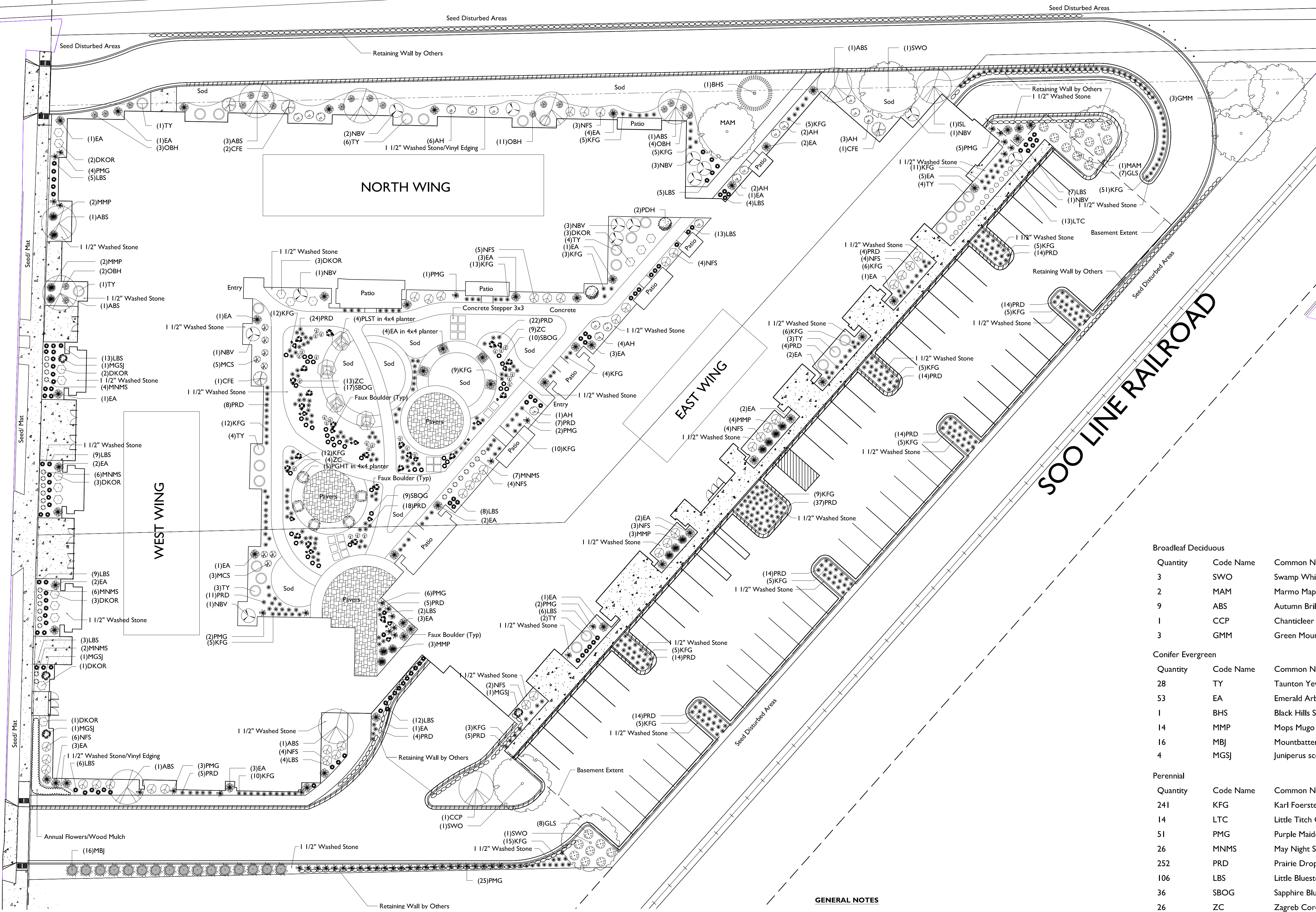


# C&NW RAILROAD

# MAPLE AVENUE

# N. GRAND AVENUE

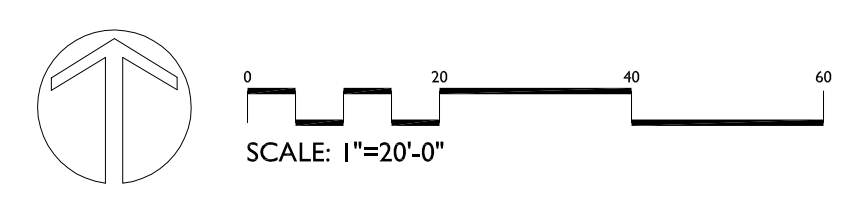


### Plant Material List

Quantity	Code Name	Common Name	Scientific Name	Planting Size
<b>Broadleaf Deciduous</b>				
3	SWO	Swamp White Oak	Quercus bicolor	2" B&B
2	MAM	Marmo Maple	Acer x freemanii 'marmo'	2" B&B
9	ABS	Autumn Brill Serviceberry	Amelanchier x grand 'autumn Brill'	6" B&B
1	CCP	Chanticleer Callery Pear	Pyrus calleryana 'chanticleer'	2 1/2" B&B
3	GMM	Green Mountain Sugar Maple	Acer saccharum 'green Mountain'	2" B&B
<b>Conifer Evergreen</b>				
28	TY	Taunton Yew	Taxus x media 'tauntonii'	18" B&B
53	EA	Emerald Arborvitae	Thuja occidentalis 'smaragd'	4" B&B
1	BHS	Black Hills Spruce	Picea glauca var densata	5" B&B
14	MMP	Mops Mugo Pine	Pinus mugo 'mops'	#3 CONT.
16	MBJ	Mountbatten Juniper	Juniperus chinensis 'mountbatten'	5" B&B
4	MGSJ	Juniperus scopulorum 'Moon Glow'	Moon Glow Spiral Juniper	4" B&B
<b>Perennial</b>				
241	KFG	Karl Foerster's Feather Reed Grass	Calamagrostis acutiflora 'karl Foerster'	#1 CONT.
14	LTC	Little Titch Catmint	Nepeta racemosa 'little Titch'	#1 CONT.
51	PMG	Purple Maiden Grass	Miscanthus sinensis var purpurescens	#1 CONT.
26	MNMS	May Night Sage	Salvia nemorosa 'mainacht'	#1 CONT.
252	PRD	Prairie Dropseed	Sporobolus heterolepis	#1 CONT.
106	LBS	Little Bluestem	Schizachyrium scoparium	#1 CONT.
36	SBOG	Sapphire Blue Oat Grass	Helictotrichon sempervirens 'saphirsprudel'	#1 CONT.
26	ZC	Zagreb Coreopsis	Coreopsis verticillata 'zagreb'	#1 CONT.
20	OBH	Olive Bailey Langdon Hosta	Hosta x 'olive Bailey Langdon'	#1 CONT.
<b>Shrub</b>				
4	PLST	Palibin Lilac (std)	Syringa meyeri 'palibin' (std)	1 3/4" B&B
4	CFE	Chicago Fire Winged Euonymus	Euonymus alatus 'timber Creek'	3" B&B
2	PDH	Pink Diamond Hydrangea	Hydrangea paniculata 'pink Diamond'	#5 CONT.
8	MCS	Magic Carpet Spirea	Spiraea japonica 'walburna'	#2 CONT.
20	GLS	Gro-Low Fragrant Sumac	Rhus aromatica 'gro-Low'	#2 CONT.
13	NBV	Northern Burgundy Arwd Viburnum	Viburnum dentatum 'mortoni'	4" B&B
1	ISL	Ivory Silk Japanese Tree Lilac	Syringa reticulata 'ivory Silk'	2" B&B
40	NFS	Neon Flash Spirea	Spiraea japonica 'neon Flash'	#2 CONT.
18	DKOR	Double Knock Out Rose	Rosa 'radtko'	#3 CONT.
18	AH	Annabelle Hydrangea	Hydrangea arborescens 'annabelle'	#3 CONT.
5	PGHT	Peegee Hydrangea (tf)	Hydrangea paniculata 'grandiflora' (tf)	1 1/2" B&B

### GENERAL NOTES

- A) Areas labeled "Red B Colored Wood Mulch" to receive a mixture of recycled wood mulch, colored brown or red as indicated, spread to a 3" depth over pre-emergent herbicide.
- B) Individual trees (and shrub groupings) found along perimeter of property as well as those found within lawn areas to receive wood mulch rings (and wood mulch beds) consisting of a mixture of recycled wood mulch, colored brown or red as indicated, spread to a minimum 3" depth (3" wide beds for shrub groupings).
- C) "Vinyl Edging" to be Valley View Black Diamond Vinyl Edging or equivalent.
- D) Areas labeled "washed stone" to receive 1-1/2" washed stone spread to a 3" depth over fabric weed barrier.
- E) "Seed" areas shall be finish-graded and seeded at a rate of 4 lbs. per 1,000 sq. ft.
- F) Seed shall consist of the following mixture:  
 10% Palmer IV Perennial Ryegrass  
 20% Dragon Kentucky Bluegrass  
 20% Diva Kentucky Bluegrass  
 20% Foxy II Creeping Red Fescue  
 15% Vail II Perennial Ryegrass  
 15% Ginney Kentucky Bluegrass
- G) Areas labeled "Seed/Mat" shall be seeded with the above-noted premium lawn seed mixture and overlaid with DS75 straw erosion control netting that is then pegged into the soil with metal staples.
- H) Areas labeled "Sod" shall receive only No. 1 grade nursery-grown bluegrass sod.
- I) Plant beds adjacent to building foundation to be mulched with 1-1/2" diameter washed stone mulch spread to a 3" depth over fabric weed barrier.



# FOX HEAD RESIDENCE - LANDSCAPE PLAN

City of Waukesha  
 Waukesha County, Wisconsin

Checked By: SS  
 Drawn By: 10/27/14  
 SR

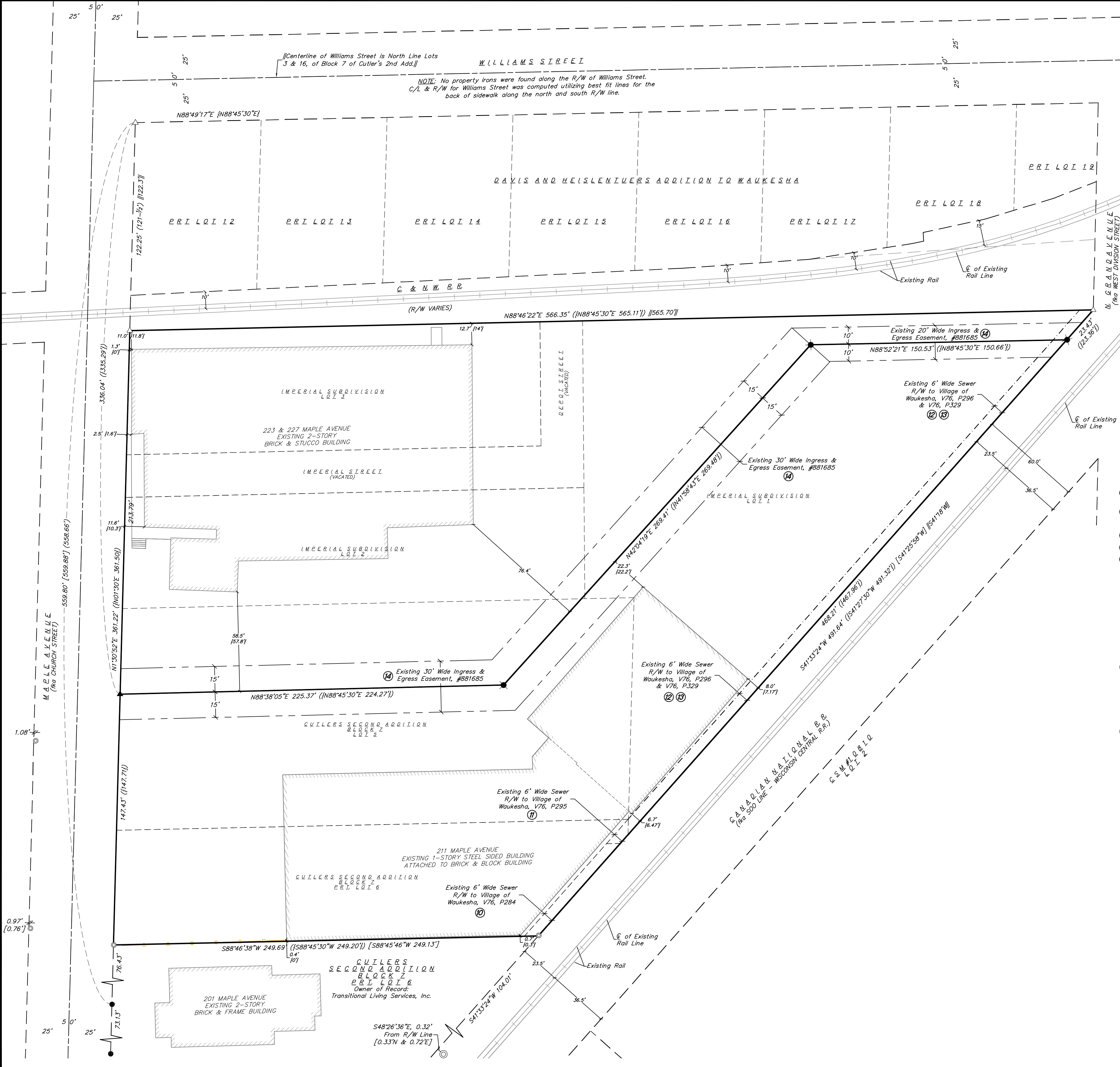
Revised: 11/11/14 SR  
 Revised: 12/01/14/RS  
 Revised: 1/14/15 RS  
 Revised:  
 Revised:  
 Revised:  
 Revised:

L1

This plan made exclusively for the party named in the title block. It remains the property of The Bruce Company of Wisconsin, Inc. and may not be reproduced or implemented in whole or in part by any method without prior written consent of The Bruce Company of Wisconsin, Inc.



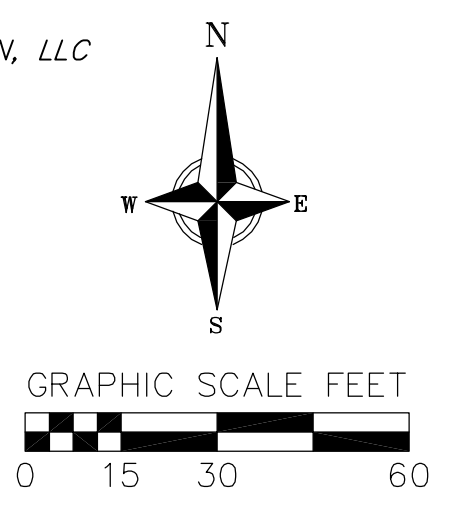
10 Sep 2014 - 1:19p M:\T Wall Enterprises LLC\40163\_211 & 223 Maple Ave\CADD\40163\_ALTA.dwg by: mmar



- SURVEY LEGEND**
- FOUND 1" Ø IRON PIPE
  - ▲ FOUND P.K. NAIL
  - FOUND 1/2" Ø IRON ROD
  - ⊙ FOUND RAILROAD SPIKE
  - △ SET P.K. NAIL
  - ( ) RECORDED AS INFORMATION
  - { } SEE NOTE #1
  - [ ] SEE NOTE #2
  - || SEE NOTE #3

**SURVEYED FOR:**  
T. WALL ENTERPRISES WISCONSIN, LLC  
PO BOX 620037  
MIDDLETON, WI 53562

**SURVEYED BY:**  
VERBICHER ASSOCIATES, INC.  
BY: MICHAEL S. MARTY  
999 FOURIER DRIVE,  
SUITE 201  
MADISON, WI 53717  
(608)-821-3955  
mmar@verbicher.com



- NOTES:**
- [ ] Indicates information per Plat of Survey by John W. Jahnke, Jahnke & Jahnke Associates Inc., dated December 20, 1983, or per Plat of Survey by John W. Jahnke, Jahnke & Jahnke Associates Inc., dated July 27, 1989. Both surveys were provided to surveyor by Leading Edge Tool and were not found on file at the Waukesha County Register of Deeds Office.
  - [ ] Indicates information per ALTA/ACSM Land Title Survey by Donald C. Chaput, R.A. Smith National, Inc., revision date of November 7, 2008 and on file at the Waukesha County Register of Deeds Office (Map #WCPS0079789).
  - || Indicates information per Survey by LS Dancey dated November, 1944 and on file at the Waukesha County Register of Deeds Office (Map #WCPS0060141).
  - Station Map Sheet No. 5A of 39, Lands-Tracks and Structures, Chicago & North-Western Railway, Operated by the C.&N.-W.P.Y. Co., Madison Division, Waukesha, Wis., Sta. 928+58 to Sta. 1000+00, dated June 30, 1917 and Plat of Survey for Proposed R.R. Connection Track, by Richard Zimmerman, Plan Date of Sept. 1988, as provided by the City of Waukesha was also used to aid in determination of the Railroad Right of Way as shown hereon.
  - See sheet 2 for additional improvements, additional information and description.
  - Area of parcel surveyed is 147,220 square feet or 3.38 acres more or less.
  - This survey is based upon field survey work performed on July 17, 16, 23, 24 & 30, 2014. Any changes in site conditions after July 30, 2014 are not reflected by this survey.
  - During the course of field survey work there was no evidence of which the surveyor is aware of current earth moving work, building construction, or building additions.
  - There was no evidence of which the surveyor is aware of the site being used as a solid waste dump, sump or sanitary landfill.
  - Utility locations were field located based upon substantial, visible, above ground structures, upon maps provided to the surveyor, or upon markings on the ground placed by utility companies and/or their agents. No warranty is given to the utility markings by others or that all underground utilities affecting this property were marked and subsequently located for this survey. A locate request was sent to Digger's Hotline per Digger's Hotline One-Call ticket numbers 20142907975, 20142908001, 20142908160, 20142908258, 20142908413, 20142908437 and 20142908345. Independent location of buried private utilities is not within the scope of this survey.
  - No attempt has been made as a part of this survey to obtain or show data concerning size, condition, or capacity of any utility or municipal/public service facility. For information regarding these utilities contact the appropriate agencies.
  - Surveyor has made no investigation or independent search for easements of record, encumbrances, restrictive covenants, or ownership title evidence.
  - By graphic plotting only the parcels surveyed fall within "Zone X - Areas determined to be outside the 0.2% chance floodplain of the Flood Insurance Rate Map Community Panel Number 213 of 500, Map Number 55133C0213F, Map Effective Date November 19, 2008.
  - Total number of marked parking stalls is 84. 4 handicap parking stalls & 80 standard parking stalls.
  - Owner of Record is shown per information obtained from the Waukesha County GIS website on August 15, 2014.

- NOTES:**
- This survey was prepared based upon information provided in the Title Commitment No NCS-688561-MAD, dated August 25, 2014 at 7:30a.m., from First American Title Insurance Company National Commercial Services, 10 W. Mifflin Street, Suite 302, Madison, WI 53703. Schedule B, Section Two, Exceptions references the following:
- EXCEPTION 9:** Rights of tenants, if any, in possession under unrecorded leases.
- ⑩ **EXCEPTION 10:** Sewer Right of Way granted to the Village of Waukesha recorded December 31, 1890, in Volume 76 of Deeds, Page 284. (Easement shown.)
- ⑪ **EXCEPTION 11:** Sewer Right of Way to Village of Waukesha recorded December 31, 1890, in Volume 76 of Deeds, Page 295. (Easement shown.)
- ⑫ **EXCEPTION 12:** Sewer Right of Way recorded December 31, 1890, in Volume 76 of Deeds, Page 296. (Easement shown.)
- ⑬ **EXCEPTION 13:** Sewer Right of Way recorded December 31, 1890, in Volume 76 of Deeds, Page 329. (Easement shown.)
- ⑭ **EXCEPTION 14:** Reservation for easement set forth in Warranty Deed recorded May 17, 1974, Reel 78, Image 1280, as Document No. 891685. (Easement shown.)
- EXCEPTION 15:** Resolution recorded March 21, 2007, as Document No. 3466432. (Pertains to adoption of Resolution to establish boundaries of Redevelopment District No. 8 and declare the area blighted, and approve the Redevelopment Plan for the District. Refer to document.)
- EXCEPTION 16:** Notice of Supplemental Final Order and Judgment recorded May 14, 2007, as Document No. 3490455. (Pertains to AT&T fiber optic cable installation litigation. Document states that the Court granted a sixteen and one half (16-1/2) wide permanent easement through the Settlement Corridor for telecommunications purposes. Document references the Milwaukee to Waukesha - Wisconsin & Southern railroad corridors and adjoining property. Refer to document. The fiber optic cable depicted on the face of the survey was marked as either "Sprint" or "Level 3". Per telephone conversations on September 10, 2014 with Tom Crowley, Brian Dreesen and Pete Reese of AT&T, there are no AT&T fiber optic lines on or immediately adjacent to the parcels surveyed. For information provided in said telephone conversations, there is existing overhead fiber optic and underground telephone conduit running along the easterly side of Grand Avenue.)
- ⑰ **EXCEPTION 17:** Easement Deed by Court Order recorded February 22, 2013, as Document No. 3993251. (Grants easement rights for a permanent telecommunications easement in the Easement Premises. Document further states that (A) the easement extends no more than ten (10) feet on each side of the Grantee's Telecommunications Cable System as it existed on June 5, 2012 (B) where the actively used components of the Grantee's Telecommunications Cable System are moved or placed, provided, however, that only a single 20-foot easement per moved component may exist at any point in time in the Easement Premises. Refer to Document. The fiber optic cable depicted on the face of the survey was marked as either "Sprint" or "Level 3". Limits of 20' Wide Easement is shown on sheet 2 and is centered on location of fiber optic line as marked by Digger's Hotline. Actual location of easement may vary based upon location of fiber optic line as constructed.)
- ⑱ **EXCEPTION 18:** Easement Deed by Court Order in Settlement of Landowner Action recorded July 31, 2013, as Document No. 4032482. (Grants easement rights for a permanent telecommunications easement in the Easement Premises. Document further states that (A) the easement extends no more than ten (10) feet on each side of the Grantee's Telecommunications Cable System as it existed on June 5, 2012 (B) where the actively used components of the Grantee's Telecommunications Cable System are moved or placed, provided, however, that only a single 20-foot easement per moved component may exist at any point in time in the Easement Premises. Refer to Document. The fiber optic cable depicted on the face of the survey was marked as either "Sprint" or "Level 3". Limits of 20' Wide Easement is shown on sheet 2 and is centered on location of fiber optic line as marked by Digger's Hotline. Actual location of easement may vary based upon location of fiber optic line as constructed.)

**ALTA/ACSM CERTIFICATION:**

To T. Wall Enterprises Wisconsin, LLC, and First American Title Insurance Company National Commercial Services:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 8, 9, 11(a), 13, 16, and 18 of Table A thereof. The field work was completed on July 30, 2014.

Verbicher Associates, Inc.  
By: Michael S. Marty

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_.

Michael S. Marty, P.L.S. No. 2452

**vierbicher**  
planners | engineers | advisors

REDBURG - MADISON - FRAIRIE | CHEN  
999 Fourier Drive | (608) 826-0330 | Fax: (608) 826-0330

**DRAFT ALTA/ACSM LAND TITLE SURVEY**  
LOTS 4-6 & PART OF LOTS 13-15, BLOCK 7, CUTLERS SECOND ADDITION TO THE PLAT OF FRAIRIEVILLE (CITY OF WAUKESHA).  
LOTS 1-3, IMPERIAL SUBDIVISION, WAUKESHA COUNTY REGISTRY, LOCATED IN THE SW 1/4, SE1/4 OF SECTION 03, TOWNSHIP 06  
NORTH, RANGE 19 EAST, CITY OF WAUKESHA, WAUKESHA COUNTY, WISCONSIN

NO.	DATE	REVISIONS	REMARKS

SCALE:  
1"=30' (22"x34")  
1"=60' (11"x17")

DATE: 2014-09-10

DRAFTER: MMAR/AMEA

CHECKED: MZIE

PROJECT NO.: 140163

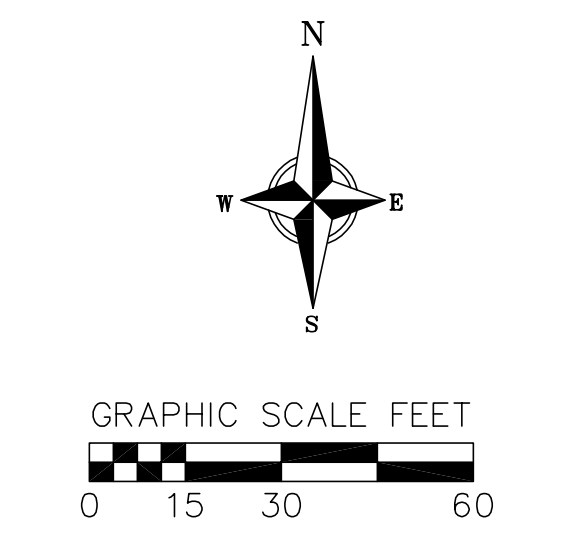
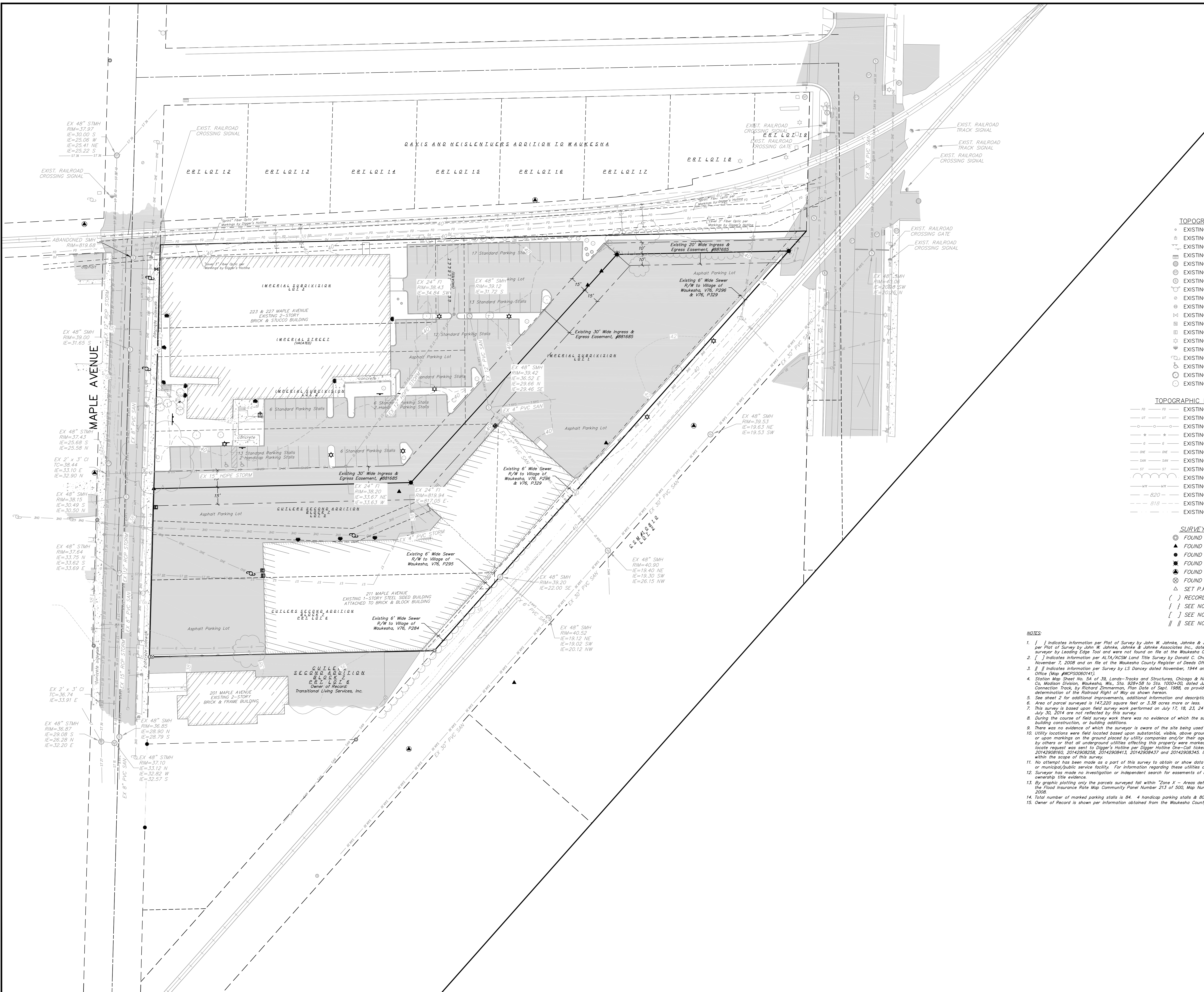
SHEET: 1 OF 2

DWG. NO.: S-554









- TOPOGRAPHIC SYMBOL LEGEND**
- EXISTING BOLLARD
  - EXISTING MAILBOX
  - ⊠ EXISTING SIGN (TYPE NOTED)
  - ⊞ EXISTING CURB INLET
  - ⊕ EXISTING FIELD INLET
  - ⊙ EXISTING STORM MANHOLE
  - ⊚ EXISTING SANITARY MANHOLE
  - ⊛ EXISTING FIRE HYDRANT
  - ⊜ EXISTING WATER MAIN VALVE
  - ⊝ EXISTING CURB STOP
  - ⊞ EXISTING GAS VALVE
  - ⊟ EXISTING AIR CONDITIONING PEDESTAL
  - ⊠ EXISTING ELECTRIC PEDESTAL
  - ⊡ EXISTING LIGHT POLE
  - ⊢ EXISTING GENERIC LIGHT
  - ⊣ EXISTING UTILITY POLE
  - ⊤ EXISTING HANDICAP PARKING
  - ⊥ EXISTING CONIFEROUS TREE
  - ⊦ EXISTING DECIDUOUS TREE
- TOPOGRAPHIC LINework LEGEND**
- FO — FO — EXISTING FIBER OPTIC LINE
  - UT — UT — EXISTING UNDERGROUND TELEPHONE
  - C — C — EXISTING CHAIN LINK FENCE
  - G — G — EXISTING GENERAL FENCE
  - G — G — EXISTING GAS LINE
  - ONE — ONE — EXISTING OVERHEAD ELECTRIC LINE
  - SAH — SAH — EXISTING SANITARY SEWER LINE
  - ST — ST — EXISTING STORM SEWER LINE
  - WM — WM — EXISTING WATER MAIN
  - B20 — B20 — EXISTING EDGE OF TREES
  - B10 — B10 — EXISTING MAJOR CONTOUR
  - B10 — B10 — EXISTING MINOR CONTOUR
  - — — EXISTING DITCH CENTERLINE
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  - ▲ FOUND P.K. NAIL
  - FOUND 1/2" ⌀ IRON ROD
  - ⊠ FOUND RAILROAD SPIKE
  - ⊛ FOUND NAIL
  - ⊚ FOUND 2" ⌀ IRON PIPE
  - ⊜ SET P.K. NAIL
  - ( ) RECORDED AS INFORMATION
  - { } SEE NOTE #1
  - [ ] SEE NOTE #2
  - || || SEE NOTE #3

- NOTES**
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vierbicher  
planners | engineers | advisors  
REEDSBURG - MADISON - WAUKESHA - WAUKESHA COUNTY, WISCONSIN  
997 Foxglove Lane, Reedburg, IL 62450  
Phone: (815) 862-0332 Fax: (815) 862-0333

**EXISTING CONDITIONS**  
FOX HEAD RESIDENCES  
CITY OF WAUKESHA  
WAUKESHA COUNTY, WISCONSIN

REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE
1	12-01-14	Rev. Prelim. Plans	
2	2-30-14	Rev. Prelim. Plans	

SCALE AS SHOWN

DATE 10/29/14

DRAFTER JFL

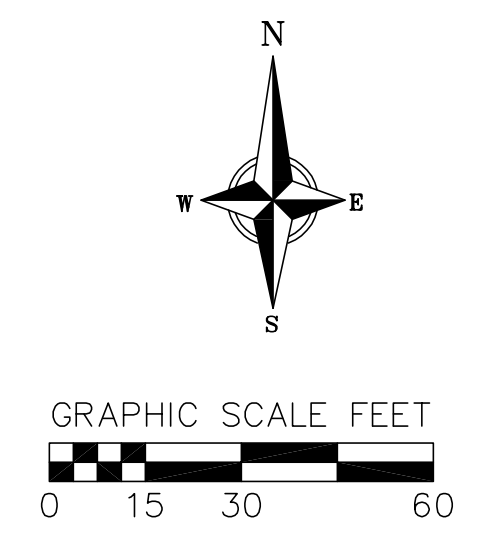
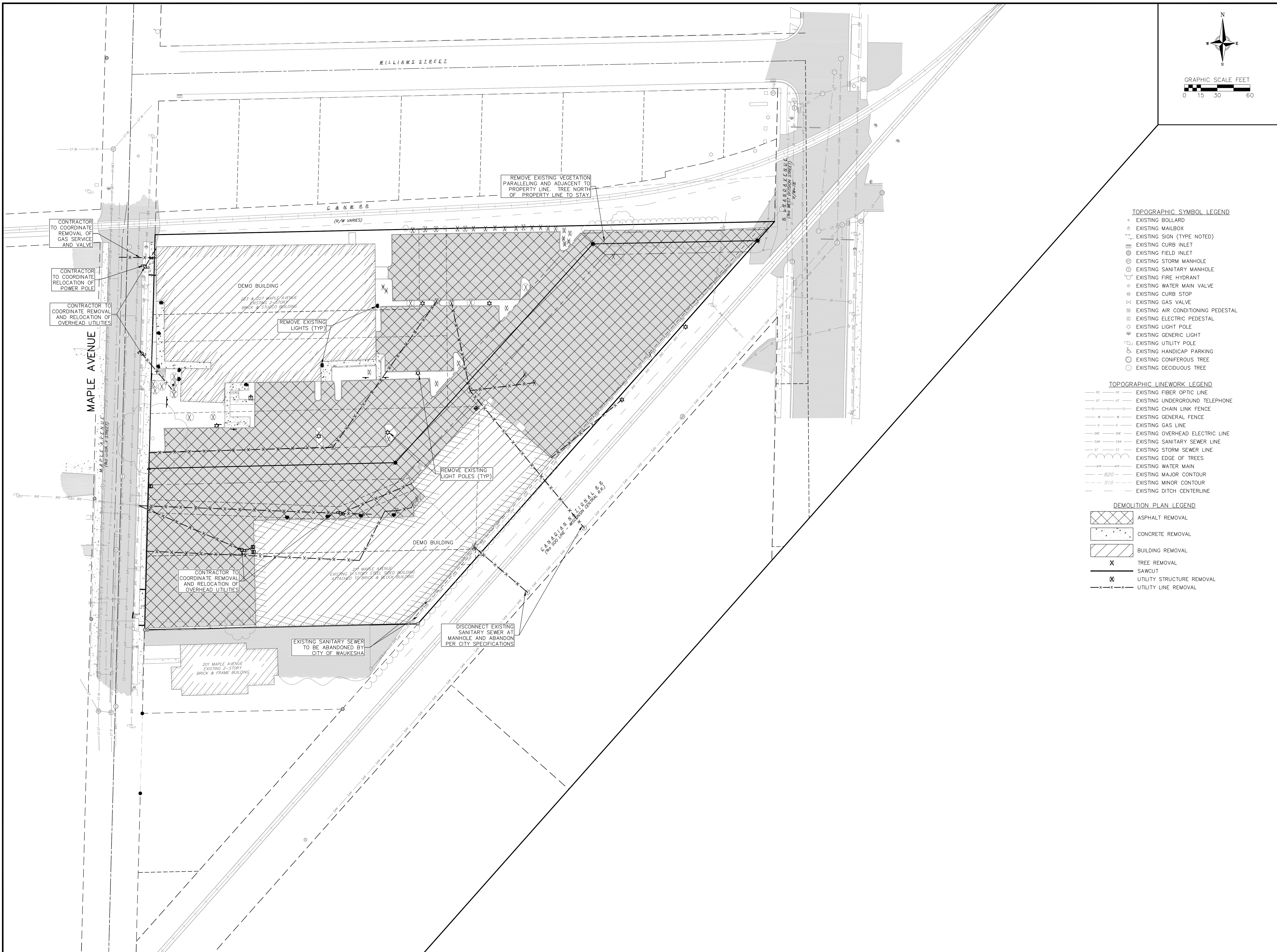
CHECKED

PROJECT NO. 140163

SHEET 1 OF 7

DWG. NO. C-100





**TOPOGRAPHIC SYMBOL LEGEND**

- EXISTING BOLLARD
- EXISTING MAILBOX
- ⊞ EXISTING SIGN (TYPE NOTED)
- ⊞ EXISTING CURB INLET
- ⊞ EXISTING FIELD INLET
- ⊞ EXISTING STORM MANHOLE
- ⊞ EXISTING SANITARY MANHOLE
- ⊞ EXISTING FIRE HYDRANT
- ⊞ EXISTING WATER MAIN VALVE
- ⊞ EXISTING CURB STOP
- ⊞ EXISTING GAS VALVE
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- ⊞ EXISTING LIGHT POLE
- ⊞ EXISTING GENERIC LIGHT
- ⊞ EXISTING UTILITY POLE
- ⊞ EXISTING HANDICAP PARKING
- ⊞ EXISTING CONIFEROUS TREE
- ⊞ EXISTING DECIDUOUS TREE

**TOPOGRAPHIC LINEWORK LEGEND**

- FO — EXISTING FIBER OPTIC LINE
- UT — EXISTING UNDERGROUND TELEPHONE
- C — EXISTING CHAIN LINK FENCE
- \* — EXISTING GENERAL FENCE
- G — EXISTING GAS LINE
- OE — EXISTING OVERHEAD ELECTRIC LINE
- SAH — EXISTING SANITARY SEWER LINE
- ST — EXISTING STORM SEWER LINE
- ET — EXISTING EDGE OF TREES
- WM — EXISTING WATER MAIN
- B20 — EXISTING MAJOR CONTOUR
- B10 — EXISTING MINOR CONTOUR
- — EXISTING DITCH CENTERLINE

**DEMOLITION PLAN LEGEND**

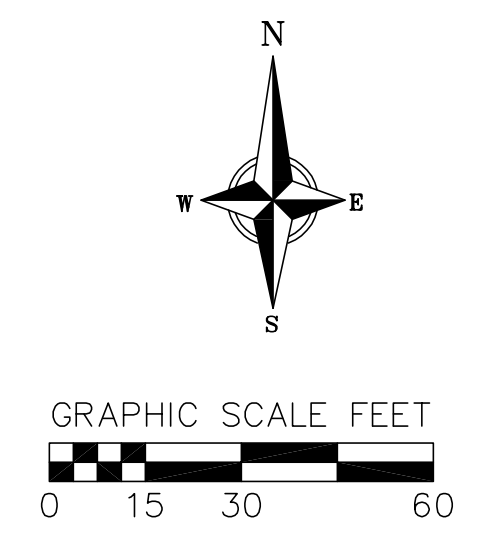
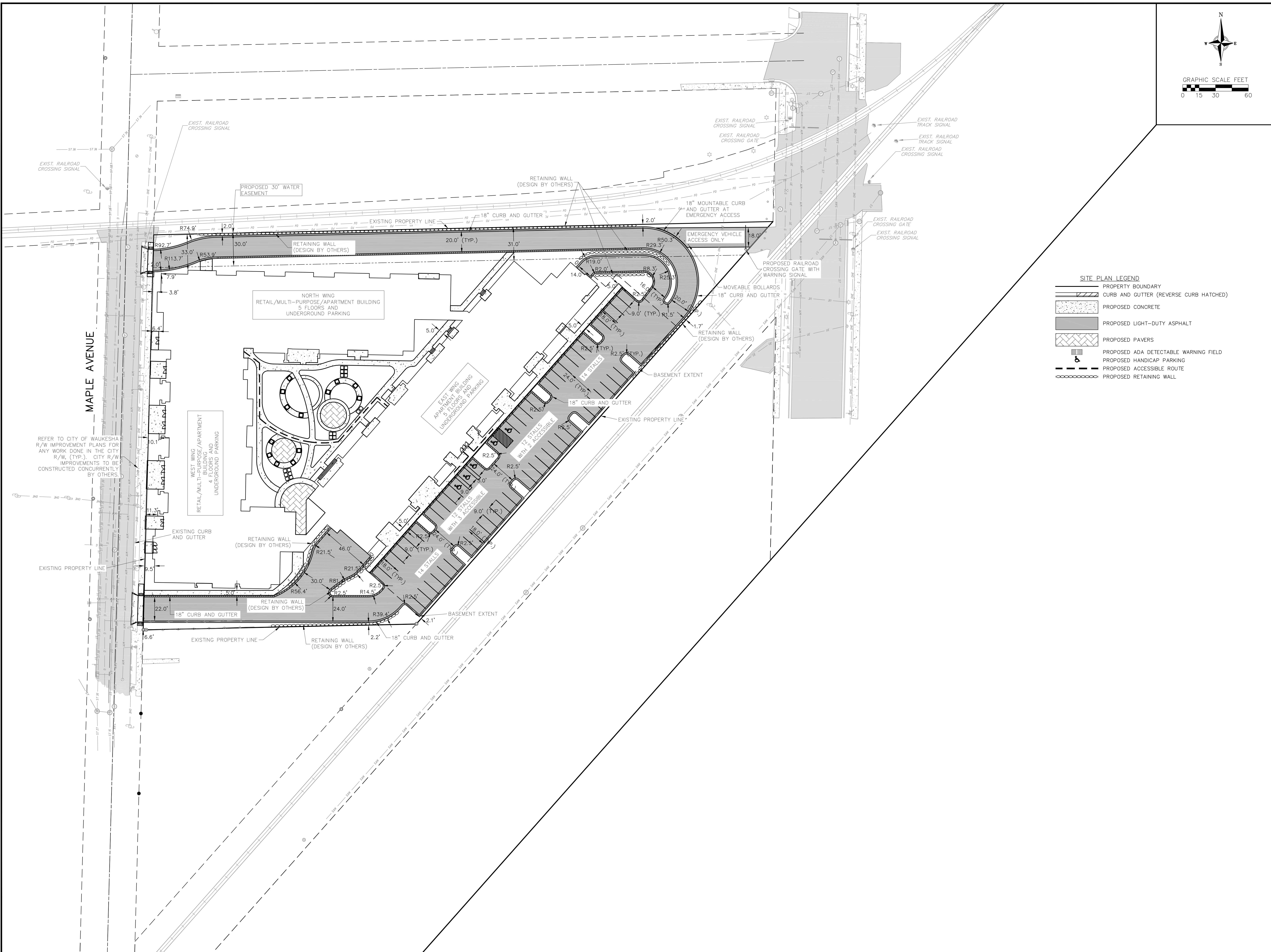
- ▨ ASPHALT REMOVAL
- ▨ CONCRETE REMOVAL
- ▨ BUILDING REMOVAL
- X TREE REMOVAL
- SAWCUT
- ⊞ UTILITY STRUCTURE REMOVAL
- X — X — X — UTILITY LINE REMOVAL

**DEMOLITION PLAN**  
 FOX HEAD RESIDENCES  
 CITY OF WAUKESHA  
 WAUKESHA COUNTY, WISCONSIN

REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE
1	12-01-14		
2	2-30-14		

SCALE: AS SHOWN  
 DATE: 10/29/14  
 DRAFTER: JFEL  
 CHECKED:  
 PROJECT NO.: 140163  
 SHEET: 2 OF 7  
 DWG. NO.: C-200





- SITE PLAN LEGEND**
- PROPERTY BOUNDARY
  - CURB AND GUTTER (REVERSE CURB HATCHED)
  - PROPOSED CONCRETE
  - PROPOSED LIGHT-DUTY ASPHALT
  - PROPOSED PAVERS
  - PROPOSED ADA DETECTABLE WARNING FIELD
  - PROPOSED HANDICAP PARKING
  - PROPOSED ACCESSIBLE ROUTE
  - PROPOSED RETAINING WALL

REFER TO CITY OF WAUKESHA R/W IMPROVEMENT PLANS FOR ANY WORK DONE IN THE CITY R/W. (TYP.). CITY R/W IMPROVEMENTS TO BE CONSTRUCTED CONCURRENTLY BY OTHERS.

REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE
1	12-01-14		
2	2-2-14		

SCALE AS SHOWN

DATE 10/29/14

DRAFTER JFEL

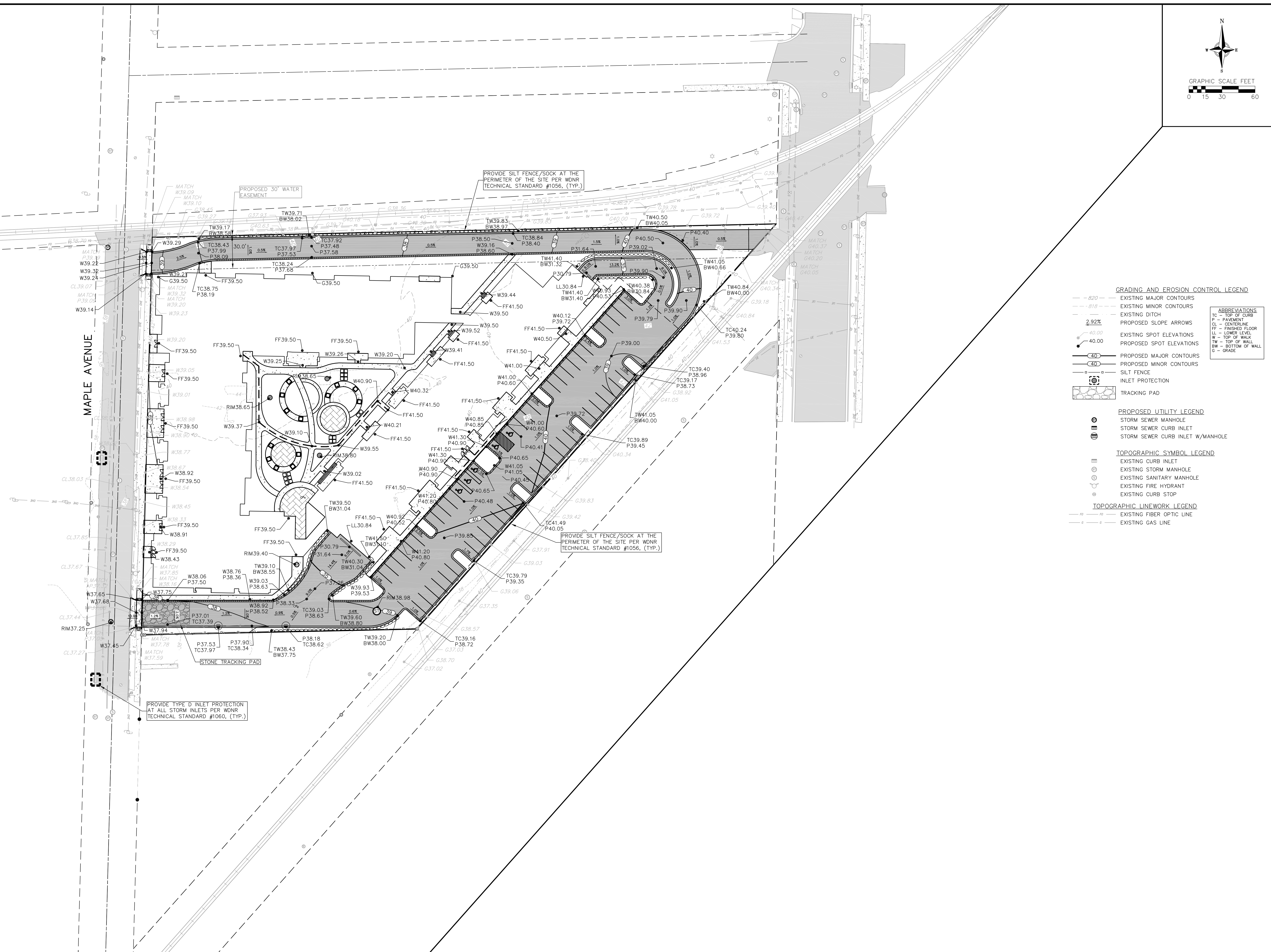
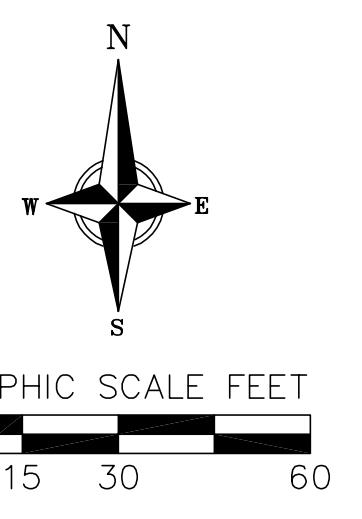
CHECKED

PROJECT NO. 140163

SHEET 3 OF 7

DWG. NO. C-300





**GRADING AND EROSION CONTROL LEGEND**

- - - 820 - - - EXISTING MAJOR CONTOURS
- - - 818 - - - EXISTING MINOR CONTOURS
- - - - - EXISTING DITCH
- 2.92% - - - PROPOSED SLOPE ARROWS
- 40.00 - - - EXISTING SPOT ELEVATIONS
- 40.00 - - - PROPOSED SPOT ELEVATIONS
- 40 - - - PROPOSED MAJOR CONTOURS
- 40 - - - PROPOSED MINOR CONTOURS
- S--- S --- SILT FENCE
- S--- S --- INLET PROTECTION
- S--- S --- TRACKING PAD

**ABBREVIATIONS**

- TC - TOP OF CURB
- P - PAVEMENT
- CL - CENTERLINE
- FF - FINISHED FLOOR
- LL - LOWER LEVEL
- W - TOP OF WALK
- BW - BOTTOM OF WALL
- G - GRADE

**PROPOSED UTILITY LEGEND**

- S--- S --- STORM SEWER MANHOLE
- S--- S --- STORM SEWER CURB INLET
- S--- S --- STORM SEWER CURB INLET W/MANHOLE

**TOPOGRAPHIC SYMBOL LEGEND**

- S--- S --- EXISTING CURB INLET
- S--- S --- EXISTING STORM MANHOLE
- S--- S --- EXISTING SANITARY MANHOLE
- S--- S --- EXISTING FIRE HYDRANT
- S--- S --- EXISTING CURB STOP

**TOPOGRAPHIC LINEWORK LEGEND**

- S--- S --- EXISTING FIBER OPTIC LINE
- S--- S --- EXISTING GAS LINE

**GRADING AND EROSION CONTROL PLAN**  
FOX HEAD RESIDENCES  
CITY OF WAUKESHA  
WAUKESHA COUNTY, WISCONSIN

REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE
1	12-01-14	1	12-01-14
2	12-30-14	2	12-30-14

SCALE AS SHOWN

DATE 10/29/14

DRAFTER JFEL

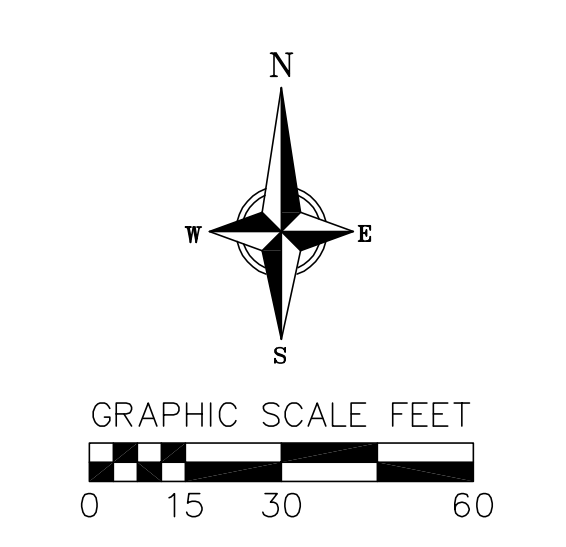
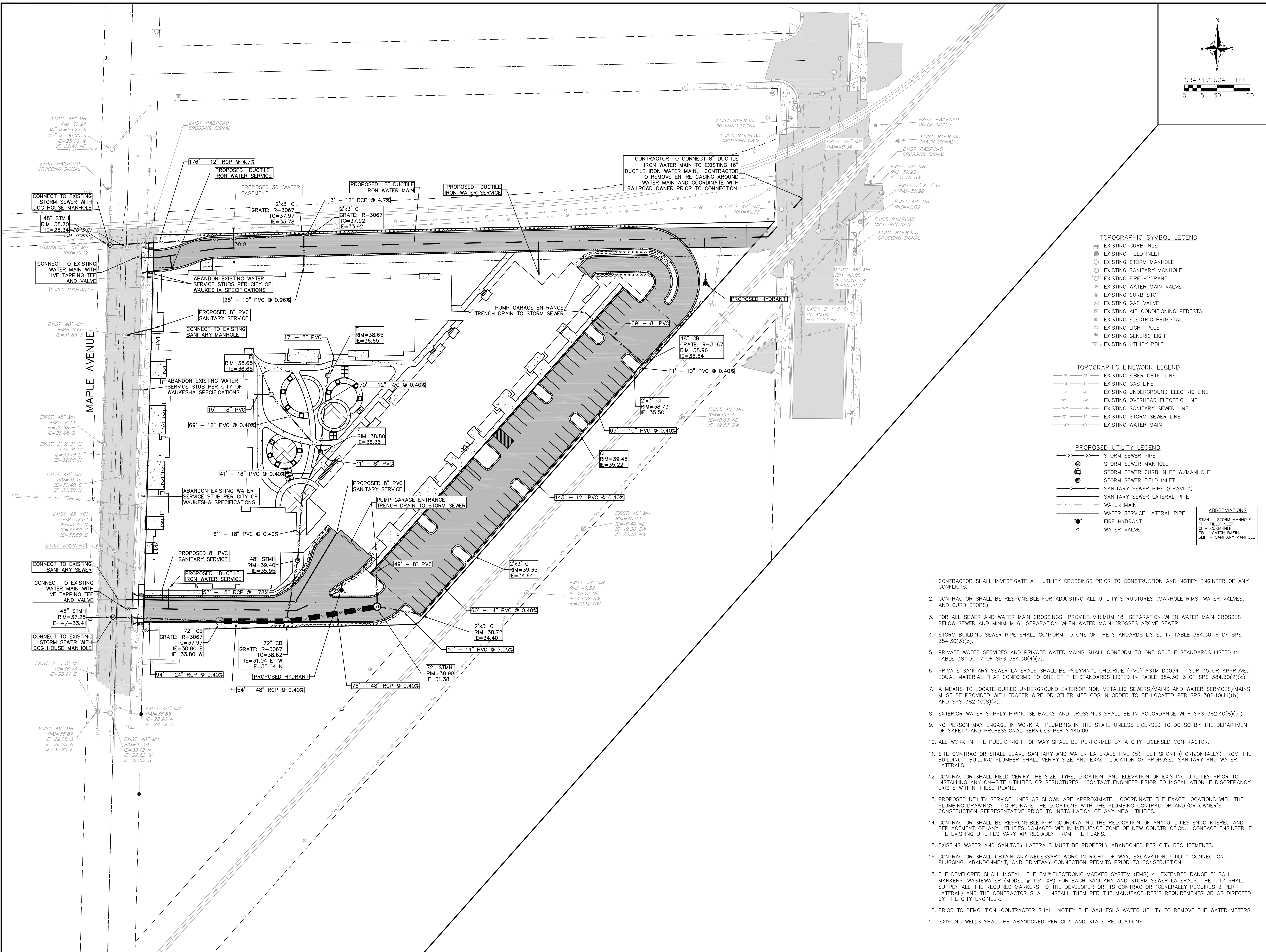
CHECKED

PROJECT NO. 140163

SHEET 4 OF 7

DWG. NO. C-400





**TOPOGRAPHIC SYMBOL LEGEND**

- EXISTING CURB INLET
- EXISTING FIELD INLET
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER MAIN VALVE
- EXISTING CURB STOP
- EXISTING GAS VALVE
- EXISTING AIR CONDITIONING PEDESTAL
- EXISTING ELECTRIC PEDESTAL
- EXISTING LIGHT POLE
- EXISTING GENERIC LIGHT
- EXISTING UTILITY POLE

**TOPOGRAPHIC LINWORK LEGEND**

- EXISTING FIBER OPTIC LINE
- EXISTING GAS LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- EXISTING WATER MAIN

**PROPOSED UTILITY LEGEND**

- STORM SEWER PIPE
- STORM SEWER MANHOLE
- STORM SEWER CURB INLET W/MANHOLE
- STORM SEWER FIELD INLET
- SANITARY SEWER PIPE (GRAVITY)
- SANITARY SEWER LATERAL PIPE
- WATER MAIN
- WATER SERVICE LATERAL PIPE
- FIRE HYDRANT
- WATER VALVE

**ABBREVIATIONS**

STMH	STORM MANHOLE
FI	FIELD INLET
CI	CURB INLET
CB	CATCH BASIN
SMH	SANITARY MANHOLE

1. CONTRACTOR SHALL INVESTIGATE ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY CONFLICTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL UTILITY STRUCTURES (MANHOLE RIMS, WATER VALVES, AND CURB STOPS).
3. FOR ALL SEWER AND WATER MAIN CROSSINGS: PROVIDE MINIMUM 18" SEPARATION WHEN WATER MAIN CROSSES BELOW SEWER AND MINIMUM 6" SEPARATION WHEN WATER MAIN CROSSES ABOVE SEWER.
4. STORM BUILDING SEWER PIPE SHALL CONFORM TO ONE OF THE STANDARDS LISTED IN TABLE 384.30-6 OF SPS 384.30(3)(c).
5. PRIVATE WATER SERVICES AND PRIVATE WATER MAINS SHALL CONFORM TO ONE OF THE STANDARDS LISTED IN TABLE 384.30-7 OF SPS 384.30(4)(d).
6. PRIVATE SANITARY SEWER LATERALS SHALL BE POLYVINYL CHLORIDE (PVC) ASTM D3034 - SDR 35 OR APPROVED EQUAL MATERIAL THAT CONFORMS TO ONE OF THE STANDARDS LISTED IN TABLE 384.30-3 OF SPS 384.30(2)(c).
7. A MEANS TO LOCATE BURIED UNDERGROUND EXTERIOR NON METALLIC SEWERS/MAINS AND WATER SERVICES/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED PER SPS 382.10(11)(h) AND SPS 382.40(8)(k).
8. EXTERIOR WATER SUPPLY PIPING SETBACKS AND CROSSINGS SHALL BE IN ACCORDANCE WITH SPS 382.40(8)(b).
9. NO PERSON MAY ENGAGE IN WORK AT PLUMBING IN THE STATE UNLESS LICENSED TO DO SO BY THE DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES PER S.145.06.
10. ALL WORK IN THE PUBLIC RIGHT OF WAY SHALL BE PERFORMED BY A CITY-LICENSED CONTRACTOR.
11. SITE CONTRACTOR SHALL LEAVE SANITARY AND WATER LATERALS FIVE (5) FEET SHORT (HORIZONTALLY) FROM THE BUILDING. BUILDING PLUMBER SHALL VERIFY SIZE AND EXACT LOCATION OF PROPOSED SANITARY AND WATER LATERALS.
12. CONTRACTOR SHALL FIELD VERIFY THE SIZE, TYPE, LOCATION, AND ELEVATION OF EXISTING UTILITIES PRIOR TO INSTALLING ANY ON-SITE UTILITIES OR STRUCTURES. CONTACT ENGINEER PRIOR TO INSTALLATION IF DISCREPANCY EXISTS WITHIN THESE PLANS.
13. PROPOSED UTILITY SERVICE LINES AS SHOWN ARE APPROXIMATE. COORDINATE THE EXACT LOCATIONS WITH THE PLUMBING DRAWINGS. COORDINATE THE LOCATIONS WITH THE PLUMBING CONTRACTOR AND/OR OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION OF ANY NEW UTILITIES.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE RELOCATION OF ANY UTILITIES ENCOUNTERED AND REPLACEMENT OF ANY UTILITIES DAMAGED WITHIN INFLUENCE ZONE OF NEW CONSTRUCTION. CONTACT ENGINEER IF THE EXISTING UTILITIES VARY APPRECIABLY FROM THE PLANS.
15. EXISTING WATER AND SANITARY LATERALS MUST BE PROPERLY ABANDONED PER CITY REQUIREMENTS.
16. CONTRACTOR SHALL OBTAIN ANY NECESSARY WORK IN RIGHT-OF WAY, EXCAVATION, UTILITY CONNECTION, PLUGGING, ABANDONMENT, AND DRIVEWAY CONNECTION PERMITS PRIOR TO CONSTRUCTION.
17. THE DEVELOPER SHALL INSTALL THE 3M™ELECTRONIC MARKER SYSTEM (EMS) 4" EXTENDED RANGE 5" BALL MARKERS-WASTEWATER (MODEL #1404-XR) FOR EACH SANITARY AND STORM SEWER LATERALS. THE CITY SHALL SUPPLY ALL THE REQUIRED MARKERS TO THE DEVELOPER OR ITS CONTRACTOR (GENERALLY REQUIRES 2 PER LATERAL) AND THE CONTRACTOR SHALL INSTALL THEM PER THE MANUFACTURER'S REQUIREMENTS OR AS DIRECTED BY THE CITY ENGINEER.
18. PRIOR TO DEMOLITION, CONTRACTOR SHALL NOTIFY THE WAUKESHA WATER UTILITY TO REMOVE THE WATER METERS.
19. EXISTING WELLS SHALL BE ABANDONED PER CITY AND STATE REGULATIONS.

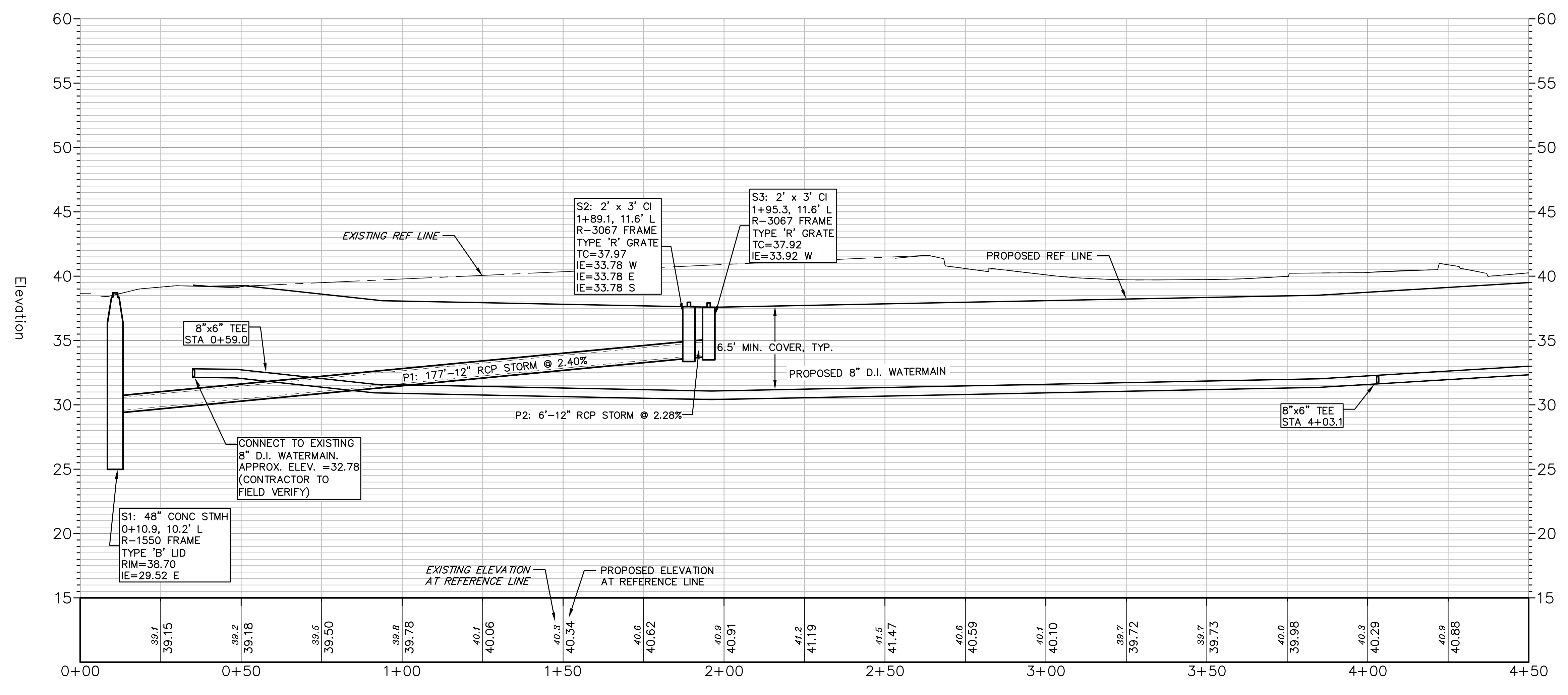
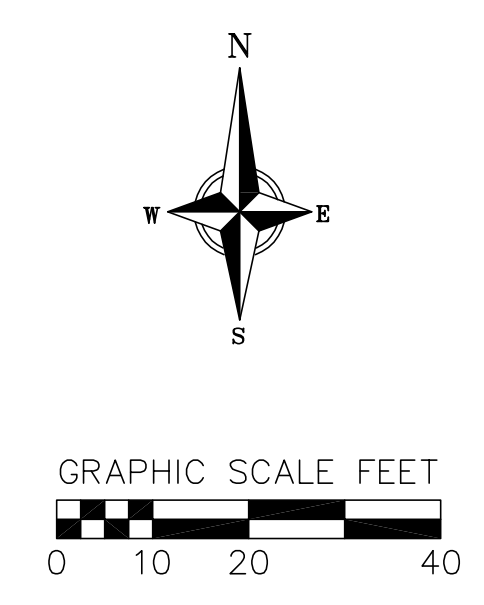
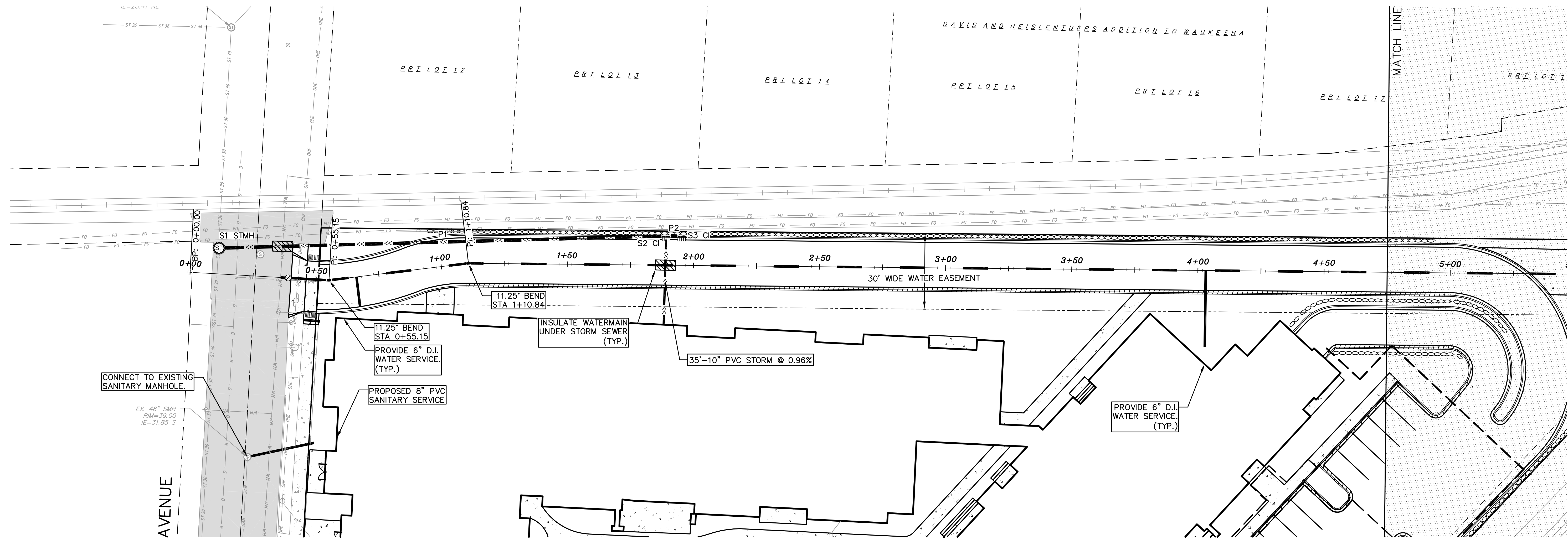
**viebicher**  
 planners | engineers | advisors  
 REEDSBURG - MADISON - WAUKESHA  
 999 Progressive Drive, Reedburg, WI 53151  
 Phone: (815) 824-2332 Fax: (815) 824-2333

**UTILITY PLAN**  
 FOX HEAD RESIDENCES  
 CITY OF WAUKESHA  
 WAUKESHA COUNTY, WISCONSIN

NO.	DATE	REVISIONS	REMARKS
1	12-01-14	Rev. Prelim. Plans	
2	12-30-14	Rev. Prelim. Plans	

SCALE: AS SHOWN  
 DATE: 10/29/14  
 DRAFTER: JFL  
 CHECKED:  
 PROJECT NO. 140163  
 SHEET  
 5 OF 7  
 DWG. NO. C-500

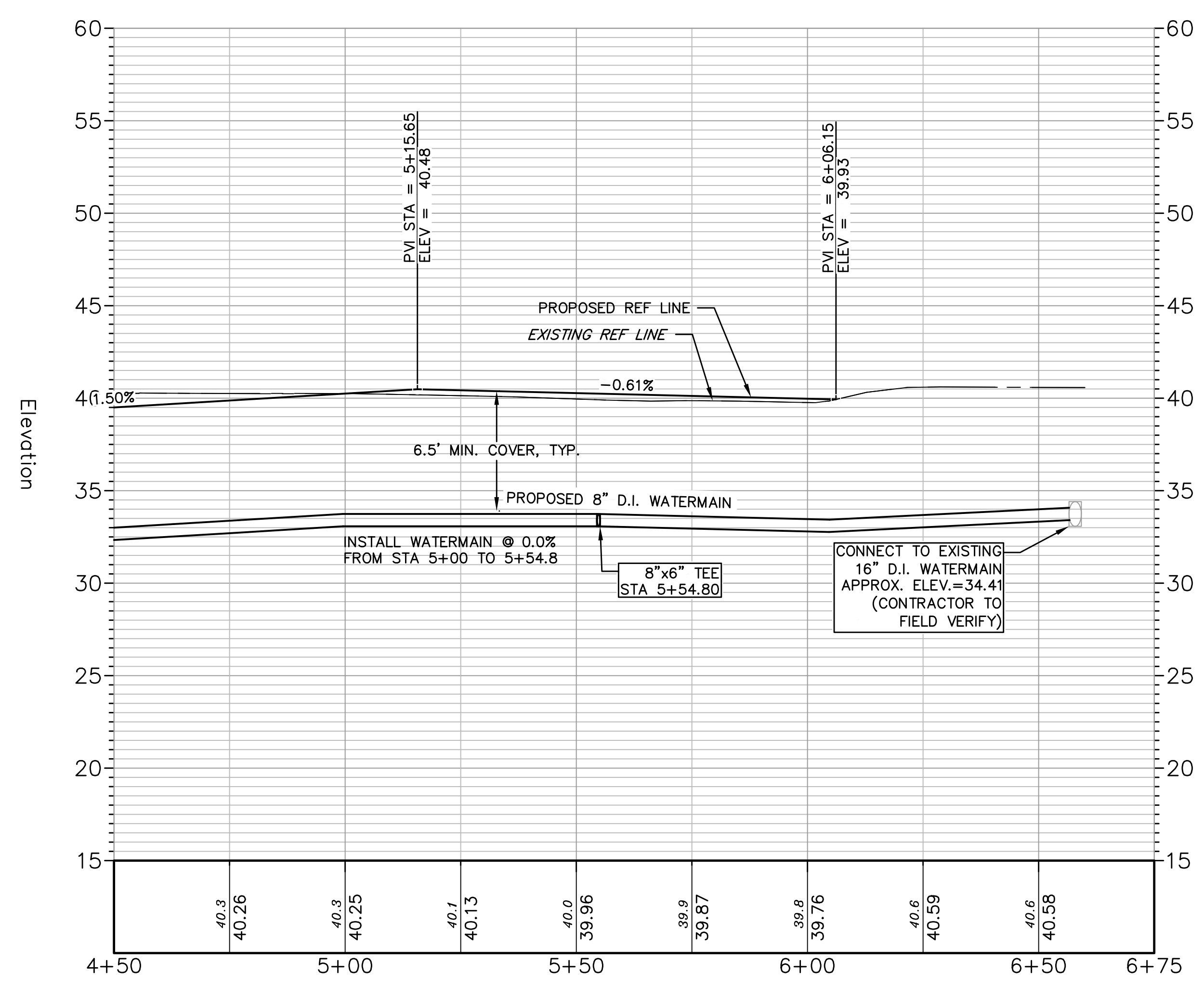
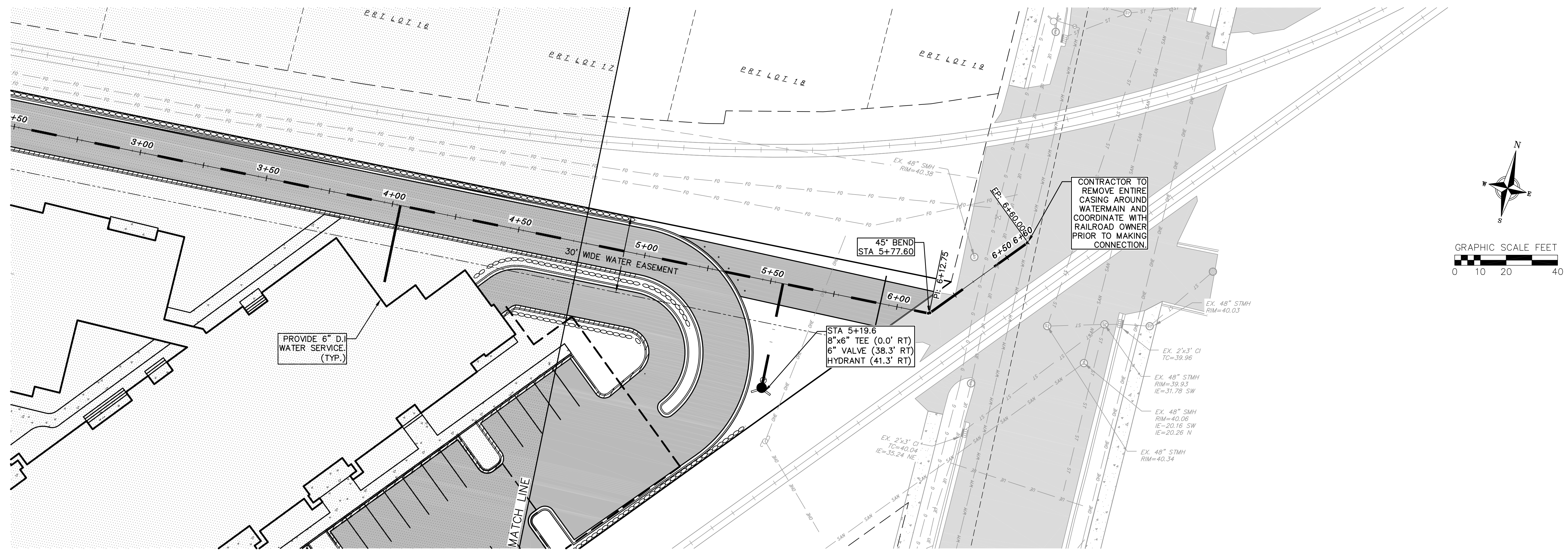




REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE

SCALE AS SHOWN  
 DATE 12/29/14  
 DRAFTER CSHA  
 CHECKED RKOL  
 PROJECT NO. 140163  
 SHEET 6 OF 7  
 DWG. NO.





REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE

SCALE AS SHOWN  
 DATE 12/29/14  
 DRAFTER CSHA  
 CHECKED RKOL  
 PROJECT NO. 140163  
 SHEET 7 OF 7  
 DWG. NO.







# Memo

December 30, 2014

**TO:** Mike Grulke, PE, PTOE, City of Waukesha Traffic Engineer

**FR:** Pat Hawley, P.E., PTOE  
Justin Schueler, P.E.

**CC:** Jon Hepner, T. Wall Enterprises, LLC  
Zi Sen Chong, T. Wall Enterprises, LLC  
Mark Herr, AIA, NCARB, Plunkett Raysich Architects, LLP

**RE:** Fox Head Residences  
Waukesha, WI  
Traffic Impact Analysis

## Introduction

Fox Head Residences is a 245-unit apartment development proposed on Maple Avenue in the City of Waukesha, Wisconsin. R.A. Smith National was retained to conduct a Traffic Impact Analysis (TIA) for the proposed development. This memorandum documents the procedures, findings, and recommendations of the analysis.

## Study Area

The proposed development will be generally located north of College Avenue, east of Maple Avenue, and south of Williams Street, as shown in Exhibit 1.

### *Site Access*

Development access will be provided with two full-access driveways on Maple Avenue. Based on the anticipated impacts of the development, the study area included the following intersections.

- Maple Avenue with College Avenue
- Maple Avenue with Williams Street
- Maple Avenue with proposed access driveway
- Williams Street with Grand Avenue

*Maple Avenue* is a two-lane, undivided local roadway with a north-south orientation. The posted speed limit is 25 miles per hours (mph). Annual average daily traffic (AADT) volumes were not available. Sidewalks are provided on both sides of the roadway. Parking is allowed on the northbound side, except near the railroad crossings. No parking is allowed on the southbound side.

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Deliver excellence, vision and responsive service to our clients.



*Grand Avenue* is a two-lane, undivided collector roadway with a north-south orientation. The posted speed limit is 25 miles per hours (mph). Year 2012 AADT volumes were 5,900 vehicles per day (vpd). Sidewalks and on-road bike lanes are provided on both sides of the roadway. Parking is allowed on the southbound side south of Williams Street and on the northbound side to the north, except near the railroad crossings.

*College Avenue* is a two-lane, undivided collector roadway with an east-west orientation. The posted speed limit is 25 miles per hours (mph). Year 2012 AADT volumes ranged from 8,000 vpd east of Grand Avenue to 8,800 vpd west of Maple Avenue. Sidewalks are provided on both sides of the roadway. Parking is allowed on the eastbound side. No parking is allowed on the westbound side.

*Williams Street* is a short, two-lane, undivided local roadway with an east-west orientation (extends one block from Maple Avenue to Grand Avenue). The statutory speed limit is 25 miles per hours (mph). AADT volumes were not available. Sidewalks are provided on both sides of the roadway. Parking is allowed on both sides of the roadway.

### **Existing Conditions**

The development site currently has several vacant buildings that previously housed office and light industrial land uses. A recent site aerial is shown in Exhibit 2. R.A. Smith National collected existing roadway geometrics, speed limits, and traffic control information in the study area, as shown in Exhibit 3.

Weekday peak period turning movement counts were collected at the study intersections in October of 2014. The weekday morning and evening peak hours were found to be 7:00 am to 8:00 am and 3:15 pm to 4:15 pm, respectively. The existing 2014 traffic volumes were used to represent Year 2015 background traffic, as shown in Exhibit 4.

Les Paul Middle School is located two blocks to the north of the proposed Fox Head Residences. The school starts at 7:30 am and releases at 2:36 pm. Therefore, the morning peak traffic hour used in the study overlaps with the school arrival period. The afternoon peak hour used in the study occurs after the school release.

Background traffic information including volume parameters (peak hour factor, heavy vehicle percentage) and existing traffic counts is provided in Appendix A.

### ***Year 2015 Background Traffic Conditions***

The Year 2015 background peak hour traffic and existing geometrics were analyzed at the study intersections in Synchro using the procedures set forth in the *2010 Highway Capacity Manual* (HCM). Level of Service (LOS) is a quantitative measure from the HCM referring to the overall quality of flow at an intersection. LOS ranges from very good, represented by LOS “A,” to very poor, represented by LOS “F.” For analysis and design purposes, LOS “D” was used to define acceptable peak hour operating conditions. Table 1 summarizes the results of this analysis.



**Table 1**  
**Year 2015 Background Traffic**  
**Weekday Peak Hour Operating Conditions**

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Northbound			Southbound			Eastbound			Westbound		
			L	T	R	L	T	R	L	T	R	L	T	R
Maple Avenue with College Avenue	One-Way Stop Control	AM	-	-	-	B	-	B	A	A	-	-	A	A
		PM	-	-	-	B	-	B	A	A	-	-	A	A
Maple Avenue with Williams Street	One-Way Stop Control	AM	-	A	A	A	A	-	-	-	-	A	-	A
		PM	-	A	A	A	A	-	-	-	-	A	-	A
Williams Street with Grand Avenue	Two-Way Stop Control	AM	A	A	A	A	A	A	B	B	B	B	B	B
		PM	A	A	A	A	A	A	B	B	B	B	B	B

The (-) symbol represents movements that are not possible

As shown in Table 1, all movements operate acceptably at LOS B or better at the study intersections under the Year 2015 background conditions. Year 2015 background traffic 95<sup>th</sup> percentile queues at the study intersections are shown in Exhibit 5. Queues are minimal at the study intersections under background conditions. Note that queues were observed at the railroad crossings when a train was present and when a school bus stopped at the crossing. At times, these queues would reach up to 12 vehicles long and extend through the adjacent study intersection. However, these queues would dissipate quickly once the crossing was clear.

Year 2015 background traffic Synchro analysis output reports are provided in Appendix B.

#### *Pedestrian and Bicycle Activity*

Pedestrian and bicycle peak period crossing volumes were collected at the study intersections and along Grand Avenue (Arlington Street to the second driveway south of Williams Street). The peak hour pedestrian and bicycle volumes at the study intersections and midblock area are shown in Exhibit 6.

The majority of pedestrians cross Grand Avenue at unmarked, midblock locations. The primary midblock crossing locations and routes are shown in Exhibit 7.

#### *Railroad Crossings*

Two separate railroad lines, Wisconsin and Southern (WSOR) and Canadian National (CN), pass through the study area (see Exhibit 3). The WSOR line crosses both Maple Avenue (110 feet south of Williams Street) and Grand Avenue (75 feet south of Williams Street). About two trains travel through the study area per day on this line. The crossing on Maple Avenue is equipped with railroad crossing signals but no gates. The crossing on Grand Avenue operates in conjunction with the closely spaced CN railroad line and is equipped with one set of railroad crossing signals and gates.

The CN line also crosses both Maple Avenue (70 feet north of College Avenue) and Grand Avenue (140 feet south of Williams Street). About 25 trains travel through the study area per day on this line. The crossing near College Avenue is equipped with railroad crossing signals, gates, and a median restriction device. As previously noted, the Grand Avenue crossing operates in conjunction with the closely spaced WSOR line.



Crossing gates (when present) extend over the approach travel lanes only and do not extend over the sidewalk.

## Future Conditions

The following sections summarize the expected traffic impacts associated with the proposed Fox Head Residences development.

### *Proposed Development*

The proposed development will include a single, 245-unit apartment building. The existing on-site buildings will be removed. Access will be provided with two full-access driveways on Maple Avenue. The southern driveway will be the primary access, and it is proposed to be located approximately 500' north of College Avenue. The northern driveway will be used as a secondary access. Due to the location of the parking in relation to the northern driveway and the internal roadway layout, the northern driveway is expected to have minimal traffic. All parking will be accommodated onsite with surface lots and an underground garage. A pedestrian railroad crossing is proposed at the northeast corner of the site to provide connection to sidewalk along Grand Avenue. One emergency vehicle access point is proposed to Grand Avenue. The proposed site plan is shown in Exhibit 8.

### *Trip Generation*

Proposed development traffic was estimated using ITE *Trip Generation*, 9<sup>th</sup> edition. Table 2 summarizes the new development trips. Due to the development's proximity to Carroll University, heavy pedestrian activity is expected. For purposes of this vehicular analysis, 20% of the trips were assumed to be pedestrian trips.

**Table 2  
Trip Generation  
Fox Head Residences**

Land Use	ITE Code	Size	Weekday Daily (rate)	AM Peak Hour Trips (rate)			PM Peak Hour Trips (rate)		
				In	Out	Total	In	Out	Total
Apartment Building	220	245 Units	1630 (6.65)	25 (20%)	100 (80%)	125 (0.51)	100 (65%)	50 (35%)	150 (0.62)
<i>Mode Split Reduction: 20%</i>			325	5	20	25	25	5	30
<b>Total New Vehicular Trips</b>			<b>1305</b>	<b>20</b>	<b>80</b>	<b>100</b>	<b>75</b>	<b>45</b>	<b>120</b>

Note: The mode split reduction reflects pedestrian trips associated with student tenants. Actual pedestrian trips may be greater; however conservative vehicular volumes were used for this analysis.

As shown in Table 2, the apartment building development is expected to generate 100 vehicular trips (20 in/80 out) during the weekday morning peak and 120 vehicular trips (75 in/45 out) during the weekday evening peak.

### *Trip Distribution and Assignment*

The trip distribution pattern was developed based on daily traffic on the surrounding street network, existing turning movements, general development in the area, and input from the City. Trip distribution used for the development is provided below and in Exhibit 9.



- To/from the north on Maple Avenue: 20%
- To/from the north on Grand Avenue: 20%
- To/from the west on College Avenue: 25%
- To/from the east on College Avenue: 15%
- To/from the south on Grand Avenue: 20%

New trips generated by the proposed development were assigned to the study area intersections based on the trip distribution and are shown in Exhibit 10.

*Year 2015 Total Traffic Conditions*

Year 2015 total traffic volumes were determined by summing the Year 2015 background traffic volumes (Exhibit 4) and the development new trips (Exhibit 10), and are shown in Exhibit 11.

Year 2015 total traffic volumes and existing geometrics were used to evaluate the study intersections during the weekday morning and evening peak hours. Table 3 summarizes the results of this analysis.

**Table 3  
Year 2015 Total Traffic  
Weekday Peak Hour Operating Conditions**

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Northbound			Southbound			Eastbound			Westbound		
			L	T	R	L	T	R	L	T	R	L	T	R
Maple Avenue with College Avenue	One-Way Stop Control	AM	-	-	-	C	-	C	A	A	-	-	A	A
		PM	-	-	-	B	-	B	A	A	-	-	A	A
Maple Avenue with Williams Street	One-Way Stop Control	AM	-	A	A	A	A	-	-	-	-	B	-	B
		PM	-	A	A	A	A	-	-	-	-	A	-	A
Maple Avenue with Northern Driveway	One-Way Stop Control	AM	-	A	A	A	A	-	-	-	-	A	-	A
		PM	-	A	A	A	A	-	-	-	-	A	-	A
Maple Avenue with Southern Driveway	One-Way Stop Control	AM	-	A	A	A	A	-	-	-	-	B	-	B
		PM	-	A	A	A	A	-	-	-	-	A	-	A
Williams Street with Grand Avenue	One-Way Stop Control	AM	A	A	A	A	A	A	B	B	B	B	B	B
		PM	A	A	A	A	A	A	B	B	B	B	B	B

The (-) symbol represents movements that are not possible

As shown in Table 3, all movements are expected to operate acceptably at LOS C or better at the study intersections under the total traffic conditions. Year 2015 total traffic 95<sup>th</sup> percentile queues are shown in Exhibit 12. Queues are expected to remain minimal at the study area intersections. Queues at the railroad crossings are expected to continue to occur when a train is present or a school bus stops at a crossing.

Year 2015 total traffic Synchro analysis output reports are provided in Appendix B.

*Proposed Development Pedestrian Traffic*

Traffic is expected to be generated between the Fox Head Residences apartments and Carroll University. Existing pedestrian facilities along Maple Avenue, Williams Street, and College Avenue provide a connection between the development site and the university. A more direct route involves the proposed pedestrian railroad crossing at the northeast corner of the site to



reach Grand Avenue. Under either scenario, pedestrians traveling between the development site and the university will encounter at least one railroad crossing.

### *Railroad Crossings*

TerraTec Engineers, Inc. is conducting two railroad evaluations. The first assesses the impact of the proposed building on driver sight lines at the adjacent at-grade railroad crossings on Maple Avenue and Grand Avenue. The sight line evaluation has been completed and results were summarized in a separate memo completed November 5, 2014. Generally, the proposed building is not expected to negatively impact driver sight lines at the adjacent railroad crossings.

The second evaluation assesses the potential of the pedestrian railroad crossing to provide a safe crossing to reach Grand Avenue. This evaluation is ongoing and results will be summarized in a separate memo.

## **Recommendations and Conclusions**

### *Roadway Improvements*

The existing intersections are expected to have sufficient capacity to accommodate vehicular traffic associated with the proposed development. Recommended improvements at the proposed site access are summarized below.

#### Proposed Access Driveway

- Construct a full-access, stop control driveway approximately 500' north of College Avenue
- The east (exiting) approach shall be stop controlled with a single travel lane. Maple Avenue shall remain free-flow.

### *Railroad*

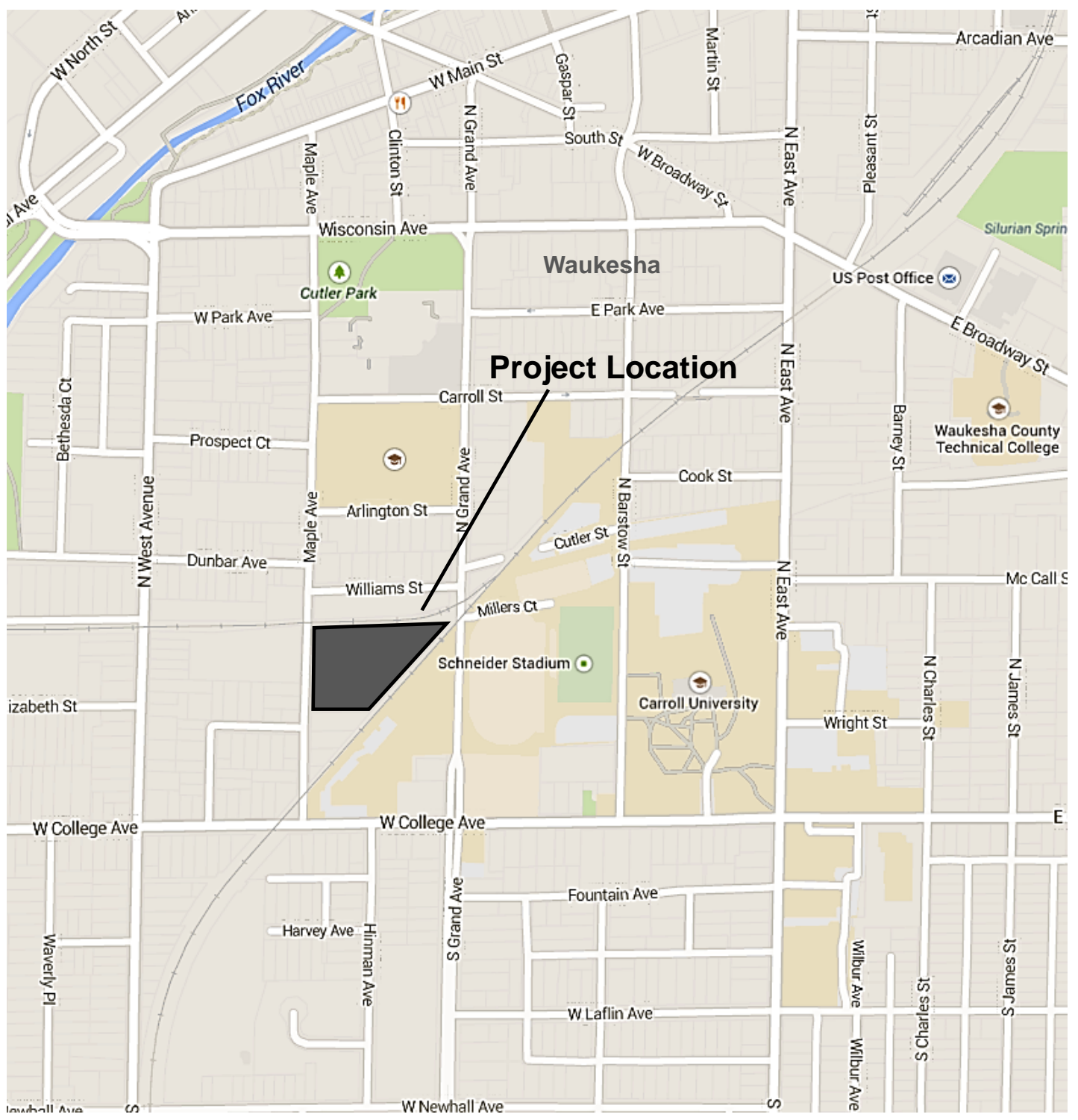
TerraTec is currently evaluating the pedestrian railroad crossing, and their results will be summarized separately in a future memo.

### *Pedestrian Improvements*


The majority of pedestrians currently cross Grand Avenue at unmarked, midblock locations (see Exhibits 6 and 7). Independent of the Fox Head Residences development, the City and Carroll University could evaluate a midblock pedestrian crossing along Grand Avenue.

TerraTec's future report will identify potential pedestrian crossing options and their feasibility.





**Legend**

 = Fox Head Residences Redevelopment Site


**Project Location**

Exhibit  
**1**





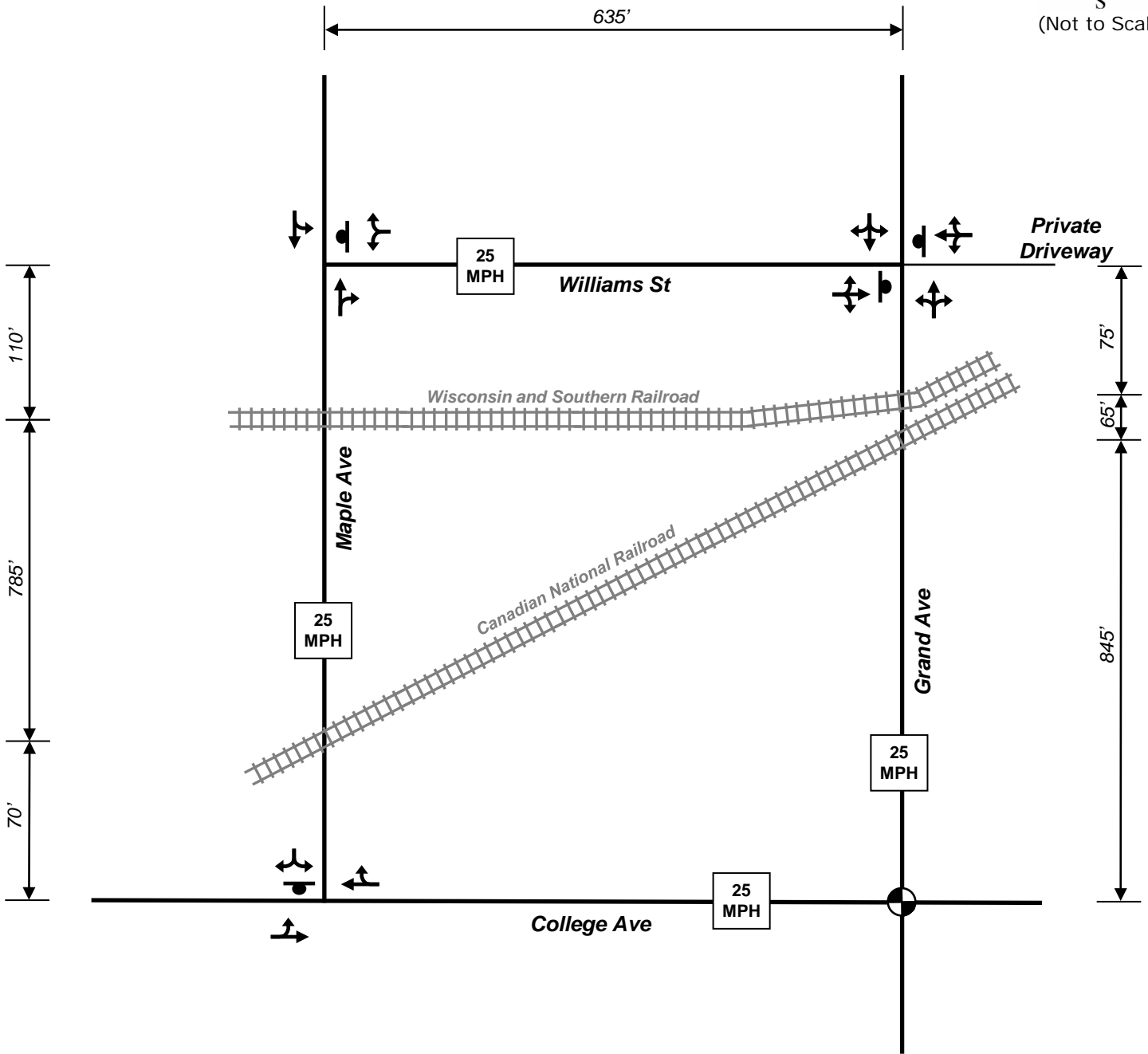
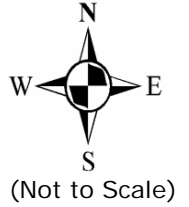
**Legend**

 = Fox Head Residences Redevelopment Site

**Recent Site Aerial**

Exhibit  
**2**





**Legend**

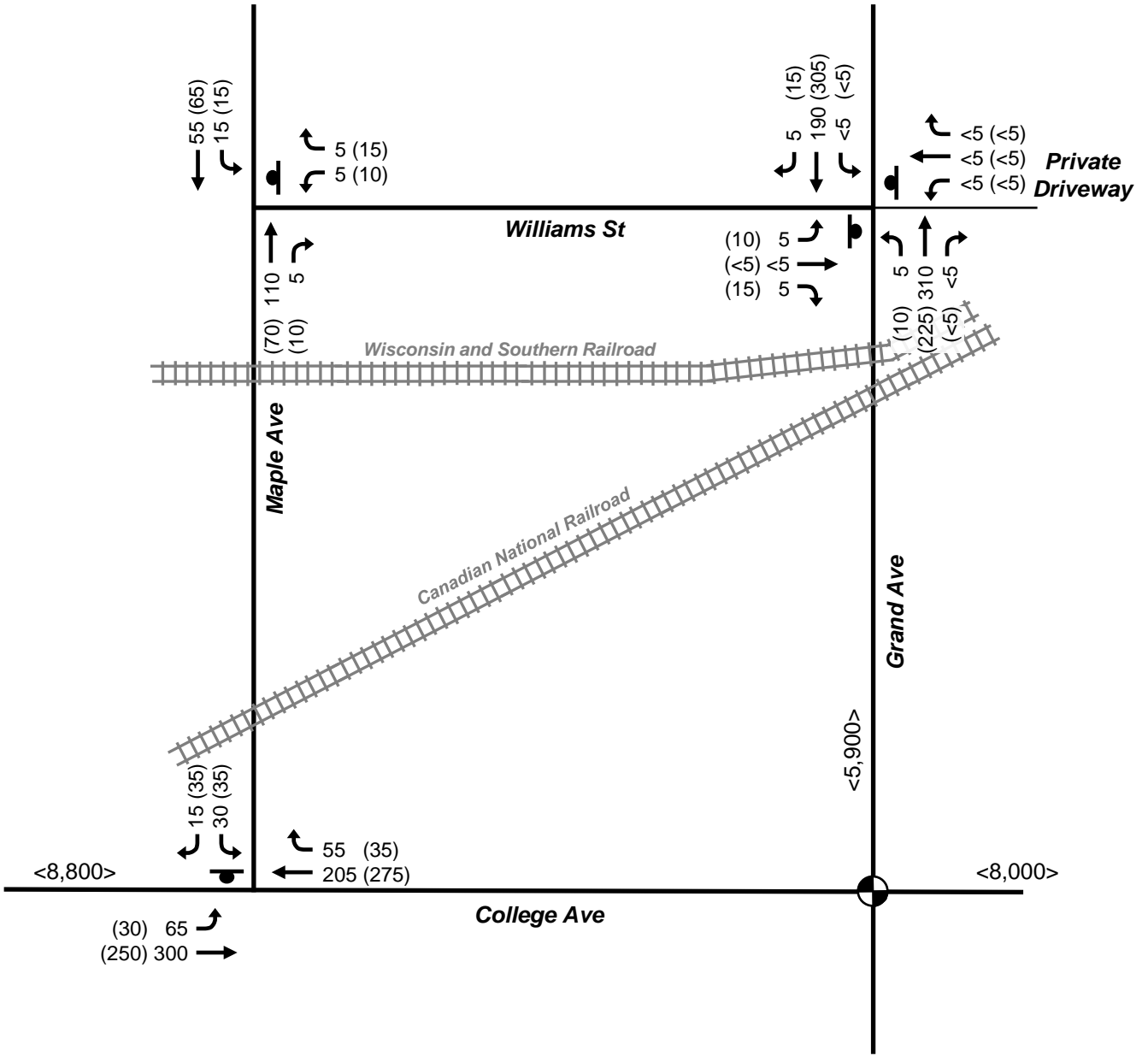
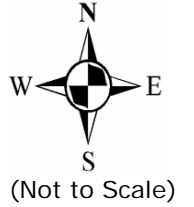
- = Railroad
- = Lane Geometry
- = Posted Speed Limit
- = Roadway Dimension (feet)
- = Stop Sign
- = Traffic Signal

Note: Intersection spacing dimensions are approximate and measured from center-to-center of intersections.

**Existing Transportation System**

Exhibit  
**3**





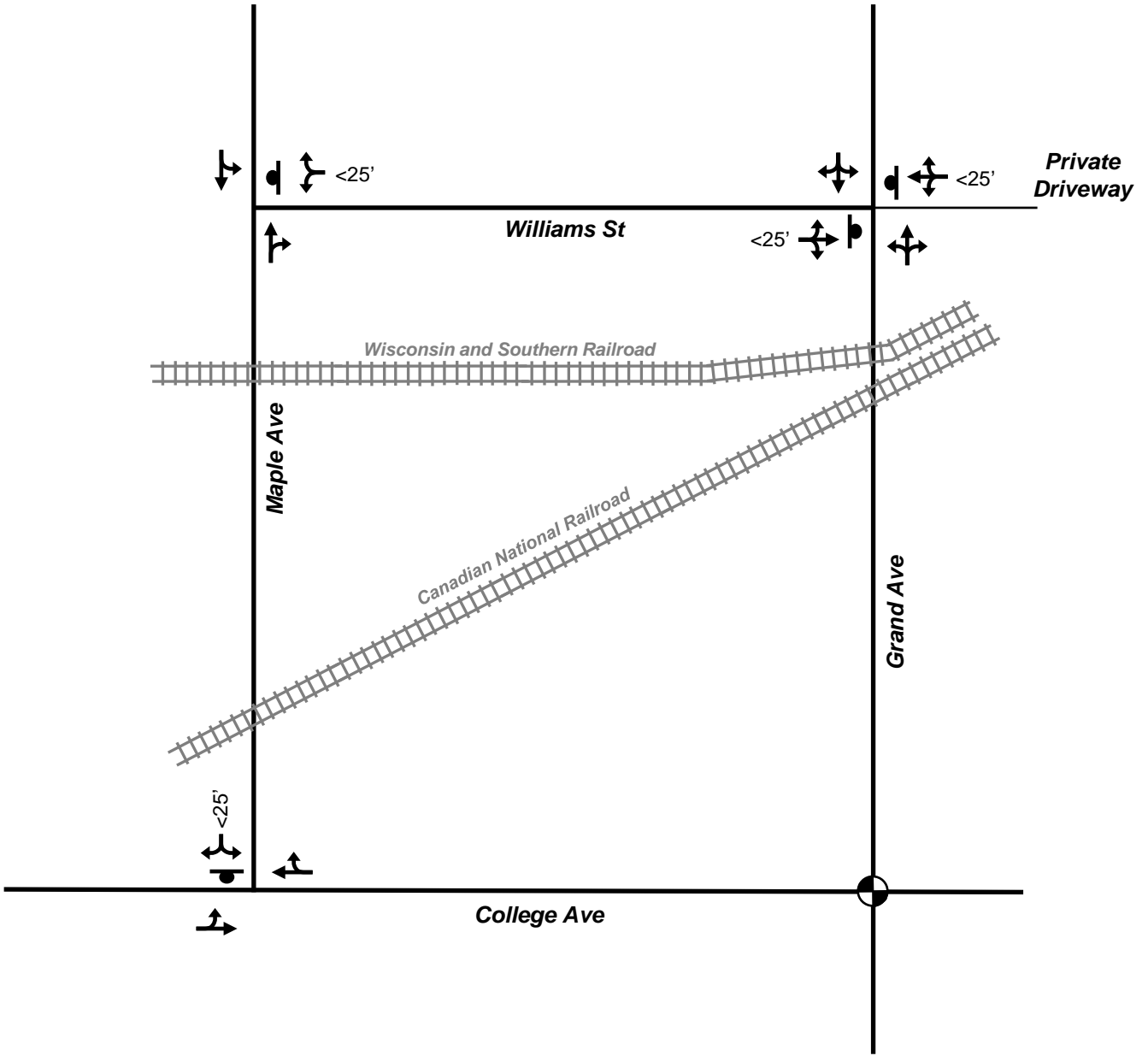
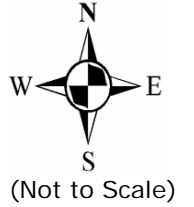
**Legend**

- = Stop Sign
- = Traffic Signal
- = Railroad
- <XX> = Average Annual Daily Traffic
- XX = Weekday AM Peak Hour Volume (7:00 – 8:00 am)
- (XX) = Weekday PM Peak Hour Volume (3:15 – 4:15 pm)
- (XX) = Weekday PM Peak Hour Pedestrian and Bicycle Crossing Volume (3:15 – 4:15 pm)

**Year 2015 Background Traffic Volumes**

Exhibit  
**4**





**Legend**

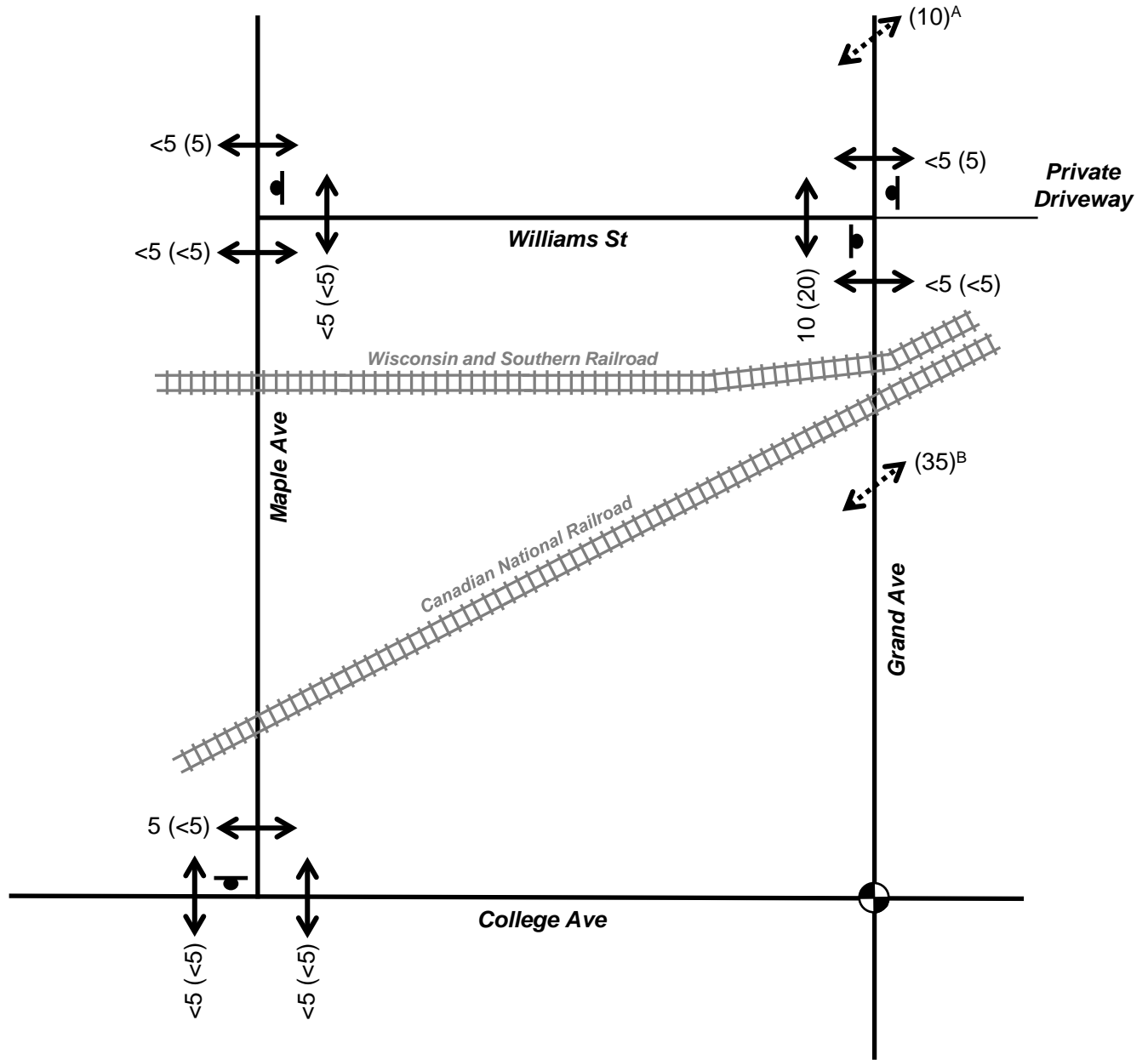
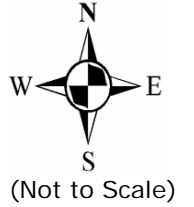
-  = Stop Sign
-  = Traffic Signal
- XX' = Maximum Queue (feet)
-  = Railroad
-  = Travel Lane

Note: Queues were observed at the railroad crossings when a train was present and when a school bus stopped at the crossing. At times, these queues would extend through the adjacent study intersection but would dissipate quickly once the crossing was clear.

**Year 2015 Background Traffic  
Maximum Queue Lengths**

Exhibit  
**5**





**Legend**

- = Stop Sign
- = Traffic Signal
- (XX) = Weekday PM Peak Hour Pedestrian and Bicycle Midblock Crossing Volume (3:15 – 4:15 pm)
- XX = Weekday AM Peak Hour Pedestrian and Bicycle Intersection Crossing Volume (7:00 – 8:00 am)
- (XX) = Weekday PM Peak Hour Pedestrian and Bicycle Intersection Crossing Volume (3:15 – 4:15 pm)
- = Railroad

Notes

- A. Pedestrian/Bicycle midblock volume includes crossings occurring between Williams Street and Arlington Street.
- B. Pedestrian/Bicycle midblock volume includes crossings occurring between Williams Street and the second driveway to the south.

**Background Pedestrian and Bicycle Crossing Volumes**

Exhibit  
**6**





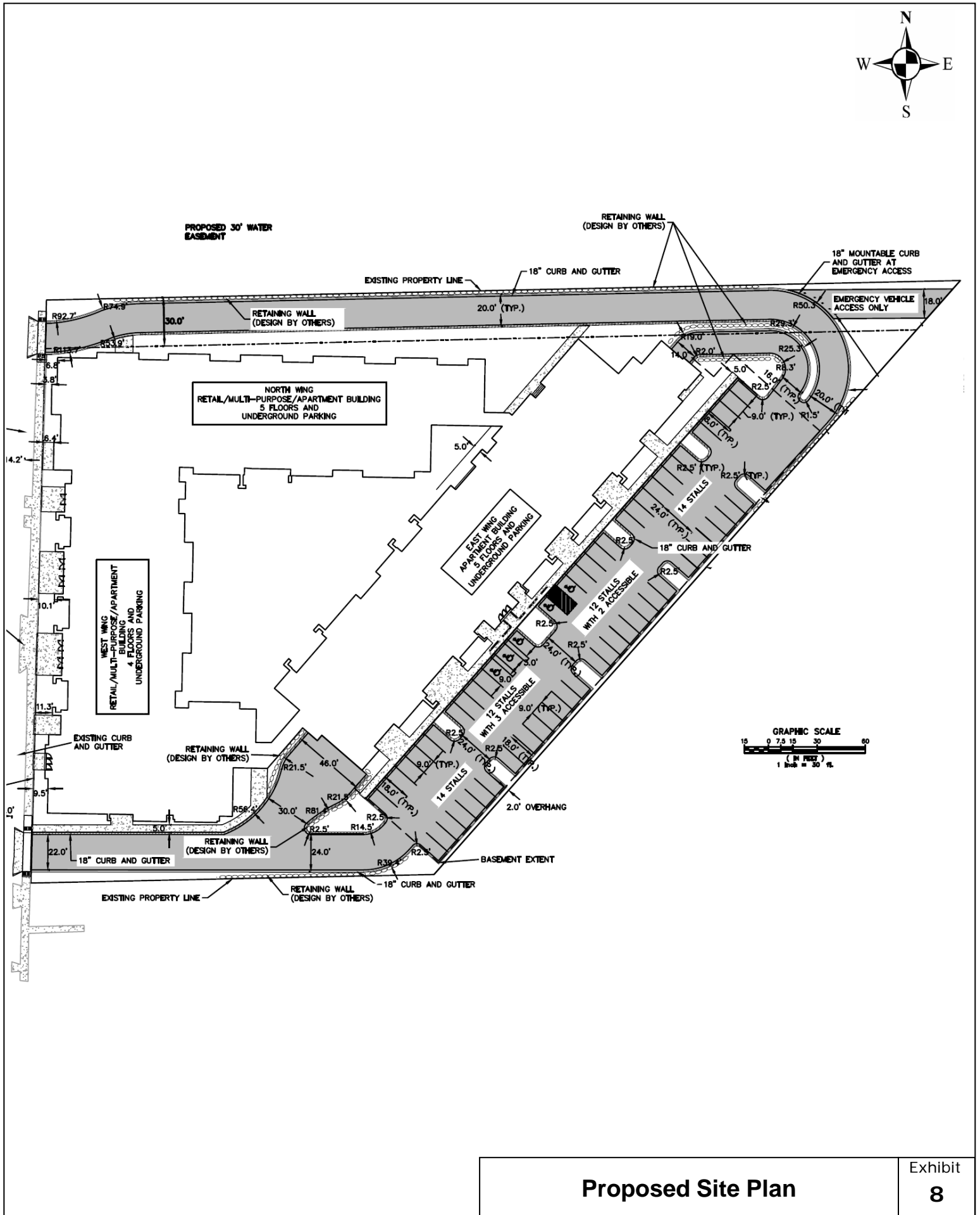
**Legend**

←...→ = Primary Pedestrian Crossing Location

**Observed Grand Avenue Primary  
Midblock Pedestrian Crossing  
Locations and Routes  
near the Development Site**

Exhibit  
**7**

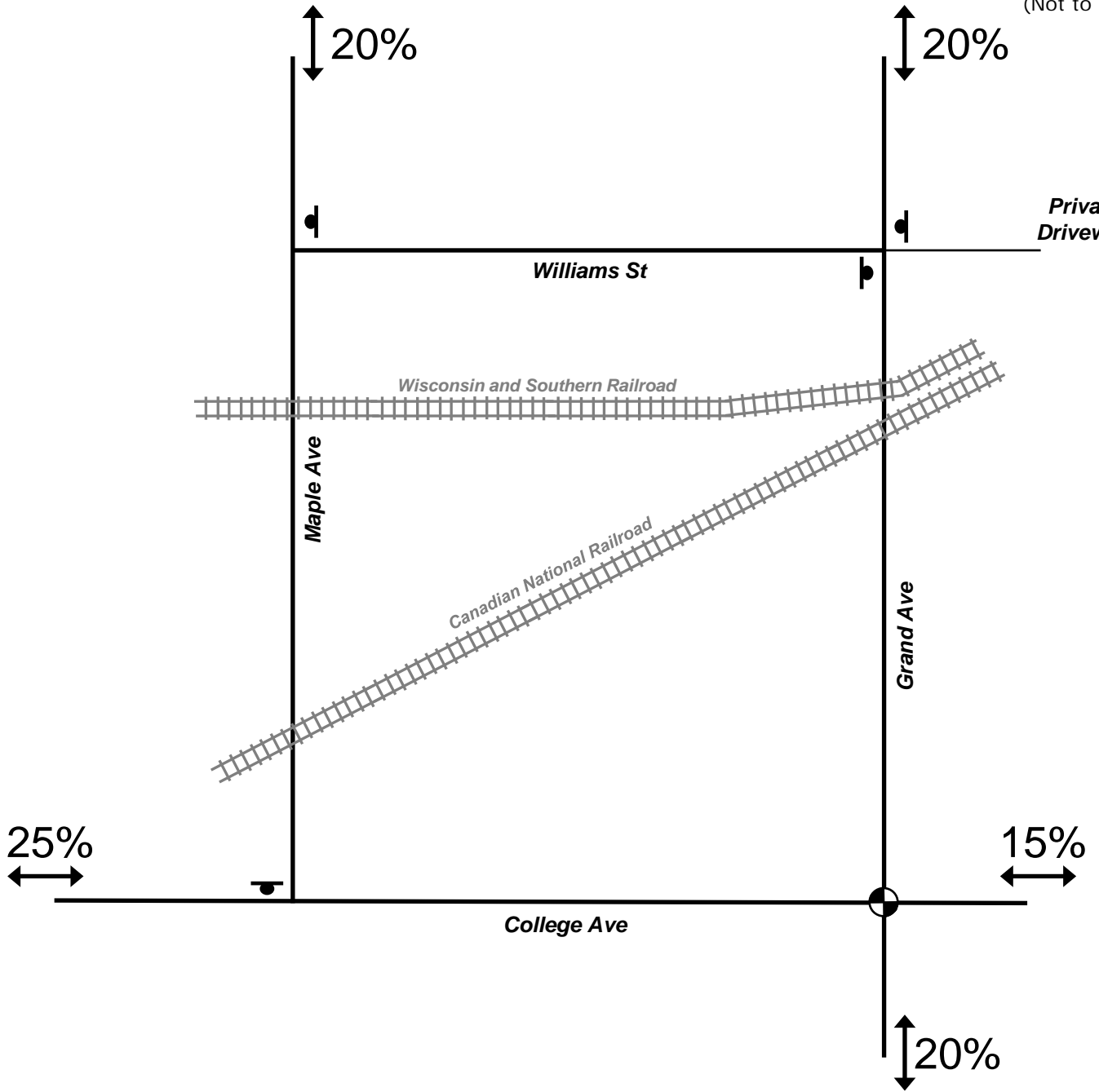
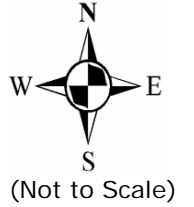




Proposed Site Plan

Exhibit 8





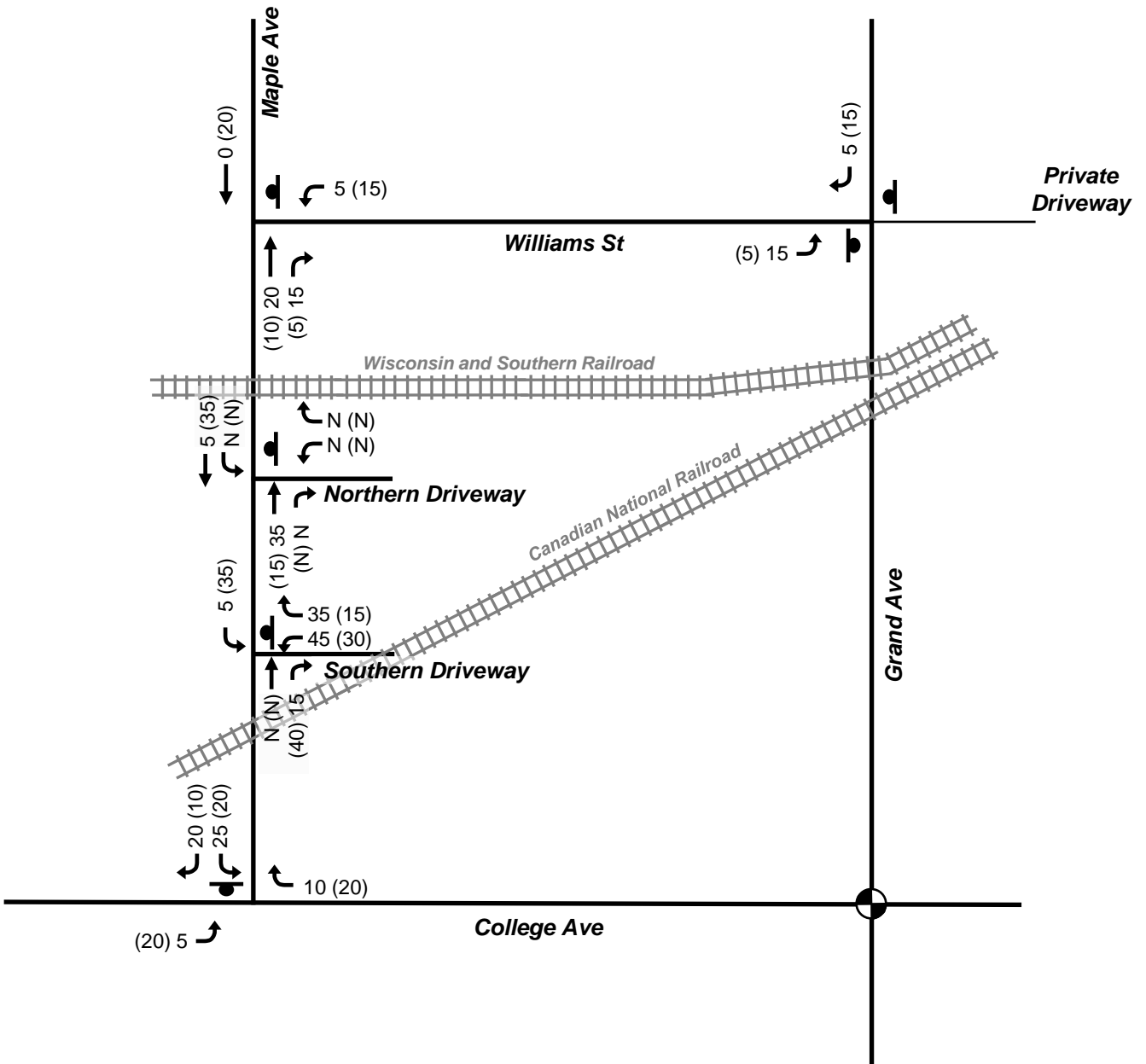
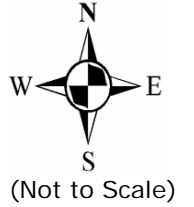
**Legend**

- = Stop Sign
- = Traffic Signal
- = Railroad
- XX % = Trip Distribution

**Trip Distribution**

Exhibit  
**9**





**Legend**

= Stop Sign      = Traffic Signal

= Railroad

XX = Weekday AM Peak Hour Volume (7:00 – 8:00 am)

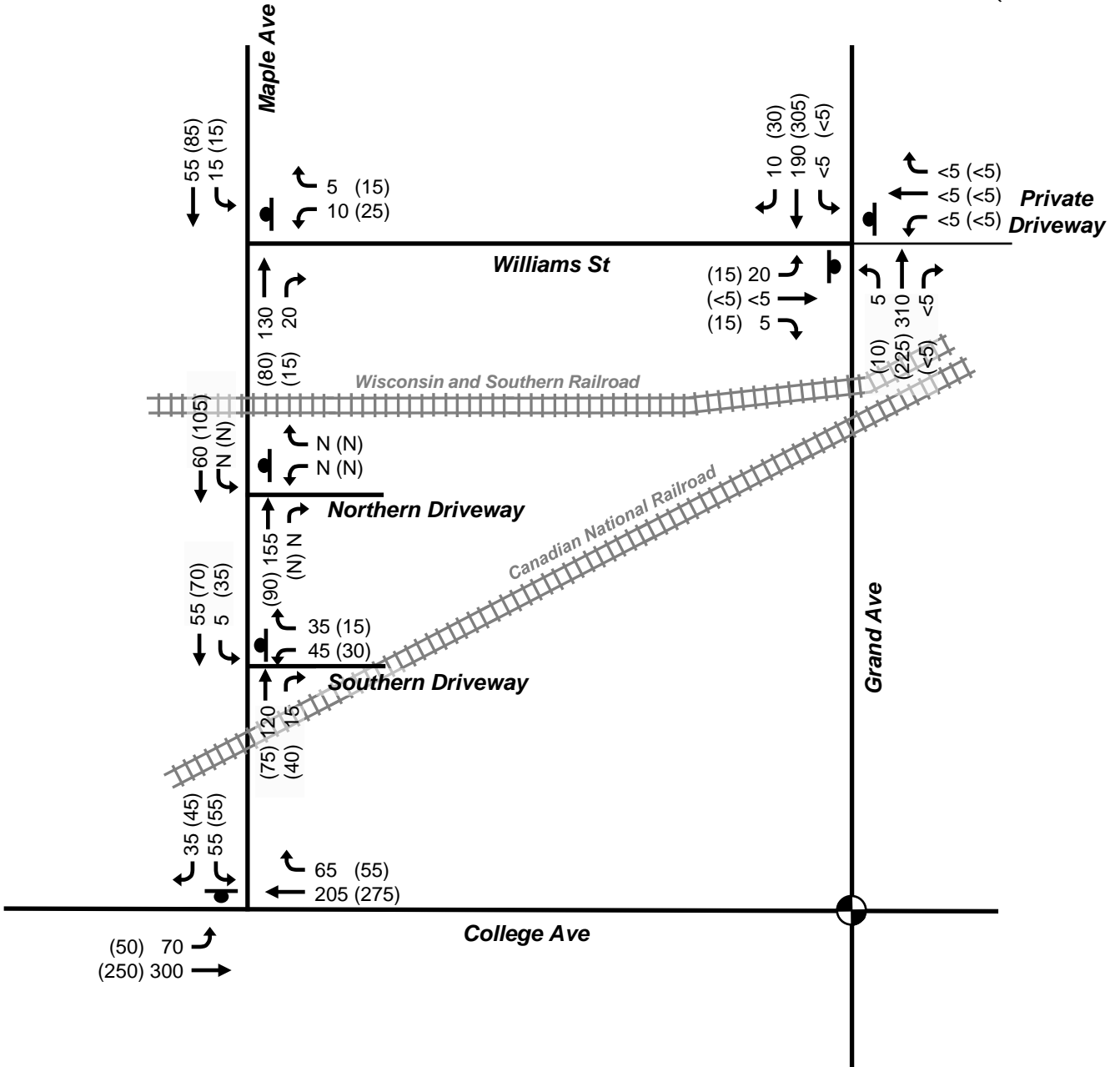
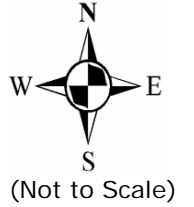
(XX) = Weekday PM Peak Hour Volume (3:15 – 4:15 pm)

N = Less than 5 vehicles/hour

**New Development Trips**

Exhibit  
**10**





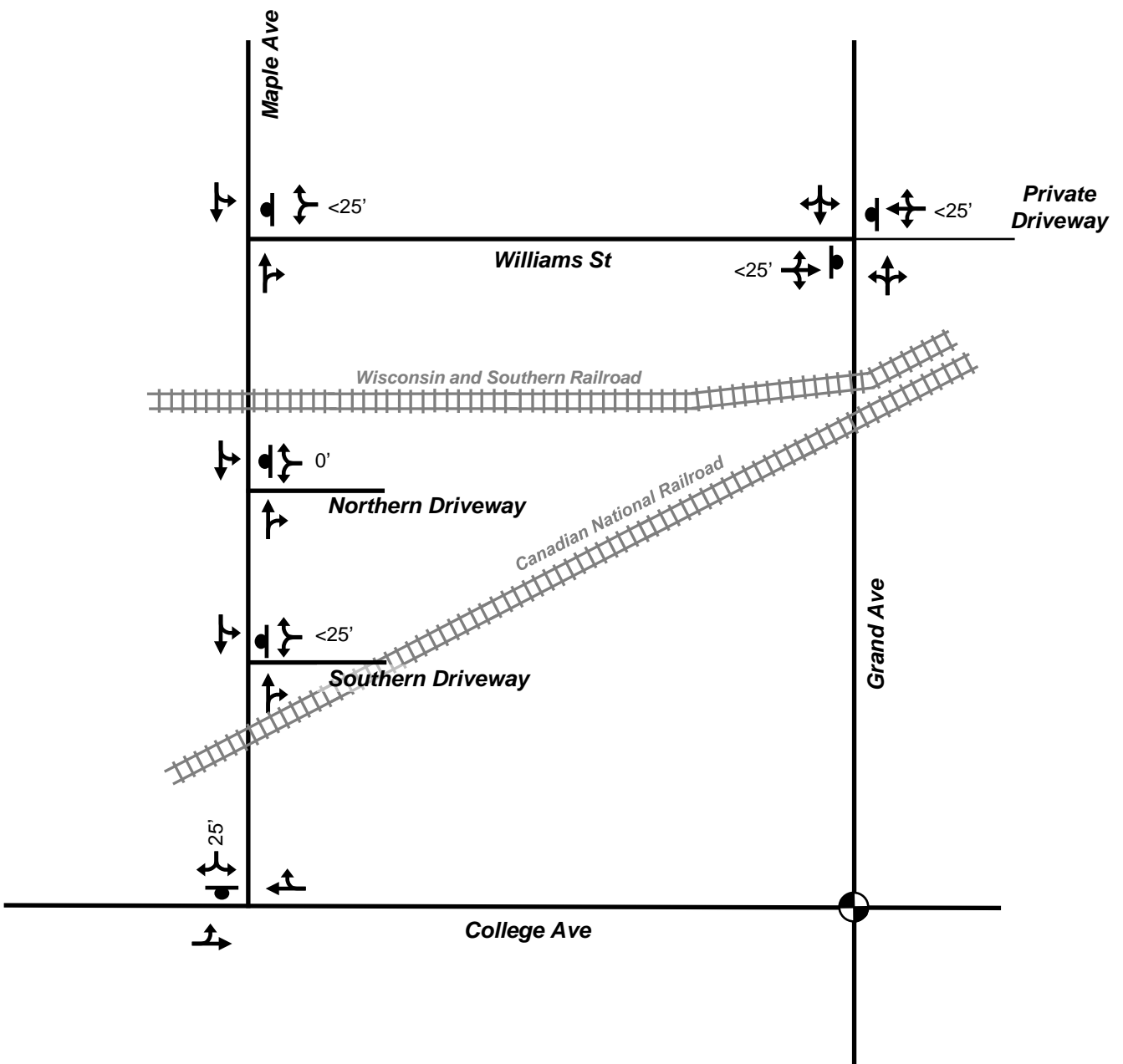
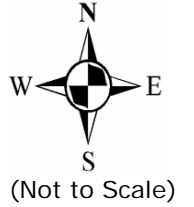
**Legend**

- = Stop Sign
- = Traffic Signal
- = Railroad
- XX = Weekday AM Peak Hour Volume (7:00 – 8:00 am)
- (XX) = Weekday PM Peak Hour Volume (3:15 – 4:15 pm)
- N = Less than 5 vehicles/hour

**Year 2015 Total Traffic Volumes**

Exhibit  
**11**





**Legend**

	= Stop Sign		= Traffic Signal
XX'	= Maximum Queue (feet)		= Railroad
	= Travel Lane		

**Year 2015 Total Traffic  
Maximum Queue Lengths**

Exhibit  
**12**