

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

WALNUT CREEK PHASE TWO

Lots 23 - 68, Non-Buildable Preservation Parcels

'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'

(Being A Resubdivision Of Buildable Bulk Parcels 'F' & 'E' And a Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No's. 20631 Thru 20647

ZONING: RC-DEO & RR-DEO

TAX MAP NO. 28 GRID Nos. 4, 5, 10-12, 17 AND 18 PARCEL No. 49

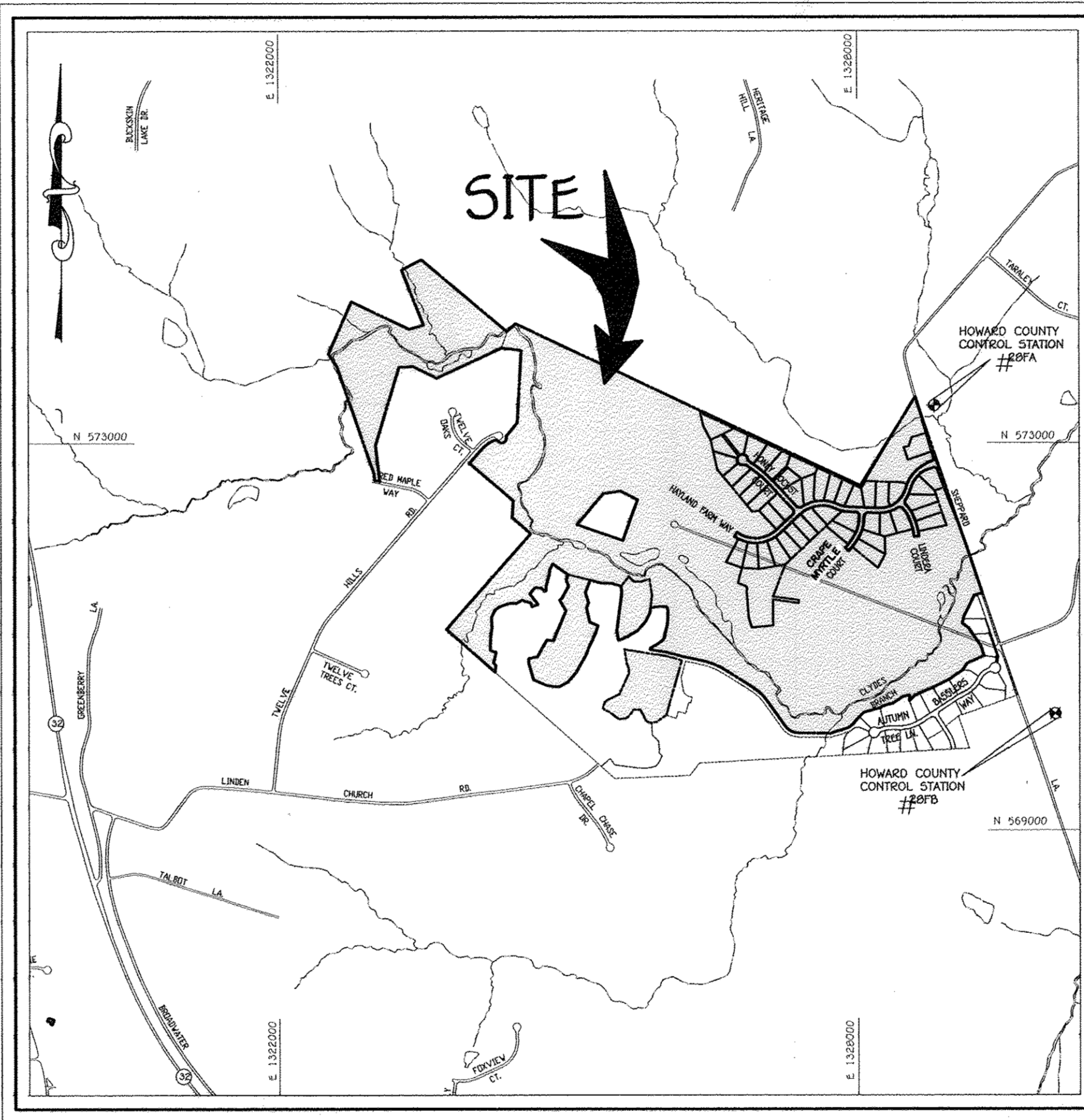
APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Johnson, Acting 11/29/12
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kestrel D. Doolittle 12/05/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 12/31/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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- GENERAL NOTES**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1800 AT LEAST 15 WORKING DAYS PRIOR TO THE START OF WORK.
 - THE CONTRACTOR SHALL NOTIFY THIS OFFICE AT (410) 300-2577 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
 - COORDINATES BASED ON NAD83 HARTFORD COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 28 FA AND NO. 28 FB
 HOWARD COUNTY MONUMENT NO. 28FA ✓ N 572,456.665 ELEV. = 349.296
 E 1,328,997.66
 HOWARD COUNTY MONUMENT NO. 28FB ✓ N 572,710.835 ELEV. = 389.804
 E 1,329,524.63
 - THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, DATED SEPTEMBER, 2005 AND WAS APPROVED UNDER SP-06-07 ON MAY 31, 2006.
 - BACKGROUND INFORMATION:
 A. SUBDIVISION NAME: WALNUT CREEK
 B. TAX MAP NO.: 28
 C. PARCELS: 49
 D. ZONING: RC-DEO & RR-DEO
 E. ELECTION DISTRICT: 5TH
 F. TOTAL TRACT AREA: 361,259 AC.
 G. NO. OF BUILDABLE LOTS: 48 (PHASE TWO)
 H. NO. OF OPEN SPACE LOTS: 0
 I. NO. OF NON-BUILDABLE PRESERVATION PARCELS: 7
 J. NO. OF BUILDABLE BULK PARCELS: 2
 K. AREA OF BUILDABLE LOTS: 30,982 AC.
 L. AREA OF OPEN SPACE LOTS: 0.00 AC.
 M. AREA OF NON-BUILDABLE PRESERVATION PARCELS: 67,179 AC.
 N. AREA OF BUILDABLE BULK PARCELS: 249,394 AC.
 O. TOTAL AREA OF ROADWAY TO BE INDICATED: 4,252 AC.
 P. PREVIOUS FILE NOS.: SP-06-007 APPROVAL DATE: 5/31/06, BA-85-52E, BA-98-33E, BA-93-49E & WP-06-007 (SEE NOTE 10 BELOW).
 - ONE CEMETERY EXISTS WITHIN THIS SUBDIVISION, "CLARK FAMILY CEMETERY" - NO. CO. 30 428-2. THE PLANNING BOARD APPROVED THE CEMETERY ACCOMMODATION AND BOUNDARY DOCUMENTATION PLAN ON MARCH 30, 2006 SUBJECT TO THE FOLLOWING CONDITIONS:
 1. THE DEVELOPER AND/OR THE WALNUT CREEK H.O.A. SHALL UPGRADE THE EXISTING SPLIT RAIL FENCE TO FURTHER PROTECT THE EXISTING CEMETERY SITE.
 2. THE DEVELOPER AND/OR THE WALNUT CREEK H.O.A. SHALL REGULARLY MAINTAIN THE CEMETERY AREA.
 3. THE DEVELOPER AND/OR THE WALNUT CREEK H.O.A. MUST PLACE A CEMETERY MARKER AT THE ENTRANCE OF THE CEMETERY SITE.
 - ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-100.
 - THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.120 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THE ENTIRE SUBDIVISION WILL BE FULFILLED BY PROVIDING 59.57 ACRES OF ON-SITE FOREST RETENTION AND 31.65 ACRES OF ON-SITE FOREST AFFORESTATION FOR A TOTAL OF 91.22 ACRES.
 SURETY FOR ON-SITE FOREST RETENTION = \$4,820/SF FOR 2,594,869 SF. = \$12,517,400 AND ON-SITE AFFORESTATION @ \$0.50/SF FOR 1,379,110 SF. = \$689,555.00 IS REQUIRED. TOTAL SURETY AMOUNT FOR THE FOREST SUBMISSION = \$13,206,955.00.
 THE FOREST CONSERVATION PROVIDED WITH PHASE TWO ARE AS FOLLOWS:
 18.00 AC. OF FOREST CONSERVATION EASEMENT (CREDITED AND NON-DEDUCTED).
 CREDITED ON-SITE RETENTION OF 17.13 ACRES OF FOREST AND 0.10 ACRES OF ON-SITE REFORESTATION. CALCULATION USED FOR PHASE TWO FOREST REQUIREMENT:
 59.57 TOTAL RETENTION ACRES/160 TOTAL UNITS = 0.3723 (44 UNITS X 0.3723 = 17.13 AC.)
 31.65 TOTAL PLANTING ACRES/160 TOTAL UNITS = 0.1979 (46 UNITS X 0.1979 = 9.10 AC.)
 A SURETY FOR ON-SITE FOREST RETENTION @ \$4,820/SF FOR 2,594,869 SF. = \$12,517,400 AND ON-SITE AFFORESTATION @ \$0.50/SF FOR 398,396 SF. = \$199,198.00 IS REQUIRED. TOTAL SURETY AMOUNT FOR THIS SUBMISSION = \$14,716,600.00.
 THE FOREST CONSERVATION SURETY IN THE AMOUNT OF \$14,716,600.00 IS TO BE PAID AS PART OF THE DEVELOPER'S AGREEMENT.
 - THIS FOREST CONSERVATION PROPOSAL IS SUBJECT TO WP-08-007, APPROVED ON AUGUST 21, 2007 TO THE FOLLOWING CONDITIONS:
 1. THE WAIVER PETITION APPROVAL APPLIES ONLY TO THE TEMPORARY DEFERRAL FOR ESTABLISHING THE FOREST CONSERVATION EASEMENTS FOR THIS SUBDIVISION BASED ON THE APPROXIMATE SCHEDULE FOR THIS PROJECT. EACH SUBSEQUENT PHASE OF DEVELOPMENT MUST ESTABLISH A PROPORTIONATE FOREST CONSERVATION AND PROVIDE THE NECESSARY AREA OF FOREST RETENTION AND AFFORESTATION PLANTING AS REQUIRED BY THE FOREST CONSERVATION WORKSHEET FOR THIS PROJECT TO SATISFY ITS OBLIGATION FOR THE ENTIRE AREA OF FOREST CONSERVATION OBLIGATION WITH THE PROCESSING AND RECORDING OF THE LAST PHASE OF DEVELOPMENT FOR THIS PROJECT.
 2. THE APPLICANT/DEVELOPER MUST CONTINUE PROCESSING THE SUBDIVISION PLANS FOR WALNUT CREEK AND MEET ALL APPLICABLE PROCESSING DEADLINE DATES IN ACCORDANCE WITH THE APPROVED APPROXIMATE SCHEDULE.
 - STORMWATER MANAGEMENT FACILITIES: B.M.P. NO. 3 & B.M.P. NO. 4
 PRIVATELY OWNED BY THE HOMEOWNER'S ASSOCIATION AND HOWARD COUNTY, HAYLAND WET EXTENDED DETENTION FACILITIES (P-3) FOR MOW & C/PV
 STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND HAYLAND 1709 SPECIFICATIONS. RETENTION VOLUMES WILL BE PROVIDED THROUGH THE USE OF GRASS CHANNELS ALONG THE PROPOSED ROADWAYS. WATER QUALITY AND CHANNEL PROTECTION VOLUMES WILL BE PROVIDED BY A MICRO-POND (EXTENDED DETENTION), POND, ONE 80-RETENTION FACILITY AND LEVEL SPREADERS.
 OVERLAND FLOOD PROTECTION VOLUME AND EXTREME FLOOD VOLUME ARE NOT REQUIRED FOR THIS SITE.
 - THE PROPOSED WATER AND SEWER SYSTEMS SHALL BE PRIVATE. SEE CONTRACT NO. 50-4440-D FOR LOW PRESSURE SYSTEM.
 13. THE SUBJECT PROPERTY IS LOCATED OUTSIDE OF THE METROPOLITAN DISTRICT.
 14. TOPOGRAPHIC CONTOURS BASED ON HARTFORD AERIAL SURVEYS, INC.
 15. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPESTEM DRIVEWAY.
 16. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HERBST BENSON & ASSOCIATES, INC., DATED SEPTEMBER, 2009 AND APPROVED ON MAY 31, 2006.
 17. THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED SEPTEMBER, 2009 AND APPROVED ON MAY 31, 2006.
 18. THE NON-CRITICAL FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED JULY 2005, AND SUPPLEMENTED WITH INFORMATION OBTAINED FROM NO. 10 CAPITAL PROJECT 0-1028A. THE FLOODPLAIN STUDY WAS APPROVED UNDER SP-06-007 DATED 5/31/06.
 19. SOILS INFORMATION TAKEN FROM SOIL MAP NO. 18, SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY 1968 ISSUE.
 20. THERE ARE STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY "SLOPES THAT AVERAGE 25% OR GREATER OVER 10 VERTICAL FEET" PER SECTION 16.100(b)(5) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. TOTAL AREA OF 25% OR GREATER SLOPES = 8.9 AC.
 21. AS PER SECTION 16.14.4.3 OF THE ZONING REGULATIONS, ONLY ONE EASEMENT HOLDER IS REQUIRED FOR PRESERVATION PARCELS DESIGNED SOLELY FOR SWM FACILITIES OR COMMUNITY SEWERAGE DISPOSAL SYSTEMS.
 A. NON-BUILDABLE PRESERVATION PARCEL 'G' OWNED: PRIVATELY
 EASEMENT HOLDER: HOWARD COUNTY, MARYLAND & HOA USE: S.W.M.
 B. NON-BUILDABLE PRESERVATION PARCEL 'I' OWNED: HOMEOWNER'S ASSOCIATION
 EASEMENT HOLDER: HOWARD COUNTY, MARYLAND USE: S.W.M.
 - NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM OR THEIR REQUIRED BUFFERS.
 23. THE LANDSCAPE SURETY FOR THE 80 SHADE AND 100 EVERGREEN TREES IN THE AMOUNT OF \$42,600.00 FOR PERIMETER LANDSCAPE REQUIREMENTS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL WILL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION. FINANCIAL SURETY FOR THE REQUIRED 220 STREET TREES WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$60,000.00.
 24. BUILDABLE BULK PARCEL 'H' RETAINS THE RIGHT TO BE FURTHER SUBDIVIDED IN ACCORDANCE WITH THE DED CLUSTER REGULATIONS IN SECTION 106 OF THE HOWARD COUNTY ZONING REGULATIONS. THE REVISIONS OF THIS RULE PARCELS INTO RESIDENTIAL LOTS WILL REQUIRE DENSITY FROM AN OFF-SITE LOCATION WITHIN THE RC-DEO DISTRICT.
 25. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 2004 ZONING REGULATIONS PER COUNCIL BILL NO. 49-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL NO. 75-2003 AND THE COMP. USE ZONING REGULATION AMENDMENTS EFFECTIVE 7/28/06. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS OR PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
 26. WALLS SHALL BE BUILT ON LOTS PRIOR TO RECORDATION OF THE FINAL RECORD MAP.
 27. LOTS 23 THRU 68 ARE TO BE SERVED BY A PUBLIC SHARED SEWER FACILITY LOCATED ON NON-BUILDABLE PRESERVATION PARCEL 'B' (P-07-076), WALNUT CREEK, PHASE ONE.
 28. SIGN POSTS: ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 4" GALVANIZED STEEL POST. SQUARE TUBE POST (1 1/2" DIA) GALVANIZED STEEL PERFORATED SQUARE TUBE SLAVE (1 1/2" DIA) - 3" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
 29. THIS PROJECT IS SUBJECT TO WASTEWATER DISCHARGE PERMIT NUMBER 06-DF-3536 AND IS EFFECTIVE FROM AUGUST 1, 2006 UNTIL AUGUST 1, 2011 WHEN IT EXPIRES. THE SHARED SEWER SYSTEM CONTRACT NO. 50-4441-D AND THE COLLECTION SYSTEM CONTRACT NO. 50-4440-D.
 30. NON-BUILDABLE PRESERVATION PARCEL 'J' TO BE CONVEYED TO TAX MAP NO. 28, PARCEL NO. 92 SIMULTANEOUSLY WITH THE RECORDATION OF THIS PLAN.
 31. A DESIGN FLOOD MARKER FROM SECTION 5.2.7.4.4, WHICH REQUIRES THAT A WET POND SHALL HAVE A POND DRAIN CAPABLE OF DRAINING THE PERMANENT POOL AREA WAS SUBMITTED WITH THIS PROJECT. THIS MARKER HAS BEEN DENIED AND A POND DRAIN HAS BEEN ADDED TO B.M.P. NO. 3.



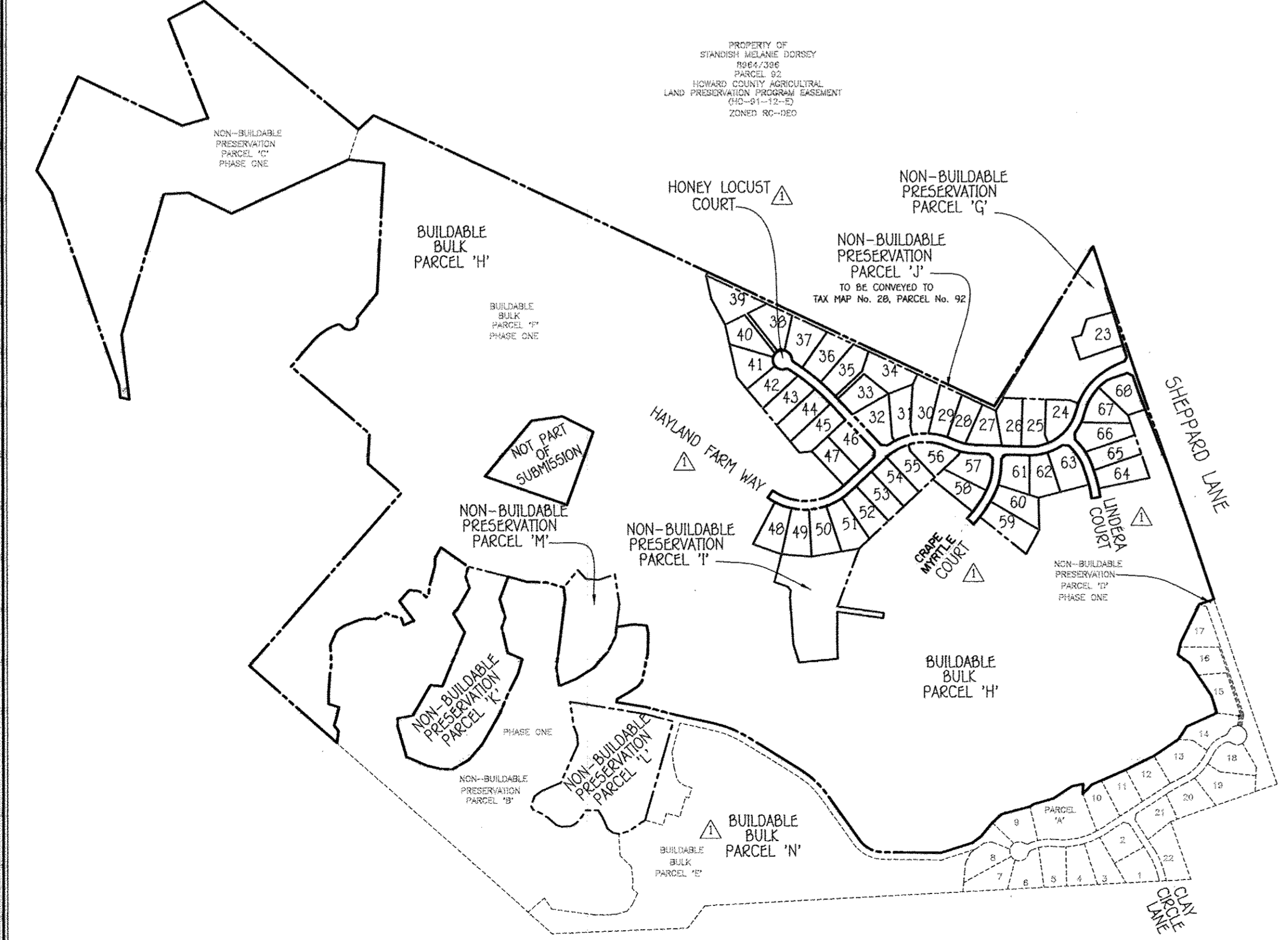
VICINITY MAP
SCALE: 1" = 1200'

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TRAFFIC CONTROL SIGNS				
ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
HAYLAND FARM WAY	0+50	44'	STOP	R1-1
HAYLAND FARM WAY	2+00	18'	SPEED LIMIT 25	R2-1
HAYLAND FARM WAY	0+48	--	KEEP RIGHT	R4-7
HAYLAND FARM WAY	1+16	--	KEEP RIGHT	R4-7
HAYLAND FARM WAY	3+00	14'	STOP AHEAD	W3-1
HAYLAND FARM WAY	20+20	14'	ROAD ENDS 500 FT.	
HAYLAND FARM WAY	@ THE TURNAROUND SEE SHEET 2	--	NO PARKING IN THE TURNAROUND	
LINDERA COURT	@ THE TURNAROUND SEE SHEET 7	--	NO PARKING IN THE TURNAROUND	
LINDERA COURT	0+25	16'	STOP	R1-1
LINDERA COURT	1+00	14'	SPEED LIMIT 25	R2-1
CRAPE MYRTLE CT.	@ THE TURNAROUND SEE SHEET 7	--	NO PARKING IN THE TURNAROUND	
CRAPE MYRTLE CT.	0+25	16'	STOP	R1-1
CRAPE MYRTLE CT.	1+00	14'	SPEED LIMIT 25	R2-1
HONEY LOCUST COURT	0+25	16'	STOP	R1-1
HONEY LOCUST COURT	1+50	11'	SPEED LIMIT 25	R2-1

ROADWAY INFORMATION CHART				
ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W	WIDTH
HAYLAND FARM WAY	PUBLIC ACCESS STREET	30 M.P.H.	50'	50'
LINDERA COURT	PUBLIC ACCESS STREET	30 M.P.H.	50'	50'
CRAPE MYRTLE COURT	PUBLIC ACCESS STREET	30 M.P.H.	50'	50'
HONEY LOCUST COURT	PUBLIC ACCESS PLACE	25 M.P.H.	50'	50'

STREET LIGHT CHART			
STREET NAME	C.L. STATION	OFFSET	FIXTURE/POLE TYPE
SHEPPARD LANE	5+48	50' L	150-WATT H.P.S. "PREMIER" PENDANT POST-TOP MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE



PLAN VIEW
NO SCALE

NO.	DESCRIPTION	DATE
1	AS-BUILT	9/15/10
2	REVISED PARCELS 'E', 'J', 'H' & 'G', ROAD NAMES AND TITLE BLOCK	9/25/12
3	REVISIONS	

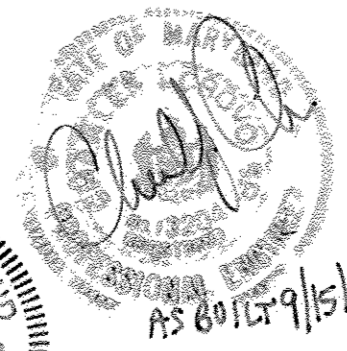
OWNER
 BASSLERS, INCORPORATED
 476 ALFRED S. BASSLER
 4994 SHEPPARD LANE
 ELIJAH CITY, MARYLAND 21042
 (410) 531-2193

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19590 NORTH AVE.
 LUSKON, MARYLAND 21765
 (410) 489-7900

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE AS-BUILT PLAN NEXT TO APPROVED PLANS AND SPECIFICATIONS.
 CHARLES J. CRACK, P.E. NO. 19024 AS-BUILT 9/10/10

10/31/12
 DATE

ALSO PROFESSIONAL SEAL
 "Professional Engineer" I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13"



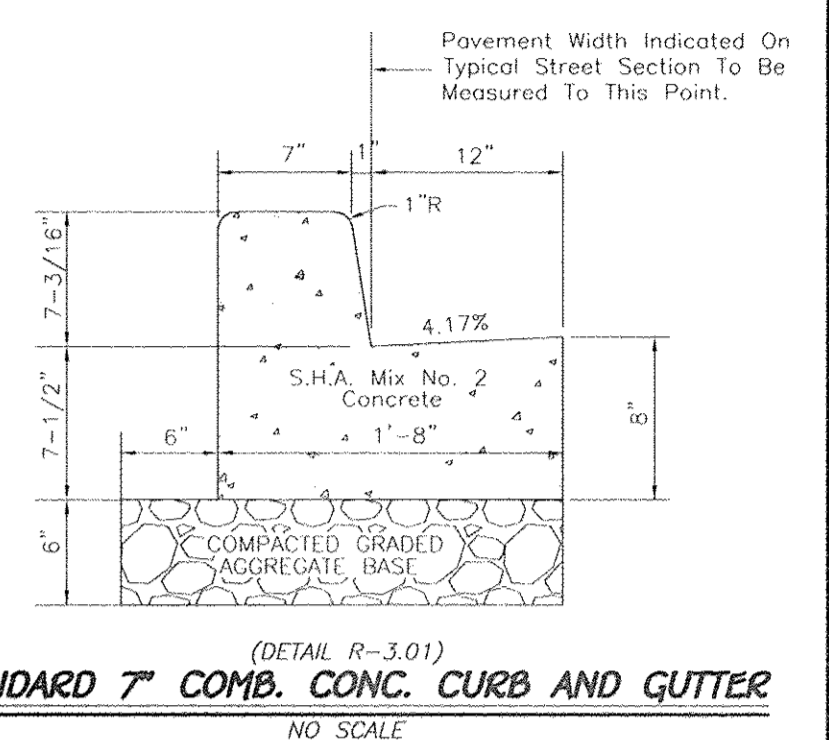
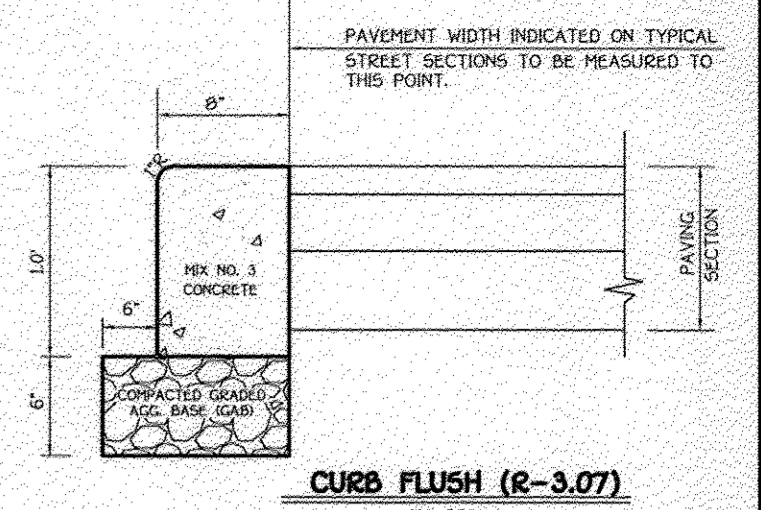
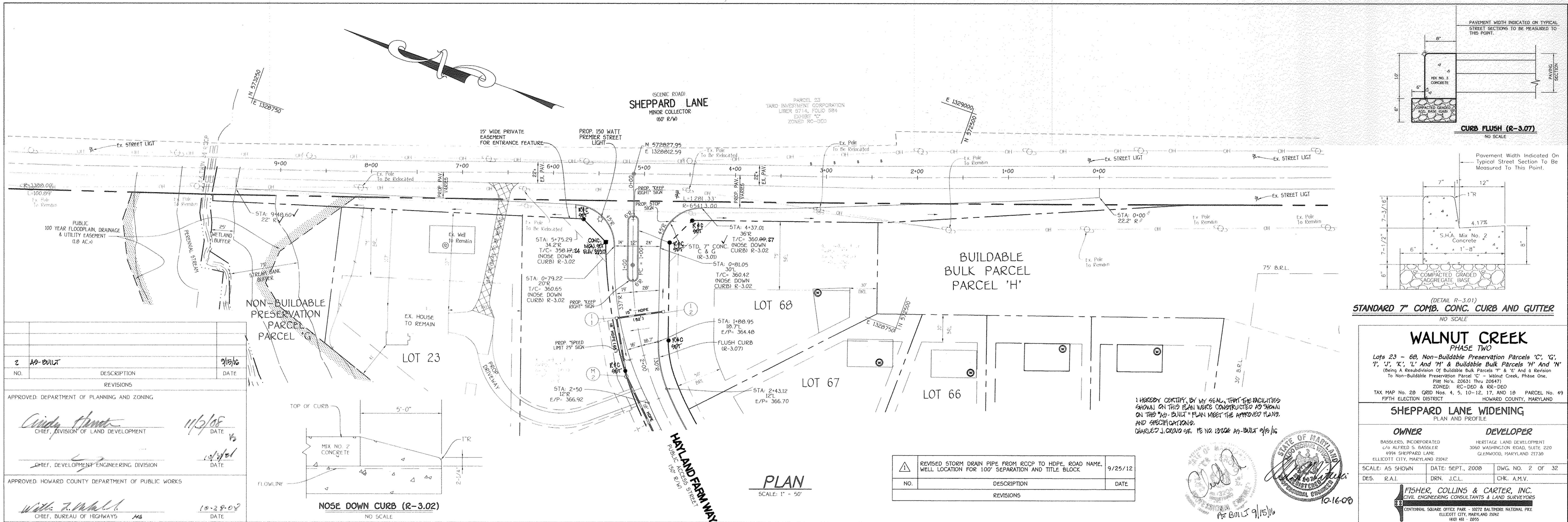
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PIKE
 ELIJAH CITY, MARYLAND 21042
 (410) 461-1225

**REVISED
WALNUT CREEK
PHASE TWO**
Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'
 (Being A Resubdivision Of Buildable Bulk Parcels 'F' & 'E' And a Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No's. 20631 Thru 20647

ZONED: RC-DEO & RR-DEO
 TAX MAP NO. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 1 OF 32

AS-BUILT

F-08-081



NO.	DESCRIPTION	DATE
2	AS-BUILT	9/15/16

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hunter 11/2/08
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 10/2/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Willie F. Mahall 10-28-08
CHIEF, BUREAU OF HIGHWAYS DATE

NO.	DESCRIPTION	DATE
1	REVISED STORM DRAIN PIPE FROM RCP TO HDPE. ROAD NAME, WELL LOCATION FOR 100' SEPARATION AND TITLE BLOCK.	9/25/12



WALNUT CREEK PHASE TWO

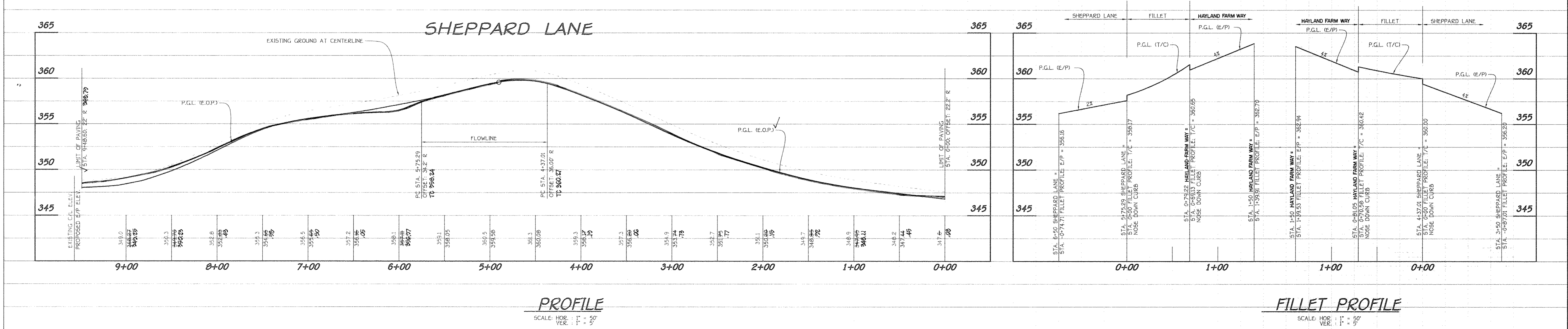
Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' and 'M' & Buildable Bulk Parcels 'H' and 'N' (Being A Resubdivision of Buildable Bulk Parcels 'M' & 'N' and a Revision to Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One. PLOT No's. 20631 Thru 20647)

TAX MAP No. 28 QRD Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

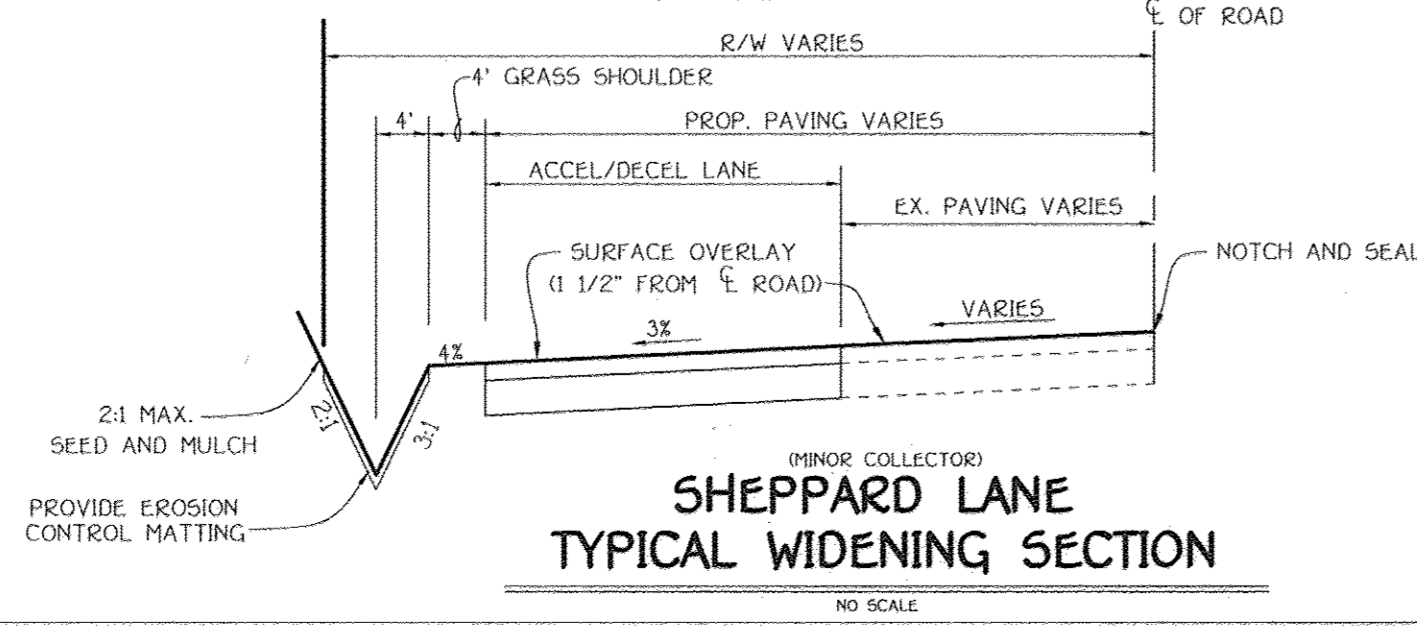
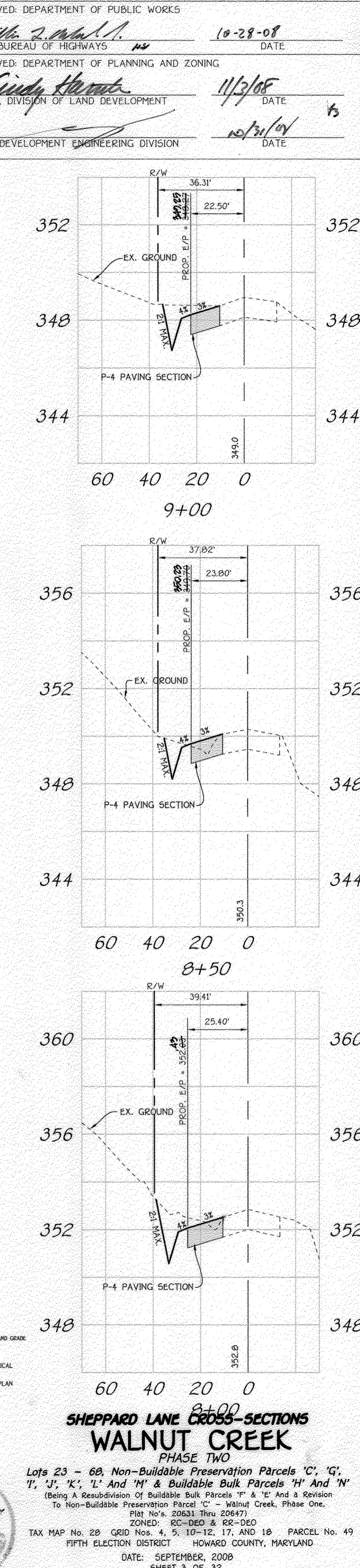
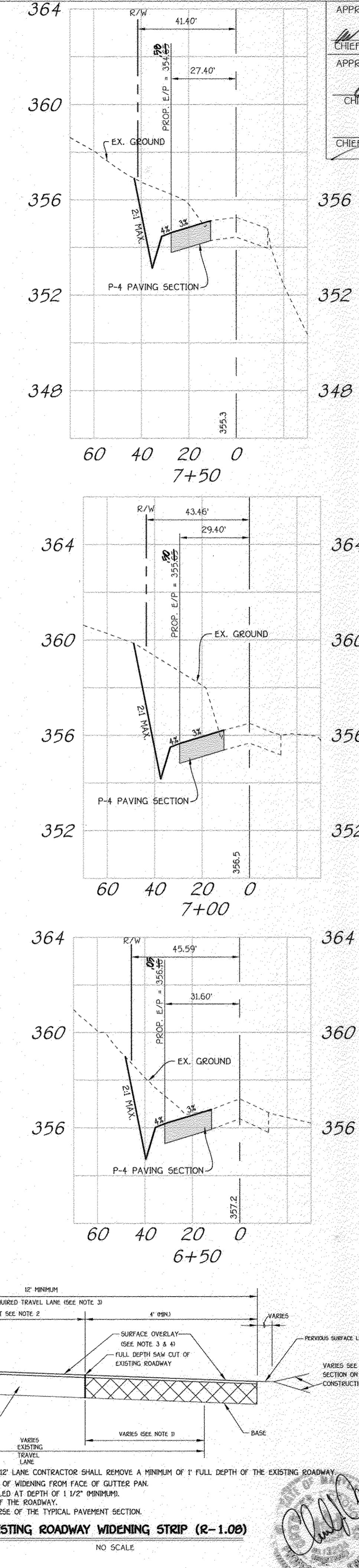
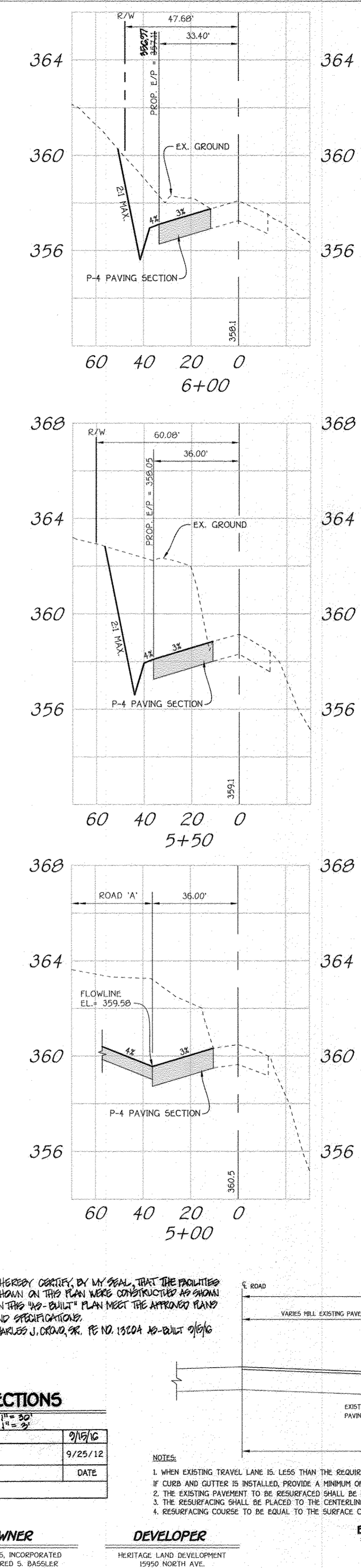
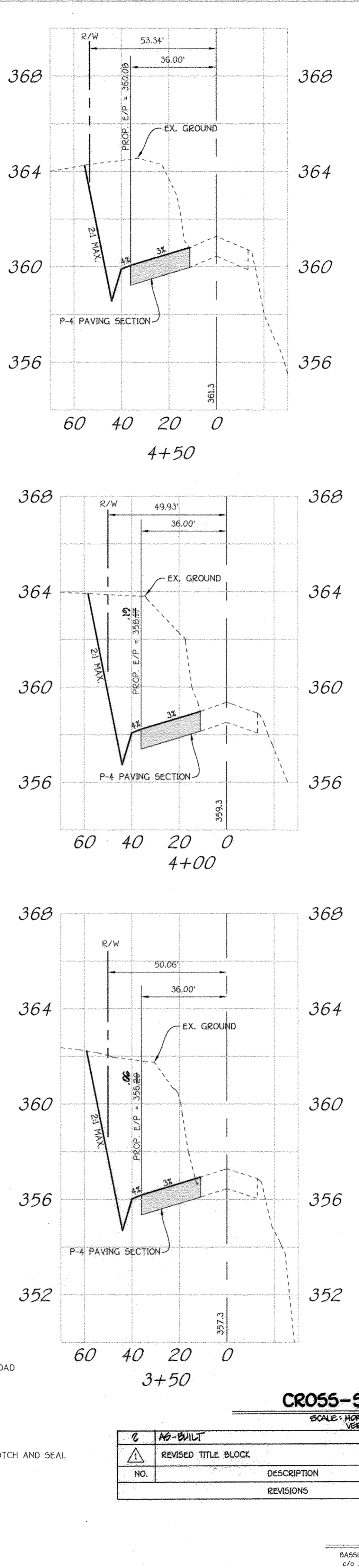
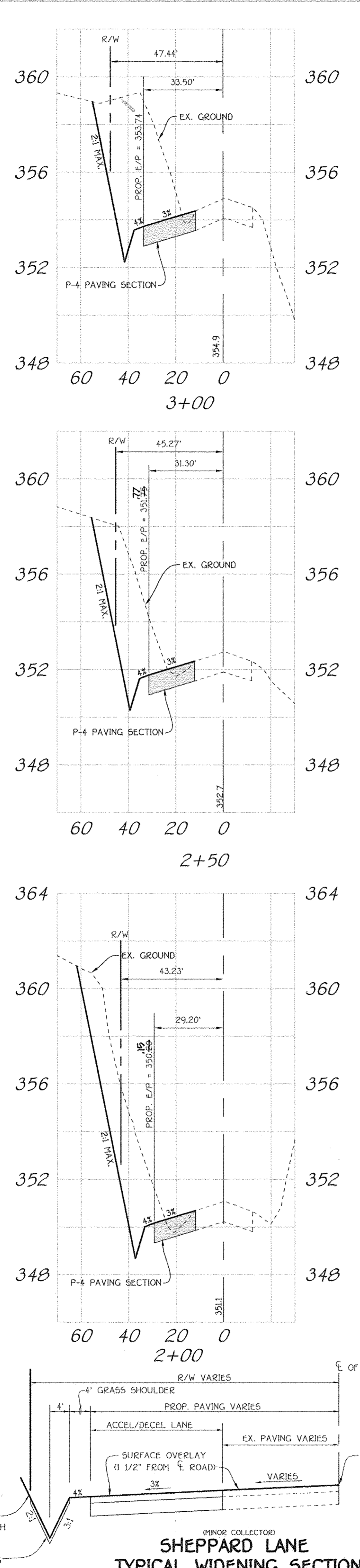
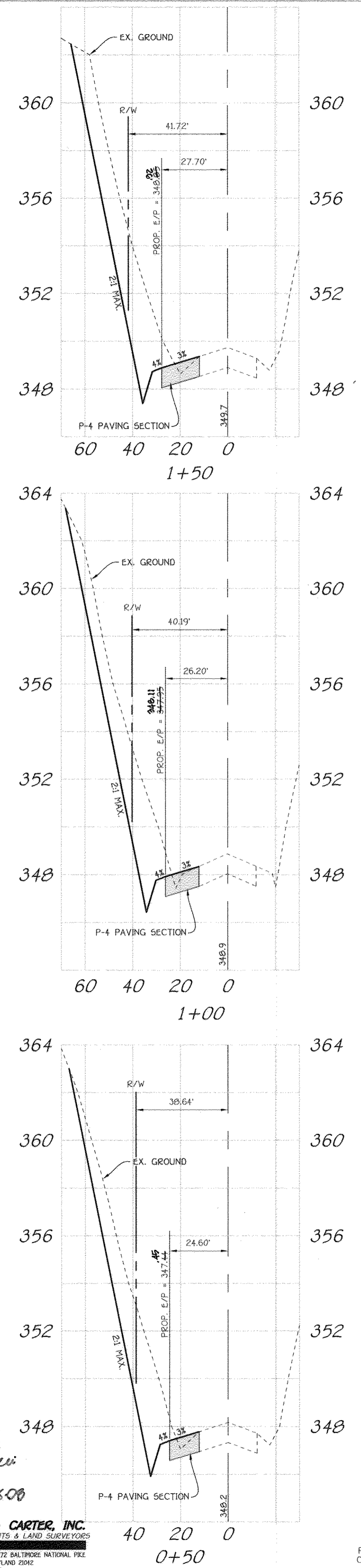
SHEPPARD LANE WIDENING
PLAN AND PROFILE

OWNER BASSELLS, INCORPORATED 676 ALFRED S. BASSELL 4994 SHEPPARD LANE ELLICOTT CITY, MARYLAND 21042	DEVELOPER HERITAGE LAND DEVELOPMENT 3060 WASHINGTON ROAD, SUITE 220 GREENWOOD, MARYLAND 21739
SCALE: AS SHOWN	DATE: SEPT. 2008
DES. R.A.I.	DRN. J.C.L.
	CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
REG. NO. 2892



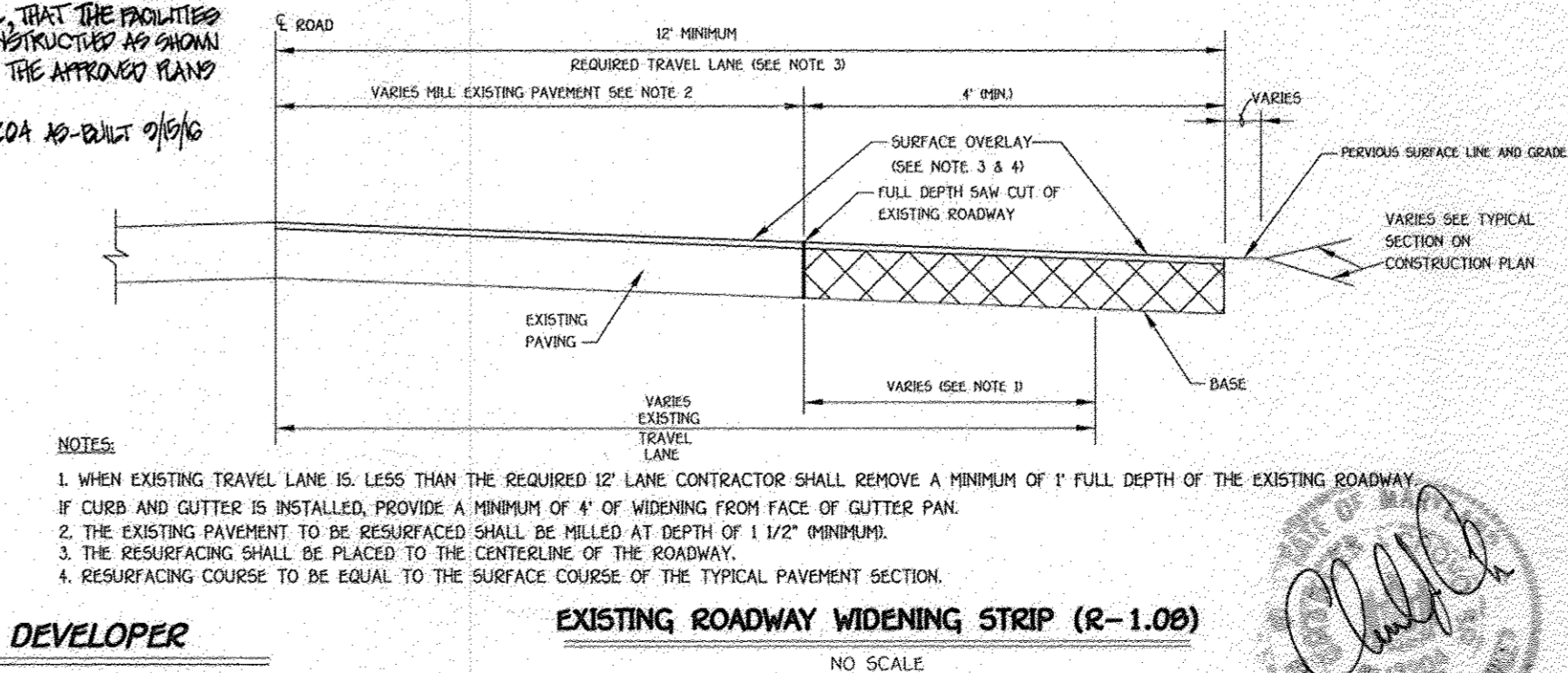
APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. Mahan 10-29-08
 CHIEF, BUREAU OF HIGHWAYS DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Harvath 11/3/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 10/30/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



CROSS-SECTIONS
 SCALE: HORIZ. 1" = 50'
 VERT. 1" = 2'

NO.	DESCRIPTION	DATE
1	AS-BUILT	9/15/10
2	REVISED TITLE BLOCK	9/25/12
	REVISIONS	

I HEREBY CERTIFY BY MY SEAL THAT THE PROFILES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 CHARLES J. CRONQ, P.E. PE NO. 15204 AS-BUILT 9/15/10

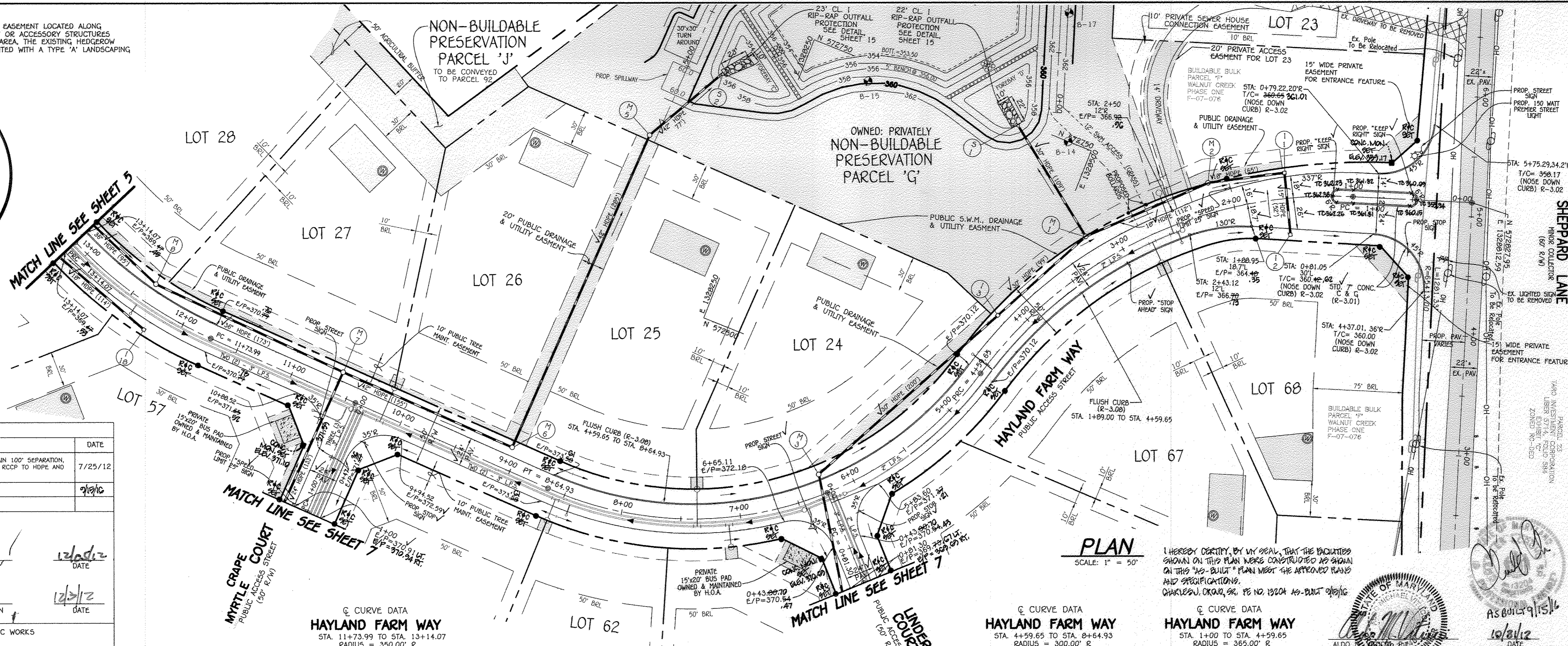
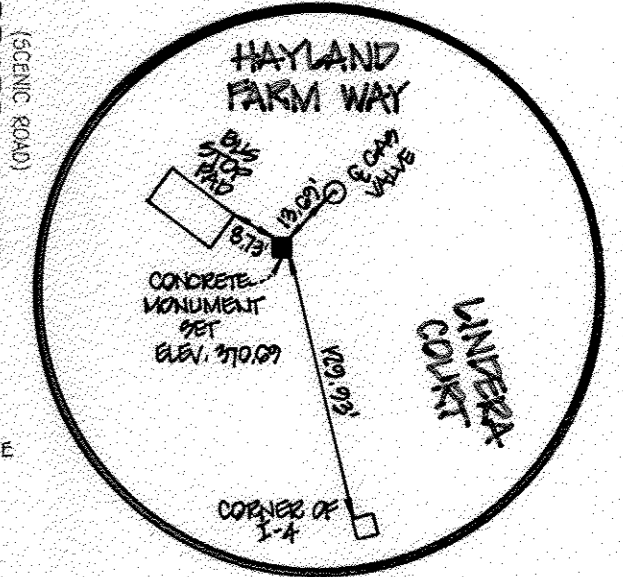
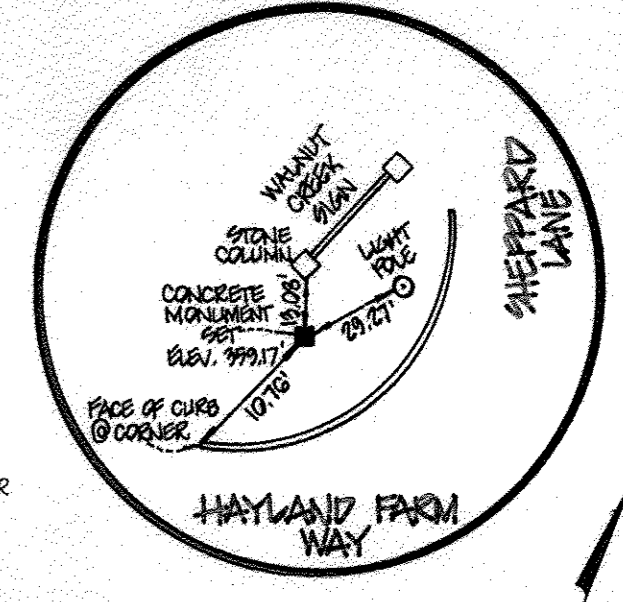
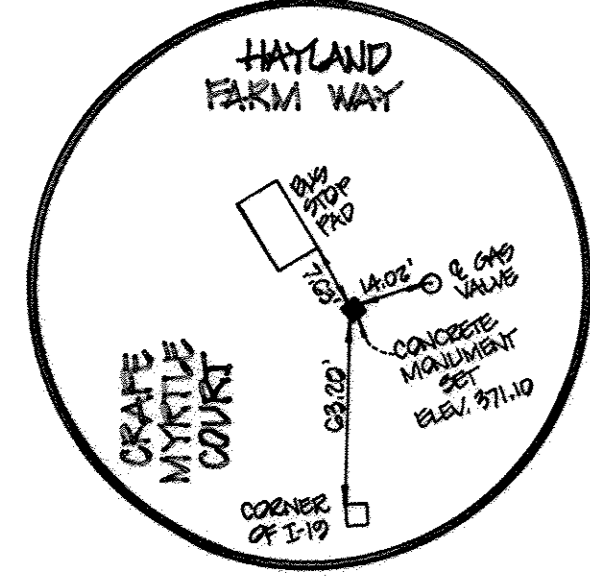


- NOTES:
1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE CONTRACTOR SHALL REMOVE A MINIMUM OF 1" FULL DEPTH OF THE EXISTING ROADWAY CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4" OF WIDENING FROM FACE OF GUTTER PAN.
 2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" MINIMUM.
 3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
 4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 MD REG. NO. 1095

SHEPPARD LANE CROSS-SECTIONS
WALNUT CREEK
 PHASE TWO
 Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'T', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'
 (Being A Resubdivision Of Buildable Bulk Parcels 'H' & 'N' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, P181 No. 20631 Thru 20647)
 ZONED: RC-DEO & RR-DEO
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 3 OF 32

NOTE:
 WITHIN THE 50 FOOT WIDE AGRICULTURAL BUFFER EASEMENT LOCATED ALONG THE NORTHERN PROPERTY BOUNDARY, NO PRIMARY OR ACCESSORY STRUCTURES SHALL BE PERMITTED, AND WITHIN THE EASEMENT AREA, THE EXISTING HEDGEROW VEGETATION SHALL BE PRESERVED AND SUPPLEMENTED WITH A TYPE 'A' LANDSCAPING BUFFER WHERE INSUFFICIENT VEGETATION EXISTS.



REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISED LOW PRESSURE SEWER, WELLS TO MAINTAIN 100' SEPARATION, PARCELS 'C', 'H' & 'J'. STORM SEWER PIPE FROM RCCP TO HOPE AND ROAD MARKS.	7/25/12
2	AS-BUILT	9/19/12

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kurt Sanderson
 CHIEF, DIVISION OF LAND DEVELOPMENT
 12/6/12 DATE

Mike Roman
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 12/1/12 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Diane Schwab
 CHIEF, BUREAU OF HIGHWAYS
 11/29/12 DATE

REVISED WALNUT CREEK PHASE TWO

Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'T', 'J', 'K', 'L' and 'M' and Buildable Bulk Parcels 'H' and 'N' (Being A Resubdivision of Buildable Bulk Parcels 'F' & 'I' and a Revision to Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, File No. 20031 Thru 20647)

ZONED: RC-OEO & RC-OEO
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

HAYLAND FARM WAY
 PLAN AND PROFILE

OWNER	DEVELOPER
BASELERS, INCORPORATED 270 ALBERT S. BASLER 4994 SHEPPARD LANE ELICOTT CITY, MARYLAND 21042 (410) 531-2193	HERITAGE LAND DEVELOPMENT 19500 NORTH AVE LISBON, MARYLAND 21765 (410) 499-7900

SCALE: AS SHOWN DATE: SEPT., 2008 DWG. NO. 4 OF 32
 DES. R.A.I. DRN. J.C.L. CHK. A.M.V.

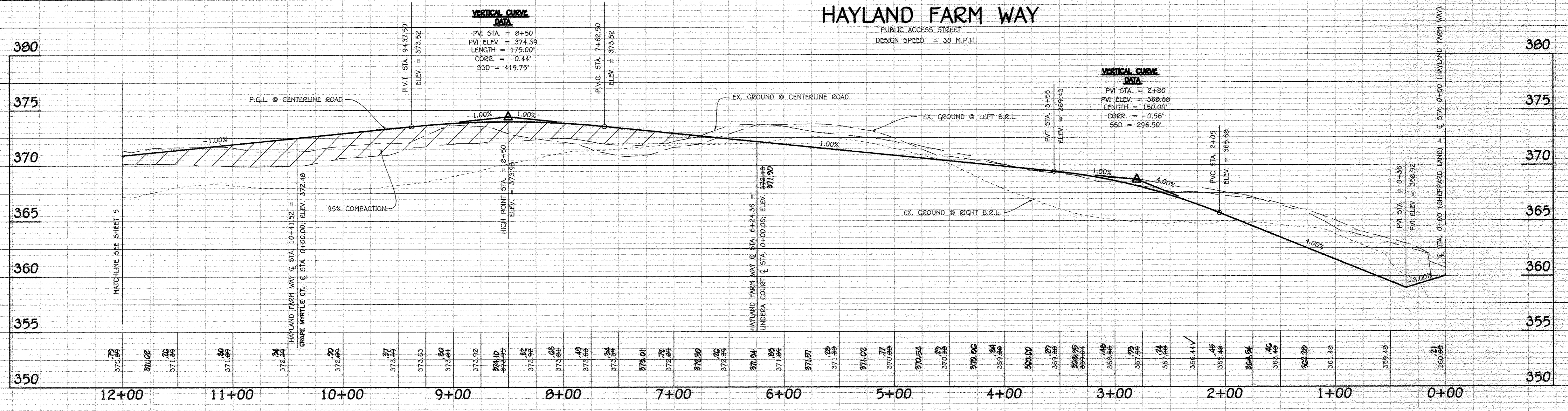
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARES OFFICE PARK - 10270 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 481 - 2292

G CURVE DATA
HAYLAND FARM WAY
 STA. 11+73.99 TO STA. 13+14.07
 RADIUS = 390.00' G
 ARC LENGTH = 140.08'
 TAN. = 70.93'
 DELTA = 22°59'53"
 CHORD = N76°24'35"W, 139.15'

G CURVE DATA
HAYLAND FARM WAY
 STA. 4+59.65 TO STA. 8+64.93
 RADIUS = 300.00' G
 ARC LENGTH = 405.28'
 TAN. = 240.35'
 DELTA = 77°24'08"
 CHORD = S53°25'25"W, 375.15'

G CURVE DATA
HAYLAND FARM WAY
 STA. 1+00 TO STA. 4+59.65
 RADIUS = 385.00' G
 ARC LENGTH = 359.65'
 TAN. = 195.94'
 DELTA = 56°27'22"
 CHORD = S42°57'02"W, 345.28'

NOTE:
 SEE SHEET 29 FOR FILLET PROFILES.



PROFILE
 SCALE: HOR. 1" = 50'
 VER. 1" = 5'

⊙ CURVE DATA
CRAPE MYRTLE COURT
 STA. 1+00 TO STA. 2+50.12
 RADIUS = 350.00' R
 ARC LENGTH = 150.12'
 TAN. = 76.23°
 DELTA = 24°34'32"
 CHORD = 514'24"4"W, 148.97'

⊙ CURVE DATA
CRAPE MYRTLE COURT
 STA. 2+50.12 TO STA. 5+77.71
 RADIUS = 700.00' R
 ARC LENGTH = 327.59'
 TAN. = 156.89°
 DELTA = 26°48'49"
 CHORD = 540'06"25"W, 324.61'

⊙ CURVE DATA
LINDERA COURT
 STA. 0+81.30 TO STA. 2+12.20
 RADIUS = 300.00' R
 ARC LENGTH = 130.90'
 TAN. = 66.51°
 DELTA = 25°00'01"
 CHORD = 531'19"17"E, 129.86'

⊙ CURVE DATA
LINDERA COURT
 STA. 13+52.21 TO STA. 13+53.38
 RADIUS = 725.00' R
 ARC LENGTH = 1091.18'
 TAN. = 678.86°
 DELTA = 26°14'05"
 CHORD = 524'17"46"W, 991.07'

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISED LOW PRESSURE SEWER, WELLS TO MAINTAIN 100' SEPARATION, PARCELS 'G', 'H' & 'J', STORM DRAIN PIPE FROM RCCP TO HOPE AND ROAD NAMES	7/25/12
2	AS-BUILT	9/19/12

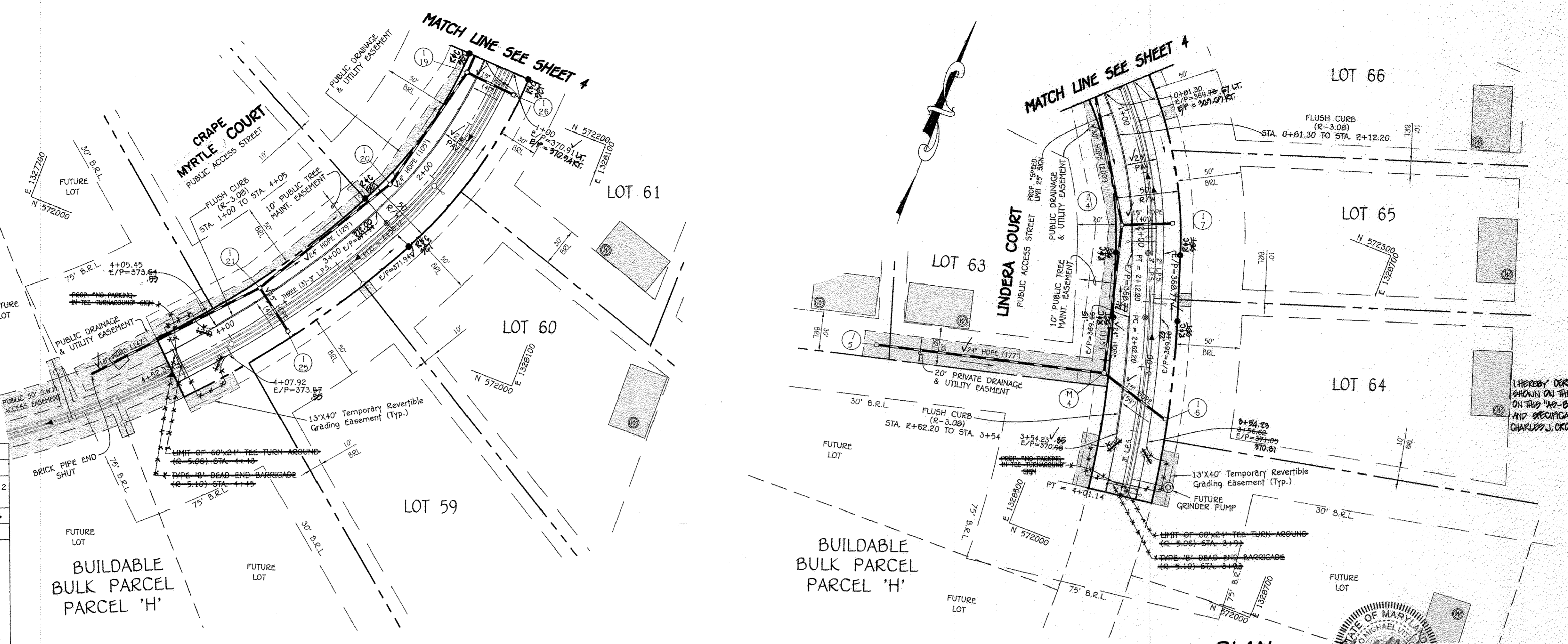
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kat Shadwin 12/05/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mr. [Signature] 12/5/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Diane Schreyer, Acting 11/29/12
 CHIEF, BUREAU OF HIGHWAYS DATE



I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 CHARLES J. ORLANDO, SR., PE NO. 18024 AS-BUILT 9/19/12

WALNUT CREEK PHASE TWO
 Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L', 'M' & Buildable Bulk Parcels 'H' And 'H' (Being A Re-subdivision Of Buildable Bulk Parcels 'C' & 'I' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No. 20631 Thru 20647)

TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

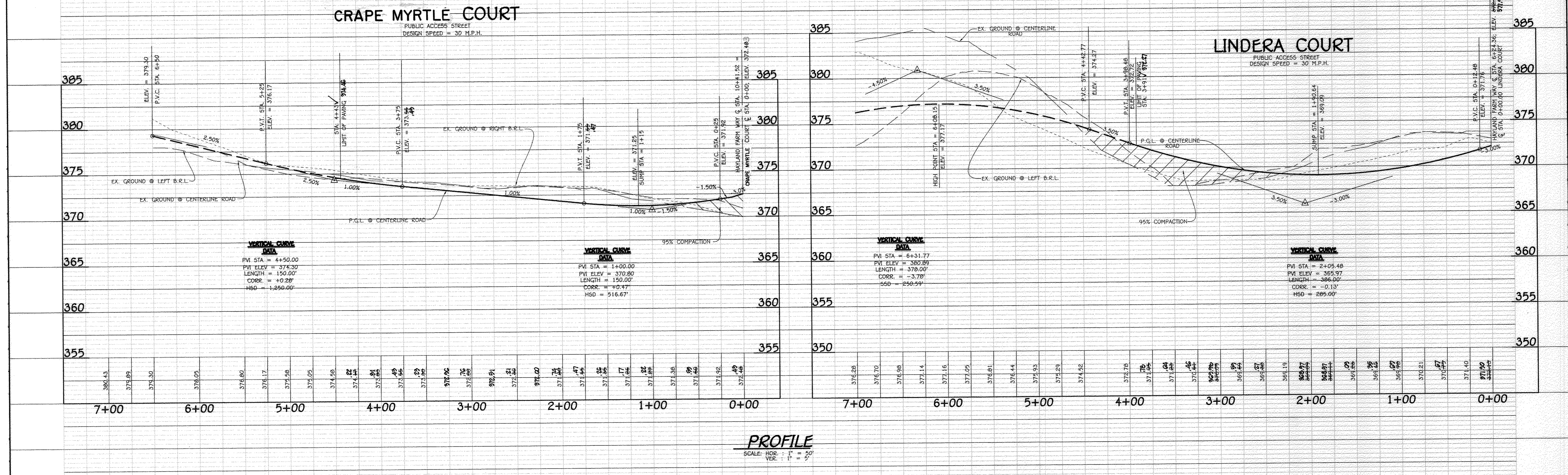
LINDERA COURT CRAPE MYRTLE COURT
 PLAN AND PROFILE PLAN AND PROFILE

OWNER
 BASSLEERS, INCORPORATED
 c/o ALFRED S. BASSLER
 4994 SHEPHERD LANE
 ELLICOTT CITY, MARYLAND 21042
 (410) 531-2193

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 LUSKON, MARYLAND 21765
 (410) 489-7900

SCALE: AS SHOWN DATE: SEPT., 2008 DWG. NO. 7 OF 32
 DES. R.A.I. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10072 WALTHAM NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2895



NOTE:
 WITHIN THE 50 FOOT WIDE AGRICULTURAL BUFFER EASEMENT LOCATED ALONG THE NORTHERN PROPERTY BOUNDARY, NO PRIMARY OR ACCESSORY STRUCTURES SHALL BE PERMITTED, AND WITHIN THE EASEMENT AREA, THE EXISTING HEDGEROW VEGETATION SHALL BE PRESERVED AND SUPPLEMENTED WITH A TYPE 'A' LANDSCAPE BUFFER WHERE INSUFFICIENT VEGETATION EXISTS.

PROPERTY OF
 STANISH MELANIE DORSEY
 PARCEL 02
 HOWARD COUNTY AGRICULTURAL
 LAND PRESERVATION PROGRAM EASEMENT
 (HC-91-12-E)
 ZONED RC-DEO

PROPERTY OF
 STANISH MELANIE DORSEY
 8864/396
 PARCEL 02
 HOWARD COUNTY AGRICULTURAL
 LAND PRESERVATION PROGRAM EASEMENT
 (HC-91-12-E)
 ZONED RC-DEO

By The Developer:
 I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature of Developer: *Charles J. Craig* 10/2/12
 Date: 10/2/12

By The Engineer:
 I Certify That The Plans, Specifications, Construction, Erosion And Sediment Control Represents A Practical Application Of My Personal Knowledge Of The Site Conditions. The Plans Also Represent My Understanding Of The Requirements Of The Howard Soil Conservation District. I Have Not Been Charged With Negligence. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion.

Signature of Engineer: *Charles J. Craig* 10/2/12
 Date: 10/2/12

Approved: Department of Public Works
 Chief Bureau of Highways
 Signature: *John P. White* 11/20/12
 Date: 11/20/12

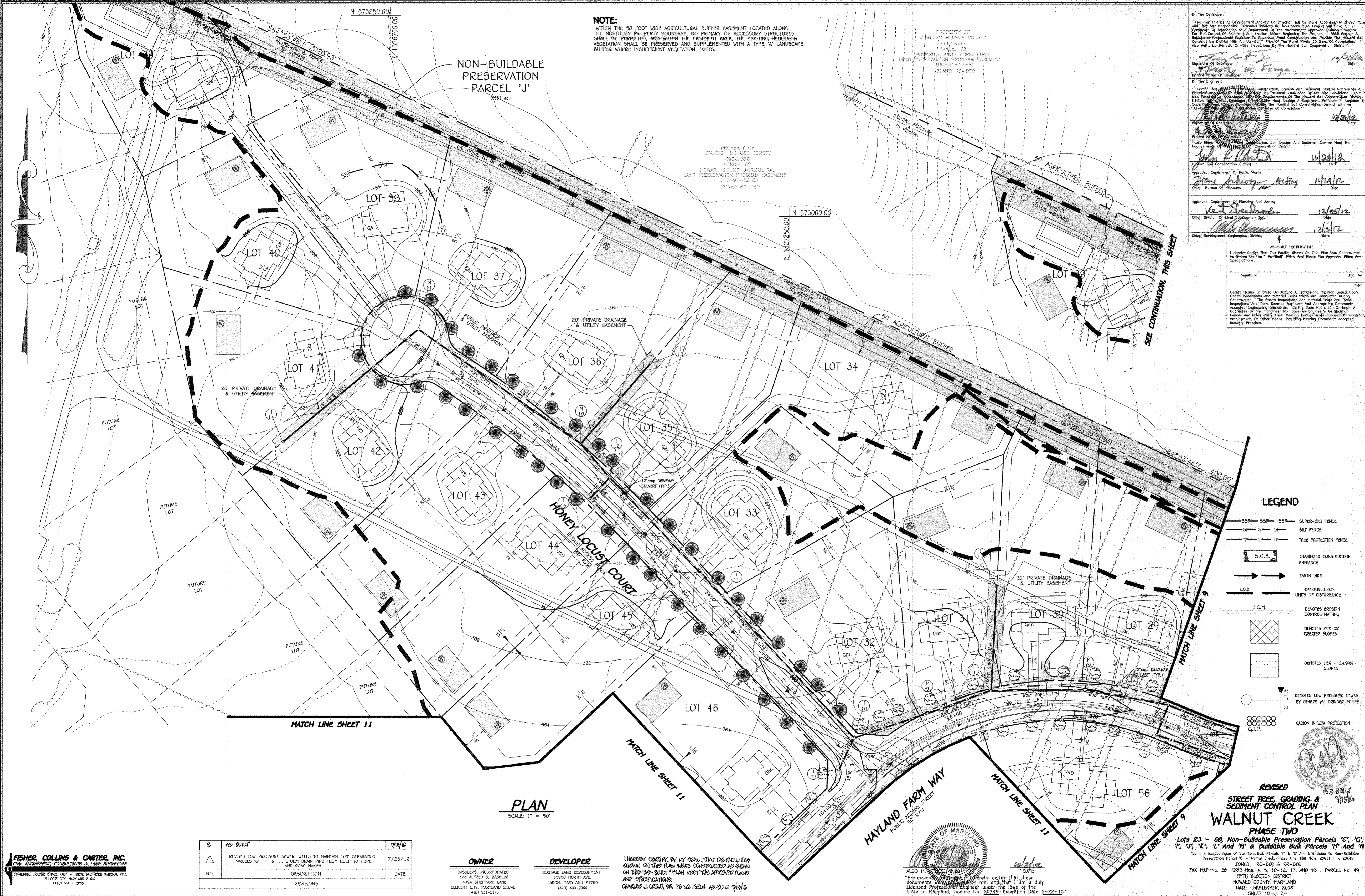
Approved: Department of Planning And Zoning
 Chief, Division Of Land Development
 Signature: *John P. White* 12/2/12
 Date: 12/2/12

Approved: Department of Planning And Zoning
 Chief, Development Engineering Division
 Signature: *John P. White* 12/3/12
 Date: 12/3/12

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

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

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



- LEGEND**
- SSP SSP SSP SUPER-SILT FENCE
 - SF SF SF SILT FENCE
 - TP TP TP TREE PROTECTION FENCE
 - S.C.E. STABILIZED CONSTRUCTION ENTRANCE
 - EARTH DIKE
 - L.O.D. LIMITS OF DISTURBANCE
 - E.C.M. DENOTES EROSION CONTROL MATTING
 - DENOTES 25% OR GREATER SLOPES
 - DENOTES 15% - 24.99% SLOPES
 - DENOTES LOW PRESSURE SEWER BY OTHERS W/ GRINDER PUMPS
 - G.I.P. GABION INFLOW PROTECTION

PLAN
 SCALE: 1" = 50'

NO.	AS-BUILT	DESCRIPTION	DATE
1	AS-BUILT	REVISED LOW PRESSURE SEWER, WELLS TO MAINTAIN 100' SEPARATION, PARCELS 'C', 'T' & 'J', STORM DRAIN PIPE FROM ROOF TO HOPE, AND ROAD NAMES	7/25/12
REVISIONS			

OWNER
 BASSELLS, INCORPORATED
 c/o ALFRED G. BASSELLS
 4994 SHEPPARD LANE
 ELICOTT CITY, MARYLAND 21042
 (410) 531-2193

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 15950 NORTH AVE.
 LISSON, MARYLAND 21765
 (410) 489-7900

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 CHARLES J. CRAIG, P.E. PE NO. 13204 AS-BUILT 10/2/12

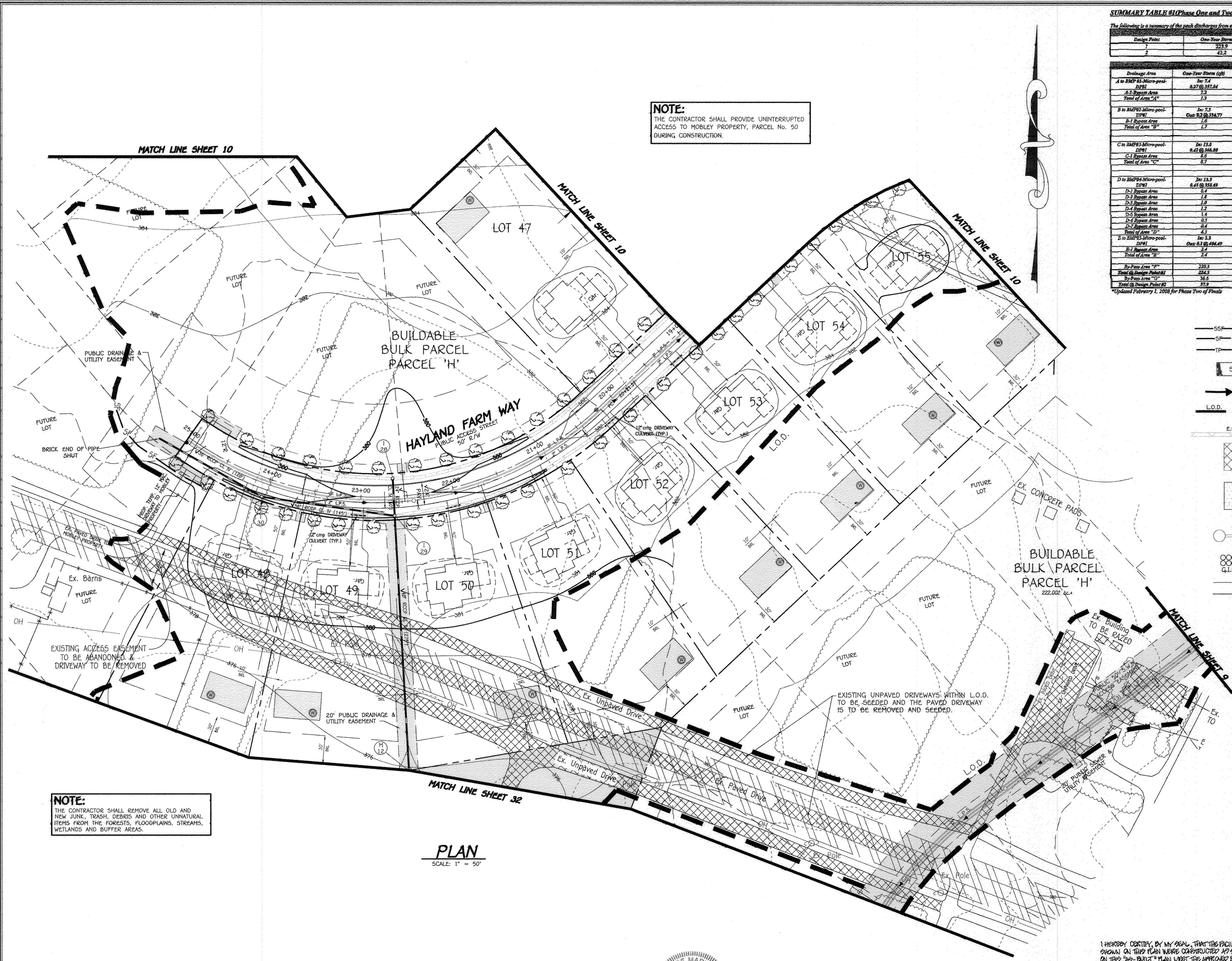


REVISED
STREET TREE, GRADING & SEDIMENT CONTROL PLAN
WALNUT CREEK
PHASE TWO
 Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'T', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'
 (Being A Re-subdivision Of Buildable Bulk Parcels 'T' & 'C' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plot No. 20631 Thru 20647)
 ZONED: RC-DEO & RR-DEO
 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 10 OF 32

E:\300104001\WALNUT CREEK PHASE TWO FINALS\PHASE TWO FINALS\PHASE TWO FINALS SHEET 10 10/20/2012 1:41:37 PM 11

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2895

AS-BUILT F-08-081



NOTE:
THE CONTRACTOR SHALL PROVIDE UNINTERRUPTED ACCESS TO MOBLEY PROPERTY, PARCEL No. 90 DURING CONSTRUCTION.

NOTE:
THE CONTRACTOR SHALL REMOVE ALL OLD AND NEW JUNK, TRASH, DEBRIS AND OTHER UNNATURAL ITEMS FROM THE FORESTS, FLOODPLAINS, STREAMS, WETLANDS AND BUFFER AREAS.

PLAN
SCALE: 1" = 50'

SUMMARY TABLE #1 (Phase One and Two Only to Date)

The following is a summary of the peak discharges from each of the drainage areas and study points.

Design Point	One-Year Storm (cfs)	Two-Year Storm (cfs)
1	223.9	1490.2
2	42.2	294.7

Drainage Area	One-Year Storm (cfs)	Two-Year Storm (cfs)
A to BMP #1-Micro-pool	In: 7.4 Out: 0.27 @ 357.04	In: 45.4 Out: 24.4 @ 254.52
A-1 Disposal Area	1.3	2.3
Total of Area "A"	8.7	47.7
B to BMP #3-Micro-pool	In: 2.3 Out: 0.2 @ 234.77	In: 28.5 Out: 0.1 @ Phase 2 Plants
B-1 Disposal Area	1.6	40.6
Total of Area "B"	3.9	79.5 subject to Phase 4
C to BMP #3-Micro-pool	In: 12.6 Out: 0.2 @ 366.89	In: 74.9 Out: 12.3 @ 378.07
C-1 Disposal Area	8.6	61.1
Total of Area "C"	21.2	63.8
D to BMP #4-Micro-pool	In: 13.9 Out: 0.4 @ 355.09	In: 86.4 Out: 55.8 @ 359.39
D-1 Disposal Area	0.4	3.6
D-2 Disposal Area	1.8	11.8
D-3 Disposal Area	1.0	6.4
D-4 Disposal Area	1.2	8.7
D-5 Disposal Area	1.4	7.8
D-6 Disposal Area	0.5	3.7
D-7 Disposal Area	0.4	3.2
Total of Area "D"	6.5	51.1
E to BMP #5-Micro-pool	In: 3.3 Out: 0.1 @ 404.47	In: 15.4 Out: 0.1 @ Phase 3 Plants
E-1 Disposal Area	3.2	38.3
Total of Area "E"	3.2	38.4 subject to Phase 3 Plants
F to Area "F"	230.0	1466.0
Total of Design Point #1	224.5	1504.8
Total of Design Point #2	38.6	245.5
Total of Design Point #3	82.9	288.7

*Updated February 1, 2009 for Phase Two of Plans

- LEGEND**
- SSF— SSF— SSF— SUPER-SILT FENCE
 - SF— SF— SF— SILT FENCE
 - TF— TF— TF— TREE PROTECTION FENCE
 - S.C.E.— STABILIZED CONSTRUCTION ENTRANCE
 - EARTH DIKE
 - L.O.D.— DENOTES L.O.D. LIMITS OF DISTURBANCE
 - E.C.M.— DENOTES EROSION CONTROL MATTING
 - DENOTES 25% OR GREATER SLOPES
 - DENOTES 15% - 24.99% SLOPES
 - DENOTES LOW PRESSURE SEWER BY OTHERS W/ GRINDER PUMPS
 - G.I.P.— GABION INFLOW PROTECTION
 - OH— DENOTES OVERHEAD ELECTRIC
 - UG— DENOTES UNDERGROUND ELECTRIC

By the Developer:
I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I/We Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howland Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howland Soil Conservation District.

Signature: *Joseph V. Feaga* Date: *12/12/12*

By the Engineer:
I/We Certify That The Construction, Erosion And Sediment Control Represents A Professional Engineering Design, To The Best Of My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howland Soil Conservation District. I Have Reviewed The Construction Plans, Trust Engage A Registered Professional Engineer To Supervise Pond Construction, And Provide The Howland Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion.

Signature: *John R. Dutton* Date: *11/20/12*

Approved: Department Of Public Works
Signature: *Diane Adams* Date: *11/14/12*

Approved: Department Of Planning And Zoning
Signature: *Kevin S. Smith* Date: *12/05/12*

Chief, Division Of Land Development
Signature: *John J. ...* Date: *12/13/12*

Chief, Development Engineering Division

SUMMARY TABLE #2 (Phase One and Two)

The following is a summary of the Recharge Volume and Q₁₀ Requirements:

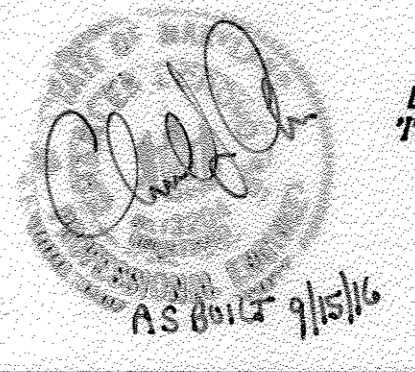
Recharge Vol for Existing Site	10.04 acres or 1.11 acre-ft	13.38 acres w/ 1/4 Area Method
Phase One and Two Only		
Area A - BMP#1-DP#1	0.2871 acre-ft	0.2871 ac. Ft. @ BMP Facility #1
Bypass Area A-1	0.2339 acre-ft	0.2339 ac. Ft. Via Orifice
Area B - BMP#3-DP#1	0.31 acre-ft	0.31 ac. Ft. @ BMP Facility #3
Bypass Area B-1	0.2653 acre-ft	0.2653 ac. Ft. via orifice
Area C - BMP#3-DP#1	0.74 acre-ft	0.74 ac. Ft. @ BMP Facility #3
Bypass Area C-1	0.670 acre-ft	0.670 ac. Ft. via orifice
Area D - BMP#4-DP#1	0.812 acre-ft	0.812 ac. Ft. @ BMP Facility #4
Bypass Area D-1	0.891 acre-ft	0.891 ac. Ft. @ Level Spreader
Bypass Area D-2	0.808 acre-ft	0.808 ac. Ft. @ Level Spreader
Bypass Area D-3	0.842 acre-ft	0.842 ac. Ft. @ Level Spreader
Bypass Area D-4	0.849 acre-ft	0.849 ac. Ft. @ Level Spreader
Bypass Area D-5	0.806 acre-ft	0.806 ac. Ft. @ Level Spreader
Bypass Area D-6	0.809 acre-ft	0.809 ac. Ft. @ Level Spreader
Area E - BMP#5-DP#1	0.089 acre-ft	0.089 ac. Ft. @ BMP Facility #5
Bypass Area E-1	0.2175 acre-ft	0.2175 ac. Ft. via orifice
Q ₁₀		
Area A - BMP#1-DP#1	0.4718 acre-ft	0.4718 ac. Ft. @ BMP Facility #1
Area B - BMP#3-DP#1	0.4093 acre-ft	0.4093 ac. Ft. @ BMP Facility #3
Area C - BMP#3-DP#1	0.8013 acre-ft	0.8013 ac. Ft. @ BMP Facility #3
Area D - BMP#4-DP#1	1.0803 acre-ft	1.0803 ac. Ft. @ BMP Facility #4
Area E - BMP#5-DP#1	0.164 acre-ft	0.164 ac. Ft. @ BMP Facility #5

Notes: Both Q₁₀ (Overbank Flood Protection or 10-year storm) and Q₁₀₀ (Extreme Flood Volume or 100-year storm) are not required for this site since this watershed area is not classified as one of the sensitive watershed areas for Howard County.

All of the ponds for this subdivision will allow safe passage of the proposed condition 10-year and 100 year Q₁₀. The ponds are adequately sized to do so and no emergency spillways are proposed.

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.

CHARLES J. GRADZINSKI, PE No. 18204, AS-BUILT 01/16/13



OWNER
BASSLER, INCORPORATED
c/o ALFRED S. BASSLER
4994 SHEPARD LANE
ELLICOTT CITY, MARYLAND 21042
(410) 531-2193

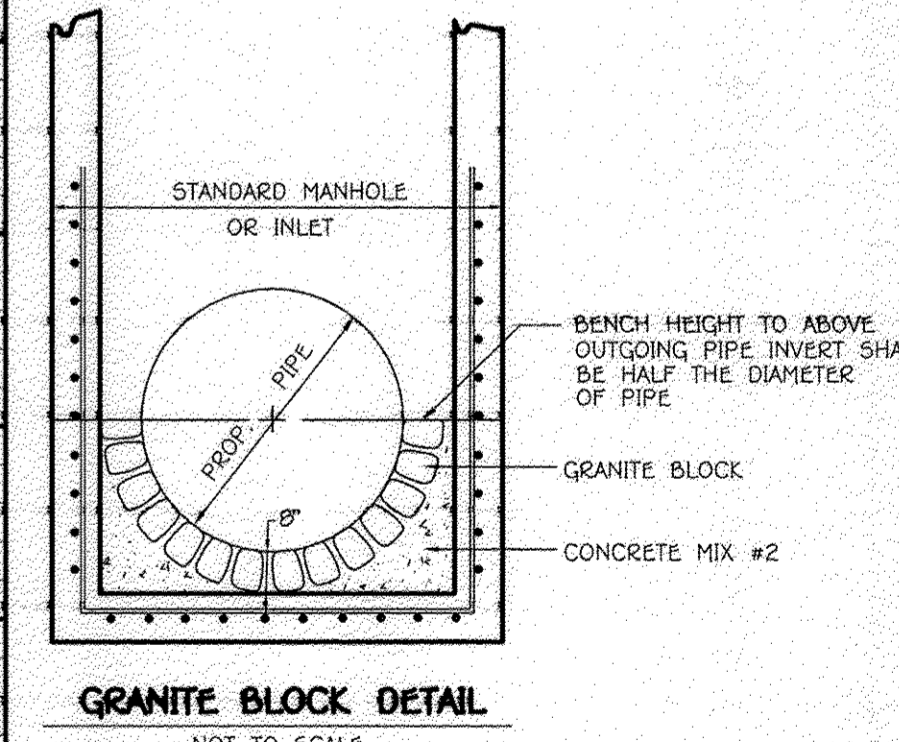
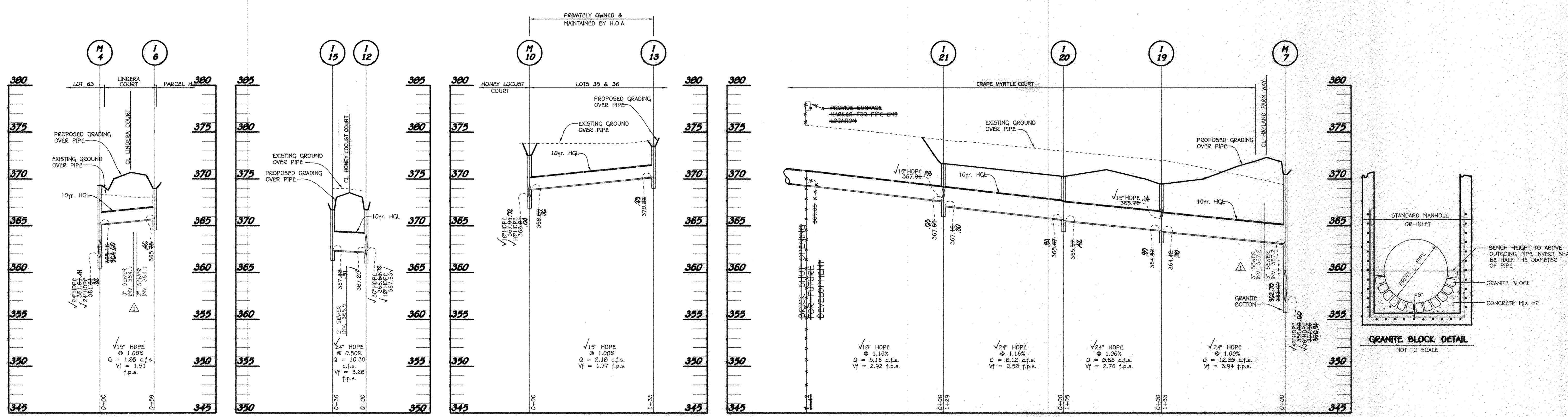
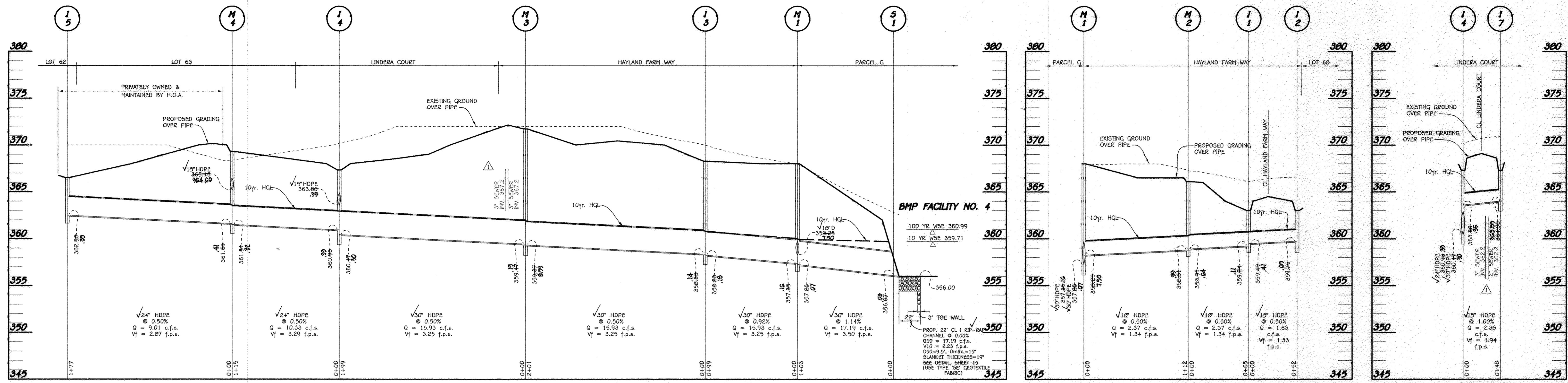
DEVELOPER
HERITAGE LAND DEVELOPMENT
19590 NORTH AVE.
LISBON, MARYLAND 21765
(410) 409-7900

REVISED STREET TREE, GRADING & SEDIMENT CONTROL PLAN
WALNUT CREEK
PHASE TWO
Lots 23 - 60, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'H'
Being A Resubdivision Of Buildable Bulk Parcels 'A' & 'C' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No. 20631 Thru 20647
ZONED: RC-DEO & RR-DEO
TAX MAP No. 28 QED Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
FIFTH ELECTION DISTRICT
DATE: SEPTEMBER, 2008
SHEET 11 OF 32

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PARK
ELLICOTT CITY, MARYLAND 21042
(410) 461-2995

NO.	DESCRIPTION	DATE
2	AS-BUILT	01/16/13
1	REVISED LOW PRESSURE SEWER, WELLS TO MAINTAIN 100' SEPARATION, PARCELS 'G', 'H' & 'J', STORM DRAIN PIPE FROM RC2P TO HOPE AND ROAD NAMES	7/25/12
NO.	REVISIONS	

ALDO ... hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13.



I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
CHARLES J. ORR, P.E., PE NO. 10024 AS-BUILT 9/15/16

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Johnson Acting 11/20/12
CHIEF, BUREAU OF HIGHWAYS DATE

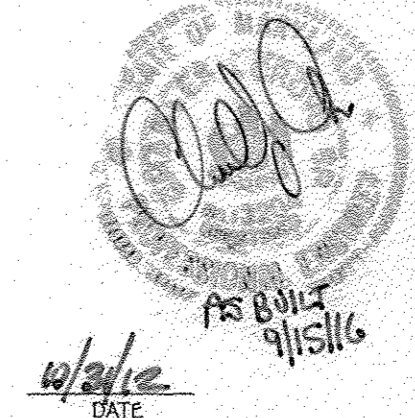
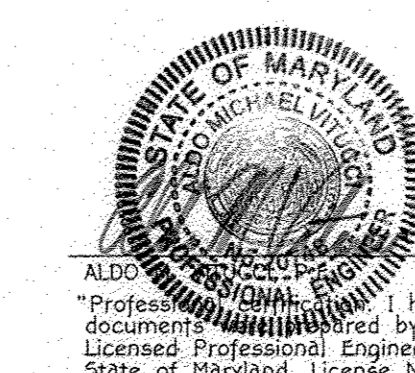
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kurt St. James 12/05/12
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William D. ... 12/2/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	DESCRIPTION	DATE
2	AS-BUILT	9/15/16
1	REVISE LOW PRESSURE SEWER CROSSINGS & PIPE TYPE	9-25-12

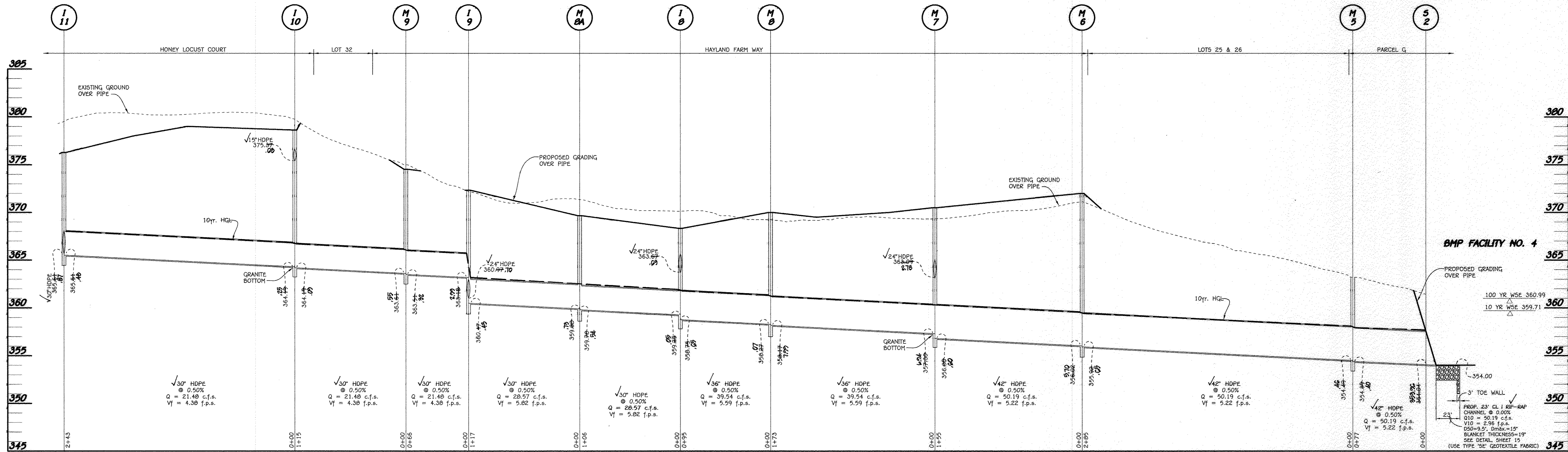
OWNER
BASOLERS, INCORPORATED
1590 NORTH AVE.
494 SHEPPARD LANE
ELLCOTT CITY, MARYLAND 21042

DEVELOPER
HERITAGE LAND DEVELOPMENT
1590 NORTH AVE.
LUSKON, MARYLAND 21765



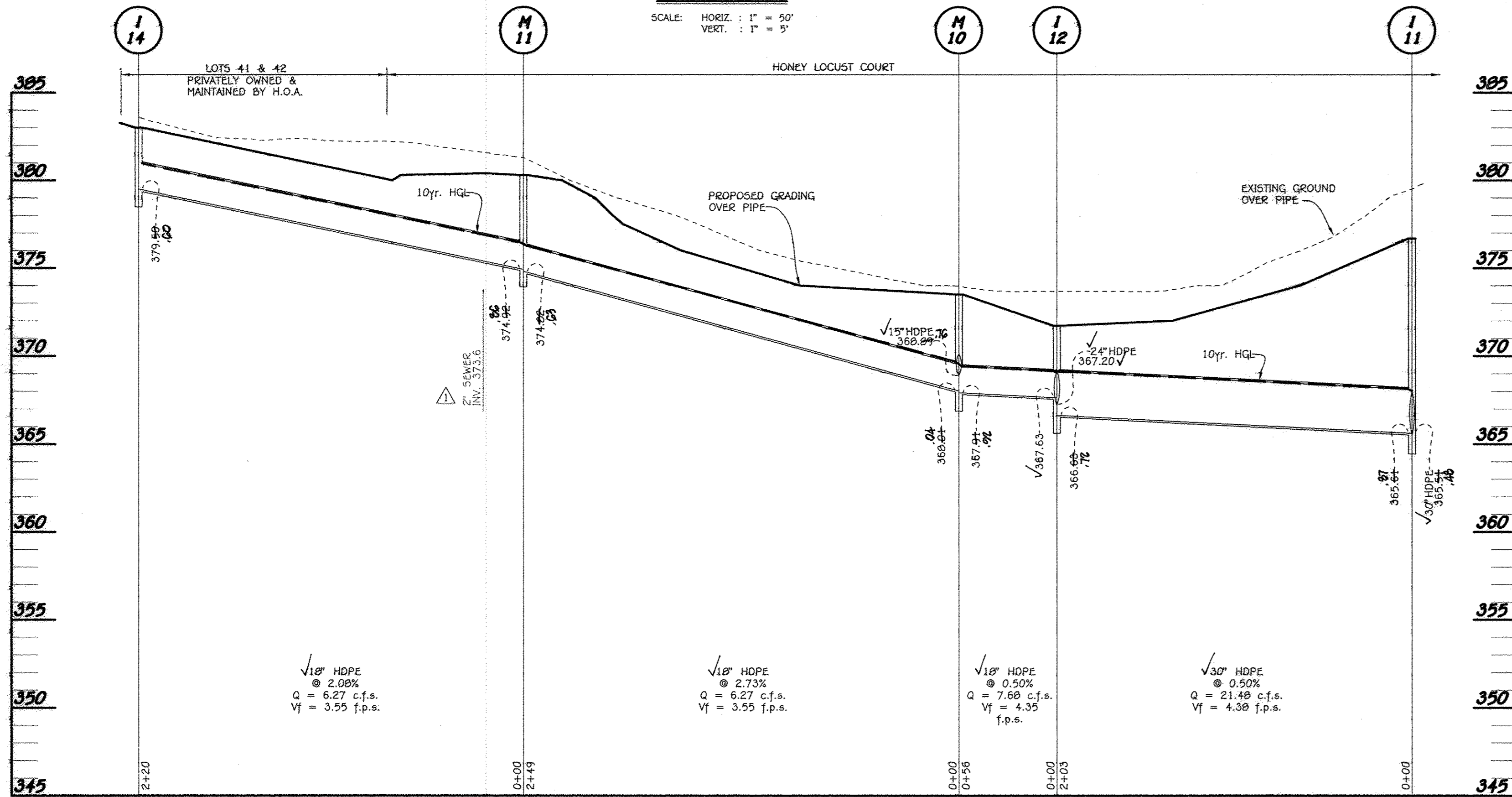
REVISED
STORM DRAIN PROFILES
WALNUT CREEK
PHASE TWO

Lots 23 - 60, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' and 'M' & Buildable Bulk Parcels 'H' and 'N'
(Being A Resubdivision Of Buildable Bulk Parcels 'I' & 'L' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plot No. 20631 Thru 20647)
ZONING: RC-DEO & RR-DEO
TAX MAP No. 20 GRID Nos. 4, 5, 10-12, 17, and 18 PARCEL No. 49
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER, 2008
SHEET 13 OF 32



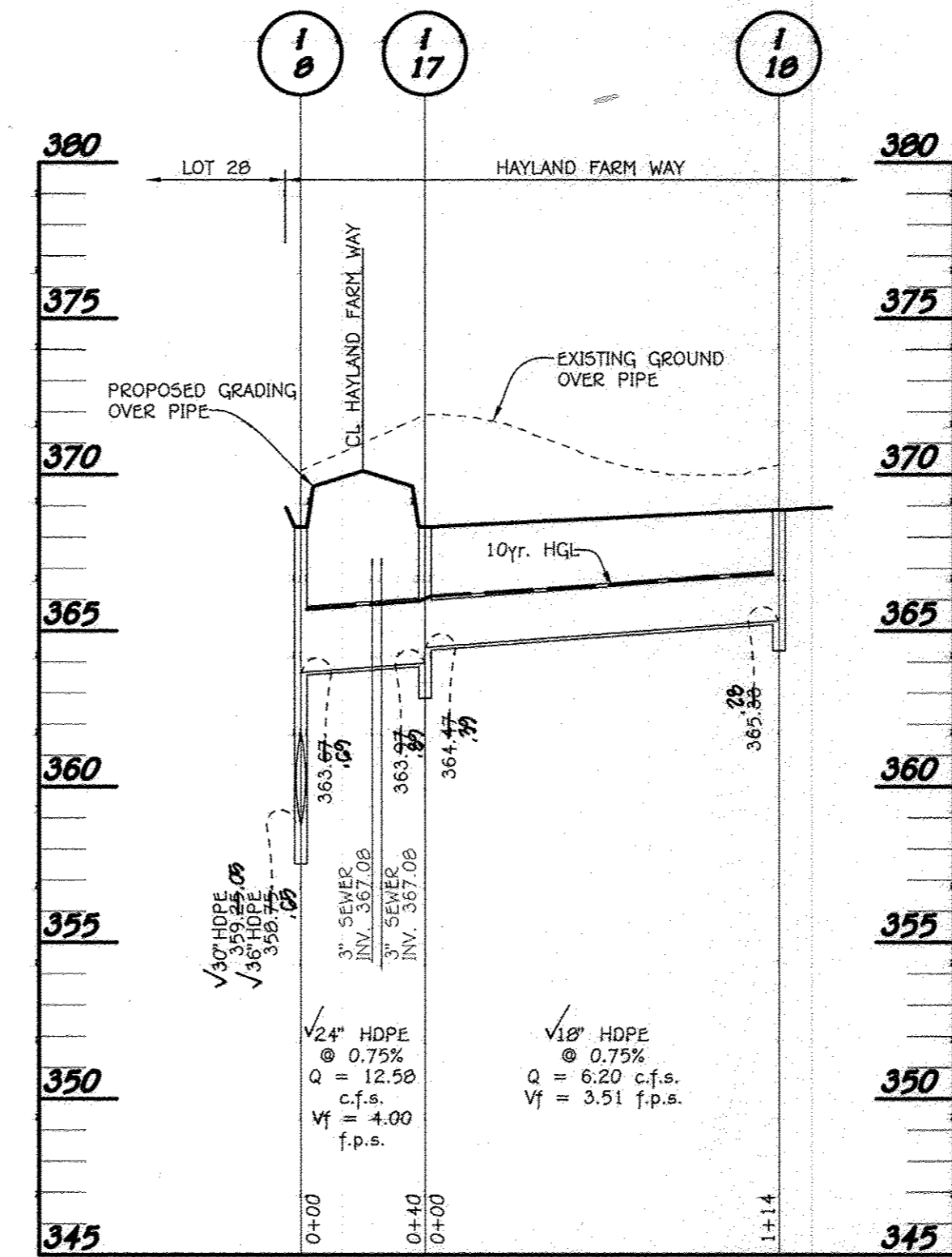
PROFILE

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



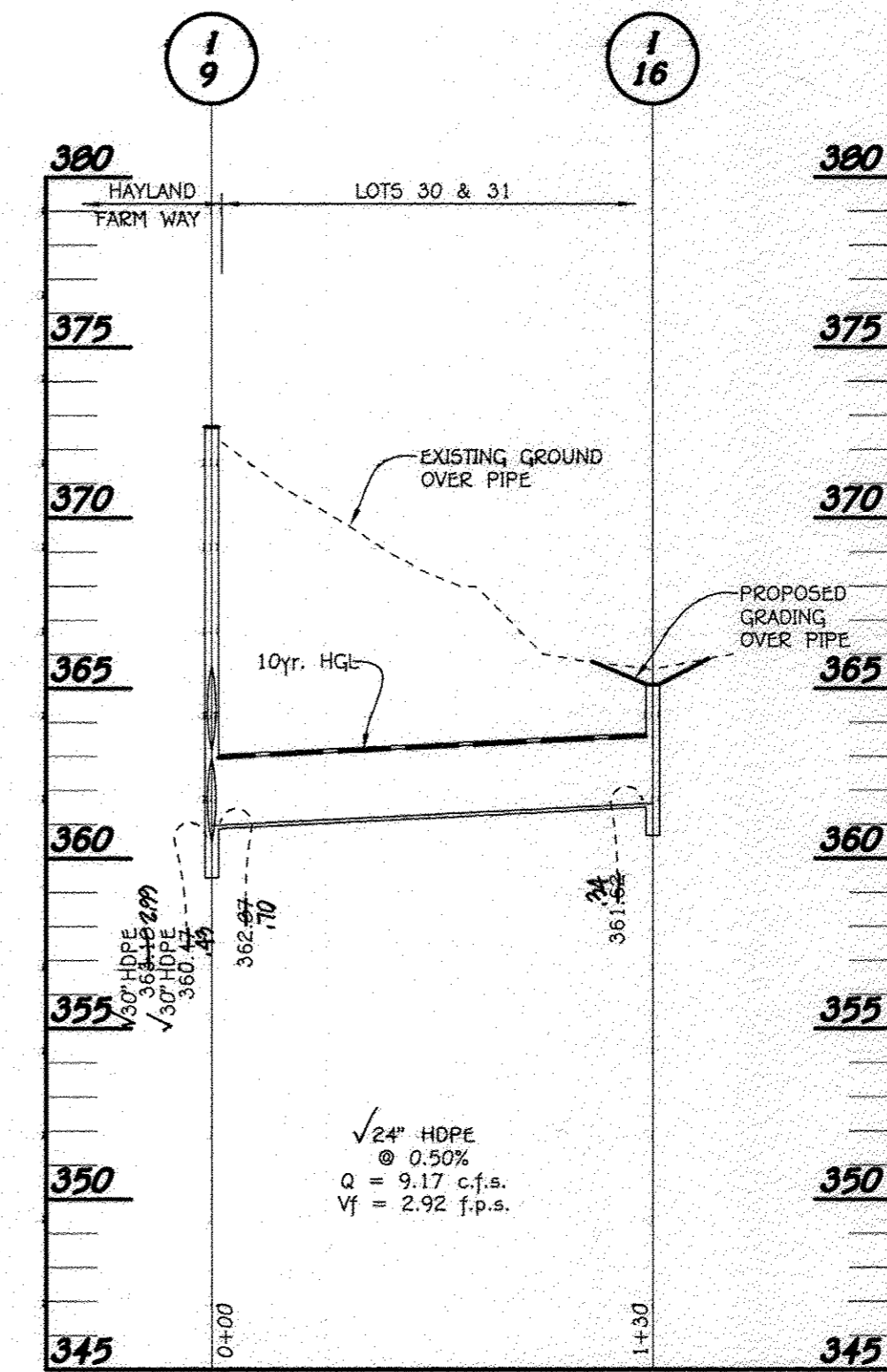
PROFILE

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



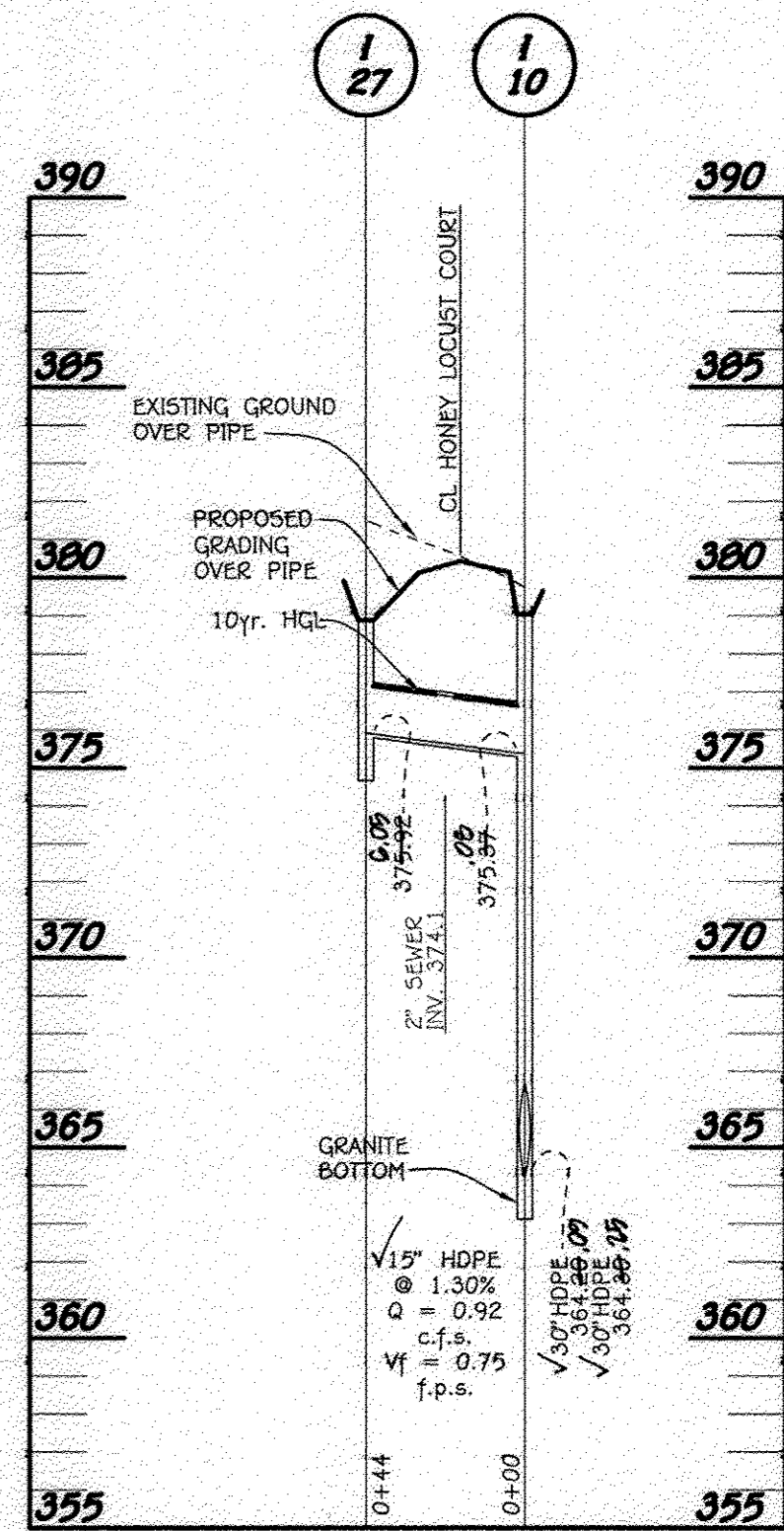
PROFILE

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



PROFILE

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



PROFILE

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Ashby, Acting 11/29/12
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kate Seidman 12/05/12
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 12/12/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DESCRIPTION	DATE
1	AS-BUILT	9/10/12
2	REVISE LOW PRESSURE SEWER CROSSINGS & PIPE TYPE	9-25-12

OWNER
BASSLER, INCORPORATED
c/o ALFRED S. BASSLER
4994 SHEPPARD LANE
ELLCOTT CITY, MARYLAND 21042

DEVELOPER
HERITAGE LAND DEVELOPMENT
15950 NORTH AVE.
LUSKON, MARYLAND 21765

I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED IN ACCORDANCE WITH THE "AS-BUILT" PLAN UNDER THE APPROVED RAIN AND MODIFICATIONS.

CHARLES J. CRAGG, PE No. 15604 AS-BUILT 9/10/12

[Seal]

ALSO: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE 2-22-13.

[Signature] 12/3/12
AS-BUILT 9/10/12

REVISED
STORM DRAIN PROFILES
WALNUT CREEK
PHASE TWO

Lots 23 - 60, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'

(Being A Subdivision Of Bulbadoe Bulb Parcels 'A' & 'B' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, P.M. No. 2064) Thru 20647

ZONED: RC-DEO & RR-DEO
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER, 2008
SHEET 14 OF 32

TAX MAP No. 2B GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10772 BALDWIN NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2995

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION	ROAD STA./COORDINATE	OFFSET	TYPE AND WIDTH	REMARKS
I-1	362.89 17	359.44 (15")	359.44 (18")	HAYLAND FARM WAY	1+55.00 42	22.12 45	√'0' INLET - 2.5'	D - 4.10
I-2	364.90 2.06	359.44 (15")	359.44 (15")	HAYLAND FARM WAY	1+55.00 4.14	22.93 40 5	√'0' INLET - 2.5'	D - 4.10
I-3	368.56 0.12	358.55 (30")	358.55 (30")	HAYLAND FARM WAY	4+14.50 9.90	19.2	√'0' INLET - 3.5'	D - 4.10
I-4	367.22 7.10	363.60 (15")	360.00 (24")	LINDERA COURT	1+90.64 1.01	22.09 14	√'0' INLET - 3.5'	D - 4.10
I-5	366.46 0.00	362.89 (15")	362.89 (15")	LOT 62	N 572.090 40.50 E 1.328 324.87 48	-	√'0' INLET (PRIVATE) - 2.5'	D - 4.10
I-6	369.00 1.0	365.43 (15")	365.43 (15")	LINDERA COURT	3+39.25 6.89	23.79 22	√'0' INLET - 2.5'	D - 4.10
I-7	367.22 4.4	363.60 (15")	363.60 (15")	LINDERA COURT	1+90.64 5.79	19.06 14	√'0' INLET - 2.5'	D - 4.10
I-8	366.20 7.1	363.60 (15")	363.60 (15")	HAYLAND FARM WAY	13+36.17 0.1	18.1	√'0' INLET - 4.0'	D - 4.10
I-9	372.66 3.10	360.00 (15")	360.00 (15")	HAYLAND FARM WAY	15+49.20 9.41	18.5	√'0' INLET - 3.5'	D - 4.10
I-10	379.04 0.6	375.47 (15")	364.54 (30")	HONEY LOCUST COURT	0+47.40 12	16.09 17	√'0' INLET - 3.5'	D - 4.10
I-11	376.03 7.99	365.44 (30")	365.44 (30")	HONEY LOCUST COURT	2+90.00 1.76	18.14 17	√'0' INLET - 3.5'	D - 4.10
I-12	374.72 2.51	367.20 (12")	367.63 (18")	HONEY LOCUST COURT	4+94.44 3.76	17.06 17	√'0' INLET - 3.5'	D - 4.10
I-13	373.50 4.36	370.22 (15")	370.22 (15")	LOTS 35 & 36	N 572.817 00.00 E 1.382 075.00 40	-	√'0' INLET (PRIVATE) - 2.5'	D - 4.10
I-14	383.00 3.7	379.52 (18")	379.52 (18")	LOTS 41 & 42	N 572.718 47.31 E 1.326 813.40 21	-	√'0' INLET (PRIVATE) - 2.5'	D - 4.10
I-15	374.72 2.82	367.39 (24")	367.39 (24")	HONEY LOCUST COURT	4+94.44 5.79	17.1	√'0' INLET - 2.5'	D - 4.10
I-16	366.46 3.16	361.42 (12")	361.42 (12")	LOTS 30 & 31	N 572.400 00.00 E 1.327 309.26 21	-	√'0' INLET (PRIVATE) - 2.5'	D - 4.10
I-17	366.20 7.1	364.47 (18")	364.47 (18")	HAYLAND FARM WAY	13+36.11	18.0	√'0' INLET - 2.5'	D - 4.10
I-18	366.20 9.36	365.44 (18")	365.44 (18")	HAYLAND FARM WAY	12+25.60 4.00	18.0	√'0' INLET - 2.5'	D - 4.10
I-19	366.46 3.10	364.62 (12")	364.62 (15")	CRAPE MYRTLE COURT	1+15.00 3.5	18.1	√'0' INLET - 2.5'	D - 4.10
I-20	370.00 5.9	365.44 (24")	365.44 (24")	CRAPE MYRTLE COURT	2+26.60 3.5	18.1	√'0' INLET - 2.5'	D - 4.10
I-21	374.00 2.07	367.94 (15")	367.94 (15")	CRAPE MYRTLE COURT	3+60.00 9.29	19.54	√'0' INLET - 2.5'	D - 4.10
I-25	371.60 0.7	368.00 (15")	368.00 (15")	CRAPE MYRTLE COURT	3+60.00 10	19.2	√'0' INLET - 2.5'	D - 4.10
I-26	369.46 3.05	366.14 (15")	366.14 (15")	CRAPE MYRTLE COURT	1+15.00 3.4	19.1	√'0' INLET - 2.5'	D - 4.10
I-27	374.00 9.05	371.52 (15")	371.52 (15")	HONEY LOCUST COURT	0+32.00 2.7	23.0	√'0' INLET - 2.5'	D - 4.10
I-28	378.40 0.7	371.04 (24")	371.04 (24")	HAYLAND FARM WAY	22+64.44 4.5	19	√'0' INLET - 2.5'	D - 4.10
I-29	378.40 9.9	371.43 (36")	371.43 (48")	HAYLAND FARM WAY	22+64.44 9.94	19.1	√'0' INLET - 5.0'	D - 4.10
I-30	379.40 9.4	372.00 (36")	372.00 (36")	HAYLAND FARM WAY	24+02.00 20	18.0	√'0' INLET - 3.5'	D - 4.10
M-1	366.00 3.2	357.30 (30")	357.30 (18")	HAYLAND FARM WAY	3+21.00 4.4	2.5	√'5' DIA. MANHOLE	G - 5.13
M-2	364.00 5.82	358.00 (18")	358.00 (18")	HAYLAND FARM WAY	2+16.00 3.4	2.5	√'4' DIA. MANHOLE	G - 5.12
M-3	371.00 5.9	359.44 (30")	359.44 (30")	HAYLAND FARM WAY	6+25.00 7.07	1.5	√'5' DIA. MANHOLE	G - 5.13
M-4	369.30 7.9	361.42 (12")	361.42 (12")	LINDERA COURT	3+08.00 4.1	20.87	√'4' DIA. MANHOLE	G - 5.12
M-5	362.00 2.77	354.00 (42")	354.00 (42")	FACILITY NO. 4	N 572.624 44.00 E 1.328 174.44 0.9	-	√'6' DIA. MANHOLE	G - 5.13
M-6	372.00 3.2	359.00 (42")	359.00 (42")	HAYLAND FARM WAY	9+06.00 30.00	18.7	√'6' DIA. MANHOLE	G - 5.13
M-7	370.00 6.7	358.00 (36")	358.00 (42")	HAYLAND FARM WAY	10+61.00 9.10	21.1	√'6' DIA. MANHOLE	G - 5.13
M-8	370.00 3.6	358.00 (36")	358.00 (36")	HAYLAND FARM WAY	12+37.00 0.05	12.1	√'5' DIA. MANHOLE	G - 5.13
M-8A	370.00 2.7	359.44 (30")	359.44 (30")	HAYLAND FARM WAY	14+37.00 4.30	18.1	√'5' DIA. MANHOLE	G - 5.13
M-9	374.00 6.01	363.00 (30")	363.00 (30")	HAYLAND FARM WAY	16+11.00 4.14	22.0	√'5' DIA. MANHOLE	G - 5.13
M-10	373.50 5.7	368.00 (18")	367.91 (18")	HONEY LOCUST COURT	5+47.00 8.00	17.5	√'4' DIA. MANHOLE	G - 5.12
M-11	380.00 4.9	374.00 (18")	374.00 (18")	HONEY LOCUST COURT	7+92.00 3.00	17.5	√'4' DIA. MANHOLE	G - 5.12
M-12	376.00 9.7	369.44 (48")	369.44 (48")	FACILITY NO. 3	N 571.718 47.31 E 1.328 075.00 40	-	√'6' DIA. MANHOLE	G - 5.13
M-13	369.50 2.4	365.00 (8")	365.00 (8")	FACILITY NO. 3	N 571.188 44.00 E 1.328 075.00 40	-	√SHALLOW MANHOLE	G - 5.12
S-1	-	356.00 (30")	356.00 (30")	FACILITY NO. 4	** N 572.718 47.31 E 1.328 075.00 40	-	30" FLARED END SECTION	***
S-2	-	356.00 (42")	356.00 (42")	FACILITY NO. 4	** N 572.718 47.31 E 1.328 075.00 40	-	42" FLARED END SECTION	***
S-5	-	369.00 (48")	369.00 (48")	FACILITY NO. 3	** N 571.188 44.00 E 1.328 075.00 40	-	48" FLARED END SECTION	***
HW-1	370.00 4.0	368.00 (24")	368.00 (24")	FACILITY NO. 3	N 571.188 44.00 E 1.328 075.00 40	-	24" TYPE 'A' HEADWALL	D - 5.11
HW-2	367.00 3.6	365.00 (30")	365.00 (30")	FACILITY NO. 4	N 572.940 00.00 E 1.328 309.26 21	-	30" TYPE 'A' HEADWALL	D - 5.11
R-1	373.75 5.5	369.00 (3.5' ORIFICE)	368.50 (24")	FACILITY NO. 3	N 571.223 9.7 E 1.328 92.44 7.6	-	√ CONC. RISER	SEE SHEET 23
R-2	361.00 1.0	353.50 (12")	353.50 (30")	FACILITY NO. 4	N 572.940 00.00 E 1.328 309.26 21	-	√ CONC. RISER	SEE SHEET 25

* - DENOTES THROAT ELEVATION AS BUILT OR ELEVATION ABOVE THE "D" INDICATE TOP OF SLAB
 (PRIVATE) - DENOTES OWNED AND MAINTAINED BY H.O.A.
 ** - DENOTES LOCATION OF END OF PIPE/BEGINNING OF END SECTION
 *** - ADS FLARED END SECTION OR EQUAL

PIPE SCHEDULE (PUBLIC)

SIZE	CLASS	LENGTH
15"	HDPE	275'
18"	HDPE	821'
24"	HDPE	598'
30"	HDPE	1453'
36"	HDPE	541'
42"	HDPE	517'
48"	HDPE	337'
8"	D.I.P. POND DRAIN	71'
8"	H.D.P.E. POND DRAIN	180'
12"	D.I.P. POND DRAIN	3'

NOTE: HDPE MAY BE SUBSTITUTED WITH RCCP PIPE MATERIAL.

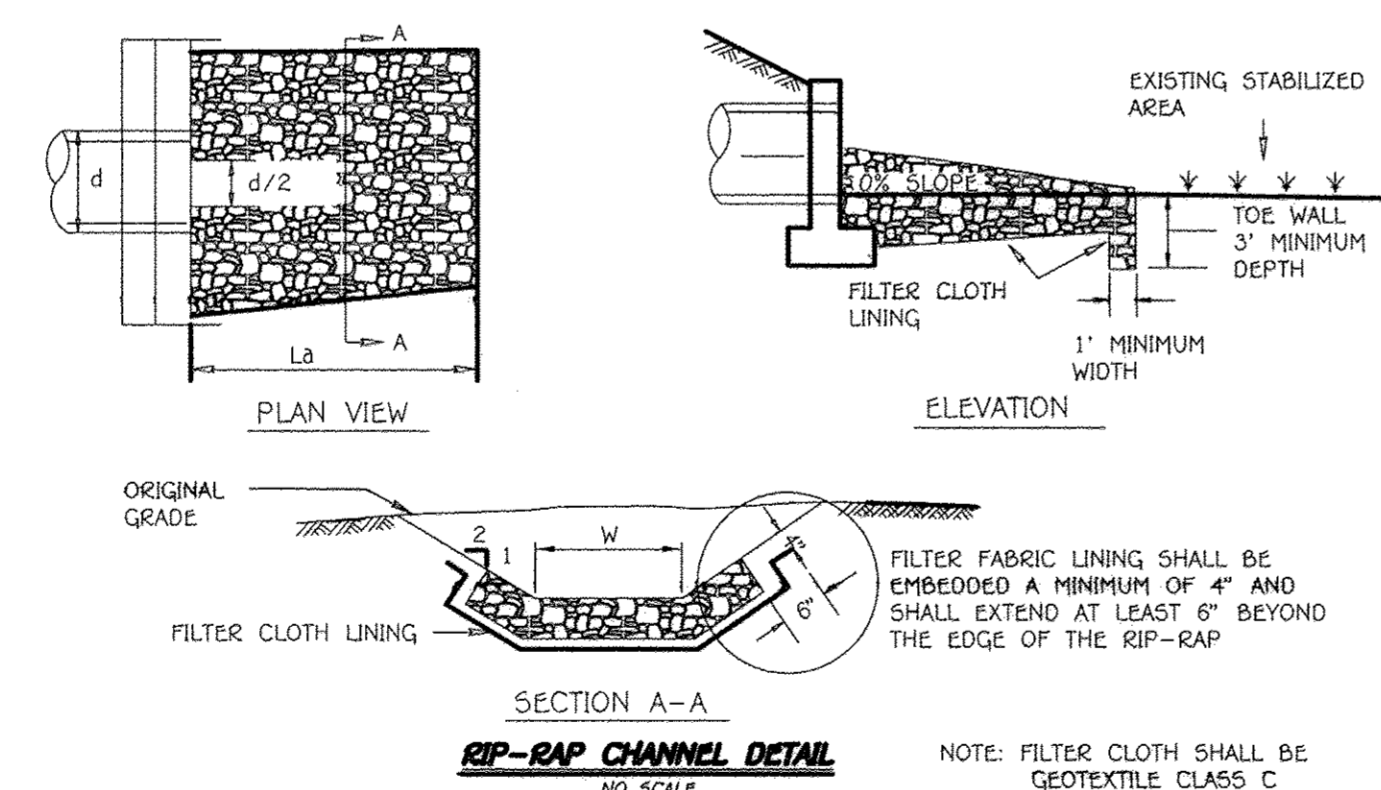
PIPE SCHEDULE (PRIVATE)

SIZE	CLASS	LENGTH
15"	HDPE	133'
18"	HDPE	142'
24"	HDPE	307'

NOTE: HDPE MAY BE SUBSTITUTED WITH RCCP PIPE MATERIAL.

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Filter cloths shall be protected from puncturing, cutting or tearing. Any damage other than an occasional hole shall be repaired by gluing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	n	V (f.p.s.)	Q 100' RIP-RAP SIZE (c.f.f.)	BLANKET THICKNESS	PIPE SIZE	La
S-1	7.69	9.81	0.7839	0.8502	0.005	0.0707	5.0'	1.08	0.04	2.23	17.19	9.5'	19"	30'
S-2	16.94	14.14	1.1980	1.1280	0.005	0.0707	6.5'	1.71	0.04	2.96	50.19	9.5'	19"	42'
S-5	19.03	15.03	1.2661	1.1704	0.005	0.0707	7.0'	1.80	0.04	3.07	58.50	9.5'	19"	48'
HW-1	11.98	13.19	0.9083	0.9378	0.005	0.0707	8.0'	1.16	0.04	2.46	29.50	9.5'	19"	24" @ POND #3
HW-2	21.73	16.54	1.3138	1.1996	0.005	0.0707	8.5'	1.80	0.04	3.15	68.50	9.5'	19"	30" @ POND #4

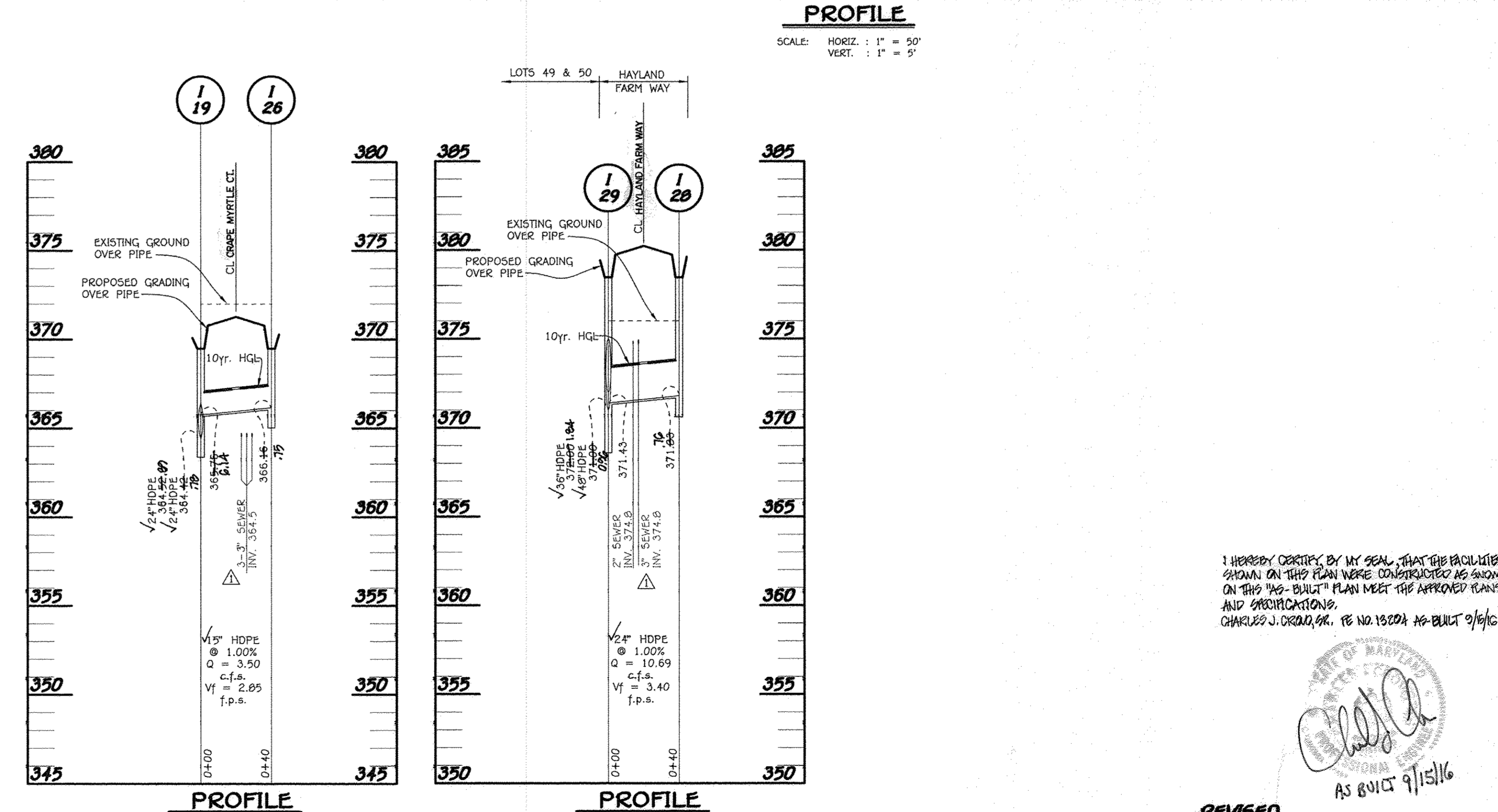
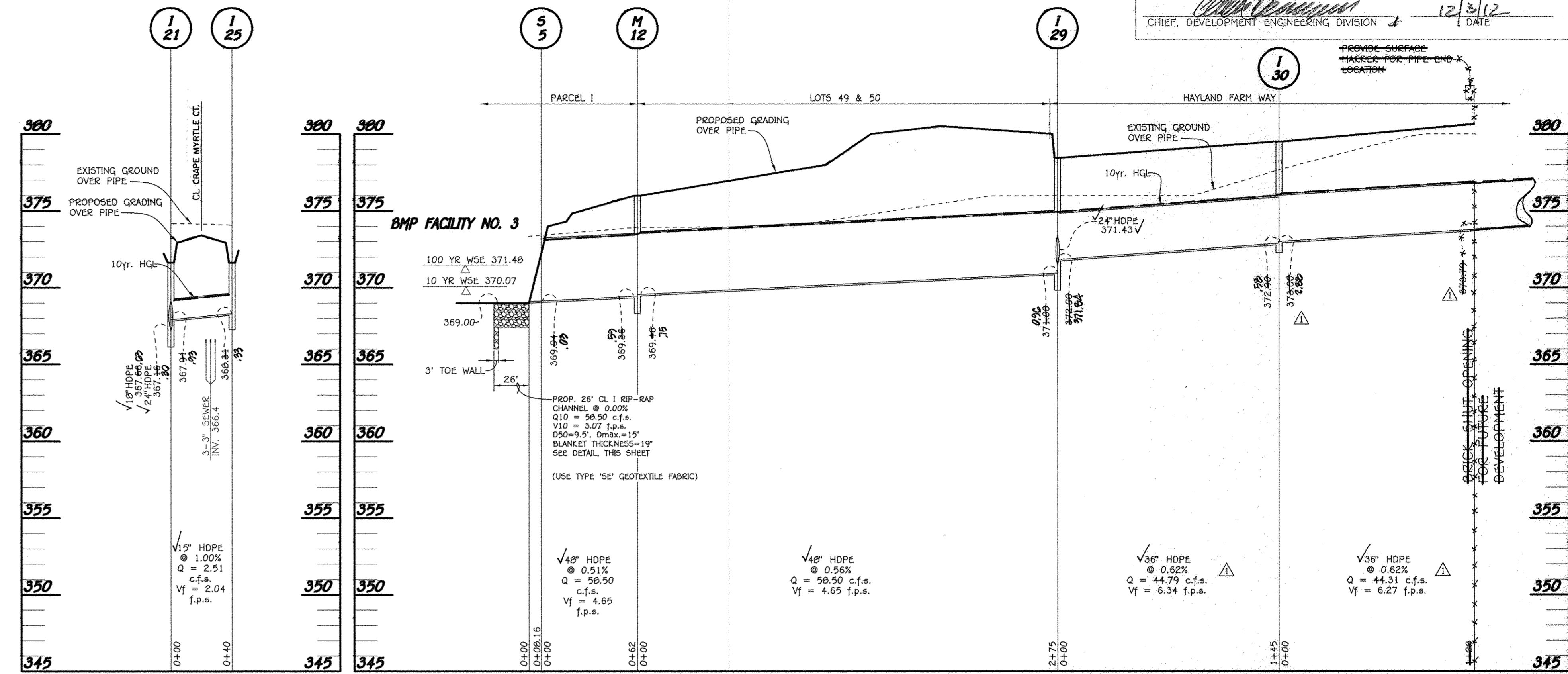
* DENOTES 100 YEAR Q USED FOR DESIGN

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALDOR NATIONAL FLD.
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2295

REVISIONS

NO.	DESCRIPTION	DATE
2	AS-BUILT	09/19/16
1	Changed pipe slope from I-29 to stub, low pressure sewer crossings and pipe material & Road Names	9-25-12

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diana Achary, Acting Chief, BUREAU OF HIGHWAYS, DATE 11/28/12
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Vet Sheridan, Chief, DIVISION OF LAND DEVELOPMENT, DATE 12/05/12
John P. ..., Chief, DEVELOPMENT ENGINEERING DIVISION, DATE 12/3/12



I HEREBY CERTIFY BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSIDERED AS SHOWN ON THE "AS-BUILT" PLAN MEET THE APPROVED REVISIONS AND SPECIFICATIONS.
 CHARLES J. DEARDORF, PE NO. 18204 AS-BUILT 9/16/16

REVISED STORM DRAIN PROFILES WALNUT CREEK PHASE TWO
 Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'T', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'
 (Being A Re-subdivision Of Buildable Bulk Parcels 'F' & 'E' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No. 20631 Thru 20647)
 ZONED: RC-DEO & RR-DEO
 QRD Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 TAX MAP No. 2B
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 15 OF 32



OWNER
 BASSLERS, INCORPORATED
 c/o ALFRED S. BASSLER
 4994 SHEPARD LANE
 ELICOTT CITY, MARYLAND 21042

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 USION, MARYLAND 21765

"Professional Engineer" I hereby certify that these documents were prepared by me and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13.

ENGINEER'S CERTIFICATE
 I hereby certify that this Plan For Erosion And Sediment Control Represents A Feasible And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Standards Of The Howard Soil Conservation District.

Signature: *[Signature]* Date: 10/16/09

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

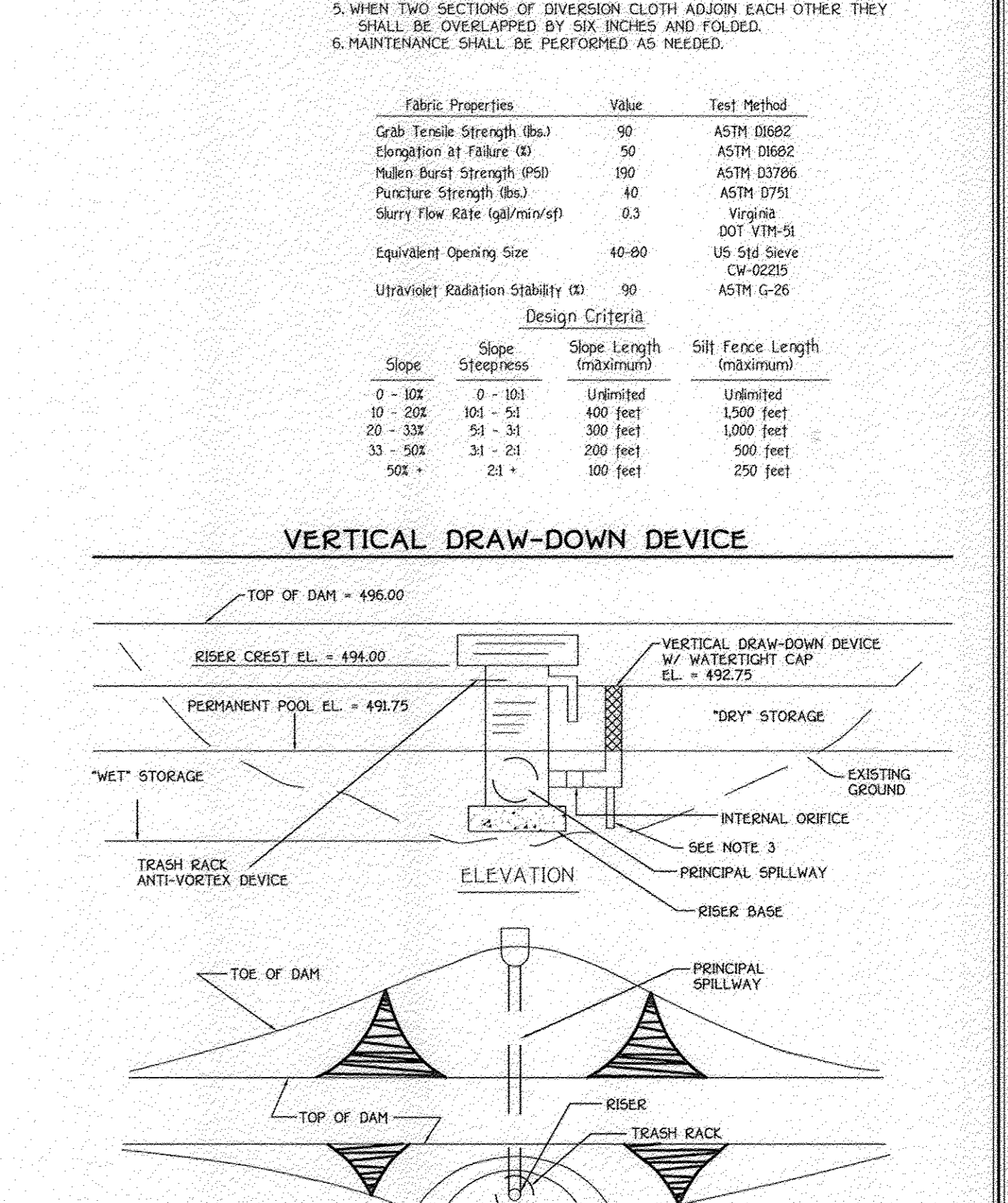
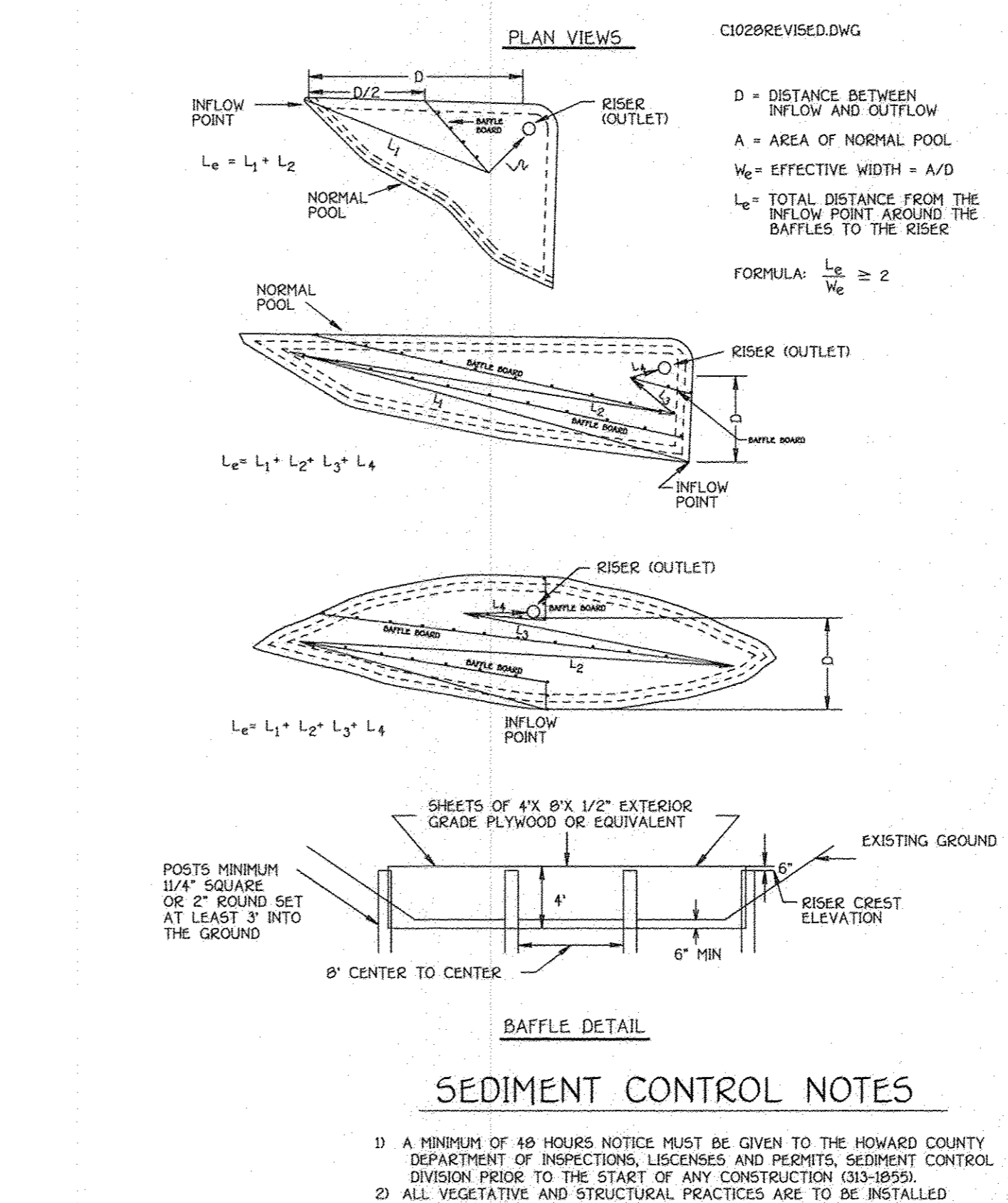
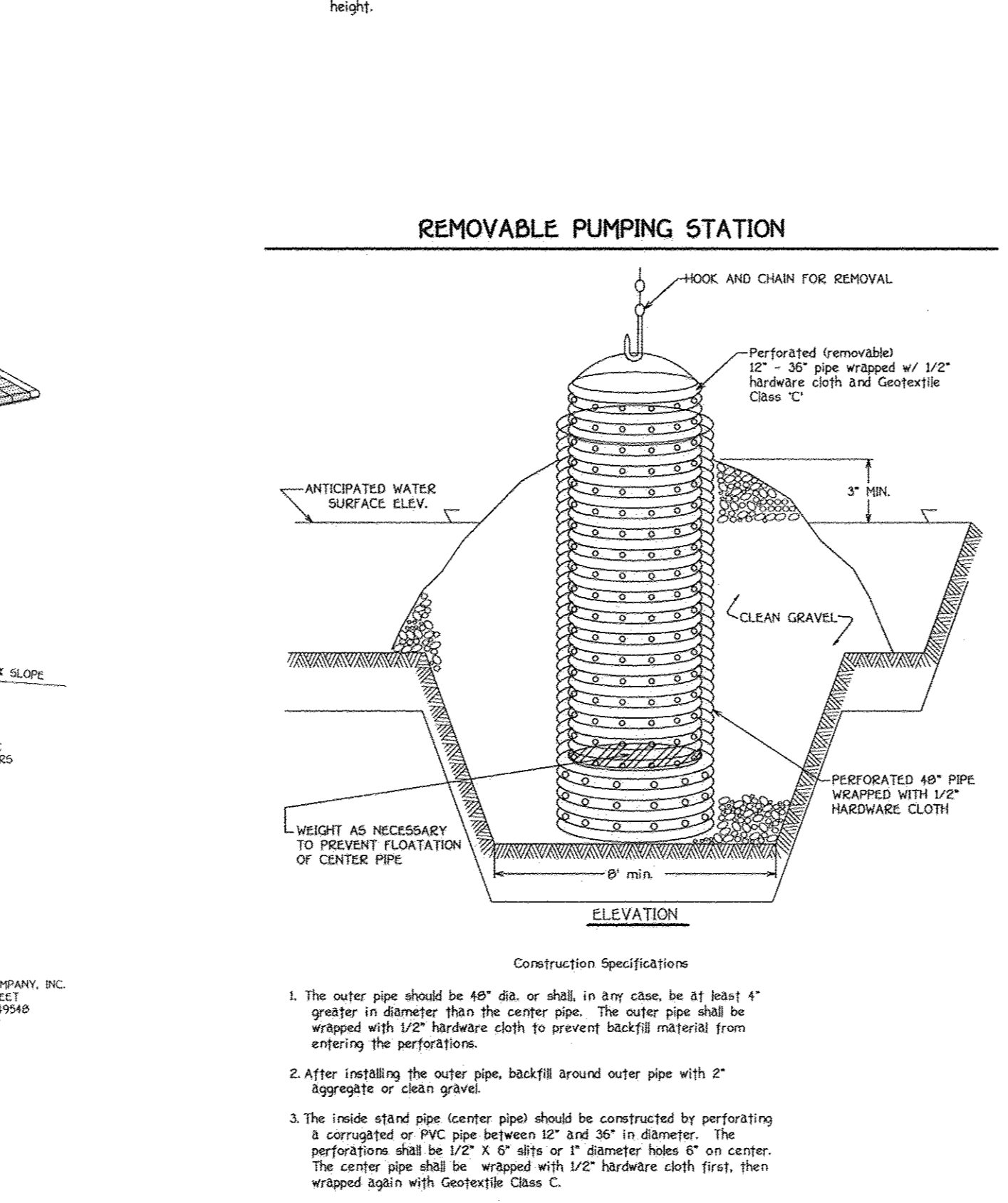
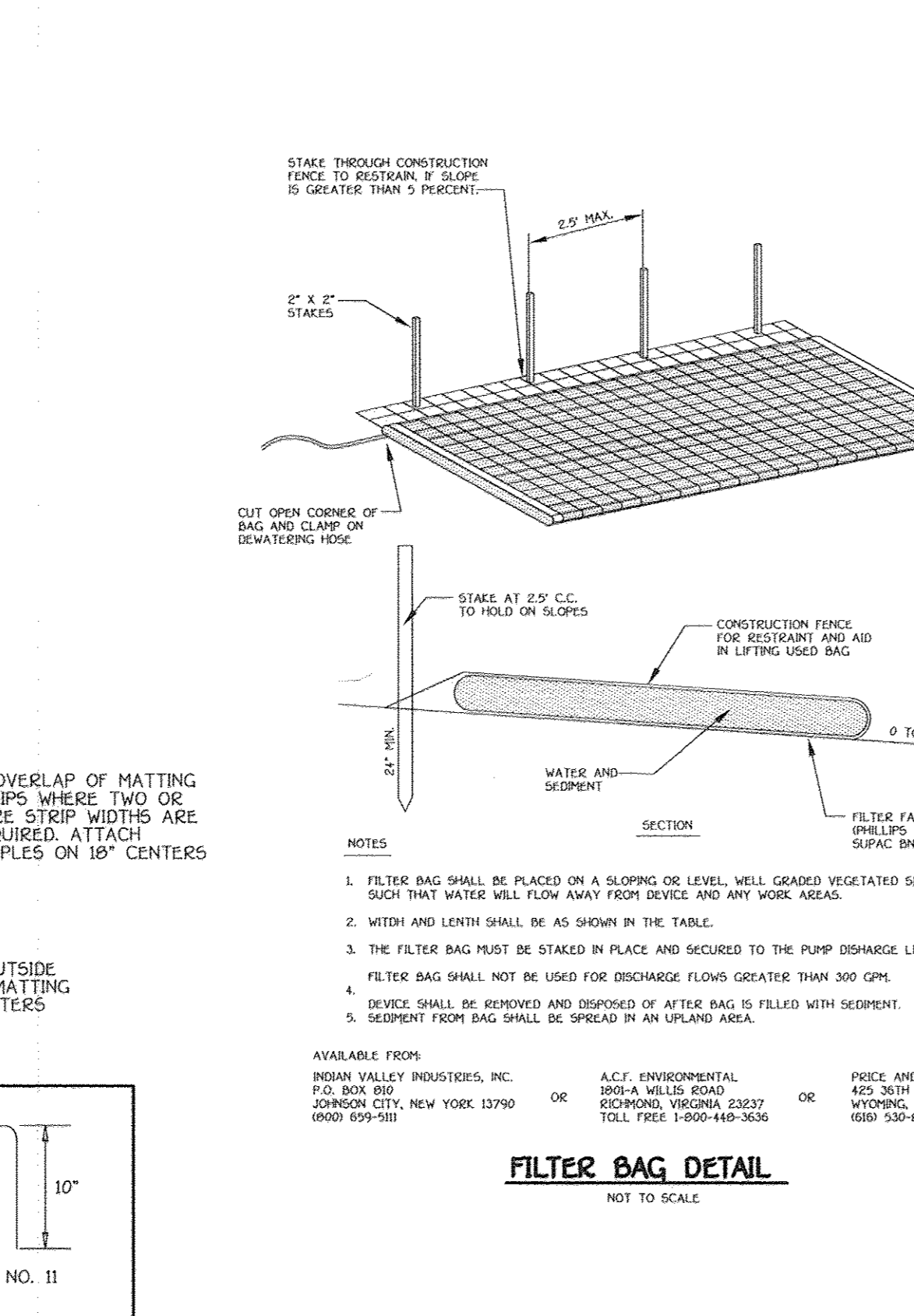
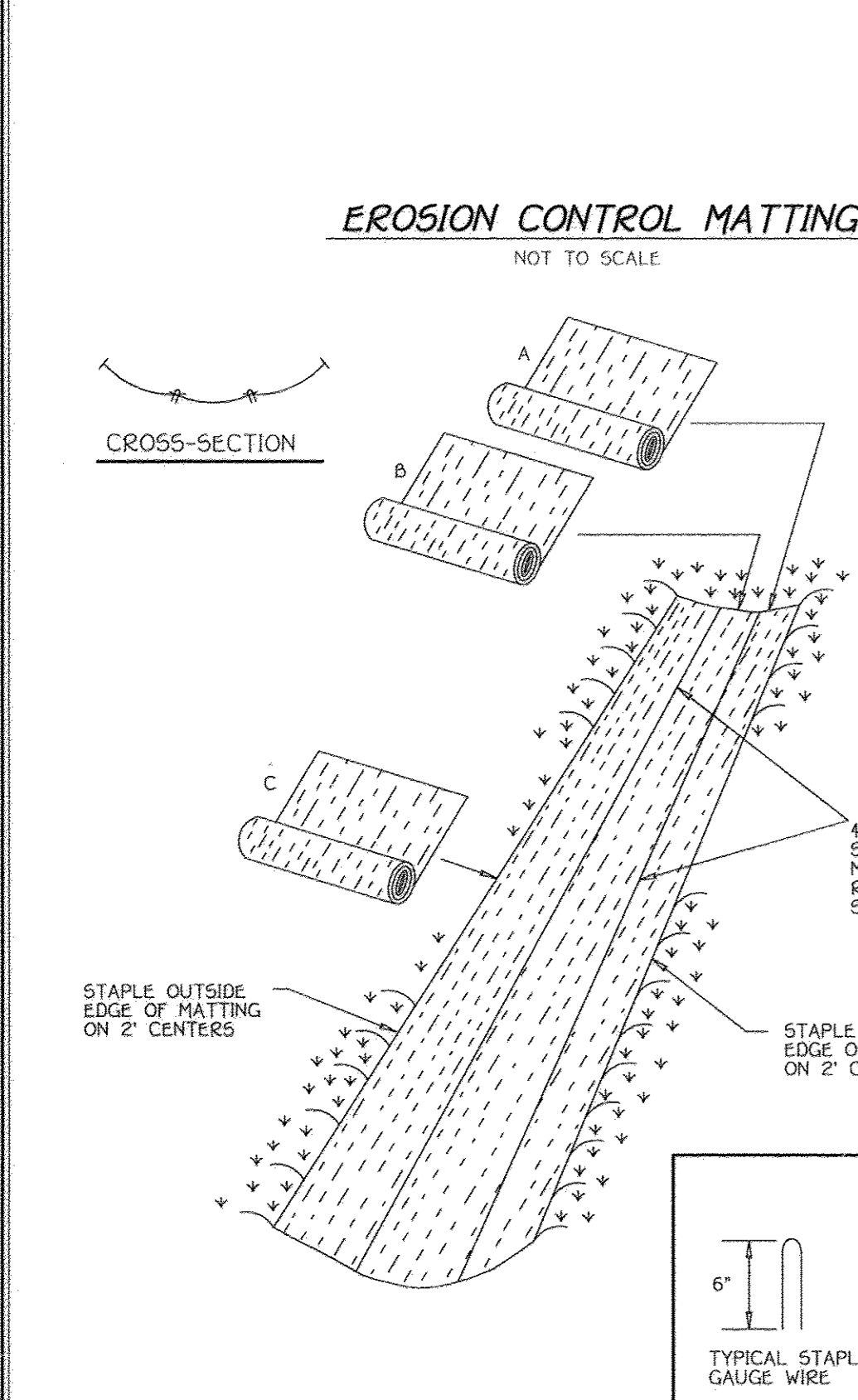
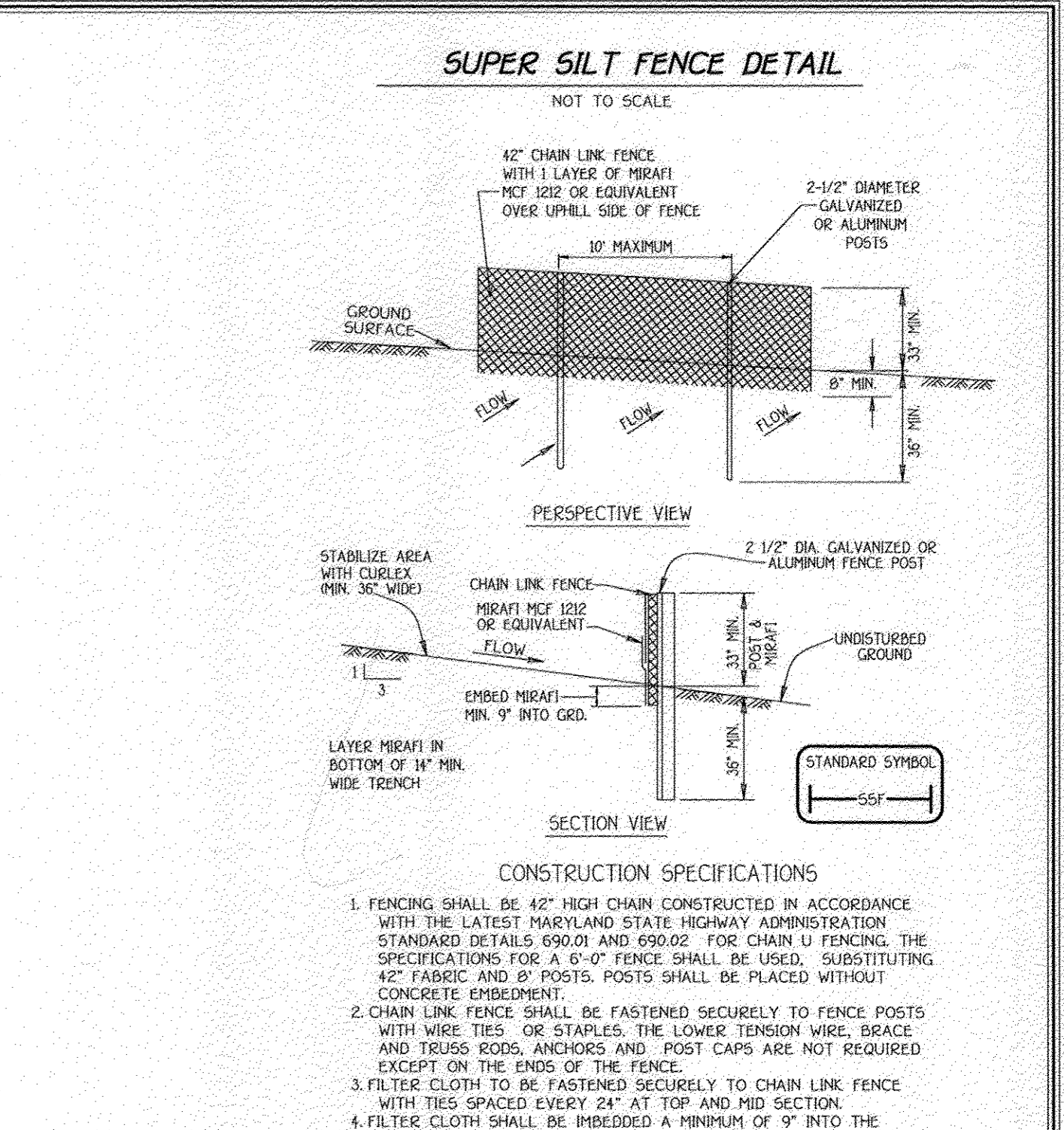
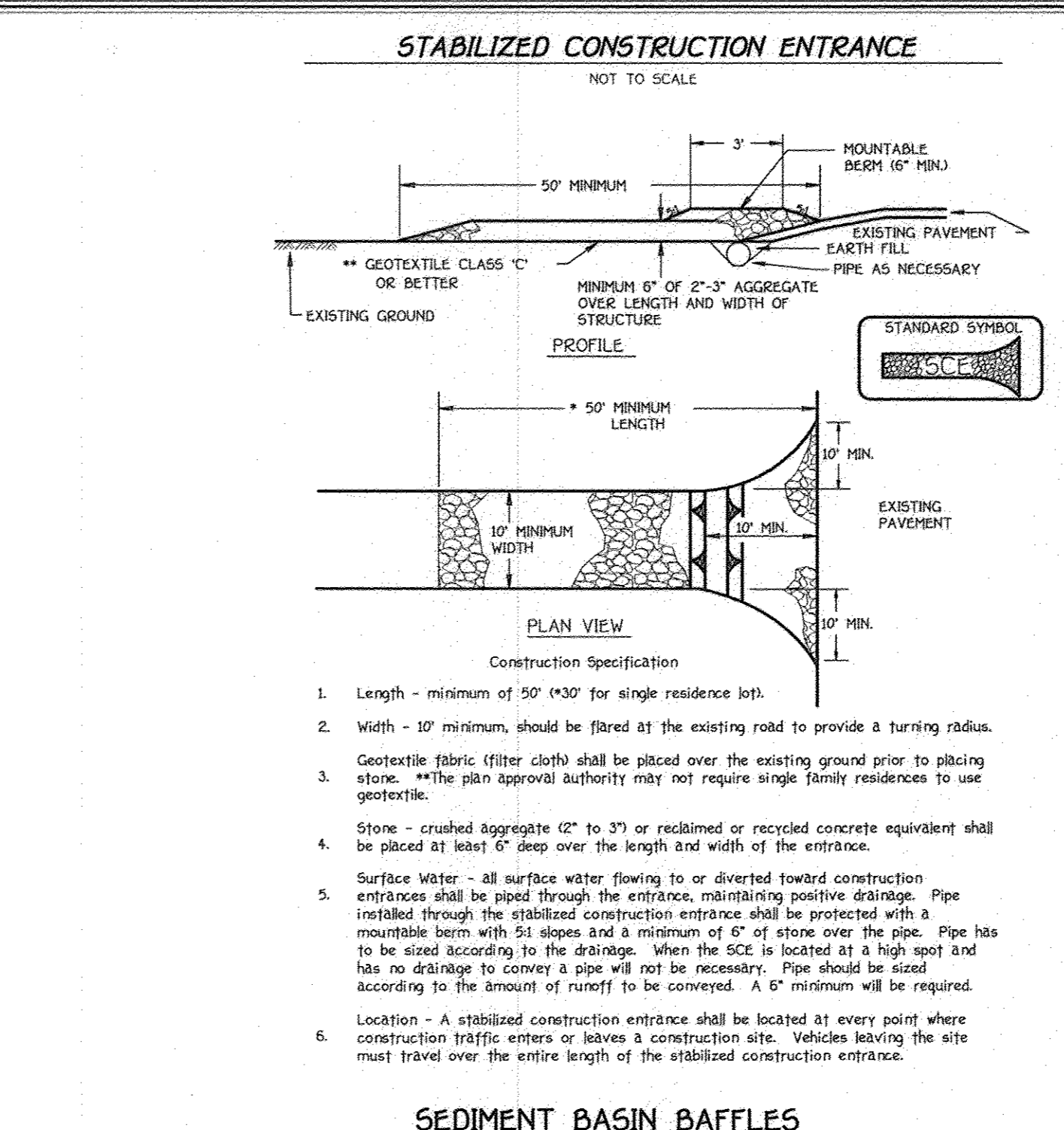
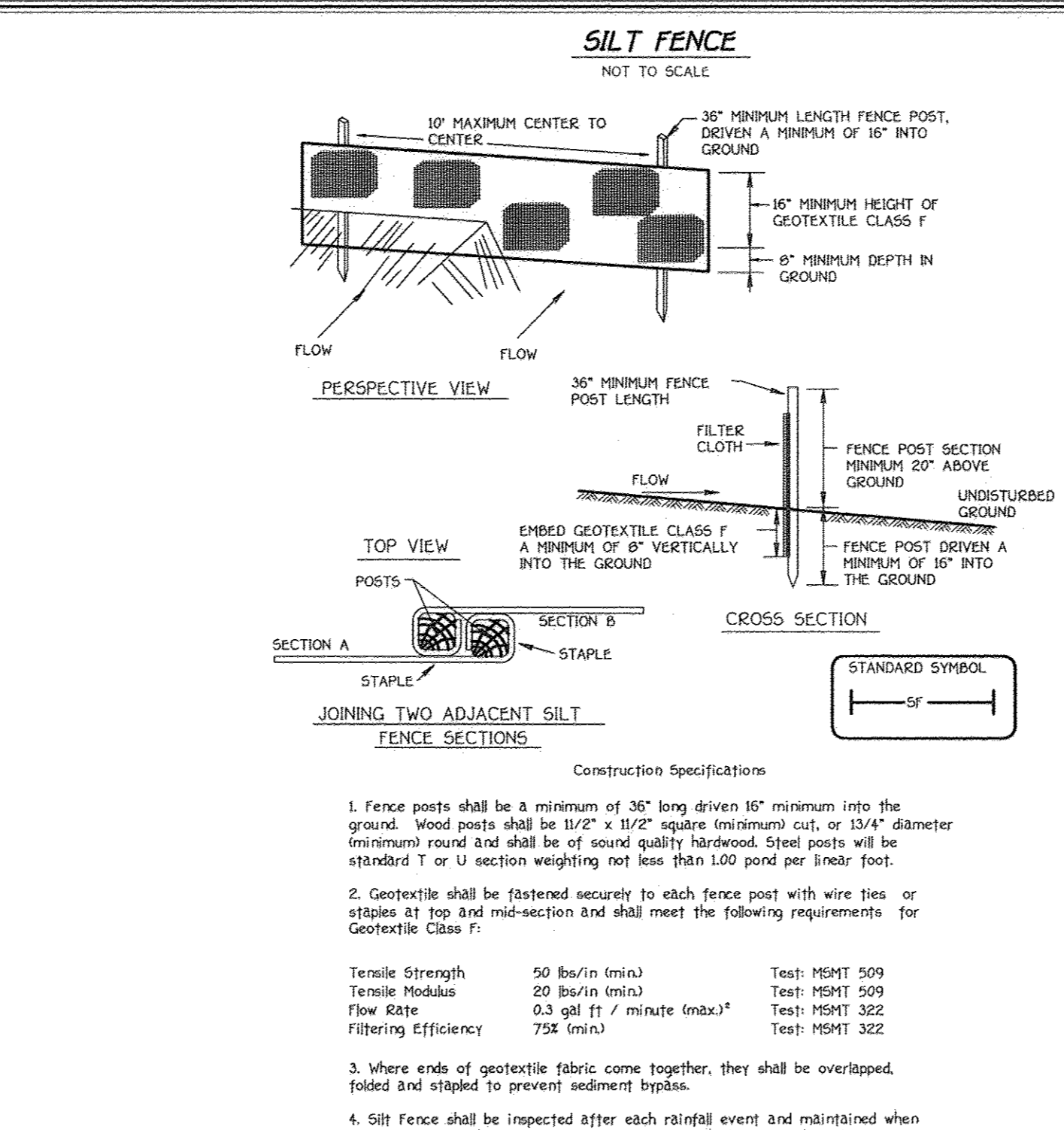
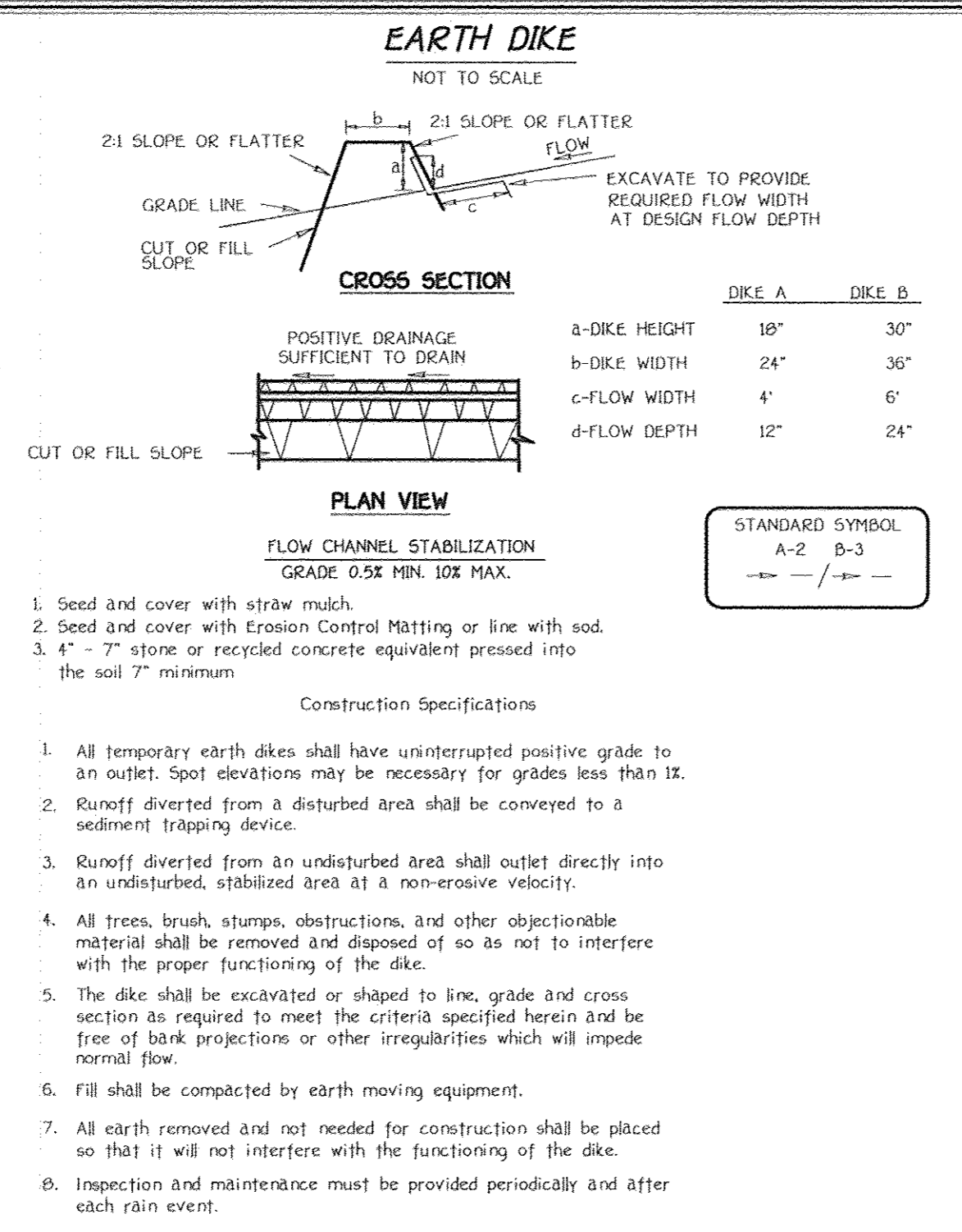
Signature: *[Signature]* Date: 10/16/09

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
 District Howard Soil Conservation Dist. Date: 10/23/09

Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development Date: 11/3/08

Chief, Development Engineering Division Date: 10/31/09

Approved: Howard County Department Of Public Works
 Chief, Bureau Of Highways Date: 10-28-08



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 410.461.2000

REVISIONS

NO.	DESCRIPTION	DATE
9-25-12		

OWNER
 BASELESS, INCORPORATED
 c/o ALFRED S. BAGGLEY
 4594 SHEPARD LANE
 ELICOTT CITY, MARYLAND 21042
 410.583.2592

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 LEBANON, MD 21106
 410.865.4000

SEDIMENT CONTROL NOTES AND DETAILS
WALNUT CREEK
 PHASE TWO
 Lots 23 - 6B, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'

ASBULL'S 9/15/10

TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 16 OF 32

SEDIMENT CONTROL NOTES AND DETAILS
WALNUT CREEK
 PHASE TWO
 Lots 23 - 6B, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'

ASBULL'S 9/15/10

TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 16 OF 32

By the Developer:
 I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Employ A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An As-Built Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature of Developer: *Timothy V. Foyea* 10/14/08
 Date: 10/14/08
 Printed Name of Developer: Timothy V. Foyea
 By the Engineer:
 I Certify That I am a Registered Professional Engineer and Sediment Control Represents A Practical And Feasible Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Reviewed The Plans And I Agree That They Meet The Requirements Of A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An As-Built Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature of Engineer: *Robert J. Collins* 10/16/08
 Date: 10/16/08
 Printed Name of Engineer: Robert J. Collins
 These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Signature of Inspector: *Robert J. Collins* 10/23/08
 Date: 10/23/08
 Printed Name of Inspector: Robert J. Collins
 Howard Soil Conservation District
 Department of Public Works
 2000 W. Main St.
 Chief, Division of Highways
 Date: 10-23-08

Approved Department Of Planning And Zoning
 Signature: *David Korman* 11/3/08
 Date: 11/3/08
 Chief, Division of Land Development
 Date: 11/3/08

Approved Department Of Planning And Zoning
 Signature: *David Korman* 11/3/08
 Date: 11/3/08
 Chief, Division of Land Development
 Date: 11/3/08

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

Signature: _____ P.E. No. _____
 Date: _____
 Certify Meets To State Or Declare A Professional Opinion Based Upon On-Site Inspections And Material Tests Which Are Conducted During Construction. The On-Site Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Community Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Ordinances, Or Other Laws, Including Meeting Community Accepted Industry Practices.

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION DEFINITION

Using vegetation as cover for barren soil to protect it from erosion. This is done by establishing vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and ensuring wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is intended to provide temporary cover for short duration due to one year and Permanent Seeding for long term vegetative cover. Examples of applicable areas for Temporary Seeding are Temporary Soil Stockpiles, cleared areas being left before construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dunes and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

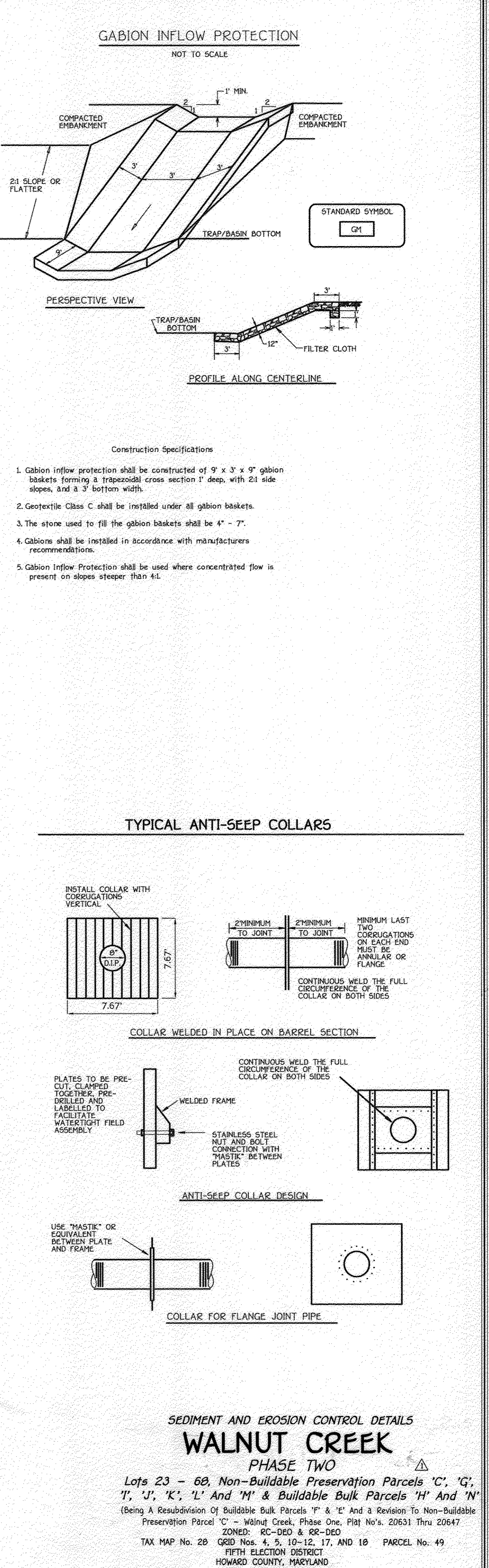
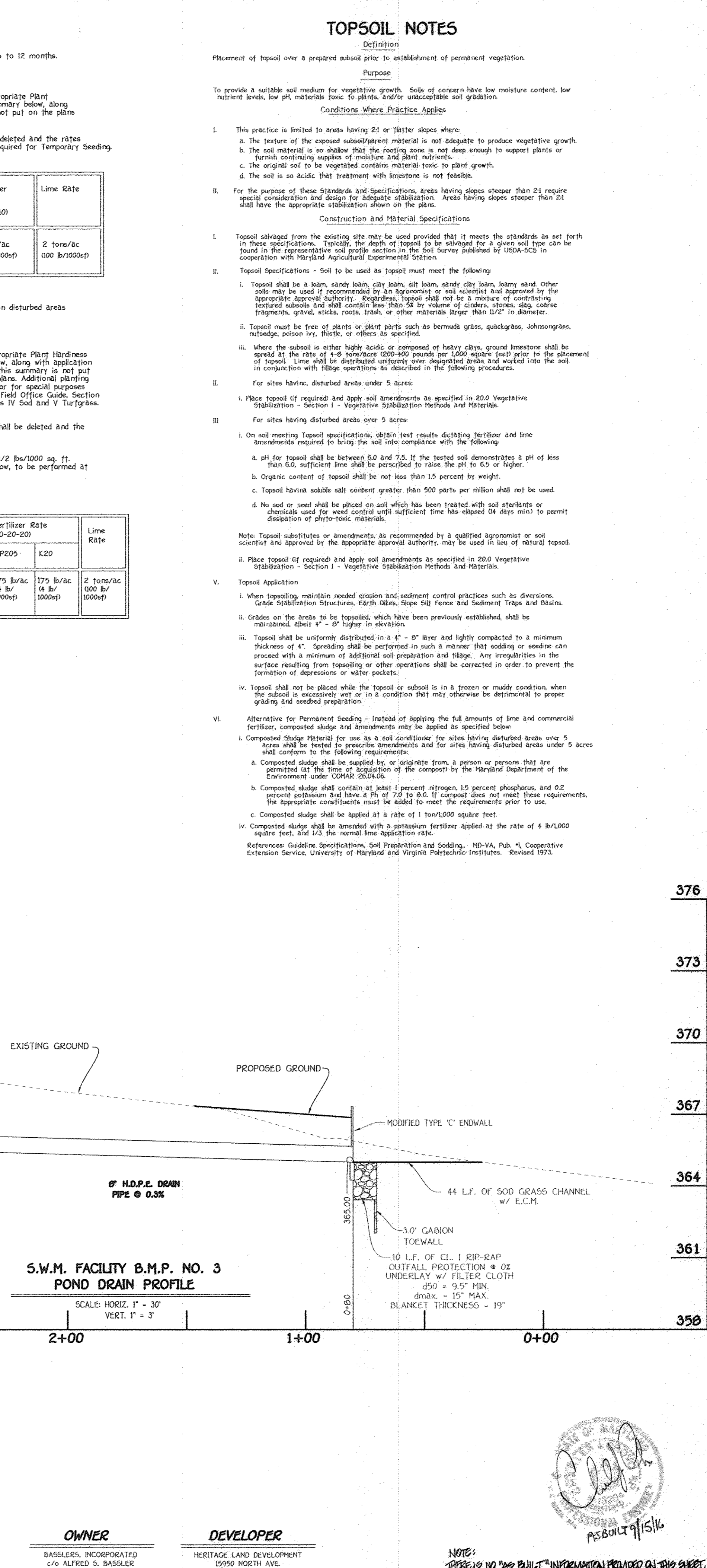
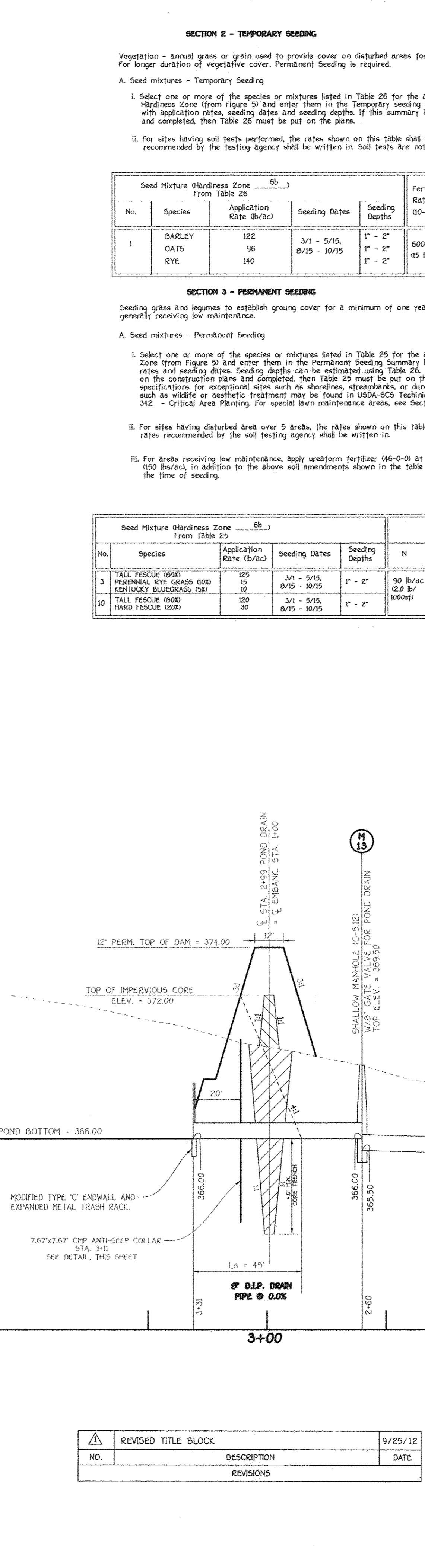
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration evaporation, and groundwater recharge. Vegetation over time will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediments, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- Site Preparation
 - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, wattles, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seedings.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
- Soil Amendment (Fertilizer and Lime Specifications)
 - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples (from for engineering purposes) may also be used for chemical analysis.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval of the appropriate authority. Fertilizers shall be delivered to the site fully baled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
 - Lime materials shall be ground limestone (dewaxed or burnt lime may be substituted which contains at least 50% total oxides calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a 100 mesh sieve and 99-100% will pass through a 200 mesh sieve.
 - Hydroponic lime and fertilizer into the top 3-5" of soil by diking or other suitable means.
- Seeded Preparation
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or ripers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the rough condition. Sloped areas greater than 3:1 should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Permanent Seeding
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 10% clay, but enough fine grained material (30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is for legumes or sericea lespedeza is to be planted, then a sandy soil (50% silt plus clay) would be acceptable.
 - Soil shall contain 1.5% minimum organic matter by weight.
 - Soil must contain sufficient pore space to permit adequate root penetration.
 - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21.5 Standard Specification for Topsoil.
 - Areas previously graded in accordance with the drawings shall be maintained in a true and even grade, then subsoiled or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.
 - Soil amendments into the top 2-5" of topsoil by diking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Slope slopes steeper than 3:1 should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.
 - Dry Seeding
 - All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
 - Seed tags shall be made available to the inspector to verify type and rate of seed used.
 - Incubator - The incubator for testing legume seed in the seed mixture shall be a petri culture of nitrogen-fixing bacteria prepared specifically for the species. Incubators shall not be used after the date indicated on the container. Add fresh incubator as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep incubator as cool as possible until used. Temperatures above 75°F will kill or weaken bacteria and make the inoculant less effective.
 - Methods of Seeding
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a catpawker seeder.
 - If fertilizer is being applied at the time of seeding, the application rate amounts will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen; P205 maximum of 200 lbs/acre; K2O maximum of 200 lbs/acre.
 - Lime - use one ground agricultural limestone, 10 to 3 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one spot. Do not use burnt or hydrated lime when hydroseeding.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Seed spreader dry shall be incorporated into the soil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 - Drill or Catpawker Seeding: Mechanized seeders that apply and cover seed with soil.
 - Catpawker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 - Much Specifications (in order of preference)
 - Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be matted, caked, decayed, or excessively chaffy and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 - Wood Cellulose Fiber: Much
 - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM shall be dried green or contain a green dye in the package that will provide an appropriate visual inspection of the uniformity of the WCFM.
 - WCFM, including dye, shall contain no germination or growth inhibiting factors.
 - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mesh will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The much material shall form a batter-like ground cover, on application, having moisture absorption and porosity properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
 - WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., range of 1.0 to 0.5, ash content of 1.5% maximum and water holding capacity of 90% minimum.
 - Mulching Seeded Areas: Much shall be applied to all seeded areas immediately after seeding.
 - If grading is completed outside of the seeding section, much along shall be applied as prescribed in this section and maintained using the seeding section return and seeding can be performed in accordance with these specifications.
 - When straw much is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Much shall be applied to a uniform loose depth of between 1" and 2". Much applied shall adhere to a uniform distribution and depth so that the soil surface is not exposed. If a much anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 - Wood cellulose fiber used as a much shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
 - Securing Straw Much Anchoring: Much anchoring shall be performed immediately following much application to minimize loss by wind or water. This may be done by one of the following methods listed by preference, depending upon size of area and erosion hazard:
 - All anchoring tool is a tractor drawn implement designed to punch and anchor much into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to better slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
 - Wood cellulose fiber may be used for anchoring. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 25 pounds of wood cellulose fiber per 100 gallons of water.
 - Application of liquid binders should be heavier at the edges where wind catches much, such as in valleys and crest of banks. The remainder of area should be applied uniform after binder application. Liquid binders - such as Acrylic Dye (Dye-1000) (Pittman, Terra Tex, Terra Lock, etc.) or other approved equal may be used at rates recommended by the manufacturer.
 - Lightweight plastic netting may be stapled over the much according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 2,000 feet long.
- Incremental Stabilization - Cut Slopes
 - All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
 - Construction sequence (Refer to Figure 3 below):
 - Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
 - Perform Phase 1 excavation, dress, and stabilize.
 - Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
 - Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.
- Incremental Stabilization of Embankments - Fill Slopes
 - Embankments shall be constructed in lifts as prescribed on the plans.
 - Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15' or when the grade operation ceases as prescribed in the above.
 - At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
 - Construction sequence (Refer to Figure 4 below):
 - Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope fill fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
 - Place Phase 1 embankment, dress and stabilize.
 - Place Phase 2 embankment, dress and stabilize.
 - Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil if required and permanent seed and much. Any interruptions in the operation or completing the operation of the seeding section will necessitate the application of temporary stabilization.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil if required and permanent seed and much. Any interruptions in the operation or completing the operation of the seeding section will necessitate the application of temporary stabilization.



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 410.461.2955

OWNER: BASSELS, INCORPORATED
 676 ALFRED S. BASSELL
 499 SHARPKED LANE
 ELICOTT CITY, MARYLAND 21042
 410.533.2933

DEVELOPER: HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 LISBON, MARYLAND 21765
 410.489.7900

APPROVED: DEPARTMENT OF PUBLIC WORKS
Steve Johnson, Acting 4/18/12
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
K. J. ... 12/25/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

M. ... 12/2/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Note: THE FOREST CONSERVATION EASEMENT(S) WILL BE ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

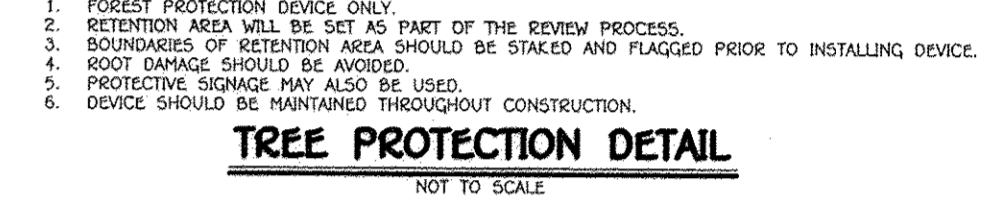
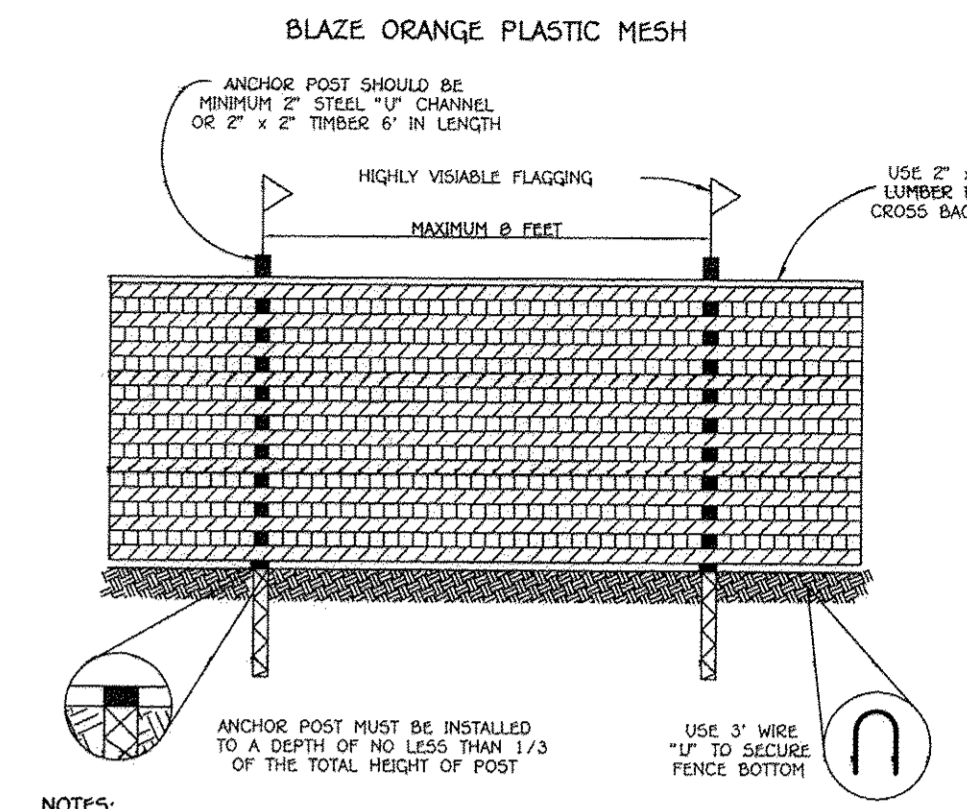
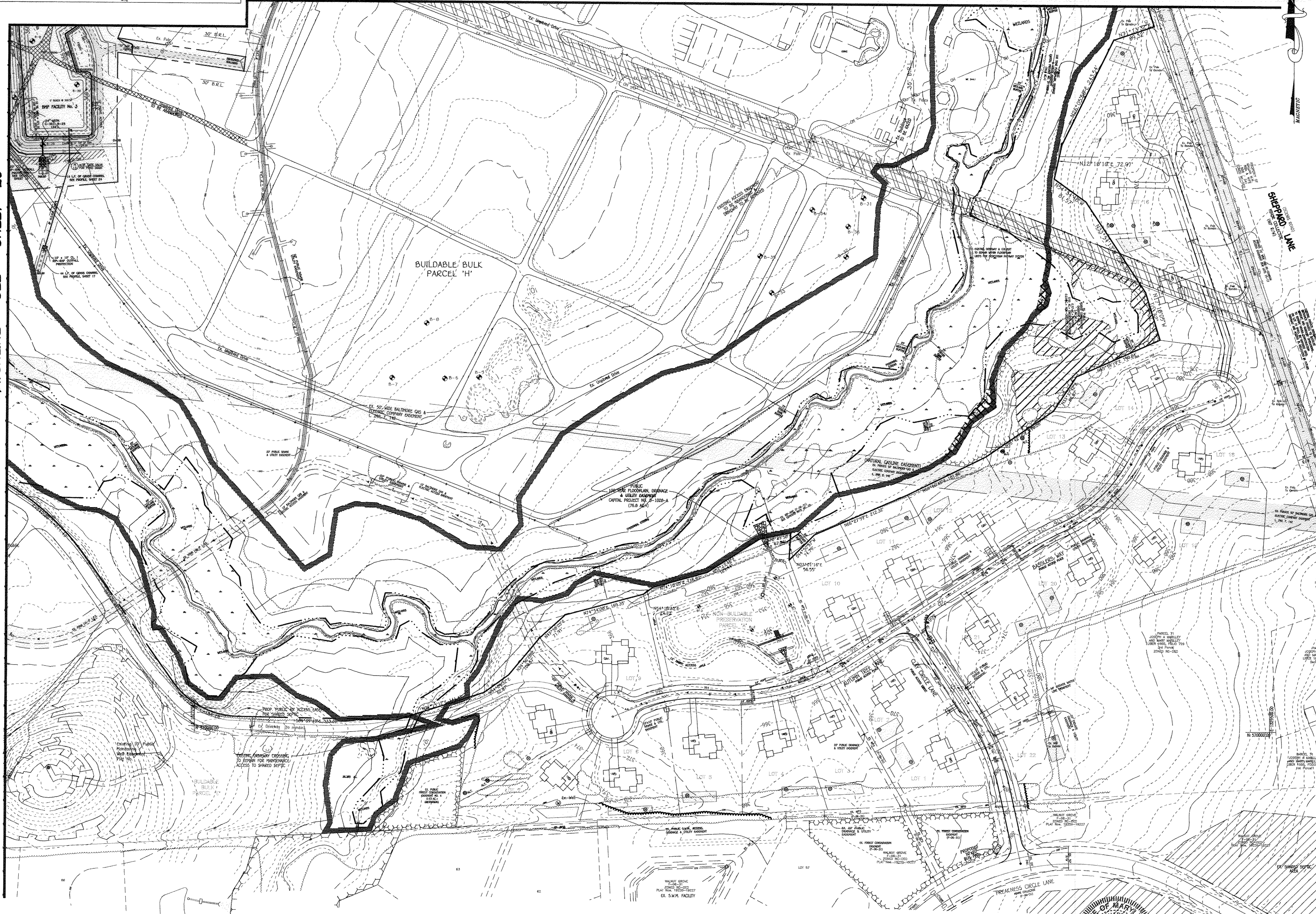
Reforestation Note:
 The reforestation obligation will be met within priority planting areas on the site. This includes floodplain, wetland and buffers.

Specimen Tree Chart

Key	Species/size	Comments
A	White oak, 44 inch dbh	fair condition, some dieback, poor crown spread
B	Tulip poplar, 30 inch dbh	good condition
C	Tulip poplar, 48 inch dbh	good condition
D	Tulip poplar, 74 inch dbh	poor condition, substantial dieback and poor canopy spread

MATCHLINE SEE SHEET 19

MATCHLINE SEE SHEET 20



FCP NOTES

- Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
- Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
- Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
- There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
- No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
- Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 15 feet of the proposed limits of disturbance.
- Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements.
- The Forest Conservation Act requirements for the entire site will be met through the onsite retention of 59.97 acres of forest and 31.66 acres of onsite reforestation. Total Forest Conservation Obligation = 91.23 ac.
- The forest conservation requirements per section 16.1200 of the howard county code and the forest conservation manual for the entire subdivision will be fulfilled by providing 59.97 acres of on-site forest retention and 31.66 acres of on-site forest afforestation for a total of 91.63 acres.

A surety for onsite forest retention @ \$0.20/sf for 2,594,869 sf. = \$518,974.00 and on-site afforestation @ \$0.50/sf for 1,379,110 sf. = \$689,555.00 is required. Total surety amount for the entire subdivision = \$1,208,529.00

The Forest Conservation provided with Phase Two are as follows:
 35.67 AC. OF FOREST CONSERVATION EASEMENT (CREDITED AND NON-CREDITED).
 Credited onsite retention of 17.13 acres of forest and 9.10 acres of onsite reforestation.
 CALCULATION USED FOR PHASE TWO FOREST REQUIREMENT:
 59.97 TOTAL RETENTION ACRES/160 TOTAL UNITS = 0.3723 (46 UNITS x 0.3723 = 17.13 AC.)
 31.66 TOTAL PLANTING ACRES/160 TOTAL UNITS = 0.1979 (146 UNITS x 0.1979 = 9.10 AC.)
 A SURETY FOR ONSITE FOREST RETENTION @ \$0.20/SF FOR 2,594,869 SF. = \$518,974.00 AND ON-SITE AFFORESTATION @ \$0.50/SF FOR 1,379,110 SF. = \$689,555.00 IS REQUIRED. TOTAL SURETY AMOUNT FOR THIS PHASE TWO SUBDIVISION = \$1,208,529.00

The forest conservation surety in the amount of \$347,435.00 is to be paid as part of the dpw developer's agreement.

LEGEND

- Existing Contours
- Wetland Limits
- Wetland/Stream Buffer
- Proposed Contours
- Forest Conservation Easement (Retention Area)
- Forest Conservation Easement To Be Planted
- NON-CREDITED RETENTION Forest Conservation Easement
- Tree Protection Fence
- Limits Of Floodplain
- Proposed Tree Line

REVISED FOREST CONSERVATION PLAN WALNUT CREEK PHASE TWO
 Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'
 (Being A Resubdivision Of Buildable Bulk Parcels 'H' & 'L' And A Revision To Non-Buildable Preservation Parcel 'C') Walnut Creek, Phase One, Plat No. 20631 Thru 20647

TAX MAP No. 28 ZONED - CC-DEG 1, 2R-DEG
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 18 OF 32

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SERVICE OFFICE, 1400 N. WOODS DRIVE, BALTIMORE, MD 21201
 (410) 461-2899

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS

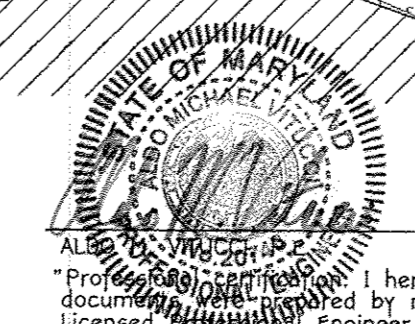
MD ONE Qualified Professional
 USACOE Wetland Delineator
 Certification # WDCP93MD06100448
John P. Canoles 11/5/12
 JOHN P. CANOLES

NO.	DESCRIPTION	DATE
1	REVISED PARCELS 'E', 'J', 'H' & 'G', ROAD NAMES, WELLS, PROPOSED FORCEMAIN AND TITLE BLOCK	9/25/12

PLAN
 SCALE: 1" = 100'

OWNER
 BASSLES, INCORPORATED
 c/o ALFRED S. BASSLES
 4974 SHEPARD LANE
 ELICOTT CITY, MARYLAND 21042

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 LISBON, MARYLAND 21765



I, *Charles J. Grand*, hereby certify that these documents were prepared by me and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13.

APPROVED: DEPARTMENT OF PUBLIC WORKS
James Schuyler Acting 11/29/12
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kurt Steinhilber 12/05/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF ENGINEERING
John P. Canoles 12/15/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

PATTERN SPACING DIAGRAM



Planting/Soil Specifications

1. Installation of bare-root plants shall take place between March 15 - April 20; 5&B/canister stock March 15 - May 30 or September 15 - November 15. Fall planting of 5&B stock is not recommended.
2. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
3. Bare-root plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
4. Fertilizer shall consist of Agriform 22-0-12, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plants shall be fertilized with Comco 06-12.
5. Plant material shall be transported to the site in a tarp or covered truck. Plants shall be kept moist prior to planting.
6. All non-organic debris associated with the planting operation shall be removed from the site by the contractor.

Sequence of Construction

1. Erosion control shall be installed in accordance with general construction plan for site.
2. Plants shall be installed as per plant schedule and the Planting/Soil Specifications for the project.
3. Upon completion of the planting, signage shall be installed as shown.
4. Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

1. Maintenance of plantings shall last for a period of 2 years.
2. Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May-September, if needed.
3. Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide application (see groundcover note where appropriate). Old field successional species will be retained.
4. Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
5. Dead branches will be pruned from plantings.

Guarantee Requirements

1. A 75 percent survival rate of forestation plantings will be required at the end of 2 growing seasons. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season. Wild trees arising from natural regeneration may be counted up to 50 percent towards the total survival number if they are healthy, native species of least 12 inches tall.

Surety for Forestation

1. The developer shall post a surety (bond, letter of credit) to ensure that forestation plantings are completed. See GENERAL NOTE 10, SHEET 1.

Planting Notes

When possible, plants shall be installed within 24 hours of delivery. If installation cannot be performed within this time frame, plant stock shall be watered and protected from desiccation.

Application of herbicide, Round-up or equivalent, may be used to reduce plant competition from old field successional growth at the time of installation. Mowing, re-application of herbicide, or a combination thereof, may be used to control unwanted, competing vegetation.

Planting shall be installed within one year or two growing seasons of subdivision approval. Plantings shall be installed in accordance with the time schedule included in Note 1 of the planting/Seeding Specifications.

FCE Planting Area # 9 - 2.72 acres

Planting units required: 194 (890 whips)
 Planting units provided: 1904 (917 whips and 20 trees)

Qty	Species	Size	Spacing	Total FCA Units
0	Acer rubrum - Red maple	1" cal.	15' o.c.	
12	Quercus alba - White oak	1" cal.	15' o.c.	
20 Total 1" caliper trees (3.5 planting units per tree) 70 Total FCA unit credit				
102	Acer rubrum - Red maple	2-3" whip	11' o.c.	
125	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
125	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
100	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
100	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
100	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
100	Quercus alba - White oak	2-3" whip	11' o.c.	
92	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
917 Total whip plantings (2 planting units per tree) 1834 Total FCA unit credit				
Total Unit Credit (70 + 1834) 1904				

1" CAL TREES = 200/ACRE (80 TREES/200 = 0.10 AC.) 3.5 Planting units = 1 - 1" Cal. Tree
 WHIPS w/shelters = 350/ACRE = 350 x 2.62 AC. = 917 WHIPS Planting units = 1 Whip

FCE Planting Area # 10 - 4.07 acres

Planting units required: 2850 (1425 whips)
 Planting units provided: 2850 (1425 whips and 40 trees)

Qty	Species	Size	Spacing	Total FCA Units
20	Acer rubrum - Red maple	1" cal.	15' o.c.	
20	Quercus alba - White oak	1" cal.	15' o.c.	
40 Total 1" caliper trees (3.5 planting units per tree) 140 Total FCA unit credit				
205	Acer rubrum - Red maple	2-3" whip	11' o.c.	
200	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
175	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
175	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
150	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
150	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
150	Quercus alba - White oak	2-3" whip	11' o.c.	
150	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
1555 Total whip plantings (2 planting units per tree) 3110 Total FCA unit credit				
Total Unit Credit (140 + 3110) 3250				

1" CAL TREES = 200/ACRE (40 TREES/200 = 0.20 AC.) 3.5 Planting units = 1 - 1" Cal. Tree
 WHIPS w/shelters = 350/ACRE = 350 x 3.87 AC. = 1355 WHIPS Planting units = 1 Whip

FOREST CONSERVATION DATA (Phase Two)

EXEMPT NO.	CREATED RETENTION AREA	PLANTING AREA	NON-ORIENTED RETENTION AREA	TOTAL EXEMPT AREA
7	1.99 AC.	0.00 AC.	0.00 AC.	1.99 AC.
8	14.51 AC.	0.00 AC.	9.44 AC.	23.95 AC.
9	0.39 AC.	2.72 AC.	0.00 AC.	3.11 AC.
10	0.24 AC.	4.07 AC.	0.00 AC.	4.31 AC.
11	0.00 AC.	2.31 AC.	0.00 AC.	2.31 AC.
TOTAL	17.13 AC.	9.10 AC.	9.44 AC.	35.67 AC.

FCE Planting Area # 11 - 2.31 acres

Planting units required: 1618 (809 whips)
 Planting units provided: 1618 (774 whips and 20 trees)

Qty	Species	Size	Spacing	Total FCA Units
0	Acer rubrum - Red maple	1" cal.	15' o.c.	
12	Quercus alba - White oak	1" cal.	15' o.c.	
20 Total 1" caliper trees (3.5 planting units per tree) 70 Total FCA unit credit				
125	Acer rubrum - Red maple	2-3" whip	11' o.c.	
125	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
75	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
75	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
100	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
100	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
94	Quercus alba - White oak	2-3" whip	11' o.c.	
80	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
774 Total whip plantings (2 planting units per tree) 1548 Total FCA unit credit				
Total Unit Credit (70 + 1548) 1618				

1" CAL TREES = 200/ACRE (20 TREES/200 = 0.10 AC.) 3.5 Planting units = 1 - 1" Cal. Tree
 WHIPS w/shelters = 350/ACRE = 350 x 2.21 AC. = 774 WHIPS Planting units = 1 Whip

FOREST CONSERVATION WORKSHEET (For the entire Walnut Creek subdivision)

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	435.8
B. DEDUCTIONS (CRITICAL AREA, AREA RESTRICTED BY LOCAL OR PROGRAM) (78.6 AC. FLOODPLAIN & 15.1 AC. UTILITY TRANSMISSION LINE EASEMENTS)	93.7
C. NET TRACT AREA - NET TRACT AREA = TOTAL TRACT (A) - DEDUCTIONS (B)	342.1

LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL

D. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 20%)	E. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 25%)
68.4	85.5

EXISTING FOREST COVER

F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD
75.4	0

IF THE EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN G = F - E; OTHERWISE G = 0.

BREAK-EVEN POINT

H. BREAK-EVEN POINT (AMOUNT OF FOREST THAT MUST BE RETAINED SO THAT NO MITIGATION IS REQUIRED)	I. (1) IF THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) IS GREATER THAN 0, THEN H = (0.2 x THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) + THE CONSERVATION THRESHOLD (E)). (2) IF THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) IS EQUAL TO 0, THEN H = EXISTING FOREST COVER (F)
0	0

PROPOSED FOREST CLEARING

J. TOTAL AREA OF FOREST TO BE CLEARED	K. TOTAL AREA OF FOREST TO BE RETAINED
19.83	59.97

E = EXISTING FOREST COVER (F) - FOREST TO BE CLEARED (J)

PLANTING REQUIREMENTS

IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS AT OR ABOVE THE BREAK-EVEN POINT (H), NO PLANTING IS REQUIRED, AND NO FURTHER CALCULATIONS ARE NECESSARY (L=0, M=0, N=0, P=0, Q=0, R=0). OTHERWISE, CALCULATE THE PLANTING REQUIREMENTS AS FOLLOWS:

L. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD

(1) IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN L = THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) x 0.25.	(2) IF THE FOREST TO BE RETAINED (K) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E), THEN L = AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) x 0.25
0	0

M. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD

(1) IF EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION THRESHOLD (E) AND THE FOREST TO BE RETAINED (K) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E), THEN M = 2.0 x (CONSERVATION THRESHOLD (E) - FOREST TO BE RETAINED (K)). (2) IF EXISTING FOREST COVER (F) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E), THEN M = 2.0 x FOREST TO BE CLEARED (J)
0

N. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD

IF THE AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN N = K - E; OTHERWISE N = 0
0

P. TOTAL REFORESTATION REQUIRED P = L + M - N

Q. TOTAL AFFORESTATION REQUIRED	R. TOTAL PLANTING REQUIREMENT R = P + Q
0	31.66

NOTE: THIS PROJECT IS USING "RURAL CLUSTER OPTION B" PER APPENDIX L OF THE FOREST CONSERVATION MANUAL FOR ITS FOREST RESTORATION CALCULATIONS WHICH INCLUDES THE AREA FOR ALL THE PRESERVATION PARCELS.

REVISED FOREST CONSERVATION PLAN WALNUT CREEK PHASE TWO

Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N' (Being A Resubdivision Of Buildable Bulk Parcels 'F' & 'E' And A Revision To Non-Buildable Preservation Parcel 'C' Walnut Creek Phase One, Plat No's. 20651 Thru 20647)

TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, And 18 PARCEL No. 49

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: SEPTEMBER, 2008 SHEET 19 OF 32



FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 1000 CENTENNIAL SQUARE OFFICE PARK - SUITE 1072 BALTIMORE NATIONAL PIKE ELICOTT CITY, MARYLAND 21042 (410) 461-8895

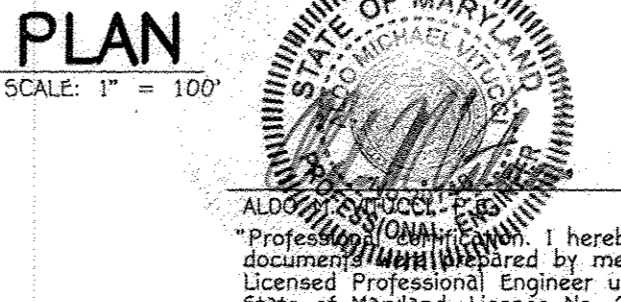
Eco-Science Professionals, Inc. CONSULTING ECOLOGISTS

MD DNR Qualified Professional USACE Wetland Delineator Certification # WDCP93M006100448
 John P. Canoles 11/5/12

NO.	DESCRIPTION	DATE
1	REVISED PARCELS 'E', 'J', 'H' & 'G', ROAD NAMES, WELLS, PROPOSED FORCEMAIN AND TITLE BLOCK	9/25/12

OWNER: BASSLERS, INCORPORATED c/o ALFRED S. BASSLER 4994 SHEPHERD LANE ELICOTT CITY, MARYLAND 21042

DEVELOPER: HERITAGE LAND DEVELOPMENT 19950 NORTH AVE. LISSON, MARYLAND 21765



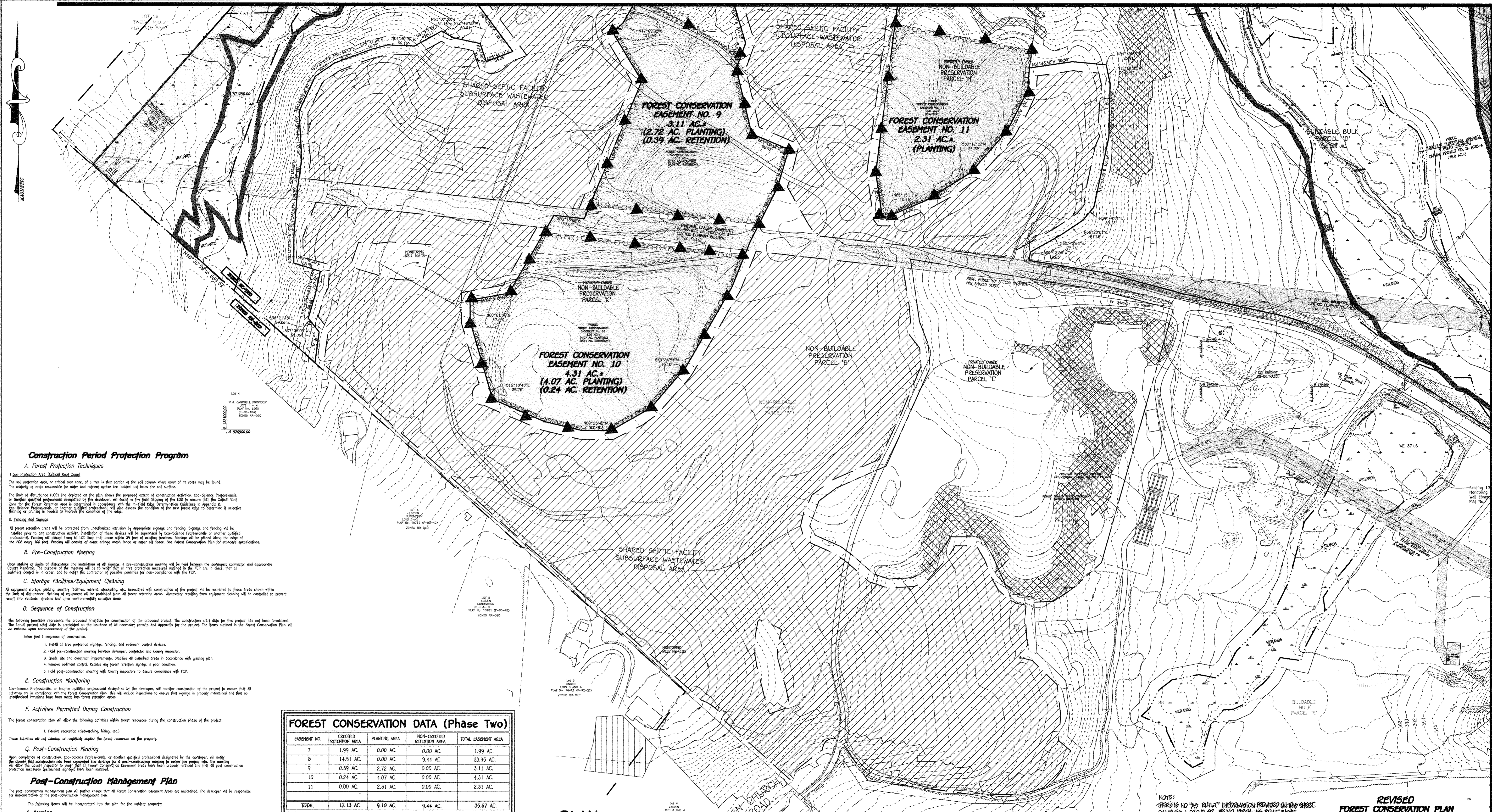
DATE: 9/15/12

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwegel, Acting 11/29/12
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Vet Seelbach 12/26/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John P. Canoles 12/21/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MATCHLINE SEE SHEET 21



Construction Period Protection Program

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)
 The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface.

The limit of disturbance (LOD) line depicted on the plan shows the proposed extent of construction activities. Eco-Science Professionals, or another qualified professional designated by the developer, will install in the field flagging of the LOD to ensure that the Critical Root Zone for the forest retention area is protected in accordance with the In-Field Edge Interpretation Guidelines in Appendix B.

Eco-Science Professionals, or another qualified professional, will also assess the condition of the new forest edge to determine if selective thinning or pruning is needed to improve the condition of the edge.

2. Fencing and Signage
 All forest retention areas will be protected from unauthorized intrusion by appropriate signage and fencing. Signage and fencing will be installed prior to any construction activity. Installation of these devices will be supervised by Eco-Science Professionals or another qualified professional. Fencing will extend along all LOD lines that occur within 20 feet of existing boundaries. Signage will be placed along the edge of the FCZ every 100 feet. Fencing will consist of biodegradable mesh fence or rubber rail fence. See Forest Conservation Plan for detailed specifications.

B. Pre-Construction Meeting
 Upon holding of final of disturbance and installation of all signage, a pre-construction meeting will be held between the developer, contractor and appropriate County Inspector. The purpose of the meeting will be to verify that all tree protection measures outlined in the PCP are in place, that all sediment control is in order, and to notify the contractor of possible penalties for non-compliance with the PCP.

C. Storage Facilities/Equipment Cleaning
 All equipment storage, staging, material handling, etc. associated with construction of the project will be restricted to those areas shown within the limit of disturbance. Washing of equipment will be prohibited from all forest retention areas. Wastewater resulting from equipment cleaning will be contained to prevent runoff into wetlands, streams and other environmentally sensitive areas.

D. Sequence of Construction
 The following timetable represents the proposed timetable for construction of the proposed project. The construction start date for this project has not been formalized. The actual project start date is predicated on the issuance of all necessary permits and approvals for the project. The items outlined in the Forest Conservation Plan will be executed upon commencement of the project.

Below find a sequence of construction:

1. Install all tree protection signage, fencing, and sediment control devices.
2. Hold pre-construction meeting between developer, contractor and County Inspector.
3. Grade site and construct improvements. Stabilize all disturbed areas in accordance with grading plan.
4. Remove sediment control. Replace any forest retention signage in poor condition.
5. Hold post-construction meeting with County Inspectors to assure compliance with PCP.

E. Construction Monitoring
 Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan. This will include inspections to ensure that signage is properly maintained and that all undisturbed riparian areas have been made into forest retention areas.

F. Activities Permitted During Construction
 The forest conservation plan will allow the following activities within forest resources during the construction phase of the project:

1. Passive recreation (birdwatching, hiking, etc.)

These activities will not damage or negatively impact the forest resources on the property.

G. Post-Construction Meeting
 Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post-construction meeting to review the project site. The meeting will allow the County Inspector to verify that all Forest Conservation Easement limits have been properly installed and that all post-construction protection measures (permanent signage) have been installed.

Post-Construction Management Plan
 The post-construction management plan will further ensure that all Forest Conservation Easement Areas are maintained. The developer will be responsible for implementation of the post-construction management plan.

The following items will be incorporated into the plan for the subject property:

A. Signage
 Signage indicating the limits of the forest retention areas shall be maintained.

EASEMENT NO.	CREDITED RETENTION AREA	PLANTING AREA	NON-CREDITED RETENTION AREA	TOTAL EASEMENT AREA
7	1.99 AC.	0.00 AC.	0.00 AC.	1.99 AC.
8	14.51 AC.	0.00 AC.	9.44 AC.	23.95 AC.
9	0.39 AC.	2.72 AC.	0.00 AC.	3.11 AC.
10	0.24 AC.	4.07 AC.	0.00 AC.	4.31 AC.
11	0.00 AC.	2.31 AC.	0.00 AC.	2.31 AC.
TOTAL	17.13 AC.	9.10 AC.	9.44 AC.	35.67 AC.

PLAN
 SCALE: 1" = 100'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 12700 WILSON ROAD, SUITE 100
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2999

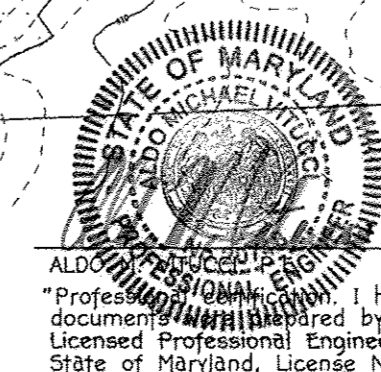
Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS
 12700 WILSON ROAD, SUITE 100
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2999

MD ONE Qualified Professional
 USACOE Wetland Delimitator
 Certification # WDCPS3M006100448
John P. Canoles 11/5/12
 JOHN P. CANOLES

NO.	DESCRIPTION	DATE
1	REVISED PARCELS 'E', 'J', 'H' & 'G', ROAD NAMES, WELLS, PROPOSED FORCEMAIN AND TITLE BLOCK	9/25/12
	REVISIONS	

OWNER
 BASSELES, INCORPORATED
 c/o ALFRED S. BASSLER
 4994 SHEPARD LANE
 ELICOTT CITY, MARYLAND 21042

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 LISBON, MARYLAND 21765



NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. CHANGES TO ORIGINAL PLAN ARE SHOWN IN RED.

REVISED FOREST CONSERVATION PLAN
WALNUT CREEK
 PHASE TWO
 Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'T', 'J', 'K', 'L' and 'W' & Buildable Bulk Parcels 'H' and 'W'
 (Being A Resubdivision of Buildable Bulk Parcels 'T' & 'C' and a Revision to Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No's. 20631 thru 20647)

ZONED: RC-DEO & RC-DEO
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2009
 SHEET 20 OF 32

DATE: 9/15/12

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

MATCHLINE SEE SHEET 18

F-08-081

STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and topsoil stored. All trees, vegetation roots and other objectionable material shall be removed. Channel banks and shrub breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Filling material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification CC, SC, CL or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8-inch thick before compaction layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spigot must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within .2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Practice).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed at a minimum of 6" measured perpendicular to the outside of the pipe of flowable fill shall be under bedding, over and on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to the specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section. Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe.

1. Materials - (Galvanized Coated Steel Pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc. must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following pipe connections are acceptable for pipes less than 24-inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange belt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2-inch greater than the corrugation depth. Pipes 24-inches in diameter and larger shall be connected by a 24-inch long annular corrugated band using a minimum of four rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12-inches on the end of each pipe. Flanged joints with 3/8-inch closed cell gaskets the full width of the flange is also acceptable. Helically corrugated pipe shall have either continuous welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/grade for their entire length. This bedding/grade shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete grade is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe

The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1220 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type 5, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type 5.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

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

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

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

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and other structures necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundations, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree of whatever the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be completed in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planning 690-3423 or as shown on the accompanying drawings.

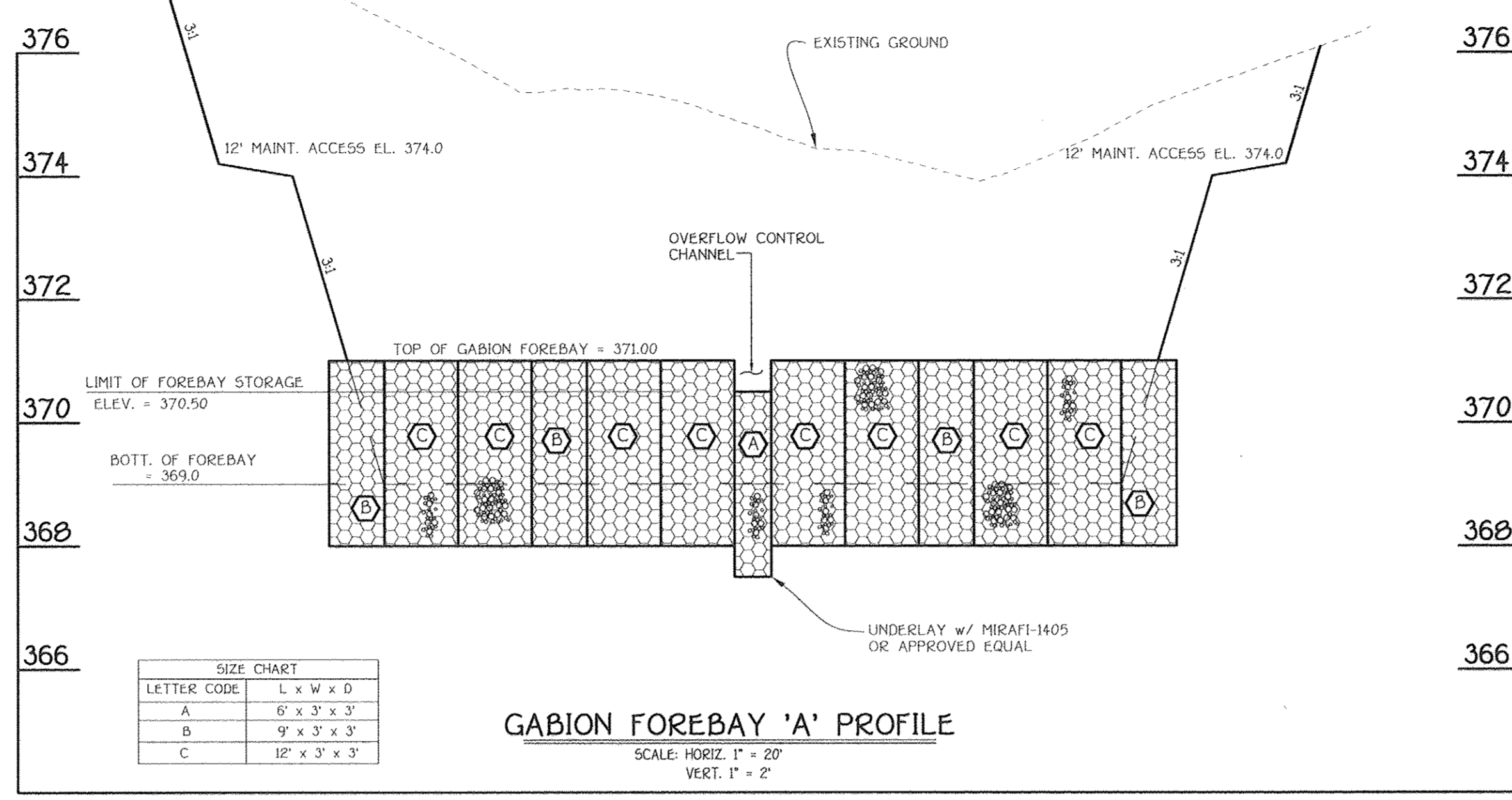
Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

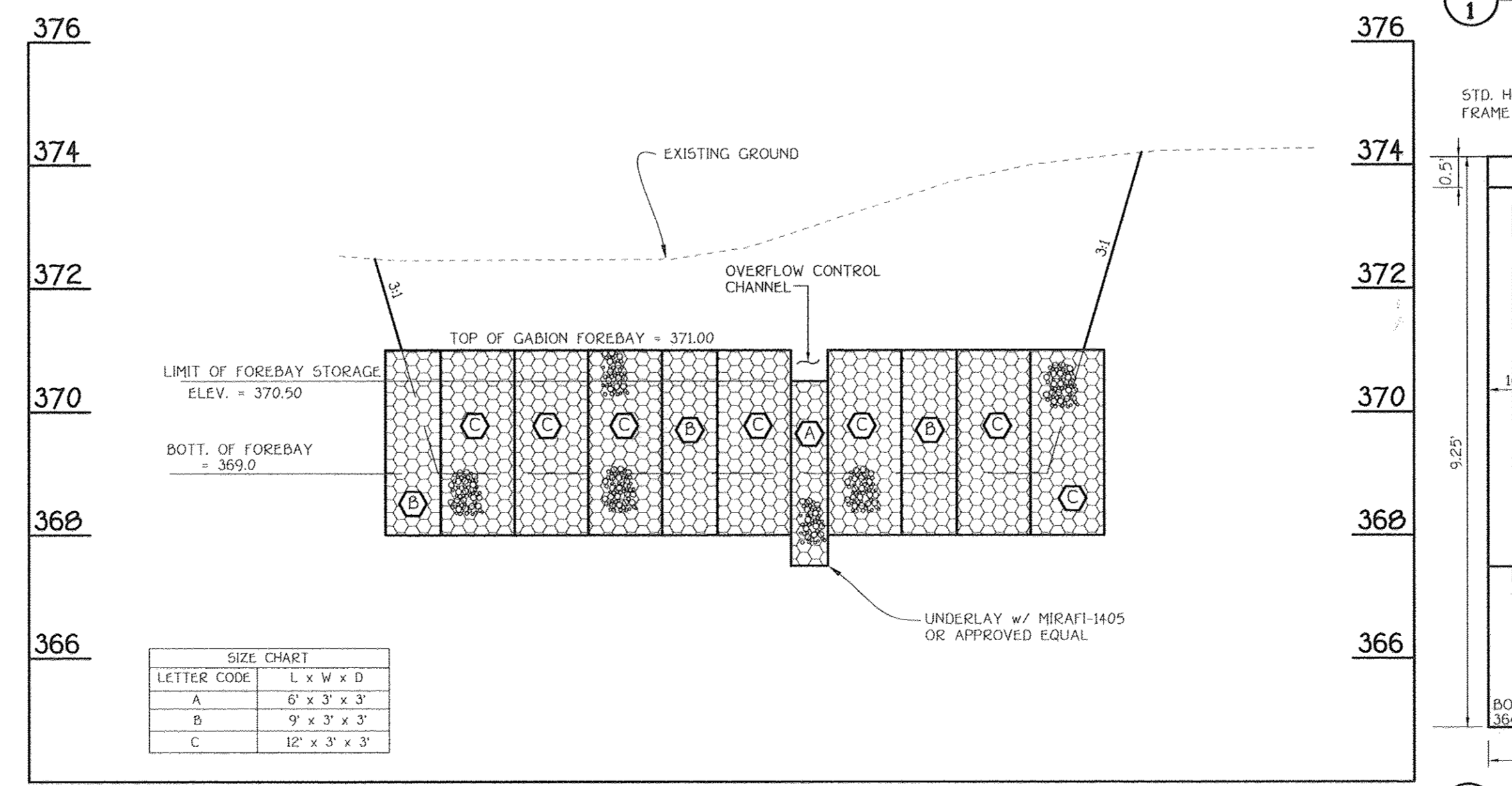
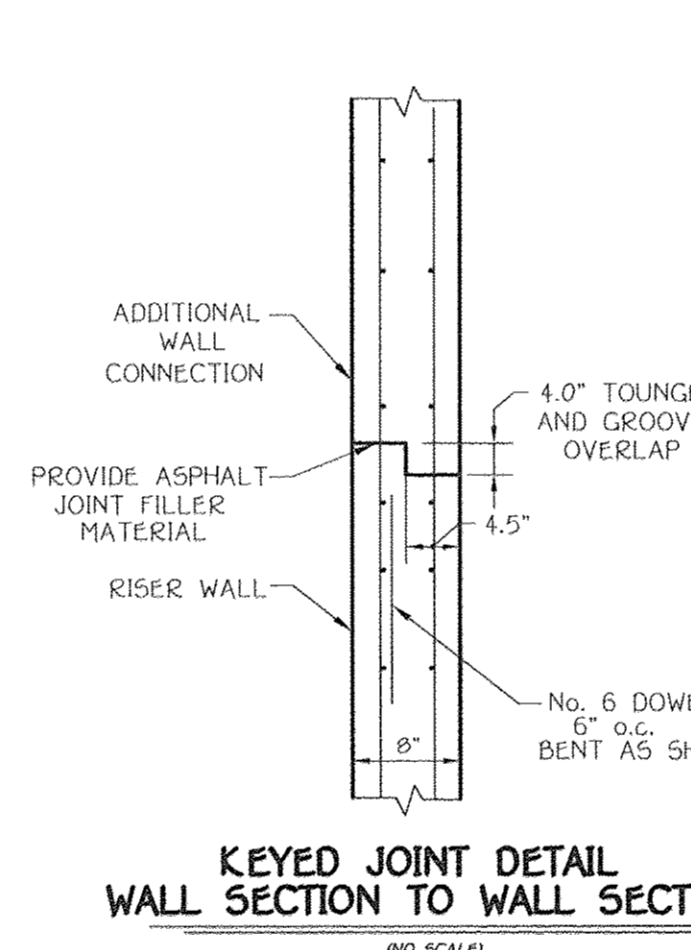
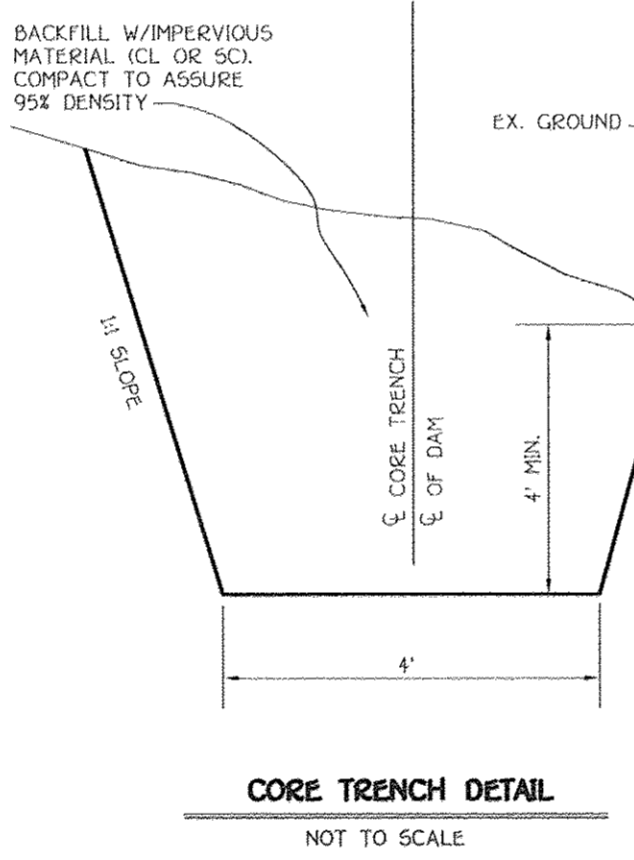
OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

NO.	REVISED PARCELS 'E', 'J', 'H' & 'G', ROAD NAMES AND TITLE BLOCK	DESCRIPTION	DATE
		REVISIONS	9/25/12



LETTER CODE	L x W x D
A	6' x 3' x 3'
B	9' x 3' x 3'
C	12' x 3' x 3'



LETTER CODE	L x W x D
A	6' x 3' x 3'
B	9' x 3' x 3'
C	12' x 3' x 3'

SWM Pond Construction Recommendations

A. General Design Recommendations

It is recommended that the geotechnical aspects of the SWM pond design and construction be in accordance with MD 378/2000 specifications.

B. Principal Stability

Variable soil conditions are present and, consequently, the bearing conditions at various elevations vary widely. It appears that the majority of the underlying native soils will be acceptable to support design bearing pressures of 2 KSF. Open footings excavated below the natural water table will be subject to disturbance by the upward flow of water and will require pumping and stabilization for acceptability.

C. Earth Slope Stability

Cut slopes located beyond the dam embankment zones shall be evaluated in the field at time of construction for conditions which may cause slope instability, including high plasticity clay soils with little sand component or granular slopes above the toe of slope. Remedial measures may include but not limited to any of the following:

1. Flatten the cut slopes to 4:1.
2. Provide toe and slope drains to control any groundwater. The design, location and spacing to be determined by the Geotechnical Engineer at the time of grading, as needed.
3. Undercut and replace unstable soils as directed by the Geotechnical Engineer.

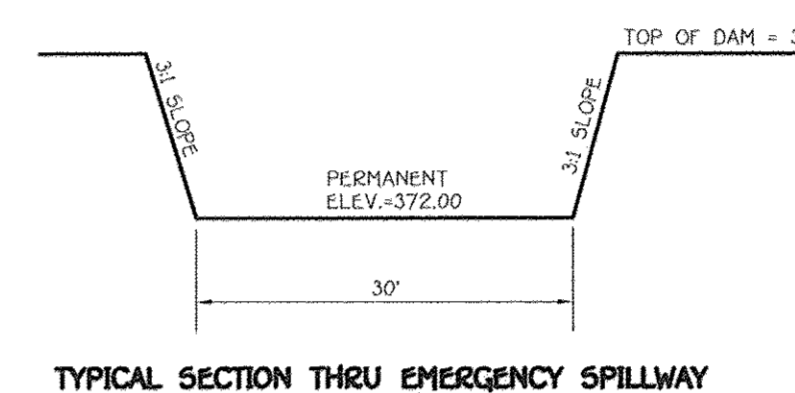
The type and extent of remedial work will be addressed at the time of construction.

D. Core Trench

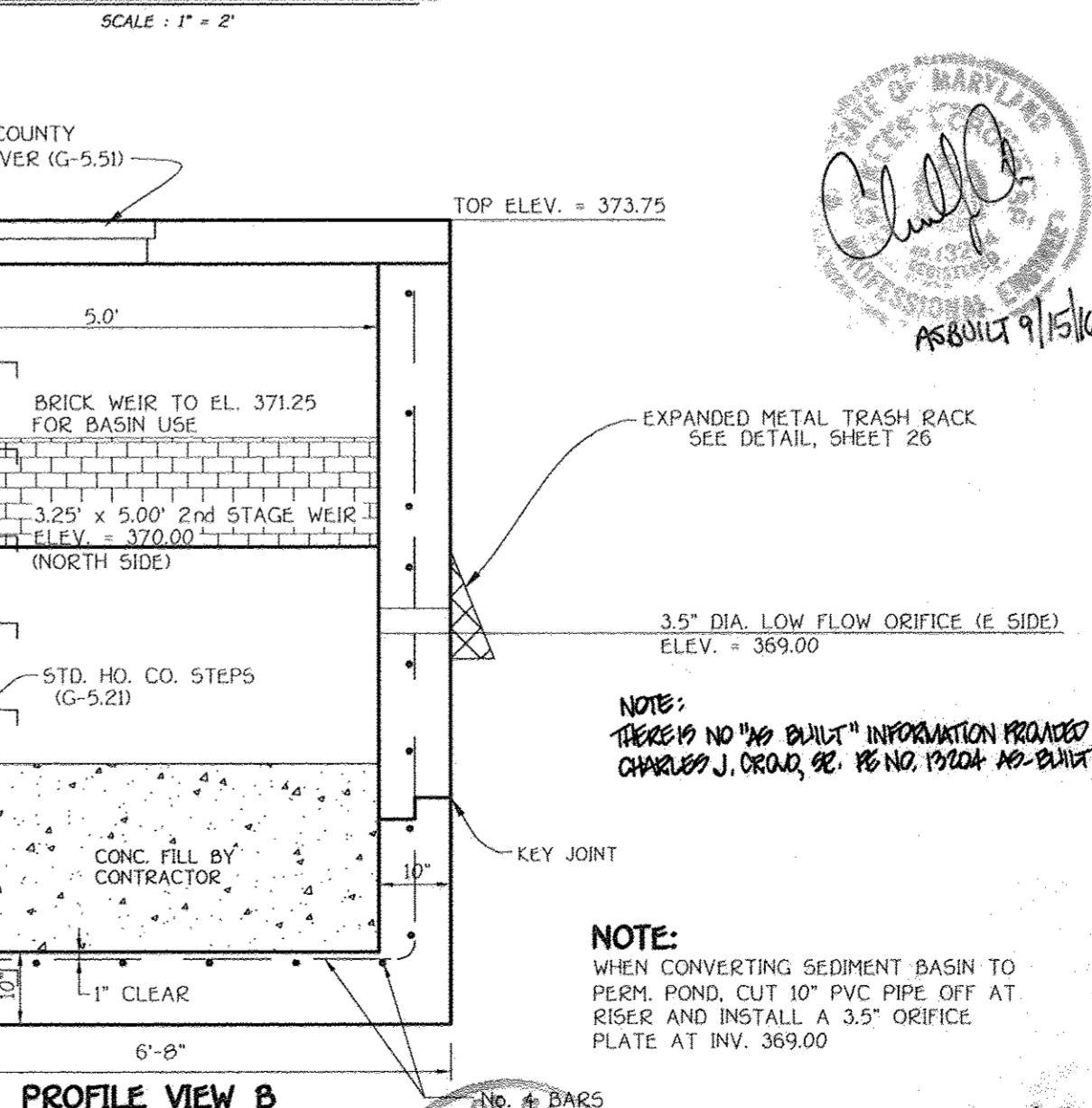
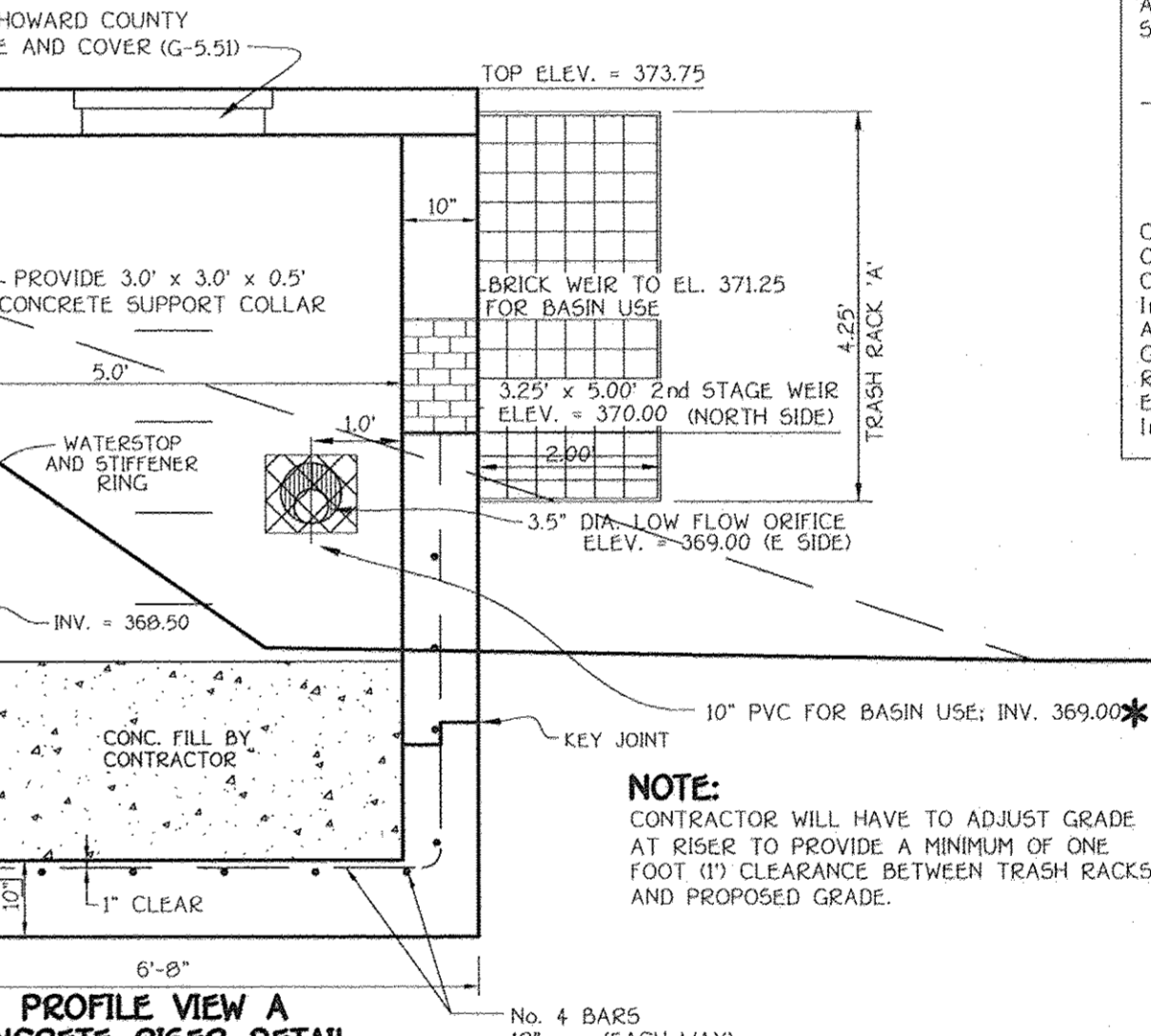
Core trenches shall be excavated to the typical MD 378/2000 specified dimensions below stripfoot cutting grade or at least 2 feet into original soils below any undercut backfill, whichever depth is greater. Depending upon the design elevations, corrections below the water table may result in instabilities of the core trench walls and bases requiring pumping and stabilization for acceptable installation of the core trench backfill.

E. Permanent Ground Water Control

Ground water should be anticipated in excavations carried below the water levels indicated by the borings. Also, since the boring program was performed in unexcavated soil, it is likely that ground water levels will rise in the water sumps requiring additional ground water control. In addition to slope drains for cut soils, it may be necessary to construct pilot channels in the basins to direct seepage into low flow orifices to prevent shallow accumulation of water.



NOT TO SCALE



By The Developer:
"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer: *[Signature]* 10/14/08
Date
Printed Name Of Developer: Timothy W Feaga

By The Engineer:
"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Within 30 Days Of Completion."

Signature Of Engineer: *[Signature]* 10-16-08
Date
Printed Name Of Engineer: ALDO M. VITALE

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

Signature: *[Signature]* 10/22/08
Date
Howard Soil Conservation District

Approved Department Of Public Works
Signature: *[Signature]* 10-28-08
Date
Chief, Bureau Of Highways

Approved Department Of Planning And Zoning
Signature: *[Signature]* 11/9/08
Date
Chief, Division Of Land Development

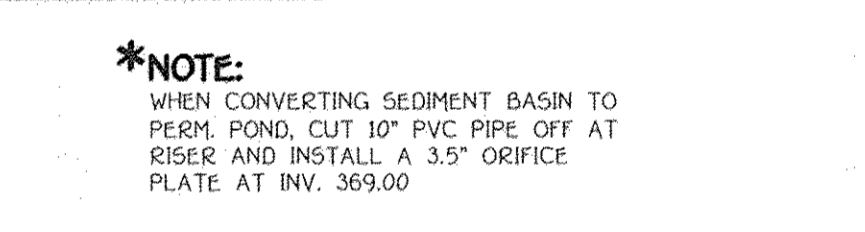
Signature: *[Signature]* 10/21/08
Date
Chief, Development Engineering Division

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

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

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

*NOTE:
WHEN CONVERTING SEDIMENT BASIN TO PESH. POND, CUT 10" PVC PIPE OFF AT RISER AND INSTALL A 3.5" ORIFICE PLATE AT INV. 369.00



*NOTE:
WHEN CONVERTING SEDIMENT BASIN TO PESH. POND, CUT 10" PVC PIPE OFF AT RISER AND INSTALL A 3.5" ORIFICE PLATE AT INV. 369.00

STORMWATER MANAGEMENT NOTES AND DETAILS
POND No. 3

PHASE TWO
Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'T', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N' (Being A Reevaluation Of Buildable Bulk Parcels 'T' & 'E' And A Revision To Non-Buildable Preservation Parcel 'L' - Walnut Creek, Phase One, Plan No. 20531 Thru 20547)

ZONED: RC-DEO & RE-DEO
GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER, 2008
SHEET 23-OF-32

DATE: 10/16/08
Signature: *[Signature]*
ALDO M. VITALE, P.E.
Professional Engineer, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 202748, Expiration Date 2-22-09.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENAL SQUARE OFFICE PARK, 10772 BALLPOON NATIONAL PARK
ELICOTT CITY, MARYLAND 21042
410.994.3995

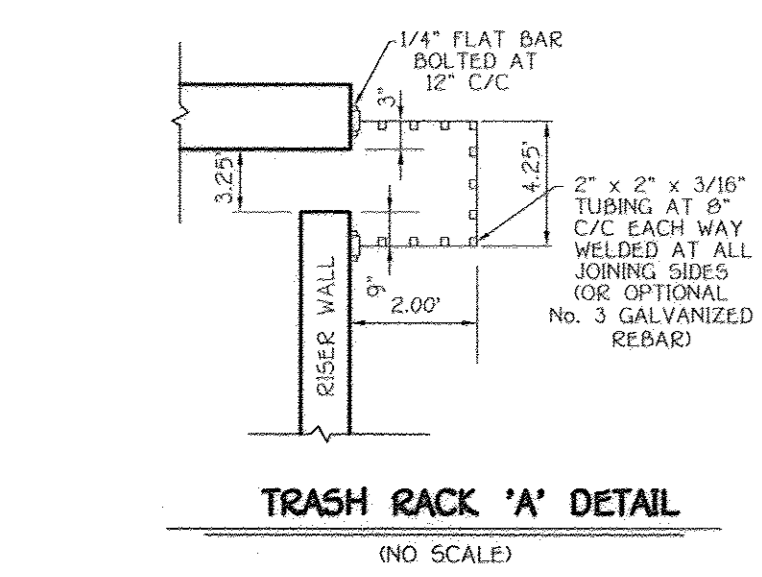
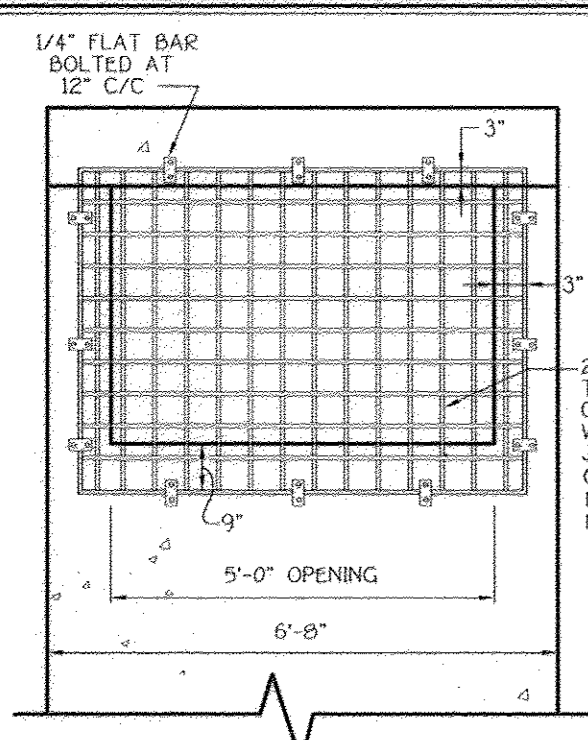
NOTE: PROVIDE MASTIC JOINT SEAL FROM OUTSIDE OF PIPE JOINTS PRIOR TO INSTALLING BARREL UNDERGROUND.
ASTM DESIGNATION C361
DIAMETERS 12 THRU 160 INCH
PRESSURES TO 125 FEET OF HEAD

CONCRETE PIPE JOINT DETAIL
NO SCALE

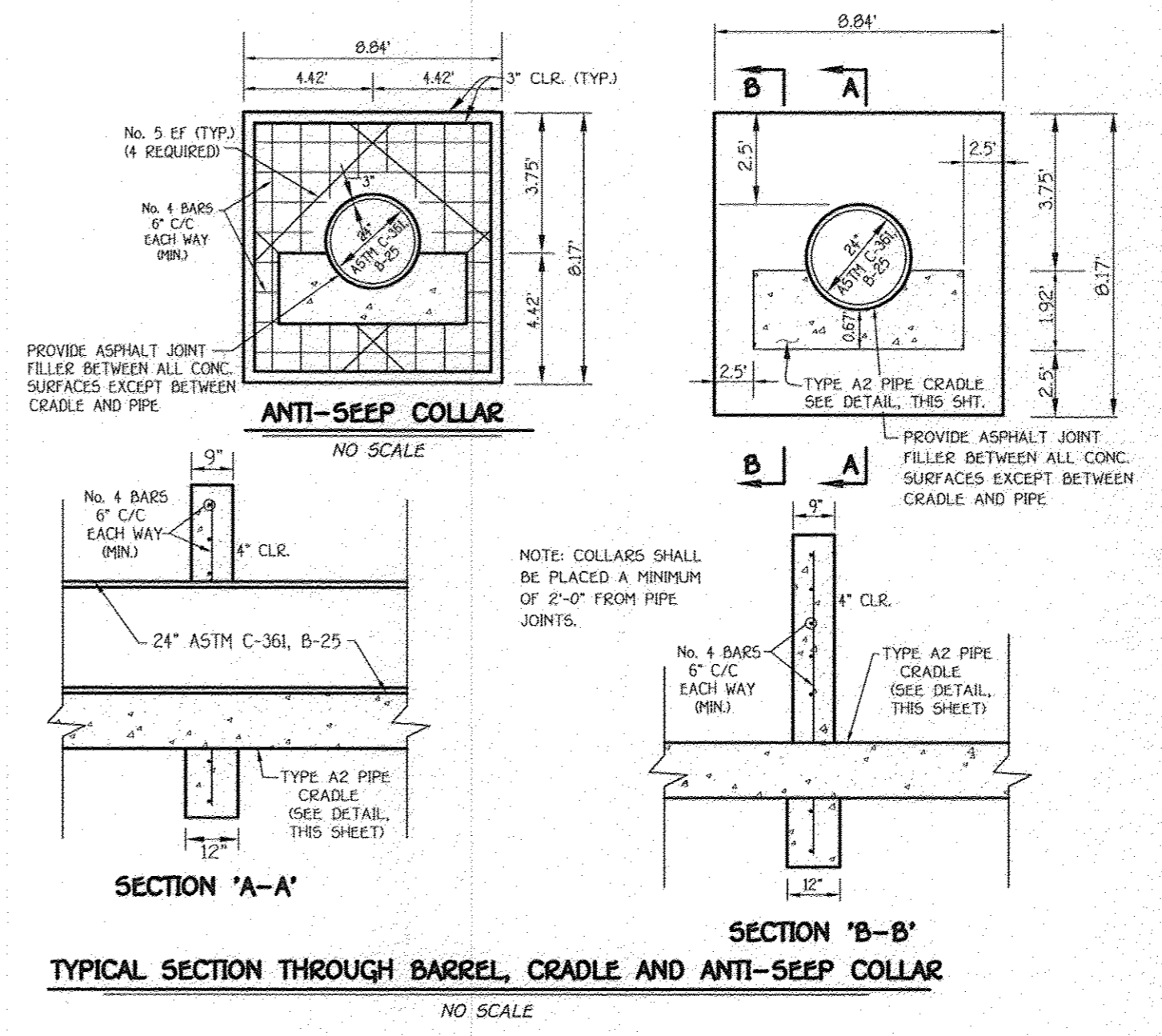
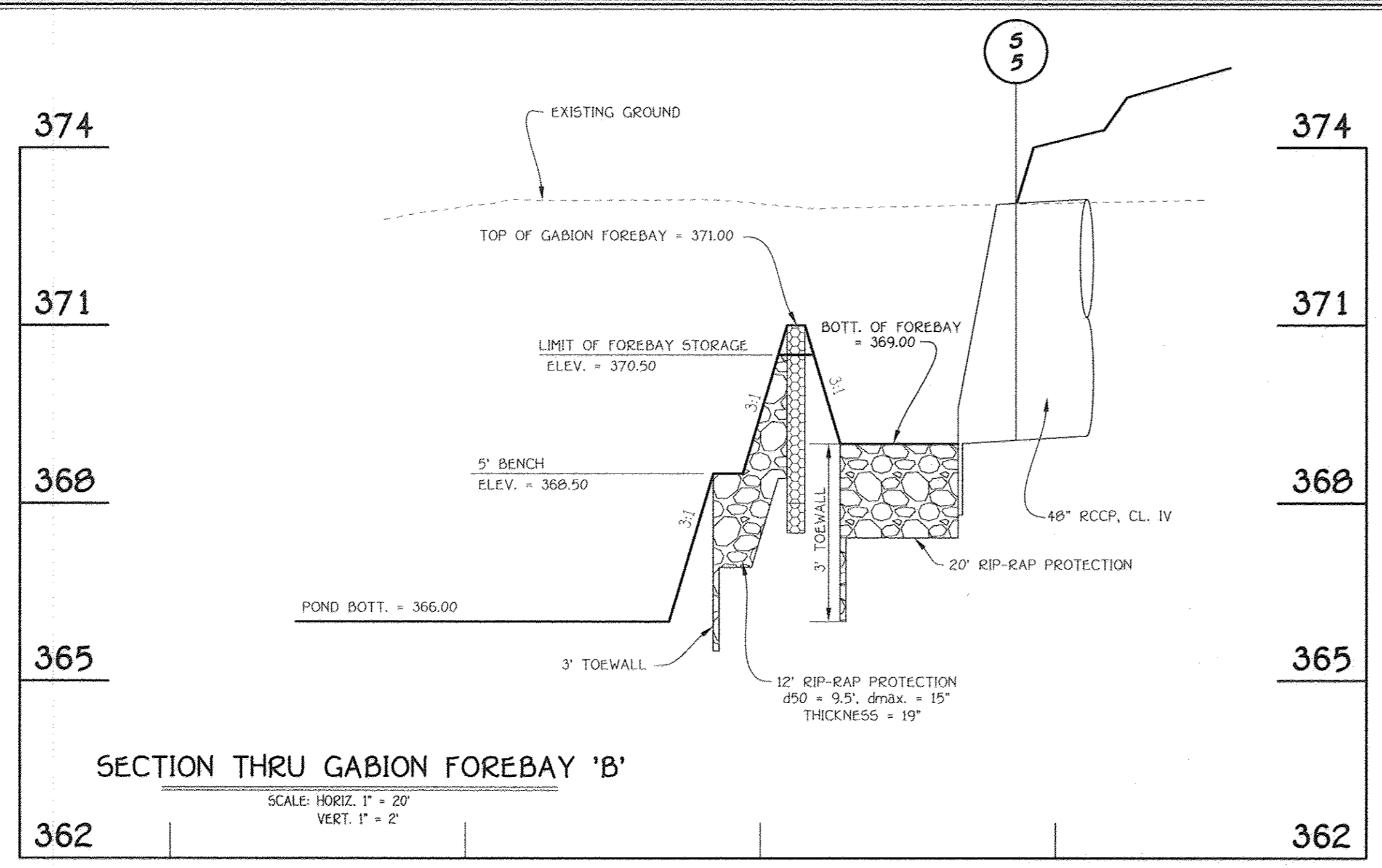
OWNER: BASSLEARS, INCORPORATED
670 ALFRED S. BASSLER
494 SHEPARD LANE
ELICOTT CITY, MARYLAND 21042

DEVELOPER: HERITAGE LAND DEVELOPMENT
19950 NORTH AVE.
LISBON, MARYLAND 21765

DATE: 10/16/08
Signature: *[Signature]*
ALDO M. VITALE, P.E.
Professional Engineer, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 202748, Expiration Date 2-22-09.



- NOTES:
- FIELD MEASURE THE STRUCTURE DIMENSIONS TO INSURE EXACT FIT OF TRASH RACK.
 - GALVANIZE ENTIRE TRASH RACK AFTER FABRICATION.
 - PAINT BATTLESHIP GRAY.



By The Developer:

I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature Of Developer: *Timothy W. Feaga* 10/16/08
 Printed Name Of Developer: Timothy W. Feaga
 Date: 10/16/08

By The Engineer:

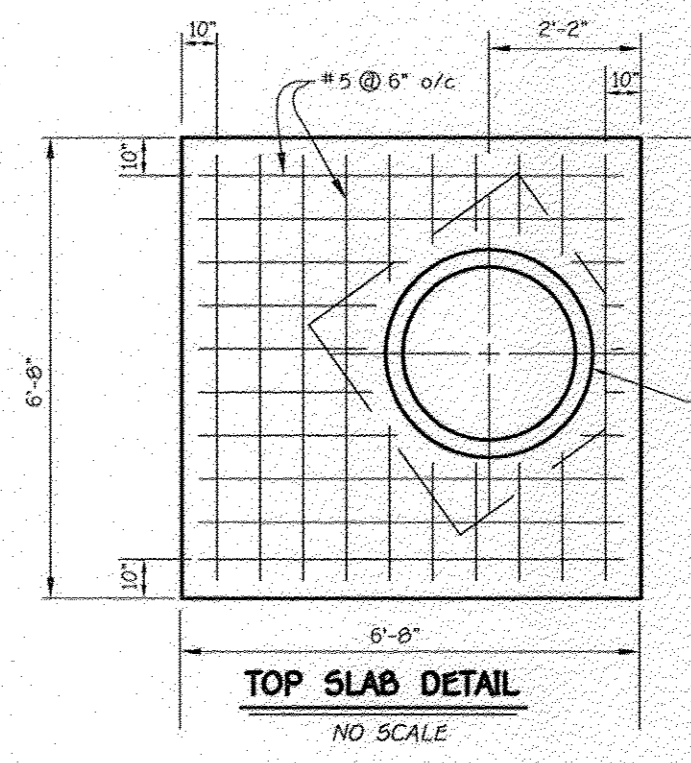
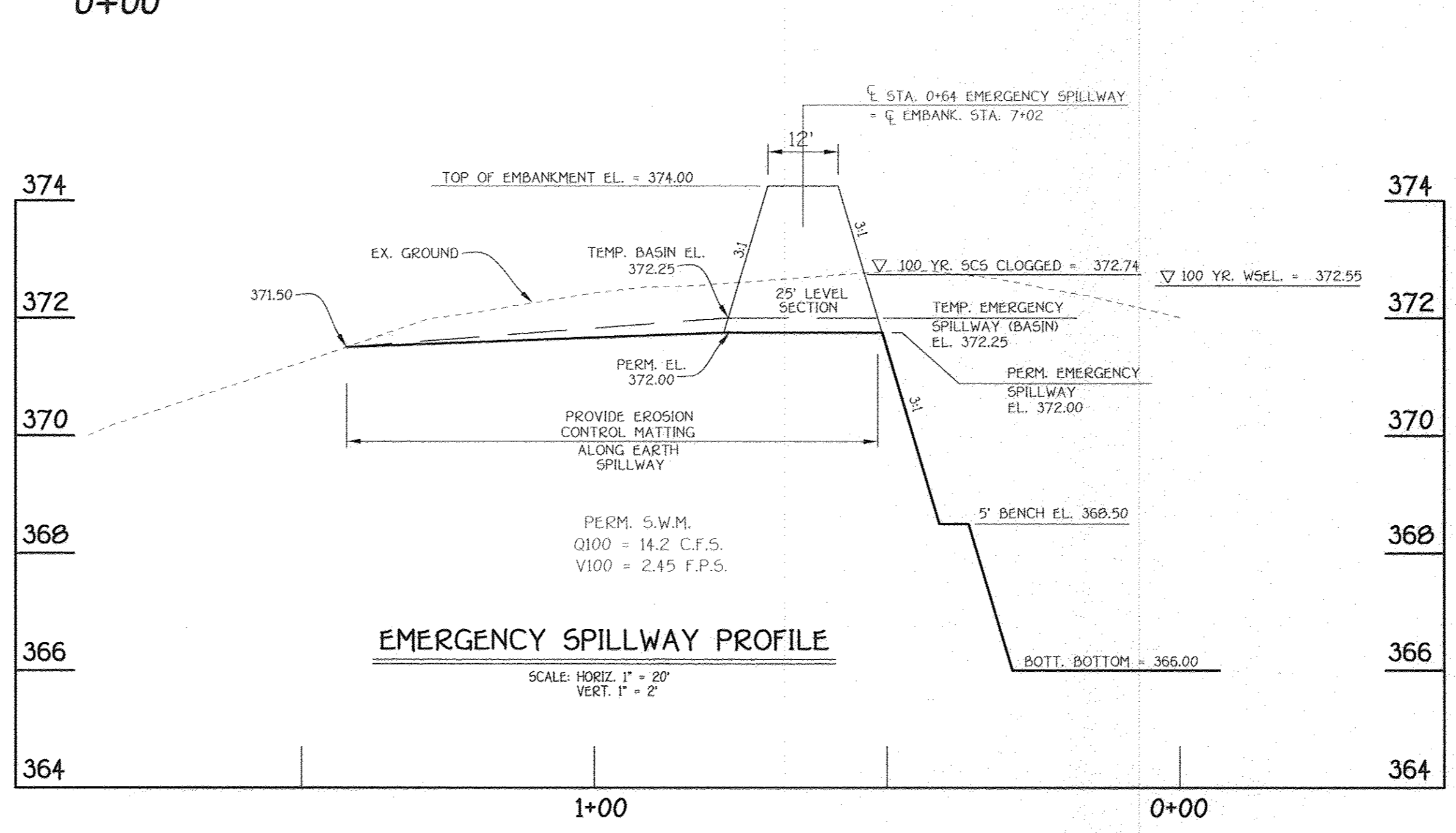
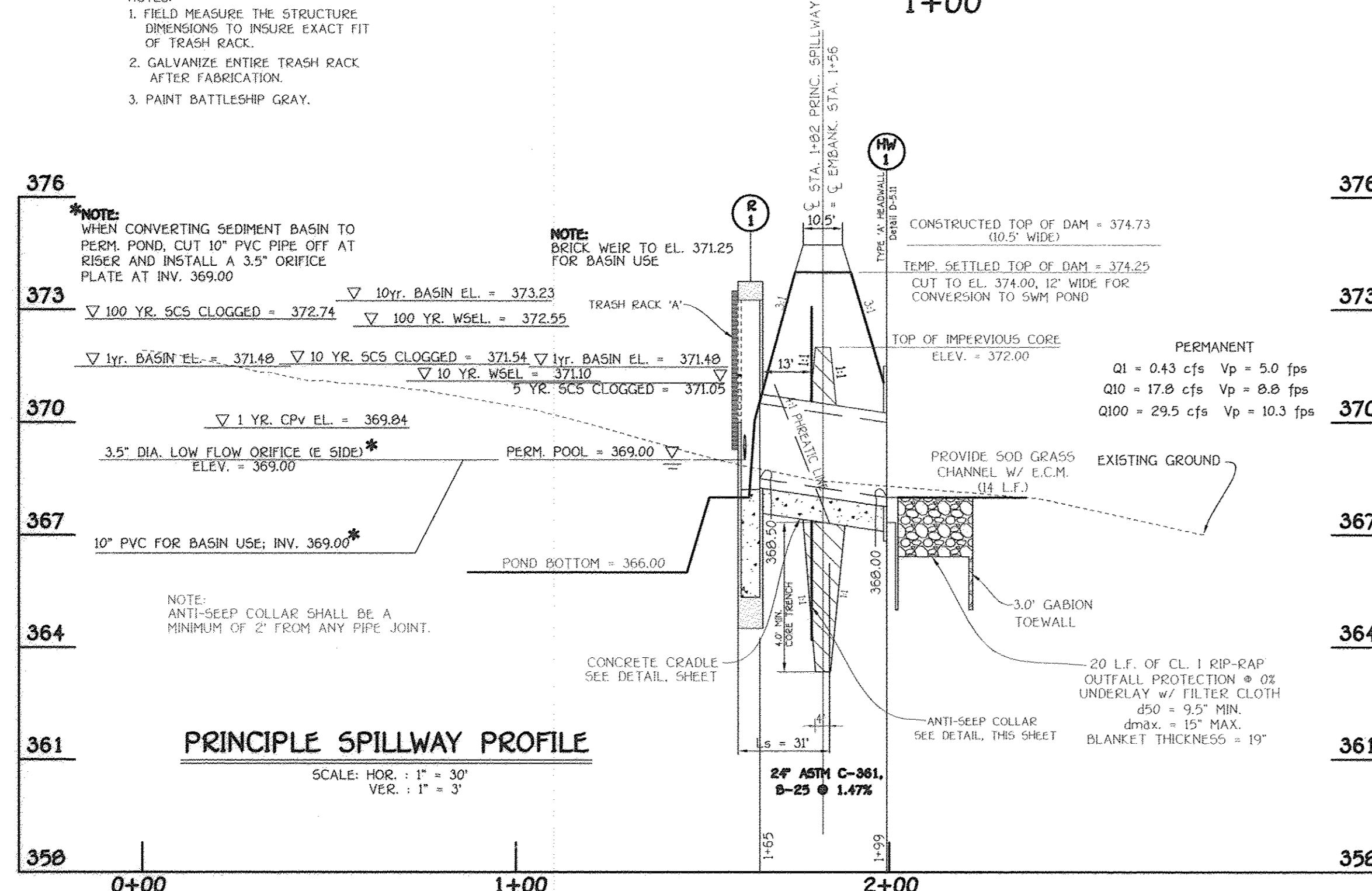
I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion.

Signature Of Engineer: *Alfred S. Bassler* 10/16/08
 Printed Name Of Engineer: Alfred S. Bassler
 Date: 10/16/08

Approved: Department Of Public Works
 Signature: *William Z. Marshall* 10/23/08
 Chief, Bureau Of Highways
 Date: 10-23-08

Approved: Department Of Planning And Zoning
 Signature: *Cindy Hanna* 10/23/08
 Chief, Division Of Land Development
 Date: 10/23/08

Chief, Development Engineering Division

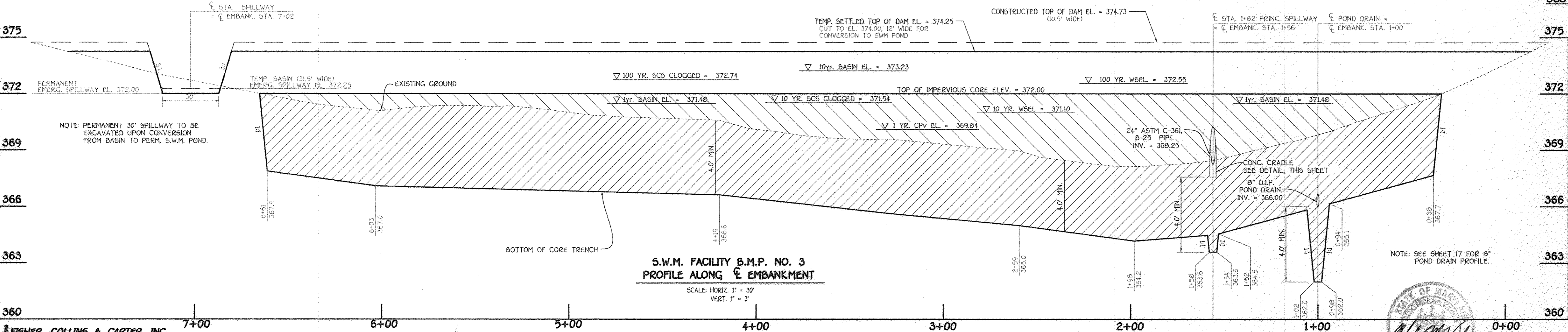
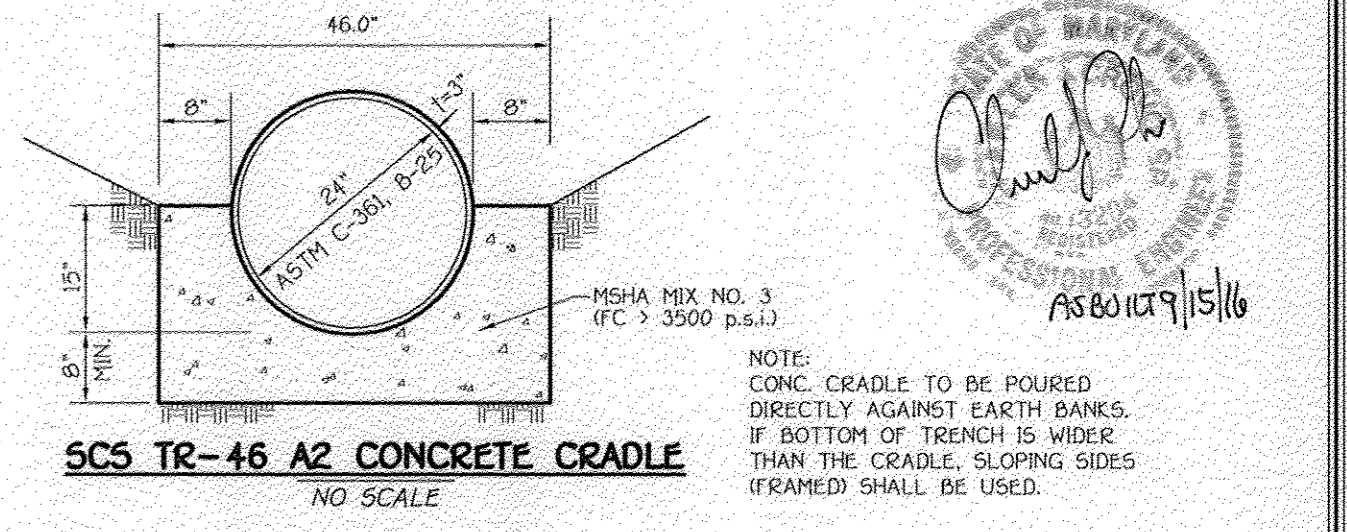


AS-BUILT CERTIFICATION

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

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

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



- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES
- ROUTINE MAINTENANCE
- Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
 - Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
 - Debris and litter shall be removed during regular mowing operations and as needed.
 - Visible signs of erosion in the pond as well as the rip-rap or gabion outlet area shall be repaired as soon as it is noticed.
- NON-ROUTINE MAINTENANCE
- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
 - Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay is half full of sediment, or when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

STORMWATER MANAGEMENT NOTES AND DETAILS

POND No. 3

WALNUT CREEK

PHASE TWO

Lots 23 - 60, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N' (Being A Re subdivision Of Buildable Bulk Parcels 'F' & 'E' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No. 20631 Thru 20647

ZONED: RC-DED & RR-DED

TAX MAP No. 26 GRID Nos. 4, 5, 10-12, 17, and 18 Parcel No. 49

FIFTH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

DATE: SEPTEMBER 2008

SHEET 24 OF 32

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21032
 410.461.2995

REVISED TITLE BLOCK		
NO.	DESCRIPTION	DATE

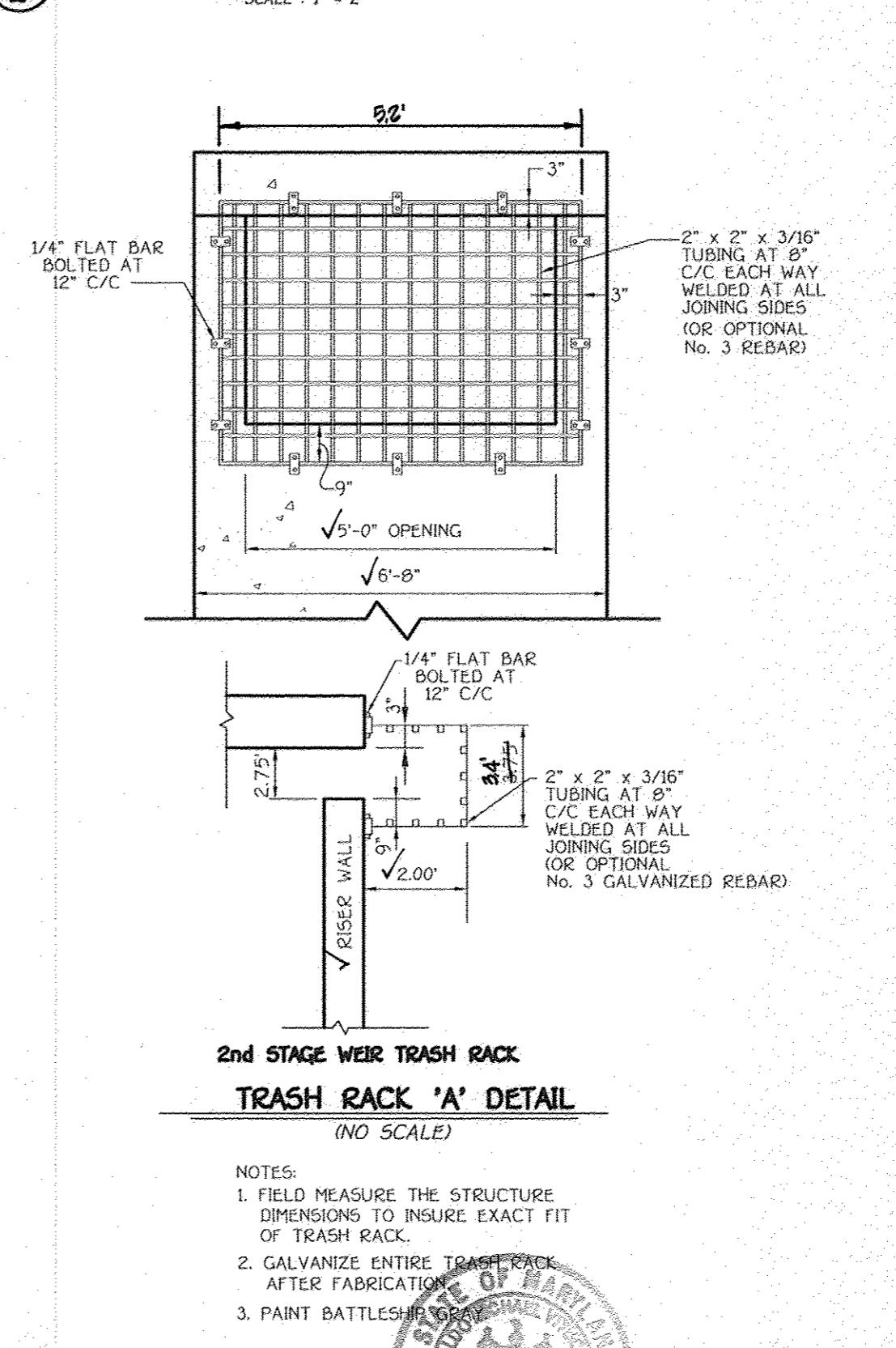
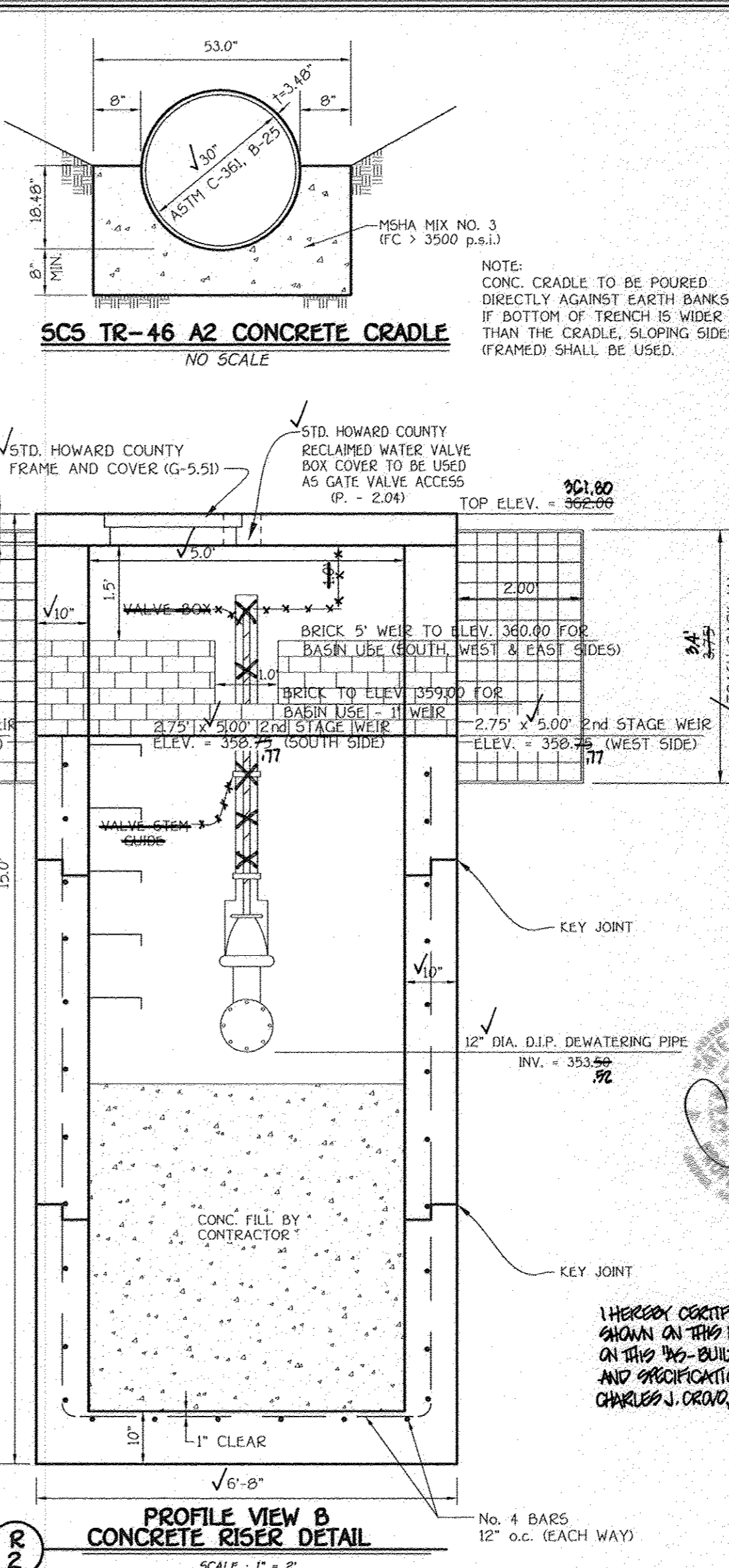
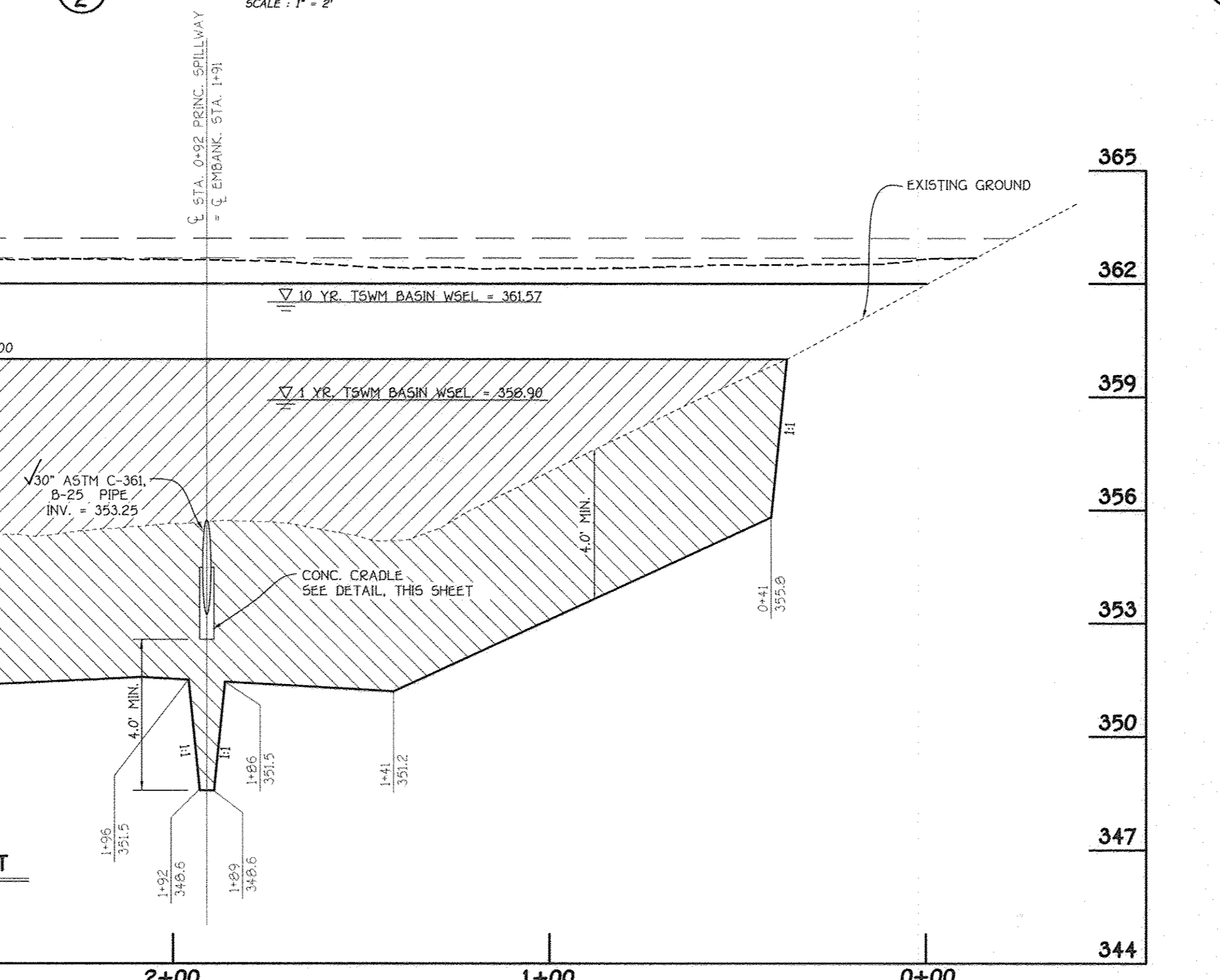
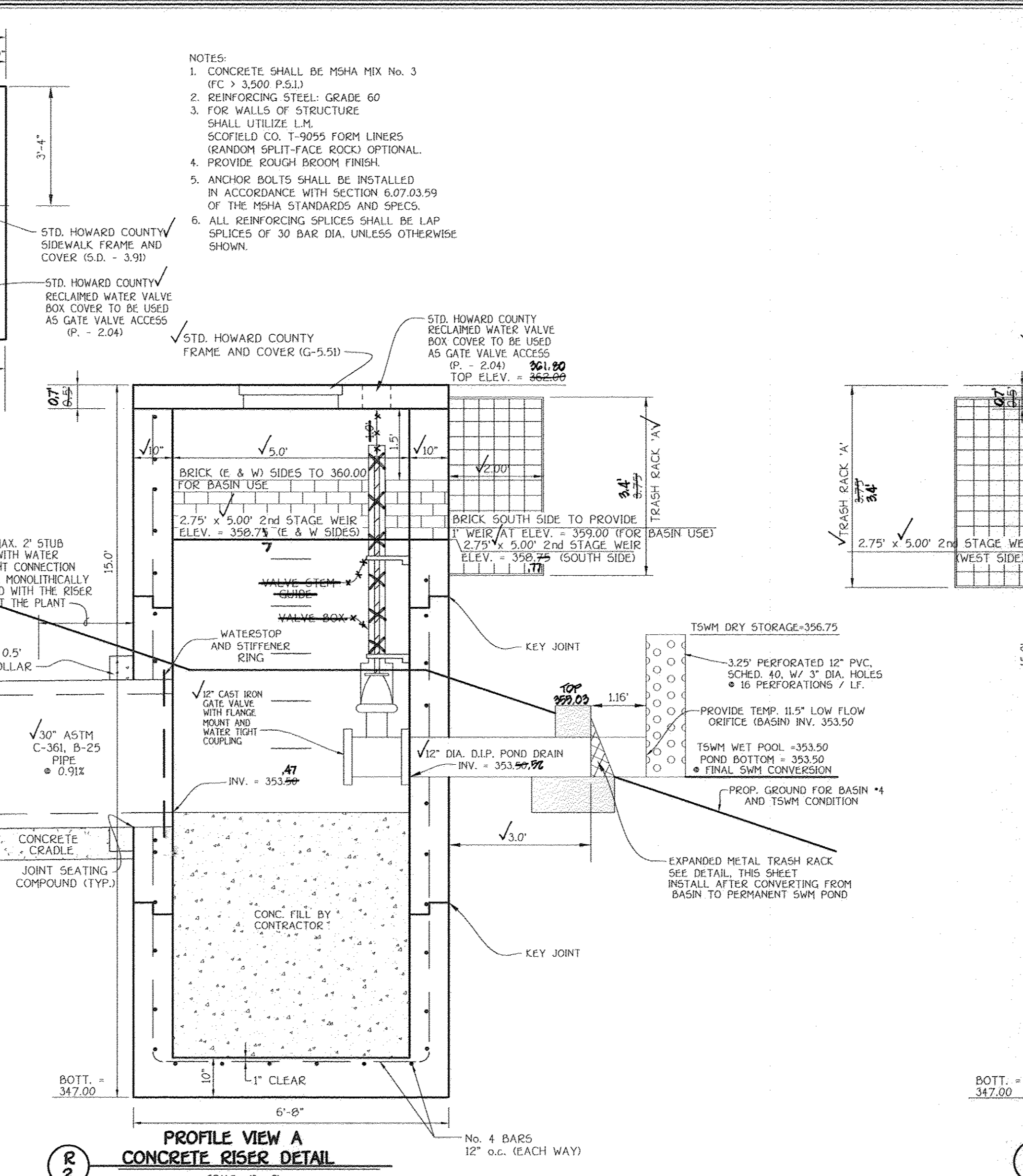
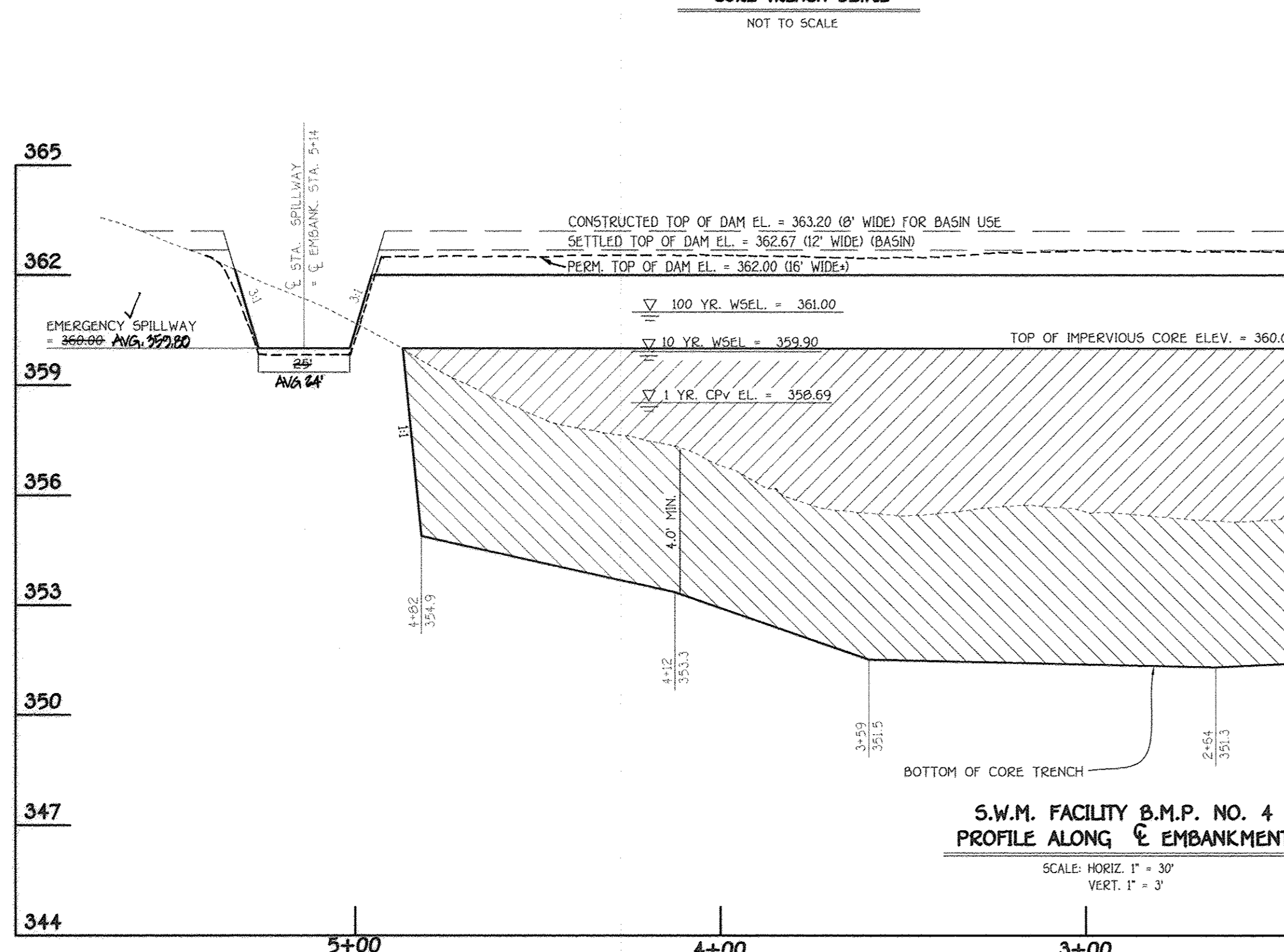
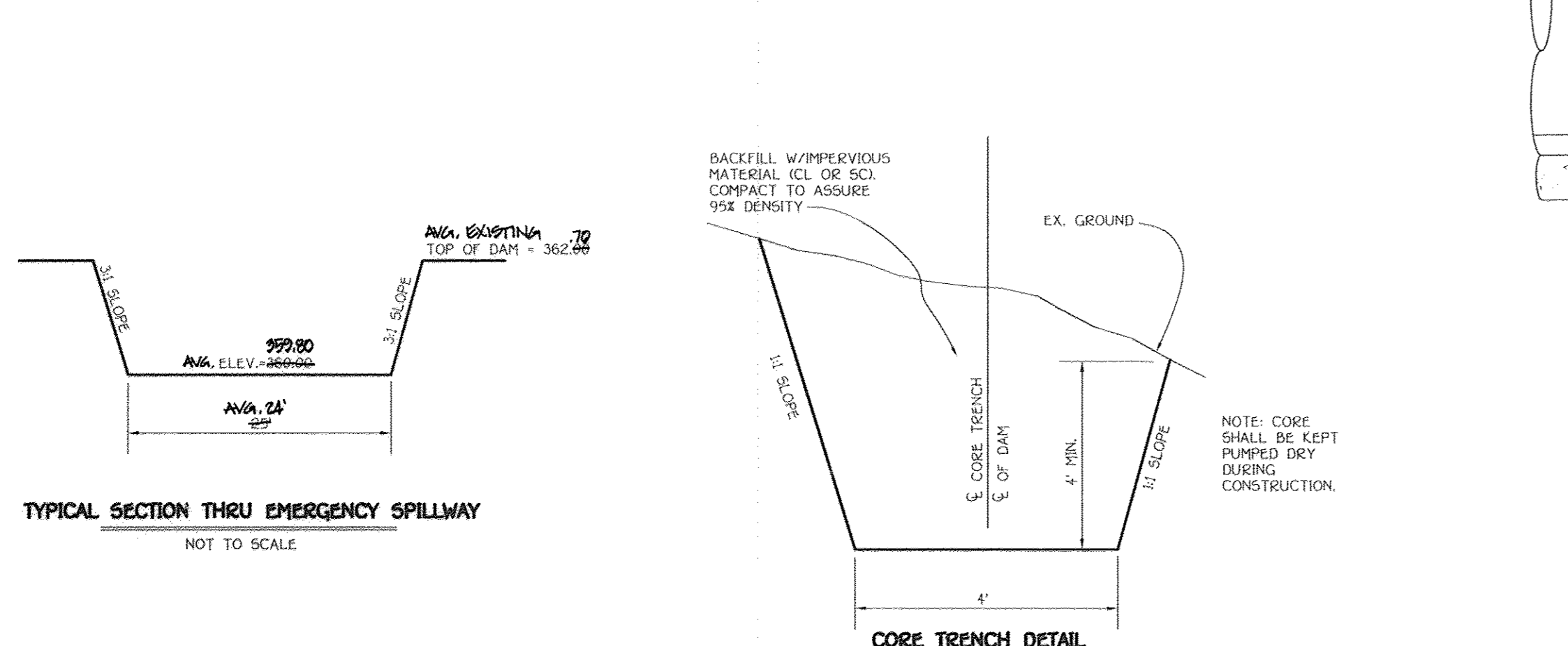
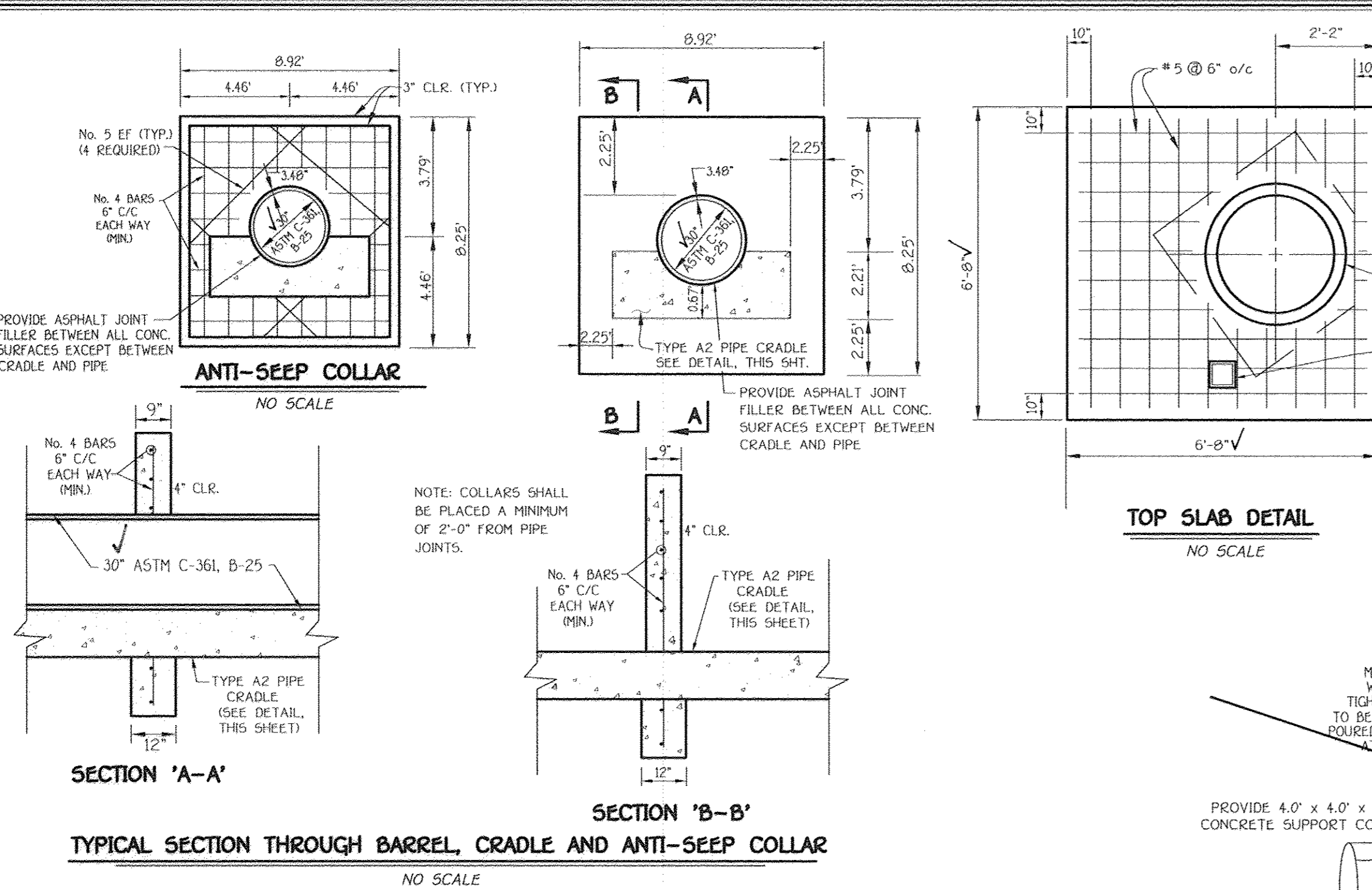
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 CHARLES J. ORNDORF, P.E. NO. 191204 NO-BUILT 07/10

OWNER: BASSLERS, INCORPORATED
 c/o ALFRED S. BASSLER
 6994 SHEPHERD LANE
 ELICOTT CITY, MARYLAND 21042

DEVELOPER: HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 LISBON, MARYLAND 21765

Professional Certification I hereby certify that these documents were inspected by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20749, Expiration Date 2-22-09.

Signature: *Alfred S. Bassler*
 Date: 10/16/08



By The Developer:
 Signature of Developer: *Timothy W. Feag* 10/16/08
 Printed Name of Developer: Timothy W. Feag
 By The Engineer:
 Signature of Engineer: *Alfredo S. Bassler* 10/16/08
 Printed Name of Engineer: Alfredo S. Bassler
 These Plans For Stormwater Construction Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.
 Approved Department of Public Works: *Michelle J. Wall* 10/23/08
 Chief, Bureau of Highways
 Approved Department of Planning And Zoning: *Cindy Hamer* 11/9/08
 Chief, Division of Land Development
 Chief, Development Engineering Division: *Charles J. Decker* 10/21/08

AS-BUILT CERTIFICATION
 I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.
 Signature: *Charles J. Decker* 10/15/16
 Date: 10/15/16
 Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 CHARLES J. DECKER, P.E. NO. 19204 AS-BUILT 10/15/16

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BAL THORP NATIONAL PKWY
 ELLICOTT CITY, MARYLAND 21042
 410-461-2925

OWNER: BASSLERS, INCORPORATED
 670 ALFRED S. BASSLER
 4994 SHEPHERD LANE
 ELLICOTT CITY, MARYLAND 21042

DEVELOPER: HERITAGE LAND DEVELOPMENT
 19590 NORTH AVE.
 LISBON, MARYLAND 21765

STORMWATER MANAGEMENT NOTES AND DETAILS
 POND No. 4
WALNUT CREEK
 PHASE TWO
 Lots 23 - 6B, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N' (Being A Resubdivision Of Buildable Bulk Parcels 'F' & 'E' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No. 20631 Thru 20647
 ZONED: RC-DED & RE-DED
 TAX MAP No. 2B GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 25 OF 32

AS-BUILT F-08-081

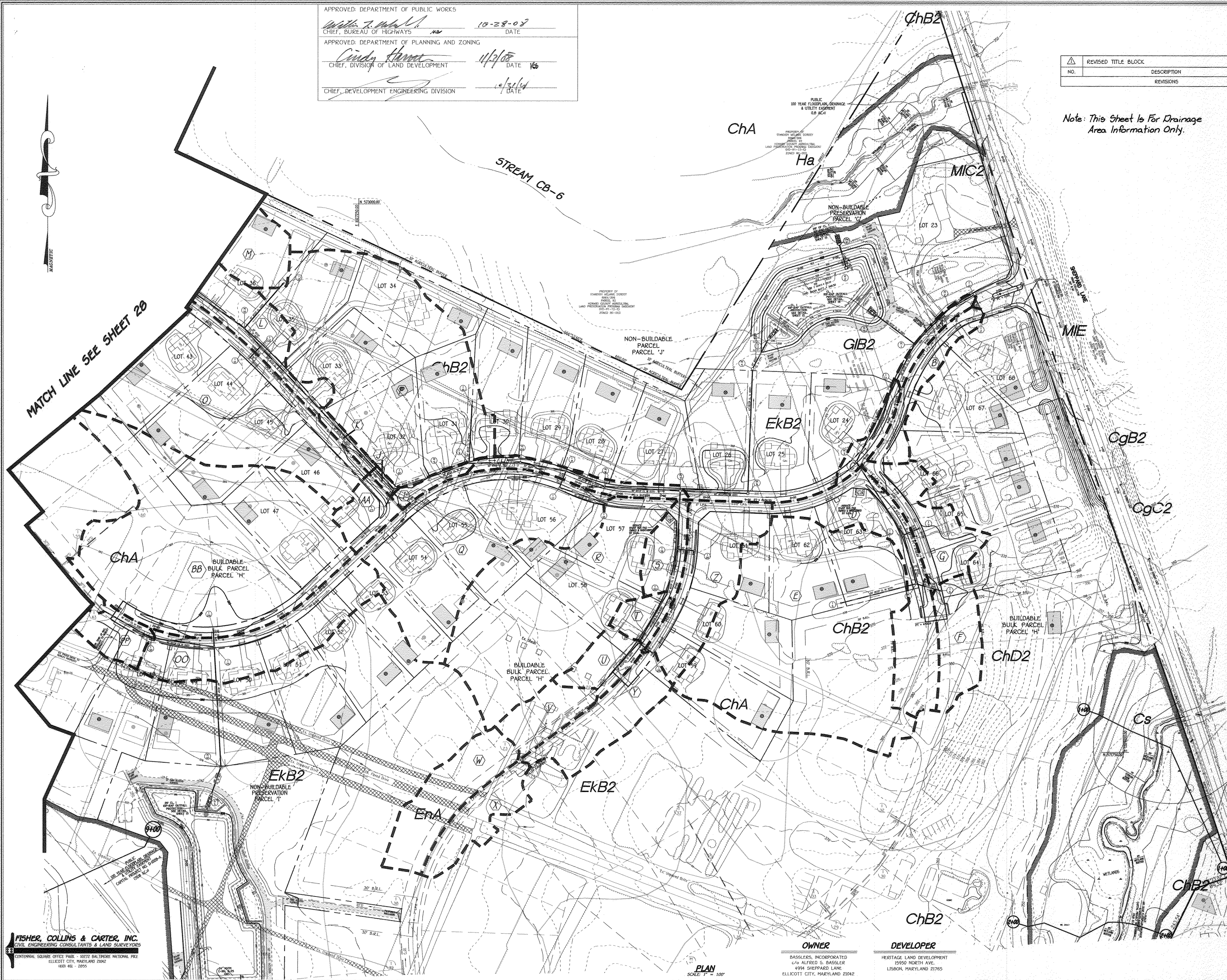
APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. McCall 10-28-08
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hunter 11/2/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 10/21/08 DATE

STORM DRAIN DRAINAGE REPORT					
STRUCTURE NO.	AREA	AREA (AC)	'C'	ZONED	X IMP.
I-1	A	0.23	0.53	RC-DEO	43
I-2	B	0.55	0.45	RC-DEO	31
I-3	C	0.21	0.52	RC-DEO	43
I-4	D	1.31	0.45	RC-DEO	31
I-5	E	4.55	0.30	RC-DEO	7
I-6	F	0.61	0.46	RC-DEO	33
I-7	G	0.74	0.48	RC-DEO	36
I-8	H	0.34	0.62	RC-DEO	60
I-9	I	0.13	0.64	RC-DEO	60
I-10	J	0.04	0.63	RC-DEO	60
I-11	K	0.11	0.48	RC-DEO	36
I-12	L	1.63	0.47	RC-DEO	34
I-13	M	1.09	0.30	RC-DEO	7
I-14	N	2.88	0.33	RC-DEO	12
I-15	O	4.47	0.35	RC-DEO	15
I-16	P	3.98	0.35	RC-DEO	15
I-17	Q	2.72	0.37	RC-DEO	18
I-18	R	3.03	0.31	RC-DEO	8
I-19	S	0.39	0.46	RC-DEO	33
I-20	T	0.25	0.48	RC-DEO	36
I-21	U	0.37	0.42	RC-DEO	27
I-22	V	0.45	0.49	RC-DEO	38
I-23	W	0.89	0.45	RC-DEO	31
I-24	X	0.54	0.45	RC-DEO	31
I-25	Y	0.80	0.47	RC-DEO	34
I-26	Z	1.20	0.44	RC-DEO	30
I-27	AA	0.34	0.48	RC-DEO	35
I-28	BB	4.62	0.35	RC-DEO	14
I-29	CC	1.34	0.47	RC-DEO	43
I-30	PP	0.38	0.48	RC-DEO	50
I-43	QQ	0.23	0.50	RC-DEO	39

Note: This sheet is for Drainage Area Information Only.



DRIVEWAY CULVERT SIZE ANALYSIS				
LOT NO.	PIPE SIZE	ROAD STA. & GRADE	ROAD NAME	REMARKS
23	12"	STA: 2+40 1.0%	ASHLEIGH DRIVE	
24	12"	STA: 5+94 1.0%	ASHLEIGH DRIVE	
25	12"	STA: 8+24 1.0%	ASHLEIGH DRIVE	
26	12"	STA: 9+54 1.0%	ASHLEIGH DRIVE	
27	12"	STA: 11+06 1.0%	ASHLEIGH DRIVE	
28	12"	STA: 12+80 1.0%	ASHLEIGH DRIVE	
29	12"	STA: 14+02 3.5%	ASHLEIGH DRIVE	
30	12"	STA: 15+00 3.5%	ASHLEIGH DRIVE	
31	12"	STA: 16+01 3.5%	ASHLEIGH DRIVE	
32	12"	STA: 17+07 1.0%	BENJAMINS COURT	
33	12"	STA: 3+29 4.0%	BENJAMINS COURT	
34	12"	STA: 4+25 4.0%	BENJAMINS COURT	
35	12"	STA: 4+73 4.0%	BENJAMINS COURT	
36	12"	STA: 6+25 3.0%	BENJAMINS COURT	
37	12"	L.P. 2+37 3.0%	BENJAMINS COURT	
38	12"	L.P. 1+84 3.0%	BENJAMINS COURT	
39	12"	L.P. 1+64 3.0%	BENJAMINS COURT	
40	NO PIPE	L.P. 1+49 HIGH PT.	BENJAMINS COURT	
41	12"	L.P. 1+23 3.0%	BENJAMINS COURT	
42	12"	L.P. 0+80 3.0%	BENJAMINS COURT	
43	12"	STA: 6+17 3.0%	BENJAMINS COURT	
44	12"	STA: 4+75 4.0%	BENJAMINS COURT	
45	12"	STA: 3+46 4.0%	BENJAMINS COURT	
46	12"	STA: 18+23 3.5%	ASHLEIGH DRIVE	
47	12"	STA: 19+47 2.0%	ASHLEIGH DRIVE	
48	12"	STA: 24+17 1.24%	ASHLEIGH DRIVE	
49	12"	STA: 23+03 1.24%	ASHLEIGH DRIVE	
50	12"	STA: 22+04 2.0%	ASHLEIGH DRIVE	
51	12"	STA: 21+11 2.0%	ASHLEIGH DRIVE	
52	12"	STA: 20+19 2.0%	ASHLEIGH DRIVE	
53	12"	STA: 19+22 2.0%	ASHLEIGH DRIVE	
54	12"	STA: 17+99 3.5%	ASHLEIGH DRIVE	
55	12"	STA: 16+76 3.5%	ASHLEIGH DRIVE	
56	12"	STA: 14+43 3.5%	ASHLEIGH DRIVE	
57	12"	STA: 1+62 1.0%	HAYLAND COURT	
58	12"	STA: 3+40 1.0%	HAYLAND COURT	
59	12"	STA: 3+27 1.0%	HAYLAND COURT	
60	12"	STA: 2+29 1.0%	HAYLAND COURT	
61	12"	STA: 9+08 1.0%	ASHLEIGH DRIVE	
62	12"	STA: 8+18 1.0%	ASHLEIGH DRIVE	
63	12"	STA: 7+26 1.0%	ASHLEIGH DRIVE	
64	12"	STA: 3+13 3.5%	HAYLAND FARM WAY	
65	12"	STA: 2+04 3.5%	HAYLAND FARM WAY	
66	12"	STA: 0+96 3.0%	HAYLAND FARM WAY	
67	12"	STA: 4+28 1.0%	ASHLEIGH DRIVE	
68	12"	STA: 2+24 4.0%	ASHLEIGH DRIVE	

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. CHECKED BY J. DROGO, P.E. ON 10/24/08. NO-BUILT 9/15/14

Professional Engineer's Seal and Signature: *William J. McCall*, 10/16/08, License No. 22748, Expiration Date 2-22-09.

STORM DRAIN DRAINAGE AREA MAP
WALNUT CREEK
 PHASE TWO

Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' and 'M' & Buildable Bulk Parcels 'H' and 'N' (Being a Resubdivision of Buildable Bulk Parcels 'I' & 'L' and a Revision to Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No. 20631 thru 20647)
 ZONED: RC-DEO & R2-DEO
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, and 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 27 OF 32

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE
 ELLICOTT CITY, MARYLAND 21042
 410-461-2950

OWNER: BASSELLS, INCORPORATED
 c/o ALFRED S. BASSELLER
 4994 SHEPHERD LANE
 ELLICOTT CITY, MARYLAND 21042

DEVELOPER: HERITAGE LAND DEVELOPMENT
 19550 NORTH AVE.
 LISBON, MARYLAND 21765

PLAN SCALE: 1" = 100'

APPROVED: DEPARTMENT OF PUBLIC WORKS
W. R. ... 10-28-08
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy ... 11/2/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 10/31/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

SOIL	NAME	CLASS
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
ChA	Chester silt loam, 0 to 3 percent slopes	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
ChD2	Chester silt loam, 15 to 25 percent slopes, moderately eroded	B
Cs	Cornus silt loam	B
EKA	Elioak silt loam, 0 to 3 percent slopes	B
EKB2	Elioak silt loam, 3 to 8 percent slopes, moderately eroded	B
EID3	Elioak silty clay loam, 15 to 25 percent slopes, severely eroded	B
GIB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GID3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B
GnA	Glenville silt loam, 0 to 3 percent slopes	C
GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
Ha	Hatboro silt loam	D
MgB2	Manor gravelly loam, 3 to 8 percent slopes, moderately eroded	B
MgC2	Manor gravelly loam, 8 to 15 percent slopes, moderately eroded	B
MIB2	Manor 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
MnD	Manor very stony loam, 3 to 25 percent slopes	B
MnF	Manor very stony loam, 25 to 60 percent slopes	B

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



Note: This Sheet is For Drainage Area Information Only.

NOTE: SEE SHEET 27 FOR DRAINAGE AREA SUMMARY CHART.
 NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. CHARLES J. ORR, SR. PE NO. 19224 AS-BUILT 07/10/10

NO.	REVISED TITLE BLOCK	9/25/12
	DESCRIPTION	DATE
	REVISIONS	

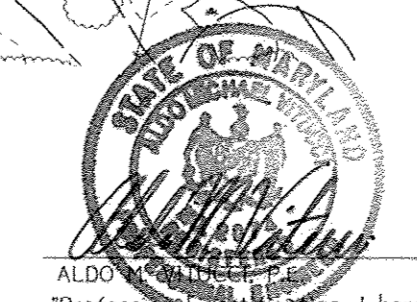
STORM DRAIN DRAINAGE AREA MAP
WALNUT CREEK
 PHASE TWO

Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N' (Being A Resubdivision Of Buildable Bulk Parcels 'F' & 'E' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No's. 20631 Thru 20647)
 ZONED: R2-DBO & R2-DBO
 TAX MAP No. 20 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER 2008
 SHEET 28 OF 32

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 4102 461 - 2955

OWNER
 BASSELS, INCORPORATED
 c/o ALFRED S. BASSELER
 4994 SHEPPARD LANE
 ELLICOTT CITY, MARYLAND 21042

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 LISBON, MARYLAND 21765

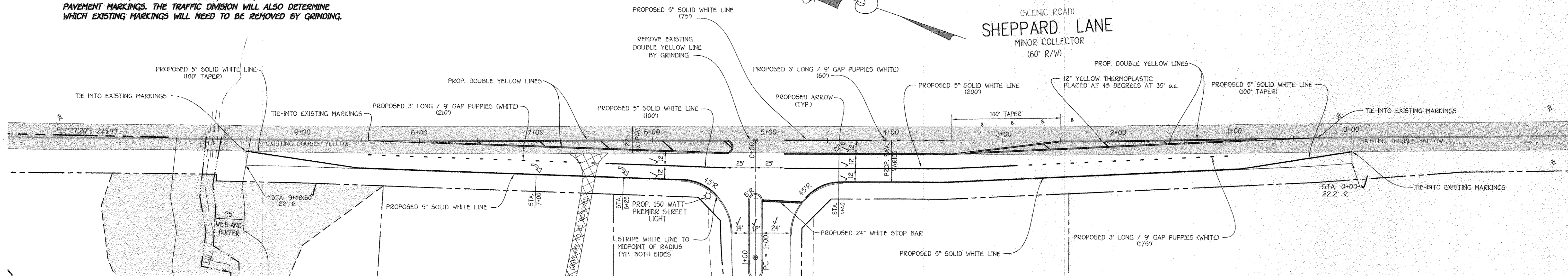


DATE: 10-16-08
 AS-BUILT: 9/11/10

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET F-08-081

- NOTES:**
1. ALL LANE DESIGNATION TO BE THERMOPLASTIC LINE STRIPING.
 2. EXISTING PAVEMENT MARKINGS SHALL BE REMOVED BY GRINDING.
 3. ALL PAVEMENT MARKINGS SHALL BE 5" WIDE UNLESS NOTED OTHERWISE.
 4. ALL RELOCATED SIGNS ARE TO BE INSTALLED ON NEW 2" GALVANIZED STEEL PERFORATED SQUARE TUBE POSTS (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVES (12 GAUGE) 3' LONG WITH A GALVANIZED STEEL CAP ON THE TOP OF POST.
 5. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT (410) 313-5752 PRIOR TO LAYING-OUT AND INSTALLING ANY SIGNS AND OR PAVEMENT MARKINGS. THE TRAFFIC DIVISION WILL ALSO DETERMINE WHICH EXISTING MARKINGS WILL NEED TO BE REMOVED BY GRINDING.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 10-28-07
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 11/3/08
 CHIEF, DIVISION OF LAND DEVELOPMENT
 APPROVED: DEPARTMENT OF ENGINEERING
 10/31/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

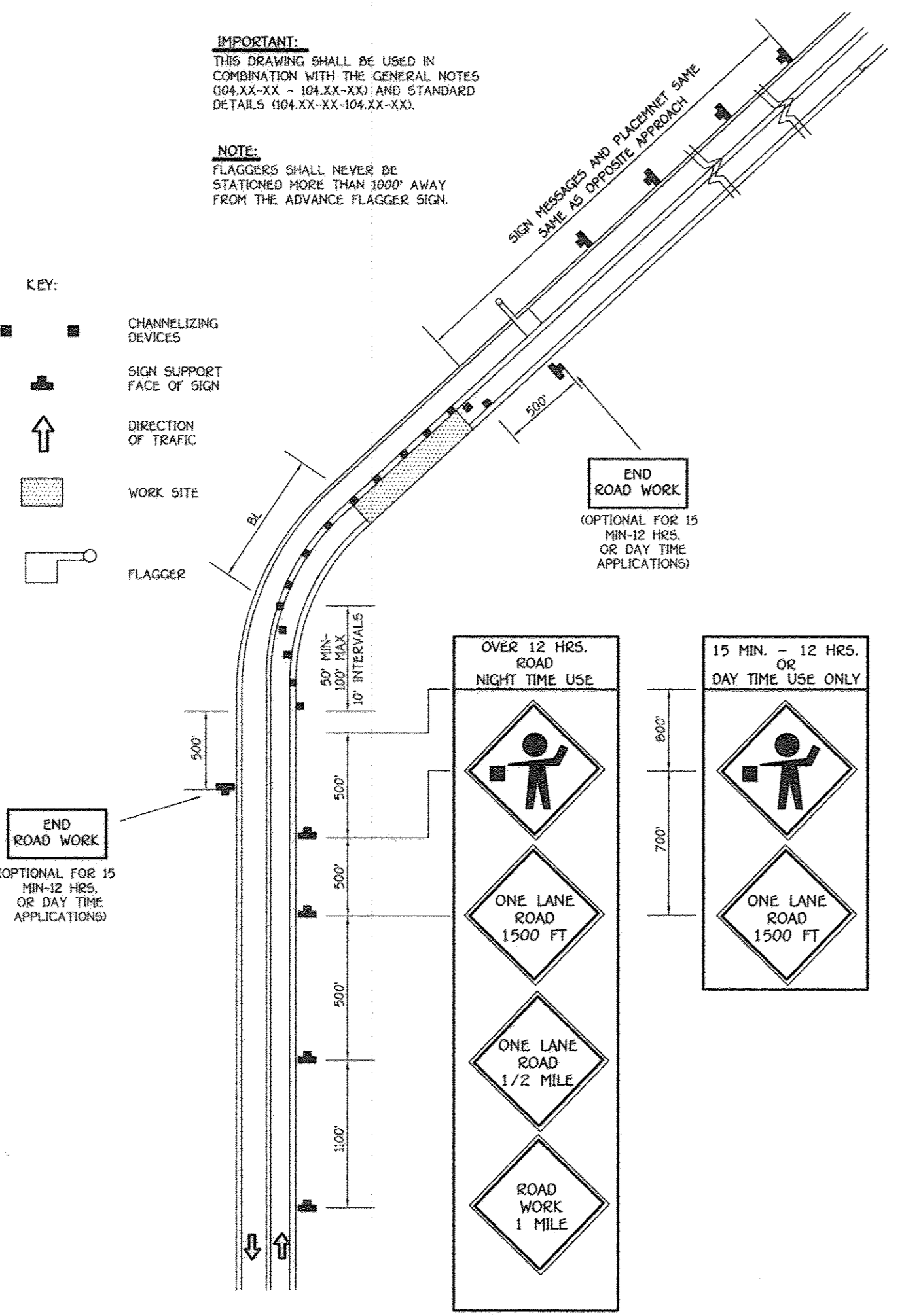


STRIPING PLAN
 SCALE: 1" = 40'

IMPORTANT:
 THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES 004.XX-XX - 104.XX-XX AND STANDARD DETAILS 004.XX-XX-104.XX-XX.

NOTE:
 FLAGGERS SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

- KEY:**
- CHANNELIZING DEVICES
 - SIGN SUPPORT FACE OF SIGN
 - DIRECTION OF TRAFFIC
 - WORK SITE
 - FLAGGER



FLAGGING OPERATION 1-LANE, 2-WAY EQUAL/LESS THAN 40 MPH
 NO SCALE

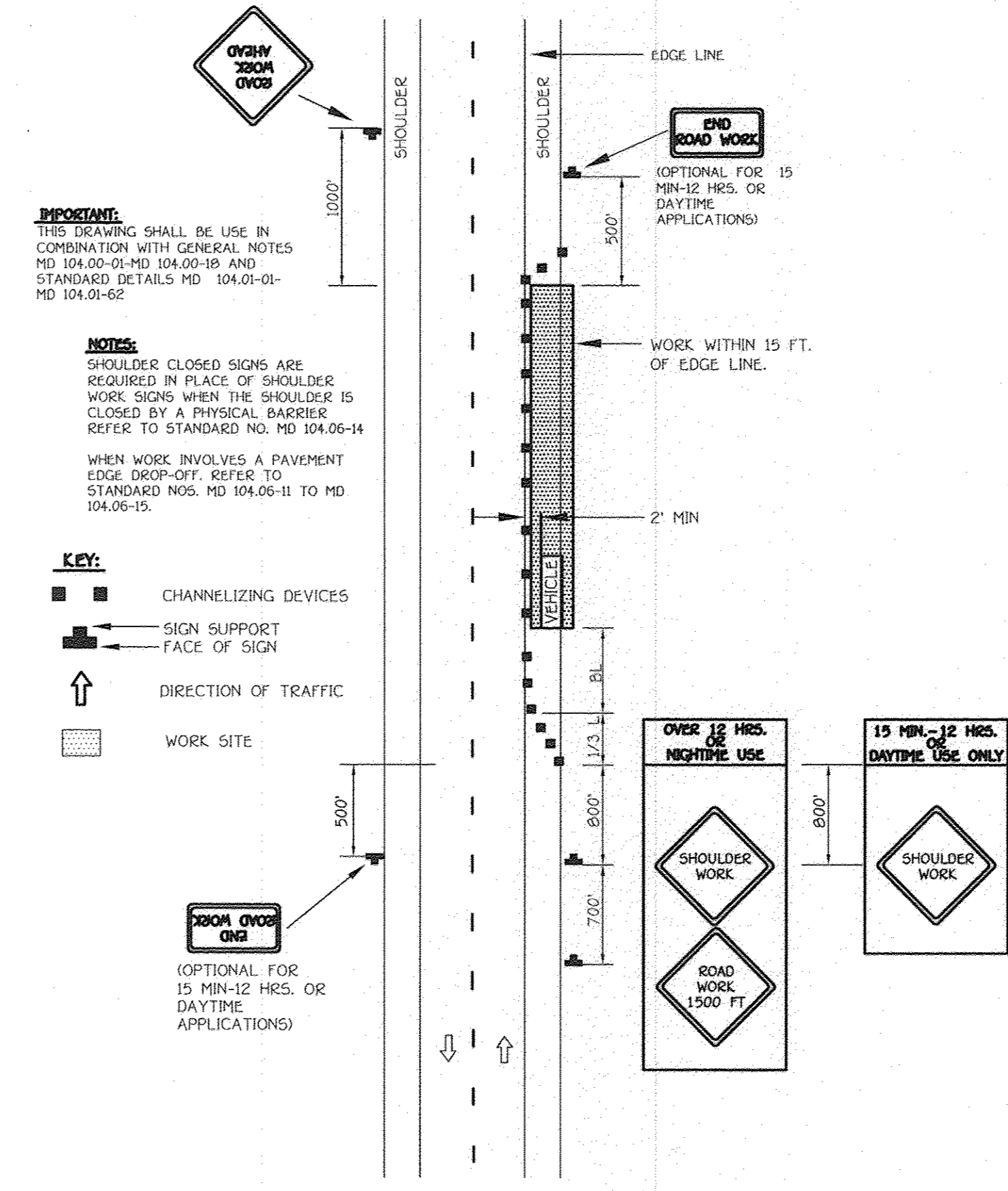
MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS GENERAL

1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.
2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPER APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.
3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1998 EDITION, ESPECIALLY PART VI AND TO SECTION 814 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1992), INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.
5. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FORTH IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THIRTEEN WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE.
7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS NOT PERMITTED.
8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND HORSEBACK RIDERS.
9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TCP, THE MUTCD, AND/OR SECTION 814 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 80% OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.
10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE.
11. THROUGHOUT THE PERIODS OF WORK ACTIVITIES TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP. IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OF PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART, OF HIS OWN DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCPs MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCPs JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC.
12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
13. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT UNLESS OTHERWISE NOTED. NO TRAVEL LANES OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FROM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.

IMPORTANT:
 THIS DRAWING SHALL BE USED IN COMBINATION WITH GENERAL NOTES MD 104.00-01-MD 104.00-18 AND STANDARD DETAILS MD 104.01-01-MD 104.01-02.

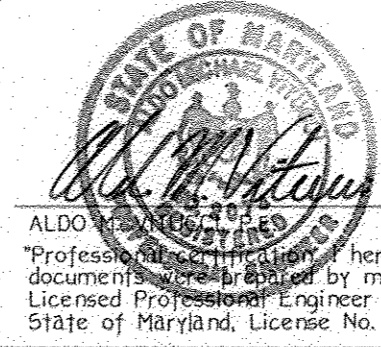
NOTES:
 SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14 WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

- KEY:**
- CHANNELIZING DEVICES
 - SIGN SUPPORT FACE OF SIGN
 - DIRECTION OF TRAFFIC
 - WORK SITE



SHOULDER WORK / 2-LANE, 2-WAY EQUAL/LESS THAN 40 MPH
 NO SCALE

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 CHARLES J. CROOK, SR. PE NO. 18204 AS-BUILT 9/19/10



DATE: 10/16/08



AS BUILT 9/15/10

NO.	REVISIONS	DATE
1	AS-BUILT	9/19/10
2	REVISED TITLE BLOCK	9/25/10

TRAFFIC CONTROL PLANS & STRIPING PLAN
WALNUT CREEK
 PHASE TWO
 Lots 23 - 6B, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'
 (Being A Resubdivision Of Buildable Bulk Parcels 'F' & 'E' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plot No's. 20631 Thru 20647
 ZONED: RC-DBO & RB-DBO
 TAX MAP NO. 2B GRID NOS. 4, 5, 10-12, 17, AND 18 PARCEL NO. 49
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 30 OF 32

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PARK
 ELLICOTT CITY, MARYLAND 21042
 410.411.2000

OWNER
 BASSLER, INCORPORATED
 c/o ALFRED S. BASSLER
 499 SHEPPARD LANE
 ELLICOTT CITY, MARYLAND 21042

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 15950 NORTH AVE.
 LISBON, MARYLAND 21765

APPROVED: DEPARTMENT OF PUBLIC WORKS
William R. ... 10-28-08
 CHIEF, BUREAU OF HIGHWAYS DATE

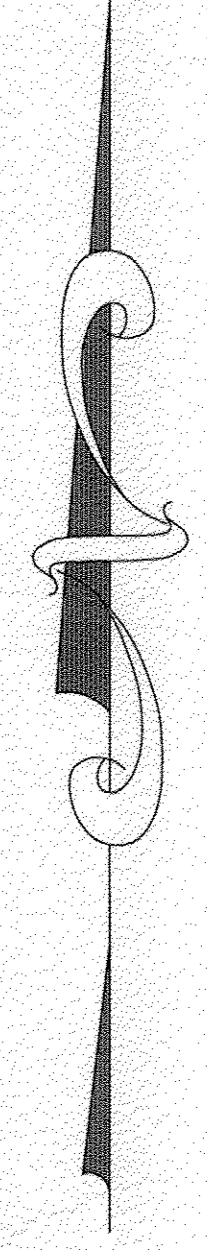
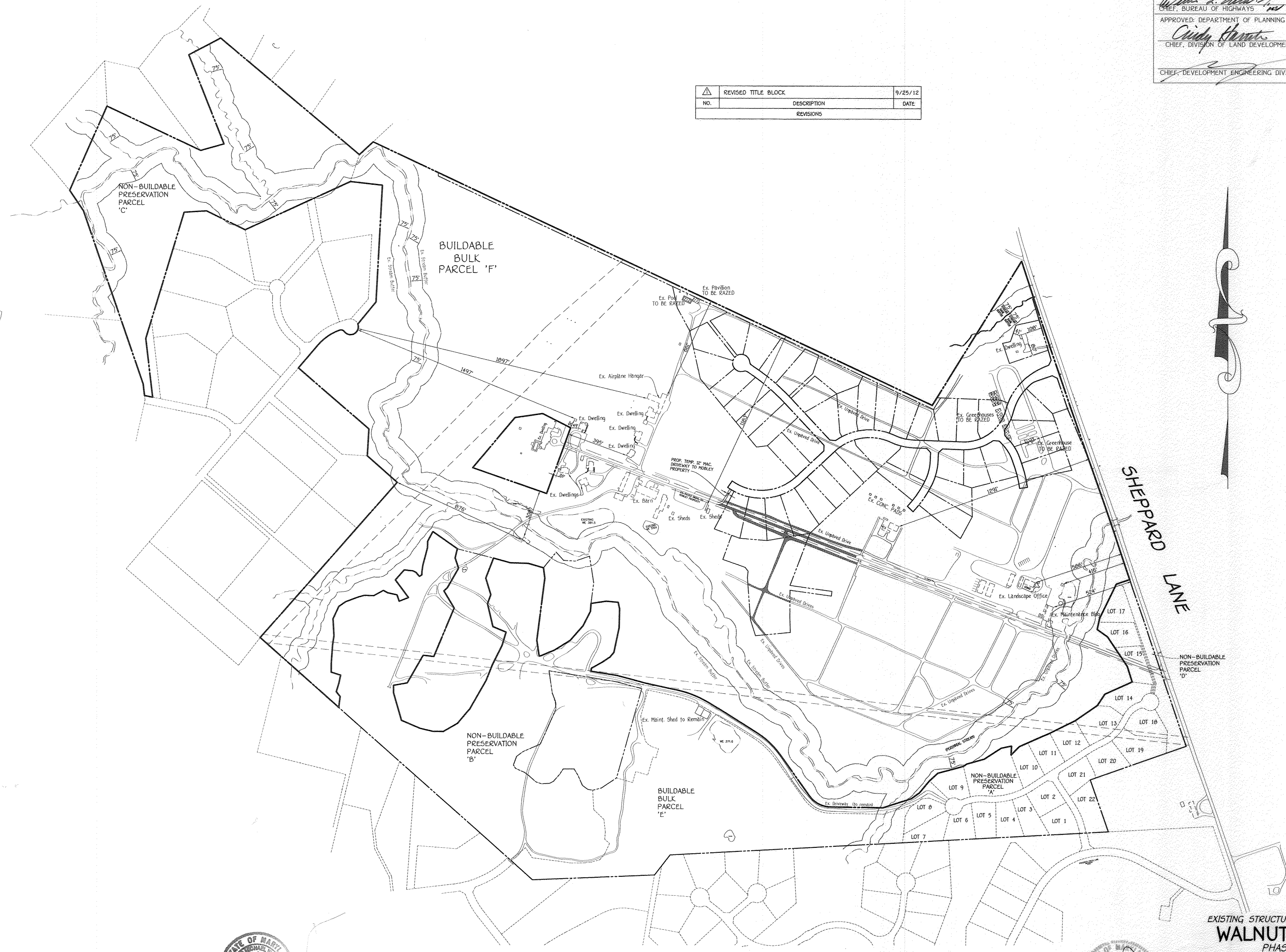
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy ... 11/3/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 10/31/08
 DATE

N 574500
 E 402562.923
 175107.9502
 (Meters)

N 574500
 E 402562.923
 175107.9502
 (Meters)

NO.	REVISED TITLE BLOCK	DATE
	DESCRIPTION	
	REVISIONS	



N 570500
 E 402562.923
 173808.7477
 (Meters)

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2000



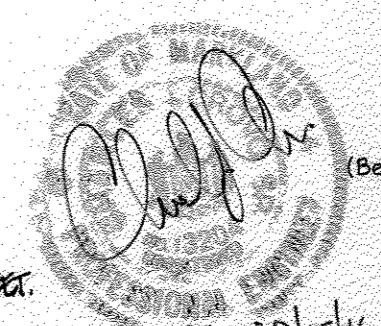
ALFRED S. BASSLER
 10-16-08
 DATE
 I, the undersigned, hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 22748, Expiration Date 2-22-09.

OWNER
 BASSLER, INCORPORATED
 c/o ALFRED S. BASSLER
 4999 SHEPARD LANE
 ELLICOTT CITY, MARYLAND 21042

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 LISSON, MARYLAND 21765

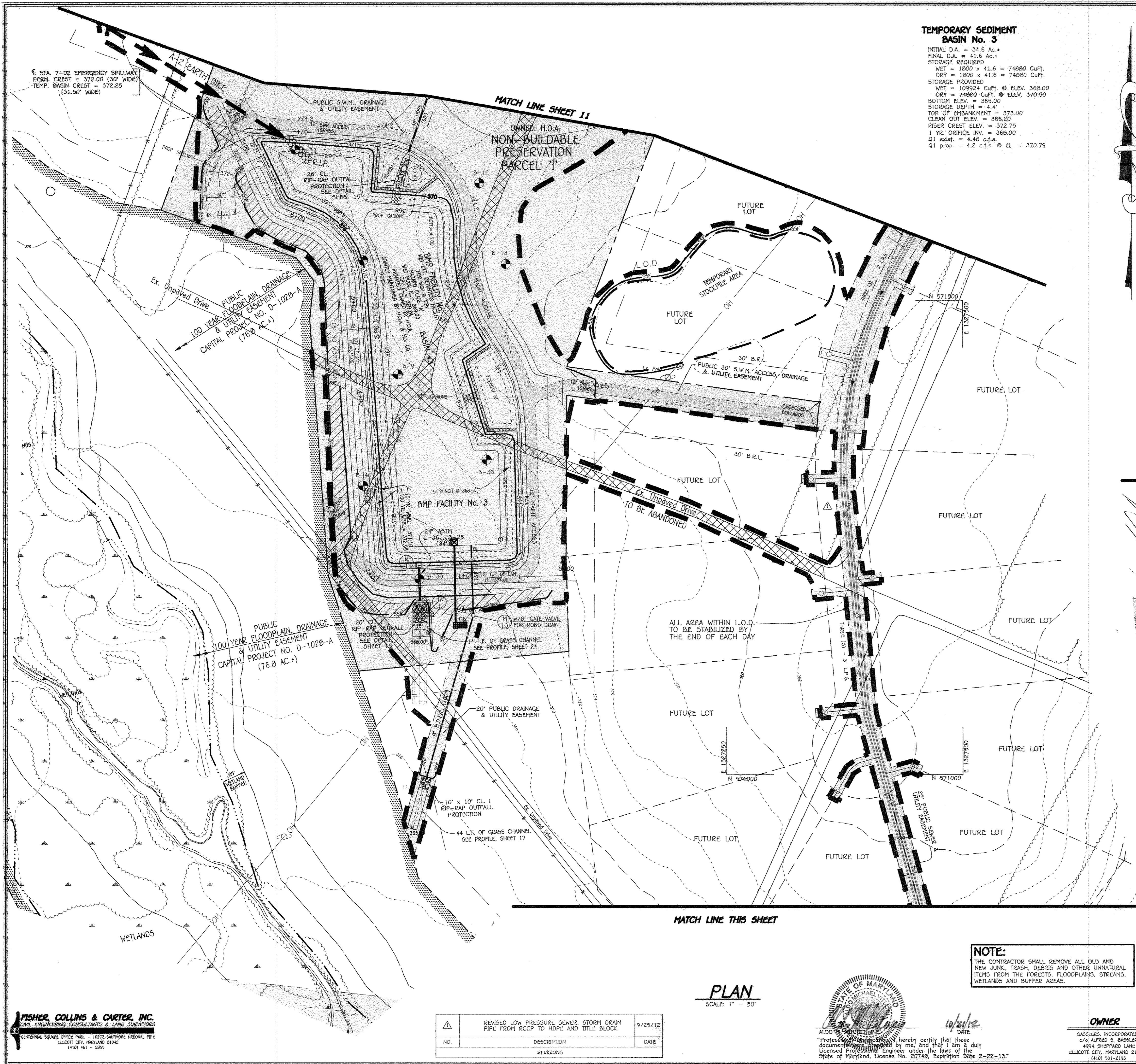
PLAN
 SCALE: 1" = 300'

NOTE:
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 CHARLES J. CRONK, P.E. NO. 15024 11-21-10



**EXISTING STRUCTURE LOCATION PLAN
 WALNUT CREEK
 PHASE TWO**
 Lots 23 - 6B, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'
 Being A Resubdivision Of Buildable Bulk Parcels 'F' & 'E' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No's. 20631 Thru 20647
 ZONED: RC-DEO & RR-DEO
 TAX MAP No. 2B GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2008
 SHEET 31 OF 32

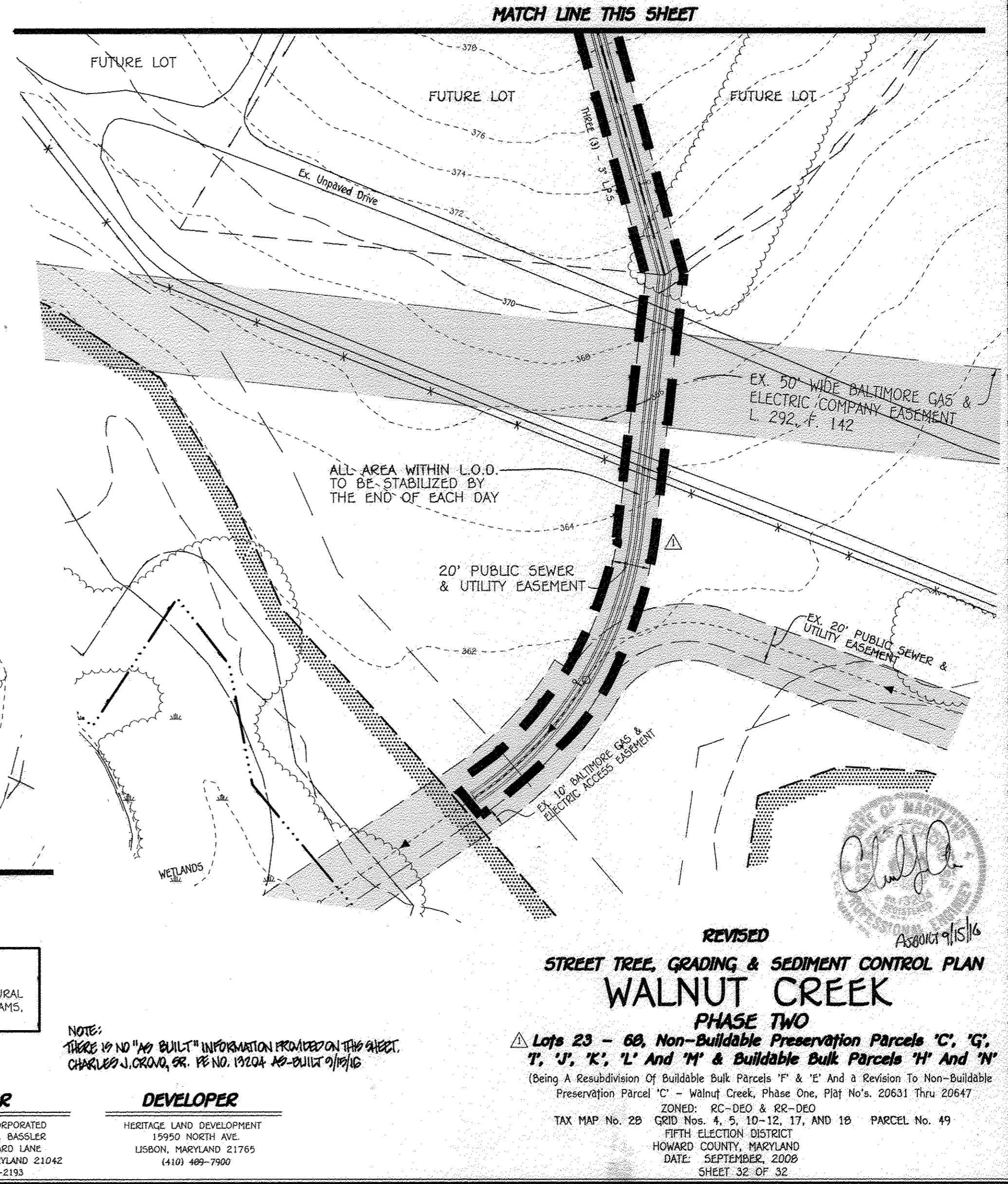
THERE IS NO AS-BUILT INFORMATION ON THIS SHEET F-08-081



TEMPORARY SEDIMENT BASIN No. 3
 INITIAL D.A. = 34.6 AC.
 FINAL D.A. = 41.6 AC.
 STORAGE REQUIRED
 WET = 1800 x 41.6 = 74880 Cuft.
 DRY = 1800 x 41.6 = 74880 Cuft.
 STORAGE PROVIDED
 WET = 10924 Cuft. @ ELEV. 368.00
 DRY = 74880 Cuft. @ ELEV. 370.50
 BOTTOM ELEV. = 365.00
 STORAGE DEPTH = 4.4'
 TOP OF IMBRICATION = 373.00
 CLEAN OUT ELEV. = 366.20
 RISER CREST ELEV. = 372.75
 1 YR. CRITICAL INV. = 368.00
 Q1 exist. = 4.46 c.f.s. @ EL. = 370.79
 Q1 prop. = 4.2 c.f.s. @ EL. = 370.79

- LEGEND**
- SSF—SSF—SSF— SUPER-SILT FENCE
 - SF—SF—SF— SILT FENCE
 - TF—TF—TF— TREE PROTECTION FENCE
 - S.C.E.— STABILIZED CONSTRUCTION ENTRANCE
 - E.D.— EARTH DIKE
 - L.O.D.— DENOTES L.O.D. LIMITS OF DISTURBANCE
 - E.C.M.— DENOTES EROSION CONTROL MATTING
 - 25%+— DENOTES 25% OR GREATER SLOPES
 - 15-24.99%— DENOTES 15% - 24.99% SLOPES
 - L.P.S.— DENOTES LOW PRESSURE SEWER BY OTHERS W/ GRINDER PUMPS
 - G.I.P.— GABION INFLOW PROTECTION
 - OH— DENOTES OVERHEAD ELECTRIC
 - UG— DENOTES UNDERGROUND ELECTRIC

By The Developer:
 I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, 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 Shall Engage A Registered Professional Engineer To Supervise Final Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.
 Signature of Developer: *Timothy W. Feagin* Date: *11/26/12*
 Printed Name of Developer: *Timothy W. Feagin*
 By The Engineer:
 I/We Certify That The Construction, Erosion And Sediment Control Represents A Professional Engineering Design Based On My Personal Knowledge Of The Site Conditions. This Plan Also Represents My Best Estimate Of The Requirements Of The Howard Soil Conservation District. I/We Certify That The Development Shown On This Plan Must Engage A Registered Professional Engineer To Supervise Final Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion.
 Signature of Engineer: *John R. Roberts* Date: *11/26/12*
 Printed Name of Engineer: *John R. Roberts*
 These Plans For Final Construction, Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.
 Signature of Public Works: *Diana Schwab, Acting* Date: *11/29/12*
 Printed Name of Public Works: *Diana Schwab, Acting*
 Signature of Planning and Zoning: *Walter D. Jones* Date: *11/29/12*
 Printed Name of Planning and Zoning: *Walter D. Jones*
 AS-BUILT CERTIFICATION
 I/We Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.
 Signature: _____ P.E. No.: _____
 Date: _____
 Certifies Means To State Or Declare A Professional Opinion Based Upon On-Site Inspections And Material Tests Which Are Conducted During Construction. The On-Site Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Practices. Certify Does Not Mean Or Imply A Guarantee Of The Engineer Nor Does An Engineer's Certification Release Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.



NOTE:
 THE CONTRACTOR SHALL REMOVE ALL OLD AND NEW JUNK, TRASH, DEBRIS AND OTHER UNNATURAL ITEMS FROM THE FORESTS, FLOODPLAINS, STREAMS, WETLANDS AND BUFFER AREAS.

PLAN
 SCALE: 1" = 50'

NO.	DESCRIPTION	DATE
1	REVISED LOW PRESSURE SEWER, STORM DRAIN PIPE FROM RCCP TO HDPE AND TITLE BLOCK	9/25/12

ALSO BY THE ENGINEER:
 I/We Certify That These Documents Were Prepared By Me, and That I Am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20718, Expiration Date 2-22-13.

OWNER
 BASSELS, INCORPORATED
 c/o ALFRED S. BASSLER
 4994 SHEPPARD LANE
 ELIJAH CITY, MARYLAND 21042
 (410) 531-2153

DEVELOPER
 HERITAGE LAND DEVELOPMENT
 19950 NORTH AVE.
 USBON, MARYLAND 21765
 (410) 489-7900

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELIJAH CITY, MARYLAND 21042
 (410) 461-2255

REVISED
STREET TREE, GRADING & SEDIMENT CONTROL PLAN
WALNUT CREEK
PHASE TWO
 Lots 23 - 68, Non-Buildable Preservation Parcels 'C', 'G', 'I', 'J', 'K', 'L' And 'M' & Buildable Bulk Parcels 'H' And 'N'
 (Being A Resubdivision Of Buildable Bulk Parcels 'F' & 'E' And A Revision To Non-Buildable Preservation Parcel 'C' - Walnut Creek, Phase One, Plat No. 20631 Thru 20647
 ZONED: RC-DEO & RR-DEO
 ORD Nos. 4, 5, 10-12, 17, AND 18
 TAX MAP No. 29
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER, 2009
 SHEET 32 OF 32

THERE IS NO "AS-BUILT" INFORMATION ON THIS SHEET F-08-081