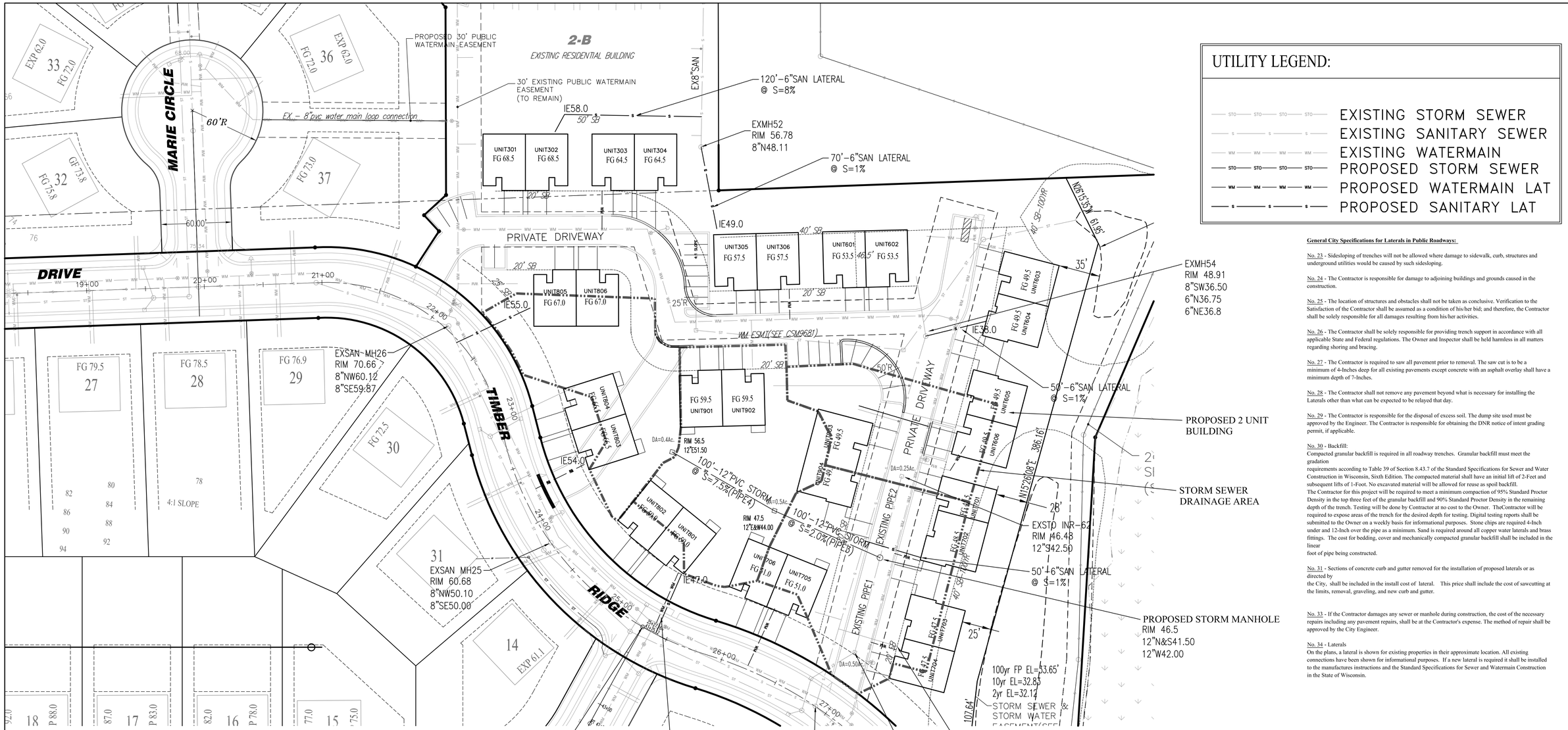

UTILITY LEGEND:

- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- PROPOSED STORM SEWER
- PROPOSED WATERMAIN LAT
- PROPOSED SANITARY LAT

General City Specifications for Laterals in Public Roadways:

No. 23 - Sidesloping of trenches will not be allowed where damage to sidewalk, curb, structures and underground utilities would be caused by such sidesloping.

No. 24 - The Contractor is responsible for damage to adjoining buildings and grounds caused in the construction.

No. 25 - The location of structures and obstacles shall not be taken as conclusive. Verification to the Satisfaction of the Contractor shall be assumed as a condition of his/her bid; and therefore, the Contractor shall be solely responsible for all damages resulting from his/her activities.

No. 26 - The Contractor shall be solely responsible for providing trench support in accordance with all applicable State and Federal regulations. The Owner and Inspector shall be held harmless in all matters regarding shoring and bracing.

No. 27 - The Contractor is required to saw all pavement prior to removal. The saw cut is to be a minimum of 4-Inches deep for all existing pavements except concrete with an asphalt overlay shall have a minimum depth of 7-Inches.

No. 28 - The Contractor shall not remove any pavement beyond what is necessary for installing the Laterals other than what can be expected to be relayed that day.

No. 29 - The Contractor is responsible for the disposal of excess soil. The dump site used must be approved by the Engineer. The Contractor is responsible for obtaining the DNR notice of intent grading permit, if applicable.

No. 30 - Backfill:
Compacted granular backfill is required in all roadway trenches. Granular backfill must meet the gradation
requirements according to Table 39 of Section 8.43.7 of the Standard Specifications for Sewer and Water Construction in Wisconsin, Sixth Edition. The compacted material shall have an initial lift of 2-Feet and subsequent lifts of 1-Foot. No excavated material will be allowed for reuse as spoil backfill.
The Contractor for this project will be required to meet a minimum compaction of 95% Standard Proctor Density in the top three feet of the granular backfill and 90% Standard Proctor Density in the remaining depth of the trench. Testing will be done by Contractor at no cost to the Owner. TheContractor will be required to expose areas of the trench for the desired depth for resting. Digital testing reports shall be submitted to the Owner on a weekly basis for informational purposes. Stone chips are required 4-Inch under and 12-Inch over the pipe as a minimum. Sand is required around all copper water laterals and brass fittings. The cost for bedding, cover and mechanically compacted granular backfill shall be included in the linear
foot of pipe being constructed.

No. 31 - Sections of concrete curb and gutter removed for the installation of proposed laterals or as directed by
the City, shall be included in the install cost of lateral. This price shall include the cost of sawcutting at the limits, removal, graveling, and new curb and gutter.

No. 33 - If the Contractor damages any sewer or manhole during construction, the cost of the necessary repairs including any pavement repairs, shall be at the Contractor's expense. The method of repair shall be approved by the City Engineer.

No. 34 - Laterals
On the plans, a lateral is shown for existing properties in their approximate location. All existing connections have been shown for informational purposes. If a new lateral is required it shall be installed to the manufactures instructions and the Standard Specifications for Sewer and Watermain Construction in the State of Wisconsin.

NOTE:
IF APPLICABLE, EXISTING SANITARY SEWER LATERALS THAT ARE NOT PROPOSED TO BE REUSED SHOULD BE ABANDONED AT THE SANITARY SEWER MAIN AND FILLED WITH SLURRY.

Note: All work shall be in accordance with the Standard Specifications for Highway and Structure Construction, State of Wisconsin, Latest Edition, and the City of Waukesha Ordinances and/or the Standard Specifications as set forth in the State of Wisconsin Department of Commerse. All permits must be obtain by the contractor prior to commencing work.

STORM SEWER CALCULATION SHEET

Pipe	IncA	At	C	IncT	Tc	Yr	I	Qt	n	Slope	D	Cap	V	L	UpInv	DnInv	UpRim	DnRim
							(in/hr)	(cfs)		(%)								
Pipe 4	0.40	0.40	0.50	5.00	5.00	10	6.41	1.29	0.013	7.477	12	9.82	7.74	100.31	51.50	44.00	56.50	47.5
Pipe 3	0.50	0.90	0.50	5.00	5.57	10	6.25	2.84	0.013	2.039	12	5.14	6.36	98.09	44.00	42.00	47.50	46.5
Pipe 2	0.25	0.25	0.70	5.00	5.00	10	6.41	1.13	0.013	1.300	12	4.27	12.00	71.66	42.50	41.50	46.48	46.5
Pipe 1	0.00	1.15	0.50	5.00	5.82	10	6.18	3.90	0.013	1.300	12	3.92	10.19	83.38	41.50	40.50	46.50	45.38

THE INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY THE PROJECT SURVEYOR, UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.

EXISTING TOPOGRAPHY:
The existing topography was obtained by KW Survey, Dated: May, 2016.

BENCHMARKS:
1)NW corner of the SW ¼ of Sec. 22; concrete monument with brass cap. Elevation=73.95.
2)NW corner of the NW ¼ of sec. 22; concrete monument with brass cap. Elevation = 77.43.
3)NE corner of the SW ¼ of sec. 22; concrete monument with brass cap. Elevation=28.07.

City of Waukesha datum: add 780.56 to achieve USGS datum.

PRIVATE WATER MAIN, SANITARY & STORM SEWER SPECIFICATIONS:

1. All work shall be in accordance with the Standard Specifications for Highway and Structure Construction, State of Wisconsin, Latest Edition; the State of Wisconsin Standard Specifications for Sewer and Water Construction in Wisconsin, the State of Wisconsin Department of Safety and Professional Services Plumbing Code; and the City of Waukesha Ordinances.

2. The private water main, sanitary & storm sewer design, permitting, construction, installation, supervision, maintenance, inspection AND testing shall be in accordance with State of Wisconsin, Chapter SPS 382. All permits must be obtain by the contractor prior to commencing work.

3. Private sanitary laterals shall be PVC (solid wall), ASTM D-3034, DR-35 or 28; or PVC (solid wall), AWWA C-900 per the State of Wisconsin Plumbing Code, Chapter SPS 382 and the Standard Specifications for Sewer & Water Construction in Wisconsin.

4. Private Water main laterals shall be PVC (solid wall), AWWA C-900, CLASS 235, DR-18 with Push-On type integral elastomeric bell-spigot joints per the State of Wisconsin Plumbing Code, Chapter SPS 382 AND the Standard Specifications for Sewer & Water Construction in Wisconsin.

5. Private Storm Sewers shall be PVC (solid wall), DR-26 OR HDPE, per the State of Wisconsin Plumbing Code, Chapter SPS 382. Storm manholes shall be precast concrete in accordance with File No. 26 of the Standard Specifications for Sewer & Water Construction in Wisconsin with a Neenah No. R2471 frame & grate (open cover). Manhole diameter sized per File No. 12. Storm inlets shall be precast concrete box structures in accordance with File No. 29 of the Standard Specifications for Sewer & Water Construction in Wisconsin with a Neenah No. R3227-C frame & grate or EQUAL.

SCALE: 1" = 40'

REVISIONS	
DATE	COMMENT

ELLENA ENGINEERING CONSULTANTS, LLC
SITE CIVIL ENGINEERING & STORMWATER MANAGEMENT
Ellena Engineering Consultants, LLC • 700 Pilgrim Parkway - Suite 100 • Elm Grove, WI 53122
Phone: 262-719-6183 • Fax: 866-457-2584 • Email: mellena@eeceng.com

Timber Ridge - Villas PUD Amendment
City of Waukesha, Wisconsin

WISCONSIN MARK R. ELLENA E-24090 WALES, WI PROFESSIONAL ENGINEER

Utility Plan

SCALE: 1"=40'		DATE: 09/10/16
DESIGNED BY: MRE,PE		PROJECT NO:
APPROVED BY: _____ DATE		C3