

CONTRACT NO. 24-4130-D

FINAL WATER & SEWER PLAN

SNOWDEN RIVER BUSINESS PARK

SECTION 1 AREA 1 PARCEL C-1

KENDALL OVERLOOK

**2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND**

QUANTITIES (PUBLIC)		AS-BUILT		
ITEMS	QUANTITIES	QUANTITIES ESTIMATED	TYPE	MANUFACTURER/SUPPLIER
8" WATER MAIN (DIP)	2112 LF			
6" WATER MAIN (DIP)	104 LF			
FIRE HYDRANT	6 EA			
1" WHC	1,466 LF			
1-1/2" WHC	79 LF			
2" WHC	28 LF			
6" VALVES	6 EA			
8" VALVES	8 EA			
SLEEVE & VALVE 12" X 8" TAPPING	1 EA			
8" X 8" TEE	2 EA			
8" X 6" TEE	6 EA			
8" SAN. (DIP)	1202 LF			
8" SAN. (PVC)	707 LF			
4" SHC	1505 LF			
DROP SHC TYPE 'A'	19 EA			
DROP SHC TYPE 'B'	16 EA			
PRECAST MANHOLE (4' DIA.)	14 EA			
WATER TIGHT FRAME & COVER	4 EA			
TYPE 'B' SANITARY DROP CONNECTION	4 EA			
NAME OF UTILITY CONTRACTOR:				
SURVEY AND DRAFTING DIV.	CHECK BOX AS-BUILT DATE			

SHEET INDEX	
1	COVER SHEET
2	WATER AND SEWER PLAN
3	WATER PROFILES
4	SANITARY SEWER PROFILES
5	SANITARY SEWER PROFILES

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON SDP-03-163

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW

Jim Myers 12/30/03
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Robertson 12/30/03
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Ruth B... 12-22-03
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
[Signature] 1/5/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

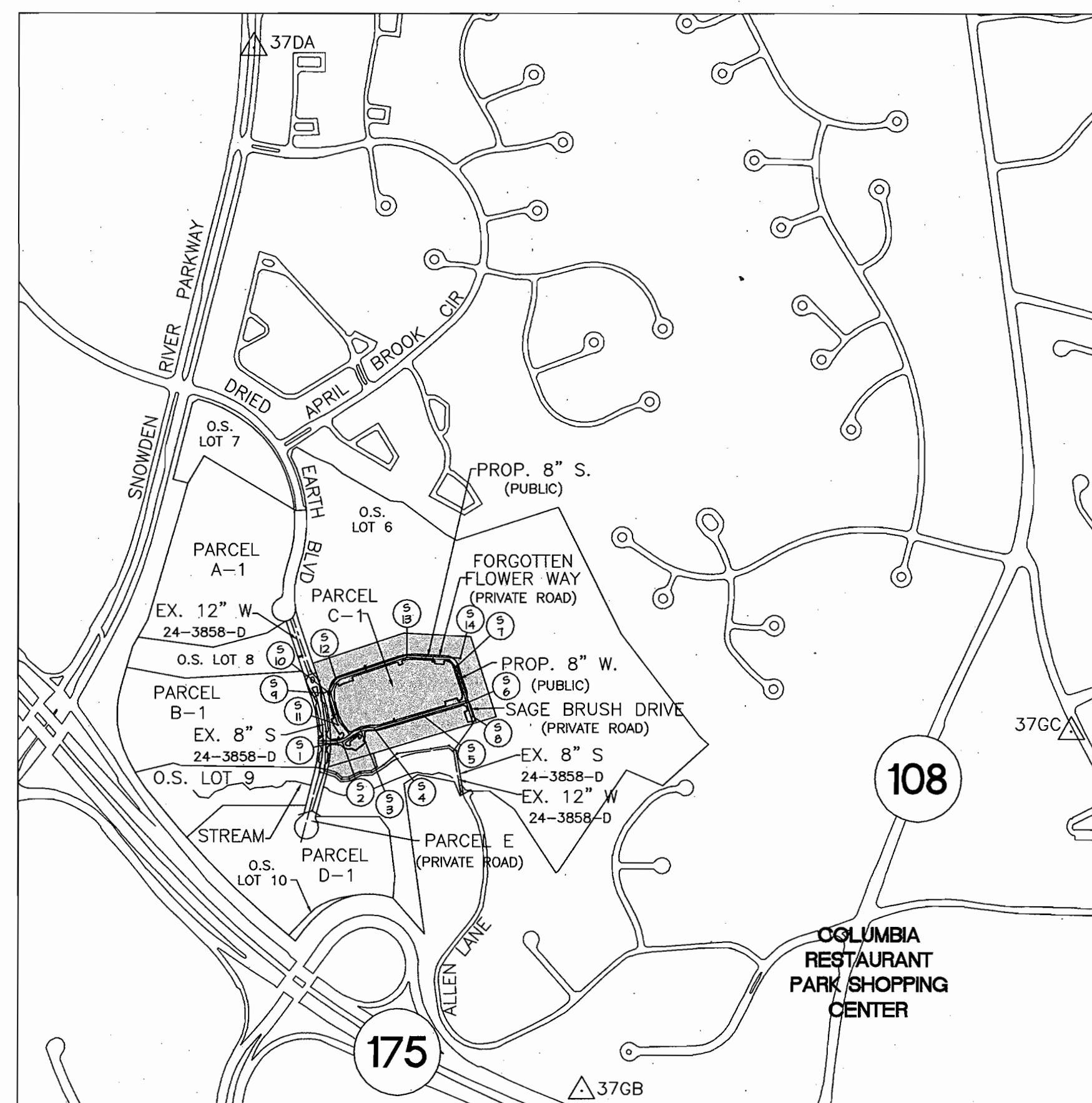
MORRIS & RITCHE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
9090 JUNCTION DRIVE SUITE 9
ANNAPOLIS JUNCTION, MARYLAND 20701
(410) 792-9792 or (301) 776-1690
FAX (410) 792-7395

PIERO VAN MELLITS
No. 21875
REGISTERED PROFESSIONAL ENGINEER
14-15-03

DES: CAO/GRL
DRN: GRL/BS
CHK: PVM
DATE: 12/15/03
BY NO. REVISIONS DATE 600' SCALE MAP NO. 37 BLOCK NO. 19

OWNER
A. NAME: BRIAN KNAUFF B. DAYTIME TELEPHONE: (410) 712-7012
C. COMPANY: THE RYLAND GROUP, INC.
D. ADDRESS: 7250 PARKWAY DRIVE, SUITE 520
E. CITY: HANDOVER STATE: MD ZIP: 21076

SNOWDEN RIVER BUSINESS PARK
SECTION 1, AREA 1, PARCEL C-1
KENDALL OVERLOOK
(78 AGE RESTRICTED ADULT HOUSING UNITS AND 1 CLUBHOUSE)
COVER SHEET
CONTRACT NO. 24-4130-D
L 5289 F. 330
ZONED: NT TAX MAP: 37 GRID: 19 PARCEL 725
ELECTION DISTRICT NO.: 6 HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 1 OF 5



VICINITY MAP

SCALE: 1" = 600'
COPYRIGHT ADC THE MAP PEOPLE
PERMITTED USE NO. 20602149
MAP NO. 16 GRIDS E,10

W & S	TYPE OF BUILDING: ACTIVE ADULT TOWNHOUSE
COUNTY USE	NUMBER OF BUILDABLE LOTS: 1
WATER NO. E-06	NUMBER OF NON-BUILDABLE LOTS: 0
SEWER NO. 3450000	NUMBER OF W.H.C.: 79
TEST GRADIENT: 700	NUMBER OF S.H.C.: 79
	DRAINAGE AREA: LITTLE PATUXENT
	TREATMENT PLANT: LPWWTP

BENCHMARKS

BENCHMARK # 37GB
HOWARD COUNTY GEODETIC SURVEY CONTROL
N 553,452.828 E 1,368,503.19
ELEVATION=325.233'
BENCHMARK # 376C
HOWARD COUNTY GEODETIC SURVEY CONTROL
N 555,250.797 E 1,370,946.37
ELEVATION=331.192'
BENCHMARK # 37DA
HOWARD COUNTY GEODETIC SURVEY CONTROL
N 558,667.518 E 1,366,857.48
ELEVATION=379.786'
ALL BENCHMARKS ARE STAMPED BRASS OR ALUMINUM DISC SET ON TOP OF A 3" DEEP COLUMN OF CONCRETE USUALLY SET 1" OR 2" BELOW TERRAIN SURFACE.

GENERAL NOTES

PART I.

- 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.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83/91.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
- 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 PROJECT SITE.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL \oplus AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWING. 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).....410-850-4620
BGE (UNDERGROUND DAMAGE CONTROL).....410-787-9068
BUREAU OF UTILITIES.....410-313-4900
COLONIAL PIPELINE CO.....410-795-1390
MISS UTILITY.....1-800-257-7777
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.
- THE 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 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.

PART II. WATER

- ALL WATER MAINS SHALL BE D.I.P. CLASS 52 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 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.

PART III. SEWER

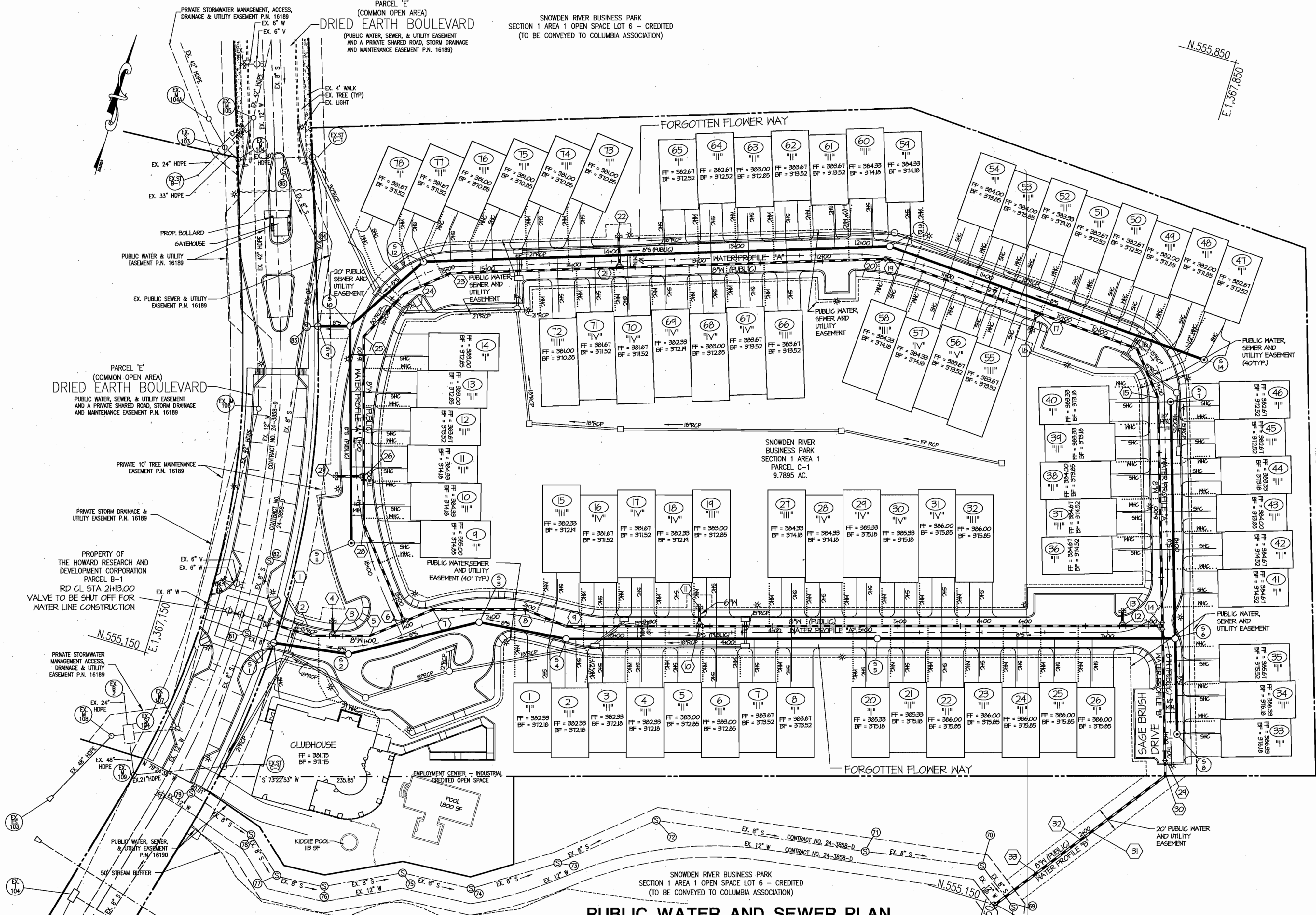
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C., UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER, UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED "W.T." IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. 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." INDICATES THAT THE CELLAR CANNOT BE SERVED.

ADDITIONAL NOTES

- DPZ REFERENCE NUMBERS:
FDP-239 - SNOWDEN RIVER BUSINESS PARK SECTION 1 AREA 1 FINAL DEVELOPMENT PLAN (ALLOWS USE BY RIGHT)
F-01-142 - SNOWDEN RIVER BUSINESS PARK SECTION 1, AREA 1, PARCELS 'A' THRU 'E' & LOTS 1 THRU 5 RECORDED AS PLAT NO. 15182 THRU 15188
F-01-142 - SNOWDEN RIVER BUSINESS PARK SECTION 1, AREA 1, PARCELS 'A' THRU 'E' & LOTS 1 THRU 5 CONSTRUCTION PLAN
F-04-15 - SNOWDEN RIVER BUSINESS PARK SECTION 1, AREA 1, PARCELS 'A-1', 'B-1', 'C-1', 'D-1', AND E & LOTS 6 THRU 10 RECORDED AS PLAT NO. 16185 THRU 16191 (RESUBDIVISION OF PLATS 15182 THRU 15188)
F-04-73 - SNOWDEN RIVER BUSINESS PARK SECTION 1, AREA 1, PARCELS 'C-1' AND E & LOTS 6 THRU 10 RECORDED AS PLAT NO. 16185 THRU 16191 (RESUBDIVISION OF PLATS 16185 THRU 16191)
CONTRACT NO. 24-3858-D EXISTING PUBLIC WATER AND SEWER PLANS
CONTRACT NO. 24-4130-D PROPOSED PUBLIC WATER AND SEWER PLANS
WP-03-110 - WAIVER PETITION FOR REDUCTION OF MINIMUM PUBIC ROAD FRONTAGE
- 12" WATER VALVES TO BE CLOSED IN CASE OF EMERGENCY ARE DRIED EARTH BLVD. STA. 5+90 AND STA. 22+65.

LEGEND

- ===== PROPOSED CURB & GUTTER
- ===== PROPOSED DRIVEWAY
- PROPOSED TOWNHOME
- CENTER LINE OF ROAD
- (10) PROPOSED TOWNHOME UNIT NUMBER
- ===== EXISTING CURB
- EXISTING PROPERTY LINE
- EXISTING ZONING LINE
- EX. 8" S. EXISTING SANITARY SEWER
- EX. 15" HDPE EXISTING STORM DRAIN
- EX. 8" W. EXISTING WATER LINE
- FF= 302.33 FINISHED FLOOR ELEVATION
- BF= 312.33 BASEMENT FLOOR ELEVATION
- PROPOSED WATER HOUSE CONNECTION
- PROPOSED PUBLIC WATER LINE
- PROPOSED PUBLIC FIRE HYDRANT
- PROPOSED PUBLIC WATER VALVE
- PROPOSED PUBLIC WATER TEE (W/ 2 VALVES)
- (14) PROPOSED FITTING/HYDRANT NO.
- PROPOSED PUBLIC SANITARY SEWER
- PROPOSED PRIVATE STORM DRAIN
- PROPOSED 4" SEWER HOUSE CONNECTION
- PROPOSED STREET LIGHT

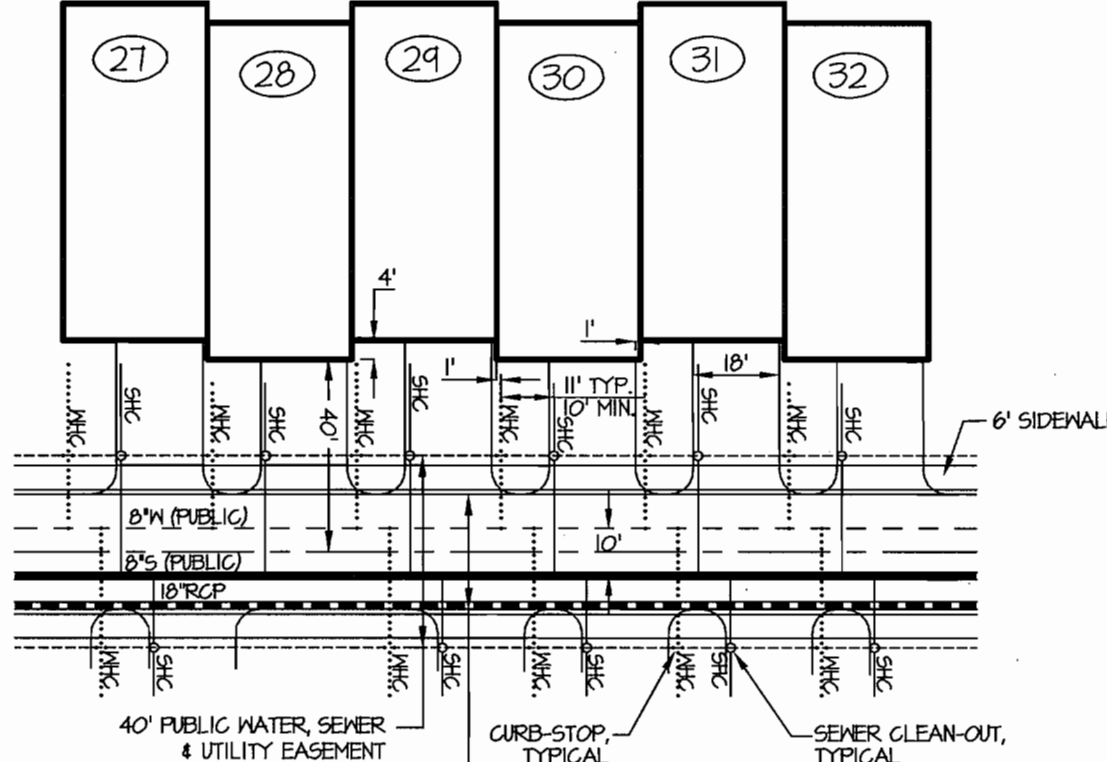


- NOTES:**
- ALL PROPOSED WATERLINES AND HYDRANTS, WITHIN THE PROPOSED PUBLIC WATER, SEWER AND UTILITY EASEMENT, ARE PUBLIC.
 - THE WATER HOUSE CONNECTIONS (WHC), FROM THE EASEMENT/CURB STOP TO THE INDIVIDUAL UNITS ARE PRIVATE.
 - THE SANITARY SEWER, WITHIN THE PROPOSED PUBLIC WATER, SEWER AND UTILITY EASEMENT IS PUBLIC. THE SANITARY SEWER WITHIN DRIED EARTH BOULEVARD IS PUBLIC.
 - THE SEWER HOUSE CONNECTIONS (SHC) FROM THE EASEMENT LINE TO THE INDIVIDUAL UNITS ARE PRIVATE.
 - SEE PLAN AND TYPICAL DETAIL FOR WATER HOUSE CONNECTION (WHC) LOCATIONS, HOWARD CO. STANDARD DETAIL W-3.21. ALL WHC'S ARE 1" UNLESS OTHERWISE NOTED.
 - SEE PLAN AND TYPICAL DETAIL FOR SEWER HOUSE CONNECTION (SHC) LOCATIONS, HOWARD CO. STANDARD DETAILS S-2.11, S-2.12 AND S-2.13. ALL SHC'S ARE 4" UNLESS OTHERWISE NOTED. A TYPE "C" DROP CONNECTION IS CALLED FOR ON THE SANITARY SEWER CLEANOUT CHART ON SHEET 5, WHEN THE DIFFERENCE IN INVERT ELEVATIONS AT THE MAIN IS AT LEAST 1'-0". IF FIELD CONDITIONS DO NOT ALLOW FOR THIS CONNECTION TO BE MADE, A TYPE "B" DROP HOUSE CONNECTION CAN BE USED HOLDING THE LOWEST DHC INVERT ELEVATION AT THE MAIN AND EXTENDING THE LATERAL TO THE UNIT AT A 2% SLOPE.
 - A MIN. 10' SEPARATION SHALL BE MAINTAINED BETWEEN THE WHC AND SHC. THE TYPICAL SEPARATION BETWEEN THE WHC & SHC CONNECTION IS 11'-0".
 - THE WATER IS TYPICALLY LOCATED 5' TO THE LEFT OF THE ROAD CENTERLINE, AND THE SEWER 5' RIGHT OF CENTERLINE. SEE PLAN VIEW FOR APPROXIMATE LOCATION AND SCHEDULES FOR ACTUAL LOCATION.
 - ALL HORIZONTAL AND VERTICAL BENDS SHALL BE BUTTRESSED IN ACCORDANCE WITH HOWARD CO. STANDARD DETAIL W-2.22.
 - TEES SHALL BE BUTTRESSED IN ACCORDANCE WITH HOWARD CO. STANDARD DETAIL W-2.23.
 - REFER TO SHEET NO. 3 FOR INVERTS OF THE PROPOSED WATER MAIN AND ELEVATIONS OF VALVE BOXES AND HYDRANTS.
 - SEE SEWER PROFILE SHEETS FOR FURTHER INFORMATION ON SLOPE, INVERTS AND TYPE OF SHC.

PUBLIC WATER AND SEWER PLAN
SCALE: 1"=50'

* STATION LOCATED ON SAGE BRUSH DRIVE ALL OTHERS ARE LOCATED ON FORGOTTEN FLOWER WAY

NOTE NO.	WL STATION	WATER PROFILE	REMARK	ROAD & STATION	OFFSET
1	0+00	A	CONNECT TO EXISTING 8" WATER LINE STUB, AFTER PROPOSED SYSTEM HAS BEEN TESTED, DISINFECTED & APPROVED BY HOWARD CO. DPW	0+31.98	5.88' L
2	0+25.04	A	8" - 22.5' BEND	0+57.44	5.76' L
3	0+41.86	A	8" X 6" TEE W/ 1-6" VALVE & ROADWAY BOX (NW)	0+75.12	8.39' L
4	0+13.66	A-FH	6" FIRE HYDRANT, BURY EL. = 379.78, BURY LENGTH = 7.0'	0+73.96	19.99' L
5	0+71.65	A	8" - 22.5' BEND	1+06.98	6.90' L
6	1+01.18	A	= STA 18+19.29 WATER PROFILE "A", 8" X 8" TEE W/ 2-8" VALVES & ROADWAY BOXES (NW & NE)	1+38.38	9.27' L
7	1+26.03	A	8" - 22.5' BEND	1+62.06	9.95' L
8	1+39.87	A	8" - 22.5' BEND	2+32.87	5.37' L
9	2+34.80	A	8" - 22.5' BEND	2+67.25	0.19' R
10	3+41.48	A	8" X 6" TEE W/ 1-8" (NE) & 1-6" (N) VALVE & ROADWAY BOX	3+74.21	5.00' L
11	0+15.10	A-FH	6" FIRE HYDRANT, BURY EL. = 378.82, BURY LENGTH = 5.5'	3+74.21	20.10' L
12	6+79.39	A	8" X 6" TEE W/ 1-6" VALVE AND ROADWAY BOX (NW)	7+12.86	4.54' L
13	0+11.54	A-FH	6" FIRE HYDRANT, BURY EL. = 383.12, BURY LENGTH = 6.5'	7+15.76	15.88' L
14	17+12.23	A	= STA 0+00.00 WATER PROFILE "B", 8" X 8" TEE W/ 3-8" VALVES & ROADWAY BOXES (NW, SW & SE)	0+14.68*	3.79' L
15	8+93.43	A	8" - 22.5' BEND	9+17.52	5.00' L
16	9+36.45	A	8" - 45' BEND	9+65.74	3.38' L
17	10+20.90	A	8" X 6" TEE W/ 1-6" VALVE & ROADWAY BOX (S)	10+51.58	5.58' L
18	0+14.41	A-FH	6" FIRE HYDRANT, BURY EL. = 380.00, BURY LENGTH = 4.5'	10+51.63	20.00' L
19	11+47.88	A	8" - 22.5' BEND	11+79.06	1.54' L
20	11+49.88	A	8" VALVE & ROADWAY BOX	11+81.04	1.90' L
21	13+62.85	A	8" X 6" TEE W/ 1-6" VALVE & ROADWAY BOX (NW)	13+93.99	2.50' L
22	0+25.00	A-FH	6" FIRE HYDRANT, BURY EL. = 379.05, BURY LENGTH = 5.0'	13+93.99	20.00' R
23	14+97.49	A	8" - 22.5' BEND	15+29.51	4.85' L
24	15+38.29	A	8" - 22.5' BEND	15+74.16	4.41' L
25	15+84.73	A	8" - 45' BEND	16+19.69	7.91' R
26	16+96.69	A	8" X 6" TEE W/ 1-6" VALVE & ROADWAY BOX (NW)	17+30.68	3.26' L
27	0+21.79	A-FH	6" FIRE HYDRANT, BURY EL. = 381.78, BURY LENGTH = 6.0'	17+39.50	18.00' R
28	17+35.07	A	8" - 22.5' BEND	17+69.59	0.77' L
29	1+06.69	B	8" VALVE & ROADWAY BOX	1+17.86*	5.00' R
30	1+11.69	B	8" - 45' BEND (ROTATED DOWN)	N/A	N/A
31	1+95.89	B	8" - 11.25' VERT. BEND	N/A	N/A
32	2+07.64	B	8" - 11.25' VERT. BEND	N/A	N/A
33	2+51.52	B	8" - 11.25' VERT. BEND	N/A	N/A
34	2+91.99	B	12" X 8" TAPPING SLEEVE W/ 1-8" VALVE AND ROADWAY BOX (N)	N/A	N/A



- NOTES:**
- SEE PLAN FOR LOCATION OF SERVICES.
 - MAINTAIN 10'-0" OF BETWEEN WATER & SEWER HOUSE CONNECTIONS.
 - CURB STOPS AND CLEANOUTS, IF LOCATED IN THE DRIVEWAY, SHALL HAVE TRAFFIC BEARING FRAME AND COVER.
 - SEE PLAN AND TYPICAL DETAILS FOR SEWER HOUSE CONNECTION (SHC) AND WATER HOUSE CONNECTION (WHC) LOCATIONS, HOWARD CO. STANDARD DETAILS S-2.11, S-2.12, S-2.13 AND W-3.21, RESPECTIVELY.

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Jim Meyer 12/30/03
NATURAL RESOURCES COOPERATIVE SERVICE DATE

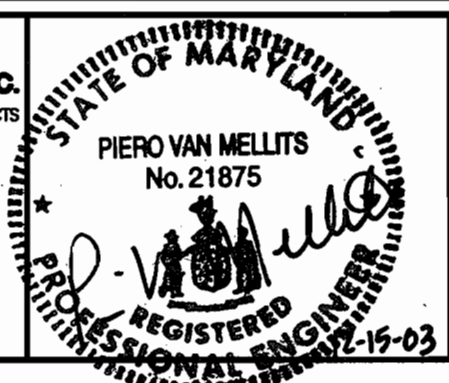
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John K. Robertson 12/30/03
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert B. Bunn 12-22-03
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
John J. ... 1/5/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MORRIS & RITCHE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
9090 JUNCTION DRIVE SUITE 9
ANNAPOLIS JUNCTION, MARYLAND 20701
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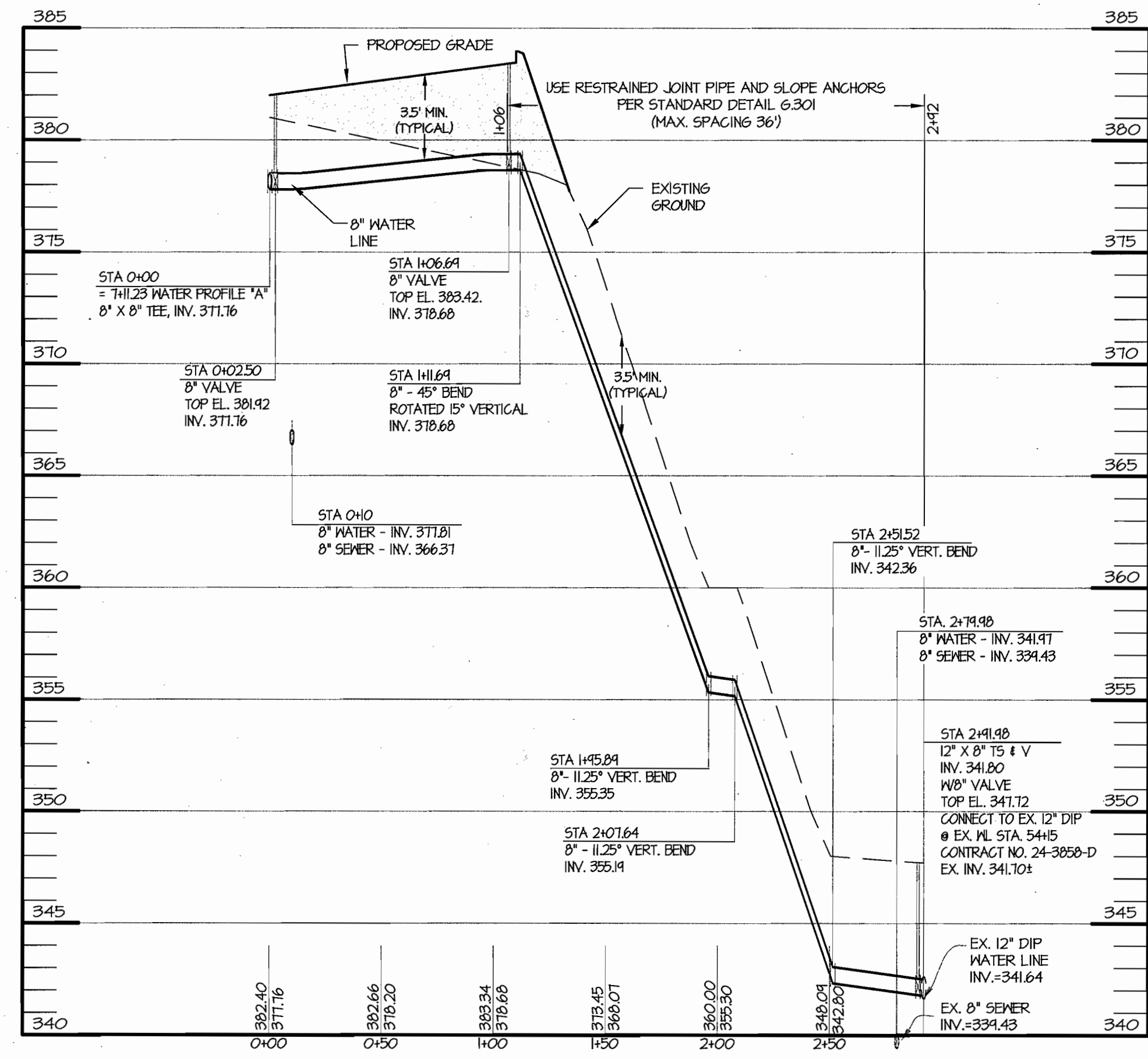
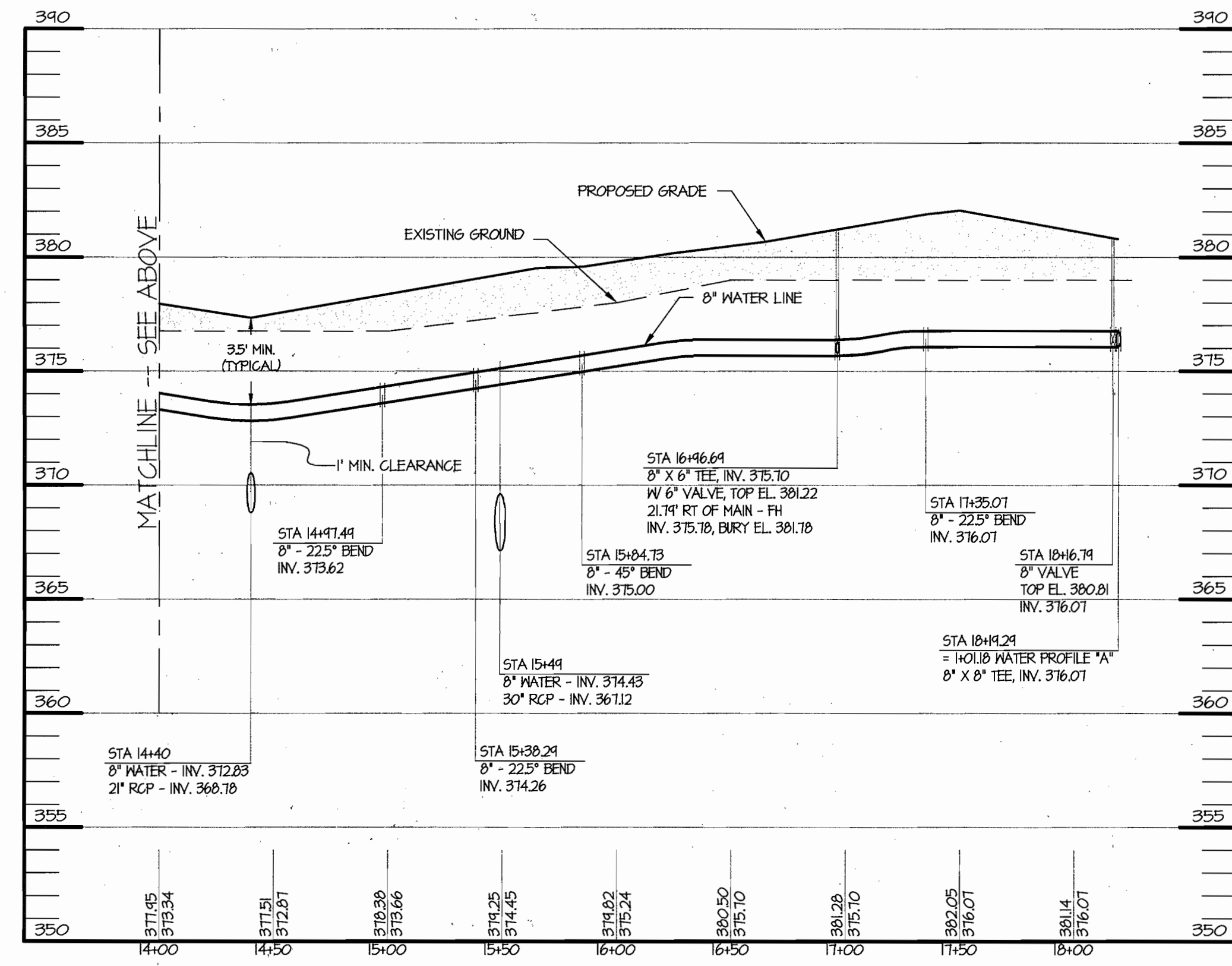
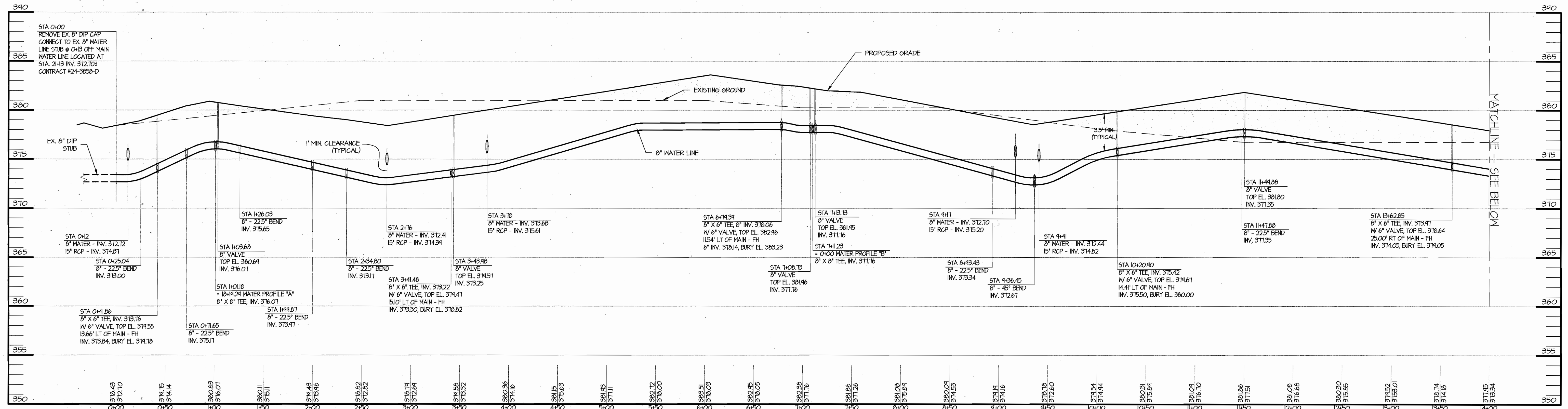
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CHK: PVM
DATE: 12/15/03

BY NO. REVISIONS DATE 600' SCALE MAP NO. 37 BLOCK NO. 19

OWNER: SNOWDEN RIVER BUSINESS PARK
A. NAME: BRIAN KNAUFF B. DAYTIME TELEPHONE: (410) 712-9864
C. COMPANY: THE RYLAND GROUP, INC.
D. ADDRESS: 7250 PARKWAY DRIVE, SUITE 520
E. CITY: HANOVER STATE: MD ZIP: 21076

SNOWDEN RIVER BUSINESS PARK
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KENDALL OVERLOOK
(78 AGE RESTRICTED ADULT HOUSING UNITS AND 1 CLUBHOUSE)
WATER AND SEWER PLAN
CONTRACT NO. 24-4130-D
L. 5289 F. 330
ZONED: NT TAX MAP: 37 GRID: 19 PARCEL 725
ELECTION DISTRICT NO.: 6 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 5



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John R. Roberts 12/30/03
 HOWARD SOIL CONSERVATION DISTRICT DATE

PROVIDE CONTROLLED FILL TO 95% COMPACTION PER AASHTO T-180. PLACEMENT TO BE APPROVED BY THE GEOTECHNICAL ENGINEER.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
Ruth Beigner 12-22-03
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
[Signature] 1/5/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MRA MORRIS & FITCHE ASSOCIATES, INC.
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
 8090 JUNCTION DRIVE SUITE 9
 ANNAPOLIS JUNCTION, MARYLAND 20701
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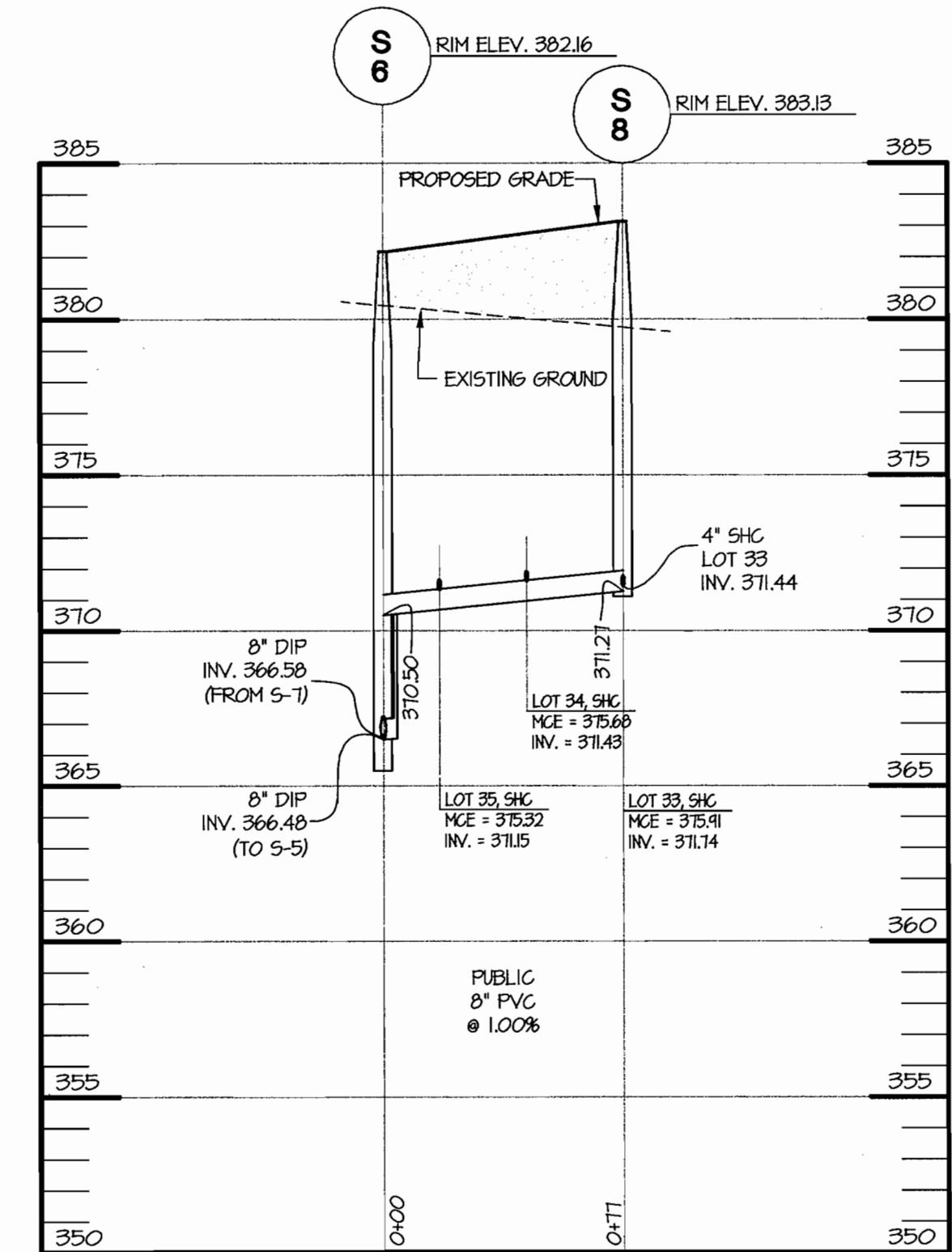
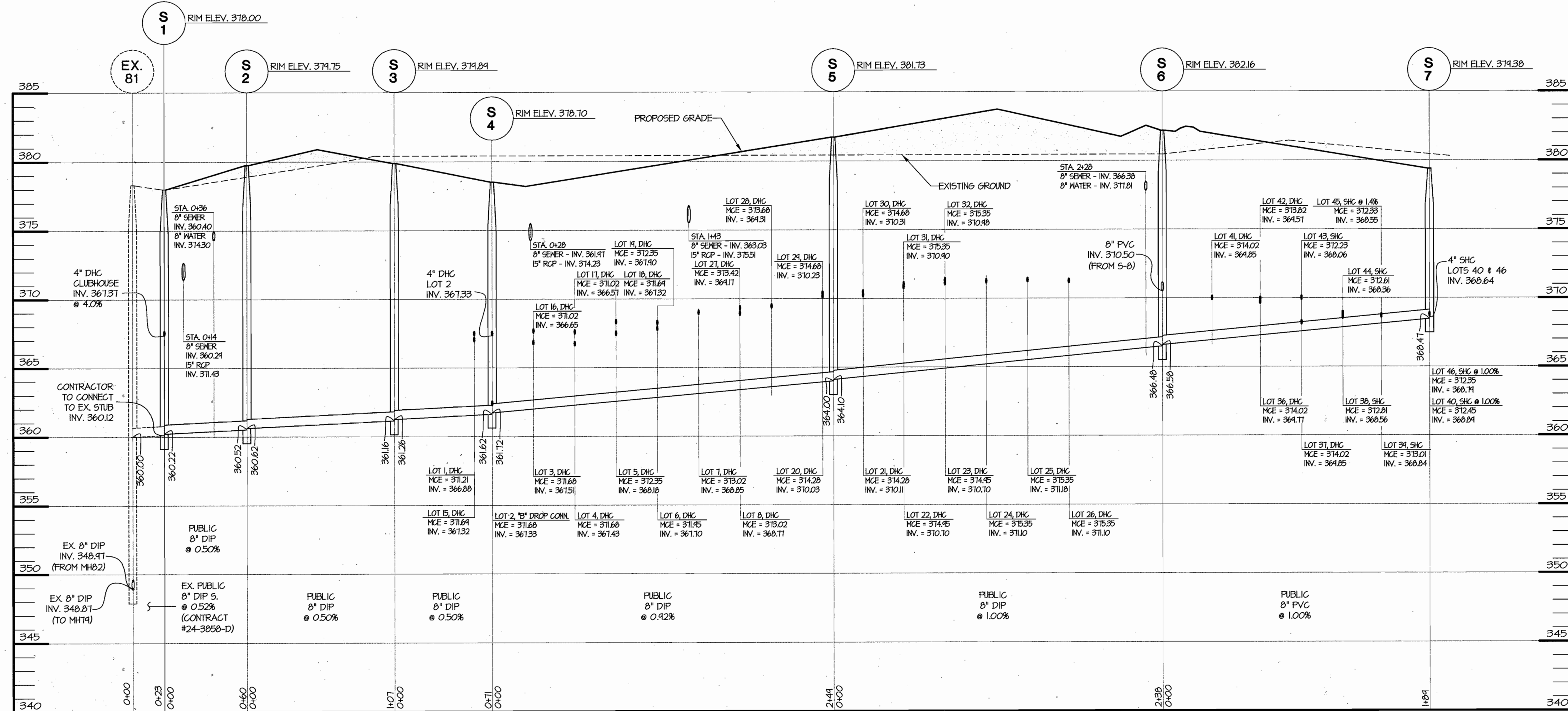
PIERO VAN MELLITS
 No. 21875
 REGISTERED PROFESSIONAL ENGINEER
 12-15-03

DES: CAO/GRL
 DRN: GRL/BS
 CHK: PVM
 DATE: 12/15/03

BY NO.	REVISIONS	DATE

OWNER: SNOWDEN RIVER BUSINESS PARK SECTION 1, AREA 1, PARCEL C-1
 A. NAME: BRIAN KNAUFF B. DAYTIME TELEPHONE: (410) 712-9864
 C. COMPANY: THE RYLAND GROUP, INC.
 D. ADDRESS: 7250 PARKWAY DRIVE, SUITE 520
 E. CITY: HANDOVER STATE: MD ZIP: 21076

SCALE AS SHOWN
 SHEET 3 OF 5
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 KENDALL OVERLOOK (78 AGE RESTRICTED ADULT HOUSING UNITS AND 1 CLUBHOUSE)
WATER PROFILES
 CONTRACT NO. 24-4130-D
 L. 5289 F. 330
 ZONED: NT TAX MAP: 37 GRID: 19 PARCEL 725
 ELECTION DISTRICT NO.: 6 HOWARD COUNTY, MARYLAND



SANITARY SEWER PROFILE
 HOR. 1" = 50'
 VERT. 1" = 5'

NOTE:
 1. THE INVERT ELEVATION GIVEN FOR THE SEWER HOUSE CONNECTIONS (SHC) IS THE ELEVATION AT THE EDGE OF EASEMENT. IF THE SHC ENTERS AT A STRUCTURE THEN THERE IS ALSO AN INVERT SHOWN FOR THE CONNECTION TO THE MANHOLE. SEE THE SANITARY SEWER CLEAN-OUT CHART FOR MORE DETAILED INFORMATION ON THE SHC.

SANITARY SEWER PROFILE

HOR. 1" = 50'
 VERT. 1" = 5'

SANITARY SEWER PIPE SCHEDULE		
SIZE	TYPE	LENGTH
4" SHC/DHC	PVC	1333 FT
4" SHC/DHC	DIP	1780 FT
8"	PVC	707 FT
8"	DIP	1202 FT

SANITARY SEWER STRUCTURE SCHEDULE				LOCATION	
STR. NO.	TOP ELEV.	INV. OUT.	TYPE	NORTHING	EASTING
S-1	378.00	360.12	DROP MANHOLE TYPE "B" HOWARD CO. STD. DETAIL S1.32	555,186.65	1,367,246.41
S-2	379.75	360.52	STANDARD PRECAST MANHOLE HOWARD CO. STD. DETAIL G5.11	555,195.08	1,367,305.99
S-3	379.89	361.16	STANDARD PRECAST MANHOLE HOWARD CO. STD. DETAIL G5.11	555,249.13	1,367,398.75
S-4	378.70	361.62	DROP MANHOLE TYPE "B" HOWARD CO. STD. DETAIL S1.32	555,256.09	1,367,469.06
S-5	381.73	364.00	STANDARD PRECAST MANHOLE HOWARD CO. STD. DETAIL G5.11	555,327.19	1,367,707.30
S-6	382.16	366.48	DROP MANHOLE TYPE "B" HOWARD CO. STD. DETAIL S1.32	555,395.20	1,367,935.17
S-7	379.38	368.47	TERMINAL MANHOLE HOWARD CO. STD. DETAIL S1.31	555,575.55	1,367,877.67
S-8	383.13	372.77	TERMINAL MANHOLE HOWARD CO. STD. DETAIL S1.31	555,322.16	1,367,958.46
S-9	376.89	362.05	STANDARD PRECAST MANHOLE HOWARD CO. STD. DETAIL G5.11	555,439.25	1,367,207.84
S-10	379.97	362.28	DROP MANHOLE TYPE "B" HOWARD CO. STD. DETAIL S1.32	555,446.57	1,367,232.39
S-12	378.30	362.77	STANDARD PRECAST MANHOLE HOWARD CO. STD. DETAIL G5.11	555,512.82	1,367,273.83
S-13	381.32	364.74	STANDARD PRECAST MANHOLE HOWARD CO. STD. DETAIL G5.11	555,630.72	1,367,627.31
S-14	379.89	367.51	TERMINAL MANHOLE HOWARD CO. STD. DETAIL S1.31	555,615.35	1,367,893.70
S-11	381.54	369.99	TERMINAL MANHOLE HOWARD CO. STD. DETAIL S1.31	555,280.97	1,367,282.90

• COORDINATES TO CENTERLINE OF STRUCTURE
 * LOCATE MANHOLE FRAME AND COVER IN PAVED AREA, ROTATE TO KEEP OUT OF GUTTER PAN.
 NOTE: ALL MANHOLE LIDS TO BE LETTERED IN ACCORDANCE WITH HOWARD COUNTY DETAIL G5.53 FOR SANITARY SEWER.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON SDP-03-163

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW

Jim Meyers 12/30/03
 NATURAL RESOURCES CONSERVATION DISTRICT DATE

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

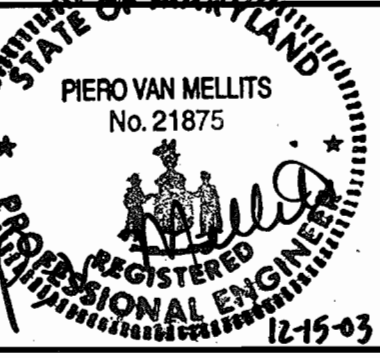
John R. Roberts 12/30/03
 HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
Randy Bump 12-22-03
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
[Signature] 11/5/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



MORRIS & RITCHE ASSOCIATES, INC.
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
 8000 JUNCTION DRIVE SUITE 9
 ANNAPOLIS JUNCTION, MARYLAND 20701
 (410) 792-9792 or (301) 776-1690
 FAX (410) 792-7395



DES: CAQ/GRL
 DRN: GRL/BS
 CHK: PVM
 DATE: 12/15/03

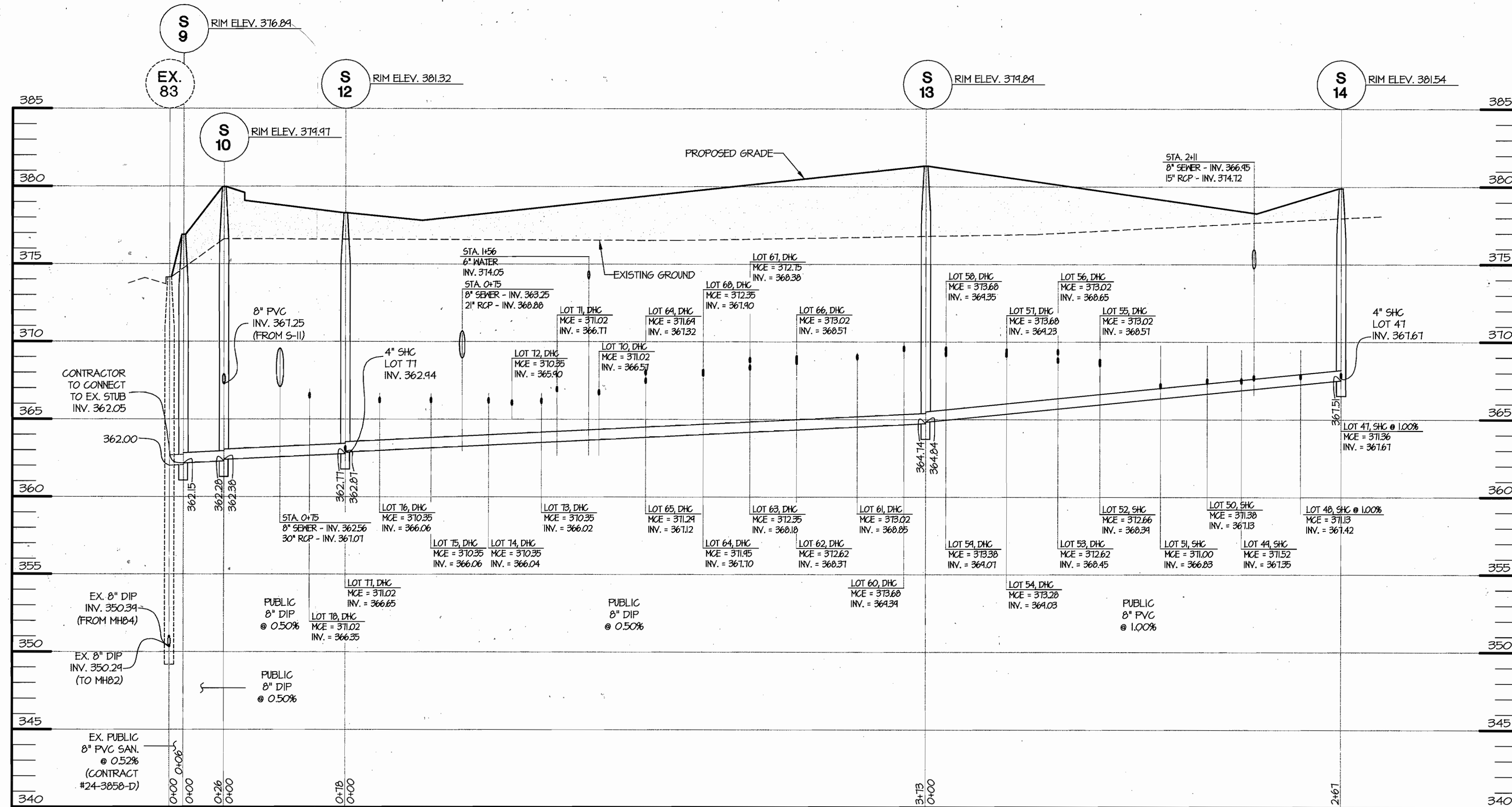
BY NO.	REVISIONS	DATE

SNOWDEN RIVER BUSINESS PARK
 SECTION 1, AREA 1, PARCEL C-1
 KENDALL OVERLOOK
 (78 AGE RESTRICTED ADULT HOUSING UNITS AND 1 CLUBHOUSE)
SANITARY SEWER PROFILES
 CONTRACT NO. 24-4130-D
 L. 5289 F. 330
 ZONED: NT TAX MAP: 37 GRID: 19 PARCEL 725
 ELECTION DISTRICT NO.: 6 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 4 OF 5

PROVIDE CONTROLLED FILL TO 95% COMPACTION PER AASHTO T-180. PLACEMENT TO BE APPROVED BY THE GEOTECHNICAL ENGINEER.

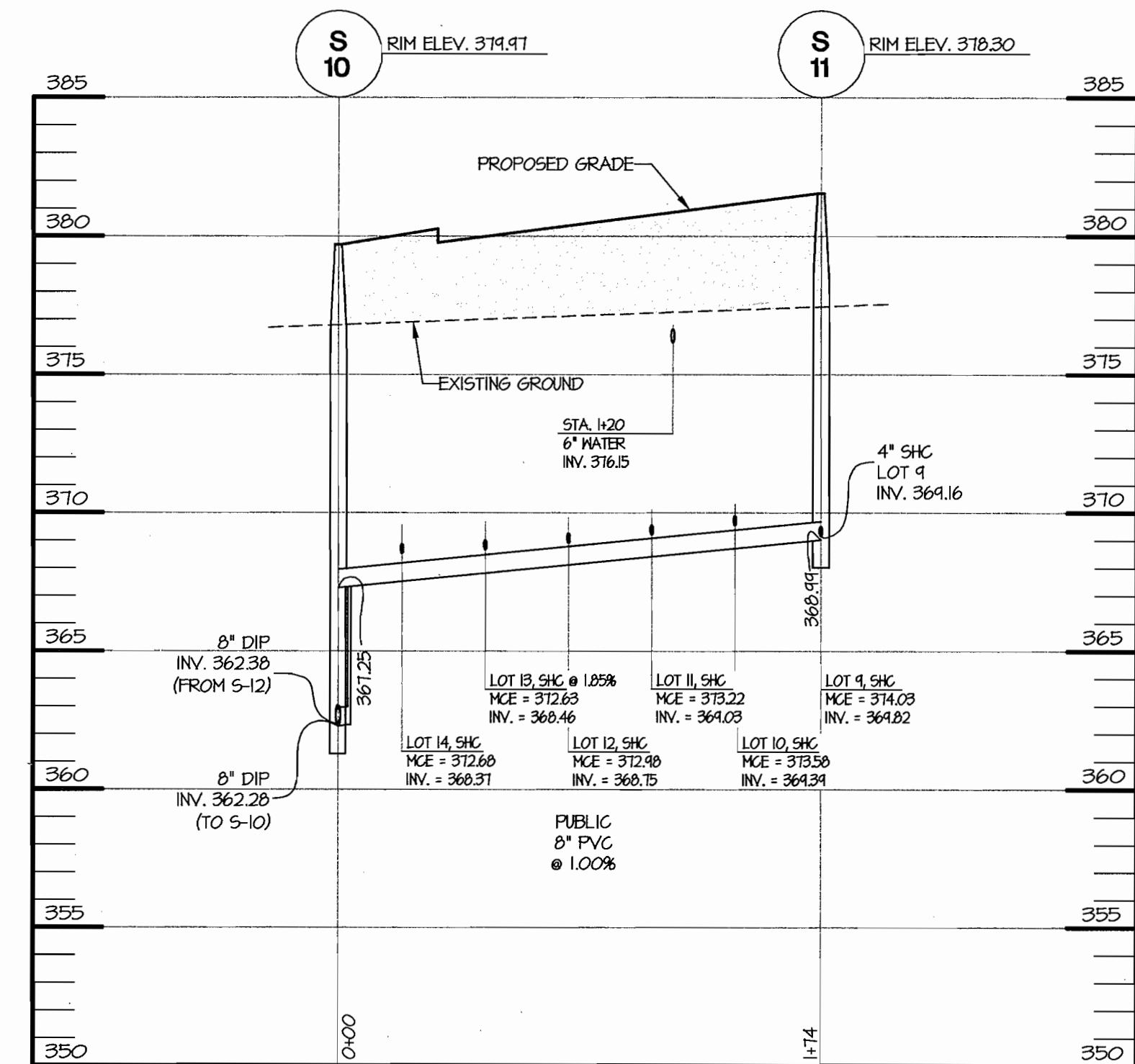
DWNER: B. DAYTIME TELEPHONE: (410) 712-9864
 A. NAME: BRIAN KNAUFF FAX NO.: (410) 712-9864
 C. COMPANY: THE RYLAND GROUP, INC.
 D. ADDRESS: 7250 PARKWAY DRIVE, SUITE 920
 E. CITY: HANDOVER STATE: MD ZIP: 21076



SANITARY SEWER PROFILE

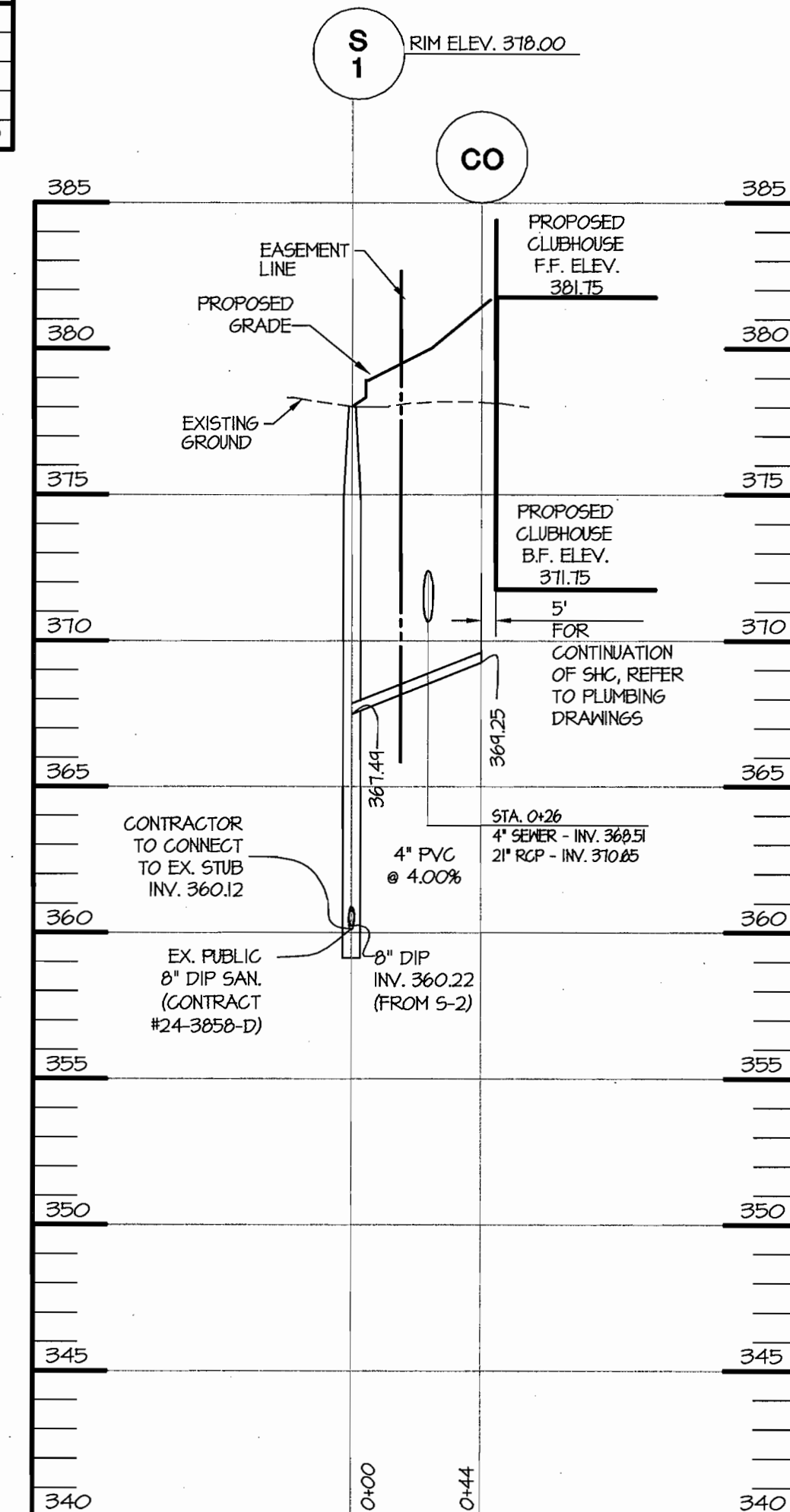
NOTE:
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HOR. 1" = 50'
VERT. 1" = 5'



SANITARY SEWER PROFILE

HOR. 1" = 50'
VERT. 1" = 5'



SANITARY SEWER PROFILE

HOR. 1" = 50'
VERT. 1" = 5'

SANITARY SEWER CLEAN-OUT CHART

UNIT NO.	STATION @ MAIN	INVERT @ MAIN	INVERT @ D.H.C. (TYPE D.H.C.)	LENGTH OF SERVICE	SLOPE OF SERVICE	INV. @ ESMT/PROP. LINE	TOP C/O ELEV.	MIN. CELLAR ELEVATION (MCE)
S3 TO S4								
1	0+58	361.72	366.70(B)	32'	2.00%	366.88	379.25	371.21
15	0+58	361.72	366.70(B)	46'	2.00%	367.32	379.25	371.69
S4 TO S5								
2	0+30	362.16	367.13(A)	34'	2.00%	367.33	379.07	371.68
4	0+60	362.43	367.13(C)	34'	2.00%	367.43	379.27	371.88
5	0+90	362.71	367.88(C)	30'	2.00%	368.18	379.73	372.35
6	1+20	362.99	367.40(B)	34'	2.00%	367.70	380.15	371.95
7	1+50	363.26	368.55(A)	30'	2.00%	368.85	380.62	373.02
8	1+80	363.54	368.47(B)	34'	2.00%	368.77	381.04	373.42
27	1+80	363.54	368.47(B)	44'	2.00%	369.17	381.04	373.42
28	2+03	363.75	368.81(A)	40'	2.00%	369.31	381.44	373.68
20	2+40	364.09	369.73(B)	34'	2.00%	370.03	382.04	374.28
29	2+40	364.09	369.73(B)	44'	2.00%	370.23	382.04	374.68
S5 TO S6								
21	0+21	364.48	369.81(B)	30'	2.00%	370.11	382.42	374.28
30	0+21	364.48	369.81(B)	40'	2.00%	370.31	382.42	374.68
22	0+51	364.78	370.40(B)	34'	2.00%	370.70	382.87	374.95
31	0+51	364.78	370.40(B)	44'	2.00%	370.90	382.87	375.35
23	0+81	365.08	370.48(B)	30'	2.00%	370.78	383.25	374.95
32	0+81	365.08	370.48(B)	40'	2.00%	370.98	383.25	375.35
24	1+11	365.38	370.80(A)	34'	2.00%	371.10	383.37	375.35
25	1+41	365.68	370.88(A)	30'	2.00%	371.18	383.33	375.35
26	1+71	365.98	370.80(A)	34'	2.00%	371.10	382.99	375.35
S6 TO S7								
41	0+36	367.11	369.55(A)	30'	2.00%	369.85	381.86	374.02
36	0+71	367.46	369.27(B)	34'	2.00%	369.77	381.81	374.02
42	0+71	367.46	369.27(B)	34'	2.00%	369.57	381.81	373.82
37	1+01	367.76	369.35(A)	40'	2.00%	369.85	381.62	374.02
43	1+01	367.76	369.35(A)	30'	2.00%	368.06	381.62	372.23
38	1+31	368.06	369.35(A)	44'	2.00%	368.56	380.72	372.81
44	1+31	368.06	369.35(A)	34'	2.00%	368.36	380.72	372.81
39	1+59	368.34	369.27(B)	40'	2.00%	368.84	380.24	373.01
45	1+59	368.34	369.27(B)	30'	1.40%	368.55	380.24	372.33
40	0+ SMH 7	368.64	368.64	44'	1.00%	368.89	379.61	372.45
46	0+ SMH 7	368.64	368.64	34'	1.00%	368.79	379.61	372.35
S6 TO S8								
35	0+18	370.85	371.15	30'	2.00%	371.15	382.99	375.32
34	0+48	371.13	371.43	34'	2.00%	371.43	383.34	375.68
33	0+ SMH 8	371.44	371.74	30'	2.00%	371.74	383.60	375.91

SANITARY SEWER CLEAN-OUT CHART

UNIT NO.	STATION @ MAIN	INVERT @ MAIN	INVERT @ D.H.C.	LENGTH OF SERVICE	SLOPE OF SERVICE	INV. @ ESMT/PROP. LINE	TOP C/O ELEV.	MIN. CELLAR ELEVATION (MCE)
S10 TO S12								
78	0+55	362.82	366.05(A)	55'	2.00%	366.35	379.02	371.02
77	0+ SMH 12	362.94	366.43(A)	36'	2.00%	366.65	378.73	371.02
S12 TO S13								
76	0+22	363.15	365.76(A)	36'	2.00%	366.06	378.23	370.35
75	0+55	363.31	365.76(A)	36'	2.00%	366.06	377.90	370.35
74	0+92	363.50	365.74(A)	37'	2.00%	366.04	377.97	370.35
72	1+07	363.57	365.40(A)	44'	2.00%	365.90	378.13	370.35
73	1+28	363.67	365.72(A)	38'	2.00%	366.02	378.28	370.35
71	1+36	363.72	366.07(A)	44'	2.00%	366.77	378.60	371.02
70	1+63	363.85	366.07(A)	44'	2.00%	366.57	379.99	371.02
65	1+93	364.00	366.82(B)	30'	2.00%	367.12	379.33	371.29
69	1+93	364.00	366.82(B)	40'	2.00%	367.32	379.33	371.69
64	2+30	364.19	367.40(B)	34'	2.00%	367.70	379.88	371.95
68	2+30	364.19	367.40(B)	44'	2.00%	367.90	379.88	372.35
63	2+60	364.34	367.88(B)	30'	2.00%	368.18	380.33	372.75
67	2+60	364.34	367.88(B)	40'	2.00%	368.38	380.33	372.75
62	2+90	364.49	368.07(B)	34'	2.00%	368.37	380.78	372.62
66	2+90	364.49	368.07(B)	44'	2.00%	368.57	380.78	373.02
61	3+29	364.68	368.55(A)	30'	2.00%	368.85	380.91	373.02
60	3+59	364.83	369.13(A)	34'	2.00%	369.39	381.58	373.68
S13 TO S14								
58	0+13	365.13	368.81(B)	40'	2.00%	369.35	381.60	373.68
59	0+13	365.13	368.81(B)	35'	2.00%	369.07	381.44	373.38
54	0+52	365.52	368.73(B)	34'	2.00%	369.03	381.11	373.28
57	0+82	365.52	368.73(B)	44'	2.00%	369.23	381.11	373.68
53	0+85	365.85	368.15(B)	30'	2.00%	368.45	380.61	372.62
56	0+85	365.85	368.15(B)	40'	2.00%	368.65	380.61	373.02
52	1+12	366.12	368.09(B)	35'	2.00%	368.39	380.20	372.66
55	1+12	366.12	368.09(B)	43'	2.00%	368.57	380.20	373.02
51	1+51	366.51	368.09(B)	31'	2.00%	368.83	379.76	371.00
50	1+81	366.81	368.09(B)	30'	2.00%	367.13	379.34	371.38
49	2+03	367.03	368.09(B)	31'	2.00%	367.35	379.18	371.52
48	2+41	367.41	368.09(B)	35'	1.00%	367.42	379.03	371.13
47	0+ SMH 14	367.67	367.67	32'	1.00%	367.67	378.67	371.36
S10 TO S11								
14	0+23	367.65	368.09(B)	58'	2.00%	368.37	379.92	372.68
13	0+43	367.95	368.09(B)	48'	1.85%	368.48	380.24	372.83
12	0+83	368.25	368.09(B)	43'	2.00%	368.75	380.71	372.98
11	1+13	368.55	368.09(B)	40'	2.00%	369.03	381.19	373.22
10	1+43	368.85	368.09(B)	43'	2.00%	369.39	381.60	373.58
9	0+ SMH 11	369.16	368.09(B)	50'	2.00%	369.82	381.94	374.03
CLUBHOUSE @ SMH 11								
CLUBHOUSE	0+ SMH 11	367.49	367.49	44'	4.00%	368.16	381.24	371.75

(A) TYPE A DROP HOUSE CONNECTION, HOWARD COUNTY STD. DETAIL S-2-11.
(B) TYPE B DROP HOUSE CONNECTION, HOWARD COUNTY STD. DETAIL S-2-12.
(C) TYPE C DROP HOUSE CONNECTION, HOWARD COUNTY STD. DETAIL S-2-13.

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON SDP-03-163

REVIEW FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REVIEW

Jim Myers 12/30/03
NATURAL RESOURCES CONSERVATION DISTRICT DATE

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

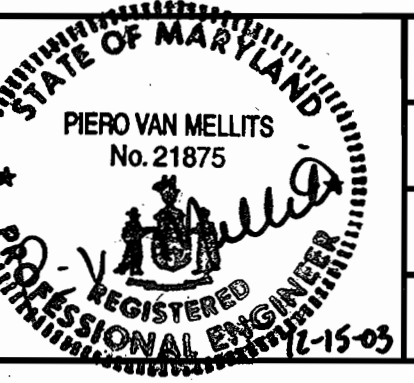
John K. Roberts 12/30/03
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND



MORRIS & RITCHE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
9090 JUNCTION DRIVE SUITE 9
ANNAPOLIS JUNCTION, MARYLAND 20701
(410) 792-9762 or (410) 776-1890
FAX (410) 792-7395



DES: CAO/GRL
DRN: GRL/BS
CHK: PVM
DATE: 12/15/03

Ruth Beavers 12-22-03
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 1/5/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

OWNER
A. NAME: BRIAN KNAUFF B. DAYTIME TELEPHONE: (410) 712-7012
C. COMPANY: THE RYLAND GROUP, INC.
D. ADDRESS: 7250 PARKWAY DRIVE, SUITE 520
E. CITY: HANOVER STATE: MD ZIP: 21076

SNOWDEN RIVER BUSINESS PARK
SECTION 1, AREA 1, PARCEL C-1
KENDALL OVERLOOK
(78 AGE RESTRICTED ADULT HOUSING UNITS AND 1 CLUBHOUSE)
SANITARY SEWER PROFILES
CONTRACT NO. 24-4130-D
L 5289 F. 330
ZONED: NT TAX MAP: 37 GRID: 19 PARCEL 725
ELECTION DISTRICT NO.: 6 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 5

600' SCALE MAP NO. 37 BLOCK NO. 19