

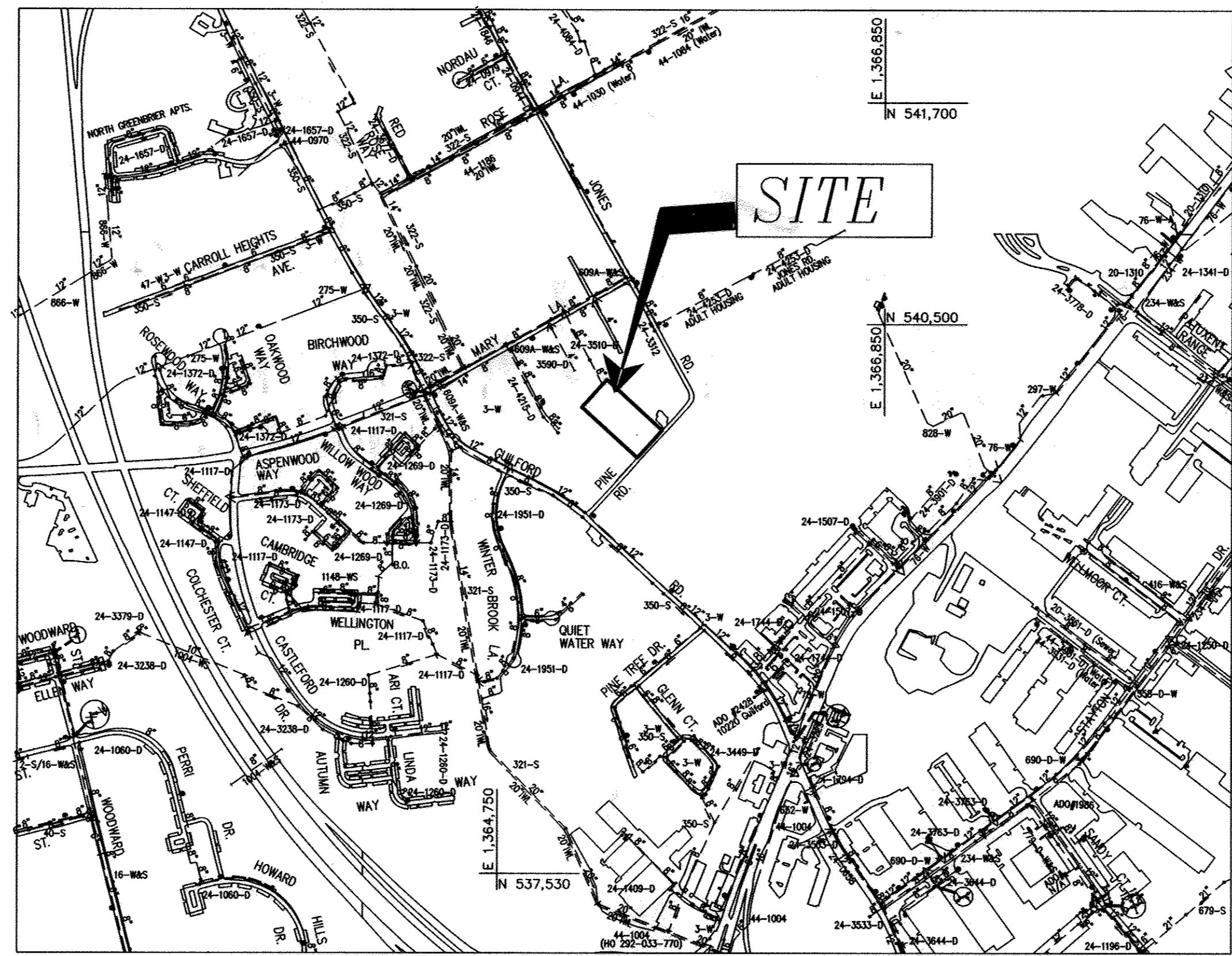
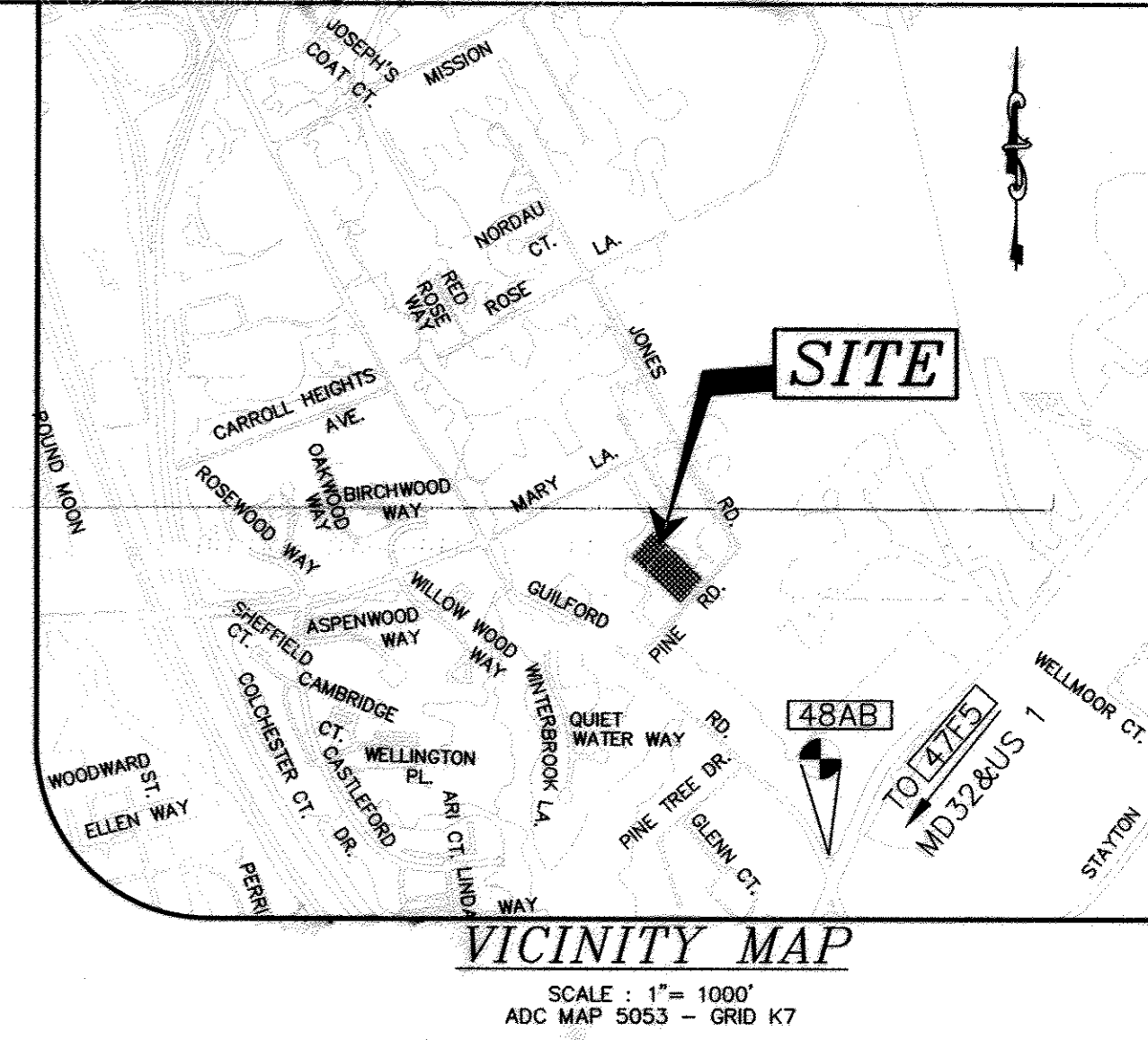
QUANTITY TABLE

ITEMS	QUANTITIES		TYPE	MANUFACTURER/SUPPLIER
	ESTIMATED	QUANTITIES		
STANDARD MH (HO. CO. STD.G-5.12)	2 EACH	2 EA.		Contractors Products
DROP MH (HO. CO. STD.S-1.32)	1 EACH	1 EA.		PLASTIC TRENDS
8" SEWER MAIN (PVC)	356 L.F.	356 L.F.	SDR-35	JM EAGLE
4" SHC	118 L.F.	122 L.F.	SDR-35	JM EAGLE
# 4" SHC	6 EACH	6 EA.	SDR-35	PLASTIC TRENDS
8" WATER MAIN (PVC C-900, DR-18)	800 L.F.	805 L.F.	DR-18	NATIONAL PIPE & PLASTIC
1 1/2" WATER HOUSE CONNECTION	90 L.F.	87 L.F.	TYPEK	CAMBRIDGE LEE
# 1 1/2" WHC	6 EACH	6 EA.		ROMAL INDUSTRIES
8"x12" T.S. & V	1 EACH	1 EA.		ROMAL INDUSTRIES
8" VALVE	1 EACH	1 EA.		MUELLER CORP.
8"x6" F.H.T. & V.	1 EACH	1 EA.		MUELLER CORP.
FIRE HYDRANT	1 EACH	1 EA.		MUELLER CORP.
8" CAP & BUTTRESS	2 EACH	2 EA.		STAR PIPE

NAME OF UTILITY CONTRACTOR: J+A CONSTRUCTION
 SURVEY AND DRAFTING DIVISION AS-BUILT DATE

BENCHMARKS

STA. No. 47F5	N 535985.0412	ELEV. 234.996
	E 1365653.4555	
STA. No. 48AB	N 536384.4474	ELEV. 225.653
	E 1366415.7904	



LOCATION MAP
SCALE: 1" = 600'

- SEWER**
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
 - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
 - FORCE MAINS SHALL BE D.I.P. ONLY.
 - MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
 - MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL 05.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATED THAT THE CELLAR CANNOT BE SERVED.
- EROSION AND SEDIMENT CONTROL FOR THIS CONTRACT IS PROVIDED UNDER: F-12-047 AND AS PER SECTION 308 OF VOLUME IV OF THE HOWARD COUNTY DESIGN MANUAL.**

- GENERAL NOTES**
- 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.
 - TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN SURVEY PERFORMED ON OR ABOUT SEPTEMBER 2011 BY MILDENBERG, BOENDER ASSOCIATES.
 - 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. 47C1 AND NO. 48AB. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE HO.CO. GEODETIC CONTROL STA. 47CMT2 AND 47CM7.
 - 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 THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF 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 DRAWING, 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.
 - WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [square with X] 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.	410-795-1390
STATE HIGHWAY ADMINISTRATION	410-531-5533
VERIZON	1-800-743-0033/410-224-9210
MISS UTILITY	1-800-257-7777
 - 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 CONSTRUCTION. THE CONTRACTOR SHALL REMOVE TREES, BRUSH AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 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 18.114(a) OF THE HOWARD COUNTY CODE.

INDEX OF DRAWINGS

NO.	DESCRIPTION
1	TITLE SHEET
2	WATER AND SEWER PLAN
3	WATER AND SEWER PROFILES

TYPE OF BUILDING

TYPE OF BUILDING	RESIDENTIAL
No. OF UNITS	6
No. OF WATER HOUSE CONNECTION	6
No. OF SEWER HOUSE CONNECTIONS	6
DRAINAGE AREA	LITTLE PATUXENT
TREATMENT PLANT	LITTLE PATUXENT

- LEGEND**
- EXISTING SEWER MAIN AND MANHOLE
 - |-| EXISTING WATER MAIN AND VALVE
 - EXISTING FIRE HYDRANT
 - 8" S PROPOSED SEWER MAIN
 - 8" S PROPOSED SEWER HOUSE CONNECTION
 - 8" W PROPOSED WATER MAIN
 - 8" W PROPOSED WATER HOUSE CONNECTION
 - PROPOSED FIRE HYDRANT

CONTRACT NO.: 24-4732-D
NORDAU SUBDIVISION
LOTS 13 THRU 18, SECTION E-1
RESUBDIVISION OF LOT 2
WATER AND SEWER MAIN EXTENSION
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

- WATER**
- ALL WATER MAINS SHALL BE PVC (C-900), DR-18 UNLESS OTHERWISE NOTED.
 - TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
 - VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
 - ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
 - FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
 - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
 - TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP- AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
 - FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SERVICE WITH THE PERFORMER'S MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS-REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POND SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS INCLUDING RESTRAINTS AND HARNESSES. ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
9. ALL NEW WATER MAIN JOINTS ARE TO BE RESTRAINED.

DEVELOPER
 H AND H ROCK COMPANIES
 6800 DEERPATH ROAD, SUITE 100
 ELK RIDGE, MD 21075
 (410)579-2442

PROPERTY OWNER
 PINE ROAD, LLC
 6800 DEERPATH ROAD, SUITE 150
 ELK RIDGE, MD 21075
 (410)997-0296

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER'S SIGNATURE: [Signature] DATE: 4/14/12
 DEVELOPER'S NAME: [Name]

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.

ENGINEER'S SIGNATURE: [Signature] DATE: 5/14/12
 ENGINEER'S NAME: JEFFREY SLOMAN

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

HOWARD SCD: [Signature] DATE: 5/21/12

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.: 40091, EXPIRATION DATE: 2/13/13

PLAN REFERENCE NUMBERS:
 ECP 12-020, F-12-047

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES: [Signature] DATE: 5/14/12

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] DATE: 6/6/12

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Fax: (410) 997-0298 Fax.



engineering	illustration	approval	project	date	BY	NO.	REVISION	DATE
JLS	JLS	RJH	11-017	APR 2012	EG	A	16-BUILTS	WLL

TITLE SHEET

600' SCALE MAP NO. 47 BLOCK NO. 42

NORDAU SUBDIVISION
 LOTS 13 THRU 18 (RESUBDIVISION LOT 2)
 CONTRACT NO.: 24-4732-D
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY

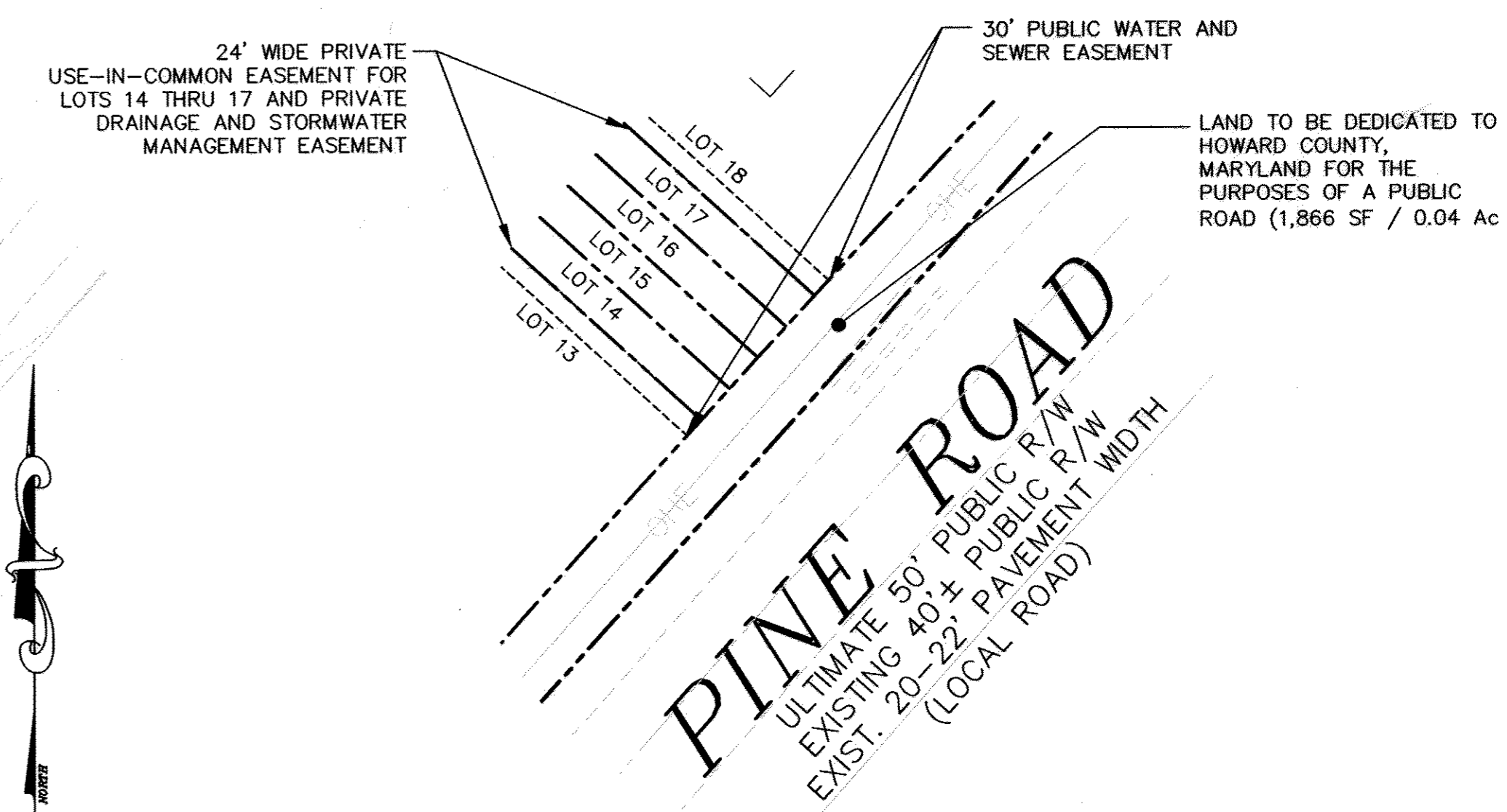
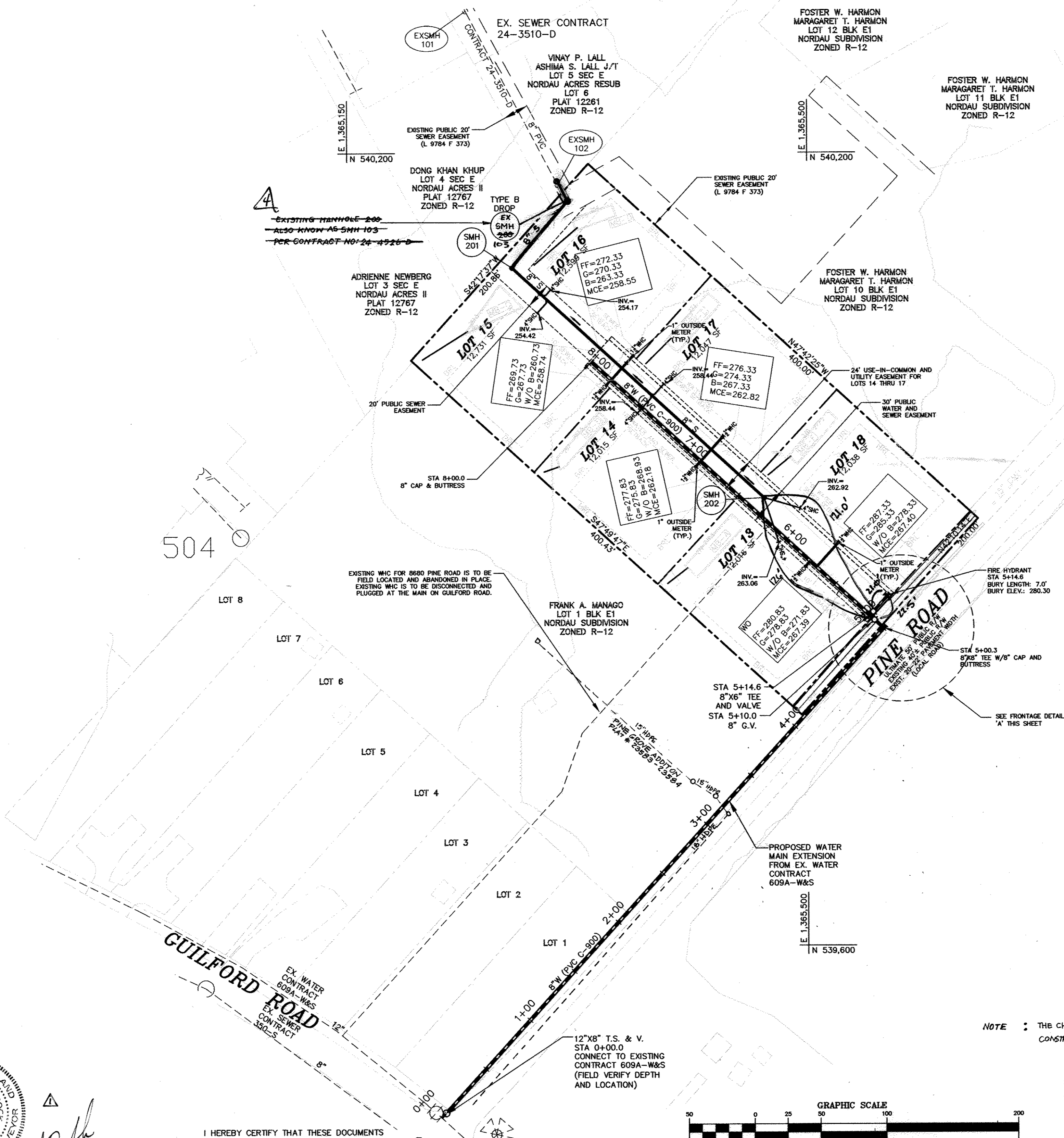
scale AS SHOWN
1 OF 3

H: 11-017 PINE ROAD (Nordenau) DWG17-W&S OCT 2011

WATER / SEWER MAIN TABULATION CHART		
APPURTENANCE	NORTHING	EASTING
SMH 200	N 540160.4187	E 1365318.6178
SMH 201	N 540113.0226	E 1365378.5005
SMH 202	N 539336.6424	E 1365466.8702
12"X8" T.S.&V.	N 539469.8727	E 1365220.6588
8"X8" TEE WITH VALVE AND CAP AND BUTTRESS	N 539839.6681	E 1365557.6707
8"X6" TEE	N 539849.2922	E 1365547.1898
8" CAP AND BUTTRESS	N 540041.8308	E 1365335.8121

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE			
LOT	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
13	PINE ROAD	FF=98.0	SMH-202:84.0
14	PINE ROAD	W/M LOT 14:45.0 W/M LOT 15:33.0	
15	PINE ROAD	SMH-201:43.0 SMH-103:87.0	
16	PINE ROAD	SMH-201:37.0 SMH-103:67.0	
17	PINE ROAD	W/M LOT 16:35.5 W/M LOT 17:46.5	
18	PINE ROAD	FF=96.0	SMH-202:78.0

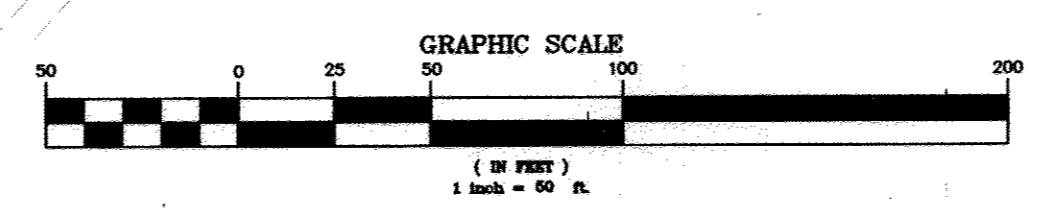
WATER HOUSE CONNECTION AS-BUILT LOCATION TABLE			
LOT	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2
13	PINE ROAD	FF=68.0	SMH-202:67.0
14	PINE ROAD	SMH-201:58.5	SMH-103:67.5
15	PINE ROAD	SMH-17:46.5	SMH-14:35.0
16	PINE ROAD	SMH-17:35.5	SMH-14:45.0
17	PINE ROAD	SMH-101:58.0	SMH-17:58.5
18	PINE ROAD	FF=57.5	SMH-202:67.0



SEWER MANHOLE	TYPE
200-103	HO. CO. STD. S-1.32
201	HO. CO. STD. G-5.11
202	HO. CO. STD. G-5.11

EXISTING BUILDING ADDRESS:
8680 PINE ROAD

NOTE: THIS CHANGE TO THIS PLAN IS FOR REFERENCE USE ONLY, TO MATCH THE DESIGN TO BE CONSTRUCTED UNDER CONTRACT 24-4566-D.



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.: 40091, EXPIRATION DATE: 2/13/13

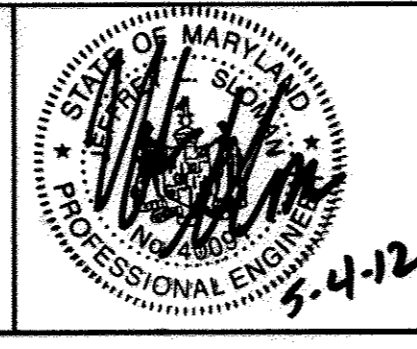
DEVELOPER
H AND H ROCK COMPANIES
6800 DEERPATH ROAD, SUITE 100
ELKRIE, MD 21075
(410)579-2442

PROPERTY OWNER
PINE ROAD, LLC
6800 DEERPATH ROAD, SUITE 150
ELKRIE, MD 21075
(410)997-0296

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Sheila C. ...
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
...
CHIEF, DEVELOPMENT ENGINEERING DIVISION

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
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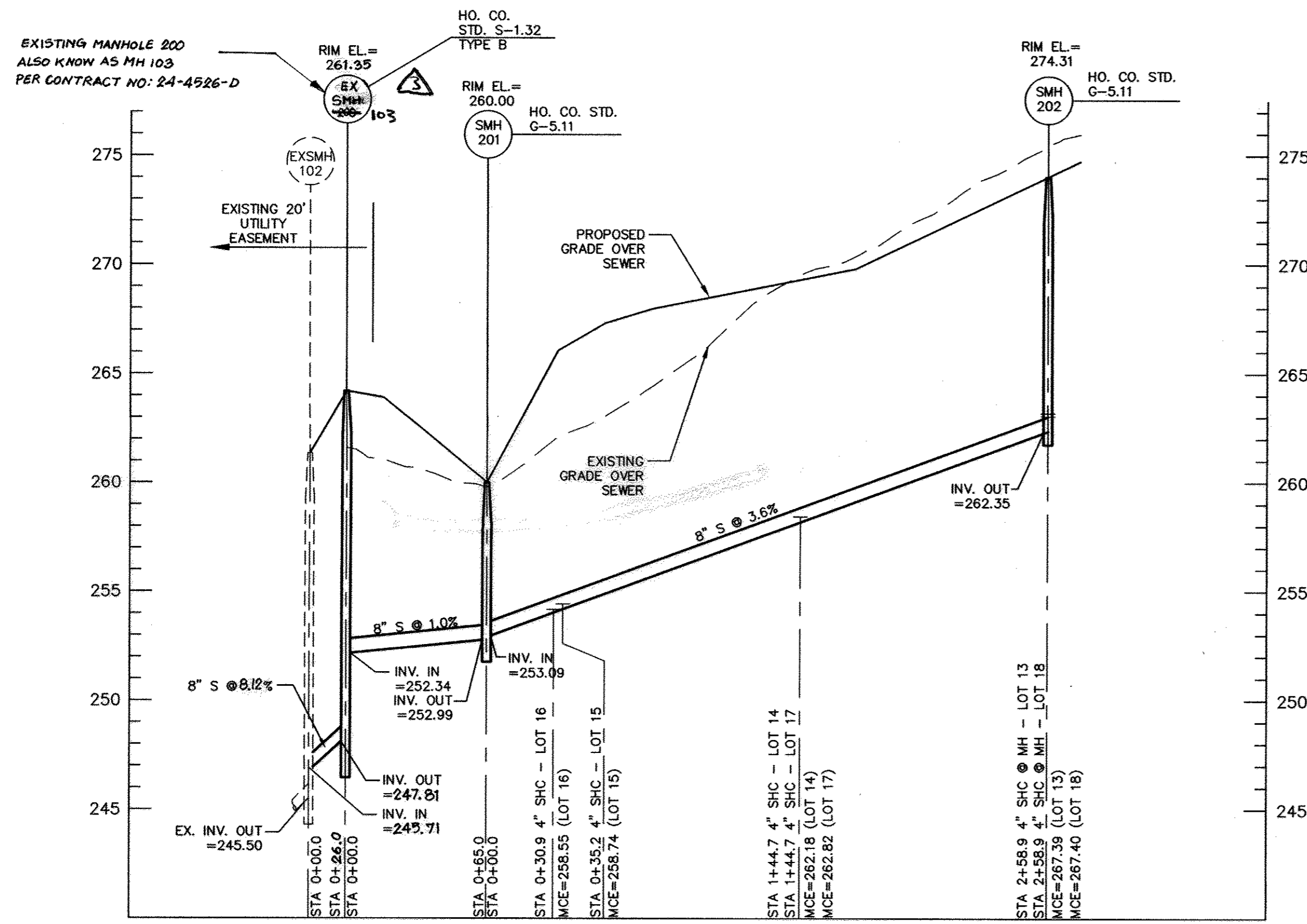
engineering	JLS	illustration	JIS	approval	RJH	project	11-017	date	APR 2012	BY	NO.	REVISION	DATE
		EEG	4	As-BUILTS									
		EEG	3	As-BUILTS									
		MBA	2	ADD STORM DRAIN PIPE									
		AA	1	REVISE LOCATION OF SMH 102 AND 200 AND ADD NOTE									

WATER AND SEWER PLAN
600' SCALE MAP NO. 47 BLOCK NO. 42

NORDAU SUBDIVISION
LOTS 13 THRU 18 (RESUBDIVISION LOT 2)
CONTRACT NO.: 24-4732-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY

scale
1"=50'
2 OF 3

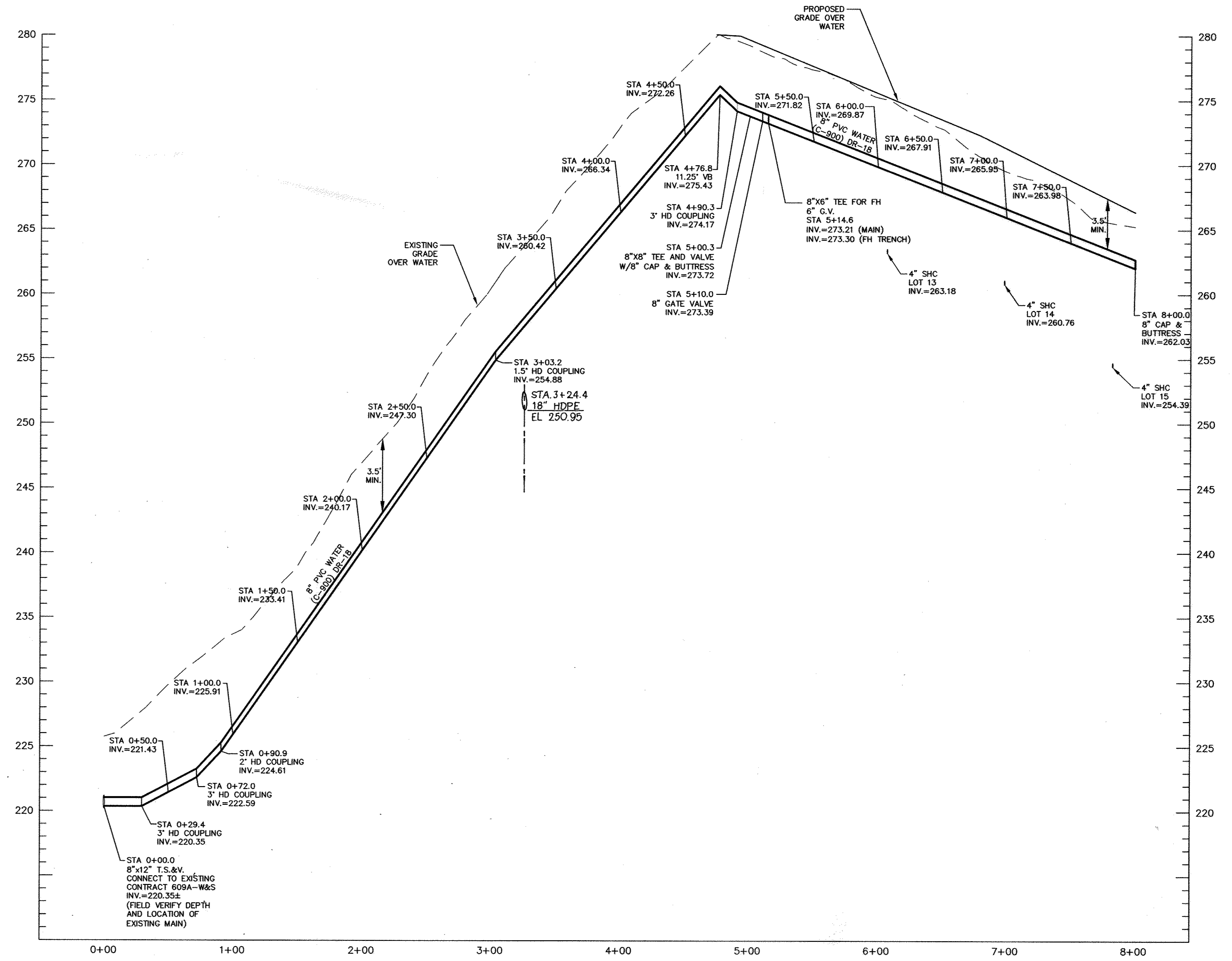
K:\11-017 PINE ROAD (NORDAU)\DWG\17-W&S OCT 2011



PROFILE - SANITARY SEWER

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

LOT	INV. @ R/W (OR EASEMENT)	MCE	SLOPE
13	263.06	267.39	2.0%
14	258.44	262.18	2.0%
15	254.42	258.74	2.0%
16	254.17	258.55	2.0%
17	258.44	262.82	2.0%
18	262.92	267.40	2.0%



PROFILE - WATER

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

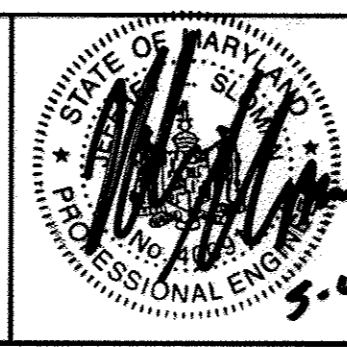
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
S. J. CLEGG
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
C. BOENDER
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
(410) 997-0296 Fax (410) 997-0298 Fax



engineering	JLS				
illustration	JLS				
approval	RH	EEG	3	AS-BUILTS	6/16
project	11-017	AA	AA	REVISE INVERT AND SLOPE FOR SMH 102 AND 200 AND ADD NOTE 7-28-12	3/2012
date	APR 2012	BY	NO.	REVISION	DATE

WATER AND SEWER PROFILES

600' SCALE MAP NO. 47 BLOCK NO. 42

NORDAU SUBDIVISION
LOTS 13 THRU 18 (RESUBDIVISION LOT 2)
CONTRACT NO.: 24-4732-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY

scale AS SHOWN
3 OF 3

DEVELOPER
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(410)579-2442

PROPERTY OWNER
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