VILLAGE OF MCFARLAND *NOTICE OF PUBLIC MEETING*

Public Works Committee

Tuesday, September 8, 2020 **6:00 PM** **McFarland Municipal Center**
Community Room

AGENDA

Join the webinar: https://us02web.zoom.us/j/85926985260

Or By Telephone:
Dial US: +1 (312) 626-6799
Webinar ID: 859 2698 5260

1. CALL TO ORDER, ROLL CALL.

2. PUBLIC APPEARANCES.

3. APPROVAL OF MINUTES.
   a. Discussion and action regarding the minutes from the joint Public Works and Public Utilities meeting held on August 10, 2020

   b. Discussion and action regarding the minutes from the Public Works meeting held on August 13, 2020.

4. BUSINESS.
   a. Discussion and action to make a recommendation to the Village Board regarding final design and authorization for County Highway MN Phase 4 project for bidding.

   b. Presentation and discussion of the Traffic Impact Analysis for Broadhead Street and Holscher Road.

   c. Presentation of the Public Works Monthly Report

5. SCHEDULE NEXT MEETING DATE.
   a. Tuesday October 13, 2020 at 6:00 p.m.

6. ADJOURNMENT.

This meeting notice constitutes an official meeting of the above referenced group and was posted in accordance with all applicable laws related to Open Meetings Law. It is possible that members of and possibly a quorum of members of other governmental bodies of the municipality may be in attendance at the above stated meeting to gather information. No action will be taken by any governmental body at the above stated meeting other than the governmental body specifically referred to above in this notice. Upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals. For additional information or to request this service, contact the McFarland Municipal Center at (608) 838-3153 or cassandra.suettinger@mcfarland.wi.us.

VILLAGE OF MCFARLAND

Joint Public Works and Public Utilities Committee Minutes

Monday August 10, 2020 – 6:00 P.M.

1. CALL TO ORDER, ROLL CALL

   The meeting was called to order by Village Trustee and Public Utilities Committee Chairperson Eric Kryzenske at 6:00 p.m. The meeting was held via Zoom.

   Members present: Carolyn Clow, Justin Rupert, Chris Fredrick, Marv Meyers, Eric Kryzenske, Marc Nielsen, Mary Pat Lytle, Jerry Adrian, Pauline Boness (due to technical issues was disconnected at approximately 6:24 p.m.).

   Staff present: Jim Hessling (Director of Public Works/Utilities), Aimee Irwin (Assistant to the Director), Tim Stieve (Town & Country Engineering), Matt Schuenke (Village Administrator)

2. PUBLIC APPEARANCES

   None

3. BUSINESS
   a. Discussion and action to make a recommendation to the Village Board regarding the addition of water main replacement on N. Autumn Lane to the 2020 Street and Utility Improvement project(s) and authorizing related change order.
      - Tim Stieve summarized the 2020 Street and Utility Improvement project for N. Autumn Lane. Work was to be completed on N. Autumn Lane from Main Street to Timber Lane focusing on water main improvements and pavement work. During the construction at this location a couple water main breaks occurred which caused those involved to step back and re-evaluate the water main.
      - Tim Stieve presented the proposed options for the water main replacement. The first option involves the current contractor to add the water main replacement to the current project. The second option is to delay the replacement to a future year. Tim noted that by choosing option two there may be increased cost implications.
      - Committee members discussed the two options. Mary Pat Lytle clarified how the additional expense would be financed. Matt Schuenke stated that it would be via a capital allocation within the Water Utility from cash and cash equivalents. Chris Fredrick asked how the sanitary sewer's condition is in this location. Jim Hessling stated this was televised during the recent breaks and appears to be in good condition. Chris Fredrick asked if the curb stop work was

included in the proposal provided by G-Pro. Tim Stieve stated this item was omitted and likely would add an estimated $10,000. Chris Fredrick asked if the G-Pro proposal presented is reasonable. Tim Stieve stated the proposal overall is reasonable for a 8" water main with the per lineal foot arriving lower than what G-Pro bid the original project at. Committee members discussed previous years restoration concerns related to grass and specified materials. Tim Stieve acknowledged that restoration has been a concern in the past but hopes that diligent monitoring of the work and materials should improve this concern.

- Motion by Carolyn Clow recommending the addition of water main replacement on N. Autumn Lane to G-Pro in the amount of $308,022.58 with a 10% contingency to the Village Board. Seconded by Chris Fredrick. Motion passed 8-0-1 (Pauline Boness experienced technical issues and was unable to participate in the motion vote)

4. ADJOURNMENT
    a. Motion by Chris Fredrick to adjourn at 6:34 p.m. Seconded by Marv Meyers. Motion passed 8-0-0.

Respectfully submitted by Aimee Irwin

VILLAGE OF MCFARLAND

Public Works Committee Minutes

Thursday August 13, 2020 – 6:00 P.M.

1. CALL TO ORDER, ROLL CALL

   The meeting was called to order by Village Trustee and Committee Chairperson Carolyn Clow at 6:00 p.m. This meeting was held via Zoom.

   Members present: Village Trustee Justin Rupert, Chris Fredrick, Marv Meyers, Jerry Adrian

   Staff present: Matt Schuenke (Village Administrator), Jim Hessling (Director of Public Works/Utilities), Lee Igl (Public Works Superintendent), Aimee Irwin (Assistant to the Director), Tim Stieve (Town & Country Engineering), Sayer Larson (Parks Superintendent)

2. PUBLIC APPEARANCES

   None

3. APPROVAL OF MINUTES
   a. Discussion and action regarding the minutes from the Public Works meeting held on July 14, 2020.
      a. Motion by Jerry Adrian to approve minutes as presented. Seconded by Justin Rupert. Motion passed 5-0-0.
4. BUSINESS
   a. <u>Discussion and recommendation to the Village Board regarding tree planting proposals for 2020.</u>
      - Jim Hessling provided background regarding the tree planting proposals. Four companies were contacted for a proposal and three were received with only one company submitting all the requested information. Srb's Trees, Inc. was the company that submitted all requested information although they were not the lowest proposal received.
      - Committee members discussed the presented information and proposals. Carolyn Clow clarified if we had identified the specific trees that we will purchase. Jim Hessling responded that we did not identify which trees yet. Jim stated that the average cost information was provided for the trees allowing the village to select type and number of trees at a later date. Chris Fredrick clarified the justification in choosing a proposal that was not the low bidder. Jim Hessling stated that our justification is that only one proposal submitted contained all items requested.

- Motion by Chris Fredrick recommending to the Village Board the award of the 2020 tree planting to Srb's Trees, Inc. Seconded by Justin Rupert. Motion passed 5-0-0

b. Discussion and recommendation to the Village Board regarding speed study on Bremer Road.
    - Jim Hessling provided background regarding a resident request to lower the speed on Bremer Road. The Police Department placed a counter and tracked speed data on Bremer Road. Following the collection of data this information was provided to Lee Gibbs with SRF.
    - Lee Gibbs with SRF completed a site review of the area and reviewed his recommendations which were included in the enclosed memorandum. Lee had requested additional data from Lake Edge Road as comparison as this road is posted at 15 m.p.h. The data compiled between both locations would provide justification for not lowering the speed on Bremer Road. In the memorandum provided by Lee Gibbs, it is recommended to add additional signage related to bicycle traffic, pedestrians and additional speed limit signs on the south side of Bremer Road.
    - Committee members discussed the request and recommendations provided by Lee Gibbs. Chris Fredrick asked if this area is included in the long term plan for pedestrian pathways. Jerry Adrian stated that due to the roadway space available this area likely was not included in future plans. Jerry Adrian did recommend that this area is looked at in the future.
    - Motion by Carolyn Clow accepting the recommendations as provided by SRF in that of not lowering the speed limit and install speed and warning signage. Seconded by Marv Meyers. Motion passed 5-0-0.

c. Discussion on 60% plan of Hwy MN Phase 4 road project.
    - Tim Stieve with Town & Country Engineering presented the 60% plan of Highway MN Phase 4. Matt Schuenke stated that the bid for this project would likely be sent out in 2021 for the work to occur in 2021. Matt suggested that four items should be reviewed and discussed: the intersection of Holscher and Broadhead, whether the work should be done in one or two phases, the possibility of a roundabout at Highway MN and County Highway AB, and the scheduling of a public input session.
    - Lee Gibbs with SRF provided a brief overview of his plans to present data regarding the Holscher and Broadhead intersection. This information will be presented to the committee in September.
    - Committee members discussed the presented design plans. Matt Schuenke clarified if the Holscher and Broadhead intersection has

the ability to square up with this project. Tim Stieve stated that the current plans do include a slight shift for Broadhead (Highway MN). Chris Fredrick asked if the Public Safety building plans is taking in account the Highway MN road project. Matt Schuenke stated this project has been discussed in conjunction with the Public Safety building design plans. Committee members discussed the possible phasing with this project as either all in one phase or two phases.

- No action taken on this item.

d. Discuss and schedule a public input session regarding Hwy MN Phase 4 road project.
   - Carolyn Clow provided the recommendation of scheduling a public input meeting for various projects the village is looking at undertaking.
   - Matt Schuenke provided that prior to COVID19, public input sessions would occur in person where plans would be provided and attendees could ask questions or provide recommendations. Post COVID19 these input sessions have moved to an online forum and survey.
   - The public input online forum is schedule for Monday August 31st.
   - Matt Schuenke stated that the data from the public input session and data from survey completions will be presented to the committee in September.

e. Presentation of the Public Works Monthly Report from the Director.
   - Jim Hessling provided an update on public works activities in the Village for the month of July 2020.

5. SCHEDULE NEXT MEETING DATE
   a. Tuesday September 8, 2020 at 6:00 pm
6. ADJOURNMENT
   a. Motion by Carolyn Clow to adjourn at 7:23 p.m. Seconded by Jerry Adrian. Motion passed 5-0-0.

Respectfully submitted by Aimee Irwin

VILLAGE OF
McFarland

VILLAGE BOARD SUMMARY SHEET

MEETING DATE: **Tuesday, September 8, 2020**

SECTION: **Business**

DEPARTMENT: **Public Works**

CONTACT:

AGENDA ITEM: **Discussion and action to make a recommendation to the Village Board regarding final design and authorization for County Highway MN Phase 4 project for bidding.**

PREVIOUS ACTION:
The Public Works Committee reviewed the 60% design plans at their meeting on August 13th.

An online forum was held to present these plans to the public on August 31st. There were about 33 people in attendance from the public.

ISSUE SUMMARY:
As part of the Hwy MN Phase 4 road project, a final design decision needs to be accepted by the Committee and then direction provided to go to bid for the project as a recommendation to the Village Board. The Village Board will then take final action as part of the next step to advance the project that is desired for implemtaton in 2021. This is a reconstruction project that will transform the road from a rural section to an urban one and is quite significant as part of the work that is planned. Very similar to what was done to Holscher Road just a few years ago.

An online forum was held for the project on Monday, August 31st to present the projec to the public and gather input. The comments recieved in that meeting are provided in your packet as background.

The entire design is included in your packet for consideration as listed on the agenda. This includes reconstruction from Holscher Road through CTH AB. However, Staff is recommending that we break the project up into two phases with the first phase terminating somewhere just past N. Pennisula Way. Further development to the east of this ending point appears delayed and the remaining road work can be addressed at that time. Additionally, this will give us more time to study the CTH MN and CTH AB intersection as was requested by the Committee. We can complete this work in 2021. Please note the following schedule to complete our work:

- September 8, 2020 - Committee: Discuss project phasing and determine extent of the project. Unless the Committee wishes to move the whole project forward at this time, no

action would be needed and direction could simply be provided to address the points above.

- November 10, 2020 - Committee: Come back for action at this point with the revised project scope and cost, this would be a more final product and specific to the reduced amount of work that might be desired. If the Committee desires wanting to break the project up into phases then this will give us time to update those plans so that the project is more specific to that objective.
- November 23, 2020 - Village Board: Earliest time the board can receive the recommendation to accept the final design and send the project to bid. Also the same night the Village Board will adopt the 2021 Budget which is inclusive of this project.
- January 2021 - Bid the Project
- February 2021 - Committee/Board consideration of bids.
- April 2021 - Project Commencement

Lots of room in this schedule and is laid out to be flexible for the varioius steps to advance the project. If there are other bid items for the year, we will want those to line up with the bid schedule which might require the general bid timeframe to be adjusted as we go.

FINANCIAL/BUDGET IMPACT:
Our engineers estimate of the cost breakdown, using Penninsula Way as a phasing line is as follows:

Full Project – Total Cost = $2.4M, Village portion = $1.47M (more details provided on this at our last meeting).

Phase 4.1: Holscher Road to Peninsula Way – Total Cost = $618K, Village portion = $289K

Phase 4.2: Peninsula Way to CTH AB (including intersection) – Total Cost = $1.77M, Village portion = $1.18M (likely some portion of our costs can be paid for through new development which is undetermined at this point). The big cost swing is partly due to shorter length (the west phase is half as long as the east phase), but also because water main has already been extended to Peninsula.

Dane County will participate in some of the costs associated with this whole project in return for a jurisdictional transfer.

VILLAGE PLAN REFERENCE:
2020-2024 Capital Improvement Plan

ORDINANCE REFERENCE:
None.

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

Staff recommends consideration to break the project into two phases with the first phase moving forward in 2021 to carry the reconstruction of the road through N. Penninsula Way.

ATTACHMENTS:

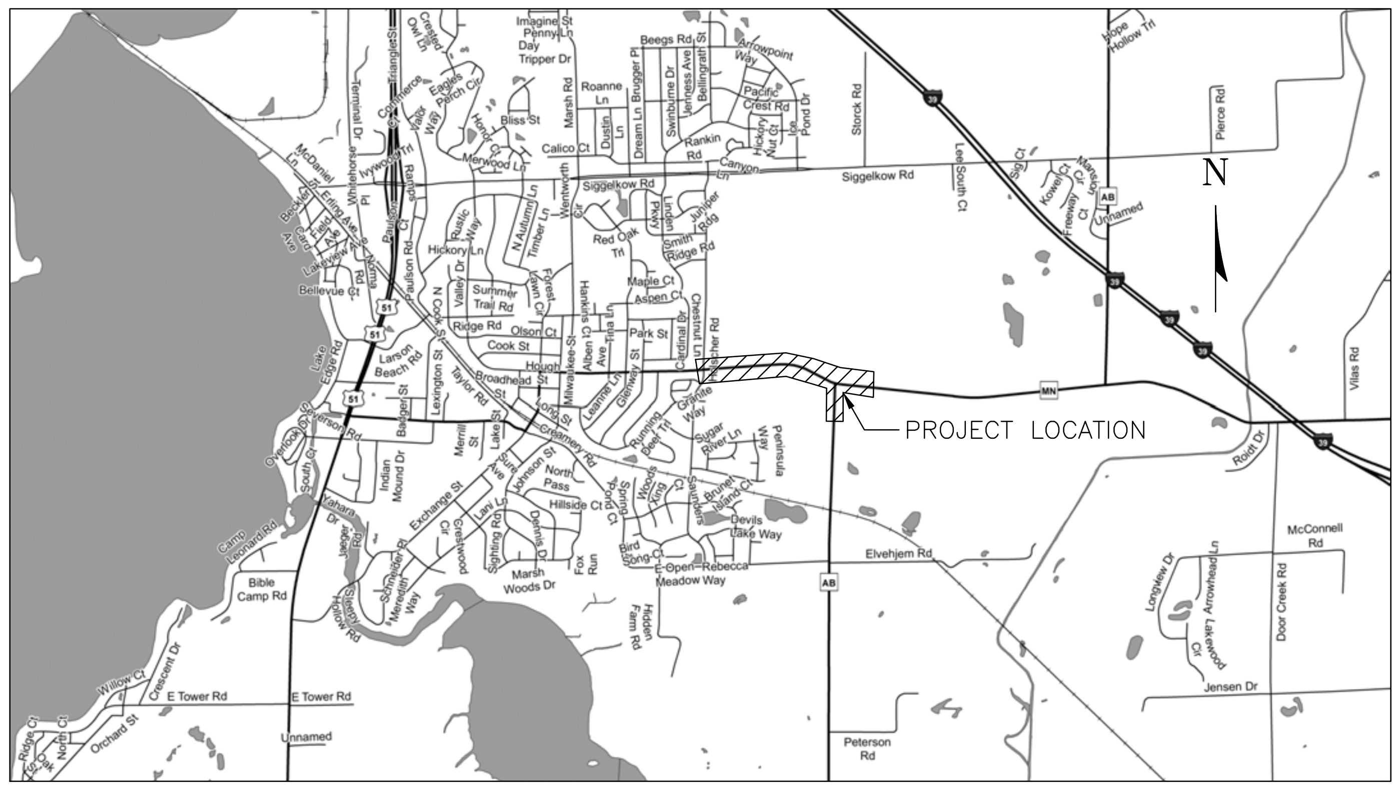
1. MC174 MEETING
2. Public Input Session 8.31.2020 County Highway MN

2021 STREET AND UTILITY IMPROVEMENTS

COUNTY HIGHWAY MN

Village of McFarland, Wisconsin

SHEET INDEX



NO SCALE

MEMBER

ONE CALL SYSTEMS INTERNATIONAL

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1–800–242–8511
TOLL FREE

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

LEGEND

UNDERGROUND TELE.	UT
UNDERGROUND CATV.	UCATV
UNDERGROUND ELEC.	UE
OVERHEAD	OH
EXISTING GAS	G
PROPERTY LINE	
EXISTING WATER MAIN	WM
EXISTING SANITARY SEWER	SAN
EXISTING STORM SEWER	STM
EXISTING FENCE LINE	x
SAWCUT	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
NEW STORM SEWER	
NEW WATER MAIN	
NEW SANITARY SEWER	

NEW ITEMS:

WATER VALVE, CURB STOP (CS), HYDRANT, MANHOLE, CURB INLET, ENDWALL, GAS WARNING (CAUTION)

EXISTING ITEMS:

FLAG POLE, MAILBOX, POWER POLE, LIGHT POLE, LAMP POST, PULL BOX

WATER VALVE, CURB STOP (CS), HYDRANT, WELL, MONITORING WELL, TRACER WIRE (TW)

SANITARY MANHOLE, SANITARY VALVE, CLEANOUT, STORM MANHOLE, CURB INLET, CIRCULAR INLET

SQUARE INLET, ENDWALL, STUMP, DECID. TREE, EVERGREEN (RELATIVE SIZE SHOWN), SHRUB OR HEDGE, SIGN

CATV. PED. (C), TELE. PED. (T), ELEC. PED. (E), GAS VALVE, STREET SIGN, IRON PIPE (IP), IRON ROD (IR)

NOTES:
1.) EXISTING FEATURES AND LABELS ARE SHOWN WITH SCREENED, LIGHTER LINES.
2.) NEW CONCRETE IS SHOWN SHADED IN PLAN VIEWS
3.) CONCRETE REMOVALS ARE SHOWN BY CROSS–HATCHING

TOWN & COUNTRY ENGINEERING, INC.
2912 Marketplace Drive
Suite 103
Madison, WI 53719
(608) 273-3350
www.tcengineers.net

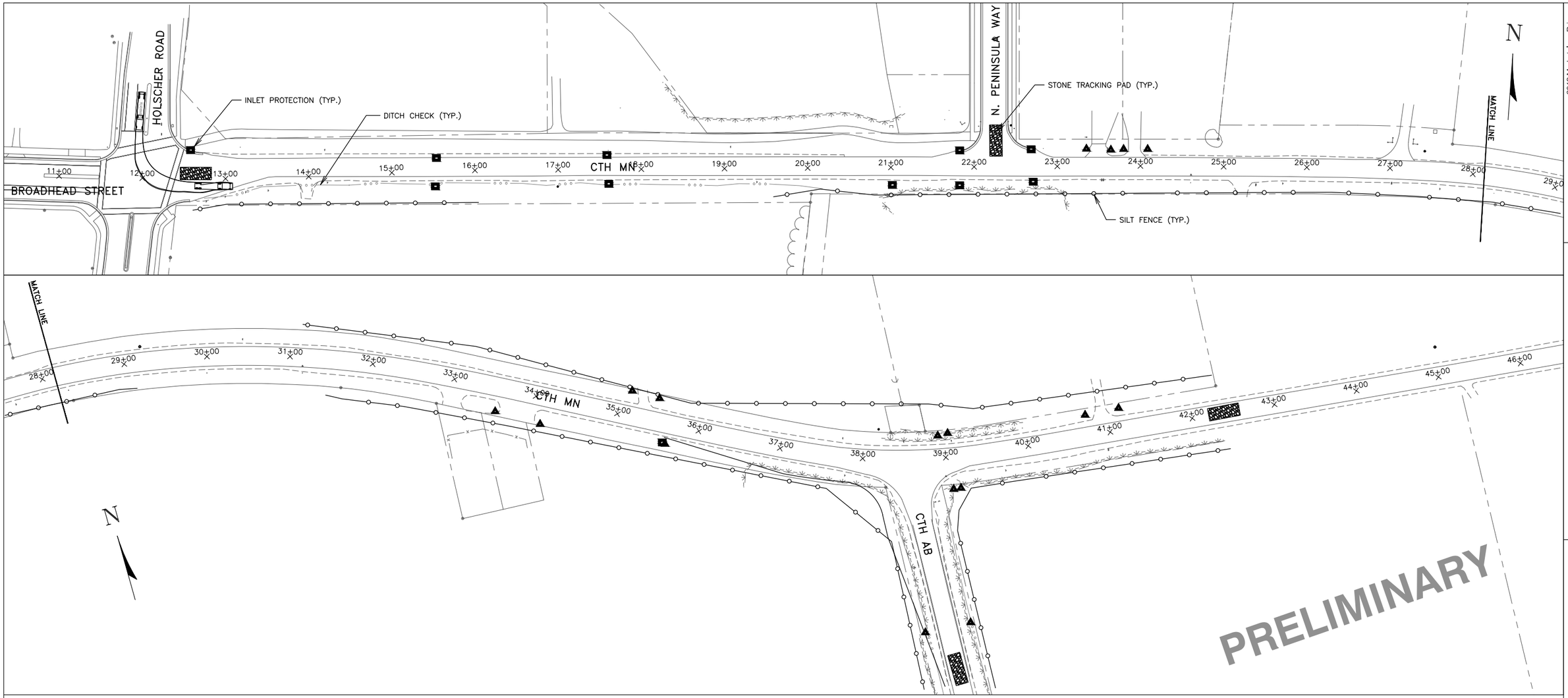
REVISIONS	BY	DATE

SHEET

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
REV. DATE:

PROJECT NO.: MC 174
DRAWING FILE: MC 174 DETAILS.DWG
DATE: 7–16–20



PRELIMINARY

EROSION CONTROL NOTES:

- LOCATIONS MARKED WITH "▪" TO RECEIVE INLET FILTER PROTECTION DURING CONSTRUCTION. ALL NEW STREET INLETS MUST ALSO RECEIVE INLET FILTER PROTECTION.
- CONSTRUCT A STONE CHECK DAM IN GUTTER LINE AT ALL LOCATIONS MARKED WITH "▲"
- SURFACE FLOW DIRECTION IS INDICATED WITH ~~~►
- SILT FENCE INSTALLATION IS INDICATED WITH -o——o——
- POST WDNR CERTIFICATE OF PERMIT COVERAGE ON SITE AND MAINTAIN UNTIL CONSTRUCTION ACTIVITIES HAVE CEASED, THE SITE IS STABILIZED, AND A NOTICE OF TERMINATION IS FILED WITH WDNR.
- KEEP A COPY OF THE CURRENT EROSION CONTROL PLAN ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
- SUBMIT PLAN REVISIONS OR AMENDMENTS TO THE WDNR AT LEAST 5 DAYS PRIOR TO FIELD IMPLEMENTATION.
- THE CONTRACTOR IS RESPONSIBLE FOR ROUTINE SITE INSPECTIONS AT LEAST ONCE EVERY 7 DAYS AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5 INCHES OR GREATER. KEEP INSPECTION REPORTS ON–SITE AND MAKE THEM AVAILABLE UPON REQUEST.
- INSPECT AND MAINTAIN ALL INSTALLED EROSION CONTROL PRACTICES UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
- WHEN POSSIBLE: PRESERVE EXISTING VEGETATION (ESPECIALLY ADJACENT TO SURFACE WATERS), MINIMIZE LAND–DISTURBING CONSTRUCTION ACTIVITY ON SLOPES OF 20% OR MORE, MINIMIZE SOIL COMPACTION, AND PRESERVE TOPSOIL.
- REFER TO THE WDNR STORMWATER CONSTRUCTION TECHNICAL STANDARDS AT http:dnr.wi.gov/topic/stormwater/standards/const_standards.html.
- INSTALL PERIMETER EROSION CONTROLS AND ROCK TRACKING PAD CONSTRUCTION ENTRANCE(S) PRIOR TO ANY LAND–DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRUBBING. USE WDNR TECHNICAL STANDARD STONE TRACKING PAD AND TIRE WASHING #1057 FOR ROCK CONSTRUCTION ENTRANCE(S).
- INSTALL INLET PROTECTION PRIOR TO LAND–DISTURBING ACTIVITIES IN THE CONTRIBUTING DRAINAGE AREA AND/OR IMMEDIATELY UPON INLET INSTALLATION. COMPLY WITH WDNR TECHNICAL STANDARD STORM DRAIN INLET PROTECTION FOR CONSTRUCTION SITES #1060.
- STAGE CONSTRUCTION GRADING ACTIVITIES TO MINIMIZE THE CUMULATIVE EXPOSED AREA. CONDUCT TEMPORARY GRADING FOR EROSION CONTROL PER WDNR TECHNICAL STANDARD TEMPORARY GRADING PRACTICES FOR EROSION CONTROL #1067.
- NOTIFY THE OWNER IF DEWATERING IS SCHEDULED TO OCCUR IN AREAS OF SOIL AND/OR GROUNDWATER CONTAMINATION, OR IF DEWATERING WILL OCCUR FROM A HIGH CAPACITY WELL (70 GPM OR MORE). DEWATER ONLY AFTER THE APPROPRIATE WDNR DEWATERING DISCHARGE PERMIT HAS BEEN OBTAINED.
- PROVIDE ANTI–SCOUR PROTECTION AND MAINTAIN NON–EROSIVE FLOW DURING DEWATERING. LIMIT PUMPING RATES TO EITHER (A) THE SEDIMENT BASIN/TRAP DESIGN DISCHARGE RATE, OR (B) THE BASIN DESIGN RELEASE RATE WITH THE CORRECTLY–FITTED HOSE AND GEOTEXTILE FILTER BAG. PERFORM DEWATERING OF ACCUMULATED SURFACE RUNOFF IN ACCORDANCE WITH WDNR TECHNICAL STANDARD DE–WATERING #1061.
- INSTALL AND MAINTAIN SILT FENCING PER WDNR TECHNICAL STANDARD SILT FENCE #1056. REMOVE SEDIMENT FROM BEHIND SILT FENCES AND SEDIMENT BARRIERS BEFORE SEDIMENT REACHES A DEPTH THAT IS EQUAL TO ONE–HALF OF THE FENCE AND/OR BARRIER HEIGHT.
- REPAIR BREAKS AND GAPS IN SILT FENCES AND BARRIERS IMMEDIATELY. REPLACE DECOMPOSING STRAW BALES (TYPICAL BALE LIFE IS 3 MONTHS). LOCATE, INSTALL, AND MAINTAIN STRAW BALES PER WDNR TECHNICAL STANDARD DITCH CHECKS #1062.
- INSTALL AND MAINTAIN FILTER SOCKS IN ACCORDANCE WITH WDNR TECHNICAL STANDARD INTERIM MANUFACTURED PERIMETER CONTROL AND SLOPE INTERRUPTION PRODUCTS #1071.
- IMMEDIATELY STABILIZE STOCKPILES AND SURROUND STOCKPILES AS NEEDED WITH SILT FENCE OR OTHER PERIMETER CONTROL IF STOCKPILES WILL REMAIN INACTIVE FOR 7 DAYS OR LONGER.
- IMMEDIATELY STABILIZE ALL DISTURBED AREAS THAT WILL REMAIN INACTIVE FOR 14 DAYS OR LONGER. BETWEEN SEPTEMBER 15 AND OCTOBER 15: STABILIZE WITH MULCH, TACKIFIER, AND A PERENNIAL SEED MIXED WITH WINTER WHEAT, ANNUAL OATS, OR ANNUAL RYE, AS APPROPRIATE FOR REGION AND SOIL TYPE. OCTOBER 15 THROUGH COLD WEATHER: STABILIZE WITH A POLYMER AND DORMANT SEED MIX, AS APPROPRIATE FOR REGION AND SOIL TYPE.
- STABILIZE AREAS OF FINAL GRADING WITHIN 7 DAYS OF REACHING FINAL GRADE.
- SWEEP/CLEAN UP ALL SEDIMENT/TRASH THAT MOVES OFF–SITE DUE TO CONSTRUCTION ACTIVITY OR STORM EVENTS BEFORE THE END OF THE SAME WORKDAY OR AS DIRECTED BY THE OWNER. SEPARATE SWEPT MATERIALS (SOILS AND TRASH) AND DISPOSE OF APPROPRIATELY.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST PER WDNR TECHNICAL STANDARD DUST CONTROL ON CONSTRUCTION SITES #1068.
- COORDINATE WITH THE OWNER TO UPDATE THE LAND DISTURBANCE PERMIT TO INDICATE THE ANTICIPATED OR LIKELY DISPOSAL LOCATIONS FOR ANY EXCAVATED SOILS OR CONSTRUCTION DEBRIS THAT WILL BE HAULED OFF–SITE FOR DISPOSAL. THE DEPOSITED OR STOCKPILED MATERIAL NEEDS TO INCLUDE PERIMETER SEDIMENT CONTROL MEASURES (SUCH AS SILT FENCE, HAY BALES, FILTER SOCKS, OR COMPACTED EARTHEN BERMS).
- FOR NON–CHANNELIZED FLOW ON DISTURBED OR CONSTRUCTED SLOPES, PROVIDE CLASS I, II OR III TYPE A EROSION CONTROL MATTING. SELECT EROSION MATTING FROM APPROPRIATE MATRIX IN WDOT'S WIDOT PRODUCT ACCEPTABILITY LIST (PAL); INSTALL AND MAINTAIN PER WDNR TECHNICAL STANDARD NON–CHANNEL EROSION MAT #1052.
- FOR CHANNELIZED FLOW ON DISTURBED OR CONSTRUCTED AREAS, PROVIDE CLASS I, II, OR III TYPE B EROSION CONTROL MATTING. SELECT EROSION MATTING FROM APPROPRIATE MATRIX IN WDOT'S WIDOT PRODUCT ACCEPTABILITY LIST (PAL); INSTALL AND MAINTAIN PER WDNR TECHNICAL STANDARD CHANNEL EROSION MAT #1053.
- INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES (SUCH AS TEMPORARY SEDIMENT BASINS, DITCH CHECKS, EROSION CONTROL MATTING, SILT FENCING, FILTER SOCKS, WATTLES, SWALES, ETC.), OR AS DIRECTED BY THE OWNER.

TOWN & COUNTRY ENGINEERING, INC.
2912 Marketplace Drive
Suite 103
Madison, WI 53719
(608) 273-3350
www.tcengineers.net

EROSION CONTROL PLAN AND GENERAL NOTES

2021 STREET AND UTILITY IMPROVEMENTS

CTH MN

Village of McFarland, Wisconsin

PROJECT NO.:	MC 174
DRAWING FILE:	MC 174 SHEETS.DWG
DRAWN BY:	J.R.K.
CHECKED BY:	N.R.B.
DATE:	8–26–20
REVISIONS:	
SCALE:	0 30 60
SHEET:	1

TEMPORARY BENCHMARK TABLE		
TBM	ELEV.	DESCRIPTION
300	907.61	CHISELED X IN MEDIAN NORTH OF INTERSECTION
43	888.38	SW TAG BOLT FH SOUTH SIDE OF PENINSULA WAY INTERSECTION

HOLSCHER ROAD
BROADHEAD STREET
CTH MN
EX. CONC. WALK
EX. CONC. MEDIAN
EX. 12" WM
EX. 10" WM
EX. 12" RCP
EX. 18" RCP
EX. SIGNAL BOX (TYP.)
EX. TELE. PED. (TYP.)
TBM 300
EX. STM INLET 1
RIM = 906.08
SW. INV. = 903.90 (12")
EX. STM 6' INLET MH 2
EX. STM 6' INLET MH 4
RIM = 908.59
N. INV. = 904.64 (12")
EX. STREET SIGN (TYP.)
EX. LIGHT POLE
EX. HYDRANT (TYP.)
EX. WATER VALVE (TYP.)
EX. ASPHALT PATH
EX. PROPERTY BOUNDARY (TYP.)
EX. EDGE OF GRAVEL (TYP.)
EX. EDGE OF PAVEMENT (TYP.)
EX. STM ENDWALL 1
NEW STM INLET MH 5
STA. 12+58.29/33.12L
NEW 18" RCP STM
FIELD ENTRANCE
EX. 18" CMP
INV. = 898.66
INV. = 897.72
RELOCATE POWER POLE
NEW STM INLET MH 6
STA. 15+52.87/17.49L
32 L.F. NEW 12" RCP STM @ 2.00%
NEW STM INLET 10
RIM = 893.43
N. INV. = 892.26 (12")
TBM 43
MATCH LINE SHEETS A1 & A2
N
12+00
13+00
14+00
15+00
16+00
17+00

PRELIMINARY

EX. STM 6' INLET MH 2
RIM = 906.79
NE. INV. = 904.06 (12")
E. INV. = 903.60 (18")
S. INV. = 904.10 (12")
W. INV. = 903.81 (18")
EX. GROUND
EX. 18" RCP STM
EX. 12" RCP STM
NEW STM INLET MH 5
RIM = 906.50
W. INV. = 901.80 (18")
E. INV. = 901.75 (18")
EX. STM ENDWALL 1
W. INV. = 900.98 (18")
NEW 18" RCP STM
EX. 12" WM
EX. 10" WM
291 L.F. NEW 18" RCP STM @ 3.49%
NEW STM INLET MH 6
RIM = 896.00
W. INV. = 891.62 (18")
S. INV. = 891.62 (12")
E. INV. = 891.62 (18")
EX. GROUND
202 L.F. NEW 18" RCP STM @ 2.54%
EX. 10" WM
908 906 904 902 900 898 896 894 892 890
898 896 894 892 890 888 886 884 882 880
12+00 13+00 14+00 15+00 16+00 17+00

PRELIMINARY

2912 Marketplace Drive
Suite 103
Madison, WI 53719
(608) 273-3350
www.tcengineers.net
TOWN & COUNTRY ENGINEERING, INC.

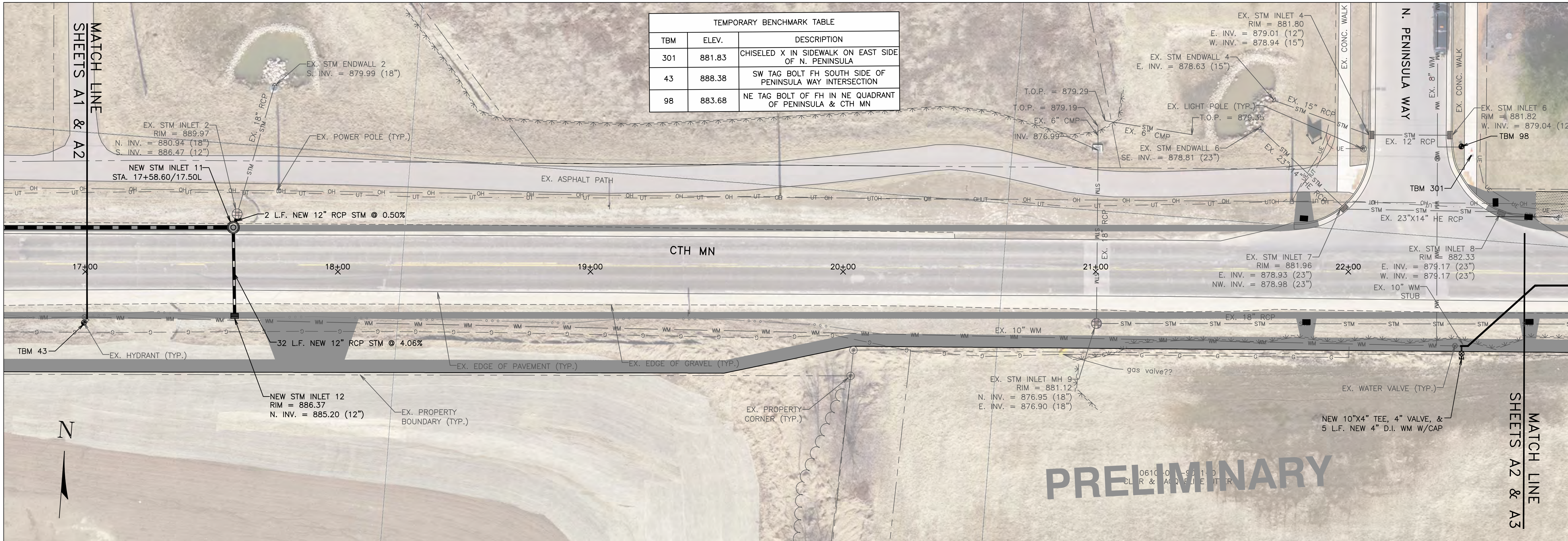
PLAN & PROFILE
CTH MN
Station 11+20 To Station 17+20

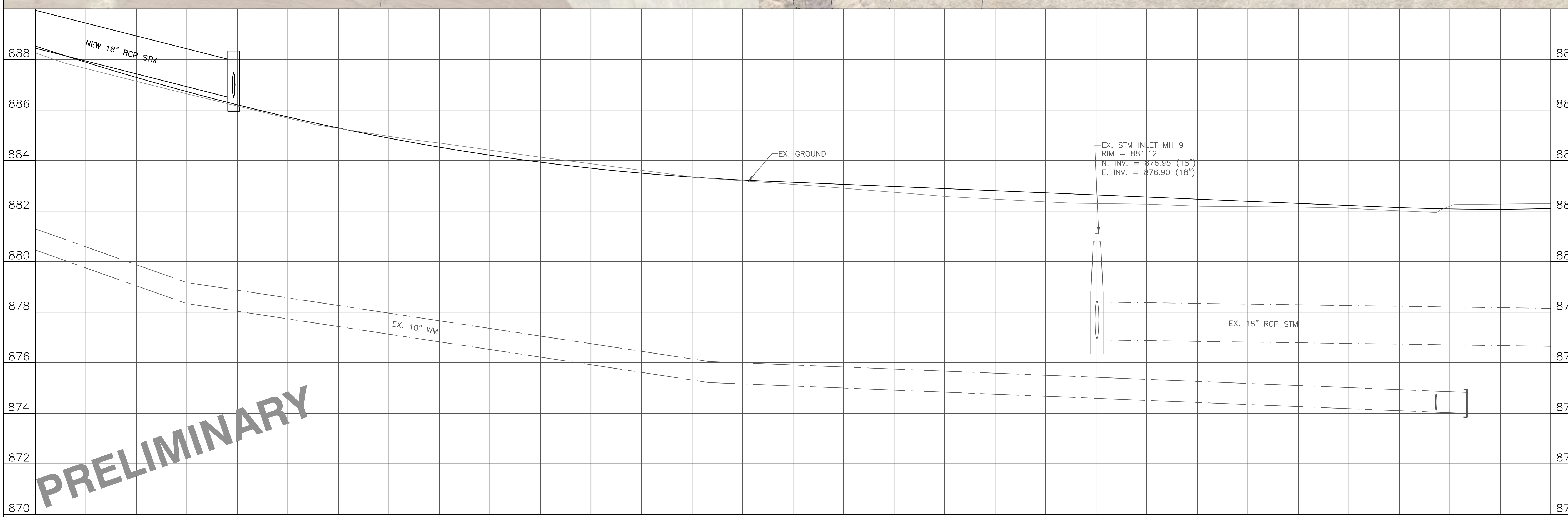
2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.:	MC 174
DRAWING FILE:	MC 174 SHEETS.DWG
DRAWN BY:	J.R.K.
CHECKED BY:	N.R.B.
DATE:	8-26-20
REVISIONS:	
SCALE: HORIZONTAL	0 5 10 20
VERTICAL	1 2
SHEET:	A1

TEMPORARY BENCHMARK TABLE

TBM	ELEV.	DESCRIPTION
301	881.83	CHISELED X IN SIDEWALK ON EAST SIDE OF N. PENINSULA
43	888.38	SW TAG BOLT FH SOUTH SIDE OF PENINSULA WAY INTERSECTION
98	883.68	NE TAG BOLT OF FH IN NE QUADRANT OF PENINSULA & CTH MN





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PLAN & PROFILE
CTH MN
Station 16+80 To Station 22+80

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20
VERTICAL 0 1 2
SHEET: A2

TEMPORARY BENCHMARK TABLE		
TBM	ELEV.	DESCRIPTION
33	881.83	RR SPIKE IN POWER POLE NEAR HOUSE #3486

#3510
#3502
#3486
#3495
TBM 98
EX. FLAG POLE
EX. STM ENDWALL 7
W. INV. = 880.09 (23")
EX. 23" X 14" HE RCP
CONC. DRIVE
EX. 15" CMP STM
EX. 18" CMP STM
ASPH. DRIVE
EX. PROPERTY CORNER (TYP.)
EX. PROPERTY BOUNDARY (TYP.)
EX. POWER POLE (TYP.)
EX. FENCE (TYP.)
EX. DECORATIVE SHED
TBM 33
ASPH. DRIVE
CTH MN
23+00
24+00
25+00
26+00
27+00
28+00
EX. 18" RCP STM
GRAVEL DRIVE
EX. EDGE OF PAVEMENT (TYP.)
EX. EDGE OF GRAVEL (TYP.)
EX. MAILBOX (TYP.)
EX. SIGN (TYP.)
EX. STM MH 10
RIM = 881.33
W. INV. = 876.40 (18")
E. INV. = 876.40 (18")
MATCH LINE SHEETS A2 & A3
MATCH LINE SHEETS A3 & A4
N
PRELIMINARY

888
886
884
882
880
878
876
874
872
870
EX. GROUND
EX. STM MH 10
RIM = 881.33
W. INV. = 876.40 (18")
E. INV. = 876.40 (18")
EX. 18" RCP STM
EX. 18" RCP STM
PRELIMINARY

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PLAN & PROFILE
CTH MN
Station 22+40 To Station 28+40

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING TITLE: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20, VERTICAL 1 2
SHEET: A3

TEMPORARY BENCHMARK TABLE		
TBM	ELEV.	DESCRIPTION
302	886.26	CAP N. SIDE OF CTH MN 29+21

MATCH LINE SHEETS A3 & A4

MATCH LINE SHEETS A4 & A5

0610-021-8002-1
VENNEVOLL INC.

EX. GUY WIRE (TYP.)

EX. EDGE OF PAVEMENT (TYP.)

EX. EDGE OF GRAVEL (TYP.)

EX. PROPERTY BOUNDARY (TYP.)

EX. POWER POLE (TYP.)

TBM 302

28+00

29+00

30+00

31+00

32+00

33+00

34+00

CTH MN

EX. 18" RCP STM

EX. STM MH 11
RIM = 884.39
W. INV. = 875.47 (18")
E. INV. = 875.47 (18")

EX. STM MH 12
RIM = 882.53
W. INV. = 875.16 (18")
E. INV. = 875.16 (18")

EX. STM MH 13
RIM = 879.51
W. INV. = 874.79 (18")
SE. INV. = 874.79 (18")

EX. PROPERTY CORNER (TYP.)

EX. GAS VALVE (TYP.)

EX. STM ENDWALL 8
SE. INV. = 868.85 (18")

EX. 18" CMP

GRAVEL DRIVE

#3455

0610-021-9632-0
CLAIR & JACQUELINE UTTER

PRELIMINARY

N

EX. GROUND

EX. 18" RCP STM

PRELIMINARY

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TOWN & COUNTRY ENGINEERING, INC.

PLAN & PROFILE
CTH MN
Station 28+00 To Station 34+00

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20
VERTICAL 1 2
SHEET: A4

MATCH LINE SHEETS A4 & A5

MATCH LINE SHEETS A5 & A6

0610-021-9501-1
VENNEVOLL INC.

INV. = 865.10

INV. = 864.42

EX. 18" CMP FIELD ENTRANCE

EX. POWER POLE (TYP.)

EX. GUY WIRE (TYP.)

EX. PROPERTY BOUNDARY (TYP.)

EX. PROPERTY CORNER (TYP.)

EX. TELE. PED. (TYP.)

EX. STM ENDWALL 12
S. INV. = 861.14 (30")

34+00

35+00

36+00

CTH MN

37+00

38+00

86+00

87+00

39+00

EX. EDGE OF PAVEMENT (TYP.)

EX. STM ENDWALL 10
S. INV. = 861.27 (30")

EX. 18" RCP

EX. 18" CMP

GRAVEL DRIVE

EX. STM ENDWALL 9
NW. INV. = 867.65 (18")

TBM 303

EX. STM ENDWALL 11
N. INV. = 860.54 (30")

EX. SIGN (TYP.)

EX. STM ENDWALL 3
NW. INV. = 865.00 (18")

EX. STM ENDWALL 13
N. INV. = 860.54 (30")

0610-021-9632-0
CLAIR & JACQUELINE UTTER

PRELIMINARY

N

874
872
870
868
866
864
862
860
858
856

EX. STM ENDWALL 3
NW. INV. = 865.00 (18")

EX. GROUND

EX. 30" CMP STM

EX. 30" CMP STM

34+00
35+00
36+00
37+00
38+00
39+00

PRELIMINARY

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PLAN & PROFILE
CTH MN
Station 33+60 To Station 39+60

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20
VERTICAL 1 2
SHEET: A5

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PLAN & PROFILE
CTH MN
Station 39+20 To Station 45+20

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20
VERTICAL 1 2
SHEET: A6

PRELIMINARY

N

0610-021-9632-0
CLAIR & JACQUELINE UTTER

CTH AB

81+00

82+00

83+00

84+00

85+00

86+00

38+00

39+00

EX. 24" CMP

CTH MN

0610-012-9170-0
CLAIR & JACQUELINE UTTER

EX. GROUND

PRELIMINARY

868 866 864 862 860 858 856 854 852 850

81+00 82+00 83+00 84+00 85+00 86+00

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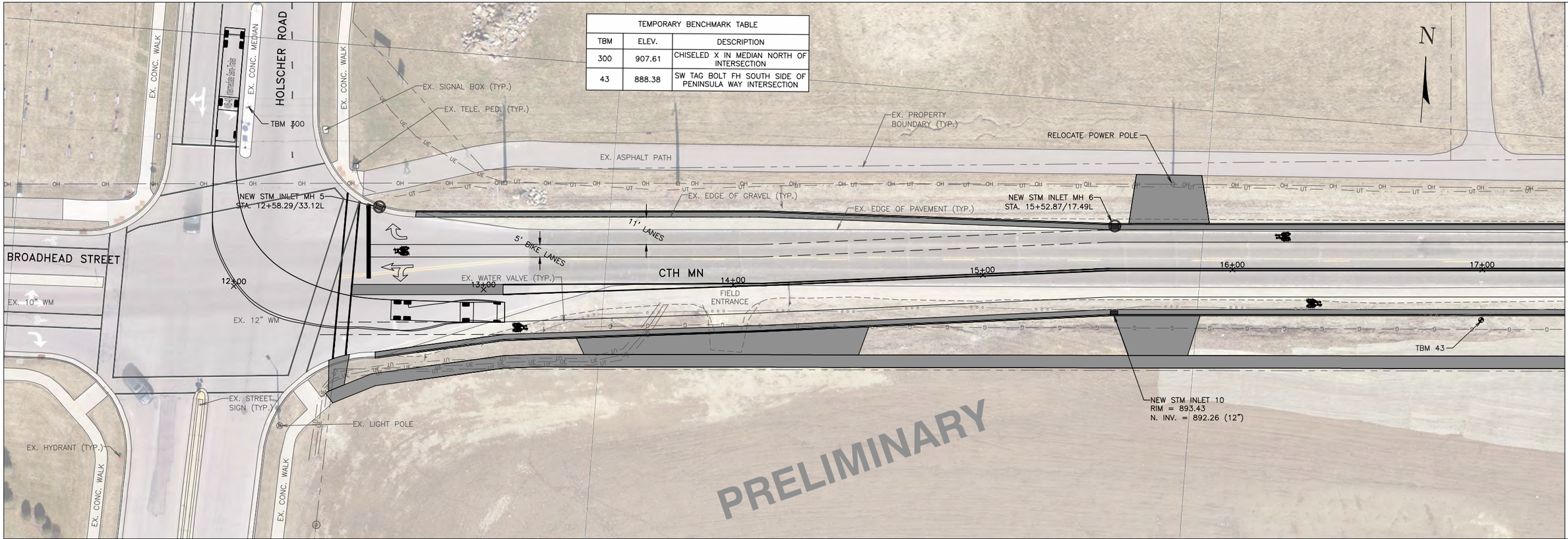
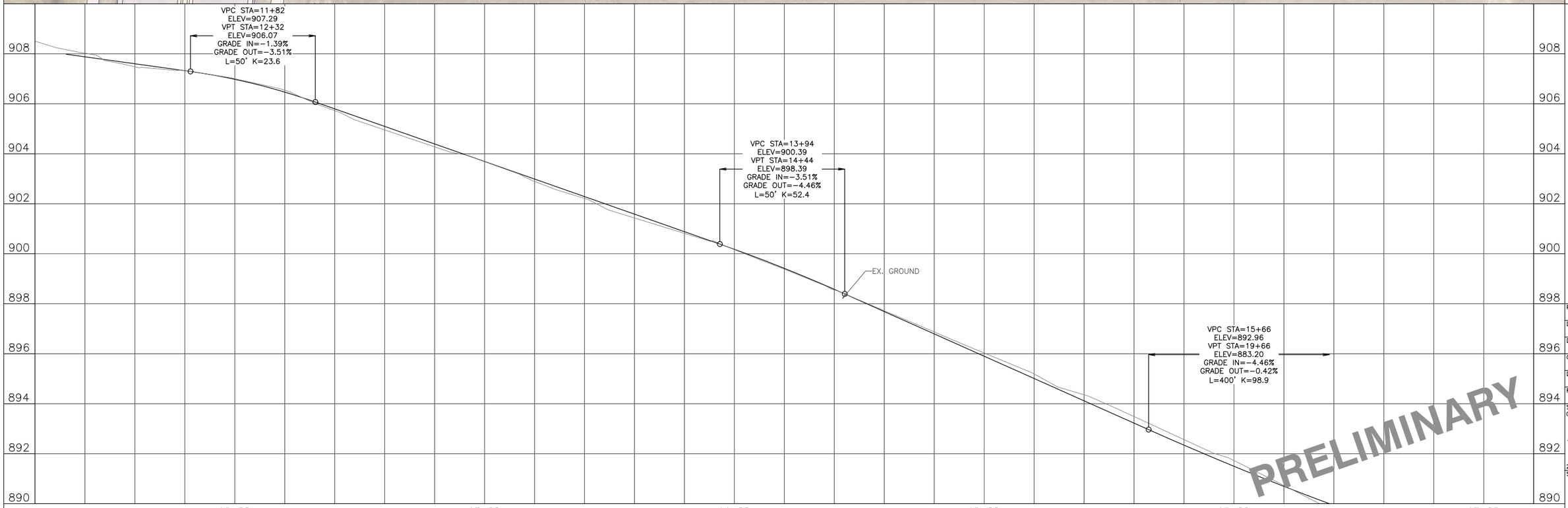
PLAN & PROFILE
CTH AB
Station 80+40 To Station 86+40

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING NO.: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20, VERTICAL 1 2
SHEET: A7

TEMPORARY BENCHMARK TABLE		
TBM	ELEV.	DESCRIPTION
300	907.61	CHISELED X IN MEDIAN NORTH OF INTERSECTION
43	888.38	SW TAG BOLT FH SOUTH SIDE OF PENINSULA WAY INTERSECTION





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PLAN & PROFILE
CTH MN
Station 11+20 To Station 17+20

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.:	MC 174
DRAWING FILE:	MC 174 SHEETS.DWG
DRAWN BY:	J.R.K.
CHECKED BY:	N.R.B.
DATE:	8-26-20
REVISIONS:	
SCALE: HORIZONTAL	0 5 10 20
VERTICAL	1 2
SHEET:	B1

TEMPORARY BENCHMARK TABLE		
TBM	ELEV.	DESCRIPTION
301	881.83	CHISELED X IN SIDEWALK ON EAST SIDE OF N. PENINSULA
43	888.38	SW TAG BOLT FH SOUTH SIDE OF PENINSULA WAY INTERSECTION
98	883.68	NE TAG BOLT OF FH IN NE QUADRANT OF PENINSULA & CTH MN

N

EX. POWER POLE (TYP.)

EX. ASPHALT PATH

EX. CONC. WALK

N. PENINSULA WAY

TBM 98

TBM 301

CTH MN

17+00 18+00 19+00 20+00 21+00 22+00

11' LANES

5' BIKE LANES

TBM 43

EX. EDGE OF PAVEMENT (TYP.)

EX. EDGE OF GRAVEL (TYP.)

gas valve??

EX. PROPERTY BOUNDARY (TYP.)

EX. PROPERTY CORNER (TYP.)

0610-021-9001-0
CLAIR & JACQUELINE UTTER

PRELIMINARY

VPC STA=15+66
ELEV=892.96
VPT STA=19+66
ELEV=883.20
GRADE IN=-4.46%
GRADE OUT=-0.42%
L=400' K=98.9

EX. GROUND

VPC STA=22+14
ELEV=882.16
VPT STA=23+14
ELEV=882.23
GRADE IN=-0.42%
GRADE OUT=0.56%
L=100' K=102.3

894 892 890 888 886 884 882 880 878 876

PRELIMINARY

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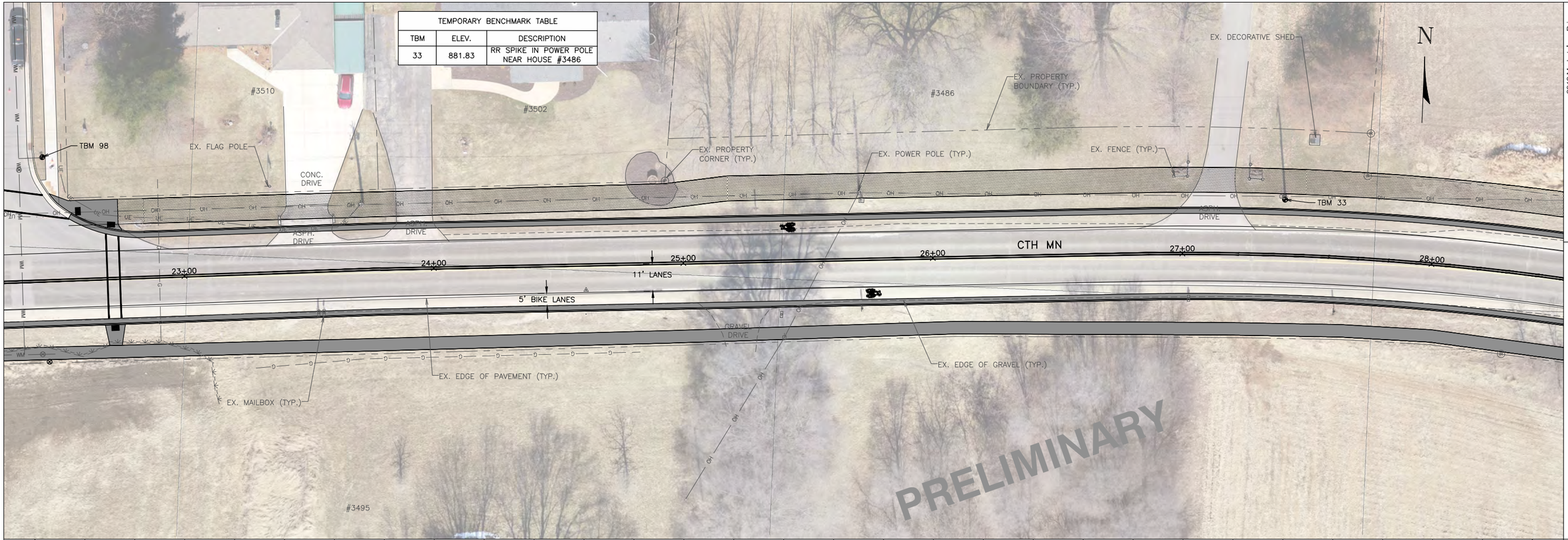
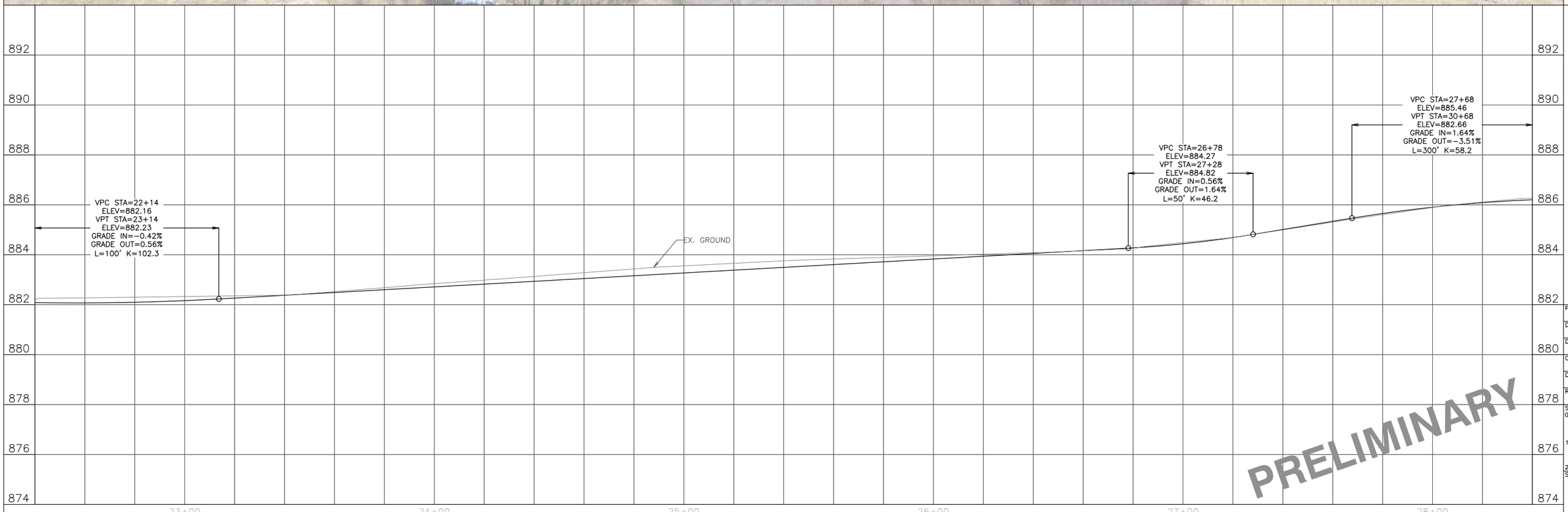
PLAN & PROFILE
CTH MN
Station 16+80 To Station 22+80

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20, VERTICAL 1 2
SHEET: B2

TEMPORARY BENCHMARK TABLE		
TBM	ELEV.	DESCRIPTION
33	881.83	RR SPIKE IN POWER POLE NEAR HOUSE #3486





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PLAN & PROFILE
CTH MN
Station 22+40 To Station 28+40

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.:	MC 174
DRAWING FILE:	MC 174-SHEETS.DWG
DRAWN BY:	J.R.K.
CHECKED BY:	N.R.B.
DATE:	8-26-20
REVISIONS:	
SCALE: HORIZONTAL	0 5 10 20
VERTICAL	1 2
SHEET:	B3

TEMPORARY BENCHMARK TABLE		
TBM	ELEV.	DESCRIPTION
302	886.26	CAP N. SIDE OF CTH MN 29+21

0610-021-8002-1
VENNEVOLL INC.

EX. GUY WIRE (TYP.)
EX. EDGE OF PAVEMENT (TYP.)
EX. EDGE OF GRAVEL (TYP.)
EX. PROPERTY BOUNDARY (TYP.)
EX. POWER POLE (TYP.)
TBM 302
28+00
29+00
30+00
31+00
32+00
33+00
34+00
CTH MN
5' BIKE LANES
11' LANES
GRAVEL DRIVE
EX. PROPERTY CORNER (TYP.)
EX. GAS VALVE (TYP.)
0610-021-9632-0
CLAIR & JACQUELINE UTTER
#3455

PRELIMINARY

N

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PLAN & PROFILE
CTH MN
Station 28+00 To Station 34+00

VPC STA=27+68
ELEV=885.46
VPT STA=30+68
ELEV=882.66
GRADE IN=1.64%
GRADE OUT=-3.51%
L=300' K=58.2

EX. GROUND

VPC STA=33+09
ELEV=874.18
VPT STA=34+09
ELEV=871.51
GRADE IN=-3.51%
GRADE OUT=-1.84%
L=100' K=59.7

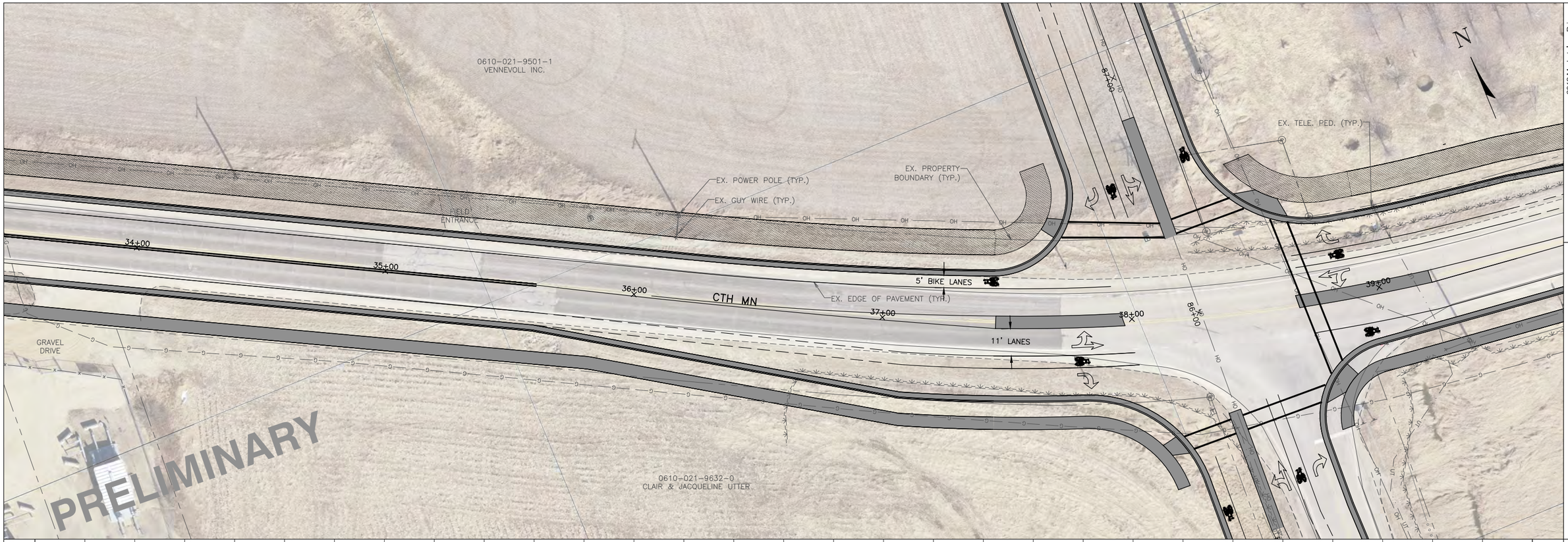
888
886
884
882
880
878
876
874
872
870

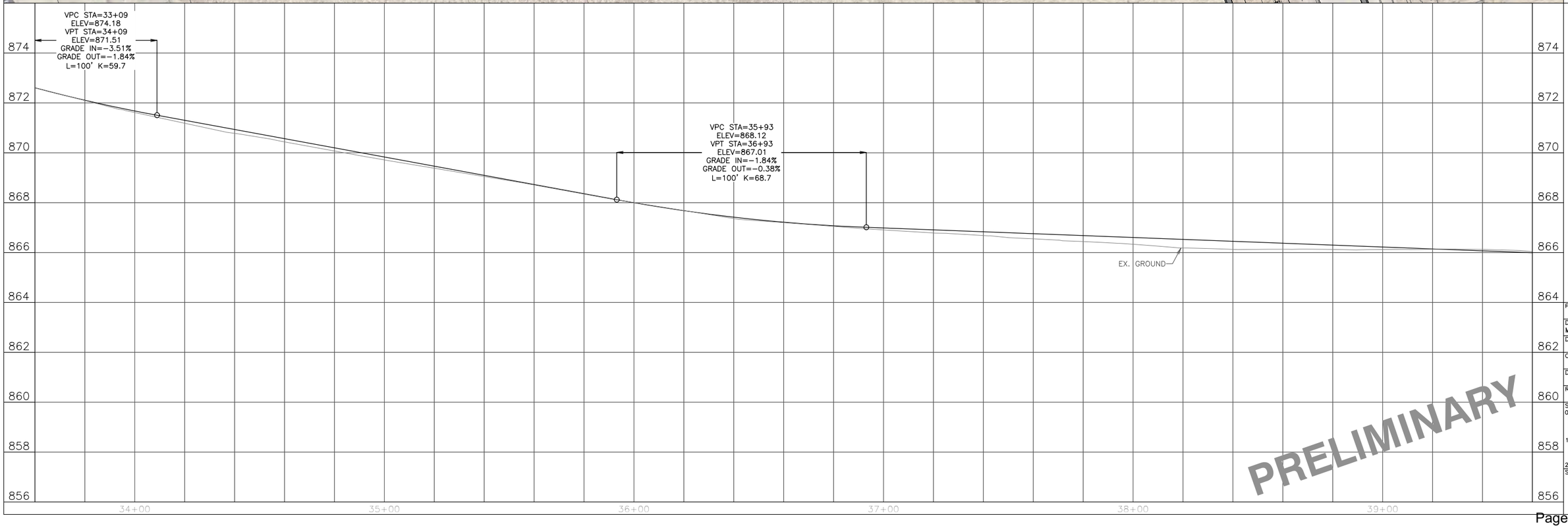
29+00
30+00
31+00
32+00
33+00

PRELIMINARY

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.:	MC 174
DRAWING TITLE:	MC 174 SHEETS.DWG
DRAWN BY:	J.R.K.
CHECKED BY:	N.R.B.
DATE:	8-26-20
REVISIONS:	
SCALE: HORIZONTAL	0 5 10 20
VERTICAL	1 2
SHEET:	B4





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PLAN & PROFILE
CTH MN
Station 33+60 To Station 39+60

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20, VERTICAL 1 2
SHEET: B5

TEMPORARY BENCHMARK TABLE		
TBM	ELEV.	DESCRIPTION
304	865.18	CAP N. SIDE OF CTH MN

#3424 CTH MN

0610-012-9000-5
SKAAR SCATTERED ACRES INC.

EX. PROPERTY BOUNDARY (TYP.)

EX. PROPERTY CORNER (TYP.)

EX. EDGE OF GRAVEL (TYP.)

EX. EDGE OF PAVEMENT (TYP.)

TBM 304

GRAVEL DRIVE

40+00 41+00 42+00 43+00 44+00 45+00

CTH MN

EX. POWER POLE (TYP.)

EX. MAILBOX (TYP.)

EX. GUY WIRE (TYP.)

0610-012-9170-0
CLAIR & JACQUELINE UTTER

VPC STA=42+12
ELEV=865.03
VPT STA=42+62
ELEV=865.01
GRADE IN=-0.38%
GRADE OUT=0.30%
L=50' K=73.7

EX. GROUND

872 870 868 866 864 862 860 858 856 854

40+00 41+00 42+00 43+00 44+00 45+00

PRELIMINARY

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PLAN & PROFILE
CTH MN
Station 39+20 To Station 45+20

2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: SHEETS.DWG
DRAWN BY: J.R.K.
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DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20, VERTICAL 1 2
SHEET: B6

PRELIMINARY

0610-021-9632-0
CLAIR & JACQUELINE UTTER

N

EX. GUY WIRE (TYP.)

81+00

82+00

83+00

84+00

85+00

86+00

11' LANES

5' BIKE LANES

EX. EDGE OF PAVEMENT (TYP.)

EX. EDGE OF GRAVEL (TYP.)

EX. PROPERTY BOUNDARY (TYP.)

EX. WETLAND BOUNDARY (TYP.)

EX. POWER POLE W/CONC. BASE

0610-012-9170-0
CLAIR & JACQUELINE UTTER

EX. GROUND

868
866
864
862
860
858
856
854
852
850

81+00
82+00
83+00
84+00
85+00
86+00

PRELIMINARY

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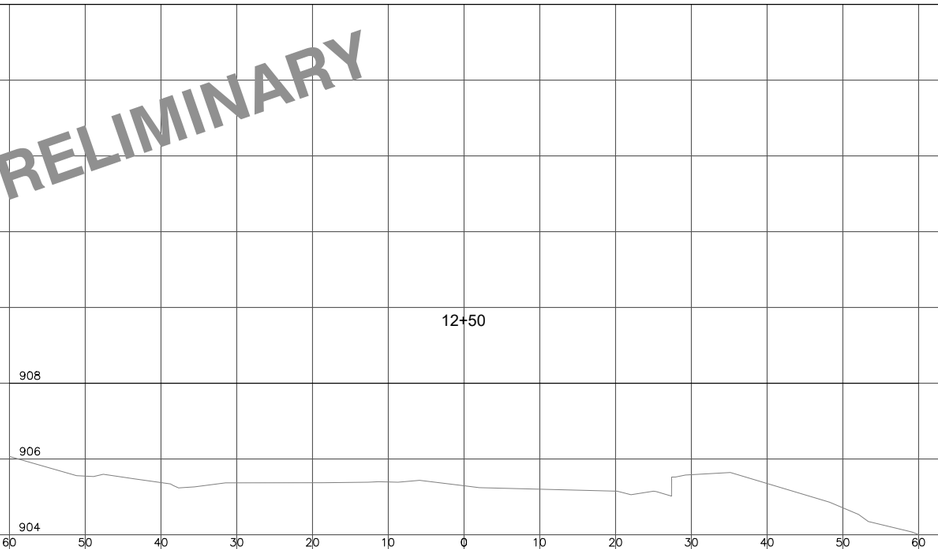
PLAN & PROFILE
CTH AB
Station 80+40 To Station 86+40

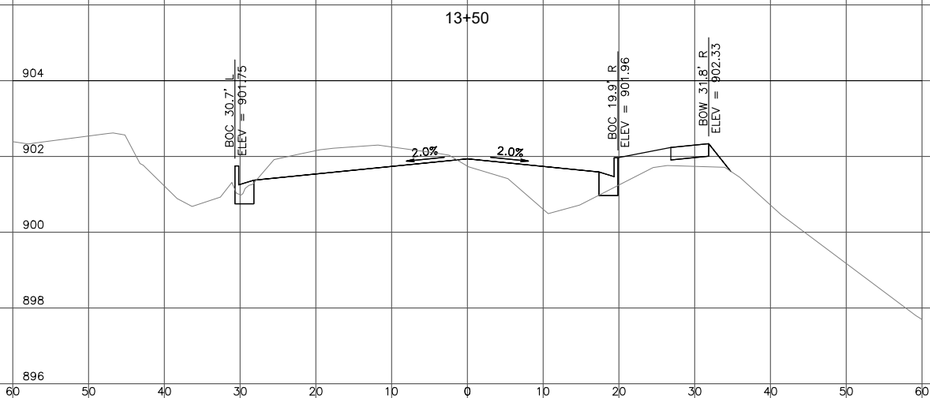
2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

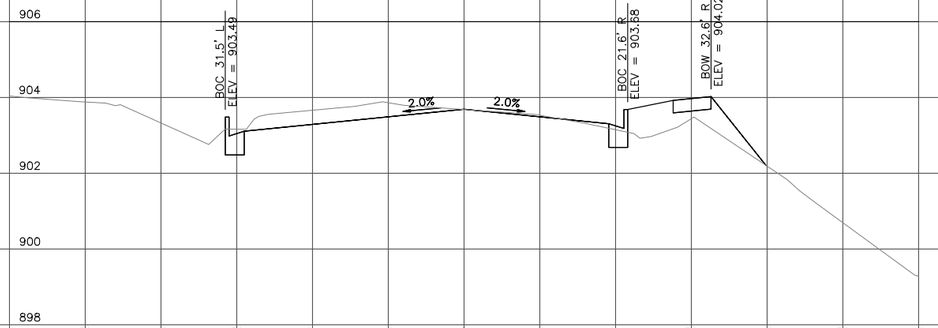
PROJECT NO.: MC 174
DRAWING NO.: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 5 10 20, VERTICAL 1 2
SHEET: B7

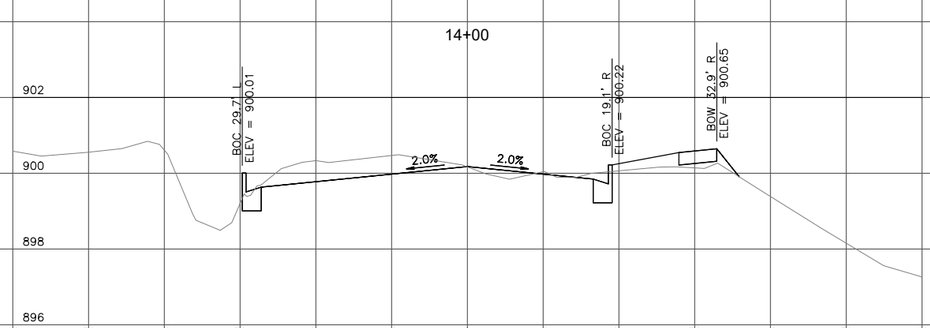
PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.









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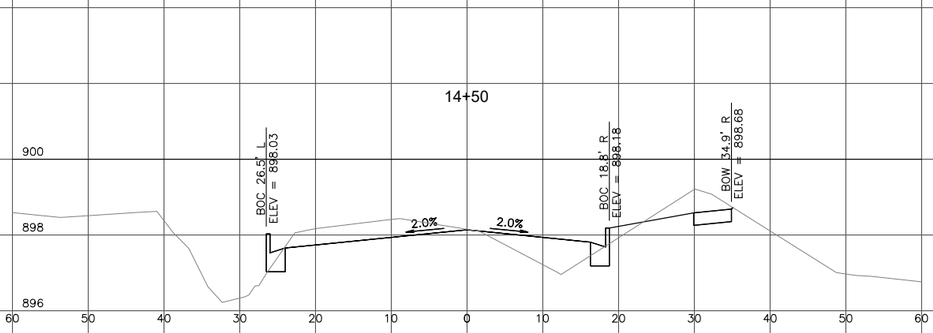
CROSS SECTIONS
CTH MN
Station X+XX To Station X+XX

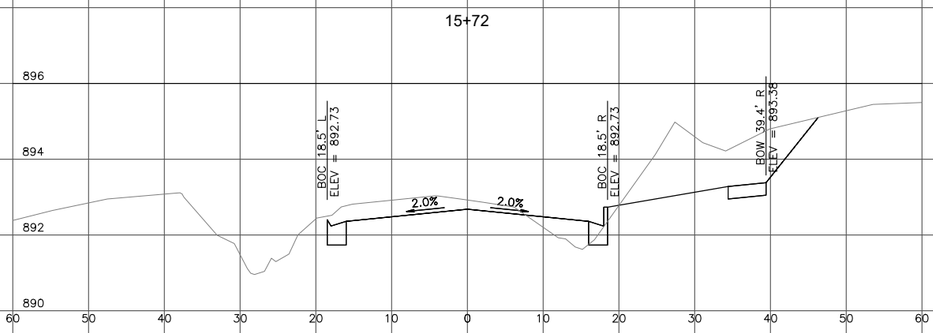
2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

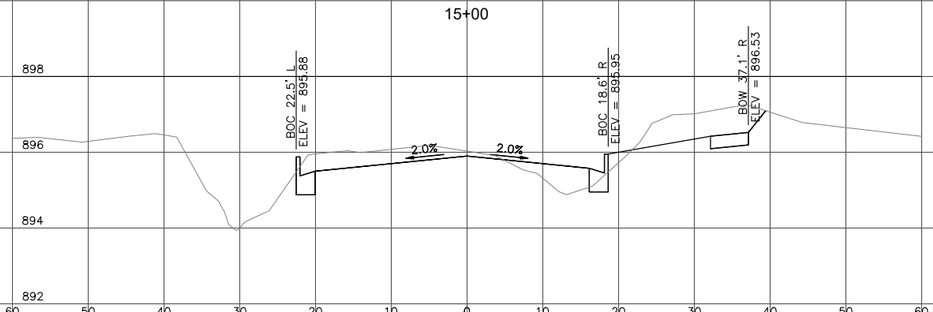
PROJECT NO.: MC 174
DRAWING NO.: MC 174-SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X1

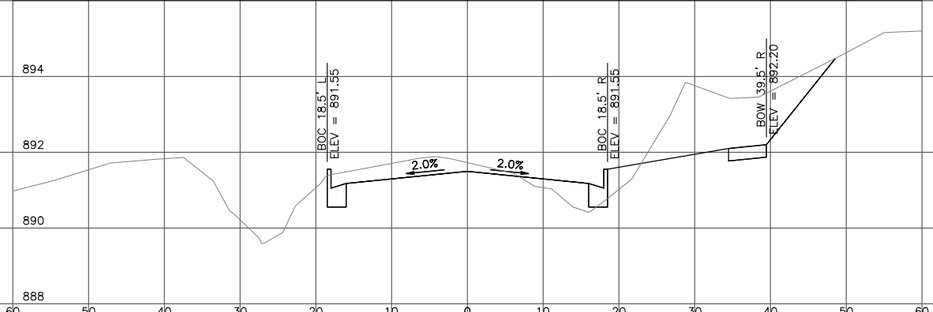
PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.









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CROSS SECTIONS
CTH MN
Station X+XX To Station X+XX

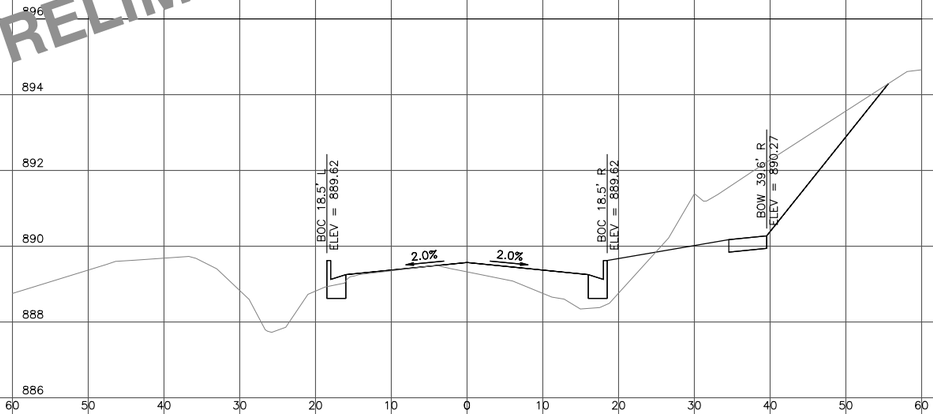
2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X2

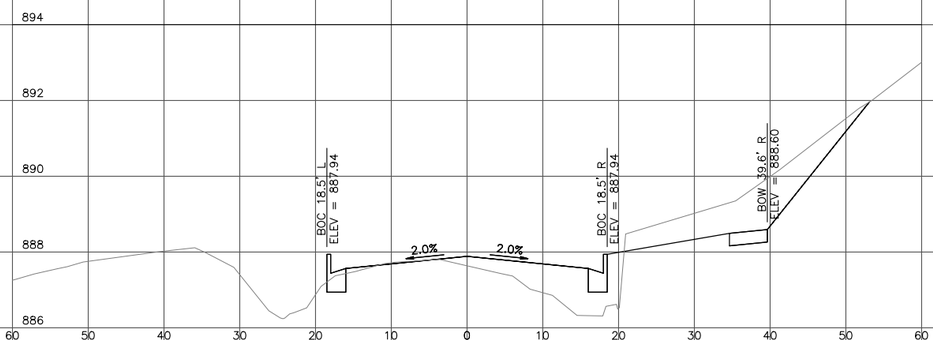
PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.

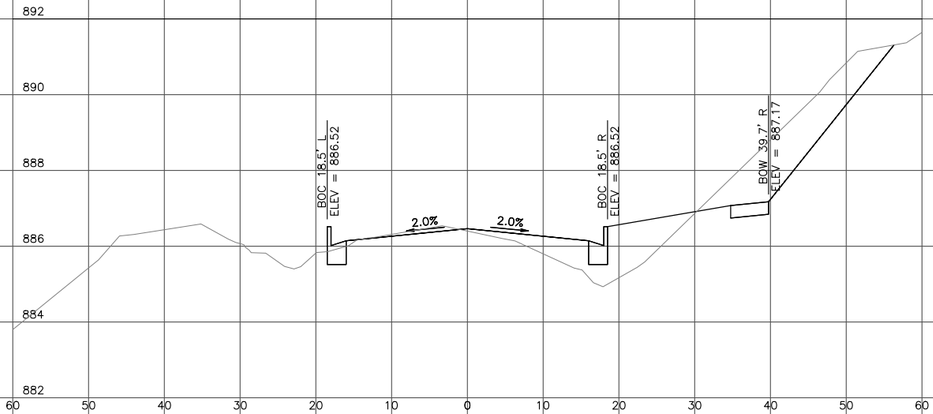
16+50



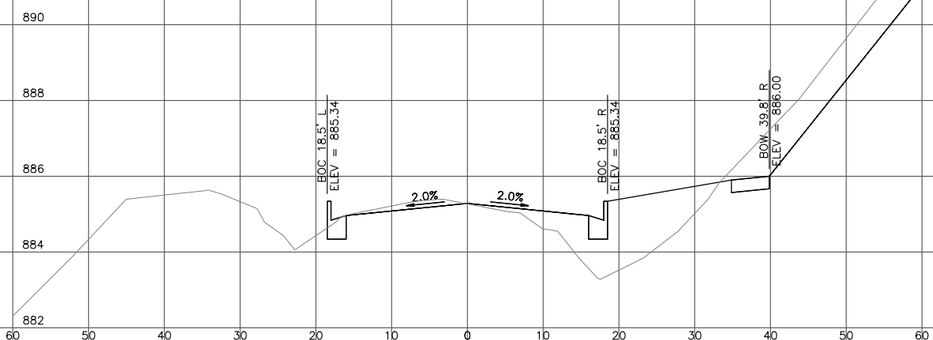
17+00



17+50



18+00



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CTH MN
Village of McFarland, Wisconsin

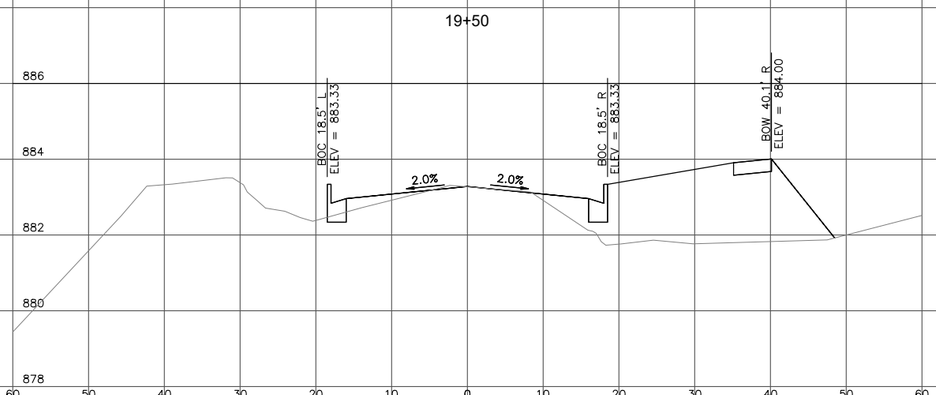
PROJECT NO.:	MC 174
DRAWING FILE:	SHEETS.DWG
DRAWN BY:	J.R.K.
CHECKED BY:	N.R.B.
DATE:	8-26-20
REVISIONS:	
SCALE: HORIZONTAL	0 2.5 5 10
	1 VERTICAL 2
SHEET:	X3

PRELIMINARY

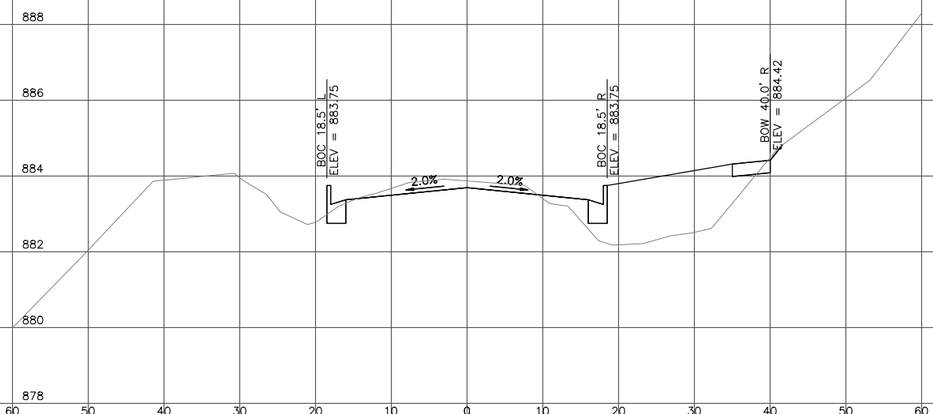
EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.

18+50

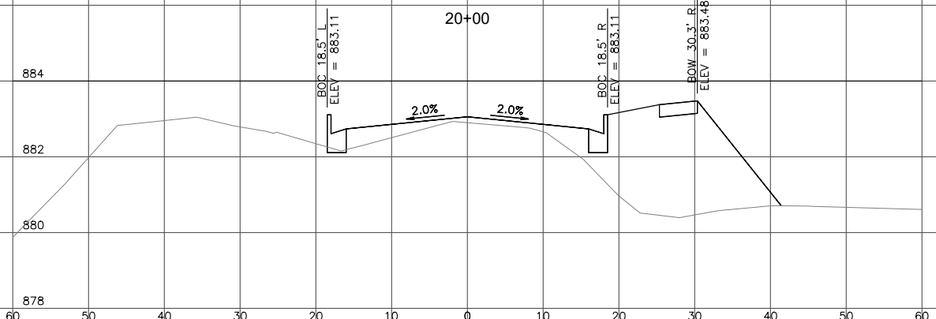
19+50



19+00



20+00



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Village of McFarland, Wisconsin

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DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X4

PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
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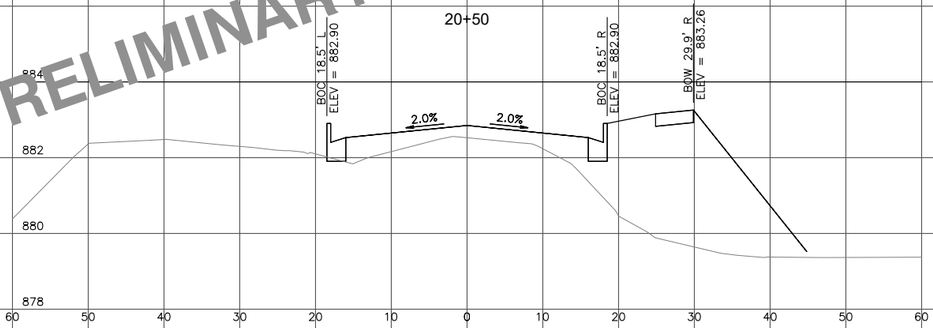
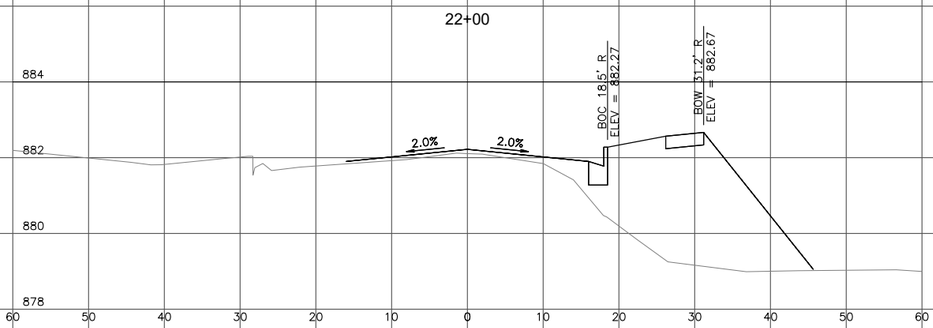
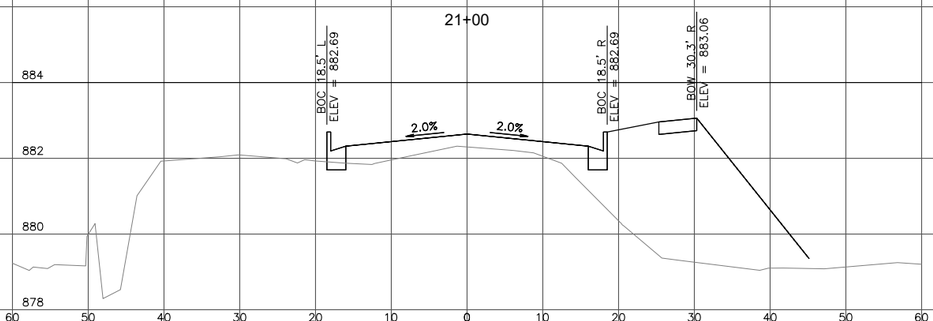
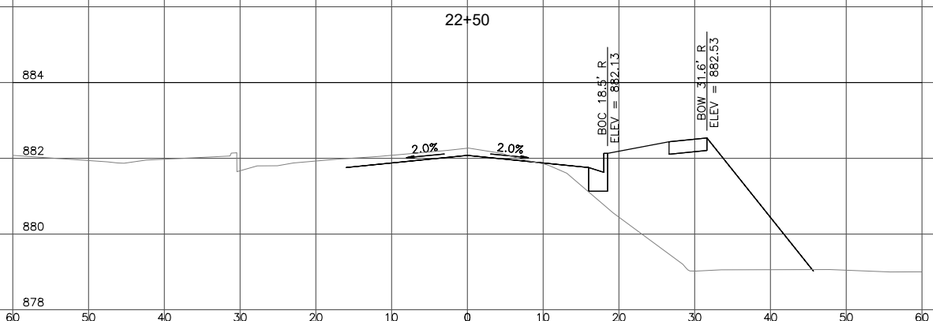
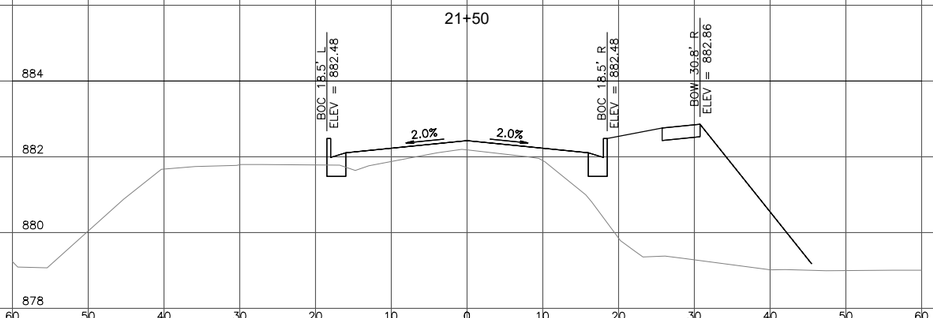
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.

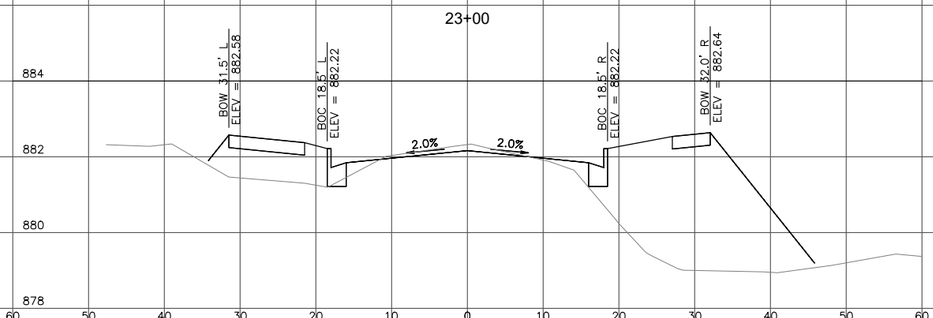












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CROSS SECTIONS
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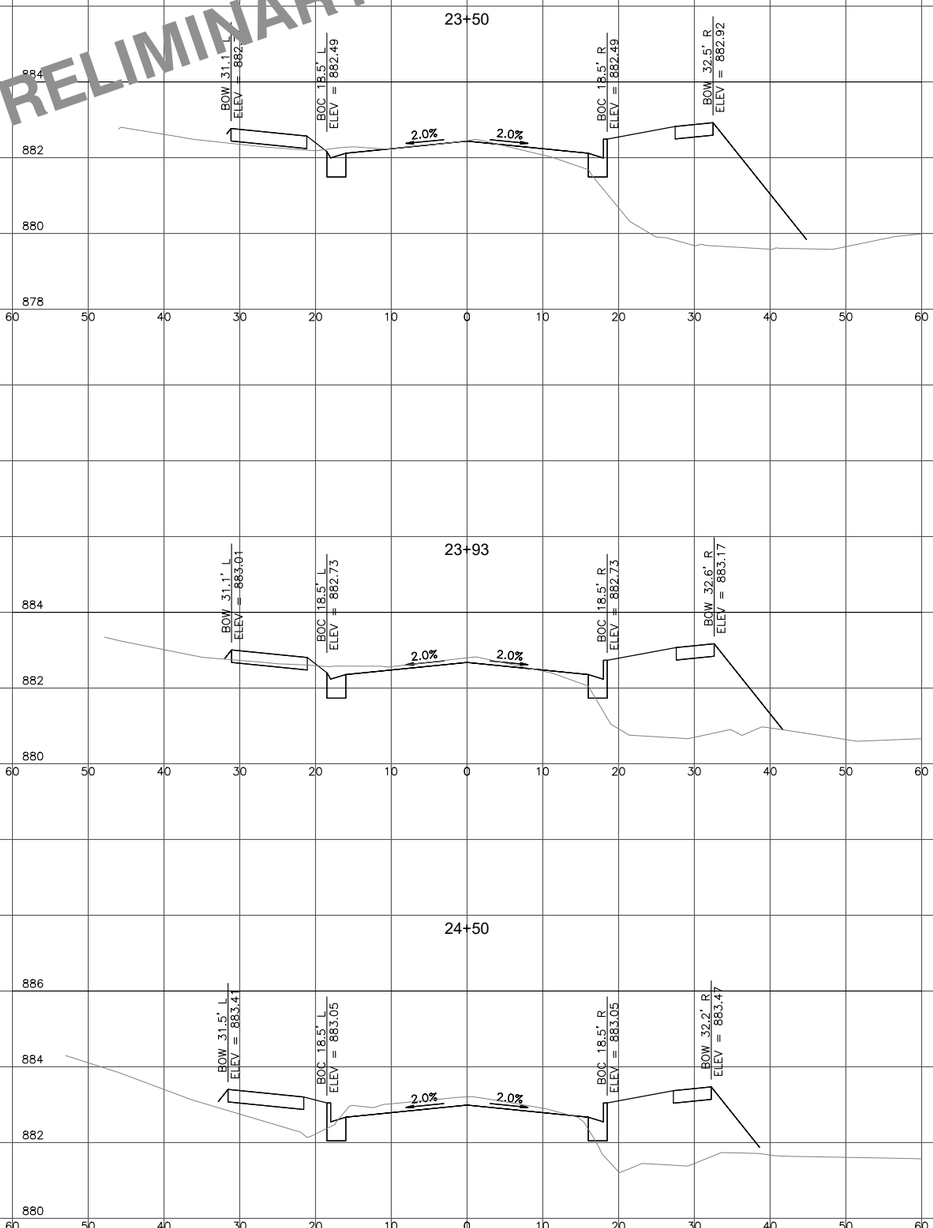
Station X+XX To Station X+XX

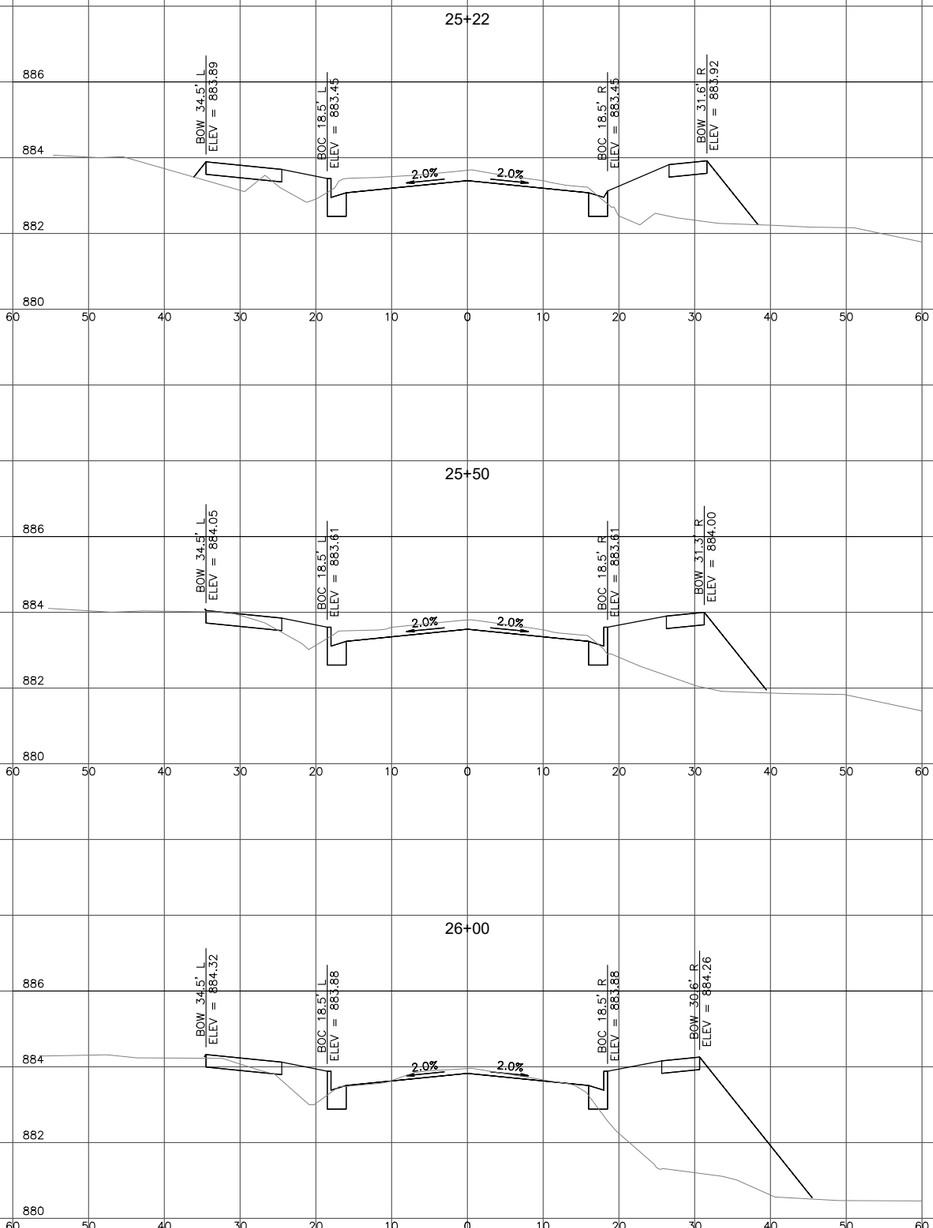
2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X5

PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.





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CROSS SECTIONS
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CTH MN
Village of McFarland, Wisconsin

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CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X6

PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.

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CTH MN
Village of McFarland, Wisconsin

PROJECT NO.:	MC 174
DRAWING FILE:	MC 174 SHEETS.DWG
DRAWN BY:	J.R.K.
CHECKED BY:	N.R.B.
DATE:	8-26-20
REVISIONS:	

SCALE: HORIZONTAL 0 2.5 5 10
1
2 VERTICAL

SHEET: X7

PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.

29+50

30+00

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CROSS SECTIONS
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2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

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DRAWN BY: J.R.K.
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DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2

SHEET: X8

PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.

30+50

31+50

31+00

32+00

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Village of McFarland, Wisconsin

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CHECKED BY: N.R.B.
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X9

PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
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2021 STREET AND UTILITY IMPROVEMENTS
CTH MN
Village of McFarland, Wisconsin

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DRAWN BY: J.R.K.
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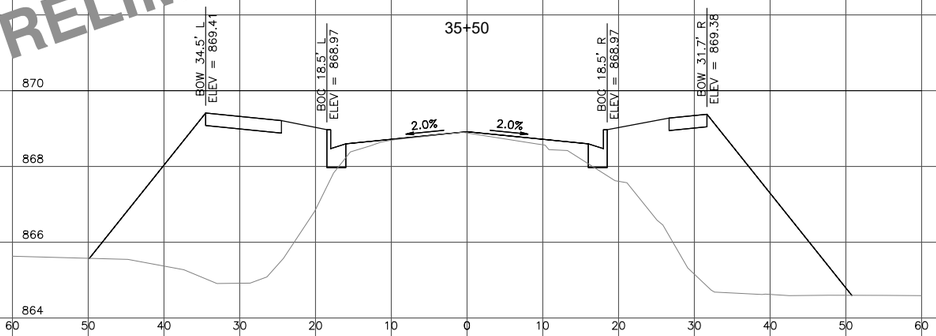
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X10

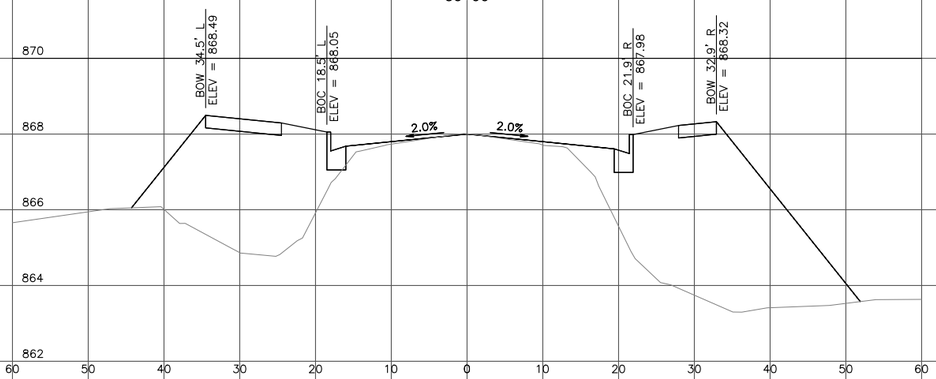
PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.

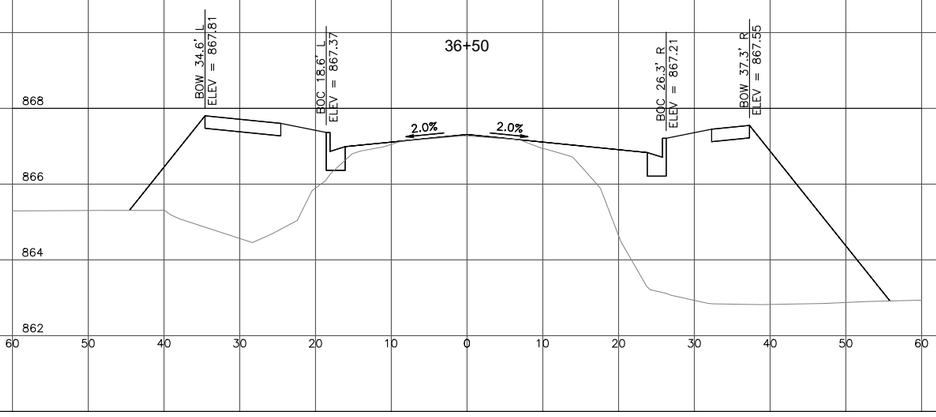
35+50



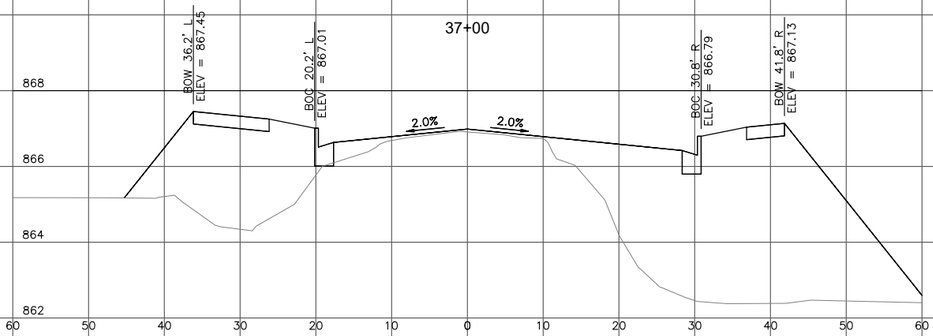
36+00



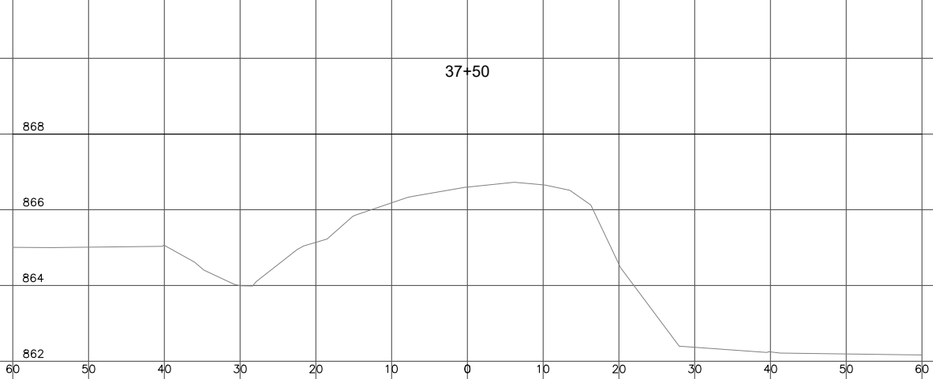
36+50



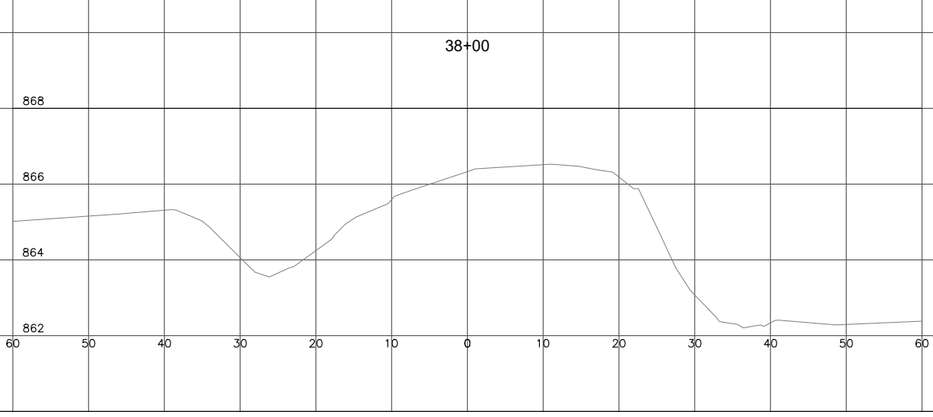
37+00



37+50



38+00



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CROSS SECTIONS
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CTH MN
Village of McFarland, Wisconsin

PROJECT NO.: MC 174
DRAWING FILE: MC 174 SHEETS.DWG
DRAWN BY: J.R.K.
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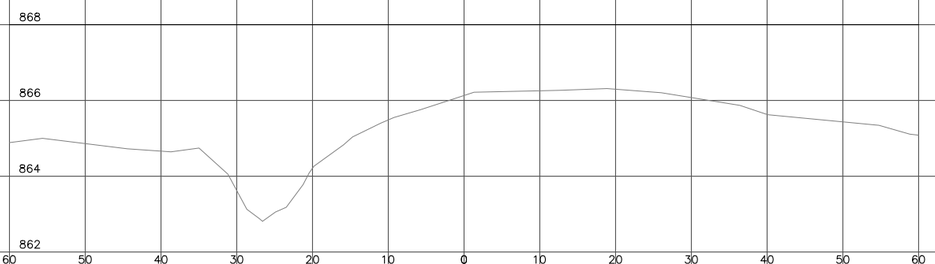
DATE: 8-26-20
REVISIONS:
SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X11

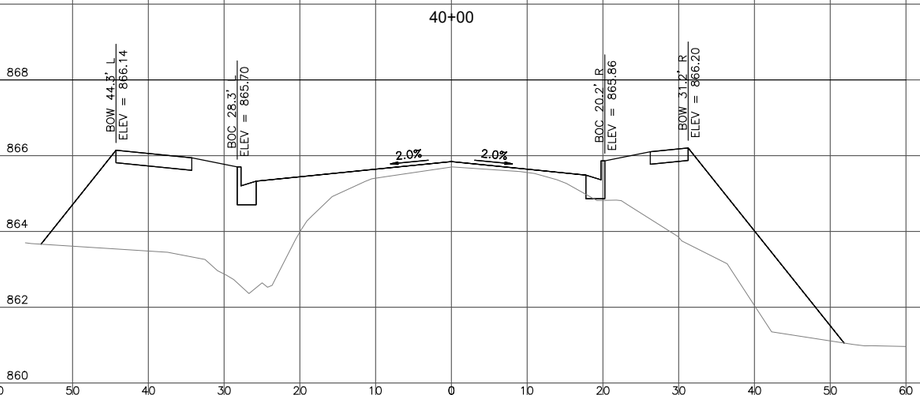
PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
FINISHED CONTOURS ARE DENOTED BY DARKER LINES.
DRIVE OVER CURB ELEVATIONS ARE LABELED AT FULL CURB HEIGHT.

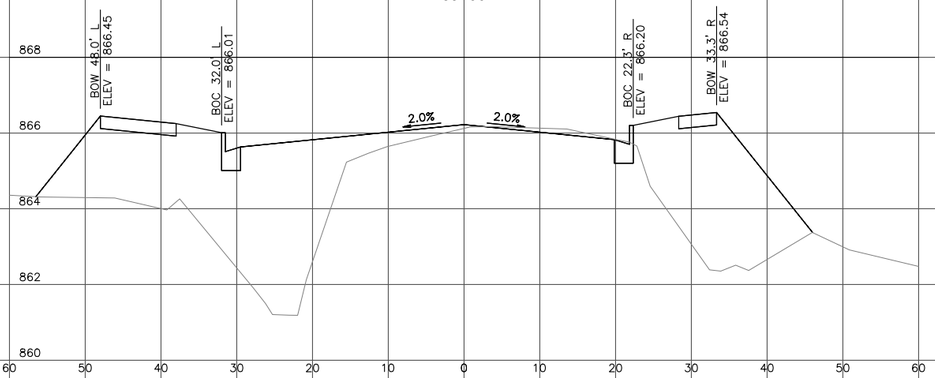
38+50



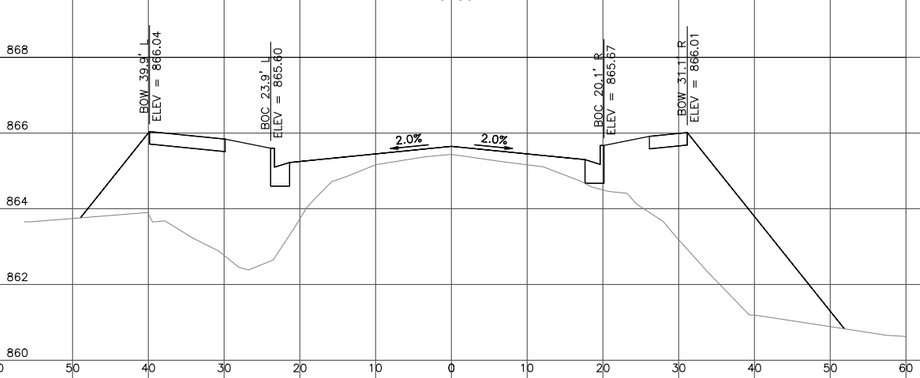
40+00



39+00

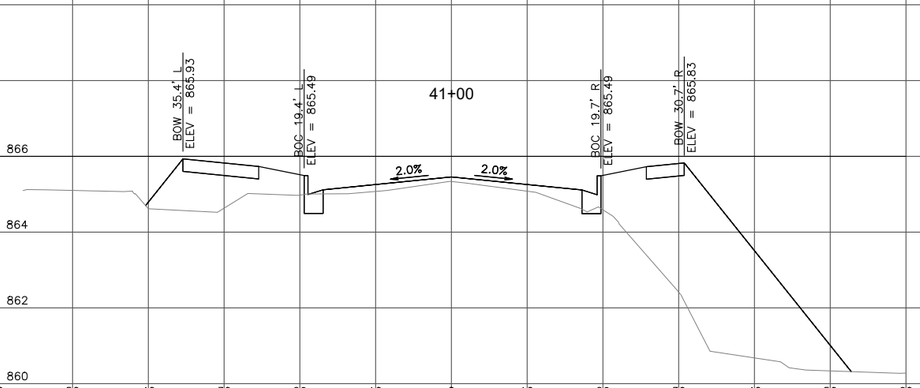


40+50



39+50

41+00



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SHEET: X12

PRELIMINARY

EXISTING CONTOURS ARE DENOTED BY LIGHTER LINES.
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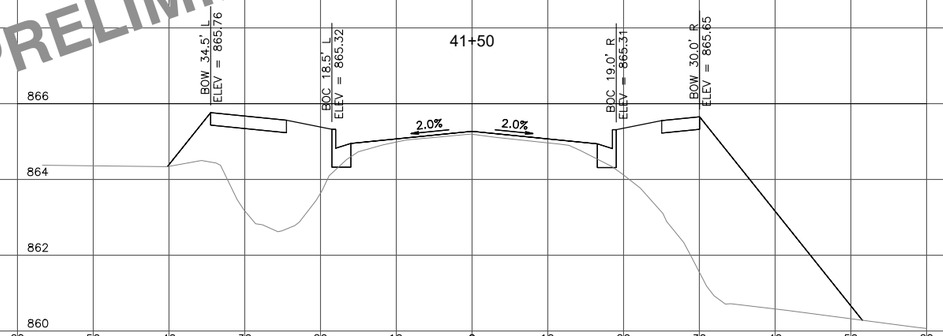

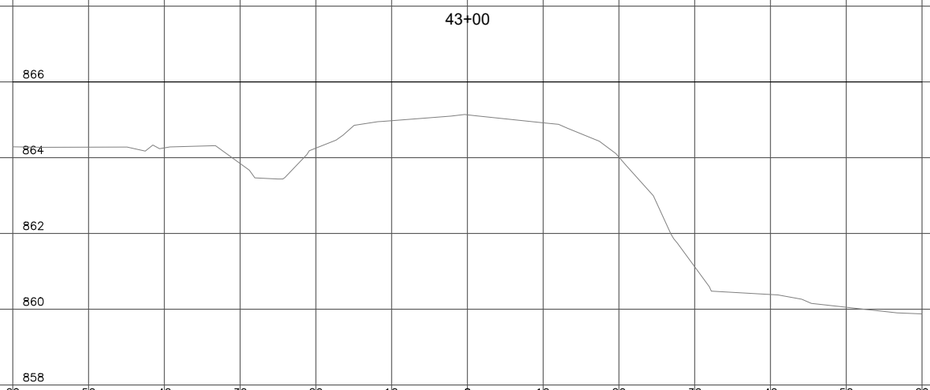

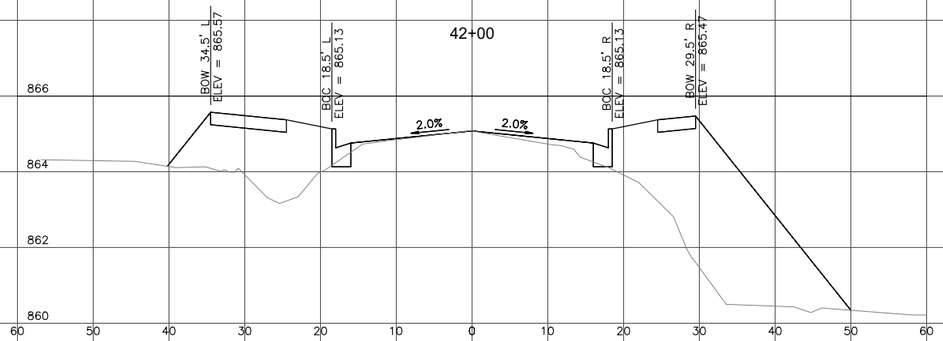

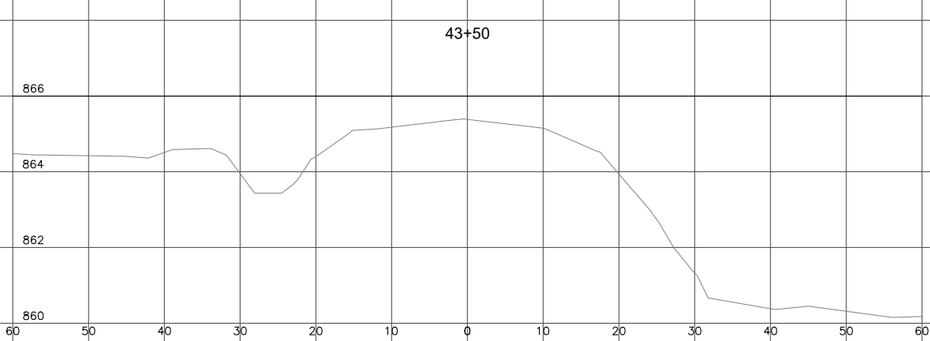

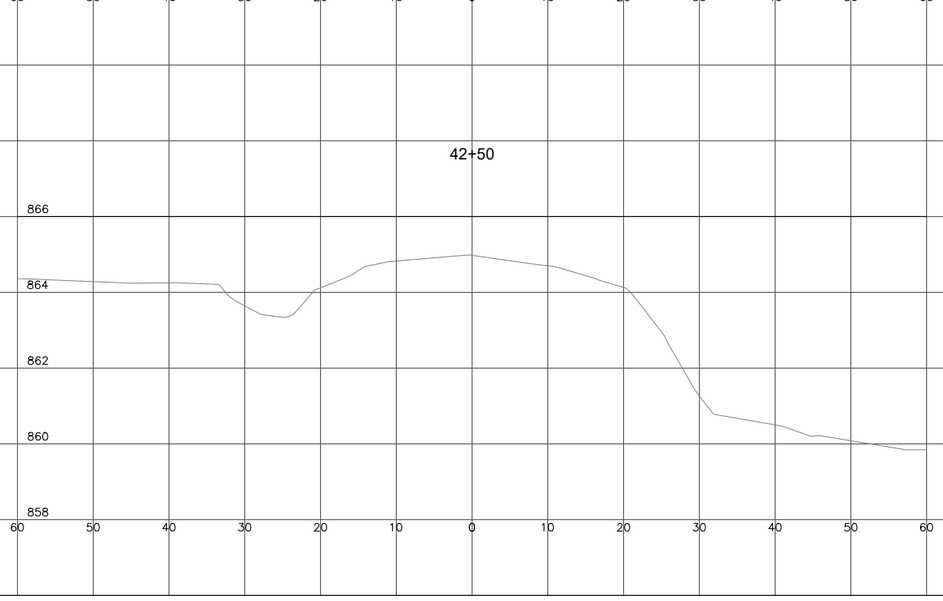

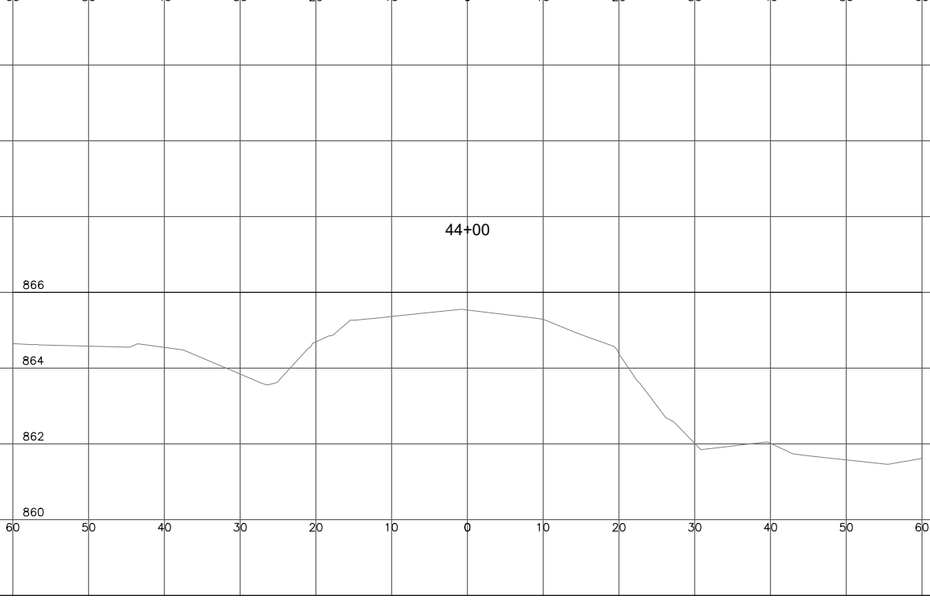

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SCALE: HORIZONTAL 0 2.5 5 10
VERTICAL 1 2
SHEET: X13

Public Input Session—County Highway MN

August 31, 2020 at 7:00 p.m. via Zoom webinar

Attendee comments and questions:

- Wayne Utterback, 3029 Highway AB
    - At the CTH MN/AB intersection, does Phase 4 of MN tie into the southern Interceptor capacity? The proposed Interceptor is concepted as intersecting MN west of the AB/MN intersection
- Camille and Nathan Danielson, 6140 Shooting Star Trl
    - What impact would the connection from MN to Siggelkow have on the Rod & Gun Club? It looks like it might be right in the potential path
- Ken
    - On the NE Corner of Holscher/MN is it possible to move the corner sidewalk away from the road? It is very close and walkers marking the corner need to get very close to the road.
- Chris St. Clair
    - Where is the intended speeding limit change associated with this road?
    - Is there a southbound component planned for the road that goes in to the prairie place development? (peninsula way)
    - The village plan includes relocating the rod and gun club correct?
    - With all the driveways facing Holscher road, is it still considered a collector street? Is this something that could be changed with the extension of AB from a planning standpoint
    - Does the fact that Holscher Rd is considered a “collector” street have an impact on the wide turns to allow for semi traffic?
    - Just a general comment to be read for the record—I think a roundabout at the AB south intersection would be an excellent way to introduce a speeding limit change and safely allow for traffic to move
    - Another comment for the record—without a 4-way stop, there is significant concern over the Holscher/MN intersection for pedestrian safety—could be mitigated with overhead pedestrian signals
    - The intersection at Holscher and MN is not standardized—as mentioned likely due to the presence of the cemetery. What mitigations are available from an engineering standpoint to ensure the safety of pedestrians?
- Jim Lacy
    - Is it fair to assume the visibility along the current MN would be dramatically improved by the removal of the vegetation? i.e. at the curve just west of AB
- Bill Stoneman
    - Does this total project extend all the way to AB north?
- Adam Swierczak
    - Can you discuss the intent of the storm water routing for this project?

VILLAGE OF
McFarland

VILLAGE BOARD SUMMARY SHEET

MEETING DATE: **Tuesday, September 8, 2020**

SECTION: **Business**

DEPARTMENT: **Public Works**

CONTACT: **Jim Hessling, Public Works Director**

AGENDA ITEM: **Presentation and discussion of the Traffic Impact Analysis for Broadhead Street and Holscher Road.**

PREVIOUS ACTION:
This issue of the Broadhead Phase #4 reconstruction has been discussed at previous Public Works committee meetings and most recently at a Public Input meeting held last week.

ISSUE SUMMARY:
Included in your packet is a Traffic Impact Analysis for the Broadhead & Holscher Road intersection as part of the Broadhead Street Phase 4 reconstruction project slated for 2021. This document was previously sent to committee members on August 19, 2020 via email.

Phase 4 is anticipated to run from Holscher Road east to CTH AB but still under review as part of the previous agenda item.

Data and plans were reviewed by SRF for evaluation and a professional opinion. SRF has completed its review and their report is included in the packet. Action as part of the committees review would decide next steps to take, if any at all. Our objective is to see what if any additional comments, quesitons, concerns, etc. the Committee has now that they have had a chance to review the report and the recommendations provided. We'll likely have a short presentation but a lot of this information was reviewed at our last meeting, and we can follow up on questions as they arise in the meeting.

FINANCIAL/BUDGET IMPACT:

VILLAGE PLAN REFERENCE:

ORDINANCE REFERENCE:

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

ATTACHMENTS:

1. 200805_Broadhead Holscher ICE

To: Village of McFarland
From: Lee Gibbs, PE, PTOE
Date: 7/23/2020
RE: Traffic Impact Analysis (TIA)
Broadhead Street and Holscher Road
Village of McFarland
Dane County

Project Description:

This intersection is a four-legged intersection located on the periphery of the Village of McFarland. Broadhead Street (also known as County MN and running east-west) serves as the major street and Holscher Road (running north-south) serves as the minor street with all movements from Holscher Road under stop control. Exclusive left-turn lanes are provided on both approaches of Holscher Road and an exclusive right-turn lane is provided on the west leg of Broadhead Street. Bike lanes and sidewalks are provided on the north, south, and west intersection legs while crosswalks are provided on all intersection legs. A multi-use path runs on the north side of the east intersection leg.

Several developments are proposed in the immediate vicinity of the intersection: a residential development of 80 dwelling units, a residential development of 32 units, and a new Village public safety building. These sites, in addition to long-range Village growth east of the study intersection, will increase traffic volumes at this location. This condition, coupled with existing concerns of stop-sign noncompliance on Holscher Road and upcoming reconstruction of Broadhead Street east of Holscher Road, has introduced consideration of evaluating the existing intersection control and to investigate potential intersection control improvements.

Description of Alternatives:

The following intersection control was investigated:

- Two-way stop-control (TWSC) – existing condition
- All-way stop-control (AWSC)
- Traffic signal control
- Roundabout control

Safety Considerations:

Observed Crash History Years: 2015 through 2019

Crash Type	Fatal	Injury A	Injury B	Injury C	KABC	PDO	Total
Fixed Object	0	0	0	0	0	2	2
Angle	0	0	0	1	1	0	1
Total	0	0	0	1	1	2	3

Injury A: crash resulting in incapacitating injury
Injury B: crash resulting in non-incapacitating injury
Injury C: crash resulting in minor injury
KABC: sum of fatal and injury crashes
PDO: property damage only crashes

Crash Trends: No crash trends identified in observed crash history

Contributing Factors: One PDO crash was alcohol-related; the other PDO crash occurred in a work zone

Operational Considerations:

Peak period (6-9a and 3-6p) intersection turning movement counts were collected at the intersection in July 2020. Due to the COVID-19 pandemic altering traffic patterns, the collected traffic data was adjusted using historical counts in the area to project more representative (i.e. pre COVID-19) traffic conditions. Year 2009 and 2018 traffic counts along County MN (east of the study intersection) were reviewed to generate an average annual growth rate (AAGR) for the roadway. This AAGR was projected to extrapolate Year 2020 traffic volumes at this count site. The extrapolated count data was compared to observed intersection counts at Broadhead / Holscher and intersection volumes were increased to reflect the extrapolated data. Observed turning movement proportions for each intersection approach were used to apply the increase in traffic volumes to each turning movement at the intersection. This process produced the existing-year intersection turning movement volumes used for analysis purposes.

Existing (Year 2020) and future-year (Year 2030) traffic conditions were evaluated. Background growth (2 percent per year), site traffic from adjacent properties, and site traffic from long-range growth areas were included in the future-year conditions. The Highway Capacity Manual (HCM) module of Synchro11 was used to develop measures of effectiveness (MOEs) for all traffic operations analysis scenarios. The results can be found below:

Year: 2020	Existing Conditions (TWSC)											
AM Peak	EB			WB			NB			SB		
	L/T	-	R	-	All	-	L	-	T/R	L	-	T/R
# Lanes	1		1		1		1		1	1		1
LOS	A		A		A		B		B	B		B
Delay (s)	7.6		0.0		7.5		11.6		12.1	13.2		10.3
v/c	0.02		0.00		0.01		0.05		0.19	0.10		0.08
Queue (ft.)	5		0		0		5		20	10		10
Storage (ft.)			100				100			100		
PM Peak	EB			WB			NB			SB		
	L/T	-	R	-	All	-	L	-	T/R	L	-	T/R
# Lanes	1		1		1		1		1	1		1
LOS	A		A		A		B		B	B		B
Delay (s)	7.5		0.0		7.5		11.7		11.0	12.1		11.2
v/c	0.02		0.00		0.01		0.04		0.10	0.08		0.12
Queue (ft.)	5		0		0		5		10	5		10
Storage (ft.)			100				100			100		
Additional Information												

Year: 2030

Future No-Build Conditions

AM Peak	EB			WB			NB			SB		
	L/T	-	R	L/T	-	R	L	-	T/R	L	-	T/R
# Lanes	1		1	1		1	1		1	1		1
LOS	A		A	A		A	B		B	B		B
Delay (s)	7.6		0.0	7.5		0.0	11.6		12.1	12.6		10.0
v/c	0.02		0.00	0.01		0.00	0.05		0.19	0.09		0.07
Queue (ft.)	5		0	0		0	5		20	10		5
Storage (ft.)			100			100	100			100		

PM Peak	EB			WB			NB			SB		
	L/T	-	R	L/T	-	R	L	-	T/R	L	-	T/R
# Lanes	1		1	1		1	1		1	1		1
LOS	A		A	A		A	B		B	B		B
Delay (s)	7.5		0.0	7.5		0.0	11.7		11.0	11.9		11.1
v/c	0.02		0.00	0.01		0.00	0.04		0.10	0.07		0.12
Queue (ft.)	5		0	0		0	5		10	5		10
Storage (ft.)			100			100	100			100		

Additional Information	As part of the Broadhead Street reconstruction, the WB approach will be reconstructed to provide a through/left-turn lane and an exclusive right-turn lane. This update is reflected in this, and other relevant, future-year alternatives.

Year: 2030

Future Build Conditions (AWSC Alternative)

AM Peak	EB			WB			NB			SB		
	L/T	-	R	L/T	-	R	L	-	T/R	L	-	T/R
# Lanes	1		1	1		1	1		1	1		1
LOS	B		A	B		A	B		B	B		B
Delay (s)	11.4		8.7	14.2		9.7	10.3		11.5	11.0		10.0
v/c	0.26		0.07	0.47		0.24	0.07		0.28	0.14		0.15
Queue (ft.)	25		5	65		20	5		30	15		15
Storage (ft.)			100			100	100			100		

PM Peak	EB			WB			NB			SB		
	L/T	-	R	L/T	-	R	L	-	T/R	L	-	T/R
# Lanes	1		1	1		1	1		1	1		1
LOS	B		A	B		A	B		B	B		B
Delay (s)	13.9		8.7	13.0		8.7	10.5		10.8	11.5		10.5
v/c	0.45		0.09	0.39		0.08	0.07		0.21	0.20		0.19
Queue (ft.)	60		10	45		10	5		20	20		20
Storage (ft.)			100			100	100			100		

Additional Information	Per guidance in Section 2B.07 of the Manual of Uniform Traffic Control Devices (MUTCD), Year 2030 AM and PM projected peak-hour volumes at this intersection would meet minimum volume thresholds for AWSC consideration to implement. Year 2020 volumes would not meet these thresholds.

Year: 2030	Future Build Conditions (Traffic Signal Alternative)											
AM Peak	EB			WB			NB			SB		
	L/T	-	R	L/T	-	R	L	-	T/R	L	-	T/R
# Lanes	1		1	1		1	1		1	1		1
LOS	A		A	A		A	A		A	A		A
Delay (s)	5.0		4.7	5.6		5.4	7.2		7.4	8.0		6.9
v/c	0.18		0.08	0.35		0.32	0.06		0.39	0.13		0.24
Queue (ft.)	10		5	20		10	5		20	10		10
Storage (ft.)			100			100	100			100		
PM Peak	EB			WB			NB			SB		
	L/T	-	R	L/T	-	R	L	-	T/R	L	-	T/R
# Lanes	1		1	1		1	1		1	1		1
LOS	A		A	A		A	A		A	A		A
Delay (s)	5.8		5.1	5.6		5.0	6.8		6.6	7.4		6.5
v/c	0.34		0.13	0.29		0.10	0.06		0.29	0.17		0.26
Queue (ft.)	20		5	15		5	5		10	10		10
Storage (ft.)			100			100	100			100		
Additional Information	Per Section 4C of the MUTCD, Year 2030 AM and PM peak-hour volumes would not meet minimum volume thresholds for traffic signal consideration to implement.											

Year: 2030	Future Build Conditions (Roundabout Alternative)											
AM Peak	EB			WB			NB			SB		
	-	All	-	-	All	-	-	All	-	-	All	-
# Lanes		1			1			1			1	
LOS		A			A			A			A	
Delay (s)		4.8			8.4			5.0			5.3	
v/c		0.17			0.43			0.18			0.16	
Queue (ft.)		25			50			25			25	
Storage (ft.)												
PM Peak	EB			WB			NB			SB		
	-	All	-	-	All	-	-	All	-	-	All	-
# Lanes		1			1			1			1	
LOS		A			A			A			A	
Delay (s)		6.4			5.5			5.5			5.5	
v/c		0.30			0.25			0.17			0.21	
Queue (ft.)		25			25			25			25	
Storage (ft.)												
Additional Information												

Other Considerations:

A cemetery is located in the northwest quadrant of the intersection. A public safety center – with firehouse – is proposed in the southeast quadrant; it is anticipated that emergency vehicles will exit onto Broadhead Street.

Feasibility of Alternatives:

The TWSC, AWSC, and traffic signal alternatives can be implemented with minimal impacts to the surrounding areas; the roundabout alternative may require right of way acquisition and/or roadway realignment due to sensitive land uses adjacent to the intersection.

Conclusion:

All alternatives maintain adequate (LOS C or better) traffic operations during Year 2030 peak traffic periods. Due to existing land uses, the roundabout alternative may require right of way acquisition and realignment of roadway approaches; therefore, the roundabout alternative should not be considered a feasible alternative for consideration.

Due to the low traffic volumes currently at the intersection, the intersection should maintain TWSC upon reconstruction of the east leg of Broadhead Street. Traffic conditions should be monitored at this intersection as development occurs to determine when AWSC should be implemented (see attachment for volume thresholds for AWSC consideration). It is unlikely that traffic volumes will meet minimum thresholds to warrant traffic signalization; therefore, traffic signal control is not recommended at this time (see attachment for volume thresholds for traffic signal consideration).

Attachments:

Intersection turning movement counts collected in July 2020
Crash Diagram
Intersection Traffic Operations Analysis Worksheets
Section 2B.07 of MUTCD (AWSC volume thresholds)
Section 4C of MUTCD (traffic signal volume thresholds)

Intersection Traffic Volume Report

Count Basics		Version 2013.J4.1	Page 1 of 11
Start Date:	Thursday, July 9, 2020	Weekday	Schools Not in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Intersection of: Holscher Road and Broadhead Street

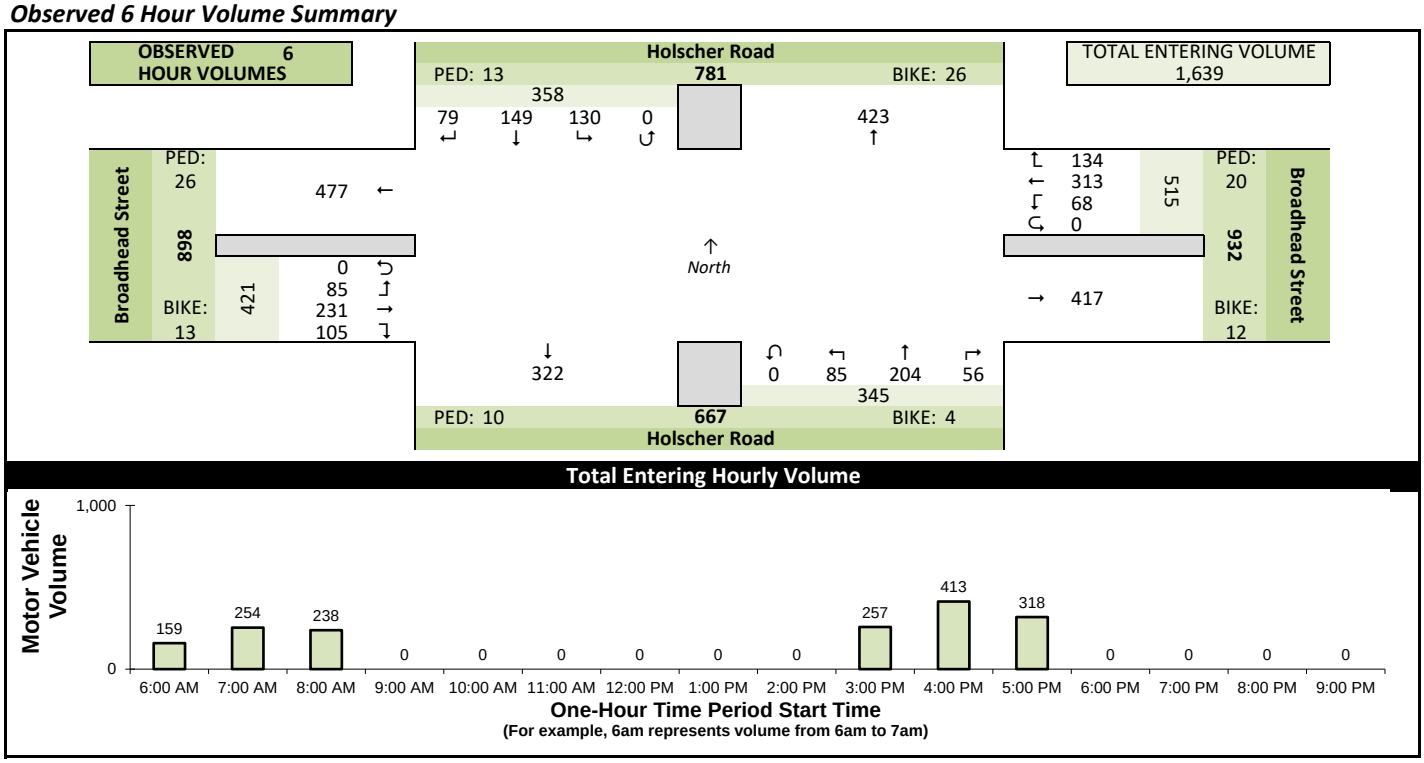
Site Information

Municipality	McFarland		
County	Dane	WisDOT Region	SW-M
Traffic Control	Partial Stop Control		
Roadway Names		North Direction	↑
North Leg	Holscher Road		
East Leg	Broadhead Street		
South Leg	Holscher Road		
West Leg	Broadhead Street		
Special Considerations			
Schools	Not in Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
Pre-school children	None		
Elementry school age children	None		
Visually impaired (white cane/helper dog)	None		
Elderly/disabled (except wheelchairs)	None		
Wheelchairs/electric scooters	None		
Other (describe)	None	None	

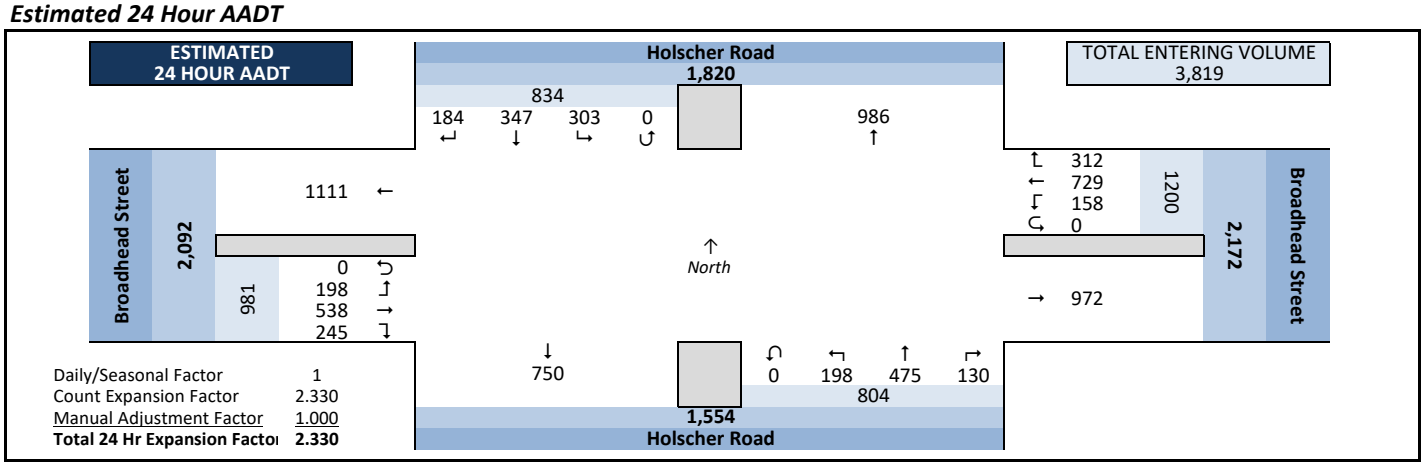
Count Information

Hrs Counted:	6:00 AM-9:00 AM and 3:00 PM-6:00 PM				
1st Day of Count	Thursday, July 9, 2020			Weather	
AM Peak Period	Thursday, July 9, 2020			Clear & Dry	
Midday Peak Period				Clear & Dry	
PM Peak Period	Thursday, July 9, 2020			Clear & Dry	
Calculated Peak Hours					
AM	7:15-8:15am	MD		PM	4:15-5:15pm
Peak Hours Selected for Analysis					
AM	7:15-8:15am	MD		PM	4:15-5:15pm
Daily/Seasonal Adjustment Group					
Count Expansion Group					
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	2.330		
Company Name	SRF Consulting, Inc.			Manual Adj.	1.000
Observers: AM Peak Period					
Observers: Midday Peak Period					
Observers: PM Peak Period					
Comments					

Observed 6 Hour Volume Summary



Estimated 24 Hour AADT

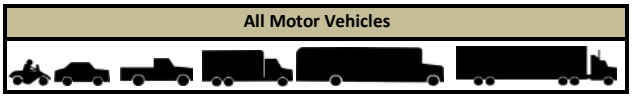


Intersection Traffic Volume Report

Count Basics			Page 3 of 11
Start Date:	Thursday, July 9, 2020	Weekday	Schools Not in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

Peak Hour Volume Summary

Holscher Road and Broadhead Street



Peak Hour Volumes, Truck Percentages, and PHFs

Thursday, July 9, 2020		From North					From East					From South					From West					
	AM Peak Hour	Holscher Road					Broadhead Street					Holscher Road					Broadhead Street					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
AM Peak Hour	7:15 AM	2	4	4	0	10	10	9	1	0	20	4	9	5	0	18	3	6	3	0	12	60
	7:30 AM	4	1	6	0	11	7	21	4	0	32	2	21	2	0	25	3	8	6	0	17	85
	7:45 AM	6	3	8	0	17	5	10	2	0	17	4	6	4	0	14	1	5	2	0	8	56
	8:00 AM	4	3	5	0	12	17	8	3	0	28	2	11	3	0	16	3	9	4	0	16	72
	Peak Hour Volume	16	11	23	0	50	39	48	10	0	97	12	47	14	0	73	10	28	15	0	53	273
	Rounded Hourly Volume	15	10	25	0	50	40	50	10	0	100	10	45	15	0	70	10	30	15	0	55	275
	% Single Unit Trucks	0.0	0.0	8.7	0.0	4.0	15.4	4.2	0.0	0.0	8.2	0.0	2.1	0.0	0.0	1.4	0.0	0.0	6.7	0.0	1.9	4.4
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	8.7	0.0	4.0	15.4	4.2	0.0	0.0	8.2	0.0	2.1	0.0	0.0	1.4	0.0	0.0	6.7	0.0	1.9	4.4
	Peak Hour Factor (PHF)	0.67	0.69	0.72	0.00	0.74	0.57	0.57	0.62	0.00	0.76	0.75	0.56	0.70	0.00	0.73	0.83	0.78	0.62	0.00	0.78	0.80

N/A		From North					From East					From South					From West					
	MD Peak Hour	Holscher Road					Broadhead Street					Holscher Road					Broadhead Street					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
Midday (MD) Peak Hour	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Thursday, July 9, 2020		From North					From East					From South					From West					
	PM Peak Hour	Holscher Road					Broadhead Street					Holscher Road					Broadhead Street					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
PM Peak Hour	4:15 PM	6	11	14	0	31	5	22	5	0	32	4	8	5	0	17	9	14	5	0	28	108
	4:30 PM	4	8	8	0	20	8	21	3	0	32	2	15	6	0	23	9	18	9	0	36	111
	4:45 PM	6	11	10	0	27	3	12	4	0	19	6	11	2	0	19	14	22	4	0	40	105
	5:00 PM	6	16	4	0	26	6	16	6	0	28	4	9	5	0	18	7	15	8	0	30	102
	Peak Hour Volume	22	46	36	0	104	22	71	18	0	111	16	43	18	0	77	39	69	26	0	134	426
	Rounded Hourly Volume	20	45	35	0	100	20	70	20	0	110	15	45	20	0	80	40	70	25	0	135	425
	% Single Unit Trucks	0.0	2.2	5.6	0.0	2.9	0.0	1.4	0.0	0.0	0.9	0.0	2.3	11.1	0.0	3.9	0.0	4.3	0.0	0.0	2.2	2.3
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	2.2	5.6	0.0	2.9	0.0	1.4	0.0	0.0	0.9	0.0	2.3	11.1	0.0	3.9	0.0	4.3	0.0	0.0	2.2	2.3
	Peak Hour Factor (PHF)	0.92	0.72	0.64	0.00	0.84	0.69	0.81	0.75	0.00	0.87	0.67	0.72	0.75	0.00	0.84	0.70	0.78	0.72	0.00	0.84	0.96

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		Holscher Road			Broadhead Street			Holscher Road			Broadhead Street			
	15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	1
	7:30 AM	1	3	4	0	0	0	0	0	0	2	2	4	8
	7:45 AM	3	1	4	0	4	4	2	0	2	1	0	1	11
	8:00 AM	1	3	4	0	0	0	0	0	0	3	1	4	8
	Total	5	7	12	0	4	4	2	0	2	6	4	10	28
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	4	4	0	0	0	0	0	0	0	3	3	7
	4:30 PM	0	4	4	0	0	0	0	0	0	1	0	1	5
	4:45 PM	0	1	1	0	2	2	1	0	1	0	0	0	4
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	9	9	0	2	2	1	0	1	1	3	4	16

Intersection Traffic Volume Report

Count Basics		*Page 5 of 11*
Start Date: Thursday, July 9, 2020	Weekday	Schools Not in Session
Total Number of Hours Counted: 6	Non-Holiday	No Special Events

15-Minute Motor Vehicle Data

All Motor Vehicles

Holscher Road and Broadhead Street

15-Minute Motor Vehicle Data

15-Minute Time Period		From North (↓) Holscher Road					From East (←) Broadhead Street					From South (↑) Holscher Road					From West (→) Broadhead Street					15-Min	Hourly	
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	Sum	PHF
AM Peak Period	6:00 AM	0	3	1	0	4	4	8	1	0	13	3	2	2	0	7	1	4	1	0	6	30	159	0.71
	6:15 AM	0	2	3	0	5	5	11	2	0	18	1	9	2	0	12	2	1	2	0	5	40	182	0.81
	6:30 AM	2	1	1	0	4	3	10	0	0	13	0	7	3	0	10	1	3	2	0	6	33	202	0.84
	6:45 AM	1	2	5	0	8	4	12	2	0	18	5	12	4	0	21	2	6	1	0	9	56	254	0.75
	7:00 AM	5	1	5	0	11	6	10	1	0	17	2	9	5	0	16	1	7	1	0	9	53	254	0.75
	7:15 AM	2	4	4	0	10	10	9	1	0	20	4	9	5	0	18	3	6	3	0	12	60	273	0.80
	7:30 AM	4	1	6	0	11	7	21	4	0	32	2	21	2	0	25	3	8	6	0	17	85	264	0.78
	7:45 AM	6	3	8	0	17	5	10	2	0	17	4	6	4	0	14	1	5	2	0	8	56	239	0.83
	8:00 AM	4	3	5	0	12	17	8	3	0	28	2	11	3	0	16	3	9	4	0	16	72	238	0.83
	8:15 AM	2	7	4	0	13	4	10	3	0	17	2	6	2	0	10	2	7	2	0	11	51		
	8:30 AM	2	5	6	0	13	6	12	4	0	22	3	14	5	0	22	2	0	1	0	3	60		
	8:45 AM	2	4	0	0	6	4	11	1	0	16	2	9	3	0	14	5	11	3	0	19	55		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 PM	2	5	4	0	11	2	13	0	0	15	1	5	4	0	10	3	8	3	0	14	50	257	0.72
	3:15 PM	1	6	6	0	13	5	10	4	0	19	1	10	3	0	14	5	8	5	0	18	64	296	0.83
	3:30 PM	1	4	5	0	10	2	8	2	0	12	2	4	3	0	9	9	13	1	0	23	54	340	0.79
	3:45 PM	6	11	10	0	27	5	21	5	0	31	1	3	2	0	6	4	19	2	0	25	89	397	0.89
	4:00 PM	3	9	4	0	16	7	18	5	0	30	2	7	6	0	15	5	18	5	0	28	89	413	0.93
	4:15 PM	6	11	14	0	31	5	22	5	0	32	4	8	5	0	17	9	14	5	0	28	108	426	0.96
	4:30 PM	4	8	8	0	20	8	21	3	0	32	2	15	6	0	23	9	18	9	0	36	111	401	0.90
	4:45 PM	6	11	10	0	27	3	12	4	0	19	6	11	2	0	19	14	22	4	0	40	105	348	0.83
	5:00 PM	6	16	4	0	26	6	16	6	0	28	4	9	5	0	18	7	15	8	0	30	102	318	0.78
	5:15 PM	8	11	5	0	24	7	16	6	0	29	1	7	5	0	13	7	9	1	0	17	83		
	5:30 PM	4	7	6	0	17	4	9	0	0	13	1	6	2	0	9	3	10	6	0	19	58		
	5:45 PM	2	14	6	0	22	5	15	4	0	24	1	4	2	0	7	4	10	8	0	22	75		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		79	149	130	0	358	134	313	68	0	515	56	204	85	0	345	105	231	85	0	421	1639		

Peak Hour All Vehicle Volume Summary

Hourly Time Period		From North (↓) Holscher Road					From East (←) Broadhead Street					From South (↑) Holscher Road					From West (→) Broadhead Street					Total Hourly	
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Volume	PHF
AM	7:15 AM	16	11	23	0	50	39	48	10	0	97	12	47	14	0	73	10	28	15	0	53	273	0.80
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:15 PM	22	46	36	0	104	22	71	18	0	111	16	43	18	0	77	39	69	26	0	134	426	0.96

Intersection Traffic Volume Report

Count Basics			*Page 9 of 11*
Start Date:	Thursday, July 9, 2020	Weekday	Schools Not in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

15-Minute Heavy Vehicle Data

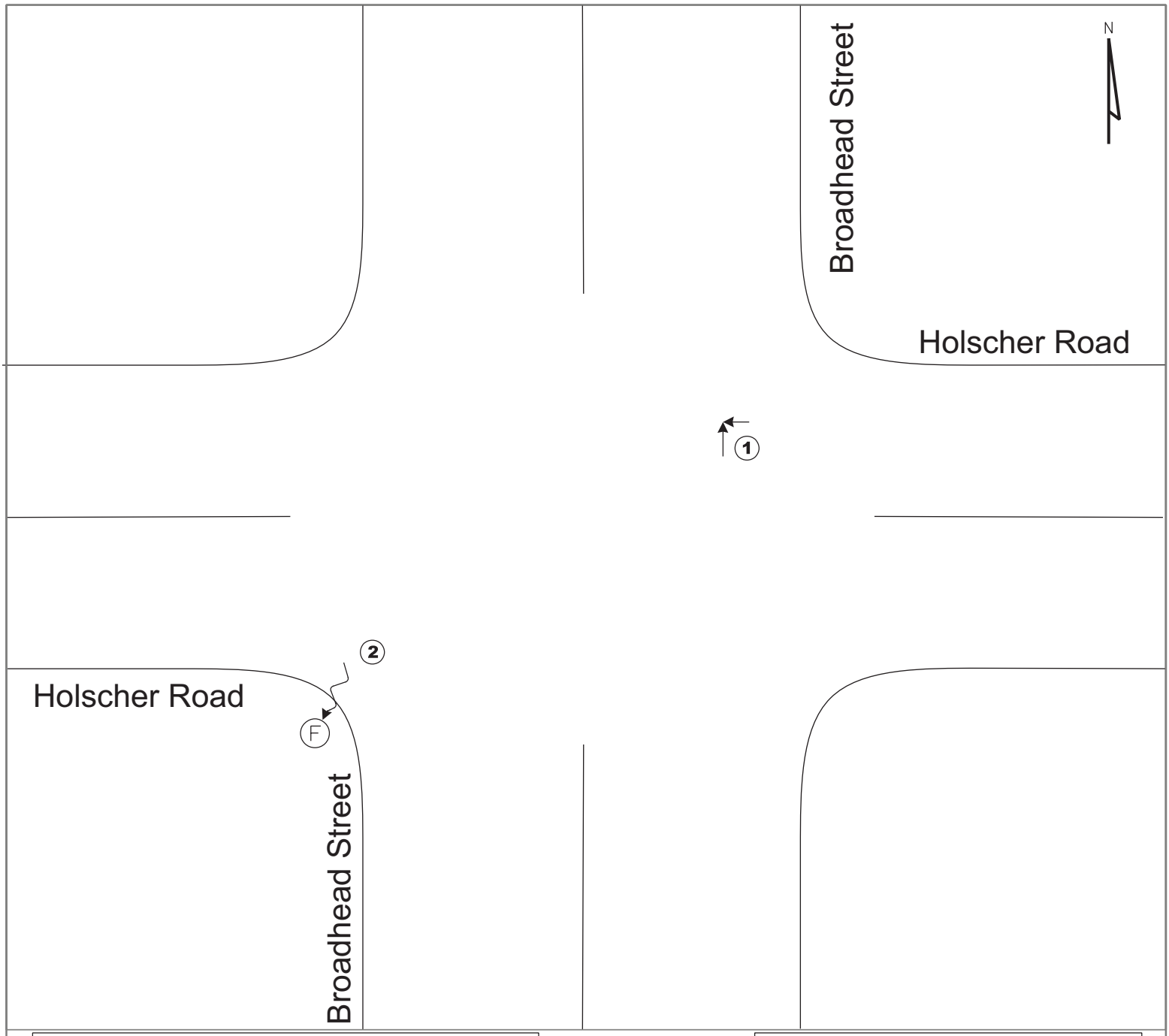
Holscher Road and Broadhead Street

15-Minute Heavy Vehicle Data

	15-Minute Time Period	From North (↓) Holscher Road					From East (←) Broadhead Street					From South (↑) Holscher Road					From West (→) Broadhead Street					15-Min	Hourly
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	Sum
AM Peak Period	6:00 AM	0	1	0	0	1	2	2	1	0	5	0	0	0	0	0	0	0	0	0	0	6	15
	6:15 AM	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	3	12
	6:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11
	6:45 AM	0	0	2	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5	13
	7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3	10
	7:15 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	12
	7:30 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	3	10
	7:45 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	13
	8:00 AM	0	0	1	0	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5	14
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	1	1	0	2	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1	6	
	8:45 AM	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2	6
	3:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	11
	3:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	10
	4:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3	11
	4:15 PM	0	1	1	0	2	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	5	10
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	7
	4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	7
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2	6
	5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	
	5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
	5:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		0	9	8	0	17	11	13	2	0	26	0	4	2	0	6	2	10	1	0	13	62	

Peak Hour Heavy Vehicle Volume Summary

	Hourly Time Period	From North (↓) Holscher Road					From East (←) Broadhead Street					From South (↑) Holscher Road					From West (→) Broadhead Street					Total Hourly
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Volume
AM	7:15 AM	0	0	2	0	2	6	2	0	0	8	0	1	0	0	1	0	0	1	0	1	12
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	1	2	0	3	0	1	0	0	1	0	1	2	0	3	0	3	0	0	3	10



DOCUMENTATION CONVENTION

(#) = CRASH FREQUENCY (2015 - 2019)

CRASH FREQUENCY/SEVERITY

3 Crashes

- 0 Fatal Crash (K)
- 0 Incapacitating (A-level)
- 0 Non-Incapacitating (B-level)
- 1 Possible Injury (C-level)
- 2 Property Damage Only

LEGEND

- Moving Vehicle
- Backing Vehicle
- Pedestrian
- Bicyclist
- Parked Vehicle
- (S)(Y) Stop/Yield Sign
- (T) Tree
- (U) Utility Pole
- (F) Fixed Object
- (N) Non-Fixed Object
- Angle (Right Angle)
- Angle (Left Turn)
- Angle (Right Turn)
- Sideswipe-Same
- Sideswipe-Opposite
- Head-On
- Rear-End
- Out of Control
- Overtake
- Overturn

Figure X.X
COLLISION DIAGRAM
HOLSCHER ROAD & BROADHEAD STREET
MCFARLAND, WISCONSIN

Years: 2015- 2019

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	45	16	16	78	63	22	76	20	37	18	26
Future Vol, veh/h	24	45	16	16	78	63	22	76	20	37	18	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	8	8	8	1	1	1	4	4	4
Mvmt Flow	30	56	20	20	98	79	28	95	25	46	23	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	177	0	0	76	0	0	322	333	56	364	314	138
Stage 1	-	-	-	-	-	-	116	116	-	178	178	-
Stage 2	-	-	-	-	-	-	206	217	-	186	136	-
Critical Hdwy	4.12	-	-	4.18	-	-	7.11	6.51	6.21	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Follow-up Hdwy	2.218	-	-	2.272	-	-	3.509	4.009	3.309	3.536	4.036	3.336
Pot Cap-1 Maneuver	1399	-	-	1486	-	-	633	589	1013	588	598	905
Stage 1	-	-	-	-	-	-	891	802	-	819	748	-
Stage 2	-	-	-	-	-	-	798	725	-	811	780	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1399	-	-	1486	-	-	575	567	1013	486	576	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	575	567	-	486	576	-
Stage 1	-	-	-	-	-	-	871	784	-	801	737	-
Stage 2	-	-	-	-	-	-	735	714	-	680	763	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.8	12	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	575	624	1399	-	-	1486	-	-	486	734
HCM Lane V/C Ratio	0.048	0.192	0.021	-	-	0.013	-	-	0.095	0.075
HCM Control Delay (s)	11.6	12.1	7.6	0	-	7.5	0	-	13.2	10.3
HCM Lane LOS	B	B	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	0.1	0.7	0.1	-	-	0	-	-	0.3	0.2

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	78	44	20	79	25	20	48	18	40	51	24
Future Vol, veh/h	29	78	44	20	79	25	20	48	18	40	51	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	1	1	1	4	4	4	3	3	3
Mvmt Flow	30	81	46	21	82	26	21	50	19	42	53	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	127	0	0	317	291	81	336	324	95
Stage 1	-	-	-	-	-	-	141	141	-	137	137	-
Stage 2	-	-	-	-	-	-	176	150	-	199	187	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.14	6.54	6.24	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.13	5.53	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.536	4.036	3.336	3.527	4.027	3.327
Pot Cap-1 Maneuver	1483	-	-	1465	-	-	632	616	973	616	592	959
Stage 1	-	-	-	-	-	-	857	776	-	864	781	-
Stage 2	-	-	-	-	-	-	821	769	-	801	743	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1483	-	-	1465	-	-	556	593	973	549	570	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	556	593	-	549	570	-
Stage 1	-	-	-	-	-	-	838	759	-	845	769	-
Stage 2	-	-	-	-	-	-	733	757	-	718	727	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	1.2	11.2	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	556	664	1483	-	-	1465	-	-	549	655
HCM Lane V/C Ratio	0.037	0.104	0.02	-	-	0.014	-	-	0.076	0.119
HCM Control Delay (s)	11.7	11	7.5	0	-	7.5	0	-	12.1	11.2
HCM Lane LOS	B	B	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	0.1	0.3	0.1	-	-	0	-	-	0.2	0.4

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	45	16	16	78	63	22	76	20	37	18	26
Future Vol, veh/h	24	45	16	16	78	63	22	76	20	37	18	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	8	8	8	1	1	1	4	4	4
Mvmt Flow	30	56	20	20	98	79	28	95	25	46	23	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	177	0	0	76	0	0	322	333	56	324	274	98
Stage 1	-	-	-	-	-	-	116	116	-	138	138	-
Stage 2	-	-	-	-	-	-	206	217	-	186	136	-
Critical Hdwy	4.12	-	-	4.18	-	-	7.11	6.51	6.21	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.14	5.54	-
Follow-up Hdwy	2.218	-	-	2.272	-	-	3.509	4.009	3.309	3.536	4.036	3.336
Pot Cap-1 Maneuver	1399	-	-	1486	-	-	633	589	1013	625	630	953
Stage 1	-	-	-	-	-	-	891	802	-	860	779	-
Stage 2	-	-	-	-	-	-	798	725	-	811	780	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1399	-	-	1486	-	-	577	567	1013	517	607	953
Mov Cap-2 Maneuver	-	-	-	-	-	-	577	567	-	517	607	-
Stage 1	-	-	-	-	-	-	871	784	-	841	767	-
Stage 2	-	-	-	-	-	-	737	714	-	680	763	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.8	12	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	577	624	1399	-	-	1486	-	-	517	773
HCM Lane V/C Ratio	0.048	0.192	0.021	-	-	0.013	-	-	0.089	0.071
HCM Control Delay (s)	11.6	12.1	7.6	0	-	7.5	0	-	12.6	10
HCM Lane LOS	B	B	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	0.1	0.7	0.1	-	-	0	-	-	0.3	0.2

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	78	44	20	79	25	20	48	18	40	51	24
Future Vol, veh/h	29	78	44	20	79	25	20	48	18	40	51	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	1	1	1	4	4	4	3	3	3
Mvmt Flow	30	81	46	21	82	26	21	50	19	42	53	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	127	0	0	317	291	81	323	311	82
Stage 1	-	-	-	-	-	-	141	141	-	124	124	-
Stage 2	-	-	-	-	-	-	176	150	-	199	187	-
Critical Hdwy	4.12	-	-	4.11	-	-	7.14	6.54	6.24	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.13	5.53	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.536	4.036	3.336	3.527	4.027	3.327
Pot Cap-1 Maneuver	1483	-	-	1465	-	-	632	616	973	628	602	975
Stage 1	-	-	-	-	-	-	857	776	-	878	791	-
Stage 2	-	-	-	-	-	-	821	769	-	801	743	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1483	-	-	1465	-	-	557	593	973	560	580	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	557	593	-	560	580	-
Stage 1	-	-	-	-	-	-	838	759	-	859	779	-
Stage 2	-	-	-	-	-	-	734	757	-	718	727	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	1.2	11.2	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	557	664	1483	-	-	1465	-	-	560	666
HCM Lane V/C Ratio	0.037	0.104	0.02	-	-	0.014	-	-	0.074	0.117
HCM Control Delay (s)	11.7	11	7.5	0	-	7.5	0	-	11.9	11.1
HCM Lane LOS	B	B	A	A	-	A	A	-	B	B
HCM 95th %tile Q(veh)	0.1	0.3	0.1	-	-	0	-	-	0.2	0.4

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	75	35	45	175	130	30	95	30	55	25	45
Future Vol, veh/h	40	75	35	45	175	130	30	95	30	55	25	45
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	8	8	8	1	1	1	4	4	4
Mvmt Flow	50	94	44	56	219	163	38	119	38	69	31	56
Number of Lanes	0	1	1	0	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.8	12.5	11.3	10.4
HCM LOS	B	B	B	B

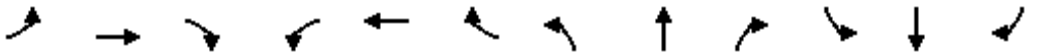
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	35%	0%	20%	0%	100%	0%
Vol Thru, %	0%	76%	65%	0%	80%	0%	0%	36%
Vol Right, %	0%	24%	0%	100%	0%	100%	0%	64%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	125	115	35	220	130	55	70
LT Vol	30	0	40	0	45	0	55	0
Through Vol	0	95	75	0	175	0	0	25
RT Vol	0	30	0	35	0	130	0	45
Lane Flow Rate	38	156	144	44	275	162	69	88
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.073	0.274	0.257	0.067	0.468	0.24	0.136	0.15
Departure Headway (Hd)	7.001	6.322	6.43	5.543	6.121	5.31	7.123	6.157
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	511	567	558	644	589	674	503	581
Service Time	4.755	4.076	4.184	3.296	3.865	3.053	4.88	3.913
HCM Lane V/C Ratio	0.074	0.275	0.258	0.068	0.467	0.24	0.137	0.151
HCM Control Delay	10.3	11.5	11.4	8.7	14.2	9.7	11	10
HCM Lane LOS	B	B	B	A	B	A	B	A
HCM 95th-tile Q	0.2	1.1	1	0.2	2.5	0.9	0.5	0.5

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	200	60	45	170	50	35	65	50	95	65	40
Future Vol, veh/h	50	200	60	45	170	50	35	65	50	95	65	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	1	1	1	4	4	4	3	3	3
Mvmt Flow	52	208	63	47	177	52	36	68	52	99	68	42
Number of Lanes	0	1	1	0	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.9	12.2	10.7	11
HCM LOS	B	B	B	B

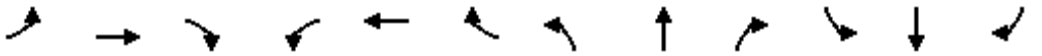
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	20%	0%	21%	0%	100%	0%
Vol Thru, %	0%	57%	80%	0%	79%	0%	0%	62%
Vol Right, %	0%	43%	0%	100%	0%	100%	0%	38%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	115	250	60	215	50	95	105
LT Vol	35	0	50	0	45	0	95	0
Through Vol	0	65	200	0	170	0	0	65
RT Vol	0	50	0	60	0	50	0	40
Lane Flow Rate	36	120	260	62	224	52	99	109
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.073	0.211	0.448	0.093	0.389	0.079	0.194	0.19
Departure Headway (Hd)	7.171	6.352	6.196	5.385	6.251	5.435	7.047	6.268
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	498	563	581	663	573	657	508	570
Service Time	4.936	4.117	3.95	3.139	4.007	3.19	4.81	4.03
HCM Lane V/C Ratio	0.072	0.213	0.448	0.094	0.391	0.079	0.195	0.191
HCM Control Delay	10.5	10.8	13.9	8.7	13	8.7	11.5	10.5
HCM Lane LOS	B	B	B	A	B	A	B	B
HCM 95th-tile Q	0.2	0.8	2.3	0.3	1.8	0.3	0.7	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	75	35	45	175	130	30	95	30	55	25	45
Future Volume (veh/h)	40	75	35	45	175	130	30	95	30	55	25	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1781	1781	1781	1885	1885	1885	1841	1841	1841
Adj Flow Rate, veh/h	50	94	44	56	219	162	38	119	38	69	31	56
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	8	8	8	1	1	1	4	4	4
Cap, veh/h	335	449	538	279	503	513	587	306	98	530	131	237
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	294	1322	1585	201	1481	1510	1321	1369	437	1210	588	1062
Grp Volume(v), veh/h	144	0	44	275	0	162	38	0	157	69	0	87
Grp Sat Flow(s),veh/h/ln	1616	0	1585	1682	0	1510	1321	0	1806	1210	0	1650
Q Serve(g_s), s	0.0	0.0	0.4	0.0	0.0	1.6	0.5	0.0	1.5	1.1	0.0	0.9
Cycle Q Clear(g_c), s	1.1	0.0	0.4	2.5	0.0	1.6	1.4	0.0	1.5	2.6	0.0	0.9
Prop In Lane	0.35		1.00	0.20		1.00	1.00		0.24	1.00		0.64
Lane Grp Cap(c), veh/h	784	0	538	782	0	513	587	0	403	530	0	368
V/C Ratio(X)	0.18	0.00	0.08	0.35	0.00	0.32	0.06	0.00	0.39	0.13	0.00	0.24
Avail Cap(c_a), veh/h	3194	0	3195	3494	0	3043	2185	0	2588	1994	0	2363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.9	0.0	4.6	5.3	0.0	5.0	7.1	0.0	6.8	7.9	0.0	6.6
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.3	0.0	0.4	0.0	0.0	0.6	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.1	0.8	0.0	0.4	0.2	0.0	0.7	0.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.0	0.0	4.7	5.6	0.0	5.4	7.2	0.0	7.4	8.0	0.0	6.9
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		188			437			195			156	
Approach Delay, s/veh		4.9			5.5			7.4			7.4	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.5		9.1		11.5		9.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		41.5		29.5		41.5		29.5				
Max Q Clear Time (g_c+I1), s		3.1		4.6		4.5		3.5				
Green Ext Time (p_c), s		1.2		0.7		2.5		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			6.1									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	200	60	45	170	50	35	65	50	95	65	40
Future Volume (veh/h)	50	200	60	45	170	50	35	65	50	95	65	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1841	1841	1841	1856	1856	1856
Adj Flow Rate, veh/h	52	208	62	47	177	52	36	68	52	99	68	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	1	1	1	4	4	4	3	3	3
Cap, veh/h	280	478	494	283	477	498	596	232	177	589	257	159
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	208	1533	1585	210	1532	1598	1263	968	740	1262	1073	663
Grp Volume(v), veh/h	260	0	62	224	0	52	36	0	120	99	0	110
Grp Sat Flow(s),veh/h/ln	1741	0	1585	1741	0	1598	1263	0	1708	1262	0	1736
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.0	0.5	0.5	0.0	1.2	1.4	0.0	1.0
Cycle Q Clear(g_c), s	2.2	0.0	0.6	1.9	0.0	0.5	1.5	0.0	1.2	2.5	0.0	1.0
Prop In Lane	0.20		1.00	0.21		1.00	1.00		0.43	1.00		0.38
Lane Grp Cap(c), veh/h	758	0	494	760	0	498	596	0	409	589	0	416
V/C Ratio(X)	0.34	0.00	0.13	0.29	0.00	0.10	0.06	0.00	0.29	0.17	0.00	0.26
Avail Cap(c_a), veh/h	3598	0	3202	3575	0	3227	2215	0	2597	2206	0	2641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.5	0.0	4.9	5.4	0.0	4.9	6.8	0.0	6.2	7.3	0.0	6.2
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.2	0.0	0.1	0.0	0.0	0.4	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	0.2	0.6	0.0	0.1	0.1	0.0	0.4	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.8	0.0	5.1	5.6	0.0	5.0	6.8	0.0	6.6	7.4	0.0	6.5
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		322			276			156			209	
Approach Delay, s/veh		5.6			5.5			6.7			6.9	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.7		9.3		10.7		9.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.5		30.5		40.5		30.5				
Max Q Clear Time (g_c+I1), s		4.2		4.5		3.9		3.5				
Green Ext Time (p_c), s		2.0		1.0		1.7		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			6.1									
HCM 6th LOS			A									

Intersection	
Intersection Delay, s/veh	6.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	188	437	195	156
Demand Flow Rate, veh/h	192	472	196	162
Vehicles Circulating, veh/h	164	209	219	335
Vehicles Exiting, veh/h	333	206	137	346
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.8	8.4	5.0	5.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	192	472	196	162
Cap Entry Lane, veh/h	1132	1093	1084	991
Entry HV Adj Factor	0.980	0.927	0.994	0.962
Flow Entry, veh/h	188	437	195	156
Cap Entry, veh/h	1109	1013	1078	953
V/C Ratio	0.170	0.432	0.181	0.164
Control Delay, s/veh	4.8	8.4	5.0	5.3
LOS	A	A	A	A
95th %tile Queue, veh	1	2	1	1

Intersection	
Intersection Delay, s/veh	5.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	322	276	156	209
Demand Flow Rate, veh/h	328	279	162	215
Vehicles Circulating, veh/h	219	161	367	263
Vehicles Exiting, veh/h	259	368	180	177
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	5.5	5.5	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	328	279	162	215
Cap Entry Lane, veh/h	1084	1134	966	1048
Entry HV Adj Factor	0.981	0.990	0.965	0.972
Flow Entry, veh/h	322	276	156	209
Cap Entry, veh/h	1064	1123	932	1018
V/C Ratio	0.302	0.246	0.168	0.205
Control Delay, s/veh	6.4	5.5	5.5	5.5
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Section 2B.07 Multi-Way Stop Applications

Support:

01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

03 *The decision to install multi-way stop control should be based on an engineering study.*

04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*

A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.

C. Minimum volumes:

1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and

2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Option:

05 Other criteria that may be considered in an engineering study include:

A. The need to control left-turn conflicts;

B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;

C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and

D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

Section 4C.02 Warrant 1, Eight-Hour Vehicular Volume

Support:
01 The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

02 The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

03 It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.

Standard:
04 **The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:**

A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or
B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112
Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Option:
05 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70 percent columns in Table 4C-1 may be used in place of the 100 percent columns.

Guidance:
06 *The combination of Conditions A and B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied and should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.*

Standard:
07 **The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:**

A. The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and
B. The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

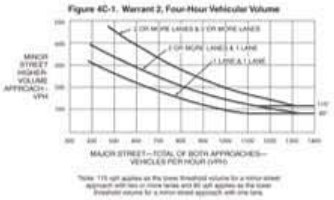
Option:
08 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Section 4C.03 Warrant 2, Four-Hour Vehicular Volume

Support:
01 The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

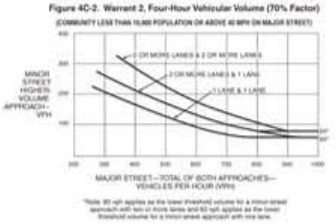
Standard:
02 **The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.**

Figure 4C-1 Warrant 2, Four-Hour Vehicular Volume



Option:
03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

Figure 4C-2 Warrant 2, Four-Hour Vehicular Volume (70% Factor)



Section 4C.04 Warrant 3, Peak Hour

Support:
01 The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Standard:
02 **This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.**

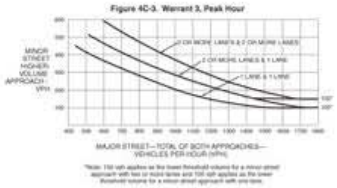
03 **The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:**

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. **The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and**
2. **The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and**
3. **The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.**

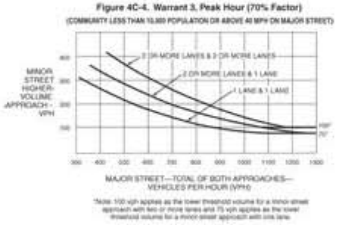
B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

Figure 4C-3 Warrant 3, Peak Hour



Option:
04 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to evaluate the criteria in the second category of the Standard.

Figure 4C-4 Warrant 3, Peak Hour (70% Factor)



05 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

VILLAGE OF
McFarland

VILLAGE BOARD SUMMARY SHEET

MEETING DATE: **Tuesday, September 8, 2020**

SECTION: **Business**

DEPARTMENT: **Public Works**

CONTACT: **Jim Hessling, Public Works Director**

AGENDA ITEM: **Presentation of the Public Works Monthly Report**

PREVIOUS ACTION:

ISSUE SUMMARY:

FINANCIAL/BUDGET IMPACT:

VILLAGE PLAN REFERENCE:

ORDINANCE REFERENCE:

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

ATTACHMENTS:

1. August 2020 Public Works Directors report

PUBLIC WORKS COMMITTEE
September 8, 2020

PUBLIC UTILITIES COMMITTEE
September 15, 2020

Public Works Directors Report for August 2020

The following is information concerning events and activities of the Public Works Department along with the Water and Sewer Utilities for the previous month. This information is provided in brief to provide an overview of the highlights.

PW Complex

Construction activities at the public works building are currently on going. The void under the concrete has been repaired. Work is progressing on the mezzanine, and the mechanic's shop floor. Outside yard work has started with the removal of the asphalt and the partial installation of the concrete flume.

Road Construction Projects

This year's street projects, Burma Road, Autumn and North Autumn Lanes along with the sump pump header project are moving along. Binder pavement has been laid in some places.

Lead and Copper Testing

The department has been working with the DNR on site selection for our 2020 Lead and Copper Testing requirements. All sites now have to be re-approved by the DNR before samples are collected.

Painting

Painting of various cross walks and curb lines continued in August.

Meetings/Training/Seminars

All meetings were held by electronic means this month.

- Jim Hessling participated in:
  APWA monthly board meeting