ENGINEERS PLANNERS SURVEYORS

R:\Stark\City\Massillon\50\Castello – GiraSole Development 2018\DWG\2019-07-24 VillaSole Site Plans.dwg; 9/27/19 - 9:26am; jrenicker

VILLA SOLE DEVELOPMENT

LOCATED IN THE CITY OF MASSILLON, STARK COUNTY, OHIO

SEPTEMBER 2019

LEGEND

SYMBOL	DESCRIPTION
	EX. MONUMENT BOX
	PROP. MONUMENT BOX
	EX. MONUMENT (AS NOTED)
	5/8" BAR W/ H&A CAP (SET)
	BENCHMARK (AS NOTED)
	BOUNDARY LINE
	CENTER LINE
	LOT LINE
	PROPERTY LINE
R/W	RIGHT OF WAY
( )	RECORD BEARINGS & DIST.
E.O.P.	EDGE OF PAVEMENT
F.F.	FINISH FLOOR
	EX. CONTOUR LINE
	PROP. CONTOUR LINE
-980-	CONTOUR LABEL
	BOLLARD
	FENCE (AS NOTED)
	GUARDRAIL
B	MAILBOX
	RAIL ROAD
	SIGN
	H.C. PARKING SPACE
	DECIDIOUS TREE (AS NOTED)
	EVERGREEN TREE (AS NOTED)
	BUSH (AS NOTED)
	SOIL BORING
	POLE ANCHOR
	GUY POLE
	GENERAL POLE
	FLAG POLE
	LIGHT POLE
	LIGHT & POWER POLE
	LIGHT, POWER, TELE POLE
	LIGHT, POWER, TELE, TV POLE
	POWER POLE
	TELEPHONE POLE
	TELEPHONE, LIGHT POLE
	TELEPHONE, POWER POLE
	PULL BOX
	TRAFFIC CONTROL BOX
	POLE W/ PED. SIGNAL
	POLE W/ TRAFFIC SIGNAL
--OE--	OVERHEAD ELECTRIC LINE
--UE--	UNDERGROUND ELECTRIC LINE
	ELECTRIC LINE MARKER
	ELECTRIC BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
--FO--	FIBER OPTIC LINE
	FIBER OPTIC LINE MARKER

SYMBOL	DESCRIPTION
--G--	GAS LINE
	GAS LINE MARKER
	GAS METER
	GAS VALVE
	GAS TANK
	GAS WELL
--SAN--	SANITARY SEWER LINE
	SANITARY SEWER LINE MARKER
	SANITARY M.H./ C.O.
M.H.	MANHOLE
C.O.	CLEAN OUT
--ST--	STORM SEWER LINE
	STORM SEWER LINE MARKER
	STORM CATCH BASIN
	STORM CURB INLET
	STORM MANHOLE
	STORM DOWNSPOUT
	STORM HEADWALL
C.B.	CATCH BASIN
C.I.	CURB INLET
T/G	TOP OF GRATE
T/C	TOP OF COVER
T/CU	TOP OF CURB
	FLOWLINE
Y.D.	YARD DRAIN
D.S.	DOWNSPOUT
--OE--	OVERHEAD TELEPHONE LINE
--UT--	UNDERGROUND TELEPHONE LINE
	TELEPHONE LINE MARKER
	TELEPHONE BOX
	TELEPHONE MANHOLE
--OTV--	OVERHEAD TV LINE
--UTV--	UNDERGROUND TV LINE
	TV LINE MARKER
	TV/CABLE BOX
	TV/CABLE MANHOLE
--W--	WATER LINE
	WATER LINE MARKER
	WATER MANHOLE
	WATER METER
	WATER VALVE
	WATER SPRINKLER
	FIRE HYDRANT
	MONITORING WELL

BENCHMARK 'A'
CUT NAIL SET 1' UP WEST SIDE of 30" MAPLE, 16' WEST OF EAST PROPERTY LINE, 105' SOUTH OF N.W. CORNER OF LOT 76.
ELEV. 1080.47

BENCHMARK 'B'
CHISELED 'X' ON N.W. FLANGE BOLT OF FIRE HYDRANT, SOUTH SIDE OF HILLS & DALES ROAD, 37' WEST OF STORM MANHOLE.
ELEV. 1066.00

ODOT STANDARD DRAWING LIST

SCD NUMBER	ITEM	DATE
CB-1.1	CATCH BASIN 2-2B	1/18/13
CB-1.2	CATCH BASIN 2-3	1/18/13
CB-1.2	CATCH BASIN 2-4	1/18/13
HW-2.1	HALF HEIGHT HEADWALL	1/18/13
MH-1.2	MANHOLE NO. 3	1/18/13
BP-3.1	ASPHALT PAVING	7/18/14

ENGINEER/ SURVEYOR

HAMMONTREE & ASSOCIATES, LIMITED
5233 STONEHAM ROAD
NORTH CANTON, OHIO 44720

ATTN– JOSHUA J. RENICKER, P.E., M.S.–ENMGT

PHONE– 330-499-8817

jrenicker@hammontree-engineers.com

OWNER/DEVELOPER

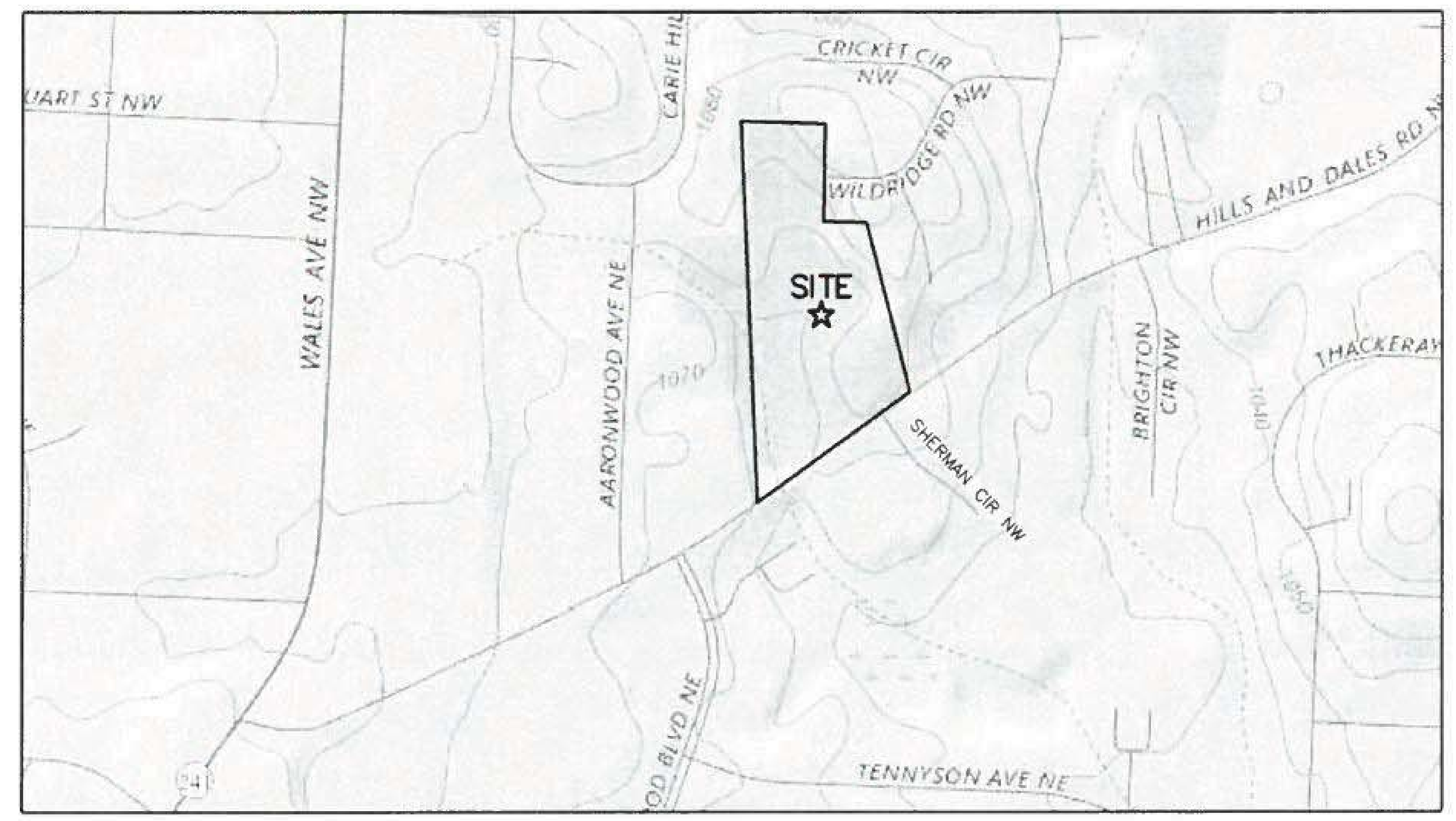
VILLA SOLE, LLC
7294 BRETZ AVE NW
MASSILLON, OHIO 44646

ATTN– BERNY FERRANTE

PHONE– 330-268-8707

berny_b4@yahoo.com

VICINITY MAP
N.T.S.



SITE ADDRESS: INTERSECTION OF HILLS & DALES ROAD NE AND SHERMAN CIRCLE NE, MASSILLON, OH 44646

INDEX OF SHEETS

APPROVALS

OWNER ____________________ DATE

APPROVED BY THE STARK CO. SOIL & WATER CONSERVATION DISTRICT BY A LETTER DATED AUGUST 16, 2019.

OEPA NPDES # 3GC10882*AG

APPROVED BY OHIO EPA FOR SANITARY MAIN EXTENSION BY A LETTER DATED ____________________, 20__.

APPROVED BY AQUA OHIO FOR WATERLINE EXTENSION BY A LETTER DATED ____________________, 20__.

ONLY APPROVED SIGNED PLANS BY THE CITY ENGINEER ARE TO BE USED FOR CONSTRUCTION.

APPROVED BY THE MASSILLON CITY ENGINEER THIS 30th DAY OF SEPTEMBER, 2019.

CITY ENGINEER

ESTIMATED PUBLIC ROADWAY & UTILITY QUANTITIES

ITEM	QUAN.	UNIT	DESCRIPTION
			EARTHWORK & ROADS (WILDRIDGE R/W)
203	868	CU. YD.	EXCAVATION INCLUDING EMBANKMENT CONSTR.
204	594	SQ. YD.	SUBGRADE COMPACTION
204	8	HOUR	PROOF ROLLING
207	2	EACH	ROCK CONSTRUCTION ENTRANCE
301	66	CU. YD.	4 1/2" ASPHALT CONCRETE BASE
304	99	CU. YD.	6" AGGREGATE BASE
407	42	GAL.	TACK COAT (0.08 GAL./SQ. YD.)
408	209	GAL.	PRIME COAT (0.40 GAL./SQ. YD.)
448	22	CU. YD.	1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1
605	270	LIN. FT.	4" UNDERDRAINS
609	266	LIN. FT.	TYPE 2 CONCRETE CURB AND GUTTER
623	1	EACH	MONUMENT ASSEMBLY
651	164	CU. YD.	STOCKPILED TOPSOIL
652	164	CU. YD.	PLACING STOCKPILED TOPSOIL
659	390	SQ. YD.	SEEDING AND MULCHING
			DRAINAGE
207	694	SQ. YD.	TEMPORARY SEEDING AND MULCHING
207	9	EACH	TEMPORARY CURB INLET PROTECTION
811	51	LIN. FT.	8" TYPE "B" CONDUIT (707.45) OR APPROVED EQUAL
811	582	LIN. FT.	12" TYPE "B" CONDUIT (706.02) (707.33)
811	328	LIN. FT.	15" TYPE "B" CONDUIT (706.02) (707.33)
811	233	LIN. FT.	18" TYPE "B" CONDUIT (706.02) (707.33)
811	274	LIN. FT.	24" TYPE "B" CONDUIT (706.02) (707.33)
811	264	LIN. FT.	30" TYPE "B" CONDUIT (706.02) (707.33)
811	4	EACH	2-2B CATCH BASIN
811	4	EACH	2-3 CATCH BASIN
811	2	EACH	3A CATCH BASIN
811	8	EACH	YARD DRAIN

ITEM	QUAN.	UNIT	DESCRIPTION
			SANITARY
611	1,086	LIN. FT.	8" P.V.C. GRAVITY SEWER PIPE, ASTM D-3034
611	14	EACH	6" ON 8" WYE W/6" 45° BEND, ASTM D-3034
611	430	LIN. FT.	6" P.V.C. GRAVITY SEWER PIPE, ASTM D-3034
611	8	EACH	MANHOLE COMPLETE
			WATER
638	1,014	LIN. FT.	8" DUCTILE IRON PIPE, PRESSURE CLASS 350 W/POLYWRAP
638	787	LIN. FT.	1" COPPER (TYPE K) WATER SERVICE LINE
638	288	LIN. FT.	2" HDPE SDR9 W/ TRACER WIRE & MARKER TAPE
638	1	EACH	8" PLUG W/ 2" TAP
638	2	EACH	CONNECT TO EXISTING WATER MAIN
638	1	EACH	2" CORP STOP W/ TAPPING SADDLE
638	1	EACH	2" CURB STOP
638	1	EACH	8" X 6" REDUCER
638	5	EACH	8" GATE VALVE WITH BOX
638	3	EACH	8"-22.5° BEND
638	11	EACH	8"-45° BEND
638	24	EACH	WATER SERVICE CONNECTION COMPLETE
638	4	EACH	HYDRANT ASSEMBLY, TYPE II

CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES, INCLUDING EARTHWORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER AND ENGINEER DURING THE BIDDING PROCESS OF ANY QUANTITY DISCREPANCIES IN THE BID DOCUMENTS. ONCE THE CONSTRUCTION CONTRACT IS ISSUED, THE CONTRACTOR ACKNOWLEDGES THE CONTRACT PRICE COVERS ALL LABOR AND MATERIALS TO SUBSTANTIALLY COMPLETE THE PROJECT ACCORDING TO THE CONSTRUCTION DOCUMENTS.

UTILITY CONTACTS

SANITARY
CITY OF MASSILLON
MUNICIPAL GOVERNMENT ANNEX
151 LINCOLN WAY EAST
MASSILLON, OH 44646
PH: 330-830-1722

ELECTRIC
OHIO EDISON
1910 W. MARKET ST, BLDG 1
AKRON, OH 44313
PH: 800-633-4766

WATER
AQUA OHIO
870 THIRD ST NW
MASSILLON, OH 44647
ATTN: JACOB FLANARY
PH: 330-832-5764 X50650

TELEPHONE
AT&T OHIO
50 W. BOWERY ST, 6TH FLOOR
AKRON, OH 44308
ATTN: WAYNE PROUDFOOT
PH: 330-384-3052

GAS
DOMINION EAST OHIO
320 SPRINGSIDE DR, SUITE 320
AKRON, OH 44333
ATTN: BRYAN DAYTON
PH: 330-664-2409

CABLE
MASSILLON CABLE TV
814 CABLE COURT
MASSILLON, OH 44647
PH: 330-833-5509

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig

OHIO811.org
Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

* THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION

STATE OF OHIO
JOSHUA J. RENICKER
REGISTERED PROFESSIONAL ENGINEER
9/26/2019

HAMMONTREE & ASSOCIATES, LIMITED
ENGINEERS, PLANNERS, SURVEYORS
5233 STONEHAM RD. NORTH CANTON, OH 44720
PHN: (330) 499-8817 FAX: (330) 499-0149
TOLL FREE: 1-800-394-8817
www.hammontree-engineers.com

REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____

DESN BY: JJR
DRWN BY:
RVWD BY: JJR
FLD BK: 638
BK PG: 40
DATE: 03/28/19

SCALES
HORZ:
VERT:
CONTOUR INT:

COVER
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C1.1

ENGINEERS LA PLANNERS LA SURVEYORS

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- (A) STORM M.H.
  T/G = 1062.63
  INV. 12"SLCP S= 1055.13
  INV. 36"SLCP E&W= 1053.93
- (B) CURB INLET (2X)
  T/G = 1062.03
  INV. 12"SLCP W= 1058.88
  INV. 12"SLCP S= 1058.83
- (C) CURB INLET (2X)
  T/G = 1061.92
  INV. 4"SLCP S= 1059.62
  INV. 12"SLCP S= 1056.82
  INV. 12"SLCP N= 1056.72
- (D) STORM M.H.
  T/G = 1062.60
  INV. 60"SLCP N&S= 1048.43
  INV. 36"SLCP W= 1053.30
  PIPE OFFSET 4' WEST
- (E) CURB INLET
  T/G = 1064.04
  INV. 12"SLCP S= 1057.84
- (F) CURB INLET
  T/G = 1064.43
  INV. 4"CPP S = 1061.43
  INV. 12"SLCP N&S= 1057.43
- (G) STORM M.H.
  T/G = 1064.65
  INV. 12"SLCP N = 1057.09
  INV. 12"SLCP W = 1056.99
- (H) SAN. M.H.
  T/C = 1086.25
  INV. 6"VCP W= STUB
  INV. 6"VCP NW= 1080.45
  INV. 8"VCP E= 1078.47
- (I) SAN. M.H.
  T/C = 1087.10
  INV. 8"VCP W= 1076.81
  INV. 8"VCP NE= 1076.50
- (J) SAN. M.H.
  T/C = 1052.63
  INV. 12"VIT N= 1043.90
  INV. 12"VIT S= 1043.88

SCALE: 1 INCH = 40'
0 20' 40' 80'

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DESN BY:	JJR		
DRWN BY:	JJR	FLD BK:	638
RVWD BY:		BK PG:	40
DATE:	9/27/2019		

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

EXISTING SITE - DEMOLITION PLAN
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
JACKSON TOWNSHIP, STARK COUNTY, OH

C2.1

STATE OF OHIO
JOSHUA J. RENICKER
E-72744
REGISTERED PROFESSIONAL ENGINEER
7/12/2019

* - APPARENT ENCROACHMENT

SITE DATA

ADDRESS:
GIRA SOLE
WILDRIDGE DRIVE NW
MASSILLON, OH 44646

GIRA SOLE AREA: 1.68 AC.

PUBLIC R/W AREA: 0.202 AC.

PROP. PAVEMENT AREA: 0.11 AC.

PROPOSED USE:
4 RESIDENTIAL SINGLE FAMILY LOTS

ADDRESS:
VILLA SOLE
HILLS & DALES RD NW
MASSILLON, OH 44646

PROPOSED USE:
10 RESIDENTIAL TWIN VILLAS

VILLA SOLE AREA: 6.12 AC.

PROP. PAVEMENT AREA: 0.42 AC

TOTAL SITE AREA: 7.80 AC.

AREA OF SITE TO UNDERGO EXCAVATION: 6.89 AC.

TOTAL PROP. PAVEMENT AREA: 0.53 AC

ZONING

GIRA SOLE (4 RESIDENTIAL LOTS)
ZONED: R-3

MINIMUM BUILDING SETBACKS
FRONT: 30'
SIDE: 10' (12' FOR 2ND STORY)
REAR: 35'

VILLA SOLE (10 TWIN VILLAS)
ZONED: PUD

MINIMUM BUILDING SETBACKS
FRONT: 30'
SIDE: 15'
REAR: 30'

UTILITY NOTES

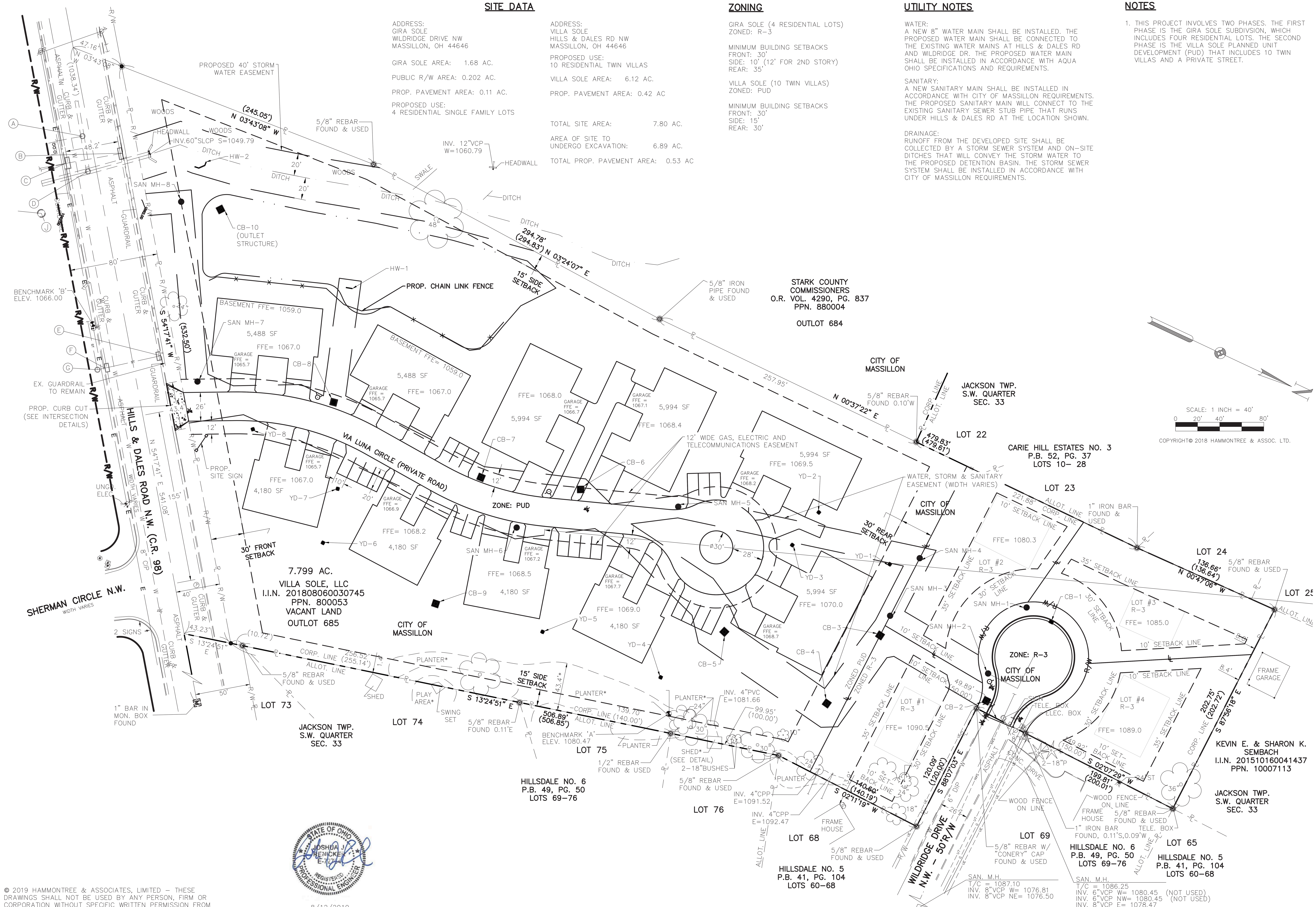
WATER:
A NEW 8" WATER MAIN SHALL BE INSTALLED. THE PROPOSED WATER MAIN SHALL BE CONNECTED TO THE EXISTING WATER MAINS AT HILLS & DALES RD AND WILDRIDGE DR. THE PROPOSED WATER MAIN SHALL BE INSTALLED IN ACCORDANCE WITH AQUA OHIO SPECIFICATIONS AND REQUIREMENTS.

SANITARY:
A NEW SANITARY MAIN SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF MASSILLON REQUIREMENTS. THE PROPOSED SANITARY MAIN WILL CONNECT TO THE EXISTING SANITARY SEWER STUB PIPE THAT RUNS UNDER HILLS & DALES RD AT THE LOCATION SHOWN.

DRAINAGE:
RUNOFF FROM THE DEVELOPED SITE SHALL BE COLLECTED BY A STORM SEWER SYSTEM AND ON-SITE DITCHES THAT WILL CONVEY THE STORM WATER TO THE PROPOSED DETENTION BASIN. THE STORM SEWER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF MASSILLON REQUIREMENTS.

NOTES

1. THIS PROJECT INVOLVES TWO PHASES. THE FIRST PHASE IS THE GIRA SOLE SUBDIVSION, WHICH INCLUDES FOUR RESIDENTIAL LOTS. THE SECOND PHASE IS THE VILLA SOLE PLANNED UNIT DEVELOPMENT (PUD) THAT INCLUDES 10 TWIN VILLAS AND A PRIVATE STREET.



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STATE OF OHIO
JOSHUA J. HENICKER
E-
REGISTERED PROFESSIONAL ENGINEER
8/12/2019

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DESN BY: JJR
DRWN BY:
RVWD BY: JJR
FLD BK: 638
BK PG: 40
DATE: 9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

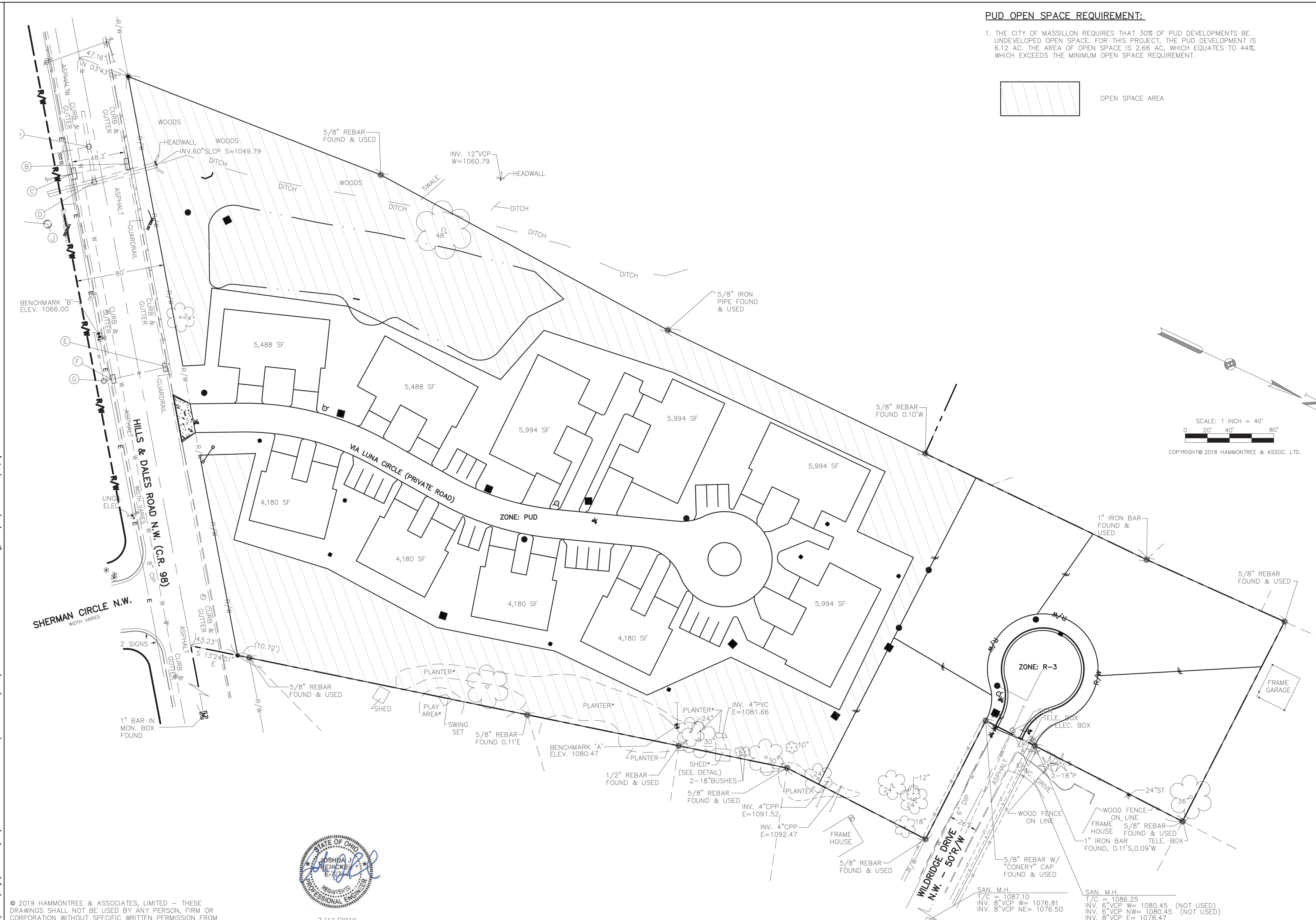
SITE DIMENSION PLAN
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

ENGINEERS PLANNERS SURVEYORS

PUD OPEN SPACE REQUIREMENT:

1. THE CITY OF MASSILLON REQUIRES THAT 30% OF PUD DEVELOPMENTS BE UNDEVELOPED OPEN SPACE. FOR THIS PROJECT, THE PUD DEVELOPMENT IS 6.12 AC. THE AREA OF OPEN SPACE IS 2.66 AC, WHICH EQUATES TO 44%, WHICH EXCEEDS THE MINIMUM OPEN SPACE REQUIREMENT.

OPEN SPACE AREA



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STATE OF OHIO JOSHUA J. JENICKE E-... REGISTERED PROFESSIONAL ENGINEER

7/12/2019

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REV. BY:	DATE:	DESC:	

DESN BY:	JJR
DRWN BY:	
RVWD BY:	JJR
FLD BK:	638
BK PG:	40
DATE:	9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

PUD OPEN SPACE MAP
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C3.2

NOTES:
1. CONNECT PROPOSED 8" WATER MAIN TO NEW 8" AQUA OHIO WATER MAIN BRANCH IN ACCORDANCE WITH AQUA OHIO REQUIREMENTS.
2. PROPOSED 8" WATER MAIN SHALL BE INSTALLED IN ACCORDANCE WITH AQUA OHIO SPECIFICATIONS. REFER TO AQUA OHIO NOTES ON SHEET C7.2. REFER TO AQUA OHIO STANDARD DETAILS ON SHEET C7.3.
3. SANITARY MAIN, STRUCTURES AND SERVICE LATERALS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF MASSILLON REQUIREMENTS. REFER TO SHEET C7.4 FOR CITY OF MASSILLON SPECIFICATIONS.
4. STORM SEWER MAIN AND STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF MASSILLON REQUIREMENTS.
5. MINIMUM VERTICAL CLEARANCE BETWEEN SANITARY AND STORM SEWER AND WATERLINE SHALL BE 18 INCHES. MINIMUM HORIZONTAL SEPARATION SHALL BE 10 FT. MINIMUM VERTICAL SEPARATION BETWEEN ALL OTHER UTILITIES SHALL BE 12 INCHES AND MINIMUM HORIZONTAL SEPARATION SHALL BE 5 FT.

STORM SEWER PIPE CHART

PIPE	SIZE	*TYPE	LENGTH	SLOPE	INVERT IN	INVERT OUT
P1	15"	B	93'	1.08%	1079.50	1078.50
P2	15"	B	113'	5.37%	1078.50	1072.00
P3	18"	B	78'	1.03%	1071.00	1070.20
P4	18"	B	113'	2.65%	1066.00	1063.00
P5	24"	B	183'	1.04%	1062.50	1060.60
P6	24"	B	91'	1.10%	1060.60	1059.60
P7	30"	B	150'	1.00%	1059.20	1057.70
P8	30"	B	114'	1.32%	1057.00	1055.50
P9	15"	B	122'	1.07%	1060.50	1059.20
P10	12"	B	80'	1.00%	1065.00	1064.20
P11	12"	B	38'	1.05%	1064.20	1063.80
P12	12"	B	100'	1.00%	1063.80	1062.80
P13	12"	B	71'	1.13%	1063.50	1062.70
P14	12"	B	100'	1.00%	1064.00	1063.00
P15	8"	B	51'	0.98%	1062.20	1061.70
P16	12"	B	116'	1.03%	1061.70	1060.50
P17	12"	B	77'	1.30%	1061.50	1060.50
P18	18"	C	42'	1.19%	1053.00	1052.50

*USE CORRUGATED POLYETHYLENE SMOOTH LINED PIPE (707.33) OR APPROVED EQUAL.

SANITARY SEWER STRUCTURE TABLE

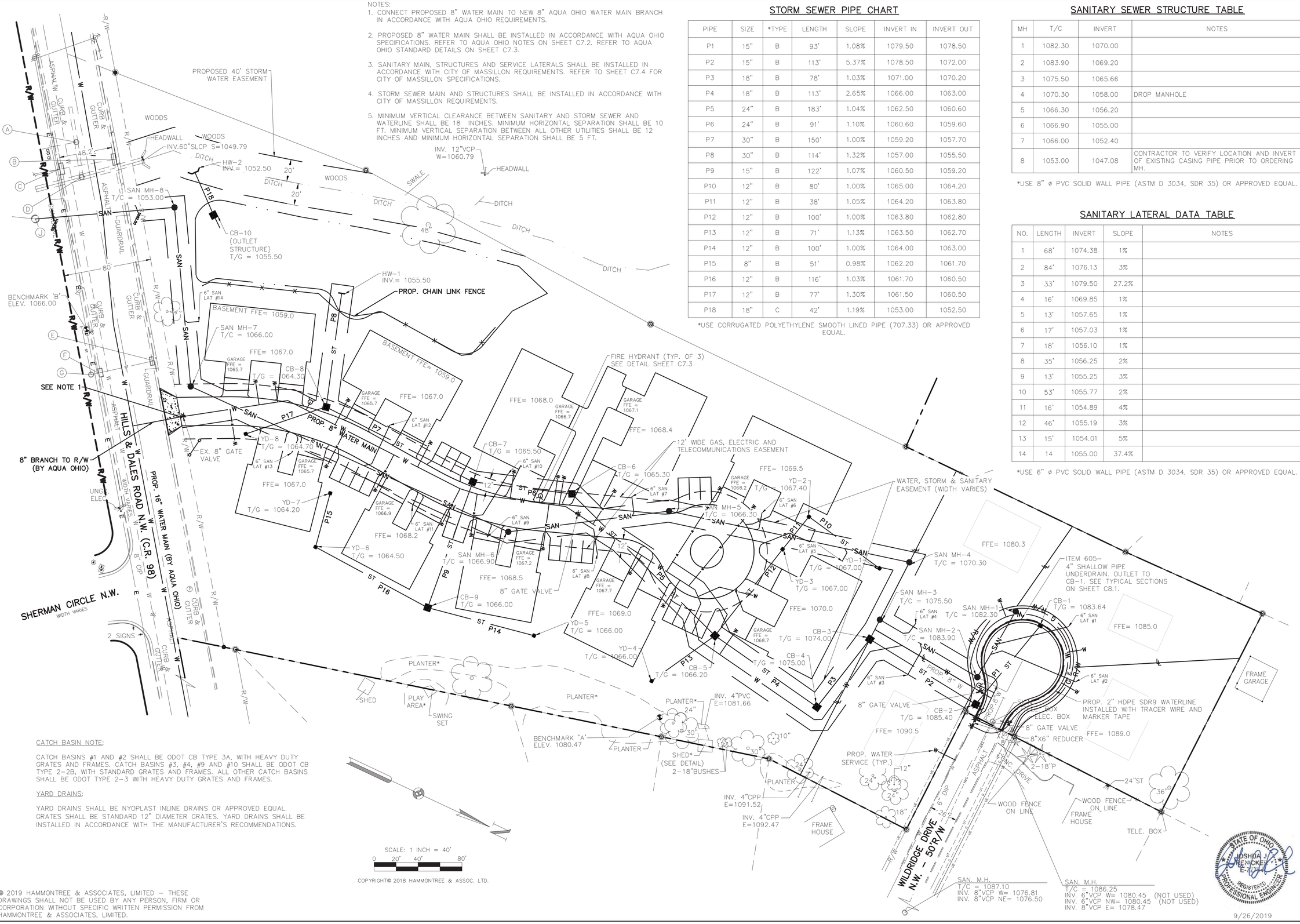
MH	T/C	INVERT	NOTES
1	1082.30	1070.00	
2	1083.90	1069.20	
3	1075.50	1065.66	
4	1070.30	1058.00	DROP MANHOLE
5	1066.30	1056.20	
6	1066.90	1055.00	
7	1066.00	1052.40	
8	1053.00	1047.08	CONTRACTOR TO VERIFY LOCATION AND INVERT OF EXISTING CASING PIPE PRIOR TO ORDERING MH.

*USE 8" ø PVC SOLID WALL PIPE (ASTM D 3034, SDR 35) OR APPROVED EQUAL.

SANITARY LATERAL DATA TABLE

NO.	LENGTH	INVERT	SLOPE	NOTES
1	68'	1074.38	1%	
2	84'	1076.13	3%	
3	33'	1079.50	27.2%	
4	16'	1069.85	1%	
5	13'	1057.65	1%	
6	17'	1057.03	1%	
7	18'	1056.10	1%	
8	35'	1056.25	2%	
9	13'	1055.25	3%	
10	53'	1055.77	2%	
11	16'	1054.89	4%	
12	46'	1055.19	3%	
13	15'	1054.01	5%	
14	14	1055.00	37.4%	

*USE 6" ø PVC SOLID WALL PIPE (ASTM D 3034, SDR 35) OR APPROVED EQUAL.



CATCH BASIN NOTE:

CATCH BASINS #1 AND #2 SHALL BE ODOT CB TYPE 3A, WITH HEAVY DUTY GRATES AND FRAMES. CATCH BASINS #3, #4, #9 AND #10 SHALL BE ODOT CB TYPE 2-2B, WITH STANDARD GRATES AND FRAMES. ALL OTHER CATCH BASINS SHALL BE ODOT TYPE 2-3 WITH HEAVY DUTY GRATES AND FRAMES.

YARD DRAINS:

YARD DRAINS SHALL BE NYOPLAST INLINE DRAINS OR APPROVED EQUAL. GRATES SHALL BE STANDARD 12" DIAMETER GRATES. YARD DRAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SCALE: 1 INCH = 40'
0 20' 40' 80'

STATE OF OHIO JOSHUA J. HENICKER E-74744 REGISTERED PROFESSIONAL ENGINEER

9/26/2019

HAMMONTREE & ASSOCIATES, LIMITED
ENGINEERS, PLANNERS, SURVEYORS
5233 STONEHAM RD. NORTH CANTON, OH 44720
PHN: (330) 499-8817 FAX: (330) 499-0149
TOLL FREE: 1-800-394-8817
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DESC.: DATE:
REV. BY: REV. BY: REV. BY: REV. BY: REV. BY:

DESN BY: JJR
DRWN BY: JJR
RVWD BY:
FLD BK: 638
BK PG: 40
DATE:9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

SITE UTILITY PLAN
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE
LOCATED IN THE CITY OF MASSILLON
JACKSON TOWNSHIP, STARK COUNTY, OH

C4.1

R:\Stark\City Massillon\SD\Castello - GiraSole Development 2018\DWG\2019-07-24 VillaSole Site Plans.dwg; 10/14/19 - 1:50pm; jrenicker

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NOTES:

1. THIS SITE IS NOT LOCATED WITHIN A FLOODPLAIN. ACCORDING TO FEMA FIRM NO. 39151C0203E, EFFECTIVE 9/29/2011, THIS SITE IS LOCATED IN ZONE X.

TYPICAL DITCH SECTION
NTS

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DESN BY:	JJR	FLD BK:	638
DRWN BY:	JJR	BK PG:	40
RVWD BY:		DATE:	9/27/2019

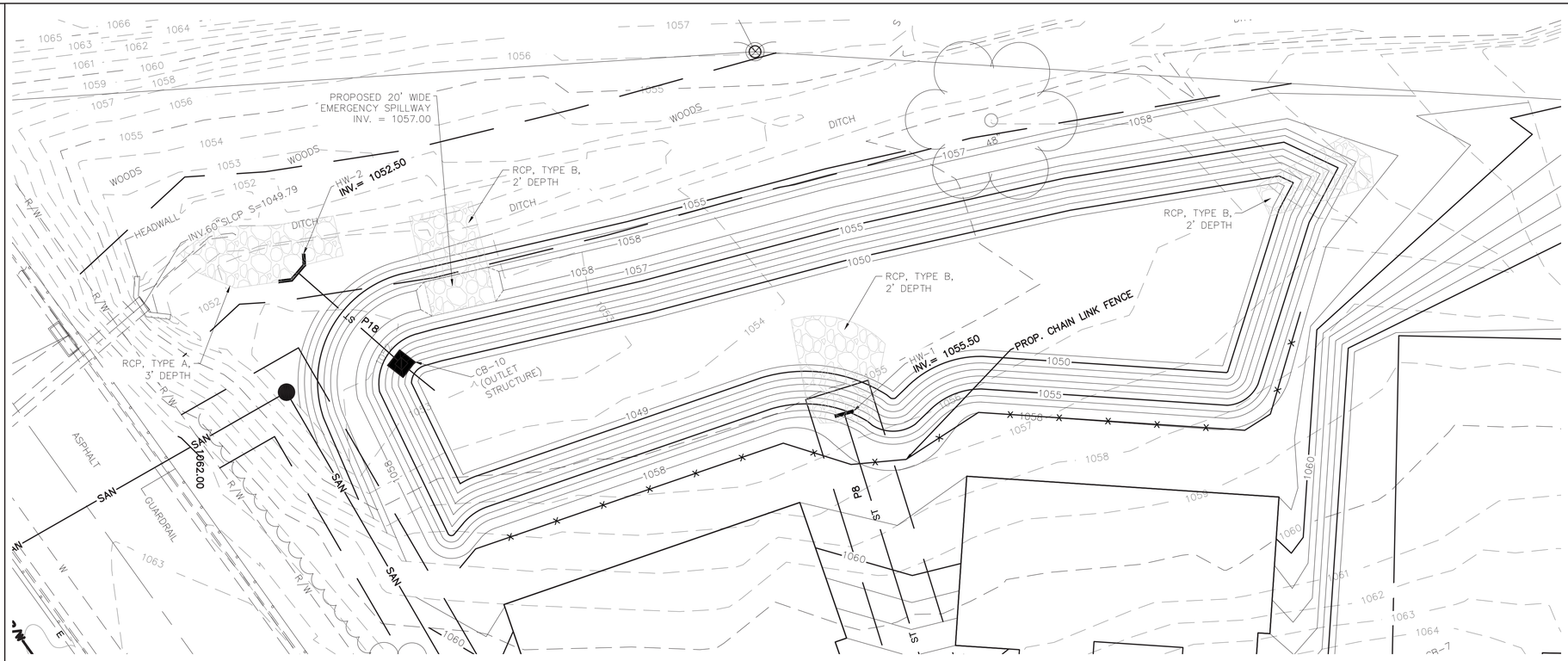
SCALES
HORZ:
VERT:
CONTOUR INT: 1'

OVERALL SITE GRADING PLAN
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C5.1

STATE OF OHIO
JOSHUA J. RENICKER
E-7844
REGISTERED PROFESSIONAL ENGINEER

8/12/2019



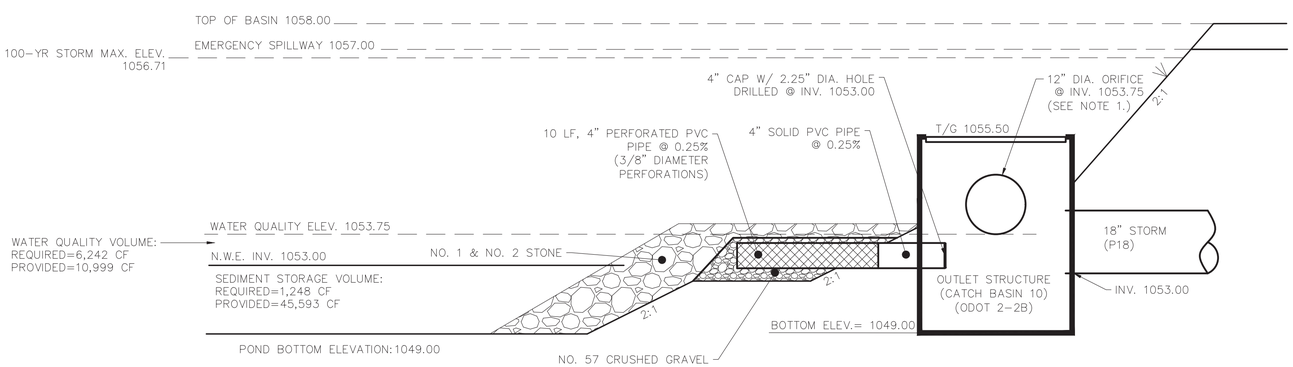
NOTE:

1. 12" DIA. ORIFICE SHALL BE PLUGGED OR COVERED DURING CONSTRUCTION. IT SHALL BE PUT INTO SERVICE ONCE CONSTRUCTION IS COMPLETE AND 80% OF THE CONTRIBUTING AREA IS STABILIZED AGAINST EROSION.

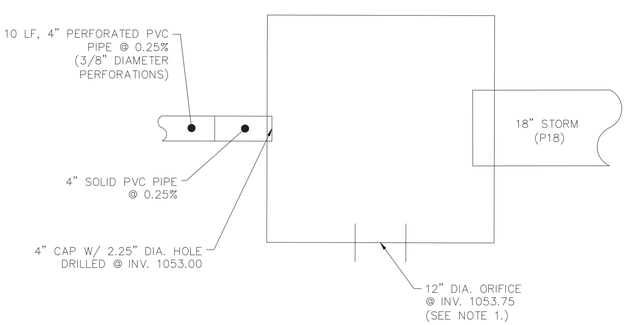
SUMMARY OF STORM WATER MANAGEMENT BASIN CALCULATIONS

NORMAL WATER ELEVATION = 1053.00

YEAR STORM FREQUENCY	WATER QUALITY	2	5	10	10 DURING CONSTRUCTION	25	50	100
PRE-DEV PEAK Q	N/A	5.19	8.69	12.01	N/A	17.29	22.07	27.53
POST-DEV UNCONTROLLED PEAK Q	N/A	17.31	24.02	29.93	32.90	38.74	46.30	54.64
POST-DEV PEAK Q FROM BASIN	0.10	0.63	1.96	3.32	7.49	5.87	12.08	14.37
DESIGN PEAK WATER ELEVATION	1053.75	1054.11	1054.49	1054.96	1055.80	1055.67	1056.14	1056.71
DESIGN STORAGE VOLUME REQ'D	6,242	61,943	68,095	75,629	90,171	87,969	96,382	107,105
AS-BUILT PEAK Q FROM BASIN								
AS-BUILT PEAK WATER ELEVATION								
AS-BUILT STORAGE VOLUME PROVIDED								



WQ / DETENTION BASIN OUTLET STRUCTURE DETAIL
N.T.S.



WQ / DETENTION BASIN OUTLET STRUCTURE PLAN VIEW
N.T.S.

JOSHUA J. HENICKER E-74744 REGISTERED PROFESSIONAL ENGINEER STATE OF OHIO

8/12/2019

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SCALES
HORZ: 20'
VERT:
CONTOUR INT: 1'

SITE DETENTION PLAN
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C6.1

ENGINEERS HA SURVEYORS HA PLANNERS

R:\Stark\City\Massillon\5D\Castello - GiroSole Development 2018\DWG\2019-07-24 VillaSole Site Plans.dwg; 10/14/19 - 1:50pm; jrenicker

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL (IN A LOCATION APPROVED BY THE GOVERNING AUTHORITIES) OF ALL STRUCTURES; SO THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS OUTLINED IN THESE PLANS OR GEOTECHNICAL REPORT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS NEEDED FOR DEMOLITION AND DISPOSAL.
2. THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES.
3. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
4. IF ANY PAVEMENT IS DAMAGED OUTSIDE THE SAW-CUT LIMITS, THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPAIR OF THAT PAVEMENT.
5. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATIONS OF ALL UTILITIES.
6. WITHIN THE SUBJECT PROPERTY, THE INTENT IS TO HAVE A CLEAN, CLEAR SITE, FREE OF ALL EXISTING ITEMS NOTED TO BE REMOVED IN ORDER TO PERMIT THE CONSTRUCTION OF THE NEW PROJECT.
7. WHERE EXISTING ITEMS ARE SHOWN TO REMAIN, CARE SHOULD BE TAKEN TO INSURE PROTECTION OF THAT ITEM FROM DAMAGE. ANY ITEMS DISTURBED BY CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE TO A CONDITION EQUAL TO OR BETTER THAN EXISTING AND TO THE SATISFACTION OF THE OWNER OF THE ITEM.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS, METHODS, AND MATERIALS OF CONSTRUCTION TO COMPLETE PROPOSED CONSTRUCTION.
9. ANY APPARENT DISCREPANCIES OR QUESTIONS IN CONTRACT DOCUMENTS ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVES IMMEDIATELY.
10. TRAFFIC SHALL BE MAINTAINED ON ALL ADJOINING STREETS AT ALL TIMES. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
11. THE DESIGN ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, PROCEDURES, TECHNIQUES, OR SEQUENCES OF CONSTRUCTION NOT SPECIFIED HEREIN, NOR FOR THE SAFETY ON THE JOB SITE, NOR SHALL THE DESIGN ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
12. ANY MODIFICATIONS TO THE WORK SHOWN ON THE PLANS MUST HAVE PRIOR WRITTEN APPROVAL FROM THE OWNER AND REVIEW AGENCIES.

UTILITY NOTES

1. UTILITIES SHOWN WERE TAKEN FROM RECORDS OF RESPECTIVE UTILITY COMPANIES AND FROM A TOPOGRAPHIC SURVEY AND DO NOT NECESSARILY REPRESENT ALL UNDERGROUND OR OVERHEAD UTILITIES ADJACENT TO OR UPON THE PREMISES SHOWN ON THE PLAN. CALL OUPS PRIOR TO EXCAVATION.
2. ANY UTILITIES FOUND DURING EXCAVATION, NOT SHOWN ON THESE PLANS, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
3. EXISTING UTILITIES TO REMAIN, WHICH ARE CRUSHED OR DAMAGED DURING CONSTRUCTION, SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
4. EACH SUBCONTRACTOR SHALL OBTAIN THEIR OWN PERMITS AND CONTACT THE UTILITY COMPANY FOR VERIFICATION AND LOCATION OF HOOK-UP PRIOR TO ANY WORK BEING DONE.
5. STORM:

   ALL STORM SEWERS SHALL CONFORM TO ODOT ITEM 707.33 OR ITEM 706.02.

   ALL CATCH BASINS SHALL BE CONSTRUCTED AS SHOWN ON THESE DRAWINGS AND DETAILED PER THE ODOT STANDARD DRAWINGS AND CURRENT CONSTRUCTION AND MATERIAL SPECIFICATIONS. CATCH BASIN GRATES WITHIN PAVEMENT TO BE TRAFFIC BEARING.

   DOWNSPOUTS TO CONNECT DIRECTLY TO THE STORM SEWER SYSTEM WITH A MINIMUM 6" DIAMETER PIPE WITH A MINIMUM 1% SLOPE. REFER TO ARCHITECTURAL PLANS FOR EXACT DOWNSPOUT LOCATION.
6. SANITARY:

   SANITARY LATERAL SHALL BE A MINIMUM 6" DIAMETER PVC PIPE, ASTM D3034, SDR35, WITH RUBBER GASKET JOINTS OR APPROVED EQUAL. LATERAL SHALL BE CONSTRUCTED WITH A MINIMUM OF 1% SLOPE (44% MAX), AND HAVE A MINIMUM OF 4 FOOT OF COVER.

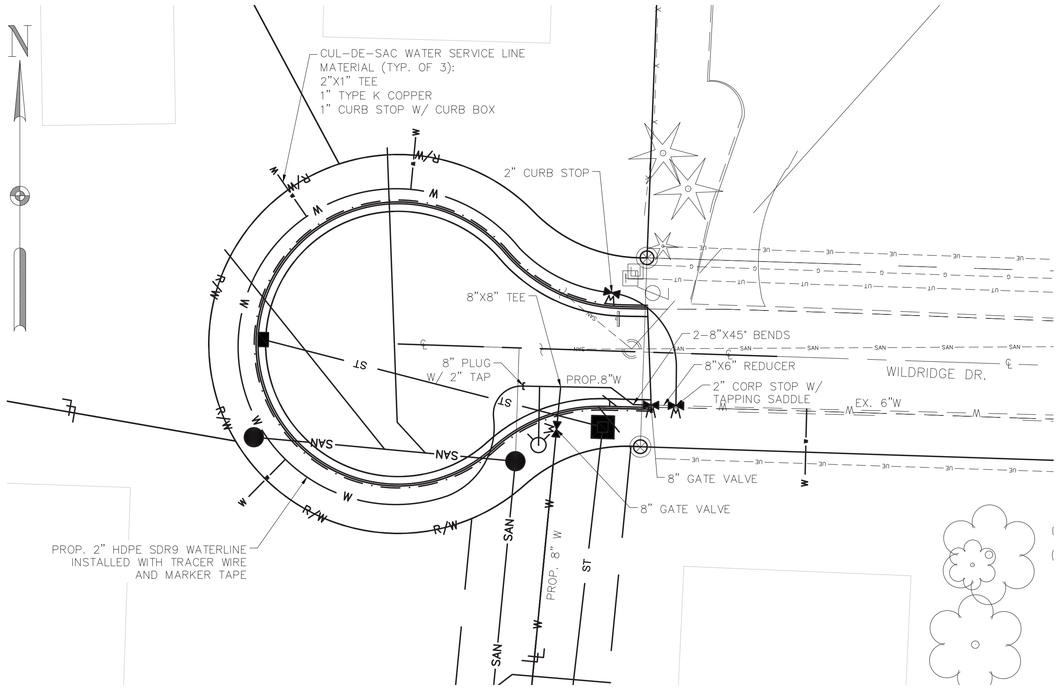
   ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.

   THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SLOPE OF BUILDING SEWERS TOWARDS THE LATERAL SEWER IN STRICT ACCORDANCE WITH THE GOVERNING AUTHORITIES.

   CLEAN-OUTS TO BE INSTALLED AT ALL PIPE BENDS AND ANGLES, UNLESS A MANHOLE IS INDICATED.
7. THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, INVERT ELEVATION, AND CONDITION OF ALL EXISTING UTILITIES AT THE POINT OF CONNECTIONS PRIOR TO ANY INSTALLATION. THE CONTRACTOR IS TO ENSURE EXISTING UTILITIES ARE IN GOOD WORKING ORDER. IF ELEVATIONS DIFFER FROM WHAT IS SHOWN ON THIS DRAWING, THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY PRIOR TO ANY CONSTRUCTION.
8. 10 FT-HORIZONTAL AND 1.5 FT-VERTICAL (MINIMUM) CLEARANCE IS REQUIRED BETWEEN SANITARY & WATER LINES. ALL OTHER UTILITIES SHALL HAVE 5 FT-HORIZONTAL AND 1.0 FT-VERTICAL (MINIMUM) CLEARANCE BETWEEN LINES.
9. GAS, ELECTRIC, TELEPHONE & CABLE LINES SHOWN FOR REFERENCE ONLY AND ARE DESIGNED BY OTHERS. CONTRACTOR TO INSTALL PER RESPECTIVE UTILITY APPROVED SET OF PLANS.
10. COORDINATE UTILITY CONNECTIONS AT THE BUILDING WITH THE MECHANICAL DRAWINGS.

GENERAL NOTES - EARTHWORK

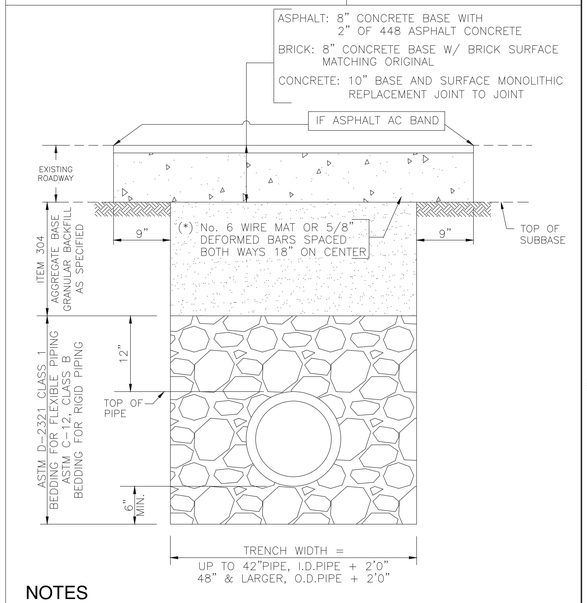
1. THE CONTRACTOR SHALL INSTALL ALL SEDIMENTATION CONTROLS TO MINIMIZE SOIL EROSION AND OFF-SITE SILTATION BEFORE ANY CLEARING, GRUBBING OR EARTHWORK HAS BEGUN. REFERENCE THE STORM WATER POLLUTION PREVENTION PLAN FOR EROSION CONTROL STRUCTURES AND SPECIFICATIONS.
2. ALL TIMBER, LOGS, BRUSH, RUBBISH, AND VEGETATIVE MATTER WHICH WILL INTERFERE WITH THE GRADING OPERATION OR AFFECT THE PLANNED STABILITY OF FILL AREAS SHALL BE REMOVED FROM THE PROJECT CONSTRUCTION AREA.
3. ANY UNSUITABLE SOILS ENCOUNTERED IN PROPOSED PAVEMENT AREAS SHALL BE REMOVED AND REPLACED WITH COMPACTED MATERIAL APPROVED BY THE ENGINEER.
4. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES AND SHALL BACKFILL AND GRADE EXCAVATED AREAS SO AS TO ELIMINATE PONDING ON THE SITE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPORTATION OF ANY BORROW MATERIAL NECESSARY TO COMPLETE THE JOB.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE OFF-SITE DISPOSAL OF ANY AND ALL EXCESS OR UNSUITABLE MATERIAL NOT USED ON THE JOB SITE.
7. PROPOSED PAVEMENT AREAS ARE TO BE PROOF-ROLLED PER SPECIFICATIONS IMMEDIATELY PRIOR TO CONSTRUCTION. IF ANY AREAS ARE FOUND TO BE "SOFT" OR "SPONGY", THE YIELDING AREAS IN THE SUBGRADE SHALL BE REMOVED AND/OR REPLACED PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
8. PROPOSED ELEVATIONS SHOWN SHALL NOT BE CHANGED WITHOUT APPROVAL OF THE ENGINEER.
9. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING AND IN AREAS SELECTED BY OWNER.
10. UNLESS OTHERWISE INDICATED AT A SPECIFIC LOCATION, ALL FINISHED GRADES AT THE LIMITS OF NEW WORK ARE TO CONFORM TO AND MATCH EXISTING GRADES.
11. SITE GRADING SHALL PROVIDE POSITIVE DRAINAGE TO CATCH BASINS OR SHEET FLOW OFF OF AREAS, THUS PREVENTING THE PONDING OF WATER ON SITE.
12. PRIOR TO PLACEMENT OF ANY COMPACTED FILLS, PROCTOR CURVES SHALL BE ESTABLISHED FROM PROPOSED BORROW MATERIAL SAMPLES.
13. ALL COMPACTED FILLS RELATED TO THE CONSTRUCTION OF THE PROPOSED PROJECT SHALL BE PLACED IN ACCORDANCE WITH ODOT ITEM 203. DURING CONSTRUCTION, THESE COMPACTED FILLS SHALL BE TESTED USING THE NUCLEAR DENSOMETER METHOD. COMPACTION REQUIREMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.



SCALE: 1 INCH = 20'
0 10' 20' 40'

Kathy Catazaro-Perry, Mayor
Massillon City of Champions
CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
FAX: (330)830-1786

TRENCH DETAIL WITHIN ROADWAY/DRIVEWAY



NOTES

(1) CONCRETE BASE SHALL BE OF 1:2:4, 6 BAG MIX, PORTLAND CEMENT CONCRETE USING HIGH EARLY STRENGTH CEMENT AND IT MUST BE CURED AT LEAST 48 HRS.

(*) MUST BE USED WHEN WIDTH OF TRENCH IS GREATER AT THE SUBBASE. FIBER CONCRETE BASE MAY BE USED IN LIEU OF THE BARS.

Kathy Catazaro-Perry, Mayor
Massillon City of Champions
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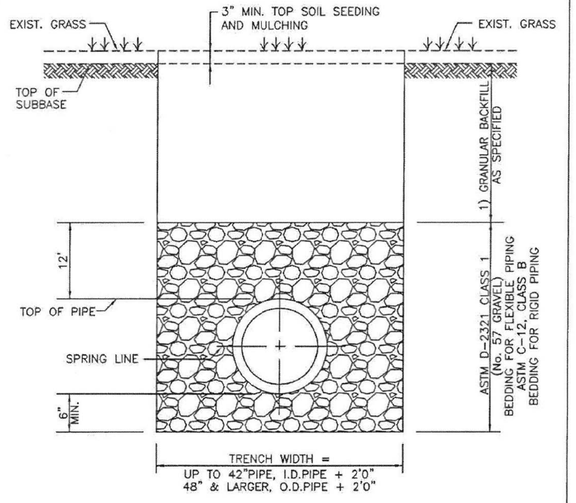
TRENCH DETAIL OUTSIDE ROADWAY



NOTES

1) EXCAVATED MATERIAL MAY BE USED IF FOUND TO BE IN ACCEPTABLE CONDITION AS DETERMINED BY THE CITY ENGINEER.

STATE OF OHIO
JOSHUA J. RENICKER
E-71744
REGISTERED PROFESSIONAL ENGINEER

8/12/2019

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SITE NOTES & DETAILS
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C7.1

HAMMONTREE & ASSOCIATES ENGINEERS SURVEYORS PLANNERS

R:\Stark\City\Massillon\SD\Castello - GiraSole Development 2018\DWG\2019-07-24 VillaSole Site Plans.dwg; 10/14/19 - 1:50pm; jrenicker

Kathy Catazaro-Perry, Mayor

Massillon City of Champions

CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
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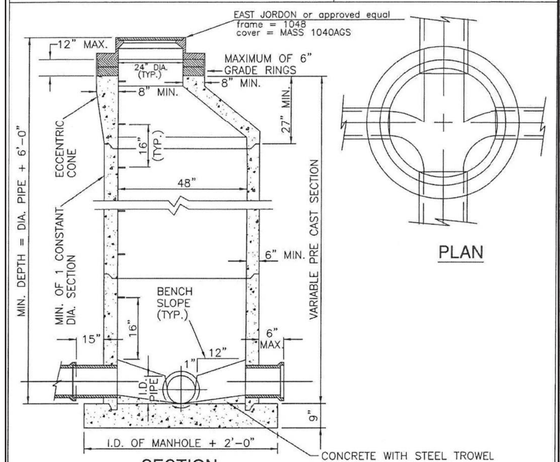
SANITARY MANHOLE TYPE 3 SEWERS 8" TO 21"



PLAN

SECTION

NOTES:

1. IF TOP STEP IS IN 24" DIA. OPENING IT MAY PROJECT NO MORE THAN 3 1/2".
2. M.A. IND. PS-1-PF STEPS OR APPROVED EQUAL.
3. FOR SPECIFICATIONS REGARDING CONCRETE TO BE USED IN MANHOLES SEE ITEM NO. 4&16.
4. FOR PVC & ABS PIPE CONNECTIONS USE ASTM C-923 FLEXIBLE GASKET SUCH AS A-LOK, DURA SEAL III, KOR-N-SEAL OR APPROVED EQUAL. THIS METHOD ALSO ACCEPTABLE FOR VCP.
5. PRE CAST MANHOLES SECTIONS SHALL MEET ASTM C-478.
6. MANHOLE JOINTS SHALL MEET ASTM C-443.
7. MANHOLE ADJUSTMENTS TO GRADE WILL BE NO GREATER THAN 12", USING PRECAST COLLARS MEETING ASTM C-478

Kathy Catazaro-Perry, Mayor

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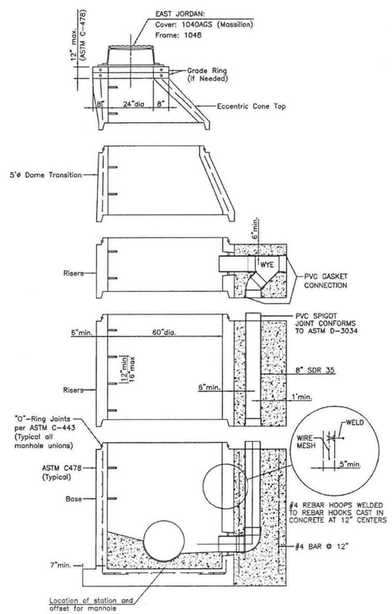
STANDARD DROP MANHOLE



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SANITARY NOTES

SANITARY SEWER SPECIFICATIONS

SANITARY SEWER CONSTRUCTION PROPOSED FOR THIS PROJECT SHALL CONFORM TO THE LATEST CITY OF MASSILLON STANDARDS AND CONSTRUCTION AND MATERIALS SPECIFICATIONS, TEN STATE STANDARDS, AND THE LATEST EDITION OF THE ODOT CMS, OR MODIFIED BY THE CONTRACT DRAWINGS. IF A CONFLICT ARISES BETWEEN SAID STANDARDS IT SHALL BE AT THE DISCRETION OF THE CITY OF MASSILLON ENGINEER AS TO WHICH STANDARD SHALL GOVERN. THE PROJECT CONTRACT DRAWINGS SHALL GOVERN UNLESS NOTED OTHERWISE.

SANITARY GRAVITY SEWER PIPE AND FITTINGS SHALL BE PVC SDR 35 CONFORMING TO ASTM D-3034 UNLESS OTHERWISE NOTED. PVC COMPOUNDS SHALL CONFORM TO ASTM D-1784 PVC PIPE AND FITTINGS SHALL HAVE BELL AND SPIGOT TYPE JOINTS CONFORMING TO ASTM D-3212 AND GASKETS CONFORMING TO ASTM F-477

BACKFILL IN SEWER TRENCHES SHALL CONFORM TO ODOT ITEM 603.10 AND BE PLACED IN LAYERS SUFFICIENT TO MEET THE COMPACTION REQUIREMENT OF 100% OF MAXIMUM LABORATORY DRY DENSITY PER ASTM D-698 AND THOROUGHLY COMPACTED WITH MACHINE MOUNTED COMPACTION EQUIPMENT. THE PLACING OF BACKFILL MATERIAL SHALL BE CONTINUED UNTIL THE TRENCH IS ENTIRELY FILLED AND COMPACTED WITH THE APPROVED GRANULAR MATERIAL TO THE GRADE CALLED FOR ON THE CONTRACT DRAWINGS. EXCAVATED MATERIAL CONFORMING TO ODOT ITEM 203 SHALL BE USED FOR BACKFILLING EXISTING STRUCTURES (AFTER REMOVAL) ONLY. CRUSHED GRAVEL CONFORMING TO GRADATION REQUIREMENTS OF ODOT ITEM 304 OR APPROVED EQUAL AS SHOWN IN ODOT TABLE 703-1 SHALL BE USED FOR BACKFILLING ALL SEWER TRENCH AREAS SHOWN ON THE PLANS AND AS DIRECTED BY THE CITY OF MASSILLON ENGINEER. FLOODING, JETTING, OR PUDDLING OF BACKFILL MATERIAL WILL NOT BE PERMITTED UNLESS APPROVED BY THE CITY OF MASSILLON ENGINEER. COMPACTION TESTING OF BACKFILL BY A GEOTECHNICAL ENGINEER MAY BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR.

SANITARY SEWERS SHALL BE AIR TESTED FOR LEAKAGE AND MANDREL TESTED FOR DEFLECTION. THE MAXIMUM ALLOWABLE PIPE DEFLECTION SHALL BE 5%

SANITARY SEWER MANHOLE FRAMES SHALL CONFORM TO EAST JORDON TYPE MASSILLON 1048 OR APPROVED EQUAL.
SANITARY SEWER MANHOLE LIDS SHALL CONFORM TO EAST JORDON TYPE MASSILLON 1040AGS OR APPROVED EQUAL

PRIOR TO FINAL PAYMENT FOR AND ACCEPTANCE OF SANITARY SEWER INSTALLATION THE RESULTS OF THE AIR PRESSURE TESTS, TELEVISION TESTS AND MANDREL TESTS SHALL BE FORWARDED TO THE CITY OF MASSILLON ENGINEER.

DEFLECTION TESTING

MAXIMUM ALLOWABLE PIPE DEFLECTION (REDUCTION IN VERTICAL INSIDE DIAMETER) SHALL BE 5%. DEFLECTION TESTS OF PIPE SHALL BE PERFORMED NOT SOONER THAN 30 DAYS AFTER THE BACKFILL HAS BEEN PROPERLY PLACED AND BEFORE FINAL ACCEPTANCE. LOCATIONS WITH EXCESS DEFLECTION SHALL BE EXCAVATED AND REPAIRED BY RE-BEDDING OR REPLACEMENT OF THE PIPE AT THE CONTRACTOR'S EXPENSE. DEVICES FOR TESTING INCLUDE A DEFLECTOMETER METER, OR PROPERLY SIZED (60, NO-GO) MANDREL OF SEWER BALL. THE DEFLECTION TESTING MUST BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES. FOR THE PURPOSE OF DEFLECTION MEASUREMENTS, THE BASE INSIDE PIPE DIAMETERS WITHOUT DEFLECTION ARE PROVIDED IN TABLE A. THE MAXIMUM ALLOWABLE DEFLECTION SHALL BE APPLIED TO THE BASE INSIDE DIAMETER IN DETERMINING THE MINIMUM PERMISSIBLE DIAMETER. IT MUST BE EMPHASIZED THAT TO INSURE ACCURATE TESTING, THE LINES MUST BE THOROUGHLY CLEANED.

TABLE A
INSIDE DIAMETERS FOR DEFLECTION MEASUREMENTS
OF ASTM D 3034 SDR 35 / SDR 21 PVC SEWER PIPE

SIZE	SDR	AVG. O.D.	BASE I.D.	DEFLECTION MANDREL
6"	35	6.275	5.742	5.54
8"	35	8.400	7.685	7.28
10"	35	10.500	9.563	9.08
12"	35	12.500	11.351	10.79

TELEVISION TESTING

ALL SANITARY SEWERS, 8-INCH DIAMETER AND LARGER, MUST PASS AN INTERNAL TELEVISION INSPECTION. THE CONTRACTOR SHALL PROVIDE A COMPLETE INTERNAL INSPECTION DVD TO THE CITY OF MASSILLON ENGINEERING DEPARTMENT. THE RECORDING PROCEDURE SHALL BE IN ACCORDANCE WITH CITY OF MASSILLON ENGINEERING DEPARTMENT STANDARDS.

LEAKAGE TESTS

LEAKAGE TESTS SHALL BE PERFORMED WHICH MAY INCLUDE APPROPRIATE WATER OR LOW PRESSURE AIR TESTING. THE TESTING METHODS SELECTED SHOULD TAKE INTO CONSIDERATION THE RANGE IN GROUNDWATER ELEVATIONS DURING THE TEST AND ANTICIPATED DURING THE DESIGN LIFE OF THE SEWER COMPLETED AND ACCEPTED.

WATER (HYDROSTATIC) TEST

THE LEAKAGE EXFILTRATION OR INFILTRATION SHALL NOT EXCEED 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY [(L/DIA OF PIPE DIAMETER KM D)] FOR ANY SECTION OF THE SYSTEM. AN EXFILTRATION OR INFILTRATION TEST SHALL BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET (0.6 M).

AIR TESTING AS PER ASTM F1417

AIR TESTING WILL BE CONDUCTED AS THE PROJECT IS BEING CONSTRUCTED. AT NO TIME WILL MORE THAN 800 FEET OF PIPE BE INSTALLED BEFORE AIR TESTING IS PERFORMED. SEWAGE WILL NOT BE DIVERTED TO ANY SECTION OF PIPE, REGARDLESS OF LENGTH, UNTIL ALL TESTING IS COMPLETED AND ACCEPTED.

AFTER BACKFILLING A MANHOLE TO MANHOLE REACH OF SANITARY SEWER LINE, THE CONTRACTOR SHALL, AT HIS EXPENSE, CONDUCT THE LINE ACCEPTANCE TESTS. THE TESTS SHALL BE PERFORMED ACCORDING TO THE STATED PROCEDURES AND UNDER THE SUPERVISION OF THE CITY OF MASSILLON ENGINEER OR HIS REPRESENTATIVE.

EQUIPMENT USED SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS AND BE APPROVED BY THE CITY OF MASSILLON ENGINEER:

1. PNEUMATIC PLUGS SHALL HAVE A SEALING LENGTH EQUAL TO OR A GREATER THAN THE DIAMETER OF THE PIPE BEING INSPECTED.
2. PNEUMATIC PLUGS SHALL RESIST INTERNAL TEST PRESSURES WITHOUT REQUIRED EXTERNAL BRACING OR BLOCKING.
3. ALL AIR USED SHALL PASS THROUGH A SINGLE CONTROL PANEL.
4. THREE INDIVIDUAL HOSES SHALL BE USED FOR THE FOLLOWING CONNECTIONS:
   a. FROM CONTROL PANEL TO PNEUMATIC PLUGS FOR INFLATION.
   b. FROM CONTROL PANEL TO SEALED LINE FOR INTRODUCING THE LOW PRESSURE AIR.
   c. FROM SEALED LINE TO CONTROL PANEL FOR CONTINUALLY MONITORING AIR PRESSURE RISE IN THE SEALED LINE.

TEST EQUIPMENT TESTING PROCEDURES SHALL BE AS FOLLOWS:

ALL PNEUMATIC PLUGS SHALL BE SEAL TESTED BEFORE BEING USED IN THE ACTUAL TEST INSTALLATION. ONE LENGTH OF PIPE SHALL BE LAID ON THE GROUND AN SEALED AT BOTH ENDS WITH THE PNEUMATIC PLUGS TO BE CHECKED. THE SEALED PIPE SHALL BE PRESSURED TO 5 PSIG. THE PLUGS MUST HOLD AGAINST THIS PRESSURE WITHOUT HAVING TO BE BRACED.
AFTER A MANHOLE TO MANHOLE REACH OF PIPE HAS BEEN BACKFILLED AND CLEANED, AND THE PNEUMATIC PLUGS ARE CHECKED BY THE ABOVE PROCEDURE, THE PLUGS SHALL BE PLACED IN THE LINE AT EACH MANHOLE. LOW PRESSURE AIR SHALL BE SLOWLY INTRODUCED INTO THIS SEALED LINE UNTIL THE INTERNAL AIR PRESSURE REACHES APPROXIMATELY 4 PSI.

Kathy Catazaro-Perry, Mayor

Massillon City of Champions

CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
FAX: (330)830-1786

SANITARY NOTES

CONTINUED: AIR TESTING AS PER ASTM F1417

AT LEAST TWO MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE. WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE 3.5 PSIG, THE AIR HOSE FROM THE CONTROL PANEL TO THE AIR SUPPLY SHALL BE DISCONNECTED. THE PORTION OF THE LINE BEING TESTED SHALL BE TERMED "ACCEPTABLE" IF THE TIME REQUIRED IN MINUTES FOR THE PRESSURE TO DECREASE FROM 3.5 TO 2.5 PSIG (GREATER THEN THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE) SHALL NOT BE LESS THAN THE TIME SHOWN FOR THE GIVEN DIAMETERS IN THE FOLLOWING TABLE.

PIPE DIAMETER IN.	MINIMUM TIME MINUTES	LENGTH FOR MINUTES TIME, FT.	TIME FOR LONGER LENGTH, S	SPECIFICATION TIME LENGTH (L) SHOWN, MINUTES							
				100 FT.	150 FT.	200 FT.	250 FT.	300 FT.	350 FT.	400 FT.	450 FT.
4	3:46	597	0.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:45
6	5:40	398	0.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:36	7:36	8:52	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	198	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342 L	14:10	14:10	17:46	22:15	26:42	31:09	35:36	40:04
18	17:0	133	7.692 L	17:00	19:13	25:38	32:09	38:27	44:52	51:16	57:41

IN AREAS WHERE GROUND WATER IS KNOWN TO EXIST, THE CONTRACTOR SHALL INSTALL A 1/2 INCH DIAMETER CAPPED PIPE NIPPLE APPROXIMATELY 10 INCHES LONG, THROUGH THE MANHOLE WALL ON TOP OF ONE OF THE SANITARY SEWER LINES ENTERING THE MANHOLE. THIS SHALL BE DONE AT THE TIME THE SANITARY SEWER LINE IS INSTALLED. IMMEDIATELY PRIOR TO THE PERFORMANCE OF THE LINE ACCEPTABILITY TEST, THE GROUND WATER SHALL BE DETERMINED BY REMOVING THE PIPE CAP, BLOWING AIR THROUGH THE PIPE NIPPLE IN THE GROUND SO AS TO CLEAR IT, AND THEN CONNECTING A CLEAR PLASTIC TUBE TO THE NIPPLE. THE PLASTIC TUBE SHALL BE VERTICAL AND A MEASUREMENT OF THE HEIGHT, IN FEET OF WATER OVER THE INVERT OF THE PIPE, SHALL BE TAKEN AFTER THE WATER HAS STOPPED RISING IN THIS PLASTIC TUBE. THE HEIGHT, IN FEET OF WATER OVER THE INVERT OF THE PIPE, SHALL BE TAKEN AFTER THE WATER HAS STOPPED RISING IN THIS PLASTIC TUBE. AIR TEST PRESSURE IS TO BE INCREASED BY 0.433 PSI FOR EACH FOOT THE GROUND WATER IS ABOVE THE INVERT OF THE SEWER LINE BEING TESTED. THE ALLOWABLE DROP OF ONE POUND AND THE TIMING OF THE TEST REMAIN THE SAME.

IF A LINE ACCEPTABILITY TEST IS BEING CONDUCTED ON MORE THAN ONE MANHOLE REACH OF PIPE, THE ENTIRE SECTION BEING TESTED SHALL MEET THE LINE ACCEPTABILITY REQUIREMENTS AS IF ONLY ONE (1) OF THE MANHOLE REACHES IN THE SECTION WERE BEING TESTED.

NEGATIVE AIR PRESSURE (VACUUM) TESTING OF MANHOLES AS PER ASTM C-1244

PREPARATION OF THE MANHOLE:

A. ALL LIFT HOLES SHALL BE PLUGGED.
B. ALL PIPES ENTERING THE MANHOLE SHALL BE TEMPORARILY PLUGGED, TAKING CARE TO SECURELY BRACE THE PIPES AND PLUGS TO PREVENT THEM FROM BEING DRAWN INTO THE MANHOLE.

PROCEDURE:

A. THE TEST HEAD SHALL BE PLACED AT THE TOP OF THE MANHOLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
B. A VACUUM OF 10 IN. OF MERCURY SHALL BE DRAWN ON THE MANHOLE, THE VALVE ON THE VACUUM LINE OF THE TEST HEAD CLOSED, AND THE VACUUM PUMP SHUT OFF. THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9 IN OF MERCURY.
C. THE MANHOLE SHALL PASS IF THE TIME FOR THE VACUUM READING TO DROP FROM 10 IN. OF MERCURY TO 9 IN. OF MERCURY MEETS OR EXCEEDS THE VALUES INDICATED IN TABLE BELOW.

DEPTH (FT)	MINIMUM TEST TIMES FOR MANHOLES DIAMETER, IN.								
	30	33	36	42	48	54	60	66	72
	TIME, IN SECONDS								
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	28	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	58	65	72	81

CLEAN WATER STATEMENT

ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.

RELATION TO WATER MAINS

SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.
SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER.

WORKING AREA

NO EXCAVATION WITH SIDE SLOPES STEEPER THAN 2:1 AND/OR DEEPER THAN 2', OPEN CASTINGS AND PIPES SHALL BE LEFT EXPOSED WHEN THE SITE IS UNATTENDED BY THE CONTRACTOR. THE CONTRACTOR SHALL SECURE ALL SUCH EXCAVATIONS, OPEN CASTINGS AND PIPES AGAINST UNAUTHORIZED ENTRY COVERING WITH STEEL PLATES, TEMPORARY BACKFILLING, FENCING AND SECURITY SERVICES SHALL BE INCLUDED IN THE PRICE BID FOR THE WORK.

FINAL APPROVAL

A VIDEO IN THE FORM OF DVD WILL BE MADE BY THE CONTRACTOR AND SUBMITTED TO THE CITY OF MASSILLON ENGINEER PRIOR TO THE PROJECT COMMENCING. AFTER THE FINAL INVOICE IS SUBMITTED THE SITE SHALL BE VIDEOED AGAIN BY THE CONTRACTOR. ANY DISCREPANCIES WILL BE RESOLVED PRIOR TO FINAL PAYMENT. AS BUILT DRAWINGS SHALL BE CREATED BY THE CONTRACTOR AND SUBMITTED TO THE CITY OF MASSILLON ENGINEER IN A CLEAR AND LEGENDABLE MANNER PRIOR TO FINAL INVOICE.
COST OF THIS WORK SHALL BE INCLUDED IN ITEM 623 CONSTRUCTION STAKING

AQUA OHIO-WATER LINE NOTES

1. WATERLINES AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO AQUA OHIO SPECIFICATIONS AND DETAILS IN EFFECT AT TIME OF CONSTRUCTION. ANY SITUATION REQUIRING A MODIFICATION TO SAID STANDARDS & SPECIFICATIONS MUST FIRST BE APPROVED BY AQUA OHIO.
2. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH AQUA OHIO.
3. THE CONTRACTOR SHALL ALERT THE UTILITIES PROTECTION SERVICE AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. APPROVAL BY AQUA OHIO CONSTITUTES NEITHER EXPRESSED NOR IMPLIED WARRANTIES AS TO FITNESS, ACCURACY, OR SUFFICIENCY OF PLANS, DESIGNS OR SPECIFICATIONS.
5. ALL ROUGH GRADING TO WITHIN SIX (6) INCHES OF FINISHED GRADE SHALL BE COMPLETED WITHIN EASEMENTS AND RIGHTS-OF-WAY PRIOR TO WATERLINE CONSTRUCTION.
6. MINIMUM VERTICAL CLEARANCE BETWEEN WATERLINE AND SANITARY OR STORM SEWER SHALL BE 18 INCHES. MINIMUM HORIZONTAL SEPARATION SHALL BE 10 FT.
7. WATER SERVICE LINES SHALL TERMINATE 5 FT. FROM THE BUILDING FOUNDATION.
8. DCIP WATER MAIN PIPE SHALL CONFORM TO AWWA C-151, AWWA C-111 FOR JOINTS.
9. WATER MAIN PRESSURE TESTING SHALL CONFORM TO AWWA C-600.
10. WATER MAIN DISINFECTION SHALL CONFORM TO AWWA C-651.
11. MINIMUM COVER OVER WATERLINES SHALL BE FOUR (4) FT.
12. HYDRANTS SHALL BE MUELLER A-423 CENTURION, OR APPROVED EQUAL, 3-WAY.
13. TYPE "II" HYDRANT REFERS TO 90 DEGREE TEE ASSEMBLY OFF OF MAIN LINE, COMPLETE WITH ALL VALVES AND APPURTENANCES. THE CONTRACTOR SHALL REFER TO AQUA OHIO SPECIFICATIONS AND DETAILS.
14. FIRE HYDRANTS SHALL BE FIELD PAINTED RED & YELLOW (2 COATS).
15. HYDRANTS, HYDRANT VALVES, MAINLINE VALVE BOXES AND CURB BOXES SHALL NOT BE LOCATED WITHIN SIDEWALKS, DRIVEWAYS, OR APRONS.
16. BLOW-OFF HYDRANTS SHALL HAVE 2" INLET, 2" OUTLET AND RISER PIPE, AND SHALL BE ECLIPSE NO. TF500, OR APPROVED EQUAL.
17. BACKFILLING BELOW OR WITHIN 3 FT OF EXISTING OR PROPOSED ROADWAY, DRIVEWAY, SIDEWALK OR WALL SHALL BE TYPE 1 OR TYPE 2 STRUCTURAL BACKFILL IN ACCORDANCE WITH THE BACKFILL REQUIRED FOR STORM SEWER, ODOT ITEM 703.11.
18. ALL PIPE JOINTS WITHIN 40 LF OF ANY DEAD END SHALL BE RESTRAINED BY USING FIELD LOCK GASKETS, OR MEGA LUGS ON MECHANICAL JOINTS. ALL PIPE JOINTS WITHIN 40 LF OF ANY BEND, FITTING, VALVE OR TEE SHALL ALSO BE RESTRAINED BY USING FIELD LOCK GASKETS OR MEGA LUGS. IN ADDITION, POURED-IN-PLACE CONCRETE THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES AND PLUGS TO PREVENT MOVEMENT OF THE WATER LINE. BLOCKING SHALL BE CAREFULLY PLACED TO ENSURE IT IS POSITIONED PROPERLY TO WITHSTAND THE RESULTANT FORCES AT EACH BEND, FITTING, ETC. AND SHALL BEAR ON STABLE UNDISTURBED GROUND CAPABLE OF WITHSTANDING THE POTENTIAL LOAD.
19. A PRESSURE REDUCING VALVE WILL BE NEEDED AFTER EACH METER.

AQUA OHIO MATERIAL SPECIFICATIONS

1. DUCTILE IRON PIPE: PUSH-ON JOINTS, CEMENT LINED, THICKNESS CLASS 52 FOR 4 INCH THROUGH 16 INCH, MANUFACTURING STANDARDS AWWA C150 AND C151. POLYETHYLENE ENCASEMENT SHALL BE INSTALLED ON ALL DUCTILE PIPE AND FITTINGS.
2. DUCTILE IRON FITTINGS (TEES, CROSSES, BENDS, REDUCERS, SLEEVES, COUPLINGS AND PLUGS.): MECHANICAL JOINT, TEES, CROSSES, BENDS AND REDUCERS ARE TO BE CEMENT LINED; WORKING PRESSURE RATING 250 PSI, MANUFACTURING STANDARDS ANSI A21.53, ANSI A21.4 AND ANSI A21.10. COMPACT STYLE IS ACCEPTABLE. RETAINER GLANDS SHALL BE INSTALLED WHEREVER THERE IS A POSSIBILITY OF JOINT SEPARATION.
3. FIRE HYDRANTS: POST TYPE, BREAKABLE FLANGE DESIGN FOR TRAFFIC COLLISIONS, 5 ¼" DIAMETER MAIN VALVE, ONE 5" STORZ CONNECTION AND TWO 2 ½" HOSE NOZZLES, 6" MJ INLET, MAIN VALVE TO OPEN LEFT, DIRECTION OF OPENING TO BE INDICATED WITH ARROW CAST ON HYDRANT, TO BE DESIGNED FOR 5 FOOT TRENCH, NATIONAL STANDARD THREADS ON NOZZLES, O-RING PACKING PREFERRED, TYPE 304 STAINLESS STEEL BOLTS AND NUTS, OPERATING NUT AND NUT ON CAPS: 1 ½" PENTAGON, COLOR YELLOW PAINT ON BODY TRIMMED WITH RED PAINT ON BONNET AND CAPS, AWWA STANDARD C502, MUELLER CENTURION A423, US PIPE M-94, CLOW MEDALLION OR AMERICAN DARLING B-84-B.
4. TAPPING VALVES: RESILIENT SEAT, IRON BODY, STAINLESS STEEL BONNET BOLTS AND NUTS, MECHANICAL JOINT ACCESSORIES, NON-RISING STEM, FOR UNDERGROUND SERVICE, O-RING PACKING PREFERRED, OPEN RIGHT (CLOCKWISE) 2 INCH SQUARE OPERATING NUT, MANUFACTURING STANDARDS AND PRESSURE RATINGS AWWA SPECIFICATION C500.
5. 4" THROUGH 12" GATE VALVES: RESILIENT SEAT, IRON BODY, STAINLESS STEEL BONNET BOLTS AND NUTS, MECHANICAL JOINT ACCESSORIES, NON-RISING STEM, FOR UNDERGROUND SERVICE, O-RING PACKING PREFERRED, OPEN RIGHT (CLOCKWISE), 2 INCH SQUARE OPERATING NUT, MANUFACTURING STANDARDS AND PRESSURE RATINGS AWWA C509, MUELLER A-2360 OR EQUAL.
6. VALVE BOXES: TWO PIECE, CAST IRON, SCREW TYPE FOR ADJUSTABLE HEIGHT, HEIGHT RANGE TO BE APPROXIMATELY 36 TO 60 INCHES. THEY ARE TO INCLUDE A WELL FITTING CAST IRON LID, THE WORD "WATER" TO BE CAST ON LID, B SIZE.
7. 2" WATER MAIN: 2" WATER MAIN SHALL BE SOFT DRAWN TYPE 'K" COPPER TUBING OR HIGH DENSITY POLYETHYLENE PLASTIC (HDPE), COPPER TUBE SIZE, AS CALLED OUT ON THE PLAN. IF HDPE IS USED, IT SHALL BE 200 PSI, SDR 9 WITH MARKING TAPE AND A 12 GAUGE COPPER TRACER WIRE LAID IN THE TRENCH. BRASS COMPRESSION FITTINGS SHALL BE USED. STAINLESS STEEL STIFFENERS ARE NECESSARY AT EACH JOINT.
8. POLYETHYLENE ENCASEMENT: EIGHT MIL THICK POLYETHYLENE TUBE MANUFACTURED IN ACCORDANCE WITH ANSI/AWWA C105/A21.5. POLYETHYLENE ADHESIVE TAPE, 1 ½" WIDE, IS TO SEAL JOINTS.
9. BLOW OFF ASSEMBLIES: KUPFERLE FOUNDRY TF500 OR APPROVED EQUAL. INSTALL IN VALVE BOX. INSTALL 2" CURB STOP WITH CURB BOX AHEAD OF EACH BLOW OFF.

STATE OF OHIO
JOSHUA J. HENICKER
E-7274
REGISTERED PROFESSIONAL ENGINEER

8/12/2019

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RVWD BY:		JJR
FLD BK:	638	
BK PG:		40
DATE:	9/27/2019	

SCALES
HORZ:
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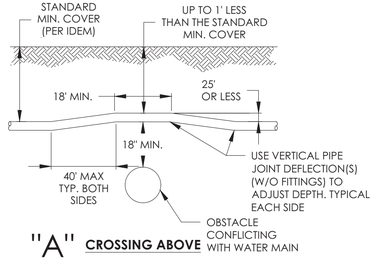
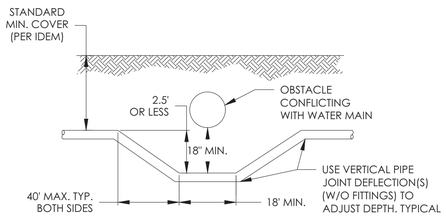
CONTOUR INT:

SITE NOTES & DETAILS
VILLA SOLE DEVELOPMENT
FOR VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

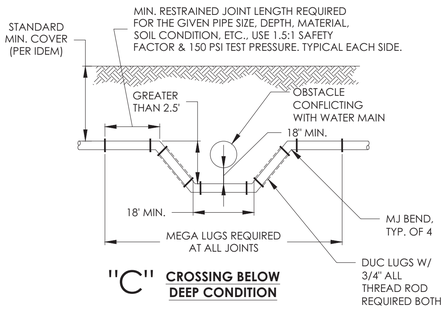
C7.2



"A" **CROSSING ABOVE** WITH WATER MAIN



"B" **CROSSING BELOW SHALLOW CONDITION**



"C" **CROSSING BELOW DEEP CONDITION**

* PROVIDE ADEQUATE SUPPORT IF THE OBSTACLE IS IN PLACE BEFORE THE WATER MAIN IS CONSTRUCTED

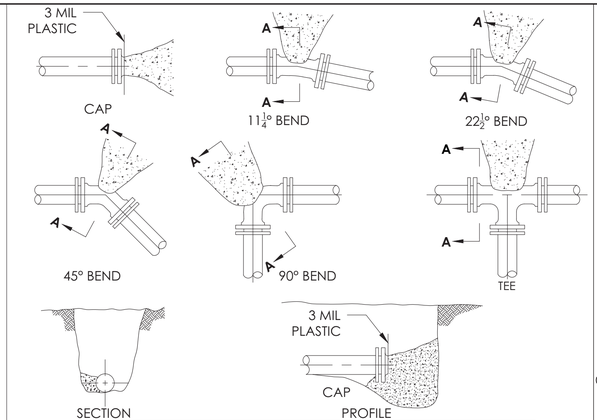
EXISTING WATER MAIN CROSSINGS:

1. CONTRACTOR TO NOTIFY AQUA Ohio INC. WHEN UNDERMINING OF EXISTING MAIN OCCURS.
2. CONTRACTOR SHALL PROVIDE ADEQUATE BACKING ON EACH SIDE OF THE JOINT.

EXISTING WATERLINE TO BE RESTRAINED WITHIN 18' OF FIRST BEND.

DEVIATIONS FROM THESE EXAMPLES WILL REQUIRE PERMIT APPLICANT TO SUBMIT THE COMPLETE "APPLICATION FOR CONSTRUCTION PERMIT FOR PUBLIC WATER SYSTEM (STATE FORM 35058)" WITH DETAILED INFORMATION ABOUT THE ALTERNATIVE TECHNICAL STANDARD.

DESIGN CRITERIA FOR UTILITY CONFLICTS/CROSSINGS



FITTINGS SIZES	BEARING AREA OF BLOCK ON UNDISTURBED SOIL FOR HORIZONTAL BENDS (S.F.) *				
	TEES & ENDS	90° BEND	45° BEND	22½° BEND	11¼° BEND
4	1.5	2	1.5	1.5	1.5
6	3	4	2	1.5	1.5
8	4.5	7	3.5	2	1.5
10	7.5	10.5	5	3	1.5
12	10.5	15	8	4	2.5

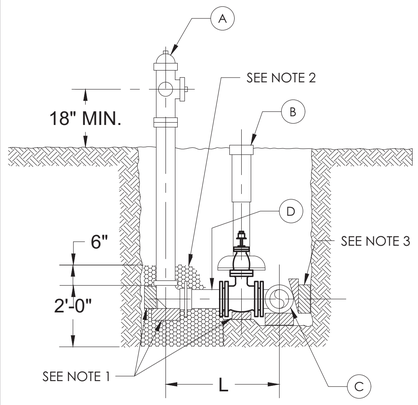
* AND VERTICAL BENDS UP

NOTES:
1). ALL BLOCKING SHALL BE POURED AGAINST FIRM, UNDISTURBED SOIL.
2). BEARING AREA AT FITTINGS NOT GIVEN IN BEARING TABLE SHALL BE AS DIRECTED BY THE ENGINEER.
3). WHEN POURING AGAINST PLUGS AND BLIND FLANGES SET A PIECE OF 3 MIL PLASTIC AGAINST FITTING, TO KEEP CONCRETE OFF BOLTS.
4). LAYOUT TO BE APPROVED BY ENGINEER PRIOR TO CONCRETE POUR.
5). BASED ON 150 PSI STATIC PRESSURE PLUS 50 PSI WATER HAMMER AND 2000 PSF SOIL BEARING.
6). PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE AFTER CONCRETE IS POURED.
7). THRUST BLOCK DETAILS ARE SHOWN AS MINIMUM AND MAY REQUIRE ADDITIONAL BLOCKING.
8). CONCRETE CINDER BLOCKS MAY BE USED IN PLACE OF POURED CONCRETE FOR WATER MAINS 12" AND SMALLER.

CONCRETE THRUST BLOCKING DETAILS

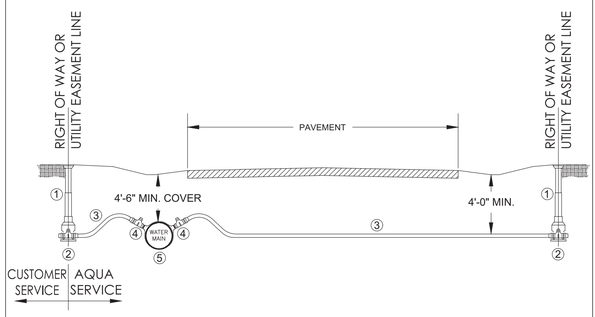
NOTES:
1. SOLID CONCRETE BLOCK TO BE USED UNDER ALL TEES, VALVES, ALSO BEHIND AND UNDER HYDRANT ELBOW.
2. CLEAN CRUSHED STONE FILL AROUND HYDRANT DRAIN TO A DEPTH OF 2'-0".
3. SOLID CONCRETE BLOCK WITH OAK WEDGES. (BRACED AGAINST UNDISTURBED SOIL)
4. ALL HYDRANTS SHALL STAND PLUMB AND HAVE PUMPER NOZZLE FACING THE CURB.
5. PUMPER NOZZLE SHALL BE OUTFITTED WITH 5" STORZ STEAMER CONNECTION.

ITEM	DESCRIPTION
A	HYDRANT ASSEMBLY PER STANDARDS BY AQUA OHIO INC.
B	6" M.J. GATE VALVE, (3) PIECE VALVE BOX
C	ANCHOR TEE (CLOW F-1217)
D	M.J. ANCHOR COUPLING x 12"L



DISTANCE FROM MAIN TO HYDRANT	
MAIN LINE SIZE	L - MIN. DISTANCE (INCHES)
6"	38"
8"	40"
10"	42"
12"	43"
16"	46"
20"	58"
24"	61"

TYPICAL FIRE HYDRANT ASSEMBLY TYPE II

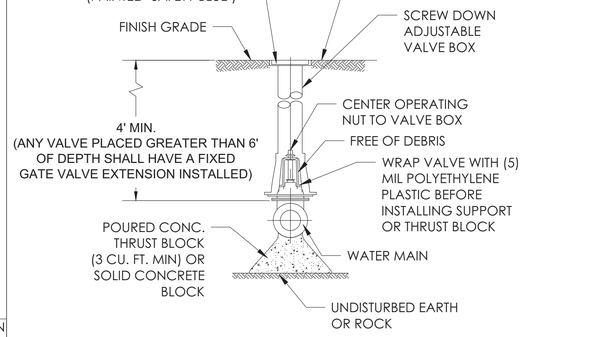


FITTINGS AND TYPE OF MATERIALS REQUIRED BY AQUA OHIO, INC.

1. CURB BOX
2. 1" BRASS CURB STOP
3. SERVICE LINE
4. 1" BRASS CORPORATION STOP 4
5. MAXIMUM DIRECT TAP SHALL BE 1" FOR 8" AND 12" DIA. D.I.P. AND 2" FOR 16" DIA. D.I.P. BRASS SERVICE SADDLE WITH STAINLESS STEEL STRAP TO BE USED OTHERWISE

*** RESIDENTS TO BE NOTIFIED BEFORE SHUT OFF**

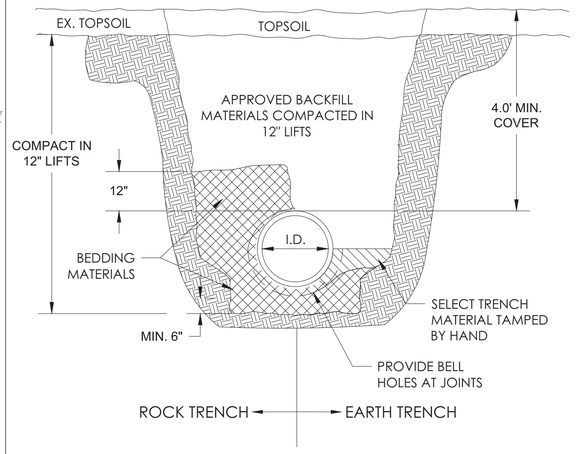
AQUA OHIO, INC. TYPICAL SERVICE LINE INSTALLATION



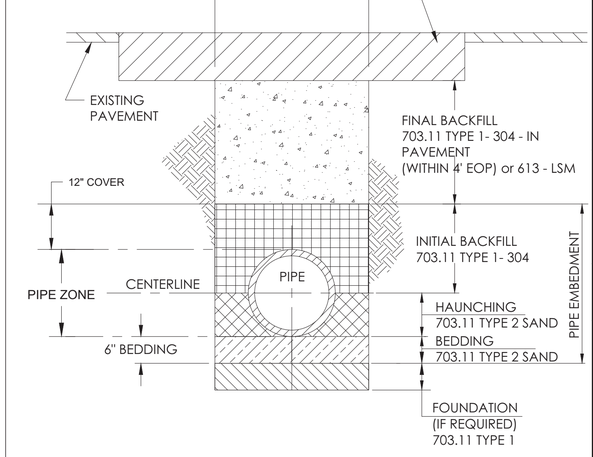
GATE VALVE INSTALLATION DETAIL

1. ALL VALVE BOXES MUST BE KEPT FREE OF DEBRIS DURING CONSTRUCTION.

GATE VALVE INSTALLATION DETAIL



TYPICAL TRENCH DETAIL OUTSIDE OF PAVEMENT



TYPICAL TRENCH DETAIL INSIDE OF PAVEMENT

8/12/2019

HAMMONTREE & ASSOCIATES, LIMITED
ENGINEERS, PLANNERS, SURVEYORS
5233 STONEHAM RD. NORTH CANTON, OH 44720
PHN: (330) 499-8817 FAX: (330) 498-0149
TOLL FREE: 1-800-394-8817
www.hammontree-engineers.com

REV. BY:	DATE:
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REV. BY:	DATE:

DESN BY:	JJR
DRWN BY:	JJR
RVWD BY:	
FLD BK:	638
BK PG:	40
DATE:	9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT:

AQUA OHIO STANDARD DETAILS
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C7.3

CONSTRUCTION SPECIFICATIONS & STANDARDS
ALL CONSTRUCTION TO BE CITY OF MASSILLON SPECIFICATIONS AND STANDARDS, THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS AND FOLLOW ALL OSHA AND ADA REGULATIONS AND REQUIREMENTS, SEDIMENT EROSION STANDARDS.

CONTRACTOR AVAILABILITY
THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH A 24 HOUR PHONE NUMBER WHERE THE CONTRACTOR SHALL BE AVAILABLE FOR EMERGENCIES.

QUANTITIES
QUANTITIES ARE INDICATED FOR COMPARISON OF BIDS ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY QUANTITIES BEFORE ORDERING MATERIALS. VARIATIONS FROM THE PLAN QUANTITIES SHALL BE APPROVED BY THE ENGINEER OR OWNER BEFORE MATERIALS ORDERS ARE PLACED. MATERIALS REJECTED DUE TO INCOMPATIBILITY BETWEEN ORDERED QUANTITIES AND FIELD CONDITIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

UTILITIES
LISTED BELOW ARE ALL KNOWN UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

SBC	50 W.BOWERY, 6TH FLOOR AKRON, OH 44308 800–384–8057
AQUA WATER	P.O. BOX 584 MASSILLON, OH 44648 (330) 833–4156
OHIO EDISON STARK DIVISION	2600 S. ERIE ST. MASSILLON, OH 44545 (330) 833–3141
MASSILLON CABLE TV P.O. BOX	814 MASSILLON, OH 44648 (330) 833–4134
CITY OF MASSILLON SANITARY SEWER	151 LINCOLN WAY EAST MASSILLON, OH 44646 (330) 830–1722
DOMINION EAST OHIO GAS COMPANY	4725 SOUTHWAY ST. S.W. CANTON, OH 44706 (330) 478–3142
ENERVEST OPERATING LLC	125 STATE ROUTE 43, SUITE 100 HARTVILLE, OH 44632 (330) 587–1208

THE CONTRACTOR SHALL NOTIFY ALL UTILITIES 48 HOURS PRIOR TO WORK. THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE SHOWN AT APPROXIMATE LOCATIONS AND WHERE OBTAINED AS REQUIRED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C. OUPS – 1–800–362–2764 OGUPUPS – 1–800–925–0988

NOTIFICATION OF SAFETY FORCES AND BUS GARAGES
THE CONTRACTOR SHALL NOTIFY ALL APPLICABLE AGENCIES LISTED BELOW AT LEAST 48 HOURS IN ADVANCE OF ANY STREET CLOSING OR TRAFFIC CHANGE.

MASSILLON SAFETY SERVICE 330–830–1702;
NORTH LAWRENCE FIRE DEPT. 330–832–6347;
MASSILLON POLICE DEPARTMENT 330–830–1735;
PERRY FIRE DEPARTMENT 330–833–3865;
PERRY POLICE DEPARTMENT 330–478–5121;
TUSC. SCHOOL BUS GARAGE 330–837–7805;
MASSILLON FIRE DEPARTMENT 330–833–1053;
TUSCARAWAS TOWNSHIP HALL 330–832–4337;
MASSILLON SCHOOL BUS GARAGE 330–830–1849;
JACKSON POLICE DEPARTMENT 330–4834–360;
PERRY SCHOOL BUS GARAGE 330–477–1300;
SARTA 330–454–5333
PERRY TOWNSHIP HALL 330–833–2141;
JACKSON FIRE DEPARTMENT 330–834–3950;
JACKSON TOWNSHIP HALL 330–832–7416;
JACKSON SCHOOL BUS GARAGE 330–830–8042;
STARK COUNTY SHERIFF 330–430–3800;

EXISTING DATA
EACH CONTRACTOR SHALL VISIT THE SITE PERSONALLY TO ASCERTAIN THE NATURE OF THE WORK AND BECOME THOROUGHLY FAMILARIZED WITH THE SITE PRIOR TO BID SUBMISSION. EXISTING STRUCTURES, GRADES, PIPING, ETC. ARE INDICATED IN APPROXIMATE LOCATION ON THE PLAN. INFORMATION SHOWN IS NOT GUARANTED TO BE CORRECT AND COMPLETE. THE DATA SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE EXISTENCE OF FACILITIES ABOVE OR BELOW GROUND, WHICH MAY NOT BE SHOWN, WILL NOT BE A BASIS FOR A CLAIM FOR EXTRA WORK. EXISTING UNDERGROUND UTILITIES SHOWN ARE RECORDS PROVIDED BY UTILITY COMPANIES AND ARE APPROXIMATE ONLY. SERVICE LATERALS ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF CONTRACTOR TO NOTIFY THE DEVELOPER, PRIOR TO BID OPENING OF NON–CONNFORMING OR CONFLICTING INFORMATION.

PRESERVATION OF EXISTING UTILITY SERVICES
ANY EXISTING WATER LINE, SANITARY SEWER, STORM SEWER, GAS LINE OR OTHER UTILITY IN OR OUTSIDE OF THE CONSTRUCTION LIMITS, DAMAGED DURING CONSTRUCTION OF THE PROPOSED PROJECT, WILL BE REPLACED AT THAT CONTRACTORS EXPENSE.

PRESERVATION OF PROPERTY CORNERS, SURVEY MARKERS AND MONUMENTS
THE CONTRACTOR SHALL PRESERVE ALL CORNERSTONES, IRON PINS, CONCRETE MONUMENTS ANY TYPE OF LAND MONUMENT. HE SHALL HAVE ALL LAND MONUMENTS IN THE PROXIMITY OF THE WORK REFERENCED. HE SHALL REPLACE DESTROYED OR DAMAGED MONUMENTS AND SHALL FURNISH A CERTIFICATION BY AN OHIO REGISTERED SURVEYOR THAT THE MONUMENTS HAVE BEEN RESTORED.

PRESERVATION OF PRIVATE PROPERTY
THE CONTRACTOR SHALL PERFORM WORK AS TO NOT DISTURB, DAMAGE OR DESTROY ANY TELEPHONE OR POWER POLES, SIGNS, LANDSCAPING ITEMS, ETC.. ANY ITEM DAMAGED OR DESTROYED SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE ANY ITEM DISTURBED OR IN CONFLICT WITH THE WORK TO BE PERFORMED SHALL BE REMOVED AND RESET AT THE CONTRACTOR'S EXPENSE. PRIOR ENGINEER APPROVAL IS REQUIRED BEFORE ANY OF THE ABOVE ITEMS ARE PERFORMED.

ACCESSIBILITY TO PRIVATE PROPERTY
ACCESS TO ALL DRIVEWAYS AND PARKING AREAS WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES EXCEPT WHILE LAYING THE SANITARY SEWER ACROSS THE DRIVE. THE TRENCH SHALL BE BACKFILLED AT THE END OF EACH WORK DAY TO PROVIDE ACCESS. THE CONTRACTOR MUST NOTIFY EACH PROPERTY OWNER AT LEAST 24 HOURS IN ADVANCE OF CUTTING THIER DRIVEWAY.

WORK LIMITS
THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE CONTRACTOR SHALL PROVIDE FOR THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CONDITIONS OF WORK
ALL WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH THE U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ACT, STATE, COUNTY, AND CITY OF MASSILLON LAWS AND REGULATIONS. ALL WORK, AT ALL TIMES SHALL BE SUBJECT TO OBSERVATION BY THE OWNER AND/OR ENGINEER. ALL WORK SHALL COMPLY WITH THE CONDITIONS OF THE CONTRACT DOCUMENTS AND OHIO EPA, AND STANDARDS OF THE CITY OF MASSILLON ALL ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, AND APPLICABLE CITY, COUNTY, STATE AND FEDERAL CODES.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE AND SATISFACTORY ACCESS TO ALL ABUTTING PROPERTIES TO THE PROJECT SITE. ADJACENT ROADS SHALL BE MAINTAINED AND KEPT CLEAN OF MUD AND OTHER DEBRIS THAT MAY BE CAUSED BY TRAFFIC EXITING THE WORK SITE. THE CONTRACTOR SHALL COORDINATE AND PROVIDE FOR ALL NECESSARY TRAFFIC CONTROL. TRAFFIC CONTROL SHALL FOLLOW THE MORE STRINGENT GUIDELINES OF THE CITY OF MISSION OR ODOT.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AND MAINTAIN FACILITIES FOR A CONSTRUCTION OFFICE, EMPLOYEE PARKING, AND EMPLOYEE SANITARY FACILITIES. ON STREET PARKING WILL NOT BE PERMITTED. THE CONTRACTOR SHALL PROVIDE FOR THE LAWFUL OFF–SITE DISPOSAL OF DEMOLITION DEBRIS AND CONSTRUCTION WASTE.

MANHOLES, CATCH BASINS, INLETS AND PIPES REMOVED OR ABANDONED
ALL CASTING, PRE–CAST STRUCTURES AND PIPES SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT–OF–WAY FOR SALVAGE BY THE CITY. CONTACT THE CITY OF MASSILLON STREET SUPERINTENDENT – JOE BERNES AT 330–833–5746. ANY UNWANTED MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR. PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 ITEM.

STATIONING
ALL STATIONING SHOWN IS REFERENCED TO THE CENTERLINE OF CONSTRUCTION AS SHOWN.

GRADING AND FILLING OPERATIONS
NO EXCAVATION, GRADING, OR FILLING OPERATIONS SHALL BE PERFORMED IN ANY WETLANDS OR STREAMS, UNLESS THE REQUIRED STATE AND OR FEDERAL PERMITS HAVE BEEN OBTAINED. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR STORE EQUIPMENT AND/OR MATERIALS IN ANY WETLAND OR STREAMS.

EXCAVATED MATERIAL
ALL EXCAVATED MATERIAL AND ALL MATERIAL USED IN CONSTRUCTION OF THE WORK SHALL BE PILED AND STORED IN A MANNER THAT WILL NOT ENDANGER THE WORK AND THAT WILL LEAVE DRIVEWAYS OR OTHER CONTROLS UNOBSTRUCTED AND ACCESSIBLE WHILE THE WORK IS TO BE COMPLETED. SATISFACTORY PROVISIONS SHALL BE MADE FOR STREET DRAINAGE, AND NATURAL WATERCOURSES SHALL NOT BE OBSTRUCTED. DURING THE PROGRESS OF THE WORK, ALL MATERIAL PILES SHALL BE KEPT TRIMMED UP AND MAINTAINED IN A NEAT MANNER. ALL EXCAVATED WASTE MATERIAL SHALL BE REMOVED FROM THE PROJECT SITE, AS DIRECTED BY THE ENGINEER. THE WASTE SITE IS TO BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE CITY, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS. ALONG WITH A LETTER FROM THE PROPOSED WASTE SITE OWNER PERMITTING SUCH AND HOLDING THE CITY HARMLESS.

ITEM 651, TOPSOIL STOCKPILED
THE MATERIAL FOR THIS ITEM SHALL BE OBTAINED FROM AREAS WITHIN THE PROPOSED RIGHT–OF–WAY. PROVISION OF THIS 651 ITEM SHALL NOT BE CONSTRUCTED AS A WAIVER OF THE PROVISIONS OF 201.4 SOD AND INCIDENTAL TOPSOIL REMOVED ELSEWHERE ON THIS PROJECT FOR SALVAGE, FOR USE AS DESCRIBED IN 203.04(e). SHALL BE INCLUDED IN THE CONTRACT PRICE FOR VARIOUS 203 ITEMS. ALL COSTS OF THE ABOVE SAID WORK SHALL BE INCLUDED IN ITEM 653 TOPSOIL FURNISHED AND PLACED

REMOVAL AND RELOCATION OF EXISTING UTILITIES
THE CONTRACTOR IS REQUIRED TO COOPERATE WITH EACH RESPECTIVE UTILITY OWNER FOR THE REMOVAL AND RELOCATION OF ANY AND ALL UTILITIES THAT CREATE A CONFLICT WITH CONSTRUCTION OF THE PROJECT.

SUBSURFACE CONDITIONS
IT IS THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO MAKES HIS OWN INVESTIGATION OF SUBSURFACE CONDITIONS PRIOR TO SUBMITTING BID. PROSPECTIVE BIDDERS ARE TO COORDINATE WITH THE OWNER FOR ACCESS TO THE SITE FOR INSPECTIONS AND EXPLORATORY EXCAVATION. THE BIDDER SHALL CONTACT THE OWNER AT LEAST 72 HOURS IN ADVANCE OF THE DESIRED INSPECT OR EXCAVATION. THE BIDDER SHALL CONTACT O.U.P.S. AND OBTAIN LOCATIONS OF OTHER UTILITIES.

CROSSING OR CONNECTING TO EXISTING PIPES AND UTILITIES
WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT. IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS. PAYMENT FOR THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

REVIEW OF SANITARY AND DRAINAGE FACILITIES
BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY OF MASSILLON AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FEILD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BT THE CITY OF MASSILLON. ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BT THE CITY OF MASSILLON. ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

RESTORATION
FOR SANITARY SEWER INSTALLED, TESTED, AND ACCEPTED UP TO MAY 15TH OF ANY CALENDER YEAR, RESTORATION SHALL BE COMPLETE BY JUNE 30th OF THAT YEAR. FOR INSTALLATION OF SANITARY SEWER TESTED AND ACCEPTED FROM MAY 15th TO SEPTEMBER 30th OF ANY CALENDER YEAR, RESTORATION SHALL BE COMPLETE BY NOVEMBER 15th OF THAT CALENDER YEAR. FOR SANITARY SEWER INSTALLED, TESTED, AND ACCEPTED AFTER NOVEMBER 15TH OF ANY CALENDER YEAR. RESTORATION SHALL BE COMPLETE BY MAY 15th OF THE NEXT CALENDER YEAR. ALL SOIL AREAS DISTURBED BY THE CONTRACTOR SHALL BE TOPSOILED, SEEDED AND MULCHED. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR EACH ITEM OF AFFECTED WORK. TOPSOIL, SEEDING AND MULCHING SHALL NOT BE A SEPERATE PAY ITEM. THIS INCLUDES BACKFILLING, SEEDING AND MULCHING ALONG THE EDGE OF ALL PAVEMENT RESTORATION. PAVEMENT CROSSINGS WILL RECEIVE TYPE C PAVEMENT REPLACEMENT WITH FULL WIDTH PAVEMANT OVERLAY. CONTRACTOR TO REPLACE ALL PAVEMENT MARKINGS. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR PAVEMENT CONTRACTOR TO USE HOT APPLIED JOINT CRACK SEALER ON ASPHALT PAVEMENT AT ALL ENDS AND INTERSECTIONS. ALL TRENCHES IN ROAD RIGHT OF WAY WILL RECEIVE FULL DEPTH PREMIUM GRANULAR BACKFILL.

WORKING AREA
NO EXCAVATION WITH SIDE SLOPES STEEPER THAN 2:1 AND/OR DEEPER THAN 2', OPEN CASTINGS AND PIPES SHALL BE LEFT EXPOSED WHEN THE SITE IS UNATTENDED BY THE CONTRACTOR. THE CONTRACTOR SHALL SECURE ALL SUCH EXCAVATIONS, OPEN CASTINGS AND PIPES AGAINST UNAUTHORIZED ENTRY COVERING WITH STEEL PLATES, TEMPORARY BACKFILLING, FENCING AND SECURITY SERVICES SHALL BE INCLUDED IN THE PRICE BID FOR THE WORK.

ITEM 407, TACK COAT
THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE CITY ENGINEER. QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.08 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

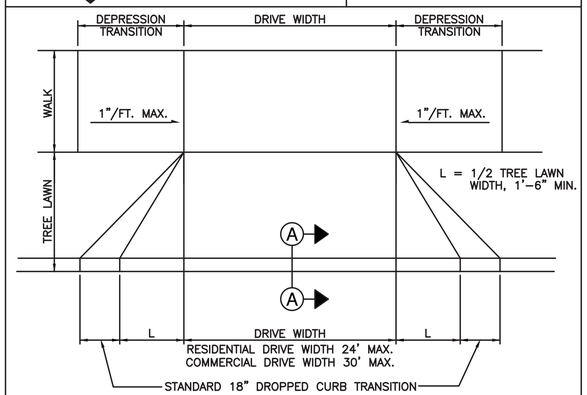
ITEM 408, BITUMINOUS PRIME COAT
THE RATE OF APPLICATION OF THE 408 PRIME COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE CITY ENGINEER. QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.40 GALLONS PER SQUARE YARD OF PRIME COAT FOR ESTIMATING PURPOSES ONLY.

ITEM 659, TOPSOIL, SEEDING AND MULCHING
ITEM 659 SHALL BE APPLIED TO ALL EXPOSED SOIL AREAS DISTURBED DURING CONSTRUCTION. SUCH AS SPECIFIED IN ITEM 659 AND IS NOT LIMITED TO JUST TOPSOIL, SEEDING AND MULCHING. THE CITY SHALL APPROVE SEED MIX PRIOR TO CONSTRUCTION TO BE USED THROUGH OUT CONSTRUCTION LIMITS. PROPOSED MIX SHALL BE SUBMITTED IN WRITING PRIOR TO ANY CONSTRUCTION. ALL ABOVE SAID WORK SHALL BE PAID FOR UNDER ITEM 659, SEEDING AND MULCHING LUMP SUM BID

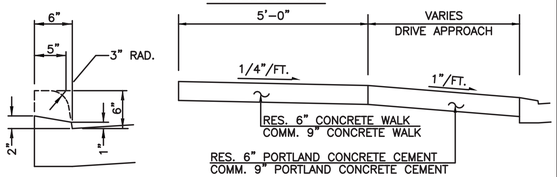
CONSTRUCTION STAKING
CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT AND AS–BUILT DRAWINGS.
REFER TO CONTROL STATIONS ON SHEETS 2a & 10. (COORDINATE SYSTEM ASSUMED)

Francis H. Cicchinelli, Jr.
Massillon Means More!
CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830–1722
FAX: (330)830–1786

DRIVEWAY APPROACH DETAIL



DRIVE PLAN



A-A

DRIVE PROFILE

NOTE
ANY DEVIATION FROM THIS MUST BE APPROVED BY THE CITY ENGINEER.
CONCRETE SHALL BE 4000 PSI CLASS C.

STATE OF OHIO
JOSHUA J. HENICKER
E-72744
REGISTERED PROFESSIONAL ENGINEER
7/12/2019

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RVWD BY:
FLD BK: 638
BK PG: 40
DATE: 03/28/19

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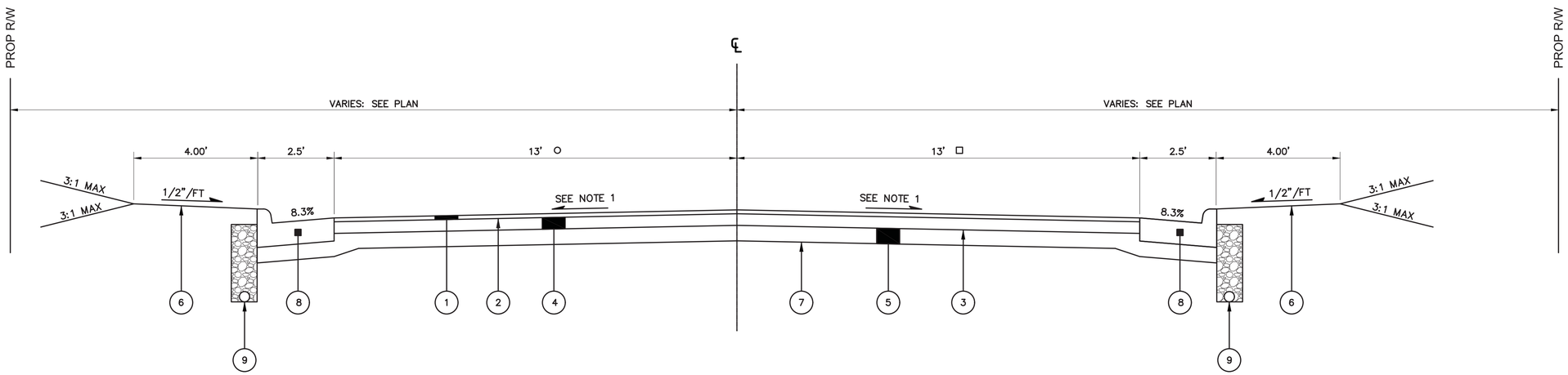
VERT:
CONTOUR INT:

CITY OF MASSILLON NOTES
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

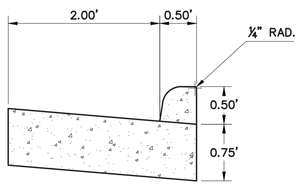
C7.4



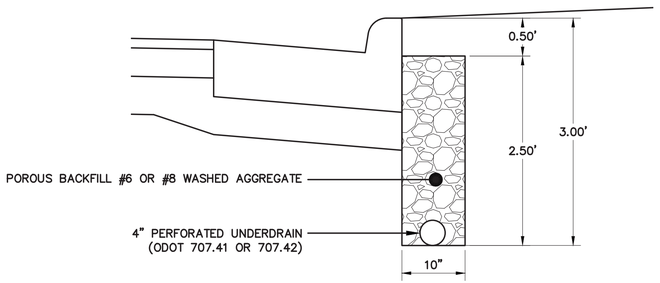
WILDRIDGE DRIVE N.W.
(PUBLIC ROADWAY)
STA. 1+33.72 TO 2+37.00

□ VARIES:
9.40' TO 35' (STA. 1+33.72 TO 2+00.00)

○ VARIES:
12.58' TO 35' (STA. 1+33.72 TO 2+00.00)



ITEM 609 – CURB, TYPE 2



ITEM 605 – 4" SHALLOW PIPE UNDERDRAINS

LEGEND

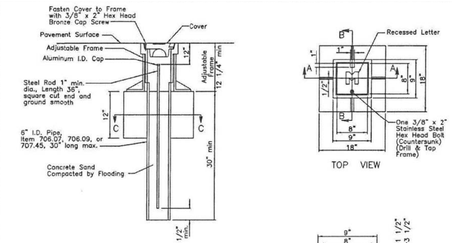
1. ITEM 448 – 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (446), PG64-22
2. ITEM 407 – TACK COAT (0.08 GAL/S.Y.)
3. ITEM 441 – PRIME COAT (0.40 GAL/S.Y.)
4. ITEM 301 – 4-1/2" ASPHALT CONCRETE BASE, PG64-28
5. ITEM 304 – 6" AGGREGATE BASE
6. ITEM 659 – SEEDING AND MULCHING
7. ITEM 204 – SUB GRADE COMPACTION, PROOF ROLLING
8. ITEM 609 – CURB, TYPE 2 (SEE DETAIL)
9. ITEM 605 – 4" SHALLOW PIPE UNDERDRAINS (SEE DETAIL)

NOTES:

1. SEE INTERSECTION DETAILS FOR CUL-DE-SAC ELEVATION AND SLOPE INFORMATION.
2. REFER TO CITY OF MASSILLON STANDARD DETAILS.

Kathy Catazaro-Perry, Mayor
Massillon City of Champions
CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
FAX: (330)830-1786

CENTERLINE MONUMENT DETAILS



MONUMENTS
Monuments shall be constructed in accordance with detail as shown on the standard construction drawings and at the locations on previous sheets.

STATE OF OHIO
JOSHUA J. HENICKER
E-71744
REGISTERED PROFESSIONAL ENGINEER
8/12/2019

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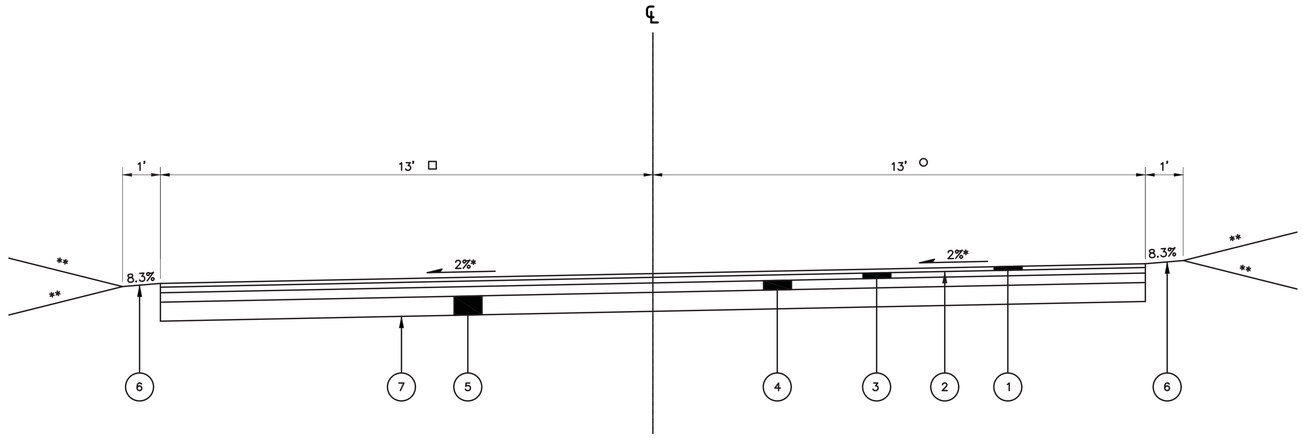
DESN BY:	JJR		
DRWN BY:	JJR	FLD BK:	638
RVWD BY:		BK PG:	40
DATE:	9/27/2019		

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

OVERALL TYPICAL SECTIONS – WILDRIDGE DRIVE
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C8.1



VIA LUNA CIRCLE
(PRIVATE ROADWAY)
STA. 1+24.59 TO 6+88.26

□ VARIES:
25.43'–0" TO 13'–0" (STA. 1+24.59 TO 1+46.79)
13'–0" TO 43'–0" (STA. 5+22.08 TO 6+45.26)
43'–0" TO 0'–0" (STA. 6+45.26 TO 7+02.82)

○ VARIES:
31.43'–0" TO 13'–0" (STA. 1+24.59 TO 1+46.79)
13'–0" TO 43'–0" (STA. 5+22.08 TO 6+45.26)
43'–0" TO 0'–0" (STA. 6+45.26 TO 7+02.82)

*SEE INTERSECTION DETAILS FOR DRIVE APRON AND CUL–DE–SAC DIMENSION, ELEVATION AND SLOPE INFORMATION.

**SEE SITE GRADING PLAN.

LEGEND

1. ITEM 441 – 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (446), PG70–22M
2. ITEM 407 – TACK COAT TO BE APPLIED AT A RATE PER ODOT 407.08
3. ITEM 441 – 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE A (446) PG64–28
4. ITEM 301 – 3" ASPHALT CONCRETE BASE, PG64–28
5. ITEM 304 – 6" AGGREGATE BASE
6. ITEM 659 – SEEDING AND MULCHING
7. ITEM 204 – SUB GRADE COMPACTION, PROOF ROLLING
8. ITEM 642 – CENTERLINE, TYPE 1

STATE OF OHIO
JOSHUA J. HENICKER
E-72744
REGISTERED PROFESSIONAL ENGINEER

8/12/2019

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www.hammontree-engineers.com

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REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____

DESN BY: JJR
DRWN BY: ___
RVWD BY: JJR
FLD BK: 638
BK PG: 40
DATE: 9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

OVERALL TYPICAL SECTIONS – VIA LUNA CIRCLE
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

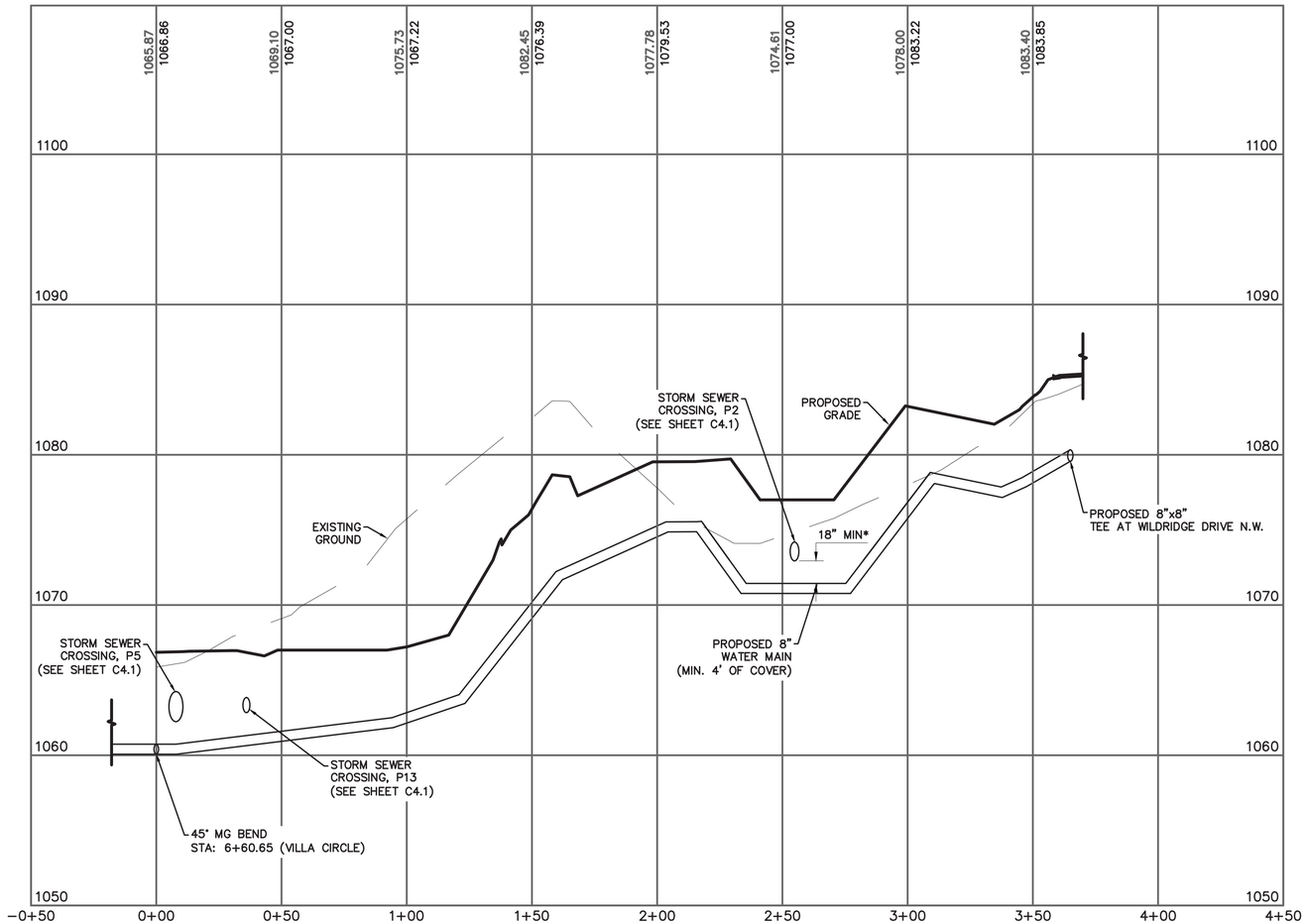
C8.2

R:\Stark\City\Massillon\50\Castello – GinoSole Development 2018\DWG\2019-07-24 VillaSole Site Plans.dwg; 10/14/19 – 1:51pm; jhenicker

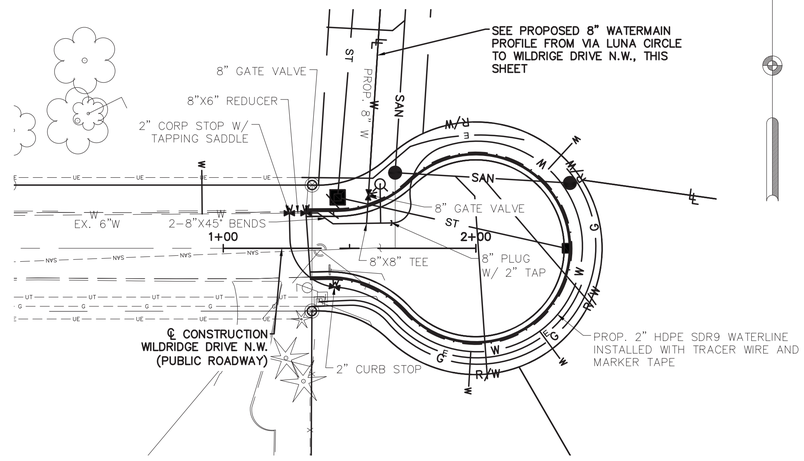
NOTES

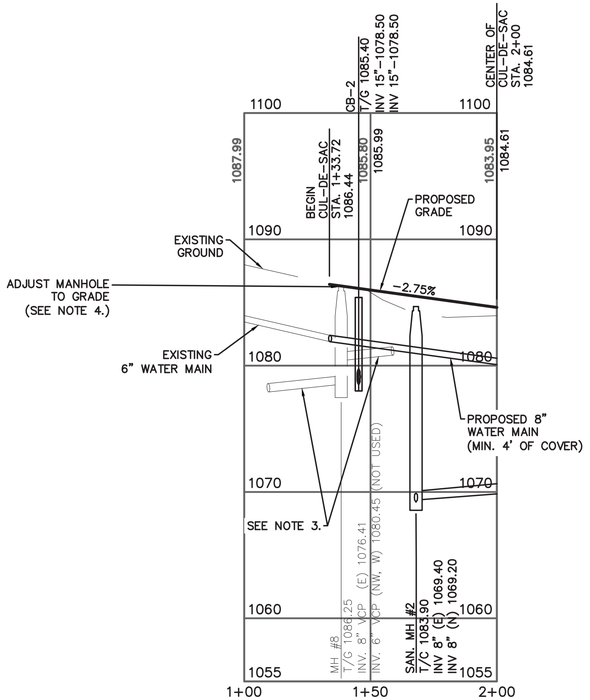
1. SEE SITE UTILITY PLAN, SHEET C4.1, FOR UTILITY INFORMATION.
2. SEE SANITARY PROFILE SHEETS, SHEETS C8.8 AND C8.9, FOR SANITARY PROFILE INFORMATION.
3. IF EXISTING SANITARY LATERALS ARE CUT, THE PIPES ARE TO BE CAPPED WITH CONCRETE.
4. EXISTING MANHOLE TO BE ADJUSTED TO THE NEW FINAL GRADE USING GRADE RINGS. GRADE RINGS ARE NOT TO EXCEED 12".

*PROVIDE 18" MINIMUM VERTICAL CLEARANCE BETWEEN ALL WATER MAIN AND STORM PIPE CROSSINGS.



Proposed Watermain Profile (From Villa Circle to Wildridge Drive N.W.)
SCALE HORIZ: 1" = 30'
SCALE VERT: 1" = 5'





SCALE: 1 INCH = 30'
0 15' 30' 60'

STATE OF OHIO
JOSHUA J. HENICKER
E-71744
REGISTERED PROFESSIONAL ENGINEER

9/26/2019

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REV. BY: ____
REV. BY: ____
REV. BY: ____
REV. BY: ____

DESN BY: JJR
DRWN BY: ____ JJR
RVWD BY: 638
FLD BK: 40
BK PG:
DATE: 9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT:

OVERALL PLAN AND PROFILE - WILDRIDGE DRIVE
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C8.3

ENGINEERS HA SURVEYORS HA PLANNERS

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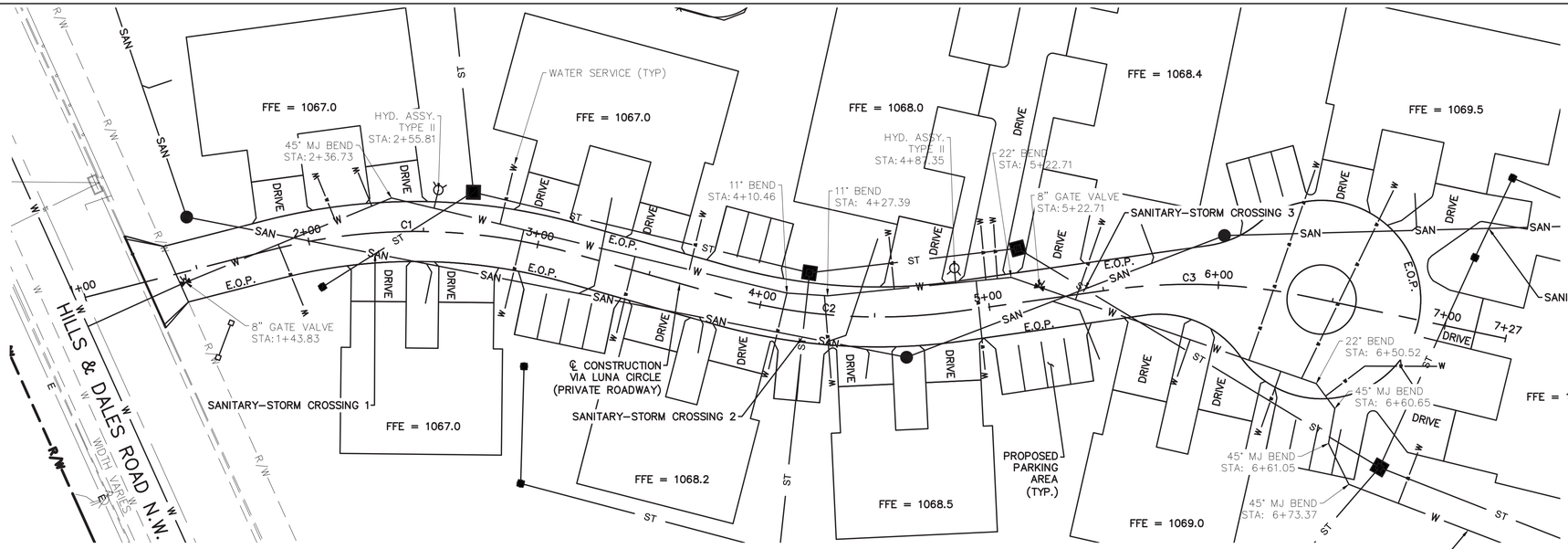


SCALE: 1 INCH = 30'

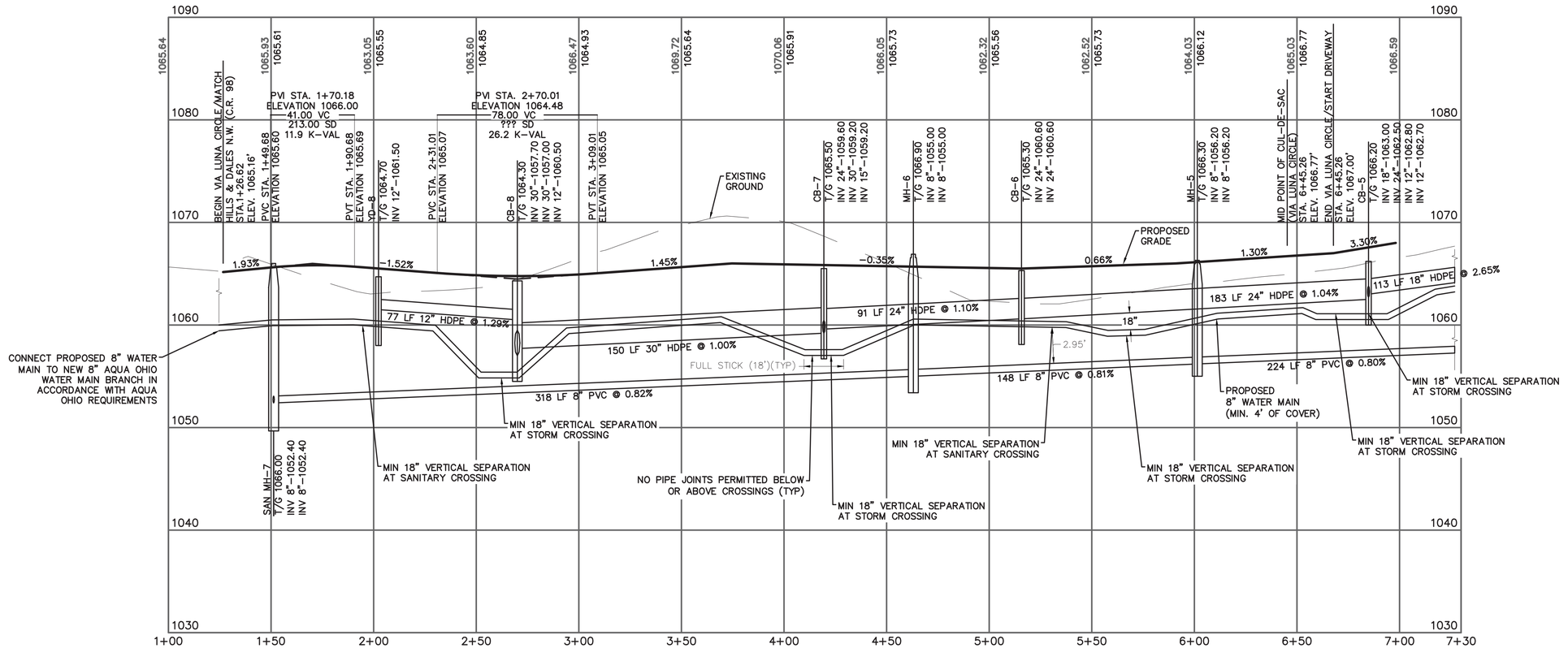
0 15' 30' 60'

NOTES

1. SEE SITE UTILITY PLAN, SHEET C4.1, FOR UTILITY INFORMATION.
2. SEE SANITARY PROFILE SHEETS, SHEETS C8.8 AND C8.9, FOR SANITARY PROFILE INFORMATION.
3. SEE SHEET C8.3 FOR PROPOSED 8" WATERMAIN PROFILE FROM VIA LUNA CIRCLE TO WILDRIDGE DRIVE N.W..

SANITARY – STORM CROSSING CHART

DESCRIPTION	SANITARY INVERT	STORM INVERT	SEPARATION DISTANCE
CROSSING 1	1053.08	1061.15	7.37'
CROSSING 2	1054.63	1059.50	4.17'
CROSSING 3	1055.67	1060.95	4.58'
CROSSING 4	1057.12	1064.05	6.23'



CURVE DATA TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	250.00'	130.90'	129.41'	N 10°42'19" W	30°00'00"	66.99'
C2	250.00'	103.82'	103.07'	N 07°36'07" W	23°47'36"	52.67'
C3	250.00'	87.27'	86.82'	N 09°29'55" W	20°00'00"	44.08'

9/3/2019

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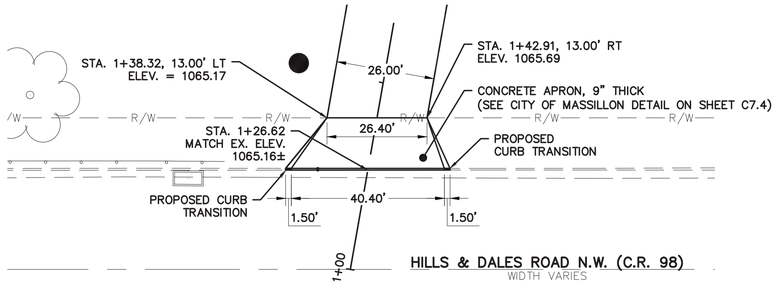
REV. BY: ____ DATE: ____
REV. BY: ____ DATE: ____
REV. BY: ____ DATE: ____

DESN BY: JJR
DRWN BY: ____
RVWD BY: JJR
FLD BK: 638
BK PG: 40
DATE: 9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT:

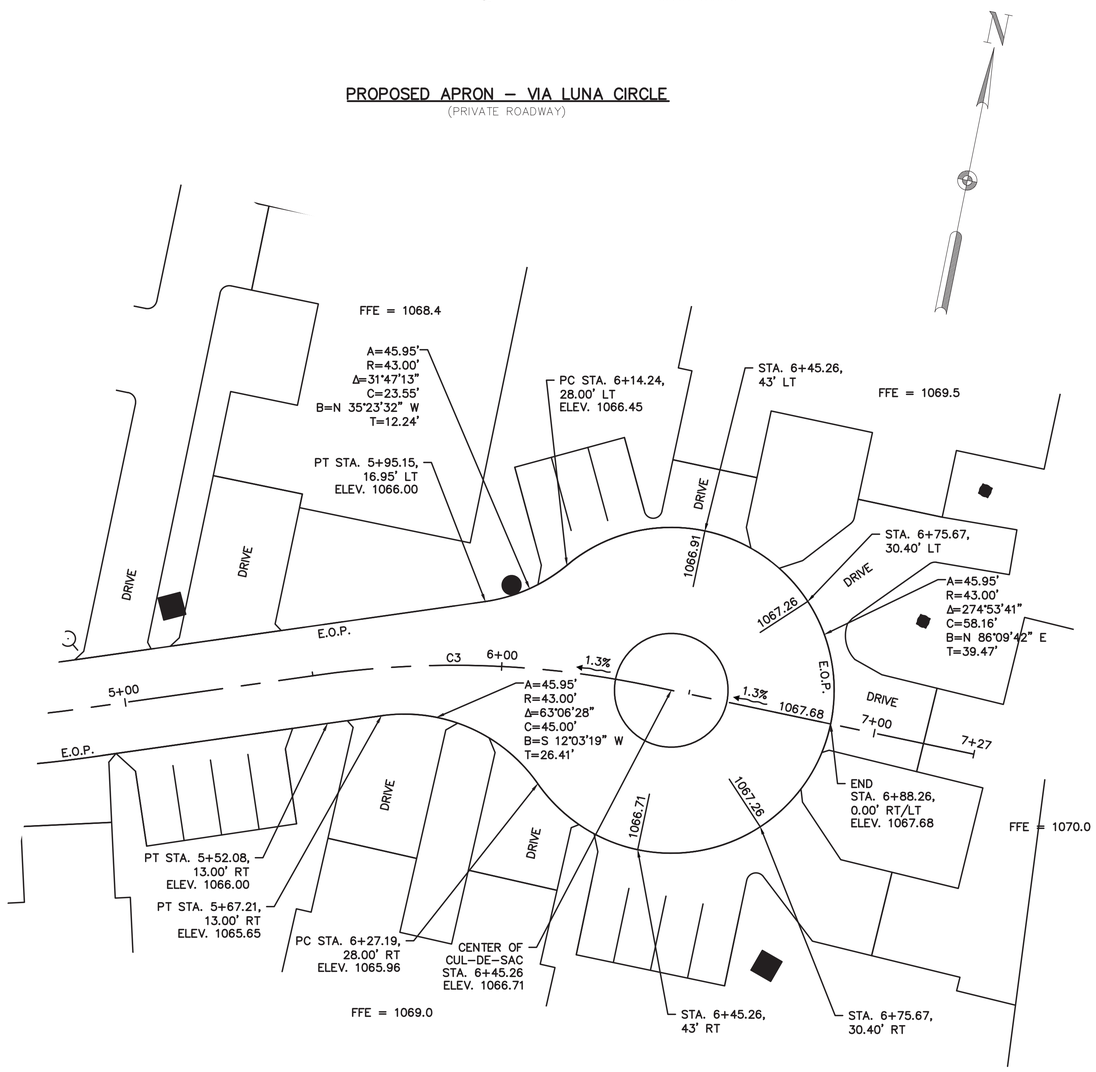
OVERALL PLAN AND PROFILE – CASTELLO DRIVE
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C8.4



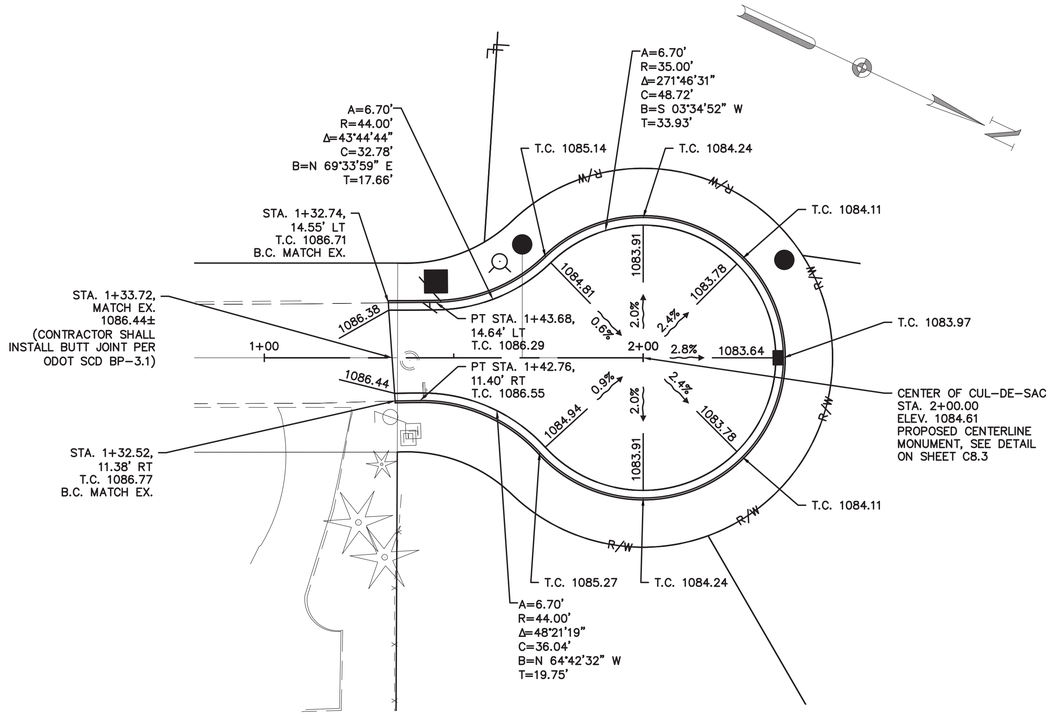
PROPOSED APRON – VIA LUNA CIRCLE

(PRIVATE ROADWAY)



PROPOSED CUL-DE-SAC – VIA LUNA CIRCLE

(PRIVATE ROADWAY)



PROPOSED CUL-DE-SAC – WILDRIDGE DRIVE N.W.

(PUBLIC ROADWAY)

CURVE DATA TABLE						
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	250.00'	130.90'	129.41'	N 10°42'19" W	30°00'00"	66.99'
C2	250.00'	103.82'	103.07'	N 07°36'07" W	23°47'36"	52.67'
C3	250.00'	87.27'	86.82'	N 09°29'55" W	20°00'00"	44.08'

SCALE: 1 INCH = 20'

0 10' 20' 40'

STATE OF OHIO
JOSHUA J. JENICKER
E-72744
REGISTERED PROFESSIONAL ENGINEER

8/12/2019

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REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____

DESN BY: JJR
DRWN BY: JJR
RVWD BY:
FLD BK: 638
BK PG: 40
DATE: 9/27/2019

SCALES
HORZ: 20'
VERT:
CONTOUR INT: 1'

OVERALL INTERSECTION DETAILS
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C8.5

ENGINEERS HA SURVEYORS HA PLANNERS

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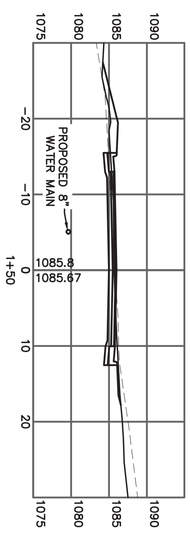

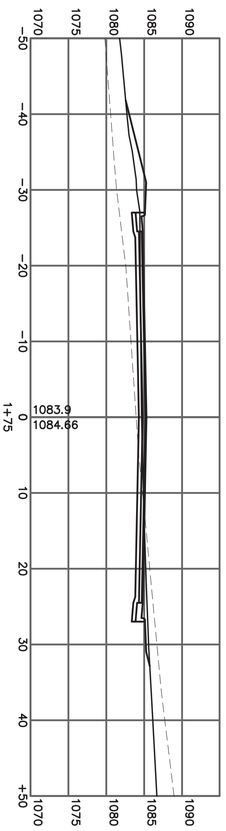

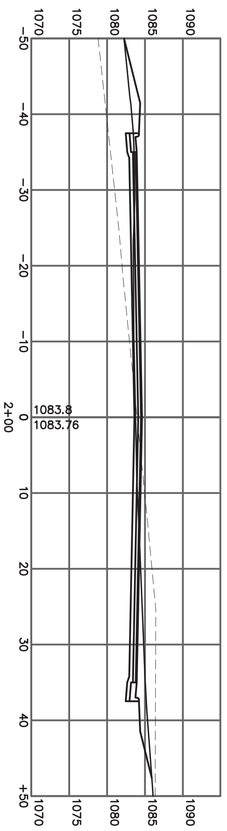

8/12/2019

C8.6	OVERALL CROSS SECTIONS – WILDRIDGE DRIVE N.W. VILLA SOLE DEVELOPMENT FOR: VILLA SOLE, LLC LOCATED IN THE CITY OF MASSILLON STARK COUNTY, OH	SCALES HORZ: VERT: CONTOUR INT: 1'	DESN BY: JJR DRWN BY: RVWD BY: JJR FLD BK: 638 BK PG: 40 DATE: 9/27/2019

REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____

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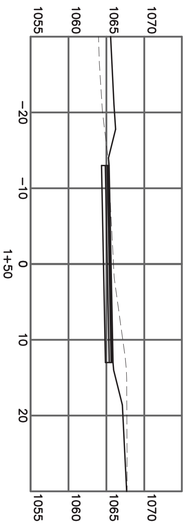

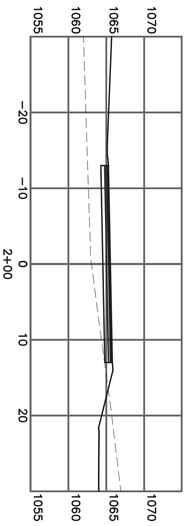

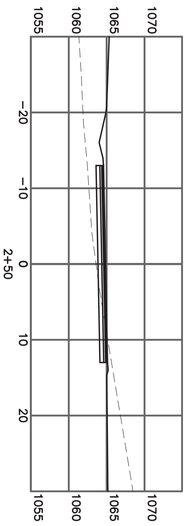

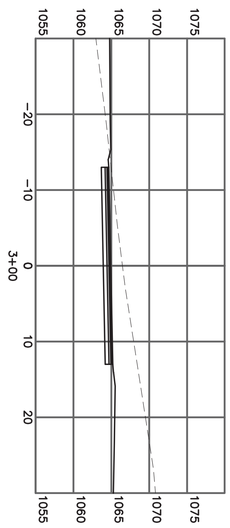

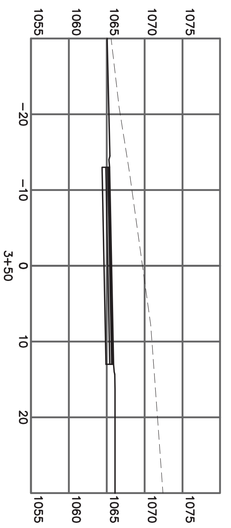

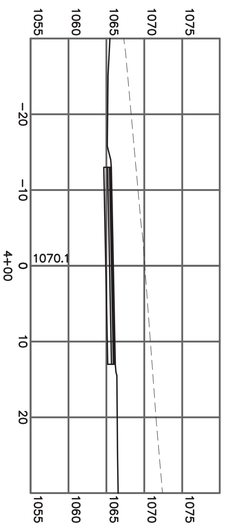

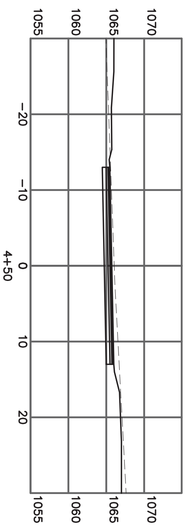

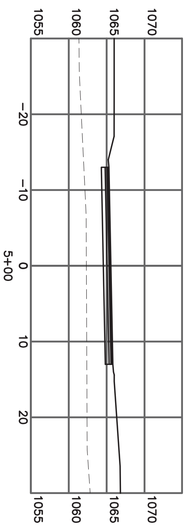

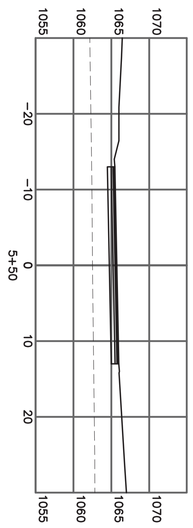

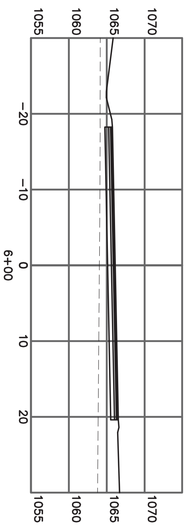

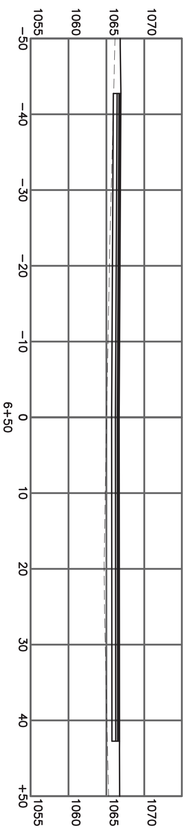

8/12/2019

OVERALL CROSS SECTIONS – CASTELLO DRIVE
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C8.7

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

DESN BY: JJR
DRWN BY: ____
RVWD BY: JJR
FLD BK: 638
BK PG: 40
DATE: 9/27/2019

REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____
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REV. BY: ____ DATE: ____ DESC.: ____
REV. BY: ____ DATE: ____ DESC.: ____

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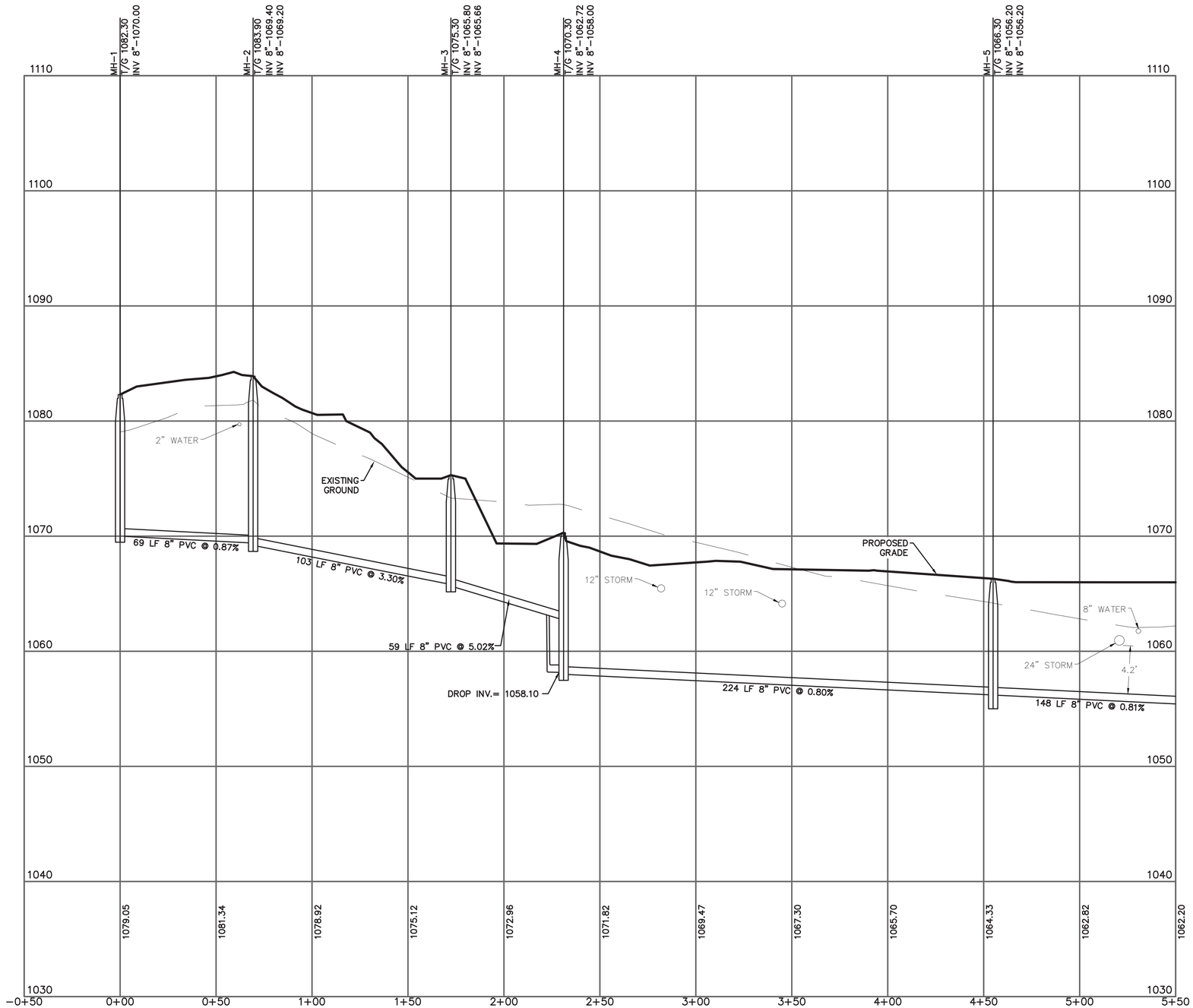

Proposed Sanitary Sewer Profile (Sta. 0+00 to Sta. 5+50)

SCALE HORIZ: 1" = 30'
SCALE VERT: 1" = 5'

NOTES

1. SEE SITE UTILITY PLAN, SHEET C4.1, FOR UTILITY INFORMATION.
2. CONTRACTOR SHALL MAINTAIN 4' OF COVER OVER PROPOSED SANITARY PIPES.

STATE OF OHIO
JOSHUA J. HENICKER
E-7044
REGISTERED PROFESSIONAL ENGINEER

9/26/2019

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DESC.: ____ REV. BY: ____ DATE: ____
DESC.: ____ REV. BY: ____ DATE: ____

DESN BY: JJR
DRWN BY: JJR
RVWD BY:
FLD BK: 638
BK PG: 40
DATE: 9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

OVERALL SANITARY PROFILES
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C8.8

ENGINEERS HA SURVEYORS HA PLANNERS

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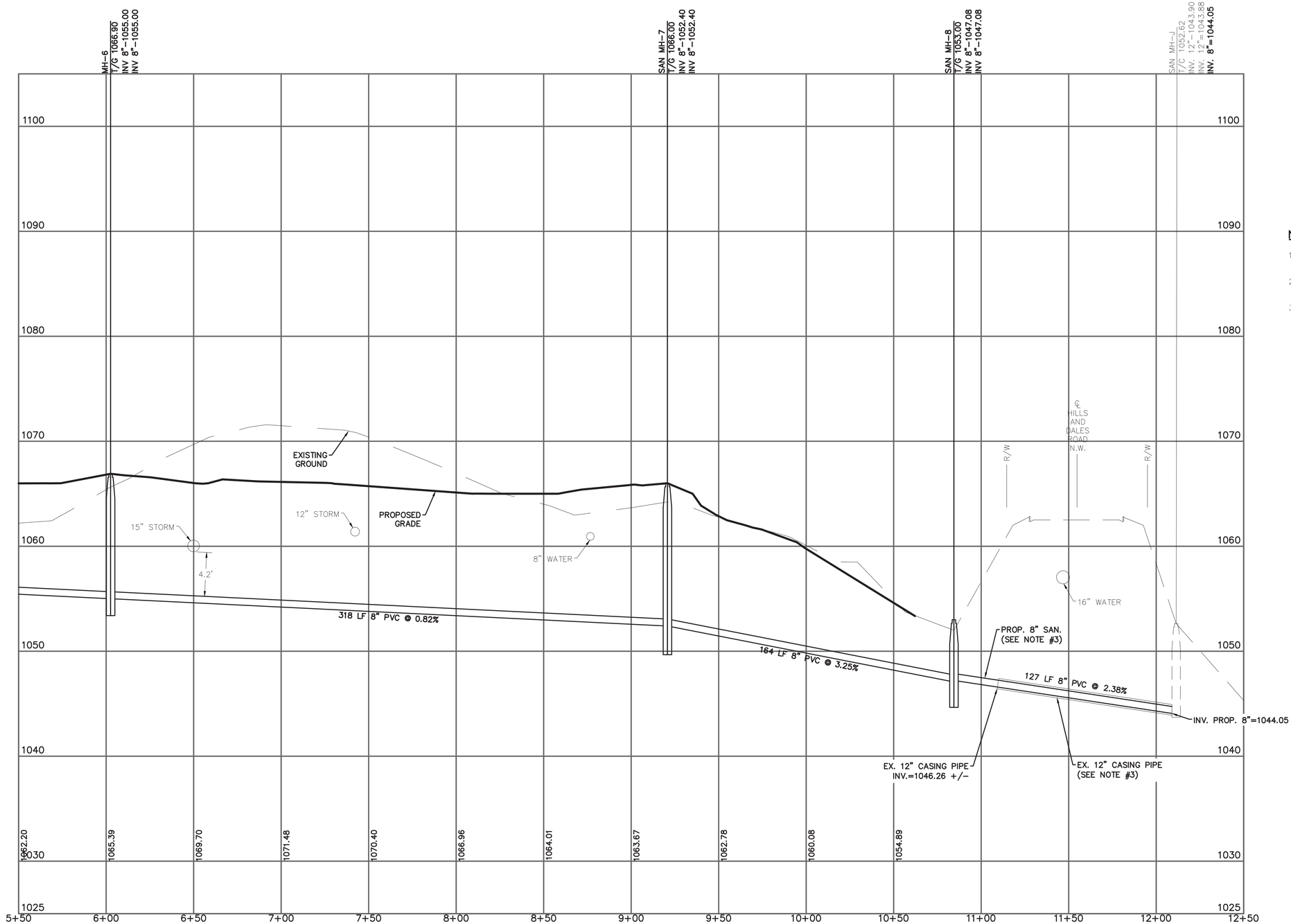

Proposed Sanitary Sewer Profile (Sta. 5+50 to End)

SCALE HORIZ: 1" = 30'
SCALE VERT: 1" = 5'

NOTES

1. SEE SITE UTILITY PLAN, SHEET C4.1, FOR UTILITY INFORMATION.
2. CONTRACTOR SHALL MAINTAIN 4' OF COVER OVER PROPOSED SANITARY PIPES.
3. CONTRACTOR TO VERIFY LOCATION, SIZE AND INVERT OF EXISTING 12" VIT CASING PIPE PRIOR TO THE BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL INSTALL A NEW 8" PVC SDR 35 PIPE THROUGH THE EXISTING CASING PIPE AND CONNECT IT TO EXISTING MH-J. AFTER THE NEW 8" PIPE IS INSTALLED, THE CONTRACTOR SHALL PLUG THE END OF THE INTERSTITIAL SPACE BETWEEN THE CASING PIPE AND THE CARRIER PIPE WITH MORTAR TO PREVENT PIPE MOVEMENT AND SOIL FROM ENTERING THE CASING PIPE.

STATE OF OHIO
JOSHUA J. HENICKER
E-7044
REGISTERED PROFESSIONAL ENGINEER

9/26/2019

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DESN BY: JJR
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DATE: 9/27/2019

SCALES
HORZ:
VERT:
CONTOUR INT: 1'

OVERALL SANITARY PROFILES
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C8.9

HA ENGINEERS HA SURVEYORS HA PLANNERS

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EROSION CONTROL NOTES

1. ALL PROPERTIES ADJACENT TO THE SITE OF SOIL–DISTURBING ACTIVITY SHALL BE PROTECTED TO THE MAXIMUM EXTENT PRACTICABLE, FROM SOIL EROSION AND SEDIMENT RUNOFF AND DRAINAGE, INCLUDING, BUT NOT LIMITED TO PRIVATE PROPERTIES, NATURAL AND ARTIFICIAL WATERWAYS, WETLANDS, STORM SEWERS AND PUBLIC LANDS.

2. CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL PRACTICES USED TO SATISFY THIS REQUIREMENT SHALL CONFORM, AS A MINIMUM, TO STATE OF OHIO STANDARDS AS SET FORTH IN THE MOST–CURRENT EDITION OF THE RAINWATER AND LAND DEVELOPMENT MANUAL, DEFINED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF SOIL AND WATER CONSERVATION AND NATURAL RESOURCE CONSERVATION SERVICE AND SHALL CONFORM TO THE MOST CURRENT OHIO ENVIRONMENTAL PROTECTION AGENCY, OHIO REVISED CODE CHAPTER 6111 REQUIREMENTS.

3. EROSION AND SEDIMENT CONTROL PLAN APPROVALS ISSUED IN ACCORDANCE WITH THESE RULES DO NOT RELIEVE THE OWNER OF RESPONSIBILITY FOR OBTAINING ALL OTHER NECESSARY PERMITS AND OR APPROVALS FROM FEDERAL STATE, AND/OR COUNTY AGENCIES. IF REQUIREMENTS VARY, THE MOST STRINGENT REQUIREMENTS SHALL BE FOLLOWED.

4. EROSION AND SEDIMENT CONTROL PRACTICES AT THE SITE, AND AS IDENTIFIED IN THE ESC PLAN SHALL COMPLY WITH THE FOLLOWING:

   A. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN OR APPROVAL LETTER FROM THE LOCAL SWCD SHALL BE LOCATED ON SITE FOR REVIEW.

   B. LIMITS TO CLEARING AND GRADING SHALL BE SHOWN ON ESC PLANS. LIMITS TO CLEARING AND GRADING SHALL BE CLEARLY MARKED ON SITE WITH SIGNAGE, FLAGGING, AND/OR FENCING ETC.

   C. INSTALL EROSION AND SEDIMENT PERIMETER CONTROLS AS A FIRST ACTION OF CONSTRUCTION AS SPECIFIED BY CONSTRUCTION SEQUENCE. THIS SHALL INCLUDE AND IS NOT LIMITED TO PROTECTIVE BMP'S FOR STREAM CORRIDORS AND CROSSINGS, WETLANDS, SITE ENTRANCE, SEDIMENT TRAPS & BASINS, BARRIERS, AND DIVERSION DIKES.

   D. CONCENTRATED STORM WATER RUNOFF SHALL PASS THROUGH A SEDIMENT CONTROL DEVICE BEFORE EXITING THE SITE BOUNDARIES. CONCENTRATED RUNOFF FROM BARE SOIL AREAS SHALL BE DIVERTED INTO A SETTLING POND OR SEDIMENT CONTROL STRUCTURE, OR OTHER APPROVED SEDIMENT BARRIER BEFORE LEAVING THE SITE.

   E. EARTHEN STRUCTURES SUCH AS DAMS, BASINS, STREAM MODIFICATIONS AND WATER DIVERSIONS SHALL BE SEEDED AND MULCHED WITH IN SEVEN (7) DAYS OF THE COMPLETION OF INSTALLATION. DAMS SHALL CONFORM TO THE OHIO DAM LAWS (ORC 1521.06).

   F. STABILIZATION OF CRITICAL AREAS WITHIN 50 FEET OF ANY STREAM OR WETLAND SHALL BE TEMPORARILY STABILIZED WITHIN TWO (2) DAYS OF DISTURBANCE IF AREA WILL REMAIN INACTIVE FOR SEVEN (7) DAYS OR LONGER AND PERMANENTLY STABILIZED WITHIN TWO (2) DAYS OF REACHING FINAL GRADE. CONSTRUCTION VEHICLES SHALL AVOID STREAMS AND THE 50 FOOT BUFFER AREAS. IF AN ACTIVE DRAINAGE WAY MUST BE CROSSED BY CONSTRUCTION VEHICLES REPEATEDLY DURING CONSTRUCTION, A TEMPORARY STREAM CROSSING SHALL BE CONSTRUCTED ACCORDING TO THE SPECIFICATIONS IN THE RAINWATER & LAND DEVELOPMENT MANUAL. CONSTRUCTION OF BRIDGES, CULVERTS OR SEDIMENT CONTROL STRUCTURES SHALL NOT PLACE SOIL, DEBRIS AND OTHER FINE PARTICULATE MATERIAL INTO OR CLOSE TO THE WATER RESOURCE IN SUCH A MANNER THAT IT MAY SLOUGH, SLIP OR ERODE.

   G. STORM SEWER INLETS SHALL BE PROTECTED SO THAT SEDIMENT–LADEN RUNOFF WILL NOT ENTER THE STORM SEWER SYSTEM WITHOUT FIRST BEING FILTERED AND/OR TREATED. SANITARY SEWER MANHOLES SHALL BE PROTECTED SO THAT NO STORM RUNOFF WILL ENTER THE SANITARY SEWER SYSTEM.

   H. RE–VEGETATE SOIL. TEMPORARY SOIL STABILIZATION SHALL OCCUR WITHIN SEVEN (7) DAYS AFTER ROUGH GRADING IF THE AREA WILL REMAIN IDLE LONGER THAN FOURTEEN (14) DAYS. PERMANENT SOIL STABILIZATION SHALL BE INSTALLED WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. PERMANENT VEGETATION IS A GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE AND MATURE ENOUGH TO SURVIVE WINTER WEATHER CONDITION.

   I. SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED TO PREVENT SOIL LOSS. STABILIZATION SHALL BE REQUIRED IF STOCKPILES ARE LOCATED WITHIN CRITICAL AREAS NEAR STREAMS OR WETLANDS, OR IF DETERMINED BY THE LOCAL SWCD THAT SEDIMENT FROM STOCKPILES WILL LEAVE THE SITE.

   J. UNSTABLE SOILS PRONE TO SLIPPING OR SLOUGHING SHALL NOT BE CLEARED, GRADED, EXCAVATED, FILLED OR HAVE LOADS IMPOSED UPON THEM UNLESS THE WORK IS PLANNED BY A QUALIFIED PROFESSIONAL ENGINEER AND INSTALLED IN ACCORDANCE WITH THE ESC PLAN. CUT AND FILL SLOPES SHOULD BE DESIGNED TO MINIMIZE EROSION PROBLEMS. ADEQUATE SLOPE DESIGN INCLUDES USE OF ROUGH SOIL SURFACE ALONG THE FACE OF THE SLOPE; WATER DIVERSION ALONG THE TOP OF THE SLOPE AWAY FROM THE FACE; TERRACES TO REDUCE SLOPE LENGTH; DELIVERY OF CONCENTRATED STORM WATER FLOWS TO THE BASE OF THE SLOPE VIA ADEQUATE CHANNEL OR PIPE; AND DRAINAGE FOR WATER SEEPS IN THE SLOPE THAT ENDANGER SLOPE STABILITY.

   K. SOIL SHALL BE REMOVED FROM PAVED SURFACES AND/OR PUBLIC ROADS AT THE END OF EACH DAY IN SUCH A MANNER THAT DOES NOT CREATE OFF–SITE SEDIMENTATION IN ORDER TO ENSURE SAFETY AND ABATE OFF–SITE SOIL LOSS. COLLECTED SEDIMENTS SHALL BE PLACED IN A STABLE LOCATION ON SITE OR TAKEN OFF–SITE TO A STABLE LOCATION.

   L. STABILIZE DISTURBED OR MODIFIED DRAINAGE WAYS. REDUCE EROSION EFFECTS OF STORM WATER BY USING AND/OR MAINTAINING GRASSED SWALES, INFILTRATION STRUCTURES, OR WATER DIVERSIONS.

   M. SEDIMENT AND EROSION CONTROLS SHALL BE INSPECTED ONCE EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL EVENT. A WRITTEN LOG OF THESE INSPECTIONS AND IMPROVEMENTS TO CONTROLS SHALL BE KEPT ON SITE. THE INSPECTIONS SHALL INCLUDE THE DATE OF INSPECTION, NAME OF INSPECTOR, WEATHER CONDITIONS, OBSERVATIONS, ACTIONS TAKEN TO CORRECT ANY PROBLEMS AND THE DATE CORRECTIVE ACTIONS WERE TAKEN.

   N. TRENCHES FOR UNDERGROUND UTILITY LINES AND PIPES SHALL BE TEMPORARILY STABILIZED WITHIN SEVEN (7) DAYS IF THEY ARE TO REMAIN INACTIVE FOR THIRTY (30) DAYS. TRENCH DEWATERING DEVICES SHALL DISCHARGE IN A MANNER THAT FILTERS SOIL–LADEN WATER BEFORE DISCHARGING IT TO A RECEIVING DRAINAGE DITCH OR POND. IF SEEDING, MULCHING, OR OTHER EROSION AND SEDIMENT CONTROL MEASURES WERE PREVIOUSLY INSTALLED, THESE PROTECTIVE MEASURES SHALL BE REINSTALLED.

   O. DISTURBED AREAS WHICH WILL REMAIN UNWORKED FOR A PERIOD OF 14 DAYS OR MORE SHALL BE STABILIZED WITH SEEDING AND MULCHING OR OTHER APPROPRIATE MEANS WITHIN 7 DAYS.

   P. SOLID, SANITARY AND TOXIC WASTE MUST BE DISPOSED OF IN A PROPER MANNER IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. IT IS PROHIBITED TO BURN, BURY OR POUR OUT ONTO THE GROUND OR INTO THE STORM SEWERS ANY SOLVENTS, PAINTS, STAINS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREEZE, CEMENT CURING COMPOUNDS AND OTHER SUCH TOXIC OR HAZARDOUS WASTES. STORAGE TANKS SHOULD BE LOCATED IN DIKED AREAS AWAY FROM ANY DRAINAGE CHANNELS. THE DIKED AREA SHOULD HOLD A VOLUME 110% OF THE LARGEST TANK.

   Q. OFF–SITE VEHICLE TRACKING SEDIMENT SHALL BE AVOIDED. CONSTRUCTION VEHICLES ARE LIMITED TO THE CONSTRUCTION ACCESS ROAD(S) NOTED ON THE PLAN. OFFSITE SEDIMENT TRACKING SHALL BE CONTROLLED BY REGULARLY SCHEDULED SWEEPING (DAILY) OF PUBLIC STREETS AND MAINTENANCE OF ROCK CONSTRUCTION ENTRANCE. ADDITIONALLY, ON–SITE CONSTRUCTION EQUIPMENT (BACKHOE/SKID STEER) SHALL SCRAPE THE ADJACENT STREET AS SEDIMENT IS DEPOSITED.

   R. ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST MEET THE STANDARDS AND SPECIFICATIONS OF THE OHIO RAINWATER AND LAND DEVELOPMENT HANDBOOK (2006).

   S. OTHER EROSION AND SEDIMENT CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS.

   T. WINTERIZATION – ANY DISTURBED AREA THAT IS NOT GOING TO BE WORKED FOR 14 DAYS OR MORE MUST BE SEEDED AND MULCHED BY NOVEMBER 1 OR MUST HAVE A DORMANT SEEDING OR MULCH COVER APPLIED BETWEEN NOVEMBER 1 AND MARCH 1.

   U. CONCRETE CEMENT IS TO BE TAKEN BACK TO PLANT FOR WASHOUT AND RECYCLING OR DESIGNATED AREAS ON SITE FOR CONCRETE WASHOUT ARE TO BE USED.

ADDITIONAL CONSTRUCTION SITE POLLUTION CONTROLS

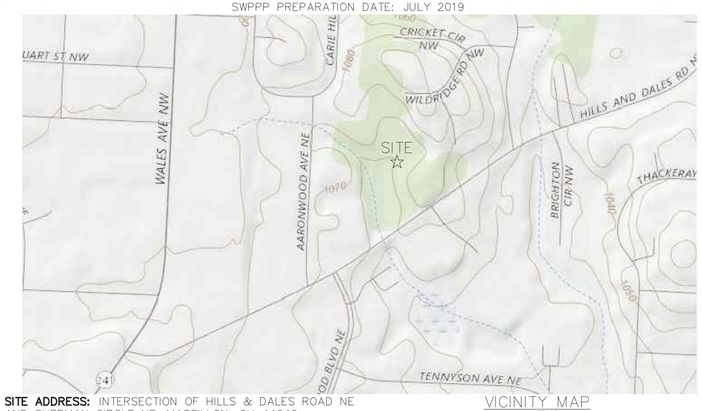
1. CONSTRUCTION PERSONNEL, INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE HAZARDOUS OR TOXIC MATERIALS, SHALL BE MADE AWARE OF THE FOLLOWING GENERAL GUIDELINES REGARDING DISPOSAL AND HANDLING OF HAZARDOUS AND CONSTRUCTION WASTES:
   - •PREVENT SPILLS
   - •FOLLOW LABEL DIRECTIONS FOR DISPOSAL
   - •REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
   - •RECYCLE WASTES WHENEVER POSSIBLE
   - •DON'T POUR INTO WATERWAYS, STORM DRAINS OR ONTO THE GROUND
   - •DON'T BURY CHEMICALS OR CONTAINERS
   - •DON'T POUR DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
   - •DON'T BURN CHEMICALS OR CONTAINERS
   - •DON'T MIX CHEMICALS TOGETHER
2. CONTAINERS SHALL BE PROVIDED FOR THE PROPER COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS USED ON–SITE. CONTAINERS SHALL BE COVERED AND NOT LEAKING. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL. CONSTRUCTION DEMOLITION AND DEBRIS (C&DD) WASTE MUST BE DISPOSED OF AT AN OHIO EPA APPROVED C&DD LANDFILL.
3. NO CONSTRUCTION RELATED WASTE MATERIALS ARE TO BE BURIED ON–SITE. BY EXCEPTION, CLEAN FILL (BRICKS, HARDENED CONCRETE, SOIL) MAY BE UTILIZED IN A WAY WHICH DOES NOT ENCROACH UPON NATURAL WETLANDS, STREAMS OR FLOODPLAINS OR RESULT IN THE CONTAMINATION OF WATERS OF THE STATE.
4. HANDLING CONSTRUCTION CHEMICALS. MIXING, PUMPING, TRANSFERRING OR OTHER HANDLING OF CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.
5. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM WATERCOURSES, DITCHES OR STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL FUEL OIL STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HRS. OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER. SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) REQUIREMENTS MAY APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVE GROUND TANK OF 660 GALLONS OR MORE, ACCUMULATIVE ABOVE GROUND STORAGE OF 1330 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. CONTAMINATED SOILS MUST BE DISPOSED OF IN ACCORDANCE WITH ITEM 8.
6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED AWAY FROM ANY WATER CONVEYANCES.
7. SPILL REPORTING REQUIREMENTS: SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST OR KITTY LITTER AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL–BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. SPILLS SHALL BE REPORTED TO OHIO EPA (1–800–282–9378). SPILLS OF 25 GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO OHIO EPA, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MIN. OF THE DISCOVERY OF THE RELEASE. ALL SPILLS WHICH CONTACT WATERS OF THE STATE MUST BE REPORTED TO OHIO EPA.
8. CONTAMINATED SOILS. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY. (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). NOTE THAT STORM WATER RUN OFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT AUTHORIZED UNDER OHIO EPA'S GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
9. OPEN BURNING. NO MATERIALS CONTAINING RUBBER, GREASE, ASPHALT, OR PETROLEUM PRODUCTS, SUCH AS TIRES, AUTOPARTS, PLASTICS OR PLASTIC COATED WIRE MAY BE BURNED (OAC 3745–19). OPEN BURNING IS NOT ALLOWED IN RESTRICTED AREAS, WHICH ARE DEFINED AS: 1) WITHIN CORPORATION LIMITS; 2) WITHIN 1000 FEET OUTSIDE A MUNICIPAL CORPORATION HAVING A POPULATION OF 1000 TO 10,000; AND 3) A ONE MILE ZONE OUTSIDE OF A CORPORATION OF 10,000 OR MORE, OUTSIDE OF RESTRICTED AREAS, NO OPEN BURNING IS ALLOWED WITHIN A 1000 FEET OF AN INHABITED BUILDING ON ANOTHER PROPERTY. OPEN BURNING IS PERMISSIBLE IN A RESTRICTED AREA FOR: HEATING TAR, WELDING, SMUDGE POTS AND SIMILAR OCCUPATIONAL NEEDS, AND HEATING FOR WARMTH OR OUTDOOR BARBEQUES. OUTSIDE OF RESTRICTED AREAS, OPEN BURNING IS PERMISSIBLE FOR LANDSCAPE OR LAND–CLEARING WASTES (PLANT MATERIAL, WITH PRIOR WRITTEN PERMISSION FROM OHIO EPA), AND AGRICULTURAL WASTES, EXCLUDING BUILDINGS.
10. DUST CONTROL OR DUST SUPPRESSANTS SHALL BE USED TO PREVENT NUISANCE CONDITIONS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND IN A MANNER WHICH WILL PREVENT A DISCHARGE TO WATERS OF THE STATE. SUFFICIENT DISTANCE MUST BE PROVIDED BETWEEN APPLICATIONS AND NEARBY BRIDGES, CATCH BASINS, AND OTHER WATERWAYS. APPLICATION (EXCLUDING WATER) MAY NOT OCCUR WHEN RAIN IS IMMINENT AS NOTED IN THE SHORT TERM FORECAST. USED OIL MAY NOT BE APPLIED FOR DUST CONTROL.
11. OTHER AIR PERMITTING REQUIREMENTS: CERTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS INCLUDING BUT NOT LIMITED TO: MOBILE CONCRETE BATCH PLANTS, MOBILE ASPHALT PLANTS, CONCRETE CRUSHERS, LARGE GENERATORS, ETC. THESE ACTIVITIES WILL REQUIRE SPECIFIC OHIO EPA AIR PERMITS FOR INSTALLATION AND OPERATION. OPERATORS MUST SEEK AUTHORIZATION FROM THE CORRESPONDING DISTRICT OF OHIO EPA. FOR DEMOLITION OF ALL COMMERCIAL SITES, A NOTIFICATION FOR RESTORATION AND DEMOLITION MUST BE SUBMITTED TO OHIO EPA TO DETERMINE IF ASBESTOS CORRECTIVE ACTIONS ARE REQUIRED.
12. PROCESS WASTE WATER/LEACHATE MANAGEMENT. OHIO EPA'S CONSTRUCTION GENERAL PERMIT ONLY ALLOWS THE DISCHARGE OF STORM WATER AND DOES NOT INCLUDE OTHER WASTE STREAMS/DISCHARGES SUCH AS VEHICLE AND/OR EQUIPMENT WASHING, ON–SITE SEPTIC LEACHATE CONCRETE WASH OUTS, WHICH ARE CONSIDERED PROCESS WASTEWATERS. ALL PROCESS WASTEWATERS MUST BE COLLECTED AND PROPERLY DISPOSED AT AN APPROVED DISPOSAL FACILITY. IN THE EVENT, LEACHATE OR SEPTAGE IS DISCHARGED; IT MUST BE ISOLATED FOR COLLECTION AND PROPER DISPOSAL AND CORRECTIVE ACTIONS TAKEN TO ELIMINATE THE SOURCE OF WASTE WATER.
13. A PERMIT TO INSTALL (PTI) IS REQUIRED PRIOR TO THE CONSTRUCTION OF ALL CENTRALIZED SANITARY SYSTEMS, INCLUDING SEWER EXTENSIONS, AND SEWERAGE SYSTEMS (EXCEPT THOSE SERVING ONE, TWO, AND THREE FAMILY DWELLINGS) AND POTABLE WATER LINES. PLANS MUST BE SUBMITTED AND APPROVED BY OHIO EPA. ISSUANCE OF AN OHIO EPA CONSTRUCTION GENERAL STORM WATER PERMIT DOES NOT AUTHORIZE THE INSTALLATION OF ANY SEWERAGE SYSTEM WHERE OHIO EPA HAS NOT APPROVED A PTI.

I, THE UNDERSIGNED, CERTIFY THAT I UNDERSTAND AND WILL ADHERE TO THE REQUIREMENTS, TERMS, AND CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN REVIEWED AND APPROVED BY THE STARK COUNTY SOIL AND WATER CONSERVATION DISTRICT FOR COMPLIANCE WITH THE CITY OF MASSILLON AND STARK COUNTY WATER QUALITY REGULATIONS FOR THE ABOVE REFERENCED PROJECT.

OWNER– _____ DATE _____

STORMWATER POLLUTION PREVENTION PLAN

SWPPP PREPARATION DATE: JULY 2019



SITE ADDRESS: INTERSECTION OF HILLS & DALES ROAD NE AND SHERMAN CIRCLE NE, MASSILLON, OH 44646

VICINITY MAP
N.T.S.

CONSTRUCTION SEQUENCE

1. CONDUCT PRE–CONSTRUCTION MEETING WITH STARK COUNTY SWCD (330–451–7644).
2. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE AS SHOWN ON PLANS. (CONTRACTOR SHALL DESIGNATE THE AREA UTILIZED FOR CONSTRUCTION ENTRANCE.)
3. CLEAR TREES, BRUSH AND STUMPS AS NECESSARY.
4. ALL PERIMETER BARRIERS TO BE CONSTRUCTED WITHIN 7 DAYS OF FIRST GRUBBING.
5. BASIN MUST BE INSTALLED PRIOR TO UP–SLOPE DISTURBANCE.
6. INSTALL TEMPORARY SEEDING TO ALL STRUCTURAL EROSION INSTALLATIONS PRIOR TO MASS GRADING OF SITE.
7. STRIP/STOCKPILE TOPSOIL. STOCKPILES THAT ARE INACTIVE FOR 14 DAYS OR LONGER SHALL BE SEEDED/STABILIZED WITHIN 7 DAYS OF LAST ACTIVITY.
8. MASS GRADING
9. INSTALL UNDERGROUND UTILITIES AND BUILDING.
10. INSTALL INLET PROTECTION.
11. BRING PAVEMENT AREAS TO SUB GRADE.
12. INSTALL PAVEMENT AND BACK FILL CURBS. AFTER INSTALLATION OF PAVEMENT REPLACE INLET PROTECTION.
13. FINISH GRADE, SEED AND MULCH ALL DISTRIBUTED AREAS AND MAINTAIN TEMPORARY EROSION CONTROLS AS REQUIRED.
14. UPON COMPLETION AND SITE STABILIZATION, REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM STORM SYSTEM AND REMOVE SOIL AND EROSION CONTROLS, EXCEPT FOR SILT FENCING. SILT FENCE TO BE REMOVED AFTER 80% OF SITE HAS BEEN STABILIZED.

ADDITIONAL PROVISIONS:
1. INSTALLATION OF SILT FENCING SHALL NOT OCCUR PRIOR TO THE INITIAL PRE–CONSTRUCTION MEETING.
2. CONTINUOUSLY SWEEP DRIVES AND STREET AND MAINTAIN CONSTRUCTION ENTRANCE.
3. ALL AREAS AT FINAL GRADE OR WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR 14 DAYS OR LONGER SHALL BE STABILIZED WITHIN 7 DAYS OF LAST ACTIVITY.

SITE INFO:

SITE DESCRIPTION– EXISTING– WOODED, UNDEVELOPED LAND. PROPOSED– RESIDENTIAL DEVELOPMENT WITH PRIVATE STREET AND DETENTION / WQ BASIN.

BMPs– THIS SITE WILL UTILIZE A WATER QUALITY BASIN THAT WILL PREVENT SEDIMENT, DEBRIS AND OTHER POLLUTANTS FROM DISCHARGING FROM THE SITE BY DETAINING THE STORM WATER AND ALLOWING POLLUTANTS TO SETTLE OUT OF THE WATER BEFORE IT IS RELEASED TO THE NEARBY STREAM.

TOTAL AREA OF SITE – 7.80 AC.
AREA OF SITE TO UNDER GO EXCAVATION – 6.89 AC.

PRE–CONSTRUCTION PERCENT IMPERVIOUSNESS – 2.6%
POST–CONSTRUCTION PERCENT IMPERVIOUSNESS – 24.9%

PRE–CONSTRUCTION CURVE NUMBER – 73
POST–CONSTRUCTION CURVE NUMBER – 86

SCHEDULE OF MAJOR CONSTRUCTION

COMMENCEMENT – SPRING 2019
COMPLETION – FALL 2020

RECEIVING STREAM & SURFACE WATER

ONSITE DRAINAGE FLOWS TO AN UNNAMED TRIBUTARY TO SIPPO CREEK.

SOILS

CdB– CANFIELD SILT LOAM, 2–6% SLOPES
Sh– SHOALS SILT LOAM
WuE2– WOOSTER SILT LOAM, 18–25% SLOPES
CdC2– CANFIELD SILT LOAM, 6–12% SLOPES

OWNER/DEVELOPER

VILLA SOLE, LLC
7294 BRETZ AVE NW
MASSILLON, OHIO 44646

ATTN– BERNY FERRANTE

PHONE– 330–268–8707

berny_b4@yahoo.com

ENGINEER/ SURVEYOR

HAMMONTREE & ASSOCIATES, LIMITED
5233 STONEHAM ROAD
NORTH CANTON, OHIO 44720

ATTN– JOSHUA J. RENICKER, P.E., M.S.–ENMGT

PHONE– 330–499–8817

jrenicker@hammontree–engineers.com

STATE OF OHIO
JOSHUA J. RENICKER
E-74744
REGISTERED PROFESSIONAL ENGINEER

7/12/2019

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STORMWATER POLLUTION PREVENTION NOTES
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C9.1

NOTE:

1. THE CONTRACTOR SHALL PREVENT AND/OR REDUCE AND CONTROL SOIL EROSION RESULTING FROM THE PROPOSED IMPROVEMENTS. THE USE OF SILT FENCING, JUTE MATTING, TEMPORARY SEEDING, SILT CHECKS, INLET PROTECTION AROUND ALL CATCH BASINS, STABILIZED CONSTRUCTIONS ENTRANCE(S), ETC. WILL BE REQUIRED. SEDIMENT CONTROL STRUCTURES/DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL RAINWATER AN LAND DEVELOPMENT – OHIO'S STANDARDS FOR STORM WATER MANAGEMENT, LAND DEVELOPMENT AND URBAN STREAM PROTECTION. SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS SET FORTH ON THE APPROVED STORM WATER POLLUTION PREVENTION PLAN APPLICABLE, OR AS DETAILED ON THE CONSTRUCTION PLANS, AS SPECIFIED BY THE CITY OF MASSILLON.

DOUBLE ROW OF SILT FENCE – INSIDE ROW MAY BE REMOVED AFTER SEDIMENT BASIN AND DIVERSION DITCHES ARE IN PLACE

HILLS & DALES ROAD N.W. (C.R. 96)
WIDTH VARIES

SHERMAN CIRCLE N.W.
WIDTH VARIES

BENCHMARK 'A'
ELEV. 1080.47

BENCHMARK 'B'
ELEV. 1066.00

WILDRIDGE DRIVE
N.W. – 50'R/W

SAN. M.H.
T/C = 1087.10
INV. 8"VCP W= 1076.81
INV. 8"VCP NE= 1076.50

SAN. M.H.
T/C = 1086.25
INV. 6"VCP W= 1080.45 (NOT USED)
INV. 6"VCP NW= 1080.45 (NOT USED)
INV. 8"VCP E= 1078.47

SCALE: 1 INCH = 40'
0 20' 40' 80'

LEGEND

CE	CONSTRUCTION ENTRANCE
TD	TEMPORARY DIVERSION CHANNEL
SB	SEDIMENT BASIN
PS	PERMANENT SEEDING
TS	TEMPORARY SEEDING
TSS	TOPSOIL STOCKPILE
IP	INLET PROTECTION
VF	VEHICLE FUELING AREA
SA	STORAGE AREA (SOLID, SAN. WASTE.....)
CW	CONCRETE WASHOUT PITS
RCP	ROCK CHANNEL PROTECTION

SF SF SF — SILT FENCE

— — — LIMITS OF CONSTRUCTION

NOTE:
CONTRACTOR TO USE TEMPORARY DIVERSION CHANNELS DURING MASS EXCAVATION TO DIVERT RUNOFF TO SEDIMENT BASIN UNTIL STORM SEWERS ARE INSTALLED AND FUNCTIONING. ALL DIVERSION CHANNELS MUST BE STABILIZED AGAINST EROSION.

7/12/2019

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DESN BY: JJR
DRWN BY: JJR
RVWD BY:
FLD BK: 638
BK PG: 40
DATE: 03/28/19

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VERT:
CONTOUR INT: 1'

STORMWATER POLLUTION PREVENTION PLAN
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C9.2

R:\Stark\City\Massillon\SD\Castello – GiroSole Development 2018\DWG\2019-07-24 VillaSole Site Plans.dwg, 10/14/19 – 1:53pm, jrenicker

ENGINEERS *SURVEYORS* *PLANNERS*

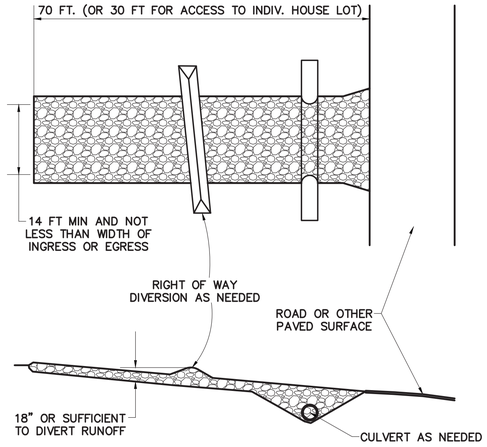
CONSTRUCTION ENTRANCE
N.T.S.

1. STONE SIZE: ODOT # 2 (1.5–2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDUAL LOTS).
3. THICKNESS: THE STONE LAYER SHALL BE AT LEAST 18 INCHES THICK FOR LIGHT OR HEAVY DUTY USE.
4. THE ENTRANCE SHALL BE AT LEAST 20 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE: A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT–PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE

MINIMUM TENSILE STRENGTH	200 LBS.	MINIMUM PUNCTURE STRENGTH	80 PSI.
MINIMUM TEAR STRENGTH	50 LBS.	MINIMUM BURST STRENGTH	320 PSI.
MINIMUM ELONGATION	20%	EQUIVALENT OPENING SIZE	EOS < 0.6 MM.
PERMITIVITY	1X10–3 CM/SEC.		

6. TIMING: THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT: A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR: A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
9. MAINTENANCE: TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF–SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION–SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
11. REMOVAL: THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ENTRANCE.



TEMPORARY DIVERSION
N.T.S.

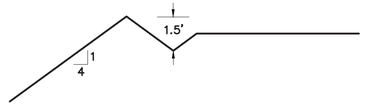
1. DRAINAGE AREA SHOULD NOT EXCEED 10 ACRES. LARGER AREAS REQUIRE A MORE EXTENSIVE DESIGN.
2. THE CHANNEL CROSS SECTION MAY BE PARABOLIC OR TRAPEZOIDAL. DISK THE BASE OF THE DIKE BEFORE PLACING FILL. BUILD THE DIKE 10% HIGHER THAN DESIGNED FOR SETTLEMENT. THE DIKE SHALL BE COMPACTED BY TRAVERSING WITH TRACKED EARTH–MOVING EQUIPMENT.
3. THE MINIMUM CROSS SECTION OF THE LEVEE OR DIKE WILL BE AS FOLLOWS: (MINIMUM DESIGN FREEBOARD SHALL BE 0.3 FOOT.) WHERE CONSTRUCTION TRAFFIC WILL CROSS, THE TOP WIDTH MAY BE MADE WIDER AND THE SIDE SLOPES FLATTER THAN SPECIFIED ABOVE.

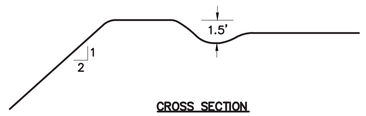
DIKE TOP WIDTH (FT.)	HEIGHT (FT.)	SIDE SLOPES	SHAPE
0	1.5	4:1	TRAPEZOIDAL
4	1.5	2:1	PARABOLIC

4. THE GRADE MAY BE VARIABLE DEPENDING UPON THE TOPOGRAPHY, BUT MUST HAVE A POSITIVE DRAINAGE TO THE OUTLET AND BE STABILIZED TO BE NON–EROSIVE.
5. OUTLET RUNOFF ONTO A STABILIZED AREA, INTO A PROPERLY DESIGNED WATERWAY, GRADE STABILIZATION STRUCTURE, OR SEDIMENT TRAPPING FACILITY.
6. DIVERSIONS SHALL BE SEEDED AND MULCHED IN ACCORDANCE WITH THE REQUIREMENTS IN PRACTICE STANDARDS TEMPORARY SEEDING (OR PERMANENT SEEDING) AND MULCHING AS SOON AS THEY ARE CONSTRUCTED OR OTHER SUITABLE STABILIZATION IN ORDER TO PRESERVE DIKE HEIGHT AND REDUCE MAINTENANCE.

TEMPORARY DIVERSION STABILIZATION TREATMENT

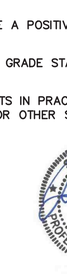
SLOPE	< 2 AC.	2 – 5 AC.	5 – 10 AC.
0 – 3%	SEED & STRAW	SEED & STRAW	SEED & STRAW
3 – 5%	SEED & STRAW	SEED & STRAW	MATTING
5 – 8%	SEED & STRAW	MATTING	MATTING
8 – 20%	SEED & STRAW	MATTING	ENGINEERED





CROSS SECTION

NOTE: DIVERSIONS WITH STEEPER SLOPES OR GREATER DRAINAGE AREAS ARE BEYOND THE SCOPE OF THIS STANDARD AND MUST BE DESIGNED FOR STABILITY. SEED, STRAW AND MATTING USED SHALL MEET THE SPECIFICATIONS FOR TEMPORARY SEEDING, MULCHING AND MATTING.



7/12/2019

SILT FENCE
N.T.S.

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE. A MINIMUM OF 8 INCHES OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6–INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6–IN. OVERLAP PRIOR TO DRIVING INTO THE GROUND, (SEE DETAILS).
10. MAINTENANCE––SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVER\FS20 TOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS, OR IN ANY OTHER WAY ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.

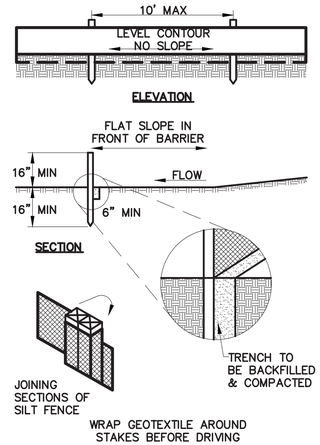
SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE–HALF OF THE HEIGHT OF THE SILT FENCE.

SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

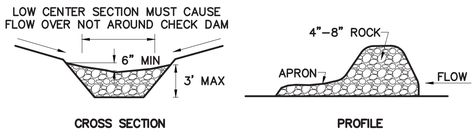
CRITERIA FOR SILT FENCE MATERIALS

1. FENCE POST – THE LENGTH SHALL BE A MINIMUM OF 32 INCHES. WOOD POSTS WILL BE 2–BY–2–IN. NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS, THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT. POSTS SHALL BE DRIVEN A MINIMUM 16 INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
2. SILT FENCE FABRIC – SEE CHART BELOW.

FABRIC PROPERTIES	VALUES	TEST METHOD
MIN TENSILE STRENGTH	120 LBS	ASTM D 4632
MAX. ELONGATION AT 60 LBS	50%	ASTM D 4632
MIN. PUNCTURE STRENGTH	50 LBS	ASTM D 4833
MIN. TEAR STRENGTH	40 LBS	ASTM D 4533
APPARENT OPENING SIZE	0.84 MM	ASTM D 4751
UV EXPOSURE STRENGTH	70%	ASTM G 4355
MIN. PERMITIVITY	1X10–2SEC.–1	ASTM D 4491



ROCK CHECK DAM
N.T.S



CROSS SECTION PROFILE

1. THE CHECK DAM SHALL BE CONSTRUCTED OF 4–8 INCH DIAMETER STONE, PLACED SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL. ODOT TYPE D STONE IS ACCEPTABLE, BUT SHOULD BE UNDERLAIN WITH A GRAVEL FILTER CONSISTING OF ODOT NO. 3 OR 4 OR SUITABLE FILTER FABRIC.
2. MAXIMUM HEIGHT OF CHECK DAM SHALL NOT EXCEED 3.0 FEET.
3. THE MIDPOINT OF THE ROCK CHECK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES.
4. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES.
5. SPACING OF CHECK DAMS SHALL BE IN A MANNER SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
6. A SPLASH APRON SHALL BE CONSTRUCTED WHERE CHECK DAMS ARE EXPECTED TO BE IN USE FOR AN EXTENDED PERIOD OF TIME. A STONE APRON SHALL BE CONSTRUCTED IMMEDIATELY DOWNSTREAM OF THE CHECK DAM TO PREVENT FLOWS FROM UNDERCUTTING THE STRUCTURE. THE APRON SHOULD BE 6 IN. THICK AND ITS LENGTH TWO TIMES THE HEIGHT OF THE DAM.
7. STONE PLACEMENT SHALL BE PERFORMED EITHER BY HAND OR MECHANICALLY AS LONG AS THE CENTER OF CHECK DAM IS LOWER THAN THE SIDES AND EXTENDS ACROSS ENTIRE CHANNEL.
8. SIDE SLOPES SHALL BE A MINIMUM OF 2:1.

CONCRETE WASHOUT FACILITY
N.T.S.

NOTES:
TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE LOCATED A MINIMUM OF 50 FT FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES. EACH FACILITY SHOULD BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS AREAS TO PREVENT DISTURBANCE OR TRACKING.

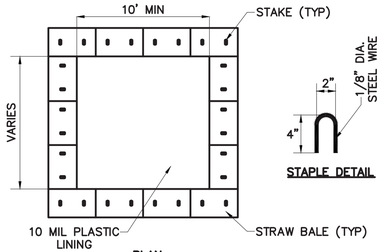
A SIGN SHOULD BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE CONSTRUCTED ABOVE GRADE OR BELOW GRADE AT THE OPTION OF THE CONTRACTOR. TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

ONLY CONCRETE FROM MIXER TRUCK CHUTES SHOULD BE WASHED INTO CONCRETE WASH OUT.

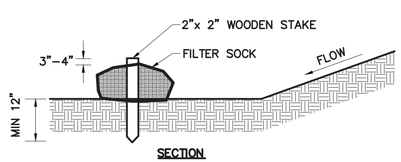
CONCRETE WASHOUT FROM CONCRETE PUMPER BINS CAN BE WASHED INTO CONCRETE PUMPER TRUCKS AND DISCHARGED INTO DESIGNATED WASHOUT AREA OR PROPERLY DISPOSED OF OFFSITE.

ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF ON A REGULAR BASIS.



FILTER SOCK
N.T.S.

1. MATERIALS: COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL–DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF A PARTICLES RANGING FROM 3/8" TO 2".
2. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.
3. FILTER SOCKS WILL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID–SLOPE.
4. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.
5. FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.
6. ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
7. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.
8. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
9. REMOVAL: FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH AS WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDINGS.



HAMMONTREE & ASSOCIATES, LIMITED
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DATE: 03/28/19

SCALES
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STORMWATER POLLUTION PREVENTION DETAILS
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

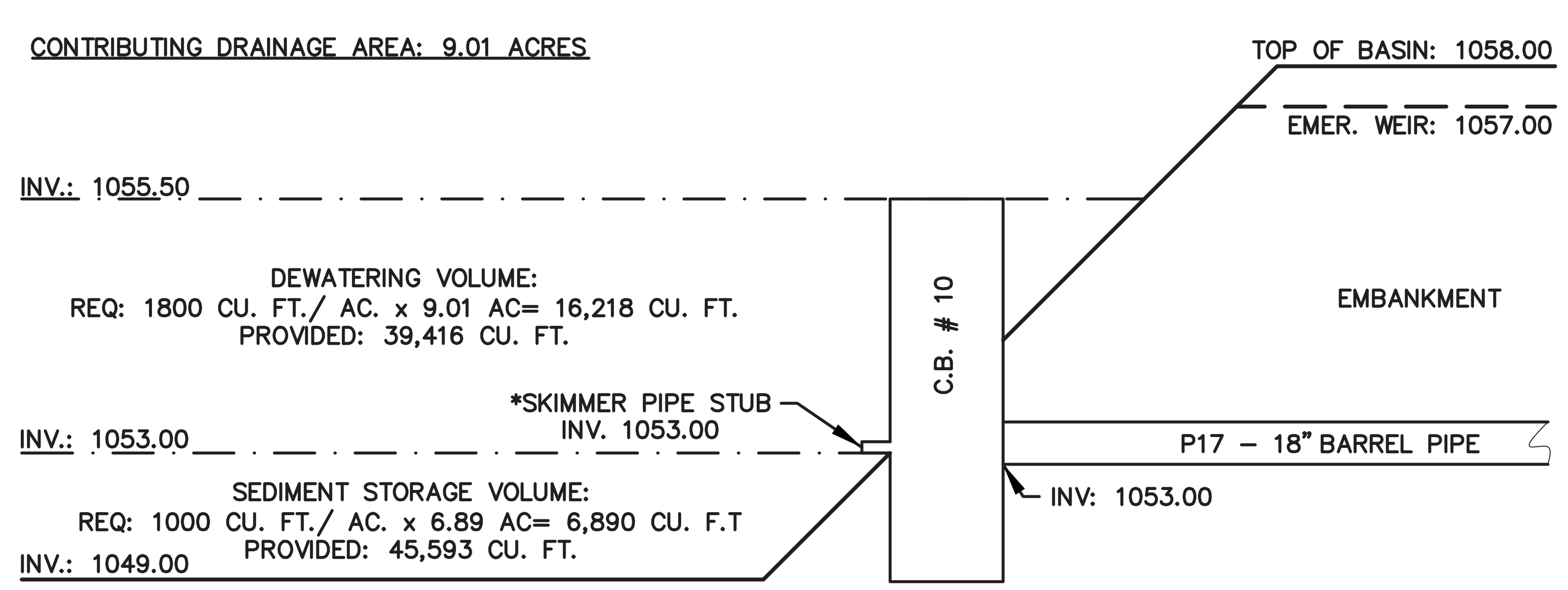
C9.3

ENGINEERS SURVEYORS PLANNERS

R:\Stark\City\Massillon\50\Castello – GraSole Development 2018\DWG\2019-07-24 VillaSole Site Plans.dwg; 10/14/19 – 1:53pm; jrenicker

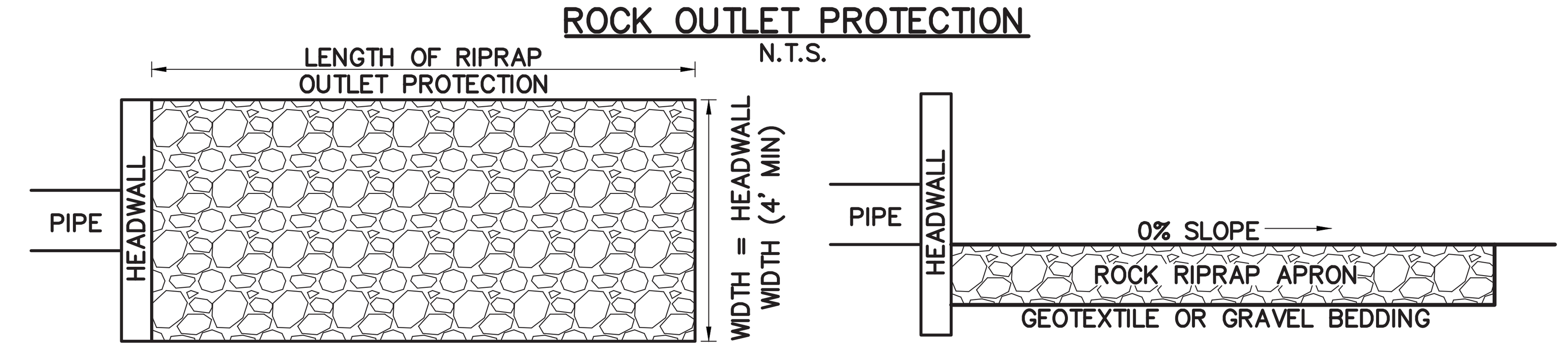
SEDIMENT BASIN
N.T.S.

1. SEDIMENT BASINS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. SITE PREPARATION: THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT CLEANOUT. GULLIES AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. THE SURFACE OF THE FOUNDATION AREA WILL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE EMBANKMENT MATERIAL.
3. CUT-OFF TRENCH: THE CUTOFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE EMBANKMENT. THE MINIMUM DEPTH SHALL BE 3 FT. UNLESS SPECIFIED DEEPER ON THE PLANS OR AS A RESULT OF SITE CONDITIONS. THE MINIMUM BOTTOM WIDTH SHALL BE 4 FT., BUT WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE TRENCH SHALL BE KEPT FREE OF STANDING WATER DURING BACKFILL OPERATIONS.
4. EMBANKMENT: THE FILL MATERIAL SHALL BE FREE OF ALL SOD, ROOTS, FROZEN SOIL, STONES OVER 6 IN. IN DIAMETER, AND OTHER OBJECTIONABLE MATERIAL. THE PLACING AND SPREADING OF THE FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL SHALL BE BROUGHT UP IN APPROXIMATELY 6 IN. HORIZONTAL LAYERS OR OF SUCH THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED. CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER EACH LAYER IN A WAY THAT WILL RESULT IN THE REQUIRED COMPACTION. SPECIAL EQUIPMENT SHALL BE USED WHEN THE REQUIRED COMPACTION CANNOT BE OBTAINED WITHOUT IT. THE MOISTURE CONTENT OF FILL MATERIAL SHALL BE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED.
5. PIPE SPILLWAY: THE PIPE CONDUIT BARREL SHALL BE PLACED ON A FIRM FOUNDATION TO THE LINES AND GRADES SHOWN ON THE PLANS. CONNECTIONS BETWEEN THE RISER AND BARREL, THE ANTI-SEEP COLLARS AND BARREL AND ALL PIPE JOINTS SHALL BE WATERTIGHT. SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND THE CONDUIT IN LAYERS AND EACH LAYER SHALL BE COMPACTED TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. ALL COMPACTION WITHIN 2 FT. OF THE PIPE SPILLWAY WILL BE ACCOMPLISHED WITH HAND-OPERATED TAMPING EQUIPMENT.
6. DURING CONSTRUCTION, CB #10 WILL SERVE AS THE OUTLET STRUCTURE FOR THE SEDIMENT BASIN. A SKIMMER WILL BE USED FOR DEWATERING THE BASIN (SEE DETAIL ON THIS SHEET).
7. TRASH RACKS: THE TOP OF THE C.B. SHALL BE FITTED WITH TRASH RACKS FIRMLY FASTENED.
8. EMERGENCY SPILLWAY: THE EMERGENCY SPILLWAY SHALL BE CUT IN UNDISTURBED GROUND. ACCURATE CONSTRUCTION OF THE SPILLWAY ELEVATION AND WIDTH IS CRITICAL AND SHALL BE WITHIN A TOLERANCE OF 0.2 FT.
9. SEED AND MULCH: THE SEDIMENT BASIN SHALL BE STABILIZED IMMEDIATELY FOLLOWING ITS CONSTRUCTION. IN NO CASE SHALL THE EMBANKMENT OR EMERGENCY SPILLWAY REMAIN BARE FOR MORE THAN 7 DAYS.
10. SEDIMENT CLEANOUT: SEDIMENT SHALL BE REMOVED AND THE SEDIMENT BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS FILLED ONE-HALF THE POND'S ORIGINAL DEPTH OR AS INDICATED ON THE PLANS. SEDIMENT REMOVED FROM THE BASIN SHALL BE PLACED SO THAT IT WILL NOT ERODE.
11. ONCE CONSTRUCTION IS COMPLETE AND 80% OF THE UPLAND VEGETATION IS ESTABLISHED, THE SKIMMER WILL BE REMOVED, THE 12" ORIFICE WILL BE PUT INTO SERVICE AND THE OUTLET STRUCTURE WILL BE RECONFIGURED IN ACCORDANCE WITH THE DETAIL ON SHEET C6.1. FINALLY, THE SEDIMENT BASIN SHALL BE REGRADED TO THE FINAL DETENTION BASIN CONFIGURATION AND SEEDED.



*USE A FAIRCLOTH SKIMMER (OR EQUAL)
W/ 2.25" ORIFICE FOR A 48 HR DRAWDOWN TIME

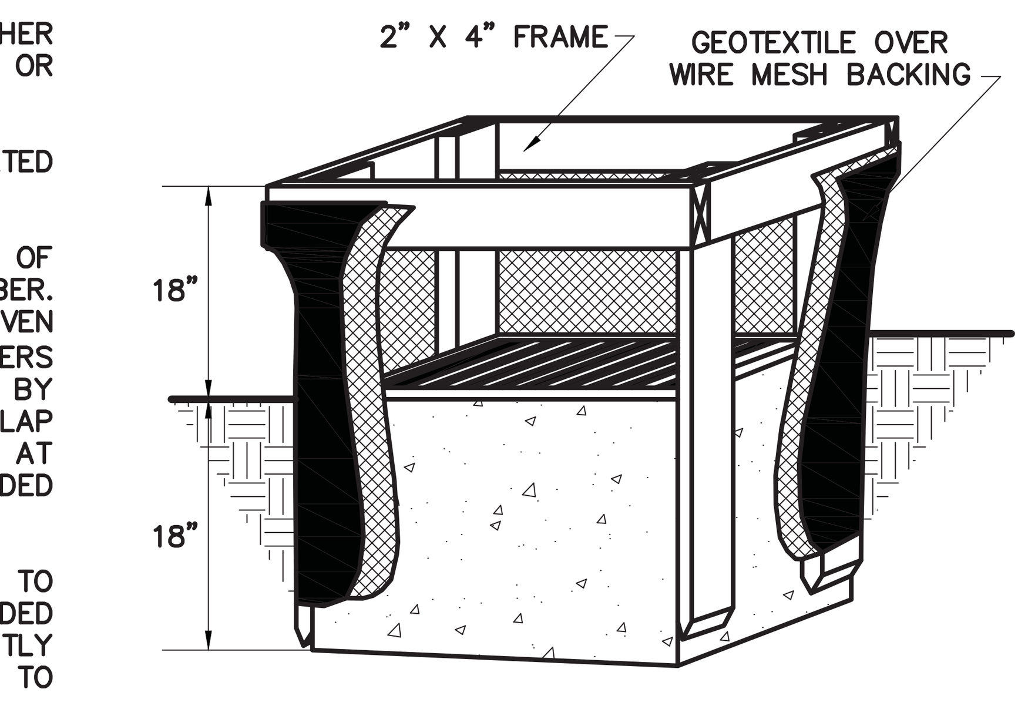
ROCK OUTLET PROTECTION
N.T.S.



1. SUBGRADE FOR THE FILTER OR BEDDING AND RIPRAP SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES AS SHOWN ON THE PLAN. THE SUBGRADE SHALL BE CLEARED OF ALL TREES, STUMPS, ROOTS, SOD, LOOSE ROCK, OR OTHER MATERIAL.
2. RIPRAP SHALL CONFORM TO THE GRADING LIMITS AS SHOWN ON THE PLAN.
3. GEOTEXTILE SHALL BE SECURELY ANCHORED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.
4. GEOTEXTILE SHALL BE LAID WITH THE LONG DIMENSION PARALLEL TO THE DIRECTION OF FLOW AND SHALL BE LAID LOOSELY BUT WITHOUT WRINKLES AND CREASES. WHERE JOINTS ARE NECESSARY, STRIPS SHALL BE PLACED TO PROVIDE A 12-IN. MINIMUM OVERLAP, WITH THE UPSTREAM STRIP OVERLAPPING THE DOWNSTREAM STRIP.
5. GRAVEL BEDDING SHALL BE ODOT NO. 67'S OR 57'S UNLESS SHOWN DIFFERENTLY ON THE DRAWINGS.
6. RIPRAP MAY BE PLACED BY EQUIPMENT BUT SHALL BE PLACED IN A MANNER TO PREVENT SLIPPAGE OR DAMAGE TO THE GEOTEXTILE.
7. RIPRAP SHALL BE PLACED BY A METHOD THAT DOES NOT CAUSE SEGREGATION OF SIZES. EXTENSIVE PUSHING WITH A DOZER CAUSES SEGREGATION AND SHALL BE AVOIDED BY DELIVERING RIPRAP NEAR ITS FINAL LOCATION WITHIN THE CHANNEL.
8. CONSTRUCTION SHALL BE SEQUENCED SO THAT OUTLET PROTECTION IS PLACED AND FUNCTIONAL WHEN THE STORM DRAIN, CULVERT, OR OPEN CHANNEL ABOVE IT BECOMES OPERATIONAL.
9. ALL DISTURBED AREAS WILL BE VEGETATED AS SOON AS PRACTICAL.

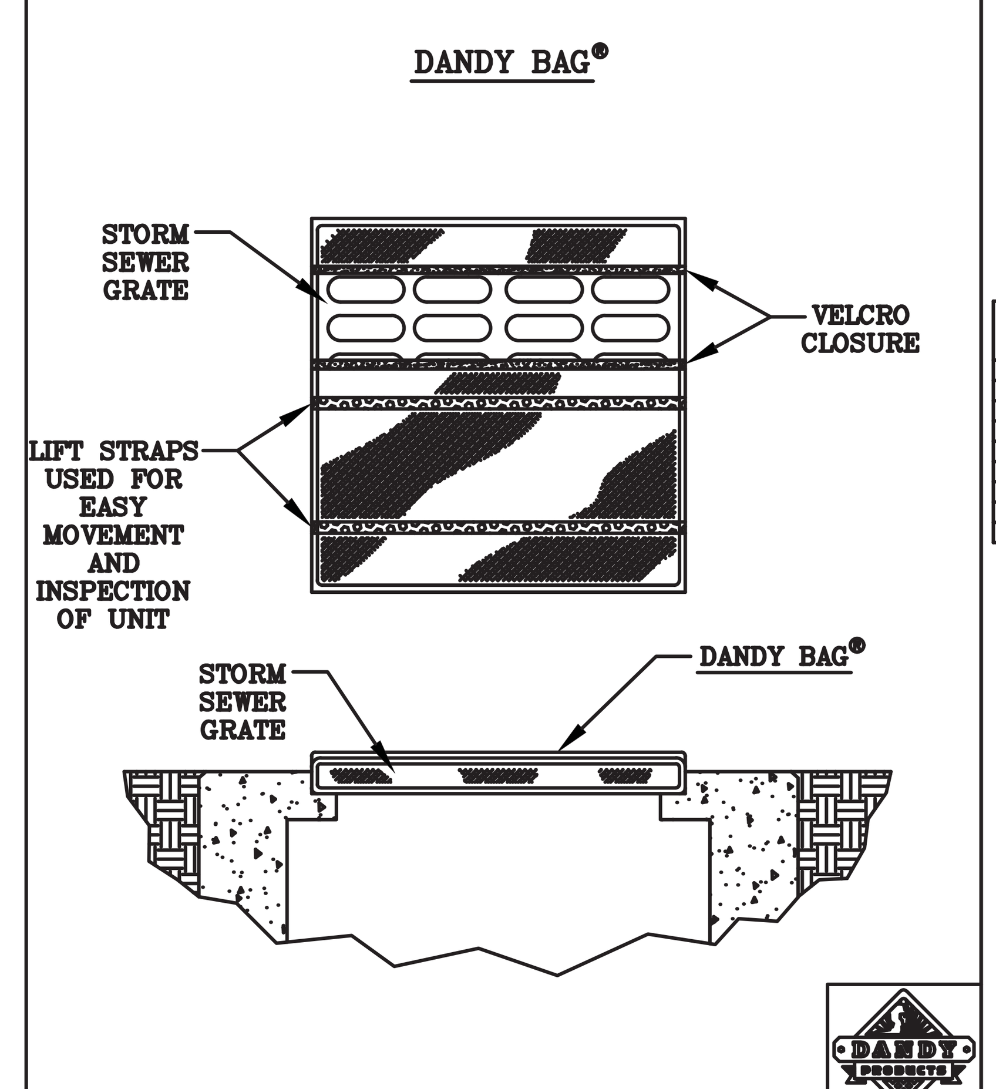
GEOTEXTILE INLET PROTECTION
N.T.S

1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE INLET BECOMES FUNCTIONAL.
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.
3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2-INCH BY 4-INCH CONSTRUCTION GRADE LUMBER. THE 2-INCH BY 4-INCH POSTS SHALL BE DRIVEN ONE (1) FT. INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2-INCH BY 4-INCH FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WILL POSE A SAFETY HAZARD TO TRAFFIC.
4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.



5. GEOTEXTILE MATERIAL SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
6. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6-INCH LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
7. A COMPACTED EARTH DIKE OR CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION. THE TOP OF THE DIKE SHALL BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.

DANDY BAG®



DETAIL OF INLET SEDIMENT CONTROL DEVICE

PROJECT:		DR. BY:
CITY/STATE:	DATE:	DR. NO:

DANDY BAG®
SPECIFICATIONS

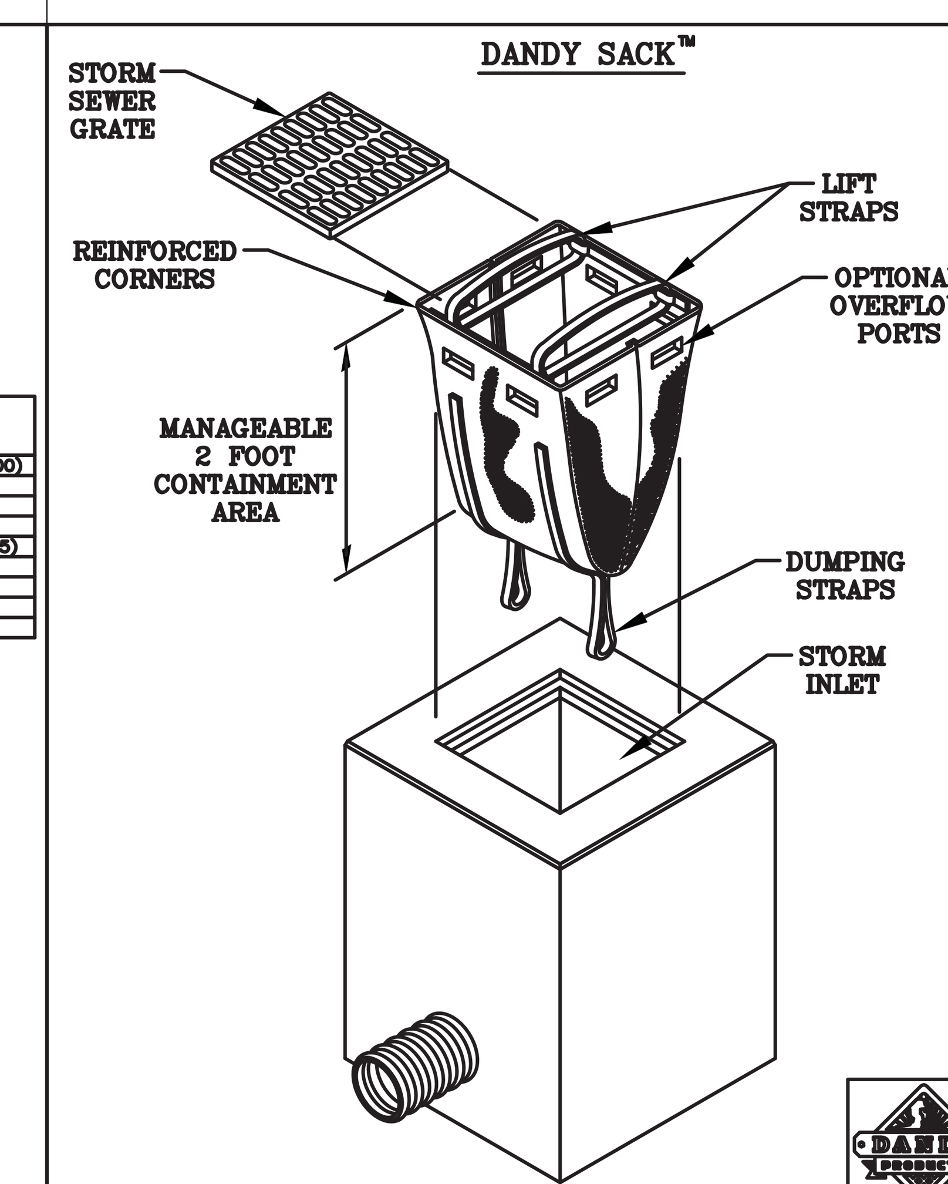
NOTE: THE DANDY BAG® WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

HI-FLOW DANDY BAG® (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistence	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	$1/min/m^2$ ($gal/min/ft^2$)	5907 (145)
Permittivity	ASTM D 4491	Sec^{-1}	2.1

*Note: All Dandy Bags® can be ordered with our optional oil absorbent pillows

DANDY SACK™



DETAIL OF INLET SEDIMENT CONTROL DEVICE

PROJECT:		DR. BY:
CITY/STATE:	DATE:	DR. NO:

DANDY SACK™
SPECIFICATIONS

NOTE: THE DANDY SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY SACK™ (BLACK)

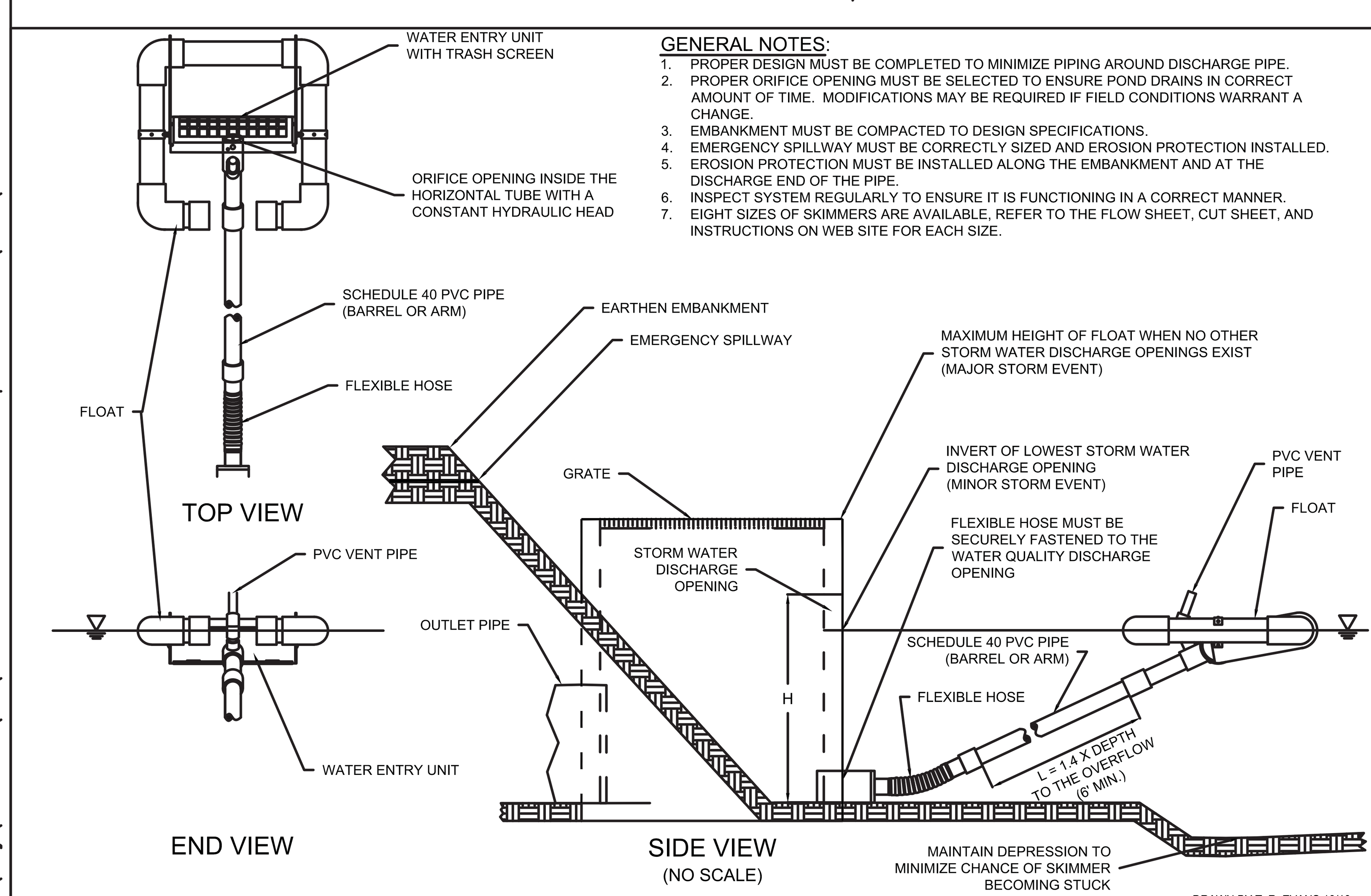
Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5506 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistence	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	$1/min/m^2$ ($gal/min/ft^2$)	2852 (70)
Permittivity	ASTM D 4491	Sec^{-1}	0.90

HI-FLOW DANDY SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistence	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	$1/min/m^2$ ($gal/min/ft^2$)	5907 (145)
Permittivity	ASTM D 4491	Sec^{-1}	2.1

*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

GENERAL NOTES:
1. PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
2. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
3. EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS.
4. EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
5. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
6. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.
7. EIGHT SIZES OF SKIMMERS ARE AVAILABLE, REFER TO THE FLOW SHEET, CUT SHEET, AND INSTRUCTIONS ON WEB SITE FOR EACH SIZE.



FAIRCLOTH SKIMMER DISCHARGE SYSTEM WITH OUTLET STRUCTURE

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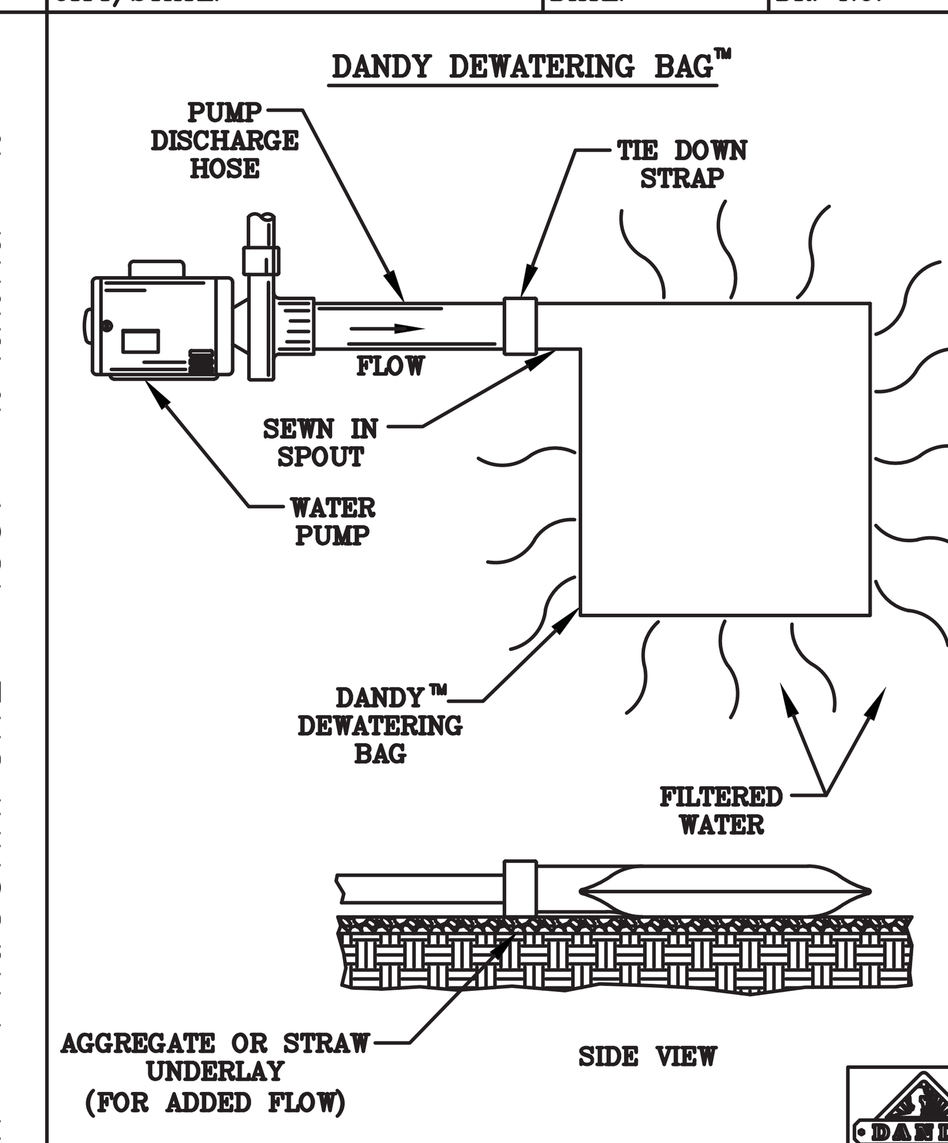
J. W. FAIRCLOTH & SON INC.
WWW.FAIRCLOTHSKIMMER.COM
TELEPHONE: (919) 732-1244
FAX: (919) 732-1266
EMAIL: WARREN@FAIRCLOTHSKIMMER.COM

DE-WATERING

1. A DE-WATERING PLAN SHALL BE DEVELOPED PRIOR TO THE COMMENCEMENT OF ANY PUMPING ACTIVITIES.
2. THE DE-WATERING PLAN SHALL INCLUDE ALL PUMPS AND RELATED EQUIPMENT NECESSARY FOR THE DEWATERING ACTIVITIES AND DESIGNATE AREAS FOR PLACEMENT OF PRACTICES. OUTLETS FOR PRACTICES SHALL BE PROTECTED FROM SCOUR EITHER BY RIPRAP PROTECTION, FABRIC LINER, OR OTHER ACCEPTABLE METHOD OF OUTLET PROTECTION.
3. WATER THAT IS NOT DISCHARGED INTO A SETTLING/TREATMENT BASIN BUT DIRECTLY INTO WATERS OF THE STATE SHALL BE MONITORED HOURLY. DISCHARGED WATER SHALL BE WITHIN ±5° F OF THE RECEIVING WATERS.
4. SETTLING BASINS SHALL NOT BE GREATER THAN FOUR (4) FEET IN DEPTH. THE BASIN SHALL BE CONSTRUCTED FOR SEDIMENT STORAGE AS OUTLINED IN CHAPTER 6, SEDIMENT BASIN OR SEDIMENT TRAP. THE INLET AND OUTLET FOR THE BASIN SHALL BE LOCATED AT THE FURTHEST POINTS OF THE STORAGE. A FLOATING OUTLET SHALL BE USED TO ENSURE THAT SETTLED SOLIDS DO NOT RE-SUSPEND DURING THE DISCHARGE PROCESS. THE SETTLING BASIN SHALL BE CLEANED OUT WHEN THE STORAGE HAS BEEN REDUCED BY 50% OF ITS ORIGINAL CAPACITY.
5. ALL NECESSARY NATIONAL, STATE AND LOCAL PERMITS SHALL BE SECURED PRIOR TO DISCHARGING INTO WATERS OF THE STATE.

DANDY DEWATERING BAG™



DETAIL OF A DEWATERING BAG

PROJECT:		DR. BY:
CITY/STATE:	DATE:	DR. NO:

DANDY DEWATERING BAG™
SPECIFICATIONS

NOTE: THE DANDY DEWATERING BAG™ WILL BE MANUFACTURED IN THE U.S.A. FROM A NONWOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

DANDY DEWATERING BAG™

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	0.9 (205) x 0.9 (205)
Grab Tensile Elongation	ASTM D 4632	%	50 x 50
Puncture Strength	ASTM D 4833	kN (lbs)	0.58 (130)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2618 (380)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.36 (80) X 0.36 (80)
UV Resistence	ASTM D 4355	%	70
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.180 (80)
Flow Rate	ASTM D 4491	$1/min/m^2$ ($gal/min/ft^2$)	3866 (95)
Permittivity	ASTM D 4491	Sec^{-1}	1.2

HAMMONTREE & ASSOCIATES, LIMITED
ENGINEERS, PLANNERS, SURVEYORS
5233 STONEHAM RD. NORTH CANTON, OH 44720
PHN: (330) 499-8817 FAX: (330) 499-0149
TOLL FREE: 1-800-394-8817
www.hammontree-engineers.com

ENGINEERS PLANNERS SURVEYORS

R:\Stark\City\Massillon\5D\Castello – GiraSole Development 2018\DWG\2019-07-24 VillaSole Site Plans.dwg; 10/14/19 – 1:53pm; jenicker

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DESN BY: JJR
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RVWD BY: JJR
FLD BK: 638
BK PG: 40
DATE: 03/28/19

SCALES
HORZ:
VERT:
CONTOUR INT:

STORMWATER POLLUTION PREVENTION DETAILS
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

STATE OF OHIO
JOSHUA J. RENICKER
REGISTERED PROFESSIONAL ENGINEER
7/12/2019

C9.4

TEMPORARY SEEDING

SEEDING DATES	SPECIES	LB./1000 FT2	LB/ACRE
MARCH 1 TO AUGUST 15	OATS TALL FESCUE ANNUAL RYEGRASS	3 1 1	128 40 40
	PERENNIAL RYEGRASS TALL FESCUE ANNUAL RYEGRASS	1 1 1	40 40 40
	ANNUAL RYEGRASS PERENNIAL RYEGRASS CREEPING RED FESCUE KENTUCKY BLUEGRASS	1.25 3.25 0.40 0.40	55 142 17 17
	OATS TALL FESCUE ANNUAL RYEGRASS	3 1 1	128 40 40
AUGUST 16TH TO NOVEMBER	RYE TALL FESCUE ANNUAL RYEGRASS	3 1 1	112 40 40
	WHEAT TALL FESCUE ANNUAL RYEGRASS	3 1 1	120 40 40
	PERENNIAL RYE TALL FESCUE ANNUAL RYEGRASS	1 1 1	40 40 40
	ANNUAL RYEGRASS PERENNIAL RYEGRASS CREEPING RED FESCUE KENTUCKY BLUEGRASS	1.25 3.25 0.40 0.40	40 40 40
NOVEMBER 1 TO FEB. 29	USE MULCH ONLY OR DORMANT SEEDING		

NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED.

1. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.
2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 14 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN 7 DAYS AFTER GRADING.
3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
4. SOIL AMENDMENTS: TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.
5. SEEDING METHOD: SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

GRADE TREATMENT

CUT SLOPES-GREATER THAN 3:1 SLOPES

1. STAIR-STEP GRADING MAY BE CARRIED OUT ON ANY MATERIAL SOFT ENOUGH TO BE RIPPED WITH A BULLDOZER. THE RATIO OF THE HORIZONTAL DISTANCE TO THE VERTICAL CUT DISTANCE SHALL BE FLATTER THAN 1:1 AND THE HORIZONTAL PORTION OF THE "STEP" SHALL SLOPE TOWARD THE VERTICAL WALL. INDIVIDUAL VERTICAL CUTS SHALL NOT BE MORE THAN 24 INCHES ON SOFT SOIL MATERIALS AND NOT MORE THAN 36 INCHES IN ROCKY MATERIALS.
2. GROOVING MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION. SUGGESTED IMPLEMENTS INCLUDE DISCS, TILLERS, SPRING HARROWS, AND THE TEETH ON A FRONT-END LOADER BUCKET. SUCH GROOVES SHALL NOT BE LESS THAN 3 INCHES DEEP NOR FURTHER THAN 15 INCHES APART.

FILL SLOPES-GREATER THAN 3:1 SLOPES

FILL SLOPES STEEPER THAN 3:1 SHALL BE GROOVED OR ALLOWED TO REMAIN ROUGH AS THEY ARE CONSTRUCTED UTILIZING METHOD (1) OR (2) BELOW.

1. GROOVING MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION SUCH AS DISCS, TILLERS, SPRING HARROWS, AND THE TEETH ON A FRONT-END LOADER BUCKET. GROOVES LEFT SHALL NOT BE LESS THAN 3 INCHES DEEP NOR FURTHER THAN 15 INCHES APART.
2. AS LIFTS OF THE FILL ARE CONSTRUCTED, SOIL AND ROCK MATERIALS MAY BE ALLOWED TO FALL NATURALLY ONTO THE SLOPE SURFACE. AT NO TIME SHALL SLOPES BE BLADED OR SCRAPED TO PRODUCE A SMOOTH, HARD SURFACE.

CUTS, FILLS, AND GRADED AREAS WHICH WILL BE MOWED

1. MOWED SLOPES SHOULD NOT BE STEEPER THAN 3:1 AND SHALL AVOID EXCESSIVE ROUGHNESS. THESE AREAS MAY BE ROUGHENED WITH SHALLOW GROOVES SUCH AS THOSE, WHICH REMAIN AFTER TILLING, DISCING, HARROWING, RAKING, OR USE OF A CULTIPACKER-SEEDER. THE FINAL PASS OF ANY SUCH TILLAGE IMPLEMENT SHALL BE ON THE CONTOUR (PERPENDICULAR TO THE SLOPE).
2. GROOVES FORMED BY IMPLEMENTS SHALL BE NOT LESS THAN 1 INCH DEEP AND NOT FURTHER THAN 12 INCHES APART. FILL SLOPES THAT ARE LEFT ROUGH DURING CONSTRUCTION MAY BE SMOOTHED WITH A CHAIN HARROW OR SIMILAR IMPLEMENT TO FACILITATE MOWING.

PERMANENT SEEDING

SEED MIX	SEEDING RATE		NOTES:
	LBS./ACRE	LBS./1,000 SQ. FEET	
	GENERAL USE		
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20-40 10-20 20-40	1/2-1 1/4-1/2 1/2-1	FOR CLOSE MOWING & FOR WATERWAYS WITH <2.0 FT/SEC VELOCITY
TALL FESCUE TURF-TYPE (DWARF) FESCUE	40-50 90	1-1 1/4 2 1/4	
	STEEP BANKS OR CUT SLOPES		
TALL FESCUE CROWN VETCH TALL FESCUE	40-50 10-20 20-30	1-1 1/4 1/4-1/2 1/2-3/4	DO NOT SEED LATER THAN AUGUST
FLAT PEA TALL FESCUE	20-25 20-30	1/2-3/4 1/2-3/4	DO NOT SEED LATER THAN AUGUST
	ROAD DITCHES AND SWALES		
TALL FESCUE TURF-TYPE (DWARF) FESCUE KENTUCKY BLUEGRASS	40-50 80 5	1-1 1/4 2 1/4 0.1	
	LAWNS		
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100-120	2 2	
KENTUCKY BLUEGRASS CREEPING RED FESCUE	100-120	2 1-1/2	FOR SHADED AREAS

SITE PREPARATION:

1. SUBSOILER, PLOW, OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. (MAXIMIZING INFILTRATION WILL HELP CONTROL BOTH RUNOFF RATE AND WATER QUALITY.) SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION.
2. THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.
3. TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

SEEDBED PREPARATION:

1. LIME: AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 POUNDS PER 1,000-SQ. FT. OR 2 TONS PER ACRE.
2. FERTILIZER: FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN PLACE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 25 POUNDS PER 1,000-SQ. FT. OR 1000 POUNDS PER ACRE OF A 10-10-10 OR 12-12-12 ANALYSES.
3. THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON THE CONTOUR.

SEEDING DATES AND SOIL CONDITIONS:

SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. IF SEEDING OCCURS OUTSIDE OF THE ABOVE-SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF 80% GERMINATION. TILLAGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON DORMANT SEEDING.

DORMANT SEEDINGS:

1. SEEDINGS SHOULD NOT BE MADE FROM OCTOBER 1 THROUGH NOVEMBER 20. DURING THIS PERIOD, THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER.

TOPSOILING

SALVAGING AND STOCKPILING:

1. DETERMINE THE DEPTH AND SUITABILITY OF TOPSOIL AT THE SITE. (FOR HELP, CONTACT YOUR LOCAL SWCD OFFICE TO OBTAIN A COUNTY SOIL SURVEY REPORT).
2. PRIOR TO STRIPPING TOPSOIL, INSTALL APPROPRIATE DOWNSLOPE EROSION AND SEDIMENTATION CONTROLS SUCH AS SEDIMENT TRAPS AND BASINS.
3. REMOVE THE SOIL MATERIAL NO DEEPER THAN WHAT THE COUNTY SOIL SURVEY DESCRIBES AS "SURFACE SOIL" (IE. A OR AP HORIZON).
4. CONSTRUCT STOCKPILES IN ACCESSIBLE LOCATIONS THAT DO NOT INTERFERE WITH NATURAL DRAINAGE. INSTALL APPROPRIATE SEDIMENT CONTROLS TO TRAP SEDIMENT SUCH AS SILT FENCE IMMEDIATELY ADJACENT TO THE STOCKPILE OR SEDIMENT TRAPS OR BASINS DOWNSTREAM OF THE STOCKPILE. STOCKPILE SIDE SLOPES SHALL NOT EXCEED A RATIO OF 2:1.
5. IF TOPSOIL IS STORED FOR MORE THAN 21DAYS, IT SHOULD BE TEMPORARY SEEDED, OR COVERED WITH A TARP.

SPREADING THE TOPSOIL

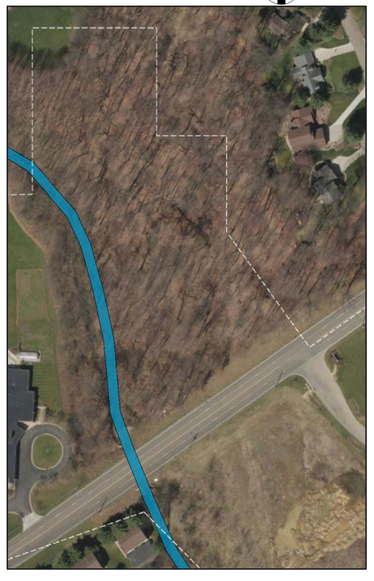
1. PRIOR TO APPLYING TOPSOIL, THE TOPSOIL SHOULD BE PULVERIZED.
2. TO ENSURE BONDING, GRADE THE SUBSOIL AND ROUGHEN THE TOP 3-4 IN. BY DISKING.
3. DO NOT APPLY WHEN SITE IS WET, MUDDY, OR FROZEN, BECAUSE IT MAKES SPREADING DIFFICULT, CAUSES COMPACTION PROBLEMS, AND INHIBITS BONDING WITH SUBSOIL.
4. APPLY TOPSOIL EVENLY TO A DEPTH OF AT LEAST 4 INCHES AND COMPACT SLIGHTLY TO IMPROVE CONTACT WITH SUBSOIL.
5. AFTER SPREADING, GRADE AND STABILIZE WITH SEEDING OR APPROPRIATE VEGETATION.

SOILS MAP

N.T.S.

WETLAND MAP

N.T.S.



STATE OF OHIO
JOSHUA J. HENICKER
E-71744
REGISTERED PROFESSIONAL ENGINEER

7/12/2019

HAMMONTREE & ASSOCIATES, LIMITED
ENGINEERS, PLANNERS, SURVEYORS
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DESN BY: JJR
DRWN BY: JJR
RVWD BY:
FLD BK: 638
BK PG: 40
DATE: 03/28/19

SCALES
HORZ:
VERT:
CONTOUR INT:

STORMWATER POLLUTION PREVENTION DETAILS
VILLA SOLE DEVELOPMENT
FOR: VILLA SOLE, LLC
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OH

C9.5

ENGINEERS HA SURVEYORS HA PLANNERS

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