

CRESTLEIGH SUBDIVISION DRAINAGE IMPROVEMENTS

CAPITAL PROJECT D-1157 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

INDEX OF DRAWINGS

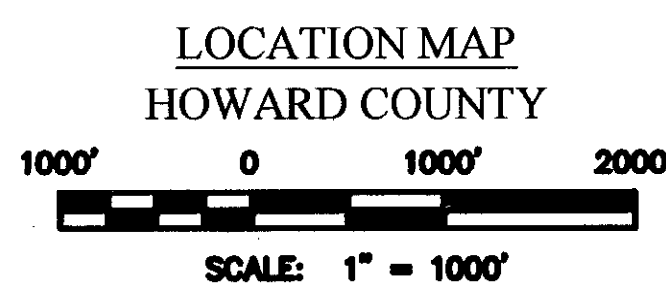
T-01	TITLE SHEET
C-01	STORM DRAIN PLAN
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C-03, C-04	MISCELLANEOUS DETAILS I & II
C-05	EROSION AND SEDIMENT CONTROL PLAN
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DA-01	DRAINAGE AREA MAP

GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AND MISS UTILITY AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK.
- COORDINATES SHOWN HEREON ARE BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD '83/2011 AS PROJECTED BY HOWARD COUNTY PROJECT CONTROL STATIONS 0010/24A AND 24B.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- ALL WORK SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," ISSUED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE NATURAL RESOURCES CONSERVATION SERVICE.
- TOPOGRAPHIC SURVEYS WERE PERFORMED BY URS CORPORATION IN APRIL, 2015.
- THE PROPERTY LINES SHOWN HERE ON ARE BASED ON A FIELD RUN SURVEY PERFORMED BY URS CORPORATION IN APRIL 2015.
- SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHOD, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- APPROXIMATE UTILITIES ARE SHOWN FROM AVAILABLE RECORDS AND/OR FIELD RECONNAISSANCE. CONTRACTOR SHALL INDEPENDENTLY VERIFY & LOCATE THE EXISTING UTILITIES VIA A PRIVATE UTILITY DESIGNATOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A PRIVATE UTILITY LOCATION COMPANY TO VERIFY LOCATIONS OF ALL EXISTING UTILITIES WITHIN THE SCOPE OF WORK PRIOR TO START OF CONSTRUCTION AT HIS OWN EXPENSE.
- UTILITY CONTACTS:
 BGE: (410)-597-7835 (ELECTRIC)
 BGE: (410)-291-5101 (GAS)
 VERIZON: (410)-224-9285
 MCI: (912)-729-6016
 XPEIUS: (703)-386-2340
 ABOVENET: (443)-250-1873
 COMCAST: (410)-513-3207
- ACCORDING TO HOWARD COUNTY, MARYLAND CODE OF ORDINANCES TITLE 15, SUBTITLE 12- FOREST CONSERVATION, THE PROJECT, CLUB COURT DRAINAGE IMPROVEMENTS, IS EXEMPT FROM FOREST CONSERVATION PLAN REQUIREMENTS. NO MORE THAN THE THREE TREES IDENTIFIED ON THE PROJECT PLAN SHEET C-01 WILL BE REMOVED AS A RESULT OF THIS PROJECT. ADDITIONAL EFFORT WILL BE MADE TO SAVE THE TWO IDENTIFIED TREES LOCATED ON 4213 CLUB COURT AS GRADING ACTIVITIES MAY IMPACT A MINOR PORTION OF THE CRITICAL ROOT ZONE.



**SITE
LOCATION**



PROFESSIONAL CERTIFICATION
 "I HEREBY CERTIFY THAT 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. 16156, EXPIRATION DATE: 8/28/2016"

POINT NO.	NORTHING	EASTING	ELEVATION	MARKER TYPE
0010/24A	579,167.044	1,360,260.252	357.15'	HOWARD CO. DISK
241B	578,753.501	1,362,302.987	390.56'	HOWARD CO. DISK
URS6	578,836.069	1,361,939.043	381.81'	MAGNAIL
URS7	578,842.187	1,361,758.175	378.23'	MAGNAIL
URS13	578,945.386	1,361,351.365	371.68'	MAGNAIL
URS15	578,262.725	1,360,919.906	341.24'	REBAR & CAP
URS111	578,490.970	1,361,240.960	356.22'	MAGNAIL
URS112	578,559.625	1,361,018.396	352.08'	MAGNAIL

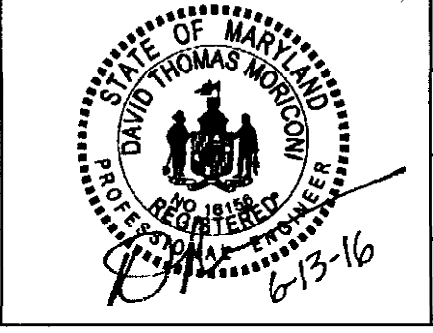
OWNERS/ DEVELOPER CERTIFICATION
 "I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."
 Jay Steinetz 7/14/16
 OWNERS/ DEVELOPER'S SIGNATURE DATE
 Jay Steinetz, Acting Chief T&SP
 PRINTED NAME & TITLE

DESIGN CERTIFICATION
 "I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
 David T. Moriconi 6-13-16
 DESIGNER'S SIGNATURE DATE
 DAVID T. MORICONI MD REGISTRATION NO. 16156
 PRINTED NAME P.E. R.L.S., OR R.L.A. (CIRCLE ONE)

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 John R. Robinson 6/16/16
 HOWARD SOIL CONSERVATION DISTRICT DATE
 EP-16-30

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
 Jay Steinetz 6/15/16
 DIRECTOR OF PUBLIC WORKS DATE
 Jay Steinetz 7/14/16
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE
 Thomas P. Switler 7-14-16
 CHIEF, BUREAU OF ENGINEERING DATE
 O'Mearin 7/22/2016
 CHIEF, BUREAU OF HIGHWAYS DATE

PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 786-7220

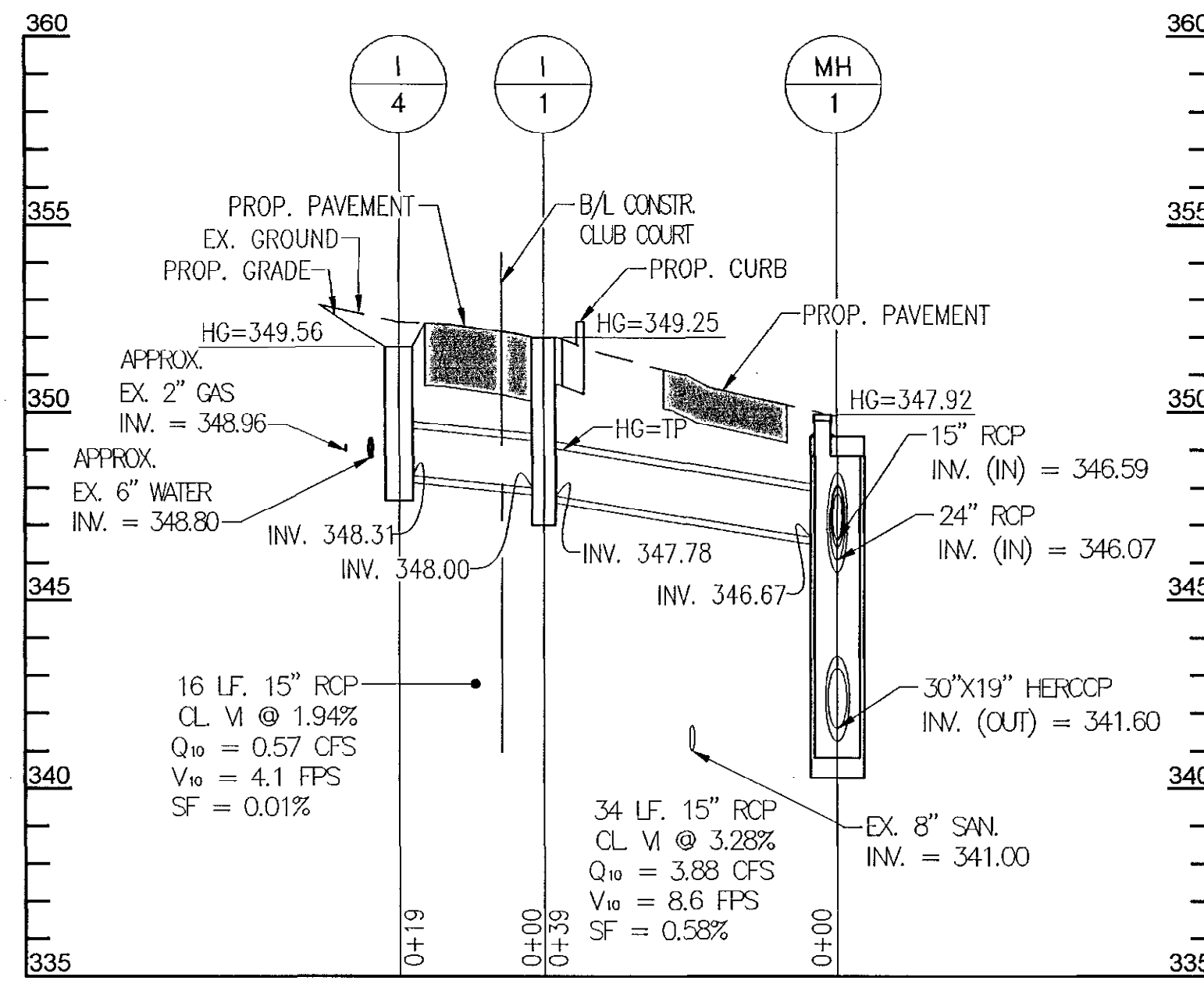


DES: MCS			
DRN: CDF			
CHK: DTM			
DATE: 01/2016	BY NO.	REVISION	DATE

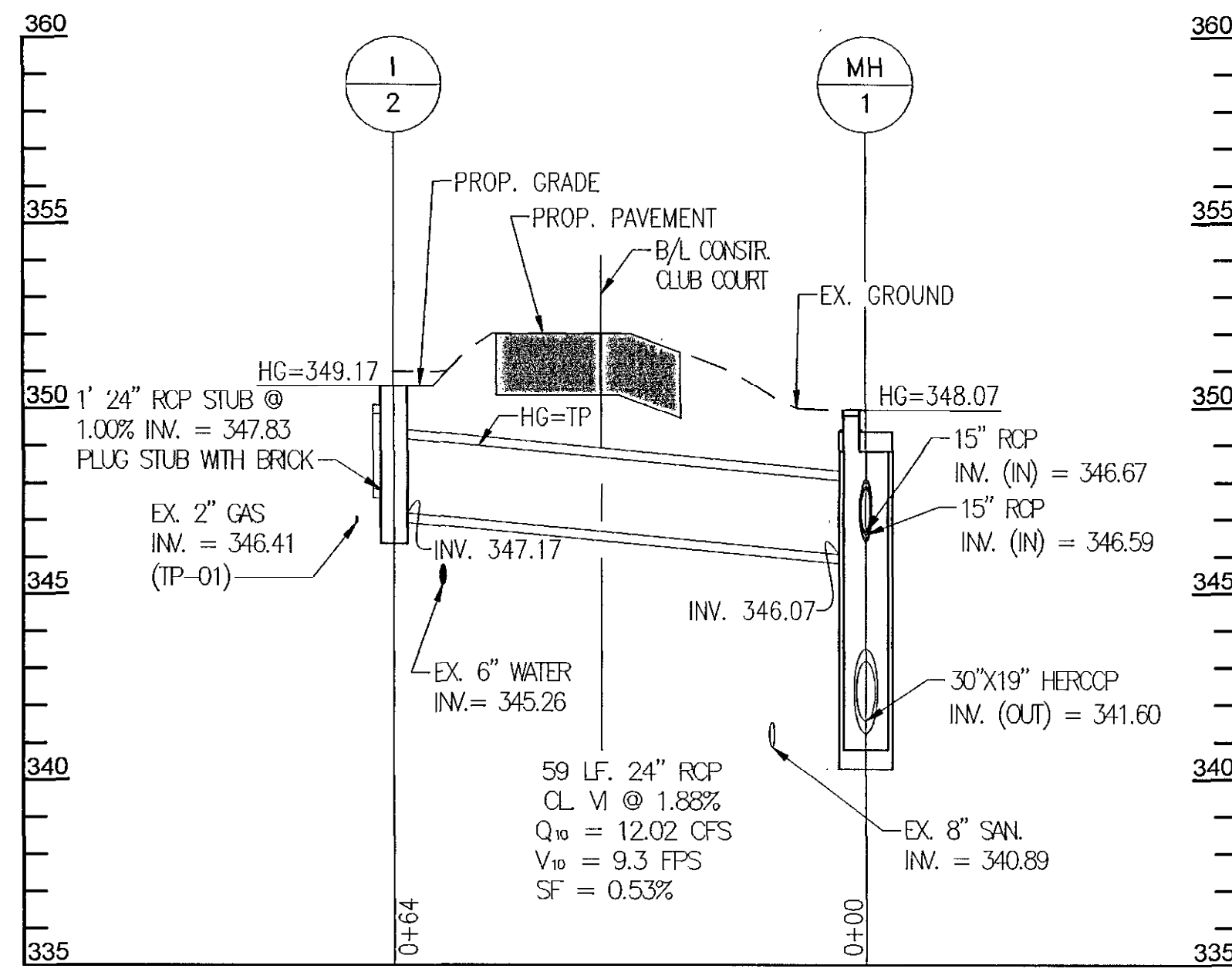
TITLE SHEET

CRESTLEIGH SUBDIVISION (CLUB COURT)
DRAINAGE IMPROVEMENTS
 6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

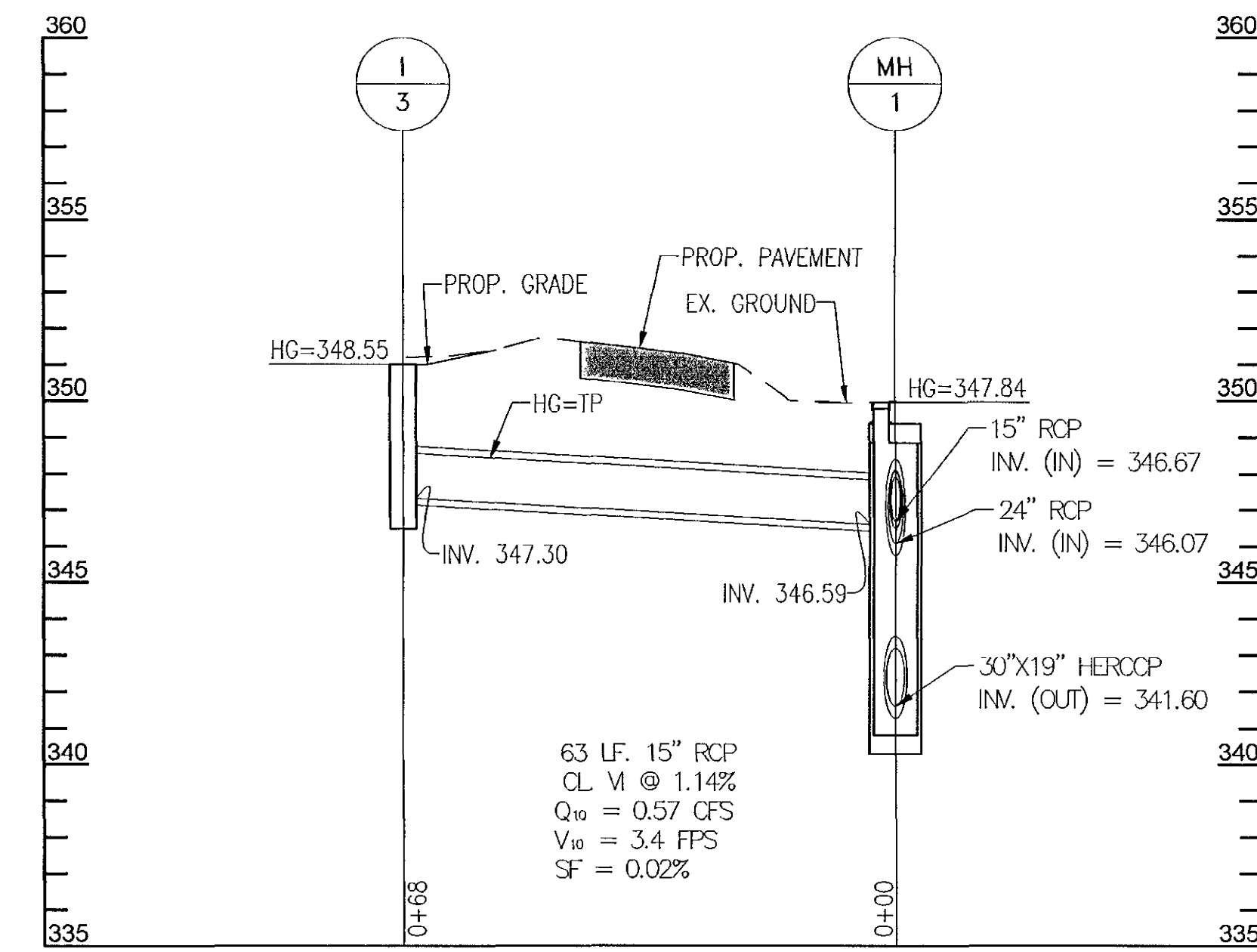
SCALE AS SHOWN
 DWG NO. T-01



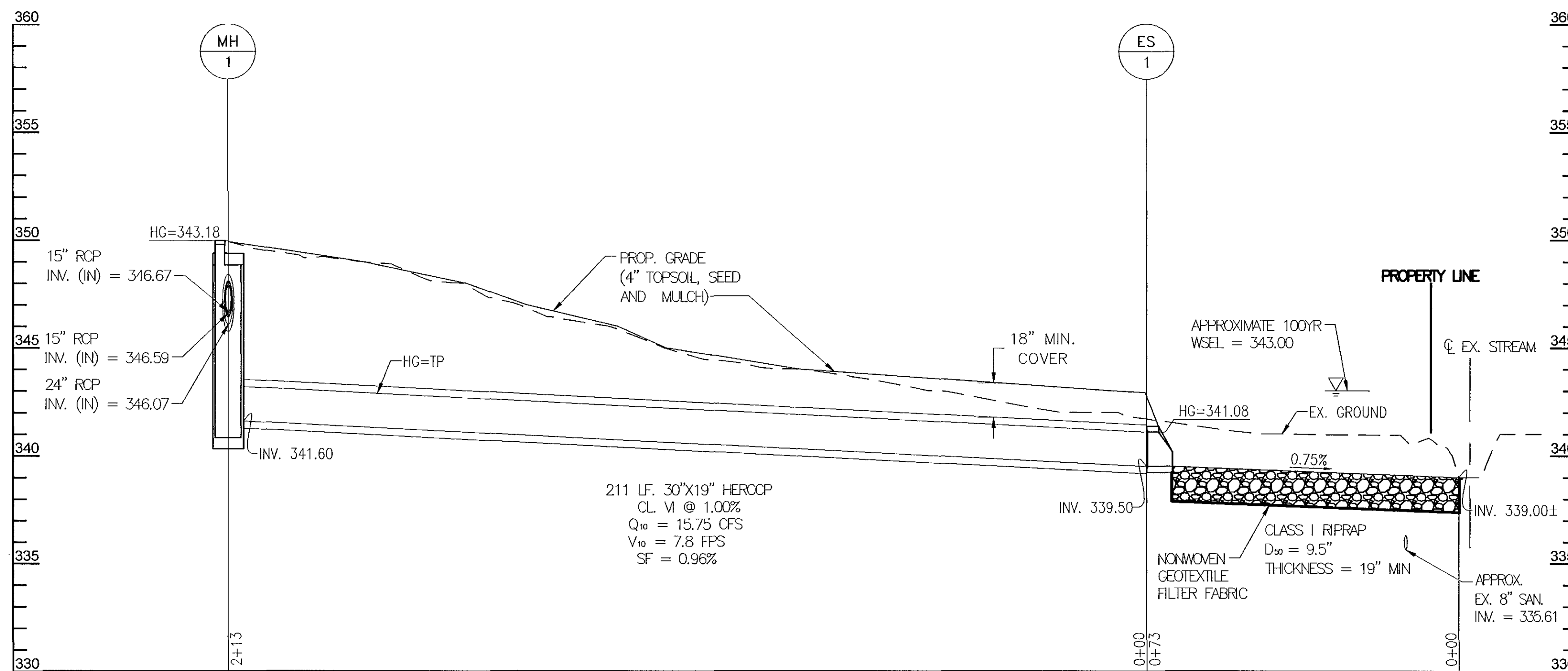
I-4 TO MH-1



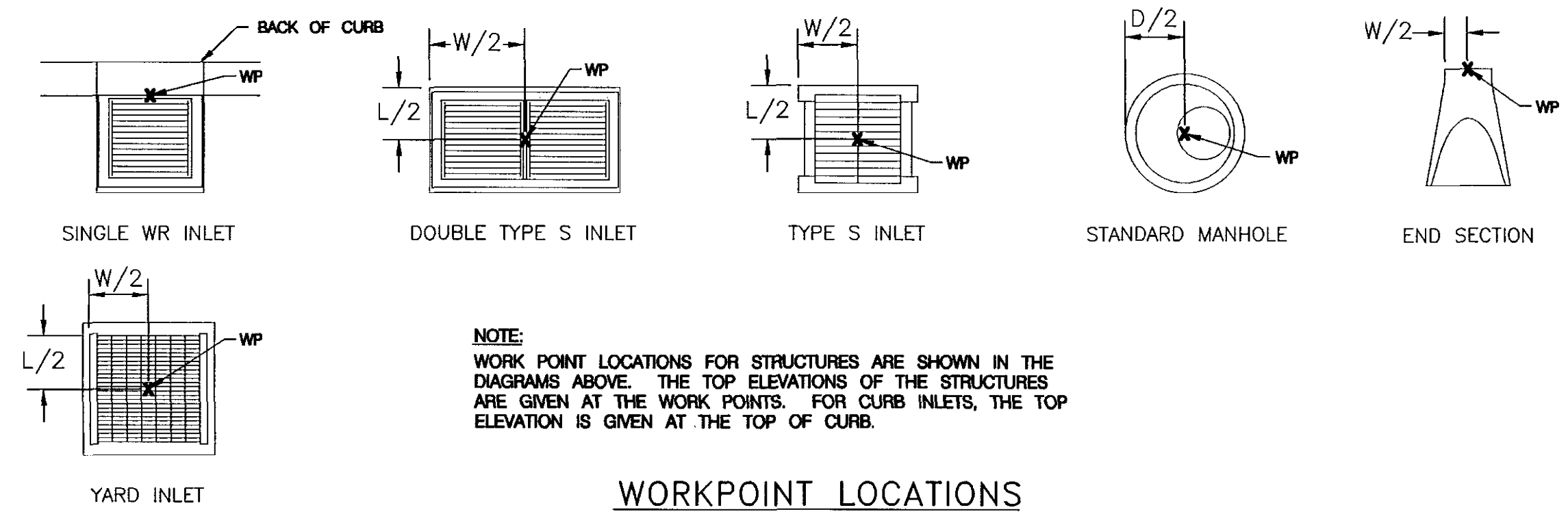
I-2 TO MH-1



I-3 TO MH-1



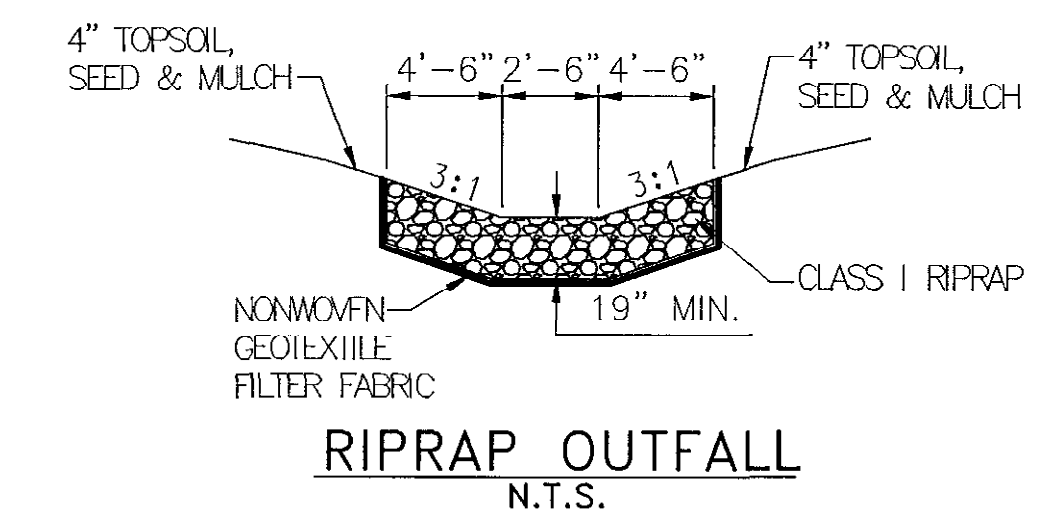
MH-1 TO ES-1



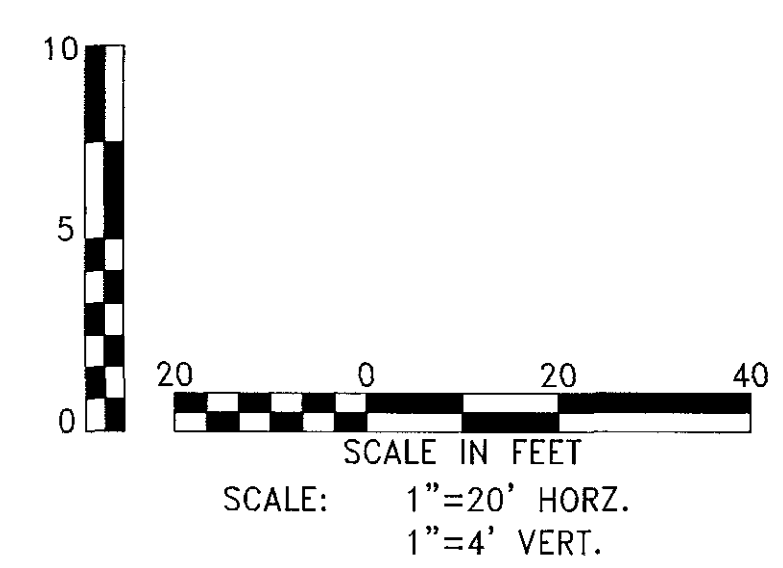
WORKPOINT LOCATIONS N.T.S.

STRUCTURE SCHEDULE												
STRUCTURE NO.	STATION	OFFSET		NORTHING	EASTING	STRUCTURE TYPE	T.S./T.G. ELEVATION	INVERT IN ELEVATION	INVERT OUT ELEVATION	STANDARD NUMBER	REMARKS	
I1	2+07.56	8.37	LT	578551.0679	1360957.9575	SINGLE WR	352.00	NA	347.78	D-4.37		
I2	1+31.55	20.46	RT	578567.1116	1361036.9036	DOUBLE TYPE S INLET	350.60	NA	347.17	D-4.23		
I3	1+06.37	26.77	LT	578516.4959	1361054.3278	TYPE S INLET	351.00	NA	347.30	D-4.22		
I4	2+07.53	13.71	RT	578571.9647	1360959.6836	YARD INLET	351.75	NA	348.00	D-4.14		
MH1	1+73.49	25.95	LT	578527.9168	1360988.0101	6' STANDARD PRECAST MH	349.95	346.67	346.07	346.59	341.60	MD 384.05 FLAT SLAB TOP

DRAINAGE PIPE SCHEDULE					
PIPE	PIPE SIZE (IN.)	MATERIAL	LENGTH (FT.)	REMARKS	
I4	I1	15	RCP	16	
I1	MH1	15	RCP	34	
I2	MH1	24	RCP	59	2' PIPE STUB
I3	MH1	15	RCP	63	



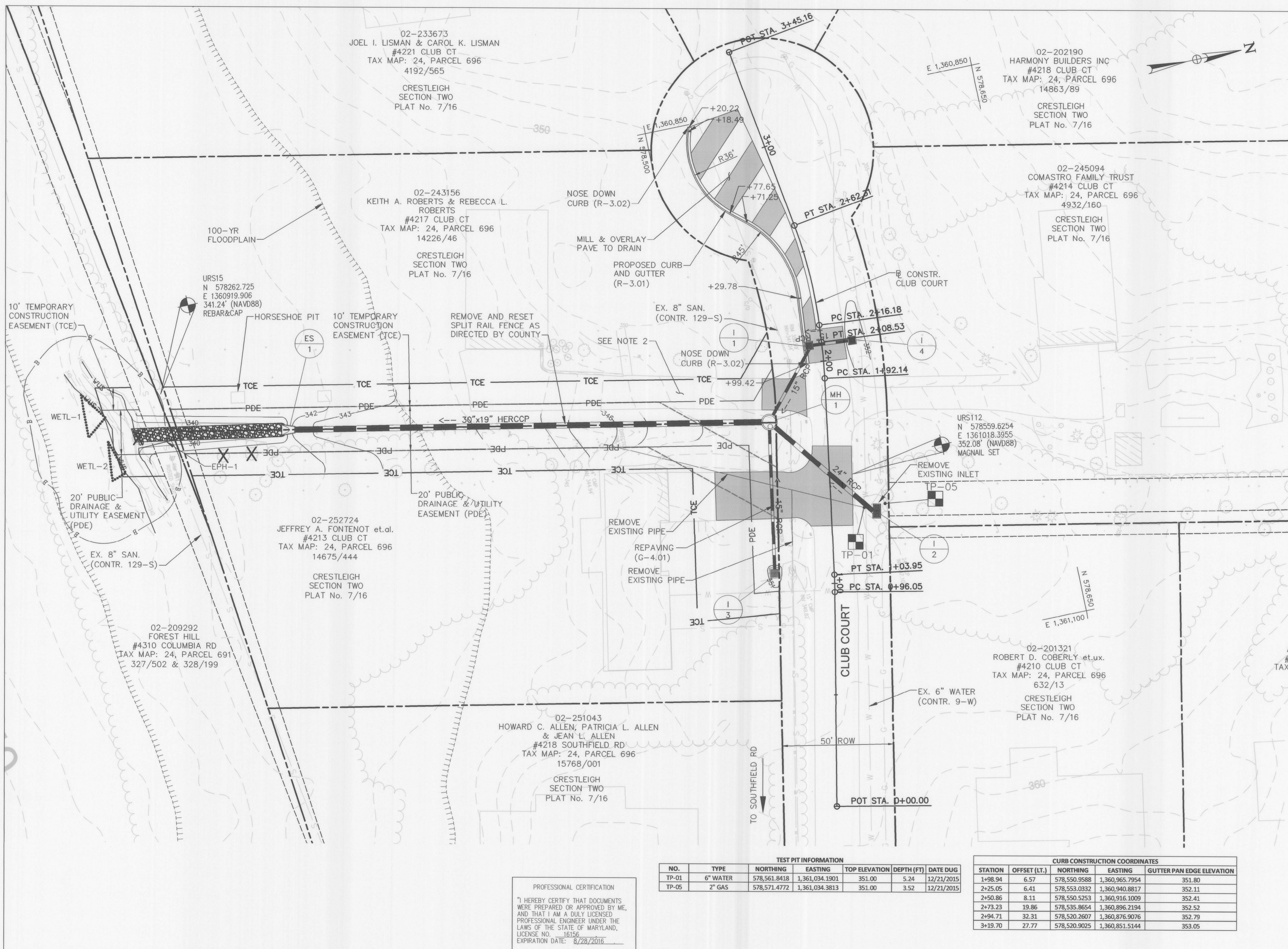
RIPRAP OFFFALL N.T.S.



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT 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. 16156, EXPIRATION DATE: 8/28/2016.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director: <i>James J. Ellis</i> 7/14/16 Chief, Bureau of Engineering: <i>James P. Butler</i> 7-14-16 Chief, Bureau of Highways: <i>Jim Meunier</i> 7/22/2016		PREPARED BY URS 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220	DES: MCS DRN: CDF CHK: DTM DATE: 01/2016	STATE OF MARYLAND DAVID THOMAS WOODWARD REGISTERED PROFESSIONAL ENGINEER LICENSE NO. 16156 EXPIRATION DATE: 8/28/2016	PIPE PROFILES SCALE MAP NO. _____ BLOCK NO. _____	CRESTLEIGH SUBDIVISION (CLUB COURT) DRAINAGE IMPROVEMENTS 6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND	SCALE 1" = 20' DWG NO. C-02
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- NOTES:**
1. THE LOCATION OF THE UTILITIES SHOWN ON THE PLANS IS FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF THESE LOCATIONS.
 2. CONTRACTOR SHALL REPAIR ANY DAMAGED PAVEMENT DUE TO CONSTRUCTION ACTIVITIES.
 3. NEW CURB SHALL BE STAKED AND CONFIRMED TO HAVE POSITIVE DRAINAGE PRIOR TO PLACEMENT.
 4. DRIVEWAY PAVING SHALL CONSIST OF 2" HMA SUPERPAVE SURFACE (9.5MM PG 64-22, LEVEL 1), ON 2" HMA SUPERPAVE BASE (19.0 MM PG64-22, LEVEL 1) ON 8" GAB.
 5. ROADWAY PAVING SHALL CONSIST OF 2" HMA SUPERPAVE SURFACE (9.5MM PG 64-22, LEVEL 1) ON 4" HMA SUPERPAVE BASE (19.0MM PG 64-22, LEVEL 1) ON 12" GAB (2 LAYERS).
 6. MINIMIZE IMPACTS TO EXISTING HORSE SHOE PIT LOCATED ON THE PROPERTY AT 4217 CLUB CT.
 7. CONTRACTOR SHALL TEST PIT THE EXISTING GAS AND WATER LINES NEAR THE LOCATION OF PROPOSED INLET 1-2 AND 1-4. THE TEST PIT SHOULD BE EXCAVATED IN A MANNER SUCH THAT THE EXISTING UTILITY IS VISIBLE TO ENSURE IT WILL NOT BE IMPACTED. THIS SHALL BE DONE PRIOR TO THE ATTEMPTED INSTALLATION OF PROPOSED INLETS AND PIPES.



TEST PIT INFORMATION

NO.	TYPE	NORTHING	EASTING	TOP ELEVATION	DEPTH (FT)	DATE DUG
TP-01	6" WATER	578,561.8418	1,361,034.1901	351.00	5.24	12/21/2015
TP-05	2" GAS	578,571.4772	1,361,034.3813	351.00	3.52	12/21/2015

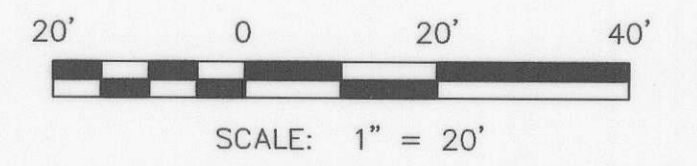
CURB CONSTRUCTION COORDINATES

STATION	OFFSET (LT.)	NORTHING	EASTING	GUTTER PAN EDGE ELEVATION
1+98.94	6.57	578,550.9588	1,360,965.7954	351.80
2+25.05	6.41	578,553.0332	1,360,940.8817	352.11
2+50.86	8.11	578,550.5253	1,360,916.1009	352.41
2+73.23	19.86	578,535.8654	1,360,896.2194	352.52
2+94.71	32.31	578,520.2607	1,360,876.9076	352.79
3+19.70	27.77	578,520.9025	1,360,851.5144	353.05

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- LEGEND**
- PROPOSED MANHOLE
 - ▬ PROPOSED INLET
 - ▬ PROPOSED DRAINAGE PIPE
 - WETLAND BOUNDARY
 - WUS- WATERS OF THE US
 - ▨ PROPOSED RIPRAP
 - X TREE REMOVAL
 - ▨ 2" MILL & OVERLAY
 - ▨ FULL DEPTH PAVING



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

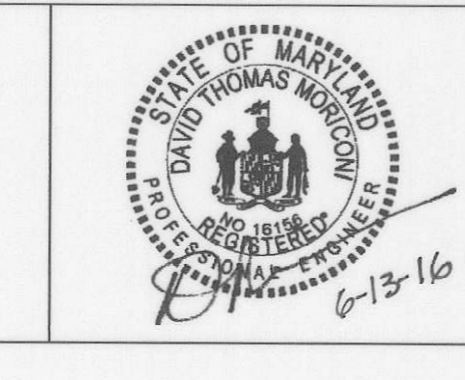
James H. Smith 8/5/16
DIRECTOR OF PUBLIC WORKS DATE

Morgan E. Butler 7/14/16
CHIEF, BUREAU OF ENGINEERING DATE

Chris Fleming 7/14/16
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION DATE

Michael A. Meenan 7/22/2016
CHIEF, BUREAU OF HIGHWAYS DATE

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 786-7220



DES:	MCS		
DRN:	CDF		
CHK:	DTM		
DATE:	01/2016		
BY:	NO.	REVISION	DATE

STORM DRAIN PLAN

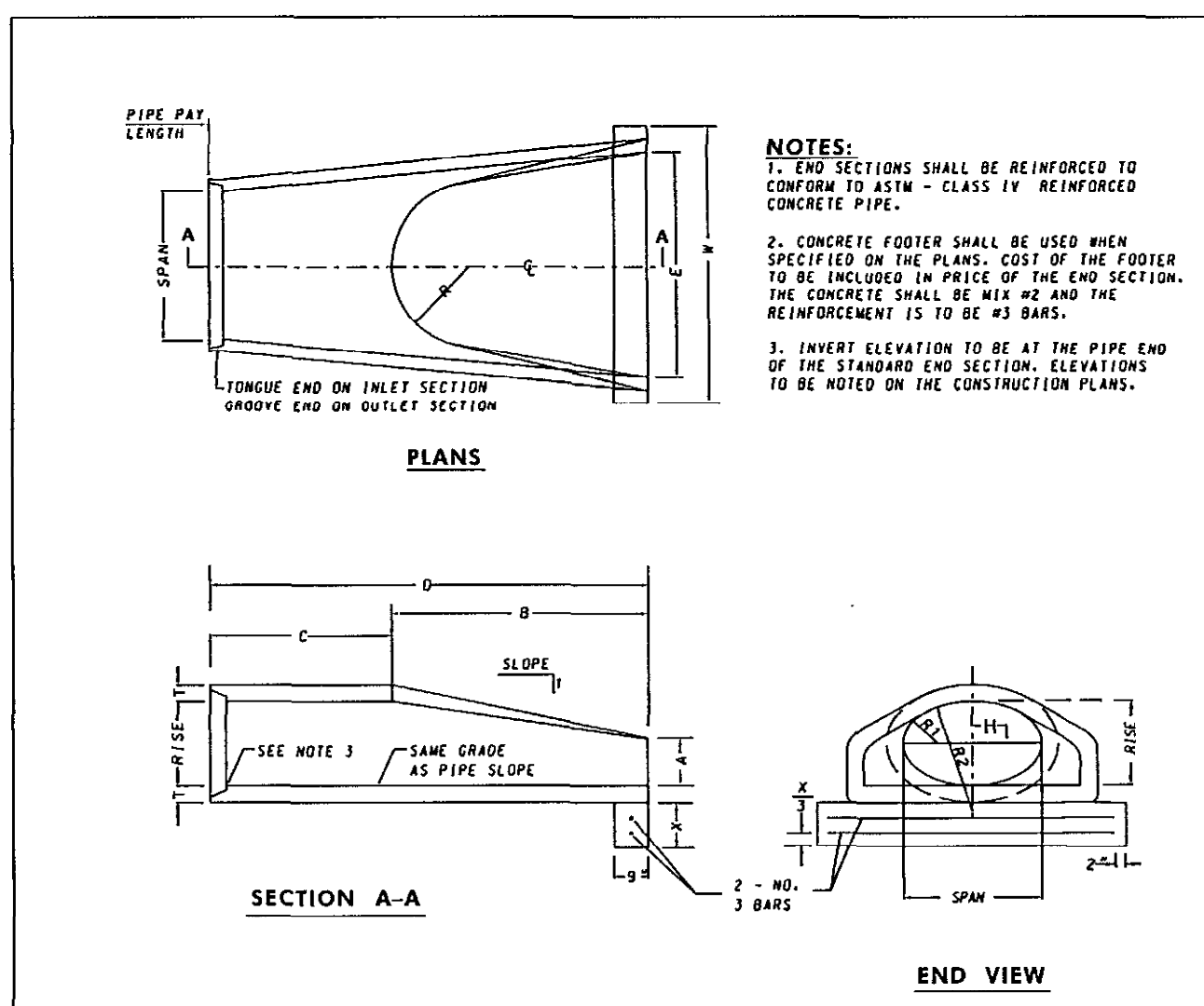
SCALE MAP NO. _____ BLOCK NO. _____

**CRESTLEIGH SUBDIVISION (CLUB COURT)
DRAINAGE IMPROVEMENTS**

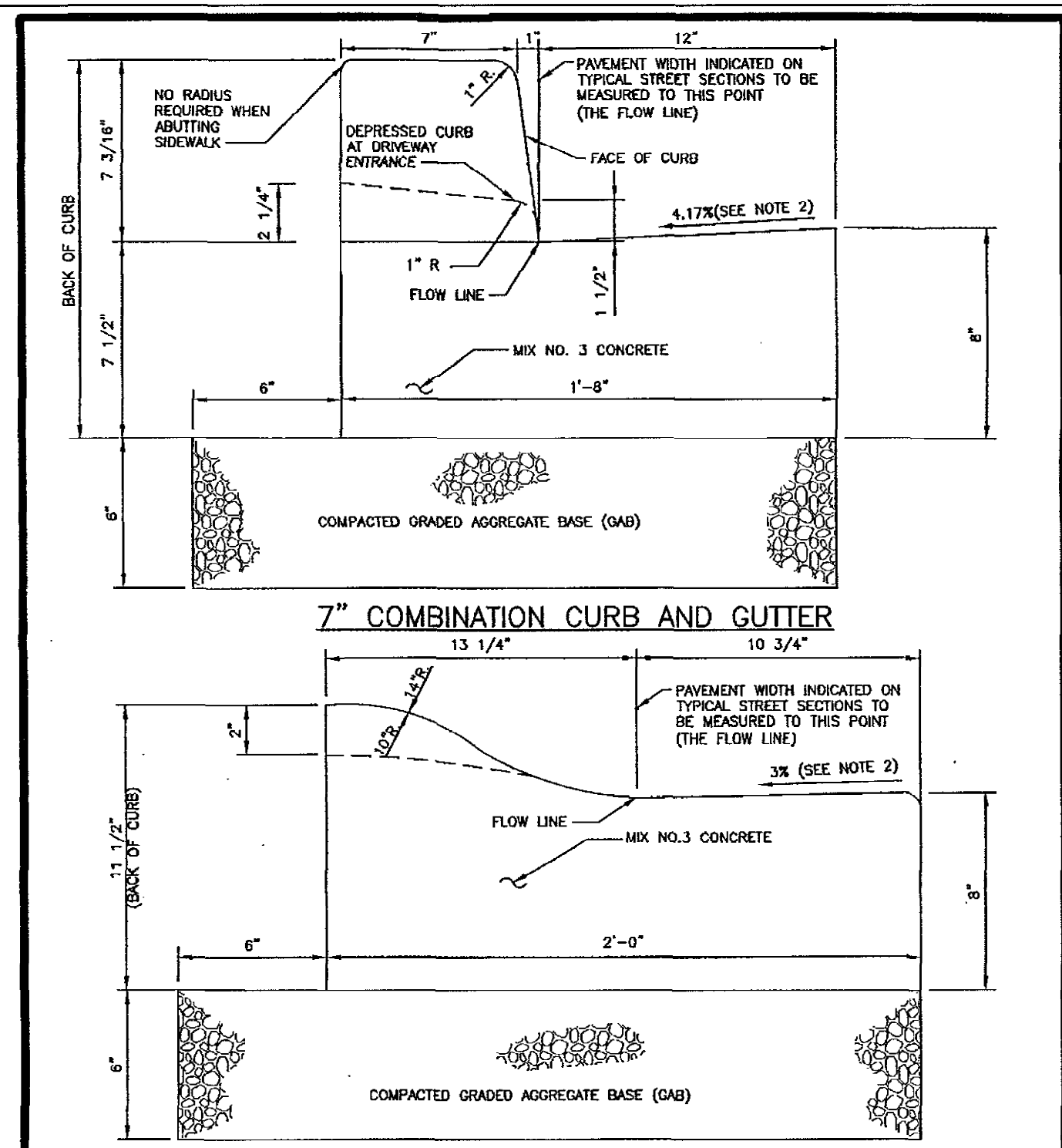
6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE
1" = 20'

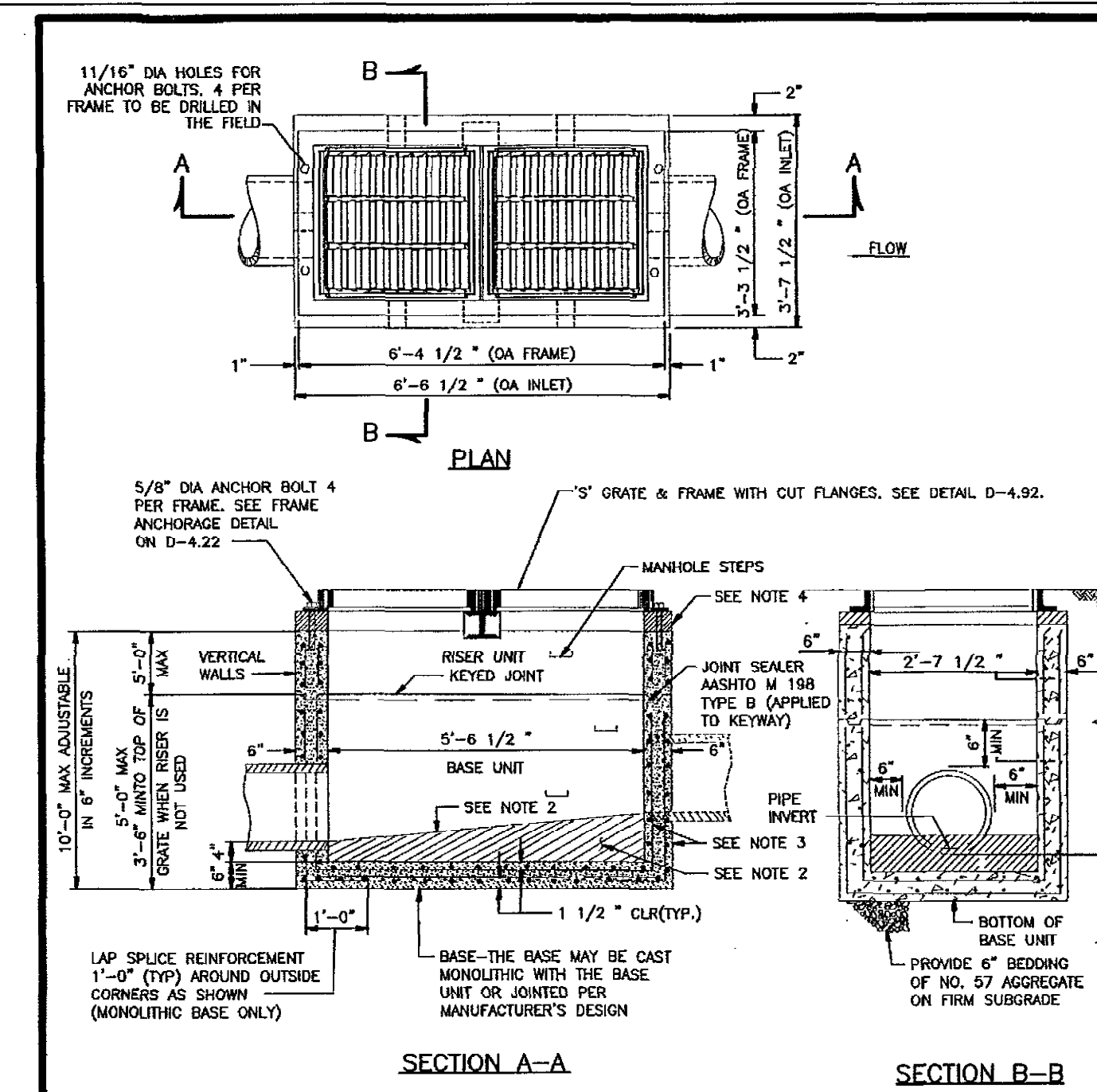
DWG NO.
C-01



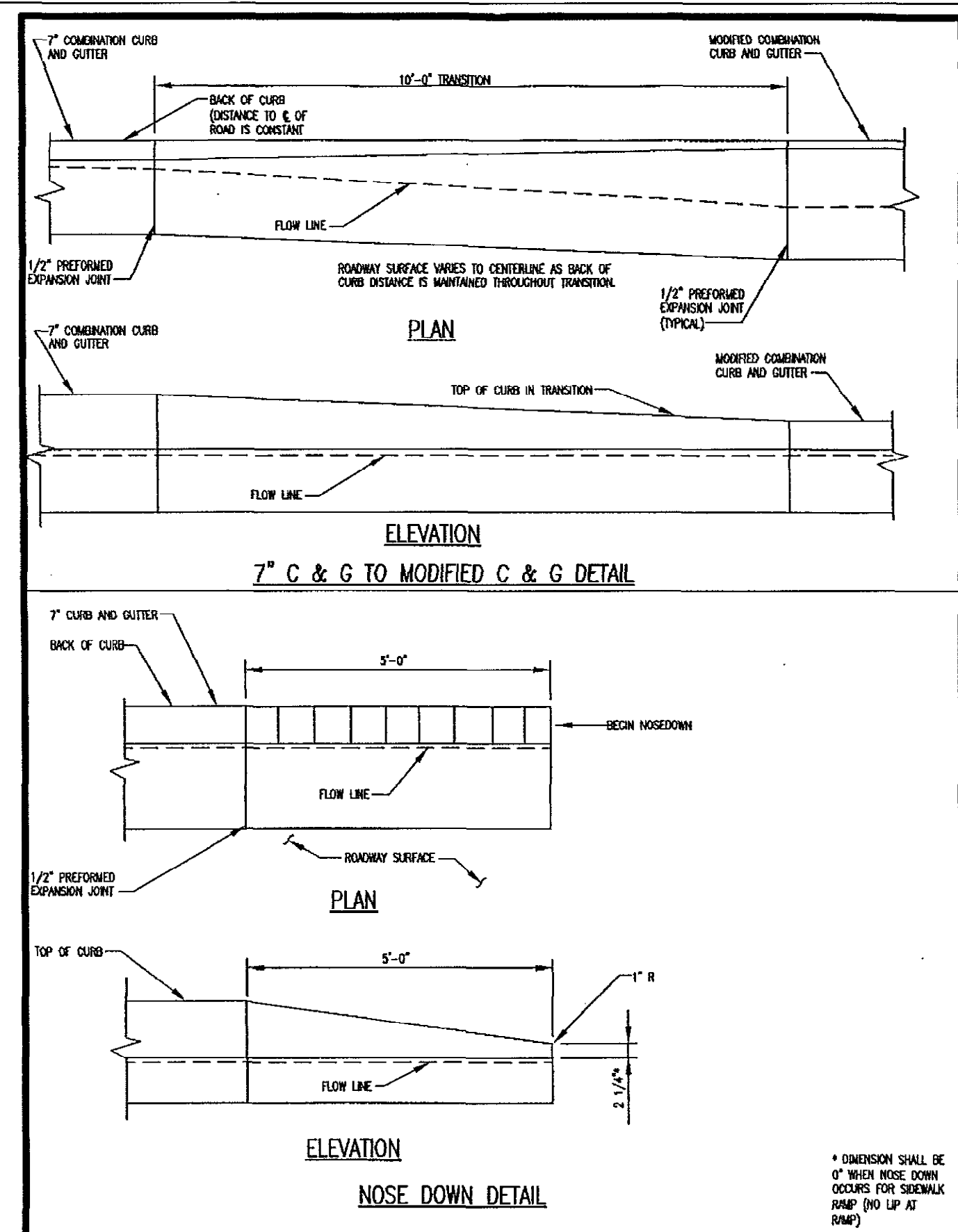
SPECIFICATION 305 APPROVED Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD CONCRETE END SECTION HORIZONTAL ELLIPTICAL PIPE STANDARD NO. MD 369.00	CATEGORY CODE ITEMS APPROVED DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT DIVISION OF HIGHWAY ADMINISTRATION APPROVAL DATE: 5/1/2007 REVISION: 5/1/2007	Detail R-3.01
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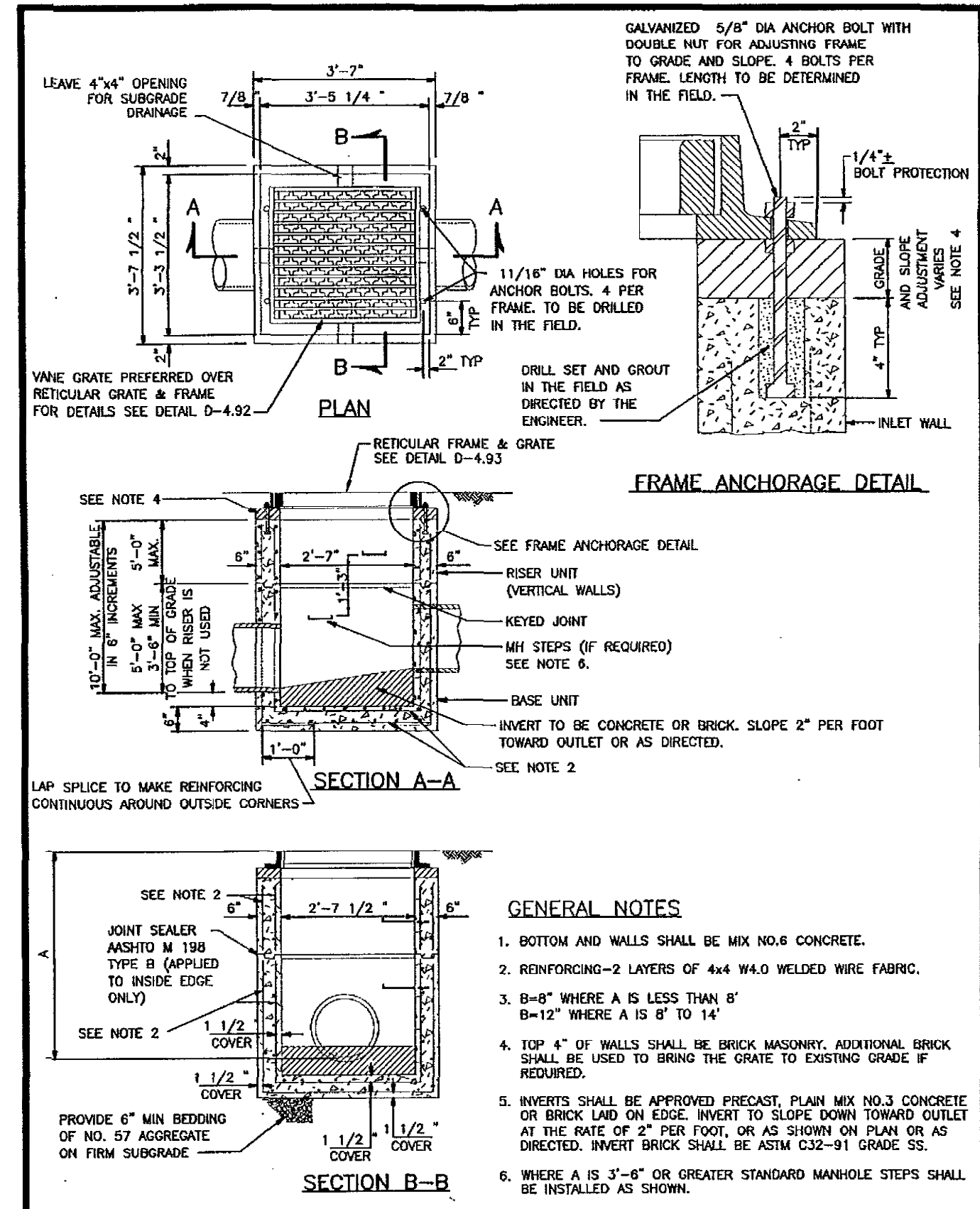
HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS CURB AND GUTTER 7" & Modified Detail R-3.01	APPROVED CHIEF, BUREAU OF ENGINEERING
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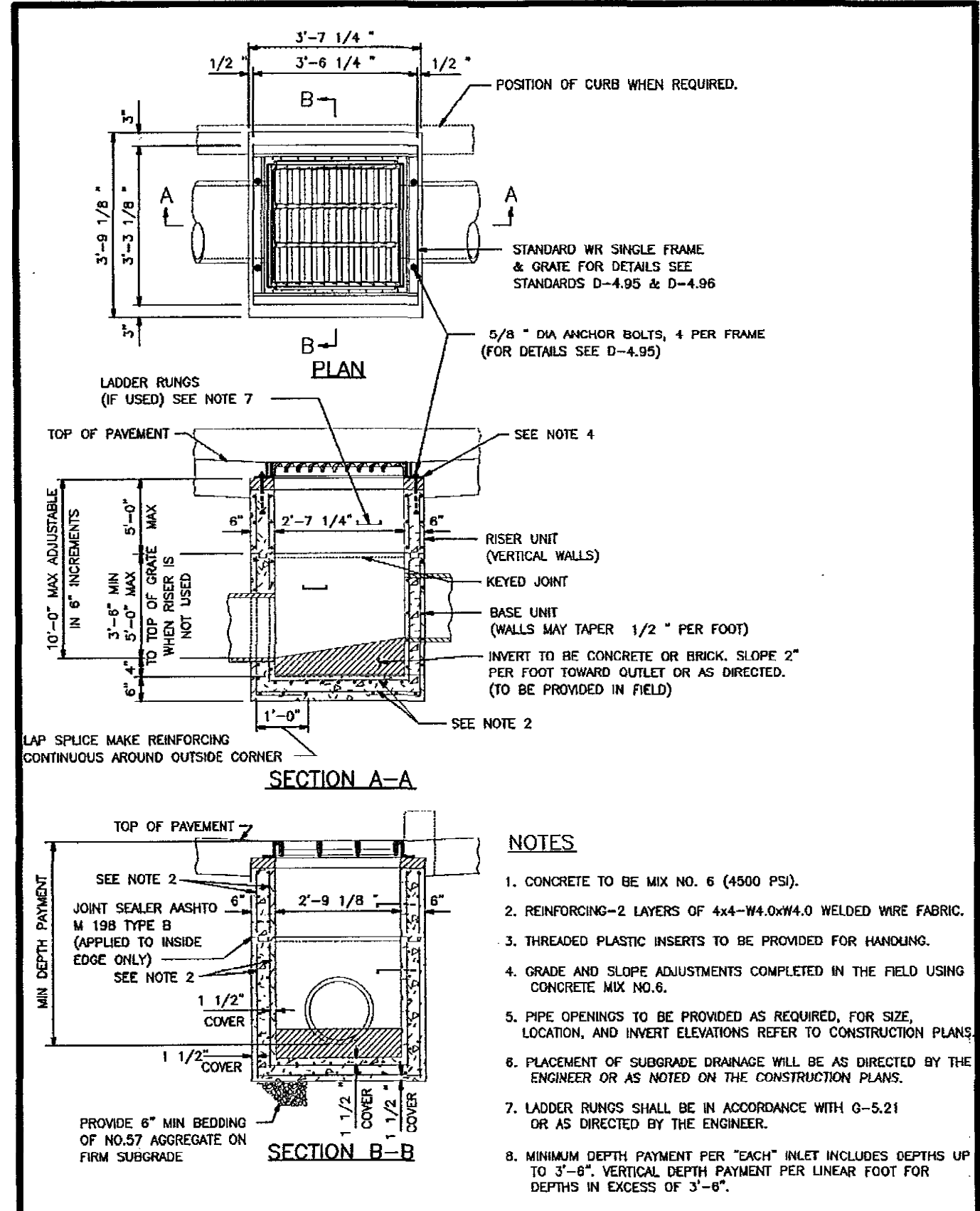
HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Double Type 'S' Inlet Detail D-4.23	APPROVED CHIEF, BUREAU OF ENGINEERING
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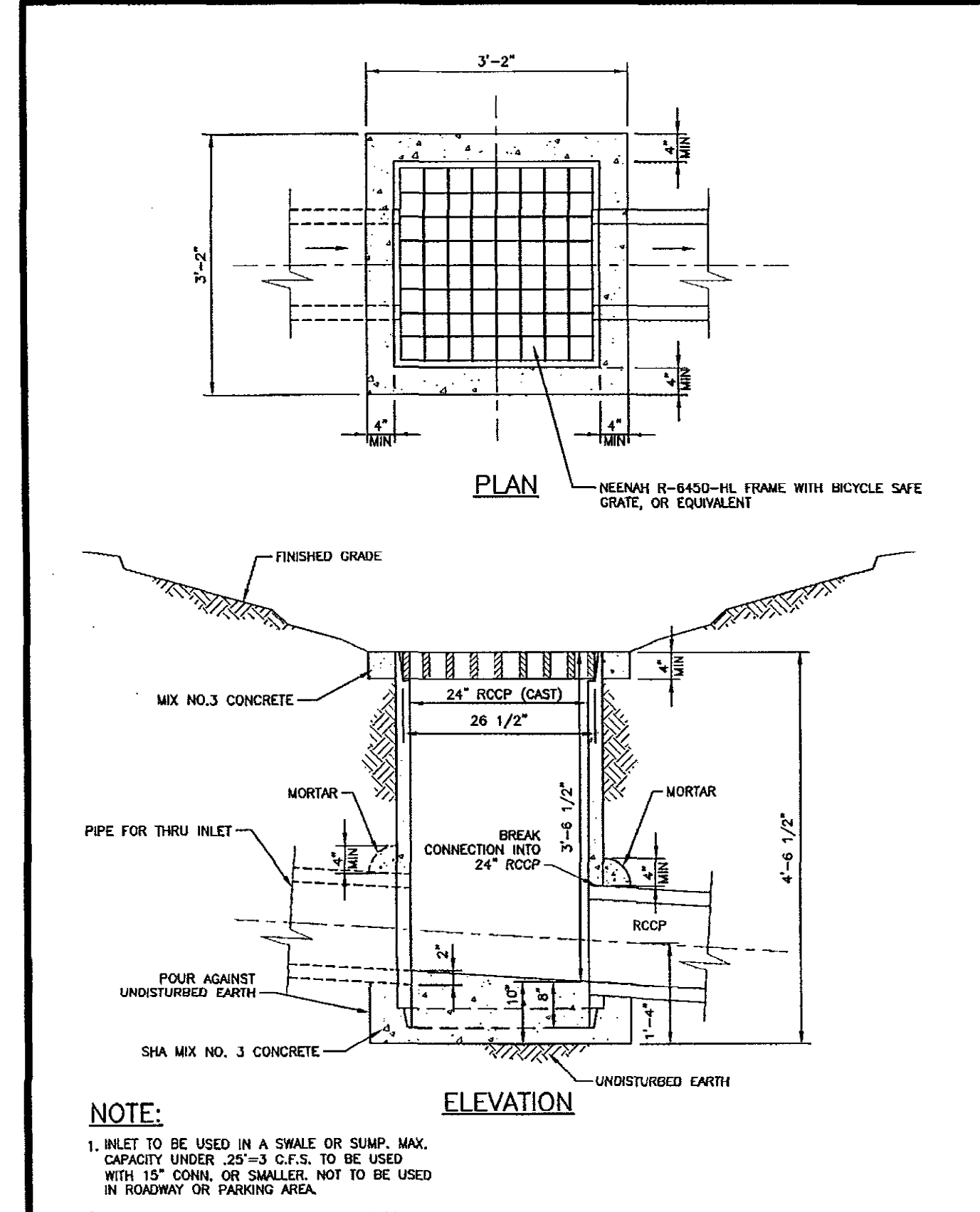
HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS CURB AND GUTTER 7" Transition to Modified & Nose Down Detail R-3.02	APPROVED CHIEF, BUREAU OF ENGINEERING
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HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Type 'S' Inlet Detail D-4.22	APPROVED CHIEF, BUREAU OF ENGINEERING
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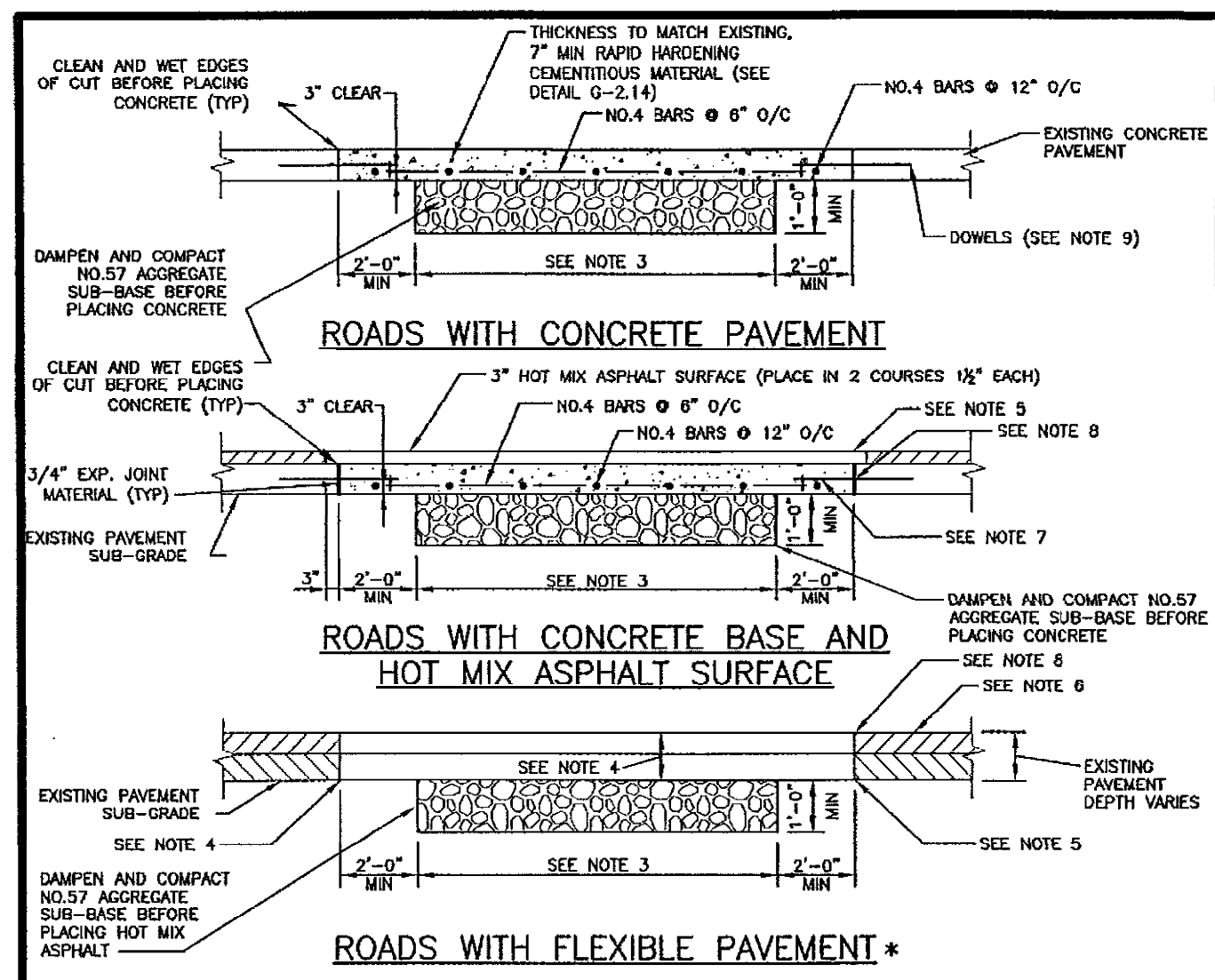


HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Single WR Inlet Precast Detail D-4.37	APPROVED CHIEF, BUREAU OF ENGINEERING
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HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Yard Inlet Detail D-4.14	APPROVED CHIEF, BUREAU OF ENGINEERING
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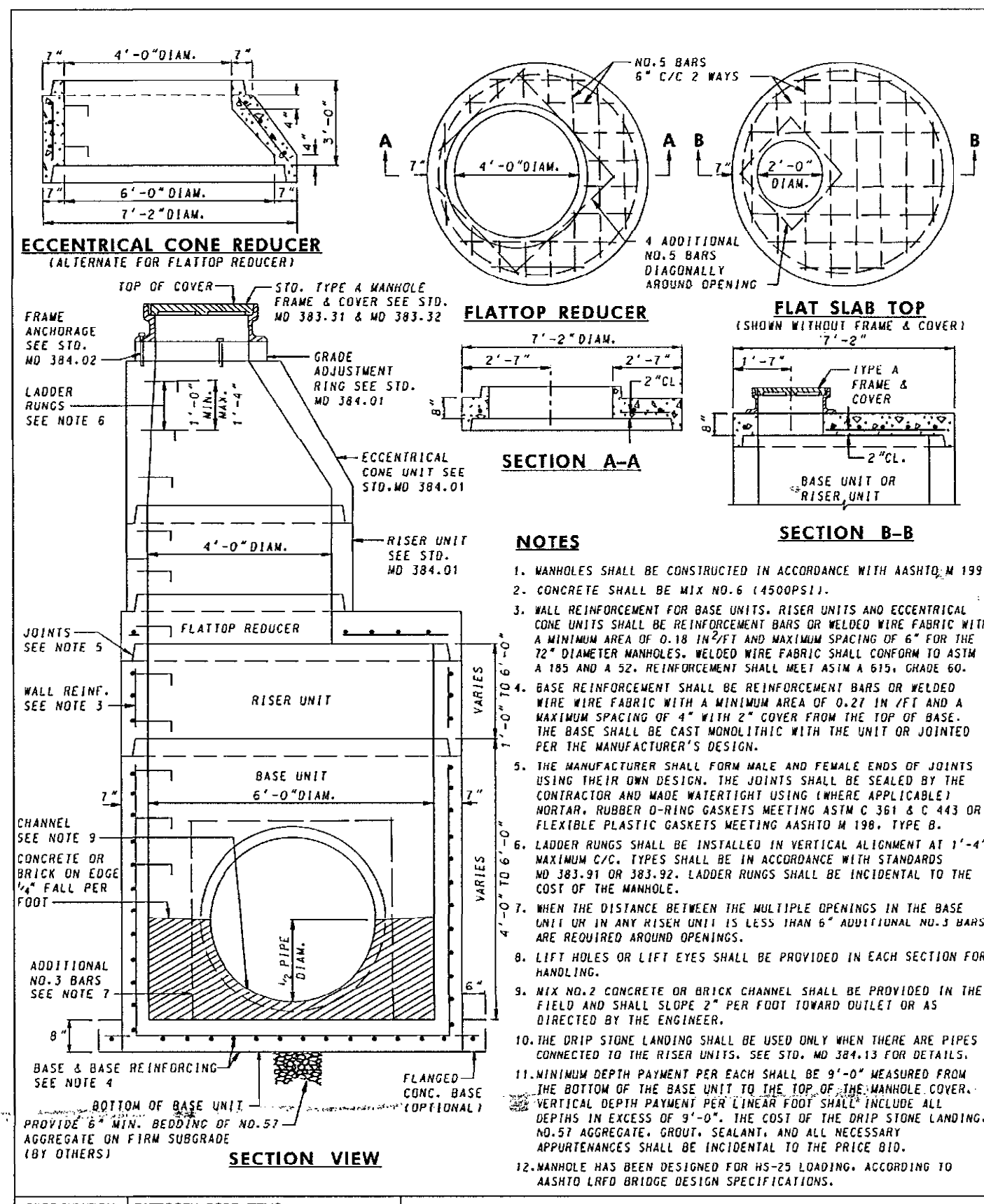
PROFESSIONAL CERTIFICATION
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- NOTES:**
- WHEREVER A TRENCH CROSSES A CONCRETE ROADWAY THAT HAS JOINT INSTALLATIONS THE ENTIRE SLAB BETWEEN THE EDGE OF THE TRENCH AND THE NEAREST JOINT SHALL BE REMOVED IF THE DISTANCE IS LESS THAN 10 FEET.
 - CLEAN AND WET EDGES OF CUT AND SUBGRADE BEFORE PLACING CONCRETE.
 - AGGREGATE SUB-BASE WIDTH SHALL BE 6 FT MINIMUM OR ACTUAL TRENCH WIDTH, WHICH EVER IS GREATER.
 - HOT MIX ASPHALT PAVEMENT PATCH THICKNESS SHALL BE EQUAL TO THE EXISTING PAVING SECTION OR AS APPROVED BY DPW. THE MINIMUM PAVING PATCH SHALL CONSIST OF 2" HMA SURFACE COURSE OVER 4" HMA BASE COURSE. GRADED AGGREGATE BASE SHALL BE PLACED AND COMPACTED IN 6" MAXIMUM COMPACTED THICKNESS LAYERS.
 - CLEAN EXPOSED VERTICAL SURFACE OF ADJACENT PAVEMENT AND PLACE TACK COAT ON ALL VERTICAL SURFACES PRIOR TO PLACING HMA.
 - IF THE REMAINING EXISTING PAVEMENT IS LESS THAN 4" WIDE, THE RESIDUAL PAVEMENT SHALL BE REMOVED IN ITS ENTIRETY AND REPLACED.
 - CONCRETE REPLACEMENT SHALL BE 10" MINIMUM MIX NO. 6.
 - SAW CUT FULL DEPTH ALL JOINTS OF EXISTING CONCRETE, BITUMINOUS, AND BASE PAVEMENTS.
 - REINFORCEMENT OF CONCRETE PAVING SHALL BE ACCOMPLISHED BY DOWELING. DOWELS SHALL BE CENTERED IN PAVEMENT THICKNESS. NEW REINFORCING SHALL BE TIED TO DOWELS.
 - TOTAL REPAIR WIDTH SHALL BE EQUAL TO THE LANE WIDTH IN ACCORDANCE WITH THE SPECIFICATIONS.

Howard County, Maryland Department of Public Works Utility Trench Roadway Repaving G-4.01	Detail Approved: [Signature] Chief, Bureau of Engineering
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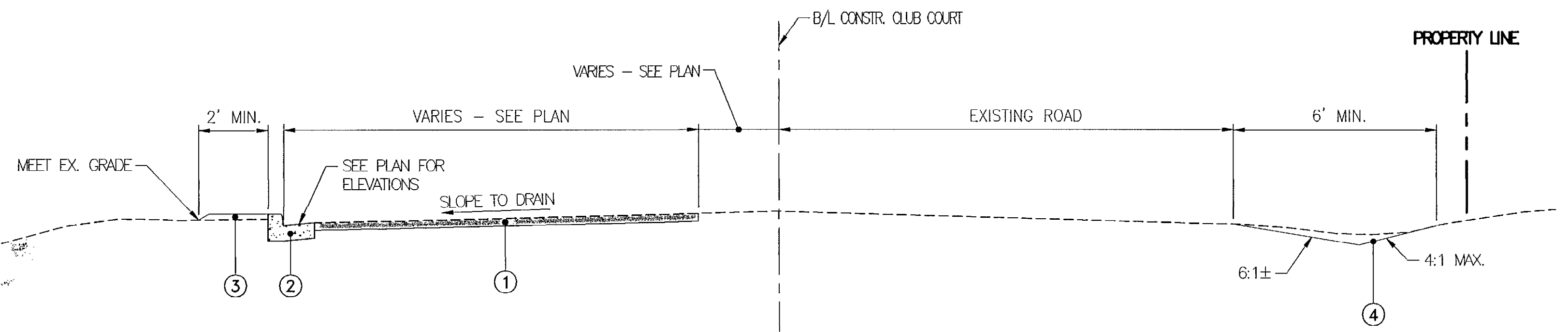
* FOR USE ON THIS PROJECT



NOTES:

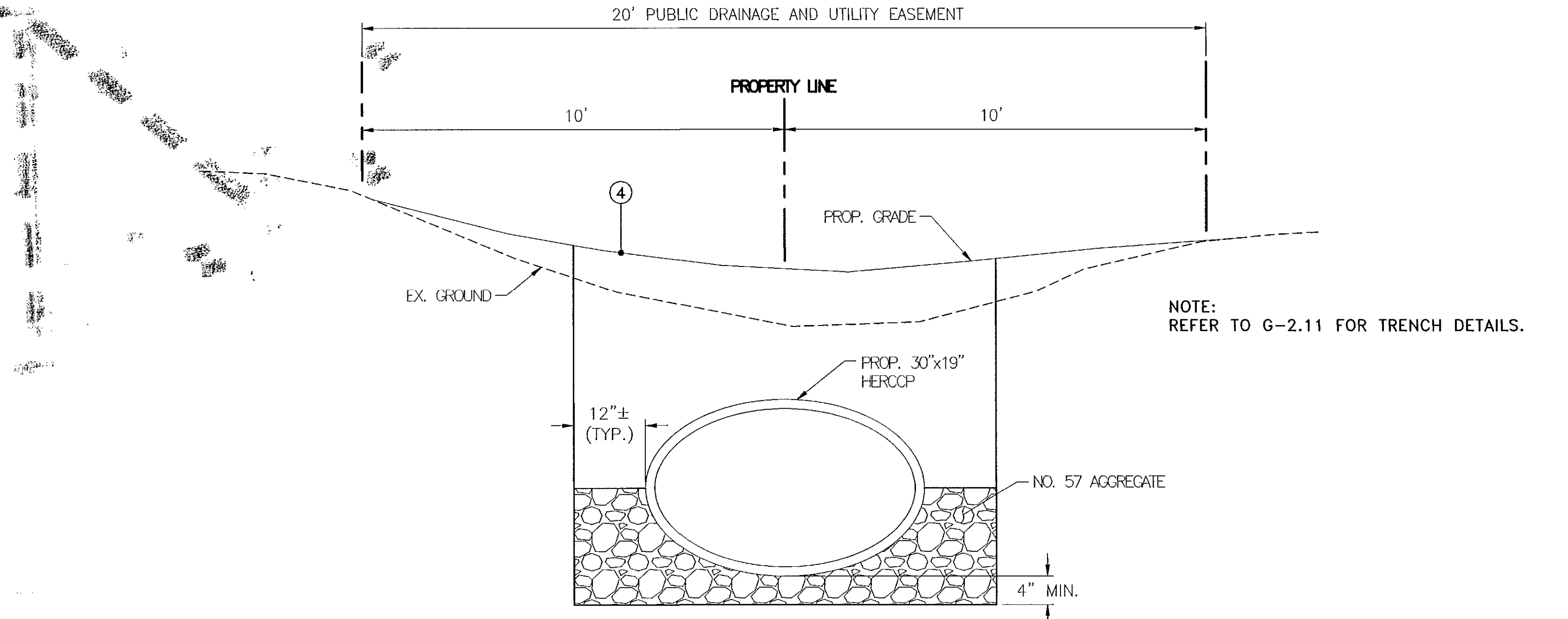
- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASHTO M 193.
- CONCRETE SHALL BE MIX NO. 6 (4500PSI).
- WALL REINFORCEMENT FOR BASE UNITS, RISER UNITS AND ECCENTRIC CONE UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.18 IN²/FT AND MAXIMUM SPACING OF 6" FOR THE 72" DIAMETER MANHOLES. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 AND A 25. REINFORCEMENT SHALL MEET ASHRAE 910. GRADE NO. 4 BASE REINFORCEMENT SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABRIC WITH A MINIMUM AREA OF 0.27 IN²/FT AND A MAXIMUM SPACING OF 4" WITH 2" COVER FROM THE TOP OF BASE. THE BASE SHALL BE CAST MONOLITHIC WITH THE UNIT OR JOINTED PER THE MANUFACTURER'S DESIGN.
- WHEN THE DISTANCE BETWEEN THE MULTIPLE OPENINGS IN THE BASE UNIT OR IN ANY RISER UNIT IS LESS THAN 6" ADDITIONAL NO. 5 BARS ARE REQUIRED AROUND OPENINGS.
- LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING.
- MIX NO. 2 CONCRETE OR BRICK CHANNEL SHALL BE PROVIDED IN THE FIELD AND SHALL SLOPE 2" PER FOOT TOWARD OUTLET OR AS DIRECTED BY THE ENGINEER.
- IF THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES CONNECTED TO THE RISER UNITS. SEE STD. NO. 384.19 FOR DETAILS.
- MINIMUM DEPTH PAVEMENT PER EACH SHALL BE 9" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAVEMENT PER LINEAR FOOT SHALL INCLUDE ALL LAYERS IN EXCESS OF 3" 0". THE COST OF THE DRIP STONE LANDING, NO. 57 AGGREGATE, GROUT, SEALANT, AND ALL NECESSARY IMPROVEMENTS SHALL BE INCIDENTAL TO THE PRICE BID.
- MANHOLE HAS BEEN DESIGNED FOR HS-20 LOADING, ACCORDING TO ASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

Specification 305
 CATEGORY CODE ITEMS
 APPROVED: [Signature]
 DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT
 STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
72" DIAMETER PRECAST MANHOLE FOR 42" & 48" PIPES
 STANDARD NO. MD 384.05



TYPICAL SECTION - 1
N.T.S.

- LEGEND**
- 2" MILL AND OVERLAY (2" HMA SURFACE (9.5MM, PG64-22, LEVEL 1))
 - 7" COMBINATION CURB & GUTTER
 - 4" TOPSOIL, SEED AND MULCH
 - SOD AROUND 1-4. SEE C-01 FOR CONTOURS.

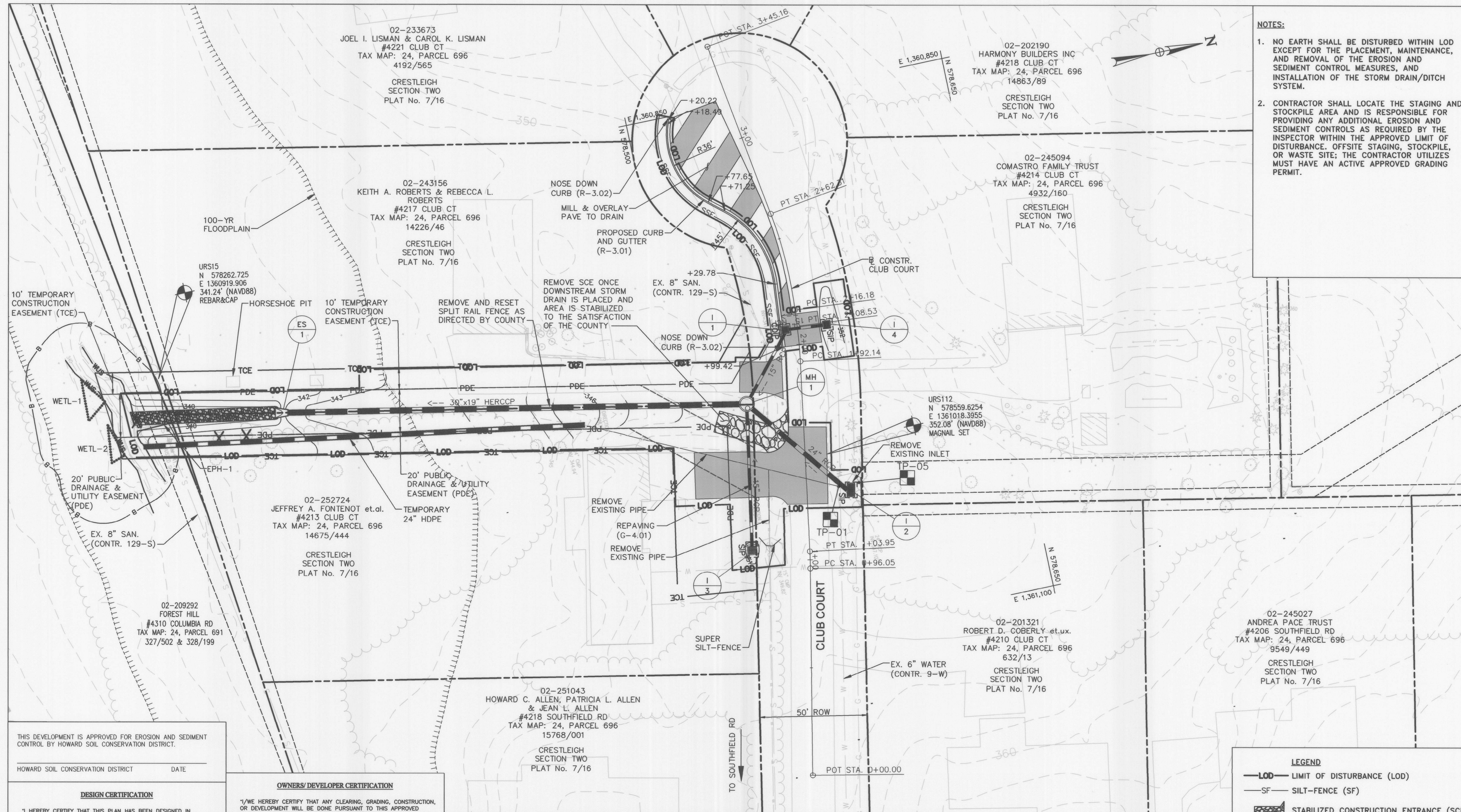


TYPICAL SECTION - 2
N.T.S.

NOTE: REFER TO G-2.11 FOR TRENCH DETAILS.

PROFESSIONAL CERTIFICATION
 "I HEREBY CERTIFY THAT 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. 16156, EXPIRATION DATE: 8/28/2016"

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND [Signatures and Dates]	PREPARED BY URS 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220	PROFESSIONAL ENGINEER [Signature and Seal]	DES: MCS DRN: CDF CHK: DTM DATE: 01/2016	MISCELLANEOUS DETAILS - II	CRESTLEIGH SUBDIVISION (CLUB COURT) DRAINAGE IMPROVEMENTS 6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND	SCALE N.T.S. DWG NO. C-04
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- NOTES:**
- NO EARTH SHALL BE DISTURBED WITHIN LOD EXCEPT FOR THE PLACEMENT, MAINTENANCE, AND REMOVAL OF THE EROSION AND SEDIMENT CONTROL MEASURES, AND INSTALLATION OF THE STORM DRAIN/DITCH SYSTEM.
 - CONTRACTOR SHALL LOCATE THE STAGING AND STOCKPILE AREA AND IS RESPONSIBLE FOR PROVIDING ANY ADDITIONAL EROSION AND SEDIMENT CONTROLS AS REQUIRED BY THE INSPECTOR WITHIN THE APPROVED LIMIT OF DISTURBANCE. OFFSITE STAGING, STOCKPILE, OR WASTE SITE; THE CONTRACTOR UTILIZES MUST HAVE AN ACTIVE APPROVED GRADING PERMIT.

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

HOWARD SOIL CONSERVATION DISTRICT DATE

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

DESIGNER'S SIGNATURE DATE 6-13-16

DAVID T. MORICONI MD REGISTRATION NO. 16156 URS CORPORATION (P.E.) R.L.S., OR R.L.A. (CIRCLE ONE) 4 NORTH PARK DRIVE HUNT VALLEY, MD 21030

OWNERS/DEVELOPER CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

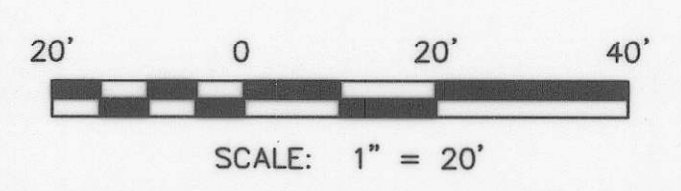
OWNER'S/DEVELOPER'S SIGNATURE DATE 7/14/16

Jay Stemetz, Acting Chief T&SP PRINTED NAME & TITLE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT 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. 16156, EXPIRATION DATE: 8/28/2016

- LEGEND**
- LOD LIMIT OF DISTURBANCE (LOD)
 - SF SILT-FENCE (SF)
 - STABILIZED CONSTRUCTION ENTRANCE (SCE)
 - COIP COMBINATION INLET PROTECTION
 - SIP STANDARD INLET PROTECTION



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works DATE 6/15/16

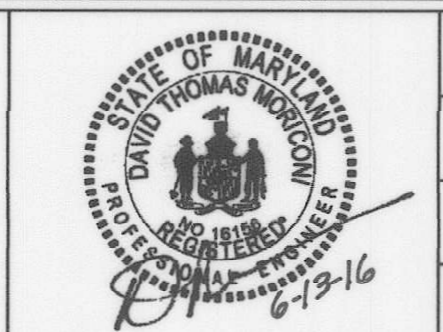
Chief, Bureau of Engineering DATE 7-14-16

Chief, Bureau of Highways DATE 7/14/16

PREPARED BY

URS

4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



DES:	MCS
DRN:	CDF
CHK:	DTM
DATE:	01/2016
BY:	NO.
REVISION:	
DATE:	

EROSION AND SEDIMENT CONTROL PLAN

SCALE MAP NO. BLOCK NO.

CRESTLEIGH SUBDIVISION (CLUB COURT)
DRAINAGE IMPROVEMENTS

6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE 1" = 20'
DWG NO. C-05

B-4.2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

- A. Soil Preparation
1. Temporary Stabilization
a. Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment...

B-4.3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

- A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed used must have been tested within the 6 months immediately preceding the date of sowing...

B-4.4 STANDARDS AND SPECIFICATIONS

FOR

PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

- A. Seed Mixtures
1. General Use
a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2.

B-4.4 STANDARDS AND SPECIFICATIONS

FOR

TEMPORARY STABILIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

- 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths.

Temporary Seeding Summary

Table with columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate. Includes rows for FOXTAIL MILLET, PEARL MILLET, and a summary row.

SEQUENCE OF CONSTRUCTION - GENERAL NOTES

- 1. THE CONTRACTOR SHALL NOTIFY THE HOWARD SOIL CONSERVATION DISTRICT AT (410) 489-7987 AT LEAST SEVEN (7) DAYS PRIOR TO ANY EARTH DISTURBANCE TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE INSPECTOR.

SEQUENCE OF CONSTRUCTION

- 1. CONTACT THE HOWARD COUNTY DEPARTMENT OF CONSTRUCTION INSPECTION AT (410) 313-1880 AT LEAST 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.

DESIGN CERTIFICATION

OWNERS/ DEVELOPER CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS...

DAVID T. MORICONI
URS CORPORATION
4 NORTH PARK DRIVE
HUNT VALLEY, MD 21030

MD REGISTRATION NO. 16156
P.E./R.L.S. OR R.L.A. (CIRCLE ONE)

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN...

Jay Steimetz
Acting Chief TFS

PRINTED NAME & TITLE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND...



EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

CRESTLEIGH SUBDIVISION (CLUB COURT) DRAINAGE IMPROVEMENTS

SCALE N.T.S. DWG NO. C-06

Table with columns: DES: MCS, DRN: CDF, CHK: DTM, DATE: 01/2016, BY, NO., REVISION, DATE, SCALE MAP NO., BLOCK NO.

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY HOWARD SOIL CONSERVATION DISTRICT.
John R. Robertson, Esq.
HOWARD SOIL CONSERVATION DISTRICT

B-4-8 STANDARDS AND SPECIFICATIONS

FOR STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

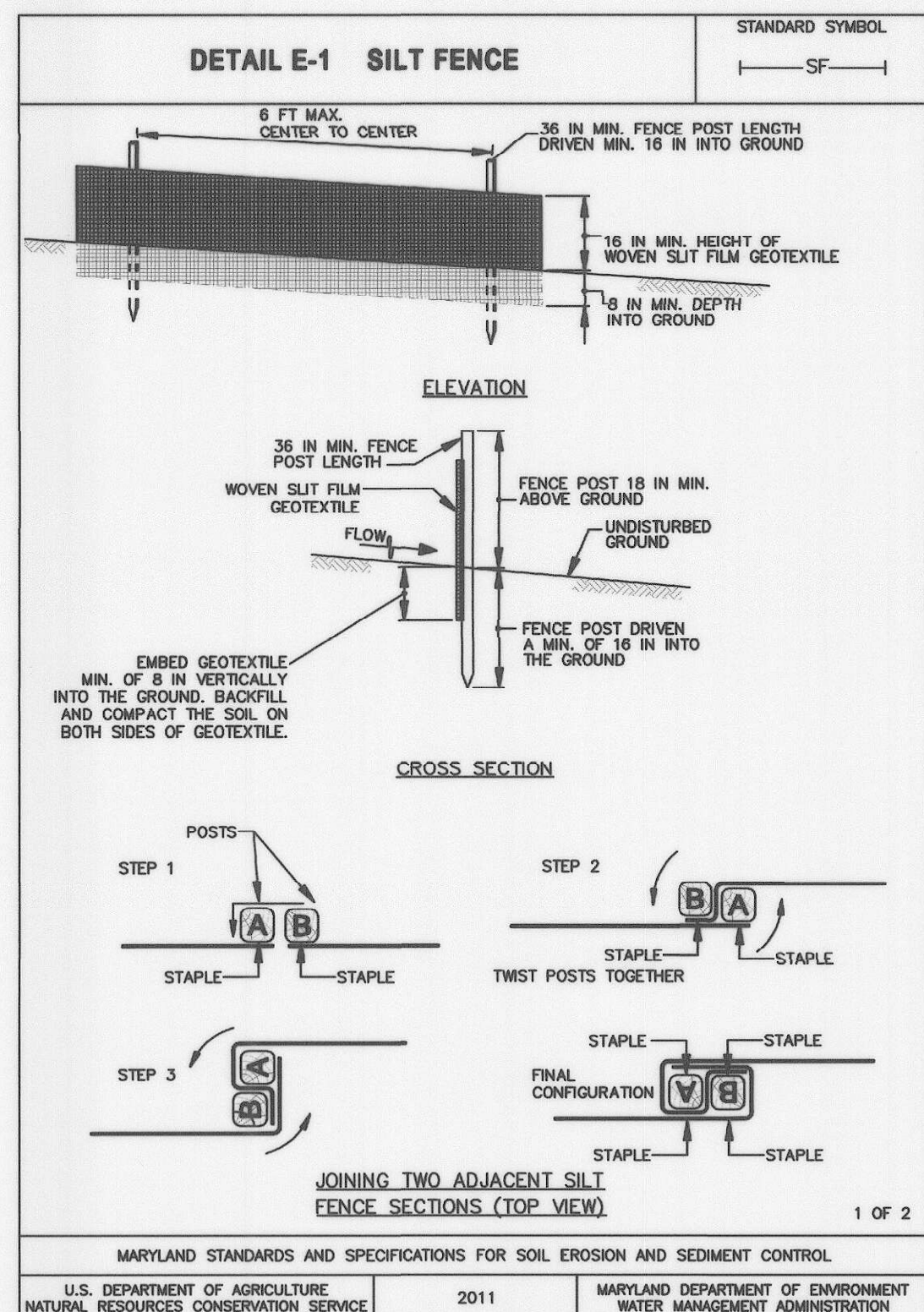
Criteria

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access the stockpile area from the upgrade side.
- Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

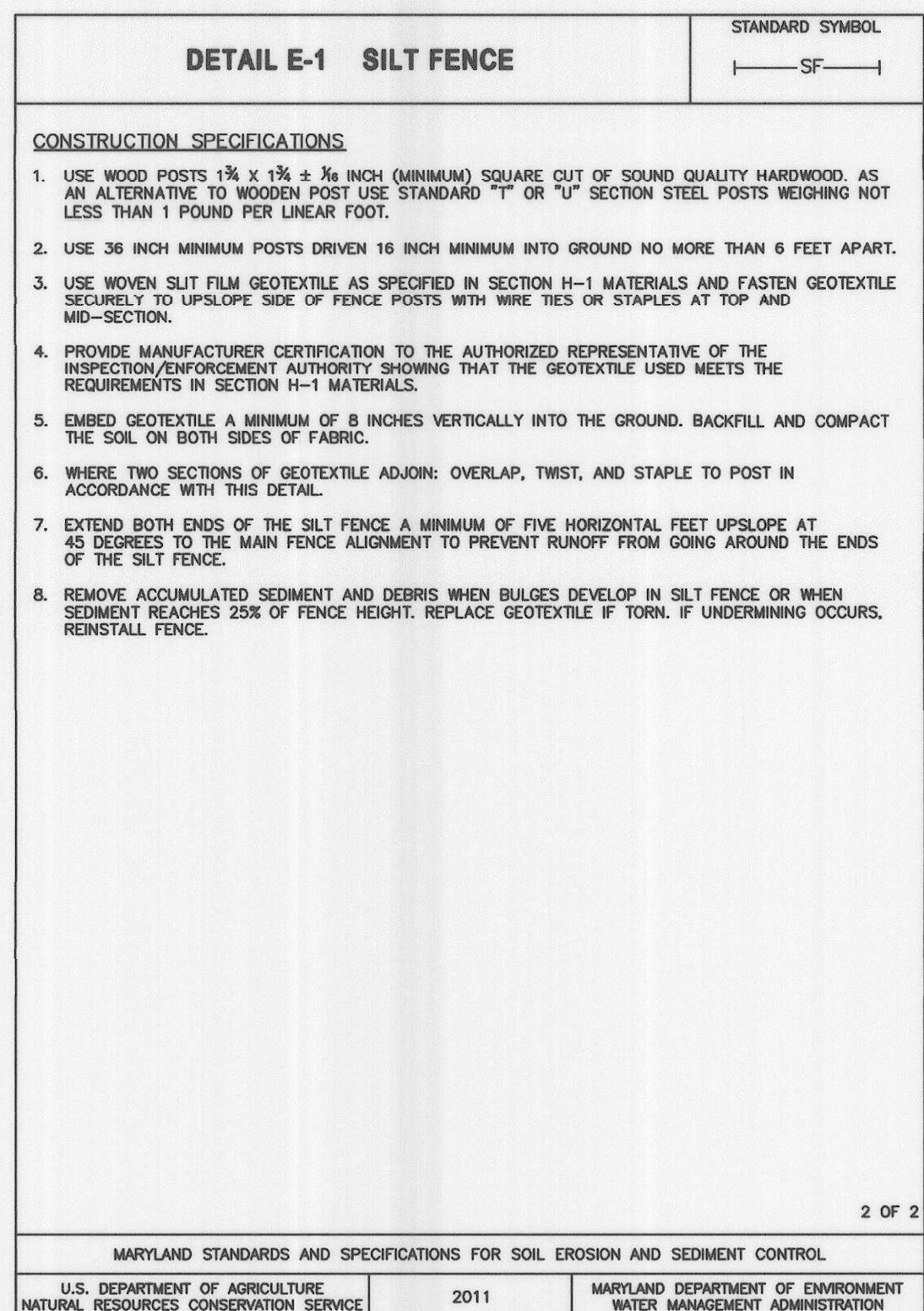
Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

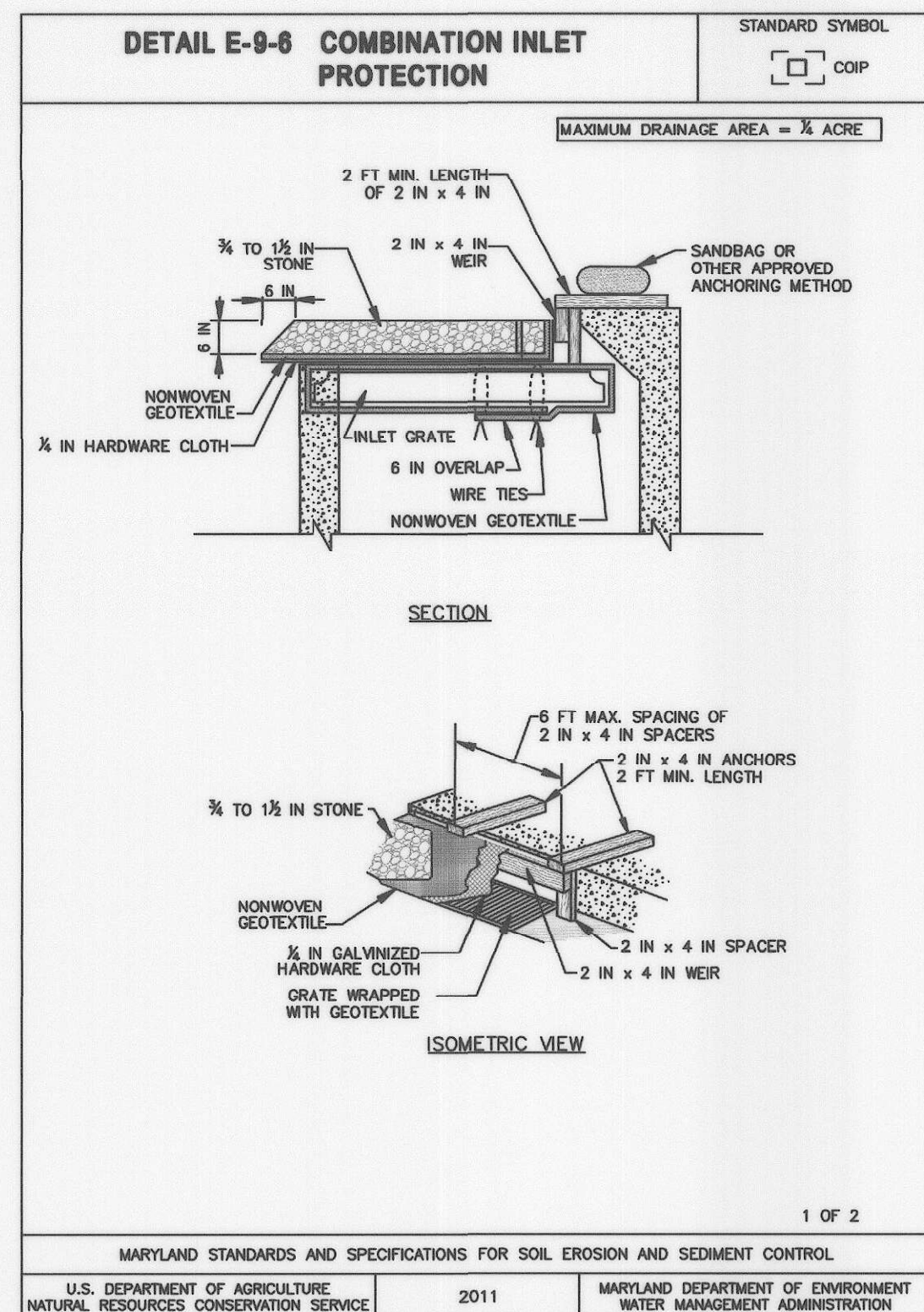
B.43



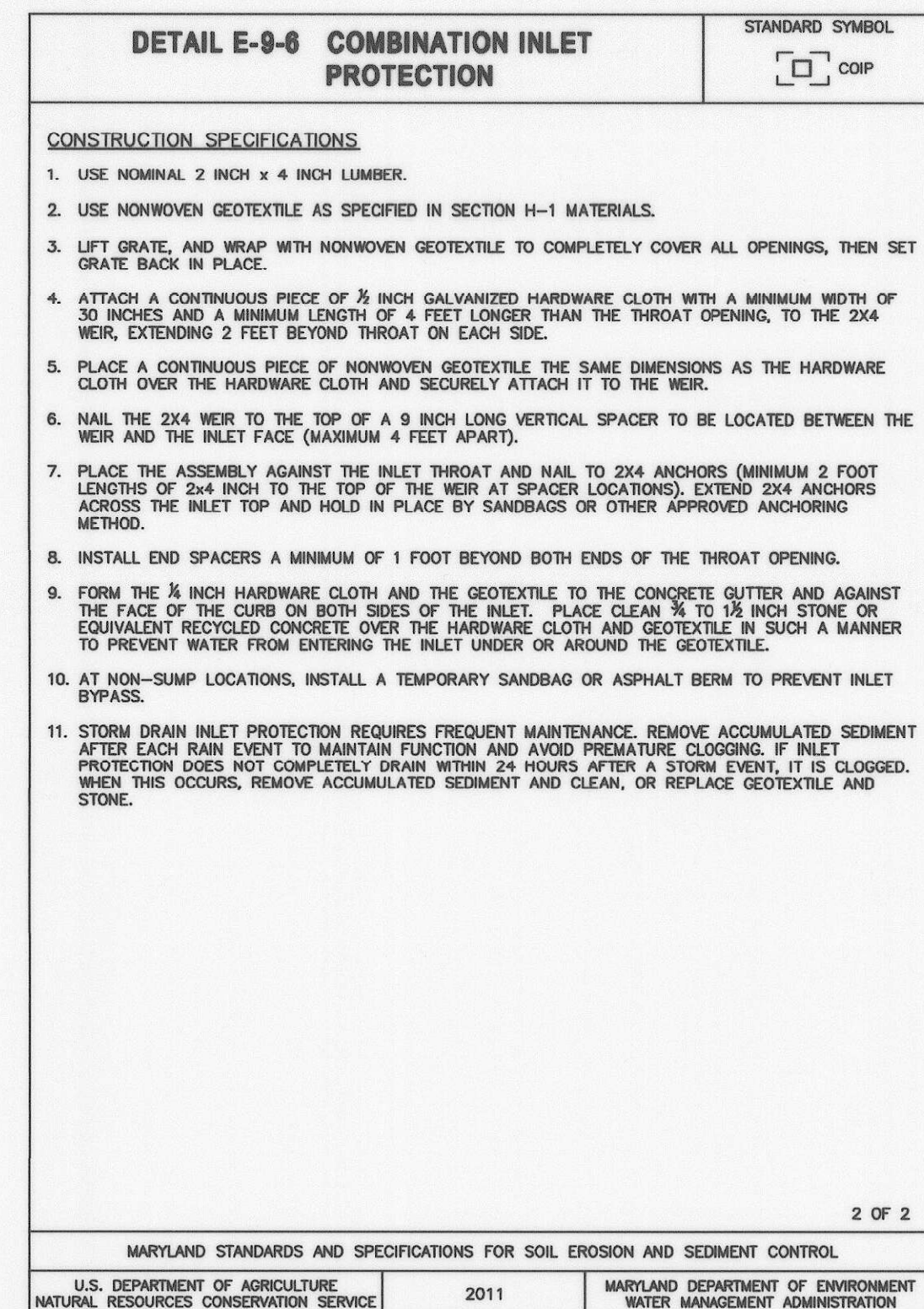
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



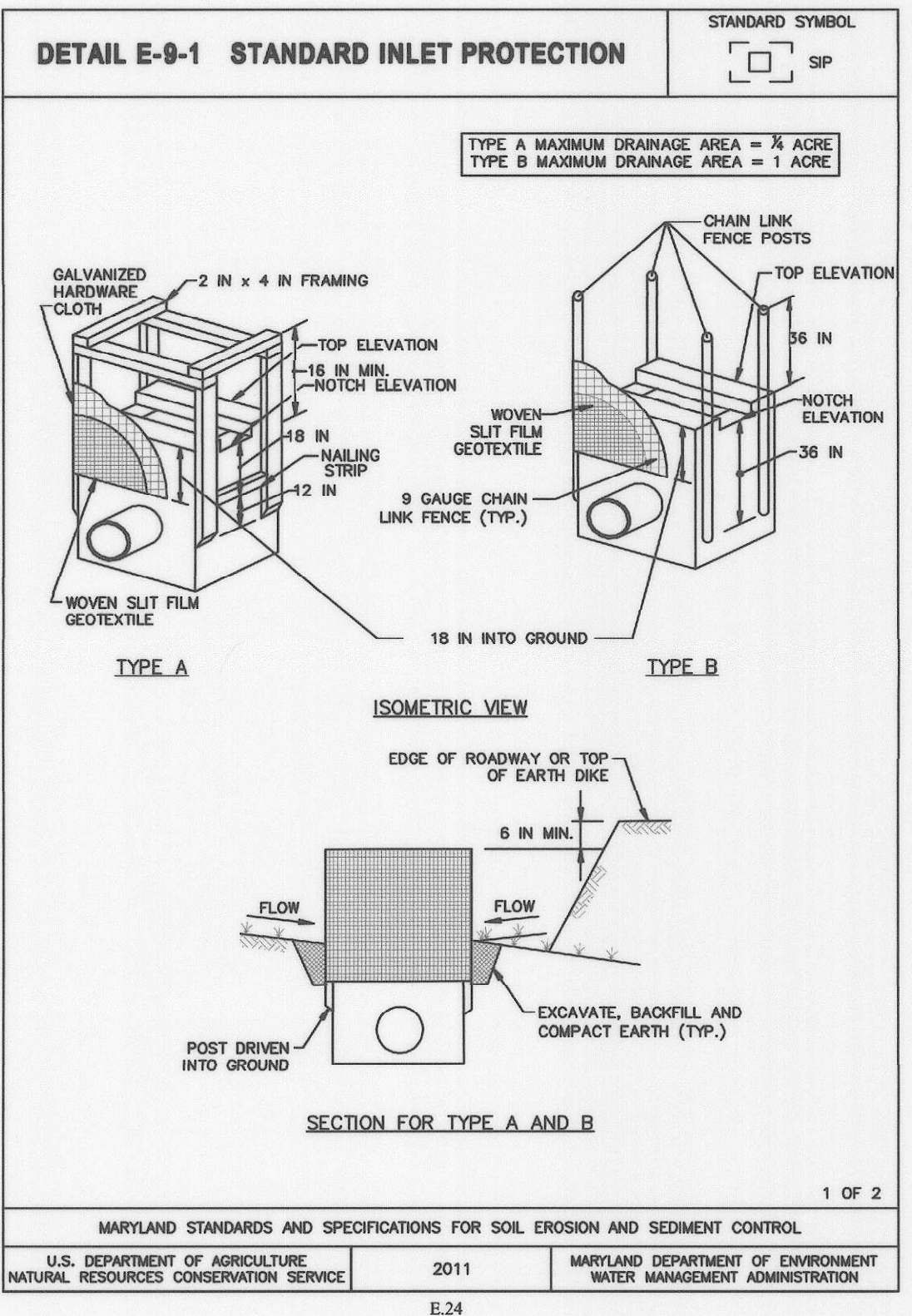
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



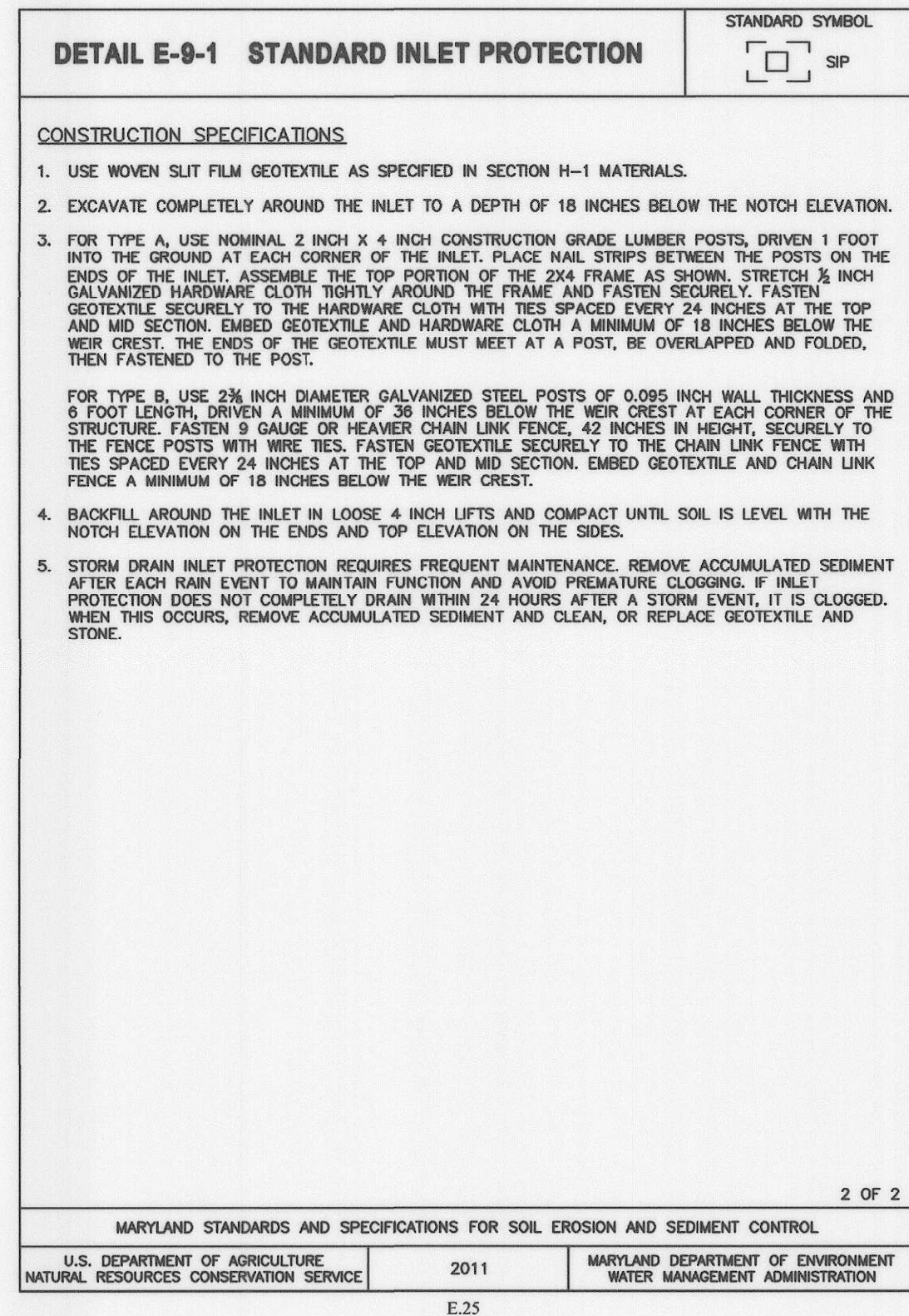
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
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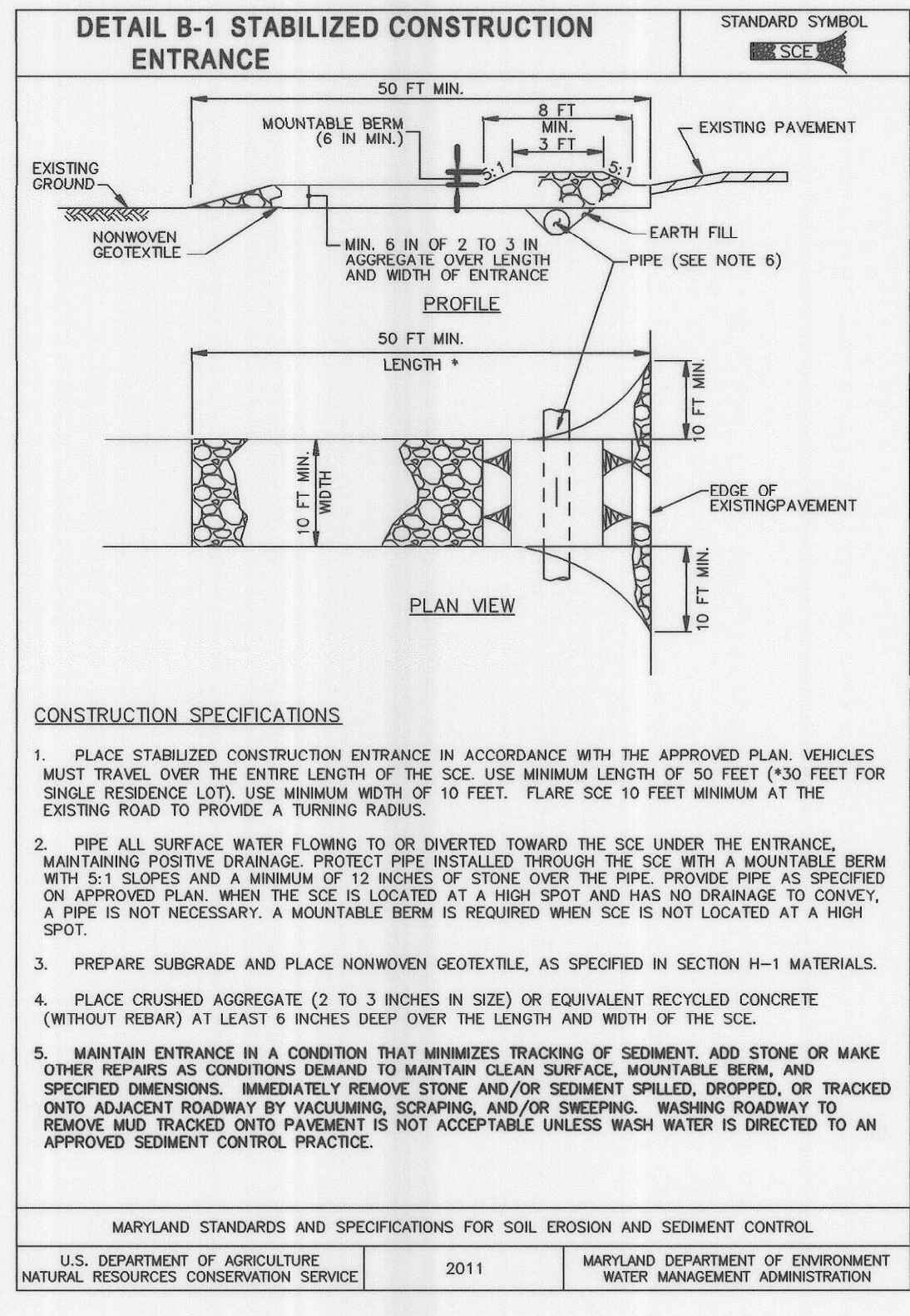
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



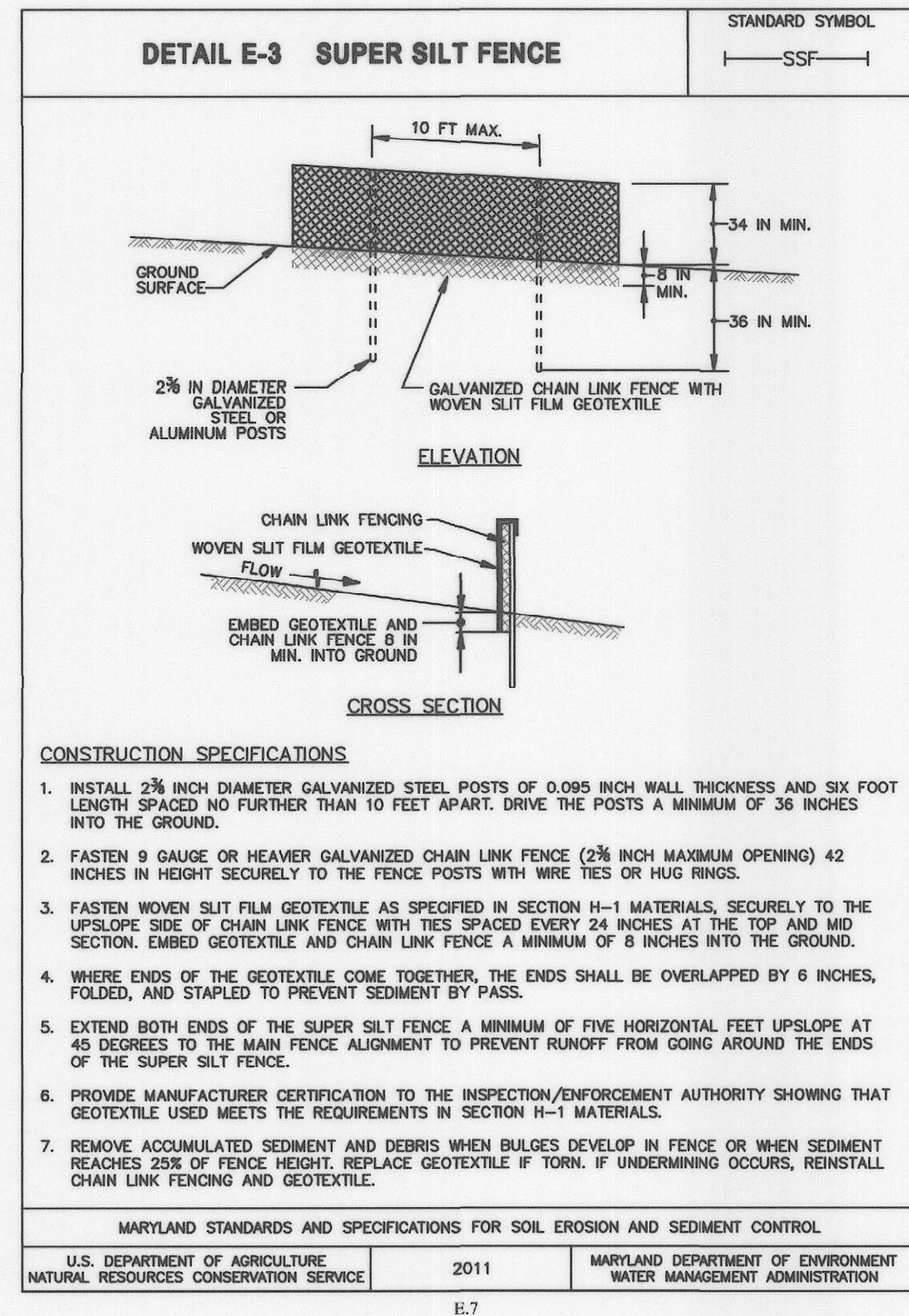
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

DESIGN CERTIFICATION

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DESIGNER'S SIGNATURE: *David T. Moriconi* DATE: 6-13-16

DAVID T. MORICONI
URS CORPORATION
4 NORTH PARK DRIVE
HUNT VALLEY, MD 21030

MD REGISTRATION NO. 16156
P.E. R.L.S. OR R.L.A. (CIRCLE ONE)

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OWNERS/ DEVELOPER'S SIGNATURE: *Jay Steimle* DATE: 7/14/16

JAY STEIMLE, Acting Chief TFS/P
PRINTED NAME & TITLE

PROFESSIONAL CERTIFICATION

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David T. Moriconi 6-13-16

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

Howard R. Robinson 6/16/16
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

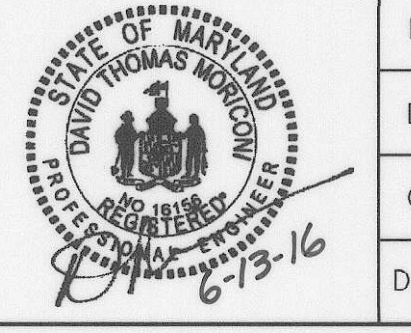
Director of Public Works: *David T. Moriconi* DATE: 6/13/16

Chief, Bureau of Engineering: *Thomas P. Seville* DATE: 7-14-16

Chief, Transportation and Special Projects Division: *Jay Steimle* DATE: 7/14/16

Chief, Bureau of Highways: *Tom Mevius* DATE: 7/22/2016

PREPARED BY
URS
4 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
TEL: (410) 785-7220



DES:	MCS				
DRN:	CDF				
CHK:	DTM				
DATE:	01/2016				
BY	NO.	REVISION	DATE	SCALE	MAP NO.

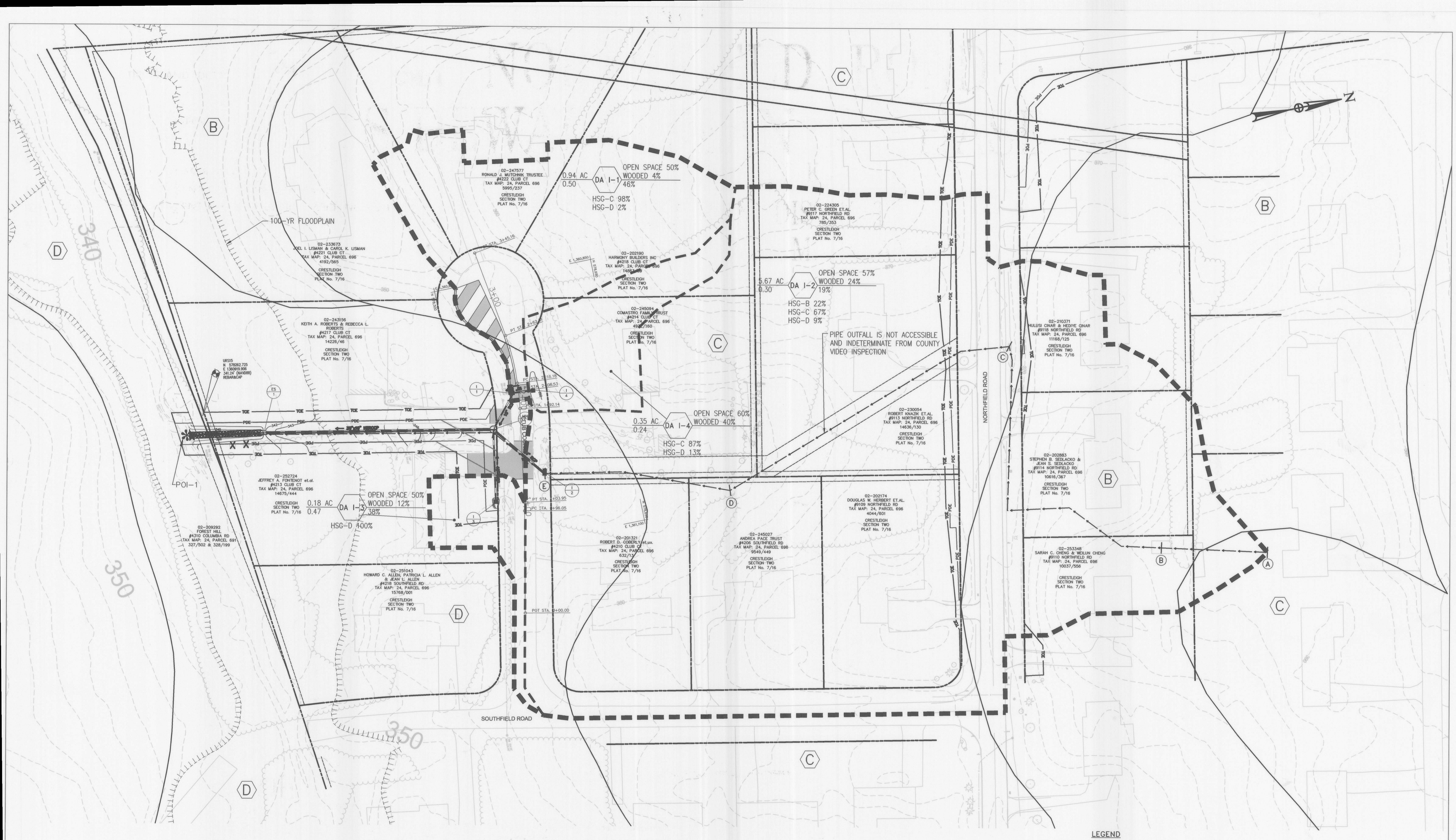
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SCALE MAP NO. _____ BLOCK NO. _____

CRESTLEIGH SUBDIVISION (CLUB COURT) DRAINAGE IMPROVEMENTS

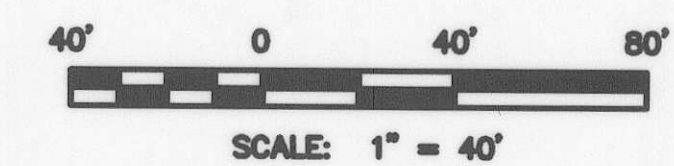
6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE: N.T.S.
DWG NO. C-07



PIPE OUTFALL IS NOT ACCESSIBLE AND INDETERMINATE FROM COUNTY VIDEO INSPECTION

- LEGEND**
- POINT OF INVESTIGATION (POI)
 - DRAINAGE AREA BOUNDARY
 - TIME OF CONCENTRATION PATH (TC)
 - 100-YR FLOODPLAIN
 - SOILS GROUP



PROFESSIONAL CERTIFICATION
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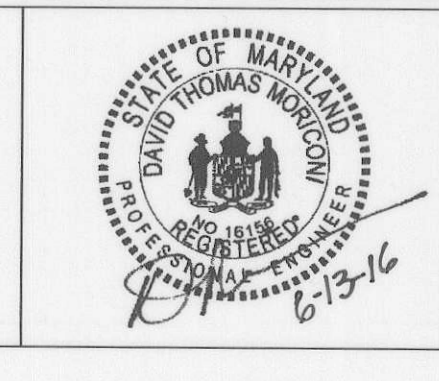
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Chris Fleming
 DIRECTOR OF PUBLIC WORKS
 DATE: 7/14/16

James E. Butler
 CHIEF, BUREAU OF ENGINEERING
 DATE: 7/14/16

Michael Meunier
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 7/22/2016

PREPARED BY
URS
 4 NORTH PARK DRIVE
 HUNT VALLEY, MARYLAND
 TEL: (410) 785-7220



DES:	MCS			
DRN:	CDF			
CHK:	DTM			
DATE:	01/2016			
BY:	NO.	REVISION	DATE	

DRAINAGE AREA MAP

SCALE MAP NO. _____ BLOCK NO. _____

**CRESTLEIGH SUBDIVISION (CLUB COURT)
 DRAINAGE IMPROVEMENTS**

6TH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

SCALE
 1" = 40'

DWG NO.
 DA-01