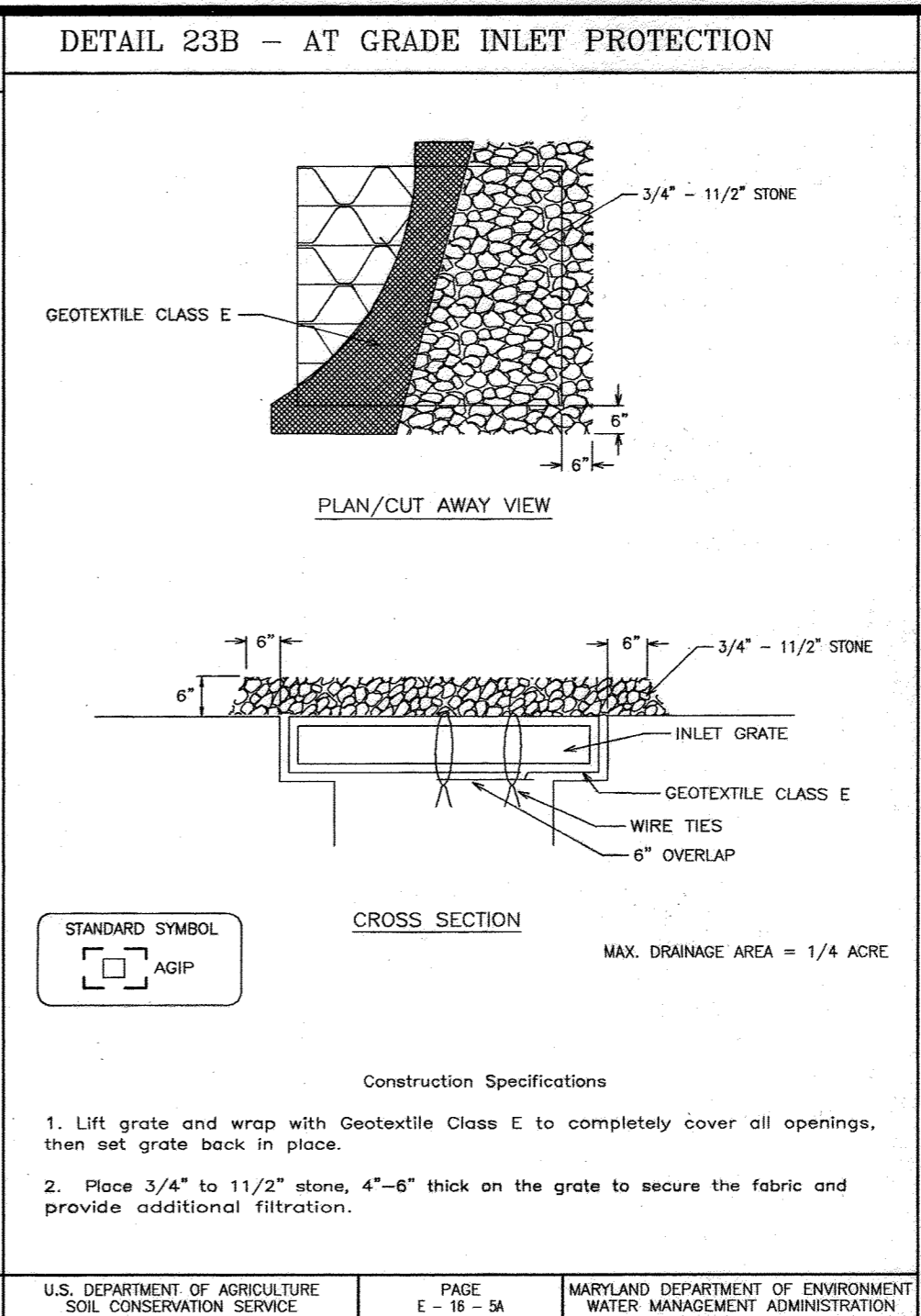
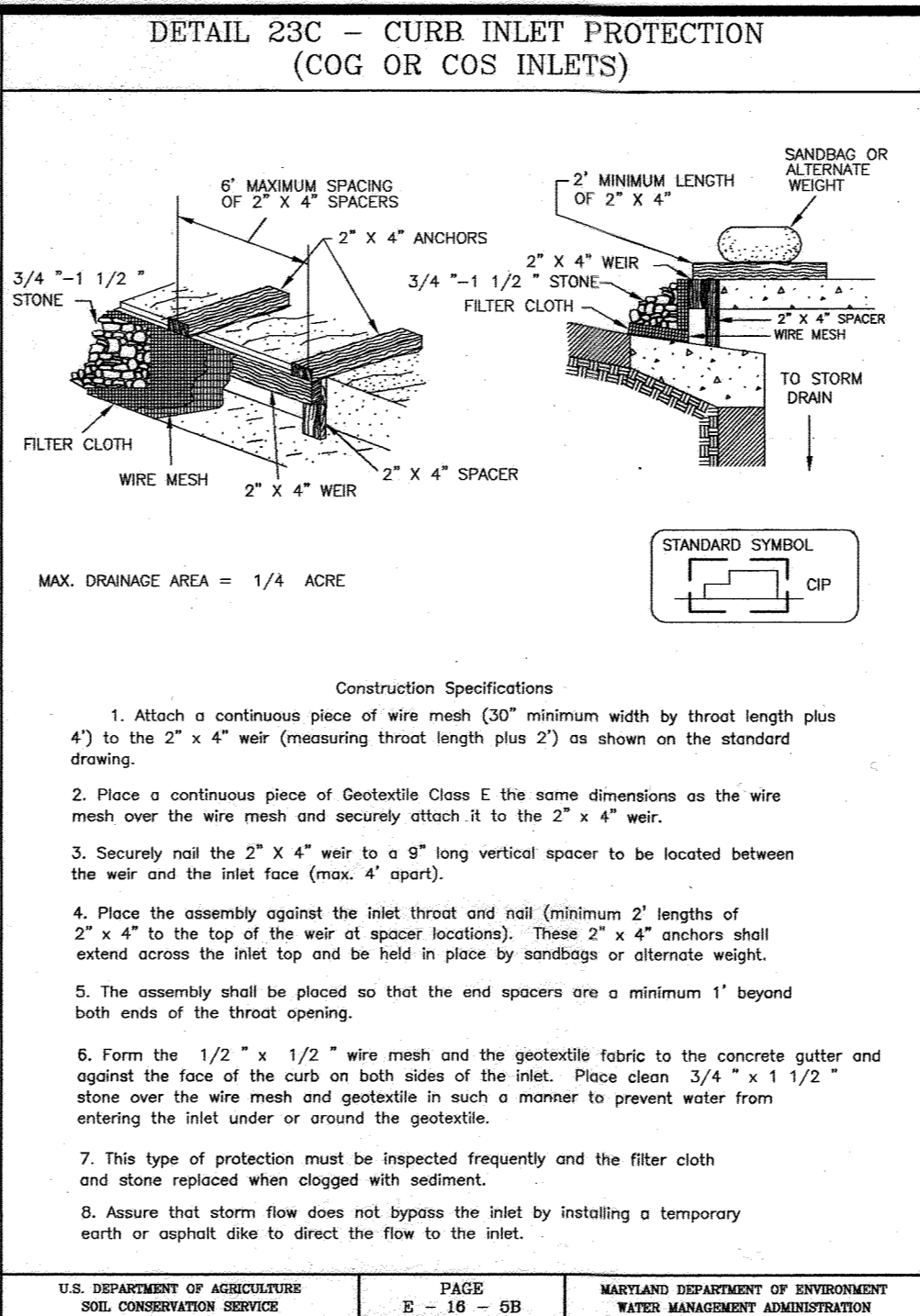
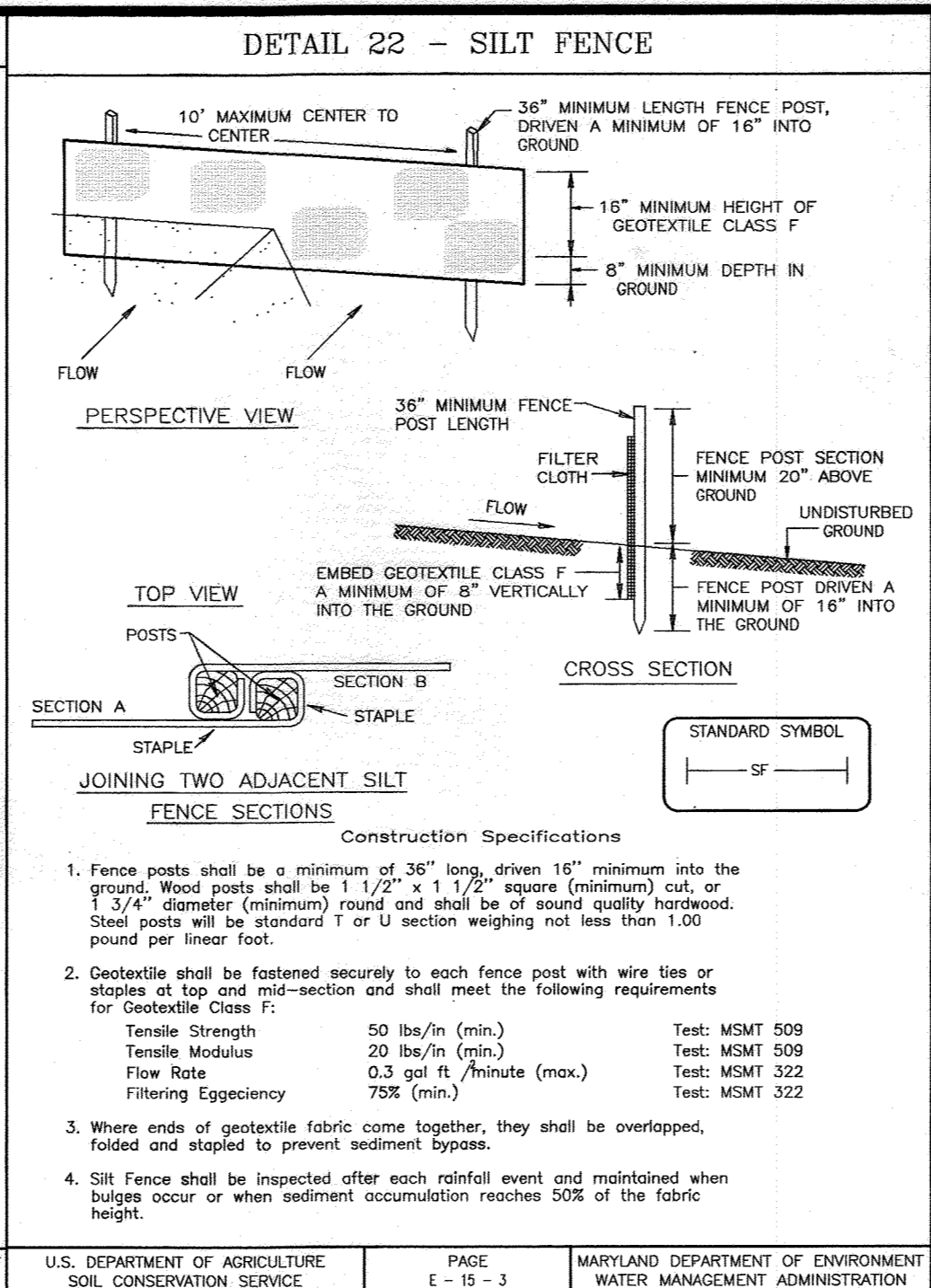
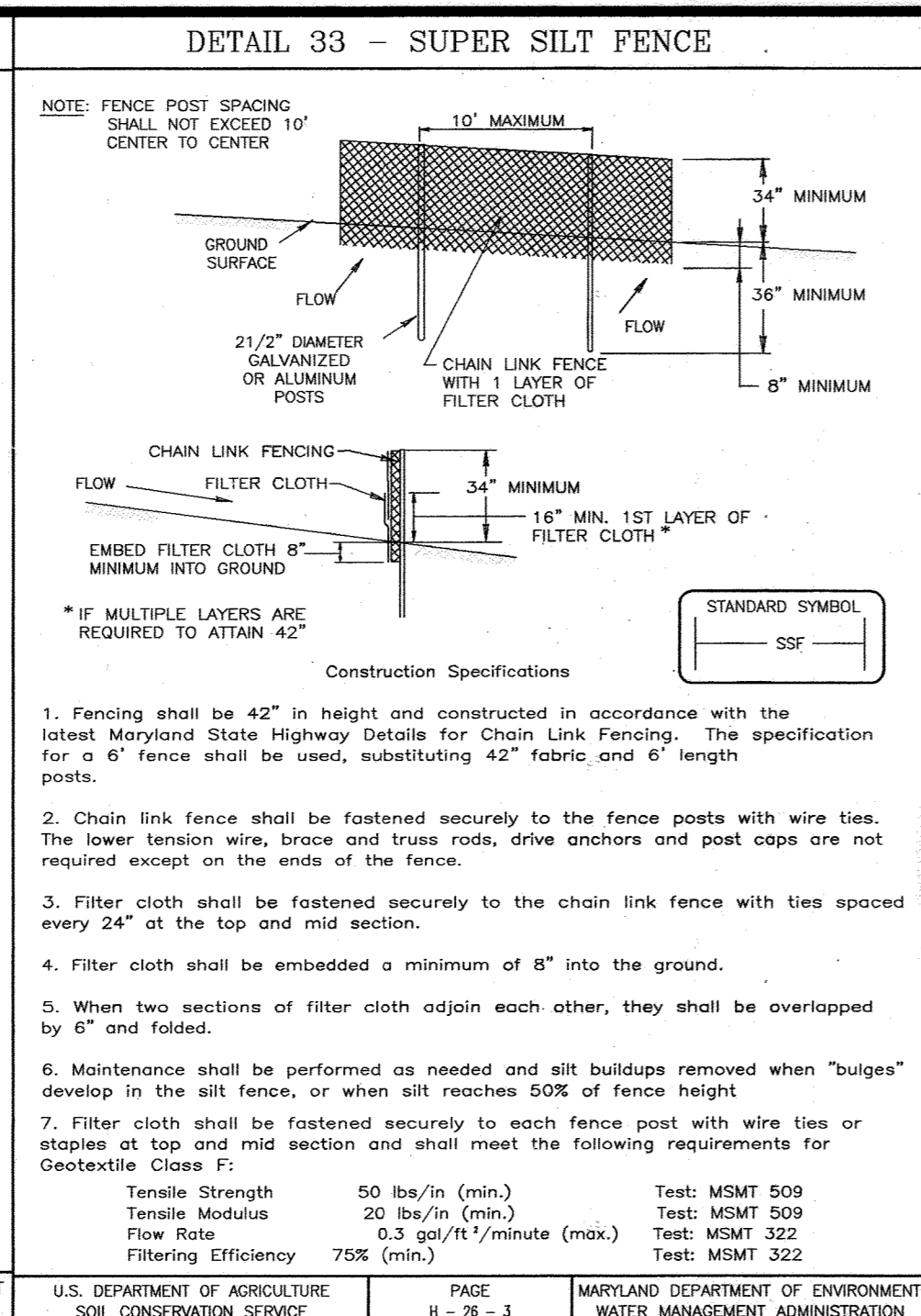
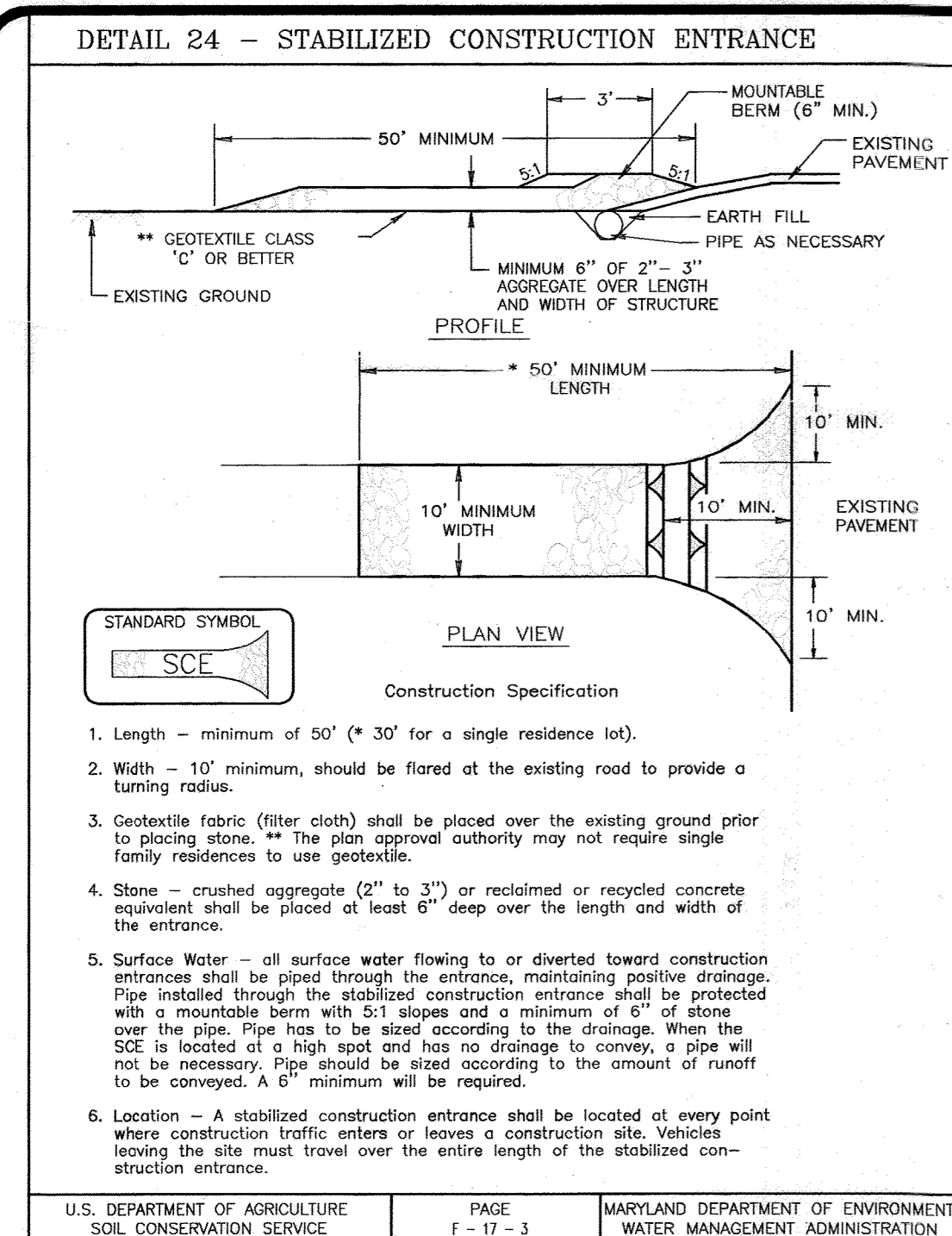
SITE GRADING AND SEDIMENT CONTROL PLAN

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136 SOUTH MAIN STREET
SPRINGFIELD MASSACHUSETTS 01103
801-531-8585 FAX 801-531-8586

1901 MAIN STREET
SPRINGFIELD MASSACHUSETTS 01103
413-787-1785 FAX 413-787-1786





U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-28-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

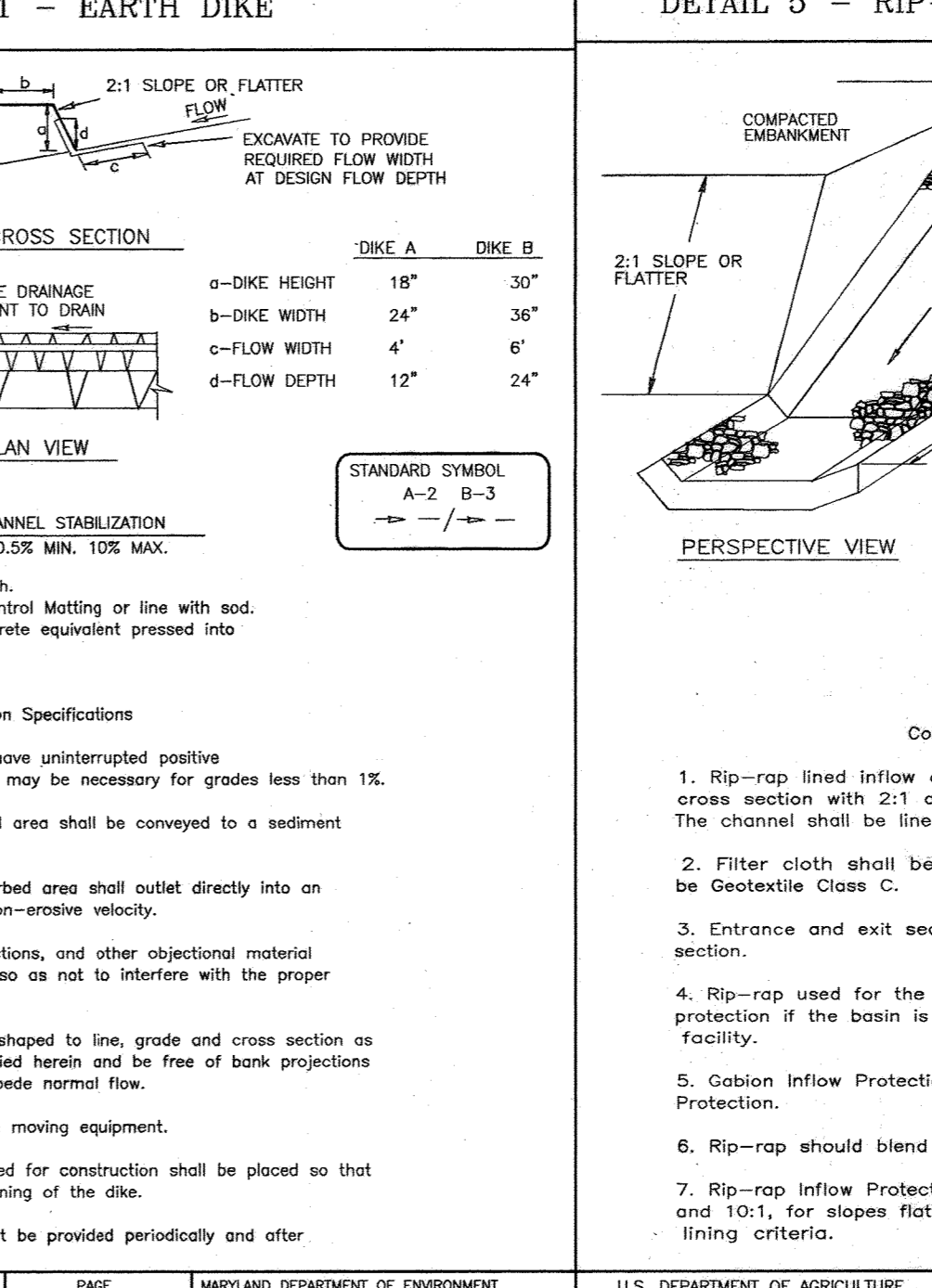
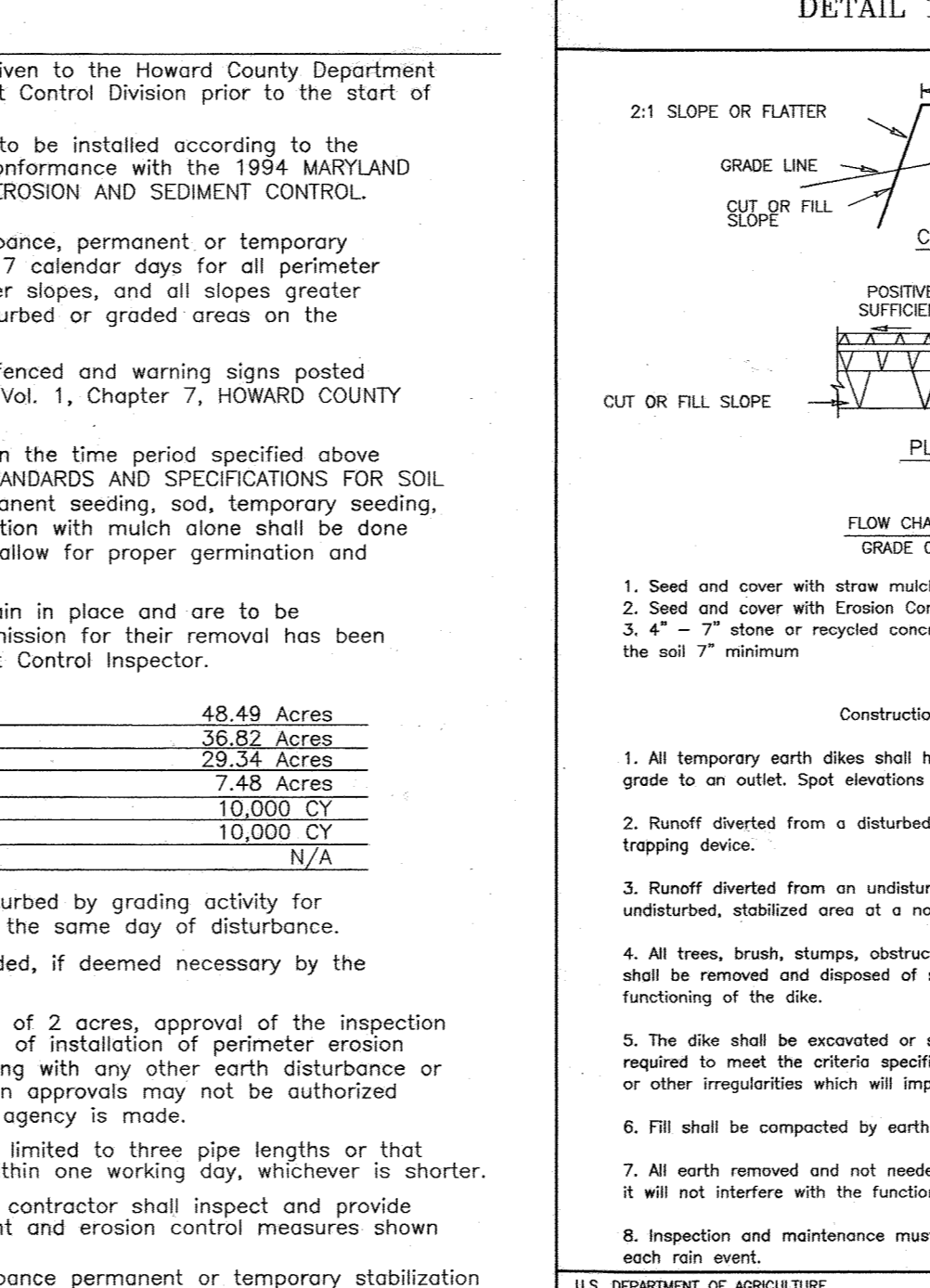
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-16-5B MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-16-5A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

PERMANENT SEEDING NOTES
 APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE...
SEEDBED PREPARATION: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding...
SOIL AMENDMENTS: In lieu of soil test recommendations, use one of:
 1. Preferred—Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer...
 2. Acceptable—Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer...
SEEDING: For periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue...
MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unrotted small grain straw immediately after seeding...
MAINTENANCE: Inspect all seeded areas and make needed repairs.

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL
 Placement of topsoil over a prepared subsoil prior to...
 To provide a suitable soil medium for vegetable growth...
Conditions Where Practice Applies
 I. This practice is limited to areas having 2:1 or flatter...
 II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization...
Construction and Material Specifications
 I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications...
 II. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist and approved by the appropriate approval authority...
 III. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4".

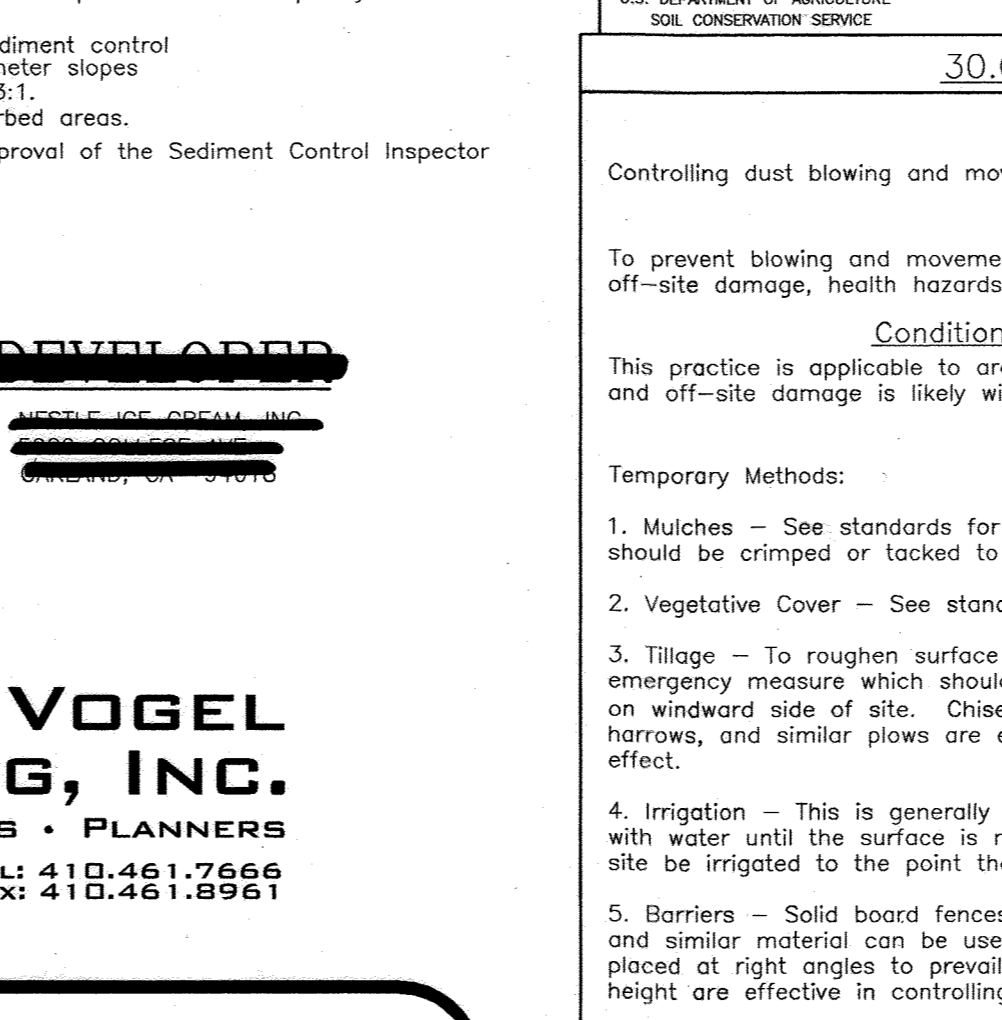
SEDIMENT CONTROL NOTES
 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division...
 2. All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL...
 3. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within (a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1, (b) 14 days as to all other disturbed or graded areas on the project site...
 4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage...
 5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL...
 6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector...
 7. Site Analysis:
 Total Area: 48.49 Acres
 Area Disturbed: 36.82 Acres
 Area to be roofed or paved: 2.94 Acres
 Area to be vegetatively stabilized: 7.48 Acres
 Total Cut: 10,000 CY
 Total Fill: 10,000 CY
 Offered waste/borrow area location: N/A
 8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance...
 9. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector...
 10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading...
 11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter...
 12. During grading and after each rainfall, the contractor shall inspect and provide the necessary maintenance on the sediment and erosion control measures shown hereon...
 13. Following initial soil disturbance or redistribution permanent or temporary stabilization shall be completed with:
 A. 7 calendar days for all perimeter sediment control structures, dikes, swales, dike perimeter slopes and all slopes greater than 3:1.
 B. 14 calendar days for all other disturbed areas.
 * To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit



TEMPORARY SEEDING NOTES
 SEEDBED PREPARATION: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding...
SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer...
SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual ryegrass...
MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unrotted small grain straw immediately after seeding...
MAINTENANCE: Inspect all seeded areas and make needed repairs.

SEQUENCE OF CONSTRUCTION
 1. Obtain grading permit. MDE Tracking #200550820.
 2. For Use 1 streams, in-stream work shall not be conducted during the period of March 1 through June 15, inclusive, during any year.
 3. Notify Howard County at least 48 hours before starting any work.
 4. Sediment control structures shall be installed and maintained during construction. SDR-04-144 to be utilized.
 5. Construct Stabilized Construction Entrance and install tree protection devices.
 6. Clear and grub for sediment control devices only.
 7. Install silt fences and super silt fences.
 8. With inspector's approval, construct culvert and stabilize immediately.
 9. Culvert to be constructed during a 5-day clear (no-precipitation) period. MDE Permit required prior to construction.
 10. With inspector's approval, Contractor to first grade area to establish positive flow to basin. As grading continues, the contractor is to maintain positive flow to the basin at all times. Employ dust control measures as needed.
 11. Stabilize all temporary swales, side ditches, or berms. See details and specifications for incremental stabilization.
 12. With inspector's approval, install utilities, paving, and begin building construction. Temporarily block inlets to recharge volume trench.
 13. With inspector's approval with contributing drainage areas stabilized, convert sediment basins #1 to final sediment management by excavating bottom of basin to design bottom. Remove dewatering devices from pond and install pond drains. Upon removal of sediment basin #2, install gabion chute. Construction to be performed as shown on approved SWM plans.

30.0 DUST CONTROL
Definition
 Controlling dust blowing and movement on construction sites and roads.
Purpose
 To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.
Conditions Where Practice Applies
 This practice is applicable to areas subject to dust blowing and movements where on and off-site damage is likely without treatment.
Specifications
 1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.
 2. Vegetative Cover - See standards for temporary vegetative cover.
 3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12" apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
 4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
 5. Barriers - Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
 6. Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.
Permanent Methods
 1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
 2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
 3. Stone - Cover surface with crushed stone or coarse gravel.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 5/2/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 6/2/05
 DIRECTOR DATE 4/2/05

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
 USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE 4/2/05
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD S.C.D. DATE 4/2/05

BY THE DEVELOPER:
 I, WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE OF DEVELOPER DATE 4-14-05

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT THIS WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE OF ENGINEER DATE 4/14/05

30.0 DUST CONTROL
Definition
 Controlling dust blowing and movement on construction sites and roads.
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 5/2/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 6/2/05
 DIRECTOR DATE 4/2/05

DRAWING NO. C6.6
 HO. CO. DPZ SHEET: 13 OF 40
 SDP-05-40

REV	DATE	DESCRIPTION
5-25-06	DPZ	REVISED PER COMMENTS
3	01-05-22	REVISED PER COMMENTS
6	10-12-22	REVISED PER COMMENTS

DREYER'S GRAND ICE CREAM
 9080 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

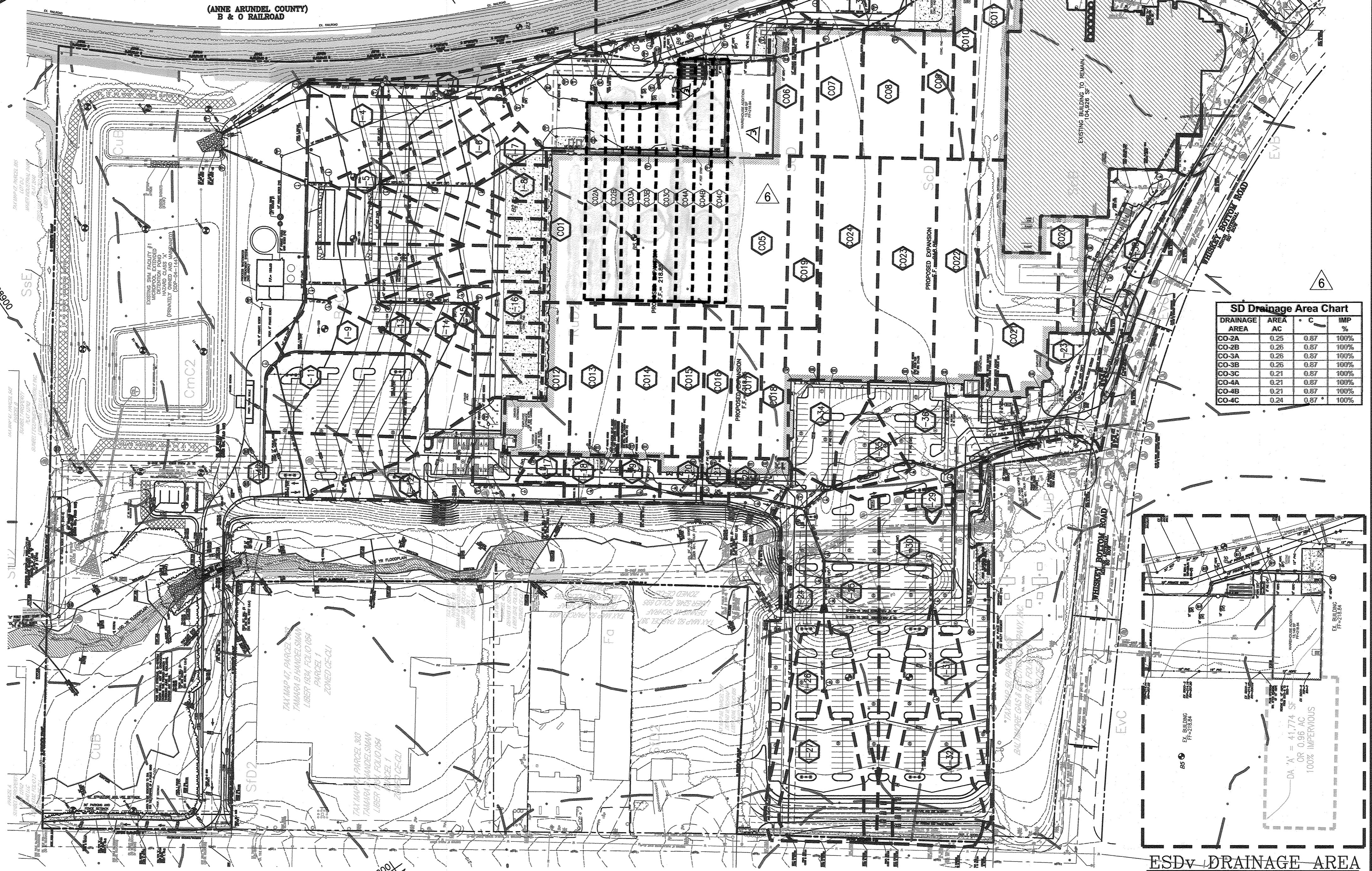
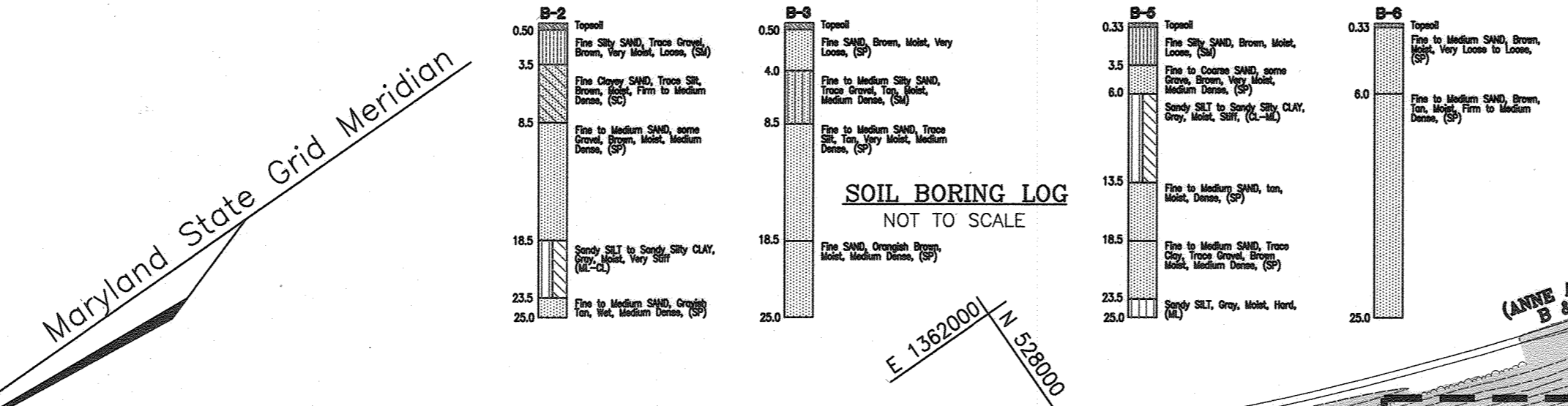
SEDIMENT CONTROL DETAILS

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
 SUITE 200
 SPRINGFIELD MASSACHUSETTS 01103
 413-787-1785 • FAX 413-787-1786

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

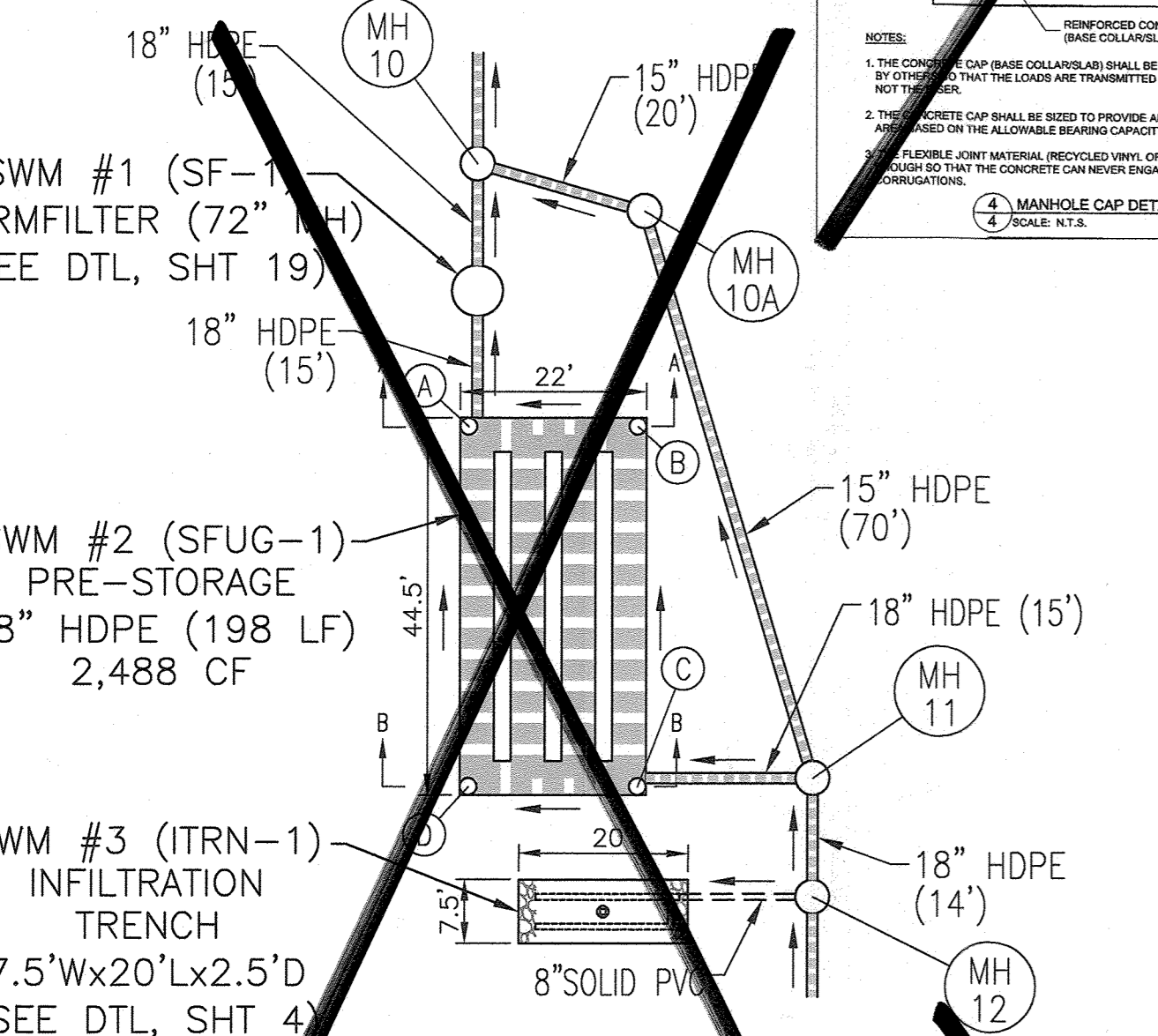
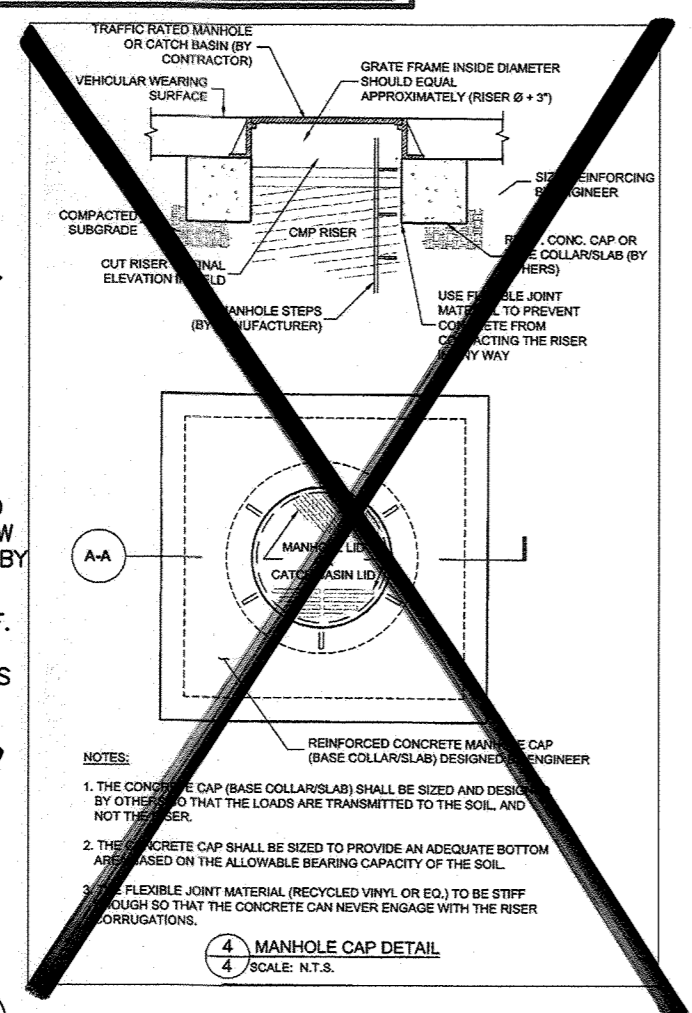
PHASE	INLET #	ZONING (Z)	SUBAREA (B)	AREA (A) (ac)	"C" FACTOR (C)	% IMPERVIOUS (P)
I-1	M-2	A	0.26	0.87	100	
I-2	M-2	B	1.92	0.74	80	
I-2A	M-2	B	0.96	0.87	100	
I-3	M-2	C	0.72	0.87	100	
I-4	M-2	D	0.91	0.87	100	
I-5	M-2	E	0.47	0.87	100	
I-6	M-2	F	0.67	0.87	100	
I-7	M-2	G	0.27	0.87	100	
I-8	M-2	H	0.13	0.87	100	
I-9	M-2	I	1.01	0.87	100	
I-11	M-2	K	0.80	0.87	100	
I-12	M-2	L	0.61	0.87	100	
I-13	M-2	M	0.58	0.87	100	
I-14	M-2	N	0.32	0.87	100	
I-15	M-2	O	0.20	0.87	100	
I-16	M-2	P	0.26	0.87	100	
I-17	M-2	Q	0.07	0.87	100	
I-18	M-2	R	0.17	0.87	100	
I-19	M-2	S	0.17	0.87	100	
I-20	M-2	T	0.12	0.87	100	
I-21	M-2	U	0.10	0.87	100	
I-22	M-2	V	0.11	0.87	100	
I-23	M-2	W	0.33	0.87	20	
I-24	M-2	X	0.72	0.31	0	
I-25	M-2	Y	0.72	0.87	100	
I-26	M-2	Z	0.57	0.81	91	
I-27	M-2	AA	0.58	0.65	67	
I-28	M-2	BB	0.08	0.33	19	
I-29	M-2	CC	0.06	0.87	100	
I-30	M-2	DD	1.22	0.87	100	
I-31	M-2	EE	0.55	0.78	86	
I-32	M-2	FF	0.36	0.64	64	
I-33	M-2	GG	0.10	0.35	20	
I-34	M-2	HH	0.40	0.87	100	
I-35	M-2	II	0.25	0.87	100	
I-36	M-2	JJ	0.80	0.87	100	
I-37	M-2	KK	0.65	0.69	57	
I-38	M-2	LL	0.75	0.45	35	



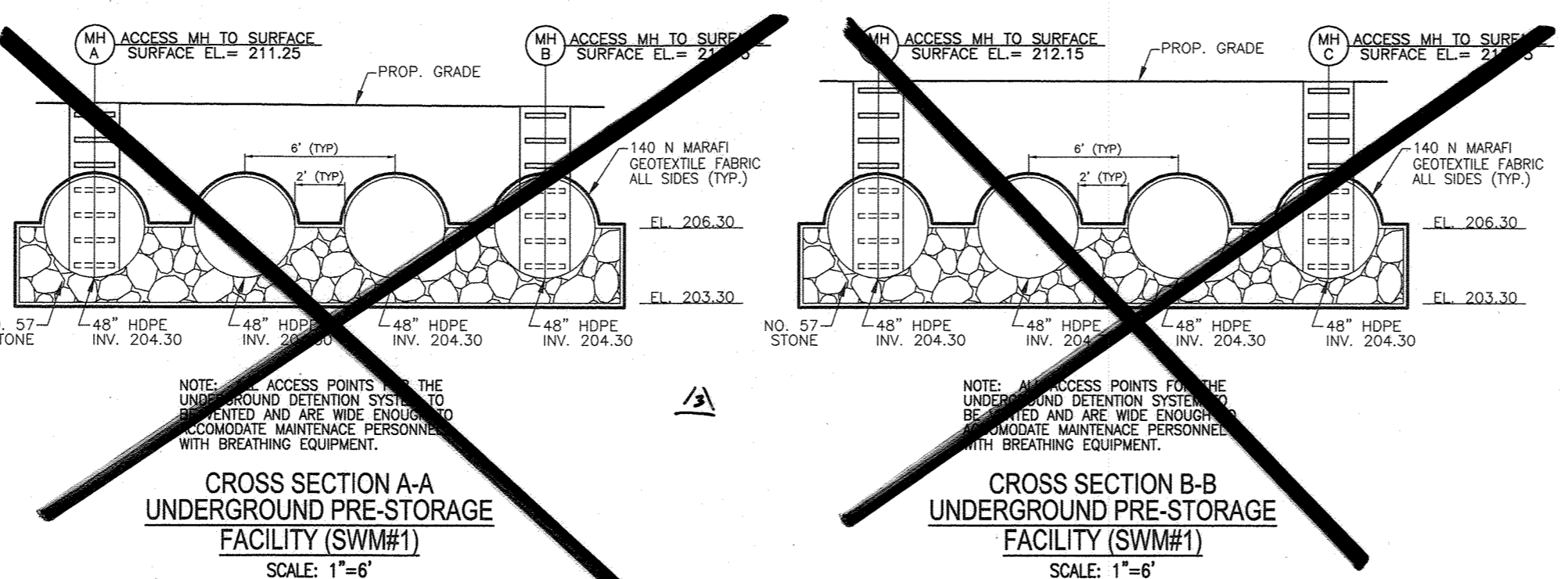
DRAINAGE AREA	AREA AC	"C"	IMP %
CO-2A	0.26	0.87	100%
CO-2B	0.26	0.87	100%
CO-3A	0.26	0.87	100%
CO-3B	0.26	0.87	100%
CO-3C	0.21	0.87	100%
CO-4A	0.21	0.87	100%
CO-4B	0.21	0.87	100%
CO-4C	0.24	0.87	100%

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES

- THE UNDERGROUND STORMWATER MANAGEMENT FACILITY IS PRIVATELY OWNED AND FUNCTION. PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN ITS OPERATION OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO
- THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHALL BE EVENTS, INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM
- WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY OTHER DEBRIS THAT MIGHT OBSTRUCT THE OUTFALL IS OBSERVED, THE FACILITY
- THE FACILITY SHALL BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS, NOTIFYING THEM OF THE SPILL AND CLEANUP OPERATION. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES
- THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND THE REMOVED MATERIAL AND LIQUID. MEANS, THE OWNER SHALL FOLLOW PROPER CLEANING AND DISPOSAL OF STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK OR OTHER MANUAL
- THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY DISPOSED OF. ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS



STORM DRAIN DRAINAGE AREA MAP
SCALE: 1"=100'



SUMMARY TABLE:

Limit of Disturbance (LOD) = 39,742 s.f. or 0.91 ac.
 Total Imp. Area = 0.91 ac.
 Total Imp. Area to be treated (50% of Imp. w/in LOD) = 0.46 ac.
 Total ESDv Required (Redevelopment, Pe = 1.0 inch) = 1,573 cu. ft.
 Total Recharge Volume Required = 0 cu. ft.

Total ESDv Provided in proposed Infiltration Trench (I-1) = 1,584 cu. ft.
 Total Recharge Volume Provided = 0 cu. ft.
 Pe Provided = 1.3 inch

Field Infiltration Rate:

10000	10001
1st minute (in/hr)	13.58
2nd minute (in/hr)	9.14
3rd minute (in/hr)	8.28
	2.20
	4.79
	1.85

Total ESDv Provided = 3,311 cu. ft.
 Total Recharge Volume Provided = 332 cu. ft.
 Pe Provided = 1.0 inch

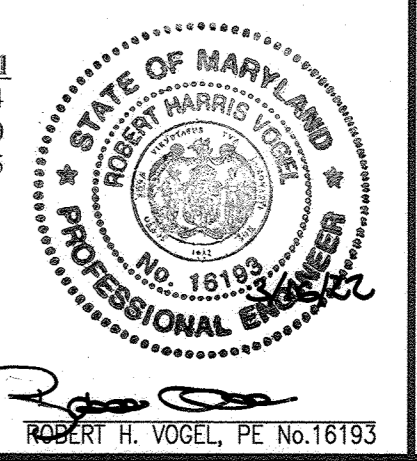
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OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 48006
 SCOTTSDALE, AZ 85261
 (510) 652-8187

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 4-7-22
 DATE: 4-7-22

NO.	DATE	BY	REVISION
6	10-12-22	TS	REVISE TO ADD CHILLED WAREHOUSE EXPANSION, RETAINING WALL, SHED
5	06-21-22	TS	GRAZING AND CHANGE SHEET NUMBERS
3	01-05-22	TS	REVISE THE PLAN TO RELIEVE THE ESD REACTOR AND SHED DRAIN SYSTEM & THE INSTALLATION OF ASSOC. STORMWATER MANAGEMENT FACILITIES
1	05-25-06	DZ	REVISE PLAN TO SHOW AS-BUILT FACILITIES AND REVISE VARIOUS FACILITY INFORMATION

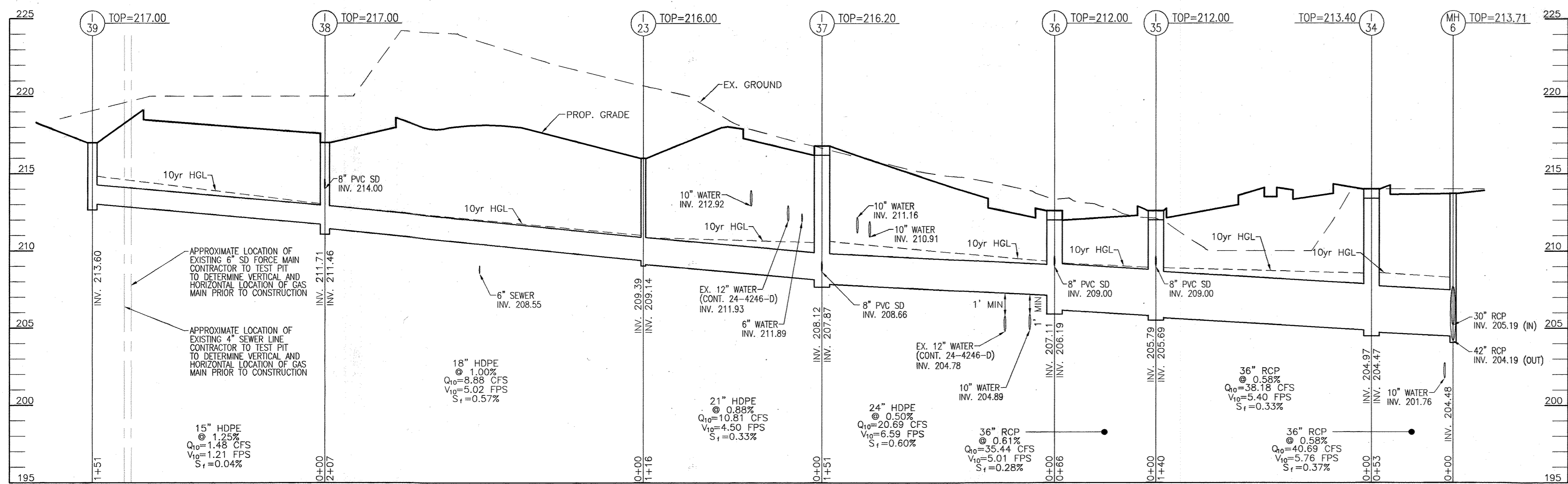
REVISED SITE DEVELOPMENT PLAN
 STORM DRAIN DRAINAGE AREA MAP
DREYER'S GRAND ICE CREAM
 9600 LAUREL RD 20723
 LAUREL, MD 20723
 L.080623-PLAT.0112

VOGEL ENGINEERING
TIMMONS GROUP
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410-461-7666 F: 410-461-8961 www.timmons.com

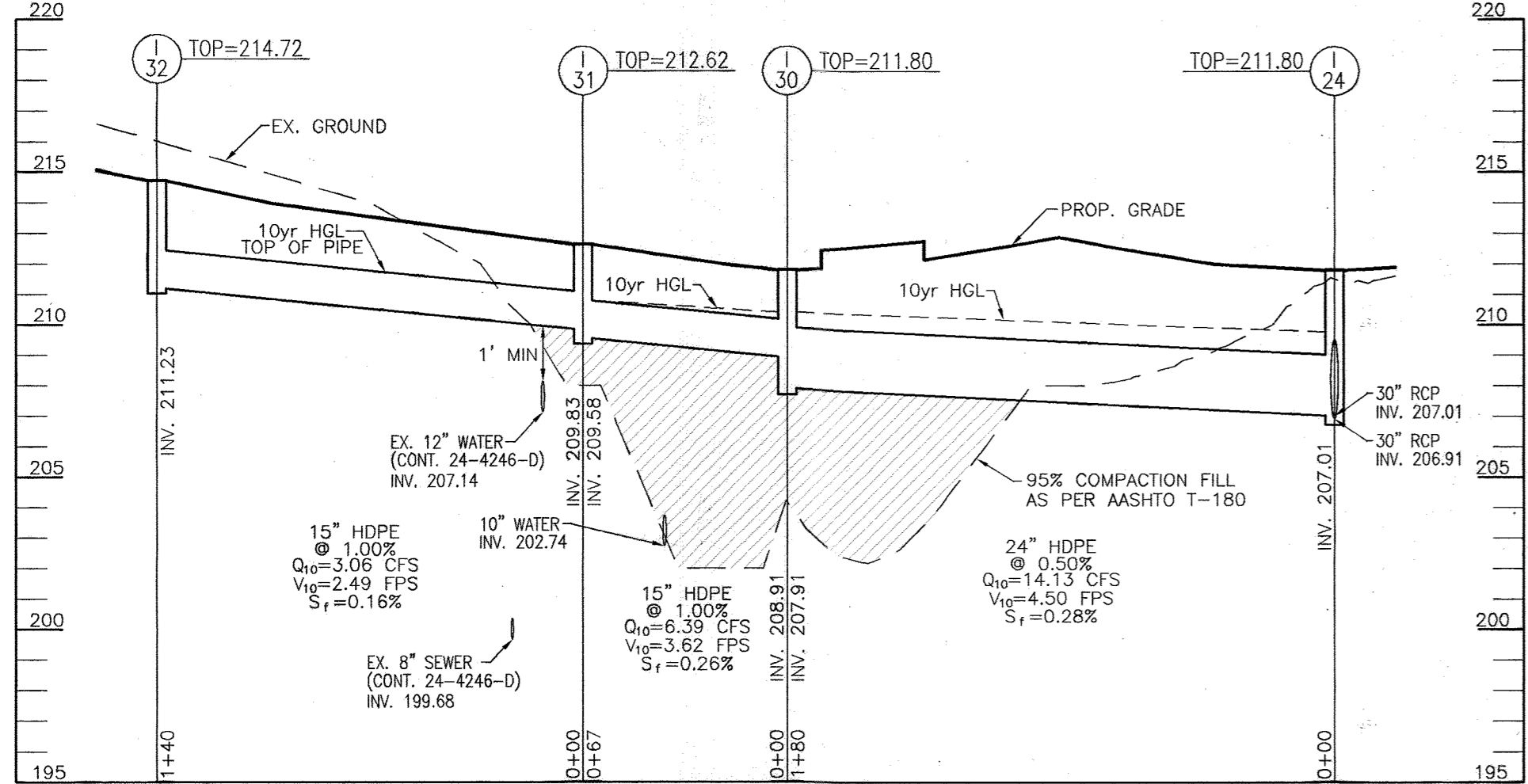
DESIGN BY: RHW
 DRAWN BY: VE+TG
 CHECKED BY: RHW
 DATE: JANUARY 2022
 SCALE: AS SHOWN
 W.O. NO.: 49641

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-30-2022.

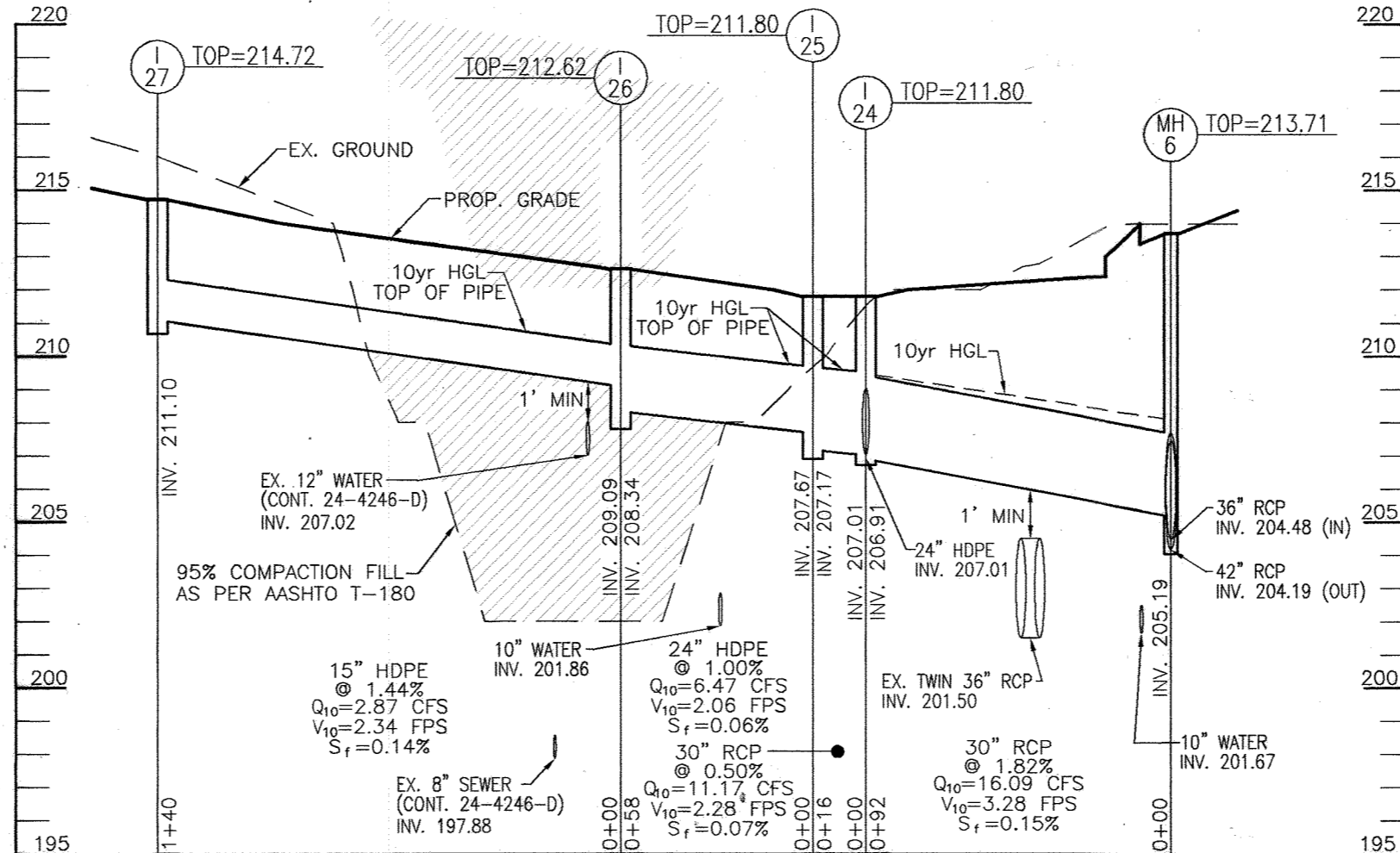
C5.0
 14 SHEET OF 40



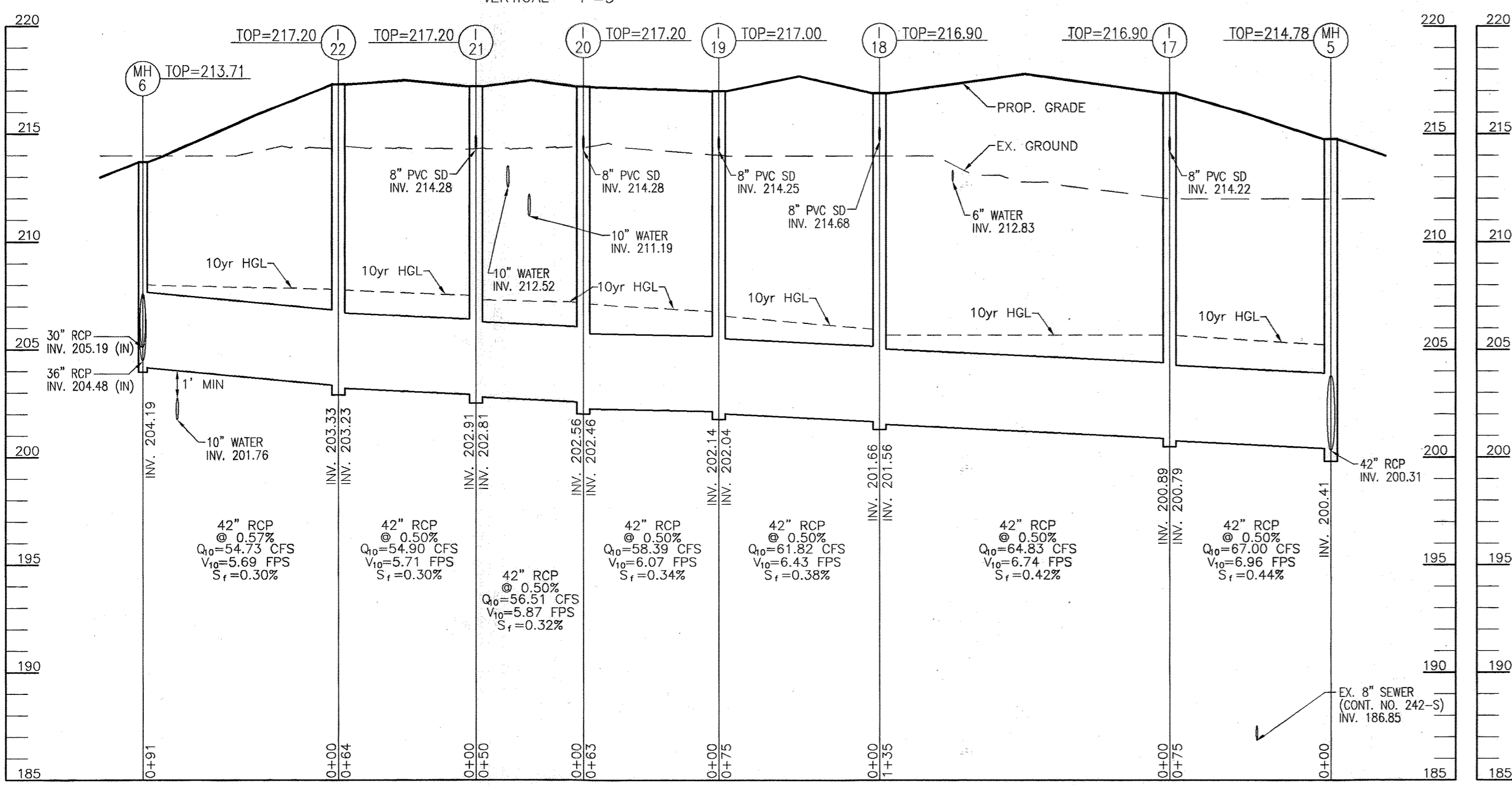
STORM DRAIN PROFILE (I39-MH6)



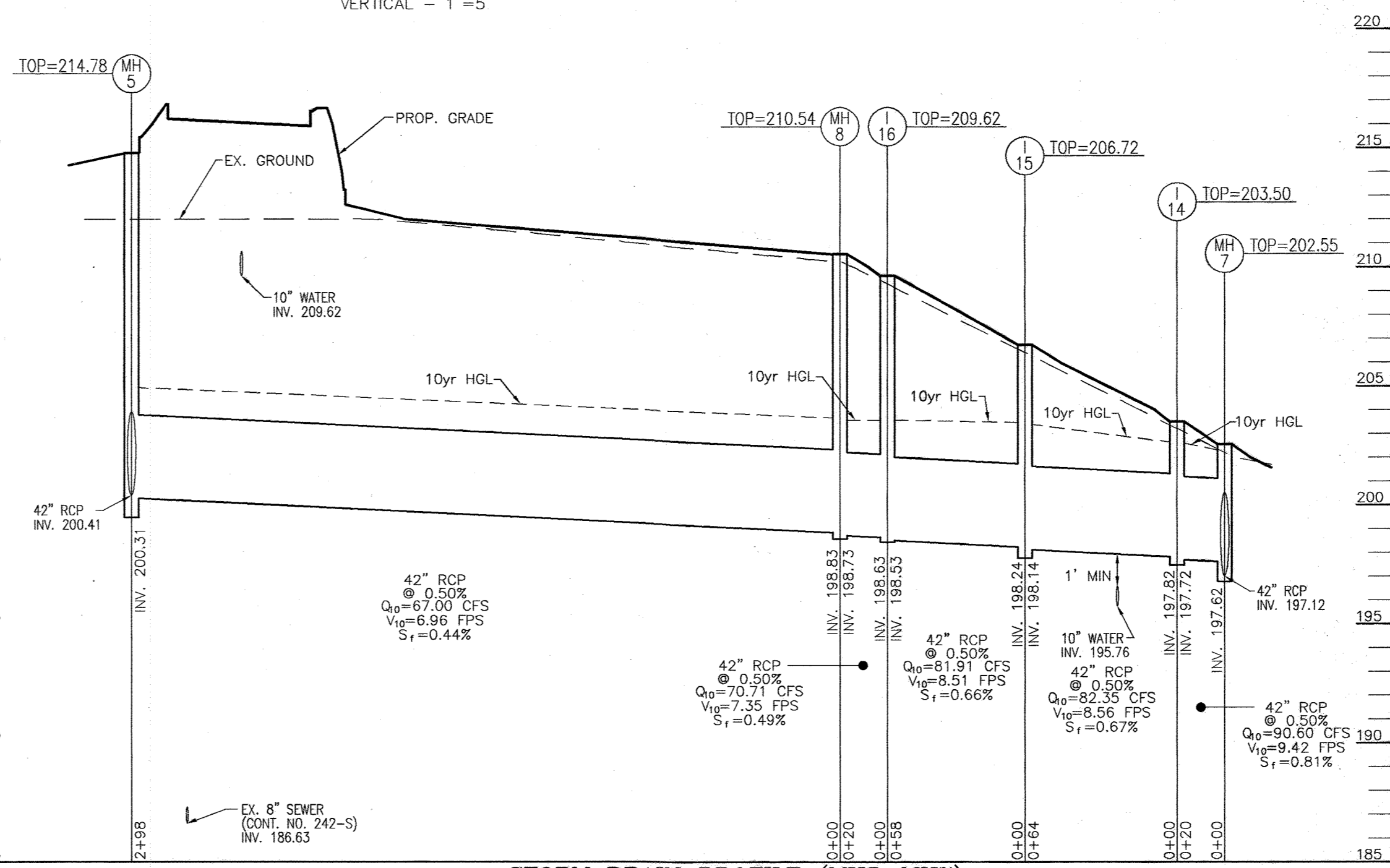
STORM DRAIN PROFILE (I32-I24)



STORM DRAIN PROFILE (I27-MH6)



STORM DRAIN PROFILE (MH6-MH5)

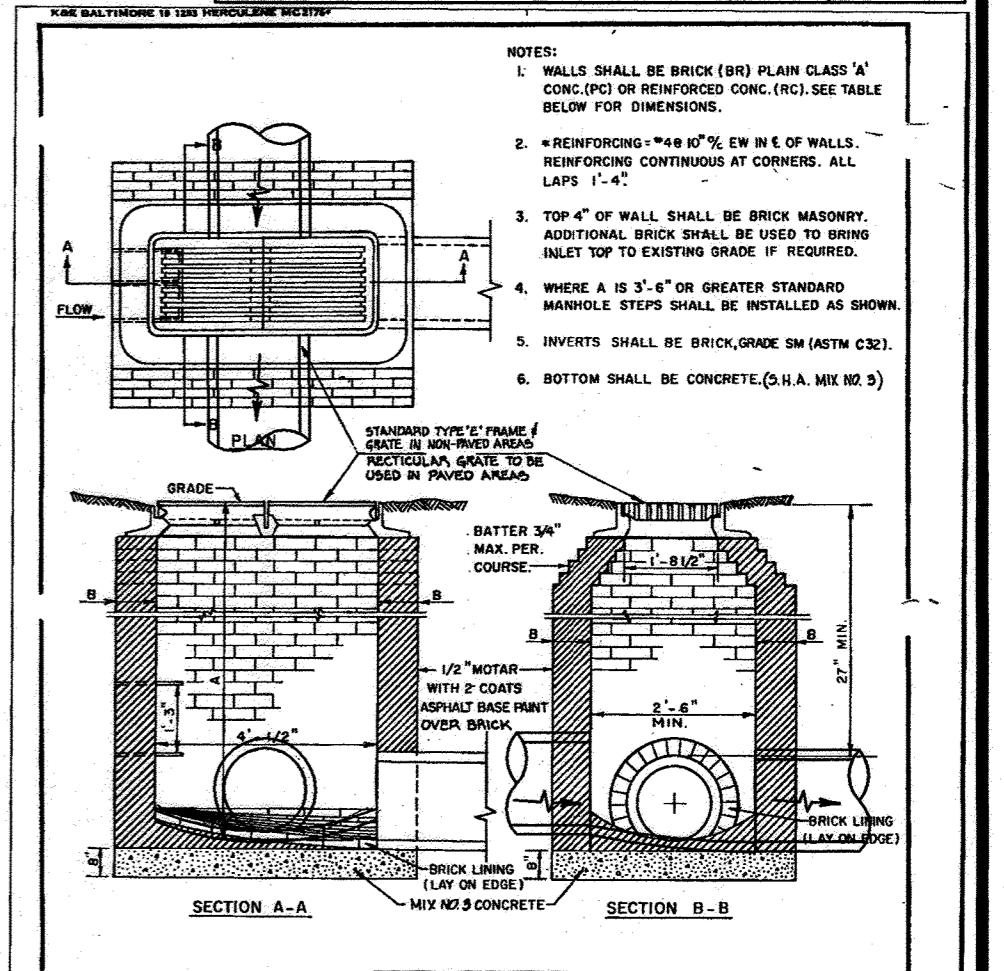


STORM DRAIN PROFILE (MH5-MH7)

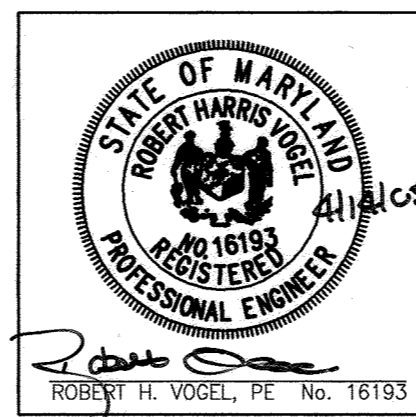
STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	COMMENTS
I-1	TYPE 'A'-10' INLET	N 528274 E 1361945	200.10	194.12	194.02	HO. CO. STD SD-4.02
I-2	DOUBLE TYPE 'S' COMB. INLET (NORMAL)	N 527799 E 1361697	209.00	201.35	200.85	MODIFIED HO. CO. STD SD-4.33 ("A"-SHEET 17)
I-2A	DOUBLE TYPE 'S' COMB. INLET (NORMAL)	N 527760 E 1361680	209.86	201.97	201.87	MODIFIED HO. CO. STD SD-4.33 ("A"-SHEET 17)
I-3	DOUBLE TYPE 'S' COMB. INLET (PARALLEL)	N 574492 E 1361584	211.80	205.48	205.48	HO. CO. STD SD-4.34
I-4	TYPE 'A'-10' INLET	N 528370 E 1361812	197.50	193.96	193.76	HO. CO. STD SD-4.02
I-5	DOUBLE TYPE 'S' INLET	N 528338 E 1361789	198.48	195.40	195.40	HO. CO. STD SD-4.23
I-6	MODIFIED DOUBLE TYPE 'S' INLET	N 528272 E 1361740	202.53	198.96	198.96	MODIFIED HO. CO. STD SD-4.23 ("B"-SHEET 17)
I-7	DOUBLE TYPE 'S' INLET	N 528207 E 1361693	206.57	200.17	199.92	HO. CO. STD SD-4.23
I-8	DOUBLE TYPE 'S' INLET	N 528144 E 1361647	210.41	205.00	202.08	HO. CO. STD SD-4.23
I-9	TYPE 'A'-10' INLET	N 528483 E 1361658	198.50	194.82	194.82	HO. CO. STD SD-4.02
I-11	DOUBLE TYPE 'S' COMB. INLET (NORMAL)	N 528587 E 1361593	199.00	196.68	195.93	MODIFIED HO. CO. STD SD-4.33 ("B"-SHEET 17)
I-12	TYPE 'A'-10' INLET	N 528665 E 1361382	200.15	197.81	197.81	HO. CO. STD SD-4.02
I-13	DOUBLE TYPE 'S' INLET	N 528451 E 1361631	199.64	196.28	196.28	HO. CO. STD SD-4.23
I-14	DOUBLE TYPE 'S' INLET	N 528370 E 1361571	203.50	197.82	197.72	HO. CO. STD SD-4.23
I-15	DOUBLE TYPE 'S' INLET	N 528318 E 1361533	206.72	198.24	198.14	HO. CO. STD SD-4.23
I-16	DOUBLE TYPE 'S' INLET	N 528271 E 1361499	209.62	198.63	198.53	HO. CO. STD SD-4.23
I-17	DOUBLE TYPE 'S' INLET	N 528370 E 1361203	216.90	202.88	202.79	HO. CO. STD SD-4.23
I-18	DOUBLE TYPE 'S' INLET	N 528261 E 1361124	216.90	202.88	202.79	HO. CO. STD SD-4.23
I-19	DOUBLE TYPE 'S' INLET	N 528200 E 1361080	217.00	202.79	202.70	HO. CO. STD SD-4.23
I-20	DOUBLE TYPE 'S' INLET	N 528158 E 1361035	217.20	202.46	202.46	HO. CO. STD SD-4.23
I-21	DOUBLE TYPE 'S' INLET	N 528119 E 1361005	217.20	202.81	202.81	HO. CO. STD SD-4.23
I-22	DOUBLE TYPE 'S' INLET	N 528066 E 1360968	217.20	203.33	203.23	HO. CO. STD SD-4.23
I-23	TYPE 'E' INLET	N 527516 E 1360802	216.00	209.39	209.14	MODIFIED HO. CO. STD SD-4.21 (SEE SHEET 15)
I-24	DOUBLE TYPE 'S' INLET	N 528027 E 1360810	211.80	206.91	206.91	HO. CO. STD SD-4.23
I-25	DOUBLE TYPE 'S' INLET	N 528037 E 1360797	211.80	207.87	207.17	HO. CO. STD SD-4.23
I-26	DOUBLE TYPE 'S' INLET	N 528068 E 1360750	212.62	208.44	208.34	HO. CO. STD SD-4.23
I-27	DOUBLE TYPE 'S' INLET	N 528149 E 1360634	214.72	211.10	211.10	HO. CO. STD SD-4.23
I-30	DOUBLE TYPE 'S' INLET	N 527884 E 1360701	211.80	208.91	207.91	HO. CO. STD SD-4.23
I-31	DOUBLE TYPE 'S' INLET	N 527992 E 1360646	212.62	209.83	208.58	HO. CO. STD SD-4.23
I-32	DOUBLE TYPE 'S' INLET	N 528002 E 1360531	214.72	211.23	211.23	HO. CO. STD SD-4.23
I-34	TYPE 'A'-10' INLET	N 527952 E 1360907	213.40	204.85	204.75	HO. CO. STD SD-4.02
I-35	TYPE 'A'-10' INLET	N 527818 E 1360865	212.00	205.69	205.69	HO. CO. STD SD-4.02
I-36	TYPE 'A'-10' INLET	N 527776 E 1360815	212.00	206.19	206.19	HO. CO. STD SD-4.02
I-37	TYPE 'A'-10' INLET	N 527629 E 1360777	216.20	211.87	211.87	HO. CO. STD SD-4.02
I-38	DOUBLE TYPE 'S' COMB. INLET (PARALLEL)	N 527371 E 1360950	217.00	211.46	211.46	MODIFIED HO. CO. STD SD-4.34 (SEE SHEET 16)
I-39	TYPE 'E' INLET	N 527516 E 1360802	217.00	213.60	213.60	MD. 381.01
MH-1	84" DIAM. PRECAST MANHOLE	N 528176 E 1361873	204.21	198.23	194.73	MD. 384.07
MH-2	5'-0" STANDARD PRECAST MANHOLE	N 528007 E 1361750	212.30	198.45	198.35	HO. CO. STD. G-5.13
MH-3	5'-0" STANDARD PRECAST MANHOLE	N 527891 E 1361735	210.75	199.72	199.62	HO. CO. STD. G-5.13
MH-3A	5'-0" STANDARD PRECAST MANHOLE	N 527839 E 1361701	209.61	200.45	200.35	HO. CO. STD. G-5.13
MH-4	4'-0" STANDARD PRECAST MANHOLE	N 527635 E 1361628	212.72	203.38	203.23	HO. CO. STD. G-5.12
MH-5	72" DIAM. PRECAST MANHOLE	N 528431 E 1361247	214.78	200.41	200.31	MD. 384.05
MH-6	5'-0" STANDARD PRECAST MANHOLE	N 528005 E 1360900	213.71	204.18	204.19	HO. CO. STD. G-5.12
MH-7	72" DIAM. PRECAST MANHOLE	N 528386 E 1361583	202.55	197.62	197.12	MD. 384.05
MH-8	72" DIAM. PRECAST MANHOLE	N 528255 E 1361487	210.54	198.83	198.73	MD. 384.05
MH-1	TYPE 'A' HEADWALL	N 528439 E 1361959	199.00	193.00	193.00	HO. CO. STD SD-5.11
MH-2	TYPE 'A' HEADWALL	N 528453 E 1361938	197.00	193.00	193.00	HO. CO. STD SD-5.11
EW-1	TYPE 'C' ENDWALL (USE 12" SPECS.)	N 528439 E 1361959	184.00	185.75	185.75	HO. CO. STD SD-5.21

NOTE: 1. Top elevations are of flowing for Double Type 'A'-10' and Double Type 'S' Comb. Inlets at center top of grate for Double Type 'S' inlets and top of Manhole cover for Precast Manholes.
2. For top slab slopes see grading plan.
3. See Architectural plans for roof drain details.

PIPE SCHEDULE		
SIZE	TYPE	LENGTH
15"	HDPE	648 LF
18"	HDPE	285 LF
21"	HDPE	197 LF
24"	HDPE	568 LF
15"	RCP	306 LF
24"	RCP	122 LF
30"	RCP	879 LF
36"	RCP	259 LF
42"	RCP	1207 LF
48"	RCP	164 LF
54"	RCP	287 LF
84"	RCP CLASS IV	40 LF
6"	PVC (SOLID)	240 LF
6"	PVC (PERFORATED)	420 LF
8"	PVC (SOLID)	923 LF
8"	PVC (PERFORATED)	220 LF
10"	PVC	85 LF
12"	PVC	263 LF
15"	PVC	86 LF
18"	PVC	353 LF



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/5/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/1/05
 DIRECTOR
 DATE: 6/4/05



OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 P.O. Box 4900E
 SCOTSDALE, AZ 85261
 (510) 652-8187

ROBERT H. VOGEL
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DRAWING NO.
C5.1
 HO. CO. DPZ SHEET:
 15 OF 40
 SDP-05-40

REVISED PLAN AND SECTION AS SHOWN
 FACILITIES, SERVICE AREAS,
 UTILITY INFORMATION
 DATE: 05-08-05
 BY: RAV
 CHECKED: DZ
 DATE: 01-05-22
 BY: TS
 CHECKED: G
 DATE: 10-12-22
 BY: TS
 RELEASED FOR: _____

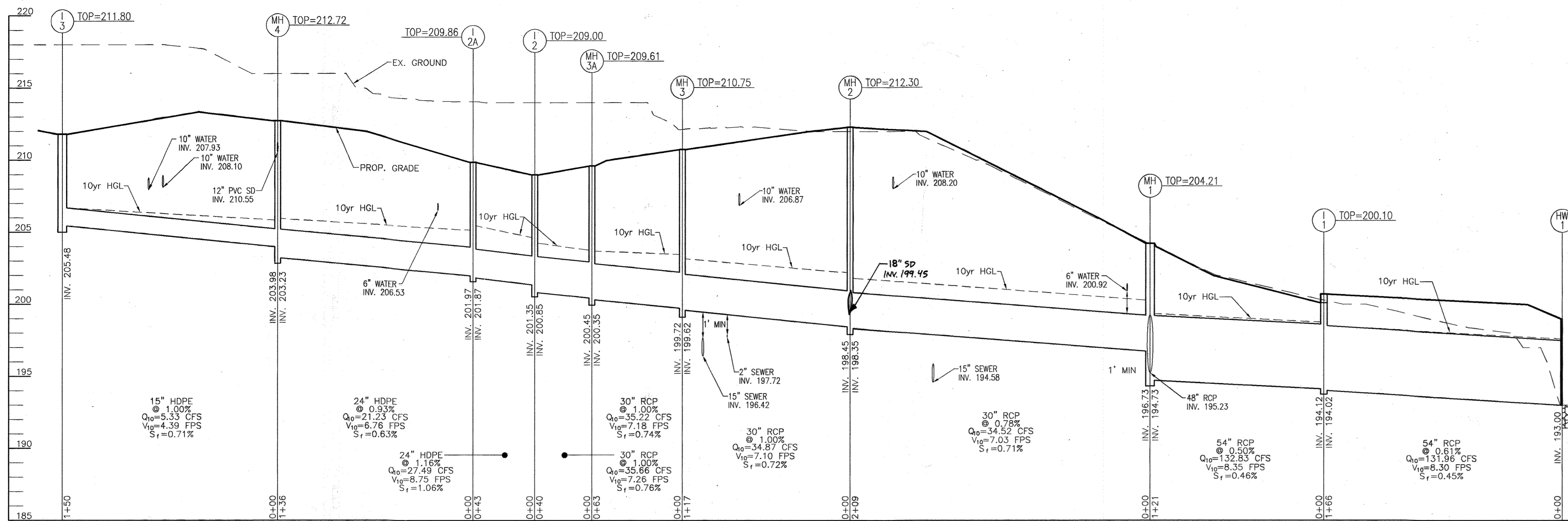
DREYER'S GRAND ICE CREAM
 9080 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

STORM DRAIN PROFILES

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

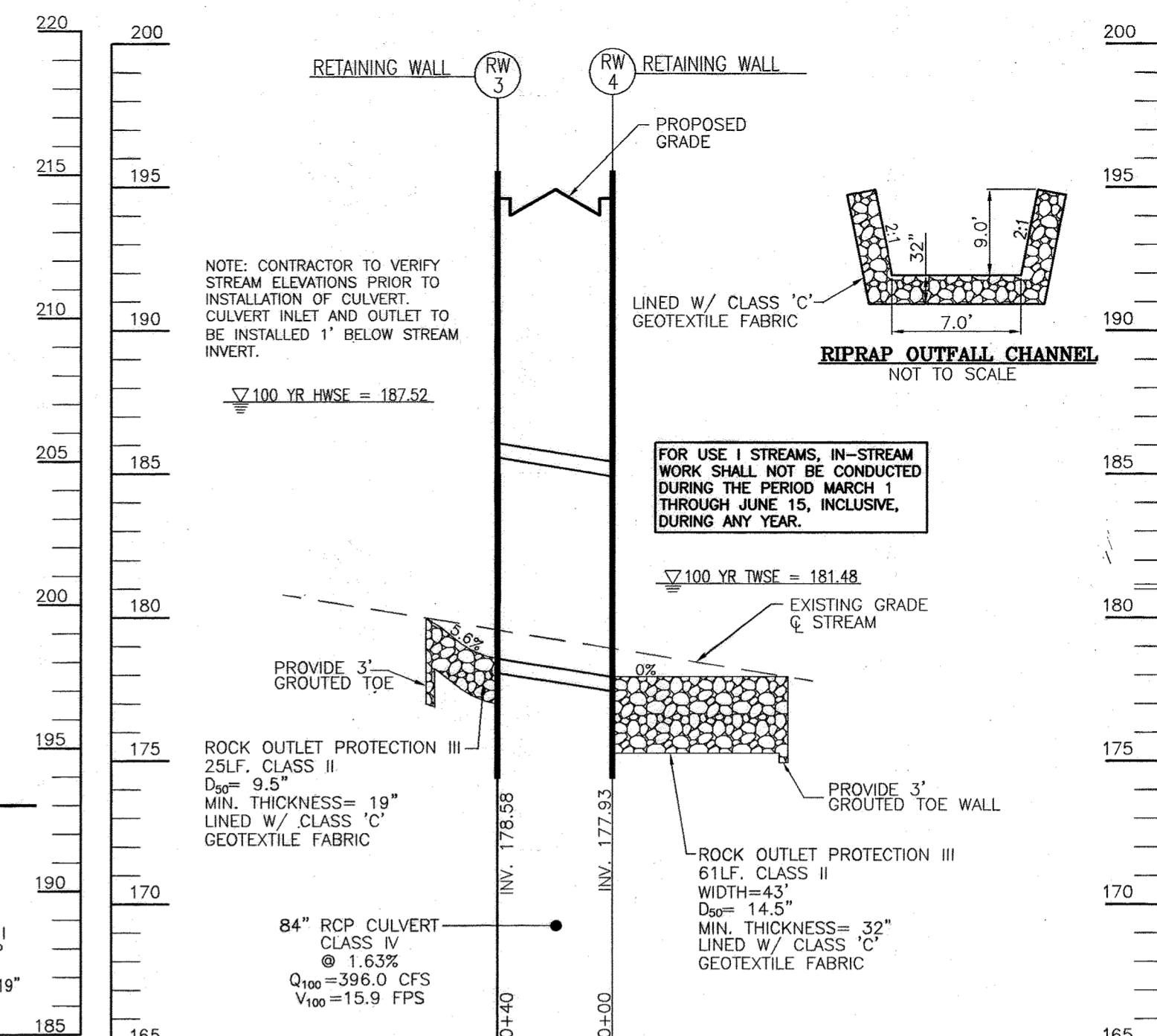
136 SOUTH MAIN STREET
 SUITE 200
 SPRINGFIELD MASSACHUSETTS 01104
 413-787-1785 • FAX 413-787-1786

1901 MAIN STREET
 SUITE 200
 SPRINGFIELD MASSACHUSETTS 01104
 413-787-1785 • FAX 413-787-1786



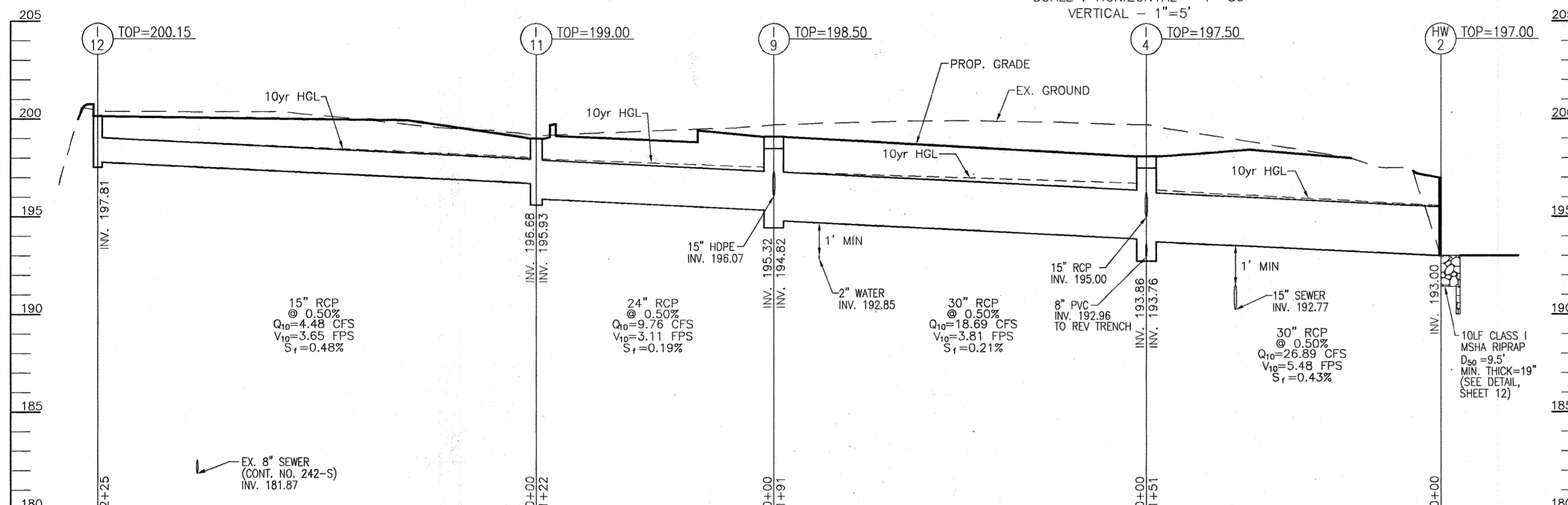
STORM DRAIN PROFILE (I3-HW1)

SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



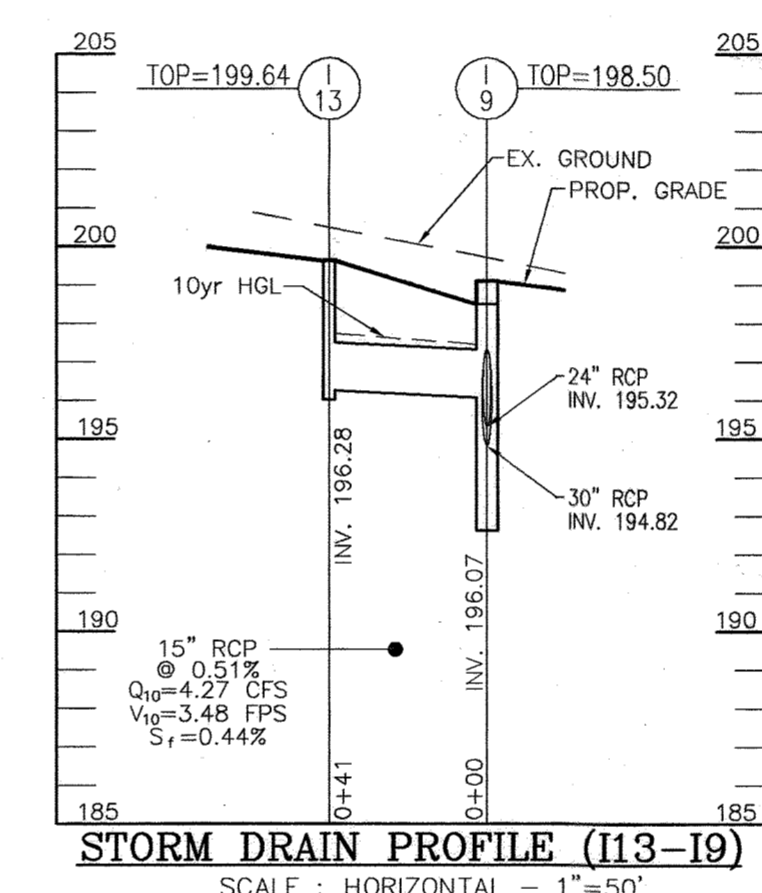
CULVERT PROFILE

SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



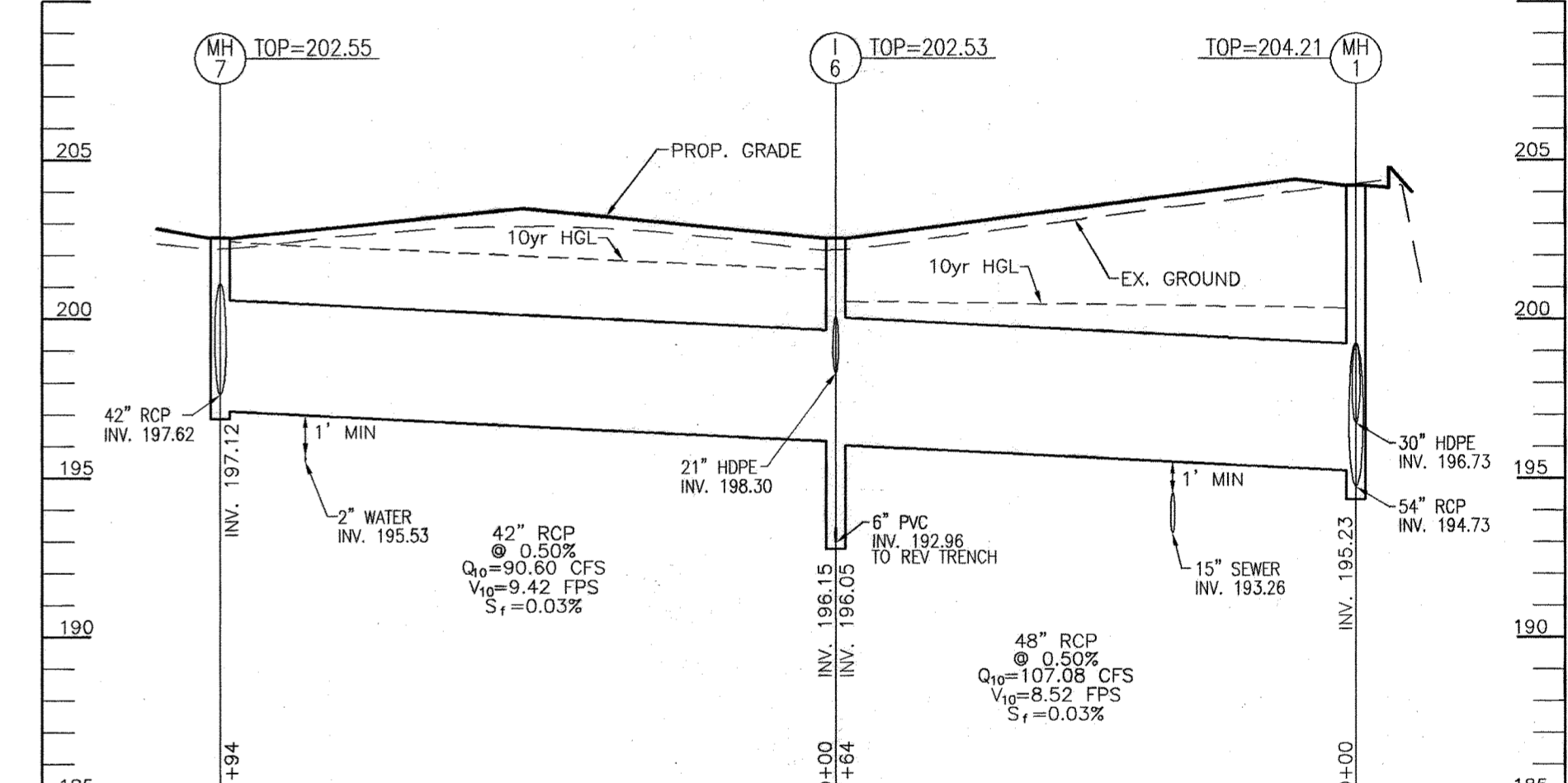
STORM DRAIN PROFILE (I12-HW2)

SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



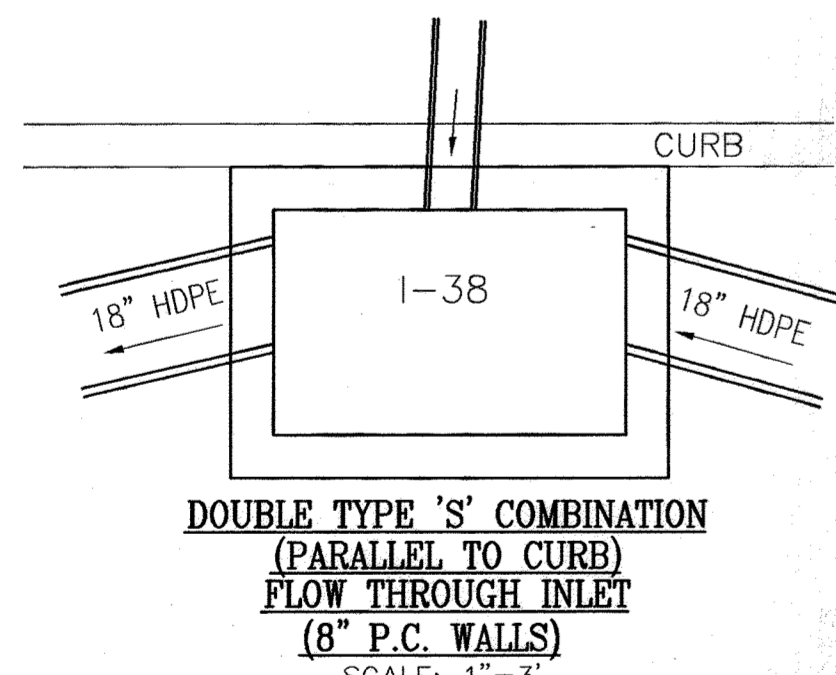
STORM DRAIN PROFILE (I13-19)

SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



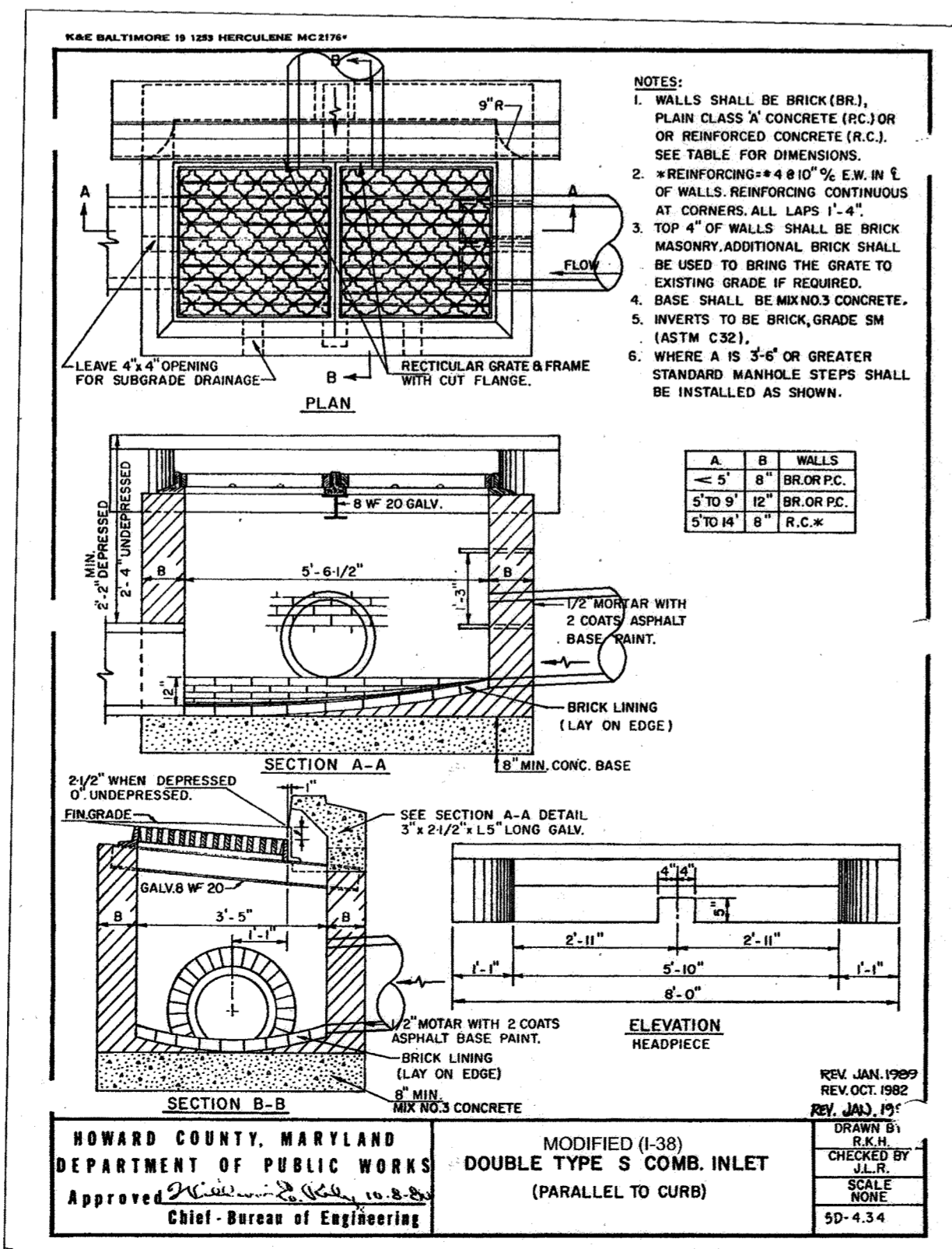
STORM DRAIN PROFILE (MH7-MH1)

SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

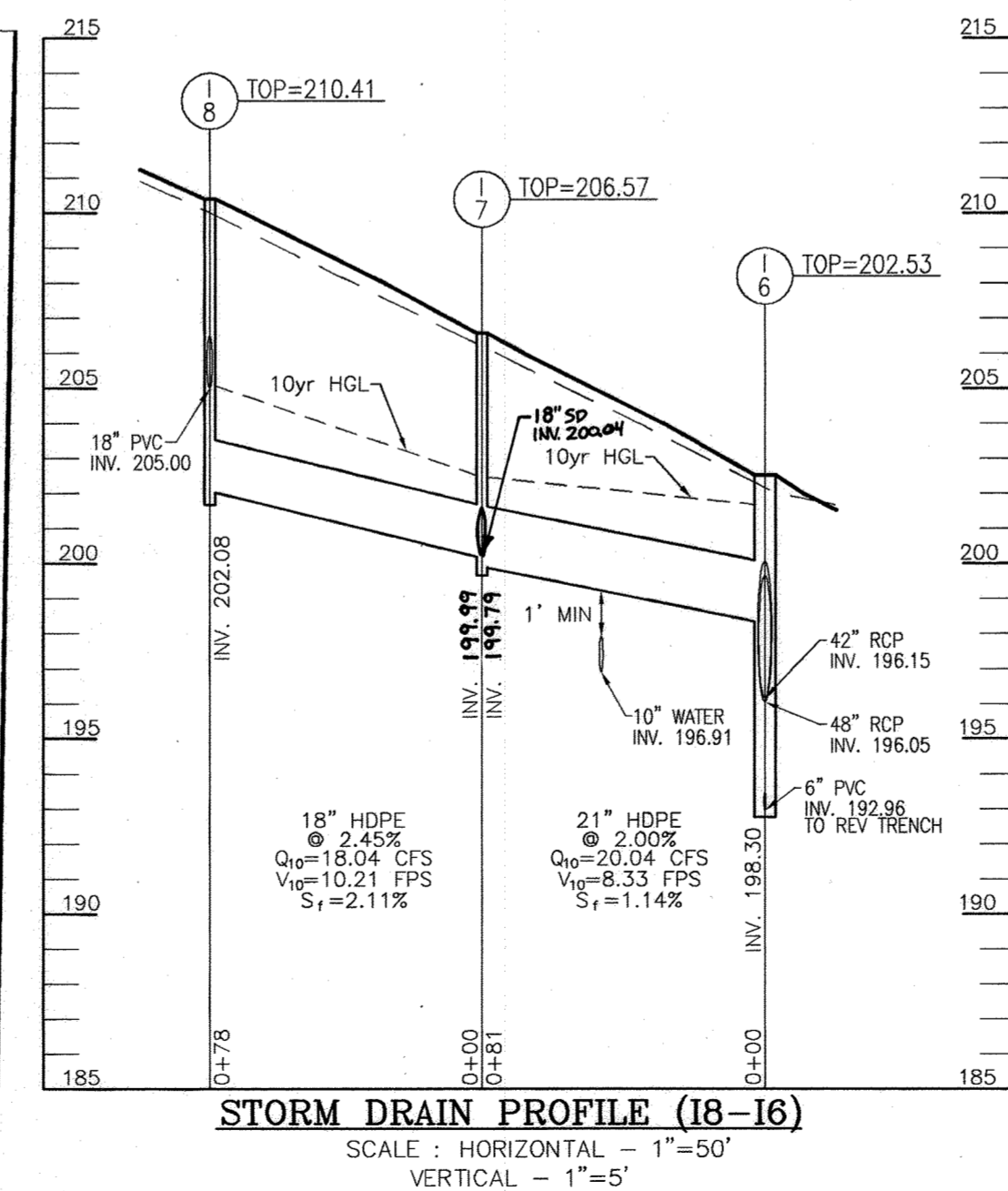


**DOUBLE TYPE 'S' COMBINATION
(PARALLEL TO CURB)
FLOW THROUGH INLET
(8" P.C. WALLS)**

SCALE: 1"=4'

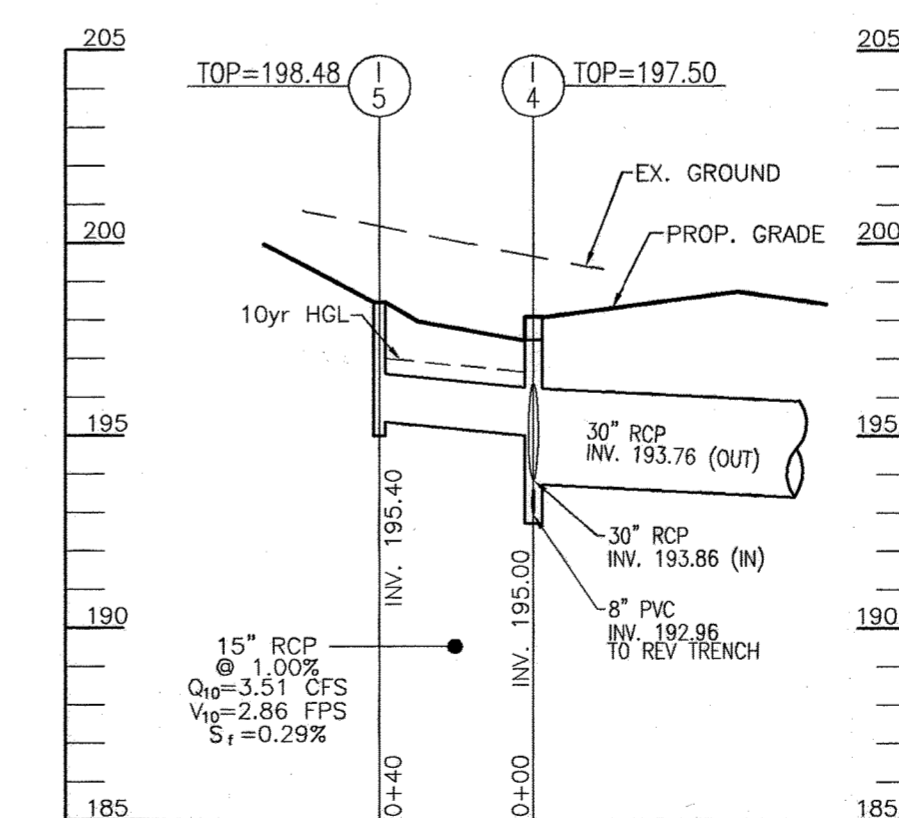


**DOUBLE TYPE S COMB. INLET
(PARALLEL TO CURB)**



STORM DRAIN PROFILE (I8-16)

SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



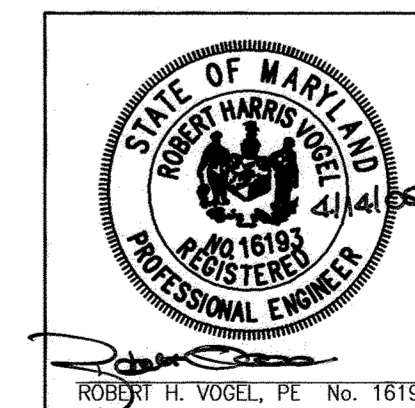
STORM DRAIN PROFILE (I5-14)

SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/26/15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 6/2/15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 6/2/15
 DIRECTOR DATE

OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO Box 4900E
 SCOTTSDALE, AZ 85261
 (510) 652-8187

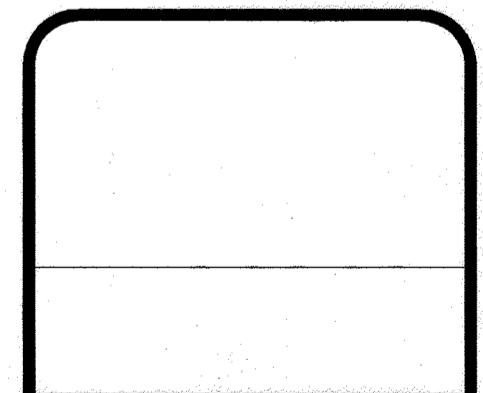


**ROBERT H. VOGEL
ENGINEERING, INC.**
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

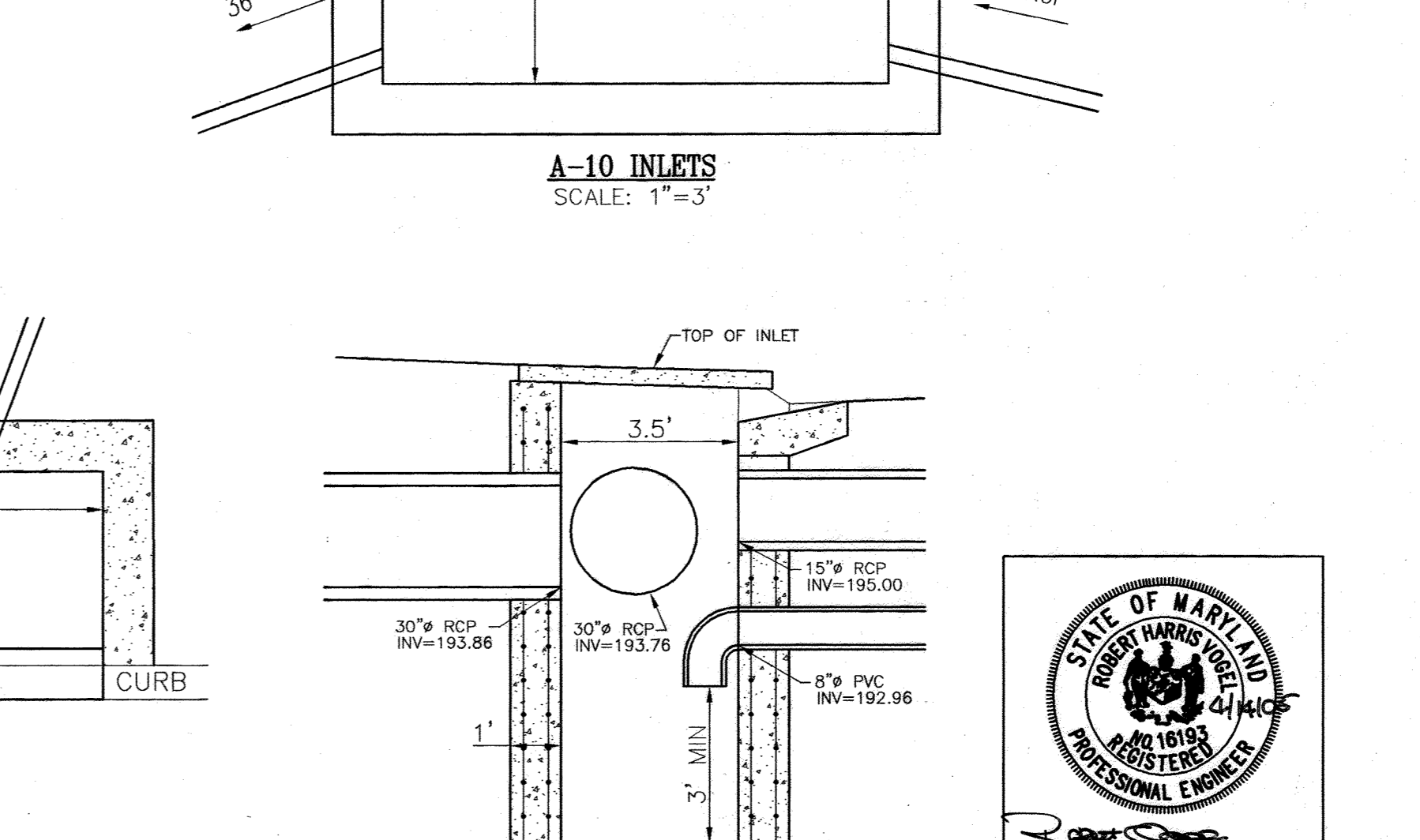
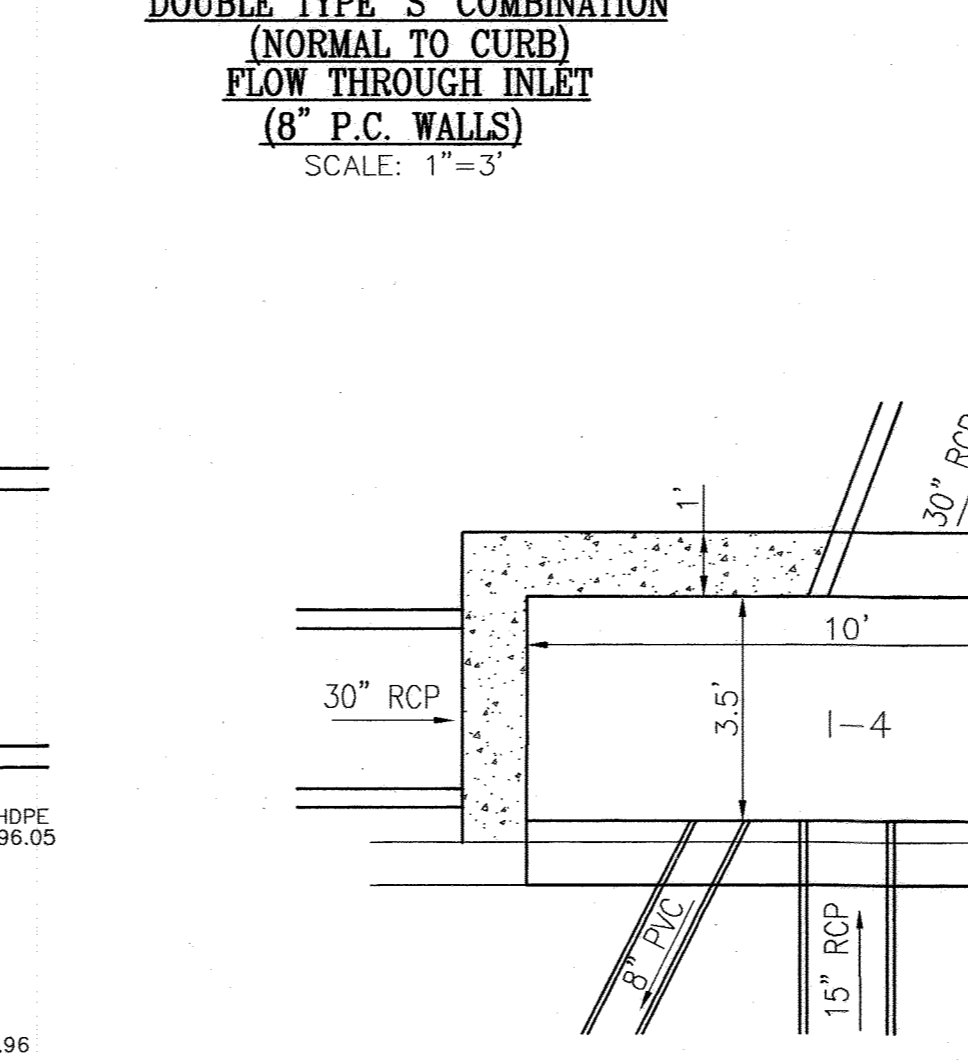
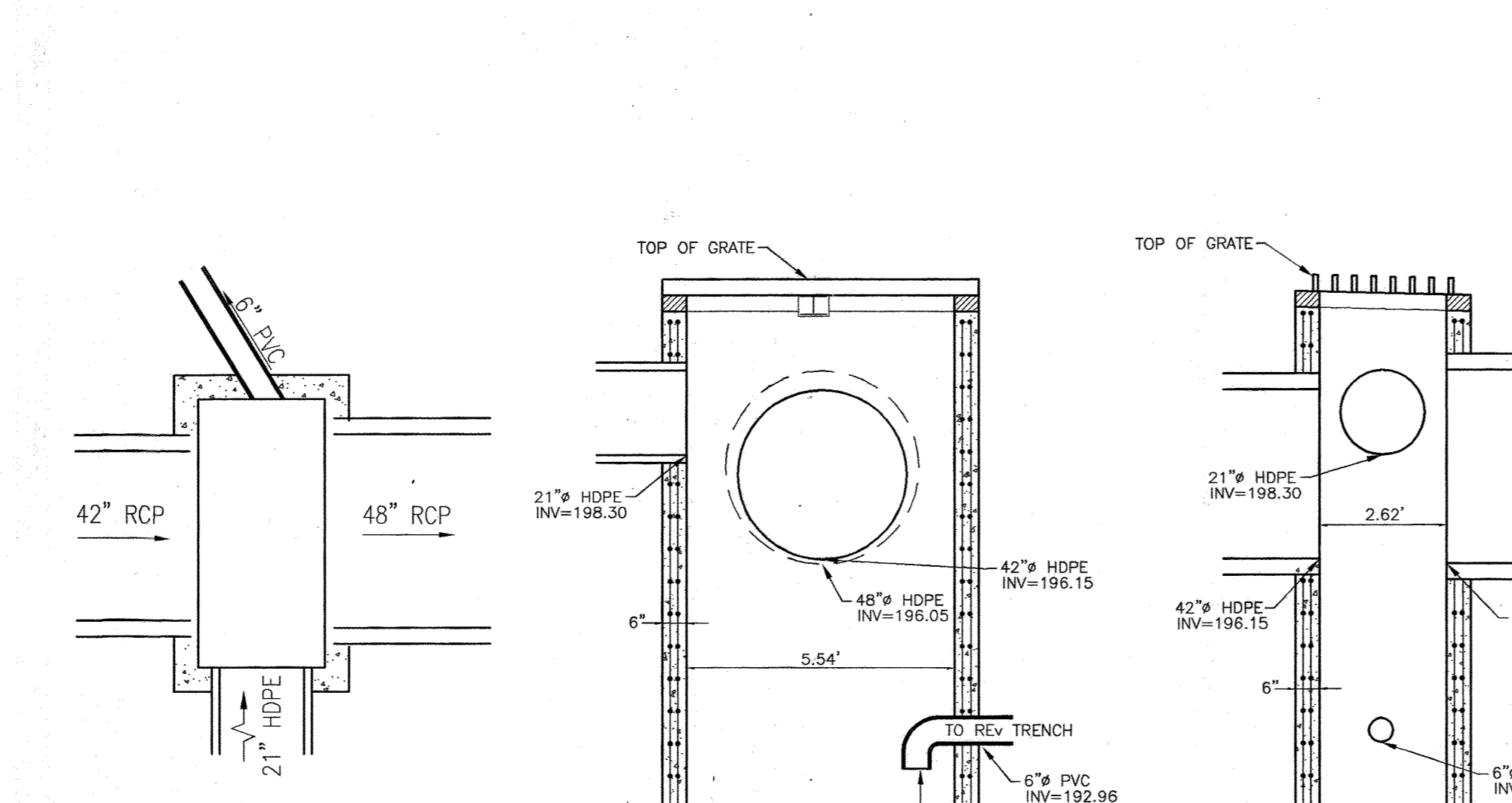
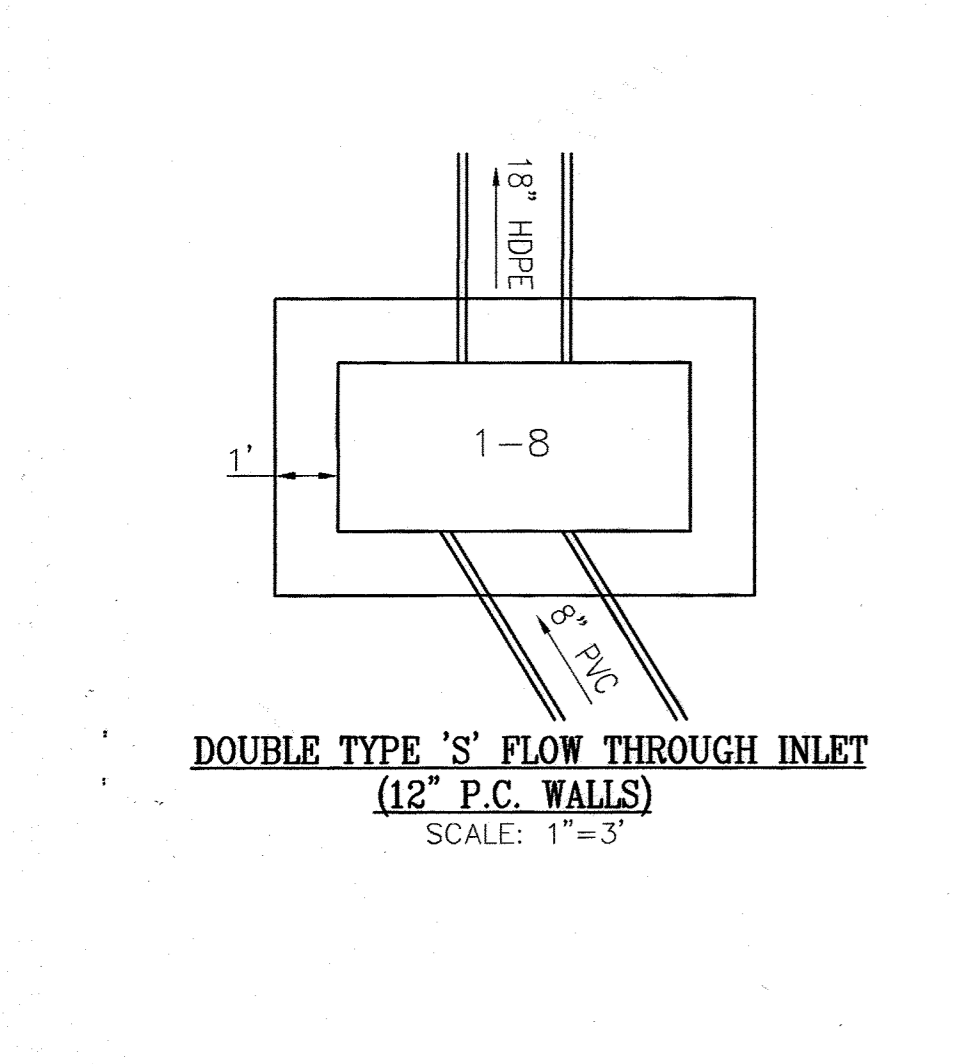
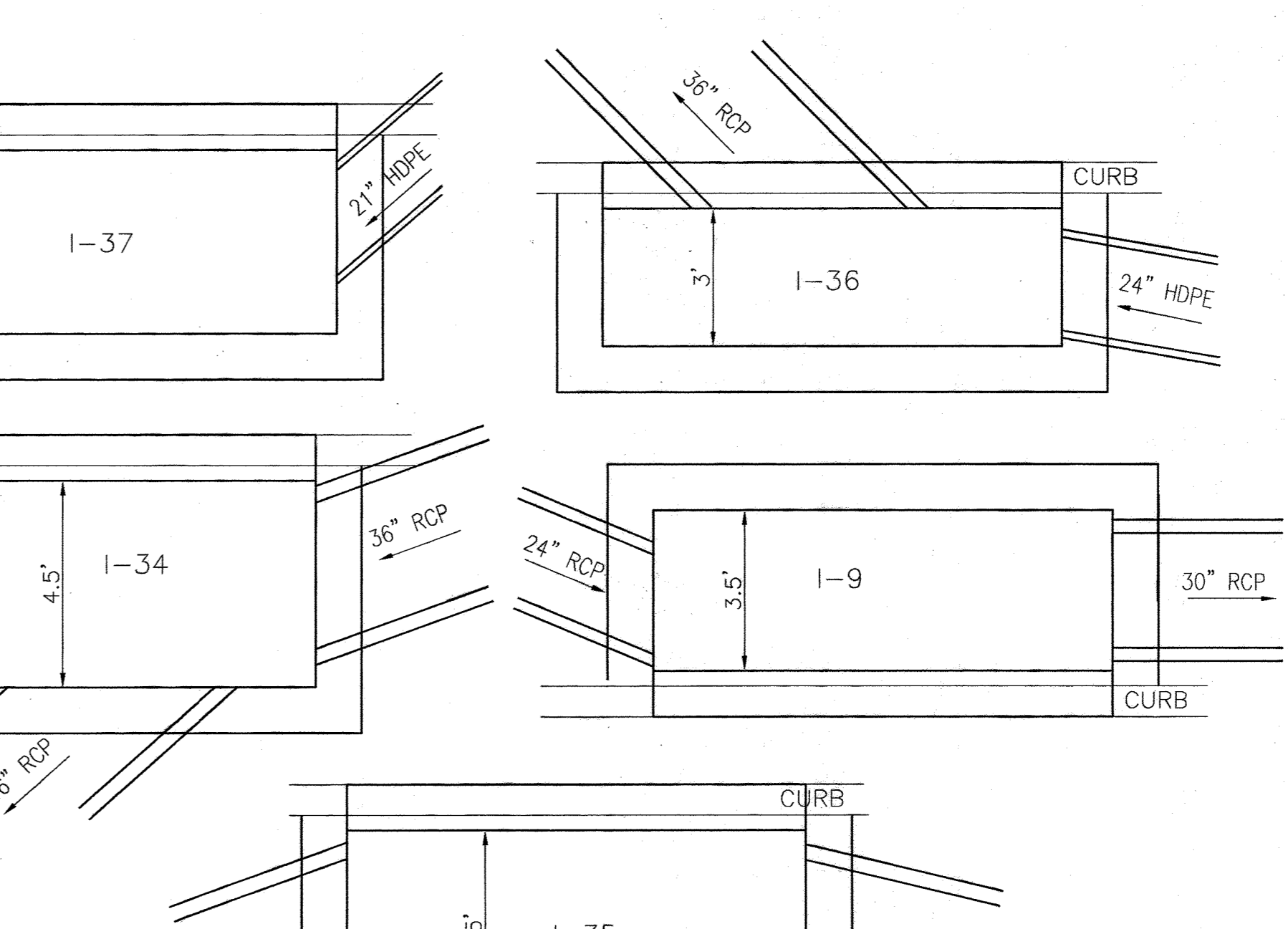
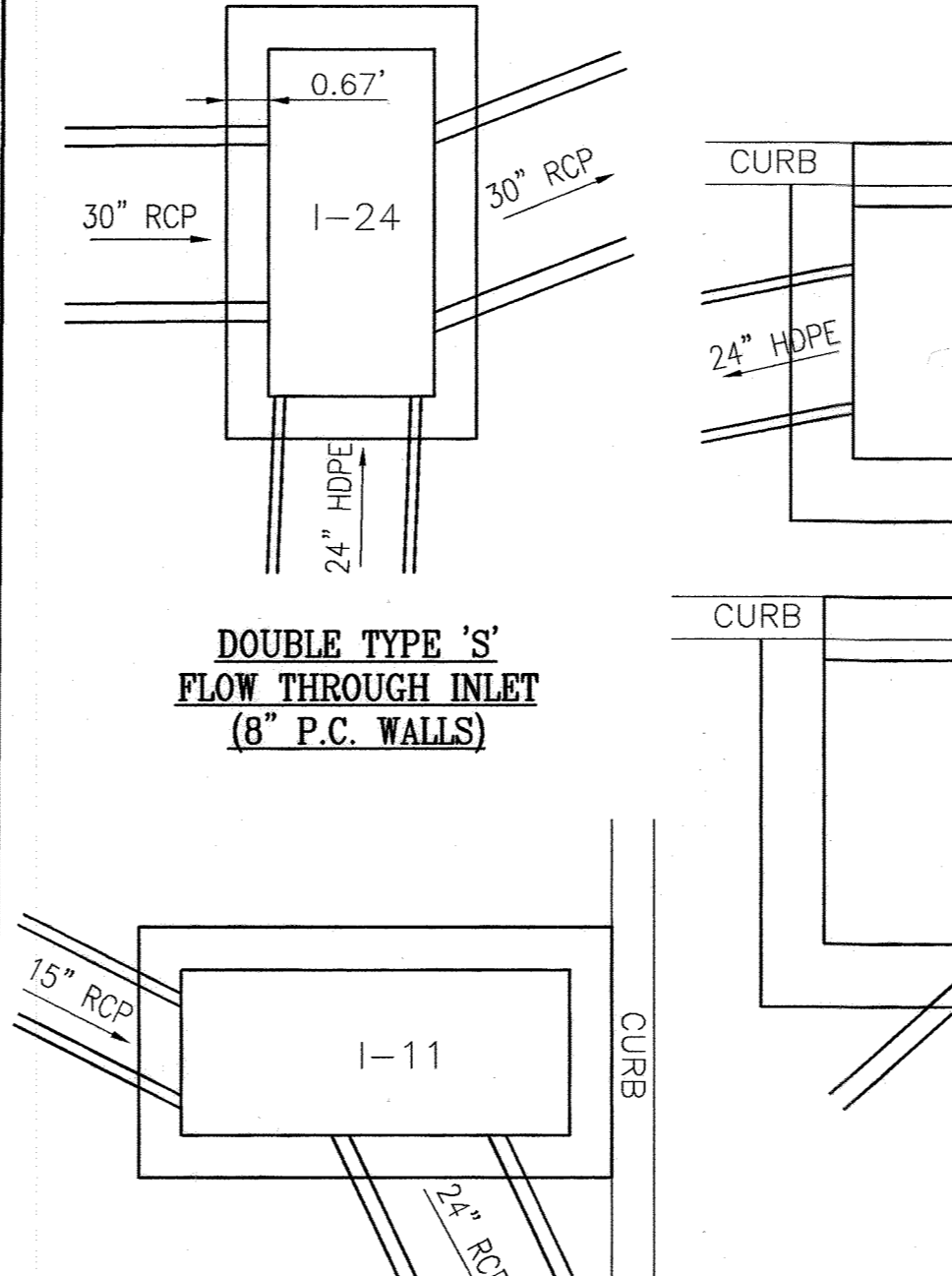
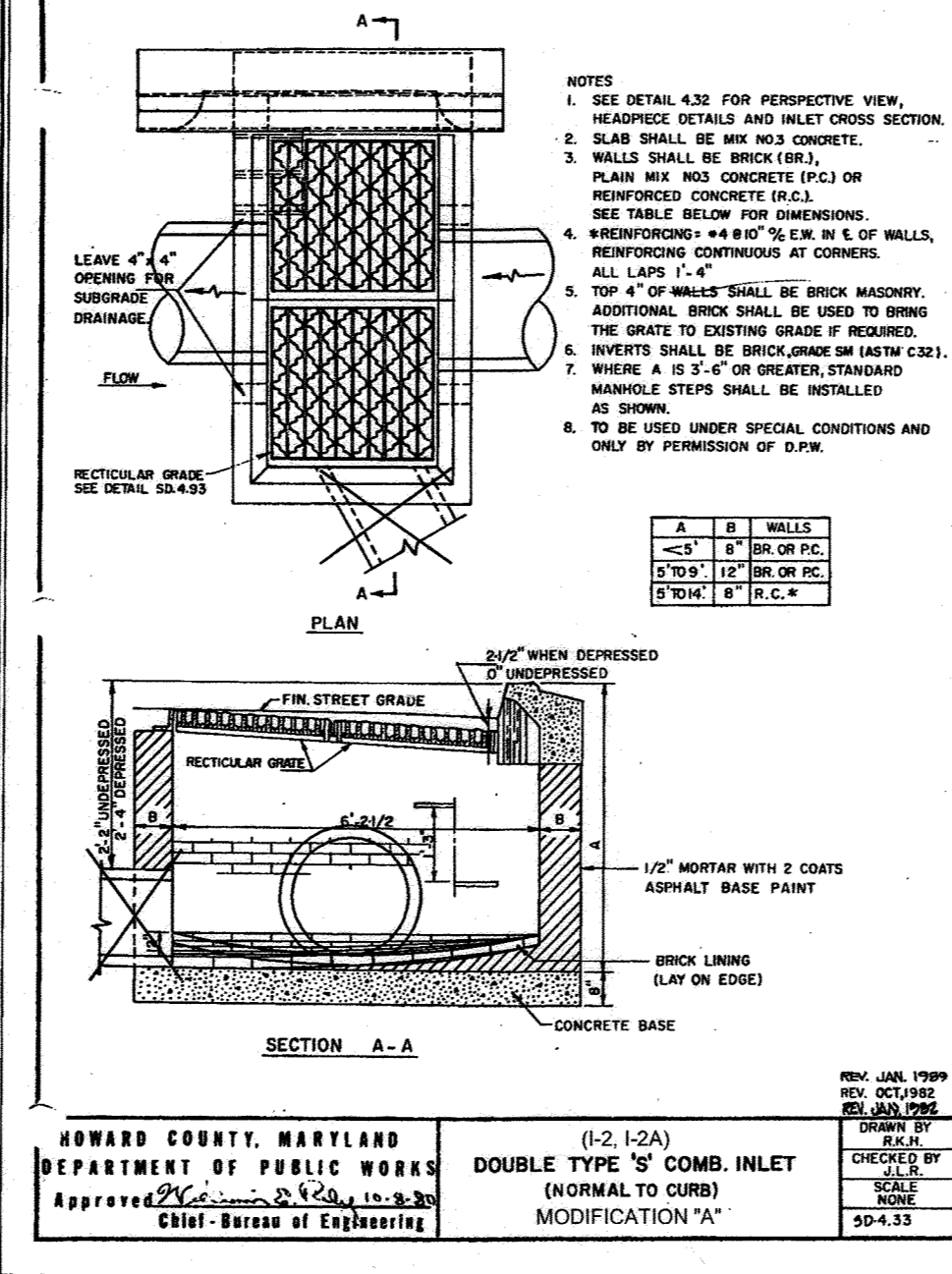
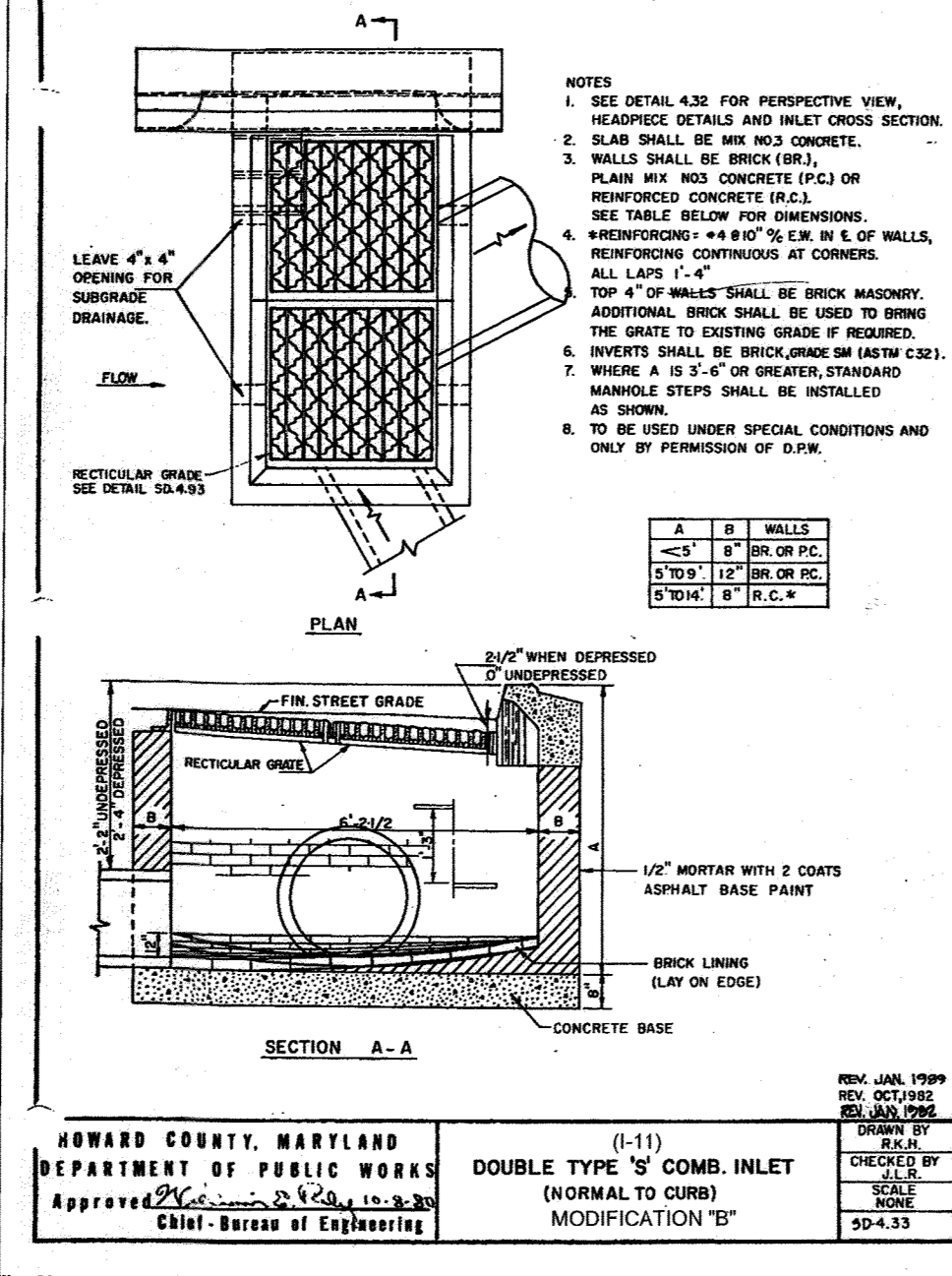
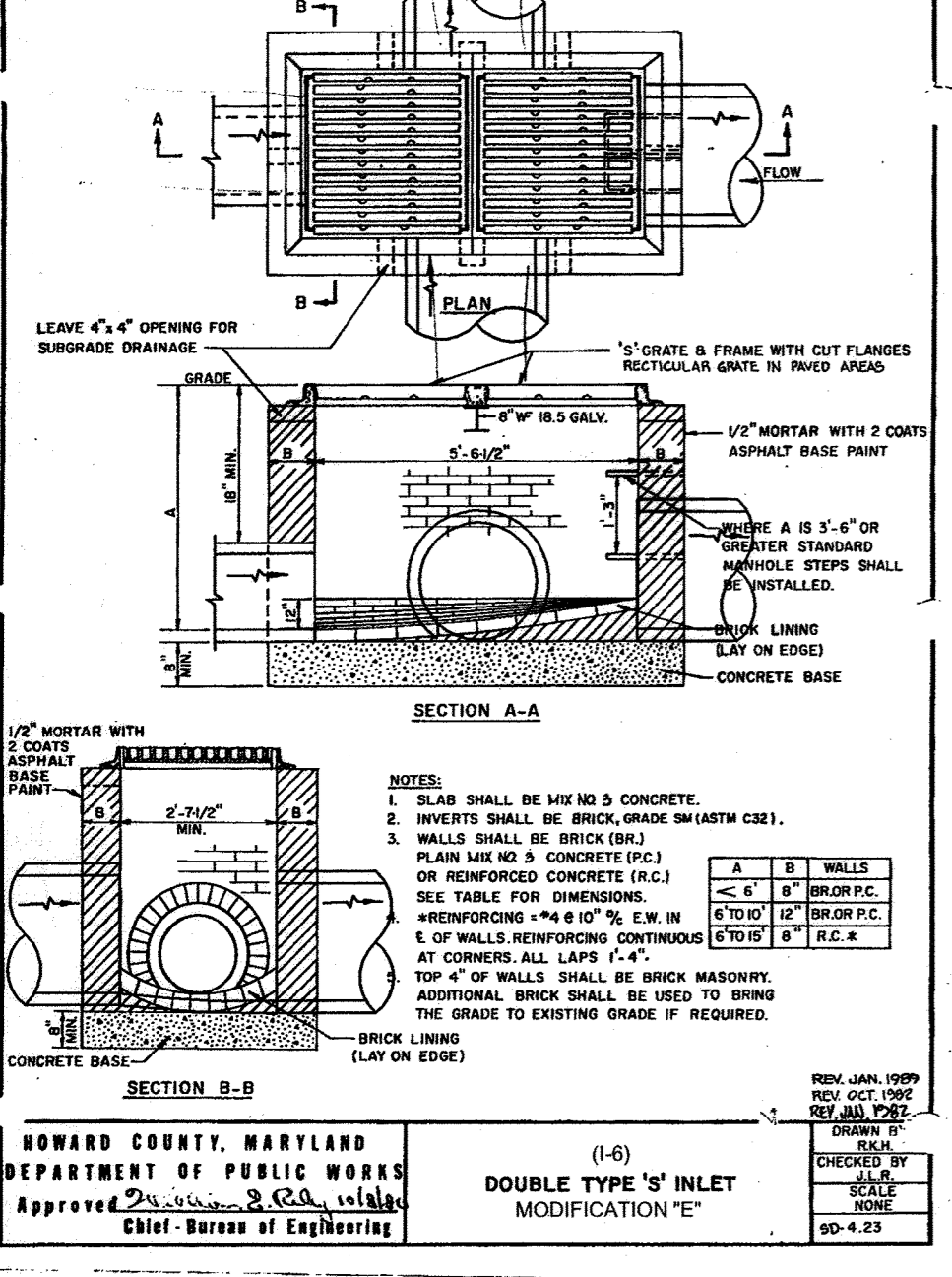
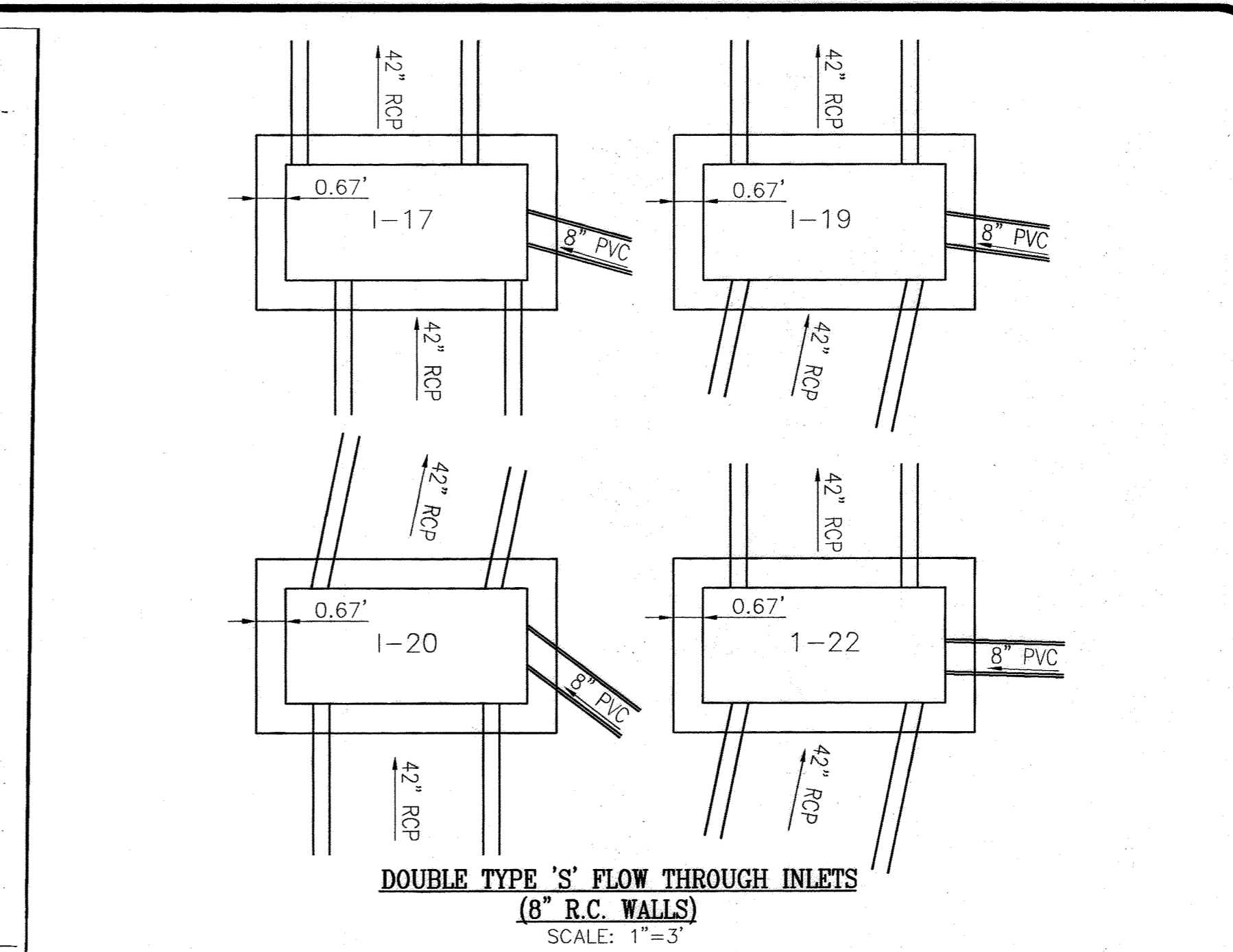
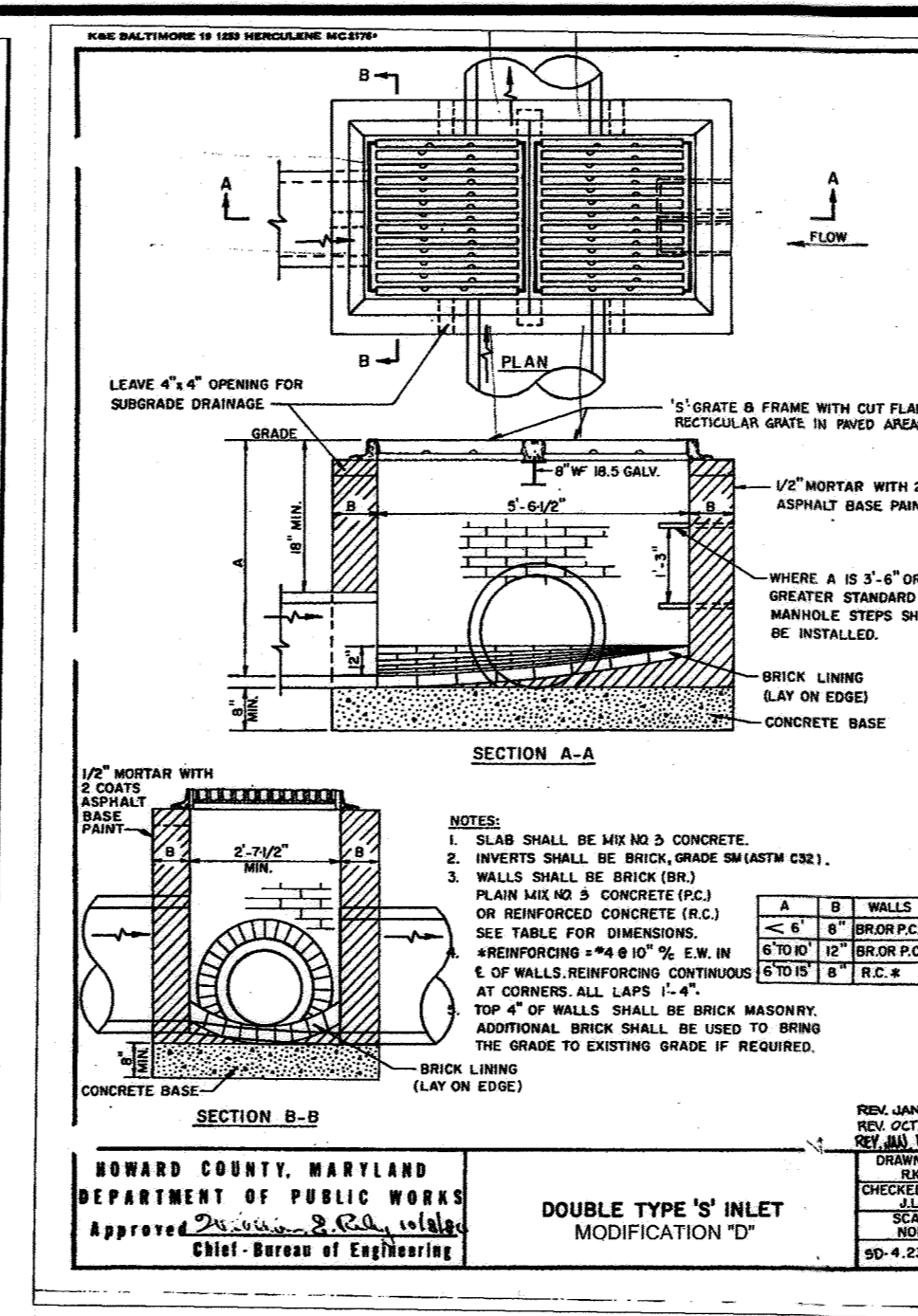
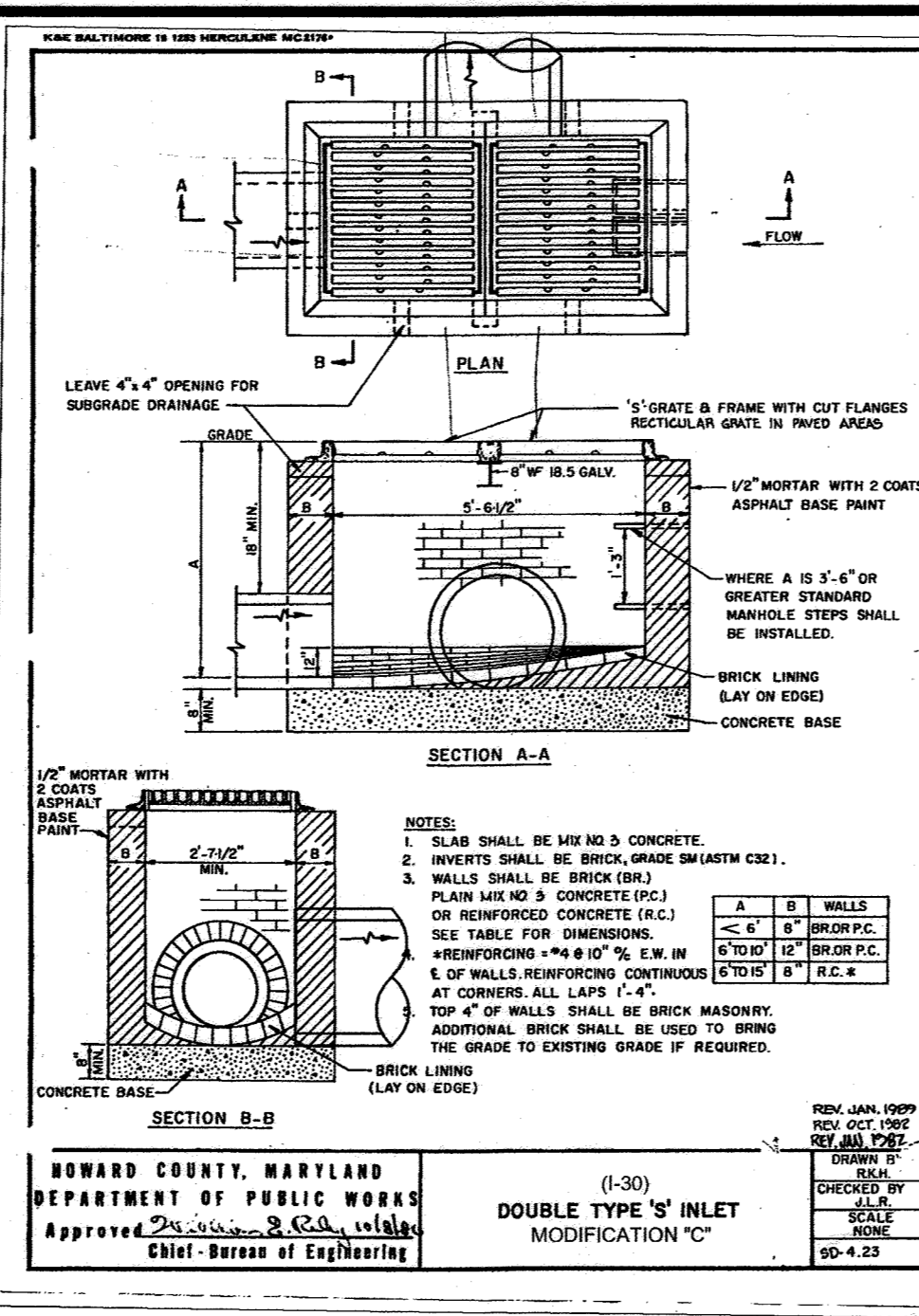
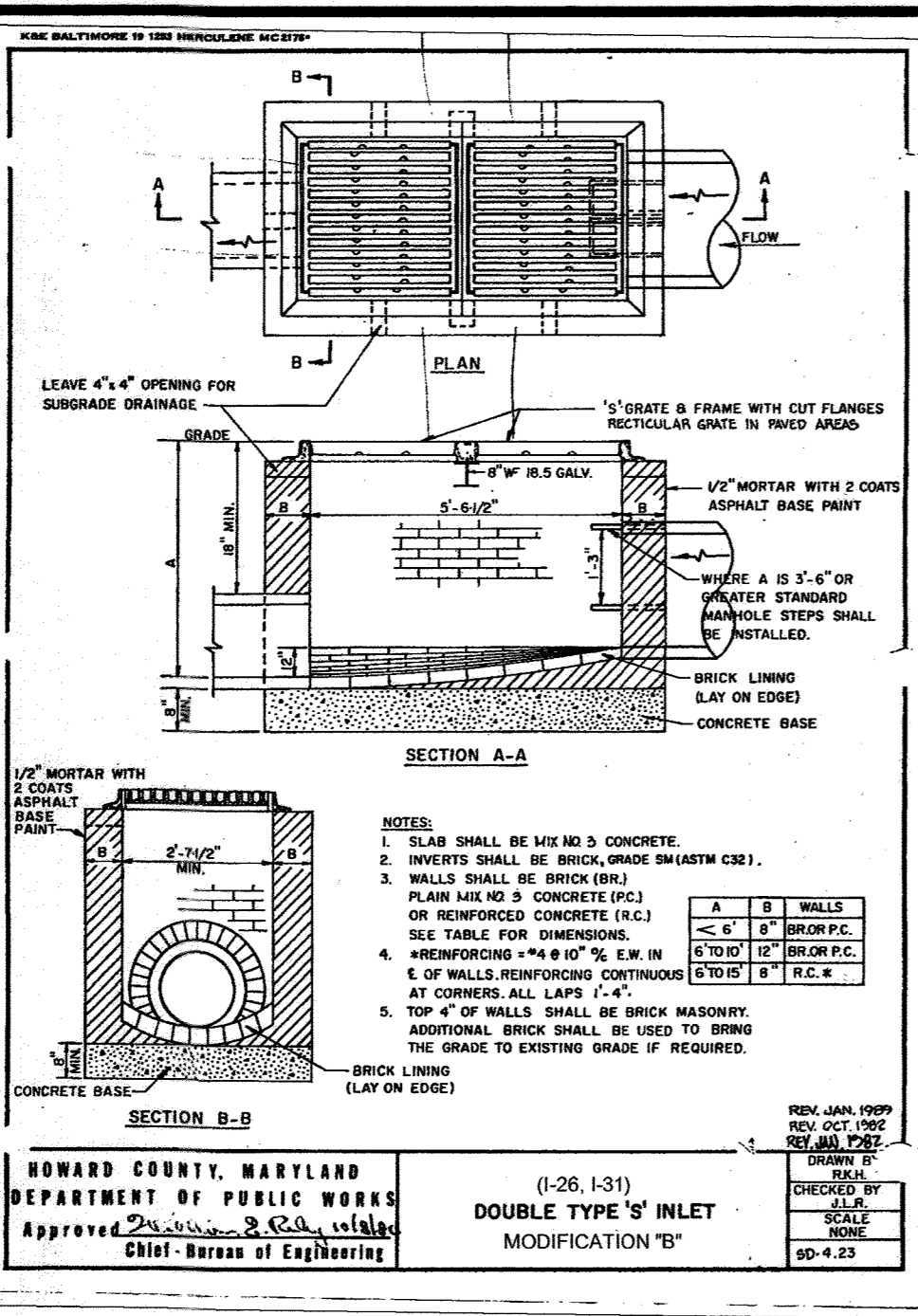
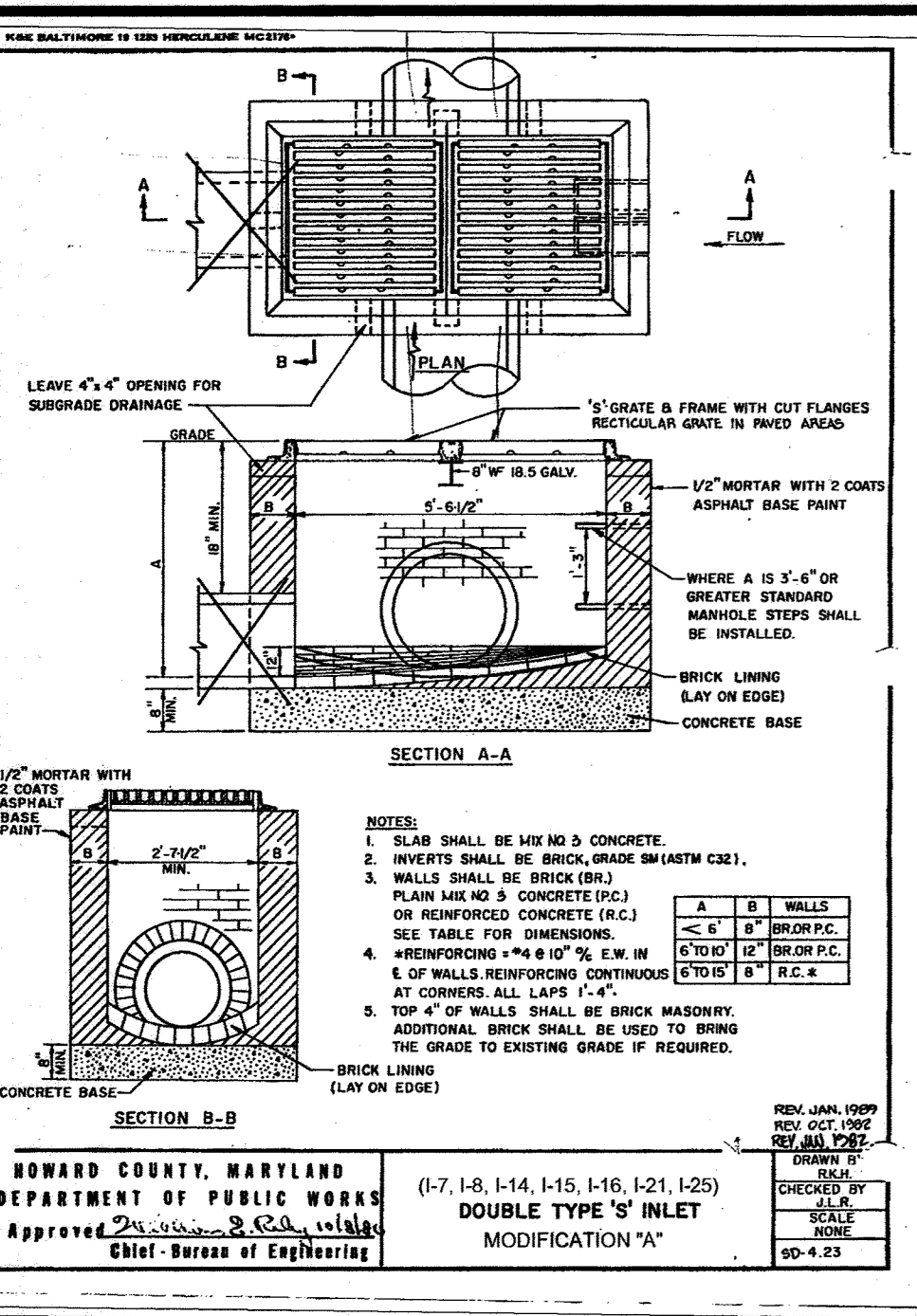
REVISED PLAN TO SHOW AS BUILT FACILITY INFORMATION	DATE	BY	APP.	RELEASED FOR
1	05-25-06	DZ		
2	01-05-21	TS		
3	01-05-21	TS		
4	10-12-22	TS		

DREYER'S GRAND ICE CREAM
 9080 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT
 136 SOUTH MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01103
 801-531-8585, FAX 801-531-8586
 413-787-1785, FAX 413-787-1786



DRAWING NO.
C5.2
 HO. CO. DPZ SHEET:
 16 OF 40
 SDP-05-40



APPROVED: HOWARD COUNTY, DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: [Signature] 5/25/05
 Chief, Division of Land Development: [Signature] 6/6/05
 Director: [Signature] 6/2/05

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO Box 49008
SCOTTSDALE, AZ 85261
(510) 652-8187

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
BELLGATE CITY, MD 21043
TEL: 410-461-7666
FAX: 410-461-8961

STATE OF MARYLAND
ROBERT H. VOGEL, P.E.
REGISTERED PROFESSIONAL ENGINEER
No. 16193

DRAWING NO. C5.3
HO. CO. DPZ SHEET: 17 OF 40
SDP-05-40

REVISED PLAN TO SHOW VARIOUS FACILITY INFORMATION	DATE	BY
1	05-25-05	DZ PAH
2	01-05-24	TS
3	01-05-24	TS
4	10-12-22	TS
5		
6		

DREYER'S GRAND ICE CREAM
9090 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

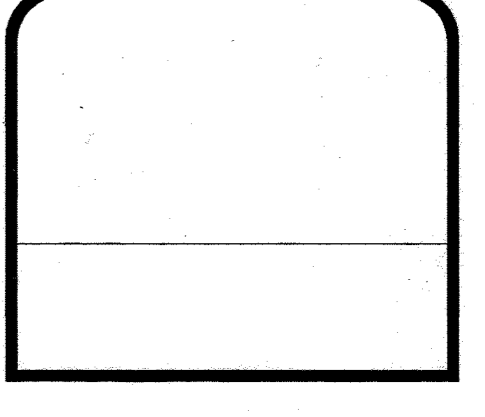
STORM DRAIN INLET DETAILS

THE DENNIS GROUP, LLC

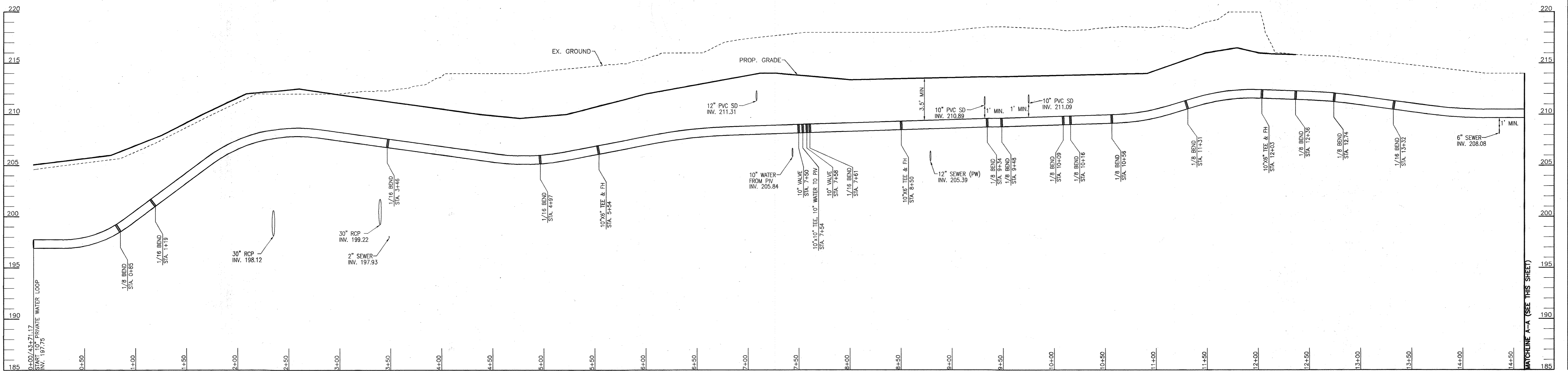
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-787-1785 • FAX 413-787-1786

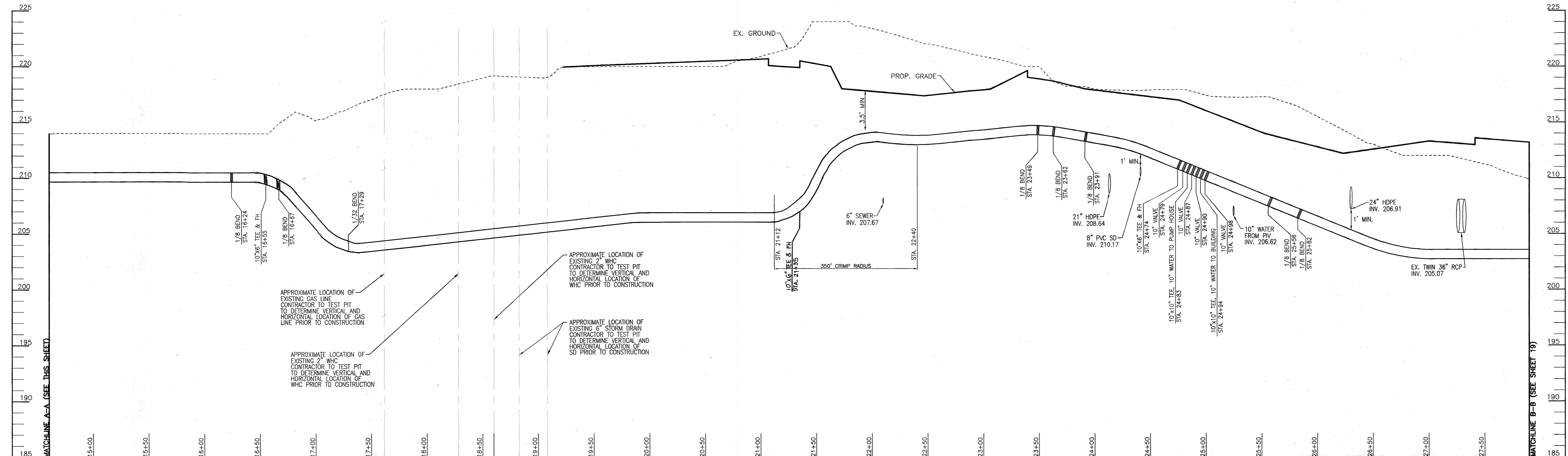
1901 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
801-531-8585 • FAX 801-531-8586



DRAWING NO. C5.3
HO. CO. DPZ SHEET: 17 OF 40
SDP-05-40



10' WATER LOOP PROFILE
 SCALE: HORIZONTAL - 1"=50'
 VERTICAL - 1"=5'



10' WATER LOOP PROFILE
 SCALE: HORIZONTAL - 1"=50'
 VERTICAL - 1"=5'

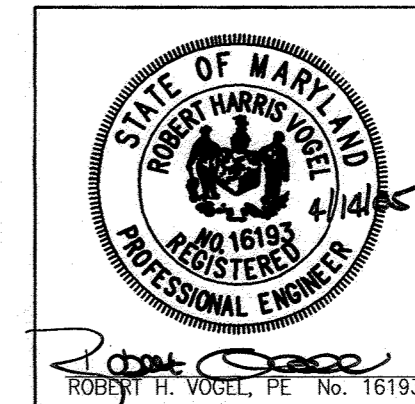
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/25/05

 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/2/05

 DIRECTOR
 DATE: 6/2/05

OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 4400
 SCOTSDALE, AZ 85261
 (510) 652-8187



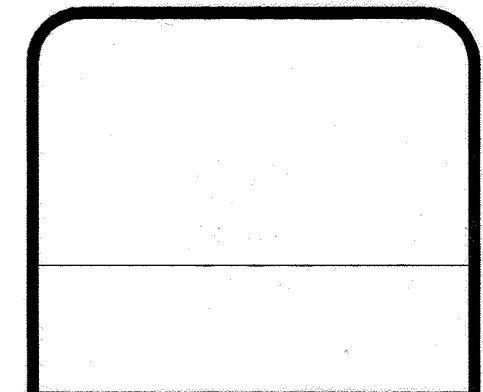
OWNER
 [Redacted]
 [Redacted]
 [Redacted]
DEVELOPER
 [Redacted]
 [Redacted]
 [Redacted]

ROBERT H. VOGEL
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

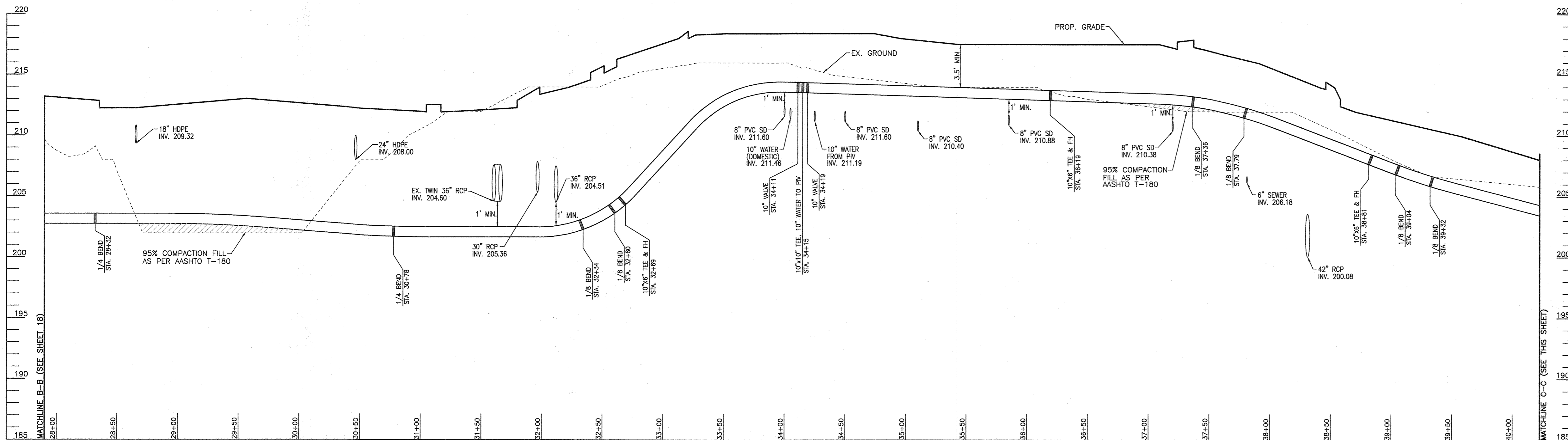
REVISED PLAN TO SHOW AS-BUILT FACILITY INFORMATION	RHV	DATE	BY	APP.	RELEASED FOR
REVISED PLAN TO SHOW THE 15,110 GPD WASTEWATER EXPANSION AND STORMWATER MANAGEMENT FACILITIES	VTG	01-05-24	TS		
REVISED PLAN TO SHOW THE 15,110 GPD WASTEWATER EXPANSION AND STORMWATER MANAGEMENT FACILITIES	VTG	10-12-22	TS		

DREYER'S GRAND ICE CREAM
 9090 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723
WATER PROFILES

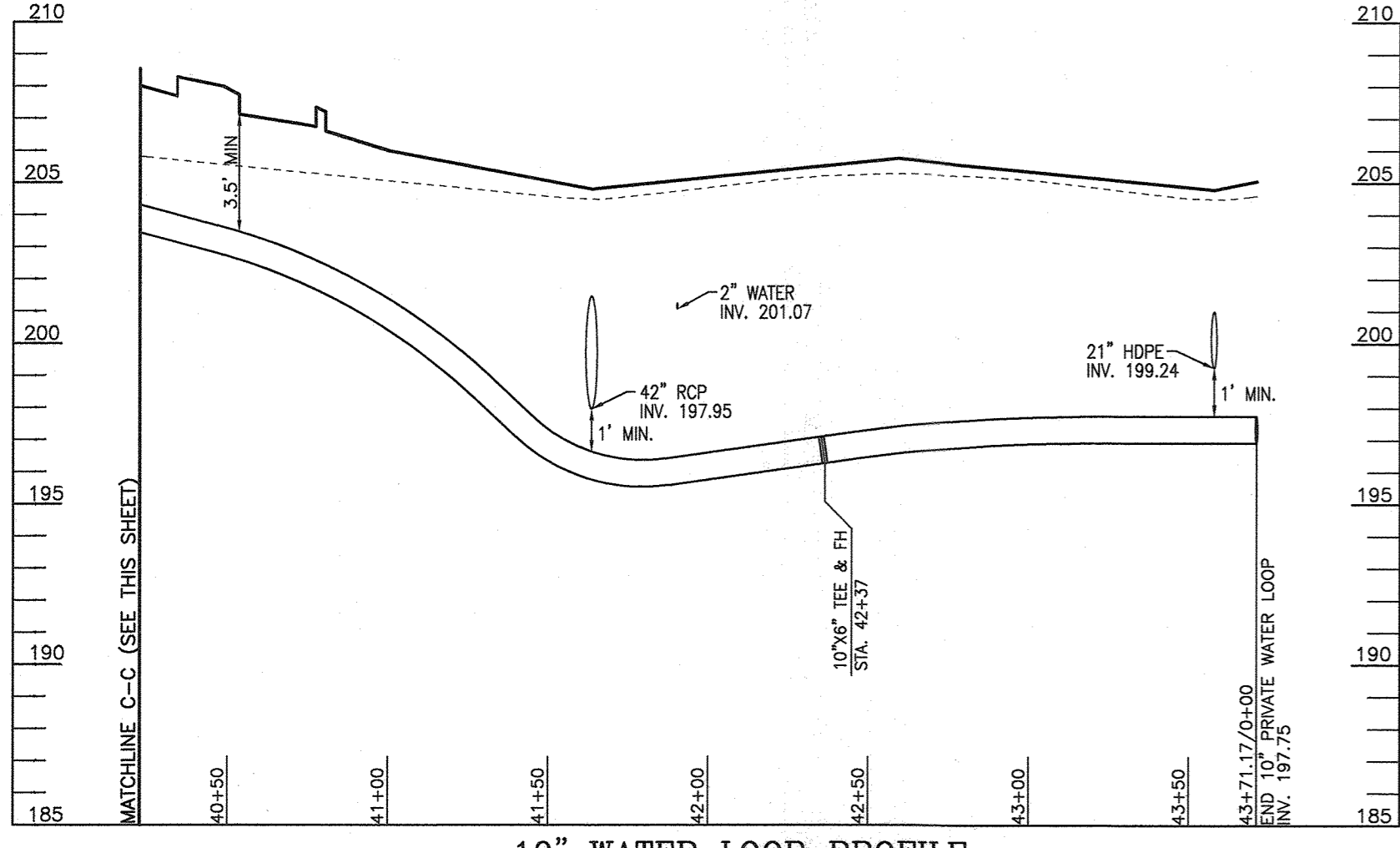
THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT
 136 SOUTH MAIN STREET
 SALT LAKE CITY, UTAH 84101
 801-531-8585, FAX 801-531-8586
 1391 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01103
 413-787-1787, FAX 413-787-1786



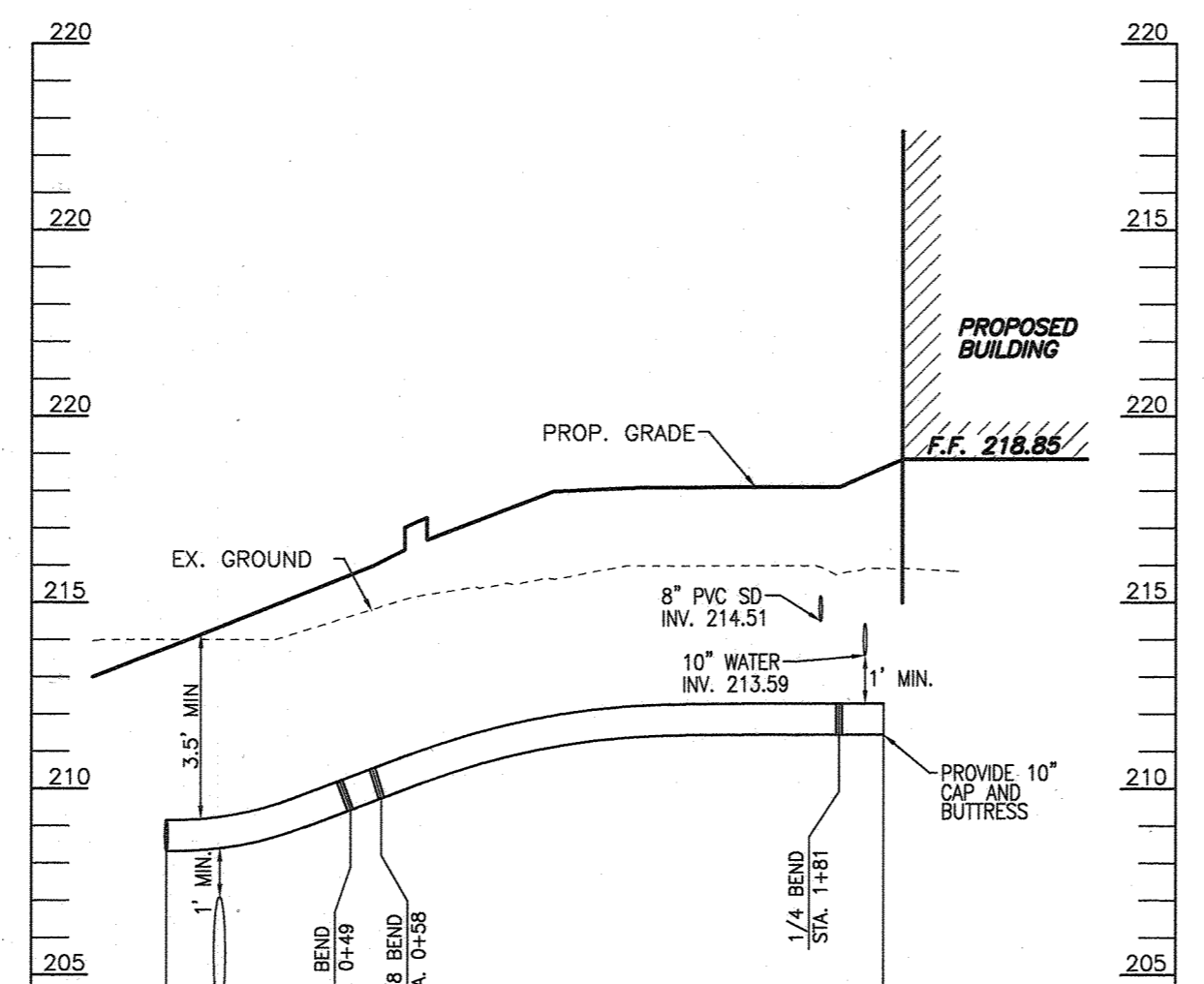
DRAWING NO.
C5.4
 HO. CO. DPZ SHEET:
 18 OF 40



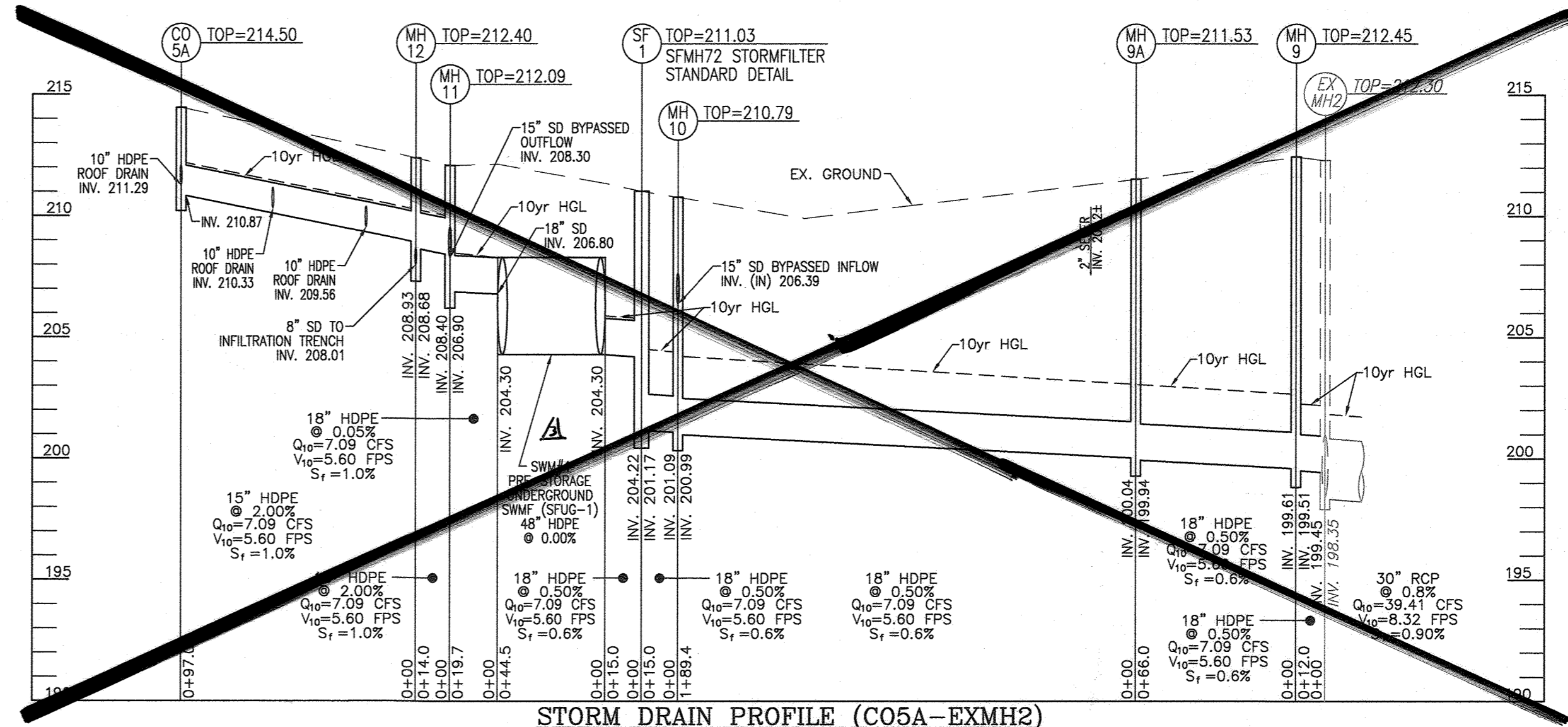
10" WATER LOOP PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



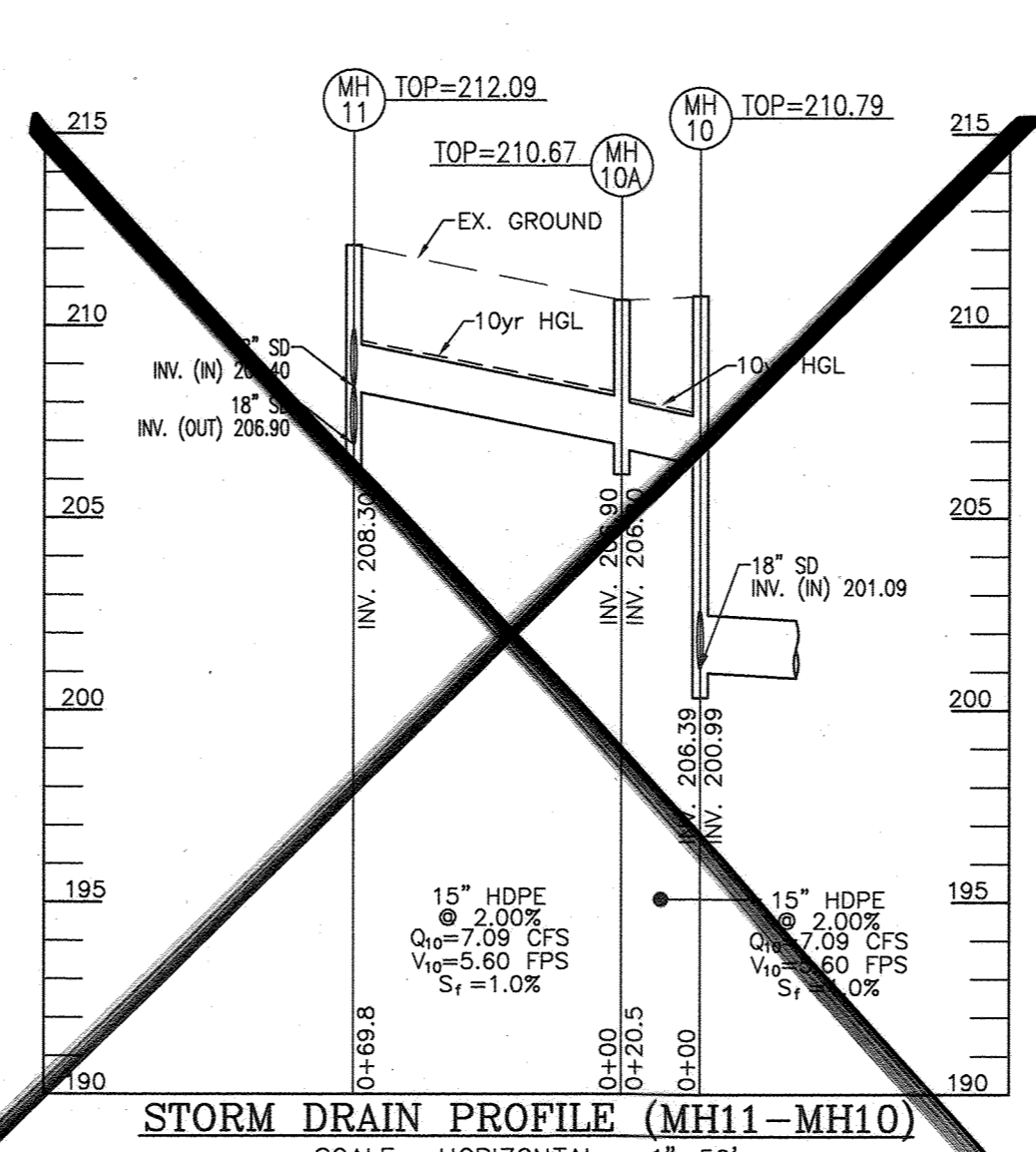
10" WATER LOOP PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



10" PRIVATE WATER PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



STORM DRAIN PROFILE (CO5A-EXMH2)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



STORM DRAIN PROFILE (MH11-MH10)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

STORM DRAIN STRUCTURE SCHEDULE (PRIVATE)

STR #	INV. IN	INV. OUT	TOP ELEV	DETAIL	LOCATION	REMARKS
MH-9	199.61	199.61	212.45	G-5.12	E=1361737.99 N=528008.83	
MH-6A	200.04	199.61	211.53	G-5.12	E=1361735.14 N=527943.31	
MH-10	201.09	200.99	210.99	G-5.12	E=1361616.63 N=527790.29	
MH-10A	206.90	206.90	210.97	G-5.12	E=1361631.23 N=527774.17	
MH-11	206.90	206.90	212.09	G-5.12	E=1361669.76 N=527708.33	
MH-12	206.90	206.90	212.40	G-5.12	E=1361669.76 N=527708.33	
SF-1	204.22	201.17	211.03	---	E=1361669.76 N=527778.17	SEE DETAIL SHEET
---	---	210.87	214.50	---	E=1361542.58 N=527616.64	

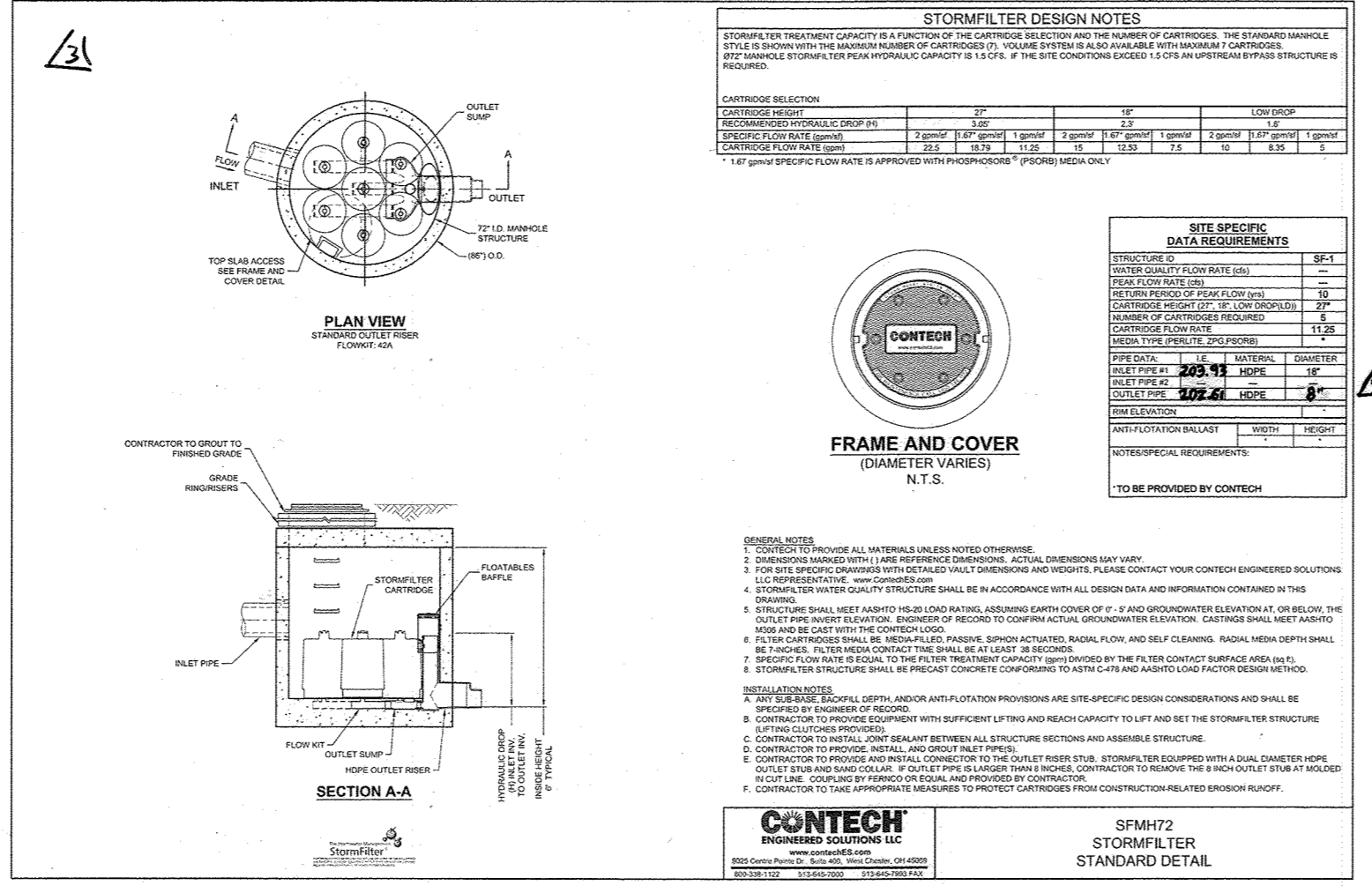
PRIVATE SD PIPE SCHEDULE

Size	Class	Length
6"	8' PVC (SW)	14
8"	10' HDPE	37
10"	10' HDPE	44
15"	15' HDPE	187
18"	18' HDPE	331
18"	18' HDPE	698

Total length of pipe is linear feet.

HDPE is to be smooth interior. Contractor shall install pipe in accordance with manufacturer's specifications.

- SEQUENCE OF CONSTRUCTION (FOR REVISION #2)**
- OBTAIN GRADING PERMIT (1 DAY)
 - DEVELOPER/CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE (1 DAY)
 - NOTIFY HOWARD COUNTY BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION (410-313-1880) AT LEAST 24 HRS BEFORE STARTING WORK. (1 DAY)
 - STAKEOUT LIMITS OF DISTURBANCE (1 DAY)
 - INSTALL PERIMETER CONTROLS INCLUDING SILT FENCE ON PAVEMENT AND INLET PROTECTION ON EXISTING INLETS. (1 DAYS)
 - WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, INSTALL STORM DRAIN FROM CO-5A UPSTREAM TO EX. MH-2 INCLUDING PRE-STORAGE FACILITIES, STORMFILTER DEVICE AND RECHARGE VOLUME TRENCH. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CURBSIDES FROM CONSTRUCTION RELATED EROSION. RUNOFF AND TEMPORARILY BLOCK INLET TO RECHARGE VOLUME TRENCH UNTIL CONTRIBUTING DRAINAGE AREA IS STABILIZED. REMOVE EXISTING STORM DRAIN FROM EX. SDCO-5 TO EX. SDCO-4 AND PLUG UPSTREAM INVERT AT EX. SDCO-4. (3 WEEKS)
 - COMPLETE ALL TRENCH REPAIR WITHIN EXISTING PAVEMENT. (1 WEEK)
 - BEGUN CONSTRUCTION OF BUILDING ADDITION. (3 MONTHS)
 - UPON COMPLETION OF BUILDING ADDITION AND AFTER PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, FLUSH STORM DRAIN SYSTEM AND REMOVE ANY REMAINING CONTROLS. (1 WEEK.)
- NOTES:**
- DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.
 - FOLLOWING INITIAL SOIL DISTURBANCES OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
 - ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

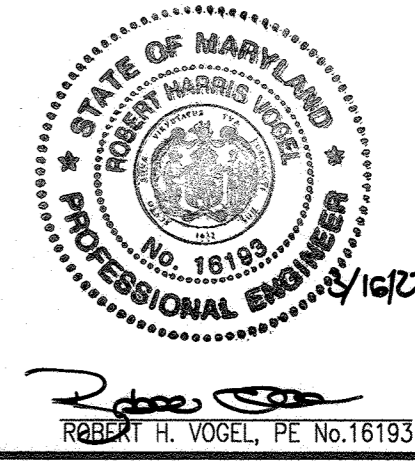


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

John G. Gorn 4-7-22
CHIEF, DEVELOPMENT ENGINEERING DIVISION

John M. Morris 4-7-22
CHIEF, DIVISION OF LAND DEVELOPMENT

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 48006
SCOTTSDALE, AZ 85261
(510) 652-8187



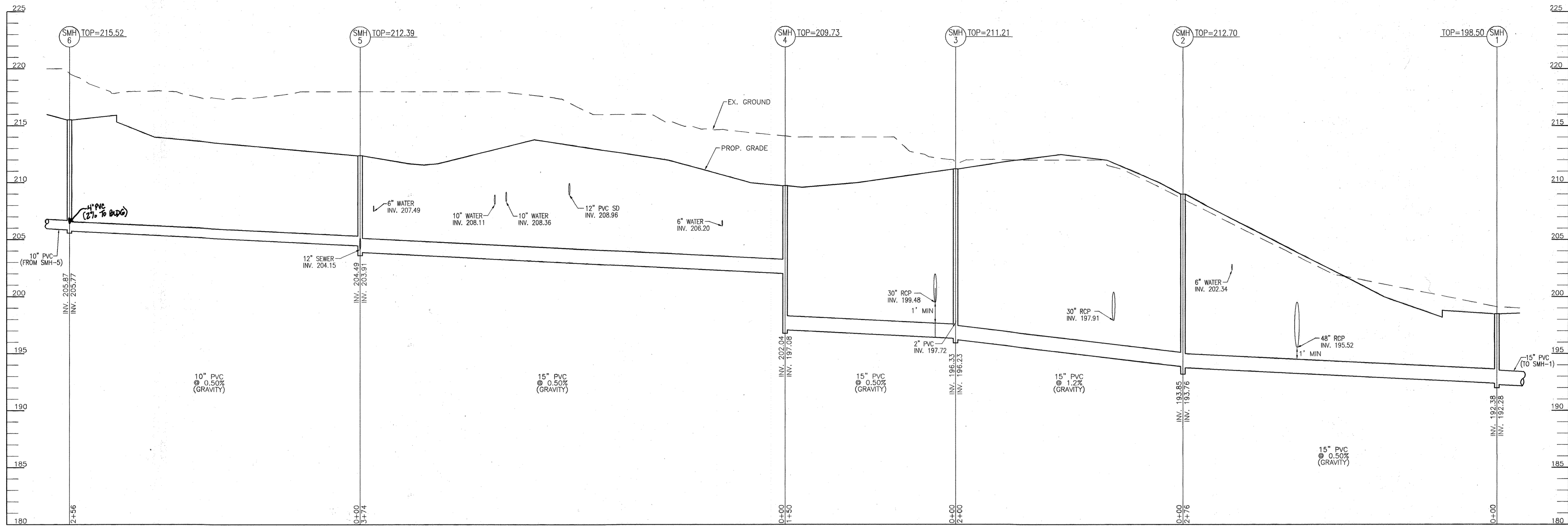
NO.	DATE	BY	REVISION
6	10-12-22	TS	REVISE TO ADD CHIEF, WAREHOUSE EXPANSION, RECHARGE WALL, SWALE GRADING AND CHANGE SHEET NUMBERS
5	06-24-22	TS	REVISE PLAN TO RELocate THE SD TRENCH AND STORM DRAIN SYSTEM
3	01-05-22	TS	REVISE THE PLAN TO SHOW THE 13,119 SFT WAREHOUSE EXPANSION & THE INSTALLATION OF ASSOC. STORMWATER MANAGEMENT FACILITIES
1	05-25-06	DZ	REVISE PLAN TO SHOW AS-BUILT FACILITIES AND REVISE VARIOUS FACILITY INFORMATION

REVISED SITE DEVELOPMENT PLAN
WATER PROFILES
DREYER'S GRAND ICE CREAM
9600 LAUREL RD 20723
L. FORMER 213 - PAT 0122
PARCEL 609 (LOT A-2)
HOWARD COUNTY, MARYLAND
TAX MAP 60, GRID E
8TH ELECTION DISTRICT

VOGEL ENGINEERING
TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410-461-7666 F: 410-461-8961 www.timmons.com

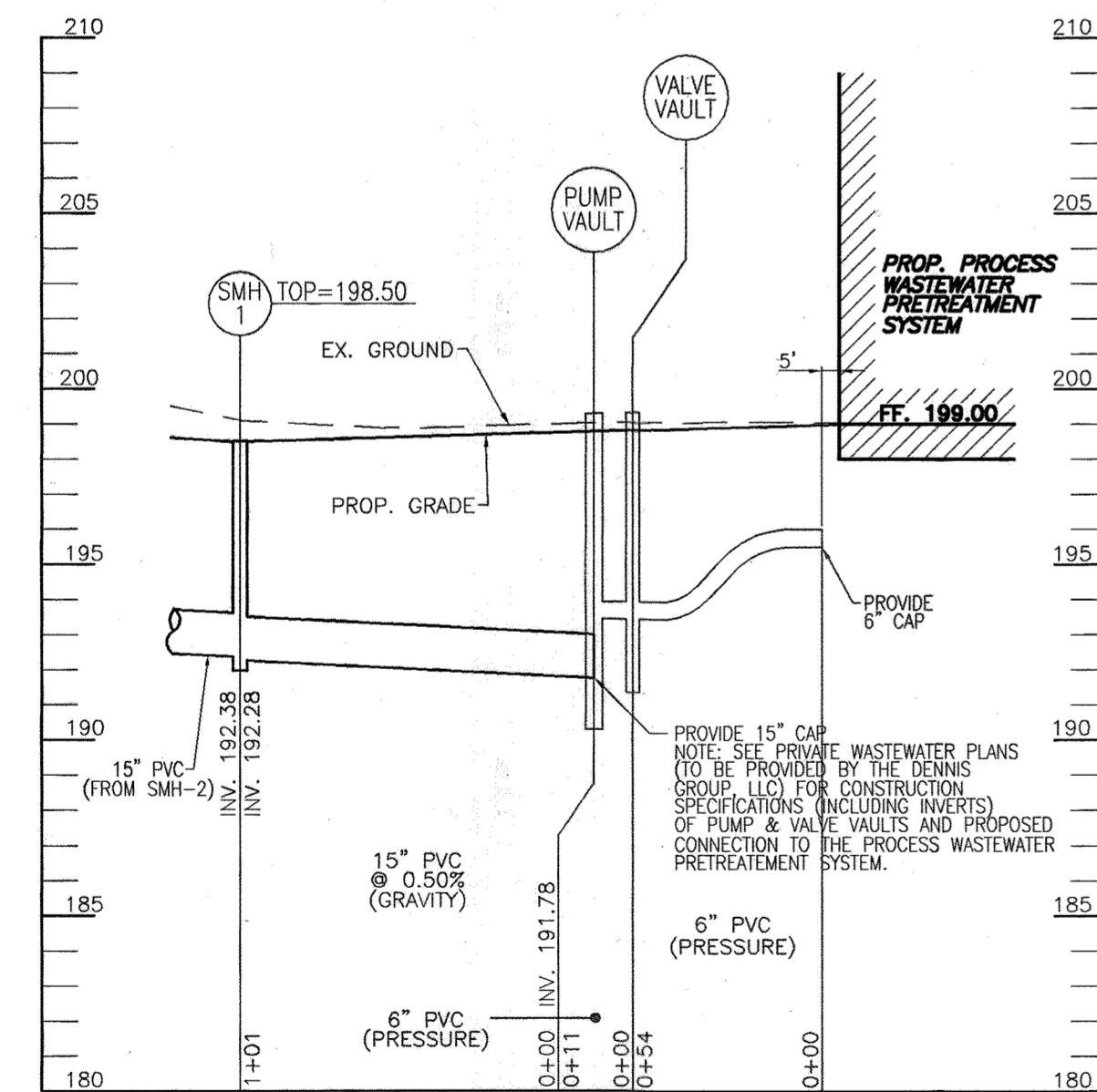
DESIGN BY: RHY
DRAWN BY: VE+TG
CHECKED BY: RHY
DATE: JANUARY 2022
SCALE: AS SHOWN
W.O. NO.: 49641

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2022.



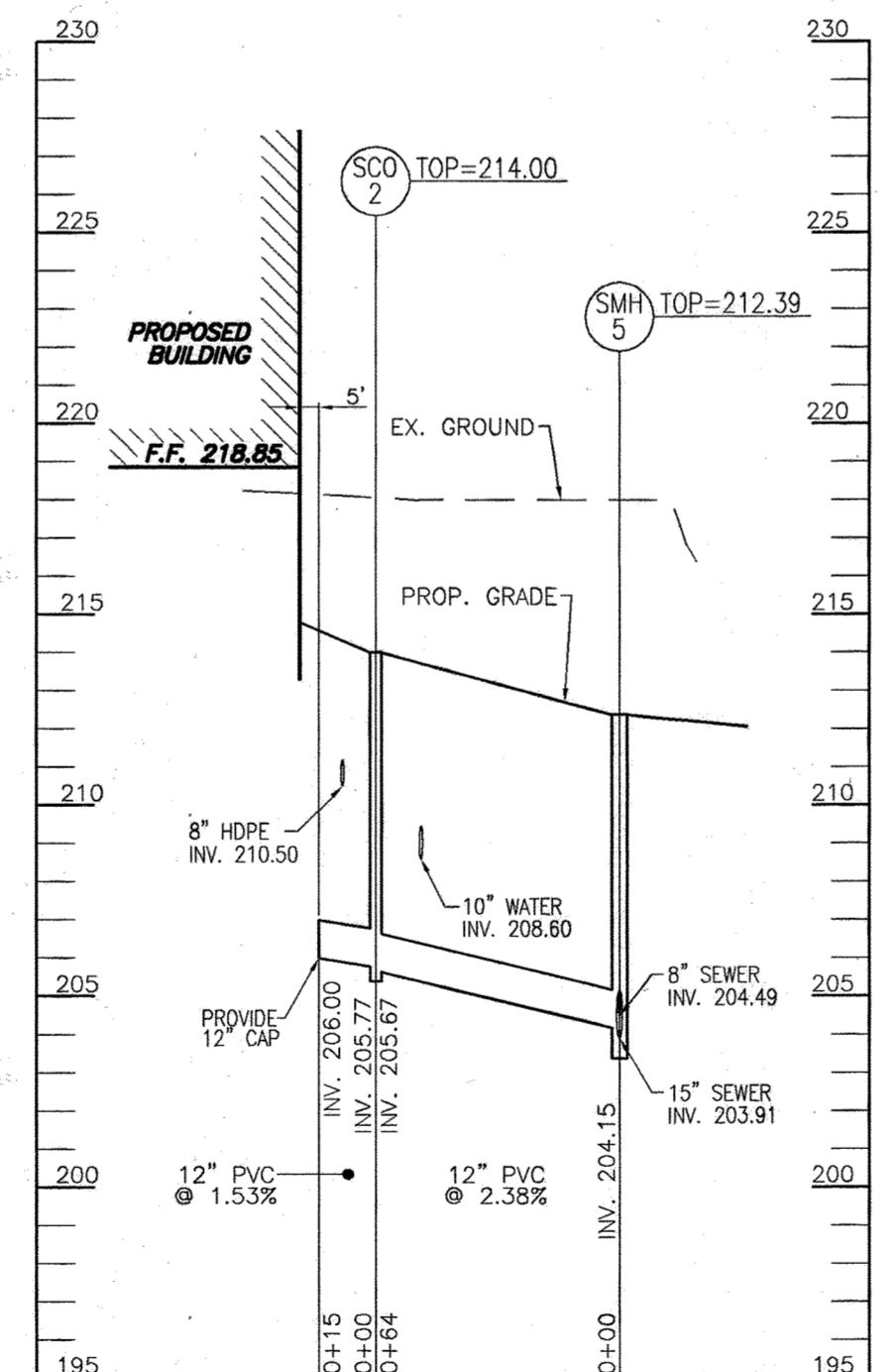
PRIVATE PROCESS WASTE SEWER PROFILE

SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



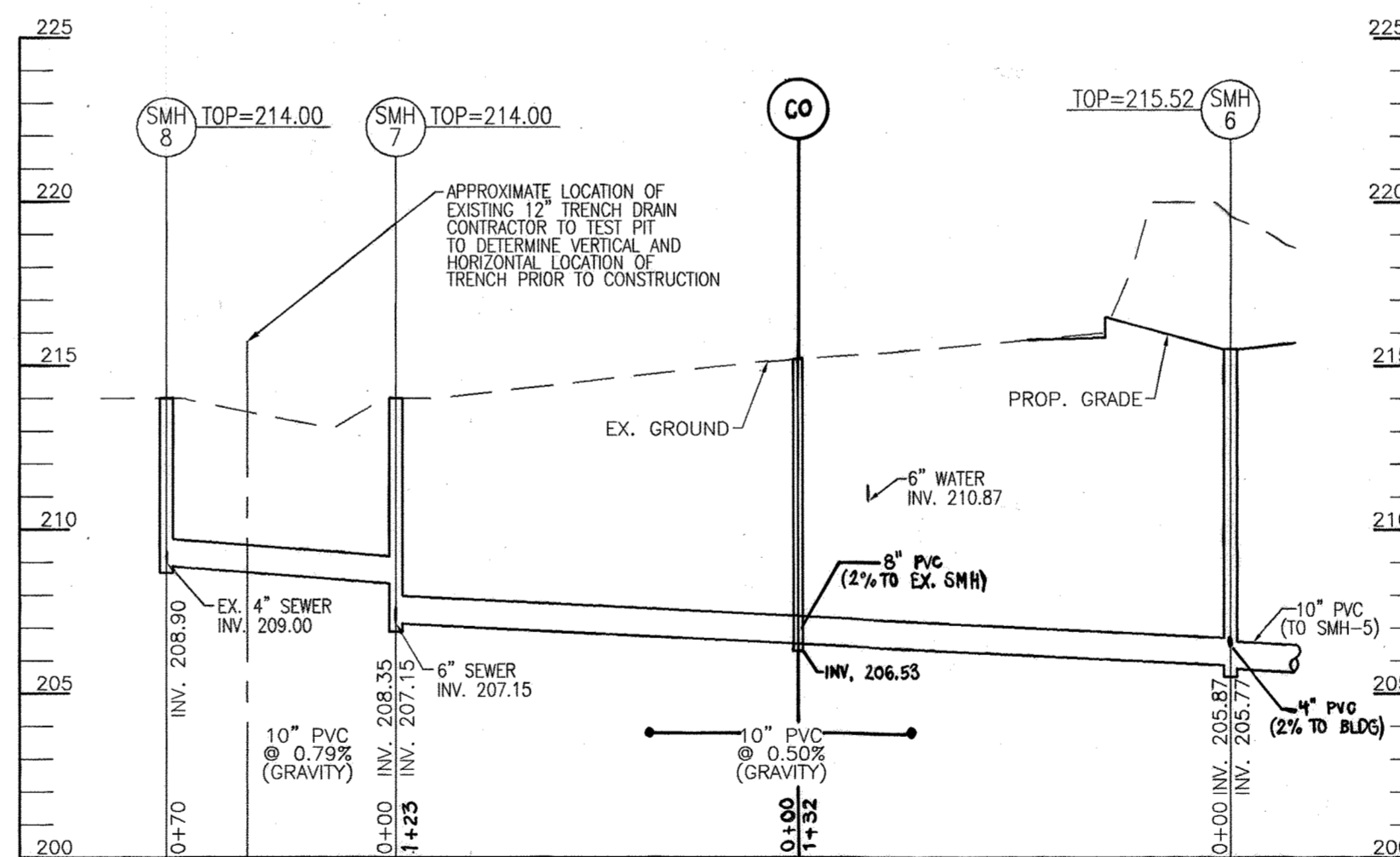
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SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



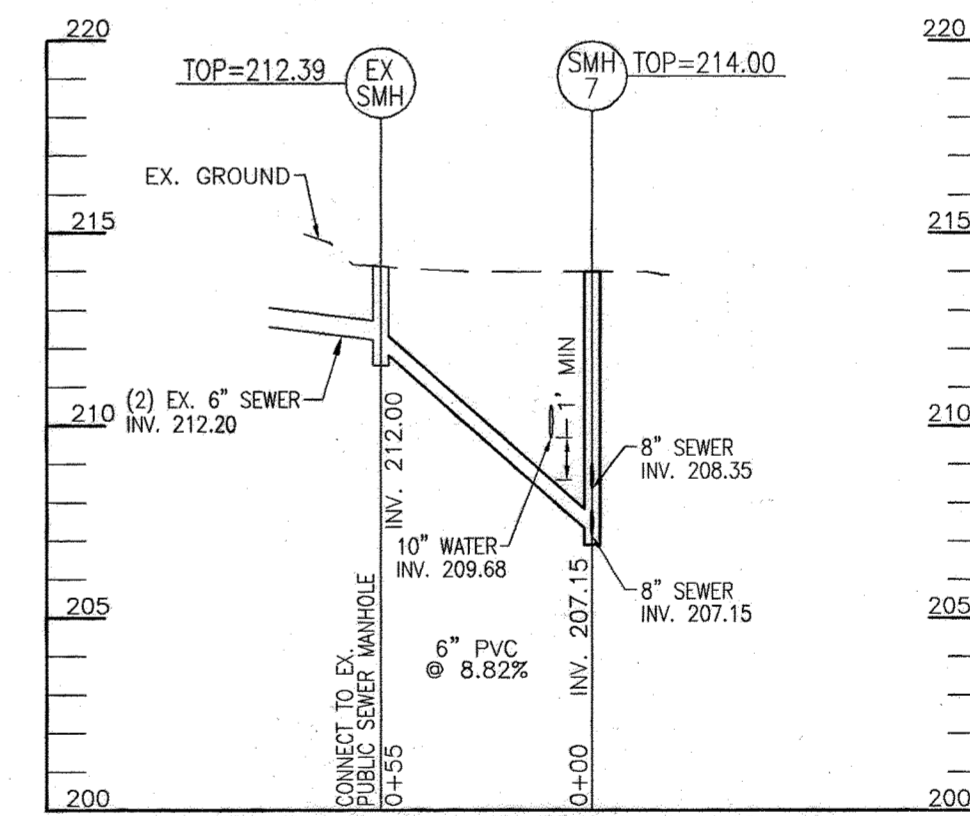
PRIVATE PROCESS WASTE SEWER PROFILE

SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



PRIVATE PROCESS WASTE SEWER PROFILE

SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



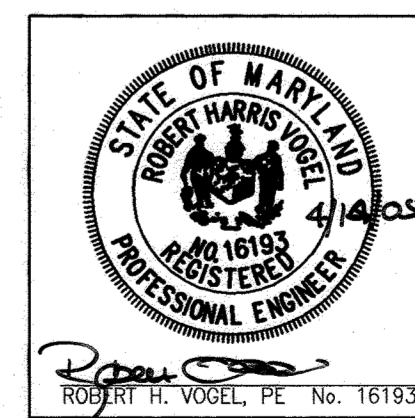
PRIVATE PROCESS WASTE SEWER PROFILE

SCALE : HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard 5/25/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Cindy Hamilton 6/3/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Paul M. Wolfe 6/4/05
DIRECTOR DATE

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO Box 4900E
SCARSDALE, NY 10526
(516) 652-8187



OWNER
DEVELOPER

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

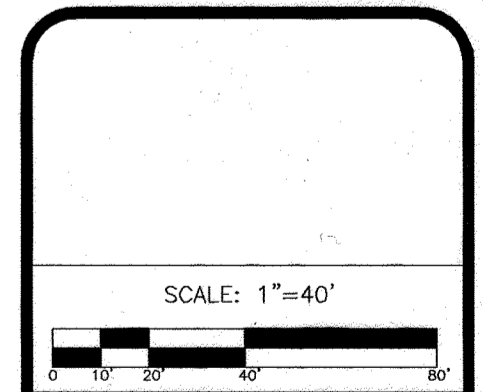
REVISED PLAN TO SHOW AS BUILT	DATE	BY	APP.	RELEASED FOR
1	05-25-06	DZ	RIV	
2	01-05-22	T3	YTS	
3	01-05-22	T3	YTS	
4	01-05-22	T3	YTS	
5	01-05-22	T3	YTS	
6	01-05-22	T3	YTS	

DREYER'S GRAND ICE CREAM
9080 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

SEWER PROFILES

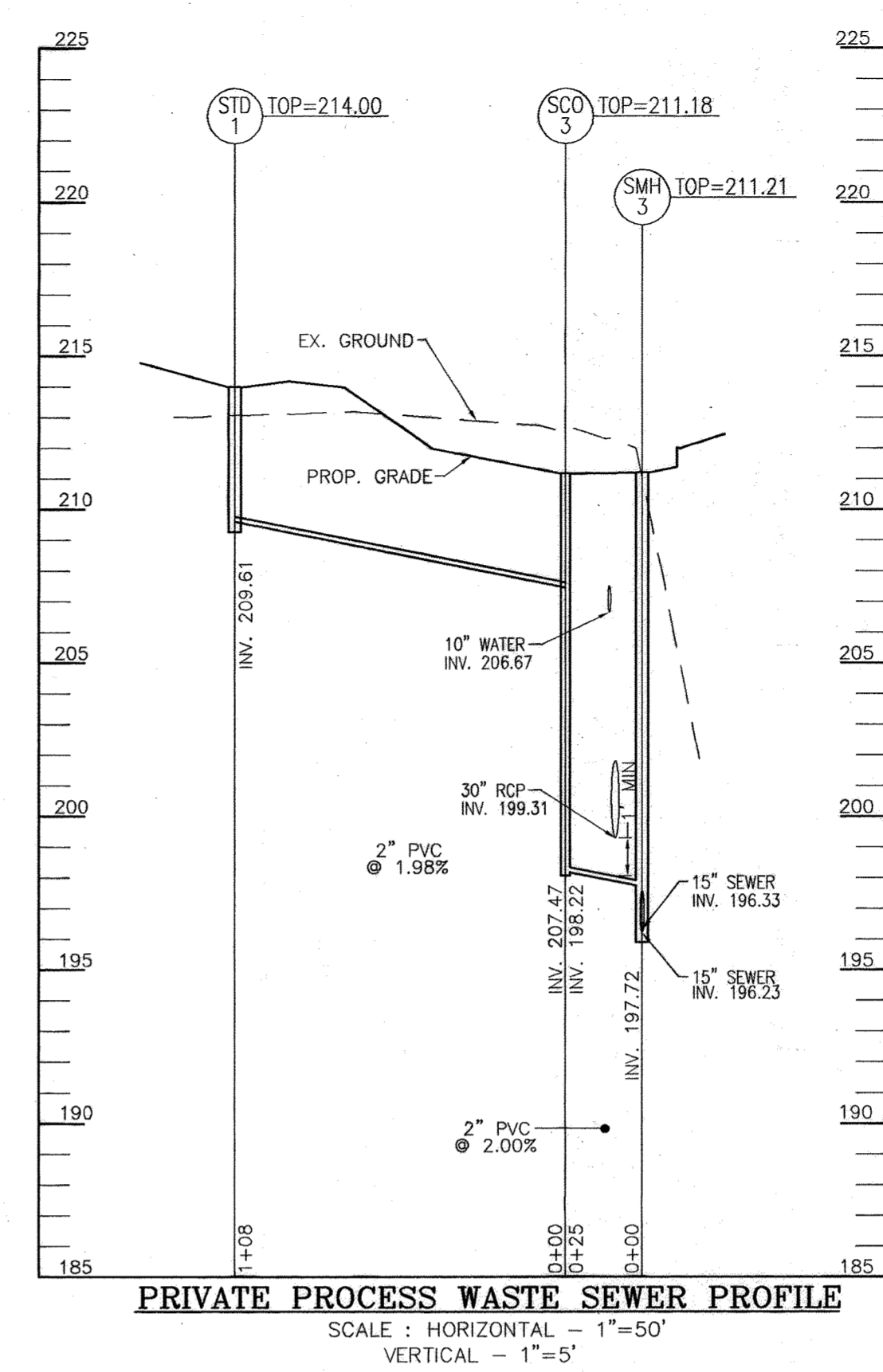
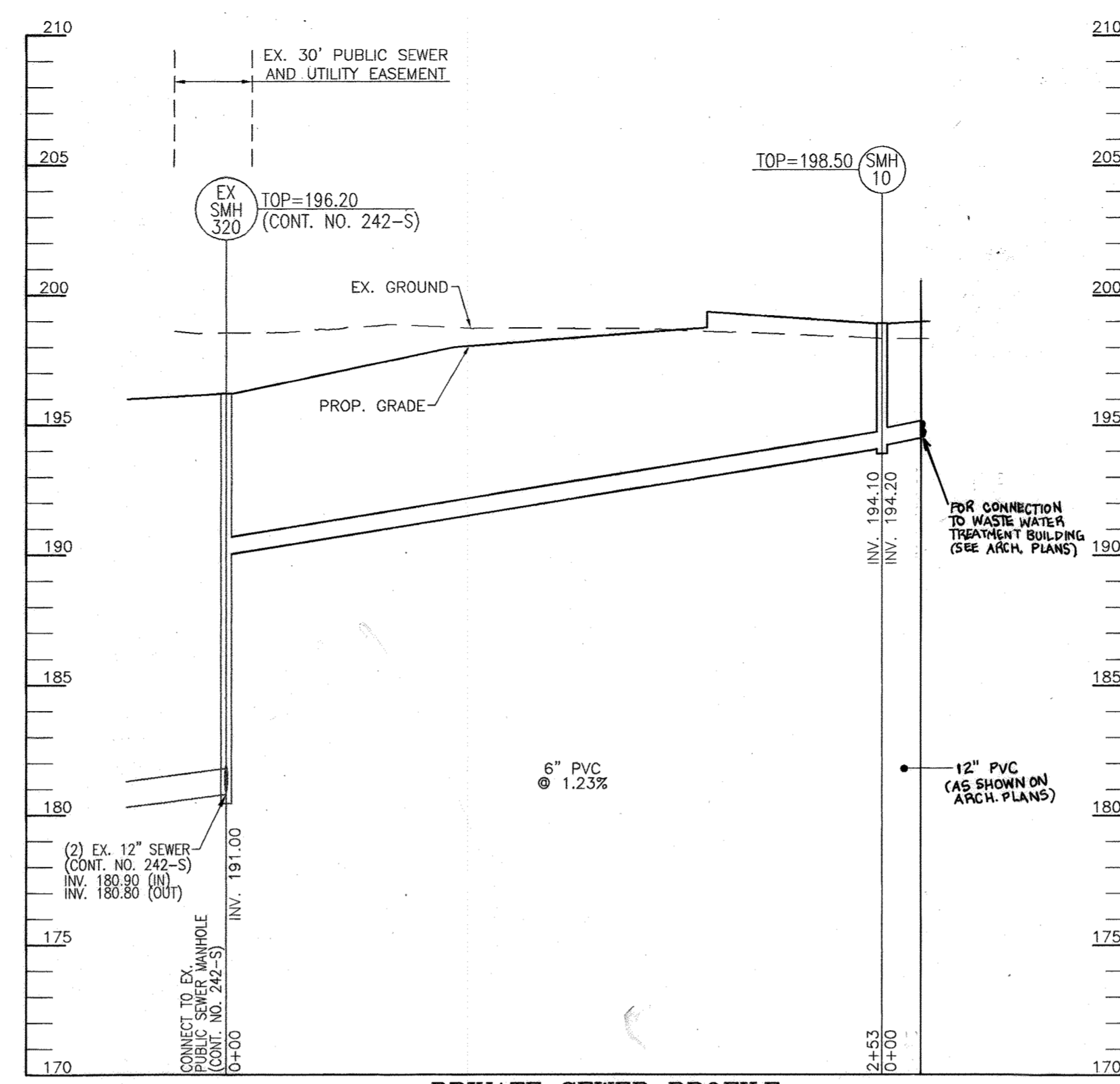
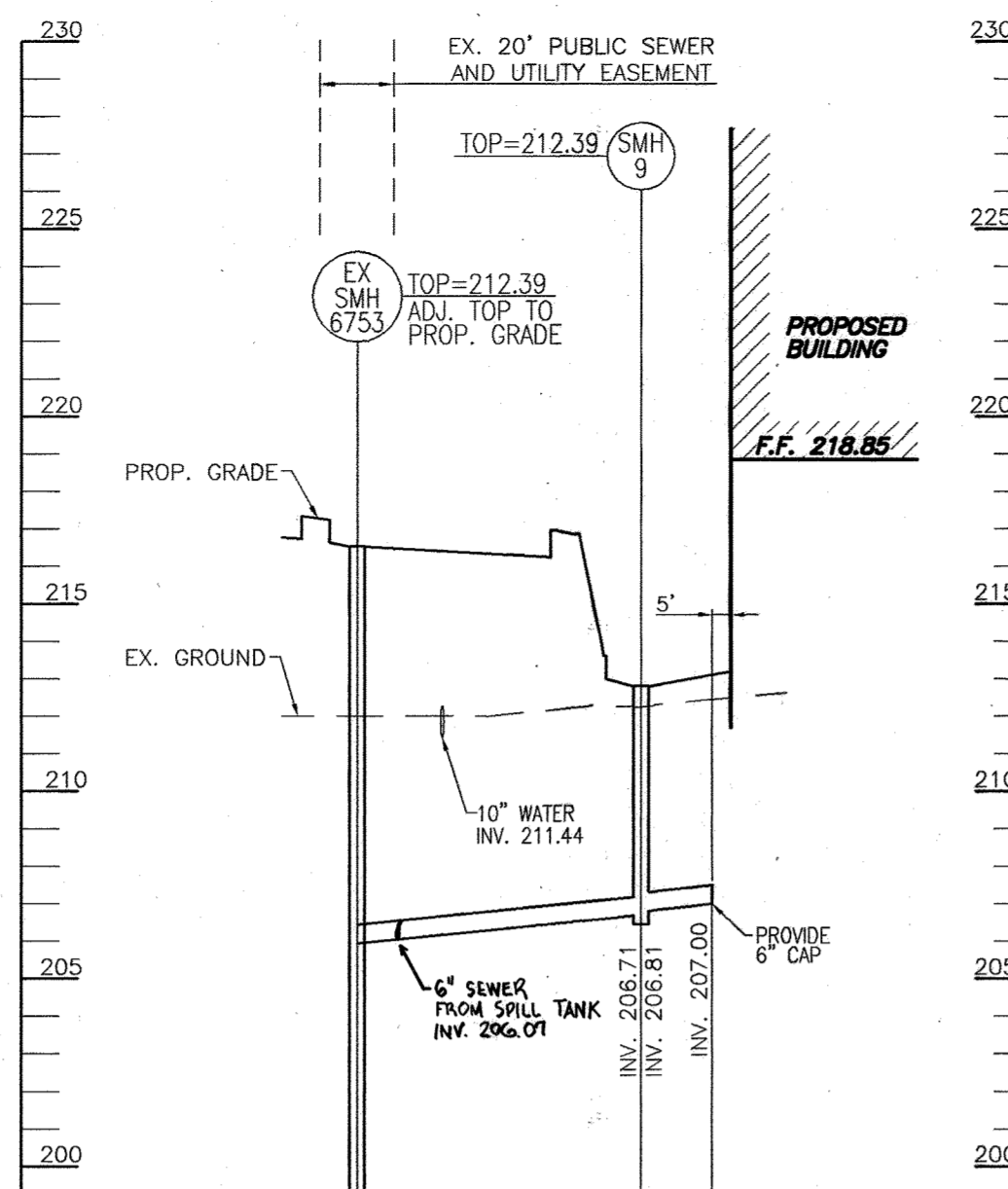
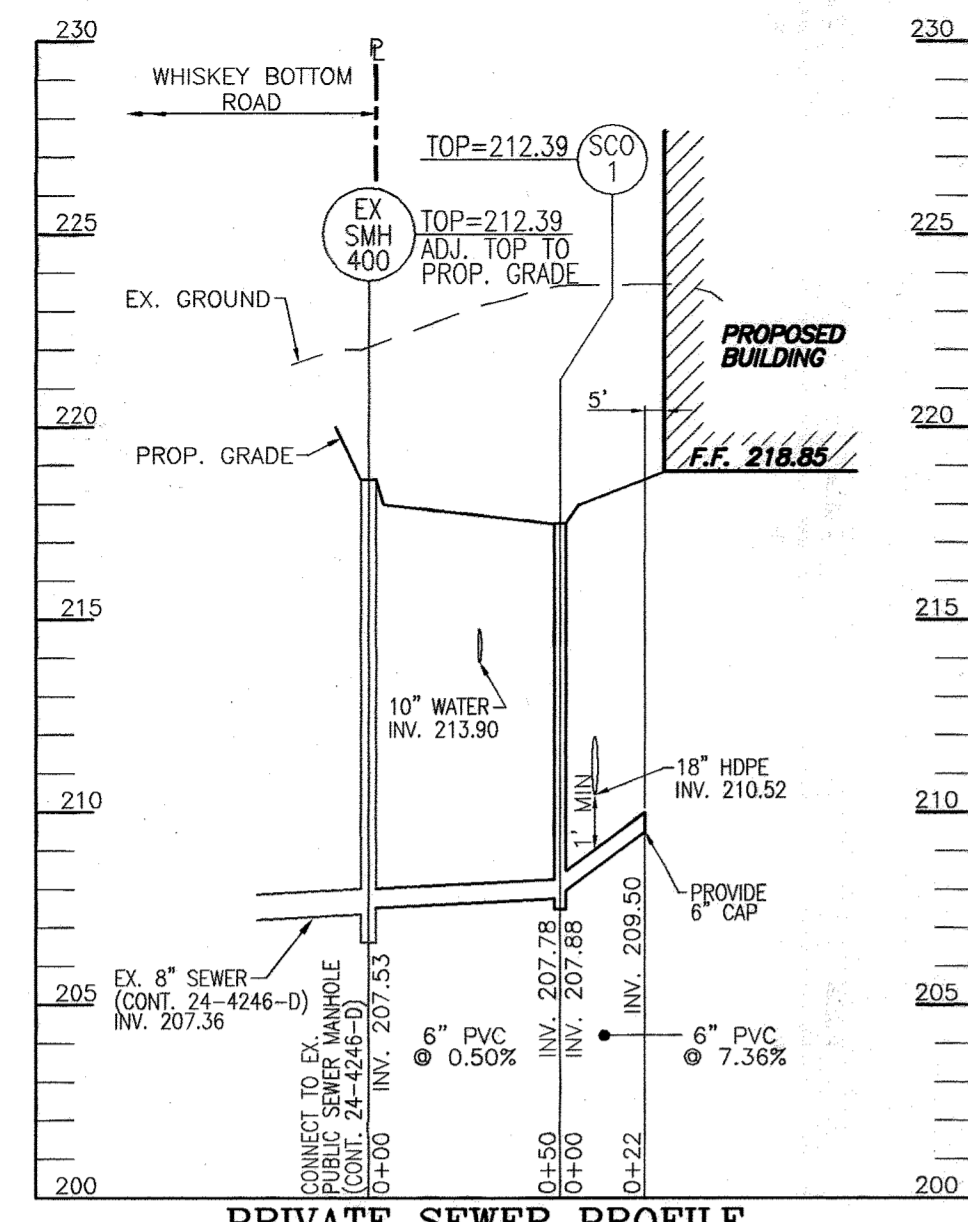
THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
SPRINGFIELD MASSACHUSETTS 01103
801-531-8585 • FAX 801-531-8386



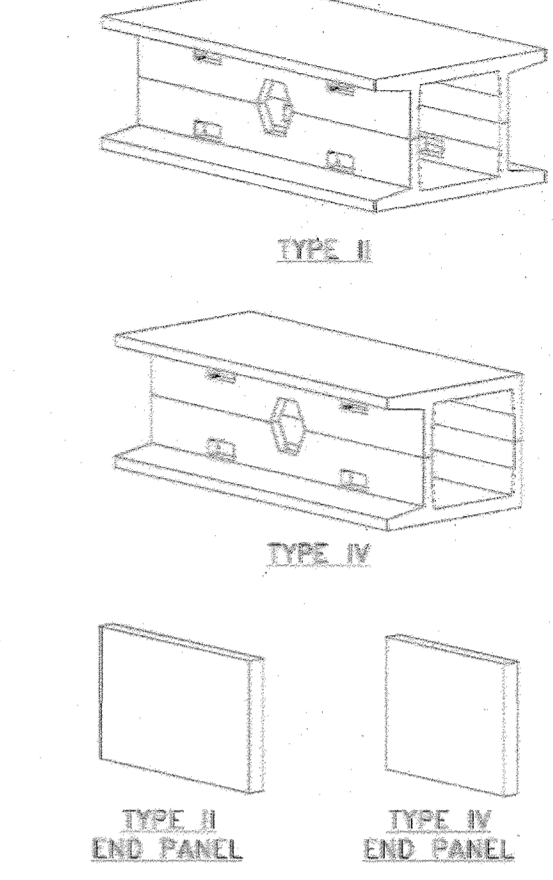
DRAWING NO.
C5.6

HO. CO. DPZ SHEET:
20 OF 40



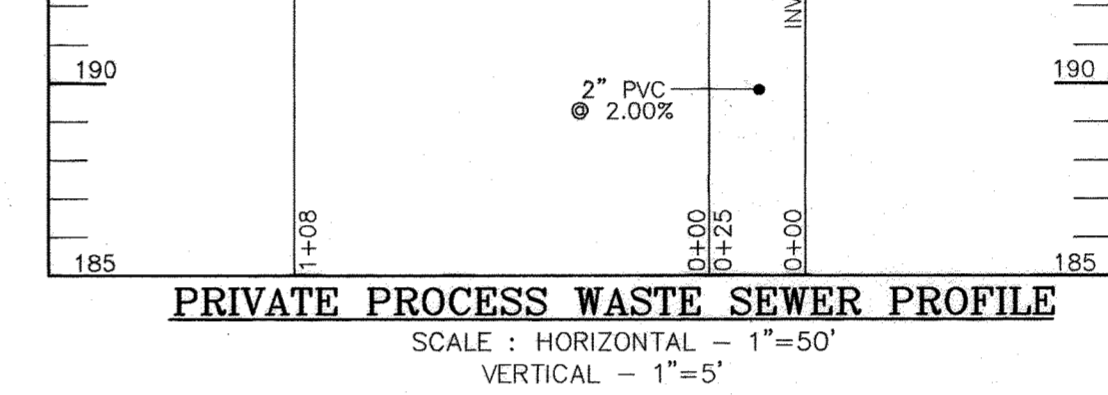
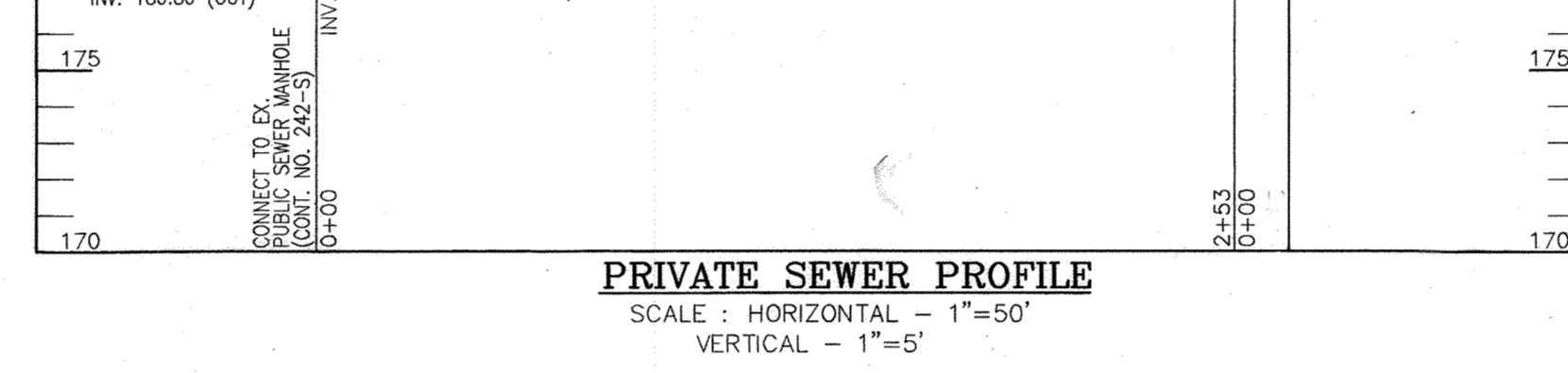
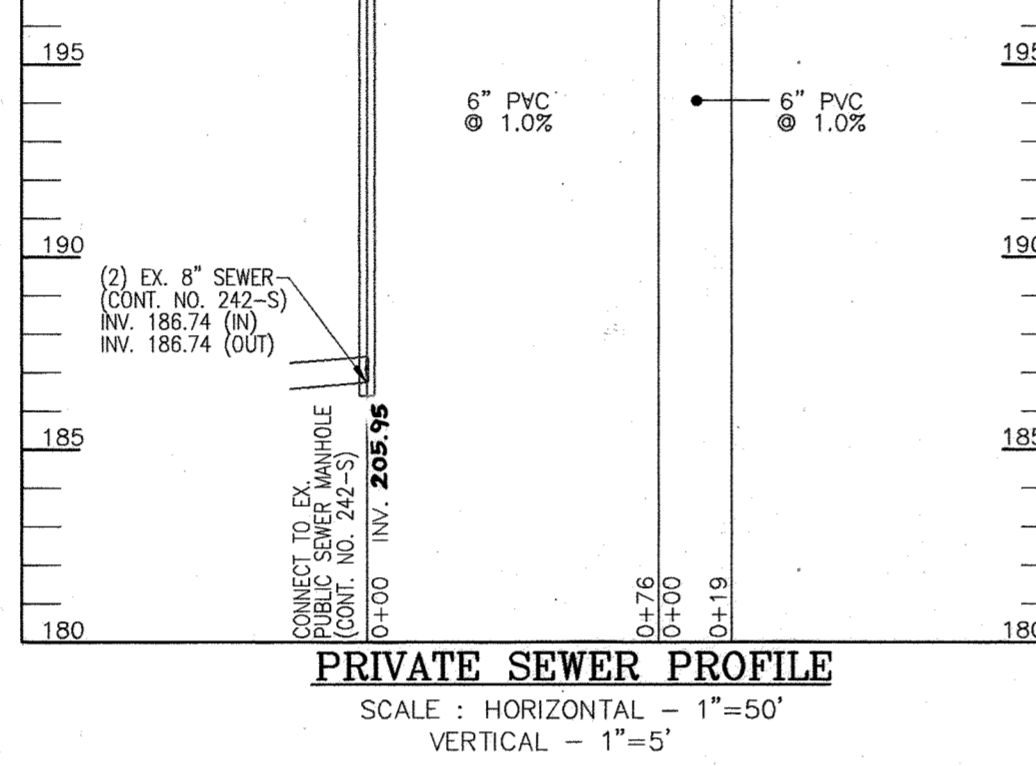
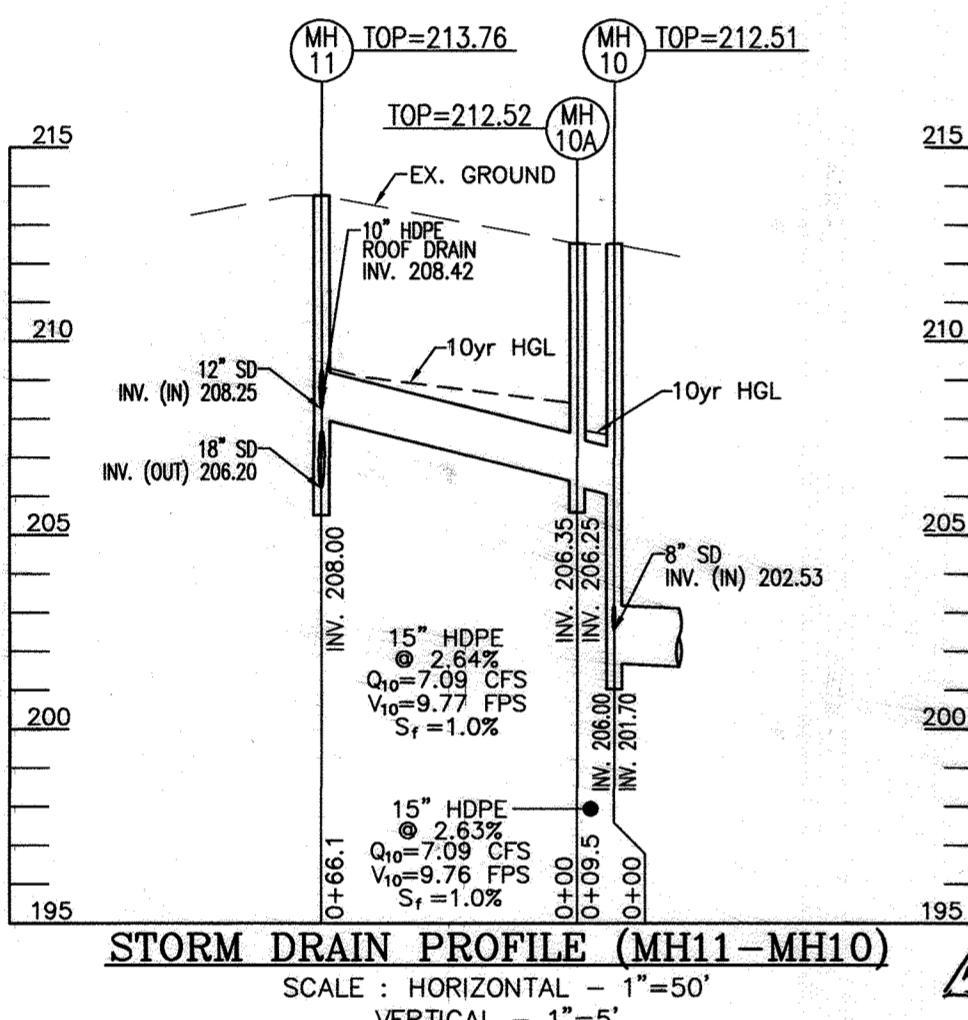
BILL OF MATERIALS

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	18" HDPE	1.18	LINEAL FEET
2	15" HDPE	1.18	LINEAL FEET
3	12" HDPE	1.18	LINEAL FEET
4	10" HDPE	1.18	LINEAL FEET
5	8" HDPE	1.18	LINEAL FEET
6	6" HDPE	1.18	LINEAL FEET
7	4" HDPE	1.18	LINEAL FEET
8	3" HDPE	1.18	LINEAL FEET
9	2" HDPE	1.18	LINEAL FEET
10	1" HDPE	1.18	LINEAL FEET
11	18" HDPE MANHOLE	1	UNIT
12	15" HDPE MANHOLE	1	UNIT
13	12" HDPE MANHOLE	1	UNIT
14	10" HDPE MANHOLE	1	UNIT
15	8" HDPE MANHOLE	1	UNIT
16	6" HDPE MANHOLE	1	UNIT
17	4" HDPE MANHOLE	1	UNIT
18	3" HDPE MANHOLE	1	UNIT
19	2" HDPE MANHOLE	1	UNIT
20	1" HDPE MANHOLE	1	UNIT
21	18" HDPE END PANEL	1	UNIT
22	15" HDPE END PANEL	1	UNIT
23	12" HDPE END PANEL	1	UNIT
24	10" HDPE END PANEL	1	UNIT
25	8" HDPE END PANEL	1	UNIT
26	6" HDPE END PANEL	1	UNIT
27	4" HDPE END PANEL	1	UNIT
28	3" HDPE END PANEL	1	UNIT
29	2" HDPE END PANEL	1	UNIT
30	1" HDPE END PANEL	1	UNIT



NOTES:

- UNDERSTANDING OF STORMWATER SYSTEM SHOWN BELOW ALLOW FOR A 3/4" DROP BETWEEN EACH MANHOLE.
- ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
- SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
- SP - INDICATES A MANHOLE WITH SPECIFICATIONS.
- IP - INDICATES A MANHOLE WITH A PANEL ATTACHMENT.
- CONTRACTOR RESPONSIBILITY TO OBTAIN COMPLETION/CONTRACT TO FINAL ENGINEER BY ACCEPTED PLAN SET.



SITE SPECIFIC DESIGN CRITERIA

- STORMWATER SYSTEM SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLER ENGINEER AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INCLUDE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
- COVER RATING SHALL BE 4.50/INCHES/5.40/INCHES/STORMWATER FOR ADDITIONAL COVER OPTIONS.
- ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO ENGINEER INSTALLATION.
- FOR STRUCTURAL CALCULATIONS THE DESIGN WIND SPEED IS ASSUMED TO BE BELOW WIND SPEED OF SYSTEM (WIND SPEED OF SYSTEM IS 110 MPH).
- SYSTEM DESIGN SHALL ALLOW FOR INCIDENTAL LEAKAGE AND WILL NOT BE SUBJECT TO LEAKAGE TESTING.

STRUCTURAL DESIGN LOADING CRITERIA

USE LISTED ABOVE 4.50/INCHES/5.40/INCHES/STORMWATER

CONCRETE SHALL BE 3000 PSI COMPRESSIVE STRENGTH

STEEL SHALL BE A36

REINFORCING STEEL SHALL BE #4

MINIMUM ACTIVE COVER SHALL BE 4" FOR ALL REINFORCING

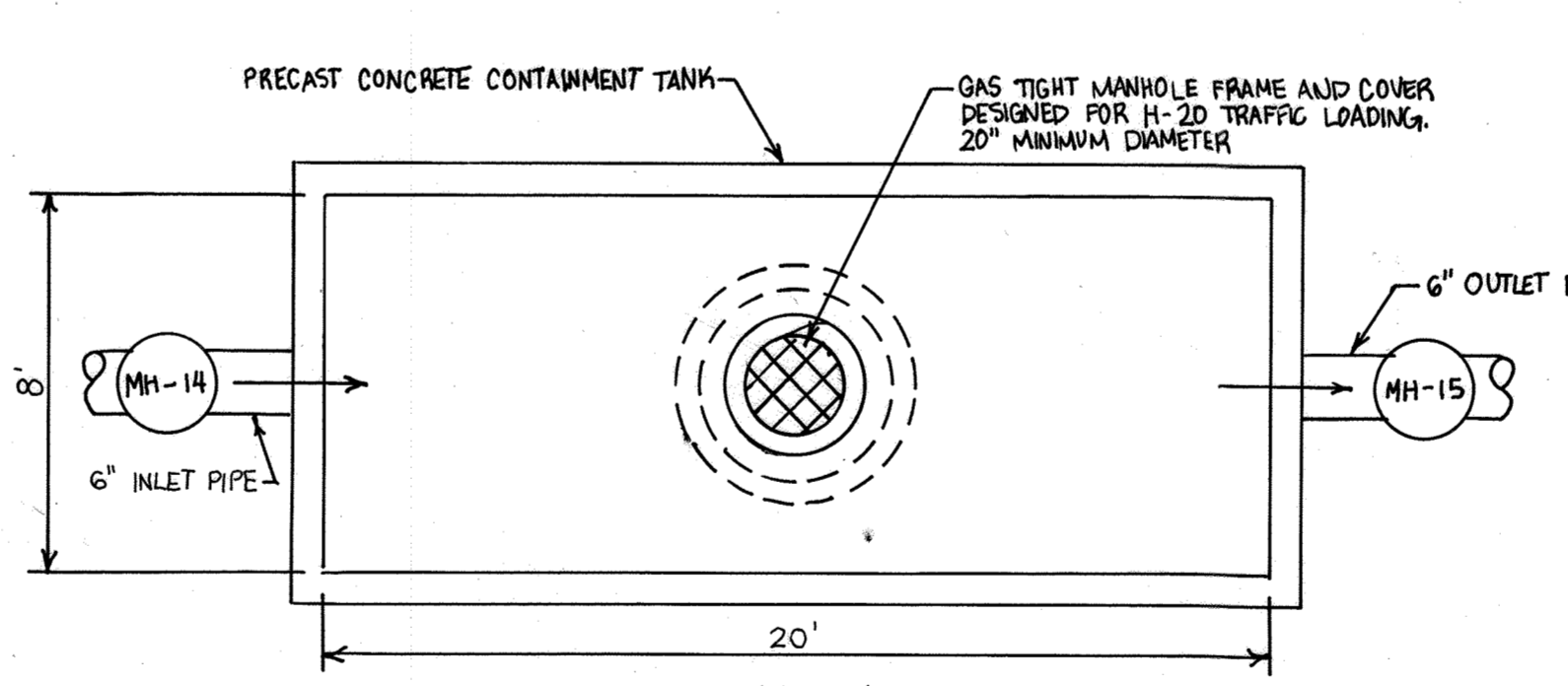
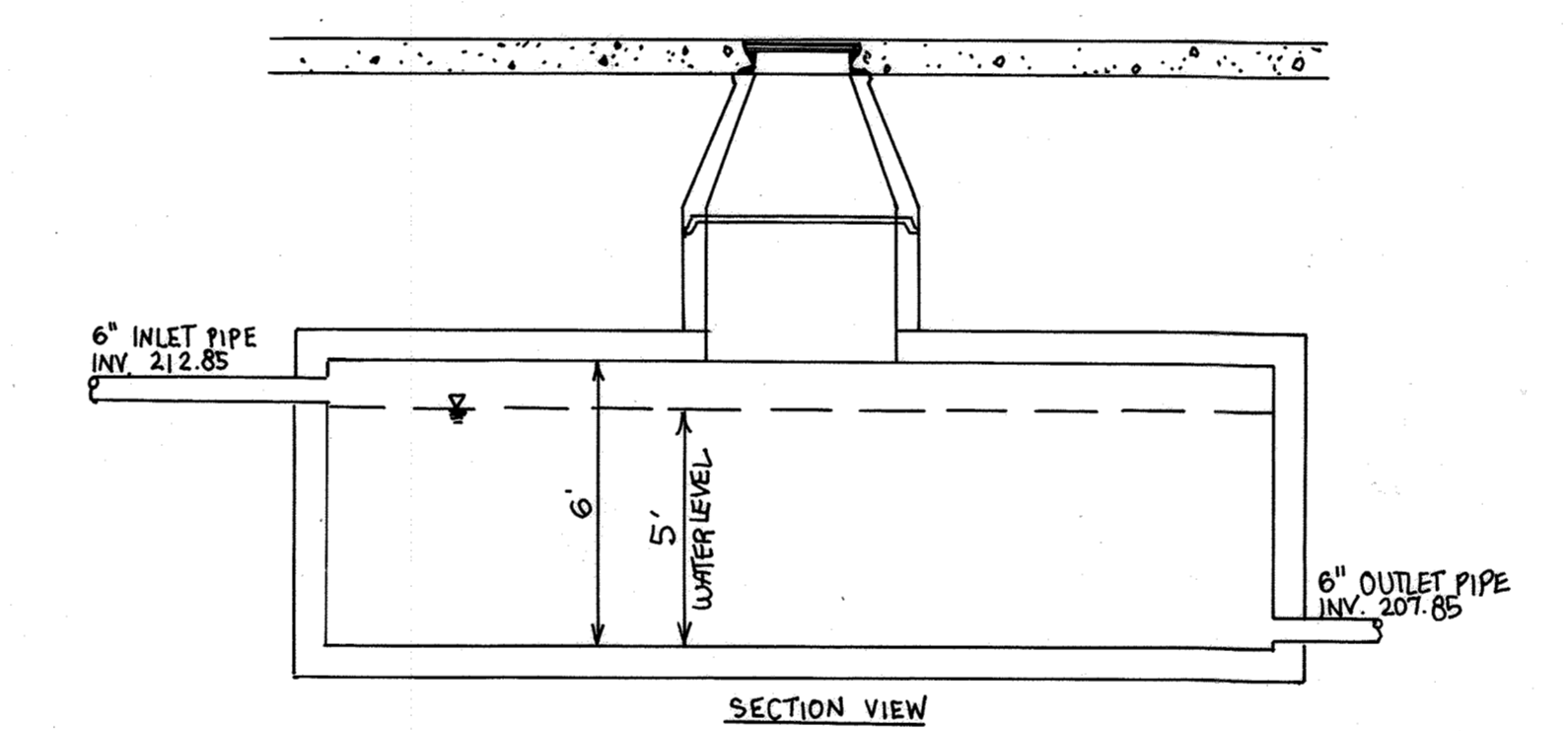
MINIMUM PASSIVE COVER SHALL BE 4" FOR ALL REINFORCING

MINIMUM COVER SHALL BE 4" FOR ALL REINFORCING

STORMWATER SYSTEM INFORMATION

UNDER STORAGE FROM: 18" HDPE

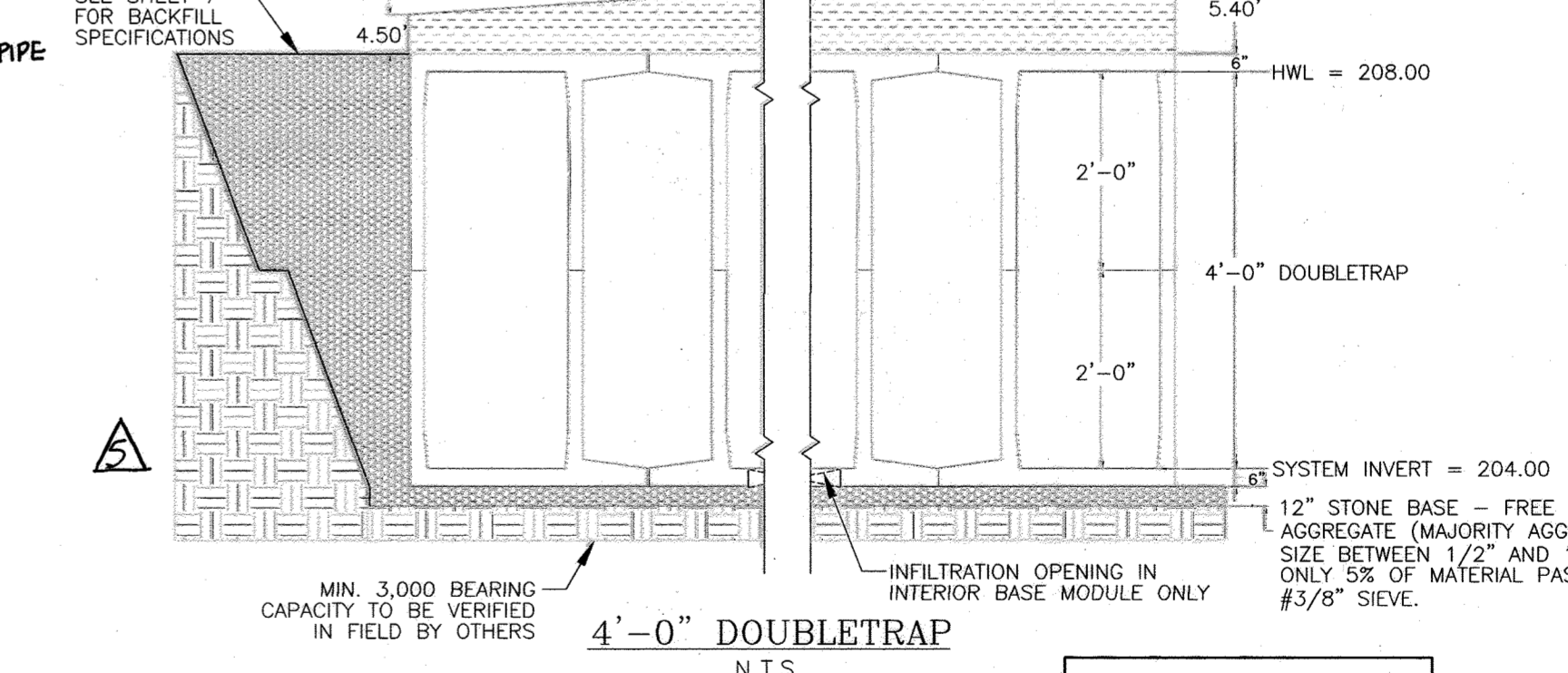
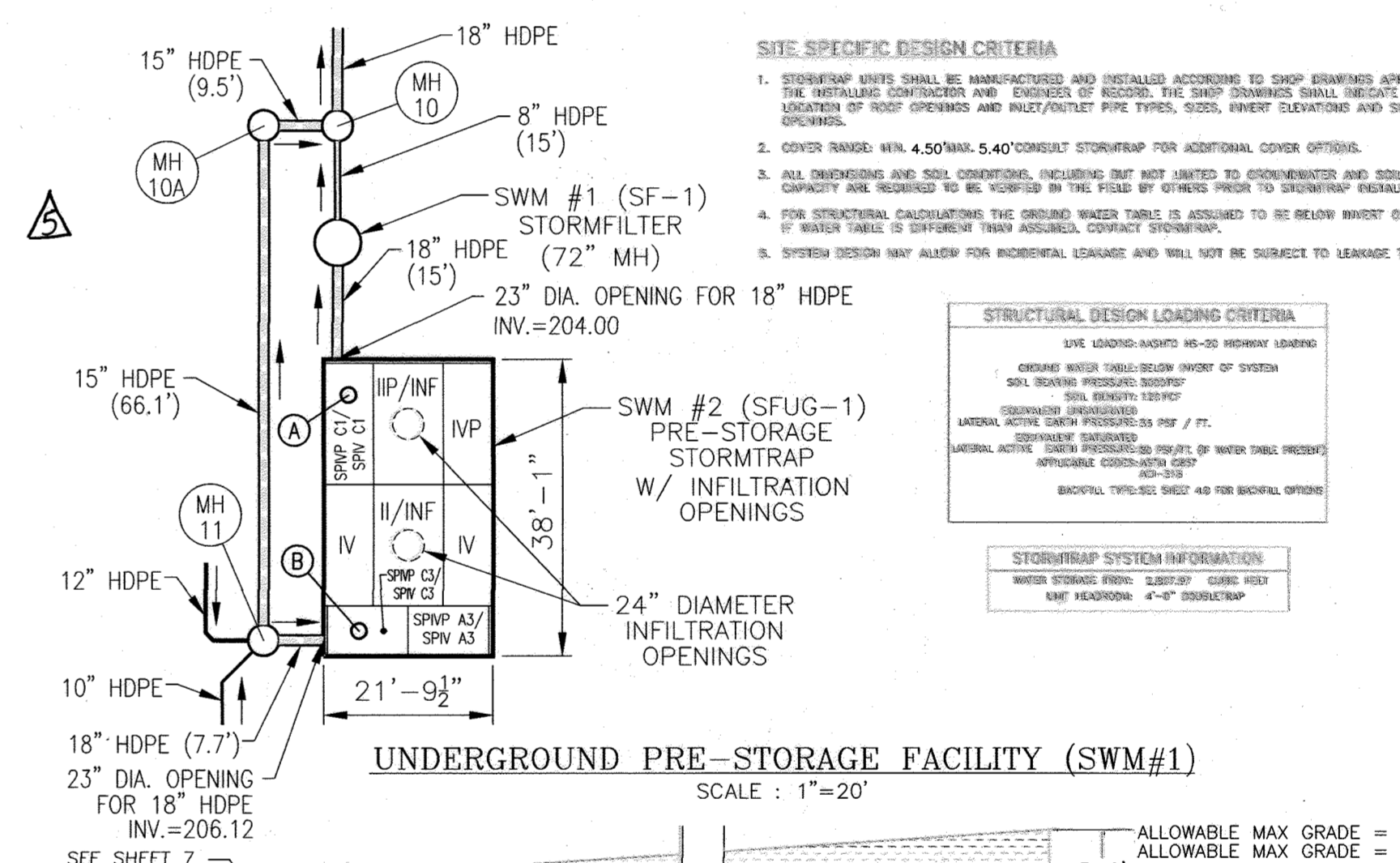
TYPE: 4" DOUBLETRAP



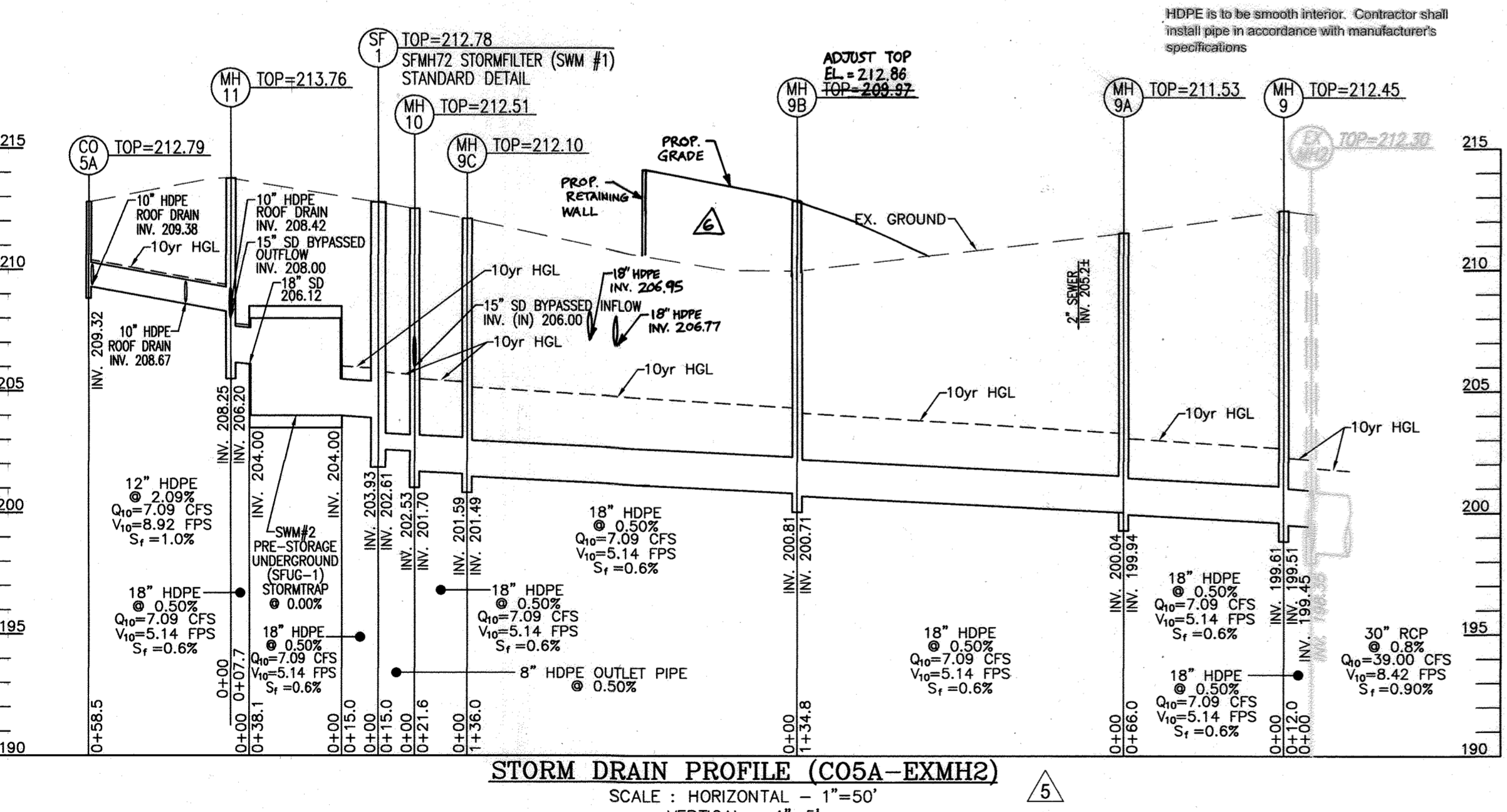
GENERAL NOTES

- THE STRUCTURE CHAMBER SHALL BE PRECAST. THE MANUFACTURER SHALL FURNISH DETAILED STAMPED DESIGN DRAWINGS SHOWING THE REINFORCING STEEL CONCRETE DESIGN, STRUCTURAL MEMBERS, AND MANHOLE ASSEMBLIES. THE STRUCTURE SHALL BE RATED FOR H-20 TRAFFIC LOADING.
- THE PRECAST STRUCTURE SHALL BE WATER-TIGHT. ALL PENETRATIONS SHALL BE AS MANUFACTURED BY LINK, SEAL, OR EQUAL.
- TANK SHALL BE ACCESSIBLE FOR INSPECTION AND MAINTENANCE. NO STRUCTURES SHALL BE CONSTRUCTED DIRECTLY UPON OR ABOVE THE GREASE INTERCEPTOR ACCESS LOCATIONS, INLET AND OUTLET SHALL BE ACCESSIBLE FOR INSPECTION AND MAINTENANCE.
- BACKFILL AROUND THE STRUCTURE SHALL BE PLACED IN SUCH A MANNER AS TO PREVENT DAMAGE TO THE TANK.

UNDERGROUND EMERGENCY NH3 SPILL TANK (10,000 GAL)
NOT TO SCALE



UNDERGROUND PRE-STORAGE FACILITY (SWM#1)
SCALE: 1"=20'



STORM DRAIN STRUCTURE SCHEDULE (PRIVATE)

SIR#	TYPE	INV. IN	INV. OUT	TOP ELEV.	DETAIL	LOCATION	REMARKS
MH9	4" MANHOLE	199.81	199.81	212.46	G-5.12	E=1391737.99 N=528008.93	
MH9A	4" MANHOLE	200.04	199.94	211.53	G-5.12	E=1391738.14 N=527943.33	
MH9B	4" MANHOLE	200.81	200.71	209.97	G-5.12	E=1391859.76 N=527943.42	
MH9C	4" MANHOLE	201.59	201.49	210.10	G-5.12	E=1391861.31 N=527933.09	
MH10	4" MANHOLE	202.55/208.00	201.70	212.51	G-5.12	E=1391902.56 N=527885.59	
MH10A	4" MANHOLE	203.25	203.15	212.52	G-5.12	E=1391904.01 N=527884.17	
MH11	4" MANHOLE	208.25/208.42	208.00/208.20	213.76	G-5.12	E=1391855.09 N=527637.77	
SP-1	12" STORMFILTER	203.93	202.61	212.76		E=1391853.72 N=527637.47	
C05A	CLEANOUT	209.38	209.32	212.79		E=1391859.31 N=527683.87	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Cindy Hamilton
CHIEF, DIVISION OF LAND DEVELOPMENT

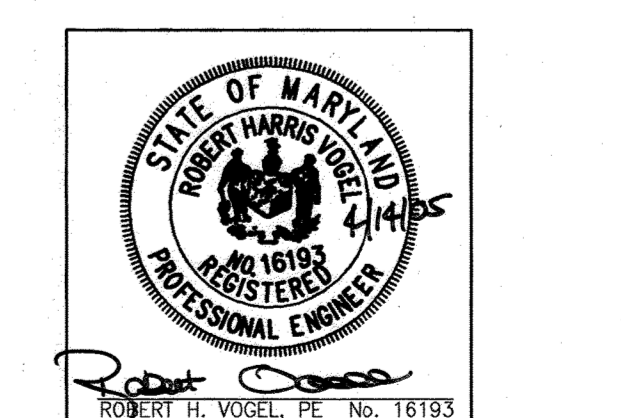
Paula D. Lygler
DIRECTOR

DATE: 5/25/16

DATE: 6/2/16

DATE: 6/2/16

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 4900 E
SCOTSDALE, AZ 85261
(50) 652-8187



ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLIOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DRAWING NO. C5.7
NO. CO. DPZ SHEET: 21 OF 40
SDP-05-40

PROCESSED BY: EDY'S GRAND ICE CREAM
PALLETIZED & LABELED
DATE: 05-26-16
BY: RHY

RECEIVED BY: EDY'S GRAND ICE CREAM
DATE: 01-05-22
BY: VYG

RECEIVED BY: EDY'S GRAND ICE CREAM
DATE: 06-21-22
BY: VYG

RECEIVED BY: EDY'S GRAND ICE CREAM
DATE: 10-12-22
BY: VYG

RELEASED FOR: _____
DATE: _____
BY: _____

DREYERS GRAND ICE CREAM
9080 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

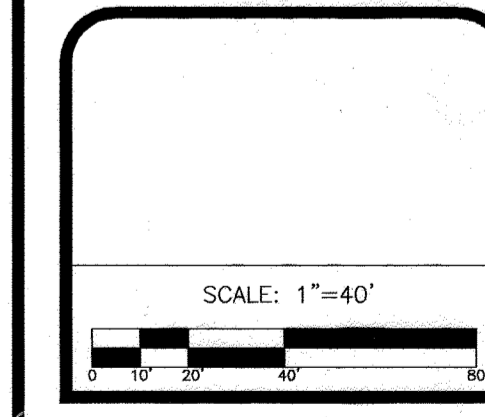
Dreyers

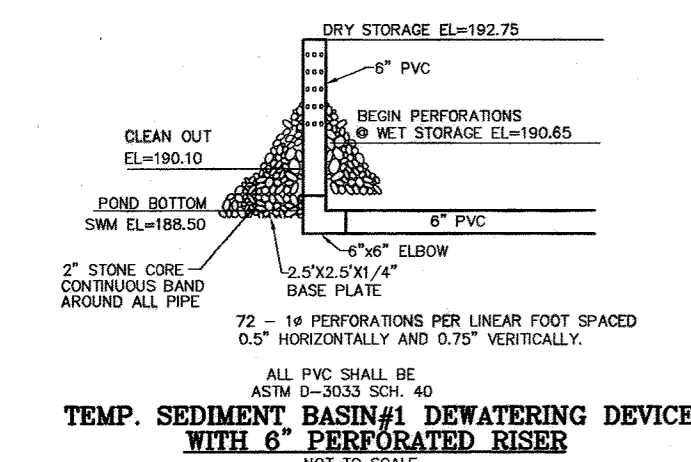
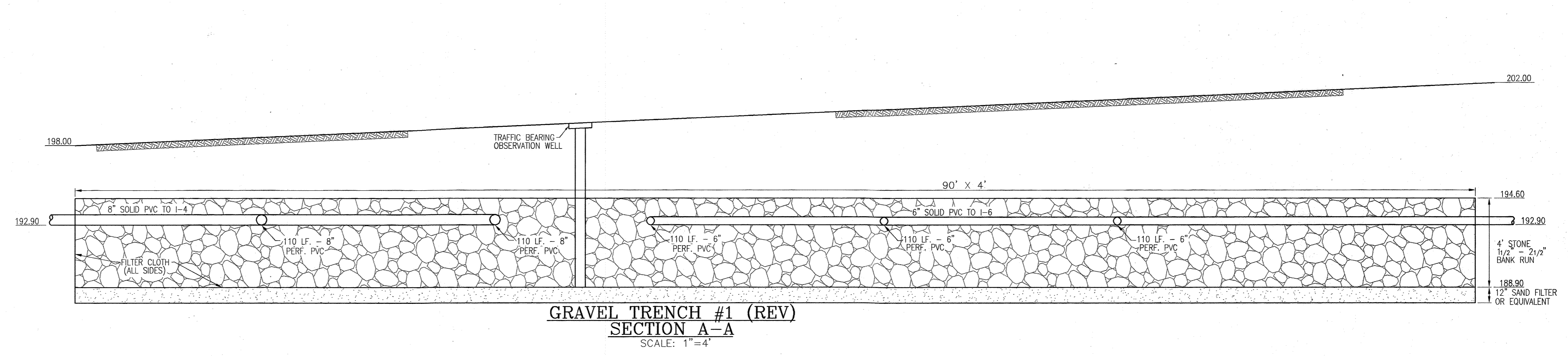
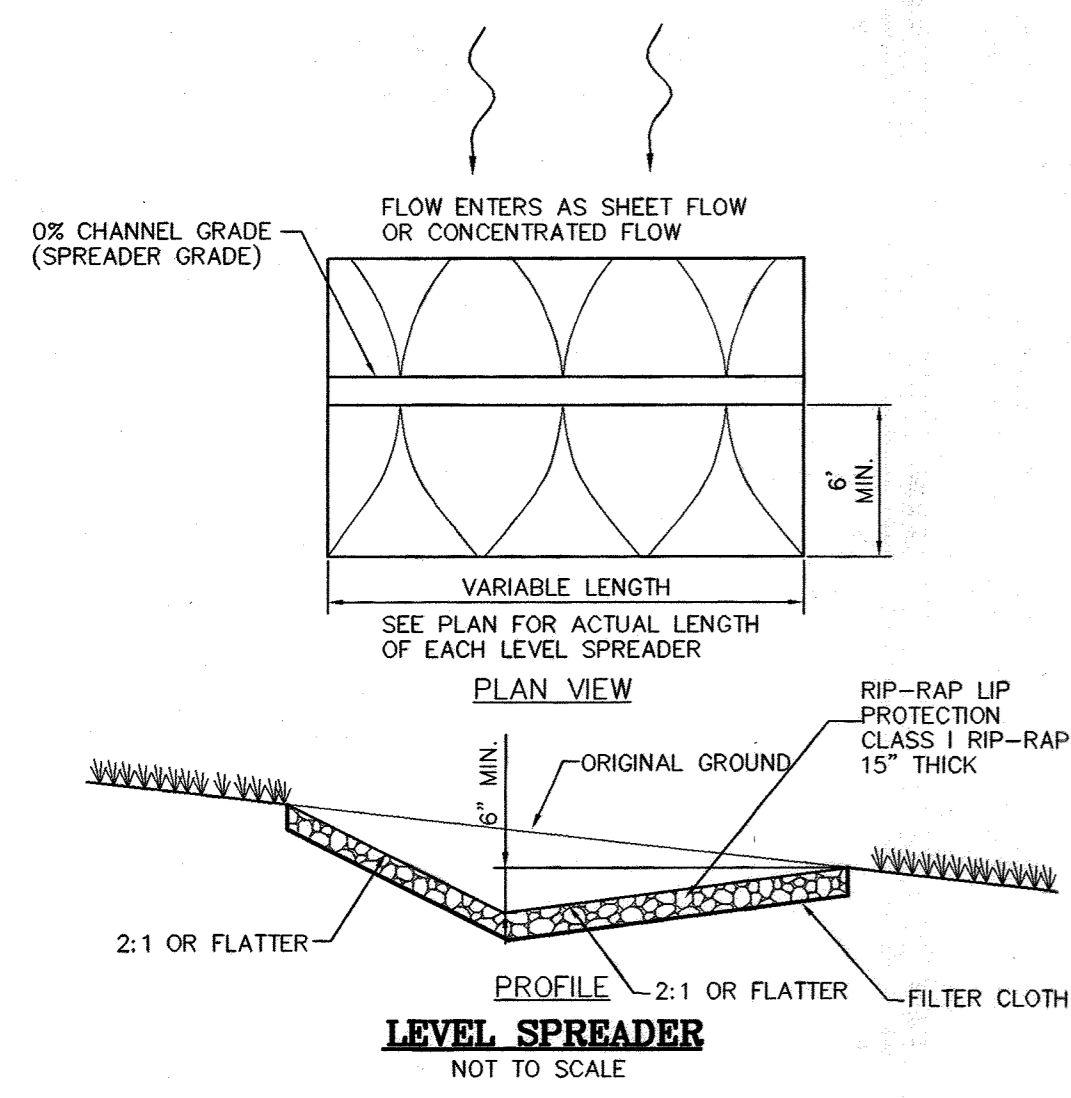
SEWER PROFILES

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
SALT LAKE CITY, UTAH 84101
801-531-8585, FAX 801-531-8586

1391 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-787-1785, FAX 413-787-1786





SEDIMENT BASIN #1
 DRAINAGE AREA TO BASIN: 23.29 AC
 TOTAL STORAGE REQUIRED: 83,844 CF
 TOTAL STORAGE PROVIDED: 153,835 CF
 BOTTOM ELEVATION: 188.50
 CREST ELEVATION: 192.75
 WET STORAGE ELEVATION: 188.50-190.65 (2.15')
 DRY STORAGE ELEVATION: 190.65-192.75 (2.10')
 TOTAL STORAGE DEPTH: 4.25'
 TOP OF EMBANKMENT: 197.50
 CLEANOUT ELEVATION: 191.10
 SIDE SLOPES: 3:1
 Q₁ EX.: 1.9 CFS
 Q₁ TSWM: 1.3 CFS
 1 YR TSWM WSEL: 192.64
 10 YR TSWM WSEL: 193.63
 Q₁ (UL): 1.5 CFS
 1 YR ULT. WSEL: 192.59

SWM POND SUMMARY

	1 YEAR	10 YEAR	100 YEAR
FLOW INTO POND	74.9 c.f.s.	161.5 c.f.s.	233.6 c.f.s.
FLOW OUT OF POND	1.5 c.f.s.	64.6 c.f.s.	82.8 c.f.s.
W.S. ELEVATION	192.59	193.93	194.93
STORAGE VOLUME	3.65 AC FT	5.94 AC FT	8.13 AC FT

	WQv	Cpv
	1.67 Ac.Ft.	3.23 Ac.Ft.

CONDITION	CN	tc	RUNOFF Q ₁ NR STORM	Q	10YR	100YR
EXISTING	75	0.35	0.71	16.1	63.2	108.2
IMPROVED	93	0.10				

SUMMARY TABLE AREA 1 (SITE)

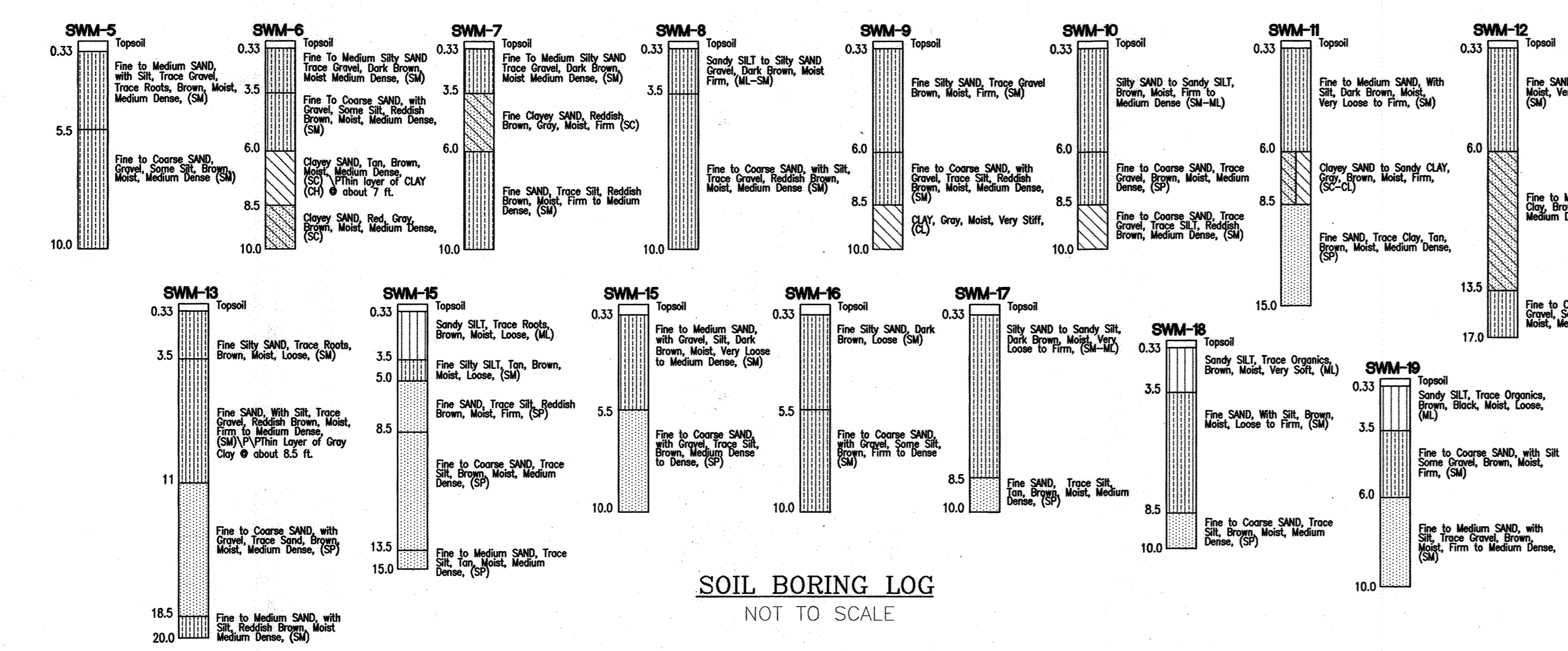
AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	1.67 AC.FT.	N/A	1.67 AC. FT.	50% OF WQV PROVIDED IN WET POOL
2	RECHARGE VOLUME REV	0.39 AC.FT. OR 4.93 AC.	0	0.39 AC. FT.	PROVIDED BY GRAVEL TRENCH
3	CHANNEL PROTECTION VOLUME CPV	3.23 AC.FT.	N/A	3.23 AC.FT.	MICROPOOL EXTENDED DETENTION
4	OVERHEAD FLOOD PROTECTION, Q10P	N/A	N/A	N/A	
5	EXTREME FLOOD VOLUME, Q100P	N/A	N/A	N/A	

NOTE: SWM PROVIDED BY MICROPOOL EXTENDED DETENTION FACILITY

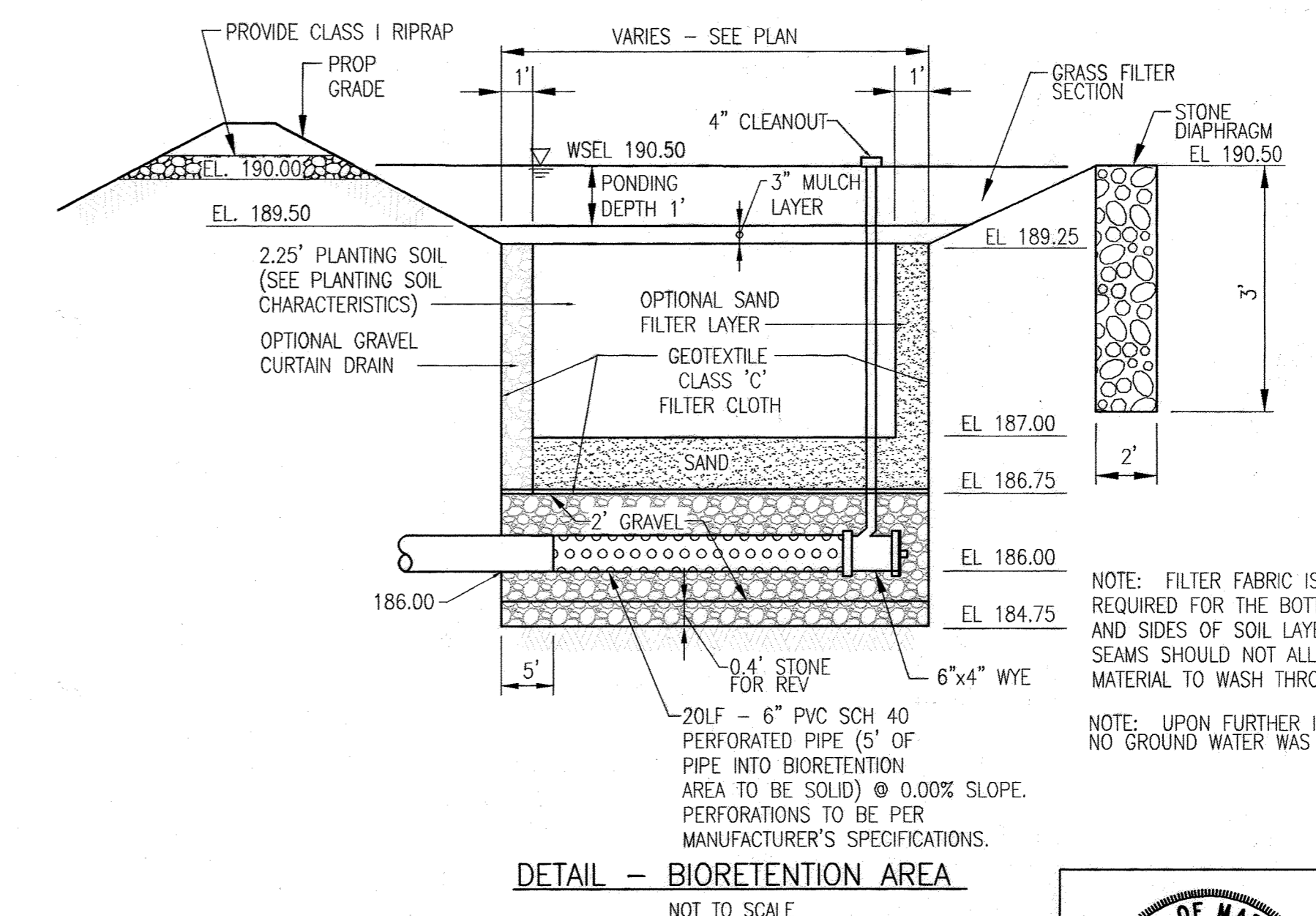
SUMMARY TABLE AREA 1 (DRIVEWAY)

AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	0.0689 AC.FT.	N/A	0.0689 AC. FT.	PROVIDED IN BIO-RETENTION FACILITY
2	RECHARGE VOLUME REV	0.0152 AC.FT.	0	0.0152 AC. FT.	PROVIDED BY GRAVE UNDER BIO-RETENTION
3	CHANNEL PROTECTION VOLUME CPV	0	N/A	0	Q ₁ = 2.0 CFS
4	OVERHEAD FLOOD PROTECTION, Q10P	N/A	N/A	N/A	
5	EXTREME FLOOD VOLUME, Q100P	N/A	N/A	N/A	

NOTE: SWM PROVIDED BY MICROPOOL EXTENDED DETENTION FACILITY



SOIL BORING LOG
 NOT TO SCALE



DETAIL - BIORETENTION AREA
 NOT TO SCALE

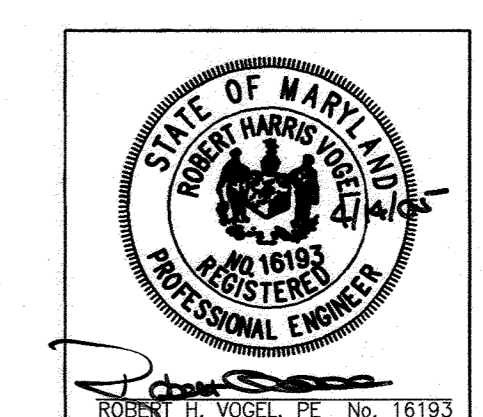
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 6/26/05

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
 USDO-NATURAL RESOURCES CONSERVATION SERVICE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 DATE: 6/26/05

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
 DATE: 6/26/05

BY THE ENGINEER:
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 DATE: 6/26/05

OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 49005
 SCOTTSDALE, AZ 85261
 (510) 652-8187



ROBERT H. VOGEL ENGINEERING, INC.
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DRAWING NO. **C6.7**
 HO. CO. DPZ SHEET: 22 OF 40
 SDP-05-40

REV	DATE	BY	APP.	RELEASED FOR
1	5-26-06	DZ	PRV	REVISED PLAN TO SHOW AS SHOWN FACILITY INFORMATION.
3	01-05-22	TS	VTG	REVISED PLAN TO SHOW THE 18 INCH 5' MANHOLE EXPANSION ASSOCIATED WITH THE MANHOLE FACILITY.
6	10-12-22	TS	VTG	REVISED PLAN TO SHOW THE 18 INCH 5' MANHOLE EXPANSION ASSOCIATED WITH THE MANHOLE FACILITY.

DREYER'S GRAND ICE CREAM
 9080 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

STORMWATER MANAGEMENT DETAILS

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
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 801-531-8585, FAX 801-531-8586

1391 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01103
 413-787-1785, FAX 413-787-1786

Geotechnical Construction Recommendations

Cut-Off Trench and Impervious Core Construction

According to the site grading plan, cut-off trenches and impervious cores will be required at the east and west sides of the proposed SWM pond.

In accordance with Maryland Code 378 requirements, the cutoff trench should extend at least 4 feet below the principal spillway pipe, have a minimum width of 4 feet, and have side slopes of 1H: 1V or flatter. The impervious core should extend vertically upward from the cutoff trench to the 10-year stormwater surface elevation. Fill materials for the cutoff trench and impervious core construction should consist of CC, SC, CL, or CH soil types, having at least 30 percent by weight passing the No. 200 sieve.

Fill materials for the cut-off trench and impervious core should be placed in 8-inch loose lifts and compacted to at least 95 percent of the maximum dry density in accordance with the Standard Proctor test method, ASTM D-698. We recommend that moisture contents at the time of construction should generally be within the range of the optimum moisture content to 3 percentage points wet of the optimum moisture content. Placement and compaction of the cutoff trench and impervious core fill materials should be monitored by the Geotechnical Engineer on a full-time basis to ensure that fill materials are being placed and compacted in accordance with plans and specifications.

General Embankment Construction

According to the plans provided, it appears that the SWM pond is to be constructed to a configuration of 3H:1V, primarily in a cut situation. However, embankment will be required at the east and west sides of the pond with a maximum of 7.5 feet of fill at the northeastern corner of the pond. The results of the borings indicated that the cut slopes should be suitable for the proposed 3H:1V. The fill slopes planned at 3H:1V should consist of embankment fill as recommended below.

Embankment soils placed outside the limits of the cut-off trench and impervious core should consist of soils classified as CL, ML, SC, SM, SC-SP, or SM-SP in accordance with ASTM D-2487. Soils of these types should be readily available from excavated materials associated with the pond construction, although care will be exercised to ensure that the materials do not contain excessive amounts of organics.

Summary of SWM Pond Design

Based on the subsurface conditions encountered at the site and our review of the proposed Stormwater Management Plan, it is our opinion that the design for the proposed SWM pond and its modifications as recommended herein, is in general accordance with Maryland Code 378 requirements with regard to geotechnical considerations. Careful observation of soil conditions exposed during construction will be needed to ensure that measures are taken to provide necessary improvement of soil conditions, especially in the areas of cut slopes and in areas of structural support.

Subgrade Preparation

Subgrade preparation in proposed embankment areas should generally include the removal of any soil, loess, or otherwise unsuitable materials from areas that are to receive fill. We recommend the removal of unsuitable materials should extend at least 5 feet beyond the area to receive fill, unless otherwise recommended by the Geotechnical Engineer.

Prior to the placement of any embankment fill materials, an authorized representative of the Geotechnical Engineer should examine the subgrade soils to verify that they are suitable. The exposed soils should be thoroughly profiled by a vehicle having an axle weight of at least 10 tons, such as a loaded tandem-axle dump truck. This procedure is intended to assist in identifying any localized unstable or yielding materials. In the event that unstable or yielding areas are encountered during the profiling operations, the subgrade should be either thoroughly densified in-place, displaced/graded and recompact, or underlain to form ground and replaced with controlled, compacted fill.

Fill Placement and Compaction

Prior to placement of compacted fill, representative bulk samples (about 50 pounds) should be taken off the proposed fill soils and laboratory tests should be conducted to determine Atterberg limits, natural moisture content, grain-size distribution, and moisture-density relationships for compaction. In general, any materials to be used as structural fill should consist of those materials previously described in the previous sections pertaining to Cut-Off Trench and Impervious Core Construction and General Embankment Construction. Materials acceptable for use as embankment fill should be free of organic matter (less than 3 percent by weight) and debris, containing no rocks greater than 4 inches in their largest dimension. Any off-site borrow soils, if required, should meet the same material requirements and should be approved by the Geotechnical Engineer.

The on-site soils generally should be acceptable for re-use as embankment fill, with the restrictions previously addressed. As previously mentioned, there appears to be an insufficient quantity of the on-site soils suitable for use in the construction of the cutoff trenches and impervious cores. This material will need to be imported to the project site. Bulk samples should be taken of the proposed impervious soils and submitted to the Geotechnical Engineer for approval prior to the importation of this material to the site.

Based on the results of the field testing program conducted for this site, and visual and laboratory classifications of the samples obtained, the on-site soils are generally considered to be suitable for re-use as embankment fill. Considering the laboratory test results, existing moisture contents for some of the on-site soils may be greater than the optimum moisture content. Therefore, drying of the soils by aeration or by chemical methods such as quick lime or cement should be anticipated to reduce the moisture content of the on-site soils in order to achieve the required compaction. Any materials proposed for use as structural fill should be approved by the Geotechnical Engineer or his authorized representative.

Due to the textural variations of the on-site soils, variations in moisture-density relationships should be anticipated. Such changes must be determined in the field by the Geotechnical Engineer, or his authorized representative, during the earthwork operations and treated appropriately.

All general embankment fill should be placed in loose lifts which do not exceed 8 inches in thickness, and should be compacted to at least 95 percent of the maximum dry density, as determined by the Standard Proctor compaction test method (ASTM D-698). Generally, the moisture content of the fill materials for the embankment should be maintained within +/- 2 percentage points of the optimum moisture content for the fill materials, as determined by ASTM D-698.

Fill materials for the cut-off trench and impervious core should be placed in loose lifts which do not exceed 8 inches in thickness, and should be compacted to at least 95 percent of the maximum dry density, as determined by the Standard Proctor compaction test method (ASTM D-698). Relative to clayey soils placed in the cut-off trench and impervious core, it will be desirable to maintain field moisture contents within the range of optimum moisture content to 3 percentage points wet of optimum moisture content, to aid in obtaining relatively low coefficients of permeability.

Any embankment fill placed on slopes steeper than 5H:1V should be adequately benched into the existing slope. Benches should be a minimum of 5 feet wide and should have heights no greater than 3 feet or the drum height of the roller, whichever is less.

The footprint of the proposed embankment should be well defined, including the limits of the fill zones at the time of fill placement. Grade controls should be maintained throughout the filling operations. All filling operations should be observed on a full-time basis by a qualified Soil Technician to determine that the minimum compaction requirements are being achieved. A minimum of one compaction test per lift and every 2,500 square foot lift area should be made. The elevation and location of the tests should be clearly identified at the time of fill placement.

At the end of each work day, all fill areas should be graded to facilitate positive drainage of any free water associated with precipitation and surface run-off, and sealed by use of a smooth-drum roller to limit infiltration of surface water.

Fill materials should not be placed on frozen soils or frost-heaved soils and/or on soils that have been saturated by precipitation. All frozen or frost-heaved soils should be removed prior to placement of controlled and compacted fill. Borrow fill materials shall not contain frozen materials at the time of placement.

If any problems are encountered during the earthwork operations, or if site conditions deviate from those encountered during our subsurface investigation, the Geotechnical Engineer should be notified immediately.

Construction Considerations

Because of the presence of fines, the on-site soils will be sensitive to moisture and disturbance. Construction activities in the presence of excess moisture can lead to softening of the subgrade soil loss of bearing capacity. Therefore it will be prudent to schedule earthwork operations during the warmer and drier seasons (typically late spring to early fall). Measures should also be taken to limit site disturbance, especially from rubber-tired heavy construction equipment, and to control and remove surface water from development areas. It is advisable to designate haul roads and traffic areas to limit the areas of disturbance and prevent construction traffic from excessively degrading the sensitive subgrade soils, especially any moisture sensitive soils containing high percentages of silt and clay.

A firm working surface should be established prior to construction of new fills. The moisture content of the fill soils at the time of placement should be carefully controlled to ensure that the required compaction effort can be achieved without excessive pumping or movement of the fill mass. In the event that the earthwork operations are accomplished during the cooler and wetter periods of the year, delays and additional costs should be anticipated since any reduction of soil moisture would have to be accomplished by mechanical manipulation in order to achieve the specified compaction.

Groundwater will not be encountered during drilling at any of the borings performed for the SWM Pond during this investigation. It appears that groundwater will not impact construction of the pond embankments and during undercutting and backfilling operations. However, should any perched water be encountered, it should be managed easily by using ditches, sumps and pumps.

Some of the soils at this site could be sensitive to moisture and could become difficult to work if exposed to excessive moisture and construction activity. Therefore, surface water runoff should be properly maintained. Surface water should be directed away from the construction area, and the work area should be sloped at a grade of 1 to 2 percent to reduce the potential of ponding water and the subsequent saturation of the surface soils. At the end of each work day, the subgrade should be sealed by rolling the surface with a smooth drum roller. Sealing the surface should also facilitate positive drainage of surface runoff to stormwater collection facilities.

Some cuts or excavation associated with construction may require forming or bracing, slope flattening or other physical measures to control sloughing and/or prevent slope failures. An examination of the applicable codes (e.g. OSHA) should be made by the appropriate contractor to ensure that adequate protection of the excavations and trench walls is provided.

Soils at this site contain fines and are considered erodible. The Contractor should provide and maintain good site drainage during earthwork operations to help maintain the integrity of the surface soils. All erosion and sedimentation shall be controlled in accordance with sound engineering practice and current local requirements.

OPERATION AND MAINTENANCE

SCHEDULE FOR BIO-RETENTION AREAS

- 1. ANNUAL MAINTENANCE OF PLANT MATERIAL, WHICH LATER AND SOIL LAYER IS REQUIRED... MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT...
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL... THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION...
3. MULCH SHALL BE INSPECTED EACH SPRING... REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER...
4. SOIL EROSION SHOULD BE MONITORED ON AN AS NEEDED WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

NOTE: CONTRACTOR SHALL ENSURE THAT THE S.W.M. FACILITY IS WATERTIGHT.

- 1. ALL PIPE CONNECTIONS AT STRUCTURES SHALL BE CEMENTED TO ENSURE WATERTIGHT CONNECTION.
2. ALL ACCMP PIPE JOINTS SHALL USE 12" WIDE HUGGER BAND WITH "O" RING GASKETS.
3. TEES AND ELBOWS TO BE FACTORY FABRICATED UELLS, ONE PIECE.
4. TRENCH BEDDING TO BE IN ACCORDANCE WITH RECOMMENDATIONS FROM THE GEOTECHNICAL ENGINEER IN THE FIELD.
5. PROVIDE WATERTIGHT JOINTS AT ALL PIPE CONNECTIONS. (FOR REINFORCED CONCRETE PIPE, ASTM C-361, RUBBER GASKET PIPE).

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES

- 1. THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
2. WATER LEVELS AND SEEDMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
3. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
4. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN WITHIN THE 24 HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
5. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

Appendix B.3. Construction Specifications for Sand Filters, Bioretention and Open Channels

Specifications for Bioretention

1. Material Specifications

The allowable materials to be used in bioretention area are detailed in Table B.3.2.

2. Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations.

The planting soil shall be tested and shall meet the following criteria:

- pH range 5.2 - 7.0
organic matter 1.5 - 4% (by weight)
magnesium 35 lb./ac
phosphorus (phosphate - P) 20 75 lb./ac
potassium (potash - K) 20 85 lb./ac
soluble salts nit to exceed 500 ppm

All bioretention areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium and additional test of organic matter, and soluble salts. A textural analysis shall be performed for each location where the top soil was excavated.

Since different lab calibrate their testing equipment differently, all testing results shall come from the same testing facility. Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

3. Compaction

It is very important to minimize compaction of both the base of the bioretention area and the required backfill. When possible, use hoers to remove ground soil. If bioretention areas are excavated using loader, the contractor should use wide track or marsh track equipment, or light equipment with turf tires (Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as chisel plow, ripper, or subsolar. These tilling operations are to restructure the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the required sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand.

4. Plant Material

Recommended plant material for bioretention areas can be found in Appendix A, Section A.2.3 of the 2000 Maryland Stormwater Design Manual.

5. Plant Installation

Mulch should be placed to a uniform thickness of 2" to 3". Shredded hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable.

Root stock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only odd fertilizer if wood chips or mulch are used to amend the soil.

6. Underdrains

Underdrains are to be placed on a 3'-0" wide section filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation well and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

7. Miscellaneous

The bioretention facility may not be constructed until all contributing drainage area has been stabilized.

Table with columns: MATERIAL, SPECIFICATION, SIZE, NOTES. Lists materials like PLANTINGS, MULCH, UNDERDRAIN GRVEL, UNDERDRAIN PIPING, POURED IN PLACE CONCRETE, SAND (1' DEEP).

POND BOTTOM SOIL CONDITIONS

If broken rock fragments are encountered at finished pond bottom, under cut a minimum of 12" below basin grade and to a horizontal distance of at least 18" beyond each edge of the broken rock and backfill with fine grained ML or CL soils compacted to a firm condition. This procedure should be performed under the supervision of the project Geotechnical Engineer.

In order to lower the infiltration rate into the sands with gravel, it is recommended that the sands with gravel be underlain and replaced with a minimum of 12 inches of soils classified as SM per ASTM D-2487 or Sandy Loam per USDA classification. The fill soil should be compacted to at least 95 percent of its maximum dry density per ASTM D-698.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, NRCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MO-376), THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF.

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT EXTENDED DETENTION FACILITY

- ROUTINE MAINTENANCE
1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS.
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 OCTOBER.
3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Handwritten signatures and dates for Development Engineering Division, Division of Land Development, and Director.

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

USDA NATURAL RESOURCES CONSERVATION SERVICE. This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

BY THE DEVELOPER:

CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL... SIGNATURE OF DEVELOPER: 4/14/05

BY THE ENGINEER:

CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. SIGNATURE OF ENGINEER: 4/14/05

DEWATERING STRATEGY

Dewatering refers to the act of removing and discharging water from excavated areas on construction sites or from sediment traps and basins on construction sites. Standards and specifications for dewatering practices follow:

These standards apply to removal and discharge of water from any excavated area or sediment trap or basin at any construction site. Given the unique conditions at any particular construction site, any or all of the practices may apply.

Designers shall specify the preferred procedures for dewatering on plans. In particular, designers should identify procedures for dewatering sediment traps and basins prior to elimination of the fast sediment control facility on the site or prior to conversion of sediment control facilities to stormwater management facilities.

Dewatering of Excavated Areas
A. Designers shall specify on plans, and in sequences of construction included on plans, practices for dewatering of excavated areas. Plan reviewers shall check to see that procedures for dewatering are included on plans.

Approved Practices for Dewatering of Excavated Areas
1. Pumping of water to an existing sediment basin, filter bag or trap in which the entire volume of water from the area to be dewatered can be contained without discharge to receiving waters.

- 2. Pumping of water to an existing sediment basin, filter bag or trap such that the entire volume of water from the area to be dewatered can be managed without exceeding the design outflow from the sediment control structure.
3. Removable Pumping Station. Standards and specifications for Removable Pumping Station are on Detail 20A.
4. Use of a Sump Pit. Standards and specifications for a sump pit are on Detail 20B.
5. Sediment Tank. Standards and specifications for a sump pit are on Detail 21.

Dewatering of Sediment Traps and Basins

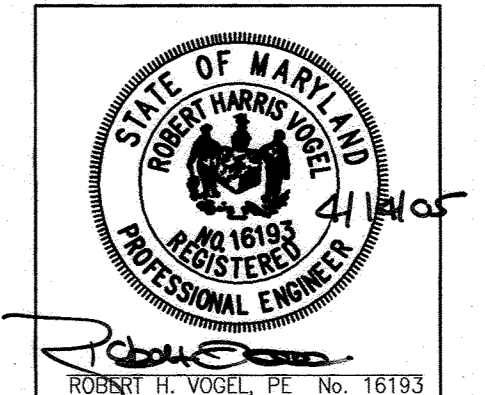
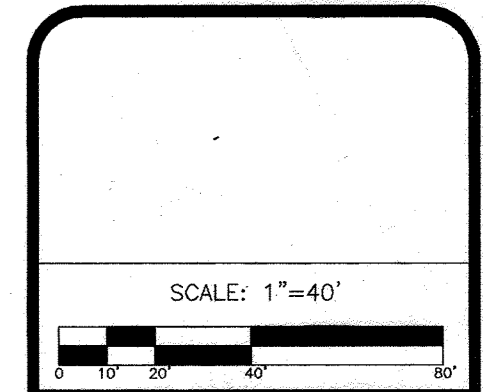
Designers shall specify on plans, and in sequences of construction included on plans, the practices for dewatering of traps and basins. Plan reviewers shall check to see that procedures for dewatering to be used are included on plans.

Approved Practices for Dewatering of Traps and Basins

- 1. Removable pumping station.
2. Use of a Sump Pit.
3. Use of a flooding suction hose to pump the cleaner water from the top of the pond.
4. Vegetative buffers - The maintenance of areas of existing vegetation adjacent to wetlands, streams, and other areas of significant natural resource value in connection with sediment control practices noted in this manual can ensure that such areas are not adversely affected by grading and construction of stormwater runoff once construction is complete.

STORMWATER MANAGEMENT NOTES
DREYER'S GRAND ICE CREAM
9080 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT
136 SOUTH MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
801-551-8383, FAX 801-551-8886



OWNER/DEVELOPER: EDY'S GRAND ICE CREAM
ENGINEERING, INC.
8407 MAIN STREET
LILLCOTT CITY, MD 21043
TEL: 410.481.2666

DRAWING NO. C6.8
HO. CO. DPZ SHEET: 23 OF 40
SDP-05-40

MATCHLINE (SHEET 25, L1.4)

PROPOSED EXPANSION
F.F. = 218.85

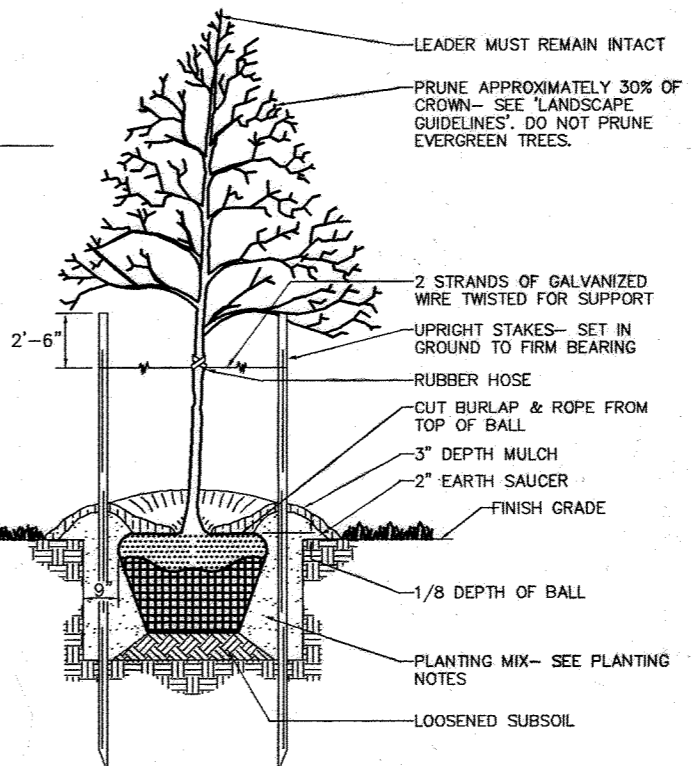
EXISTING BUILDING TO REMAIN
104,926 SF

LANDSCAPE PLAN
SCALE: 1"=50'

NOTES

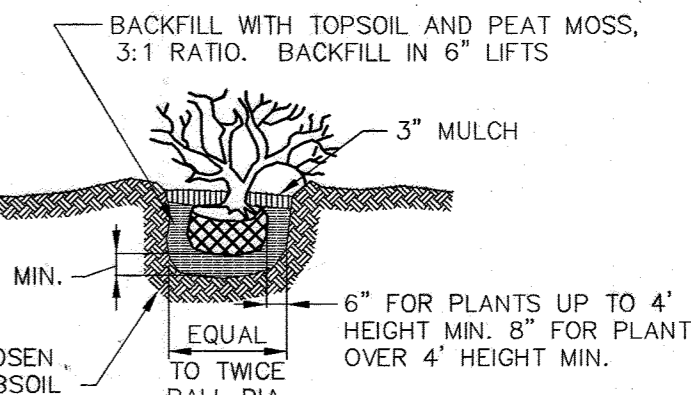
- SEE "LANDSCAPE SPECIFICATION GUIDELINES" FOR BALTIMORE-WASHINGTON METROPOLITAN AREA FOR ALL MATERIALS, PRODUCT, AND PROCEDURE SPECIFICATIONS.
- SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
- PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
- KEEP MULCH 1" FROM TRUNK.
- SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
- TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.

TREE PLANTING AND STAKING
DECIDUOUS TREES UP TO 2-1/2" CALIPER

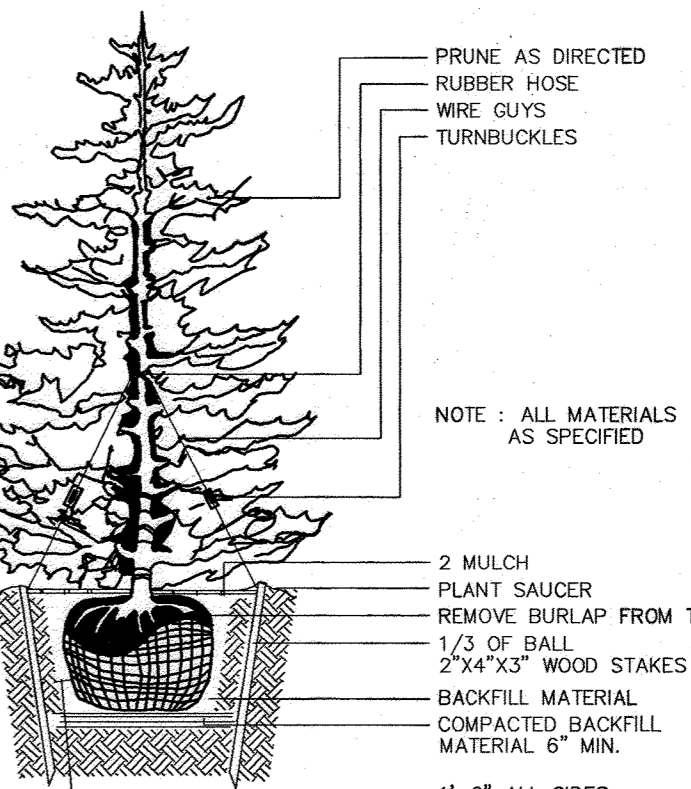


LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED LIGHT POLE
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS
- LANDSCAPE PERIMETER



SHRUB PLANTING DETAIL
NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

**SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING**

Number of parking spaces	601
Number of trees and islands required	30
Number of trees and islands provided	30
Shade Trees	0
Other Trees (2:1 Substitution)	0

**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS AND PERIMETER PROPERTIES									
	1	2A	2B	3	4	5	6	7	8	9
Perimeter/Frontage Designation	A	B	E	B	C	A	B	A	B	A
Linear Feet of Roadway Frontage/Perimeter	938	300	134	182	236	625	425	1657	263	1120
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	YES 856	No	YES 230
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No	No	No	No	No	No
Number of Plants Required	1:60	1:50	1:40	1:50	1:60	1:60	1:50	1:60	1:50	1:60
Shade Trees	16	6	3	4	4	10	9	13	5	15
Evergreen Trees	-	8	-	-	-	-	11	-	7	-
Other Trees (2:1 Substitution)	-	-	-	-	-	-	-	-	-	-
Shrubs (10:1 Substitution)	-	-	34	-	-	-	-	-	-	-
Describe Plant Substitution Credits Below if needed)										
Number of Plants Provided	16	6	3	4	4	10	9	13	5	15
Evergreen Trees	-	8	-	-	-	-	11	-	7	-
Other Trees (2:1 Substitution)	-	-	-	-	-	-	-	-	-	-
Shrubs (10:1 Substitution)	-	-	34	-	-	-	-	-	-	-
Describe Plant Substitution Credits Below if needed)										

TAX MAP 50, PARCEL 509
ICE CREAM PARTNERS USA LLC
LIBER 4913, FOLIO 89
PARCEL B
THE SOUTHLAND CORPORATION PROPERTY
PLAT 10207
9.0133 ACRES
ZONED: M-1

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
AR	69	Acer rubrum 'October Glory' October Glory Red Maple	2 1/2" - 3" Cal.	B & B
PS	47	Pinus strobus Eastern White Pine	6' - 8' Ht.	B & B
QP	30	Quercus Phellos Willow Oak	2 1/2" - 3" Cal.	B & B
TD	34	Toxus media 'Densiformis' Densiformis Yew	2 1/2" - 3" Ht.	B & B
CL	10	CUPRESSOCYPARIS LEYLANDII LELAND CYRESS	5' - 6' HT	B & B

GENERAL NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. THE REQUIRED PARKING AND PERIMETER LANDSCAPING WILL BE BONDED PER THIS SUBMISSION.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$42,270.00 FOR THE REQUIRED 122 SHADE TREES, 31 EVERGREEN TREES AND 34 SHRUBS.
- SWM LANDSCAPING IS NOT REQUIRED FOR THIS SITE SINCE THE SWM FACILITY IS NOT VISIBLE FROM A PUBLIC ROAD.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/6/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 6/2/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 6/14/05
DIRECTOR DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[Signature] 04/14/05
SIGNATURE OF DEVELOPER DATE

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 419005
SCOTTSDALE, AZ 85261
(90) 652-6187

OWNER
[Redacted]

DESIGNER
[Redacted]

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

REVISED BY: [Redacted] DATE: [Redacted]
REVISIONS TO BE MADE TO THIS PLAN SHALL BE INDICATED BY THE FOLLOWING:

NO.	DATE	BY	APP.	RELEASED FOR
1	5-25-06	DZ	RHV	
2	12-21-07	RHV	RHV	
3	01-05-21	TS	VTG	
6	10-12-22	TS	VTG	

DREYERS GRAND ICE CREAM
9090 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

Dreyers

LANDSCAPE PLAN

THE DENNIS GROUP, LLC

PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
SALT LAKE CITY, UT 84101
801-531-8585, FAX 801-531-8586

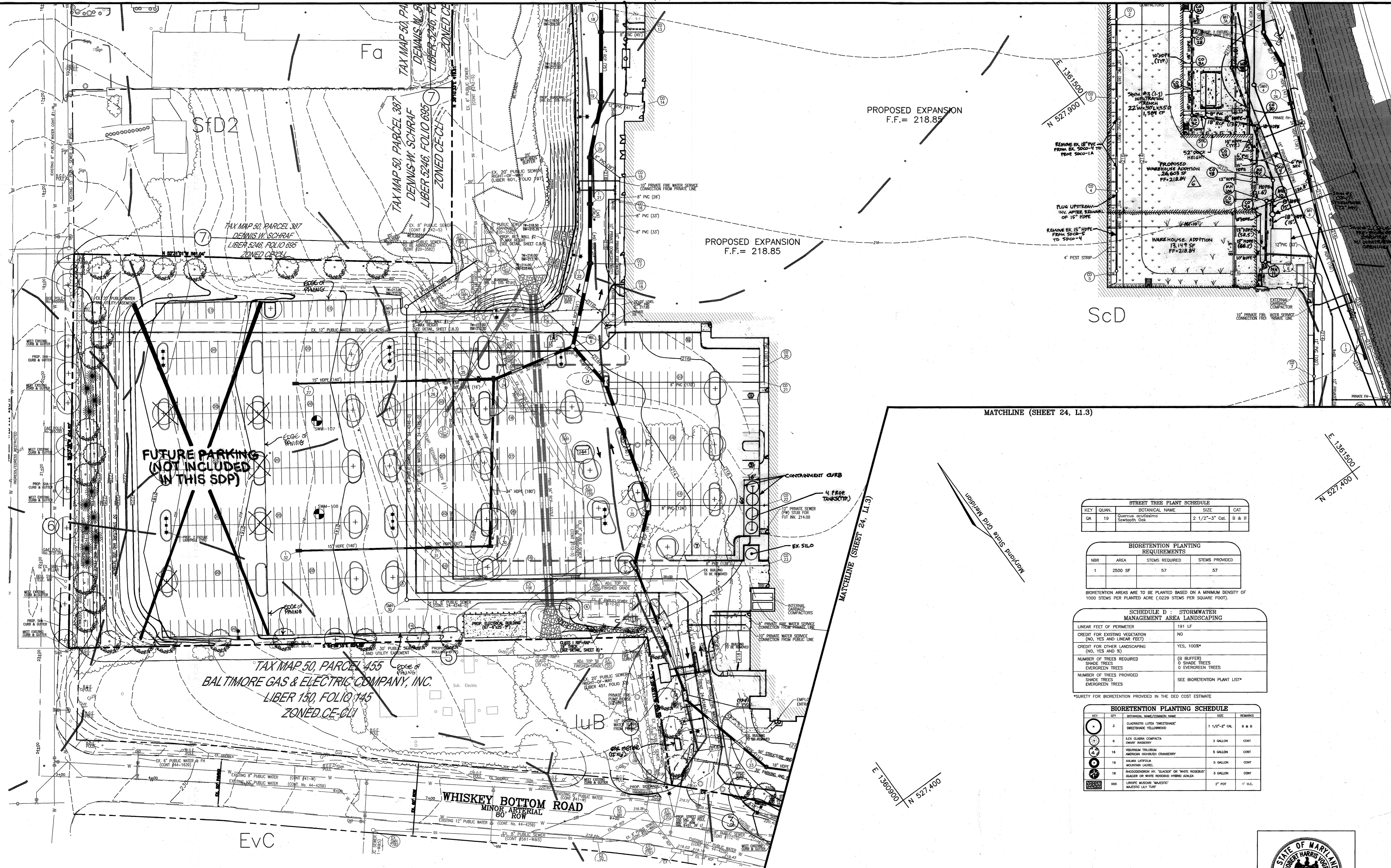
1391 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-787-1785, FAX 413-787-1786

DRAWING NO.
L1.3

HO. CO. DPZ SHEET:
24 OF 40

SDP-05-40

MATCHLINE (SHEET 26, L1.5)



PROPOSED EXPANSION
F.F. = 218.85

PROPOSED EXPANSION
F.F. = 218.85

FUTURE PARKING
(NOT INCLUDED
IN THIS SDP)

TAX MAP 50, PARCEL 455
BALTIMORE GAS & ELECTRIC COMPANY, INC.
LIBER 150, FOLIO 145
ZONED CE-CH

WHISKEY BOTTOM ROAD
MINOR ARTERIAL
80' ROW

MATCHLINE (SHEET 24, L1.3)

MATCHLINE (SHEET 24, L1.3)

STREET TREE PLANT SCHEDULE			
KEY	QUAN.	BOTANICAL NAME	SIZE
GA	19	Quercus macrocarpa Scotslash Oak	2 1/2" - 3" Cal. B & B

BIORETENTION PLANTING REQUIREMENTS			
NEER	AREA	STEMS REQUIRED	STEMS PROVIDED
1	2500 SF	57	57

BIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (6228 STEMS PER SQUARE FOOT).

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	181 LF
CREDIT FOR EXISTING VEGETATION (NO. YES AND LINEAR FEET)	NO
CREDIT FOR OTHER LANDSCAPING (NO. YES AND SF)	YES, 1000*
NUMBER OF TREES REQUIRED	(B) BUFFERED 0 SHADE TREES 0 EVERGREEN TREES
NUMBER OF TREES PROVIDED	SEE BIORETENTION PLANT LIST*

BIORETENTION PLANTING SCHEDULE			
KEY	QTY	SIZE	REMARKS
1	3	1 1/2" - 2" O.C.	GLADIOLUS LUTEA 'SWEETWIND' SWEETWIND YELLOWWIND
2	6	3 GALLON	LELX GLABRA COMPACTA SWIFT HONEY
3	16	5 GALLON	VERONICA THIBAUDII AMERICAN HONEYBERRY
4	16	5 GALLON	KALINA LUTICATA MOONBURN LARLES
5	16	3 GALLON	ROODOLPHIA SP. 'SACILEY' OR 'WHITE ROSEBUD' SHADE OR WHITE ROSEBUD HYBRID CROCK
6	500	2" POT	LIRIODENEA MONSIEUR 'MAESTRO' MAESTRO LILY TURF

*SURETY FOR BIORETENTION PROVIDED IN THE BID COST ESTIMATE

NO.	DATE	BY	APP.	REVISION
1	05-20-06	DZ	RHV	REVISION TO SHEET AS-BUILT FACILITIES AND REUSE VARIATIONS
2	12-21-07	RHV	RHV	REVISION TO SHEET TO SHOW THE PLAN TO SHOW THE INSTALLATION OF MANAGERIAL PRACTICES
3	01-05-22	TS	VTG	REVISE THE PLAN TO SHOW THE INSTALLATION OF MANAGERIAL PRACTICES
4	05-03-22	RHV	VTG	ADD SOILING TO SHEET AND REUSE THE SOILING RELEASED FOR

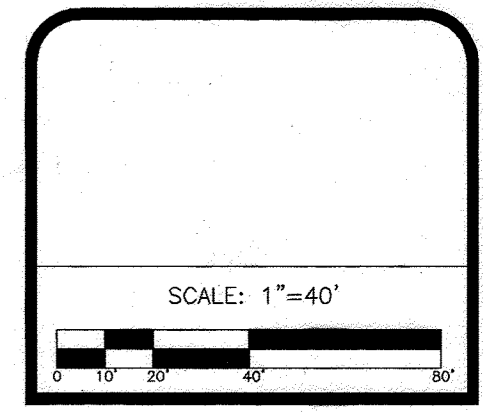
DREYER'S GRAND ICE CREAM
9080 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

LANDSCAPE PLAN

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
SALT LAKE CITY, UTAH 84101
801-531-8585, FAX 801-531-8586

1391 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-787-1785, FAX 413-787-1786



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County Department of Planning and Zoning
5/25/05
DATE

John Kamm
6/2/05
DATE

David A. Anger
6/2/05
DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

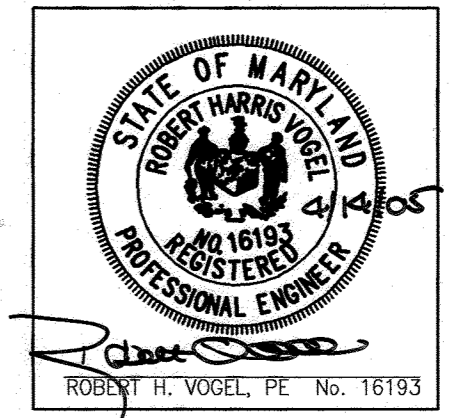
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Robert H. Vogel
SIGNATURE OF DEVELOPER

9-14-05
DATE

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 4900E
SCOTSDALE, AZ 85261
(510) 652-8187

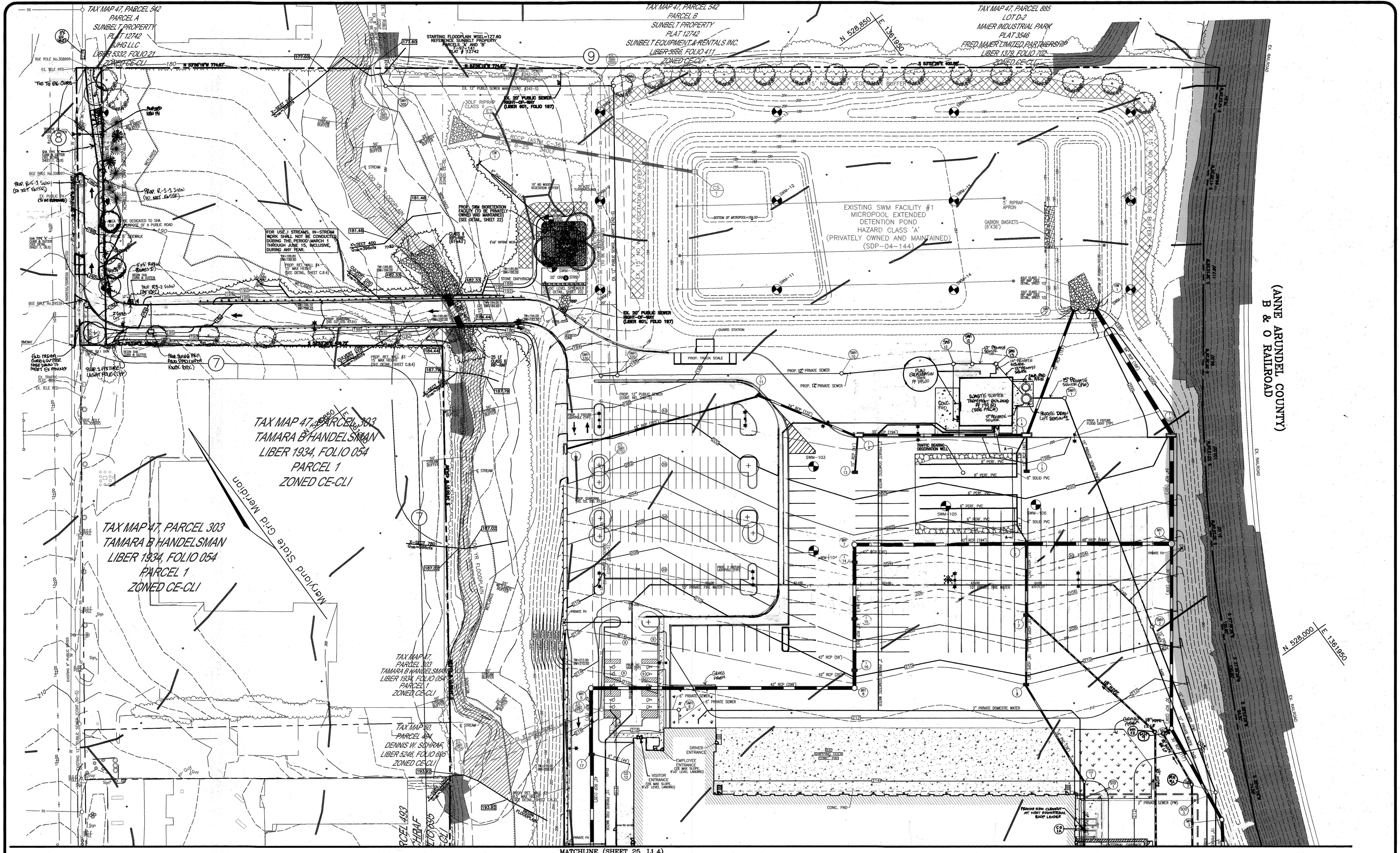
NO.	DATE	BY	APP.	REVISION
6	10-12-22	TS	VTG	REVISE TO ADD CHILLED WAREHOUSE EXPANSION, RETAINING WALL, SWM, GRADING AND CHANGE SHEET NUMBERS
5	06-24-22	TS	VTG	REVISE THE PLAN TO REFLECT THE ESD PRACTICES AND STORM DRAIN SYSTEM



ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043 TEL: 410.481.7666
FAX: 410.461.8911

DRAWING NO.
L1.4

HO. CO. DPZ SHEET:
25 OF 40



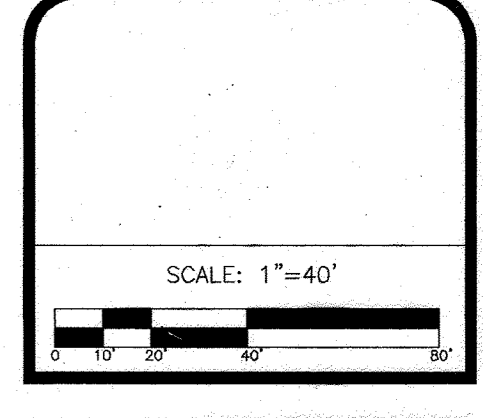
REV.	DATE	BY	APP.	RELEASED FOR
05-25-06	DJA			REVISED PLAN TO SHOW AS-BUILT UTILITIES AND RESURFACING
3	01-05-22	TS		REVISED INTERSECTION TO SHOW 15' WOOD VEG. BUFFER AND THE INSTALLATION OF MANAGEMENT PLAN
6	10-12-22	TS		REVISED TO ADD CATCH BASIN AND SWM FACILITY

DREYER'S GRAND ICE CREAM
 9090 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

LANDSCAPE PLAN

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
 LAUREL, MD 20723
 410-331-8886



DRAWING NO.
L1.5

HO. CO. DPZ SHEET:
 26 OF 40

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County Seal
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/25/05

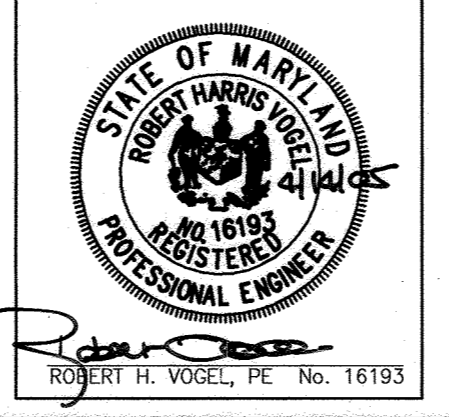
Cond Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/2/05

Robert Vogel
 DIRECTOR
 DATE: 6/2/05

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Robert Vogel
 SIGNATURE OF DEVELOPER
 DATE: 04.14.05

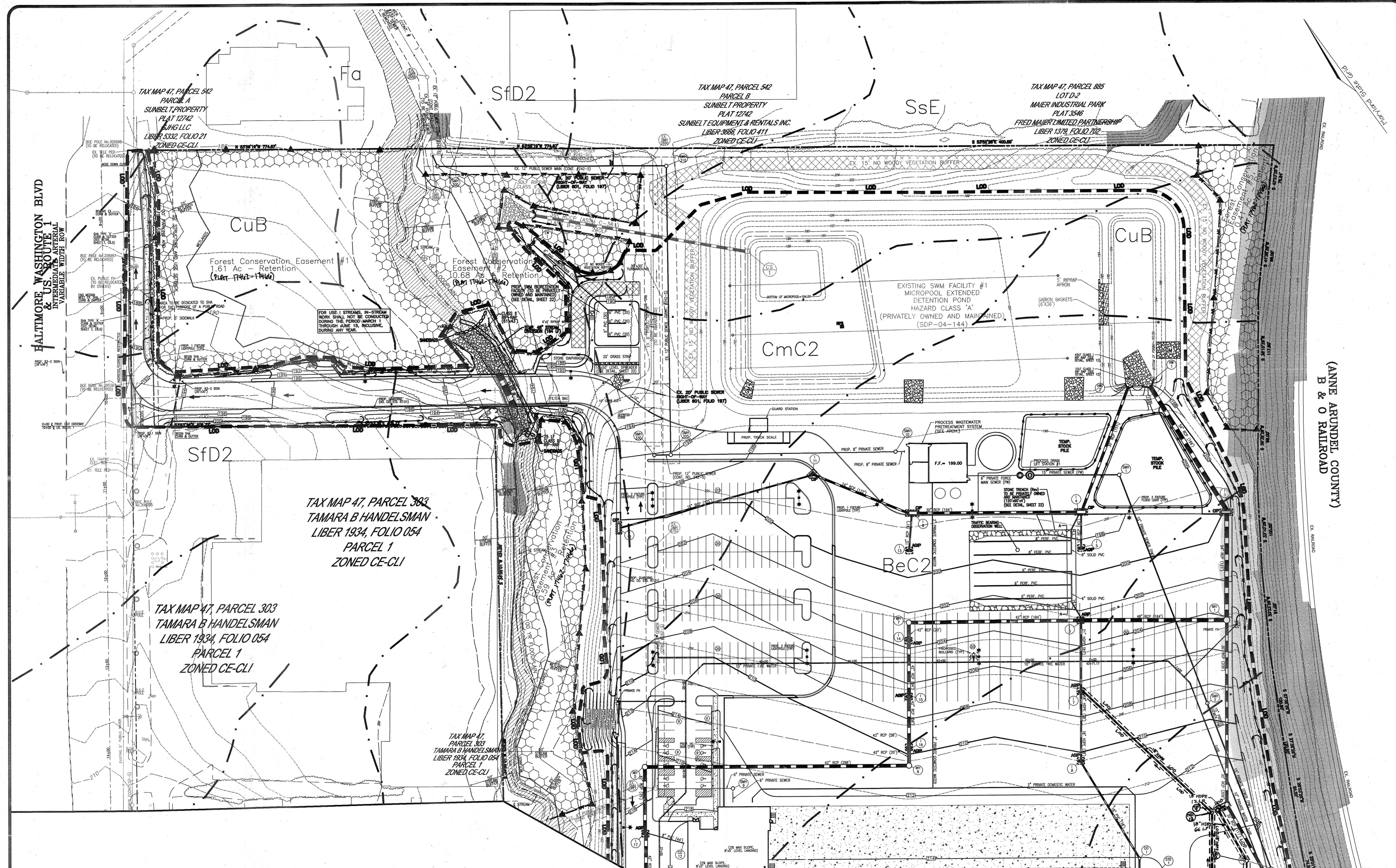


OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 4900 E
 SCOTTSDALE, AZ 85261
 (510) 652-8187

DEVELOPER
 ROBERT H. VOGEL ENGINEERING, INC.

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/15/15

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/2/15

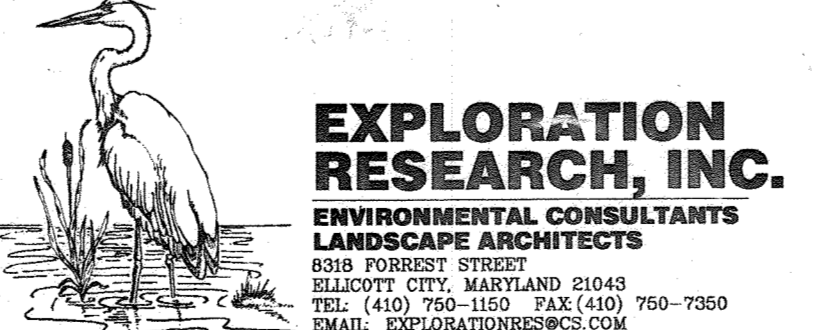
DIRECTOR
 DATE: 6/11/15

LEGEND

Forest Conservation Easement
 FCE Signage
 TPF Tree Protection Fence

MATCHLINE (SHEET 28, L1.7)

Forest Conservation Plan by:



OWNER/DEVELOPER
 EBY'S GRAND ICE CREAM
 PO BOX 4900E
 SCOTTSDALE, AZ 85261
 (512) 652-8187

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.466.7666
 FAX: 410.466.8961

5-26-06	DE	3	01-05-22	TS	VTG	REL.	DATE	BY	APP.	RELEASED FOR
										FOR THE CLIENT'S REVIEW AND APPROVAL OF THE PLAN TO SHOW THE LOCATION OF THE PROPOSED FOREST CONSERVATION EASEMENT AND TREE PROTECTION FENCE.

DREYER'S GRAND ICE CREAM
 9000 WHISKEY BOTTOM ROAD
 LAUREL, MD 20728

FOREST CONSERVATION PLAN

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1391 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01103
 413-757-1785 • FAX 413-787-1786

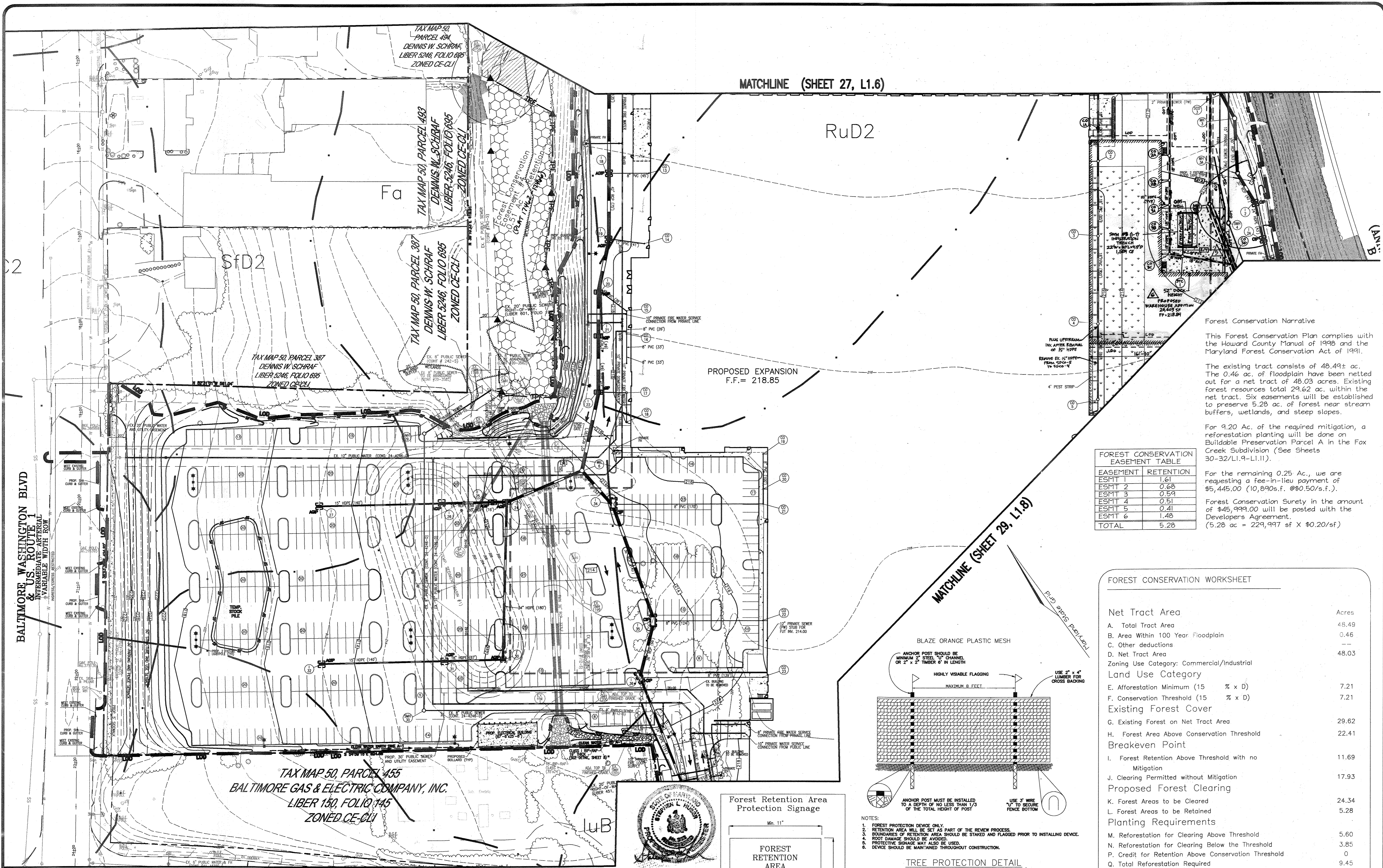
136 SOUTH MAIN STREET
 SALT LAKE CITY, UTAH 84101
 801-531-8585 • FAX 801-531-8586

SCALE: 1"=50'

DRAWING NO.
L1.6

NO. CO. DPZ SHEET:
 27 OF 40

SDP-05-40



MATCHLINE (SHEET 27, L1.6)

MATCHLINE (SHEET 29, L1.8)

Forest Conservation Narrative

This Forest Conservation Plan complies with the Howard County Manual of 1998 and the Maryland Forest Conservation Act of 1991.

The existing tract consists of 48.49± ac. The 0.46 ac. of floodplain have been netted out for a net tract of 48.03 acres. Existing forest resources total 29.62 ac. within the net tract. Six easements will be established to preserve 5.28 ac. of forest near stream buffers, wetlands, and steep slopes.

For 9.20 Ac. of the required mitigation, a reforestation planting will be done on Buildable Preservation Parcel A in the Fox Creek Subdivision (See Sheets 30-32/L1.9-L1.11).

For the remaining 0.25 Ac., we are requesting a fee-in-lieu payment of \$5,445.00 (10,890s.f. @ \$0.50/s.f.).

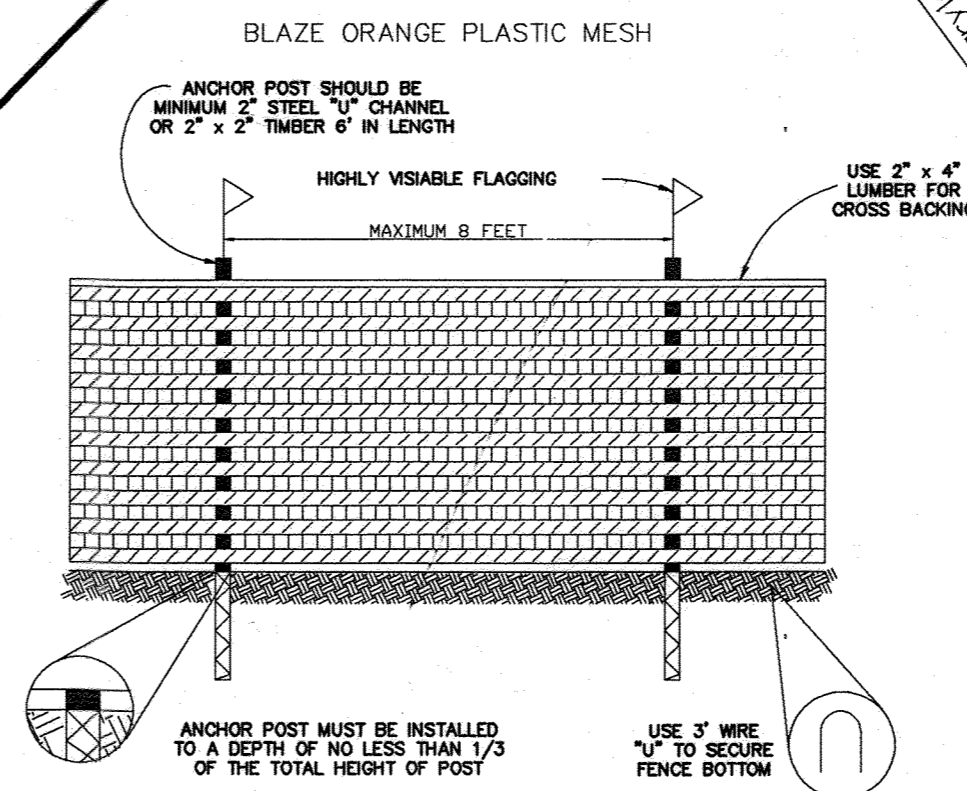
Forest Conservation Surety in the amount of \$45,999.00 will be posted with the Developer's Agreement.
(5.28 ac = 229,997 sf X \$0.20/sf)

FOREST CONSERVATION EASEMENT TABLE

EASEMENT	RETENTION
ESMT 1	1.61
ESMT 2	0.68
ESMT 3	0.54
ESMT 4	0.51
ESMT 5	0.41
ESMT 6	1.48
TOTAL	5.28

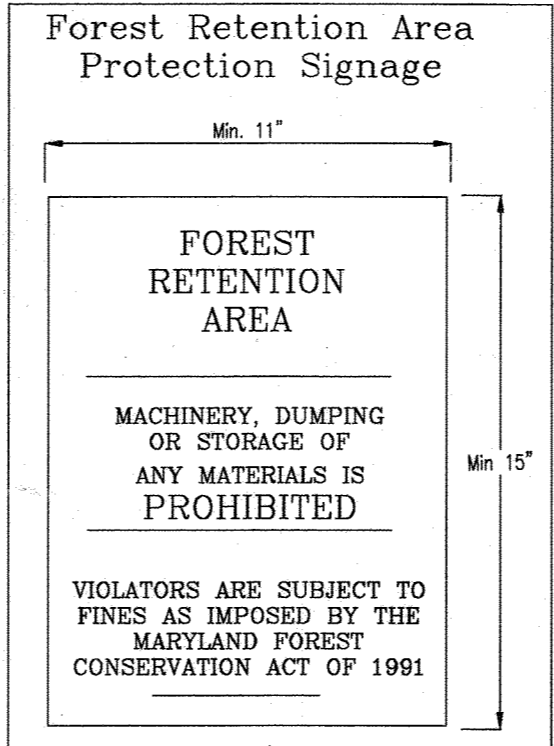
FOREST CONSERVATION WORKSHEET

Item	Acres
Net Tract Area	
A. Total Tract Area	48.49
B. Area Within 100 Year Floodplain	0.46
C. Other deductions	---
D. Net Tract Area	48.03
Zoning Use Category: Commercial/Industrial	
Land Use Category	
E. Afforestation Minimum (15 % x D)	7.21
F. Conservation Threshold (15 % x D)	7.21
Existing Forest Cover	
G. Existing Forest on Net Tract Area	29.62
H. Forest Area Above Conservation Threshold Breakeven Point	22.41
I. Forest Retention Above Threshold with no Mitigation	11.69
J. Clearing Permitted without Mitigation	17.93
Proposed Forest Clearing	
K. Forest Areas to be Cleared	24.34
L. Forest Areas to be Retained	5.28
Planting Requirements	
M. Reforestation for Clearing Above Threshold	5.60
N. Reforestation for Clearing Below the Threshold	3.85
P. Credit for Retention Above Conservation Threshold	0
Q. Total Reforestation Required	9.45
R. Total Afforestation Required	0
S. Total Reforestation and Afforestation Requirement	9.45



TREE PROTECTION DETAIL
NOT TO SCALE

OWNER/DEVELOPER
EPI'S GRAND ICE CREAM
PO BOX 4806E
SCOTSDALE, AZ 85261
(516) 652-8187



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Mark Dammann 5/25/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Carla Hamant 6/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Barbara A. Lyle 6/1/05
DIRECTOR DATE

LEGEND

Forest Conservation Easement

FCE Signage

TPF - Tree Protection Fence

Forest Conservation Plan by:

EXPLORATION RESEARCH, INC.
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS
8316 FOREST STREET
BELLEVILLE CITY, MARYLAND 21045
TEL: (410) 750-1150 FAX: (410) 750-7350
EMAIL: EXPLORATION@RESEARCH.COM

REVISIONS TO SHEET AS-BUILT

NO.	DATE	BY	APP.	DESCRIPTION
1	05-25-04	DB		REVISED PLAN TO SHOW THE EXISTING AND THE INSTALLATION OF ASSOCIATED STREAM BUFFER FACILITIES
3	01-05-22	TS		REVISED PLAN TO SHOW THE EXISTING AND THE INSTALLATION OF ASSOCIATED STREAM BUFFER FACILITIES
5	06-24-22	TS		REVISED PLAN TO SHOW THE EXISTING AND THE INSTALLATION OF ASSOCIATED STREAM BUFFER FACILITIES
6	10-12-22	TS		REVISED PLAN TO SHOW THE EXISTING AND THE INSTALLATION OF ASSOCIATED STREAM BUFFER FACILITIES

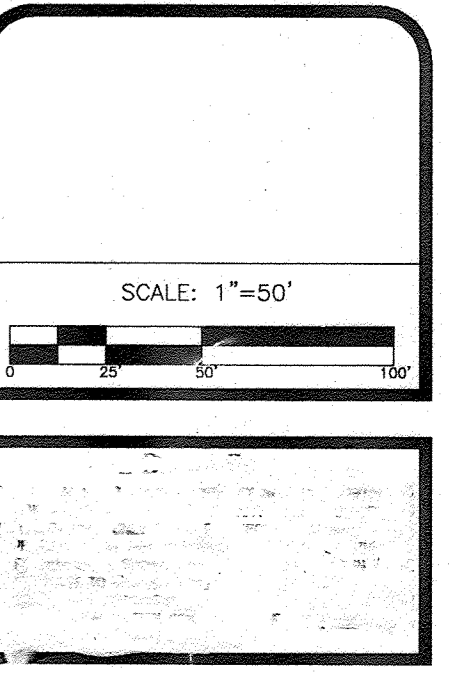
DREYER'S GRAND ICE CREAM
8080 WHISKEY BOTTOM ROAD
LAUREL, MD 20728

FOREST CONSERVATION PLAN

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1901 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-787-1785 • FAX 413-787-1786

136 SOUTH MAIN STREET
SALISBURY CITY, UTAH 84101
801-531-8585 • FAX 801-531-8586



DRAWING NO. **L1.7**

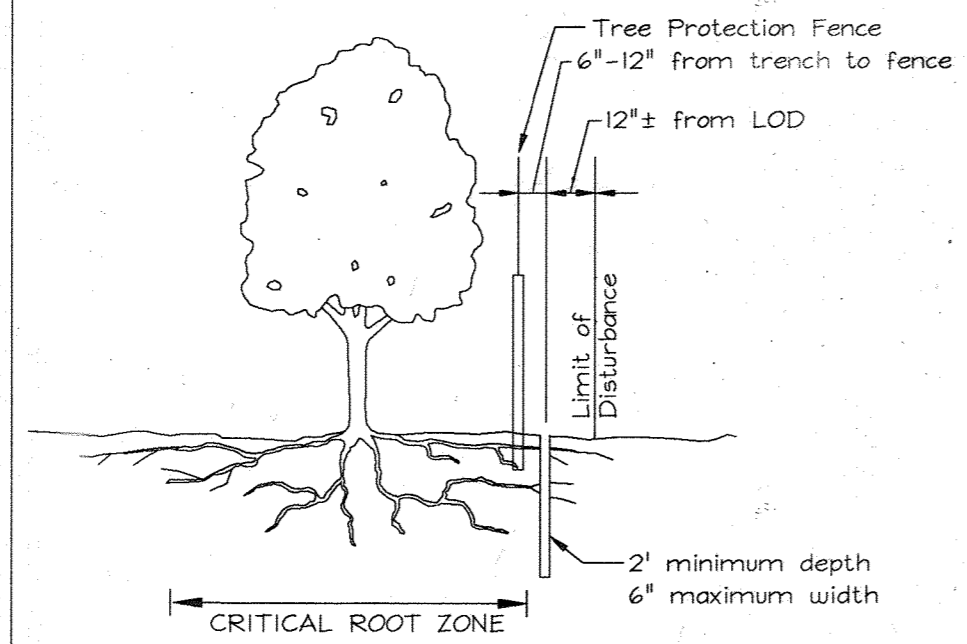
HO. CO. DPZ SHEET: 28 OF 40

MANAGEMENT NOTES FOR FOREST RETENTION AREAS

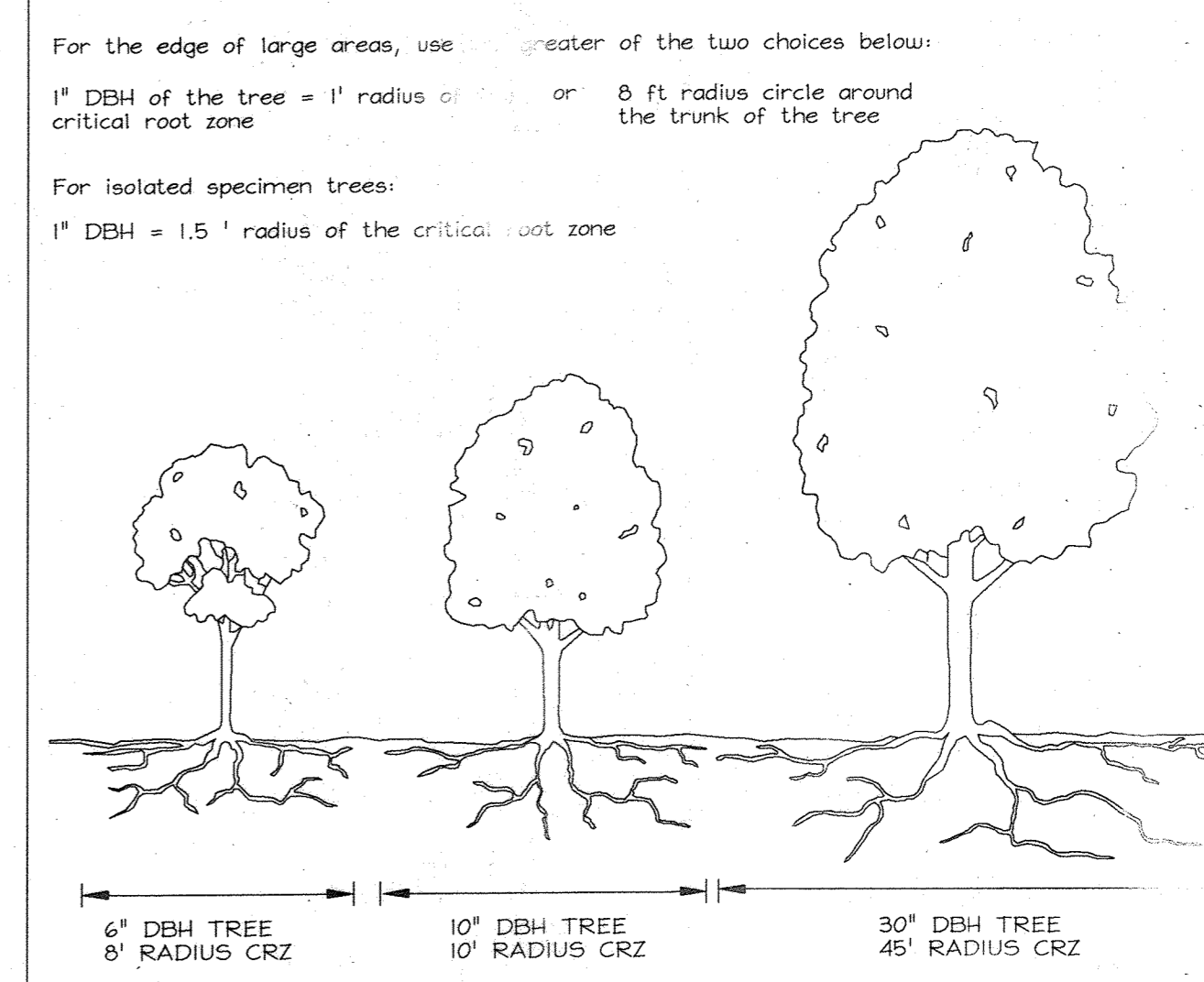
- All proposed activities shall adhere to the conditions, schedules and terms of the approved sediment control and erosion plan.
- After the boundaries of the retention area have been staked and flagged and before any disturbance has taken place on-site, a preconstruction meeting at the construction site shall take place. The developer, contractor or project manager, and appropriate County Inspectors shall attend.
- Tree protection for all retained areas:
 - All retention areas within 50 feet of proposed construction activities shall be protected by highly visible, well anchored temporary protection devices (silt fence or blaze orange plastic mesh).
 - All protection devices shall be in place prior to any grading or land clearing.
 - All protection devices shall be properly maintained and shall remain in place until construction has ceased.
 - Attachment of signs, fencing or other objects to trees is prohibited.
 - No equipment, machinery, vehicles, materials or excessive pedestrian traffic shall be allowed within protected areas.
- If the critical root zone (see detail) is affected by construction activities such as grade change, digging for foundations and roads or utility installation:
 - Prune roots with a clean cut using proper pruning equipment (see root pruning detail).
 - Water and fertilize as needed.
- During construction phase, monitor and correct condition of retained trees for soil compaction, root injury, flood conditions, drought conditions and other stress signs.
- Post-Construction Phase:
 - Inspect existing trees around the perimeter of disturbed limits for evidence of soil compaction, root injury, limb injury, or other stress signs and correct with proper management techniques such as root or limb pruning, soil aeration, fertilization, crown reduction or watering. Inspection and evaluation shall be performed by a licensed arborist.
 - Inspect for dead or dying trees or limbs which may pose safety hazard and remove.
 - No burial of discarded materials will occur onsite within the conservation areas.
 - No burning within 100 feet of wooded area.
 - All temporary forest protection structures will be removed after construction.
 - Following completion of construction, prior to use, the County inspector shall inspect the entire area.

ROOT PRUNING

- Retention areas shall be set prior to construction
- Boundaries of retention areas shall be flagged, and location of trench shall be specified by ERI Qualified Professional.
- Roots shall be cut cleanly with root pruning equipment. Where roots > 1" are found, trenching shall be done by air spade or hand tools. Roots > 1" shall be cut with a hand saw.
- Trench shall be immediately backfilled with soil removed or high organic content soil.
- Any other techniques shall be approved by the ERI Qualified Professional before implementation.



CRITICAL ROOT ZONE

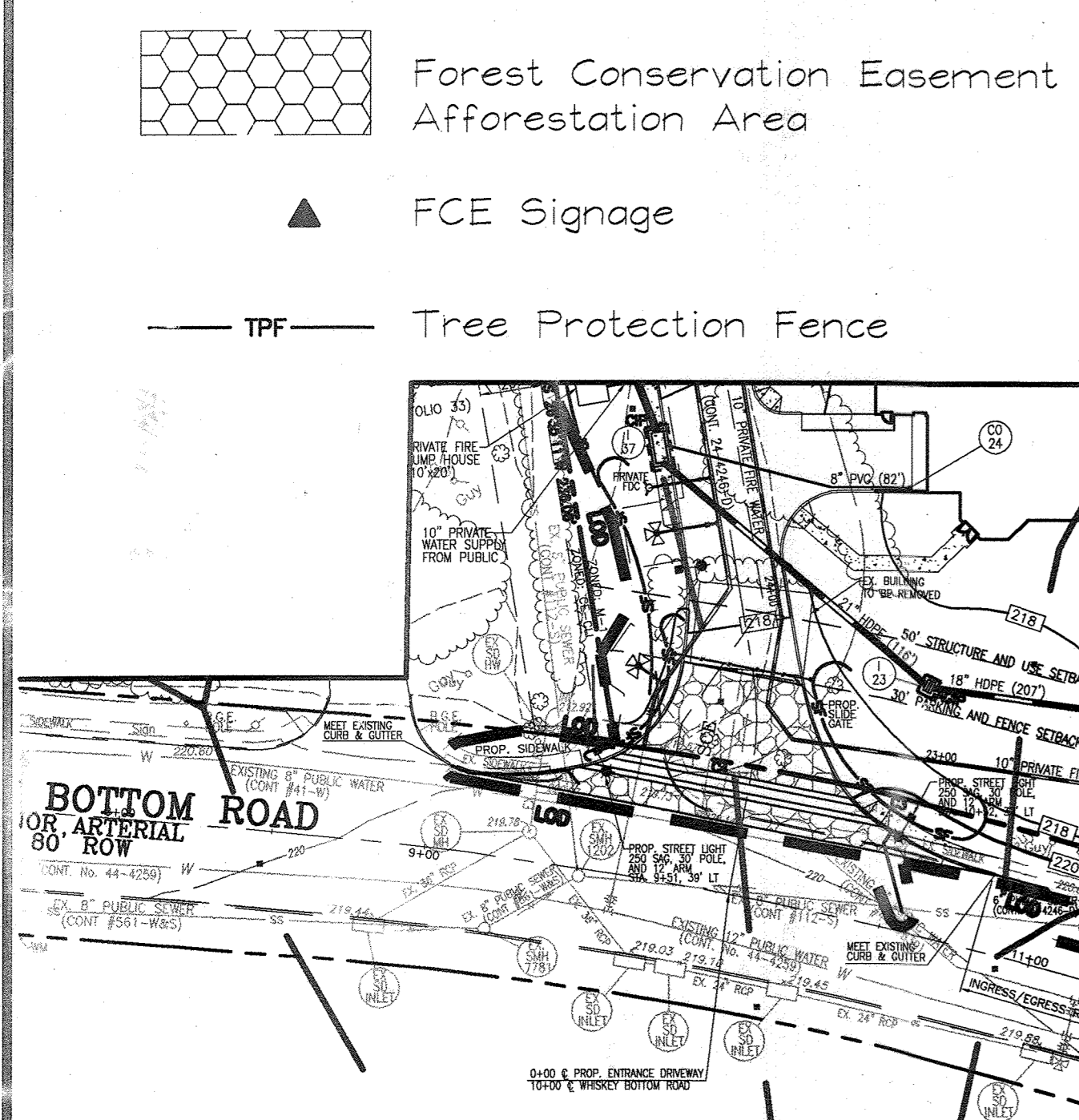


Soil Protection Zone Notes

- The Soil Protection Zone shall include all areas contained inside the Limit of Disturbance.
- Where possible, the Soil Protection Zone shall extend to the drip line of specimen trees. For other groups of trees, the zone shall be the drip line or 40% of the height of the tree, whichever is greater.
- No construction activity is permitted within the Soil Protection Zone.
- If soil has been compacted or grading has taken place in the vicinity of the Soil Protection Zone, root pruning shall be implemented per Root Pruning detail, shown on this plan.
- Root pruning shall occur prior to the beginning of construction.
- Where the Soil Protection Zone must encroach inside the Critical Root Zone of a tree, soil disturbance shall be mitigated with vertical mulching, radial trenching, or another method approved by the ERI Forest Conservation Professional.
- Prior to construction, the Limits of Disturbance shall be marked and the ERI Professional shall determine which trees will need preventative treatment or removal.
- Tree maintenance and removal shall be undertaken by a qualified MD Tree Expert to ensure damage to surrounding trees is minimized.
- Brush and limbs removed for construction shall be chipped and spread at the edge of the Soil Protection Zone to a depth of 6 inches. This shall occur outside the Soil Protection Zone where compaction could impact otherwise unprotected Critical Root Zone.

LEGEND

- Forest Conservation Easement Afforestation Area
- FCE Signage
- Tree Protection Fence



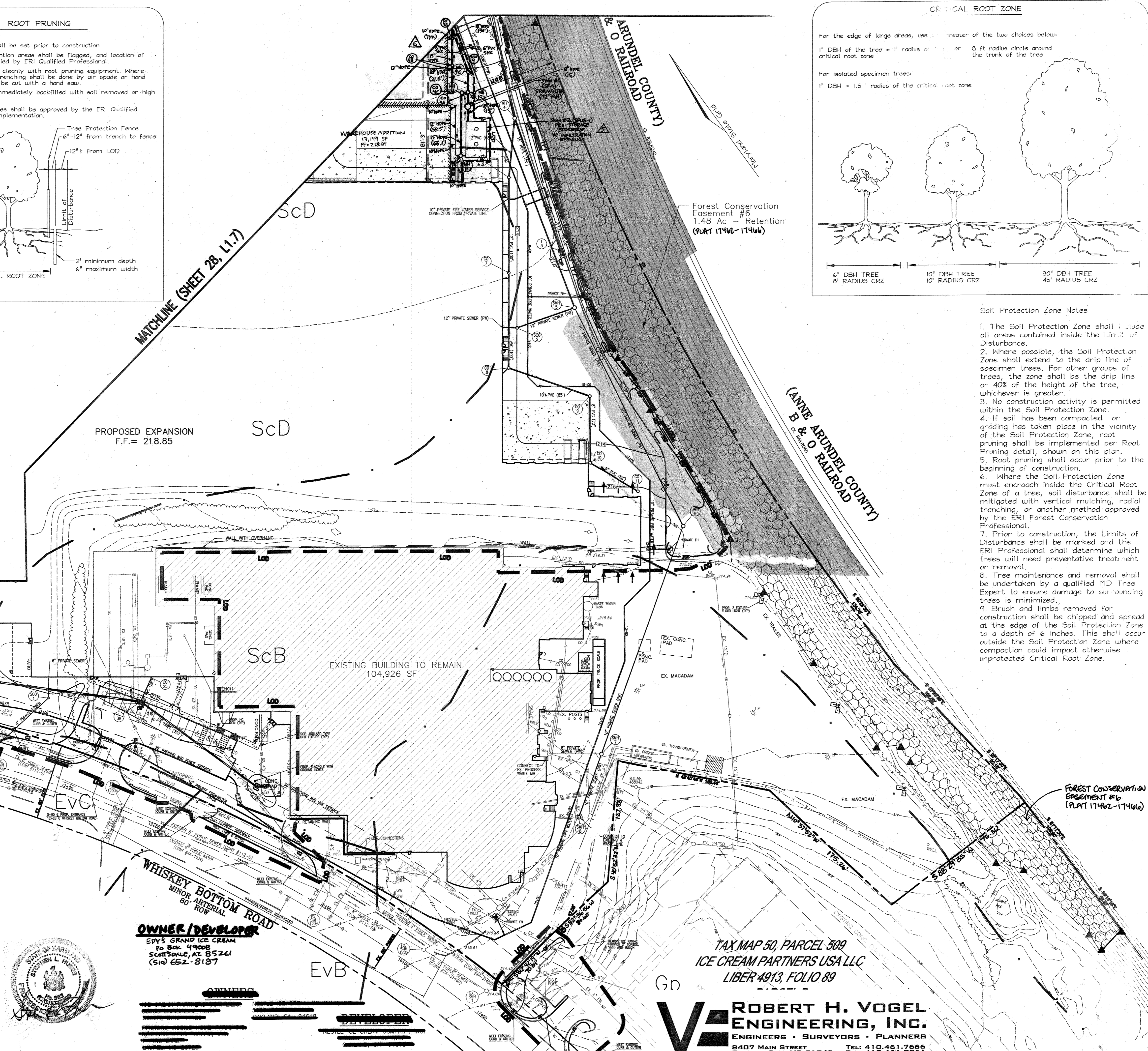
Forest Conservation Plan by:

EXPLORATION RESEARCH, INC.
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS
 8018 FORREST STREET
 ELICOTT CITY, MARYLAND 21043
 TEL: (410) 750-1150 FAX: (410) 750-7350
 EMAIL: EXPLORATION@EXR.COM

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County Seal

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 5/25/05
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 6/2/05
 DIRECTOR: *[Signature]* DATE: 6/2/05



OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 c/o B&W 4TH FLOOR
 SCOTTSDALE, AZ 85261
 (602) 652-8187

TAX MAP 50, PARCEL 509
 ICE CREAM PARTNERS USA LLC
 LIBER 4913, FOLIO 89

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

REV	DATE	BY	APP.	RELEASED FOR
1	05-25-05	DE		
2	01-05-22	TS		
3	06-24-22	TS		
4	10-12-22	TS		

DREYER'S GRAND ICE CREAM
 9080 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

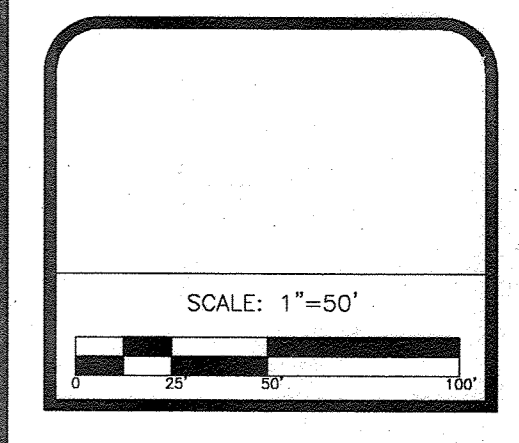
Dreyer's

FOREST CONSERVATION PLAN

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1391 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01103
 413-787-1785 • FAX 413-787-1786

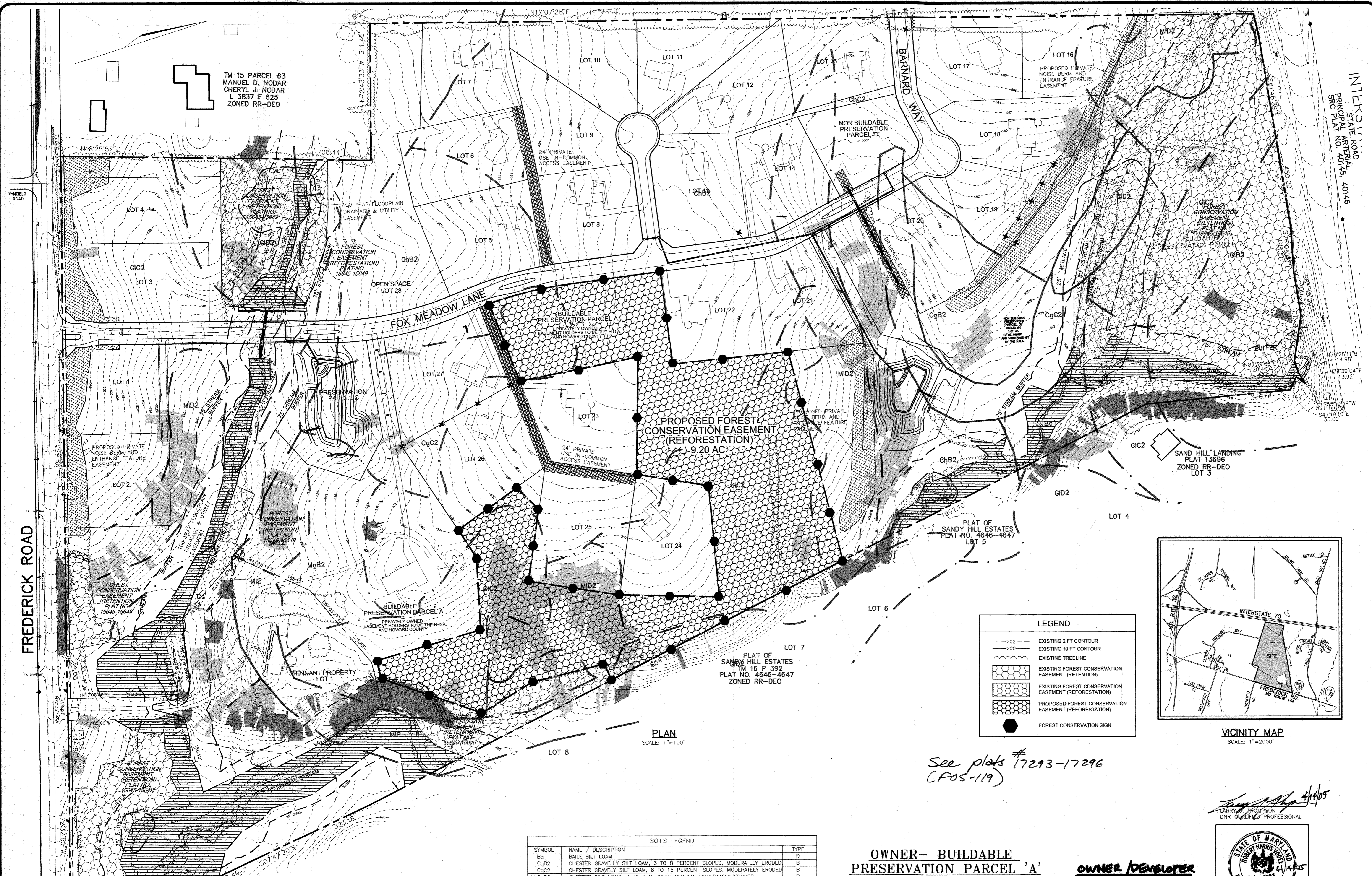
136 SOUTH MAIN STREET
 SALT LAKE CITY, UTAH 84101
 801-531-8585 • FAX 801-531-8586



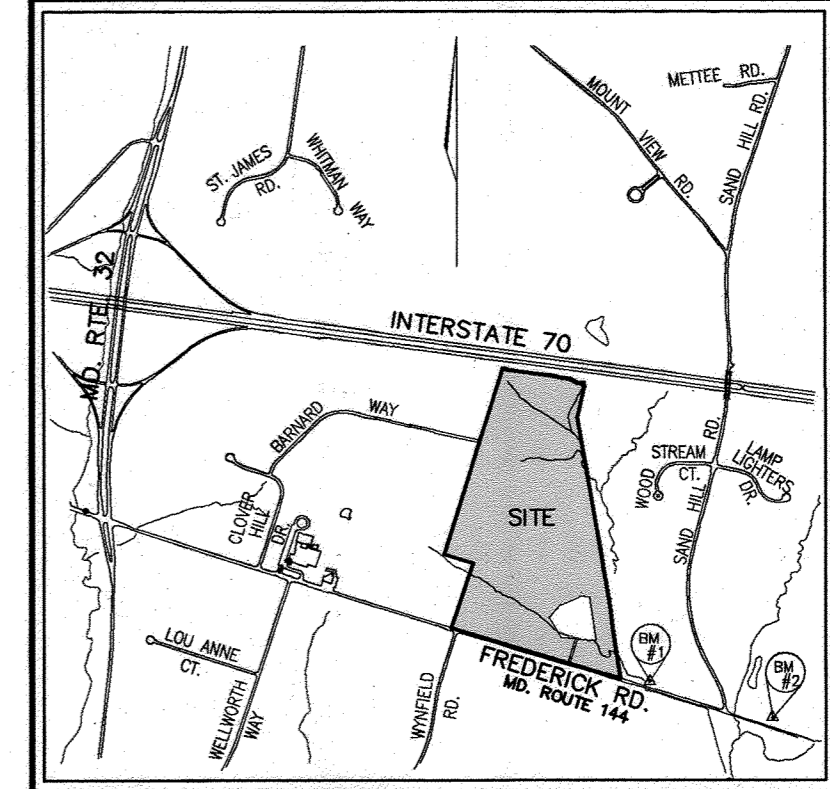
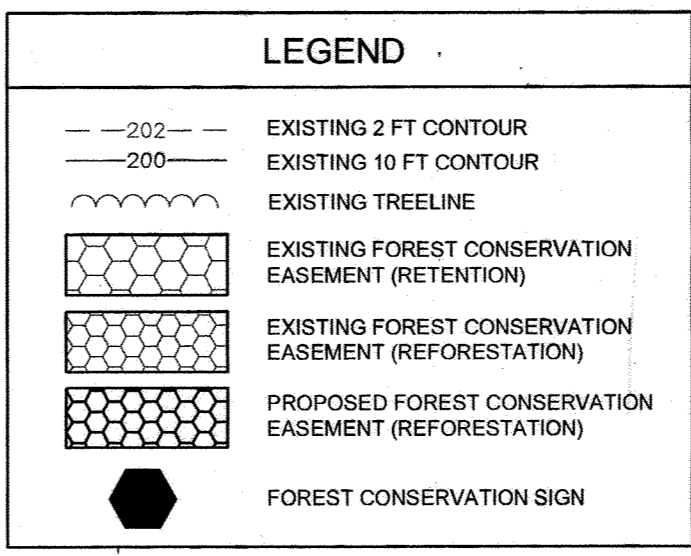
DRAWING NO.
L1.8

HO. CO. DPZ SHEET:
 29 OF 40

SDP-05-40



PLAN
SCALE: 1"=100'



See plats #17293-17296
(F05-119)

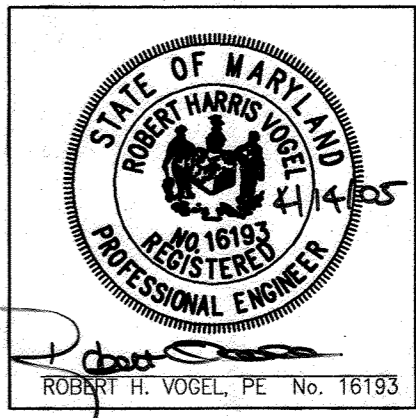
SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	TYPE
B	BAILE SILT LOAM	D
CgB2	CHESTER GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
CgC2	CHESTER GRAVELLY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
ChB2	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
ChC2	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
Cs	COMUS SILT LOAM	B
GIB2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GIC2	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
GID2	GLENELG LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	B
GnB2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MID2	MANOR LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	B
MIE	MANOR LOAM, 25 TO 45 PERCENT SLOPES	B
MgB2	MANOR GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B

NOTE:
-HOWARD SOIL SURVEY, MAP NUMBER 8

**OWNER- BUILDABLE
PRESERVATION PARCEL 'A'**

RICHARD W. TENNANT
MARY L. TENNANT (DECEASED)
12256 FREDERICK ROAD
ELLICOTT CITY, MARYLAND
21042

OWNER/DEVELOPER
DREYER'S GRAND ICE CREAM
PO BOX 4900 E
SCOTTSDALE, AZ 85261
(510) 652-8187



**ROBERT H. VOGEL
ENGINEERING, INC.**
ENGINEERS • SURVEYORS • PLANNERS
840 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410-461-7666
FAX: 410-461-8966

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/2/05

 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/2/05

 DIRECTOR
 DATE: 6/2/05

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

 SIGNATURE OF DEVELOPER
 DATE: 4-14-05

REV.	DATE	BY	APP.	RELEASED FOR
1	5-25-04	DZ		
3	04-05-22	TS		
6	10-12-22	TS		

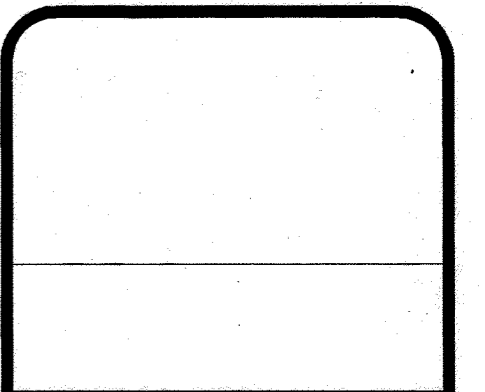
DREYER'S GRAND ICE CREAM
 9090 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

OFF-SITE PLANTING PLAN

THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

1391 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01103
 413-787-1785, FAX 413-787-1786

136 SOUTH MAIN STREET
 SALT LAKE CITY, UTAH 84101
 801-531-8585, FAX 801-531-8586



DRAWING NO.
L1.9
 HO. CO. DPZ SHEET:
 30 OF 40

FOREST CONSERVATION NARRATIVE

THIS FOREST CONSERVATION PLAN WAS PREPARED IN ACCORDANCE WITH THE HOWARD COUNTY FOREST CONSERVATION MANUAL.

THIS PLAN PROVIDES OFF-SITE PLANTING FOR DREYERS GRAND ICE CREAM. REQUIRED PLANTING IS 9.45 ACRES AND WILL BE FULFILLED BY PLANTING 9.20 ACRES WITHIN A FOREST CONSERVATION EASEMENT LOCATED ON THE FOX CREEK SUBDIVISION, PRESERVATION PARCEL A, TAX MAP 15; AND BY A FEE-IN-LIEU PAYMENT OF \$5,4550.00 FOR THE REMAINING 0.25 ACRES.

THE 9.20 ACRE PLANTING AREA IS LOCATED ON PRESERVATION PARCEL A AND BORDERS LOTS 22-26 AND PRESERVATION PARCEL B. THE AREA IS CONTIGUOUS WITH AN EXISTING FOREST RETENTION EASEMENT ONSITE AND TREELINE ON THE ADJACENT PROPERTY. THIS AREA WILL EXPAND THE EXISTING FOREST HABITAT WHICH INCLUDES WETLANDS AND A PERENNIAL STREAM AND WILL PROVIDE A BUFFER BETWEEN THE EXISTING DEVELOPMENT AND ENVIRONMENTALLY SENSITIVE AREAS.

PLANTINGS SHALL OCCUR USING THE STOCK SIZE SHOWN ON THE PLANTING SCHEDULE. HOWEVER IF DUE TO SEASONAL VARIABILITY THE PRESCRIBED SIZE OR SPECIES ARE NOT AVAILABLE, SUBSTITUTIONS MAY BE MADE IF APPROVED BY HOWARD COUNTY PRIOR TO INSTALLATION.

THE TOTAL FOREST CONSERVATION OBLIGATION MEET ON THIS SITE IS 9.20 ACRES, WITH A TOTAL FOREST CONSERVATION SURETY AMOUNT OF \$200,376.00. (400,752 SF X \$0.50 = \$200,376.00)

PLANT SELECTION AND DENSITY SPACING REQUIREMENTS

PLANTING MATERIAL SIZE AND DENSITY PLANTING:

PLANTING SIZE AND DENSITY MAY VARY WITH A COMBINATION OF PLANTING STOCK WHICH WILL BE DETERMINED AT THE TIME OF PLANTING. PLANTING QUANTITY AND SPACING ARE BASED ON SQUARE FOOTAGE CREDIT, WHICH VARIES BY MATERIAL SIZE. A TOTAL OF 43,560 SF OF PLANTING CREDIT MUST BE FULFILLED FOR EACH ACRE PLANTED. THIS CREDIT CAN BE FULFILLED WITH ANY COMBINATION OF MATERIAL SIZE IN ACCORDANCE WITH THE FOLLOWING CHART.

PLANT MATERIAL SIZE TABLE

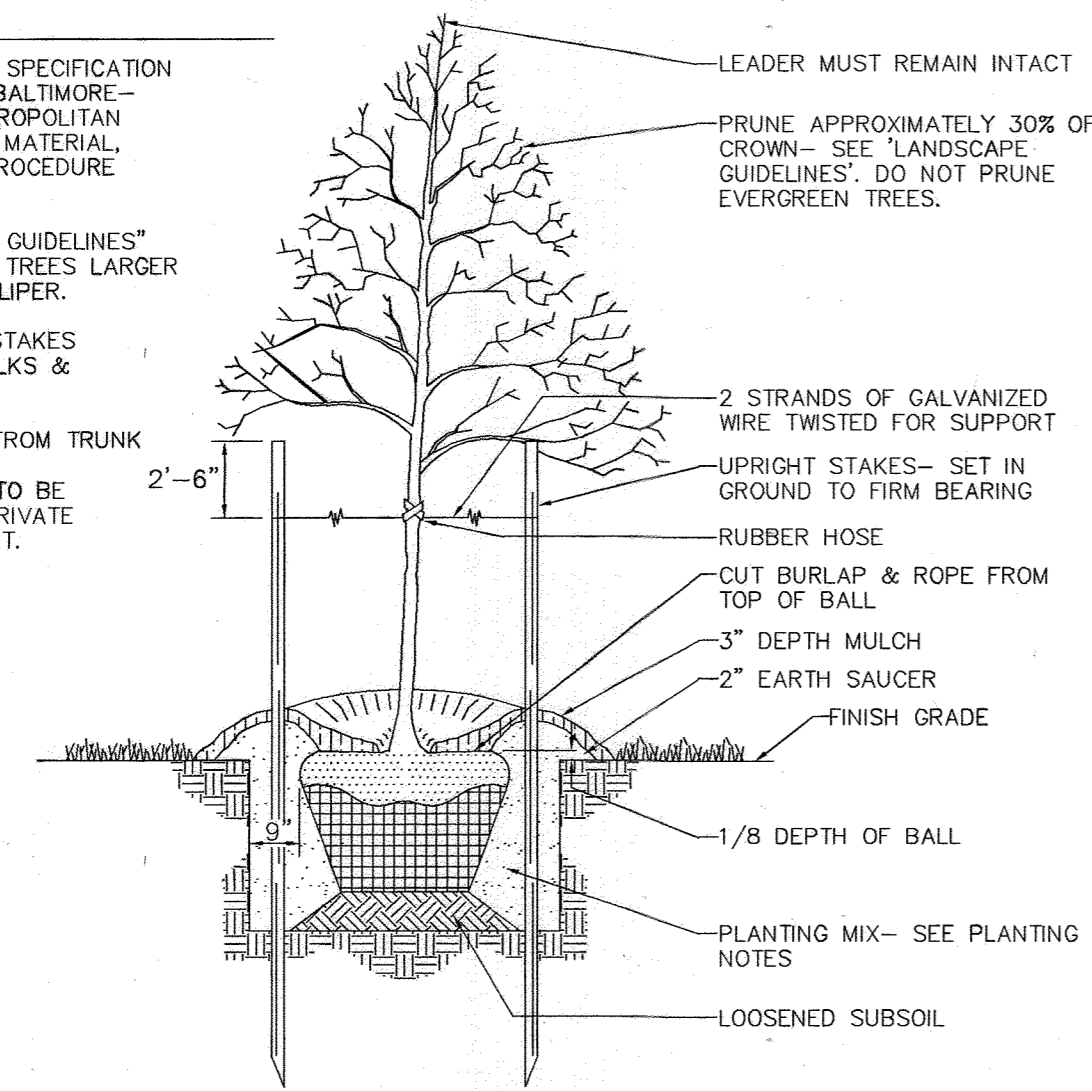
MATERIAL SIZE	SPACING	TPA	SF CREDIT PER PLANT	COMMENTS
2" CALIPER TREES	20' X 20'	100	435.6	B & B
1" CALIPER TREES	15' X 15'	200	217.8	B & B
SEEDLINGS OR WHIPS	11' X 11'	350	125	CONTAINER 1-3 GAL. W/ TREE SHELTERS
SEEDLINGS	8' X 8'	700	62	BARE ROOT OR CONTAINER GROWN

FOREST CONSERVATION EASEMENT: 9.20 AC (200 TPA)

QTY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	NOTES	
263	ACER RUBRUM	RED MAPLE	1" CAL.	15' O.C.	1" CAL. BALLED AND BURLAPED	
263	LIQUIDAMBAR STYRACIFLUA	SWEETGUM	1" CAL.	15' O.C.		
263	PLATANUS OCCIDENTALIS	SYCAMORE	1" CAL.	15' O.C.		
263	QUERCUS PALUSTRIS	PIN OAK	1" CAL.	15' O.C.		
263	CERCIS CANADENSIS	REDBUD	1" CAL.	15' O.C.		
263	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	1" CAL.	15' O.C.		
262	PINUS TAEDA	LOBLOLLY PINE	1" CAL.	15' O.C.		
1840	TOTAL PLANTINGS					

NOTES

- SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
- SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
- PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
- KEEP MULCH 1" FROM TRUNK
- TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TREE PLANTING AND STAKING

TREES UP TO 2-1/2" CALIPER NOT TO SCALE

LONG TERM FOREST MANAGEMENT

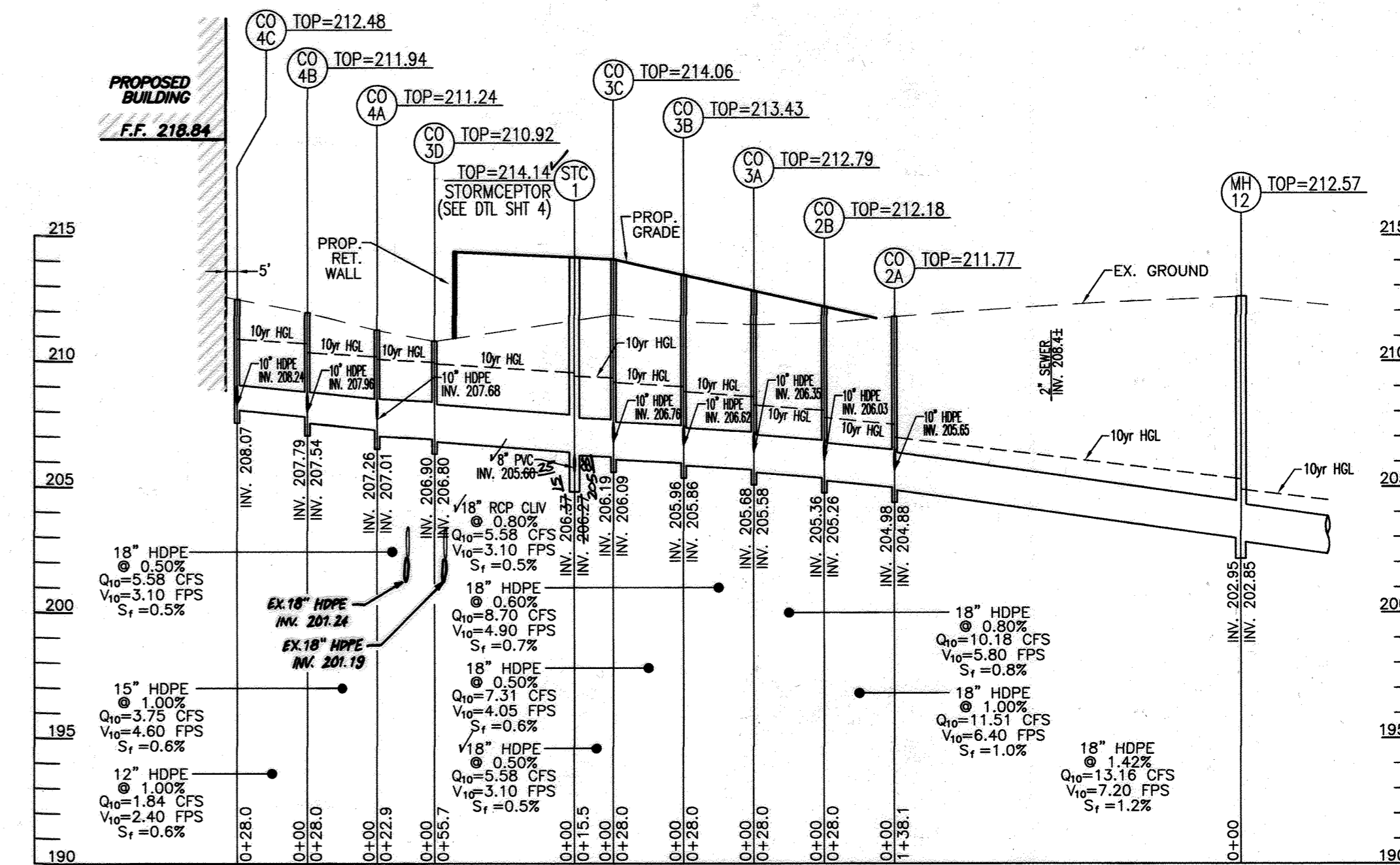
PLANTED AREAS MAY BE MANAGED FOR AESTHETICS, WILDLIFE, TIMBER PRODUCTS AND WATERSHED PROTECTION IN ACCORDANCE WITH SOUND FOREST MANAGEMENT PRACTICES. CONTROL OF INVASIVES SUCH AS MULTIFLORA ROSE AND HONEYSUCKLE WILL BE CRUCIAL DURING THE ESTABLISHMENT YEARS. A FOREST MANAGEMENT PLAN SHOULD BE DEVELOPED BY A MARYLAND REGISTERED FORESTER FOR RECOMMENDATIONS BEYOND THE INITIAL 5-YEAR ESTABLISHMENT PERIOD.

REFORESTATION MONITORING NOTES

- MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT SUMMER KILL.
- THE MINIMUM SURVIVAL RATE SHALL BE 75% OF THE TOTAL NUMBER OF TREES PLANTED PER ACRE AT THE END OF THE TWO YEAR MAINTENANCE PERIOD. WILD TREE SEEDLINGS FROM NATURAL REGENERATION ON THE PLANTING SITE MAY BE COUNTY UP TO 50% TOWARD THE TOTAL SURVIVAL NUMBER IF THEY ARE HEALTHY NATIVE SPECIES AT LEAST 12 INCHES TALL.
- SURVIVAL WILL BE DETERMINED BY A STRATIFIED RANDOM SAMPLE OF THE PLANTINGS. THE SPECIES COMPOSITION OF THE SAMPLE POPULATION SHOULD BE PROPORTIONATE TO THE AMOUNT OF EACH SPECIES IN THE ENTIRE PLANTING TO BE SAMPLED.
- EFFECTIVE MONITORING WILL ASSESS PLANT SURVIVABILITY DURING THE FIRST GROWING SEASON AND MAKE RECOMMENDATIONS FOR REINFORCEMENT PLANTING IF REQUIRED AT THE TIME.

REFORESTATION AREA PLANTING NOTES

- INITIAL PLANTING INSPECTION AND CERTIFICATION REQUIRED.
- REFORESTATION AREAS MAY BE PLANTED AS SOON AS REASONABLE TO DO SO. LATE WINTER - EARLY SPRING PLANTINGS ARE PREFERRED. EARLIEST PLANTING DATES WILL VARY FROM YEAR TO YEAR BUT PLANTING MAY GENERALLY BEGIN AS SOON AS THE GROUND IS NO LONGER FROZEN. ALTERNATE PLANTING DATES MAY BE CONSIDERED AS CONDITIONS WARRANT.
- SOIL AMENDMENTS AND FERTILIZATION RECOMMENDATIONS WILL BE MADE BASED UPON THE RESULTS OF SOIL ANALYSIS FOR NITROGEN, PHOSPHORUS, POTASSIUM, ORGANIC MATTER CONTENT AND PH. I IF REQUIRED, FERTILIZER WILL BE PROVIDED USING A SLOW RELEASE, SOLUBLE 16-8-16 ANALYSIS DESIGNED TO LAST 5-8 YEARS CONTAINED IN POLYETHYLENE PERFORATED BAGS SUCH AS MANUFACTURED BY ADCO WORKS, P.O. BOX 310 HOLLIS, NY 11423 OR APPROVED EQUAL.
- PLANT MATERIALS SHALL BE PLANTED IN ACCORDANCE WITH THE PLANTING DIAGRAM, PLANTING DETAILS AND PLANTING SCHEDULE.
- PLANT STOCK MUST BE PROTECTED FROM DESICCATION AT ALL TIMES PRIOR TO PLANTING. MATERIALS HELD FOR PLANTING SHALL BE MOISTENED AND PLACED IN COOL SHADED AREAS UNTIL READY FOR PLACEMENT.
- PLANTING MATERIALS SHALL BE NURSERY GROWN AND INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO THE AMERICAN STANDARDS FOR NURSERY STOCK SPECIFICATIONS FOR SIZE, FORM, VIGOR, OR ROOTS, OR DUE TO TRUNK WOUNDS, BREAKAGE, DESICCATION, INSECT OR DISEASE MUST BE REPLACED.
- ALL STOCK TO BE CONTAINER GROWN WITH DEER REPELLENT TABLETS IN GROWING MEDIUM SUCH AS "REPELLEX."
- NEWLY PLANTED TREES MAY REQUIRE WATERING AT LEAST ONCE PER WEEK DURING THE FIRST GROWING SEASON DEPENDING ON RAINFALL IN ORDER TO GET ESTABLISHED. THE INITIAL PLANTING OPERATION SHOULD ALLOW FOR WATERING DURING INSTALLATION TO COMPLETELY SOAK BACKFILL MATERIALS.
- MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE DIAGRAM PROVIDED AND SHALL CONSIST OF COMPOSTED, SHREDDED HARDWOOD BARK MULCH, FREE OF WOOD ALCOHOL.
- PLANTING HOLES SHOULD BE EXCAVATED TO A MINIMUM DIAMETER OF 2.5 TO 3 TIMES THE DIAMETER OF THE ROOT BALL OR CONTAINER. MECHANICAL AUGURING IS PREFERRED WITH SCARIFICATION OF THE SIDES OF EACH HOLE.



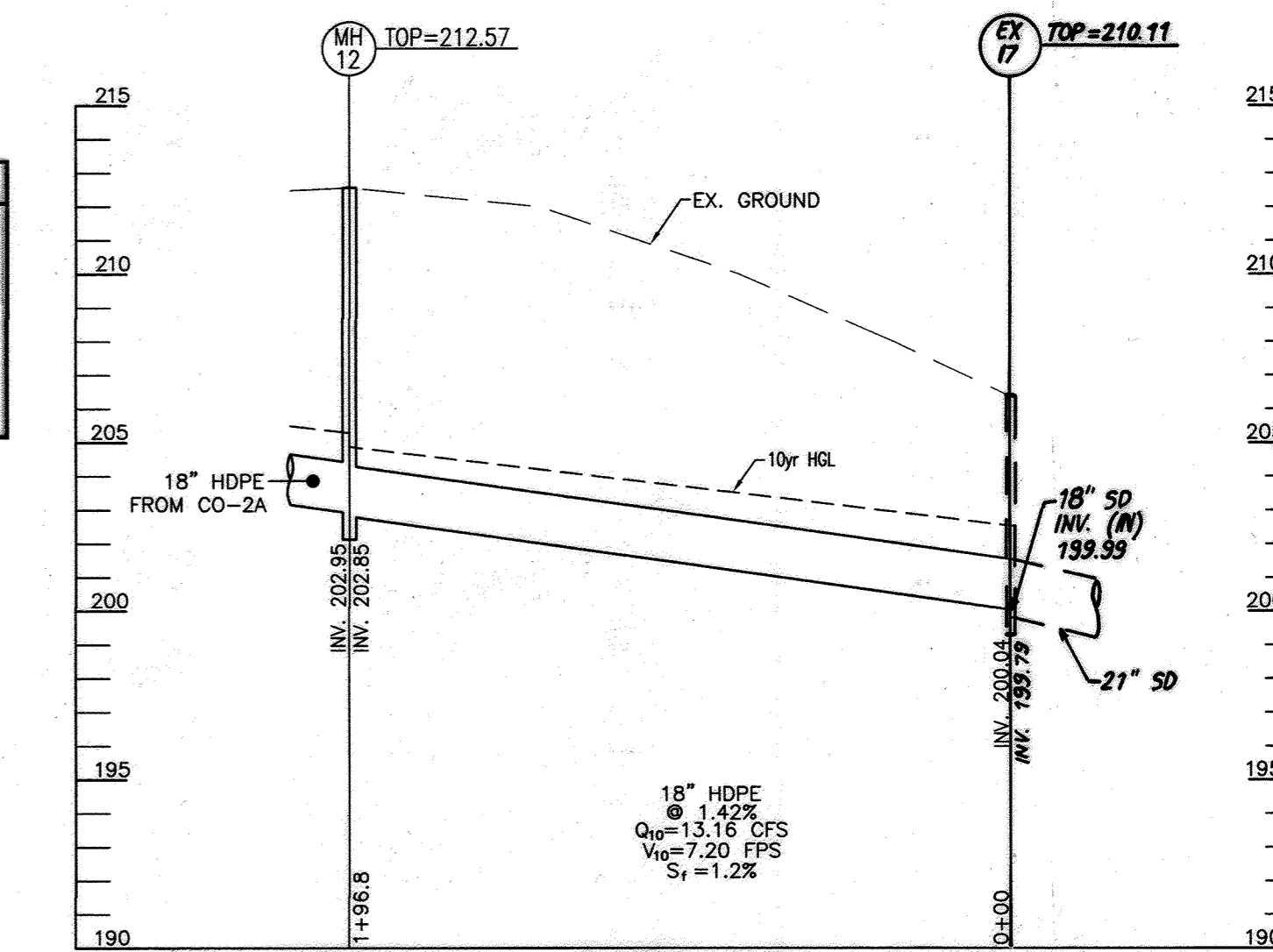
STORM DRAIN PROFILE (CO-4C TO MH-12)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

PRIVATE SD PIPE SCHEDULE

Size	Class	Total Length *
8"	PVC (SOLID)	13
8"	PVC (PERF.)	80
10"	HDPE	60
12"	HDPE	28
15"	HDPE	28
18"	RCP	56
18"	HDPE	485

* The total length of pipe is linear feet only.

HDPE is to be smooth interior. Contractor shall install pipe in accordance with manufacturer's specifications

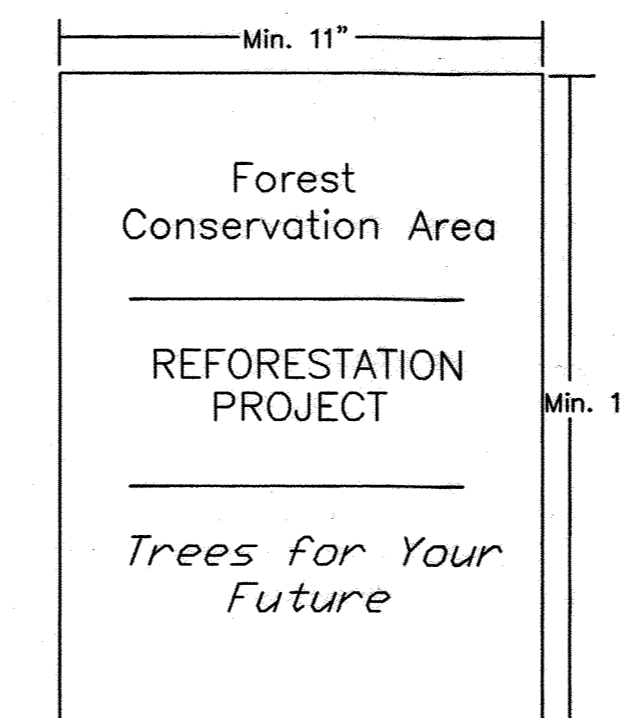


STORM DRAIN PROFILE (MH-12 TO EX I-7)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

STORM DRAIN STRUCTURE SCHEDULE (PRIVATE)

STR #	TYPE	INV. IN	INV. OUT	TOP ELEV	DETAIL	LOCATION	REMARKS
MH-12	4" MANHOLE	202.95	202.85	212.57	G-5.12	E= 1361730.88 N= 5278013.96	
STC-1	STORMCEPTOR (STC300)	206.87	205.88	214.11		E= 1361595.51 N= 527800.08	SEE DTL SHEET 04
CO-2A	CLEANOUT	204.98 / 205.65	204.88	211.77		E= 1361650.11 N= 527901.97	
CO-2B	CLEANOUT	205.38 / 206.03	205.28	212.18		E= 1361633.73 N= 527879.28	
CO-3A	CLEANOUT	205.68 / 206.33	205.58	212.79		E= 1361617.25 N= 527836.55	
CO-3B	CLEANOUT	205.98 / 206.62	205.88	213.43		E= 1361600.98 N= 527833.84	
CO-3C	CLEANOUT	206.19 / 206.76	206.09	214.06		E= 1361584.80 N= 527811.13	
CO-3D	CLEANOUT	206.30	206.20	210.92		E= 1361634.60 N= 527769.45	
CO-4A	CLEANOUT	207.28 / 207.88	207.01	211.24		E= 1361621.31 N= 527741.91	
CO-4B	CLEANOUT	207.70 / 207.96	207.54	211.94		E= 1361604.93 N= 527719.20	
CO-4C	CLEANOUT	208.24	208.07	212.48		E= 1361588.55 N= 527696.49	

REFORESTATION PROTECTION SIGNAGE



- NOTE:
- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
 - SIGNS TO BE PLACED APPROXIMATELY 100' FEET APART.
 - ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/23/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 6/16/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 6/16/05
DIRECTOR DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[Signature] 4/14/05
SIGNATURE OF DEVELOPER DATE

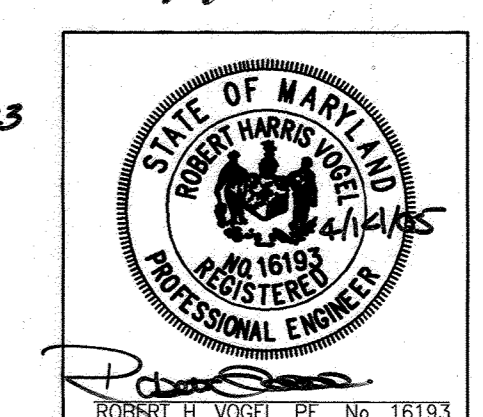
OWNER/DEVELOPER

EDYS GRAND ICE CREAM
PO BOX 4900E
SCOTTSDALE, AZ 85261
(516) 652-8187

AS-BUILT CERTIFICATION FOR PSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS IN COMPLIANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.

[Signature] 16193 7-25-23
PE NAME P.E.# DATE



ROBERT H. VOGEL ENGINEERING, INC.

ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

REVISIONS

NO.	DATE	BY	APP.	RELEASED FOR
1	5-25-05	DPZ		
3	01-05-23	TS		
6	10-12-23	TS		

DREYERS GRAND ICE CREAM
9090 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

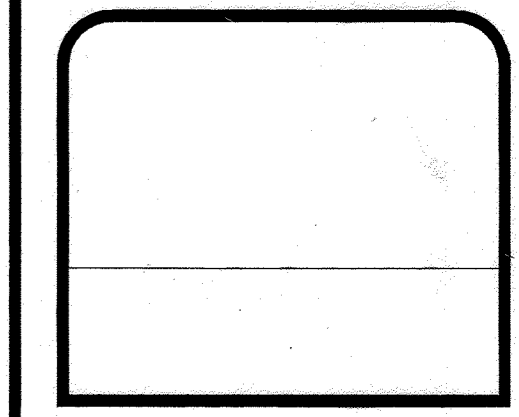
OFF-SITE PLANTING NOTES AND DETAILS

THE DENNIS GROUP, LLC

PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

136 SOUTH MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-757-1785 • FAX 413-787-1786

1901 MAIN STREET
SPRINGFIELD, MASSACHUSETTS 01103
413-757-1785 • FAX 413-787-1786

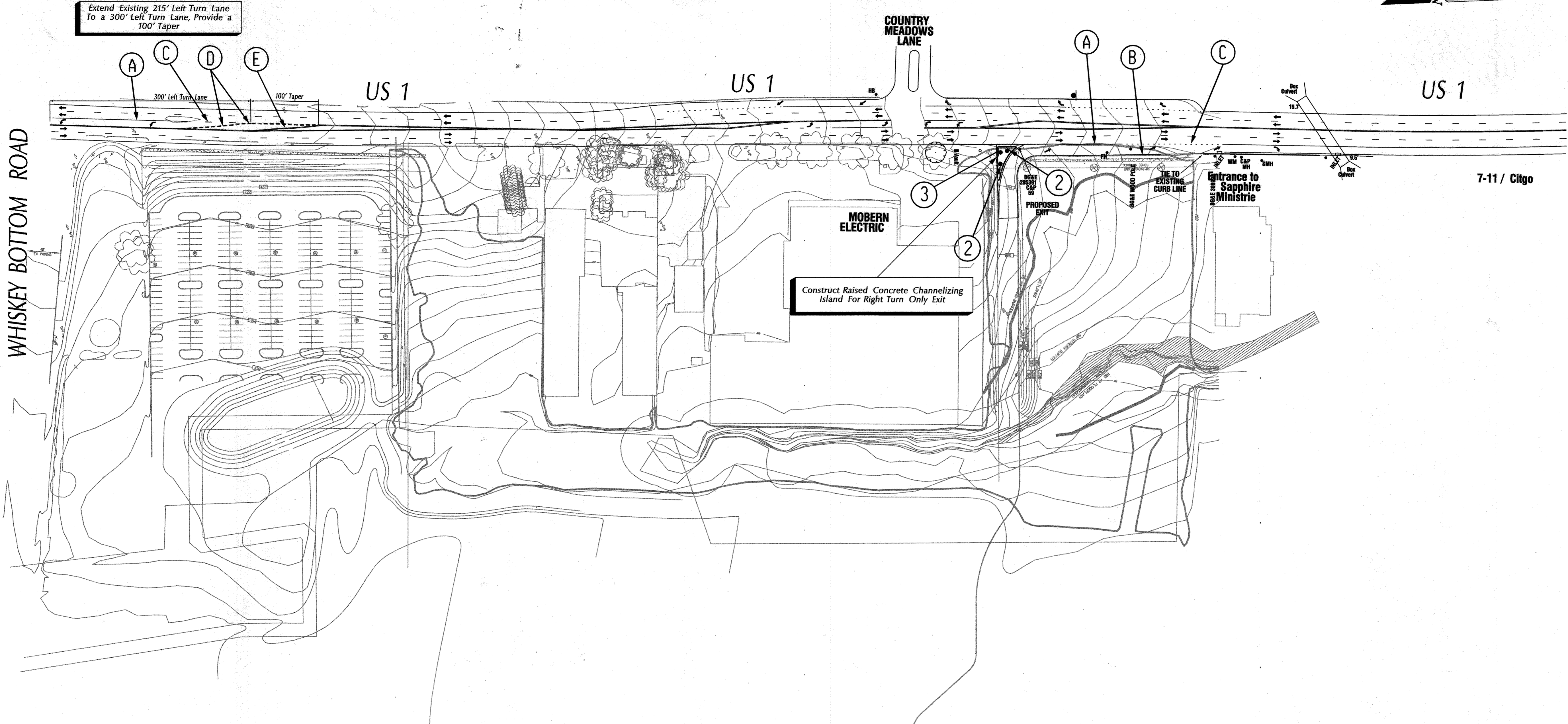


DRAWING NO. **L1.10**

HO. CO. DPZ SHEET: 31 OF 40

SDP-05-40

AS-BUILT JULY 2023



Extend Existing 215' Left Turn Lane To a 300' Left Turn Lane, Provide a 100' Taper

Construct Raised Concrete Channelizing Island For Right Turn Only Exit

NOTE: Existing Pavement Markings Are To Be Removed By Grinding.

	Quantities:
(A) Install 5 in. wide solid white pavement marking for lane line.	250 FT
(B) Install 5 in. wide solid white pavement marking for edge line.	250 FT
(C) Install 5 in. wide dotted white pavement marking. (3ft. segment - 9ft. gap) for lane line	30 FT
(D) Remove existing pavement markings by 200 FT grinding	100 FT
(E) Install 5 in. wide solid double yellow pavement marking for center line.	200 FT

	Quantities:
① R3-2 36x36	1 EA
② R3-2 30x30	1 EA
③ R3-1 36x36	1 EA

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE 5/25/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] DATE 6/2/06
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] DATE 6/4/06
 DIRECTOR

OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 4900E
 SCOTSDALE, AZ 85261
 (510) 652-8107

OWNER
 [Redacted]
 [Redacted]

DEVELOPER
 [Redacted]

Robert H. Vogel Engineering, Inc.
 Engineers • Surveyors • Planners
 8407 Main Street
 Ellicott City, Maryland 21043
 Tel: 410.461.7666 Fax: 410.461.8961



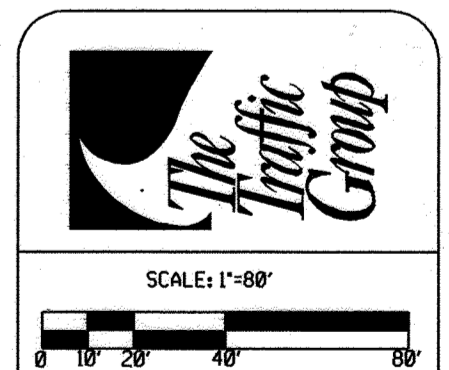
REVISED DRAWING	DATE	BY	APP.	REL.	DATE	BY	APP.	REL.
1	5-25-06	DZ						
3	01-05-22	TS	VTG					
6	10-12-22	TS	VTG					

9090 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

THE DENNIS GROUP, LLC
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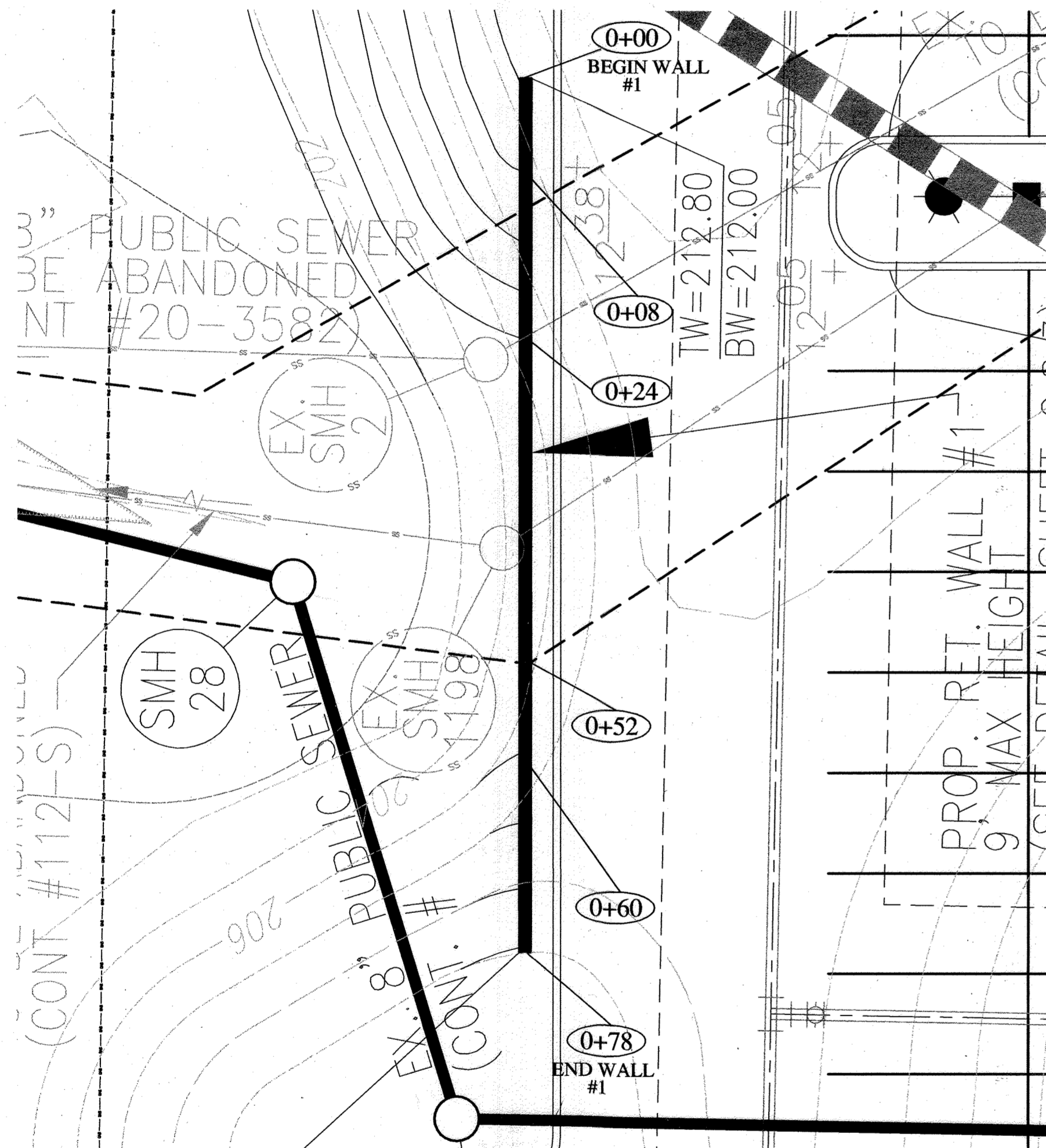
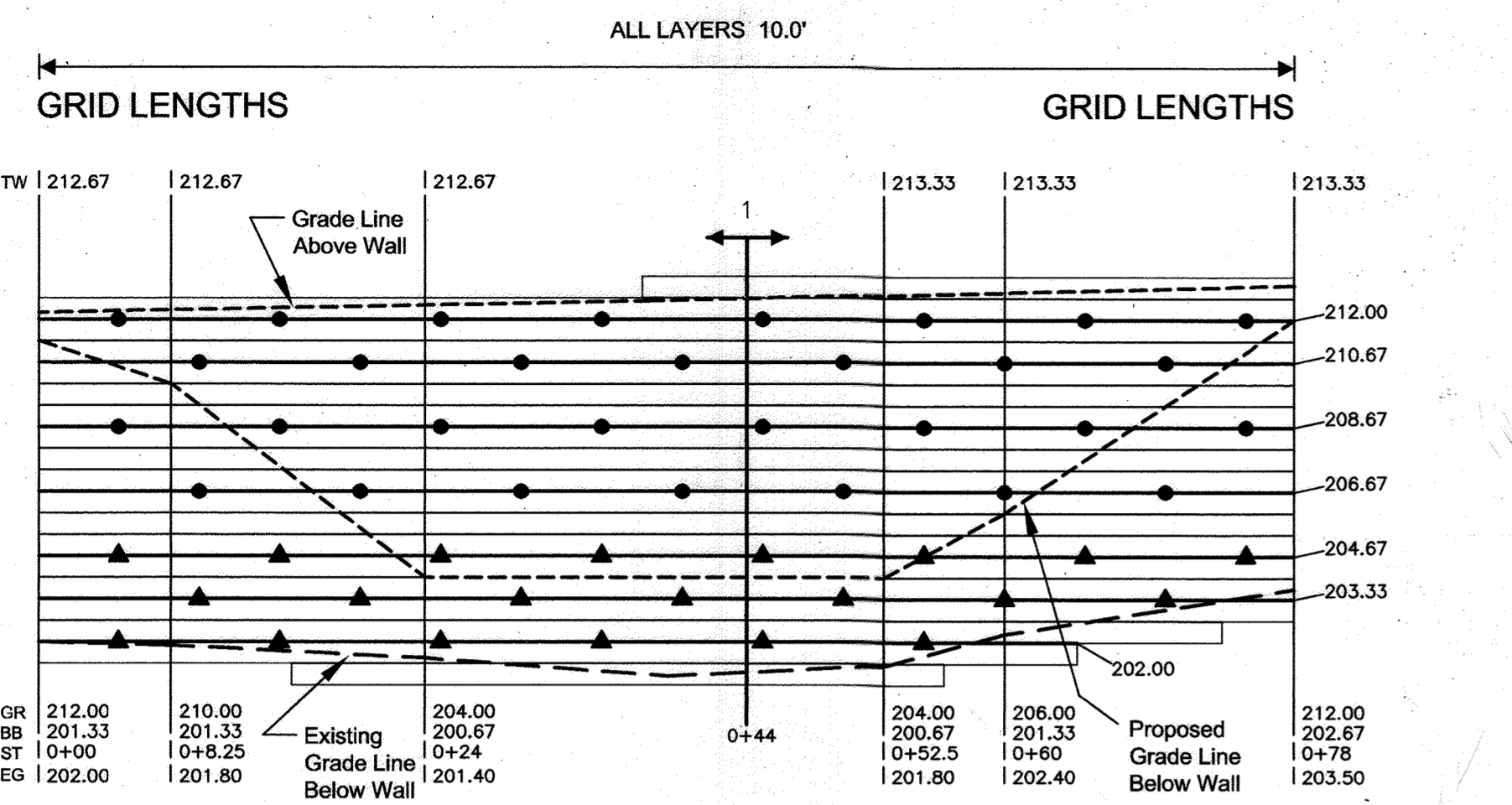
1391 Main Street
 Springfield, Massachusetts 01103
 413-787-1785 FAX 413-787-1786

135 South Main Street
 Salt Lake City, Utah 84101
 801-531-8585 FAX 801-531-8586



DRAWING NO.
C6.9
 HO. CO. DPZ. SHEET:
 32 OF 40
 SDP-05-40

WALL #1 (by parking lot at end of wetlands)



SCALE: 1" = 10'

TW = TOP OF WALL (NOT INCLUDING CAP)
 GR = PROPOSED FINISHED GRADE AT BASE OF WALL
 BB = BOTTOM OF BLOCK / TOP OF LEVELING PAD
 ST = WALL STATION
 EG = EXISTING GRADE

GRID KEY: MIRAFI 3XT
 MIRAFI 5XT

SCALE: HORIZONTAL 1" = 10'
 VERTICAL 1" = 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/25/05
Cinda Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/2/05
Robert H. Vogel
 DIRECTOR
 DATE: 6/2/05

RYAN & ASSOCIATES
 A Division of WKR Consulting, Inc.
RETAINING WALL DIVISION
 717-262-4242 fax 717-262-4245
 29 South Main Street, Suite A
 Chambersburg, PA 17201

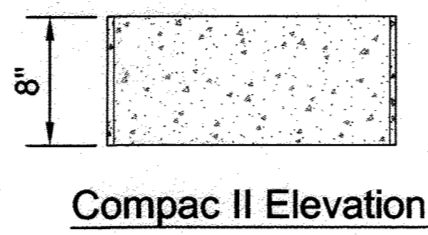
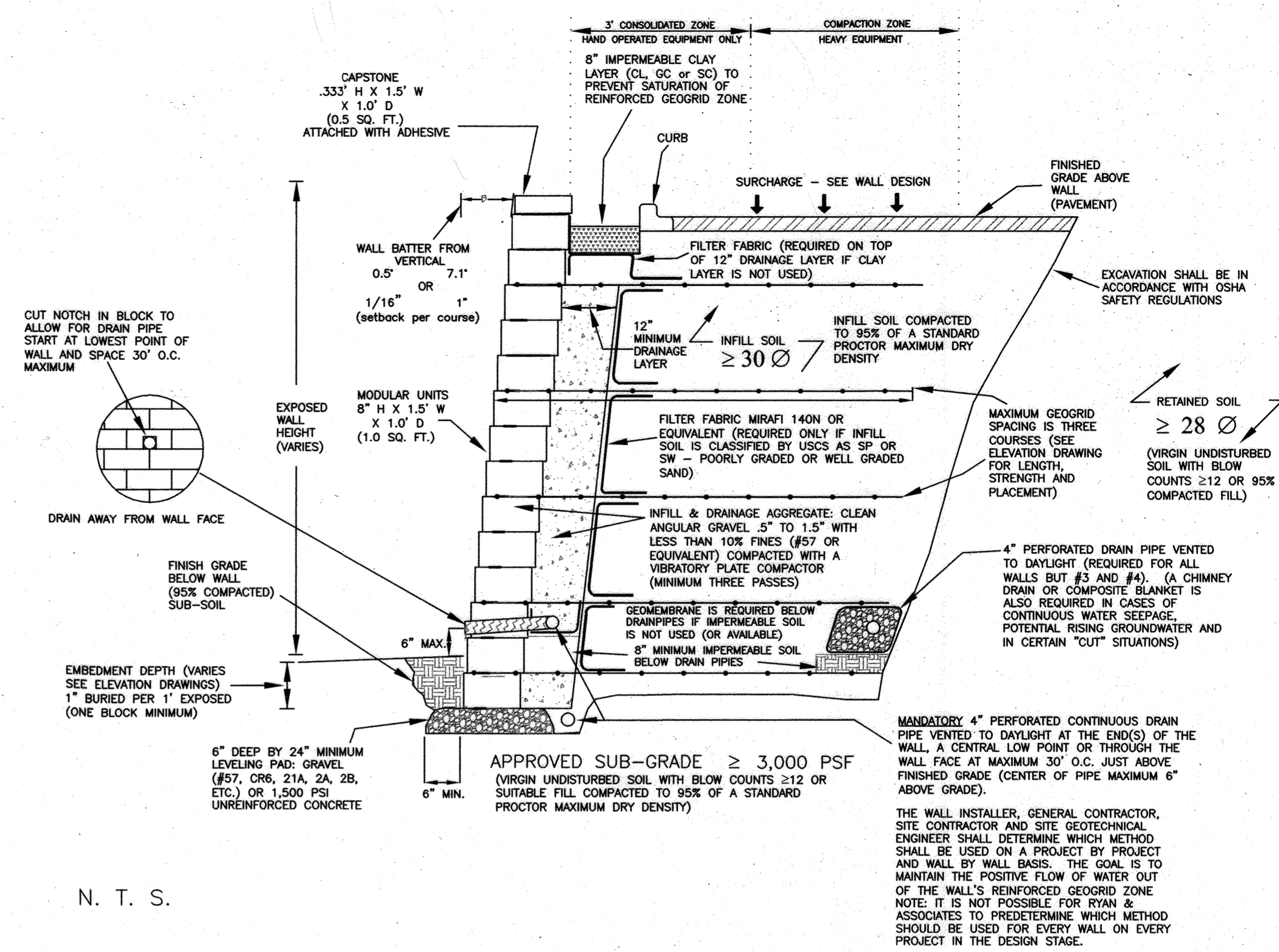
William K. Ryan
 Professional Engr. No. 21586

OWNER/DEVELOPER
 EDY'S GRAND ICE CREAM
 PO BOX 4900E
 SCOTTSDALE, AZ 85261
 (516) 652-8187

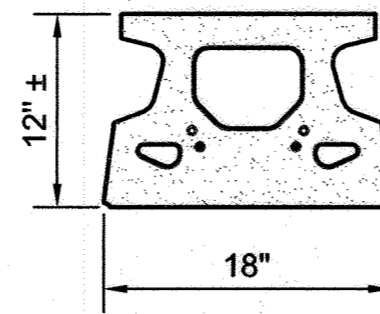
ENGINEER
 ROBERT H. VOGEL
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

KEYSTONE COMPAC

WALL SECTION WITH SURCHARGE

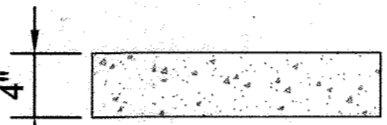


Compac II Elevation

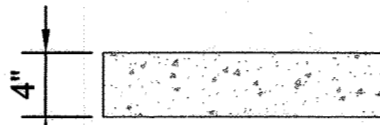


Compac II Plan

Compac II Unit
 * Dimensions May Vary by Region

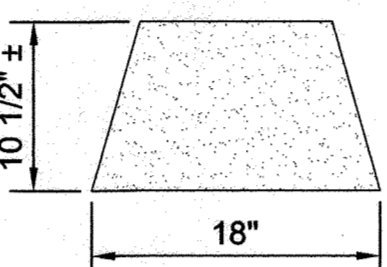


Cap Unit Elevation

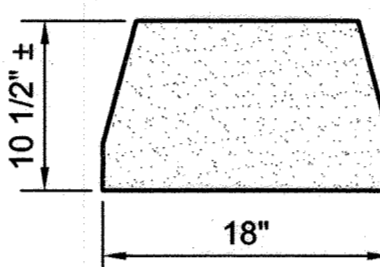


Cap Unit Elevation

Cap Unit Unit
 * Dimensions May Vary by Region



Cap Unit Plan

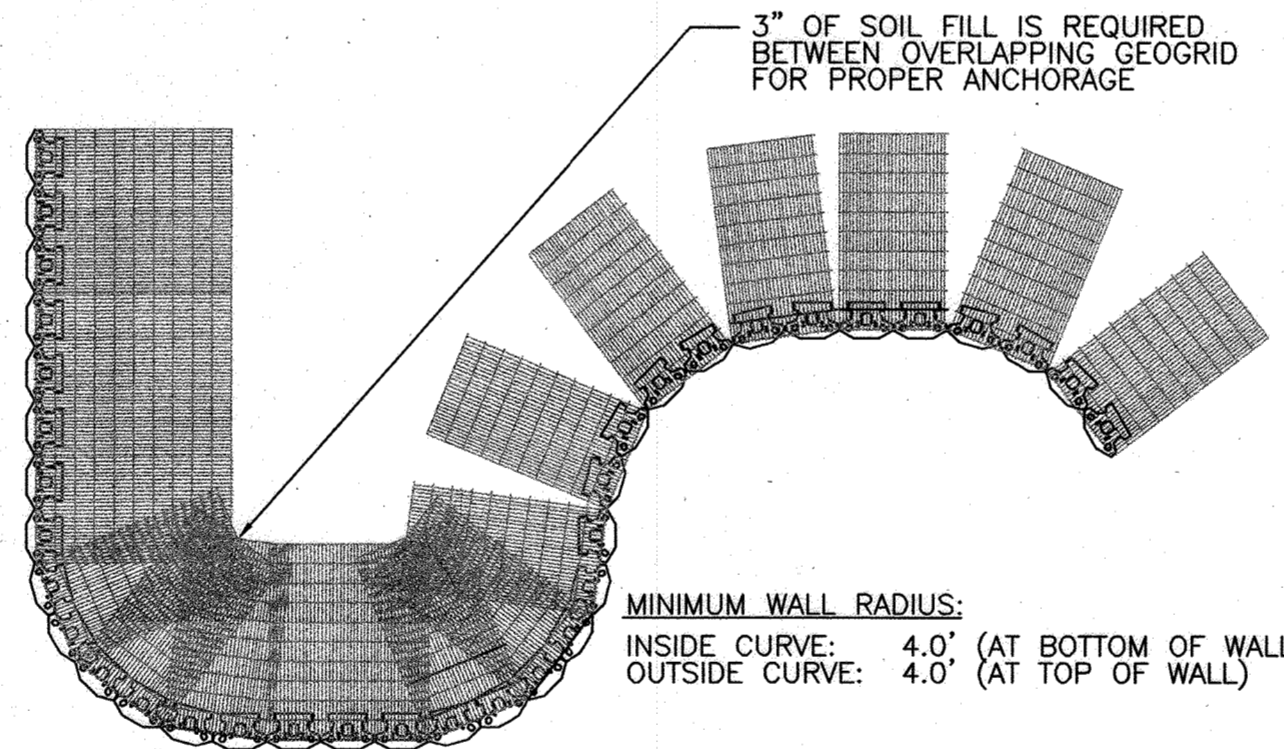


Cap Unit Plan

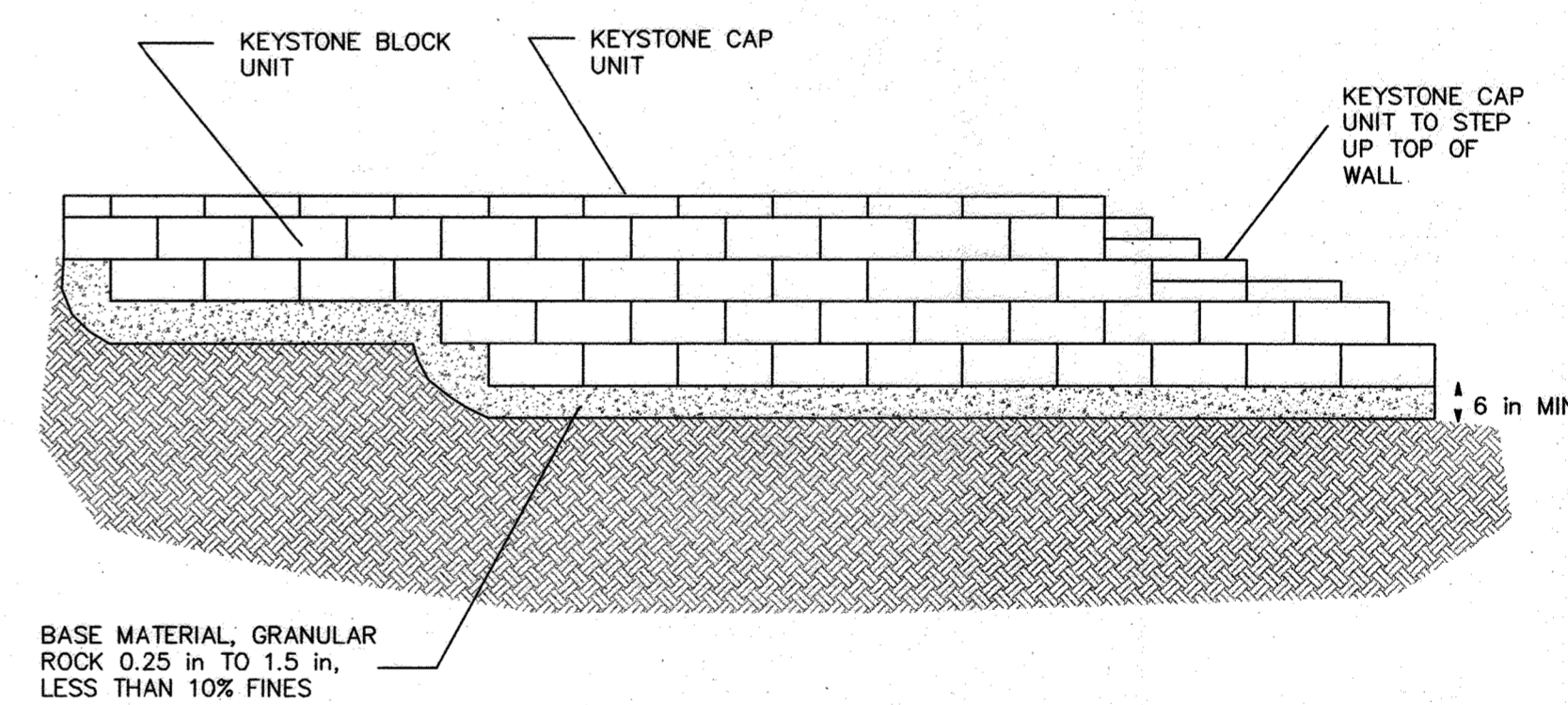
Straight Split Cap Unit Option
 * Dimensions & Availability Will Vary by Region

Universal Cap Unit Option
 * Dimensions & Availability Will Vary by Region

REINFORCEMENT PLACEMENT FOR INSIDE AND OUTSIDE CURVES



GEOGRID INSTALLATION ON CURVES

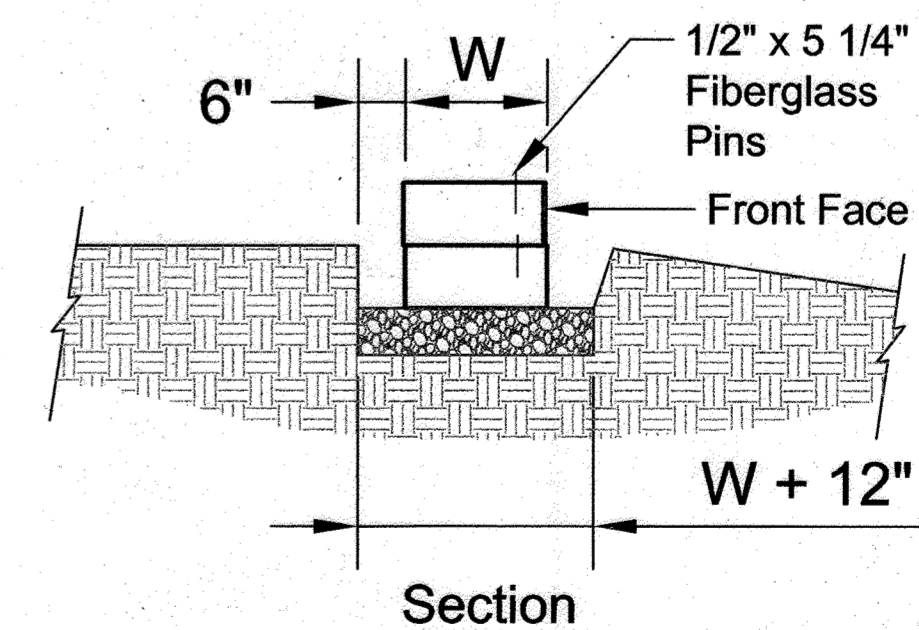


KEYSTONE STEP DOWN TYPICAL DETAIL

MATERIAL ESTIMATE: BLOCK: Keystone Compac II GEOGRID: Mirafi 3XT, 5XT & 7XT

WALL	TOTAL SQ. FT.	(1.0 S.F.) BLOCK	(.5 S.F.) CAPS**	PINS	SQ YDS 3XT GRID	SQ YDS 5XT GRID	SQ YDS 7XT GRID	CU. YDS. DRAIN GRAVEL	CU. YDS. LEVELING PAD GRAVEL	FT. WALL LENGTH
1	972	945	54	1,786	400	285	0	57	6	78
2	5,086	4,860	392	8,980	2,675	1,520	0	299	43	555
3	1,098	1,060	72	1,989	505	255	125	65	8	98
4	3,117	3,015	204	5,685	1,400	840	285	184	20	259
Totals	10,241	9,880	722	18,440	4,980	2,900	410	605	77	990

* Ryan & Associates is not responsible for extras or shortages based on this take-off. It is the contractor's responsibility to verify the accuracy of this design by reviewing the site/grading plan for this project.
 ** Includes one extra cap per step down on top of the wall for double capping.
 Totals include 2% extra for block and caps, 15% for geogrid and 5% for gravel.
 revised 04/01/2005



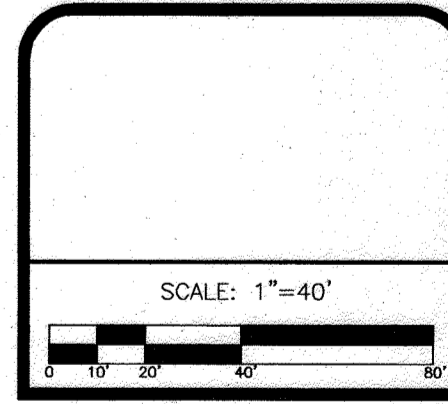
Leveling Pad Detail

RELEASED FOR...

REV	DATE	BY	APP.
1	05/25/05	DA	
3	01-05-22	Y.S.	
6	10-12-22	T.S.	

DREYER'S GRAND ICE CREAM
 9090 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

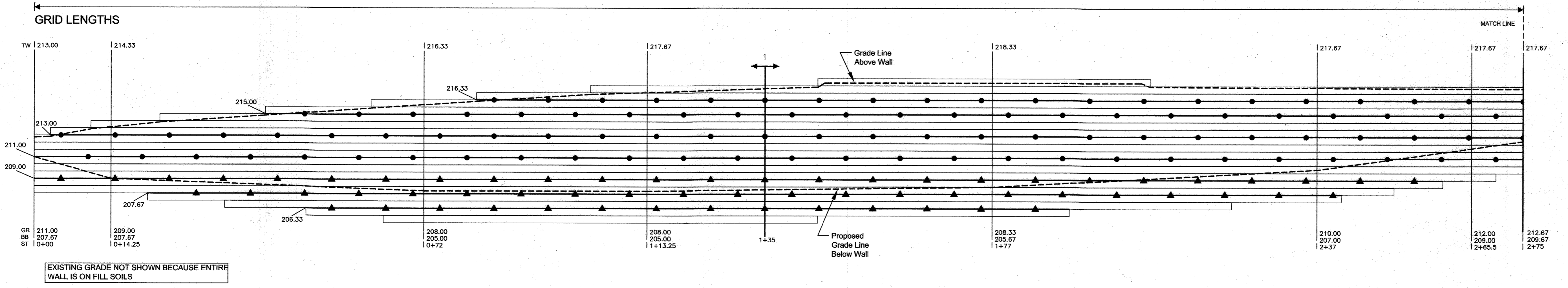
THE DENNIS GROUP, LLC
 PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT
 1901 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01103
 413-757-1785 • FAX 413-757-1786
 136 SOUTH MAIN STREET
 SALISBURY CITY, MD 21801
 801-357-8383 • FAX 801-357-8386



DRAWING NO.
C6.11
 HO. CO. DPZ SHEET:
 34 OF 40
 SDP-05-40

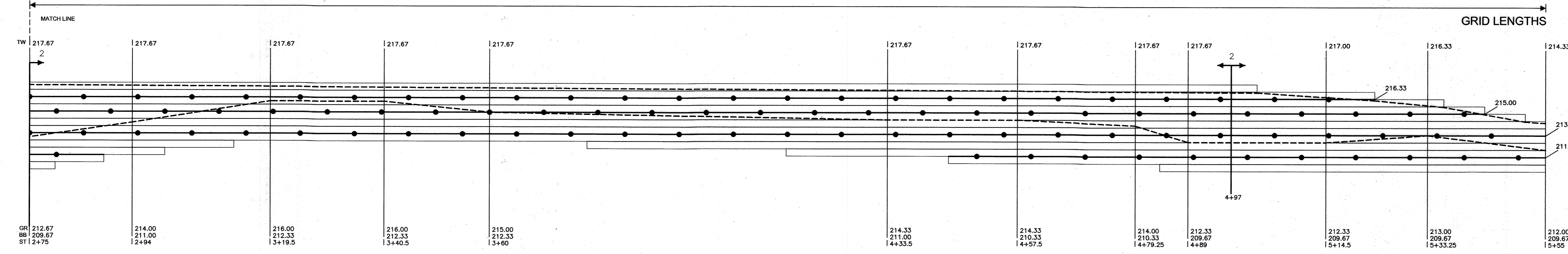
WALL #2 (between wetlands & proposed building)

TOP FOUR LAYERS 11.0'
LOWER THREE LAYERS 19.0'



EXISTING GRADE NOT SHOWN BECAUSE ENTIRE WALL IS ON FILL SOILS

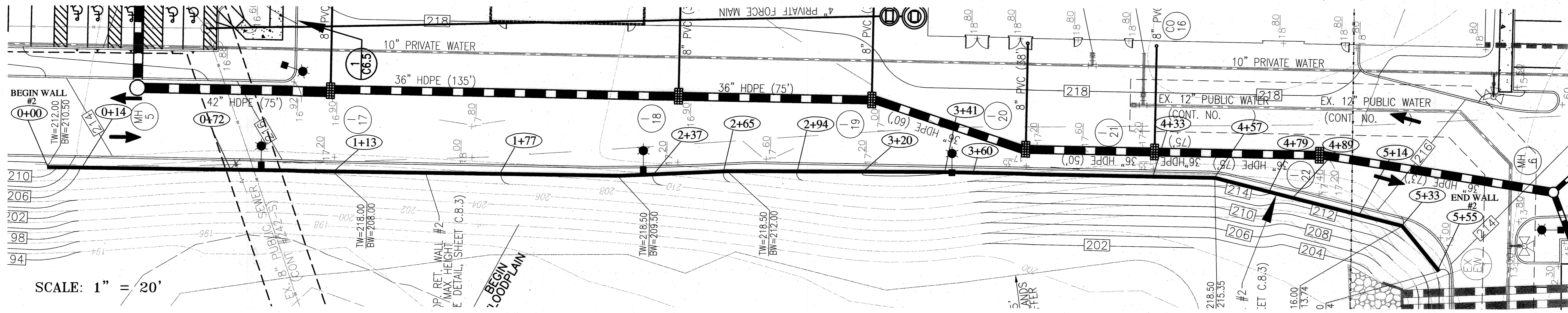
ALL LAYERS 11.0'



TW = TOP OF WALL (NOT INCLUDING CAP)
GR = PROPOSED FINISHED GRADE AT BASE OF WALL
BB = BOTTOM OF BLOCK / TOP OF LEVELING PAD
ST = WALL STATION
EG = EXISTING GRADE

GRID KEY: MIRAFI 3XT \rightarrow
MIRAFI 5XT \rightarrow

SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 5'



SCALE: 1" = 20'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5/25/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 6/2/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 6/2/05
 DIRECTOR

RYAN & ASSOCIATES
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RETAINING WALL DIVISION
 717-262-4242 fax 717-262-4245
 29 South Main Street, Suite A
 Chambersburg, PA 17201

Professional Engr. No. 21586
 William K. Ryan

OWNER/DEVELOPER
 DREYER'S GRAND ICE CREAM
 PO Box 4900 E
 SCOTTSDALE, AZ 85261
 (516) 652-8187

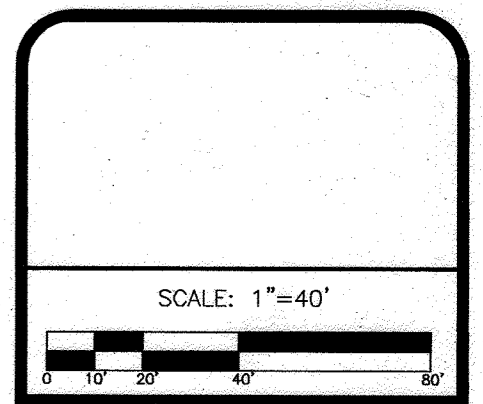
CONTRACTOR
 [Signature]
 [Signature]
 [Signature]

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.481.7888
 ELLICOTT CITY, MD 21043 FAX: 410.481.8981

REL.	DATE	BY	APP.	RELEASED FOR
1	08-28-06	DR		
3	01-05-22	TS		
6	10-12-22	TS		

DREYER'S GRAND ICE CREAM
 9090 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723

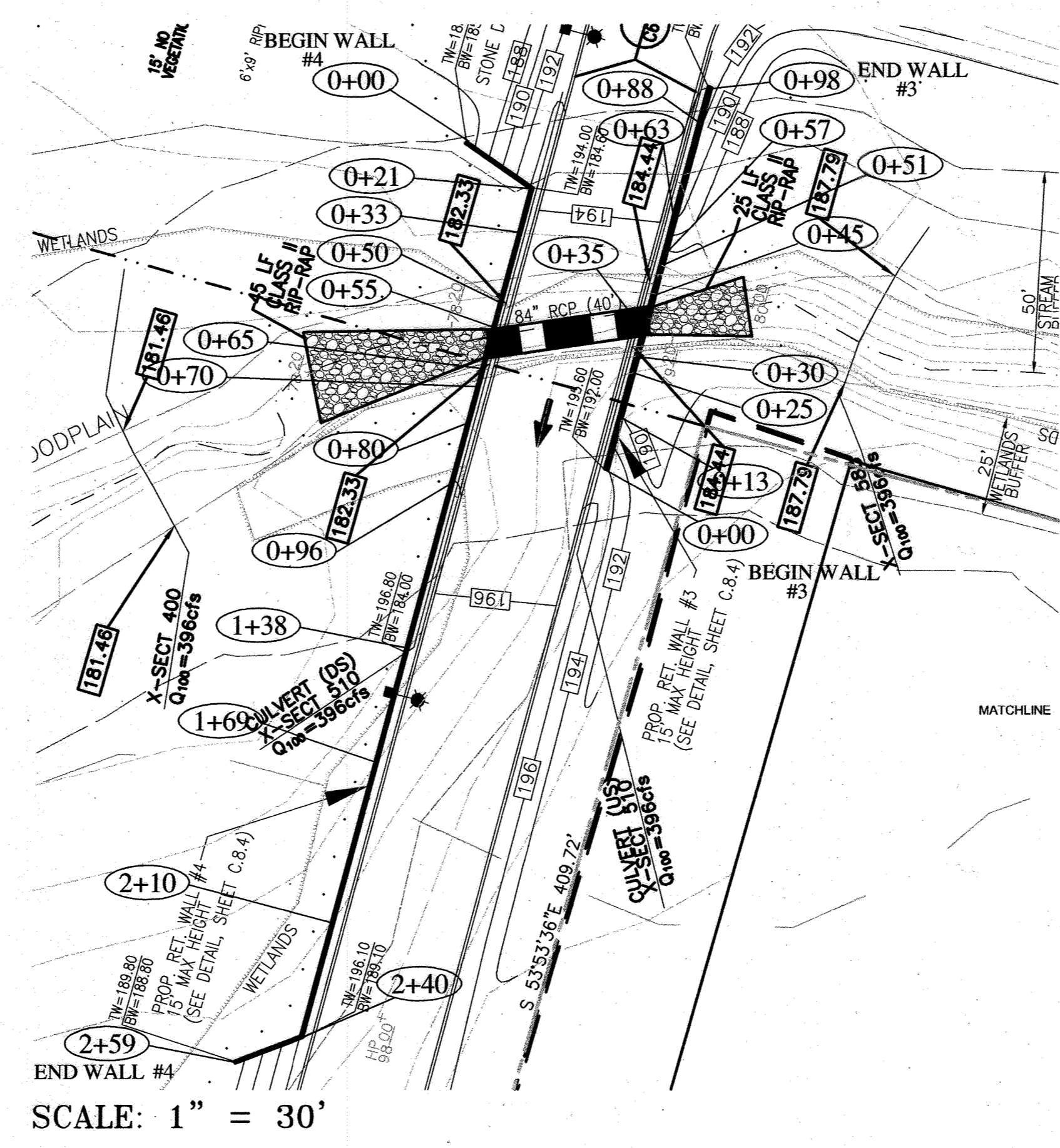
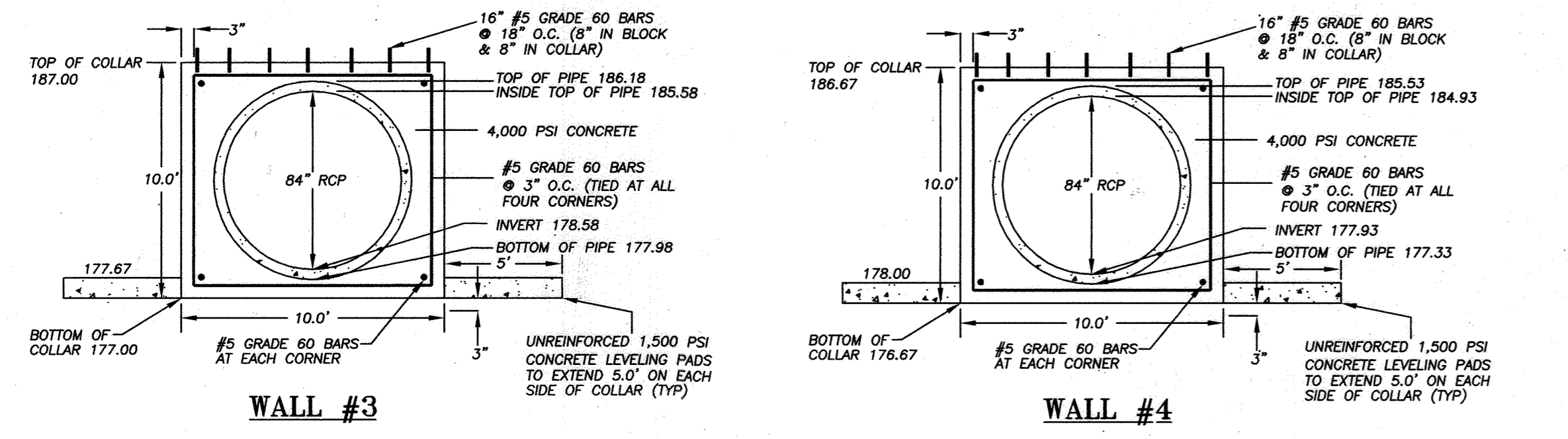
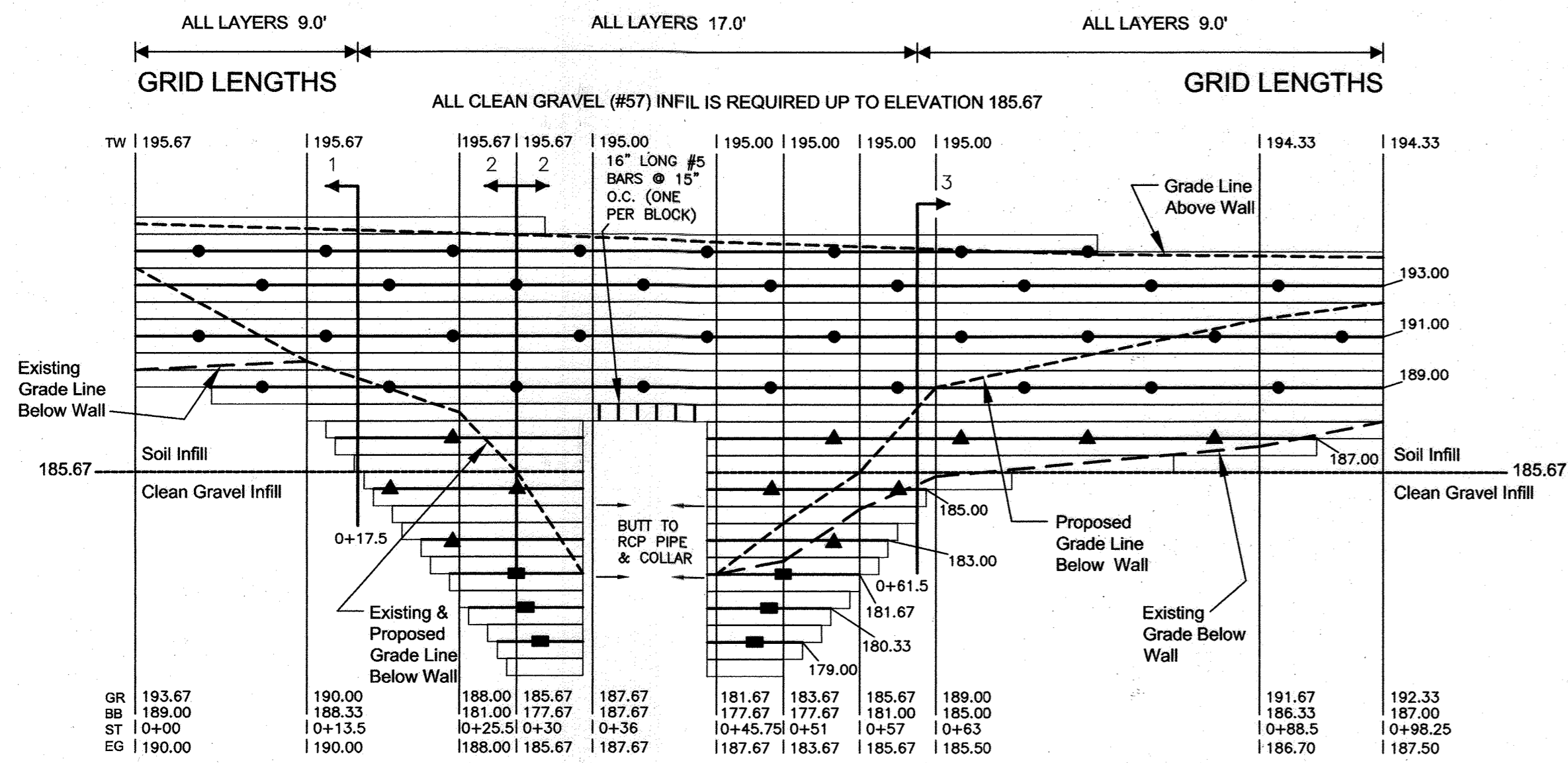
THE DENNIS GROUP, LLC
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 136 SOUTH MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01102
 413-787-1785 • FAX 413-787-1786



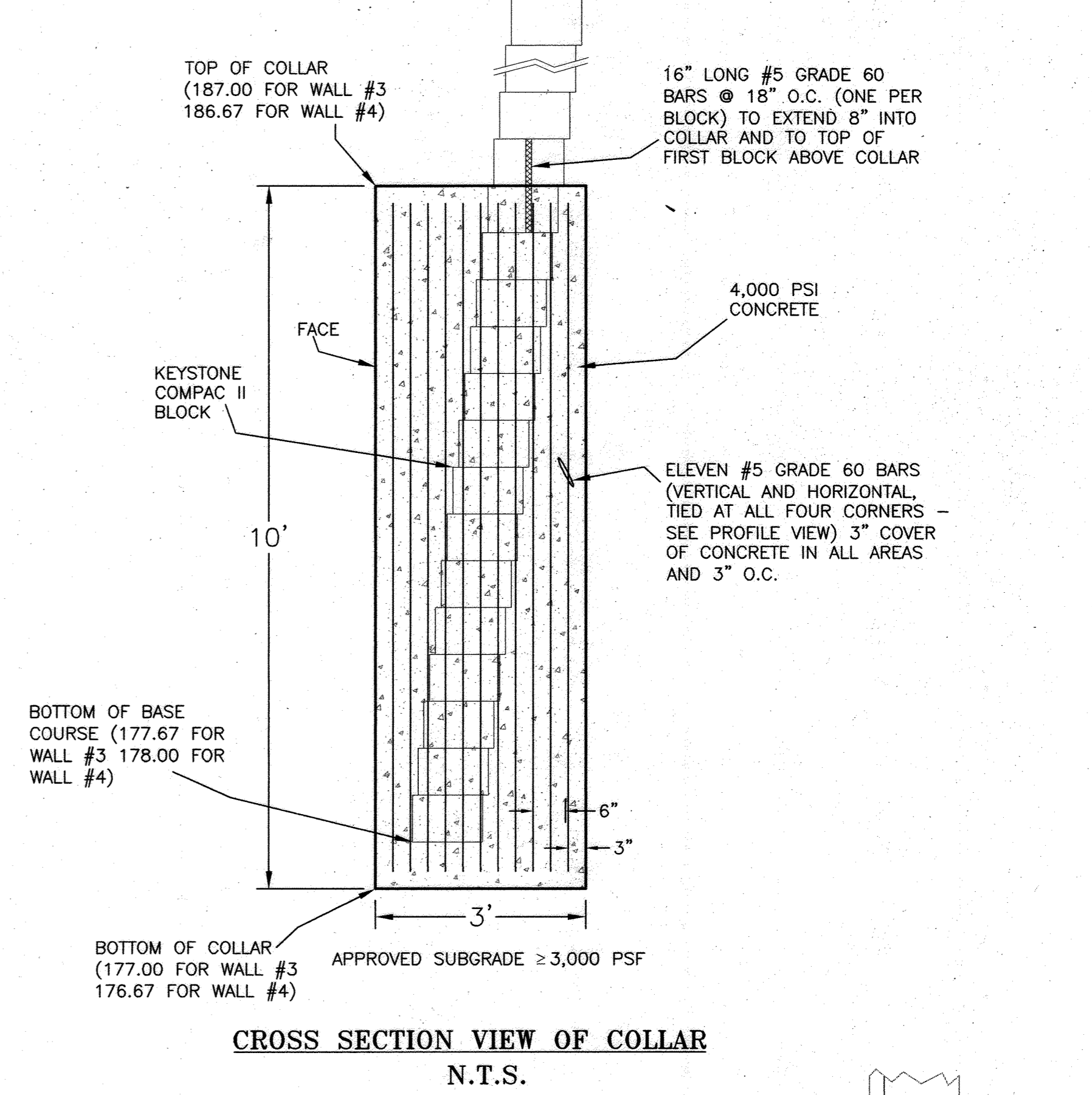
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C6.12

HO. CO. DPZ SHEET:
 35 OF 40
 SDP-05-40

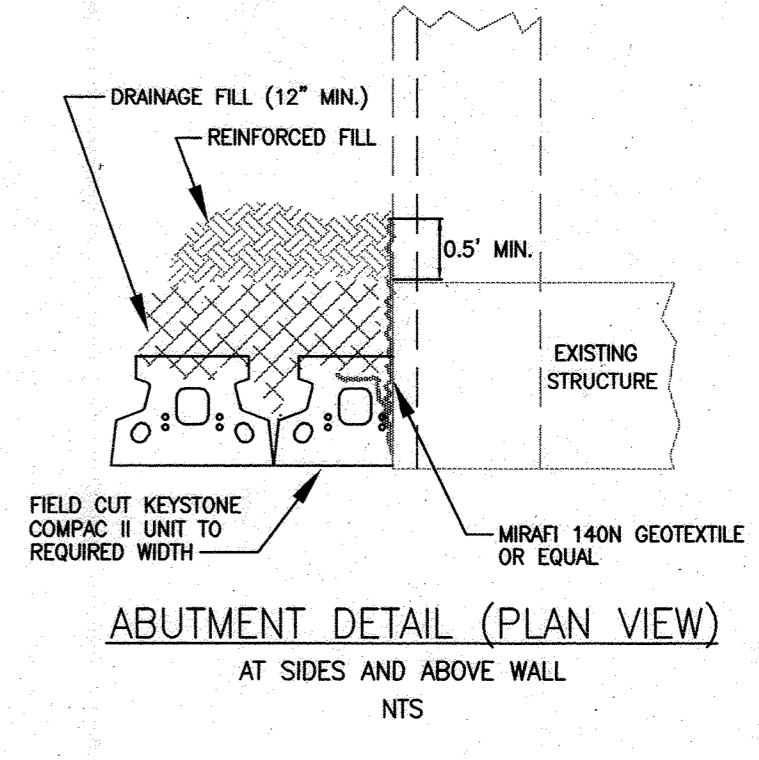
WALL #3 (S of exit road)



SCALE: 1" = 30'

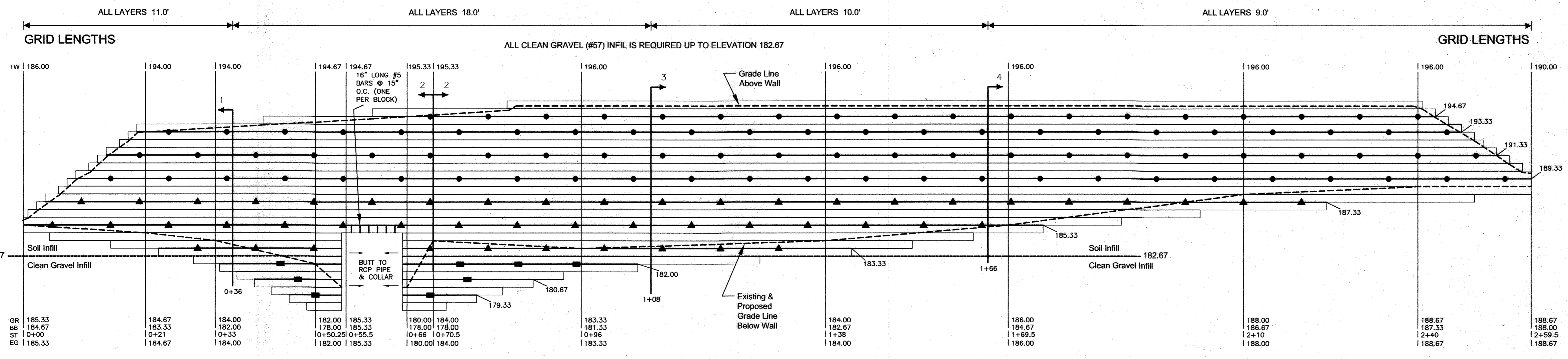


CROSS SECTION VIEW OF COLLAR
N.T.S.



ABUTMENT DETAIL (PLAN VIEW)
N.T.S.

WALL #4 (S of exit road)



TW = TOP OF WALL (NOT INCLUDING CAP)
GR = PROPOSED FINISHED GRADE AT BASE OF WALL
BB = BOTTOM OF BLOCK / TOP OF LEVELING PAD
ST = WALL STATION
EG = EXISTING GRADE

GRID KEY: MIRAFI 3XT —●—
MIRAFI 5XT —▲—
MIRAFI 7XT —■—

SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5/25/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION (DATE)
 [Signature] 6/2/05
 CHIEF, DIVISION OF LAND DEVELOPMENT (DATE)
 [Signature] 6/2/05
 DIRECTOR (DATE)

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OWNER
 [Signature]
 [Signature]
 [Signature]
 [Signature]
 [Signature]

DESIGNER
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 [Signature]
 [Signature]
 [Signature]

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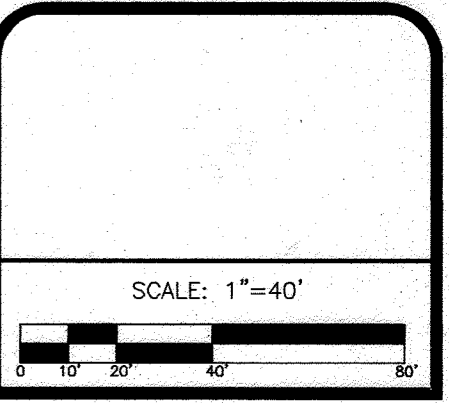
DATE	BY	APP.	RELEASED FOR
05-26-06	DR	VTG	
01-05-21	TS	VTG	
10-12-22	TS	VTG	

DREYER'S GRAND ICE CREAM
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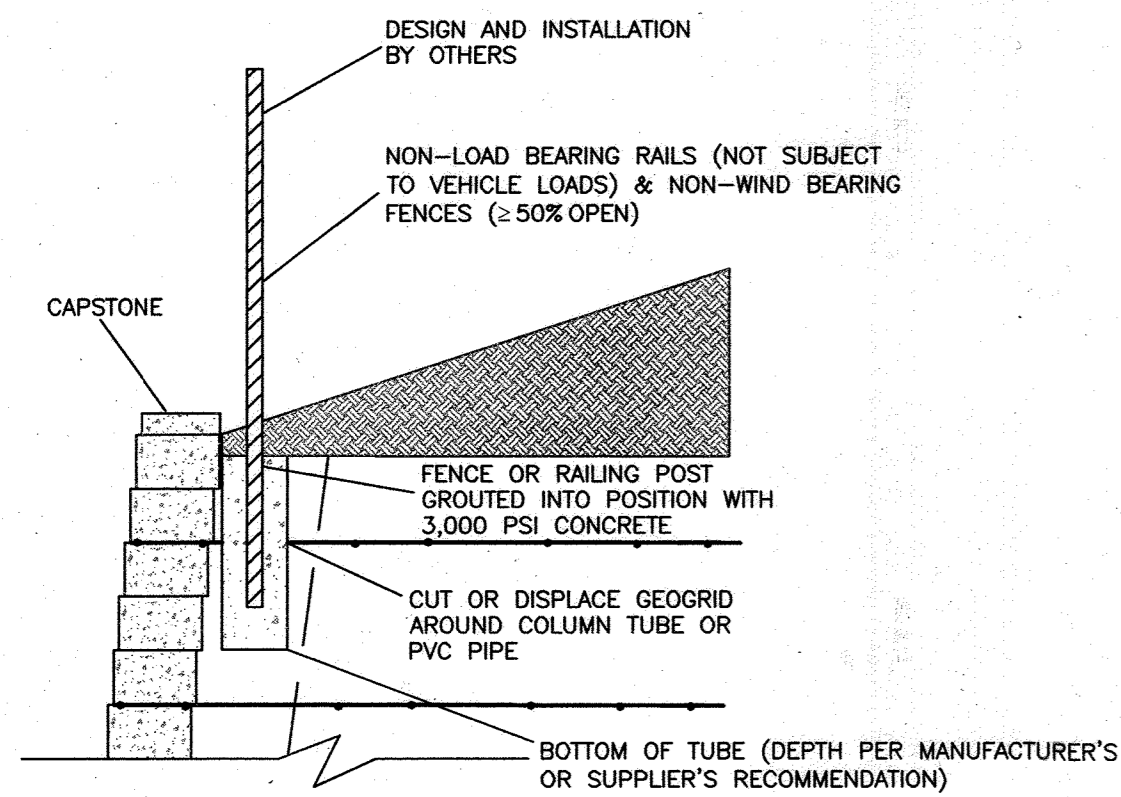
136 SOUTH MAIN STREET
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 801-531-8585, FAX 801-531-8586

1391 MAIN STREET
 SPRINGFIELD, MASSACHUSETTS 01103
 413-787-1785, FAX 413-787-1786

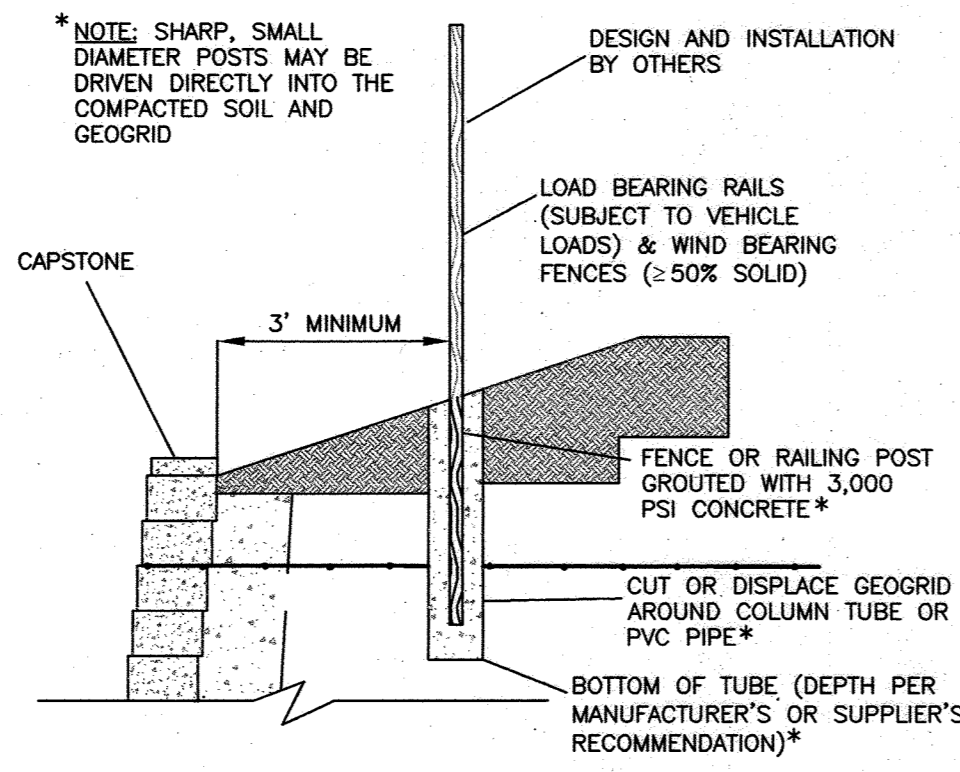


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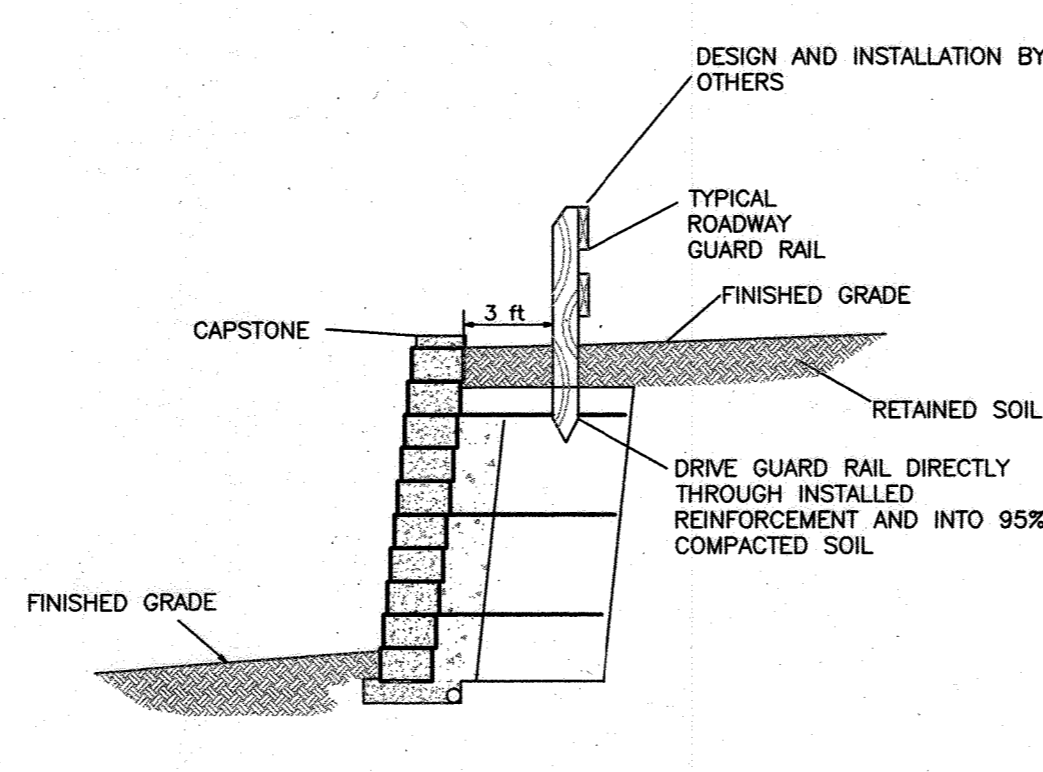
HO. CO. DPZ SHEET:
 36 OF 40



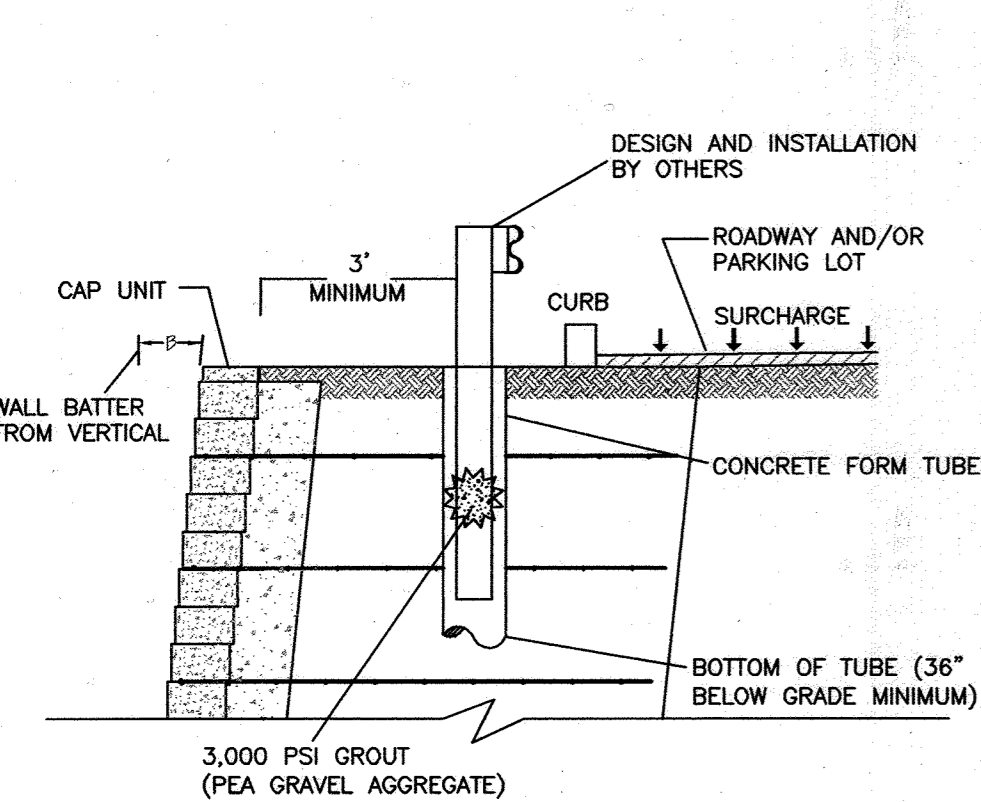
NON-LOAD BEARING & NON-WIND BEARING
(INSTALLED BEHIND WALL)
N.T.S.



LOAD BEARING & WIND BEARING
(INSTALLED BEHIND WALL)
N.T.S.



GUARDRAIL DETAIL
DRIVEN THROUGH GEOGRID
N.T.S.



GUARDRAIL DETAIL
N.T.S.

NOTE: THE CONCRETE FORM TUBE SHALL:
- BE 12" IN DIAMETER MINIMUM
- INTERSECT TWO GEOGRID LAYERS VERTICALLY
- BE CUT INTO SEGMENTS TO ALLOW THE GEOGRID TO PASS CONTINUOUSLY FROM THE FACE OF THE WALL THROUGH THE FORM TUBE, THROUGH THE 12" DRAINAGE LAYER AND INTO THE REINFORCED SOIL ZONE - BE A MINIMUM OF 36" BELOW GRADE TO ELIMINATE ANY FROST CONCERNS
- BE GROUDED WITH 3,000 PSI CONCRETE (WITH PEA GRAVEL AGGREGATE) AFTER THE POST INSTALLATION

THE GEOGRID SHALL:
- PASS CONTINUOUSLY THROUGH THE CUT SECTION OF THE CONCRETE FORM TUBE
- BE CUT TO ALLOW THE POST TO BE INSTALLED AFTER THE WALL IS CONSTRUCTED (THE GEOGRID LEFT PENETRATING THE TUBE WILL BOND WITH THE GROUT TO CREATE A UNIFIED MASS WITH THE POST AND TRANSFER THE LOAD TO THE REINFORCED SOIL)
- BE KEPT TAUT WITHOUT ANY SLACK

GUARDRAIL WITH IMPACT LOAD
N.T.S.

RYAN & ASSOCIATES' SCOPE OF WORK FOR THIS PROJECT DOES NOT INCLUDE FENCE OR RAILING DESIGNS (CALCULATIONS). THESE DETAILS HAVE BEEN PROVIDED ONLY TO SHOW TYPICAL INTERACTIONS OF FENCES AND RAILINGS WITH SEGMENTAL WALLS. THE OWNER, GENERAL CONTRACTOR AND/OR WALL INSTALLER WILL NEED TO VERIFY THE SIZE AND TYPE OF FENCE OR RAILING THAT IS NEEDED TO BE IN ACCORDANCE WITH THE MUNICIPALITY'S REQUIREMENTS.

GENERAL NOTES

- SOIL PARAMETERS:** Ryan & Associates (RA) has reviewed the "Subsurface Exploration and Geotechnical Engineering Analyses" dated 03/03/2004 and the "Supplemental Subsurface Exploration and Geotechnical Engineering Analyses" dated 05/14/2004 for this site prepared by ECS, Ltd. Based on these reports the soils vary widely and are classified by USCS as CH (fat clay), CL (lean clay), ML (sandy silt/silt), SC (clayey sand), SM (silty sand), SP (poorly graded sand) and SW (well graded sand). Although the sandy soils are predominant, a conservative internal angle of friction of 28° was used for the foundation soils (the walls sub-grades) and the retained soils (the soils behind the walls' reinforced geogrid zones and extending to distances that are twice the wall heights) in the event fine-grained soils are encountered under or behind the walls. This is for worst case CL or ML soil types. CH, MH (elastic silt) and OH/OH/PT (organic soils) are not acceptable for the foundation and retained zones (CH is present on this site but is limited to one small lense in the borings so it should not be a major factor). If these unsuitable soils are encountered in the foundation or retained zones they must be removed and replaced with soils that meet or exceed the design friction angle of 28°. An internal angle of friction of 30° was used for the infill soils (the walls' reinforced geogrid zones). Therefore all soils used for wall backfill must be classified by USCS as gravel (GC, GM, GP or GW) or sand (SC, SM, SP or SW). The infill soil must also meet the following requirements: maximum of 45% passing the #200 sieve (minimum of 55% retained on the #200 sieve), maximum optimum moisture of 20%, minimum dry unit weight of 105 PCF and maximum liquid limit of 40. Since proctor tests were not provided an assumed unit weight of 125 PCF was used (maximum wet density for the foundation and retained soils and maximum wet density less 5% for 95% compaction for the compacted infill soils). The site geotechnical engineer will need to do standard proctor tests to determine the actual soil density and moisture. Fluctuations of 5 PCF higher or lower will not affect these designs, however if the unit weight varies by more than 5 PCF RA must be notified so that the cross sections can be rerun to verify that all factors of safety are still met. No cohesion was used in any of the calculations.
- BEARING CAPACITY:** The sub-grades (the soils under the walls' gravel leveling pads and the soils under the walls' reinforced geogrid zones) must be tested by the site geotechnical engineer prior to wall construction and have minimum allowable bearing capacities of 3,000 PSF. The actual bearing pressure exerted by each specific wall section is shown on the "Cross Section Details and Factors of Safety" table so that the site geotechnical engineer may determine specifically how to handle any areas where low bearing capacity soils are encountered on an individual wall section basis. Areas of the sub-grades that do not meet these maximum pressures will require undercutting and/or geogrid reinforcing. The sub-grades must be virgin (natural undisturbed soil with blow counts ≥12) or suitable fill (≥28") compacted to 95% of a standard proctor maximum dry density.
- GEOGRIDS:** These walls were designed with Mirafi 3XT, 5XT & 7XT geogrids, which have LTDS (Long Term Design Strengths) of 1558, 2234 & 2961 respectively. All geogrid substitutions must have prior approval of RA.
- BLOCK SYSTEM:** These designs are valid only for the Keystone Compac II block system. Each segmental wall system has unique dimensions, connection devices and interacts differently with geogrids; therefore other block types may not be substituted without a partial or complete redesign.
- CONSTRUCTION OVERSIGHT:** The construction of these walls must be performed under the observation/review of a Maryland Registered Professional Engineer or their designated representative to ensure that they are built in accordance with the RA Structural Notes and Specifications. All wall construction must be certified by a registered professional geotechnical/structural engineer.
- GLOBAL STABILITY:** Global stability analyses were performed for the highest/most critical section of all walls. The analyses were performed on G-Slope design software and the geogrid layers were lengthened (if required) until factors of safety of 1.30 were met for external stability. A factor of safety of 1.50 was also met for internal stability (geogrid rupture). Walls #3 & #4 were also analyzed for rapid draw down events (1.0' above the 100 year flood elevations) and factors of safety of 1.1 were met. Copies of the global analyses are included in the 81/2" X 11" submittal.
- CULVERT/PIPE INTERSECTING THE WALLS (Walls #3 & #4):** An 84" RCP (reinforced concrete pipe) is proposed under the roadway between Walls #3 & #4 and will be intersecting these two walls. Since this is a structural pipe it should be able to be worked around without additional means of support, however it should be verified by the pipe manufacturer that it can withstand the maximum load exerted by these walls which is 2,970 PSF. For ease of construction, 10.0' X 10.0' cast in place concrete collars shall be built around the pipe. Details have been provided with geogrid elevations to coincide with top of block elevations to eliminate the horizontal cutting of blocks. Three #5 grade 60 bars shall be placed 3" O.C. (3" in from the front and the back of the structure and 3" apart). They shall have 3" of cover (from bottom, sides and top). There shall be 16" long Grade 60 reinforcing bars placed vertically where the walls pass over the collar. They shall be spaced at 1.5' O.C. and extend from the top of the blocks a minimum of 8" into the concrete. See the graphic details of the collar/pipe structures for clarification.
- WATER APPLICATIONS:** The lower portions of Walls #3 & #4 must be built as "water applications" up to 1.0' above the 100 year flood plain elevations (as noted on the profiles for the two walls). This dictates the following: clean gravel (#57 or equivalent: 5" to 1.5" with less than 10% fines) must be used for the entire reinforced geogrid zones (there is a line on the profile drawings for these walls showing the elevation to which gravel infill must be used) and filter fabric (Mirafi 140N or equivalent) must encase the buried blocks, the leveling pads and the entire reinforced geogrid zones. The filter fabric must also be laid horizontally across the top of the gravel infill where the transition to soil is made (to prevent the downward migration of fines).
- FILTER FABRIC:** Filter fabric (Mirafi 140N or equivalent) is required between the 12" gravel drainage layer and the compacted infill soils for all walls (as shown on the typical wall section) since the site soils on this project are sandy (non-cohesive soils can slough into and clog the drainage layer).
- EMBEDMENT/EXISTING GRADE ELEVATIONS:** Wall embedment varies from one to sixteen blocks. The exact amount of buried blocks can be determined by subtracting the "BB" elevations from the "GR" elevations on the RA profile drawings. RA has met the civil engineer's proposed grades at the bases of the walls (labeled as "GR" elevations), but has buried enough blocks so that all walls except Wall #2 (see note 21 below) are situated on virgin soils (the "BB" elevations go a minimum of one course below virgin grade elevations). A grade line showing existing site elevations is shown on all walls (except in cases where the existing and proposed elevations are the same as the existing grades and they run together).
- CIVIL PLANS:** This design package is based on civil plans prepared by Robert H. Vogel Engineering, Inc (RVE). RA has inserted portions of the RVE plans to show the RA wall numbering and stationing.
- SPECIFICATIONS:** Construction and materials must conform to the attached "Ryan & Associates segmental retaining wall specifications and installation guidelines for Keystone".
- WALL PROFILES:** The elevation drawings were done to represent the grade changes necessary on the civil plans and were done in exact block course increments of 667" (8"). Minor field changes may be necessary by the wall installer. Lineal footage may be added or subtracted as needed if the wall heights are equal to or less than the design heights. If the wall installer needs to construct the walls to heights that exceed the design sections, RA must be notified and higher cross sections must be provided before proceeding. The cap height of .333' (4") is not shown on the profile drawings however its height may have been used in some cases to achieve the desired TW elevations.
- WALL BATTER:** These walls were designed with the blocks having no batter (0.0"). This was done so that the 0.5" near vertical batter (front pin position: 1/16" setback per block course) may be used if desired and will allow for some construction tolerances. However, the 7.1" batter (rear pin position: 1" setback per block course) is strongly recommended by RA since it is more conservative (yields higher factors of safety) and allows for more construction tolerances. If the rear vertical batter is used the wall installer should lay the base courses tilted back a minimum of 1/4" to compensate for movement during construction from compaction equipment and the geogrid losing its slack to ensure that the walls do not go beyond vertical (have negative batters). If the 7.1" batter is used it is important for the wall installer and the civil engineer/surveyor to predetermine the walls' batters during stake out. The bases of the walls will need to be moved forward if there are critical dimensions that need to be met on the high side of the walls.
- MANDATORY REAR DRAINPIPES (Walls #1, #2 & #5):** Rear drainpipes are required at the backs of all the walls' reinforced geogrid zones except for Walls #3 & #4 (since they are "water applications" and have gravel infill at the bottom). These rear drainpipes are in addition to the mandatory 4" drainpipes at the fronts of the walls (within the gravel leveling pads or behind the at grade courses- depending on which drainpipe position is exercised). The rear drainpipes shall be surrounded by a minimum of 6" of clean gravel (#57 or equivalent) and shall have perpendicular solid pipes that run forward and connect to the front drainage system with crosses or tees.
- SPECIAL HOWARD COUNTY RETAINING WALL SPECIFICATIONS:**
 - Retaining walls shall only be constructed under the observation of a Registered Professional Engineer and a (NICET, 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 STP-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 the construction.
 - For walls over ten feet in height, 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.
- DESIGN SOFTWARE:** Internal and external wall calculations were performed with Keywall design software (version 3.1.6). A table has been included ("Cross Section Details and Factors of Safety") which has the following information: section location (area of wall referenced), total wall height, loads applied, factors of safety (for sliding, overturning, bearing capacity and global stability) and bearing pressure (the weight exerted by the wall structure, the block and the reinforced geogrid zone). Factors of safety of 1.5 were also met for: geogrid pullout (from the soil and from the block), geogrid overstress (geogrid rupture) and connection (block to geogrid). Copies of these calculations are included in the 81/2" X 11" submittal.
- SEPARATE 81/2" X 11" SUBMITTAL:** These 24" X 36" sheets were done in conjunction with an 81/2" X 11" submittal. The 81/2" X 11" submittal has the structural cross section calculations and global stability analyses.
- TANGENT ANGLES- Walls #2 & #4:** The angle points as drawn on the civil plans on Walls #2 and #4 must be built as radii (inside curves) or inside corners (blocks interlocked and overlapped in accordance with Keystone construction guidelines for 90° corners). Continuous vertical joints are not permitted.
- LIGHT POST FOUNDATIONS:** There are light post foundations proposed directly behind Wall #2 (three locations: 0+83, 2+32 & 3+54) and Wall #5 (two locations: 1+29 & 2+94). Based on information obtained by RA (via email from The Dennis Group), the foundations are 2' diameter, extend 9' below grade, extend 3' above grade and have 35' poles attached to them. These post foundations must extend a minimum of 4' below the bases of the walls ("BB" elevations) so that they do not impact (impose loads) on them and must be a minimum of 2' behind the walls. The area between the posts and the walls must be filled with all clean gravel (#57 or equivalent). Concrete form tubes (or some other type of round form such as pipes) must be placed during wall construction and the geogrid worked around (looped over) them. Four of the five locations do not meet the depth criterion (only station 3+54 of Wall #2 appears to be in conformance) and will need to be substantially deepened to meet the 4' beyond bottom of wall requirement. If it is not possible to extend the depth of these posts so that they are 4' below the "BB" elevations, a structural design will need to be done (steel reinforced concrete with an L-shaped "foot") that will allow the wind loads to be transferred to the reinforced soil masses (under the pavement). RA can provide these design services for an additional fee (from the MD office).
- FILL SOILS- Wall #2:** Wall #2 is entirely on fill soils (it rests on a "fill slope"). It is imperative that the existing brush/vegetation and topsoil are stripped down to suitable sub-soils (28") and that the slope is constructed in controlled lifts that are compacted to 95% of a standard proctor maximum dry density as supervised by the site geotechnical engineer prior to wall construction.

CROSS SECTION DETAILS & FACTORS OF SAFETY:

SECTION	STATION	TOTAL HEIGHT	LOAD APPLIED	SLIDING minimum 1.50	OVERTURNING minimum 2.00	BEARING CAPACITY minimum 2.50	BEARING PRESSURE PSF	GLOBAL STABILITY minimum 1.30
WALL #1								
1	References Entire Wall	8.67'	300 PSF LIVE LOAD	1.68	3.30	5.44	2,374	1.67
WALL #2								
1	0+00 TO 2+75	12.67'	300 PSF LIVE LOAD	3.01	11.91	12.10	1,956	1.32
2	2+75 TO 5+55	8.00'	300 PSF LIVE LOAD	2.52	8.27	11.92	1,319	1.31
WALL #3								
1	0+00 TO 0+17.5	10.00'	300 PSF LIVE LOAD	1.78	3.91	6.35	1,797	2.50
2	0+17.5 TO 0+61.5	18.00'	300 PSF LIVE LOAD	2.19	5.29	6.29	2,970	1.48
3	0+61.5 TO 0+98	10.67'	300 PSF LIVE LOAD	1.71	3.53	5.68	1,965	1.48
WALL #4								
1	0+00 TO 0+36	12.67'	300 PSF LIVE LOAD	1.68	3.30	4.92	2,374	1.63
2	0+36 TO 1+08	17.33'	300 PSF LIVE LOAD	2.39	6.33	7.23	2,781	1.63
3	1+08 TO 1+66	14.00'	300 PSF LIVE LOAD	1.72	3.39	4.80	2,598	1.63
4	1+66 TO 2+59	11.33'	300 PSF LIVE LOAD	1.64	3.20	5.07	2,145	1.63
WALL #5								
1	0+00 TO 1+17	12.67'	300 PSF LIVE LOAD	3.03	10.69	10.82	1,970	1.31
2	1+17 TO 2+66	15.33'	300 PSF LIVE LOAD	2.58	7.79	8.56	2,414	1.31
3	2+66 TO 3+39	12.67'	300 PSF LIVE LOAD	2.92	10.69	10.82	1,195	1.31

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/2/05

 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/2/05

 DIRECTOR
 DATE: 6/3/05

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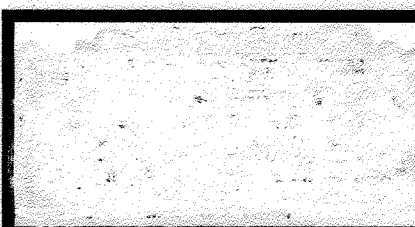
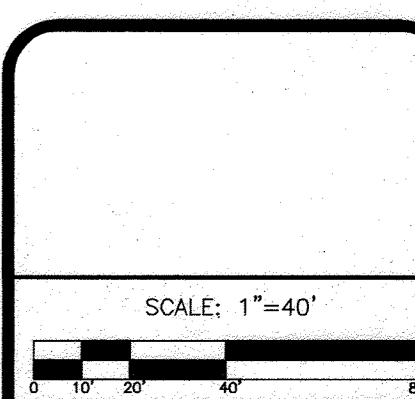
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HO. CO. DPZ SHEET:
 37 OF 40

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HO. CO. DPZ SHEET:
 37 OF 40

SPECIFICATIONS FOR SEGMENTAL RETAINING WALL SYSTEMS

PART 1: GENERAL

1.01 Description

A. Work includes furnishing and installing segmental retaining wall (SRW) Units to the lines and grades designated on the Final Design prepared by Ryan & Associates (RA). Also included are furnishing and installing appurtenant materials required for construction of the retaining wall as shown on the RA Final Design.

1.02 Reference Standards

- A. ASTM C 140- Sampling and Testing Concrete Masonry Units
B. ASTM D 4595- Tensile Properties of Geotextiles by the Wide-Width Strip Method.
C. ASTM D 5282- Test Method for Evaluating the Unconfined Creep Behavior of Geo-Grids
D. GRI-GG1- Single Rib Geogrid Tensile Strength
E. GRI-GGS- Geogrid Pulloff
F. ASTM D 698- Moisture Density Relationship for Soils, Standard Method
G. ASTM D 422- Liquid Limit and Plasticity Index of Soils
H. ASTM 4318- Atterberg Limits of Soil
I. ASTM 3034- Specification for Polyvinyl Chloride (PVC) Plastic Pipe
J. ASTM D 1248- Specification for Corrugated Plastic Pipe

1.03 Design Standards

A. The following factors of safety have been met in this design: Sliding 1.5, Overturning 2.0, Bearing Capacity 2.0, Geogrid Overstress 1.5, Geogrid Connection (between the block and the geogrid) and Geogrid Pulloff 1.5 (from the block and from the soil).

1.04 Scope of Work

A. The retaining wall design engineer's (Ryan & Associates) scope consists of preparing the wall design and professionally sealing to enable the contractor to obtain the necessary permits and properly construct the wall. The design engineer shall verify the accuracy of the geogrid elevations by comparing them to the civil plans or actual field conditions prior to wall construction. The civil plans and actual field conditions govern and their grades must always be met. The final footage of the wall and the TW/BW elevations must be checked. If an error is discovered, RA shall be notified immediately and revisions will be provided. RA will not be responsible for correcting a wall that is being built or has been built incorrectly due to this design not being checked for accuracy prior to wall construction.

1.05 Contractor's Responsibility

A. This design has been done in an effort to achieve the required grade changes shown on the civil plans for the project or the owner's (or wall installer's) desired grade changes (in the case of design build projects). The wall installer shall verify the accuracy of the geogrid elevations by comparing them to the civil plans or actual field conditions prior to wall construction. The civil plans and actual field conditions govern and their grades must always be met. The final footage of the wall and the TW/BW elevations must be checked. If an error is discovered, RA shall be notified immediately and revisions will be provided. RA will not be responsible for correcting a wall that is being built or has been built incorrectly due to this design not being checked for accuracy prior to wall construction.

PART 2: MATERIALS & DESIGN PARAMETERS

2.01 Segmental Retaining Wall Units

A. SRW Units shall be machine formed, Portland Cement concrete blocks specifically designed for retaining wall applications. The SRW Unit currently approved for this project is:

Keystone Compac II as manufactured by Betco Block & Products

NOTE: Where keystone specifications and reference documents conflict with these specifications the RA specifications hold precedence.

B. SRW Units shall be sound and free of cracks or other defects that would interfere with the proper placing of the units or significantly impair the strength or permanence of the structure. Cracking or excessive chipping may be grounds for rejection. Units showing cracks longer than 1/2 inch shall not be used within the wall. Units showing chips visible at a distance of 30 feet from the wall shall not be used within the wall.

C. Concrete used to manufacture SRW Units shall have a minimum 28 days compressive strength of 3,000 PSI and a maximum moisture absorption rate, by weight, of 8% as determined in accordance with ASTM C 140. Compressive strength test specimens shall conform to the saw-cut coupon provisions of Section 2.2.4 of ASTM C 140 with the following exception: Coupon shall be taken from the least dimension of the unit of a size and shape representing the geometry of the unit as a whole.

D. SRW Units molded dimensions shall not differ more than +/- 1/8 inch from that specified, except height which shall be +/- 1/16 inch as measured in accordance with ASTM C 140.

2.02 Geosynthetic Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids as indicated on the RA Final Design. No geogrid substitutions shall be permitted without the prior approval of RA (a partial redesign may be necessary if geogrids are substituted). NOTE: it is always acceptable to substitute a higher strength geogrid (of the same manufacturer) for a lower strength geogrid.

2.03 Connectors

A. Shear connectors shall be 1/2 inch diameter thermoset isophthalic polyester resin-pultruded fiberglass reinforcement rods or equivalents to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to +100 degrees F. These connectors shall be capable of holding the geogrid in the proper design position during geogrid pre-tensioning and backfilling. The pins have several positions. The rear pin position results in a 1" setback and a 7.1" batter and the center pin position results in a rear vertical setback with an approximate positive batter of 0.5". The batter for which RA designed this wall will be stated in the RA Final Design General Notes and on the structural cross sections. It is always acceptable to change from the rear vertical batter to 7.1" since it is more conservative (yields higher factors of safety); however the cross sections will need to be revised.

2.04 Leveling Pad

A. Material for the leveling pad shall consist of compacted gravel or unreinforced concrete. Typical gravels used for this leveling pad are #57, CR6, 21A, 2A modified, 2B, RC6, RC57, etc. Lean un-reinforced concrete with a strength of 1,500 PSI may also be used for the leveling pad.

2.05 Drainage Aggregate

A. Drainage aggregate shall be clean angular gravel (#57 or equivalent) with a size of 1/2 inch to 1 1/2 inches and less than 10% fines (passing the #200 sieve). Rounded "fine gravel" type aggregate is not permissible since it does not have the necessary frictional properties. Recycled gravel may be used if it meets the above criterion.

2.06 Drainage Pipe

A. The drainage collection pipe shall be a 4 inch perforated or slotted PVC or corrugated HDPE pipe.

2.07 Infill Soils: the reinforced geogrid zone

A. The soils used must meet or exceed the friction angle stated in the RA Final Design (in the General Notes, on the typical wall section and on the structural cross sections). The reinforced material shall be free of debris and organic material (i.e.- no plants, roots, sod, top soil, trash, wood, etc.). The infill soil shall consist of CH (fat clay), MH (elastic silt) or OH/OI/PT (organic silts). All soils used for wall infill must always meet the following requirements, regardless of the friction angle: maximum liquid limit of 40, maximum optimum moisture of 20%, maximum of 75% passing the #200 sieve (minimum of 25% retained on the #200 sieve) and minimum dry unit weight of 105 PCF. Soil moisture must be within (2% of optimum to obtain proper compaction results (no exceptions).

B. Rocks may be used as infill material as long as they have a maximum size of 6 inches and a mean diameter of 3 inches. Recycled concrete is permissible for infill except with certain polyester geogrids in water applications. In the case of water applications the geogrid manufacturer shall be consulted to see if the alkali in the recycled material will cause corrosive damage to their geogrid.

C. Select gravel (classified by USCS as GP or GW) is normally an acceptable substitution in the event suitable soils (those meeting RA's and the site geotechnical engineer's requirements) are not readily available or if there are difficulties due to frost or moisture levels. However, the unit weights of gravel vary widely (clean gravel is typically 90-100 PCF and "crusher run" gravel is typically 130-140 PCF) so RA must be notified so that recycled gravels can be run prior to making any substitutions. In some cases clean gravel actually requires longer geogrid lengths because of its extremely light unit weight.

D. Asphalt tallings (blocktop millings) are only acceptable for wall infill if authorized in writing by the municipality (county, township, etc.) and/or regulatory authority since they may be a potential environmental hazard. These materials must also meet the requirements for the backfill soils in the RA Final Design; therefore RA must be given a proctor test and gradation (sieve analysis) for approval prior to wall construction.

2.09 Foundation Soils: the soils under the wall's gravel leveling pad and the soils under the reinforced geogrid zone

A. The foundation soils (wall sub-grade) must meet or exceed the minimum allowable bearing capacity stated in the RA Final Design (in the General Notes and on the typical wall section). The sub-grade must be virgin (natural undisturbed soil with blow counts >12) or suitable fill (friction angle > the RA Final Design requirement) compacted to 95% of a standard proctor maximum dry density. If highly plastic soils (OH or MH) or organic soils (OH, CL, or PT) are encountered in the sub-grade they must be removed and replaced with suitable soil or gravel that is placed in controlled lifts and compacted to 95% of a standard proctor maximum dry density. If the organic or plastic soils extend so deep that they cannot be totally removed, they shall be undercut a minimum of 4" and replaced with suitable soil or gravel. In all cases, the wall's sub-grade is not only the soils under the leveling pad, but also includes all soils under the entire reinforced geogrid zone. Therefore, the foundation soils extend from 6" in front of the base block to the back of the reinforced geogrid zone (back edge of the lowest geogrid layer).

2.10 Soil Investigation

A. RA recommends that every retaining wall design be preceded by an in-situ soil investigation by a licensed geotechnical engineer. However, if the owner and/or wall installer elects not to have an investigation conducted RA may assign a soil design professional published by the Soil Conservation Service (soil maps), a verbal description by the owner and/or wall installer or by RA's previous experience in certain geographic areas. It must be understood that the owner and/or wall installer bears full responsibility to the election not to have a soil investigation performed.

2.11 Site History & Information

A. Many factors other than soil information affect the performance and design of the retaining wall. RA relies on information provided by the owner and/or wall installer when designing a retaining wall. RA bears no responsibility if the owner and/or wall installer omit critical information required to properly design the wall. Information critical to wall design from the site consist of: topographic features (such as slopes), soil types, utilities, storm water management, structures (including buildings, other existing or proposed walls, swimming pools, etc.), site geological phenomenon (groundwater, loads with the wall's zone of influence (such as driveways, patios, roadways, sidewalks, etc.) and any other readily known site factors that could potentially impact the RA Final Design.

PART 3: CONSTRUCTION

3.01 Inspection

A. RA considers all retaining walls to be critical structures, meaning most walls require a considerable financial investment by the owner and failure of a wall will negatively impact a property both financially and from a public safety perspective. The owner or owner's representative is responsible for verifying that the wall installer meets all of the requirements of the RA Final Design (as stated in these specifications and the project's General Notes). This includes all submittals for materials and design, qualifications and proper installation of the wall system. All walls with an exposed height of 4 feet or greater, or those which require a building permit, must have the construction monitored and the completed wall certified by a licensed geotechnical/structural engineer registered in the jurisdiction of the project. Additionally, after the wall has been completed it is highly recommended that it be surveyed to establish the wall's current horizontal and vertical alignment.

B. The wall installer's field construction supervisor shall have demonstrated experience and be qualified to direct all work at the site.

C. RA provides construction review on some retaining wall projects. RA verifies general compliance with the RA Final Design; however, it is the wall installer's ultimate responsibility to construct the structure properly in accordance with the RA Final Design. RA liability is limited to the amount of our fees for the scope of work provided for the wall designs and construction oversight.

3.02 Excavation

A. The wall installer shall excavate to the lines and grades shown on the RA Final Design and the project's civil plans. The wall installer shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted soil (friction angle > RA design parameters) or gravel as directed by the site geotechnical engineer.

B. The wall installer shall verify the location of existing structures and utilities prior to excavation. The wall installer shall ensure that all surrounding structures are protected from the effects of wall excavation. Excavation support (shoring) if required, is the responsibility of the wall installer. All excavation shall be conducted in accordance with OSHA (federal) and state safety regulations. All work to construct the wall must be in accordance with 29CFR1926 sub-part P (OSHA Excavation Safety Requirements).

3.03 Foundation Preparation

A. Following excavation, the foundation soils (under the wall's gravel leveling pad and under the wall's reinforced geogrid zone) shall be examined by the site geotechnical engineer to assure that the actual foundation soil strength meets or exceeds the minimum allowable bearing capacity in the RA Final Design (stated in the General Notes and shown on the typical wall section). Soils that do not meet the required strength shall be removed and replaced with approved select structural fill or gravel and be compacted to 95% of a standard proctor maximum dry density for the full depth.

B. In cases of poor bearing capacity, deep fill soils, or when groundwater is encountered it may not be possible or practical to undercut to suitable soils. As an alternative, gravel, geogrid reinforcing (or a combination of both) or a concrete footing may be utilized to meet the required soil bearing capacity. RA can provide a supplemental sub-grade design for an additional fee (it is not within RA's original scope of work for this project). However, it is the site geotechnical engineer's ultimate responsibility to ensure that the sub-grade meets or exceeds that specified by RA for this project (stated in the RA Final Design). The site geotechnical engineer must add a minimum factor of safety of 2.0 to the RA specified capacity (i.e. if RA requires 2,500 PSF the actual field ultimate bearing capacity must meet or exceed 5,000 PSF).

3.04 Leveling Pad Construction

A. The leveling pad shall be placed so that its top elevation is the same as the bottom of block ("BB" elevation on the RA Final Design profile drawing. It shall have a minimum thickness of 6 inches and a minimum width of 2 feet (for 12" wide blocks). The leveling pad should, at a minimum, extend laterally at least a distance of 6 inches from the toe and heel of the lower most SRW Unit. The leveling pad must have a minimum width of 30 inch for 18 inch wide blocks and a minimum width of 36 inch for 24 inch wide blocks.

B. The leveling pad material shall be compacted to 95% of a standard proctor maximum dry density with a vibratory plate compactor or an additional fee (it is not within RA's original scope of work for this project). However, it is the site geotechnical engineer's ultimate responsibility to ensure that the sub-grade meets or exceeds that specified by RA for this project (stated in the RA Final Design). The site geotechnical engineer must add a minimum factor of safety of 2.0 to the RA specified capacity (i.e. if RA requires 2,500 PSF the actual field ultimate bearing capacity must meet or exceed 5,000 PSF).

3.05 SRW Unit Installation

A. All SRW Units shall be installed at the proper elevation and orientation as shown on the RA Final Design profile drawing in conjunction with the project's civil plans. The SRW Units shall be installed in general accordance with the manufacturer's recommendations (RA's Final Design shall govern in any conflict between the two requirements).

B. The first course of SRW Units shall be placed on the leveling pad. The units shall be leveled side-to-side, front-to-front and back-to-back, and shall be oriented and aligned to ensure intimate contact with the leveling pad. The first course is the most important for accurate and acceptable results. Alignment may be done by means of a string line or an offset from the base line to the backs of the blocks. SRW units shall have a minimum 4 inch overlap of units on each successive course so that the wall is interlocked and continuous. No horizontal gaps greater than 1/4 inch between the faces of adjacent units are permitted.

C. Because the wall has a setback, its batter must be predetermined during the stake out process by the civil engineer/surveyor. The batter shall be left to right (not right to left) and must be met on the high side of the wall then the base (at the toe) will need to be moved forward to compensate.

D. Lay out of curves and corners shall be installed in accordance with the civil plans and the RA Final Design. Construction techniques for curves and corners shall be in accordance with the SRW manufacturer's installation guidelines. In general, all tangent angles shown on the civil drawings should be changed into right (inside and outside curves) to enhance the wall's strength and appearance. Continuous vertical joints are not permitted. Inside and outside 90° corners may be constructed without compromising the wall's integrity if they are properly built. Inside corners should be constructed so that the SRW Units interlock and overlap (according to the manufacturer's recommendations) and outside corners should incorporate special corner blocks when possible. If special outside corner blocks are not available from the block manufacturer for this project then the manufacturer's guidelines for building structural outside corners shall be followed. Outside corners must be built so that the blocks interlock and overlap. If gapping is necessary (when there is not a positive connection from clips, lips, lugs, pins, etc.) only industrial grade adhesives or sealants designed for concrete-to-concrete applications may be used (adhesives designed for plastic or wood applications are not acceptable).

E. Clean all excess debris from the tops of the SRW Units and install the next course.

F. Repeat procedures to the extent of wall height.

G. A +/- construction tolerance is permitted horizontally for wall batter (block setback). In no case shall a wall go beyond vertical (have a negative batter). Some block systems have an optional near vertical batter (typically 0.50). If the wall is to be built with a near vertical batter, the base course should be laid so that it is tilted back a minimum of 1/4 inch to compensate for movement that will likely occur from compaction equipment and from the geogrid losing its slope. Walls that are laid flat (not with a batter) must be placed on a +/- 1.5 inch tolerance over a 10 foot distance is permitted vertically (as checked from left to right along the wall).

H. Embedment shall be a minimum of 1 inch buried for every 1 foot of exposed wall height with one block minimum when the front slope is 4:1 or greater (more level). Walls constructed on 3:1 front slopes or less (more steep) require additional buried blocks. See the profile drawing in the RA Final Design for the exact amount of embedment (the amount of buried block can be determined at each wall station by subtracting the "BB" elevations from the "GR" elevations).

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR

5/25/05 DATE

6/2/05 DATE

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SWING BY THE WAY CHRYSLER/DODGE

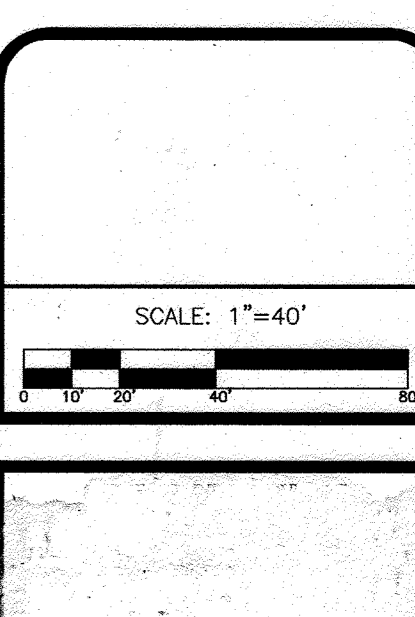
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B. Field changes to the RA Final Design must be approved by RA in writing. Request(s) for design changes/field modifications must be made to RA in writing prior to RA issuing a written response. All correspondence must be documented with formal written response. These additional services are not included in RA's original scope of work and design fee. Therefore, a contract modification/change order must be signed by RA and the client prior to these additional services being provided.

3.13 Rails, Fences & Other Structures

A. The scope of RA for this project does not include fence or railing designs. Typical details have been given to provide general guidelines for the installation of fences, guide rails and railings behind walls. RA cannot give specific details because the type, placement and height of fences and rails varies widely and because the requirements are different depending on the municipality and regulatory authority. RA can provide a project specific fence or rail detail and structural design for an additional fee if given exact information (material type and size and manufacturer's specifications and installation guidelines).

B. Open fences and railings not subject to wind loads (minimum of 50% open and maximum of 50R solid) may be placed directly behind the wall or in the wall (can be placed in the blocks only if they are a hollow system and if the cores and web alignment will accept the posts) as long as they are not subject to vehicular impact. Solid or semi-solid fences that are subject to wind loads must be kept back a minimum of 3 feet from the rear of the wall to prevent loading of the wall.

C. Guide rails subject to vehicular impact must be kept back a minimum of 3 feet from the rear of the wall to prevent loading of the wall. Guide rails may be placed closer than this 3 foot minimum only if a barrier (such as curbing, wheel stops, etc.) is in place to prevent vehicular impact (the overhang of vehicles must be considered when determining this).

D. Light post foundations, sign foundations and similar structures subject to wind loads must be kept back a minimum of 3 feet from the rear of the wall to prevent loading of the wall.

E. In cases where these 3 foot minimum distances cannot be met due to restraints on the site, additional analyses will need to be done to determine methods of stabilization. RA can provide these designs for an additional fee.

3.14 Storm Structures & Utilities

A. Reinforced Concrete Pipes (RCIP) may pass through the leveling pad or wall structure without additional means of support (it should be verified from the pipe manufacturer that the pipe can withstand a load equal to or greater than that exerted by the wall--as stated in the RA Final Design General Notes under "Bearing Capacity"). The SRW units may be cut to fit around the pipe and the voids filled with non-shrink grout or type "M" mortar. A concrete collar may be cast around the structure if desired for ease of construction and aesthetic considerations. When a collar is cast, the top of the collar must line up with an even block course to maintain proper alignment, neat workmanship and to eliminate horizontal cutting of blocks.

B. The wall may not bear on plastic or steel pipes (such as ADS, CMP, HDPE, PVC, SLOPP, etc.) or utilities (such as electric, gas, phone lines, sewer or water lines, etc.). Grade beams or lintels must be used to bridge these non-load bearing structures. The specific grade beam or lintel is not specified in the RA Final Design. RA shall be consulted to determine the size, strength and reinforcing of the grade beam or lintel. If these non-load bearing pipes or utilities are located at minimum of 42 inches below the wall's leveling pad then a grade beam or lintel is not necessary.

C. Concrete storm structures may be located behind a wall and be within the reinforced geogrid zone as dictated by the project's civil drawings. If the structure(s) cannot be moved out of the reinforced geogrid zone and the geogrid cannot be installed to its full design length the following shall apply. On small structures (such as collection boxes, concrete pipes less than 18 inches, inlets, manholes, etc.) it is acceptable to shorten the geogrid from the design length and meet bearing structures with the wall--as stated in the RA Final Design General Notes under "Bearing Capacity". The SRW units may be cut to fit around the pipe and the voids filled with non-shrink grout or type "M" mortar. A concrete collar may be cast around the structure if desired for ease of construction and aesthetic considerations. When a collar is cast, the top of the collar must line up with an even block course to maintain proper alignment, neat workmanship and to eliminate horizontal cutting of blocks.

D. The wall's integrity may be compromised if pipes or structures burst or develop leaks and allow water or fluids to saturate the reinforced geogrid zone. The geogrid reinforcement shall be provided to ensure that the geogrid zone remains saturated or burst or leak and allow water or fluids to saturate the reinforced geogrid zone. To prevent damage to the wall structure a bed of clean gravel shall be placed under all pipes (minimum of 6" deep) and shall extend up to the "spring line" (half way up). Positive flow of the gravel must be maintained away from the wall structure.

3.15 Construction Adjacent to Completed Wall

A. The owner or owner's representative is responsible for ensuring that construction adjacent to the wall by others does not disturb the wall or place temporary construction loads on the wall that exceed design loads, including loads such as water pressure, temporary grades, or equipment loading. Heavy paving or grading equipment shall be kept a minimum of three feet behind the back of the wall face. Equipment with wheel loads in excess of 150 PSF live load shall not be operated within 10 feet of the retaining wall during construction. If access to the wall is necessary, care shall be taken by the general contractor or owner to ensure water runoff is directed away from the wall structure until final grading and surface drainage collection systems are completed.

B. Care must be taken when installing appurtenances (such as generators, transformers, etc.) or utilities within the reinforced geogrid zone of the wall. The compaction integrity of the reinforced geogrid zone must be maintained, both below and beside (around) the appurtenance or utility. Neglecting to do so may cause hydrostatic pressure and wall failure.

3.16 Storm Water Management & Slopes

A. The segmental retaining wall is not a storm water management structure. The wall can accommodate the rainfall above the reinforced geogrid zone but not the watershed (including the retained zone). Therefore it is absolutely essential that surface water be prevented from entering (and ultimately saturating) the reinforced geogrid zone. This is usually accomplished by the site engineer (owner's civil engineer) grading the surface behind the wall to direct surface water to swales that divert the water around the wall ends. To prevent water from entering over the top of the wall through scuppers, if water is directed to the wall (such as applications with back slopes), the top 8 inches of compacted fill over the reinforced geogrid zone must have impermeable soil (such as CL, GC or SC). If clayey soils are not readily available an underlying geomembrane (geosynthetic liner) may also be used. This geomembrane shall

be Mirafiori 2200K, Stratadrain or equivalent. It shall extend downward vertically a minimum of 3 feet behind the reinforced geogrid zone, be laid horizontally on top of the reinforced geogrid zone with a maximum slope of 10:1 and extend forward into the 12 inch gravel drainage layer.

B. The site geotechnical engineer is responsible for verifying the stability of slopes on the project. RA's scope includes only the wall design, not the evaluation of back slopes (above walls) or front slopes (at the base of walls). RA performs global stability analyses on walls that rest on major front slopes, however only the wall is analyzed, not the actual slopes above or below the wall. It is the responsibility of the site geotechnical engineer to determine if the site soils are able to sustain the proposed grades. If not, they shall determine and specify the additional reinforcement that is necessary to provide the proper slope stability and prevent erosion.

C. The general contractor, owner, site contractor and/or wall installer must provide for proper wall drainage to prevent the buildup of hydrostatic pressures over the service life of the structure. In the event additional water is introduced into the general wall area, either above or below grade, the RA Final Design will be invalid (the exception is "water applications" where clean gravel is used for infill and it is wrapped in filter fabric and the design intent is for the wall to be interacting with water).

D. Drains for other structures (such as downspouts, roof drains, sump pumps, etc.) must flow through the wall. They cannot be connected to the wall's drainage system or discharge into the wall's reinforced geogrid zone.

3.17 Parking Lots & Roadways

A. If a paved parking lot or roadway is proposed above the wall it must be properly maintained and have proper surface water management. Typically curbing is installed to catch and divert the surface water runoff to inlets or ponds. All joints between the asphalt and the curbing must be sealed to prevent water from seeping into the wall's reinforced geogrid zone. The owner must regularly (semi-annually) inspect the pavement for cracks and repair them immediately if discovered. If cracks remain open they could allow surface water runoff or melting snow to saturate the wall's reinforced geogrid zone or retained zone which can lead to wall failure.

B. RA makes an effort to keep the topmost layer of geogrid two or three courses down from the top of the wall when there is pavement above. This is done so that the geogrid is properly embedded in sub-soils and not lying on top (since there is the depth of the granular sub-base material and the pavement depth to account for). Also, in many cases, RA designs the wall with the "TW" elevation high enough so that the back of the curb is covered (normally required by the civil engineer and required for support of the curbing). Therefore, the top layer of geogrid in some cases must be cut during pavement and/or curb installation (especially when a wall steps continuously on top). It is acceptable to cut the topmost layer of geogrid only if it is at the same elevation as the pavement or curbing (since if this is the case the wall is not absorbing a lateral load--only holding back "dead space" between the pavement or curbing and itself). However, the second layer of geogrid down from the top must remain intact.

C. If snow is plowed/pushed and stored above a wall it can not exceed a height of 5'. If there are definite plans for storage of accumulated snow before the wall is built, RA upon request, can design the wall to accommodate more than 5' of snow (additional geogrid will be required). Snow melt must not be allowed to saturate the wall's reinforced geogrid zone.

3.18 Post Construction Responsibilities

A. Retaining walls are a substantial financial investment. Therefore it is in the owner's best interest that a wall maintenance budget be established within the overall property management budget to monitor and provide preventative maintenance. Retaining wall maintenance, at a minimum, should consist of: checking drainage, inspecting for settling and surveying (or leveling) and verifying proper installation. RA can provide a written checklist to the person under the supervision of a licensed geotechnical/structural engineer. RA can provide this service for an additional fee.

B. RA SHOULD BE NOTIFIED AS SOON AS REASONABLY POSSIBLE IF THE RETAINING WALL EXHIBITS CONDITIONS CONTRARY TO THE RA FINAL DESIGN SO THAT RA MAY BE CONSULTED TO PROTECT THE OWNER'S INVESTMENT.

END OF SECTION Revised 10-11-04

The information contained herein is proprietary and is the sole property of RA. It is only intended for use on this project. Reuse of these drawings, specifications, design computations in any manner is strictly prohibited without written approval from RA. Any other use is subject to penalty of law. (c)

STRUCTURAL NOTES:

- DESIGN CRITERIA**
- DESIGNED UNDER THE PROVISIONS OF THE INTERNATIONAL BUILDING CODE(IBC) 2018/ASCE 7-16.
 - DESIGN LOADS:
LIVE LOADS:
DESIGN SURCHARGE LOAD = 250 PSF
RAILING LOAD = 50 PLF OR 200 LBS AT ANY POINT IN ANY DIRECTION
 - STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER TRADES DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL COMPARE AND VERIFY STRUCTURAL DRAWINGS AND SPECIFICATIONS w/ ARCHITECTURAL AND ALL OTHER TRADES DWGS, SPECIFICATIONS, AND REQUIREMENTS AND REPORT ANY DISCREPANCY TO THE STRUCTURAL ENGINEER AND DESIGN TEAM PRIOR TO DEMOLITION, FABRICATION, AND / OR INSTALLATION OF ANY STRUCTURAL MEMBERS.
 - NO LOADS IN EXCESS OF DESIGN LOADS LISTED SHALL BE PLACED ON ANY AREA DURING CONSTRUCTION UNLESS ADEQUATE SHORING OR OTHER METHOD IS APPROVED TO SUPPORT THE EXCESSIVE LOADS. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE UNTIL PERMANENT BRACING IS COMPLETED.

- DESIGN RESPONSIBILITY**
- TIMMONS GROUP IS THE ENGINEER OF RECORD FOR THE STRUCTURAL DESIGN OF CAST-IN-PLACE RETAINING WALLS AND FOOTINGS ASSOCIATED WITH THE FOLLOWING DRAWINGS. ANY OTHER ITEMS REFERENCED ON THESE DRAWINGS ARE NOT PART OF THE SCOPE OF THESE STRUCTURAL DRAWINGS.
 - ALL NOTES ON STRUCTURAL DRAWINGS SHALL BE ASSUMED TYPICAL UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATIONS.
 - SECTIONS AND DETAILS ARE TO BE USED IN ALL SIMILAR LOCATIONS UNLESS OTHERWISE SHOWN BY OTHER DETAILS AND/OR SECTIONS.
 - PROMPTLY NOTIFY ENGINEER OF ANY STRUCTURAL MEMBER CALLED OUT ON THE CIVIL DRAWINGS THAT IS NOT IDENTIFIED ON THE STRUCTURAL DRAWINGS.
 - THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION OF CONSTRUCTION OF THE PROJECT AND THEN, ONLY TO SUPPORT THE DESIGN LOADS INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION AND FOR THE ADEQUACY OF THE STRUCTURE TO SUPPORT LOADS OCCURRING DURING CONSTRUCTION. FURNISH ALL TEMPORARY BRACING, SHORING, AND/OR SUPPORT AS REQUIRED.
 - CHECK ALL DIMENSIONS AGAINST THE REQUIREMENTS OF OTHER CONTRACT DOCUMENTS. RESOLVE APPARENT INCONSISTENCIES IN THE CONTRACT DOCUMENTS WITH THE ARCHITECT/ ENGINEER BEFORE PROCEEDING WITH WORK.

- EXISTING CONDITIONS**
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE PLANS TO THE ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL BE REQUIRED TO DOCUMENT EXISTING CONDITIONS BY SKETCHES OR OTHER METHODS.
 - DEPTHS AND LOCATIONS OF EXISTING STRUCTURES AND UTILITY LOCATIONS TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF THE WORK. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO ENSURE THAT EXISTING STRUCTURES AND UTILITIES ARE NOT DAMAGED AS PART OF THE WORK.
 - VERIFY ALL EXISTING CONDITIONS (INCLUDING BUT NOT LIMITED TO EXISTING STRUCTURE, UTILITIES, SITE CONDITIONS, ETC.) APPLICABLE TO THIS PROJECT BEFORE STARTING ANY PHASE OF WORK.
 - PROTECT EXISTING CONDITIONS (MENTIONED ABOVE) DURING ALL PHASES OF DEMOLITION AND CONSTRUCTION OF THIS PROJECT.
 - REPAIR ALL ITEMS DAMAGED IN THE COURSE OF DOING THIS WORK TO A CONDITION AT LEAST EQUAL TO ORIGINAL CONDITION AT NO ADDITIONAL EXPENSE TO THE OWNER.
 - NOTIFY PROJECT DESIGN TEAM OF DISCREPANCIES, INCONSISTENCIES, OR ITEMS TO BE CHANGED DUE TO EXISTING CONDITIONS.

- PROPOSED DIMENSIONS & ELEVATIONS**
- THE CONTRACTOR SHALL INDEPENDENTLY VERIFY ALL ELEVATIONS AND DIMENSIONS SHOWN ON THE DRAWINGS BEFORE FABRICATION AND CONSTRUCTION. IF FIELD CONDITIONS AND/OR DIMENSIONS DIFFER FROM THE PLANS, THE CONTRACTOR SHALL USE THE FIELD MEASUREMENTS AND MAKE APPROPRIATE CHANGES TO THOSE SHOWN ON THE PLANS WHEN SHOP DRAWINGS ARE SUBMITTED FOR APPROVAL BY THE ENGINEER. THE FIELD MEASUREMENTS SHALL BE INDICATED ON THE SUBMITTED SHOP DRAWINGS.

- CONSTRUCTION METHODS**
- THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING CONSTRUCTION.

- TEMPORARY BRACING**
- CONTRACTOR IS RESPONSIBLE FOR BRACING, WITHOUT OVERSTRESSING, ALL STRUCTURAL ELEMENTS AS REQUIRED AT ALL STAGES OF CONSTRUCTION UNTIL COMPLETION OF THE PROJECT. PROVIDE TEMPORARY LATERAL SUPPORT FOR ALL WALLS UNTIL THE WALLS ARE ADEQUATELY BRACED BY PERMANENT STRUCTURAL MEANS.

- GEOTECHNICAL INFORMATION**
- REFER TO GEOTECHNICAL REPORT "PROPOSED DRYERS ICE CREAM PLAN EXPANSION" PREPARED BY ECS LTD DATED 03/03/2004 FOR ALL SUBGRADE MATERIAL REQUIREMENTS.
 - THE DESIGN IS BASED UPON AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 3000 PSF. SOIL BELOW THE FOOTINGS NOT MEETING THE DESIGN BEARING PRESSURE SHALL BE EXCAVATED TO A DEPTH OF VERIFIABLE DESIGN PRESSURE AND BACKFILLED WITH NO. 57 STONE TO THE LEVEL OF FOUNDATION BEARING. THIS SHALL BE APPROVED BY A LICENSED GEOTECHNICAL ENGINEER.
 - DESIGN IS BASED UPON ASSUMED SOIL FILL VALUES. GEOTECH TO VERIFY THE FOLLOWING ASSUMPTIONS IN THE FIELD:
A. DENSITY: 125 PCF MAX.
B. FRICTION ANGLE OF BACKFILL SOIL: 30 DEGREES
 - THE SITE SHALL BE PREPARED UNIFORM IN ACCORDANCE WITH CIVIL DRAWINGS, SPECIFICATIONS, AND THE DESIGN SOIL BEARING PRESSURE. A LICENSED GEOTECHNICAL ENGINEER SHALL VERIFY ALL ASSUMPTIONS AND REPORTS ANY VARIATIONS TO THE ENGINEER.
 - ALL EXCAVATIONS AND FOOTINGS SHALL BE INSPECTED BY A LICENSED GEOTECHNICAL ENGINEER TO VERIFY THE DESIGN ASSUMPTIONS AND REPORT ADVERSE CONDITIONS. ALL FOUNDATIONS SHALL BE CONCRETED PROMPTLY FOLLOWING INSPECTION.
 - WHERE FILL IS REQUIRED, IT SHALL BE PLACED IN ACCORDANCE WITH INSTRUCTIONS OF A LICENSED GEOTECHNICAL ENGINEER TO MAINTAIN DESIGN BEARING PRESSURE.
 - USE HAND COMPACTION EQUIPMENT WITHIN FIVE FEET OF RETAINING WALLS.
 - AFTER STRIPPING MATERIAL FROM AREA TO BE GRADED, REMOVE ALL UNSUITABLE MATERIAL FROM EXPOSED SUB-GRADE, SUCH AS DEBRIS, TRASH, ORGANIC MATTER, OR SOFT SOIL. SOIL SURFACES RECEIVING COMPACTED STRUCTURAL FILL SHALL BE PROOF-ROLLED WITH A LOADED DUMP TRUCK UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER. AREAS EXHIBITING EXCESSIVE PUMPING, WEAVING, OR RUTTING SHALL BE EXCAVATED AND REPLACED WITH COMPACTED STRUCTURAL FILL OR SCARIFIED, DRIED, AND RE-COMPACTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING FILL.
 - THE HORIZONTAL DISTANCE BETWEEN STEPS IN WALL FOOTINGS SHALL BE AT LEAST TWO TIMES THE CHANGE IN ELEVATION.
 - CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING CONSTRUCTION TO DIRECT WATER AWAY FROM FOUNDATION CONSTRUCTION AREAS. ANY SUB-GRADE SOILS WEAKENED BY THROUGH SATURATION OR DISTURBANCE SHALL BE REMOVED AND REPLACED WITH COMPACTED STRUCTURAL FILL.

- SUBMITTALS**
- CONTRACTOR SHALL PROVIDE THE FOLLOWING PRIOR TO FABRICATION AND INSTALLATION FOR THE ENGINEER'S APPROVAL:
- PRODUCT DATA SHEETS FOR EACH MATERIAL TO BE INSTALLED.
 - CONCRETE MIX DESIGN FOR CAST-IN-PLACE RETAINING WALLS.
 - MATERIAL AND MILL CERTIFICATIONS.
 - SHOP DRAWINGS SHOWING STEEL REINFORCING FABRICATIONS, BENDING, AND PLACEMENT.
 - SHOP DRAWINGS SHOWING STEEL RAILING FABRICATIONS, BENDING, AND PLACEMENT.

- MATERIALS**
- ALL DETAILING, FABRICATION, AND PLACEMENT OF REINFORCING STEEL FORM WORK, MIXING, HANDLING, PLACING, FINISHING, AND CURING OF CONCRETE SHALL BE IN ACCORDANCE WITH CURRENT EDITIONS OF ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI-318) AND ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI-318).
- REINFORCEMENT**
 - REINFORCING STEEL BARS AND ALL SUPPORT DEVICES SHALL BE BLACK BARS AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60. SUBMIT TO TIMMONS GROUP FOR APPROVAL, COMPLETE BENDING AND PLACING DETAILS OF ALL REINFORCEMENT, INDICATING POSITION OF SPLICES, INCLUDE ACCESSORY DRAWINGS.
 - ALL REINFORCING BAR SPLICES SHALL BE ACI CLASS B TENSION LAP SPLICES, U.N.O.
 - UNLESS OTHERWISE NOTED, CAST-IN-PLACE CONCRETE CLEAR COVER SHALL BE AS FOLLOWS:
 - CAST AGAINST EARTH: 3"
 - PERMANENTLY EXPOSED TO EARTH OR WEATHER: 2"
 - CONCRETE**
 - 28-DAY STRENGTH: 4,000 PSI
 - DENSITY: NORMAL WEIGHT
 - W/C (MAX): 0.45
 - AIR CONTENT: 6.5% +/- 1.5
 - NOMINAL MAX. AGGREGATE SIZE: 3/4 IN.
 - CONCRETE SHALL CONFORM TO ASTM C94. ALL AGGREGATES SHALL CONFORM TO ASTM C33.
 - CAST SIX CYLINDERS OF EACH CONCRETE POUR. TEST TWO CYLINDERS SEVEN DAYS AFTER CASTING AND TWO 28 DAYS AFTER CASTING. HOLD TWO CYLINDERS FOR POSSIBLE TEST UNTIL 60 DAYS AFTER CASTING. DISPOSE OF CYLINDERS IF TEST IS NOT REQUESTED. SEND REPORTS TO ARCHITECT, CONTRACTOR AND STRUCTURAL ENGINEER.
 - NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
 - CONTRACTOR TO CHAMFER EXPOSED EDGES OF CONCRETE TO 3/4".
 - AT LOCATIONS OF NEW CONCRETE PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SHALL BE ROUGHENED TO A 3/16" AMPLITUDE PRIOR TO APPLYING THE BONDING AGENT AND SUBSEQUENTLY THE NEW CONCRETE.
 - EXTERIOR GRADE PLYWOOD SUITABLE FOR CONCRETE FORMS COMPLYING WITH DOC P51, MEDIUM DENSITY OVERLAY, CLASS 1 OR BETTER AND HARD PLASTIC FINISHED PLYWOOD SHALL BE USED AS FORMS.
 - IF FORM RELEASE AGENT IS USED, FORM RELEASE AGENT SHALL NOT STAIN OR ADVERSELY AFFECT CONCRETE SURFACES THAT WILL PREVENT THE APPROVED FINISH.
 - STRUCTURAL STEEL**
 - PIPE SHAPES SHALL BE FABRICATED FROM ASTM A53, GRADE B, STEEL.
 - CONCRETE BONDING AGENT**
 - SHALL BE A CEMENTITIOUS EPOXY RESIN AND CONFORM TO MDOT REQUIREMENTS.
 - EXPANSION JOINT FILLER MATERIAL**
 - SHALL BE PREFORMED AND SHALL MEET THE REQUIREMENTS OF AASHTO M213.
 - SUBMIT ONE OF THE FOLLOWING PRODUCTS (OR APPROVED EQUAL) FOR ENGINEER'S APPROVAL AND INSTALL PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS:
 - RIGHT JOINT FIBRE EXPANSION JOINT BY RIGHT POINTE, LLC, DEKALB, IL
 - FIBRE EXPANSION JOINT BY W.R. MEADOWS, INC., HAMPSHIRE, IL
 - EXPANSION JOINT SEALANT MATERIAL**
 - SHALL BE HOT APPLIED, SINGLE COMPONENT JOINT SEALANT AND CONFORM TO ASTM D6990, TYPE II. THE EXPANSION JOINT SEALANT MATERIAL SHALL BE APPLIED DIRECTLY OVER THE EXPANSION JOINT FILLER MATERIAL. USE THE SAME MANUFACTURER FOR THE EXPANSION JOINT FILLER MATERIAL AND EXPANSION JOINT SEALANT MATERIAL. COLOR SHALL BE APPROVED BY THE OWNER PRIOR TO INSTALLATION.
 - GEOTEXTILE DRAINAGE FABRIC**
 - SHALL BE A NON-WOVEN AND CLOG RESISTANT POLYPROPYLENE MATERIAL, SUITABLE FOR SUBSURFACE APPLICATION, AND THERMALLY AND LOGICALLY STABLE.
 - THE GEOTEXTILE SHALL COMPLY WITH THE REQUIREMENTS OF AASHTO M288 TABLE 1-GEOTEXTILE STRENGTH PROPERTY REQUIREMENTS, CLASS 3, FOR GRAB STRENGTH.
 - DRAIN PIPE**
 - SHALL BE CORRUGATED, NON-PERFORATED POLYETHYLENE PIPE CONFORMING TO MDOT REQUIREMENTS.
 - WEEP HOLES**
 - SHALL CONSIST OF NON-PERFORATED PVC DRAIN PIPES. INSTALL MESH SCREEN OVER WEEP HOLES ALONG THE RETAINING WALL FILL FACE.

- SPECIAL INSPECTIONS**
- SPECIAL INSPECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH CHAPTER 17 OF THE 2018 INTERNATIONAL BUILDING CODE. AN APPROVED SPECIAL INSPECTION AGENCY SHALL BE PROVIDED BY THE OWNER PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL INSPECTION PROCEDURES WITH THE OWNER AND THE OWNER'S AGENT. A FINAL REPORT OF INSPECTIONS DOCUMENTING COMPLETION OF ALL WORK SHALL BE SUBMITTED TO THE CODE OFFICIAL. THE CONTRACTOR SHALL COORDINATE WITH THE INSPECTOR TO MEET THE SPECIAL INSPECTION REQUIREMENTS.
 - SPECIAL INSPECTIONS FOR STRUCTURAL STEEL FRAMING SHALL MEET REQUIREMENTS OF SECTION 1705.2 AND TABLE 1705.2.3.
 - SPECIAL INSPECTIONS FOR CONCRETE CONSTRUCTION SHALL MEET REQUIREMENTS OF SECTION 1705.3 AND TABLE 1705.3.
- SPECIAL INSPECTIONS FOR SOILS SHALL MEET REQUIREMENTS OF SECTION 1705.6 AND TABLE 1705.6.

ABBREVIATIONS:

AASHTO	-	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
ACI	-	AMERICAN CONCRETE INSTITUTE
B. BOT	-	BOTTOM
BRG	-	BEARING
CANT.	-	CANTILEVER
CIP	-	CAST IN PLACE
CJ	-	CONSTRUCTION OR CONTROL JOINT
CL	-	CENTERLINE
CLR	-	CLEAR
CNTR'D	-	CENTERED
CONC.	-	CONCRETE
CONT.	-	CONTINUOUS
DIA.	-	DIAMETER
EA.	-	EACH
E.F.	-	EACH FACE
EL. ELEV.	-	ELEVATION
EQ	-	EQUAL
E.W.	-	EACH WAY
FDN	-	FOUNDATION
FOC	-	FACE OF CONCRETE
FTG	-	FOOTING
HORIZ	-	HORIZONTAL
IBC	-	INTERNATIONAL BUILDING CODE
LW	-	LONG WAY
MAX	-	MAXIMUM
MDOT	-	MARYLAND DEPARTMENT OF TRANSPORTATION
MIN	-	MINIMUM
N.T.S.	-	NOT TO SCALE
OC	-	ON CENTER
PEJ	-	PREFORMED EXPANSION JOINT
PSF	-	POUNDS PER SQUARE FOOT
REINF	-	REINFORCEMENT, REINFORCING
SER	-	STRUCTURAL ENGINEER OF RECORD
SCH	-	SCHEDULE
SW	-	SHORT WAY
T	-	TOP
TOF	-	TOP OF FOOTING
TYP	-	TYPICAL
U.N.O.	-	UNLESS NOTED OTHERWISE
VERT.	-	VERTICAL

LEGEND:

CONCRETE	-	[Symbol]
EARTH	-	[Symbol]
POROUS FILL / GRANULAR FILL	-	[Symbol]

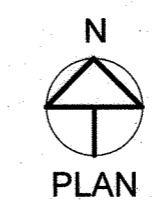
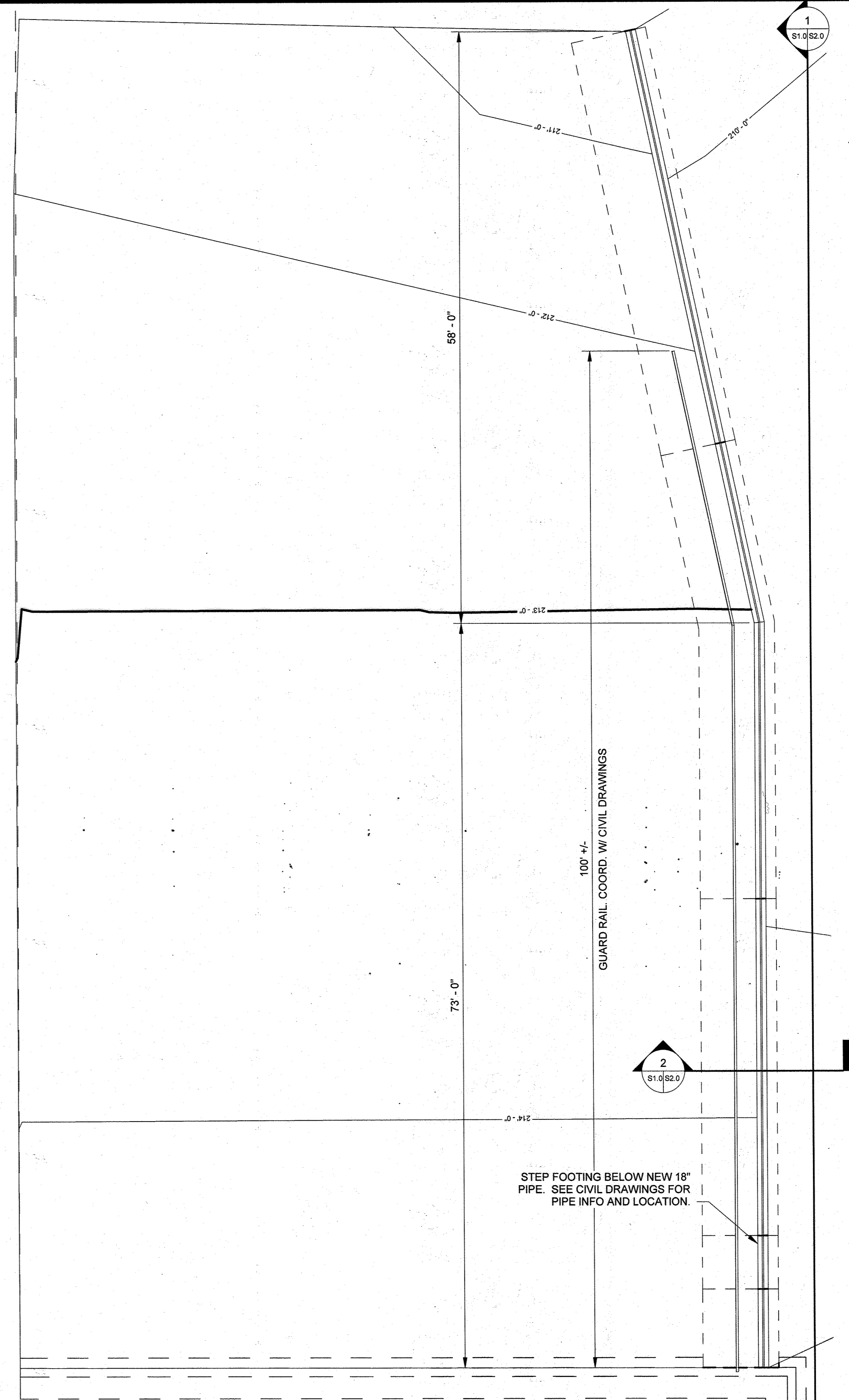
SECTION NUMBER: [Symbol]

SHEET CUT ON: [Symbol]

SHEET SHOWN ON: [Symbol]

FOUNDATION PLAN GENERAL NOTES:

- SEE SHEET S2.0 FOR SECTIONS AND DETAILS.
- CONTRACTOR TO COORDINATE ALL DIMENSIONS, ELEVATIONS AND OPENINGS WITH CIVIL DRAWINGS AND EXISTING CONDITIONS PRIOR TO EXECUTING WORK.
- REFER TO GEOTECHNICAL REPORT "PROPOSED DRYERS ICE CREAM PLANT EXPANSION" PREPARED BY ECS LTD DATED 03/03/2004 FOR ALL SUBGRADE MATERIAL REQUIREMENTS.
- TOP OF FOOTING (T.O.F.) ELEVATIONS REFERENCE EXISTING BUILDING FINISH FLOOR (0'-0") = 218.84'.
- STEP FOOTINGS AT UTILITY LOCATIONS TO ALLOW FOR SLEEVE ABOVE FOOTING. COORDINATE PENETRATION LOCATIONS W/ CIVIL, ARCHITECTURAL, AND PLUMBING DRAWINGS.
- (S) DENOTES FOOTING STEP. SEE TYPICAL DETAIL ON SHEET S3.0.



PARTIAL FOUNDATION PLAN
1/8" = 1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/10/23

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 1/12/23

DIRECTOR DATE 1-12-23

TITLE	SHEET NAME
S1.0	GENERAL NOTES AND FOUNDATION PLAN
S2.0	WALL SECTIONS AND DETAILS

OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO BOX 49006
SCOTTSDALE, AZ 85261
(510) 652-8187



11-28-22
GARY JOHNSON, PE No.28772

NO.	DATE	BY	APP	REVISION
6	10-12-22	SGH	CJ	REVISE TO ADD CHILLED WAREHOUSE EXPANSION, RETAINING WALL, SWM, GRADING AND CHANGE SHEET NUMBERS

REVISED SITE DEVELOPMENT PLAN
GENERAL NOTES AND FOUNDATION PLAN
DREYER'S GRAND ICE CREAM
9800 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410-461-7666 F: 410-461-8961 www.timmons.com

TIMMONS GROUP
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
P: 410-461-7666 F: 410-461-8961 www.timmons.com

PARCEL 508 (LOT A-2)
HOWARD COUNTY, MARYLAND

TAX MAP 60A, SECTION 5
GPA ELECTION

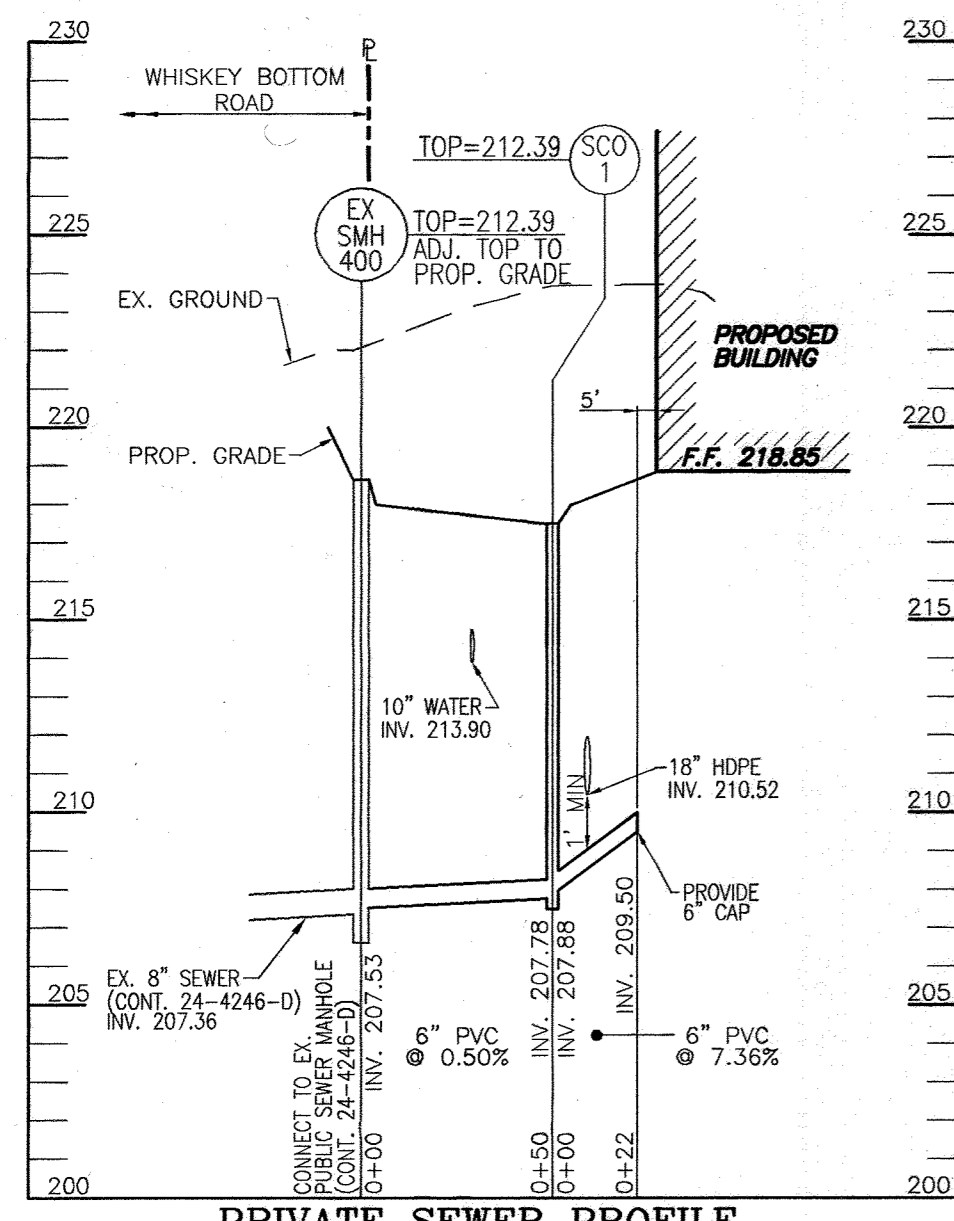
VOGEL ENGINEERING

DESIGN BY: SGH
DRAWN BY: SGH
CHECKED BY: TWL
DATE: OCTOBER 2022
SCALE: AS SHOWN
W.O. NO.: 52554

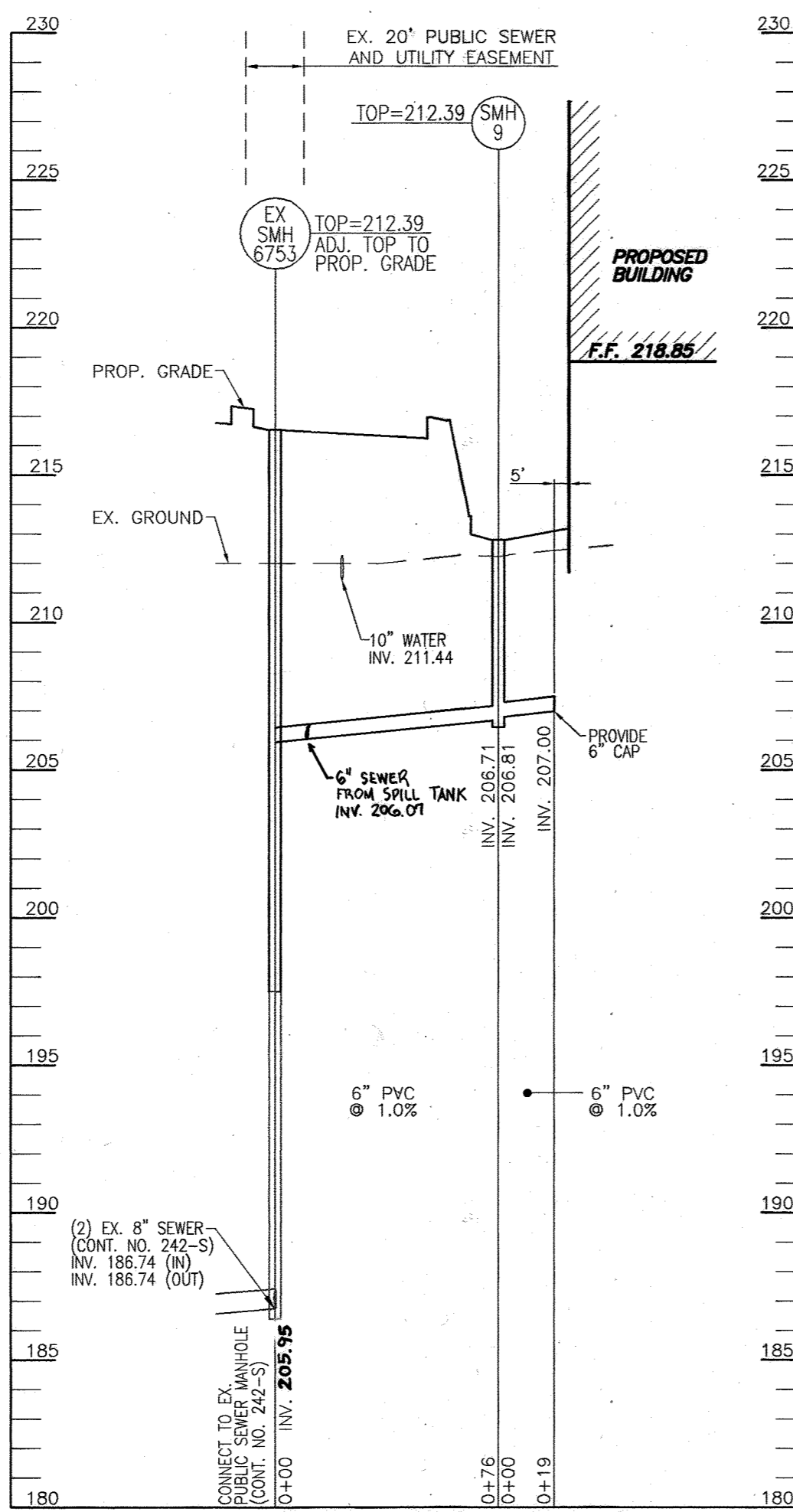
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE PROVISIONS OF THE STATE OF MARYLAND, LICENSE NO. 28772, STATE EXPIRATION DATE: 05-14-2023

S1.0

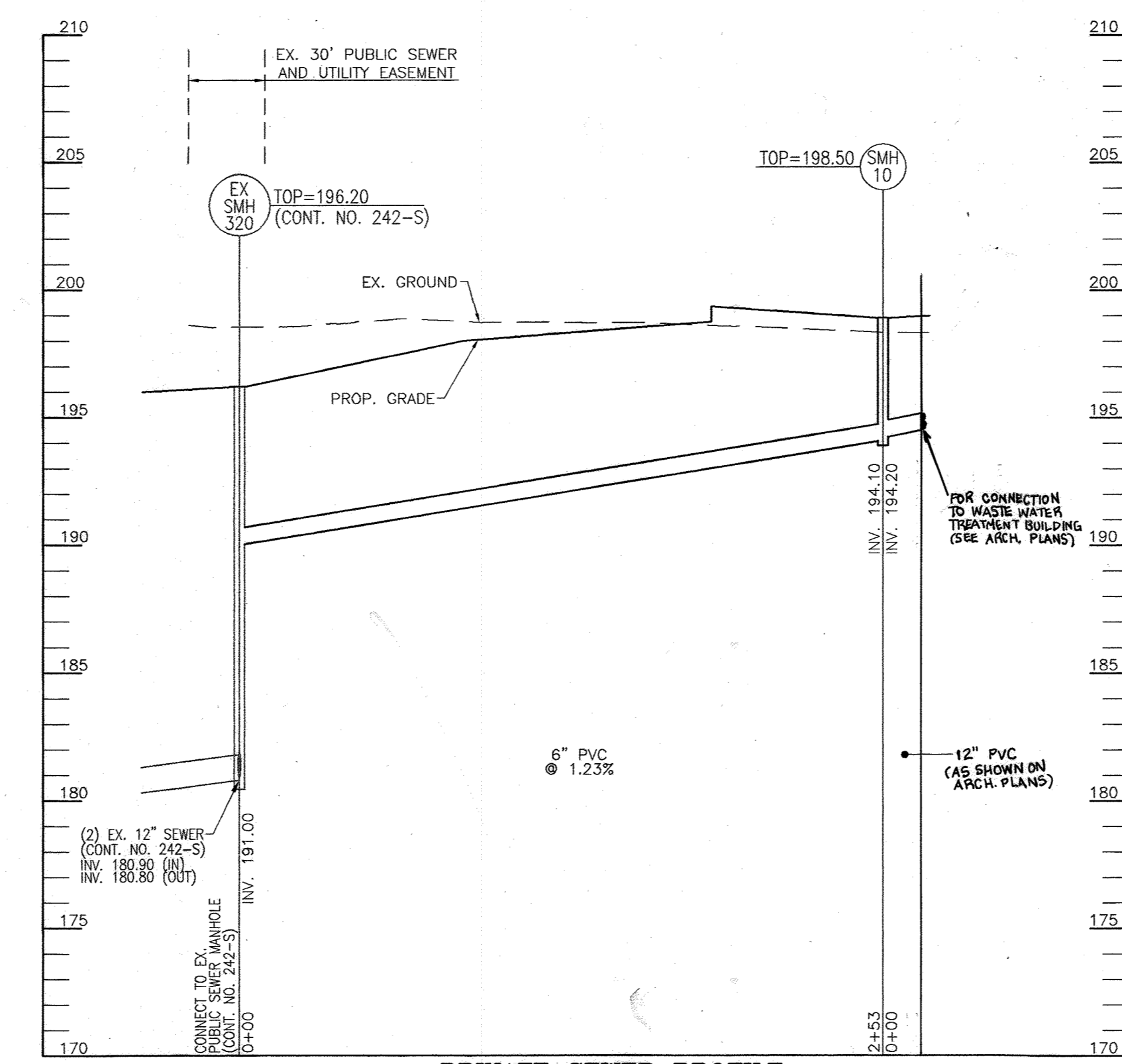
39 SHEET OF 40



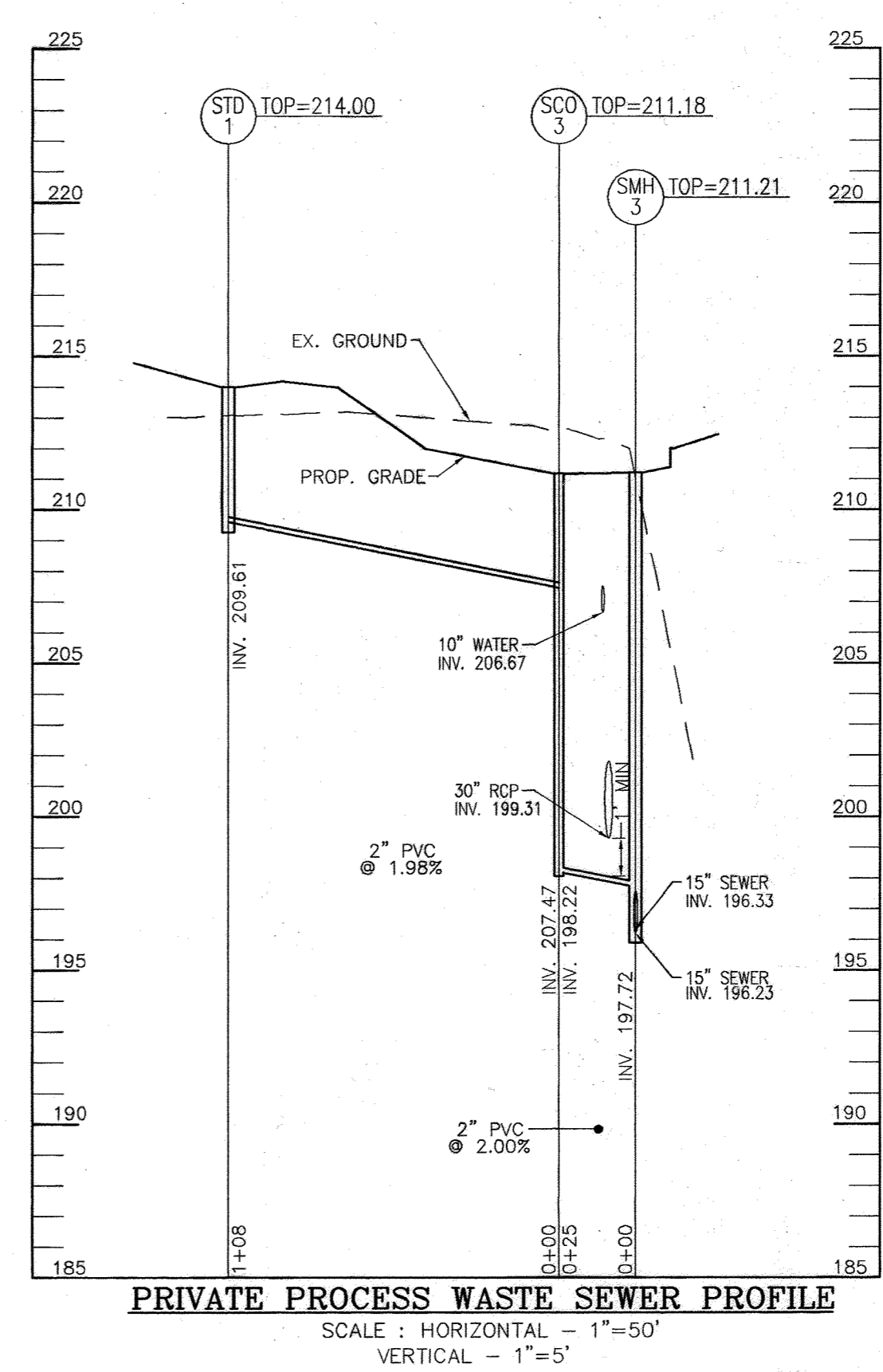
PRIVATE SEWER PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



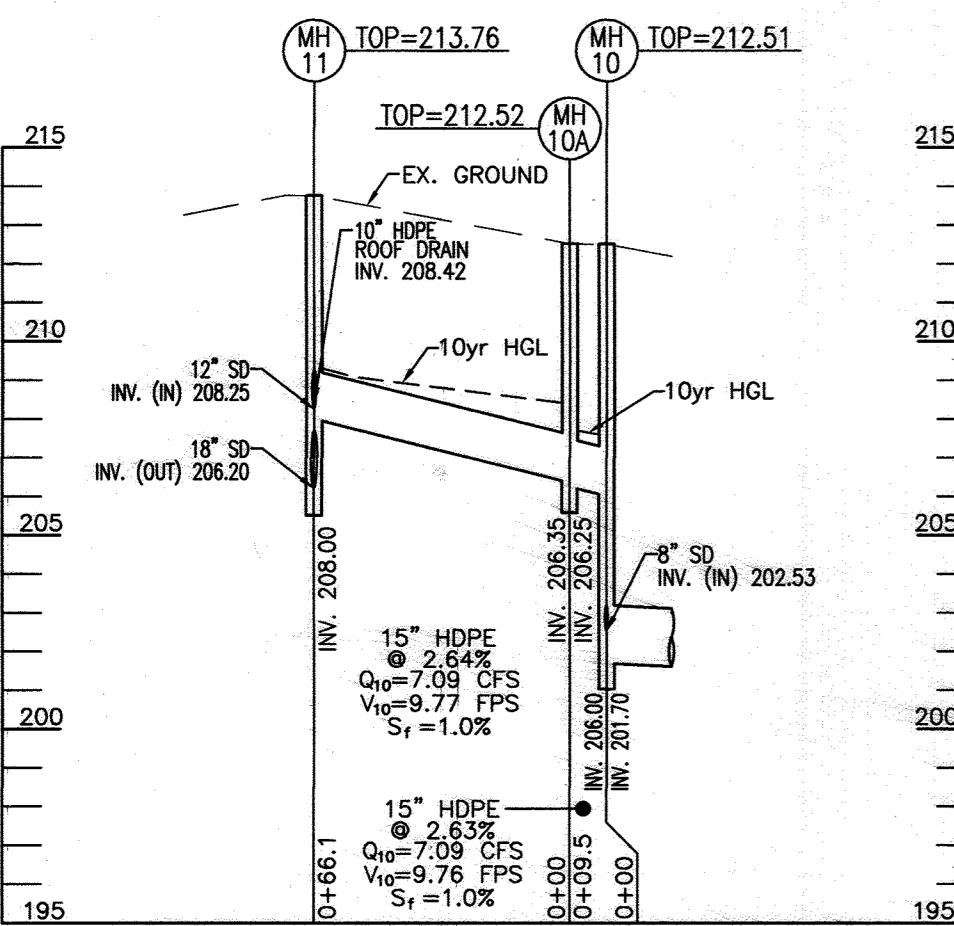
PRIVATE SEWER PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



PRIVATE SEWER PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



PRIVATE PROCESS WASTE SEWER PROFILE
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



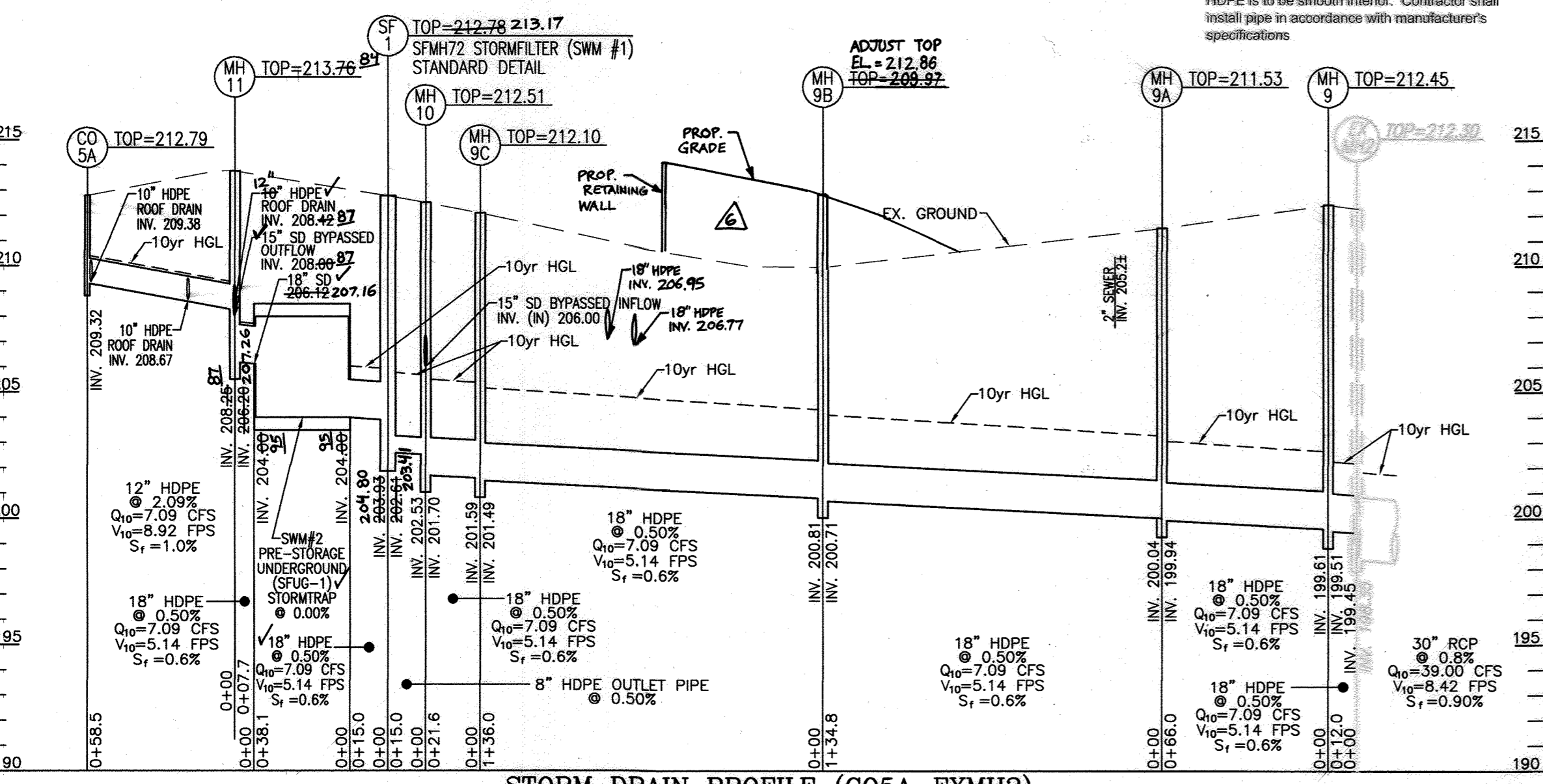
STORM DRAIN PROFILE (MH11-MH10)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'

PRIVATE SD PIPE SCHEDULE

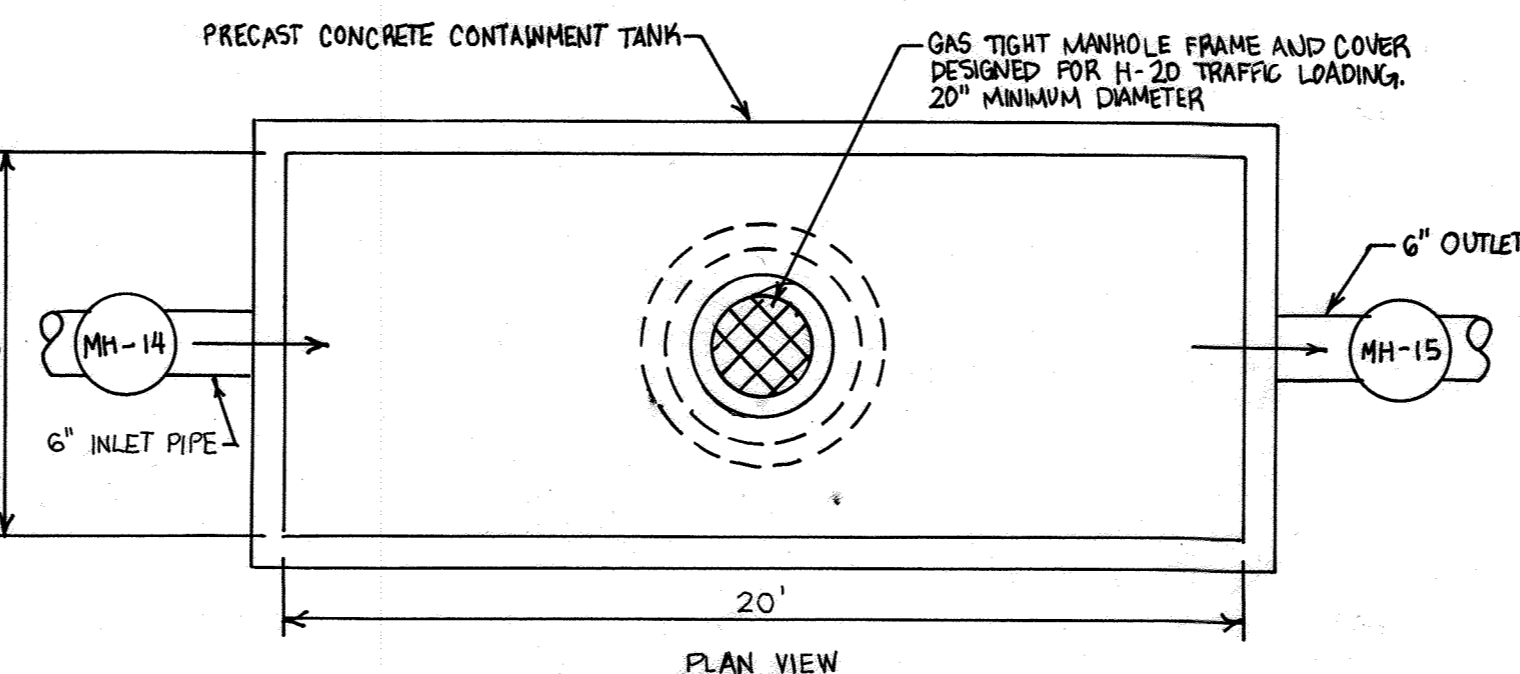
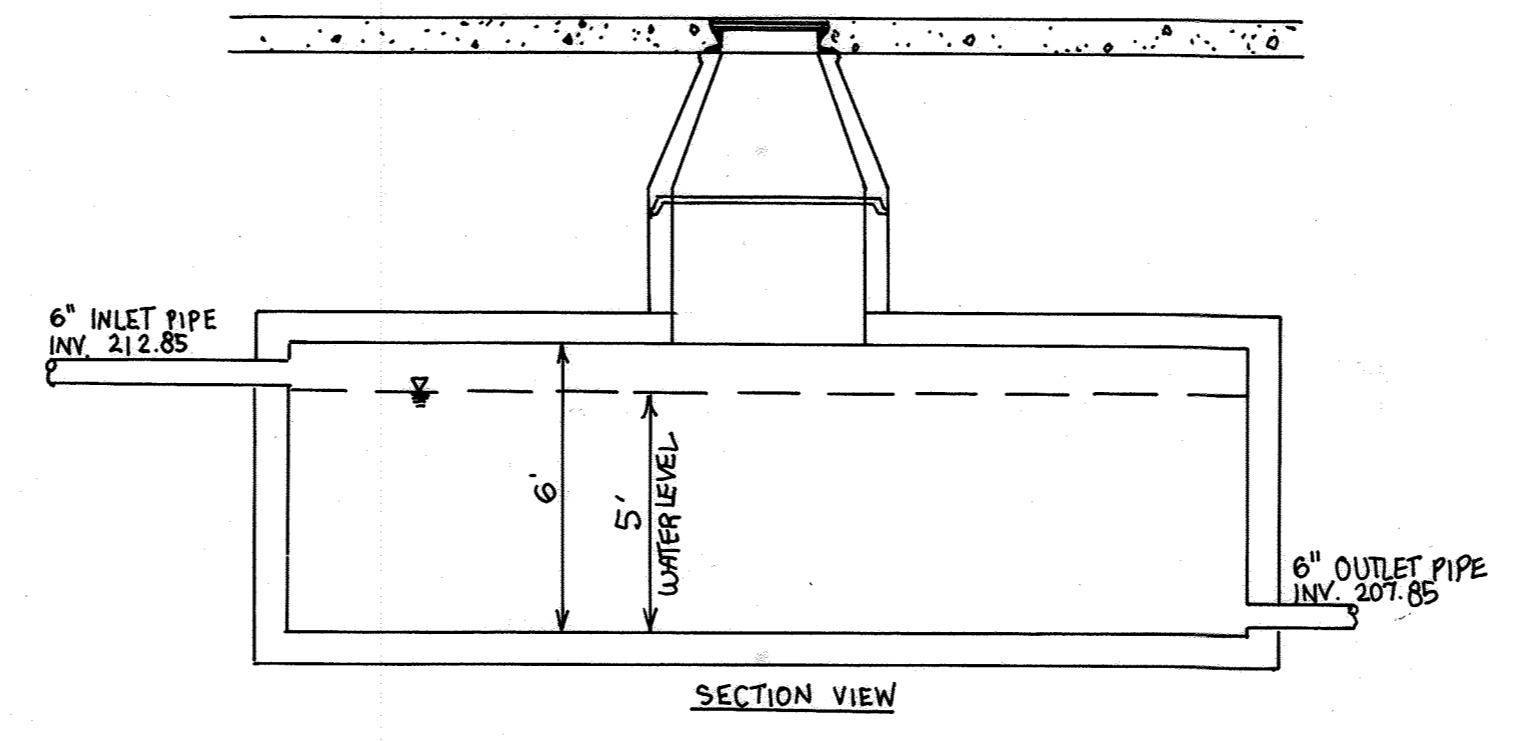
Size	Class	Total Length*
8"	HDPE	16
10"	HDPE	40
12"	HDPE	59
15"	HDPE	76
18"	HDPE	393

*The total length of pipe is linear feet only.

HDPE is to be smooth interior. Contractor shall install pipe in accordance with manufacturer's specifications.



STORM DRAIN PROFILE (CO5A-EXMH2)
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



GENERAL NOTES

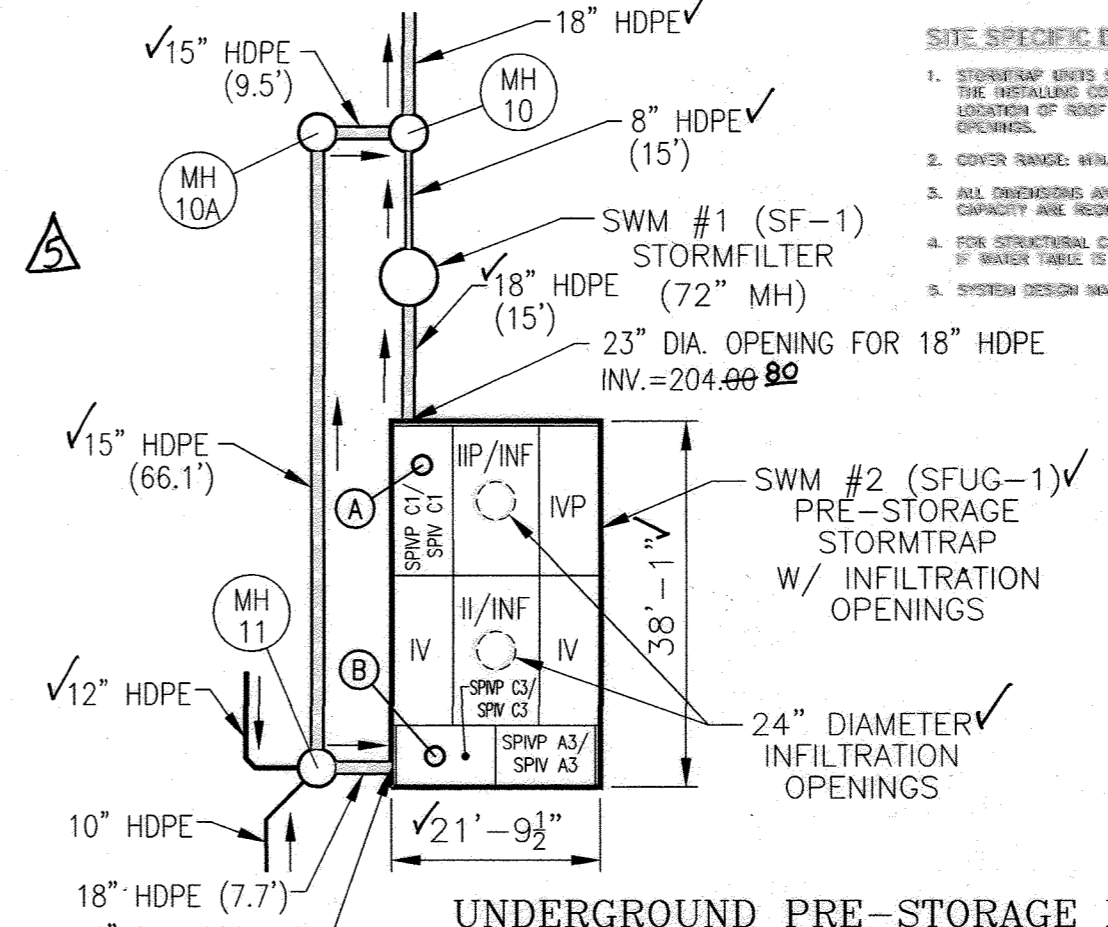
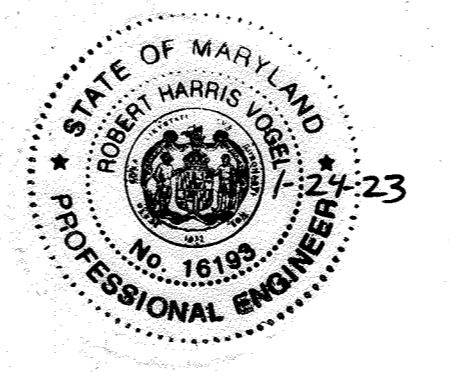
1. THE STRUCTURE CHAMBER SHALL BE PRECAST. THE MANUFACTURER SHALL FURNISH DETAILED STAMPED DESIGN DRAWINGS SHOWING THE REINFORCING STEEL, CONCRETE DESIGN, STRUCTURAL MEMBERS, AND MANHOLE ASSEMBLIES. THE STRUCTURE SHALL BE RATED FOR H-20 LOADING.
2. THE PRECAST STRUCTURE SHALL BE WATERTIGHT. ALL PENETRATIONS SHALL BE AS MANUFACTURED BY LINK, SEAL, OR EQUAL.
3. TANK SHALL BE ACCESSIBLE FOR INSPECTION AND MAINTENANCE. NO STRUCTURES SHALL BE CONSTRUCTED DIRECTLY UPON OR ABOVE THE GREASE INTERCEPTOR ACCESS LOCATIONS, INLET AND OUTLET SHALL BE ACCESSIBLE FOR INSPECTION AND MAINTENANCE.
4. BACKFILL AROUND THE STRUCTURE SHALL BE PLACED IN SUCH A MANNER AS TO PREVENT DAMAGE TO THE TANK.

UNDERGROUND EMERGENCY NH3 SPILL TANK (10,000 GAL)
NOT TO SCALE

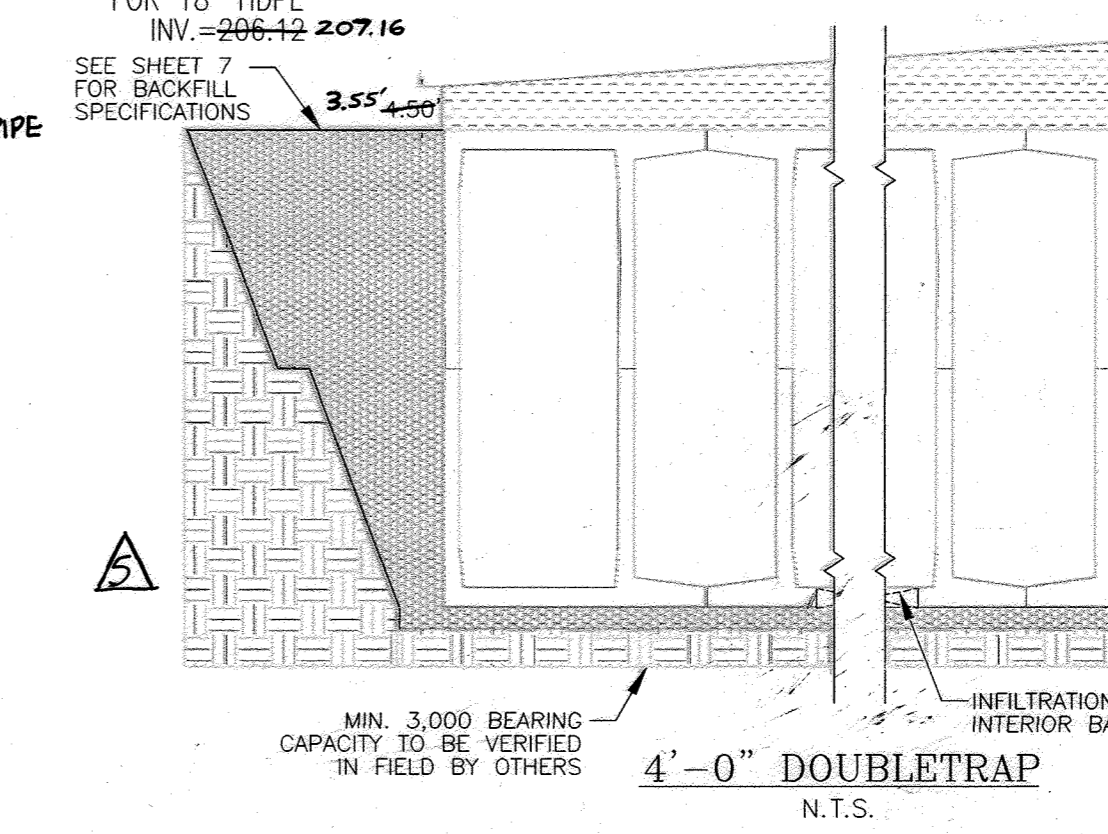
AS-BUILT CERTIFICATION FOR FSWM

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLAGGING OF THE UNDERGROUND SWM FACILITY.

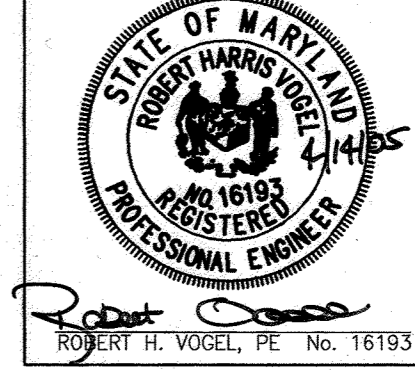
PE NAME: 16193 DATE: 1-24-23



UNDERGROUND PRE-STORAGE FACILITY (SWM#1)
SCALE: 1"=20'



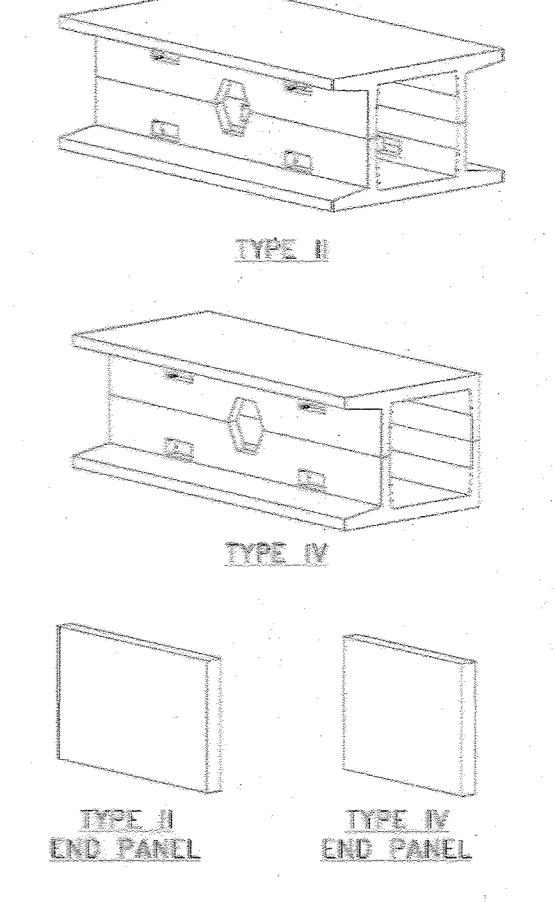
OWNER/DEVELOPER
EDY'S GRAND ICE CREAM
PO Box 4900E
SCOTSDALE, AZ 85261
(50) 652-8187



ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELIOTT CITY, MD 21043
TEL: 410-461-7666
FAX: 410-461-8966

BILL OF MATERIALS

ITEM	DESCRIPTION	QUANTITY	UNIT
1	12" HDPE STORM DRAIN	168	LINEAR FEET
2	15" HDPE STORM DRAIN	10	LINEAR FEET
3	18" HDPE STORM DRAIN	10	LINEAR FEET
4	24" DIA. INFILTRATION OPENING	1	UNIT
5	4" DOUBLETRAP	1	UNIT
6	2" STONE BASE	10	SQ. YD.
7	1/2" STONE BASE	10	SQ. YD.
8	1/2" STONE BASE	10	SQ. YD.
9	1/2" STONE BASE	10	SQ. YD.
10	1/2" STONE BASE	10	SQ. YD.
11	1/2" STONE BASE	10	SQ. YD.
12	1/2" STONE BASE	10	SQ. YD.
13	1/2" STONE BASE	10	SQ. YD.
14	1/2" STONE BASE	10	SQ. YD.
15	1/2" STONE BASE	10	SQ. YD.
16	1/2" STONE BASE	10	SQ. YD.
17	1/2" STONE BASE	10	SQ. YD.
18	1/2" STONE BASE	10	SQ. YD.
19	1/2" STONE BASE	10	SQ. YD.
20	1/2" STONE BASE	10	SQ. YD.
21	1/2" STONE BASE	10	SQ. YD.
22	1/2" STONE BASE	10	SQ. YD.
23	1/2" STONE BASE	10	SQ. YD.
24	1/2" STONE BASE	10	SQ. YD.
25	1/2" STONE BASE	10	SQ. YD.
26	1/2" STONE BASE	10	SQ. YD.
27	1/2" STONE BASE	10	SQ. YD.
28	1/2" STONE BASE	10	SQ. YD.
29	1/2" STONE BASE	10	SQ. YD.
30	1/2" STONE BASE	10	SQ. YD.
31	1/2" STONE BASE	10	SQ. YD.
32	1/2" STONE BASE	10	SQ. YD.
33	1/2" STONE BASE	10	SQ. YD.
34	1/2" STONE BASE	10	SQ. YD.
35	1/2" STONE BASE	10	SQ. YD.
36	1/2" STONE BASE	10	SQ. YD.
37	1/2" STONE BASE	10	SQ. YD.
38	1/2" STONE BASE	10	SQ. YD.
39	1/2" STONE BASE	10	SQ. YD.
40	1/2" STONE BASE	10	SQ. YD.
41	1/2" STONE BASE	10	SQ. YD.
42	1/2" STONE BASE	10	SQ. YD.
43	1/2" STONE BASE	10	SQ. YD.
44	1/2" STONE BASE	10	SQ. YD.
45	1/2" STONE BASE	10	SQ. YD.
46	1/2" STONE BASE	10	SQ. YD.
47	1/2" STONE BASE	10	SQ. YD.
48	1/2" STONE BASE	10	SQ. YD.
49	1/2" STONE BASE	10	SQ. YD.
50	1/2" STONE BASE	10	SQ. YD.



NOTES

1. DIMENSIONS OF STORM DRAIN SYSTEM SHOWN BELOW ALLOW FOR A 1/4" GAP BETWEEN SUCH MODULES.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SIZE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP - INDICATES A MANHOLE WITH INSULATION.
5. P - INDICATES A MANHOLE WITH A PUMP ATTACHMENT.
6. CONNECTIONS RESPONSIBILITY TO BE DETERMINED/ACCURACY TO FINAL POSITION OF RECORD PLAN SET.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: 5/25/23

Chief, Division of Land Development: 6/4/23

Director: 6/4/23

STORM DRAIN STRUCTURE SCHEDULE (PRIVATE)

STR#	TYPE	INV. IN	INV. OUT	TOP BLVD	DETAIL	LOCATION	REMARKS
MH10	4" MANHOLE	199.81	199.51	212.45	C.S. 12	E=1381727.89 N=5205908.83	
MH9A	4" MANHOLE	200.04	199.94	213.33	C.S. 12	E=1381730.14 N=5207943.21	
MH9B	4" MANHOLE	200.91	200.71	209.17	C.S. 12	E=1381650.76 N=5207544.42	
MH9C	4" MANHOLE	201.69	201.49	212.10	C.S. 12	E=1381615.31 N=5207703.08	
MH10	4" MANHOLE	202.51/206.00	201.70	212.51	C.S. 12	E=1381602.76 N=5207855.59	
MH9A	4" MANHOLE	200.35	200.25	212.52	C.S. 12	E=1381524.91 N=5207611.47	
MH11	4" MANHOLE	200.25/208.42	208.00/208.20	215.78	C.S. 12	E=1381555.18 N=5207517.77	
SF-1	72" STORMFILTER/MH	203.93	202.61	212.78	---	E=1381555.22 N=5207517.47	
CO5A	CLEANOUT	209.35	209.32	212.79	---	E=1381580.31 N=5207618.87	

RECEIVED PLAN TO SHOW & BUILD FACILITIES & UTILITY EASEMENT INFORMATION.

NO.	DATE	BY	APP.	REMARKS
1	05-28-06	DZ	RVH	
3	01-05-22	TS	VTG	REVISED PLAN TO SHOW THE ADJUTANT GENERAL'S ASSOCIATED STORMWATER MANAGEMENT FACILITIES
5	04-24-22	TS	VTG	MAKE THE PLAN TO REFLECT THE EIP
6	10-12-22	TS	VTG	MAKE THE PLAN TO REFLECT THE EIP

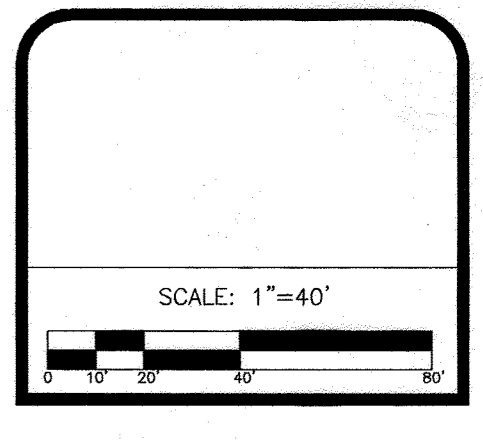
DREYER'S GRAND ICE CREAM
9090 WHISKEY BOTTOM ROAD
LAUREL, MD 20723

SEWER PROFILES

THE DENNIS GROUP, LLC
PLANNING • ENGINEERING • CONSTRUCTION MANAGEMENT

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801-531-8585, FAX 801-531-8586

1901 MAIN STREET
SPRINGFIELD MASSACHUSETTS 01103
413-787-1785, FAX 413-787-1786



DRAWING NO. **C5.7**

HO. CO. DPZ SHEET: 21 OF 40

AS-BUILT, DECEMBER 2022