

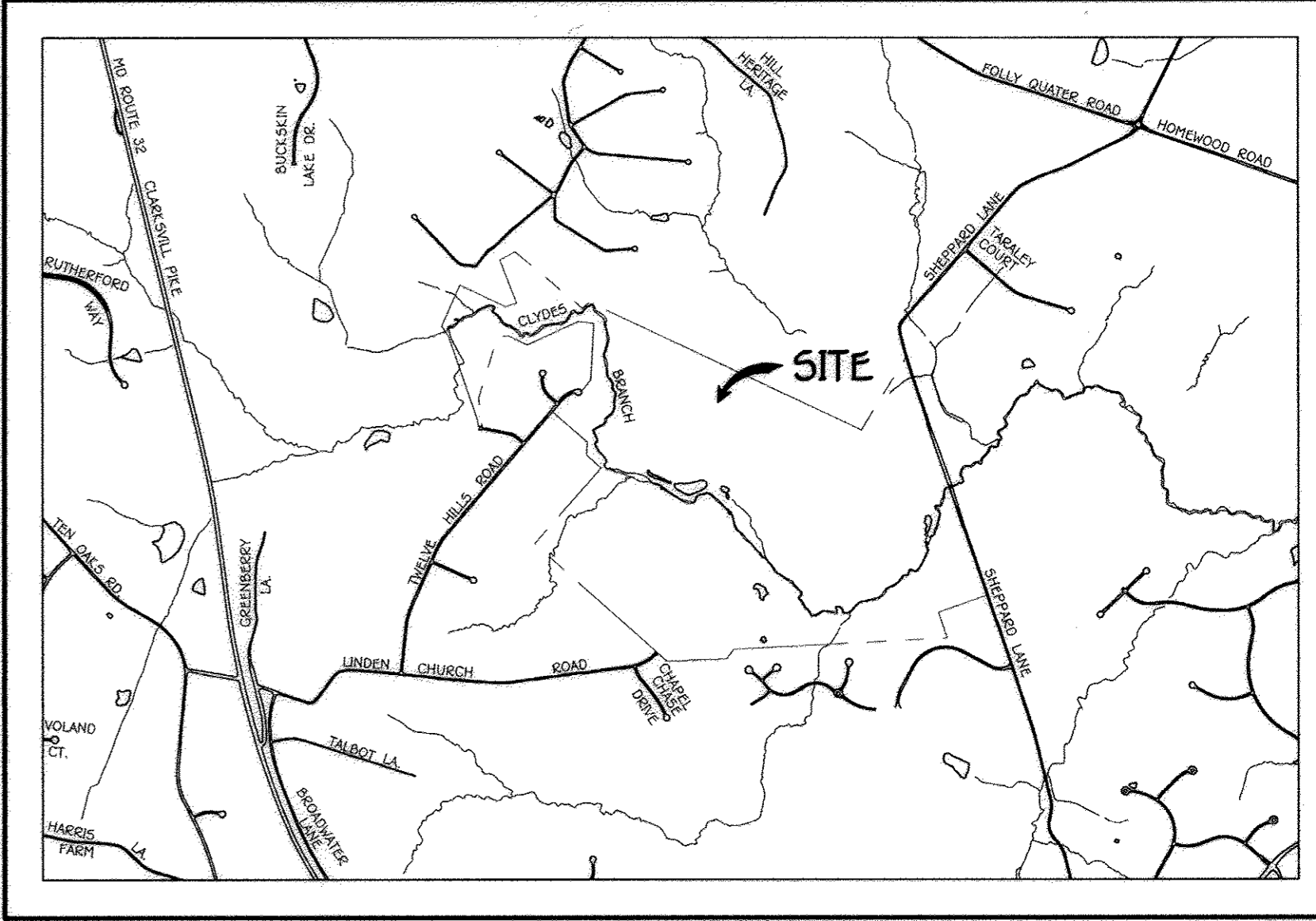
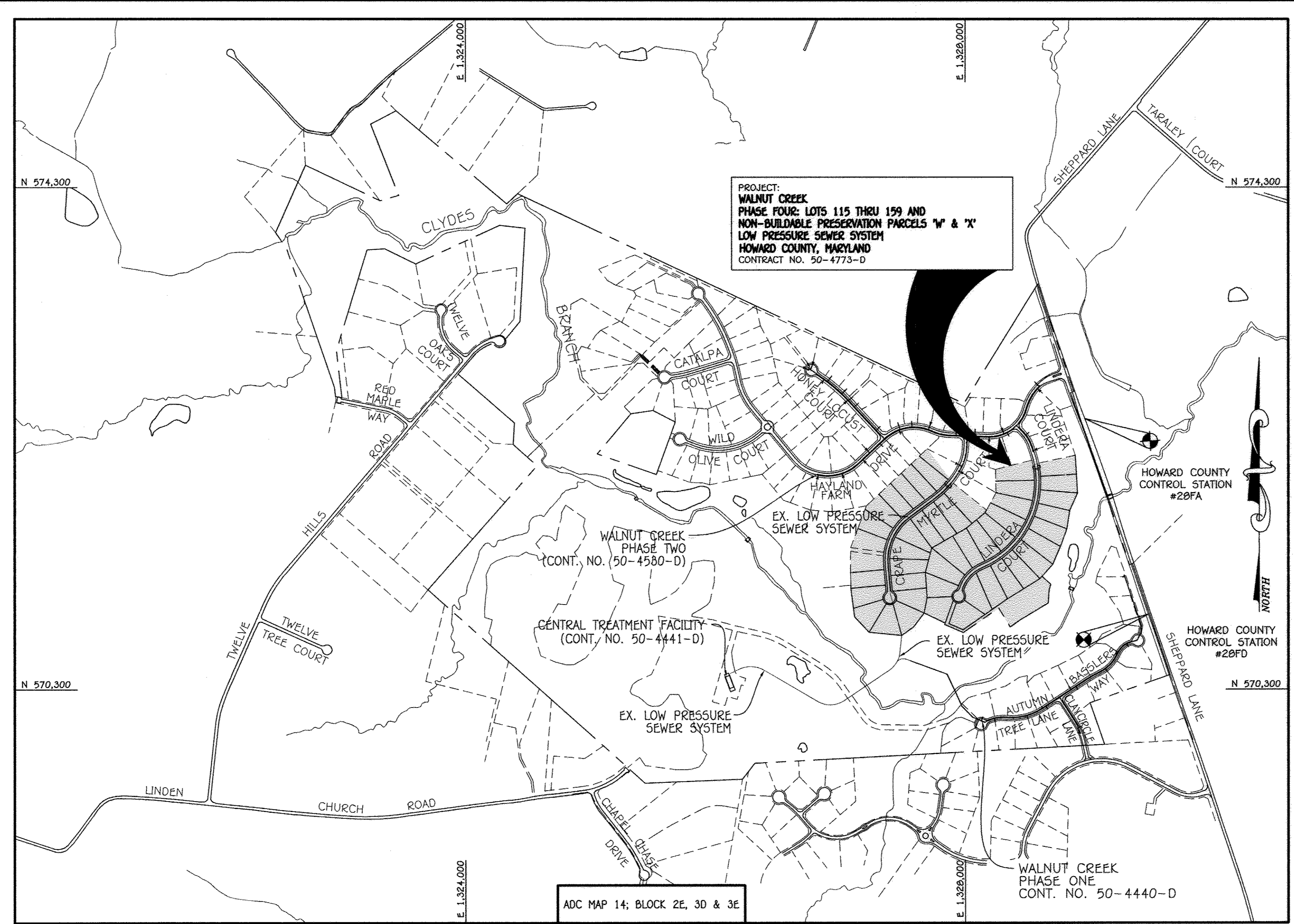
QUANTITIES				
ITEM	ESTIMATED	AS-BUILT		SUPPLIER
		QUANTITIES	TYPE	
1-1/2" L.P.S.	613 L.F.	610 L.F.	SDR-11	LB WATER
2" L.P.S.	471 L.F.	464 L.F.	SDR-11	LB WATER
3" L.P.S.	800 L.F.	826 L.F.	SDR-11	LB WATER
1-1/2"X1-1/2" TEE	1 EACH	1		LB WATER
2"X1-1/2" TEE	4 EACH	4		LB WATER
3"X1-1/2" TEE	8 EACH	8		LB WATER
AIR RELEASE VALVE	2 EACH	2	BRASS BALL	LB WATER
3" ISOLATION VALVE	1 EACH	1		LB WATER
2"X1-1/2" REDUCER	1 EACH	1	SDR-11	LB WATER
3"X2" REDUCER	1 EACH	1	SDR-11	LB WATER
TERMINAL FLUSHING CONNECTION	1 EACH	1		LB WATER
IN-LINE FLUSHING CONNECTION	3 EACH	3		LB WATER
CONTINUITY TEST STATION	7 EACH	7	CONCRETE	LB WATER
DUPLIX GRINDER PUMP	19 EACH	19		LB WATER
SIMPLEX GRINDER PUMP	7 EACH	7		LB WATER

NAME OF UTILITY CONTRACTOR: UTILITIES UNLIMITED
 SURVEY & DRAFTING DIVISION AS-BUILT DATE: 11-18-16

BENCHMARK INFORMATION

B.M.#1 - HOWARD COUNTY CONTROL STATION #28FA - HORIZONTAL - NAD '83
 (LOCATED ALONG THE EAST SIDE OF SHEPPARD LANE, APPROX. 4' OFF EDGE OF PAVING BETWEEN CAP POLES 52 & 53)
 N 572,456.6830
 E 1,328,957.6379
 ELEVATION = 348.234 - VERTICAL - (NAVD '88)

B.M.#2 - HOWARD COUNTY CONTROL STATION #28FD - HORIZONTAL - NAD '83
 (LOCATED ALONG THE WEST SIDE OF SHEPPARD LANE, AT THE ENTRANCE TO THE BASSELER PROPERTY)
 N 570,895.8745
 E 1,329,461.3295
 ELEVATION = 381.909 - VERTICAL - (NAVD '88)



VICINITY MAP
 SCALE: 1" = 2000'

GENERAL NOTES

- PART A
- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
 - TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON OR ABOUT JULY, 2005 BY FISHER, COLLINS & CARTER, INC.
 - HORIZONTAL AND VERTICAL SURVEY CONTROLS: THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91' AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 28FA & NO. 28FD. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
 - CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF THE ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
 - FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
 - WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
 - THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

AT&T	1-800-252-1133
BGE (CONTRACTOR SERVICES)	410-637-8713
BGE (EMERGENCY)	410-685-0123
BUREAU OF UTILITIES	410-313-4900
COLONIAL PIPELINE CO.	410-795-1590
MESSE UTILITY	1-800-287-7777
STATE HIGHWAY ADMINISTRATION	410-531-5533
VERIZON	1-800-743-0033 / 410-224-9210
 - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
 - CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONSTRUCTION OF THE MAIN.
 - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)-313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 10.114(a) OF THE HOWARD COUNTY CODE.

PART B: WATER MAIN GENERAL NOTES

- WATER SERVICE TO ALL BUILDABLE LOTS SHALL BE PROVIDED BY INDIVIDUAL PRIVATE ON-LOT WELLS.

PART C: SEWER MAIN GENERAL NOTES

- LOW PRESSURE SEWER MAINS SHALL BE HDPE, SDR-11.
- A TOTAL OF THIRTY-FIVE (35) LOTS ARE CONNECTED TO THE LOW PRESSURE SEWER SYSTEM.
- ALL RESIDENTIAL DWELLINGS ON THE LOTS CONNECTED TO THE LOW PRESSURE SEWER SYSTEM ARE LIMITED TO A MAXIMUM OF FIVE (5) BEDROOMS.
- TRACER WIRE SHALL BE PROVIDED OVER ALL LOW PRESSURE SEWER MAINS. TRACER WIRE SHALL BE OVERLAPPING, INSULATED #6 AND FIRMLY CONNECTED AND ENCAPSULATED.
- REFERENCE THE DETAILS ON SHEETS 5, 6 OF 7 FOR NOTES, REQUIREMENTS & SPECIFICATIONS REGARDING THE GRINDER PUMP & HOUSING & THE ASSOCIATED GRINDER PUMP CONTROL PANEL.
- THE CONSTRUCTION PLANS FOR THE COMMUNITY SHARED CENTRAL TREATMENT FACILITY & SHARED SEPTIC DISPOSAL FACILITY WERE PREPARED BY OTHERS UNDER CONT. NO. 50-4441-D.
- ALL LATERALS BETWEEN THE GRINDER PUMP UNITS AND THE LOW PRESSURE SEWER MAINS SHALL BE 1.50" DIAMETER.

TYPE OF BUILDING: RESIDENTIAL - SINGLE FAMILY DETACHED

NUMBER OF LOTS:	45 BUILDABLE
NO. OF WATER HOUSE CONNECTIONS:	0 - PRIVATE ON-LOT WELLS
NO. OF SEWER HOUSE CONNECTIONS:	45
SEWER SHED:	N/A
TREATMENT PLANT:	COMMUNITY SHARED CENTRAL TREATMENT FACILITY & SHARED SEPTIC DISPOSAL FACILITY

LOCATION MAP
 SCALE: 1" = 600'

PLAN REFERENCE NUMBERS:
 SP-06-007
 F-13-034

CONTRACT NO. 50-4773-D
WALNUT CREEK
 PHASE FOUR: LOTS 115 THRU 159
 AND NON-BUILDABLE PRESERVATION PARCELS 'W' & 'X'
 LOW PRESSURE SEWER SYSTEM
 HOWARD COUNTY, MARYLAND

AS BUILTS
 BY: DFI DATE 12-15-16

DEVELOPER
 BASSELER VENTURE, LLC
 15950 NORTH AVENUE
 P.O. BOX 482
 LISBON, MD 21765

CONTRACT NO. 50-4773-D
 WALNUT CREEK
 PHASE FOUR: LOTS 115 THRU 159
 AND NON-BUILDABLE PRESERVATION
 PARCELS 'W' & 'X'
 LOW PRESSURE SEWER SYSTEM
 HOWARD COUNTY, MARYLAND

DEVELOPER'S CERTIFICATION

" I/WE HEREBY 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 THE DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

Paul W. Koebel, FOR:
 BASSELER VENTURE, LLC 08/14/13
 SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATION

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

Paul W. Koebel, FOR:
 BASSELER VENTURE, LLC 08/14/13
 SIGNATURE OF DEVELOPER DATE

F-13-034

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

APPROVED:
 John P. Reardon 4/9/13
 CHIEF, HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND

1. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12243 EXPIRATION DATE 5/7/16/14.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PHASE - 10272 BALDWIN NATIONAL PPK
 ELLIOTT CITY, MARYLAND 21042
 (410) 461-2995

DESIGNED BY: B.C.R.
 DRAWN BY: B.C.R.
 CHECKED BY: P.W.K.
 DATE: MARCH, 2013

PAUL W. KRIEBEL
 #12043
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF MARYLAND

LOW PRESSURE SEWER SYSTEM
 TITLE SHEET

600' SCALE MAP NO. 20 BLOCK NO. 45,10,11,12,17&18
 F.C.C. WORK ORDER NO. 04001-3005
 FILE NAME: LOW PRESSURE SEWER SYSTEM TITLE SHEET

WALNUT CREEK
 PHASE FOUR: LOTS 115 THRU 159
 AND NON-BUILDABLE PRESERVATION PARCELS 'W' & 'X'
 LOW PRESSURE SEWER SYSTEM
 CONTRACT NO. 50-4773-D
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 1 OF 7



MATCHLINE: SEE SHEET 3

NOTE: REMOVE EX. PLUG & CONNECT TO EX. 1-1/2" DISCHARGE LINE (TYPICAL FOR LOTS 130 THRU 159)

MATCHLINE: SEE SHEET 3

MATCHLINE: SEE SHEET 3

AS BUILT
BIG DFI DATE: 12-15-10

CONTRACT NO. 50-4773-0
WALNUT CREEK
PHASE FOUR: LOTS 115 THRU 159
AND NON-BUILDABLE PRESERVATION
PARCELS 'W' & 'X'
LOW PRESSURE SEWER SYSTEM
HOWARD COUNTY, MARYLAND

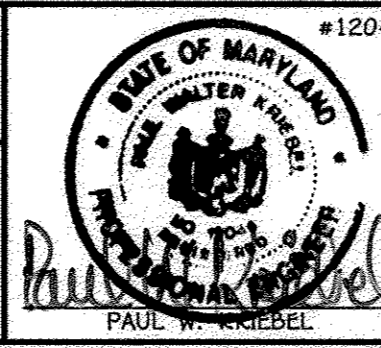
PLAN
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 15243 EXPIRATION DATE 5/7/16/14.

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



DESIGNED BY:	B.C.R.
DRAWN BY:	B.C.R.
CHECKED BY:	P.W.K.
DATE:	MARCH, 2012
BY NO.	
REVISION	

LOW PRESSURE SEWER SYSTEM PLAN

600' SCALE MAP NO. 28 BLOCK NO. 43,10,11,12,17&18
F.C.C. WORK ORDER NO. 04001-3002
FILE NAME: WATER & SEWER MAIN EXTENSION PLAN

WALNUT CREEK
PHASE FOUR: LOTS 115 THRU 159
AND NON-BUILDABLE PRESERVATION PARCELS 'W' & 'X'
LOW PRESSURE SEWER SYSTEM
CONTRACT NO. 50-4773-0
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 7

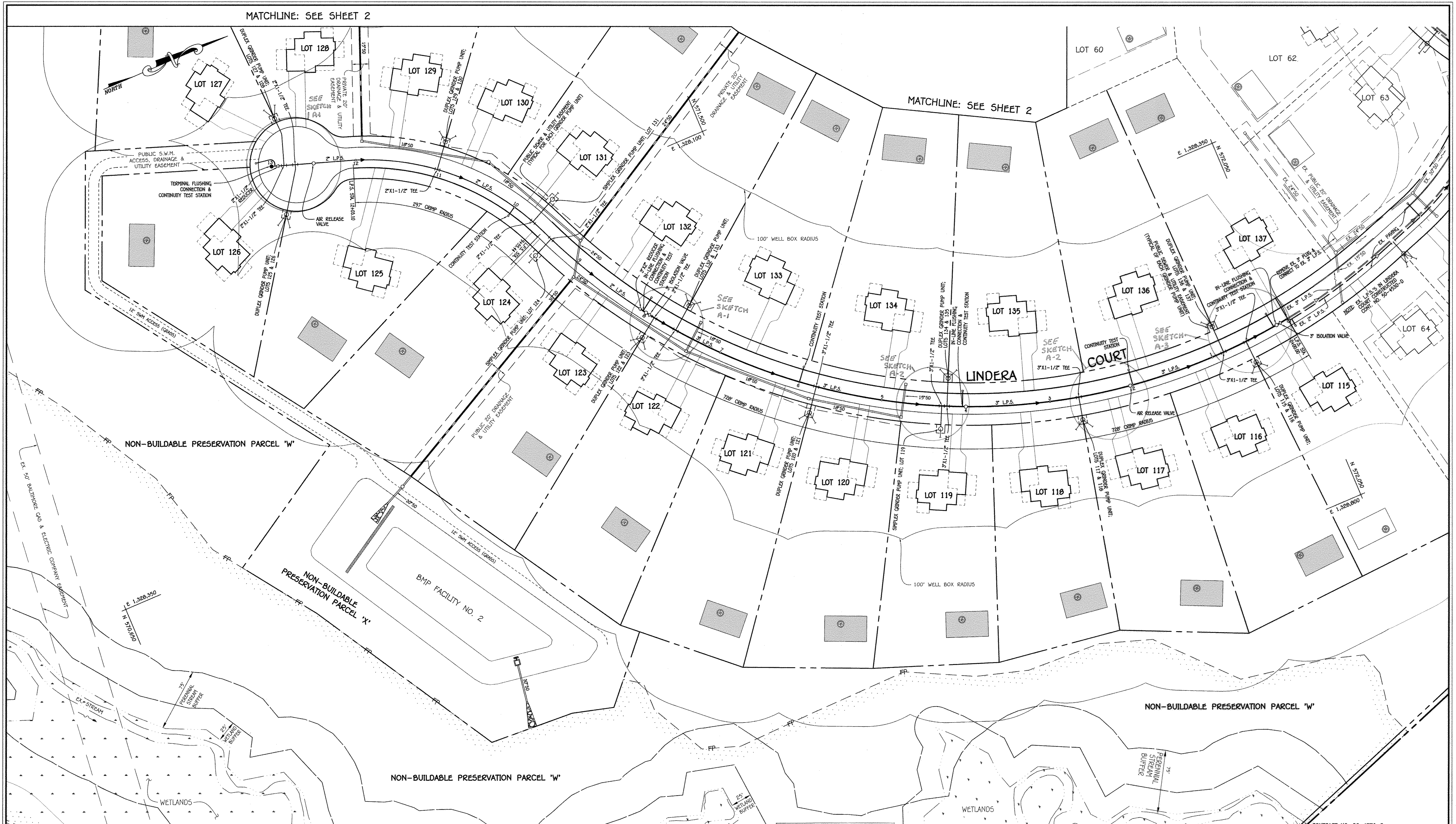
M. K. Welch Jr. SE 4/4/13
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 4/19/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

I:\2004\04001\0403\PHASE FOUR FINALS\04001-3004-Phase 4-Sewer Main Contract Plan.dwg, Plan Sheet 2, 3/14/2013 10:06:47 AM

MATCHLINE: SEE SHEET 2

MATCHLINE: SEE SHEET 2



SEE SHEET 7 FOR ON LOT ASBUILT MEASUREMENTS.

PLAN
SCALE: 1" = 50'

AS BUILTS
BY: DFI DATE: 12-15-16

CONTRACT NO. 50-4773-D
WALNUT CREEK
PHASE FOUR: LOTS 115 THRU 137
AND NON-BUILDABLE PRESERVATION
PARCELS 'W' & 'X'
LOW PRESSURE SEWER SYSTEM
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

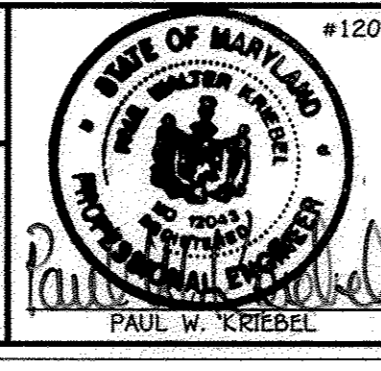
[Signature] 4/4/2013
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

[Signature] 4/13/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE 5/7/16/14.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2895



DESIGNED BY:	B.C.R.
DRAWN BY:	B.C.R.
CHECKED BY:	P.W.K.
DATE:	MARCH, 2013
BY NO.	
REVISION	
DATE	

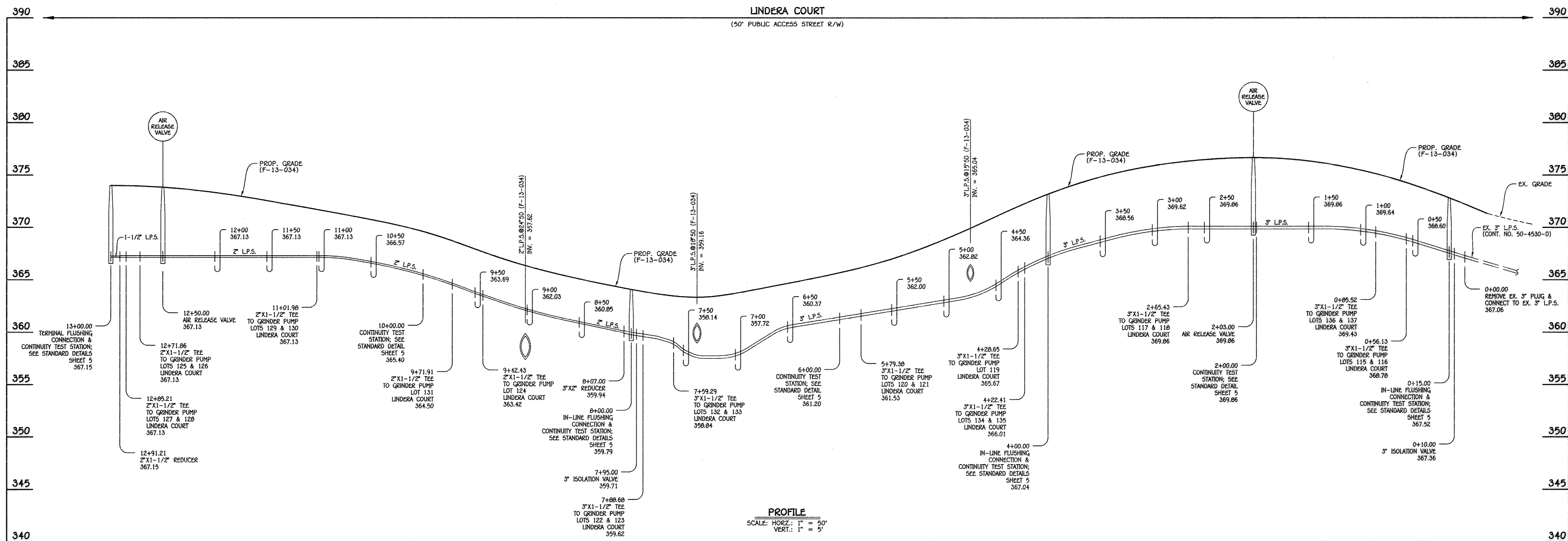
LOW PRESSURE SEWER SYSTEM
PLAN

600' SCALE MAP NO. 28 BLOCK NO. 15.10.11.12.17&18
F.C.C. WORK ORDER NO. 04001-3005
FILE NAME: WATER & SEWER MAIN EXTENSION PLAN

WALNUT CREEK
PHASE FOUR: LOTS 115 THRU 137
AND NON-BUILDABLE PRESERVATION PARCELS 'W' & 'X'
LOW PRESSURE SEWER SYSTEM
CONTRACT NO. 50-4773-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 7

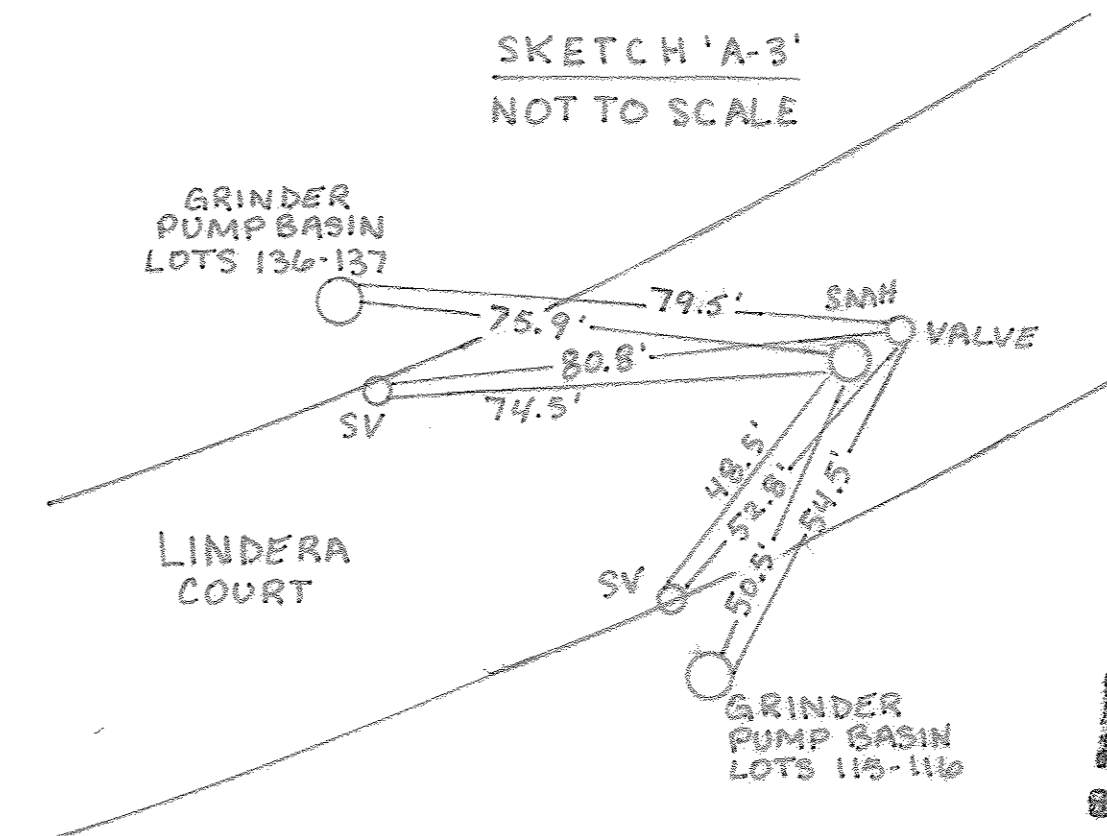
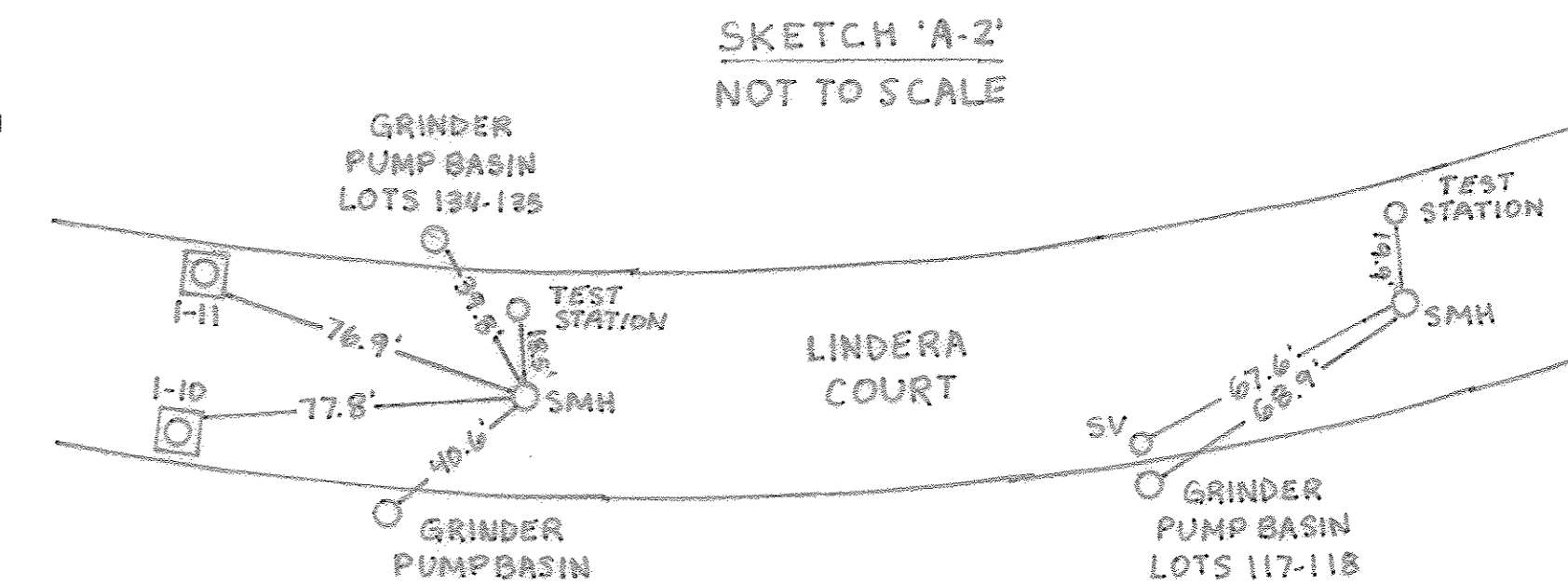
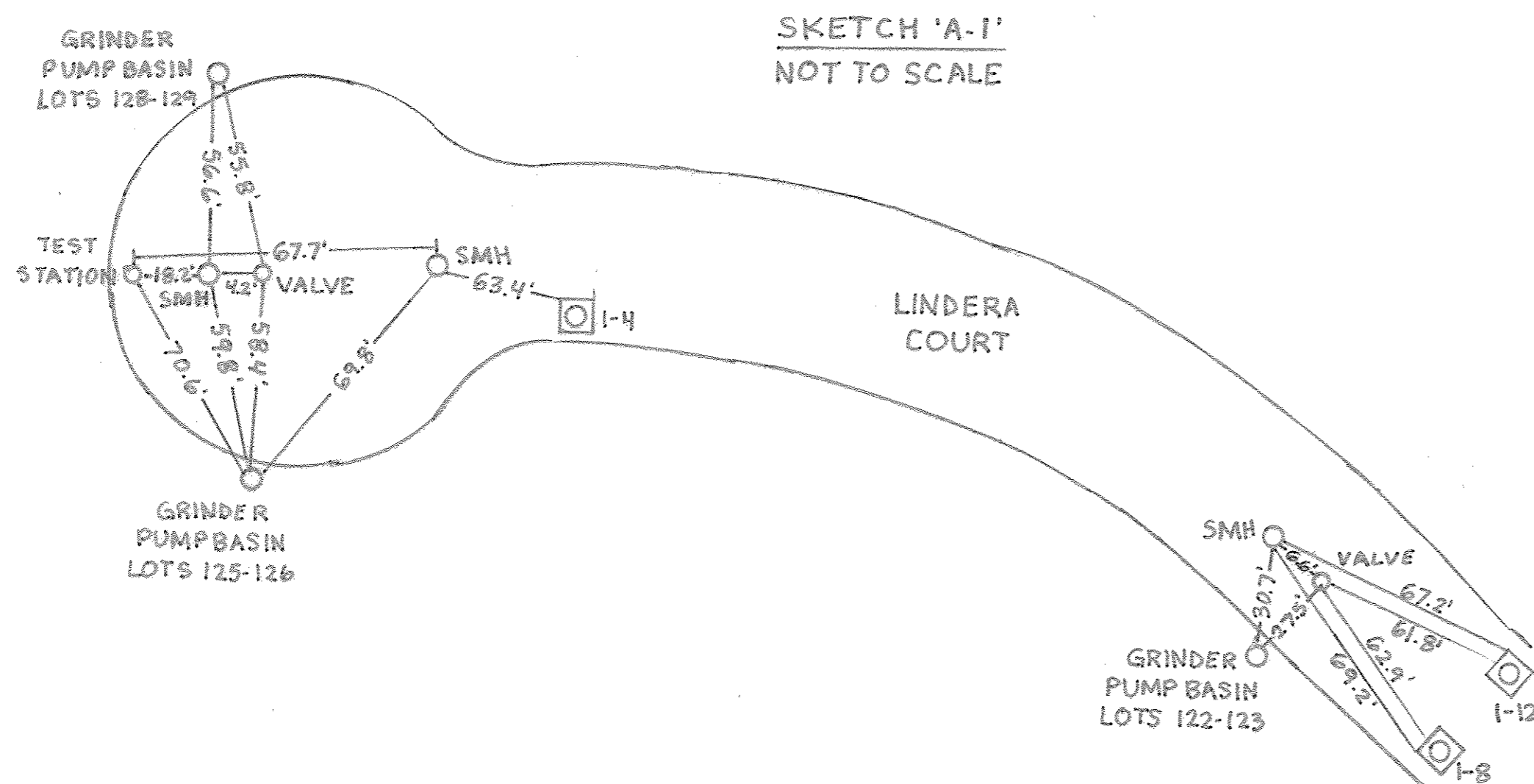
13,2004\04001\04001-3004-Phase 4-Sewer Main Extension Plan.dwg, Plan Sheet 3, 3/14/2013, 10:07:01 AM



1-1/2", 2" & 3" LOW PRESSURE SEWER MAIN: LINDERA COURT

L.P.S. STA.	APPURTENANCE	NORTHING	EASTING	RIM ELEVATION
LOW PRESSURE SEWER MAIN: LINDERA COURT				
0+00.00	EX. 3" PLUG	572051.75	1328575.15	
0+00.00	PT (CRIMP RADIUS 728')	572051.75	1328575.15	
0+10.00	3" ISOLATION VALVE	572041.33	1328576.44	
0+15.00	IN-LINE FLUSHING CONN. & CONTINUITY TEST STATION	572036.37	1328577.04	372.81 **
0+56.13	3"X1-1/2" TEE	571995.40	1328580.65	
0+05.52	3"X1-1/2" TEE	571966.04	1328581.82	
2+00.00	CONTINUITY TEST STATION	571851.88	1328575.04	376.15 **
2+03.00	AIR RELEASE VALVE	571848.91	1328574.63	
2+65.43	3"X1-1/2" TEE	571787.55	1328563.15	
4+00.00	IN-LINE FLUSHING CONN. & CONTINUITY TEST STATION	571660.01	1328520.86	373.18 **
4+22.41	3"X1-1/2" TEE	571639.62	1328511.56	
4+28.65	3"X1-1/2" TEE	571634.00	1328508.06	
5+79.38	3"X1-1/2" TEE	571506.15	1328429.51	
6+00.00	CONTINUITY TEST STATION	571490.04	1328416.66	364.25 **
7+59.29	3"X1-1/2" TEE	571378.91	1328302.98	
7+88.68	3"X1-1/2" TEE	571361.25	1328279.49	
7+95.00	3" ISOLATION VALVE	571357.57	1328274.34	
8+00.00	IN-LINE FLUSHING CONN. & CONTINUITY TEST STATION	571354.70	1328270.24	364.07 **
8+07.00	3"X2" REDUCER	571350.73	1328264.48	
9+42.43	2"X1-1/2" TEE	571285.17	1328146.20	
9+55.44	PRC (CRIMP RADIUS 728')	571280.05	1328134.23	
9+55.44	PRC (CRIMP RADIUS 297')	571280.05	132813.23	
9+71.91	2"X1-1/2" TEE	571273.26	1328119.16	
10+00.00	CONTINUITY TEST STATION	571259.88	1328094.55	369.00 **
11+01.98	2"X1-1/2" TEE	571193.21	1328018.05	
12+03.10	PT (CRIMP RADIUS 297')	571105.46	1327968.74	
12+50.00	AIR RELEASE VALVE	571061.08	1327953.63	
12+71.86	1-1/2"X1-1/2" TEE	571040.39	1327946.59	
12+89.21	2"X1-1/2" TEE	571027.75	1327942.28	
12+91.21	2"X1-1/2" REDUCER	571022.07	1327940.35	
13+00.00	TERMINAL FLUSHING CONN. & CONTINUITY TEST STATION	571013.76	1327937.52	374.00 * 374.50 **

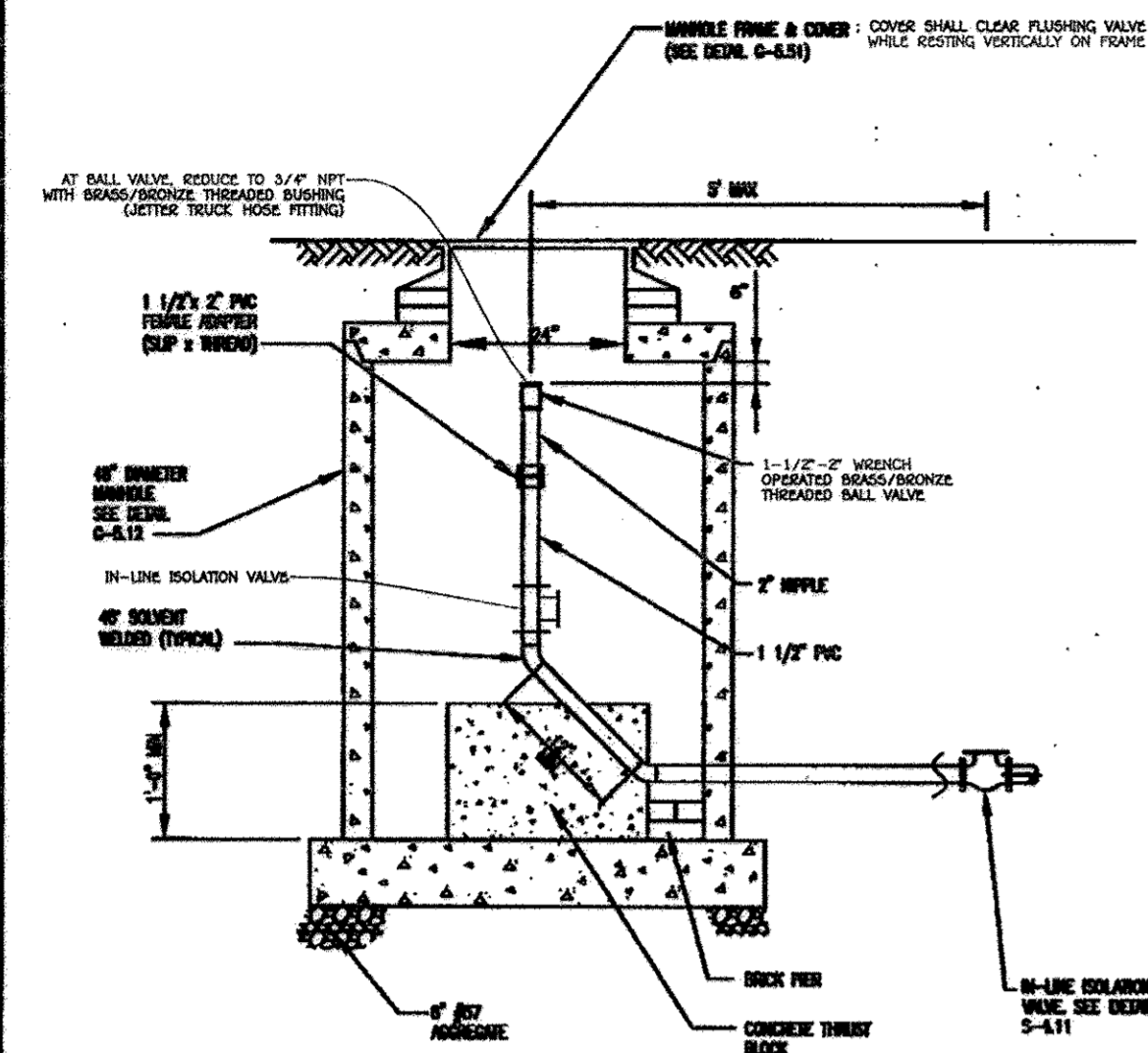
NOTE: SET ALL MANHOLE RIMS FLUSH W/PROPOSED GRADE.
 * DENOTES IN-LINE FLUSHING CONNECTION RIM ELEVATION
 ** DENOTES CONTINUITY TEST STATION RIM ELEVATION



AS BUILTS
 BY: DEI DATE 12-15-16
 CONTRACT NO. 50-4773-D
 WALNUT CREEK
 PHASE FOUR: LOTS 115 THRU 159
 AND NON-BUILDABLE PRESERVATION
 PARCELS 'W' & 'X'
 LOW PRESSURE SEWER SYSTEM
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES J. Kwiatkowski DATE: 4/1/13	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND CHIEF, DEVELOPMENT ENGINEERING DIVISION M. Williams DATE: 4/1/13	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12040 EXPIRATION DATE 5/31/16/14. FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 10275 BALDORNE NATIONAL Pkwy. ELICOTT CITY, MARYLAND 21042 (410) 461-2895	#12043 DESIGNED BY: B.C.R. DRAWN BY: B.C.R. CHECKED BY: P.W.K. DATE: MARCH, 2013 BY NO. REVISION	LOW PRESSURE SEWER SYSTEM PROFILE & CHART 600' SCALE MAP NO. 28 BLOCK NO. 15,10,11,12,17&18 F.C.C. WORK ORDER NO. 04001-3005 FILE NAME: WATER & SEWER MAIN EXTENSION PLAN	WALNUT CREEK PHASE FOUR: LOTS 115 THRU 159 AND NON-BUILDABLE PRESERVATION PARCELS 'W' & 'X' LOW PRESSURE SEWER SYSTEM CONTRACT NO. 50-4773-D FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 4 OF 7
---	--	---	---	---	---	--------------------------------

NOTES:
 1. S & S-3000 PER 20 DMS
 2. DO NOT EXPOSE JOINTS



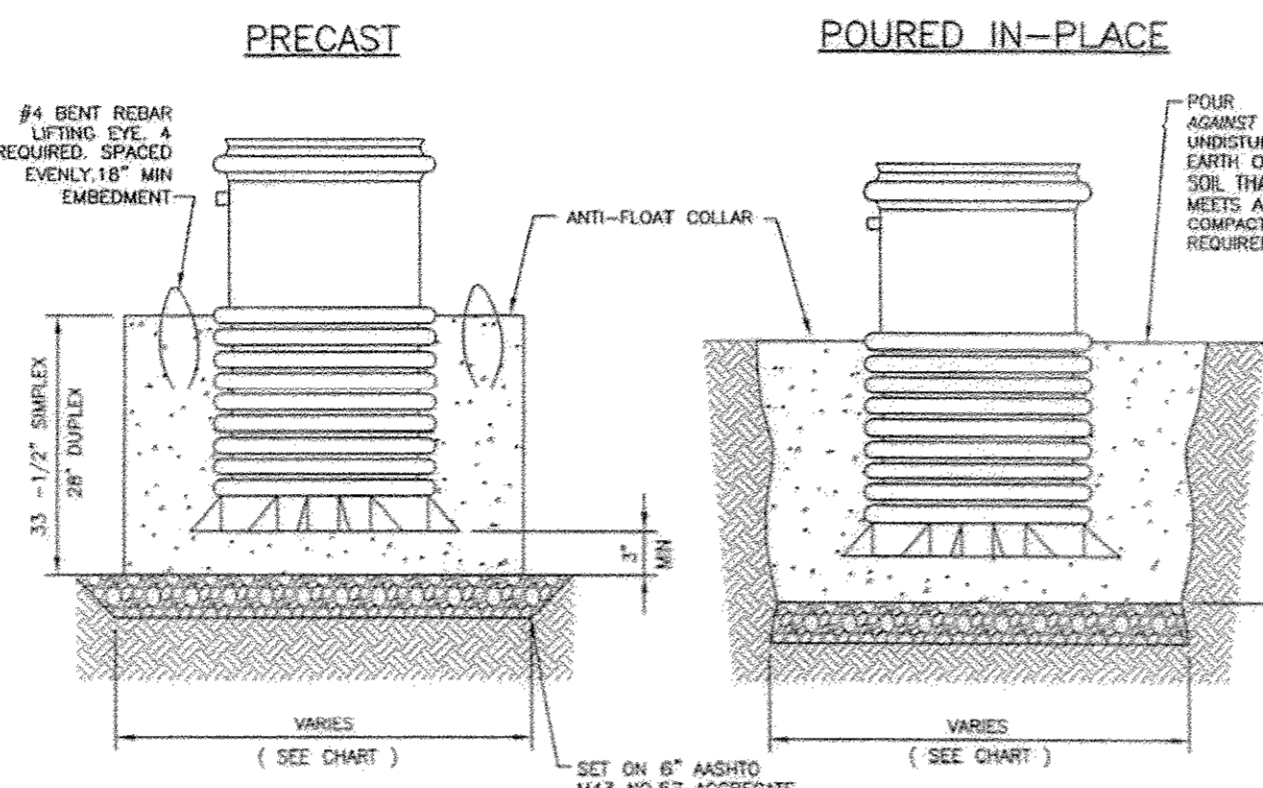
NOTE: MODIFIED BY FISHER, COLLINS & CARTER, INC.: 04/17/13

Howard County, Maryland Department of Public Works	Terminal Flushing Connection County Owned Grinder Pump	Detail E-1.03
Approved: <i>[Signature]</i> Chief, Bureau of Engineering		

ENVIRONMENT ONE MODEL	STATION VOLUME	CONCRETE VOLUME	BALLAST WEIGHT	PRE-CAST DIA AT 33"-35" IN HEIGHT
2010-08	17.6 FT ³	9.8 FT ³ (.36 CY)	1500 LBS (1473 LBS)	ø 36 IN
2010-74	22.7 FT ³	13.2 FT ³ (.48 CY)	2000 LBS (1985 LBS)	ø 38-3/8 IN
2010-93	28.6 FT ³	17.3 FT ³ (.63 CY)	2600 LBS (2580 LBS)	ø 42-3/8 IN
2010-124	38.6 FT ³	24.2 FT ³ (.90 CY)	3700 LBS (3642 LBS)	ø 47-3/8 IN
2010-129	40.0 FT ³	25.1 FT ³ (.93 CY)	3800 LBS (3750 LBS)	ø 48 IN
2010-158	49.5 FT ³	31.6 FT ³ (1.17 CY)	4800 LBS (4732 LBS)	ø 52-3/8 IN
2010-160	49.9 FT ³	31.8 FT ³ (1.18 CY)	4800 LBS (4773 LBS)	ø 52-3/8 IN

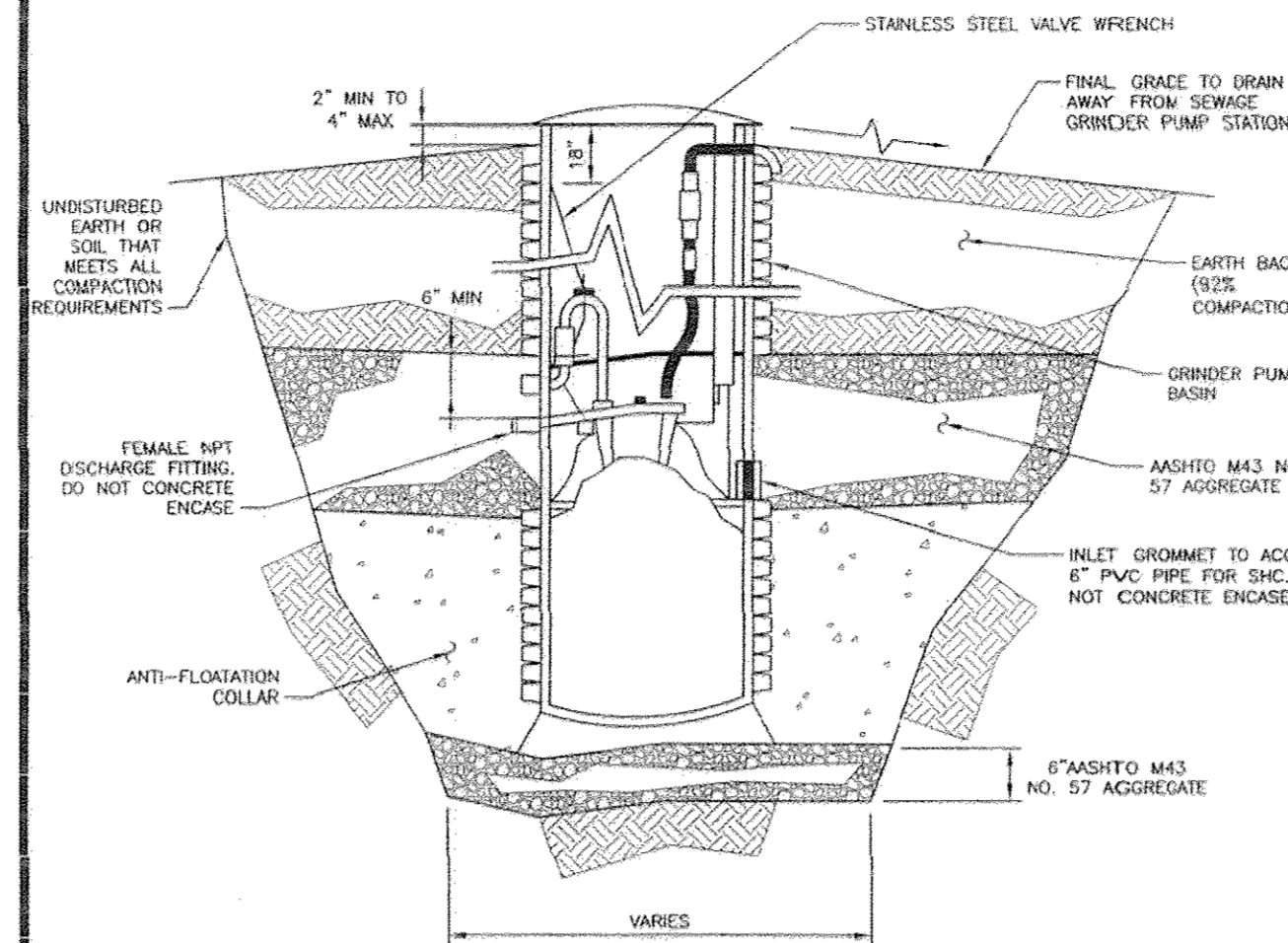
ENVIRONMENT ONE MODEL	STATION VOLUME	CONCRETE VOLUME	BALLAST WEIGHT	PRE-CAST DIA AT 28" IN HEIGHT
2014-85	47.5 FT ³	28.8 FT ³ (1.0 CY)	4300 LBS (4285 LBS)	ø 57-3/8 IN
2014-93	49.6 FT ³	29.9 FT ³ (1.1 CY)	4500 LBS (4484 LBS)	ø 58-3/8 IN
2014-129	61.0 FT ³	37.6 FT ³ (1.4 CY)	5700 LBS (5646 LBS)	ø 63-3/8 IN
2014-160	71.0 FT ³	44.4 FT ³ (1.6 CY)	5700 LBS (6664 LBS)	ø 67-3/8 IN

* - OR APPROVED EQUAL



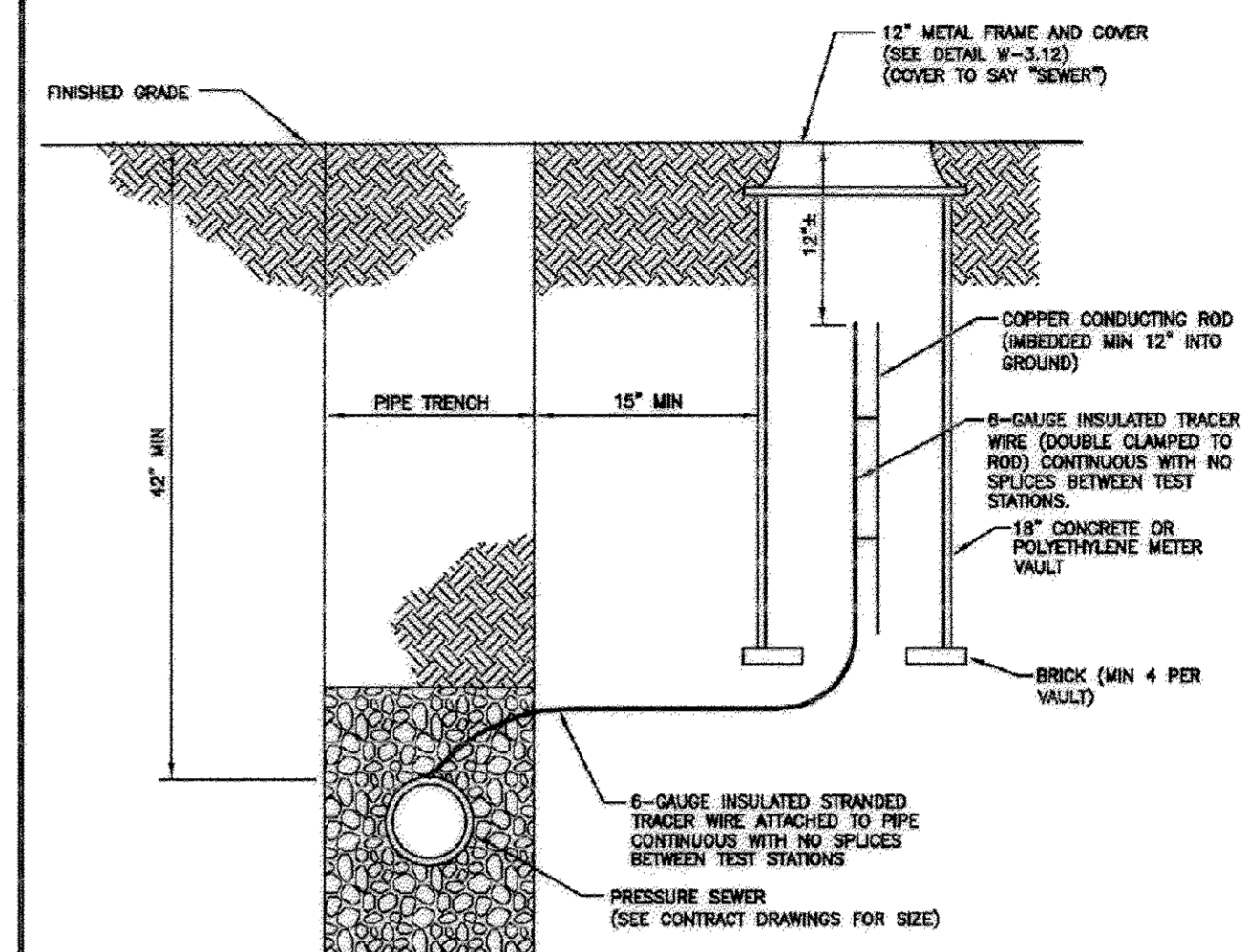
- NOTES:**
1. INSTALL PLUMB - PROVIDE TEMPORARY BRACING TO MAINTAIN POSITIONING DURING CONCRETE PLACEMENT.
 2. ALL CONCRETE TO BE MIX NO. 1 AND SHALL CURE 24 HOURS PRIOR TO BACKFILL.
 3. SEE E-2.01 FOR ANTI-FLOATATION COLLAR DETAILS.
 4. CONCRETE SHALL CURE A MINIMUM OF 24 HOURS PRIOR TO BACKFILL.

Howard County, Maryland Department of Public Works	Anti-Floatation Collar County Owned Grinder Pump	Detail E-2.01
Approved: <i>[Signature]</i> Chief, Bureau of Engineering		



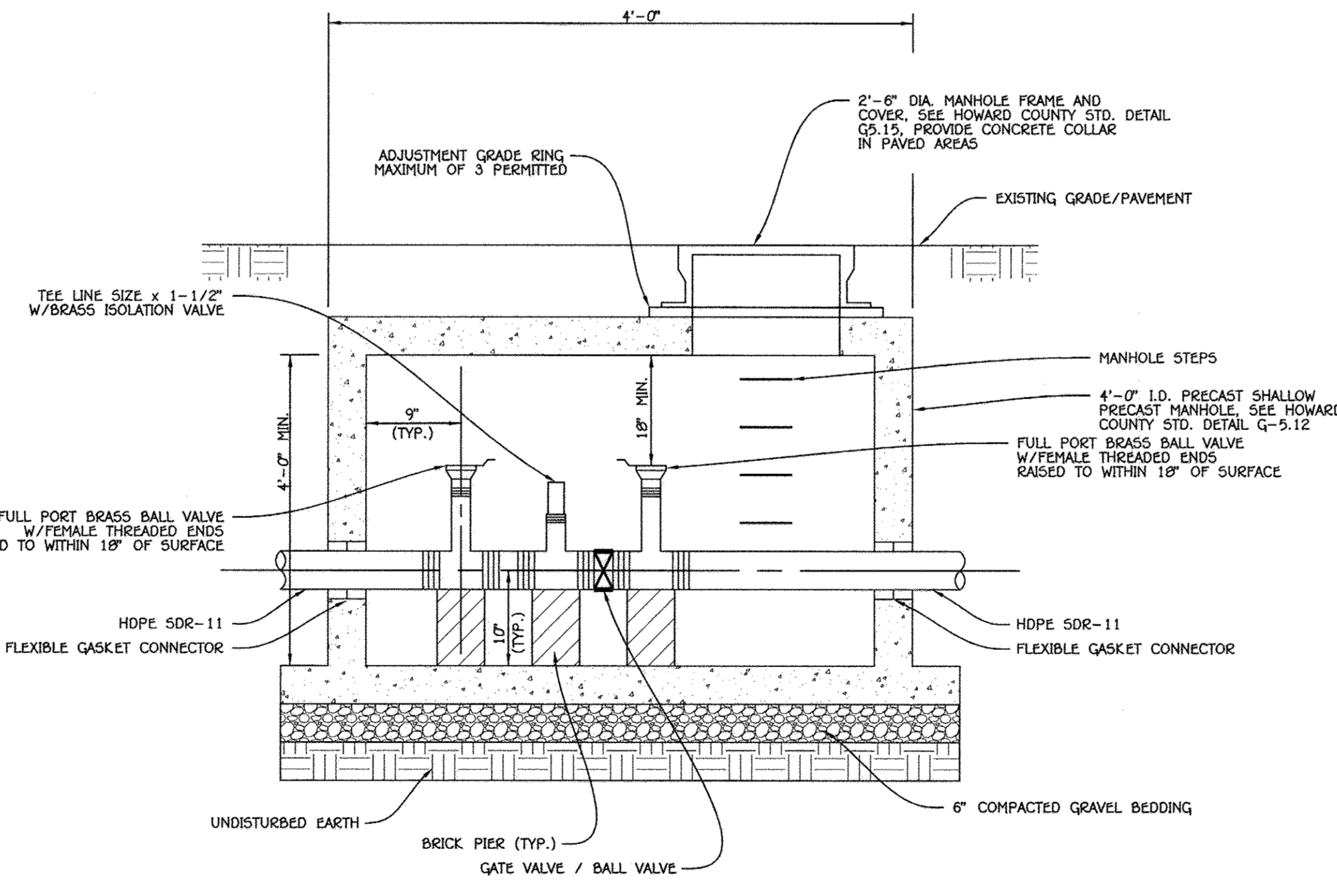
- NOTES:**
1. SIMPLEX PUMP SHOWN; DUPLEX PUMP BACKFILL IS THE SAME.
 2. INSTALL PLUMB: PROVIDE TEMPORARY BRACING TO MAINTAIN POSITIONING DURING BACKFILL.
 3. SEE E-2.01 FOR ANTI-FLOATATION COLLAR DETAILS.
 4. CONCRETE SHALL CURE A MINIMUM OF 24 HOURS PRIOR TO BACKFILL.

Howard County, Maryland Department of Public Works	Backfill County Owned Grinder Pump	Detail E-2.02
Approved: <i>[Signature]</i> Chief, Bureau of Engineering		



- NOTES:**
1. FOR LOCATIONS ALONG PRESSURE SEWER ALIGNMENT, SEE G-8.21.
 2. SEE G-8.21 FOR OTHER CONTINUITY TEST STATION INFORMATION.
 3. NO SPICES BETWEEN TEST STATIONS, UNLESS APPROVED BY HOWARD COUNTY. LATERAL SPICES APPROVED BY THE COUNTY SHALL CONSIST OF A BRASS COMPRESSION NUT, WATERPROOF BINDER, AND UNDERGROUND ELECTRICAL TAPE. EXTENSION SPICES SHALL BE MADE USING A CRIMP CONNECTOR AND SHRINK TUBING.

Howard County, Maryland Department of Public Works	PRESSURE SEWER Tracer Wire, Conducting Rod & Vault	Detail S-4.18
Approved: <i>[Signature]</i> Chief, Bureau of Engineering		



IN-LINE PRESSURE CLEANOUT (FLUSHING CONNECTION)

NO SCALE

AS BUILTS
 ORIGINAL DATE: 12-15-16

CONTRACT NO. 50-4773-D
 WALNUT CREEK
 PHASE FOUR: LOTS 115 THRU 159
 AND NON-BUILDABLE PRESERVATION
 PARCELS 'W' & 'X'
 LOW PRESSURE SEWER SYSTEM
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF BUREAU OF UTILITIES
[Signature] R SE 4/4/13
 DATE

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 4/13
 DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE 5/7/18/14.
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 SALTPOPE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2295

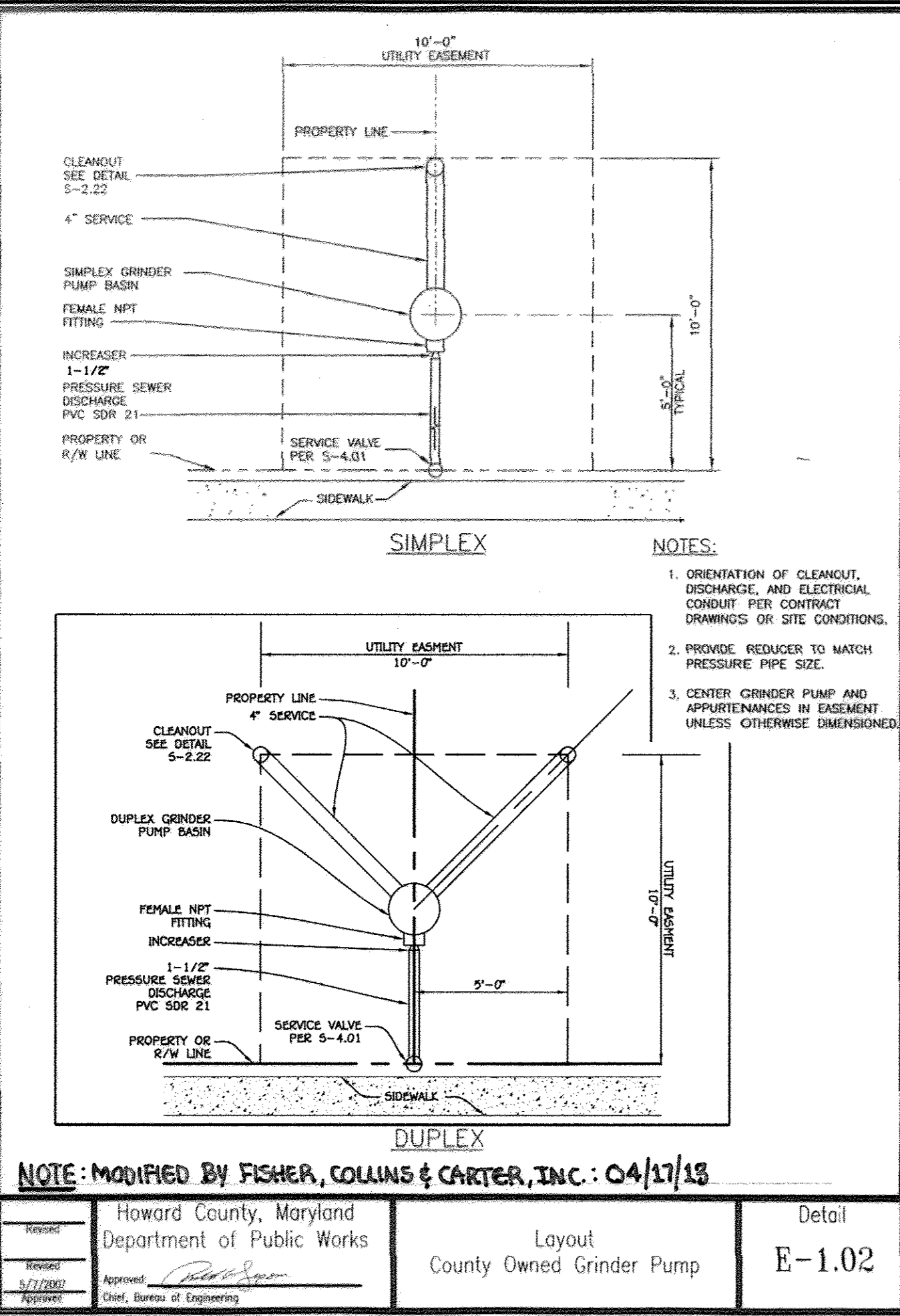


DESIGNED BY:	B.C.R.
DRAWN BY:	B.C.R.
CHECKED BY:	P.W.K.
DATE:	MARCH, 2013
BY NO.	
REVISION	
DATE	

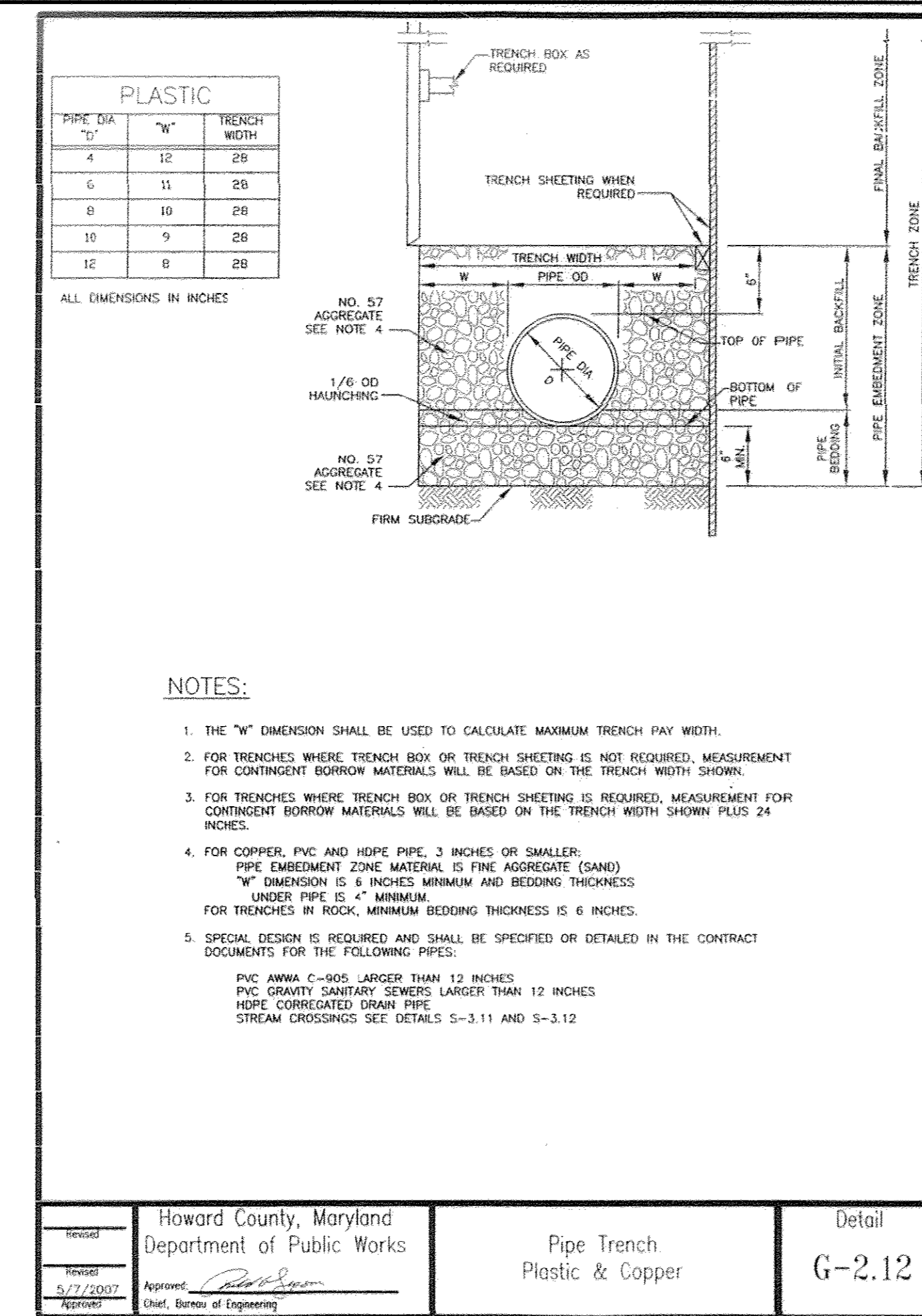
LOW PRESSURE SEWER SYSTEM DETAILS
 600' SCALE MAP NO. 28 BLOCK NO. 15, 10, 11, 12, 17 & 19
 F.C.C. WORK ORDER NO. 04001-3005
 FILE NAME: WATER & SEWER MAIN EXTENSION PLAN

WALNUT CREEK
 PHASE FOUR: LOTS 115 THRU 159
 AND NON-BUILDABLE PRESERVATION PARCELS 'W' & 'X'
 LOW PRESSURE SEWER SYSTEM
 CONTRACT NO. 50-4773-D
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

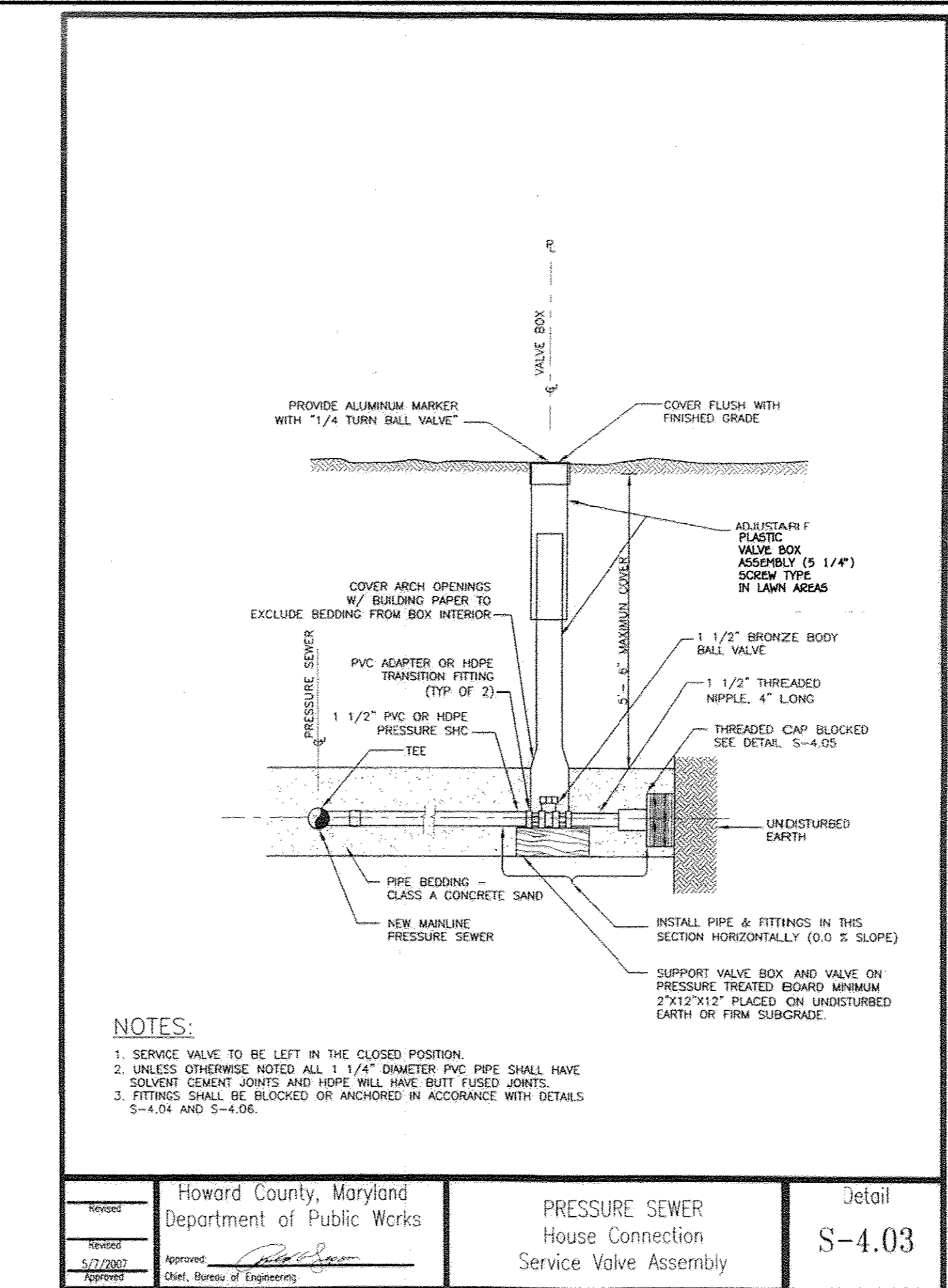
SCALE AS SHOWN
 SHEET 5 OF 7



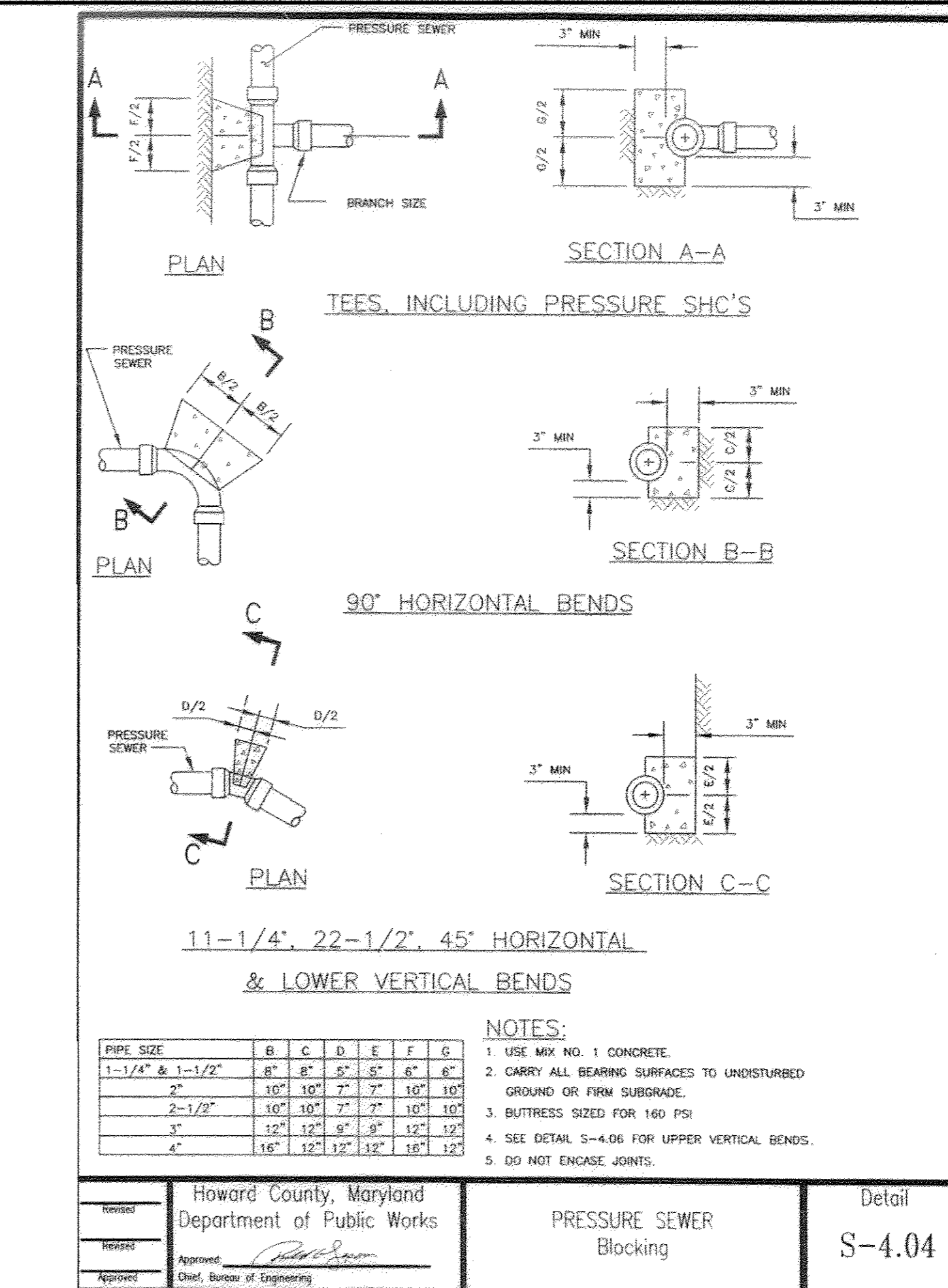
Revised	Howard County, Maryland Department of Public Works	Layout	Detail
Revised	Approved: <i>[Signature]</i>	County Owned Grinder Pump	E-1.02
Approved	Chief, Bureau of Engineering		



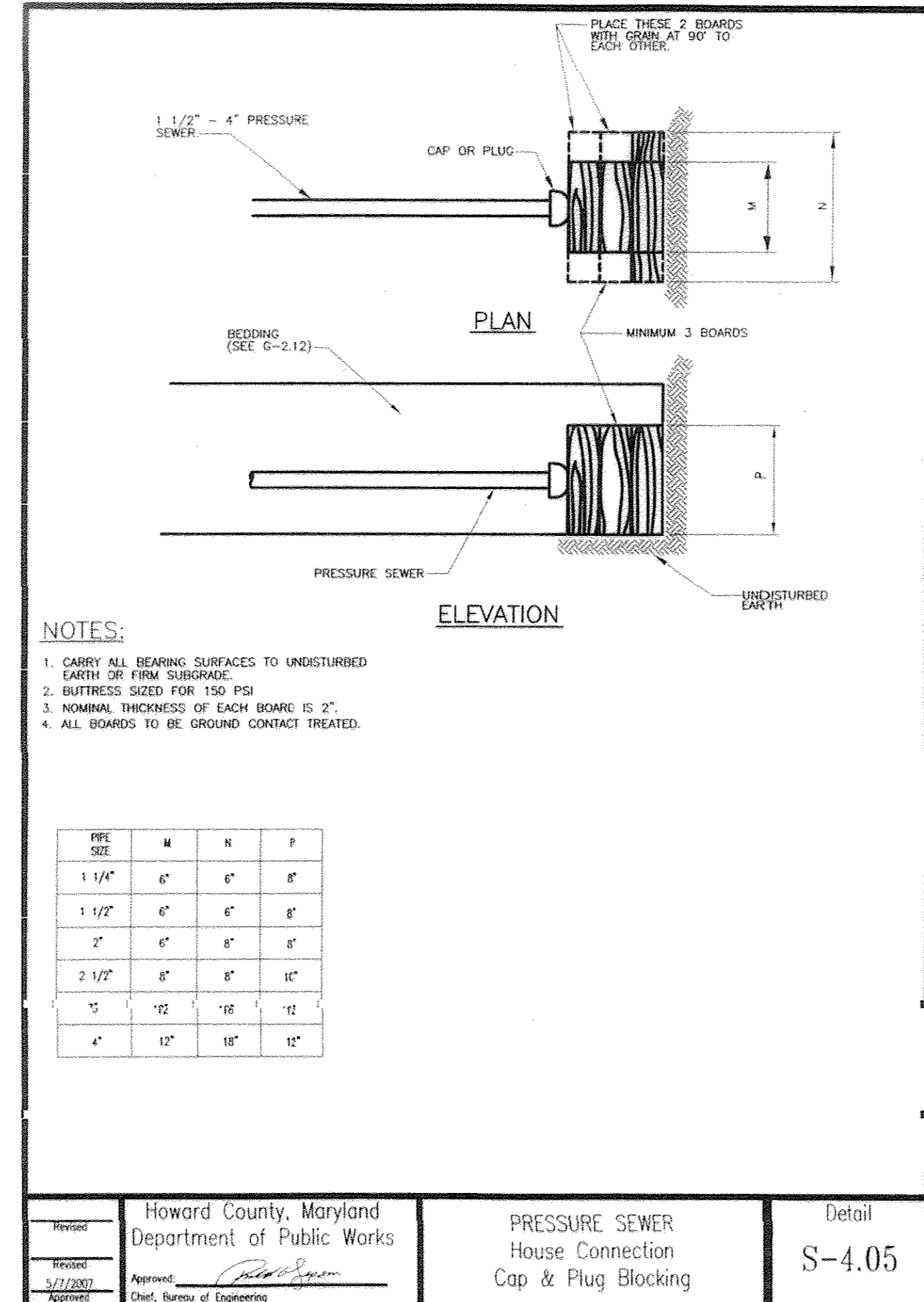
Revised	Howard County, Maryland Department of Public Works	Pipe Trench Plastic & Copper	Detail
Revised	Approved: <i>[Signature]</i>		G-2.12
Approved	Chief, Bureau of Engineering		



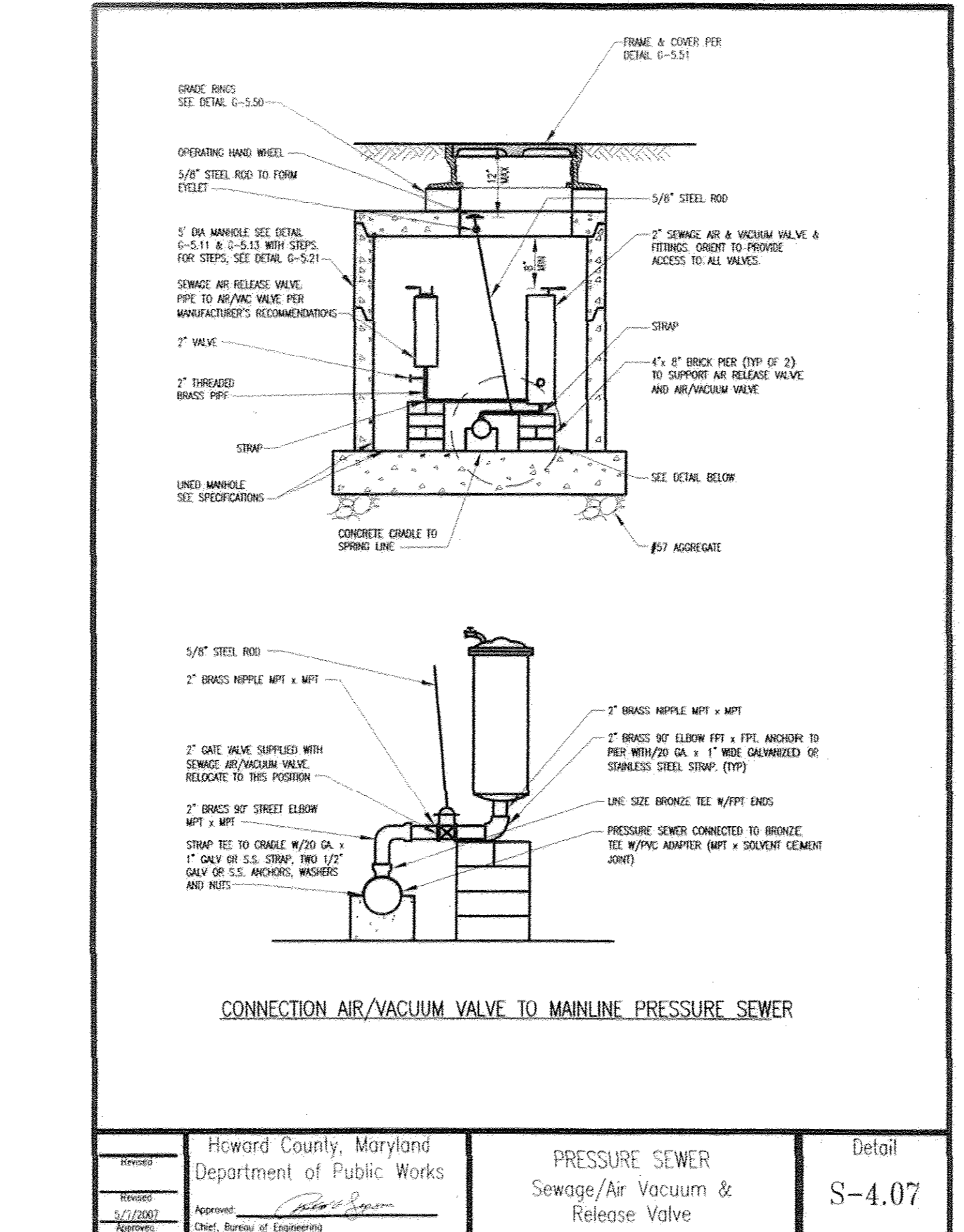
Revised	Howard County, Maryland Department of Public Works	PRESSURE SEWER House Connection Service Valve Assembly	Detail
Revised	Approved: <i>[Signature]</i>		S-4.03
Approved	Chief, Bureau of Engineering		



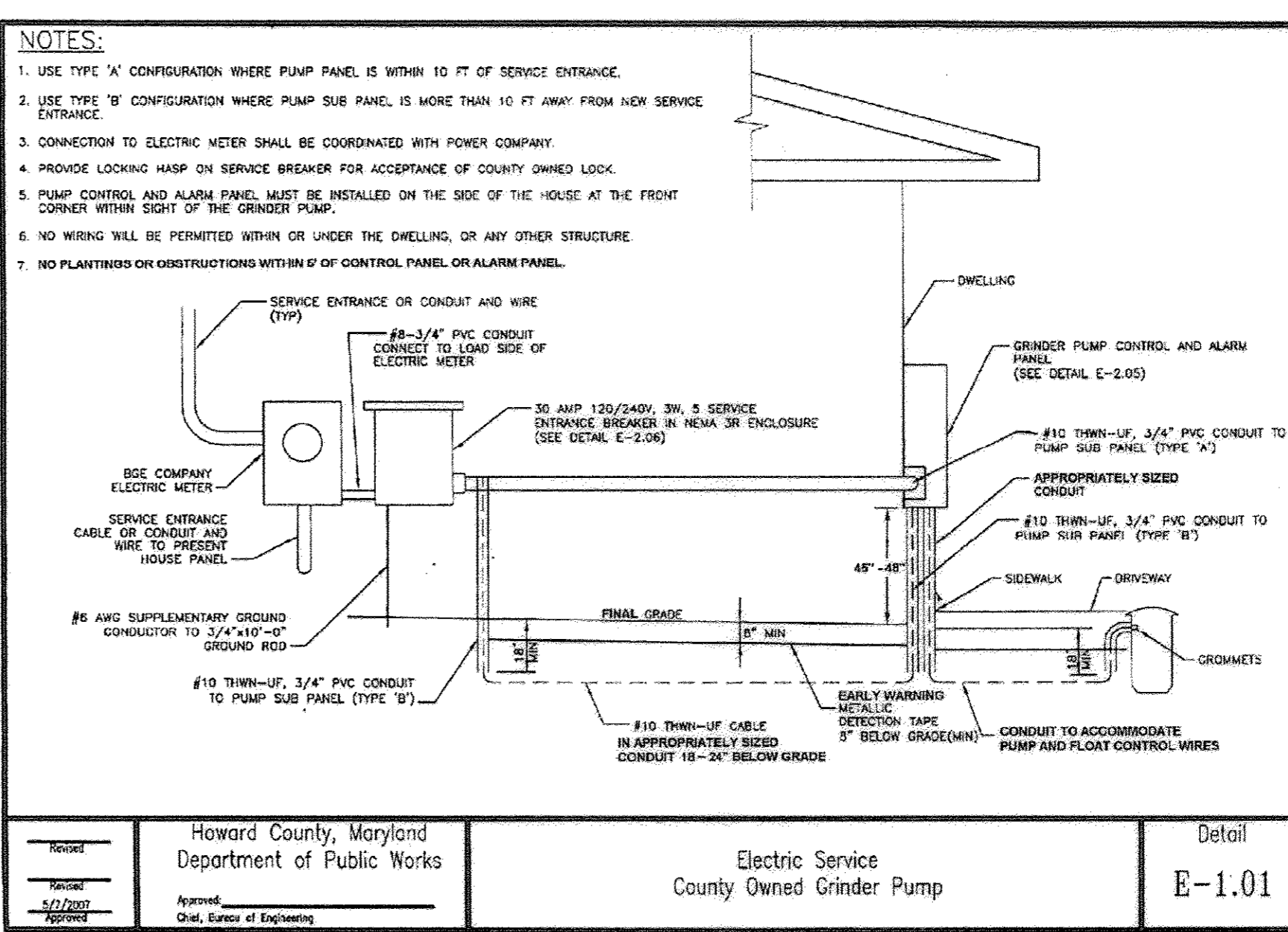
Revised	Howard County, Maryland Department of Public Works	PRESSURE SEWER Blocking	Detail
Revised	Approved: <i>[Signature]</i>		S-4.04
Approved	Chief, Bureau of Engineering		



Revised	Howard County, Maryland Department of Public Works	PRESSURE SEWER House Connection Cap & Plug Blocking	Detail
Revised	Approved: <i>[Signature]</i>		S-4.05
Approved	Chief, Bureau of Engineering		



Revised	Howard County, Maryland Department of Public Works	PRESSURE SEWER Sewage/Air Vacuum & Release Valve	Detail
Revised	Approved: <i>[Signature]</i>		S-4.07
Approved	Chief, Bureau of Engineering		



Revised	Howard County, Maryland Department of Public Works	Electric Service County Owned Grinder Pump	Detail
Revised	Approved: <i>[Signature]</i>		E-1.01
Approved	Chief, Bureau of Engineering		

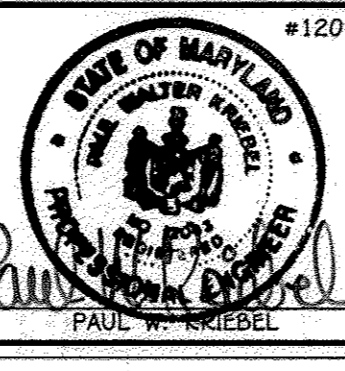
AS BUILTS
BY: *[Signature]* DATE: 12-15-16

CONTRACT NO. 50-4773-D
WALNUT CREEK
PHASE FOUR: LOTS 115 THRU 159
AND NON-BUILDABLE PRESERVATION
PARCELS 'W' & 'X'
LOW PRESSURE SEWER SYSTEM
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
[Signature] 4/9/13
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
[Signature] 4/9/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 15242 EXPIRATION DATE 5/31/16.
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2895



DESIGNED BY: B.C.R.
DRAWN BY: B.C.R.
CHECKED BY: P.W.K.
DATE: MARCH, 2013

LOW PRESSURE SEWER SYSTEM
DETAILS
600' SCALE MAP NO. 28 BLOCK NO. 4,5,10,11,12,17&18
F.C.C. WORK ORDER NO. 04001-3005
FILE NAME: WATER & SEWER MAIN EXTENSION PLAN

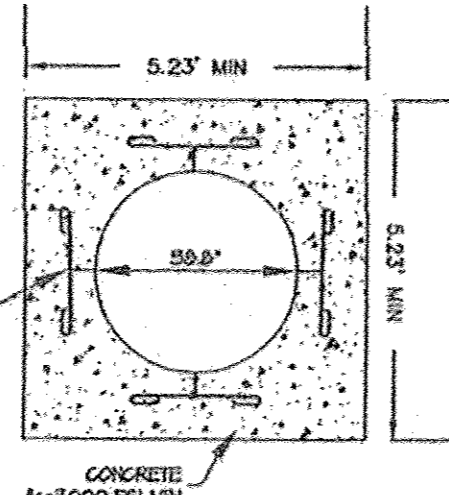
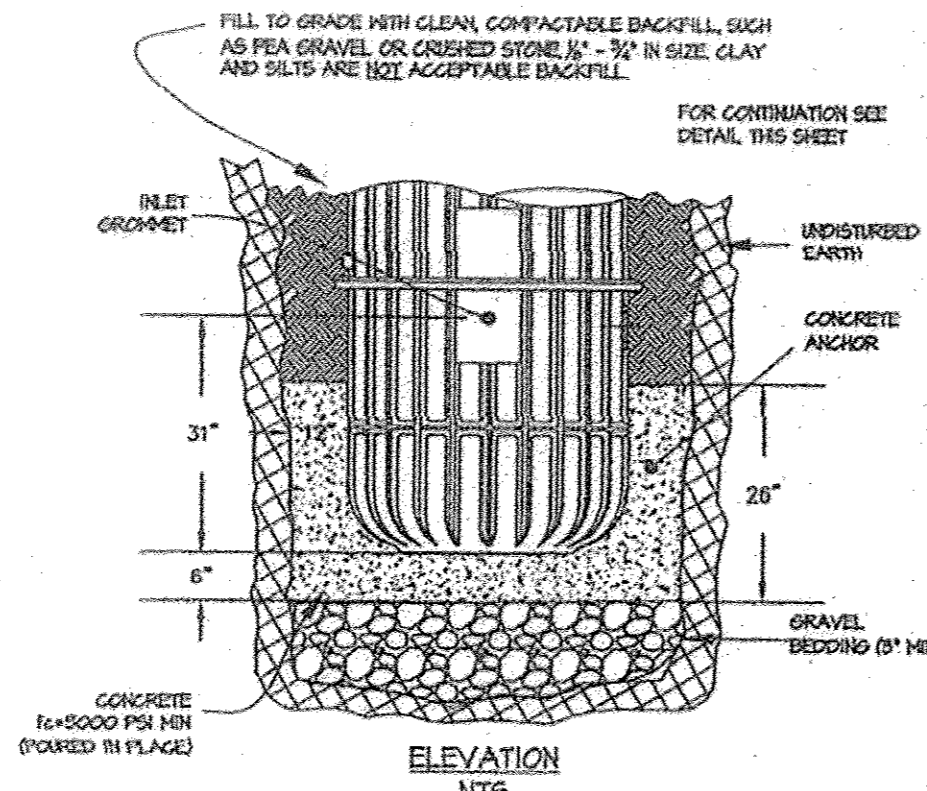
WALNUT CREEK
PHASE FOUR: LOTS 115 THRU 159
AND NON-BUILDABLE PRESERVATION PARCELS 'W' & 'X'
LOW PRESSURE SEWER SYSTEM
CONTRACT NO. 50-4773-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 6 OF 7

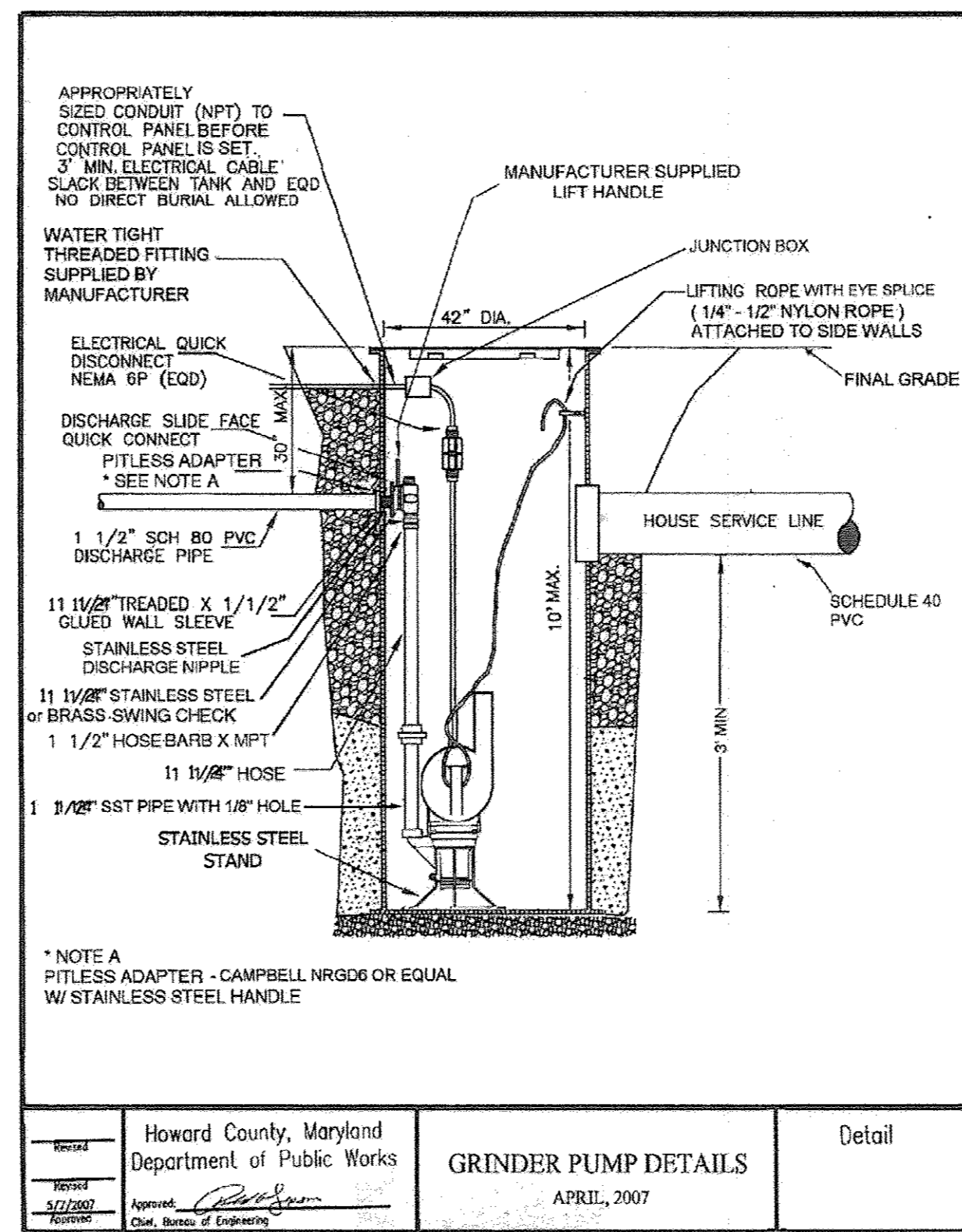
SEWER HOUSE CONNECTION

Table with 4 columns: LOT NUMBER, MEASUREMENT 1, MEASUREMENT 2, MEASUREMENT 3. Lists sewer house connections for lots 115 to 159.

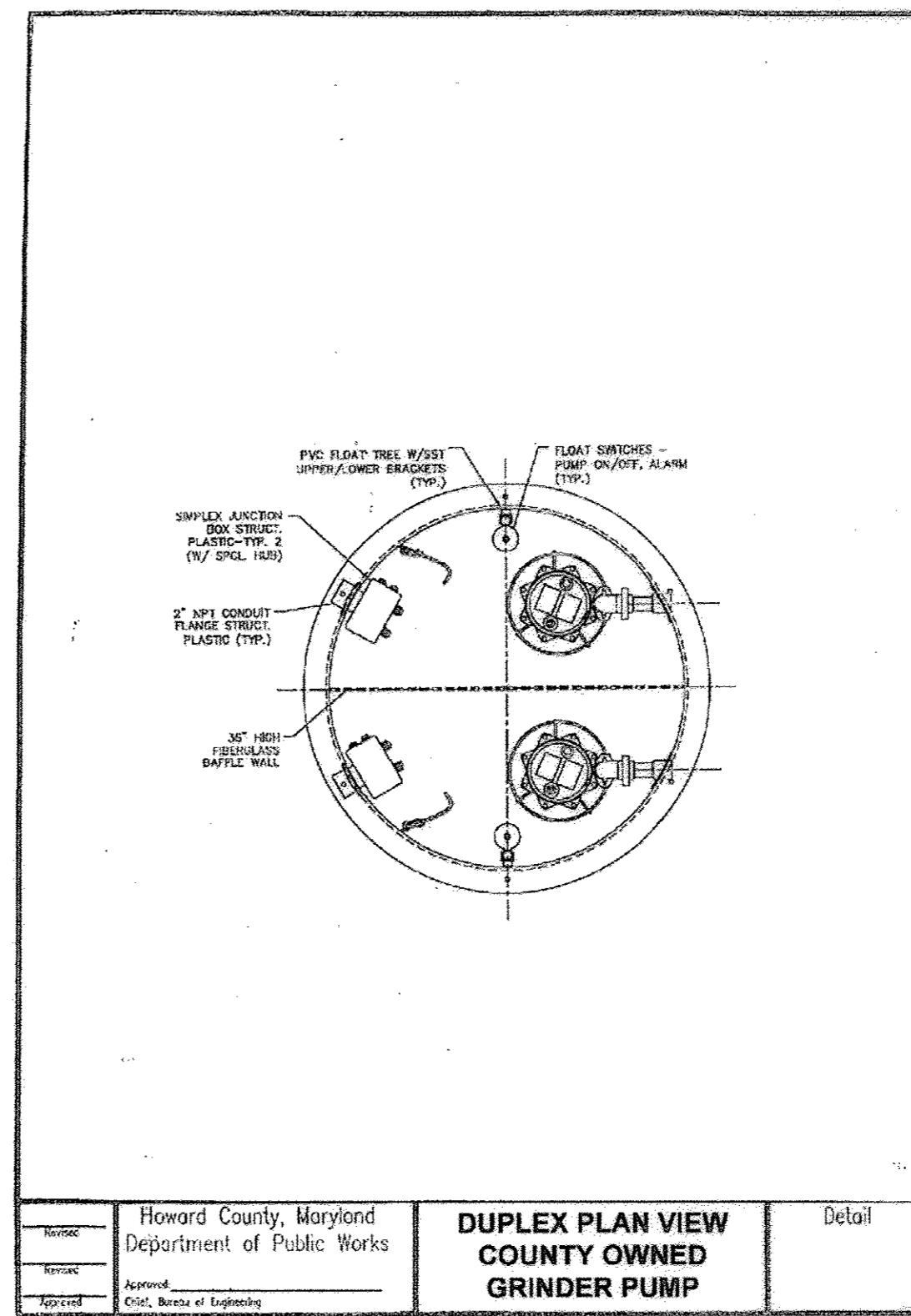
GPB- GRINDER PUMP BASIN
SV- SERVICE VALVE
SHC- SEWER HOUSE CONNECTION



CONCRETE FOOTING DETAIL



Howard County, Maryland
Department of Public Works
GRINDER PUMP DETAILS
APRIL, 2007
Detail



Howard County, Maryland
Department of Public Works
DUPLIX PLAN VIEW
COUNTY OWNED
GRINDER PUMP
Detail

SERVICE VALVE

Table with 4 columns: LOT NUMBER, MEASUREMENT 1, MEASUREMENT 2, MEASUREMENT 3. Lists service valve connections for lots 115 to 159.

GPB- GRINDER PUMP BASIN
SV- SERVICE VALVE
SHC- SEWER HOUSE CONNECTION

GRINDER PUMP BASIN table with 4 columns: LOT NUMBER, MEASUREMENT 1, MEASUREMENT 2, MEASUREMENT 3. Lists GPB to SV connections.

GRINDER PUMP BASIN table with 4 columns: LOT NUMBER, MEASUREMENT 1, MEASUREMENT 2, MEASUREMENT 3. Lists GPB to SHC connections.

GPB- GRINDER PUMP BASIN SV- SERVICE VALVE SHC- SEWER HOUSE CONNECTION

PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS
WALNUT CREEK LOW PRESSURE SYSTEM DESIGN
PHASE FOUR, LOTS 115-159

Table with 14 columns: ZONE NUMBER, CONNECTS TO ZONE, NUMBER OF PUMPS IN ZONE, ACCUM PUMPS IN ZONE, GAL/DAY PER CORE, MAX FLOW PER CORE, MAX SIM OPS, MAX FLOW (GPM), PIPE SIZE (INCHES), MAX VELOCITY (FPS), LENGTH OF MAIN THIS ZONE, FRICTION LOSS FACTOR (FT/100FT), FRICTION LOSS THIS ZONE, ACCUMULATED FRICTION LOSS (FEET), MAX MAIN ELEVATION, MINIMUM PUMP ELEVATION, STATIC HEAD (FEET), TOTAL DYNAMIC HEAD (FT).

PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)
WALNUT CREEK LOW PRESSURE SYSTEM DESIGN
PHASE FOUR, LOTS 115-159

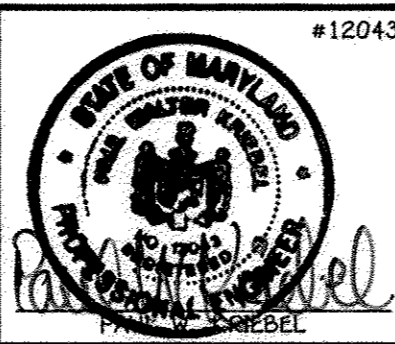
Table with 14 columns: ZONE NUMBER, CONNECTS TO ZONE, ACCUMULATED TOTAL OF PUMPS THIS ZONE, EXISTING PIPE SIZE, GAL PER 100 LINEAL FEET, LENGTH OF ZONE, CAPACITY OF ZONE, AVERAGE DAILY FLOW, AVERAGE FLUID CHANGES PER DAY, AVERAGE RETENTION TIME (HR), ACCUMULATED RETENTION TIME (HR).

AS BUILTS
BY: DFI DATE: 12-15-16

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

1 HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 12545 EXPIRATION DATE 5/16/14.
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS



DESIGNED BY: NATHAN FUHRMAN
DRAWN BY: NATHAN FUHRMAN
CHECKED BY: P.W.K.
DATE: MARCH, 2013

LOW PRESSURE SEWER SYSTEM
DETAILS

600' SCALE MAP NO. 2B BLOCK NO. 45.10.11.12.17A.18
F.C.C. WORK ORDER NO. 04001-3005
FILE NAME: WATER & SEWER MAIN EXTENSION PLAN

WALNUT CREEK
PHASE FOUR: LOTS 115 THRU 159
AND NON-BUILDABLE PRESERVATION PARCELS 'W' & 'X'
LOW PRESSURE SEWER SYSTEM
CONTRACT NO. 50-4773-D
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS SHOWN
SHEET
7 OF 7

CONTRACT NO. 50-4773-D
WALNUT CREEK
PHASE FOUR: LOTS 115 THRU 159
AND NON-BUILDABLE PRESERVATION
PARCELS 'W' & 'X'
LOW PRESSURE SEWER SYSTEM
HOWARD COUNTY, MARYLAND